TENANT IMPROVEMENT
ISSUE FOR CONSTRUCTION

[redacted]

PROJECT TEAM

TENANT	OWNER	ARCHITECT	STRUCTURAL	MECHANICAL/PLUMBING	ELECTRICAL	CONTRACTOR

CONSULTANTS

STAMP

LICENSED ARCHITECT
ANDREW J. ESCALA
RENEWAL 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE

TITLE

COVER SHEET

G-000-TI

ABBREVIATIONS

&	AND	JAN.	JANITOR
∠	ANGLE	J.B.	JUNCTION BOX
@	AT	J.T.	JOINT TRENCH
℄	CENTER LINE		
⊏	CHANNEL	KIT.	KITCHEN
°	DEGREES	K.O.	KNOCKOUT
⌀	DIAMETER	K.P.	KICKPLATE
±	PLUS / MINUS	LAB.	LABORATORY
#	POUND, NUMBER	LAM.	LAMINATE
ℙ	PROPERTY LINE	LAVS.	LAVATORIES
		LB.	POUND
A.B.	ANCHOR BOLT	L.P.	LOW POINT
A.C.	ASPHALTIC CONCRETE	L.S.D.	LIQUID SOAP DISPENSER
A/C	AIR CONDITIONING		
AC. TILE	ACOUSTICAL TILE	MAT.	MATERIAL
A.D.	AREA DRAIN	MAX.	MAXIMUM
ADJ.	ADJUSTABLE	M.B.	MACHINE BOLT
ADDL.	ADDITIONAL	M.B.R.	MODIFIED BITUMEN ROOF
A.F.F.	ABOVE FINISH FLOOR	MECH.	MECHANICAL
A.F.S.	AUTOMATIC FIRE SPRINKLER	MET.	METAL
AGGR.	AGGREGATE	MFR.	MANUFACTURER
ALUM.	ALUMINUM	M.H.	MANHOLE
ANOD.	ANODIZED	MIN.	MINIMUM
ASPH.	ASPHALT	M.O.	MASONRY OPENING
A.T.	ASH TRAY	M.S.	MACHINE SCREW
		MULL.	MULLION
B/	BACK OF OR BOTTOM OF		
BD/	BOARD	N.I.C.	NOT IN CONTRACT
BITUM.	BITUMINOUS	N.S.F.	NET SQUARE FEET
BLDG.	BUILDING	N.T.S.	NOT TO SCALE
BLKG.	BLOCKING	(N)	NEW
BM.	BEAM		
B.O.J.	BOTTOM OF JOISTS	OBS.	OBSCURE
BOTT.	BOTTOM	O.C.	ON CENTER
B.U.R.	BUILT-UP ROOF	O.H.	OVERHEAD, OPPOSITE HAND
		OPNG.	OPENING
CABT.	CABINET	OPP.	OPPOSITE
C.B.	CATCH BASKET OR CHALKBOARD	O.D.	OVERFLOW DRAIN
CAD. PL.	CADMIUM PLATED		or OUTSIDE DIAMETER
C.D.	CUP DISPENSER		
CEM.	CEMENT	P.A.	PUBLIC ADDRESS
CER.	CERAMIC	P.B.	PANIC BAR
C.I.	CAST IRON	P.C.C.	PORTLAND CEMENT CONCRETE
C.J.	CONSTRUCTION JOINT	P.D.F.	POWDER DRIVEN FASTENER
CL.	CHAIN LINK	P.H.	PHILLIPS HEAD
CLR.	CLEAR	PL.	PLATE
CLG.	CEILING	PLAS.	PLASTER
C.M.U.	CONCRETE MASONRY UNIT	PLAS. LAM.	PLASTIC LAMINATE
C.O.	CLEANOUT	PLY.	PLYWOOD
COL.	COLUMN	PNL.	PANEL
COMP.	COMPOSITION	POL.	POLISHED
CONC.	CONCRETE	PORC.ENAM.	PORCELAIN ENAMEL
CONN.	CONNECTION	PRCST.	PRECAST
CONT.	CONTINUOUS	P.S.D.	POWDER SOAP DISPENSER
CONTR.	CONTRACTOR	PT.	POINT
C.O.T.G.	CLEAN OUT TO GRADE	P.T.D.	PAPER TOWEL DISPENSER
CSK.	COUNTERSUNK	P.V.C.	POLYVINYL CHLORIDE
C.W.	COLD WATER		
		Q.T.	QUARRY TILE
DET.	DETAIL		
D.F.	DOUGLAS FIR	R.	RISER
D.F.	DRINKING FOUNTAIN	R.A.	RETURN AIR
DIA.	DIAMETER	RAD.	RADIUS
DIM.	DIMENSION	R.C.P.	REINFORCED CONCRETE PIPE
DN.	DOWN	RD.	ROUND
DO.	DITTO	R.D.	ROOF DRAIN
D.S.	DOWNSPOUT	REC.	RECESSED
DWG.	DRAWING	REINF.	REINFORCED(ING)
D.S.P.	DRY STANDPIPE	RES.	RESILIENT
		R.H.	ROUND HEAD
EA.	EACH	RM.	ROOM
EIFS.	EXTERIOR INSULATING FINISH SYS.	RO.	ROUGH
E.J.	EXPANSION JOINT	R.O.	ROUGH OPENING
ELEC.	ELECTRICAL	R / W	RIGHT OF WAY
ELEV.	ELEVATION, ELEVATOR	RWD.	REDWOOD
ENCL.	ENCLOSURE	R.W.L.	RAIN WATER LEADER
E.P.B.	ELECTRIC PANEL BOARD		
EQ.	EQUAL	S.	SEWER
E.S.	EXPANSION SHIELD	S.C.D.	SEAT COVER DISPENSER
E.W.C.	ELECTRIC WATER COOLER	S.D.	STORM DRAIN
E.W.H.	ELECTRIC WATER HEATER	SECT.	SECTION
EXH.	EXHAUST	S.F.	SQUARE FOOT / FEET
EXIST., (E)	EXISTING	SHT.	SHEET
EXT.	EXTERIOR	SHTHG.	SHEATHING
EXPO.	EXPOSED	SHVS.	SHELVES
EXP.	EXPANSION	SIM.	SIMILAR
		SK.	SINK OR SKETCH
F.A.	FIRE ALARM	S.M.	SHEET METAL
F.B.	FLAT BAR	S.M.S.	SHEET METAL SCREW
FBRGL.	FIBERGLASS	S.N.D.	SANITARY NAPKIN DISPOSER
F.D.	FLOOR DRAIN	S.N.V.	SANITARY NAPKIN VENDOR
FDN.	FOUNDATION	S.O.V.	SHUT OFF VALVE
F.E.	FIRE EXTINGUISHER	SPECS.	SPECIFICATIONS
F.E.C.	FIRE EXTINGUISHER CABINET	SQ.	SQUARE
F.H.	FIRE HYDRANT OR FLAT HEAD	S.S.	SANITARY SEWER
F.H.C.	FIRE HOSE CABINET	STD.	STANDARD
F.F.	FINISH FLOOR	STL.	STEEL
F.O.	FINISHED OPENING	STOR.	STORAGE
F.O.C.	FACE OF CONCRETE	STRUCT.	STRUCTURAL
F.O.(E)FS.	FACE OF EIFS	ST.STL.	STAINLESS STEEL
F.O.F.	FACE OF FINISH	SUSP.	SUSPENDED
F.O.M.	FACE OF MASONRY		
F.O.S.	FACE OF STUD	T.C.	TOP OF CURB
F.S.	FLOOR SINK	T.D.	TOWEL DISPENSER
FTG.	FOOTING	T.D.D.	TOWEL DISPENSER & DISPOSAL
FRP.	FIBERGLASS REINFORCED PLASTIC	TEL.	TELEPHONE
FPRF.	FIREPROOF	T & G.	TONGUE AND GROOVE
		T.O.S.	TOP OF SLAB
GA.	GAUGE	T.P.	TOP OF PAVEMENT
GALV.	GALVANIZE(D)	TR.	TREAD
G.I.	GALVANIZED IRON	TYP.	TYPICAL
G.F.R.C.	GLASS FIBER REINFORCED CONCRETE	T.W.	TOP OF WALL
GRD.	GROUND OR GRADE		
G.S.F.	GROSS SQUARE FEET	UNF.	UNFINISHED
G.V.	GATE VALVE	U.O.N.	UNLESS OTHERWISE NOTED
G.V.C.B.	GATE VALVE IN CONCRETE BOX	UR.	URINAL
GYP.	GYPSUM		
		V.C.P.	VITREOUS CLAY PIPE
HDR.	HEADER	VERT.	VERTICAL
HDWD.	HARDWOOD	VEST.	VESTIBULE
HDWR.	HARDWARE	V.G.D.F.	VERTICAL GRAIN DOUGLAS FIR
H.M.	HOLLOW METAL		
HORIZ.	HORIZONTAL	W	WATER
H.P.	HIGH POINT	W/	WITH
HR.	HOUR	WAINS.	WAINSCOT
H.R.C.	HOSE REEL CABINET	WD.	WOOD
H.S.B.	HIGH STRENGTH BOLT	W.P.	WORK POINT or WATERPROOF
HT.	HEIGHT	W.R.	WATER RESISTANT
H.T.D.	HANDICAP TOWEL DISPENSER		or WASTE RECEPTACLE
HTG.	HEATING	W.S.	WEATHER STRIPPING
H.W.	HOT WATER		or WOOD SCREW
H.W.D.	HOT WATER DISPENSER	WT.	WEIGHT
		W.W.	WINDOW WALL
I.D.	INSIDE DIAMETER	W.W.F.	WELDED WIRE FABRIC
INSUL.	INSULATION		
INV.	INVERT		
INT.	INTERIOR		

LEGAL DESCRIPTION:

ASSESSOR'S PARCEL NUMBER:

345-012-14-00

SITE ADDRESS:

EXISTING USE:

OCCUPIED R&D BUILDING TO REMAIN

EXISTING DEVELOPMENT PERMITS:

PLANNED INDUSTRIAL DEVELOPMENT (P.I.D.)	86-0967
P.I.D. AMENDMENT	87-1049
PROCESS 2000 SUBSTANTIAL CONFORMANCE REVIEW	96000267 (add Mech.Yard)
PROCESS 2000 SUBSTANTIAL CONFORMANCE REVIEW	

LAND USE INFORMATION AND OVERLAYS:

BASE ZONE	IP-1-1 INDUSTRIAL PARK ZONE
AIRPORT INFLUENCE AREA (AIA)	YES
COMMUNITY PLANNED IMPLEMENTATION OVERLAY ZONE(CPIOZ)	A
MIRAMAR COMPREHENSIVE LAND USE PLAN SAFETY ZONE	TRANSITION ZONE
AIRPORT ENVIRONS OVERLAY ZONE	80-85 CNEL
FIRE BRUSH ZONES 300FT BUFFER	YES
FIRE HAZARD SEVERITY ZONE	YES
FIRST PUBLIC ROADWAY	NO
PARKING IMPACT	YES
PRIME INDUSTRIAL LAND	YES
ENVIRONMENTAL SENSITIVE LAND	YES
STEEP HILLSIDES	YES
GEOLOGIC HAZARD CATEGORIES	51/54
FAA PART 77 NOTIFICATION AREA	YES
COMMUNITY PLAN NAME	UNIVERSITY

SITE AREA:

TOTAL GROSS SITE AREA: (approximate)	6.52 ACRES (284,011 SF)
PARCEL 1	2.72 ACRES
PARCEL 2	3.80 ACRES
MAXIMUM BUILDING COVERAGE:	1,83 ACRES = .25 (max. allowed)
MAXIMUM BUILDING COVERAGE %:	71,002.80 SF (71,002.80/284,011) = 25%
EXISTING BUILDING COVERAGE:	68,500 SF (68,500/284,011) = 24,1%

GROSS FLOOR AREA:

FIRST FLOOR LOT COVERAGE	38,500 S.F.
SECOND FLOOR SQUARE FOOTAGE	32,500 S.F.
TOTAL GROSS SQUARE FOOTAGE	69,000 S.F.
MECHANICAL YARD	1,200 S.F.
TOTAL ON SITE GROSS SQUARE FOOTAGE	133,000 SF
MAXIMUM GROSS SQUARE FOOTAGE AS ENTITLED	133,000 SF

FIRE RESISTIVE RATING REQUIREMENTS:

BUILDING ELEMENT	Type III B
PRIMARY STRUCTURAL FRAME	0 hr
BEARING WALLS - Exterior	2 hr
BEARING WALLS - Interior	0 hr
NON-BEARING WALLS - Exterior	See Table 602*
NON-BEARING WALLS - Interior	0 hr
FLOOR CONSTRUCTION & SECONDARY MEMBERS	0 hr
ROOF CONSTRUCTION & SECONDARY MEMBERS	0 hr

**To comply with Table 602 the building shall keep 30' away from all property lines.*

ZONING:

THESE PARCELS WERE DEVELOPED UNDER RESOLUTION NO. 7493 PD GRANTING PLANNED INDUSTRIAL DEVELOPMENT PERMIT NO. 87-1049 AMENDMENT TO PID PERMIT NO. 86-0967, RECORDED JUNE 14, 1988 AS FILE NO.88-283002, OF OFFICIAL RECORDS, THE CONDITIONS FOR DEVELOP UNDER SAID RESOLUTION MAU OR MAY NOT AGREE WITH THE STANDARD ZONING REGULATIONS FOR ZONE IP-1-1, COASTAL OVERLAY ZONE, IN WHICH THESE PROPERTIES LIE.

MINIMUM FRONT SETBACK	20'
STANDARD FRONT SETBACK	25'
SIDE SETBACK	15'
MINIMUM STREET SETBACK	20'
STANDARD STREET SIDE SETBACK	20'
STANDARD REAR SETBACK	25'
HEIGHT	N/A
FLOOR AREA RATIO	2.0

PARKING TABULATION:

MINIMUM PARKING TO BE PROVIDED PER P.I.D. 86-0967	419 SPACES
MINIMUM PARKING TO BE PROVIDED PER P.I.D. AMENDMENT 87-1049	502 SPACES
MINIMUM PARKING TO BE PROVIDED PER SCR 96005151	365 SPACES
EXISTING PARKING SURFACE PARKING PROVIDED	287 SPACES
EXISTING GARAGE PARKING PROVIDED	79 SPACES
EXISTING ON SITE PARKING PROVIDED	365 SPACES
PARKING RATIO PER 1,000 S.F.	2.7/1000

EXISTING PARKING CALCULATIONS:

BASED ON SHARED PERKING AGREEMENT PTS # 264785

SITE	GROSS AREA (SF)	REQUIRED PARKING	PROVIDED PARKING
4755	45,000	112.5	102
4757	69,000	172.5	109
4767	64,000	160	234
		445	445

PARKING NOTE: RESOLUTION NO. 7493 PD GRANTING PLANNED INDUSTRIAL DEVELOPMENT PERMIT NO. 87-1049 AMENDMENT TO PID PERMIT NO. 86-0967, RECORDED JUNE 14, 1988 AS FILE NO. 88-283002, OF OFFICIAL RECORDS, CALLS FOR A MINIMUM OF 502 PARKING SPACES FOR BOTH PARCELS. IT SI UNKNOWN IF A VARIANCE WAS GRANTED REGARDING REQUIRED PARKING AFTER THIS DOCUMENT.

	BUILDING GROSS MEASURED FLOOR AREA: (MEASURED TO INSIDE FACE OF PERIMETER WALLS & MINIMUM FACE OF GLAZING, STAIRS, ELEVATOR SHAFTS, SHAFTS ARE INCLUDED.)	BUILDING GROSS FLOOR AREA: (MEASURED TO OUTSIDE FACE OF PERIMETER WALLS & OUTSIDE FACE OF GLAZING, STAIRS, ELEVATOR SHAFTS, SHAFTS ARE INCLUDED.
FIRST FLOOR:	34,466 SF	34,712 SF
SECOND FLOOR:	33,879 SF	34,058 SF
TOTAL AREA:	68,345 SF	68,770 SF

GOVERNING CODES

BUILDING CODE:
PART 2: 2010 CALIFORNIA BUILDING CODE (CBC)
PART 3: 2010 CALIFORNIA ELECTRICAL CODE (CEC)
PART 4: 2010 CALIFORNIA MECHANICAL CODE (CMC)
PART 5: 2010 CALIFORNIA PLUMBING CODE (CPC)
PART 6: 2010 CALIFORNIA ENERGY CODE
PART 9: 2010 CALIFORNIA FIRE CODE (CFC)
PART 11: 2010 CALIFORNIA GREEN CONSTRUCTION CODE
PART 12: 2010 CALIFORNIA REFERENCED STANDARDS CODE
TITLE 8: 2010 CALIFORNIA ELEVATOR SAFETY CODE

OTHER REGULATIONS:

PROJECT DATA

PROJECT NAME:

PROJECT ADDRESS:

CONSTRUCTION TYPE: IIIB

SPRINKLERED: YES- FULLY SPRINKLERED

OCCUPANCY: GROUP B

PROPOSED USE: LAB/ OFFICE

GROSS MEASURED FLOOR AREA OF TENANT IMPROVEMENT AREA:
MEASURED TO INSIDE FACE OF PERIMETER WALLS, INSIDE FACE OF GLAZING AND CENTERLINE OF ADJOINING COMMON PARTY WALLS THROUGH WITH THE REMAINING UNIMPROVED SHELL AREA. STAIRS, ELEVATOR SHAFTS, SHAFTS ARE INCLUDED.

FIRST FLOOR:	22,235 SF
SECOND FLOOR:	33,879 SF
TOTAL AREA:	56,114 SF

BUILDING ORIGINALLY CONSTRUCTED IN 1989, BUILT UNDER THE 1985 UBC.

CAL GREEN:

1. SMOKING PROHIBITED WITHIN 25 FEET OF BUILDING ENTRIES, OUTDOOR INTAKES AND OPERABLE WINDOWS. EXISTING PARKING LOT AREAS ARE DESIGNATE AS "SMOKING AREAS".
2. 100% OF TREES, STUMPS, ROCKS, AND ASSOCIATED VEGETATION AND SOILS RESULTING PRIMARILY FROM LAND CLEARING SHALL BE REUSED OR RECYCLED. A LETTER FROM THE CONTRACTOR WITH VERIFICATIONS NEEDS TO BE SUBMITTED TO THE INSPECTOR TO SHOW COMPLIANCE.
3. PREVENT IRRIGATION SPRAY ON THE STRUCTURES.
4. ADHESIVES, SEALANTS, CAULKS, ADHESIVES AND SEALANTS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS. (SECTION 5.504.4.1 OF CAL GREEN) ADHESIVES, ADHESIVE BONDING PRIMERS, SEALANTS, SEALANT PRIMERS, AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE, OR SCAQMD RULE 1168 VOC LIMITS, AS SHOWN IN TABLES 5.504.4.1 AND 5.504/402 OF CAL GREEN.
5. A LETTER FROM THE CONTRACTOR AND BUILDING OWNER CERTIFYING WHAT MATERIAL HAS BEEN USED AND ITS COMPLIANCE WITH THE CODE MUST BE SUBMITTED TO THE BUILDING INSPECTOR.
6. AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94507.
7. ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH TABLE 5.504.4.2 UNLESS MORE STRINGENT LOCALS APPLY.
8. AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT-WEIGHTED MIR LIMITS FOR ROC IN SECTION 94522(a)(3) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES (CCR TITLE 17, SECTION 94520 ET SEQ).
9. PROVIDE A LETTER FROM CONTRACTOR AND/OR THE BUILDING OWNER CERTIFYING WHAT PAINT HAS BEEN USED AND ITS COMPLIANCE WITH THE CODE MUST BE SUBMITTED TO THE BUILDING INSPECTOR.
10. ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF ONE OF THE STANDARDS LISTED IN 5.504.4.4
11. ALL CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CARPET AND RUG INSTITUTE GREEN LABEL PROGRAM. ALL CARPET ADHESIVE SHALL MEET THE REQUIREMENTS OF TABLE 5.504.4.1. A LETTER FROM THE INSTALLER CERTIFYING COMPLIANCE MUST BE SUBMITTED TO THE BUILDING INSPECTOR.
12. HARDWOOD PLYWOOD, PARTICLE BOARD, AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED IN THE INTERIOR OR EXTERIOR OF THE BUILDING SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN TABLE 5.504.4.
13. DOCUMENTATION SHALL BE PROVIDED VERIFYING THAT RESILIENT FLOORING MATERIALS MEET THE POLLUTANT EMISSION LIMITS.

SCOPE OF WORK

THE SCOPE OF WORK FOR THE TENANT IMPROVEMENT CONSISTS OF 56,114 SQAURE FOOT OF NEW LAB AND OFFICE SPACE WITHIN AN EXISTING TWO STORY OFFICE LABORATORY BUILDING. THE SCOPE OF WORK INCLUDES NEW RESTROOMS ON EACH FLOOR, ASSOCIATED MECHANICAL, ELECTRICAL, PLUMBING AND STRUCTURAL WORK TO SUPPORT NEW LABS & OFFICES. NEW MECHANICAL AND PLUMBING EQUIPMENT WILL BE LOCATED ON THE ROOF AND THE EXISTING UTILITY YARD TO SUPPORT FUNCTIONS IN THE LAB AND OFFICE SPACES. ALL PARTIAL DEMOLITION WILL OCCUR UNDER A SEPERATE PERMIT.

ALLOWABLE AREA CALCULATIONS

ALLOWABLE AREA PER STORY PER TABLE 503:
GROUP B = 19,000 SF

Aa= At + [At x If] + [At x Is]

Is = 2 PER CBC 506.3
(sprinkler system increase)
If = [F/P - 0.25] x (W/30)
F = 246.5'
P = 861'
W = 30'
If = 0.04

B OCCUPANCY = 76,000 sf

At = 19,000 SF (tabular building area per story)
Aa = 19,000 + [19,000 x 0.04] + [19,000 x 2]
= 19,000 + 760 + 38,000
= 57,760 SF < 76,000(allowable building area per story)

W = 30

If = [F/P - 0.25] W/30
= [246.5/861-0.25] 30/30
= (0.04)(30/30)
= 0.04

TABLE 503 BASIC ALLOWABLE BLDG. AREA 19,000 SF
506.2 FRONTAGE INCREASE ----
506.3 AUTOMATIC SPRINKLER INCREASE x 2 38,000
506.4 SINGLE OCC. W/ MULTIPLE FLOOR x 2 76,000

BLDG. HEIGHT 34.5' plus 8' (Roof Screen)= 42.5 < 55' allowable
STORIES ABOVE GRADE 2 < 3 allowable

RESTROOM FIXTURE CALCULATIONS

CALCULATIONS PER 2010 CALIFORNIA PLUMBING CODE, CHAPTER 4,TABLE A
GROUP A OCCUPANT LOAD FACTOR (SQ.FT.) - 30
GROUP B OCCUPANT LOAD FACTOR (SQ.FT.) - 200
GROUP F OCCUPANT LOAD FACTOR (SQ.FT.) - 2,000
GROUP S OCCUPANT LOAD FACTOR (SQ.FT.) - 5,000

TENANT IMPROVEMENT

OCCUPANT GROUP	SF	OCCUPANT LOAD	TOTAL OCCUPANTS
GROUP A	3,403 SF	30	113.43
GROUP B	26,070 SF	200	130.35
GROUP F	4,741 SF	2000	2
GROUP S	997 SF	5000	0
	50,017 SF		**246.35**

TENANT IMPROVEMENT: EXCLUDED ACCESSORY AREAS PER TABLE A - 2010 CPC

LOBBY / CIRCULATION	7,773 SF	0	0
RESTROOMS	1,299 SF	0	0
UTILITY ROOMS, STORAGE, JANITOR	4,271 SF	0	0
EMPLOYEE ACCESSORY	1,138 SF	0	0
	16,601 SF		**0.00**

GENDER	# OF OCCUPANTS	WATER CLOSETS REQUIRED	WATER CLOSETS PROVIDED	URINALS REQUIRED	URINALS PROVIDED	LAVATORIES REQUIRED	LAVATORIES PROVIDED
FEMALE	124	(6) +2	9	-	-	4	6
MALE	124	3	5	3	4	4	6

PER #5 2010 CPC, FOR EVERY URINAL ADDED IN EXCESS OF THE NUMBER REQUIRED, ONE WATER CLOSET SHALL BE PERMITTED TO BE DEDUCTED. THE NUMBER OF WATER CLOSETS SHALL NOT BE REDUCED BY TWO-THIRDS OF THE MINIMUM REQUIREMENT.

PER#14 THE TOTAL NUMBER OF WATER CLOSETS FOR FEMALES SHALL EQUAL THE NUMBERS OF WATER CLOSETS AND URINALS REQUIRED FOR MALES.

ANTICIPATED REMAINNING SHELL BUILD-OUT (FOR REFERENCE ONLY)

UNIMPROVED SHELL AREA

GROUP B	9,929 SF	200	49.65
ACCESSORY	2,120 SF	0	0
		(+ TI SF)	(+ TI OCCs.)
	63,758 SF		**296.00**

GENDER	# OF OCCUPANTS	WATER CLOSETS REQUIRED	WATER CLOSETS PROVIDED	URINALS REQUIRED	URINALS PROVIDED	LAVATORIES REQUIRED	LAVATORIES PROVIDED
FEMALE	148	(7) +2	9	-	-	4	6
MALE	148	(6) -1	5	(3) +1	4	4	6

COMPLETE PLANS AND SPECIFICATIONS FOR ALL FIRE EXTINGUISHING SYSTEMS, INCLUDING AUTOMATIC SPRINKLER AND STANDPIPE SYSTEMS AND OTHER SPECIAL FIRE EXTINGUISHING SYSTEMS AND RELATED APPURTENANCES SHALL BE SUBMITTED TO THE CITY OF SAN DIEGO FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

COMPLETE PLANS AND SPECIFICATIONS FOR ALL FIRE ALARM SYSTEMS SHALL BE SUBMITTED TOT HE CITY OF SAN DIEGO DEVELOPMENT SERVICES FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

SYMBOLS

- GRID LINE NUMBER OR LETTER — GRID LINE
- DETAIL NUMBER; SHEET WHERE DETAIL IS DRAWN, SAME DISCIPLINE — DETAIL
- SECTION NUMBER; SHEET WHERE SECTION IS DRAWN, SAME DISCIPLINE — SECTION
- F H 4: STUD SIZE, WALL TYPE, WALL EXTENT — WALL TYPE
- DELTA; SEE DESCRIPTION BLOCK ON SAME SHEET FOR DATE & DESCRIPTION — DRAWING REVISION
- KEYED NOTES SEE DESCRIPTION; LIST ON SAME SHEET — KEYNOTE
- PLAN NORTH; FILLED LINE INDICATES PLAN NORTH; DASHED ARROW INDICATES TRUE NORTH — NORTH ARROW

LOCATION PLAN

SITE MAP

SHEET NUMBER	SHEET NAME	SCHEMATIC DESIGN - 12/04/12	DESIGN REVIEW SET - 02/04/13	CITY SUBMITTAL - 02/14/13	ADDENDUM NO.1 - 02/22/13	PC RESUBMITTAL	ADDENDUM NO.2 - 04/24/13	ISSUE FOR CONSTRUCTION - 05/24/13
GENERAL								
G-000-TI	COVER SHEET	■	■	■	■	■		■
G-001-TI	GENERAL NOTES, ABBREVIATIONS & SHEET INDEX	■	■	■	■			■
G-002-TI	GENERAL NOTES		■	■	■	■		■
G-003-TI	ACCESSIBILITY DETAILS AND MOUNTING HEIGHT SCHEDULES		■	■	■	■		■
G-004-TI	CONTROL AREA PLANS		■	■	■			■
G-005-TI	FIRE PROOFING PLAN							■
ARCHITECTURAL								
A-101Ds-TI	FIRST LEVEL OVERALL DEMOLITION PLAN	■	■	■	■	■		■
A-102D-TI	SECOND LEVEL OVERALL DEMOLITION PLAN	■	■	■	■	■		■
A-103D-TI	ROOF OVERALL DEMOLITION PLAN	■	■	■	■	■		■
A-001-TI	OVERALL SITE PLAN (FOR REFERENCE)	■	■	■	■	■		■
A-002-TI	SITE DETAILS		■	■	■	■		■
A-011-TI	FIRST LEVEL CODE COMPLIANCE PLAN & EXITING PLAN		■	■	■	■		■
A-012-TI	SECOND LEVEL CODE COMPLIANCE & EXITING PLAN		■	■	■	■		■
A-101-TI	FIRST LEVEL OVERALL FLOOR PLAN	■	■	■	■	■	■	■
A-102-TI	SECOND LEVEL OVERALL FLOOR PLAN	■	■	■	■	■	■	■
A-103-TI	ROOF LEVEL OVERALL FLOOR PLAN	■	■	■	■	■		■
A-101F-TI	FIRST LEVEL OVERALL FINISH PLAN	■	■	■	■	■	■	■
A-102F-TI	SECOND LEVEL OVERALL FINISH PLAN	■	■	■	■	■	■	■
A-101C-TI	FIRST LEVEL OVERALL REFLECTED CEILING PLAN	■	■	■	■	■	■	■
A-102C-TI	SECOND LEVEL OVERALL REFLECTED CEILING PLAN	■	■	■	■	■	■	■
A-120-TI	FINISH SCHEDULE	■	■			■	■	■
A-201-TI	ENLARGED PLANS			■	■	■	■	■
A-311-TI	INTERIOR ELEVATIONS	■	■	■	■	■	■	■
A-312-TI	INTERIOR ELEVATIONS		■	■	■	■	■	■
A-313-TI	INTERIOR ELEVATIONS		■	■	■	■	■	■
A-350-TI	BUILDING SECTIONS	■	■	■	■	■		■
A-401-TI	ENLARGED TOILET PLANS, ELEVATIONS AND DETAILS		■	■	■	■	■	■
A-402-TI	ENLARGED TOILET PLANS, ELEVATIONS AND DETAILS		■	■	■	■		■
A-501L-TI	FIRST LEVEL OVERALL LABORATORY PLAN	■	■	■	■	■		■
A-502L-TI	SECOND LEVEL OVERALL LABORATORY PLAN	■	■	■	■	■		■
A-510.a-TI	ENLARGED LABORATORY PLANS	■	■	■	■	■		■
A-510.b-TI	ENLARGED LABORATORY PLANS		■	■	■	■		■
A-510.c-TI	ENLARGED LABORATORY PLANS		■	■	■	■		■
A-510.d-TI	ENLARGED LABORATORY PLANS	■	■	■	■	■		■
A-520-TI	LAB CASEWORK, NOTES & SCHEDULES			■	■	■		■
A-520.a-TI	EQUIPMENT LIST		■	■	■	■		■
A-520.b-TI	EQUIPMENT LIST		■	■	■	■		■
A-520.c-TI	EQUIPMENT LIST		■	■	■	■		■
A-520.d-TI	- EQUIPMENT LIST							■
A-520.e-TI	EQUIPMENT LIST							■
A-521-TI	LAB DETAILS		■	■	■	■		■
A-522-TI	LAB DETAILS							■
A-602-TI	WALL TYPE SCHEDULE		■	■		■	■	■
A-603-TI	FIREPROOFING DETAILS							■
A-610-TI	INTERIOR FRAMING		■	■	■			■
A-611-TI	WALL DETAILS		■	■	■	■		■
A-612-TI	WALL& INTERIOR DETAILS		■	■	■	■		■
A-613-TI	INTERIOR DETAILS		■	■	■	■	■	■
A-614-TI	CEILING DETAILS		■	■	■	■		■
A-631-TI	DOOR DETAILS		■	■	■	■	■	■
A-632-TI	DOOR & WINDOW DETAILS		■	■	■	■	■	■
A-701-TI	DOOR SCHEDULE & WINDOW LEGEND	■	■	■	■	■		■
STRUCTURAL								
S-001-TI	STRUCTURAL NOTES		■	■		■		■
S-002-TI	STRUCTURAL NOTES AND SPECIAL INSPECTION PROGRAM		■	■		■		■
S-004-TI	TYPICAL DETAILS		■	■		■		■
S-005-TI	TYPICAL DETAILS		■	■		■		■
S-006-TI	TYPICAL DETAILS		■	■		■		■
S-101-TI	FOUNDATION PLAN		■	■		■		■
S-102-TI	SECOND LEVEL FRAMING PLAN		■	■		■		■
S-103-TI	ROOF FRAMING PLAN		■	■		■		■
S-105-TI	MECHANICAL YARD PLAN		■	■		■		■
S-501-TI	ENLARGED PARTIAL FRAMING PLANS		■	■		■		■
S-601-TI	STAIR PLAN AND DETAILS		■	■		■

GENERAL NOTES

1. **SITE VISIT:**
THE CONTRACTOR SHALL VISIT THE SITE, VERIFY ALL EXISTING CONDITIONS AS SHOWN ON DRAWINGS, AND REPORT ANY DISCREPANCIES BETWEEN THE FIELD CONDITIONS AND THE DRAWINGS TO THE ARCHITECT.

2. **CODE COMPLIANCE:**
ALL WORK SHALL CONFORM WITH THE CURRENT EDITIONS OF THE CODE, SEE APPLICABLE CODES AT PROJECT DATA, THE RULES AND REGULATIONS OF THE SAFETY ORDERS ISSUED BY THE DIVISION OF INDUSTRIAL SAFETY, AND THE NATIONAL BOARD OF UNDERWRITERS. THE CONSTRUCTION SHALL COMPLY WITH THESE AND ALL OTHER NATIONAL, STATE, AND LOCAL CODES.

WHERE UL, GA, OR CBC SECTION 703 CONSTRUCTION ASSEMBLIES ARE DESIGNATED, THE COMPONENTS AND INSTALLATION DETAILS SHALL CONFORM IN EVERY PARTICULAR WITH THE DESIGN NUMBER SPECIFIED.

3. **CONSTRUCTION SCHEDULE:**
ALL WORK SHALL BE PERFORMED DURING WORKING HOURS EXCEPT WHERE NOTED ON DRAWINGS, CONTRACTS, AND SPECIFICATIONS. ANY OVERTIME SHALL COMMENCE ONLY WITH PRIOR APPROVAL BY OWNER.

4. **SCHEDULE OF WORK:**
COORDINATE THE CONSTRUCTION SCHEDULE AND OPERATIONS SCHEDULE WITH THE CONSTRUCTION COORDINATOR. COORDINATE ALL SERVICE SHUT-DOWNS WITH THE CONSTRUCTION COORDINATOR.

5. **"AS-BUILT" CONSTRUCTION SET:**
THE CONTRACTOR SHALL POSSESS AND MAINTAIN, AT THE JOB SITE, A CURRENT "AS-BUILT" DRAWING SET, THIS SET SHOULD REFLECT ALL APPROVED DESIGN DRAWING CHANGES. THIS SET IS TO BE KEPT IN GOOD CONDITION AND SHALL BE DELIVERED TO OWNER WITHIN TWO WEEKS AFTER THE COMPLETION OF THE PROJECT.

6. **SEISMIC BRACING:**
ALL NEW CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH CBC SECTION 1614.1,3 EARTHQUAKE RESISTANT DESIGN, CONSTRUCTION STANDARDS, AND SPECIFICATIONS FOR SEISMIC BRACING AND SUPPORT OF ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, PIPING, AND ELECTRICAL WORK. PROVIDE SEISMIC ANCHORS AT ALL TOOLS, BENCHES, AND SHELVES AS REQUIRED.

7. **MATERIALS AND METHODS:**
ALL MATERIALS FOR THIS CONSTRUCTION SHALL BE NEW. OWNER RESERVES THE RIGHT TO APPROVE ALL MATERIALS WHICH SHALL BE IN STRICT ACCORDANCE WITH OWNER'S SPECIFICATIONS OR AS NOTED ON THE CONSTRUCTION DOCUMENTS. IF ANY PORTION OF THE WORK (EITHER THE MATERIALS OR THE METHODS OF INSTALLATION) IS DETERMINED TO BE DEFECTIVE THE CONTRACTOR SHALL REPLACE THAT PORTION, WITH NO ADDITIONAL COST TO OWNER, AS PART OF THE ORIGINAL CONTRACT.

8. **APPLICABLE FEES AND PERMITS:**
OWNER WILL PAY FOR THE BUILDING PERMIT AND THE PROJECT COORDINATOR WILL OBTAIN IT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AND PAY FOR ALL TRADE PERMITS, MISCELLANEOUS FEES, INSPECTIONS, AND TAXES.

9. **EXISTING CONDITIONS:**
THE VARIOUS PLANS ARE NOT INTENDED AS SURVEYS OF ALL EXISTING CONDITIONS AND ONLY INDICATE IN GENERAL CERTAIN CONDITIONS RELATED TO THE WORK TO BE DONE. INFORMATION REGARDING EXISTING CONDITIONS HAS BEEN DETERMINED AS REASONABLY AS POSSIBLE, BUT MAY NOT BE SHOWN EXACTLY. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS AND REPORT ALL DISCREPANCIES TO THE ARCHITECT PRIOR TO THE START OF WORK.

10. **UTILITIES:**
THE LOCATION SHOWN FOR EXISTING UTILITY MAINS ARE APPROXIMATE ONLY, THE ACCURACY OR COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED. VERIFY LOCATION OF ALL UTILITY LINES, CONDUITS, SURFACE OR SUBSURFACE STRUCTURES, ETC., OF ANY NATURE THAT MAY BE AFFECTED BY THE WORK.
VERIFY ACTUAL LOCATION AND DEPTH, AND REPORT POTENTIAL CONFLICTS TO THE ENGINEER PRIOR TO EXCAVATING FOR NEW FACILITIES.

11. **DAMAGED UTILITIES / SYSTEMS:**
SHOULD ANY OF THE ABOVE ITEMS BE DISTURBED, DISCONNECTED, OR DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY PROPER AUTHORITIES AND THOSE PARTIES AFFECTED. CONTRACTOR SHALL BEAR ALL EXPENSES, OF WHATEVER NATURE, ARISING FROM SUCH DISTURBANCE, REPLACEMENT, OR REPAIR THEREOF, AND REPLACE OR REPAIR SUCH ITEMS AS REQUIRED.

12. **UNIDENTIFIED ITEMS:**
SHOULD ANY UNIDENTIFIED ITEM BE ENCOUNTERED DURING CONSTRUCTION, DO NOT PROCEED UNTIL THE OWNER HAS BEEN NOTIFIED AND DIRECTION HAS BEEN GIVEN.

13 **ACCESS DOORS:**
COORDINATE ACCESS DOOR LOCATIONS (FOR CONCEALED ITEMS) WITH APPROPRIATE CONTRACTOR

14 **TRENCHING:**
ALL TRENCHES AND EXCAVATIONS SHALL BE CONSTRUCTED IN STRICT COMPLIANCE WITH THE APPLICABLE SECTIONS OF CALIFORNIA AND FEDERAL O.S.H.A REQUIREMENTS AND OTHER APPLICABLE SAFETY ORDINANCES. CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR TRENCH SHORING DESIGN AND INSTALLATION.

15. **DUST CONTROL:**
CONTRACTOR SHALL PROVIDE DUST CONTROL AT ALL TIMES.

16. **CONSTRUCTION DOCUMENTS:**
THE CONSTRUCTION DOCUMENTS CONSIST OF THESE DRAWINGS AND THE PROJECT MANUAL FOR THIS ISSUANCE. DRAWINGS REPRESENT THE QUANTITY AND LOCATION OF THE WORK. THE PROJECT MANUAL INDICATES THE QUALITY OF THE WORK. ALL TRADES SHALL BE REQUIRED TO MEET THE REQUIREMENTS OF THESE DOCUMENTS AND SUBSEQUENT INFORMATION PROVIDED FOR THIS PROJECT.

17. THE GENERAL CONTRACTOR SHALL NOTIFY THE FIRE SPRINKLER CONTRACTOR TO APPLY FOR A FIRE SPRINKLER PERMIT ACCORDING TO THE REQUIREMENTS OF CBC AND THE CITY OF SAN DIEGO.

18. THE GENERAL CONTRACTOR SHALL NOTIFY THE UNDERGROUND FIRE SERVICE CONTRACTOR TO APPLY FOR A FIRE SPRINKLER PERMIT ACCORDING TO THE REQUIREMENTS OF CBC AND THE CITY OF SAN DIEGO.

19. **ELEVATORS:**
ELEVATORS SHALL COMPLY WITH 2007 CBC CHAPTER 30, CAL OSHA REQUIREMENTS ANSI,ASME A17.1, NFPA 72, 3-8,14.6 AND ALL OTHER PERTINENT CODES.

20. RATED DOORS SHALL HAVE SMOKE SEAL TO COMPLY WITH POSITIVE PRESSURE AS REQUIRED PER CBC STANDARD 7-2. RATED WALL SHALL COMPLY WITH CBC SECTION 715.4,3.1.

21. ALL RATED DOOR ASSEMBLY SHALL HAVE "S" LABEL PER CODE SECTION 715,4,5.1 & 3.

22. HAZARDOUS MATERIALS WILL BE STORED AT THE H3/H4 DESIGNATED ENCLOSED ROOMS THAT ARE USED WITHIN THE BUILDING WHICH EXCEED THE QUANTITIES LISTED IN CBC TABLES 307,1 (1) AND 307,1 (2).

23. **DEFERRED SUBMITTAL:**
A. FIRE SERVICE UNDERGROUND
B. FIRE SPRINKLERS
C. CURTAIN WALLS
D. STAIRS

GENERAL NOTES - CODE COMPLIANCE PLANS

1. ALL REQUIRED SITE ACCESSIBLE ROUTES OF TRAVEL FROM DISABLED PARKING STALLS & ADJACENT PUBLIC SIDEWALKS ARE CONSIDERED IN FULL COMPLIANCE AS COMPLETED UNDER PREVIOUS PERMITS FOR THIS BUILDING.

2. WHERE UL, WH, GA, OR CBC CONSTRUCTION ASSEMBLIES PER SECT. 703 ARE DESIGNATED, THE COMPONENTS AND INSTALLATION DETAILS MUST CONFORM IN EVERY PARTICULAR WAY WITH THE DESIGN NUMBER SPECIFIED.

3. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DRY CHEMICAL UL RATED FIRE EXTINGUISHERS CABINETS AND FIRE EXTINGUISHERS WITHIN THOSE CABINETS. SEE SHEETS G-102.1X THRU G-102.4X FOR PROPOSED LOCATIONS OF FIRE EXTINGUISHER CABINETS: FINAL NUMBER, TYPE AND EXACT LOCATION TO BE DETERMINED BY FIELD INSPECTOR, AND GILEAD'S EH&S DEPARTMENT.

4. PROVIDE ALL REQUIRED FIRE ALARMS, EMERGENCY LIGHTING AND EXIT SIGNAGE PER ELECTRICAL DRAWINGS.

5. THE INTERIOR ACCESSIBLE ROUTES OF TRAVEL CONNECT ALL PUBLIC SPACES, TOILET & BREAK ROOM FACILITIES. SEE ACCESSIBLE ROUTES OF TRAVEL, CODE AND EXITING INFORMATION ON SHEET G-102.1X THRU G-102.4X.

6. PROVIDE MINIMUM 18" STRIKE SIDE CLEARANCE AT SWING SIDE OF ALL INTERIOR DOORS, AND MINIMUM 12" AT PUSH SIDE (ON DOORS WITH CLOSER) FOR HANDICAPPED ACCESSIBILITY. PROVIDE MINIMUM 24" STRIKE SIDE CLEARANCE AT ALL EXTERIOR DOORS FOR HANDICAPPED ACCESSIBILITY.

7. REFERENCE STRUCTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

8. ALL EXTERIOR PATHS OF TRAVEL ARE ACCESSIBLE. SEE SHEET G-102.1X.

9. ADDRESS:
APPROVED NUMBERS OR ADDRESSES SHALL BE PLACED ON ALL NEW & EXISTING BUILDINGS IN SUCH A POSITION TO BE VISIBLE & LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.

10. ALL DOOR OPENINGS WILL HAVE A MINIMUM 32" CLEAR OPENING.

EXITING NOTES

1. DOOR HARDWARE:
EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT, REFER TO THE DOOR & FRAME SCHEDULE ON SHEETS A-602 A-603 & A-604 FOR MORE NOTES.

2. EXIT SIGNS:
THE PATH OF TRAVEL TO & WITHIN EXITS IN A BUILDING SHALL BE IDENTIFIED BY EXIT SIGNS CONFORMING TO THE REQUIREMENTS OF CBC 1011 EXIT SIGNS SHALL BE READILY VISIBLE FROM THE DIRECTION OF APPROACH & LOCATED AS NECESSARY TO INDICATE THE DIRECTION OF EGRESS TRAVEL. NO POINT SHALL BE MORE THAN 100' FROM THE NEAREST VISIBLE SIGN, TACTILE EXIT SIGNS SHOULD ALSO BE PROVIDED PER CBC SECTIONS 1011.3

3. MEANS OF EGRESS ILLUMINATION:
AT ANY TIME THE BUILDING IS OCCUPIED, THE MEANS OF EGRESS SHALL BE ILLUMINATED AT AN INTENSITY OF NOT LESS THAN 1 FT-CANDLE AT FLOOR LEVEL

4. ILLUMINATION POWER SUPPLY:
POWER SUPPLY FOR MEANS OF EGRESS ILLUMINATION SHALL NORMALLY BE PROVIDED BY THE PREMISES' ELECTRICAL SUPPLY. IN THE EVENT OF ITS FAILURE, ILLUMINATION TO BE AUTOMATICALLY PROVIDED FROM AN EMERGENCY SYSTEM WHERE THE EXITING SYSTEM SERVES AN OCCUPANT LOAD OF 100 OR MORE.

5. AISLES WITHOUT FIXED SEATS:
AISLES SERVING AS A PORTION OF AN EXIT ACCESS IN THE MEANS OF EGRESS SYSTEM SHALL BE IN ACCORDANCE WITH CBC 1014.4.

6. SPRINKLER PERMIT:
SPRINKLER SYSTEM TO BE SUBMITTED UNDER A SEPARATE PERMIT. FOR APPROVAL PRIOR TO SYSTEM INSTALLATION.
SPRINKLER (T.I.):
ALTERATIONS TO THE EXISTING AUTOMATIC FIRE SPRINKLER SYSTEM TO BE SUBMITTED AS SHOP DRAWINGS UNDER A SEPARATE PERMIT APPLICATION FOR FIRE DEPARTMENT APPROVAL PRIOR TO MAKING ALTERATIONS.

7. ROOM CAPACITY:
ANY ROOM HAVING AN OCCUPANT LOAD OF 50 OR MORE SHALL HAVE THE CAPACITY OF THE ROOM POSTED IN A CONSPICUOUS PLACE.

8. ACCESSIBLE PATHS OF TRAVEL:
EXISTING EXTERIOR PATHS OF TRAVEL FROM PARKING TO MAIN BUILDING ENTRANCES COMPLY WITH CURRENT ACCESSIBILITY REGULATIONS. ALL EXISTING AND NEW INTERIOR PUBLIC AREAS INCLUDING OFFICES, CLASS/CONF ROOMS, BREAK ROOMS AND TOILETS TO COMPLY WITH CURRENT ACCESSIBILITY REGULATIONS.

9. FIRE EXTINGUISHERS:
ALL PORTIONS OF THE BUILDING SHALL BE WITHIN 75' OF A FIRE EXTINGUISHER. THE MIN. SIZE OF EXTINGUISHER TO BE 2A10BC

10. PANIC HARDWARE:
PANIC HARDWARE IS REQUIRED TO ROOMS WITH OCCUPANT LOAD OF 50 OR MORE AND ANY GROUP H OCCUPANCY. ELECTRICAL ROOMS WITH EQUIPMENT RATED 1,200 AMPERES OR MORE PER CBC SECTION 1008.1.9, AND AS INDICATED ON DRAWINGS.

11. ASSISTIVE LISTENING DEVICE:
WHERE ASSISTIVE LISTENING DEVICE ARE REQUIRED TO BE IDENTIFIED BY THE INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS, IT SHALL COMPLY PER CBC SECTION 1117B.5.8.4

AUTOMATIC SHUT-OFFS:
12. EACH SINGLE SYSTEM PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2,000 CUBIC FT/MIN. SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF ACTIVATED BY SMOKE DETECTORS.

13. LATCHING AND LOCKING HAND ACTIVATED DOORS IN PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT THE ABILITY TO GRASP THE OPENING HARDWARE. LOCKED EXIT DOORS SHALL OPERATE AS ABOVE IN THE EGRESS DIRECTION. (CBC 1133B.2.5.2)

14. WHERE A PAIR OF DOORS IS UTILIZED AT LEAST ONE OF THE DOORS SHALL PROVIDE A CLEAR UNONSTRUCTED OPENING WIDTH OF 32 INCHES WITH THE LEAF POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION. (CBC 1133.2.3.1)

15. THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2" LOWER THAN THE THRESHOLD OF TH E DOORWAY. CHANGE IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BE BEVELED WITH A SLOPE NO GREATER THAN ONE UNIT VERTICAL AND TO 2 UNITS HORIZONTAL (50% SLOPE). (CBC 1133B.2,4,1).

16. THE BOTTOM 10 INCHES OF ALL DOORS EXCEPT AUTOMATIC AND SLIDING DOORS SHALL HAVE A SMOOTH UNITERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WOUTH CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED, A 10 INCH HIGH SMOOTH PANEL SHALL BE INSTALLED ON TEH PUSH SIDE.

17. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS FOR EXTERIOR DOORS AND INTERIOR DOORS, APPLIED AT RIGHT ANGLES TO HINGED DOORS AND THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED. THE MAXIMUM EFFORT TO OPERATE FIRE DOORS MAY BE INCREASED UP TO 15 POUNDS.

POWER & SIGNAL, FURNITURE & EQUIPMENT PLAN NOTES

1. FREESTANDING FURNITURE AND EQUIPMENT TO BE SUPPLIED BY THE TENANT U.O.N. AND IS SHOWN FOR REFERENCE ONLY.

2. REFER TO ELECTRICAL DRAWINGS FOR THE FOLLOWING:
A. WIRING AND CIRCUITING LAYOUT.
B. SWITCHING
C. PULL BOXES
D. ELECTRICAL AND TELECOMMUNICATIONS OUTLET/DEVICE LOCATIONS, TYPE AND CONDUIT RUNS.

3. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR MECHANICAL AND PLUMBING EQUIPMENT AND REQUIREMENTS.

4. FIELD VERIFY FLOOR POWER AND SIGNAL OUTLET LOCATIONS WITH THE ARCHITECT PRIOR TO CORING.

5. THE GENERAL CONTRACTOR SHALL VERIFY EXACT FIELD CONDITIONS FOR SWITCH AND FIXTURE RELATIONSHIP AS WELL AS TELEPHONE AND ELECTRICAL OUTLETS. REPORT DISCREPANCIES TO THE ARCHITECT.

6. THE GENERAL CONTRACTOR SHALL LOCATE ALL TELEPHONE & ELECTRICAL OUTLETS AT FLOOR & PARTITIONS AND VERIFY LOCATIONS WITH ARCHITECT BEFORE PROCEEDING WITH THE WORK.

7. ALL TELEPHONE AND SPECIAL INSTALLATION WORK SHALL BE COORDINATED BY THE GENERAL CONTRACTOR WITH THE ARCHITECT AND THEIR VENDORS.

8. RECEPTACLE AND OUTLET COVER PLATES SHALL BE WHITE U.O.N, STAINLESS STEEL COVER PLATES ARE REQUIRED IN THE PRODUCTION SUITE, DEVELOPMENT LAB & ANTE ROOM (211089 & 211088), KILO LAB (212026), TISSUE CULTURE LAB, BSL2+ TISSUE CULTURE LAB & ANTE ROOM (211126 & 211124), AND SAMPLING ROOM & GOWN/MAT TRANSFER (211046 & 211047) .

9. IN CASE OF CONFLICT BETWEEN ARCHITECTURAL PLANS AND ELECTRICAL AND MECHANICAL PLANS AS REGARDS LOCATION OF SWITCHES, T-STATS, LIGHT FIXTURES, ELECTRICAL OUTLETS AND DEVICES, NOTIFY THE ARCHITECT PRIOR INSTALLATION.

10. REFER TO DETAIL 14.D ON DRAWING NO. G-003 FOR ELECTRICAL AND COMMUNICATIONS MOUNTING HEIGHT SCHEDULE.

11. ALL WALL MOUNTED ELECTRICAL AND TELEPHONE OUTLETS INDICATED 30" OR MORE A.F.F. TO BE INSTALLED HORIZONTALLY. AT THE INDICATED HEIGHT A.F.F. TO THE TOP OF COVERPLATE.

12. OUTLETS SHALL BE OFF-SET AND NOT MOUNTED BACK TO BACK.

13. PROVIDE ACOUSTICAL SOUND PADS AT ALL OUTLETS LOCATED IN FULL HEIGHT PARTITIONS.

14. TELEPHONE & DATA CABLING TO BE TIED INDEPENDENTLY TO STRUCTURE PER CODE.

15. PROVIDE TELEPHONE AND DATA CABLING THAT MAY BE USED IN CEILING PLENUMS WITHOUT CONDUITS.

16. ELECTRICAL OUTLETS AT WET AREAS (E.G. SINKS) TO BE GFI TYPE.

17. SCHEDULE THE CORING FOR ELECTRICAL AND TELEPHONE FLOOR MOUNTED OUTLETS AND THE RELATED CEILING WORK FOLLOWING FIELD CONFIRMATION OF OUTLET LOCATIONS WITH FURNITURE VENDOR.

GENERAL SITE ACCESSIBILITY NOTES IF NOT OTHERWISE DETAILED :

1. AT ENTRANCE TO PARKING FACILITIES, OR VISIBLE FROM EACH STALL OR SPACE, A SIGN SHALL CLEARLY AND CONSPICUOUSLY STATE THE FOLLOWING:

"Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or license plates issued for persons with disabilities may be towed away at owner's expense. Towed vehicles may be reclaimed at_____ or by telephoning_____."

2. BLANK SPACES ARE TO BE FILLED IN WITH APPROPRIATE INFORMATION AS A PERMANENT PART OF THE SIGN (PER CURRENT CBC).

3. PROVIDE A SIGN DISPLAYING INTERNATIONAL SYMBOL OF ACCESSIBILITY ON OR ADJACENT TO BUILDING ENTRANCES (PER CURRENT CBC).

4. WALKWAYS AND SIDEWALKS ALONG ACCESSIBLE ROUTES OF TRAVEL ARE:
A. CONTINUOUSLY ACCESSIBLE
B. HAVE MAXIMUM 1/2" CHANGES IN ELEVATION
C. MINIMUM 48" IN WIDTH, AND
D. WHEN SLOPE IN DIRECTION OF TRAVEL OF ANY WALK EXCEEDS 5% SLOPE SHALL COMPLY WITH ACCESSIBLE RAMPS PROVISIONS OF SECTION 1133B.5(CBC 1135B.5)

5. PER CBC SECTION 1133B.8.5 "DETECTABLE WARNINGS AT HAZARDOUS VEHICULAR AREAS. IF A WALK CROSSES OR ADJOINS A VEHICULAR WAY, AND THE WALKING SURFACES ARE NOT SEPARATED BY CURBS, RAILINGS OR OTHER ELEMENTS BETWEEN THE PEDESTRIAN AREAS AN VEHICULAR AREAS, THE BOUNDARY BETWEEN THE AREAS SHALL BE DEFINED BY A CONTINUOUS DETECTABLE WARNING WHICH IS 36 INCHES (914 mm) WIDE, COMPLYING WITH SECTION 1121B.3.1, ITEM 8(a)."

6. ALL (E) EXTERIOR STAIRS HAVE A 2" WIDE CLEARLY COLOR-CONTRASTING STRIPING AT ALL TREADS.

FLOOR PLAN NOTES

1. THE CONSTRUCTION PLANS INDICATE THE TYPE AND LOCATION OF NEW INTERIOR PARTITIONS, DOORS, WINDOWS, CABINETWORK, ETC. THE BUILDING SHELL AND INTERIOR EXISTING CONDITIONS.

2. THE FOLLOWING SHALL BE PROVIDED BY THE GENERAL CONTRACTOR AS DESIGN-BUILD SYSTEMS:
A. AUTOMATIC FIRE SPRINKLER SYSTEM.
B. STAIRS
CONTRACTOR SHALL FULLY COORDINATE THE DESIGN/ENGINEERING PROCESS OF THE ABOVE REFERENCED SYSTEMS AND THE COMPLETE AND PROPERLY FUNCTIONING INSTALLATION THEREOF.

3. THE FOLLOWING MAYBE PROVIDED BY THE OWNER'S VENDORS BUT THE INSTALLATION OF THOSE SYSTEMS SHALL BE COORDINATED BY THE GENERAL CONTRACTOR WITH EACH OF HIS SUBCONTRACTORS FOR THE SYSTEMS NOTED BELOW:
A. TELECOMMUNICATIONS
B. SECURITY
C. FURNITURE
D. AUDIO-VISUAL
THE GENERAL CONTRACTOR SHALL PROVIDE ELECTRICAL RACEWAY AND POWER TO ALL POINTS DESIGNATED BY THE VENDOR'S FOR EACH OF THE OWNER'S FURNISHED SYSTEMS

4. ALL PARTITIONS, DOORS, GLAZED OPENINGS, SOFFITS, ET AL., SHALL BE STRUCTURALLY BRACED IN ACCORDANCE WITH SEISMIC CODE REQUIREMENTS.

5. COORDINATE LOCATION AND PROVIDE BLOCKING, BACKINGS AND/OR REINFORCEMENT IN PARTITIONS FOR ALL CABINETS, COUNTERTOPS AND ANY WALL-MOUNTED ITEMS. REFER TO THE PLANS, ELEVATIONS AND DETAILS FOR LOCATION OF ITEMS WHICH MAY REQUIRE SUPPORT. SEE DETAILS 2S SHEET A-501.

6. ALL PARTITIONS SHALL BE DIMENSIONED FROM FINISH FACE OF FINISH TO FINISH FACE OF FINISH U.O.N.

7. PROVIDE NECESSARY FIRE EXTINGUISHER CABINETS TO MATCH EXISTING LOCATED SUCH THAT THE MAXIMUM TRAVEL DISTANCE TO A FIRE EXTINGUISHER SHALL NOT EXCEED 75 FEET. LOCATIONS INDICATED ON THE DRAWINGS SHALL BE VERIFIED WITH THE FIRE MARSHALL AS BEING ACCEPTABLE. SEE ON SHEET A-502 FOR INSTALLATION.

8. ALL FURRED WALLS SHALL EXTEND VERTICALLY THRU THE CEILING WHERE INDICATED ON THE DRAWINGS OR TO THE STRUCTURE ABOVE WHERE NO CEILING OCCURS. U.O.N

9. WHEREVER DIAGONAL BRACING IS INDICATED OR OTHERWISE REQUIRED, INSTALL BRACING UNEXPOSED TO VIEW, PARTICULARLY AT SUSPENDED OR DRYWALL CEILING AREAS. IF EXPOSED TO VIEW CONDITIONS EXIST IN THE DESIGN, DO NOT BRACE INTO THE AREA WHERE NO CEILING IS TO BE INSTALLED, OR INTO THE "MORE OPEN"AND VISIBLE SIDE OF BULKHEAD/SOFFIT WHERE BOTH SIDES SHALL BE WITHOUT A CEILING.

10. FOR TYPICAL PARTITIONS, AND PARTITION DETAILS REFER TO SHEET A-601

11. WHERE NEW PARTITIONS MEET EXISTING MULLIONS OR COLUMNS INSTALL THE NEW PARTITION PERPENDICULAR TO THE EXISTING MULLION OR COLUMN AND ALIGN THE CENTERLINE OF THE NEW PARTITION WITH THE MULLION OR COLUMN U.O.N

12. WHERE A GYPSUM BOARD PARTITION MEETS FLUSH WITH THE FACE OF AN EXISTING PARTITION, REMOVE THE EXISTING METAL CORNER BEAD BEFORE INSTALLING THE NEW PARTITION.

13. ALIGN NEW PARTITION SURFACES WITH THE EXISTING ADJACENT OR ADJOINING SURFACES WHERE INDICATED. TAPE AND SAND THE JOINTS TO SMOOTH WITHOUT ANY VISIBLE JOINTS. PATCH AND REPAIR SURFACES TO MATCH ADJACENT OR ADJOINING SURFACES.

14. PATCH EXISTING DAMAGED PARTITIONS THROUGHOUT ENTIRE PROJECT AREA TO MATCH ADJACENT SURFACES.

15. CUT AND FIT COMPONENTS AS REQUIRED TO ALTER EXISTING WORK FOR INSTALLATION OF NEW WORK. PATCH DAMAGED AREAS TO MATCH ADJACENT SURFACES.

16. AT OPENINGS IN GYPSUM BOARD WALLS FOR DUCT WORK, RETURN AIR, WRAP HEAD, JAMBS AND SILL OF OPENING WITH GYPSUM BOARD, U.O.N.

17. HOT WATER AND DRAIN PIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED.

18. VERTICAL DIMENSIONS ARE FROM TOP OF FLOOR SLAB, EXCEPT WHERE OTHERWISE NOTED TO BE ABOVE FINISH FLOOR.

19. DIMENSIONS ARE NOT ADJUSTABLE WITHOUT APPROVAL OF THE ARCHITECT UNLESS NOTED +/- OR VIF (VERIFY IN FIELD).

20. THE GENERAL CONTRACTOR SHALL VERIFY THAT NO CONFLICT EXISTS IN THE LOCATION OF ANY MECHANICAL, HVAC, TELEPHONE, ELECTRICAL, PLUMBING AND SPRINKLER EQUIPMENT (TO INCLUDE ALL PIPING, DUCTWORK, CONDUIT, CABLES, ETC.) AND THAT ALL REQUIRED CLEARANCES FOR INSTALLATION AND MAINTENANCE OF ABOVE EQUIPMENT ARE PROVIDED. ELEMENTS TO BE EXPOSED TO VIEW SHALL BE REVIEWED WITH THE ARCHITECT AND COORDINATED BY AND BETWEEN THE GENERAL CONTRACTOR AND PERTINENT SUB-CONTRACTORS PRIOR TO CONSTRUCTION OR FABRICATION PROCEEDING

21. LAY-OUT ALL PARTITIONS BEFORE PROCEEDING. VERIFY PARTITION LAY-OUT WITH ARCHITECT BEFORE FRAMING. IF DISCREPANCIES EXIST BETWEEN FIELD CONDITIONS AND THE DRAWINGS NOTIFY ARCHITECT.

22. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE DIMENSIONS AND ELEVATIONS AT THE SITE. THE CONTRACTOR AND SUB-CONTRACTORS SHALL COORDINATE THE LAYOUT AND EXACT LOCATIONS OF ALL PARTITIONS, DOORS, ELECTRICAL/TELEPHONE OUTLETS, LIGHT SWITCHES AND THERMOSTATS WITH THE ARCHITECT IN THE FIELD PRIOR TO PROCEEDING.

23. IN THE EVENT OF CONFLICT BETWEEN DATA SHOWN ON DRAWINGS AND DATA SHOWN ON THE SPECIFICATIONS, THE MORE STRINGENT SHALL TAKE PRECEDENCE. SHOULD THE CONTRACTOR AT ANY TIME DISCOVER AN ERROR IN A DRAWING OR SPECIFICATION OR A DISCREPANCY OR VARIATION BETWEEN DIMENSIONS ON DRAWINGS AND MEASUREMENTS AT THE SITE OR LACK OF DIMENSIONS OR OTHER INFORMATION, THE GENERAL CONTRACTOR SHALL NOT PROCEED WITH THE WORK AFFECTED UNTIL CLARIFICATION HAS BEEN MADE.

24. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE APPROPRIATE STRUCTURAL BACKING AND REINFORCING IN PARTITIONS BEHIND ALL WALL-MOUNTED, WALL-ANCHORED OR SUPPORTED ITEMS. ALL CONCEALED WOOD USED FOR SUCH SUPPORT SHALL BE FIRE RETARDANT TREATED.

GENERAL NOTES FOR INTERIOR PROJECTS

1. ALL NEW CONSTRUCTION IS SHOWN SOLID DARK LINES. ALL EXISTING CONSTRUCTION TO REMAIN IS SHOWN SCREENED.

2. ALL DIMENSIONS SHOWN RELATING TO EXISTING CONSTRUCTION ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY ALL ACTUAL DIMENSIONS.

3. ALL DIMENSIONS ARE FACE OF FINISH, FACE OF CONCRETE, TO CENTER LINES OF COLUMNS AND OTHER GRID POINTS AND TO CENTER LINES OF DOORS AND OTHER SCHEDULED OPENINGS UNLESS OTHERWISE NOTED.

4. OFFSET STUDS WHERE REQUIRED TO ALIGN FINISH MATERIAL.

5. PROVIDE BACKING IN WALLS FOR ALL WALL MOUNTED ITEMS AS DETAILED.

6. ALL DOORS ARE LOCATED 4" ON HINGED SIDE FROM ALL PERPENDICULAR TO THE DOOR UNLESS OTHERWISE NOTED.

7. CEILING HEIGHTS ARE MEASURED TO BOTTOM OF FINISH OR SUSPENDED CEILING TEE.

8. IN CEILINGS, LOCATE PENETRATING ITEMS (FIXTURES, SPRINKLER HEADS, ETC.) IN PATTERNS SHOWN ON REFLECTED CEILING PLAN OR AS SCHEDULED.

9. STAGGER ALL RECEPTACLE OUTLETS.

CALGREEN NOTES:

1. SMOKING PROHIBITED WITHIN 25 FEET OF BUILDING ENTRIES, OUTDOOR INTAKES AND OPERABLE WINDOWS. EXISTING PARKING LOT AREAS ARE DESIGNATE AS "SMOKING AREAS".

2. 100% OF TREES, STUMPS, ROCKS, AND ASSOCIATED VEGETATION AND SOILS RESULTING PRIMARILY FROM LAND CLEARING SHALL BE REUSED OR RECYCLED. A LETTER FROM THE CONTRACTOR WITH VERIFICATIONS NEEDS TO BE SUBMITTED TO THE INSPECTOR TO SHOW COMPLIANCE.

3. PREVENT IRRIGATION SPRAY ON THE STRUCTURES.

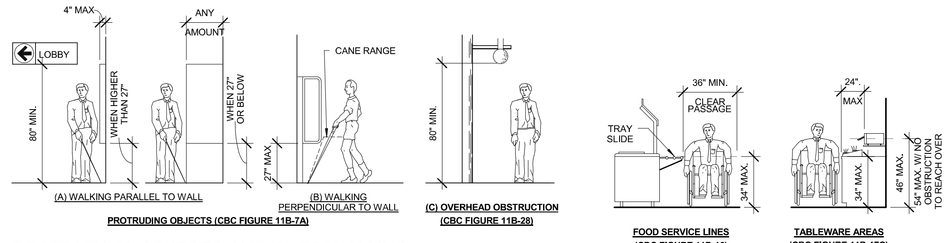
4. ADHESIVES, SEALANTS, CAULKS, ADHESIVES AND SEALANTS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS. (SECTION 5.504.4.1 OF CAL GREEN) ADHESIVES, ADHESIVE BONDING PRIMERS, SEALANTS, SEALANT PRIMERS, AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE, OR SCAQMD RULE 1168 VOC LIMITS, AS SHOWN IN TABLES 5.504.4.1 AND 5.504/402 OF CAL GREEN.

5. A LETTER FROM THE CONTRACTOR AND BUILDING OWNER CERTIFYING WHAT MATERIAL HAS BEEN USED AND ITS COMPLIANCE WITH THE CODE MUST BE SUBMITTED TO THE BUILDING INSPECTOR.

6. AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF CALIFORNIA CODE OF REGULATIONS,TILE 17, COMMENCING WITH SECTION 94507.

7. ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH TABLE 5.504.4.2 UNLESS MORE STRINGENT LOCALS APPLY.

8. AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT-WEIGHTED MIR LIMITS FOR ROC IN SECTION 94522(a)(3) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES (CCR TITLE 17,



(A) WALKING PARALLEL TO WALL

(B) WALKING PERPENDICULAR TO WALL

PROTRUDING OBJECTS (CBC FIGURE 11B-7A)

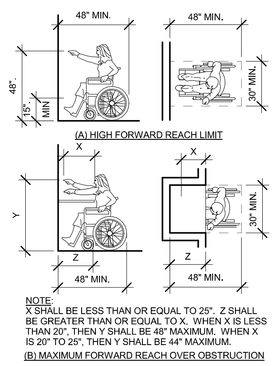
(C) OVERHEAD OBSTRUCTION (CBC FIGURE 11B-28)

FOOD SERVICE LINES (CBC FIGURE 11B-16)

TABLEWARE AREAS (CBC FIGURE 11B-17C)

4 PROTRUDING OBJECTS AND OVERHANGING OBSTRUCTIONS

1/4" = 1'-0"

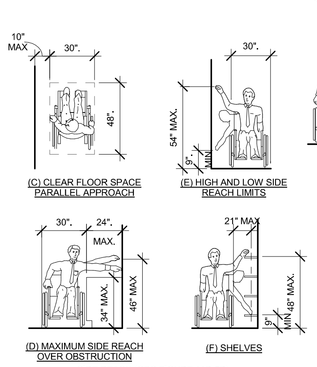


(A) HIGH FORWARD REACH LIMIT

NOTE:
X SHALL BE LESS THAN OR EQUAL TO 25". Z SHALL BE GREATER THAN OR EQUAL TO X. WHEN X IS LESS THAN 20", THEN Y SHALL BE 48" MAXIMUM. WHEN X IS 20" TO 25", THEN Y SHALL BE 44" MAXIMUM.

(B) MAXIMUM FORWARD REACH OVER OBSTRUCTION

FORWARD REACH (CBC FIGURE 11B-5C)



(C) CLEAR FLOOR SPACE PARALLEL APPROACH

(E) HIGH AND LOW SIDE REACH LIMITS

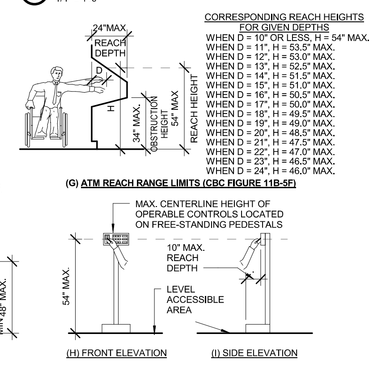
(D) MAXIMUM SIDE REACH OVER OBSTRUCTION

(F) SHELVES

SIDE REACH (CBC FIGURE 11B-5D)

3 FOOD SERVICE

1/4" = 1'-0"



CORRESPONDING REACH HEIGHTS FOR GIVEN DEPTHS
WHEN D = 10" OR LESS, H = 54" MAX.
WHEN D = 11", H = 53.5" MAX.
WHEN D = 12", H = 53.0" MAX.
WHEN D = 13", H = 52.5" MAX.
WHEN D = 14", H = 51.5" MAX.
WHEN D = 15", H = 51.0" MAX.
WHEN D = 16", H = 50.5" MAX.
WHEN D = 17", H = 50.0" MAX.
WHEN D = 18", H = 49.5" MAX.
WHEN D = 19", H = 49.0" MAX.
WHEN D = 20", H = 48.5" MAX.
WHEN D = 21", H = 47.5" MAX.
WHEN D = 22", H = 47.0" MAX.
WHEN D = 23", H = 46.5" MAX.
WHEN D = 24", H = 46.0" MAX.

(G) ATM REACH RANGE LIMITS (CBC FIGURE 11B-5F)

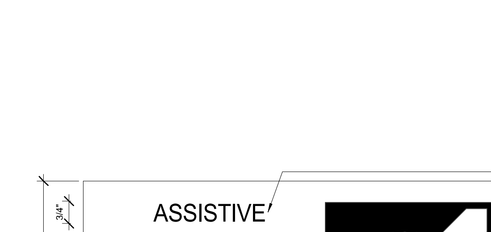
(H) FRONT ELEVATION

(I) SIDE ELEVATION

CARD READER ON FREE STANDING PEDESTALS (CBC FIGURE 11C-2)

5 SPACE ALLOWANCES AND REACH RANGES

1/4" = 1'-0"



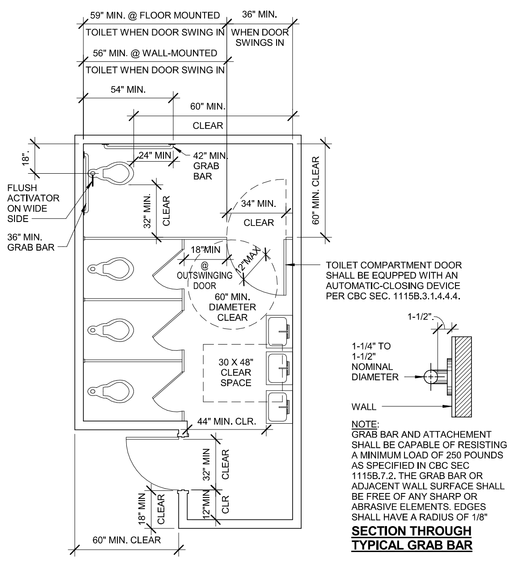
PLAN

SECTION A

60" MIN. X 30" MIN. ROLL-IN SHOWER STALL

7 ACCESSIBLE SHOWER STALL (CBC FIGURE 11B-2A)

1/4" = 1'-0"



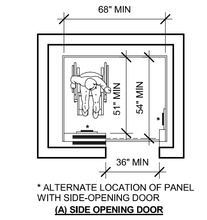
1-1/2"
1-1/4" TO 1-1/2" NOMINAL DIAMETER
WALL

NOTE:
GRAB BAR AND ATTACHEMENT SHALL BE CAPABLE OF RESISTING A MINIMUM LOAD OF 250 POUNDS AS SPECIFIED IN CBC SEC. 1115B.7.2. THE GRAB BAR OR ADJACENT WALL SURFACE SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. EDGES SHALL HAVE A RADIUS OF 1/8"

SECTION THROUGH TYPICAL GRAB BAR

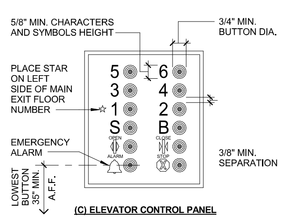
6 MULTIPLE ACCOMMODATION TOILET FACILITY & GRAB BAR DETAIL (CBC FIGS. 11B-1B & 11B-1C)

1/4" = 1'-0"

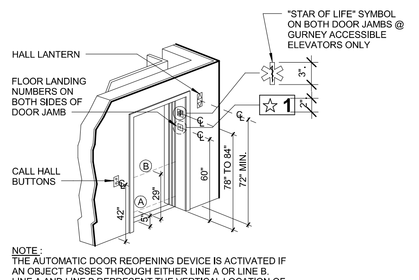


* ALTERNATE LOCATION OF PANEL WITH SIDE-OPENING DOOR

(A) SIDE OPENING DOOR

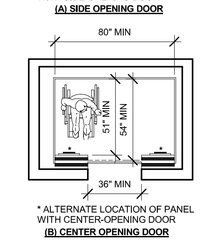


(C) ELEVATOR CONTROL PANEL



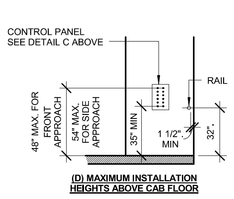
NOTE:
THE AUTOMATIC DOOR REOPENING DEVICE IS ACTIVATED IF AN OBJECT PASSES THROUGH EITHER LINE A OR LINE B. LINE A AND LINE B REPRESENT THE VERTICAL LOCATION OF THE DOOR REOPENING DEVICE NOT REQUIRING CONTACT.

(E) HOISTWAY AND ELEVATOR ENTRANCES

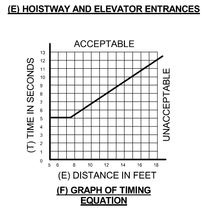


* ALTERNATE LOCATION OF PANEL WITH CENTER-OPENING DOOR

(B) CENTER OPENING DOOR



(D) MAXIMUM INSTALLATION HEIGHTS ABOVE CAB FLOOR



(F) GRAPH OF TIMING EQUATION

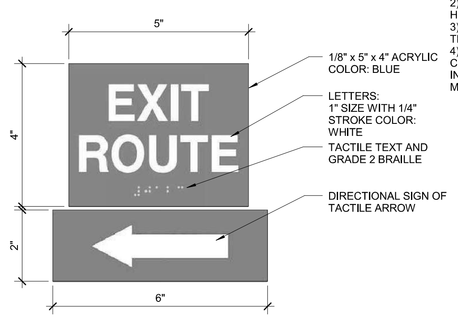
8 ELEVATORS (CBC FIGURES 11B-40A, 11B-40B, 11B-40C, AND 11B-40D)

1/4" = 1'-0"

SCALE: 6" = 1'-0"

15 ASSISTIVE LISTENING DEVICE SIGN
6" = 1'-0"

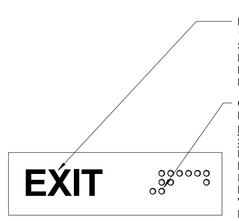
14 EMERGENCY EXIT SIGNAGE
6" = 1'-0"



13 EXIT ROUTE SIGNAGE
6" = 1'-0"

BRAILLE SIGNAGE NOTES:

1) THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE THE STANDARD USED TO IDENTIFY FACILITES THAT AREA ACCESSIBLE TO AND USABLE BY PHYSICALLY DISABLE PERSONS AS SET FORTH IN THE CBC (FIG-11B-6). THE SYMBOL SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL BE EQUAL TO COLOR 15090 IN THE FEDERAL STANDARD 595B.
2) CHARACTERS ON SIGNS SHALL HAVE WIDTH TO HEIGHT RATIO BETWEEN 3:5 AND 1:1 AND A STROKE WIDTH TO HEIGHT RATIO OF BETWEEN 1:5 & 1:10.
3) PICTORIAL SYMBOL SIGNS SHALL BE ACCOMPANIED BY THE VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE OUTSIDE DIMENSION OF THE PICTOGRAM FIELD SHALL BE A MINIMUM OF 6" HIGH.
4)CONTRACTED GRADE 2 BRAI. SHALL BE USED WHEREVER BRAILLE IS REQUIRED. DOTS SHALL BE 1/10 INCH ON CENTER IN EACH CELL WITH 2/10 INCH SPACE BETWEEN CELLS, MEASURED FROM THE SECOND COLUMN DOTS IN THE FIRST CELL TO THE FIRST COLUMN DOTS OF DOTS IN THE SECOND CELL. DOTS SHALL BE RAISED A MINIMUM OF 1/40 INCH ABOVE THE BACKGROUND, AND SHALL BE DOMED OR ROUNDED.



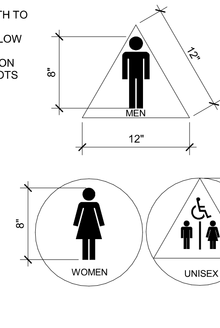
LETTERS AND NUMERALS SHALL BE RAISED 1/32", UPPER CASE, SANS SERIF TYPE AND SHALL BE ACCOMPANIED WITH GRADE II BRAILLE. RAISED CHARACTERS SHALL BE AT LEAST 5/8" HIGH, BUT NO HIGHER THAN 2"

CORRESPONDING GRADE II BRAILLE

LITERALLY BRAILLE STANDARD DIMENSIONS:
Dot Diameter .059"
Inter-dot spacing .090"
Horizontal separation between cells .241"
Vertical separation between cells .395"

MOUNT SIGNAGE 60" FROM FLOOR FINISH.

11 SIGNAGE WITH BRAILLE
1/4" = 1'-0"

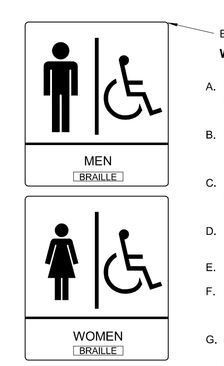


DOOR SIGN

A. DOORWAYS LEADING TO MEN'S RESTROOMS SHALL BE IDENTIFIED BY AN EQUILATERAL TRIANGLE WITH EDGES 12 INCH LONG AND A VERTEX POINTING UPWARD. DOORWAYS LEADING TO WOMEN'S RESTROOMS SHALL BE IDENTIFIED BY A CIRCLE 12 INCHES IN DIA.
B. BACKGROUND COLOR: BLUE FIGURES: WHITE (COLOR TO BE
C. NON-GLARE FIN.)
D. MOUNTING HEIGHT: CENTER OF SIGN TO BE 5' ABOVE THE FLOOR ON DOOR
E. MOUNTING METHOD: DOUBLE STICK FOAM TAPE, SCOTCH BRAND 3M.
F. THICKNESS: 1/4 INCH.
G. FABRICATION METHOD: NEW PLEXIGLAS SIGN WITH SUBSURFACE GRAPHICS AND BACK SPRAYED.

APPLICABLE CODES:
- CBC 2007 SECTION 1115B.6
- CAL. TITLE 24 SECTION 1115B.5
- ADA SECTION 4.30.4

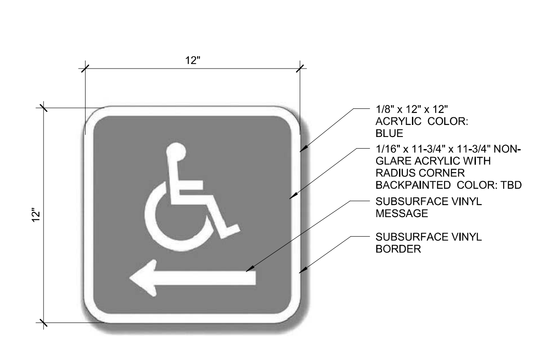
9 TOILET ROOM DOOR SIGNAGE
1 1/2" = 1'-0"



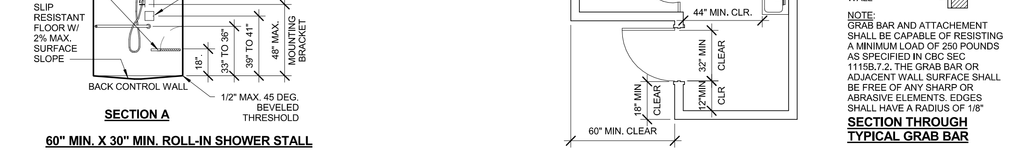
WALL SIGN

A. 1/32in, RAISED SANS-SERIF UPPERCASE CHARACTERS ACCOMPANIED BY GRADE 2 BRAILLE. CHARACTERS MIN. 5/8in. HIGH, TO MAXIMUM 2" HIGH
B. COLOR: BACKGROUND: BLUE TYPE/FIGURE: WHITE (COLORS TO BE NON-GLARE FINISH)
C. MOUNTING HEIGHT: CENTER OF SIGN TO BE 5 FEET ABOVE THE FLOOR ON THE WALL - LATCH SIDE
D. MOUNTING METHOD: DOUBLE STICK FOAM TAPE, SCOTCH BRAND 3M
E. THICKNESS: 1/4 INCH
F. FABRICATION METHOD: NEW PLEXIGLAS SIGN WITH SURFACE GRAPHICS AND BACK SPRAYED
G. APPLICABLE CODES: ADA SECTION 4.1.2, 4.30.4, 4.30.5, 4.30.6 CAL. TITLE 24 SECTION 1117B.5

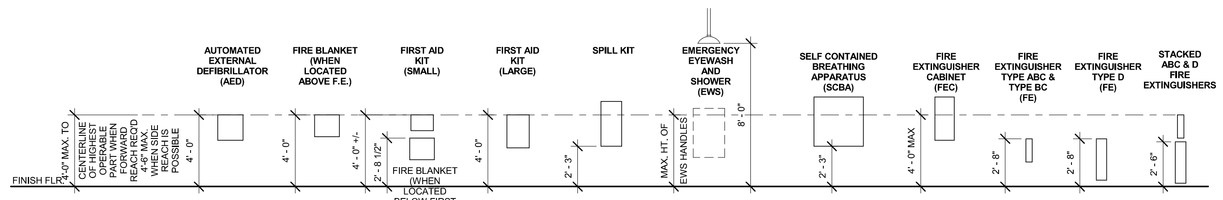
NOTE: REFER TO SEPARATE DETAIL FOR DOOR SIGN INFORMATION



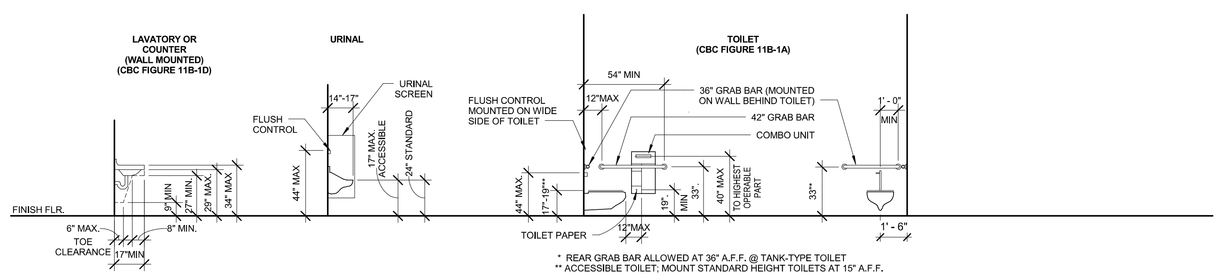
12 ACCESSIBILITY DIRECTIONAL SIGNAGE
3" = 1'-0"



D. ELECTRICAL AND COMMUNICATIONS MOUNTING HEIGHT SCHEDULE NOTE: PROVIDE BACKING FOR ALL EQUIPMENT PER DETAIL 25/A-501.

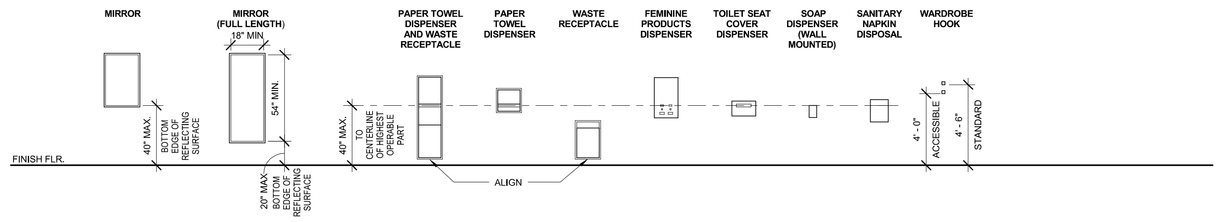


C. LIFE SAFETY EQUIPMENT MOUNTING HEIGHT SCHEDULE NOTE: PROVIDE BACKING FOR ALL EQUIPMENT PER DETAIL 25/A-501.



* REAR GRAB BAR ALLOWED AT 36" A.F.F. @ TANK-TYPE TOILET
** ACCESSIBLE TOILET; MOUNT STANDARD HEIGHT TOILETS AT 15" A.F.F.

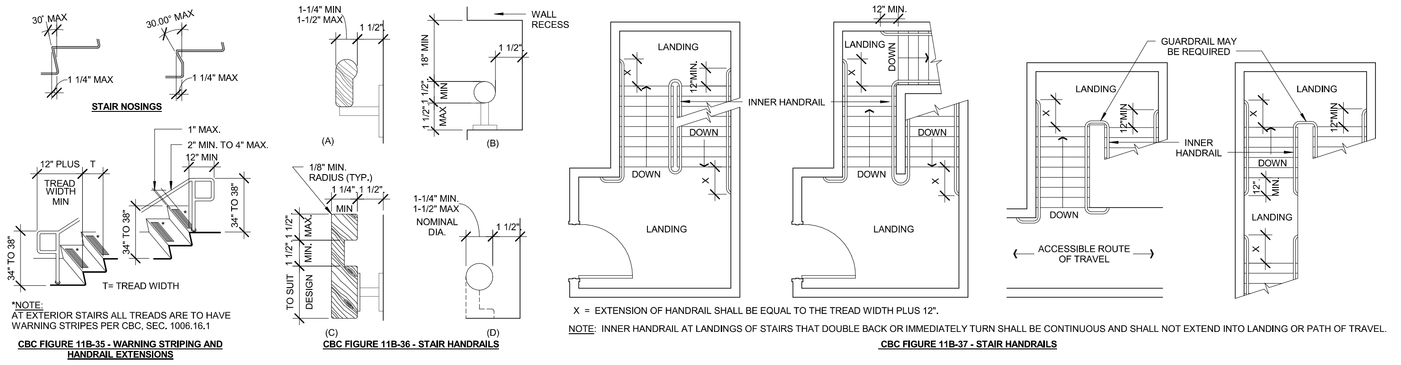
B. TOILET ROOM FIXTURE MOUNTING HEIGHT SCHEDULE NOTE: PROVIDE BACKING FOR ALL EQUIPMENT PER DETAIL 25/A-501.



A. TOILET ROOM ACCESSORY MOUNTING HEIGHT SCHEDULE NOTE: PROVIDE BACKING FOR ALL EQUIPMENT PER DETAIL 25/A-501.

1 MOUNTING HEIGHT SCHEDULES

1/4" = 1'-0"



CBC FIGURE 11B-35 - WARNING STRIPING AND HANDRAIL EXTENSIONS

CBC FIGURE 11B-36 - STAIR HANDRAILS

X = EXTENSION OF HANDRAIL SHALL BE EQUAL TO THE TREAD WIDTH PLUS 12".

NOTE: INNER HANDRAIL AT LANDINGS OF STAIRS THAT DOUBLE BACK OR IMMEDIATELY TURN SHALL BE CONTINUOUS AND SHALL NOT EXTEND INTO LANDING OR PATH OF TRAVEL.

CBC FIGURE 11B-37 - STAIR HANDRAILS

2 STAIRS AND HANDRAILS

1/4" = 1'-0"

CONSULTANTS

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

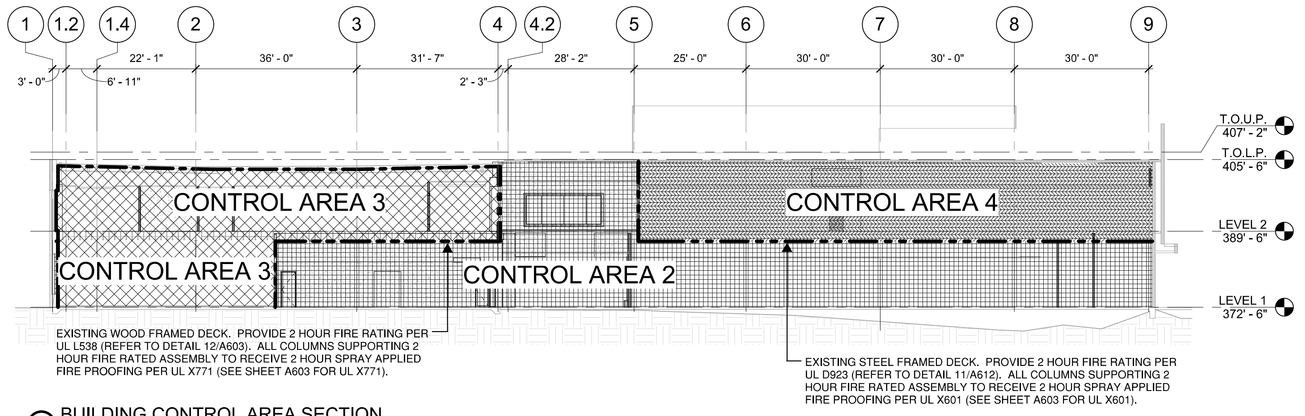
SCALE As indicated

TITLE

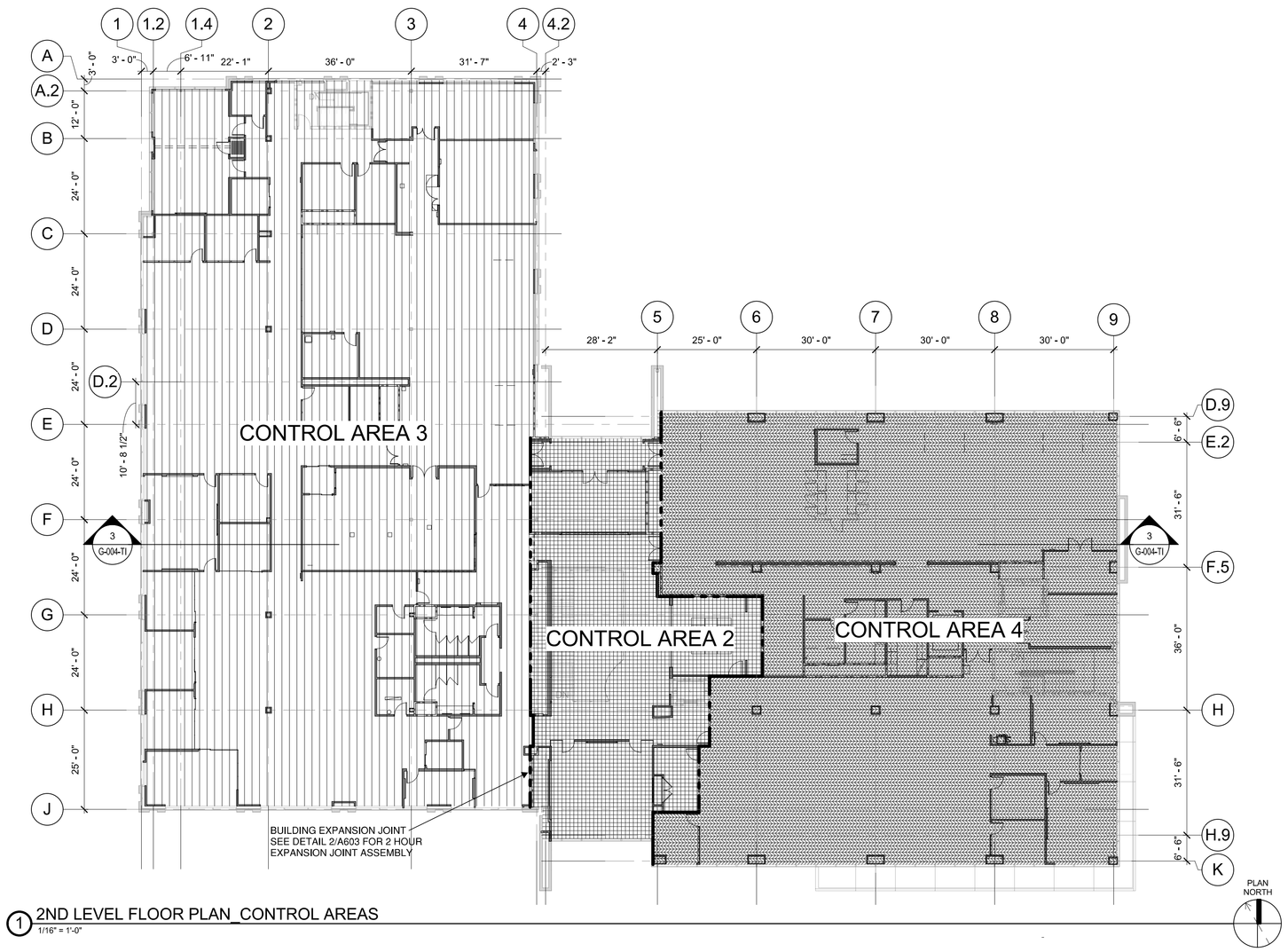
ACCESSIBILITY DETAILS AND MOUNTING HEIGHT SCHEDULES

G-003-TI

5/22/2013 1:00:55 AM



3 BUILDING CONTROL AREA SECTION
1/16" = 1'-0"



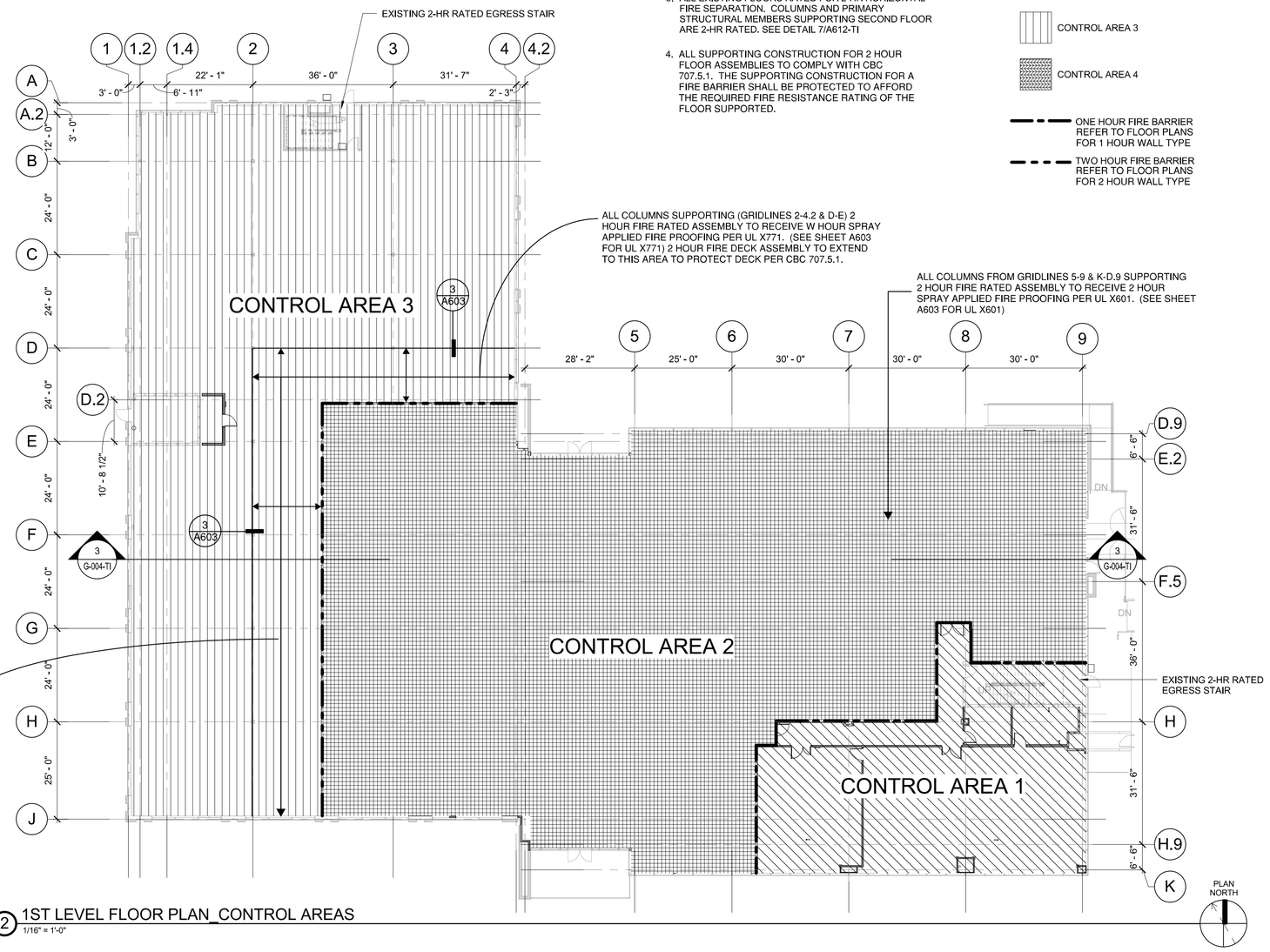
1 2ND LEVEL FLOOR PLAN_CONTROL AREAS
1/16" = 1'-0"

CONTROL AREA NOTES

1. QUANTITIES OF HAZARDOUS MATERIAL SHALL NOT EXCEED THE MAXIMUM ALLOWABLE PER CONTROL AREA PER CBC TABLE 414.2.5.
2. SEE TECHNICAL REPORT SUBMITTED WITH PERMIT FOR ADDITIONAL INFORMATION.
3. ALL EXISTING FLOORS RATED FOR 2-HR HORIZONTAL FIRE SEPARATION. COLUMNS AND PRIMARY STRUCTURAL MEMBERS SUPPORTING SECOND FLOOR ARE 2-HR RATED. SEE DETAIL 7/A612-TI
4. ALL SUPPORTING CONSTRUCTION FOR 2 HOUR FLOOR ASSEMBLIES TO COMPLY WITH CBC 707.5.1. THE SUPPORTING CONSTRUCTION FOR A FIRE BARRIER SHALL BE PROTECTED TO AFFORD THE REQUIRED FIRE RESISTANCE RATING OF THE FLOOR SUPPORTED.

CONTROL AREA LEGEND

- CONTROL AREA 1
- CONTROL AREA 2
- CONTROL AREA 3
- CONTROL AREA 4
- ONE HOUR FIRE BARRIER REFER TO FLOOR PLANS FOR 1 HOUR WALL TYPE
- TWO HOUR FIRE BARRIER REFER TO FLOOR PLANS FOR 2 HOUR WALL TYPE



2 1ST LEVEL FLOOR PLAN_CONTROL AREAS
1/16" = 1'-0"

4/24/2013 3:56:56 AM

CONSULTANTS

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NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

CONTROL AREA PLANS

G-004-TI

GENERAL NOTES

1. FLOORS ARE TO BE RATED FOR 2 HOUR HORIZONTAL FIRE BARRIER.

2. FIRE BARRIERS SHALL EXTEND FROM THE TOP OF THE FLOOR/CEILING ASSEMBLY BELOW TO THE UNDERSIDE OF THE FLOOR OR ROOF SHEATHING, SLB OR DECK ABOVE AND SHALL BE SECURELY ATTACHED THERETO. (CBC 707.5)

3. THE SUPPORTING CONSTRUCTION FOR FOR A FIRE BARRIER SHALL BE PROTECTED TO AFFORD THE REQUIRED FIRE RESISTANCE RATING OF THE FIRE BARRIER SUPPORTED. (CBC SECTION 705.1)

Per 2010 CBC Section 713.4.1.2.1: The aggregate area of the openings through the membrane shall not exceed 100 sq. in. in any 100 sq. ft. of ceiling area in assemblies tested without penetrations.

100 sq. in.
15.89 sq. in. =6.29

6 pts. allowed per any 100 sq. ft. of ceiling area

EXTENT OF 2 HOUR FLOOR ASSEMBLY AT WOOD FRAMED FLOOR ASSEMBLY PER UL D923. REFER TO SHEET A-603-TI DETAIL XX FOR FLOOR ASSEMBLY DETAIL. ALL SUPPORTING COLUMNS IN THIS AREA TO RECEIVE 2 HOUR SPRAY APPLIED FIRE PROOFING PER UL X771. ALL SUPPORTING BEAMS IN THIS AREA TO RECEIVE SPRAY APPLIED FIRE PROOFING PER UL X601. SEE SHEET A-603-TI FOR UL ASSEMBLY DETAILS.

EXTENT OF 2 HOUR FLOOR ASSEMBLY AT STEEL FRAMED FLOOR PER UL D923. REFER TO SHEET A-603-TI DETAIL XX FOR FLOOR ASSEMBLY DETAIL. ALL SUPPORTING COLUMNS IN THIS AREA TO RECEIVE 2 HOUR SPRAY APPLIED FIRE PROOFING PER UL X601. ALL SUPPORTING BEAMS IN THIS AREA TO RECEIVE SPRAY APPLIED FIRE PROOFING PER UL X601. SEE SHEET D923-TI FOR UL ASSEMBLY DETAILS.

D8 ENGINEERING JUDGMENT FIRESTOP DETAIL

PROJECT : GENOMATICA
CONTRACTOR : DPR CONSTRUCTION
F-RATING = 2-HR.

BOTTOM VIEW

SECTION A-A

Area = πR²
R = 2¼"
π(2.25")² = 15.89in²
= 0.11055ft²

3" Ø Hanger
+ 5/8" Ø O.D.
+ 1" annular space (min)
= 4⅛" Ø Hole @
Ea. Loc.

1. WOOD ROOF/CEILING ASSEMBLY (UL DESIGN NO. L538) (2-HR. FIRE-RATING).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 3" NOMINAL DIAMETER STEEL PIPE.
   B. MAXIMUM 3" NOMINAL DIAMETER COPPER TUBING.
   C. MAXIMUM 3" NOMINAL DIAMETER STEEL CONDUIT OR EMT.
3. MINIMUM 1-1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
4. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTE : ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".

THIS ENGINEERING JUDGMENT REPRESENTS A FIRESTOP SYSTEM THAT WOULD BE EXPECTED TO PASS THE STATED RATINGS IF TESTED. (REFERENCE : UL/cUL SYSTEM NO. F-C-1059)

HILTI, Inc.
Tulsa, Oklahoma USA (800) 879-8000

Hilti Firestop Systems

Designed by: Jonathan D. Mathew, CTR

Sheet: 1 of 1
Scale: 8½" x 11"
Date: May 30, 2013

Drawing No. 173281a

Saving Lives through Innovation and Education

BUILDING EXPANSION JOINT SEE DETAIL 2/A603 FOR 2 HOUR ASSEMBLY

PENETRATION AT RATED UL L538 RATED FLOOR ASSEMBLY(TYP.) REFER TO DETAIL 11/A612

3 A603 SIM.

2" 18 GA METAL DECK W/ 3 1/4" (MIN) LT. WT. CONC. PER 4 S-005

SEE SHEET S-104-TI

CONSULTANTS

STAMP

LICENSED ARCHITECT
RANDY J. EKEY
12-22-14
REN 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE

TITLE

FIRE PROOFING PLAN

G-005

4/29/2013 4:42:26 PM

GENERAL DEMOLITION NOTES

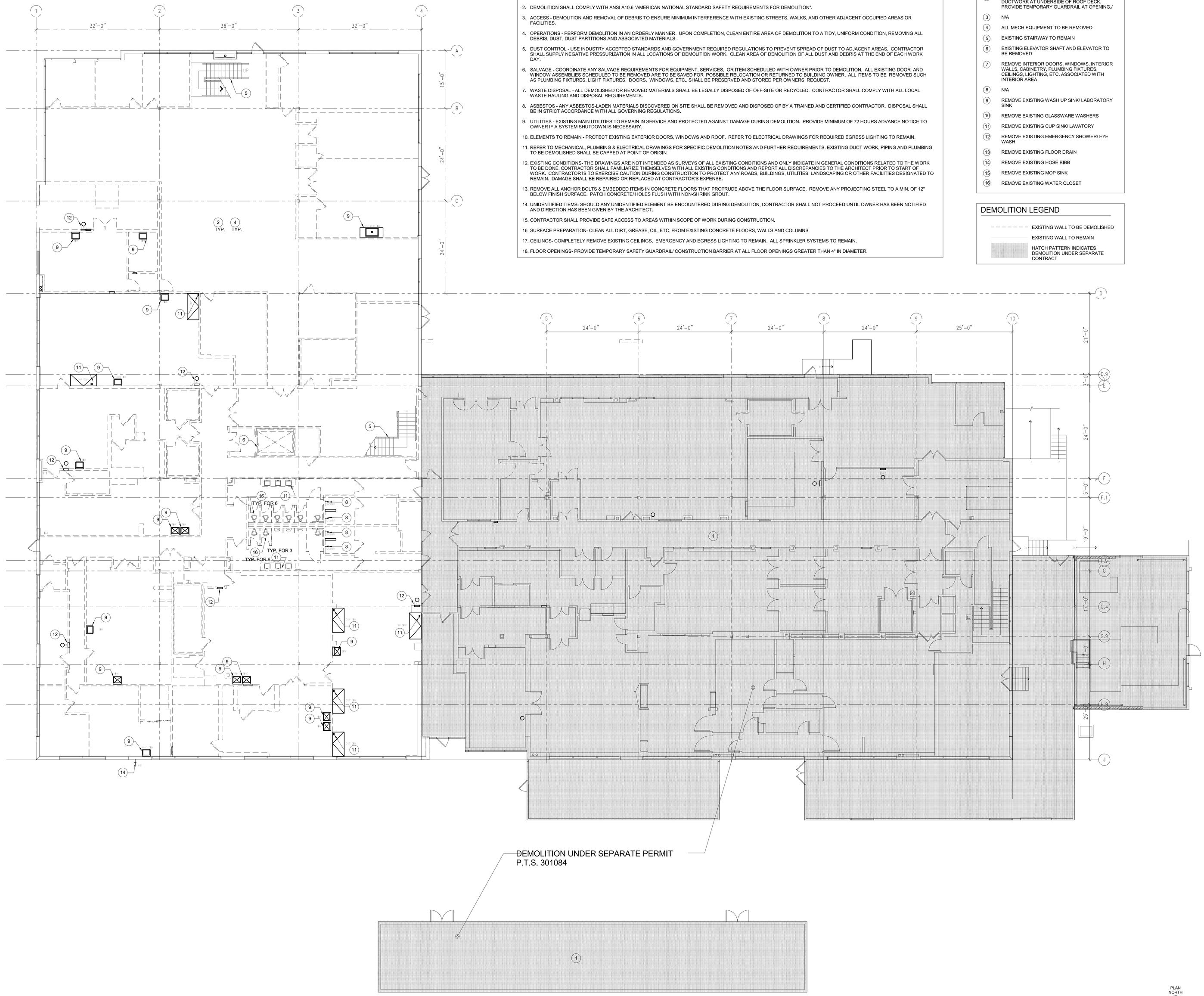
1. INTENT - THE INTENT OF THE DEMOLITION DRAWINGS IS TO INCLUDE ALL LABOR, MATERIALS AND SERVICES NECESSARY FOR COMPLETION OF ALL DEMOLITION SHOWN. THE SCOPE OF DEMOLITION WORK IS GENERAL IN NATURE. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE JOB SITE TO VERIFY THE EXISTING CONDITIONS AND NOTIFYING THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS.
2. DEMOLITION SHALL COMPLY WITH ANSI A10.6 "AMERICAN NATIONAL STANDARD SAFETY REQUIREMENTS FOR DEMOLITION".
3. ACCESS - DEMOLITION AND REMOVAL OF DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH EXISTING STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AREAS OR FACILITIES.
4. OPERATIONS - PERFORM DEMOLITION IN AN ORDERLY MANNER. UPON COMPLETION, CLEAN ENTIRE AREA OF DEMOLITION TO A TIDY, UNIFORM CONDITION, REMOVING ALL DEBRIS, DUST, DUST PARTITIONS AND ASSOCIATED MATERIALS.
5. DUST CONTROL - USE INDUSTRY ACCEPTED STANDARDS AND GOVERNMENT REQUIRED REGULATIONS TO PREVENT SPREAD OF DUST TO ADJACENT AREAS. CONTRACTOR SHALL SUPPLY NEGATIVE PRESSURIZATION IN ALL LOCATIONS OF DEMOLITION WORK. CLEAN AREA OF DEMOLITION OF ALL DUST AND DEBRIS AT THE END OF EACH WORK DAY.
6. SALVAGE - COORDINATE ANY SALVAGE REQUIREMENTS FOR EQUIPMENT, SERVICES, OR ITEM SCHEDULED WITH OWNER PRIOR TO DEMOLITION. ALL EXISTING DOOR AND WINDOW ASSEMBLIES SCHEDULED TO BE REMOVED ARE TO BE SAVED FOR POSSIBLE RELOCATION OR RETURNED TO BUILDING OWNER. ALL ITEMS TO BE REMOVED SUCH AS PLUMBING FIXTURES, LIGHT FIXTURES, DOORS, WINDOWS, ETC., SHALL BE PRESERVED AND STORED PER OWNERS REQUEST.
7. WASTE DISPOSAL - ALL DEMOLISHED OR REMOVED MATERIALS SHALL BE LEGALLY DISPOSED OF OFF-SITE OR RECYCLED. CONTRACTOR SHALL COMPLY WITH ALL LOCAL WASTE HAULING AND DISPOSAL REQUIREMENTS.
8. ASBESTOS - ANY ASBESTOS-LADEN MATERIALS DISCOVERED ON SITE SHALL BE REMOVED AND DISPOSED OF BY A TRAINED AND CERTIFIED CONTRACTOR. DISPOSAL SHALL BE IN STRICT ACCORDANCE WITH ALL GOVERNING REGULATIONS.
9. UTILITIES - EXISTING MAIN UTILITIES TO REMAIN IN SERVICE AND PROTECTED AGAINST DAMAGE DURING DEMOLITION. PROVIDE MINIMUM OF 72 HOURS ADVANCE NOTICE TO OWNER IF A SYSTEM SHUTDOWN IS NECESSARY.
10. ELEMENTS TO REMAIN - PROTECT EXISTING EXTERIOR DOORS, WINDOWS AND ROOF. REFER TO ELECTRICAL DRAWINGS FOR REQUIRED EGRESS LIGHTING TO REMAIN.
11. REFER TO MECHANICAL, PLUMBING & ELECTRICAL DRAWINGS FOR SPECIFIC DEMOLITION NOTES AND FURTHER REQUIREMENTS. EXISTING DUCT WORK, PIPING AND PLUMBING TO BE DEMOLISHED SHALL BE CAPPED AT POINT OF ORIGIN
12. EXISTING CONDITIONS- THE DRAWINGS ARE NOT INTENDED AS SURVEYS OF ALL EXISTING CONDITIONS AND ONLY INDICATE IN GENERAL CONDITIONS RELATED TO THE WORK TO BE DONE. CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS AND REPORT ALL DISCREPANCIES TO THE ARCHITECT PRIOR TO START OF WORK. CONTRACTOR IS TO EXERCISE CAUTION DURING CONSTRUCTION TO PROTECT ANY ROADS, BUILDINGS, UTILITIES, LANDSCAPING OR OTHER FACILITIES DESIGNATED TO REMAIN. DAMAGE SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
13. REMOVE ALL ANCHOR BOLTS & EMBEDDED ITEMS IN CONCRETE FLOORS THAT PROTRUDE ABOVE THE FLOOR SURFACE. REMOVE ANY PROJECTING STEEL TO A MIN. OF 12" BELOW FINISH SURFACE. PATCH CONCRETE/ HOLES FLUSH WITH NON-SHRINK GROUT.
14. UNIDENTIFIED ITEMS- SHOULD ANY UNIDENTIFIED ELEMENT BE ENCOUNTERED DURING DEMOLITION, CONTRACTOR SHALL NOT PROCEED UNTIL OWNER HAS BEEN NOTIFIED AND DIRECTION HAS BEEN GIVEN BY THE ARCHITECT.
15. CONTRACTOR SHALL PROVIDE SAFE ACCESS TO AREAS WITHIN SCOPE OF WORK DURING CONSTRUCTION.
16. SURFACE PREPARATION- CLEAN ALL DIRT, GREASE, OIL, ETC. FROM EXISTING CONCRETE FLOORS, WALLS AND COLUMNS.
17. CEILINGS- COMPLETELY REMOVE EXISTING CEILINGS. EMERGENCY AND EGRESS LIGHTING TO REMAIN. ALL SPRINKLER SYSTEMS TO REMAIN.
18. FLOOR OPENINGS- PROVIDE TEMPORARY SAFETY GUARDRAIL/ CONSTRUCTION BARRIER AT ALL FLOOR OPENINGS GREATER THAN 4" IN DIAMETER.

DEMOLITION KEYNOTES

1. HATCH PATTERN INDICATES NOT IN CONTRACT
2. REMOVE HVAC EQUIPMENT IN ITS ENTIRETY- CAP DUCTWORK AT UNDERSIDE OF ROOF DECK. PROVIDE TEMPORARY GUARDRAIL AT OPENING./
3. N/A
4. ALL MECH EQUIPMENT TO BE REMOVED
5. EXISTING STAIRWAY TO REMAIN
6. EXISTING ELEVATOR SHAFT AND ELEVATOR TO BE REMOVED
7. REMOVE INTERIOR DOORS, WINDOWS, INTERIOR WALLS, CABINETRY, PLUMBING FIXTURES, CEILINGS, LIGHTING, ETC. ASSOCIATED WITH INTERIOR AREA
8. N/A
9. REMOVE EXISTING WASH UP SINK/ LABORATORY SINK
10. REMOVE EXISTING GLASSWARE WASHERS
11. REMOVE EXISTING CUP SINK/ LAVATORY
12. REMOVE EXISTING EMERGENCY SHOWER/ EYE WASH
13. REMOVE EXISTING FLOOR DRAIN
14. REMOVE EXISTING HOSE BIBB
15. REMOVE EXISTING MOP SINK
16. REMOVE EXISTING WATER CLOSET

DEMOLITION LEGEND

- EXISTING WALL TO BE DEMOLISHED
- EXISTING WALL TO REMAIN
- HATCH PATTERN INDICATES DEMOLITION UNDER SEPARATE CONTRACT



FIRST FLOOR DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH

5/23/2013 9:51:07 AM

CONSULTANTS

STAMP

LICENSED ARCHITECT
FRANK J. ESPOSITO
C-22216
RENEWAL 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

FIRST LEVEL OVERALL DEMOLITION PLAN

A-101D-TI

GENERAL DEMOLITION NOTES

1. INTENT - THE INTENT OF THE DEMOLITION DRAWINGS IS TO INCLUDE ALL LABOR, MATERIALS AND SERVICES NECESSARY FOR COMPLETION OF ALL DEMOLITION SHOWN. THE SCOPE OF DEMOLITION WORK IS GENERAL IN NATURE. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE JOB SITE TO VERIFY THE EXISTING CONDITIONS AND NOTIFYING THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS.
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4. OPERATIONS - PERFORM DEMOLITION IN AN ORDERLY MANNER, UPON COMPLETION, CLEAN ENTIRE AREA OF DEMOLITION TO A TIDY, UNIFORM CONDITION, REMOVING ALL DEBRIS, DUST, DUST PARTITIONS AND ASSOCIATED MATERIALS.
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6. SALVAGE - COORDINATE ANY SALVAGE REQUIREMENTS FOR EQUIPMENT, SERVICES, OR ITEM SCHEDULED WITH OWNER PRIOR TO DEMOLITION. ALL EXISTING DOOR AND WINDOW ASSEMBLIES SCHEDULED TO BE REMOVED ARE TO BE SAVED FOR POSSIBLE RELOCATION OR RETURNED TO BUILDING OWNER. ALL ITEMS TO BE REMOVED SUCH AS PLUMBING FIXTURES, LIGHT FIXTURES, DOORS, WINDOWS, ETC., SHALL BE PRESERVED AND STORED PER OWNERS REQUEST.
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8. ASBESTOS - ANY ASBESTOS-LADEN MATERIALS DISCOVERED ON SITE SHALL BE REMOVED AND DISPOSED OF BY A TRAINED AND CERTIFIED CONTRACTOR. DISPOSAL SHALL BE IN STRICT ACCORDANCE WITH ALL GOVERNING REGULATIONS.
9. UTILITIES - EXISTING MAIN UTILITIES TO REMAIN IN SERVICE AND PROTECTED AGAINST DAMAGE DURING DEMOLITION. PROVIDE MINIMUM OF 72 HOURS ADVANCE NOTICE TO OWNER IF A SYSTEM SHUTDOWN IS NECESSARY.
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13. REMOVE ALL ANCHOR BOLTS & EMBEDDED ITEMS IN CONCRETE FLOORS THAT PROTRUDE ABOVE THE FLOOR SURFACE. REMOVE ANY PROJECTING STEEL TO A MIN. OF 12" BELOW FINISH SURFACE. PATCH CONCRETE/ HOLES FLUSH WITH NON-SHRINK GROUT.
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17. CEILINGS- COMPLETELY REMOVE EXISTING CEILINGS. EMERGENCY AND EGRESS LIGHTING TO REMAIN. ALL SPRINKLER SYSTEMS TO REMAIN.
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DEMOLITION KEYNOTES

1. HATCH PATTERN INDICATES NOT IN CONTRACT
2. REMOVE HVAC EQUIPMENT IN ITS ENTIRETY- CAP DUCTWORK AT UNDERSIDE OF ROOF DECK. PROVIDE TEMPORARY GUARDRAIL AT OPENING./
3. ALL MECH EQUIPMENT TO BE REMOVED
4. EXISTING STAIRWAY TO REMAIN
5. EXISTING ELEVATOR SHAFT AND ELEVATOR TO BE REMOVED
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7. N/A
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9. REMOVE EXISTING GLASSWARE WASHERS
10. REMOVE EXISTING CUP SINK/ LAVATORY
11. REMOVE EXISTING EMERGENCY SHOWER/ EYE WASH
12. REMOVE EXISTING FLOOR DRAIN
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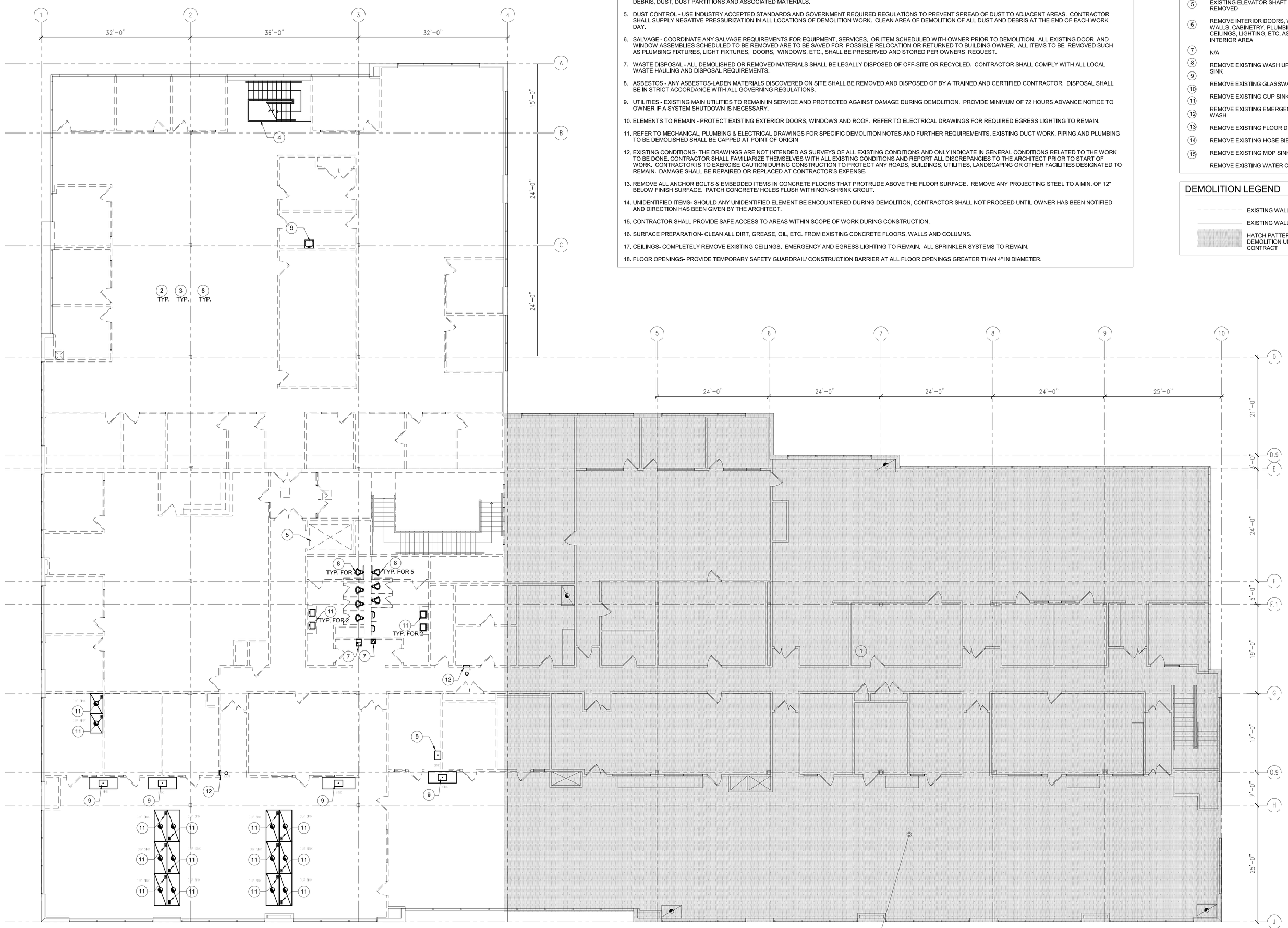
15. REMOVE EXISTING WATER CLOSET

DEMOLITION LEGEND

- EXISTING WALL TO BE DEMOLISHED
- EXISTING WALL TO REMAIN
- HATCH PATTERN INDICATES DEMOLITION UNDER SEPARATE CONTRACT



DEMOLITION UNDER SEPARATE PERMIT
P.T.S. 301084

SECOND FLOOR DEMOLITION PLAN
1/8" = 1'-0"

PLAN NORTH

CONSULTANTS

STAMP

LICENSED ARCHITECT
NANCY J. ESCH
No. C22219
RENEWAL 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

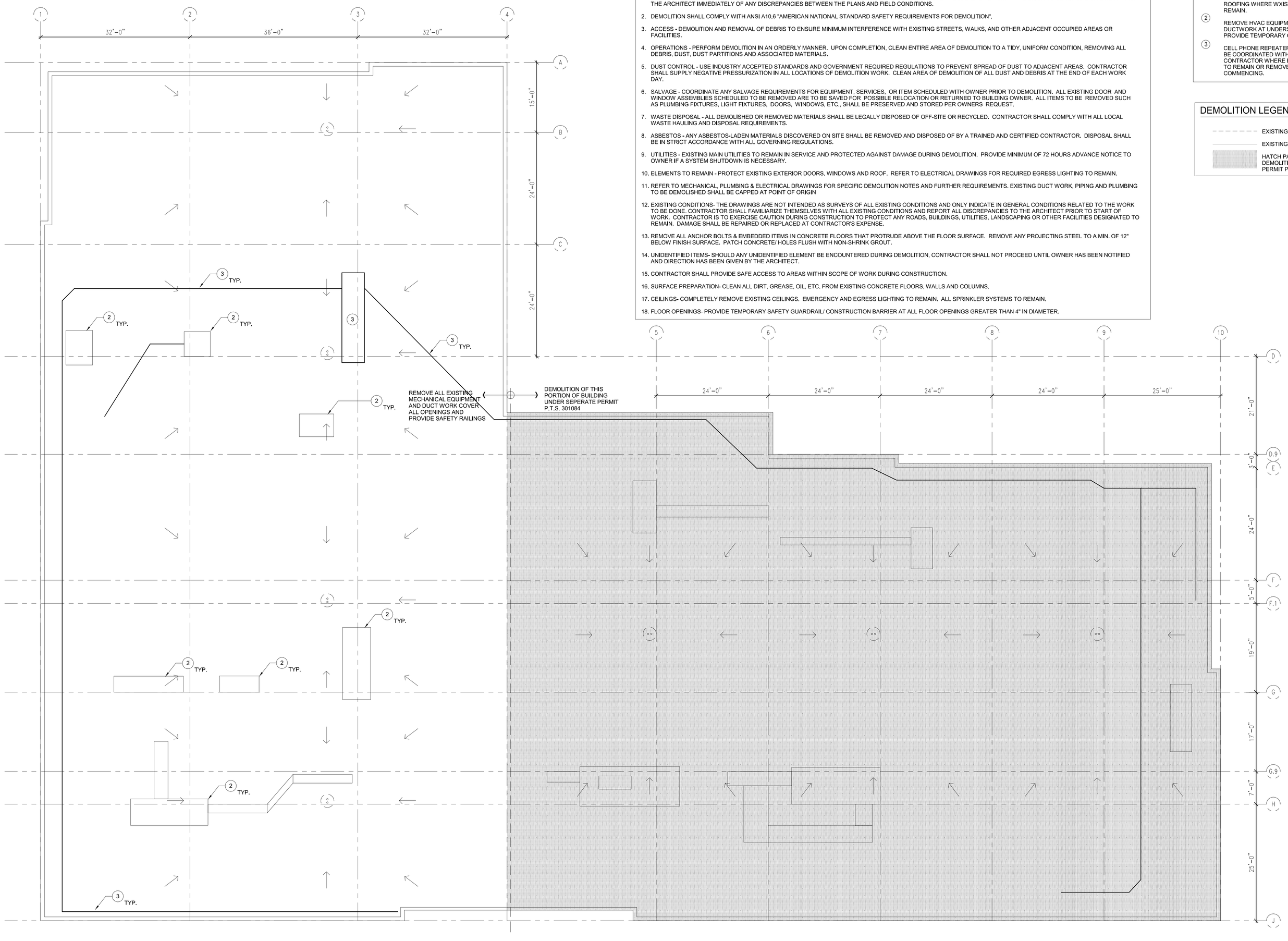
SCALE 1/8" = 1'-0"

TITLE

SECOND LEVEL OVERALL DEMOLITION PLAN

A-102D-TI

5/23/2013 9:52:03 AM



ROOF DEMOLITION PLAN

1/8" = 1'-0"

PLAN NORTH

GENERAL DEMOLITION NOTES

1. INTENT - THE INTENT OF THE DEMOLITION DRAWINGS IS TO INCLUDE ALL LABOR, MATERIALS AND SERVICES NECESSARY FOR COMPLETION OF ALL DEMOLITION SHOWN. THE SCOPE OF DEMOLITION WORK IS GENERAL IN NATURE. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE JOB SITE TO VERIFY THE EXISTING CONDITIONS AND NOTIFYING THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS.
2. DEMOLITION SHALL COMPLY WITH ANSI A10.6 "AMERICAN NATIONAL STANDARD SAFETY REQUIREMENTS FOR DEMOLITION".
3. ACCESS - DEMOLITION AND REMOVAL OF DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH EXISTING STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AREAS OR FACILITIES.
4. OPERATIONS - PERFORM DEMOLITION IN AN ORDERLY MANNER. UPON COMPLETION, CLEAN ENTIRE AREA OF DEMOLITION TO A TIDY, UNIFORM CONDITION, REMOVING ALL DEBRIS, DUST, DUST PARTITIONS AND ASSOCIATED MATERIALS.
5. DUST CONTROL - USE INDUSTRY ACCEPTED STANDARDS AND GOVERNMENT REQUIRED REGULATIONS TO PREVENT SPREAD OF DUST TO ADJACENT AREAS. CONTRACTOR SHALL SUPPLY NEGATIVE PRESSURIZATION IN ALL LOCATIONS OF DEMOLITION WORK. CLEAN AREA OF DEMOLITION OF ALL DUST AND DEBRIS AT THE END OF EACH WORK DAY.
6. SALVAGE - COORDINATE ANY SALVAGE REQUIREMENTS FOR EQUIPMENT, SERVICES, OR ITEM SCHEDULED WITH OWNER PRIOR TO DEMOLITION. ALL EXISTING DOOR AND WINDOW ASSEMBLIES SCHEDULED TO BE REMOVED ARE TO BE SAVED FOR POSSIBLE RELOCATION OR RETURNED TO BUILDING OWNER. ALL ITEMS TO BE REMOVED SUCH AS PLUMBING FIXTURES, LIGHT FIXTURES, DOORS, WINDOWS, ETC., SHALL BE PRESERVED AND STORED PER OWNERS REQUEST.
7. WASTE DISPOSAL - ALL DEMOLISHED OR REMOVED MATERIALS SHALL BE LEGALLY DISPOSED OF OFF-SITE OR RECYCLED. CONTRACTOR SHALL COMPLY WITH ALL LOCAL WASTE HAULING AND DISPOSAL REQUIREMENTS.
8. ASBESTOS - ANY ASBESTOS-LADEN MATERIALS DISCOVERED ON SITE SHALL BE REMOVED AND DISPOSED OF BY A TRAINED AND CERTIFIED CONTRACTOR. DISPOSAL SHALL BE IN STRICT ACCORDANCE WITH ALL GOVERNING REGULATIONS.
9. UTILITIES - EXISTING MAIN UTILITIES TO REMAIN IN SERVICE AND PROTECTED AGAINST DAMAGE DURING DEMOLITION. PROVIDE MINIMUM OF 72 HOURS ADVANCE NOTICE TO OWNER IF A SYSTEM SHUTDOWN IS NECESSARY.
10. ELEMENTS TO REMAIN - PROTECT EXISTING EXTERIOR DOORS, WINDOWS AND ROOF. REFER TO ELECTRICAL DRAWINGS FOR REQUIRED EGRESS LIGHTING TO REMAIN.
11. REFER TO MECHANICAL, PLUMBING & ELECTRICAL DRAWINGS FOR SPECIFIC DEMOLITION NOTES AND FURTHER REQUIREMENTS. EXISTING DUCT WORK, PIPING AND PLUMBING TO BE DEMOLISHED SHALL BE CAPPED AT POINT OF ORIGIN
12. EXISTING CONDITIONS- THE DRAWINGS ARE NOT INTENDED AS SURVEYS OF ALL EXISTING CONDITIONS AND ONLY INDICATE IN GENERAL CONDITIONS RELATED TO THE WORK TO BE DONE. CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS AND REPORT ALL DISCREPANCIES TO THE ARCHITECT PRIOR TO START OF WORK. CONTRACTOR IS TO EXERCISE CAUTION DURING CONSTRUCTION TO PROTECT ANY ROADS, BUILDINGS, UTILITIES, LANDSCAPING OR OTHER FACILITIES DESIGNATED TO REMAIN. DAMAGE SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
13. REMOVE ALL ANCHOR BOLTS & EMBEDDED ITEMS IN CONCRETE FLOORS THAT PROTRUDE ABOVE THE FLOOR SURFACE. REMOVE ANY PROJECTING STEEL TO A MIN. OF 12" BELOW FINISH SURFACE. PATCH CONCRETE/ HOLES FLUSH WITH NON-SHRINK GROUT.
14. UNIDENTIFIED ITEMS- SHOULD ANY UNIDENTIFIED ELEMENT BE ENCOUNTERED DURING DEMOLITION, CONTRACTOR SHALL NOT PROCEED UNTIL OWNER HAS BEEN NOTIFIED AND DIRECTION HAS BEEN GIVEN BY THE ARCHITECT.
15. CONTRACTOR SHALL PROVIDE SAFE ACCESS TO AREAS WITHIN SCOPE OF WORK DURING CONSTRUCTION.
16. SURFACE PREPARATION- CLEAN ALL DIRT, GREASE, OIL, ETC. FROM EXISTING CONCRETE FLOORS, WALLS AND COLUMNS.
17. CEILINGS- COMPLETELY REMOVE EXISTING CEILINGS. EMERGENCY AND EGRESS LIGHTING TO REMAIN. ALL SPRINKLER SYSTEMS TO REMAIN.
18. FLOOR OPENINGS- PROVIDE TEMPORARY SAFETY GUARDRAIL/ CONSTRUCTION BARRIER AT ALL FLOOR OPENINGS GREATER THAN 4" IN DIAMETER.

DEMOLITION KEYNOTES ROOF

1. REFER TO STRUCTURAL DRAWINGS FOR EXTENT OF ROOF FRAMING TO REMAIN. PROTECT ROOFING WHERE WXISTING STRUCTURE IS TO REMAIN.
2. REMOVE HVAC EQUIPMENT IN ITS ENTIRETY- CAP DUCTWORK AT UNDERSIDE OF ROOF DECK. PROVIDE TEMPORARY GUARDRAIL AT OPENING./
3. CELL PHONE REPEATER TOWER AND CABLING TO BE COORDINATED WITH OWNER AND CONTRACTOR WHERE EQUIPMENT IS SCHEDULED TO REMAIN OR REMOVED PRIOR TO ANY WORK COMMENCING.

DEMOLITION LEGEND

- EXISTING WALL TO BE DEMOLISHED
- EXISTING WALL TO REMAIN
- HATCH PATTERN INDICATES DEMOLITION UNDER SEPARATE PERMIT P.T.S. 301084

CONSULTANTS

STAMP

LICENSED ARCHITECT
LINCOLN J. ESCOTO
C-22219
RENEWAL 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

ROOF OVERALL DEMOLITION PLAN

A-103D-TI

5/22/2013 9:52:59 AM

GENERAL SITE NOTES:

1. AT ENTRANCE TO PARKING FACILITIES, OR VISIBLE FROM EACH STALL OR SPACE. A SIGN SHALL CLEARLY AND CONSPICUOUSLY STATES THE FOLLOWING:

   "Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or license plates issued for persons with disabilities may be towed reclaimed at _____or by away at owner's expense. Towed vehicles may be telephoning_____."

   BLANK SPACES ARE TO BE FILLED IN WITH APPROPRIATE INFORMATION AS A PERMANENT PART OF THE SIGN (2010 CBC CHAPTER 11).

2. PROVIDE A SIGN DISPLAYING INTERNATIONAL SYMBOL OF ACCESSIBILITY ON OR ADJACENT TO BUILDING ENTRANCES (2010 CBC SECTION 1127B.3).

3. WALKWAYS AND SIDEWALKS ALONG ACCESSIBLE ROUTES OF TRAVEL ARE:
   A. CONTINUOUSLY ACCESSIBLE
   B. HAVE MAXIMUM 1/2" CHANGES IN ELEVATION
   C. MINIMUM 48" IN WIDTH, AND
   D. WHERE NECESSARY TO CHANGES ELEVATION AT A SLOPE EXCEEDING 5% (i.e., 1:200 SHALL HAVE RAMPS COMPLYING WITH 2010 CBC CHAPTER 11).

4. WHERE THE ACCESSIBLE ROUTE OF TRAVEL CROSSES ONTO A VEHICULAR ROUTE OF TRAVEL USING A CURB RAMP THAT IS LESS THAN A 1:15 SLOPE, SPECIFY A 36" WIDE CONTINUOUS DETECTABLE WARNINGS WHERE THE PEDESTRIAN PATH CROSSES OR ADJOINS A VEHICULAR WAY SUCH AS A DRIVEWAY TO WARN OF POTENTIAL HAZARDS. (2010 CHAPTER 11)

5. ALL ENTRANCES AND ALL EXTERIOR GROUND FLOOR EXIT DOORS TO BUILDINGS AND FACILITIES SHALL BE MADE ACCESSIBLE TO PERSONS WITH DISABILITIES.

PARKING TABULATION:

MINIMUM PARKING TO BE PROVIDED PER P.LD. 86-0967	419 SPACES
MINIMUM PARKING TO BE PROVIDED PER P.LD. AMENDMENT 87-1049	502 SPACES
MINIMUM PARKING TO BE PROVIDED PER SCR 960005151	365 SPACES
EXISTING PARKING SURFACE PARKING PROVIDED	287 SPACES
EXISTING GARAGE PARKING PROVIDED	79 SPACES
EXISTING ON SITE PARKING PROVIDED	365 SPACES
PARKING RATIO PER 1,000 S.F.	2.7/1000

EXISTING PARKING CALCULATIONS:

BASED ON SHARED PERKING AGREEMENT PTS # 264785

SITE	GROSS AREA (SF)	REQUIRED PARKING	PROVIDED PARKING
4755	45,000	112.5	102
4757	69,000	172.5	109
4767	64,000	160	234
		445	445

(5) ADA STALLS PROVIDED BASED ON 109 PARKING STALLS AT PARCEL 4757

PARCEL 4

PARCEL MAP NO. 16265

ACCESSIBLE PATH TO PUBLIC WAY

ACCESSIBLE EXIT

EXISTING ADA PARKING SEE 1/A-002-TI

ADA PATH OF TRAVEL

FOR CONTINUATION OF ACCESSIBLE PATH REFER TO SHEET A-011-TI

EQUIPMENT YARD AND HAZ MAT YARD UNDER A SEPERATE PERMIT, PTS# 305716

ACCESSIBLE EXIT

PARCEL 2

PARCEL MAP 17892

SITE PLAN FOR REFERENCE ONLY, NO EXTERIOR WORK UNDER THIS PERMIT. REFER TO PTS# 305716 FOR BUILDING SHELL AND SITE IMPROVEMENTS. SHELL CONDITIONING IS INCLUDED IN THIS SCOPE OF WORK AND REFERENCES THE BUILDING SHELL

PLAN NORTH

CONSULTANTS

STAMP

LICENSED ARCHITECT — JAMES J. ESCHEN — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

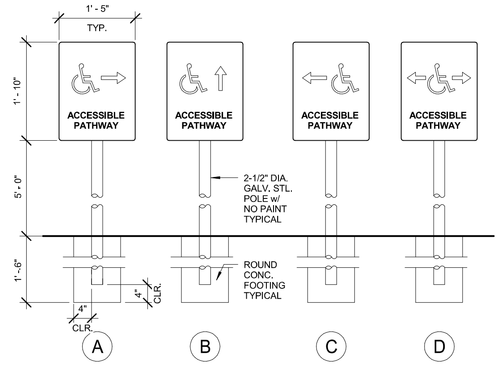
OVERALL SITE PLAN (FOR REFERENCE)

A-001-TI

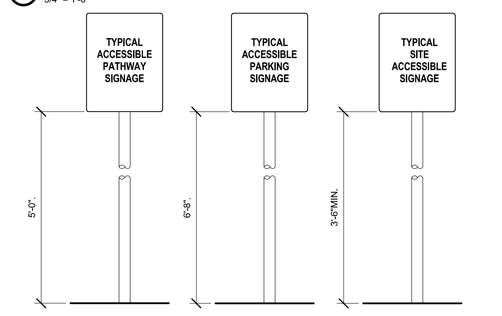
5/23/2013 9:49:42 AM

ACCESSIBLE ROUTE NOTES:

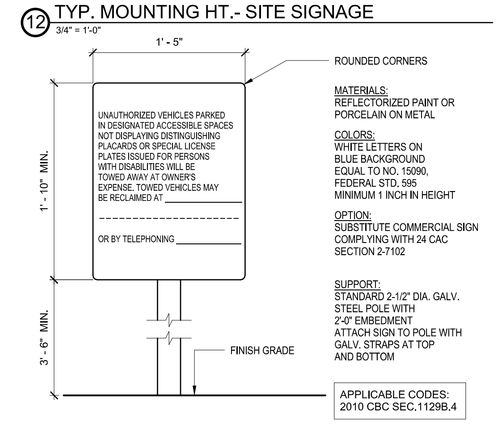
1. INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) SIGNAGE SHALL COMPLY WITH CBC SECTION 1117 B.5
2. ACCESSIBLE PARKING SPACE SIGNAGE SHALL COMPLY WITH CBC SECTION 1129 B.5
3. DETECTABLE WARNINGS SHALL COMPLY WITH CBC SECTION 1127 B.5
4. CONFIRM MAX. SLOPE IS 5% IN PATH OF TRAVEL AND MAX. CROSS SLOPE IS 2% ALONG ACCESS ROUTE.



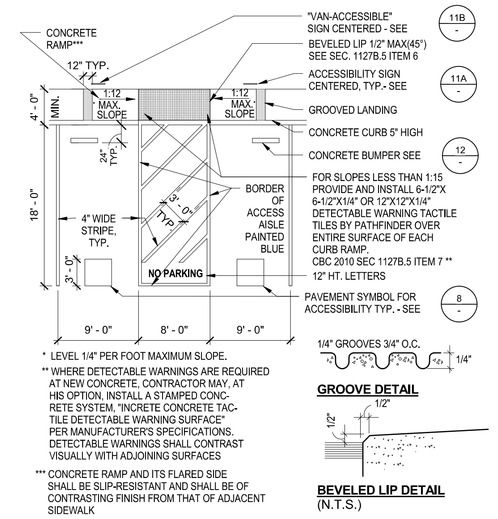
11 ACCESSIBLE PATH SIGN
3/4" = 1'-0"



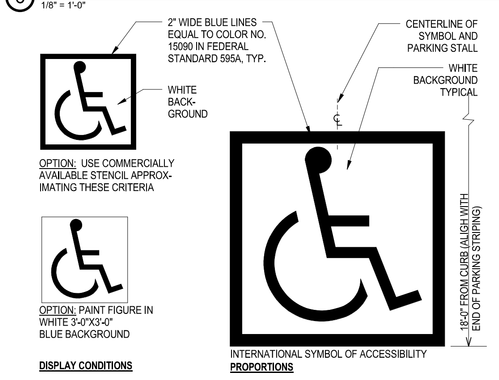
12 TYP. MOUNTING HT.- SITE SIGNAGE
3/4" = 1'-0"



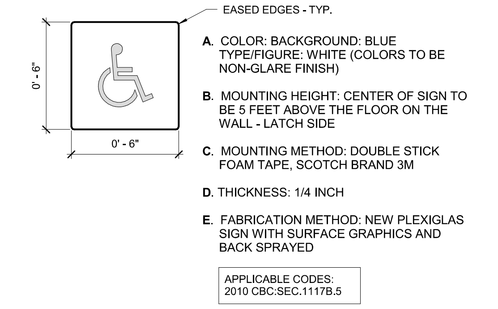
13 SITE ACCESSIBLE SIGN
1 1/2" = 1'-0"



6 ACCESSIBILITY PARKING STALLS - VAN
1/8" = 1'-0"



7 PAVEMENT SYMBOL FOR ACCESSIBILITY
1" = 1'-0"



A. COLOR: BACKGROUND: BLUE TYPE/FIGURE: WHITE (COLORS TO BE NON-GLARE FINISH)

B. MOUNTING HEIGHT: CENTER OF SIGN TO BE 5 FEET ABOVE THE FLOOR ON THE WALL - LATCH SIDE

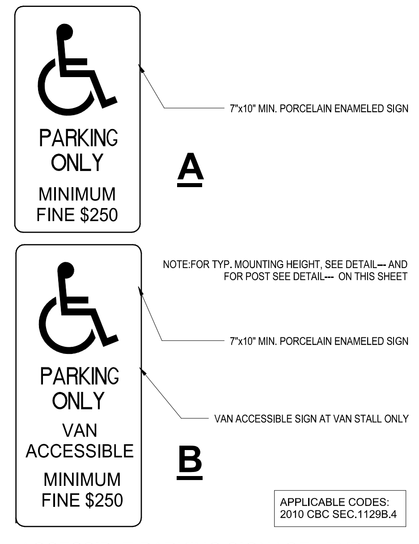
C. MOUNTING METHOD: DOUBLE STICK FOAM TAPE, SCOTCH BRAND 3M

D. THICKNESS: 1/4 INCH

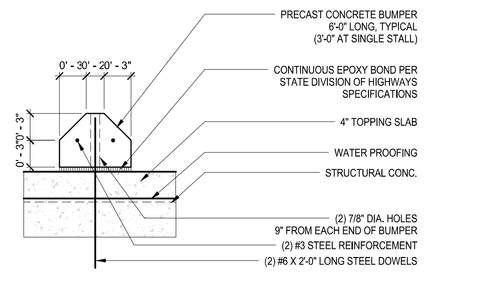
E. FABRICATION METHOD: NEW PLEXIGLAS SIGN WITH SURFACE GRAPHICS AND BACK SPRAYED

APPLICABLE CODES: 2010 CBC.SEC.1117B.5

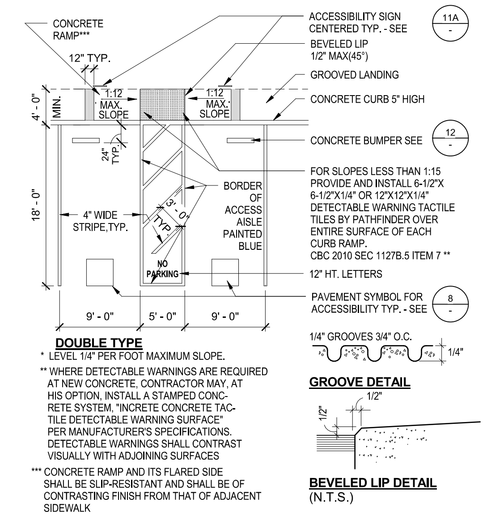
8 BUILDING ACCESSIBLE SIGN
3" = 1'-0"



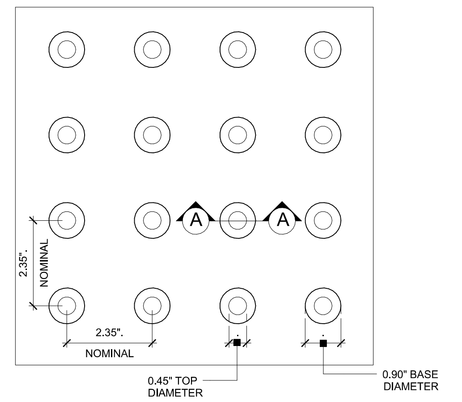
9 ACCESSIBLE PARKING SIGNAGE - TYP.
3" = 1'-0"



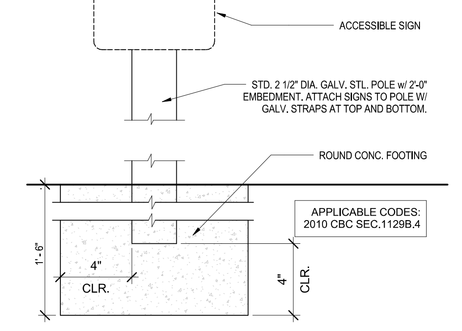
10 PRECAST CONCRETE BUMPER
1 1/2" = 1'-0"



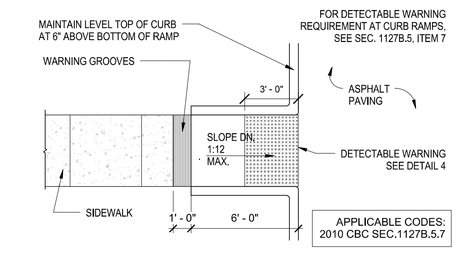
1 ACCESSIBILITY PARKING STALLS
1/8" = 1'-0"



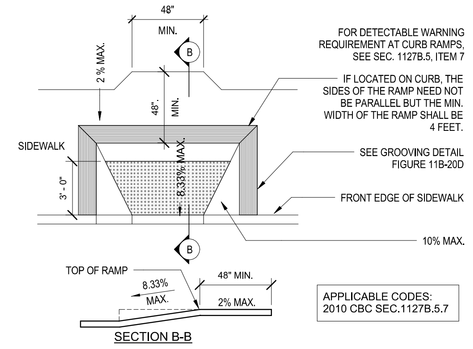
2 DETECTABLE WARNING SURFACE
6" = 1'-0"



3 TYPICAL ACCESSIBLE SIGNAGE POST
3" = 1'-0"



4 CURB RAMP AT SIDEWALK - PLAN
1/4" = 1'-0"



5 CURB RAMP AT SIDEWALK
1/4" = 1'-0"

CONSULTANTS

STAMP

LICENSED ARCHITECT — JAMES J. ESCHEN — No. 22278 — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

SITE DETAILS

A-002-TI

5/23/2013 9:49:51 AM

1. LOCATIONS & CLASSIFICATIONS OF EXISTING EXTINGUISHERS SHALL BE IN ACCORDANCE WITH CFC 906 & CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 19.

2. DURING CONSTRUCTION, AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED ON EACH FLOOR LEVEL AT EACH STAIRWAY, IN ALL STORAGE & CONSTRUCTION SHEDS, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, & WHERE OTHER SPECIAL HAZARDS ARE PRESENT PER CFC 1415.1.

3. IN BUILDINGS FOUR OR MORE STORIES IN HEIGHT, STANDPIPES SHALL BE PROVIDED DURING CONSTRUCTION WHEN THE HEIGHT REACHES 40 FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT ACCESS. A FIRE DEPARTMENT CONNECTION SHALL BE NO MORE THAN 100 FEET FROM AVAILABLE FIRE DEPARTMENT VEHICLE ACCESS ROADWAYS. CFC 1410, 1413.

4. BUILDINGS UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION SHALL CONFORM TO CFC CHAPTER 14. WELDING, CUTTING, AND OTHER HOT WORK SHALL BE IN CONFROMANCE WITH CFC CHAPTER 26.

5. ADDRESS IDENTIFICATION SHALL BE PROVIDED FOR ALL NEW AND EXISTING BUILDINGS IN A LOCATION THAT IS PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. WHERE ACCESS IS BY WAY OF A PRIVATE ROAD AND THE BUILDING ADDRESS CANNOT BE VIEWED FROM THE PUBLIC WAY, AN APPROVED SIGN OR MEANS SHALL BE USED TO IDENTIFY THE STRUCTURE. PREMISES IDENTIFICATION SHALL CONFORM TO SECTION 96.0209 OF THE SAN DIEGO MUNICIPAL CODE AND CBC 501.2.

6. WALL, FLOOR AND CEILING FINISHES AND MATERIALS SHALL NOT EXCEED THE INTERIOR FINISH CLASSIFIATIONS IN CBC TABLE 803.3 AND SHALL MEET THE FLAME PROPAGATION PERFORMANCE CRITERIA OF THE CALIFORNIA CODE OF REGULATIONS, TITLE 19, DIVISION 1. DECORATIVE MATERIALS SHALL BE PROPERLY TREATED BY A PRODUCT OR PROCESS APPROVED THE THE STATE FIRE MARSHAL WITH APPROPRIATE DOCUMENTATION PROVIDED TO THE CITY OF SAN DIEGO.

7. DUMPSTERS AND TRASH CONTAINERS EXCEEDING 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS, OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AN APPROVED SPRINKLER SYSTEM OR LOCATED IN A TYPE I OR IIA STRUCTURE SEPARATED BY 10 FEET FROM OTHER STRUCTURES. CONTAINERS LARGER THAN 1 CUBIC YARD SHALL BE OF NON- OR LIMITED-COMBUSTIBLE MATERIALS OR SIMILARLY PROTECTED OR SEPARATED. CFC 304.3.

8. EXITS, EXIT SIGNS, FIRE ALARM PANELS, HOSE CABINETS, FIRE EXTINGUISHER LOCATIONS, AND STANDPIPE CONNECTIONS SHALL NOT BE CONCEALED BY CURTAINS, MIRRORS, OR OTHER DECORATIVE MATERIAL.

9. OPEN FLAMES, FIRE AND BURNING ON ALL PREMISES IS PROHIBITED EXCEPT AS SPECIFICALLY PERMITTED BY THE CITY OF SAN DIEGO AND CFC 308.

10. THE EGRESS PATH SHALL REMAIN FREE AND CLEAR OF ALL OBSTRUCTIONS AT ALL TIMES. NO STORAGE IS PREMITTED IN ANY EGRESS PATHS.

11. COMPLETE PLANS AND SPECIFICATIONS FOR ALL FIRE EXTINGUISHING SYSTEMS, INCLUDING AUTOMATIC SPRINKLER AND STANDPIPE SYSTEMS AND OTHER SPECIAL FIRE EXTINGUISHING SYSTEMS AND RELATED APPURTENANCES SHALL BE SUBMITTED TO THE CITY OF SAN DIEGO FOR REVIEW AND APPROVAL PRIOR TO INSTALLATIONS. CFC 901.2.

12. FIRE SPRINKLER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH CBC 903.3.

13. ALL VALVES CONTROLLING THE WATER SUPPLY FOR AUTOMATIC SPRINKLER SYSTEMS AND WATERFLOW SWITCHES ON ALL SPRINKLER SYTESM SHALL BE ELECTRONICALLY MONITORED WHERE THE NUMBER OF SPRINKLERS SERVED IS 20 OR MORE. CBC 903.4.

14. AN AUTOMATIC EXTINGUISHING SYSTEM SHALL BE PROVIDED TO PROTECT COMMERCIAL-TYPE FOOD HEATING EQUIPMENT THAT PRODUCES GREASE-LADEN VAPORS AND SHALL COMPLY WITH 2010 CFC, CMC AND 2002 NFPA 17A. REVIEW AND APPROVAL OF A HOOD AND DUCT EXTINGUISHING SYSTEM PLAN IS REQUIRED PRIOR TO INSTALLATION OR USE OF COOKING EQUIPMENT.

15. COMPLETE PLANS AND SPECIFICATIONS FOR FIRE ALARM SYSTEMS SHALL BE SUBMITTED TO THE CITY OF SAN DIEGO DEVELOPMENT SERVICES FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. CFC 907.1.1

16. FIRE ALARM SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH CBC 907.6

17. AUTOMATIC FIRE SPRINKLER SYSTEM(S) AND ALL CONTROL VALVES, WITH THE EXCEPTION OF THOSE LISTED IN CBC 903.4 SHALL BE MONITORED BY A UL LISTED CENTRAL ALARM STATION.

GENERAL NOTES - EXITING PLAN

1. SITE PLAN (SHEET A-001-TI FOR REFERENCE ONLY) INDICATES THE ACCESSIBLE ROUTE OF TRAVEL.

2. WHERE UL, GA, OR IBC CONSTRUCTION ASSEMBLIES ARE DESIGNATED, THE COMPONENTS AND INSTALLATION DETAILS MUST CONFORM IN EVERY PARTICULAR WAY WITH THE DESIGN NUMBER SPECIFIED.

3. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED FIRE-RATED EXIT DOOR ASSEMBLIES AND FIRE EXTINGUISHERS AT 75'-0" MINIMUM DISTANCE. LOCATIONS OF FIRE EXTINGUISHER CABINETS AS SHOWN ON PLANS.

4. PROVIDE MINIMUM 18" STRIKE SIDE CLEARANCE AT SWING SIDE OF ALL INTERIOR DOORS AND MINIMUM 12" AT PUSH SIDE (ON DOORS WITH CLOSERS) FOR HANDICAPPED ACCESSIBILITY. PROVIDE MINIMUM 24" STRIKE SIDE CLEARANCE AT ALL EXTERIOR DOORS FOR HANDICAPPED ACCESSIBILITY.

5. EVERY EXIT DOORWAY SHALL HAVE 32" CLEAR OPENING WHEN DOOR IS OPEN 90 DEGREES.

6. EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY KNOWLEDGE OR EFFORT.

7. THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2" LOWER THAN THE THRESHOLD OF ANY DOORWAY.

8. FOR UL NUMBERS OF FIRE RATED WALLS, SEE SHEET A-611/A-612

9. PROVIDE INTERNATIONAL ACCESSIBILITY SYMBOL AT ALL ACCESSIBLE ENTRANCES PER SECTION 1117.5.8.1. THE SIGNS SHALL COMPLY WITH CBC SECTIONS 117B.5.8.1.1.

10. AT EVERY PRIMARY ENTRANCE AND AT EVERY MAJOR JUNCTION ALONG OR LEADING TO AN ACCESSIBLE ROUTE OF TRAVEL, THERE SHALL BE A SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILTY. SIGNS SHALL INDICATE THE DIRECTION TO ACCESSIBLE BUILDING ENTRANCES AND FACILITES AND SHALL COMPLY WITH CBC 1117B.5 - 1117B.5.9.

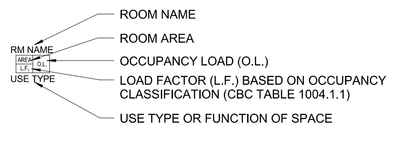
11. WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACE, SIGNS SHALL BE INSTALLED ON THE WALL ADJACNET TO THE LATCH OUTSIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING SOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY THE RIGHT SIDE.

12.TACTILE STAIR LEVEL IDENTIFICATION SIGNS THAT COMPLY WITH 1117B.5-1 SHALL BE LOCATED AT EACH FLOOR LEVEL LANDING IN ALL ECNLOSED STAIRWAYS IN BUILDING WITH TWO OR MORE STORIES IN HEIGHT TO IDENTIFY THE FLOOR LEVEL. AT EXIT DISCHARGE LEVEL, THE SIGN SHALL INCLUDLE A RAISED FIVE POINTED STAR LOCATED TO THE LEFT OF THE IDENTIFIYING LEVEL. THE OUTSIDE DIAMETER OF THE STAR SHALL BE THE SAME AS THE HEIGHT OF THE RAISED CHARACTER.

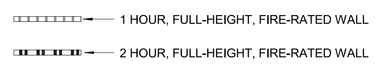
13. EACH DOOR PROVIDING ACCESS TO AN AREA OF REFUGE FROM AN ADJACENT FLOOR AREA SHALL BE IDENTIFIED BY A SIGN OF ACCESSIBILTY COMPLYING WITH SECTION 1117B.5.1, ITEM 2 STATING: AREA OF REFUGE, AND INCLUDING THE INTERNATIONAL SYMBOL OF ACCESSIBILTY. WHERE EXIT SIGN ILLUMINATION IS REQUIRED BY SECTION 1011.2, THE AREA OF REFUGE SHALL BE ILLUMINATED. ADDITONALLY TACTILE SIGNAGE COMPLYING WITH SECTION 1117B.5.1, ITEM 1 SHALL BE LOCATED AT EACH DOOR TO AN AREA OF REFUGE.

14. EMERGENCY WARING SYSTEMS SHALL ACTIVATE A MEANS OF WARNING FOR THE HEARING IMPAIRED COMPYING WTH NFPA 72 AS AMENDED INI CHAPTER 35 OF THE CBC.

CODE COMPLIANCE PLAN LEGEND



FIRE RESISTIVE AREA LEGEND



TACTILE EXIT SIGNAGE

T-ER	"EXIT ROUTE"	T-ER
T-EX	"EXIT"	T-EX
T-TE	"TO EXIT"	T-TE
T-ED	"EXIT STAIR DOWN"	T-ED
T-EU	"EXIT STAIR UP"	T-EU

NOTE:

- WHEN SPECIAL EGRESS CONTROL DEVICES ARE USED THERE SHALL BE PROVIDED A TACTILE SIGN IN BRAILLE AND RAISED CHARACTERS LOCATED WITHIN 12 INCHES OF PANIC BAR OR OTHER DOOR LATCHING HARDWAR STATING: " KEEP PUSHING. THIS DOOR WILL OPEN IN 15 SECONDS, ALARM WILL SOUND.
- FOR ASSEMBLY AREAS IN A OCCUPANCIES A SIGN SHALL BE POSTED IN A PERMANENT LOCATION INDICATING AVAILABILITY OF ASSISTIVE LISTENING DEVICES. THIS SIGN SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESS FOR HEARING IMPAIRED AND WORDING THAT STATES " ASSISTIVE LISTENING SYSTEM AVAILABLE".
- ALL BRAILLE SIGNS SHALL CONFORM TO CBC SECTION 1011.3, MOUNT SIGNS AT +60" AFF

GENERAL NOTES - CODE COMPLIANCE PLANS

1. ALL REQUIRED SITE ACCESSIBLE ROUTES OF TRAVEL FROM DISABLED PARKING STALLS & ADJACENT PUBLIC SIDEWALKS ARE CONSIDERED IN FULL COMPLIANCE AS COMPLETED UNDER PREVIOUS PERMITS FOR THIS BUILDING.

2. WHERE UL, GA, OR CBC CONSTRUCTION ASSEMBLIES SECT. 703 ARE DESIGNATED, THE COMPONENTS AND INSTALLATION DETAILS MUST CONFORM IN EVERY PARTICULAR WAY WITH THE DESIGN NUMBER SPECIFIED.

3. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DRY CHEMICAL UL RATED 3A:40B-C FIRE EXTINGUISHERS & CABINETS AT OFFICE AREAS & CORRIDORS; 4A-60B:C FIRE EXTINGUISHERS & CABINETS AT LABORATORY AREAS. SEE THIS SHEET FOR PROPOSED LOCATIONS OF FIRE EXTINGUISHER CABINETS.FINAL NUMBER, TYPE & EXACT LOCATION TO BE BY FIELD INSPECTOR.

4. PROVIDE ALL REQUIRED FIRE ALARMS, EMERGENCY LIGHTING AND EXIT SIGNAGE PER ELECTRICAL DRAWINGS.

5. THE INTERIOR ACCESSIBLE ROUTES OF TRAVEL CONNECT ALL PUBLIC SPACES, TOILET & BREAK ROOM FACILITIES. SEE ACCESSIBLE ROUTES OF TRAVEL, CODE AND EXITING INFORMATION THIS SHEET.

6. PROVIDE MINIMUM 18" STRIKE SIDE CLEARANCE AT SWING SIDE OF ALL INTERIOR DOORS, AND MUNIMUM 12" AT PUSH SIDE (ON DOORS WITH CLOSERS) FOR HANDICAPPED ACCESSIBILITY. PROVIDE MINIMUM 24" STRIKE SIDE CLEARANCE AT ALL EXTERIOR DOORS FOR HANDICAPPED ACCESSIBILITY.

7. REFERENCE STRUCTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

8. PROVIDE 5% MIN. OF TOTAL EMPLOYEE WORKSURFACES TO BE BETWEEN 28" AND 34" A.F.F. PER CBC 1122B.4.

9. ALL EXTERIOR PATHS OF TRAVEL ARE ACCESSIBLE.

10. ALL FLOOR AND LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY RUN SHALL HAVE A MAXIMUM SLOPE OF 1/4" OR 2% (CBC 1009.5)

11. ALL TREADS SHALL BE SLIP RESISTANT, WEATHER EXPOSED STAIRS AND THEIR APPROACH SHALL BE DESIGNED SO THAT WATER WILL NOT ACCUMULATE ON THE WALKING SURFACE. TREADS SHALL HAVE SMOOTH, ROUNDED OR CHAMFERED EXPOSED EDES WITH NO ABRUPT EDGES AT THE NOSING.

12. ADJACENT TO THE LATCH OUTSIDE THE SANITARY FACILITIES DOOR, PROVIDE RAISED LETTERS AND BRAILLE CONFORMING WITH CBC SECTION 1117B.5.6. IF THERE IS NO WALL SPACE ON THE LATCH SIDE, SIGNS SHALL BE ON THE NEAREST ADJACENT WALL, PREFEREABLY ON THE RIGHT. THE CENTER OF THE SIGN SHALL BE 60 INCHES HIGH, MOUNTED SO A PERSON MAY APPROACH WITHIN 3 INCHES WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR DOOR SWING.

13. WATER CLOSETS COMPARTMENTS IN A MULITPLE ACCOMODATION TOILET FACILITY SHALL BE EQUIPPED AN AUTOMATIC CLOING DOOR. WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGRESS FROM ITS CLOSED POSITION. PROVIDE A CLEAR, UNOBSTRUCTED OPENING WIDTH OF 32 INCHES WHEN AT THE END, AND 34 INCHES WHEN AT THE SIDE.

14. MANUVERING SPACE AT THE COMPARTMENT DOOR SHALL COMPLY WITH SECTIONS 1133B2.4.2 & 1133B2.4.3. THE LEVEL AREA SHALL BE 60 INCHES IN DIRECTION OF DOOR SWING AND 48 INCHES ON OPPPOSITE SIDE OF DOOR CLOSED. COMPARTMENT DOOR IN A MULTIPLE ACCOMODATION TOILET FACILITY, THE STRIKE EDGE CLEARANCE OF 18" REQUIRED.

15. THE INSIDE AND OUTSIDE OF THE COMPARTMENT DOOR OF MULITPLE ACCOMMODATION TOILET FACILITY SHALL BE EQUIPPED WITH A LOOP OT U SHAPED HANDLE IMMEDIATELY BELOW THE LATCH. THE LATCH SHALL BE FLIP OVER STYLE, SLIDING OR OTHER HARDWARE NOT REQUIRING THE USER TO GRASP OR TWIST.

16. EXCEPT FOR DOOR OPENING WIDTHS AND DOOR SWINGS, A CLEAR, UNOBSTRUCTED ACCESS OF 44 INCHES SHALL BE PROVIDED TO A WATER CLOSET COMPARTMENT IN A MULTIPLE ACCOMMODATION TOILET FACILITY. THE SPACE IMMEDIATELY IN FRONT OF A WATER CLOSET COMPARTMENT SHALL BE NOT LESS THAN 48" MEASURED AT A RIGHT ANGLE TO THE COMPARTMENT DOOR IN THE CLOSED POSITION.

17. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURACES UNDER LAVATORIES.

18. CONTROLS FOR WATER CLOSET FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS. WATER CLOSET AND URINAL FLUSH VALVE CONTROLS, AND FAUCET AND OPERATING MECHANISM CONTROLS SHALL BE OPERABLE WITH ONE HAND, SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST AND SHALL BE MOUTNED NO MORE THAN 44 INCHES ABOVE THE FLOOR.

19. THE FORCE REQUIRED TO ACTIVATE WATER CLOSET AND URINAL FLUSH VALVE CONTROLS, AND FAUCET AND OPERATING MECHANISM CONTROLS SHALL BE NO GRATER THAN 5LBF.

20. SELF CLOSING FAUCET CONTROL VALVES ARE ALLOWED IF THE FAUCETS REMAINS OPEN FOR AT LEAST 10 SECONDS.

21. TOILET ROOM FLOORS SHALL HAVE A SMOOTH, HARD, NON ABSORBANT SURFACE OF CONCRETE, CERAMIC TILE OR OTHER APPROVED MATERIAL EXTENDING UP THE WALLS AT LEAST 5 INCHES. WALLS OF WATER CLOSET COMPARTMENTS AND WITHIN 24 INCHES OF THE FRONT AND SIDES OF URINALS SHALL BE SIMILARLY FINISHED TO A HEIGHT OF 48 INCHES. EXCEPT FOR STRUCTURAL ELEMENTS, MATERIALS USED IN SUCH WALLS SHALL NOT BE ADVERSLY AFFECTED BY MOISTURE.

STAIR 1	
WIDTH CALC. (SEC. 1005.1)	
STAIR (0.3")	REQ: 61 x0.3 = 18.3"
	PROVIDED: 53"
ALL OTHERS (0.2")	REQ: 61 x0.2 = 12.2"
	PROVIDED: 36"

ENTRY DOOR	
WIDTH CALC. (SEC. 1005.1)	
STAIR (0.3")	REQ: 194x0.3 = N/A
	PROVIDED: N/A
ALL OTHERS (0.2")	REQ: 194x0.2 = 39"
	PROVIDED: 72"

STAIR 3	
WIDTH CALC. (SEC. 1005.1)	
STAIR (0.3")	REQ: 99 x0.3 = 29.7"
	PROVIDED: 53"
ALL OTHERS (0.2")	REQ: 99 x0.2 = 19.8"
	PROVIDED: 36"

CONSULTANTS

STAMP

LICENSED ARCHITECT — MARK J. ESCHER — 17224 — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

FIRST LEVEL CODE COMPLIANCE PLAN & EXITING PLAN

A-011-TI

1ST LEVEL FLOOR PLAN OCCUPANCY & EGRESS

1/8" = 1'-0"

PLAN NORTH

5/22/2013 9:50:10 AM

1. LOCATIONS & CLASSIFICATIONS OF EXISTING EXTINGUISHERS SHALL BE IN ACCORDANCE WITH CFC 906 & CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 19.

