E D A

THE BOSTON BUILDING

9 EXCHANGE PLACE
SUITE 1100

SALT LAKE CITY
UTAH 84111

TEL 801 531 7600

EDA Project # 221011
Contact: S. McCarthy

UNIVERSITY OF UTAH
CVRTI BUILDING ADDITION

BUILDING 500
95 SOUTH 2000 EAST
SALT LAKE CITY, UT 84112

University Project Number:
22294

Issue Date:
12 NOVEMBER 2021

50% Con. Doc's

THE UNIVERSITY OF UTAH

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SIGNATURES

DATE	**Director, Campus Design & Construction**
DATE	**Director, Plant Operations**
DATE	**Project Manager, Campus Design & Construction**
DATE	**User Department/Group, University of Utah**

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Contact: Mike MacFarlane
Contact Phone:

Sheet Number
G000

ABBREVIATIONS

&	AND	ID	INSIDE DIAMETER
AFF	ABOVE FINISH FLOOR	INFO	INFORMATION
ACT	ACOUSTIC CEILING TILE	INSUL	INSULATION
ADDL	ADDITIONAL	INT	INTERIOR
ADJ	ADJACENT/ADJUSTABLE		
ADMIN	ADMINISTRATION	JAN	JANITOR
ALT	ALTERNATE	J-BOX	JUNCTION BOX
ALUM	ALUMINUM		
ANOD	ANODIZED	LAM	LAMINATE
APPROX	APPROXIMATELY	LAV	LAVATORY
ARCH	ARCHITECTURAL		
AV	AUDIO/VISUAL	MAINT	MAINTENANCE
		MFR	MANUFACTURER
BLW	BELOW	MATL	MATERIAL
BD	BOARD	MAX	MAXIMUM
BO	BOTTOM OF	MECH	MECHANICAL
BLDG	BUILDING	MTL	METAL
BLT	BUILT	MIN	MINIMUM
CAB	CABINET	OC	ON CENTER
CD	CONSTRUCTION DOCUMENTS	OFCI	OWNER-FURNISHED, CONTRACTOR-INSTALLED
CFCI	CONTRACTOR-FURNISHED, CONTRACTOR-INSTALLED	OFOI	OWNER-FURNISHED, OWNER-INSTALLED
CFOI	CONTRACTOR-FURNISHED, OWNER-INSTALLED	ORIG	ORIGINAL
CIP	CAST-IN-PLACE	OD	OUTSIDE DIAMETER
CIR	CIRCLE	OPP	OPPOSITE
CJ	CONTROL JOINT		
CL	CENTER LINE	PT	PAINT
CLG	CEILING	PBD	PARTICLE BOARD
CLR	CLEAR	PLYWD	PLYWOOD
CMU	CONCRETE MASONRY UNIT	PREF	PREFERENCE
CNTR	COUNTER	PRELIM	PRELIMINARY
COL	COLUMN	PREV	PREVIOUS
CONC	CONCRETE	PROJ	PROJECT
CONF	CONFERENCE		
CONSTR	CONSTRUCTION	QTY	QUANTITY
COORD	COORDINATE		
CONT	CONTINUE/ CONTINUOUS	R	RADIUS
CORR	CORRIDOR	RLG	RAILING
CSK	COUNTERSUNK	RM	ROOM
CSWK	CASEWORK	RCP	REFLECTED CEILING PLAN
CTR	CENTER	REINF	REINFORCED
CUST	CUSTODIAN	RFI	REQUEST FOR INFORMATION
		RFP	
DBE	DECK BEARING ELEVATION	REQ'D	REQUEST FOR PROPOSAL
DBL	DOUBLE	REV	REQUIRED
DEG	DEGREE	RD	REVISION
DEMO	DEMOLITION/ DEMOLISH	RO	ROOF DRAIN
DET	DETAIL		ROUGH OPENING
DF	DRINKING FOUNTAIN	SCHED	
DIAG	DIAGONAL	SECT	SCHEDULE
DIA	DIAMETER	SHT	SECTION
DIM	DIMENSION	SIM	SHEET
DIR	DIRECTION	SC	SIMILAR
DIST	DISTANCE	SCWD	SOLID CORE
DR	DOOR	S	SOLID CORE WOOD DOOR
DWG	DRAWING	SMFEC	SOUTH
			SUFACE MOUNTED FIRE
EA	EACH	SPEC	EXTINGUISHER CABINET
E	EAST	SQ	SPECIFICATIONS
ELEC	ELECTRICAL	SF	SQUARE
EWC	ELECTRICAL WATER COOLER	STD	SQUARE FEET
ELEV	ELEVATION	SS	STANDARD
EMER	EMERGENCY	STL	STAINLESS STEEL
ENCL	ENCLOSURE	STOR	STEEL
EQ	EQUAL	SD	STORAGE
EQUIP	EQUIPMENT	STRUCT	STORM DRAIN
EST	ESTIMATE	SUSP CLG	STRUCTURAL
ETC	ET CETERA		SUSPENDED CEILING
EXIST	EXISTING	TBD	
EXP	EXPANSION	TMPD	TO BE DETERMINED
EJ	EXPANSION JOINT	TEMP	TEMPERED
EXT	EXTERIOR	THRES	TEMPORARY
EIFS	EXTERIOR INSULATION & FINISH SYSTEM	THRU	THRESHOLD
		T&G	THROUGH
FT	FOOT	TO	TONGUE & GROOVE
FIN FLR	FINISH FLOOR	TOB	TOP OF
FEC	FIRE EXTINGUISHER CABINET	TOC	TOP OF BEAM
FIXT	FIXTURE	TOF	TOP OF CONCRETE
FD	FLOOR DRAIN	TOS	TOP OF FLOOR/ FOOTING
FURN	FURNITURE/ FURNISHINGS	TOW	TOP OF SLAB
		TS	TOP OF WALL
GA	GAUGE	TYP	TUBE STEEL
GALV	GALVANIZED		TYPICAL
GC	GENERAL CONTRACTOR	UNO	
GL	GLASS	UTIL	UNLESS NOTED OTHERWISE
GYP BD	GYPSUM BOARD		UTILITY
		VIF	
HCP	HANDICAP	VERT	VERIFY IN FIELD
HNDRL	HANDRAIL	VEST	VERTICAL
HDW	HARDWARE	VCT	VESTIBULE
HDWD	HARDWOOD		VINYL COMPOSITE TILE
HDR	HEADER	WC	
HVAC	HEATING, VENTILATION, & AIR CONDITIONING	WT	WATER CLOSET
		W	WEIGHT
HT	HEIGHT	W/	WEST
HM	HOLLOW METAL	W/O	WITH
HB	HOSE BIBB	WD	WITHOUT
			WOOD

DEFERRED SUBMITTALS

Deferred submittal items are those portions of the design that are not submitted at the time of applicant and have received prior approval from the building official to be deferred. All deferred submittal items must be listed on the approved plans and be placed in a conspicuous location. The process is as follows:

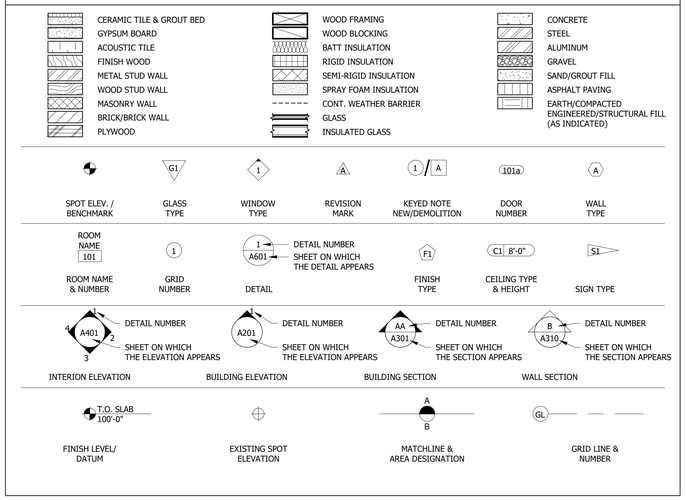
1 Deferred submittal items must first be reviewed by the Engineer or Architect in responsible charge.
2 The deferred submittal items are then submitted to the city for review. The Engineer or Architect in responsible charge shall attach a letter to the submittal stating that the deferred item is in conformance with the design of the structure.
3 Deferred submittal items shall not be installed until approved by the Building Official.

FIRE ALARM

GENERAL NOTES

1. DATUM ELEVATION EQUATION: 100'-0" = 4944.52
2. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES WITH THE CONSTRUCTION DOCUMENTS TO ARCHITECT PRIOR TO ANY INSTALLATION AND/OR ASSOCIATED CONSTRUCTION ACTIVITY.
3. CONSTRUCTION DAMAGE TO ANY ADJACENT SURFACES, DUE TO DEMOLITION ACTIVITIES OR NEW CONSTRUCTION, SHALL BE PATCHED OR REPAIRED TO MATCH ADJACENT SURFACES.
4. ALL GENERAL CONTRACTORS, SUBCONTRACTORS AND SUB-SUBCONTRACTORS SHALL BE LICENSED TO WORK IN THE STATE OF UTAH.
5. ALL WORK AND MATERIALS SHALL BE IN FULL CONFORMANCE WITH THE LATEST FEDERAL, STATE, AND LOCAL CODES, LAWS AND ORDINANCES, INCLUDING THEIR MOST RECENT REVISIONS, AMENDMENTS AND INTERPRETATIONS.
6. THE GENERAL CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ARCHITECT FOR IMMEDIATE RESOLUTION, ANY CODE VIOLATIONS OR INCORRECT CONSTRUCTION OR SAFETY PROBLEMS THAT ARE EXISTING CONDITIONS.
7. ALL DIMENSIONS SHALL BE AS INDICATED ON THE DRAWINGS OR AS CLARIFIED BY THE ARCHITECT. UNDER NO CIRCUMSTANCES SHALL DIMENSIONS BE DETERMINED BY SCALING THE DRAWINGS. BRING ANY DIMENSIONAL DISCREPANCIES TO THE ARCHITECT'S ATTENTION FOR CLARIFICATION.
8. ALL MOUNTING HEIGHTS OF SIGNAGE, FIXTURES, CABINETRY, HAND/ GUARDRAILS AND TOILET ACCESSORIES SHALL MEET ADA STANDARDS.
9. ADJACENT, IN-LINE PARTITIONS OF DIFFERENT TYPES SHALL BE CONSTRUCTED SUCH THAT EXPOSED, FINISHED SURFACES ARE FLUSH AND CONTINUOUS.
10. FLOOR PLANS INDICATE FLOOR FINISH TRANSITIONS ONLY WHERE TRANSITIONS OCCUR WITHIN ROOMS OR SPACES, UNLESS OTHERWISE NOTED.
11. VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT PROVIDED AS PART OF THIS CONTRACT OR BY OTHERS.
12. REFER TO CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND OTHER CATEGORIES OF DRAWINGS FOR ADDITIONAL NOTES.
13. SEE SYMBOL LEGEND FOR TYPICAL GRAPHIC SYMBOLS.
14. ALL WOOD BLOCKING WITHIN WALLS SHALL BE FIRE-RETARDANT PRESSURE-TREATED LUMBER.
15. THE GENERAL CONTRACTOR SHALL PROVIDE & MAINTAIN A TEMPORARY 6'-0" HIGH FENCE ALONG THE CONTRACT LIMIT LINE AND AROUND THE STAGING AREA FOR THE DURATION OF CONSTRUCTION.

SYMBOLS



VICINITY MAP



DRAWING INDEX

SHEET NUMBER	SHEET NAME
GENERAL	
G000	TITLE SHEET
G001	NOTES, INDEX, ABBREVS. & DEFERRED SUBMITTALS
G002	CODE ANALYSIS
G003	LIFE SAFETY & CODE PLANS
G004	LIFE SAFETY & CODE PLAN
G005	LIFE SAFETY & CODE PLAN
CIVIL	
CG100	GRADING PLAN
CS001	GENERAL NOTES
CS100	SITE PLAN
CU100	UTILITY PLAN
LANDSCAPE	
L-D101	TREE REMOVAL & PROTECTION PLAN
L-L101	LANDSCAPE PLAN
L-L501	LANDSCAPE DETAILS
L-R101	IRRIGATION PLAN
L-R501	IRRIGATION DETAILS
L-R502	IRRIGATION DETAILS
DEMOLITION	
AD100	BASEMENT LEVEL DEMOLITION PLAN
AD101	MAIN FLOOR DEMOLITION PLAN
AD102	LEVEL 2 DEMOLITION PLAN
ARCHITECTURAL	
A001	SITE PLAN
A100	BASEMENT FLOOR PLAN
A101	LEVEL 1 FLOOR PLAN
A102	LEVEL 2 FLOOR PLAN
A103	ROOF PLAN
A104	DIMENSIONED PLANS
A110	REFLECTED CEILING PLANS
A120	FINISH FLOOR PLANS
A140	FURNITURE PLANS (FOR REFERENCE ONLY)
A200	BUILDING ELEVATIONS
A300	BUILDING SECTIONS
A310	WALL SECTIONS
A311	WALL SECTIONS
A312	WALL SECTIONS
A400	ENLARGED FLOOR PLANS & ELEVATIONS
A430	LAB PLANS & ELEVATIONS
A431	LAB EQUIPMENT SCHEDULES
A500	EXTERIOR DETAILS
A525	INTERIOR DETAILS
A540	ROOF DETAILS
A600	WALL TYPES
A610	DOOR SCHEDULE & TYPES
A615	WINDOW & GLAZING TYPES
A700	INTERIOR STAIR PLANS, SECTIONS & DETAILS
A701	EXTERIOR STAIR PLANS, SECTIONS & DETAILS
STRUCTURAL	
SB101	FOOTING AND FOUNDATION PLAN
SB501	TYPICAL FOOTING & FOUNDATION DETAILS
SB502	TYPICAL FOOTING & FOUNDATION DETAILS
SB503	FOOTING & FOUNDATION DETAILS
SB601	CONCRETE SCHEDULES
SB602	REINFORCING SCHEDULES
SB611	MASONRY SCHEDULES
SE001	GENERAL STRUCTURAL NOTES
SE002	GENERAL STRUCTURAL NOTES
SE003	LEGENDS & ABBREVIATIONS
SF101	LEVEL 1 FRAMING PLAN
SF102	LEVEL 2 FRAMING PLAN
SF103	ROOF FRAMING PLAN
SF501	TYPICAL CONCRETE OVER STEEL DECK DETAILS
SF502	COMPOSITE STEEL FLOOR DETAILS
SF503	STEEL BEAM TO MASONRY WALL
SF511	TYPICAL ROOF FRAMING DETAILS
SF514	STEEL BEAM TO MASONRY WALLS
SF515	STEEL ROOF FRAMING DETAILS
SF551	NON-BEARING MASONRY WALL BRACING
SF552	NON-STRUCTURAL DETAILS
SF601	TYPICAL STEEL FRAMING SCHEDULES
SF602	STEEL COLUMN SCHEDULE AND DETAILS
SF603	STEEL DECK SCHEDULES
MECHANICAL	
M001	MECHANICAL LEGEND, SYMBOLS & ABBREVIATIONS
M100	BASEMENT MECHANICAL PLAN
M100D	BASEMENT MECHANICAL DEMO PLAN
M101	LEVEL 1 MECHANICAL PLAN
M102	LEVEL 2 MECHANICAL PLAN
M103	ROOF LEVEL MECHANICAL AND PLUMBING PLAN
M200	BASEMENT PIPING PLAN
M201	LEVEL 1 PIPING PLAN
M202	LEVEL 2 PIPING PLAN
M501	MECHANICAL DETAILS
M601	MECHANICAL SCHEDULES
M701	MECHANICAL SCHEMATICS
PLUMBING	
P100	BASEMENT FLOOR PLUMBING PLAN
P100D	BASEMENT PLUMBING DEMO PLAN
P101	LEVEL 1 PLUMBING PLAN
P102	LEVEL 2 PLUMBING PLAN
P401	ENLARGED PLUMBING PLANS
P501	PLUMBING DETAILS
P601	PLUMBING SCHEDULES
ELECTRICAL	
EC101	FLOOR PLAN - TELECOM
EC501	TELECOM DETAILS
EC502	TELECOM DETAILS
EC701	TELECOM RISER DIAGRAMS
ED100	FLOOR PLAN - ELECTRICAL DEMOLITION
EG001	GENERAL NOTES AND SYMBOLS LISTS
EL100	BASEMENT FLOOR PLAN - LIGHTING PLAN
EL101	LEVEL 1 FLOOR PLAN - LIGHTING PLAN
EL102	LEVEL 2 FLOOR PLAN - LIGHTING PLAN
EL501	LIGHTING DETAILS
EL502	LIGHTING WIRING DIAGRAM
EL601	LIGHT FIXTURE SCHEDULE AND NOTES
EP100	BASEMENT FLOOR PLAN - POWER PLAN
EP101	LEVEL 1 FLOOR PLAN - POWER PLAN
EP102	LEVEL 2 FLOOR PLAN - POWER PLAN
EP103	ROOF LEVEL POWER PLAN
EP501	POWER DETAILS
EP502	POWER DETAILS
EP641	POWER SCHEDULES
EP701	ONE-LINE DIAGRAM - POWER
EP702	ONE-LINE DIAGRAM - POWER
EP801	PANEL SCHEDULES
EP802	PANEL SCHEDULES
ES101	SITE PLAN - ELECTRICAL
ES501	SITE DETAILS
EY100	BASEMENT FLOOR PLAN - SYSTEM
EY101	LEVEL 1 FLOOR PLAN - SYSTEMS
EY102	LEVEL 2 FLOOR PLAN - SYSTEMS PLAN
EY501	ACCESS CONTROL DOOR ROUGH-IN DETAILS
EY701	FIRE ALARM RISER DIAGRAM

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawings	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

22294

SHEET TITLE:

NOTES, INDEX, ABBREVS. & DEFERRED SUBMITTALS

SHEET NUMBER:

G001

SHEET OF

THE UNIVERSITY OF UTAH

CODE ANALYSIS FORM – 2018 INTERNATIONAL BUILDING CODE

BUILDING IDENTIFICATION:	CVRTI Building Addition Building 500 U of U Project No. 22294/Contract No. FMA-0001855
CODE ANALYSIS COMPLETION DATE:	September 16, 2021

PART 1

APPLICABLE CODE	YEAR	APPLICABLE CODE	YEAR
International Building Code (IBC)	2018	ADA (ADAAG)	2010
International Existing Building Code	2018	ICC/ANSI A117.1	2017
International Fire Code (IFC)	2018	NFPA 101 Life Safety Code (State)	2018
International Mechanical Code (IMC)	2018	NFPA 101 Life Safety Code (Federal)	2015
International Energy Conservation Code (IECC)	2018	NFPA 99 Health Care Facilities Code	2018
International Plumbing Code (IBC)	2018	FGI Health Care Guidelines	2018
National Electric Code	2017		

PART 2

Occupancy Group (Chapter 3)			(T601) Const. Type (1)	Area (506)				Height (T504.3) *6		Stories (T504.4) *6		(508) Mixed Use Type (3)	(508.4.2) Area Ratio
Floor	Name	Group		Tabular NS (T506.2)	Tabular SM or S1 (T506.2)	Aa (*2)	Actual ft²	Tabular T504.3 ft	Actual ft	Tabular (T504.4)	Actual		
		B	VB				15,346						
Basement - Floor Total:							12,278						
	Existing						10,896						
	Addition						1,382						
1st - Floor Total:							15,184						
	Existing						11,270						
	Addition						3,914						
2nd Floor Total:							10,515						
	Existing						6,601						
	Addition						3,914						
3rd Floor Total:													
Building Total (*2)			VB	9,000	16,750	47,250	37,957	40'	27'	2	2		

*(*1) Construction Type shall be the most restrictive occupancy requirement for the entire building (508.3 & 508.4)*
*(*2) Area- Total building Area dependent on Single or Mixed Occupancy Building (506.2.1 through 506.2.4) & Frontage Increase (506.3)*

PART 3 - ALLOWABLE AREA DETERMINATION (506.2.1 through 506.2.4 & 506.3)

FRONTAGE INCREASE: If = [714/714- 0.25]30/30 = .75

	Existing	VB, NS Potential	New	Total
Basement	11,205 sf	4,545 sf	1,382 sf	12,587 sf
Main	11,205 sf	4,545 sf	3,914 sf	15,119 sf
Upper	6,514 sf	9,236 sf	3,914 sf	10,428 sf

506.2.3 *(Equation 5-2)*

Aa = [9,000 + (9,000 * 0.75) * 2 = **31,500 (VB)**

506.3.2 *(Equation 5-4)*
W = 30 (max. allowed)

506.3.3 *(Equation 5-5)*
If = [(629 / 629) - 0.25] * 30/30 = 0.75

SINGLE-OCCUPANCY, MULTISTORY BUILDINGS (506.2.3):
Allowable Area: Aa = [At + (NS× If)] × Sa = (Provide Analysis)
Level 1, B Occupancy: Aa = [9,000 + (9,000 × .75)] x 1 = 15,750

Sa = Actual number of building stories above grade plane, not to exceed three. For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building stories above grade plane, not to exceed four.

PART 4 - GRADE PLANE ELEVATION & HEIGHT & STORIES (504)

BUILDING WALL	AVERAGE ELEVATION	GRADE PLANE ELEVATION
NORTH	24'	4938'
SOUTH	30'	4930'
EAST	24'	4938'
WEST	24'	4929'
	TOTAL BUILDING G.P.E.	4934'

STORY	FINISHED FLOOR ELEVATION	STORY ABOVE G.P.E.	HEIGHT
BASEMENT	100'-0"	--	
1ST FLOOR	112'-2"		
2ND FLOOR	123'-8"		
TOTAL BUILDING		**2-STORIES**	**27'**

PART 5 - AUTOMATIC FIRE SPRINKLER (903 & T903.2.11.6)

ITEM	REFERENCE	COMMENTS
Required	NA	Building is type VB NS
Fire-Resistance Substitution (T601)	NA	

PART 6 - OCCUPANCY SEPARATIONS (T508.4)

OCCUPANCY/OCCUPANCY	RATING	IBC/UL DESIGN #
NA		

PART 7 - OTHER BUILDING ELEMENTS (T601 and T602)

ELEMENT	MATERIAL (602.3)	RATING	IBC/UL DESIGN #
Interior Bearing Wall		0*	
Interior Non-Bearing Wall		0*	
Structural Frame		0	
Exterior Structural Frame		0	
Shaft Enclosure a,b		1	U.L. U419
Floor / Ceiling Assembly		0*	
Roof / Ceiling Assembly		0	
Vertical Exit Enclosure a,b		1	U.L. U419

a. *Fire-resistance rating not less than the floor assembly penetrated (713.4) (1023.2).*
b. *2 hours where connecting four stories or more and 1 hour where connecting less than four stories, including basements. (713.4) (1023.2).*

** . 1 Hr. Rated Wall and 2 Hr. Rated Floor above and below Lab Control Area to be determined based on Chemical Inventory Analysis. Considering Chemical Inventory and Analysis has not yet been provided, the Program assumes there is a Control Area at the perimeter of Level 1 and Level 2 Labs.*

PART 8 - EXTERIOR WALL FIRE RATINGS & OPENING PROTECTION (T705.8)

WALL LOCATION	PROTECTED	UNPROTECTED	PARAPET REQ'D (705.11)
NORTH		No Limit	Not required
SOUTH		No Limit	Not required
EAST		No Limit	Not required
WEST		No Limit	Not required

PART 9 - EXIT REQUIREMENTS

FLOOR LEVEL	ROOM NAME	OCCUPANT LOAD FACTOR (T1004.1.2)	# OF OCCUPANTS (1004)	# OF EXITS (1006)	REQ'D EGRESS WIDTH (1005)	REQ'D STAIR WIDTH (1005.3)	REQ'D AISLE WIDTH (1016)	COMMON PATH OF TRAVEL DISTANCE (T1006.2.1)	TOTAL TRAVEL DISTANCE (1017)
							NA		
Basement Total:		150@8 50@Labs 300@Storage	119	3	36"	48"			
Level 1 Total:		150@8 50@Labs 300@Storage	204	3	41"	48"			
Level 2 Total:		150@8 50@Labs 300@Storage	81	2	36"	48"			
Building Total:			404	8	121"	5		75'	200'

PART 10 - ADDITIONAL REQUIREMENTS

ACCESSIBLE MEANS OF EGRESS (1009):	Provided
ACCESSIBLE ROUTE (1104 & INTERNATIONAL EXISTING BUILDING CODE):	Provided
SPECIAL OCCUPANCY REQUIREMENTS (CHAPTER 4):	N/A

PLUMBING FIXTURES (T 2902.1)

TOTAL NUMBER OF REQUIRED FIXTURES:

OCCUPANCY	OCC. LOAD	WATER CLOSETS RATIO	WATER CLOSETS MEN	WATER CLOSETS RATIO	WATER CLOSETS WOMEN	LAVATORIES RATIO	LAVATORIES MEN	LAVATORIES WOMEN	DRINKING FOUNTAINS RATIO	DRINKING FOUNTAINS TOTAL	SERVICE SINKS
A3		1 PER 125	0.0	1 PER 65	0.0	1 PER 200	0.0	0.0	1 PER 1000	0	
B	444	1 PER 25 <50	2.0	1 PER 25 <50	2.0	1 PER 40 <80	2.0	2.0	1 PER 100	4.44	
		1 PER 50 >50	3.4	1 PER 50 >50	3.4	1 PER 80 >80	1.8	1.8			
E		1 PER 50	0.0	1 PER 50	0.0	1 PER 50	0.0	0.0	1 PER 100	0	
I2 - Hosp, Ambul		1 PER ROOM		1 PER ROOM		1 PER ROOM			1 PER 100	0	
I2 - Staff		1 PER 25	0.0	1 PER 25	0.0	1 PER 35	0.0	0.0	1 PER 100	0	
I2 - Visitors		1 PER 75	0.0	1 PER 75	0.0	1 PER 100	0.0	0.0	1 PER 500	0	
S1, S2		1 PER 100	0.0	1 PER 100	0.0	1 PER 100	0.0	0.0	1 PER 1000	0	
TOTAL REQUIRED			**6**		**6**		**4**	**4**		**5**	**0**
TOTAL PROVIDED			**7**		**8**		**6**	**7**		**0**	**0**

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CODE ANALYSIS

SHEET NUMBER:
G002

SHEET OF

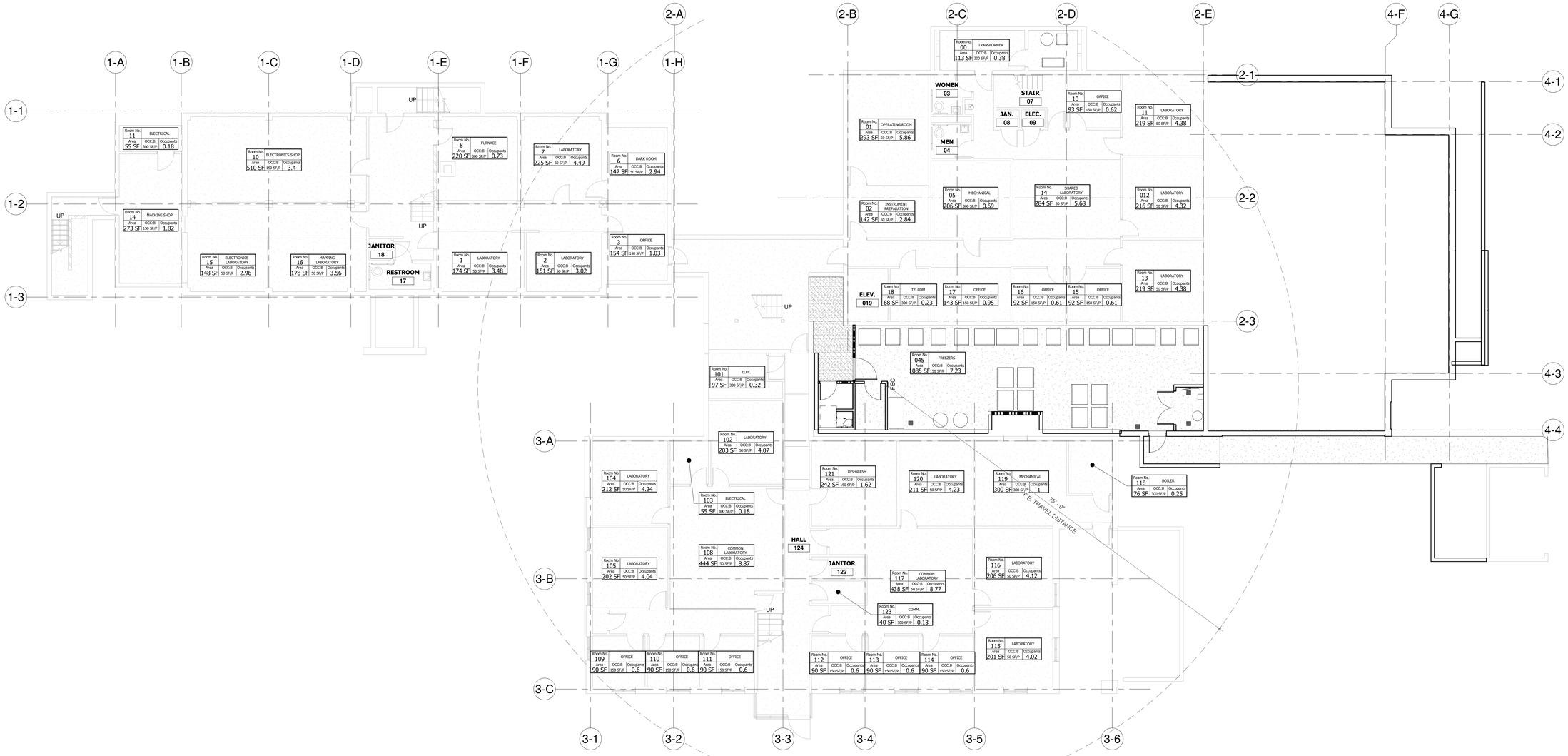
CODE PLAN LEGEND

RATED PARTITIONS LEGEND:

- FIRE-RATED PARTITION, 1 HOUR MIN.
- FIRE-RATED PARTITION, 2 HOUR MIN.
- FIRE-RATED PARTITION, 3 HOUR MIN.
- FIRE-RATED PARTITION, 4 HOUR MIN.
- SMOKE
- F.E.C. — FIRE EXTINGUISHER CABINET
- F.E. — FIRE EXTINGUISHER

CODE PLAN LEGEND

- 1-HOUR RATED WALL
- 2-HOUR RATED WALL
- F.E.C. — FIRE EXTINGUISHER CABINET
- F.E. — FIRE EXTINGUISHER
- TRAVEL DISTANCE PATH < 250' @ A3 & E; <300' @ B
- 100 — OCCUPANT LOAD
- 10 / 10 — EXIT WIDTH IN INCHES (REQUIRED / PROVIDED)



1 BASEMENT CODE & EGRESS PLAN
1/8" = 1'-0"

THE UNIVERSITY OF UTAH
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1795 E. So. Campus Dr., Rm. 201
Salt Lake City, UT 84112-9403
Phone: (801) 581-6883
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[A] The Boston Building
9 Exchange Place, Suite 1100
Salt Lake City, Utah 84111

[O] 801 531 7600

[E] info@edaarch.com

[W] www.edaarch.com

EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawings	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

22294

SHEET TITLE:

LIFE SAFETY & CODE PLANS

SHEET NUMBER:

G003

SHEET OF

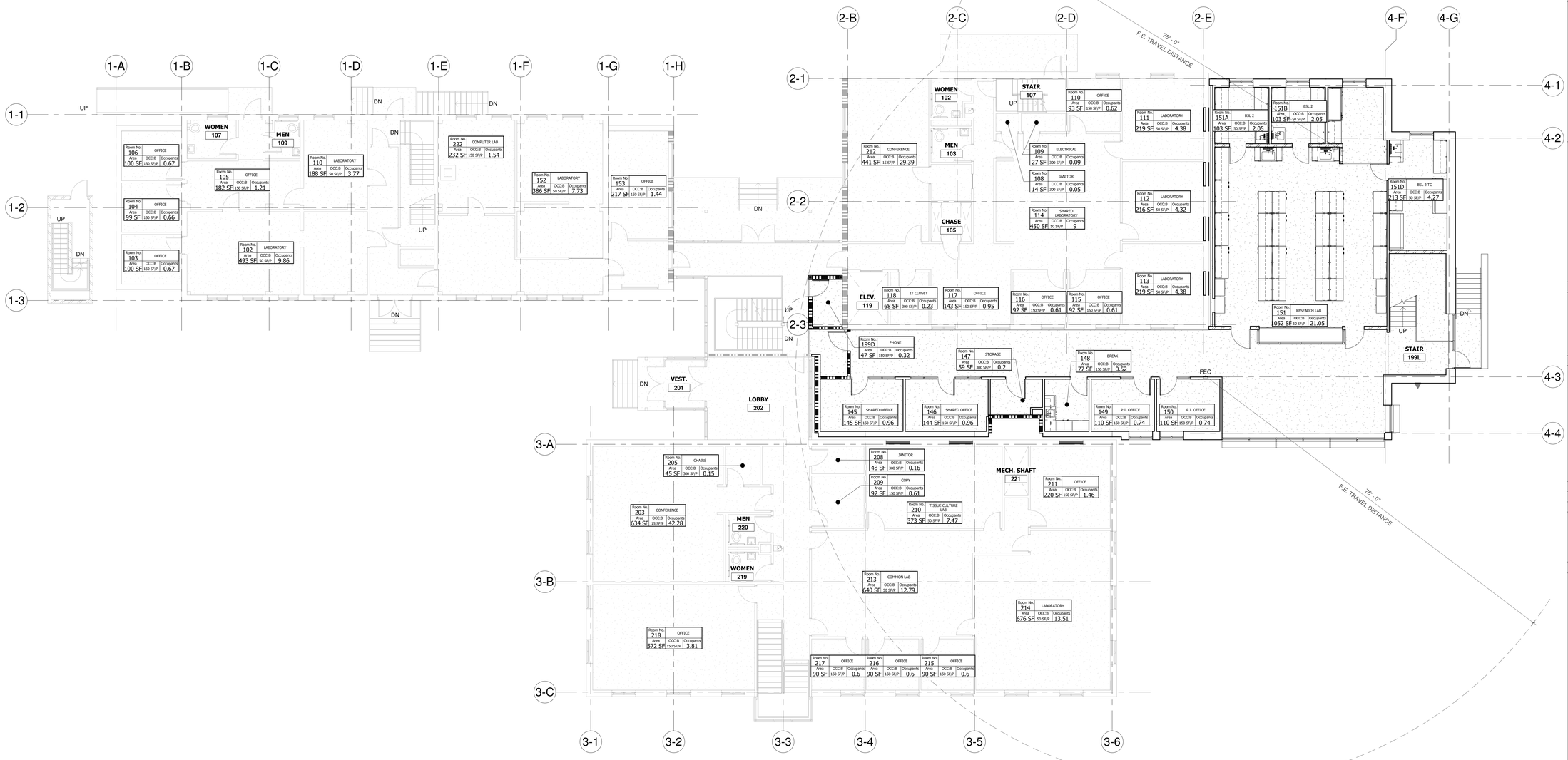
CODE PLAN LEGEND

RATED PARTITIONS LEGEND:

- FIRE-RATED PARTITION, 1 HOUR MIN.
- FIRE-RATED PARTITION, 2 HOUR MIN.
- FIRE-RATED PARTITION, 3 HOUR MIN.
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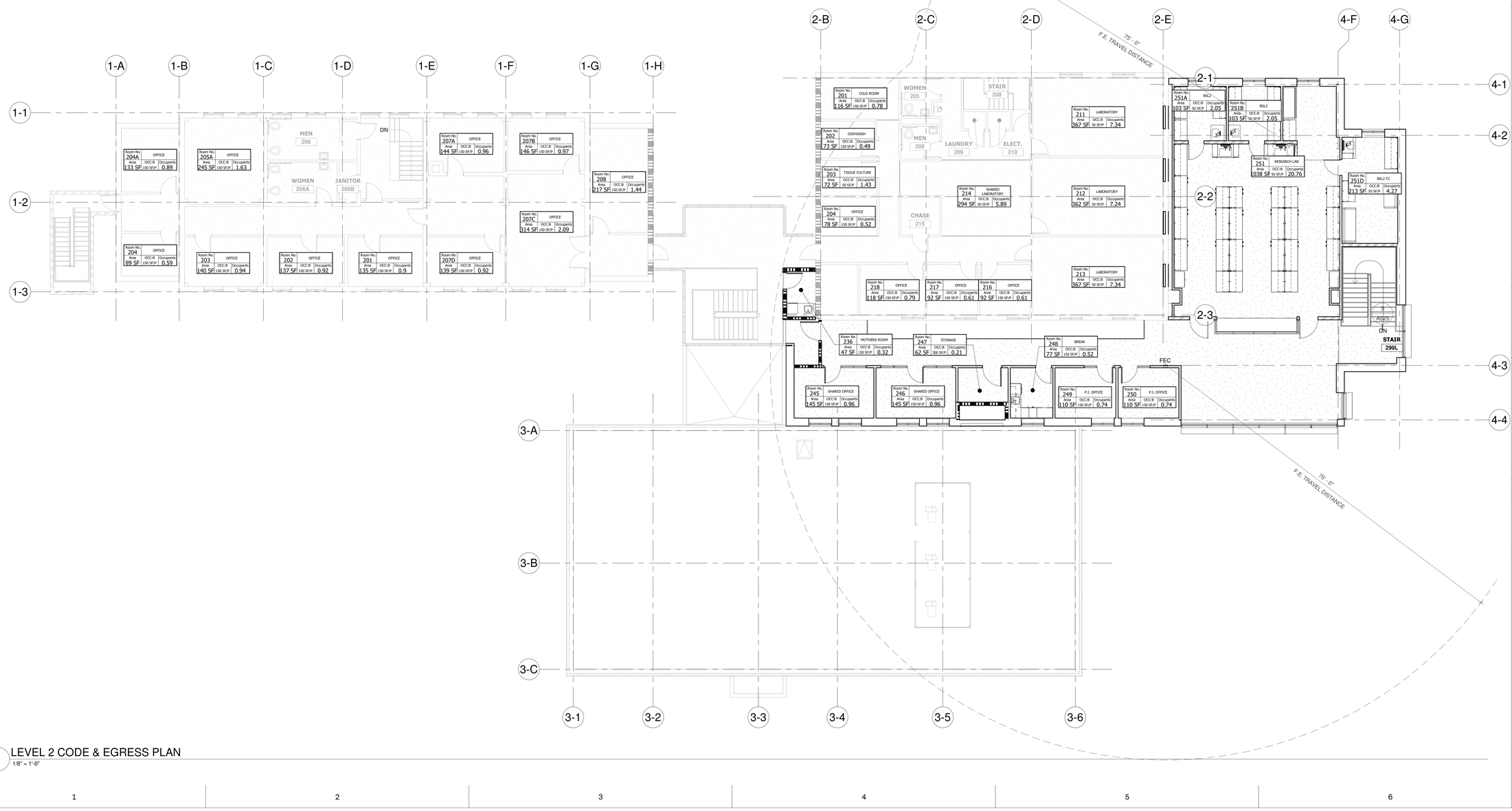
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SHEET TITLE:
LIFE SAFETY & CODE PLAN

SHEET NUMBER:
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GENERAL NOTES

ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE UNIVERSITY OF UTAH PLANS AND SPECIFICATIONS, AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS."

A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. SUCH MEETINGS SHALL COMPLY WITH ADOPTED ENGINEERING STANDARDS.

ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FOLLOWING COMPLETION OF WORK.

CONTRACTOR SHALL COMPLY WITH SAFETY REQUIREMENTS CONTAINED IN THE GENERAL CONDITIONS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LAND OF PUBLIC AND PRIVATE OWNERSHIP TO BE RESTORED TO ITS ORIGINAL STATE.

CONTRACTOR SHALL RETAIN AND PROTECT WHERE POSSIBLE ALL LANDSCAPING, TREES, EXISTING UTILITIES, DITCHES, CULVERTS, PAVEMENT, FENCING, ETC. EXCEPT WHERE REMOVAL OF SUCH ITEMS IS SPECIFICALLY CALLED FOR ON DRAWINGS. ANY DAMAGE CAUSED BY CONTRACTOR SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.

ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.

EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.

CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE ENGINEER SHALL BE REMOVED AND REPLACED
SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A ENGINEER.

CONTRACTOR SHALL TAKE PHOTOS OF JOB SITE PRIOR TO PROJECT BEGINNING.

CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF TRANSITIONS TO BE AS SHOWN ON PLANS.

ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AND AS SHOWN ON THESE PLANS.

EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATION.

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS.

PROPER SIGNS, BARRIERS, BARRICADES AND LIGHTS SHALL BE PLACED AND MAINTAINED

THIS PLAN DOES NOT AUTHORIZE CLOSURE OF ANY ROAD OR STREET.

CONTRACTOR SHALL PROTECT CONSTRUCT STAGING AREA WITH FENCING.

CONTRACTOR SHALL MAINTAIN DUST FREE WORK AND STORAGE AREAS. WATER TRUCK REQUIRED.

CONTRACTOR SHALL REFER TO GEOTECHNICAL STUDY PREPARED BY CONSOLIDATED ENGINEERING DATED OCTOBER 31, 2019.

CONTRACTOR SHALL COMPLY WITH ANY CULTURAL RESOURCE MANAGEMENT OR PROTECTION DIRECTIVES FROM THE UNIVERSITY. ALL EXCAVATION SHALL BE COORDINATED WITH ARCHAEOLOGICAL MONITORING, IF DIRECTED. CONTRACTOR WILL SELF-REPORT TO UNIVERSITY PROJECT MANAGER ANY HISTORIC OR CULTURAL RESOURCE DISCOVERIES MADE DURING UNMONITORED EXCAVATION WORK. EACH TREE REMOVED SHALL BE REPLACED BY 2 PER UNIVERSITY STANDARDS AN PLACED ON CAMPUS. LOCATION TO BE COORDINATED WITH SUE POPE 801-581-5371.

EACH TREE REMOVED SHALL BE REMOVED SHALL BE REPLACED BY TWO PER UNIVERSITY STANDARDS. LOCATION TO BE COORDINATED WITH SUE POPE 801-581-5371.

GRADING PLAN GENERAL NOTES

1. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.
2. UNLESS OTHERWISE SHOWN, NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
3. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS THAT DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB, GUTTER, AND UTILITIES.
4. BENCHMARK VERIFICATION: CONTRACTOR SHALL USE BENCHMARKS AND DATUM SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
5. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
6. GRADES WITHIN ASPHALT PARKING AREAS SHALL BE CONSTRUCTED TO WITHIN 0.10 FEET OF THE DESIGN GRADE. HOWEVER, THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL PAVEMENT AREAS AND ALONG ALL CURBS. ALL CURBS SHALL BE BUILT IN ACCORDANCE TO THE PLANS AND SPECIFICATIONS. CURBS OR PAVEMENT AREAS WHICH DO NOT PROVIDE PROPER DRAINAGE MUST BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
7. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
8. EXISTING GRADE CONTOUR INTERVALS ARE SHOWN AT 1 FOOT INTERVALS.
9. PROPOSED GRADE CONTOUR INTERVALS ARE SHOWN AT 1 FOOT INTERVALS.
10. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
11. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
12. SITE WORK SHALL MEET OR EXCEED UNIVERSITY OF UTAH SITE SPECIFICATIONS.
13. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
14. SUBGRADE MATERIALS SHALL BE TESTED TO EVALUATE THE MECHANICAL STRENGTH OF THE PROPOSED ROADWAY SUBGRADE BY CALIFORNIA BEARING RATIO (CBR) PENETRATION TESTS. THE FINAL DETERMINATION FOR STRUCTURAL PAVEMENT SECTION SHALL BE DETERMINED FOLLOWING AN EVALUATION OF THESE TEST RESULTS.
15. TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PREPARED BY PSOMAS DATED 07/12/21. TOPOGRAPHIC INFORMATION IS TO BE CONSIDERED ACCURATE WITHIN 1/2 OF A CONTOUR INTERVAL PER THE STANDARD ESTABLISHED BY THE UNITED STATES NATIONAL MAP ACCURACY STANDARDS. TOPOGRAPHY REPRESENTS THE SURFACE AS FOUND AT THE TIME OF THE SURVEY. THE ENGINEER AND OWNER CANNOT GUARANTEE THAT THE TOPOGRAPHIC CONDITIONS AT THE TIME OF CONSTRUCTION ARE THE SAME AS AT THE TIME THE TOPOGRAPHIC MAP WAS PRODUCED. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE TOPOGRAPHY AT THE TIME OF BIDDING BY UTILIZING SPOT CHECKS THROUGHOUT THE SITE. IN THE EVENT THE CONTRACTOR DISAGREES WITH THE ACCURACY OF THE TOPOGRAPHY OF FINDS DISCREPANCIES, THEN IT MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK. BY SUBMITTING AN EARTHWORK BID THE CONTRACTOR ACKNOWLEDGES THAT THEY HAVE VERIFIED THE ACCURACY OF THE TOPOGRAPHIC INFORMATION FOUND ON THESE PLANS AND TAKE NO EXCEPTION TO THE DATA PROVIDED.

UTILITY GENERAL NOTES

1. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEYS AND UNIVERSITY OF UTAH RECORDS.
2. ALL ABANDONED UTILITIES DAMAGED OR EXPOSED DURING CONSTRUCTION SHALL BE REMOVED CAPPED AND PLUGGED. ENGINEER SHALL DETERMINE WHICH UTILITIES ARE ABANDONED.
3. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.
4. CONTRACTOR SHALL CONTACT THE UNIVERSITY OF UTAH SURVEY DEPARTMENT TO MARK ALL EXISTING UTILITIES A MINIMUM OF TWO WEEKS PRIOR TO ANY DIGGING. LENARD BARNEY 801-585-5070
5. CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.
6. ALL STORM DRAIN PIPE PENETRATIONS INTO BOXES SHALL BE CONSTRUCTED WITH WATER TIGHT SEALS ON THE OUTSIDE AND GROUTED SMOOTH WITH A NON-SHRINK GROUT ON THE INSIDE. CONDUITS SHALL BE CUT OFF FLUSH WITH THE INSIDE OF THE BOX.
7. ALL STORM DRAIN CONDUITS AND BOXES SHALL BE CLEAN AND FREE OF ROCKS, DIRT, AND CONSTRUCTION DEBRIS PRIOR TO FINAL INSPECTION.
8. CONTRACTOR IS RESPONSIBLE FOR THE COST AND SCHEDULING OF REQUIRED UTILITIES TO THE PROJECT.
9. ALL WATERLINES TO BE BURIED WITH A MINIMUM OF 60 INCHES OF COVER.
10. ALL RIM ELEVATIONS ARE APPROXIMATE, CONTRACTOR TO ADJUST FINAL RIMS TO GRADE.
11. ALL UTILITIES ARE TO BE AS-BUILT SURVEYED IN U OF U COORDINATE SYSTEM WITH HORIZONTAL AND VERTICAL INFORMATION.

ABBREVIATIONS

AC	ACRES
AD	AREA DRAIN
ADA	AMERICANS WITH DISABILITIES ACT
ASPH	ASPHALT
ASSY	ASSEMBLY
BDRY	BOUNDARY
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BM	BENCHMARK
BOW	BOTTOM OF WALL
C&G	CURB AND GUTTER
CB	CATCH BASIN
CL	CENTER LINE
CO	CLEANOUT
COMM	COMMUNICATION
CONC	CONCRETE
CONC DB	CONCRETE DUCT BANK
COR	CORNER
CTR	CENTER
CTRL	CONTROL
CU FT	CUBIC FEET
CU YD	CUBIC YARD
DEMO	DEMOLITION
DET	DETAIL
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
E	ELECTRIC
EC	EDGE OF CURB
EG	EXISTING GRADE
EL	ELEVATION
EQUIP	EQUIPMENT
EXIST	EXISTING
F	FIRE
FF EL	FINISH FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FOC	FACE OF CURB
FOW	FACE OF WALL
FT	FEET OR FOOT
FUT	FUTURE
FW	FIRE WATER
G	GROUND
GV	GATE VALVE
HC	HANDICAP
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
INV	INVERT
LATL	LATERAL
LOD	LIMIT OF DISTURBANCE
LS	LANDSCAPE
LF	LINEAR FEET (FOOT)
MAX	MAXIMUM
MECH RM	MECHANICAL ROOM
MH	MANHOLE
MON	MONUMENT
NA	NOT APPLICABLE
NPW	NON-POTTABLE WATER
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PC	POINT OF CURVATURE
PCC	PRECAST CONCRETE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVE
PROP	PROPERTY
PSL	PIPE SLEEVE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE (PLASTIC)
RAD	RADIUS
RAD PT	RADIUS POINT
RCP	REINFORCED CONCRETE PIPE
REQ	REQUIRED
RD	ROOF DRAIN
RDC	REDUCER
REV	REVISION
RMP	ROCKY MOUNTAIN POWER
ROW	RIGHT OF WAY
SCHEM	SCHEMATIC
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SF	SQUARE FEET (FOOT)
SP EL	SPOT ELEVATION
SPEC	SPECIFICATION
SQ	SQUARE
SQ YD	SQUARE YARD
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
SURF	SURFACE
SURV	SURVEY
SW	SIDEWALK
SWR	SEWER
SYM	SYMBOL
SYS	SYSTEM
T	TOWNSHIP
TBC	TOP BACK OF CURB
TEMP	TEMPORARY
TOC	TOP OF CONCRETE
TOP	TOP OF PAVEMENT
TOPO	TOPOGRAPHY
TOW	TOP OF WALL
TYP	TYPICAL
UDOT	UTAH DEPARTMENT OF TRANSPORTATION
UGND	UNDERGROUND
UTIL	UTILITY
VC	VERTICAL CURVE
VERT	VERTICAL
W	WATER
W/	WITH
W/O	WITHOUT
WM	WATER METER

LEGEND

EXISTING	PROPOSED	
sd sd	SD SD	STORM DRAIN
s s	S S	SANITARY SEWER
w w	W W	WATER
fw fw	FW FW	FIRE WATER
irr irr		IRRIGATION
g g	G G	GAS
e e	E E	ELECTRIC
t t	T T	TELEPHONE
fo fo	FO FO	FIBER OPTIC
com	COM	COMMUNICATIONS
cax cax	CAX CAX	CABLE
		CENTER LINE
		PROPERTY LINE
		CURB & GUTTER
x x x x x x	X X X X X X	FENCE LINE
	DU DU	DRY UTILITY
	LOD	LIMITS OF DISTURBANCE
	SF	SILT FENCE
		DITCH/SWALE
5090	5090	MAJOR CONTOUR
5091	5091	MINOR CONTOUR
		ACCESSIBLE ROUTE
		RETAINING WALL
		WATER VALVE
	W	WATER METER
		FIRE HYDRANT
		AIR RELEASE VALVE
		BLOW-OFF VALVE
		WATER SHUT OFF
		TEE
		CROSS
		STUB
		11.25° BEND
		22.5° BEND
		45° BEND
		90° BEND
D	SD	STORM DRAIN MANHOLE
		STORM DRAIN INLET
		STORM COMBO BOX
S	SS	SANITARY SEWER MANHOLE
		SANITARY SEWER CLEANOUT
	G&O	GREASE TRAP
	GM	GAS METER
		LIGHT POLE
T E S	T E S	ELECTRICAL EQUIPMENT
		UTILITY POLE
		GUY WIRE
		TRASH ENCLOSURE
		INLET PROTECTION
		ACCESSIBLE STALL

PROJECT BENCHMARK

BEARINGS ARE BASED ON THE NORTH DAKOTA STATE PLANE COORDINATE SYSTEM, NORTH ZONE, DISTANCES ARE GROUND.

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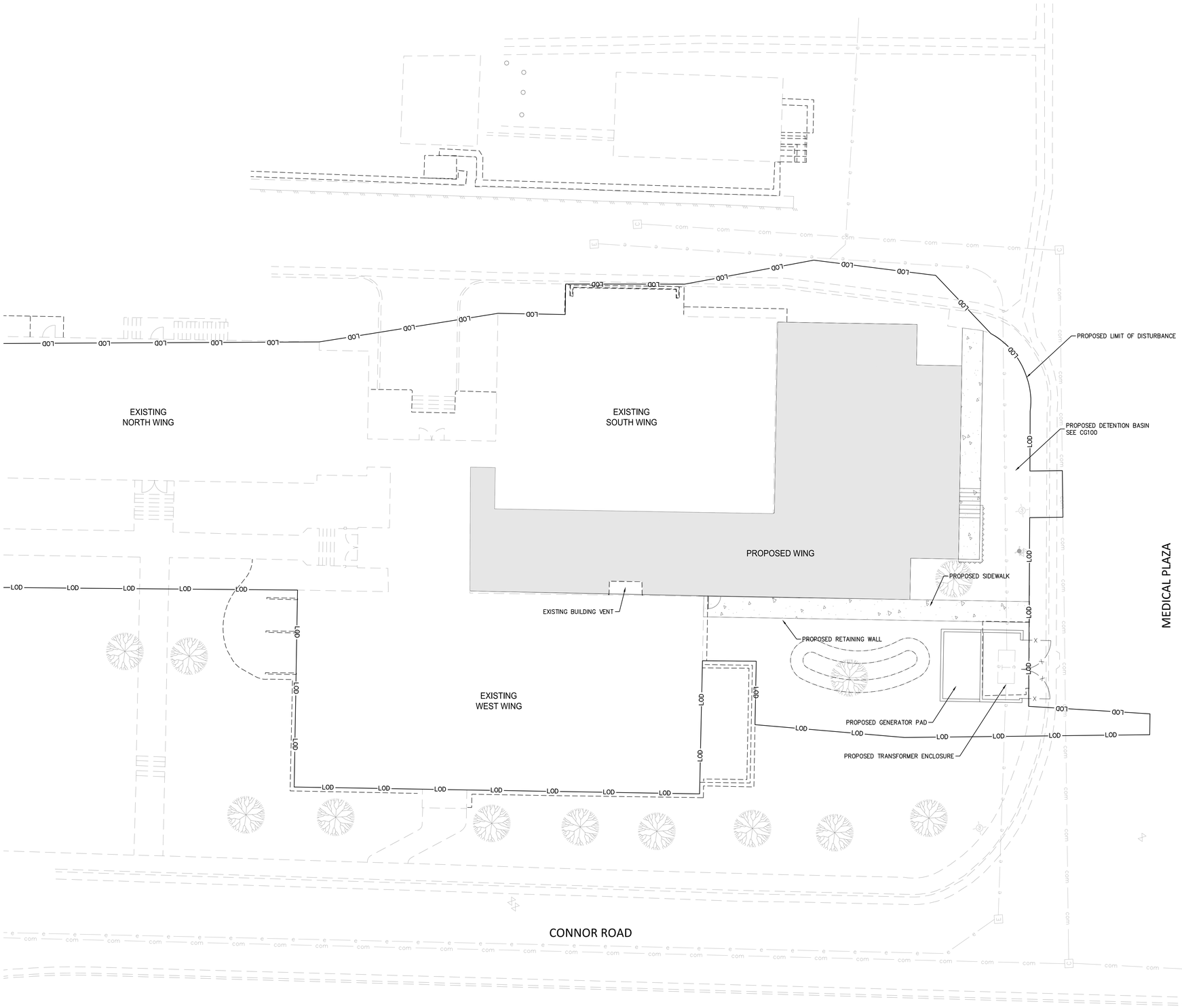
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SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
CS001

SHEET OF



10 0 10 20
SCALE OF FEET
FULL SIZE (30x42) 1"=10'

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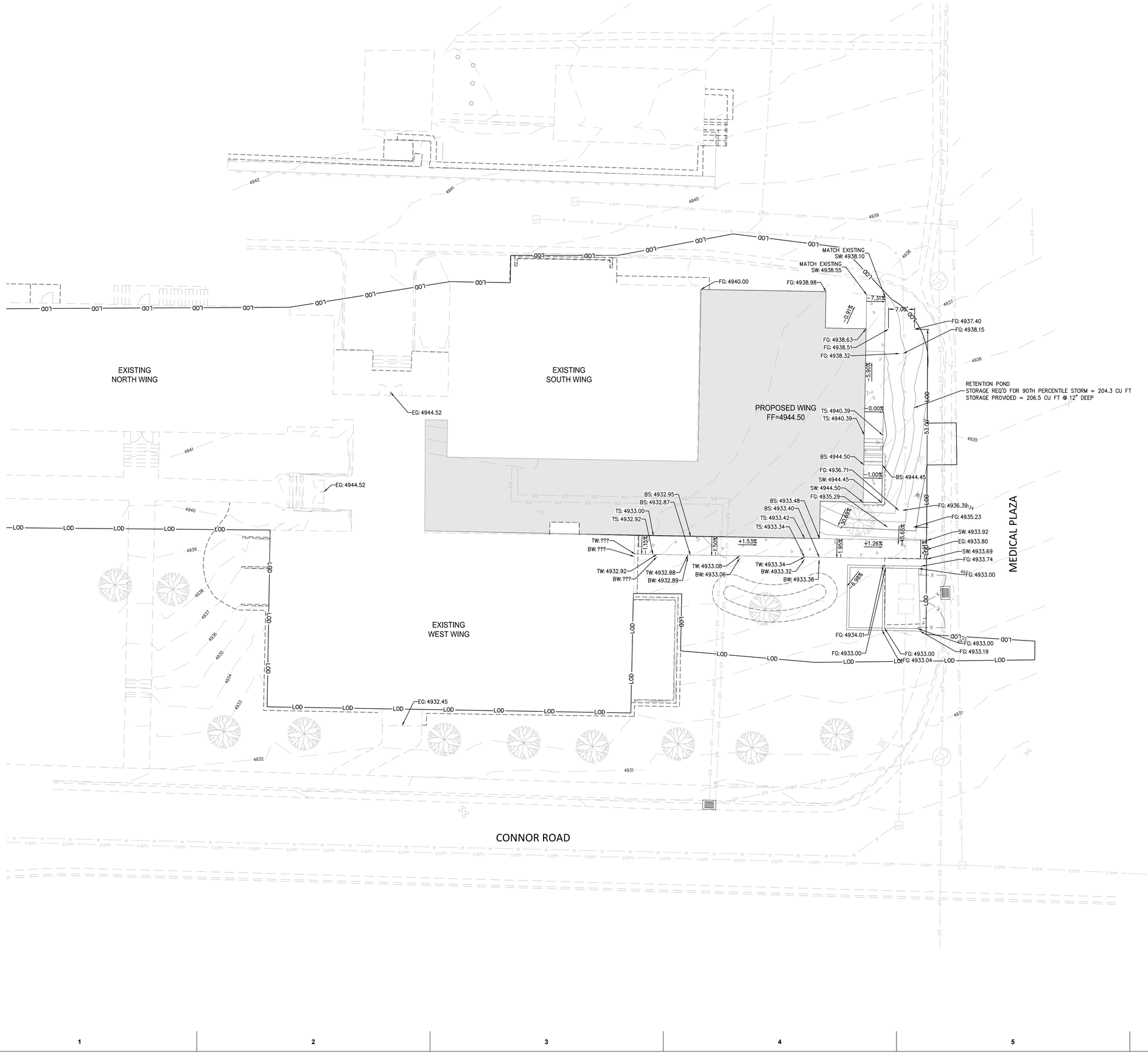
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SITE PLAN

SHEET NUMBER:

CS100

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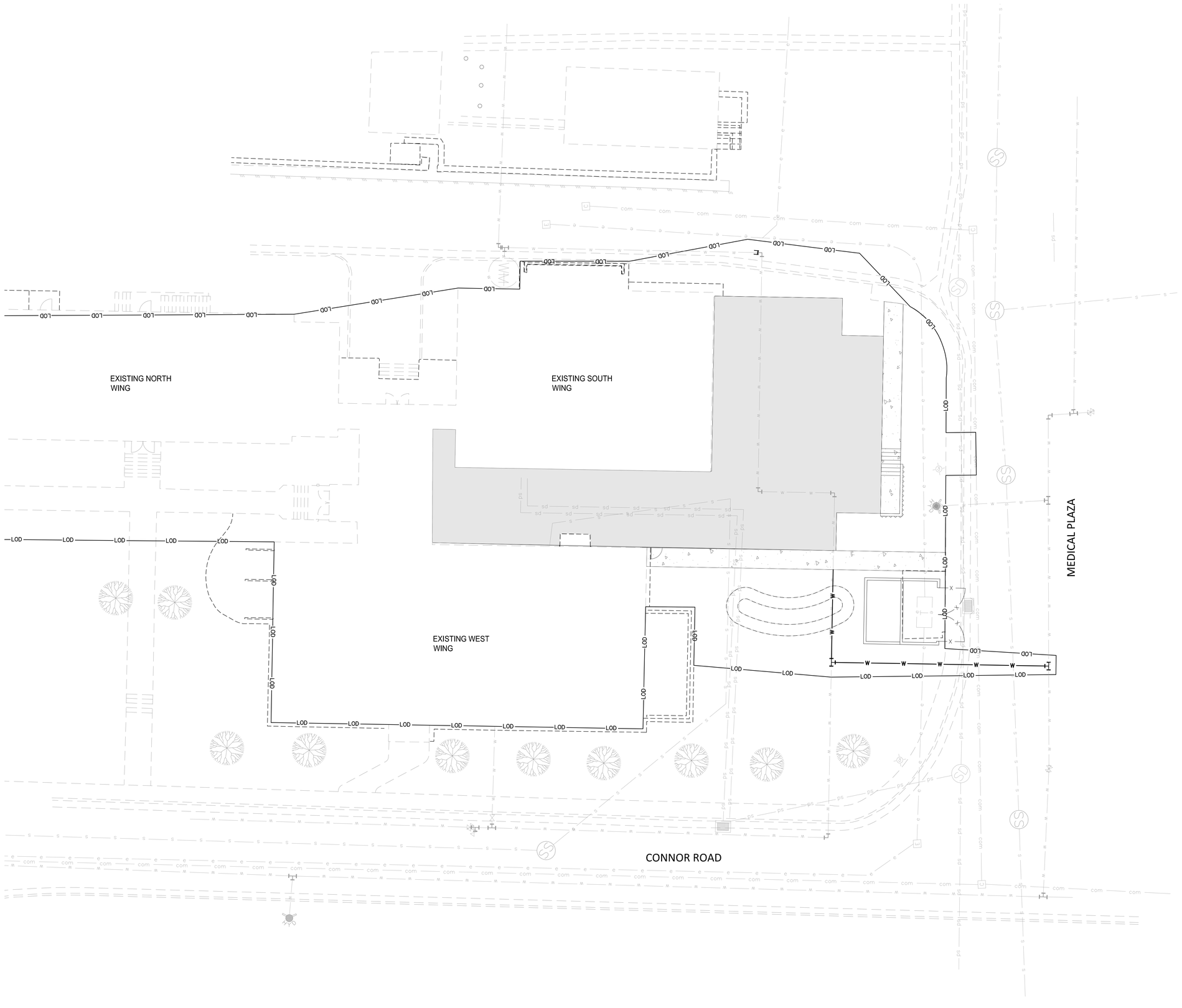
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GRADING PLAN

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawings	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

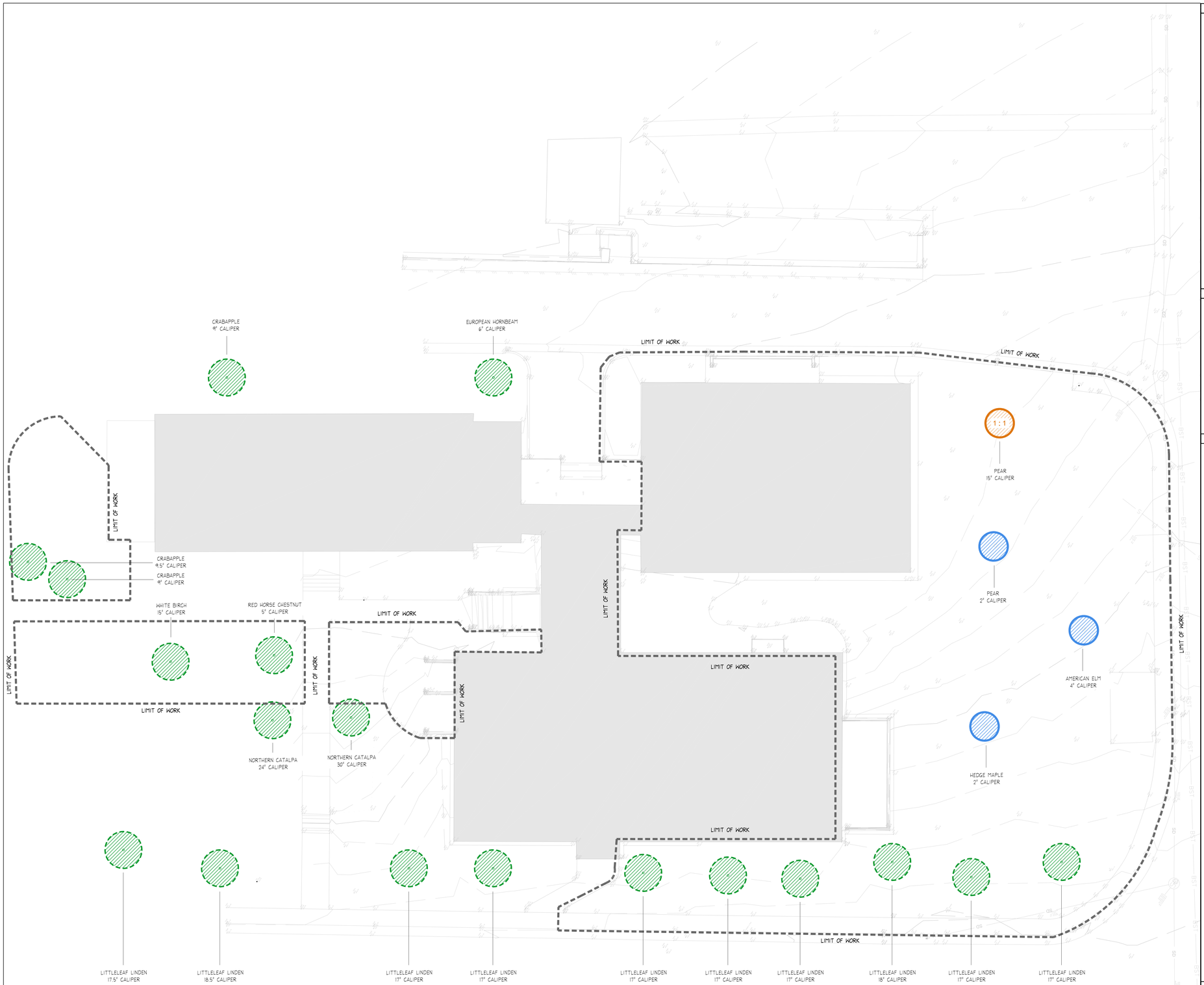
SHEET TITLE:

UTILITY PLAN

SHEET NUMBER:

CU100

SHEET OF



LANDSCAPE NOTES | A

EXISTING IRRIGATION SYSTEM - OVERALL:

1. THE CONTRACTOR SHALL MAINTAIN THE EXISTING IRRIGATION SYSTEM IN GOOD WORKING CONDITION TO ENSURE THAT EXISTING PLANT MATERIAL RECEIVES THE PROPER AMOUNT OF WATER DURING ALL PHASES OF CONSTRUCTION.
2. THE CONTRACTOR SHALL MAKE MODIFICATIONS TO THE EXISTING IRRIGATION SYSTEM AS REQUIRED WHERE EXISTING IRRIGATION ZONES WILL BE DISRUPTED DUE TO PROPOSED CONSTRUCTION.
3. MODIFICATIONS TO THE EXISTING IRRIGATION SYSTEM MAY INCLUDE BUT IS NOT LIMITED TO: RE-ROUTING EXISTING IRRIGATION MAINLINES AND LATERAL LINES, RELOCATING EXISTING IRRIGATION VALVES AND CONTROL WIRING, AND RELOCATING EXISTING IRRIGATION HEADS.
4. THE CONTRACTOR MAY ALSO BE REQUIRED TO HAND-WATER EXISTING PLANT MATERIAL AS REQUIRED IF THE MODIFICATIONS TO THE EXISTING IRRIGATION SYSTEM AS PREVIOUSLY LISTED ARE NOT MADE.
5. ANY EXISTING HEAD, VALVE, VALVE MARKER, VALVE BOX, OR OTHER EXISTING EQUIPMENT LOCATED WHERE THERE WILL BE A GRADE OR SURFACE MATERIAL CHANGE, SHALL BE ADJUSTED UP OR DOWN TO ITS PROPER POSITION IN RELATION TO THE NEW FINISHED GRADE, AT NO ADDITIONAL COST TO THE OWNER, UNLESS THE PLANS SHOW IT TO BE RELOCATED.
6. CONTRACTOR TO MAKE RECORD DRAWINGS OF ANY CHANGES OR MODIFICATIONS TO THE EXISTING IRRIGATION SYSTEM.

EXISTING TREES - OVERALL:

1. PRIOR TO THE REMOVAL OF ANY EXISTING TREE, THE CONTRACTOR TO RECEIVE WRITTEN APPROVAL FROM THE OWNER, TAGGED ON SITE, AND BE REMOVED PER UNIVERSITY OF UTAH STANDARDS.
2. ANY TREE TO BE PROTECTED WITHIN THE LIMIT OF WORK SHALL BE PROTECTED PER THE UNIVERSITY OF UTAH STANDARDS. THIS INCLUDES WATERING (AUTOMATIC DRIP IRRIGATION IS THE PREFERRED METHOD, PROPER ROOT PRUNING, PROTECTION OF DRIP ZONE WITH RIGID FENCING (CHAIN LINK), SIGNAGE, BRANCH TRIMMING, AND ROOT PROTECTION MEASURES.
3. UNIVERSITY OF UTAH ARBORIST SHALL BE CONSULTED FOR THE DURATION OF THE PROJECT TO ENSURE THE MEANS AND MEASURES ARE BEING USED TO PROTECT THE EXISTING TREES. INSPECTIONS BY THE ARBORIST SHALL OCCUR MONTHLY FOR THE DURATION OF THE PROJECT. FERTILIZATION SHALL OCCUR FOR THE TREES DUE TO STRESS, ENCROACHMENT OF CONSTRUCTION ACTIVITIES OR IDENTIFIED BY THE ARBORIST.
4. REFER TO THE UNIVERSITY OF UTAH DFCM REQUIREMENTS - 4.0 LANDSCAPE AND IRRIGATION STANDARDS.
5. ANY TREE TO BE PROTECTED WITHIN THE LIMIT OF WORK SHALL BE PROTECTED SHALL FERTILIZED IN THE SPRING AND FALL AND PROVIDE SOIL CONDITIONER AND ROOT PRUNING.
6. THE LOCATION OF THE RIGID FENCING SHALL BE INDICATED BY PAINT BY THE LANDSCAPE ARCHITECT AND UNIVERSITY OF UTAH GROUNDS MAINTENANCE REPRESENTATIVE PRIOR TO THE INSTALLATION OF THE FENCING. THE GENERAL CONTRACTOR SHALL SCHEDULE REQUEST THE MARKING FOR THE LOCATION OF THE FENCING ONE WEEK PRIOR TO THE INSTALLATION OF THE RIGID FENCING. NO FENCING SHALL BE MOVED UNLESS THE CONTRACTOR RECEIVES APPROVAL FROM THE UNIVERSITY OF UTAH GROUNDS MAINTENANCE.
7. AIR SPADE AND CUT ROOTS PRIOR TO EXCAVATION ON ALL TREES THAT MAY BE IMPACTED BY CONSTRUCTION.
8. HIRE A CERTIFIED ARBORIST DURING THE DURATION OF THE PROJECT.

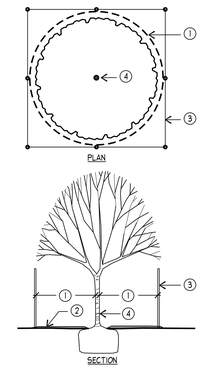
LEGEND | B

PROTECT IN PLACE EXISTING TREE AND TEMPORARY FENCING REFER TO SPECS AND SHT. L-D101 DTL. C

1 : 1 — REMOVE EXISTING TREE PER UNIV. STANDARDS - 1 TO 1 RATIO - HEALTHY

TRANSPLANT TREE

TREE PROTECTION DETAIL | C



1. PROTECTIVE ROOT ZONE (PRZ)- TO CALCULATE CRITICAL ROOT RADIUS, MEASURE THE TREE'S DIAMETER (DBH) 4.5 FEET ABOVE THE GROUND. MEASURE IN INCHES. FOR EACH INCH, ALLOW FOR 1 TO 1.5 FEET OF CRITICAL ROOT RADIUS. IF A TREE'S DBH IS TEN INCHES, ITS CRITICAL ROOT RADIUS IS 10 TO 15 FEET.
2. CONTRACTOR TO INSTALL AND MAINTAIN 6" OF TEMPORARY BARK MULCH WITHIN THE PRZ FOR PROPOSED TREES TO BE PROTECTED IN PLACE. REMOVE AND REPLACE PRIOR TO FINAL INSTALLATION OF PROPOSED MULCHES AND SURFACING.
3. TREE PROTECTION BARRIER- SEE SPECIFICATIONS. REVIEW DESIGN WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
4. TREE TRUNK

NOTES:
1. IF THERE IS TRENCHING WITHIN THE PRZ, TRENCHES SHALL ONLY BE DUG ON ONE SIDE OF THE TREE AND SHALL BE DONE ONLY DONE WITH APPROVAL FROM THE OWNER'S REPRESENTATIVE. HAND EXCAVATION ONLY.
2. DO NOT STOCKPILE ANY MATERIALS OR LOCATE ANY HEAVY MACHINERY WITHIN THE PRZ. THERE SHALL BE NO TRAFFIC ALLOWED WITHIN THE PRZ.
3. ONLY MOVE BARRIER WITH THE PERMISSION OF THE OWNER'S REPRESENTATIVE.

TREE SUMMARY | D

DESCRIPTION	QUANTITY
TREES PROTECTED WITHIN PROJECT LIMIT OF DISTURBANCE	10
REMOVE EXISTING TREE PER UNIV. STANDARDS 1 TO 2 RATIO REPLACEMENT - HEALTHY	0
REMOVE EXISTING TREE PER UNIV. STANDARDS 1 TO 1 RATIO - HEALTHY	1
TRANSPLANT TREE PER UNIV. STANDARDS	3

KEY MAP AND SCALE | E

NORTH SCALE: 1"-0" = 10'-0"

0 5 10 20

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
#	50% CD Drawings	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

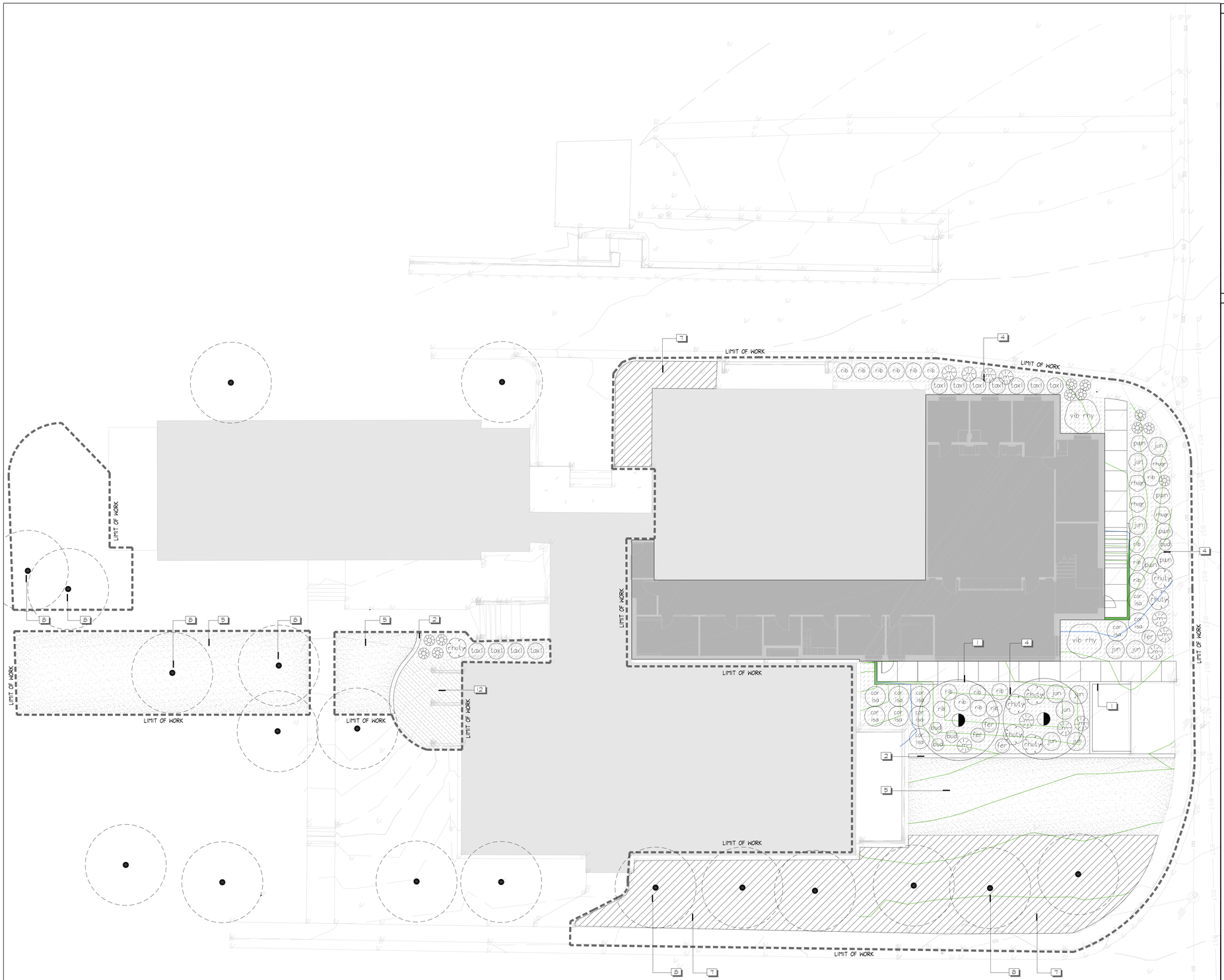
SHEET TITLE:

TREE REMOVAL & PROTECTION PLAN

SHEET NUMBER: L-D101

SHEET OF

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LANDSCAPE NOTES — A

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COSTS INCURRED DUE TO DAMAGE OF SAID UTILITIES.
2. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH THE LANDSCAPE CONSTRUCTION FOR THIS PROJECT.
5. ALL PLANT MATERIAL SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE UPON DELIVERY TO THE SITE, AND PRIOR TO INSTALLATION.
6. IF DISCREPANCIES ARISE BETWEEN ACTUAL PLANTING AREA SIZES IN THE FIELD AND THOSE SHOWN ON THE PLANS, CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR RESOLUTION. FAILURE TO MAKE SUCH CONFLICTS KNOWN WILL RESULT IN CONTRACTOR'S LIABILITY FOR MATERIALS RELOCATION.
7. FINAL LOCATIONS OF ALL PLANT MATERIALS SHALL BE SUBJECT TO APPROVAL OF THE OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES AND LANDSCAPING THAT IS DESIGNATED TO REMAIN. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING OR OTHER APPROVED GUARDS OUTSIDE DRIP LINE (OUTER PERIMETER OF BRANCHES) OF TREES TO PROTECT FROM DAMAGE (SEE DETAIL). DO NOT STORE CONSTRUCTION MATERIALS, PERMIT VEHICULAR TRAFFIC OR PEDESTRIAN ACCESS WITHIN DRIP LINE TO AVOID SOIL COMPACTION. COORDINATE WITH ARCHS. AND CIVIL PLANS.
10. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.
11. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE DEPTHS DESCRIBED FOR TURF AREAS AND SHRUB BEDS AS INDICATED IN SHT. L-L101 DTL. B. IF NECESSARY DIG SUBGRADE IN SHRUB BEDS AND SODDED AREAS DOWN AS SPECIFIED BEFORE PLACING AMENDED TOPSOIL. REFER TO GRADING PLAN FOR FINISH GRADE AND DRAINAGE. UNIV. OF UTAH GROUNDS MAINTENANCE TO INSPECT THE SUBGRADE PRIOR TO INSTALLING THE TOPSOIL.
13. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE ONLY AS APPROVED BY THE OWNER'S REPRESENTATIVE.
14. ALL TREES LESS THAN 2" CAL. SHALL BE DOUBLE STAKED AND ALL DECIDUOUS TREES GREATER THAN 2" CAL. - SEE SHT. L-L501 DTL. B.
15. A SOILS REPORT SHALL BE PROVIDED BY THE CONTRACTOR, AND SHALL DESCRIBE THE DEPTH, COMPOSITION, AND BULK DENSITY OF THE TOPSOIL AND SUBSOIL AT THE SITE AND SHALL INCLUDE RECOMMENDATIONS FOR SOIL AMENDMENTS. REFER TO SPECS.
16. ALL PLANTING AREAS TO BE INSPECTED BY THE UNIV. OF UTAH GROUNDS MAINTENANCE PRIOR TO ADDING TOPSOIL AND AMENDMENTS. TREES NEED INSPECTED BY THE UNIV. OF UTAH GROUNDS MAINTENANCE PRIOR TO PLANTING. 24 HOUR NOTICE IS REQUIRED. CHECK IN AND SIGN OFF SHALL BE COMPLETED ON THE CONSTRUCTION DOCUMENTS LOCATED IN THE CONSTRUCTION TRAILER.
17. PLANT MATERIAL SHALL BE REPLACED AS NEEDED WITHIN THE ONE YEAR WARRANTY. DO NOT WAIT UNTIL THE END OF THE WARRANTY TO REPLACE DEAD PLANT MATERIAL. DEAD PLANT MATERIAL NEED TO BE REPLACED IMMEDIATELY UPON OBSERVATION, UNLESS ARCHITECT OR OWNER DETERMINES OTHERWISE. (HEAT, COLD, NO WATER OR ETC.).

REFERENCE NOTE SCHEDULE — B

SYMBOL	DESCRIPTION	QTY
1	WALL - REFER TO ARCHS. PLANS	
2	CONCRETE MOW CURB, TYP. - REFER TO SHT. L-L501 DTL. F	
4	3" DEPTH OF BARK MULCH OVER 12" AMENDED TOPSOIL, TYP. - REFER TO SHT. L-L501 DTL. C. WHEN USING BARK MULCH ASSOCIATED WITH GROUNDCOVERS, USE 1" OF BARK MULCH. UNIVERSITY GROUNDS MAINTENANCE TO INSPECT THE SUBGRADE PRIOR TO INSTALLING THE TOPSOIL. PROTECT IN PLACE EXISTING TREE ROOTS, TYP.	2,372 sf
5	TURF AREAS WITH 6" AMENDED TOPSOIL, PROTECT EXISTING ROOTS WHEN PLACING TOPSOIL, TYP. - REFER TO SHT. L-L501 DTL. C. UNIVERSITY GROUNDS MAINTENANCE TO INSPECT THE SUBGRADE PRIOR TO INSTALLING THE TOPSOIL.	
7	PROTECT IN PLACE EXISTING PLANT MATERIAL	
8	PROTECT IN PLACE EXISTING TREE, TYP. - REFER TO SHEET L-D101	
12	TOP DRESS WITH 3" OF BARK MULCH OVER EXISTING SOILS. PROTECT IN PLACE EXISTING TREE ROOTS, TYP.	332 sf

* QUANTITY INFORMATION PROVIDED FOR REFERENCE ONLY. CONTRACTOR RESPONSIBLE TO VERIFY ALL QUANTITIES.