2. DURING CONSTRUCTION, AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED ON EACH FLOOR LEVEL AT EACH STAIRWAY, IN ALL STORAGE & CONSTRUCTION SHEDS, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, & WHERE OTHER SPECIAL HAZARDS ARE PRESENT PER CFC 1415.1.

3. IN BUILDINGS FOUR OR MORE STORIES IN HEIGHT, STANDPIPES SHALL BE PROVIDED DURING CONSTRUCTION WHEN THE HEIGHT REACHES 40 FEET ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT ACCESS. A FIRE DEPARTMENT CONNCETION SHALL BE NO MORE THAN 100 FEET FROM AVAILABLE FIRE DEPARTMENT VEHICLE ACCESS ROADWAYS. CFC 1410, 1413.

4. BUILDINGS UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION SHALL CONFORM TO CFC CHAPTER 14, WELDING, CUTTING, AND OTHER HOT WORK SHALL BE IN CONFROMANCE WITH CFC CHAPTER 26.

5. ADDRESS IDENTIFICATION SHALL BE PROVIDED FOR ALL NEW AND EXISTING BUILDINGS IN A LOCATION THAT IS PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. WHERE ACCESS IS BY WAY OF A PRIVATE ROAD AND THE BUILDING ADDRESS CANNOT BE VIEWED FROM THE PUBLIC WAY, AN APPROVED SIGN OR MEANS SHALL BE USED TO IDENTIFY THE STRUCTURE. PREMISES IDENTIFICATION SHALL CONFORM TO SECTION 96.0209 OF THE SAN DIEGO MUNICIPAL CODE AND CBC 501.2.

6. WALL, FLOOR AND CEILING FINISHES AND MATERIALS SHALL NOT EXCEED THE INTERIOR FINISH CLASSIFIATIONS IN CBC TABLE 803.3 AND SHALL MEET THE FLAME PROPAGATION PERFORMANCE CRITERIA OF THE CALIFORNIA CODE OF REGULATIONS, TITLE 19, DIVISION 1. DECORATIVE MATERIALS SHALL BE PROPERLY TREATED BY A PRODUCT OR PROCESS APPROVED THE THE STATE FIRE MARSHAL WITH APPROPRIATE DOCUMENTATION PROVIDED TO THE CITY OF SAN DIEGO.

7. DUMPSTERS AND TRASH CONTAINERS EXCEEDING 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS, OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AN APPROVED SPRINKLER SYSTEM OR LOCATED IN A TYPE I OR IIA STRUCTURE SEPARATED BY 10 FEET FROM OTHER STRUCTURES. CONTAINERS LARGER THAN 1 CUBIC YARD SHALL BE OF NON- OR LIMITED-COMBUSTIBLE MATERIALS OR SIMILARLY PROTECTED OR SEPARATED. CFC 304.3.

8. EXITS, EXIT SIGNS, FIRE ALARM PANELS, HOSE CABINETS, FIRE EXTINGUISHER LOCATIONS, AND STANDPIPE CONNECTIONS SHALL NOT BE CONCEALED BY CURTAINS, MIRRORS, OR OTHER DECORATIVE MATERIAL.

9. OPEN FLAMES, FIRE AND BURNING ON ALL PREMISES IS PROHIBITED EXCEPT AS SPECIFICALLY PERMITTED BY THE CITY OF SAN DIEGO AND CFC 308.

10. THE EGRESS PATH SHALL REMAIN FREE AND CLEAR OF ALL OBSTRUCTIONS AT ALL TIMES. NO STORAGE IS PREMITTED IN ANY EGRESS PATHS.

11. COMPLETE PLANS AND SPECIFICATIONS FOR ALL FIRE EXTINGUISHING SYSTEMS, INCLUDING AUTOMATIC SPRINKLER AND STANDPIPE SYSTEMS AND OTHER SPECIAL FIRE EXTINGUISHING SYSTEMS AND RELATED APPURTENANCES SHALL BE SUBMITTED TO THE CITY OF SAN DIEGO FOR REVIEW AND APPROVAL PRIOR TO INSTALLATIONS. CFC 901.2.

12. FIRE SPRINKLER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH CBC 903.3.

13. ALL VALVES CONTROLLING THE WATER SUPPLY FOR AUTOMATIC SPRINKLER SYSTEMS AND WATERFLOW SWITCHES ON ALL SPRINKLER SYTESM SHALL BE ELECTRONICALLY MONITORED WHERE THE NUMBER OF SPRINKLERS SERVED IS 20 OR MORE. CBC 903.4.

14. AN AUTOMATIC EXTINGUISHING SYSTEM SHALL BE PROVIDED TO PROTECT COMMERCIAL-TYPE FOOD HEATING EQUIPMENT THAT PRODUCES GREASE-LADEN VAPORS AND SHALL COMPLY WITH 2010 CFC, CMC AND 2002 NFPA 17A. REVIEW AND APPROVAL OF A HOOD AND DUCT EXTINGUISHING SYSTEM PLAN IS REQUIRED PRIOR TO INSTALLATION OR USE OF COOKING EQUIPMENT.

15. COMPLETE PLANS AND SPECIFICATIONS FOR FIRE ALARM SYSTEMS SHALL BE SUBMITTED TO THE CITY OF SAN DIEGO DEVELOPMENT SERVICES FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. CFC 907.1.1

16. FIRE ALARM SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH CBC 907.6

17. AUTOMATIC FIRE SPRINKLER SYSTEM(S) AND ALL CONTROL VALVES, WITH THE EXCEPTION OF THOSE LISTED IN CBC 903.4 SHALL BE MONITORED BY A UL LISTED CENTRAL ALARM STATION.

GENERAL NOTES - EXITING PLAN

1. SITE PLAN (SHEET A-001-TI FOR REFERENCE ONLY) INDICATES THE ACCESSIBLE ROUTE OF TRAVEL.

2. WHERE UL, GA, OR IBC CONSTRUCTION ASSEMBLIES ARE DESIGNATED, THE COMPONENTS AND INSTALLATION DETAILS MUST CONFORM IN EVERY PARTICULAR WAY WITH THE DESIGN NUMBER SPECIFIED.

3. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED FIRE-RATED EXIT DOOR ASSEMBLIES AND FIRE EXTINGUISHERS AT 75'-0" MINIMUM DISTANCE. LOCATIONS OF FIRE EXTINGUISHER CABINETS AS SHOWN ON PLANS.

4. PROVIDE MINIMUM 18" STRIKE SIDE CLEARANCE AT SWING SIDE OF ALL INTERIOR DOORS AND MINIMUM 12" AT PUSH SIDE (ON DOORS WITH CLOSERS) FOR HANDICAPPED ACCESSIBILITY. PROVIDE MINIMUM 24" STRIKE SIDE CLEARANCE AT ALL EXTERIOR DOORS FOR HANDICAPPED ACCESSIBILITY.

5. EVERY EXIT DOORWAY SHALL HAVE 32" CLEAR OPENING WHEN DOOR IS OPEN 90 DEGREES.

6. EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY KNOWLEDGE OR EFFORT.

7. THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2" LOWER THAN THE THRESHOLD OF ANY DOORWAY.

8. FOR UL NUMBERS OF FIRE RATED WALLS, SEE SHEET A-611/A-612

9. PROVIDE INTERNATIONAL ACCESSIBILITY SYMBOL AT ALL ACCESSIBLE ENTRANCES PER SECTION 1117.5,8.1. THE SIGNS SHALL COMPLY WITH CBC SECTIONS 117B.5,8.1,1.

10. AT EVERY PRIMARY ENTRANCE AND AT EVERY MAJOR JUNCTION ALONG OR LEADING TO AN ACCESSIBLE ROUTE OF TRAVEL, THERE SHALL BE A SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILTY. SIGNS SHALL INDICATE THE DIRECTION TO ACCESSIBLE BUILDING ENTRANCES AND FACILITES AND SHALL COMPLY WITH CBC 1117B.5 - 1117B.5.8.

11. WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACE, SIGNS SHALL BE INSTALLED ON THE WALL ADJACNET TO THE LATCH OUTSIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING SOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY THE RIGHT SIDE.

12.TACTILE STAIR LEVEL IDENTIFICATION SIGNS THAT COMPLY WITH 1117B.5-1 SHALL BE LOCATED AT EACH FLOOR LEVEL LANDING IN ALL ECNLOSED STAIRWAYS IN BUILDING WITH TWO OR MORE STORIES IN HEIGHT TO IDENTIGY THE FLOOR LEVEL AT EXIT DISCHARGE LEVEL, THE SIGN SHALL INCLUDE A RAISED FIVE POINTED STAR LOCATED TO THE LEFT OF THE IDENTIFYING LEVEL. THE OUTSIDE DIAMETER OF THE STAR SHALL BE THE SAME AS THE HEIGHT OF THE RAISED CHARACTER.

13. EACH DOOR PROVIDING ACCESS TO AN AREA OF REFUGE FROM AN ADJACENT FLOOR AREA SHALL BE IDENTIFIED BY A SIGN OF ACCESSIBLTY COMPLYING WITH SECTION 1117B.5,1, ITEM 2 STATING: AREA OF REFUGE, AND INCLUDING THE INTERNATIONAL SYMBOL OF ACCESSIBILTY. WHERE EXIT SIGN ILLUMINATION IS REQUIRED BY SECTION 1011.2, THE AREA OF REFUGE SHALL BE ILLUMINATED. ADDITONALLY TACTILE SIGNAGE COMPLYING WITH SECTION 1117B.5,1, ITEM 1 SHALL BE LOCATED AT EACH DOOR TO AN AREA OF REFUGE.

14. EMERGENCY WARING SYSTEMS SHALL ACTIVATE A MEANS OF WARNING FOR THE HEARING IMPAIRED COMPYING WTH NFPA 72 AS AMENDED INI CHAPTER 35 OF THE CBC.

CODE COMPLIANCE PLAN LEGEND

- ROOM NAME
- ROOM AREA
- OCCUPANCY LOAD (O.L.)
- LOAD FACTOR (L.F.) BASED ON OCCUPANCY CLASSIFICATION (CBC TABLE 1004.1.1)
- USE TYPE OR FUNCTION OF SPACE
- OCCUPANT LOAD AT EXIT
- DIRECTION OF TRAVEL
- EXIT SIGN
- F.E.C. — FIRE EXTINGUISHER CABINET (RECESSED)
- TRAVEL DISTANCE

FIRE RESISTIVE AREA LEGEND

- 1 HOUR, FULL-HEIGHT, FIRE-RATED WALL
- 2 HOUR, FULL-HEIGHT, FIRE-RATED WALL

TACTILE EXIT SIGNAGE

T-ER	"EXIT ROUTE"
T-EX	"EXIT"
T-TE	"TO EXIT"
T-ED	"EXIT STAIR DOWN"
T-EU	"EXIT STAIR UP"

NOTE:

- WHEN SPECIAL EGRESS CONTROL DEVICES ARE USED THERE SHALL BE PROVIDED A TACTILE SIGN IN BRAILLE AND RAISED CHARACTERS LOCATED WITHIN 12 INCHES OF PANIC BAR OR OTHER DOOR LATCHING HARDWAR STATING: " KEEP PUSHING. THIS DOOR WILL OPEN IN 15 SECONDS, ALARM WILL SOUND.
- FOR ASSEMBLY AREAS IN A OCCUPANCIES A SIGN SHALL BE POSTED IN A PERMANENT LOCATION INDICATING AVAILABILITY OF ASSISTIVE LISTENING DEVICES. THIS SIGN SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESS FOR HEARING IMPAIRED AND WORDING THAT STATES " ASSISTIVE LISTENING SYSTEM AVAILABLE".
- ALL BRAILLE SIGNS SHALL CONFORM TO CBC SECTION 1011.3, MOUNT SIGNS AT +60" AFF

GENERAL NOTES - CODE COMPLIANCE PLANS

1. ALL REQUIRED SITE ACCESSIBLE ROUTES OF TRAVEL FROM DISABLED PARKING STALLS & ADJACENT PUBLIC SIDEWALKS ARE CONSIDERED IN FULL COMPLIANCE AS COMPLETED UNDER PREVIOUS PERMITS FOR THIS BUILDING.

2. WHERE UL, GA, OR CBC CONSTRUCTION ASSEMBLIES SECT, 703 ARE DESIGNATED, THE COMPONENTS AND INSTALLATION DETAILS MUST CONFORM IN EVERY PARTICULAR WAY WITH THE DESIGN NUMBER SPECIFIED.

3. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DRY CHEMICAL UL RATED 3A:40B:C FIRE EXTINGUISHERS & CABINETS AT OFFICE AREAS & CORRIDORS; 4A-60B:C FIRE EXTINGUISHERS & CABINETS AT LABORATORY AREAS. SEE THIS SHEET FOR PROPOSED LOCATIONS OF FIRE EXTINGUISHER CABINETS FINAL NUMBER. TYPE & EXACT LOCATION TO BE BY FIELD INSPECTOR.

4. PROVIDE ALL REQUIRED FIRE ALARMS, EMERGENCY LIGHTING AND EXIT SIGNAGE PER ELECTRICAL DRAWINGS.

5. THE INTERIOR ACCESSIBLE ROUTES OF TRAVEL CONNECT ALL PUBLIC SPACES, TOILET & BREAK ROOM FACILITIES. SEE ACCESSIBLE ROUTES OF TRAVEL, CODE AND EXITING INFORMATION THIS SHEET.

6. PROVIDE MINIMUM 18" STRIKE SIDE CLEARANCE AT SWING SIDE OF ALL INTERIOR DOORS, AND MUNIMUM 12" AT PUSH SIDE (ON DOORS WITH CLOSERS) FOR HANDICAPPED ACCESSIBILITY. PROVIDE MINIMUM 24" STRIKE SIDE CLEARANCE AT ALL EXTERIOR DOORS FOR HANDICAPPED ACCESSIBILITY.

7. REFERENCE STRUCTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

8. PROVIDE 5% MIN. OF TOTAL EMPLOYEE WORKSURFACES TO BE BETWEEN 28" AND 34" A.F.F. PER CBC 1122B.4.

9. ALL EXTERIOR PATHS OF TRAVEL ARE ACCESSIBLE.

10. ALL FLOOR AND LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY RUN SHALL HAVE A MAXIMUM SLOPE OF 1/4" OR 2% (CBC 1009.5)

11. ALL TREADS SHALL BE SLIP RESISTANT, WEATHER EXPOSED STAIRS AND THEIR APPROACH SHALL BE DESIGNED SO THAT WATER WILL NOT ACCUMULATE ON THE WALKING SURFACE. TREADS SHALL HAVE SMOOTH, ROUNDED OR CHAMFERED EXPOSED EDES WITH NO ABRUPT EDGES AT THE NOSING.

12. ADJACENT TO THE LATCH OUTSIDE THE SANITARY FACILITIES DOOR, PROVIDE RAISED LETTERS AND BRAILLE CONFORMING WITH CBC SECTION 1117B.5.6. IF THERE IS NO WALL SPACE ON THE LATCH SIDE, SIGNS SHALL BE ON THE NEAREST ADJACENT WALL, PREFEREABLY ON THE RIGHT. THE CENTER OF THE SIGN SHALL BE 60 INCHES HIGH, MOUNTED SO A PERSON MAY APPROACH WITHIN 3 INCHES WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR DOOR SWING.

13. WATER CLOSETS COMPARTMENTS IN A MULTIPLE ACCOMODATION TOILET FACILITY SHALL BE EQUIPPED AN AUTOMATIC CLOING DOOR, WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGRESS FROM ITS CLOSED POSITION, PROVIDE A CLEAR, UNOBSTRUCTED OPENING WIDTH OF 32 INCHES WHEN AT THE END, AND 34 INCHES WHEN AT THE SIDE.

14. MANUVERING SPACE AT THE COMPARTMENT DOOR SHALL COMPLY WITH SECTIONS 1133B2.4.2 & 1133B2.4.3. THE LEVEL AREA SHALL BE 60 INCHES IN DIRECTION OF DOOR SWING AND 48 INCHES ON OPPPOSITE SIDE OF DOOR CLOSED. COMPARTMENT DOOR IN A MULTIPLE ACCOMODATION TOILET FACILITY, THE STRIKE EDGE CLEARANCE OF 18" REQUIRED.

15. THE INSIDE AND OUTSIDE OF THE COMPARTMENT DOOR OF MULTIPLE ACCOMMODATION TOILET FACILITY SHALL BE EQUIPPED WITH A LOOP OT U SHAPED HANDLE IMMEDIATELY BELOW THE LATCH, THE LATCH SHALL BE FLIP OVER STYLE, SLIDING OR OTHER HARDWARE NOT REQUIRING THE USER TO GRASP OR TWIST.

16. EXCEPT FOR DOOR OPENING WIDTHS AND DOOR SWINGS, A CLEAR, UNOBSTRUCTED ACCESS OF 44 INCHES SHALL BE PROVIDED TO A WATER CLOSET COMPARTMENT IN A MULTIPLE ACCOMMODATION TOILET FACILITY, THE SPACE IMMEDIATELY IN FRONT OF A WATER CLOSET COMPARTMENT SHALL BE NOT LESS THAN 48" MEASURED AT A RIGHT ANGLE TO THE COMPARTMENT DOOR IN THE CLOSED POSITION.

17. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.

18. CONTROLS FOR WATER CLOSET FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS, WATER CLOSET AND URINAL FLUSH VALVE CONTROLS, AND FAUCET AND OPERATING MECHANISM CONTROLS SHALL BE OPERABLE WITH ONE HAND, SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST AND SHALL BE MOUNTED NO MORE THAN 44 INCHES ABOVE THE FLOOR.

19. THE FORCE REQUIRED TO ACTIVATE WATER CLOSET AND URINAL FLUSH VALVE CONTROLS, AND FAUCET AND OPERATING MECHANISM CONTROLS SHALL BE NO GRATER THAN 5LBF.

20. SELF CLOSING FAUCET CONTROL VALVES ARE ALLOWED IF THE FAUCETS REMAINS OPEN FOR AT LEAST 10 SECONDS.

21. TOILET ROOM FLOORS SHALL HAVE A SMOOTH, HARD, NON ABSORBANT SURFACE OF CONCRETE, CERAMIC TILE OR OTHER APPROVED MATERIAL EXTENDING UP THE WALLS AT LEAST 5 INCHES. WALLS OF WATER CLSOET COMPARTMENTS AND WITHIN 24 INCHES OF THE FRONT AND SIDES OF URINALS SHALL BE SIMILARLY FINISHED TO A HEIGHT OF 48 INCHES. EXCEPT FOR STRUCTURAL ELEMENTS, MATERALS USED IN SUCH WALLS SHALL NOT BE ADVERSLY AFFECTED BY MOISTURE.

STAIR 1	
WIDTH CALC. (SEC. 1005.1)	
STAIR (0.3")	REQ: 144x0.3 = 43.2"
	PROVIDED: 44"
ALL OTHERS (0.2")	REQ: 144x0.2 = 28.8"
	PROVIDED: 36"

STAIR 2	
WIDTH CALC. (SEC. 1005.1)	
STAIR (0.3")	REQ: 192x0.3 = 57.6"
	PROVIDED: 60.0"
ALL OTHERS (0.2")	REQ: 192x0.2 = 38.4"
	PROVIDED: 72"

STAIR 3	
WIDTH CALC. (SEC. 1005.1)	
STAIR (0.3")	REQ: 97 x0.3 = 29.1"
	PROVIDED: 56"
ALL OTHERS (0.2")	REQ: 97 x0.2 = 19.4"
	PROVIDED: 36"

2ND LEVEL FLOOR PLAN OCCUPANCY & EGRESS

1/8" = 1'-0"

5/22/2013 9:50:30 AM

CONSULTANTS

STAMP

LICENSED ARCHITECT — JAY J. ESCO — No. C-22219 — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

SECOND LEVEL CODE COMPLIANCE & EXITING PLAN

A-012-TI

FLOOR PLAN LEGEND

- EXISTING PARTITION NON-RATED
- EXISTING PARTITION 1-HR FIRE RATED
- EXISTING PARTITION 2-HR FIRE RATED
- NEW PARTITION NON-RATED
- NEW PARTITION 1-HR FIRE RATED
- NEW PARTITION 2-HR FIRE RATED
- 133 — DOOR NUMBER (SEE DOOR SCHEDULE FOR DETAILS)
- FA4S — WALL TYPE DESIGNATION (SEE SHEET A-602-TI)
- F.E.C. — FIRE EXTINGUISHER CABINET (RECESSED)
- F.E.C. — FIRE EXTINGUISHER CABINET (SURFACE- MOUNTED)
- CR — CARD READER
- ALIGN — ALIGN (FACE OF FINISH TO FACE OF FINISH)

FIRE EXTINGUISHER SCHEDULE

ALL EXTINGUISHERS ARE 5 LB 'ABC' DRY CHEM. POWDER TYPE EXCEPT AS NOTED BELOW

A 10 LB 'ABC' EXTINGUISHER

B 10 LB CLEAN GUARD OR HALON EXTINGUISHER

C 10 LB MINIMUM CLASS 'D' EXTINGUISHER FOR FLAMMABLE METALS

**PROVIDE (1) TYPE A ON ROOF BY SCREEN GATE AND (1) TYPE A IN THE EQUIPMENT YARD BY THE DOUBLE GATES. PROVIDE SURFACE MOUNTED WEATHER-TIGHT CABINET.

** NOTES:
1. ON ENTRANCE DOORS IN TENANT SPACES AMD BUILDINGS WITH AN OCCUPANCY IN GROUP A, B, I-2, M, R-1 OR R-2 WITH AN AUTOMATIC SPRINKLER SYSTEM PER SECTION 903.3.1.1 AND AN APPROVED AUTOMATIC SMOKE DETECTION SYSTEM PER CBC SECTION 907 ARE PERMITTED TO BE EQUIPPED WITH AN APPROVED ENTRANCE AND EGRESS ACCESS CONTROL SYSTEM.
2. A SENOR SHALL BE PROVIDED ON THE EGRESS SIDE OF THE ACCESS CONTROLLED EGRESS DOORS ARRANGED TO DETECT AN OCCUPANT APPROACHING THE DOORS. THE DOORS SHALL BE ARRANGED TO UNLOCK BY A SIGNAL FROM A LOSS OF POWER TOT HE SENSOR. LOSS OF POWER TO THAT PART OF THE EGRESS ACCESS CONTROL SYSTEM.
3. ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM SHALL AUTOMATICALLY UNLOCK THE ACCESS CONTROLLED EGRESS DOORS, AND THE DOORS SHALL REMAIN UNLOCKED UNTIL THE FIRE ALARM HAS BEEN RESET. ACTIVATION OF THE BUILDING AUTOMATIC SPRINKLER OT FIRE DETCTION SYSTEM SHALL AUTOMATICALLY UNLOCK THE ACCESS CONTROLLED EGRESS DOORS, AND THE DOORS SHALL REMAIN UNLOCKED UNTIL THE FIRE ALARM HAS BEEN RESET.

KEYNOTES

*NOTE: SEE SHEET G-001-TI FOR GENERAL NOTES.

1. EXTERIOR WALL TO RECEIVE 3-5/8" 20 GA. MTL FURRING FOR R-13 BATT INSULATION. FURRING TO CONTINUE TO 6" ABOVE CEILING. BATT INSULATION TO CONTINUE UP TO UNDERSIDE OF DECK.
2. FIRE RISER. REFER TO CORE & SHELL PLUMBING DRAWINGS.
3. CLEARSTORY WINDOWS ABOVE DOOR. SEE INTERIOR ELEVATIONS.
4. PROVIDE CEMENTITIOUS FIRE PROOFING (SECOND FLOOR SUPPORT ONLY) FOR 2-HOUR RATING.
5. EXISTING ROOF/OVERFLOW DRAINS. CONNECT RE-ROUTED TO FIRST FLOOR.
6. CONTINUE EXTERIOR PANEL MATERIAL INTO BUILDING. ALIGN FOR SEAM, FINISH, ETC., IN ALL MANNER.
7. PROVIDE ACCESS PANELS TO IN-LINE ROOF DRAIN FILTERS. COORDINATE SIZE/LOCATION W/ DRAIN PIPE AND FURRING DETAIL AND ADVISE IMMEDIATELY OF ANY CONFLICTS.

CONSULTANTS

STAMP

LICENSED ARCHITECT — MARK J. ECKER — No. C22278 — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

FIRST LEVEL OVERALL FLOOR PLAN

A-101-TI

1ST LEVEL FLOOR PLAN
1/8" = 1'-0"

PLAN NORTH

5/23/2013 9:50:40 AM

FLOOR PLAN LEGEND

- EXISTING PARTITION NON-RATED
- EXISTING PARTITION 1-HR FIRE RATED
- EXISTING PARTITION 2-HR FIRE RATED
- NEW PARTITION NON-RATED
- NEW PARTITION 1-HR FIRE RATED
- NEW PARTITION 2-HR FIRE RATED

133 — DOOR NUMBER (SEE DOOR SCHEDULE FOR DETAILS)

FA4S — WALL TYPE DESIGNATION (SEE SHEET A-602-TI)

F.E.C. — FIRE EXTINGUISHER CABINET (RECESSED)

F.E.C. — FIRE EXTINGUISHER CABINET (SURFACE- MOUNTED)

CR — CARD READER

ALIGN — ALIGN (FACE OF FINISH TO FACE OF FINISH)

FIRE EXTINGUISHER SCHEDULE

ALL EXTINGUISHERS ARE 5 LB 'ABC' DRY CHEM. POWDER TYPE EXCEPT AS NOTED BELOW

A 10 LB 'ABC' EXTINGUISHER

B 10 LB CLEAN GUARD OR HALON EXTINGUISHER

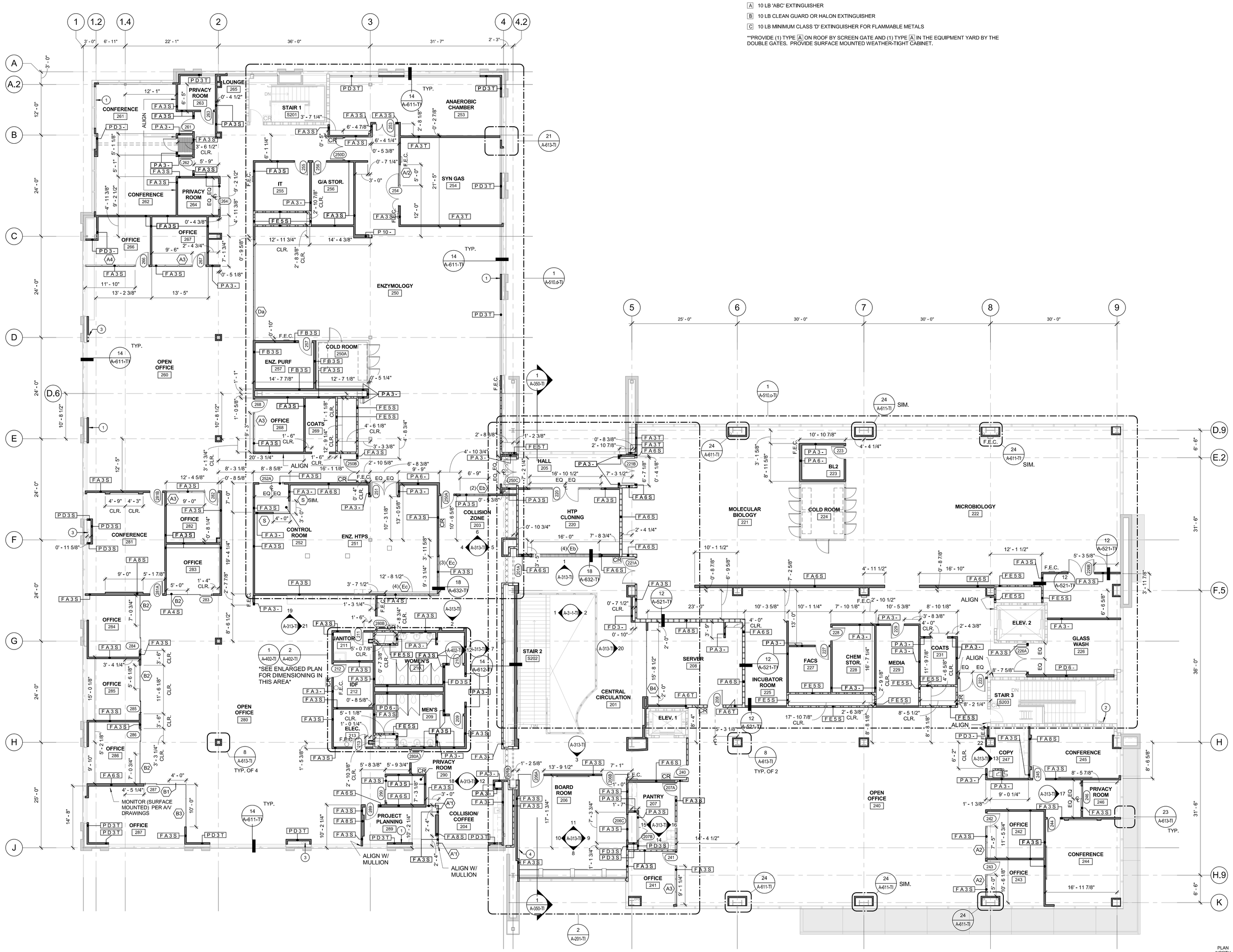
C 10 LB MINIMUM CLASS 'D' EXTINGUISHER FOR FLAMMABLE METALS

**PROVIDE (1) TYPE A ON ROOF BY SCREEN GATE AND (1) TYPE A IN THE EQUIPMENT YARD BY THE DOUBLE GATES. PROVIDE SURFACE MOUNTED WEATHER-TIGHT CABINET.

KEYNOTES

*NOTE: SEE SHEET G-001-TI FOR GENERAL NOTES.

1. EXTERIOR WALL TO RECEIVE 3-5/8" 20 GA. MTL FURRING FOR R-13 BATT INSULATION. FURRING TO CONTINUE TO 6" ABOVE CEILING. BATT INSULATION TO CONTINUE UP TO UNDERSIDE OF DECK.
2. FIRE RISER. REFER TO CORE & SHELL PLUMBING DRAWINGS.
3. EXISTING ROOF AND OVERFLOW DRAINS TO BE REMOVED FROM THE SECOND FLOOR PERIMETER. INTERCEPT AT ROOF PENETRATIONS (ALONG GRID'S) AND RE-ROUTE TO THE FIRST FLOOR. RUN HIGH AGAINST UNDERSIDE OF SECOND FLOOR FRAMING AND RECONNECT AT PERIMETER WALLS. REFER TO PLUMBING DRAWINGS.
4. CONTINUE EXTERIOR PANEL MATERIAL INTO BUILDING. ALIGN FOR SEAM, FINISH, ETC., IN ALL MANNER.



2ND LEVEL FLOOR PLAN
1/8" = 1'-0"

PLAN NORTH

CONSULTANTS

STAMP

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

SECOND LEVEL OVERALL FLOOR PLAN

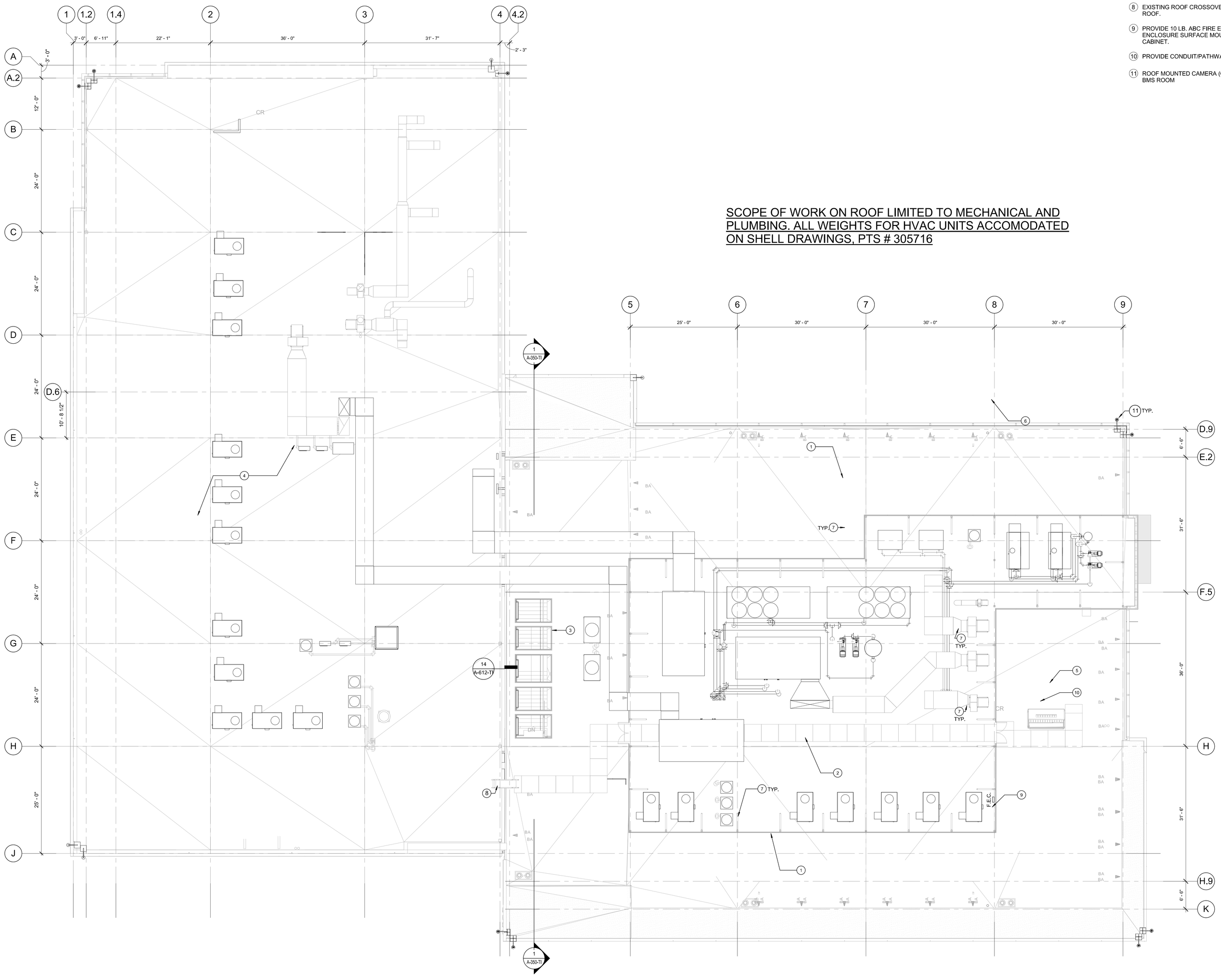
A-102-TI

5/23/2013 9:51:17 AM

KEYNOTES

1. ROOF SCREEN (N.I.C) PER SHELL DRAWINGS.
2. WALK PADS (N.I.C.) PER SHELL DRAWINGS.
3. SKYLIGHT (N.I.C.) PER SHELL DRAWINGS.
4. EXISTING BUILDING ROOF. REFER TO SHELL DRAWINGS FOR ANY WORK.
5. STAIR/ROOF HATCH (N.I.C.) PER SHELL DRAWINGS.
6. ROOF DRAWINGS (N.I.C.) PER SHELL DRAWINGS.
7. ROOF SCREEN KICKER (N.I.C.) PER SHELL DRAWINGS.
8. EXISTING ROOF CROSSOVER LADDER FROM UPPER TO LOWER ROOF.
9. PROVIDE 10 LB. ABC FIRE EXTINGUISHER IN RAIN-TIGHT, GLASS FRONT ENCLOSURE SURFACE MOUNTED ON SCREEN @ 48" TO TOP OF CABINET.
10. PROVIDE CONDUIT/PATHWAY FOR LOW VOLTAGE SECURITY CONTACT.
11. ROOF MOUNTED CAMERA (OFOI). INSTALL CONDUIT PATHWAY TO BMS ROOM

SCOPE OF WORK ON ROOF LIMITED TO MECHANICAL AND PLUMBING. ALL WEIGHTS FOR HVAC UNITS ACCOMODATED ON SHELL DRAWINGS, PTS # 305716



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

PLAN NORTH

5/23/2013 9:52:49 AM

CONSULTANTS

STAMP

LICENSED ARCHITECT
ANDREW J. ESCALANTE
REN. 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/8" = 1'-0"

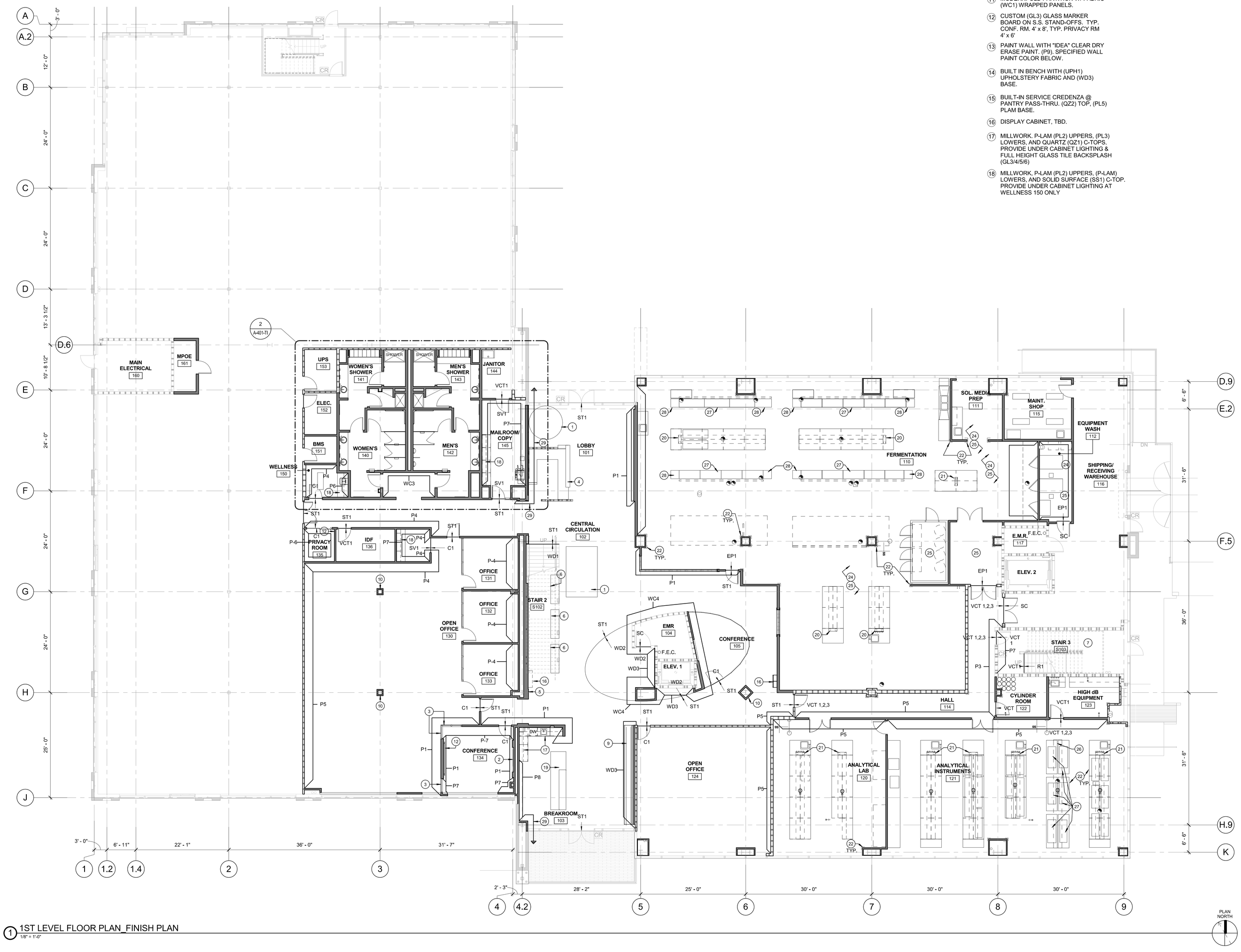
TITLE

ROOF LEVEL OVERALL FLOOR PLAN

A-103-TI

KEYNOTES

1. CUSTOM AREA RUG, N.I.C.
2. A/V WALL. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. FROSTED GLASS FILM (GF1) TO 8'-0" AFF. CLEAR GLASS ABOVE
4. CUSTOM MILLWORK RECEPTION DESK. PROVIDE $20,000 ALLOWANCE.
5. SEE A-311-TI LOBBY SECTION FOR TWO LOBBY WALL FINISH INFORMATION.
6. CUSTOM BENCH SEATING BELOW STAIR WITH (UPH1) CUSHIONS. CUSHIONS N.I.C.
7. PAINT STAIR STRINGERS W/ (P11)
8. PATENT WALL, TBD.
9. BUILT-IN BANQUETTE SEATING WITH (UPH1) AND (UPH2) UPHOLSTERY FABRIC. (WD3) PANELING @ WALL & SOFFIT ABOVE.
10. WRAP COLUMNS WITH (WD3), TYP.
11. MODERNFOLD PARTITION W/ FABRIC (WC1) WRAPPED PANELS.
12. CUSTOM (GL3) GLASS MARKER BOARD ON S.S. STAND-OFFS. TYP. CONF. RM. 4' x 8', TYP. PRIVACY RM 4' x 6'
13. PAINT WALL WITH "IDEA" CLEAR DRY ERASE PAINT. (P9). SPECIFIED WALL PAINT COLOR BELOW.
14. BUILT IN BENCH WITH (UPH1) UPHOLSTERY FABRIC AND (WD3) BASE.
15. BUILT-IN SERVICE CREDENZA @ PANTRY PASS-THRU. (QZ2) TOP, (PL5) PLAM BASE.
16. DISPLAY CABINET, TBD.
17. MILLWORK. P-LAM (PL2) UPPERS, (PL3) LOWERS, AND QUARTZ (QZ1) C-TOPS. PROVIDE UNDER CABINET LIGHTING & FULL HEIGHT GLASS TILE BACKSPLASH (GL3/4/5/6)
18. MILLWORK, P-LAM (PL2) UPPERS, (P-LAM) LOWERS, AND SOLID SURFACE (SS1) C-TOP. PROVIDE UNDER CABINET LIGHTING AT WELLNESS 150 ONLY
19. MILLWORK "ISLAND". PLAM (PL3) LOWERS AND (QZ1) C-TOP. PROVIDE FOOTREST BAR AT EAST SIDE
20. WRAP LAB UMBILICAL CHASE WITH (RPI) RESIN PANELS, TYP.
21. WRAP LAB UMBILICAL CHASE WITH (MT7) METAL LAMINATE
22. PROVIDE STAINLESS STEEL CORNER GUARDS AT ALL OUTSIDE CORNERS IN LAB LOCATIONS.
23. PROVIDE BLACK OUT SHADES (WT2) THIS LOCATION
24. PROVIDE EPOXY PAINT THIS AREA.
25. EP-1 : EPOXY FLOORING
26. OVERHEAD SERVICE CARRIER
27. S.S. TABLES, O.F.O.I.
28. COMPUTER STATIONS, O.F.O.I.
29. METAL PANELS (MT6)



1 1ST LEVEL FLOOR PLAN_FINISH PLAN
1/8" = 1'-0"

5/23/2013 9:55:14 AM

CONSULTANTS

STAMP

BRIAN J. ESPE LICENSED ARCHITECT C-22278 REN. 12/31/13 STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

FIRST LEVEL OVERALL FINISH PLAN

A-101F-TI

KEYNOTES

1. CUSTOM AREA RUG, N.I.C.
2. A/V WALL. SEE INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
3. FROSTED GLASS FILM (GF1) TO 8'-0" AFF. CLEAR GLASS ABOVE
4. CUSTOM MILLWORK RECEPTION DESK. PROVIDE $20,000 ALLOWANCE.
5. SEE A-311-TI LOBBY SECTION FOR TWO LOBBY WALL FINISH INFORMATION.
6. CUSTOM BENCH SEATING BELOW STAIR WITH (UPH11) CUSHIONS. CUSHIONS N.I.C.
7. PAINT STAIR STRINGERS W/ (P11)
8. PATENT WALL, TBD.
9. BUILT-IN BANQUETTE SEATING WITH (UPHI) AND (UPH2) UPHOLSTERY FABRIC. (WD3) PANELING @ WALL & SOFFIT ABOVE.
10. WRAP COLUMNS WITH (WD3). TYP.
11. MODERNFOLD PARTITION W/ FABRIC (WC1) WRAPPED PANELS.
12. CUSTOM (GL3) GLASS MARKER BOARD ON S.S. STAND-OFFS. TYP. CONF. RM. 4' x 8', TYP. PRIVACY RM 4' x 6'
13. PAINT WALL WITH "IDEA" CLEAR DRY ERASE PAINT. (P9). SPECIFIED WALL PAINT COLOR BELOW.
14. BUILT IN BENCH WITH (UPH1) UPHOLSTERY FABRIC AND (WD3) BASE.
15. BUILT-IN SERVICE CREDENZA @ PANTRY PASS-THRU. (QZ2) TOP, (PL5) PLAM BASE.
16. DISPLAY CABINET, TBD.
17. MILLWORK. P-LAM (PL2) UPPERS, (PL3) LOWERS, AND QUARTZ (QZ1) C-TOPS. PROVIDE UNDER CABINET LIGHTING & FULL HEIGHT GLASS TILE BACKSPLASH (GL3/4/5/6)
18. MILLWORK, P-LAM (PL2) UPPERS, (P-LAM) LOWERS, AND SOLID SURFACE (SS1) C-TOP. PROVIDE UNDER CABINET LIGHTING AT WELLNESS 150 ONLY
19. MILLWORK "ISLAND". PLAM (PL3) LOWERS AND (QZ1) C-TOP. PROVIDE FOOTREST BAR AT EAST SIDE
20. WRAP LAB UMBILICAL CHASE WITH (RPI) RESIN PANELS, TYP.
21. WRAP LAB UMBILICAL CHASE WITH (MT7) METAL LAMINATE
22. PROVIDE STAINLESS STEEL CORNER GUARDS AT ALL OUTSIDE CORNERS IN LAB LOCATIONS.
23. PROVIDE BLACK OUT SHADES (WT2) THIS LOCATION
24. PROVIDE EPOXY PAINT THIS AREA.
25. EP-1 : EPOXY FLOORING
26. OVERHEAD SERVICE CARRIER
27. S.S. TABLES, O.F.O.I.
28. COMPUTER STATIONS, O.F.O.I.
29. METAL PANELS (MT6)

2ND LEVEL FLOOR PLAN FINISH PLAN
1/8" = 1'-0"

PLAN NORTH

CONSULTANTS

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

SECOND LEVEL OVERALL FINISH PLAN

A-102F-TI

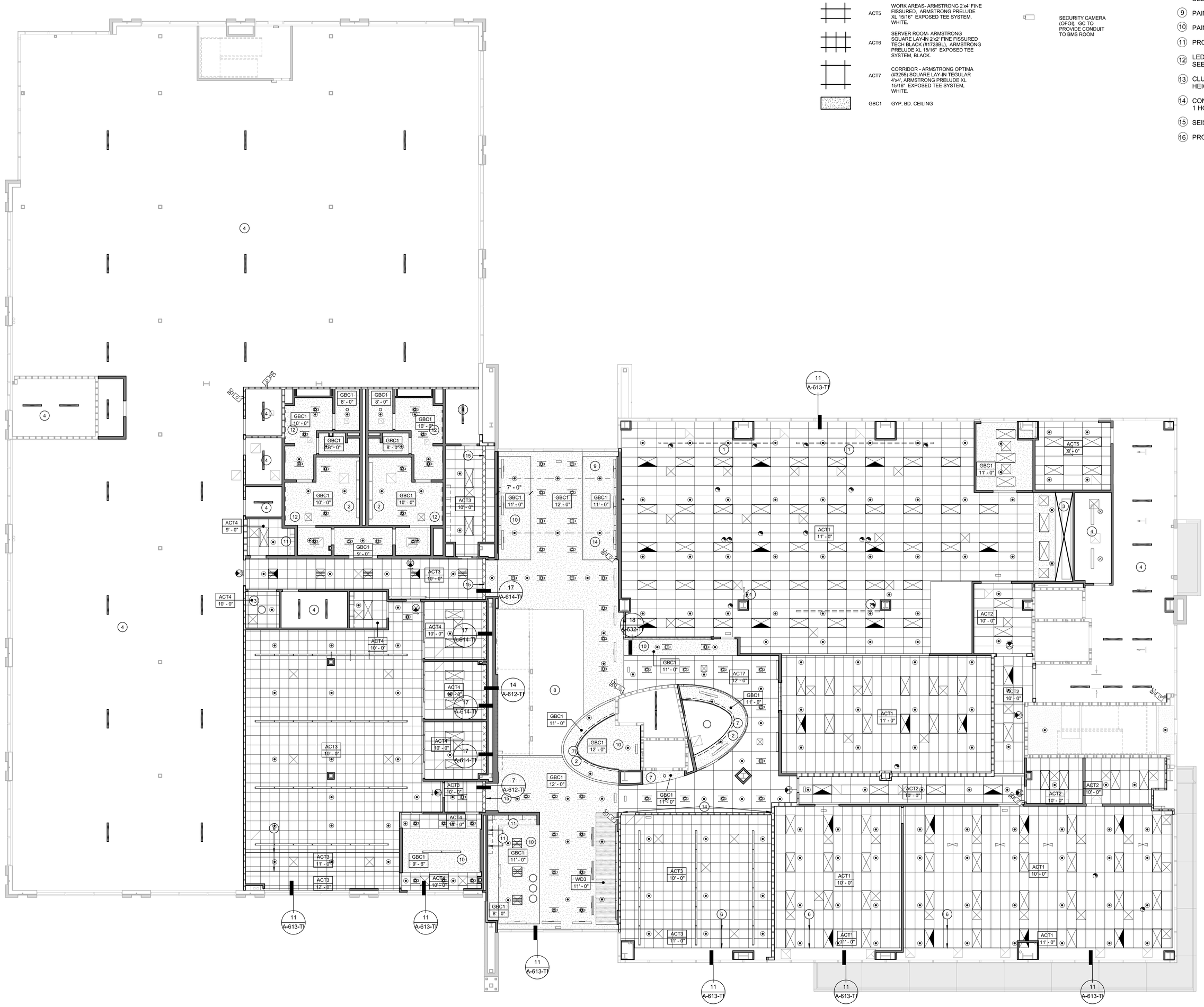
5/23/2013 9:52:15 AM

REFLECTED CEILING PLAN LEGEND

ACT1	PILOT PLANT/ FERMENTATION- NATIONAL GYPSUM GOLD BOND GRIDSTONE CLEAN ROOM GYPSUM CEILING PANELS W/ 2-MIL WHITE STIPPLE VINYL LAMINATE 2'x4', ARMSTRONG PRELUDE PLUS XL ALUMINUM 15/16" EXPOSED TEE. WHITE.		2 ' X 2' FLUORESCENT LIGHT FIXTURE
ACT2	LABORATORY- ARMSTRONG HEALTH ZONE ULTIMA, FINE TEXTURE, SQUARE LAY-IN (#1938) 2'x4', ARMSTRONG 15/16 PRELUDE SUSPENSION SYSTEM EXPOSED TEE SYSTEM. WHITE.		2 ' X 4' FLUORESCENT LIGHT FIXTURE
ACT3	OPEN OFFICE- ARMSTRONG OPTIMA OPEN PLAN (#3355) LAY-IN TEGULAR 2'x2', ARMSTRONG SUPRAFINE XL 9/16" EXPOSED TEE SYSTEM, WHITE.		FLUORESCENT PENDANT LIGHT FIXTURE
ACT4	CONFERENCE AND PRIVATE OFFICE- ARMSTRONG ULTIMA HIGH CAC (#1952), FINE TEXTURE, SQUARE LAY-IN TEGULAR 2'x2', ARMSTRONG SUPRAFINE XL 9/16" EXPOSED TEE SYSTEM, WHITE.	ACT 12'-0"	CEILING TYPE AND HEIGHT TAG
ACT5	WORK AREAS- ARMSTRONG 2'x4' FINE FISSURED, ARMSTRONG PRELUDE XL 15/16" EXPOSED TEE SYSTEM. WHITE.		EXIT LIGHT
ACT6	SERVER ROOM- ARMSTRONG SQUARE LAY-IN 2'x2' FINE FISSURED TECH BLACK (#17288L), ARMSTRONG PRELUDE XL 15/16" EXPOSED TEE SYSTEM, BLACK.	UP	UTILITY PANEL
ACT7	CORRIDOR - ARMSTRONG OPTIMA (#3255) SQUARE LAY-IN TEGULAR 4'x4', ARMSTRONG PRELUDE XL 15/16" EXPOSED TEE SYSTEM, WHITE.		FIRE SPRINKLER
GBC1	GYP. BD. CEILING		SECURITY CAMERA (OPOI). GC TO PROVIDE CONDUIT TO BMS ROOM

KEYNOTES

1. STAINLESS STEEL UNISTRUT UTILITY FRAME SUSPENDED FROM STRUCTURE ABOVE DOWN TO 7'-0" A.F.F.
2. COVE LIGHTING AT GYP. BOARD SOFFITS/ CLOUDS/RESTROOMS.
3. STAINLESS STEEL STEAM CAPTURE HOOD. REFER TO MECHANICAL DRAWINGS.
4. NO CEILING ABOVE.
5. RE-ROUTE ROOF/OVERFLOW DRAINS TO FIRST FLOOR INTERSTITIAL SPACE, REFER TO PLUMBING DRAWINGS.
6. 1'-0" COMPASSO TRIM AT CEILING ELEVATION CHANGE
7. PAINT UNDERSIDE & INSIDE SOFFIT RETURN W/ P7
8. OPEN TO FLOOR ABOVE. WRAP SOFFIT BELOW VERTICALLY TO FLOOR ABOVE.
9. PAINT ALL SIDES OF SOFFIT W/ (P5)
10. PAINT UNDERSIDE OF SOFFIT WITH (P1) WHITE
11. PROVIDE UNDER CABINET LIGHTING AT MILLWORK
12. LED FIXTURE SURROUND AT MIRROR. SEE ELEVATIONS
13. CLUSTER OF (3) PENDANTS HUNG AT VARYING HEIGHTS. HEIGHTS TBD BY ARCHITECT
14. CONSTRUCT HUNG SOFFIT ABOVE CLESTORY WINDOWS 1 HOUR RATED CONSTRUCTION.
15. SEISMIC EXPANSION JOINT AT CEILING
16. PROVIDE BLACKOUT SHADES AT THIS LOCATION



1ST LEVEL REFLECTED CEILING PLAN
1/8" = 1'-0"

PLAN NORTH

CONSULTANTS

STAMP

LICENSED ARCHITECT
JEREMY J. ESCAMILLA
12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

FIRST LEVEL OVERALL REFLECTED CEILING PLAN

A-101C-TI

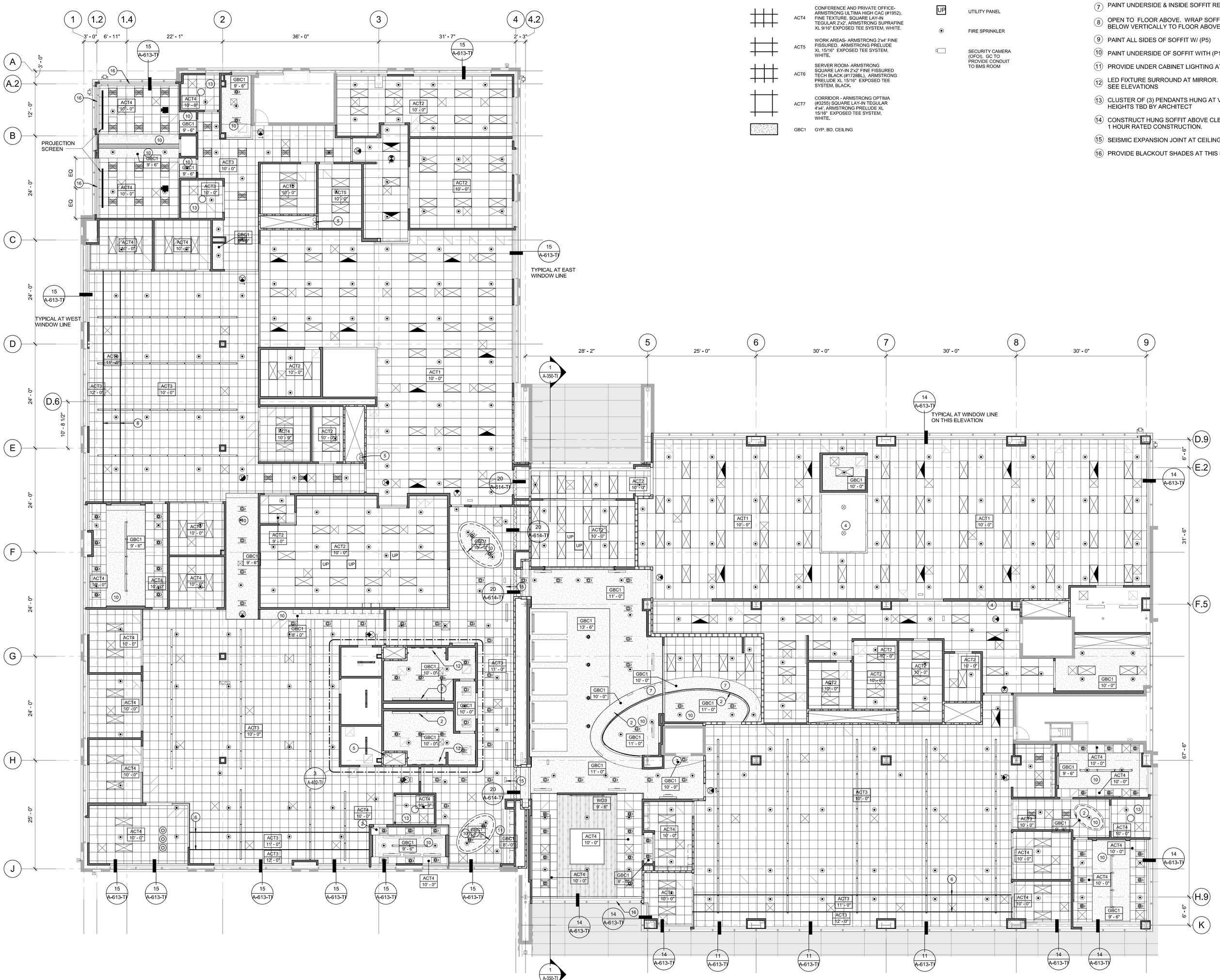
5/23/2013 9:50:55 AM

REFLECTED CEILING PLAN LEGEND

ACT1	PILOT PLANT/ FERMENTATION- NATIONAL GYPSUM GOLD BOND GRIDSTONE CLEAN ROOM GYPSUM CEILING PANELS W/ 2-MIL WHITE STIPPLE VINYL LAMINATE 2'x4', ARMSTRONG PRELUDE PLUS XL ALUMINUM 15/16" EXPOSED TEE. WHITE.		2 ' X 2' FLUORESCENT LIGHT FIXTURE
			2 ' X 4' FLUORESCENT LIGHT FIXTURE
ACT2	LABORATORY- ARMSTRONG HEALTH ZONE ULTIMA, FINE TEXTURE, SQUARE LAY-IN (#1938) 2'x4', ARMSTRONG 15/16 PRELUDE SUSPENSION SYSTEM EXPOSED TEE SYSTEM. WHITE.		FLUORESCENT PENDANT LIGHT FIXTURE
		ACT 12'-0"	CEILING TYPE AND HEIGHT TAG
ACT3	OPEN OFFICE- ARMSTRONG OPTIMA OPEN PLAN, (#3355) LAY-IN TEGULAR 2'x2'. ARMSTRONG SUPRAFINE XL 9/16" EXPOSED TEE SYSTEM. WHITE.		EXIT LIGHT
		UP	UTILITY PANEL
ACT4	CONFERENCE AND PRIVATE OFFICE- ARMSTRONG ULTIMA HIGH CAC (#1952), FINE TEXTURE, SQUARE LAY-IN TEGULAR 2'x2', ARMSTRONG SUPRAFINE XL 9/16" EXPOSED TEE SYSTEM, WHITE.		FIRE SPRINKLER
ACT5	WORK AREAS- ARMSTRONG 2'x4' FINE FISSURED, ARMSTRONG PRELUDE XL 15/16" EXPOSED TEE SYSTEM, WHITE.		SECURITY CAMERA (OFOI). GC TO PROVIDE CONDUIT TO BMS ROOM
ACT6	SERVER ROOM- ARMSTRONG SQUARE LAY-IN 2'x2' FINE FISSURED TECH BLACK (#1728BL). ARMSTRONG PRELUDE XL 15/16" EXPOSED TEE SYSTEM, BLACK.		
ACT7	CORRIDOR - ARMSTRONG OPTIMA (#3255) SQUARE LAY-IN TEGULAR 4'x4', ARMSTRONG PRELUDE XL 15/16" EXPOSED TEE SYSTEM, WHITE.		
GBC1	GYP. BD. CEILING		

KEYNOTES

1. STAINLESS STEEL UNISTRUT UTILITY FRAME SUSPENDED FROM STRUCTURE ABOVE DOWN TO 7'-0" A.F.F.
2. COVE LIGHTING AT GYP. BOARD SOFFITS/ CLOUDS/RESTROOMS.
3. STAINLESS STEEL STEAM CAPTURE HOOD. REFER TO MECHANICAL DRAWINGS.
4. NO CEILING ABOVE.
5. RE-ROUTE ROOF/OVERFLOW DRAINS TO FIRST FLOOR INTERSTITIAL SPACE, REFER TO PLUMBING DRAWINGS.
6. 1'-0" COMPASSO TRIM AT CEILING ELEVATION CHANGE
7. PAINT UNDERSIDE & INSIDE SOFFIT RETURN W/ P7
8. OPEN TO FLOOR ABOVE. WRAP SOFFIT BELOW VERTICALLY TO FLOOR ABOVE.
9. PAINT ALL SIDES OF SOFFIT W/ (P5)
10. PAINT UNDERSIDE OF SOFFIT WITH (P1) WHITE
11. PROVIDE UNDER CABINET LIGHTING AT MILLWORK
12. LED FIXTURE SURROUND AT MIRROR. SEE ELEVATIONS
13. CLUSTER OF (3) PENDANTS HUNG AT VARYING HEIGHTS. HEIGHTS TBD BY ARCHITECT
14. CONSTRUCT HUNG SOFFIT ABOVE CLESTORY WINDOWS 1 HOUR RATED CONSTRUCTION.
15. SEISMIC EXPANSION JOINT AT CEILING
16. PROVIDE BLACKOUT SHADES AT THIS LOCATION



1 2ND LEVEL REFLECTED CEILING PLAN
1/8" = 1'-0"

CONSULTANTS

STAMP

LICENSED ARCHITECT — JAMES J. ENGSTROM — RENEWAL 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

SECOND LEVEL OVERALL REFLECTED CEILING PLAN

A-102C-TI

5/23/2013 9:51:52 AM

FINISH SPECIFICATIONS

FLOOR FINISHES

SEALED CONCRETE

SC SEALED CONCRETE

VCT

VCT1
MANUFACTURER: ARMSTRONG
PRODUCT: STRIATIONS (w/ BBT BIOSTRIDE)
COLOR: T3615 HONEY
SIZE: 6" x 12"
INSTALLATION: ASHLAR
LOCATION: LABS, MISC. LOCATIONS
NOTES: PROVIDE $2.45/SF BUDGET
CONTACT: PAULA HABERKERN
619.756.3698
phaberkern@brwestltd.com

VCT2
MANUFACTURER: ARMSTRONG
PRODUCT: STRIATIONS (w/ BBT BIOSTRIDE)
COLOR: T3602 STEEL
SIZE: 6" x 12"
INSTALLATION: ASHLAR
LOCATION: LABS, MISC. LOCATIONS
NOTES: PROVIDE $2.45/SF BUDGET MATERIAL

VCT3
MANUFACTURER: ARMSTRONG
PRODUCT: STRIATIONS (w/ BBT BIOSTRIDE)
COLOR: T3614 BISQUE
SIZE: 6" x 12"
INSTALLATION: ASHLAR
LOCATION: LABS, MISC. LOCATIONS
NOTES: PROVIDE $2.45/SF BUDGET MATERIAL

NOTE: 3-COLOR VCT PATTERN AT LABS TBD

EPOXY FLOORING

EP1
MANUFACTURER: ARIZONA POLYMER FLOORING
PRODUCT: ARMOUR-REZ HD 135 TROWELED
COLOR: TBD
DESCRIPTION: TROWELED EPOXY MORTAR BASE WITH VINYL MACRO CLEAR EPOXY TOPCOAT & ADDITIONAL URETHANE TOPCOAT PILOT
LOCATION: PLANT AREAS
CONTACT: -
-

EP2
MANUFACTURER: DURAFLEX
PRODUCT: DURAFLEX POLY-CRETE SLB
COLOR: TBD
LOCATION: COLD ROOMS, 2ND FLOOR GLASS WASH
CONTACT: -
-

BASE

B1
MANUFACTURER: FLEXCO
COLOR: 037 DARK BEIGE
DESCRIPTION: 4" RUBBER BASE WITH TOE
LOCATION: @ (C1) CARPET
CONTACT: GEORGE EMIGH
714.658.8645

B2
MANUFACTURER: FLEXCO
COLOR: 020 NEUTRAL
DESCRIPTION: 4" RUBBER BASE WITH TOE
LOCATION: @ (VCT), (SDT1)

B3
MANUFACTURER: FLEXCO
COLOR: 038 OUTER BANKS
DESCRIPTION: 4" RUBBER BASE WITH TOE
LOCATION: @ (SV1)

B4
MANUFACTURER: FLEXCO
COLOR: 01 BLACK DAHLIA
DESCRIPTION: 4" RUBBER BASE W/ TOE
LOCATION: @ (SDT2)

B5
DESCRIPTION: WOOD BASE (RECLAIMED WOOD)
STYLE: 3/4" SANDED BARN SIDING (MATCH WD3)
NOTES: -
LOCATION: @ (WD3) WALLS & (WD3) COLUMN WRAPS

B6
DESCRIPTION: WOOD BASE (PAINTED)
COLOR: PAINTED TO MATCH ADJ. WALL SURFACE
NOTES: 1/2" x 4" MDF BASE WITH SQUARE EDGE, SEMI-GLOSS
LOCATION: (ST1) & SEE FINISH PLANS FOR MISC. LOCATIONS

B7
MANUFACTURER: SPEC CERAMICS
STYLE: COMPASS
COLOR: GREENWICH NAT
SIZE: 6" H
NOTES: PROVIDE (MT2) TRIM @ TOP EDGE OF BASE @PAINTED WALLS, (CT1) TILES TO BE CUT IN HALF
GROUT: EPOXY, TBD
LOCATION: RESTROOMS @ PAINT & (WC) WALLS
CONTACT: BEN FRIESEN
619.518.3011
BEN@GCTHOMAS.COM

RUBBER

R1
MANUFACTURER: FLEXCO
PRODUCT: HEAVY DUTY SQUARE
COLOR: 037 DARK BEIGE
LOCATION: STAIR TREADS @ SECONDARY STAIRWELLS
SIZE: TBD
CONTACT: GEORGE EMIGH
714.658.8645

AREA RUGS (N.I.C.)

RUG1
MANUFACTURER: DECORATIVE CARPETS
PRODUCT: WOOL LOOP, HA=450, PATTERN:DIAMOND MINE
COLOR: TBD (CUSTOM)
SIZE: TBD, RECTANGLE
NOTES: PROVIDE RUG PAD, $2,750 BUDGET
QUANTITY: 3
LOCATION: LOBBY, 2ND FLOOR COFFEE & LOUNGE AREA
CONTACT: LAUREN FREDRICKSON
866.859.0032
lfredrickson@decorativecarpets.com

RUG2
MANUFACTURER: DECORATIVE CARPETS
PRODUCT: WOOL LOOP, HA=450, PATTERN DIAMOND
COLOR: TBD (CUSTOM)
SIZE: TBD CIRCLE
NOTES: PROVIDE RUG PAD, $2,500 BUDGET PER RUG 1
QUANTITY: 1
LOCATION: RECEPTION AREA

CARPET

C1
MANUFACTURER: TANDUS FLOORING
STYLE: LANDFORM 03297
COLOR: SOLAR ENGINE 65007
DESCRIPTION: 24X24 CARPET TILE
INSTALLATION: HORIZONTAL ASHLAR
LOCATION: OFFICE AREAS, CONFERENCE ROOMS
NOTES: PROVIDE $19.52 SQ.YD. BUDGET(MATERIAL)
CONTACT: RICH NUDO
619.990.8945
rnudo@tandus.com

FLOOR FINISHES (CONTINUED)

STONE TILE

ST1
MANUFACTURER: TBD
STYLE/COLOR: TBD
SIZE: TBD
GROUT: EPOXY, TBD
LOCATION: 1ST & 2ND FLOOR LOBBY/SURROUNDING CORRIDORS
BASE: (B6) U.O.N.
NOTES:
CONTACT: TBD

ST2
MANUFACTURER: FIVE ELEMENTS
STYLE/COLOR: SLICED PEBBLE TILE MOSAICS/JAVA
SIZE: 12" x 12" SHEETS
GROUT: EPOXY, TBD
LOCATION: SHOWER FLOOR, RESTROOM WALL ACCENTS
NOTES: PROVIDE $11/SF BUDGET (MATERIAL)
CONTACT: CHRISTA KEYSER
877.695.2092
christa@thefiveelements.com

CERAMIC TILE

CT1
MANUFACTURER: SPEC CERAMICS
STYLE/COLOR: COMPASS/GREENWICH NAT
SIZE: 12" x 24"
BASE: (B7)
GROUT: EPOXY, TBD
LOCATION: RESTROOM FLOORS
NOTES: PROVIDE $3.50/SF BUDGET
CONTACT: BEN FRIESEN
BEN@GSTHOMAS.COM
619.518.3011

WOOD (RECLAIMED)

WD1
MANUFACTURER: VINTAGE TIMBERWORKS
STYLE: ENGINEERED SANDED BARN SIDING (PLANK)
SPECIES: OAK
COLOR: BROWN
SIZE: 2' - 8' LENGTH, RANDOM WIDTH
THICKNESS: TBD (VENEER OVER PLY SUBSTRATE)
NOTES: PROVIDE 10% MIN WASTE FACTOR $15/BOARD FOOT BUDGET, LIGHTLY SANDED, PRIMED & SEALED
LOCATION: LOBBY STAIR TREADS
CONTACT: CARMEN URSINO
951.695.1003

WD2
MANUFACTURER: VINTAGE TIMBERWORKS
STYLE: ENGINEERED SANDED BARN SIDING (FLOORING)
SPECIES: OAK
COLOR: BROWN
NOTES: 2' - 8' LENGTH, RANDOM WIDTH. $15/ BOARD FOOT BUDGET, TONGUE & GROOVE, BACK RELIEF, LIGHTLY SANDED, PRIMED & SEALED. PROVIDE 10% MIN WASTE FACTOR
THICKNESS: 3/8" / 1/8" VENEER OVER PLY SUBSTRATE
LOCATION: "ELLIPSE" AT 1ST & 2ND FLOOR LOBBY

SHEET VINYL (LUXURY VINYL TILE)

SV1
MANUFACTURER: TO MARKET
PRODUCT: FORMIS/GESSO
COLOR: C0611 MIRAGE
SIZE: 18" X 18" TILE
LOCATION: COPY ROOMS, MAIL ROOM
CONTACT: LYNN RINEHART
619.339.7992
lynnrtm@hotmail.com

SV2
MANUFACTURER: ARMSTRONG
PRODUCT: MEDINTONE
COLOR: H8311 NATURAL WHITE
SIZE: 6' ROLLS
NOTES: WELDED SEAMS
LOCATION: LAB SUPPORT AREAS
CONTACT: PAULA HABERKEN - TRI WEST
619.756.3698

STATIC DISSIPATIVE TILE

SDT1
MANUFACTURER: ARMSTRONG
PRODUCT: SDT
COLOR: 51950 MARBLE BEIGE
SIZE: 12"x12"
BASE: B2
LOCATION: IT WORKROOM
CONTACT: PAULA HABERKEM
619.756-3698

SDT2
MANUFACTURER: FORBO
PRODUCT: STATIC DISSIPATIVE TILE
COLOR: SD 150209 BASALT (BLACK)
SIZE: 24" x 24"
BASE: B4
LOCATION: SERVER ROOM
CONTACT: 800.842.7839

WALL FINISHES

VENEER PLASTER

VP1
MANUFACTURER: TEXSTON - TERRA GREEN
PRODUCT: SPECIALTY PLASTER
CODE: VPC-4840A-122812
LOCATION: TWO STORY LOBBY FEATURE WALL
CONTACT: 818.227.4812

WOOD (RECLAIMED)

WD3
MANUFACTURER: VINTAGE TIMBERWORKS
STYLE: SANDED BARN SIDING, SEMI SURFACED PLANK
SPECIES: OAK
COLOR: BROWN
THICKNESS: 3/4"
NOTES: $7.75/SQUARE FOOT BUDGET, PROVIDE 10% MIN WASTE FACTOR
LOCATION: @ LOBBY ACCENT WALL, BREAK ROOM, OPEN OFFICE COLUMN WRAPS, BOARD ROOM WALL/SOFFIT
CONTACT: CARMEN URSINO
951.695.1003

EPOXY WALL SYSTEM

EWS
MANUFACTURER: ARIZONA POLYMER FLOORING OR DURAFLEX
PRODUCT: A.P. SANI-WALL FRG OR DURAFLEX DURAWALL
COLOR: TBD
LOCATION: PILOT PLANT AREAS
CONTACT: -
-

WALL FINISHES (CONTINUED)

PAINT

P1
MANUFACTURER: BENJAMIN MOORE
COLOR: OC-117 SIMPLY WHITE (WHITE)
LOCATION: GYP SOFFITS U.O.N.

P2
MANUFACTURER: FRAZEE
COLOR: CLW 1007W BLAEBERRY (OFF WHITE)
LOCATION: FIELD PAINT

P3
MANUFACTURER: BENJAMIN MOORE
COLOR: HC-80 BLEEKER BEIGE (MID NEUTRAL)
LOCATION: ACCENT

P4
MANUFACTURER: FRAZEE
COLOR: CL2883UD MEXICAN TEA (DARK NEUTRAL)
LOCATION: ACCENT

P5
MANUFACTURER: BENJAMIN MOORE
COLOR: 1307 GERANIUM
LOCATION: ACCENT

P6
MANUFACTURER: BENJAMIN MOORE
COLOR: 1424 BLUE VIOLA (LIGHT PURPLE)
LOCATION: ACCENT

P7
MANUFACTURER: DUNN EDWARDS
COLOR: DE5950 PURPLE GUMBALL (MID PURPLE)
LOCATION: ACCENT

P8
MANUFACTURER: BENJAMIN MOORE
COLOR: 1414 SUPER NOVA (DARK PURPLE)
LOCATION: SERVER ROOM WALL PAINT

P9
MANUFACTURER: MDC
PRODUCT: "IDEA" DRY ERASE PAINT
COLOR: CRYSTAL CLEAR
CONTACT: ANGELA LUMAYE,
alumaye@mdcwall.com
858.361.7766

P10
MANUFACTURER: BENJAMIN MOORE
COLOR: 2111-40 TAOS TAUPE (DARK NEUTRAL)
LOCATION: BOARD ROOM (ACCENT)

P11
MANUFACTURER: BENJAMIN MOORE
COLOR: 987 BUCKHORN
LOCATION: STAIR 1 & STAIR 3 (STRINGERS)

CERAMIC TILE

CT2
MANUFACTURER: MARAZZI
STYLE: FOREST
COLOR: WHITE
FINISH: GLOSS
SIZE: 12" x 24"
GROUT: EPOXY, COLOR TBD
NOTES: RUN TILE HORIZONTALLY, PROVIDE $5.25/SF BUDGET
LOCATION: RESTROOM AND SHOWER WALL TILE (FIELD)
CONTACT: WILLOW DECKER,
wdecker@marazzitile.com
858.780.6635

GLASS

GL1
MANUFACTURER: TBD
STYLE: CLEAR TEMPERED ***LOW IRON GLASS***
COLOR: TBD
THICKNESS: TBD
LOCATION: TYPICAL CLEAR GLAZING
NOTES: THROUGHOUT
CONTACT: -

GL2
MANUFACTURER: PULP STUDIO
PRODUCT: BACK PAINTED 3/8" GLASS
COLOR: MATCH (P2) - CUSTOM COLOR
SIZE: TBD, SEE ELEVATIONS
LOCATION: GLASS MARKERBOARDS
CONTACT: CHARLOTTE PIERCE,
CHARLOTTE@PULPSTUDIO.COM
310.815.4999

GL3
MANUFACTURER: DALTILE
STYLE: REFLECTIONS IN GLASS TILE
COLOR: CODE RED/MATTE
SIZE: 2" x 2"
LOCATION: BREAK ROOM & COFFEE BACKSPLASH
NOTES: EQUAL AMOUNTS OF EACH TILE AT BACKSPLASH, RANDOM, VERTICAL
CONTACT: SCOTT CHOUINARD
951.757.4919
scott.chouinard@daltile.com

GL4
MANUFACTURER: DALTILE
STYLE: REFLECTIONS IN GLASS TILE
COLOR: CODE RED/GLOSSY
SIZE: 2" x 2"
LOCATION: BREAK ROOM & COFFEE BACKSPLASH
NOTES: EQUAL AMOUNTS OF EACH TILE AT BACKSPLASH, RANDOM, VERTICAL

GL5
MANUFACTURER: DALTILE
STYLE: REFLECTIONS IN GLASS TILE
COLOR: ULTRA VIOLET/MATTE
SIZE: 2" x 2"
LOCATION: BREAK ROOM & COFFEE BACKSPLASH
NOTES: EQUAL AMOUNTS OF EACH TILE AT BACKSPLASH, RANDOM, VERTICAL

GL6
MANUFACTURER: DALTILE
STYLE: REFLECTIONS IN GLASS TILE
COLOR: ULTRA VIOLET/GLOSSY
SIZE: 2" x 2"
LOCATION: BREAK ROOM & COFFEE BACKSPLASH
NOTES: EQUAL AMOUNTS OF EACH TILE AT BACKSPLASH, RANDOM, VERTICAL

GL7
MANUFACTURER: PULP STUDIO
STYLE: FROSTED LAMINATED GLASS #5099
SIZE: TBD
LOCATION: LOBBY STAIR RISERS

GLASS FILM

GF1
MANUFACTURER: LUMAR
PRODUCT: GLASS FILM
STYLE: NRM PS2 FROST
LOCATION: OFFICE STOREFRONTS & CONF. RM. GLAZING
NOTES: PROVIDE 50% COVERAGE, DESIGN TBD @ OFFICES
CONTACT: SAN DIEGO GLASS COATING CO
619.280.8556

WALLCOVERING

WC1
MANUFACTURER: LUNA TEXTILES
MATERIAL: FABRIC WALLCOVERING
PATTERN: TWILIGHT
COLOR: EWT-2303 GLINT (LIGHT NEUTRAL)
SIZE: 66" W
LOCATION: BOARD ROOM
NOTES: FABRIC WRAPPED PANELS
CONTACT: MARY DAVIS
MDAVIS@LUNATEXTILES.COM
310-470-6127

WC2
MANUFACTURER: LUNA TEXTILES
MATERIAL: FABRIC WALLCOVERING
PATTERN: TWILIGHT
COLOR: EWT-2305 AURA (DARK NEUTRAL)
SIZE: 66" W
LOCATION: BOARD ROOM
NOTES: FABRIC WRAPPED PANELS

WC3
MANUFACTURER: DESIGNTEX
MATERIAL: VINYL WALLCOVERING
PATTERN: CLARITY 6118
COLOR: 6118-301P PERSIMMON (RED)
SIZE: 54" W
LOCATION: RESTROOMS
NOTES: RUN VERTICALLY

WC4
MANUFACTURER: MAHARAM
MATERIAL: VINYL WALLCOVERING
PATTERN: SARI 399426
COLOR: 015 VIOLET (PURPLE)
SIZE: 54" W
LOCATION: SEE FINISH PLANS
CONTACT: JOANNE NEWMAN,
jnewman@maharam.com
310.228.3464

MISCELLANEOUS FINISHES

WINDOW TREATMENTS

WT1
MANUFACTURER: MARIAK OR HUNTER DOUGLAS
SERIES: MANUAL ROLLER SHADES
INFO: MEDIUM VERTICAL WEAVE SHADE CLOTH MOUNTED WITHIN BLIND
PICKET (SURFACE MOUNTED)
OPENNESS FACTOR: 3%
COLOR: TBD
LOCATION: ALL EXTERIOR WINDOWS EXCEPT LOBBY
CONTACT: -

WT2
MANUFACTURER: MARIAK OR HUNTER DOUGLAS
TYPE: BLACK OUT SHADES
SERIES: TBD
INFO: TBD
LOCATION: CONF RMS. 261, 262, BOARD ROOM 206

EPOXY

EP3
MANUFACTURER: EPOXYN
COLOR: #14 PLATINUM (DARK GREY)
THICKNESS: 1"
LOCATION: LAB COUNTERTOPS
CONTACT: 800.424.5254

QUARTZ

QZ1
MANUFACTURER: TUTTO MARMO
PRODUCT: RENTAL QUARTZ
COLOR: BQ300P ALPINE POLISHED(OFF WHITE)
LOCATION: BREAK ROOM, COFFEE ROOM, RECEPTION DESK, LOBBY BENCHES
CONTACT: ROMINA MASCIOLI,
ROMINA@TUTTOMARMOINE.COM
858.689.9604

QZ2
MANUFACTURER: DUPONT
PRODUCT: ZODIAC
COLOR: CHICORY, POLISHED (DARK NEUTRAL)
LOCATION: RESTROOM AND BOARD ROOM
CONTACT: -

RESIN PANELS

RP1
MANUFACTURER: 3FORM
PRODUCT: CHROMA
COLOR: VIOLET
FINISH FRONT: RENEW
FINISH BACK: TBD
THICKNESS: 1/2"
LOCATION: UTILITY CHASE WHERE IDENTIFIED ON PLANS, 2 STORY LOBBY WALL, RECPTION DESK
CONTACT: SASHA NEILSON,
SNEILSON@3-FORM.COM
619.865.8013

SOLID SURFACE

SS1
MANUFACTURER: FORMICA
PRODUCT: SIGNATURES
COLOR: 758 BIANCO MINERAL
LOCATION: COPY, WELLNESS, MAILROOM
CONTACT: 714.343.6750
SUE SYCK, SUE.SYCK@FORMICA.COM

PLASTIC LAMINATE

PL1
MANUFACTURER: FORMICA
COLOR: 5883-58 PECAN WOODLINE, MATTE
LOCATION: LAB CASEWORK/BASE CABINETS), LOCKERS
NOTES: RUN WOODGRAIN VERTICALLY

PL2
MANUFACTURER: FORMICA
COLOR: 934 PEARL(OFF WHITE)
FINISH: GLOSS
LOCATION: BREAK ROOM, MAIL, COPY ROOM, WELLNESS - UPPER CABINET (VERTICALS)

PL3
MANUFACTURER: LAMINART
COLOR: 2420-T MINERAL GOLD (METALLIC) LIGHT NEUTRAL
LOCATION: BREAK ROOM/COPY/MAIL ROOM, WELLNESS -LOWER CABINETS (VERTICALS)
CONTACT: 310.463.6823
EILEEN WALKER,
EVALKER@LAMINART.COM

PL4
MANUFACTURER: FORMICA
COLOR: 934-58 PEARL(OFF WHITE)
FINISH: MATTE
LOCATION: LAB SHELVING OR MISC.
CONTACT: -

PL5
MANUFACTURER: LAMINART
COLOR: 2432-T SILK ROAD(DARK NEUTRAL METALLIC)
LOCATION: BOARD ROOM MILLWORK
CONTACT: -

PL6
MANUFACTURER: FORMICA
PRODUCT: COLORCORE 2
COLOR: 7223C - FV NEW WHITE
FINISH: GLOSS @ VERTICAL SURFACE, VELOUR @ HORIZONTAL SURFACE
LOCATION: RECEPTION DESK

METAL

MT1
MANUFACTURER: CHEMETAL
STYLE/COLOR: #346 GRAPHITE
LOCATION: RESTROOM SINK APRON
NOTES: RUN GRAIN VERTICALLY
CONTACT: CPS GARTEN CORP.
800.367.8505

MT2
MANUFACTURER: SCHLUTER
STYLE: TBD
COLOR: STAINLESS STEEL
LOCATION: RESTROOM BASE TRIM
CONTACT: 800.472.4588
www.schluter.com

MT3
MANUFACTURER: FIVE ELEMENTS
MATERIAL: STAINLESS STEEL TILE
SIZE: 1" x 3"
LOCATION: RESTROOM ACCENT
NOTES: PROVIDE $20/SF BUDGET(MATERIAL)
CONTACT: CHRISTA KEYSER
877.695.2092
christa@thefiveelements.net

MT4
MANUFACTURER: MOCKETT
STYLE: DP3B
FINISH: SATIN CHROME
LENGTH: 4"
LOCATION: OFFICE MILLWORK
CONTACT: 800.523.1269

MT5
MANUFACTURER: STAINLESS DOOR HARDWARE
STYLE: ES371
FINISH: STAINLESS STEEL
SIZE: 47 1/4" L
LOCATION: CONFERENCE ROOM DOORS
CONTACT: DIEGO WUETHRICH
800.523.1269 XT. 6353

MT6
MANUFACTURER: ALCOA ARCHITECTURAL PRODUCTS
PRODUCT: REYNOBOND
PAINT SYSTEM: COLOR WELD 500
COLOR: FRISCO WHITE
LOCATION: RECEPTION
CONTACT: 800.841.7774

MT7
MANUFACTURER: CHEMETAL
STYLE/ COLOR: #727 LIGHT STAINLESS STEEL ALUMINUM
LOCATION: LAB UTILITY CHASE
NOTES: RUN GRAIN VERTICALLY

MISCELLANEOUS FINISHES (CONTINUED)

GROUT

G1
MANUFACTURER: TBD
TYPE: EPOXY
COLOR: TBD
LOCATION: @ ST1

G2
MANUFACTURER: TBD
TYPE: EPOXY
COLOR: TBD
LOCATION: @ ST2

G3
MANUFACTURER: TBD
TYPE: EPOXY
COLOR: TBD
LOCATION: @ CT1

G4
MANUFACTURER: TBD
TYPE: EPOXY
COLOR: TBD
LOCATION: @ CT2, MT3

G5
MANUFACTURER: TBD
TYPE: EPOXY
COLOR: TBD
LOCATION: @ GL3, GL4, GL5, GL6

UPHOLSTERY

UPH1
MANUFACTURER: LUNA TEXTILES
PATTERN: SKETCH STRIPE
COLOR: PS5-5166 BEJEWLED
SIZE: 54"w
LOCATION:: BENCH SEATING (BACK) @ BREAK ROOM, BENCH CUSHIONS @ LOBBY(NIC), BOARD ROOM BENCH SEAT & BACK
NOTES: RUN LINEAR PATTERN VERTICALLY
CONTACT: MARY DAVIS, MDAVIS@LUNATEXTILES.COM
310-470-6127

UPH2
MANUFACTURER: CONCERTEX
PATTERN: IN COGNITUS GREEN AMAZING
COLOR: ACAI (PURPLE)
SIZE: 54"w
LOCATION: BENCH SEATING (SEAT) @ BREAK ROOM
NOTES: -
CONTACT: 888.395.2399

GENERAL NOTES - FINISH PLAN

1) CONTRACTOR SHALL VERIFY AVAILABILITY OF NEW FINISHES. CONTACT ARCHITECT IMMEDIATELY IF SPECIFIED MATERIALS ARE NO LONGER AVAILABLE.

2) VERIFY THAT SURFACES TO RECEIVE FINISHES HAVE BEEN PROPERLY PREPARED. WALLS AND FLOORS SHOULD VARY NO MORE THAN 1/8" IN 10 FEET. REPORT DEFECTS IN WRITING TO ARCHITECT.

3) MATERIALS TO BE PREPARED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS TO ENSURE A SMOOTH, ACCURATE AND EVEN INSTALLATION.

4) FOR FURTHER CLARIFICATION AS TO EXTENT OF FINISHES SEE INTERIOR ELEVATION SHEETS A-311, A-312, A-313

5) ALL TRANSITIONS BETWEEN MATERIALS SHALL BE SMOOTH.

6) PRIOR TO APPLICATION OF, ALL SURFACES SHALL BE PROPERLY PREPARED, TAPED AND SMOOTHED.

7) CONTRACTOR SHALL PROVIDE (3) 8-1/2" X 11" BRUSH OUTS OF EACH PAINT COLOR TO DGA FOR APPROVAL 2 WEEKS PRIOR TO COMMENCEMENT OF WORK. APPROVAL SHALL BE REQUIRED PRIOR TO PURCHASE OF PAINT.

8) ALL MATERIALS, FINISH SAMPLES AND SHOP DRAWINGS TO BE SUBMITTED TO DGA FOR APPROVAL PRIOR TO INSTALLATION.

9) MAXIMUM HEIGHT DIFFERENCE BETWEEN FLOOR COVERING SURFACES SHALL BE 1/4".

10) ALL PARTITIONS, COLUMNS, AND EXTERIOR WALLS SHALL RECEIVE RUBBER BASE UNLESS OTHERWISE NOTED.

11) FOR CARPET BORDERS, INSETS AND SPECIALTY SEAMING A DIAGRAM SHALL BE SUBMITTED BY THE FLOORING SUBCONTRACTOR AND APPROVED BY DGA PRIOR TO START OF WORK.

12) GYP. BD CEILINGS & SOFFITS TO BE PAINTED WHITE (P1), U.O.N.

13) PAINT ALL WALLS AND BRACE FRAMES OFF-WHITE (P2), U.O.N.

14) SEE SHEET A-613-TI FOR FLOORING TRANSITION DETAILS.

15) PROVIDE STAINLESS STEEL CORNER GUARDS AT ALL OUTSIDE CORNERS IN LAB AREAS.

KEY TO FINISH INDICATION

FINISH ABBREVIATION -MANUFACTURER
-FINISH SPECIFICATION
-CONTACT
INFORMATION

CONSULTANTS

STAMP

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 12" = 1'-0"

TITLE

FINISH SCHEDULE

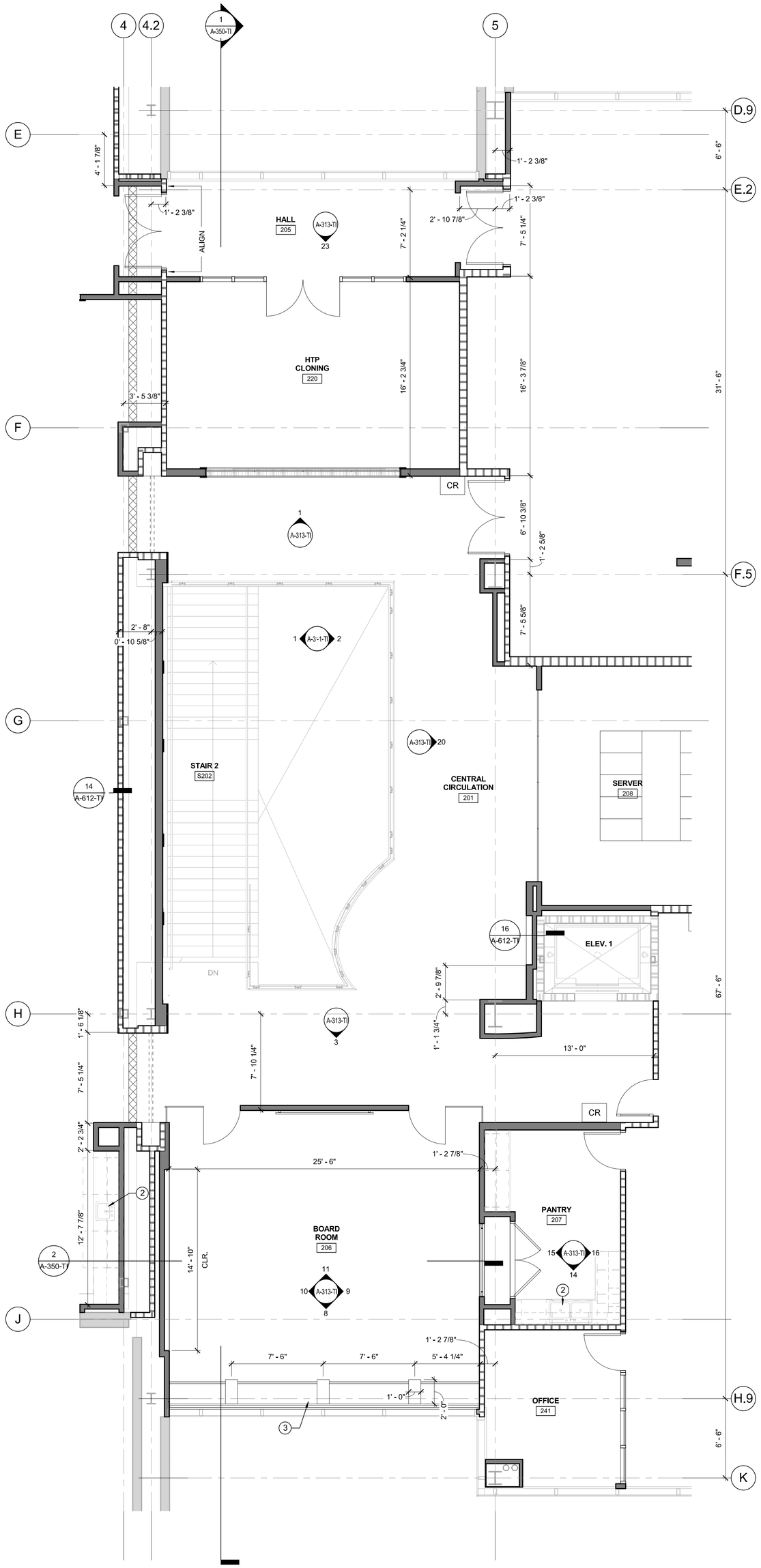
A-120-TI

12/2013 9:53:03 AM

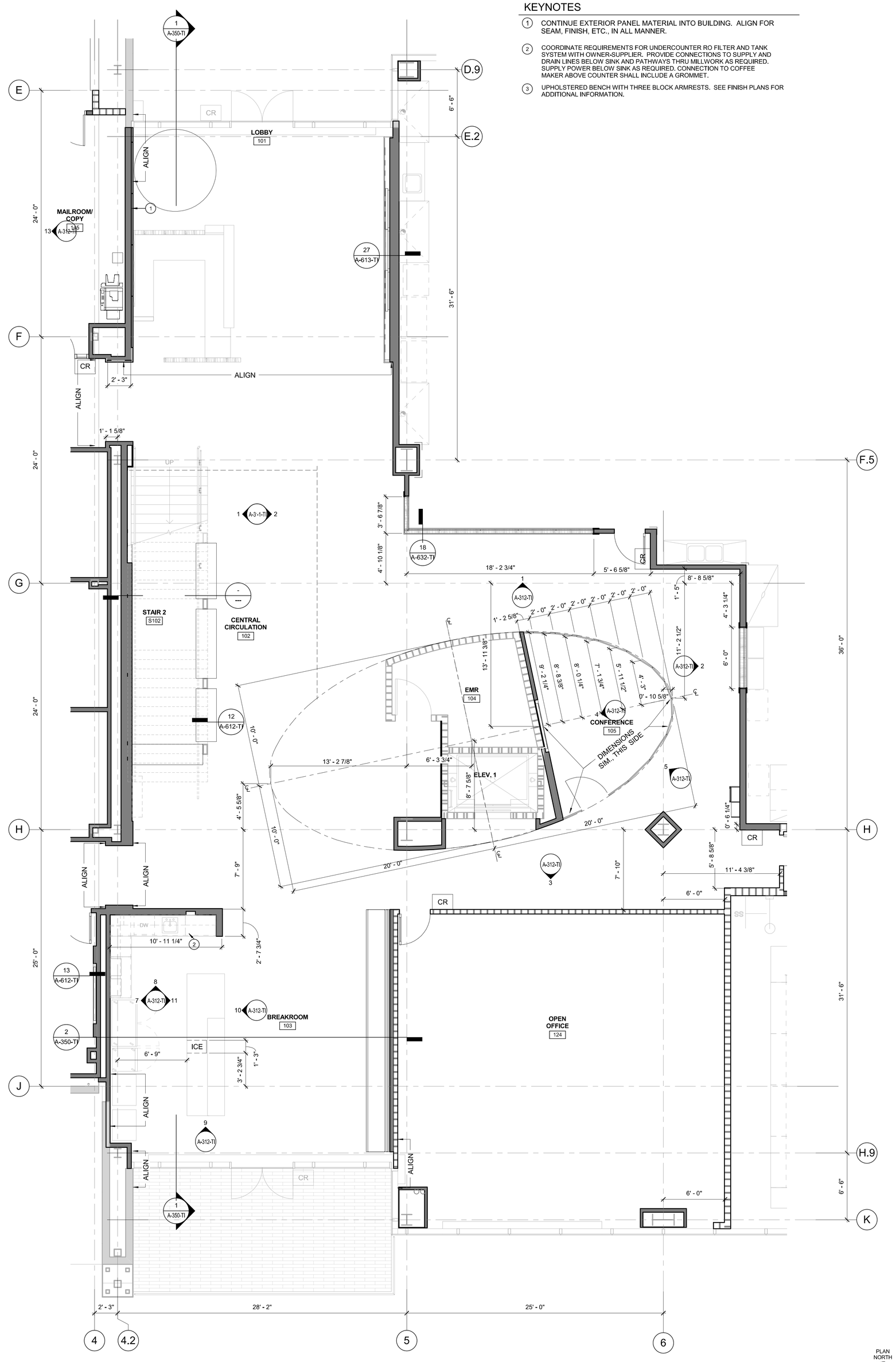
T1 FINISH SCHEDULE
12" = 1'-0"

KEYNOTES

1. CONTINUE EXTERIOR PANEL MATERIAL INTO BUILDING. ALIGN FOR SEAM, FINISH, ETC., IN ALL MANNER.
2. COORDINATE REQUIREMENTS FOR UNDERCOUNTER RO FILTER AND TANK SYSTEM WITH OWNER-SUPPLIER. PROVIDE CONNECTIONS TO SUPPLY AND DRAIN LINES BELOW SINK AND PATHWAYS THRU MILLWORK AS REQUIRED. SUPPLY POWER BELOW SINK AS REQUIRED. CONNECTION TO COFFEE MAKER ABOVE COUNTER SHALL INCLUDE A GROMMET.
3. UPHOLSTERED BENCH WITH THREE BLOCK ARMRESTS. SEE FINISH PLANS FOR ADDITIONAL INFORMATION.



2 ENLARGED 2ND LEVEL LOBBY PLAN
1/4" = 1'-0"



1 ENLARGED 1ST LEVEL LOBBY PLAN
SCALE 1/4" = 1'-0"

CONSULTANTS

STAMP

LICENSED ARCHITECT
TIMOTHY J. ESCHER
RENEW 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/4" = 1'-0"

TITLE

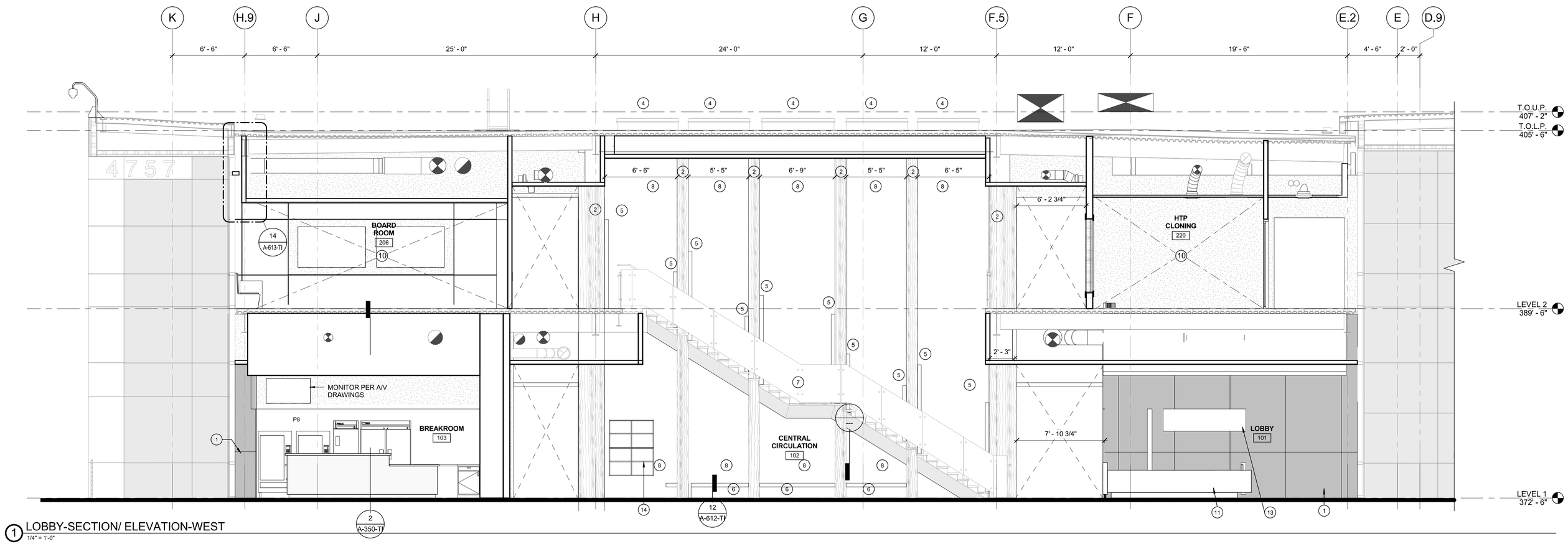
ENLARGED PLANS

A-201-TI

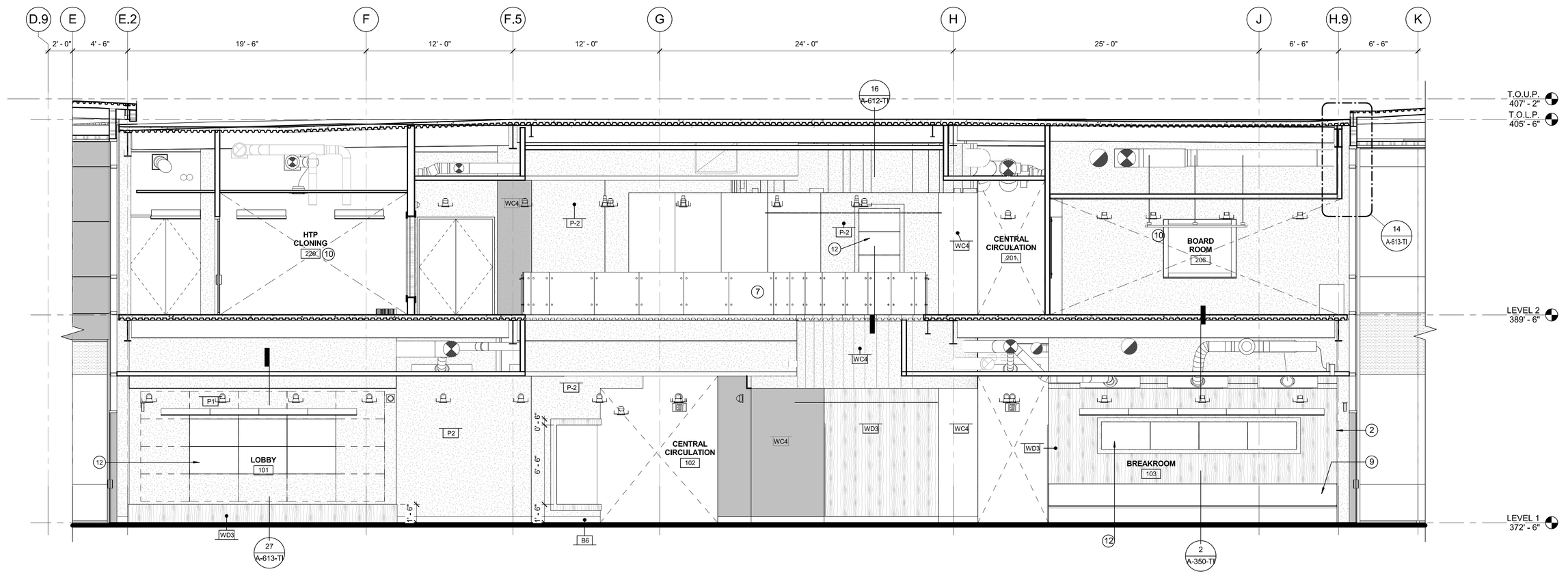
5/23/2013 9:53:12 AM

KEYNOTES

1. CONTINUE EXTERIOR PANEL MATERIAL INTO BUILDING. ALIGN FOR SEAM, FINISH, ETC,, IN ALL MANNER.
2. RECLAIMED WOOD VENEER SIDING (WD3)
3. STAIR PER SHELL DRAWINGS. RECLAD WITH RECLAIMED WOOD TREADS (WD1)
4. SKYLIGHT PER SHELL PACKAGE
5. ACCENT BANDS,2-1/2" WIDE X 1/2" THICK RESIN PANEL (RP1) SLOTS ALTERNATING 8'-0" & 5'-0" ABOVE FINISHED SURFACE OF STAIR TREAD. VARYING HEIGHTS AS SHOWN. ATTACH OVER PLASTER W/ 1/4" LAG BOLT, WASHER & 1/2" ACORN NUT.
6. BENCH SEATING- CUSTOM MILLWORK- SEE 16 &17/ A612-TI
7. GLASS RAILING (GL1) - REFER TO SHELL PACKAGE
8. VENETIAN PLASTER (VP1)
9. BANQUETTE SEATING (UPH1 & UPH2)- SEE 20/A-613
10. FOR ADDITIONAL INFORMATION IN THIS AREA, REFER TO INTERIOR ELEVATIONS.
11. RECEPTIONIST DESK- SEE XX
12. -
13. CORPORATE SIGNAGE BY OTHERS
14. CUSTOM MILLWORK DISPLAY CABINET



1 LOBBY-SECTION/ ELEVATION-WEST
1/4" = 1'-0"



2 LOBBY-SECTION/ ELEVATION-EAST
1/4" = 1'-0"

CONSULTANTS

STAMP

LICENSED ARCHITECT
PATRICK J. EMERY
No. 22219
REN. 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

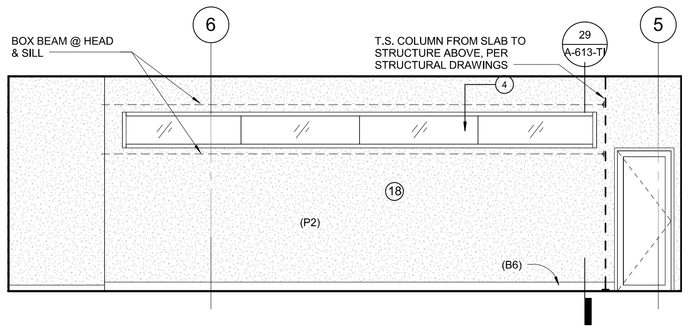
SCALE As indicated

TITLE

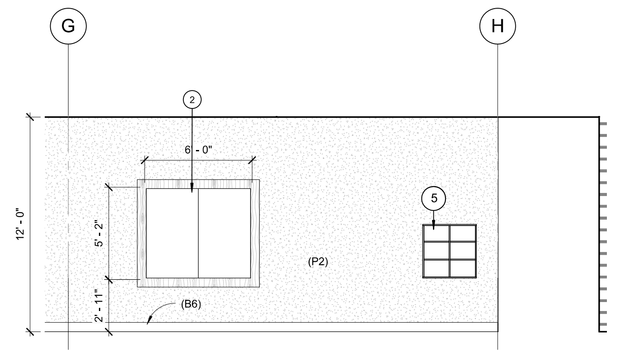
INTERIOR ELEVATIONS

A-311-TI

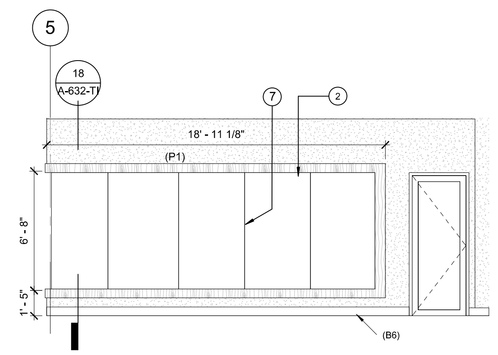
5/23/2013 9:53:33 AM



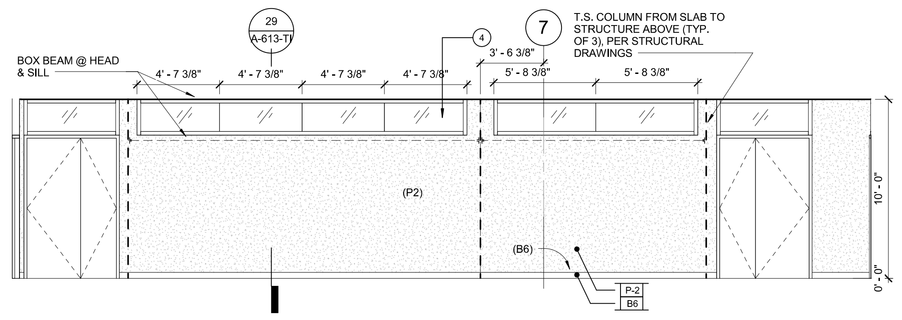
3 CENTRAL CIRCULATION 102
1/4" = 1'-0"



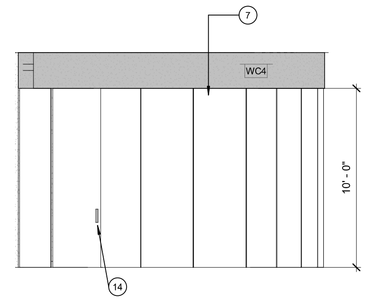
2 CIRCULATION 101 EAST ELEVATION
1/4" = 1'-0"



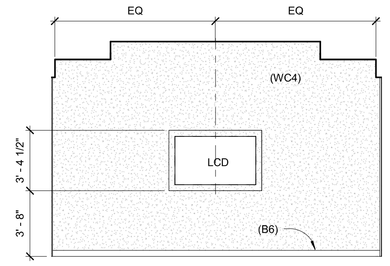
1 CIRCULATION 101 NORTH ELEVATION
1/4" = 1'-0"



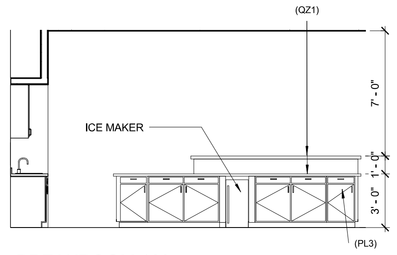
6 HALLWAY 104 SOUTH ELEVATION
1/4" = 1'-0"



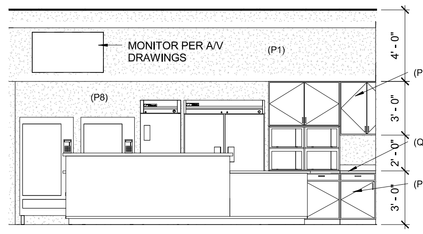
5 CONFERENCE ROOM 105 NORTH ELEV. FROM HALL
1/4" = 1'-0"



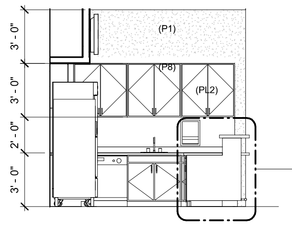
4 CONFERENCE ROOM 105 WEST ELEVATION
1/4" = 1'-0"



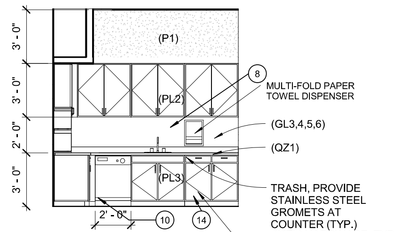
11 BREAKROOM 103
1/4" = 1'-0"



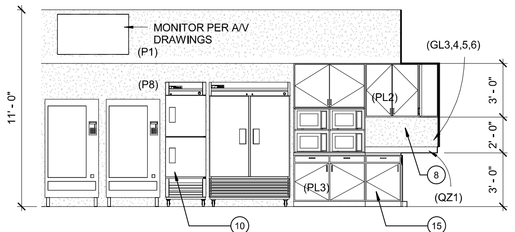
10 BREAKROOM 103
1/4" = 1'-0"



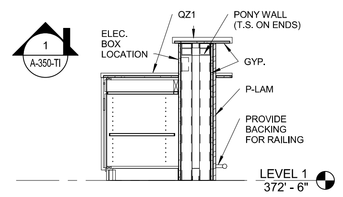
9 BREAKROOM 103
1/4" = 1'-0"



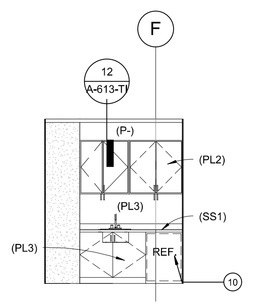
8 BREAKROOM 103
1/4" = 1'-0"



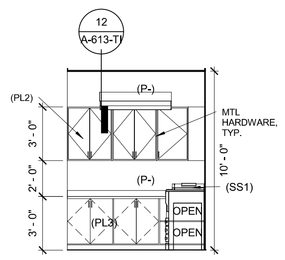
7 BREAKROOM 103
1/4" = 1'-0"



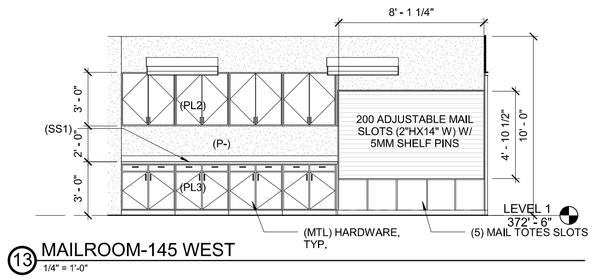
16 PONY WALL
1/2" = 1'-0"



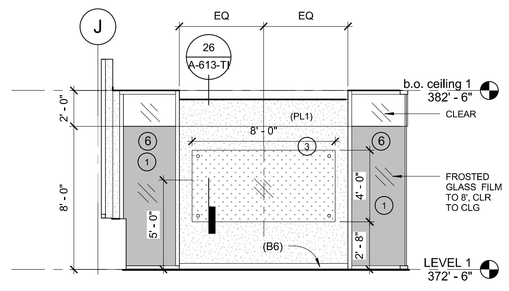
15 WELLNESS ROOM 150
1/4" = 1'-0"



14 COPYROOM 137
1/4" = 1'-0"



13 MAILROOM-145 WEST
1/4" = 1'-0"



12 CONFERENCE ROOM 134
1/4" = 1'-0"

KEYNOTES

1. TEMPERED SAFETY GLAZING
2. (WD-3) 3/4" X 4" RECLAIMED WOOD FRAME, WRAP WOOD AT THE FACE OF THE JAMB, SILL & HEAD. WRAP INTERIOR EDGE.
3. GLASS MARKER BOARD (GL2) SEE 26 A-613-TI
4. CLESTORY WINDOWS (GL1)
5. CUSTOM MILLWORK DISPLAY CABINET
6. (GFI) GLASS FILM @ OFFICE STOREFRONT(TYP.) PATTERN TBD, COVERAGE TO BE 50% OF WINDOW.
7. TEMPERED CLEAR GLAZING WITH CLEAR SILICONE SEALANT. SET IN "U" CHANNEL TOP & BOTTOM.
8. UNDER CABINET LIGHTING.
9. CUSTOM MILLWORK UPHOLSTERED BENCH.
10. OWNER FURNISHED EQUIPMENT. PROVIDE BACKING FOR MOUNTING OF EQUIPMENT. FINISH MATERIAL TO BEHIND EQUIPMENT TO MATCH SURROUNDING FINISH MATERIAL, (TYP.)
11. FROSTED DOOR
12. SLIDING GLASS BARN DOOR
13. RECLAIMED WOOD WALL (WD3)
14. COORDINATE REQUIREMENTS FOR UNDERCOUNTER RO FILTER AND TANK SYSTEM WITH OWNER-SUPPLIER. PROVIDE CONNECTIONS TO SUPPLY AND DRAIN LINES BELOW SINK AND PATHWAYS THRU MILLWORK AS REQUIRED. SUPPLY POWER BELOW SINK AS REQUIRED. CONNECTION TO COFFEE MAKER ABOVE COUNTER SHALL INCLUDE A GROMMET.
15. (MTS) STAINLESS STEEL DOOR PULL
16. PATENT DISPLAY WALL TBD (SEE SKETCH)
17. SLIDING PANTRY DOOR
18. WALL TO BE CONSTRUCTED TO 1-HR RATING TO UNDERSIDE OF DECK ABOVE. WINDOWS ARE NON-RATED AT THIS PHASE.

CONSULTANTS

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

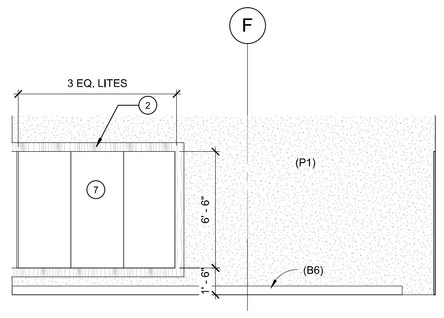
SCALE AS SHOWN

TITLE

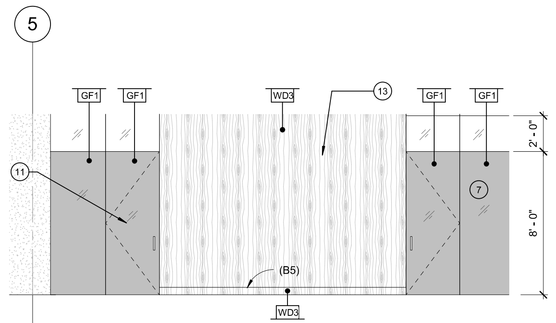
INTERIOR ELEVATIONS

A-312-TI

5/22/2019 9:53:50 AM



4 COLLISION 203 WEST ELEVATION
1/4" = 1'-0"



3 CIRCULATION 201 SOUTH ELEVATION
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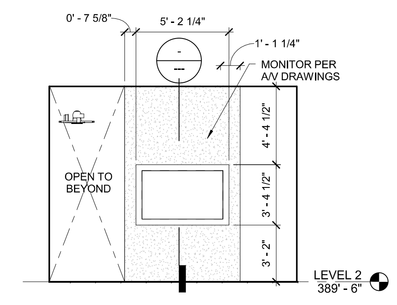
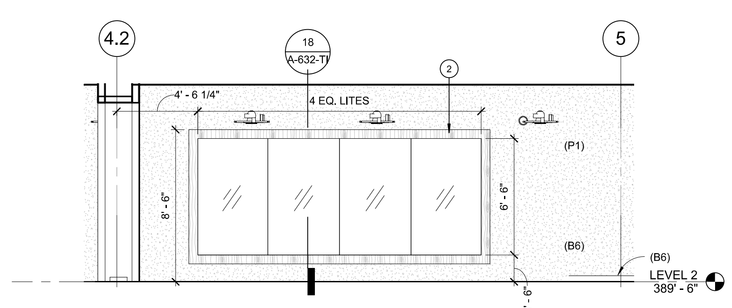
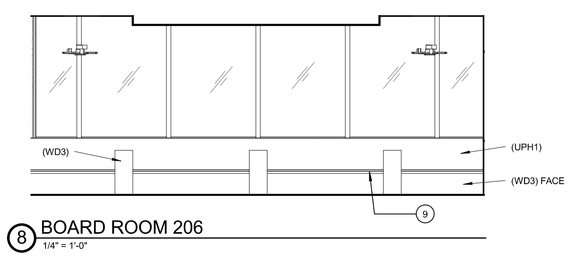


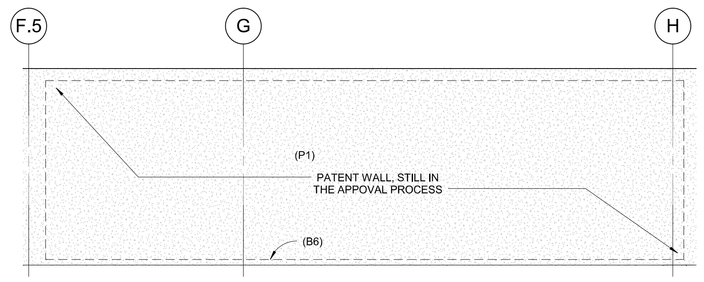
2 VIDEO DISPLAY WALL
1/4" = 1'-0"



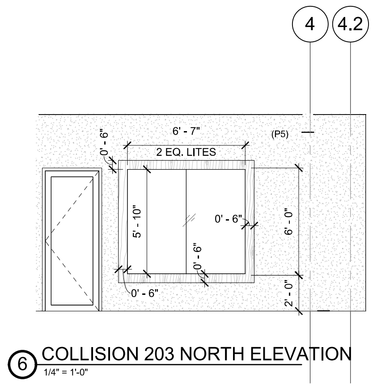
1 CIRCULATION 201 NORTH ELEVATION
1/4" = 1'-0"



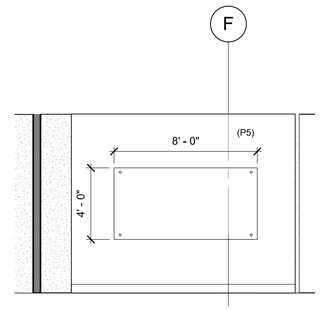
8 BOARD ROOM 206
1/4" = 1'-0"



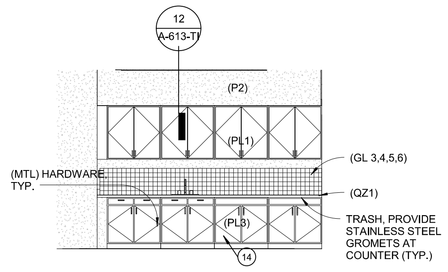
7 HALLWAY 203 EAST ELEVATION
1/4" = 1'-0"



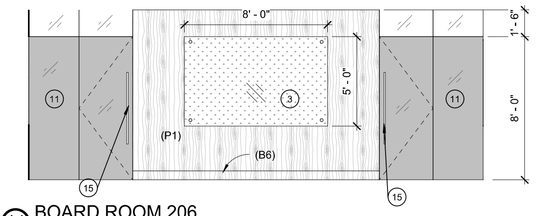
6 COLLISION 203 NORTH ELEVATION
1/4" = 1'-0"



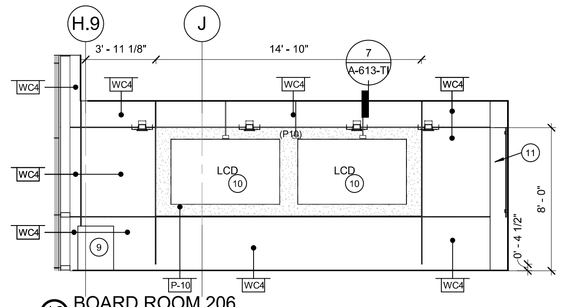
5 COLLISION 203 EAST ELEVATION
1/4" = 1'-0"



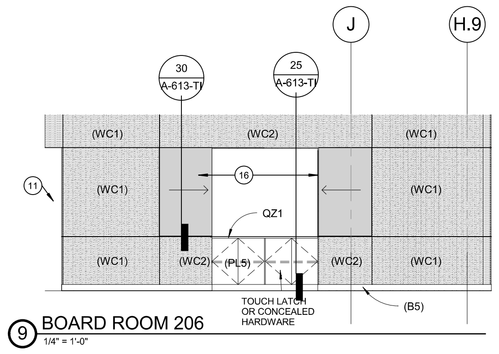
12 COFFEE 204
1/4" = 1'-0"



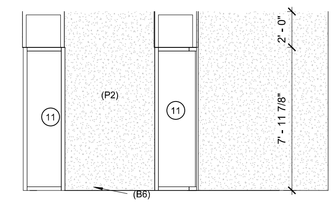
11 BOARD ROOM 206
1/4" = 1'-0"



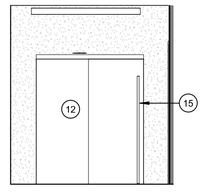
10 BOARD ROOM 206
1/4" = 1'-0"



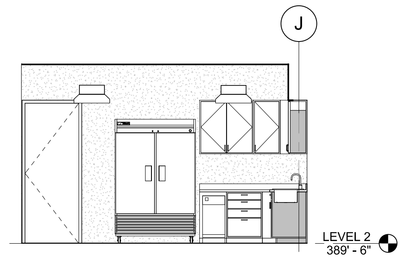
9 BOARD ROOM 206
1/4" = 1'-0"



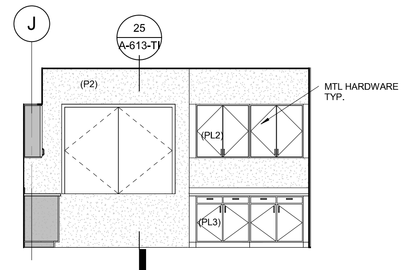
18 COLLISION 204-WEST
1/4" = 1'-0"



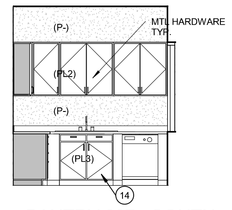
17 PRIVACY ROOM 219 (TYP.)
1/4" = 1'-0"



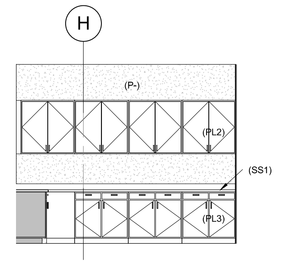
16 PANTRY 207 - EAST
1/4" = 1'-0"



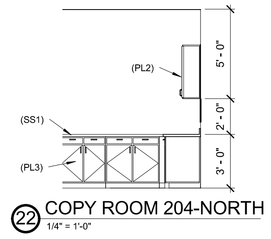
15 PANTRY 207 - WEST
1/4" = 1'-0"



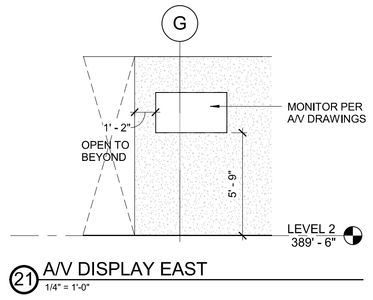
14 PANTRY 207 - SOUTH
1/4" = 1'-0"



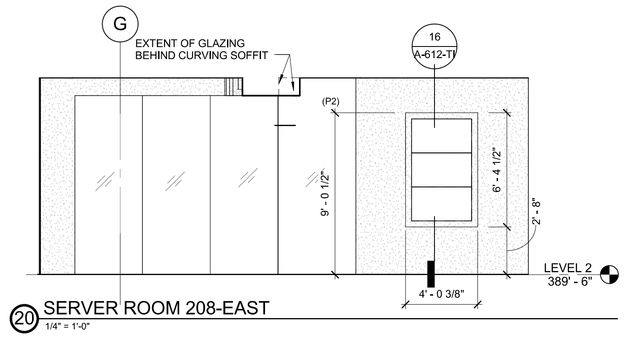
13 COPY ROOM 204- EAST
1/4" = 1'-0"



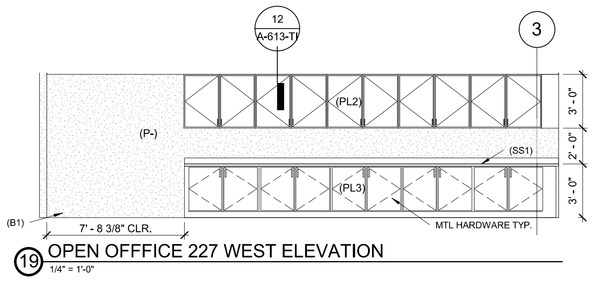
22 COPY ROOM 204-NORTH
1/4" = 1'-0"



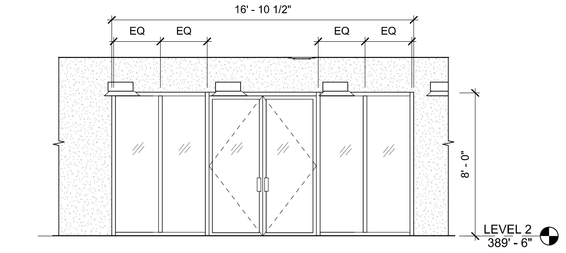
21 A/V DISPLAY EAST
1/4" = 1'-0"



20 SERVER ROOM 208-EAST
1/4" = 1'-0"



19 OPEN OFFFICE 227 WEST ELEVATION
1/4" = 1'-0"



23 STOREFRONT @ HTP CLONING
1/4" = 1'-0"

KEYNOTES

1. TEMPERED SAFETY GLAZING
2. (WD-3) 3/4" X 4" RECLAIMED WOOD FRAME, WRAP WOOD AT THE FACE OF THE JAMB, SILL & HEAD, WRAP INTERIOR EDGE.
3. GLASS MARKER BOARD (GL2) SEE 26 A-613-TI
4. CLESTORY WINDOWS (GL1)
5. CUSTOM MILLWORK DISPLAY CABINET
6. (GFI) GLASS FILM @ OFFICE STOREFRONT(TYP.) PATTERN TBD, COVERAGE TO BE 50% OF WINDOW.
7. TEMPERED CLEAR GLAZING WITH CLEAR SILICONE SEALANT. SET IN "U" CHANNEL TOP & BOTTOM.
8. UNDER CABINET LIGHTING.
9. CUSTOM MILLWORK UPHOLSTERED BENCH.
10. OWNER FURNISHED EQUIPMENT. PROVIDE BACKING FOR MOUNTING OF EQUIPMENT. FINISH MATERIAL TO BEHIND EQUIPMENT TO MATCH SURROUNDING FINISH MATERIAL. (TYP.)
11. FROSTED DOOR
12. SLIDING GLASS BARN DOOR
13. RECLAIMED WOOD WALL (WD3)
14. COORDINATE REQUIREMENTS FOR UNDERCOUNTER RO FILTER AND TANK SYSTEM WITH OWNER-SUPPLIER. PROVIDE CONNECTIONS TO SUPPLY AND DRAIN LINES BELOW SINK AND PATHWAYS THRU MILLWORK AS REQUIRED. SUPPLY POWER BELOW SINK AS REQUIRED. CONNECTION TO COFFEE MAKER ABOVE COUNTER SHALL INCLUDE A GROMMET.
15. (MTS) STAINLESS STEEL DOOR PULL
16. PATENT DISPLAY WALL TBD (SEE SKETCH)
17. SLIDING PANTRY DOOR
18. WALL TO BE CONSTRUCTED TO 1-HR RATING TO UNDERSIDE OF DECK ABOVE. WINDOWS ARE NON-RATED AT THIS PHASE.

CONSULTANTS

STAMP

LICENSED ARCHITECT
LINCOLN J. ESCOTE
C-22218
RENEW 2/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

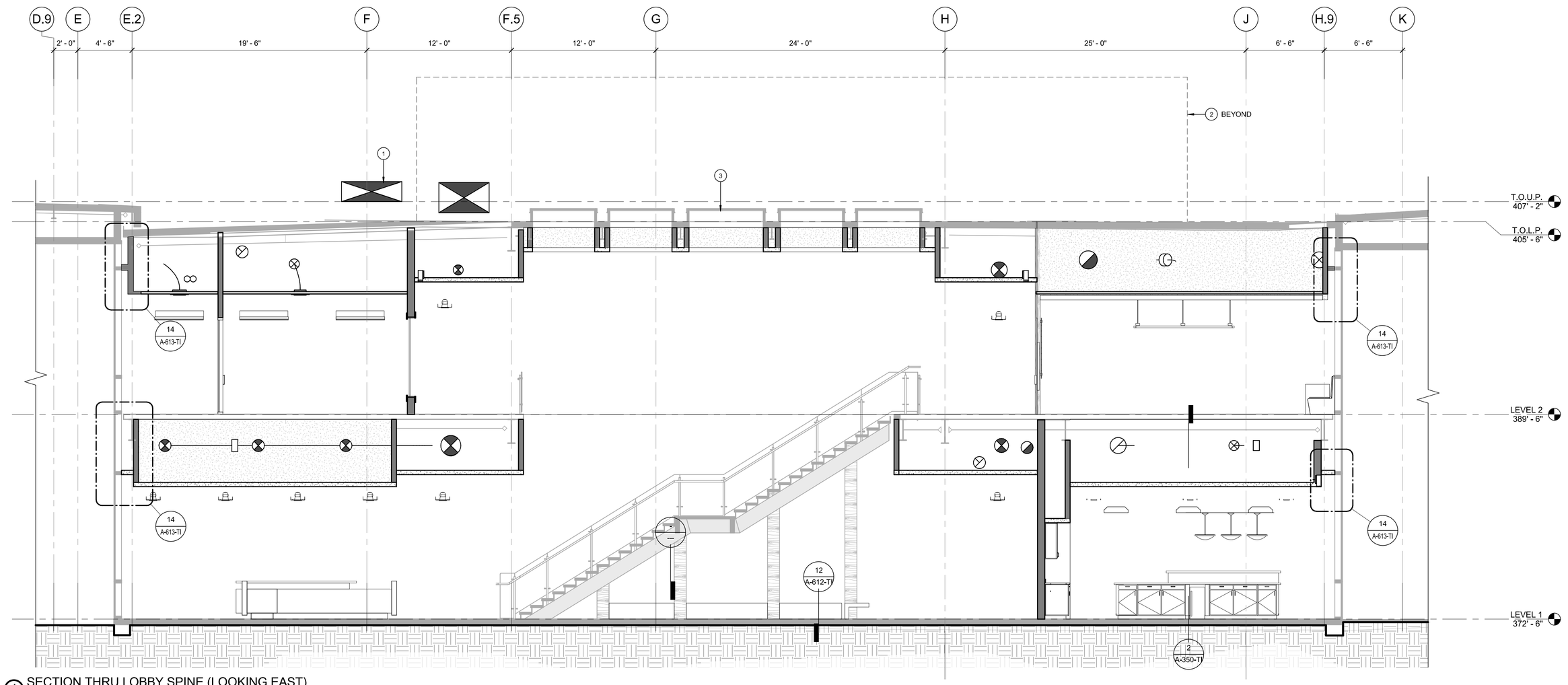
SCALE As indicated

TITLE

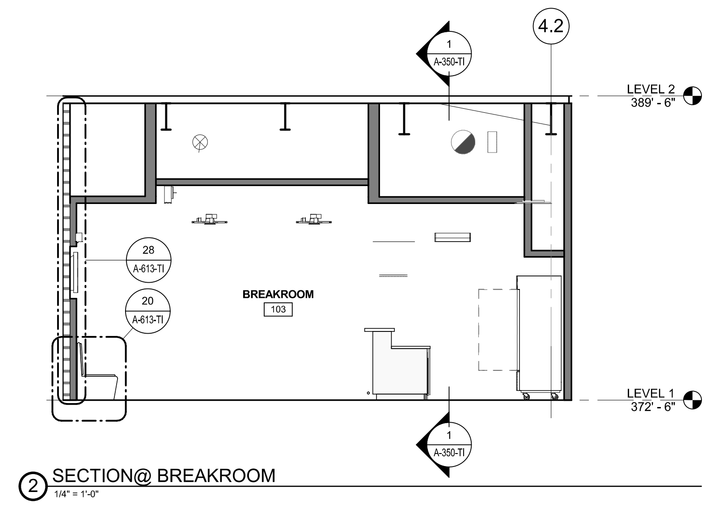
INTERIOR ELEVATIONS

A-313-TI

5/22/2013 9:53:57 AM



1 SECTION THRU LOBBY SPINE (LOOKING EAST)
1/4" = 1'-0"



2 SECTION@ BREAKROOM
1/4" = 1'-0"

5/23/2013 9:54:04 AM

CONSULTANTS

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

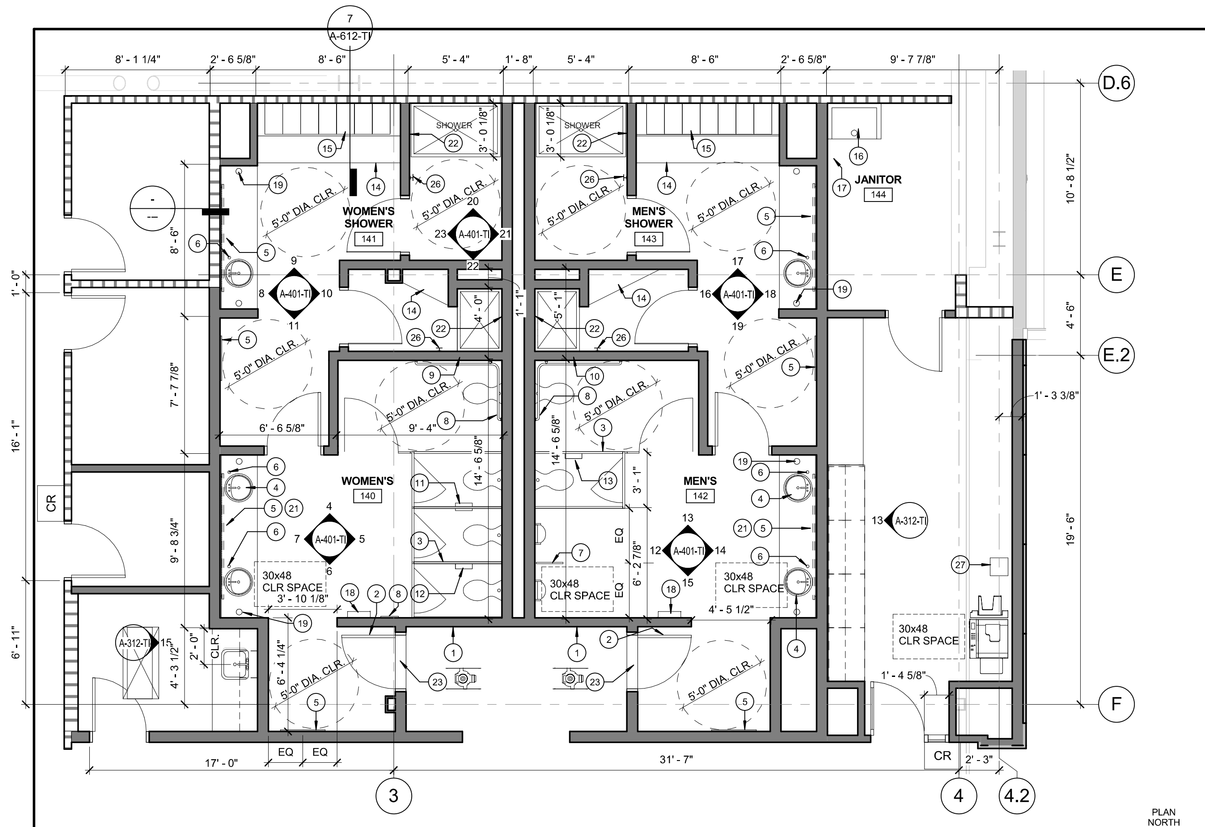
PROJECT NO. 12137

SCALE 1/4" = 1'-0"

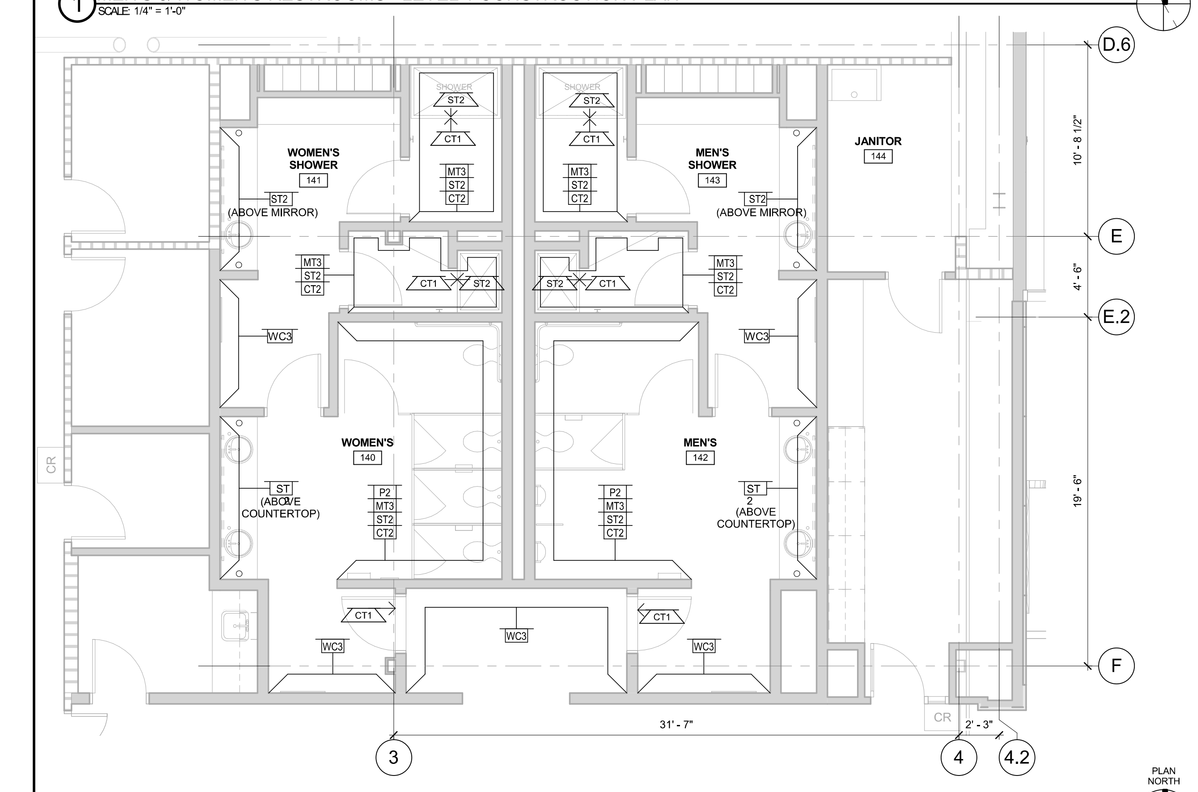
TITLE

BUILDING SECTIONS

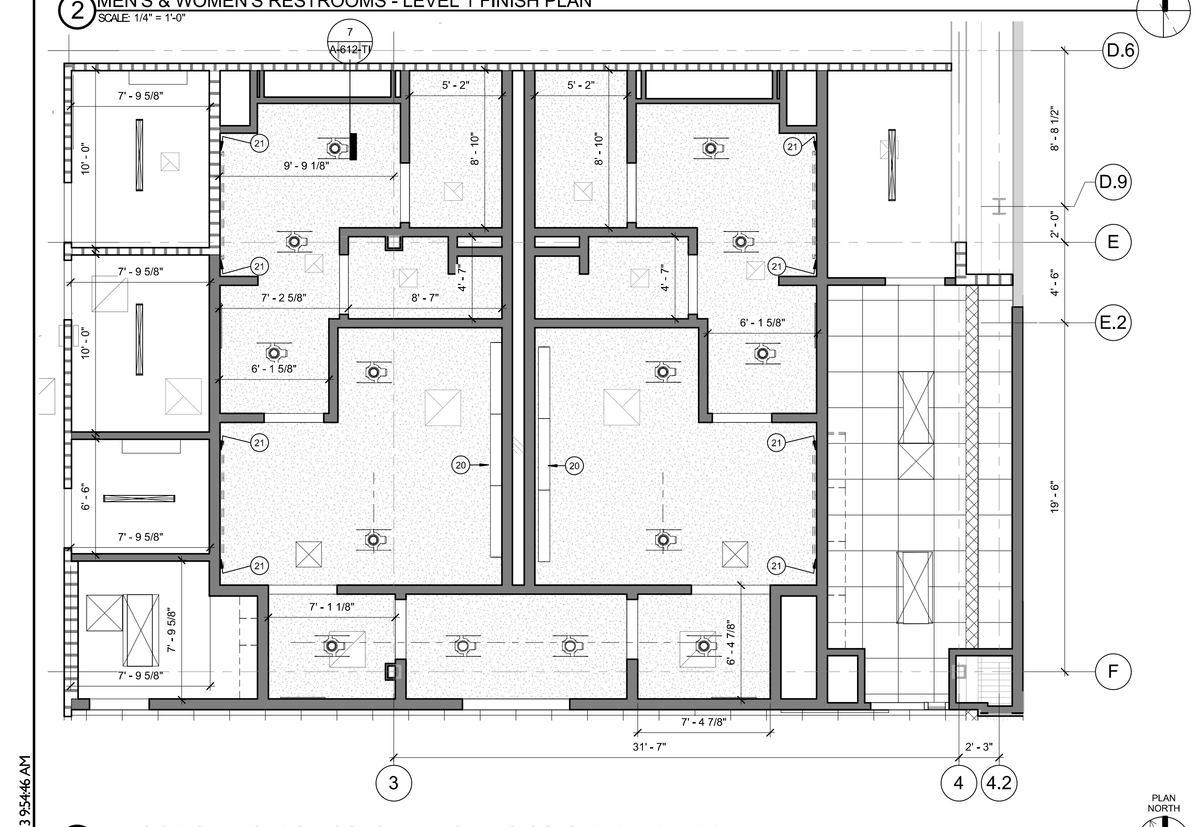
A-350-TI



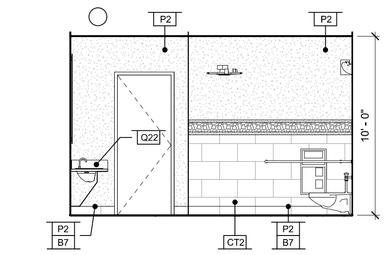
1 MEN'S & WOMEN'S RESTROOMS - LEVEL 1 CONSTRUCTION PLAN
SCALE: 1/4" = 1'-0"



2 MEN'S & WOMEN'S RESTROOMS - LEVEL 1 FINISH PLAN
SCALE: 1/4" = 1'-0"

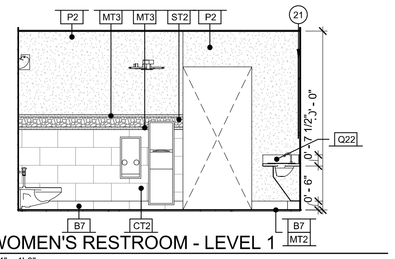


3 MEN'S & WOMEN'S RESTROOMS REFLECTED CEILING PLAN - LEVEL 1
SCALE: 1/4" = 1'-0"

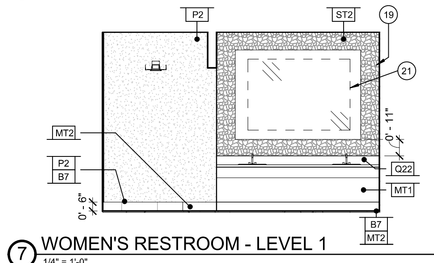


4 WOMEN'S RESTROOM - LEVEL 1
1/4" = 1'-0"

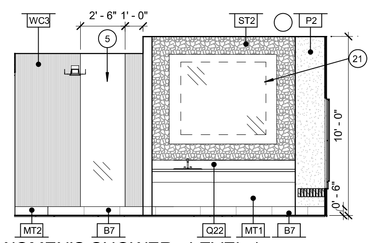
5 WOMEN'S RESTROOM - LEVEL 1
1/4" = 1'-0"



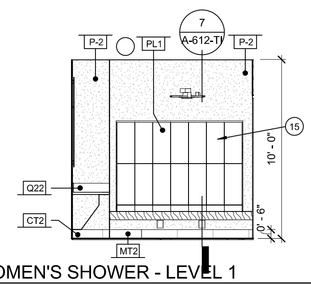
6 WOMEN'S RESTROOM - LEVEL 1
1/4" = 1'-0"



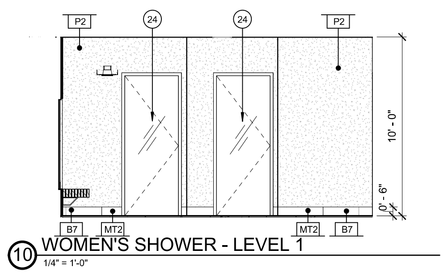
7 WOMEN'S RESTROOM - LEVEL 1
1/4" = 1'-0"



8 WOMEN'S SHOWER - LEVEL 1
1/4" = 1'-0"



9 WOMEN'S SHOWER - LEVEL 1
1/4" = 1'-0"



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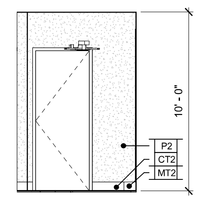
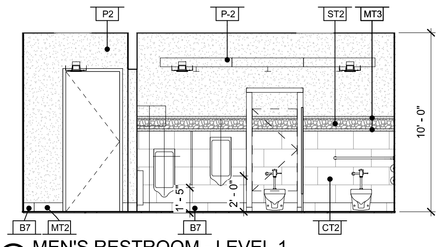
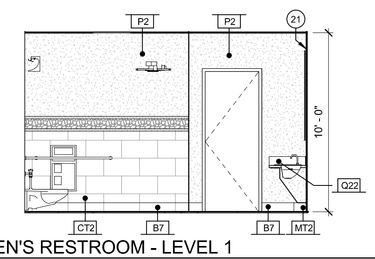
1/4" = 1'-0"



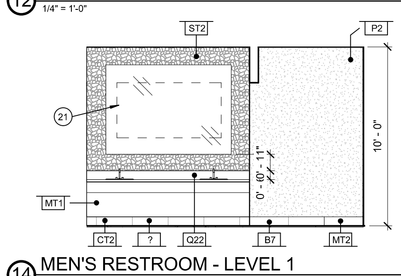
11 WOMEN'S SHOWER - LEVEL 1
1/4" = 1'-0"



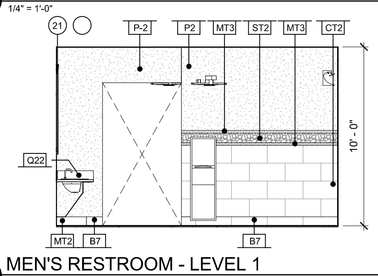
12 MEN'S RESTROOM - LEVEL 1
1/4" = 1'-0"



13 MEN'S RESTROOM - LEVEL 1
1/4" = 1'-0"



14 MEN'S RESTROOM - LEVEL 1
1/4" = 1'-0"



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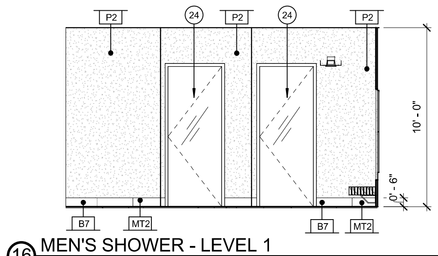
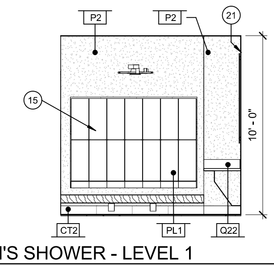
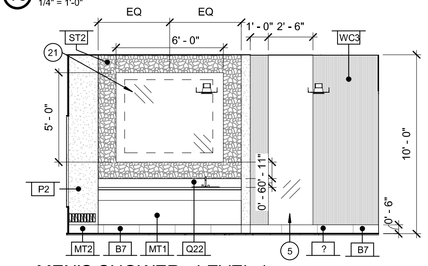
1/4" = 1'-0"



16 MEN'S SHOWER - LEVEL 1
1/4" = 1'-0"



17 MEN'S SHOWER - LEVEL 1
1/4" = 1'-0"



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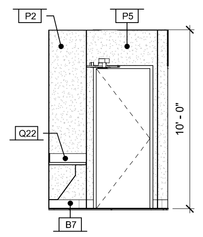

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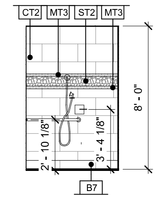

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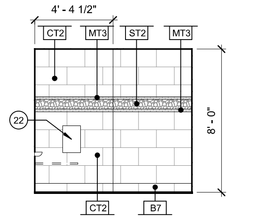

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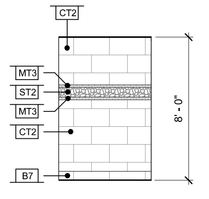

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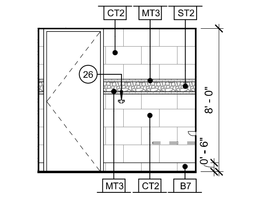
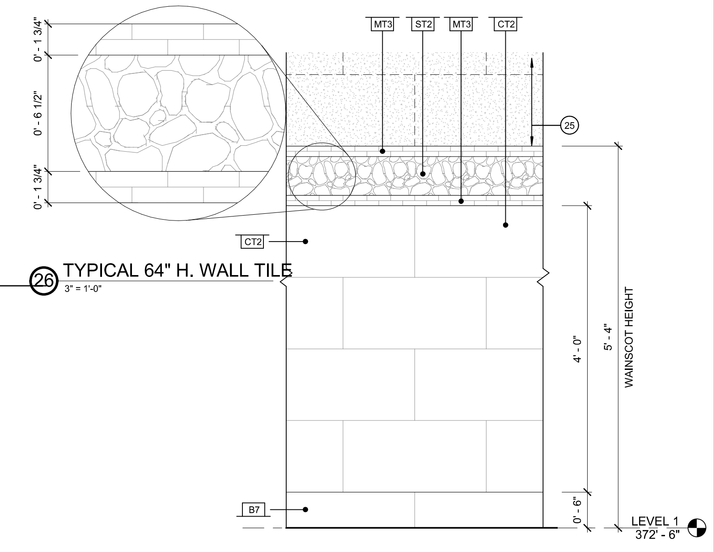


23 WOMEN'S SHOWER - LEVEL 1
1/4" = 1'-0"



26 TYPICAL 64" H. WALL TILE
3" = 1'-0"

25 TYP. TILE COURSING @ WAINSCOT & TILE WALLS
1" = 1'-0"

KEYNOTES

1. WALL TOILET ROOM SIGNAGE, SEE G-003-TI
2. DOOR TOILET ROOM SIGNAGE, SEE G-003-TI
3. FLOOR-MOUNTED, STAINLESS STEEL PARTITIONS
4. LAVATORY SINK, SEE SPECIFICATIONS & PLUMBING DWGs
5. WALL-MOUNTED MIRROR, REFER TO ELEVATIONS FOR ADDITIONAL INFORMATION
6. SOAP DISPENSER, "BOBRICK" B-822
7. S.S. URINAL SCREEN
8. 42" GRAB BAR (IN EACH ACCESSIBLE STALL COMPARTMENT) "BOBRICK" B-6806 x 42"
9. WALL-MOUNTED RECESSED - SEATCOVER, SANITARY NAPKIN & TOILET TISSUE DISPENSER, "BOBRICK" B-3574
10. WALL-MOUNTED RECESSED - SEATCOVER & TOILET TISSUE DISPENSER, "BOBRICK" B-3474
11. PARTITION-MOUNTED, DOUBLE-SIDED UNIT, SEATCOVER, TOILET TISSUE DISPENSER, SANITARY NAPKIN DISPOSAL - "BOBRICK" B-357
12. SURFACE-MOUNTED - SEATCOVER, SANITARY NAPKIN DISPOSAL & TOILET TISSUE DISPENSER, "BOBRICK" B-3579
13. SURFACE-MOUNTED - SEATCOVER & TOILET TISSUE DISPENSER, "BOBRICK" B-3479
14. CUSTOM TEAK SLAT BENCH
15. HALF-HEIGHT, P-LAM (PL-1) LOCKERS, (2) HIGH
16. FLOOR SINK
17. MOP & BROOM HOLDER - "BOBRICK" B-223 x 24"
18. WALL MOUNTED RECESSED PAPER TOWEL DISPENSER & WASTE RECEPTACLE - "BOBRICK" B-3944
19. WALL SCONCE, EACH END OF COUNTER.
20. CONTINUOUS COVE LIGHT.
21. COVE LIGHT AROUND 4-SIDES OF STAND-OFF MIRROR.
22. RECESSED NICHE @ SHOWER- SEE DETAIL X/A-XXX
23. MARBLE THRESHOLD- SEE DETAIL X/A-XXX
24. LOCKABLE GLASS DOOR WITH GLASS FILM, T.B.D.
25. FIELD TILE TO CONTINUE AT FULL-HEIGHT TILE WALLS.
26. S.S. DBL. SIDED COAT HOOK - "BOBRICK" B-672, SEE SHEET G-003-TI FOR MOUNTING HEIGHT INFORMATION.
27. PAPER SHREDDER

NOTE: SHOWERS SHALL BE FINISHED WITH SMOOTH, HARD, NONABSORBANT SURFACE, SUCH AS PORTLAND CEMENT, CONCRETE TILE, CERAMIC TILE, OR OTHER APPROVED MATERIAL AS SPECIFIED IN SECTION 1115B.3.1, ITEM 6. THE HEIGHT OF THIS SURFACE SHALL BE NOT LESS THAN 70" ABOVE THE DRAIN INLET. MATERIALS OTHER THAN STRUCTURAL ELEMENTS USED IN SUCH WALLS SHALL BE OF A TYPE WHICH IS NOT ADVERSELY AFFECTED BY MOISTURE. (CBC SECTION 1115B.2-1).

NOTE: SHOWER THRESHOLD OR RECESSED DROP SHALL BE A MAXIMUM OF 1/2" HIGH AND SHALL BE BEVELED OR SLOPED AT AN ANGLE NOT EXCEEDING 45 DEGREES (100 PERCENT GRADIENT) FROM THE HORIZONTAL.

CONSULTANTS

STAMP

LICENSED ARCHITECT — JEREMY J. ESCAMILLA — No. 32278 — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

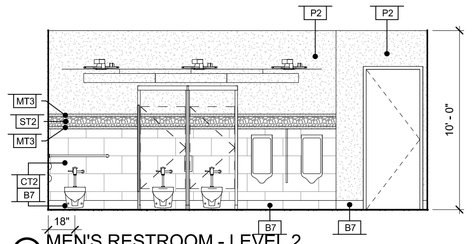
SCALE As indicated

TITLE

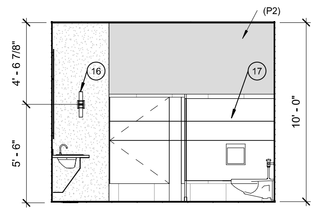
ENLARGED TOILET PLANS, ELEVATIONS AND DETAILS

A-401-TI

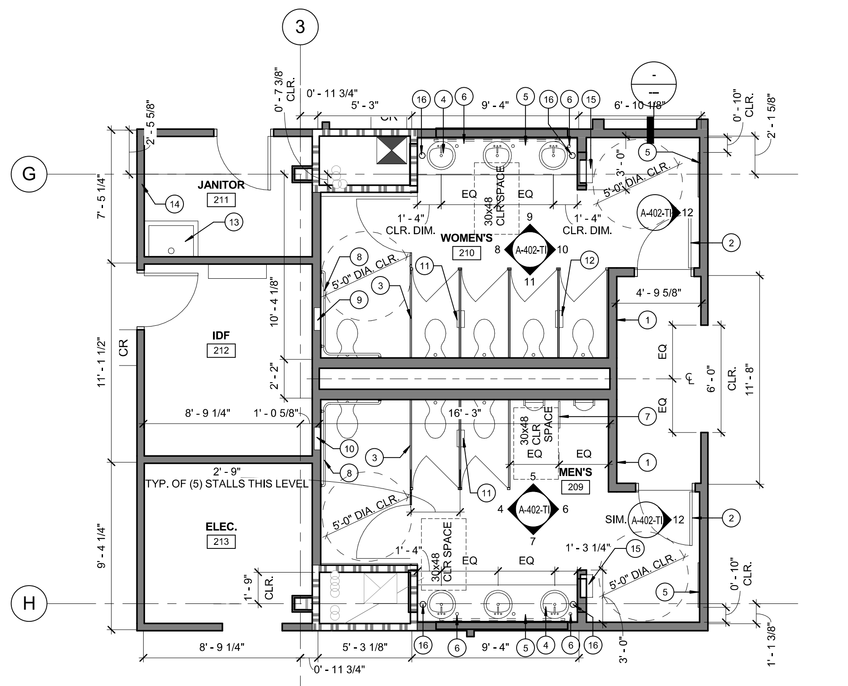
5/23/2013 9:54:46 AM



5 MEN'S RESTROOM - LEVEL 2
1/4" = 1'-0"

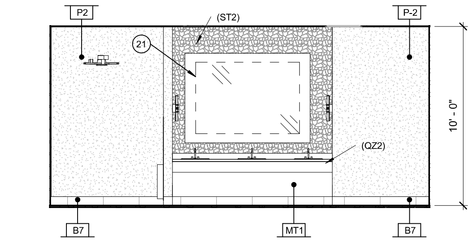


4 MEN'S RESTROOM - LEVEL 2
1/4" = 1'-0"

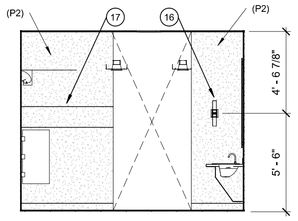


1 MEN'S & WOMEN'S RESTROOMS - LEVEL 2 CONSTRUCTION PLAN
1/4" = 1'-0"

PLAN NORTH



7 MEN'S RESTROOM - LEVEL 2
1/4" = 1'-0"



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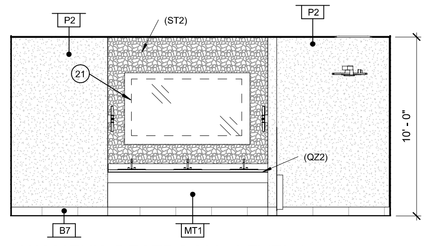
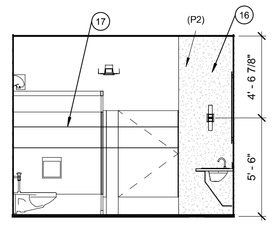
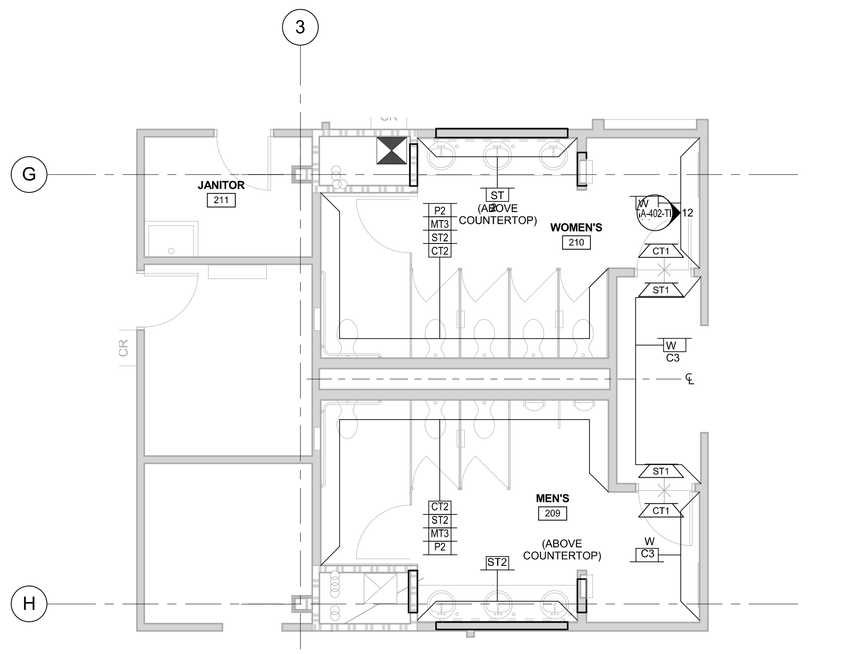
1/4" = 1'-0"



9 WOMEN'S RESTROOM - LEVEL 2
1/4" = 1'-0"

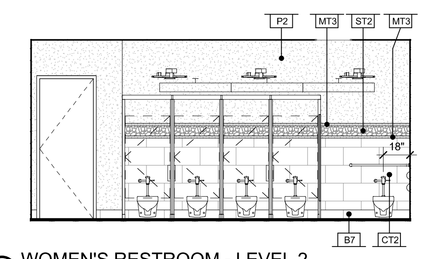


8 WOMEN'S RESTROOM - LEVEL 2
1/4" = 1'-0"

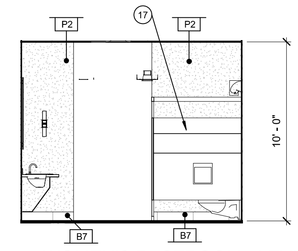


2 MEN'S & WOMEN'S RESTROOMS - LEVEL 2 FINISH PLAN
1/4" = 1'-0"

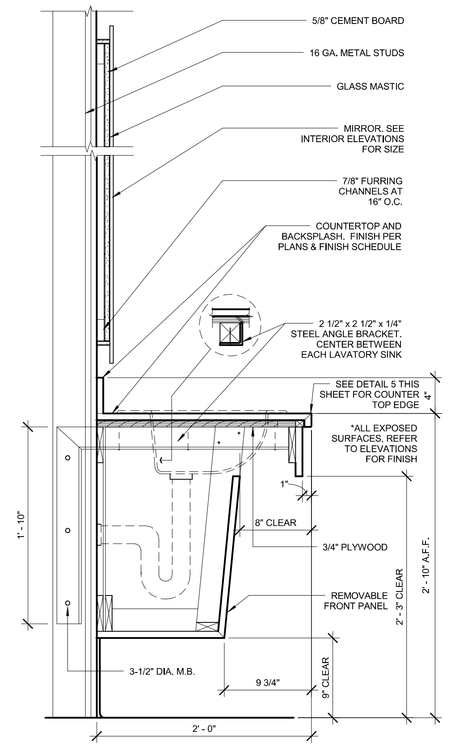
PLAN NORTH



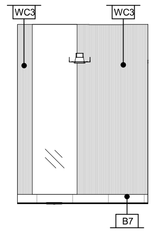
11 WOMEN'S RESTROOM - LEVEL 2
1/4" = 1'-0"



10 WOMEN'S RESTROOM - LEVEL 2
1/4" = 1'-0"

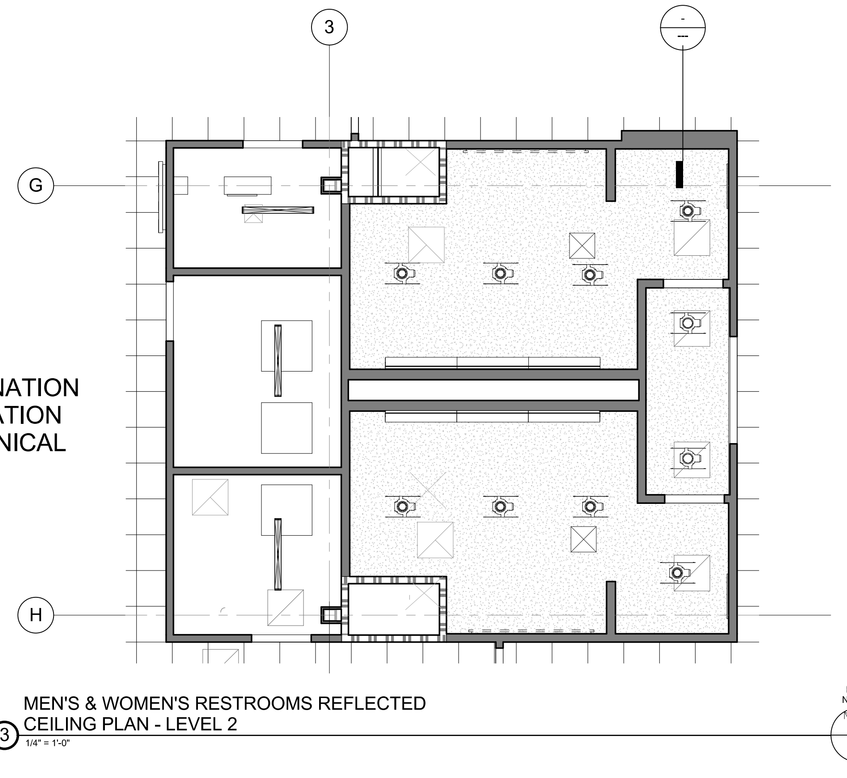


13 SECTION THRU LAVATORY COUNTER
1 1/2" = 1'-0"



12 FULL-HEIGHT MIRROR
1/4" = 1'-0"

FINAL RCP COORDINATION REQUIRED FOR LOCATION OF LIGHTING, MECHANICAL AND FIRE SPRINKLER LOCATIONS



3 MEN'S & WOMEN'S RESTROOMS REFLECTED CEILING PLAN - LEVEL 2
1/4" = 1'-0"

PLAN NORTH

KEYNOTES

1. WALL TOILET ROOM SIGNAGE, SEE G-003-TI
2. DOOR TOILET ROOM SIGNAGE, SEE G-003-TI
3. FLOOR-MOUNTED, STAINLESS STEEL PARTITIONS
4. LAVATORY SINK, SEE SPECIFICATIONS & PLUMBING DWGs
5. WALL-MOUNTED MIRROR, REFER TO ELEVATIONS FOR ADDITIONAL INFORMATION
6. SOAP DISPENSER, "BOBRICK" B-822
7. S.S. URINAL SCREEN
8. 42" GRAB BAR (IN EACH ACCESSIBLE STALL COMPARTMENT) "BOBRICK" B-6806 x 42"
9. WALL-MOUNTED RECESSED - SEATCOVER, SANITARY NAPKIN & TOILET TISSUE DISPENSER, "BOBRICK" B-3574
10. WALL-MOUNTED RECESSED - SEATCOVER & TOILET TISSUE DISPENSER, "BOBRICK" B-3474
11. PARTITION-MOUNTED, DOUBLE-SIDED UNIT, SEATCOVER, TOILET TISSUE DISPENSER, SANITARY NAPKIN DISPOSAL - "BOBRICK" B-357
12. SURFACE-MOUNTED - SEATCOVER, SANITARY NAPKIN DISPOSAL & TOILET TISSUE DISPENSER, "BOBRICK" B-3579
13. FLOOR SINK
14. MOP & BROOM HOLDER - "BOBRICK" B-223 x 24"
15. WALL MOUNTED RECESSED PAPER TOWEL DISPENSER & WASTE RECEPTACLE - "BOBRICK" B-3944
16. WALL SCONCE, EACH END OF COUNTER.
17. FIELD TILE AND ACCENT BANDING

CONSULTANTS

STAMP

LICENSED ARCHITECT
LAWRENCE J. ESCHER
No. 22278
REN. 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

ENLARGED TOILET PLANS, ELEVATIONS AND DETAILS

A-402-TI

5/23/2013 10:28:48 AM

1 1ST LEVEL FLOOR PLAN - LABORATORY & FURNISHING
1/8" = 1'-0"

5/22/2013 9:55:18 AM

CONSULTANTS

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LICENSED ARCHITECT
JEFFREY J. ESCOBAR
No. C-22219
REN. 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

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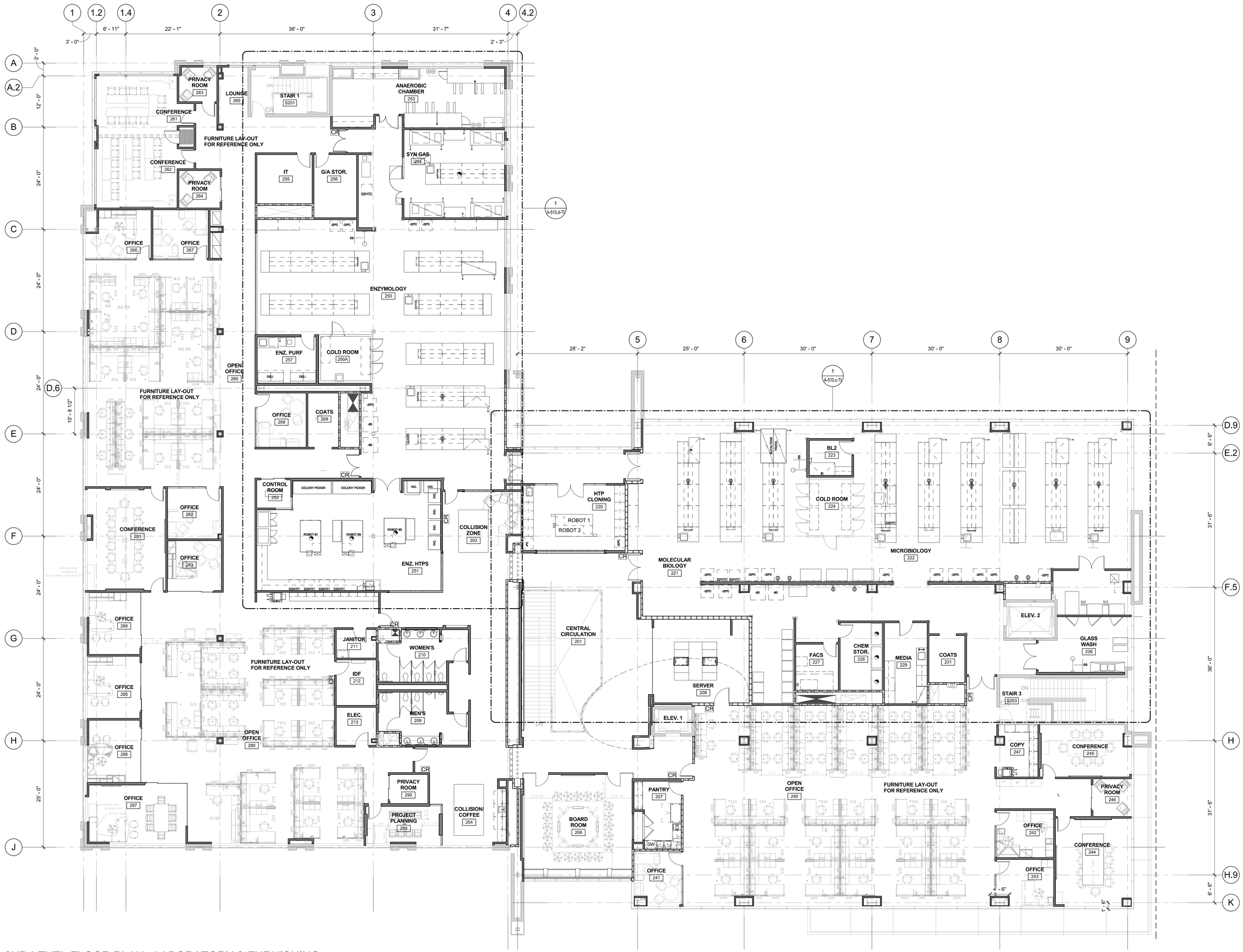
PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

FIRST LEVEL OVERALL LABORATORY PLAN

A-501L-TI



2ND LEVEL FLOOR PLAN - LABORATORY & FURNISHING

1/8" = 1'-0"

5/22/2013 9:55:29 AM

CONSULTANTS

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LICENSED ARCHITECT
JEFFREY J. ESCHER
No. C22219
RENEWAL 12/31/13
STATE OF CALIFORNIA

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CLIENT

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ADDRESS

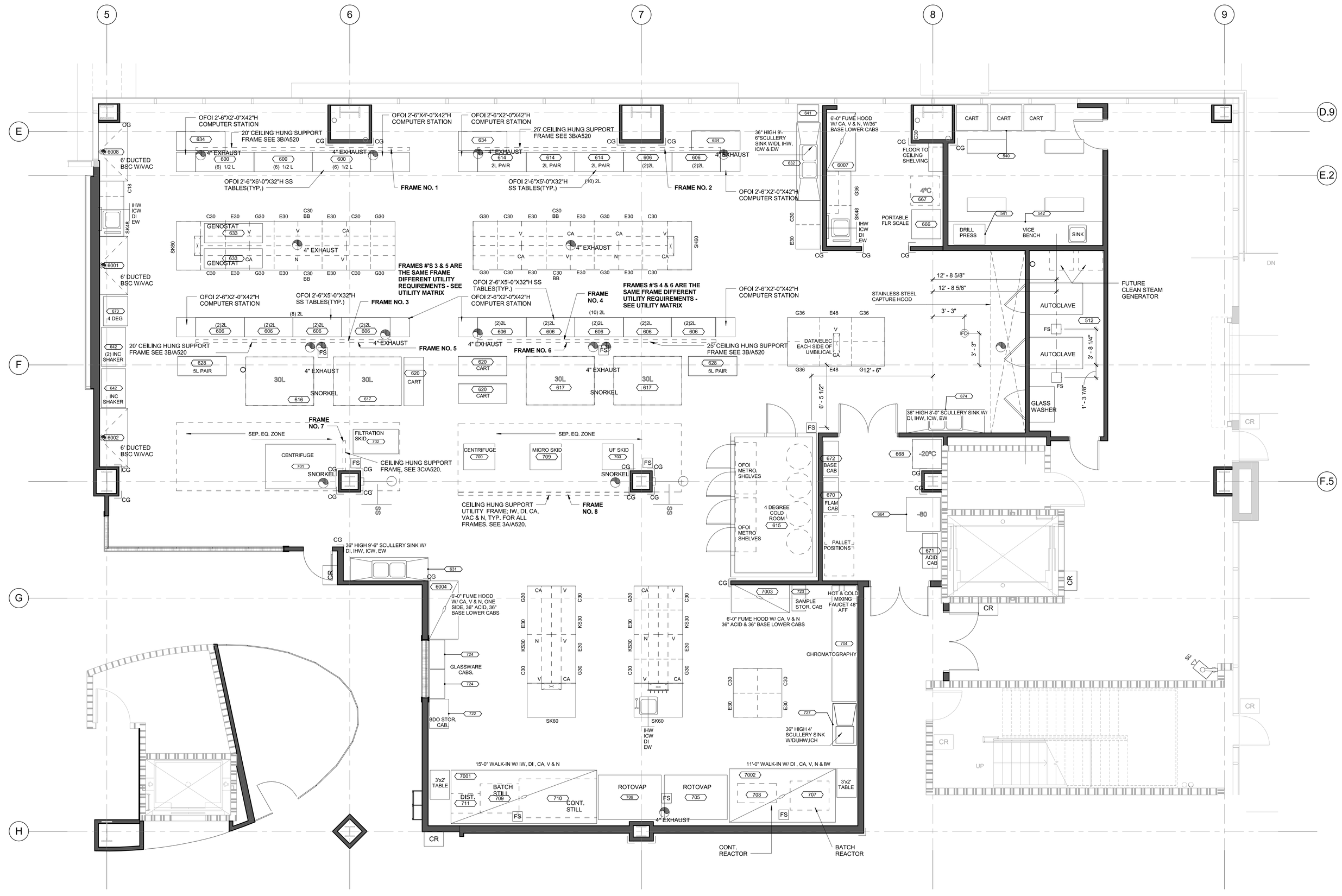
PROJECT NO. 12137

SCALE 1/8" = 1'-0"

TITLE

SECOND LEVEL OVERALL LABORATORY PLAN

A-502L-TI



1 L1-Fermentation & Separation Labs
1/4" = 1'-0"

5/22/2013 9:55:36 AM

CONSULTANTS

STAMP

LICENSED ARCHITECT
JEREMY J. ESCOBAR
RENEWAL 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

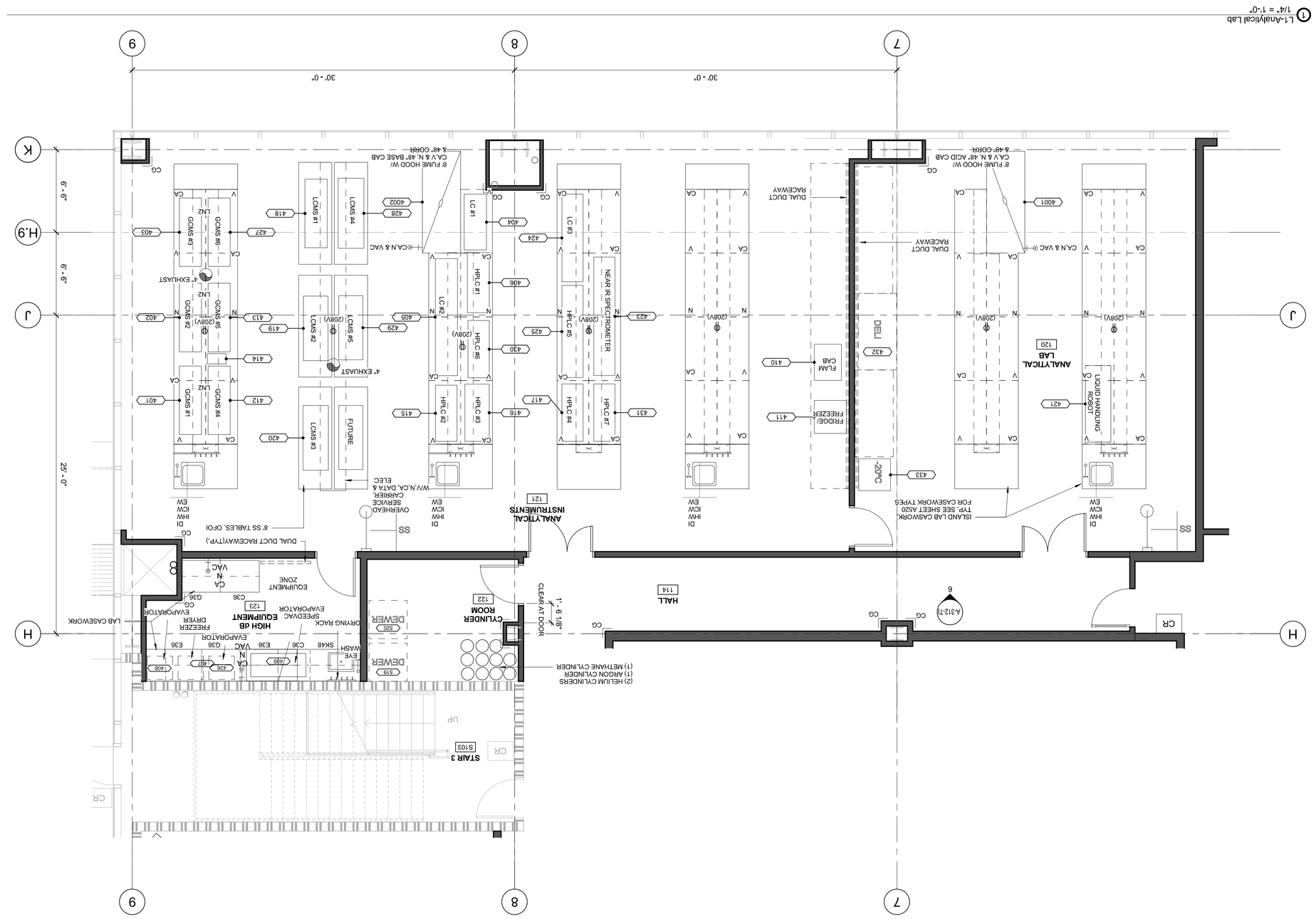
SCALE 1/4" = 1'-0"

TITLE

ENLARGED LABORATORY PLANS

A-510.a-TI

5232013 9:55:41 AM



ENLARGED
LABORATORY PLANS

TITLE

1/4" = 1'-0"
SCALE

12137
PROJECT NO.

ADDRESS

PROJECT

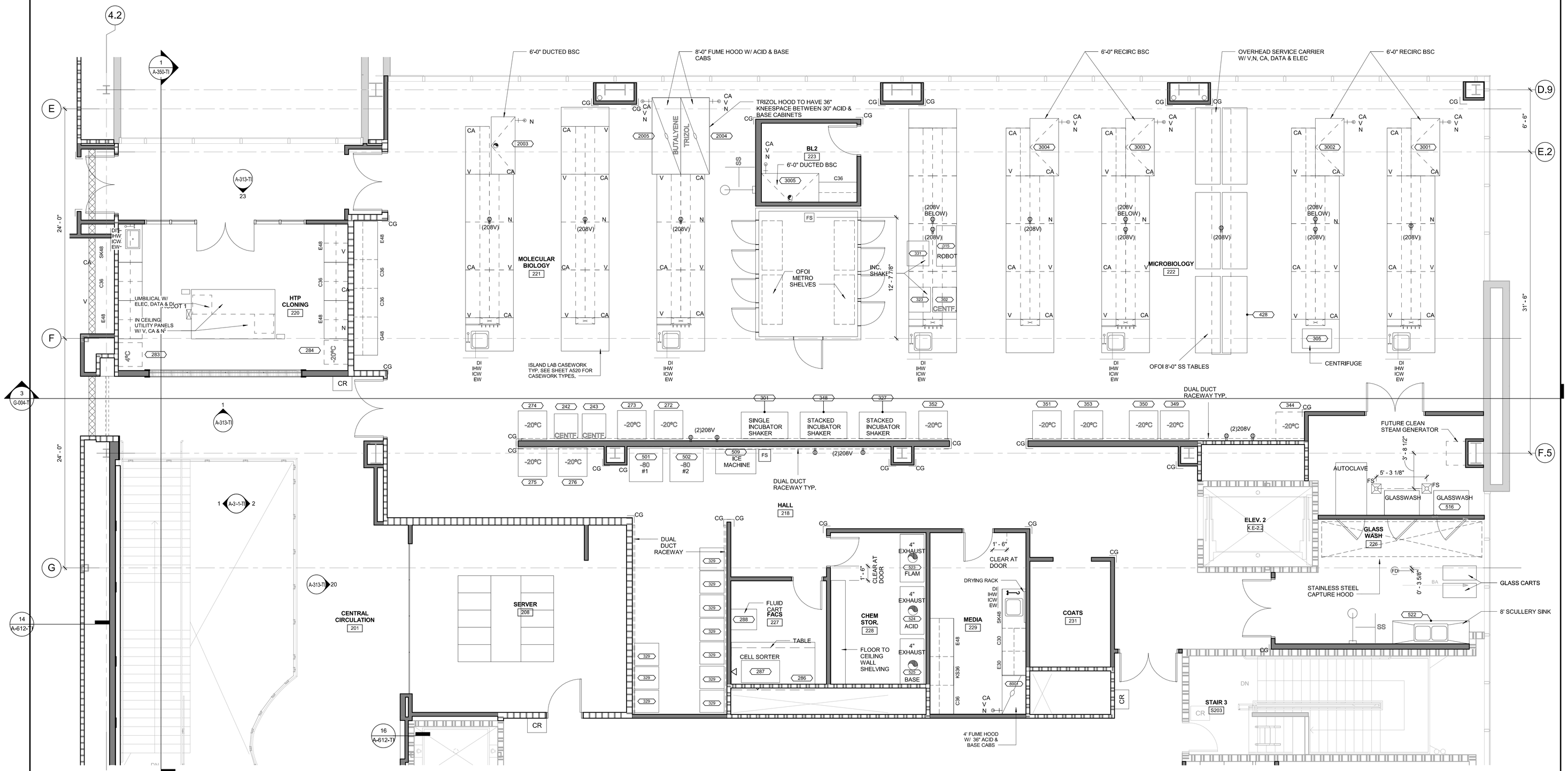
CLIENT

NO. DESCRIPTION DATE

STAMP

CONSULTANTS

A-510.b-TT



1 L2-Micro & Molec Labs
1/4" = 1'-0"

CONSULTANTS

STAMP

LICENSED ARCHITECT
JAMES J. ENTENZA
No. C22276
REN. 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

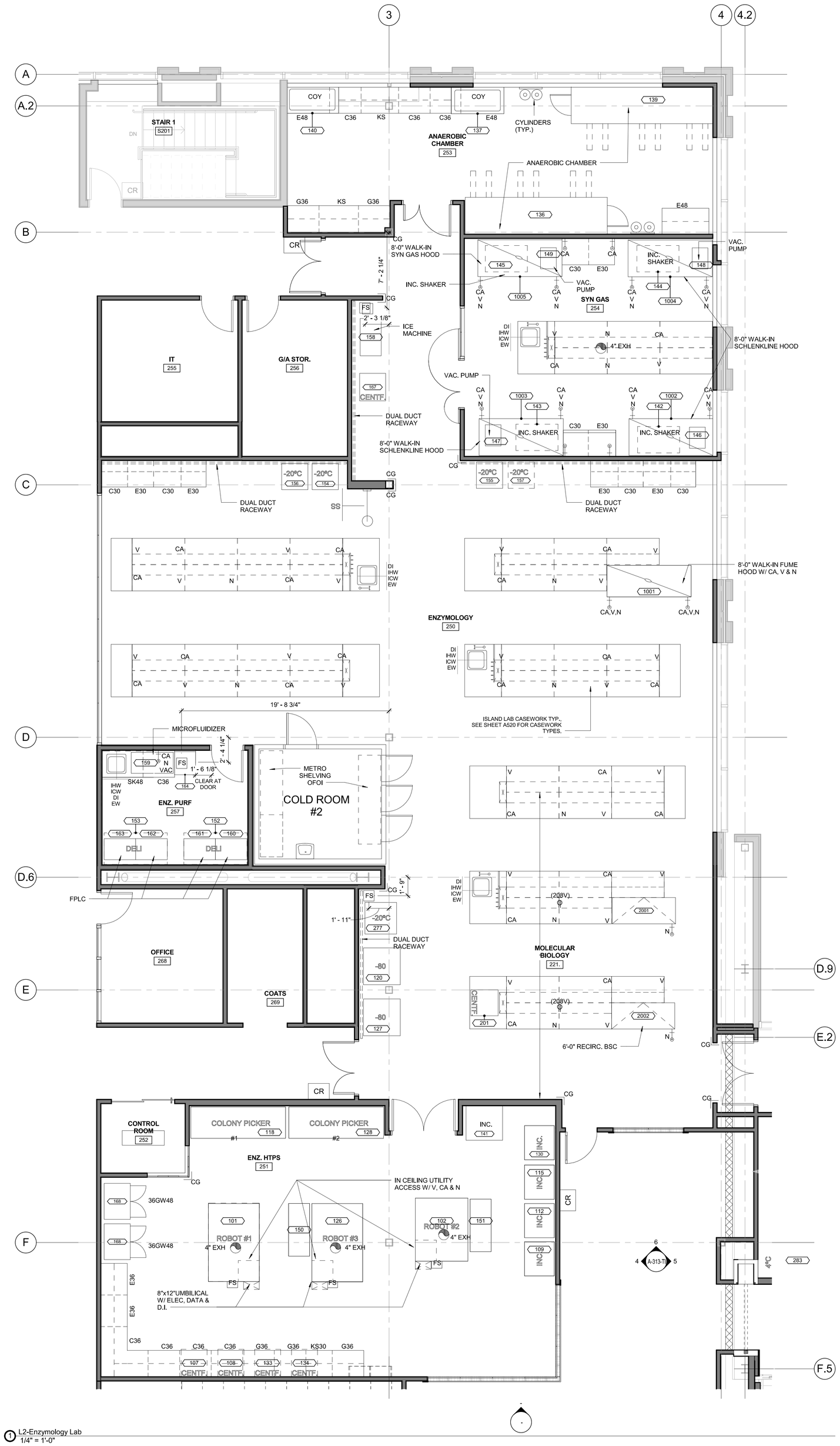
SCALE 1/4" = 1'-0"

TITLE

ENLARGED LABORATORY PLANS

A-510.c-TI

5/23/2013 9:55:48 AM



1 L2-Enzymology Lab
1/4" = 1'-0"

CONSULTANTS

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LICENSED ARCHITECT
JEREMY J. ESCOBAR
12-31-14
REN. 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

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ADDRESS

PROJECT NO. 12137

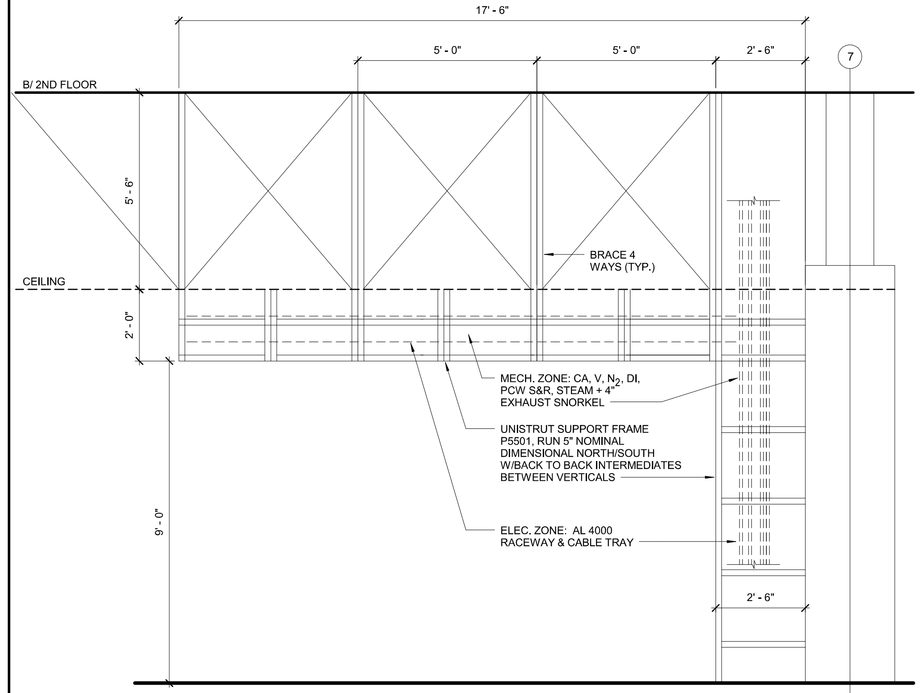
SCALE 1/4" = 1'-0"

TITLE

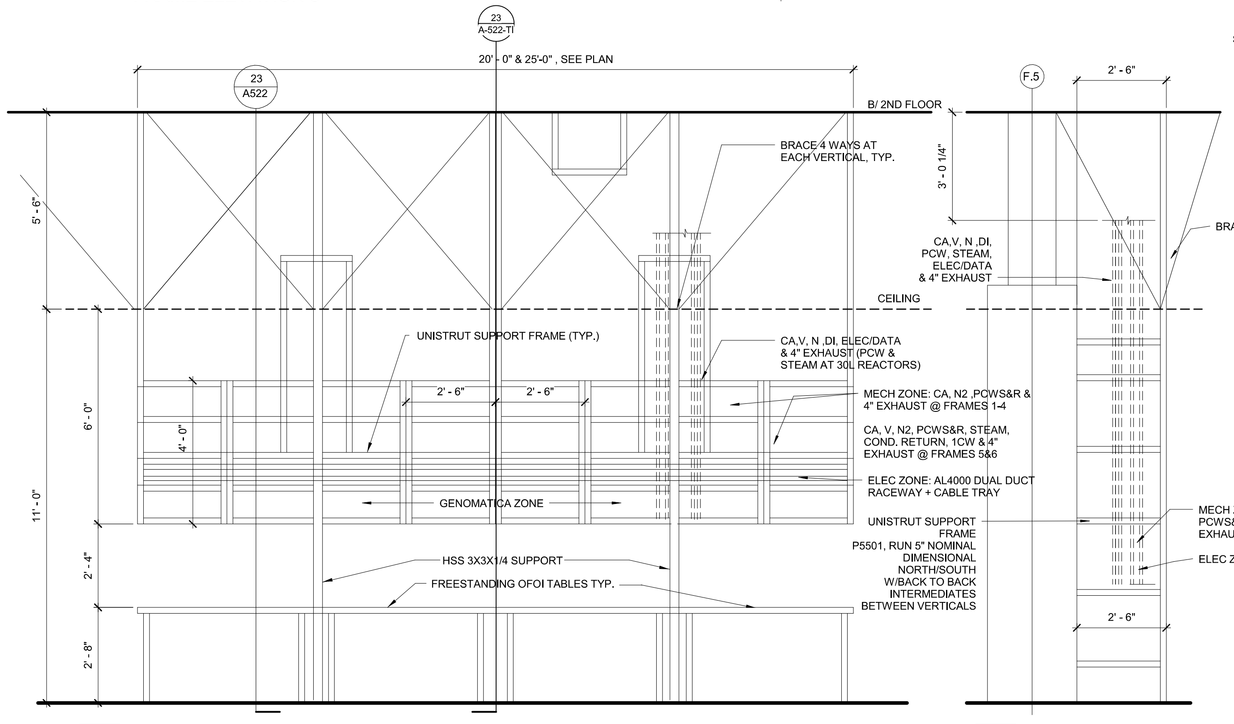
ENLARGED LABORATORY PLANS

A-510.d-TI

5/23/2013 9:55:54 AM

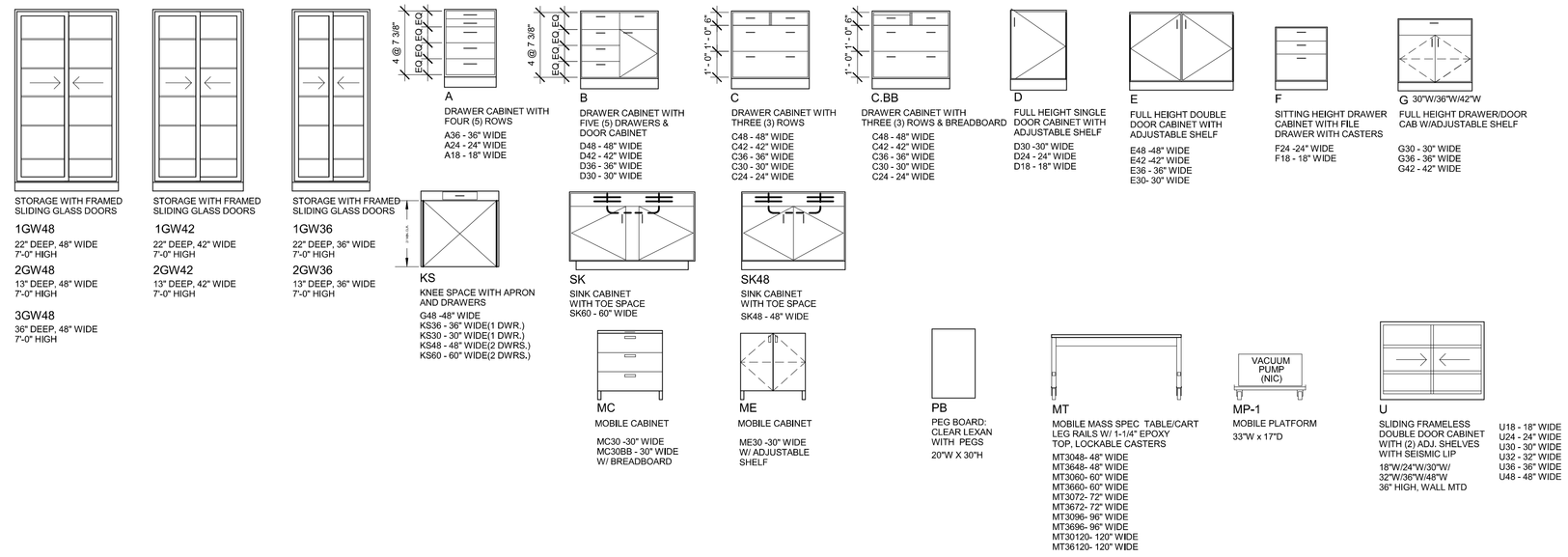


3A UTILITY FRAME @ SEPARATION EQ. LOOKING NORTH
FRAME ELEVATION 8

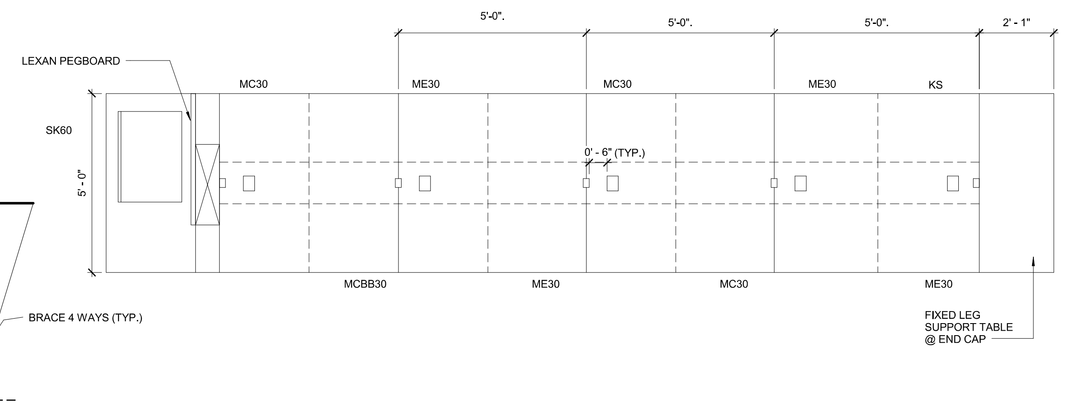


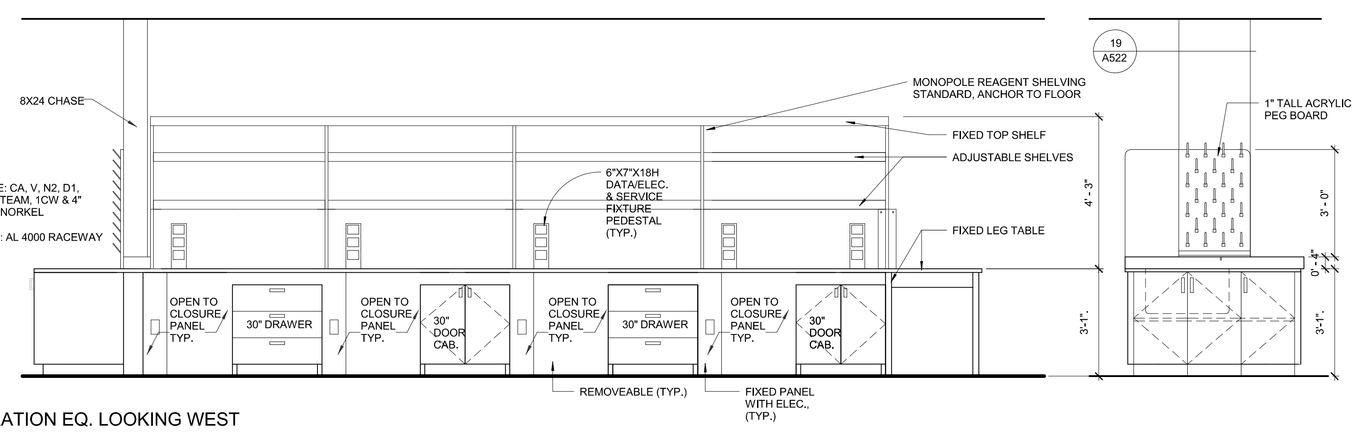
3B UTILITY FRAME AT 2L & 1/2 L FERMENTORS
FRAME ELEVATIONS 1-6

3C UTILITY FRAME @ SEPERATION EQ. LOOKING WEST
FRAME ELEVATIONS 7



1 LABORATORY CASEWORK SCHEDULE
3/8" = 1'-0"





GENERAL LABORATORY CASEWORK NOTES:

1. ALL FUME HOODS ARE TO RECEIVE CLOSURE PANELS FINISHED TO MATCH FUME HOOD

2. REFER TO DWG. -- FOR ADDITIONAL NOTES & DIMENSIONS.

3. ALL LABORATORY BASE CABINETS ARE 35" HIGH UNLESS OTHERWISE NOTED ON DRAWING (LEL +30")

4. FP = FILLER PANEL
   PB = PEGBOARD

5. WHERE PULLOT "BREAD BOARD" OCCURS, PROPER LOCATION IS TO THE RIGHT OF ADJACENT KNEE SPACE.

6. SK-1: 31" x 22" x 12" DEEP DROP-IN STAINLESS STEEL
   VERIFY WITH PLUMBING DRAWINGS

7. LABORATORY CASEWORK BENCHTOPS & TABLE TOPS, INCLUDING BACKSPLASH, ARE BLACK EPOXY RESIN UNLESS OTHERWISE NOTED ON DRAWING.

8. LABORATORY CASEWORK REAGENT SHELVES & WALL SHELVES SHALL BE THERMALLY FUSED MELAMINE W WITH SEISMIC LIP ON ALL EXPOSED EDGES PER 12/13 A-651.

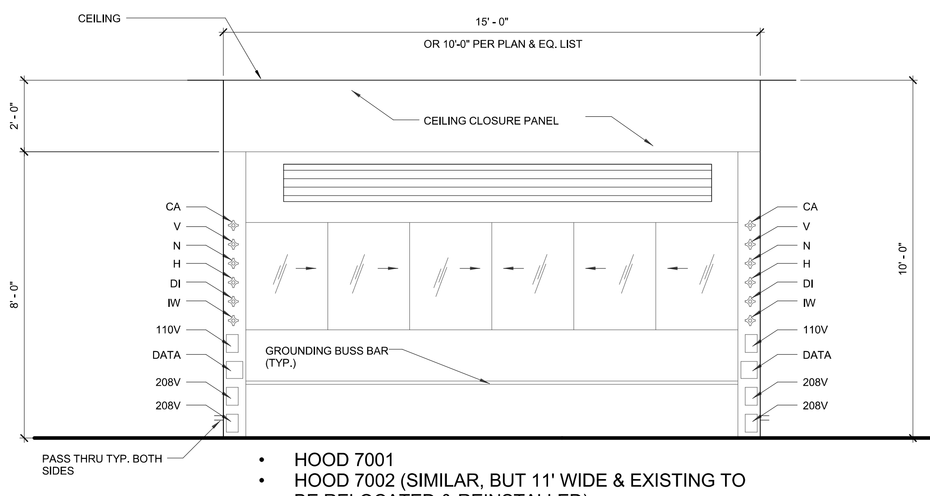
9. LABORATORY CASEWORK PULLS PER SPEC.

10. FUME HOODS SHALL BE INSPECTED, TESTED AND LABELED BY AN INDEPENDENT TESTING AGENCY SUCH AS U.L. OR E.T.L. TO MEET THE REQUIREMENTS OF N.F.P.A. 45, SECTIONS 6,12,2 & 6,13 AS FOLLOWS:

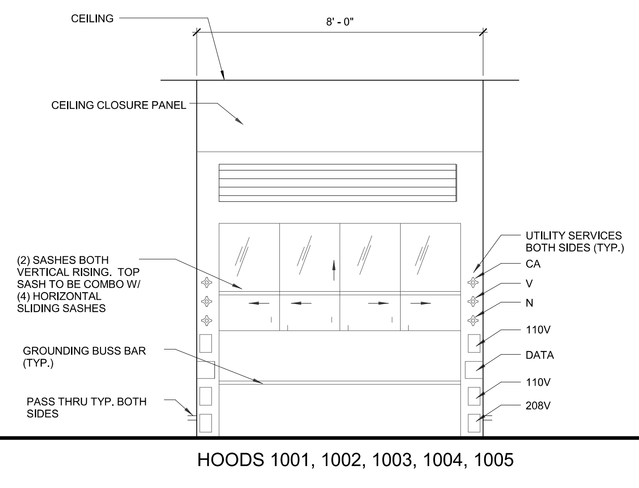
   A: A SIGN SHALL BE AFFIXED TO EACH HOOD CONTAINING THE FOLLOWING INFORMATION FROM THE LAST INSPECTION: INSPECTION INTERVAL, LAST ISPECTION DATE, AVERAGE FACE VELOCITY, LOCATION OF FAN THAT SERVES HOOD, INSPECTOR'S NAME.
   B: WHEN INSTALLED OR MODIFIED, AND AT LEAST ANNUALLY THEREAFTER, LABORATORY FUME HOODS, LABORATORY HOOD EXHAUST SYSTEMS AND LABORATORY SPECIAL EXHAUST SYSTEMS SHALL BE INSPECTED & TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A. 45, SECTION 6.13.

11. FUME HOOD BASE CABINETS - REFER TO SPECIFICATION SECTIONS 11610

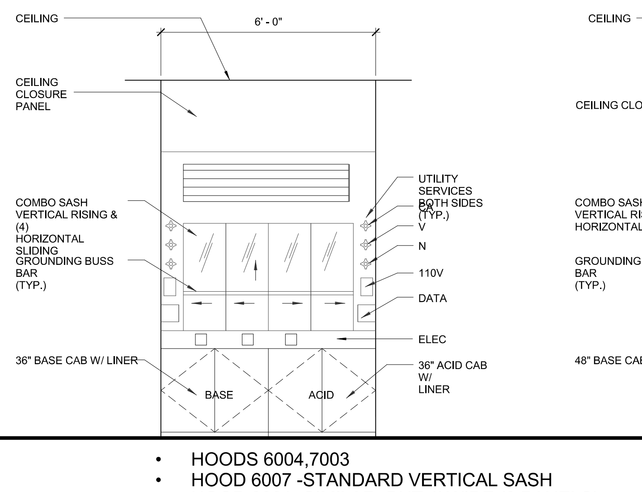
3 UNISTRUT FRAME ELEVATION
1/2" = 1'-0"



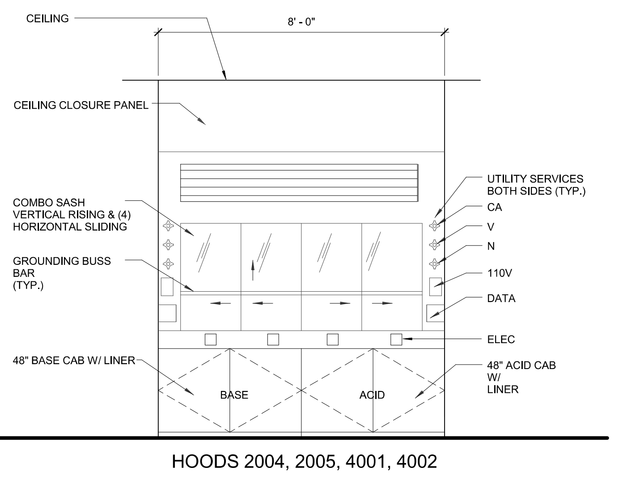
- HOOD 7001
- HOOD 7002 (SIMILAR, BUT 11' WIDE & EXISTING TO BE RELOCATED & REINSTALLED)



HOODS 1001, 1002, 1003, 1004, 1005



- HOODS 6004,7003
- HOOD 6007 -STANDARD VERTICAL SASH
- HOOD 8001 -SIMILAR, BUT 4' WIDE (2 PANELS)



HOODS 2004, 2005, 4001, 4002

4 HOOD ELEVATIONS
1/2" = 1'-0"

CONSULTANTS

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS SHOWN

TITLE

LAB CASEWORK, NOTES & SCHEDULES

A-520-TI

5/23/2013 9:56:00 AM

ID		Ownership				Equipment				Dimensions			Power				Network		Utilities														
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Monitoring /BMS	Data	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Drain, Floor Drain, Drain	Comments
244		Molecular Biology		General Lab	221																												
245		Molecular Biology		General Lab	221																												
246	OFOI	Molecular Biology		General Lab	221	Bench	Platform Shaker	Brunswick Scientific	CLASSIC C2		13	16	6																				
247	OFOI	Molecular Biology		General Lab	221	Bench	centrifuge	eppendorf	centrifuge 5430R		13	24	12																				
248	OFOI	Molecular Biology		General Lab	221	Bench	QIA cube	Qiagen	QIAcube		24	24	22																				
249	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
250	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
251	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
252	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
253	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
254	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
255	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
256	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
257	OFOI	Molecular Biology		General Lab	221	Bench	Vortexer	VWR	Vortex Mixer		5	7	6																				In individual Researcher 6' bench area
258	OFOI	Molecular Biology		General Lab	221	Bench	galaxy mini centrifuge	VWR	SN 1005		5	5	5																				In individual Researcher 6' bench area
259	OFOI	Molecular Biology		General Lab	221	Bench	galaxy mini centrifuge	VWR	SN 1005		5	5	5																				In individual Researcher 6' bench area
260	OFOI	Molecular Biology		General Lab	221	Bench	galaxy mini centrifuge	VWR	SN 1005		5	5	5																				In individual Researcher 6' bench area
261	OFOI	Molecular Biology		General Lab	221	Bench	galaxy mini centrifuge	VWR	SN 1005		5	5	5																				In individual Researcher 6' bench area
262	OFOI	Molecular Biology		General Lab	221	Bench	galaxy mini centrifuge	VWR	SN 1005		5	5	5																				In individual Researcher 6' bench area
263	OFOI	Molecular Biology		General Lab	221	Bench	galaxy mini centrifuge	VWR	SN 1005		5	5	5																				In individual Researcher 6' bench area
264	OFOI	Molecular Biology		General Lab	221	Bench	galaxy mini centrifuge	VWR	SN 1005		5	5	5																				In individual Researcher 6' bench area
265	OFOI	Molecular Biology		General Lab	221	Bench	mini plate spinner	Labnet	mps 1000		7	6	7																				
266	OFOI	Molecular Biology		General Lab	221	Bench	centrifuge	eppendorf	Centrifuge 5424		8	12	8																				In individual Researcher 6' bench area
267	OFOI	Molecular Biology		General Lab	221	Bench	centrifuge	eppendorf	Centrifuge 5424		8	12	8																				In individual Researcher 6' bench area
268	OFOI	Molecular Biology		General Lab	221	Bench	centrifuge	eppendorf	Centrifuge 5424		8	12	8																				In individual Researcher 6' bench area
269	OFOI	Molecular Biology		General Lab	221	Bench	centrifuge	eppendorf	Centrifuge 5424		8	12	8																				In individual Researcher 6' bench area
270	OFOI	Molecular Biology		General Lab	221	Bench	centrifuge	eppendorf	Centrifuge 5424		8	12	8																				In individual Researcher 6' bench area
271	OFOI	Molecular Biology		General Lab	221	Bench	centrifuge	eppendorf	Centrifuge 5424		8	12	8																				In individual Researcher 6' bench area
272	OFOI	Molecular Biology	N	General Lab	221	Floor	-20 degree freezer				3'	3'					Y				Y												
273	OFOI	Molecular Biology	N	General Lab	221	Table	-20 degree freezer				3'	3'					Y				Y												
274	OFOI	Molecular Biology	N	General Lab	221	Floor	-20 degree freezer				3'	3'					Y				Y												
275	OFOI	Molecular Biology	N	General Lab	221	Floor	-20 degree freezer				3'	3'					Y				Y												
276	OFOI	Molecular Biology	N	General Lab	221	Floor	-20 degree freezer				3'	3'					Y				Y												
277	OFOI	Molecular Biology	N	General Lab	221	Floor	-20 degree freezer				3'	3'					Y				Y												
278																																

ID		Ownership				Equipment				Dimensions			Power				Network		Utilities														
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Monitoring /BMS	Data	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Drain, Floor Drain, Drain	Comments
279																																
280																																
281	OFOI	Molecular Biology	N	HTP Cloning	220	Table	Robot #1	Tecan	Evo 150		31"	105"	39"				Y	Y	Y	Y					Y	Y	Y						Table provided by robot manufacturer
282	OFOI	Molecular Biology	N	HTP Cloning	220	Table	Robot #2	Tecan	Evo 150		31"	105"	39"				Y	Y	Y	Y					Y	Y	Y						Table provided by robot manufacturer
283	OFOI	Molecular Biology	N	HTP Cloning	220	Floor	4 degree refrigerator				3'	3'									Y												
284	OFOI	Molecular Biology	N	HTP Cloning	220	Floor	-20 degree freezer				3'	3'					Y				Y												
285																																
286	OFOI	Molecular Biology	N	FACS/Micro	228	Floor	FACS Table	BD			8'-9"	4'-5"	34"																				
287	OFOI	Molecular Biology	N	FACS/Micro	228	Table	BD FACS Aria III cell sorter	BD	FACS Aria III sensor		48"	28"	28"				Y	Y							Y	Y	Y						Footprint for instrument and computer table 105"L x 53"W x 36" H
288	OFOI	Molecular Biology	N	FACS/Micro	228	Table	BD FACS Aria III wet cart	BD	FACS Aria III cart		32"	26"	26"				Y	Y															Footprint for instrument and computer table 105"L x 53"W x 36" H
301	OFOI	Microbiology		General Lab	222	Floor	Lab Incubator Shaker (single stack)	ATR, Multitron			33"	43"	38"	208				Y							Y								locate in common equipment area in lab
302	OFOI	Microbiology		General Lab	222	Bench	Centrifuge	Eppendorf	5424		12"	9.5"	8.5"												Y								
303	OFOI	Microbiology		General Lab	222	Bench	Iblot	Invitrogen			6.5"	14"	5"																				
304	OFOI	Microbiology		General Lab	222	Bench	Minicentrifuge	VWR			5.5"	7"	5"												Y								
305	OFOI	Microbiology		General Lab Common	222	Bench	Big Centrifuge	Beckman Coulter	Allegra x-15R		26"	30"	16.5"	208											Y								
306	OFOI	Microbiology		General Lab	222	Bench	Vortex x3	VWR	Analog Vortex		5"	8"	7"																				
307	OFOI	Microbiology		General Lab	222	Bench	Shaker x2	IKA	KS 260 Basic		14.5"	17"	4.5"																				
308	OFOI	Microbiology		General Lab	222	Bench	Centrifuge x2	Eppendorf	5424		12"	9.5"	8.5"																				
309	OFOI	Microbiology		General Lab	222	Bench	Analog Vortex Mixer	VWR			5"	8"	7"																				
310	OFOI	Microbiology		General Lab	222	Bench	Analog Vortex Mixer (1 per researcher)	VWR			5"	8"	7"																				
311	OFOI	Microbiology		General Lab	222	Bench	Minicentrifuge (1 per researcher)	VWR			5.5"	7"	5"																				
312	OFOI	Microbiology		General Lab	222	Bench	Centrifuge (1 per every 2 researchers)	Eppendorf	5424		12"	9.5"	8.5"																				
313	OFOI	Microbiology		General Lab	222	Bench	Centrifuge	Eppendorf	5430R		15"	25"	13"																				
314	OFOI	Microbiology		General Lab	222	Bench	Analog Vortex Mixer	VWR			5"	8"	7"																				
315	OFOI	Microbiology		General Lab Common	222	Bench	Robot (Ep Motion)	Eppendorf	5075		23"	43"	26"																				
316	OFOI	Microbiology		General Lab	222	Bench	Analog Vortex Mixer	VWR			5"	8"	7"																				
317	OFOI	Microbiology		General Lab	222	Bench	Minicentrifuge	VWR			5.5"	7"	5"																				
318	OFOI	Microbiology		General Lab	222	Bench	Analog Vortex Mixer	VWR	Analog Vortex		5"	8"	7"																				
319	OFOI	Microbiology		General Lab	222	Bench	Centrifuge	Eppendorf	5424		12"	9.5"	8.5"																				
320	OFOI	Microbiology		General Lab	222	Bench	Minicentrifuge	VWR			5.5"	7"	5"																				
321	OFOI	Microbiology		General Lab	222	Bench	Mini Vortexer Mixer (1 per researcher)	Fisher Scientific			5"	7"	7"																				
322	OFOI	Microbiology		General Lab	222	Bench	Centrifuge	Eppendorf	5424		12"	9.5"	8.5"																				
323	OFOI	Microbiology		General Lab	222	Bench	Incubator Shaker	New Brunswick	C24		21"	27"	21"				Y																
324	OFOI	Microbiology		General Lab	222	Bench	Centrifuge	Eppendorf	5424		12"	9.5"	8.5"																				
325	OFOI	Microbiology		General Lab	222	Bench	Analog Vortex Mixer	VWR	Analog Vortex		5"	8"	7"																				
326	OFOI	Microbiology		General Lab	222	Bench	Mini Centrifuge	VWR	Galaxy Ministar		5.5"	7"	5"												Y								

ID		Ownership				Equipment				Dimensions			Power				Network		Utilities														
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Monitoring /BMS	Data	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Drain, Floor Drain, Drain	Comments
327	OFOI	Microbiology		General Lab	222	Floor	Incubator Shaker (2 stack pizza oven type)	New Brunswick	I26		29"	50"	23"	208			Y																To reside in 30 or 37 degree warm room
328		Microbiology		General Lab Equipment Support	222																												
329	OFOI	Microbiology		General Lab	224	Floor	Incubator (21 total, 10 double stacks and one single)	VWR	1545 Incubator		25"	27"	36"	115	5		Y																650 Watts each
330	OFOI	Microbiology		Common Warm	224 & 225	Floor	Incubator x2	Lab-Line	Imperial III		20"	26"	33"																				To reside in 30 or 37 degree warm room
331	OFOI	Microbiology		General Lab Common	222	Bench	Incubator Shaker	New Brunswick	Excella E24		22"	30"	24"				Y																
332	OFOI	Microbiology		General Lab Common	222	Bench	Plate Reader	BioTek	PowerWave xs 340		8.5"	16.5"	9"																				
333	OFOI	Microbiology		General Lab Common	222	Bench	Spectrophotometer	Thermo Scientific	Genesys 10 UV		13"	15"	9.5"																				
334	OFOI	Microbiology		General Lab Common	222	Bench	Electro Cell-Manipulator	BTX Harvard Apparatus	ECM 630		13"	12"	7"																				
335	OFOI	Microbiology		General Lab Common	222	Bench	Electroporator	BTX Harvard Apparatus	HT-200		9"	8"	6"																				
336	OFOI	Microbiology		General Lab Common	222	Bench	Centrifuge	Eppendorf	Centrifuge 5402		24"	18"	11"												Y								
337	OFOI	Microbiology		General Lab Common	222	Bench	Electric Pipette Stands	Biohit			6"	6"	14"																				
338	OFOI	Microbiology		General Lab Common	222	Bench	PCR Cycler x7	Eppendorf	Mastercyc lerpro S		10"	17"	18"																				
339	OFOI	Microbiology		General Lab Common	222	Bench	Eppendorf Tube Mixer x2	Eppendorf	Thermomix xer R		9"	10"	6"												Y								
340	OFOI	Microbiology		General Lab Common	222	Bench	Dry Bath Incubator	Fisher Scientific	Dry Bath Incubator		8"	9"	4"																				
341	OFOI	Microbiology		General Lab Common	222	Bench	Electroporator	BioRad	MicroPuls er		8"	12"	6"																				
342	OFOI	Microbiology		General Lab Common	222	Bench	Mini Centrifuge	Benchmark	My Fuge		6"	9"	5"																				
343	OFOI	Microbiology		General Lab Common	222	Bench	Lable Printer (LIMS)	Brady	BP-PX300 Plus		9.5"	15"	11"																				
344	OFOI	Microbiology	E	General Lab Common	222	Floor	-20 degree Freezer	Kenmore			32"	31"	70"				Y				Y												
345	OFOI	Microbiology		General Lab Common	222	Bench	Printer	Dell			17"	32"	30"																				
346	OFOI	Microbiology		General Lab Common	222	Bench	Computer Tower	Dell	Optiplex 980		7.5"	17"	17"																				
347	OFOI	Microbiology		General Lab Common	222	Bench	Monitor	Dell			6"	19"	19"																				
348	OFOI	Microbiology		General Lab	222	Floor	Incubator Shaker (2 stack pizza oven type)	New Brunswick	I26		29"	50"	23"	208			Y																
349	OFOI	Microbiology	N	General Lab	222	Table	-20 degree freezer				32"	32"	70"				Y				Y												
350	OFOI	Microbiology	N	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y				Y												
351	OFOI	Microbiology	N	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y				Y												
352	OFOI	Microbiology	N	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y				Y												
353	OFOI	Microbiology	N	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y				Y												
354	OFOI	Microbiology		General Lab	222	Bench	Bioscreen	Growth Curve			42"	24"		110			Y	Y															
355	OFOI	Microbiology		General Lab	222	Bench	Bioscreen	Growth Curve			42"	24"		110			Y	Y															
356	OFOI	Microbiology		General Lab	222	Bench	Bioscreen	Growth Curve			42"	24"		110			Y	Y															
401	OFOI	Analytical	130	Instrument Lab	121	Bench	GCMS #1	Agilent	7890/597 5C		85	30	50	110	20		Y	Y	Y						Y	Helium		Y	Y				Includes vac pump and data system (PC). Also requires liquid N2.
402	OFOI	Analytical	130	Instrument Lab	121	Bench	GCMS #2	Agilent	6890/597 3N		70	30	50	110	20		Y	Y	Y						Y	Helium		Y	Y				Includes vac pump and data system (PC). Also requires liquid N2. Also requires Argon
403	OFOI	Analytical	130	Instrument Lab	121	Bench	GCMS #3 TCD	Agilent	6890		55	30	24	230	20		Y	Y	Y							Helium		Y					Includes data system (PC)
404	OFOI	Analytical	130	Instrument Lab	121	Bench	LC #1 Metrohm IC	Metrohm	Profession al IC 850		60	25	50	110	20		Y		Y														Includes data system (PC). Needs waste collection container.
405	OFOI	Analytical	130	Instrument Lab	121	Bench	LC #2 Dionex IC	Dionex (Thermofisher)	ICS 5000		120	30	35	110	20		Y		Y						Y								Includes data system (PC). Needs waste collection container.

ID		Ownership				Equipment				Dimensions			Power				Network		Utilities														
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Monitoring /BMS	Data	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Drain, Floor Drain, Drain	Comments
101	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	Robot System #1	Agilent	Biocel 1200		89"	56"	78"	120	30			Y						Y							Floor Sink	Integral UPS, weight 1,700 lbs
102	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	Robot System #2 (Benchbot robotic arm and robot table)	Agilent	Benchbot		72"	60"	80"	120	20			Y	Y	Y				Y							Floor Sink	
103	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Table	Plate sealer on robot table	Xpeel						120	3																	
104	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Table	Plate sealer on robot table	Wasp						120	5									Y								
105	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Table	Plate Labeler on robot table	Agilent						120	5					Y				Y								
106	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Table	Plate filler on robot table	Multidrop						120	2																	
107	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Table	Table top centrifuge				30"	28"	20"	208	20																	
108	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Table	Table top centrifuge				30"	28"	20"	208	20																	
109	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	Incubator #1 (Humidified Incubator Chamber w/shakers)				39"	34"	80"	120	10			Y	Y													
110	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251		10 Shakers in above incubator							120	4			Y	Y													
111		Enzymology																														
112	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	Incubator #2 (Humidified Incubator Chamber w/shakers)				39"	34"	80"	120	10			Y	Y													
113	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251		10 Shakers in above incubator							120	4			Y	Y													
114		Enzymology																														
115	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	Incubator #3 (Humidified Incubator Chamber w/shakers)				39"	34"	80"	120	10			Y	Y													
116	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251		10 Shakers in above incubator							120	4			Y	Y													
117		Enzymology																														
118	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	Colony Picker #1				96"	36"	70"	120	20																	
119	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251		Colony Picker #1 Computer Equipment							120	20					Y												
120	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	-80° C Freezer				43"	36"	80"	208	20			Y			Y	Y										Space for nitrogen dewer for backup or Genomatica to purchase one reserve -80 for equip failures
121	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Bench	Liquid Handler							120	20																	
122	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Bench	Plate Reader Stacker							120	2																	
123	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Bench	Plate Filler							120	0.6																	
124	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Bench	Plate Filler							120	0.6																	
125	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Bench	Plate Filler							120	0.6																	
126	OFOI	Enzymology	New	HTPS/Auto Lab	251	Floor	Robot System #3	Agilent	Biocel 1200		89"	56"	78"	120	30			Y		Y				Y							Floor Sink	Integral UPS, weight 1,700 lbs
127	OFOI	Enzymology	New	HTPS/Auto Lab	251	Floor	-80° C Freezer				43"	36"	80"	208	20			Y			Y	Y										Space for nitrogen dewer for backup or Genomatica to purchase one reserve -80 for equip failures
128	OFOI	Enzymology	New	HTPS/Auto Lab	251	Floor	Colony Picker #2				96"	36"	70"	120	20																	
129	OFOI	Enzymology	New	HTPS/Auto Lab	251		Colony Picker Computer Equipment							120	20					Y												
130	OFOI	Enzymology	New	HTPS/Auto Lab	251	Floor	Humidified Incubator #4 w/shakers				39"	34"	80"	120	10			Y	Y													
131	OFOI	Enzymology	New	HTPS/Auto Lab	251		10 Shakers in above incubator							120	4			Y	Y													
132		Enzymology																														
133	OFOI	Enzymology	New	HTPS/Auto Lab	251	Table	Table top centrifuge				30"	28"	20"	208	20																	
134	OFOI	Enzymology	New	HTPS/Auto Lab	251	Table	Table top centrifuge				30"	28"	20"	208	20																	
135																																
136	OFOI	Enzymology	Enz	Anaerobic Chamber	253	Floor	Anaerobic Chamber (includes -40 integral freezer)				16'	42"	80"	120				Y							Y							Swing of chamber door 2' inc in width	
137	OFOI	Enzymology	Enz	Anaerobic Chamber	253	Bench	Anaerobic Chamber	Coy			68"	30"	30"	120																		
138																																

ID		Ownership				Equipment				Dimensions			Power				Network		Utilities														
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Monitoring /BMS	Data	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Drain, Floor Drain, Drain	Comments
139	OFOI	Enzymology	New	Anaerobic Chamber	253	Floor	Anaerobic Chamber (includes -40 integral freezer)				16'	42"	80"	120				Y							Y							Swing of chamber door 2' inc in width	
140	OFOI	Enzymology	New	Anaerobic Chamber	253	Bench	Anaerobic Chamber	Coy			68"	30"	30"	120																		
141	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	253	Floor	Incubators (2 stack)				42"	42"		120				Y		Y					Y							
142	OFOI	Enzymology	Syn Gas	Syn Gas	254	Floor	Incubator Shaker (single stack pizza oven type in fume hood)				43"	33"	38"	110				Y		Y				Y							
143	OFOI	Enzymology	Syn Gas	Syn Gas	254	Floor	Incubator Shaker (single stack pizza oven type in fume hood)				43"	33"	38"	110				Y		Y				Y							
144	OFOI	Enzymology	New	Syn Gas	254	Floor	Incubator Shaker (single stack pizza oven type in fume hood)				43"	33"	38"	110				Y		Y				Y							
145	OFOI	Enzymology	New	Syn Gas	254	Floor	Incubator Shaker (single stack pizza oven type in fume hood)				43"	33"	38"	110				Y		Y				Y							
146	OFCI	Enzymology	Syn Gas	Syn Gas	254	Floor	Vac Pump (in fume hood)							208		3															Explosion Proof wiring and switching required.
147	OFCI	Enzymology	Syn Gas	Syn Gas	254	Floor	Vac Pump (in fume hood)							110		3															Explosion Proof wiring and switching required.
148	OFCI	Enzymology	New	Syn Gas	254	Floor	Vac Pump (in fume hood)							208		3															Explosion Proof wiring and switching required.
149	OFCI	Enzymology	New	Syn Gas	254	Floor	Vac Pump (in fume hood)							208		3								Y							Explosion Proof wiring and switching required.
150	OFOI	Enzymology	Aut Lab	HTPS/Auto Lab	251	Floor	Rolling Table				6'	3'																				
151	OFOI	Enzymology	Aut Lab

ID		Ownership				Equipment				Dimensions			Power					Network		Utilities											
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volts	Amps	Phase	Equipment	UPS	Data	Monitoring /BMS	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ductless Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Hose Bibb, Drain	Comments
406	OFOI	Analytical	130	Instrument Lab	121	Bench	HPLC #1	Dionex (Thermofisher i	Ultimate 3000		84	30	50	110	20		Y		Y							Y				Y		Includes data system (PC). Needs waste collection container.
407	OFOI	Analytical	130	High dB	123	Bench	Freeze dryer	Labconco	FreZone 4.5		32	28	32	110	20															Y		includes vac pump
408	OFOI	Analytical	130	High dB	123	Bench	Evaporator	Labconco	RapidVap Vertex RVT4102,		24	15	10	110	20											Y						should be in the fume hood
409	OFOI	Analytical	130	High dB	123	Bench	Speedvac evaporator	Thermofisher	SC210A		60	30	36	110	20															Y		includes vac pump
410	OFCI	Analytical	130	Instrument Lab	121	Floor	Flammable solvent cabinet				43	30	60																			
411	OFOI	Analytical	130	Instrument Lab	121	Floor	Freezer/Fridge				36	30	60	110	20						Y											
412	OFOI	Analytical	127	Instrument Lab	121	Bench	GCMS #4	Agilent	7890/597 5C		85	30	50	110	20		Y	Y	Y							Y	Helium		Y	Y		Also requires H2 gas (generator); includes vac pump and PC. Also requires liquid N2.
413	OFOI	Analytical	127	Lab	121	Bench	GCMS #5	Agilent	6890/597 3N		70	30	50	110	20		Y	Y	Y							Y	Helium		Y	Y		Includes vac pump and PC. Also requires liquid N2.
414	OFOI	Analytical	127	Instrument Lab	121	Bench	Hydrogen generator	DomnicK Hunter			25	25	40	110	10		Y	Y											Y		Locate next to GCMS's #4 & 5
415	OFOI	Analytical	127	Instrument Lab	121	Bench	HPLC #2	Agilent	1100		50	30	70	110	20		Y		Y												Includes PC. Needs waste collection container.
416	OFOI	Analytical	127	Instrument Lab	121	Bench	HPLC #3	Agilent	1200		50	30	70	110	20		Y		Y												Includes PC. Needs waste collection container.
417	OFOI	Analytical	127	Instrument Lab	121	Bench	HPLC #4	Agilent	1100		50	30	70	110	20		Y		Y												Includes PC. Needs waste collection container.
418	OFOI	Analytical	127	Instrument Lab	121	Cart	LCMS #1	AB Sciex	API 3200		90	36	60	230	20		Y		Y							Y				Y		vac pump, PC and liquid waste container
419	OFOI	Analytical	127	Instrument Lab	121	Cart	LCMS #2	AB Sciex	Qtrap 3200		90	36	60	230	20		Y		Y							Y				Y		vac pump, PC and liquid waste container
420	OFOI	Analytical	127	Instrument Lab	121	Cart	LCMS #3	Thermofisher	Exactive		100	36	60	230	20		Y		Y							Y				Y		vac pump, PC and liquid waste container
421	OFOI	Analytical	127	General Lab	120	Bench	Liquid Handling Robot	Eppendorf	Epimotion		80	36	60	110	20				Y												PC. Duplicate to Enzymology.
422																																
423	OFOI	Analytical	N	Instrument Lab	121	Bench	Near-IR Spectrometer	BRUKER	V70 Vertex, ATS-XT		120	30	30	110	20		y		y							Y						Acquisition planned for 2013 - instrument room - includes data system (PC).
424	OFOI	Analytical	N	Instrument Lab	121	Bench	LC #3 Dionex IC	Dionex (Thermofisher i	ICS 5000		120	30	35	110	20		Y		Y							Y						Acquisition planned for 2013 - instrument room - includes data system (PC). Needs waste collection container.
425	OFOI	Analytical	N	Instrument Lab	121	Bench	HPLC #5	Dionex (Thermofisher i	Ultimate 3000		84	30	50	110	20		Y		Y							Y				Y		Acquisition planned for 2013 - instrument room - includes data system (PC). Needs waste collection container.
426	OFOI	Analytical	N	High dB	123	Bench	Evaporator	Genevac	EZ3T		32	28	32	110	20		Y												Y	Y		Acquisition planned for 2013 - "noisy"room - includes vac pump
427	OFOI	Analytical	N	Instrument Lab	121	Bench	GCMS #6	Agilent/Leco	7890/597 5C		85	30	50	110	20		Y	y	Y							Y	Helium		Y	Y		Acquisition planned for 2013 - includes vac pump and data system (PC); also requires liquid N2
428	OFOI	Analytical	N	Instrument Lab	121	Cart	LCMS #4	Thermofisher	QExactive		100	40	60	230	20		Y	Y	Y							Y				Y		Acquisition planned for 2013 - includes vac pump and data system (PC)
429	OFOI	Analytical	N	Instrument Lab	121	Cart	LCMS #5	AB Sciex	TripleTOF		100	60	60	230	20		Y	Y	Y							Y				Y		Acquisition planned for 2014 - includes vac pump and data system (PC)
430	OFOI	Analytical	N	Instrument Lab	121	Bench	HPLC #6	Agilent	1200		50	30	70	110	20		Y		Y												Acquisition planned for 2013 - includes and data system (PC). Needs waste collection container.
431	OFOI	Analytical	N	Instrument Lab	121	Bench	HPLC #7	Agilent	1200		50	30	70	110	20		Y		Y												Acquisition planned for 2014 - includes data system (PC). Needs waste collection container.
432	OFOI	Analytical	N	General Lab	120	Floor	6' Deli case, 4 degree				6'	2'									Y										Acquisition planned for 2013 - Includes vac pump
433	OFOI	Analytical	N	General Lab	120	Floor	-20 degree Freezer				33"	33"									Y										
434	CFCI	Analytical		Instrument Lab	121	Floor	Cylinder closet																								Cylinder closet with space for: (2) Helium cylinders, Argon cylinder, Methane cylinder and Nitrogen Dewers.
501	OFOI	General Research	Main Lab		TBD	Floor	-80°C freezer #1	Sanyo	MDF-U53V		32.5	39	79								Y										
502	OFOI	General Research	Main Lab		TBD	Floor	-80°C freezer #2	Sanyo	MDF-U73V		42	39	79								Y										
503	OFOI	General Research	Main Lab		TBD	Floor	-80°C freezer #3	Sanyo	MDF-U52V		32.5	39	79								Y										Nema 620 plug

ID		Ownership				Equipment				Dimensions			Power					Network		Utilities											
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volts	Amps	Phase	Equipment	UPS	Data	Monitoring /BMS	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ductless Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Hose Bibb, Drain	Comments
504	OFOI	General Research	Main Lab		TBD	Floor	-80°C freezer #4	Sanyo	MDF-U54V		32.5	39	79								Y										
505	OFOI	General Research	Main Lab		TBD	Floor	-80°C freezer #5	Sanyo	MDF-U74V		42	39	79								Y										
506	OFOI	General Research	Main Lab		TBD	Floor	-80°C freezer #6	Sanyo	MDF-U76V		42	39	79								Y										
507	OFOI	General Research	N		TBD	Floor	-80°C freezer (future, backup)	Sanyo	MDF-U76V		42	39	79								Y										
508	OFOI	General Research	N		TBD	Floor	-80°C freezer n+x? (future, growth)	Sanyo	MDF-U76V		42	39	79								Y										
509	OFCI	General Research	Chemical Room	Micro/Mol	Hallway	Floor	Ice Machine	Manitowoc			48.5	34	80																		
510	CFCI	General Research	N	Glass Wash	226	Floor	Autoclave 26.5x36x61 chamber size	Getinge	700 Series Vacuum/Gravity		3'-3"	5'-11"	6'-0"								Y		Y								Service area clearances of 1'-10" both sides
511	CFCI	General Research	N	Glass Wash	226	Floor	Glasswre Washer	Getinge	8666		3'-8"	3'-0"	6'-2"								Y	Y	Y								Service area clearances of 1'-6" both sides
512	CFCI	General Research	N	PP Equip Wash	112	Floor	Autoclave 26.5x36x61 chamber size	Getinge	700 Series Vacuum/Gravity		3'-3"	5'-11"	6'-0"								Y		Y								Service area clearances of 1'-10" both sides
513	CFCI	General Research	N	PP Equip Wash	112	Floor	Autoclave 26.5x36x61 chamber size	Getinge	700 Series Vacuum/Gravity		3'-3"	5'-11"	6'-0"								Y		Y								Service area clearances of 1'-10" both sides
514	OFOI	General Research	Fermentation			Floor	Autoclave	Yamato	SM510		19	21	47																		
515	OFOI	General Research	AutoClave Room			Table	Autoclave	Market Forge	Sterilmatic		19	36	34																		
516	CFCI	General Research		Glass Wash	226	Floor	Glasswre Washer	Getinge	8666		3'-8"	3'-0"	6'-2"									Y	Y	Y							Service area clearances of 1'-6" both sides
517	CFCI	General Research		PP Equip Wash	112	Floor	Glasswre Washer	Getinge	8666		3'-8"	3'-0"	6'-2"									Y	Y	Y							Service area clearances of 1'-6" both sides
518	OFOI	General Research				Floor	Drying Oven	TBD																							
519	OFOI	General Research		Cylinder Rm	122	Floor	Nitrogen Dewer				3'-2"	3'-2"																			
520	OFOI	General Research		Cylinder Rm	122	Floor	Nitrogen Dewer				3'-2"	3'-2"																			
521	CFCI	General Research	Chemical Room	Molecular Bio	221 Eq zone	Floor	Ice Machine	Manitowoc			48.5	34	80								Y									Drain	
522	CFCI	General Research		Glass Wash	226	Floor	Scullery Sink				8'	30"	36'								Y	Y									
523	CFCI	General Research		Chem Storage	229	Floor	Flammable Storage Cabinet				43"	18"	69"															Y			
524	CFCI	General Research		Chem Storage	229	Floor	Acid Storage Cabinet				43"	18"	69"															Y			
525	CFCI	General Research		Chem Storage	229	Floor	Base Storage Cabinet				43"	18"	69"															Y			
526																															
527																															
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539																															
540	OFOI			Maint Shop	115	Floor	Tool Cart				48"	24"																			
541	OFOI			Maint Shop	115	Bench	Drill Press				24"	24"																			
542	OFOI			Maint Shop	115	Floor	Bench with Vice				6'	2'-6"																			
543	OFCI			Mech Yard			Ingersol Rand Nirvana Air Compressor																								
544	OFCI			Mech Yard			Ingersol Rand Nuvonia Air Dryer																								
545	OFCI			Mech Yard			Ingersol Rand Nuvonia particle filters																								
546																															
547																															

ID		Ownership				Equipment				Dimensions			Power					Network		Utilities											
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercntr	Description	Brand	Model	Asset No.	Width	Depth	Height	Volts	Amps	Phase	Equipment	UPS	Data	Monitoring /BMS	Process Alarm	IW	DI	CA	VAC	N2	Specialty Gas	Ductless Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Hose Bibb, Drain	Comments
548																															
549																															
550	CFCI	General Office	N	Pantry	207	Floor	Undercounter ice maker																								
551	CFCI	General Office	N	Pantry	207	Floor	Undercounter dishwasher																								
552	CFCI	General Office	N	Pantry - Wellness	207	Floor	Deli Style Refrigerator																								
553	CFCI	General Office	N	Room	150	Floor	Undercounter Refrigerator																								
554	CFCI	General Office	N	Break Room	103	Floor	SS Solid Door Deli Style Refrigerator	TRUE	T49-2		55	30	79																		
555	CFCI	General Office	N	Break Room	103	Floor	SS half swing door Freezer	TRUE	T-23F-2		27	30	79																		
556	CFCI	General Office	N	Break Room	103	Floor	Undercounter ice maker																								
557	CFCI	General Office	N	Break Room	103	Floor	Undercounter dishwasher																								
558	OFOI	General Office	N	Break Room	103	Floor	Vending - Snacks																								
559	OFOI	General Office	N	Break Room	103	Floor	Vending - Soda																								
560																															
561	OFOI	General Office		Copy/Mail	137	Floor	Color MDF Copier																								
562	OFOI	General Office		Copy/Mail	137	Floor	Shredding Machine/Bin																								
563	OFOI	General Office		Copy/Mail	247	Floor	Color MDF Copier																								
564	OFOI	General Office		Copy/Mail	247	Floor	Shredding Machine/Bin																								
565	OFOI	General Office		Copy/Mail	280	Floor	Color MDF Copier																								
566	OFOI	General Office		Copy/Mail	280	Floor	Shredding Machine/Bin																								

KEY PLAN

STAMP

LICENSED ARCHITECT
NANCY J. EICHAR
No. 22178
RENEWAL 08/31/13
STATE OF CALIFORNIA

CLIENT

PROJECT

ADDRESS

PROJECT NO. **12137**

SCALE

TITLE

EQUIPMENT LIST

A-520.b-TI

2/13/2013 71306 A#1

Printed: 1/25/2013 9:42 AM
Updated: 2013.01.25

ID		Ownership			Bench, Cart, Floor, Table, Undercntr	Equipment				Dimensions			Power					Network		Utilities																
New Equip. No.	Responsibility	Current Group	New Room Location	Room Number		Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Data	Monitoring /BMS	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Sink, Floor Drain, Drain	Comments
520		General Research	Cylinder Rm	122	Floor	Nitrogen Dewer				3'-2"	3'-2"																									
521		General Research	Molecular Bio	221 Eq zone	Floor	Ice Machine	Manitowoc			48.5	34	80																								
522																																		
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539																																		
540			Maint Shop		Floor	Tool Cart				48"	24"																									
541			Maint Shop		Bench	Drill Press				24"	24"																									
542			Maint Shop		Floor	Bench with Vice				6'	2'-6"																									
543																																		
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545																																		
546																																		
547																																		
548																																		
549																																		
550		General Office	Pantry	207	Floor	Undercounter ice maker																														
551		General Office	Pantry	207	Floor	Undercounter dishwasher																														
552		General Office	Pantry	207	Floor	Dell Style Refrigerator																														
553		General Office	Wellness Room	150	Floor	Undercounter Refrigerator																														
554		General Office	Break Room	103	Floor	Dell Style Refrigerator																														
555		General Office	Break Room	103	Floor	Dell Style Refrigerator																														
556		General Office	Break Room	103	Floor	Undercounter ice maker																														
557		General Office	Break Room	103	Floor	Undercounter dishwasher																														
558		General Office	Break Room	103	Floor	Vending - Snacks																														
559		General Office	Break Room	103	Floor	Vending - Soda																														
560		General Office	Break Room	103	Floor	Freezer																														
561		General Office	Copy/Mail	137	Floor	Color MDF Copier																														

ID		Ownership			Bench, Cart, Floor, Table, Undercntr	Equipment				Dimensions			Power					Network		Utilities																
New Equip. No.	Responsibility	Current Group	New Room Location	Room Number		Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Data	Monitoring /BMS	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Sink, Floor Drain, Drain	Comments
562		General Office	Copy/Mail	137	Floor	Shredding Machine/Bin																												
563		General Office	Copy/Mail	247	Floor	Color MDF Copier																												
564		General Office	Copy/Mail	247	Floor	Shredding Machine/Bin																												
565		General Office	Copy/Mail	280	Floor	Color MDF Copier																												
566		General Office	Copy/Mail	280	Floor	Shredding Machine/Bin																												

ID		Ownership			Bench, Cart, Floor, Table, Undercntr	Equipment				Dimensions			Power					Network		Utilities																
New Equip. No.	Responsibility	Current Group	New Room Location	Room Number		Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Data	Monitoring /BMS	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Sink, Floor Drain, Drain	Comments
326		Microbiology	General Lab	222	Bench	Mini Centrifuge	VWR	Galaxy Ministar		5.5"	7"	5"										Y												
327		Microbiology	General Lab	222	Floor	Incubator Shaker (2 stack pizza oven type)	New Brunswick	I26		29"	50"	22"	208			Y																		To reside in 30 or 37 degree warm room
328		Microbiology	General Lab	222																														
329		Microbiology	Common Warm	224 & 225	Floor	Incubator x4	VWR	1545 Incubator		27"	25"	36"																						To reside in 30 or 37 degree warm room
330		Microbiology	Common Warm	224 & 225	Floor	Incubator x2	Lab-Line	Imperial III		20"	26"	33"																						To reside in 30 or 37 degree warm room
331		Microbiology	General Lab Common	222	Bench	Incubator Shaker	New Brunswick	Excella E24		22"	30"	24"				Y																		
332		Microbiology	General Lab Common	222	Bench	Plate Reader	BioTek	PowerWave 340		8.5"	16.3"	9"																						
333		Microbiology	General Lab Common	222	Bench	Spectrophotometer	Thermo Scientific	Genesys 10 S UV-		13"	15"	9.5"																						
334		Microbiology	General Lab Common	222	Bench	Electro Cell Manipulator	BTX Harvard Apparatus	ECM 630		13"	12"	7"																						
335		Microbiology	General Lab Common	222	Bench	Electroporator	BTX Harvard Apparatus	HT-200		9"	8"	6"																						
336		Microbiology	General Lab Common	222	Bench	Centrifuge	Eppendorf	Centrifuge 5402		24"	18"	11"												Y										
337		Microbiology	General Lab Common	222	Bench	Electric Pipette Stands	Biohit			8"	8"	14"																						
338		Microbiology	General Lab Common	222	Bench	PCR Cycler x7	Eppendorf	Mastercycler pro S		10"	17"	18"																						
339		Microbiology	General Lab Common	222	Bench	Eppendorf Tube Mixer x2	Eppendorf	Thermomixer R		9"	10"	6"												Y										
340		Microbiology	General Lab Common	222	Bench	Dry Bath Incubator	Fisher Scientific	Dry Bath Incubator		8"	9"	4"																						
341		Microbiology	General Lab Common	222	Bench	Electroporator	BioRad	MicroPulser		8"	12"	6"																						
342		Microbiology	General Lab Common	222	Bench	Mini Centrifuge	Benchmark	My Fuge		6"	9"	5"																						
343		Microbiology	General Lab Common	222	Bench	Lable Printer (LIMS)	Brady	BP-PR200 Plus		9.5"	15"	11"																						
344		Microbiology	General Lab Common	222	Floor	-20 degree freezer	Kenmore			32"	31"	70"				Y																		
345		Microbiology	General Lab Common	222	Bench	Printer	Dell			17"	32"	30"																						
346		Microbiology	General Lab Common	222	Bench	Computer Tower	Dell	Optiplex 980		7.5"	17"	17"																						
347		Microbiology	General Lab Common	222	Bench	Monitor	Dell			6"	19"	19"																						
348		Microbiology	General Lab	222	Floor	Incubator Shaker (2 stack pizza oven type)	New Brunswick	I26		29"	50"	22"	208			Y																		
349		Microbiology	General Lab	222	Table	-20 degree freezer				32"	32"	70"				Y																		
350		Microbiology	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y																		
351		Microbiology	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y																		
352		Microbiology	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y																		
353		Microbiology	General Lab	222	Floor	-20 degree freezer				32"	32"	70"				Y																		
354		Microbiology	General Lab	222	Bench	Bioscreen	Growth Curve			42"	24"		110			Y	Y																	

ID		Ownership			Bench, Cart, Floor, Table, Undercntr	Equipment				Dimensions			Power					Network		Utilities																
New Equip. No.	Responsibility	Current Group	New Room Location	Room Number		Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Data	Monitoring /BMS	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Sink, Floor Drain, Drain	Comments
426		Analytical	High dB	123	Cart	Evaporator	Genevac	EZ3T		32	26	32	110	20		Y																		Acquisition planned for 2013 - "noisy"room - includes vacuum pump
427		Analytical	Instrument Lab	121	Bench	GCMS #6	Agilent/Leco	7890/5975 C		85	30	50	110	20		Y	Y	Y						Y	Helium		Y	Y			Acquisition planned for 2013 - includes vac pump and data system (PC); also requires liquid N2.
428		Analytical	Lab	121	Cart	LCMS #4	Thermofisher	QExactive		100	40	60	230	20		Y	Y	Y						Y				Y				Acquisition planned for 2013 - Includes vac pump and data system (PC)
429		Analytical	Instrument Lab	121	Cart	LCMS #5	AB Sciex	TripleTOF		100	60	60	230	20		Y	Y	Y						Y				Y				Acquisition planned for 2014 - Includes vac pump and data system (PC)
430		Analytical	Instrument Lab	121	Bench	HPLC #6	Agilent	1200		50	30	70	110	20		Y		Y														Acquisition planned for 2013 - Includes and data system (PC). Needs waste collection container.
431		Analytical	Instrument Lab	121	Bench	HPLC #7	Agilent	1200		50	30	70	110	20		Y		Y														Acquisition planned for 2014 - includes data system (PC) Needs waste collection container.
432		Analytical	General Lab	120	Floor	6' Deli case, 4 degree				6'	2'																					Acquisition planned for 2013 - Includes vac pump
433		Analytical	General Lab	120	Floor	-20 degree freezer				32"	32"																							
434		Analytical	Instrument Lab	121	Floor	Cylinder closet																												Cylinder closet with space for: (2) Helium cylinders, Argon cylinder, Methane cylinder and Nitrogen Dewers.
501		General Research		TBD	Floor	-80°C freezer #1	Sanyo	MDF-U53V		32.5	39	79																						
502		General Research		TBD	Floor	-80°C freezer #2	Sanyo	MDF-U73V		42	39	79																						
503		General Research		TBD	Floor	-80°C freezer #3	Sanyo	MDF-U52V		32.5	39	79																						Nema 620 plug
504		General Research		TBD	Floor	-80°C freezer #4	Sanyo	MDF-U54V		32.5	39	79																						
505		General Research		TBD	Floor	-80°C freezer #5	Sanyo	MDF-U74V		42	39	79																						
506		General Research		TBD	Floor	-80°C freezer #6	Sanyo	MDF-U76V		42	39	79																						
507		General Research		TBD	Floor	-80°C freezer (future, backup)	Sanyo	MDF-U76V		42	39	79																						
508		General Research		TBD	Floor	-80°C freezer nnx7 (future, growth)	Sanyo	MDF-U76V		42	39	79																						
509		General Research	Enzymology	250 Eq zone	Floor	Ice Machine	Manitowoc			48.5	34	80																						
510		General Research	Glass Wash	226	Floor	Autoclave 24x36x60 chamber size	TBD, Steris	Eagle 3000		3'-8"	6'-2"	6'-3"																						Steris Eagle 3000 used for sizing info
511		General Research	Glass Wash	226	Floor	Autoclave 24x36x60 chamber size	TBD, Steris	Eagle 3000		3'-8"	6'-2"	6'-3"																						Steris Eagle 3000 used for sizing info
512		General Research	PP Equip Wash	112	Floor	Autoclave 24x36x60 chamber size	TBD, Steris	Eagle 3000		3'-8"	6'-2"	6'-3"																						Steris Eagle 3000 used for sizing info
513		General Research	PP Equip Wash	112	Floor	Autoclave 24x36x60 chamber size	TBD, Steris	Eagle 3000		3'-8"	6'-2"	6'-3"																						Steris Eagle 3000 used for sizing info
514		General Research			Floor	Autoclave	Yamato	SM51C		19	21	47																						Steris Eagle 3000 used for sizing info
515		General Research			Table	Autoclave	Market Forge	Sterilmatic		19	36	34																						Gettinge Castle was used for sizing info
516		General Research	Glass Wash	226	Floor	Glassware Washer	TBD, Gettinge	Castle 8866		3'-9"	3'-0"	6'-2"																						Gettinge Castle was used for sizing info
517		General Research	PP Equip Wash	112	Floor	Glassware Washer	TBD, Gettinge	Castle 8866		3'-9"	3'-0"	6'-2"																						
518		General Research			Floor	Drying Oven	TBD																											
519		General Research	Cylinder Rm	122	Floor	Nitrogen Dewer				3'-2"	3'-2"																							

ID		Ownership			Bench, Cart, Floor, Table, Undercntr	Equipment				Dimensions			Power					Network		Utilities																
New Equip. No.	Responsibility	Current Group	New Room Location	Room Number		Description	Brand	Model	Asset No.	Width	Depth	Height	Volt	Amp	Phase	E-power	UPS	Data	Monitoring /BMS	IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Snorkel	Vac Pump Cabinet	Floor Sink, Floor Drain, Drain	Floor Sink, Floor Drain, Drain	Comments
547		Analytical	Instrument Lab	121	Floor	Freezer/Fridge				36	30	60	110	20																				
548		Analytical	Instrument Lab	121	Bench	GCMS #4	Agilent	7890/5975 C 6890/5973 N		85	30	50	110	20		Y	Y	Y						Y	Helium		Y	Y			Also requires H2 gas (generator); includes vac pump and PC. Also requires liquid N2.
549		Analytical	Instrument Lab	121	Bench	GCMS #5	Agilent			70	30	50	110	20		Y	Y	Y						Y	Helium		Y	Y			Includes vac pump and data system (PC). Also requires Argon. Includes vac pump and PC. Also requires liquid N2.
550		Analytical	Instrument Lab	121	Bench	Hydrogen generator	Dionex/E Pointer			25	25	40	110	10		Y	Y																Locate next to GCMS's #4 & 5
551		Analytical	Instrument Lab	121	Bench	HPLC #2	Agilent	1100		50	30	70	110	20		Y		Y															Includes PC. Needs waste collection container.
552		Analytical	Instrument Lab	121	Bench	HPLC #3	Agilent	1200		50	30	70	110	20		Y		Y															Includes PC. Needs waste collection container.
553		Analytical	Instrument Lab	121	Bench	HPLC #4	Agilent	1100		50	30	70	110	20		Y		Y															Includes PC. Needs waste collection container.
554		Analytical	Instrument Lab	121	Cart	LCMS #1	AB Sciex	API 3200		90	36	60	230	20		Y		Y						Y				Y				vac pump, PC and liquid waste container
555		Analytical	Instrument Lab	121	Cart	LCMS #2	AB Sciex	Qtrap 3200		90	36	60	230	20		Y		Y						Y				Y				vac pump, PC and liquid waste container
556		Analytical	Instrument Lab	121	Cart	LCMS #3	Thermofisher	Exactive		100	36	60	230	20		Y		Y						Y				Y				vac pump, PC and liquid waste container
557		Analytical	General Lab	120	Bench	Liquid Handling Robot	Eppendorf	Epimotion		80	36	60	110	20				Y															PC. Duplicate to Enzymology.
558																																		
559		Analytical	Instrument Lab	121	Bench	Near-IR Spectrometer	BRUKER	VTO Vertex, WTS-XT		129	30	30	110	20		Y		Y						Y								Acquisition planned for 2013 - instrument room - includes data system (PC)
560		Analytical	Instrument Lab	121	Bench	LC #3 Dionex IC	Dionex (Thermofisher)	ICS 5000		129	30	35	110	20		Y		Y						Y								Acquisition planned for 2013 - instrument room - includes data system (PC). Needs waste collection container.
561		Analytical	Instrument Lab	121	Bench	HPLC #5	Dionex (Thermofisher)	Ultimate 3000		84	30	50	110	20		Y		Y						Y				Y				Acquisition planned for 2013 - instrument room - includes data system (PC). Needs waste collection container.

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KEY PLAN

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MARK J. ESCHER
REN 12/31/13
STATE OF CALIFORNIA

CLIENT
Alexandria Real Estate Equities Inc.

PROJECT

ADDRESS

PROJECT NO. **12137**

SCALE

TITLE
EQUIPMENT LIST

A-520.c-TI

ID		Ownership				Hood						Dimensions			Utilities												Power						Network		
New Equip. No.	Responsibility	Current Group	Current Bldg. Location	New Room Location	Room Number	Biosafety Cabinet, Fume Hood, Ventilated Enclosure, Weigh Enclosure, Glove Box	Bench, Floor, Table	Description	Brand	Model	Asset No.	Distillation Grid	Width	Depth	Height	IW	DI	CA	VAC	N2	Specialty Gas	Ducted, Recirculating	Vac Pump Cabinet	Drain	Volts	Amps	Phase	E-power	UPS	Grounding Bars	Data	Monitoring / BMS	Comments
1001	CFCI	Enzymology	New	General Lab	250	Fume Hood	Floor	8' Walk-in Fume Hood	TBD				8'	42"				Y	Y	Y		Ducted					Y		Y				SS table at bench height w/ vaccum pump below. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1002	CFCI	Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD				8'	42"				Y	Y	Y		Ducted					Y		Y				SS table at bench height w/ grounded explosion proof vacuum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1003	CFCI	Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD				8'	42"				Y	Y	Y		Ducted					Y		Y				SS table at bench height w/ grounded explosion proof vacuum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1004	CFCI	Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD				8'	42"				Y	Y	Y		Ducted					Y		Y				SS table at bench height w/ grounded explosion proof vacuum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1005	CFCI	Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD				8'	42"				Y	Y	Y		Ducted					Y		Y				SS table at bench height w/ grounded explosion proof vacuum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
2001	CFCI	Molecular Biology	New	General Lab	221A	Biosafety Cabinet	Floor	Recirc BSC, Class II Type A2	TBD				64"	32"	72"							Recirculating			208								No thimble connection
2002	CFCI	Molecular Biology	New	General Lab	221A	Biosafety Cabinet	Floor	Recirc BSC, Class II Type A2	TBD				64"	32"	72"					Y		Recirculating			208								No thimble connection
2003	CFCI	Molecular Biology	New	General Lab	221	Biosafety Cabinet	Floor	Ducted BSC, Class II Type A2	TBD				64"	32"	72"							Ducted											Thimble connection, 70% recirculating
2004	CFCI	Molecular Biology	New	General Lab	221	Fume Hood	Bench	8' Fume Hood	TBD				8'	36"					Y	Y	Y	Ducted							Y				Trizol hood. 36" knee space with 30" Acid & Base cabinets each side
2005	CFCI	Molecular Biology	New	General Lab	221	Fume Hood	Bench	8' Fume Hood	TBD				8'	36"					Y	Y	Y	Ducted							Y				Butadyenne or Syn Gas hood. Acid & Base cabinets below
3001	OFCI	Microbiology	If	General Lab	222	Biosafety Cabinet	Floor	Recirc BSC, Class II Type A2	Nuaire				6'	32"	84"				Y	Y	Y	Recirculating											
3002	CFCI	Microbiology	New	General Lab	222	Biosafety Cabinet	Floor	Recirc BSC, Class II Type A2	TBD				6'	32"	84"				Y	Y	Y	Recirculating											No thimble connection
3003	CFCI	Microbiology	New	General Lab	222	Biosafety Cabinet	Floor	Recirc BSC, Class II Type A2	TBD				6'	32"	84"				Y	Y	Y	Recirculating											No thimble connection
3004	CFCI	Microbiology	New	General Lab	222	Biosafety Cabinet	Floor	Recirc BSC, Class II Type A2	TBD				6'	32"	84"				Y	Y	Y	Recirculating											No thimble connection
3005	CFCI	Microbiology	New	BL2 General Lab	223	Biosafety Cabinet	Floor	Ducted BSC, Class II Type B1	TBD				6'	32"	84"				Y	Y	Y	Ducted											Hard ducted, 50% of air is recirculated
4001	CFCI	Analytical	New	General Lab	120	Fume Hood	Bench	8' Fume Hood	TBD				8'	36"					Y	Y	Y	Ducted							Y				48" Acid & Base lower cabinets

ID		Ownership				Hood						Dimensions			Utilities												Power						Network		
New Equip. No.	Responsibility	Current Group	Current Bldg. Location	New Room Location	Room Number	Biosafety Cabinet, Fume Hood, Ventilated Enclosure, Weigh Enclosure, Glove Box	Bench, Floor, Table	Description	Brand	Model	Asset No.	Distillation Grid	Width	Depth	Height	IW	DI	CA	VAC	N2	Specialty Gas	Ducted, Recirculating	Vac Pump Cabinet	Drain	Volts	Amps	Phase	E-power	UPS	Grounding Bars	Data	Monitoring / BMS	Comments
4002	CFCI	Analytical	New	Instrument Lab	121	Fume Hood	Bench	8' Fume Hood	TBD				8'	36"					Y	Y	Y	Ducted							Y				48" Acid & Base lower cabinets
6001	CFCI	Fermentation Separation	New	Bench Scale	110	Biosafety Cabinet	Floor	Ducted BSC, Class II Type A2	TBD				6'	32"	84"					Y		Ducted				110	15.1		Y				Thimble connection, 70% recirculating
6002	CFCI	Fermentation Separation	New	Bench Scale	110	Biosafety Cabinet	Floor	Ducted BSC, Class II Type A2	TBD				6'	32"	84"					Y		Ducted				110	15.1		Y				Thimble connection, 70% recirculating
6003	CFCI	Fermentation Separation		Pilot Plant		Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable	80603			72	33	90					Y		Ducted				110	15.1		Y				Omitted at 11/20/12 review meeting w/ PP
6004	CFCI	Fermentation Separation	New	Bench Scale	110	Fume Hood	Bench	6' Fume Hood	TBD			Y	6'	36"	84"				Y	Y	Y	Ducted				110			Y		Y		Prefer dual power receptacles on both L/R. Gas service 1 side. 36" acid & base lower cabinets
6005	CFCI	Fermentation Separation		Bench Scale		Fume Hood	Bench	6' Fume Hood	Safeair or comparable				72	33						Y		Ducted				110			Y				Omitted at 11/20/12 review meeting w/ PP
6006	CFCI	Fermentation Separation		Pilot Plant		Fume Hood	Floor	6' Walk-in Fume Hood	Safeair or comparable				72	33						Y		Ducted				110			Y				Omitted at 11/20/12 review meeting w/ PP
6007	CFCI	Fermentation Separation	New	Media Prep	111	Fume Hood	Bench	6' Fume Hood	TBD				6'	36"	84"				Y	Y	Y	Ducted				110			Y	Y			36" acid & base lower cabinets
6008	CFCI	Fermentation Separation	New	Bench Scale	110	Biosafety Cabinet	Floor	Ducted BSC, Class II Type A2	TBD				6'	32"	84"					Y		Ducted				110			Y				Thimble connection, 70% recirculating
7001	CFCI	Fermentation Separation	New	Separation	109	Fume Hood	Floor	15' Walk-in fume hood (for stills)	TBD				15'	5'-6"		Y	Y	Y	Y	Y		Ducted				110				Y	Y		15-ft walk-in hood will be for continuous still, batch still and SPD. Elec & gas both sides. Water 1 side
7002	OFCI	Fermentation Separation	E	Separation	109	Fume Hood	Floor	11' Walk-in fume hood (for reactors)					11'-3"	5'-3"		Y	Y	Y	Y	Y	Hydrogen	Ducted			230				Y			Existing 11-ft walk in hood will be for the two reactors. Elec & gas both sides. Water 1 side
7003	CFCI	Fermentation Separation	New	Separation	109	Fume Hood	Bench	6' Fume Hood	TBD				6'	36"			Y		Y	Y	Y	Ducted			230				Y			Wet-chemistry, converstion testing etc. 36" Acid & Base lower cabinets. Gas service 1 side.
8000	CFCI	Media	New	Media	230	Fume Hood	Bench	4' Fume Hood	TBD				4'	36"					Y	Y	Y	Ducted			110				Y	Y		36" Acid & Base lower cabinets

New Equip. No.	Responsibility	Ownership: Current Group	Current Bldg. Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercounter	Equipment: Description	Brand	Model	Asset No.	Assembly Dwg	Grant #	Dimensions: Width (inches)	Depth (inches)	Height (inches)	Power: Volts	Amps	Phase	E-power	UPS	Network: Process Alarm	Monitoring / BMS	Utilities: IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Sealed Cabinet	Vac Pump Cabinet	Floor Sink, Floor Drain	Process Utilities: Floor Sink, Acid Waste	RO	Chilled Water	Process Steam	Plant Steam	Catalent	Waste	Clean-in-Place	Comments	QTY (now)	Total QTY (inc future)
600	OFCI	Fermentation Separation		Bench Scale	110	Bench	1/2 L Fermentor (bank of six)	Infors HT	Multifors				6"	24	34										Y	Y	Y																		1/2 L controls	3	3
601	OFCI	Fermentation Separation		Bench Scale	110	Bench	Strain gauge	custom made					5.5	8	9																												with bank of six, alone fermentors on support frame	10	20
602	OFCI	Fermentation Separation		Bench Scale/TBD	110	Floor	Chiller 2Q	vwr					33	34	24																												Process Chillers not required if house process chilled water system. 9 degree C (49 degree F) water.	2	3
603	OFCI	Fermentation Separation		Bench Scale	110	Bench	HMI Multiflo control computer, monitor & keyboard	dell					24	24	16																												1 computer station per (6) 1/2L fermentors	3	3
604																																														
605	OFCI	Fermentation Separation	Farm	Bench Scale	110	Bench	2 L Computer, Micro Fit I/O box	Sartorius					20	20	10	110	8		Y																										Hard/digital for up to (16) 2L Reactors	1	2
606	OFCI	Fermentation Separation		Bench Scale	110	Bench	2 L Fermentor, vessel & balance Ar units	sartorius					30	24	32																												Ducted exhaust to be 4" w/ blast gate	14	22
607	OFCI	Fermentation Separation		Bench Scale	110	Bench	BR control computer, monitor and keyboard	dell & apple					24	24	24																												1 control computer station per (4) 2L fermentors.	6	8
608																																														
609					110																																									
610	OFCI	Fermentation Separation		Bench Scale	110	Bench	Presens transmitter	Presens					30	12	5																												1 transmitter per (4) 2L fermentors on support frame above reactors	6	7
611	OFCI	Fermentation Separation		Bench Scale	110	Bench	Peristaltic pump (feed pump)	watson marlow					9	9	9.5																												1 pump below each 2L fermentor below	20	30
612	OFCI	Fermentation Separation		Bench Scale	110	Bench	mass flow controller boxes						30	11	6.5																												Controller on support frame above reactors	5	7
613	OFCI	Fermentation Separation		Bench Scale	110	Floor	Chiller	Lauda					16	22	32																												Process Chillers not required if house process chilled water system. 9 degree C (49 degree F) water	2	2
614	OFCI	Fermentation Separation		Bench Scale	110	Bench	2 L Fermentor, vessel, vessels & balances 8+ units	Sartorius					60	30	32																												Ducted exhaust to be 4" w/ blast gate	3	3
615	CFCI	Fermentation Separation	Separatio n	Pilot Plant	110A	Floor	4 degree Cold Room								11'-6"																												Shared with Separation	1	1
616	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Floor	30L Fermentor #1 skid (steam jacketed)	Sartorius	Cplus			84	60	90	208	20	3	Y	Y				Y	Y	Y	Y	Y			Y	Y		Floor Sink		Y	Y						Accessible space all sides. Articulating arm suction exhaust	1	1
617	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Floor	30L Fermentor #2 skid (steam jacketed)	Sartorius	Cplus			84	60	75	208	20	3	Y	Y				Y	Y	Y	Y	Y			Y	Y		Floor Sink		Y	Y						Accessible space all sides. Articulating arm suction exhaust	1	3
620	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Floor	30 L Computer/Instrument Cart	n/A				96	40	63																												1 cart for each 30L Fermentor	1	2
620A	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Cart	Brooks MFC Controller box	Brooks	Size 3			12	12	10	110	4		Y																								On cart item #320 or on support frame	1	1
620B	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Cart	MicroFit I/O box	Sartorius				16	20	10	110	8		Y																								On cart item #320 or on support frame	1	1
620C	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Cart	Presens Fmocontrol	Presens				12	12	10	110	0.5		Y																								On cart item #320 or on support frame	1	1
620D	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Cart	OPTEX Transmitter	OPTEX				12	12	10	115	0.5		Y	Y																							On cart item #320 or on support frame	1	2
620E	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Cart	Network Switch					8	5	3	110	1		Y																								On cart item #320 or on support frame	1	1
620F	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Cart	USB to Serial Converter					4	6	1	110	0.5		Y	Y																								On cart item #320 or on support frame	1	2
620G	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Cart	Desktop PC	B+Tech				8	17	17				Y	Y					Y		Y																On cart item #320 or on support frame	1	1
628	OFCI	Fermentation Separation		Pilot Lab	Pilot Plant	110	Floor	6 liter Fermentor (pair)	Sartorius				60	24	40	120 208-240V 1 phase	30 40A Power 120VC ontrol	3	Y					Y	Y	Y	Y			Y				Floor Sink		Y							Bench mounted fermentor with 30L Bioreactors. Ducted exhaust to be 4" w/ blast gate	1	2
629	OFCI	Fermentation Separation		Pilot Lab	TBD	110	Floor	Boiler	Sussmen				72	48	69																												Boiler not required if house boilers for plant steam. Boiler is only used for 1 reactor OFF SITE	1	2
631	CFCI	Fermentation Separation		Pilot Lab	Bench Scale	110	Floor	Scullery Sink					114	30	36										Y	Y																Drain				1	1
632	CFCI	Fermentation Separation	Farm	Pilot Plant	Bench Scale	110	Floor	Scullery Sink					114	30	36										Y	Y																Drain				1	1
633	OFCI	Fermentation Separation	Evolution	Bench Scale	110	Bench	1/2 L Fermentors Genostats	Genomatica					168	36	36	110											Y	Y	Y			Y														1	2
634	OFCI	Fermentation Separation	Farm	Bench Scale/VP	110	Bench	Offgas Mass Spec for all Fermentors (30 stations per MS)	Hiden Analytical					77	24	25	120	10		Y	Y																								Has UPS and is included in dimensions. Can be re-arranged to shorter deeper dimension, or UPS under bench for 6/7" width. Prefer to have this in accessory room due to pump noise and heat	1	3
634A	OFCI	Fermentation Separation	Farm		110	Floor	Process Valve for Mass Spec	Analytical								110	5		Y	Y																								Separated for power/BMS connections included in Mass Spec above	1	3
648	OFCI	Fermentation Separation	Farm		110	Floor	DCU3 Controller for Av Mass flow Controllers	sartorius	DCU3				32	28	37	110	6		Y	Y						Y	Y																			1	1
641	OFCI	Fermentation Separation	Farm	Equipment Wash	112	Floor	Top loader pulse/vwr	Yamato	cm510				37	21	44	220	11		Y																												1	2
642	OFCI	Fermentation Separation	Farm	Bench Scale	110	Floor	Stackable incubator shakers (2 stacks)	Brunswick	i 26				50	34	55	110	20 amp 30 115A outlets																														1	2
643	OFCI	Fermentation Separation	Farm	Bench Scale	110	Bench	micro fuge	Eppendorf					9	12	9	110	7																												2	3
646	OFCI	Fermentation Separation	Farm	Bench Scale	110	Bench	Refrigerated micro fuge	Eppendorf					24	20	12	110	10																													1	1
647	OFCI	Fermentation Separation	Farm	Bench Scale	110	Bench	YSI Glucose anlayzer	YSI					24	12	16	110	5																													2	3
650	OFCI	Fermentation Separation	Farm	Bench Scale	110	Bench	Spectrophotometer	Thermo					12	19	10	110	5																													1	2

New Equip. No.	Responsibility	Ownership: Current Group	Current Bldg. Location	New Room Location	Room Number	Bench, Cart, Floor, Table, Undercounter	Equipment: Description	Brand	Model	Asset No.	Assembly Dwg	Grant #	Dimensions: Width (inches)	Depth (inches)	Height (inches)	Power: Volts	Amps	Phase	E-power	UPS	Network: Process Alarm	Monitoring / BMS	Utilities: IW	DI	CA	VAC	N2	Specialty Gas	Ducted Exhaust	Sealed Cabinet	Vac Pump Cabinet	Floor Sink, Floor Drain	Process Utilities: Floor Sink, Acid Waste	RO	Chilled Water	Process Steam	Plant Steam	Catalent	Waste	Clean-in-Place	Comments	QTY (now)	Total QTY (inc future)
711	OFCI	Fermentation Separation	Separatio n	Separation	109	Hood	Shunt Path Distillation (in 15' walk in fume hood)	Incos					32	24	24																												In walk in hood #501. Shared, 2'x3' table for PC & controller. System includes		
712	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Moisture Analyzer with analytical balance	Schaln	TA3 TL				48	32	24	110					Y																						Includes PC		
713	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Colorimeter	Hunter	ColorQu est XE				48	32	24	110					Y																						Includes PC		
714	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Specisphotometer	Beckman Coulter	DU 800																																		Separate storage room for 55-gal drums, 10-gal pails, large carboys, large flasks, tables and equipment. Cold storage for storing broth.		
715	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Mobile surge tank (New)	TBD																																		Intermediate storage during harvest		
716	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	pH meter																																						
717	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Viscometer																																						
718	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Conductivity meter																																						
719	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Refractometer																																						
720	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Moisture Balance																																						
721	OFCI	Fermentation Separation	Separatio n	Separation	109	Bench	Plant rack and supply organizers																																						
722	OFCI	Fermentation Separation	Separatio n	Separation	109	Floor	BDO material storage cabinet						6'	18"	66"																												For storing EtP chemicals. MSDL catalysts etc.		
723	CFCI	Fermentation Separation		Separation	109	Floor	General sample storage						6'	2'																												For storing intermediate/ product samples, IX resins, activted carbon, membranes, etc.		
724	CFCI	Fermentation Separation	Separatio n	Separation	109	Floor	Glasswere cabinet						36'	18"																												flasks, distillation columns, condensers etc	1	2
725		Fermentation Separation		Cold Room	110A	Floor	4 degree Cold room						10'	11'																												Duplicator of Item #615		
726		Fermentation Separation		Raw Material	113	Floor	In Process Storage Room						10'	10'																												Room #113 Raw Materials		
727	CFCI	Fermentation Separation	Separatio n	Separation	109	Floor	4' SS Scullery sink (single bowl w/ 1 draing sides)						48"	30"	36"										Y	Y																Drain					
728																																													

CONSULTANTS

KEY PLAN

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE

TITLE

EQUIPMENT LIST

A-520.d-TI

2/13/2013 7:14:07 AM

Revised: 5/15/2013 9:44 AM

ID		Ownership				Hood					Dimensions			Utilities								Power					Network		Comments
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Biosafety Cabinet, Fume Hood, Ventilated Enclosure, Weigh Enclosure, Glove Box	Bench, Floor, Table	Description	Brand	Model#	Asset No.	Width	Depth	Height	IW	CA	VAC	N2	Specialty Gas	Ducted, Recirculating	Vac Pump Cabinet	Drain	Volt	Amp	Phase	E-power	UPS	Data	Monitoring /BMS	Comments
1001		Enzymology	New	General Lab	250	Fume Hood	Floor	8' Walk-in Fume Hood	TBD			8'	42"			Y	Y	Y			Ducted						Y			SS table at bench height w/ vaccum pump below. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1002		Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD			8'	42"			Y	Y	Y			Ducted						Y			SS table at bench height w/ grounded explosion proof vaccum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1003		Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD			8'	42"			Y	Y	Y			Ducted						Y			SS table at bench height w/ grounded explosion proof vaccum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1004		Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD			8'	42"			Y	Y	Y			Ducted						Y			SS table at bench height w/ grounded explosion proof vaccum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
1005		Enzymology	New	Syn Gas Lab	254	Fume Hood	Floor	8' Walk-in Fume Hood	TBD			8'	42"			Y	Y	Y			Ducted						Y			SS table at bench height w/ grounded explosion proof vaccum pump below. Leave 18" adjacent for flamable gas cylinders. Lower sash vertical rising & next sash vertical rising and horizontal sliding - combo sash.
2001		Molecular Biology	E	General Lab	221A	Biosafety Cabinet	Floor	Recirc BSC	The Baker Company	SG603		64"	24"	72"				Y			Recirculating			208						
2002		Molecular Biology	E	General Lab	221A	Biosafety Cabinet	Floor	Recirc BSC	The Baker Company	SG603		64"	24"	72"				Y			Recirculating			208						
2003		Molecular Biology	E	General Lab	221	Biosafety Cabinet	Floor	Ducted BSC	The Baker Company			64"	24"	72"				Y			Ducted									
2004		Molecular Biology	N	General Lab	221	Fume Hood	Bench	8' Fume Hood				8'	3'			Y	Y	Y			Ducted									Trizol hood. Acid & Base cabinets below
2005		Molecular Biology	N	General Lab	221	Fume Hood	Bench	8' Fume Hood				8'	3'			Y	Y	Y			Ducted									Butadyene or Syn Gas hood. Acid & Base cabinets below
3001		Microbiology	E	General Lab	222	Biosafety Cabinet	Floor	Class II Type A/B3 recirc BSC	Nuaire			6'	30"	84"		Y	Y	Y			Recirculating									
3002		Microbiology	N	General Lab	222	Biosafety Cabinet	Floor	Recirc BSC				6'	30"	84"		Y	Y	Y			Recirculating									
3003		Microbiology	N	General Lab	222	Biosafety Cabinet	Floor	Recirc BSC				6'	30"	84"		Y	Y	Y			Recirculating									
3004		Microbiology	N	General Lab	222	Biosafety Cabinet	Floor	Recirc BSC				6'	30"	84"		Y	Y	Y			Recirculating									
3005		Microbiology	N	BL2	223	Biosafety Cabinet	Floor	Ducted BSC				6'	30"	84"		Y	Y	Y			Ducted									
4001		Analytical	N	General Lab	120	Fume Hood	Bench	8' Fume Hood				8'	30"			Y	Y	Y			Ducted									Acid, Flamm & Base lower cabinets
4002		Analytical	N	Instrumen t Lab	121	Fume Hood	Bench	8' Fume Hood				8'	30"			Y	Y	Y			Ducted									Acid & Base lower cabinets
6001		Fermentation Separation		Bench Scale	110	Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable	80603		72	33	90				Y			Ducted			110	15.1		Y			
6002		Fermentation Separation		Bench Scale	110	Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable	80603		72	33	90				Y			Ducted			110	15.1		Y			
6003		Fermentation Separation		Pilot Plant		Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable	80603		72	33	90				Y			Ducted			110	15.1		Y			Omitted at 11/20/12 review meeting w/ PP
6004		Fermentation Separation		Bench Scale	110	Fume Hood	Bench	6' Fume Hood	Safeair or comparable			72	33		Y	Y	Y				Ducted			110			Y			Prefer dual power receptacles on both L/R
6005		Fermentation Separation		Bench Scale		Fume Hood	Bench	6' Fume Hood	Safeair or comparable			72	33					Y			Ducted			110			Y			Omitted at 11/20/12 review meeting w/ PP
6006		Fermentation Separation		Pilot Plant		Fume Hood	Floor	6' Walk-in Fume Hood	Safeair or comparable			72	33					Y			Ducted			110			Y			Omitted at 11/20/12 review meeting w/ PP
6007		Fermentation Separation		Media Prep	111	Fume Hood	Bench	6' Fume Hood				72	33		Y	Y					Ducted			110			Y			
6008		Fermentation Separation		Bench Scale	110	Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable			72	33					Y			Ducted			110			Y			
7001		Fermentation Separation	N	Separation	109	Fume Hood	Floor	15' Walk-in fume hood (for stills)				15'	5'-6"			Y	Y	Y						110					Y	15-ft walk-in hood will be for continuous still, batch still and SPD
7002		Fermentation Separation	N	Separation	109	Fume Hood	Floor	10' Walk-in fume hood (for reactors)				10'	5'-6"			Y	Y	Y	Hydrogen					230						10-ft walk in hood will be for the two reactors
7003		Fermentation Separation	N	Separation	109	Fume Hood	Bench	6' Fume Hood				6'	3'			Y	Y	Y						230						wet-chemistry, conversion testing etc. Acid and base fume hood base cabinets.
8000		Media		Media	230	Fume Hood	Bench	6' Fume Hood				6'	3'			Y	Y	Y			Ducted			110			Y	Y		Acid & Base lower cabinets

New Equip. No.	Responsibility	Ownership: Current Group	Current Bldg Location	New Room Location	Room Number	Equipment: Bench, Cart, Floor, Table, Undercounter	Description	Brand	Model#	Asset No.	Assembly Date	Assembly Completed	Dimensions: Width (inches)	Depth (inches)	Height (inches)	Power: Volt	Amp	Phase	E-power	UPS	Network: Data	Monitoring/ BMS/ EMS	IW	Utilities: DI	CA	VAC	N2	Specialty Gas	Ducted, Recirculating	Ducted Exhaust	Ducted Supply	Vac Pump Cabinet	Floor Sink, Drain	Process Utilities: Floor Sink, Drain	Cilantro Soft Water	RO	Chilled Water	Process Steam	Process Steam Steamers	Clean-to-Dirty Ratio	Comments	QTY (now)	Total QTY (inc. future)
602		Fermentation Separation		Bench Scale	110	Bench	1/2 L Fermentor (bank of six)	bioflo IIT	Multiflo				6'	24	34																									1/2 L controls	1	1
603		Fermentation Separation		Bench Scale	110	Bench	Strain gauge	custom made					3.5	8	9																									with bank of six; allow fermentors on support frame	16	20
602		Fermentation Separation		Bench Spray/TBD	110	Floor	Chiller (2)	vwr					12	24	24																									**Process Chillers not required if house process chilled water system. 9 degree C (48 degree F) water**	2	2
603		Fermentation Separation		Bench Scale	110	Bench	HMI Multiflo control computer, monitor & keyboard	dell					24	24	36																									1 computer station per (8) 1/2L fermentors	1	1
604					110																																					
605		Fermentation Separation	Farm	Bench Scale	110	Bench	2 L Computer, Micro FIS I/O box	Sartorius					70	30	50	110	8		Y																						Input/output for up to (16) 2L Reactors	1	2
606		Fermentation Separation		Bench Scale	110	Bench	2 L Fermentor, vessel & balance A+ units	sartorius					30	24	32																									Ducted exhaust to be 4" w/ blast gate	14	22
607		Fermentation Separation		Bench Scale	110	Bench	BR control computer, monitor and keyboard	dell & apple					24	24	24															Y										1 control computer station per (4) 2L fermentors.	6	8
608					110																																					
609					110																																					
610		Fermentation Separation		Bench Scale	110	Bench	Pressess transmitter	Pressess					10	12	5																									1 transmitter per (4) 2L fermentors on support frame above reactors	6	7
611		Fermentation Separation		Bench Scale	110	Bench	Peristaltic pump (feed pump	watson marlow					6	8	3.5																									1 pump below each 2L fermentor below	20	30
612		Fermentation Separation		Bench Scale	110	Bench	mass flow controller boxes						10	11	6.5																									Controller on support frame above reactors	5	7
613		Fermentation Separation		Bench Scale	110	Floor	Chiller	Lauda					18	22	32																									**Process Chillers not required if house process chilled water system. 9 degree C (48 degree F) water**	2	2
614		Fermentation Separation		Bench Scale	110	Bench	2 L Fermentor (pair), vessels & balances B+ units	Sartorius					60	30	32																									Ducted exhaust to be 4" w/ blast gate	3	3
615		Fermentation Separation	Separatio n	Separation	109	Cart	4 degree Cold Room						144	120	96																									Shared with Separation	1	1
616		Fermentation Separation	Pilot Lab	Pilot Plant	110	Floor	30L Fermentor #1 skid (steam jacketed)	Sartorius	Cplus				84	60	96	208	20	3	Y	Y			Y	Y	Y	Y	Y			Y	Y			Floor Sink		Y	Y				Accessible space all sides. Articulating arm snorkle exhaust.	1	1
617		Fermentation Separation	Pilot Lab	Pilot Plant	110	Floor	30L Fermentor #2 skid (steam jacketed)	Sartorius	Cplus				84	60	75	208	20	3	Y	Y			Y	Y	Y	Y	Y			Y	Y			Floor Sink		Y	Y				Accessible space all sides. Articulating arm snorkle exhaust.	1	3
620		Fermentation Separation	Pilot Lab	Pilot Plant	110	Floor	10 L Computer/Instrument Cart	n/A					36	40	68																									1 cart for each 30L Fermentor	1	2
620A		Fermentation Separation	Pilot Lab	Pilot Plant	110	Cart	Brooks MFC Controller box	Brooks	Size 3				17	17	10	110	4		Y																					On cart item #120 or on support frame	1	1
620B		Fermentation Separation	Pilot Lab	Pilot Plant	110	Cart	Micro FIS I/O box	Sartorius					20	20	10	110	8		Y																					On cart item #120 or on support frame	1	1
620C		Fermentation Separation	Pilot Lab	Pilot Plant	110	Cart	Pressess Transmitter	Pressess					12	12	10	110	0.5		Y																					On cart item #120 or on support frame	1	1
620D		Fermentation Separation	Pilot Lab	Pilot Plant	110	Cart	OPTEX Transmitter	OPTEX					12	12	10	115	0.5		Y	Y																					On cart item #120 or on support frame	1	2
620E		Fermentation Separation	Pilot Lab	Pilot Plant	110	Cart	Network Switch						8	5	2	110	1		Y																					On cart item #120 or on support frame	1	1
620F		Fermentation Separation	Pilot Lab	Pilot Plant	110	Cart	USB to Serial Converter						4	6	1	110	0.5		Y	Y																					On cart item #120 or on support frame	1	2
620G		Fermentation Separation	Pilot Lab	Pilot Plant	110	Cart	Desktop PC		Be Twin				8	17	17				Y	Y					Y	Y				Y										On cart item #120 or on support frame	1	1
628		Fermentation Separation	Pilot Lab	Pilot Plant	110	Bench	5 liter Fermentor (pair)	Sartorius					60	24	40	120	10		Y						Y	Y	Y			Y				Floor Sink		Y					Each to bank with 3" ss Reducers, Sirius with 30L Bioreactors. Ducted exhaust to be 4" w/ blast gate	1	2
629		Fermentation Separation	Pilot Lab	TBD	110	Floor	Boiler	Sussman					72	48	60	480V Power 120VCo ntrol	4KK Power 15A Control	3																							**Boiler not required if house boilers for plant steam. Boiler is only sized for 1 reactor CIP cycle**	1	2
631		Fermentation Separation	Pilot Lab	Bench Scale	110	Floor	Scullery Sink						114	30	36										Y	Y										Y				Or & IW faucets both sides of sink basins.	1	1
632		Fermentation Separation	Farm	Pilot Plant	110	Floor	Scullery Sink						114	30	36										Y	Y										Y				Or & IW faucets both sides of sink basins.	1	1
633		Fermentation Separation	Evolution	*****	110	Bench	1/2 L Fermentors Genostats	Genomatica					144	36	36	110									Y	Y	Y			Y										Glas to determine location	1	2
634		Fermentation Separation	Farm	Bench Scale/IW	110	Bench	Oflgas Mass Spec for all Fermentors (2X reactors per each M5)	Hiden Analytical					77	24	75	120	10		Y	Y					Y	Y	Y			Y	Y										"Has UPS unit is included in dimensions. Can be re-arranged to shorter deeper dimension, or UPS under bench for 6.7" width. Prefer to have this in accessory room due to pump noise and heat.	1	3
634A		Fermentation Separation	Farm		110	Bench	Process Value for Mass Spec (CO2) Controller for 4+ Mass flow Controllers	Hiden Analytical								110	5		Y	Y																					Separated for power but dimensions included in Mass Spec above	1	3
640		Fermentation Separation	Farm	*****	110	Floor		sartorius	DCU3				32	28	37	110	6		Y	Y					Y		Y													In kowspace or on rack or with noisy equipment	1	1
651		Fermentation Separation	Farm	Equipment Wash	112	Floor	Top loader autoclave	Tomato	sm458				17	21	44	220	11		Y																					3x 1/2 L Fermentors & sinks	1	2
642		Fermentation Separation	Farm	Bench Scale	110	Bench	Stackable incubator shakers (2 stack)	New Brunswick	i26				50	34	55	110	20 (10A each)																							2 X 15 Amp. dimensions listed for 2 stacked units	1	1.5
643		Fermentation Separation	Farm	Bench Scale	110	Bench	micro fuge	Eppendorf					9	12	9	110	7																								2	3

ID		Ownership				Hood					Dimensions			Utilities								Power					Network		Comments
New Equip. No.	Responsibility	Current Group	Current Bldg Location	New Room Location	Room Number	Biosafety Cabinet, Fume Hood, Ventilated Enclosure, Weigh Enclosure, Glove Box	Bench, Floor, Table	Description	Brand	Model#	Asset No.	Width	Depth	Height	IW	CA	VAC	N2	Specialty Gas	Ducted, Recirculating	Vac Pump Cabinet	Drain	Volt	Amp	Phase	E-power	UPS	Data	Monitoring /BMS	Comments
4002		Analytical	N	Instrumen t Lab	121	Fume Hood	Bench	8' Fume Hood				8'	30"			Y	Y	Y			Ducted									Acid & Base lower cabinets
6001		Fermentation Separation		Bench Scale	110	Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable	80603		72	33	90				Y			Ducted			110	15.1		Y			
6002		Fermentation Separation		Bench Scale	110	Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable	80603		72	33	90				Y			Ducted			110	15.1		Y			
6003		Fermentation Separation		Pilot Plant		Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable	80603		72	33	90				Y			Ducted			110	15.1		Y			Omitted at 11/20/12 review meeting w/ PP
6004		Fermentation Separation		Bench Scale	110	Fume Hood	Bench	6' Fume Hood	Safeair or comparable			72	33		Y	Y	Y				Ducted			110			Y			Prefer dual power receptacles on both L/R
6005		Fermentation Separation		Bench Scale		Fume Hood	Bench	6' Fume Hood	Safeair or comparable			72	33					Y			Ducted			110			Y			Omitted at 11/20/12 review meeting w/ PP
6006		Fermentation Separation		Pilot Plant		Fume Hood	Floor	6' Walk-in Fume Hood	Safeair or comparable			72	33					Y			Ducted			110			Y			Omitted at 11/20/12 review meeting w/ PP
6007		Fermentation Separation		Media Prep	111	Fume Hood	Bench	6' Fume Hood				72	33		Y	Y					Ducted			110			Y			
6008		Fermentation Separation		Bench Scale	110	Biosafety Cabinet	Floor	6' Ducted Biosafety Cabinet	Baker or comparable			72	33					Y			Ducted			110			Y			
7001		Fermentation Separation	N	Separation	109	Fume Hood	Floor	15' Walk-in fume hood (for stills)				15'	5'-6"			Y	Y	Y						110					Y	15-ft walk-in hood will be for continuous still, batch still and SPD
7002		Fermentation Separation	N	Separation	109	Fume Hood	Floor	10' Walk-in fume hood (for reactors)				10'	5'-6"			Y	Y	Y	Hydrogen					230						10-ft walk in hood will be for the two reactors
7003		Fermentation Separation	N	Separation	109	Fume Hood	Bench	6' Fume Hood				6'	3'			Y	Y	Y						230						wet-chemistry, conversion testing etc. Acid and base fume hood base cabinets.
8000		Media		Media	230	Fume Hood	Bench	6' Fume Hood				6'	3'			Y	Y	Y			Ducted			110			Y	Y		Acid & Base lower cabinets

New Equip. No.	Responsibility	Ownership: Current Group	Current Bldg Location	New Room Location	Room Number	Equipment: Bench, Cart, Floor, Table, Undercounter	Description	Brand	Model#	Asset No.	Assembly Date	Assembly Completed	Dimensions: Width (inches)	Depth (inches)	Height (inches)	Power: Volt	Amp	Phase	E-power	UPS	Network: Data	Monitoring/ BMS/ EMS	IW	Utilities: DI	CA	VAC	N2	Specialty Gas	Ducted, Recirculating	Ducted Exhaust	Ducted Supply	Vac Pump Cabinet	Floor Sink, Drain	Process Utilities: Floor Sink, Drain	Cilantro Soft Water	RO	Chilled Water	Process Steam	Process Steam Steamers	Clean-to-Dirty Ratio	Comments	QTY (now)	Total QTY (inc. future)
606		Fermentation Separation	Farm	Bench Scale	110	Bench	Refrigerated micro-fuge	Eppendorf					24	29	37	110	10																									1	1
617		Fermentation Separation	Farm	Bench Scale	110	Bench	YSI Glucose anlayser	YSI					24	12	16	110	5																									2	3
610		Fermentation Separation	Farm	Bench Scale	110	Bench	Spectrophotometer	Therme					12	19	10	110	5																									1	2
613		Fermentation Separation	Farm	Bench Scale	110		Label printer	Brady					12	16	11	110	5																									1	1
653		Fermentation Separation	Farm	Pilot Plant	110	Floor	Tool box (undercounter)	Kobalt					30	20	34																											2	2
655		Fermentation Separation	Farm	Bench Scale	110	Floor	Lab cart						45	26	38																											3	4
659		Fermentation Separation	Farm	Bench Scale	110	Bench	FTNIR device	Bruker					24	36	24	110	5										Y														Similar to Mass Spec for sampling up to (6) reactors	6	1
660		Fermentation Separation	Farm	*****		Bench	Evolution Machine (Near Genocyst)	Genomatica					21	17	21	110	5								Y	Y															Currently not being used by Fermentation	4	7
661		Fermentation Separation	Farm	*****		Bench	PC - Evolution Machine						11	16	4																											Currently not being used by Fermentation	1	1
662		Fermentation Separation	Farm	Bench Scale	110	Bench	Digital Density Meter						24	17	15	110																												
663		Fermentation Separation	Farm	Bench Scale	110	Bench	Osmometer						10	12	5																														
654		Fermentation Separation	Farm	Raw Material	113	Floor	ADC freezer, (noisy)	Sanyo	MDF-U374VC				48	44	80	208			Y																										
665		Fermentation Separation	N	?	110	Floor	Small ice machine						24	24	48																														
666		Fermentation Separation		Media Prep	111	Floor	Floor Scale						35	42																														
667		Fermentation Separation		Media Prep	111	Floor	Refrig/4 degree freezer						36	36					Y																										
668		Fermentation Separation		Raw Material Stor	113	Floor	Freezer -20 degree						36	36					Y																										
669		Fermentation Separation		Raw Material	113	Floor	Freezer -20 degree						36	36																													Omitted at 11/20/12 review meeting w/ PP		
670		Fermentation Separation		Raw Material	113	Floor	Flammable Storage Cabinet																																				
671		Fermentation Separation		Raw Material	113	Floor	Acid Storage Cabinet																																				
672		Fermentation Separation		Raw Material	113	Floor	Base Storage Cabinet																																				
673		Fermentation Separation		Bench Scale	110	Floor	Refrigerator 4 degree Freezer						30	30		110			Y																										
700		Fermentation Separation	Separatio n	Separation	109	Cart	Centrifuge	GEA	CTC1 OE-107				45	26	50	110			Y					Y							Y			Floor Sink							Includes a feed pump, speed and flow rate controllers. Requires near by scullery sink for cleaning large carboys. This process generates biomass waste.		
701		Fermentation Separation	N	Separation	109	Cart	Centrifuge (New)	TBD	TBD				90	45	50				Y					Y							Y			Floor Sink							Includes a feed pump, speed and flow rate controllers. Requires near by scullery sink for cleaning large carboys. This process generates biomass waste.		
702		Fermentation Separation	N	Separation	109	Cart	Filtration Skid- Microfiltration (New)	GEA	L				51	28	58	230	15	3						Y							Y			Floor Sink			Y				Includes pressure pumps and speed rate controllers. Requires cold & hot water supply for heat exchangers. **Process Chillers not required if house process chilled water system.**		
703		Fermentation Separation	Separatio n	Separation	109	Cart	Filtration Skid - Ultra filtration & Nano-Filtration	GEA	L				51	28	58	230			Y					Y							Y			Floor Sink			Y				Includes pressure pumps and a pump for circulating temperature control water. Requires cold & hot water supply for heat exchangers.		
704		Fermentation Separation	Separatio n	Separation	109	Table	Chromatography	Ace Glass	50				168	36	96	110																										

New Equip. No.	Responsibility	Ownership: Current Group	Current Bldg Location	New Room Location	Room Number	Equipment: Bench, Cart, Floor, Table, Undercounter	Description	Brand	Model#	Asset No.	Assembly Date	Assembly Completed	Dimensions: Width (inches)	Depth (inches)	Height (inches)	Power: Volt	Amp	Phase	E-power	UPS	Network: Data	Monitoring/ BMS/ EMS	IW	Utilities: DI	CA	VAC	N2	Specialty Gas	Ducted, Recirculating	Ducted Exhaust	Ducted Supply	Vac Pump Cabinet	Floor Sink, Drain	Process Utilities: Floor Sink, Drain	Cilantro Soft Water	RO	Chilled Water	Process Steam	Process Steam Steamers	Clean-to-Dirty Ratio	Comments	QTY (now)	Total QTY (inc. future)
707		Fermentation Separation	Separatio n	Separation	109	Hood	Batch Reactor (in 10' walk-in fume hood)	Parr	4524				36	30	96	230	15								F			x	Hydrogen		Y						Y				In walk-in hood #502. Shared, 2'x3' table for PC & controller. System includes a feed pump, and a balance vacuum pump.		
708		Fermentation Separation	Separatio n	Separation	109	Hood	Continuous Reactor (in 10' walk-in fume-hood)	Parr	5403				36	36	72													x			Y						Y				in walk-in hood #502. Shared, 2'x3' table for PC & controller. Includes a vacuum pump, a feed pump and chiller.		
709		Fermentation Separation	Separatio n	Separation	109	Hood	batch Still (in 15' walk-in fume hood)	H.S Martin					48	36	72	230				Y	Y		F			x			Y						Y				in walk-in hood #503. Shared, 2'x3' table for PC & controller. System includes feed pumps (3), balancers (4), vacuum pump and a chiller.		
710		Fermentation Separation	Separatio n	Separation	109	Hood	Continuous Still (in 15' walk-in fume-hood)	custom					96	48	96																Y						Y				in walk-in hood #503. Shared, 2'x3' table for PC & controller. System includes vacuum pump, heat transfer fluid circulating bath/pump, feed pump and chiller.		
711		Fermentation Separation	Separatio n	Separation	109	Hood	Short-Path Distillation (in 15' walk-in fume hood)	Incon					32	24	24																									in walk-in hood #503. Shared, 2'x3' table for PC & controller. System includes:		
712		Fermentation Separation	Separatio n	Separation	109	Bench	Moisture Analyzer with analytical balance	Schott	TZ3731				48	32	24	110			Y																					Includes PC		
713		Fermentation Separation	Separatio n	Separation	109	Bench	Colorimeter	Hi-rider	Colorlyte anl XE				48	32	24	110			Y																					Includes PC		
714		Fermentation Separation	Separatio n	Separation	109	Bench	Spectrophotometer	Beckman Coulter	DU 800																															Separate storage room for 55-gal drums, 120 gal racks, large carboys, large flasks, tables and equipment. Cold storage for storing broth.		
715		Fermentation Separation	Separatio n	Separation	109	Bench	Mobile surge tank (New)	TBD																															Intermediate storage during harvest.		
716		Fermentation Separation	Separatio n	Separation	109	Bench	pH meter																																		
717		Fermentation Separation	Separatio n	Separation	109	Bench	Viscometer																																		
718		Fermentation Separation	Separatio n	Separation	109	Bench	Conductivity meter																																		
719		Fermentation Separation	Separatio n	Separation	109	Bench	Refractometer																																		
720		Fermentation Separation	Separatio n	separation	109	Bench	Moisture Balance																						

5/23/2013 12:30:20 AM

A-521-TT

LAB DETAILS

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS SHOWN

TITLE

NO.	DESCRIPTION	DATE

STAMP

CONSULTANTS

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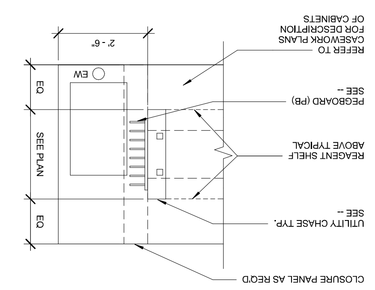
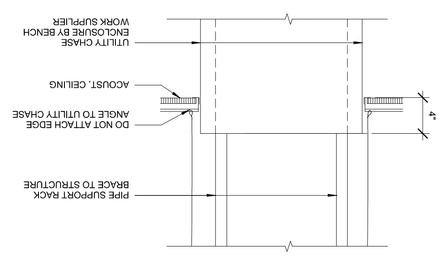
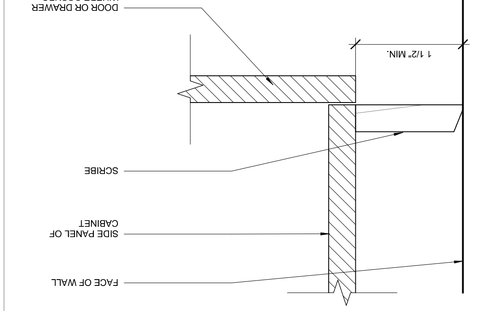
20 ISLAND CABINET- PARTIAL PLAN
1/2" = 1'-0"



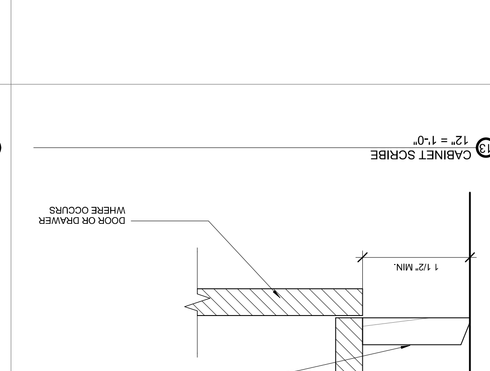
19 UTILITY CHASE INTERSECTION AT CEILING
1 1/2" = 1'-0"



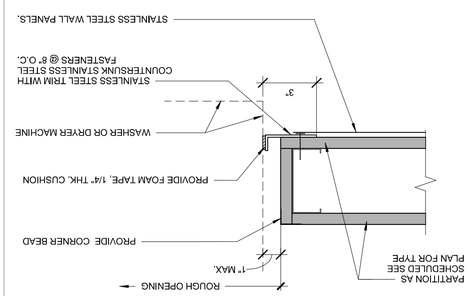
18 CABINET SCRIBE
1 1/2" = 1'-0"



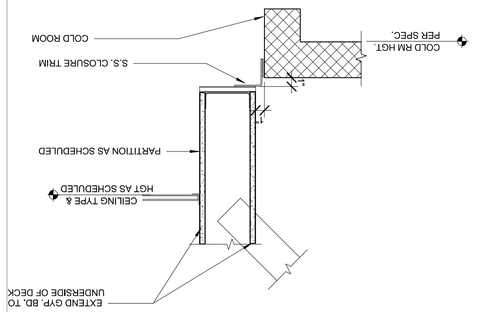
17 COLDROOM/ AUTOCLAVE CLOSURE
3" = 1'-0"



16 GLASSWASH CLOSURE
3" = 1'-0"

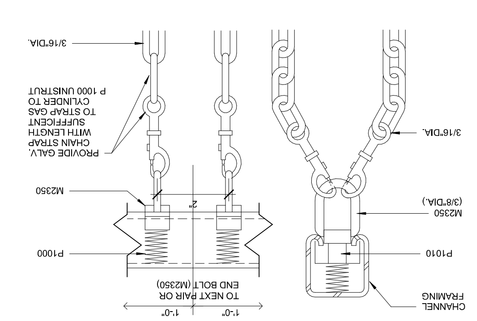


15 TYP. SOFFIT @ COLD ROOM (SIM TO J/M/B)
1 1/2" = 1'-0"

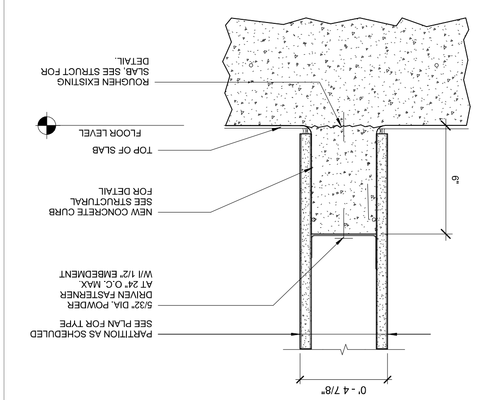


14 AUTOCLAVE/ CAGEWASH CLOSURE J/M/B
3" = 1'-0"

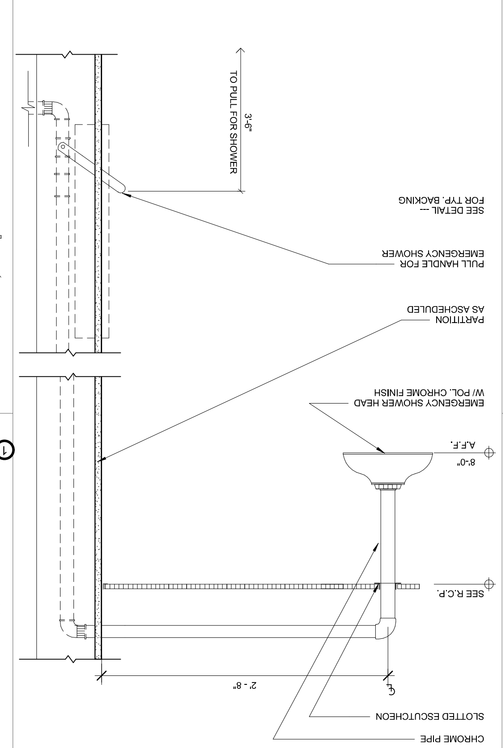
13 GAS CYLINDER STRAP
6" = 1'-0"



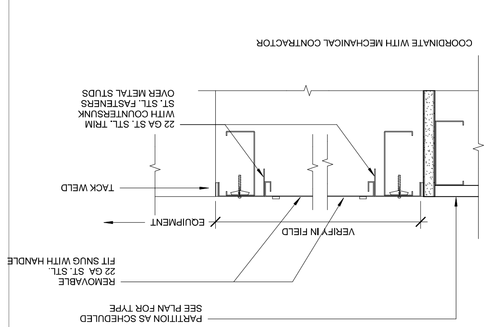
12 CONCRETE CURB DETAIL @ SERVER ROOM & GLASSWASH
3" = 1'-0"



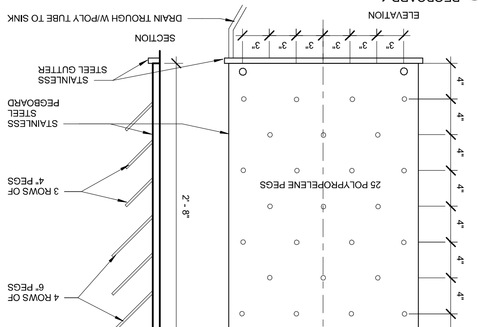
11 EMERGENCY SHOWER (ESW)
1 1/2" = 1'-0"



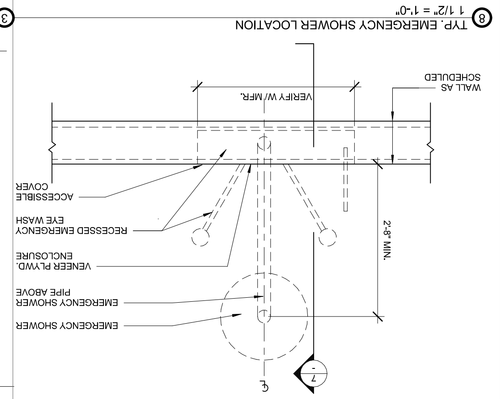
10 AUTOCLAVE/ CAGEWASH CLOSURE J/M/B
3" = 1'-0"



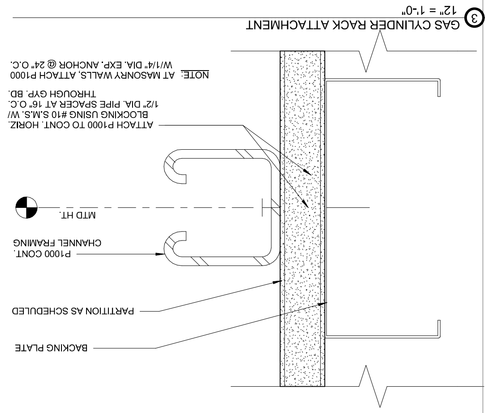
9 GAS CYLINDER RACK
3/4" = 1'-0"



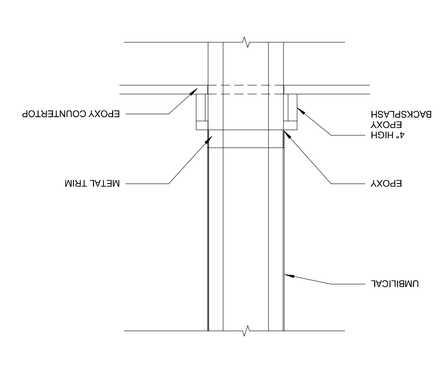
8 TYP. EMERGENCY SHOWER LOCATION
1 1/2" = 1'-0"



7 GAS CYLINDER RACK ATTACHMENT
12" = 1'-0"



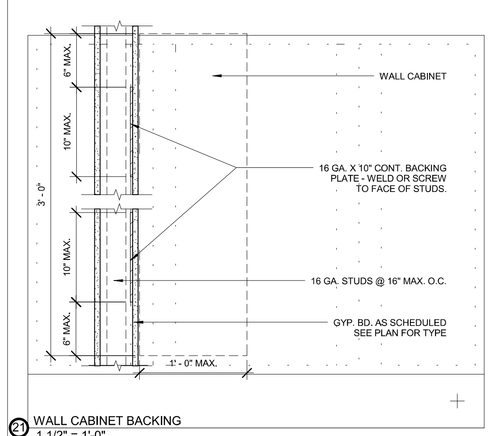
6 UTILITY CHASE/BACKSPLASH
1 1/2" = 1'-0"



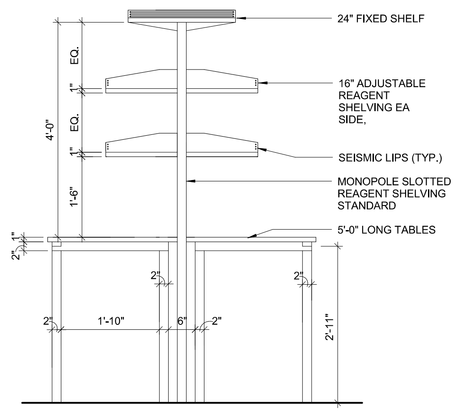
5 GAS CYLINDER STRAP
6" = 1'-0"

4 PEGBOARD-1
1 1/2" = 1'-0"

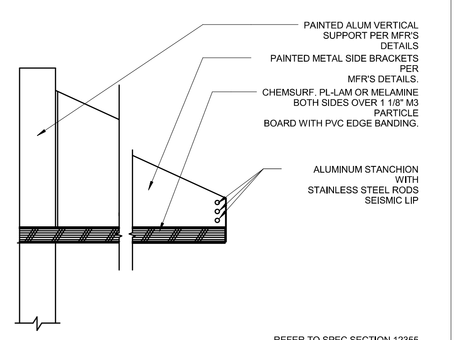
ELEVATION
SECTION
DRAIN TROUGH W/POLY TUBE TO SINK
3'
3'
3'
3'
3'
3'
3'
4'
4'
4



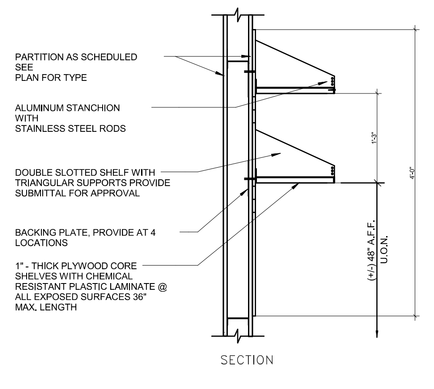
21 WALL CABINET BACKING
1 1/2" = 1'-0"



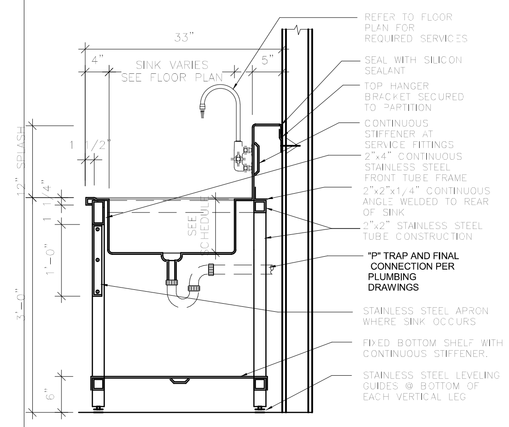
16 LAB CASEWORK SECTION
3/4" = 1'-0"



11 SECTION THRU REAGENT AND ADJ. SHELF FASCIA
3" = 1'-0"

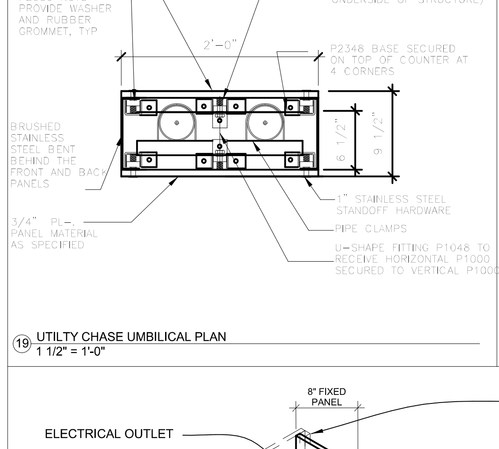


6 ADJUSTABLE WALL SHELVING
1" = 1'-0"

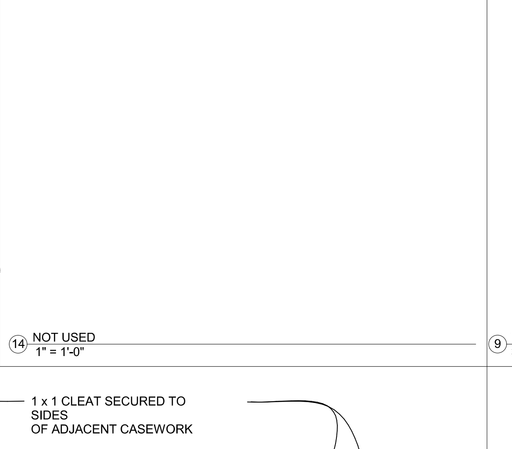


1 SCULLERY SINK
1" = 1'-0"

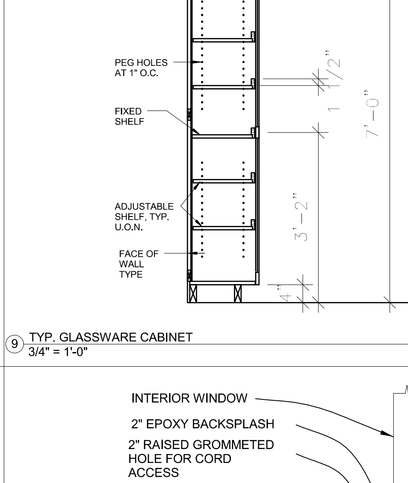
22 WALL MOUNTED LAB HEIGHTS
1 1/2" = 1'-0"



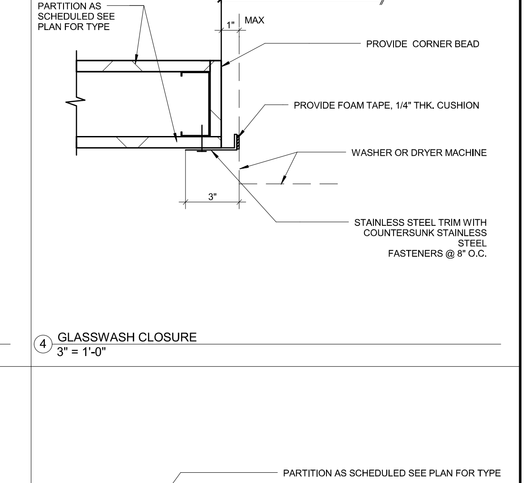
17 SEISMIC STRAPPING FOR LAB EQUIPMENT
1/4" = 1'-0"



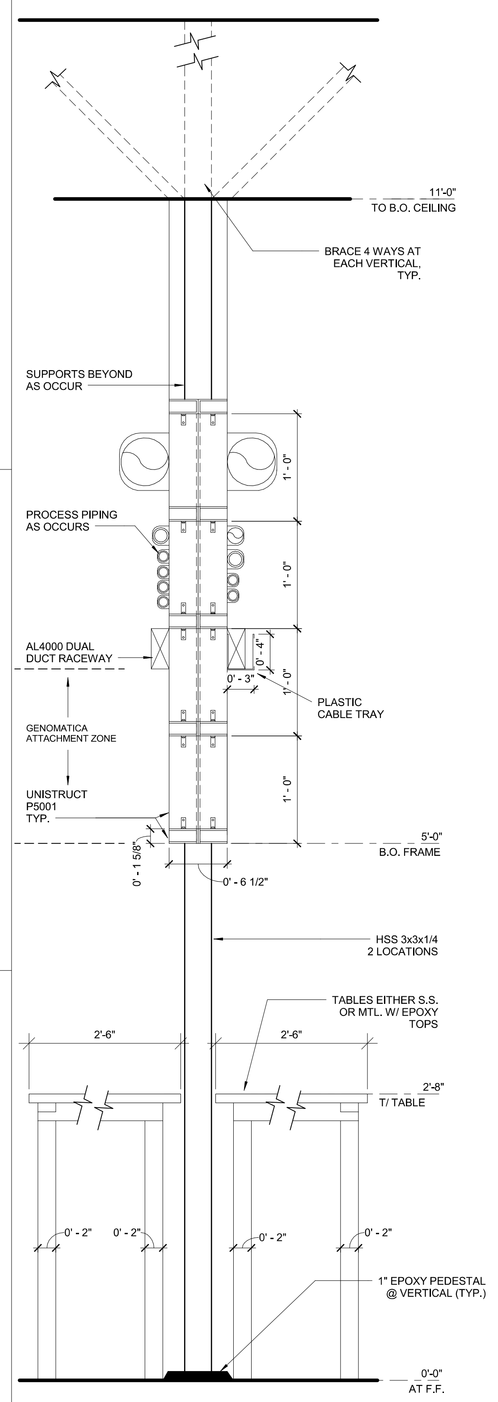
12 CONTAINMENT BERM
3" = 1'-0"



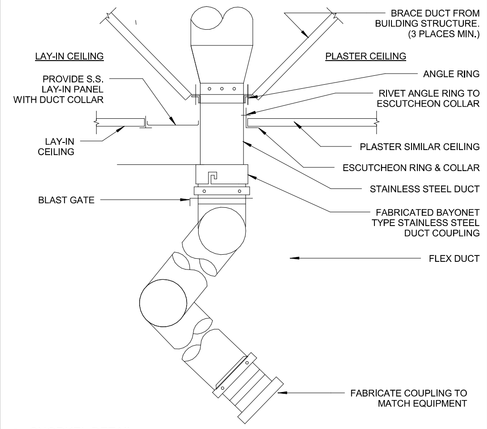
7 FULL HEIGHT WALL SHELVING
1" = 1'-0"



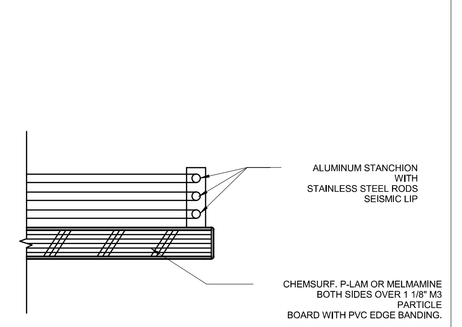
2 CORNER GUARD
3" = 1'-0"



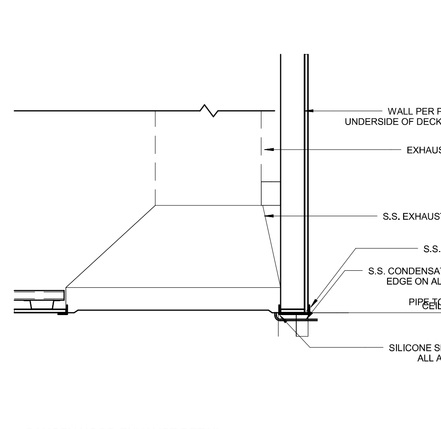
23 UNISTRUT SUPPORT FRAME SECTION
1 1/2" = 1'-0"



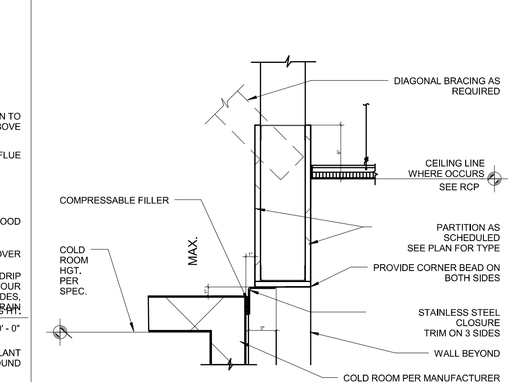
18 SNORKEL DETAIL
1 1/2" = 1'-0"



13 FIXED SHELF SEISMIC LIP
6" = 1'-0"



8 CANOPY HOOD EXHAUST DETAIL
1" = 1'-0"



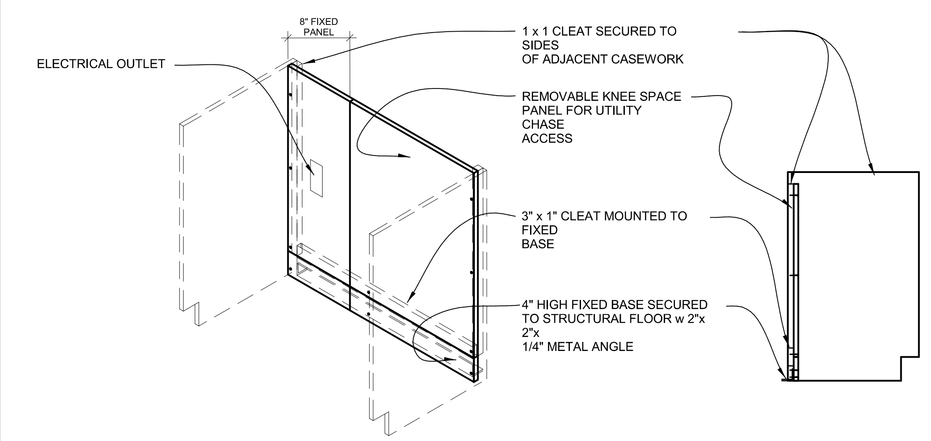
3 COLD ROOM SOFFIT
3" = 1'-0"

19 UTILTY CHASE UMBILICAL PLAN
1 1/2" = 1'-0"

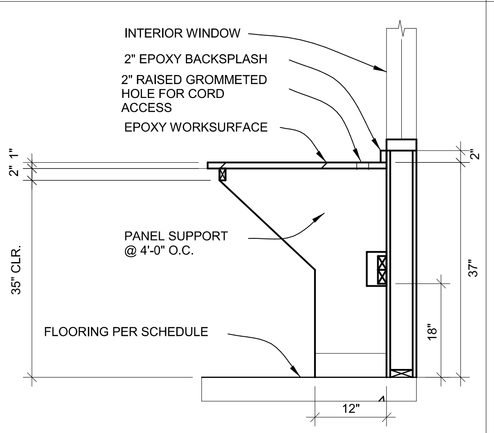
14 NOT USED
1" = 1'-0"

9 TYP. GLASSWARE CABINET
3/4" = 1'-0"

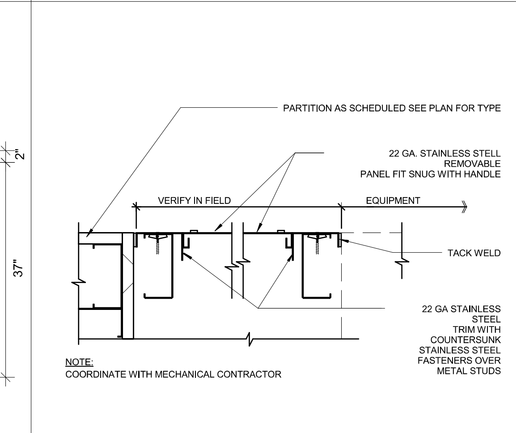
4 GLASSWASH CLOSURE
3" = 1'-0"



20 REMOVEABLE KNEE SPACE PANEL
1" = 1'-0"



10 WALL MOUNTED KNEE OPENING AT INTERIOR WALL
1" = 1'-0"



5 AUTOCLAVE CLOSURE JAMB
3" = 1'-0"

5/2/2013 1:26:26 AM

CONSULTANTS

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

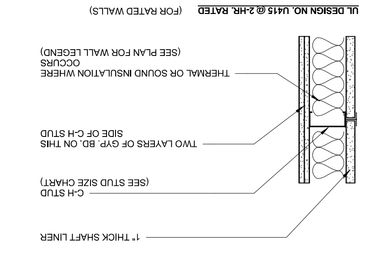
PROJECT NO. 12137

SCALE AS SHOWN

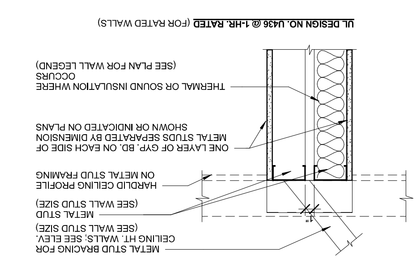
TITLE

LAB DETAILS

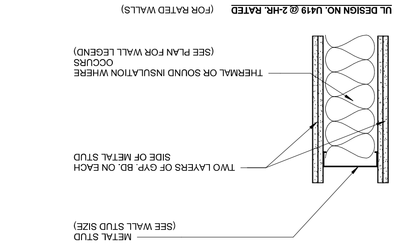
A-522-TI



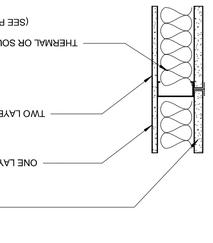
(F) WALL CONSTRUCTION TYPE - F
1 1/2" = 1'-0" (RATED & NON-RATED)



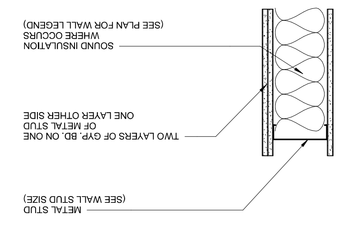
(C) WALL CONSTRUCTION TYPE - C
1 1/2" = 1'-0" (RATED & NON-RATED)



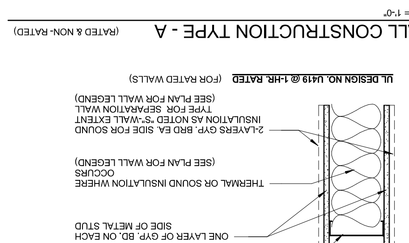
(B) WALL CONSTRUCTION TYPE - B
1 1/2" = 1'-0" (RATED & NON-RATED)



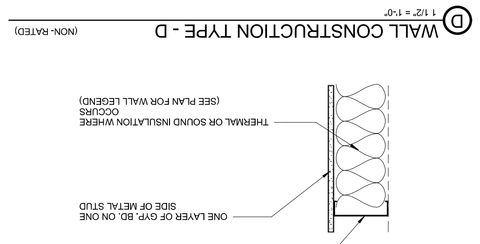
(E) WALL CONSTRUCTION TYPE - E
1 1/2" = 1'-0" (RATED & NON-RATED)



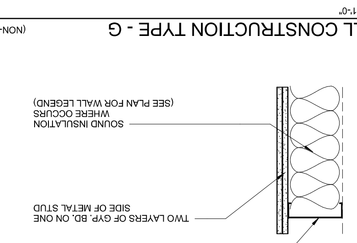
(H) WALL CONSTRUCTION TYPE - H
1 1/2" = 1'-0" (NON-RATED)



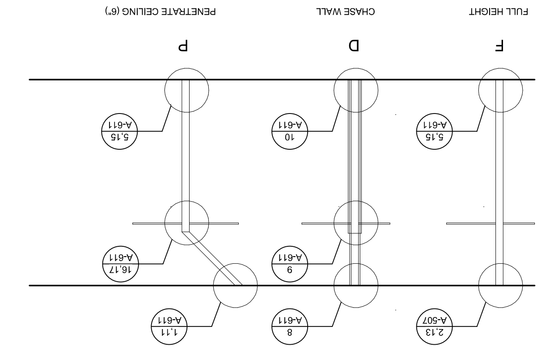
(A) WALL CONSTRUCTION TYPE - A
1 1/2" = 1'-0" (RATED & NON-RATED)



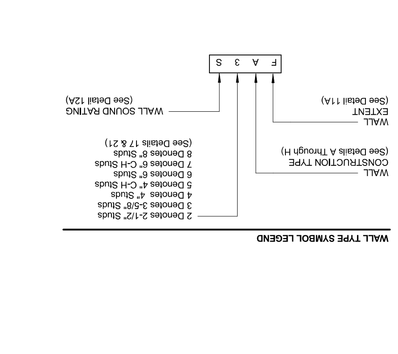
(D) WALL CONSTRUCTION TYPE - D
1 1/2" = 1'-0" (NON-RATED)



(G) WALL CONSTRUCTION TYPE - G
1 1/2" = 1'-0" (NON-RATED)



(1A) WALL EXTENT
1/4" = 1'-0"



(1) WALL TYPE SYMBOL LEGEND
1 1/2" = 1'-0"

ALLOWABLE PARTITION HTS. BASED ON GYP. BD. & ON L.T. GA. STL. STUDS ACTING AS COMPOSITE SECTION

STUD SPACING (IN INCHES)	GYPSUM BOARD FXCING:	HEIGHT IN FEET AND INCHES					
SCREW TYPE PUNCHED TC STUDS & GAUGE		HEIGHT	3 5/8"	6"	8"		
16" O.C.	5/8"-TYPE 'X' (SEE WALL TYPE)	REFER TO STUD SIZE & GAUGE TABLE					
		0-9'	22	22	22		
		9'-12'	20	20	18		
		12'-18'	16	20	22		
		14'-18'	N/A	16	20		
		18'-20'	N/A	16	16		

NOTES:
SCREW TYPE PUNCHED TC STEEL STUDS AND CHANNEL RUNNERS W/ 1-1/4" FLANGE COMPLYING WITH GYPSUM ASSOCIATION RECOMMENDED SPECIFICATIONS FOR THE APPLICATION OF FINISHING OF GYPSUM BOARD (GYPSUM ASSOC. DOCUMENT GA-216) AND WITH THE STEEL STUDS MANUF. (SSMA) PRODUCT TECHNICAL MANUAL. ICC ES#4382 REFER TO SPECIFICATION SECTION 09260 - DRYWALL SYSTEMS FOR ADDITIONAL REQUIREMENTS. CALCULATIONS ARE BASED ON ALLOWABLE DESIGN STRESS OF 20,000 PSI.

METAL STUD SCHEDULE
(21) 6" = 1'-0"

METAL STUD SIZE & GAUGE				METAL JOIST SIZE & GAUGE			
SCREW TYPE PUNCHED TC STUDS				SCREW TYPE PUNCHED TC STUDS			
HEIGHT	3 5/8"	6"	8"	SPAN	3 5/8"	6"	8"
0-9'	22	22	22	0'-7'	16	20	N/A
9'-12'	20	20	18	7'-14'	N/A	16	18
12'-18'	16	20	22	14'-18'	N/A	N/A	16
14'-18'	N/A	16	20				
18'-20'	N/A	16	16				

T	THERMAL INSULATION
S	SOUND INSULATION

WALL INSULATION SCHEDULE
(22) 1 1/2" = 1'-0"

WALL TYPE SCHEDULE

TITLE	
SCALE	As indicated
PROJECT NO.	1213?
ADDRESS	
PROJECT	
CLIENT	

NO.	DESCRIPTION	DATE

STAMP

CONSULTANTS

A-602-TT

5. **Spray-Applied Fire Resistive Materials* —** Applied by mixing with water and spraying in more than one coat to the beam to the final thicknesses shown below. When fluted or corrugated steel floor units are used, crest areas above the beam shall be filled with Spray-Applied Fire Resistive Materials. Beam surfaces shall be clean and free of dirt, loose scale and oil. Min avg and min std density of 23 and 21 pcf, respectively.

Unrestrained Beam Rating Hr	Restrained Assembly Rating Hr	Spray Applied Fire Resistive Mtl Thkns In.
1	1, 1-1/2, 2	1/2
1-1/2	1, 1-1/2, 2, 3	3/4

SOUTHWEST FIREPROOFING PRODUCTS CO — Type 7HP or FP-2

6. **Shear-Connector Studs —** (Optional) **—** Studs 3/4 in. diam by 3 in. long, for 1-1/2 in. deep form units to 5-1/4 in. long for 3 in. deep form units, headed type or equivalent per AISC specifications. Welded to the top flange of the beam through the steel form units.

7. **Electrical Inserts* —** (Not shown) Classified as "Outlet Boxes and Fittings Classified for Fire Resistance" .

H M ROBERTSON — Presset Inserts. For use with 2-1/2 in. lightweight concrete topping over Q-HMX steel floor units. Installed over factory-punched holes in floor units per accompanying installation instructions. Spacing shall not be more than one insert in each 14 sq ft of floor area with spacing along floor units not less than 48 in. O.C. The holes cut in insert cover for passage of wires shall be no more than 1/8 in. larger diam than wire. Restrained Assembly Rating is 3/4 h with Tapmate IS-FS-1 and 1 h with Tapmate IS-FS-2 inserts.

H M ROBERTSON — Tapmate IS-FS-1, IS-FS-2; Series KEB.

WIREMOLD CO — After set inserts. Single-service after set inserts installed per accompanying installation instructions in 2-1/2 in. diam hole cored/bled through min 3-1/4 in. thick concrete topping to top of crest of any min 3 in. deep cellular steel floor unit specified under Item 7. Spacing shall be no more than one insert in each 10 sq ft of floor area in each span with a min center to center spacing of 16 in. If the high potential and low potential raceways of the cellular steel floor units are separated by a valley filled with concrete, the center to center spacing of the high potential and low potential single-service after set inserts may be reduced to a min of 7-1/2 in. Restrained Assembly Rating is 2 h or less with internally protected Type 436 after set insert with Type M4-, M6- or M8- Series single-service activation fitting.

WIREMOLD CO — Internally protected Type 436 after set insert with Type M4-, M6- or M8- Series single -service activation fitting.

8. **Mineral and Fiber Boards* —** (Optional, not shown). Applied over concrete floor with no restriction on board thickness. When mineral and fiber boards are used, the unrestrained beam rating shall be increased by a minimum of 1/2 hr. See Mineral and Fiber Board (CIJR2) category for names of manufacturers.

9. **Roof Covering Materials* —** (Optional, not shown) **—** Consisting of materials compatible with insulations described herein which provide Class A, B or C coverings. See Built-Up Roof Covering Materials in Building Materials Directory.

10. **Insulating Concrete —** (Optional, not shown) **—** Various types of insulating concrete prepared and applied in the thickness indicated:

A. **Vermiculite Concrete —** (Optional, not shown).

1. Blend 6 to 8 cu ft of Vermiculite Aggregate* to 94 lb Portland Cement and air entraining agent. Min thickness of 2 in. as measured to the top surface of the structural concrete or foamed plastic (Item 11) when it is used.

SIPLAST INC

VERMICULITE PRODUCTS INC

2. Blend 3.5 cu ft. or Type NVC Concrete Aggregate* or Type NVS Vermiculite Aggregate* to 94 lb Portland Cement. Slurry coat, 1/8 in. thickness beneath foamed plastic (Item 11) when used, 1 in. min topping thickness.

ELASTIZELL CORP OF AMERICA

SIPLAST INC

VERMICULITE PRODUCTS INC

Vermiculite concrete may be covered with Roof Covering Materials (Item 9).