TREE SUMMARY — C

TREES REMOVED	QUANTITY	REQUIRED # 2" CALIPER
TREES REMOVED - 1 TO 2 RATIO - HEALTHY	0	0 X 0 = 0
TREES REMOVED - 1 TO 1 RATIO - UNHEALTHY	1	1 X 1 = 1
TOTAL	1	1

PROPOSED REPLACEMENT	QUANTITY
TREES REPLACED AT 1@ 4" CALIPER	1
TREES REPLACED AT 2@ 2" / 3" CALIPER	0
TOTAL (REQUIRED 1)	1

KEY MAP AND SCALE — D

NORTH SCALE: 1"-0" = 10'-0" (0, 5, 10, 20)

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PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
#	50% CD Drawings	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: LANDSCAPE PLAN

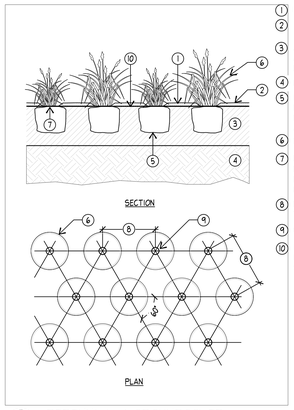
SHEET NUMBER: L-L101

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D PERENNIAL / GROUNDCOVER

SCALE: NTS — SECTION/PLAN

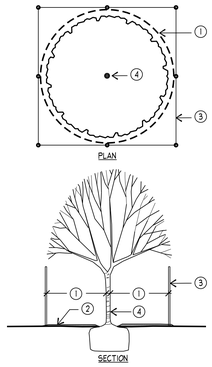


1. MULCH BACK FROM PLANT
2. MULCH LAYER - SEE SPECS. AND SHT. L-LI01 DTL. B FOR DEPTHS
3. AMENDED TOPSOIL- SEE SPECS. AND SHT. L-LI01 DTL. B FOR DEPTHS
4. UNDISTURBED SUBGRADE
5. IF PLANTS ARE POT-BOUND AT PLANTING TIME, LOOSEN THE ROOTS AROUND THE BOTTOM AND SIDES OF THE ROOT BALL
6. PLANT
7. BE SURE THE CROWN OF THE PLANT (THE POINT WHERE ROOTS AND TOP JOIN) IS EVEN WITH THE SOIL SURFACE
8. PLANT SPACING VARIES - REFER TO PLANT SCHEDULE OR PLAN
9. CENTER OF PLANT
10. WEED BARRIER FABRIC (USE UNDER ROCK NOT BARK) - SEE SPECS.

NOTES:
1. PRUNE DEAD, DISEASED, DAMAGED, OR RUBBING BRANCHES AT PLANTING TIME.
2. REMOVE ALL LABELS, WIRES, ETC. FROM PLANT.
3. WATER PLANTS THOROUGHLY FOLLOWING PLANTING TO SETTLE THE SOIL AROUND THE ROOTS.

A TREE PROTECTION

SCALE: NTS — SECTION/PLAN



1. PROTECTIVE ROOT ZONE (PRZ)- TO CALCULATE CRITICAL ROOT RADIUS, MEASURE THE TREE'S DIAMETER (DBH) 4.5 FEET ABOVE THE GROUND. MEASURE IN INCHES. FOR EACH INCH, ALLOW FOR 1 TO 1.5 FEET OF CRITICAL ROOT RADIUS. IF A TREE'S DBH IS TEN INCHES, IT'S CRITICAL ROOT RADIUS IS 10 TO 15 FEET.
2. CONTRACTOR TO INSTALL AND MAINTAIN 6" OF TEMPORARY BARK MULCH WITHIN THE PRZ FOR PROPOSED TREES TO BE PROTECTED IN PLACE. REMOVE AND REPLACE PRIOR TO FINAL INSTALLATION OF PROPOSED MULCHES AND SURFACING.
3. TREE PROTECTION BARRIER- SEE SPECIFICATIONS. REVIEW DESIGN WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
4. TREE TRUNK

NOTES:
1. IF THERE IS TRENCHING WITHIN THE PRZ, TRENCHES SHALL ONLY BE DUG ON ONE SIDE OF THE TREE AND SHALL BE DONE ONLY DONE WITH APPROVAL FROM THE OWNER'S REPRESENTATIVE. HAND EXCAVATION ONLY.
2. DO NOT STOCKPILE ANY MATERIALS OR LOCATE ANY HEAVY MACHINERY WITHIN THE PRZ. THERE SHALL BE NO TRAFFIC ALLOWED WITHIN THE PRZ.
3. ONLY MOVE BARRIER WITH THE PERMISSION OF THE OWNER'S REPRESENTATIVE.

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	CONT	CAL	QTY
•	Existing Tree Protect in Place	Existing Tree	-		18
◑	Malus x 'Spring Snow'	Spring Snow Crab Apple	B & B	3" Cal.	2

SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	QTY
bud	Buddleja x 'SMNBDL' TM	Pugster Amethyst Butterfly Bush	5 gal	4
fer	Chamaebatiaria millefolium 'Fernbush'	Fernbush	5 gal	4
cor isa	Cornus sericea 'Isanti'	Isanti Redosier Dogwood	5 gal	10
jun	Juniperus sabina 'Arcadia'	Arcadia Juniper	5 gal	10
pwn	Prunus besseyi 'Pawnee Buttes'	Sand Cherry	5 gal	5
rhugr	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	5 gal	4
rhuty	Rhus typhina 'Tiger Eyes'	Tiger Eyes Sumac	5 gal	7
rib	Ribes alpinum	Alpine Currant	5 gal	17
taxi	Taxus x media 'Hicksii'	Hicks Yew	5 gal	11
vib rhy	Viburnum x rhytidophylloides 'Alleghany'	Alleghany Viburnum	5 gal	2

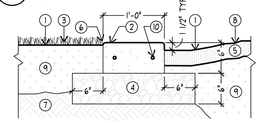
GRASSES	BOTANICAL NAME	COMMON NAME	SIZE	QTY
mis	Miscanthus sinensis 'Gracillimus'	Maiden Grass	5 gal	11
pen	Pennisetum alopecuroides 'Hameln'	Hamln Dwarf Fountain Grass	5 gal	12

GROUND COVERS	BOTANICAL NAME	COMMON NAME	CONT	SPACING	
	Turf-Grass REPAIR TURF AS NEEDED	Turf-Grass	sod		2,948 sf

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E SHRUB

SCALE: NTS — SECTION

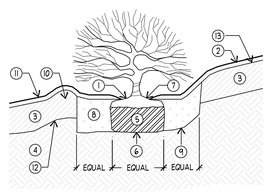


1. FINISH GRADE
2. CONCRETE MOW CURB. FINISH W/ MED. BROOM PERPENDICULAR TO HEADER RUN.
3. TURF
4. COMPACTED ROAD BASE
5. MULCH, SEE SPECS.
6. 1/4" RADIUS, TYPICAL
7. COMPACTED SUBGRADE
8. SHRUB BED
9. AMENDED TOPSOIL
10. 12" MOWCURB - REBAR (2) #4 CONTINUOUS. 6' SIM - REBAR (1) #4 CONTINUOUS. 2" CLEARANCE @ SIDES, TYP. BOTH TYPES.

NOTE:
1. WHEN MOW CURB IS ADJACENT TO BUILDING OR WALL, USE EXPANSION JOINT AND SLOPE 2% AWAY FROM BUILDING.
2. EXPANSION JOINTS AT 20' O.C. AND A TOOLED JOINT AT 10' O.C.
3. FORM IN PLACE, DO NOT EXTRUDE.

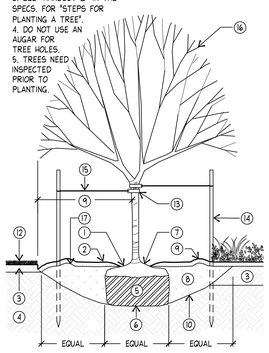
F CONCRETE MOW CURB

SCALE: NTS — SECTION



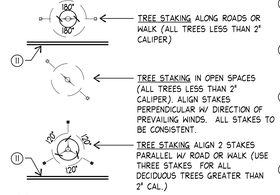
1. MULCH 1" TO 2" BACK FROM TRUNK
2. MULCH LAYER - SEE SPECS. AND SHT. L-LI01 DTL. B
3. AMENDED TOPSOIL- SEE SPECS. AND SHT. L-LI01 DTL. B FOR DEPTHS
4. UNDISTURBED SUBGRADE
5. IF THE SHRUB IS BALLED AND BURLAPPED (OR CONTAINED IN A WIRE BASKET), CUT AND REMOVE THE ROPE, STRING, WIRE, AND/OR WIRE BASKET FROM AROUND THE TRUNK AND TOP 1/3 OF THE ROOT BALL
6. SET ROOTBALL ON FIRMLY PACKED TOPSOIL TO PREVENT SETTLING
7. TRUNK FLAIR- SET 1" TO 2" ABOVE FINISH GRADE
8. MAKE THE HOLE WIDE, AS MUCH AS THREE TIMES THE DIAMETER OF THE ROOT BALL, BUT ONLY AS DEEP AS THE ROOT BALL. BACKFILL TOPSOIL BORROW - SEE SPECS. BACKFILL IN 12 INCH LIFTS.
9. ROUGHEN SIDES PRIOR TO BACKFILLING. SETTLE W/ WATER IN 12" LIFTS
10. CONSTRUCT WATERING DISH AT EACH PLANT USING TOPSOIL
11. FINISH GRADE
12. EXISTING GRADE
13. WEED BARRIER FABRIC (USE UNDER ROCK NOT BARK) - SEE SPECS.

NOTES:
1. PLANT SHRUB PLUMB.
2. PRUNE DEAD, DISEASED, DAMAGED, OR RUBBING BRANCHES AT PLANTING TIME. DO NOT PRUNE LEADER.
3. REMOVE ALL LABELS, WIRES, ETC. FROM SHRUB.
4. DO NOT USE AN AUGAR FOR TREE HOLES.
5. DEEP WATER WITH HOSE ALL PLANTS.
6. WATER PLANT IN POT PRIOR TO REMOVING PLANT FROM POT. DO NOT PLANT DRY PLANTS. ALL POTTED PLNATS MUST HAVE A MOIST ROOT SYSTEM.



NOTES:
1. PLANT TREE PLUMB.
2. REMOVE ALL LABELS, WIRES, ETC. FROM THE TREE'S STEM.
3. SEE "HANDOUT B" IN THE SPECS. FOR "STEPS FOR PLANTING A TREE".
4. DO NOT USE AN AUGAR FOR TREE HOLES.
5. TREES NEED INSPECTED PRIOR TO PLANTING.

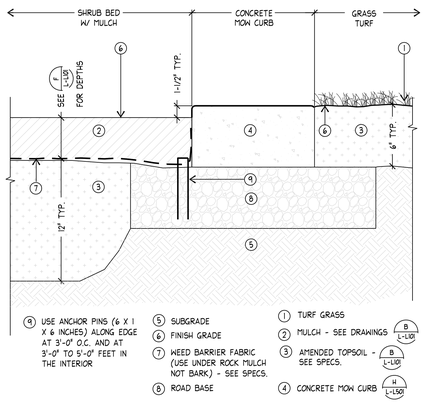
EXCEPT IN RARE CASES TREES SHOULD NOT BE STAKED



15. DOUBLE STRAND PLIABLE NO. 14-GAGE GALVANIZED STEEL WIRE OR VINYL-COATED STEEL WIRE, DO NOT PULL TAUT
16. PRUNE DEAD, DISEASED, DAMAGED, OR RUBBING BRANCHES AT PLANTING TIME. DO NOT PRUNE LEADER. IMPROPER PRUNING SHALL BE CAUSE FOR REJECTION OF THE PLANT MATERIAL.
17. WEED BARRIER FABRIC (USE UNDER ROCK NOT BARK) - SEE SPECS.

B DECIDUOUS TREE WITH STAKING

SCALE: NTS — SECTION



9. USE ANCHOR PINS (6 X 1 X 6 INCHES) ALONG EDGE AT 3'-0" O.C. AND AT 3'-0" TO 5'-0" FEET IN THE INTERIOR
5. SUBGRADE
6. FINISH GRADE
7. WEED BARRIER FABRIC (USE UNDER ROCK MULCH NOT BARK) - SEE SPECS.
8. ROAD BASE
1. TURF GRASS
2. MULCH - SEE DRAWINGS
3. AMENDED TOPSOIL - SEE SPECS.
4. CONCRETE MOW CURB

C MULCH WITH TOPSOIL

SCALE: NTS — SECTION

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

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1058 East 2100 South Salt Lake City, Utah 84106
office 801.487.4923 www.arcsitiodesign.com

PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
#	50% CD Drawings	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

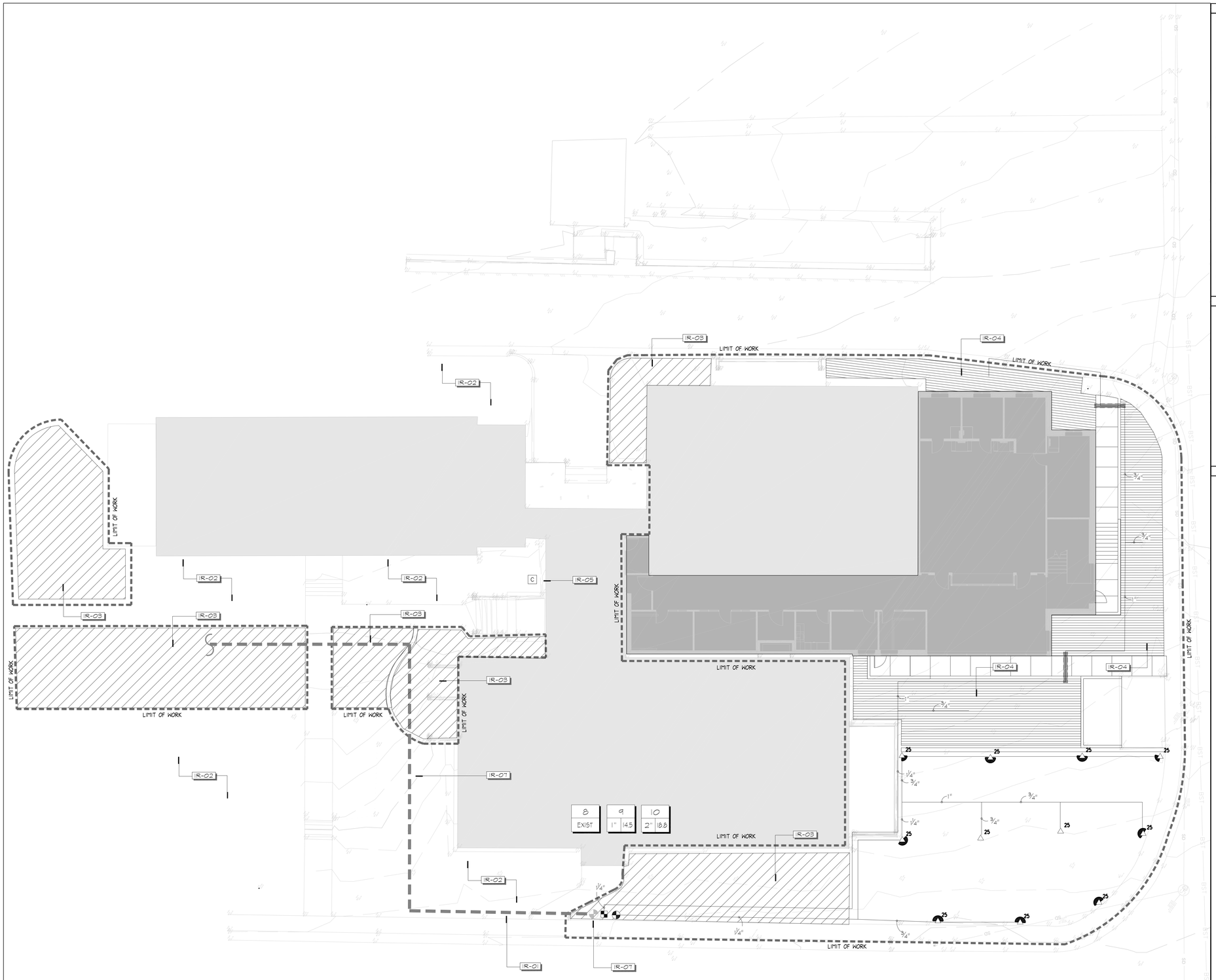
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LANDSCAPE DETAILS

SHEET NUMBER: L-L501

SHEET OF

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LANDSCAPE NOTES A

1. IT IS THE INTENT OF THESE IRRIGATION PLANS TO PROVIDE THE CONTRACTOR WITH CONSTRUCTION INFORMATION THAT WILL ENABLE HIM TO PROVIDE AND INSTALL A COMPLETE AND OPERATIONAL IRRIGATION SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PARTS AND MATERIALS REQUIRED.
2. THE CONTRACTOR SHALL VERIFY THE AVAILABLE WATER PRESSURE ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. IN THE EVENT THE PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY. CONTRACTOR TO MAINTAIN OPERATING PRESSURE FOR EACH ZONE TO THE LAST HEAD.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, WALKS, AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY HIS WORK. HE SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES AND LATERALS THROUGH WALLS AND UNDER PAVING.
4. DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADING DIFFERENCES MAY NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
5. THIS DESIGN IS DIAGRAMMATIC. ALL IRRIGATION EQUIPMENT, PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHEREVER POSSIBLE.
6. IRRIGATION SYSTEM IS TO BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
7. THE CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES FOR OPTIMUM COVERAGE. INSTALL ALL SPRINKLER HEADS WITH NOZZLES OF THE APPROPRIATE DEGREE AND RADIUS FOR THE AREA TO BE COVERED. ADJUST ALL NOZZLES TO MINIMIZE SPRAYING ONTO WALKS, BUILDINGS, ETC.
8. ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURES SPECS.
9. ALL PIPE INSTALLED IN PAVING SHALL BE SLEEVED, SEE DETAILS.

EXISTING IRRIGATION SYSTEM - OVERALL:

1. THE CONTRACTOR SHALL MAINTAIN THE EXISTING IRRIGATION SYSTEM IN GOOD WORKING CONDITION TO ENSURE THAT EXISTING PLANT MATERIAL RECEIVES THE PROPER AMOUNT OF WATER DURING ALL PHASES OF CONSTRUCTION.
2. THE CONTRACTOR SHALL MAKE MODIFICATIONS TO THE EXISTING IRRIGATION SYSTEM AS REQUIRED WHERE EXISTING IRRIGATION ZONES WILL BE DISRUPTED DUE TO PROPOSED CONSTRUCTION.
3. MODIFICATIONS TO THE EXISTING IRRIGATION SYSTEM MAY INCLUDE BUT IS NOT LIMITED TO: RE-ROUTING EXISTING IRRIGATION MAINLINES AND LATERAL LINES, RELOCATING EXISTING IRRIGATION VALVES AND CONTROL WIRING, AND RELOCATING EXISTING IRRIGATION HEADS.
4. THE CONTRACTOR MAY ALSO BE REQUIRED TO HAND-WATER EXISTING PLANT MATERIAL AS REQUIRED IF THE MODIFICATIONS TO THE EXISTING IRRIGATION SYSTEM AS PREVIOUSLY LISTED ARE NOT MADE.
5. ANY EXISTING HEAD, VALVE, VALVE MARKER, VALVE BOX, OR OTHER EXISTING EQUIPMENT LOCATED WHERE THERE WILL BE A GRADE OR SURFACE MATERIAL CHANGE, SHALL BE ADJUSTED UP OR DOWN TO ITS PROPER POSITION IN RELATION TO THE NEW FINISHED GRADE, AT NO ADDITIONAL COST TO THE OWNER, UNLESS THE PLANS SHOW IT TO BE RELOCATED.

REFERENCE NOTE SCHEDULE B

SYMBOL	IRRIGATION DESCRIPTION
IR-01	EXISTING IRRIGATION MAINLINE. PROTECT IN PLACE EXISTING
IR-02	PROTECT IN PLACE EXISTING IRRIGATION SYSTEM
IR-03	REPAIR EXISTING IRRIGATION SYSTEM - ADJUST EXISTING IRRIGATION HEADS & PIPING AS REQUIRED TO ACCOMODATE NEW IMPROVEMENTS.
IR-04	COORDINATE LAYOUT OF IRRIGATION DRIPPERLINE PRIOR TO PLACEMENT OF PROPOSED PLANT MATERIAL, TYP.
IR-05	CONTROLLER - EXISTING - PROTECT IN PLACE. CONNECT NEW VALVES TO CONTROLLER
IR-07	APPROXIMATE LOCATION OF EXISTING MAINLINE AND VALVES. CONTRACTOR TO FIELD VERIFY. COORDINATE WITH UNIVERSITY OF UTAH. MAINTAIN VALVES SERVING PARTS OF THE LANDSCAPE OUTSIDE THE LIMITS OF WORK.

VALVE SCHEDULE C

NUMBER	MODEL	SIZE	TYPE	GPM
9	Rain Bird PEB or Toro Drip Valve Assembly	1"	Area for Dripline	14.46
10	Rain Bird PEB	2"	Turf Rotor	18.82

KEY MAP AND SCALE D

NORTH

SCALE: 1"-0" = 10'-0"

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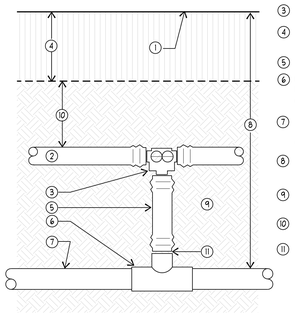
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IRRIGATION PLAN

SHEET NUMBER: L-R101

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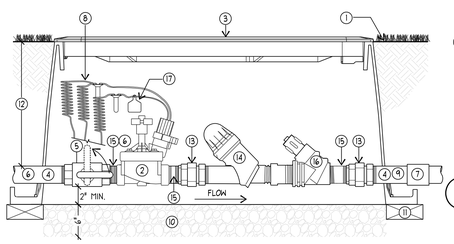
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1. TOP FINISH GRADE/ TOP OF MULCH
2. DRIPLINE TUBING
3. DRIPLINE 180 2-WAY TEE
4. MULCH - SEE SHT. L-L101 DTL. B FOR DEPTHS.
5. BLANK DRIPLINE PIPE
6. USE COMPRESSION TEE OR ELL FOR POLY PIPE OR PVC TEE (5x5x1) FOR PVC PIPE
7. LATERAL PIPING- POLY PIPE OR PVC PIPE, SEE THE PLANS (SIZE AS PER PLAN)
8. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL)
9. TOPSOIL - SEE SHT. L-L101 DTL. B FOR DEPTHS.
10. BURY DRIPPERLINE 2 TO 3 BELOW MULCH.
11. BARBED ADAPTER

K DRIPLINE START CONNECTION AND DEPTHS

SCALE: NTS — SECTION



ALL VALVE BOX LIDS ARE TO BE BRANDED WITH 3" TALL LETTERING. '00-00' FOR CLOCK # VALVE # ON RCV'S, 'WS' FOR WIRE SPLICE. 'BV' FOR BALL VALVE. 'S # W' FOR STOP # WASTE. 'LV' FOR LINE VALVE. 'QC' FOR QUICK COUPLER, 'DV' FOR DRAIN VALVE, 'HB' FOR HOSE BIB. COORDINATE WITH OWNER FOR CLOCK AND VALVE #.

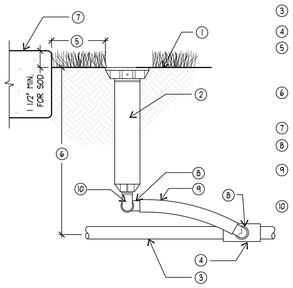
8. CONTROL WIRES- 30-INCH LINEAR LENGTH OF WIRE, COILED
9. LATERAL PIPING (SIZE AS PER PLAN)
10. 6-INCH MINIMUM DEPTH OF 1-INCH WASHED AGGREGATE
11. BRICK FOUNDATION, TYP.
12. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL)
13. PVC SCH. 80 UNION
14. DISK FILTER (SEE IRRIGATION SCHEDULE)
15. PVC SCH. 80 NIPPLE; LENGTH AS REQUIRED (TYP.)
16. INLINE PRESSURE REGULATOR VALVE (SEE IRRIGATION LEGEND)
17. VALVE TAG - COORDINATE WITH U OF U GROUNDS DEPT.

1. SET FLUSH TO FINISH GRADE/TOP OF MULCH
2. ELECTRIC REMOTE-CONTROL VALVE (SEE IRRIGATION SCHEDULE)
3. VALVE BOX (SEE SPECS.)
4. PVC SCH 80 TOE NIPPLE WITH 5X5 FITTING (LENGTH AS REQUIRED)
5. ISOLATION BALL VALVE (SEE IRRIGATION SCHEDULE) ASSOCIATE WITH VALVE MANIFOLDS AS INDICATED ON THE PLANS
6. MAINLINE PIPING (SIZE AS PER PLAN)
7. PVC SCH 80 SLIP X SLIP COUPLING OR BELL END OF PIPE

NOTES:
1. LOCATE ALL VALVE BOXES IN PLANTER BEDS UNLESS OTHERWISE INDICATED. MAINTAIN 3 FEET AWAY FROM THE HARDSCAPE.
2. ALL FITTINGS AND NIPPLES IN MANIFOLD SHALL BE SCH. 80 THREADED PVC USING TEFLON TAPE.
3. VALVE MANIFOLD TO BE INSTALLED GOING AWAY FROM MAIN SUPPLY LINE. MINIMUM OF 1 FOOT BEFORE CHANGE IN DIRECTION.
4. CUT ALL VALVE BOXES AS REQUIRED SO BOXES DO NOT SIT ON PIPING.

L ELECTRIC REMOTE CONTROL VALVE W/ DISC FILTER & PRV

SCALE: NTS — SECTION

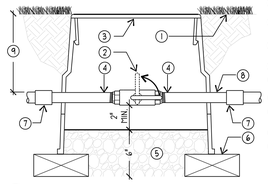


1. SET HEAD FLUSH WITH FINISH GRADE/TOP OF MULCH
2. POP-UP SPRAY HEAD (SEE IRRIGATION SCHEDULE)
3. LATERAL PIPING (SIZE AS PER PLAN)
4. PVC SCH 40 TEE OR ELL
5. ALL SPRAY HEADS TO BE PLACED 2" CLEAR OF ALL HARDSCAPE SURFACES AND 2'-0" FROM BUILDINGS
6. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL)
7. TOP OF HARDSCAPE
8. 1/2-INCH SWING PIPE ELL (RAIN BIRD OR TORO)
9. 1/2-INCH POLYETHYLENE SWING PIPE, MIN. 12" OR AS LENGTH NEEDED (RAIN BIRD OR TORO)
10. 1/2-INCH MARLEX STREET ELL (RAIN BIRD OR TORO)

NOTE:
1. SWING PIPE SHALL SLOPE TOWARDS LATERAL PIPE FOR COMPLETE DRAINAGE.

H POP-UP SPRAY HEAD

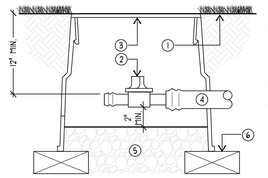
SCALE: NTS — SECTION



1. SET FLUSH TO FINISH GRADE / TOP OF MULCH
2. ISOLATION BALL VALVE (SEE IRRIGATION SCHEDULE)
3. STANDARD VALVE BOX (SEE SPECS.).
4. PVC SCH 80 TOE NIPPLE
5. 6-INCH MINIMUM DEPTH OF 1-INCH WASHED AGGREGATE
6. BRICK FOUNDATION
7. PVC SCH 80 SLIP X SLIP COUPLING OR BELL END OF PIPE
8. MAINLINE PIPING
9. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL)

I ISOLATION BALL VALVE ASSEMBLY

SCALE: NTS — SECTION

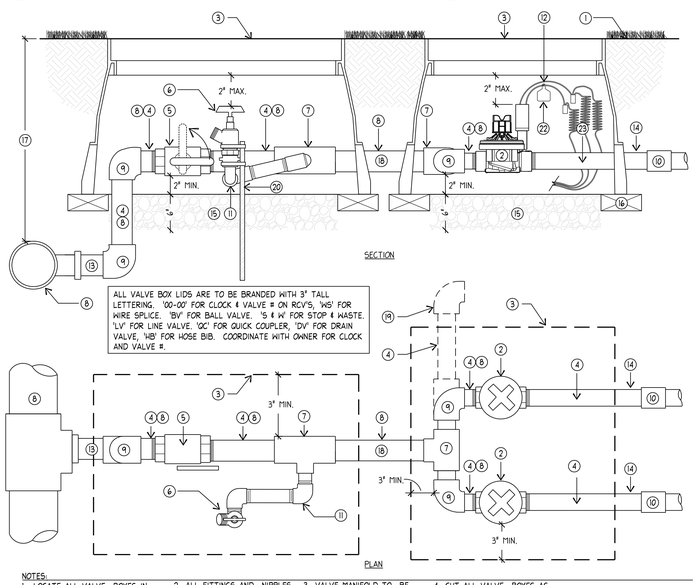


1. SET FLUSH TO FINISH GRADE/TOP OF MULCH
2. LINE FLUSHING VALVE - NETAFIM TLSOV
3. 10 INCH ROUND VALVE BOX
4. DRIPLINE TUBING
5. 12-INCH MINIMUM DEPTH OF 1-INCH WASHED AGGREGATE
6. BRICK FOUNDATION

NOTES:
1. PLACE MANUAL LINE FLUSHING VALVES AT EACH DEAD END, AND LOW POINT IN THE SYSTEM.

J MANUAL LINE FLUSHING VALVE ASSEMBLY

SCALE: NTS — SECTION

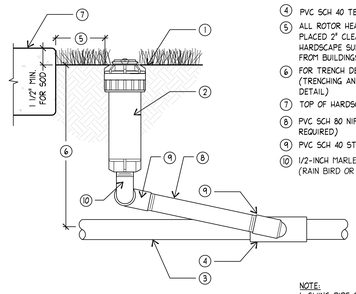


ALL VALVE BOX LIDS ARE TO BE BRANDED WITH 3" TALL LETTERING. '00-00' FOR CLOCK # VALVE # ON RCV'S, 'WS' FOR WIRE SPLICE. 'BV' FOR BALL VALVE. 'S # W' FOR STOP # WASTE. 'LV' FOR LINE VALVE 'QC' FOR QUICK COUPLER, 'DV' FOR DRAIN VALVE, 'HB' FOR HOSE BIB. COORDINATE WITH OWNER FOR CLOCK AND VALVE #.

NOTES:
1. LOCATE ALL VALVE BOXES IN PLANTER BEDS UNLESS OTHERWISE INDICATED. MAINTAIN 3 FEET AWAY FROM THE HARDSCAPE.
2. ALL FITTINGS AND NIPPLES IN MANIFOLD SHALL BE SCH. 80 THREADED PVC USING TEFLON TAPE.
3. VALVE MANIFOLD TO BE INSTALLED GOING AWAY FROM MAIN SUPPLY LINE. MINIMUM OF 1 FOOT BEFORE CHANGE IN DIRECTION.
4. CUT ALL VALVE BOXES AS REQUIRED SO BOXES DO NOT SIT ON PIPING.

G ELECTRIC REMOTE-CONTROL VALVE ASSEMBLY

SCALE: NTS — SECTION/PLAN

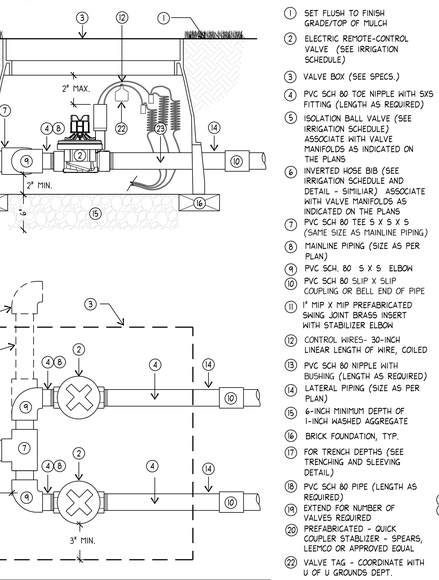


1. SET HEAD FLUSH WITH FINISH GRADE/TOP OF MULCH
2. POP-UP ROTOR HEAD (SEE IRRIGATION SCHEDULE)
3. LATERAL PIPING (SIZE AS PER PLAN)
4. PVC SCH 40 TEE OR ELL
5. ALL ROTOR HEADS TO BE PLACED 2" CLEAR OF ALL HARDSCAPE SURFACES AND 2'-0" FROM BUILDINGS
6. FOR TRENCH DEPTHS (TRENCHING AND SLEEVING DETAIL)
7. TOP OF HARDSCAPE
8. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
9. PVC SCH 40 STREET ELL
10. 1/2-INCH MARLEX STREET ELL (RAIN BIRD OR TORO)

NOTE:
1. SWING PIPE SHALL SLOPE TOWARDS LATERAL PIPE FOR COMPLETE DRAINAGE.
2. USE ON 7 GPM OR MORE.

F POP-UP ROTOR HEAD

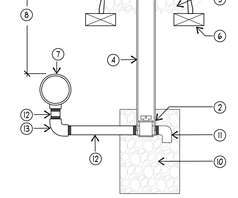
SCALE: NTS — SECTION



1. SET FLUSH TO FINISH GRADE/TOP OF MULCH
2. ELECTRIC REMOTE-CONTROL VALVE (SEE IRRIGATION SCHEDULE)
3. VALVE BOX (SEE SPECS.)
4. PVC SCH 80 TOE NIPPLE WITH 5X5 FITTING (LENGTH AS REQUIRED)
5. ISOLATION BALL VALVE (SEE IRRIGATION SCHEDULE) ASSOCIATE WITH VALVE MANIFOLDS AS INDICATED ON THE PLANS
6. INVERTED HOSE BIB (SEE IRRIGATION SCHEDULE AND DETAIL - SIMILIAR) ASSOCIATE WITH VALVE MANIFOLDS AS INDICATED ON THE PLANS
7. PVC SCH 80 TEE S X S X S (SAME SIZE AS MAINLINE PIPING)
8. MAINLINE PIPING (SIZE AS PER PLAN)
9. PVC SCH. 80 S X S ELBOW
10. PVC SCH 80 SLIP X SLIP COUPLING OR BELL END OF PIPE
11. 1" MIP X MIP PREFABRICATED SWING JOINT BRASS INSERT WITH STABILIZER ELBOW
12. CONTROL WIRES- 30-INCH LINEAR LENGTH OF WIRE, COILED
13. PVC SCH 80 NIPPLE WITH BUSHING (LENGTH AS REQUIRED)
14. LATERAL PIPING (SIZE AS PER PLAN).
15. 6-INCH MINIMUM DEPTH OF 1-INCH WASHED AGGREGATE
16. BRICK FOUNDATION, TYP.
17. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL.)
18. PVC SCH 80 PIPE (LENGTH AS REQUIRED)
19. EXTEND FOR NUMBER OF VALVES REQUIRED
20. PREFABRICATED - QUICK COUPLER STABLIZER - SPEARS, LEEMCO OR APPROVED EQUAL
22. VALVE TAG - COORDINATE WITH U OF U GROUNDS DEPT.
23. PVC SCH. 80 NIPPLE (LENGTH AS REQUIRED)

E MAINLINE DRAIN ASSEMBLY

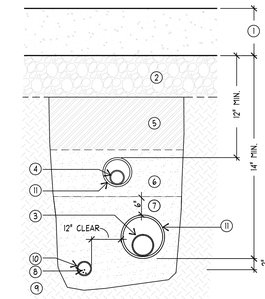
SCALE: NTS — SECTION



1. SET FLUSH TO FINISH GRADE/TOP OF MULCH
2. 3/4" MAINLINE DRAIN VALVE (SEE IRRIGATION SCHEDULE)
3. 8" ROUND VALVE BOX (SEE SPECS.)
4. 4" SCH 40 PVC SLEEVE (LENGTH AS REQUIRED). NOTCH OVER VALVE FOR STABILITY.
5. 6-INCH MINIMUM DEPTH OF 3/4-INCH WASHED AGGREGATE
6. BRICK FOUNDATION
7. MAINLINE PIPING (SIZE AS PER PLAN)
8. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL)
9. WEATHERMATIC 906L LOCKING VALVE CAP WITH A RLK-1 KEY OR EQUAL
10. GRAVEL SUMP- 18" DIA. X 12" DEEP
11. SCH. 80 PVC STREET ELL TURNED DOWNWARDS
12. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
13. PVC SCH 80 ELL

A SLEEVING

SCALE: NTS — SECTION



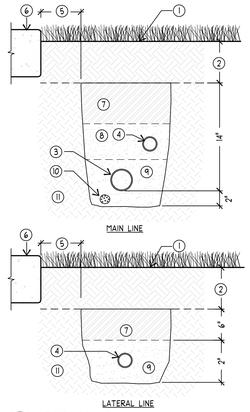
3. MARK THE LOCATION OF EACH SLEEVE BY INSTALLING A MAGNETIZED MASONRY NAIL, FLUSH WITH THE HARDSCAPE, INDICATING THE LOCATION OF EACH END OF THE SLEEVE.

1. HARDSCAPE PAVING
2. COMPACTED AGGREGATE SUB-BASE
3. MAINLINE PIPING - MIN. DEPTH 18" TO TOP OF PIPE
4. LATERAL PIPING
5. USE EXCAVATED TRENCH MATERIAL NOT TO EXCEED 1" DIA. ROCKS
6. BEDDING SAND- IN CASES WHERE LATERAL PIPING IS INSTALLED IN MAINLINE TRENCH, USE SAND TO BACKFILL TRENCH
7. BEDDING SAND- IN CASES WHERE LATERAL PIPING IS INSTALLED IN MAINLINE TRENCH, USE SAND TO BACKFILL TRENCH SO THAT THE LATERAL LINE IS 12" BELOW FINISH GRADE.
8. IRRIGATION CONTROL WIRES - NO OTHER UTILITIES MAY BE BURIED IN THE SAME TRENCH AS IRRIGATION.
9. COMPACTED SUBGRADE
10. ELECTRICAL CONDUIT- SEE SPECS.
11. SLEEVING:
-SLEEVES SHALL BE 2" LARGER THAN THE PIPE OR WIRES WITHIN -4" AND LARGER + PVC CLASS 200

NOTE:
1. SETTLE ALL TRENCHES WITH WATER PRIOR TO INSTALLATION OF TOPSOIL.
2. EXTEND ALL SLEEVING 18" MIN. BEYOND EDGE OF PAVING.
3. MIN. 6" DISTANCE BETWEEN EACH PIPE.

B TRENCHING

SCALE: NTS — SECTION

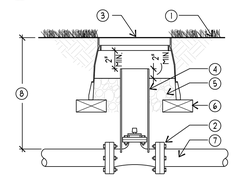


1. FINISH GRADE/TOP OF MULCH
2. TOPSOIL LAYER (6" IN TURF AND 12" IN SHRUB BED)
3. MAINLINE PIPING - MIN. DEPTH 18" TO TOP OF PIPE (SIZE AS PER PLAN)
4. LATERAL PIPING (SIZE AS PER PLAN)
5. LOCATE ALL TRENCHES 12" AWAY FROM ALL BUILDINGS, SIDEWALKS OR ANY HARD SURFACES. 3' FROM ROADS.
6. TOP OF HARDSCAPE
7. USE EXCAVATED TRENCH MATERIAL NOT TO EXCEED 1" DIA. ROCKS
8. BEDDING SAND- IN CASES WHERE LATERAL PIPING IS INSTALLED IN MAINLINE TRENCH, USE SAND TO BACKFILL TRENCH SO THAT THE LATERAL LINE IS 12" BELOW FINISH GRADE.
9. BEDDING SAND- USE SAND TO A DEPTH OF 2" BELOW AND TO THE EITHER SIDE OF PIPING TO BED ALL PVC PIPING AND ELECTRICAL WIRES
10. IRRIGATION CONTROL WIRES - BUNDLE AND TAPE WITH DUCT TAPE EVERY 15 FEET O.C. NO OTHER UTILITIES MAY BE BURIED IN THE SAME TRENCH AS IRRIGATION.
11. COMPACTED SUBGRADE

NOTE:
1. SETTLE ALL TRENCHES WITH WATER PRIOR TO INSTALLATION OF TOPSOIL.
2. MIN. 6" DISTANCE BETWEEN EACH PIPE.