B. **Cellular Concrete — Roof Topping Mixture* —** Concentrate mixed with water and Portland Cement per manufacturer's specifications. Cast dry density 28-day min compressive strength of 190 psi as determined with ASTH C495-66.

CELCORE INC — Cast dry density of 31 (+ or -) 3.0 pcf.

CELLULAR CONCRETE L L C — Cast dry density of 37 (+ or -) 3.0 pcf.

ELASTIZELL CORP OF AMERICA — Type II, Mix #1 of cast dry density 39 (+ or -) 3.0 pcf, Mix #2 of cast dry density 40 (+ or -) 3.0 pcf, Mix #3 of cast dry density 47 (+ or -) 3.0 pcf.

LITE-CRETE INC — Cast dry density of 29 (+ or -) 3.0 pcf.

C. **Cellular Concrete — Roof Topping Mixture* —** Concentrate mixed with water and Portland Cement per manufacturer's specifications. 28-day min compressive strength of 190 psi as determined with ASTM C495-66.

SIPLAST INC — Mix No. 1 or 2. Cast dry density of 32 to 35 pcf for Mix No. 1 or 36 to 39 pcf for Mix No. 2.

D. **Perlite Concrete —** 6 cu ft of Perlite Aggregate* to 94 lb of Portland Cement and 1-1/2 pt air entraining agent. Min thickness 2 in. as measured to the top surface of structural concrete or foamed plastic (Item 11A) when it is used. See Perlite Aggregate (CFPX) in Fire Resistance Directory for names of manufacturers.

E. **Cellular Concrete — Roof Topping Mixture* —** Foam concentrate mixed with water, Portland Cement and UL Classified Vermiculite Aggregate per manufacturer's application instructions. Cast dry density of 30 to 39 pcf and 28-day compressive strength of min 250 psi as determined in accordance with ASTM C495-66.

CELLULAR CONCRETE L L C — Mix No. 3.

SIPLAST INC — Mix No. 3.

F. **Floor Topping Mixture* —** (Optional, not shown) **—** Approx 4.5 gal of water to 41 lbs of NVS Premix floor topping mixture. Slurry coat 1/8 in. thickness beneath foamed plastic (Item 11) when used, 1 in. min topping thickness.

SIPLAST INC

Floor Topping Mixture may be covered with Built-Up or Single Membrane Roof Covering.

11. **Foamed Plastic* —** (Optional, not shown) **—** For use only with vermiculite (Item 10A) or cellular (Item 10C) concretes or Floor-Topping Mixture (Item 10F) -rigid polystyrene foamed plastic insulation having skirs and/or holes sandwiched between vermiculite concrete slurry which is applied to the normal or lightweight concrete surface and vermiculite concrete topping (Item 10A), Max thickness to be 8 in.

SIPLAST INC

VERMICULITE PRODUCTS INC

11A. **Foamed Plastic* —** (Optional) **—** Nom 24 by 48 in., 48 by 48 in., 24 by 96 in, or 48 by 96 in. by max 8 in. thick polystyrene foamed plastic insulation boards with holes symmetrically placed having a max density of 2.0 pcf. For use only with cellular concrete roof topping mixture (Item 10B).

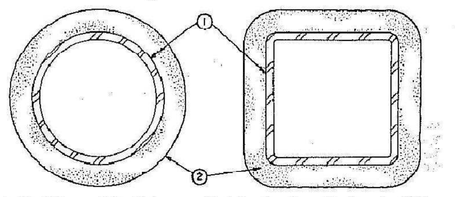
STARFOAM MFG INC

11B. **Foamed Plastic* —** (Optional, not shown) **—** For use only with cellular concrete. Nom 24 by 48 by max 8 in. thick polystyrene foamed plastic insulation boards having a density of 1.0 + 0.1 pcf encapsulated within cellular concrete topping (Item 10B). Each insulation board shall contain six nom 3 in. diam holks oriented in two rows of three holes each with the holes spaced 12 in. OC, transversely and 16 in. OC longitudinally. See Foamed Plastic* (BRYX) category in the Building Materials Directory or Foamed Plastic* (CCVW) category in the Fire Resistance Directory for list of manufacturers.

12. **Foamed Plastic* —** (Optional, not shown). Polyisocyanurate roof insulation applied over concrete floor with no restriction on insulation thickness. When polyisocyanurate insulation is used, the unrestrained beam rating shall be increased by a minimum of 1/2 hr. See Foamed Plastic (CCVW), category in the Fire Resistance Directory for list of manufacturers.

*Bearing the UL Classification Mark

Design No. X771
Ratings — 3/4, 1, 1-1/2, 2, 3 and 4 h



1. **Steel Pipe or Tube Column —** Steel circular pipe with diameter (OD) ranging from a minimum of 3 in. to a maximum of 32 in. with a minimum wall thickness of 3/16 in.
Steel square or rectangular tube with outside wall dimensions ranging from a minimum 3 in. to a maximum of 32 in. and a minimum wall thickness of 3/16 in.
The A/P ratio of the steel pipe or tube (see Item 2) shall range from 0.18 to 2.0.
2. **Spray-Applied Fire Resistive Materials* —** Applied by mixing with water and spraying in one or more coats to steel surfaces which must be clean and free of dirt, loose scale and oil. Min avg and std density of 15/14 pcf respectively. Min avg and min std density of 22/19 pcf respectively for Types Z-106, Z-106/G. For method of density determination, see Design Information Section, preceding these designs.
The hourly rating of the structural member is dependent upon the ratio of A/P and the thickness of Spray-Applied Fire Resistive Materials, where A is the cross sectional area of the pipe or tube and P is the heated perimeter. The A/P ratio of a circular pipe is determined by:

$$A/P \text{ pipe} = \frac{t\,(d - t)}{d}$$

Where:
d = the outer diameter of the pipe (in.)
t = the wall thickness of the pipe (in.)
The A/P ratio of a rectangular tube is determined by:

$$A/P \text{ tube} = \frac{t\,(a + b - 2t)}{a + b}$$

Where:
a = the outer width of the tube (in.)
b = the outer length of the tube (in.)
t = the wall thickness of the tube (in.)
The thickness of Spray-Applied Fire Resistive Materials for ratings of 3/4, 1, 1-1/2, 2, 3 and 4 h of a steel pipe or tube can be determined by the equation:

$$h = \frac{R - 0.20}{4.43\ (A/P)}$$

Where:
R = the hourly rating (hrs).
h = the thickness of Spray-Applied Fire Resistive Materials, minimum 1/4 in., maximum 3-7/8 in.
ARABIAN VERMICULITE INDUSTRIES —Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6s, Sonotex 1, Sonotex 5, Z-106, Z-106/G.
CONSTRUCTION PRODUCTS DIV
W R GRACE & CO OF CANADA LTD —Types MK-4, MK-5.
GRACE KOREA INC —Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6s, Monokote Acoustic 1, Monokote Acoustic 5, Z-106, Z-106/G.
PYROK INC —Type LD.
SOUTHWEST VERMICULITE CO —Types 4, 5, 3EF, 5GP, 5MD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD.
VERMICULITE PRODUCTS INC —Types MK-4, MK-5.
W R GRACE & CO - CONN
CONSTRUCTION PRODUCTS DIV —Types MK-4, MK-5, MK-6/HY, MK-6s, Monokote Acoustic 1, Monokote Acoustic 5, RC, Z-106, Z-106/G.
*Bearing the UL Classification Mark

Design No. D923
BXUV.D923
Fire-resistance Ratings - ANSI/UL 263

Page Bottom

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Listed or Classified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered as Classified, Listed, or Recognized.

Fire-resistance Ratings - ANSI/UL 263

See General Information for Fire-resistance Ratings - ANSI/UL 263

Design No. D923

April 19, 2013

Restrained Assembly Ratings — 3/4, 1, 1-1/2, 2 or 3 Hr

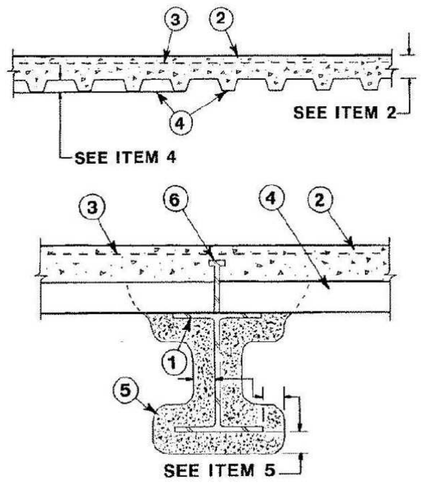
(See Items 2, 7, 8, 9 and 12)

Unrestrained Assembly Rating — 0 Hr (See Item 4)

Unrestrained Beam Ratings — 1, 1-1/2, 2 and 3 Hr

(See Items 5, 8 and 12)

Load Restricted for Canadian Applications — See Guide BXUV7



1. **Supports —** W8x28 min size steel beams.

2. **Normal Weight or Lightweight Concrete —** Normal weight concrete, carbonate or siliceous aggregate, 147 to 153 pcf unit weight, 3500 psi compressive strength, vibrated. Lightweight concrete, expanded shale, or slate aggregate by rotary-kiln method, or expanded clay aggregate by rotary-kiln or sintered-grate method; 3000 psi compressive strength, vibrated, 4 to 7 percent entrained air.

Restrained Assembly Rating Hr	Concrete (Type)	Concrete Unit Weight pcf	Concrete Thkns In.
1	Normal Weight	—	3-1/2
1-1/2	Normal Weight	—	4
2	Normal Weight	—	4-1/2
3	Normal Weight	—	5-1/4
3/4 or 1 (See Item 6)	Lightweight	107-113	2-1/2
1	Lightweight	107-120	2-5/8
1-1/2	Lightweight	107-113	3
2**	Lightweight	107-113	3-1/4
2**/4*	Lightweight	107-116	3-1
2	Lightweight	107-120	3-1/2
3	Lightweight	107-113	4-3/16
3	Lightweight	107-120	4-7/16

*For use with 2 or 3 in. steel floor and form units only.

**When optional Items 7 and 11 are used, the Restrained Assembly Ratings of the 3-1/4 in. lightweight concrete thicknesses are reduced to 1-1/2 h.

3. **Welded Wire Fabric —** 6x6, 10x10 SWG.

4. **Steel Floor and Form Units* —** Composite 1-1/2, 1-5/8, 2 or 3 in. deep galv units of 4-1/2 in. deep noncomposite galv units. Fluted units may be uncoated or phosphatized/painted. Min gauges are 22 MSG for fluted and 20/20 MSG for cellular units. The following combinations of units may be used:

(1) All 1B, 2A, 2B, 2B or 3B in. wide cellular.

(2) All fluted.

(3) One or two 3 in. deep, 12 in. wide; 1B/1B MSG min cellular, alternating with 3 in. deep fluted or other cellular.

(4) Any blend of fluted and 1B, 2A, 2B, 2B or 3B in. wide cellular.

(5) 3 in. deep, 30 in. wide cellular with 8-1/8 in. wide valley along side joints may be used when 3/8 in. diam reinforcing bars are placed 1-1/2 in. to each side of side joints and 1 in. above bottom of unit.

(6) Corrugated, 1-5/16 in. deep, 30 in. wide, 24 MSG min galv units with shear wires factory welded to deck corrugations. Welded to supports 12 in. OC through welding washers. For shear wire spacing of 8 in. or less, the steel deck stress shall not exceed 20 KSI. For shear wire spacing greater than 8 in. OC but less than or equal to 12 in. OC, steel deck stress shall not exceed 12 KSI.

Components for field-assembled cellular metal raceway units:

Raceway bottom — 24 or 36 in. wide Types 212 VS, 312VS .

Raceway cover plate — Types CP-12, CP-16.

Raceway divider — Types DC-20, DC-25.

Raceway isolation trough — Types T-20, T-25, T-30.

ASC STEEL DECK, DIV OF ASC PROFILES INC — 24 through 36 in. wide, Types B Hi-Form, BF Hi-Form, N Hi-Form, NF Hi-Form, 2W Hi-Form, 2WF Hi-Form, 3W Hi-Form, 3WF Hi-Form, DGB Hi-Form, DGBF Hi-Form, DGN Hi-Form, DGNF Hi-Form, DGZW Hi-Form, DGZWF Hi-Form, DGW Hi-Form, and DGWF Hi-Form. All units may be galvanized or Prime Shield.

CANAM STEEL CORP — 36 in. wide Type P-3623, P-3606, P-3615 and 24 in wide Type P-2432 composite.

CANAM STEEL CORP — 24 in. wide, Types 1-1/2, 2 or 3 in. LOK-Floor, LOK-Floor Cell; 36 in. wide Types 2 or 3 in. LOK-Floor, LOK-Floor Cell; 24 in. wide Types N-LOK, N-LOK Cell; 24, 30 or 36 in. wide Types 1-1/2 in. B-LOK, B-LOK Cell.

CONSOLIDATED SYSTEMS INC — 24 in. wide Types CFD-2, CFD-3; 24, 30 or 36 in. wide Type CFD-1.5; 24 or 36 in. wide Types Mac-Lok 2, Mac-Lok 3; 24 in. wide, Types B2C, B2FC, NC, NFC; 30 in. wide Type B3C; 12 in. wide Mac-Way cellular 45MDW, 2-633MTWA, 2-633MTWV, 3-633MTWA, 3-633MTWV.

DESIGN ASSISTANCE CONSTRUCTION SYSTEMS INC — 36 in. wide Type DACS1.5CD, or 24 in. wide Type DACS2.0CD, or DACS3.0CD.

EPSC METALS CORP — 24 in. wide Types EC150, ECP150, EC300, ECP300, EC366, ECP366, EC150, EC300 inverted; 30 in. wide Types ECB150, ECBR150; 36 in. wide Type EC266.

H H ROBERTSON — QL Types, 24 in. wide 3 or 3 inverted, UKX, UKX-3 2 in, 99, AKX, 21 or 21 inverted, 121, NXX, TKX; 24 or 30 in. wide QKN, QKN-4; 36 in. wide 99, NXX, WXX; 24, 28 or 36 in. wide NXX; 1.5NXC, NXC, AKX, 2 or 3 in TKX; 12 in. wide noncomposite Sec. 12; 17 in. wide 21; 26 or 28 in. wide UKX, B7.5 cm wide. Side joints of QL, 99, 121, WXX, TKX, TKC, and Metric units=QL-77-900; QLC-79-900 may be welded together 60 in. O.C. Side joints of 99, AKX, WXX, QKN, QKN-4, TKX and Metric units-QL-77-900 and QLC-79-900 may be fastened together with min 1 in. long No. 12x14 self-drilling, self-tapping steel screws 36 in. O.C.

HAMBRO STRUCTURAL SYSTEMS, DIV OF CANAM STEEL CORP — 36 in. wide, 1-1/2 in. Type P3615HB. The max superimposed load for Type P3615HB units shall not exceed 250 PSF. For single spans, the use of the units shall be limited to 5 ft 0 in., 8 ft 0 in, and 6 ft, 6 in. max spans for the Nos. 22, 20 and 18 gauge units, respectively. For multiple spans, No. 18 gauge units may be used on max 7 ft, 6 in. spans with a max total superimposed load of 240 pcs.

KAM INDUSTRIES LTD, DBA CORDECK — 24 in wide, Type 2 or 3 in. WDR.

MARLYN STEEL DECKS INC — Type 1.5 CF, 2.0 CF or 3.0 CF.

NEW MILLENNIUM BUILDING SYSTEMS L L C — Type 1.5CD, 1.5CDI, 1.5CDR, 2.0CD or 3.0CD. Units may be phos/painted or galvanized.

ROOF DECK INC — 36 in. wide Types LOK 1-1/2, LOK 1-1/2 R; 24 in. wide Types LOK-2, LOK-3.

VALLEY JOIST — 24 or 36 in. wide Types WVC 1-1/2 or WVC 2.

VERCO DECKING INC - A NUCOR CO — 24, 30 or 36 in. wide Types PLB, B, BR; 24 or 36 in. wide Types PLW2, W2, PLW3, W3; 24 in. wide Types PLN, N; 12 in. wide PLW2, W2, PLW3 or W3 units may be blended with 24 or 36 in. wide PLW2, W2, PLW3 or W3 units, respectively. Units may be phos/pbt.

VULCRAFT, DIV OF NUCOR CORP — 24, 30 or 36 in. wide Types 1.5VL, 1.5VLI, 1.5VLP; 24 or 36 in. wide Types 2VLI, 2VLP, 3VLI, 3VLP.

Spacing of weld attaching units to supports shall be 12 in. OC for 12, 24 and 36 in. wide units, four welds per sheet for 30 in. wide units, 6 in. OC for 18 in. wide and Sec. 12 units. Unless noted otherwise adjacent units button-punched or welded together 36 in. OC along side joints. Adjacent 18 in. wide units welded together 30 in. OC along side joints. For 3 Hr Rating, units with overlapping type side joints welded together 24 in. OC max.

+12 in. wide, 1-1/2 in. deep Mac-Way units may be blended with 24 in. wide B2C or 30 in. wide B3C units in a blend of one cell to one or more fluted units. 12 in. wide, 2 in. deep Mac-Way units may be blended with 36 in. wide Mac-Lok 2 units in a blend of one cell to one or more fluted units. 12 in. wide, 3 in. deep Mac-Way units may be blended with 36 in. wide Mac-Lok 3 units in a blend of one cell to one or more fluted units. The side edge of the fluted unit is placed on the top of the side edge of the mac-way cell and the two are welded together with welding washers spaced a max of 32 in. O.C. for Mac-Lok 2 or 3 units and a max of 24 in. O.C. for the B2C or B3C units.

The Unrestrained Assembly Rating is 1-1/2 h for the following units with the stated limitations:

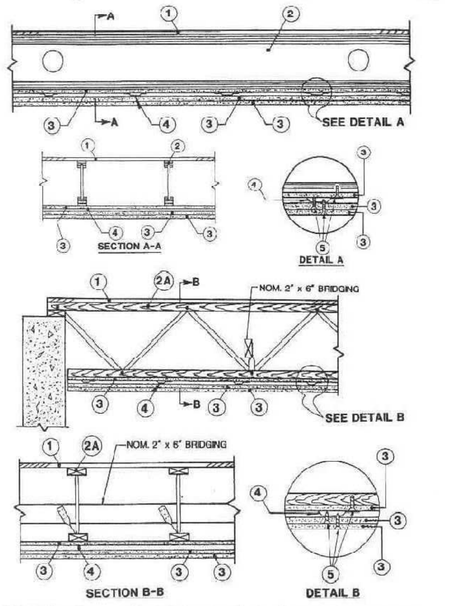
(a) 1-1/2 in. deep, 24 in. wide, 22 MSG or thicker fluted with clear spans not more than 7 ft, 8 in.

(b) 1-1/2 in. deep, 24 in. wide, 20 MSG or thicker fluted with clear spans not more than 8 ft, 8 in.

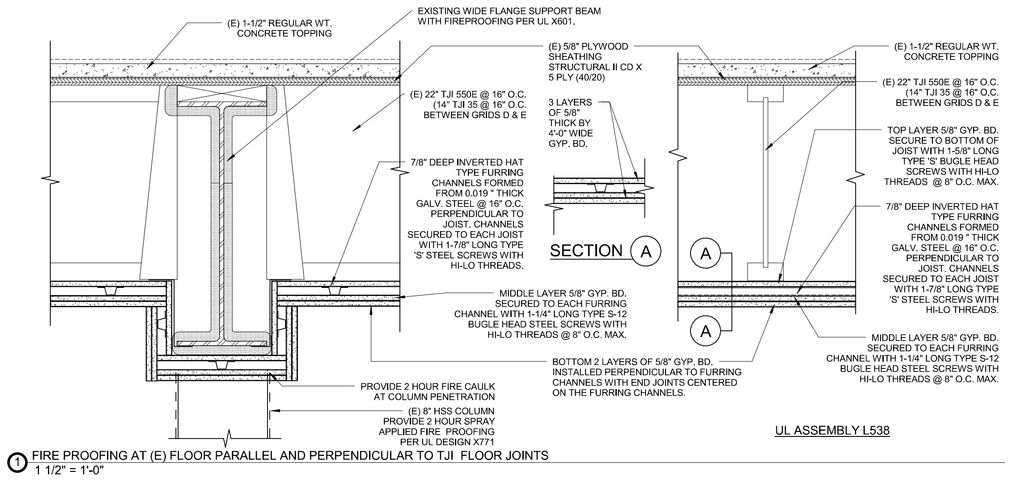
(c) 1-1/2 in. deep, 24 in. wide, 16 MSG or thicker fluted and 18/18 MSG or thicker cellular with clear spans not more than 9 ft, 11 in.

(d) 2 in. deep, 36 in. wide, 18 MSG or thicker fluted and 24 in. wide, 20/18 MSG or thicker cellular with clear spans not more than 13 ft, 2 in.

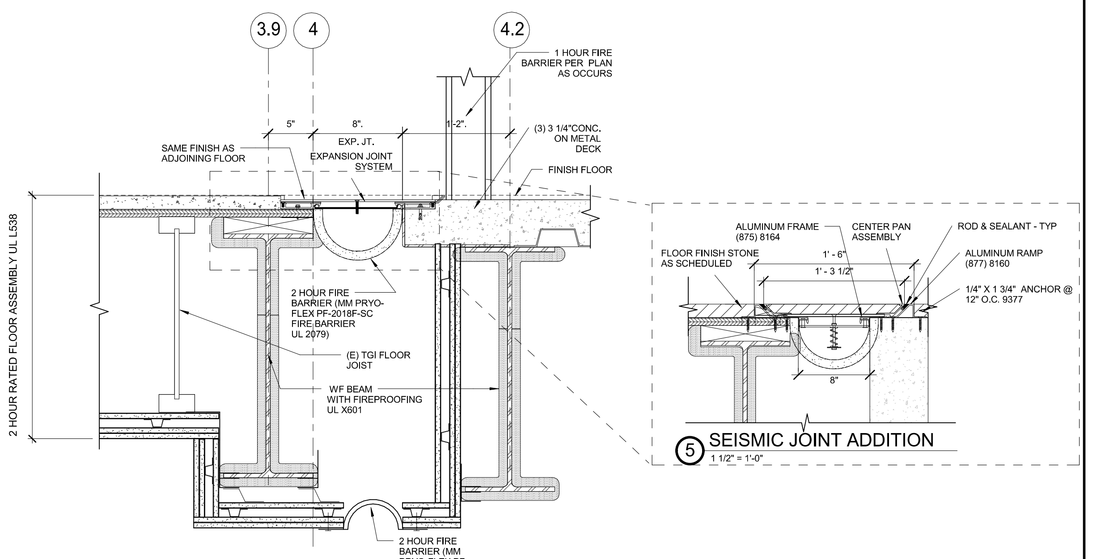
Design No. L538
Unrestrained Assembly Ratings — 2 Hr.
Finish Rating — More Than 90 Min. ALTERNATE CONSTRUCTION



1. **Finish Flooring —** 4 by 8 ft by min 5/8 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Installed perpendicular to the joists with end joints centered over the top chord of the joists and staggered.
A 3/4 in. thick or thicker perlite, vermiculite or gypsum concrete may be applied over the panels, if desired.
A. **Alternate Finish Floor Mineral and Fiber Board* —** Sizes ranging from 3 ft. by 4 ft. to 8 ft. by 12 ft., by min. 1/2 in. thick. All joints to be staggered a min. of 12 in. OC with adjacent sub-floor joints.
HOMASOTE CO —Type 440-32 Mineral and Fiber Board
Sub-flooring 1 in. by 6 in. T & G fastened diagonally to joists; or 15/32 in. thick plywood or 7/16 in. thick oriented strand board (OSB) wood structural panels, min. grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered.
2. **Structural Wood Members* —** Min 9-1/2 in. deep "I" -shaped wood joists spaced at a max of 19.2 in. OC. Min joist bearing on bearing plates shall be 1-3/4 in. Joists secured to the bearing plates with two 8d or 10d nails at each end. Holes may be cut in the web of the joists in accordance with the manufacturer's installation instructions.
TRUS JOIST MACMILLAN L P —Types TJI®/H60, TJI®/H60P, TJI ®/H90, TJI®/H90P, TJI®/H90X, TJI®/L45P, TJI®/L60, TJI ®/L60P, TJI®/L90, TJI®/L90P, TJI®/Pro(Tm)25P, TJI ®/Pro(Tm)35P, TJI®/Pro(Tm)120TS, TJI®/Pro(Tm)150, TJI ®/Pro(Tm)150TS, TJI®/Pro(Tm)250, TJI®/Pro(Tm)350, TJI ®/Pro(Tm)350P, TJI®/Pro(Tm)550, TJI®/Pro(Tm)550P.
A. **Alternate Structural Wood Members* —** Min 14 in. deep wood and steel trusses spaced a max of 19.2 in. OC. Min bearing and nailing or bolting to bearing plates (through steel bearing clips) shall be in accordance with the manufacturer's installation instructions.
TRUS JOIST MACMILLAN L P —Types TJH, TJL(X), TJM, TJS, TJW.
3. **Wallboard Gypsum* —** Three layers of 5/8 in. thick by 4 ft wide sheets of wallboard. Top layer boards installed with the long dimension perpendicular to joists (or trusses). Bottom two layers of board installed perpendicular to furring channels (Item 4).
Top layer boards attached to bottom chord of joists (or trusses) with 1-5/8 in. long Type S bugle head screws with hi-lo threads. Wallboard end joints centered on bottom chord of joists. End joints in adjacent rows of board shall be staggered on adjacent joists.
Spacing of screws attaching the top layer of boards to joists shall not exceed 8 in. OC. At side joints of wallboard the screws shall be located 1-1/2 to 2 in. from the board side edges while at end joints the screws shall be located 3/4 in. from the board ends.
The end joints in the middle and face layer boards shall be centered on the furring or resilient channels. The middle layer wallboard shall be attached to each furring or resilient channel with 1 or 1-1/4 in. long Type S screws with hi-lo threads spaced a max 8 in. OC and located from 1-1/2 to 2 in. from the boards' side edges, and 5/8 to 3/4 in. from the boards' ends.
The face layer wallboard shall be attached to each furring or resilient channel through the middle layer wallboard with 1-5/8 or 1 7/8 in. long Type S screws with hi-lo threads. The screws shall be spaced a max of 8 in. OC and located similarly to the screws in the middle layer board relative to the side and ends of the boards. End joints and side joints of the face layer boards shall be staggered a min of 16 in. from the joints in the middle layer. If end joints of the face layer boards are not centered on the furring channels, the end of boards at the end joint shall be attached to the middle layer boards with 1-1 /2 in. long Type G screws spaced 8 in. OC and 1-1/2 in. from the end joint. All screws shall be driven no further than flush with the face of the boards in order not to damage the core of the boards.
AMERICAN GYPSUM CO —Type AG-C.
CANADIAN GYPSUM COMPANY —Type C or IP-X2.
CONTINENTAL GYPSUM COMPANY —Types CG-3, CG3-3, CG5-5, CG-C, CGTC-C.
G-P GYPSUM CORP, SUB OF
GEORGIA-PACIFIC CORP —Types 5, C.
JAMES HARDIE GYPSUM INC —Type Max"C" .
LAFARGE GYPSUM, DIV OF
LAFARGE CORP —Types LGFC3, LGFC-C.
NATIONAL GYPSUM CO —Types FSK-G, FSW-G.
PABCO GYPSUM, DIV OF
PACIFIC GYPSUM BUILDING PRODUCTS INC —Types C, PG-3, PG-C.
REPUBLIC GYPSUM CO —Type RG-C.
STANDARD GYPSUM L L C —Type SG-C.
TEMPLE-INLAND FOREST PRODUCTS CORP —Type TG-C.
UNITED STATES GYPSUM CO —Type C or IP-X2.
YESO PANAMERICANO S A DE C V —Type C or IP-X2.
4. **Furring Channels —** Resilient, furring channels, 1/2 in. deep or inverted hat type furring channels, 7/8 in. deep, formed of min 0.019 in. thick (26 gauge) galv steel, installed perpendicular to structural members. Channels spaced a max of 16 in. OC and attached to each joist with 1-7/8 in. long Type S screws with hi-lo threads.
5. **Screw, Wallboard —** Type S, hi-lo thread, self-drilling and self-tapping, bugle head steel screws and Type G wallboard screws shall meet ASTM C1107 or ASTM C954 standards.
6. **Finishing System —** (Not shown) — Paper tape embedded in joint compound over face layer joints with edges of compound feathered out and exposed screw heads covered with compound. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum wallboard.
*Bearing the UL Classification Marking



1 FIRE PROOFING AT (E) FLOOR PARALLEL AND PERPENDICULAR TO TJI FLOOR JOINTS
1 1/2" = 1'-0"



2 FIRE PROOFING AT (E) FLOOR EXPANSION JOINT
1 1/2" = 1'-0"

TABLE 2—MINIMUM AVERAGE THICKNESS OF FIRE PROTECTION MATERIALS APPLIED TO STEEL COLUMNS[1]

A. Wide flange steel columns: Minimum thickness (inches)[2]				
A1. For fire protection materials: MK-6/HY, MK-6/HY ES, MK-6s, RG, Z-106/G				
MINIMUM W/D RATIO	4 HR.	3 HR.	2 HR.	1 HR.
8.63	1/2	3/8	1/4	1/4
2.49	1 3/8	1/2	3/8	1/4
0.83	2 1/4	1 3/4	1 1/4	3/4
0.67	2 3/4	2 1/4	1 3/4	1
0.57	4	2 1/2	2	1 1/4
0.33	3 1/2	3	3	1 1/2
A2. For fire protection materials: Z-106, Z-106HY				
MINIMUM W/D RATIO	4 HR.	3 HR.	2 HR.	1 HR.
8.63	1/2	3/8	1/4	1/4
2.49	1 3/4	1/2	3/8	1/4
0.83	2 1/2	1 3/4	1 1/4	3/4
0.67	2 3/4	2	1 3/4	1
0.57	3	2 1/2	2	1 1/4
0.33	3 1/2	3 1/2	3	1 1/2
A3. For fire protection materials: Z-146, Z-146T, Z-156, and Z-156T				
MINIMUM W/D RATIO	4 HR.	3 HR.	2 HR.	1 HR.
8.63	1/2	3/8	1/4	1/4
2.52	1 3/4	1/2	3/8	1/4
0.83	2	1 3/4	1 1/4	3/4
0.67	2 1/2	2	1 3/4	1
0.57	3	2 1/2	2	1 1/4
0.33	3	2 1/2	2 1/2	1 1/2

For SI: 1 inch = 25.4 mm.

B. Hollow shape steel columns: Minimum thickness (inches)[2]				
B1. For fire protection materials: MK-6/HY, MK-6/HY ES, MK-6s , RG, Z-106, Z-106/HY, Z-106/G				
STEEL TUBE: SIZE (inches)	A/P RATIO	4 HR.	3 HR.	2 HR.	1 HR.
3 x 3 x 1/4	0.58	NR	3/4	3/8	1
6 x 6 x 1/2	0.58	1 1/2	1 1/4	3/4	3/8
20 x 20 x 1	0.95	1	7/8	1/2	1/4
32 x 32 x 1	1.58	1/2	1/2	1/4	1/4
STEEL PIPE SIZE (inches)	A/P RATIO	4 HR.	3 HR.	2 HR.	1 HR.
3 dia. x 0.216 Standard	0.80	NR	3/4	3/8	1
6 dia. x 0.864 Double Extra Strong	0.74	1 1/4	1	3/4	1/2
8 dia. x 0.322 Standard	0.31	2 1/4	2 1/4	2	3/4
10 dia. x 0.5 Extra Strong	0.48	1 3/4	1 1/4	1/4	3/4

For SI: 1 inch = 25.4 mm.

C. Round steel columns: Minimum thickness (inches)[2]				
For fire protection materials: Z-146, Z-146T, Z-156, and Z-156T				
STEEL TUBE: SIZE (inches)	A/P RATIO	4 HR	3 HR	2 HR	1 HR
3 x 3 x 1/16	0.18	4	2 3/4	1 3/4	1
20 x 20 x 1/4	0.79	1 1/2	1 1/4	3/4	1/2
32 x 32 x 2	1.88	1/2	1/2	1/4	1/4
STEEL PIPE SIZE (inches)	A/P RATIO	4 HR.	3 HR.	2 HR.	1 HR.
4 dia. x 0.237 Standard	0.62	2 1/2	2 1/4	1 3/4	3/4
6 dia. x 0.864 Double Extra Streng	0.74

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10 TYPICAL WALL INTERSECTION FRAMING DETAILS

1 1/2" = 1'-0"

NOTE: SEE PLANS FOR WALL TYPES

A. NON-RATED TO NON-RATED OR RATED TO RATED WALL INTERSECTION FRAMING

BOTH WALLS SHALL BE RATED ON NON-RATED WALL TYPES

B. NON-RATED TO RATED WALL INTERSECTION FRAMING

NON-RATED WALL

RATED WALL

C. NON-RATED TO NON-RATED OR RATED TO RATED WALL CORNER FRAMING

BOTH WALLS SHALL BE RATED ON NON-RATED WALL TYPES

9 WALL BRACING DETAIL

1 1/2" = 1'-0"

*NOTE: BRACE ONLY REQUIRED AT WALLS OVER 10'-0" LONG

WALL AS SCHEDULED

W/(2) # 10 SMS

CLIP OFF FLANGES & BEND WEB AT TOP FOR ATTACHMENT TO TOP TRACK

ALTERNATING BRACE.

12 MAX

8 MIN

12 MAX

2'MAX

BRACE @ 8'-0" O.C. MAX

U.O.N. MIN OF (2) BRACES PER WALL, W/ 20 GA CH STUDS / TRACKS

ALTERNATE STUDS / TRACKS ALTERNATE EVERY OTHER BRACE

*PROVIDE METAL STUD STRONGBACK REQUIRED ONLY @ BRACE LOCATIONS IF BRACING ALLOWED IN SPECIFIC DETAILS

METAL STUD STRONGBACK ATTACHMENT TO STRUCTURE ABOVE

SEE DETAIL S/-.FOR

SEE DETAIL 18 ABOVE

STRUCTURE ABOVE

SECTION A-A

STRONGBACK W/ 2 1/2"LEG @17" OC

3 5/8", 20 GA METAL STUD W/ 2 1/2"LEG

#10 SHEET METAL SCREWS

3 5/8", 20 GA METAL STUD W/ 2 1/2"LEG

11 STRUCTURAL BACKING PLATE DETAILS

1" = 1'-0"

A. FOR ITEMS THAT WEIGH OR SUPPORT LESS THAN 20 LBS PER LF
(DOOR STOPS, BUMPER RAILS, CRASH RAILS, WHITE BOARDS, FIRE EXTINGUISHERS, ETC)

NOTES:
1. MINIMUM LENGTH, HEIGHT AND LOCATION OF BACKING REQUIRED AND NUMBER PLATE NOT SHOWN ON PLANS MAY BE USED AS MOUNTED

TYPICAL WALL FRAMING, DOUBLE STUDS @ SIDES OF OPENINGS

STUD @ 16" O.C. (TYP)

(3) #10 PAN HEAD SMS PER PLATE (2 STUD BYS MIN)

16 GA 6" CONTINUOUS STEEL STUDS, ATTACHED W/ #12 SMS (2 @ EA STUD)

2"W 16GA STRAP 18" OC AT BOTH SIDES OF BOXED

B. FOR ITEMS THAT WEIGH OR SUPPORT BETWEEN 20 AND 100 LBS PER LF
(BASE CABINETS, TALL CABINETS, HANDRAILS, GUARDRAILS, WALL MOUNTED EQUIPMENT, ETC.)

NOTES:
1. STUD FLANGES TO BE CONTINUOUS.
2. CONTINUAL LENGTH HEIGHT AND LOCATION OF BRACING PLATE AND NUMBER REQUIRED WITH ITEM TO BE MOUNTED FROM FACE OF WALL, 6" MAX.
3. DESIGN LOAD CONCENTRICITY

(3) #10 PAN HEAD SMS @12" OC EACH STUD

STUD

16 GA 1-1/2 X1-1/2 ANGLE BTWN W/ (3) #10 PAN HEAD SMS AND 1/2 STUD BEARING ON STUD W/ PLATE

6" W 16 GA STRAP (16 OC @ STUDS, ATTACHED W/ 4 #12 SMS (2 @ EACH STUD)

6" W 6A DEEP LED RUNNER TRACK, NOTCHED AROUND STUDS (2 STUD BYS MIN)

BOXED PAIR OF 16 GA STUDS @ SIDES OF OPENINGS

(2) #10 SMS

TRACK ATTACHMENT W/ 2" MIN EMBEDMENT @ 2'-0" O.C. MIN. (2) PER STUD

METAL DECK W/ 0.15? DIA PER WITH 1" MIN EMBEDMENT @ 2'-0" O.C. MIN. (2) PER STUD

CONC FILLED METAL DECK

DEFLECTION TRACK

FULL HEIGHT WALL AS SCHEDULED

WALL PERPENDICULAR TO METAL DECK FLUTES

0.15? PER WF 1" MIN EMBEDMENT @ 2'-0" O.C. MIN. (2) ATTACHMENTS EACH RIB

CONC FILLED METAL DECK

DEFLECTION TRACK

FULL HEIGHT WALL AS SCHEDULED

8 TOP TRACK TO STEEL BEAM

1 1/2" = 1'-0"

FULL HEIGHT WALL AS SCHEDULED

DEFLECTION TRACK

#10 SMS @ 2'-0" O.C.

16 GA X 6" WIDE SHT METAL PLATE (CONT'I ATTACHMENT @ 2'-0" O.C. (CONT'I RATED CONDITIONS)

(2) 0.15? DIA PER @ 2'-0" O.C.

STEEL BEAM (SEE STRUCTURAL)

FULL HEIGHT WALL AS SCHEDULED

DEFLECTION TRACK

0.15? DIA PER @ 2'-0" O.C.

STEEL BEAM (SEE STRUCTURAL)

7 FULL HEIGHT WALL FRAMING

1 1/2" = 1'-0"

WALL PARALLEL TO METAL DECK FLUTES

FULL HEIGHT WALL AS SCHEDULED

DEFLECTION TRACK

TRACK ATTACHMENT W/ 2" MIN EMBEDMENT @ 2'-0" O.C. MIN. (2) ATTACHMENTS EACH RIB

CLOSURE PLATE W/ #10 SMS @ 2'-0" O.C. MIN. (2) PER STUD (CONT'I RATED CONDITIONS) TO SPAN A MIN OF TWO RIBS

16 GA X 6" WIDE SHT METAL CONC FILLED METAL DECK

DEFLECTION TRACK

FULL HEIGHT WALL AS SCHEDULED

6 HEAD OPENING FRAMING DETAILS

1" = 1'-0"

FOR HEAD OPENINGS UP TO 3'-6" CLEAR WIDTH

ADDITIONAL ATTACHMENT

BASE TRACK

METAL STUD, SEE PLAN FOR WALL TYPE

HEADER TRACK

INFILL STUD

JAMB STUD NESTED IN TRACK

STUD NESTED IN TRACK

FOR HEAD OPENINGS FROM 3'-6" TO 8'-0" CLEAR WIDTH

ADDITIONAL ATTACHMENT AT JAMB

BASE TRACK

METAL STUD, SEE PLAN FOR WALL TYPE

HEADER TRACK

JAMB STUD NESTED IN TRACK

INFILL STUD

FOR HEAD OPENINGS FROM 8'-0" TO 12'-0" CLEAR WIDTH

ADDITIONAL ATTACHMENT AT JAMB

BASE TRACK

METAL STUD, SEE PLAN FOR WALL TYPE

SUPPORT ANGLE

HEADER TRACK

BOXED HEADER (6" STEEL JOISTS IN BASE TRACK)

JAMB STUD NESTED IN TRACK

INFILL STUD

5 DIAGONAL WALL BRACING CONNECTIONS TO STRUCTURE

1 1/2" = 1'-0"

C. BENT RUNNER BRACE @ DECK

3 FLUTES AND 16" MIN.

5'-6" MAX.

45.00°

TYP.

DIAGONAL BRACE

BRACE TO BE LOCATED OVER/APPLY FLANGES TO METAL DECK WITH #10 SMS MIN. CLIP PLATES, BEND WEB AND SCREW PNS MIN. CLIP PLATES, BEND WEB AND SCREW PNS MIN.

STEEL BEAM (SEE STRUCTURAL)

0.15? DIA PER @ 2'-0" O.C.

#10 SMS @ 2'-0" O.C.

16 GA X 6" WIDE SHT METAL PLATE

(2) 0.15? DIA PER @ 2'-0" O.C.

DEFLECTION TRACK

FULL HEIGHT WALL AS SCHEDULED

B. BRACE W/ ANGLE @ DECK

STEEL BEAM (SEE STRUCTURAL)

0.15? DIA PER @ 2'-0" O.C.

TRACK ATTACHMENT W/ 2" MIN EMBEDMENT @ 2'-0" O.C. MIN. (2) PER STUD

CONCRETE ON METAL DECK

LATH OR CEILING SYSTEM, WHERE OCCURS

SEE WALL TYPE FOR HEIGHT

6" 18 GA DEEP LEG RUNNER TRACK, NOTCHED AROUND STUDS

CEILING JOISTS, WHERE OCCURS

SEE WALL SCHEDULE

A. CEILING @ METAL STUD WALL

SEE WALL SCHEDULE

CEILING JOISTS

LATH OR CEILING SYSTEM, WHERE OCCURS

B. CEILING @ METAL STUD WALL

SEE WALL SCHEDULE

CEILING JOISTS

LATH OR CEILING SYSTEM, WHERE OCCURS

C. METAL STUD WALL TO CEILING FRAMING
(WALLS PARALLEL TO CEILING FRAMING)

SEE WALL SCHEDULE

CLIP OFF FLANGES AND BACK BEND STUD FOR ATTACHMENT UNDER JOISTS

CEILING JOISTS (SEE A/-) FOR WOOD FRAMING)

D. CEILING @ PLUMBING CHASE
(WALLS PARALLEL TO CEILING FRAMING)

SEE WALL SCHEDULE

CLIP OFF FLANGES AND BACK BEND STUD FOR ATTACHMENT UNDER JOISTS

CEILING JOISTS

6" FOR TOILET ON ONE SIDE OF CHASE, 1? FOR SIDE OF CHASE W/ PLUMBING)

4 WINDOW SILL FRAMING

1" = 1'-0"

CRIPPLE WALL

BASE TRACK

ADDITIONAL ATTACHMENT AT JAMB

METAL STUD, SEE SCHEDULE

SILL TRACK

6" LONG PIECE OF TRACK

STUD NESTED IN TRACK

3 TYPICAL INTERIOR WALL FRAMING ELEVATION

3/8" = 1'-0"

A4610-?

4

A4610-?

6

FLOOR

SEE PLANS AND OPENING SCHEDULE FOR DOOR SIZE

SEE PLANS AND OPENING SCHEDULE FOR WINDOW SIZE

WALL AS SCHEDULED

UNDERSIDE OF STRUCTURE

A4610-?

2

A4610-?

6

SIM.

2 TYPICAL INTERIOR WALL FRAMING

3/4" = 1'-0"

12" MIN

NOTES
1. ALL FASTENERS SHALL BE PER MFG SPEC. U.N.

FLOOR ATTACHMENT.

0.157 DIA PR @ 16"O.C. W/ 1"MIN. EMBEDMENT INTO CONCRETE SLAB

PROVIDE WP 2000 INTO CONCRETE SLAB

AN ELONGATED HOLE AS REQUIRED

WALL AS SCHEDULED

16 GA CLIP ANGLE W/ (2) FASTENERS TO STUD AND (2) TO COLD-ROLLED CHANNEL

PER METAL STUD MFG SPECS)

CHANNELS AT VERTICAL INTERVALS

1 1/2" X 16 GA COLD ROLLED CHANNEL (PROVIDE ADDITIONAL FASTEN AT EACH STUD LOCATION) TYP.

DEFLECTION TOP TRACK AT FULL HEIGHT WALLS

FASTEN AT EACH STUD

1/2" TO 5/8" DEFLECTION GAP PER MFG SPECIFICATIONS

STUD NESTED IN TRACK

6" LONG PIECE OF TRACK

INFILL STUD

JAMB STUD NESTED IN TRACK

HEADER TRACK

ADDITIONAL ATTACHMENT

BASE TRACK

STUD NESTED IN TRACK

1 WALL TO HARD LID CEILING DETAILS

1" = 1'-0"

NOTE: REFER TO CHARTS IN NON-BEARING WALL AND CEILING FRAMING NOTES FOR STUD AND JOIST SIZE, GAUGE AND SPACING.

A. CEILING @ METAL STUD WALL

SEE WALL SCHEDULE

CEILING JOISTS, WHERE OCCURS

SEE WALL TYPE FOR HEIGHT

6" 18 GA DEEP LEG RUNNER TRACK, NOTCHED AROUND STUDS

LATH OR CEILING SYSTEM, WHERE OCCURS

B. CEILING @ METAL STUD WALL

SEE WALL SCHEDULE

CEILING JOISTS

LATH OR CEILING SYSTEM, WHERE OCCURS

C. METAL STUD WALL TO CEILING FRAMING
(WALLS PARALLEL TO CEILING FRAMING)

SEE WALL SCHEDULE

CLIP OFF FLANGES AND BACK BEND STUD FOR ATTACHMENT UNDER JOISTS

CEILING JOISTS (SEE A/-) FOR WOOD FRAMING)

D. CEILING @ PLUMBING CHASE
(WALLS PARALLEL TO CEILING FRAMING)

SEE WALL SCHEDULE

CLIP OFF FLANGES AND BACK BEND STUD FOR ATTACHMENT UNDER JOISTS

CEILING JOISTS

6" FOR TOILET ON ONE SIDE OF CHASE, 1?" FOR SIDE OF CHASE W/ PLUMBING)

INTERIOR NON-BEARING WALL & CEILING FRAMING NOTES

1. THIS SHEET DEPICTS TYPICAL INTERIOR NON-LOAD BEARING METAL STUD FRAMING ELEVATIONS AND HOW OPENINGS IN THE TYPICAL WALL/PARTITION SHALL BE FRAMED.
2. THE TYPICAL DETAILS SHOWN INDICATE HOW WALLS MEET THE STRUCTURE AND HOW OPENINGS ARE FRAMED OR DETAILED.
3. THE TYPICAL DETAILS WILL NOT COVER ALL POSSIBLE CONDITIONS THAT MAY OCCUR IN THE PROJECT. THE CONTRACTOR IS TO MODIFY THE FRAMING AS REQUIRED TO ACCOMMODATE SPECIAL CONDITIONS THAT MAY OCCUR AND NOTIFY ARCHITECT OF ANY DISCREPANCIES THAT HAVE BEEN SCHEDULED.
4. THESE DETAILS MODIFY THE CONFIGURATION AND FRAMING OF THE TYPICAL WALL TYPES SHOWN ON PLANS. PROVIDE ADDITIONAL FRAMING AS SPECIFIED AND INDICATED.
5. METAL FRAMING COMPONENTS: MANUFACTURERS STANDARD NON-LOAD BEARING MANUFACTURERS STANDARD COMPONENTS AND ACCESSORIES FOR EACH TYPE OF FRAMING OF TYPE, SIZE, SPACING AND GAUGE AS SPECIFIED AND INDICATED. PROVIDE FRAMING TO PROVIDE A COMPLETE FRAMING SYSTEM.
6. ESTABLISHED STANDARD: STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) PRODUCT TECHNICAL INFORMATION MANUAL FOR STEEL C-STUDS AND TRACKS FOR NON-LOADING BEARING WALLS ONLY. REFER TO STRUCTURAL FOR LOAD BEARING WALL SPECIFICATIONS.
   a. SIZE: PROVIDE SIZES AS INDICATED ON THE DRAWINGS. USE 3?5 AND BOTTOM TRACK OF SAME GAUGE AS WALL STUDS, UNLESS OTHERWISE NOTED ON DRAWINGS.
   b. SPACING AND GAUGE: REFER TO THE SCHEDULES BELOW FOR MINIMUM GAUGE AND SPACING FOR THE STUDS AND WALL HEIGHT INDICATED IN THE DRAWINGS. UNLESS OTHERWISE NOTED ON DRAWINGS PER INTERIOR NON-STRUCTURAL APPLICATIONS ONLY.
   c. CEILING JOISTS SHALL BE PARALLEL TO METAL STUDS, UNLESS OTHERWISE NOTED ON DRAWINGS. PROVIDE STUDS AND TRACKS SAME GAUGE AS WALL AT OPENINGS THAT ARE LESS THAN 4'-0" WIDE. FOR OPENING 4'-0" AND GREATER PROVIDE 16 GAUGE STUDS AND TRACKS. HEADER ASSEMBLIES INCLUDE THE BOXED HEADER TRACK WITH STUDS NESTED TRIMMER STUDS AT EACH JAMB AND ONE KING STUD AT EACH SIDE OF OPENING.
   d. AT HEADER JAMB FRAMING ASSEMBLIES TO DOORS, WINDOWS AND OTHER OPENINGS UNLESS OTHERWISE NOTED, PROVIDE STUDS AND TRACKS SAME GAUGE AS WALL AT OPENINGS THAT ARE LESS THAN 4'-0" WIDE. FOR OPENING 4'-0" AND GREATER PROVIDE 16 GAUGE STUDS AND TRACKS. HEADER ASSEMBLIES INCLUDE THE BOXED HEADER TRACK WITH STUDS NESTED TRIMMER STUDS AT EACH JAMB AND ONE KING STUD AT EACH SIDE OF OPENING.
   e. BRACING: PROVIDE 16 GAUGE STUDS FOR SUPPORT OF BACKING FOR ALL WALL MOUNTED ITEMS, UNLESS NOTED OTHERWISE ON DRAWINGS.
   f. DEFLECTION TRACK: PROVIDE 16 GAUGE SLOTTED STEEL DEEP-LEG DEFLECTION TRACK AT TOP OF ALL PARTITIONS AND WALLS LISTED AS REQUIRED TO RECEIVE DEFLECTION TRACK AT HEAD OF PARTITION, FURRING OR FLOOR-TO-FLOOR OR FLOOR-TO-ROOF WALLS AS INDICATED ON THE DRAWINGS. PROVIDE DEFLECTION TRACK AT TOP OF ALL INTERIOR PARTITIONS AND WALLS LISTED AND INDICATED ON THE DRAWINGS AND AS REQUIRED BY LOCAL CODES OR OTHER GOVERNING AUTHORITIES. DEFLECTION TRACK SHALL BE SIZED FOR STUD SIZE INDICATED AND SHALL ACCOMMODATE A MINIMUM OF 1" VERTICAL DEFLECTION OF THE STRUCTURE ABOVE. DEFLECTION TRACK SHALL BE SIZED TO ACCOMMODATE THE DEFLECTION INDICATED ON THE DRAWINGS. DEFLECTION TRACK SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND AS INDICATED ON THE DRAWINGS.
   g. ALL STUDS SHALL BE CUT TO LENGTH TO ALLOW FOR DEFLECTION TRACK AT TOP OF WALL. DO NOT SCREW OR ATTACH STUDS TO BOTH TOP AND BOTTOM TRACKS. ALL STUDS SHALL BE FREE TO MOVE VERTICALLY AT TOP OF WALL.
   h. ALL STUDS SHALL BE PLUMB, TRUE AND SECURELY ANCHORED IN PLACE. ALL STUDS SHALL BE INSTALLED WITH FLANGES IN THE SAME DIRECTION.
   i. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
   j. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
   k. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
   l. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
   m. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
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   o. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
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   v. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
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   jj. ALL STUDS SHALL BE INSTALLED WITH KNOCKOUTS ALIGNED FOR THE FULL LENGTH OF THE WALL.
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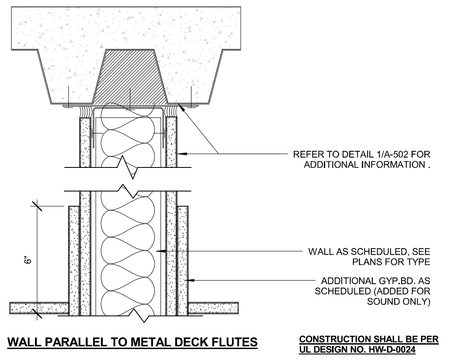
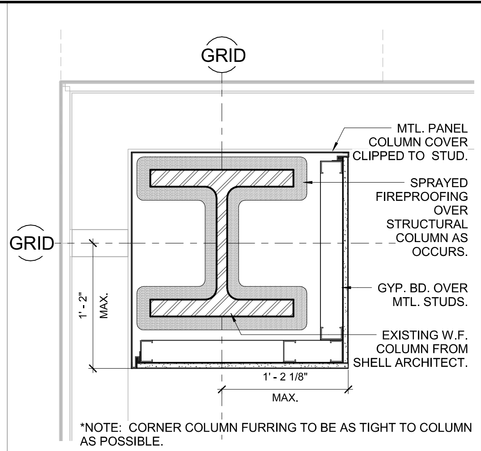


WALL PARALLEL TO METAL DECK FLUTES

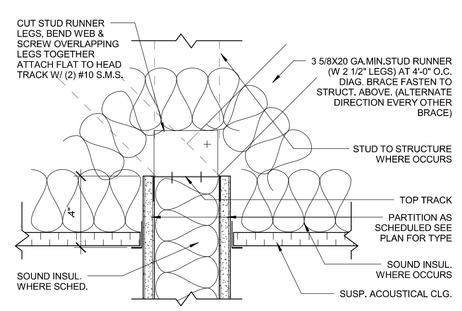
CONSTRUCTION SHALL BE PER UL DESIGN NO. HW-D-0024

25 FULL HEIGHT 1-HR.RATED WALL TO MTL. DECK
3" = 1'-0"

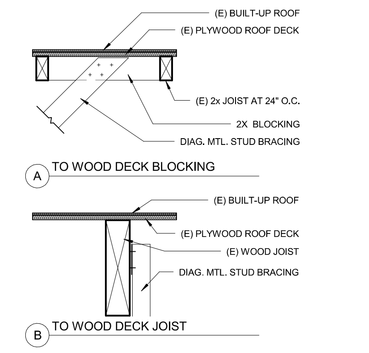


*NOTE: CORNER COLUMN FURRING TO BE AS TIGHT TO COLUMN AS POSSIBLE.

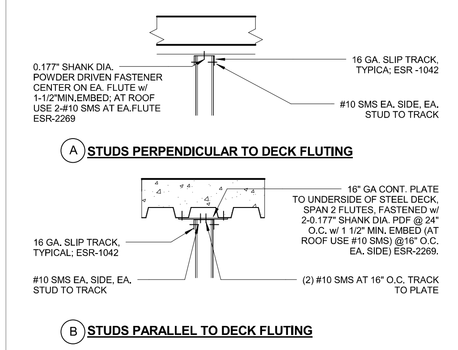
21 TYP. COLUMN FURRING @ BLDG. CORNER
1 1/2" = 1'-0"



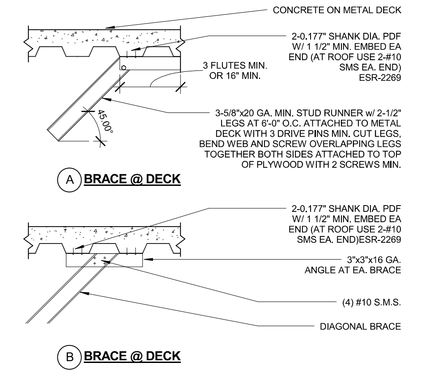
16 GYP. BD. PARTITION @ ACOUSTICAL CEILING
3" = 1'-0"



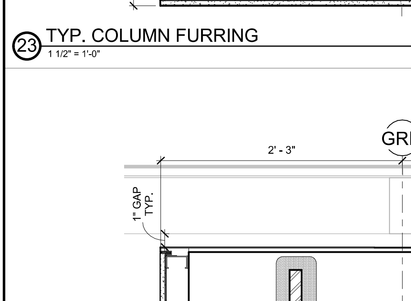
11 STUD CONNECTION TO PLYWOOD ROOF
1" = 1'-0"



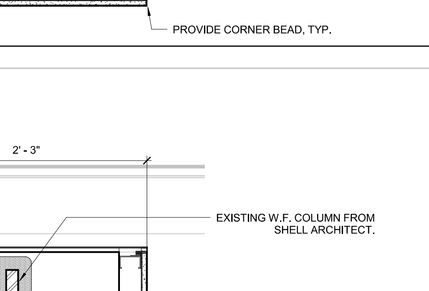
6 STUD CONNECTION TO DECK
3/4" = 1'-0"



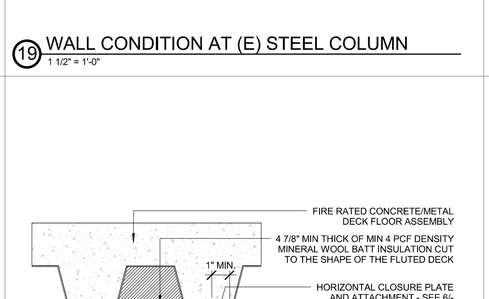
1 DIAGONAL BRACING CONNECTIONS TO DECK
3/4" = 1'-0"



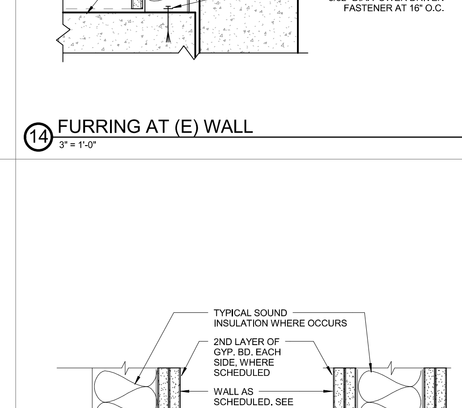
26 IN-LINE ROOF DRN. FILTER @ PERIMETER WALL
1 1/2" = 1'-0"



22 TYPICAL COLUMN FURRING AT WALL
1 1/2" = 1'-0"

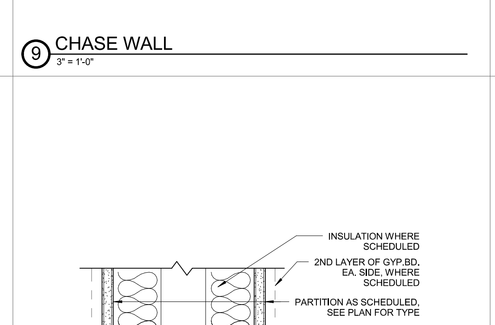


17 GYP. BD. PARTITION HEAD AT HARD CEILING
3" = 1'-0"

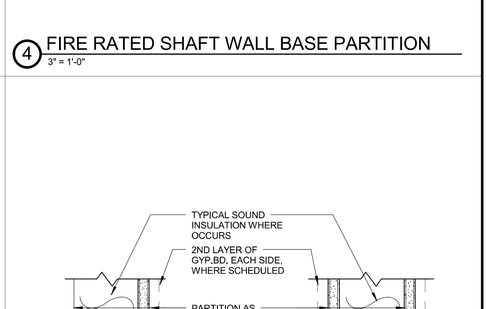


UL HW-S-0012

12 1-HR - WALL HEAD DETAIL @ PLYWOOD ROOF
3" = 1'-0"

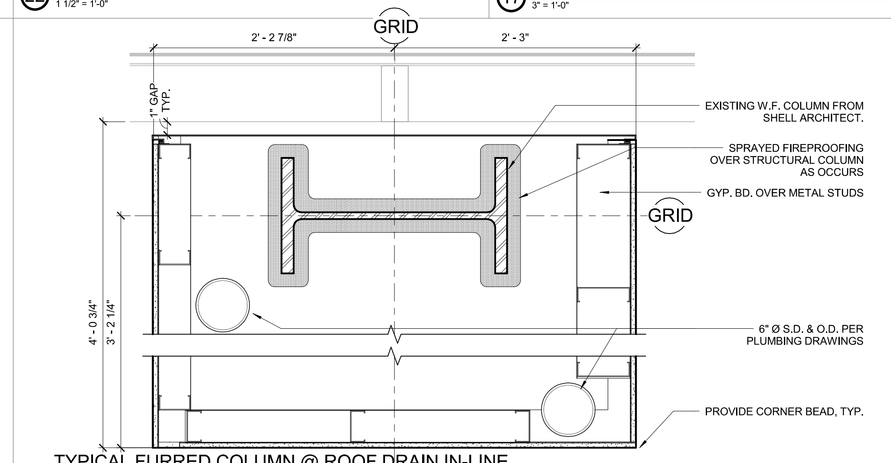


7 GYPSUM BOARD PARTITION HEAD
3" = 1'-0"



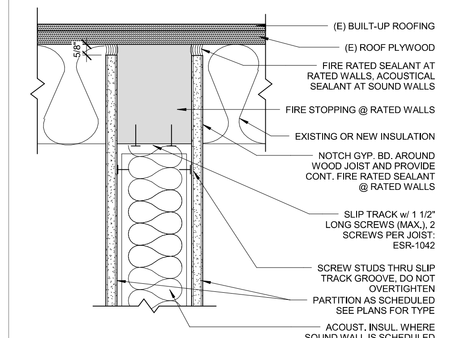
UL SYSTEM #HW-D-0024

2 FULL HEIGHT RATED WALL TO CONCRETE DECK
3" = 1'-0"

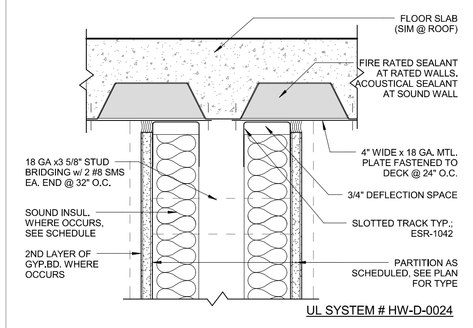


TYPICAL FURRED COLUMN @ ROOF DRAIN IN-LINE FILTER

18
1 1/2" = 1'-0"

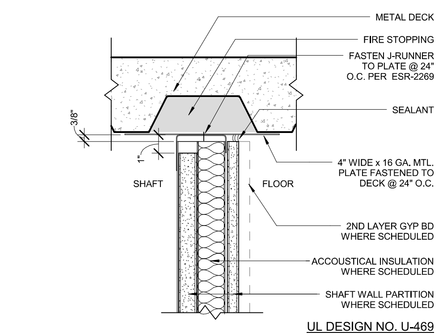


13 WALL AT PLYWOOD ROOF
3" = 1'-0"



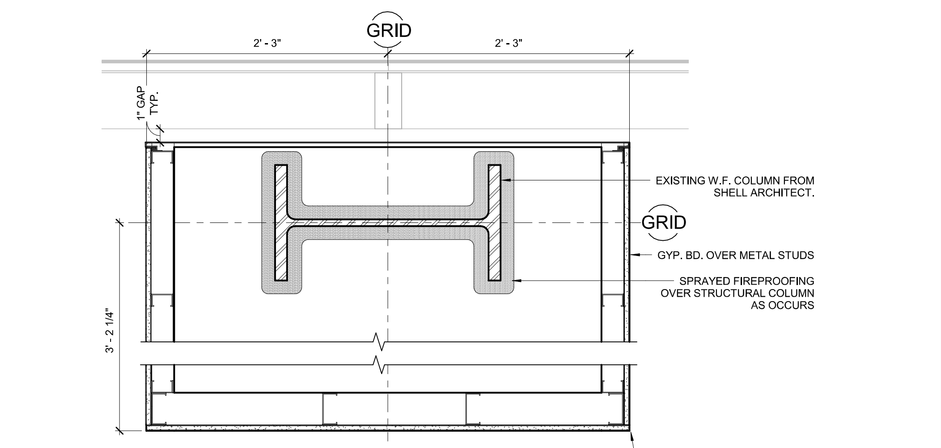
UL SYSTEM # HW-D-0024

8 FIRE RATED GYP.BD.PART.HEAD @ CONC. DECK
3" = 1'-0"

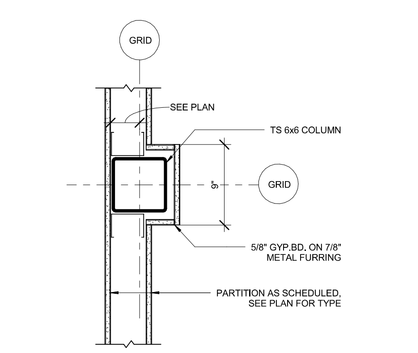


UL DESIGN NO. U-469

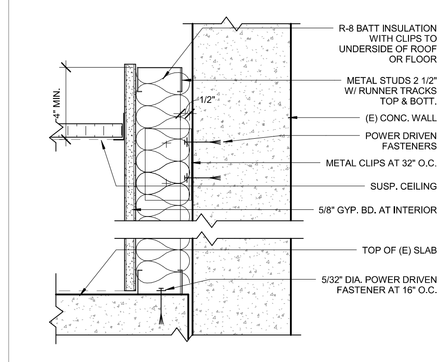
3 FIRE RATED SHAFT PARTITION AT CONC. DECK
3" = 1'-0"



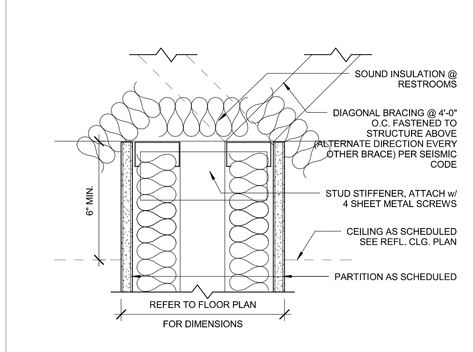
23 TYP. COLUMN FURRING
1 1/2" = 1'-0"



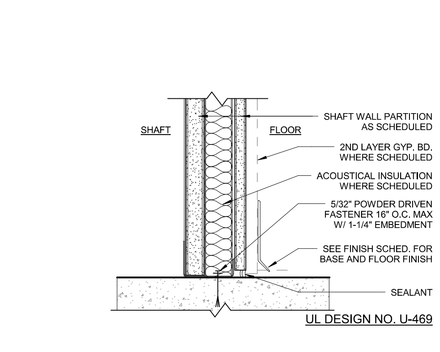
19 WALL CONDITION AT (E) STEEL COLUMN
1 1/2" = 1'-0"



14 FURRING AT (E) WALL
3" = 1'-0"

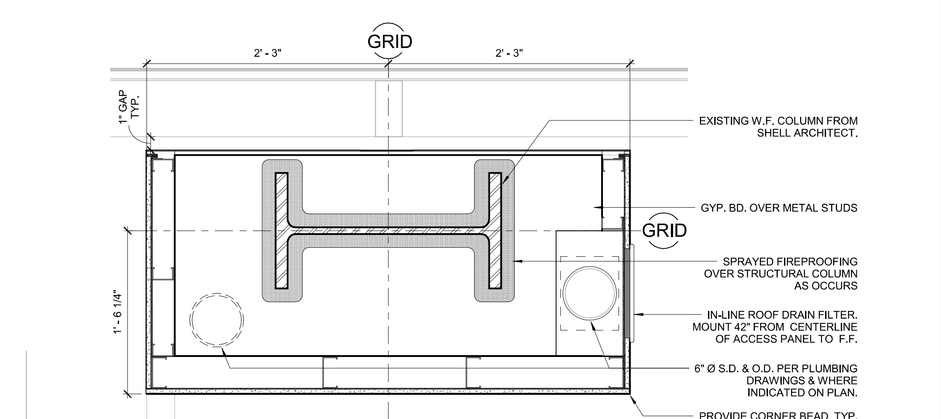


9 CHASE WALL
3" = 1'-0"



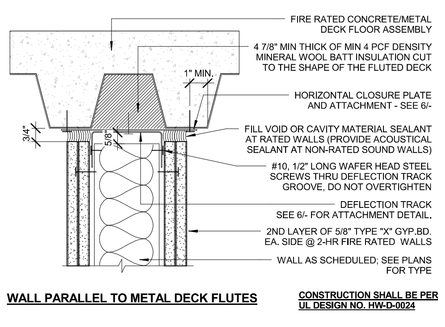
UL DESIGN NO. U-469

4 FIRE RATED SHAFT WALL BASE PARTITION
3" = 1'-0"



TYP. COLUMN FURRING @ ROOF DRAIN & OVER-FLOW

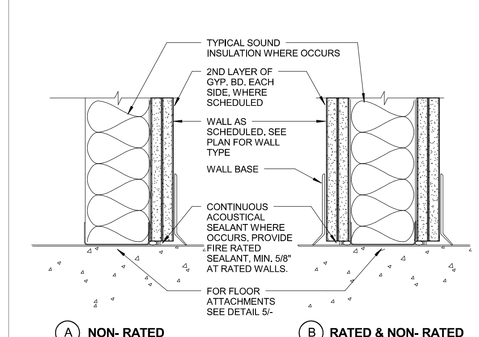
24
1 1/2" = 1'-0"



WALL PARALLEL TO METAL DECK FLUTES

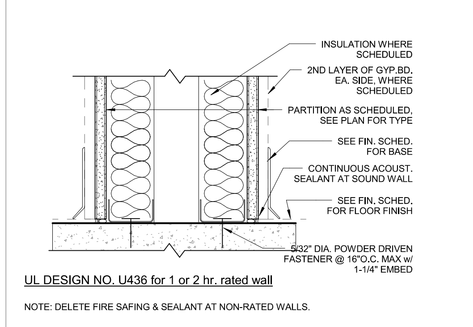
CONSTRUCTION SHALL BE PER UL DESIGN NO. HW/S-0024

20 FULL HEIGHT RATED WALL TO METAL DECK
3" = 1'-0"



RATED CONSTRUCTION SHALL BE PER UL DESIGN NO. U465

15 WALL BASE DETAIL
3" = 1'-0"

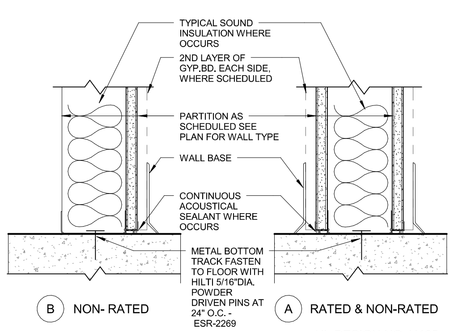


UL DESIGN NO. U436 for 1 or 2 hr. rated wall

NOTE: DELETE FIRE SAFING & SEALANT AT NON-RATED WALLS.

FIRE RATED CHASE WALL BASE, NON RATED SIMILAR

10
3" = 1'-0"



UL DESIGN NO. U465

5 SOUND WALL BASE
3" = 1'-0"

5/23/2013 9:59:11 AM

CONSULTANTS

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

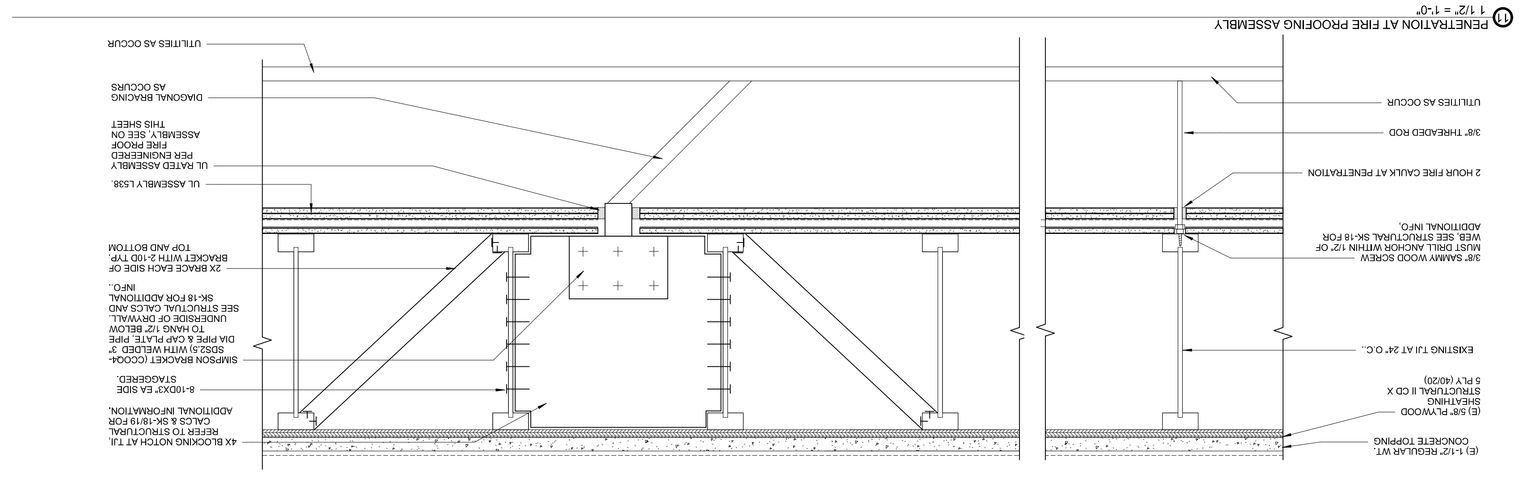
TITLE

WALL DETAILS

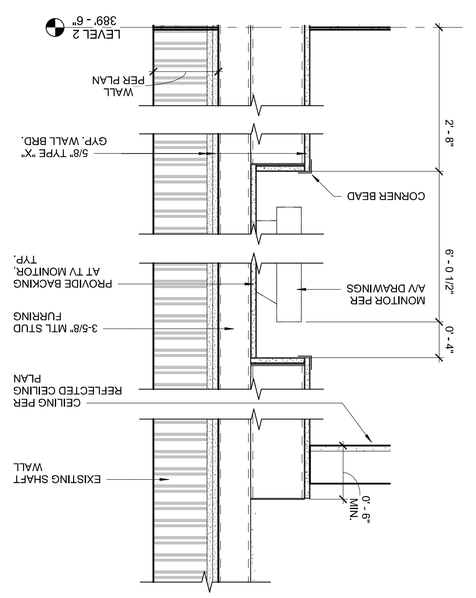
A-611-TI

5/20/2019 5:59:56 PM

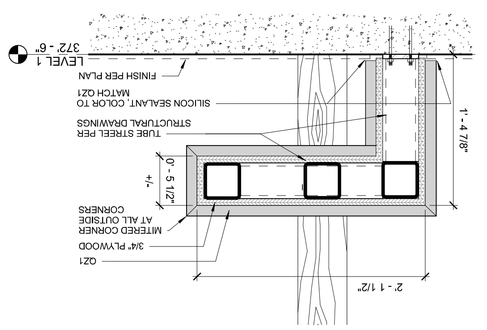
11 PENETRATION AT FIRE PROOFING ASSEMBLY
1 1/2" = 1'-0"



16 VIDEO WALL @ (SHAFTWALL (E)
1 1/2" = 1'-0"

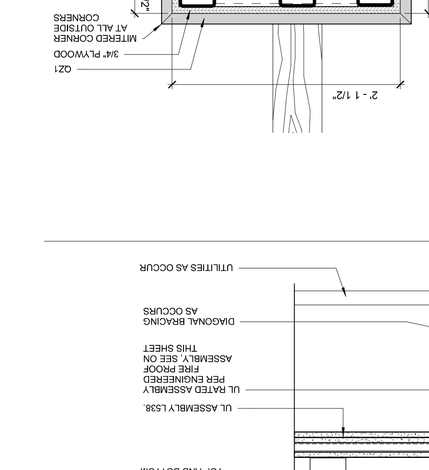


12 SECTION @ BENCH
1 1/2" = 1'-0"

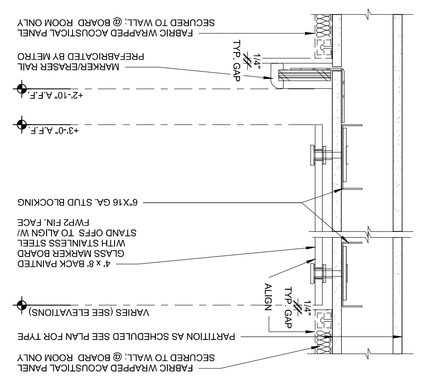


13 SECT. @ TYP. VIDEO WALL (N.R. CONDITION)
3" = 1'-0"

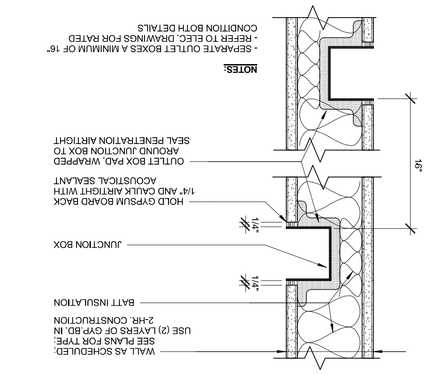
14 SECT. @ SEISMIC SEPARATION
1 1/2" = 1'-0"



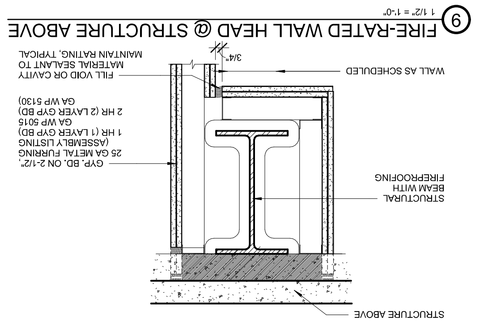
15 MARKER BOARD & TRAY DETAIL
3" = 1'-0"



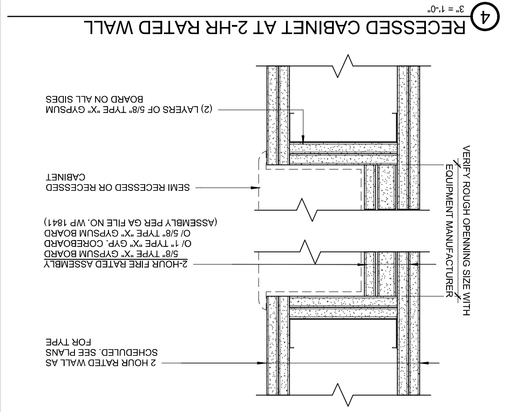
10 OUTLET BOX DETAIL PLAN
3" = 1'-0"



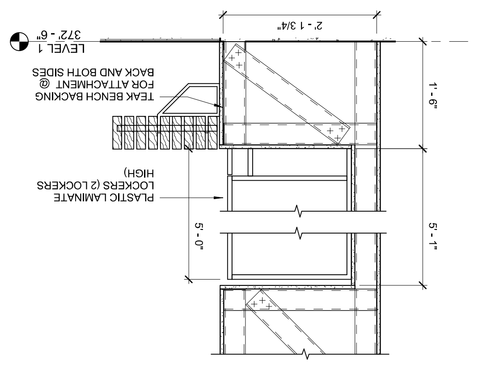
9 FIRE-RATED WALL HEAD @ STRUCTURE ABOVE
1 1/2" = 1'-0"



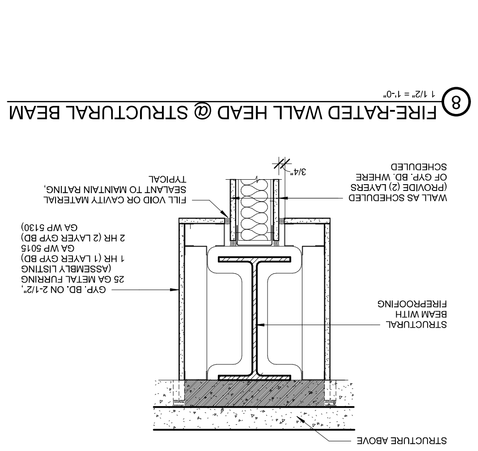
4 RECESSED CABINET AT 2-HR RATED WALL
3" = 1'-0"



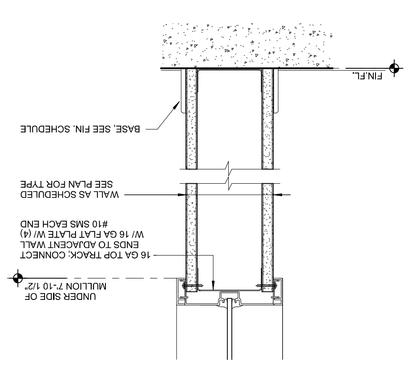
7 SECT. @ LOCKERS
1" = 1'-0"



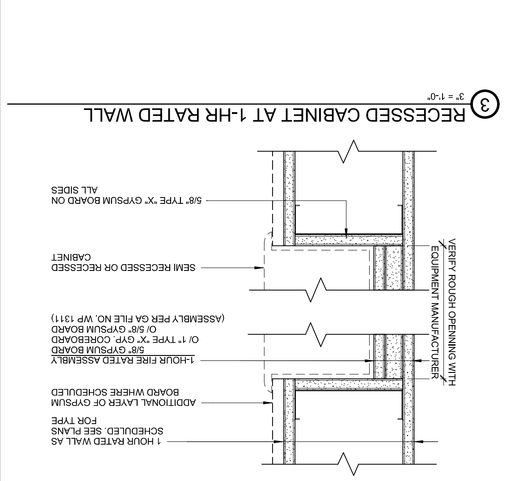
8 FIRE-RATED WALL HEAD @ STRUCTURAL BEAM
1 1/2" = 1'-0"



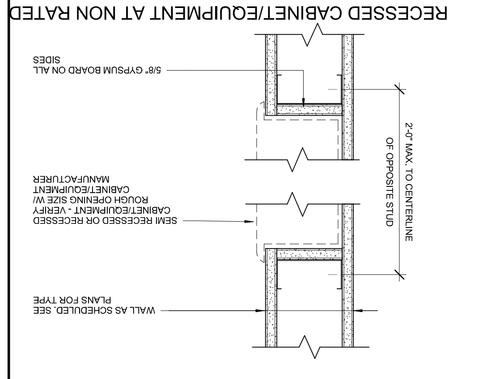
6 CANTILEVERED WALL WITH CLERESTORY ABOVE
3" = 1'-0"



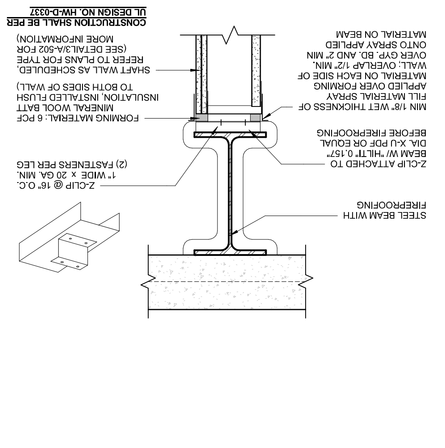
3 RECESSED CABINET AT 1-HR RATED WALL
3" = 1'-0"



2 RECESSED CABINET/EQUIPMENT AT NON RATED WALL
3" = 1'-0"



1 STEEL BEAM WITH Z-CLIP
1 1/2" = 1'-0"



A-612-TT

WALL & INTERIOR DETAILS

TITLE

SCALE As indicated

PROJECT NO. 12137

ADDRESS

PROJECT

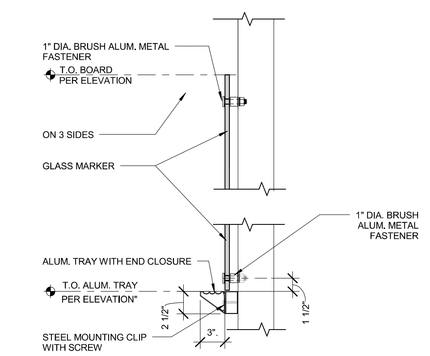
CLIENT

NO.	DESCRIPTION	DATE

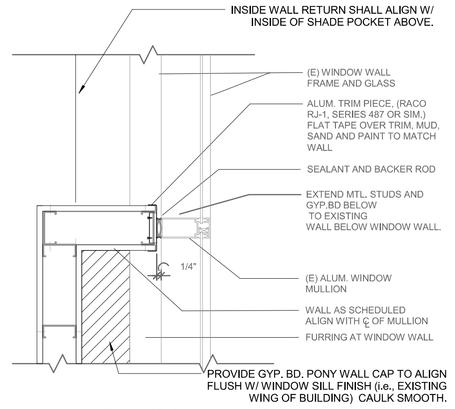
CONSULTANTS

STAMP

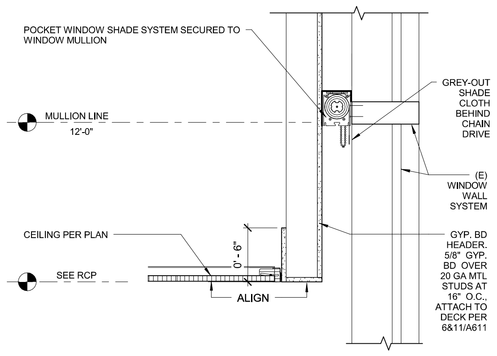
LICENSED ARCHITECT
J. EDWARD
STATE OF CALIFORNIA
RENEWAL 2/31/13



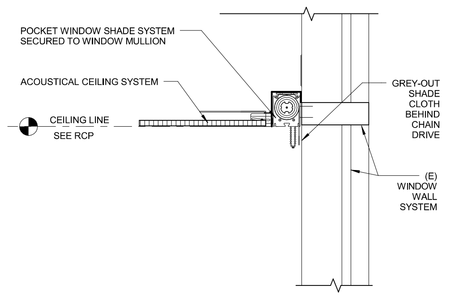
26 GLASS MARKER
1 1/2" = 1'-0"



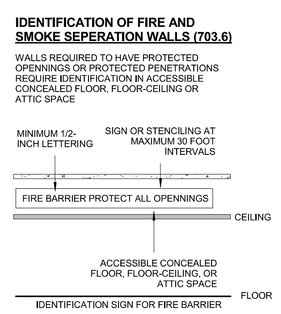
21 WALL AT WINDOW MULLION
3/4" = 1'-0"



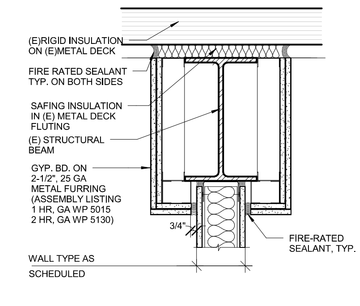
14 MECHOSHADE AT GYP BD SOFFIT
1 1/2" = 1'-0"



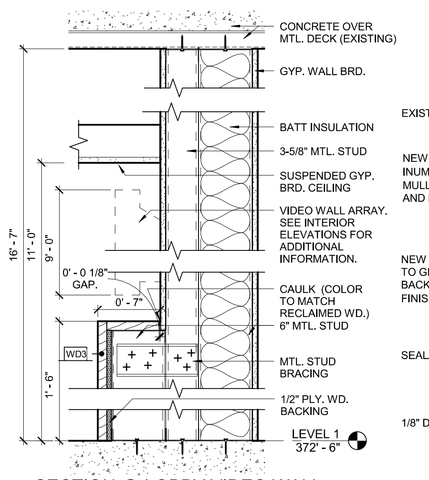
11 MECHO SHADE AT CEILING
1 1/2" = 1'-0"



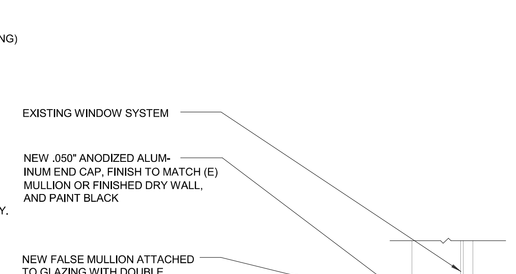
6 IDENTIFICATION OF FIRE AND SMOKE SEPARATION WALLS
1/4" = 1'-0"



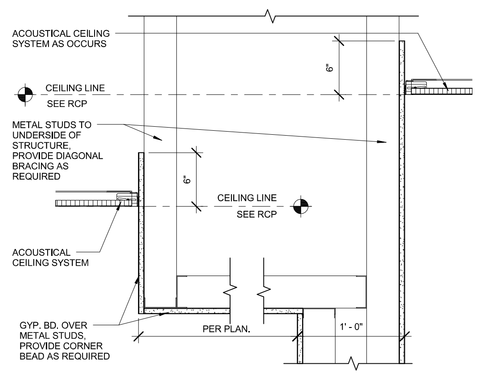
1 RATED HEAD AT STRUCTURE (RIG. INSUL.)
1 1/2" = 1'-0"



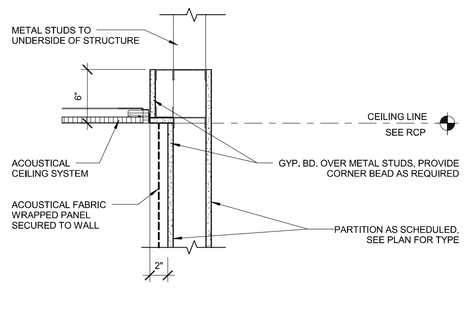
27 SECTION @ LOBBY VIDEO WALL
1 1/2" = 1'-0"



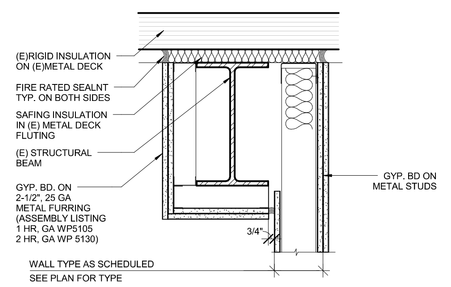
15 MECHOSHADE AT FURRING
1 1/2" = 1'-0"



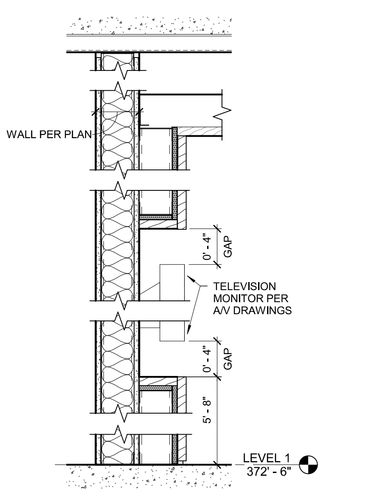
12 DETAILED CEILING SECTION
1 1/2" = 1'-0"



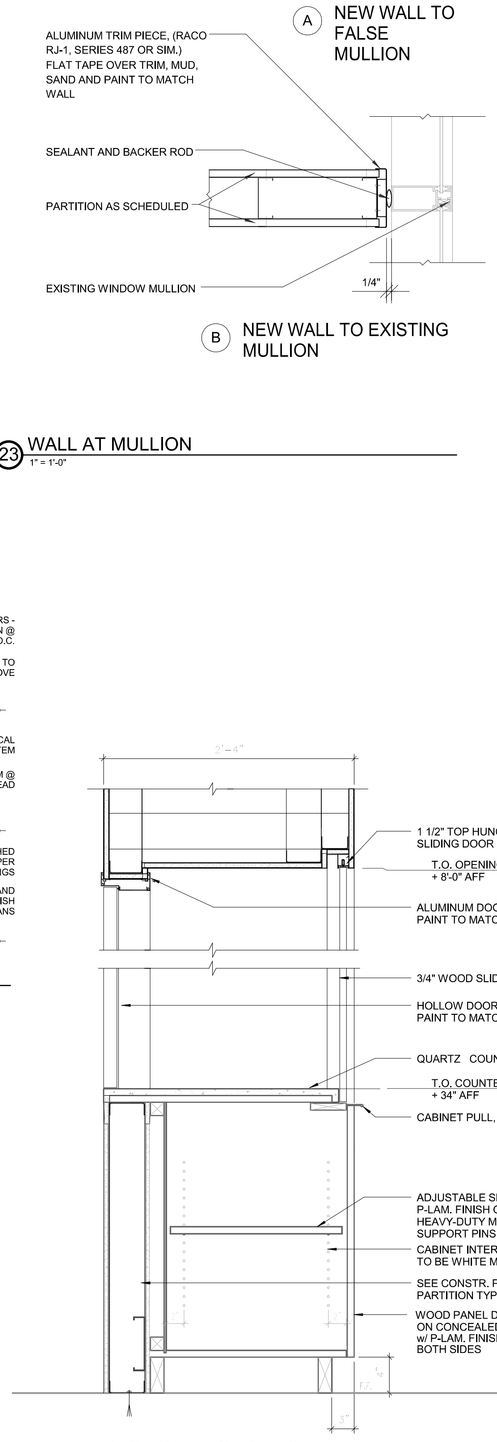
7 FABRIC WRAPPED PANEL @ CEILING
1 1/2" = 1'-0"



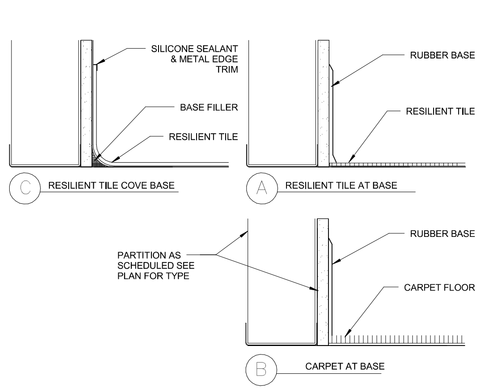
2 RATED HEAD AT STRUCTURE 2 (RIG. INSUL.)
1 1/2" = 1'-0"



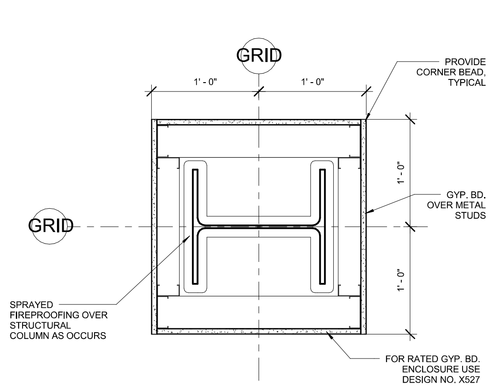
28 SECTION @ BRK. RM. VIDEO DISPLAY
1 1/2" = 1'-0"



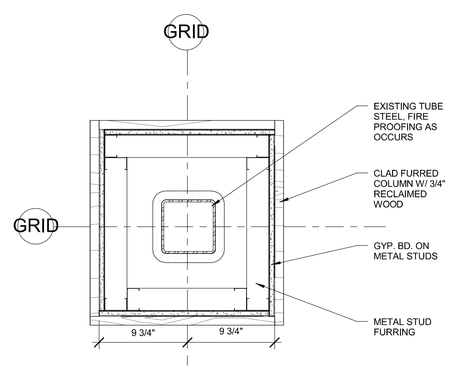
23 WALL AT MULLION
1" = 1'-0"



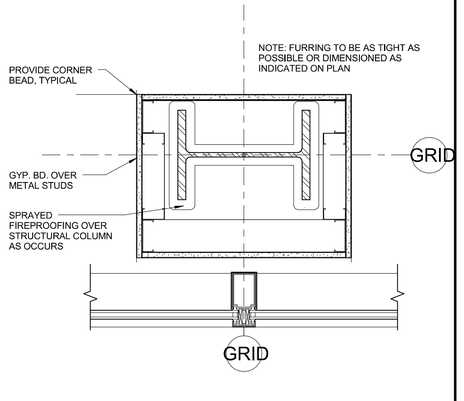
18 DETAIL AT WALL BASE
3" = 1'-0"



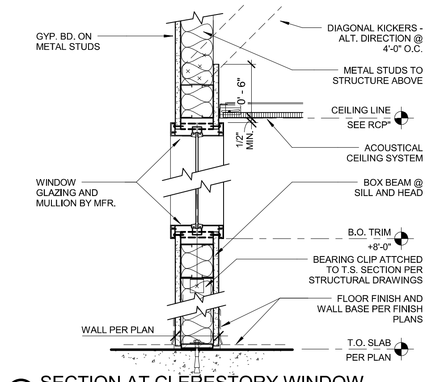
13 TYPICAL CLOUMN FURRING
1 1/2" = 1'-0"



8 WOOD CLAD COLUMN
1 1/2" = 1'-0"

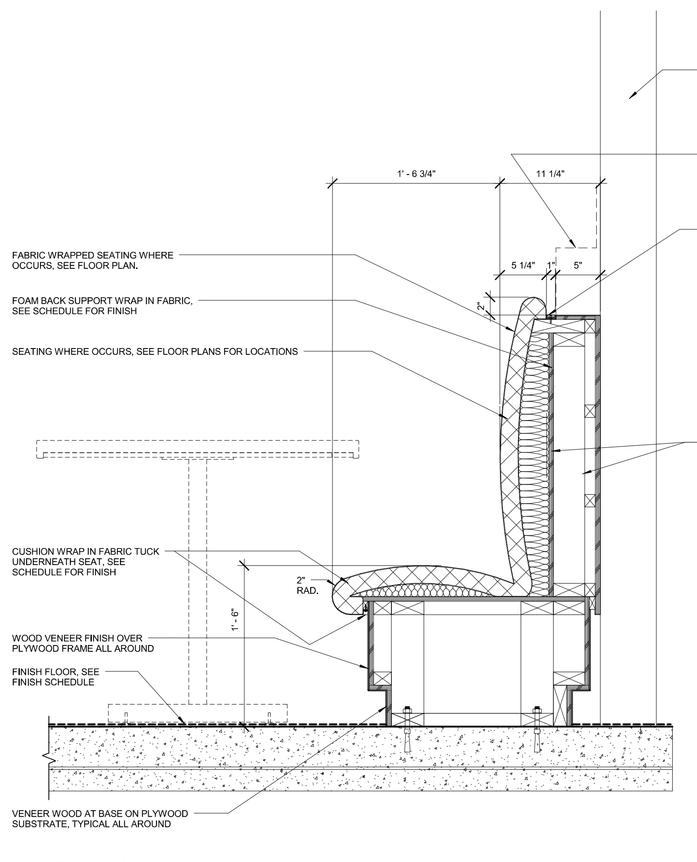


3 COLUMN FURRING AT WINDOW
1 1/2" = 1'-0"

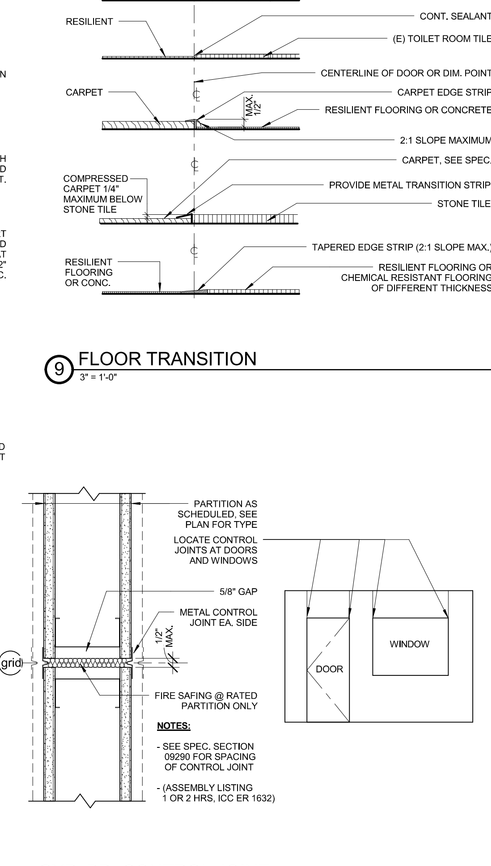


29 SECTION AT CLERESTORY WINDOW
1 1/2" = 1'-0"

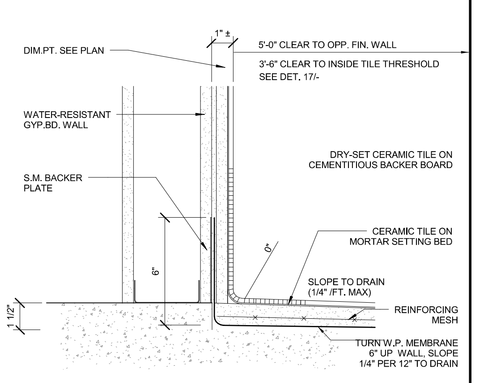
25 SECTION AT SERVERY
1 1/2" = 1'-0"



20 SEAT SECTION DETAIL
1 1/2" = 1'-0"

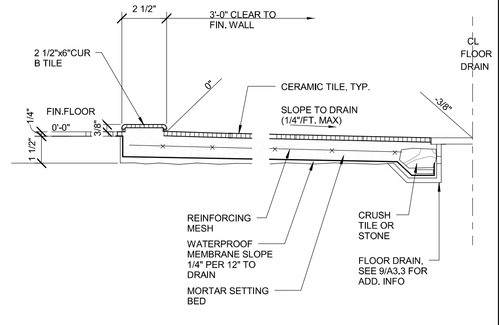


9 FLOOR TRANSITION
3" = 1'-0"



4 CERAMIC TILE SHOWER BASE
3" = 1'-0"

10 GYP. BD. CONTROL JOINT
3" = 1'-0"



5 ADA CERAMIC TILE SHOWER THRESHOLD
3" = 1'-0"

5/22/2013 10:00:12 AM

CONSULTANTS

STAMP

LICENSED ARCHITECT — NANCY J. ESCOBAR — C-22219 — RENEWAL 8/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

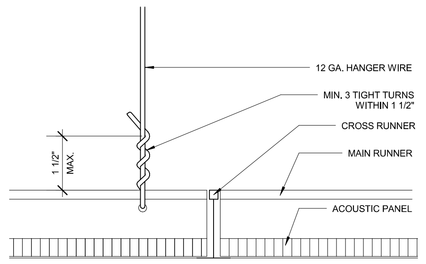
PROJECT NO. 12137

SCALE As indicated

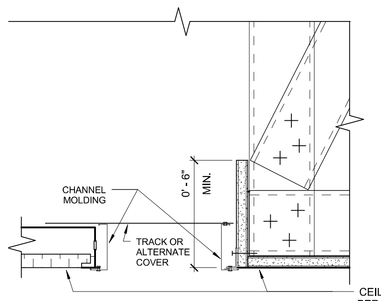
TITLE

INTERIOR DETAILS

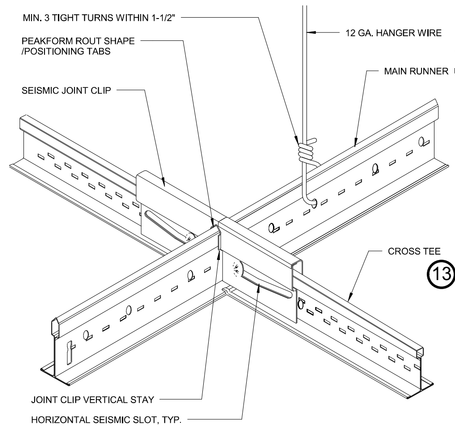
A-613-TI



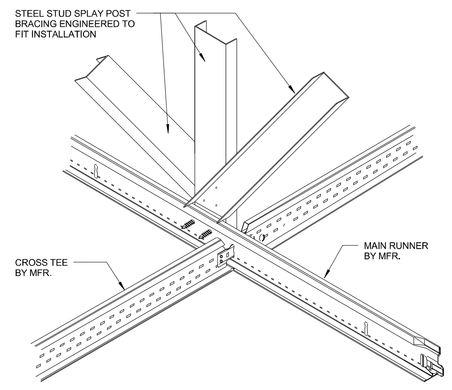
16 HANGER WIRE CONNECTION TO GRID
6" = 1'-0"



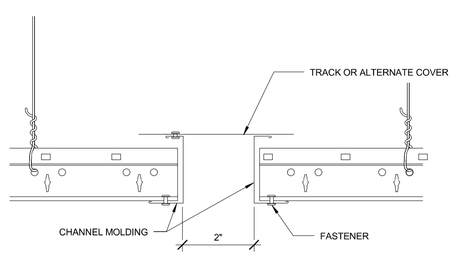
17 SEISMIC JOINT @ ACT/ GYP. SOFFIT
3" = 1'-0"



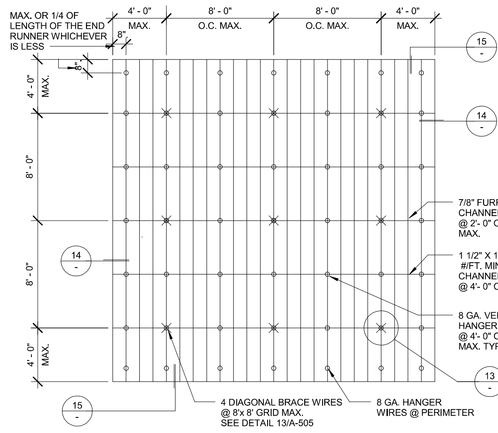
18 INSTALLED SEISMIC JOINT CLIP
6" = 1'-0"



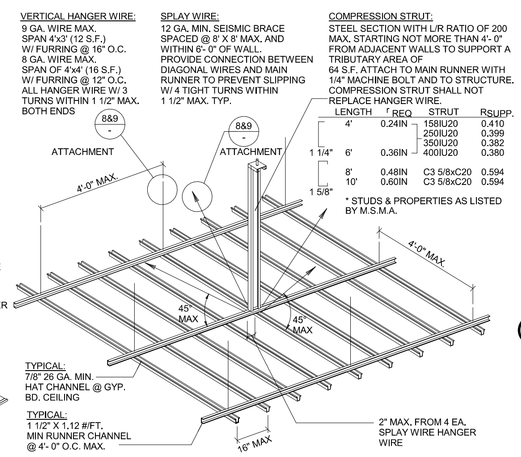
19 RIGID SPLAY BRACING
6" = 1'-0"



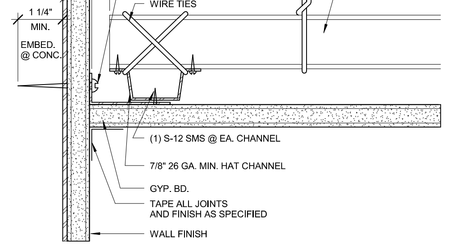
20 ACOUST. CEILING SEIMIC JOINT
6" = 1'-0"



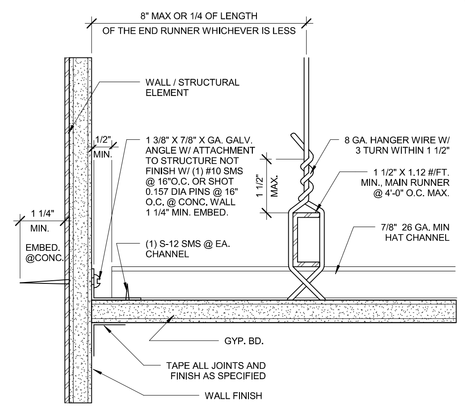
12 DIAGRAMMATIC PLAN GYPSUM BOARD SUSPENDED CEILING SYSTEM
3/16" = 1'-0"



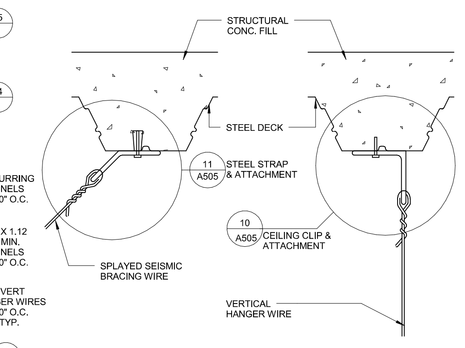
13 GYPSUM BOARD SUSPENDED CEILING SYSTEM
1/8" = 1'-0"



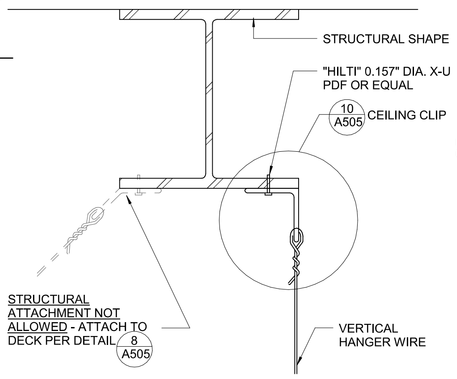
14 GYP. BD PERIMETER (Perpendicular To Main Runner)
6" = 1'-0"



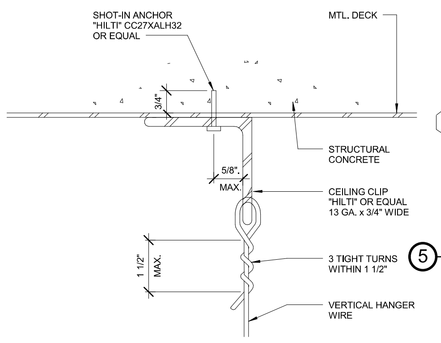
15 GYP. BD PERIMETER (Parallel To Main Runner)
6" = 1'-0"



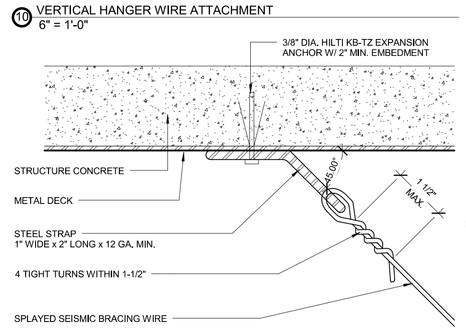
8 WIRE CONNECTION @ MET. DECK ON CONC. FILL
6" = 1'-0"



9 WIRE CONNECTION TO STEEL BEAM
6" = 1'-0"



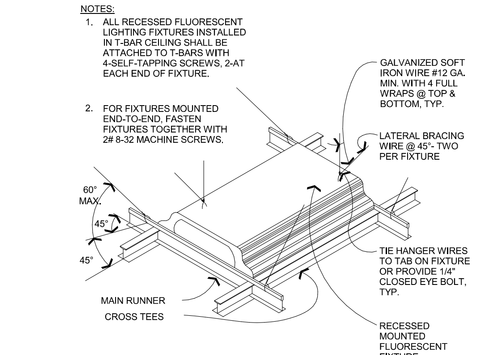
10 VERTICAL HANGER WIRE ATTACHMENT
6" = 1'-0"



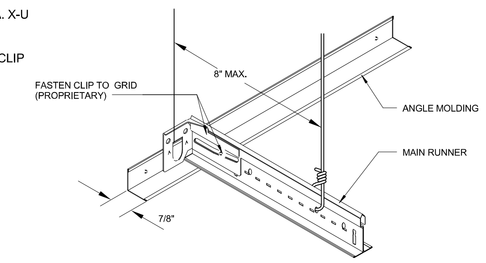
11 SPLAYED SEISMIC BRACING WIRE ATTACHMENT
6" = 1'-0"

SUSPENDED CEILING GENERAL NOTES:

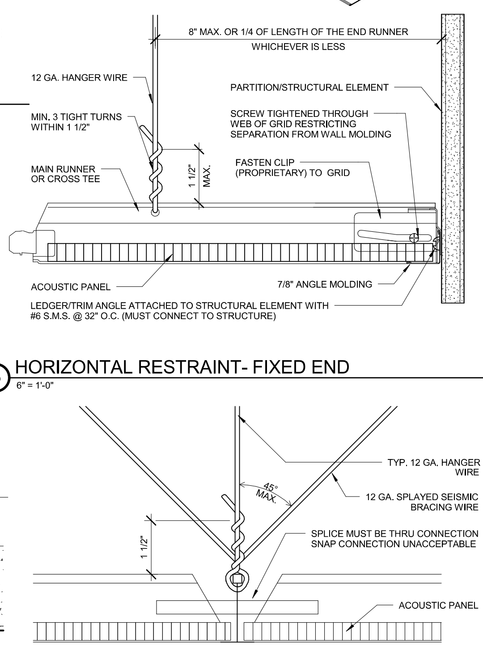
1. ALL CEILINGS SHALL USE A HEAVY DUTY T-BAR GRID SYSTEM.
2. THE "PROPRIETARY" CLIP SHALL BE THE ARMSTRONG BERC-2 CLIP SYSTEM OR APPROVED AND LISTED EQUIVALENT. INSTALLATION SHALL BE PER ICC-ES EVALUATION REPORT ESR-1308, WHICH ALLOW THE USE OF 7/8" ALL MOLDING.
3. IN EACH ORTHOGONAL HORIZONTAL DIRECTION, ONE END OF THE CEILING GRID SHALL BE ATTACHED TO THE CLOSURE ANGLE.
4. THE OTHER END IN EACH HORIZONTAL DIRECTION SHALL HAVE A 3/4" CLEARANCE FROM THE WALL AND SHALL REST UPON AND BE FREE TO SLIDE ON A CLOSURE ANGLE OR A LISTED ASSEMBLY.
5. FOR CEILING AREA EXCEEDING 1,000 SF, HORIZONTAL RESTRAINT OF THE CEILING TO THE STRUCTURAL SYSTEM SHALL BE PROVIDED. SEE DETAILS THIS SHEET.
6. FOR CEILING AREA EXCEEDING 2,500 S.F., A SEISMIC SEPARATION JOINT OR FULL HEIGHT PARTITION THAT BREAKS THE CEILING UP INTO THE AREA NOT EXCEEDING 2,500 S.F. SHALL BE PROVIDED UNLESS STRUCTURAL ANALYSIS ARE PREFORMED OF THE CEILING BRACING SYSTEM FOR THE PRESCRIBE SEISMIC FORCES THAT DEMONSTRATE CEILING SYSTEM PENETRATIONS & CLOSURE ANGLES SEE DETAIL 20.
7. PROVIDE SUFFICIENT CLEARANCE TO ACCOMMODATE THE ANTICIPATED LATERAL DISPLACEMENT. SEE DETAILS ON THIS SHEET
8. EXCEPT WHERE RIGID BRACES ARE USED TO LIMIT LATERAL DEFLECTIONS, PENETRATIONS SHALL HAVE A 2" OVERSIZE RING, SLEEVE OR ADAPTER THROUGH THE CEILING TITLE TO ALLOW FOR FREE MOVEMENT OF AT LEAST 1" IN ALL HORIZONTAL DIRECTIONS IS PERMITTED. SEE DETAILS ON THIS SHEET.
9. SUSPENDED CEILING SHALL BE SUBJECT TO PERIODIC SPECIAL INSPECTION REQUIREMENTS. THE INSPECTION ENTAILS MANUFACTURER.
10. CERTIFICATION OF COMPONENT PERFORMANCE AND PERIODIC INSPECTION IF THE SUSPENDED CEILING SYSTEM ANCHORAGE SYSTEM.



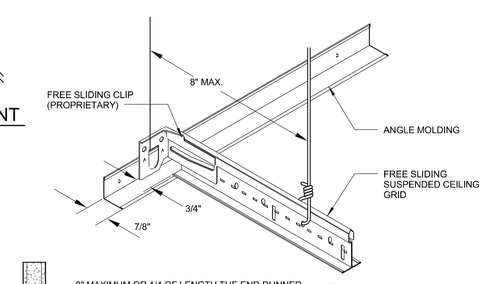
4 FLUORESCENT LIGHT MOUNTING
3" = 1'-0"



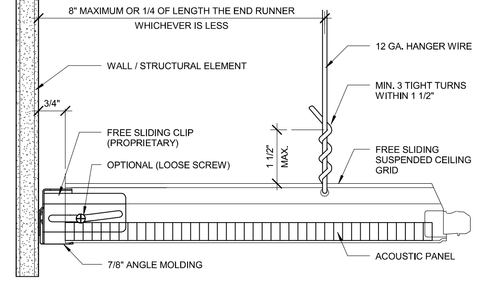
5 HORIZONTAL RESTRAINT- FIXED END
6" = 1'-0"

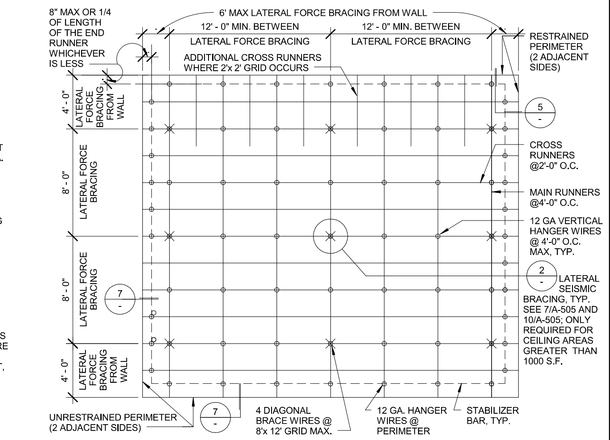


6 RUNNER SPLICE
6" = 1'-0"

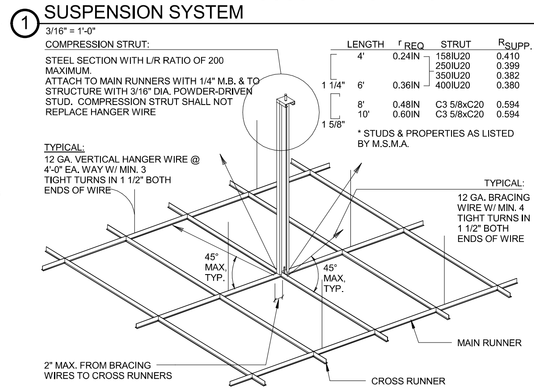


7 HORIZONTAL RESTRAINT-SLIP END @ 2 ADJ. SIDES
6" = 1'-0"

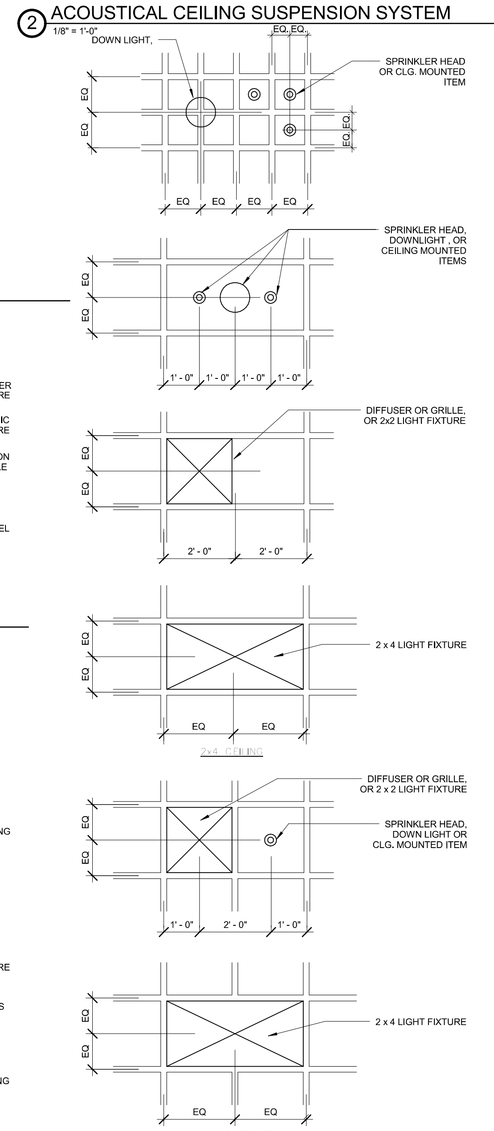




1 DIAGRAMMATIC PLAN ACOUSTICAL CEILING SUSPENSION SYSTEM
3/16" = 1'-0"



2 ACOUSTICAL CEILING SUSPENSION SYSTEM
1/8" = 1'-0"



3 TYPICAL CEILING TILE LAYOUTS
1/2" = 1'-0"

CONSULTANTS

STAMP

LICENSED ARCHITECT — MARK J. ENGLERT — No. C22219 — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

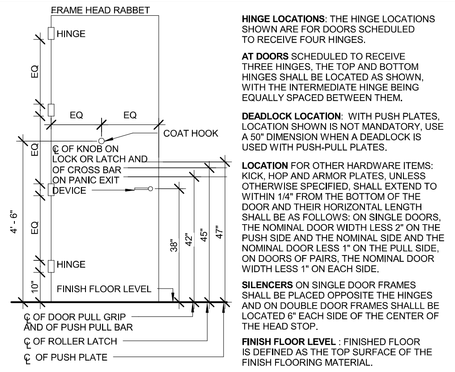
SCALE As indicated

TITLE

CEILING DETAILS

A-614-TI

5/23/2013 1:00:33 AM



HINGE LOCATIONS: THE HINGE LOCATIONS SHOWN ARE FOR DOORS SCHEDULED TO RECEIVE FOUR HINGES.

AT DOORS SCHEDULED TO RECEIVE THREE HINGES, THE TOP AND BOTTOM HINGES SHALL BE LOCATED AS SHOWN, WITH THE INTERMEDIATE HINGE BEING EQUALLY SPACED BETWEEN THEM.

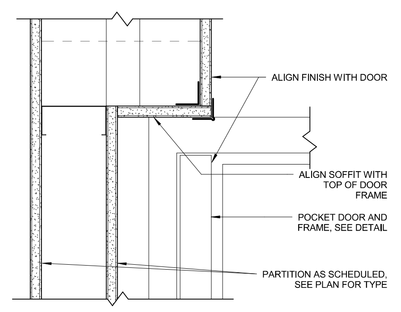
DEADLOCK LOCATION: WITH PUSH PLATES, LOCATION SHOWN IS NOT MANDATORY, USE A 50" DIMENSION WHEN A DEADLOCK IS USED WITH PUSH-PULL PLATES.

LOCATION FOR OTHER HARDWARE ITEMS: KICK, HOP AND ARMOR PLATES, UNLESS OTHERWISE SPECIFIED, SHALL EXTEND TO WITHIN 1/4" FROM THE BOTTOM OF THE DOOR AND THEIR HORIZONTAL LENGTH SHALL BE AS FOLLOWS: ON SINGLE DOORS, THE NOMINAL DOOR WIDTH LESS 2" ON THE PUSH SIDE AND THE NOMINAL SIDE AND THE NOMINAL DOOR LESS 1" ON THE PULL SIDE. ON DOORS OF PAIRS, THE NOMINAL DOOR WIDTH LESS 1" ON EACH SIDE.

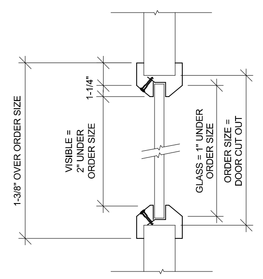
SILENCERS ON SINGLE DOOR FRAMES SHALL BE PLACED OPPOSITE THE HINGES AND ON DOUBLE DOOR FRAMES SHALLL BE LOCATED 6" EACH SIDE OF THE CENTER OF THE HEAD STOP.

FINISH FLOOR LEVEL: FINISHED FLOOR IS DEFINED AS THE TOP SURFACE OF THE FINISH FLOORING MATERIAL.

25 DOOR HARDWARE MOUNTING LOCATIONS
1/2" = 1'-0"

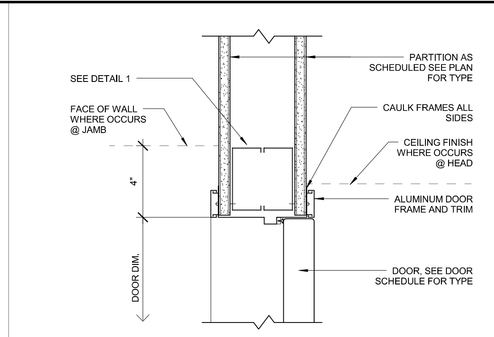


19 HOLD OPEN DOOR POCKET - SOFFIT
3" = 1'-0"

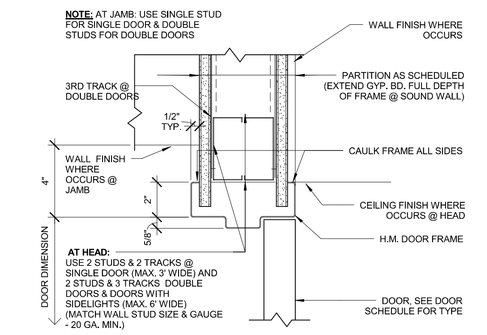


NOTE: USE AT HOLLOW METAL DOORS ONLY.

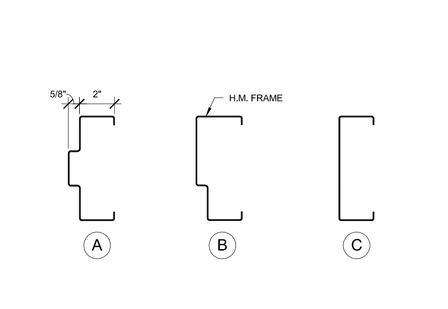
13 DOOR VISION PANEL
3" = 1'-0"



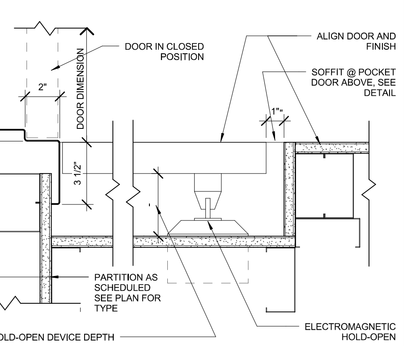
7 ALUM. DOOR HEAD (JAMB SIM.)
3" = 1'-0"



1 TYP. DOOR HEAD FRM'G (JAMB SIM.) H.M. SHOWN
3" = 1'-0"

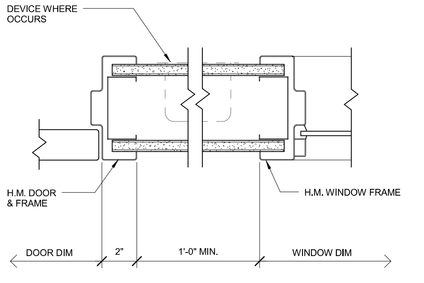


20 THRESHOLD @ H.M. DOOR
3" = 1'-0"



14 ALUMINUM DOOR JAMB @ SIDELITE
3" = 1'-0"

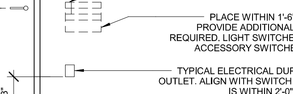
8 ALUM. DOOR JAMB/WINDOW JAMB
3" = 1'-0"



2 H.M. DOOR/TRANSOM HEAD
3" = 1'-0"

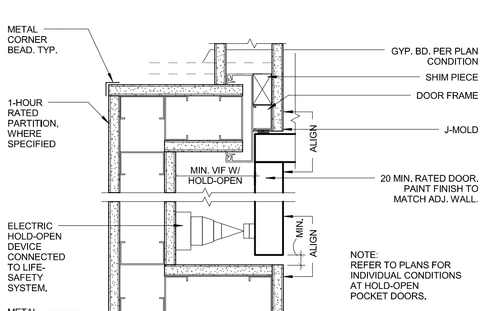
WIDTH OPENING (FT.)	JAMBS	HEADER *	SILL
0 - 4	3 5/8"X20GA.	(2)3 5/8"X20 GA.(XC) (3)3 5/8"X20 GA.(WT)	3 5/8"X20 GA.
4 - 12	(2)3 5/8"X20GA.	(2)6"X18 GA.(XC) (3)3 5/8"X20 GA.(WT)	(2)3 5/8"X20GA.
12 - 18	(2)3 5/8"X18GA.	(2)8"X18 GA.(XC) (3)3 5/8"X18 GA.(WT)	(2)3 5/8"X18GA.

* HEADER SHAPE:

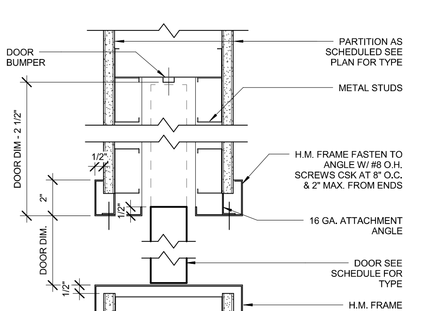


NOTE: ALL STUD DESIGNATED ARE TO BE C-STUDS (XC - 1 5/8" FLANGE)

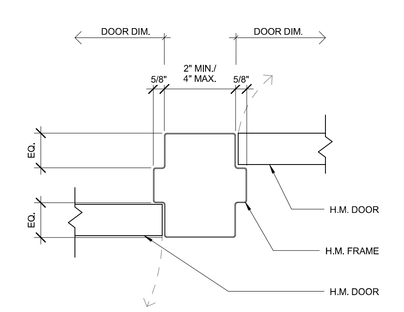
21 INTERIOR OPENING FRAMING SCHEDULE
1 1/2" = 1'-0"



15 HIDDEN DOOR HEAD (JAMB - SIM.)
3" = 1'-0"



9 ALUM. DOOR JAMB AT SIDELIGHT
3" = 1'-0"



3 DOOR JAMB AT SIDELIGHT (OFFSET)
3" = 1'-0"

22 ALUM. DOOR JAMB/WINDOW JAMB
3" = 1'-0"

16 HOLD OPEN DOOR - HEAD
3" = 1'-0"

10 DORMA SLIDING DOOR
1/4" = 1'-0"

4 DOOR JAMB AT SIDELIGHT (CENTERED)
3" = 1'-0"

23 H.M. FRAME PROFILES
3" = 1'-0"

17 HOLD OPEN DOOR POCKET - JAMB
3" = 1'-0"

5 H.M. DOOR/WINDOW JAMB
3" = 1'-0"

24 DEVICE PLATE LOCATIONS
1/2" = 1'-0"

18 TYP. HOLD OPEN POCKET DOOR JAMB
3" = 1'-0"

12 POCKET DOOR JAMB
3" = 1'-0"

6 H.M. DOOR (DUAL EGRESS)
3" = 1'-0"

CONSULTANTS

KEY PLAN

STAMP

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

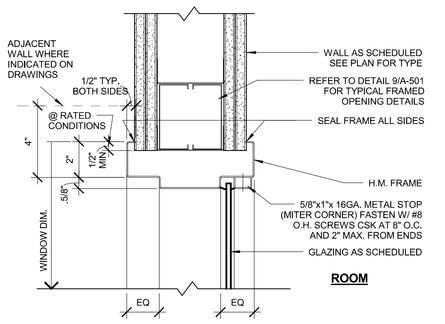
SCALE As indicated

TITLE

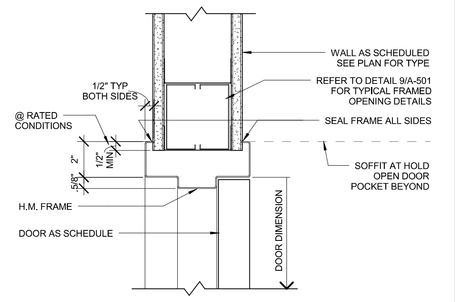
DOOR DETAILS

A-631-TI

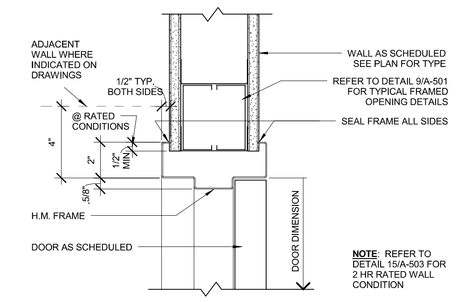
5/23/2013 1:00:50 AM



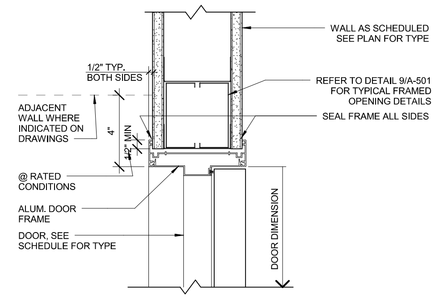
16 H.M. WINDOW HEAD - 2HR (JAMB/SILL SIM)
3" = 1'-0"



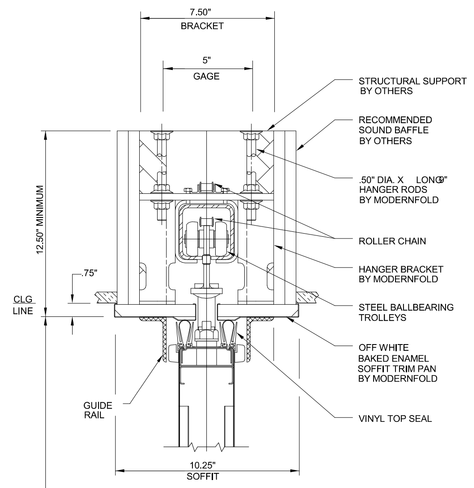
11 HOLD OPEN DOOR - HEAD
3" = 1'-0"



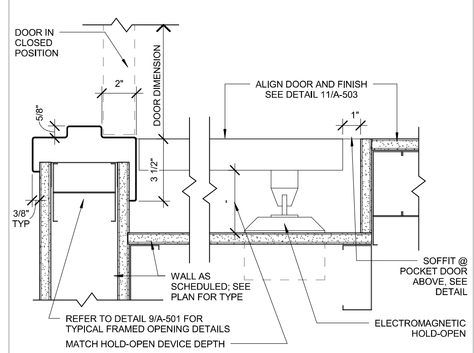
6 H.M. DOOR HEAD (JAMB SIM.)
3" = 1'-0"



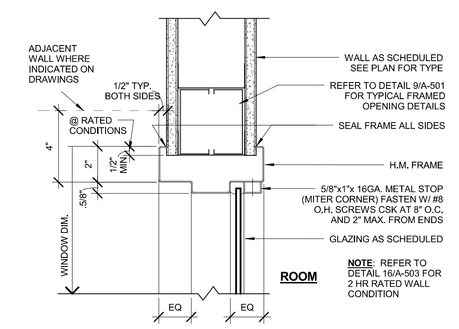
1 ALUM. DOOR HEAD (JAMB SIM.)1
3" = 1'-0"



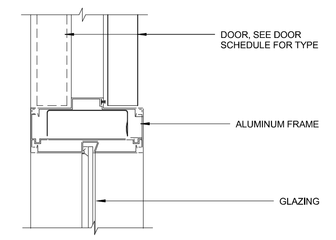
17 SECTION AT FOLDING DOOR
3" = 1'-0"



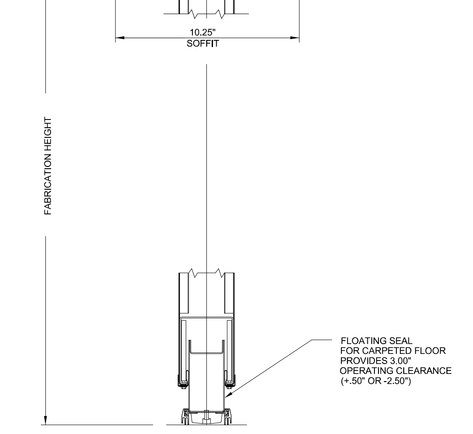
12 HOLD OPEN DOOR POCKET - JAMB
3" = 1'-0"



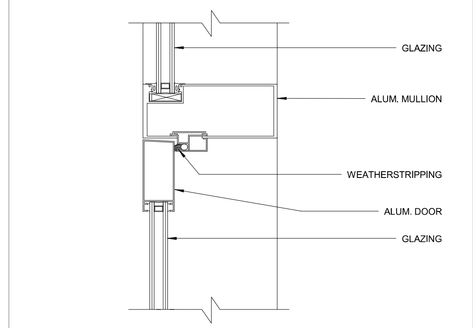
7 H.M. WINDOW HEAD (JAMB/SILL SIM.)
3" = 1'-0"



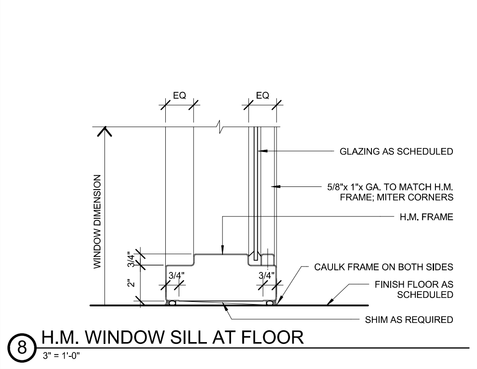
2 ALUM. DOOR JAMB @ SIDELITE
3" = 1'-0"



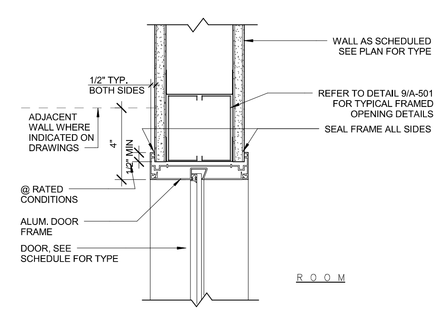
17 SECTION AT FOLDING DOOR
3" = 1'-0"



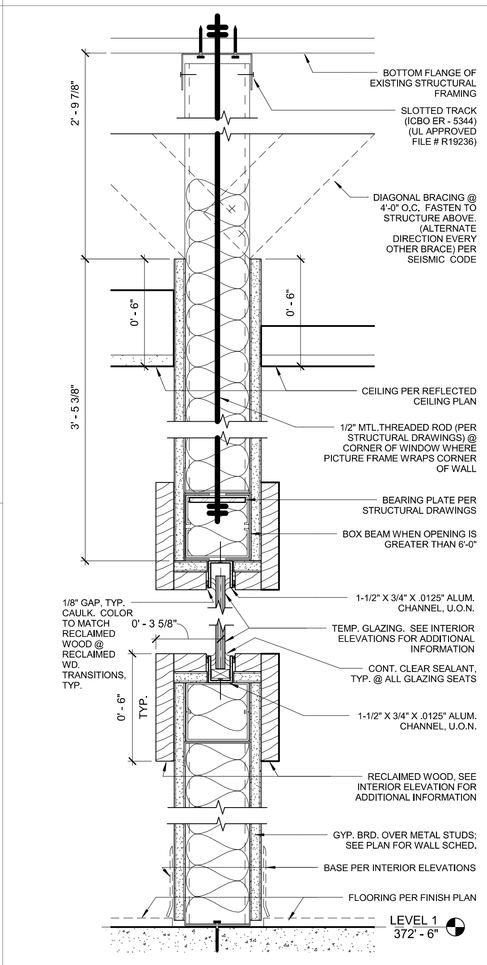
13 ALUM. DOOR JAMB
3" = 1'-0"



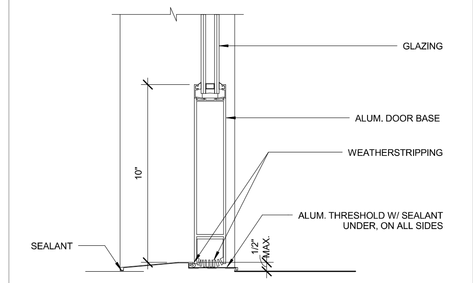
8 H.M. WINDOW SILL AT FLOOR
3" = 1'-0"



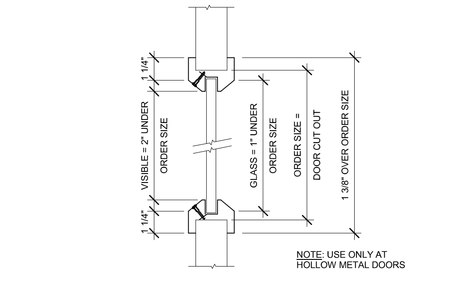
3 ALUM. WINDOW HEAD (JAMB SIM)
3" = 1'-0"



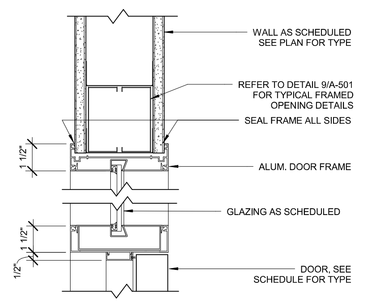
18 SECTION @ PICTURE FRAME WINDOW
3" = 1'-0"



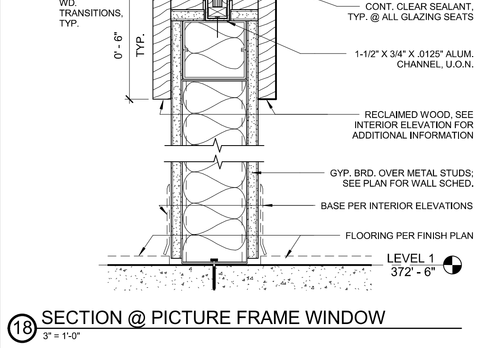
14 ALUM. DOOR THRESHOLD
3" = 1'-0"



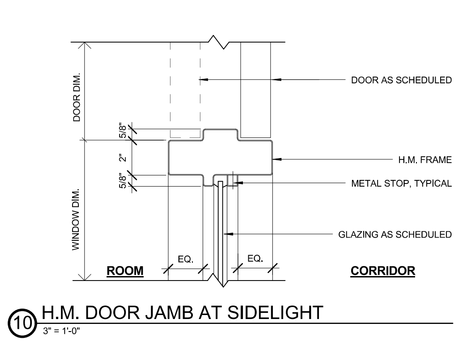
9 H.M. DOOR VISION PANEL
3" = 1'-0"



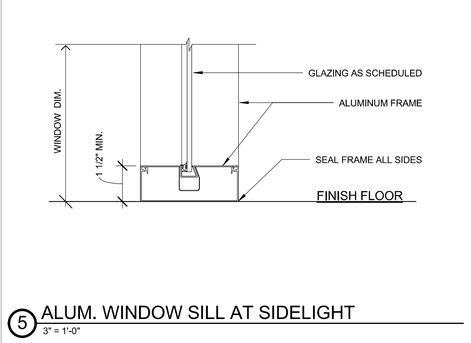
4 ALUM. DOOR JAMB @ SIDELIGHT (HEAD SIM.)
3" = 1'-0"



15 H.M. DOOR HEAD - 2HR (JAMB SIM.)
3" = 1'-0"



10 H.M. DOOR JAMB AT SIDELIGHT
3" = 1'-0"



5 ALUM. WINDOW SILL AT SIDELIGHT
3" = 1'-0"

CONSULTANTS

STAMP

LICENSED ARCHITECT — MARK J. ENGLERT — No. 22219 — REN. 12/31/13 — STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

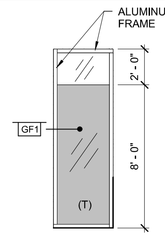
SCALE 3" = 1'-0"

TITLE

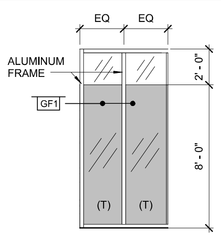
DOOR & WINDOW DETAILS

A-632-TI

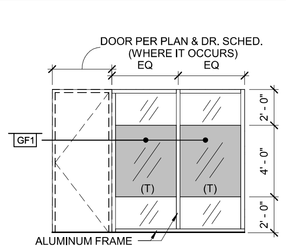
5/23/2013 1:00:06 AM



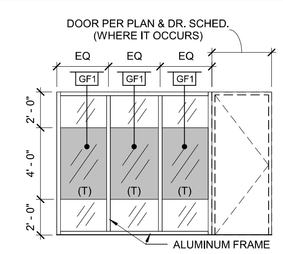
A'1 FRM'D. WDW. PNL.
1/4" = 1'-0"



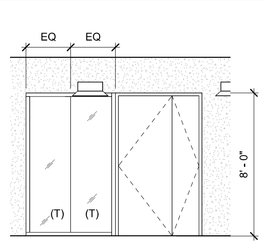
A'2 FRM'D. WDW. PNL.
1/4" = 1'-0"



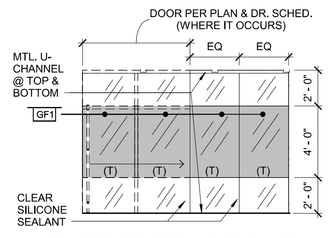
A2 FRM'D. WDW. PNL.
1/4" = 1'-0"



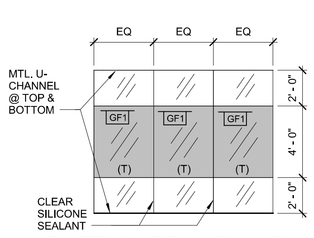
A3 FRM'D. WDW. PNL.
1/4" = 1'-0"



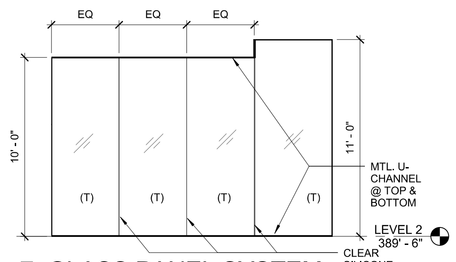
A'2 FRM'D. WDW. PNL.
1/4" = 1'-0"



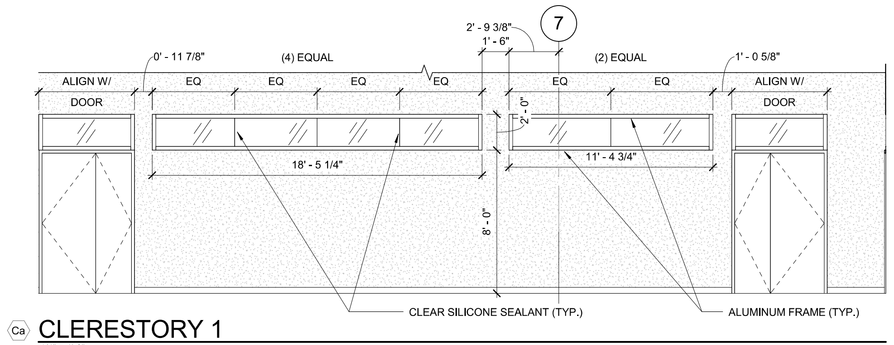
B2 BUTT-GLZD. WDW. PANEL
1/4" = 1'-0"



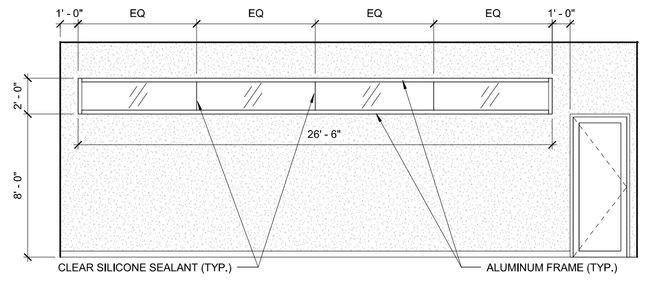
B3 BUTT-GLZD. WDW. PANEL
1/4" = 1'-0"



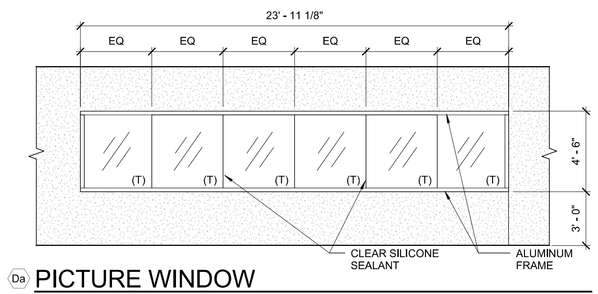
B4 GLASS PANEL SYSTEM
1/4" = 1'-0"



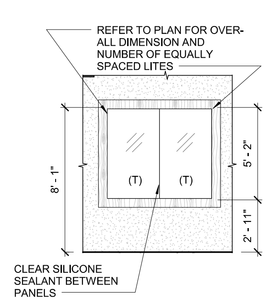
Ca CLERESTORY 1
1/4" = 1'-0"

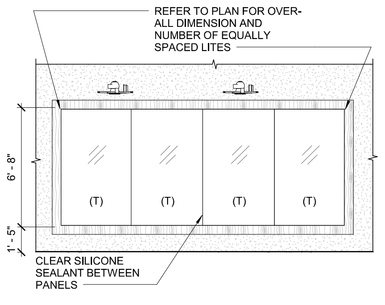


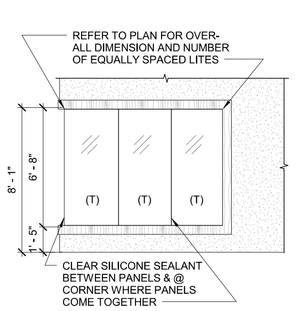
Cb CLERESTORY 2
1/4" = 1'-0"



Da PICTURE WINDOW
1/4" = 1'-0"







(#) Ea PICTURE FRAME WINDOW
1/4" = 1'-0"

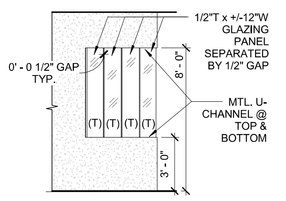
ON PLANS, REFERS TO NUMBER OF LITES PER GLAZING ASSEMBLY

(#) Eb PICTURE FRAME WINDOW
1/4" = 1'-0"

ON PLANS, REFERS TO NUMBER OF LITES PER GLAZING ASSEMBLY

(#) Ec PICTURE FRAME WINDOW
1/4" = 1'-0"

ON PLANS, REFERS TO NUMBER OF LITES PER GLAZING ASSEMBLY



S SPEAKEASY WINDOW
1/4" = 1'-0"

WINDOW LEGEND

DOOR SCHEDULE w/ HARDWARE

NUMBER (1)	ROOM NAME	DOOR SIZE (2) WIDTH	DOOR SIZE (2) HEIGHT	DOOR TYPE (3)	DOOR MATERIAL (4)	DOOR GLAZING (5)	FRAMES MATERIAL (6)	FRAMES DETAILS (7) HEAD	FRAMES DETAILS (7) JAMB	FRAMES DETAILS (7) SILL	FIRE RATING (8)	GASKETING (9)	REMARKS (10)	HARDWARE GROUP (11)	HARDWARE CARD READER	HARDWARE ALARM	HARDWARE HOLD OPEN
LEVEL 1																	
105	CONFERENCE	3' - 0"	10' - 0"	D	GLS	T					-	-	3	12			
106	UNIMPROVED SHELL	5' - 0"	7' - 10"	CC	WD	-	AL	7/A631	7/A631		60	SD		49	■	■	
110	CENTRAL CIRCULATION	3' - 0"	7' - 10"	B	WD	-	AL	7/A631	7/A631		-	AS		32	■	■	
112	EQUIPMENT WASH	3' - 0"	7' - 10"	A	HM	-	HM	1/A631	1/A631		-	SD		27			
113	RAW MATERIALS	6' - 0"	7' - 10"	CC	HM	F	HM	1/A631	1/A631		60	SD		48			■
113A	FERMENTATION	6' - 0"	7' - 10"	CC	HM	T	HM	1/A631	1/A631		-	SD		38			
114	CENTRAL CIRCULATION	3' - 0"	7' - 10"	B	WD	F	AL	7/A631	7/A631		60	SD		35	■	■	
115	MAINT. SHOP	3' - 0"	7' - 10"	C	HM	T	HM	1/A631	1/A631		-	AS		28			
116	SHIPPING/ RECEIVING WAREHOUSE	6' - 0"	7' - 10"	AA	HM	-	HM	1/A631	1/A631		60	SD		47	■	■	
120	ANALYTICAL LAB	5' - 0"	7' - 10"	CC	WD	T	AL	7/A631	1/A631				(PR.) 3'-0" / 2'-0"	40			
120A	ANALYTICAL LAB	3' - 0"	7' - 10"	C	WD	T	AL	7/A631	1/A631					26			
121	ANALYTICAL INSTRUMENTS	5' - 0"	7' - 10"	CC	WD	T	AL	7/A631	1/A631				(PR.) 3'-0" / 2'-0"	40			
122	CYLINDER ROOM	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631					29			
123	HIGH dB EQUIPMENT	3' - 0"	7' - 10"	C	WD	T	AL	7/A631	1/A631			AS		26			
124	OPEN OFFICE	3' - 0"	7' - 10"	B	WD	T	AL	7/A631	1/A631		-			33	■	■	
130	OPEN OFFICE	3' - 0"	7' - 10"	B	WD	T	AL	7/A631	1/A631		-			33	■	■	
130A	OPEN OFFICE	3' - 0"	7' - 10"	B	WD	T	AL	7/A631	1/A631		-			33	■	■	
131	OPEN OFFICE	3' - 0"	7' - 10"	A	WD		AL	7/A631	1/A631					17			
132	OFFICE	3' - 0"	7' - 10"	A	WD		AL	7/A631	1/A631					17			
133	OFFICE	3' - 0"	7' - 10"	A	WD		AL	7/A631	1/A631					17			
134	CONFERENCE	3' - 0"	7' - 10"	B	WD	T	AL	7/A631	1/A631			SD	8	18			
135	PRIVACY ROOM	6' - 0"	7' - 10"	E	GLS	T	-	-	10/A631				3, 2, 8	15			
136	IDF	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631					33	■	■	
140	WOMEN'S	3' - 0"	7' - 10"	A	WD		AL	7/A631	1/A631					19			
141	WOMEN'S SHOWER	3' - 0"	7' - 10"	A	WD		AL	7/A631	1/A631					21			
141A	WOMEN'S SHOWER	3' - 0"	7' - 10"	D	GLS	T	AL	7/A631	1/A631				9	13			
141B	WOMEN'S SHOWER	3' - 0"	7' - 10"	D	GLS	T	AL	7/A631	1/A631				9	13			
142	MEN'S	3' - 0"	7' - 10"	A	WD		AL	7/A631	1/A631					20			
143	MEN'S SHOWER	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631					21			
143A	MEN'S SHOWER	3' - 0"	7' - 10"	D	GLS	T	AL	7/A631	1/A631				9	13			
143B	MEN'S SHOWER	3' - 0"	7' - 10"	D	GLS	T	AL	7/A631	1/A631				9	13			
144	JANITOR	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631					22			
145	MAILROOM/ COPY	3' - 0"	7' - 10"	B	WD	T	AL	7/A631	1/A631					32	■	■	
150	WELLNESS	3' - 0"	7' - 10"	A	WD		AL	7/A631	1/A631				5	25			
151	BMS	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631		60	SD		36	■	■	
152	ELEC.	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631		60	SD		30		■	
153	UPS	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631		60	SD		30			
161	MPOE	3' - 0"	7' - 10"	A	WD	-	AL	7/A631	1/A631					24			
LEVEL 2																	
201A	CENTRAL CIRCULATION	6' - 3"	10' - 0"	F	-	-	-				60	SD	6	51			
201B	CENTRAL CIRCULATION	7' - 4"	10' - 0"	F	-	-	-				60	SD	6	51			
206A	BOARD ROOM	3' - 0"	8' - 0"	D	GLS	T	-						3	14			
206B	BOARD ROOM	3' - 0"	8' - 0"	D	GLS	T	-						3	14			
206C	BOARD ROOM	6' - 0"	4' - 10"		WD	-	WD						7	-			
207A	PANTRY	3' - 0"	7' - 10"	A	WD		AL				60	SD		31			
207B	PANTRY	6' - 0"	4' - 10"	A	HM	-	WD	1/A631	1/A631				10	50			
208	SERVER	3' - 6"	7' - 10"	A	WD	-	AL				60	SD		37	■	■	
209	MEN'S	3' - 0"	7' - 10"	A	WD		AL							20			
210	WOMEN'S	3' - 0"	7' - 10"	A	WD		AL							19			
211	JANITOR	3' - 0"	7' - 10"	A	WD	-	AL							22			
212	IDF	3' - 0"	7' - 10"	A	WD		AL					AS		34	■	■	
213	ELEC.	3' - 0"	7' - 10"	A	WD		AL					AS		24			
220	HTP CLONING	6' - 0"	7' - 10"	BB	WD		AL							40			
221A	MOLECULAR BIOLOGY	6' - 0"	7' - 10"	AA	WD	F	AL	16/A631	17/A631		60	SD		45	■	■	
221B	MOLECULAR BIOLOGY	6' - 0"	8' - 0"	AA	HM	-	HM	1/A631	1/A631		60	SD		46		■	■
222	HALL	6' - 0"	7' - 10"	CC	WD	T	HM	1/A631	1/A631		-			44			
223	BL2	3' - 0"	7' - 10"	C	HM	T	HM	1/A631	1/A631					26			
226A	GLASS WASH	6' - 0"	7' - 10"	CC	HM	T	HM	1/A631	1/A631					39			
226B	MICROBIOLOGY	6' - 0"	7' - 10"	CC	HM	T	HM	1/A631	1/A631					42			
227	FACS	3' - 0"	7' - 10"	C	HM	T	HM	1/A631	1/A631					26			
228	CHEM STOR.	3' - 0"	7' - 10"	C	HM	T	HM	1/A631	1/A631					26			
229	MEDIA	3' - 0"	7' - 10"	C	HM	T	HM	1/A631	1/A631					26			
240	OPEN OFFICE	3' - 0"	7' - 10"	B	WD	F	AL				60	SD		36	■	■	
241	OFFICE	3' - 0"	7' - 10"	A	WD		AL					SD		17			
242	OFFICE	3' - 0"	7' - 10"	A	WD		AL					SD		17			
243	OFFICE	3' - 0"	7' - 10"	A	WD		AL					SD		17			
244	CONFERENCE	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
245	CONFERENCE	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
246	PRIVACY ROOM	6' - 0"	7' - 0"	E	GLS	T	AL	-	10				3, 2, 8	15			
250A	COLLISION ZONE	3' - 0"	7' - 10"	B	WD	T	AL							33	■	■	
250B	MOLECULAR BIOLOGY	5' - 0"	7' - 10"	CC	WD	T	AL						(PR.) 3'-0" / 2'-0"	43	■	■	
250C	HALL	6' - 0"	8' - 0"	AA	HM	-	HM	16/A631	17/A631		60	SD		46		■	■
250D	ENZYMOLOGY	5' - 0"	7' - 10"	CC	WD	T	AL						(PR.) 3'-0" / 2'-0"	43			
251	ENZ. HTPS	6' - 0"	7' - 10"	CC	HM	T	HM	1/A631	1/A631					41			
252A	CONTROL ROOM	6' - 0"	7' - 10"	E	GLS	T		-	10				3.2	16			
253	ENZYMOLOGY	4' - 6"	7' - 10"	CC	HM	T	HM	1/A631	1/A631				(PR.) 3'-0" / 1'-6"	39			
254	SYN GAS	4' - 6"	7' - 10"	CC	HM	T	HM	1/A631	1/A631				(PR.) 3'-0" / 2'-0"	39			
255	IT	3' - 0"	7' - 10"	C	WD	T	AL							23			
256	G/A STOR.	3' - 0"	7' - 10"	A	WD		AL							23			
257	ENZ. PURF	3' - 0"	7' - 10"	C	HM	T	HM	1/A631	1/A631					26			
261	CONFERENCE	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
262	CONFERENCE	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
263	PRIVACY ROOM	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
264	PRIVACY ROOM	6' - 0"	7' - 10"	E	GLS	T	AL	-	10/A631				3, 2, 8	15			
266	OFFICE	3' - 0"	7' - 10"	A	WD		AL					SD		17			
267	OFFICE	3' - 0"	7' - 10"	A	WD		AL					SD		17			
268	OFFICE	3' - 0"	7' - 10"	A	WD		AL					SD		17			
280A	OPEN OFFICE	3' - 0"	7' - 10"	B	WD	T	AL							33	■	■	
280B	OPEN OFFICE	3' - 0"	7' - 10"	B	WD	T	AL							33	■	■	
281A	CONFERENCE	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
281B	CONFERENCE	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
282	OFFICE	3' - 0"	7' - 10"	A	WD	-	AL					SD		17			
283	OPEN OFFICE	6' - 0"	7' - 10"	E	GLS	-	AL	-	10/A631			SD	3, 2, 8	16			
284	OPEN OFFICE	6' - 0"	7' - 10"	E	GLS	-	AL	-	10/A631			SD	3, 2, 8	16			
285	OFFICE	6' - 0"	7' - 10"	E	GLS	-	AL	-	10/A631			SD	3, 2, 8	16			
286	OPEN OFFICE	6' - 0"	7' - 10"	E	GLS	-	AL	-	10/A631			SD	3, 2, 8	16			
287	OFFICE	6' - 0"	7' - 10"	E	GLS	T	AL	-	10/A631				3, 2, 8	16			
289	PROJECT PLANNING	3' - 0"	7' - 10"	B	WD	T	AL					SD	8	18			
290	PRIVACY ROOM	6' - 0"	7' - 10"	E	GLS	T		-	10/A631				3, 2, 8	15			

DOOR AND FRAME NOTES:
NOTES BELOW APPLY TO NUMBERS IN PARENTHESES ON DOOR SCHEDULE.

(1) NUMBER:
THE DOOR NUMBER MATCHES THE ROOM NUMBER. WHEN MORE THAN ONE DOOR EXISTS PER ROOM THE SECOND DOOR NUMBER IS FOLLOWED WITH "a", THE THIRD WITH "b", ETC.

(2) SIZE:
DOOR SIZES ARE NOMINAL. FIELD VERIFY OPENINGS

ALL DOORS ARE 1-3/4" THICK WITH 3/8" UNDERCUT UNLESS OTHERWISE NOTED.

(3) TYPE:
SEE DOOR TYPES ON THIS SHEET.

(4) MATERIAL:
A. HM = HOLLOW METAL
AL = ALUMINUM
STL = STEEL
WD = WOOD - MARSHFIELD DOORS, EVIROCLAD, BIRCH-WHITE, QUARTERSLICED, CUSTOM FINISH 21970OC
B. FOR ALUM.FRAME FINISHES SEE SPECIFICATIONS 08120. ALL ALUM. DOOR FRAME WILL BE CLEAR ANODIZED ALUMINUM EXCEPT DOORS INDICATED.

(5) GLAZING:
A. MIN./FR = FIRE RATED (FIRE LITE PLUS)
W = WIRE GLASS
T = TEMPERED GLASS
F = FIRELITE GLASS
FG = GLASS WITH FILM
B. SEE SPECIFICATIONS SECTION 08113.
C. SEE A-700 - FINISH LEGEND FOR GLAZING & GLAZING FILM TYPES

(6) MATERIAL:
A. HM = HOLLOW METAL
AL = ALUMINUM
STL = STEEL
B. MATCH EXISTING FINISHES

(7) DETAILS:
A. SEE DETAIL AND DRAWING NOTED.
B. FOR DETAILS DESIGNATED "MFR", REFER TO DOOR AND FRAME MANUFACTURER'S STANDARD PUBLISHED DETAILS.
C. SILL HT. FOR H.M. 2" , FOR ALUM. 1 1/2" AND TYPES 'A' , 'B' AND 'D' WILL BE 10" U.O.N.

(8) FIRE RATING:
A. PROVIDE LABELS FOR ALL RATED DOORS AND FRAMES. LABEL SHALL BE FOR ENTIRE RATED ASSEMBLY AS DEFINED IN CBC SECTION 713.
B. ALL 20, 45, 60 & 90 MINUTE RATED ASSEMBLIES GASKETING MATERIAL SO INSTALLED SHALL BE PROVIDED WITH APPROVED TO PROVIDE A SEAL HERE THE DOOR MEETS THE STOP ON BOTH SIDES AND ACROSS THE TOP (CBC STANDARDS 7.210). SEE GASKETING COLUMN.
C. USE FIRE RATED GLASS AT RATED CONDITIONS (FIRELITE NT PLUS OR VETROTECH SGG PYROSWISS AND SGG KERALITE)

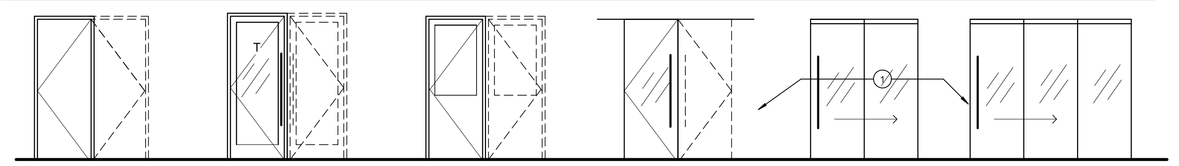
(9) GASKETING:
A. SD = SMOKE DRAFT SEAL
AS = AIR SEAL
WS = WEATHERSTRIPPING BY DOOR MANUFACTURER
B. SEE SPECIFICATIONS SECTION 08710.

(10) REMARKS
1. NOT USED
2. PROVIDE OVERHEAD SLIDING TRACK HARDWARE.
3. DOOR TO RECEIVE VERTICAL 48" LONG STAINLESS BAR PULL HARDWARE - BOTH SIDES. SEE KEYNOTE.
4. ALL HM DOORS & FRAMES TO BE EPOXY PAINTED (P5).
5. PROVIDE "IN-USE" LOCKSET INDICATOR.
6. COORDINATE ACTIVATION W/ FIRE ALARM.
7. B1-PART SLIDING PANTRY SERVING PANEL DOOR. REFER TO INTERIOR ELEVATIONS.
8. PROVIDE PRIVACY FILM. REFER TO FINISH SCHEDULE & INTERIOR ELEVATIONS.
9. PROVIDE INTERIOR PRIVACY LATCH AND BACKPAINT GLASS WHITE.
10 NO HARDWARE AT BOARD ROOM SIDE.

(11) HARDWARE GROUP
1. SEE SECPCIFICATION SECTION 087100

DOOR NOTES
1. Only entrance doors in tenant spaces and buildings with an occupancy in Group A, B, 1-2, M, R-1 or R-2 with an automatic sprinkler system per Section 903.3.1.1 and an approved automatic smoke detection system per Section 907, are permitted to be equipped with an approved entrance and egress access control system. (Sec. 1008.1.4.4).
2. A sensor shall be provided on the egress side of the access-controlled egress doors arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor. Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.
3. Activation of the building fire alarm system, shall automatically unlock the access-controlled egress doors, and the doors shall remain unlocked until the fire alarm system has been reset. Activation of the building automatic sprinkler or fire detection system, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
4. Entrance doors in buildings with an occupancy in Group A, B, shall not be secured from the egress side during periods that the building is open to the general public

DOOR TYPES



KEYNOTES
1 ROUND STAINLESS STEEL PULL 4'-0" TALL

CONSULTANTS

STAMP

LICENSED ARCHITECT
NANCY J. ENGLE
No. 22219
REN. 12/31/13
STATE OF CALIFORNIA

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE 1/4" = 1'-0"

TITLE

DOOR SCHEDULE & WINDOW LEGEND

A-701-TI

5/23/2013 1:00:28 AM

STRUCTURAL NOTES

K. COLD-FORMED STEEL FRAMING:

1. COLD-FORMED STEEL FRAMING SHALL BE FROM A STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) APPROVED SUPPLIER, AND CONFORM TO ICC #ER-4943P.

2. COLD-FORMED STEEL FRAMING SHALL BE GALVANIZED (G60), AND CONFORM TO ASTM A 653 AS FOLLOWS:

STUDS - 43 MILS (18GA) & LIGHTER	GRADE 33
STUDS - 54 MILS (16GA) & HEAVIER	GRADE 50
TRACK - ALL GAUGES	GRADE 33
CLIP ANGLES - ALL GAUGES	GRADE 33

3. COLD-FORMED STEEL FRAMING SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AISI SPECIFICATION FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS. STUD MEMBERS SHALL HAVE PUNCHED WEBS.

4. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.

5. ACCESSORIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, TRACKS, CLIPS, WEB STIFFENERS, ANCHORS, FASTENING DEVICES, RESILIENT CLIPS AND OTHER ACCESSORIES REQUIRED SHALL BE INCLUDED FOR A COMPLETE AND PROPER INSTALLATION, AS RECOMMENDED BY THE MANUFACTURER FOR THE STEEL MEMBERS USED.

6. TOP AND BOTTOM TRACKS SHALL BE 54 MILS (16 GAUGE) WITH 1-1/4 INCH FLANGES, U.O.N.

7. STUDS SHALL BE INSTALLED WITH THEIR BEARING ENDS POSITIONED FLUSH AGAINST THE INSIDE TRACK WEB, U.O.N.

8. FULL HEIGHT DOUBLE STUDS SHALL BE PROVIDED AT THE ENDS OF PARTITIONS, AT ALL WALL OPENINGS, AND AT OTHER LOCATIONS SHOWN ON THE PLANS.

9. SHOTPINS SHOWN FOR CONNECTIONS TO CONCRETE, CMU OR CONCRETE TOPPING SHALL BE HILTI X-U 32 P8, ICC #ESR-2269, OR EQUAL.

MINIMUM SPACING	4 INCHES
MINIMUM EDGE DISTANCE	3 INCHES

10. SHOTPINS SHOWN FOR CONNECTIONS TO UNDER SIDE OF COLD-FORMED STEEL DECK WITH CONCRETE TOPPINGS ABOVE SHALL BE HILTI HILTI X-U 32 P8, ICC #ESR-2269, OR EQUAL.

MINIMUM SPACING	1-1/2 INCHES OC
MINIMUM EDGE DIST. (W-DECK)	1-1/8 INCH
MINIMUM EDGE DIST. (B-DECK)	7/8 INCH

11. SHOTPINS SHOWN FOR CONNECTIONS TO STRUCTURAL STEEL FRAMING OR DECK CLOSURE PLATE SHALL BE HILTI X-U 16 P8, ICC #ESR-2269, OR EQUAL. FASTENER LENGTH SHALL PENETRATE THROUGH THE STRUCTURAL STEEL THICKNESS.

MINIMUM SPACING	1-1/2 INCHES OC
MINIMUM EDGE DISTANCE	1/2 INCH

12. FLOOR AND/OR CEILING JOISTS SHALL HAVE THE SAME ON-CENTER SPACING AS THE WALL STUDS, AND JOISTS SHALL BE ALIGNED DIRECTLY OVER STUDS SO AS TO AVOID BENDING IN THE WALL TOP TRACK.

13. FASTENINGS OF COMPONENTS SHALL BE WITH #10 SELF-DRILLING SCREWS, U.O.N. PER ICC #ER-4943P, OR EQUAL.

MINIMUM SPACING	1-1/2 INCHES OC
MINIMUM EDGE DISTANCE	1/2 INCH

14. SHEATHING SHALL BE ATTACHED TO BOTH FACES OF METAL WALL STUDS THROUGHOUT THEIR LENGTH, U.O.N. PROVIDE LATERAL BRACING WHERE SHEATHING DOES NOT OCCUR.

H. STRUCTURAL STEEL:

1. STRUCTURAL STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 22 OF THE BUILDING CODE, AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".

2. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS..