C GATE VALVE ASSEMBLY

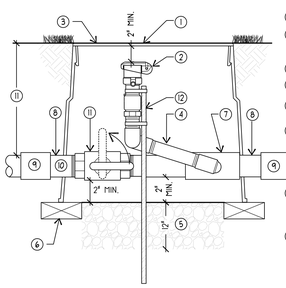
SCALE: NTS — SECTION



1. SET FLUSH TO FINISH GRADE/TOP OF MULCH
2. GATE VALVE (SEE IRRIGATION SCHEDULE.)
3. 10" ROUND VALVE BOX (SEE SPECS.).
4. 6" SCH 40 PVC SLEEVE (LENGTH AS REQUIRED). NOTCH OVER VALVE FOR STABILITY.
5. 6-INCH MINIMUM DEPTH OF 3/4-INCH WASHED AGGREGATE
6. BRICK FOUNDATION
7. MAINLINE PIPING (SIZE AS PER PLAN)
8. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL)

D QUICK COUPLER VALVE ASSEMBLY

SCALE: NTS — SECTION



1. SET FLUSH TO FINISH GRADE/TOP OF MULCH
2. QUICK-COUPLING VALVE (SEE IRRIGATION SCEDULE)
3. STANDARD VALVE BOX (SEE SPECS.)
4. 1" MIP X MIP PREFABRICATED SWING JOINT
5. 12-INCH MINIMUM DEPTH OF 1-INCH WASHED AGGREGATE
6. BRICK FOUNDATION
7. PVC SCH 80 SLIP X SLIP X THREAD TEE (SAME SIZE AS MAINLINE PIPING)
8. PVC SCH 80 PIPE
9. PVC SCH 80 SLIP X SLIP COUPLING OR BELL END OF PIPE
10. MAINLINE PIPING (SIZE AS PER PLAN)
11. ISOLATION BALL VALVE (SEE IRRIGATION SCHEDULE)
11. FOR TRENCH DEPTHS (SEE TRENCHING AND SLEEVING DETAIL)
12. PREFABRICATED - QUICK COUPLER STABLIZER - SPEARS, LEEMCO OR APPROVED EQUAL

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

ArcSitio Design, Inc
Landscape Architecture & Architectural Site Design
1058 East 2100 South Salt Lake City, Utah 84106
office 801.487.4923 www.arcsitiodesign.com

PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
#	50% CD Drawings	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

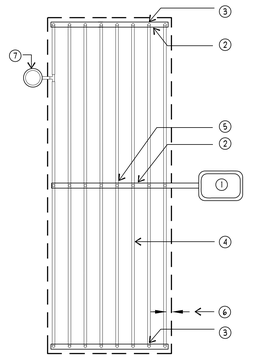
UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE:
IRRIGATION DETAILS

SHEET NUMBER:
L-R501

SHEET OF

C:\Users\JOELBERT\AppData\Local\Temp\AcPublish_11456\L-R501GATION.dwg Nov 11, 2021 - 2:15pm

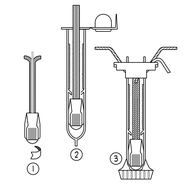


1. ELECTRIC REMOTE CONTROL VALVE WITH DISC FILTER AND PRV - REFER TO IRRIGATION SCHEDULE
2. DRIPLINE START CONNECTION MALE ADAPTER
3. 1" PVC EXHAUST HEADER OR FOOTER, NO SMALLER THAN 1"
4. DRIPLINE TUBING - REFER TO IRRIGATION SCHEDULE TYPE AND SPACING
5. 1" PVC SUPPLY EXHAUST PIPE, NO SMALLER THAN 1"
6. PERIMETER LATERALS 2" TO 4" FROM EDGE
7. LINE FLUSHING VALVE PLACE MANUAL LINE FLUSHING VALVES AT EACH DEAD END, AND LOW POINT IN THE SYSTEM.

NOTES:
1. SOIL STAPLES: ANCHOR THE DRIP TUBING WITH STAINLESS STEEL SOIL STAPLES EVERY 4 FEET. USE TWO SOIL STAPLES AT EACH TEE, ELBOW OR CROSS.

A DRIPLINE TYPICAL PLANTER LAYOUT

SCALE: NTS — PLAN



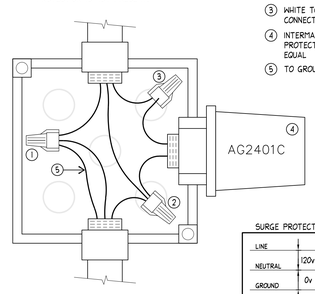
1. STRIP WIRES AND APPLY SCOTCHLOK Y ELECTRICAL SPRING CONNECTOR IN A CLOCKWISE DIRECTION.
2. INSERT SPLICE TO BOTTOM OF GEL FILLED TUBE. VISUALLY CHECK TO MAKE SURE SCOTCHLOK CONNECTOR HAS BEEN PUSHED PAST THE LOCKING FINGERS AND IS SEATED ON THE BOTTOM OF THE TUBE.
3. POSITION WIRES IN WIRE CHANNELS AND CLOSE INSULATOR TUBE COVER.

NOTE:
1. ALL WIRES TO BE SOLDERED.

B 3M DBR-Y-6 DIRECT BURY SPLICE KIT

SCALE: NTS — SECTION

NOTE: INSTALL SURGE PROTECTION ON ALL NEW CONTROLLERS & INSTALL ON EXISTING CONTROLLERS IF SURGE PROTECTION IS NOT PRESENT.



1. GREEN GROUND WIRE CONNECTION
2. BLACK TO BLACK WIRE CONNECTION
3. WHITE TO BLACK WIRE CONNECTION
4. INTERMATIC AG2401 SURGE PROTECTOR OR APPROVED EQUAL
5. TO GROUNDING GRID

C SURGE PROTECTION JUNCTION BOX INSTALLATION

SCALE: 1" = X'-X" — SECTION

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#	Description	Date
#	50% CD Drawings	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: IRRIGATION DETAILS

SHEET NUMBER: L-R502

SHEET OF

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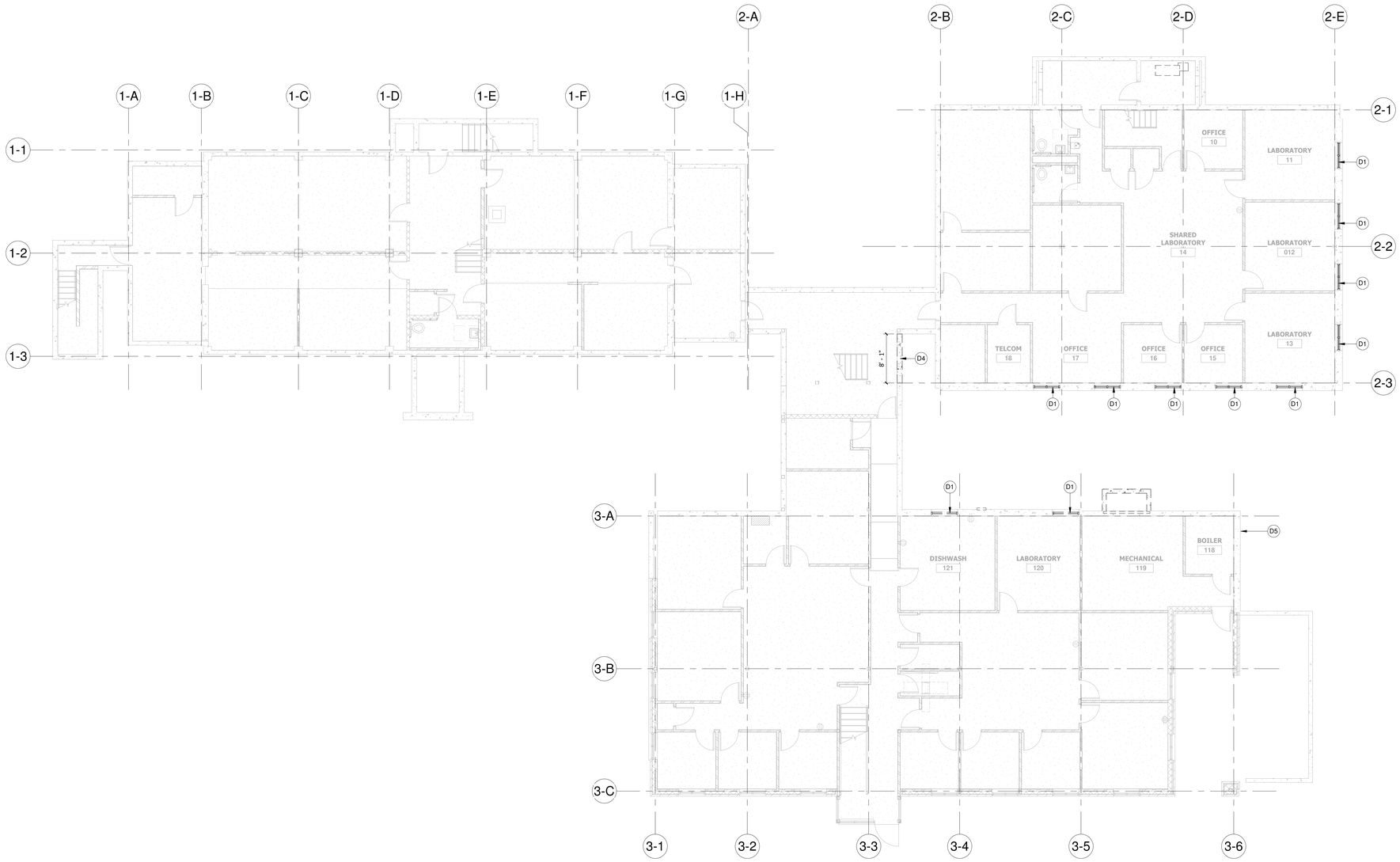
DEMOLITION PLAN LEGEND	
EXISTING ELEMENT TO REMAIN	
EXISTING ELEMENT TO BE DEMOLISHED	

GENERAL DEMOLITION NOTES

1. FIELD-VERIFY ALL EXISTING CONDITIONS.
2. OWNER RESERVES FIRST RIGHT TO ALL SALVAGEABLE ITEMS.
3. PROTECT ADJACENT SURFACES & MATERIALS TO REMAIN DURING DEMOLITION. REPAIR/REPLACE ALL DAMAGED SURFACES/MATERIALS AS REQUIRED TO MATCH EXISTING.

KEYED NOTES

D1	DEMOLISH (E) WINDOW
D4	DEMOLISH 12" CONCRETE FOUNDATION WALL TO 8'-6" A.F.F.
D5	CREATE NEW OPENING TO RE-ROUTE BOILER FLUE



1 BASEMENT DEMOLITION PLAN
1/8" = 1'-0"

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1	50% CD Drawings	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
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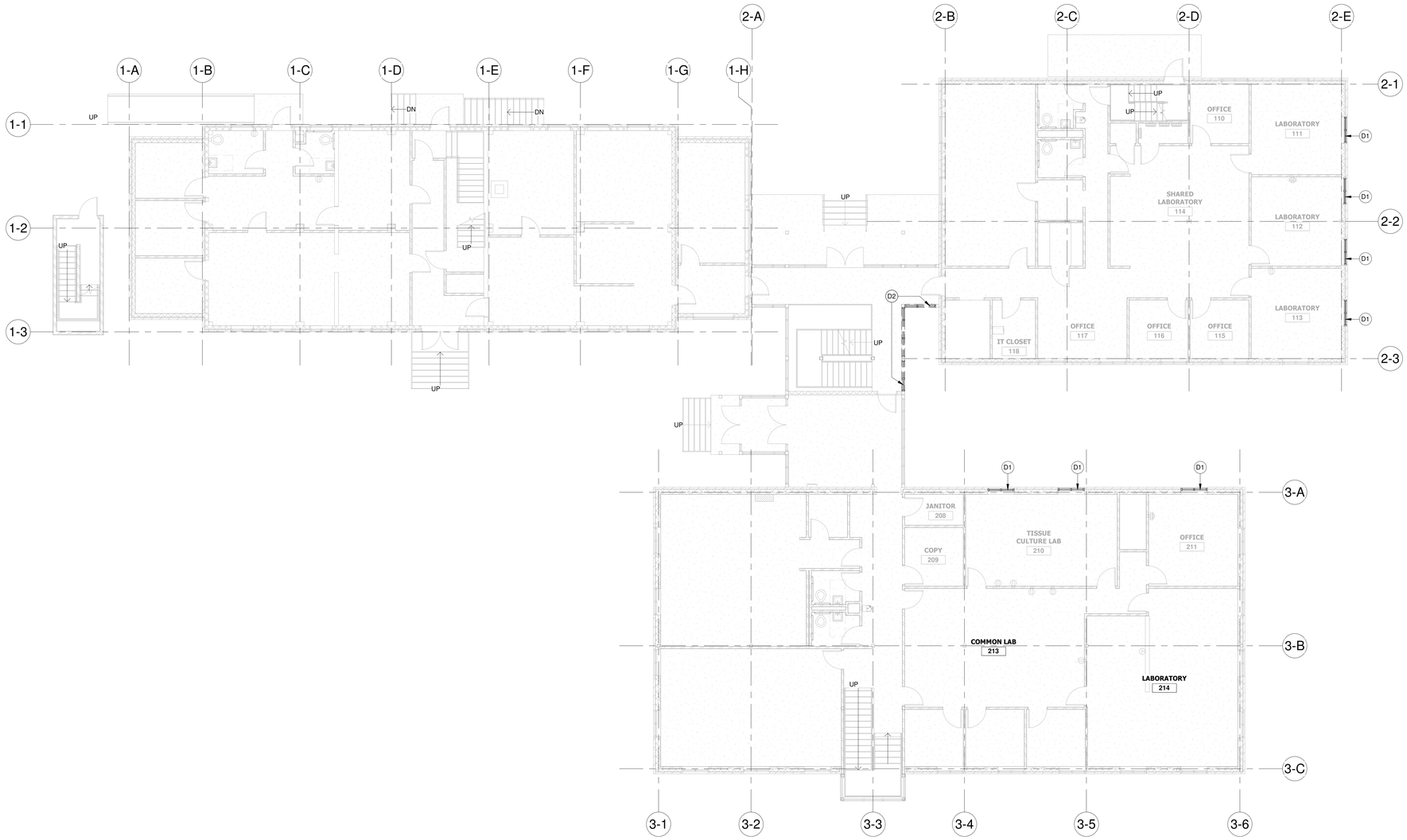
SHEET TITLE:
BASEMENT LEVEL DEMOLITION PLAN

SHEET NUMBER:
AD100

SHEET OF

DEMOLITION PLAN LEGEND	GENERAL DEMOLITION NOTES
EXISTING ELEMENT TO REMAIN EXISTING ELEMENT TO BE DEMOLISHED	1. FIELD-VERIFY ALL EXISTING CONDITIONS. 2. OWNER RESERVES FIRST RIGHT TO ALL SALVAGEABLE ITEMS. 3. PROTECT ADJACENT SURFACES & MATERIALS TO REMAIN DURING DEMOLITION. REPAIR/REPLACE ALL DAMAGED SURFACES/MATERIALS AS REQUIRED TO MATCH EXISTING.

KEYED NOTES	
D1	DEMOLISH (E) WINDOW
D2	DEMOLISH (E) WINDOW WALL



1 LEVEL 1 DEMOLITION PLAN
1/8" = 1'-0"

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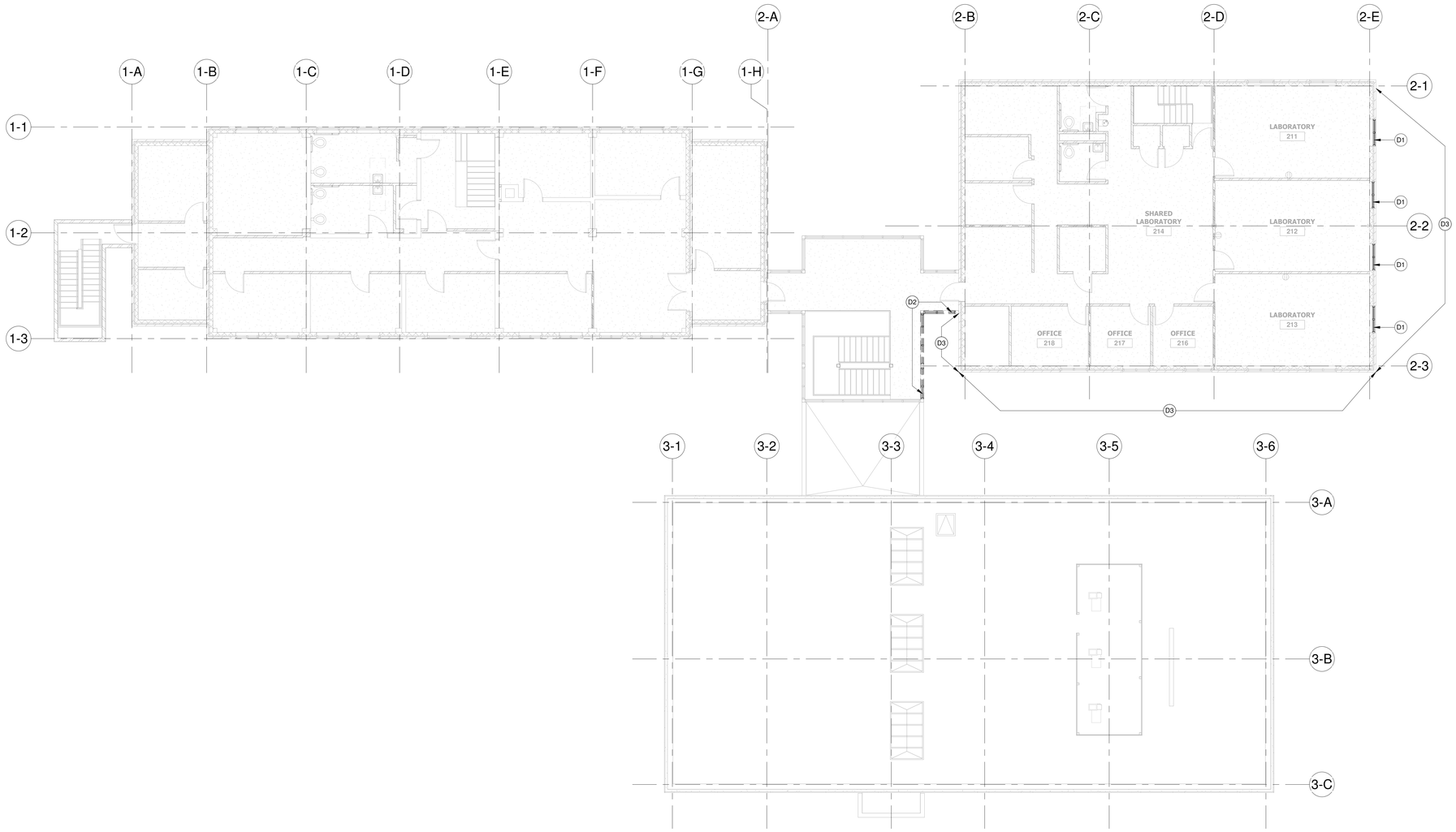
SHEET TITLE:
MAIN FLOOR DEMOLITION PLAN

SHEET NUMBER:
AD101

SHEET OF

DEMOLITION PLAN LEGEND	GENERAL DEMOLITION NOTES
EXISTING ELEMENT TO REMAIN EXISTING ELEMENT TO BE DEMOLISHED	1. FIELD-VERIFY ALL EXISTING CONDITIONS. 2. OWNER RESERVES FIRST RIGHT TO ALL SALVAGEABLE ITEMS. 3. PROTECT ADJACENT SURFACES & MATERIALS TO REMAIN DURING DEMOLITION. REPAIR/REPLACE ALL DAMAGED SURFACES/MATERIALS AS REQUIRED TO MATCH EXISTING.

KEYED NOTES	
D1	DEMOLISH (E) WINDOW
D2	DEMOLISH (E) WINDOW WALL
D3	DEMOLISH BRICK FOR STRUCTURAL CONNECTION OF NEW FLOOR - SEE WALL SECTIONS AND STRUCTURAL DETAILS



1 LEVEL 2 DEMOLITION PLAN
1/8" = 1'-0"

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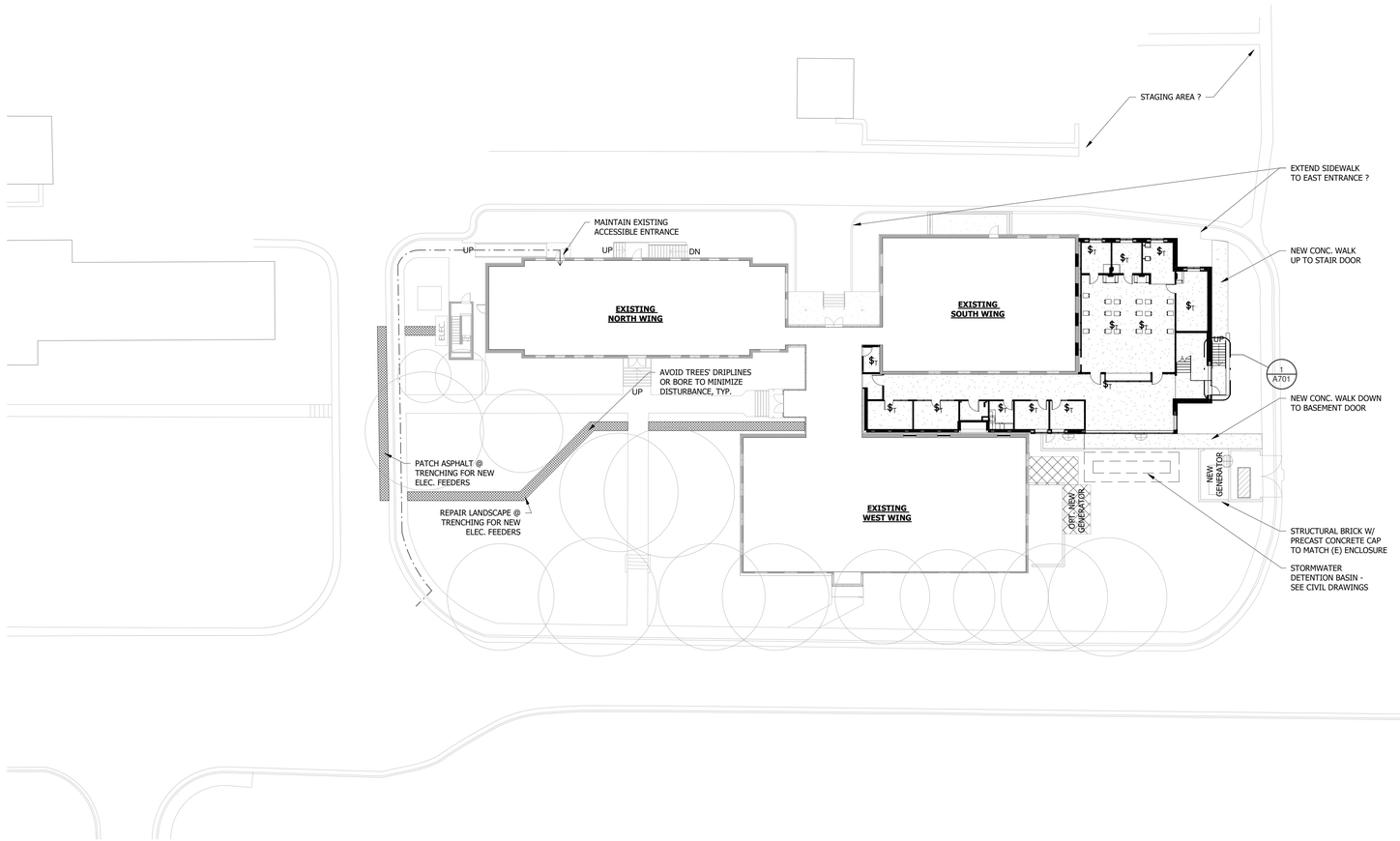
ISSUE DATE:
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SHEET TITLE:
LEVEL 2 DEMOLITION PLAN

SHEET NUMBER:
AD102

SHEET OF



1 SITE PLAN
1" = 20'-0"

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SHEET TITLE:

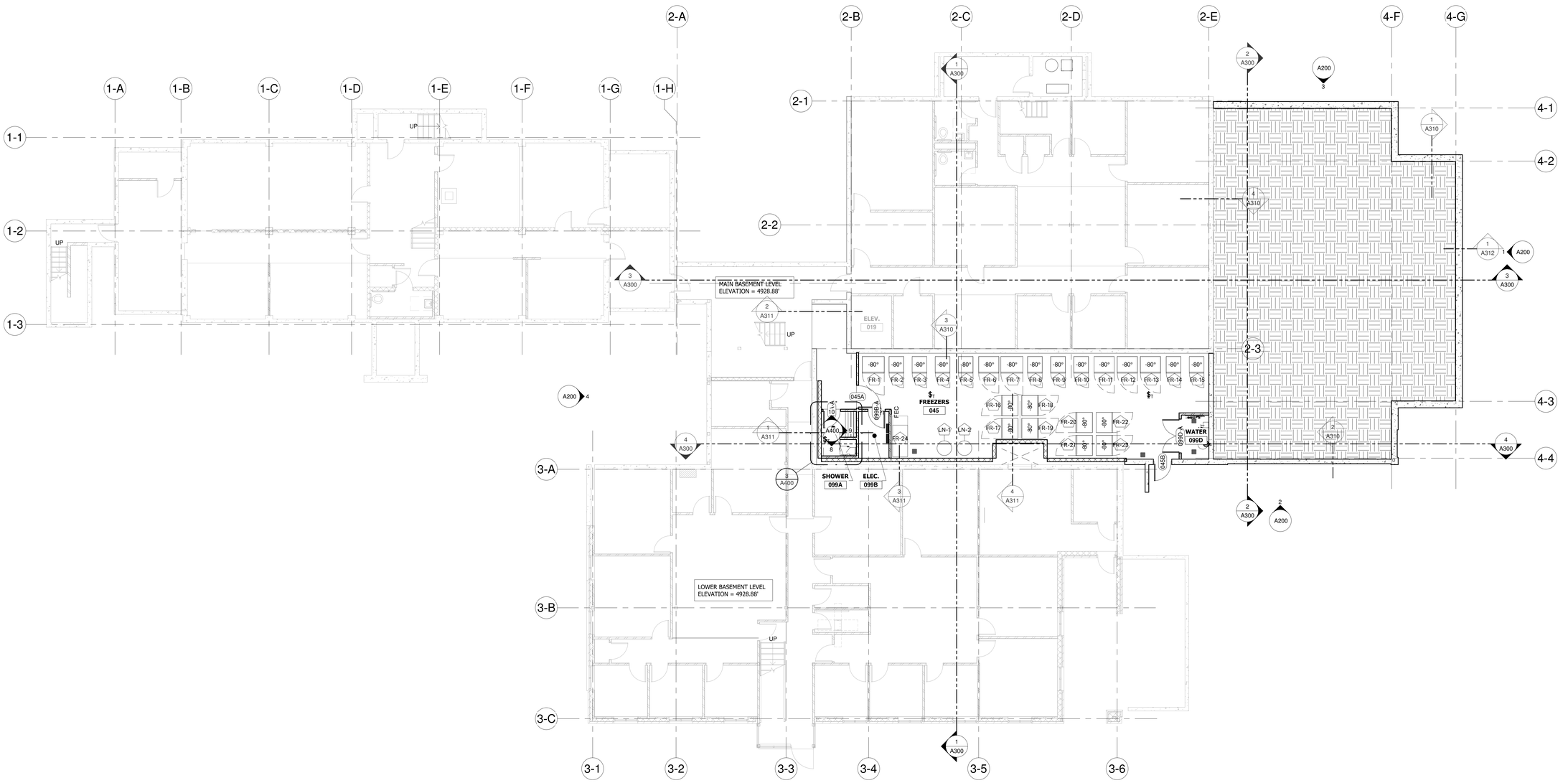
SITE PLAN

SHEET NUMBER:

A001

SHEET OF

FLOOR PLAN LEGEND	GENERAL FLOOR PLAN NOTES	KEYED NOTES
EXISTING WALL TO REMAIN NEW WALL - SEE WALL TYPES CARD READER - COORDINATE W/ OWNER, AND ELECTRICAL & SECURITY SYSTEMS RECESSED FIRE EXTINGUISHER CABINET	1. FIELD-VERIFY ALL EXISTING CONDITIONS. 2. REFER TO SHEET G001 FOR GENERAL NOTES. 3. REFER TO SHEET G002 FOR RATED WALL LOCATIONS. 4. REFER TO SHEET A601 FOR WALL TYPE DEFINITIONS. 5. SEALANT IS REQUIRED AROUND ALL FRAMES, OPENINGS, EXPANSION & CONTROL JOINTS, AND BETWEEN DISSIMILAR MATERIALS, INDICATED OR OTHERWISE. USE SEALANTS AS SCHEDULED, OR AS RECOMMENDED BY MANUFACTURER FOR CONDITIONS. CONSULT ARCHITECT WHERE MORE THAN ONE PRODUCT MAY BE SUITABLE, AND FOR COLOR SELECTION.	



1 BASEMENT FLOOR PLAN
1/8" = 1'-0"

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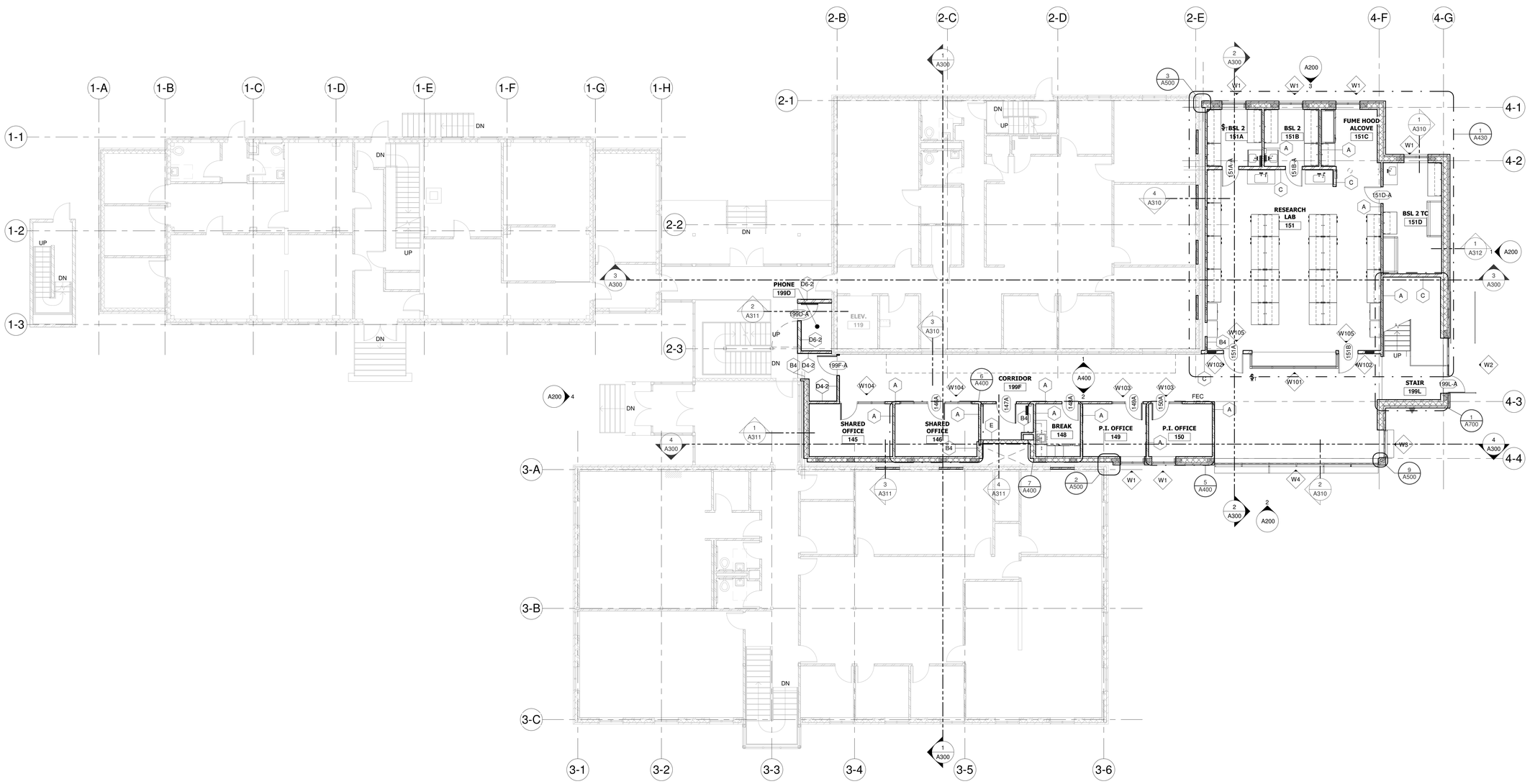
UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
BASEMENT FLOOR PLAN

SHEET NUMBER:
A100

SHEET OF

FLOOR PLAN LEGEND	GENERAL FLOOR PLAN NOTES	KEYED NOTES
EXISTING WALL TO REMAIN NEW WALL - SEE WALL TYPES CARD READER - COORDINATE W/ OWNER, AND ELECTRICAL & SECURITY SYSTEMS RECESSED FIRE EXTINGUISHER CABINET	1. FIELD-VERIFY ALL EXISTING CONDITIONS. 2. REFER TO SHEET G001 FOR GENERAL NOTES. 3. REFER TO SHEET G002 FOR RATED WALL LOCATIONS. 4. REFER TO SHEET A601 FOR WALL TYPE DEFINITIONS. 5. SEALANT IS REQUIRED AROUND ALL FRAMES, OPENINGS, EXPANSION & CONTROL JOINTS, AND BETWEEN DISSIMILAR MATERIALS, INDICATED OR OTHERWISE. USE SEALANTS AS SCHEDULED, OR AS RECOMMENDED BY MANUFACTURER FOR CONDITIONS. CONSULT ARCHITECT WHERE MORE THAN ONE PRODUCT MAY BE SUITABLE, AND FOR COLOR SELECTION.	



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

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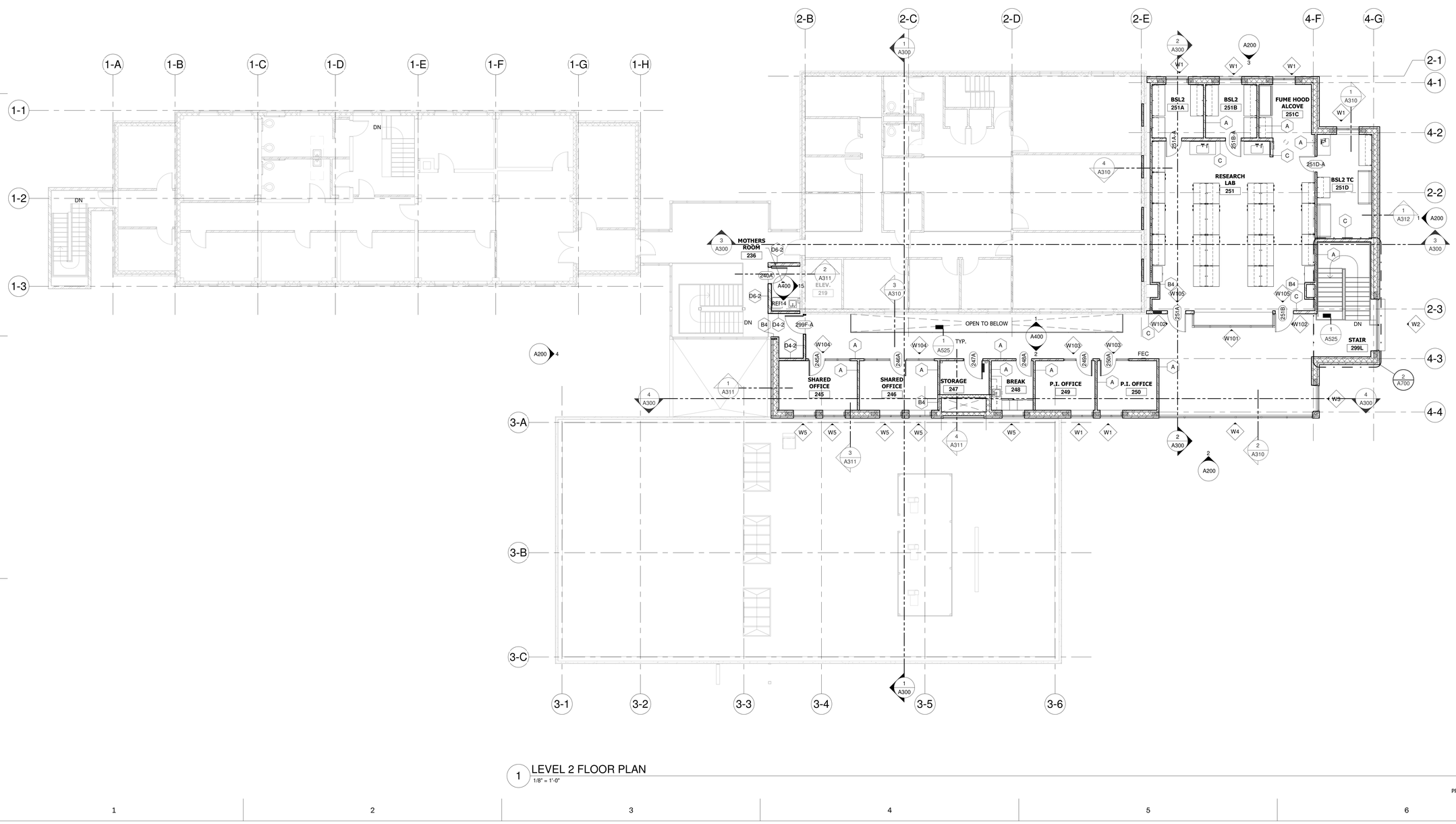
UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
LEVEL 1 FLOOR PLAN

SHEET NUMBER:
A101

SHEET OF

FLOOR PLAN LEGEND	GENERAL FLOOR PLAN NOTES	KEYED NOTES
EXISTING WALL TO REMAIN NEW WALL - SEE WALL TYPES CR CARD READER - COORDINATE W/ OWNER, AND ELECTRICAL & SECURITY SYSTEMS FEC RECESSED FIRE EXTINGUISHER CABINET	1. FIELD-VERIFY ALL EXISTING CONDITIONS. 2. REFER TO SHEET G001 FOR GENERAL NOTES. 3. REFER TO SHEET G002 FOR RATED WALL LOCATIONS. 4. REFER TO SHEET A601 FOR WALL TYPE DEFINITIONS. 5. SEALANT IS REQUIRED AROUND ALL FRAMES, OPENINGS, EXPANSION & CONTROL JOINTS, AND BETWEEN DISSIMILAR MATERIALS, INDICATED OR OTHERWISE. USE SEALANTS AS SCHEDULED, OR AS RECOMMENDED BY MANUFACTURER FOR CONDITIONS. CONSULT ARCHITECT WHERE MORE THAN ONE PRODUCT MAY BE SUITABLE, AND FOR COLOR SELECTION.	



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

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SHEET TITLE:

LEVEL 2 FLOOR PLAN

SHEET NUMBER:

A102

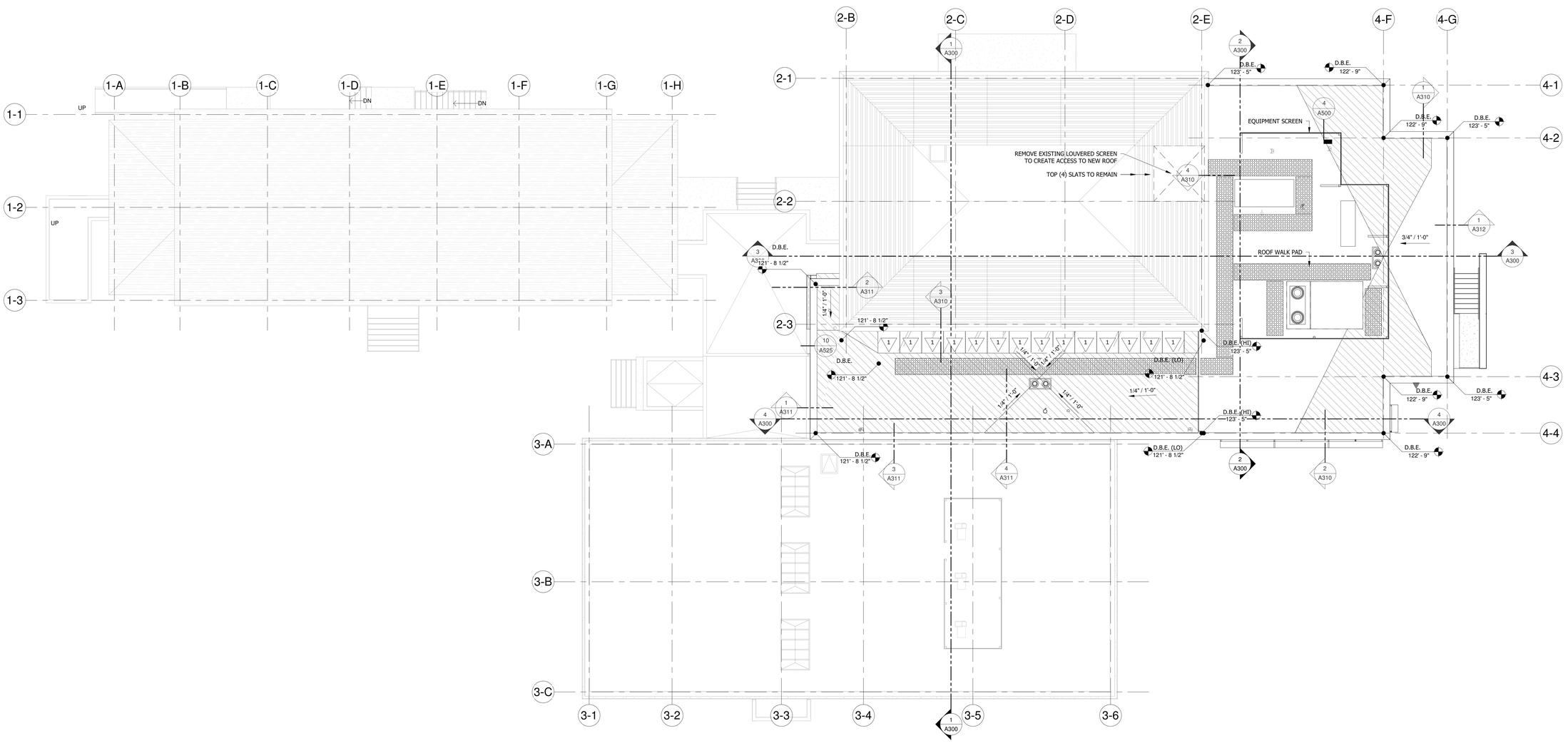
SHEET OF

ROOF PLAN LEGEND	
CRICKETING	
WALK PAD	
ROOF DRAIN	
ROOF HATCH	

GENERAL ROOFING NOTES

1. TYPICAL ROOF ASSEMBLY
   MECHANICALLY-FASTENED SINGLE-PLY ROOF MEMBRANE OVER POLYISOCYANURATE ROOF INSULATION (R-30 MIN.)
2. PROVIDE CRICKETING WHERE REQUIRED TO MAINTAIN UNINTERRUPTED SLOPE TO DRAIN.
3. ROOF AREA SOUTH OF GRID 2-E IS A SLOPED STRUCTURE.
4. ROOF AREA NORTH OF GRID 2-E IS A FLAT STRUCTURE WITH TAPERED INSULATION.
5. REFER TO MECHANICAL, PLUMBING, & ELECTRICAL DRAWINGS FOR A COMPLETE REPRESENTATION OF ALL PENETRATIONS NOT SHOWN ON THIS SHEET.

KEYED NOTES



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

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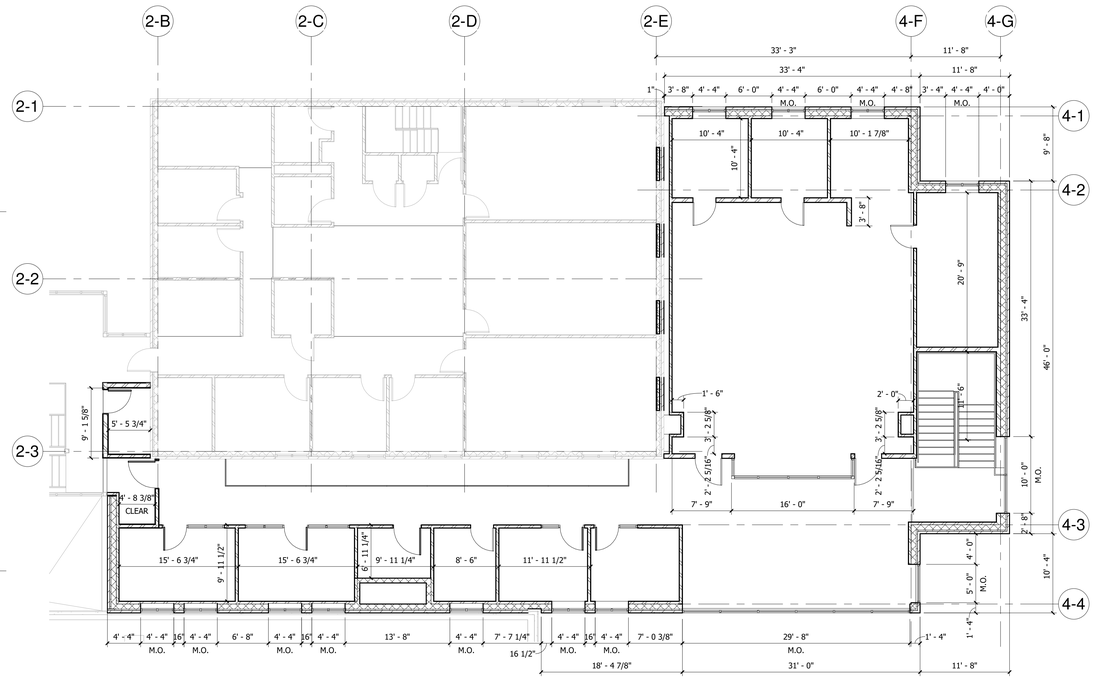
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ROOF PLAN

SHEET NUMBER:
A103

SHEET OF

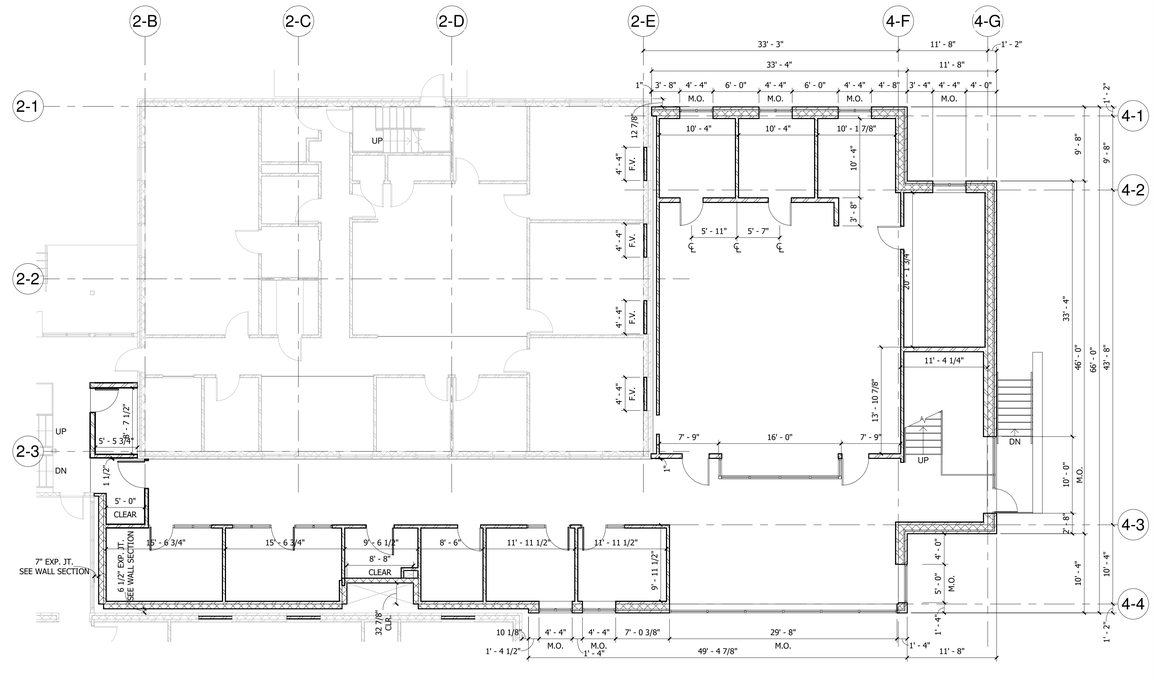
GENERAL DIMENSION NOTES

1. GRID LINES INDICATE CENTER OF STRUCTURAL STEEL, FACE OF MASONRY, AND/OR FACE OF CONCRETE FOUNDATION WALL.
2. PLAN DIMENSIONS ARE TO GRID LINES, COLUMN CENTERLINES, FACE OF CONCRETE/MASONRY, AND FINISHED FACE OF PARTITIONS.
3. COORDINATE ALL LAYERS OF WALL ASSEMBLIES TO ENSURE MINIMUM CLEARANCES ARE PROVIDED.
4. REFER TO ENLARGED PLANS FOR ADDITIONAL DIMENSIONING.
5. REFER TO SHEET G001 FOR TYPICAL MOUNTING HEIGHTS.
6. DOOR/WINDOW OPENINGS IN FRAMED PARTITIONS SHALL BE TWO INCHES (2") FROM FINISHED CORNER TO EDGE OF FRAME, U.N.O.



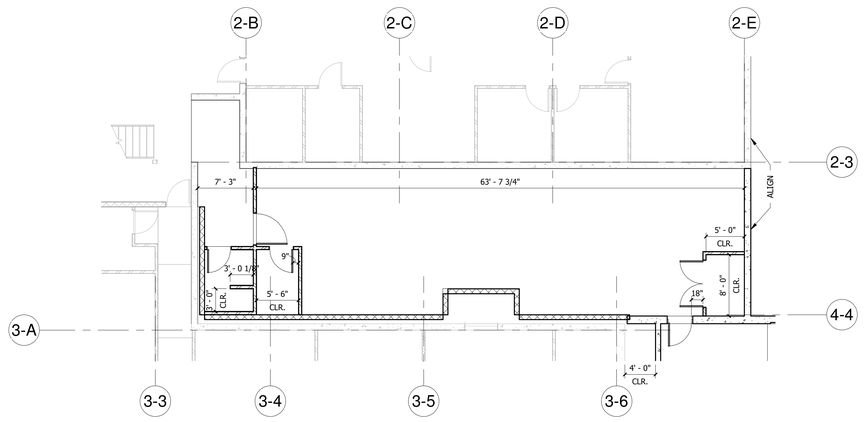
3 LEVEL 2 FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH



2 LEVEL 1 DIMENSIONED PLAN
1/8" = 1'-0"

PROJECT NORTH



1 BASEMENT FLOOR PLAN
1/8" = 1'-0"

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50§ CD Drawings	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
22294

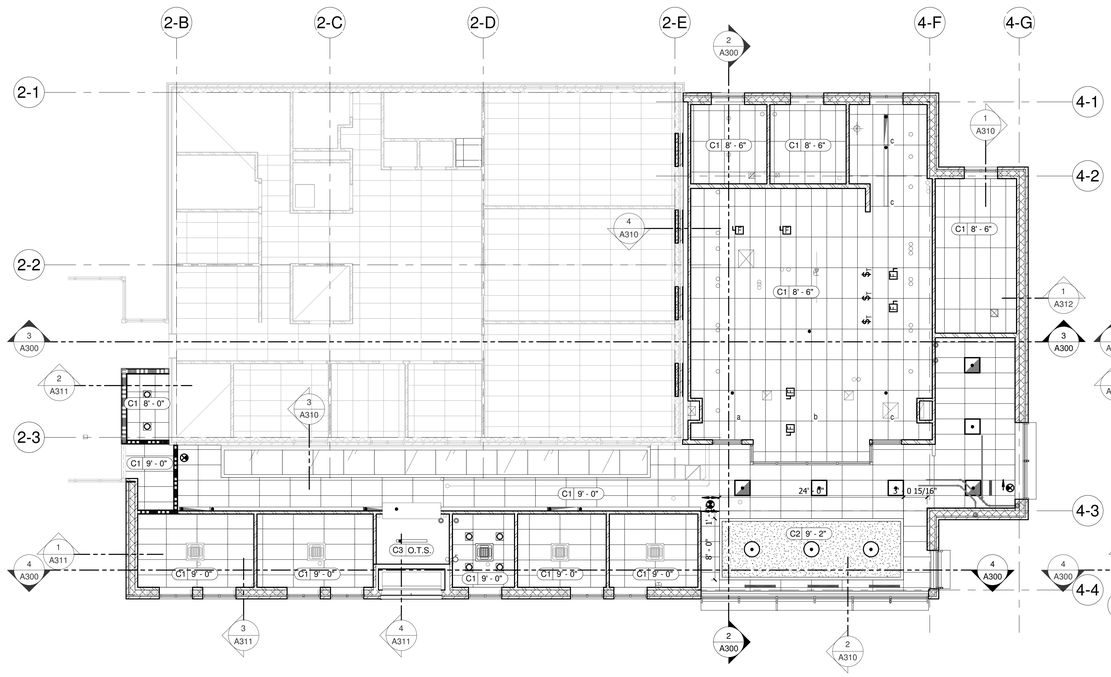
SHEET TITLE:
DIMENSIONED PLANS

SHEET NUMBER:
A104

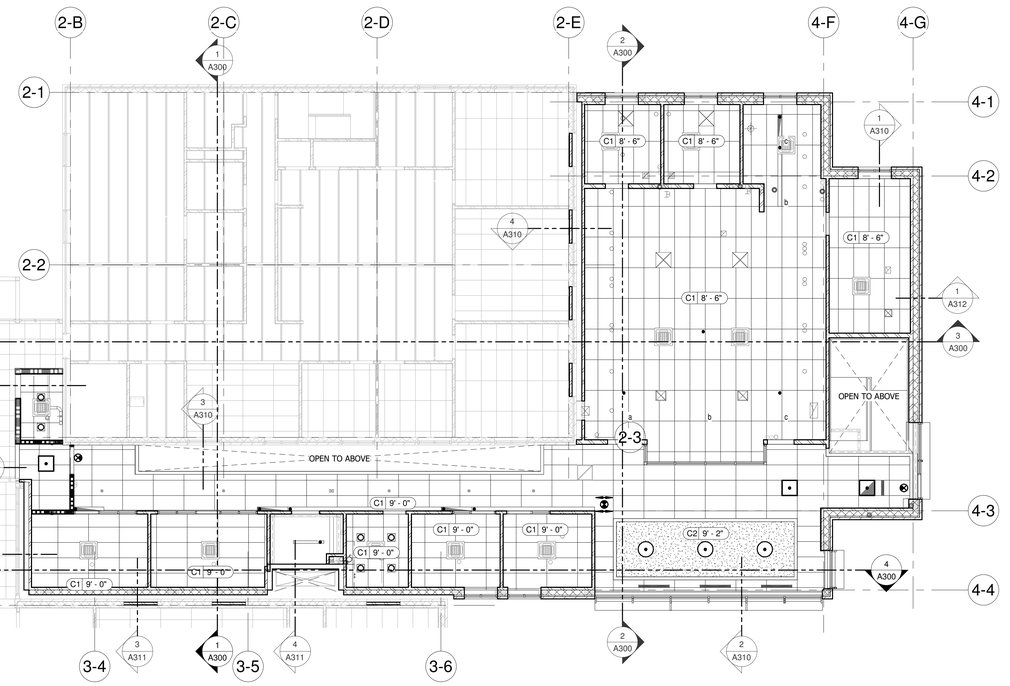
SHEET OF

CEILING LEGEND	GENERAL CEILING NOTES
ACT-1 ACT-2 LIGHT FIXTURE HVAC DIFFUSER HVAC RETURN AIR GRILLE HVAC CASSETTE	1. REFER TO MECHANICAL & ELECTRICAL DRAWINGS FOR ACTUAL FIXTURE/DEVICE INFORMATION. SHOWN HERE FOR SPECIFIC DIMENSIONS AND GENERAL LAYOUT COORDINATION. 2. COORDINATE THE LAYOUT OF CEILING SUSPENSION TO ACHIEVE THE LOCATIONS OF ALL ITEMS TO BE INSTALLED IN THE CEILING. 3. LAY-IN GRID CEILINGS ARE SHOWN FOR INTENT. LAY OUT ACOUSTICAL TILES SYMETRICALLY WITHIN INDIVIDUAL SPACES. 4. FIRE SPRINKLER SYSTEM SHALL BE FULLY COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION TO ENSURE ALL SYSTEM ARE INSTALLED AS TIGHT TO THE STRUCTURE ABOVE AS POSSIBLE. HEADS SHALL BE INSTALLED SYMETRICALLY WITHIN INDIVIDUAL SPACES. 5. LOCATE SMOKE ALARMS, SPRINKLER HEADS, AND ALL OTHER CEILING-MOUNTED DEVICES AT THE CENTER OF CEILING TILES / CLOUDS. 6. ALL OPEN-TO-STRUCTURE CEILINGS SHALL BE PAINTED, INCLUDING ALL EXPOSED DUCTWORK, PIPING, CONDUIT, ETC. 7. ALL SUSPENDED ITEMS SHALL BE SEISMICALLY BRACED, AS REQUIRED BY CODE.

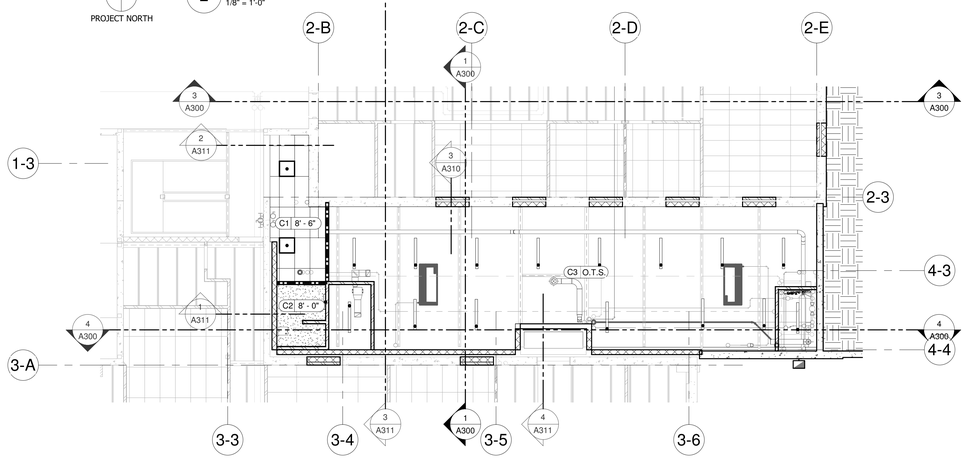
KEYED NOTES



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



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



1 BASEMENT REFLECTED CEILING PLAN
1/8" = 1'-0"

PROJECT NORTH

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SHEET TITLE:
REFLECTED CEILING PLANS

SHEET NUMBER:
A110

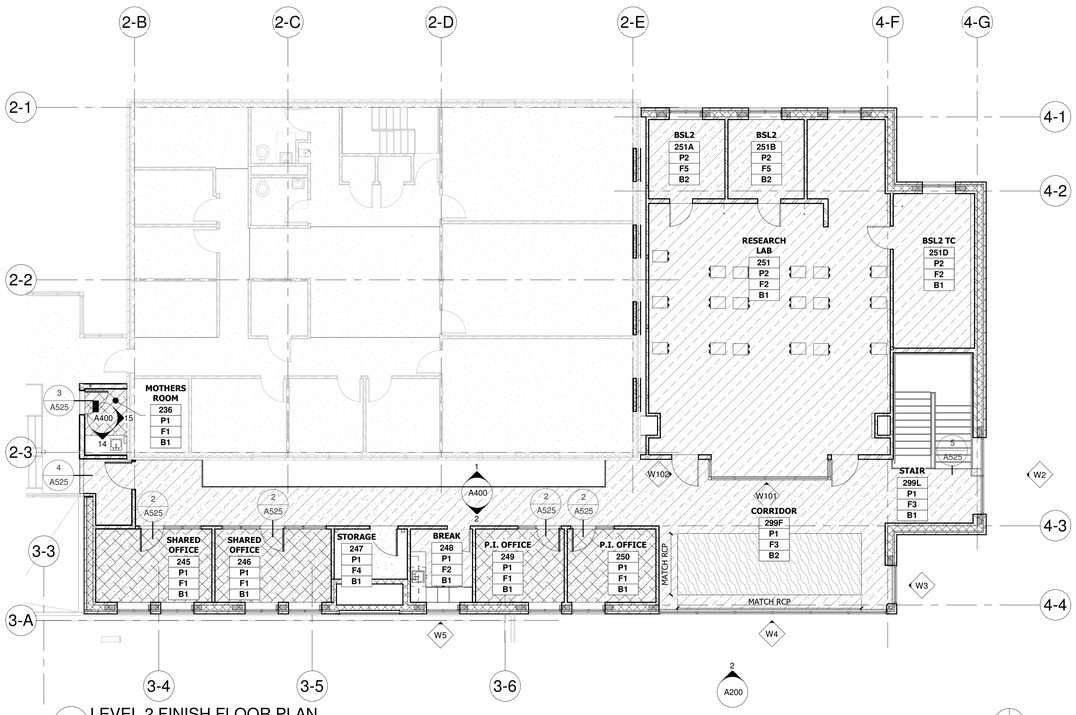
SHEET OF

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING
BASEMENT					
045	FREEZERS	F4	B1	P1	C3
099A	SHOWER	FT1	B3	WT1	C2
099B	ELEC.	F4	B1	P1	C3
LEVEL 1					
145	SHARED OFFICE	F1	B1	P1	C1
146	SHARED OFFICE	F1	B1	P1	C1
148	BREAK	F3	B1	P1	C1
149	P.I. OFFICE	F1	B1	P1	C1
150	P.I. OFFICE	F1	B1	P1	C1
151	RESEARCH LAB	F2	B1	P2	C1
151A	BSL 2	F5	B2	P2	C1
151B	BSL 2	F5	B2	P2	C1
151D	BSL 2 TC	F2	B1	P2	C1
199D	PHONE	F1	B1	P1	C1
199F	CORRIDOR	F3	B1	P1	C1
199L	STAIR	F3	B1	P1	C1
LEVEL 2					
236	MOTHERS ROOM	F1	B1	P1	C1
245	SHARED OFFICE	F1	B1	P1	C1
246	SHARED OFFICE	F1	B1	P1	C1
248	BREAK	F3	B1	P1	C1
249	P.I. OFFICE	F1	B1	P1	C1
250	P.I. OFFICE	F1	B1	P1	C1
251	RESEARCH LAB	F2	B1	P2	C1
251A	BSL2	F5	B2	P2	C1
251B	BSL2	F5	B2	P2	C1
251D	BSL2 TC	F2	B1	P2	C1
299F	CORRIDOR	F3	B1	P1	C1
299L	STAIR	F3	B1	P1	C2

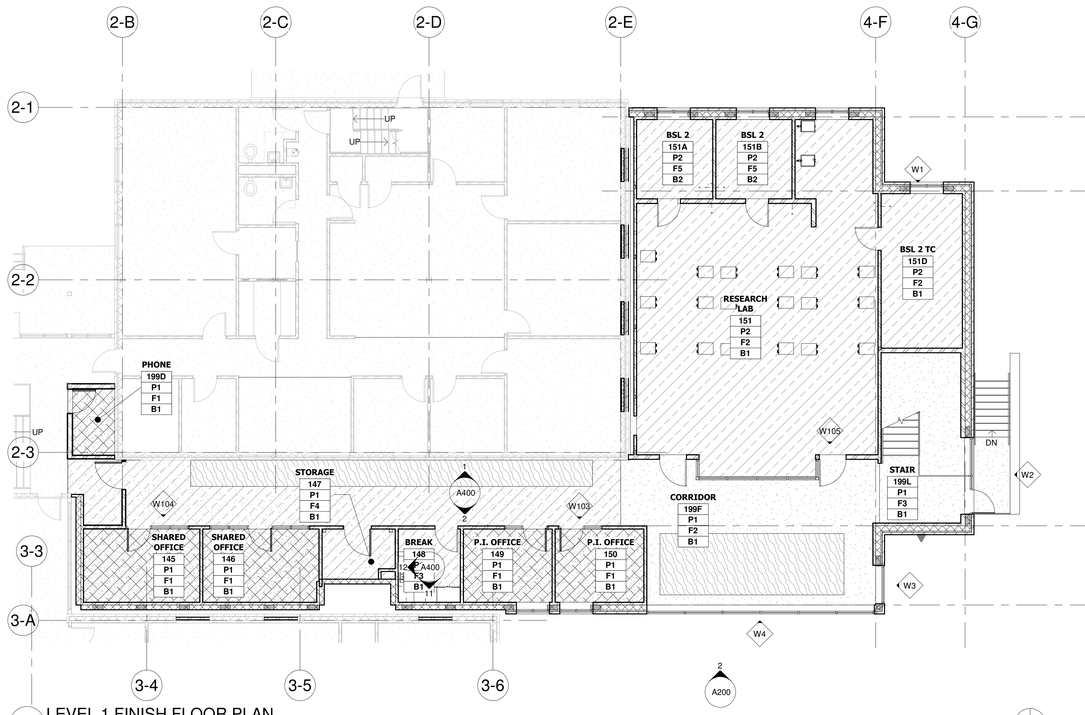
FINISH LEGEND

MARK	COMMENTS	MANUFACTURER	MODEL	PATTERN/NUMBER	COLOR	SIZE	COMMENTS
B1	RUBBER BASE	ROPPE				4"	
B2	TILE						
F1	CARPET TILE	INTERFACE	HN850	ASHLAR	104206 - NICKEL	10" x 39"	
F2	LINOLEUM - FIELD	TARKETT	LINOFLOOR	VENETO (14872)	685 - ICED SLATE	--	
F3	LINOLEUM - ACCENT	TARKETT	LINOFLOOR	VENETO (14872)	673 - COMET	--	
F4	SEALED CONCRETE	ASHFORD FORMULA	--	--	--	--	
FT1	PORCELAIN TILE						
P1	FIELD PAINT	SHERWIN WILLIAMS	EGGSHELL			--	
P2	ACCENT PAINT	SHERWIN WILLIAMS	EGGSHELL			--	
WT1	WALL TILE						



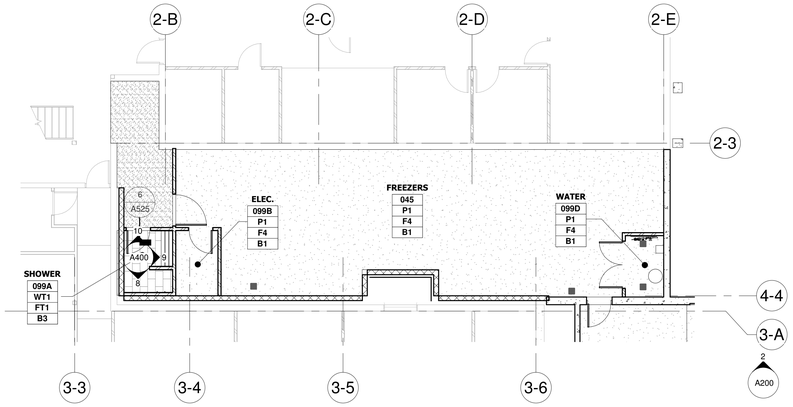
3 LEVEL 2 FINISH FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH



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

PROJECT NORTH



1 BASEMENT FINISH FLOOR PLAN
1/8" = 1'-0"

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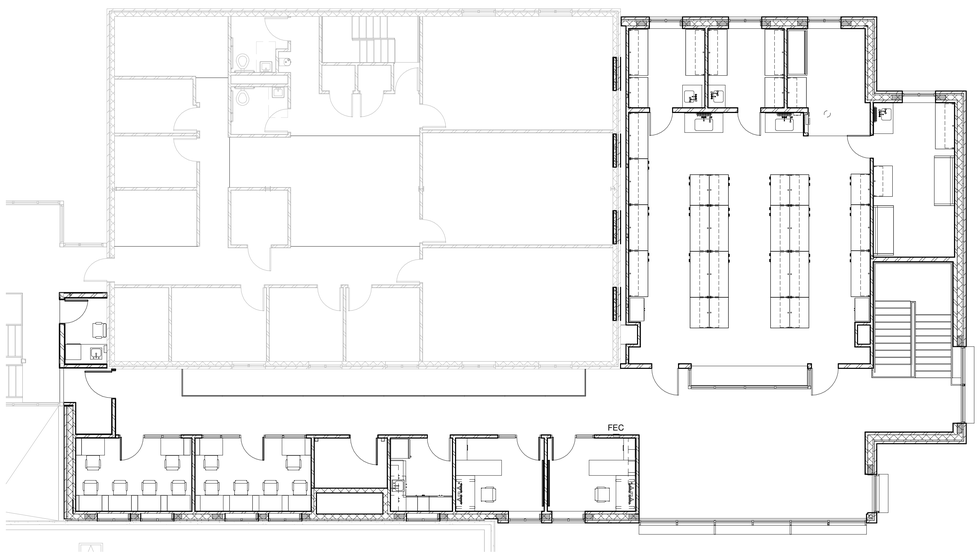
SHEET TITLE:

FINISH FLOOR PLANS

SHEET NUMBER:

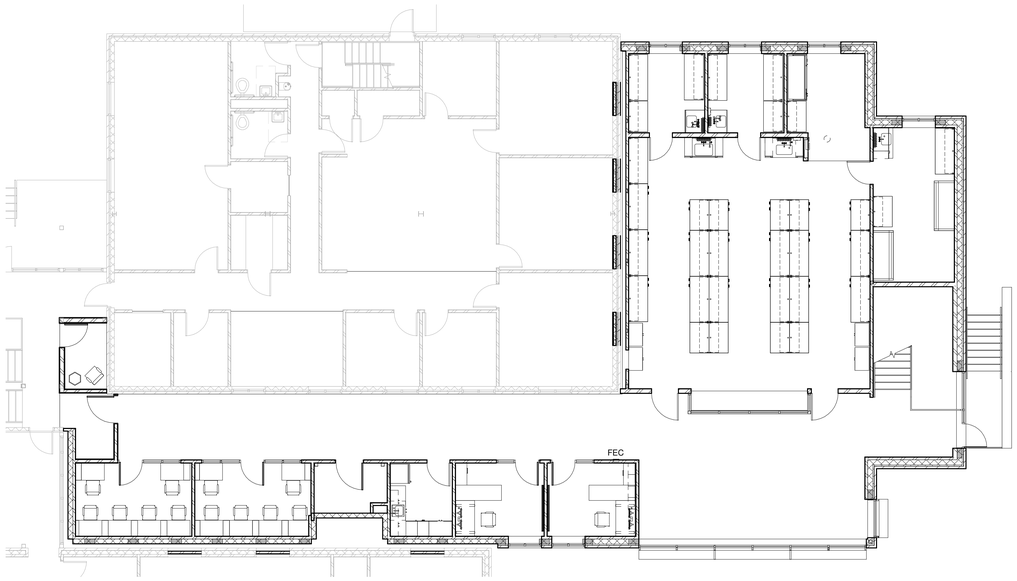
A120

SHEET OF



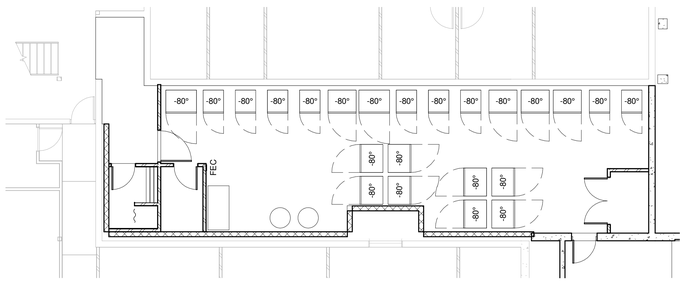
3 LEVEL 2 FURNITURE PLAN
1/8" = 1'-0"

PROJECT NORTH



2 LEVEL 1 FURNITURE PLAN
1/8" = 1'-0"

PROJECT NORTH



1 BASEMENT FURNITURE PLAN
1/8" = 1'-0"

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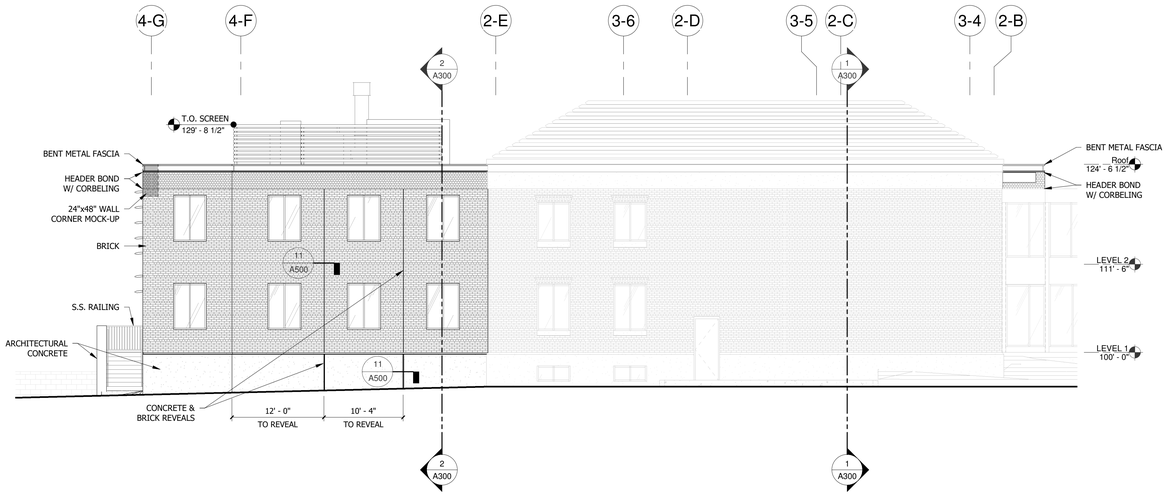
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FURNITURE PLANS (FOR REFERENCE ONLY)

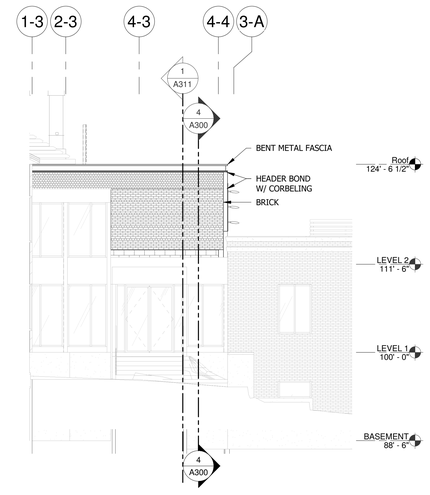
SHEET NUMBER:

A140

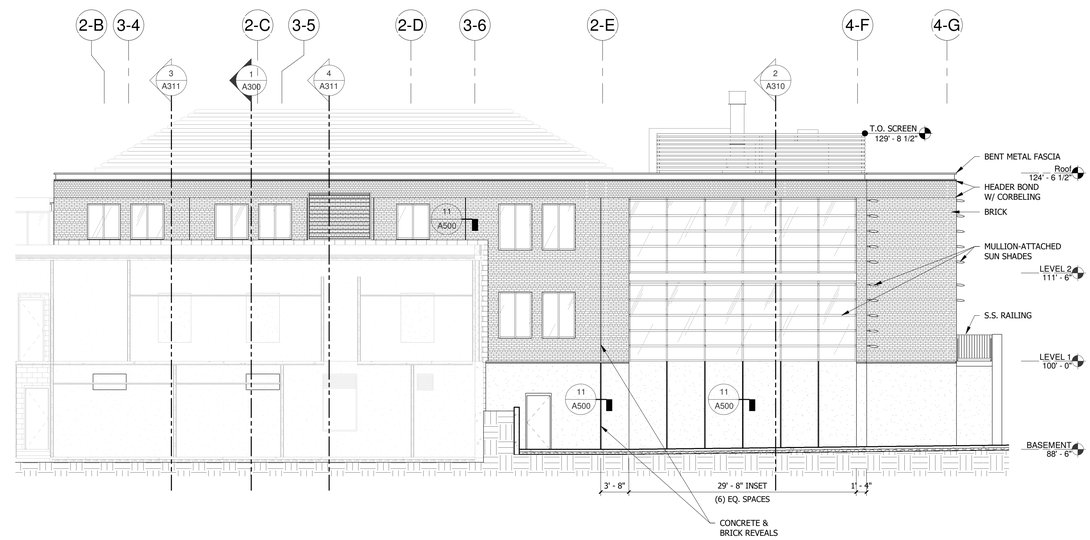
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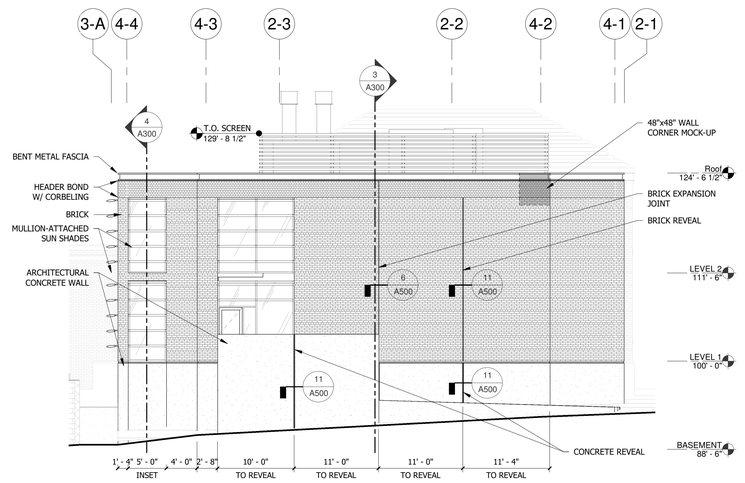
3 EAST ELEVATION
1/8" = 1'-0"



4 NORTH ELEVATION
1/8" = 1'-0"



2 WEST ELEVATION
1/8" = 1'-0"



1 SOUTH ELEVATION
1/8" = 1'-0"

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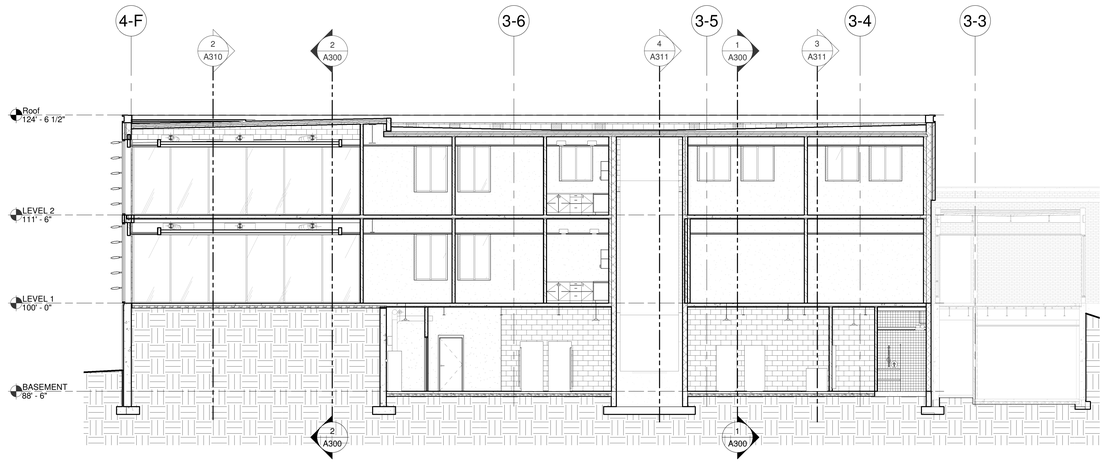
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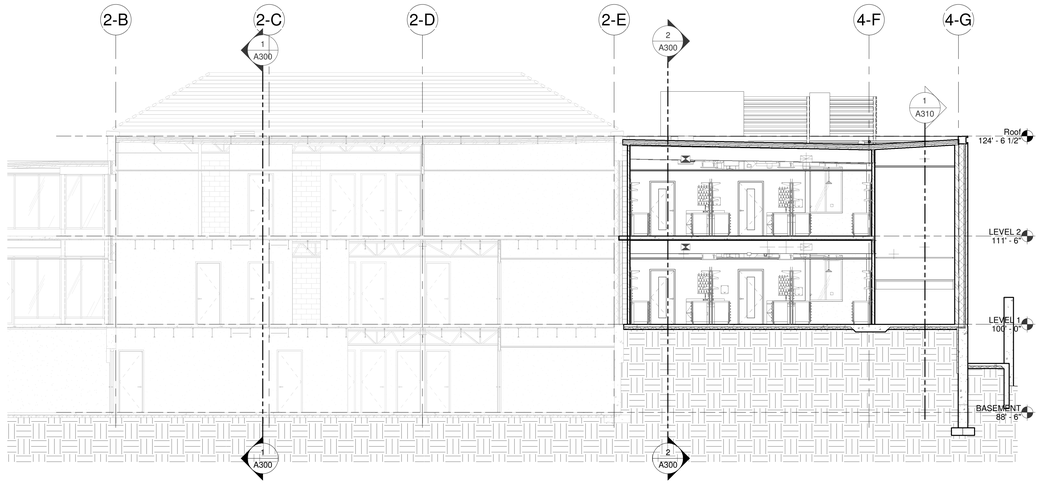
SHEET TITLE:
BUILDING ELEVATIONS

SHEET NUMBER:
A200

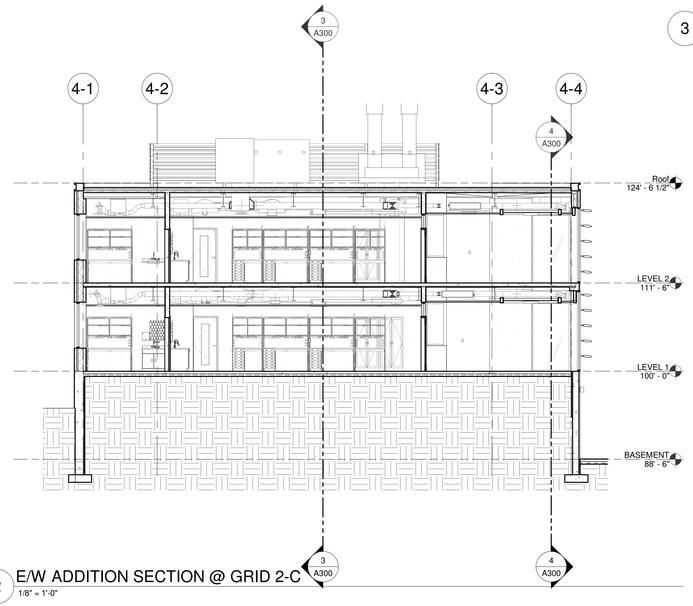
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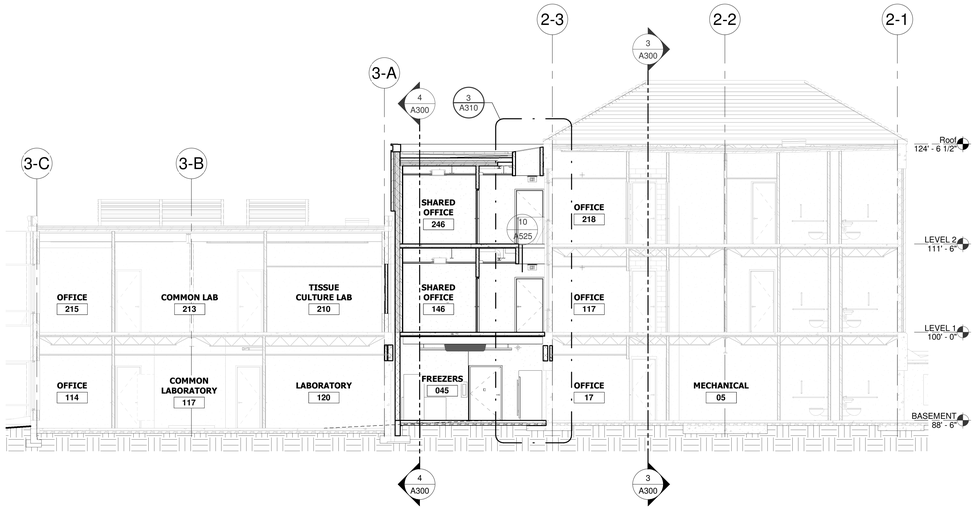
4 N/S BUILDING SECTION @ GRID 4-4
1/8" = 1'-0"