3. STRUCTURAL STEEL STRENGTHS AND GRADES SHALL BE AS FOLLOWS, U.O.N.

DESCRIPTION	YIELD Fy,ksi	ASTM GRADE
WF AND WT SHAPES, U.O.N.	50 ksi	A992, GR 50
ANGLES, CHANNELS & OTHER SHAPES	36 ksi	A36
HSS SECTIONS	46 ksi	A500, GR B
STRUCTURAL PIPE SECTIONS	35 ksi	A53, GR B
BASE PLATES, CONNECTION PLATES & MISC., U.O.N.	36 ksi	A36
CONNECTION PLATES & BASE PLATES AT FRAMES	50 ksi	A572, GR 50

4. HOLLOW STRUCTURAL STEEL (HSS) MEMBERS SHALL BE SEAL WELDED IN DRY CONDITION IN THE SHOP. PROVIDE WEEP HOLES AT THE LOW END OF ALL HOLLOW MEMBERS IN EXTERIOR CONDITIONS AND SEAL WELD AROUND ALL MATING SURFACES IN EXTERIOR CONDITIONS WHETHER COVERED OR OPEN. CONCEAL WELD SEAM FROM VIEW WHERE PRACTICAL.

5. ANCHOR RODS SHALL CONFORM TO ASTM F 1554, GRADE 36, UNLESS OTHERWISE NOTED. NUTS FOR ANCHOR RODS SHALL CONFORM TO ASTM A 563, GRADE A HEX HEAVY HEX WHERE ANCHOR ROD DIAMETER IS GREATER THAN 1 1/2").

6. MAIN MEMBERS SHALL HAVE HIGH STRENGTH BOLTS CONFORMING TO AISC SPECS FOR ASTM A 325N BOLTS, U.O.N. OTHER BOLTS SHALL CONFORM TO ASTM A 307. NUTS FOR HIGH STRENGTH BOLTS SHALL BE HEAVY HEX GRADE C CONFORMING TO ASTM A 563.

7. EXTERIOR STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. ZINC COATING SHALL CONFORM TO ASTM A 123 (G60, U.O.N.).

8. TIGHTEN ASTM A 325N BOLTS TO "SNUG-TIGHT" CONDITION PER AISC SPECIFICATION FOR STRUCTURAL JOINTS. TEST ASTM A 325SC BOLTS WITH A CALIBRATED WRENCH UNLESS LOAD INDICATOR BOLTS ARE USED.

9. WELDING DONE AFTER GALVANIZING SHALL BE PROTECTED WITH TWO COATS OF "GALVANIZED", "GALVALOY", OR EQUAL.

10. APPLY SPRAYED FIREPROOFING OVER STRUCTURAL STEEL WITH MONOKOTE MK6/CBF OF MK6/ED AS MANUFACTURED BY W.R. GRACE AND COMPANY, PER ICC #ER-4607. HOURLY FIRE RESISTANCE SHALL BE DETERMINED USING TABLE 6-A OF THE CBC AND BUILDING TYPES OF CONSTRUCTION AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

I. STEEL STAIRS:

1. STEEL COMPONENTS SHALL COMPLY WITH THE APPLICABLE NOTES UNDER "STRUCTURAL STEEL."

2. WELDING SHALL COMPLY WITH THE APPLICABLE NOTES UNDER "WELDING."

3. POST-INSTALLED ANCHORS SHALL COMPLY WITH THE APPLICABLE NOTES UNDER "POST-INSTALLED MECHANICAL ANCHORS" OR "POST-INSTALLED ADHESIVE ANCHORS."

4. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.

5. MEMBER SIZES INDICATED ARE THE MINIMUM SIZES THAT SHALL BE USED FOR CONSTRUCTION. MEMBER SIZES USED SHALL BE OF THE SAME NOMINAL SHAPE AND DIMENSION INDICATED.

6. VERTICAL AND HORIZONTAL DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS AND EXISTING CONDITIONS PRIOR TO FABRICATION. THE ARCHITECT SHALL BE NOTIFIED OF ANY FIELD CONDITIONS DISCOVERED BY THE CONTRACT DOCUMENTS PRIOR TO FABRICATION.

7. CONNECTIONS TO THE STRUCTURE SHALL INCLUDE STABILIZING ELEMENTS SUCH AS BRACES, STIFFENER PLATES, ETC., SO AS TO NOT IMPOSE ECCENTRIC LOADING, TWISTING, OR WARPING TO STRUCTURAL MEMBERS. PROVIDE MATERIAL AND INSTALL STABILIZING ELEMENTS. NECESSARY STABILIZING ELEMENTS SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.

J. DRYPACK / NON-SHRINK GROUT:

1. NON-SHRINK GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 6,000 psi IN ACCORDANCE WITH ASTM C 1107.

2. NON-SHRINK GROUT SHALL BE INSTALLED UNDER A COLUMN BASE PLATE AFTER THE COLUMN HAS BEEN PLUMBED AND PRIOR TO PLACING CONCRETE FILL ON THE STRUCTURE.

19. FLYASH SHALL CONFORM TO ASTM C 618, CLASS F. FLYASH SHALL BE LIMITED TO NO MORE THAN THE FOLLOWING PERCENTAGES OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS IN THE CONCRETE, U.O.N.

COLUMNS AND WALLS	20%
FOUNDATIONS	20%
SLABS ON GRADE	20%

14. CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED.

15. WATER MAY BE ADDED ON-SITE TO OBTAIN SPECIFIED SLUMPS PROVIDED THAT IT IS ADDED WITHIN ONE HOUR OF BATCHING AND SITE-ADDED WATER IS SPECIFIED ON THE BATCH REPORT. SITE-ADDED WATER SHALL NOT COMPROMISE THE STRENGTH OR SLUMP OF THE CONCRETE.

16. CONCRETE SHALL NOT BE PLACED BEYOND 1-1/2 HOURS FOLLOWING BATCHING.

17. PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC., SHALL BE FORMED WITH A 3/4" CHAMFER U.O.N.

18. CONSTRUCTION JOINTS IN STRUCTURAL MEMBERS THAT ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. LONGITUDINAL REINFORCEMENT SHALL CONTINUE UNINTERRUPTED THROUGH CONSTRUCTION JOINTS. KEYWAYS SHALL BE PROVIDED PERPENDICULAR TO THE DIRECTION OF LOAD IN CONSTRUCTION JOINTS.

19. WHERE CONCRETE IS PLACED AGAINST EXISTING CONCRETE SURFACES, THE EXISTING CONCRETE SURFACES SHALL BE THOROUGHLY CLEANED AND ROUGHENED TO A MINIMUM AMPLITUDE OF ¼-INCH. A CONCRETE BONDING AGENT SHALL BE APPLIED TO THE EXISTING CONCRETE SURFACE.

20. CONDUIT, PIPES OR DUCTS SHALL NOT BE PLACED IN CONCRETE COLUMNS, WALLS, SLABS OR CONCRETE TOPPING FILLS UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER. SLEEVES FOR OPENINGS IN CONCRETE SHALL BE INSTALLED BEFORE PLACING. REINFORCING WHICH MAY CONFLICT SHALL NOT BE CUT UNLESS APPROVED IN WRITING BY THE ENGINEER.

21. WHERE PERMITTED, CONDUITS AND SLEEVES WITHIN SLABS AND WALLS SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE THICKNESS OF THE SLAB OR WALL. THE MAXIMUM SIZE OF A CONDUIT IS 1/4 OF THE SLAB OR WALL THICKNESS. CONDUITS OR SLEEVES SHALL BE SPACED AT LEAST 3 TIMES THEIR DIAMETER CLEAR BETWEEN.

22. STAY-IN-PLACE FORMS SHALL HAVE MATERIAL STRENGTH AND STIFFNESS PROPERTIES SUFFICIENT FOR THE SUPPORT OF WET CONCRETE DURING CURING.

23. THE CONCRETE SLAB-ON-GRADE AND TOPPING FILL THICKNESS SHOWN IS THE MINIMUM REQUIRED THICKNESS. FLOORS SHALL BE MONITORED BY TRANSIT LEVEL OR LASER DURING PLACEMENT TO MAINTAIN LEVEL FLOOR.

24. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF 7 DAYS AFTER ITS PLACEMENT. APPROVED CURING COMPOUNDS MAY BE USED IN LIEU OF MOIST CURING.

G. REINFORCED CONCRETE MASONRY UNITS (CMU):

1. MASONRY CONSTRUCTION SHALL CONFORM TO CHAPTER 21 OF THE BUILDING CODE AND ACI 530.1.

2. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.

3. CONCRETE MASONRY CONSTRUCTION SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF F'm=1,500 psi EXCEPT WHERE NOTED THAT F'm=3,000 psi IS REQUIRED. BASEMENT RETAINING WALLS SHALL BE F'm=3,000 psi.

4. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90, MEDIUM WEIGHT, SINGLE OPEN-END UNITS, U.O.N.

5. MORTAR SHALL CONFORM TO ASTM C 270, TYPE "S".

6. GROUT SHALL CONFORM TO ASTM C 476. GROUT MIX DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

7. STRENGTH VERIFICATION OF MASONRY PRIOR TO AND DURING CONSTRUCTION SHALL BE: BY THE PRISM TEST METHOD IN ACCORDANCE WITH SECTION 2105.2.2.2 OF THE BUILDING CODE. WHERE THE PRISM TEST METHOD IS USED, MASONRY COMPONENTS SHALL BE OF SUFFICIENT STRENGTH SUCH THAT THE COMPLETED MASONRY WORK MEETS THE SPECIFIED MINIMUM COMPRESSIVE STRENGTH.

8. VERTICAL BARS IN WALLS SHALL BE PLACED IN THE CENTER OF THE WALL UNLESS OTHERWISE INDICATED. VERTICAL BARS SHALL BE TIED OR OTHERWISE FIXED IN POSITION AT THE TOP AND BOTTOM AND AT INTERVALS OF NOT MORE THAN 200 BAR DIAMETERS.

9. HORIZONTAL BARS SHALL BE PLACED IN BOND BEAM UNITS.

10. CONDUITS OR PIPES SHALL NOT OCCUR IN SAME CELL AS REINFORCING BARS.

11. MASONRY UNITS SHALL BE PLACED IN A RUNNING BOND PATTERN, U.O.N.

12. MASONRY CELLS SHALL BE SOLID GROUTED, U.O.N.

13. A GROUT POUR SHALL BE THE TOTAL HEIGHT OF MASONRY THAT IS GROUTED PRIOR TO THE ERECTION OF ADDITIONAL MASONRY. A GROUT POUR SHALL NOT EXCEED THE HEIGHT LIMITS GIVEN IN ACI 530.1, TABLE 7 AND MAY CONSIST OF ONE OR MORE GROUT LIFTS.

14. A GROUT LIFT SHALL BE THE HEIGHT OF GROUT THAT IS PLACED IN A SINGLE, CONTINUOUS OPERATION BEFORE CONSOLIDATION OF GROUT. GROUT LIFTS SHALL NOT EXCEED 5'-0" IN HEIGHT, UNLESS THE FOLLOWING CONDITIONS ARE MET:
   A. MASONRY IS ALLOWED TO CURE FOR A MINIMUM OF 4 HOURS PRIOR TO GROUTING
   B. GROUT SLUMP IS MAINTAINED BETWEEN 10 AND 11 INCHES AS VERIFIED BY TESTING
   C. LIFTS ARE LIMITED TO A HEIGHT BETWEEN HORIZONTAL BOND BEAMS, OR A MAXIMUM OF 12'-8".

15. GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION. WHERE LIFTS EXCEED 12 INCHES, GROUT SHALL BE RE-CONSOLIDATED BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT.

16. INSPECTION AND CLEAN OUT HOLES SHALL BE PROVIDED AT THE BASE OF GROUTED CELLS WHERE A GROUT POUR EXCEEDS 5'-0" IN HEIGHT. HOLE SPACING SHALL NOT EXCEED 32 INCHES ON CENTER.

17. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1-1/2" BELOW TOP OF THE UPPERMOST UNIT.

8. FOOTING ELEVATIONS SHALL BE LOCATED SUCH THAT THEIR BEARING IS A MINIMUM HORIZONTAL DISTANCE OF 7 FT FROM THE DAYLIGHT OF AN ADJACENT SLOPE OR AS RECOMMENDED WITHIN THE GEOTECHNICAL REPORT.

9. ANCHOR BOLTS, DOWELS AND HOLD-DOWN ANCHORS SHALL BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.

10. WALLS RETAINING EARTH SHALL BE DRAINED AND BACKFILLED ACCORDING TO THE RECOMMENDATIONS WITHIN THE GEOTECHNICAL REPORT.

11. BACKFILLING BEHIND RETAINING WALLS SHALL NOT BEGIN UNTIL WALLS HAVE BEEN CURED FOR A MINIMUM OF 14 DAYS.

12. SHORING SHALL BE INSTALLED AT THE TOP OF RESTRAINED RETAINING WALLS PRIOR TO BACKFILLING. SHORING SHALL REMAIN IN PLACE UNTIL THE PERMANENT STRUCTURAL SUPPORTING MEMBERS ARE IN PLACE. FOR CONCRETE SUPPORTING MEMBERS, SHORING TO REMAIN IN PLACE FOR A MINIMUM OF 7 DAYS AFTER CONCRETE PLACEMENT.

13. SLABS ON GRADE THAT RESTRAIN THE BOTTOM OF RETAINING WALLS SHALL BE IN PLACE PRIOR TO BACKFILLING OF THE WALLS.

D. WELDING:

1. WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY (AWS) D1.1. ELECTRODE FILLER MATERIAL SHALL BE A MINIMUM OF E70XX U.O.N

2. WELDING OF COLD-FORMED STEEL DECK AND COLD-FORMED FRAMING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR SHEET STEEL IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY (AWS) D1.3. E60XX ELECTRODES SHALL BE USED FOR WELDING OF COLD-FORMED STEEL DECK AND COLD-FORMED FRAMING.

3. WELDING OF REINFORCING BARS SHALL BE PERFORMED BY WELDERS CERTIFIED FOR REINFORCING BARS IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY (AWS) D1.4. E70XX ELECTRODES SHALL BE USED FOR WELDING OF REINFORCING BAR TO REINFORCING BAR. E70XX ELECTRODES SHALL BE USED FOR WELDING OF REINFORCING BAR TO ROLLED STEEL SHAPES AND PLATES.

4. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.

5. WELDING ELECTRODE FOR THE SHIELDED METAL-ARC WELDING (S.M.A.W.) PROCESS AND WELDING ELECTRODE SHALL CONFORM TO AWS A5.1 "SPECIFICATION FOR CARBON STEEL ELECTRODES FOR SHIELDED METAL ARC WELDING."

6. WELDS SHALL HAVE A HELD CONTROLLED SEQUENCE AND TECHNIQUE IN ORDER TO MINIMIZE SHRINKAGE STRESSES AND DISTORTION.

7. FOR SPECIAL STEEL MOMENT RESISTING FRAME WELDING REQUIREMENTS, SEE SHEET S3.1.

8. FOR SPECIAL STEEL CONCENTRIC BRACED FRAME WELDING REQUIREMENTS, SEE SHEET S3.2.

E. REINFORCING STEEL:

1. DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS SHALL BE PREFORMED IN ACCORDANCE WITH ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."

2. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.

3. REINFORCING BARS SHALL CONFORM TO ASTM A 615, GRADE 60, U.O.N.

4. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185, MINIMUM LAP OF WWF SHALL BE ONE FULL MESH + 2".

5. REINFORCING BAR LAP SPLICES SHALL BE:
   CLASS B, (18" MIN.) FOR CONCRETE, U.O.N.
   65 BAR DIA. (24" MIN.) FOR MASONRY, U.O.N. .

6. DETAILS OF REINFORCEMENT SHALL COMPLY WITH ACI 318, CHAPTER 7.

7. WHERE HOOKS ARE ILLUSTRATED AS 90-DEGREE HOOKS, 180-DEGREE HOOKS MAY BE USED IN LIEU OF 90-DEGREE HOOKS.

8. REINFORCING BARS FOR CONCRETE SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM COVER:

CONC. CAST AGAINST EARTH	3"
FORMED CONC. EXPOSED TO EARTH / WEATHER	
#5 OR SMALLER	1-1/2"
#6 OR LARGER	2"
SLABS (#11 AND SMALLER)	3/4"

9. VERTICAL WALL BARS SHALL BE ACCURATELY POSITIONED AT THE CENTER OF THE WALL, U.O.N., AND SHALL BE TIED IN PLACE AT THE TOP AND BOTTOM.

10. #3 SPACER TIES SHALL BE INSTALLED AT 30" ON CENTER IN BEAMS AND FOOTINGS TO SECURE REINFORCING BARS IN PLACE, U.O.N.

11. REINFORCEMENT SUPPORTS IN SLABS SHALL BE MANUFACTURED OF NONCORROSIVE MATERIAL

F. REINFORCED CONCRETE:

1. CONCRETE CONSTRUCTION SHALL CONFORM WITH CHAPTER 19 OF THE BUILDING CODE AND TO THE PROVISIONS OF ACI 318.

2. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.

3. READY MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C 94.

4. CEMENT SHALL CONFORM TO ASTM C 150 TYPE I OR II, LOW ALKALI.

5. AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C 33.

6. NORMAL WEIGHT CONCRETE SHALL BE 150 pcf.

7. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE ENGINEER. MIX DESIGN METHODS (TEST HISTORY OR TRIAL BATCH METHOD) IN ACCORDANCE WITH ACI 318, SECTION 5.3 SHALL BE USED TO PROPORTION CONCRETE.

8. MINIMUM CONCRETE COMPRESSIVE STRENGTHS AT 28 DAYS, MAXIMUM SLUMPS, AND MAXIMUM WATER/CEMENT RATIOS SHALL BE AS FOLLOWS:

DESCRIPTION	MIN 28 DAY F'c	SLUMP	MAX W/C RATIO
LIGHT WEIGHT FILL ON COLD-FORMED STEEL DECK	4.0 KSI	4" +/- 1"	0.45
OTHER CONCRETE	3.5 KSI	4" +/- 1"	0.50

9. ADMIXTURES SHALL BE APPROVED IN ADVANCE.

10. GROUT OR CONCRETE CONTAINING CHLORIDE ADDITIVES SHALL NOT BE USED IN POST-TENSIONED CONSTRUCTION.

11. SLUMPS INDICATED ARE PRIOR TO PLASTICIZER ADDITIVES.

12. CONCRETE ADMIXTURES CONTAINING CHLORIDE OR CHLORIDE SALTS SHALL NOT BE USED EXCEPT WHERE APPROVED IN WRITING BY THE ENGINEER.

A. BASIS OF DESIGN:

1. THE STRUCTURAL DESIGN HAS BEEN PERFORMED IN ACCORDANCE WITH THE 2010 CALIFORNIA BUILDING CODE (CBC).

2. LIVE LOADS (MAY BE REDUCED IN ACCORDANCE WITH THE BUILDING CODE)

ROOF MECHANICAL AREA	50 psf
ROOF	20 psf
FLOOR (LABORATORY)	110 psf
PARTITION LOADING	15 psf

3. SEISMIC DESIGN DATA

OCCUPANCY CATEGORY	II
SEISMIC IMPORTANCE FACTOR	I_E = 1.0
MAPPED SPECTRAL ACCELERATION	S_S = 1.397
MAPPED SPECTRAL ACCELERATION	S_1 = 0.517
SITE CLASS	C
SITE COEFFICIENT	F_a = 1.0
SITE COEFFICIENT	F_v = 1.3
DESIGN SPECTRAL ACCELERATION	S_{DS} = 0.931
DESIGN SPECTRAL ACCELERATION	S_{D1} = 0.448
SEISMIC DESIGN CATEGORY	D
PARTITION LOADING AT FLOORS	10 psf
PARTITION LOADING AT ROOFS	5 psf
ANALYSIS PROCEDURE USED	MODAL RESPONSE SPECTRUM (SEE NOTE 4)
SEISMIC FORCE RESISTING SYSTEM	SPECIAL STEEL MOMENT RESISTING FRAMES
RESPONSE MODIFICATION	R = 8
SYSTEM OVERSTRENGTH FACTOR	Ω = 3
DEFLECTION AMPLIFICATION FACTOR	C_d = 5.5
REDUNDANCY FACTOR	ρ = 1.0
SEISMIC RESPONSE COEFFICIENT	C_S = 0.087
DESIGN BASE SHEAR	V = 310 k

4. THE MODAL RESPONSE SPECTRUM ANALYSIS IS BASED ON THE DESIGN RESPONSE SPECTRUM IN ASCE 7, FIGURE 11.4.-1

5. WIND DESIGN DATA

BASIC WIND SPEED	V = 85 mph
WIND IMPORTANCE FACTOR	I_W = 1.0
EXPOSURE CATEGORY	
NORTH QUADRANT	C
EAST QUADRANT	C
SOUTH QUADRANT	C
WEST QUADRANT	C
ENCLOSURE CATEGORY	ENCLOSED
GUST & INTERNAL PRESSURE COEFF	GC_{pi} = 0.18
DIRECTIONALITY FACTOR	K_d = 0.85
TOPOGRAPHIC FACTOR	K_1 = 0.00
TOPOGRAPHIC FACTOR	K_2 = 0.00
TOPOGRAPHIC FACTOR	K_3 = 0.00

B. GENERAL:

1. SPECIFIC NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

2. WHERE NO DETAILS ARE SHOWN OR NOTED IN ANY PART OF THE WORK THE DETAILS FOR OTHER SIMILAR WORK SHALL APPLY

3. DETAILS IDENTIFIED AS TYPICAL, SHALL APPLY IN ESTIMATING AND CONSTRUCTION TO EVERY LIKE CONDITION WHETHER OR NOT THE REFERENCE IS REPEATED.

4. THE STRUCTURAL DRAWINGS SHALL NOT BE SCALED. COORDINATE DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

5. COORDINATE ELEVATIONS, SLOPES AND DRAINAGE REQUIREMENTS WITH THE ARCHITECTURAL DRAWINGS.

6. STANDARDS REFERENCED ON THE STRUCTURAL DRAWINGS REFER TO THE EDITION APPLICABLE UNDER THE APPLICABLE BUILDING CODE.

7. THE RESPONSIBILITY FOR THE REVIEW AND COORDINATION OF DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF RELATED CONSTRUCTION SHALL BEAR ON THE CONTRACTOR. DISCREPANCIES THAT EXIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER, PRIOR TO START OF RELATED CONSTRUCTION.

8. WORK PERFORMED IN CONFLICT WITH THE STRUCTURAL DRAWINGS OR APPLICABLE BUILDING CODE REQUIREMENTS SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR.

9. DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS SHALL BE VERIFIED BEFORE STARTING RELATED WORK AND THE ENGINEER NOTIFIED OF DISCREPANCIES IN A TIMELY MANNER.

10. SITE CONDITIONS THAT ARE NOT REFLECTED ON THE STRUCTURAL DRAWINGS OR THAT DEVIATE FROM THE MAXIMUM OR MINIMUM DIMENSIONS INDICATED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER. SUCH CONDITIONS MAY INCLUDE CONFLICT IN GRADES, ADVERSE SOIL CONDITIONS, GROUND WATER PRESENT, DEEPENED FOOTINGS, UNCOVERED AND UNEXPECTED UTILITY LINES, ETC.

11. MATERIALS AND WORKMANSHIP SHALL CONFORM TO REQUIREMENTS OF APPLICABLE REGULATIONS AND THE BUILDING CODE AS AMENDED AND ADOPTED BY THE BUILDING OFFICIAL.

12. LOADS TO THE BUILDING EXCEEDING THE LOADS INDICATED ON THE PLANS, OR ANY LOADS EXCEEDING 400 POUNDS THAT ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE REPORTED TO THE ENGINEER.

C. FOUNDATION:

1. THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT SHALL BE FOLLOWED:

BY:	GEOCON INC.
DATED:	JAN. 14, 2011
PROJECT NO:	61304-52-01
UPDATED BY:	GEOCON INC.
DATED:	NOVEMBER 30, 2012
PROJECT NO:	61304-52-02

2. DEVIATIONS IN GEOTECHNICAL CONDITIONS FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE STRUCTURAL AND GEOTECHNICAL ENGINEERS IN A TIMELY MANNER.

3. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.

4. THE MAXIMUM ALLOWABLE SOIL BEARING PRESSURE SHALL BE 3000 psf. ALLOWABLE BEARING MAY BE INCREASED BY 500 psf AND 300 psf FOR EACH ADDITIONAL FOOT OF FOUNDATION DEPTH AND WIDTH, RESPECTIVELY, TO A MAXIMUM OF 5000 psf. THE RESULTING ALLOWABLE BEARING VALUE MAY BE INCREASED BY 1/3 FOR WIND AND SEISMIC LOAD CASES.

5. FOOTING AND UTILITY TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED IN LAYERS SUBJECT TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. FLOODING WILL NOT BE PERMITTED.

6. LOOSE SOIL AND FILL MATERIAL SHALL BE COMPACTED ACCORDING TO THE REQUIREMENTS OF THE SOILS REPORT.

7. FOOTING DEPTHS INDICATED ON THE STRUCTURAL DRAWINGS ARE FOR BIDDING PURPOSES ONLY AND ARE ASSUMED TO BE IN SUITABLE BEARING MATERIALS. THE GEOTECHNICAL ENGINEER MAY REQUIRE FOUNDATION DEPTHS TO BE INCREASED. THE RESPONSIBILITY FOR CONFORMING TO THE GEOTECHNICAL REPORT RECOMMENDATIONS REGARDING DEPTH OF FOOTINGS SHALL BEAR ON THE CONTRACTOR.

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS NOTED

TITLE

STRUCTURAL NOTES

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STATEMENT OF SPECIAL INSPECTIONS

FOOTNOTES FOR STATEMENT OF SPECIAL INSPECTIONS:

1. AT TIME OF CONCRETE SAMPLING:
   A. FABRICATE SPECIMENS FOR STRENGTH TESTS
   B. PERFORM SLUMP AND AIR CONTENT TESTS
   C. DETERMINE CONCRETE TEMPERATURE
2. AT THE BEGINNING OF MASONRY CONSTRUCTION, VERIFY THE FOLLOWING:
   A. TYPE AND GRADE OF MASONRY UNITS
   B. PROPORTIONS OF SITE-PREPARED MORTAR
   C. CONSTRUCTION OF MORTAR JOINTS
   D. LOCATION OF REINFORCEMENT STEEL, CONNECTIONS AND ANCHORAGES
3. DURING THE COURSE OF MASONRY CONSTRUCTION, VERIFY THE FOLLOWING:
   A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS
   B. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS AND OTHER CONSTRUCTION
   C. SIZE, GRADE AND TYPE OF REINFORCING STEEL
   D. PREPARATION AND CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (BELOW 40° F) OR HOT WEATHER (ABOVE 90° F)
4. PRIOR TO GROUTING, VERIFY THE FOLLOWING:
   A. GROUT SPACE IS CLEAN
   B. PLACEMENT OF REINFORCEMENT, CONNECTORS AND ANCHORAGES
   C. PROPORTIONS OF SITE-PREPARED GROUT
   D. CONSTRUCTION OF MORTAR JOINTS
5. VERIFICATION MAY BE BY VISUAL INSPECTION OR CERTIFICATE OF COMPLIANCE. HIGH-STRENGTH BOLTS, NUTS AND WASHERS MAY BE REQUIRED TO BE SAMPLED, TESTED AND INSPECTED BY THE BUILDING OFFICIAL, PRIOR TO INSTALLATION.
6. HIGH-STRENGTH BOLTS, NUTS AND WASHERS WHICH ARE NOT MELTED AND MANUFACTURED IN THE UNITED STATES SHALL BE SAMPLED AND TESTED AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO INSTALLATION.
7. PERIODIC INSPECTION SHALL BE PERMITTED FOR HIGH-STRENGTH BOLTS IN BEARING TYPE CONNECTIONS. VERIFICATION MAY BE VISUAL INSPECTION THAT THE CONNECTED MATERIALS HAVE BEEN DRAWN TOGETHER AND PROPERLY SNUGGED.
8. PERIODIC INSPECTION SHALL BE PERMITTED FOR HIGH-STRENGTH BOLTS IN SLIP-CRITICAL TYPE CONNECTIONS WHERE BOLT TENSION IS VERIFIED BY ANY OF THE FOLLOWING METHODS:
   A. TURN-OF-NUT METHOD USING MATCH-MARKING TECHNIQUES.
   B. DIRECT TENSION INDICATOR METHOD.
   C. ALTERNATE DESIGN FASTENER (TWIST-OFF BOLT) METHOD.
9. VERIFY THE FOLLOWING RELATING TO THE INSTALLATION OF POST-INSTALLED ANCHORS:
   A. CONCRETE TYPE AND COMPRESSIVE STRENGTH AND THICKNESS.
   B. HOLE DIMENSIONS AND CLEANING PROCEDURES.
   C. ANCHOR TYPE, DIMENSIONS, EMBEDMENT, SPACING, EDGE DISTANCE AND TIGHTENING TORQUE.
   D. ADHESIVE TYPE, EXPIRATION DATE AND STORAGE PROCEDURES.
10. THE SPECIAL INSPECTOR SHALL CONTINUOUSLY INSPECT THE INITIAL INSTALLATION OF EACH TYPE AND SIZE OF ADHESIVE ANCHOR BY EACH INSTALLER. SUBSEQUENT INSTALLATIONS OF THE SAME TYPE AND SIZE OF ANCHOR BY THE SAME INSTALLER MAY BE PERFORMED ON A PERIODIC BASIS.

No.	DESCRIPTION OF TYPE OF INSPECTION REQUIRED, REFERENCE DETAIL	CONTINUOUS	PERIODIC	
	SOIL			
	SOIL MATERIAL BELOW FOUNDATIONS FOR ADEQUACY TO ACHIEVE DESIGN BEARING CAPACITY		×	
	EXCAVATIONS EXTEND TO PROPER DEPTH AND BEARING STRATA		×	
	CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIAL		×	
	SUBGRADE AND SITE PREPARATION PRIOR TO PLACEMENT OF CONTROLLED FILL		×	
	PLACEMENT AND COMPACTION OF CONTROLLED FILL INCLUDING RELATIVE DENSITY	×		
	SOIL EXPANSION TEST RESULTS INCLUDING EXPANSION INDEX, RECOMMENDATIONS FOR FOUNDATION AND FLOOR SLAB DESIGN		×	
	CONCRETE			
	SHAPE, LOCATION AND DIMENSION OF CONCRETE FORMWORK PRIOR TO PLACEMENT OF CONCRETE		×	
	REINFORCING STEEL MATERIAL		×	
	PLACEMENT OF REINFORCING STEEL PRIOR TO CLOSING OF FORMS OR DELIVERY OF CONCRETE		×	
	INSTALLATION OF EMBEDDED BOLTS PRIOR TO AND DURING CONCRETE PLACEMENT	×		
	CONCRETE MIX VERIFICATION AT TIME OF DELIVERY		×	
	SAMPLING OF FRESH CONCRETE (SEE FOOTNOTE 1)	×		
	TESTING OF CONCRETE STRENGTH FOR CONFORMANCE WITH THE CONSTRUCTION DRAWING REQUIREMENTS		×	
	APPLICATION TECHNIQUES OF CONCRETE PLACEMENT	×		
	MAINTENANCE OF REQUIRED CURING TEMPERATURE AND TECHNIQUES		×	
	WELDING OF REINFORCING STEEL			
	WELDING PROCEDURES PRIOR TO THE START OF WORK		×	
	QUALIFICATIONS OF WELDERS PRIOR TO THE START OF WORK		×	
	CERTIFIED MILL TEST REPORTS, IDENTIFYING CHEMICAL MAKE-UP AND CARBON EQUIVALENT, FOR EACH SHIPMENT OF WELDING STEEL MATERIAL TO BE WELDED, STATING ASTM A615		×	
	MATERIAL OF WELD FILLER MATERIAL		×	
	WELDS OF SHEAR REINFORCING STEEL	×		
	WELDS OF OTHER REINFORCING STEEL		×	
	MASONRY (LEVEL 1 SPECIAL INSPECTION)			
	CERTIFICATE OF MATERIALS COMPLIANCE PRIOR TO THE START OF WORK		×	
	PREPARATION OF TEST PRISMS PRIOR TO THE START OF WORK (IF USING PRISM TEST METHOD)	×		
	TESTING OF MASONRY PRISM STRENGTH PRIOR TO THE START OF WORK (IF USING PRISM TEST METHOD)		×	
	MASONRY CONSTRUCTION AT THE START OF WORK (SEE FOOTNOTE 2)		×	
	REINFORCING STEEL MATERIAL		×	
	CERTIFIED MILL TEST REPORTS FOR EACH SHIPMENT OF ASTM A 615 REINFORCING MATERIAL TO BE USED IN SHEAR WALLS (HOOPS AND CROSS-TIES EXEMPTED)		×	
	PLACEMENT OF REINFORCING STEEL PRIOR TO DELIVERY OF GROUT		×	
	MASONRY CONSTRUCTION DURING COURSE OF WORK (SEE FOOTNOTE 3)		×	
	MASONRY CONSTRUCTION PRIOR TO GROUTING (SEE FOOTNOTE 4)		×	
	GROUT PLACEMENT	×		
	GROUT SLUMP DURING GROUT PLACEMENT (IF LIFTS GREATER THAN 5'-0" ARE USED)	×		
	PREPARATION OF GROUT SPECIMENS DURING CONSTRUCTION (IF USING UNIT STRENGTH METHOD)	×		
	PREPARATION OF TEST PRISMS DURING CONSTRUCTION (IF USING PRISM TEST METHOD)	×		
	TESTING OF GROUT STRENGTH DURING CONSTRUCTION (IF USING UNIT STRENGTH METHOD)		×	
	TESTING OF MASONRY PRISM STRENGTH DURING CONSTRUCTION (IF USING PRISM TEST METHOD)		×	
	STRUCTURAL STEEL			
	STRUCTURAL STEEL MATERIAL		×	
	HIGH-STRENGTH BOLTING			
	MATERIAL OF HIGH STRENGTH BOLTS, NUTS AND WASHERS (SEE FOOTNOTES 5 & 6)		×	
	INSTALLATION OF HIGH STRENGTH BOLTS (BEARING TYPE CONNECTIONS)		FOOT NOTE 7	
	WELDING OF STRUCTURAL STEEL			
	WELDING PROCEDURES PRIOR TO THE START OF WORK		×	
	QUALIFICATIONS OF WELDERS PRIOR TO THE START OF WORK		×	
	WELD FILLER MATERIALS		×	
	EXECUTION OF GROOVE WELDS	×		
	EXECUTION OF MULTI PASS FILLET WELDS	×		
	EXECUTION OF SINGLE PASS FILLET WELDS LARGER THAN 5/16 INCH	×		
	EXECUTION OF PLUG AND SLOT WELDS	×		
	EXECUTION OF SINGLE PASS FILLET WELDS, 5/16 INCH OR SMALLER		×	
	INSTALLATION OF WELDED STUDS AT LOCATIONS OTHER THAN COLD-FORMED STEEL DECKS	×		
	WELDING OF STAIRS AND RAILING SYSTEMS		×	
	COLD-FORMED STEEL FRAMING			
	COLD-FORMED STEEL FRAMING MATERIAL		×	
	WELDING PROCEDURES PRIOR TO THE START OF WORK		×	
	QUALIFICATIONS OF WELDERS PRIOR TO THE START OF WORK		×	
	WELDING OF COLD-FORMED STEEL FRAMING		×	
	SCREW ATTACHMENT, BOLTING, ANCHORING AND OTHER FASTENERS WITHIN THE SEISMIC-FORCE RESISTING SYSTEM INCLUDING SHEAR WALLS, BRACES, DIAPHRAGMS, DRAG-STRUTS AND HOLD-DOWNS		×	
	POST-INSTALLED ANCHORS			
	INSTALLATION OF MECHANICAL ANCHORS (SEE FOOTNOTE 11)	×		
	INSTALLATION OF SCREW ANCHORS (SEE FOOTNOTE 11)	×		
	JOBSITE STORAGE OF ADHESIVE PRIOR TO INSTALLATION FOR CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS		×	
	INITIAL INSTALLATION OF ADHESIVE ANCHORS (SEE FOOTNOTE 12)	FOOT NOTE 10		
	SUBSEQUENT INSTALLATION OF ADHESIVE ANCHORS (SEE FOOTNOTE 12)		FOOT NOTE 10	
	OTHER			
	SPRAYED FIRE-RESISTANT MATERIALS IN ACCORDANCE WITH SECTION 1704.12 OF THE BUILDING CODE		×	

SPECIAL INSPECTION PROGRAM

A. GENERAL:

1. THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL ACTING AS THE OWNER'S AGENT SHALL EMPLOY A SPECIAL INSPECTION AGENCY TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS.
2. SPECIAL INSPECTION SHALL BE PERFORMED IN ADDITION TO INSPECTION BY THE BUILDING OFFICIAL AS REQUIRED IN SECTION 110 OF THE BUILDING CODE. SPECIAL INSPECTION SHALL NOT BE A SUBSTITUTE FOR INSPECTION BY THE BUILDING OFFICIAL.
3. WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE OBSERVED IN ACCORDANCE WITH THE STATEMENT OF SPECIAL INSPECTIONS AND SECTION 1704 OF THE BUILDING CODE, IT SHALL BE THE SPECIAL INSPECTION AGENCY'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT THE REQUIRED WORK IS INSPECTED.
4. THE SPECIAL INSPECTION AGENCY SHALL BE APPROVED BY THE BUILDING OFFICIAL FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
   EXCEPTIONS:
   A. SOILS INSPECTIONS SHALL BE PERFORMED BY THE GEOTECHNICAL ENGINEER OF RECORD IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC183 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
   B. SMOKE CONTROL SYSTEM INSPECTIONS SHALL BE PERFORMED BY THE MECHANICAL ENGINEER OF RECORD.
   C. WHEN THIS REQUIREMENT IS WAIVED BY THE BUILDING OFFICIAL.
5. THE CONSTRUCTION MATERIALS TESTING LABORATORY SHALL BE APPROVED BY THE BUILDING OFFICIAL FOR THE TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND EQUIPMENT.
6. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE MAIN WIND- OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM, OR WIND- OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A STATEMENT OF RESPONSIBILITY TO THE OWNER AND BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SPECIAL INSPECTION AGENCY AT LEAST ONE WORKING DAY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION.
8. WORK REQUIRING SPECIAL INSPECTION THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL IS SUBJECT TO REMOVAL OR EXPOSURE AT THE CONTRACTOR'S EXPENSE.

B. REQUIRED REPORTS:

1. A SOILS INSPECTION REPORT, SIGNED, STAMPED AND DATED BY THE GEOTECHNICAL ENGINEER OF RECORD, SHALL BE SUBMITTED TO AND APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE CONTRACTOR REQUESTING A BUILDING DEPARTMENT FOUNDATION INSPECTION OR THE PLACEMENT OF FOUNDATION CONCRETE. THE REPORT SHALL STATE THAT:
   A. THE FOUNDATION EXCAVATIONS COMPLY WITH THE INTENT OF THE SOILS REPORT.
2. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
3. SPECIAL INSPECTION REPORTS SHALL INDICATE WHETHER THE WORK INSPECTED WAS, OR WAS NOT PERFORMED IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
4. THE TESTING LABORATORY SHALL FURNISH REPORTS OF MATERIAL TESTS TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
5. LABORATORY TESTING REPORTS SHALL INDICATE THAT THE TESTED MATERIALS CONFORM TO THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
6. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
7. IF DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO COMPLETION OF THAT PHASE OF WORK.
8. A FINAL REPORT DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS, MATERIAL TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.
9. A PROPERTY OWNER'S FINAL REPORT FORM FOR WORK REQUIRED TO HAVE SPECIAL INSPECTIONS, MATERIAL TESTING AND STRUCTURAL OBSERVATIONS MUST BE COMPLETED BY THE PROPERTY OWNER, PROPERTY OWNER'S AGENT OF RECORD, ARCHITECT OF RECORD, OR ENGINEER OF RECORD AND SUBMITTED TO THE BUILDING OFFICIAL.

C. CONTINUOUS AND PERIODIC INSPECTIONS:

1. WHERE CONTINUOUS SPECIAL INSPECTION IS REQUIRED, THE SPECIAL INSPECTOR SHALL CONTINUOUSLY PROVIDE FULL-TIME VERIFICATION OF THE WORK.
2. WHERE PERIODIC SPECIAL INSPECTION IS REQUIRED, THE SPECIAL INSPECTOR NEED NOT BE CONTINUOUSLY PRESENT DURING THE WORK WHERE PERIODIC INSPECTION IS INDICATED. AS A MINIMUM, PERIODIC SPECIAL INSPECTION SHALL OCCUR DAILY.

D. OFF-SITE FABRICATION:

1. SPECIAL INSPECTION IS REQUIRED FOR THE OFF-SITE FABRICATION OF STRUCTURAL LOAD-BEARING MEMBERS, REINFORCING AND ASSEMBLIES, UNLESS THE FABRICATION IS PERFORMED BY AN APPROVED FABRICATOR.
2. AN APPLICATION FOR OFF-SITE FABRICATION MUST BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO COMMENCING ANY FABRICATION WORK REQUIRING SPECIAL INSPECTION.
3. A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION MUST BE COMPLETED BY THE SPECIAL INSPECTOR AND SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS.
4. SPECIAL INSPECTION SHALL INCLUDE VERIFICATION THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO THE APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.
5. SPECIAL INSPECTION SHALL INCLUDE REVIEW OF THE PROCEDURES FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE REQUIREMENTS OF THE BUILDING CODE.

STRUCTURAL NOTES CONTINUED

N. POST-INSTALLED SCREW ANCHORS:

1. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
2. SCREW ANCHORS FOR INSTALLATION IN SOLID NORMAL-WEIGHT OR LIGHT-WEIGHT CONCRETE SHALL BE [POWERS FASTENERS WEDGE-BOLT+ (ICC #ESR-2526)] [SIMPSON TITEN HD (ICC #ESR-2713)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC193 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
3. SCREW ANCHORS FOR INSTALLATION IN NORMAL-WEIGHT OR LIGHT-WEIGHT CONCRETE FILL OVER COLD-FORMED STEEL DECK SHALL BE [POWERS FASTENERS WEDGE-BOLT+ (ICC #ESR-2526)] [SIMPSON TITEN HD (ICC #ESR-2713)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC193 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
4. SCREW ANCHORS FOR OVERHEAD INSTALLATION THRU GOLD-FORMED STEEL DECK, INTO NORMAL-WEIGHT OR LIGHT-WEIGHT CONCRETE FILL SHALL BE [POWERS FASTENERS WEDGE-BOLT+ (ICC #ESR-2526)] [SIMPSON TITEN HD (ICC #ESR-2713)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC193 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
5. SCREW ANCHORS FOR INSTALLATION IN CONCRETE MASONRY SHALL BE [POWERS FASTENERS WEDGE-BOLT+ (ICC #ESR-1678)] [SIMPSON TITEN HD (ICC #ESR-1056)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC106 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
6. ANCHORS SHALL BE OF THE TYPE, DIAMETER, AND MINIMUM DIMENSIONAL REQUIREMENTS (EMBEDMENT, SPACING AND EDGE DISTANCE) AS INDICATED ON THE DRAWINGS.
7. ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH DRILLING EQUIPMENT OF THE TYPE REQUIRED IN THE MANUFACTURER'S PUBLISHED ICC REPORT. HOLES SHALL BE CLEANED IN CONFORMANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.
8. WHEN INSTALLING ANCHORS IN EXISTING REINFORCED CONCRETE OR MASONRY, AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS.
9. WHEN INSTALLING ANCHORS INTO PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. AVOID CUTTING OR DAMAGING THE TENDONS.

O. POST-INSTALLED ADHESIVE ANCHORS:

1. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
2. ADHESIVE ANCHOR INSTALLERS SHALL BE TRAINED BY A QUALIFIED REPRESENTATIVE OF THE ADHESIVE MANUFACTURER ON THE PROPER PROCEDURES AND TECHNIQUES FOR INSTALLATION.
3. ADHESIVE SHALL BE STORED ON THE JOBSITE IN A COOL, DRY LOCATION IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.
4. ADHESIVE ANCHORS FOR INSTALLATION IN SOLID NORMAL-WEIGHT CONCRETE SHALL BE [HILTI HIT RE500-SD (ICC #ESR-2322)] [SIMPSON SET-XP (ICC #ESR-2508)] [POWERS FASTENERS PE1000+ (ICC #ESR-2583)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC308 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
5. ADHESIVE ANCHORS FOR INSTALLATION IN NORMAL-WEIGHT CONCRETE FILL OVER COLD-FORMED STEEL DECK SHALL BE [HILTI HIT RE500-SD (ICC #ESR-2322)] [SIMPSON SET-XP (ICC #ESR-2508)] [POWERS FASTENERS PE1000+ (ICC #ESR-2583)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC308 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
6. ADHESIVE ANCHORS SHALL NOT BE USED FOR OVERHEAD INSTALLATION THRU GOLD-FORMED STEEL DECK, INTO CONCRETE FILL.
7. ADHESIVE ANCHORS FOR INSTALLATION IN CONCRETE MASONRY SHALL BE [HILTI HIT HY150 MAX (ICC #ESR-1967)] [SIMPSON SET (ICC #ESR-1772)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC58 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
8. ANCHORS SHALL BE OF THE TYPE, DIAMETER, AND MINIMUM DIMENSIONAL REQUIREMENTS (EMBEDMENT, SPACING AND EDGE DISTANCE) AS INDICATED ON THE DRAWINGS.
9. ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH DRILLING EQUIPMENT OF THE TYPE REQUIRED IN THE MANUFACTURER'S PUBLISHED ICC REPORT. HOLES SHALL BE CLEANED IN CONFORMANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.
10. WHEN INSTALLING ANCHORS IN EXISTING REINFORCED CONCRETE OR MASONRY, AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS.
11. WHEN INSTALLING ANCHORS INTO PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. AVOID CUTTING OR DAMAGING THE TENDONS.

L. SHEAR CONNECTORS (WELDED STUDS):

1. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
2. SHEAR CONNECTORS SHALL COMPLY WITH ICC #ESR-2856, NELSON SHEAR CONNECTOR STUDS, OR EQUAL. SHEAR CONNECTORS SHALL BE MADE FROM COLD ROLLED STEEL CONFORMING TO ASTM A 108, GRADES 1015-1020 WITH A MINIMUM TENSILE STRENGTH 60,000 psi. STUD WELDING INSPECTING AND TESTING SHALL CONFORM TO AWS D1.1.
3. WHERE USED WITH 3" DEEP GOLD-FORMED STEEL DECK, SHEAR CONNECTORS SHALL NOT BE LESS THAN 4-1/2" INCHES IN LENGTH IN PLACE, U.O.N.
4. SHEAR STUDS SHALL HAVE NOT LESS THAN 3/4 INCH OF CONCRETE COVER.
5. USE SHORTER SHEAR STUDS WHERE CONCRETE SURFACE IS REDUCED IN THICKNESS DUE TO FLOOR DEPRESSIONS. STUD LENGTH SHALL BE EQUAL TO THE STRUCTURAL FLOOR THICKNESS, MINUS 3/4" FOR COVER.
6. STUDS SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. THE STUD SHALL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8" DIAMETER AND UNDER, AND 3/16" FOR OVER 5/8" DIAMETER. WELDING SHALL BE DONE ONLY BY QUALIFIED WELDERS APPROVED BY THE WELDING INSPECTOR.
7. NUMBER OF 3/4" DIA. HEADED STUD SHEAR CONNECTORS ARE SHOWN ON FRAMING PLANS. SPACE SHEAR CONNECTORS EQUALLY ALONG LENGTH OF BEAM. IF DECK FLUTES PREVENT EQUAL SPACING, STUDS SHALL BE SPACED CLOSER NEAR ENDS OF BEAMS OR STUDS MAY BE SPACED TWO PER FLUTE NEAR ENDS IF TOTAL NUMBER EXCEEDS NUMBER OF FLUTES. A SINGLE NUMBER INDICATES UNIFORM SPACING FROM END TO END, MULTIPLE NUMBERS INDICATE NUMBER OF STUDS TO BE SPACED UNIFORMLY BETWEEN BEAM REACTION POINTS AND/OR ENDS OF BEAM. MINIMUM SPACING IN A SINGLE ROW SHALL BE 6x STUD DIAMETER.
8. INSTALL STUDS IN SINGLE ROW DIRECTLY OVER BEAM WEBS. WHERE OBSTRUCTIONS PREVENT PLACEMENT DIRECTLY OVER WEB PLACE STUDS CLOSE TO WEB AS POSSIBLE.
9. WHERE SHEAR STUDS AND DECK WELDING LOCATION COINCIDE, THE SHEAR STUD WELDED THROUGH THE DECK MAY REPLACE THE DECK WELDING.
10. WHEN WELDING THROUGH TWO THICKNESSES OF GOLD-FORMED STEEL DECK OR WHERE A LAP JOINT IS REQUIRED, BURN A 3/4" DIAMETER HOLE THROUGH THE DECK TO ALLOW PROPER SEATING OF STUD ON BEAM.
11. WHEN DECK IS PARALLEL TO DIRECTION OF BEAM SPAN, DECK POSITION SHALL BE SUCH THAT A VALLEY OCCURS OVER BEAM CENTERLINE OR DECK MUST BE SEPARATED AT BEAM CENTERLINE TO PERMIT SHEAR STUD ATTACHMENT DIRECTLY TO BEAM FLANGE.

M. POST-INSTALLED MECHANICAL ANCHORS:

1. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704, 1707 AND 1708 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
2. MECHANICAL ANCHORS FOR INSTALLATION IN SOLID NORMAL-WEIGHT OR LIGHT-WEIGHT CONCRETE SHALL BE [HILTI KB-TZ (ICC #ESR-1917)] [SIMPSON STRONG-BOLT (ICC #ESR-1771)] [POWERS FASTENERS POWER-STUD+ SD2 (ICC #ESR-2502)]. WHERE INDICATED, ANCHORS SHALL BE [HILTI HSL-3 (ICC #ESR-1545)] [HILTI HDA (ICC #ESR-1546)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC193 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
3. MECHANICAL ANCHORS FOR INSTALLATION IN NORMAL-WEIGHT OR LIGHT-WEIGHT CONCRETE FILL OVER GOLD-FORMED STEEL DECK SHALL BE [HILTI KB-TZ (ICC #ESR-1917)] [SIMPSON STRONG-BOLT (ICC #ESR-1771)] [POWERS FASTENERS POWER-STUD+ SD2 (ICC #ESR-2502)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC193 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
4. MECHANICAL ANCHORS FOR OVERHEAD INSTALLATION THRU GOLD-FORMED STEEL DECK, INTO NORMAL-WEIGHT OR LIGHT-WEIGHT CONCRETE FILL SHALL BE [HILTI KB-TZ (ICC #ESR-1917)] [SIMPSON STRONG-BOLT (ICC #ESR-1771)] [POWERS FASTENERS POWER-STUD+ SD2 (ICC #ESR-2502)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC193 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
5. MECHANICAL ANCHORS FOR INSTALLATION IN CONCRETE MASONRY SHALL BE [HILTI KB3 (ICC #ESR-1385)] [SIMPSON WEDGE-ALL (ICC #ESR-1396)]. ALTERNATE PRODUCTS SHALL CARRY AN ICC APPROVAL THAT IS BASED ON TESTING IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA AC01 AND SHALL BE APPROVED BY THE ENGINEER IN WRITING PRIOR TO DELIVERY TO THE JOBSITE.
6. ANCHORS SHALL BE OF THE TYPE, DIAMETER, AND MINIMUM DIMENSIONAL REQUIREMENTS (EMBEDMENT, SPACING AND EDGE DISTANCE) AS INDICATED ON THE DRAWINGS.
7. ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH DRILLING EQUIPMENT OF THE TYPE REQUIRED IN THE MANUFACTURER'S PUBLISHED ICC REPORT. HOLES SHALL BE CLEANED IN CONFORMANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.
8. WHEN INSTALLING ANCHORS IN EXISTING REINFORCED CONCRETE OR MASONRY, AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS.
9. WHEN INSTALLING ANCHORS INTO PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. AVOID CUTTING OR DAMAGING THE TENDONS.

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS NOTED

TITLE

STRUCTURAL NOTES AND SPECIAL INSPECTION PROGRAM

S-002-TI

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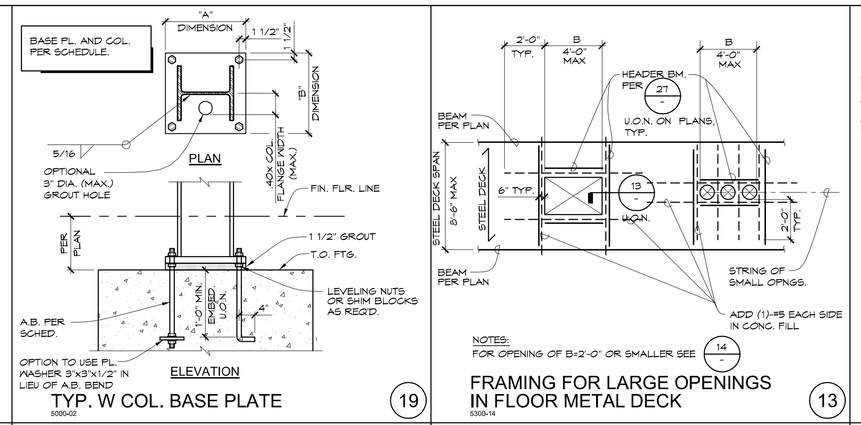


TYP. W COL. BASE PLATE

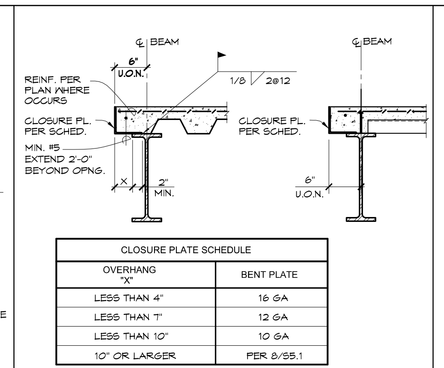
5000-02

19

FRAMING FOR LARGE OPENINGS IN FLOOR METAL DECK

5300-14

13



CLOSURE PLATE SCHEDULE	
OVERHANG "X"	BENT PLATE
LESS THAN 4"	16 GA
LESS THAN 7"	12 GA
LESS THAN 10"	10 GA
10" OR LARGER	PER 8/S5.1

TYP. EDGE AT INTERIOR FLOOR OPENINGS

5300-05

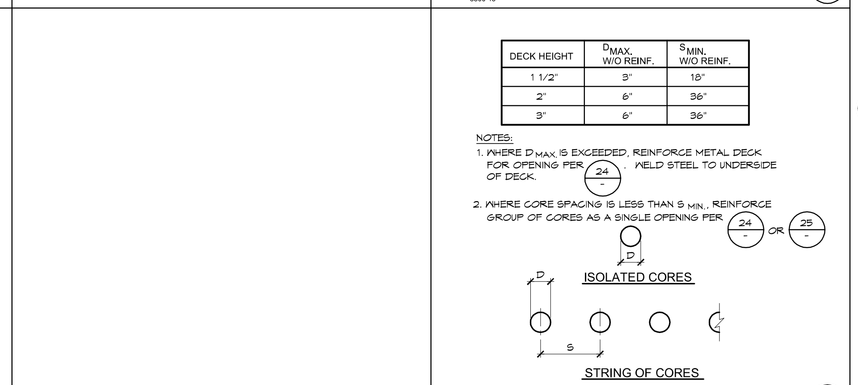
7

BEAM SIZE	SHEAR PLATE THICK.	SHEAR PLATE WELD 'F'	# OF 1"Ø A325N BOLTS	# OF ROWS
W8, W10	3/8	5/16	2	1
W12, W14	3/8	5/16	3	1
W16	3/8	5/16	4	1
W18	3/8	5/16	5	1
W21	1/2	5/16	5	1
W24	1/2	5/16	6	1
W27	1/2	5/16	7	1
W30	1/2	5/16	8	1
W33,W36	1/2	5/16	9	1

TYP. SHEAR PLATE CONN. SCHEDULE

5050-01

1



TYP. HSS COL. BASE PLATE

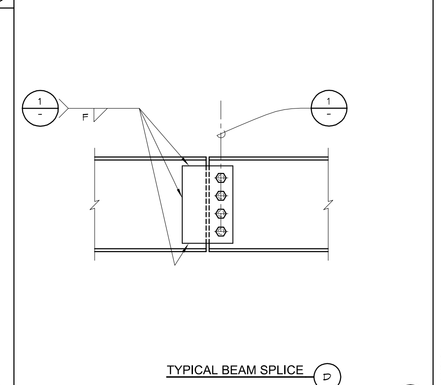
5300-03

20

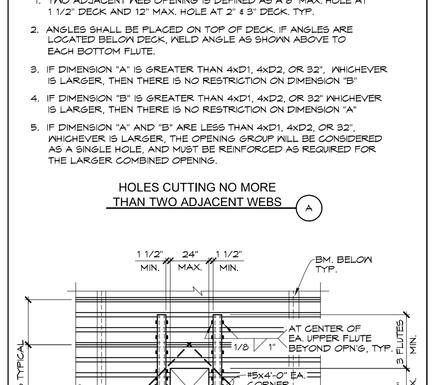
TYP. REINF. FOR SMALL OPENINGS IN ROOF DECK

5300-04

14



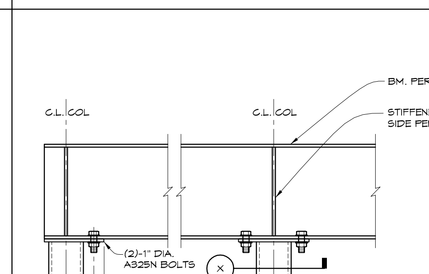
TYP. BEAM TO BEAM CONT. A



TYP. FULL HEIGHT SHEAR PLATE OR STIFFENER PLATE

5000-01

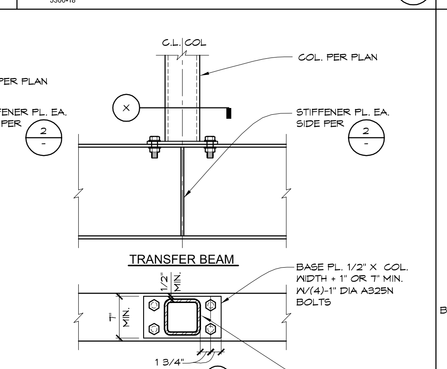
2



TYP. HSS COL. CAP PLATE

5000-10

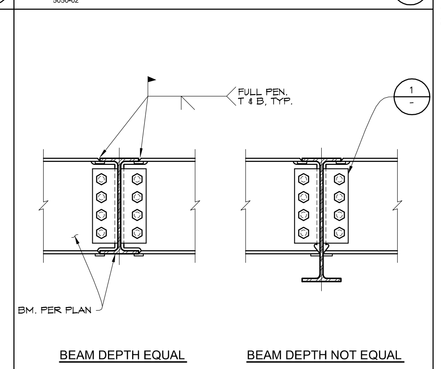
21



TYP. FRAMING FOR LARGE OPENINGS IN ROOF DECK

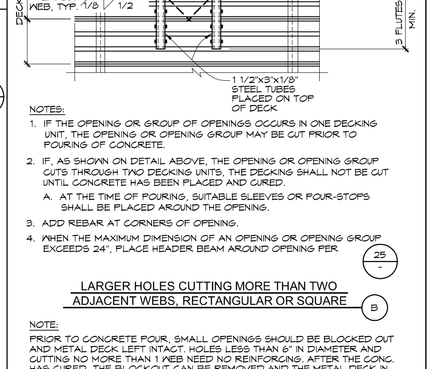
5300-02

15



TYP. BEAM TO BEAM CONN. AT FRAME AND PERIMETER

B



BRACE SCHEDULE		
L SIZE	MAX. SPAN	WELD
L3x3x1/4	7'-0"	3/16"
L4x4x5/16	10'-0"	1/4"
L5x5x3/8	13'-0"	5/16"

TYP. COMPRESSION FLANGE BRACE

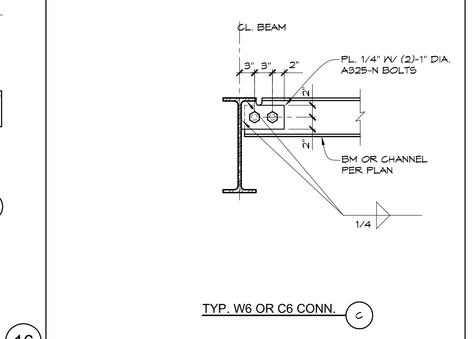
5000-06

3

TYP. CHANNEL TO BM. CONN.

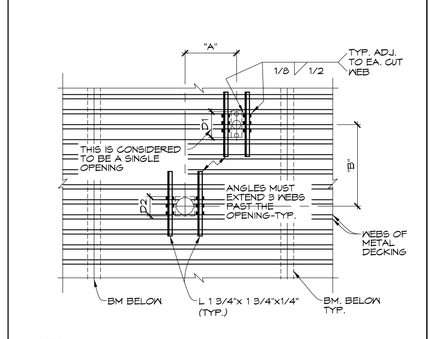
5300-19

16



TYP. W6 OR C6 CONN.

C



NOTES:
1. TWO ADJACENT WEB OPENING IS DEFINED AS A 6" MAX. HOLE AT 1 1/2" DECK AND 12" MAX. HOLE AT 2" & 3" DECK. TYP.
2. ANGLES SHALL BE PLACED ON TOP OF DECK. IF ANGLES ARE LOCATED BELOW DECK, WELD ANGLE AS SHOWN ABOVE TO EACH BOTTOM FLUTE.
3. IF DIMENSION "A" IS GREATER THAN 4xD1, 4xD2, OR 32", WHICHEVER IS LARGER, THEN THERE IS NO RESTRICTION ON DIMENSION "B"
4. IF DIMENSION "B" IS GREATER THAN 4xD1, 4xD2, OR 32" WHICHEVER IS LARGER, THEN THERE IS NO RESTRICTION ON DIMENSION "A"
5. IF DIMENSION "A" AND "B" ARE LESS THAN 4xD1, 4xD2, OR 32", WHICHEVER IS LARGER, THE OPENING GROUP WILL BE CONSIDERED AS A SINGLE HOLE AND MUST BE REINFORCED AS REQUIRED FOR THE LARGER COMBINED OPENING.

HOLES CUTTING NO MORE THAN TWO ADJACENT WEBS A

NOTES:
1. IF THE OPENING OR GROUP OF OPENINGS OCCURS IN ONE DECKING UNIT, THE OPENING OR OPENING GROUP MAY BE CUT PRIOR TO POURING OF CONCRETE.
2. IF, AS SHOWN ON DETAIL ABOVE, THE OPENING OR OPENING GROUP CUTS THROUGH TWO DECKING UNITS, THE DECKING SHALL NOT BE CUT UNTIL CONCRETE HAS BEEN PLACED AND CURED.
   A. AT THE TIME OF POURING, SUITABLE SLEEVES OR POUR-STOPS SHALL BE PLACED AROUND THE OPENING.
3. ADD REBAR AT CORNERS OF OPENING.
4. WHEN THE MAXIMUM DIMENSION OF AN OPENING OR OPENING GROUP EXCEEDS 24", PLACE HEADER BEAM AROUND OPENING PER 25

LARGER HOLES CUTTING MORE THAN TWO ADJACENT WEBS, RECTANGULAR OR SQUARE B

NOTE:
PRIOR TO CONCRETE POUR, SMALL OPENINGS SHOULD BE BLOCKED OUT AND METAL DECK LEFT INTACT. HOLES LESS THAN 6" IN DIAMETER AND CUTTING NO MORE THAN 1 WEB NEED NO REINFORCING. AFTER THE SLAB HAS CURED, THE BLOCKOUT CAN BE REMOVED AND THE METAL DECK IN THE AREA OF THE HOLE REMOVED.

TYP. OPENING IN FLOOR METAL DECK

5300-17

6

DECK HEIGHT	$D_{MAX.}$ W/O REINF.	$S_{MIN.}$ W/O REINF.
1 1/2"	3"	18"
2"	6"	36"
3"	6"	36"

NOTES:
1. WHERE $D_{MAX.}$ IS EXCEEDED, REINFORCE METAL DECK FOR OPENING PER 24, WELD STEEL TO UNDERSIDE OF DECK.
2. WHERE CORE SPACING IS LESS THAN $S_{MIN.}$, REINFORCE GROUP OF CORES AS A SINGLE OPENING PER 24 OR 25

TYP. CORED OPNGS. IN FLOOR DECK

5300-18

17

TYPICAL BEAM SPLICE D

TYP. STEEL BEAM TO BEAM CONN.

5050-02

11

TYP. CONT. BM AT HSS OR PIPE COL.

5050-08

18

BEAM DEPTH EQUAL BEAM DEPTH NOT EQUAL

TYP. BEAM TO BEAM MOMENT CONN.

5050-03

12

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS NOTED

TITLE

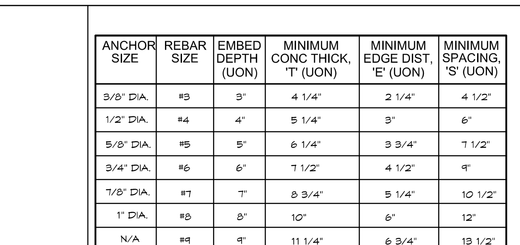
TYPICAL DETAILS

S-004-TI

10/24/2012 2:15:16 PM

\PROJECTS\2012\12138.10-4787 NCD Genomatic T10 Dwg\12138.10_S-004-TI.dwg, 5/20/2013 10:39:49 AM, Jack, 1:1

ANCHOR SIZE	REBAR SIZE	EMBED DEPTH (UON)	MINIMUM CONC THICK, 'T' (UON)	MINIMUM EDGE DIST, 'E' (UON)	MINIMUM SPACING, 'S' (UON)
3/8" DIA.	#3	3"	4 1/4"	2 1/4"	4 1/2"
1/2" DIA.	#4	4"	5 1/4"	3"	6"
5/8" DIA.	#5	5"	6 1/4"	3 3/4"	7 1/2"
3/4" DIA.	#6	6"	7 1/2"	4 1/2"	9"
7/8" DIA.	#7	7"	8 3/4"	5 1/4"	10 1/2"
1" DIA.	#8	8"	10"	6"	12"
N/A	#9	9"	11 1/4"	6 3/4"	13 1/2"
1 1/4" DIA.	#10	10"	12 1/2"	7 1/2"	15"



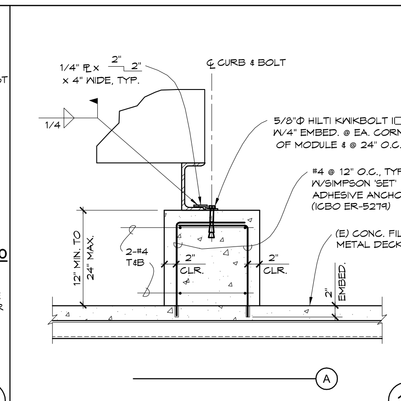
CONCRETE EDGE PERPENDICULAR TO DIRECTION OF LOAD

CONCRETE EDGE PARALLEL TO DIRECTION OF LOAD

NOTES:
1. SPECIAL INSPECTION IS REQ'D FOR INSTALLATION OF ANCHORS, U.O.N.
2. ADHESIVE SHALL BE HILTI HIT-RE-500-SD (ICC ESR-2322)
3. THREADED ROD ANCHORS SHALL BE ISO 898-1 CLASS 5.8, ASTM A193 B7 OR ASTM F593, CW STAINLESS
4. REINF. STEEL ANCHORS SHALL BE ASTM A615 OR ASTM A706 GRADE 60
5. HOLES SHALL BE DRILLED INTO DRY CONCRETE WITH A HAMMER DRILL AND CARBIDE BIT
6. CONCRETE SHALL BE NORMAL WEIGHT, f'c SHALL BE 3000 PSI, MIN.
7. UNLESS OTHERWISE NOTED, THE ANCHOR (OR ANCHOR GROUP) SHALL BE NO CLOSER TO THE CONCRETE EDGE ON THREE SIDES THAN THE LARGER OF:
   A) 12 ANCHOR DIAMETERS, OR
   B) 1.5 TIMES THE ACTUAL DISTANCE TO THE CLOSEST EDGE
8. ANCHORS SHALL BE INSTALLED IN 'TEMPERATURE RANGE 'A', AS DEFINED BY THE ICC APPROVAL:
   MAX. SHORT-TERM TEMP = 110°F;
   MAX LONG TERM TEMP = 80°F

ADHESIVE ANCHOR SCHEDULE
1205A0

19



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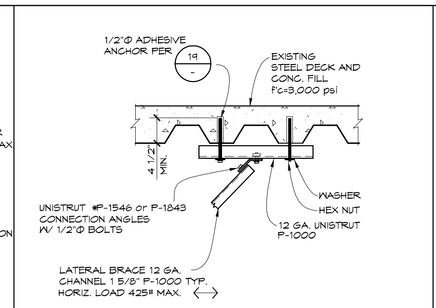
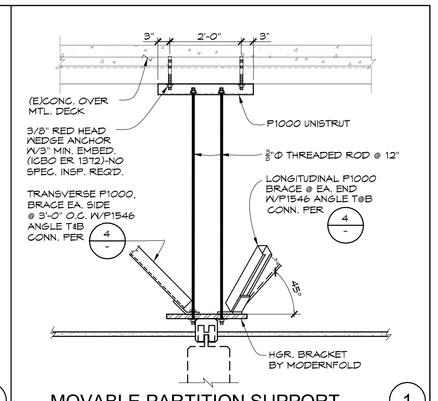


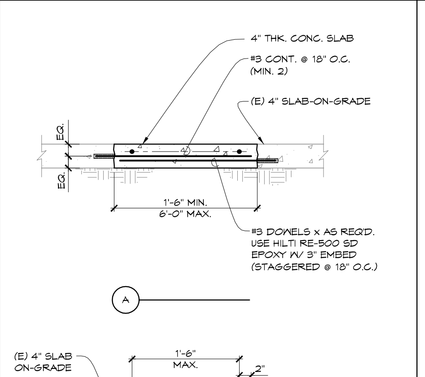
TYP. LATERAL BRACING SUPPORT AT STEEL DECK W/ CONC. FILL

7



MOVABLE PARTITION SUPPORT

1



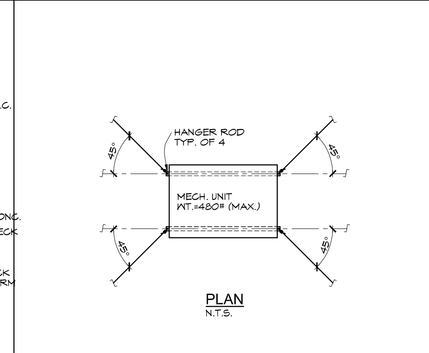
TYP. CONC. SLAB-ON-GRADE PATCH

2100-13UC

20

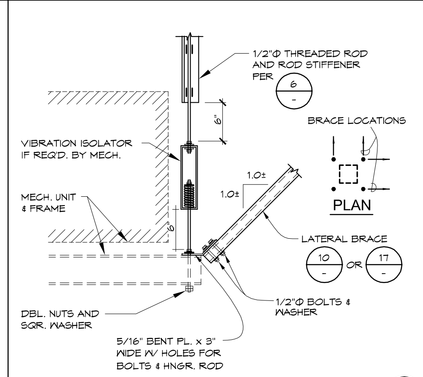
NOT USED

14



CHANNEL STIFFENER

8



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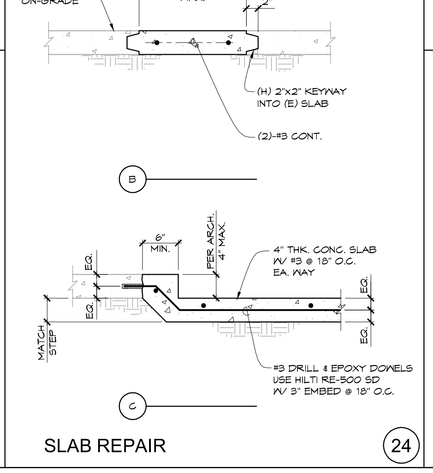
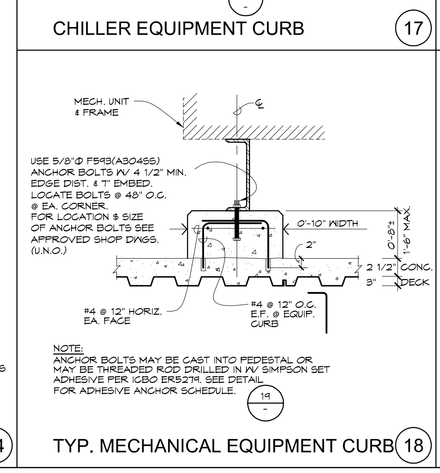


EQUIPMENT PAD AND ANCHORAGE

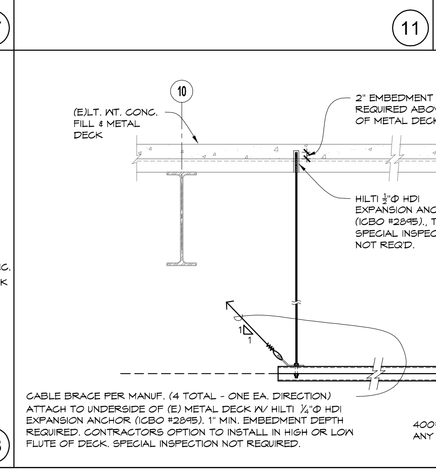
2280-01UC

21



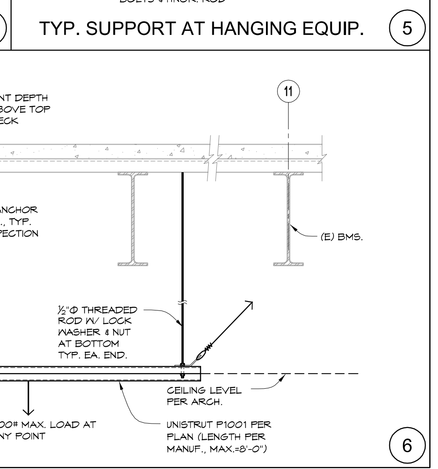
TYPICAL SUSPENDED MECH. UNIT

15



TYP. MECH. DUCT/PIPE SUPPORT

9



MOVABLE PARTITION SUPPORT

3

EQUIPMENT PAD AND ANCHORAGE

22

TYP. EQUIP. PAD AT CONC. FILL ON METAL DECK

16

TYPICAL SUSPENDED DUCT

10

4

SLAB REPAIR

24

CHILLER EQUIPMENT CURB

17

11

TYP. SUPPORT AT HANGING EQUIP.

5

TYP. MECHANICAL EQUIPMENT CURB

18

6

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS NOTED

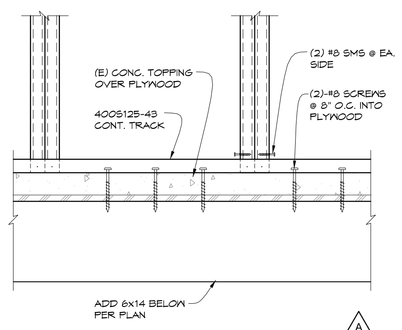
TITLE

TYPICAL DETAILS

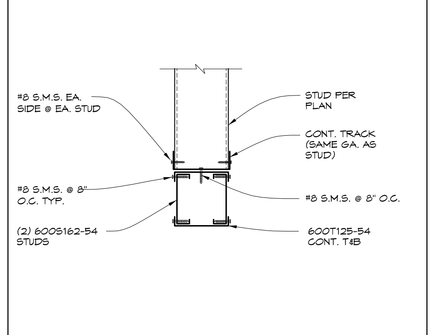
S-005-TI

10/24/2012 2:15:16 PM

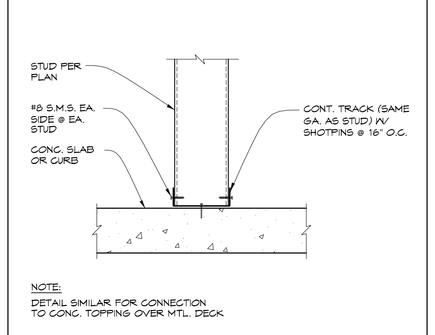
(PROJECTS)2012/12138.10-4737 NCD Genentech T10 Dwg\12138.10_S-005-TI.dwg, 5/25/2013 10:39:57 AM, Jack, 1:1



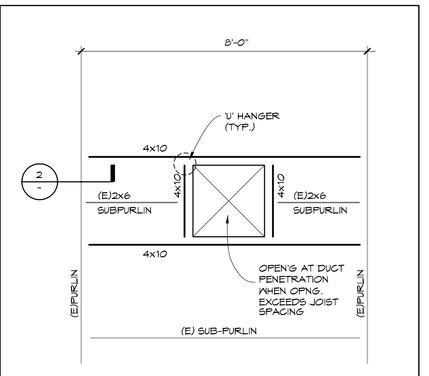
25 — 19



TYP. BOX HEADER SECTION — 7000-16UC — 13



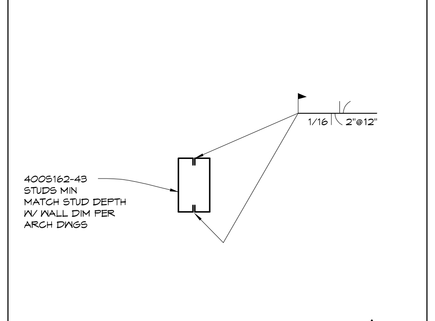
TYP. BASE OF WALL — 7000-03UC — 7



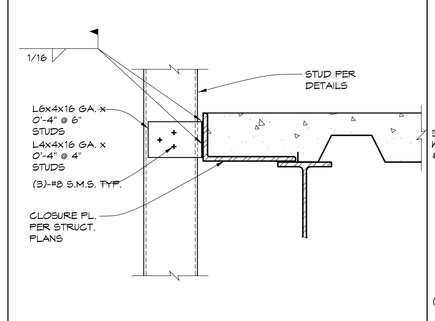
TYP. EXHAUST FAN FRAMING — 1

26

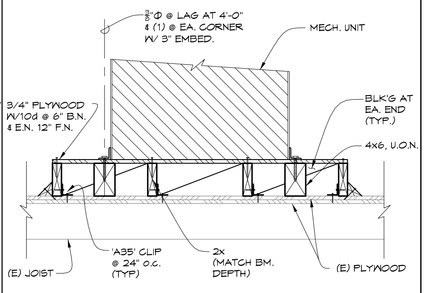
TYPICAL BOX BEAM — 20



TYP. BOX HEADER SECTION W/ BRACE — 7000-15UC — 14



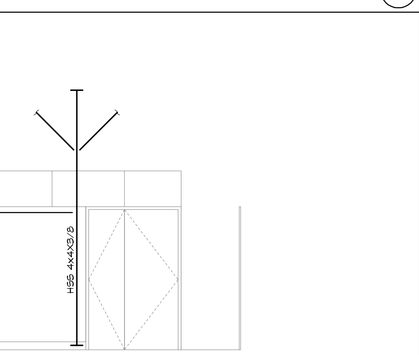
TYP. BRACE PARALLEL TO BEAM — 7000-07UC — 8



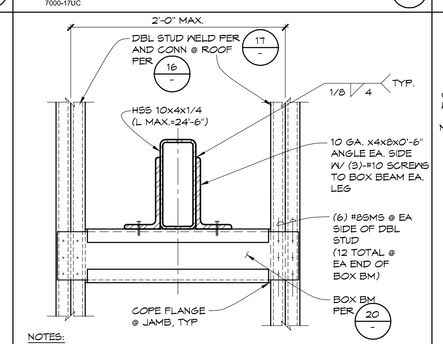
TYP. SUPPORT AT E.F.'s AND DUCT OPENINGS — 2

27

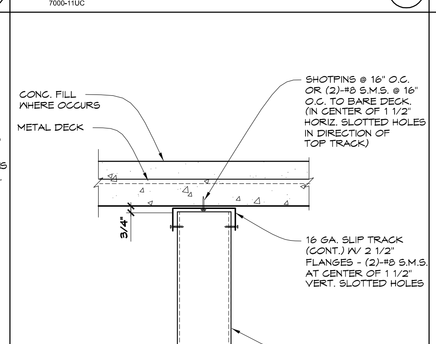
21

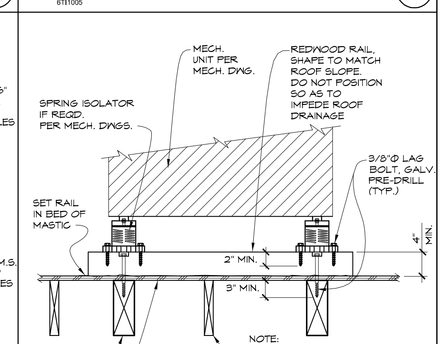


TYP. HEADER CONNECTION TO JAMB — 7000-16UC — 15



BRACE PERPENDICULAR TO DECK — 7000-09UC — 9





3

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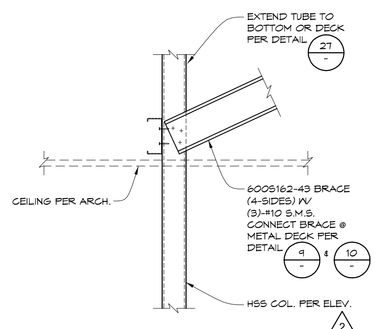

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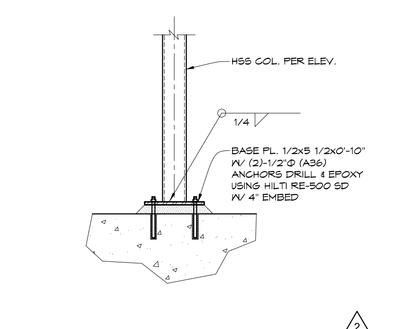
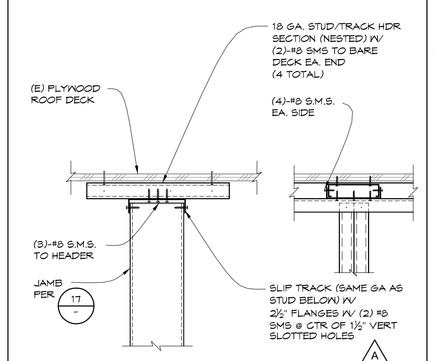
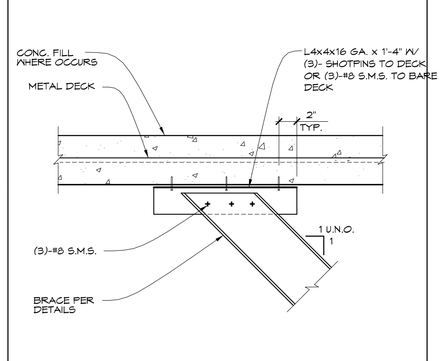
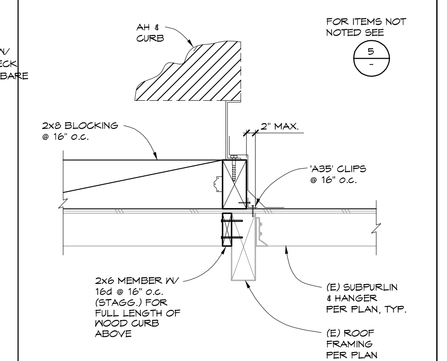


JAMB CONN AT ROOF DECK — A — 16





TYP. BRACE PARALLEL TO DECK — 7000-10UC — 10



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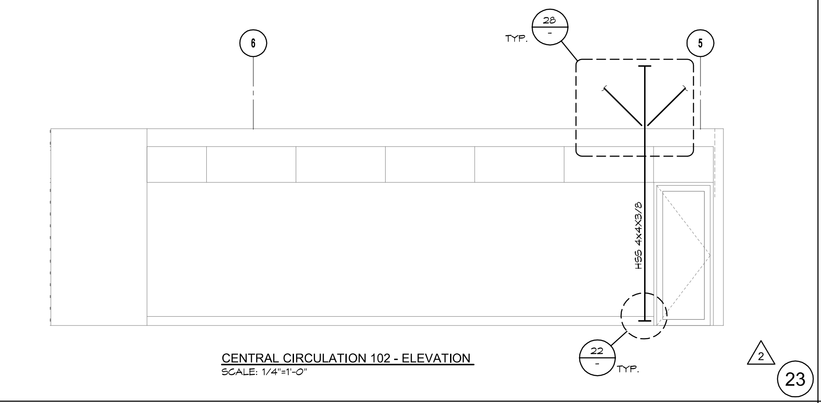


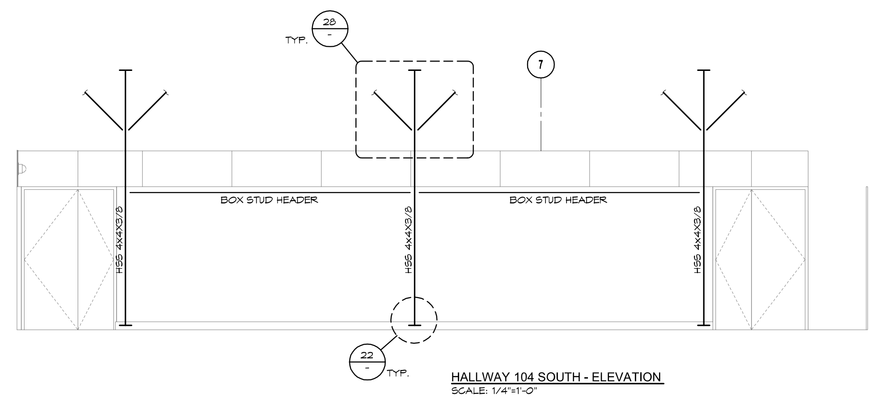
23

TYP. JAMB SECTION — 7000-11UC — 17

TYP. CLIP AT ROOF/FLOOR — 7000-11UC — 11

TYP. MECH. EQUIP. SUPPORT — 6711005 — 5

24



TYP. TOP OF WALL — 7000-12UC — 18

TYP. MECH. UNIT AT ROOF — 6711211 — 6

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS NOTED

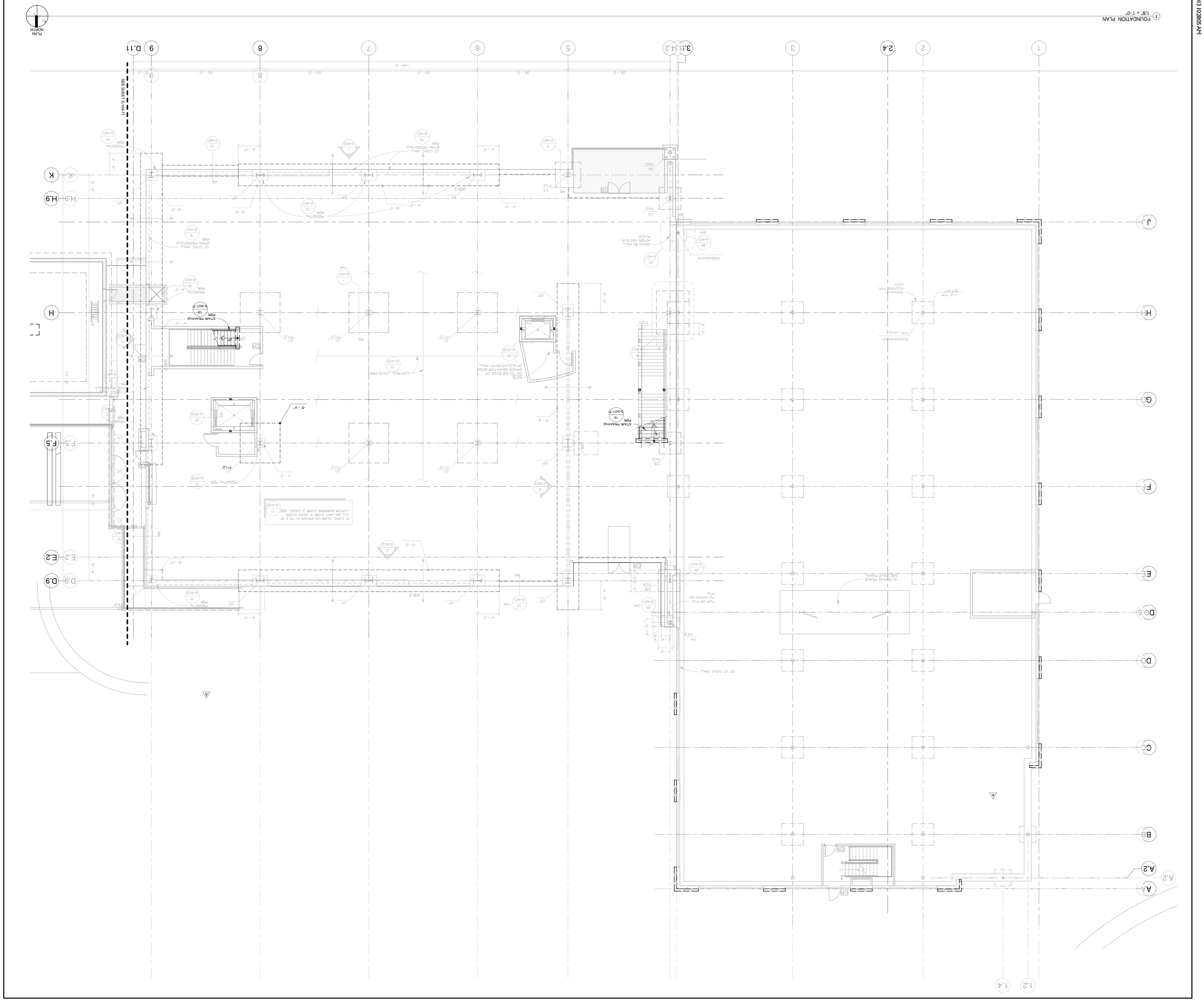
TITLE

TYPICAL DETAILS

S-006-TI

10/24/2012 2:15:16 PM

(PROJECTS)07-2012\12138.10-4707-NCD (Seminole)-TI\2 Dwg\12138.10_S-006-TI.dwg, 5/25/2013 10:40:05 AM, Jack, 1:1



S-101-T1

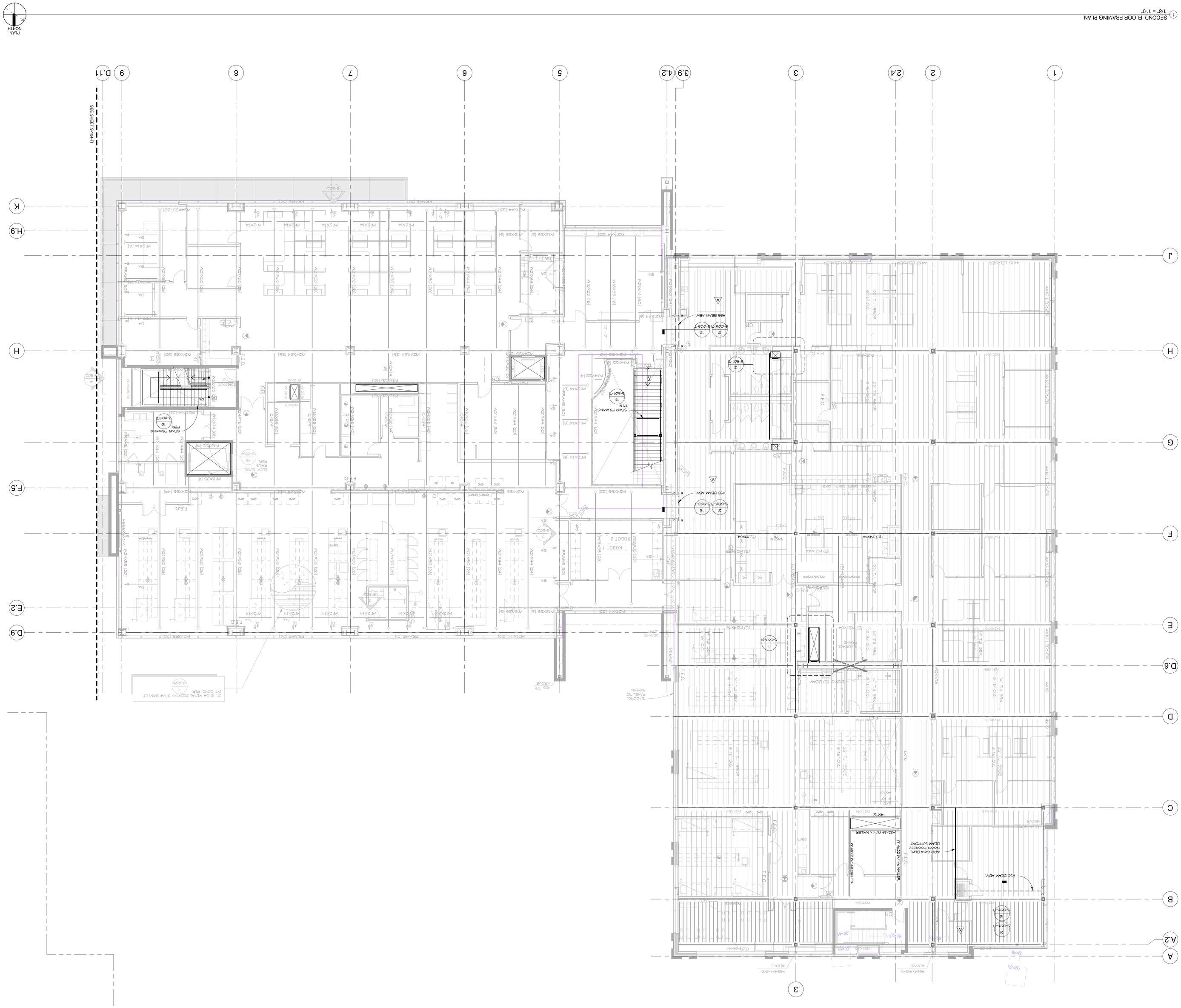
FOUNDATION PLAN

TITLE	
SCALE	AS SHOWN
PROJECT NO.	12136
ADDRESS	
PROJECT	
CLIENT	

NO.	DESCRIPTION	DATE

CONSULTANTS

5/20/2013 10:28:05 AM



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CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12136

SCALE AS SHOWN

TITLE

SECOND LEVEL FRAMING PLAN

S-102-T1

5/20/2013 10:20:02 AM

1 ROOF FRAMING PLAN
1/8" = 1'-0"

PLAN NORTH

NOTES:
1. ANCHORAGE OF MECHANICAL EQUIPMENT LESS THAN 1000 lb PER DETAIL 13 S-005
2. ANCHORAGE OF MECHANICAL EQUIPMENT MORE THAN 1000 lb PER DETAIL 11 S-005

S-103-TT

ROOF FRAMING PLAN

TITLE

SCALE AS SHOWN

PROJECT NO. 12136

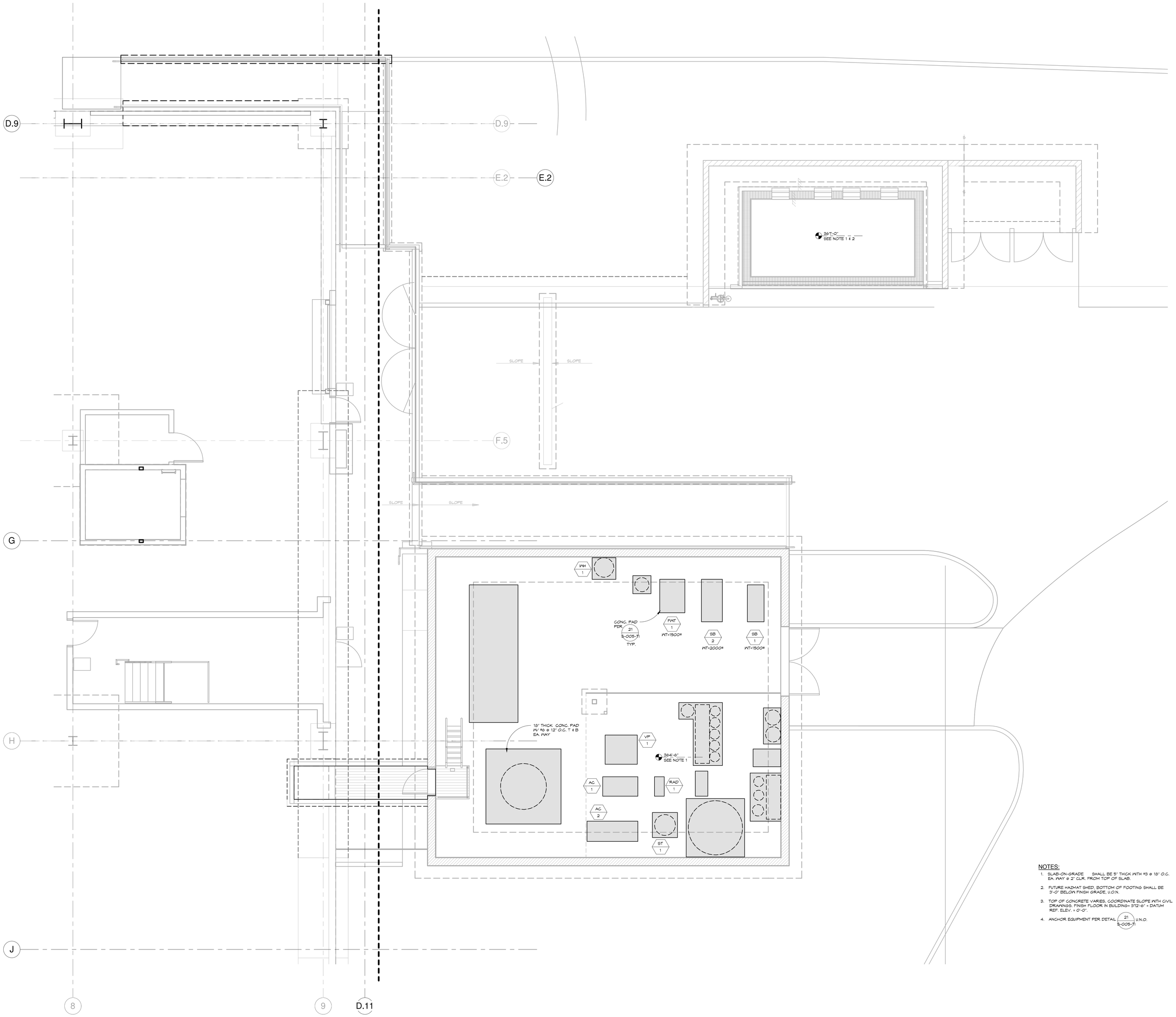
ADDRESS

PROJECT

CLIENT

NO.	DESCRIPTION	DATE

CONSULTANTS



1 ENLARGED MECHANICAL YARD PLAN
1/4" = 1'-0"

NOTES:

1. SLAB-ON-GRADE SHALL BE 5" THICK WITH #3 @ 15" O.C. EA. WAY @ 2" CLR. FROM TOP OF SLAB.
2. FUTURE HAZMAT SHED, BOTTOM OF FOOTING SHALL BE 3'-0" BELOW FINISH GRADE, U.O.N.
3. TOP OF CONCRETE VARIES, COORDINATE SLOPE WITH CIVIL DRAWINGS. FINISH FLOOR IN BUILDING= ST2'-6" + DATUM REF. ELEV. + 0'-0".
4. ANCHOR EQUIPMENT PER DETAIL 21 S-005-TI U.N.O.

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12136

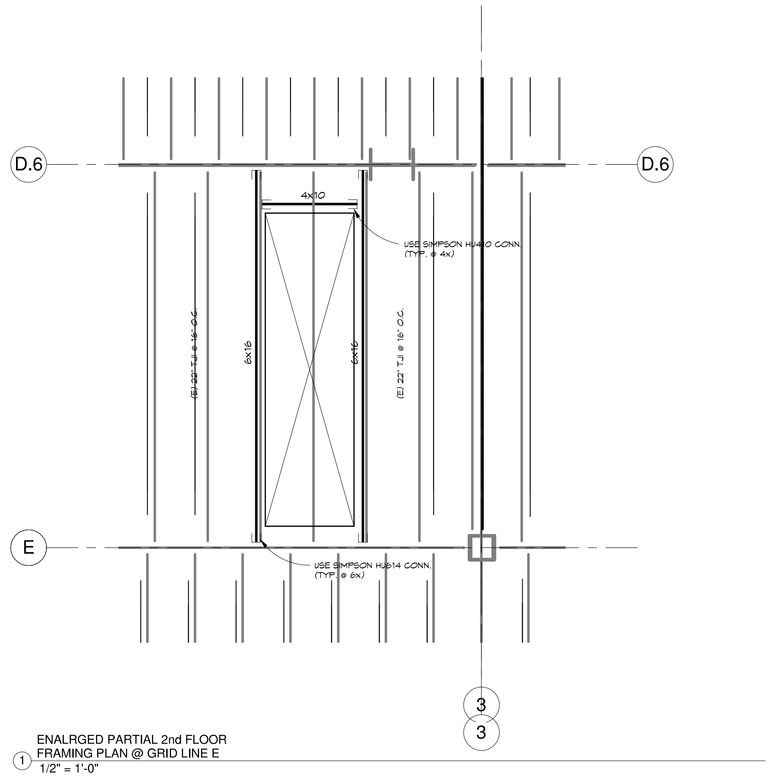
SCALE AS SHOWN

TITLE

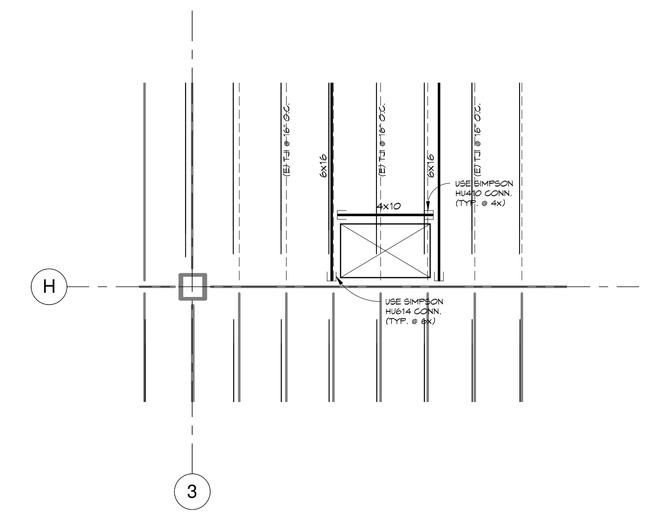
MECHANICAL YARD PLAN

S-105-TI

5/20/2013 10:30:25 AM



1 ENALRGED PARTIAL 2nd FLOOR FRAMING PLAN @ GRID LINE E
1/2" = 1'-0"



2 ENLARGED PARTIAL 2nd FLOOR FRAMING PLAN @ GRID LINE H
1/2" = 1'-0"

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12136

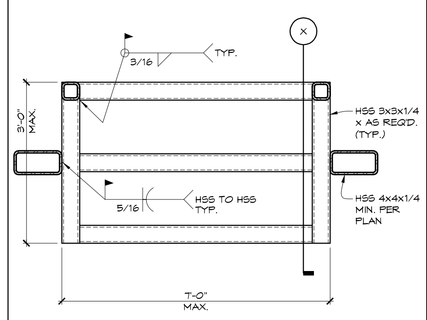
SCALE AS SHOWN

TITLE

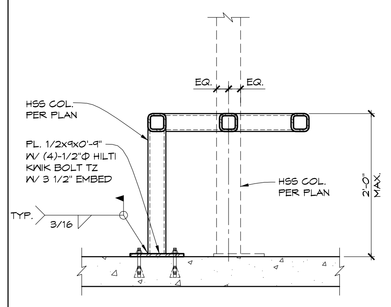
ENLARGED PARTIAL FRAMING PLANS

S-501-TI

5/20/2013 10:30:53 AM

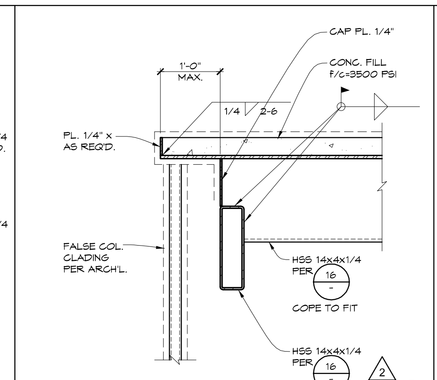


PLAN - BENCH FRAME



SECTION X

38



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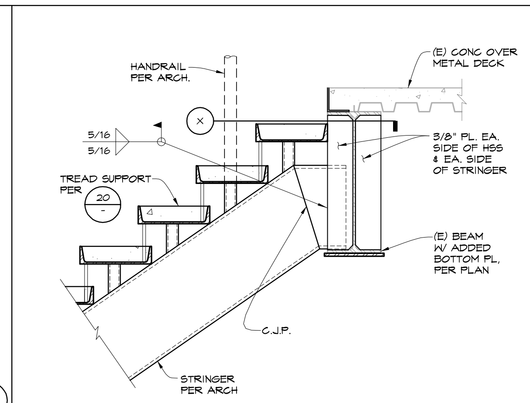

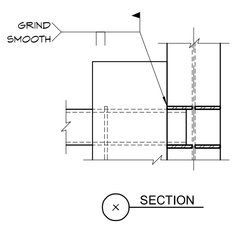

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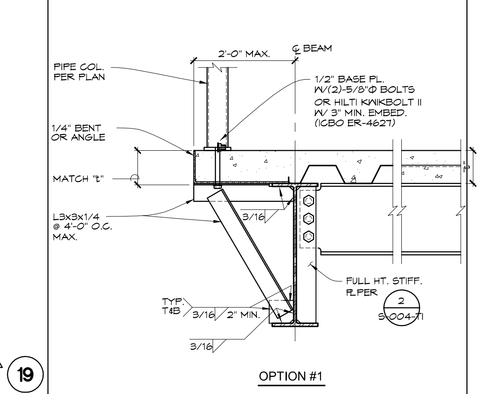

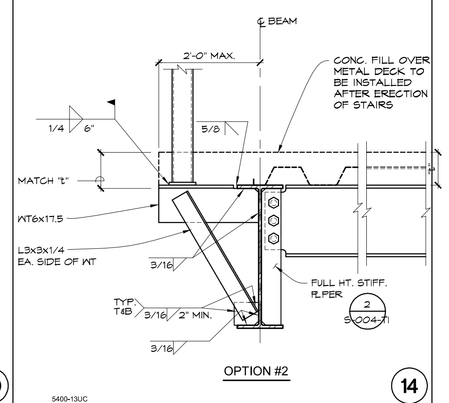

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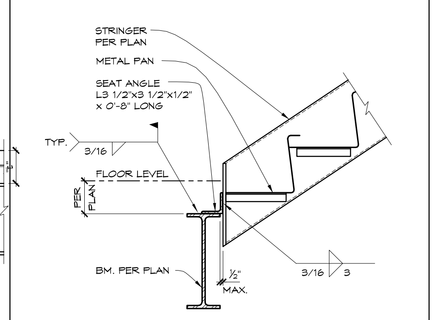

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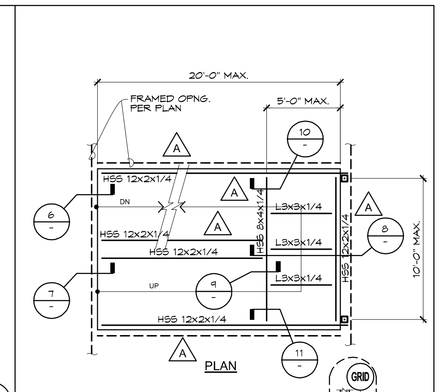

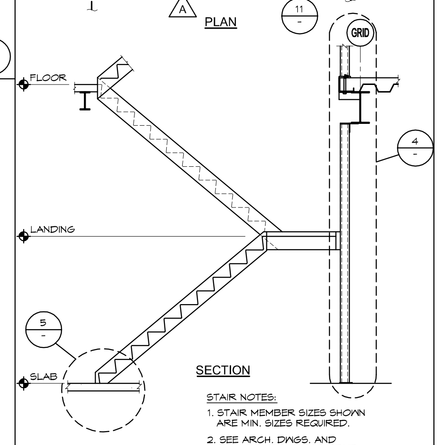

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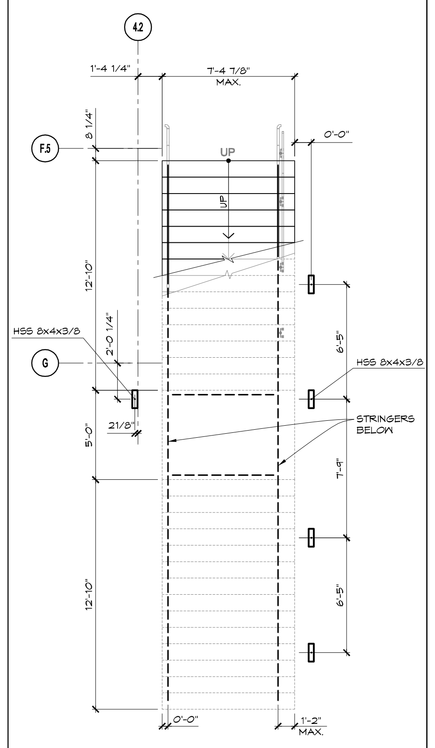

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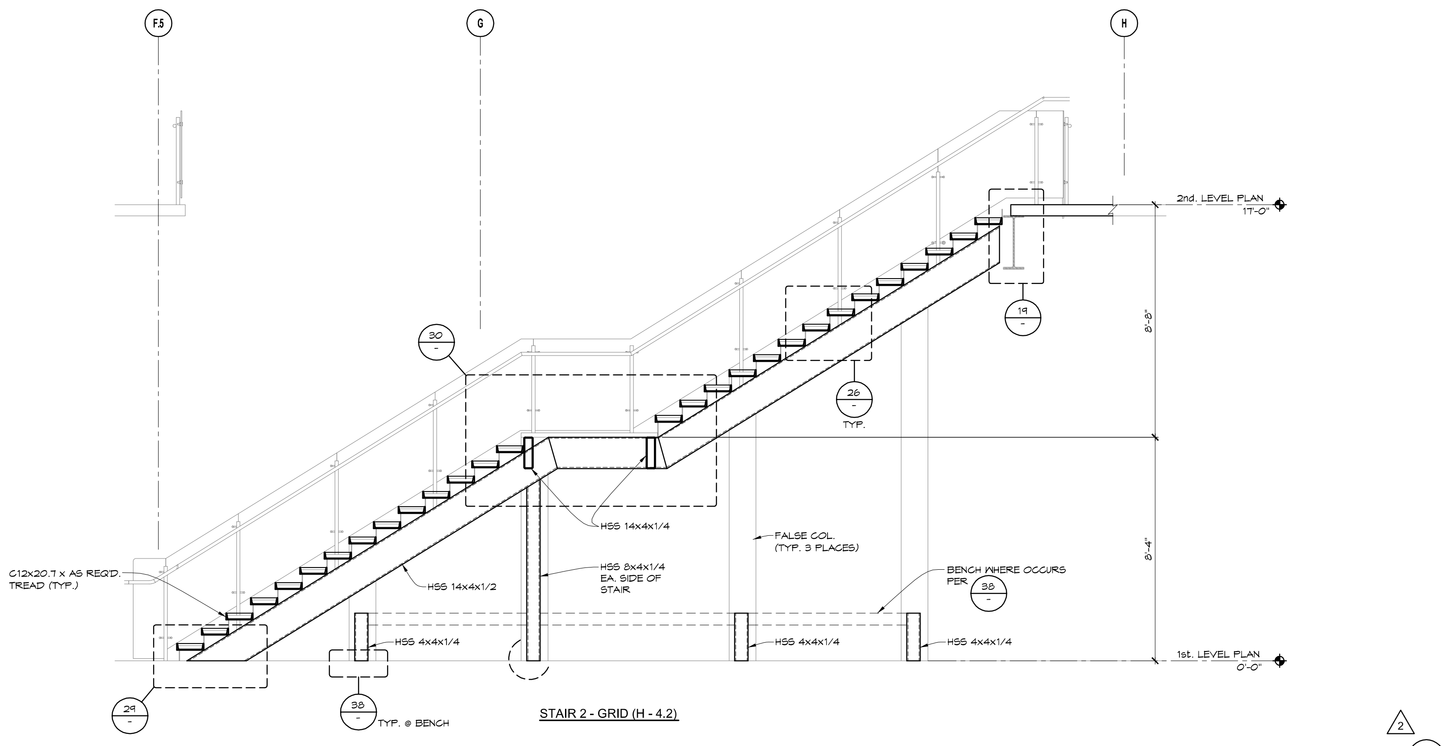

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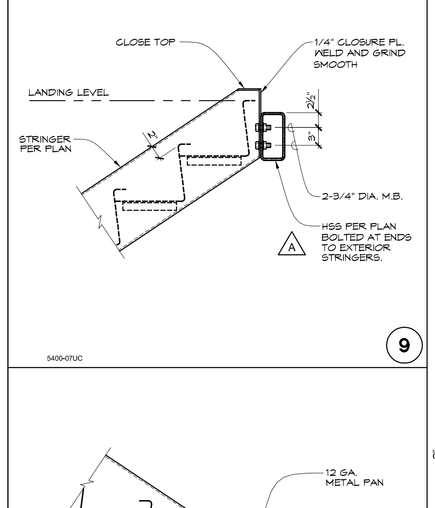

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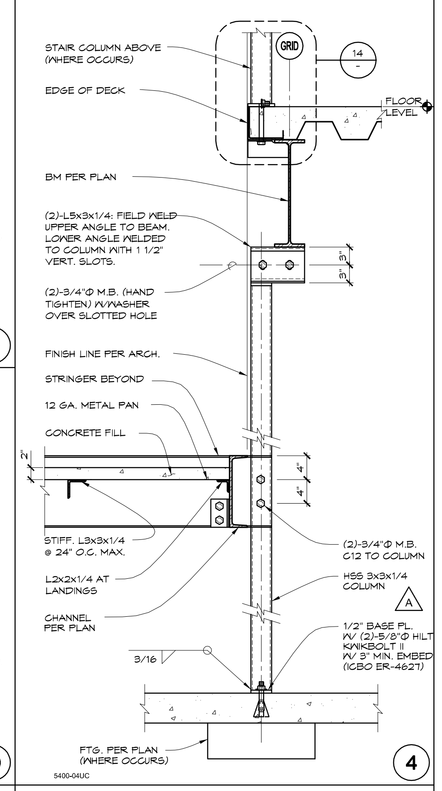

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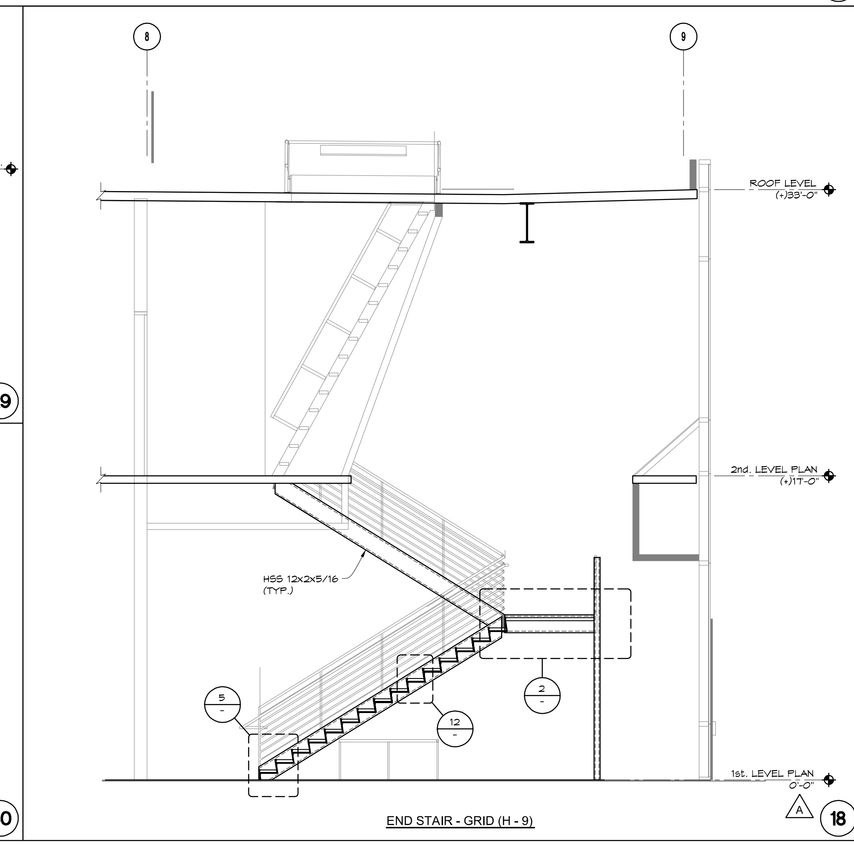

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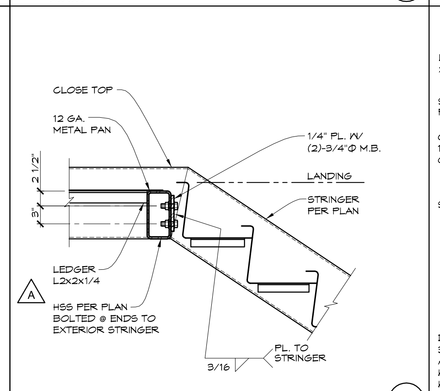

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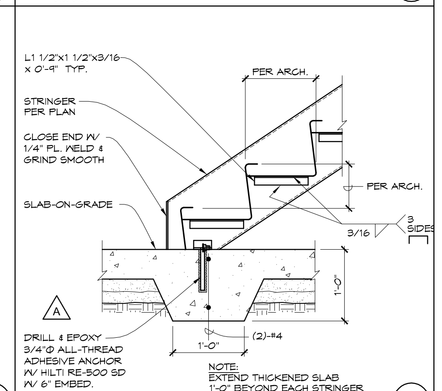

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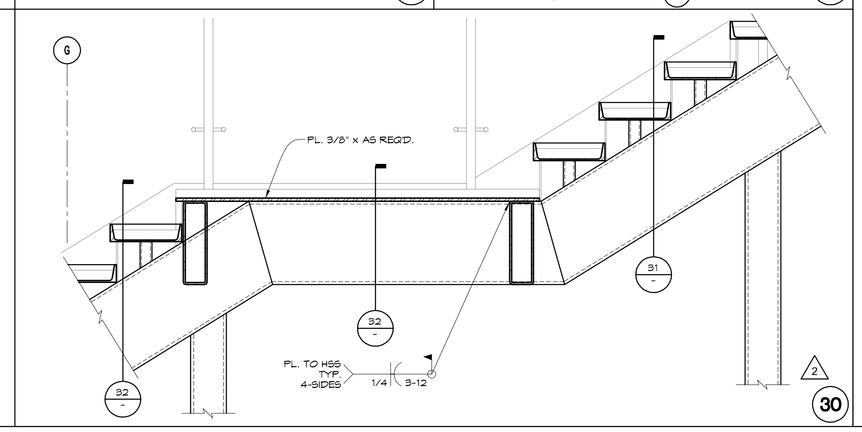

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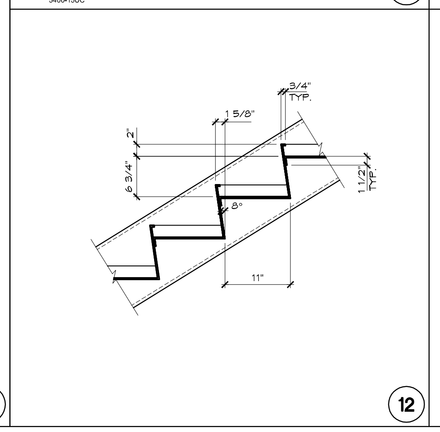

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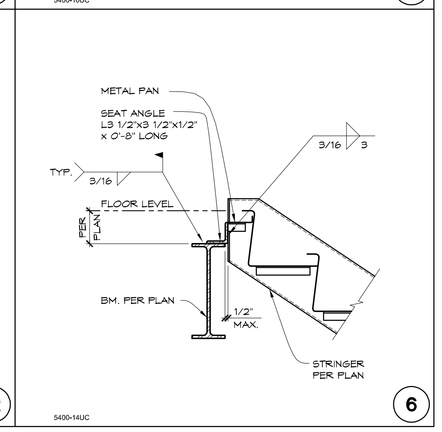

6

5400-14UC

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE AS NOTED

TITLE

STAIR PLAN AND DETAILS

S-601-TI

10/24/2012 2:15:16 PM

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SCALE: 1/2" = 1'-0" DFW: Jean

MECHANICAL NOTES

BUILDING DEPARTMENT

1. ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF SECTIONS 118, 123 AND 124 E.E.S. AND TABLE 6-6A AND 6-6B OF C.M.C. 2010.

2. ALL HVAC SYSTEMS SHALL MEET THE CONTROL REQUIREMENTS PER SECTIONS 112 AND 122 E.E.S..

3. ALL H.V.A.C. EQUIPMENT AND APPLIANCES SHALL MEET THE REQUIREMENTS PER SECTIONS 111-113, 115, AND 120-129 E.E.S.

4. INSULATION MATERIAL SHALL MEET THE CALIFORNIA QUALITY STANDARD PER SECTION 118 E.E.S.

5. AIR HANDLING DUCT SYSTEM WILL BE CONSTRUCTED, INSTALLED, MOUNTED AND SEALED IN ACCORDANCE WITH SECTIONS 601.1, 603 AND 604 OF THE CALIFORNIA MECHANICAL CODE (CMC) AND TITLE 24 - 6 - 118(d)3.

6. PROVIDE SMOKE DETECTORS AT ALL AIR MOVING SYSTEMS EXCEEDING 2,000 CFM AT SUPPLY AIR DUCTS PER SECTION 609.0 CMC.

7. ALL EXHAUST OUTLETS SHALL COMPLY WITH SECTION 506.9 C.M.C.

8. ALL EXHAUST DUCT SHALL BE GALVANIZED SHEET METAL, MINIMUM SHEET METAL THICKNESS SHALL BE PER C.M.C TABLE 5-B&C.

9. SPACING OF SUPPORTS FOR EXHAUST DUCTS SHALL NOT EXCEED 12 FEET FOR 8-INCH DUCT NOR 20 FEET FOR LARGER DUCTS.

10. CALIFORNIA MECHANICAL CODE 2010 C.M.C. 2010 IS THE CURRENT CODE THAT IS APPLICABLE TO THIS PROJECT.

11. CERTIFICATE OF ACCEPTANCE (MECH-1-A) AND ALL RELATED ACCEPTANCE DOCUMENTS SHALL BE SUBMITTED TO THE FIELD INSPECTOR DURING CONSTRUCTION. CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL THESE FORMS ARE REVIEWED AND APPROVED.

2 12. PRODUCTS BEING EXHAUSTED ARE NONFLAMMABLE VAPORS OR FUMES AS DEFINED IN SECTION 502.0 AND TABLE 5-1 OF THE C.M.C. 2010.

13. PRODUCT CONVEYING DUCT MATERIALS SHALL BE SUITABLE FOR THE INTENDED USE AS PER SECTIONS 505.0 AND 506.0 OF THE C.M.C. 2010.

14. PRODUCT CONVEYING DUCTS THAT ARE SERVED BY A COMMON EXHAUSTED SYSTEM SHALL HANDLE COMPATIBLE MATERIALS AND SEPARATE AND DISTINCT SYSTEMS SHALL BE PROVIDED FOR INCOMPATIBLE MATERIALS PER SECTION 505.1 C.M.C. 2010.

15. PRODUCT-CONVEYING EXHAUST DUCTS SHALL NOT EXTEND INTO OR THROUGH DUCTS AND PLENUMS PER SECTION 505.1 C.M.C. 2010.

16. MATERIALS WITHIN A DUCT OR PLENUM SHALL COMPLY WITH SECTION 602.2 CMC.

2 17. WALL AND ROOF-CEILING ASSEMBLIES THAT MAKE UP THE BUILDING ENEVLOPE SHALL HAVE AN STC OF AT LEAST 50, AND EXTERIOR WINDOWS SHALL HAVE A MINIMUM STC OF 30 PER SECTION 5.507.4 CBBSC.

18. COMMISIONING IS REQUIRED FOR COMMERCIAL BUILDINGS 10,000 SF AND OVER PER SECTION 5.410.2 CGBSC.

19. A COMPLETE REPORT OF COMMISSIONING PROCESS ACTIVITIES UNDERTAKEN THROUGH THE DESIGN, CONSTRUCTION, AND REPORTING RECOMENDATIONS FOR POST-CONSTRUCTION PHASES OF THE BUILDING SHALL BE COMPLETED AND PROVIDED TO THE OWNER OR REPRESENTITIVE.

20. IN MECHANICALY VENTILATED BUILDINGS, PROVIDE OCCUPIED AREAS WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY THAT PROVIDES A MINIMUM OF MERV 8 PER SECTION 5.504.5.3 CGBSC.

DIVISION OF LABOR

MECHANICAL CONTRACTOR(DIVISION 23)

1. COORDINATE ALL REQUIREMENTS FOR CONTROLS WITH DIVISION 26 AND CONTROLS CONTRACTOR.

2. FIELD MOUNT CONTROLS DEVICES SHALL BE PROVIDED BY CONTROLS CONTRACTOR AND INSTALLED BY DIVISION 23 CONTRACTOR. COORDINATE WITH CONTROLS CONTRACTOR TO INCLUDE ALL LABOR AND MATERIALS FOR A COMPLETE SYSTEM.

ELECTRICAL CONTRACTOR (DIVISION 26)

1. COORDINATE ALL REQUIREMENTS FOR CONTROLS WITH DIVISION 23 AND CONTROLS CONTRACTOR.

2. DIVISION 26 CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR CONTROLS IMPLEMENTATION INCLUDING, BUT NOT LIMITED TO:

2.1. CONTROL DAMPERS AND ACTUATORS

2.2. TEMPERATURE AND PRESSURE SENSORS

CONTROLS CONTRACTOR

1. COORDINATE ALL REQUIREMENTS FOR CONTROLS WITH DIVISION 23 AND DIVISION 26 CONTRACTORS.

2. ALL CONTROLS DEVICES SHALL BE BY CONTROLS CONTRACTOR, INCLUDING BUT NOT LIMITED TO:

2.1. CONTROL DAMPERS AND ACTUATORS

2.2. TEMPERATURE AND PRESSURE SENSORS

3. CONTROL VOLTAGE WIRING FOR ALL FIELD MOUNTED DEVICES SHALL BE BY CONTROLS CONTRACTOR.

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH GOVERNING CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, LATEST APPROVED EDITIONS OF THE UMC, UBC, UPC WITH LOCAL REVISIONS, SMACNA, AND ALL OTHER REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.

2. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF SAN DIEGO, STATE OFCALIFORNIA STANDARDS AND ALL OTHER APPLICABLE CODES.

3. ALL WORK SHALL BE PERMITTED.

4. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS, FEES, AND LICENSES.

5. ALLOW TEN (10) WORKING DAYS FOR ENGINEER TO REVIEW SUBMITTAL.

6. CONTRACTOR SHALL OBTAIN AND FOLLOW ALL LANDLORD REQUIREMENTS, GUIDELINES, RULES AND PROCEDURES FOR CONSTRUCTION. CONTRACTOR SHALL PROVIDE INSURANCE IN ACCORDANCE WITH THE BUILDING'S CERTIFICATE OF INSURANCE REQUIREMENTS.

7. EXAMINE COMPLETE SET OF DRAWINGS AND SPECIFICATIONS FOR ALL TRADES, INCLUDING ELECTRICAL AND STRUCTURAL PRIOR TO SUBMITTING BID AND START OF WORK. VERIFY ALL DIMENSIONS FOR SPACE REQUIREMENTS AND POINT OF CONNECTION TO ALL EQUIPMENT. MAKE ANY MINOR ADJUSTMENTS NECESSARY TO AVOID CONFLICTS WITH THE BUILDINGS STRUCTURE AND WORK OF OTHER TRADES.

8. THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE MECHANICAL AND PLUMBING SYSTEM. DUE TO STRUCTURAL CONDITIONS, MECHANICAL PIPING INTERFERENCE, RETAINED EXISTING FACILITIES, OR FOR OTHER REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL WORK IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING, AND THE RECORD DRAWING SHALL BE ACCURATELY REVISED TO SHOW THE CHANGES AS COMPLETED.

9. DO NOT SCALE DRAWINGS - ALL DIMENSIONS AND JOBSITE CONDITIONS SHALL BE VERIFIED AT THE JOB SITE PRIOR TO START OF CONSTRUCTION AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.

10. SEE ARCHITECTURAL REFLECTED CEILING PLAN(S) FOR THE EXACT LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.

11. SEE ARCHITECTURAL DRAWINGS FOR ROOF ACCESS AND ANY ADDITIONAL ENERGY CONSERVATION NOTES.

12. ALL OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED SO AS TO PERMIT EASY CONNECTION. COORDINATE DUCTWORK, STRUCTURAL CONDITIONS, AND ARCHITECTURAL LAYOUT.

13. WHERE SOUND INSULATION IS INDICATED, DUCT DIMENSIONS ARE NET CLEAR - e.g. AFTER INSULATION HAS BEEN INSTALLED.

14. INSULATE ALL SUPPLY & RETURN AIR DUCTWORK, INCLUDING DUCTS W/ SOUND INSULATIVE LINER, WITH OWENS / CORNING FIBERGLASS INSULATION W/ VAPOR BARRIER 1 1/2" THICK AND AN AVERAGE INSTALLED 'R' VALUE OF 5.4.

15. SEE PLUMBING DRAWINGS FOR CONDENSATE PIPING.

16. CONTRACTOR SHALL PERFORM POINT-TO-POINT CHECKOUT DURING COMMISSION AND SUBMIT TO ENGINEER FOR REVIEW TO ENSURE A COMPLETELY FUNCTIONAL SYSTEM AS INDICATED ON PLANS PRIOR TO OWNER ACCEPTANCE.

17. BECOME THOROUGHLY FAMILIAR WITH ACTUAL EXISTING CONDITIONS AND OF THE PRESENT INSTALLATION TO WHICH CONNECTIONS MUST BE MADE OR WHICH MUST BE CHANGED OR ALTERED BEFORE SUBMITTING BID. THE INTENT OF THE WORK IS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN, NO CONSIDERATION SHALL BE GRANTED BY REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR WITH ACTUAL PHYSICAL CONDITIONS, REQUIREMENTS, AND PRACTICES AT THE SITE.

18. COORDINATE ALL CUTTING, DRILLING PATCHING, AND REINFORCING REQUIRED FOR MECHANICAL WORK WITH THE GENERAL CONTRACTOR.

19. COORDINATE THE ENTIRE INSTALLATION OF MECHANICAL SYSTEM WITH THE WORK OF ALL OTHER TRADES PRIOR TO INSTALLATION.

20. CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.

21. PROVIDE RED-LINE AS BUILT DRAWINGS AT THE CONCLUSION OF WORK.

22. DUCTWORK SHOWN IN THE DRAWINGS ARE SCHEMATICS ONLY. PIPING SUPPORT, AND THERMAL EXPANSION DEVISES ARE TO BE INCORPORATED IN THE SHOP DRAWINGS. DRAWINGS ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL. DUCTWORK ANCHORAGE AND SUPPORT ARE TO BE PROVIDED BY THE CONTRACTOR TO MEET ALL CODE REQUIREMENTS.

23. FLEXIBLE CONNECTIONS SHALL BE PROVIDED ALL EQUIPMENT CONNECTIONS UNLESS OTHERWISE NOTED.

24. CONDUITS SHALL BE SUPPORTED AND BRACED IN ACCORDANCE WITH APPLICABLE LOCAL CODES.

25. ALL DUCTWORK PENETRATIONS THROUGH RATED CONSTRUCTION SHALL BE PROPER FIRE STOPS WITH UL-LISTED FIRE STOPPING PRODUCTS. CONSULT WITH UL FIRE RESISTANCE DIRECTORY FOR ADDITIONAL REQUIREMENTS.

26. ALL DUCTWORK PENETRATIONS THROUGH NON-RATED CONSTRUCTION SHALL BE PROPERLY AND GENEROUSLY CAULKED WITH SOUND RESISTANT MATERIAL SUCH AS SILICONE.

27. DAMAGE TO OTHER WORK: REPAIR ANY DAMAGE CAUSED BY DIVISION 15 CONTRACTOR TO WORK OF OTHERS DIVISIONS.

28. UPON COMPLETION OF WORK, CONTRACTOR SHALL CLEAN AND REMOVE ALL DEBRIS ASSOCIATED WITH HIS/HER WORK AND DISPOSE OF IT. ALL DISPOSAL COSTS SHALL BE BORNE BY THE CONTRACTOR. AR

MECHANICAL LEGEND

SYMBOL	ABBR.	DESCRIPTION
		DEMO EXIST. EQUIP. OR PIPES SHOWN HATCHED
		SUPPLY AIR DIFFUSER
		RETURN AIR REGISTER
		EXHAUST AIR GRILLE
		SUPPLY DUCT
		RETURN DUCT
		EXHAUST DUCT
		PVC COATED OR STAINLESS STEEL DUCT
		DUCT WITH SOUND INSULATION
	SFD	COMBINATION SMOKE & FIRE DAMPER
	MVD	MANUAL VOLUME DAMPER
		SQUARE TO ROUND CONCENTRIC REDUCER
		AIR FLOW DIRECTION ARROW
XX-##		ROOM THERMOSTAT & ZONE NUMBER
SD	S.D.	SMOKE DETECTOR
	POC/POD	POINT OF CONNECTION/POINT OF DISCONNECTION
CD	CD	CONDENSATE PIPE
CDWS	CDWS	CONDENSER WATER SUPPLY PIPE
CDWR	CDWR	CONDENSER WATER RETURN PIPE
CHWS	CHWS	CHILLED WATER SUPPLY PIPE
CHWR	CHWR	CHILLED WATER RETURN PIPE
HHWS	HHWS	HEATING HOT WATER SUPPLY PIPE
HHWR	HHWR	HEATING HOT WATER RETURN PIPE
M		FURNISHED & INSTALLED BY MECHANICAL
ME		FURNISHED BY MECHANICAL INSTALLED BY ELECTRICAL
E		FURNISHED & INSTALLED BY ELECTRICAL
C		FURNISHED & INSTALLED BY CONTROLS

SUPPLY DIFFUSER: XX — X NECK SIZE; Xdm AIR QUANTITY (C.F.M.); TYPE

EXHAUST / RETURN REGISTER: XX — X NECK SIZE; Xdm AIR QUANTITY (C.F.M.); TYPE

DETAIL CALL-OUT: DETAIL NUMBER / SHEET NUMBER

EQUIPMENT TAG: EQUIPMENT TYPE / EQUIPMENT ID

MECHANICAL SCOPE OF WORK

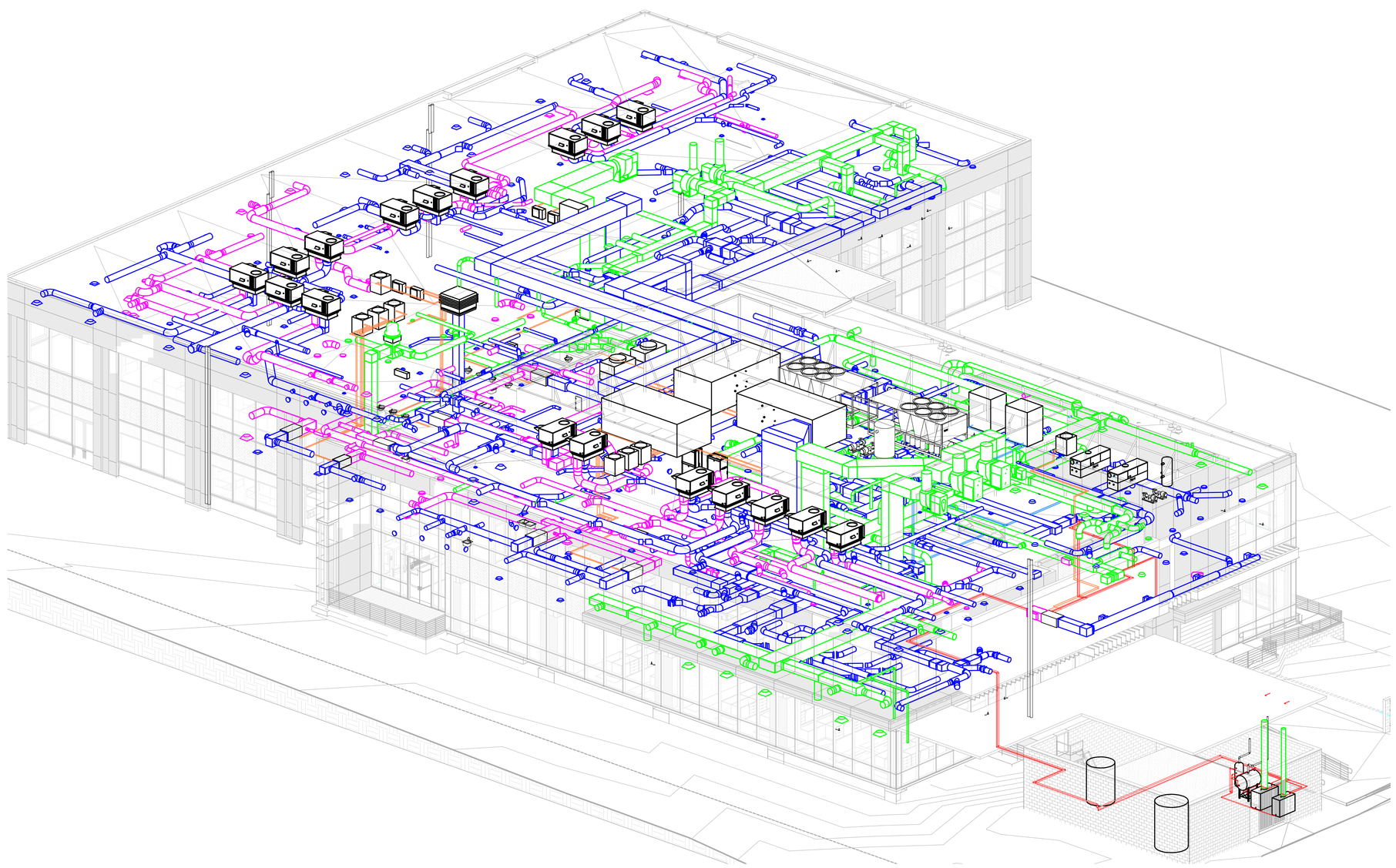
LAB SYSTEM - PROVIDE 100% OSA CONSTANT VOLUME SYSTEMS SERVING LAB SPACE ON THE FIRST AND SECOND FLOOR. ONE SYSTEM PER FLOOR. BUILDING TO BE DIVIDED INTO (4) CONTROL ZONES. EACH ZONE SHALL BE SERVED WITH A DEDICATED CONSTANT VOLUME LAB EXHAUST FAN. EACH LAB ZONE SHALL BE PROVIDED WITH A REHEAT COIL TEMPERATURE CONTROL. AIR COOLED CHILLERS AND HEATING HOT WATER BOILERS ON THE ROOF SHALL BE UTILIZED TO PROVIDE HEAT REJECTION TO LAB ZONES.

A CENTRAL STEAM BOILER PLANT SHALL BE LOCATED IN THE PLUMBING EQUIPMENT YARD AND A CENTRAL PROCESS CHILLED WATER PLANT SHALL BE LOCATED ON THE ROOF.

OFFICE SYSTEM - FIRST FLOOR OFFICE ZONES SHALL BE CONDITIONED UTILIZING SPLIT DX SYSTEMS, WITH CONDENSING UNITS ON THE ROOF AND FAN COILS IN THE SPACE. THE SECOND FLOOR OFFICE ZONES SHALL BE CONDITIONED WITH ROOFTOP PACKAGED HEAT PUMPS. EXHAUST FANS SHALL BE USED FOR RESTROOM EXHAUST.

MECHANICAL SHEET INDEX

M0.1 MECHANICAL - LEAD SHEET
M0.2 MECHANICAL - SCHEDULES
M0.3 MECHANICAL - SCHEDULES
M0.4 MECHANICAL - SCHEDULES
M0.5 MECHANICAL - TITLE 24
M0.6 MECHANICAL - TITLE 24
M1.0 MECHANICAL - 1ST FLOOR ZONE PLAN
M1.1 MECHANICAL - 2ND FLOOR ZONE PLAN
M3.0 MECHANICAL - OVERALL 1ST FLOOR PLAN
M3.1 MECHANICAL - ENLARGED 1ST FLOOR PLAN - AREA A
M3.2 MECHANICAL - ENLARGED 1ST FLOOR PLAN - AREA B
M3.3 MECHANICAL - OVERALL 2ND FLOOR PLAN
M3.4 MECHANICAL - ENLARGED 2ND FLOOR PLAN - AREA A
M3.5 MECHANICAL - ENLARGED 2ND FLOOR PLAN - AREA B
M3.6 MECHANICAL - ENLARGED 2ND FLOOR PLAN - AREA C
M3.7 MECHANICAL - OVERALL ROOF PLAN
M3.8 MECHANICAL - ENLARGED EQUIPMENT YARD
M4.0 MECHANICAL - 1ST FLOOR AIR FLOOR DIAGRAM
M4.1 MECHANICAL - 2NDFLOOR AIR FLOOR DIAGRAM
M4.2 MECHANICAL - CHW & HHW FLOW DIAGRAMS
M4.3 MECHANICAL - STEAM FLOW DIAGRAM
M5.0 MECHANICAL - DETAILS
M5.1 MECHANICAL - DETAILS
M6.0 MECHANICAL - WIRING DIAGRAMS
M6.1 MECHANICAL - CONTROL DIAGRAMS



CONSULTANTS

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE 12" = 1'-0"

TITLE

MECHANICAL - LEAD SHEET

M0.1

5/20/2013 11:50:58 AM

AIR HANDLING UNIT SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	SUPPLY FAN		MIN OA (CFM)	COOLING COIL											HEATING COIL								ELECTRICAL					FILTER		OPER WEIGHT (LBS)	REMARKS
		CFM	ESP (IN)		CAPACITY SENSIBLE (MBH)	CAPACITY TOTAL (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	VEL (FPM)	AIR PD (IN)	GPM	WTR PD (FT/HD)	EWT (°F)	LWT (°F)	CAP (MBH)	RATED CFM	ENT AIR (°F)	AIR PD (IN)	GPM	WTR PD (FT/HD)	EWT (°F)	LWT (°F)	V/PH/HZ	HP	VFD	E POWER	SMOKE DETECTOR	PRE	FINAL		
AHU 1-1	ENERGY LABS	23,500	2.5	23,500	950	1,350	91	72	52.3	52.2	484	1.1	225	8.7	44	58	520	23,500	34	0.09	18	3.5	180	150	460/3/60	40	YES	NO	YES	30%	95%	15,000	BASE MOUNTED UNIT, INTERNALLY ISOLATED DIRECT DRIVE PLUG FANS WITH 2" DEFLECTION, TEFC PREMIUM MOTOR, COPPER/COPER COOLING AND HEATING COILS, STAINLESS STEEL CASING, MOISTURE ELIMINATOR, DOUBLE SKIN INSULATED ACCESS DOORS WITH THERMAL BREAK,STAINLESS STEEL DRAIN PAN, AIR FLOW MONITORING STATION, THERMAL BREAK CONSTRUCTION IN COOLING SECTION AND ALL DOWN STREAM COMPONENTS, OUTDOOR CONSTRUCTION WITH PITCHED ROOF. UNIT TO PROVIDE 21,000 CFM AT STARTUP.
AHU 1-2	ENERGY LABS	28,200	2.5	28,200	1,167	1,756	91	72	52.3	52.2	516	1.2	250	9.1	44	58	740	28,200	34	0.1	20	3.8	180	150	460/3/60	50	YES	NO	YES	30%	95%	15,000	BASE MOUNTED UNIT, INTERNALLY ISOLATED DIRECT DRIVE PLUG FANS WITH 2" DEFLECTION, TEFC PREMIUM MOTOR, COPPER/COPER COOLING AND HEATING COILS, STAINLESS STEEL CASING, MOISTURE ELIMINATOR, DOUBLE SKIN INSULATED ACCESS DOORS WITH THERMAL BREAK,STAINLESS STEEL DRAIN PAN, AIR FLOW MONITORING STATION, THERMAL BREAK CONSTRUCTION IN COOLING SECTION AND ALL DOWN STREAM COMPONENTS, OUTDOOR CONSTRUCTION WITH PITCHED ROOF.

ROOFTOP PACKAGE HEAT PUMP SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	CAPACITY SENSIBLE (MBH)	CAPACITY TOTAL (MBH)	AMBIENT AIR TEMP (°F) DB	EAT DB (°F)	EAT WB (°F)	SA (CFM)	MIN OA (CFM)	ESP	SEER/ EER	HEATING CAPACITY (MBH)	COP/ HSPF	ELECTRICAL											FILTER		OPER WEIGHT (LBS)	REMARKS
													V/PH/HZ	COMPRESSOR			INDOOR FAN		OUTDOOR FAN		MCA	MAXIMUM SIZE FUSE	E POWER	SMOKE DETECTOR	SIZE	QUANT		
														QUANT	LRA	RLA	HP	FLA	QUANT	FLA								
HP 2-1	YORK XP036	26.5	35.9	95	80	67	1,200	155	0.5	13/11	34.8	-/7.7	460/3/60	1	45.0	6.4	1.5	2.6	1	0.8	11.4	15	NO	NO	15x20x2 14x25x2	2 1	585	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-2	YORK XP036	26.5	35.9	95	80	67	1,200	155	0.5	13/11	34.8	-/7.7	460/3/60	1	45.0	6.4	1.5	2.6	1	0.8	11.4	15	NO	NO	15x20x2 14x25x2	2 1	585	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-3	YORK XP090	68.7	94.9	95	80	67	3,000	145	0.5	-/11	90.0	3.25/-	460/3/60	2	41.0	6.9	3	5.3	1.0	0.8	22.4	25	NO	YES	24x16x2	4	925	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, SUPPLY AIR SMOKE DETECTOR, 100% DIFF TEMPERATURE OSA ECONOMIZER
HP 2-4	YORK XP048	34.8	46.2	95	80	67	1,600	225	0.5	13/11	41.0	3.2/7.7	460/3/60	1	41.0	6.1	1.5	2.6	1.0	0.8	11.0	15	NO	NO	15x20x2 14x25x2	2 1	595	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
3 HP 2-5	YORK XP060	44.6	60.7	95	80	67	2,000	115	0.5	13/0.6	56.5	3.2/7.7	460/3/60	1	52.0	7.7	1.5	2.6	1.0	1.3	13.5	20	NO	YES	15x20x2 14x25x2	2 1	600	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, SUPPLY AIR SMOKE DETECTOR, 0-50% OSA HOOD
HP 2-6	YORK XP060	44.6	60.7	95	80	67	2,000	135	0.5	13/0.6	56.5	3.2/7.7	460/3/60	1	52.0	7.7	1.5	2.6	1.0	1.3	13.5	20	NO	YES	15x20x2 14x25x2	2 1	600	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, SUPPLY AIR SMOKE DETECTOR, 0-50% OSA HOOD
HP 2-7	YORK XP048	34.8	46.2	95	80	67	1,600	135	0.5	13/11	41.0	3.2/7.7	460/3/60	1	41.0	6.1	1.5	2.6	1.0	0.8	11.0	15	NO	NO	15x20x2 14x25x2	2 1	595	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-8	YORK XP048	34.8	46.2	95	80	67	1,600	270	0.5	13/11	41.0	3.2/7.7	460/3/60	1	41.0	6.1	1.5	2.6	1.0	0.8	11.0	15	NO	NO	15x20x2 14x25x2	2 1	595	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-9	YORK XP060	44.6	60.7	95	80	67	2,000	545	0.5	13/0.6	56.5	3.2/7.7	460/3/60	1	52.0	7.7	1.5	2.6	1.0	1.3	13.5	20	NO	YES	15x20x2 14x25x2	2 1	600	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, SUPPLY AIR SMOKE DETECTOR, 0-50% OSA HOOD
HP 2-10	YORK XP048	34.8	46.2	95	80	67	1,600	275	0.5	13/11	41.0	3.2/7.7	460/3/60	1	41.0	6.1	1.5	2.6	1.0	0.8	11.0	15	NO	NO	15x20x2 14x25x2	2 1	595	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-11	YORK XP048	34.8	46.2	95	80	67	1,600	260	0.5	13/11	41.0	3.2/7.7	460/3/60	1	41.0	6.1	1.5	2.6	1.0	0.8	11.0	15	NO	NO	15x20x2 14x25x2	2 1	595	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-12	YORK XP090	68.7	94.9	95	80	67	3,000	310	0.5	-/11	90.0	3.25/-	460/3/60	2	41.0	6.9	3	5.3	1.0	0.8	22.4	25	NO	YES	24x16x2	4	925	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, SUPPLY AIR SMOKE DETECTOR, 100% DIFF TEMPERATURE OSA ECONOMIZER, UNIT SERVING CONFERENCE ROOM TO BE PROVIDED WITH DEMAND CONTROL VENTILATION
HP 2-13	YORK XP060	44.6	60.7	95	80	67	2,000	510	0.5	13/0.6	56.5	3.2/7.7	460/3/60	1	52.0	7.7	1.5	2.6	1.0	1.3	13.5	20	NO	YES	15x20x2 14x25x2	2 1	600	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-14	YORK XP060	44.6	60.7	95	80	67	2,000	110	0.5	13/0.6	56.5	3.2/7.7	460/3/60	1	52.0	7.7	1.5	2.6	1.0	1.3	13.5	20	NO	YES	15x20x2 14x25x2	2 1	600	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, SUPPLY AIR SMOKE DETECTOR, 0-50% OSA HOOD
HP 2-15	YORK XP060	44.6	60.7	95	80	67	2,000	110	0.5	13/0.6	56.5	3.2/7.7	460/3/60	1	52.0	7.7	1.5	2.6	1.0	1.3	13.5	20	NO	YES	15x20x2 14x25x2	2 1	600	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, SUPPLY AIR SMOKE DETECTOR, 0-50% OSA HOOD
HP 2-16	YORK XP048	34.8	46.2	95	80	67	1,600	185	0.5	13/11	41.0	3.2/7.7	460/3/60	1	41.0	6.1	1.5	2.6	1.0	0.8	11.0	15	NO	NO	15x20x2 14x25x2	2 1	595	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
HP 2-17	YORK XP036	26.5	35.9	95	80	67	1,200	180	0.5	13/11	34.8	-/7.7	460/3/60	1	45.0	6.4	1.5	2.6	1	0.8	11.4	15	NO	NO	15x20x2 14x25x2	2 1	585	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD
3 HP 2-18	YORK XP036	26.5	35.9	95	80	67	1,200	40	0.5	13/11	34.8	-/7.7	460/3/60	1	45.0	6.4	1.5	2.6	1	0.8	11.4	15	NO	NO	15x20x2 14x25x2	2 1	585	PROVIDE WITH 14" CURB, BACNET COMMUNICATING THERMOSTAT, 0-50% OSA HOOD

SPLIT SYSTEM INDOOR FAN COIL SCHEDULE

UNIT NO.	4 MANUFACTURER & MODEL NO.	LOCATION	SERVICE	SA (CFM)	MIN OA (CFM)	ESP	COIL DATA				ELECTRICAL					FILTER (QUANT) SIZE	OPER WEIGHT (LBS)	REMARKS
							EAT DB (°F)	EAT WB (°F)	ROWS	AREA (SQ/FT)	HP	V/PH/HZ	MAXIMUM SIZE FUSE	E POWER	SMOKE DETECTOR			
FC 1-1	YORK NC090	1ST FLOOR	OFFICE	3,000	500	0.5	80	67	3	10.6	2	460/3/60	15	NO	YES	(4) 15x25x2	550	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-2	YORK AM370	1ST FLOOR	OFFICE	1,200	300	0.5	80	67	3	5.3	1/3	208/1/60	15	NO	NO	FIELD FABRICATED	155	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-3	YORK AM250	1ST FLOOR	OFFICE	800	270	0.5	80	67	3	4.0	1/4	208/1/60	15	NO	NO	FIELD FABRICATED	105	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-4	YORK AM250	1ST FLOOR	OFFICE	800	240	0.5	80	67	3	4.0	1/4	208/1/60	15	NO	NO	FIELD FABRICATED	105	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-5	YORK AM370	1ST FLOOR	OFFICE	1,200	80	0.5	80	67	3	5.3	1/3	208/1/60	15	NO	NO	FIELD FABRICATED	155	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-6	YORK AM250	1ST FLOOR	OFFICE	800	140	0.5	80	67	3	4.0	1/4	208/1/60	15	NO	NO	FIELD FABRICATED	105	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-7	YORK AM370	1ST FLOOR	OFFICE	1,200	55	0.5	80	67	3	5.3	1/3	208/1/60	15	NO	NO	FIELD FABRICATED	155	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-8	YORK AM600	1ST FLOOR	OFFICE	2,000	150	0.5	80	67	4	5.3	3/4	208/1/60	15	NO	YES	FIELD FABRICATED	155	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT
FC 1-9	YORK AM600	1ST FLOOR	OFFICE	2,000	150	0.5	80	67	4	5.3	3/4	208/1/60	15	NO	YES	FIELD FABRICATED	155	PROVIDE WITH BACNET COMMUNICATING THERMOSTAT

SPLIT SYSTEM OUTDOOR HEAT PUMP SCHEDULE

UNIT NO.	4 MANUFACTURER & MODEL NO.	LOCATION	SERVICE	CAPACITY TOTAL (BTUH)	AMBIENT AIR TEMP (°F) DB	HEATING CAPACITY (MBH)	EER	HSPF	ELECTRICAL								MAXIMUM FUSE SIZE	OPER WEIGHT (LBS)	REMARKS
									V/PH/HZ	COMPRESSOR			OUTDOOR FAN		MINIMUM CIRC AMPS	E POWER			
										QUANT	LRA	RLA	QUANT	FLA					
CU 1-1	YORK PC090	ROOF	FC 1-1	92,000	95	82,000	11.0	3.3 COP	460/3/60	1	100	12.2	2	1.2	17.6	NO	25	450	PROVIDE WITH 5/8" LIQUID LINE AND1-1/8" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-2	YORK YJD36	ROOF	FC 1-2	36,000	95	32,800	11.0	7.7	460/3/60	1	34	4.5	1	0.8	7.2	NO	15	210	PROVIDE WITH 3/8" LIQUID LINE AND 3/4" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-3	YORK YHJD24	ROOF	FC 1-3	23,800	95	32,800	11.5	7.7	208/1/60	1	43	8.3	1	0.8	11.2	NO	15	195	PROVIDE WITH 3/8" LIQUID LINE AND 3/4" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-4	YORK YHJD24	ROOF	FC 1-4	23,800	95	32,800	11.5	7.7	208/1/60	1	43	8.3	1	0.8	11.2	NO	15	195	PROVIDE WITH 3/8" LIQUID LINE AND 3/4" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-5	YORK YJD36	ROOF	FC 1-5	36,000	95	32,800	11.0	7.7	460/3/60	1	34	4.5	1	0.8	7.2	NO	15	210	PROVIDE WITH 3/8" LIQUID LINE AND 3/4" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-6	YORK YHJD24	ROOF	FC 1-6	23,800	95	32,800	11.5	7.7	208/1/60	1	43	8.3	1	0.8	11.2	NO	15	195	PROVIDE WITH 3/8" LIQUID LINE AND 3/4" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-7	YORK YJD36	ROOF	FC 1-7	36,000	95	32,800	11.0	7.7	460/3/60	1	34	4.5	1	0.8	7.2	NO	15	210	PROVIDE WITH 3/8" LIQUID LINE AND 3/4" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-8	YORK YJD60	ROOF	FC 1-8	55,000	95	55,000	11.5	7.7	460/3/60	1	53	9.0	1	0.8	12.0	NO	20	280	PROVIDE WITH 3/8" LIQUID LINE AND 7/8" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS
CU 1-9	YORK YJD60	ROOF	FC 1-9	55,000	95	55,000	11.5	7.7	460/3/60	1	53	9.0	1	0.8	12.0	NO	20	280	PROVIDE WITH 3/8" LIQUID LINE AND 7/8" VAPOR LINE. IN STALL PER MANUFACTURE'S RECOMMENDATIONS

EXHAUST FAN SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	TYPE	2 CFM	ARR	ESP (IN)	FAN RPM	ELECTRICAL				OPER WEIGHT (LBS)	REMARKS
									V/PH/HZ	HP	VFD	E POWER		
EF 1	GREENHECK GB-180-15	ROOF	RESTROOMS / GENERAL EXHAUST	DOWN FLOW	4,040	-	0.75	1,214	460/3/60	1 1/2	NO	NO	150	PROVIDE WITH 14" ROOF CURB WITH BACK DRAFT DAMPER.
EF 1-1	GREENHECK 27-BISW-21	ROOF	CONTROL AREA 2	BISW	11,505	10	3.0	1,312	460/3/60	10	YES	YES	1,100	PROVIDE WITH WEATHER HOOD, STRUCTURAL BASE WITH 2" SPRING ISOLATION, HOUSING SEALED FOR OUTDOOR USE AND CORROSION RESISTANT PAINT. EF TO BE TYPE A SPARK PROOF CONSTRUCTION.
EF 1-2	GREENHECK 27-BISW-21	ROOF	CONTROL AREA 1	BISW	11,990	10	3.0	1,335	460/3/60	10	YES	YES	1,100	PROVIDE WITH WEATHER HOOD, STRUCTURAL BASE TO 2" SPRING ISOLATION, HOUSING SEALED FOR OUTDOOR USE AND CORROSION RESISTANT PAINT.
EF 2-1	GREENHECK 22-BISW-21	ROOF	CONTROL AREA 5	BISW	7,020	10	3.0	1,722	460/3/60	7 1/2	YES	YES	785	PROVIDE WITH WEATHER HOOD, STRUCTURAL BASE WITH 2" SPRING ISOLATION, HOUSING SEALED FOR OUTDOOR USE AND CORROSION RESISTANT PAINT. EF TO BE TYPE A SPARK PROOF CONSTRUCTION.
EF 2-2	GREENHECK 18-BISW-21	ROOF	CONTROL AREA5	BISW	4,690	10	3.0	1,830	460/3/60	5	YES	YES	580	PROVIDE WITH WEATHER HOOD, STRUCTURAL BASE TO 2" SPRING ISOLATION, HOUSING SEALED FOR OUTDOOR USE AND CORROSION RESISTANT PAINT.
EF 2-3	GREENHECK 33-BISW-21	ROOF	CONTROL AREA 4	BISW	15,800	10	3.0	1,016	460/3/60	15	YES	YES	1,350	PROVIDE WITH WEATHER HOOD, STRUCTURAL BASE TO 2" SPRING ISOLATION, HOUSING SEALED FOR OUTDOOR USE AND CORROSION RESISTANT PAINT.
EF 2-4	GREENHECK 9-BISW-21	ROOF	DUCTED BSC - CONTROL AREA 4	BISW	1,600	10	3.5	3,609	460/3/60	1 1/2	YES	YES	250	PROVIDE WITH WEATHER HOOD, STRUCTURAL BASE WITH 2" SPRING ISOLATION, HOUSING SEALED FOR OUTDOOR USE AND CORROSION RESISTANT PAINT.

SUPPLY FAN SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	TYPE	CFM	ARR	ESP (IN)	FAN RPM	ELECTRICAL					OPER WEIGHT (LBS)	REMARKS
									V/PH/HZ	HP	VFD	E POWER	SMOKE DETECTOR		
SF 1	GREENHECK LSF-16-7	ROOF	FAN COIL OSA	LOUVERED PENTHOUSE	2,800	-	0.75	937	460/3/60	3/4	YES	NO	YES	750	

GRILLES, REGISTERS AND DIFFUSER SCHEDULE

NO.	MANUFACTURER & MODEL NO.	TYPE	SIZE	DESCRIPTION
S1	TITUS PMC	T-BAR CEILING	SEE PLANS	ADJUSTABLE MODULAR CORE DIFFUSER, 4 CORES, SQUARE NECK, PERFORATED FLUSH FACE, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 3 BORDER FOR LAY-IN CEILING
S2	TITUS PMC	GYP. CEILING	SEE PLANS	ADJUSTABLE MODULAR CORE DIFFUSER, 4 CORES, SQUARE NECK, PERFORATED FLUSH FACE, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 1C BORDER FOR GYP CEILING
S3	TITUS FLOWBAR	GYP. CEILING	SEE PLANS	LINEAR SLOT DIFFUSER,(1) 2" SLOTS, PROVIDE WITH INSULATED PLENUM , STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 1B BORDER FOR GYP CEILING
S4	TITUS TMS	T-BAR CEILING	SEE PLANS	SQUARE DIFFUSER, 3 CONE DESIGN, ROUND NECK, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 3 FULL FACE BORDER FOR LAY-IN CEILING
S5	TITUS TMS	GYP. CEILING	SEE PLANS	SQUARE DIFFUSER, 3 CONE DESIGN, ROUND NECK, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 1 BORDER GYP CEILING
S6	PRICE HCF	T-BAR CEILING	SEE PLANS	HIGH CAPACITY, FLUSH FACE DIFFUSER, 2-WAY PATTERN, 24"x24" x 10" NECK, ALUMINUM CONSTRUCTION, STANDARD WHITE FINISH
S7	PRICE HCF	T-BAR CEILING	SEE PLANS	HIGH CAPACITY, FLUSH FACE DIFFUSER, 2-WAY PATTERN, 24"x48" x 12" NECK, ALUMINUM CONSTRUCTION, STANDARD WHITE FINISH
S8	TITUS TMR	T-BAR CEILING	SEE PLANS	ROUND CONE DIFFUSER, 3 CONES, ROUND NECK, STEEL CONSTRUCTION, STANDARD WHITE FINISH, DUCT MOUNTED
R1	TITUS PAR	T-BAR CEILING	SEE PLANS	PERFORATED FLUSH FACE, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 3 BORDER FOR LAY-IN CEILING
R2	TITUS PAR	GYP. CEILING	SEE PLANS	PERFORATED FLUSH FACE, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 1C BORDER FOR GYP CEILING
R3	TITUS 350FL	SURFACE MOUNT	SEE PLANS	LOUVERED RETURN GRILLE,3/4" BLADE SPACE, SINGLE DEFLECTION, BLADES HORIZONTAL, ALUMINUM CONSTRUCTION, STANDARD WHITE FINISH, TYPE 1 BORDER FOR SURFACE MOUNT
R4	TITUS FLOWBAR	GYP. CEILING	SEE PLANS	LINEAR SLOT DIFFUSER,(1) 2" SLOTS, PROVIDE WITH PLENUM , STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 1B BORDER FOR GYP CEILING. MATCH S3 SUPPLY DIFFUSER
E1	TITUS PAR	T-BAR CEILING	SEE PLANS	PERFORATED FLUSH FACE, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 3 BORDER FOR LAY-IN CEILING
E2	TITUS PAR	GYP. CEILING	SEE PLANS	PERFORATED FLUSH FACE, STEEL CONSTRUCTION, STANDARD WHITE FINISH, TYPE 1 BORDER FOR GYP CEILING

DUCT MATERIAL SCHEDULE

TYPE	DESCRIPTION	LOCATION	DUCT SIZE	MATERIALS	INSULATION	REMARKS
SUPPLY	GENERAL OFFICE/LAB - ROUND DUCT	INDOOR	UP TO 24"	GALVANIZED SPIRAL WOUND	EXTERNAL - R4.2 MIN	
SUPPLY	GENERAL OFFICE/LAB FLEX DUCT, 6' MAX LENGTH	INDOOR	UP TO 24"	ACOUSTIFLEX	INTERNAL - R4.2 MIN	
SUPPLY	GENERAL OFFICE,/LAB SQUARE DUCT	INDOOR	ALL	GALVANIZED	EXTERNAL - R4.2 MIN	
SUPPLY	GENERAL OFFICE/LAB SQUARE DUCT	OUTDOOR	ALL	DOUBLE WALL GALVANIZED, SOLID INTERNAL LINER	R8 MIN	SLOPE TOP OF DUCT TO PREVENT STANDING WATER
RETURN/EXHAUST	GENERAL OFFICE/LAB ROUND DUCT	INDOOR/OUTDOOR	UP TO 24"	GALVANIZED SPIRAL WOUND	INTERNAL - R4.2 MIN (RETURN ONLY)	SLOPE TOP OF OUT DOOR DUCT TO PREVENT STANDING WATER
RETURN/EXHAUST	GENERAL OFFICE/LAB SQUARE DUCT	INDOOR/OUTDOOR	ALL	GALVANIZED	INTERNAL - R4.2 MIN (RETURN ONLY)	SLOPE TOP OF OUT DOOR DUCT TO PREVENT STANDING WATER
EXHAUST	FUMEHOOD & BSC - BRANCH ROUND DUCT	INDOOR/OUTDOOR	UP TO 24"	PVC COATED SPIRAL WOUND	NONE	SLOPE TOP OF OUT DOOR DUCT TO PREVENT STANDING WATER
EXHAUST	FUMEHOOD & BSC BRANCH SQUARE DUCT	INDOOR/OUTDOOR	ALL	PVC COATED	NONE	SLOPE TOP OF OUT DOOR DUCT TO PREVENT STANDING WATER
EXHAUST	WET EXHAUST - BRANCH ROUND DUCT	INDOOR	UP TO 24"	304 STAINLESS STEEL, WELDED CONSTRUCTION	NONE	
EXHAUST	WET EXHAUST - BRANCH SQUARE DUCT	INDOOR	ALL	304 STAINLESS STEEL, WELDED CONSTRUCTION	NONE	

ALL DUCT SHALL BE FABRICATED, INSTALLED AND INSULATED PER SMACNA GUIDELINES, 2010 CALIFORNIA MECHANICAL CODE & 2008 CALIFORNIA TITLE 24 STANDARDS.

CONSULTANTS

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE

TITLE

MECHANICAL - SCHEDULES

M0.2

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DUCTLESS SPLIT SYSTEM INDOOR UNIT SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	NOMINAL CAPACITY (TONS)	ELECTRICAL						OPER WEIGHT (LBS)	REMARKS
					V/PH/HZ	MCA	MOP	INPUT (KW)	SEER	E-PWR		
AC 1-1	MITSUBISHI PKA-A18GA	1ST FLOOR IDF	1ST FLOOR IDF	1.5	208/1/60	1	15	2.24	14.4	YES	50	PROVIDE WITH 1/2" HOT GAS LINE AND 1/4" LIQUID LINE, WIRED WALL MOUNTED CONTROLLER, INSTALL PER MANUFACTURER'S RECOMMENDATIONS, PROVIDE TEMPERATURE MONITORING OF SPACE BEING SERVED BY BMS.
AC 1-2	MITSUBISHI PKA-A18GA	1ST FLOOR BMS RM	1ST FLOOR BMS RM	1.5	208/1/60	1	15	2.24	14.4	YES	50	PROVIDE WITH 1/2" HOT GAS LINE AND 1/4" LIQUID LINE, WIRED WALL MOUNTED CONTROLLER, INSTALL PER MANUFACTURER'S RECOMMENDATIONS, PROVIDE TEMPERATURE MONITORING OF SPACE BEING SERVED BY BMS.
(F) AC 1-3	MITSUBISHI PKA-A18GA	1ST FLOOR UPS RM	1ST FLOOR UPS RM	1.5	208/1/60	1	15	2.24	14.4	YES	50	PROVIDE WITH 1/2" HOT GAS LINE AND 1/4" LIQUID LINE, WIRED WALL MOUNTED CONTROLLER, INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE TEMPERATURE MONITORING OF SPACE BEING SERVED BY BMS. UNIT TO BE INSTALLED IN THE FUTURE. LINE SETS TO BE INSTALLED DAY ONE.
AC 2-1	MITSUBISHI PKA-A18GA	2ND FLOOR IDF	2ND FLOOR IDF	1.5	208/1/60	1	15	2.24	14.4	YES	50	PROVIDE WITH 1/2" HOT GAS LINE AND 1/4" LIQUID LINE, WIRED WALL MOUNTED CONTROLLER, INSTALL PER MANUFACTURER'S RECOMMENDATIONS, PROVIDE TEMPERATURE MONITORING OF SPACE BEING SERVED BY BMS.