3 N/S BUILDING SECTION @ GRID 2-2.5
1/8" = 1'-0"



2 E/W ADDITION SECTION @ GRID 2-C
1/8" = 1'-0"



1 E/W BUILDING SECTION @ GRID 2-E.5
1/8" = 1'-0"

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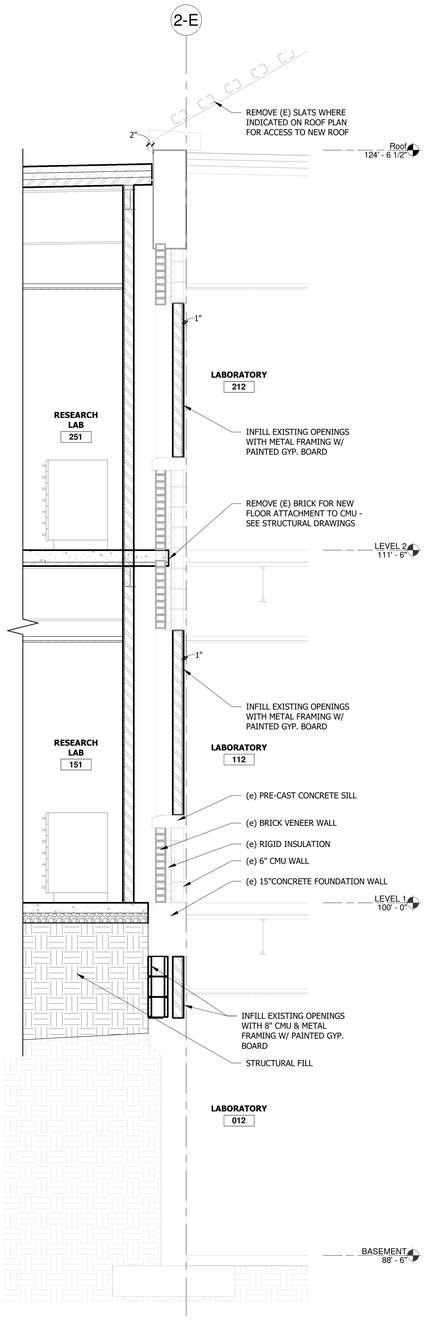
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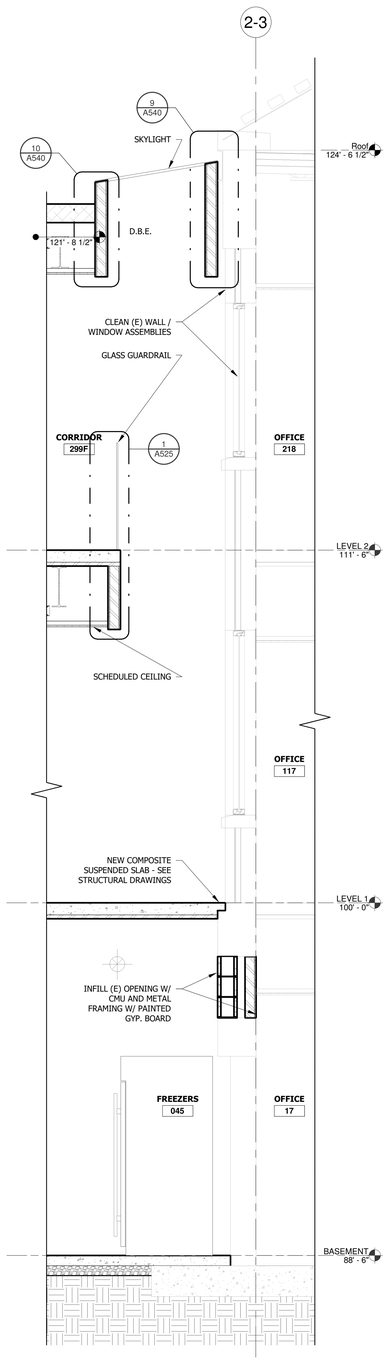
SHEET TITLE:
BUILDING SECTIONS

SHEET NUMBER:
A300

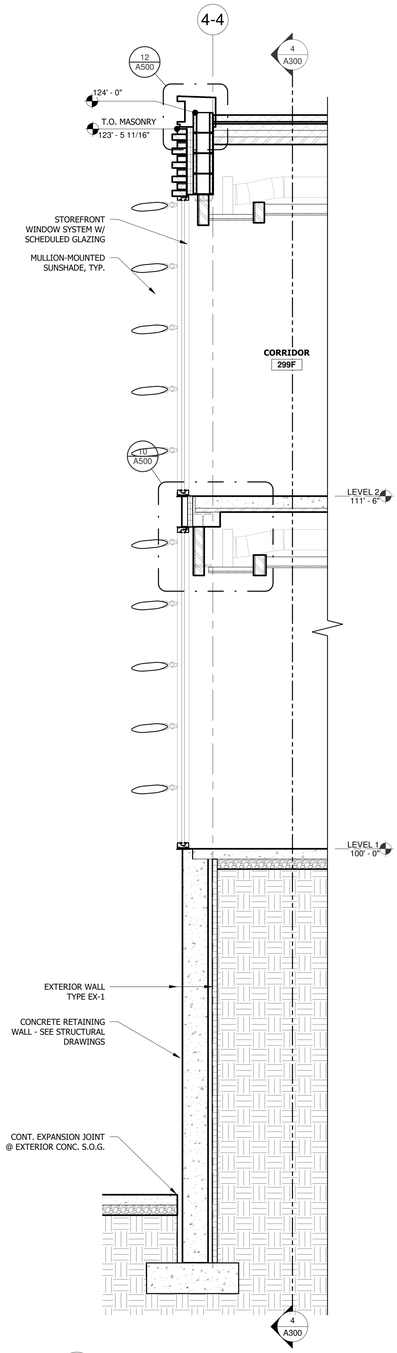
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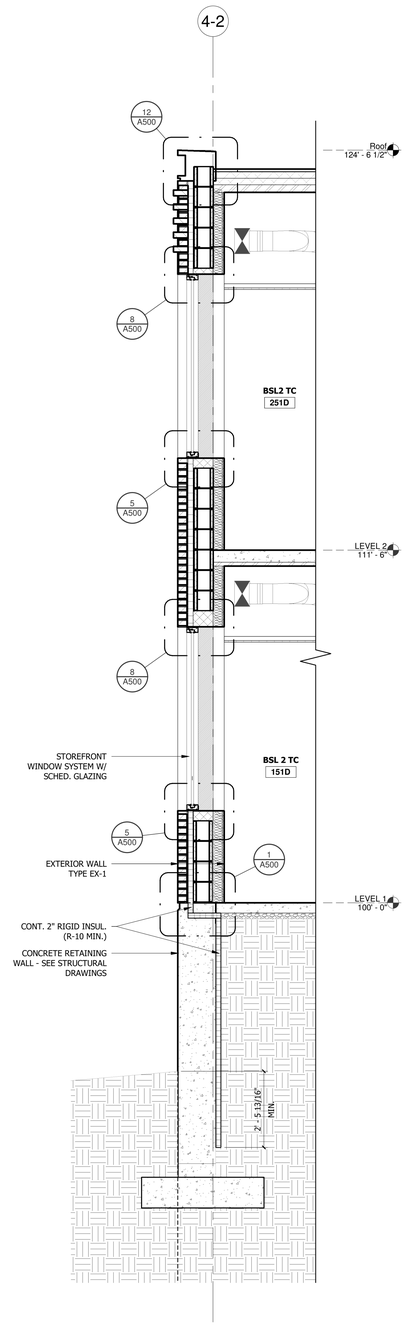
4 WALL SECTION @ GRID 2-E
1/2" = 1'-0"



3 WALL SECTION @ GRID 2-3
1/2" = 1'-0"



2 WALL SECTION @ CURTAINWALL
1/2" = 1'-0"



1 WALL SECTION @ BRICK
1/2" = 1'-0"

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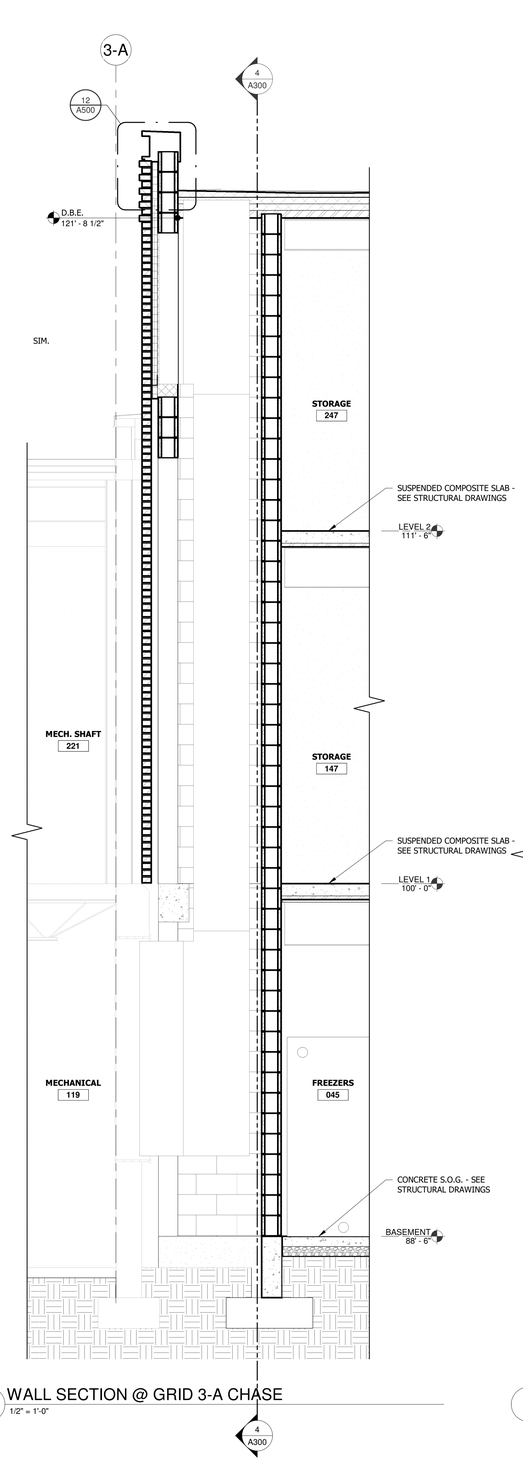
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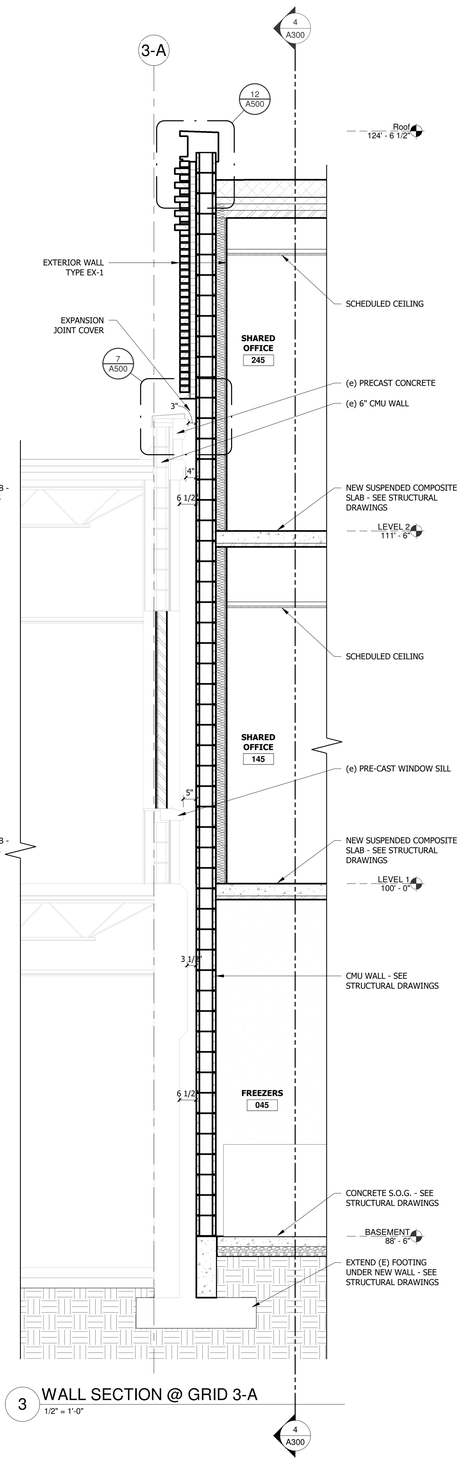
SHEET TITLE:
WALL SECTIONS

SHEET NUMBER:
A310

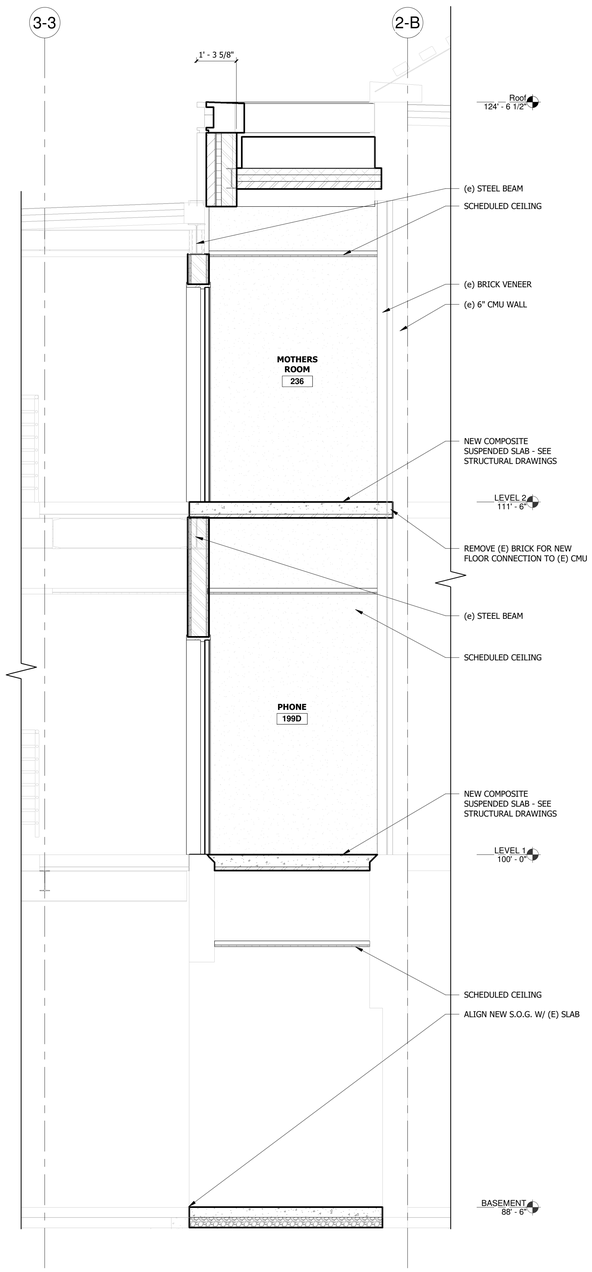
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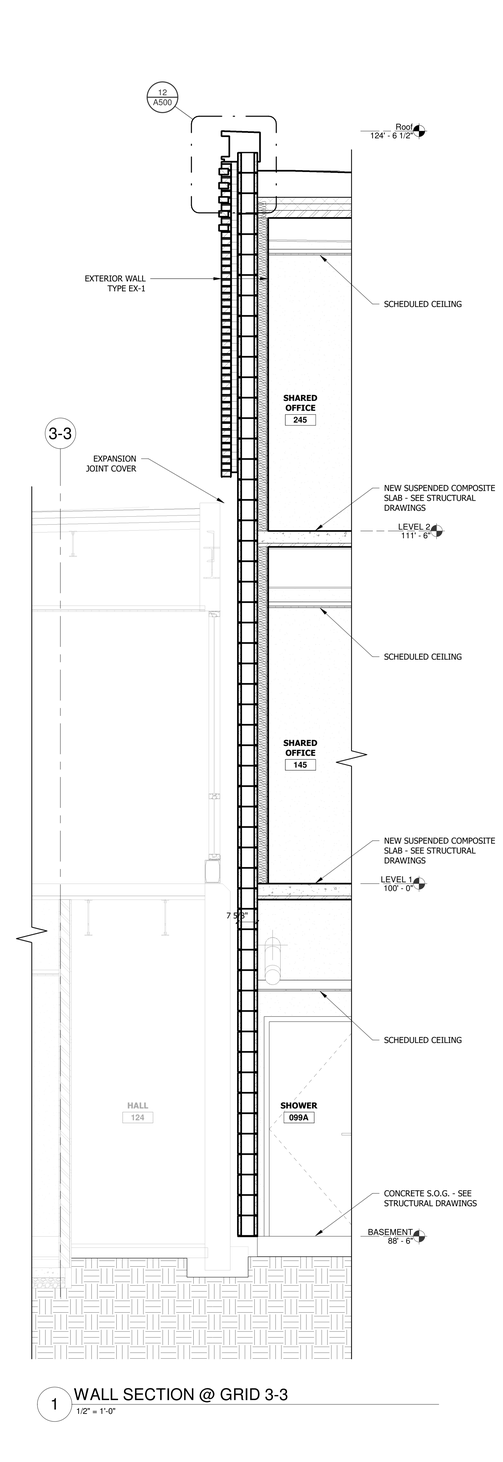
4 WALL SECTION @ GRID 3-A CHASE
1/2" = 1'-0"



3 WALL SECTION @ GRID 3-A
1/2" = 1'-0"



2 WALL SECTION 2 @ GRID 3-3
1/2" = 1'-0"



1 WALL SECTION @ GRID 3-3
1/2" = 1'-0"

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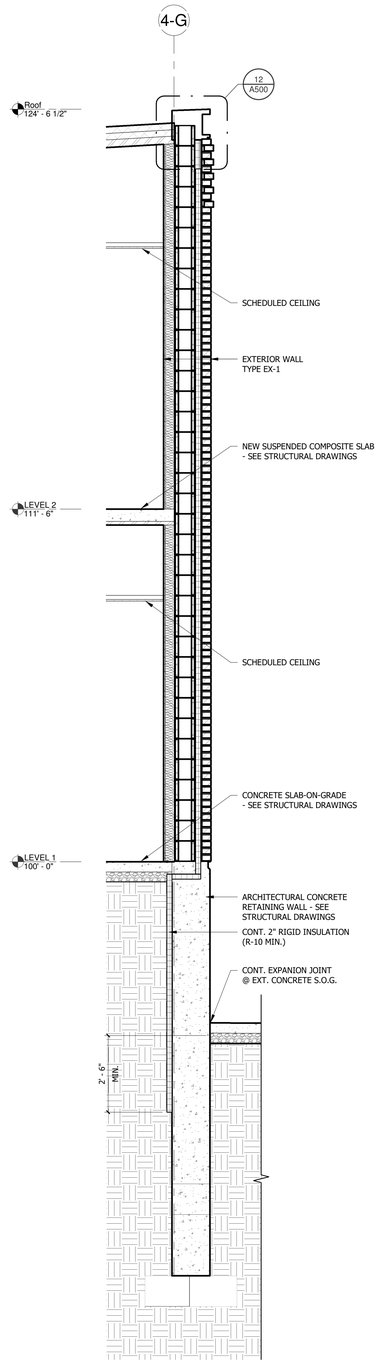
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SHEET TITLE:
WALL SECTIONS

SHEET NUMBER:
A311

SHEET OF



1 WALL SECTION @ FULL BRICK FACADE
1/2" = 1'-0"

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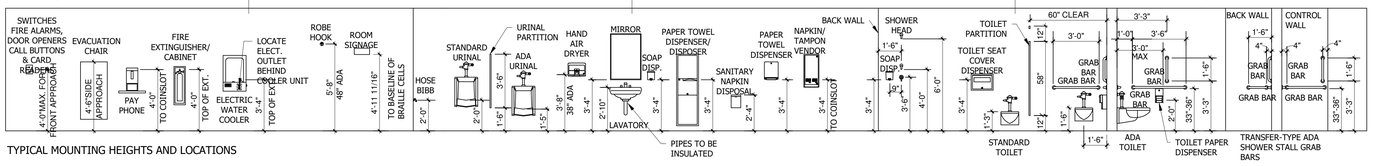
SHEET TITLE:

WALL SECTIONS

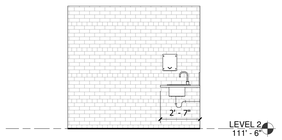
SHEET NUMBER:

A312

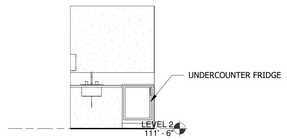
SHEET OF



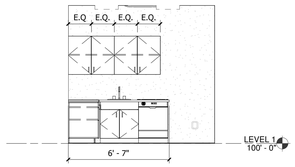
TYPICAL MOUNTING HEIGHTS AND LOCATIONS



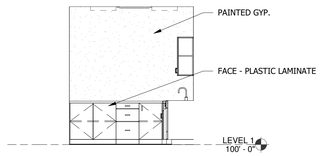
15 MOTHER'S ROOM EAST ELEVATION
1/4" = 1'-0"



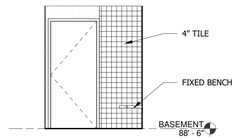
14 MOTHER'S ROOM SOUTH ELEVATION
1/4" = 1'-0"



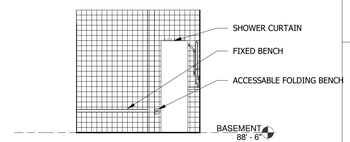
12 BREAK ROOM WEST ELEVATION
1/4" = 1'-0"



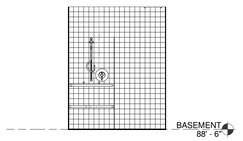
11 BREAK ROOM SOUTH ELEVATION
1/4" = 1'-0"



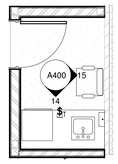
10 SHOWER NORTH ELEVATION
1/4" = 1'-0"



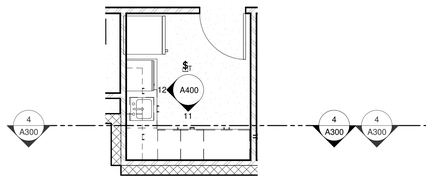
9 SHOWER EAST ELEVATION
1/4" = 1'-0"



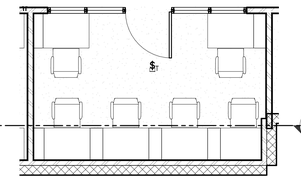
8 SHOWER SOUTH ELEVATION
1/4" = 1'-0"



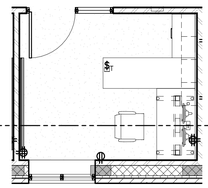
13 MOTHER'S ROOM ENLARGED PLAN
1/4" = 1'-0"



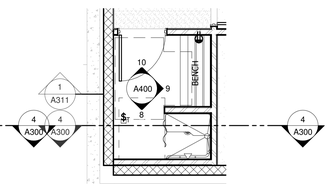
7 BREAK ROOM ENLARGED PLAN
1/4" = 1'-0"



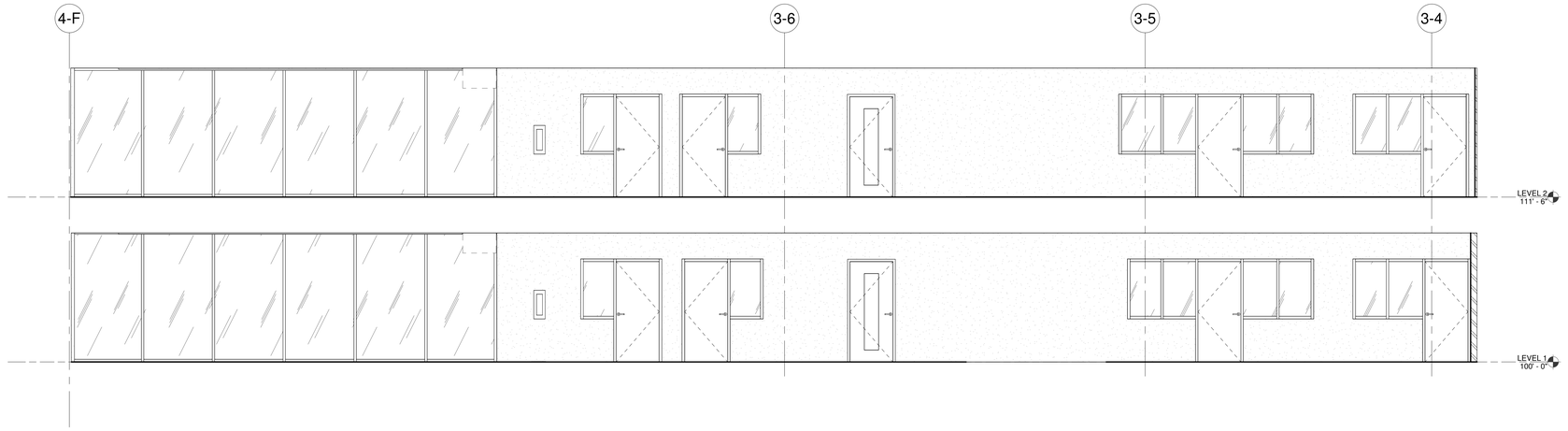
6 SHARED OFFICE ENLARGED PLAN
1/4" = 1'-0"



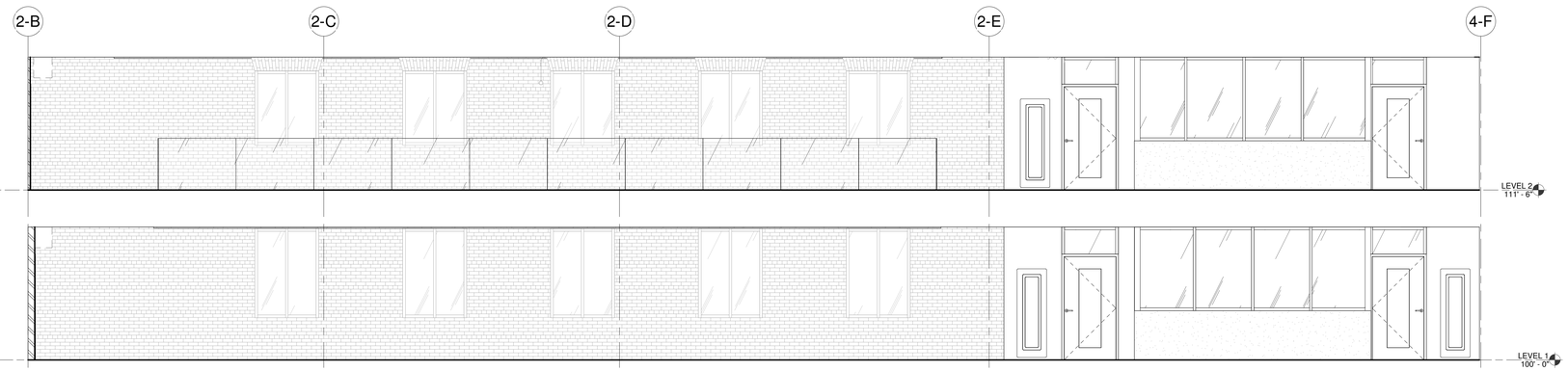
5 P.I. OFFICE ENLARGED PLAN
1/4" = 1'-0"



3 ENLARGED SHOWER PLAN
1/4" = 1'-0"



2 HALLWAY WEST ELEVATION
1/4" = 1'-0"



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

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawings	11.12.21

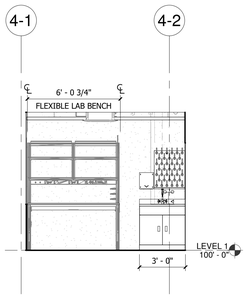
ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
22294

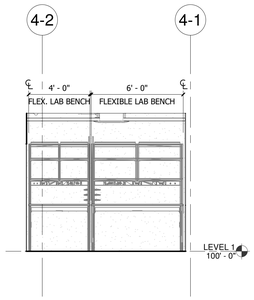
SHEET TITLE:
ENLARGED FLOOR PLANS & ELEVATIONS

SHEET NUMBER:
A400

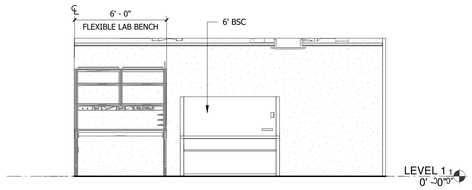
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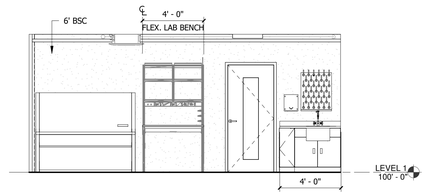
9 BSL2 ELEVATION 2
1/4" = 1'-0"



8 BSL2 ELEVATION 1
1/4" = 1'-0"

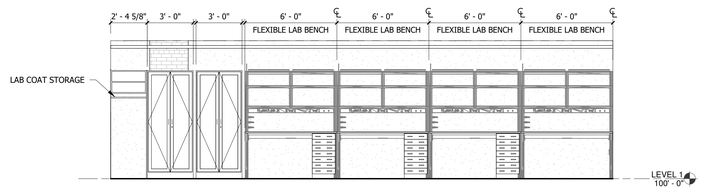


7 TISSUE CULTURE SOUTH ELEVATION
1/4" = 1'-0"

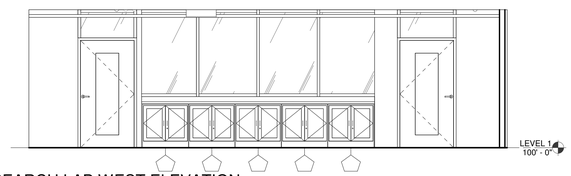


6 TISSUE CULTURE NORTH ELEVATION
1/4" = 1'-0"

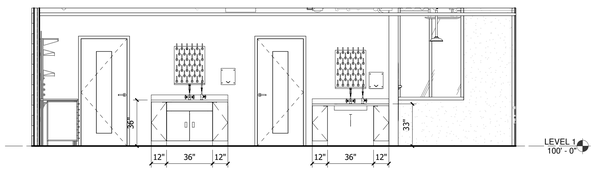
5 RESEARCH LAB SOUTH ELEVATION
1/4" = 1'-0"



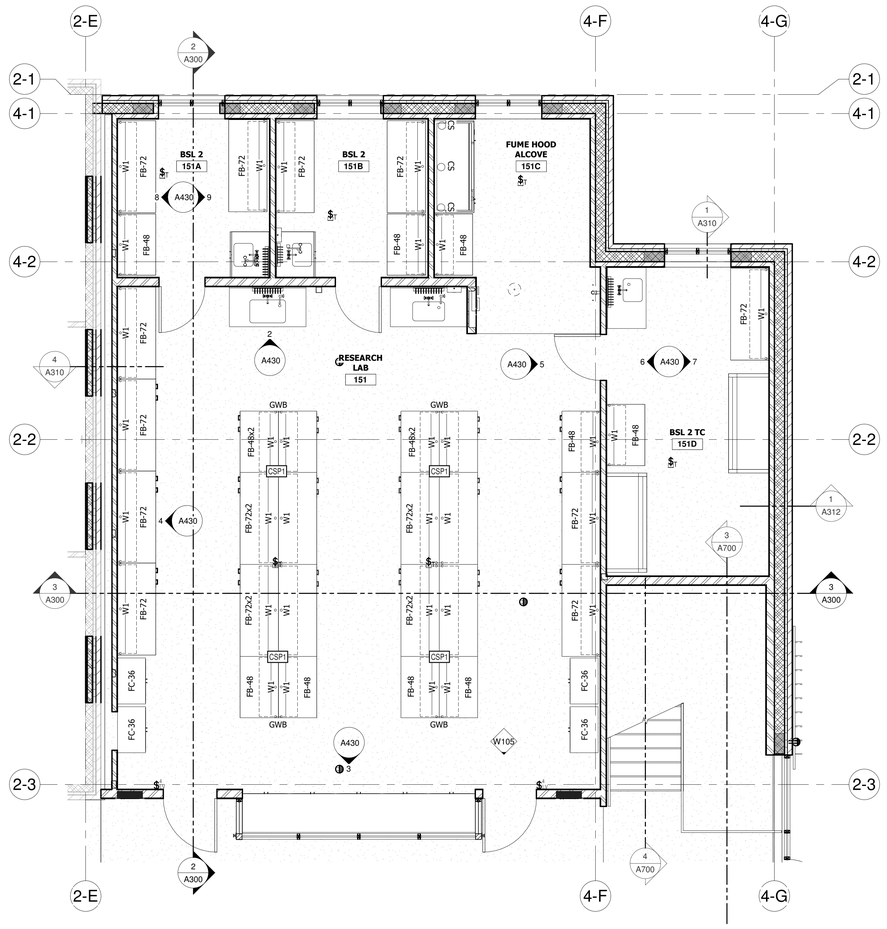
4 RESEARCH LAB NORTH ELEVATION
1/4" = 1'-0"



3 RESEARCH LAB WEST ELEVATION
1/4" = 1'-0"



2 RESEARCH LAB EAST ELEVATION
1/4" = 1'-0"



1 ENLARGED LAB PLAN
1/4" = 1'-0"

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REVISIONS:

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1	50% CD Drawings	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
LAB PLANS & ELEVATIONS

SHEET NUMBER:
A430

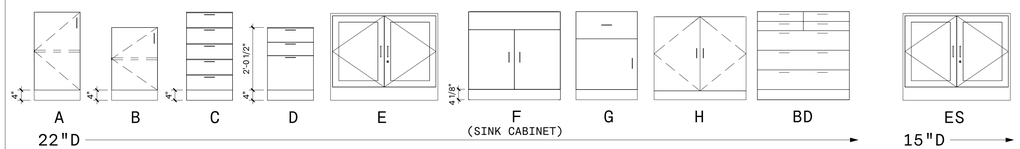
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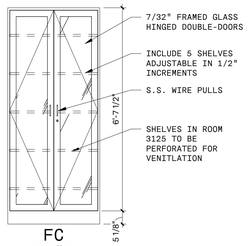
FREEZER EQUIPMENT SCHEDULE

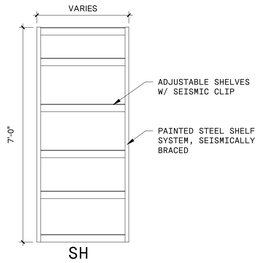
NUMBER	ASSET TAG #	RATING	VOLTAGE	PHASE	AMPS	WIDTH	DEPTH	HEIGHT	STATUS
FR-1	305371	-80°	115	1	16	48"	36"	78"	EXISTING
FR-2	320182	-80°	115	1	9	32"	36"	78"	EXISTING
FR-3	323618	-80°	115	1	9	32"	36"	78"	EXISTING
FR-4	320444	-80°	115	1	9	32"	36"	78"	EXISTING
FR-5	320181	-80°	115	1	9	32"	36"	78"	EXISTING
FR-6	310606	-80°	208/230	1	9	43"	36"	78"	EXISTING
FR-7	290674	-80°	208/230	1	9	47"	36"	78"	EXISTING
FR-8	320255	-80°	115	1	9	32"	36"	78"	EXISTING
FR-9	320922	-80°	115	1	9	33"	36"	78"	EXISTING
FR-10	322975	-80°	115	1	9	33"	36"	78"	EXISTING
FR-11	323466	-80°	115	1	8.5	44"	36"	78"	EXISTING
FR-12	310605	-80°	208/230	1	9	43"	36"	78"	EXISTING
FR-13	307803	-80°	208/230	1	9	32"	36"	78"	EXISTING
FR-14	313939	-80°	115	1	16	32"	36"	78"	EXISTING
FR-15	295066	-80°	115	1	10.5	29"	33"	44"	EXISTING
FR-16	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-17	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-18	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-19	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-20	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-21	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-22	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-23	-	-80°	115	1	8.5	44"	36"	78"	FUTURE
FR-24	-	-20°							EXISTING

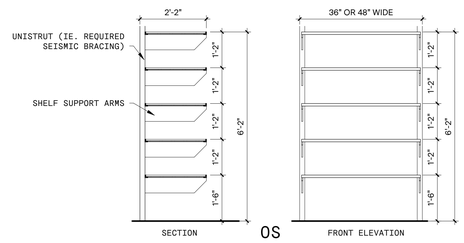
BASE CABINET TYPES (S.S. WIRE PULL, METAL U.O.N.)

-BASE CABINETS AT FB BENCHES TO BE FREESTANDING, MOVEABLE CABINETS W/ REAR CASTERS & LEVELING SLIDES
-BASE CABINETS INDICATED AS (ADA) ON FLOOR PLANS SHALL FIT AT FB WITH COUNTER TOP HEIGHT OF 34" AFF



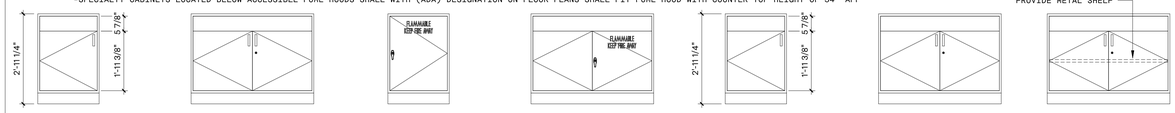






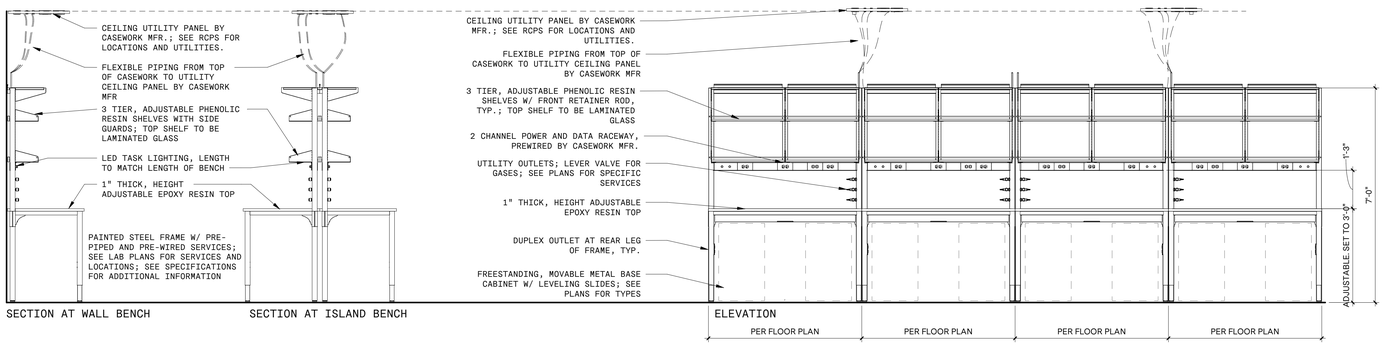
SPECIALTY BASE CABINET TYPES (S.S. WIRE PULL, METAL U.O.N.)

-SPECIALTY CABINETS LOCATED BELOW ACCESSIBLE FUME HOODS SHALL WITH (ADA) DESIGNATION ON FLOOR PLANS SHALL FIT FUME HOOD WITH COUNTER TOP HEIGHT OF 34" AFF



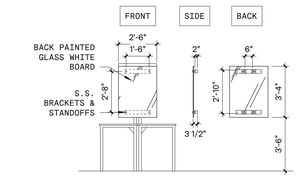
LAB CASEWORK LEGEND

1/2" = 1'-0"



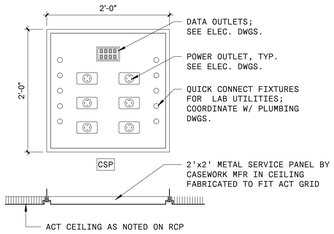
FLEXIBLE CASEWORK ELEVATIONS & SECTIONS - FB BENCHES

1/2" = 1'-0"



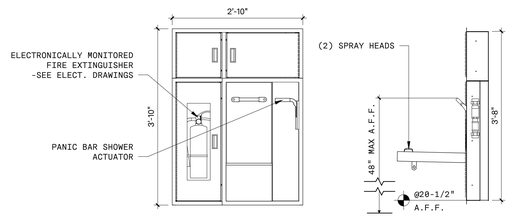
3 GWB DETAIL

1/4" = 1'-0"



2 CSP1 DETAIL @ LABS

1" = 1'-0"



1 FEC/SS DETAIL

3/4" = 1'-0"

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REVISIONS:

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1	50% CD Drawings	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

22294

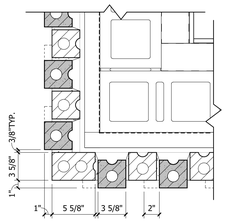
SHEET TITLE:

LAB EQUIPMENT SCHEDULES

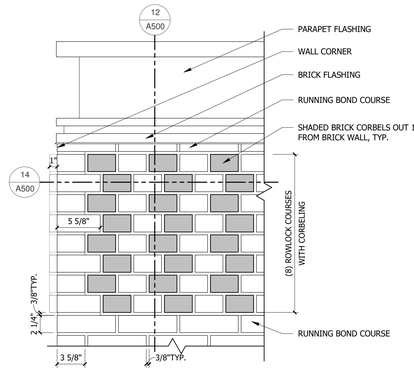
SHEET NUMBER:

A431

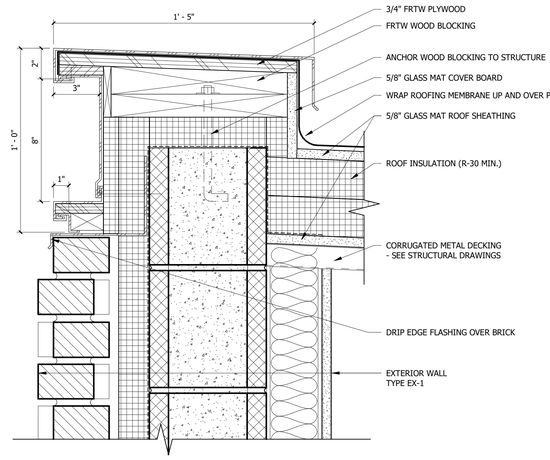
SHEET OF



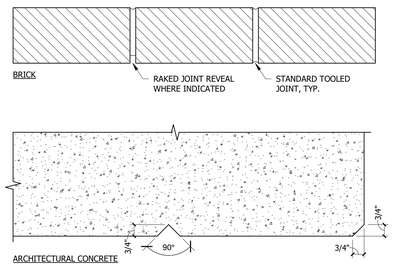
14 BRICK DESIGN RIBBON PLAN DETAIL
1 1/2" = 1'-0"



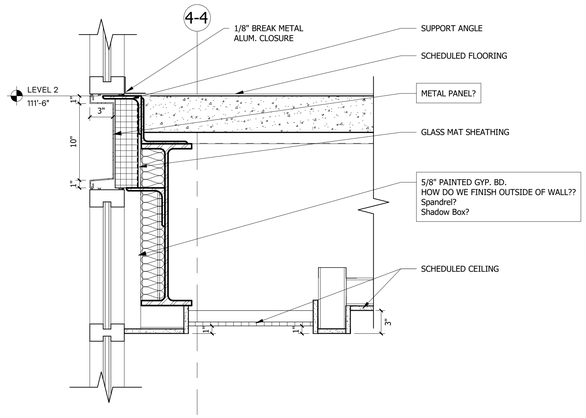
13 BRICK DESIGN RIBBON ELEVATION
1 1/2" = 1'-0"



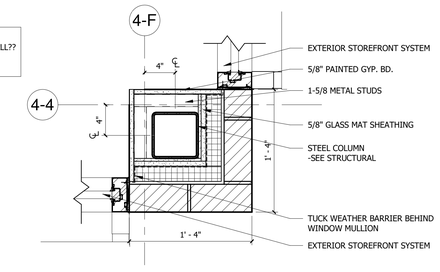
12 PARAPET DETAIL @ BRICK
3" = 1'-0"



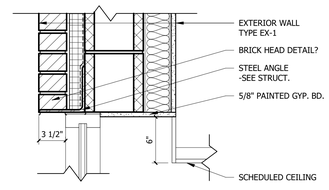
11 REVEAL & CORNER DETAILS
3" = 1'-0"



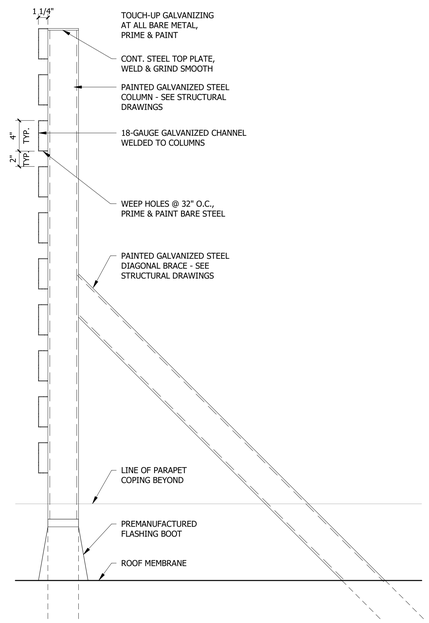
10 FLOOR DETAIL @ WEST WINDOW WALL
1 1/2" = 1'-0"



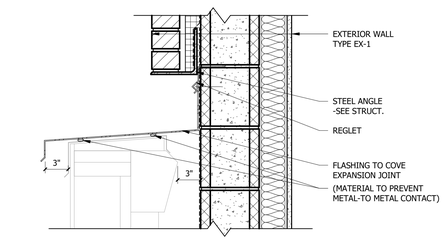
9 BRICK COLUMN DETAIL
1 1/2" = 1'-0"



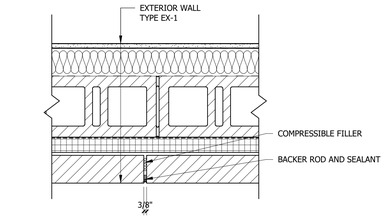
8 WINDOW HEAD DETAIL @ BRICK
1 1/2" = 1'-0"



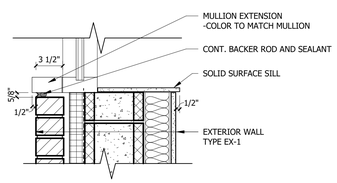
4 ROOF EQUIPMENT SCREEN
1 1/2" = 1'-0"



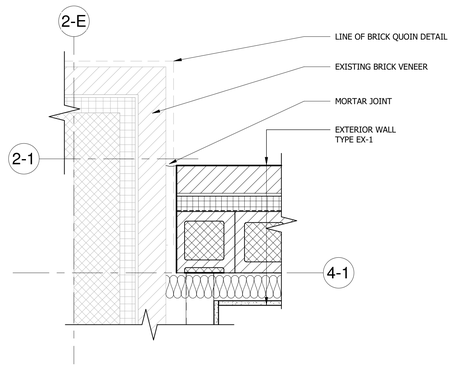
7 EXPANSION JOINT DETAIL @ ROOF PARAPET
1 1/2" = 1'-0"



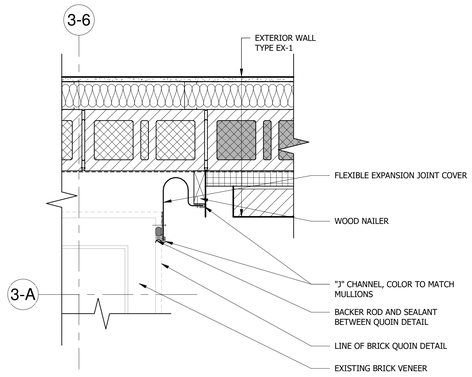
6 BRICK EXPANSION JOINT DETAIL
1 1/2" = 1'-0"



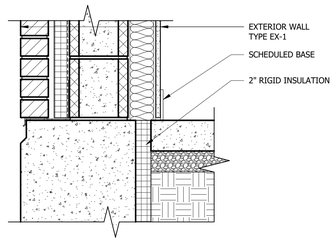
5 WINDOW SILL DETAIL @ BRICK
1 1/2" = 1'-0"



3 CORNER CONNECTION DETAIL @ SOUTH BUILDING
1 1/2" = 1'-0"



2 CORNER CONNECTION DETAIL @ WEST BUILDING
1 1/2" = 1'-0"



1 FOUNDATION CONNECTION DETAIL
1 1/2" = 1'-0"

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EDA PROJECT NUMBER: 221011

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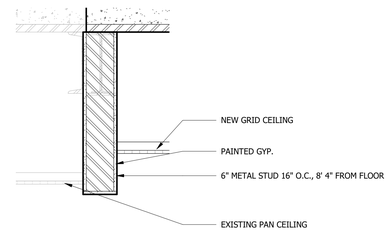
REVISIONS:

#	Description	Date
1	50% CD Drawings	11.12.21

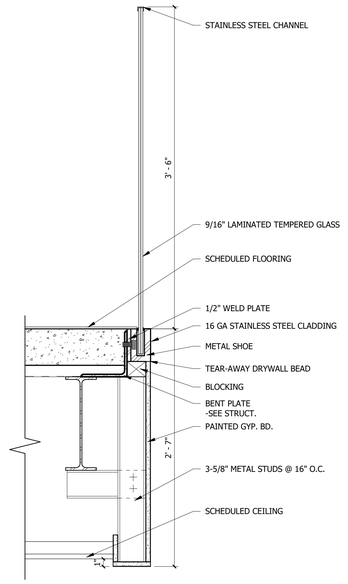
ISSUE DATE:
12 NOVEMBER 2021
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22294

SHEET TITLE:
EXTERIOR DETAILS

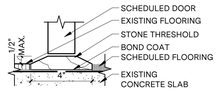
SHEET NUMBER:
A500
SHEET OF



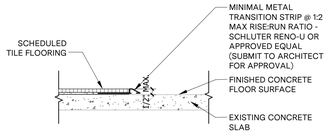
10 SOFFIT @ NEW AND EXISTING CEILING
1" = 1'-0"



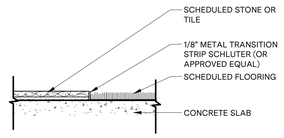
1 GLASS GUARDRAIL DETAIL
1 1/2" = 1'-0"



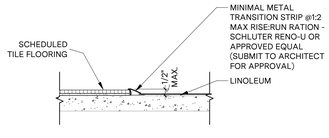
9 STONE DOOR THRESHOLD
3" = 1'-0"



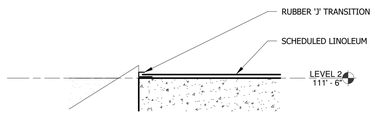
8 TILE TO CONCRETE TRANSITION
3" = 1'-0"



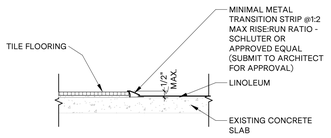
7 STONE TO CARPET TRANSITION
3" = 1'-0"



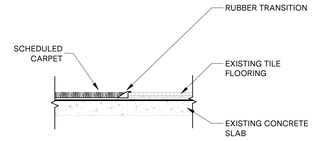
6 NEW TILE TO LINOLEUM TRANSITION
3" = 1'-0"



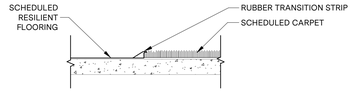
5 LINOLEUM TRANSITION @ STAIR
3" = 1'-0"



4 TILE TO LINOLEUM TRANSITION
3" = 1'-0"



3 CARPET TO (E) TILE TRANSITION
3" = 1'-0"



2 CARPET TO LINOLEUM TRANSITION
3" = 1'-0"

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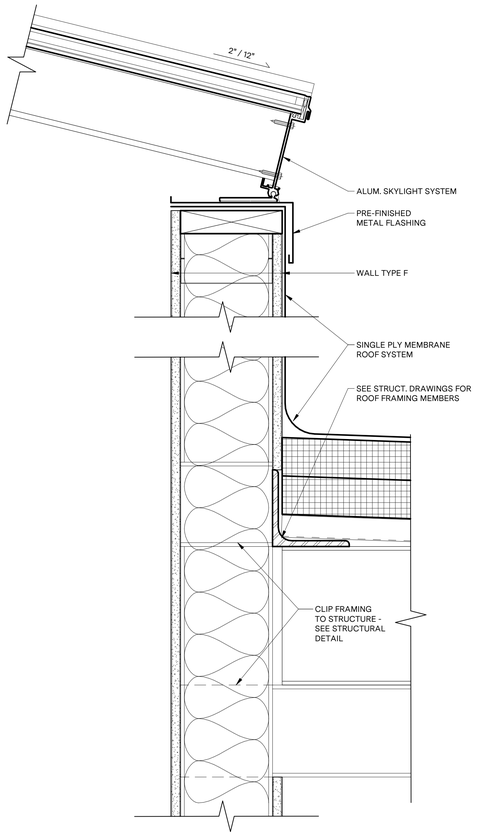
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INTERIOR DETAILS

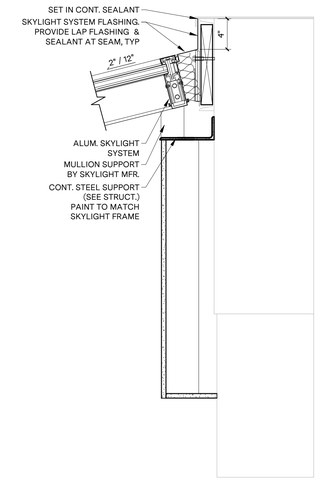
SHEET NUMBER:

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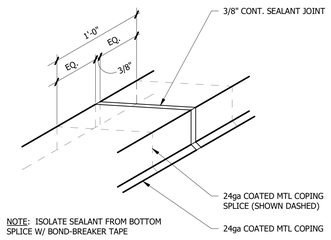
SHEET OF



10 SKYLIGHT DETAIL
3" = 1'-0"

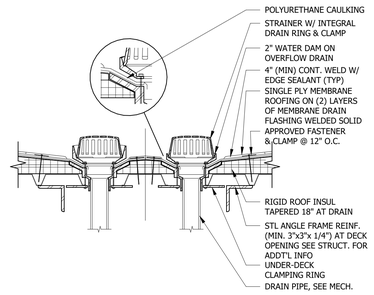


9 SKYLIGHT @ (E) PARAPET
1 1/2" = 1'-0"

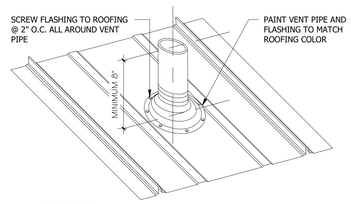


NOTE: ISOLATE SEALANT FROM BOTTOM SPLICE W/ BOND-BREAKER TAPE

8 COPING DETAIL
1 1/2" = 1'-0"

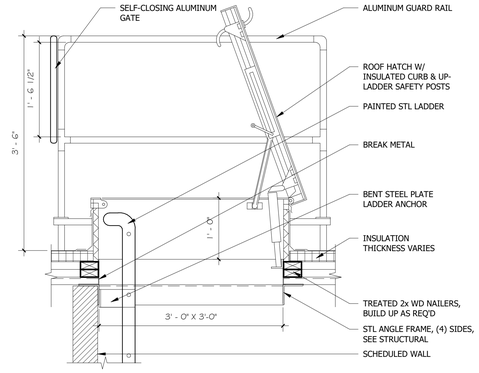


4 ROOF & OVERFLOW DRAIN DETAIL
1 1/2" = 1'-0"



* PROCEDURES *
TRIM THE OPENING IN THE FLASHING TO 20% SMALLER THAN THE PIPE DIAMETER. * SLIDE THE FLASHING DOWN OVER THE PIPE. * SEAL BETWEEN THE FLASHING AND THE ROOFING WITH GUNNABLE SEALANT AND SET THE FASHING. * FORM THE FLASHING TO FIT THE PROFILE OF THE ROOF. * FASTEN THE FLASHING WITH #10-SCREWS @ 2" O.C.

6 ROOF VENT FLASHING DETAIL
3" = 1'-0"



5 ROOF HATCH DETAIL W/ GUARDRAILS
1" = 1'-0"

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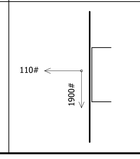
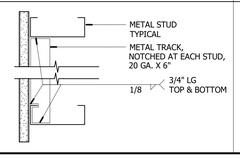
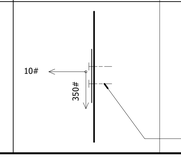
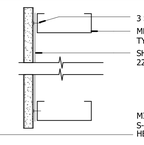
UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
ROOF DETAILS

SHEET NUMBER:
A540

SHEET OF

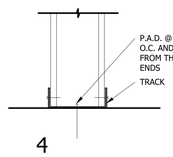
BACKING PLATE SCHEDULE

TYPE	LOAD DIAGRAM/SECTION	PLAN DETAIL	ITEMS
1			PROVIDE TYPE 1 BACKING AT OFFICE AND CLASSROOM WALLS, AT 3'-10", 5'-0", 7'-0" AND AS REQUIRED FOR WALL MOUNTED SHELVING, CASEWORK, AND EQUIPMENT TYP.
2			MIRRORS, GRAB BARS, TOILET AND BATH ACCESSORIES, PAMPHLET RACKS, VISUAL DISPLAY BOARDS, TACK BOARDS, CHALKBOARDS, TELEVISIONS, AND AS SHOWN ON DETAILS.

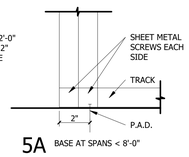
NOTES

1. EXTEND BACKING PLATE TO NEXT STUD BEYOND SIDE OF FIXTURE OR ACCESSORY, ACROSS (3) STUDS MINIMUM.
2. FOR EQUIPMENT AND WORK TO BE ANCHORED, SEE DETAILS.
3. FOR MECHANICAL WORK ANCHORAGE, SEE MECHANICAL DRAWINGS.
4. FOR ELECTRICAL WORK ANCHORAGE, SEE ELECTRICAL DRAWINGS.
5. MAX. LOADS SHOWN ARE MAX. ALLOWABLE LOADS FOR THE DIRECTION SHOWN. VERTICAL & HORIZONTAL LOADS ARE NOT CUMULATIVE E.I.: MAX ALLOWABLE LOADS ARE FOR SHEAR-TENSION INTERACTION CALCULATION.

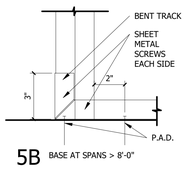
TYPICAL INTERIOR WALL AND OPENING FRAMING DETAILS



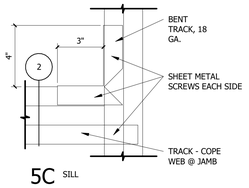
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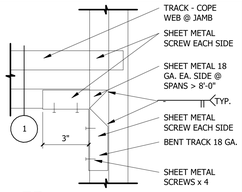
5A BASE AT SPANS < 8'-0"



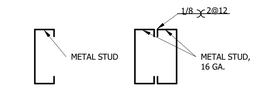
5B BASE AT SPANS > 8'-0"



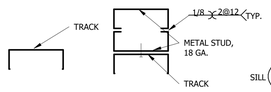
5C SILL



5D HEAD



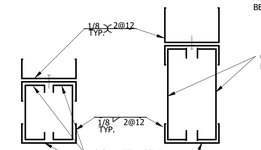
3A 0" TO 3'-0"
3B 3'-1" TO 20'-0"



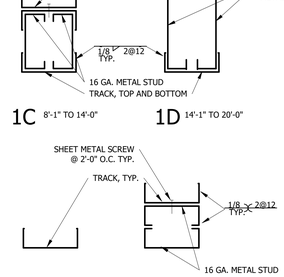
2A 0" TO 4'-0"
2B 0" TO 8'-0"
2C 4'-1" TO 8'-0"
2D 8'-1" TO 20'-0"

SILL 2A 2C

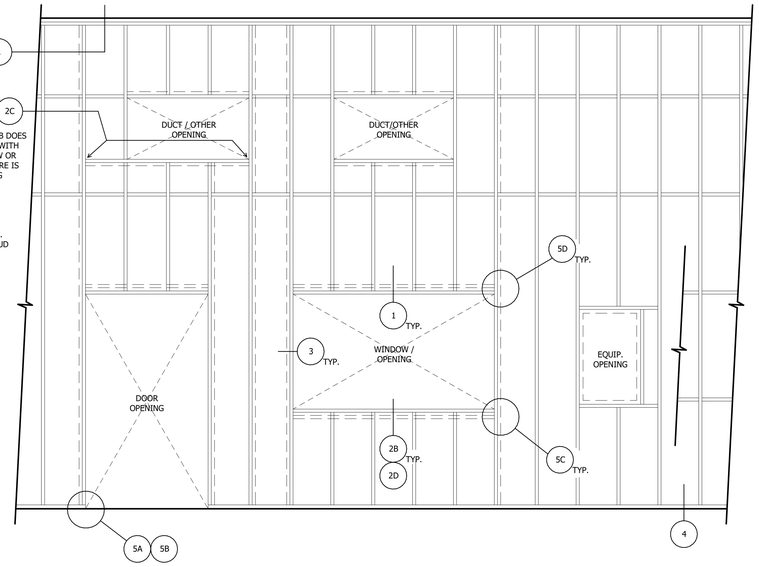
WHERE JAMB DOES NOT ALIGN WITH JAMB BELOW OR WHERE THERE IS NO OPENING BELOW



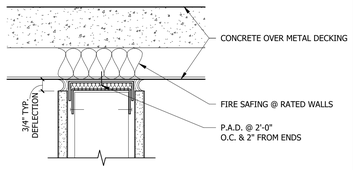
1C 8'-1" TO 14'-0"
1D 14'-1" TO 20'-0"



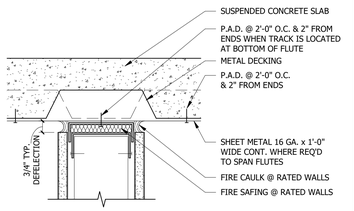
1A 0" TO 4'-0"
1B 4'-1" TO 8'-0"



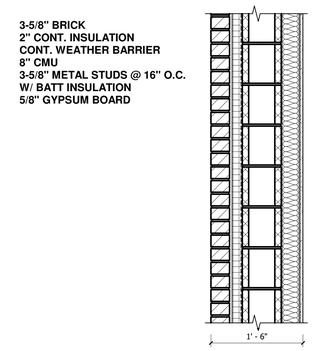
COMPENSATION CHANELS



PERPENDICULAR TO DECK



PARALLEL TO DECK

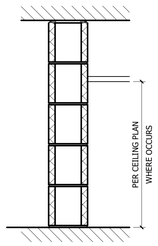


- 3-5/8" BRICK
- 2" CONT. INSULATION
- CONT. WEATHER BARRIER
- 8" CMU
- 3-5/8" METAL STUDS @ 16" O.C. W/ BATT INSULATION
- 5/8" GYPSUM BOARD

EX1 Exterior Wall Type
NTS

8" CONCRETE MASONRY BLOCK, SEAL TO DECK.

TYPE	'R' FIRE RATING	STC RATING
--	2 HRS.	--

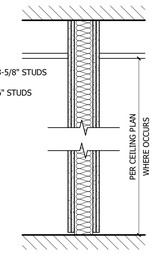


FIRE RATING: ***UL DESIGN #U905***

E Wall Type
NTS

METAL STUDS @ 16" O.C. WITH TWO LAYERS 5/8" GYPSUM BOARD, BOTH SIDES. SEAL TO DECK.

TYPE	'R' FIRE RATING	STC RATING	
D4-2	2 HRS.	--	3-5/8" STUDS
D6-2	2 HRS.	--	6" STUDS

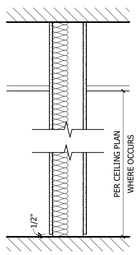


FIRE RATING: ***UL DESIGN #U419***

D Wall Type
NTS

6" METAL STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD, BOTH SIDES. SEAL TO DECK.

TYPE	'R' FIRE RATING	STC RATING
--	--	--

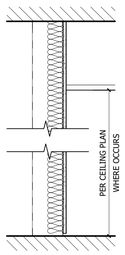


SEE INTERIOR ELEVATIONS FOR TILE EXTENTS & LOCATIONS. PROVIDE BACKER BOARD AND SCHEDULED TILE FINISH WHERE REQUIRED

C Wall Type
NTS

METAL STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD, ONE SIDE. SEAL TO DECK.

TYPE	'R' FIRE RATING	STC RATING	
B4	--	--	3-5/8" STUDS
B6	--	--	6" STUDS

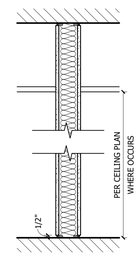


SEE INTERIOR ELEVATIONS FOR TILE EXTENTS & LOCATIONS. PROVIDE BACKER BOARD AND SCHEDULED TILE FINISH WHERE REQUIRED

B Wall Type
NTS

3-5/8" METAL STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD, BOTH SIDES. SEAL TO DECK.

TYPE	'R' FIRE RATING	STC RATING
--	--	--



SEE INTERIOR ELEVATIONS FOR TILE EXTENTS & LOCATIONS. PROVIDE BACKER BOARD AND SCHEDULED TILE FINISH WHERE REQUIRED

A Wall Type
NTS

PARTITION NOTES

1. ALL STUD GAUGES AND LIMITING HEIGHTS IN GYPSUM WALL BOARD REFERENCE SPECIFICATIONS.
2. ALL ELEC. / MECH. / EQUIPMENT / UTILITY ROOMS SHALL HAVE THEIR PERIMETER PARTITIONS INSULATED USING MINERAL WOOL
3. ALL TOILET ROOM / OFFICE PERIMETER PARTITIONS SHALL BE INSULATED WITH SOUND ATTENUATING BATTS.
4. RATED PARTITIONS TO EXTEND FROM TOP OF SLAB TO UNDERSIDE OF STRUCTURAL DECK ABOVE. SEAL TOP AND BOTTOM, TYPICAL.
5. ALL DRAIN LINES ROUTED THROUGH BUILDING INTERIOR SHALL BE WRAPPED CONTINUOUSLY WITH SOUND ATTENUATION INSULATION.
6. REFER TO PLANS FOR LOCATIONS OF PARTITION TYPES.
7. INSTALL FRAMING AND GYPSUM WALL BOARD AROUND STRUCTURAL MEMBERS OR OTHER OBSTRUCTIONS TO MAINTAIN FIRE RESISTIVE RATINGS.
8. WHERE GYPSUM WALL BOARD EXTENDS TO THE UNDERSIDE OF STRUCTURE, LEAVE 1/2" GAP AND CLOSE WITH CONTINUOUS SEALANT.
9. USE FIRESTOP SEALANT AT ALL FIRE-RATED PARTITIONS. USE ACOUSTICAL SEALANT AT ALL NON-RATED PARTITIONS, UNLESS NOTED OTHERWISE.
10. REFER MECHANICAL DRAWINGS FOR DETAILS ON PIPE PENETRATIONS THROUGH ACOUSTICAL PARTITIONS & RATED PARTITIONS.
11. WOOD BLOCKING SHALL BE FIRE-RETARDANT-TREATED.
12. ALL PARTITIONS TO RECEIVE TILE OR OTHER MORTAR-APPLIED FINISH SHALL BE CONSTRUCTED OF WATER-RESISTANT BACKER BOARD IN PLACE OF GYPSUM WALL BOARD.
13. ALL GYPSUM WALL BOARD SHALL BE SHIMMED 1/2" OFF THE FLOOR WITH NON-POROUS SHIMS. USE CONTINUOUS SEALANT.

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawings	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
WALL TYPES

SHEET NUMBER:
A600

SHEET OF

GLAZING TYPES

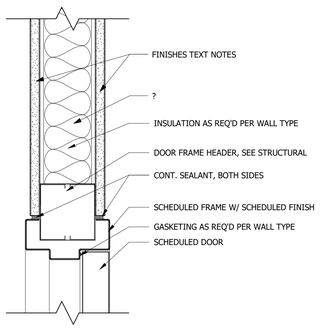
G1	1" INSULATED CLEAR LOW-E, TEMPERED/TEMPERED
G2	1" INSULATED CLEAR LOW-E, ANNEALED/ANNEALED
G3	1/4" CLEAR TEMPERED GLASS
G4	1/2" CLEAR TEMPERED GLASS

DOOR SCHEDULE

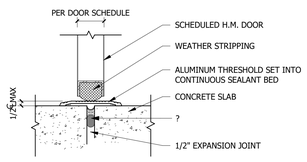
ROOM NO.	ROOM NAME	WIDTH	HEIGHT	THICKNESS	LEAF SIZE	DOOR			DETAILS			FRAME			GLASS TYPE	HARDWARE	FIRE RATING	COMMENTS
						TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL	TYPE	MATERIAL	FINISH				
		3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN										
045A	FREEZERS	4' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	--		90	
045B	FREEZERS	3' - 0"	7' - 0"	1 3/4"		D2	H.M.	PAINT				F1	H.M.	PAINT	--		--	01
099A-A	SHOWER	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				F1	H.M.	PAINT	--		90	
099B-A	ELECTRICAL	3' - 0"	7' - 0"	1 3/4"		D2	H.M.	PAINT				F1	H.M.	PAINT	--		--	
099D-A	WATER	6' - 0"	7' - 0"	1 3/4"		D3	H.M.	PAINT				F1	H.M.	PAINT	--		--	
146A	SHARED OFFICE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				W104	ALUM.	--	G3		--	
147A	STORAGE	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	--		--	
148A	BREAK	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	G3		--	
149A	P.I. OFFICE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				W103	ALUM.	--	--		--	
150A	P.I. OFFICE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				W103	ALUM.	--	--		--	
151A	RESEARCH LAB	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				W105	ALUM.	--	G3			
151A-A	BSL 2	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	G3		--	02
151B	RESEARCH LAB	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				W105	ALUM.	--	G3			
151B-A	BSL 2	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	G3		--	02
151D-A	BSL 2 TC	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	G3		--	02
199D-A	PHONE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				F1	H.M.	PAINT	--		--	
199F-A	CORRIDOR	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	--		90	
199L-A	STAIR	3' - 0"	7' - 0"	1 3/4"		D4	ALUM.	--				W2	ALUM.	--	G1		--	01
240A	MOTHERS ROOM	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				F1	H.M.	PAINT	--		90	
245A	SHARED OFFICE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				W104	ALUM.	--	--		--	
246A	SHARED OFFICE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				W104	ALUM.	--	--		--	
247A	STORAGE	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	--		--	
248A	BREAK	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	--			
249A	P.I. OFFICE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				W103	ALUM.	--	--			
250A	P.I. OFFICE	3' - 0"	7' - 0"	1 3/4"		D1	WOOD	STAIN				W103	ALUM.	--	--		--	
251A	RESEARCH LAB	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				W105	ALUM.	--	G3			
251A-A	BSL 2	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	G3		--	02
251B	RESEARCH LAB	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				W105	ALUM.	--	G3			
251B-A	BSL 2	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	G3		--	02
251D-A	BSL 2 TC	3' - 0"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	G3		--	02
299F-A	CORRIDOR	3' - 6"	7' - 0"	1 3/4"		D3	WOOD	STAIN				F1	H.M.	PAINT	--		90	

COMMENTS

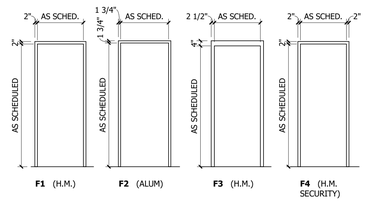
01. CARD READER
02. SMOKE SEALS



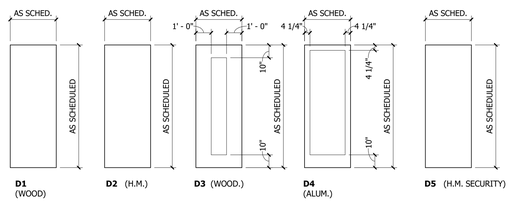
4 HM HEAD DETAIL
3" = 1'-0"



3 HM THRESHOLD DETAIL
3" = 1'-0"



2 DOOR FRAMES
1/4" = 1'-0"



1 DOOR TYPES
1/4" = 1'-0"

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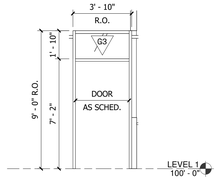
SHEET TITLE:
DOOR SCHEDULE & TYPES

SHEET NUMBER:
A610

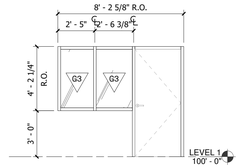
SHEET OF

GLAZING TYPES

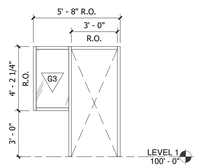
G1	1" INSULATED CLEAR LOW-E, TEMPERED/TEMPERED
G2	1" INSULATED CLEAR LOW-E, ANNEALED/ANNEALED
G3	1/4" CLEAR TEMPERED GLASS
G4	1/2" CLEAR TEMPERED GLASS



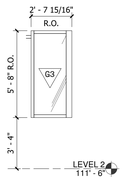
W105
STOREFRONT



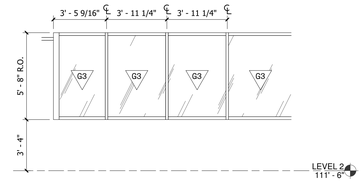
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STOREFRONT



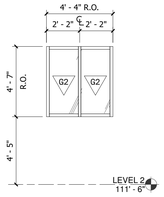
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STOREFRONT



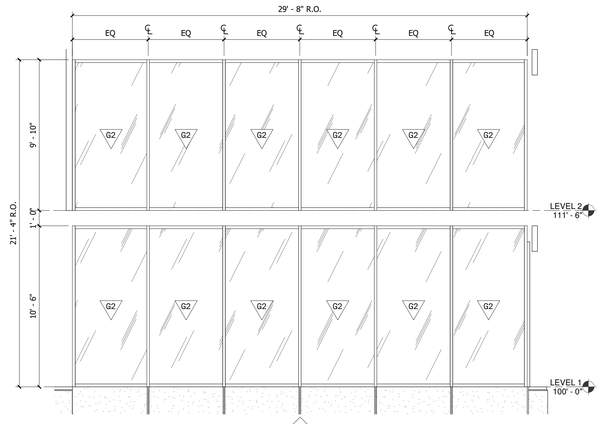
W102
STOREFRONT



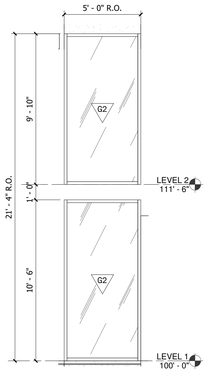
W101
STOREFRONT



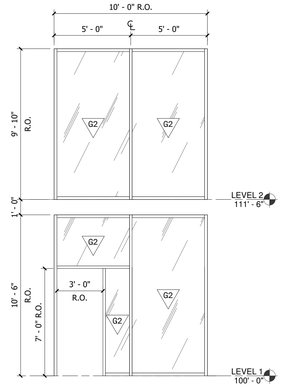
W5
STOREFRONT



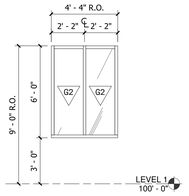
W4
STOREFRONT



W3
STOREFRONT



W2
STOREFRONT



W1
STOREFRONT

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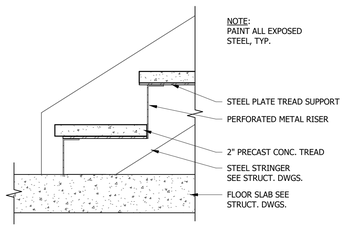
SHEET TITLE:

WINDOW & GLAZING TYPES

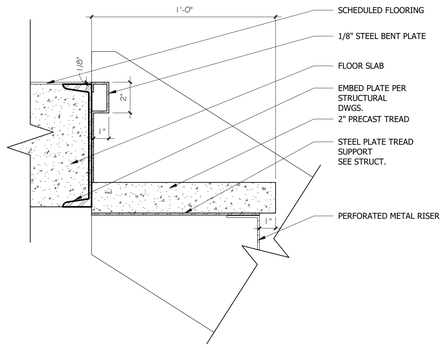
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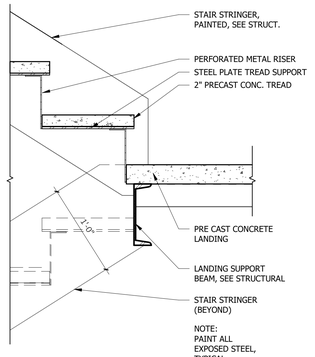
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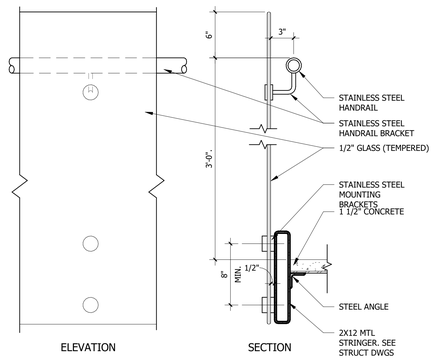
9 STAIR DETAIL AT CONCRETE SLAB
1 1/2" = 1'-0"



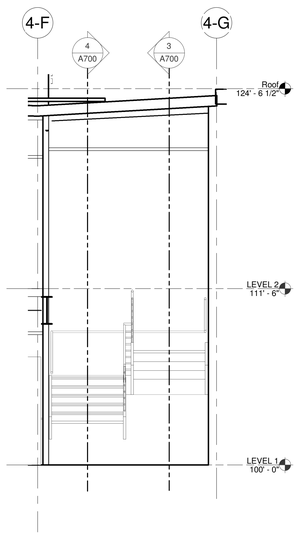
8 METAL STAIR LANDING AT CONCRETE SLAB
3" = 1'-0"



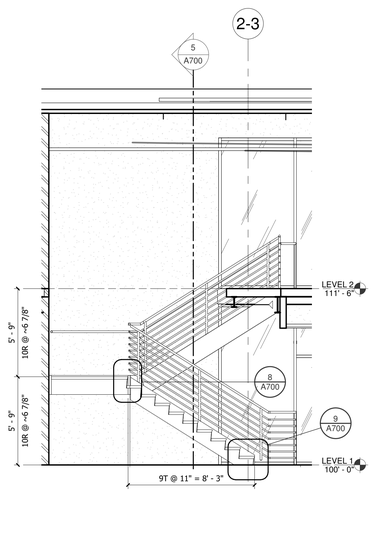
7 STAIR DETAIL AT LANDING
1 1/2" = 1'-0"



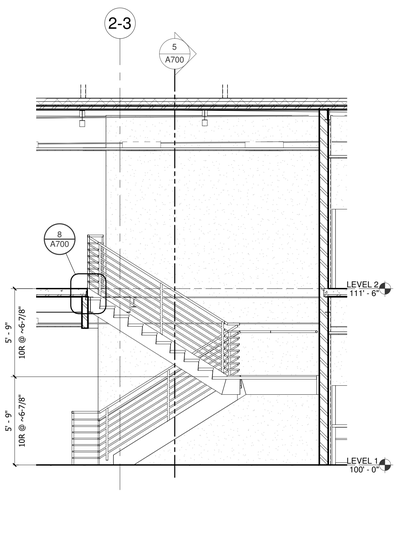
6 STAIR RAILING DETAIL-GLASS
1 1/2" = 1'-0"



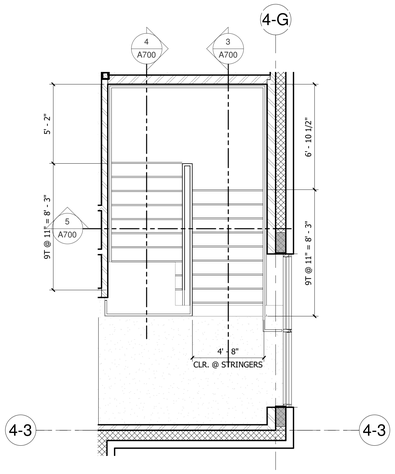
5 STAIR 1 SECTION 3
1/4" = 1'-0"



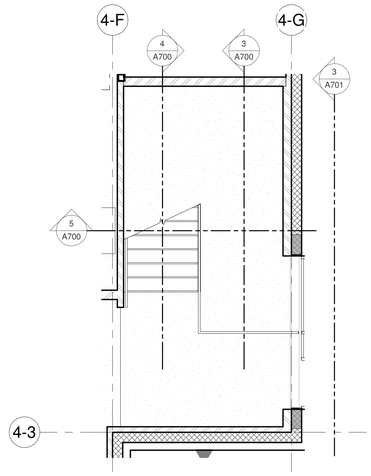
4 STAIR 1 SECTION 2
1/4" = 1'-0"



3 STAIR 1 SECTION 1
1/4" = 1'-0"



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



1 LEVEL 1 ENLARGED STAIR PLAN
1/4" = 1'-0"

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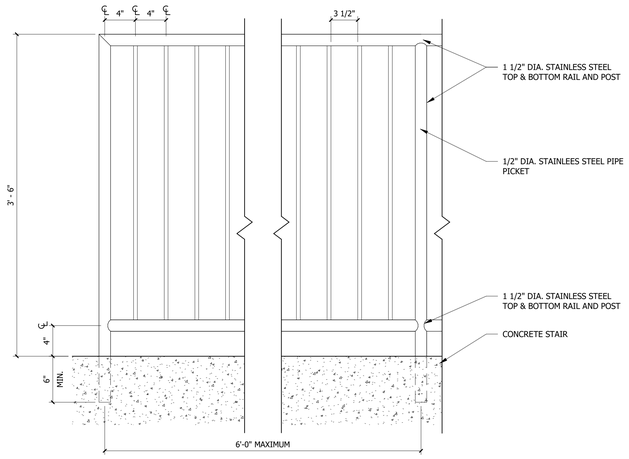
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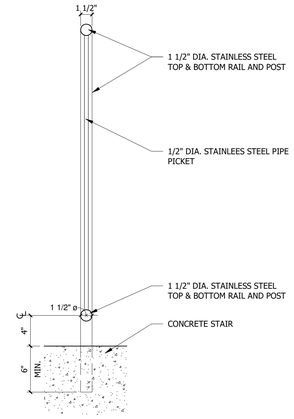
SHEET TITLE:
INTERIOR STAIR PLANS, SECTIONS & DETAILS