DUCTLESS SPLIT SYSTEM CONDENSING UNIT SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	NOMINAL CAPACITY (TONS)	ELECTRICAL					WEIGHT	REMARKS
					V/PH/HZ	NO FANS	FAN FLA	MINIMUM CIRC AMPS	MAXIMUM FUSE SIZE		
ACCU 1-1	MITSUBISHI PUY-A18NHA	ROOF	AC 1-1	1.5	208/1/60	1	0.4	13	20	100	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
ACCU 1-2	MITSUBISHI PUY-A18NHA	ROOF	AC 1-2	1.5	208/1/60	1	0.4	13	20	100	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
(F) ACCU 1-3	MITSUBISHI PUY-A18NHA	ROOF	AC 1-3	1.5	208/1/60	1	0.4	13	20	100	INSTALL PER MANUFACTURER'S RECOMMENDATIONS. UNIT TO BE INSTALLED IN THE FUTURE. LINES SETS TO BE INSTALLED DAY ONE.
ACCU 2-1	MITSUBISHI PUY-A18NHA	ROOF	AC 2-1	1.5	208/1/60	1	0.4	13	20	100	INSTALL PER MANUFACTURER'S RECOMMENDATIONS

APC COMPUTER ROOM SPLIT SYSTEM INDOOR UNIT SCHEDULE (OFCI)

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	NOMINAL CAPACITY (KW)	ELECTRICAL							OPER WEIGHT (LBS)	REMARKS
					V/PH/HZ	MCA	MOP	LRA	RLA	POWER	E-PWR		
APC 1	APC ACRP101	SERVER ROOM	SERVER ROOM	30	480/3/60	31	50	139	23	25.8	YES	850	PROVIDE WITH 1-3/8" HOT GAS LINE AND 7/8" LIQUID LINE, 85% FILTERS, CABLE TYPE LEAK DETECTION, AND BACNET COMMUNICATION CARD. COORDINATE LOCATION OF IN-ROW UNITS WITH HOT AISLE CONTAINMENT SYSTEM. INSTALL PER MANUFACTURE'S RECOMMENDATIONS.
APC 2	APC ACRP101	SERVER ROOM	SERVER ROOM	30	480/3/60	31	50	139	23	25.8	YES	850	PROVIDE WITH 1-3/8" HOT GAS LINE AND 7/8" LIQUID LINE, 85% FILTERS, CABLE TYPE LEAK DETECTION, AND BACNET COMMUNICATION CARD. COORDINATE LOCATION OF IN-ROW UNITS WITH HOT AISLE CONTAINMENT SYSTEM. INSTALL PER MANUFACTURE'S RECOMMENDATIONS.

APC COMPUTER ROOM SPLIT SYSTEM CONDENSING UNIT SCHEDULE (OFCI)

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	NOMINAL CAPACITY (KW)	ELECTRICAL					WEIGHT	REMARKS
					V/PH/HZ	NO FANS	UNIT FLA	MINIMUM CIRC AMPS	MAXIMUM FUSE SIZE		
APCCU 2-1	APC ACCD75204	ROOF	APC 1	30.0	460/3/60	1	3.5	15	15	360	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
APCCU 2-2	APC ACCD75204	ROOF	APC 2	30.0	460/3/60	1	3.5	15	15	360	INSTALL PER MANUFACTURER'S RECOMMENDATIONS

GAS FIRED STEAM BOILER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	UNIT HP	LBS/HR OUTPUT	CAPACITY (MBH)		WORKING PRESSURE (PSIG)	FEEDWATER TEMP (°F)	ELECTRICAL	OPER WEIGHT (LBS)	REMARKS
						INPUT	OUTPUT			V/PH/HZ		
SB 1	PARKER 103-9.5	EQUIPMENT YARD	STEAM	9.5	328	398	318	80	210	115/1/60	1,500	PROVIDE WITH STD. TRIM PACKAGE INCLUDING MODULATING FIRING REFLEX-TYPE WATER LEVEL GAUGE GLASS, LOW FIRE HOOD TIMER, FACTORY MUTUAL TRIM, ALARM FOR ALL LIMITS WITH DRY CONTACTS AND ANCHORING CLIPS, BAROMETRIC DAMPER ON VENT STACK. UNIT SHALL BE BUILT FOR OUTDOOR INSTALLATION WITH STAINLESS STEEL OUTER LID. PROVIDE EMERGENCY POWER.
SB 2	PARKER 103- 20	EQUIPMENT YARD	STEAM	20	690	860	690	80	210	115/1/60	2,000	PROVIDE WITH PREMIX LOW NOX BURNER SYSTEM FOR 30PPM NOX LEVELS, STD. TRIM PACKAGE INCLUDING MODULATING FIRING REFLEX-TYPE WATER LEVEL GAUGE GLASS, LOW FIRE HOOD TIMER, FACTORY MUTUAL TRIM, ALARM FOR ALL LIMITS WITH DRY CONTACTS AND ANCHORING CLIPS, BAROMETRIC DAMPER ON VENT STACK, UNIT SHALL BE BUILT FOR OUTDOOR INSTALLATION WITH STAINLESS STEEL OUTER LID, PROVIDE EMERGENCY POWER.

STEAM TANK SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	CAPACITY (GALS)	SIZE WxHxL (IN)	OPER WEIGHT (LBS)	REMARKS
FWT 1	PARKER WRH3648	EQUIPMENT YARD	STEAM	110	36"x48"x67"	1,500	PROVIDE WITH STEAM PREHEATER TUBE ASSEMBLY, (2) BURKS PUMPS MODEL NUMBER 5CTEM, 1/2 HP @ 208/1/60 FOR 9.5 BHP STEAM BOILER AND (2) BURKS PUMPS MODEL NUMBER BDCA-1.25, FOR 20 HP BOILER
BDT 1	PARKER BD2048	EQUIPMENT YARD	STEAM	39	20"0x48"	600	PROVIDE WITH BLOW DOWN COOLING ASSEMBLY

PROCESS WATER CHILLER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	CAPACITY (TONS)	COOLER				COND EAT (°F)	ELECTRICAL			OPER WEIGHT (LBS)	REMARKS
					GPM	EWT (°F)	LWT (°F)	TANK CAP (GAL)		COMPKW	V/PH/HZ	E PWR		
PCH 1	PARKER PCW060A	ROOF	PROCESS CHILLED WATER	5.0	12.2	58	48	32	95	5.1	460/3/60	YES	1,000	PROVIDE WITH INTEGRATED CIRC PUMP, THERMAL BUFFER TANK, INTERNAL BYPASS, EXPANSION TANK, AND ADVANCED MICROPROCESSOR WITH NETWORK COMMUNICATION CARD.
PCH 2	PARKER PCW060A	ROOF	PROCESS CHILLED WATER	5.0	12.2	58	48	32	95	5.1	460/3/60	YES	1,000	PROVIDE WITH INTEGRATED CIRC PUMP, THERMAL BUFFER TANK, INTERNAL BYPASS, EXPANSION TANK, AND ADVANCED MICROPROCESSOR WITH NETWORK COMMUNICATION CARD . 100% BACKUP

AUTOMATIC COMPOUND FEEDER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	ELECTRICAL	OPER WEIGHT (LBS)	REMARKS
CF 1	PARKER ST-30	EQUIPMENT YARD	STEAM	115/1/60	50	50 GALLON AUTOMATIC CHEMICAL FEEDER, WITH CHEMICAL METERING PUMP, TANK AND MIXER

STEAM TRAP SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	SERVICE	TYPE	PIPE CONN. (IN)	ORIFICE SIZE (IN)	CONDENSATE FLOW RATE (LBS/HR)	INLET PRESSURE (PSI)	DISCHARGE PRESSURE (PSI)	REMARKS
ST 1	SPIRAX SARCO FT-125	STEAM MAIN DRIP LEG	FLOAT & THERMOSTATIC	3/4	1/8	100	55	0.5	

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MECHANICAL - SCHEDULES

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AIR COOLED CHILLER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	CAPACITY (TONS)	AMBIENT AIR TEMP (°F) DB	CHILLED WATER				MIN CAPACITY	ELECTRICAL								OPER WEIGHT (LBS)	REMARKS
					GPM	EWT (°F)	LWT (°F)	WTR PD (FT/HD)		ERR	COMPRESSOR (EA) QTY	COMPRESSOR (EA) RLA	CONDENSER FAN (EA) QTY	CONDENSER FAN (EA) FLA	TOTAL UNIT MCA	TOTAL UNIT TYPE OF START	TOTAL UNIT V/PH/HZ	TOTAL UNIT E POWER		
ACH 1	YORK YLAA0156	ROOF	148	95	255	58	44	7.7	15%	10.6	5	54.5	10	4	326	SOFT START	460/3/60	NO	9,000	PROVIDE WITH COATED AL/AL COILS, SCROLL COMPRESSORS
ACH 2	YORK YLAA0156	ROOF	148	95	255	58	44	7.7	15%	10.6	5	54.5	10	4	326	SOFT START	460/3/60	NO	9,000	PROVIDE WITH COATED AL/AL COILS, SCROLL COMPRESSORS

HOT WATER BOILER SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	INPUT (MBH)	OUTPUT (MBH)	EWT (°F)	LWT (°F)	ΔP FT	GPM	V/PH/HZ	OPER WEIGHT (LBS)	REMARKS
B 1	RAYPAK WH2002B	ROOF	1,999	1,699	180	150	14.0	115	115/1/60	1,500	WITH OPTIONAL PUMP AND COVER.
B 2	RAYPAK WH2002B	ROOF	1,999	1,699	180	150	14.0	115	115/1/60	1,500	WITH OPTIONAL PUMP AND COVER.

PUMP SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	SERVICE	TYPE	GPM	FT HD	ELECTRICAL V/PH/HZ	ELECTRICAL HP	ELECTRICAL RPM	ELECTRICAL VFD	ELECTRICAL E POWER	OPER WEIGHT (LBS)	REMARKS
CHWP 1	BELL & GOSSETT 1510-4BC	CHW	CENTRIFUGAL BASE MOUNTED	510	70	460/3/60	20	1,750	YES	NO	600	
CHWP 2	BELL & GOSSETT 1510-4BC	CHW	CENTRIFUGAL BASE MOUNTED	510	70	460/3/60	20	1,750	YES	NO	600	REDUNDANT PUMP.
HHWP 1	BELL & GOSSETT 1510 2 1/2AB	HHW	CENTRIFUGAL BASE MOUNTED	235	90	460/3/60	10	3,500	YES	NO	300	
HHWP 2	BELL & GOSSETT 1510 2 1/2AB	HHW	CENTRIFUGAL BASE MOUNTED	235	90	460/3/60	10	3,500	YES	NO	300	REDUNDANT PUMP.

BUFFER TANK SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	SERVICE	CAPACITY (GALS)	SIZE DIA x HEIGHT (IN)	OPER WEIGHT (LBS)	REMARKS
BT 1	HANSON TANK B-610-48	ROOF	CHW	610	48"ØX90"	6,500	PROVIDE WITH HIGH CAPACITY AUTOMATIC AIR VENT, INTERNAL DIVIDER PLATE, FLANGED CONNECTIONS, STANDARD LEG SUPPORTS, 1-1/2" INSULATION WITH STUCCO EMBOSSED ALUMINUM JACKET
BT 2	HANSON TANK WK-378-B	ROOF	HHW	189	30"ØX66"	2,200	PROVIDE WITH HIGH CAPACITY AUTOMATIC AIR VENT, INTERNAL BAFFLE PLATES, FLANGED CONNECTIONS, STANDARD LEG SUPPORTS, 1-1/2" INSULATION WITH STUCCO EMBOSSED ALUMINUM JACKET

PIPE SYSTEM MATERIAL SCHEDULE

SYSTEM DESCRIPTION	PIPE MATERIAL	PIPE FITTINGS	INSULATION
CHILLED WATER - INDOOR	2" AND SMALLER: ASTM B88/B88M COPPER TUBE, TYPE L, ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY OR TIN SILVER OR AWS A5.8/A5.8M BCuP COPPER SILVER ALLOY 2-1/2" AND LARGER: ASTM A53/A53M, SCHEDULE 40 BLACK, WELDED OR GROOVED JOINT TYPE	2" AND SMALLER: ASME B16.18 CAST BRASS/BRONZE, ASME B16.22 SOLDER WROUGHT COPPER FITTINGS OR ASME B16.3 MALLEABLE IRON THREADED FITTINGS (ABOVE GROUND ONLY) 2-1/2" AND LARGER: ASTM A234/A234M, WROUGHT STEEL WELDING TYPE OR AWWA A234 C606 GROOVED TYPE	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F
CHILLED WATER - OUTDOOR	2" AND SMALLER: ASTM B88/B88M COPPER TUBE, TYPE L, ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY OR TIN SILVER OR AWS A5.8/A5.8M BCuP COPPER SILVER ALLOY 2-1/2" AND LARGER: ASTM A53/A53M, SCHEDULE 40 BLACK, WELDED OR GROOVED JOINT TYPE	2" AND SMALLER: ASME B16.18 CAST BRASS/BRONZE, ASME B16.22 SOLDER WROUGHT COPPER FITTINGS OR ASME B16.3 MALLEABLE IRON THREADED FITTINGS (ABOVE GROUND ONLY) 2-1/2" AND LARGER: ASTM A234/A234M, WROUGHT STEEL WELDING TYPE OR AWWA A234 C606 GROOVED TYPE	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F, WITH ASTM B209 0.016, SMOOTH ALUMINUM JACKET
HEATING HOT WATER - INDOOR	2" AND SMALLER: ASTM B88/B88M COPPER TUBE, TYPE L, ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY OR TIN SILVER OR AWS A5.8/A5.8M BCuP COPPER SILVER ALLOY 2-1/2" AND LARGER: ASTM A53/A53M, SCHEDULE 40 BLACK, WELDED OR GROOVED JOINT TYPE	2" AND SMALLER: ASME B16.18 CAST BRASS/BRONZE, ASME B16.22 SOLDER WROUGHT COPPER FITTINGS OR ASME B16.3 MALLEABLE IRON THREADED FITTINGS (ABOVE GROUND ONLY) 2-1/2" AND LARGER: ASTM A234/A234M, WROUGHT STEEL WELDING TYPE OR AWWA A234 C606 GROOVED TYPE	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F
HEATING HOT WATER - OUTDOOR	2" AND SMALLER: ASTM B88/B88M COPPER TUBE, TYPE L, ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY OR TIN SILVER OR AWS A5.8/A5.8M BCuP COPPER SILVER ALLOY 2-1/2" AND LARGER: ASTM A53/A53M, SCHEDULE 40 BLACK, WELDED OR GROOVED JOINT TYPE	2" AND SMALLER: ASME B16.18 CAST BRASS/BRONZE, ASME B16.22 SOLDER WROUGHT COPPER FITTINGS OR ASME B16.3 MALLEABLE IRON THREADED FITTINGS (ABOVE GROUND ONLY) 2-1/2" AND LARGER: ASTM A234/A234M, WROUGHT STEEL WELDING TYPE OR AWWA A234 C606 GROOVED TYPE	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F, WITH ASTM B209 0.016, SMOOTH ALUMINUM JACKET
PROCESS CHILLED WATER - INDOOR	2" AND SMALLER: ASTM B88/B88M COPPER TUBE, TYPE L, ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY OR TIN SILVER OR AWS A5.8/A5.8M BCuP COPPER SILVER ALLOY	2" AND SMALLER: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER FITTINGS	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F
PROCESS CHILLED WATER - OUTDOOR	2" AND SMALLER: ASTM B88/B88M COPPER TUBE, TYPE L, ASTM B32 LEAD-FREE SOLDER, HB ALLOY (95-5 TIN-ANTIMONY OR TIN SILVER OR AWS A5.8/A5.8M BCuP COPPER SILVER ALLOY	2" AND SMALLER: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER FITTINGS	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F, WITH ASTM B209 0.016, SMOOTH ALUMINUM JACKET
STEAM - INDOOR	ASTM A53/A53M, SCHEDULE 40 BLACK, THREADED	ASTM A234/A234M, WROUGHT STEEL THREADED	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F
STEAM - OUTDOOR	ASTM A53/A53M, SCHEDULE 40 BLACK, THREADED	ASTM A234/A234M, WROUGHT STEEL THREADED	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F, WITH ASTM B209 0.016, SMOOTH ALUMINUM JACKET
STEAM CONDENSATE RETURN - INDOOR	ASTM A53/A53M, SCHEDULE 80 BLACK, WELDED	ASTM A234/A234M, WROUGHT STEEL WELDED	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F
STEAM CONDENSATE RETURN - OUTDOOR	ASTM A53/A53M, SCHEDULE 80 BLACK, WELDED	ASTM A234/A234M, WROUGHT STEEL WELDED	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F, WITH ASTM B209 0.016, SMOOTH ALUMINUM JACKET
REFRIGERANT PIPING	ASTM B280,H58 HARD DRAWN COPPER TUBE	ASME B16.22 WROUGHT COPPER, BRAZE, AWS A5.8 BCuP	GLASS FIBER , ASTM C547, RIGID MOLDED, NON COMBUSTIBLE, K VALUE: ASTM C177, 0.24 @ 75F, WITH ASTM B209 0.016, SMOOTH ALUMINUM JACKET

ALL PIPE SHALL BE FABRICATED, INSTALLED AND INSULATED PER 2010 CALIFORNIA MECHANICAL CODE & 2SECTION 118 OF THE EES.

REHEAT COIL SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	SERVICE	CFM	APD (IN)	EAT DB (°F)	CAPACITY (MBH)	HEATING HOT WATER EWT (°F)	HEATING HOT WATER LWT (°F)	HEATING HOT WATER GPM	HEATING HOT WATER WTR PD (FT/HD)	ROWS	FINS/IN	LENGTH (IN)	HEIGHT (IN)	CONNECTION PIPE SIZE (IN)	OPER WEIGHT (LBS)	REMARKS
RH 1-1	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	2800	.025	55	91,140	180	150	6.1	5	2	8	33	24	1.125		650 FPM MAX VELOCITY
RH 1-2	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	900	.025	55	29,295	180	150	2.0	5	2	8	20	15	0.625		650 FPM MAX VELOCITY
RH 1-3	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	860	.025	55	27,993	180	150	1.9	5	2	8	20	15	0.625		650 FPM MAX VELOCITY
RH 1-4	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	1250	.025	55	40,688	180	150	2.7	5	2	8	25	15	1.125		650 FPM MAX VELOCITY
RH 1-5	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	4005	.025	55	130,363	180	150	8.7	5	2	8	36	24	1.125		650 FPM MAX VELOCITY
RH 1-6	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	2250	.025	55	73,238	180	150	4.9	5	2	8	26	24	1.125		650 FPM MAX VELOCITY
RH 1-7	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	300	.025	55	9,765	180	150	0.7	5	2	8	15	9	0.625		650 FPM MAX VELOCITY
RH 1-8	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	970	.025	55	31,574	180	150	2.1	5	2	8	20	15	0.75		650 FPM MAX VELOCITY
RH 1-9	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	1350	.025	55	43,943	180	150	2.9	5	2	8	25	15	0.75		650 FPM MAX VELOCITY
RH 1-10	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	1950	.025	55	63,473	180	150	4.2	5	2	8	24	24	0.75		650 FPM MAX VELOCITY
RH 1-11	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	3025	.025	55	98,464	180	150	6.6	5	2	8	35	24	0.75		650 FPM MAX VELOCITY
RH 1-12	RHAN INDUSTRIES OR EQUAL	1ST FLOOR LAB	1185	.025	55	38,572	180	150	2.6	5	2	8	23	15	0.75		650 FPM MAX VELOCITY
RH 2-1	NOT USED																
RH 2-2	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	2220	.025	55	72,261	180	150	4.8	5	2	8	23	15	1.125		650 FPM MAX VELOCITY
RH 2-3	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	1210	.025	55	39,386	180	150	2.6	5	2	8	23	15	1.125		650 FPM MAX VELOCITY
RH 2-4	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	3805	.025	55	123,853	180	150	8.3	5	2	8	35	24	1.125		650 FPM MAX VELOCITY
RH 2-5	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	2780	.025	55	90,489	180	150	6.0	5	2	8	33	24	1.125		650 FPM MAX VELOCITY
RH 2-6	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	1785	.025	55	58,102	180	150	3.9	5	2	8	25	20	1.125		650 FPM MAX VELOCITY
RH 2-7	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	770	.025	55	25,064	180	150	1.7	5	2	8	25	9	0.625		650 FPM MAX VELOCITY
RH 2-8	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	4050	.025	55	131,828	180	150	8.8	5	2	8	37	30	1.125		650 FPM MAX VELOCITY
RH 2-9	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	200	.025	55	6,510	180	150	0.4	5	2	8	13	6	0.625		650 FPM MAX VELOCITY
RH 2-10	NOT USED																
RH 2-11	NOT USED																
RH 2-12	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	3640	.025	55	118,482	180	150	7.9	5	2	8	35	30	1.125		650 FPM MAX VELOCITY
RH 2-13	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	1785	.025	55	58,102	180	150	3.9	5	2	8	25	20	1.125		650 FPM MAX VELOCITY
RH 2-14	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	3150	.025	55	102,533	180	150	6.8	5	2	8	30	24	1.125		650 FPM MAX VELOCITY
RH 2-15	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	1505	.025	55	48,988	180	150	3.3	5	2	8	20	18	1.125		650 FPM MAX VELOCITY
RH 2-16	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	220	.025	55	7,161	180	150	0.5	5	2	8	13	6	0.625		650 FPM MAX VELOCITY
RH 2-17	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	330	.025	55	10,742	180	150	0.7	5	2	8	15	9	0.625		650 FPM MAX VELOCITY
RH 2-18	RHAN INDUSTRIES OR EQUAL	2ND FLOOR LAB	750	.025	55	24,413	180	150	1.6	5	2	8	25	9	0.625		650 FPM MAX VELOCITY

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PERFORMANCE CERTIFICATE OF COMPLIANCE

(Part 1 of 2)

PERF-1C

ENERGY EFFICIENCY

Compliance Software: eTool 2013.01 — Date: 3/6/2013

Project Status: Proposed — Building Type: Multi-Family Residential — Building Area: 4179 sq ft — Number of Units: 7

Climate Zone: 7 — Project Scope: New Construction

ANNUAL TDV ENERGY USE SUMMARY (Whole-Building)

	Standard Proposed	Design	Compliance Margin
Heating	56.62	56.62	0.00
Cooling	21.75	21.75	0.00
Interior Lighting	40.01	40.01	0.00
Exterior Lighting	8.24	8.24	0.00
Receptacle	22.01	22.01	0.00
Process Loads	0.00	0.00	0.00
Total	148.63	148.63	0.00

BUILDING COMPLIES

GENERAL INFORMATION

Project Name: Sample Multi-Family Residential Building

Project Location (city): Sample City

Climate Zone: 7

Project Scope: New Construction

Building Type: Multi-Family Residential

Number of Units: 7

Number of Stories: 3

Conditioned Floor Area: 4179 sq ft

Number of Zones: 7

Number of Buildings: 1

Glazing Area: 1,200 sq ft

Glazing Percentage: 28.7%

Roof Area: 1,400 sq ft

Roof Material: Cool Roof

Wall Area: 3,200 sq ft

Wall Material: Stucco

Floor Area: 4179 sq ft

Foundation Type: Slab-on-Grade

Foundation Area: 1,393 sq ft

Slab Perimeter: 168 ft

Slab Edge Insulation: R-10, 2 ft deep

Raised Floor Area: 0 sq ft

Raised Floor Insulation: None

Heating System: Gas Furnace, 92 AFUE

Cooling System: Split AC, 14 SEER

Water Heating System: Gas Tankless, 0.82 EF

Duct Location: Attic

Duct Insulation: R-6

Duct Leakage: 6% to outside

Mechanical Ventilation: ASHRAE 62.2 compliant

Lighting: 100% high-efficacy

Exterior Lighting: Photocell + Time Switch

Appliances: Energy Star

Solar PV: None

Solar Thermal: None

Battery Storage: None

Compliance Method: Performance

Software: CBECC-Res 2013.01

Run Title: Proposed Design

Report Date: 03/06/13 11:51:10

Weather File: CZ07RV2.epw

Simulation Engine: EnergyPlus 8.0

Simulation Time Step: 15 min

Heating Setpoint: 68°F

Cooling Setpoint: 78°F

Setback: 10°F for 8 hours

Thermostat: Programmable

Humidity Control: None

Ventilation Rate: 0.35 ACH

Ventilation Type: Exhaust

Fan Power: 0.35 W/cfm

Fan Control: Continuous

Duct Sealing: Sealed to R-6

Duct Testing: Rough-in + Post-Install

Duct Location: Attic

Duct Insulation: R-6

Duct Leakage: 6% to outside

Duct Sealing: Sealed to R-6

Duct Testing: Rough-in + Post-Install

Water Heater Type: Gas Tankless

Water Heater Model: Rinnai RU199iN

Water Heater Capacity: 199,000 Btu/hr

Water Heater Efficiency: 0.82 EF

Water Heater Location: Garage

Pipe Insulation: R-4 hot water pipes

Recirculation: None

Drain Water Heat Recovery: None

Low-Flow Fixtures: Yes

Solar Water Heating: None

Water Heater Compliance: Meets 2013 Standard

Lighting Compliance: Meets 2013 Standard

Envelope Compliance: Meets 2013 Standard

Mechanical Compliance: Meets 2013 Standard

Water Heating Compliance: Meets 2013 Standard

Overall Compliance: Meets 2013 Standard

Compliance Margin: 0.0%

Source Energy: 148.63

Source Energy Standard: 148.63

Source Energy Margin: 0.00

Site Energy: 52.41

Site Energy Standard: 52.41

Site Energy Margin: 0.00

Natural Gas Use: 0.00 therms

Natural Gas Use Standard: 0.00 therms

Natural Gas Use Margin: 0.00 therms

Electricity Use: 5,241 kWh

Electricity Use Standard: 5,241 kWh

Electricity Use Margin: 0 kWh

Peak Electricity Demand: 2.1 kW

Peak Electricity Demand Standard: 2.1 kW

Peak Electricity Demand Margin: 0.0 kW

Annual Electricity Cost: $629

Annual Electricity Cost Standard: $629

Annual Electricity Cost Margin: $0

Annual Natural Gas Cost: $0

Annual Natural Gas Cost Standard: $0

Annual Natural Gas Cost Margin: $0

Total Annual Energy Cost: $629

Total Annual Energy Cost Standard: $629

Total Annual Energy Cost Margin: $0

Percent Better than Standard: 0.0%

Percent Better than Code: 0.0%

Code Compliance: Pass

Mandatory Measures: All Complied

Prescriptive Measures: All Complied

Performance Compliance: Complied

Documentation Author: Sample Author

Author Company: Sample Company

Author Phone: (555) 555-0100

Author Email: author@example.com

Author License: CEA-12345

Author Signature: _____

Author Date: 3/6/2013

Software Version: CBECC-Res 2013.01

Software Build: 2013.01.0

Report Version: 1.0

Report Status: Final

Report Notes: None

Report Author: Sample Author

Report Author Company: Sample Company

Report Author Phone: (555) 555-0100

Report Author Email: author@example.com

Report Author License: CEA-12345

Report Author Signature: _____

Report Author Date: 3/6/2013

Report Author Title: Energy Consultant

Report Author Address: 123 Main St, Sample City, CA 94000

Report Author Website: www.example.com

Report Author Notes: None

Report Author Other: None

Report Author Other 2: None

Report Author Other 3: None

Report Author Other 4: None

Report Author Other 5: None

Report Author Other 6: None

Report Author Other 7: None

Report Author Other 8: None

Report Author Other 9: None

Report Author Other

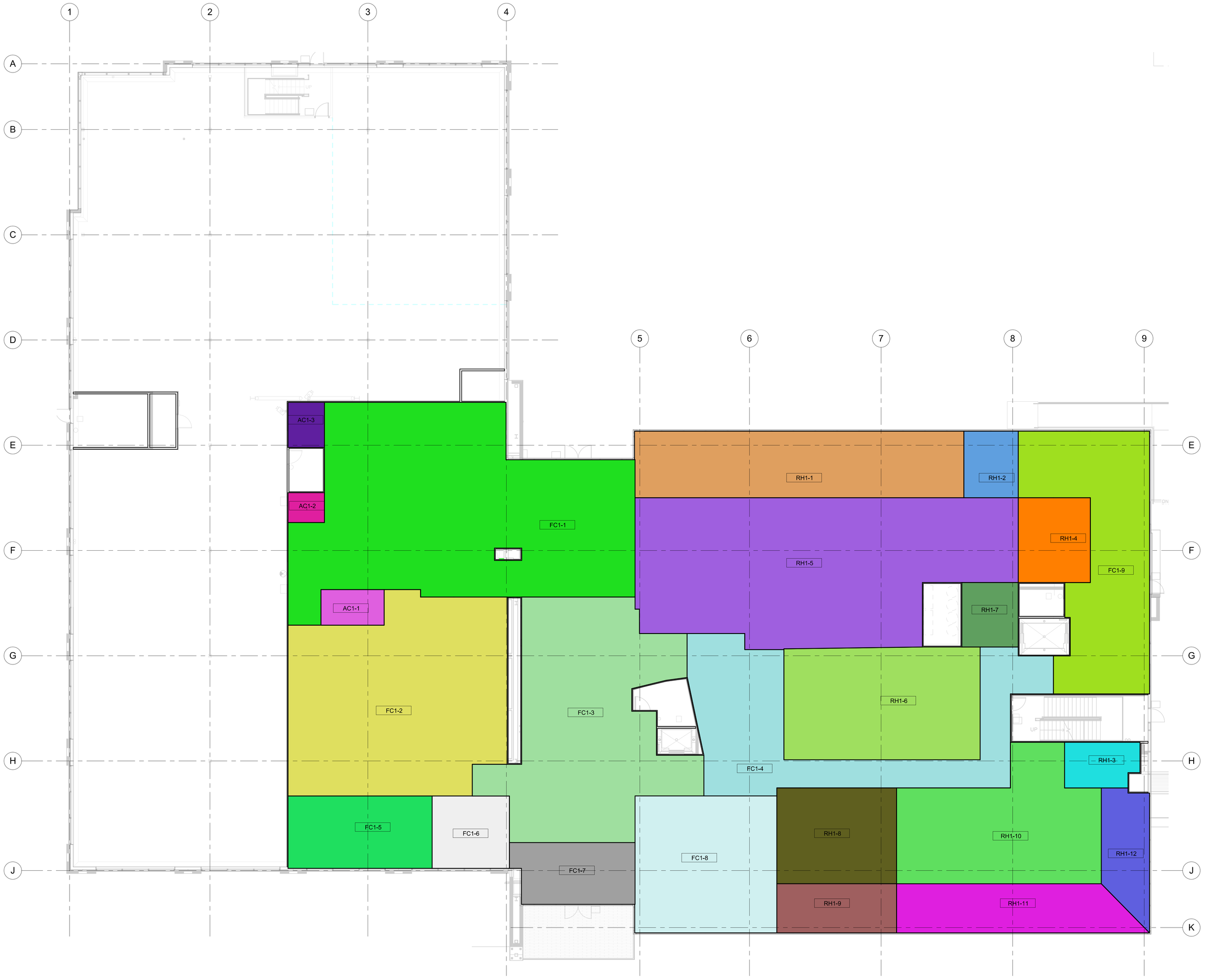
MECHANICAL VENTILATION AND AIR/HEAT

Chemodude - 77

5/8/2013

MECH-3C

| AREA SERVED | | |



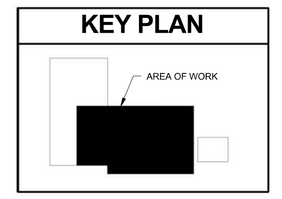
1 MECHANICAL - 1ST FLOOR ZONE PLAN
1/8" = 1'-0"

NORTH

5/20/2013 9:52:55 AM

CONSULTANTS

KEY PLAN



NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

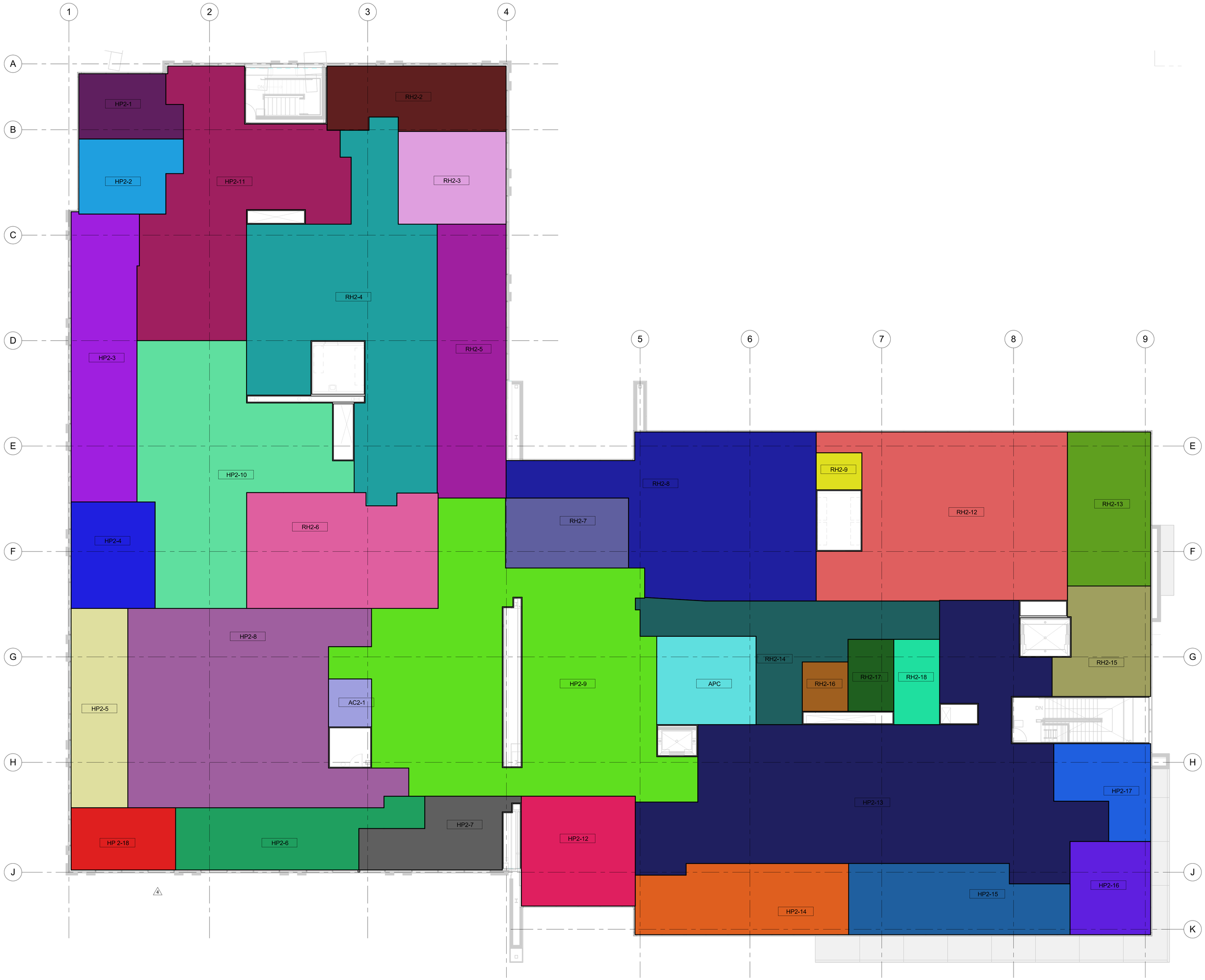
PROJECT NO.

SCALE As indicated

TITLE

MECHANICAL - 1ST FLOOR ZONE PLAN

M1.0



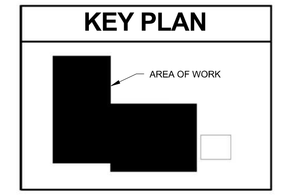
1 MECHANICAL - 2ND FLOOR ZONE PLAN
1/8" = 1'-0"

NORTH

5/20/2013 9:53:15 AM

CONSULTANTS

KEY PLAN



NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

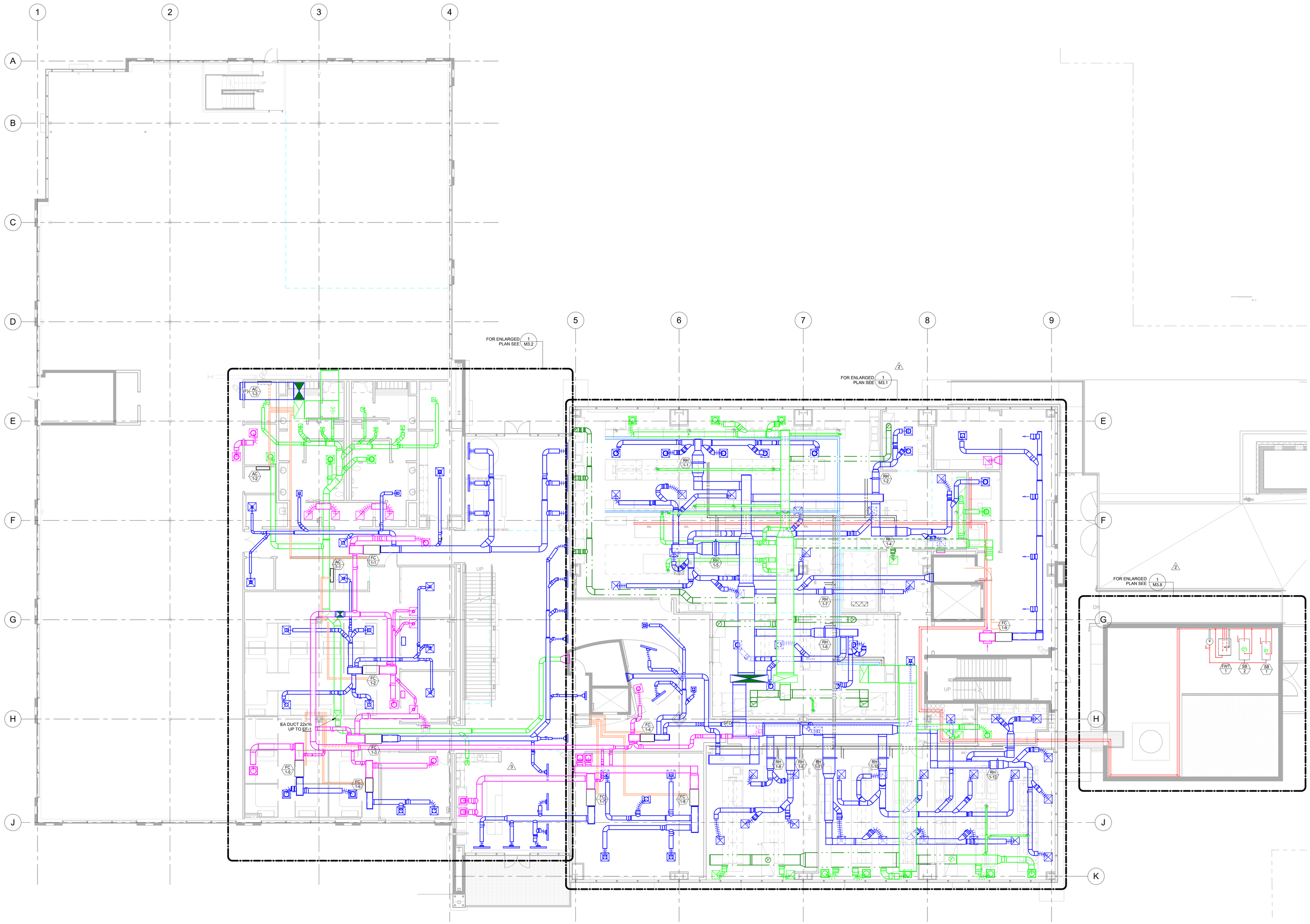
PROJECT NO.

SCALE As indicated

TITLE

MECHANICAL - 2ND FLOOR ZONE PLAN

MI.1



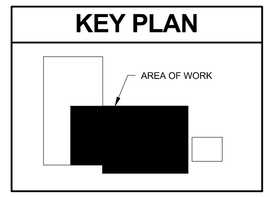
1 Mechanical - Overall 1st Floor Plan
1/8" = 1'-0"

NORTH

5/20/2013 11:51:35 AM

CONSULTANTS

KEY PLAN



NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE As indicated

TITLE

MECHANICAL - OVERALL 1ST FLOOR PLAN

M3.0

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR TO PROVIDE COORDINATED SHOP DRAWINGS OF PIPING AND DUCTWORK TO ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
3. PROVIDE AIR BALANCING DAMPERS AT ALL BRANCH CONNECTIONS TO SUPPLY, RETURN AND EXHAUST DIFFUSERS AND GRILLES. BALANCE DAMPERS SHALL BE CONSTRUCTED OF 22 GAUGE METAL, SIMILAR TO SYSTEM THAT IT IS BEING INSTALLED IN. DAMPER TO BE PROVIDED WITH A 3/8"Ø SHAFT, STANDOFF BRACKET AND LOCKING NUT. DAMPER BLADE TO BE CONSTRUCTED OF 20 GAUGE MATERIAL WITH STRENGTHENING CRIMP ACROSS CENTER.
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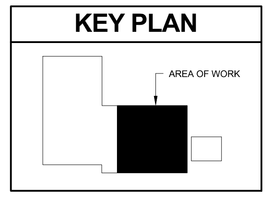
8. PROVIDE FIRESTOPPING AND FIRE CAULKING AT ALL PIPE PENETRATIONS THRU RATED WALLS AND/OR FLOORS.
9. SEE SHEET M5.0 FOR TYPICAL INSTALLATION DETAILS.

CONSULTANTS

KEY PLAN



NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE As indicated

TITLE

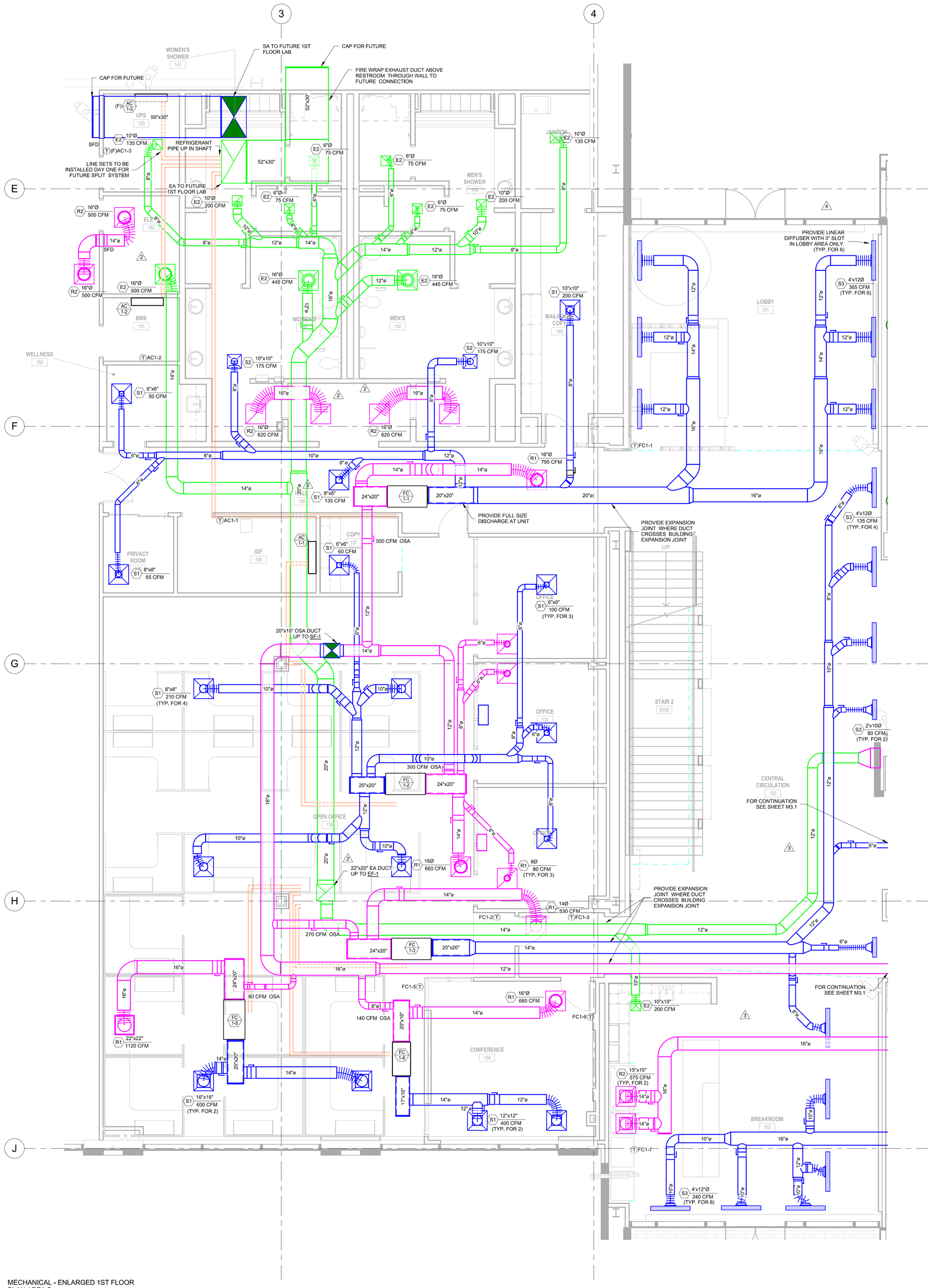
MECHANICAL - ENLARGED 1ST FLOOR PLAN - AREA A

M3.1

1 MECHANICAL - ENLARGED 1ST FLOOR PLAN - AREA A
1/4" = 1'-0"

NORTH

5/20/2013 11:51:44 AM



1 MECHANICAL - ENLARGED 1ST FLOOR PLAN AREA B
1/4" = 1'-0"

NORTH

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR TO PROVIDE COORDINATED SHOP DRAWINGS OF PIPING AND DUCTWORK TO ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
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9. SEE SHEET M5.0 FOR TYPICAL INSTALLATION DETAILS.

RESTROOM EXHAUST CALCULATION

MENS:
MINIMUM REQUIRED PER TABLE 4.4 CMC :
(2) URINALS @ 50 CFM EACH = 100 CFM
(2) WATER CLOSETS @ 50 CFM EACH = 100 CFM
LOCKER RM/SHOWER AREA @ 0.5CFM PER SF = 240 SF * .0.5 CFM PER SF = 120 cfm
TOTAL MINIMUM REQUIRED VENTILATION = 320 CFM

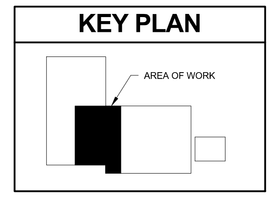
PROVIDED:
(495 SF * 10 FT HEIGHT CEILING * 9.5 AIR CHANGES PER HOUR) / 60 MIN PER HOUR = 795 CFM

WOMENS:
MINIMUM REQUIRED PER TABLE 4.4 CMC :
(4) WATER CLOSETS @ 50 CFM EACH = 200 CFM
LOCKER RM/SHOWER AREA @ 0.5CFM PER SF = 240 SF * .0.5 CFM PER SF = 120 cfm
TOTAL MINIMUM REQUIRED VENTILATION = 320 CFM

PROVIDED:
(495 SF * 10 FT HEIGHT CEILING * 9.5 AIR CHANGES PER HOUR) / 60 MIN PER HOUR = 795 CFM

NOTE: RESTROOMS DESIGNED FOR GREATER THAN 9 ACH

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

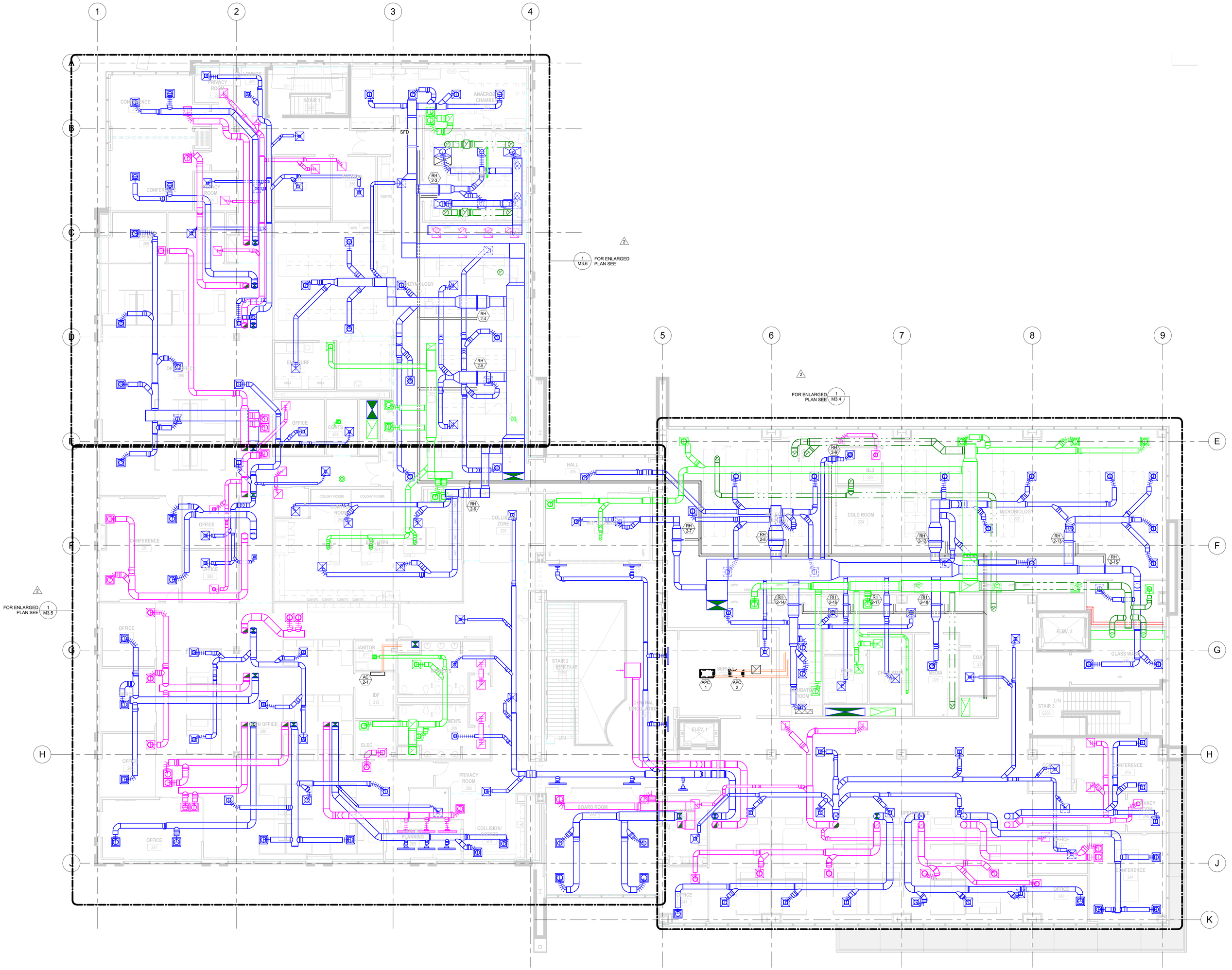
SCALE As indicated

TITLE

MECHANICAL - ENLARGED 1ST FLOOR PLAN - AREA B

M3.2

5/20/2013 11:51:51 AM



1 Mechanical - Overall 2nd Floor Plan
1/8" = 1'-0"

NORTH

CONSULTANTS

KEY PLAN

AREA OF WORK

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE As indicated

TITLE

MECHANICAL - OVERALL 2ND FLOOR PLAN

M3.3

5/20/2013 11:52:08 AM

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR TO PROVIDE COORDINATED SHOP DRAWINGS OF PIPING AND DUCTWORK TO ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
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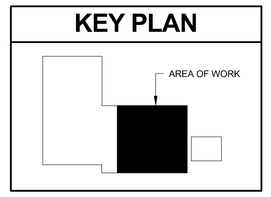
9. SEE SHEET M5.0 FOR TYPICAL INSTALLATION DETAILS.

CONSULTANTS

KEY PLAN



NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE As indicated

TITLE

MECHANICAL - ENLARGED 2ND FLOOR PLAN - AREA A

M3.4

1 MECHAN ICAL - ENLARGED 2ND FLOOR PLAN - AREA A
1/4" = 1'-0"

NORTH

5/20/2013 11:52:17 AM

RESTROOM EXHAUST CALCULATION

MENS:
MINIMUM REQUIRED PER TABLE 4.4 CMC :
(2) URINALS @ 50 CFM EACH = 100 CFM
(3) WATER CLOSETS @ 50 CFM EACH = 150 CFM
TOTAL MINIMUM REQUIRED VENTILATION = 250 CFM

PROVIDED:
(225 SF * 10 FT HEIGHT CEILING * 9.2 AIR CHANGES PER HOUR) / 60 MIN PER HOUR = 345 CFM

WOMENS:
MINIMUM REQUIRED PER TABLE 4.4 CMC :
(5) WATER CLOSETS @ 50 CFM EACH = 250 CFM
TOTAL MINIMUM REQUIRED VENTILATION = 250 CFM

PROVIDED:
(225 SF * 10 FT HEIGHT CEILING * 9.2 AIR CHANGES PER HOUR) / 60 MIN PER HOUR = 345 CFM

NOTE: RESTROOMS DESIGNED FOR GREATER THAN 9 ACH

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES.
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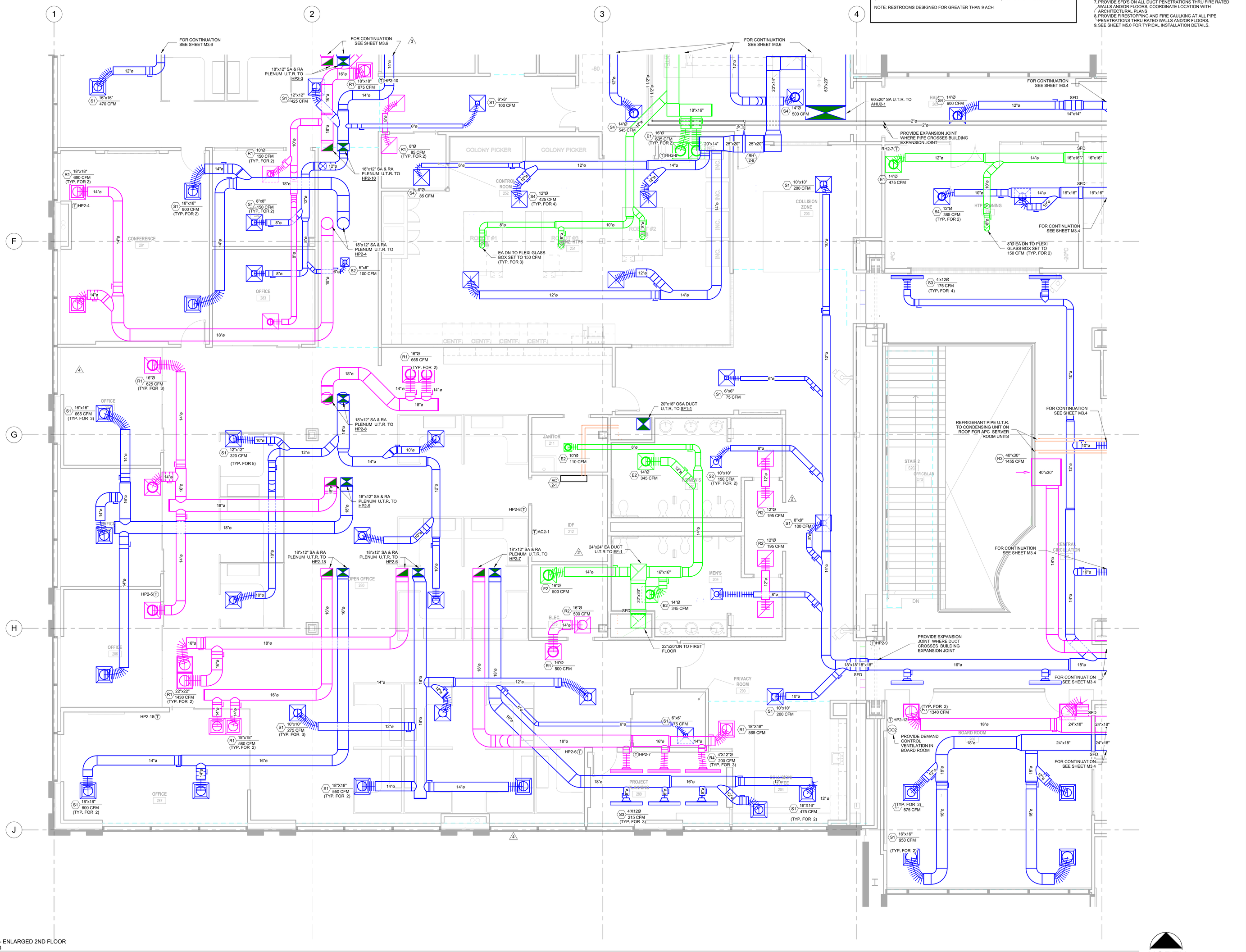
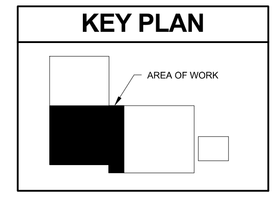
9. SEE SHEET M5.0 FOR TYPICAL INSTALLATION DETAILS.



1 MECHANICAL - ENLARGED 2ND FLOOR PLAN - AREA B
1/4" = 1'-0"

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE As indicated

TITLE

MECHANICAL - ENLARGED 2ND FLOOR PLAN - AREA B

M3.5

5/20/2013 11:52:26 AM

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES.
2. CONTRACTOR TO PROVIDE COORDINATED SHOP DRAWINGS OF PIPING AND DUCTWORK TO ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
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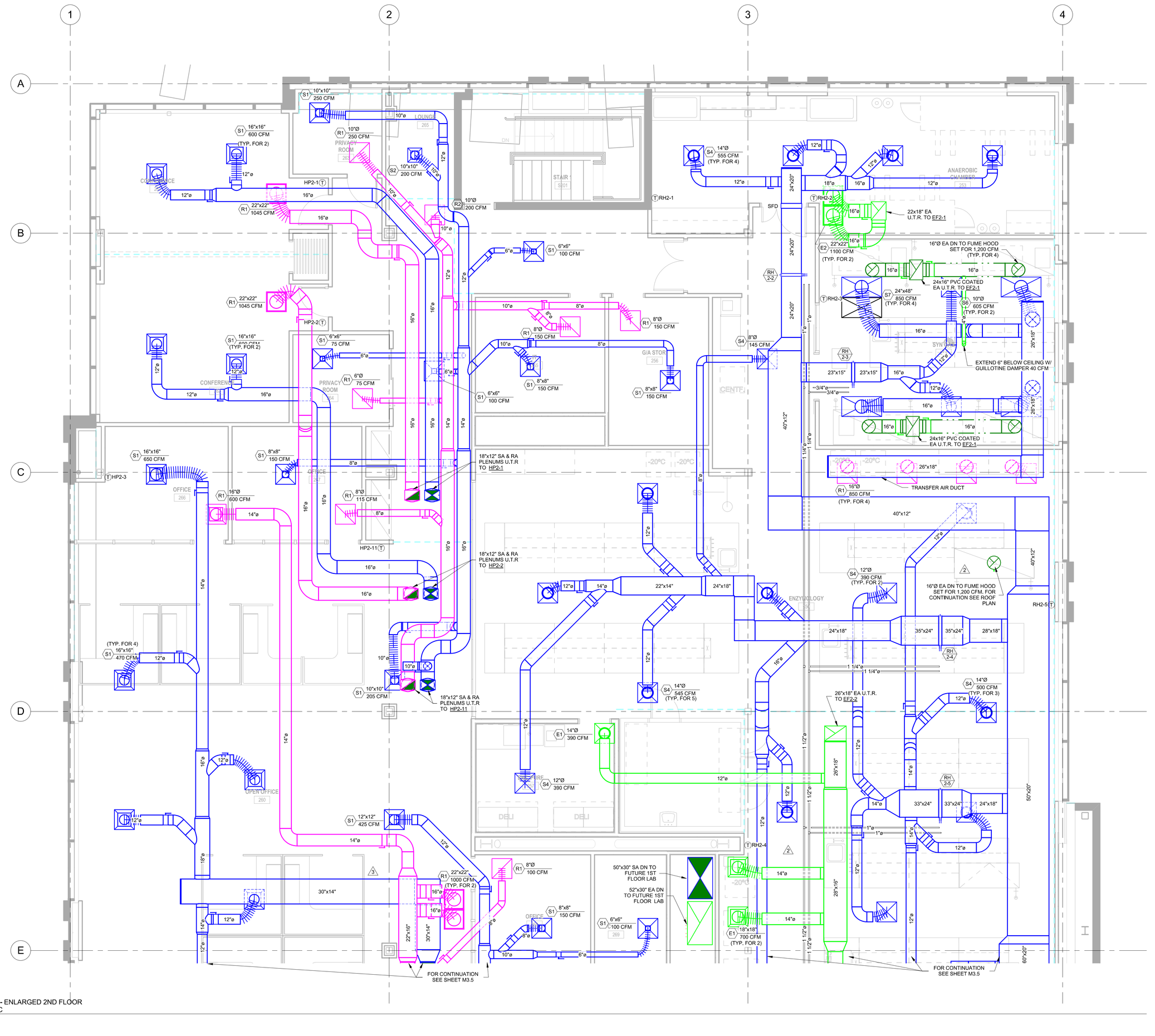
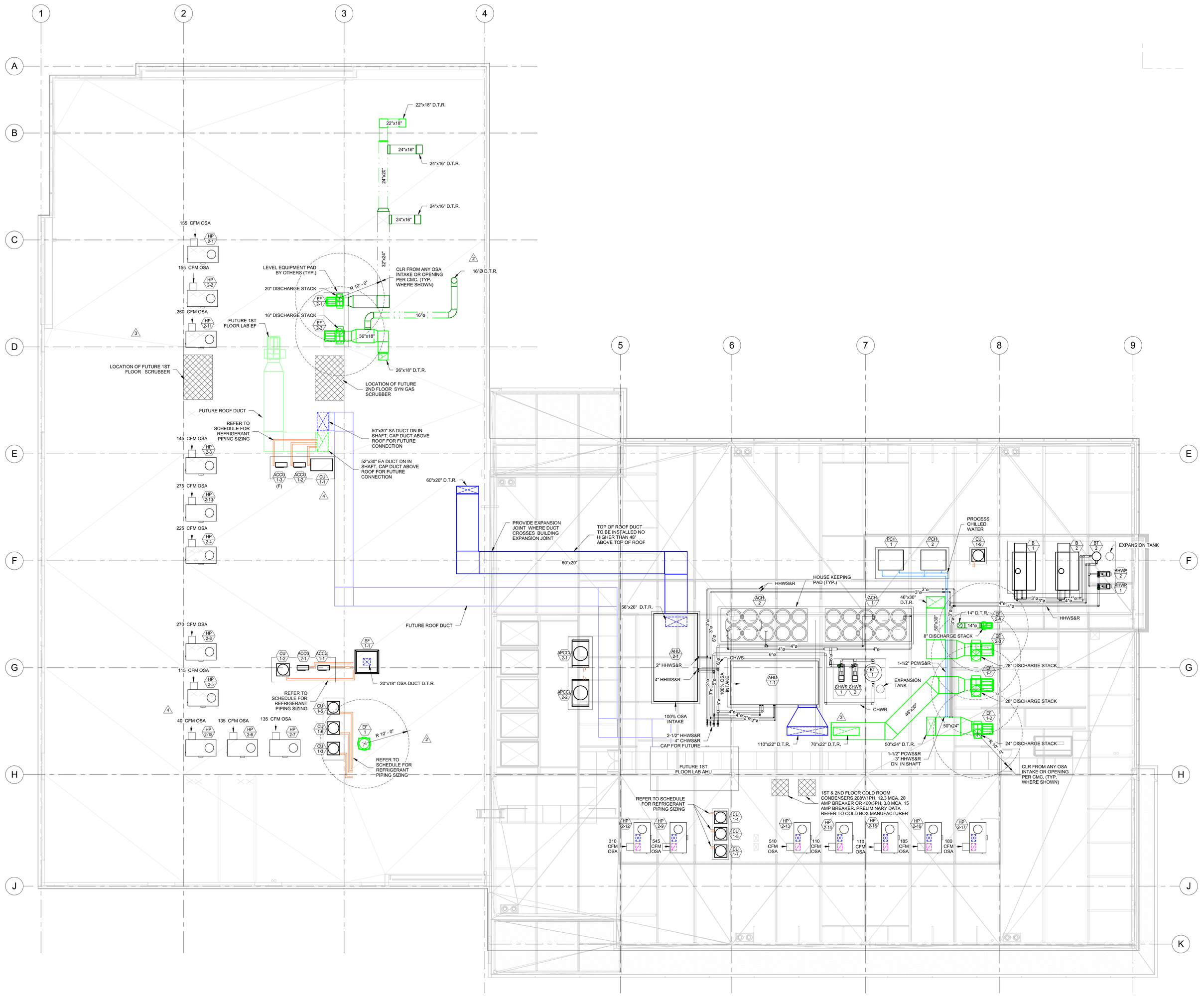
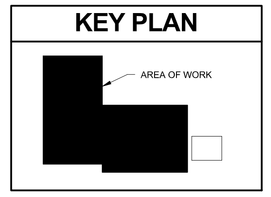




1 Mechanical - Overall Roof Plan
1/8" = 1'-0"

CONSULTANTS

KEY PLAN



NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE As indicated

TITLE

MECHANICAL - OVERALL ROOF PLAN

M3.7

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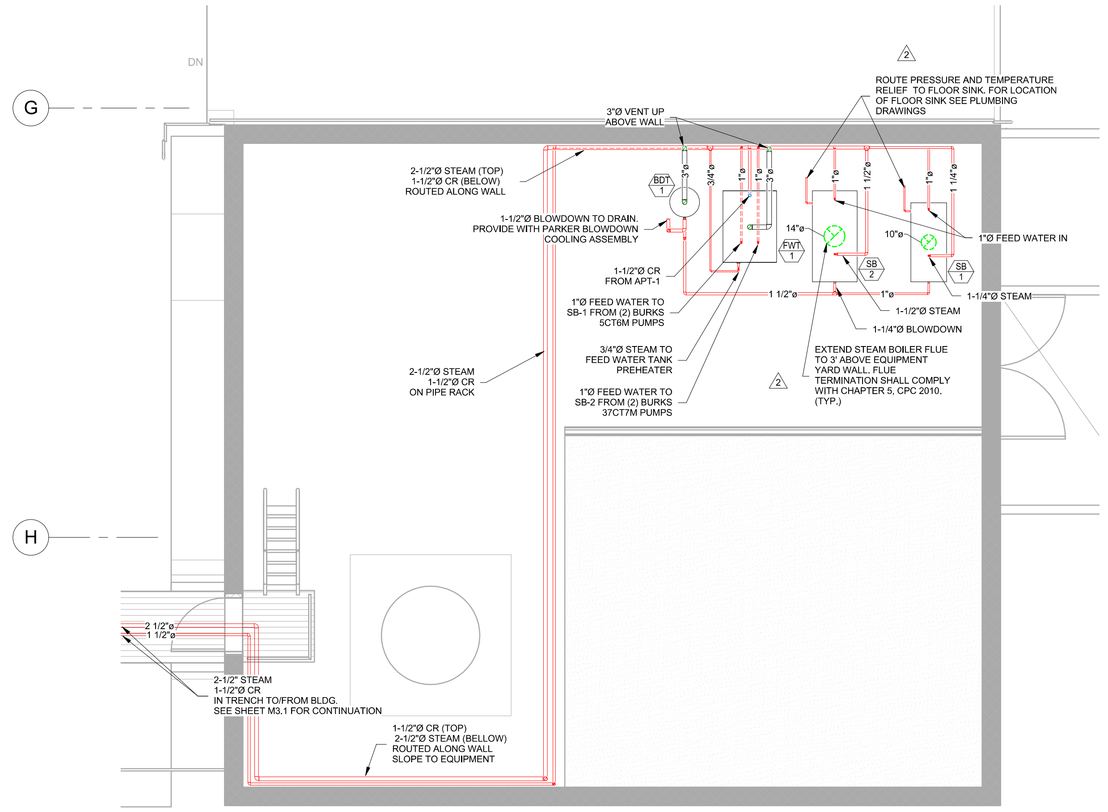
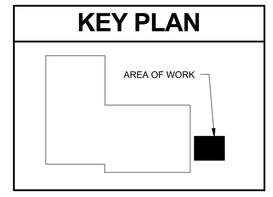


1 MECHANICAL - ENLARGED EQUIPMENT YARD PLAN
1/4" = 1'-0"

NORTH

CONSULTANTS

KEY PLAN



NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

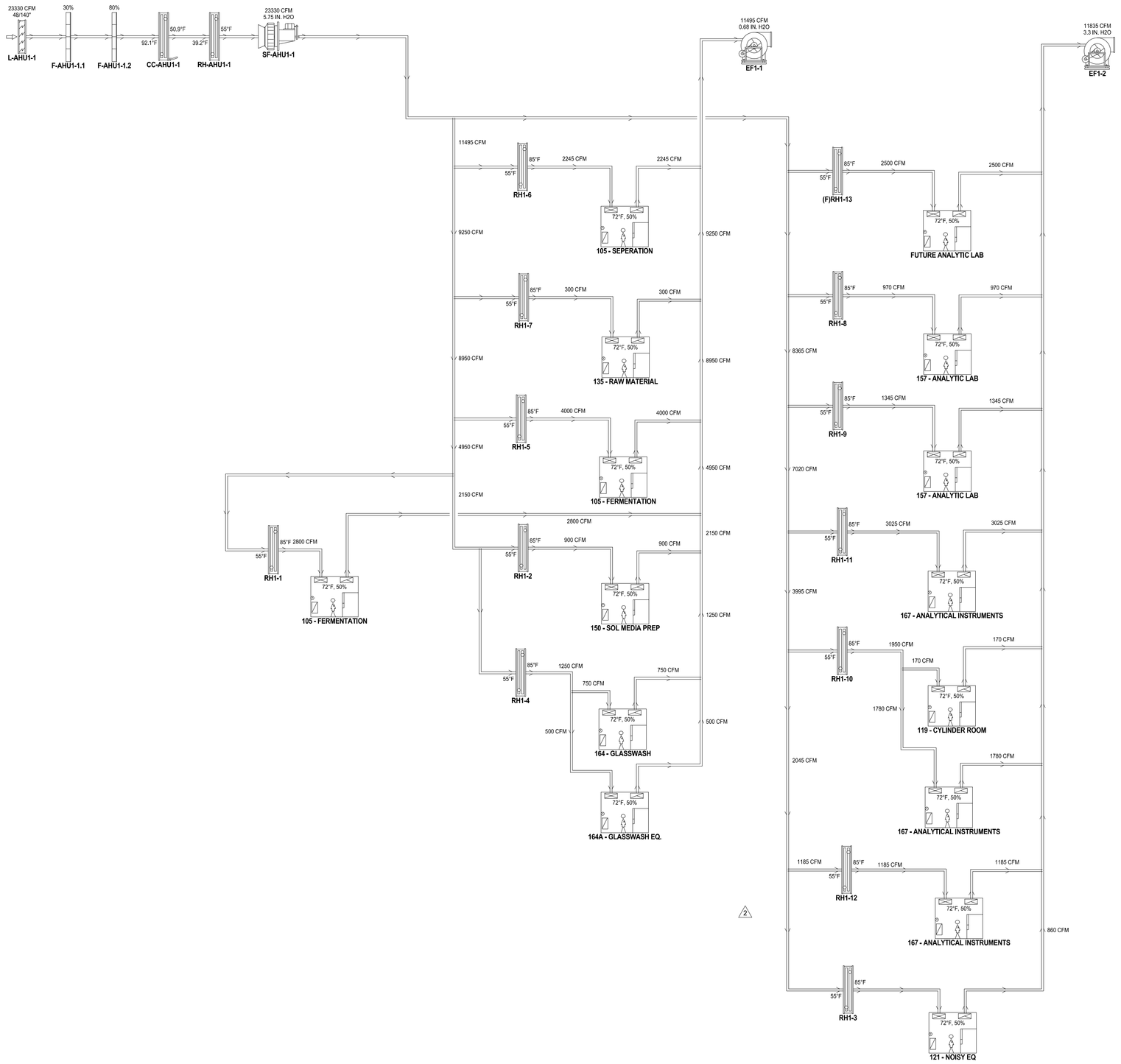
SCALE As indicated

TITLE

MECHANICAL - ENLARGED EQUIPMENT YARD

M3.8

5/20/2013 11:53:11 AM



1 MECHANICAL - 1ST FLOOR AIR FLOW DIAGRAMS

CONSULTANTS

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

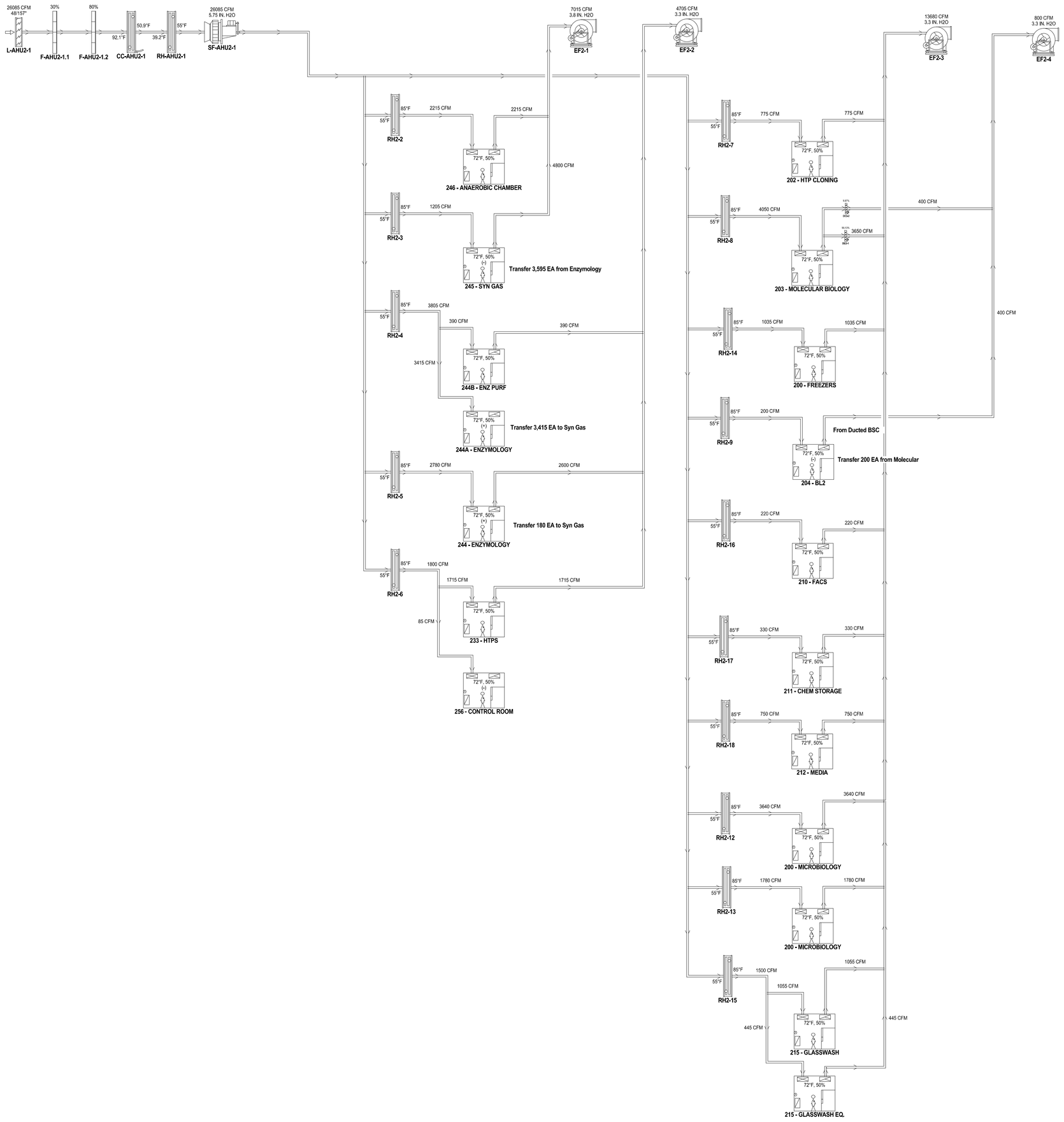
SCALE 1/2" = 1'-0"

TITLE

MECHANICAL - 1ST FLOOR AIR FLOW DIAGRAMS

M4.0

5/20/2013 11:53:12 AM



1 MECHANICAL - 2ND FLOOR AIR FLOOR DIAGRAMS

5/20/2013 11:53:13 AM

CONSULTANTS

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

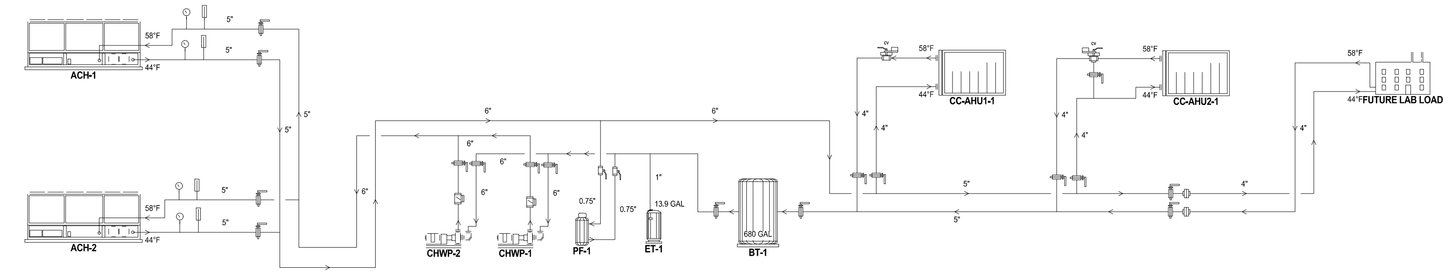
PROJECT NO.

SCALE AS SHOWN

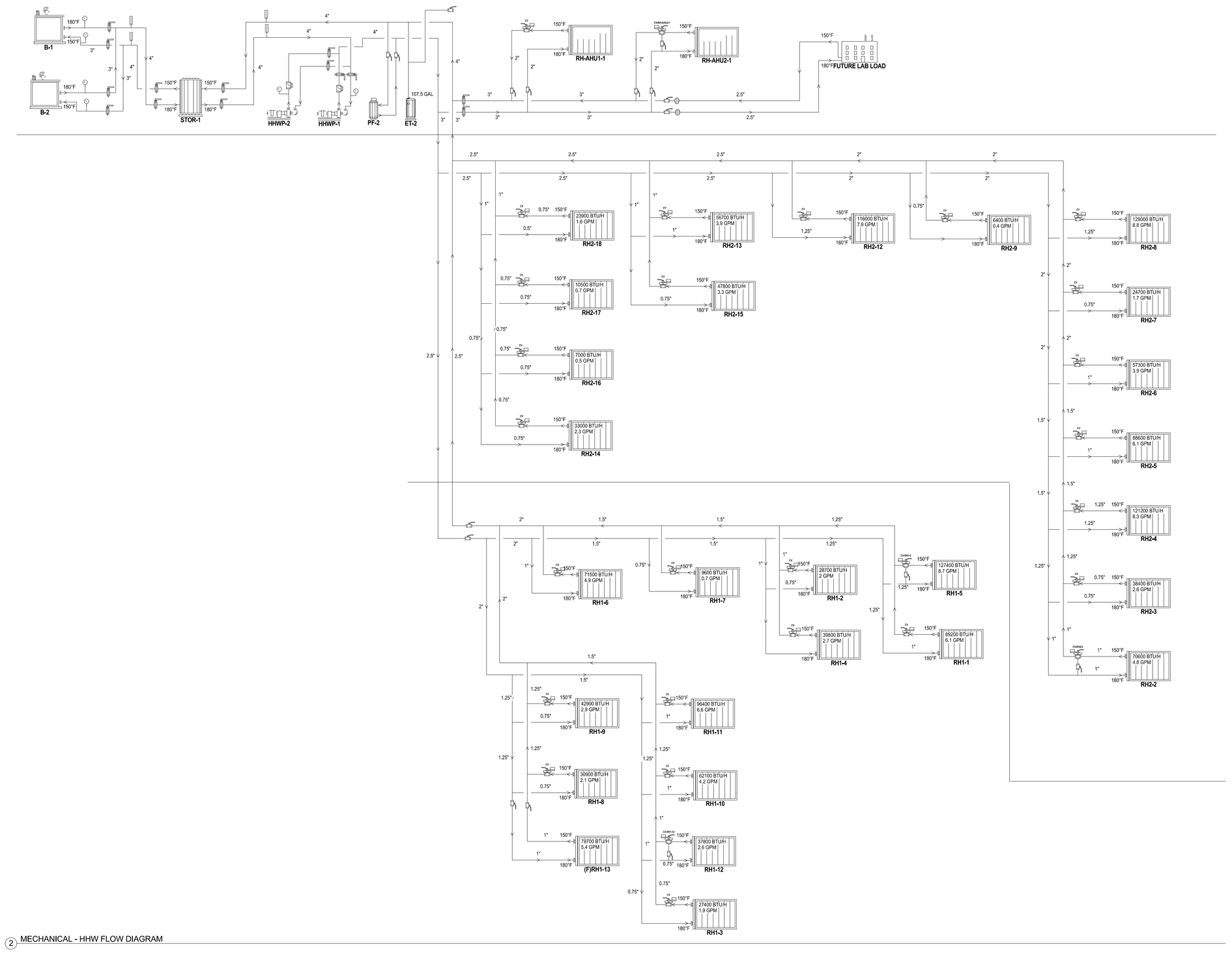
TITLE

MECHANICAL - 2ND FLOOR AIR FLOW DIAGRAMS

M4.1



1 MECHANICAL - CHW FLOW DIAGRAM



2 MECHANICAL - HHW FLOW DIAGRAM

5/20/2013 11:53:14 AM

CONSULTANTS

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE AS SHOWN

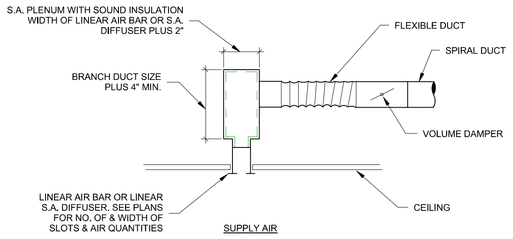
TITLE

MECHANICAL - CHW & HHW FLOW DIAGRAMS

M4.2

5/20/2013 11:53:15 AM

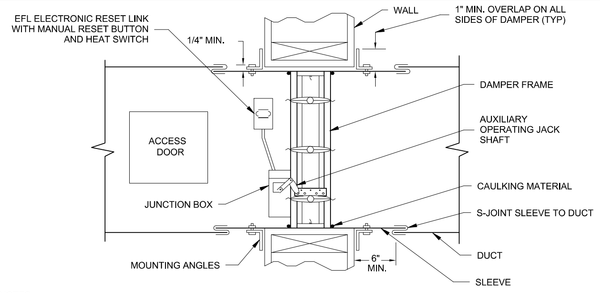
1 MECHANICAL - STEAM FLOW DIAGRAM
CF-1
FT-1
SB-2
SB-1
BT-1
PRV-1
SB-3
SB-4
SB-5
80 PSIG
55 PSIG
45 PSIG
1.25"
1"
0.75"
0.5"
0.25"
ST
MAGNEHELIC GAUGE
MAGNEHELIC GAUGE
MAGNEHELIC GAUGE



NOTE:

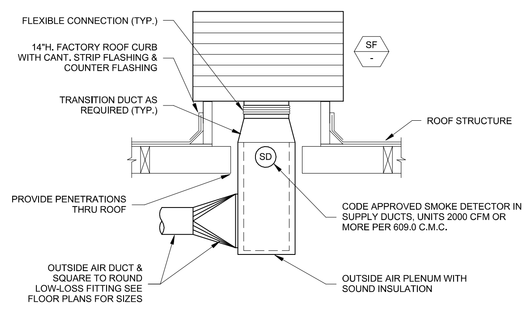
1. FOR EXACT MOUNTING & INTEGRATION OF LINEAR AIR BAR/DIFFUSER INTO CEILING SYSTEM, SEE ARCHITECTURAL DRAWINGS

16 Linear Diffuser Detail

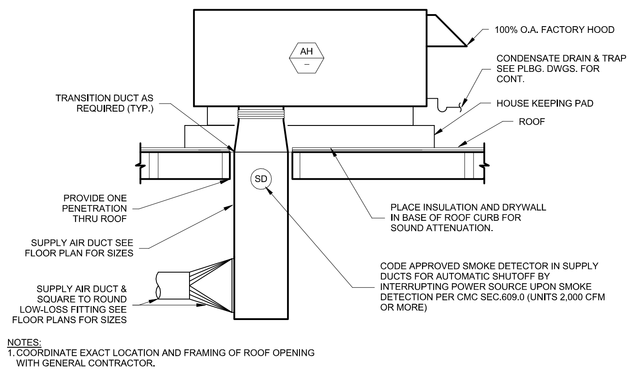


NOTES:
1. FIRE DAMPER DETAIL FOR REFERENCE ONLY.
2. MOUNTING ANGLES SHALL BE 1-1/2"X1-1/2"X16 GAGE MIN. FASTENED WITH NO. 10 SCREWS 8" ON CENTER.
3. USE ONLY STATE OF CALIFORNIA FIRE MARSHALL LISTED FIRE DAMPERS & INSTALL IN ACCORDANCE WITH STATE FIRE MARSHALL LISTING NO. 3225-245:005 & U.L. STANDARD 555S.
4. GENERAL CONTRACTOR SHALL COORDINATE CEILING ACCESS DOORS AS REQUIRED TO ACCESS DAMPER ACCESS DOOR IN DUCT.
5. ACCESS DOOR SHALL BE PROVIDED IN DUCT AND SHALL BE SHALL BE PART OD ADEQUATE SIZE AND LOCATION TO PERMIT MAINTENANCE & RESETTING OF DAMPER.
6. FIRE DAMPERS SHALL BE STATE FIRE MARSHALL APPROVED AND INSTALLED PER MANUFACTURES PRINTED INSTRUCTIONS.
7. MANUFACTURES PRINTED INSTRUCTIONS SHALL BE MADE AVAILABLE TO INSPECTING AUTHORITIES.

11 Combination Smoke Fire Damper Detail

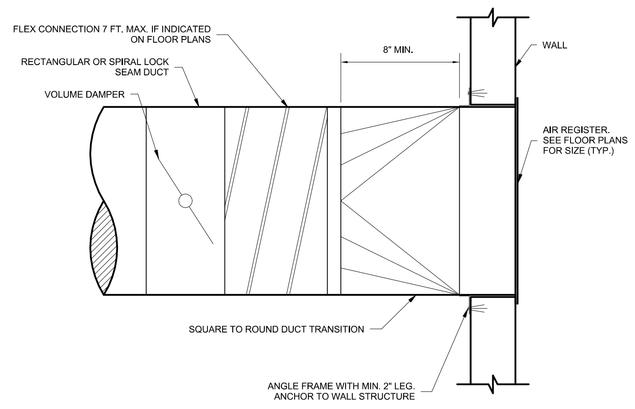


6 Rooftop Ventilator Detail

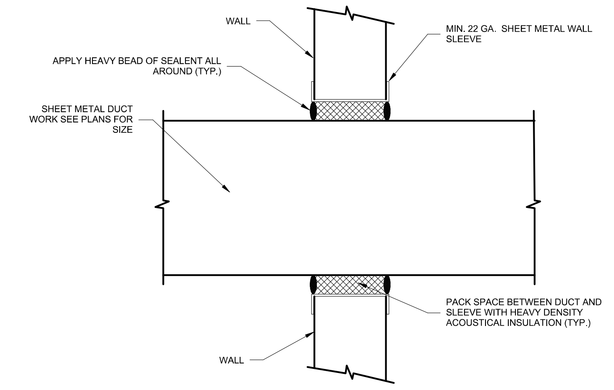


NOTES:
1. COORDINATE EXACT LOCATION AND FRAMING OF ROOF OPENING WITH GENERAL CONTRACTOR.

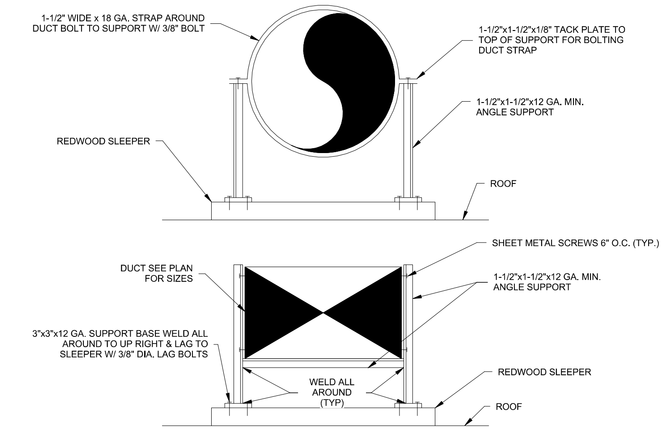
1 Rooftop Air Handling Unit Detail



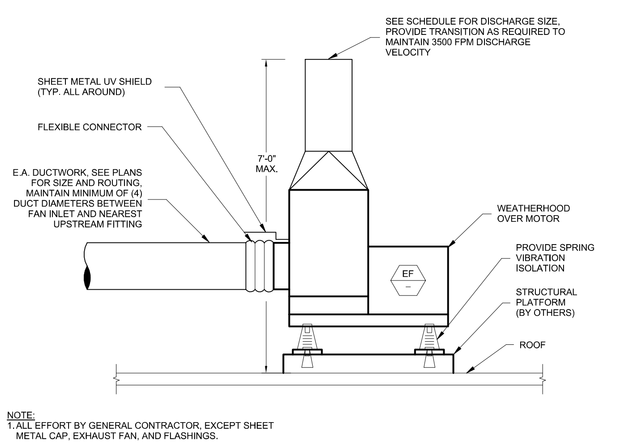
17 Sidewall Register Detail



12 Duct Penetration Thru Wall Detail

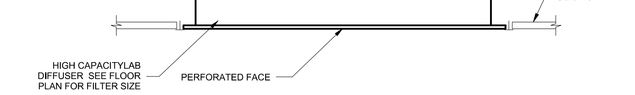


7 Duct Support On Roof Detail

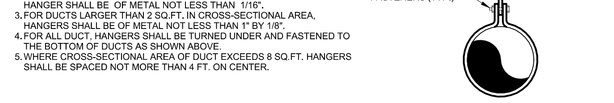


NOTE:
1. ALL EFFORT BY GENERAL CONTRACTOR, EXCEPT SHEET METAL CAP, EXHAUST FAN, AND FLASHINGS.

2 Roof Utility Type Exhaust Fan Mounting Detail



18 High Capacity Lab Filter Ceiling Diffuser Detail



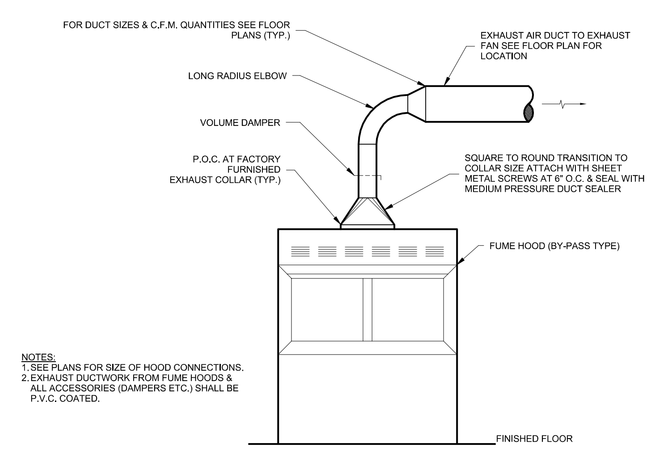
NOTES:
1. DUCTS SHALL NOT BE HUNG FROM OR SUPPORTED BY HUNG CEILING.
2. FOR DUCTS NOT TO EXCEED 2 SQ. FT. IN CROSS-SECTIONAL AREA, HANGER SHALL BE OF METAL NOT LESS THAN 1/16".
3. FOR DUCTS LARGER THAN 2 SQ.FT. IN CROSS-SECTIONAL AREA, HANGERS SHALL BE OF METAL NOT LESS THAN 1" BY 1/8".
4. FOR ALL DUCT, HANGERS SHALL BE TURNED UNDER AND FASTENED TO THE BOTTOM OF DUCTS AS SHOWN ABOVE.
5. WHERE CROSS-SECTIONAL AREA OF DUCT EXCEEDS 8 SQ.FT. HANGERS SHALL BE SPACED NOT MORE THAN 4 FT. ON CENTER.

13 Duct Support Detail

8 Rectangular Duct Thru Roof Detail

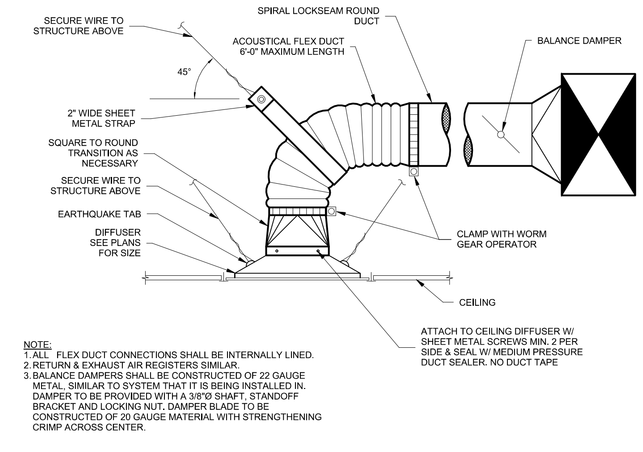
NOTE:
1. COORDINATE EXACT LOCATION AND FRAMING OF ROOF OPENING WITH GENERAL CONTRACTOR.

3 Rooftop Package Heat Pump Detail



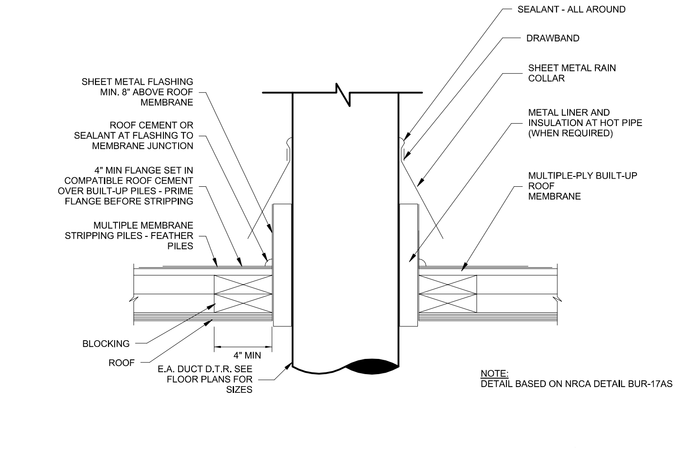
NOTES:
1. SEE PLANS FOR SIZE OF HOOD CONNECTIONS.
2. EXHAUST DUCTWORK FROM FUME HOODS & ALL ACCESSORIES (DAMPERS ETC.) SHALL BE P.V.C. COATED.

19 Fume Hood Connection Detail



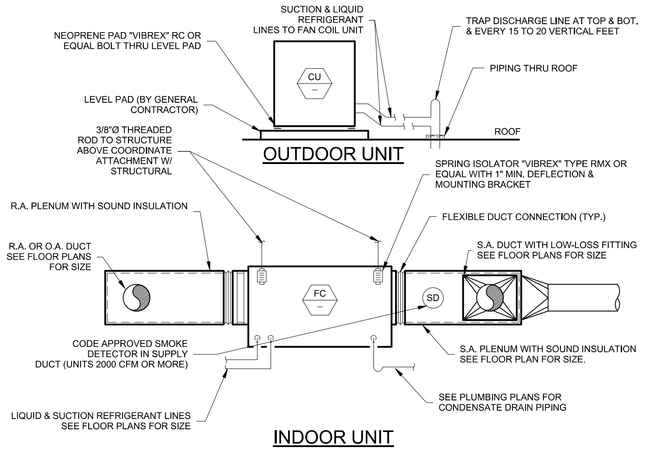
NOTE:
1. ALL FLEX DUCT CONNECTIONS SHALL BE INTERNALLY LINED.
2. RETURN & EXHAUST AIR REGISTERS SIMILAR.
3. BALANCE DAMPERS SHALL BE CONSTRUCTED OF .22 GAUGE METAL, SIMILAR TO SYSTEM THAT IT IS BEING INSTALLED IN. DAMPER TO BE PROVIDED WITH A 3/8"Ø SHAFT, STANDOFF BRACKET AND LOCKING NUT, DAMPER BLADE TO BE CONSTRUCTED OF 20 GAUGE MATERIAL WITH STRENGTHENING CRIMP ACROSS CENTER.

14 Ceiling Diffuser Detail

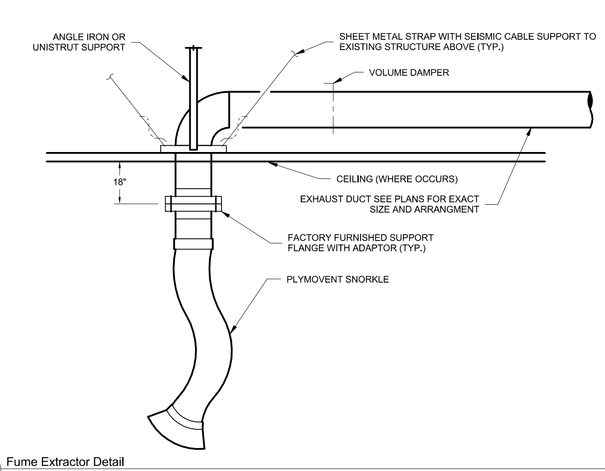


NOTE:
DETAIL BASED ON NRCA DETAIL BUR-17AS

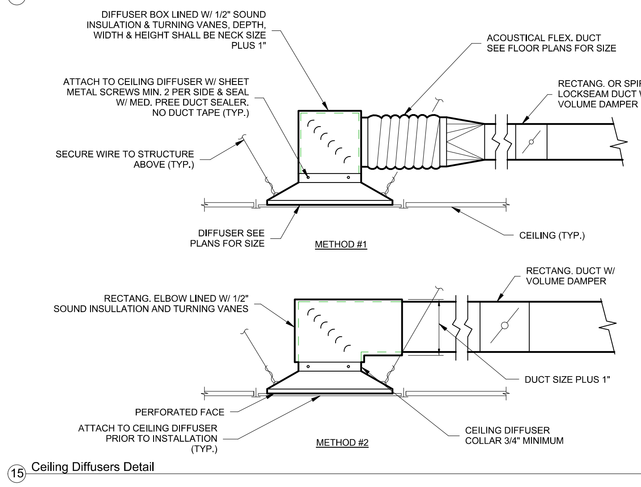
9 Round Duct Thru Roof Detail



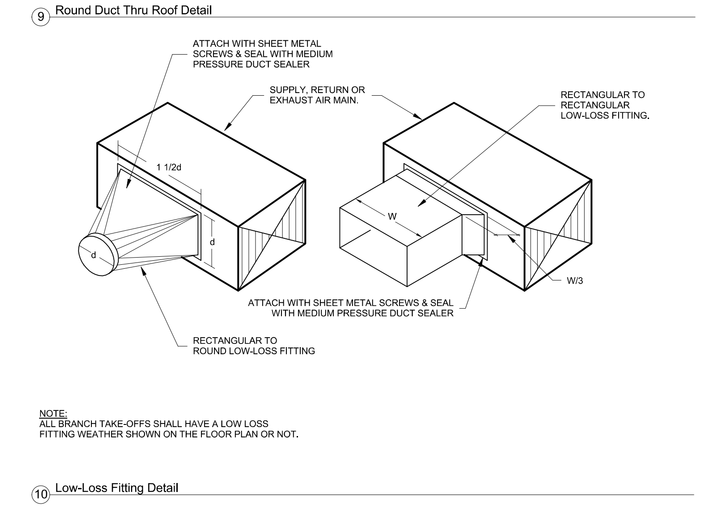
4 Split System Heat Pump Detail



20 Fume Extractor Detail

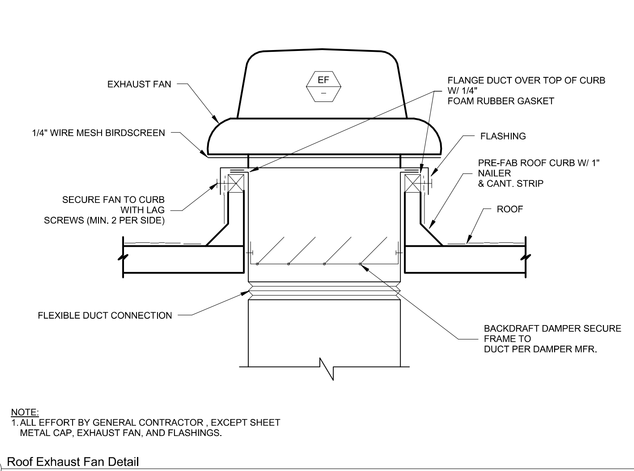


15 Ceiling Diffusers Detail



NOTE:
ALL BRANCH TAKE-OFFS SHALL HAVE A LOW LOSS FITTING WEATHER SHOWN ON THE FLOOR PLAN OR NOT.

10 Low-Loss Fitting Detail



NOTE:
1. ALL EFFORT BY GENERAL CONTRACTOR , EXCEPT SHEET METAL CAP, EXHAUST FAN, AND FLASHINGS.

5 Roof Exhaust Fan Detail

CONSULTANTS

NO.	DESCRIPTION	DATE

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TITLE

MECHANICAL - DETAILS

M5.0

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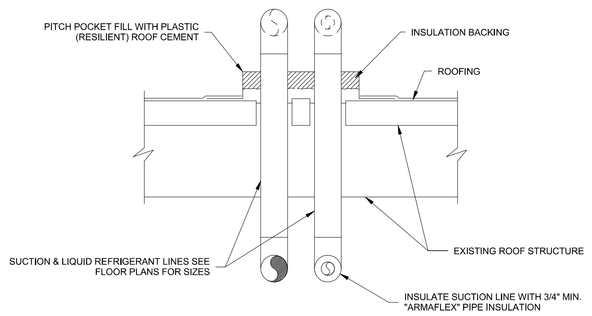
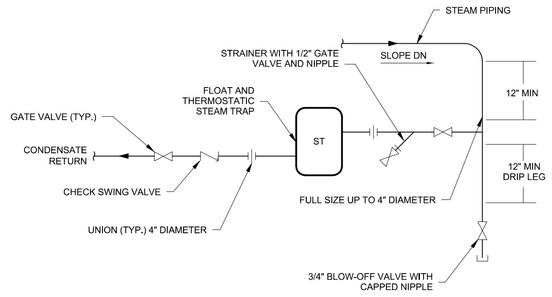
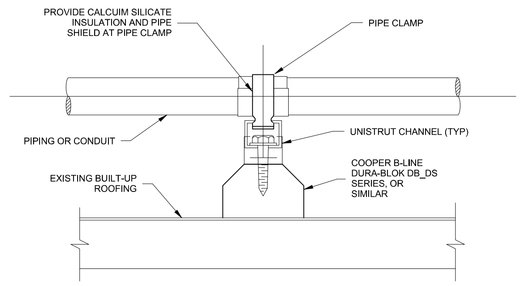


16 Refrigerant Piping Thru Roof Detail

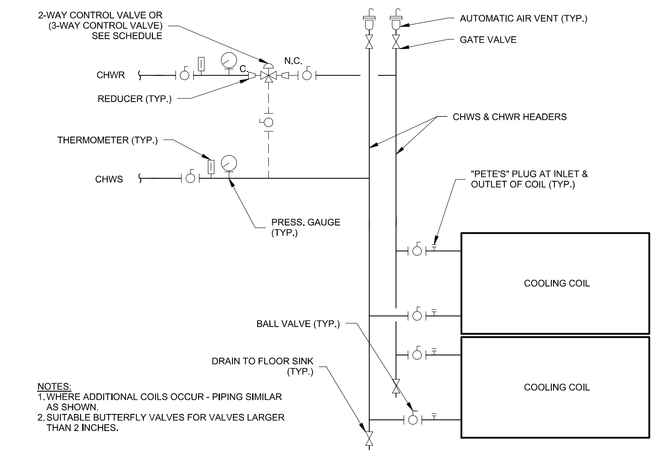


11 Drip Leg Steam Trap Detail



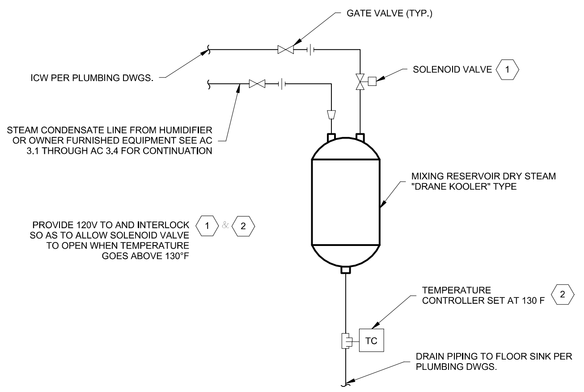
NOTES:
1. ALTERNATE MODEL: PIPE PIER
2. INSTALL SUPPORTS PER MANUFACTUER'S INSTRUCTIONS AND RECOMMENDATIONS

6 Pipe Support On Roof Detail



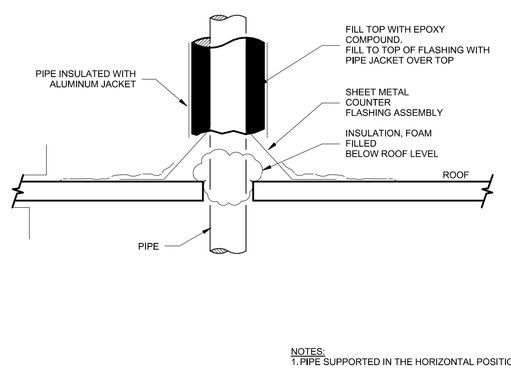
NOTES:
1. WHERE ADDITIONAL COILS OCCUR - PIPING SIMILAR AS SHOWN.
2. SUITABLE BUTTERFLY VALVES FOR VALVES LARGER THAN 2 INCHES.

1 A.H. Unit Cooling Coil Piping Detail



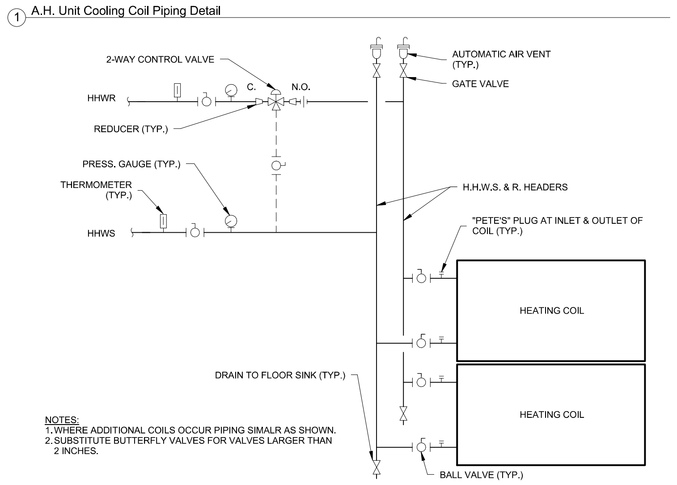
NOTE: COORDINATE W/ ELECTRICAL FOR EXACT LOCATIONS.

11 Drip Leg Steam Trap Detail



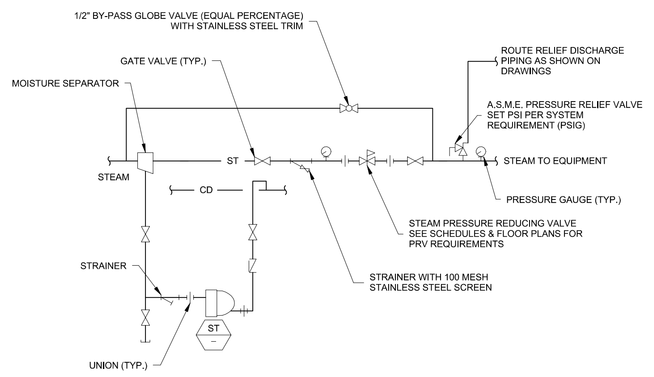
NOTES:
1. PIPE SUPPORTED IN THE HORIZONTAL POSITION

7 Pipe Thru Roof Detail

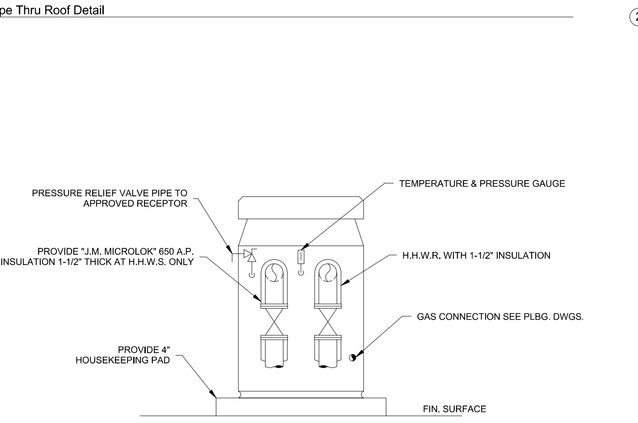


NOTES:
1. WHERE ADDITIONAL COILS OCCUR PIPING SIMALR AS SHOWN.
2. SUBSTITUTE BUTTERFLY VALVES FOR VALVES LARGER THAN 2 INCHES.

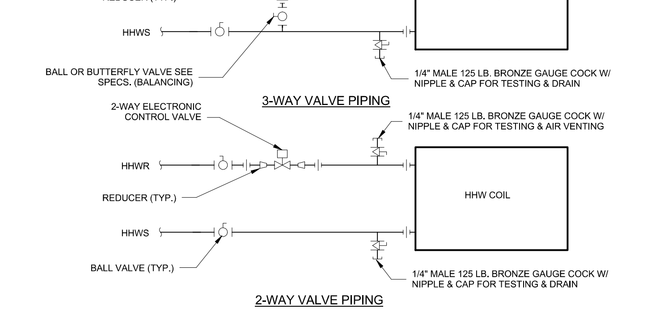
1 A.H. Unit Cooling Coil Piping Detail



12 Steam Condensate Drain Piping Detail



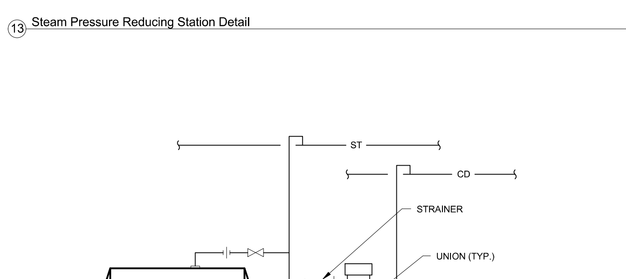
8 Raypak Gas Fired Boiler Detail



3-WAY VALVE PIPING

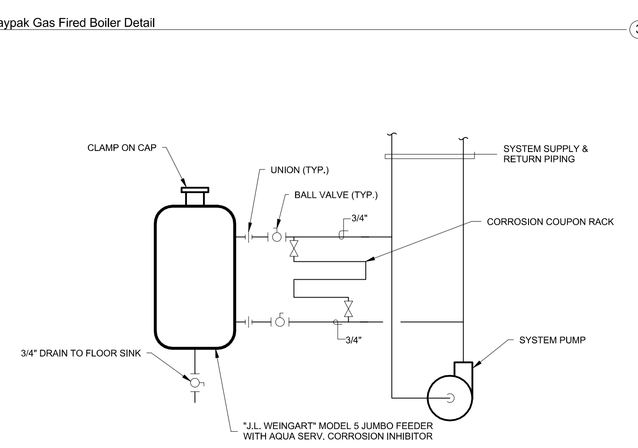
2-WAY VALVE PIPING

2 A.H. Unit Hot Water Coil Piping Detail

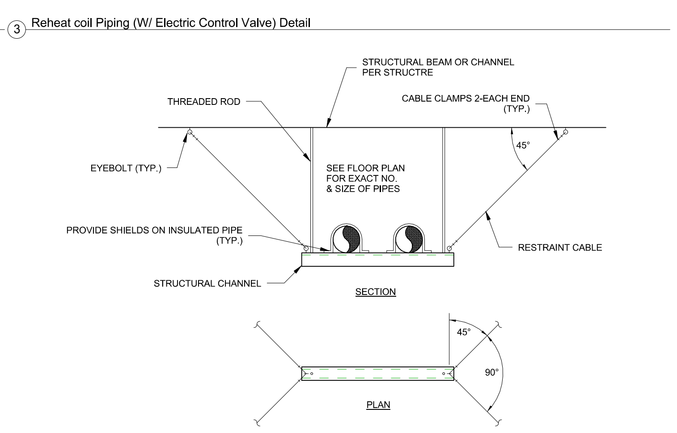


NOTE:
SEE FLOOR PLAN FOR SIZES

14 Steam Sterilizer Detail

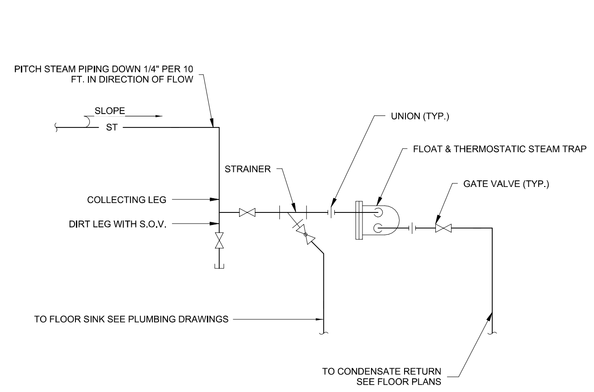


9 Pot Feeder Detail

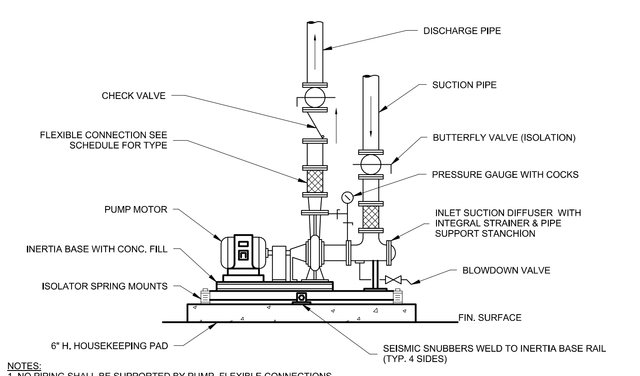


NOTES:
1. TIGHTEN CABLES AFTER PIPING HAS BEEN FILLED.
2. PROVIDE SEISMIC BRACING CABLES AT EVERY SIXTH HANGER.

4 Suspended Pipe Support Detail

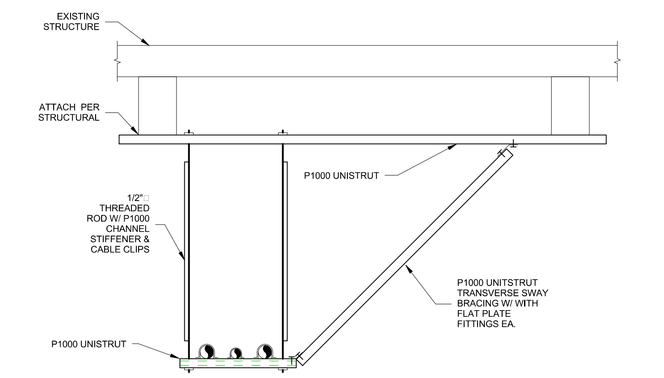


15 Steam Trap Piping Detail



NOTES:
1. NO PIPING SHALL BE SUPPORTED BY PUMP. FLEXIBLE CONNECTIONS SHALL NOT BE COMPRESSED BY WEIGHT OF PIPE.
2. INSTALLATION OF DOUBLE SUCTION PUMP SHALL BE SIMILAR EXCEPT WITHOUT SUCTION DIFFUSER.
3. ANCHOR PUMP BASE TO CONCRETE INERTIA BASE FILL. FULLY GROUT PUMP BASE FRAME, ANCHOR SNUBBERS & ISOLATORS TO HOUSEKEEPING PAD.

10 Pump Piping (Closed-Coupled End Suction) Detail



NOTES:
1. TRANSVERSE SWAY BRACING SHALL OCCUR EVERY FOURTH HANGER.
2. LONGITUDINAL BRACING SHALL OCCUR EVERY EIGHTH HANGER.
3. SINGLE PIPE SUPPORT SIMILAR, EXCEPT NO TRAPEZE REQUIRED.

5 Suspended Pipe Support Detail 1

CONSULTANTS

NO.	DESCRIPTION	DATE

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PROJECT

ADDRESS

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SCALE 12" = 1'-0"

TITLE

MECHANICAL - DETAILS

M5.1

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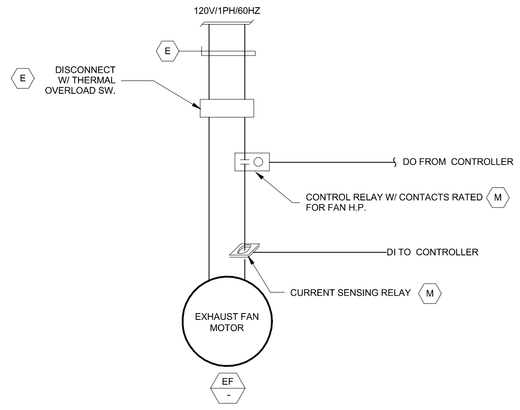
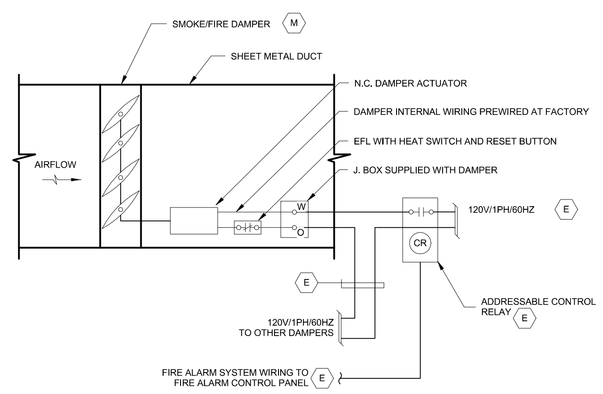


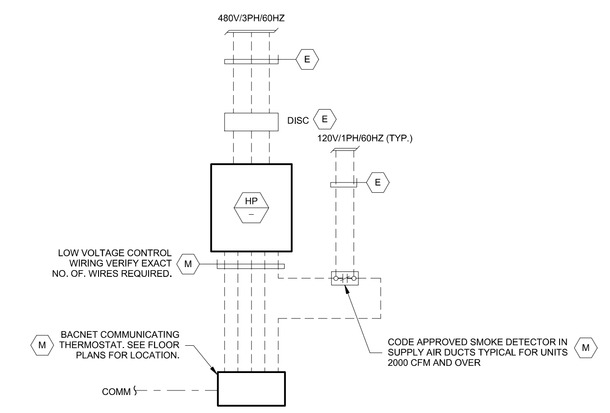
9 Single Phase Exhaust Fan Wiring



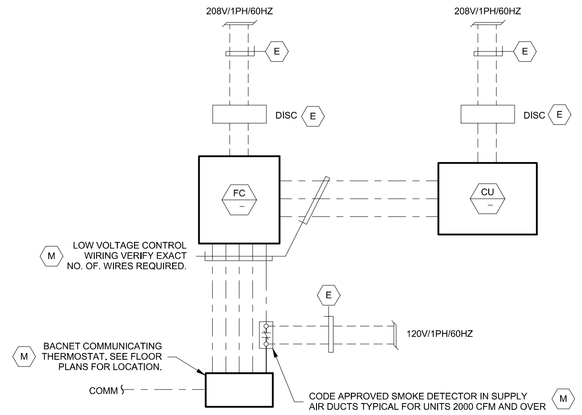
10 Smoke-Fire Damper Wiring (For area Dectection)

NOTES:
1. MIRROR DETAIL FOR OPPOSITE DOOR LOCATIONS.
2. THERMOSTAT AND LIGHT SWITCH WILL NOT BE PLACED ON SEPERATE WALLS.

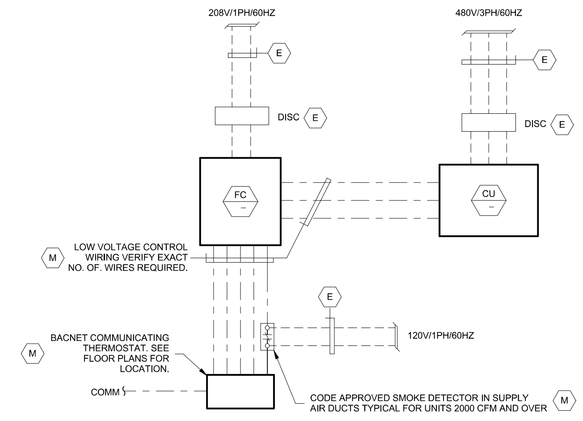
12 Thermostat - Sensor Location Detail



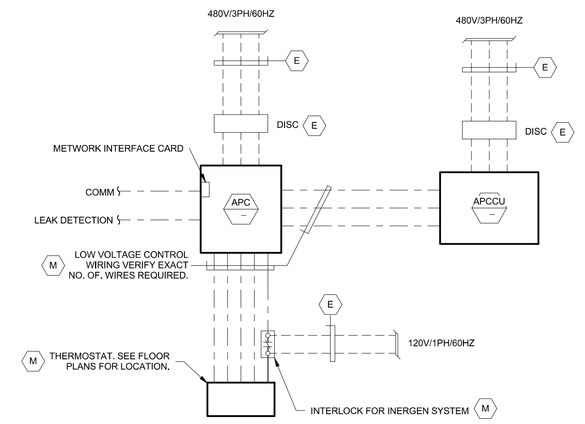
5 3 Phase Heat Pump Wiring Diagram



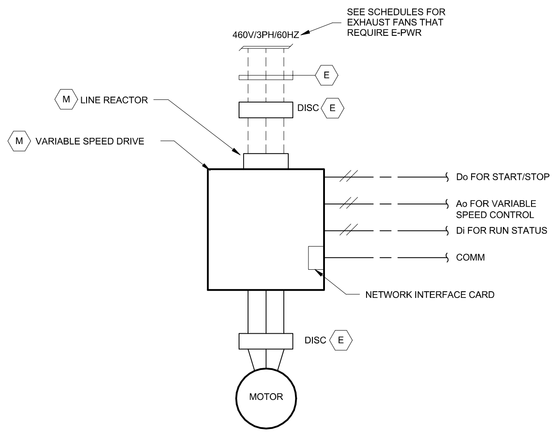
6 1 Phase Split System Heat Pump Wiring Diagram



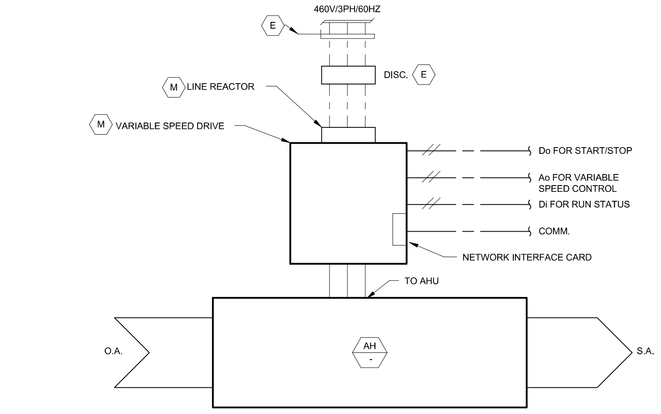
7 3 Phase Split System Heat Pump Wiring Diagram



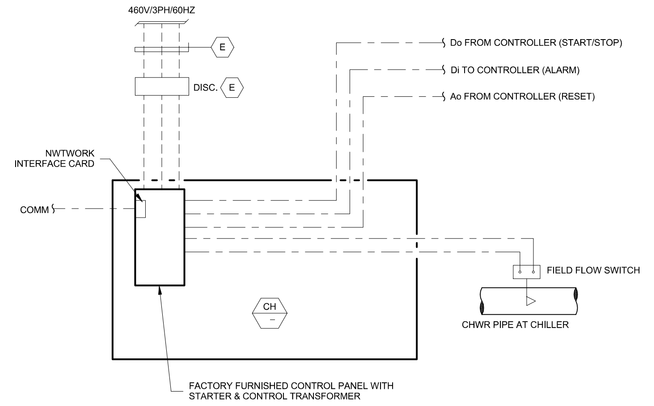
11 APC Server Room Wiring Diagram



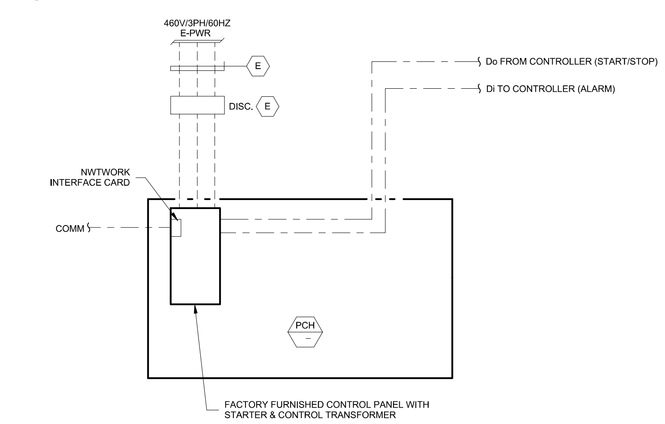
8 Fan or Pump V.F.D. Wiring



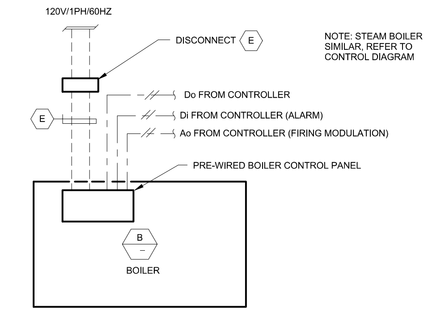
1 A.H. Unit Wiring



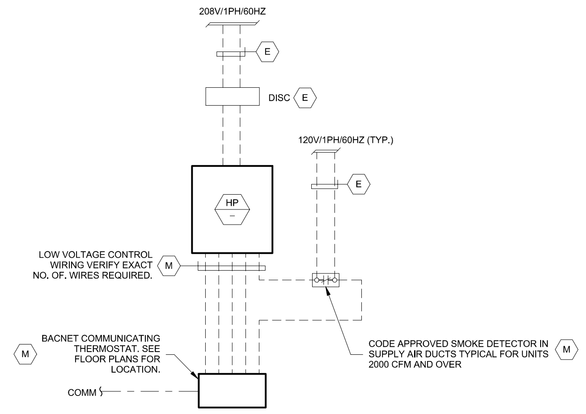
2 Chiller Wiring Diagram



13 Process Chiller Wiring Diagram



3 Heating Hot Water Boiler Wiring Detail



4 1 Phase Heat Pump Wiring Diagram

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO.

SCALE 12" = 1'-0"

TITLE

MECHANICAL - WIRING DIAGRAMS

M6.0

5/20/2013 11:53:23 AM

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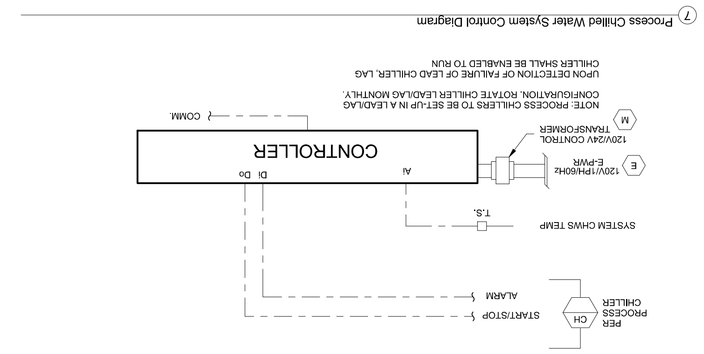
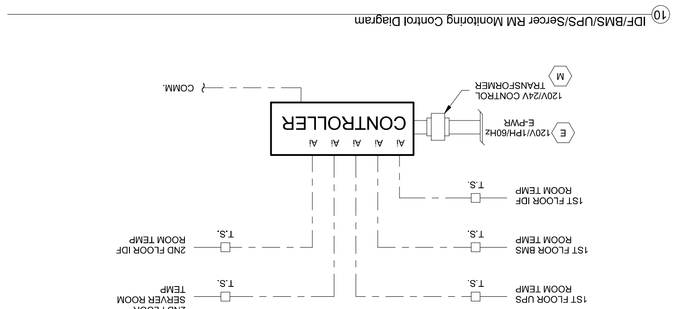


9 General Exhaust Control Detail

10 IDF/BMS/UPS/Server RM Monitoring Control Diagram


CONTROLLER
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PIPE MATERIAL SCHEDULE

SERVICE DESIGNATION	SERVICE DESCRIPTION	INSULATION	PIPING MATERIAL
RO	REVERSE OSMOSIS	N/A	POLYPROPYLENE
DI	DEIONIZED WATER	N/A	POLYPROPYLENE
LA	LAB AIR	N/A	TYPE L ACR COPPER TUBING, CLEANED FOR OXYGEN SERVICE
LV	LAB VACUUM	N/A	TYPE L COPPER TUBING, CLEANED FOR OXYGEN SERVICE
N2	NITROGEN	N/A	TYPE L ACR COPPER TUBING, CLEANED FOR OXYGEN SERVICE
LN2	LIQUID NITROGEN	VACUUM JACKETED	VACUUM INSULATED PIPING WITH JACKET
W	SANITARY WASTE	N/A	CAST IRON, ABS OR PVC
V	SANITARY VENT	N/A	CAST IRON: HUBLESS ABOVE GRADE
IW	INDUSTRIAL WASTE	N/A	POLYPROPYLENE PIPE, SOCKET FUSION WELDED PIPING WITHIN PLENUMS SHALL BE PLENUM RATED
IV	INDUSTRIAL VENT	N/A	POLYPROPYLENE PIPE, SOCKET FUSION WELDED PIPING WITHIN PLENUMS SHALL BE PLENUM RATED
DCW	DOMESTIC COLD WATER	N/A	TYPE L COPPER, SOLDERED 95/5
DHW	DOMESTIC HOT WATER	1" THICK, K= 24-.28	TYPE L COPPER, SOLDERED 95/5
ICW	INDUSTRIAL COLD WATER	N/A	TYPE L COPPER, SOLDERED 95/5
IHW	INDUSTRIAL HOT WATER	1" THICK, K=.24-.28	TYPE L COPPER, SOLDERED 95/5
ISW	INDUSTRIAL SOFT COLD WATER	N/A	TYPE L COPPER, SOLDERED 95/5
ISHW	INDUSTRIAL SOFT HOT WATER	1" THICK, K=.24-.28	TYPE L COPPER, SOLDERED 95/5
CD	CONDENSATE PIPING	1/2" THICK, K=.23-.27	TYPE M COPPER, SOLDERED 95/5
G & MPG	NATURAL GAS PIPING (ABOVE GRADE)	N/A	UP TO 2", SCHEDULE 40 BLACK IRON PIPE THREADED FTGS. 2 1/2" AND UP, SCHEDULE 40 BLACK IRON PIPE WELDED FITTINGS
G & MPG	NATURAL GAS PIPING (BELOW GRADE)	N/A	SCHEDULE 40 BLACK STEEL FACTORY COATED WITH CONTINUOUS SEAMLESS HIGH DENSITY POLYETHYLENE WITH A MINIMUM THICKNESS OF 23 MILS.

NOTE: NO CPVC PIPING WILL BE USED FOR POTABLE WATER SYSTEMS.

COMPLIANCE NOTES

1. PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE REQUIREMENTS OF SECTION 118, 123, AND 124 E.E.S. AND TABLE 6-6A & 6-6B OF THE 2010 C.M.C.
2. LAVATORY FAUCETS IN REST ROOMS SHALL BE THE SELF CLOSING TYPE.
3. LAVATORY FAUCETS TO BE .5 G.P.M. MAX.
4. NEW TOILETS TO BE ULTRA LOW FLUSH TYPE, 1.6 G.P.F.
5. SINK FAUCETS SHALL BE 2.2 GPM MAXIMUM.
6. URINALS TO BE 1.0 G.P.F, MAX.
7. WATER CLOSETS SHALL BE THE ULTRA LOW FLOW TYPE, 1.6 G.P.F, MAXIMUM.
8. SHOWERS SHALL BE PROVIDED WITH MIXING VALVES PER SECTION 418 OF THE 2010 CPC.
9. CROSS-CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT (OTHER THAN THOSE LISTED IN INFORMATION BULLETIN 103).
10. SERVICE WATER HEATING EQUIPMENT SHALL MEET ALL OF THE REQUIREMENTS OF THE APPLICABLE EFFICIENCY STANDARDS AND SHALL BE CURRENTLY LISTED AS CERTIFIED BY THE C.E.C.
11. PROVIDE VACUUM BREAKERS AT HOSE BIBBS.
12. LABEL MEDIUM PRESSURE GAS PIPING EVERY 5 FEET.
13. STATE HEALTH CODE SEC. 17921.9 BANS THE USE OF CHLORINATED POLY VINYL CHLORIDE (CPVC) FOR INTERIOR WATER SUPPLY PIPING.
14. CHEMICAL WASTE PIPING SHALL COMPLY WITH SECTION 811.0 OF THE 2010 CPC.
15. FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS.
16. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH 2010 CALIFORNIA PLUMBING CODE SECTIONS 701.0 AND 903.0.
17. SERVICE WATER HEATING SYSTEMS AND EQUIPMENT SHALL COMPLY WITH ENERGY EFFICIENCY STANDARDS, SECTION 113.
18. WATER HEATER PRESSURE AND TEMPERATURE RELIEF DRAINS THAT TERMINATE OUTSIDE OF THE BUILDING SHALL COMPLY WITH SECTION 608.5 OF THE 2010 CALIFORNIA PLUMBING CODE.
19. PROVIDE EXPANSION TANK OR OTHER APPROVED METHOD OF RELIEVING PRESSURE PER SECTION 608.3 OF THE 2010 CALIFORNIA PLUMBING CODE.
20. EACH WATER HEATER SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION PER SECTION 508.2 OF THE 2010 CALIFORNIA PLUMBING CODE.
21. EACH NON-STORAGE INSTANTANEOUS WATER HEATER HAVING AN INSIDE DIAMETER OF NOT MORE THAN 3 INCHES. WATER HEATERS NOT MEETING THIS CRITERIA SHALL BE PROVIDED WITH AN EXPANSION TANK OR OTHER APPROVED METHOD OF RELIEVING PRESSURE PER SECTION 608 OF THE 2010 CALIFORNIA PLUMBING CODE.
22. ADA WATER CLOSET, LAVATORY, AND SHOWER UNIT SHALL MEET THE AMERICAN DISABILITIES ACT GUIDELINES AND CALIFORNIA C.C.R. TITLE 24.
23. THE HEIGHT OF ACCESSIBLE WATER CLOSETS SHALL BE MINIMUM OF 17 INCHES AND A MAXIMUM OF 19 INCHES MEASURED TO THE TOP OF THE TOILET SEAT. CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS, NO MORE THAN 44 INCHES ABOVE THE FLOOR. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS.
24. WHERE URINALS ARE PROVIDED, AT LEAST ONE WITH RIM PROJECTING A MINIMUM OF 14 INCHES FROM THE WALL AND AT A MAXIMUM OF 17 INCHES ABOVE THE FLOOR SHALL BE PROVIDED.
25. FLUSH CONTROLS SHALL BE HAND OPERATED AND SHALL BE MOUNTED NO MORE THAN 44 INCHES ABOVE THE FLOOR.
26. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS.
27. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
28. FUME HOODS SHALL HAVE SINKS WITH LIPS TO PREVENT DRAINAGE OF FUME HOOD SURFACE INTO CUP SINKS.
29. ROUTING AND TERMINATION OF WATER HEATER FLUES SHALL COMPLY WITH CHAPTER 5 OF THE 2010 CALIFORNIA PLUMBING CODE.
30. A WATER HEATER PRESSURE AND TEMPERATURE RELIEF DRAIN THAT TERMINATES OUTSIDE THE BUILDING SHALL COMPLY WITH SECTION 608.5 OF THE 2010 CALIFORNIA PLUMBING CODE.
31. SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
32. POTABLE WATER PIPING MATERIAL SHALL COMPLY WITH SECTION 604.0 OF THE 2010 CALIFORNIA PLUMBING CODE.
33. GAS PIPING MATERIAL SHALL COMPLY WITH SECTION 1209.5 OF THE 2010 CALIFORNIA PLUMBING CODE.
34. ROUTING AND TERMINATION OF WATER HEATER FLUES SHALL COMPLY WITH CHAPTER 5 OF THE 2010 CALIFORNIA PLUMBING CODE.
35. COMBINATION WASTE AND VENT SYSTEMS SHALL COMPLY WITH SECTION 910.0 AND APPENDIX 'B' OF THE 2010 CALIFORNIA PLUMBING CODE.
36. CHEMICAL WASTE PIPING SHALL COMPLY WITH SECTION 811.0 OF THE 2010 CALIFORNIA PLUMBING CODE.
37. INSTALLATION OF FIXTURES SHALL COMPLY WITH CHAPTER 4 OF THE 2010 CALIFORNIA PLUMBING CODE.

TABLE 5.303.6 STANDARDS FOR PLUMBING FIXTURES AND FITTINGS

WATER CLOSETS (TOILETS) - FLUSHOMETER VALVE-TYPE SINGLE FLUSH, MAXIMUM FLUSH VOLUME	ASME A.112.19.2/CSA B45.1 - 1.28 GAL
WATER CLOSETS (TOILETS) - FLUSHOMETER VALVE-TYPE DUAL FLUSH, MAXIMUM FLUSH VOLUME	ASME A.112.19.14 & U.S. EPA WATERSENSE TANK-TYPE HIGH-EFFICIENCY TOILET SPECIFICATIONS - 1.28 GAL
WATER CLOSETS (TOILETS) - TANK TYPE	U.S. EPA WATERSENSE TANK-TYPE HIGH-EFFICIENCY TOILET SPECIFICATION
URINALS, MAXIMUM FLUSH VOLUME	ASME A.112.19.2/CSA B45.1 - 0.5 GALLONS
URINALS, NON-WATER URINALS	ASME A.112.19.19 (VITREOUS CHINA), ANSI Z124.9-2004 OR IAPMO Z124.9 (PLASTIC)
PUBLIC LAVATORY FAUCETS: MAXIMUM FLOW RATE - 0.5 GPM	ASME A.112.18.1/CSA B125.1
PUBLIC METERING SELF-CLOSING FAUCETS: MAXIMUM WATER USE - 0.25 GAL PER CYCLE	ASME A.112.18.1/CSA B125.1

NOTES:
PLUMBING FIXTURES (WATER CLOSETS & URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL MEET THE STANDARDS REFERENCED IN TABLE 5.503.6 OF DIVISION 5.3 OF THE 2010 GREEN CODE.

PARTIAL PLUMBING SPECIFICATIONS

PART 1 - GENERAL

GENERAL AND SUPPLEMENTARY CONDITIONS AND OTHER DIVISIONS - 1 SPECIFICATION SELECTIONS, APPLY TO WORK OF THIS SECTION.

WORK SHALL INCLUDE LABOR AND MATERIALS REQUIRED FOR THE COMPLETION OF A FULLY OPERATING PLUMBING SYSTEM INCLUDING BUT NOT NECESSARILY LIMITED TO: EXCAVATION, INSTALLATION, BACKFILL AND COMPACTION; REQUIRED TAXES; OBTAINING AND PAYING FOR REQUIRED LICENSES, PERMITS, FEES, INSPECTIONS, METERS AND CONNECTIONS; WATER DISTRIBUTION; VENTS AND WASTES; FIXTURES AND ROUGH-IN AND CONNECT CONDENSATE TO OWNER-FURNISHED AND MECHANICAL APPLIANCES.

DURING PROGRESS OF THE WORK MAINTAIN AN ACCURATE RECORD OF CHANGES MADE FROM THE PLANS, PRESENT A PROFESSIONALLY DONE REPRODUCIBLE PLAN TO ARCHITECT REFLECTING CHANGES.

PART 2 - PRODUCTS

USE ONLY NEW FIRST CLASS MATERIALS. EQUIPMENT TO BE IDENTIFIED WITH NAMEPLATE. ELECTRICAL EQUIPMENT TO BE UL LISTED. WHERE REQUIRED TO BE STATE FIRE MARSHALL APPROVED.

INSULATION SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND A SMOKE DENSITY NOT EXCEEDING 50.

SOIL WASTE, AND VENT PIPING WITHIN BUILDINGS: SERVICE WEIGHT CAST IRON NO-HUB SOIL PIPE UNLESS OTHERWISE NOTED. MAKE UP WITH COMPRESSION-TYPE FITTINGS AND STAINLESS STEEL CLAMP AND A SHIELD ASSEMBLIES AND NEOPRENE JOINTS.

HOT AND COLD WATER PIPING ABOVE FLOOR SHALL BE TYPE "L" HARD-DRAWN COPPER TUBE MADE UP WITH 95-5 SOLDER.

CONDENSATE DRAIN AND INDIRECT WASTE PIPING: ABOVE GRADE SHALL BE DWV COPPER WITH DWV DRAINAGE TYPE FITTINGS. PVC MAY BE USED AS APPROVED BY JURISDICTIONAL AUTHORITIES.

GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE (ASTM A120) WITH 150 PSI BLACK BANDED MALLEABLE IRON SCREWED FITTINGS AND PLAIN PATTERN COUPLINGS. 1 ¼ INCHES AND LARGER FITTINGS MAY BE BUTT WELDED. COAT AND WRAP BURIED PIPING.

LOOSE KEY OPERATED; FINISHED WITH CHROME INSIDE AND BRONZE OUTSIDE. ALL HOSE BIBS SHALL HAVE BUILD IN VACUUM BREAKERS. CRANE 252 GAS COCK SHALL BE USED.

PIPE SLEEVES SHALL BE "ADJUSTO-CRETE" OR EQUAL. PROVIDE B&C CHROME ESCUTCHEONS IN FINISHED AREAS.

HANGERS AND SUPPORTS SHALL BE GRINNEL OR EQUAL. PROVIDE LATERAL BRACING WHERE HANGERS 18" LONG. ISOLATE HANGERS AND SUPPORTS FROM PIPING WITH SEMCO TRISOLATORS, INSULATE AT OPENINGS OF STRUCTURE WITH ½" FELT WRAP.

VENT FLASHING AT EACH VENT THROUGH THE ROOF SHALL BE HEAVY AMC GALVANIZED SHEET METAL WITH ZINC CHROMATE COATING.

CLEANOUTS: FLOOR CLEANOUTS: SMITH 4023, 4043. GRADE CLEANOUTS: SMITH 4253. WALL CLEANOUTS: SMITH 4553 IN TILE WALLS AND TOILET ROOMS AND 4532 IN OTHER.

UNIONS: ISOLATE ALL DISSIMILAR METAL WITH "EPCO" DIALECTRIC UNIONS. PROVIDE NEBCO 623 FOR 2" AND SMALLER AND #740 FOR LARGER.

ACCESS PLATES: ACCESS PLATES SHALL BE PROVIDED AT CONCEALED VALVES AND EQUIPMENT, MILCOR OR EQUAL, HINGED, RATED TO MATCH CONSTRUCTION, PRIME COATED STEEL (EXCEPT SS IN TOILET ROOMS) AS SELECTED BY ARCHITECT, EQUIPPED WITH KEY LOCKING DEVICE.

FIXTURES AND EQUIPMENT: FIXTURES AND EQUIPMENT SHALL BE AS SPECIFIED AND SHALL BE COMPLETE WITH ALL STOPS, SUPPLIES, BACKING DRAIN, CHROME PLATED BRONZE TRIM AND OTHER ITEMS NECESSARY FOR A COMPLETE, OPERABLE FACILITY.

INSULATE HOT WATER PIPE ABOVE GRADE PER ADA AND TITLE 24 REQUIREMENTS.

PART 3 - EXECUTION

CODES: PERFORM ALL WORK ACCORDING TO ALL APPLICABLE CODES AND REGULATION. OBTAIN AND PAY FOR ALL PERMITS, FEES AND INSPECTIONS REQUIRED BY GOVERNING AUTHORITIES. ADDITIONAL WORK REQUIRED TO CONFORM TO THESE CODES WILL BE DONE AT NO ADDITIONAL CHARGE.

SLOPE WASTE, DRAIN AND SEWER PIPING AT ¼ INCH PER FOOT UNLESS OTHERWISE NOTED OR PERMITTED.

CUTTING AND PATCHING: DO ALL DRILLING CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE SAME MATERIALS AND WORKMANSHIP AS THE ORIGINAL WORK.

VERIFY FIXTURE AND EQUIPMENT LOCATIONS AND SERVICE WITH THE ARCHITECTURAL PLANS AND FURNISH AND CONNECT FIXTURES AND EQUIPMENT SHOWN THEREON. EQUIPMENT SHALL BE SECURELY ANCHORED TO THE STRUCTURE.

WALL-HUNG FIXTURES ON STUD WALLS SHALL BE SECURELY ATTACHED TO A ¼" THICK BY 8" WIDE STEEL PLATE WHICH SHALL EXTEND TO AT LEAST ONE STUD BEYOND THE FIRST AND LAST FIXTURE MOUNTING POINT. PLATE SHALL BE SHOP DRILLED WITH HOLES 1/16" LARGER THAN STUD BOLTS SUPPLIED WITH FIXTURE OR FIXTURE ARMS SPECIFIED. A JAM NUT SHALL BE SET TIGHT AGAINST FACE PLATE TO SECURE STUD. FIXTURE HANGER OR ARM SHALL BE SUPPORTED FREE OF FINISHED WALL BY MEANS OF SECOND SET OF JAM NUTS. PLATES SHALL BE SECURELY BOLTED TO EACH STUD CROSSED WITH 1.8" MINIMUM BY 2" STEEL BACKUP PLATES. FIXTURES WITH BACK, SPECIFIED WITH SUPPORTING ARMS, SHALL, IN ADDITION TO THE ABOVE SPECIFIED PLATES, HAVE FIXTURE HANGERS SECURELY ATTACHED BY A 2" BY 8" WOOD BACKINGS.

EACH INDIVIDUAL FIXTURE SUPPLY SHALL BE PROVIDED WITH CHROME PLATED LOOSE KEY I.P.S. STOP VALVE. DELIVER LOOSE KEYS TO THE OWNER.

NO RUBBER PACKING OR COMPOSITION SEAL SHALL BE INSTALLED. SUPPLIES SHALL BE METAL TO METAL ONLY.

PROVIDE PIPING CONNECTIONS TO EQUIPMENT PROVIDED UNDER THE AIR CONDITIONING SECTION.

AFTER PRELIMINARY PURGING OF THE SYSTEM CHLORINATE THE ENTIRE POTABLE WATER IN ACCORDANCE WITH THE CURRENT RECOMMENDATIONS OF THE AMERICAN WATER WORKS ASSOCIATION. CHLORINATE ONLY WHEN THE BUILDINGS ARE UNOCCUPIED. THEN THOROUGHLY FLUSH THE ENTIRE POTABLE WATER SYSTEM.

FLUSH WATER SYSTEMS CLEAN AND MAKE TESTS REQUIRED BY JURISDICTIONAL AUTHORITIES. MAKE ADJUSTMENTS REQUIRED TO ELIMINATE NOISE AND VIBRATION AS REQUIRED FOR APPROVAL BY THE ARCHITECT.

SEAL PENETRATIONS OF RATED BARRIERS BY PIPE AND WIRE WITH 3M FIRE BARRIER CAULK.

DAMAGED AND UNUSED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

WATER PRESSURE CALCULATION

PRESSURE AT STREET	=	100 PSI
PRESSURE AFTER METER	=	90 PSI
PRESSURE AFTER BACKFLOW & REGULATOR	=	80 PSI
HIGHEST FIXTURE	=	25 FT
PRESSURE REQUIRED AT MOST REMOTE OUTLET	=	25 PSI
FURTHEST FIXTURE FROM METER	=	500 FT

$$\frac{80\ \text{PSI} - \left(25 + (25 \times 0.43)\right) \times 100}{500} = 8.85\ \text{PSI/100 FEET (MAXIMUM ALLOWABLE PIPING PRESSURE LOSS)}$$

TABLE 5.303.2.3 PLUMBING FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE	FLOW RATE
SHOWERHEADS	2.5 GPM @ 80 PSI	2.0 GPM @ 80 PSI
LAVATORY FAUCETS - NON RESIDENTIAL	0.5 GPM @ 60 PSI	0.4 GPM @ 60 PSI
KITCHEN FAUCETS	2.2 GPM @ 60 PSI	1.8 GPM @ 60 PSI
METERING FAUCETS	0.25 GALLONS/CYCLE	0.2 GALLONS/CYCLE
FLUSHOMETER VALVE WATER CLOSETS	1.6 GALLONS/FLUSH	1.28 GALLONS/FLUSH
URINALS	1.0 GALLONS/FLUSH	0.5 GALLONS/FLUSH

NOTES:
PER 2010 GREEN CODE SECTION 5.712.3.3 "WHEN A SHOWER IS SERVED BY MORE THAT ONE NEWLY INSTALLED SHOWERHEAD, THE COMBINED FLOW RATE OF ALL THE SHOWERHEADS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED THE MAXIMUM FLOW RATE AT 20 PERCENT REDUCTION CONTAINED IN TABLE 5.303.2.2 OR THE SHOWERHEAD TO BE IN OPERATION AT A TIME.

PLUMBING NOTES

THE PLUMBING SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL CONFORM TO THE LATEST ADOPTED CODES AND REGULATIONS HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO, THE 2010 CALIFORNIA BUILDING, MECHANICAL AND PLUMBING CODES. IN CASE OF CONFLICTS WITH CODES, DRAWINGS OR SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL PREVAIL.

THESE DRAWINGS HAVE BEEN PREPARED WITH THE BEST STRUCTURAL AND ARCHITECTURAL INFORMATION AVAILABLE. IT SHALL BE UNDERSTOOD THAT EQUIPMENT LOCATIONS AND ROUTING OF PIPING MAY VARY FROM THAT SHOWN ON THE PLANS AS CONSTRUCTION PROCEEDS. IT IS THE CONTRACTORS RESPONSIBILITY TO:

A. NOTIFY THE PROJECT ENGINEER OF CONSTRUCTION RESTRAINTS WHICH MAKE VARIATIONS FROM THE PLANS NECESSARY.

THESE DRAWINGS DO NOT INCLUDE NECESSARY SAFETY REQUIREMENTS. THE CONTRACTOR SHALL COMPLY TO THE SAFETY REQUIREMENTS AS SET FORTH BY THE GENERAL CONTRACTOR AND LOCAL AUTHORITIES HAVING JURISDICTION.

COORDINATE SHUT-DOWNS OF EXISTING PIPING SYSTEMS WITH OWNER'S REPRESENTATIVE AND GENERAL CONTRACTOR PRIOR TO WORK.

PLUMBING WORK SHALL BE INSTALLED SO AS TO AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT, MECHANICAL EQUIPMENT AND STRUCTURAL MEMBERS.

CONNECTION BETWEEN INCOMPATIBLE MATERIALS ABOVE GRADE AND INSIDE BUILDING SHALL BE MADE WITH TWO (2) DIELECTRIC UNIONS SEPARATED BY A TWELVE INCH (12") SECTION OF RED BRASS PIPE.

PIPING SHALL BE SUPPORTED WITH HANGERS AND BRACKETS WHICH PROVIDE ISOLATION FROM FRAMING, CONTACT BETWEEN PIPING AND SUPPORT SHALL BE LINED WITH PLASTIC OR FELT.

ROOF, FLOOR AND WALL PENETRATIONS SHALL BE SEALED WATERTIGHT.

SEE ARCHITECTURAL DRAWINGS FOR ADA FIXTURE LOCATIONS AND MOUNTING HEIGHTS. INSULATE EXPOSED HOT WATER AND DRAIN PIPING BELOW HANDICAP LAVATORIES AND SINKS WITH INSULATING TAPE AND OFFSET P-TRAP AGAINST WALL.

WASTE, SOIL, VENT AND CONDENSATE PIPING SHALL SLOPE AT 2% UNLESS APPROVED OTHERWISE BY THE OWNER'S REPRESENTATIVE AND THE LOCAL AUTHORITIES HAVING JURISDICTION.

HORIZONTAL CONDENSATE DRAIN PIPING FROM AIR CONDITIONING UNITS SHALL BE INSULATED WITH 1/2" THICK ARMAFLEX OR FIBERGLASS PIPE INSULATION.. SLIP PIPE INSULATION AND SEAL BUTT JOINTS.

HOT WATER PIPING SHALL BE INSULATED WITH 1-1/2" THICK FIBERGLASS MOLDED INSULATION WITH K=0.27 BTUH-IN, SQ, FT, F, OR LESS.

BUILDING DRAIN AND VENT PIPING MATERIAL SHALL COMPLY WITH SECTION 701 AND 903 OF THE CALIFORNIA PLUMBING CODE.

SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.

CROSS CONNECTION PROTECTION SHALL BE PROVIDED AT ALL POTABLE WATER SUPPLIED APPLIANCES AND EQUIPMENT (OTHER THAN THOSE LISTED IN INFORMATION BULLETIN 103).

PROVIDE PERMANENT VACUUM BREAKERS ON ALL HOSE BIBBS.

PROVIDE ANGLE STOP VALVES AT EACH SUPPLY LINE TO EACH FIXTURE.

WATER CLOSETS SHALL BE LOW-CONSUMPTION 1.28 GPM FLUSH CYCLE.

PUBLIC LAVATORY FAUCETS SHALL BE THE SELF-CLOSING TYPE.

SINK FAUCETS SHALL RESTRICT FLOW TO 2.2 GPM.

LAVATORY FAUCETS SHALL RESTRICT FLOW TO 2.2 GPM AND .25 GALLONS PER CYCLE.

SHOWER HEADS SHALL RESTRICT FLOW TO 2.5 GPM AND SHALL BE PROVIDED WITH MIXING VALVE CONTROLS.

HOT WATER HEATER, CONTROLS, AND SYSTEM SHALL MEET THE REQUIREMENTS OF CALIFORNIA EFFICIENCY STANDARD P400-92-005, SECTION 113 (a) AND (b).

NO CPVC PIPING WILL BE USED FOR POTABLE WATER SYSTEMS.

INSULATE HOT WATER PIPING PER CALIFORNIA EFFICIENCY STANDARDS AND 2010 CPC.

WATER HEATERS SHALL BE SECURED AS REQUIRED BY THE 2010 CPC.

WATER PIPING SYSTEM SHALL BE DISINFECTED BY CHLORINATION PER SECTION 609.

WATER PIPING SYSTEM TESTING SHALL BE PERFORMED PRIOR TO OCCUPANCY.

FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEAL.

STATE HEALTH & SAFETY CODE BANS THE USE OF CHLORINATED POLYVINYL CHLORIDE (CPVC) FOR INTERIOR WATER-SUPPLY PIPING. NO CPVC PIPING WILL BE USED FOR POTABLE WATER SYSTEMS.

ROOF ACCESS LADDER SHALL COMPLY WITH SECTION 904.10.3 OF THE 2010 CMC.

COORDINATE FIXTURE REQUIREMENTS WITH ARCHITECT PRIOR TO BID. ARCHITECT SHALL APPROVE FIXTURES INCLUDING COLOR PRIOR TO ORDER.

VERIFY RIGHT HAND OR LEFT HAND FIXTURE CONNECTIONS AND WATER CLOSET LEVER REQUIREMENTS PRIOR TO WORK. INSTALL FIXTURES AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

LABEL MEDIUM PRESSURE GAS PIPING EVERY FIVE FEET.

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

PLUMBING SYSTEMS AND COMPONENTS SHALL COMPLY WITH "NSF/ANSI STANDARD 61 DRINKING WATER SYSTEM COMPONENTS" AND WITH CALIFORNIA ASSEMBLY BILL "AB1953" LEAD FREE STANDARDS. PRODUCTS MUST RECEIVE CERTIFICATION FROM AN INDEPENDENT ANSI-APPROVED, THIRD-PARTY TESTING ORGANIZATION.

REFER TO ARCHITECTURAL DIMENSIONS PLANS TO LOCATE SINKS, FLOOR SINKS, VENTS AND SERVICE UMBILICALS.

COLD WATER PIPE SIZING CHART

PIPE SIZE	GPM	FIXTURE UNITS		VELOCITY
		FLUSH TANK	FLUSH VALVE	
3/4"	9	13	2.0	6 FPS
1"	17	24	3.75	6 FPS
1-1/4"	29	50	12.0	8 FPS
1-1/2"	40	85	28.0	8 FPS
2"	60	170	75.0	8 FPS
2-1/2"	120	180	360	8 FPS
3"	170	750	700	8 FPS

NOTES:
PIPING NOT SIZED ON FLOOR PLANS OR DIAGRAMS SHALL BE SIZED IN ACCORDANCE WITH THIS PIPE SIZING CHART (MIN. SIZE).

MAXIMUM FLOW VELOCITIES: 6 FT/SEC. FOR BRANCH PIPING (WITHIN BUILDING) 8 FT/SEC. FOR MAINS.

HOT WATER PIPE SIZING CHART

PIPE SIZE	GPM	FIXTURE UNITS	VELOCITY
		FLUSH TANK	
3/4"	7	9	5 FPS
1"	13	18	5 FPS
1-1/4"	19	28	5 FPS
1-1/2"	27	45	5 FPS
2"	45	103	5 FPS

PIPING NOT SIZED ON FLOOR PLANS OR DIAGRAMS SHALL BE SIZED IN ACCORDANCE WITH THIS PIPE SIZING CHART (MIN. SIZE).

MAXIMUM FLOW VELOCITIES:
5 FT/SEC. FOR HOT WATER BRANCH PIPING AND BUILDING SUPPLY MAINS.

PLUMBING LEGEND

SYMBOL	ABBREV.	DESCRIPTION
	POC	POINT OF CONNECTION
	S OR W	SEWER OR WASTE ABOVE GRADE
	S OR W	SEWER OR WASTE BELOW GRADE
	FCO	FLOOR CLEAN-OUT
	WCO	WALL CLEAN-OUT
	V	VENT
IW	IW	INDUSTRIAL LAB WASTE
IV	IV	INDUSTRIAL VENT
LV	VAC	LAB VACUUM
DHW	DHW	DOMESTIC HOT WATER
DCW	DCW	DOMESTIC COLD WATER
ICW	ICW	INDUSTRIAL COLD WATER
IHW	IHW	INDUSTRIAL HOT WATER
IHWR	IHWR	INDUSTRIAL HOT WATER RETURN
N2	N2	NITROGEN
LA	LA	LAB COMPRESSED AIR
LN2	LN2	LIQUID NITROGEN
DIR	DIR	DEIONIZED WATER RETURN
DI	DI	DEIONIZED WATER SUPPLY
MPG	MPG	MEDIUM PRESSURE NATURAL GAS (5 PSI)
GAS	G	NATURAL GAS (LOW PRESSURE)
	S.O.V.	SHUT-OFF VALVE
		CHECK VALVE

(E)	DENOTES EXISTING
A/G	ABOVE GRADE
B/G	BELOW GRADE
FT	FLUSH TANK
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
LAV	LAVATORY
PSI	POUNDS PER SQUARE INCH
QTY	QUANTITY
TYP	TYPICAL
VTR	VENT THRU ROOF

FIXTURE CALL-OUT: FIXTURE TYPE / FIXTURE NUMBER

EQUIPMENT TAG: EQUIPMENT TYPE / EQUIPMENT ID

DETAIL CALL-OUT: DETAIL NUMBER / SHEET NUMBER

FLOOR DRAIN/SINK QUANTITIES

TAG	DESCRIPTION	QUANTITY	REMARKS
FS-1 & FS-2	FLOOR SINK	20	
FD-1	FLOOR DRAIN	8	

PLUMBING SHEET INDEX

SHT. NO.	DESCRIPTION
P0.1	PLUMBING LEGEND AND NOTES
P0.2	PLUMBING EQUIPMENT SCHEDULES
P2.0	PLUMBING SITE PLAN
P2.1A.1	PLUMBING FIRST FLOOR WASTE & VENT PIPING - EAST
P2.1A.2	PLUMBING FIRST FLOOR WASTE & VENT PIPING - WEST
P2.1B.1	PLUMBING FIRST FLOOR PIPING PLAN - EAST
P2.1B.2	PLUMBING FIRST FLOOR PIPING PLAN - WEST
P2.2A.1	PLUMBING SECOND FLOOR WASTE & VENT PIPING - EAST
P2.2A.2	PLUMBING SECOND FLOOR WASTE & VENT PIPING - WEST
P2.2A.3	PLUMBING SECOND FLOOR WASTE & VENT PIPING - NORTH
P2.2B.1	PLUMBING SECOND FLOOR PIPING PLAN - EAST
P2.2B.2	PLUMBING SECOND FLOOR PIPING PLAN - WEST
P2.2B.3	PLUMBING SECOND FLOOR PIPING PLAN - NORTH
P2.3	PLUMBING ROOF PLAN
P2.4	PLUMBING EQUIPMENT YARD PLAN
P3.0	PLUMBING DIAGRAMS
P3.1	PLUMBING DEIONIZED WATER SYSTEM P&ID
P3.2	PLUMBING DETAILS
P3.3	PLUMBING WATER PIPING DIAGRAM

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PLUMBING LEGEND AND NOTES

P0.1

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EQUIPMENT SCHEDULE

TAG	SERVICE	LOCATION	DESCRIPTION
IWH 1	INDUSTRIAL HOT WATER	EQUIPMENT YARD	WATER HEATER: A.O. SMITH MODEL BTH-250, 100 GALLON STORAGE TANK, 320 GALLONS PER HOUR RECOVERY AT 90°F TEMPERATURE RISE, 250 MBH GAS INPUT. ELECTRICAL: 120V-1PH-60Hz
WH 1	DOMESTIC HOT WATER	SECOND FLOOR JANITOR'S CLOSET	WATER HEATER: A.O. SMITH MODEL BTH-250, 100 GALLON STORAGE TANK, 320 GALLONS PER HOUR RECOVERY AT 90°F TEMPERATURE RISE, 250 MBH GAS INPUT. ELECTRICAL: 120V-1PH-60Hz
CP 1	1ST FLR INDUSTRIAL HOT WATER RECIRCULATION	EQUIPMENT YARD	RECIRCULATION PUMP : GRUNDFOS MODEL UPS-43-44BF, BRONZE BODY, 3 SPEED PUMP WITH CHECK VALVE, 10 GPM @ 8 FT. H.D. (LOW SPEED), 10 GPM @ 13 FT. H.D. (HIGH SPEED). ELECTRICAL: 120 VOLTS, 1.8 AMPS, 1/6 HP MOTOR.
CP 2	2ND FLR INDUSTRIAL HOT WATER RECIRCULATION	EQUIPMENT YARD	RECIRCULATION PUMP : GRUNDFOS MODEL UPS-43-44BF, BRONZE BODY, 3 SPEED PUMP WITH CHECK VALVE, 10 GPM @ 8 FT. H.D. (LOW SPEED), 10 GPM @ 13 FT. H.D. (HIGH SPEED). ELECTRICAL: 120 VOLTS, 1.8 AMPS, 1/6 HP MOTOR.
CP 3	DOMESTIC HOT WATER RECIRCULATION	SECOND FLOOR JANITOR'S CLOSET	RECIRCULATION PUMP : GRUNDFOS MODEL UPS-43-44BF, BRONZE BODY, 3 SPEED PUMP WITH CHECK VALVE, 10 GPM @ 8 FT. H.D. (LOW SPEED), 10 GPM @ 13 FT. H.D. (HIGH SPEED). ELECTRICAL: 120 VOLTS, 1.8 AMPS, 1/6 HP MOTOR.
VP 1	1ST & 2ND LEVEL LABS	EQUIPMENT YARD	VACUUM PUMP: BUSCH MODEL TTMD-2-LAB165, DUPLEX, (2) RA 0100 PUMPS AT 7.5 HP EACH, 117 ACFM, 22"Hg VACUUM, 200 GALLON TANK. COMPLETE WITH AUTO-PURGE FEATURE APPROX. WEIGHT = 1,200 LBS. ELECTRICAL: 460V-3□-60Hz, (2) 7.5 HP MOTORS
AC 1 AND ST 1	1ST & 2ND LEVEL LABS	EQUIPMENT YARD	ENCLOSED SCROLL AIR COMPRESSOR: POWEREX MODEL SEO400740, 122 SCFM @ 100 PSIG, WITH SEPARATE HANSON 240 GALLON STORAGE TANK. APPROX. WEIGHT = 2,000 LBS. (AIR COMPRESSOR ONLY) ELECTRICAL: 460V-3□-60Hz, 40 HP MOTOR, 52 FLA.
RAD 1	1ST & 2ND LEVEL LABS	EQUIPMENT YARD	REFRIGERATED AIR DRYER INGERSOLL RAND MODEL D212NC, 125 SCFM, 1.9 PSIG PRESSURE DROP, 1-1/2" INLET & OUTLET CONNECTIONS. APPROX. WEIGHT = 80 LBS. 120 VOLT-1PH-60Hz, 1.35 KW
AC 2	1ST & 2ND LEVEL LABS	EQUIPMENT YARD	RELOCATE OWNER'S EXISTING 25 HP AIR COMPRESSOR AND REFRIGERATED AIR DRYER TO NEW EQUIPMENT YARD AS SHOWN. AIR COMPRESSOR SHALL BE USED AS A BACK-UP SYSTEM. CONNECT INTO BUILDING COMPRESSED AIR SYSTEM AS SHOWN. EXISTING AIR COMPRESSOR IS AN INGERSOLL RAND MODEL IRN25H-CC. 208-230 VOLTS, 78.6 AMPS. REFRIGERATED AIR DRYER IS AN INGERSOLL RAND MODEL D212NC
DI 1 & RO 1	1ST & 2ND LEVEL LABS	EQUIPMENT YARD	DEIONIZED WATER SYSTEM BY "PURETEC", THE SYSTEM SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING: A DUPLEX SOFTENER SYSTEM WITH BRINE TANK, (2) ACTIVATED CARBON BED EXCHANGE TANKS, 5 MICRON RO PREFILTER, 4 GPM RO SYSTEM WITH A 2 HP TYPE 304 SS MULTISTAGE PUMP, 1,000 GALLON CONE BOTTOM STORAGE TANK WITH STEEL STAND, (2) 5 HP TYPE 316 SS DISTRIBUTION PUMPS, (8) 3.6 CU.FT. MIXED BED DI POLISHING TANKS, (2) POST POLISH DI FILTERS, A 254nm AMALGAM BULB ULTRA VIOLET STERILIZER, A 0.2 MICRON FINAL FILTER AND A MAIN CONTROL PANEL. ROTO METERS, QUALITY LIGHTS, SOLENOID VALVES, SENSORS, VALVES, TANK VENTS, LEVEL CONTROLS, FILTERS, FILTER CARTRIDGES, INTERCONNECTING PIPE AND FITTINGS AND CONTROL SYSTEM. ELECTRICAL DATA: RO SKID: 15 AMP DISCONNECT AT THE RO SYSTEM, 480V, 3 PHASE TO POWER RO PUMP WHICH DRAWS 5 AMPS AT 480V. DISTRIBUTION SKID: 30 AMP DISCONNECT AT THE CENTRAL CONTROL PANEL, 480V, 3 PHASE TO POWER DISTRIBUTION PUMP WHICH DRAWS 10 AMPS AT 480V. A SINGLE QUAD OR (2) DUPLEX 110V OUTLETS NEAR THE DI POLISH TANKS, WATER SOFTENER TANKS (RESIN & BRINE) AND THE CARBON EXCHANGE TANKS. POWER TO ONLY TO PROVIDE MINIMUM CONTROL POWER AND QUALITY LIGHTS (APPROX. 5 - 10 AMPS TOTAL)

LAB OUTLET SCHEDULE

TAG	DESCRIPTION
DI 1	WATER SAVER GOOSENECK DEIONIZED WATER FAUCET MODEL L7853SC DECK MOUNT AND L7854SC PANEL MOUNT.
LV 1	WATER SAVER WITH NEEDLE VALVE, SINGLE HANDLE, REMOVABLE SERRATED HOSE NOZZLE, CHROME PLATED WITH COLOR COATED "VAC" BUTTON IDENTIFICATION
LA 1	WATER SAVER WITH NEEDLE VALVE, SINGLE HANDLE, REMOVABLE SERRATED HOSE NOZZLE, CHROME PLATED WITH COLOR COATED "AIR" BUTTON IDENTIFICATION
N2 1	WATER SAVER WITH NEEDLE VALVE, SINGLE HANDLE, REMOVABLE SERRATED HOSE NOZZLE, CHROME PLATED WITH COLOR COATED "N2" BUTTON IDENTIFICATION

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	BRANCH PIPE CONNECTION SIZE				DESCRIPTION
		WASTE	VENT	CW	DHW	
WC 1	WATER CLOSET, ADA	3"	2"	1-1/4"	-	ZURN Z5615 ECO-VANTAGE HIGH EFFICIENCY TOILET (1.28 GPF), 17" RIM HEIGHT, VITREOUS CHINA, 1-1/2" TOP SPUD, 2" TRAPWAY, SIPHON JET ACTION, WALL MOUNTED. ZURN ZER6000 HIGH EFF. SENSOR OPERATED FLUSH VALVE AND Z5955SS-EL ELONGATED OPEN FRONT SEAT. PROVIDE WITH FIXTURE SUPPORT CARRIER. ADA COMPLIANT.
WC 2	WATER CLOSET	3"	2"	1-1/4"	-	ZURN Z5615 ECO-VANTAGE HIGH EFFICIENCY TOILET (1.28 GPF), 14" RIM HEIGHT, VITREOUS CHINA, 1-1/2" TOP SPUD, 2" TRAPWAY, SIPHON JET ACTION, WALL MOUNTED. ZURN ZER6000 HIGH EFF. SENSOR OPERATED FLUSH VALVE AND Z5955SS-EL ELONGATED OPEN FRONT SEAT. PROVIDE WITH FIXTURE SUPPORT CARRIER.
UR 1	ADA URINAL	2"	1-1/2"	3/4"	-	ZURN Z5798 ECOVANTAGE HIGH EFFICIENCY URINAL, VITREOUS CHINA, 3/4" TOP SPUD, 2"LP.S. OUTLET WITH INTEGRAL TRAP, HIGH EFFICIENCY WASHOUT ACTION (1/8 GPF), VANDAL RESISTANT OUTLET STRAINER. ZER6000 BATTERY POWERED SENSOR TYPE FLUSHMETER VALVE. ADA COMPLIANT.
L 1	LAVATORY	2"	1-1/2"	3/4"	3/4"	ZURN Z5110, 20"x17" OVAL VITREOUS CHINA COUNTERTOP LAV, WITH Z6913-XL BATTERY POWERED ELECTRONIC SENSOR FAUCET, PROVIDE WITH NEW MIXING THERMOSTATIC MIXING VALVE, ACCESSORIES, GRID DRAIN, P-TRAP AND SUPPLIES.
SH 1	ADA SHOWER	2"	1-1/2"	3/4"	3/4"	SYMMONS MODEL H423-V ADA SHOWER WITH HAND SHOWER SPRAY HEAD, 5 FOOT FLEXIBLE METAL HOSE WITH IN-LINE VACUUM BREAKER AND WALL FLANGE, 30" VERTICAL BAR WITH ADJUSTABLE SLIDE. PROVIDE WITH FLOOR DRAIN AND SYMMONS S-4700 PRESSURE BALANCING MIXING VALVE AND SECONDARY VOLUME CONTROL LEVER WITH TRIM AND INTEGRAL SERVICE STOPS.
S 1	SINK	2"	1-1/2"	3/4"	3/4"	ELKAY MODEL PSLVR1917, 20 GAUGE, TYPE 304 STAINLESS STEEL, 19"x17", PROVIDE WITH SINGLE LEVER FAUCET FOR HOT & COLD WATER WITH 9" SPOUT, BASKET STRAINER, TAIL PIECE, P-TRAP, ANGLE STOPS AND SUPPLIES, INSINKERATOR 1/2 HP GARBAGE DISPOSER, PROVIDE AN IN-LINE WATER FILTER AND A SEPARATE DISPENSING FAUCET AT THE SINK, ALSO CONNECT ADJACENT COFFEE STATION TO FILTER.
S 2	SINK	2"	1-1/2"	3/4"	3/4"	ELKAY MODEL DLR332210, 18 GAUGE, TYPE 304 STAINLESS STEEL, 33"x22", DOUBLE BOWL, PROVIDE WITH SINGLE LEVER FAUCET FOR HOT & COLD WATER WITH 9" SPOUT, BASKET STRAINER, TAIL PIECE, P-TRAP, ANGLE STOPS AND SUPPLIES, INSINKERATOR 1/2 HP GARBAGE DISPOSER, PROVIDE AN IN-LINE WATER FILTER AND A SEPARATE DISPENSING FAUCET AT THE SINK, ALSO CONNECT ADJACENT COFFEE STATION TO FILTER.
EW 1	EYE WASH	-	-	3/4"	-	WATER SAVER FAUCET CO. MODEL EW849, DECK MOUNTED EYE WASH UNIT, 90° SWING-DOWN ACTIVERN, 2-GS-PLUS SPRAY HEADS WITH FLIP-TOP DUST COVERS, INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES, PLASTIC COVER AND LOCKING CLIP. TEST CARD & CERTIFIED BY CSA TO MEET ANSI Z358.1. EYEWASH UNITS AT SCULLERY SINKS SHALL BE WATER SAVER MODEL EW848.
ESH 1	EMERGENCY SHOWER AND EYEWASH	2"	1-1/2"	1-1/4"	-	WATER SAVER FAUCET CO. MODEL SSBF2150, RECESSED SAFETY STATION WITH DRAIN PAN. STAINLESS STEEL SHOWER HEAD & ESCUTCHEON PLATE, HEAVY DUTY STAINLESS STEEL PANIC BAR WITH BLACK VINYL GRIP TO ACTIVATE SHOWER, 1" BRASS STAY-OPEN BALL VALVE WITH UNIONS ON INLET & OUTLET (2) FS-PLUS SPRAY HEADS, STAINLESS STEEL DRAIN PAN & CABINET, INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES. CERTIFIED BY CSA TO MEET ANSI Z358.1.
ESH 2	EMERGENCY SHOWER AND EYEWASH	-	-	1-1/4"	-	WATER SAVER FAUCET CO. MODEL SS902BC, SAFETY STATION WITH STAY-OPEN SHOWER AND EYE WASH VALVES, STAINLESS STEEL SHOWER HEAD AND CONNECTION ELBOW, STAINLESS STEEL BOWL WITH COVER, 1" BRASS STAY-OPEN BALL VALVE FOR SHOWER AND 1/2" FOR EYEWASH, (2) GS-PLUS SPRAY HEADS, INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES. CERTIFIED BY CSA TO MEET ANSI Z358.1. PROVIDE WITH BLEED VALVE ON COLD WATER INLET.
LS 1	LAB SINK	2"	1-1/2"	3/4"	3/4"	ELKAY MODEL DLR312212, 31"x22"x12 DEEP, TOP MOUNT 18 GA., TYPE 316 STAINLESS STEEL, WITH WATER SAVER MODEL L411VB-BH SWING SPOUT FAUCET WITH VACUUM BREAKER, SERRATED HOSE NOZZLE AND ADDITIONAL STANDARD AERATOR, PROVIDE WITH TAIL PIECE, P-TRAP, ANGLE STOPS, SUPPLIES. COORDINATE SINK SIZE WITH LAB FURNISHING DRAWINGS.
LS 2	LAB SINK	2"	1-1/2"	3/4"	3/4"	ELKAY MODEL WNSF8248LR #14 GAUGE, TYPE 316 STAINLESS STEEL SINK, 96"x27-1/2"x44"H OVERALL DIMENSIONS (36" TOP OF SINK), WITH TWO 24"x24"x14 DEEP BOWLS AND A 24"X24" LEFT AND 24"X24" RIGHT DRAIN BOARD. PROVIDE SINK WITH (2) ICW/IHW FAUCETS AND (2) DI FAUCETS. PROVIDE WATER SAVER MODEL L1711VB-BH-WS SWING SPOUT FAUCET WITH VACUUM BREAKER, WRISTBLADE HANDLES, SERRATED HOSE NOZZLE AND ADDITIONAL STANDARD AERATOR, PROVIDE WITH TAIL PIECE, P-TRAP, ANGLE STOPS, SUPPLIES. SECONDARY FAUCET SHALL BE WATER SAVER MODEL PR1711-110WS POLISHED CHROME PRE-RINSE FAUCET WITH VACUUM BREAKER, 39" STAINLESS STEEL SPRING HOSE AND PRE-RINSE HAND HELD VALVE, WALL SUPPORT AND HOSE HOOK. COORDINATE SINK REQUIREMENTS WITH LAB FURNISHING DRAWINGS.
LS 3	LAB SINK	2"	1-1/2"	3/4"	3/4"	ELKAY MODEL WNSF8124L #14 GAUGE, TYPE 316 STAINLESS STEEL SINK, 49-1/2"x24"x24"H OVERALL DIMENSIONS (36" TOP OF SINK), WITH ONE 24"x24"x14 DEEP BOWL AND A 24"X24" LEFT DRAIN BOARD, PROVIDE WITH WATER SAVER MODEL L1711VB-BH-WS SWING SPOUT FAUCET WITH VACUUM BREAKER, WRISTBLADE HANDLES, SERRATED HOSE NOZZLE AND ADDITIONAL STANDARD AERATOR, PROVIDE WITH TAIL PIECE, P-TRAP, ANGLE STOPS, SUPPLIES. COORDINATE SINK REQUIREMENTS WITH LAB FURNISHING DRAWINGS.
CS 1	CUP SINK	2"	1-1/2"	3/4"	-	CUP SINK PROVIDED WITH FUME HOOD, BY OTHERS. PROVIDE A VACUUM BREAKER ON WATER INLET.
MS 1	MOP SINK	3"	2"	3/4"	3/4"	FIAT MSB-2424, 24"x24"x10" MOLDED STONE WITH AMERICAN STANDARD 8344.111 FAUCET WITH PAIL HOOK, 3/4" HOSE END, BRACE, VACUUM BREAKER, GRID DRAIN AND INTEGRAL STOPS AND STRAINER.
HB 1	HOSE BIBB	-	-	3/4"	3/4"	ACORN RECESSED HOT & COLD HOSE BOX MODEL 8156 WITH WALL FLANGE. BOX SHALL BE 18 GAGE TYPE 304 STAINLESS STEEL, VALVES SHALL BE CARTRIDGE-OPERATED WITH WHEEL HANDLE AND SCREWDRIVER STOPS, BOX SHALL HAVE HOT AND COLD WATER INLETS AND A SINGLE HOSE CONNECTION OUTLET WITH A VACUUM BREAKER.
HB 2	HOSE BIBB	-	-	3/4"	-	ACORN MODEL 8121 WITH VACUUM BREAKER AND LOOSE KEY HANDLE.
SS 1	SERVICE SINK	3"	2"	3/4"	3/4"	ZURN MODEL Z5898 24"x20" CAST IRON SERVICE SINK WITH 12" BACKSPLASH AND 8" CENTER FAUCET HOLES, PROVIDE WITH Z843M1 CHROME PLATED FAUCET WITH VACUUM BREAKER, PAIL HOOK, 3/4" HOSE END AND BRACE, PROVIDE SINK WITH HANGER PLATE, U-TYPE RIM GUARD, 3" CAST IRON EXPOSED TRAP STAND WITH CLEAN-OUT
FS 1	FLOOR SINK	2", 3" OR 4"	2"	-	-	ZURN Z1902, CAST IRON FLOOR SINK, 12"x12"x10" DEEP, WITH GRATE. REFER TO PLANS FOR PIPE CONNECTION SIZE. UNLESS OTHERWISE NOTED, SIZE SHALL BE 3" MINIMUM AND CALCULATED BASED ON EQUIPMENT SERVED, WHICH EVER GREATER.
FS 2	FLOOR SINK	2", 3" OR 4"	2"	-	-	ZURN Z1900, CAST IRON FLOOR SINK, 12"x12"x6" DEEP, WITH GRATE. REFER TO PLANS FOR PIPE CONNECTION SIZE, UNLESS OTHERWISE NOTED, SIZE SHALL BE 3" MINIMUM AND CALCULATED BASED ON EQUIPMENT SERVED, WHICH EVER GREATER.
FS 3	FLOOR SINK	2"	2"	-	-	ZURN Z1910, CAST IRON FLOOR SINK, 8"x8"x6" DEEP, WITH GRATE. REFER TO PLANS FOR PIPE CONNECTION SIZE. UNLESS OTHERWISE NOTED, SIZE SHALL BE 2" MINIMUM AND CALCULATED BASED ON EQUIPMENT SERVED, WHICH EVER GREATER.
FD 1	FLOOR DRAIN	2"	1-1/2"	1/2"	-	ZURN ZN-415B-VP 2" CAST IRON ENAMELED WITH DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE, ADJUSTABLE CLAMPING COLLAR, NICKEL BRONZE STRAINER THREADED COLLAR, BOTTOM OUTLET WITH TRAP PRIMER CONNECTION.
TD 1	TRENCH DRAIN	3"	2"	1/2"	-	ZURN CAST IRON WITH POLISHED BRONZE TOP. PROVIDE WITH 1/2" TRAP PRIMER FITTING AT TAILPIECE.
TP 1	TRAP PRIMER	-	-	1/2"	-	PRECISION PLUMBING PRODUCTS PRIME-RITE MODEL PR-500, AUTOMATICALLY ACTIVATED, CORROSION RESISTANT BRASS, 1/2" INLET & OUTLET, USE SS-8 SUPPLY TUBE AND DISTRIBUTION UNIT WHEN SUPPLING MORE THAN ONE FLOOR DRAIN.

NOTES:
LAB SINKS SHALL BE TYPE 316 STAINLESS STEEL. COORDINATE LEAD TIME WITH MANUFACTURER.

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PLUMBING EQUIPMENT SCHEDULES

P0.2

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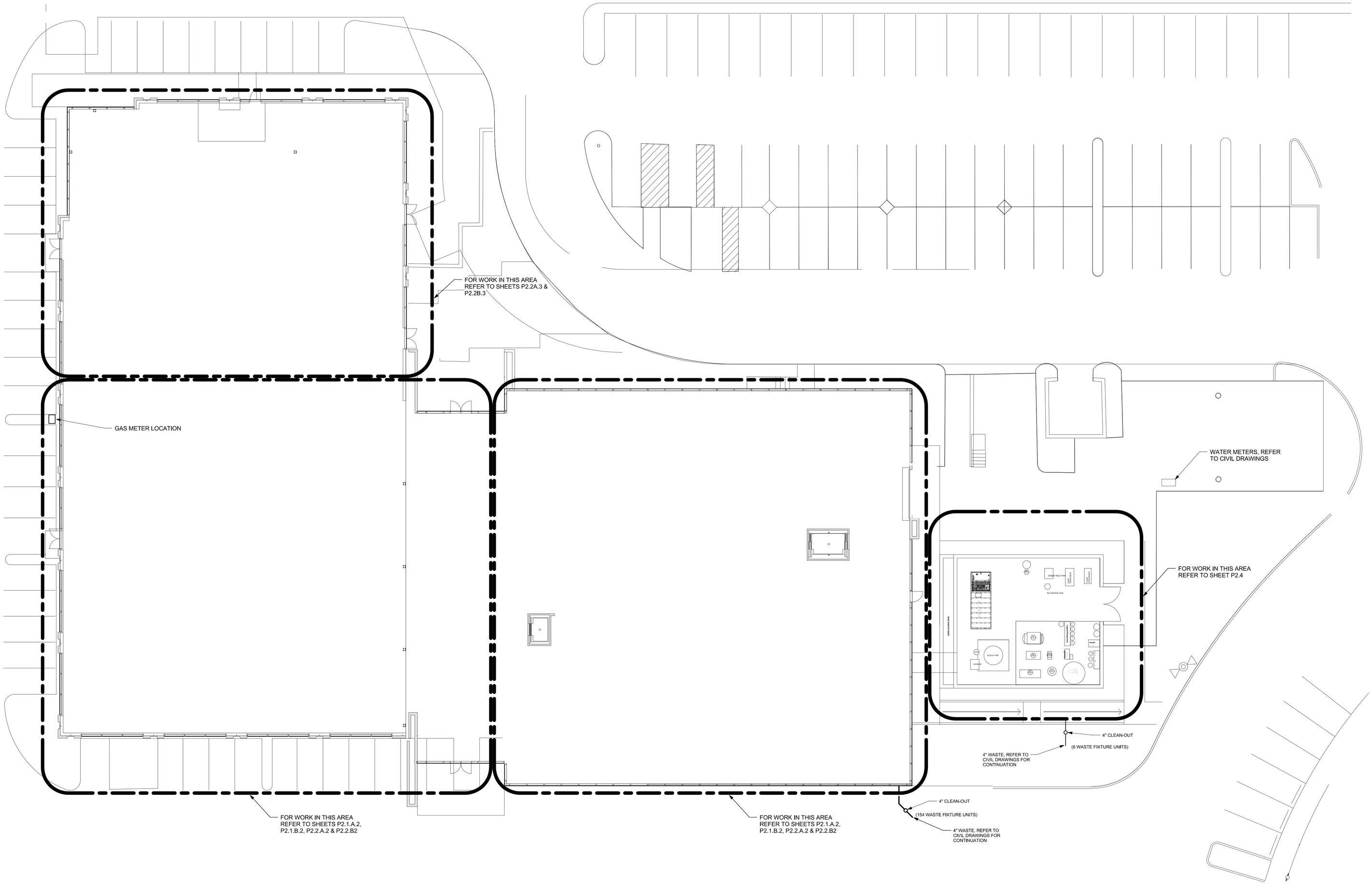

1 Plumbing Site Plan
1" = 10'-0"

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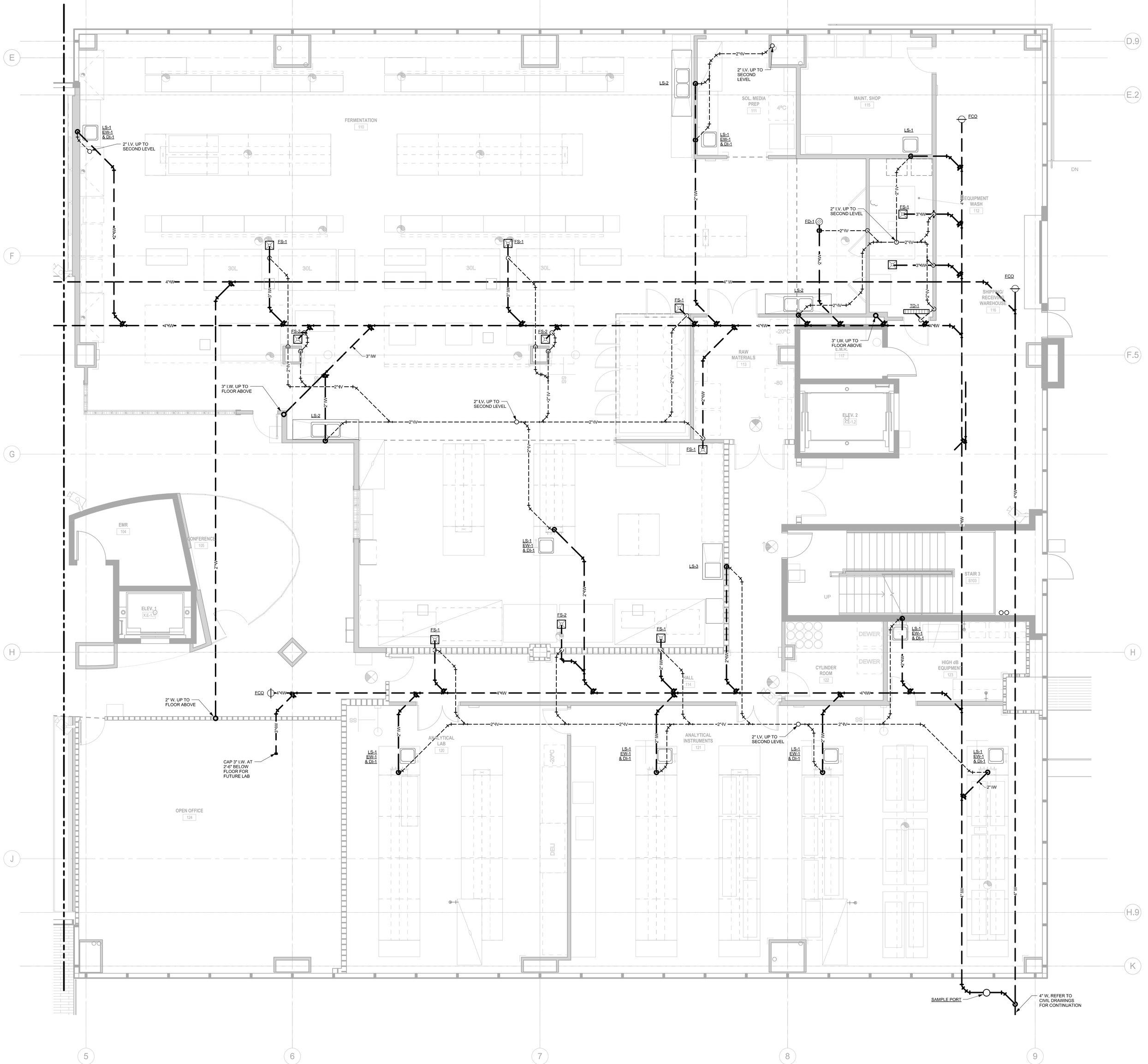
PROJECT NO. 12317

SCALE 1" = 10'-0"

TITLE

PLUMBING SITE PLAN

P2.0



Plumbing First Floor Waste & Vent Plan - EAST
1/4" = 1'-0"

NOTES:

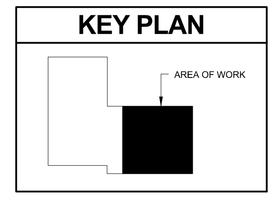
1. ROUTE A 3/4" CONDENSATE FROM EACH FAN COIL UNIT AND DISCHARGE INTO AN APPROVED RECEPTOR. REFER TO DETAIL ON SHEET P3.2 FOR PIPING CONNECTION.

2. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

3. EXTEND VENT PIPING FROM EACH FIXTURE TO VENT THRU ROOF.

4. PROVIDE WALL CLEAN-OUTS FOR EACH SINK, LAV AND URINAL.

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

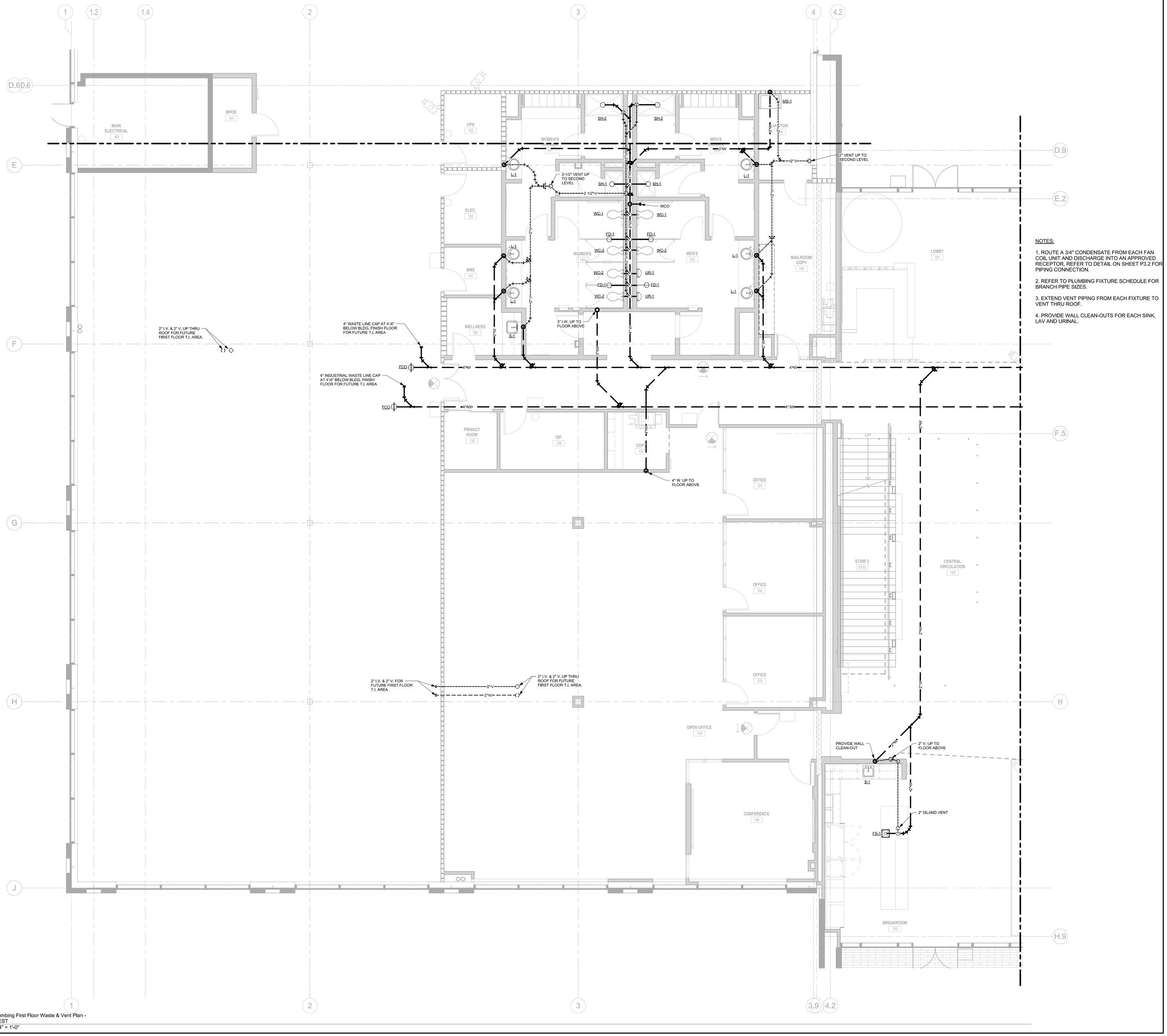
SCALE As indicated

TITLE

PLUMBING FIRST FLOOR WASTE & VENT PIPING - EAST

P2.1A.1

5/20/2013 6:02:08 PM



NOTES:

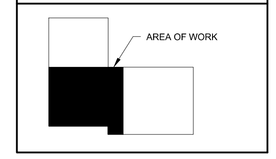
1. ROUTE A 3/4" CONDENSATE FROM EACH FAN COIL UNIT AND DISCHARGE INTO AN APPROVED RECEPTOR. REFER TO DETAIL ON SHEET P3.2 FOR PIPING CONNECTION.

2. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

3. EXTEND VENT PIPING FROM EACH FIXTURE TO VENT THRU ROOF.

4. PROVIDE WALL CLEAN-OUTS FOR EACH SINK, LAV AND URINAL.

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

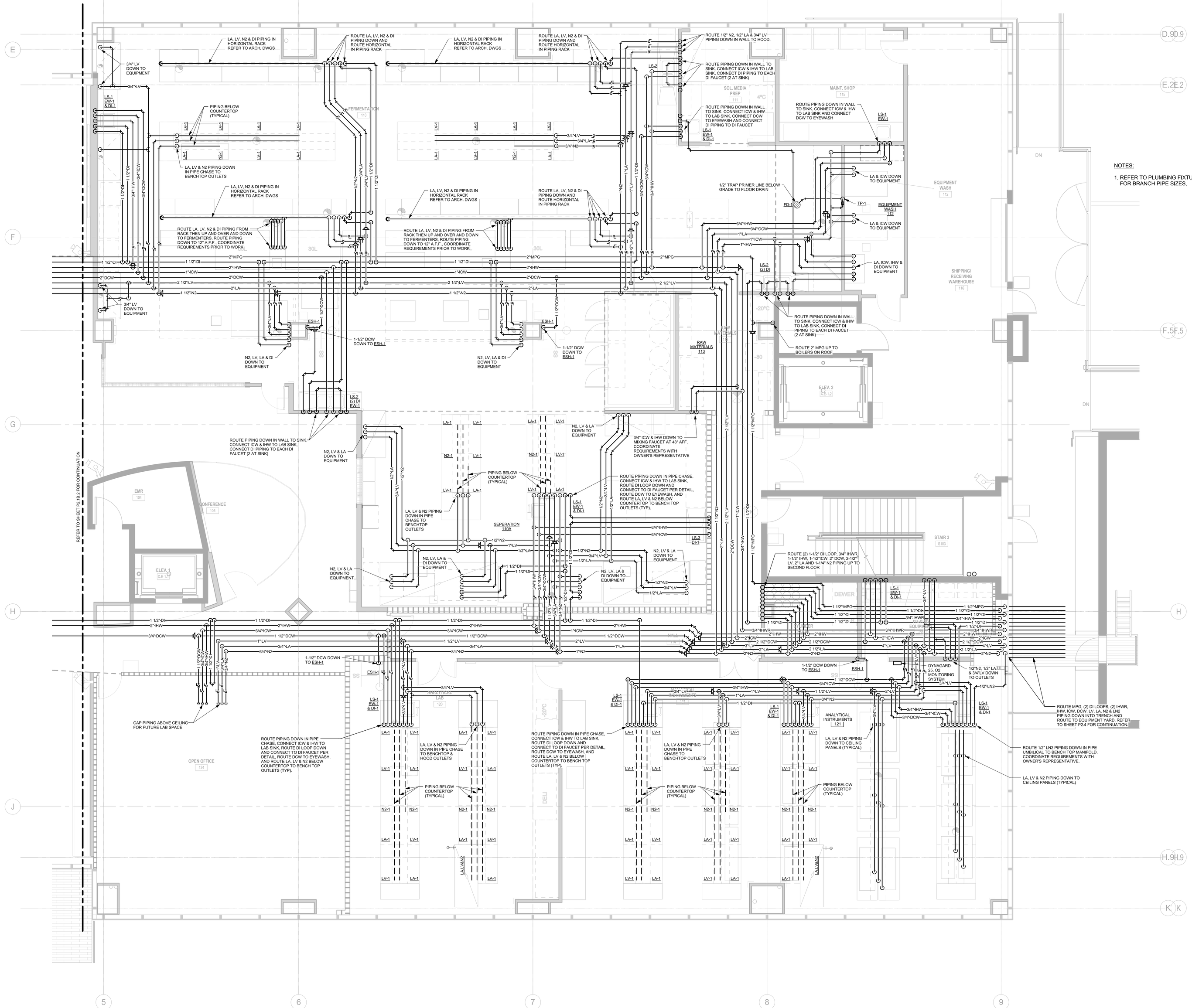
SCALE As indicated

TITLE

PLUMBING FIRST FLOOR WASTE & VENT PLAN - WEST

P2.1A.2

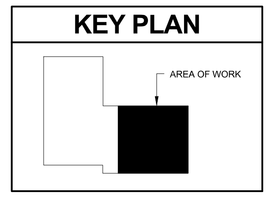
5/2/2013 6:02:09 PM



NOTES:

1. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

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ADDRESS

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SCALE As indicated

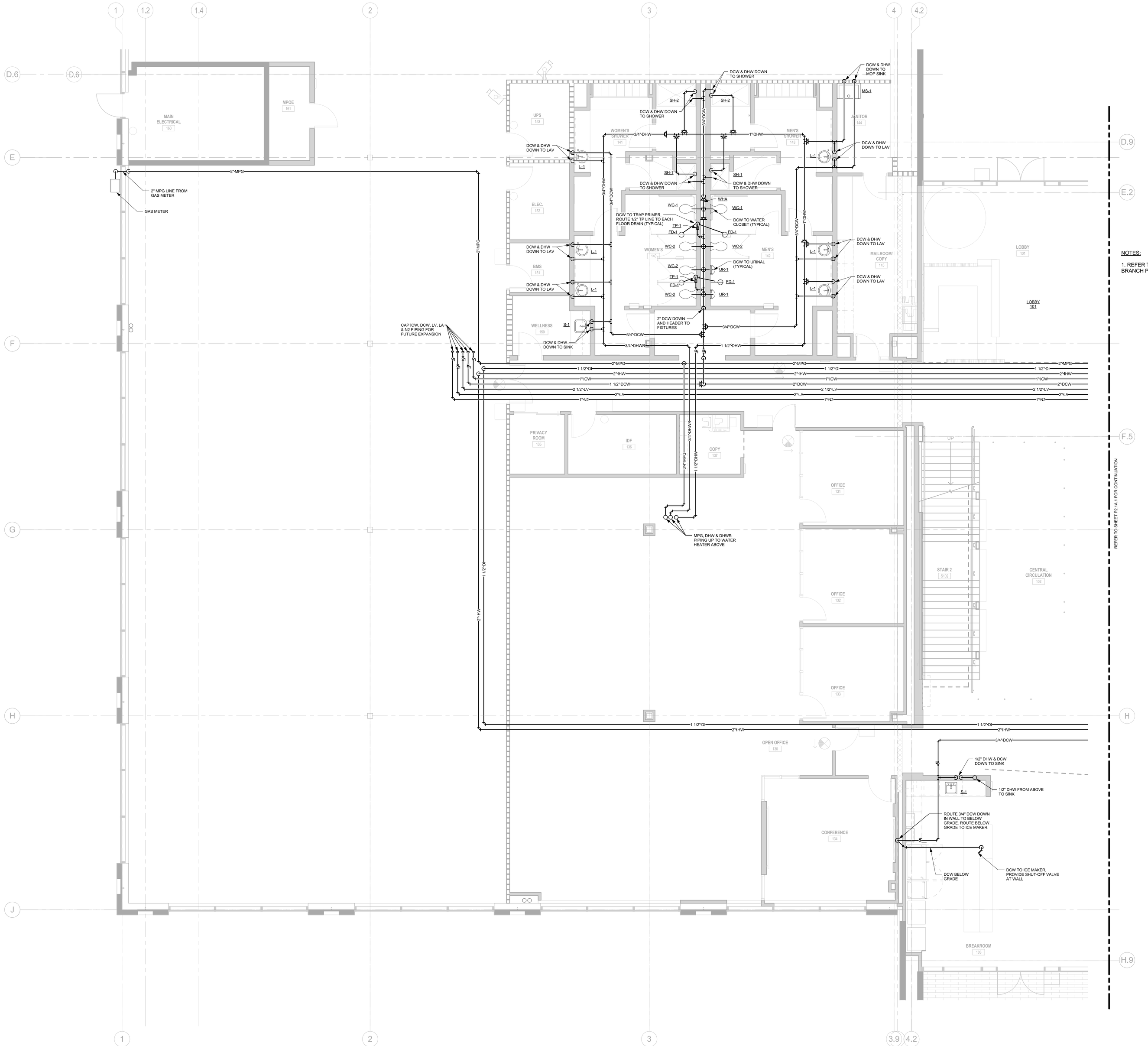
TITLE

PLUMBING FIRST FLOOR PIPING PLAN - EAST

P2.1B.1

1 Plumbing 1st Floor Piping Plan - EAST
1/4" = 1'-0"

5/20/2013 6:02:12 PM

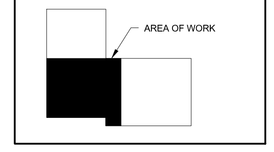


1 Plumbing 1st Floor Piping Plan - West
1/4" = 1'-0"

NOTES:

1. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

KEY PLAN



CONSULTANTS

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

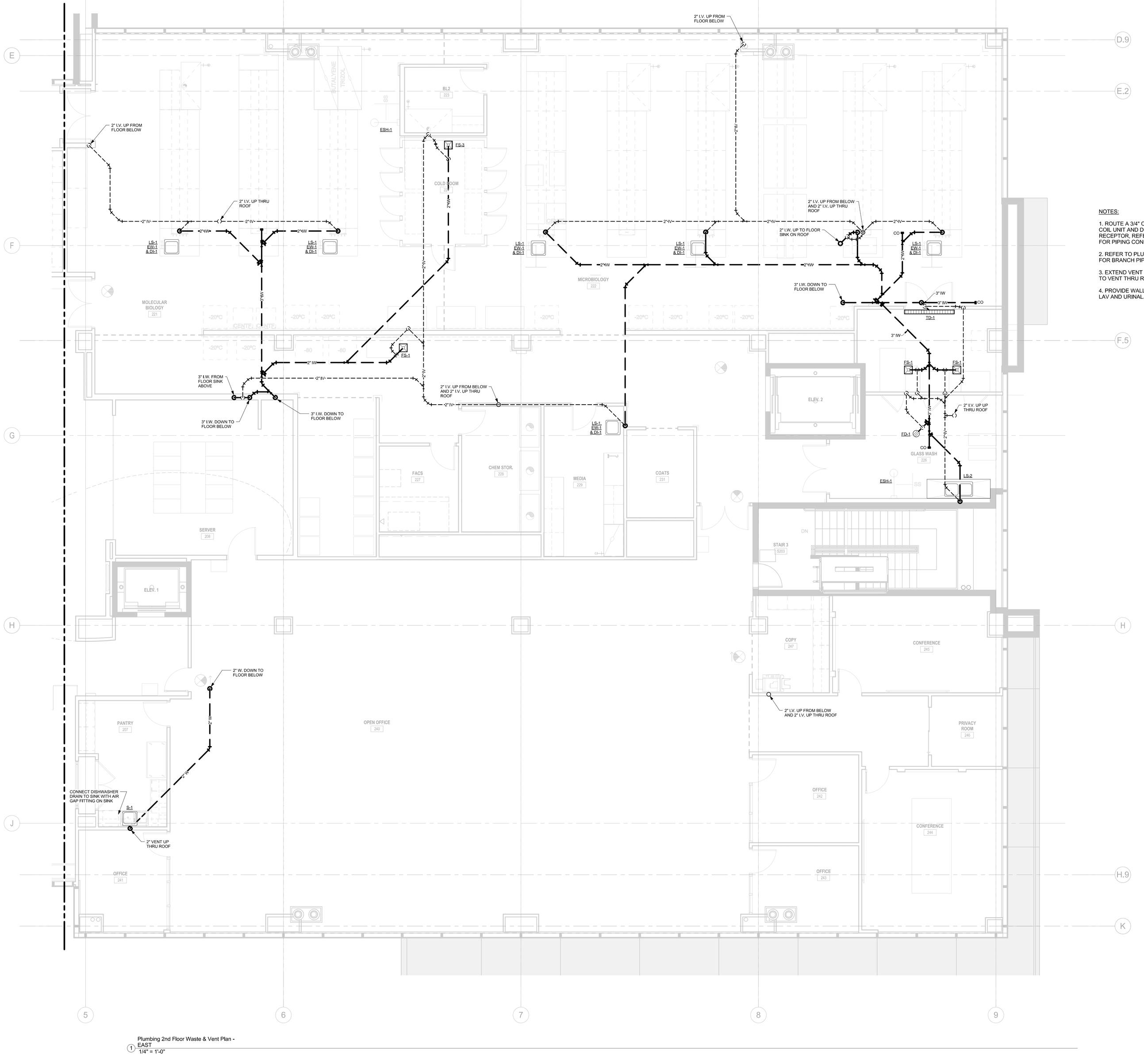
SCALE As indicated

TITLE

PLUMBING FIRST FLOOR PIPING PLAN - WEST

P2.1B.2

5/20/2013 6:02:13 PM



1 Plumbing 2nd Floor Waste & Vent Plan - EAST
1/4" = 1'-0"

NOTES:

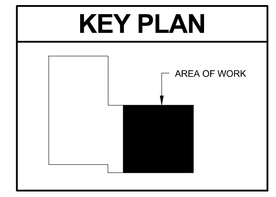
1. ROUTE A 3/4" CONDENSATE FROM EACH FAN COIL UNIT AND DISCHARGE INTO AN APPROVED RECEPTOR, REFER TO DETAIL ON SHEET P3.2 FOR PIPING CONNECTION.

2. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

3. EXTEND VENT PIPING FROM EACH FIXTURE TO VENT THRU ROOF.

4. PROVIDE WALL CLEAN-OUTS FOR EACH SINK, LAV AND URINAL.

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

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ADDRESS

PROJECT NO. 12317

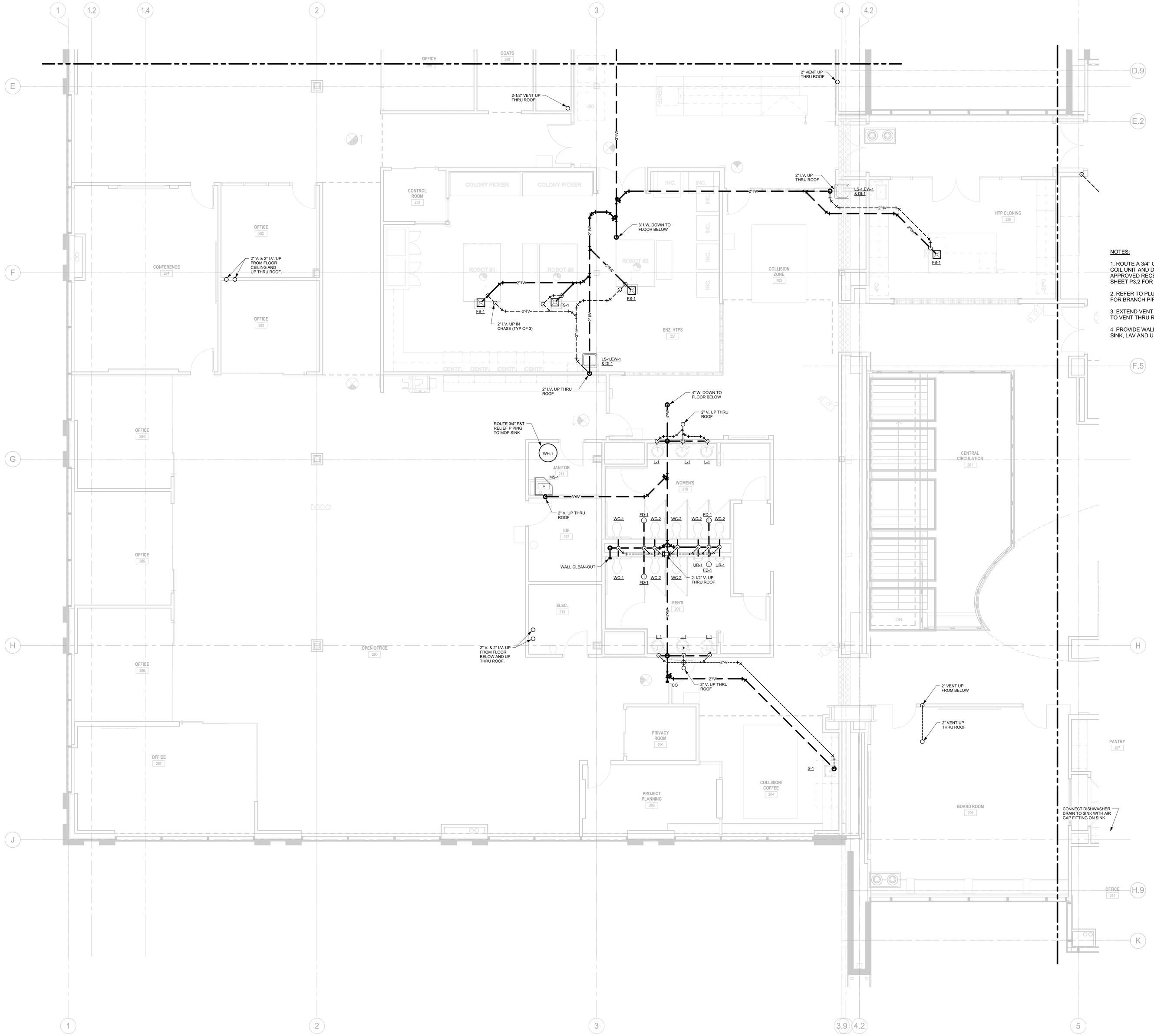
SCALE As indicated

TITLE

PLUMBING SECOND FLOOR WASTE & VENT PLAN - EAST

P2.2A.1

5/20/2013 6:02:15 PM



Plumbing 2nd Floor Waste & Vent Plan - WEST
1/4" = 1'-0"

NOTES:

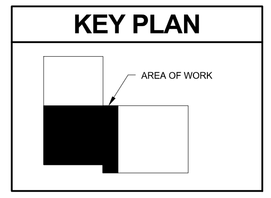
1. ROUTE A 3/4" CONDENSATE FROM EACH FAN COIL UNIT AND DISCHARGE INTO AN APPROVED RECEPTOR. REFER TO DETAIL ON SHEET P3.2 FOR PIPING CONNECTION.

2. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

3. EXTEND VENT PIPING FROM EACH FIXTURE TO VENT THRU ROOF.

4. PROVIDE WALL CLEAN-OUTS FOR EACH SINK, LAV AND URINAL.

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

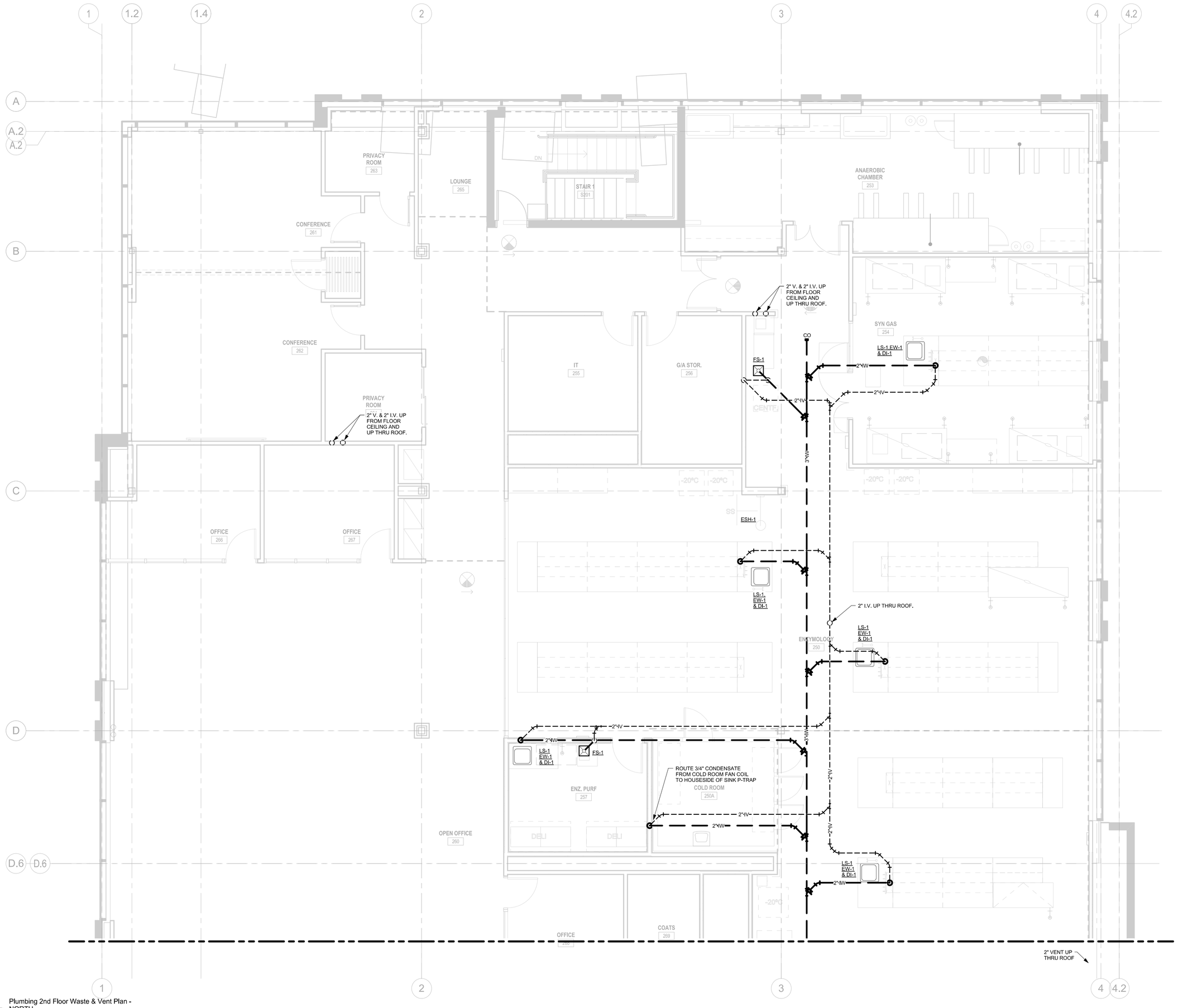
SCALE As indicated

TITLE

PLUMBING SECOND FLOOR WASTE & VENT PLAN - WEST

P2.2A.2

5/20/2013 6:02:19 PM



1 Plumbing 2nd Floor Waste & Vent Plan - NORTH
1/4" = 1'-0"

NOTES:

1. ROUTE A 3/4" CONDENSATE FROM EACH FAN COIL UNIT AND DISCHARGE INTO AN APPROVED RECEPTOR, REFER TO DETAIL ON SHEET P3.2 FOR PIPING CONNECTION.

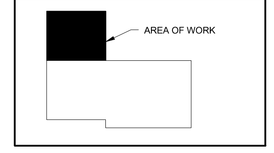
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

3. EXTEND VENT PIPING FROM EACH FIXTURE TO VENT THRU ROOF.

4. PROVIDE WALL CLEAN-OUTS FOR EACH SINK, LAV AND URINAL.

CONSULTANTS

KEY PLAN



NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

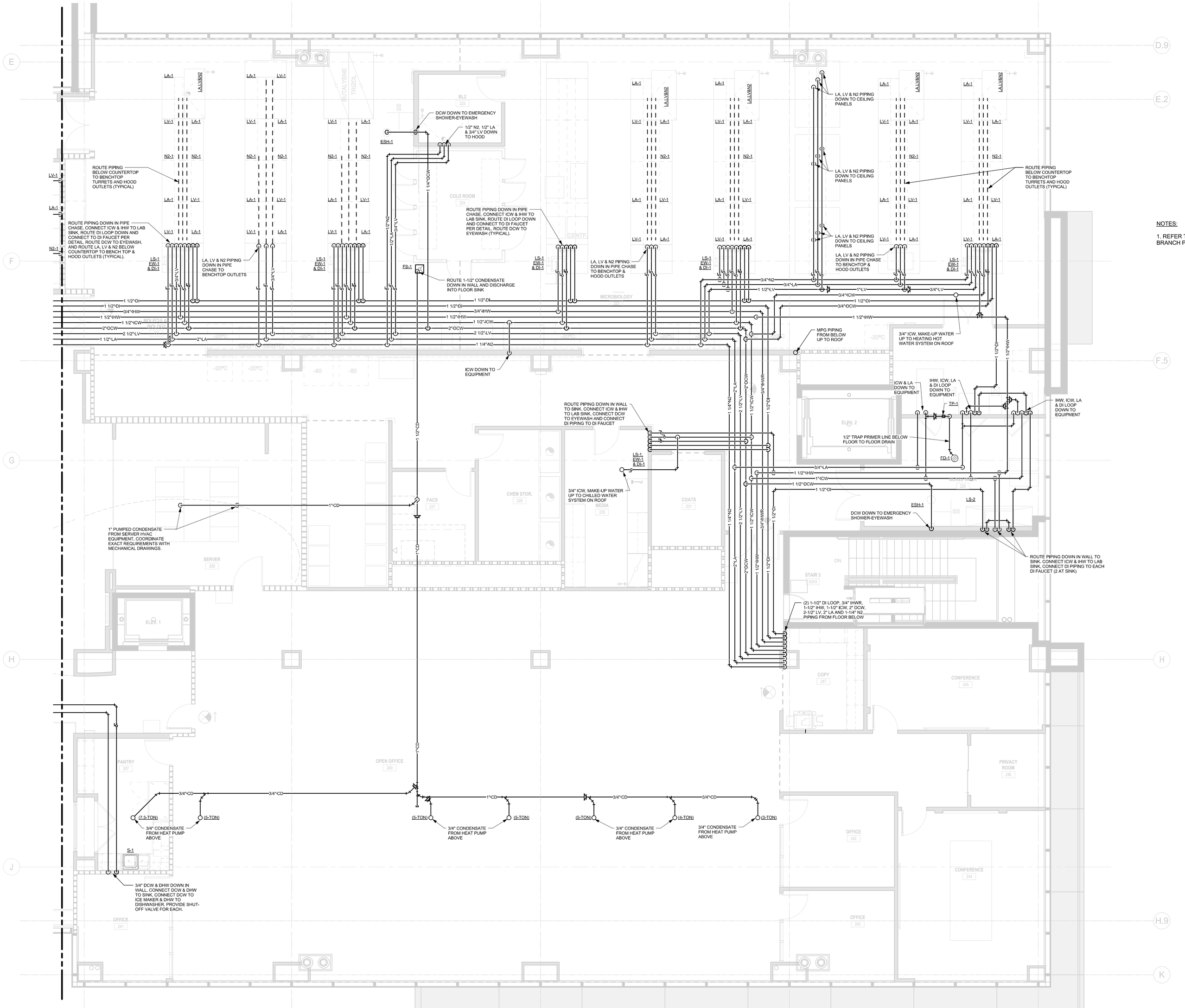
SCALE As indicated

TITLE

PLUMBING SECOND FLOOR WASTE & VENT PLAN - NORTH

P2.2A.3

5/20/2013 6:02:22 PM

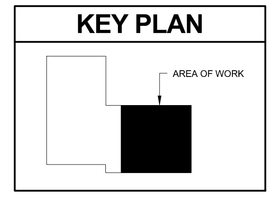


1 Plumbing 2nd Floor Piping Plan - EAST
1/4" = 1'-0"

NOTES:

1. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

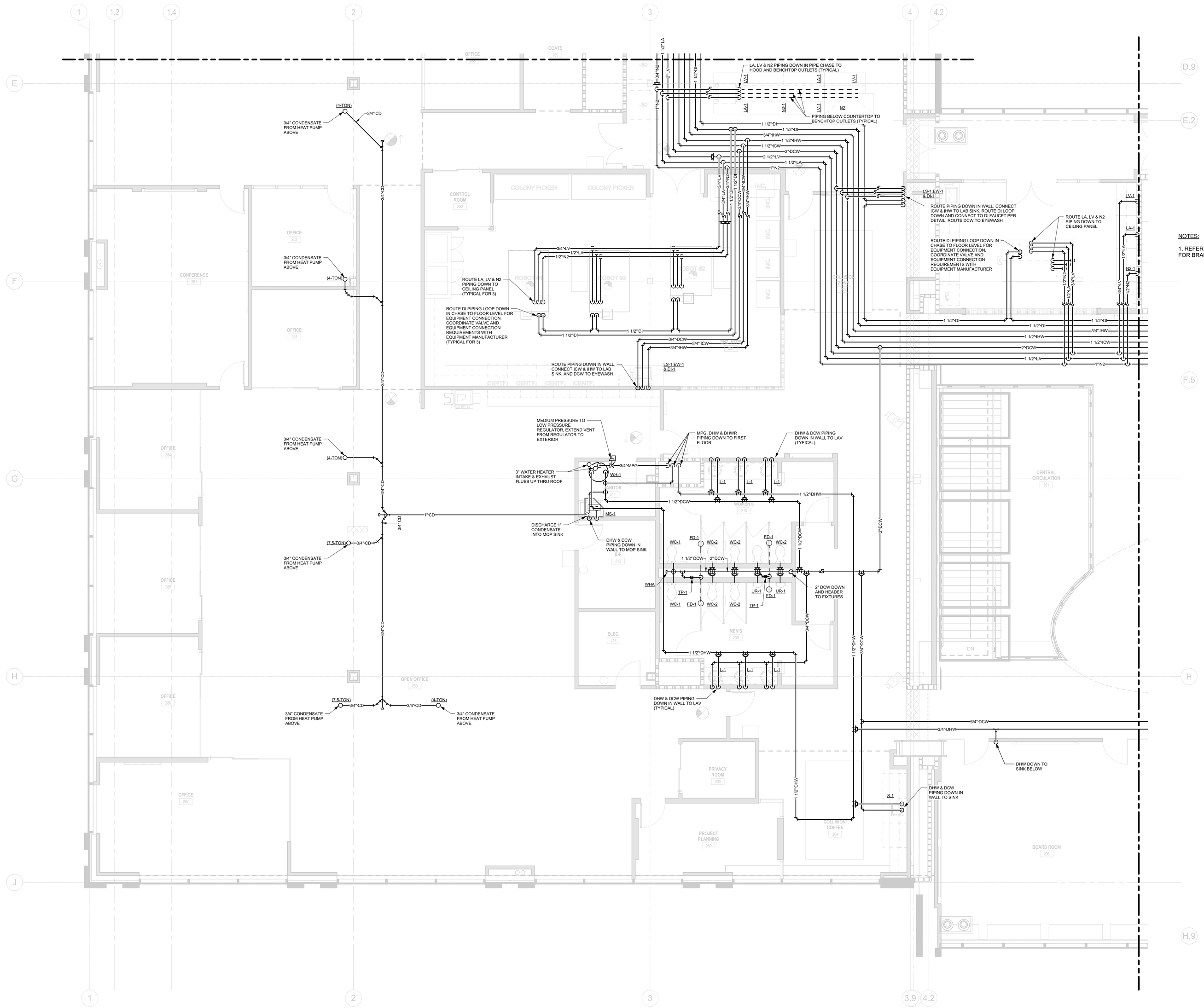
SCALE As indicated

TITLE

PLUMBING SECOND FLOOR PIPING PLAN - EAST

P2.2B.1

5/20/2013 6:02:26 PM



1 Plumbing 2nd Floor Piping Plan - WEST
1/4" = 1'-0"

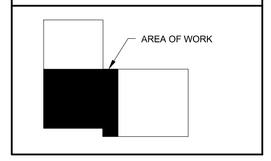
5/20/2013 6:02:50 PM

CONSULTANTS

NOTES:

1. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

KEY PLAN



NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

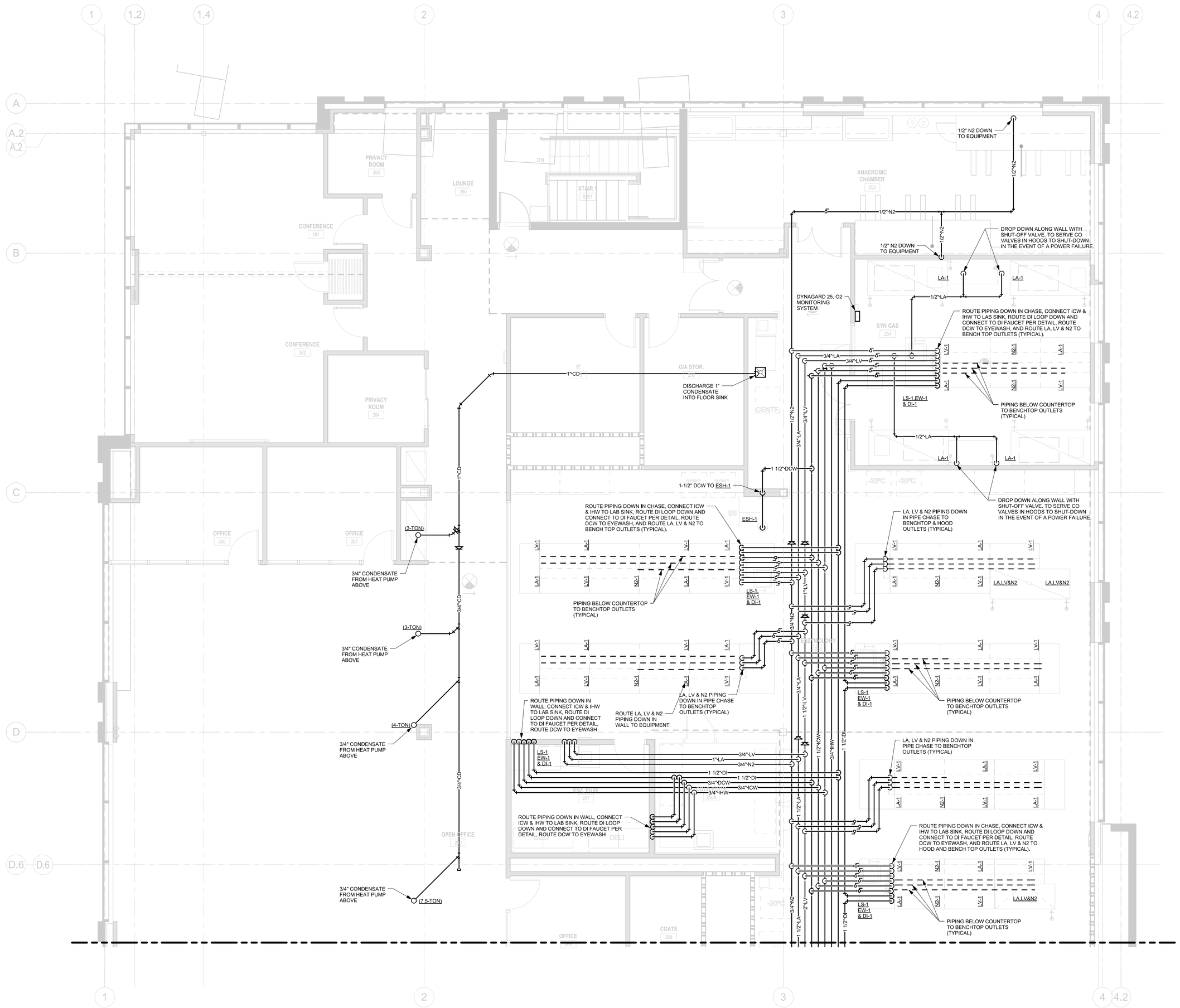
PROJECT NO. 12317

SCALE As indicated

TITLE

PLUMBING SECOND FLOOR PIPING PLAN - WEST

P2.2B.2

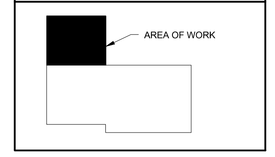


1 Plumbing 2nd Floor Piping Plan - NORTH
1/4" = 1'-0"

NOTES:

1. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.

KEY PLAN



CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

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ADDRESS

PROJECT NO. 12317

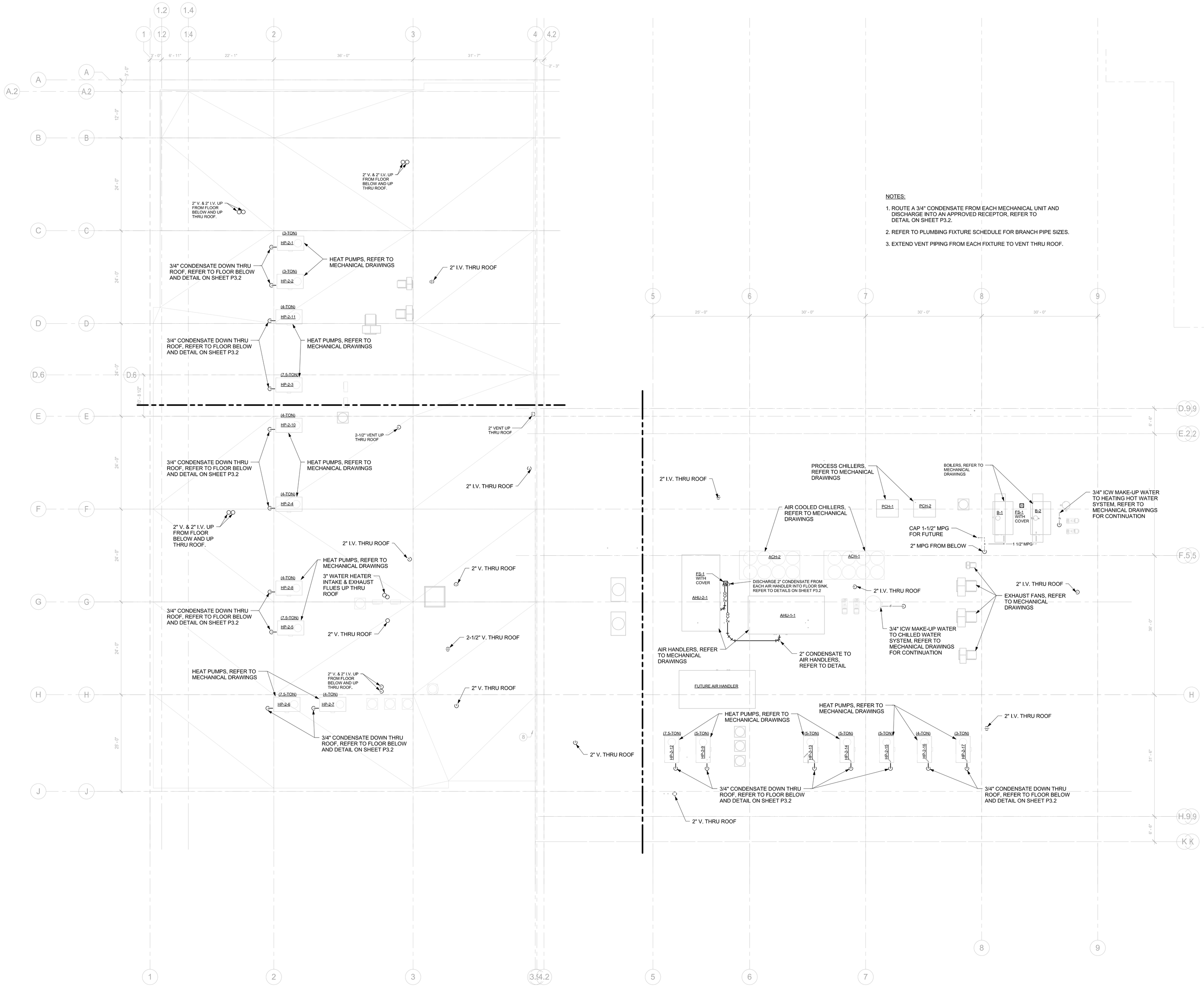
SCALE As indicated

TITLE

PLUMBING SECOND FLOOR PIPING PLAN - NORTH

P2.2B.3

5/20/2013 6:02:33 PM



NOTES:

1. ROUTE A 3/4" CONDENSATE FROM EACH MECHANICAL UNIT AND DISCHARGE INTO AN APPROVED RECEPTOR, REFER TO DETAIL ON SHEET P3.2.
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR BRANCH PIPE SIZES.
3. EXTEND VENT PIPING FROM EACH FIXTURE TO VENT THRU ROOF.

1 Plumbing Roof Plan
1/8" = 1'-0"

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

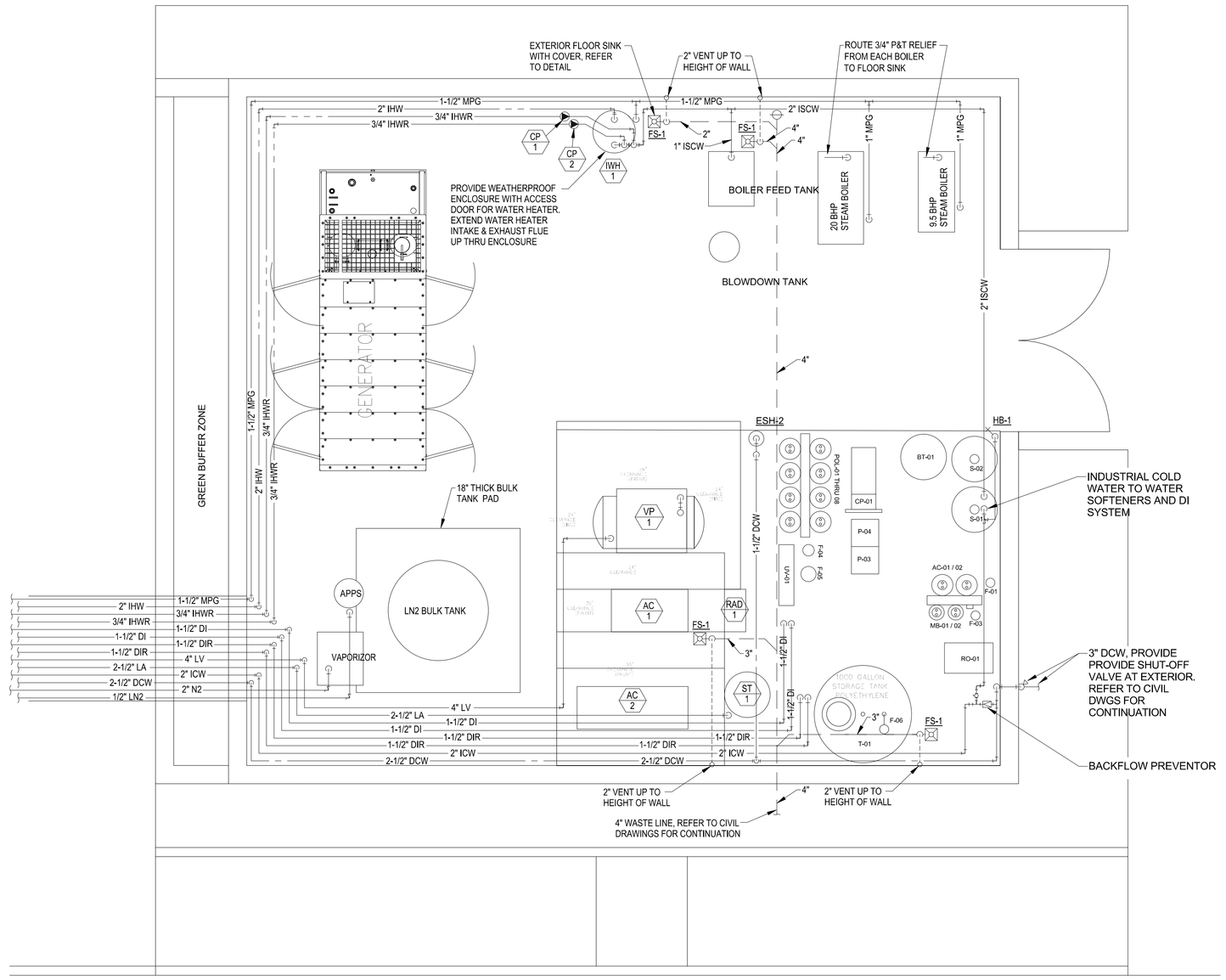
SCALE 1/8" = 1'-0"

TITLE

PLUMBING ROOF PLAN

P2.3

5/20/2013 6:56:14 PM



EQUIPMENT YARD PLAN

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

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

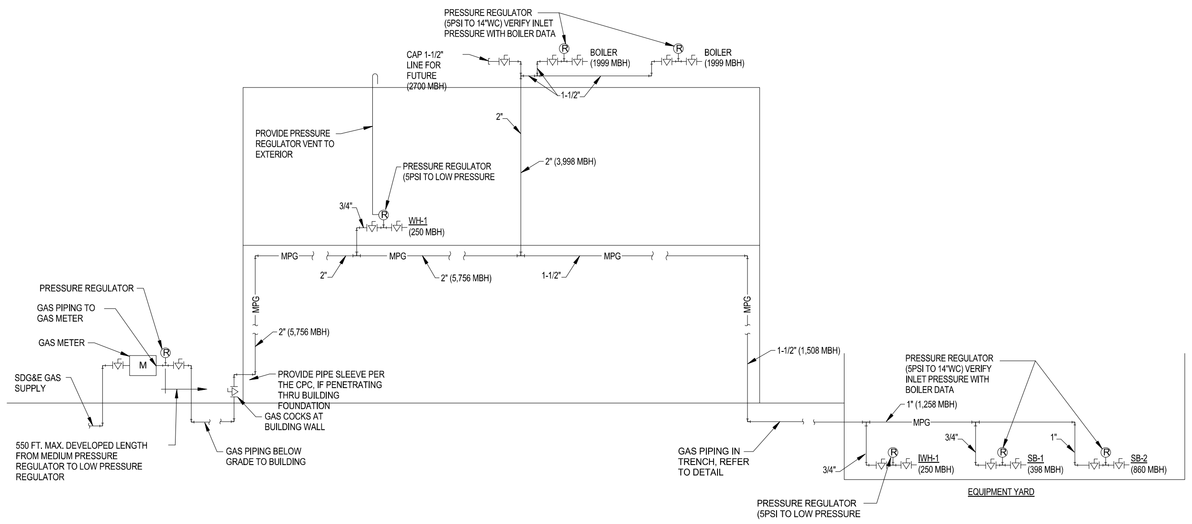
SCALE

TITLE

PLUMBING EQUIPMENT YARD

P2.4

5/20/2013 6:02:39 PM

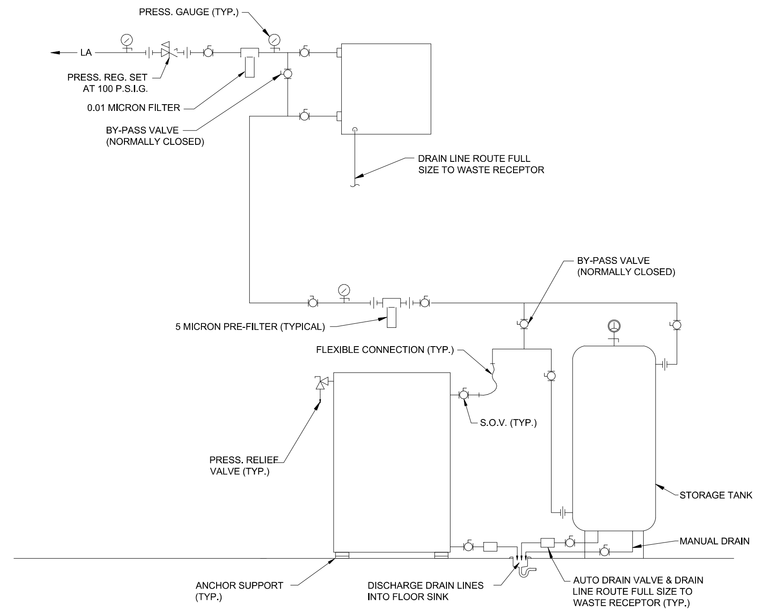


GAS LOAD SUMMARY
(5 PSI) MAXIMUM LENGTH = 550 FT. DEMAND LOAD = 5,756 MBH
LOW PRESSURE MAXIMUM LENGTH = 25 FT.

NOTES:
1. PROVIDE GAS SEDIMENT TRAP ON APPLIANCE INLETS, EXCEPT APPLIANCES WITH INTERNAL SEDIMENT TRAP.
2. LABEL MPG PIPING EVERY 5 FEET.
3. MEDIUM PRESSURE GAS PIPING SIZED PER TABLE 12-11 OF THE 2010 CALIFORNIA PLUMBING CODE.
4. SET SB-1 & SB-2 PRESSURE REGULATOR TO PROVIDE BETWEEN 7 AND 14" W.C.
5. SET B-1 AND B-2 PRESSURE REGULATOR TO PROVIDE 4" W.C.
6. ADJUST PRESSURE REGULATORS PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
7. LOW PRESSURE PIPING DOWN STREAM OF REGULATORS SHALL BE A MAXIMUM LENGTH OF 5 FEET AND SIZED PER TABLE 12-8 OF THE 2010 CALIFORNIA PLUMBING CODE.

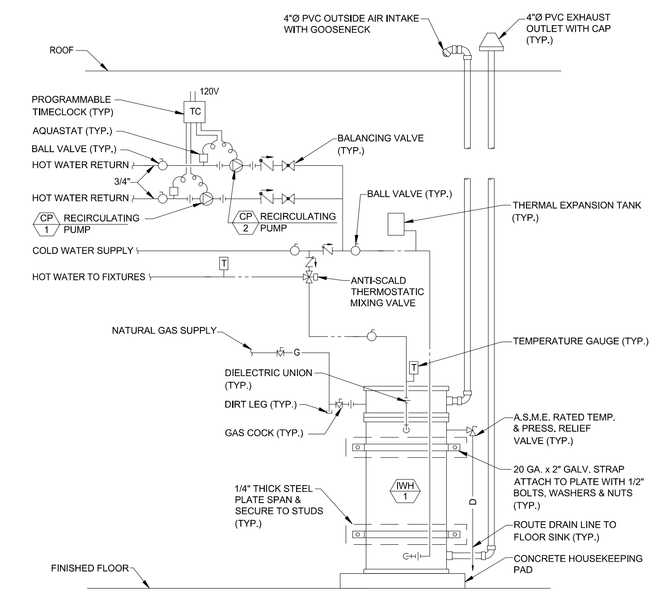
NATURAL GAS PIPING DIAGRAM

SCALE	
NONE	4



AIR COMPRESSOR PIPING DIAGRAM

SCALE	
NONE	1

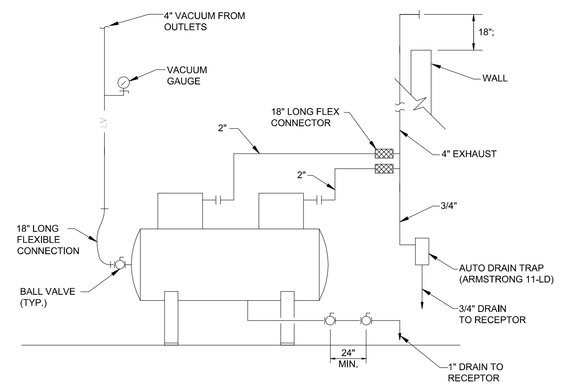


NOTES:
1. PROVIDE STRAPS, PIPING, OFFSETS AND CLEARANCES PER THE 2010 CALIFORNIA PLUMBING CODE.
2. PROVIDE THERMAL EXPANSION TANK PER MANUFACTURERS REQUIREMENTS AND PER THE REQUIREMENTS OF THE 2010 CALIFORNIA PLUMBING CODE.
3. PROVIDE FLUE PER WATER HEATER MANUFACTURER'S RECOMMENDATIONS. ADDITIONAL OFFSETS WILL BE REQUIRED AND NOT SHOWN IN THIS DETAIL.
4. COORDINATE LOCATION OF FLUE EXHAUST AND INTAKE WITH ARCHITECT. ROOF LAYOUT AND OWNER'S REPRESENTATIVE. PROVIDE FLUE SEPARATION PER MANUFACTURER'S PRINTED INSTRUCTIONS.

NOTES:
1. INDUSTRIAL WATER HEATER SHOWN, INSTALL DOMESTIC WATER HEATER SIMILAR.

INDUSTRIAL WATER HEATER WITH RECIRC PUMPS DIAGRAM

SCALE	
NONE	2



VACUUM PUMP PIPING DIAGRAM

SCALE	
NONE	3

CONSULTANTS

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PROJECT NO. 12317

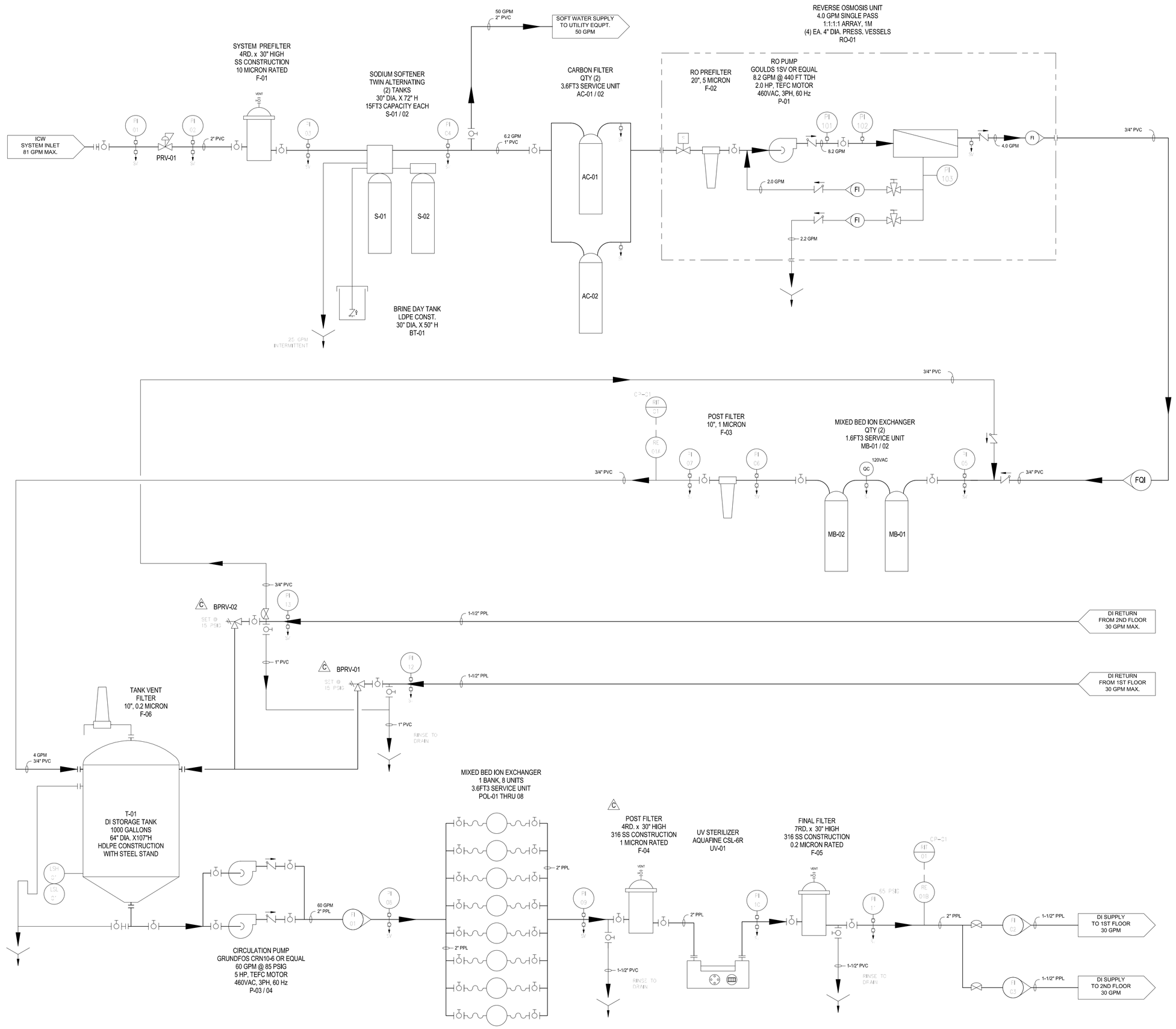
SCALE

TITLE

PLUMBING DIAGRAMS

P3.0

5/20/2013 6:02:39 PM



DEIONIZED WATER SYSTEM P&ID

NOT TO SCALE

CONSULTANTS

NO. DESCRIPTION DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

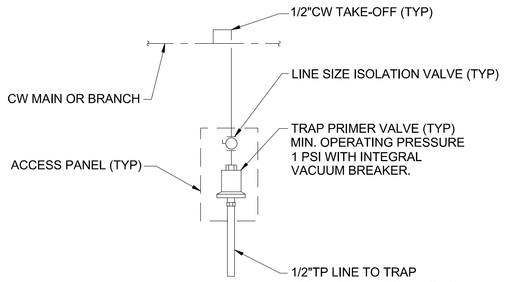
SCALE AS SHOWN

TITLE

DI SYSTEM P&ID

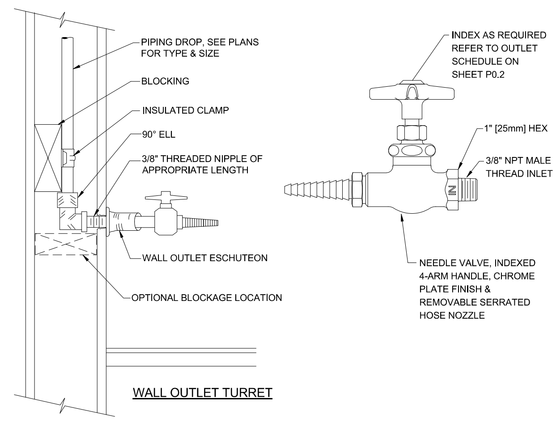
P3.1

5/20/2013 6:02:40 PM



TRAP PRIMER DETAIL

SCALE	
NONE	7

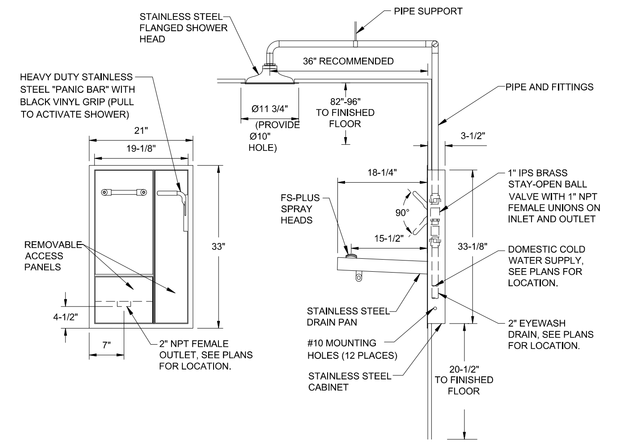


WALL OUTLET TURRET

NOTE:
INSTALL BENCH TOP AND MULTIPLE OUTLETS SIMILAR.

OUTLET DETAIL

SCALE	
NONE	4

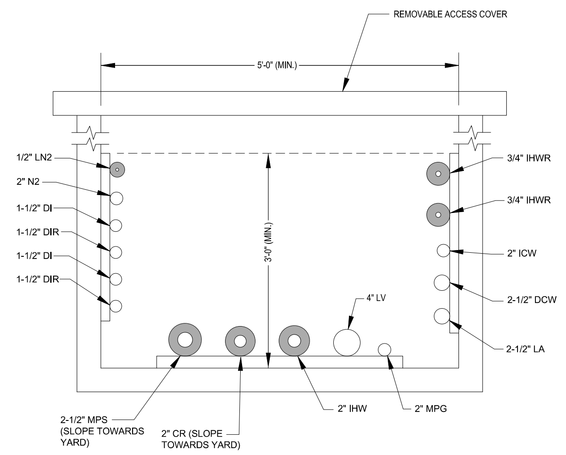


NOTES:

1. EACH FS-PLUS SPRAY HEAD HAS AN INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES FROM THE WATER FLOW.
2. UNIT IS FURNISHED WITH IN-LINE STRAINER TO PROTECT SPRAY HEADS AND VALVE COMPONENTS FROM DEBRIS IN WATER LINE.
3. UNIT SHALL BE ADA COMPLIANT.
4. FURNISH WITH ANSI COMPLIANT IDENTIFICATION SIGN.

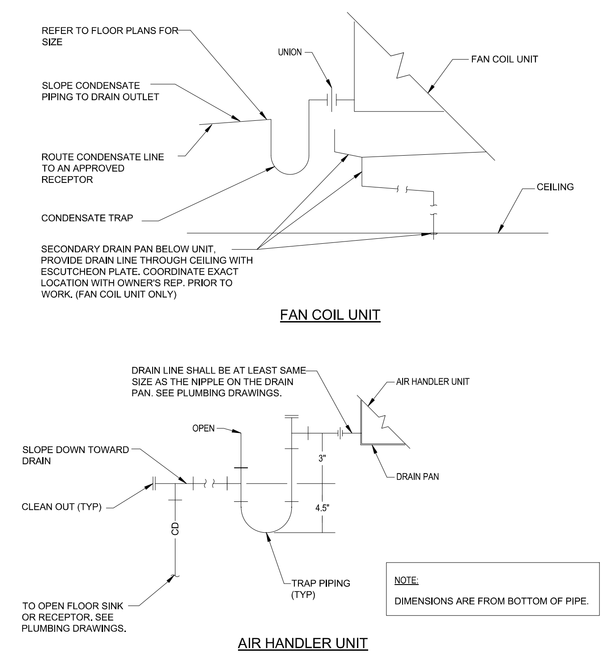
EMERGENCY SHOWER & EYEWASH

SCALE	
NONE	1



PIPE TRENCH DETAIL

SCALE	
NONE	8

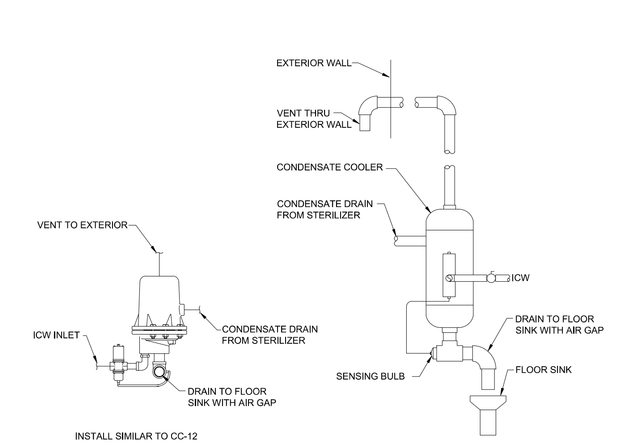


FAN COIL UNIT

AIR HANDLER UNIT

CONDENSATE DRAIN DETAILS

SCALE	
NONE	5



INSTALL SIMILAR TO CC-12

CONDENSATE COOLER
ARMSTRONG MODEL CC-5
SHOWN

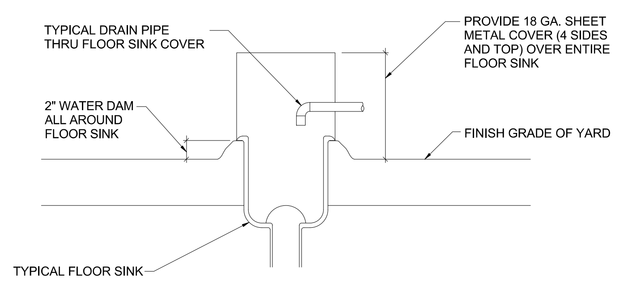
CONDENSATE COOLER
ARMSTRONG MODEL CC-12
SHOWN

NOTES:

1. PROVIDE ARMSTRONG MODEL CC-5 FOR CONDENSATE OF 5 GPM (MAX.)
2. PROVIDE ARMSTRONG MODEL CC-12 FOR CONDENSATE DISCHARGE OF 12 GPM (MAX.)

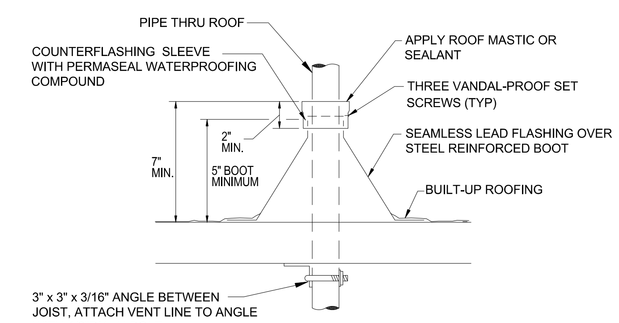
CONDENSATE COOLER DETAIL

SCALE	
NONE	2



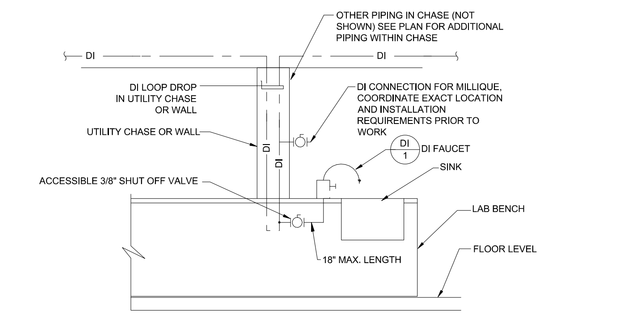
EXTERIOR FLOOR SINK DETAIL

SCALE	
NONE	9



VENT THRU ROOF DETAIL

SCALE	
NONE	6



NOTE:
1) SCULLERY SINKS SHALL HAVE (2) DI FAUCETS PER SINK.

DI PIPE AND OUTLET DETAIL

SCALE	
NONE	3

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

SCALE AS SHOWN

TITLE

PLUMBING DETAILS

P3.2

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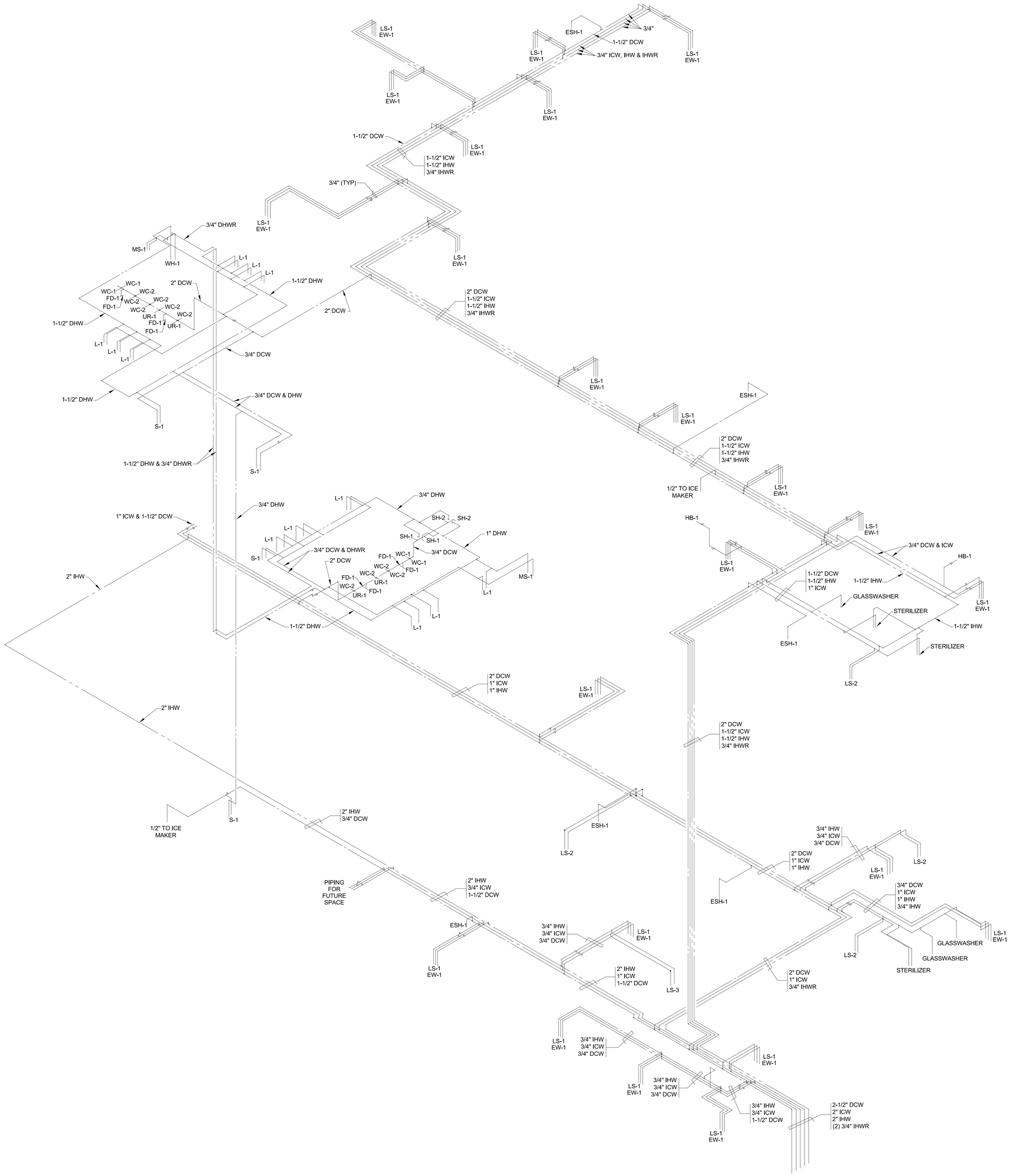

CONSULTANTS

NO.	DESCRIPTION	DATE

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12317

SCALE AS SHOWN

TITLE

WATER PIPING DIAGRAM

P3.3

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ABBREVIATIONS AND DESCRIPTIONS

A	AMPERES	KCM	KILO – CIRCULAR – MIL
AC	ALTERNATING CURRENT	KS	KNEE SPACE
A/C	AIR CONDITIONING	KVA	KILO–VOLTAMPERE
AIC	AMPERES INTERRUPTING CAPACITY	KW	KILO–WATT
AFC	AVAILABLE FAULT CURRENT	KWH	KILO–WATT–HOUR
AFF	ABOVE FINISHED FLOOR		
AFG	ABOVE FINISHED GRADE	LBS	POUNDS
AF	AMP FRAME/AMP FUSE	LF	LINEAL FEET
ABV	ABOVE	LOC	LOCATION
AL	ALUMINUM	LT	LIGHT
ARCH	ARCHITECT OR ARCHITECTURAL	LTG	LIGHTING
AS	AMP SWITCH	LV	LOW VOLTAGE
AT	AMP TRIP		
ATS	AUTOMATIC TRANSFER SWITCH	MH	MOUNTING HEIGHT
AWG	AMERICAN WIRE GAUGE	MANUF	MANUFACTURER
		MAX	MAXIMUM
B/G	BELOW GRADE	MC	MECHANICAL CONTRACTOR
BKBD	BACKBOARD	MCC	MOTOR CONTROL CENTER
BEL	BELOW	MCP	MOTOR CIRCUIT PROTECTION
		MECH	MECHANICAL
C	CONDUIT WITH WIRE	MIN	MINIMUM
CATV	CABLE TELEVISION	MLO	MAIN LUGS ONLY
CCTV	CLOSED CIRCUIT TELEVISION	MTD	MOUNTED
CB	CIRCUIT BREAKER	MTG	MOUNTING
CLG	CEILING		
CLF	CURRENT LIMITING FUSE	N	NEUTRAL
CLR	CLEAR	NC	NORMALLY CLOSED
CO	CONDUIT ONLY WITH NYLON PULLCORD	NEC	NATIONAL ELECTRICAL CODE
COAX	COAXIAL CABLE	NIC	NOT IN CONTRACT
CONC	CONCRETE	NL	NIGHT LIGHT
CONN	CONNECT OR CONNECTION	NTS	NOT TO SCALE
CONT	CONTINUATION	NO	NORMALLY OPEN
CONTR	CONTRACTOR		
CPT	CONTROL POWER TRANSFORMER	OC	ON CENTER
CU	COPPER	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CT	CURRENT TRANSFORMER	OFOI	OWNER FURNISHED OWNER INSTALLED
CW	COLD WATER		
		PB	PULLBOX
D	DEDICATED OUTLET	PC	PHOTOCELL CONTROL
DC	DIRECT CURRENT	PCTC	PHOTOCELL/TIMECLOCK CONTROL
DIA	DIAMETER	PE	PNEUMATIC–ELECTRIC
DISC	DISCONNECT	PH	PHASE
DIST	DISTRIBUTION	PIV	POST INDICATING VALVE
DL	DAMP LOCATION	PL	PILOT LIGHT
DB	DISTRIBUITON SWITCHBOARD	PLBG	PLUMBING
DWGS	DRAWINGS	PNL	PANEL
		PVC	POLYVINYL CHLORIDE
EA	EACH	PWR	POWER
EB	90–MINUTE BATTERY CONNECTED TO UNIT	PP	POWER POLE
EC	ELECTRICAL CONTRACTOR	PS	POWER SENTRY EMERGENCY BATTERY UNIT
EDF	ELECTRICAL DRINKING FOUNTAIN		
EG	CONNECTED TO EMERGENCY GENERATOR	Q	FIXTURE WITH QUARTZ RESTRIKE
EF	EXHAUST FAN	QTY	QUANTITY
EI	CONNECTED TO EMERGENCY INVERTER		
ELECT	ELECTRICAL	REC	RECESSED
ELEV	ELEVATION/ELEVATOR	RECEPT	RECEPTACLE
EMER, EM	EMERGENCY	REF	REFRIGERATOR
EMT	ELECTRO–METALLIC TUBING	REQ	REQUIREMENTS
EQUIP	EQUIPMENT	RGS	RIGID GALVANIZED STEEL
EXIST, EX	EXISTING	RM	ROOM
F	DEGREES FAHRENHEIT	SB	STANDBY
FA	FIRE ALARM	SD	SMOKE DETECTOR
FF	FURNITURE FEED, FINISHED FLOOR	SPEC	SPECIFICATION
FFE	FINISH FLOOR ELEVATION	SQ FT	SQUARE FEET OR SQUARE FOOT
FIN	FINISH OR FINISHED	STRUCT	STRUCTURAL
FIXT	FIXTURE	SW	SWITCH
FLUOR	FLUORESCENT	SWBD	SWITCHBOARD
FT	FEET OR FOOT	SWGR	SWITCHGEAR
FTG	FOOTING		
FVNR	FULL VOLTAGE NON–REVERSING	TEMP	TEMPERATURE OR TEMPORARY
		TV	TELEVISION
G	GROUND BUS OR WIRE	TEL, TELE	TELEPHONE
GA	GAUGE	TC	TIMECLOCK
GALV	GALVANIZED	TRANSF	TRANSFORMER
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GD	GARBAGE DISPOSAL		
GFI	GROUND FAULT INTERRUPTER	UGPS	UNDERGROUND PULL SECTION
GFR	GROUND FAULT RELAY	UL	UNDERWRITERS LABORATORIES
GG	GREEN GROUND	UNO	UNLESS NOTED OTHERWISE
GND	GROUND		
		V	VOLTS
H	HORIZONTAL	VA	VOLTAMPERE
HAZMAT	HAZARDOUS MATERIAL	VFD	VARIABLE FREQUENCY DRIVE
HR	HOUR		
HP	HORSEPOWER	W/	WITH
HOA	HAND–OFF–AUTOMATIC	WH	WATER HEATER
HT	HEIGHT	WP	WEATHER PROOF
HTR	HEATER	WT	WEIGHT
HZ	HERTZ		
		X	EXISTING
IG	ISOLATED GROUND	XFMR	TRANSFORMER
IMC	INTERMEDIATE METAL CONDUIT	XL	EXISTING TO BE RELOCATED
INCAND	INCANDESCENT	XN	NEW LOCATION OF RELOCATED FIXTURE
		XR	EXISTING TO BE REMOVED
J–BOX	JUNCTION BOX		

SINGLELINE SYMBOLS AND DESCRIPTIONS

	DRAWOUT CIRCUIT BREAKER	(P)	MOTOR OR EQUIPMENT AS NOTED
			UGPS LANDING LUGS
	CIRCUIT BREAKER	ATS 1 / NEMA 1	AUTOMATIC TRANSFER SWITCH
	FUSED SWITCH		GENERATOR
	TRANSFORMER	DM	DIGITAL METER BY POWER MEASUREMENTS ION–7350
	GROUNDING ELECTRODE AND CONDUCTOR	LSIG	CIRCUIT BREAKER WITH ELECTRONIC SENSING, TIMING AND TRIPPING CONTROL WITH FIELD INTERCHANGEABLE TRIP UNITS. PROVIDE TRUE RMS FUNCTIONS WITH DESCRETE FIELD ADJUSTABLE SETTINGS INDEPENDENT OF OTHER ADJUSTMENTS. L. LONG TIME TRIP S. SHORT TIME OVERCURRENT TRIP I. INSTANTANEOUS TRIP G. GROUND FAULT TRIP, GROUND FAULT SENSING INTEGRAL WITH CIRCUIT BREAKER.
	EXTERNALLY OPERATED CIRCUIT BREAKER		
PANEL	PANELBOARD	LSI	CIRCUIT BREAKER WITH ELECTRONIC SENSING, TIMING AND TRIPPING CONTROL WITH FIELD INTERCHANGEABLE TRIP UNITS. PROVIDE TRUE RMS FUNCTIONS WITH DESCRETE FIELD ADJUSTABLE SETTINGS INDEPENDENT OF OTHER ADJUSTMENTS. L. LONG TIME TRIP S. SHORT TIME OVERCURRENT TRIP I. INSTANTANEOUS TRIP
PANEL (TT / SL)	THROUGH FED OR DOUBLE LUG PANELBOARD	IC	INSULATED CASE CIRCUIT BREAKER
		SPD	SURGE PROTECTIVE DEVICE
		ST	SHUNT TRIP
	CURRENT TRANSFORMER	M	UTILITY METER WITH C.T.s.
		M	IN–LINE UTILITY METER–200A MAXIMUM

SIGNAL SYMBOLS AND DESCRIPTIONS

CR	CARD READER
DR	DOOR RELEASE SWITCH. PROVIDE JUNCTION BOX AND 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE.
TV	CATV OUTLET PROVIDE JUNCTION BOX AND 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE. +15" AFF UNO.
IC	INTERCOM PROVIDE JUNCTION BOX AND 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE. +48" AFF UNO.
DU	DURESS BUTTON PROVIDE JUNCTION BOX AND 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE. +48" AFF UNO.
SC	WALL MOUNTED SECURITY CAMERA AT 96" A.F.F. PROVIDE 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE.
S	SPEAKER BACK BOX LOCATION
IC	INTERCOM J–BOX LOCATION
SPS	SECURITY POWER SUPPLY. PROVIDE 120V CIRCUIT FOR POWER SUPPLY FURNISHED AND INSTALLED BY OTHER.

LIGHTING SYMBOLS AND DESCRIPTIONS

	SEE LUMINAIRE SCHEDULE FOR ADDITIONAL FIXTURE SYMBOLS.
	ALL WIRE SIZES FOR EXTERIOR LIGHTING SHALL BE #10AWG BY 3/4"C, UNLESS OTHERWISE NOTED.
S	SWITCH, SINGLE POLE 20A, MTD 48" AFF TO TOP DEVICE: WHITE COVERPLATE: WHITE PROVIDE 3–1/2" DEEP SINGLE GANG BOX
S_{WP}	SWITCH, SINGLE POLE 20A, MTD 48" AFF TO TOP DESIGNATED TO CONTROL LIGHTING IN CIRCUIT LEGS. DEVICE: WHITE COVERPLATE: WHITE. PROVIDE MULTI–GANG BOX AS REQUIRED TO ACCOMMODATE SWITCH LEGS INDICATED. PROVIDE 3–1/2" DEEP BOX.
S^3	SWITCH, THREE WAY, 20A, MTD 48" AFF TO TOP DEVICE: WHITE COVERPLATE: WHITE PROVIDE 3–1/2" DEEP SINGLE GANG BOX.
S^K	KEYED SWITCH, SINGLE POLE 20A, MTD 48" AFF TO TOP DEVICE: WHITE COVERPLATE: WHITE. PROVIDE 3–1/2" DEEP SINGLE GANG BOX.
S^{DIM}	DIMMER SWITCH, MTD. 48" AFF TO TOP. PROVIDE 3–1/2" DEEP SINGLE GANG BOX.
S	SPECIALTY SWITCH AS DENOTED ON PLANS. DEVICE: WHITE COVERPLATE: WHITE MTD. 48" AFF TO TOP. PROVIDE 3–1/2" DEEP SINGLE GANG BOX.
MS	WALL MOUNTED MOTION CONTROLLED LIGHTING SWITCH WITH INTEGRAL BI–LEVEL SWITCHING, INFRARED TYPE DEVICE: WHITE MTD 48" AFF TO TOP.
MS A/B	WALL MOUNTED A/B SWITCHING MOTION CONTROLLED LIGHTING SWITCH WITH INTEGRAL BI–LEVEL SWITCHING, INFRARED TYPE DEVICE: WHITE MTD 48" AFF TO TOP
MS	MOTION SENSOR POWER PACK.
	CEILING MOUNTED ULTRASONIC MOTION SENSOR. DIRECTION OF COVERAGE INDICATED BY ARROWS DEVICE: WHITE
	LIGHTING CONTROL PANEL
SA1	LOW VOLTAGE OVERRIDE CONTROL SWITCH, LETTER DESIGNATES ZONE AND NUMBER DESIGNATES SWITCH NUMBER. MTD. 48" AFF TO TOP. PROVIDE 3–1/2" DEEP SINGLE GANG BOX.
DW	3 GANG / MULTI–CHANNEL MASONRY WALLBOX DIMMER.
F1E L1–Xa EB	LUMINAIRE CALLOUT:

UNIQUE LUMINAIRE SYMBOL
F1E / L1–Xa / EB
- LUMINAIRE TYPE
- LIGHTING BRANCH CIRCUIT AND SWITCH LEGS
- EMERGENCY POWER SOURCE: 'EB' IS EMERGENCY BATTERY 'E1' IS EMERGENCY INVERTER 'EG' IS EMERGENCY GENERATOR

SYMBOLS AND DESCRIPTIONS

	DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: WHITE, COVERPLATE: WHITE		JUNCTION BOX, WALL MOUNTED.
EM	DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. CONNECTED TO EMERGENCY SYSTEM. DEVICE: RED, COVERPLATE: RED	J	JUNCTION BOX, SURFACE MOUNTED, CONCEALED.
HS	HALF SWITCH DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: WHITE, COVERPLATE: WHITE	J	JUNCTION BOX, FLUSH FLOOR MOUNTED.
D	DEDICATED 20A RATED DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: GRAY, COVERPLATE: GRAY	C	CLOCK OUTLET, MOUNTED 96" A.F.F., U.O.N.
GFI	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. PROVIDED WITH DEDICATED NEUTRAL. DEVICE: WHITE, COVERPLATE: WHITE	WW	WIREMOLD 4000 DUAL CHANNEL ALUMINUM RACEWAY MOUNTED AT +42".
WP	WEATHER PROOF DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: WHITE, COVERPLATE: GASKETED STAINLESS STEEL	PS	2 CIRCUIT PLUG STRIP MOUNTED AT UNDERSIDE OF LAB BENCH SHELF. OUTLETS 6" ON CENTER WITH CIRCUITS ALTERNATING.
	SURFACE MOUNTED DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: WHITE, COVERPLATE: STAINLESS STEEL	SFD	SMOKE FIRE DAMPER
IG	ISOLATED GROUND DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: ORANGE, COVERPLATE: ORANGE		PANELBOARD FLUSH MOUNTED
H	HORIZONTALLY MOUNTED DUPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: WHITE, COVERPLATE: WHITE		PANELBOARD SURFACE MOUNTED
	208V 1PH 20A SINGLE RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: BLACK, COVERPLATE: WHITE		SWITCHBOARD
6–30R	SPECIALTY OUTLET, VERIFY NEMA CONFIGURATION AS NOTED ON PLANS MTD 15" AFF TO BOTTOM.	T	TRANSFORMER
	FOURPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: WHITE, COVERPLATE: WHITE		FUSED DISCONNECT SWITCH
D	DEDICATED 20A RATED FOURPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: GRAY, COVERPLATE: GRAY		FVNR COMBINATION MOTOR STARTER, H–O–A, AUXILIARY CONTACTS, OPT, PILOT LIGHTS, NEMA ENCLOSURE AS REQUIRED, WITH FUSED DISCONNECT SWITCH.
	SURFACE MOUNTED FOURPLEX RECEPTACLE MTD 15" AFF TO BOTTOM. DEVICE: WHITE, COVERPLATE: WHITE		FVNR MOTOR STARTER WITH OVERLOADS, H–O–A, AUXILIARY CONTACTS, OPT, PILOT LIGHTS, NEMA ENCLOSURE AS REQUIRED.
WAP	WIRELESS ACCESS POINT ABOVE CEILING FOR WIRELESS LAN.	VFD	VARIABLE FREQUENCY DRIVE
	TELECOMMUNICATIONS OUTLET WITH TRIM RING AND PULLSTRING TO ACCESSIBLE CEILING SPACE. MTD. 15" A.F.F. TO BOTTOM U.N.O.	S^m	MOTOR HORSEPOWER RATED SWITCH.
S	SYSTEMS FURNITURE TELECOMMUNICATIONS OUTLET.		CONCEALED EMT CONDUIT WITH WIRE 2#12AWG + 1#12AWG GREEN GROUND, 3/4"C MINIMUM.
WP GFI, R	ROOF MOUNTED RECEPTACLE	#10	CONCEALED EMT CONDUIT WITH WIRE 3#10AWG + 1#10AWG GREEN GROUND, 3/4"C MINIMUM.
	CEILING MOUNTED RECEPTACLE	#10	CONCEALED EMT CONDUIT WITH WIRE 3#10AWG + 1#10AWG GREEN GROUND, 3/4"C MINIMUM.
	TELECOMMUNICATIONS OUTLET CEILING MOUNTED.		UNDERGROUND CONDUIT AND #10 WIRE, UNO. 3/4"PVC MIN.
	COMBINATION POWER & DATA FOURPLEX OUTLET, FLUSH FLOOR MOUNTED FOR SLAB ON GRADE INSTALLATION.	C	TELECOMMUNICATIONS CONDUIT ONLY, 1" TO ACCESSIBLE CEILING SPACE ON SAME FLOOR.
	COMBINATION POWER & DATA FOURPLEX OUTLET, FLUSH FLOOR MOUNTED ON FIRE RATED POKE–THRU.		HOMERUN
FF	SYSTEMS FURNITURE FLOOR FEED WITH 3/4" CONDUIT FOR POWER & 1–1/4" CONDUIT FOR SLAB ON GRADE INSTALLATION.		HATCHED CONDUIT AND WIRE TO BE REMOVED
FF	SYSTEMS FURNITURE FLOOR FEED WITH 3/4" CONDUIT FOR POWER & 1–1/4" CONDUIT FOR TELE/DATA ON FIRE RATED POKE–THRU.	CATV	CABLE TV CONDUIT UNDERGROUND
FF	SYSTEMS FURNITURE WALL FEED WITH 3/4" CONDUIT FOR POWER & 1–1/4" CONDUIT FOR TELE/DATA.	FO	FIBER OPTIC CONDUIT UNDERGROUND
	CODE SIZED PULLBOX AS INDICATED ON PLANS.	HV	HIGH VOLTAGE CONDUIT UNDERGROUND
	CODE SIZED PULLBOX OR SPLICE BOX AS INDICATED ON PLANS.	T	TELEPHONE CONDUIT UNDERGROUND
	INDICATES CONDUIT STUB–UP OR STUB–OUT LOCATION.	EH	ELECTROMAGNETIC DOOR HOLDER 4S BOX. 1–GANG RING. WALL MOUNT 4" DOWN AND 4" IN FROM CORNER OF DOOR LEAF. PROVIDE 3/4" TO CEILING SPACE FOR FIRE ALARM SYSTEM WIRING.
	CABLE TRAY, 12" WIDE ALUMINUM.		
AV	AUDIO VISUAL RECESSED FLOOR BOX WITH 8 SINGLE GANG COMPARTMENTS FOR POWER, DATA, TELEPHONE AND AUDIO VISUAL OUTLETS.		
AV	AUDIO VISUAL RECESSED POKE–THRU FLOOR BOX WITH 8 SINGLE GANG COMPARTMENTS FOR POWER, DATA, TELEPHONE AND AUDIO VISUAL OUTLETS.		

FEEDER SCHEDULE

600V BRANCH CIRCUITS 1ø 2W

LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20B	20A–2W	1	2 # 12	N/A	1 # 12	3/4"
30B	30A–2W	1	2 # 10	N/A	1 # 10	3/4"
40B	40A–2W	1	2 # 8	N/A	1 # 10	3/4"
50B	50A–2W	1	2 # 6	N/A	1 # 10	3/4"

600V FEEDER SCHEDULE 1ø 3W

LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20S	20A–3W	1	2 # 12	1 # 12	1 # 12	3/4"
30S	30A–3W	1	2 # 10	1 # 10	1 # 10	3/4"
40S	40A–3W	1	2 # 8	1 # 8	1 # 10	1"
50S	50A–3W	1	2 # 6	1 # 6	1 # 10	1"
60S	60A–3W	1	2 # 4	1 # 4	1 # 10	1"
100S	100A–3W	1	2 # 1	1 # 1	1 # 8	1 1/4"

600V FEEDER SCHEDULE 3ø 3W

LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20 Δ	20A–3W	1	3 # 12	N/A	1 # 12	3/4"
30 Δ	30A–3W	1	3 # 10	N/A	1 # 10	3/4"
40 Δ	40A–3W	1	3 # 8	N/A	1 # 10	1"
50 Δ	50A–3W	1	3 # 6	N/A	1 # 10	1"
60 Δ	60A–3W	1	3 # 4	N/A	1 # 10	1"
70 Δ	70A–3W	1	3 # 4	N/A	1 # 8	1 1/4"
80 Δ	80A–3W	1	3 # 2	N/A	1 # 8	1 1/4"
90 Δ	90A–3W	1	3 # 2	N/A	1 # 8	1 1/4"
100 Δ	100A–3W	1	3 # 1	N/A	1 # 8	1 1/4"
125 Δ	125A–3W	1	3 # 1	N/A	1 # 6	1 1/2"
150 Δ	150A–3W	1	3 # 1/0	N/A	1 # 6	1 1/2"
175 Δ	175A–3W	1	3 # 2/0	N/A	1 # 6	2"
200 Δ	200A–3W	1	3 # 3/0	N/A	1 # 6	2"
225 Δ	225A–3W	1	3 # 4/0	N/A	1 # 4	2 1/2"
250 Δ	250A–3W	1	3 #250KCM	N/A	1 # 4	2 1/2"
300 Δ	300A–3W	1	3 #350KCM	N/A	1 # 4	3"
350 Δ	350A–3W	1	3 #500KCM	N/A	1 # 2	4"
400 Δ	400A–3W	1	3 #600KCM	N/A	1 # 2	4"
450 Δ	450A–3W	2	3 # 4/0	N/A	1 # 2	3"
500 Δ	500A–3W	2	3 #250KCM	N/A	1 # 2	3"
600 Δ	600A–3W	2	3 #350KCM	N/A	1 # 1/0	4"
700 Δ	700A–3W	2	3 #500KCM	N/A	1 # 1/0	4"
800 Δ	800A–3W	2	3 #600KCM	N/A	1 # 1/0	4"
1000 Δ	1000A–3W	3	3 #500KCM	N/A	1 # 3/0	4"
1200 Δ	1200A–3W	3	3 #600KCM	N/A	1 # 3/0	4"
1600 Δ	1600A–3W	4	3 #600KCM	N/A	1 # 4/0	4"
2000 Δ	2000A–3W	5	3 #600KCM	N/A	1 #250KCM	4"
2500 Δ	2500A–3W	6	3 #600KCM	N/A	1 #350KCM	4"
3000 Δ	3000A–3W	8	3 #600KCM	N/A	1 #500KCM	4"
4000 Δ	4000A–3W	10	3 #600KCM	N/A	1 #500KCM	4"

600V FEEDER SCHEDULE 3ø 4W

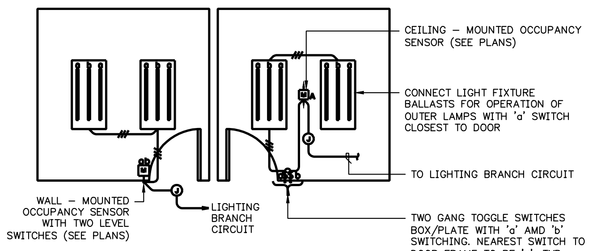
LABEL	TYPE	SETS	PHASE	NEUTRAL	GROUND	CONDUIT
20Y	20A–4W	1	3 # 12	1 # 12	1 # 12	3/4"
30Y	30A–4W	1	3 # 10	1 # 10	1 # 10	3/4"
40Y	40A–4W	1	3 # 8	1 # 10	1 # 10	1"
50Y	50A–4W	1	3 # 6	1 # 6	1 # 10	1"
60Y	60A–4W	1	3 # 4	1 # 4	1 # 10	1"
70Y	70A–4W	1	3 # 4	1 # 4	1 # 8	1 1/4"
80Y	80A–4W	1	3 # 2	1 # 2	1 # 8	1 1/4"
90Y	90A–4W	1	3 # 2	1 # 2	1 # 8	1 1/4"
100Y	100A–4W	1	3 # 1	1 # 1	1 # 8	1 1/2"
125Y	125A–4W	1	3 # 1	1 # 1	1 # 6	1 1/2"
150Y	150A–4W	1	3 # 1/0	1 # 1/0	1 # 6	1 1/2"
175Y	175A–4W	1	3 # 2/0	1 # 2/0	1 # 6	2"
200Y	200A–4W	1	3 # 3/0	1 # 3/0	1 # 6	2"
225Y	225A–4W	1	3 # 4/0	1 # 4/0	1 # 4	2 1/2"
250Y	250A–4W	1	3 #250KCM	1 #250KCM	1 # 4	2 1/2"
300Y	300A–4W	1	3 #350KCM	1 #350KCM	1 # 4	3"
350Y	350A–4W	1	3 #500KCM	1 #500KCM	1 # 2	4"
400Y	400A–4W	1	3 #600KCM	1 #600KCM	1 # 2	4"
450Y	450A–4W	2	3 # 4/0	1 # 4/0	1 # 2	3"
500Y	500A–4W	2	3 #250KCM	1 #250KCM	1 # 2	3"
600Y	600A–4W	2	3 #350KCM	1 #350KCM	1 # 1/0	4"
700Y	700A–4W	2	3 #500KCM	1 #500KCM	1 # 1/0	4"
800Y	800A–4W	2	3 #600KCM	1 #600KCM	1 # 1/0	4"
1000Y	1000A–4W	3	3 #500KCM	1 #500KCM	1 # 2/0	4"
1200Y	1200A–4W	3	3 #600KCM	1 #600KCM	1 # 3/0	4"
1600Y	1600A–4W	4	3 #600KCM	1 #600KCM	1 # 4/0	4"
2000Y	2000A–4W	5	3 #600KCM	1 #600KCM	1 #250KCM	4"
2500Y	2500A–4W	6	3 #600KCM	1 #600KCM	1 #350KCM	4"
3000Y	3000A–4W	8	3 #600KCM	1 #600KCM	1 #500KCM	4"
4000Y	4000A–4W	10	3 #600KCM	1 #600KCM	1 #500KCM	4"

ELECTRICAL CONSTRUCTION DOCUMENTS GENERAL INFORMATION

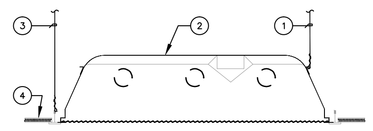
1. THE DRAWINGS CONTAINED WITHIN THESE CONSTRUCTION DOCUMENTS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK AND SHALL INCLUDE ALL COSTS, EQUIPMENT, MATERIALS, ETC. REQUIRED FOR A COMPLETE, FUNCTIONAL, AND CODE–COMPLIANT INSTALLATION.
2. THE CONTRACTOR SHALL COORDINATE ALL INSTALLATIONS WITH ALL OTHER TRADES.
3. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT, ETC. SHALL BE INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM THE ARCHITECT. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM ELECTRICAL DRAWINGS.
4. THESE DRAWINGS ARE SUPPLEMENTED BY PRINTED DIVISION 16 OR DIVISION 26 ELECTRICAL SPECIFICATIONS. THE COMPLETE ELECTRICAL CONSTRUCTION DOCUMENT PACKAGE CONTAINS BOTH SPECIFICATIONS AND DRAWINGS. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE COMPLETE ELECTRICAL CONSTRUCTION DOCUMENT PACKAGE PRIOR TO THE COMMENCEMENT OF ANY WORK AND INCLUDE ALL COST IN THIS BID.
5. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES, NATIONAL ELECTRICAL CODE, STATE OF CALIFORNIA ENERGY CONSERVATION STANDARDS AND ALL REQUIREMENT OF THE AUTHORITY HAVING JURISDICTION (AHJ).
6. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT LOCATIONS WITH ARCHITECTURAL, MECHANICAL, STRUCTURAL, PLUMBING AND ALL APPROPRIATE DISCIPLINES.
7. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM AND/OR ENGINEER PRIOR TO THE START OF CONSTRUCTION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF EXISTING SURFACES, AREAS, AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF ANY ELECTRICAL DEMOLITION AND/OR NEW WORK.
9. PROVIDE WEATHERPROOF (NEMA 3R) JUNCTION BOXES, CONDUIT, FITTINGS AND ENCLOSURES AT ALL EXTERIOR LOCATIONS AND ALL WET OR DAMP INTERIOR LOCATIONS. ALL EXTERIOR LIGHTING FIXTURES SHALL BE UL LISTED FOR WET OR DAMP LOCATION AS APPROPRIATE FOR THE LOCATION
10. VERIFY UTILITY COMPANY REQUIREMENTS FOR ALL WORK INCLUDING MODIFIED OR NEW SERVICE ENTRANCES, AND INCLUDE ALL COST IN BID.
11. NOTIFY POWER UTILITY COMPANY OF ANY SIGNIFICANT LOAD INCREASE, SERVICE REVISION, SHUTDOWN OF SERVICE OR ANY RELATED WORK.
12. VERIFY EXISTING CONDITIONS PRIOR TO BID AND INCLUDE ALL COSTS AS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
13. THE CONTRACTOR SHALL REVIEW EQUIPMENT MANUFACTURER'S REQUIREMENTS AND PROVIDE FUSE SIZES AS INDICATED, RELAYS, CONNECTIONS OR OTHER RELATED WORK TO COMPLETE THE ELECTRICAL SYSTEM.
14. ALL DEVICES AND EQUIPMENT SHALL BE INSTALLED IN COMPLIANCE WITH A.D.A. REQUIREMENTS.
15. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES FROM VIEW WHERE REASONABLY POSSIBLE.
16. CONTRACTOR SHALL ENSURE THAT ALL CONDUIT, FIXTURES, FITTINGS, AND DEVICES LOCATED IN PUBLIC AREAS ARE TAMPERPROOF AND PROTECTED FROM PHYSICAL DAMAGE.
17. ALL CURRENT CARRYING CONDUCTORS SHALL BE COPPER. INSULATION SHALL BE TYPE THHN/THWN FOR ALL BRANCH CIRCUITS UP TO AND INCLUDING SIZE #2AWG. INSULATION FOR CONDUCTORS OVER SIZE #2AWG SHALL BE XHHW.
18. ALL GROUND CONDUCTORS SHALL BE INSULATED COPPER.
19. ALL CONDUIT SHALL BE EMT (INSTALLED IN INTERIOR CONCEALED SPACES) OR SCHEDULE–40 PVC (INSTALLED UNDERGROUND) UNLESS OTHERWISE NOTED.
20. ALL AMPACITIES ARE BASED UPON TABLE 310.16 OF THE 2011 N.E.C.
21. FEEDER SCHEDULES INDICATE DATA FOR COPPER CONDUCTORS RATED UP TO 600V AT 75 DEGREES CELSIUS.
22. HEALTH CARE FACILITIES SHALL BE WIRED IN A METALLIC RACEWAY OR CABLING SYSTEM. CONTRACTOR SHALL PROVIDE A REDUNDANT GROUNDING METHOD WITH AN INSULATED GREEN GROUNDING CONDUCTOR INCLUDED.
23. ALL MULTI–WIRE BRANCH CONDUCTORS SHALL ORIGINATE FROM THE SAME PANELBOARD. THE GROUNDED AND UNGROUNDED CONDUCTORS SHALL BE GROUPED WITHIN THE PANELBOARD AND THEY SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS. THE CONTRACTOR SHALL PROVIDE THE DISCONNECTING MEANS BASED UPON THE FINAL FIELD WIRING, CIRCUITING, HOMERUNS, ETC. AS REQUIRED TO SATISFY THIS REQUIREMENT.
24. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, APPROVALS, LICENSES, ETC. AS NEEDED FOR THE COMPLETE ELECTRICAL INSTALLATION. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THE ABOVE ITEMS.
25. ALL ROOF–MOUNTED EQUIPMENT SHALL BE SERVED BY CIRCUITS ROUTED BELOW THE ROOF STRUCTURE. DO NOT ROUTE CONDUITS EXPOSED ON THE ROOF. LIMIT FINAL CONNECTIONS TO ROOF EQUIPMENT FROM ROOF PENETRATION TO 10 FEET.
26. FOR ALL EXTERIOR CONDUITS EXPOSED TO DIRECT SUNLIGHT, THE CONTRACTOR SHALL ADJUST CONDUCTOR AND CONDUIT SIZES AS NECESSARY TO COMPLY WITH CODE–REQUIRED AMBIENT TEMPERATURE AMPACITY DE–RATING.

Sheet List Table

Sheet Number	Sheet Title
E–001–TI	NOTE SHEET
E–002–TI	LUMINAIRE SCHEDULE
E–003–TI	LIGHTING ZONING PLANS
E–004–TI	TITLE 24 CALCULATIONS
E–005–TI	SINGLE LINE DIAGRAM
E–006–TI	LOAD SUMMARIES
E–007–TI	RISER DIAGRAMS
E–101–TI	E



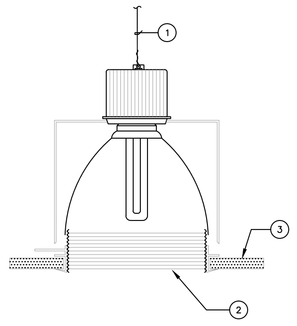
2 TYPICAL OFFICE LIGHTING
NO SCALE



KEY NOTES:

1. DENOTES FIXTURE SUPPORT WIRE (MINIMUM #10) ON TWO CORNERS ATTACHED TO BUILDING STRUCTURE.
2. DENOTES LUMINAIRE, 2'X4', 2'X2' OR 1'X4', WITH MINIMUM OF (4) RESTRAINT CLIPS, ATTACHING FIXTURES TO CEILING GRID.
3. DENOTES T–BAR CEILING SYSTEM SAFETY WIRE.
4. DENOTES CEILING MATERIAL.

3 RECESSED LUMINAIRE SEISMIC RESTRAINT
NO SCALE



KEY NOTES:

1. DENOTES FIXTURE SUPPORT WIRE (MINIMUM #10) FROM LUMINAIRE ATTACHED TO BUILDING STRUCTURE ABOVE.
2. DENOTES RECESSED INCADESCENT, FLUORESCENT OR H.I.D. DOWNLIGHT.
3. DENOTES T–BAR CEILING SYSTEM.

4 RECESSED DOWNLIGHT RESTRAINT
NO SCALE

SYMBOL	TYPE	VOLTAGE	INPUT WATTAGE	FIXTURE DESCRIPTION	FIXTURE INFORMATION		LAMP INFORMATION					BALLAST MANUFACTURER/ CATALOG NUMBER	MOUNTING INFORMATION	NOTES
					MANUFACTURER #	CATALOG NUMBER #	QTY	TYPE	WATTS	COLOR TEMP.	MANUFACTURER & CATALOG NUMBER			
	F1	277	55	DIRECT/INDIRECT RECESSED 2X4. LINEAR FACETED REFLECTOR WITH SLOPED END PLATES WITH ADVANCE OPTIMUM PROGRAM START 0.89 NOMINAL BALLAST.	LITHONIA	2AVGT8-2-32-MDR-MVOLTRS	2	T8	32	4100	OSRAM SYLVANIA F032/841/XPS/ECO	OSRAM SYLVANIA (2) QHE 1X32T8/UNV PSN-MC	RECESSED	
	F2	277	84	RECESSED PRISMATIC LENSED 2X4 TROFFER. UL LISTED. 3 LAMP/2 BALLAST FOR 50% SWITCHING. NIGHT LIGHT.	LITHONIA	2GT8-3-32-FW-A12125-MVOLT-GEB10RS	3	T8	32	4100	OSRAM SYLVANIA F032/841/XPS/ECO	OSRAM SYLVANIA (1) QHE 2X32T8/UNV PSN-MC (1) QHE 1X32T8/UNV PSN-MC	RECESSED	
	F2E	277	84	SAME AS FIXTURE TYPE F2, BUT CONNECTED TO EMERGENCY GENERATOR BRANCH CIRCUIT. NIGHT LIGHT.										
	F3			NOT USED										
	F3E			NOT USED										
	F4	277	66	2X2 RECESSED DECORATIVE SKY LIGHT FIXTURE, UL LISTED. VERIFY FROSTED ACRYLIC SHIELDING WITH ARCHITECT.	LITHONIA	2AVGT8-2-17-MDR-MVOLT-BSNP	4	T8	17	4100	OSRAM SYLVANIA F017/841/XPS/ECO	OSRAM SYLVANIA QHE 2X32T8/UNV PSN-MC	RECESSED	
	F5	277	45	6" WET LOCATION LENSED DOWNLIGHT, UL LISTED.	LITHONIA	6HF-1/42TRT-F6LS1-MVOLT	1	TRT CFL	32	4100	OSRAM SYLVANIA CF42DT/E/IN/841/ECO	OSRAM SYLVANIA (1) QTP 2X26CF/UNV DM	RECESSED	
	F6	277	45	6" OPEN DOWNLIGHT, UL LISTED.	GOTHAM	LF6N 1/42TRT MVOLT FI07A	1	TRT CFL	42	4100	OSRAM SYLVANIA CF42DT/E/IN/841/ECO	OSRAM SYLVANIA (1) QTP 2X26CF/UNV DM	RECESSED	
	F6E			SAME AS FIXTURE TYPE F6, BUT CONNECTED TO EMERGENCY GENERATOR BRANCH CIRCUIT. NIGHT LIGHT.										
	F7	277	45	8" DOWNLIGHT WITH DROP FROSTED DISK. UL LISTED.	GOTHAM	AF-1/42TRT-8AR-OLD-MVOLT	1	TRT CFL	42	4100	OSRAM SYLVANIA CF42DT/E/IN/841/ECO	OSRAM SYLVANIA (1) QTP 2X26CF/UNV DM	RECESSED	
	F7E	277	45	SAME AS FIXTURE TYPE F7, BUT CONNECTED TO EMERGENCY GENERATOR BRANCH CIRCUIT. NIGHT LIGHT.										
	F8	277	110 PER 8' SECTION	LINEAR DIRECT/INDIRECT CONTINUOUS FIXTURE LOCATED IN OPEN OFFICES. UL LISTED. 1LAMP UP, 1 LAMP DOWN. SEE DRAWINGS FOR LENGTHS.	AXIS	BB-F-NO-S#-NL4-T8-1-1-W-UNV-E-2A/B	2 PER 4'-0"	T8	32	4100	OSRAM SYLVANIA F017/841/XPS/ECO	OSRAM SYLVANIA (2) QHE 2X32T8/UNV PSN-MC PER 8' SECTION	PENDANT: 8'-6" AFF TO TOP OF FIXTURE	
	F8E			SAME AS FIXTURE TYPE F7A, BUT CONNECTED TO EMERGENCY GENERATOR BRANCH CIRCUIT. NIGHT LIGHT.										
	F9H	277	32	RECESSED WALL WASHER, UL LISTED. SINGLE LAMP CROSS SECTION. RECESSED IN WOOD CEILING. LENGTH AS SHOWN	AXIS	BMR-S-FL-S16-NL4-T8-1-W-UNV-ERS-1-DS	1	T8	32	4100			RECESSED	
	F9T	277	32	RECESSED WALL WASHER, UL LISTED. SINGLE LAMP CROSS SECTION, RECESSED IN WOOD CEILING, LENGTH AS SHOWN	AXIS	BMR-S-FL-4-NL4-T8-1-W-UNV-ERS-1-TG9	1	T8	32	4100			RECESSED	
	F10	277	32	LINEAR CONTINUOUS PERIMETER FIXTURE. UL LISTED. SINGLE LAMP CROSS SECTION. SEE DRAWINGS FOR LENGTHS.	MARK LIGHTING	PPL-16'-WH-1-T8S-EBPR-277	1 PER 4'-0"	T8	32	4100		PER 8' SECTION	RECESSED	
	F11	120	40W MAX	SMALL SCALE DECORATIVE CONE PENDANT, MONOPOINT. HALF FROSTED, HALF CLEAR. UL LISTED.	BESA	1XP-SN-C4407	1	INC	50		N/A	N/A	PENDANT	
	F12	24	3	CONTINUOUS LED TAPE LIGHT. 4100K. 150LM/FT TO 200 LM/FT. UL LISTED. SEE DRAWINGS FOR LENGTHS.	TUBE LIGHTING	DSH-VHO-24V-W60-X	N/A	LED	1.4/FT	6000	N/A	N/A	SURFACE COVE	CONTRACTOR SHALL INSTALL TAPE LIGHT TO BE CONTINUOUS WITH NO BREAKS IN LIGHT OUTPUT.
	F13	277	55	4'-0" STRIP FIXTURE WITH WIRE GUARD AND CHAIN HANGERS. UL LISTED.	LITHONIA	C-2-32-MVOLT-GEB10IS-HC36-WGCUN NST	2	T8	32	4100			CHAIN HUNG	
	F13E			SAME AS FIXTURE TYPE F13, BUT CONNECTED TO EMERGENCY GENERATOR BRANCH CIRCUIT. NIGHT LIGHT.										
	F14			NOT USED										
	F15			NOT USED										
	F16	120	300	LARGE SCALE DECORATIVE PENDANT. UL LISTED.	LE SOLEIL SUSPENSION	0607-L SOLEIL-024H1-WH	3X 1X	T4 G9 75W MR20 75W	300	4100	TBD	TBD		
	F17	120	120W MAX	SMALL SCALE DECORATIVE CONE PENDANT CLUSTER OF THREE, MONOPOINT, HALF FROSTED, HALF CLEAR. UL LISTED.	BESA	(3)XP-SN-C4407 w/ (1) T23XL-SN	3	INC	40		N/A	N/A	PENDANT	
	F18	277	26	BRUSHED ALUMINUM WALL SCONCE. ADA COMPLIANT	LUMENART	AWL02-F26F24Q3-277V	1	CFL	26	4100	N/A	N/A	SURFACE	
	F19	277	55	SURFACE	LUMENPULSE	LOGP-RO-VOLT-48-CT-10X10-WAM2-FINISH-DIMMING-(LOGIRD-4-XX)	1	LED	36				SURFACE MTD CONFIRM LOCATION WITH ARCHITECT	
	F20	277	84	RECESSED PRISMATIC LENSED 2X4 TROFFER. WET LOCATION. UL LISTED. 2 LAMP/2 BALLAST FOR 50% SWITCHING.	LITHONIA	2WRT-F-3-32-A12125-MVOLT-GEB10RS	3	T8	32	4100			RECESSED	
	F21	277	55	4'-0" STRIP FIXTURE WITH CLEAR PRISMATIC POLYCARBONATE LENS AND CHAIN HANGERS. WET LOCATION. UL LISTED.	LITHONIA	XWL232 MV	2	T8	32	4100			CHAIN HUNG	
	F22A	120	32	UNDER CABINET LIGHT	NULITE	112-132T8-120V-1SN-CP3/6	1	T8	32	4100				
	F22B	120	32	UNDER CABINET LIGHT	LITHONIA	132MV 1 T8 32 4100	1	T8	32	4100				
	F23	277	100	8" RECESSED 100W METAL HALIDE DOWNLIGHT	LITHONIA	AQL-851L-10AR-277	1	INDUCTION	85					
	F24	277	450	8'X8' SQUARE BOARDROOM PENDANT WITH INTEGRAL CORNERS	AXIS	CU-S-8-T8-3-W-0-0-277-D (0-10V)-1-CA36°-C w/90 DEGREE CORNERS (BOARDROOM)	8	T8	32					
	F25	277	84	LINEAR DIRECT/INDIRECT CONTINUOUS FIXTURE LOCATED IN OPEN OFFICES. UL LISTED. 1LAMP UP, 1 LAMP DOWN. SEE DRAWINGS FOR LENGTHS.	AXIS	CU-S-8-T8-3-W-0-0-UNV-ERS-1-CA36°-C	3	T8	32					
	F99-SF	277	5	X	LITHONIA	EDGR 1 G EL								

1 LUMINAIRE SCHEDULE
NO SCALE

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

LUMINAIRE SCHEDULE

E-002-TI

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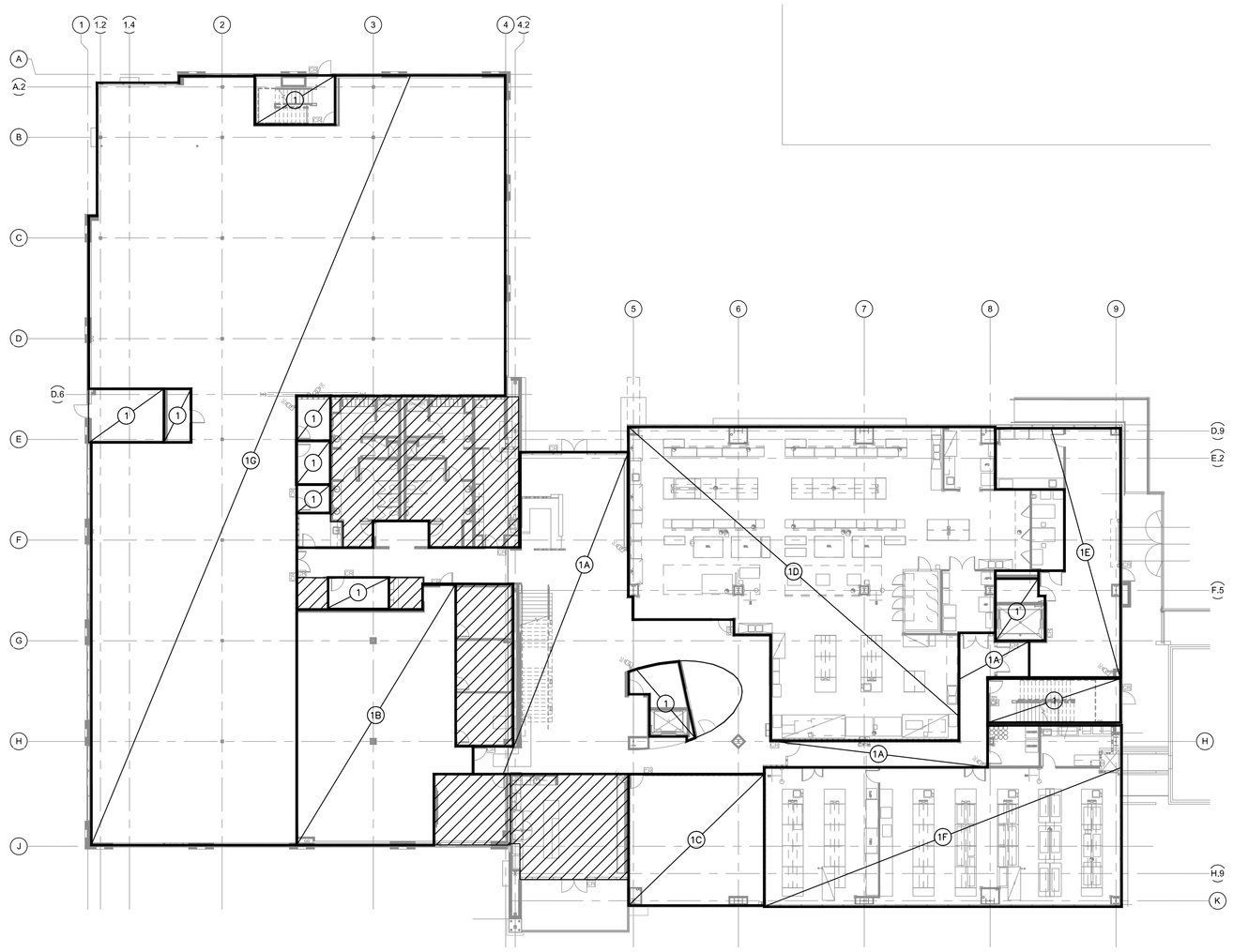
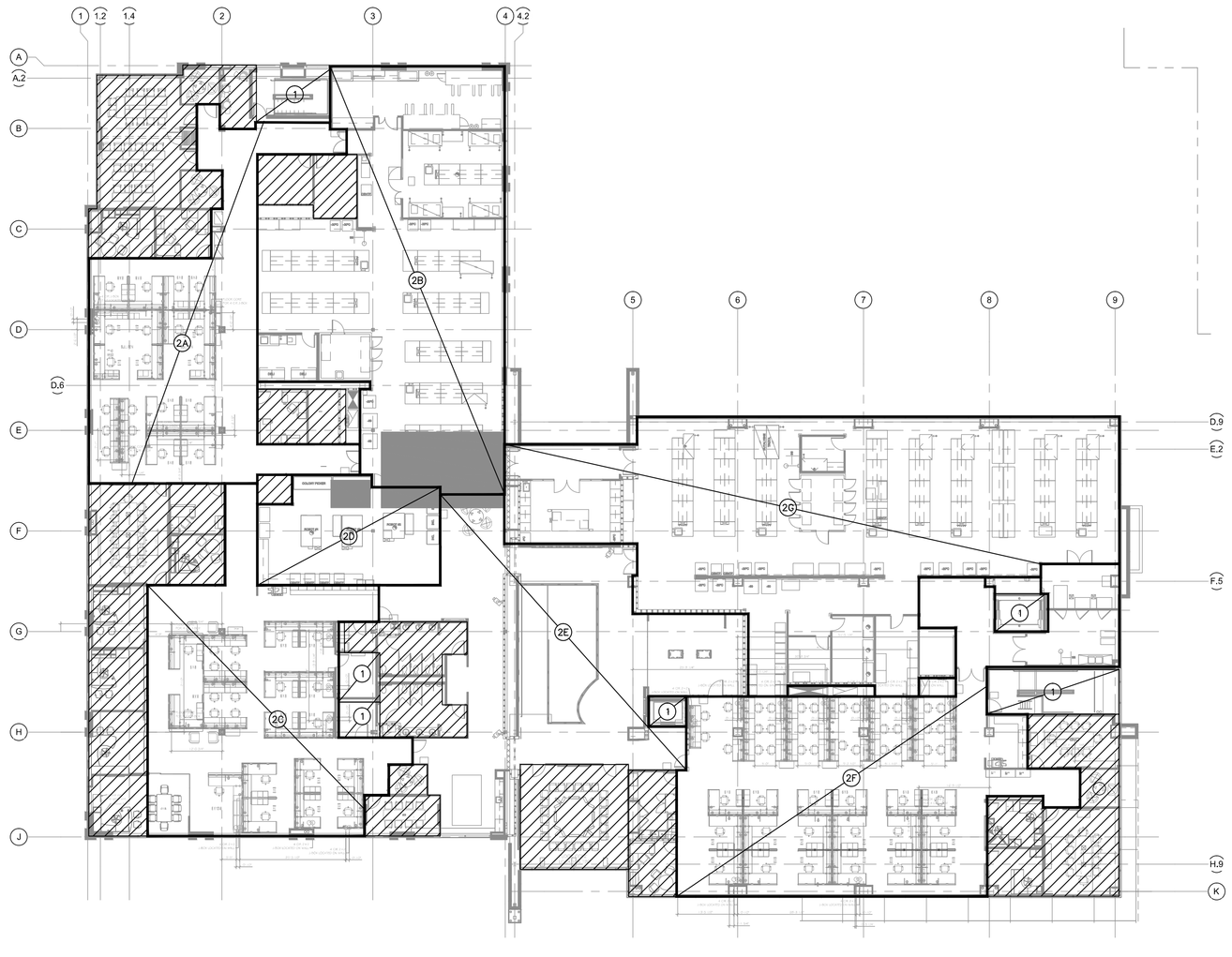


KEY NOTES:

1. LIGHTING CIRCUIT ON 24/7. NO AUTOMATIC CONTROLS IN THIS AREA.

REF. NORTH

1 FIRST FLOOR LIGHTING CONTROL ZONING PLAN
1/16" = 1'-0"

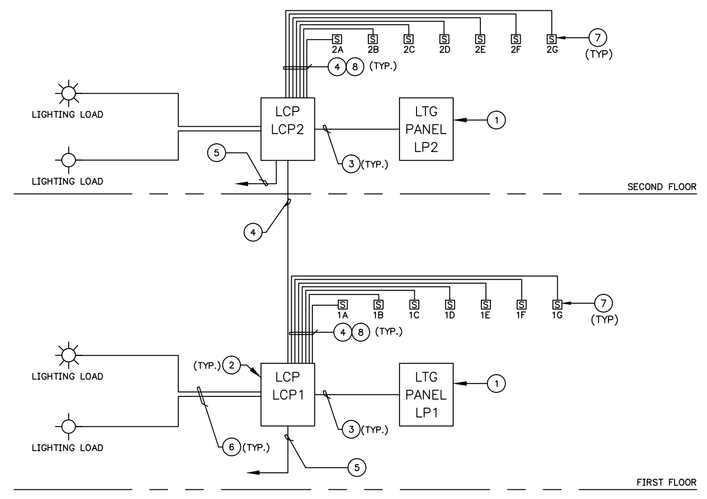


KEY NOTES:

1. LIGHTING CIRCUIT ON 24/7. NO AUTOMATIC CONTROLS IN THIS AREA.

REF. NORTH

2 SECOND FLOOR LIGHTING CONTROL ZONING PLAN
1/16" = 1'-0"



KEY NOTES:

1. DENOTES LIGHTING PANELS PER PLANS. SEE SINGLE LINE DIAGRAM FOR MORE INFORMATION.
2. NEW (16)INPUT LIGHTING CONTROL PANEL 'LCP1', PROVIDED WITH CONNECTION FOR LAPTOP CONTROL AND PROGRAMMING.
   MANUFACTURER: GREENGATE
   MODEL #: CKT16/16-120/277-SSY-SHVBI-EIM
3. DENOTES LIGHTING CIRCUITS INTERCEPTED BY LIGHTING CONTROL PANEL PER PLANS.
4. DENOTES CAT 5, 4 TWISTED PAIR WIRE.
5. DENOTES CIRCUIT 277V 20A INPUT POWER TO LIGHTING CONTROL PANEL.
6. DENOTES LIGHTING BRANCH CIRCUIT(S) ROUTED TO LIGHTING FIXTURES. REFER TO 'LCP1' LIGHTING CONTROL SCHEDULES THIS SHEET.
7. DENOTES LOW VOLTAGE OVERRIDE SWITCH WITH ZONE NOTED, WITH MAXIMUM OVERRIDE CAPACITY OF NO MORE THAN (2) HOURS.

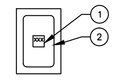
3 LIGHTING CONTROL RISER DIAGRAM
NONE

RELAY	PANEL	CIRCUIT	VOLTS	ZONE	NOTES
R1	LP2	1	277	2A	OPEN OFFICE 260
R2	LP2	3	277	2B	ENZYMOLOGY 250
R3	P2J	2	120	2B	LAB BENCH U.C. LTG
R4	LP2	5	277	2C	OPEN OFFICE 280
R5	LP2	7	277	2D	ENZYMOLOGY HTPS 257
R6	LP2	9	277	2E	CENTRAL CIRCULATION, MAIL COLLISION/COFFEE
R7	LP2	11	277	2F	OPEN OFFICE 240
R8	LP2	13	277	2G	MOLECULAR BIOLOGY, MICROBIOLOGY
R9	P2J	4	120	2G	LAB BENCH U.C. LTG
R10	P2J	6	120	2G	LAB BENCH U.C. LTG
R11	LP2	15	277	2G	HTP CLON., FACS, CHEM.
R12	–	–	277		SPARE
R13	–	–	277		SPARE
R14	–	–	277		SPARE
R15	–	–	277		SPARE
R16	–	–	277		SPARE

4 LIGHTING CONTROL RELAY SCHEDULE 'LCP2'
NO SCALE

ZONE	CONTROL	OVERRIDE SWITCHES	NOTES
2A	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2A	OPEN OFFICE 260
2B	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2B	ENZYMOLOGY 250
2C	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2C	OPEN OFFICE 280
2D	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2D	ENZYMOLOGY HTPS 257
2E	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2E	CENTRAL CIRCULATION 201, MAIL 202, COLLISION ZONE 203, COLLISION/COFFEE 204
2F	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2F	OPEN OFFICE 240
2G	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2G	MOLECULAR BIOLOGY 221, MICROBIOLOGY 222
2H	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2H	SPARE
2I	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2I	SPARE
2J	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2J	SPARE
2K	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2K	SPARE
2L	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2L	SPARE
2M	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2M	SPARE
2N	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2N	SPARE
2O	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2O	SPARE
2P	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	2P	SPARE

5 LIGHTING CONTROL ZONE SCHEDULE 'LCP2'
NO SCALE



KEY NOTES:

1. SWITCH BUTTON. LABEL ON SWITCH "AREA CONTROLLED" AS SHOWN ON LIGHTING CONTROL SCHEDULES, PER SWITCH. VERIFY WITH ARCHITECT PRIOR TO ENGRAVING. (TYPICAL)
2. 1 GANG PLATE/BACKBOX.

GENERAL NOTES:

1. VERIFY OVERRIDE SWITCH LOCATIONS WITH ARCHITECT. VERIFY QUANTITY, LAYOUT, AND ORIENTATION WITH PLANS. SWITCHES SHALL BE COMPATIBLE WITH LIGHTING CONTROL SYSTEM.

6 LIGHTING CONTROL SWITCH DETAILS AND CALLOUTS
NO SCALE

RELAY	PANEL	CIRCUIT	VOLTS	ZONE	NOTES
R1	LP1	1	277	1A	LOBBY, CENTRAL CIRCULATION, HALLS
R2	LP1	3	277	1B	OPEN OFFICE 130
R3	LP1	5	277	1C	OPEN OFFICE 124
R4	LP1	7	277	1D	FERMENTATION/SEPARATION
R5	P1J	2	120	1D	LAB BENCH U.C. LTG
R6	LP1	9	277	1E	SHIPPING/RECEIVING WAREHOUSE
R7	LP1	11	120	1F	ANALYTICAL LAB, ANALYTIC INSTRUMENTS
R8	P1J	4	120	1F	LAB BENCH U.C. LTG.
R9	P1J	6	120	1F	LAB BENCH U.C. LTG.
R10	LP1	13	277	1G	SHELL SPACE
R11	LP1	15	277	1D	FERMENTATION/SEPARATION
R12	–	–	277		SPARE
R13	–	–	277		SPARE
R14	–	–	277		SPARE
R15	–	–	277		SPARE
R16	–	–	277		SPARE

7 LIGHTING CONTROL RELAY SCHEDULE 'LCP1'
NO SCALE

ZONE	CONTROL	OVERRIDE SWITCHES	NOTES
1A	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1A	LOBBY 101, CIRCULATION 102, HALL 106 & HALL 114
1B	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1B	OPEN OFFICE 130
1C	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1C	OPEN OFFICE 124
1D	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1D	FERMENTATION 110, SEPARATION 110A
1E	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1E	SHIPPING/RECEIVING WAREHOUSE 116
1F	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1F	ANALYTICAL LAB 120, ANALYTIC INSTRUMENTS 121
1G	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1G	SHELL SPACE
1H	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1H	SPARE
1I	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1I	SPARE
1J	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1J	SPARE
1K	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1K	SPARE
1L	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1L	SPARE
1M	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1M	SPARE
1N	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1N	SPARE
1O	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1O	SPARE
1P	TIMECLOCK "ON/OFF" OVERRIDE "ON" (2HRS. MAX.)	1P	SPARE

8 LIGHTING CONTROL ZONE SCHEDULE 'LCP1'
NO SCALE

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

LIGHTING ZONING PLANS

E-003-TI

Z:\PROJ12\12224\DWG\12224-E003_LCP1.DWG Wednesday, May 22, 2013 11:47:10 AM - rmdecek

KEY NOTES:

1. PROVIDE AND INSTALL SHUNT TRIP CIRCUIT BREAKER FOR ELEVATOR FEED. PROVIDE 120V COIL AND DEDICATED CIRCUIT FOR CONTROL.
2. VERIFY SHUNT TRIP AND LOCK-OUT CONTROL WITH ELEVATOR CONTRACTOR, AND FIRE ALARM CONTRACTOR.
3. FUSIBLE DISCONNECT WITH LOCKING DEVICE. PROVIDE FUSE PER ELEVATOR MANUFACTURER'S RECOMMENDATIONS.
4. VFD WITH INTEGRAL DISCONNECT PROVIDED BY MECHANICAL AND INSTALLED BY ELECTRICAL.
5. PROVIDE ADDITIONAL 10 FEET OF FEEDER COILED IN PULL BOX FOR FUTURE CONNECTION OF UPS.
6. FEED THROUGH LUGS.
7. COORDINATE BREAKER WITH UPS INSTALLATION REQUIREMENTS.
8. PANEL FURNISHED AS PART OF THE HAZMAT ENCLOSURE.
9. 3#8, 1#8GND., 1"C.

GENERAL NOTES:

1. EACH TRANSFORMER SHALL USE THE NEAREST ELECTRODE AS THE SECONDARY GROUNDING SYSTEM. (I.E. BUILDING STEEL, COLD WATER PIPE). THE GROUNDING ELECTRODE CONDUCTOR ON THE SECONDARY SIDE OF ALL TRANSFORMERS SHALL BE CONNECTED TO BOTH BUILDING STEEL AND THE COLD WATER PIPES.
2. ALL EQUIPMENT IS NEW UNLESS NOTED OTHERWISE.
3. ALL FUSES SHALL BE CURRENT LIMITING CLASS RK1, TYPE LPS-RK-SP. (FAST ACTION 600V), OR CLASS RK1, TYPE LPN-RK-SP (FAST ACTION 250V).
4. ALL CONDUCTORS RATED 600V OR 250V SHALL HAVE 'THW', 'THHN' OR 'THWN' INSULATION WITH EMT CONDUIT. UNLESS NOTED OTHERWISE.
5. MAIN SERVICE WILL NOT BE ENERGIZED PRIOR TO BUILDING INSPECTOR'S RECEIPT OF A THIRD PARTY TESTING LABORATORY PERFORMANCE TEST CERTIFICATION FOR THE SERVICE GROUND FAULT PROTECTION. CEC 230-95.
6. ALL EQUIPMENT SHALL BE SERIES RATED FOR THE AVAILABLE FAULT CURRENT.
7. SEE LOAD SUMMARIES ON SHEET E-006-TI.

1 SINGLE LINE DIAGRAM
NO SCALE

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

SINGLE LINE DIAGRAM

E-005-TI

Z:\PROJ\2\12224\DWG\12224-E005_SL.DWG Wednesday, May 22, 2013 11:47:41 AM - rmalecek

AREA A BUS NAME	VOLTAGE L-L	AVAILABLE FAULT 3 PHASE (A)	PANEL AIC RATING
PANEL P1A	208	4797	10KA
PANEL P1B	208	4765	10KA
PANEL P1C	208	4880	10KA
PANEL P1D	208	4847	10KA
PANEL P1E	208	11348	22KA
PANEL P1F	208	11186	22KA
PANEL P1G	208	4639	10KA
PANEL P1H	208	4609	10KA
PANEL P1J	208	11945	22KA
PANEL P2A	208	7759	10KA
PANEL P2B	208	7678	10KA
PANEL P2C	208	6816	10KA
PANEL P2D	208	6752	10KA
PANEL P2E	208	7970	10KA
PANEL P2F	208	7884	10KA
PANEL P2G	208	7369	10KA
PANEL P2H	208	7295	10KA
PANEL P2J	208	11438	22KA
PANEL LP1	208	4058	10KA
PANEL LP1A	208	4058	10KA
PANEL LP1B	208	4058	10KA
PANEL LP2A	208	4058	10KA
PANEL LP2B	208	4058	10KA
PANEL EP1	208	13155	22KA
PANEL EP1A	208	13155	22KA
PANEL EP1B	208	13155	22KA
PANEL EP1C	208	13155	22KA
PANEL EP1D	208	13155	22KA
PANEL EP2	208	11946	22KA
PANEL EP2A	208	11946	22KA
PANEL EP2B	208	11946	22KA
PANEL EP2C	208	11946	22KA
PANEL EP2D	208	11946	22KA
PANEL HP	208	2977	10KA
PANEL YP	208	1489	10KA
PANEL RP1	208	2977	10KA
PANEL ERP1	208	1489	10KA
MSB	480	68072	100KA
DIST. DP1	480	13738	25KA
DIST. DP2	480	12975	25KA
DIST. DP1E	480	58258	65KA
DIST. DPR	480	46390	65KA
DIST. DPRE	480	15321	25KA
PANEL HL	480	59890	65KA
PANEL LP1	480	21385	35KA
PANEL LP2	480	11013	14KA
PANEL YL	480	10383	14KA
PANEL EL	480	6344	14KA
PANEL PRA	480	41408	65KA
PANEL PRB	480	21616	35KA
PANEL PRC	480	29443	35KA
PANEL PRD	480	22731	35KA

LOAD SUMMARY
DISTRIBUTION PANELBOARD ' DPR '

		LOAD VA	LOAD AMPS
1	PANEL 'RP1'	11884	14
2	PANEL 'PRC'	90248	109
3	ACH 1	270906	326
4	ACH 2 (FUTURE)	270906	326
5	AHU 1-1	43212	52
6	AHU 1-2 (FUTURE)	43212	52
7	AHU 2-1	54015	65
8	PANEL 'PRD'	101216	122
9	SPACE		0
10	SPACE		0
	SUB TOTAL:	885599	1066
	LARGEST MOTOR AT 25%	67727	82
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	953326	1147

LOAD SUMMARY
PANELBOARD ' PRA '

		LOAD VA	LOAD AMPS
1	HP 2-1	9473	11
2	HP 2-2	9473	11
3	HP 2-3	18614	22
4	HP 2-10	9141	11
5	HP 2-11	9141	11
6	CU 1-1	8144	10
7	PANEL 'PRB'	86451	104
8	SPACE		0
9	SPACE		0
10	SPACE		0
	SUB TOTAL:	150437	181
	LARGEST MOTOR AT 25%	4654	6
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	155091	187

LOAD SUMMARY
PANELBOARD ' PRB '

		LOAD VA	LOAD AMPS
1	HP 2-4	9473	11
2	HP 2-5	18614	22
3	HP 2-6	18614	22
4	HP 2-7	9473	11
5	HP 2-8	9473	11
6	CU 1-2	4404	5
7	CU 1-5	4404	5
8	CU 1-7	8173	10
9	EF 1	2493	3
10	SF 1	1330	2
	SUB TOTAL:	86451	104
	LARGEST MOTOR AT 25%	4654	6
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	91105	110

LOAD SUMMARY
PANELBOARD ' PRC '

		LOAD VA	LOAD AMPS
1	HP 2-9	11219	14
2	HP 2-12	18614	22
3	HP 2-13	11219	14
4	HP 2-14	11219	14
5	HP 2-15	11219	14
6	HP 2-16	9141	11
7	HP 2-17	9473	11
8	CU 1-8	8144	10
9	SPACE		0
10	SPACE		0
	SUB TOTAL:	90248	109
	LARGEST MOTOR AT 25%	4654	6
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	94902	114

LOAD SUMMARY
PANELBOARD ' PRD '

		LOAD VA	LOAD AMPS
1	CHWP 1	22437	27
2	CHWP 2	22437	27
3	HHWP 1	11634	14
4	HHWP 2	11634	14
5	PCH 1	12465	15
6	PCH 2	12465	15
7	CU 1-9	8144	10
8	SPACE		0
9	SPACE		0
10	SPACE		0
	SUB TOTAL:	101216	122
	LARGEST MOTOR AT 25%	5609	7
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	106825	129

LOAD SUMMARY
DISTRIBUTION BOARD ' GENERATOR '

		LOAD VA	LOAD AMPS
1	PANEL 'DP1E'	443206	533
2	PANEL 'EL'	8817	11
3	SPACE		0
	SUB TOTAL:	452023	544
	LARGEST MOTOR AT 25%	4363	5
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	456386	549

LOAD SUMMARY
DISTRIBUTION BOARD ' DP1E '

		LOAD VA	LOAD AMPS
1	XFRM 'T-UP1'	44490	54
2	XFRM 'T-EP1'	91650	110
3	XFRM 'T-EP2'	79050	95
4	UPS-1	40000	48
5	APC-1	25761	31
6	APC-2	25761	31
7	PANEL 'DPRE'	121468	146
8	PANEL 'ERP1'	15016	18
9	SPACE		0
10	SPACE		0
	SUB TOTAL:	443206	533
	LARGEST MOTOR AT 25%	4363	5
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	447569	539

LOAD SUMMARY
DISTRIBUTION PANELBOARD ' DPRE '

		LOAD VA	LOAD AMPS
1	PANEL 'ERP1'	15016	18
2	EF 1-1	17451	21
3	EF 1-2	11634	14
4	EF 2-1	5473	11
5	EF 2-2	6316	8
6	EF 2-3	17451	21
7	EF 2-4	2493	3
8	APCCU 2-1	5817	7
9	APCCU 2-2	5817	7
10	AC-1 (COLD ROOM)	10000	12
11	AC-2 (COLD ROOM)	10000	12
12	AC-3 (COLD ROOM)	10000	12
13			0
14			0
15			0
	SUB TOTAL:	121468	146
	LARGEST MOTOR AT 25%	4363	5
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	125831	151

LOAD SUMMARY
DISTRIBUTION PANEL ' DP1 '

		LOAD VA	LOAD AMPS
1	PANEL ' P1A '	17530	49
2	PANEL ' P1C '	36798	102
3	PANEL ' P1E '	32510	90
4	PANEL ' P1G '	34060	95
5	SPACE		0
6	SPACE		0
7	SPACE		0
8	SPACE		0
9	SPACE		0
10	SPACE		0
	SUBTOTAL	120898	336
	LONG CONT. LOAD AT 25%	30225	84
	TOTAL AT 208Y/120V 3PH 4W WITH LCL:	151123	420

LOAD SUMMARY
DISTRIBUTION PANEL ' DP2 '

		LOAD VA	LOAD AMPS
1	PANEL ' P2A '	40900	114
2	PANEL ' P2C '	40250	112
3	PANEL ' P2E '	33850	94
4	PANEL ' P2G '	37590	104
5	SPACE		0
6	SPACE		0
7	SPACE		0
8	SPACE		0
9	SPACE		0
10	SPACE		0
	SUBTOTAL	152590	424
	LONG CONT. LOAD AT 25%	38148	106
	TOTAL AT 208Y/120V 3PH 4W WITH LCL:	190738	530

LOAD SUMMARY
DISTRIBUTION BOARD ' MSB '

		LOAD VA	LOAD AMPS
1	PANEL 'HL'	49111	59
2	PANEL 'LP1'	19109	23
3	DIST. 'DP1E'	895599	1066
4	PANEL 'PRA'	150437	181
5	XFMR 'DP2'	152590	184
6	XFMR 'DP1'	120898	145
7	PANEL 'YL'	111680	134
8	PANEL 'EL'	11021	13
9	DIST. 'DP1E'	443206	533
10	SPACE		0
	SUB TOTAL:	1943651	2339
	LARGEST MOTOR AT 25%	67727	82
	TOTAL AT 480Y/277V 3PH 4W WITH LCL:	2011378	2420

CONSULTANTS

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PROJECT

ADDRESS

PROJECT NO. 12137

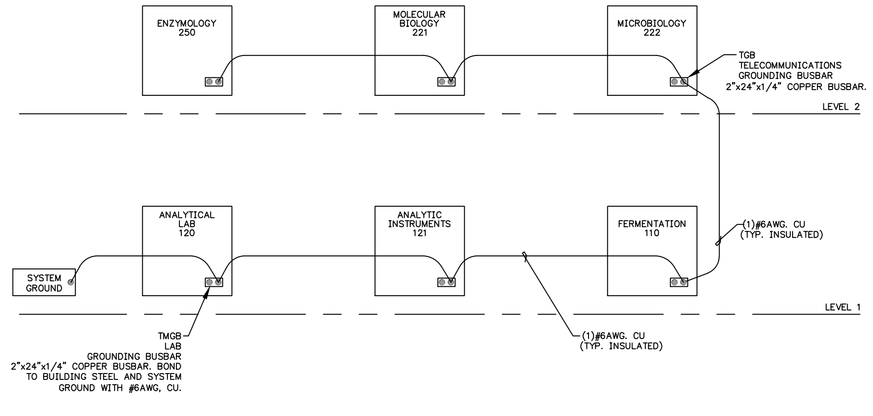
SCALE As indicated

TITLE

LOAD SUMMARIES

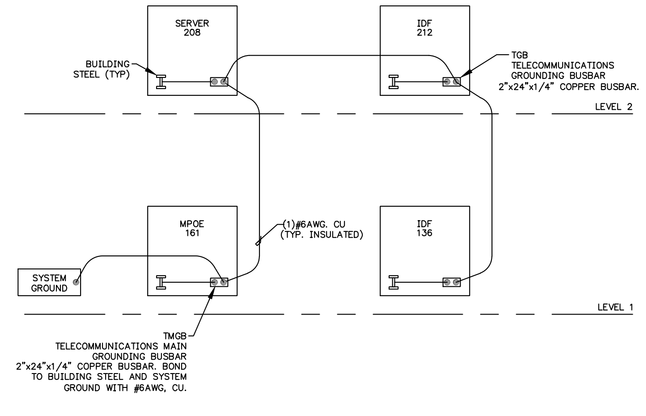
E-006-TI

Z:\PROJ12\12224\DWG\12224-E006_LS.DWG Wednesday, May 22, 2013 11:47:57 AM -- rmaleesk



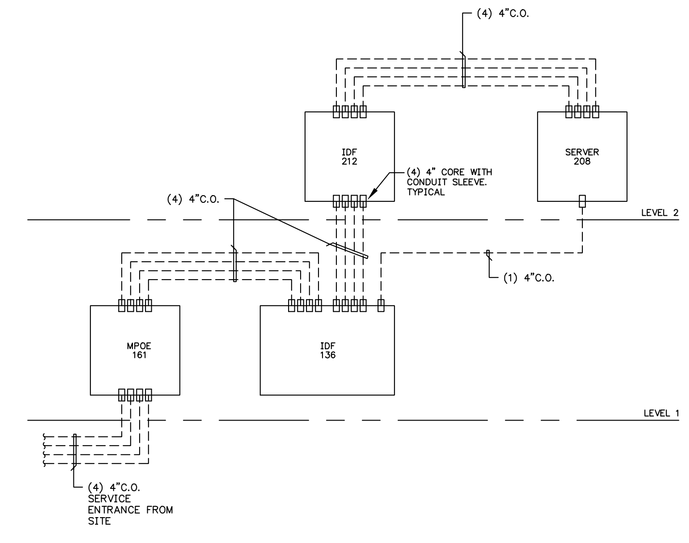
3 LAB GROUNDING BUSBAR RISER

NO SCALE



2 TBB–TELECOMMUNICATIONS BONDING BACKBONE

NO SCALE



1 TELECOMMUNICATIONS RISER DIAGRAM

NONE

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ADDRESS

PROJECT NO. 12137

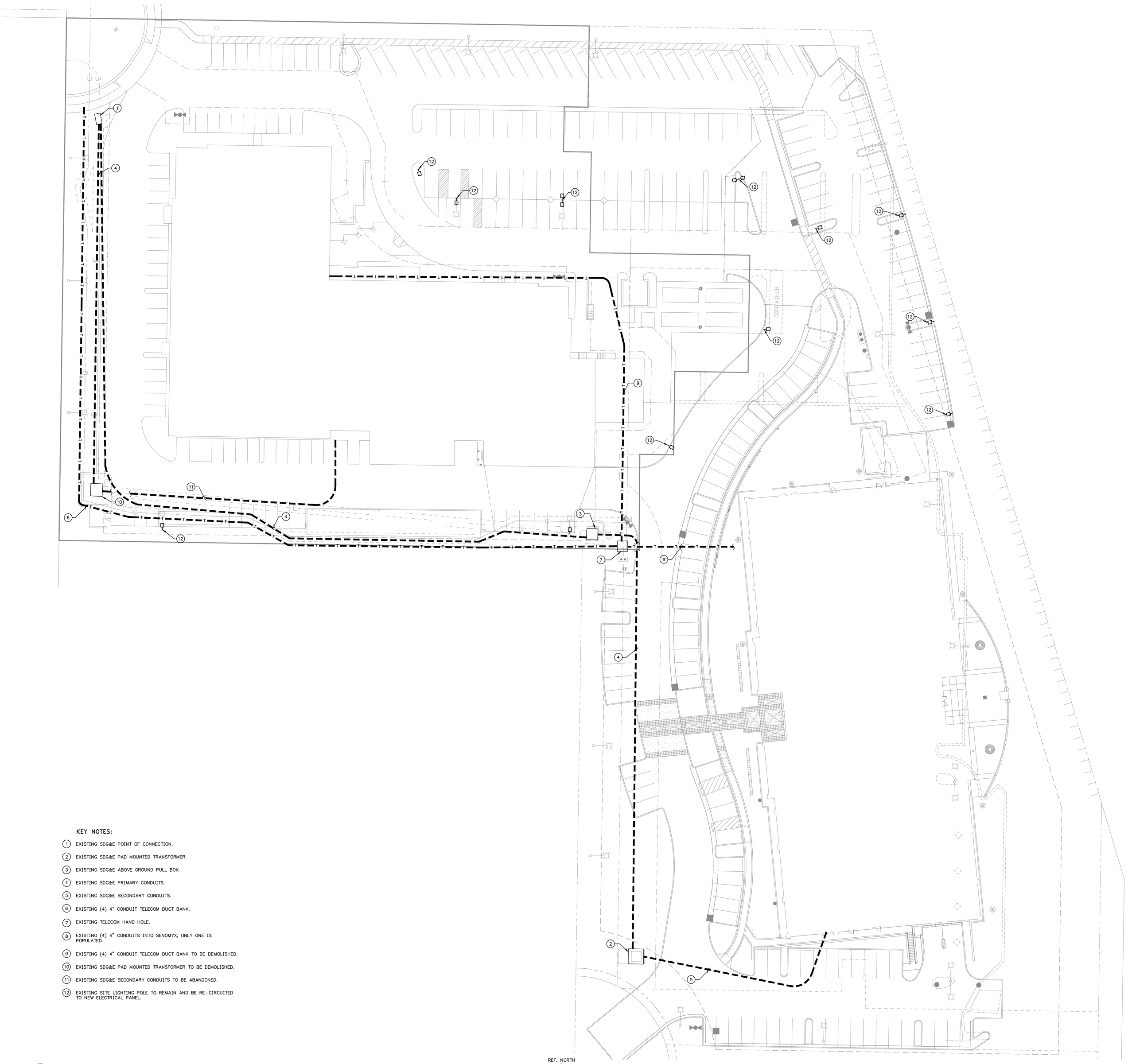
SCALE As indicated

TITLE

RISER DIAGRAMS

E-007-TI

Z:\PROJ12\12224\DWG\12224-E007_SL.DWG Wednesday, May 22, 2013 11:48:05 AM — rfelix



KEY NOTES:

1. EXISTING SDG&E POINT OF CONNECTION.
2. EXISTING SDG&E PAD MOUNTED TRANSFORMER.
3. EXISTING SDG&E ABOVE GROUND PULL BOX.
4. EXISTING SDG&E PRIMARY CONDUITS.
5. EXISTING SDG&E SECONDARY CONDUITS.
6. EXISTING (4) 4" CONDUIT TELECOM DUCT BANK.
7. EXISTING TELECOM HAND HOLE.
8. EXISTING (4) 4" CONDUITS INTO SENOMYX, ONLY ONE IS POPULATED.
9. EXISTING (4) 4" CONDUIT TELECOM DUCT BANK TO BE DEMOLISHED.
10. EXISTING SDG&E PAD MOUNTED TRANSFORMER TO BE DEMOLISHED.
11. EXISTING SDG&E SECONDARY CONDUITS TO BE ABANDONED.
12. EXISTING SITE LIGHTING POLE TO REMAIN AND BE RE-CIRCUITED TO NEW ELECTRICAL PANEL.

REF. NORTH

1 EXISTING OVERALL SITE PLAN
1" = 20'-0"

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PROJECT

ADDRESS

PROJECT NO. 12137

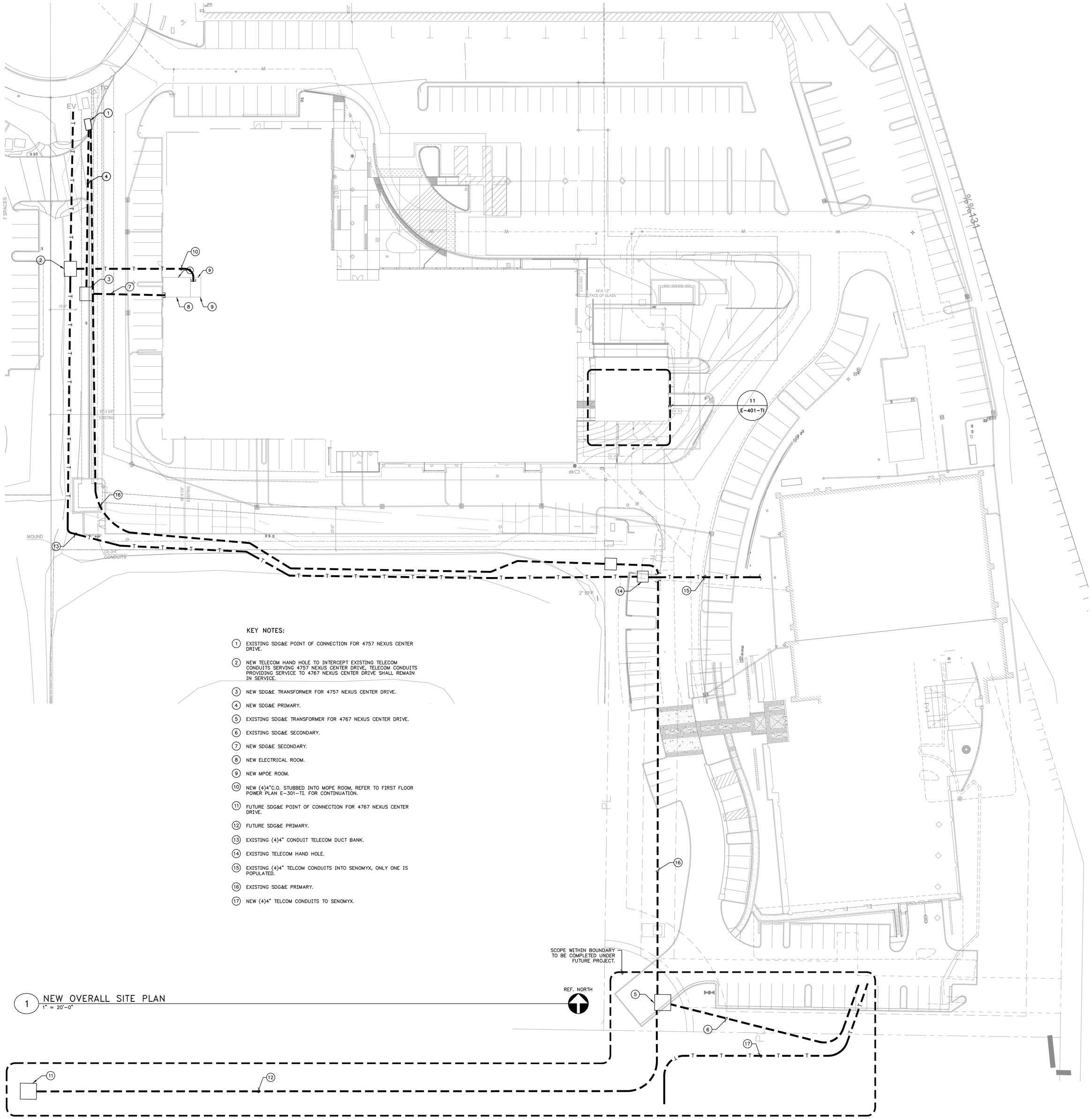
SCALE As indicated

TITLE

EXISTING OVERALL SITE PLAN

E-101-TI

Z:\PROJ\12224\DWG\12224-E101_OSP.DWG Wednesday, May 22, 2013 11:48:10 AM - rfelix



1 NEW OVERALL SITE PLAN
1" = 20'-0"

KEY NOTES:

1. EXISTING SDG&E POINT OF CONNECTION FOR 4757 NEXUS CENTER DRIVE.
2. NEW TELECOM HAND HOLE TO INTERCEPT EXISTING TELECOM CONDUITS SERVING 4757 NEXUS CENTER DRIVE. TELECOM CONDUITS PROVIDING SERVICE TO 4767 NEXUS CENTER DRIVE SHALL REMAIN IN SERVICE.
3. NEW SDG&E TRANSFORMER FOR 4757 NEXUS CENTER DRIVE.
4. NEW SDG&E PRIMARY.
5. EXISTING SDG&E TRANSFORMER FOR 4767 NEXUS CENTER DRIVE.
6. EXISTING SDG&E SECONDARY.
7. NEW SDG&E SECONDARY.
8. NEW ELECTRICAL ROOM.
9. NEW MPOE ROOM.
10. NEW (4)4"C.O. STUBBED INTO MOPE ROOM. REFER TO FIRST FLOOR POWER PLAN E-301-TI. FOR CONTINUATION.
11. FUTURE SDG&E POINT OF CONNECTION FOR 4767 NEXUS CENTER DRIVE.
12. FUTURE SDG&E PRIMARY.
13. EXISTING (4)4" CONDUIT TELECOM DUCT BANK.
14. EXISTING TELECOM HAND HOLE.
15. EXISTING (4)4" TELCOM CONDUITS INTO SENOMYX, ONLY ONE IS POPULATED.
16. EXISTING SDG&E PRIMARY.
17. NEW (4)4" TELCOM CONDUITS TO SENOMYX.

A. ALL UTILITY SERVICES SHALL BE INSTALLED PER THE UTILITY COMPANY REQUIREMENTS. VERIFY FINAL CONSTRUCTION REQUIREMENTS WITH UTILITY COMPANY SERVICE PLANNERS

B. CONTACT THE FOLLOWING SERVICE PLANNERS FOR FURTHER INFORMATION:

POWER: _____

TELEPHONE: _____

CATV: _____

C. THE CONTRACTOR SHALL INSPECT AND VERIFY ALL FIELD CONDITIONS PRIOR TO INSTALLATION OF UTILITY SERVICES.

D. COORDINATE TRENCH ROUTING AND EQUIPMENT LOCATIONS WITH EXISTING CONDITIONS AND NEW WORK.

E. UTILITY SERVICE INFORMATION SHOWN IS FOR BIDDING PURPOSES ONLY. ACTUAL CONSTRUCTION DOCUMENTS SHALL BE OBTAINED FROM THE APPROPRIATE UTILITY COMPANY REPRESENTATIVE.

F. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANY REPRESENTATIVE TO ESTABLISH PRE-CONSTRUCTION COORDINATION, OBTAIN ALL NECESSARY METERS AND/OR APPROVALS, AND SCHEDULE UTILITY WORK TO COORDINATE WITH THE CONSTRUCTION SCHEDULE.

G. ROUTE FIBER OPTIC CONDUITS FROM PROPERTY LINE TO EACH TELEPHONE SERVICE ENTRANCE IN DEDICATED RACEWAY AND SUBSTRUCTURES. FOLLOW TELEPHONE SERVICE ROUTING. CAP AND LOCATE ALL CONDUITS STUBS.

H. ALL CONDUITS SHALL BE 3/4" MINIMUM.

I. ALL CONDUCTORS SHALL BE #10 COPPER WIRE MINIMUM.

J. THE CONTRACTOR SHALL VERIFY ALL EXISTING UNDERGROUND UTILITIES, SUBSTRUCTURES, EASEMENTS, RIGHTS-OF-WAY, ETC. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

K. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT AND DEVICE LOCATIONS WITH THE ARCHITECT, CIVIL ENGINEER, AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

L. THE CONTRACTOR SHALL IDENTIFY ALL EASEMENTS AND GAIN EXCAVATION RIGHTS AS REQUIRED BEFORE COMMENCEMENT OF CONSTRUCTION.

M. ALL EXTERIOR RECEPTACLES SHALL BE GFI AND INCLUDE WEATHERPROOF IN-USE COVERS.

N. ALL EXTERIOR DEVICES AND EQUIPMENT SHALL BE RATED NEMA 3R.

O. ALL CONDUIT STUBS SHALL BE CAPPED, MARKED, LOCATED, AND LABEL CD.

P. PROVIDE CODE-SIZED PULL BOXES OR HANDHOLES WHERE REQUIRED.

2 UTILITY SERVICE NOTES
NO SCALE

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PROJECT

ADDRESS

PROJECT NO. 12137

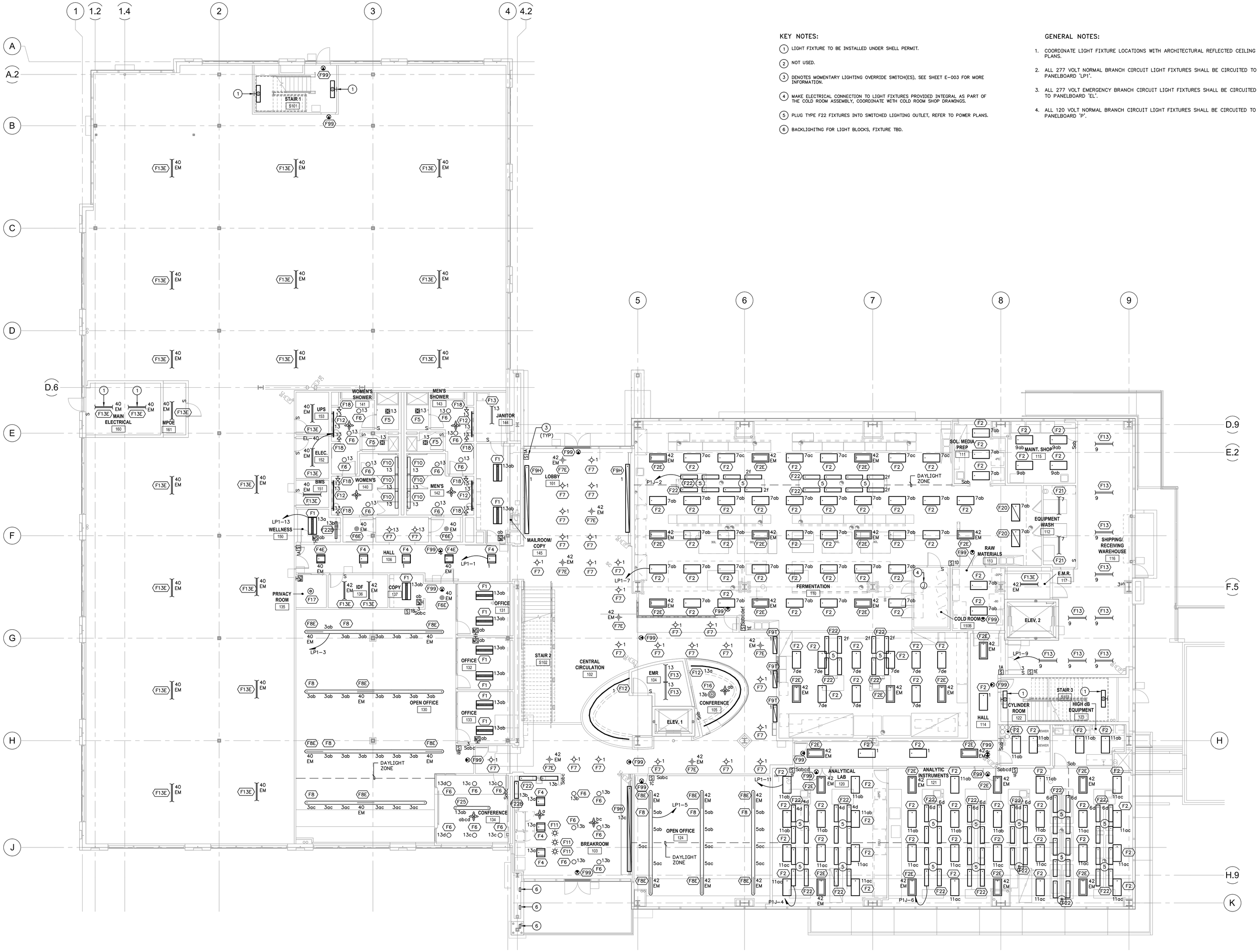
SCALE As indicated

TITLE

NEW OVERALL SITE PLAN

E-102-TI

Z:\PROJ\2\2224\DWG\2224-E102_OSP.DWG Wednesday, May 22, 2013 11:48:16 AM - rmalecek



KEY NOTES:

1. LIGHT FIXTURE TO BE INSTALLED UNDER SHELL PERMIT.
2. NOT USED.
3. DENOTES MOMENTARY LIGHTING OVERRIDE SWITCH(ES), SEE SHEET E-003 FOR MORE INFORMATION.
4. MAKE ELECTRICAL CONNECTION TO LIGHT FIXTURES PROVIDED INTEGRAL AS PART OF THE COLD ROOM ASSEMBLY, COORDINATE WITH COLD ROOM SHOP DRAWINGS.
5. PLUG TYPE F22 FIXTURES INTO SWITCHED LIGHTING OUTLET, REFER TO POWER PLANS.
6. BACKLIGHTING FOR LIGHT BLOCKS, FIXTURE TBD.

GENERAL NOTES:

1. COORDINATE LIGHT FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
2. ALL 277 VOLT NORMAL BRANCH CIRCUIT LIGHT FIXTURES SHALL BE CIRCUITED TO PANELBOARD 'LP1'.
3. ALL 277 VOLT EMERGENCY BRANCH CIRCUIT LIGHT FIXTURES SHALL BE CIRCUITED TO PANELBOARD 'EL'.
4. ALL 120 VOLT NORMAL BRANCH CIRCUIT LIGHT FIXTURES SHALL BE CIRCUITED TO PANELBOARD 'P'.

1 FIRST FLOOR LIGHTING PLAN
1/8" = 1'-0"

REF. NORTH

CONSULTANTS

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PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

FIRST FLOOR LIGHTING PLAN

E-201-TI

Z:\PROJ\2\12224\DWG\12224-E201_LP1.DWG Wednesday, May 22, 2013 11:48:27 AM -- rHelix

KEY NOTES:

1. FIXTURE "F15" AT THIS LOCATION TO BE VERTICAL BANDS AT DIFFERENT LENGTHS WITH ILLUMINATED INSIDE CORNERS FROM WALL TO CEILING. SEE ARCHITECTURAL ELEVATION FOR MORE INFORMATION.
2. PATENT WALL TO BE EVENLY ILLUMINATED FROM 3 FEET BELOW THE CEILING TO CEILING. PROVIDE AN ALLOWANCE FOR THIS DESIGN.
3. LIGHT FIXTURE TO BE INSTALLED UNDER SHELL PERMIT.
4. MAKE ELECTRICAL CONNECTION TO LIGHT FIXTURES PROVIDED INTEGRAL AS PART OF THE COLD ROOM ASSEMBLY, COORDINATE WITH COLD ROOM SHOP DRAWINGS.
5. PLUG TYPE F22 LIGHT FIXTURES INTO SWITCHED LIGHTING OUTLET, REFER TO POWER PLAN.

GENERAL NOTES:

1. COORDINATE LIGHT FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS.

1 SECOND FLOOR LIGHITNG PLAN
1/8" = 1'-0"

REF. NORTH

CONSULTANTS

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PROJECT

ADDRESS

PROJECT NO. 12137

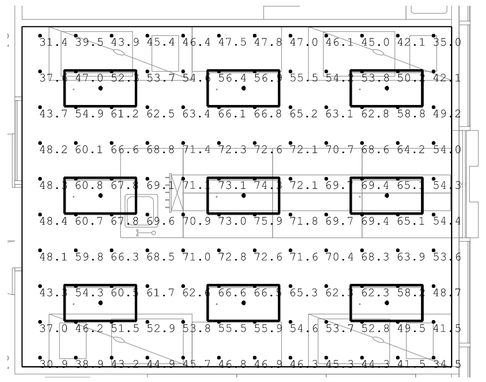
SCALE As indicated

TITLE

SECOND FLOOR LIGHTING PLAN

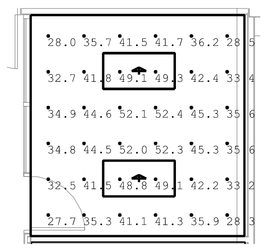
E-202-TI

Z:\PROJ12\12224\DWG\12224-E202_LP2.DWG Wednesday, May 22, 2013 11:48:41 AM - rfelix



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Syn Gas_Workplane	Illuminance	Fc	57.03	75.9	30.9	1.85	2.46

3 SYN GAS ROOM 245 CALCULATION
1/4" = 1'-0"



Calculation Summary							
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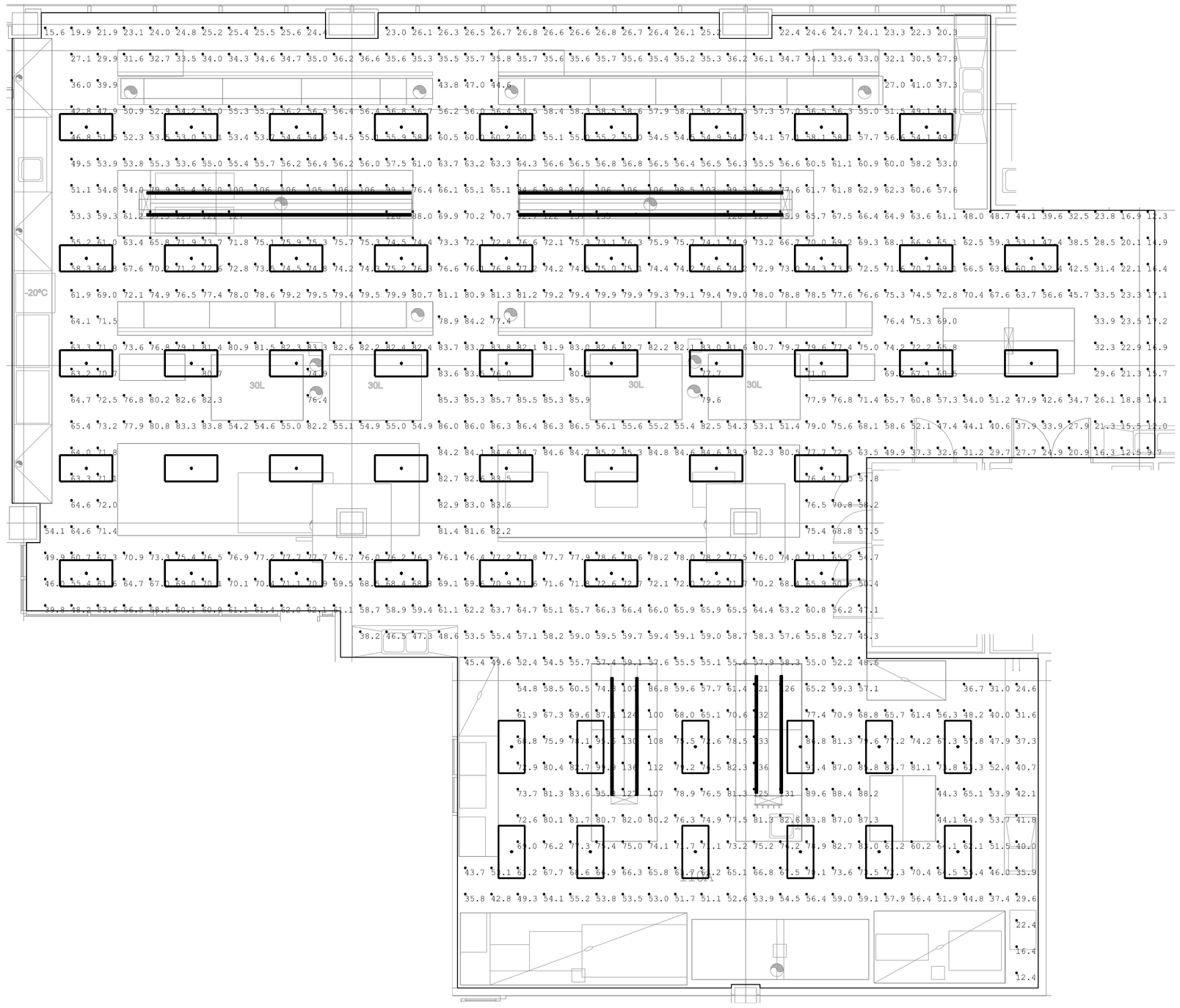
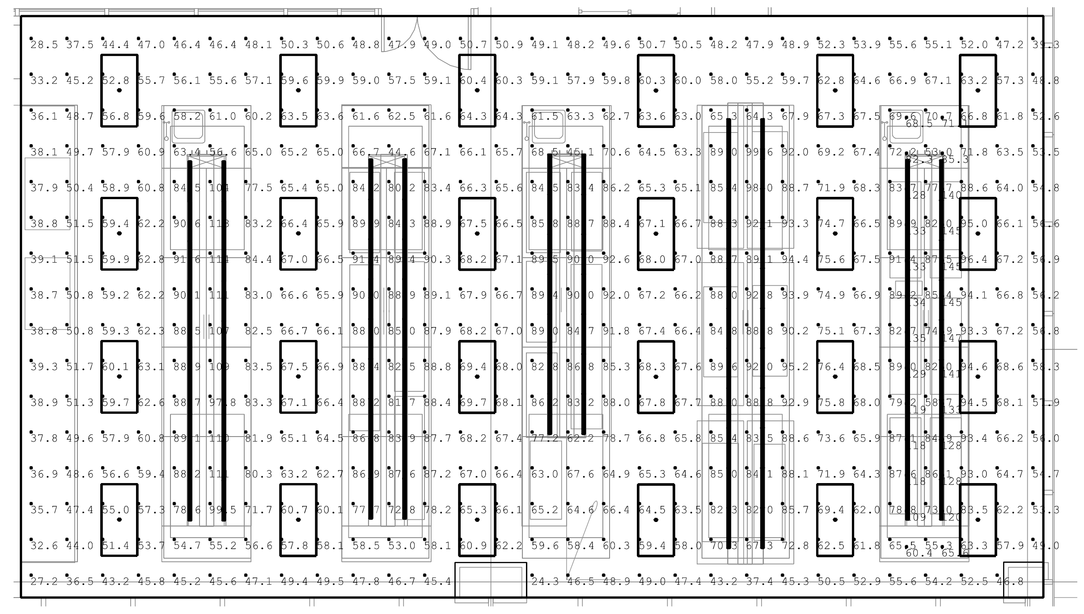
4 TYPICAL PRIVATE OFFICE
1/4" = 1'-0"



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Fermentation 110_Workplane	Illuminance	Fc	63.47	137	6.2	10.24	22.06

1 FERMENTATION ROOM 110 CALCULATION
1/4" = 1'-0"



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Analytical Instruments_Workplane	Illuminance	Fc	67.95	114	24.3	2.80	4.70
Desk (Pedestal)_2_Top_1	Illuminance	Fc	117.75	147	60.4	1.95	2.43

2 ANALYTIC INSTRUMENTS ROOM 121 CALCULATION
1/4" = 1'-0"

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PROJECT

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PROJECT NO. 12137

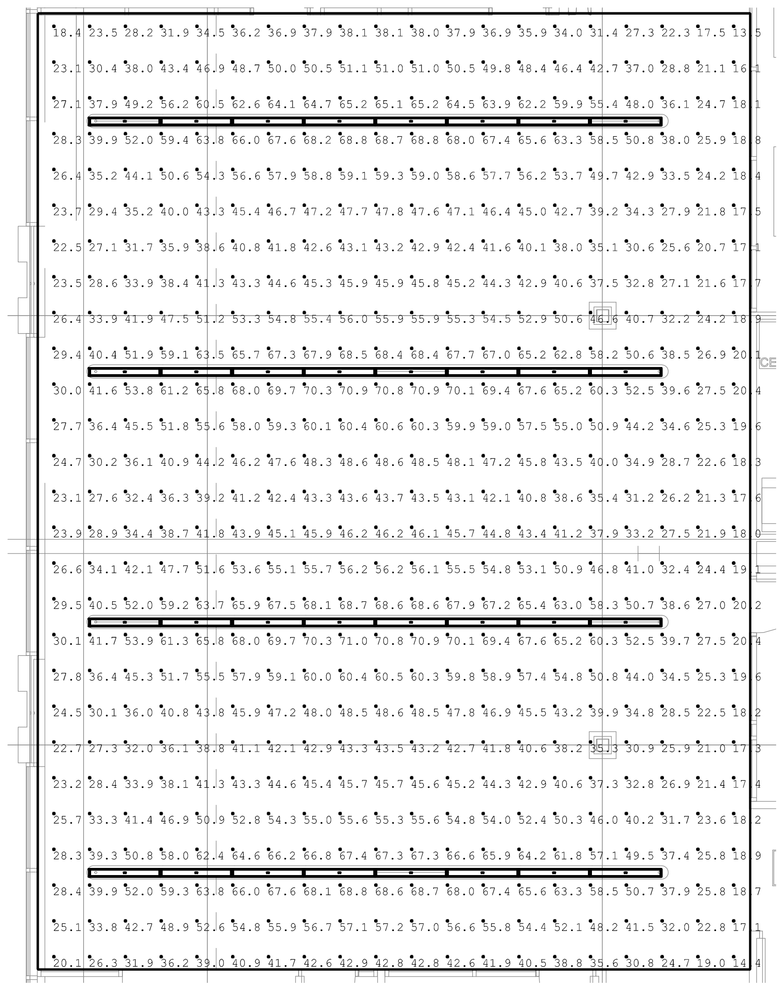
SCALE As indicated

TITLE

LIGHTING CALCULATIONS

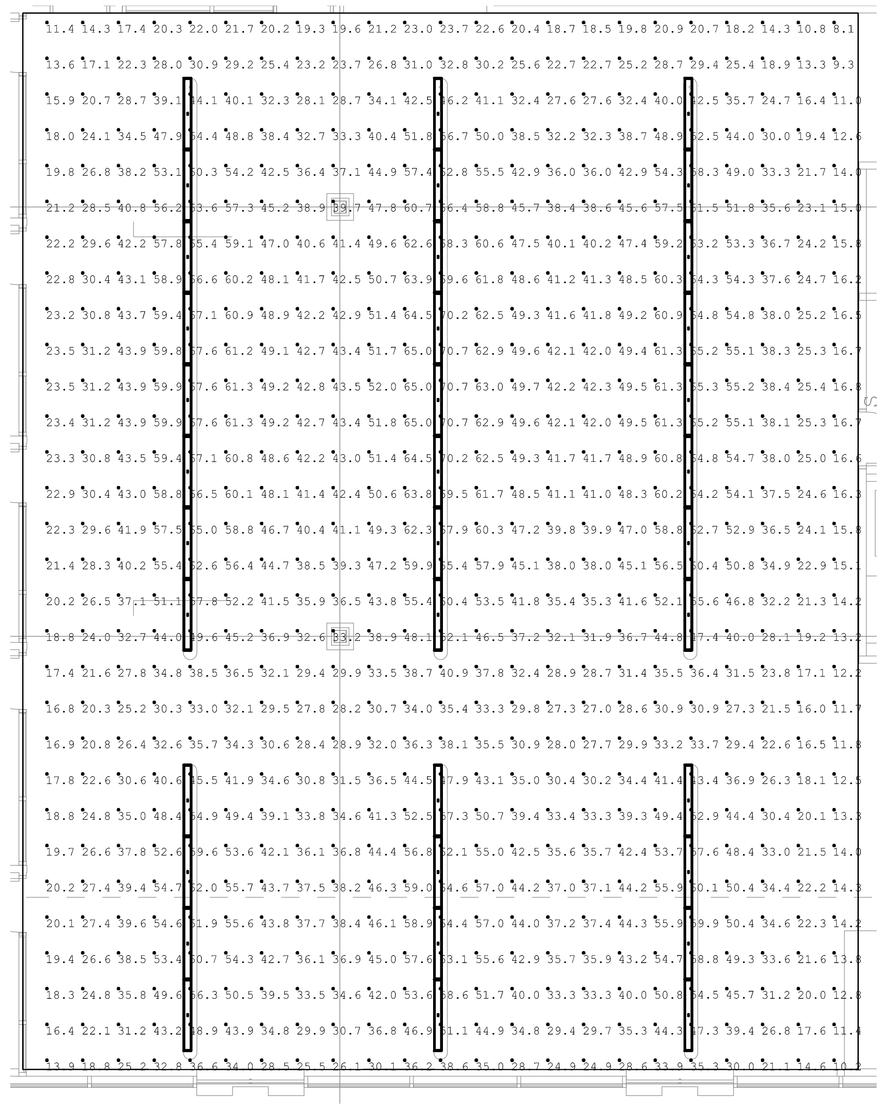
E-203-TI

Z:\PROJ12\12224\DWG\12224-E203_LP1C.DWG Wednesday, May 22, 2013 11:49:03 AM - rfelix



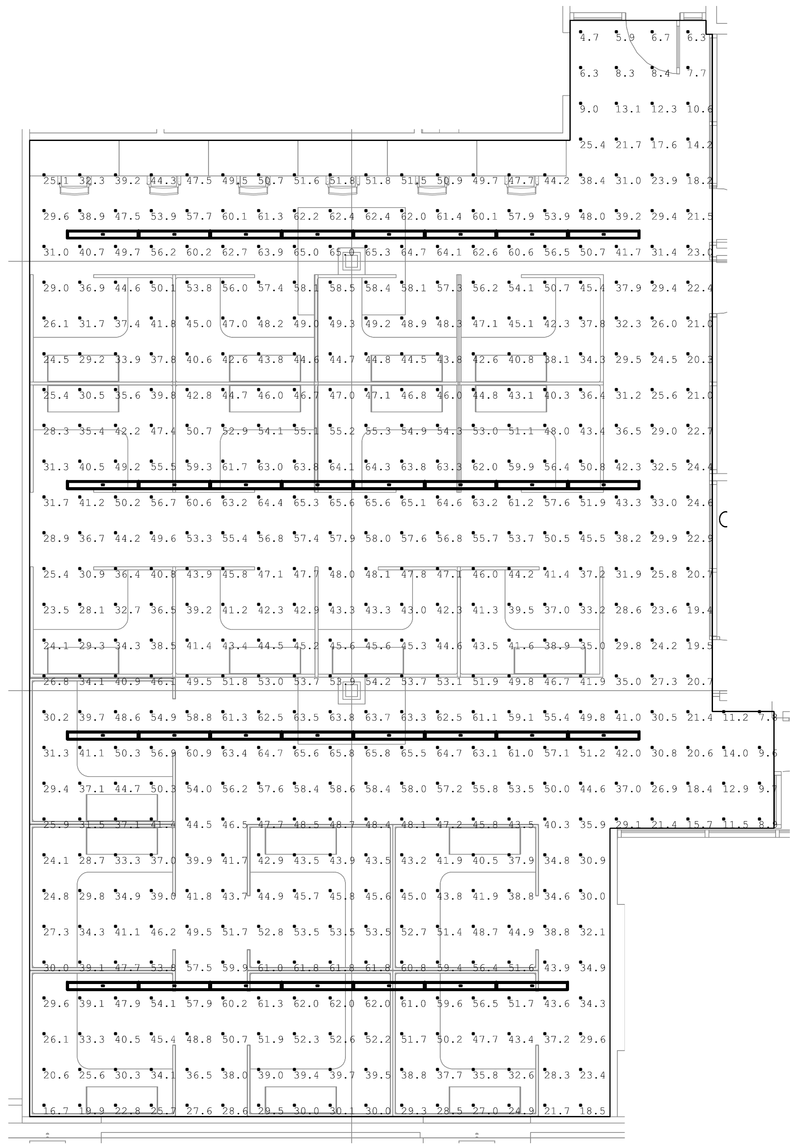
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Open Office 260_Workplane	Illuminance	Fc	44.97	71.0	13.5	3.33	5.26

2 OPEN OFFICE 260CALCULATION
1/4" = 1'-0"



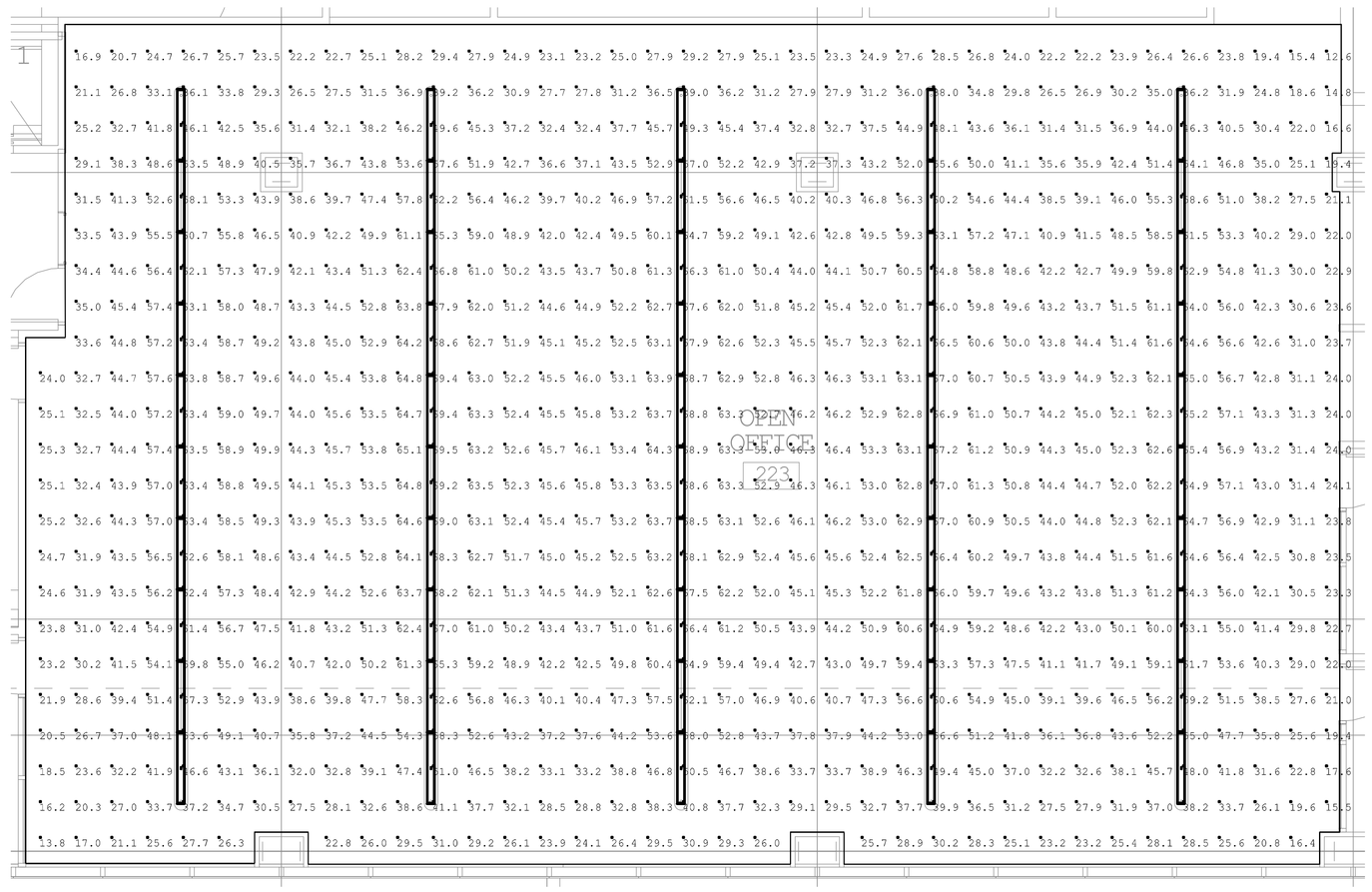
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Open office 280_Workplane	Illuminance	Fc	39.54	70.7	8.1	4.88	8.73

2 OPEN OFFICE 280 CALCULATION
1/4" = 1'-0"



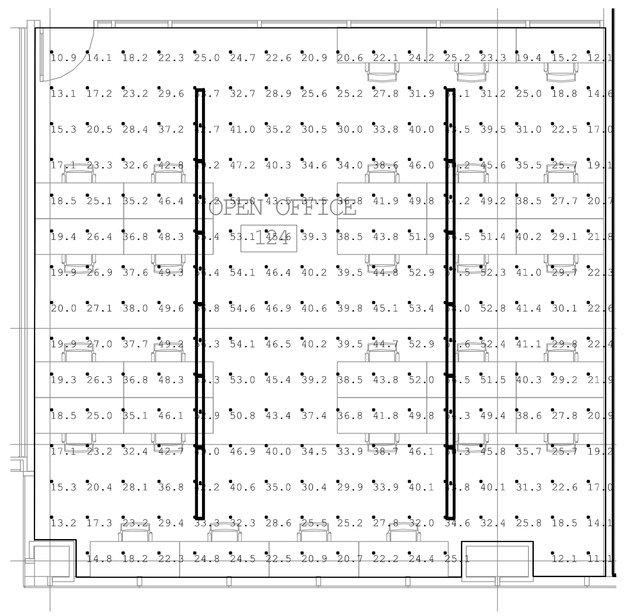
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Open Office 130_Workplane	Illuminance	Fc	42.84	65.8	4.7	9.11	14.00

4 OPEN OFFICE 130 CALCULATION
1/4" = 1'-0"



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Open Office 240_Workplane	Illuminance	Fc	45.16	69.5	12.6	3.58	5.52

2 TYPICAL OPEN OFFICE CALCULATION
1/4" = 1'-0"



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Open Office 124_Workplane	Illuminance	Fc	34.52	58.0	10.9	3.17	5.32

4 OPEN OFFICE 124 CALCULATION
1/4" = 1'-0"

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PROJECT

ADDRESS

PROJECT NO. 12137

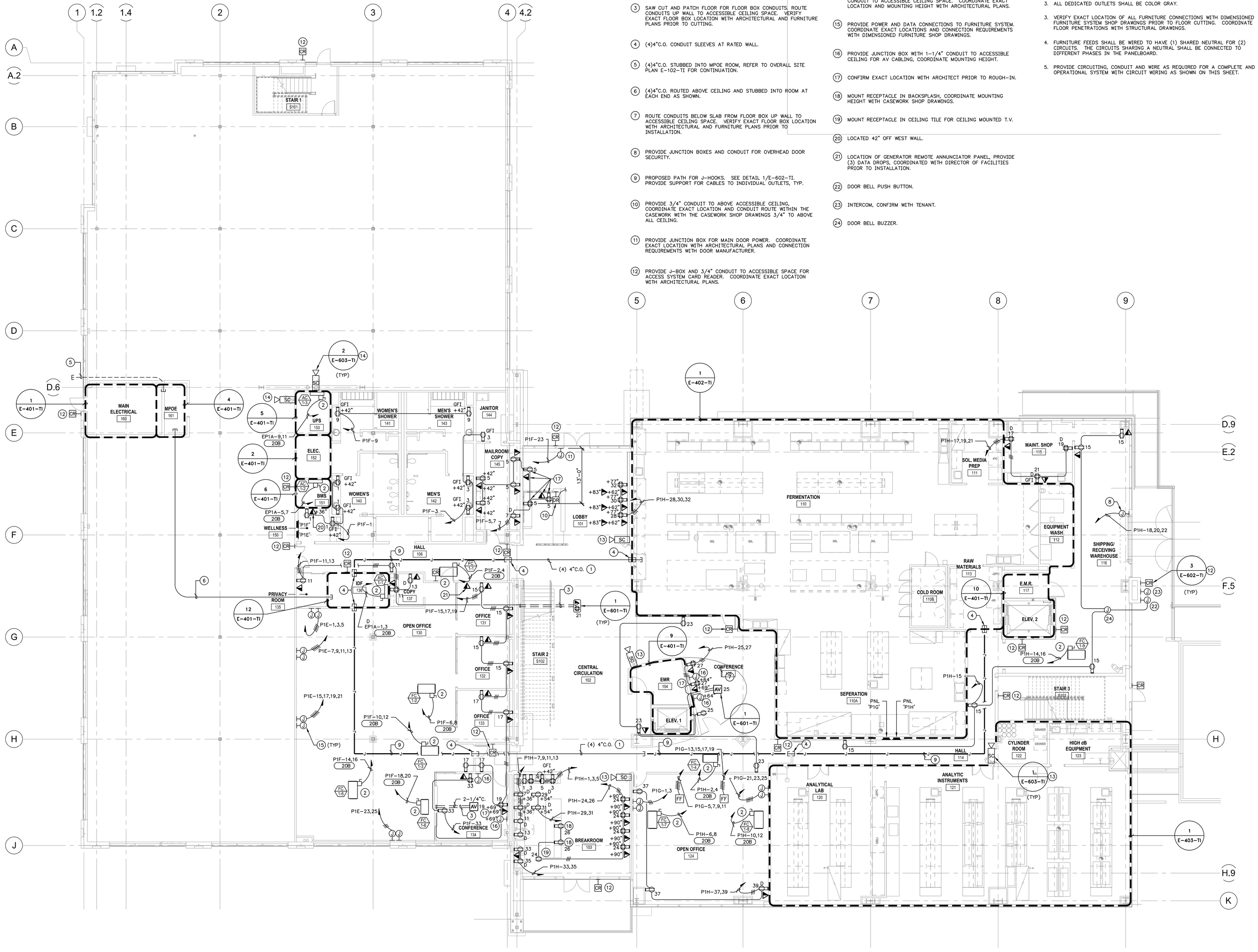
SCALE As indicated

TITLE

LIGHTING CALCULATIONS

E-204-TI

Z:\PROJ12\12224\DWG\12224-E204_LP2C.DWG Wednesday, May 22, 2013 11:49:31 AM - rmdaleck



1 FIRST FLOOR ELECTRICAL PLAN
1/8" = 1'-0"

REF. NORTH

KEY NOTES:

1. ROUTE ABOVE HARD LID CEILING.
2. NEMA 1 FRACTIONAL HORSEPOWER MANUAL MOTOR DISCONNECT, PROVIDE WITH THERMAL OVERLOADS.
3. SAW CUT AND PATCH FLOOR FOR FLOOR BOX CONDUITS. ROUTE CONDUITS UP WALL TO ACCESSIBLE CEILING SPACE. VERIFY EXACT FLOOR BOX LOCATION WITH ARCHITECTURAL AND FURNITURE PLANS PRIOR TO CUTTING.
4. (4)4"C.O. CONDUIT SLEEVES AT RATED WALL.
5. (4)4"C.O. STUBBED INTO MPOE ROOM, REFER TO OVERALL SITE PLAN E-102-TI FOR CONTINUATION.
6. (4)4"C.O. ROUTED ABOVE CEILING AND STUBBED INTO ROOM AT EACH END AS SHOWN.
7. ROUTE CONDUITS BELOW SLAB FROM FLOOR BOX UP WALL TO ACCESSIBLE CEILING SPACE. VERIFY EXACT FLOOR BOX LOCATION WITH ARCHITECTURAL AND FURNITURE PLANS PRIOR TO INSTALLATION.
8. PROVIDE JUNCTION BOXES AND CONDUIT FOR OVERHEAD DOOR SECURITY.
9. PROPOSED PATH FOR J-HOOKS. SEE DETAIL 1/E-602-TI. PROVIDE SUPPORT FOR CABLES TO INDIVIDUAL OUTLETS, TYP.
10. PROVIDE 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING, COORDINATE EXACT LOCATION AND CONDUIT ROUTE WITHIN THE CASEWORK WITH THE CASEWORK SHOP DRAWINGS 3/4" TO ABOVE ALL CEILING.
11. PROVIDE JUNCTION BOX FOR MAIN DOOR POWER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS AND CONNECTION REQUIREMENTS WITH DOOR MANUFACTURER.
12. PROVIDE J-BOX AND 3/4" CONDUIT TO ACCESSIBLE SPACE FOR ACCESS SYSTEM CARD READER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS.

KEY NOTES:

13. WALL MOUNTED SECURITY CAMERA AT 96" A.F.F., U.O.N., PROVIDE 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS.
14. EXTERIOR WALL MOUNTED SECURITY CAMERA. PROVIDE 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL PLANS.
15. PROVIDE POWER AND DATA CONNECTIONS TO FURNITURE SYSTEM. COORDINATE EXACT LOCATIONS AND CONNECTION REQUIREMENTS WITH DIMENSIONED FURNITURE SHOP DRAWINGS.
16. PROVIDE JUNCTION BOX WITH 1-1/4" CONDUIT TO ACCESSIBLE CEILING FOR AV CABLING, COORDINATE MOUNTING HEIGHT.
17. CONFIRM EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
18. MOUNT RECEPTACLE IN BACKSPLASH, COORDINATE MOUNTING HEIGHT WITH CASEWORK SHOP DRAWINGS.
19. MOUNT RECEPTACLE IN CEILING TILE FOR CEILING MOUNTED T.V.
20. LOCATED 42" OFF WEST WALL.
21. LOCATION OF GENERATOR REMOTE ANNUNCIATOR PANEL, PROVIDE (3) DATA DROPS, COORDINATED WITH DIRECTOR OF FACILITIES PRIOR TO INSTALLATION.
22. DOOR BELL PUSH BUTTON.
23. INTERCOM, CONFIRM WITH TENANT.
24. DOOR BELL BUZZER.

GENERAL NOTES:

1. ALL OUTLETS IN LAB SHALL HAVE STAINLESS STEEL COVER PLATES.
2. ALL EMERGENCY OUTLETS SHALL BE COLOR ORANGE.
3. ALL DEDICATED OUTLETS SHALL BE COLOR GRAY.
3. VERIFY EXACT LOCATION OF ALL FURNITURE CONNECTIONS WITH DIMENSIONED FURNITURE SYSTEM SHOP DRAWINGS PRIOR TO FLOOR CUTTING. COORDINATE FLOOR PENETRATIONS WITH STRUCTURAL DRAWINGS.
4. FURNITURE FEEDS SHALL BE WIRED TO HAVE (1) SHARED NEUTRAL FOR (2) CIRCUITS. THE CIRCUITS SHARING A NEUTRAL SHALL BE CONNECTED TO DIFFERENT PHASES IN THE PANELBOARD.
5. PROVIDE CIRCUITING, CONDUIT AND WIRE AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM WITH CIRCUIT WIRING AS SHOWN ON THIS SHEET.

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PROJECT NO. 12137

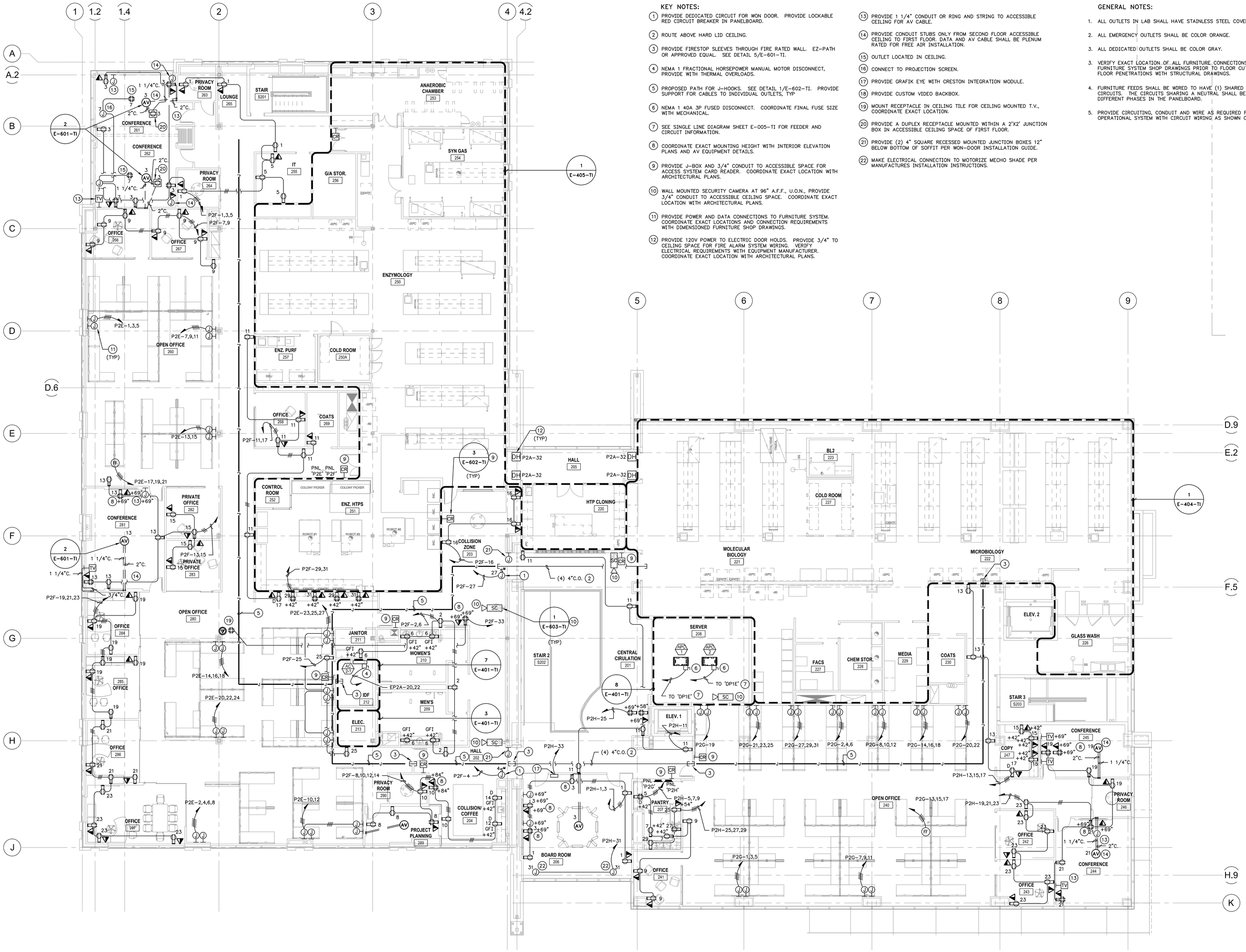
SCALE As indicated

TITLE

FIRST FLOOR POWER PLAN

E-301-TI

Z:\PROJ12\12224\DWG\12224-E301_PP1.DWG Wednesday, May 22, 2013 11:49:40 AM - rmalecek



KEY NOTES:

1. PROVIDE DEDICATED CIRCUIT FOR WON DOOR. PROVIDE LOCKABLE RED CIRCUIT BREAKER IN PANELBOARD.
2. ROUTE ABOVE HARD LID CEILING.
3. PROVIDE FIRESTOP SLEEVES THROUGH FIRE RATED WALL. EZ-PATH OR APPROVED EQUAL. SEE DETAIL 5/E-601-TI.
4. NEMA 1 FRACTIONAL HORSEPOWER MANUAL MOTOR DISCONNECT, PROVIDE WITH THERMAL OVERLOADS.
5. PROPOSED PATH FOR J-HOOKS. SEE DETAIL 1/E-602-TI. PROVIDE SUPPORT FOR CABLES TO INDIVIDUAL OUTLETS, TYP
6. NEMA 1 40A 3P FUSED DISCONNECT. COORDINATE FINAL FUSE SIZE WITH MECHANICAL.
7. SEE SINGLE LINE DIAGRAM SHEET E-005-TI FOR FEEDER AND CIRCUIT INFORMATION.
8. COORDINATE EXACT MOUNTING HEIGHT WITH INTERIOR ELEVATION PLANS AND AV EQUIPMENT DETAILS.
9. PROVIDE J-BOX AND 3/4" CONDUIT TO ACCESSIBLE SPACE FOR ACCESS SYSTEM CARD READER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS.
10. WALL MOUNTED SECURITY CAMERA AT 96" A.F.F., U.O.N., PROVIDE 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS.
11. PROVIDE POWER AND DATA CONNECTIONS TO FURNITURE SYSTEM. COORDINATE EXACT LOCATIONS AND CONNECTION REQUIREMENTS WITH DIMENSIONED FURNITURE SHOP DRAWINGS.
12. PROVIDE 120V POWER TO ELECTRIC DOOR HOLDS. PROVIDE 3/4" TO CEILING SPACE FOR FIRE ALARM SYSTEM WIRING. VERIFY ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS.
13. PROVIDE 1 1/4" CONDUIT OR RING AND STRING TO ACCESSIBLE CEILING FOR AV CABLE.
14. PROVIDE CONDUIT STUBS ONLY FROM SECOND FLOOR ACCESSIBLE CEILING TO FIRST FLOOR. DATA AND AV CABLE SHALL BE PLENUM RATED FOR FREE AIR INSTALLATION.
15. OUTLET LOCATED IN CEILING.
16. CONNECT TO PROJECTION SCREEN.
17. PROVIDE GRAFIK EYE WITH CRESTON INTEGRATION MODULE.
18. PROVIDE CUSTOM VIDEO BACKBOX.
19. MOUNT RECEPTACLE IN CEILING TILE FOR CEILING MOUNTED T.V., COORDINATE EXACT LOCATION.
20. PROVIDE A DUPLEX RECEPTACLE MOUNTED WITHIN A 2'X2' JUNCTION BOX IN ACCESSIBLE CEILING SPACE OF FIRST FLOOR.
21. PROVIDE (2) 4" SQUARE RECESSED MOUNTED JUNCTION BOXES 12" BELOW BOTTOM OF SOFFIT PER WON-DOOR INSTALLATION GUIDE.
22. MAKE ELECTRICAL CONNECTION TO MOTORIZE MECHO SHADE PER MANUFACTURES INSTALLATION INSTRUCTIONS.

GENERAL NOTES:

1. ALL OUTLETS IN LAB SHALL HAVE STAINLESS STEEL COVER PLATES.
2. ALL EMERGENCY OUTLETS SHALL BE COLOR ORANGE.
3. ALL DEDICATED OUTLETS SHALL BE COLOR GRAY.
3. VERIFY EXACT LOCATION OF ALL FURNITURE CONNECTIONS WITH DIMENSIONED FURNITURE SYSTEM SHOP DRAWINGS PRIOR TO FLOOR CUTTING. COORDINATE FLOOR PENETRATIONS WITH STRUCTURAL DRAWINGS.
4. FURNITURE FEEDS SHALL BE WIRED TO HAVE (1) SHARED NEUTRAL FOR (2) CIRCUITS. THE CIRCUITS SHARING A NEUTRAL SHALL BE CONNECTED TO DIFFERENT PHASES IN THE PANELBOARD.
5. PROVIDE CIRCUITING, CONDUIT AND WIRE AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM WITH CIRCUIT WIRING AS SHOWN ON THIS SHEET.

1 SECOND FLOOR ELECTRICAL PLAN
1/8" = 1'-0"

REF. NORTH

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PROJECT NO. 12137

SCALE As indicated

TITLE

SECOND FLOOR POWER PLAN

E-302-TI

Z:\PROJ12\1222A\DWG\1222A-E302_PP2.DWG Wednesday, May 22, 2013 11:49:51 AM - rmalecek

GENERAL NOTES:

1. PROVIDE LIQUIDTIGHT FINAL CONNECTION TO MECHANICAL UNIT.
2. COORDINATE FINAL LOCATION OF ALL ELECTRICAL FEED LOCATIONS WITH MECHANICAL. ROOF PENETRATIONS TO BE LOCALIZED TO FEED LOCATIONS. ROOF MOUNTED CONDUIT AND WOODEN SLEEPER ARE NOT TO BE INSTALLED.
3. ALL STARTERS ARE FULL VOLTAGE, NON-REVERSING UNLESS NOTED OTHERWISE. STARTERS TO BE PROVIDED WITH HOA, AND 24V CONTROL TRANSFORMER.
4. ROUTE ALL ELECTRICAL CONDUIT TIGHT TO UNDERSIDE OF ROOF. EXPOSED ROOF MOUNTED CONDUIT WILL NOT BE ACCEPABLE.

SHEET KEY NOTES:

1. NEMA 3R 30A 3P COMBINATION STARTER/FUSIBLE DISCONNECT. COORDINATE FINAL HEATER, STARTER AND FUSE SIZE WITH MECHANICAL.
2. PROVIDE UNIT CONNECTION TO VARIABLE FREQUENCY DRIVE UNIT. VFD PROVIDED BY MECHANICAL, INSTALLED BY MECHANICAL, WIRED BY ELECTRICAL.
3. PROVIDE AND INSTALL WEATHERPROOF GFI WORK OUTLET WITHIN 25' OF MECHANICAL EQUIPMENT.
4. PROVIDE ROOF WALL MOUNTED AREA WORK LIGHTING. COORDINATE MOUNTING LOCATION WITH ARCHITECTURAL PLANS.
5. PROVIDE 120V CONNECTION TO B-1, B-2 CONTROLS.
6. NEMA 3R FRACTIONAL HORSEPOWER COMBINATION STARTER/DISCONNECT, PROVIDE WITH THERMAL OVERLOADS.
7. NEMA 3R 30A 2P FUSED DISCONNECT. COORDINATE FINAL FUSE SIZE WITH MECHANICAL.
8. NEMA 3R 60A 3P FUSED DISCONNECT. COORDINATE FINAL FUSE SIZE WITH MECHANICAL.
9. NEMA 3R 30A 3P FUSED DISCONNECT. COORDINATE FINAL FUSE SIZE WITH MECHANICAL.
10. NEMA 3R 60A 2P FUSED DISCONNECT. COORDINATE FINAL FUSE SIZE WITH MECHANICAL.
11. CONNECT ELECTRICAL FEED TO INTEGRAL VFD/DISCONNECT SWITCH PROVIDED WITH AIR HANDLER.
12. MAKE ELECTRICAL CONNECTION TO COLD ROOM CONDENSING UNIT, COORDINATE REQUIREMENTS AND EXACT LOCATION WITH COLD ROOM SHOP DRAWINGS.
13. SEE SINGLE LINE DIAGRAM SHEET E-005-TI FOR CIRCUIT AND FEEDER INFORMATION.
14. PROVIDE 120V CONNECTION TO HVAC CONTROL PANEL. COORDINATE INSTALLATION AND EXACT LOCATION WITH MECHANICAL.

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

REF. NORTH

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ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

ROOF POWER PLAN

E-303-TI

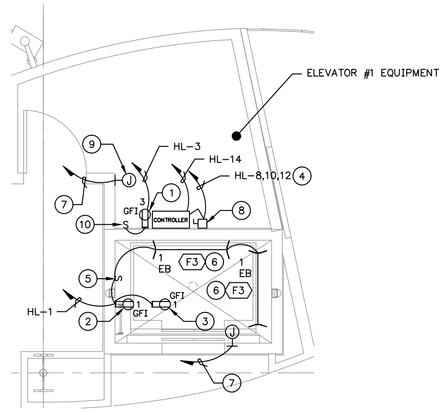
Z:\PROJ12\12224\DWG\12224-E303_RP1.DWG Wednesday, May 22, 2013 11:49:58 AM — rmalecek

KEY NOTES:

1. DUPLEX GFI OUTLET IN ELEVATOR MACHINE ROOM. LOCATE PER MANUFACTURE AND CODE REQUIREMENTS.
2. DUPLEX GFI OUTLET AT BASE OF ELEVATOR SHAFT FOR MAINTENANCE POWER. LOCATE PER MANUFACTURER AND CODE REQUIREMENTS.
3. DUPLEX GFI OUTLET MOUNTED HALFWAY UP ELEVATOR SHAFT WHERE REQUIRED BY MANUFACTURER AND CODE.
4. ELEVATOR POWER VIA SHUNT-TRIP BREAKER.
5. MANUFACTURER APPROVED SWITCH IN ELEVATOR PIT FOR LIGHT FIXTURES.
6. WALL MOUNTED FIXTURE IN ELEVATOR PIT PER MANUFACTURER AND CODE REQUIREMENTS. CIRCUIT THROUGH GFI OUTLET AT BASE OF ELEVATOR PIT.
7. ROUTE 3/4" C.O TO TELEPHONE BACKBOARD.
8. COORDINATE LOCATION OF DISCONNECT SWITCH FOR MOTOR CONNECTION WITH MANUFACTURE AND CODE REQUIREMENTS. VERIFY FUSE SIZE AND RATING PRIOR TO INSTALLATION. MINIMUM DISCONNECT SWITCH RATING OF 100A, 3P. PROVIDE AUXILIARY CONTACTS (1 NO/ 1 NC) AND INTERCONNECT TO ELEVATOR DC BATTERY LOWERING SYSTEM.
9. PROVIDE AND INSTALL JUNCTION BOX FOR ELEVATOR CAB TELEPHONE CONNECTION. COORDINATE ROUTING WITH MANUFACTURE.
10. PROVIDE AND INSTALL WALL SWITCH WITH LOCKING DEVICE FOR ELEVATOR CAB POWER AND LIGHTING REQUIREMENTS. VERIFY REQUIREMENTS WITH MANUFACTURE.

GENERAL NOTES:

1. VERIFY ALL ELEVATOR POWER, CONTROL, AND COMMUNICATION REQUIREMENTS WITH ELEVATOR SHOP DRAWINGS PRIOR TO INSTALLATION.



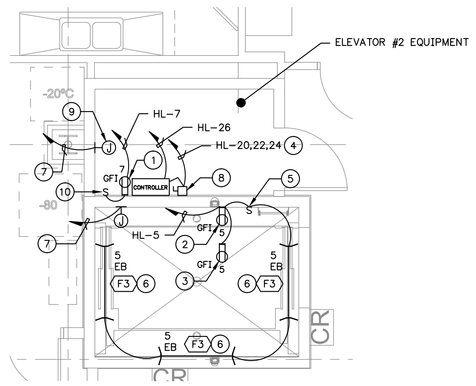
9 ELEVATOR #1 AND MACHINE ROOM 104
1/4" = 1'-0"
REF. NORTH

KEY NOTES:

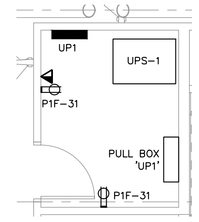
1. DUPLEX GFI OUTLET IN ELEVATOR MACHINE ROOM. LOCATE PER MANUFACTURE AND CODE REQUIREMENTS.
2. DUPLEX GFI OUTLET AT BASE OF ELEVATOR SHAFT FOR MAINTENANCE POWER. LOCATE PER MANUFACTURER AND CODE REQUIREMENTS.
3. DUPLEX GFI OUTLET MOUNTED HALFWAY UP ELEVATOR SHAFT WHERE REQUIRED BY MANUFACTURER AND CODE.
4. ELEVATOR POWER VIA SHUNT TRIP BREAKER.
5. MANUFACTURER APPROVED SWITCH IN ELEVATOR PIT FOR LIGHT FIXTURES.
6. WALL MOUNTED FIXTURE IN ELEVATOR PIT PER MANUFACTURER AND CODE REQUIREMENTS. CIRCUIT THROUGH GFI OUTLET AT BASE OF ELEVATOR PIT.
7. ROUTE 3/4" C.O TO TELEPHONE BACKBOARD.
8. COORDINATE LOCATION OF DISCONNECT SWITCH FOR MOTOR CONNECTION WITH MANUFACTURE AND CODE REQUIREMENTS. VERIFY FUSE SIZE AND RATING PRIOR TO INSTALLATION. MINIMUM DISCONNECT SWITCH RATING OF 100A, 3P. PROVIDE AUXILIARY CONTACTS (1 NO/ 1 NC) AND INTERCONNECT TO ELEVATOR DC BATTERY LOWERING SYSTEM.
9. PROVIDE AND INSTALL JUNCTION BOX FOR ELEVATOR CAB TELEPHONE CONNECTION. COORDINATE ROUTING WITH MANUFACTURE.
10. PROVIDE AND INSTALL WALL SWITCH WITH LOCKING DEVICE FOR ELEVATOR CAB POWER AND LIGHTING REQUIREMENTS. VERIFY REQUIREMENTS WITH MANUFACTURE.

GENERAL NOTES:

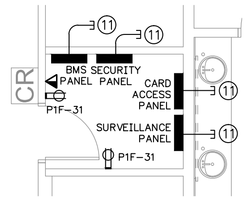
1. VERIFY ALL ELEVATOR POWER, CONTROL, AND COMMUNICATION REQUIREMENTS WITH ELEVATOR SHOP DRAWINGS PRIOR TO INSTALLATION.



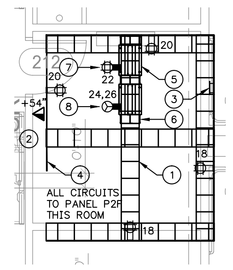
10 ELEVATOR #2 AND MACHINE ROOM 117
1/4" = 1'-0"
REF. NORTH



5 FIRST FLOOR UPS ROOM 153
1/4" = 1'-0"
REF. NORTH

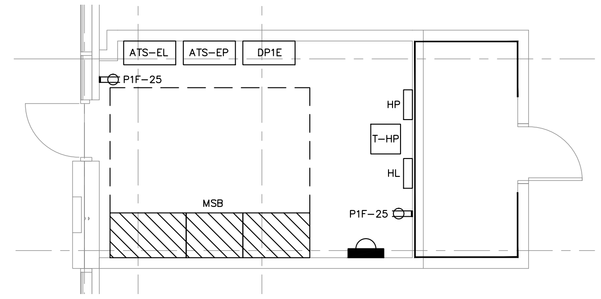


6 FIRST FLOOR BMS ROOM 151
1/4" = 1'-0"
REF. NORTH

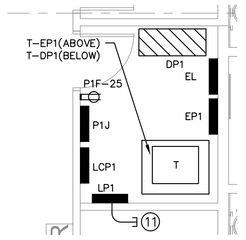


KEY NOTES:

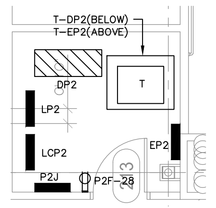
1. NOT USED.
2. 12"W LADDER RACK MOUNTED AT 7'-6" A.F.F.
3. FIRE STOP FITTING TO CABLE TRAY OUTSIDE OF ROOM.
4. 2" X 24" X 1/4" GROUND BUS BAR.
5. 3/4" PLYWOOD WITH WHITE FIRE RETARDANT PAINT ON ALL WALLS FROM FLOOR TO 9'-0" AFF.
6. 19"W X 84"H TELECOMMUNICATIONS RACK WITH WIRE MANAGER.
7. 10"W X 84"H DOUBLE SIDED VERTICAL WIRE MANAGER.
8. 120V/20A QUAD RECEPTACLE MOUNTED RECEPTACLE TO LADDER RACK ABOVE EQUIPMENT RACK.
9. 208V/20A QUAD RECEPTACLE MOUNTED RECEPTACLE TO LADDER RACK ABOVE EQUIPMENT RACK.

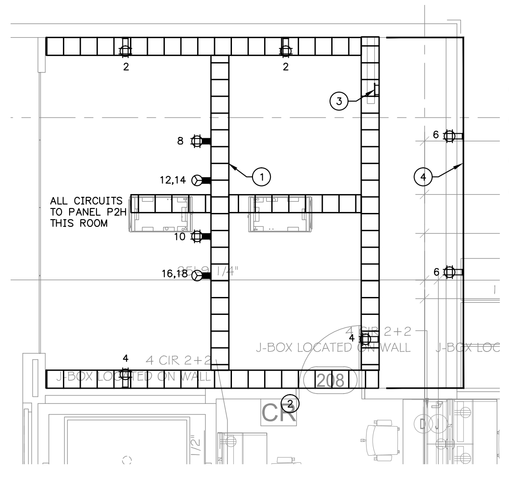


1 MAIN ELECTRICAL ROOM 160
1/4" = 1'-0"
REF. NORTH



2 FIRST FLOOR ELECTRICAL ROOM 152
1/4" = 1'-0"
REF. NORTH

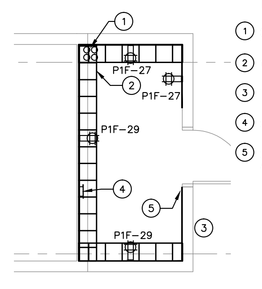




KEY NOTES:

1. 12"W LADDER RACK MOUNTED AT 7'-6" A.F.F.
2. FIRE STOP FITTING TO CABLE TRAY OUTSIDE OF ROOM.
3. 2" X 24" X 1/4" GROUND BUS BAR.
4. 3/4" PLYWOOD WITH WHITE FIRE RETARDANT PAINT ON ALL WALLS FROM FLOOR TO 9'-0" AFF.

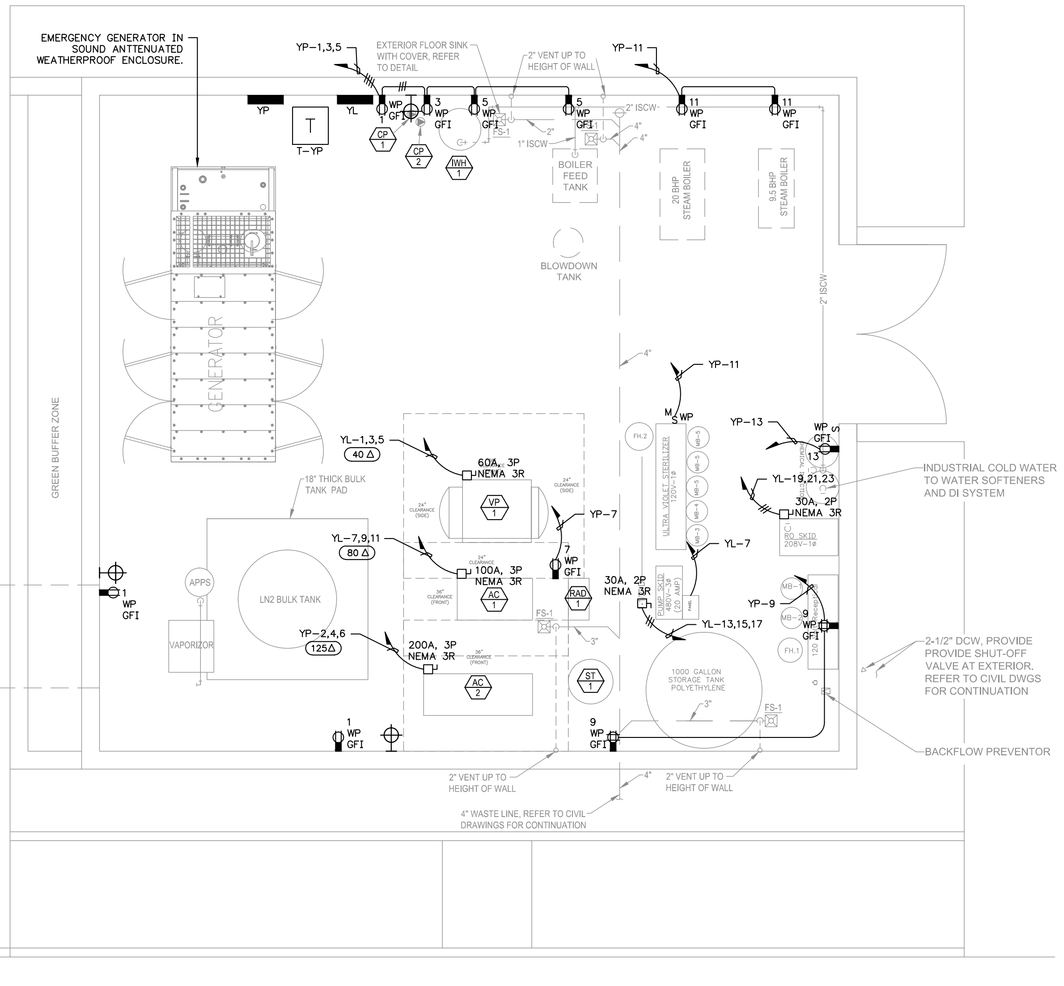
8 SERVER ROOM 207
1/4" = 1'-0"
REF. NORTH



KEY NOTES:

1. (4)4" CONDUIT STUBS FROM SITE.
2. 12"W LADDER RACK MOUNTED AT 7'-6" A.F.F.
3. FIRE STOP FITTING TO CABLE TRAY OUTSIDE OF ROOM.
4. 2" X 24" X 1/4" GROUND BUS BAR.
5. 3/4" PLYWOOD WITH WHITE FIRE RETARDANT PAINT ON ALL WALLS FROM FLOOR TO 9'-0" AFF.

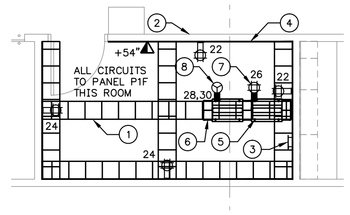
4 FIRST FLOOR MPOE ROOM 161
1/4" = 1'-0"
REF. NORTH



11 EQUIPMENT YARD
1/4" = 1'-0"
REF. NORTH

KEY NOTES:

1. 12"W LADDER RACK MOUNTED AT 7'-6" A.F.F.
2. FIRE STOP FITTING TO CABLE TRAY OUTSIDE OF ROOM.
3. 2" X 24" X 1/4" GROUND BUS BAR.
4. 3/4" PLYWOOD WITH WHITE FIRE RETARDANT PAINT ON ALL WALLS FROM FLOOR TO 9'-0" AFF.
5. 19"W X 84"H TELECOMMUNICATIONS RACK WITH WIRE MANAGER.
6. 10"W X 84"H DOUBLE SIDED VERTICAL WIRE MANAGER.
7. 120V/20A QUAD RECEPTACLE MOUNTED RECEPTACLE TO LADDER RACK ABOVE EQUIPMENT RACK.
8. 208V/20A QUAD RECEPTACLE MOUNTED RECEPTACLE TO LADDER RACK ABOVE EQUIPMENT RACK.



12 FIRST FLOOR IDF ROOM 136
1/4" = 1'-0"
REF. NORTH

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

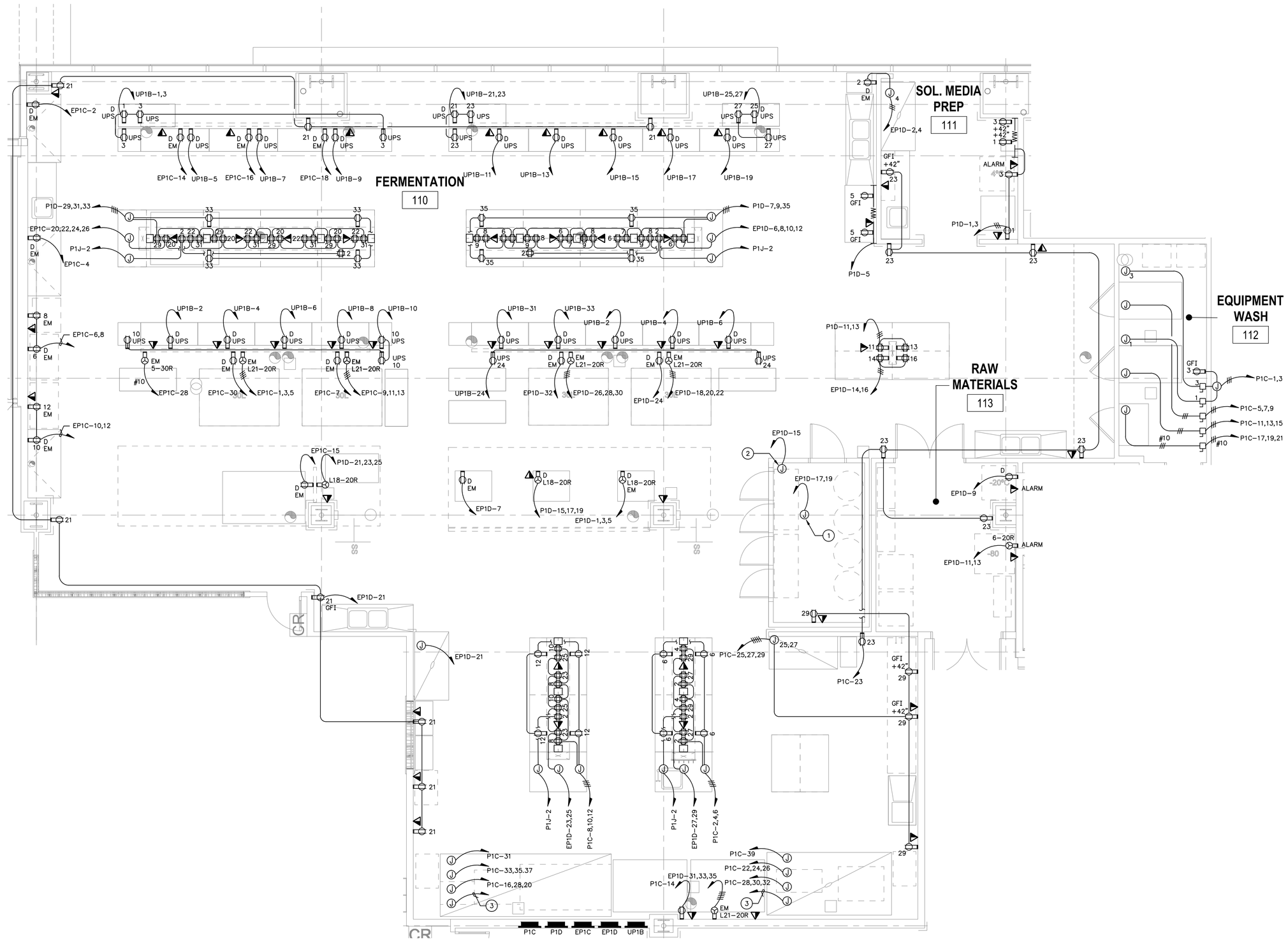
SCALE As indicated

TITLE

ENLARGED PLANS

E-401-TI

Z:\PROJ12\1224\DWG\1224-E401_EP1.DWG Wednesday, May 22, 2013 11:50:21 AM - rmolecek



KEY NOTES:

1. MAKE ELECTRICAL CONNECTION TO FAN COIL PROVIDED INTEGRAL AS PART OF THE COLD ROOM ASSEMBLY. COORDINATE WITH COLD ROOM SHOP DRAWINGS.
2. PROVIDE 120V, 20A SINGLE POINT CONNECTION FOR COLD ROOM CONTROLS AND LIGHTING.
3. PROVIDE 1" SPARE CONDUIT TO PANELBOARD 'EP1D'.

GENERAL NOTES:

1. ALL OUTLETS IN LAB SHALL HAVE STAINLESS STEEL COVER PLATES.
2. ALL EMERGENCY OUTLETS SHALL BE COLOR ORANGE.
3. ALL DEDICATED OUTLETS SHALL BE COLOR GREY.

1 ENLARGED LABORATORY PLAN
1/4" = 1'-0"

REF. NORTH

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PROJECT NO. 12137

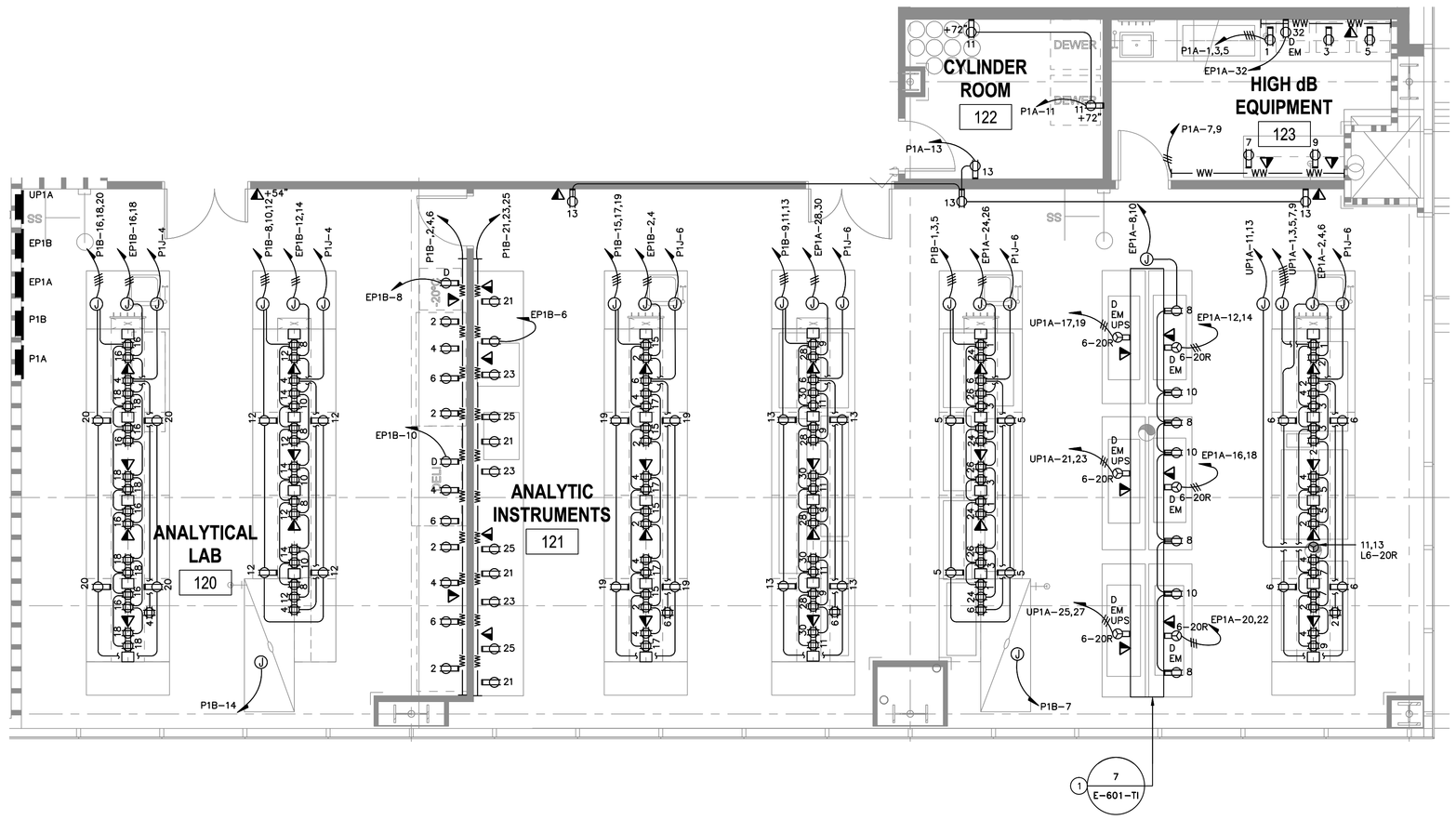
SCALE As indicated

TITLE

ENLARGED LABORATORY PLAN

E-402-TI

Z:\PROJ\2\1224\DWG\1224-E402_EP2.DWG Wednesday, May 22, 2013 11:50:31 AM - rmaleek



KEY NOTES:

1. OVERHEAD SERVICE CARRIER.
2. MOUNT ABOVE RACEWAY.

GENERAL NOTES:

1. ALL OUTLETS IN LAB SHALL HAVE STAINLESS STEEL COVER PLATES.
2. ALL EMERGENCY OUTLETS SHALL BE COLOR ORANGE.
3. ALL DEDICATED OUTLETS SHALL BE COLOR GREY.

1 ENLARGED LABORATORY PLAN
1/4" = 1'-0"

REF. NORTH

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PROJECT NO. 12137

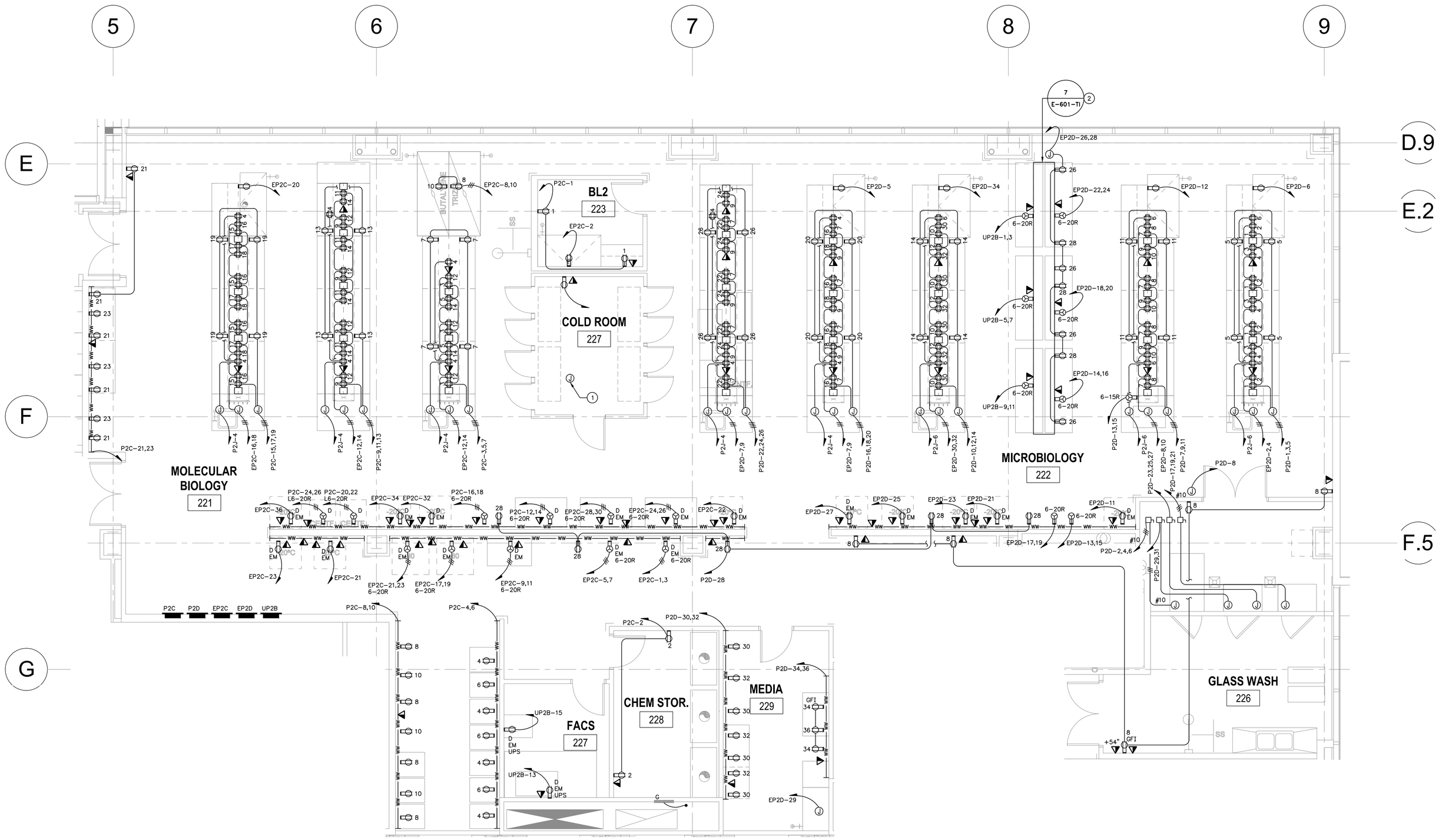
SCALE As indicated

TITLE

ENLARGED LABORATORY PLAN

E-403-TI

Z:\PROJ12\12224\DWG\12224-E403_EP3.DWG Wednesday, May 22, 2013 11:50:40 AM - rmalecek



KEY NOTES:

1. MAKE ELECTRICAL CONNECTION TO FAN COIL PROVIDED INTEGRAL AS PART OF THE COLD ROOM ASSEMBLY. COORDINATE WITH COLD ROOM SHOP DRAWINGS.
2. OVERHEAD SERVICE CARRIER.

GENERAL NOTES:

1. ALL OUTLETS IN LAB SHALL HAVE STAINLESS STEEL COVER PLATES.
2. ALL EMERGENCY OUTLETS SHALL BE COLOR ORANGE.
3. ALL DEDICATED OUTLETS SHALL BE COLOR GREY.

1 ENLARGED LABORATORY PLAN
1/4" = 1'-0"

REF. NORTH

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

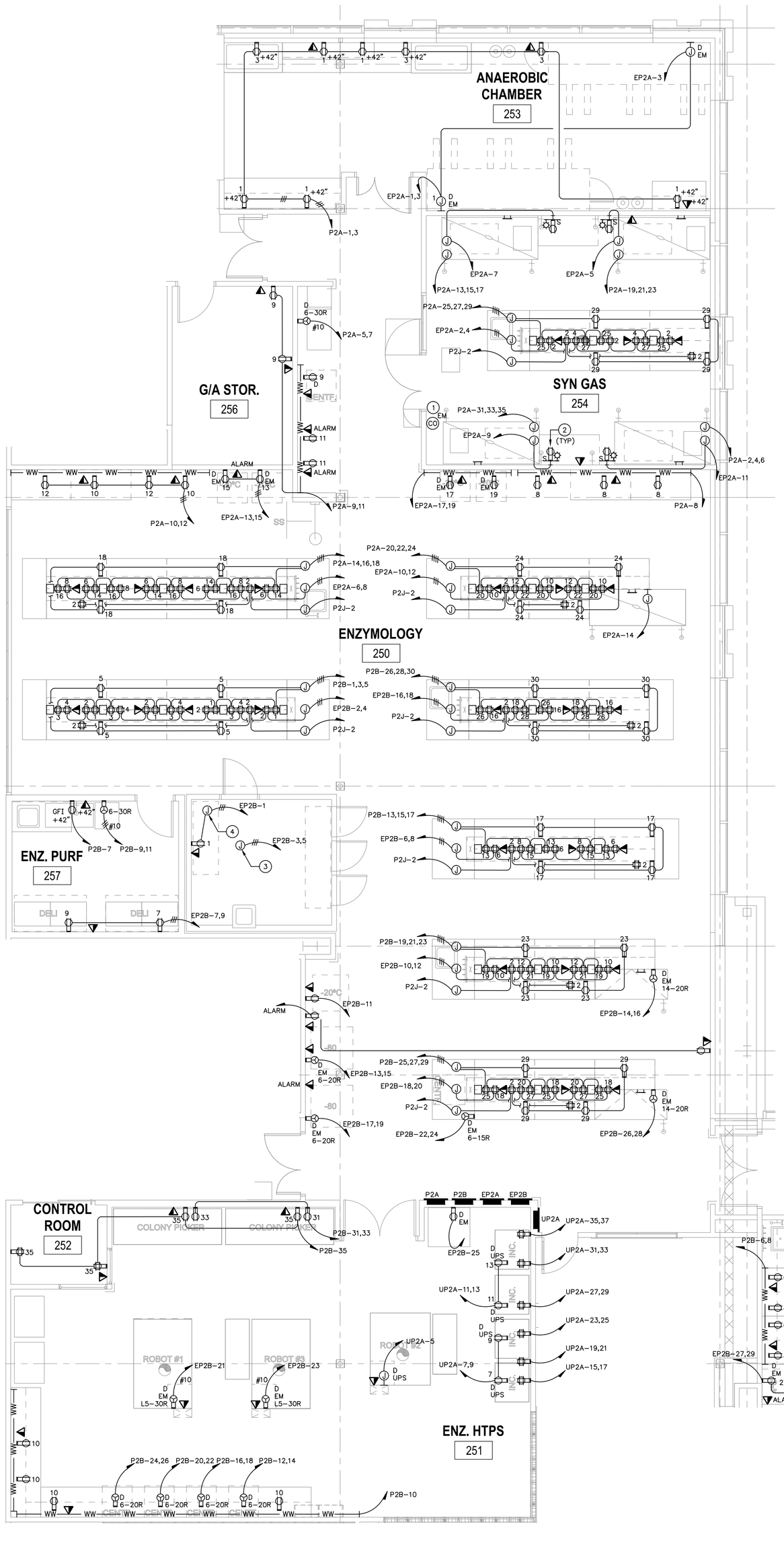
SCALE As indicated

TITLE

ENLARGED LABORATORY PLAN

E-404-TI

Z:\PROJ12\12224\DWG\12224-E404_EP4.DWG Wednesday, May 22, 2013 11:50:53 AM — rmalecek



1 ENLARGED LABORATORY PLAN
1/4" = 1'-0"

REF. NORTH

KEY NOTES:

1. PROVIDE CARBON MONOXIDE DETECTOR WITH CONNECTION TO FIRE ALARM SYSTEM. CONNECT TO EMERGENCY POWER. VERIFY EXACT LOCATION WITH ARCHITECTURAL PLANS.
2. PROVIDE OUTLET WITH LIGHT SWITCH AND PILOT LIGHT. VERIFY MOUNTING HEIGHT WITH ARCHITECTURAL PLANS.
3. MAKE ELECTRICAL CONNECTION TO FAN COIL PROVIDED INTEGRAL AS PART OF THE COLD ROOM ASSEMBLY; COORDINATE WITH COLD ROOM SHOP DRAWINGS.
4. PROVIDE 120V, 20A SINGLE POINT CONNECTION FOR COLD ROOM CONTROLS AND LIGHTING.

GENERAL NOTES:

1. ALL OUTLETS IN LAB SHALL HAVE STAINLESS STEEL COVER PLATES.
2. ALL EMERGENCY OUTLETS SHALL BE COLOR ORANGE.
3. ALL DEDICATED OUTLETS SHALL BE COLOR GREY.

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. 12137

SCALE As indicated

TITLE

ENLARGED LABORATORY PLAN

E-405-TI

Z:\PROJ\12\1224\DWG\1224-E405_EP5.DWG Wednesday, May 22, 2013 11:51:06 AM - rmaleek

PANEL: H12 | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: MLO | BUS AMPACITY: 225A | 22,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
		SPARE	1	23	1			432	2	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	23	3			252	4	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	23	5			720	6	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	23	7				8	20	2	SPARE		
		SPARE	1	23	9				10	20	2	SPARE		
		SPARE	1	23	11				12	20	1	SPARE		
		SPACE			13				14			SPACE		
		SPACE			15				16			SPACE		
		SPACE			17				18			SPACE		
					19				20					
					21				22					
					23				24					
					25				26					
					27				28					
					29				30					
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
		SUBTOTAL (VA)				0	0	432	252	720		SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		1,404				432		252	720			4		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	0 VA	1.00	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	1,404 VA	1.25	1755 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY
1,404 VA
4 AMPS

NEC DEMAND LOAD SUMMARY
1,755 VA
5 AMPS

NOTES:

PANEL: H1E | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: FEED THRU LUGS | BUS AMPACITY: 225A | 22,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	R	SYSTEM FURNITURE	1	20	1	500			2	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	3		1,000		4	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	5			1,000	6	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	7	1,000			8	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	9		1,000		10	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	11			1,000	12	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	13	1,000			14	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	15		1,000		16	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	17			1,000	18	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	19	1,000			20	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	21		1,000		22	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	23			1,000	24	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	25	1,000			26	20	1	SPACE		
		SPARE	1	20	27				28			SPACE		
		SPARE	1	20	29				30			SPACE		
		SPARE	1	20	31				32			SPACE		
		SPACE			33				34			SPACE		
		SPACE			35				36			SPACE		
		SPACE			37				38			SPACE		
		SPACE			39				40			SPACE		
		SPACE			41				42			SPACE		
		SUBTOTAL (VA)				4,000	4,000	4,000	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		12,000				4,000		4,000	4,000			40		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	0 VA	1.00	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	12,000 VA	0.90	11,250 VA

CONNECTED LOAD SUMMARY
12,000 VA
33 AMPS

NEC DEMAND LOAD SUMMARY
11,250 VA
31 AMPS

NOTES:

PANEL: P1A | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: FEED THRU LUGS | BUS AMPACITY: 225A | 10,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	R	ROOM 123	1	20	1	200			2	20	1	SPARE		
	R	ROOM 123	1	20	3		200		4	20	1	SPARE		
	R	ROOM 123	1	20	5			200	6	20	1	SPARE		
	R	ROOM 123	1	20	7	200			8	20	1	SPARE		
	R	ROOM 123	1	20	9		200		10	20	1	SPARE		
	R	ROOM 123	1	20	11			360	12	20	1	SPARE		
	R	GENERAL RECEPT	1	20	13	720			14	20	1	SPARE		
		SPARE	1	20	15				16	20	1	SPARE		
		SPARE	1	20	17				18	20	1	SPARE		
		SPARE	1	20	19				20	20	1	SPARE		
		SPARE	1	20	21				22	20	1	SPARE		
		SPARE	1	20	23				24			SPACE		
		SPACE	1	20	25				26			SPACE		
		SPACE	1	20	27				28			SPACE		
		SPACE	1	20	29				30			SPACE		
		SPACE	1	20	31				32			SPACE		
		SPACE	1	20	33				34			SPACE		
		SPACE	1	20	35				36			SPACE		
		SPACE	1	20	37				38			SPACE		
		SPACE	1	20	39				40			SPACE		
		SPACE	1	20	41				42			SPACE		
		SUBTOTAL (VA)				1,120	400	920	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		2,260				1,120		400	560			6		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	0 VA	1.00	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	2,260 VA	0.90	2,034 VA

CONNECTED LOAD SUMMARY
2,260 VA
6 AMPS

NEC DEMAND LOAD SUMMARY
2,034 VA
6 AMPS

PANEL: HL | 277/480V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: 200A | BUS AMPACITY: 225A | 65,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	L	ELEVATOR #1	1	20	1	476			2	50	3	7 HP		
	L	ELEVATOR MECH. RM #1	1	20	3		500		4	20	1	SPARE		
	L	ELEVATOR #2	1	20	5			534	6			534	6	
	L	ELEVATOR MECH. RM #2	1	20	7	800			8	20	1	SPARE		
		SPARE	1	20	9		7,171		10	70	3	ELEVATOR #1	M	
		SPARE	1	20	11			7,171	12			7,171	12	
	L	EXTERIOR LTG	1	20	13	450			14	20	1	ELEVATOR #1 SHUNT TRIP	E	
					15		503		16			SPACE		
					17				18			SPACE		
					19		7,171		20	70	3	ELEVATOR #2	M	
					21			7,171	22			-	-	
					23				24			7,171	24	
					25		503		26	20	1	ELEVATOR #2 SHUNT TRIP	E	
					27				28			SPACE		
					29				30			SPACE		
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
		SUBTOTAL (VA)				1,426	500	534	14,342	14,671		SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		46,466				12,744		15,342	15,410			56		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	3,810 VA	1.00	3,810 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	2,490 VA	1.25	3075 VA
M = MOTOR	43,620 VA	1.00	43,620 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY
49,430 VA
58 AMPS

NEC DEMAND LOAD SUMMARY
49,111 VA
58 AMPS

NOTES:

PANEL: 1A | 277/480Y 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: 200A | BUS AMPACITY: 200A | 14,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	E	MH-1	3	40	1	6,044		13,322	2	60	3	WM-1 HP	E	
	E	----			3		6,044		4			----	E	
	E	----			5			6,044	6			----	E	
	E	AC-1	3	50	7	14,404			8	20	3	PUMP 5400	E	
	E	----			9		14,404		10			----	E	
	E	----			11			14,404	12			----	E	
	E	RETHERMOR SWR	3	20	13	1,000			14	20	1			
	E	----			15		1,000		16	20	1			
	E	----			17			1,000	18	20	1			
	E	RO-5400	3	20	19	1,000			20	20	1			
	E	----			21		1,000		22	20	1			
	E	----			23			1,000	24	20	1			
			1	20	25				26	20	1			
			1	20	27				28	20	1			
			1	20	29				30	20	1			
			1	20	31				32	20	1			
			1	20	33				34	20	1			
			1	20	35				36	20	1			
			1	20	37				38	20	1			
			1	20	39				40	20	1			
			1	20	41				42	20	1			
		SUBTOTAL (VA)				22,495	22,495	22,495	17,322	13,432	13,432	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		111,593				39,920		39,959	39,905			134		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	111,593 VA	1.00	111,593 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY
111,593 VA
134 AMPS

NEC DEMAND LOAD SUMMARY
111,593 VA
134 AMPS

NOTES:

PANEL: P1F | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: MLO | BUS AMPACITY: 225A | 22,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	R	145, 141, 153 GFI RECEPTS	1	20	1	720		720	2	20	2	PC1-1	M	
	R	142, 140, 144 GFI RECEPTS	1	20	3		720		4			- - - -	M	
	R	146 GFI RECEPTS	1	20	5			1,824	6	20	2	PC1-2	M	
	E	149 DI/D COPIER	1	20	7	990			8			- - - -	M	
	R	148 RECEPTACLES	1	20	9		990		10	20	2	PC1-3	M	
	R	166, 130, 137 RECEPTS	1	20	11			720	12			- - - -	M	
	E	157 DI/D COPIER	1	20	13	990			14	20	2	PC1-5	M	
	R	131, 132 RECEPTS	1	20	15		720		16			- - - -	M	
	R	155, 153 RECEPTS	1	20	17			720	18	20	2	PC1-6	M	
	H	134 RECEPTS	1	20	19	720			20			- - - -	M	
	E	152 FLOOR BOX	1	20	21		990		22	20	1	154 RECEPTS	R	
	M	LIFTBY DOOR POWER	1	20	23			832	24	20	1	156 RECEPTS	R	
	H	ELEC ROOM 152, 169 RECS	1	20	25	540			26	20	1	109 DED OWNER REC	R	
	R	167 RECEPTS	1	20	27		720		28	20	1	108 DED 208V REC	E	
	R	161 RECEPTS	1	20	29			720	30			- - - -	E	
	R	171, 173 RECEPTS	1	20	31	360			32	20	1	SPARE		
	R	133 TV RECEPT	1	20	33		360		34	20	1	SPARE		
		SPARE	1	20	35				36	20	1	SPARE		
		SPARE	1	20	37				38	20	1	SPARE		
		SPARE	1	20	39				40	20	1	SPARE		
		SPARE	1	20	41				42	20	1	SPARE		
		SUBTOTAL (VA)				4,290	4,680	4,616	3,866	3,230	2,790	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		22,859				8,970		7,236	7,653			63		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	4,890 VA	1.00	4,890 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	5,270 VA	1.00	5,270 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	12,640 VA	0.90	11,343 VA

CONNECTED LOAD SUMMARY
22,859 VA
63 AMPS

NEC DEMAND LOAD SUMMARY
21,510 VA
61 AMPS

NOTES:

PANEL: P1B | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: MLO | BUS AMPACITY: 225A | 10,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	E	EQUIPMENT #1A	1	20	1	500			2	20	1	SPARE		
	E	EQUIPMENT #1B	1	20	3		500		4	20	1	SPARE		
	E	EQUIPMENT #1C	1	20	5			500	6	20	1	SPARE		
	E	EQUIPMENT #1D	1	20	7	500			8	20	1	SPARE		
	E	EQUIPMENT #1E	1	20	9		500		10	20	1	SPARE		
	E	EQUIPMENT #1F	1	20	11			500	12	20	1	SPARE		
	E	-	-	20	13	500			14	20	1	EQUIPMENT #1G	E	
	E	-	-	20	15		500		16	20	1	EQUIPMENT #1H	E	
	E	EQUIPMENT #1I	3	30	17			500	18	20	1	SPARE		
	E	-	-	20	19	500			20	20	1	SPARE		
	E	-	-	20	21		500		22	20	1	SPARE		
	E	-	-	20	23			500	24	20	1	SPARE		
	E	EQUIPMENT #1J	2	20	25	500			26	20	1	SPARE		
	E	-	-	20	27		500		28	20	1	SPACE		
	E	EQUIPMENT #1K	1	20	29			500	30	20	1	SPACE		
	E	EQUIPMENT #1L	1	20	31	500			32	20	1	SPACE		
	E	EQUIPMENT #1M	3	20	33		500		34	20	1	SPARE		
	E	-	-	20	35			500	36	20	1	SPARE		
	E	-	-	20	37	500			38	20	1	SPARE		
	E	EQUIPMENT #1N	1	20	39		500		40	20	1	SPARE		
		SPARE	1	20	41			500	42	20	1	SPARE		
		SUBTOTAL (VA)				3,000	3,000	2,500	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		8,500				3,000		3,000	2,500			24		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	8,500 VA	1.00	8,500 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY
19,500 VA
55 AMPS

NEC DEMAND LOAD SUMMARY
19,500 VA
55 AMPS

NOTES:

PANEL: HP | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: 100A | BUS AMPACITY: 125A | 10,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
		SPARE	1	20	2				2	20	1	SPARE		
		SPARE	1	20	3				4	20	1	SPARE		
		SPARE	1	20	5				6	20	1	SPARE		
		SPARE	1	20	7				8	20	1	SPARE		
		SPARE	1	20	9				10	20	1	SPARE		
		SPARE	1	20	11				12	20	1	SPARE		
		SPARE			13				14			SPACE		
		SPACE			15				16			SPACE		
		SPACE			17				18			SPACE		
					19				20					
					21				22					
					23				24					
					25				26					
					27				28					
					29				30					
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
		SUBTOTAL (VA)				0	0	0	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		0				0		0	0			0		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	0 VA	1.00	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY
0 VA
0 AMPS

NEC DEMAND LOAD SUMMARY
0 VA
0 AMPS

NOTES:

PANEL: 1B | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: 150A | BUS AMPACITY: 200A | 10,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	E	GENERAL PURPOSE OUTLET	1	20	1	540			2	20	1	AC-2	E	
	E	CP-1 & CP-2	1	20	3		432		4			----	E	
	E	MH-1	1	20	5			555	6	432	3	----	E	
	E	EAD-1	1	20	7	1,200			8	20	2	RO-5400	E	
	E	RO-5400	1	20	9		036		10		1,560		E	
	E	STEAMROLLER RECEPT	1	20	11			500	12	20	1	SPARE		
	E	CHEMICAL INJECTION REC	1	20	13	500			14	20	1	SPARE		
		SPARE	1	20	15				16	20	1	SPARE		
					17				18					
					19				20					
					21				22					
					23				24					
					25				26					
					27				28					
					29				30					
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
		SUBTOTAL (VA)				2,300	932	1,055	10,932	10,332	6,432	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		29,619				13,532		11,864	10,432			99		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	35,075 VA	1.00	35,075 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	540 VA	0.90	540 VA

CONNECTED LOAD SUMMARY
35,616 VA
99 AMPS

NEC DEMAND LOAD SUMMARY
35,616 VA
99 AMPS

NOTES:

PANEL: H1G | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: FEED THRU LUGS | BUS AMPACITY: 225A | 10,000 AIC SYMMETRICAL

CKT	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	CKT
	R	SYSTEM FURNITURE	1	20	1	1,000			2	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	3		1,000		4	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	5			1,000	6	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	7	1,000			8	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	9		1,000		10	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	11			1,000	12	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	13	1,000			14	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	15		1,000		16	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	17			1,000	18	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	19	1,000			20	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	21		1,000		22	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	23			1,000	24	20	1	SPARE		
	R	SYSTEM FURNITURE	1	20	25	1,000			26	20	1	SPARE		
		SPARE	1	20	27				28			SPACE		
		SPARE	1	20	29				30			SPACE		
		SPARE	1	20	31				32			SPACE		
		SPACE			33				34			SPACE		
		SPACE			35				36			SPACE		
		SPACE			37				38			SPACE		
		SPACE			39				40			SPACE		
		SPACE			41				42			SPACE		
		SUBTOTAL (VA)				5,000	5,000	4,500	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B	PHASE C			TOTAL ALL PHASES (AMPS)		
		14,500				5,500		5,000	4,500			40		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	0 VA	1.00	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	VA	1.25	0 VA
R = RECEPTACLE	14,500 VA	0.90	12,293 VA

CONNECTED LOAD SUMMARY
14,500 VA
40 AMPS

NEC DEMAND LOAD SUMMARY
12,293 VA
34 AMPS

NOTES:

PANEL: P1G | 120/208V 3 PHASE 4 WIRE | FLUSH MOUNTED
MAIN: FEED THRU LUGS | BUS AMPACITY: 225A | 10,

PANEL: LP2 — 277/480V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 125A — 14,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	L	OPEN OFFICE 290	1	20	1	2,024			2	20	1	SPARE		
	L	ENDWALDOOR 253	1	20	3		3,240		4	20	1	SPARE		
	L	OPEN OFFICE 290	1	20	5			1,655	6	20	1	SPARE		
	L	ENDWALDOOR 179/L237	1	20	7	756			8	20	1	SPARE		
	L	CIRCULATION HALLS, CORRI	1	20	9		1,856		10	20	1	SPARE		
	L	OPEN OFFICE 290	1	20	11			3,743	12	20	1	SPARE		
	L	MDE EQUIP. ROOM 180/L180	1	20	13	3,040			14	20	1	SPARE		
	L	W'TP CLOW, CHECK STOR, MEN	1	20	15		1,690		16	20	1	SPARE		
	L	TOILETS, CONFERENCE	1	20	17			2,159	18	20	1	SPARE		
	L	CONFERENCE	1	20	19	1,690			20	20	1	SPARE		
	L	CONFERENCE	1	20	21		1,658		22	20	1	SPARE		
		SPACE			23				24			SPACE		
		SPACE			25				26			SPACE		
		SPACE			27				28			SPACE		
		SPACE			29				30			SPACE		
		SPACE			31				32			SPACE		
		SPACE			33				34			SPACE		
		SPACE			35				36			SPACE		
		SPACE			37				38			SPACE		
		SPACE			39				40			SPACE		
		SPACE			41				42			SPACE		
		SUBTOTAL (VA)				8,709	8,557	7,057	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		24,962				8,709		8,557		7,357		90		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	0 VA	1.50	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	24,852 VA	1.25	31077.5 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	0 VA	0.50	0 VA

CONNECTED LOAD SUMMARY
24,852 VA
93 AMPS

NEC DEMAND LOAD SUMMARY
31,078 VA
87 AMPS

NOTES:

PANEL: LP1A — 277/480V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 125A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	EQUIPMENT #401	1	20	1	500			2	20	1	SPARE		
	E	EQUIPMENT #402	1	20	3		500		4	20	1	SPARE		
	E	EQUIPMENT #403	2	20	5			500	6	20	1	SPARE		
	E	EQUIPMENT #404	1	20	7	500			8	20	1	SPARE		
	E	EQUIPMENT #412	1	20	9		500		10	20	1	SPARE		
	E	EQUIPMENT #414	1	20	11			500	12	20	1	SPARE		
	E	EQUIPMENT #413	2	20	13	500			14	20	1	SPARE		
	E	EQUIPMENT #427			15		500		16			SPACE		
	E	FUTURE 208V	1	20	17			500	18	20	1	SPARE		
	E				19	500			20			SPACE		
	E	EQUIPMENT #429	2	20	21		500		22	20	1	SPARE		
	E				23			500	24			SPACE		
	E	EQUIPMENT #423	2	20	25	500			26	20	1	SPARE		
	E				27		500		28			SPACE		
		SPARE	1	20	29			500	30	20	1	SPARE		
		SPARE	1	20	31				32			SPACE		
		SPARE	1	20	33				34			SPACE		
		SPARE	1	20	35				36			SPACE		
		SPARE	1	20	37				38			SPACE		
		SPARE	1	20	39				40			SPACE		
		SPARE	1	20	41				42			SPACE		
		SUBTOTAL (VA)				2,500	2,500	2,000	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		7,000				2,500		2,500		2,000		19		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	7,000 VA	1.00	7,000 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	0 VA	0.50	0 VA

CONNECTED LOAD SUMMARY
7,000 VA
19 AMPS

NEC DEMAND LOAD SUMMARY
7,000 VA
19 AMPS

NOTES:

PANEL: EP1A — 120/208V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: FEED THRU LUGS — BUS AMPACITY: 225A — 22,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	AC4-1	2	20	1	1,120			2	20	1	LAB BENCH MULTI-OUTLET	R	
					3		1,120		4	20	1	LAB BENCH MULTI-OUTLET	R	
	E	AC4-2	2	20	5			1,120	6	20	1	LAB BENCH MULTI-OUTLET	R	
					7	1,120			8	20	1	LAB BENCH MULTI-OUTLET	R	
	E	AC4-3 (FUTURE)	2	20	9		1,120		10	20	1	LAB BENCH MULTI-OUTLET	R	
	E				11			1,120	12	20	2	EQUIPMENT #422	E	
		SPARE	1	20	13			500	14	-	-	-	-	
		SPARE	1	20	15				16	20	2	EQUIPMENT #415	E	
		SPARE	1	20	17				18	-	-	-	-	
		SPARE	1	20	19		500		20	20	2	EQUIPMENT #415	E	
		SPARE	1	20	21			500	22	-	-	-	-	
		SPACE			23				24	20	1	LAB BENCH MULTI-OUTLET	R	
		SPACE			25		900		26	20	1	LAB BENCH MULTI-OUTLET	R	
		SPACE			27			900	28	20	1	LAB BENCH MULTI-OUTLET	R	
		SPACE			29				30	20	1	LAB BENCH MULTI-OUTLET	R	
		SPACE			31		500		32	20	1	EQUIPMENT #401	E	
		SPACE			33				34	20	1	SPARE		
		SPACE			35				36	20	1	SPARE		
		SPACE			37				38	20	1	SPARE		
		SPACE			39				40	20	1	SPARE		
		SPACE			41				42	20	1	SPARE		
		SUBTOTAL (VA)				2,240	2,240	2,240	4,200	2,700		SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		27,100				9,940		9,940		7,220		75		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	23,050 VA	1.00	23,050 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	3,600 VA	0.50	1,800 VA

CONNECTED LOAD SUMMARY
26,650 VA
74 AMPS

NEC DEMAND LOAD SUMMARY
24,850 VA
69 AMPS

NOTES:

PANEL: EL — 277/480V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: 400A — BUS AMPACITY: 125A — 14,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	L	1ST FLOOR EMERGENCY LTG	1	20	1	3,444			2	20	1	SPARE		
	L	1ST FLOOR EMERGENCY LTG	1	20	3		2,036		4	20	1	SPARE		
	L	2ND FLOOR EMERGENCY LTG	1	20	5			3,293	6	20	1	SPARE		
		SPARE	1	20	7				8	20	1	SPARE		
		SPARE	1	20	9				10	20	1	SPARE		
		SPARE	1	20	11				12	20	1	SPARE		
		SPARE	1	20	13				14	20	1	SPARE		
		SPACE			15				16			SPACE		
		SPACE			17				18			SPACE		
		SPACE			19				20			SPACE		
		SPACE			21				22			SPACE		
		SPACE			23				24			SPACE		
		SPACE			25				26			SPACE		
		SPACE			27				28			SPACE		
		SPACE			29				30			SPACE		
		SPACE			31				32			SPACE		
		SPACE			33				34			SPACE		
		SPACE			35				36			SPACE		
		SPACE			37				38			SPACE		
		SPACE			39				40			SPACE		
		SPACE			41				42			SPACE		
		SUBTOTAL (VA)				3,444	2,036	3,293	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		8,817				3,444		2,036		3,293		11		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	0 VA	1.50	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	8,817 VA	1.25	11021.25 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	0 VA	0.50	0 VA

CONNECTED LOAD SUMMARY
8,817 VA
11 AMPS

NEC DEMAND LOAD SUMMARY
11,021 VA
13 AMPS

NOTES:

PANEL: P2A — 120/208V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: FEED THRU LUGS — BUS AMPACITY: 225A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	R	LAB BENCH 120V/237	1	20	1	900			2	20	3	EQUIPMENT #314/L	E	
	E	EQUIPMENT #137 & 140	1	20	3		500		4	-	-	-	-	
	E	EQUIPMENT #137	2	20	5			500	6	-	-	-	-	
	E			-	7	500			8	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #156 & 157	1	20	9		500		10	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #158	1	20	11			500	12	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #146	3	20	13	500			14	20	1	LAB BENCH MULTI-OUTLET	R	
	E			-	15		500		16	20	1	LAB BENCH MULTI-OUTLET	R	
	E			-	17			900	18	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #148	3	20	19	500			20	20	1	LAB BENCH MULTI-OUTLET	R	
	E			-	21		500		22	20	1	LAB BENCH MULTI-OUTLET	R	
	E			-	23			900	24	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	25	900			26	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	27		900		28	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	29			900	30	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #118	1	20	31	500			32	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #120	1	20	33		500		34	20	1	LAB BENCH MULTI-OUTLET	R	
	F	GEN. REC. 231, 232	1	20	35			500	36	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	37				38	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	39				40	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	41				42	20	1	LAB BENCH MULTI-OUTLET	R	
		SUBTOTAL (VA)				3,400	3,400	3,400	4,600	4,100	4,100	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		23,400				8,400		7,900		7,100		65		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	9,000 VA	1.00	9,000 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	14,400 VA	0.50	12,200 VA

CONNECTED LOAD SUMMARY
23,400 VA
65 AMPS

NEC DEMAND LOAD SUMMARY
21,200 VA
58 AMPS

FEED THRU LOAD SUMMARY
49,850 VA
114 AMPS

NOTES:

PANEL: EP1B — 120/208V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 125A — 22,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
		SPARE	1	20	1			900	2	20	1	EQUIPMENT #405	E	
		SPARE	1	20	3		900		4	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	5			900	6	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	7	500			8	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	9		900		10	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	11			900	12	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	13	900			14	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	15		900		16	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	17			900	18	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	19				20	20	1	SPARE		
		SPACE			21				22	20	1	SPARE		
		SPACE			23				24			SPACE		
		SPACE			25				26			SPACE		
		SPACE			27				28			SPACE		
		SPACE			29				30			SPACE		
		SPACE			31				32			SPACE		
		SPACE			33				34			SPACE		
		SPACE			35				36			SPACE		
		SPACE			37				38			SPACE		
		SPACE			39				40			SPACE		
		SPACE			41				42			SPACE		
		SUBTOTAL (VA)				1,400	1,800	1,800	0	0	0	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		5,000				1,400		1,800		1,800		14		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	4,800 VA	1.00	4,800 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	0 VA	0.50	0 VA

CONNECTED LOAD SUMMARY
4,800 VA
13 AMPS

NEC DEMAND LOAD SUMMARY
4,800 VA
13 AMPS

NOTES:

PANEL: EP1A — 120/208V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: 400A — BUS AMPACITY: 400A — 22,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	PANEL LP1A	3	200	1	8,740			2	225	3	PANEL EP1C	E	
	E	-----	-	-	3		9,240		4	-	-	-----	E	
	E	-----	-	-	5			22,215	6	-	-	-----	E	
	SPACE				7			20,700	8	-	-	-----	E	
	SPACE				9				10	225	3	PANEL EP2C	E	
	SPACE				11				12			SPACE		
	SPACE				13				14			SPACE		
	SPACE				15				16			SPACE		
	SPACE				17				18			SPACE		
					19				20					
					21				22					
					23				24					
					25				26					
					27				28					
					29				30					
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
		SUBTOTAL (VA)				8,740	9,240	8,240	24,290	22,750	19,060	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		91,630				33,030		31,230		27,370		255		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	91,630 VA	1.00	91,630 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	0 VA	0.50	0 VA

CONNECTED LOAD SUMMARY
91,630 VA
255 AMPS

NEC DEMAND LOAD SUMMARY
91,630 VA
255 AMPS

NOTES:

PANEL: EP1C — 120/208V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: FEED THRU LUGS — BUS AMPACITY: 225A — 22,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	EQUIPMENT #416	3	20	1	2,400			2	20	1	EQUIPMENT #5005	E	
	E				3		2,400		4	20	1	EQUIPMENT #5051	E	
	E				5			2,400	6	20	1	EQUIPMENT #542	E	
	E	EQUIPMENT #417	1	20	7	1,200			8	20	1	EQUIPMENT #573	E	
	E	EQUIPMENT #417	3	20	9		2,000		10	20	1	EQUIPMENT #4002	E	
	E				11			2,000	12	20	1	EQUIPMENT #542	E	
	E			-	13	2,030			14	20	1	EQUIPMENT #500	E	
	E	EQUIPMENT #701	1	20	15		1,650		16	20	1	EQUIPMENT #503	E	
	E	HADWAY LOAD CENTER	2	30	17			1,920	18	20	1	EQUIPMENT #501	E	
	E				19	1,200			20	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	21			900	22	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	23				24	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	25			900	26	20	1	LAB BENCH MULTI-OUTLET	R	
		SPARE	1	20	27				28	20	1	LAB BENCH MULTI-OUTLET	R	
		SPACE			29				30	20	1	EQUIPMENT #516	E	
		SPACE			31				32	20	1	SPARE		
		SPACE			33				34	20	1	SPARE		
		SPACE			35				36	20	1	SPARE		
		SPACE			37				38	-	-	SPACE		
		SPACE			39				40	-	-	SPACE		
		SPACE			41				42	-	-	SPACE		
		SUBTOTAL (VA)				6,830	6,050	5,400	3,300	2,800	2,800	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		27,150				9,900		9,350		8,330		75		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	23,050 VA	1.00	23,050 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	3,600 VA	0.50	1,800 VA

CONNECTED LOAD SUMMARY
27,150 VA
75 AMPS

NEC DEMAND LOAD SUMMARY
24,850 VA
69 AMPS

NOTES:

PANEL: UP1 — 120/208V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: 400A — BUS AMPACITY: 400A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	PANEL UP1A	3	200	1	2,500			2	200	3	PANEL UP2A	E	
	E	-----	-	-	3		2,500		4	-	-	-----	E	
	E	-----	-	-	5			5,800	6	-	-	-----	E	
	SPACE				7				8			SPACE		
	SPACE				9				10			SPACE		
	SPACE				11				12			SPACE		
	SPACE				13				14			SPACE		
	SPACE				15				16			SPACE		
	SPACE				17				18			SPACE		
					19				20					
					21				22					
					23				24					
					25				26					
					27				28					
					29				30					
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
		SUBTOTAL (VA)				2,500	2,500	2,900	5,400	5,400	5,400	SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA)				PHASE A		PHASE B		PHASE C		TOTAL ALL PHASES (AMPS)		
		23,200				7,900		7,900		7,400		54		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
C = EQUIPMENT	23,200 VA	1.00	23,200 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	N/A	1.25	0 VA
R = RECEPTACLE	0 VA	0.50	0 VA

CONNECTED LOAD SUMMARY
23,200 VA
64 AMPS

NEC DEMAND LOAD SUMMARY
23,200 VA
64 AMPS

NOTES:

PANEL: UP2A — 277/480V, 3 PHASE, 4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 125A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	EQUIPMENT #202	1	20	1	2,400			2	20	1	SPARE		
	E	EQUIPMENT #201	1	20	3		2,400		4	20	1	SPARE		
	E	EQUIPMENT #102	1	20	5			2,400	6	20	1	SPARE		
	E	EQUIPMENT #103	1	20	7	500			8	20	1	SPARE		
	E	EQUIPMENT #107	1	20	9		500		10	20	1	SPARE		
	E	EQUIPMENT #115	1	20	11			500	12	20	1	SPARE		
	E	EQUIPMENT #130	1	20	13	500			14	20	1	SPARE		
	E	SHAKER	1	20	15		500		16	20	1	SPARE		
	E	SHAKER	1	20	17			500	18	20	1	SPARE		
	E	SHAKER	1	20	19	500			20	20	1	SPARE		
	E	SHAKER	1	20	21		500		22			SPACE		
	E	SHAKER	1	20	23			500	24			SPACE		
	E	SHAKER	1	20	25	500			26			SPACE		
	E	SHAKER	1	20	27		500		28			SPACE		
	E	SHAKER	1	20	29			500	30			SPACE		

PANEL: EP2 — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: 400A — BUS AMPACITY: 400A — 22.000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	PANEL EP2A	3	200	1	12,800			14,350			2	200	3	PANEL EP2C	E	
	E	- - - - - -	-	-	3		12,800			14,215		4	-	-	- - - - - -	E	
	E	- - - - - -	-	-	5			12,200			12,915	6	-	-	- - - - - -	E	
		SPACE			7							8			SPACE		
		SPACE			9							10			SPACE		
		SPACE			11							12			SPACE		
		SPACE			13							14			SPACE		
		SPACE			15							16			SPACE		
		SPACE			17							18			SPACE		
					19							20					
					21							22					
					23							24					
					25							26					
					27							28					
					29							30					
					31							32					
					33							34					
					35							36					
					37							38					
					39							40					
		SUBTOTAL (VA)			41	12,800	12,800	12,200	14,350	14,215	12,915	42			SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 79,080				PHASE A 26,800		PHASE B 27,015		PHASE C 25,115					TOTAL ALL PHASES (AMPS) 229		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	0 VA	1.00	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY: 79,080 VA — 229 AMPS

NEC DEMAND LOAD SUMMARY: 79,080 VA — 229 AMPS

NOTES:

PANEL: EP2A — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: FED THRU LUGS — BUS AMPACITY: 225A — 22.000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	EQUIPMENT #106	1	20	1	500			900			2	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #109	1	20	3		500			900		4	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #144	1	20	5			500			900	6	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #145	1	20	7	500			900			8	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #143	1	20	9		500			900		10	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #142	1	20	11			500			900	12	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #104	1	20	13	900			900			14	20	1	EQUIPMENT #1001	E	
	C	EQUIPMENT #105	1	20	15		500			900		16	20	1	LAB BENCH MULTI-OUTLET	R	
	C	EQUIPMENT #155	1	20	17			900			500	18	20	1	LAB BENCH MULTI-OUTLET	R	
	C	EQUIPMENT #157	1	20	19	900			500			20	20	2	#DIV/0!		
		SPARE	1	20	21						300	22	-				
		SPARE	1	20	23							24	20	1	SPARE		
		SPARE	1	20	25							26	20	1	SPARE		
		SPARE	1	20	27							28	20	1	SPARE		
		SPARE	1	20	29							30	20	1	SPARE		
		SPARE	1	20	31							32	-				
		SPACE			33							34			SPACE		
		SPACE			35							36			SPACE		
		SPACE			37							38			SPACE		
		SPACE			39							40			SPACE		
		SPACE			41							42			SPACE		
		SUBTOTAL (VA)				2,800	1,500	1,800	3,200	3,200	2,700				SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 15,300				PHASE A 5,600		PHASE B 4,700		PHASE C 4,600					TOTAL ALL PHASES (AMPS) 43		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	7,300 VA	1.00	7,300 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	7,200 VA	1.00	7,200 VA

CONNECTED LOAD SUMMARY: 15,300 VA — 43 AMPS

NEC DEMAND LOAD SUMMARY: 14,500 VA — 40 AMPS

NOTES:

PANEL: PGF — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 225A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	R	203, 204, 205 RECEPTS	1	20	1	900			360			2	20	1	WALL 202 RECEPTS	R	
	R	201, 202 RECEPTS	1	20	3		1,080			360		4	20	1	WORKBOOK POWER	E	3
	R	255 RECEPTS	1	20	5			540			900	6	20	1	203,213,221 OTHRECEPTS	R	
	R	250 RECEPTS - PRINTER	1	20	7	900			360			8	20	1	207 RECEPTS	R	
	R	255, 257 RECEPTS	1	20	9		720			360		10	20	1	204, 256 RECEPTS	R	
	R	260, 254 RECEPTS	1	20	11			720			900	12	20	1	204 TED COUNTER	R	
	R	251 RECEPTS	1	20	13	900			900			14	20	1	204 TED COUNTER	R	
	R	252, 253 RECEPTS	1	20	15		720			360		16	20	1	203 RECEPTS	R	
	S	260 DISP. COPIER	1	20	17			900			360	18	20	1	212 RECEPTS	R	
	R	254, 255 RECEPTS	1	20	19	720			360			20	20	1	212 RECEPTS	R	
	R	256, 257 RECEPTS	1	20	21		720			720		22	20	1	212 TED CU/WC HEC	R	
	R	258 RECEPTS	1	20	23			360			720	24	20	1	212 240 220V HEC	R	
	R	260 DEN RECEPTS	1	20	25	540			720			26	-	-	- - - - - -	E	
	E	WIDVIDEO PROVER	1	20	27		250					28	20	1	SPARE		
	R	COPY WELLNESS OFFICE	1	20	29			720				30	20	1	SPARE		
	R	COPY WELLNESS OFFICE	1	20	31	720						32	20	1	SPARE		
		SPARE			33							34	20	1	SPARE		
		SPARE	1	20	35							36	20	1	SPARE		
		SPACE			37							38			SPACE		
		SPACE			39							40			SPACE		
		SPACE			41							42			SPACE		
		SUBTOTAL (VA)				4,740	3,450	3,320	2,700	2,480	2,880				SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 19,330				PHASE A 7,440		PHASE B 5,570		PHASE C 6,320					TOTAL ALL PHASES (AMPS) 54		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	4,110 VA	1.00	4,110 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	15,480 VA	1.00	12,740 VA

CONNECTED LOAD SUMMARY: 19,590 VA — 54 AMPS

NEC DEMAND LOAD SUMMARY: 16,850 VA — 47 AMPS

NOTES:
1. PROVIDE CIRCUIT BREAKER LOCK-ON DEVICE. COLOR: RED.

PANEL: P2C — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 225A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	R	GENERAL RECEPTACLE	1	20	1	900			540			2	20	1	GENERAL RECEPTACLE	R	
	R	LAB BENCH MULTI-OUTLET	1	20	3		900			540		4	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	5			900			540	6	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	7	900			540			8	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	9		900			540		10	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	11			900			540	12	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	13	900			540			14	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	15		900			540		16	20	1	LAB BENCH MULTI-OUTLET	R	
	R	LAB BENCH MULTI-OUTLET	1	20	17			900			540	18	20	1	LAB BENCH MULTI-OUTLET	R	
	R	GENERAL RECEPTACLE	1	20	19	900			1,650			20	20	2	CENTRIFUGE 243	C	
	R	GENERAL RECEPTACLE	1	20	21		900			1,650		22	-				
		SPARE	1	20	23			900			1,650	24	20	2	CENTRIFUGE 243	C	
		SPARE	1	20	25				1,650			26	-				
		SPARE	1	20	27							28	20	1	SPARE		
		SPARE	1	20	29							30	20	1	SPARE		
		SPARE	1	20	31							32	20	1	SPARE		
		SPARE	1	20	33							34	20	1	SPARE		
		SPACE			35							36			SPACE		
		SPACE			37							38			SPACE		
		SPACE			39							40			SPACE		
		SPACE			41							42			SPACE		
		SUBTOTAL (VA)				3,600	3,600	3,600	5,940	5,940	5,940				SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 26,190				PHASE A 9,600		PHASE B 9,540		PHASE C 7,050					TOTAL ALL PHASES (AMPS) 73		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	6,760 VA	1.00	6,760 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	19,430 VA	1.00	14,700 VA

CONNECTED LOAD SUMMARY: 26,190 VA — 73 AMPS

NEC DEMAND LOAD SUMMARY: 21,460 VA — 60 AMPS

NOTES:

PANEL: EP2B — 120/208V,3 PHASE,4 WIRE — SURFACE MOUNTED
MAIN: 100A — BUS AMPACITY: 125A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	ACCU 1-1	2	20	1	1,200			500			2	20	1	LAB BENCH MULTI-OUTLET	R	
	E	- - - - - -	-	-	3		1,352			900		4	20	1	LAB BENCH MULTI-OUTLET	R	
	E	ACCU 1-2	2	20	5			1,252			900	6	20	1	LAB BENCH MULTI-OUTLET	R	
	C	- - - - - -	-	-	7	1,252			900			8	20	1	LAB BENCH MULTI-OUTLET	R	
	C	ACCU 1-3 (FUTURE)	2	20	9		1,352			900		10	20	1	LAB BENCH MULTI-OUTLET	R	
	C	- - - - - -	-	-	11			1,252			900	12	20	1	LAB BENCH MULTI-OUTLET	R	
	E	ACCU 2-1	2	20	13	1,252			500			14	20	1	EQUIPMENT #2001	E	
	E	- - - - - -	-	-	15		1,352			500		16	20	1	SPACE		
	E	COLD ROOM CONDENSING	2	20	17	1,000			500			18	20	1	SPACE		
	E	- - - - - -	-	-	19			1,000			500	20	20	1	SPACE		
	E	COLD ROOM CONDENSING	2	20	21	1,000			500			22	-				
	E	- - - - - -	-	-	23		1,000			500		24	-				
		- - - - - -	-	-	25			1,000			500	26	-				
		- - - - - -	-	-	27							28	-				
		- - - - - -	-	-	29							30	-				
		- - - - - -	-	-	31							32	-				
		- - - - - -	-	-	33							34	-				
		- - - - - -	-	-	35							36	-				
		- - - - - -	-	-	37							38	-				
		- - - - - -	-	-	39							40	-				
		- - - - - -	-	-	41							42	-				
		SUBTOTAL (VA)				5,056	5,056	4,504	200	0	0				SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 19,816				PHASE A 5,256		PHASE B 5,056		PHASE C 4,704					TOTAL ALL PHASES (AMPS) 42		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	15,016 VA	1.00	15,016 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	0 VA	1.00	0 VA

CONNECTED LOAD SUMMARY: 15,016 VA — 42 AMPS

NEC DEMAND LOAD SUMMARY: 15,016 VA — 42 AMPS

NOTES:

PANEL: EP2D — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: FED THRU LUGS — BUS AMPACITY: 225A — 22.000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	E	WWW/WP 207V	2	20	1	900			300			2	20	1	EQUIPMENT #2005	E	
	E	- - - - - -	-	-	3		900			300		4	20	1	LAB BENCH MULTI-OUTLET	R	
	E	- - - - - -	-	-	5			900			900	6	20	1	LAB BENCH MULTI-OUTLET	R	
	E	EQUIPMENT #903	2	20	7	900			500			8	20	1	EQUIPMENT #2006	E	
	E	- - - - - -	-	-	9		500			500		10	20	1	EQUIPMENT #2005	E	
	E	- - - - - -	-	-	11			500			900	12	20	1	EQUIPMENT #2007	E	
	E	40°C FREEZER	2	20	13	615			900			14	20	1	LAB BENCH MULTI-OUTLET	R	
	E	- - - - - -	-	-	15		615			900		16	20	1	LAB BENCH MULTI-OUTLET	R	
	E	40°C FREEZER	2	20	17			615			900	18	20	1	LAB BENCH MULTI-OUTLET	R	
	E	- - - - - -	-	-	19	615			500			20	20	1	EQUIPMENT #2000	E	
	E	20°C FREEZER 210	1	20	21		500			500		22	20	1	EQUIPMENT #202	E	
	E	20°C FREEZER 215	1	20	23			500			500	24	20	2	EQUIPMENT #227	E	
		SPARE	1	20	25				500			26	-				
		SPARE	1	20	27					500		28	20	2	EQUIPMENT #348	C	
		SPARE	1	20	29						500	30	-				
		SPARE	1	20	31				500			32	20	1	EQUIPMENT #272	C	
		SPACE			33					500		34	20	1	EQUIPMENT #237	C	
		SPACE			35						500	36	20	1	EQUIPMENT #274	C	
		SPACE			37							38			SPARE		
		SPACE			39							40			SPARE		
		SPACE			41							42			SPACE		
		SUBTOTAL (VA)				3,030	2,515	2,515	3,400	3,900	4,300				SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 19,660				PHASE A 6,430		PHASE B 6,315		PHASE C 6,715					TOTAL ALL PHASES (AMPS) 54		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	14,060 VA	1.00	14,060 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	5,460 VA	1.00	5,460 VA

CONNECTED LOAD SUMMARY: 19,660 VA — 54 AMPS

NEC DEMAND LOAD SUMMARY: 19,520 VA — 54 AMPS

NOTES:

PANEL: P2F — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 225A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	R	206 RECEPTS	1	20	1	540			720			2	20	1	207 RECEPTS	R	
	R	208 AV/RECEPTS	1	20	3		720			720		4	20	1	207 RECEPTS	R	
	R	207 DSQ RECEPT	1	20	5			540			1,920	6	20	1	207 RECEPTS	R	
	R	207 DSQ RECEPT	1	20	7	960			1,920			8	20	1	207 DCD QUAD WEC	R	
	R	240, 241 RECEPTS	1	20	9		540			1,920		10	20	1	207 DCD QUAD WEC	R	
	R	201 RECEPTS	1	20	11			900			1,920	12	20	1	207 DCD 208V/WEC	C	
	R	WALL RECEPTS	1	20	13	540			1,920			14	-	-	- - - - - -	E	
	R	247 RECEPTS	1	20	15		540			1,920		16	20	1	207 DCD 208V/EC	E	
	R	247 DCD RECEPT	1	20	17			900			1,920	18	20	1	SPARE		
	R	245, 246 RECEPTS	1	20	19	720						20	20	1	SPARE		
	R	248 RECEPTS	1	20	21		540					22	20	1	SPARE		
	R	242, 243 RECEPTS	1	20	23			900				24	20	1	SPARE		
		SPARE	1	20	25							26	20	1	SPARE		
		SPARE	1	20	27							28	20	1	SPARE		
		SPARE	1	20	29							30	20	1	SPARE		
		SPARE	1	20	31							32	20	1	SPARE		
		SPACE			33							34			SPACE		
		SPACE			35							36			SPACE		
		SPACE			37							38			SPACE		
		SPACE			39							40			SPACE		
		SPACE			41							42			SPACE		
		SUBTOTAL (VA)				2,760	2,340	3,720	4,560	4,960	4,560				SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 22,920				PHASE A 7,320		PHASE B 9,090		PHASE C 6,240					TOTAL ALL PHASES (AMPS) 63		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	7,680 VA	1.00	7,680 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	14,620 VA	1.00	12,410 VA

CONNECTED LOAD SUMMARY: 22,300 VA — 63 AMPS

NEC DEMAND LOAD SUMMARY: 20,090 VA — 56 AMPS

NOTES:

PANEL: P2G — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 225A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	R	SYSTEMFURNITURE	1	20	1	1,000			500			2	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	3		1,000			1,800		4	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	5			1,000			1,800	6	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	7	1,000			1,800			8	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	9		1,000			1,800		10	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	11			1,000			1,800	12	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	13	1,000			1,800			14	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	15		1,000			1,800		16	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	17			1,000			1,800	18	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	19	1,000			500			20	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	21		1,000			1,800		22	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	23			1,000			1,800	24	20	1	SYSTEMFURNITURE	R	
	R	SYSTEMFURNITURE	1	20	25	1,000						26	20	1	SPARE		
	R	SYSTEMFURNITURE	1	20	27		500					28	20	1	SPARE		
		SPARE	1	20	29							30	20	1	SPARE		
		SPARE	1	20	31							32	20	1	SPARE		
		SPARE	1	20	33							34	20	1	SPARE		
		SPACE			35							36			SPACE		
		SPACE			37							38			SPACE		
		SPACE			39							40			SPACE		
		SPACE			41							42			SPACE		
		SUBTOTAL (VA)				3,000	2,500	3,000	2,800	3,600	3,600				SUBTOTAL (VA)		
		TOTAL ALL PHASES (VA) 18,500				PHASE A 6,500		PHASE B 8,000		PHASE C 8,000					TOTAL ALL PHASES (AMPS) 77		

LOAD SUMMARY BY TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC LOAD
E = EQUIPMENT	0 VA	1.00	0 VA
H = ELECTRIC HEAT	0 VA	1.00	0 VA
K = KITCHEN EQUIPMENT	0 VA	0.65	0 VA
L = LIGHTING	0 VA	1.25	0 VA
M = MOTOR	0 VA	1.00	0 VA
M = LARGEST MOTOR	0 VA	1.25	0 VA
R = RECEPTACLE	18,500 VA	1.00	14,800 VA

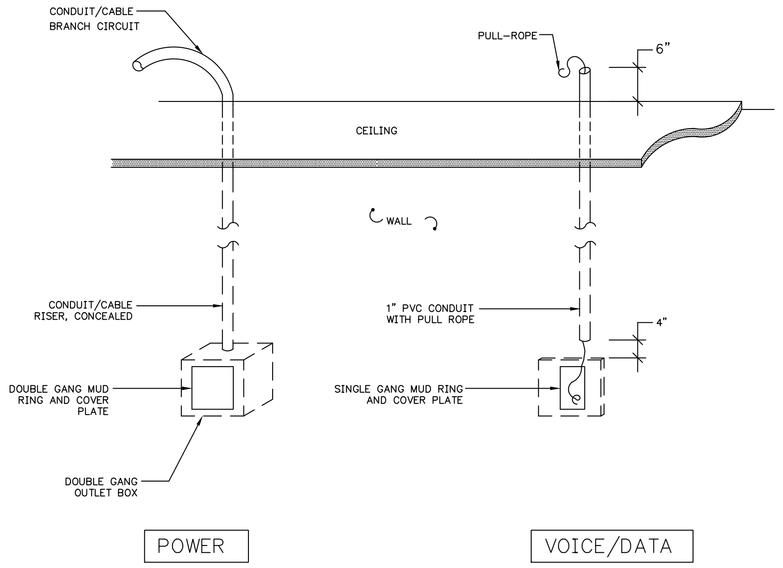
CONNECTED LOAD SUMMARY: 18,500 VA — 77 AMPS

NEC DEMAND LOAD SUMMARY: 14,800 VA — 62 AMPS

NOTES:

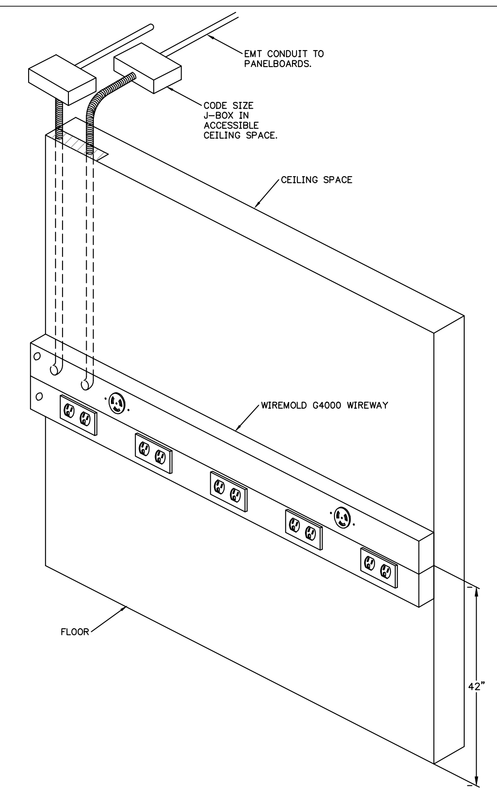
PANEL: P2H — 120/208V,3 PHASE,4 WIRE — FLUSH MOUNTED
MAIN: MLO — BUS AMPACITY: 225A — 10,000 AIC SYMMETRICAL

NOTES	TYPE	DESCRIPTION	POLES	AMPS	CKT	LOAD/PHASE (VA) A	B	C	A	B	C	CKT	AMPS	POLES	DESCRIPTION	TYPE	NOTES
	R	209 RECEPTS	1	20	1	900			540			2	20	1	LAB BENCH MULTI-OUTLET	R	
	R	210 RECEPTS	1	20	3		900			540		4	20	1	LAB BENCH MULTI-OUTLET	R	
	R	211, 212 RECEPTS	1	20	5			900			540	6	20	1	LAB BENCH MULTI-OUTLET	R	
	R	213 RECEPTS	1	20	7	900			540			8	20	1	LAB BENCH MULTI-OUTLET	R	
	R	214, 215 RECEPTS	1	20	9		900			540		10	20	1	LAB BENCH MULTI-OUTLET	R	
	R	216, 217 RECEPTS	1	20	11			900			540	12	20	1	LAB BENCH MULTI-OUTLET	R	
	R	218 RECEPTS	1	20	13	900			540			14	20	1	LAB BENCH MULTI-OUTLET	R	
	R	219, 220 RECEPTS	1	20	15		900			540		16	20	1	LAB BENCH MULTI-OUTLET	R	
	R	221, 222 RECEPTS	1	20	17			900			540	18	20	1	LAB BENCH MULTI-OUTLET	R	
	R	223 RECEPTS	1	20	19	900			540			20	20	1	LAB BENCH MULTI-OUTLET	R	
	R	224, 225 RECEPTS	1	20	21		900			540		22	20	1	LAB BENC



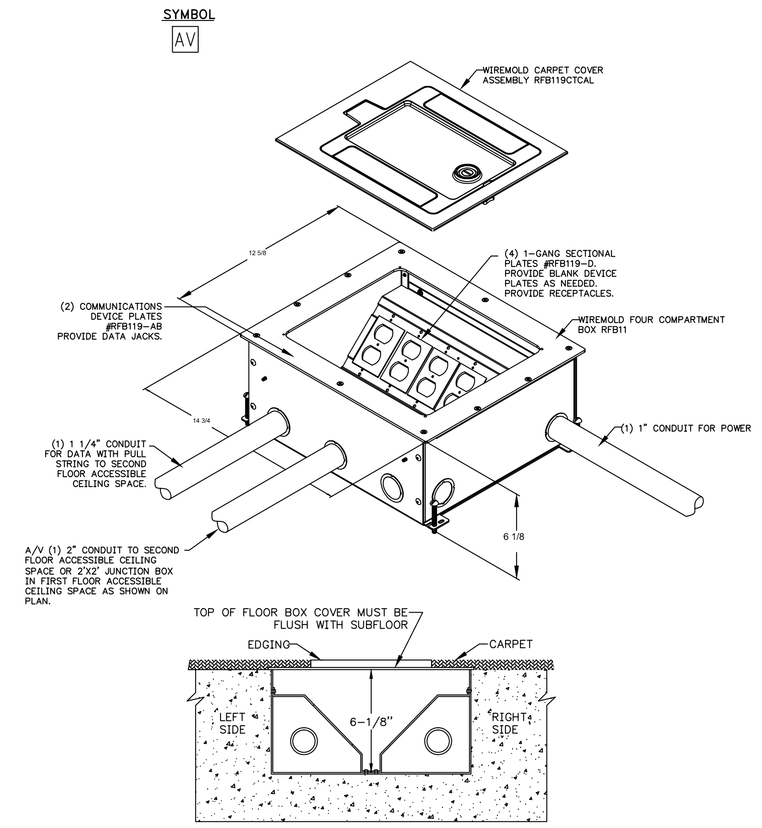
TYPICAL OUTLET RISERS

SCALE: NO SCALE | 7



WALL MOUNTED RACEWAY DETAIL

SCALE: NO SCALE | 3

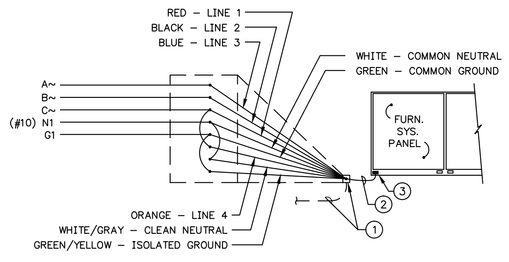


SIDE VIEW

A/V RECESSED FLOOR BOX

SCALE: NO SCALE | 1

CONSULTANTS

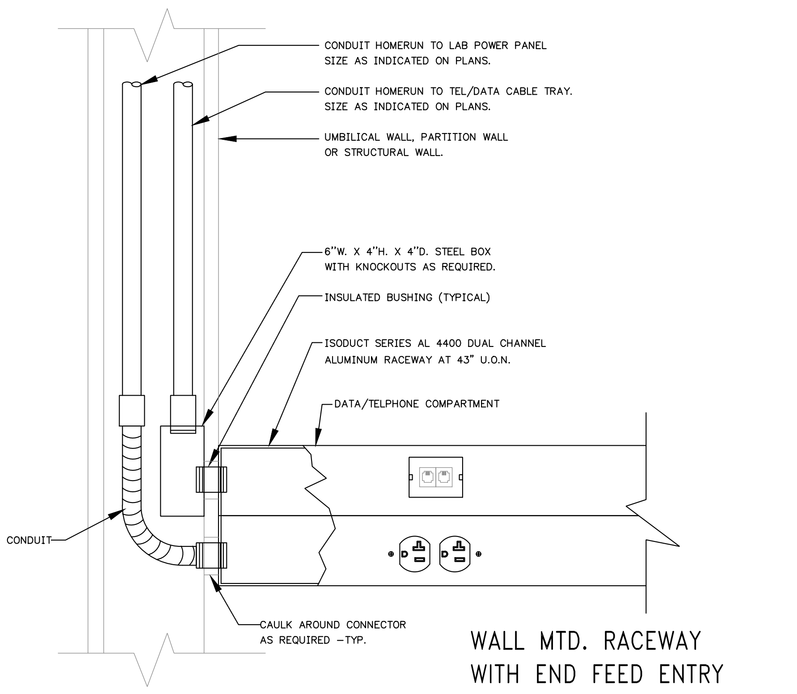


DETAIL 'J' NOTES:

1. UNDERGROUND CONDUIT, WIRING AND WALL OR FLOOR BOX PER PLANS.
2. FURNITURE SYSTEM PANEL POWER WHIP (FURNISHED AND INSTALLED BY SYSTEM VENDOR, FINAL CONNECTIONS BY DIV. 16).
3. SEE ALSO WIRING DIAGRAM AND CONNECTION INSTRUCTIONS FOR ALL-STEEL INTERCHANGE ELECTRICAL (8 WIRE) SYSTEM.

TYPICAL FURNITURE SYSTEM CONNECTION

SCALE: NO SCALE | 7



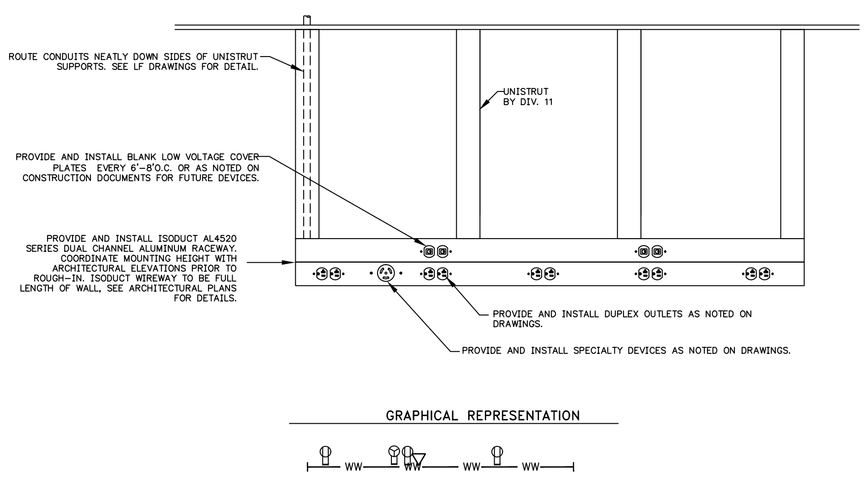
WALL MTD. RACEWAY
WITH END FEED ENTRY

FURNITURE FEED DETAIL

SCALE: NO SCALE | 4

A/V RECESSED POKE-THRU FLOOR BOX

SCALE: NO SCALE | 2



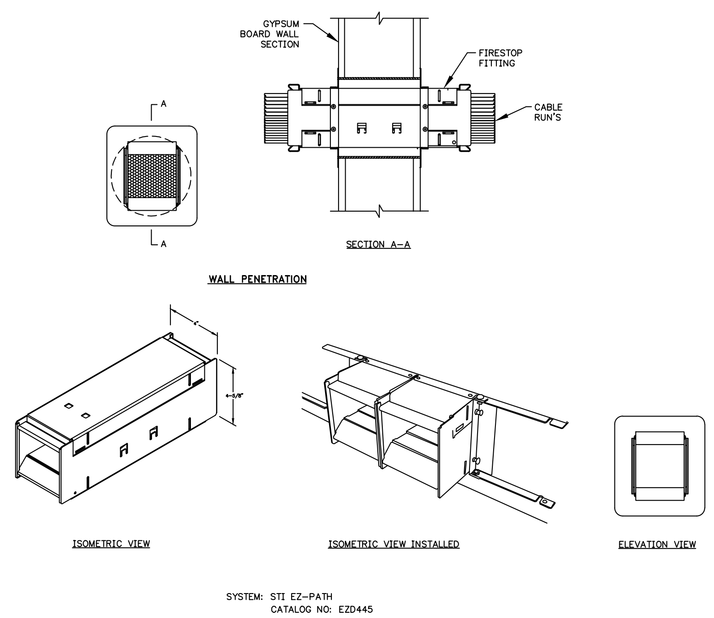
GRAPHICAL REPRESENTATION

GENERAL NOTES:

1. MOUNT TO UNISTRUT OVERHEAD SERVICE CARRIER. SEE LF DRAWINGS FOR MORE INFORMATION.

SCHEMATIC PLUG-STRIP AT OVERHEAD SERVICE CARRIER DETAIL

SCALE: NO SCALE | 7



SYSTEM: STI EZ-PATH
CATALOG NO: EZD445

FIRESTOP FITTING DETAIL

SCALE: NO SCALE | 5

CLIENT

PROJECT

ADDRESS

PROJECT NO. **12137**

SCALE As indicated

TITLE

DETAILS

E-601-TI

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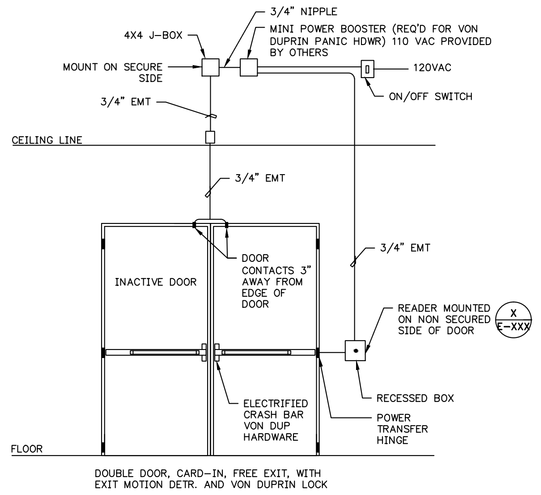
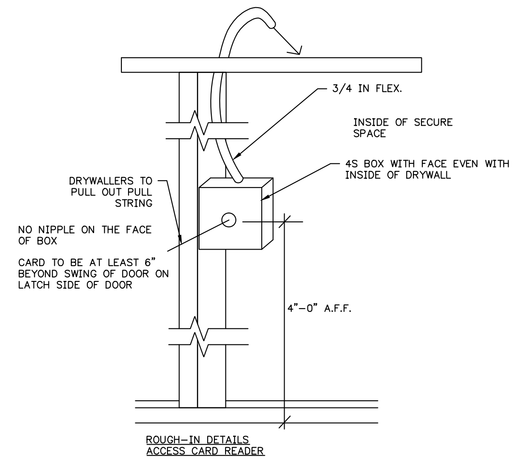


DOUBLE DOOR, CARD-IN, FREE EXIT, WITH EXIT MOTION DETR. AND VON DUPRIN LOCK

DOUBLE EXIT DOOR SECURITY DETAIL

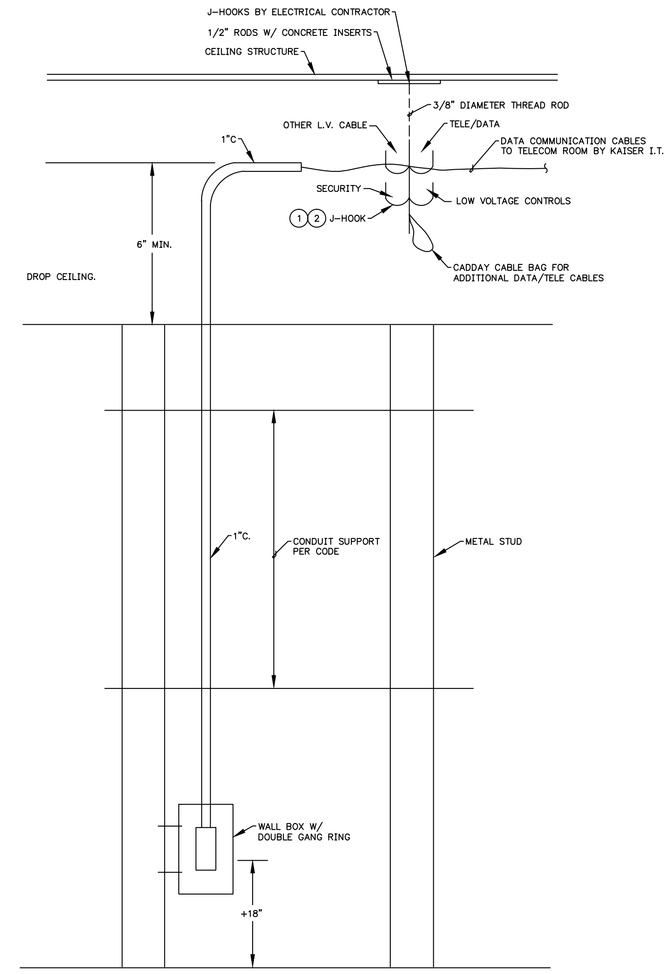
SCALE: NO SCALE | 6



ROUGH-IN DETAILS ACCESS CARD READER

CARD READER ROUGH-IN DETAIL

SCALE: NO SCALE | 3



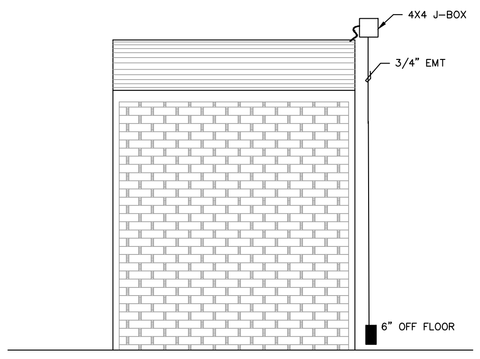
KEY NOTES:

1. 2 STACKS OF (2) J-HOOKS TO BE INSTALLED AT 5 FEET ON CENTER.
2. 4" DIA. J-HOOK W/ ANGLE BRACKET ASSEMBLY FOR SECURING TO CEILING STRUCTURE. USE CADDY "CABLECAT" #CAT64AFAB4. B-LINE TYPE OR EQUAL.

INDIVIDUAL CABLES SHALL BE SUPPORTED BY #12 GAUGE CEILING WIRE WITH AN APPROVED CABLE CLIP. EACH LOW VOLTAGE CABLE INSTALLER SHALL BE RESPONSIBLE FOR THEIR OWN INDIVIDUAL SUPPORTS WHEN THEY EXIT THE J-HOOK PATH. ALL LOW VOLTAGE CONTRACTORS SHALL BE RESPONSIBLE FOR CONDUIT SLEEVES AND FIREPROOFING.

DATA/TELECOM/SECURITY DROP INSTALLATION

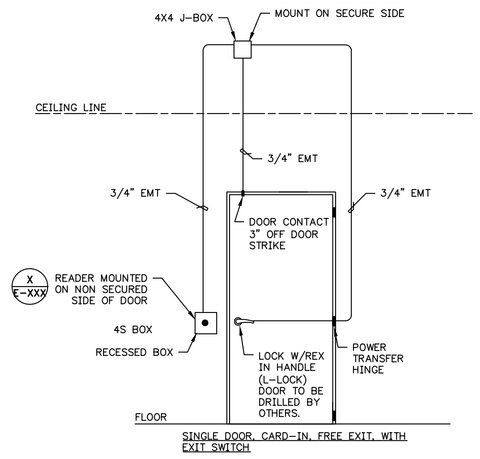
SCALE: NO SCALE | 1



OVERHEAD DOOR WITH CONTACT

EXIT DOOR SECURITY DETAIL

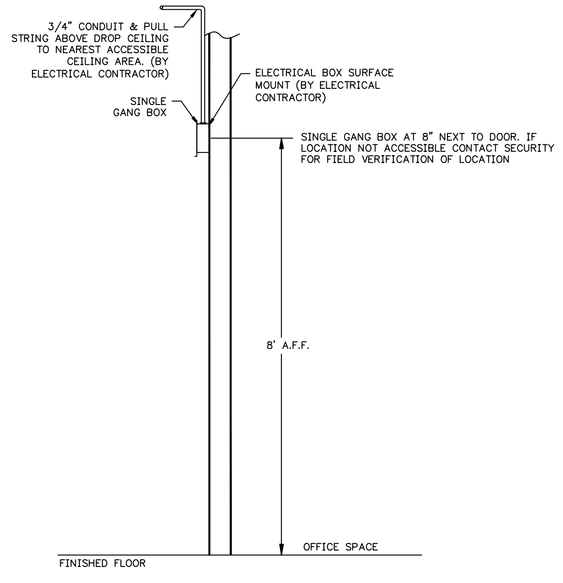
SCALE: NO SCALE | 7



SINGLE DOOR, CARD-IN, FREE EXIT, WITH EXIT SWITCH

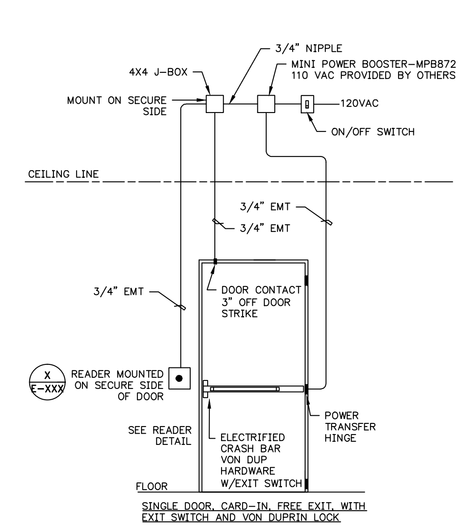
INTERIOR DOOR SECURITY DETAIL

SCALE: NO SCALE | 4



STAIRWELL TO ROOF WALL MOUNT CAMERA (INTERIOR)

SCALE: NO SCALE | 8



SINGLE DOOR, CARD-IN, FREE EXIT, WITH EXIT SWITCH AND VON DUPRIN LOCK

EXIT DOOR SECURITY DETAIL

SCALE: NO SCALE | 5

.

SCALE: NO SCALE | 2

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. **12137**

SCALE As indicated

TITLE

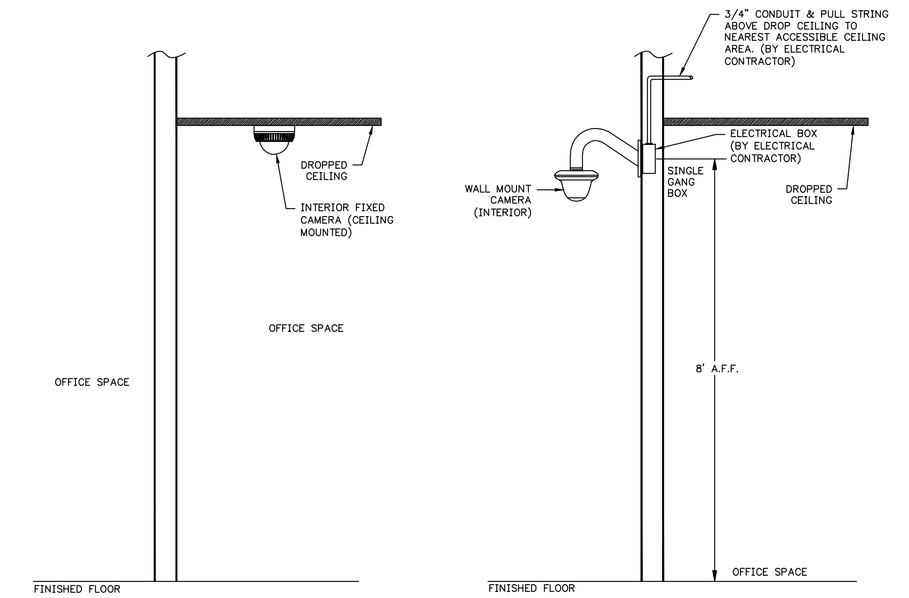
DETAILS

E-602-TI

Z:\PROJ\12\12224\DWG\12224-E602_DSD.DWG Wednesday, May 22, 2013 11:52:53 AM - rmolecek

SCALE: NO SCALE 7

SCALE: NO SCALE 4

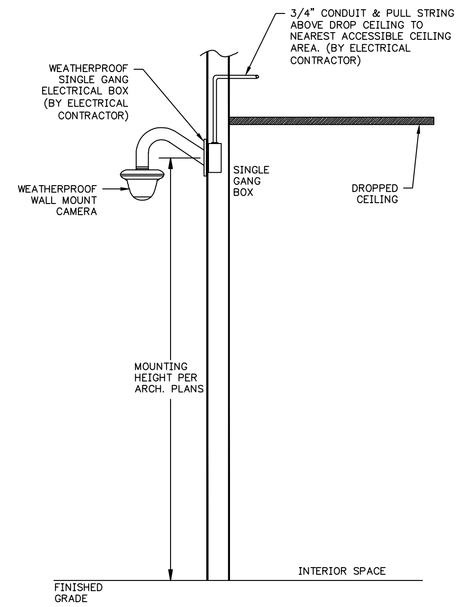


CEILING AND WALL MOUNT CAMERA (INTERIOR)

SCALE: NO SCALE 1

SCALE: NO SCALE 8

SCALE: NO SCALE 5

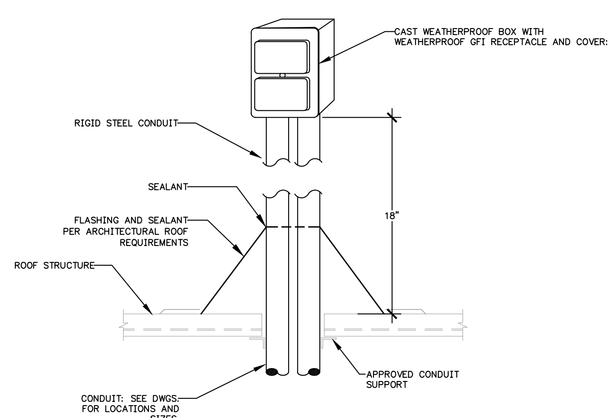


WALL MOUNT CAMERA (EXTERIOR)

SCALE: NO SCALE 2

SCALE: NO SCALE 9

SCALE: NO SCALE 6



ROOF PENETRATION AND RECEPTACLE DETAIL

SCALE: NO SCALE 3

CONSULTANTS

CLIENT

PROJECT

ADDRESS

PROJECT NO. **12137**

SCALE As indicated

TITLE

DETAILS

E-603-TI

Z:\PROJ12\12224\DWG\12224-E603_DS3.DWG Wednesday, May 22, 2013 11:52:58 AM - mmiller