SHEET NUMBER:
A700

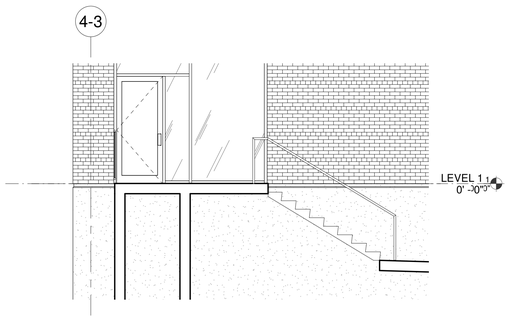
SHEET OF



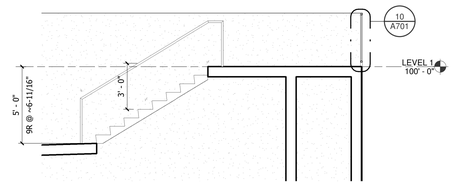
11 EXTERIOR GUARD RAIL ELEVATION
1 1/2" = 1'-0"



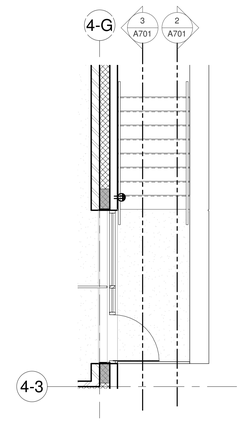
10 EXTERIOR GUARD RAIL SECTION
1 1/2" = 1'-0"



3 EXTERIOR STAIR SECTION 2
1/4" = 1'-0"



2 EXTERIOR STAIR SECTION 1
1/4" = 1'-0"



1 EXTERIOR STAIR ENLARGED PLAN
1/4" = 1'-0"

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawings	11.12.21

ISSUE DATE:
12 NOVEMBER 2021
UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
EXTERIOR STAIR PLANS, SECTIONS & DETAILS

SHEET NUMBER:
A701

SHEET OF

1. Design Criteria

1.1. Governing Code.....2018 International Building Code (IBC)
A. Risk Category.....III

1.2. Floor Live Loading
A. Office.....50 psf Live Load + 15 psf Partition Load
B. Corridors above 1st floor.....80 psf Live Load
C. Mechanical & Storage Rooms.....125 psf Live Load or actual weights, if larger
D. Laboratory Rooms.....60 psf Live Load+ 15 psf Partition Load

1.3. Roof Live Loading
A. Roof Live Load.....20 psf
B. Roof Snow Load.....33 psf + Drift per IBC
1. Ground Snow Load, P_g.....42 psf
2. Snow Exposure Factor, C_e.....1.0
3. Importance Factor, I_s.....1.10
4. Thermal Factor, C_t.....1.0
5. Slope Factor, C_s.....1.0
C. Roof Rain Load Intensity
1. 15-min duration/100-year return period, i_{15}.....1.07 in. per hour
2. 60-min duration/100-year return period, i_{60}.....1.78 in. per hour

1.4. Earthquake
A. Seismic Design Category.....D
B. Spectral Response Accelerations
S_S = 1.60 g S_{DS} = 1.07 g
S_1 = 0.63 g S_{D1} = 0.42 g
C. Soil Site Class.....C
F_a = 1.2 F_v = 1.4
D. Basic Seismic-Force-Resisting System.....Special Reinforced Masonry Shear Walls
R = 5 Ω_0 = 2.5 C_d = 3.5
E. Importance Factor, I_E.....1.25
F. Redundancy Factor, ρ.....1.0
G. Analysis Procedure.....Equivalent Lateral Force (Static)
H. Seismic Design Coefficient, C_S.....0.252
I. Design Base Shear.....412 kips
J. Building Seismic Movement

Level	Total Displacement		Story Drift	
	Elastic	Inelastic	Elastic - δ_e	Inelastic - Δ
Level 4	X.X"	X.X"	X.X"	X.X"
Level 3	X.X"	X.X"	X.X"	X.X"
Level 2	X.X"	X.X"	X.X"	X.X"
Level 1	X.X"	X.X"	X.X"	X.X"
Base	-	-	-	-

1.5. Wind
A. Basic Design Wind Speed, V.....109 mph
B. Velocity pressure exponent coefficient, K_d.....0.85
C. Ground elevation factor, K_d.....0.85
D. Exposure category.....C
E. Internal Pressure Coefficient, GC_{pi}.....0.18
F. Topographic Factor, K_{zt}.....1.0
G. Components and Cladding Design Pressure

Design Wind Pressure - LRFD (psf)					
Location		Tributary Area (ft²)			
		< 10	50	100	> 500
Walls	Within 6.6ft of building corner	32.1	27.2	25.0	20.1
	All other areas	26.1	23.6	22.6	20.1
Location		Tributary Area (ft²)			
		< 10	50	100	> 100
Roof	Within 21.6ft of building corner	75.4	58.9	51.8	35.3
	Within 21.6ft of building edge	55.3	47.1	43.5	35.3
	All other areas	42.0	35.5	32.8	26.3

1.6. Foundation
A. Subsurface Conditions:
Soils report and log of borings was obtained by the Owner for the Engineer's use in the design of the foundation, and is not a part of the Contract Documents. This report and log of borings is available for the Contractor's information, but is not a warranty of the subsurface conditions. The Contractor may use the report at their own risk.
B. Soils Report by AGEC, dated August 23, 2021
C. Soil Bearing Pressure: .....varies, but not to exceed 3,500psf on undisturbed native soil or compacted fill.
D. Lateral Soil Pressure Fluid Equivalent Density.
1. Active: .....50 pcf (retaining walls)
2. At Rest: .....65 pcf (rigid foundation walls)
3. Passive: .....300 pcf
4. Increase for Seismic: .....44 pcf (Active), 29pcf (At Rest)
E. Coefficient of Friction: 0.45

1.7. Classification for Fire Rated Construction
A. For the purpose of determining fire-resistive assemblies, the following framing systems shall be considered unrestrained.
1. Open web steel framing members supporting metal decking.
2. Single span and simply supported end spans of multiple bays that are supported by bearing walls:
a. Steel beams supporting concrete slabs, metal decking, or precast concrete units.
b. Open web steel joists supporting concrete slabs or precast concrete units.
c. Concrete slabs, precast concrete units, or metal decking.
3. Interior spans of multiple bays supported by bearing walls:
a. Steel beams supporting metal decking or precast concrete units.
b. Open web steel joists supporting precast concrete units.
B. All other steel floor and roof framing members shall be considered restrained.
C. Diagonal members in vertical braced frames shall be considered as secondary members for fire proofing protection.

2. Earthwork

2.1. Clearing: The entire building area shall be scraped to remove the top 4 inches of soil, including all vegetation and debris.

2.2. Footings shall bear on native undisturbed soil or compacted structural fill extending to native undisturbed soil.

2.3. Proof rolling: The natural undisturbed soil below all footings shall be proof rolled prior to placing concrete. Remove all soft spots and replace with compacted structural fill.

2.4. Compacted structural fill: Structural fill shall be provided at any location of soft spots. Fill shall be as described by the TYPICAL COMPACTED STRUCTURAL FILL DETAIL. All fill shall be tested (See Specifications and the Quality Assurance section of the GSN).
A. Footings and Floor Slab Support: All fill material shall be a well-graded non-expansive granular material with a maximum size less than 4 inches and with not more than 35 percent passing a No. 200 sieve and having a liquid limit below 30 percent. It shall be compacted to 95 percent of the maximum laboratory density as determined by ASTM D1557.
B. Directly Under Floor Slabs (upper 4 inches): All fill material shall be a sand and/or granular material with a maximum size less than 2 inches and with not more than 5 percent passing a No. 200 sieve. It shall be compacted to 90 percent of the maximum laboratory density as determined by ASTM D1557.

2.5. It shall be the responsibility of the Contractor to brace and shore excavations as required.

3. Concrete

3.1. Materials shall comply with the Standards specified in American Concrete Institute (ACI) 318-14, "Building Code Requirements for Structural Concrete."
A. Concrete mix design requirements shall be as follows:

Location	f'c at 28 days (psi)	Max W/C Ratio	Air Content (%)	Max Aggregate Size	Exposure Classes*		
					F	S	C
Footings	3000	0.50	-	1"	F0	S0	C0
Interior Slabs on Grade	3000	0.45	-	1"	F0	S0	C0
Exterior Walls	4500	0.45	6	¾"	F1	S0	C1
Walls	4000	0.45	-	¾"	F0	S0	C0
Exterior Columns	4500	0.45	6	¾"	F1	S0	C1
Columns	4000	0.45	-	¾"	F0	S0	C0
Concrete over Steel Deck	3000	0.45	-	¾"	F0	S0	C0
All other site cast concrete	4500	0.45	6	1"	F1	S0	C1

* Exposure Classes are per ACI 318, Section 19.3.1.1, where F, S and C are exposure categories for freezing and thawing, sulfate, and corrosion protection of reinforcement, respectively.

B. Cementitious Materials:
1. Portland Cement (ASTM C150):
a. Type I or II for exposure class S0.
b. Type II or V for exposure class S1.
c. Type V for exposure class S2 and S3.
2. Fly Ash (ASTM C618, Class C or F): maximum fly ash content as a percentage of total weight of cementitious materials shall be 25 percent.
C. Concrete Density (Maximum Air Dry Weight):
1. Normal weight concrete shall be approximately 145 to 155 pounds per cubic foot. Aggregate shall be ASTM C33.
2. Lightweight concrete shall not exceed 110 pounds per cubic foot and shall be made of lightweight coarse aggregates and either lightweight and/or normal weight fines meeting ASTM C330.
D. Steel Reinforcement:
1. ASTM A615 Grade 60, fy = 60,000 psi min. unless noted otherwise.
2. Reinforcement at concrete moment frames, concrete shear walls, and all components of shear walls including coupling beams and wall piers shall comply with ASTM A706, Grade 60. ASTM A615 Grade 60 reinforcement shall be permitted if:
a. The actual yield strength based on mill tests does not exceed 78,000 psi, and
b. The ratio of actual tensile strength to the actual yield strength is not less than 1.25.
c. Mill tests shall be submitted to the Engineer.
E. Wire Reinforcement:
1. Welded wire fabric (WWF): ASTM A1064.
F. Fiber Reinforcement:
1. Synthetic Micro-Fiber: fibrillated polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116, 1/2 to 1-1/2 inches long. Add to concrete at a dosage rate of 1.5 lb/cu yd where indicated.
2. Macrosynthetic Fibers: monofilament, non-fibrillating fibers made of a polypropylene/polyethylene blend. Macro fibers shall comply with ASTM C 1116, Type III, and meet the criteria of ASTM D 7508.
a. Where noted in the Steel Deck Schedule, macrosynthetic fibers shall be added to concrete over steel deck at a dosage rate determined by the fiber manufacturer but not less than 4 lb/cu yd.
b. Do not burn off exposed fibers.
G. Admixtures:
1. Air-entraining admixtures, comply with ASTM C 260 (when used).
a. Tolerance on air content as delivered shall be +/- 1.5%.
b. When air content of a trowel finished floor slab exceeds 3%, there is an increased risk for delaminations and blistering to occur. When this situation is present, the Contractor shall pay special attention to the finishing procedures to help minimize such risks. Refer to ACI 302.1R-15 "Guide for Concrete Floor and Slab Construction" for proper finishing guidelines.
2. Corrosion Inhibiting admixture, comply with ASTM C1582 (when used):
a. Corrosion inhibiting additive containing a minimum of 30 percent calcium nitrite dosed at 3 gallons per cubic yard shall be added to all reinforced concrete with exposure class C2.
3. Waterproofing Admixture: Add waterproofing admixture in concrete placed at _____. Add Penetron Admix, Xypex Admix C-500 or BASF Rheomac 300D admixture to the concrete mix at the dosing rate recommended by the manufacturer. Alternate equal products may be submitted for review and consideration by the architect/engineer.
4. The use of super plasticizers and water reducers is allowed, but not required.
5. Calcium chloride or admixtures containing calcium chloride shall not be added to the concrete mix.
H. Chloride Ion: Maximum water soluble chloride ion concentrations in hardened concrete at age between 28 and 42 days contributed from the ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed a maximum, by weight of cement, of 1.00% for concrete with exposure class C0, 0.30% for concrete with exposure class C1, 0.15% for concrete with exposure class C2, and 0.06% for all prestressed concrete.
I. Slump Limit: 4 inches, maximum for all concrete prior to the addition of plasticizers and water reducing admixtures. The concrete supplier shall indicate the final slump of each concrete mix in the submitted mix design.
J. Shrinkage Limit: Interior slabs on grade shall have a drying shrinkage limit of 0.040 percent tested in accordance with ASTM C157. Drying shrinkage test results shall be submitted with mix designs.
K. Only one grade or type of concrete shall be poured on the site at any given time.
L. Plastic coated tie wires and chairs shall be used to support reinforcing bars, tie bars and tendons in parking structures and other reinforced concrete structures that will be exposed to moisture.

3.2. Formwork shall comply with ACI Standards Publication 347 and the project specifications. The Contractor shall be responsible for the design, detailing, care, placement and removal of the formwork and shores.
A. Pre-camber forms and screeds with a camber of 1/4" per every 10'-0" of span to compensate for dead load deflection, unless noted otherwise. Post tensioned concrete slabs and beams do not require formwork to be pre-cambered.

3.3. Concrete cover requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building Code Requirements for Structural Concrete".

A. Cast-in-place Concrete:	Specified Cover
1. Cast against and permanently exposed to earth:	3"
2. Formed concrete exposed to earth or weather:	
#6 thru #18 bars	2"
#5 and smaller bars	1.1/2"
3. Concrete not exposed to weather or in contact with ground:	
Slabs, Walls, Joists; #11 bars and smaller	3/4"
Beams, Columns: primary reinforcement, ties, stirrups, spirals	1.1/2"

3.4. Construction Joints and Control Joints:
A. Provide a surface intentionally roughened to ¼" amplitude in all wall footings. A continuous keyway shall not be used for concrete shear wall to footing connections, unless specifically indicated. Refer to project plans, schedules and details for the shear wall to footing connection requirements.
B. All horizontal and vertical construction joints shall have a surface intentionally roughened to ¼" amplitude. A continuous 2 x #5 bars, in grouted cells, is required in each element other than shear walls.
C. Provide reinforcement dowels to match the member reinforcement across the joint, unless noted otherwise. For dowels across construction joints and wall to footing connections of concrete shear walls, refer to specific project plans, schedules, and details.
D. Construction joints in suspended concrete pours shall be made at the center of spans.
E. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any direction.
F. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints shall be completed within 12 hours of concrete placement. See typical details for joint configuration.
G. Control joints in visually exposed walls, unless noted otherwise: (Joints shall line up with masonry and architectural joints, see drawings.)
1. Vertical control joints at 10'-0" on center.
2. Reinforcing shall be continuous through control and construction joints, unless noted otherwise.
3. Control joints in concrete foundation walls shall line up with masonry control joints.
H. Control joints shall be installed in concrete slabs over steel deck by saw-cutting along girders and purlins at interior grid lines. See typical details for joint size and reinforcement. Reinforcement required shall be in addition to any slab reinforcement.

3.5. Detailing: All reinforcing, including welded wire fabric, shall be detailed, bolstered & supported to comply with ACI 315, "Details and Detailing of Concrete Reinforcement" and the Concrete Reinforcing Steel Institute (CRSI) recommendations. Reinforcing bars shall not be welded unless specifically shown on drawings.
A. All reinforcing shall be developed in compliance with the CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE SCHEDULE. As indicated in the drawings or upon approval of the engineer of record, standard tension hooks or headed bars described by the TENSION HOOK DEVELOPMENT SCHEDULE or the TENSION HEADED BAR DEVELOPMENT SCHEDULE may be used in lieu of straight bars.
B. All mechanical splices shall have the capacity to develop at least 1.25fy of the bar in tension or compression. Type 2 couplers have the capacity to develop the full tension capacity of the bar. Type 1 couplers shall not be used in moment frames and shear wall jamb columns. Mechanical splices shall have a current ICC or IAPMO code evaluation report, "Lenton" (IAPMO No. 0129), "Taper-Lock" (IAPMO No. 0319) or "SAS Stressteel" (ICC ESR-1163), "Bar-Lock" (ICC ESR-2465) or approved equivalent may be used. Mechanical couplers on adjacent bars shall be staggered a minimum of 24" apart along the longitudinal axis of the reinforcing bars.
C. All embedded elements and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
D. Use chairs or other support devices recommended by CRSI to support and tie reinforcement bars and welded wire fabric prior to placing concrete. Welded wire fabric shall be continuously supported at 36" o.c. maximum.
E. See typical details for reinforcing at wall intersections and ends, reinforcing around wall openings and suspended slab openings, reinforcing around dowels, concrete column ties and splices in vertical column reinforcing.
F. See typical details for column cross-ties. The 90-degree hooks of two successive crossties engaging the same longitudinal bars shall be alternated end for end.
G. Where required, reinforcement is to be terminated in a standard hook or headed bar anchor. Refer to the TENSION HOOK DEVELOPMENT SCHEDULE, the TENSION HEADED BAR DEVELOPMENT SCHEDULE and the REINFORCEMENT END HOOK SCHEDULE as appropriate. Unless otherwise noted, a standard hook or headed bar end equivalent and may be substituted at the Contractor's option.
H. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embedded items prior to concrete placement.
I. All reinforcement shall be bent cold, and shall be bent only once at the same location. All reinforcement shall be shop bent, unless otherwise permitted by the Engineer.

3.6. Minimum Reinforcing: Wall reinforcing shall be as follows, unless noted otherwise:

Wall Thickness	Horizontal Reinforcing	Vertical Reinforcing
6"	#4 @ 13" o.c.	#4 @ 18" o.c.
8"	#5 @ 15" o.c.	#4 @ 16" o.c.
10"	#5 @ 12" o.c.	#4 @ 13" o.c.
12"	#4 @ 13" o.c. Each Face	#4 @ 18" o.c. Each Face
Others	0.25% of Wall Area	0.15% of Wall Area

Spacing shall exceed neither three times the wall thickness nor 18". In addition to the above reinforcing, 2 - #5 x continuous horizontal bars shall be placed at the bottom of the wall (near the footing) and at each floor level, at the roof level and at the top of wall.

3.7. No aluminum conduit or product containing aluminum or any other material injurious to concrete shall be embedded in concrete.

3.8. Unless otherwise noted, all slabs on grade shall be 4" thick.

4. Masonry

4.1. Materials shall comply with the Standards specified in TMS 402-16 and TMS 602-16, "Building Code Requirements and Specification for Masonry Structures."
A. Materials, unless noted otherwise:
1. Concrete Masonry Units: ASTM C 90, Medium Weight.
2. Hollow Clay Units: Hollow Brick, ASTM C652, Grade SW.
3. Solid Clay Units: ASTM C216, Grade SW.
4. Material Strength: The Prism Test Method or the Unit Strength Method according to TMS 602-16 Section 1.4B may be used to determine the compressive strength of masonry assemblies. The contractor shall select the desired method and meet the required material strengths as follows:
a. Prism Test Method, TMS 602-16 Section 1.4B.3:
1) Concrete Masonry Unit Assembly, f'm = 2000 psi.
2) Hollow Clay Unit Assembly, f'm = 2500 psi.
3) Solid Clay Unit Assembly f'm = 1500 psi.
b. Unit Strength Method, TMS 602-16 Section 1.4B.2:
1) Concrete Masonry Units, minimum unit strength of 2000 psi average or better. (f'm = 2000 psi)
2) Hollow Clay Units, minimum unit strength of 6600 psi average or better. (f'm = 2500 psi)
3) Solid Clay Units, minimum unit strength of 3350 psi average or better. (f'm = 1500 psi)
5. Mortar: Use Type "S" according to ASTM C270, proportion specification. Admixtures shall not be added to the mortar mix.
6. Grout: For masonry assemblies with f'm = 2,000 psi or less conform to ASTM C476, proportion specification. Grout that does not meet the requirements of ASTM C476 proportion specification or that is used in masonry assemblies with f'm > 2,000 psi shall meet the following requirements: Meet the material requirements of ASTM C476, obtain a minimum compressive strength of f'm or 2,000 psi, whichever is larger, at 28 days tested according to ASTM C1019, and a slump of 8 in. to 11 in. as determined by ASTM C143.
a. Self-Consolidating Grout: Conform to the material requirements of ASTM C476, obtain a minimum compressive strength of f'm or 2,000 psi, whichever is larger, at 28 days tested according to ASTM C1019, obtain a slump flow of 24 in. to 30 in. as determined by ASTM C1611, and shall have a Visual Stability Index less than or equal to 1 as determined in accordance with ASTM C1611 Appendix X.1. Field addition of admixtures is not permitted.
7. Reinforcing: Grade 60 reinforcing steel shall comply with ASTM A615. Wire joint reinforcing shall comply with ASTM A951.
8. Deformed Bar Anchors (DBA): All DBAs shall comply with ASTM A496.
9. Anchor Bolts (AB): ASTM A307 with ASTM A563 heavy hex nuts and hardened washers, Grade A, unless noted otherwise.
10. Headed Stud Anchors (HSA): Manufacture all HSAs in conformance with ASTM A108 with dimensions complying with AISC specifications.

4.2. Construction Requirements:
A. Mortar Joints: Joints shall be "concave", "V-joint" or "weathered raked" for structural members unless noted otherwise on architectural drawings.
B. Masonry walls, beams and columns shall be constructed with running bond, unless noted otherwise.
C. Grouting Requirements: Comply with IBC Section 2104 and TMS 602 Section 3.5. Grout shall be mechanically consolidated and mechanically reconsolidated according to TMS 602 Section 3.5 E.
1. Grout Pour Heights that exceed 4 feet shall meet the following requirements:
a. Provide cleanouts in the bottom course of masonry for each grout pour in accordance with TMS 602 Section 3.2 F.
b. For grout other than Self Consolidating Grout a demonstration panel representative of the proposed wall construction and construction procedures shall be provided and approved by the Architect. The demonstration panel may be a part of the completed construction as approved by the Architect.
c. For Self-Consolidating Grout placed in masonry that has cured for at least 4 hours, place in lifts not exceeding the Maximum Grout Pour Height in listed in TMS 602 Section 3.5C.
2. When grouting, form grout keys between grout pours. Form grout keys between grout lifts when the first lift is permitted to set prior to placement of the subsequent lift.
a. Form a grout key by terminating the grout a minimum of 1.1/2 in. below a mortar joint.
b. Do not form grout keys within beams.
c. At beams or lintels laid with closed bottom units, terminate the grout pour at the bottom of the beam or lintel without forming a grout key.
D. Reinforcing Bars shall not be welded unless specifically shown on drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for DBAs or HSAs.
E. Control Joints: Spacing shall not exceed 40'-0" or 2.5 times the wall height, whichever is less. Joints shall not be located over masonry openings, and shall be a minimum of the schedule masonry column width away from masonry openings. See architectural drawings for locations.
F. Grout all beam and joist pockets solid after installation of beams and joists.
G. Masonry Veneer Attachment and Reinforcing:
1. To steel stud and wood stud walls: Veneer shall be attached to the studs with Hohmann & Barnard DW-10HS seismic veneer anchors (or engineer approved equivalent) spaced at maximum 16" o.c horizontally and 18" o.c. vertically. Veneer anchors shall be attached to studs with #10 corrosion resistant self-drilling screws.
2. To concrete walls: 22 gauge galvanized dovetail slots shall be installed vertical in concrete at maximum 16" o.c. horizontal spacing. Attach the veneer to dovetail slots with Hohmann & Barnard #315 BT Flexible Brick Tie at maximum 18" o.c. vertically. Dovetail slots and anchor ties shall be galvanized.
3. To reinforced masonry walls: Veneer shall be attached with tri-rod laddur type reinforcement spaced at a maximum of 16" o.c. vertically consisting of 3 – W1.7 (#9 gauge), galvanized, corrugated, continuous wires. Cross wires shall be W1.7 (#9 gauge) galvanized wires welded to the longitudinal wires and spaced at a maximum of 16" o.c. horizontally. Veneer may also be attached with Hohmann & Barnard 285 Grip-Lok Ladder (or engineer approved equivalent) spaced at maximum 16" o.c. horizontally and 18" o.c. vertically. Where the joints in the veneer and masonry back up walls do not align, attach veneer with Hohmann & Barnard 364 SV Seismic-Notch Gripstay Channel Slot Anchor seismic veneer anchors (or engineer approved equivalent).
4. Other methods of attachment may be used after written acceptance by the architect and structural engineer.
5. Steel Lintels: Provide steel angle lintels at all openings through the masonry veneer. Provide one inch of bearing for each foot of width of opening, with a minimum bearing of six inches. See the Steel Angle Lintel Schedule for size.

4.3. Detailing Requirements:
A. Standards: Reinforcing detailing shall comply with American Concrete Institute (ACI) Standard 315, "Details and Detailing of Concrete Reinforcement."
B. Reinforcement Protection (cover):
1. Joint reinforcement shall have not less than 5/8" mortar coverage from the exposed face.
2. Other reinforcement shall have a minimum coverage of one bar diameter over all the bars, but not less than 3/4". When masonry is exposed to soil, minimum coverage shall be 1.5".
C. Vertical steel reinforcement shall be placed and secured against displacement prior to grouting by wire positioners or other suitable devices: at intervals not exceeding the least dimension of the grout lift height, or per spacing indicated, or 64". Vertical reinforcing shall be located at the center of the wall, unless noted otherwise.
D. Lap Splice Lengths: Lap all masonry reinforcing bars per the "Masonry Reinforcing Bar Lap Splice Schedule." Joint reinforcement shall lap a minimum of 6".
E. Corner Bars: Horizontal reinforcement shall be continuous at all corners and at intersecting walls. Provide corner bars with the required lap splice length.
F. Dowels: All vertical reinforcing shall be doweled to the foundation wall, footing (structure below) and to the structure above with the same size dowel, spacing (and in the same core) as the vertical wall reinforcing unless noted otherwise.
G. Wall Openings 24" wide and wider: Provide reinforced masonry lintels per Masonry Lintel Schedule over the top of, and 2 - #5 bars, in grouted spaces, on all sides and adjacent to every unscheduled opening, unless noted otherwise. Bars for all openings shall extend a minimum of 24" beyond the corners of the opening. Vertical bars shall extend from floor level below to the floor, or roof, level above. Where a 24" extension is not possible, extend bars as far beyond the opening as possible and terminate them with a 90 degree standard ACI hook.
H. Horizontal wall reinforcing shall be continuous through joining concrete walls, masonry walls, columns, and pilasters. Provide a key between the wall and the column or pilaster. Horizontal wall reinforcing shall be placed inside the column vertical reinforcing.
I. Anchor bolts and headed stud anchors shall be set in a grouted cell. Anchor bolts and headed stud anchors shall have 1" grout surrounding the shank at its penetration. Grout shall be flush with the face or top of the masonry.
J. All masonry column ties shall terminate with 135 degree hooks plus a 6 bar diameter extension (4" minimum).
K. The exposed face of all embed plates shall be set flush with the face of masonry wall or column.

4.4. Minimum Reinforcing:
All masonry walls shall be reinforced as follows, unless shown otherwise on the drawings. Reinforcing shall be placed in grouted cells.

Wall Thickness	Horizontal Reinforcing	Vertical Reinforcing
6"	#4 @ 48" o.c.	#5 @ 32" o.c.
8"	#5 @ 48" o.c.	#5 @ 32" o.c.
10"	#6 @ 48" o.c.	#6 @ 32" o.c.
12"	2 - #5 @ 48" o.c.	#6 @ 32" o.c.

5. Structural Steel

5.1. Material:
A. W-Shapes: ASTM A992, (F_y = 50 ksi), except as noted otherwise
B. All Other Shapes and Plates: ASTM A36 (Fy = 36 ksi), except as noted otherwise
C. Rectangular and Square Hollow Structural Sections (HSS): ASTM A500, Grade C (F_y = 50 ksi)
D. Round HSS: ASTM A500, Grade C (F_y = 46 ksi)
E. Steel Pipe: ASTM A53, Grade B (F_y = 35 ksi)
F. Steel Deck:
1. Galvanized Steel Sheet: ASTM A653 or A1063, Grade 50 with G60 galvanized coating.
2. Ungalvanized Steel Sheet: ASTM A1008 or A1039, Grade 50
G. High-Strength Bolts:
1. Group A: ASTM F3125 Grades A325 & F1852
2. Group B: ASTM F3125 Grades A490 & F2280
3. Group C: ASTM F3043 & ASTM F3111
H. Deformed Bar Anchors (DBA): ASTM A496 or ASTMA1064, 70 ksi minimum yield strength.
I. Headed Stud Anchors (HSA): ASTM A108, with dimensions complying with AISC specifications
J. Anchor Rods: ASTM F1554, Grade 36, unless noted otherwise, with ASTM A563 heavy hex nuts and ASTM F436 hardened washers
K. Structural steel that is part of the seismic force resisting system shall be supplied with minimum Charpy V-Notch impact test results of 20 ft-lbs. absorbed energy at 70 degrees Fahrenheit, indicated below:
1. Hot rolled shapes with flanges 1.1/2" thick and thicker tested in the alternate core location as described in ASTM A6 Supplementary requirement S30
2. Plates 2" and thicker measured at any location permitted by ASTM A673
3. Test Frequency: Each heat

5.2. Fabrication and construction shall comply with the following Codes and Standards:
A. American Institute of Steel Construction (AISC) 360-16, "Specification for Structural Steel Buildings"
B. AISC 341-16, "Seismic Provisions for Structural Steel Buildings"
C. AISC 303-16, "Code of Standard Practice for Steel Buildings and Bridges" excluding the following: Section 3.3 (last two sentences of first paragraph), Section 4.4, Section 4.4.1, Section 4.4.2, Section 4.5, and Section 7.13.3
1. The architectural drawings are the prime contract drawings. Consultants' drawings by other disciplines are supplementary to the architectural drawings. The structural drawings shall be used in conjunction with the architectural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in architectural, structural, and/or other consultants' drawings. Refer to the Special Instructions section of the project notes, below.
D. AISC/RCSC 2014, "Specification for Structural Joints Using High-Strength Bolts"
E. American Welding Society (AWS) D1.1:2015, "Structural Welding Code – Steel" (specific items do not apply when they conflict with the AISC requirements)
F. American Welding Society (AWS) D1.8:2016, "Structural Welding Code – Seismic Supplement" (specific items do not apply when they conflict with the AISC requirements)

5.3. Structural shapes and plates shall be fabricated from newly rolled (milled) one-piece sections without splices, unless specifically noted otherwise on the structural drawings. Connections for structural steel shall comply with the structural drawings, unless written approval is given by the Structural Engineer.

5.4. Welding:
A. It is recommended the steel erection contractor and steel fabricator contact the Quality Assurance Agency prior to beginning any welds. A program of joint preparation and welding procedures should be worked out between the two parties before the welding is started so that correct welds will be made from the beginning.
B. Certification of Welders: All shop and field welding shall be executed by AWS certified welders who have been specifically certified for the process of welding being performed. The welder's certification will be considered as being current unless the welder is not engaged in the process of welding being performed for a period exceeding six months or there is a specific reason to question a welder's ability as required by AWS. Certification and records must comply with AWS Standards. Certification and appropriate records must be provided to the Architect prior to beginning work.
C. Electrodes: E-70 XX or as noted otherwise. E60 XX may be used for welding steel floor and roof decks.
D. Minimum Welds: All intersecting steel shapes that are not bolted shall be connected by a fillet weld all around, unless noted otherwise. Fillet weld sizes that are not shown shall be 1/16" less than the thinnest of the connected parts for thicknesses 1/4" and larger. Fillet welds on plates less than 1/4" shall be of the same size as the thinnest of the connected parts.
E. Reinforcing Bars: Do not weld rebar except as specifically detailed in the drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for deformed bar anchors (DBAs), machine bolts, or headed stud anchors (HSAs).
F. Bolts: Do not apply any welds, including "tack" welds to bolts, including anchor bolts, except as specifically detailed in the drawings.
G. Headed Stud Anchor (HSA) welding and Deformed Bar Anchor (DBA) welding shall conform to the manufacturer's specifications. Welding shall comply with AWS D1.1 Section 7.6 through 7.9 and Annex G.
H. Special Provisions for Welds in the SFRS (Seismic Force Resisting System): Welds used in members and connections of moment frames, braced frames, and collector elements shall comply with these requirements. Welding methods, procedures and quality control shall comply with AISC 341 Chapter J, AWS D1.1, AWS D1.8 and the following:
1. Demand Critical Welds: The following CJP groove welds are demand critical and shall comply with the special requirements for Demand Critical Welds.
a. Beam flanges to columns, single plate shear connections to columns, and beam webs to columns in moment frames.
b. Column splice welds including column bases in moment frames and braced frames.
c. Link beams to columns in Eccentrically Braced Frames.
d. Web plate to flange plate welds in built-up Eccentrically Braced Frame link beams.
e. Other welds designated as demand critical in the drawings.
2. Welding shall be performed in accordance with AISC 341 Chapter J and a welding procedure specification (WPS) as required in AWS D1.1. WPS variables shall be within the parameters established by the filler metal manufacturer. WPS for demand critical welds shall also comply with AWS D1.8 Section 6.1.
3. Consumables for Welding:
a. Welds used in members and connections of the SFRS shall be made with filler metals meeting the requirements specified in section 6.3 of AWS D1.8.
b. Filler metal properties shall be as follows:

Property	70 ksi Classification	80 ksi Classification
Yield Strength, ksi	58 min	68 min
Tensile Strength, ksi	70 min	80 min
Elongation (%)	22 min	19 min
CVN Toughness, ft-lbf	20 min @ 0 degrees F	20 min @ 20 degrees F

c. Filler metals in Demand Critical Welds shall receive Heat Input Testing that achieves the properties listed above with CVN toughness of 40 ft-lbf min @ 70 degrees F and shall comply with AWS D1.8 section 6.3.5 to 6.3.8.
d. Diffusible Hydrogen: Welding electrodes and electrode-flux combinations shall meet the requirements of AWS D1.8 Table 6.3. The manufacturer's Certificate of Conformance shall be considered adequate proof of this requirement.
e. Intermixed filler metals shall meet the requirements of AWS D1.8 section 6.3.4.
4. Backer bars shall be removed from the beam bottom flange to columns. The root of the weld shall be back gouged to sound metal to remove all slag and cracks. Weld the back gouged region and finish welding using a reinforcing fillet weld. Comply with AWS D1.8 sections 6.7 and 6.8. This requirement also applies to all non-fusible backing used at beam to column CJP welds. Comply with AWS D1.8 section 6.9.
5. Steel backer bars need not be removed from the beam top flange connections to columns or at continuity plate connections to columns provided that the backer bars are welded to the column flange with a continuous 5/16 inch fillet weld on the edge below the CJP groove weld for the entire length of the backer bar.
6. Backing at beam flange to column flange joints shall not be welded to the underside of the beam flange, nor tack welded at this location. If fillet welds or tack welds are placed between the backing and the beam flange in error, they shall be repaired per AWS D1.8 Section 6.9.3.
7. Details and treatment of weld tabs shall be per AWS D1.8 Section 6.11. Use weld tabs as specified in AWS D1.1 Section 5.31 except at the end of CJP welds adjacent to the column web/flange juncture at continuity plates. Remove weld tabs to within 1/8 inch of the base metal surface after welding. Where weld tabs are used at continuity plates, remove them to within 1/4 inch of the base metal surface after welding. Finish the edge where weld tabs are removed to a surface roughness of 500 micro-inches.
8. CJP joints in members with different thickness or widths (such as column splices) shall be transitioned in a manner that the slope in the transition does not exceed 1 in 2.1/2. The transition shall be accomplished by chamfering the thicker part, tapering the wider part, sloping the weld metal, or by a combination of these.
9. Quality requirements for weld access holes for all demand critical welds shall comply with AWS D1.8 Section 6.10. Weld access hole shape shall be per AWS D1.8 Figure 6.2.
10. Beam bottom flange welding sequence shall comply with AWS D1.8 Section 6.14.
11. Preheat, and interpass temperatures shall comply with AWS D1.1 Section 3.5 and AWS D1.8 Section 6.5.
12. Additional welding provisions applicable to demand critical welds only are as follows:
a. Welding processes shall comply with AWS D1.8 Section 6.2.
b. Filler metal packaging and exposure limitations shall comply with AWS D1.8 Section 6.4.
13. Tack welds shall comply with AWS D1.1 Section 5.18 and AWS D1.8 Section 6.6 and 6.16. Tack welds attaching backing bars and weld tabs at demand critical welds shall be placed where they are incorporated into a final weld.
14. Imperfections such as cracks, gouges, grooves, arch strikes and notches will not be permitted within the Protected Zone. Imperfections within the Protected Zone shall be repaired or removed in accordance with AWS D1.8 Section 6.15.4.
15. Braced Frame Welding: Lengths shown for fillet welds at brace-to-gusset, gusset-to-baseplate, and column-to-gusset connections are minimums, intended for establishing gusset plate dimensions. Weld entire contact length at these joints, typical.

5.5. Bolted Connections:
A. Provide snug tightened joints with Group A (threads not excluded) bolts for steel to steel connections, unless noted otherwise. Snug tightened joints shall be used in connections for simple span framing and beam (or girder) to bearing plate connections. Snug tight is the condition that exists when all of the plies in a connection have been pulled into firm contact by the bolts in the joint and all of the bolts in the joint have been tightened sufficiently to prevent the removal of the nuts without the use of a wrench. The snug tightened condition is typically achieved with a few impacts of an impact wrench, application of an electric torque wrench until the wrench begins to slow, or the full effort of a worker on an ordinary spud wrench.
B. Provide pretensioned joints with Group A (threads not excluded) Type 1 bolts for all steel to steel connections that are part of the Lateral Force Resisting System (LFRS). Faying surfaces shall meet the requirements of a slip-critical Class A surface except for faying surfaces of end plate moment connections. Tighten bolts by the turn of the nut, calibrated wrench, or direct tension indicator method. Alternate fastener designs as defined by AISC shall be submitted to the Engineer for review and acceptability prior to installation. Provide hardened washers beneath turned element.
C. Provide hardened washers beneath the turned element of all bolts or nuts. Provide hardened beveled washers, to compensate for the lack of parallelism, where the outer face of the bolted parts has a slope greater than one in twenty with respect to the plane normal to the bolt axis. Hardened washers or plates installed over oversized holes or slotted holes shall be at least 5/16" thick and shall conform to ASTM F436. Plates or bars installed at slotted holes shall have a size sufficient to completely cover the slot after installation.
D. Where a steel to steel beam connection is not detailed in the drawings, provide a standard AISC framed connection with the capacity to support one half of the total uniform load

Adhesive Anchor System	Evaluation Report
Hilti HIT-HY 270	ICC ESR-4143
DeWalt AC100+ Gold	ICC ESR-3200

E. Alternate anchors or adhesives are permitted with approval of the Engineer. The Contractor shall submit the proposed anchor product data and code evaluation report demonstrating the anchor is equivalent to or exceeds the capacity of the specified anchor.
F. Installation of adhesive anchors horizontally or upwardly inclined to support sustained tension loads shall be performed by personnel certified by an applicable certification program. Certification shall include written and performance tests in accordance with the ACI/CRSI Adhesive Anchor Installer Certification program, or equivalent. Proof of current certification shall be submitted to the Engineer for approval prior to commencement of installation.
G. Anchors shall be installed according to the Manufacturer's Printed Installation Instructions and applicable code evaluation reports including:
1. Hole diameter, depth, and cleaning procedure
2. Adhesive mixing, preparation, and placement
3. Installation torque
H. Locate all existing reinforcement and embedded items prior to drilling into concrete or masonry elements. Do not damage rebar or embeds while drilling or installing anchors.
I. Grout all defective or abandoned holes with non-shrink grout or an injectable epoxy adhesive matching the surrounding concrete compressive strength. Consult the Architect for additional requirements at architecturally exposed concrete.
J. Drilled anchors are not allowed in post-tensioned concrete without approval of the Architect and Engineer.
K. Carbon steel anchors are limited to use in dry, interior locations.
L. Holes for post-installed anchors may not be core drilled unless specifically allowed by the manufacturer's installation instructions and the code evaluation report.

7. Special Instructions

7.1. The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specifications for additional requirements in each section. Notes and specific details on the drawings shall take precedence over General Structural Notes and typical details.

7.2. The architectural drawings are the prime contract drawings. Consultant drawings by other disciplines are supplementary to the architectural drawings. All omissions or conflicts, including dimensions, between the various elements of the consultants' drawings and/or specifications shall be brought to the attention of the Architect before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the Architect without additional cost to the Owner. Any work done by the Contractor after discovery of such discrepancy shall be done at the Contractor's risk.

7.3. The structural drawings shall be used in conjunction with the architectural drawings. Primary structural elements and overall structural layout are indicated within the structural plans and details. Some secondary elements, architectural layouts, alcoves, elevations, slopes, depressions, curbs, mechanical equipment and electrical equipment, are not indicated within the structural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in the architectural, structural and/or other consultants' drawings.

7.4. Shoring and Bracing Requirements:
A. Floor and Roof Structures -- The General Contractor is responsible for the method and sequence of all structural erection. The Contractor shall provide temporary shoring and bracing as the method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof and floor attachments. The building shall not be considered stable until all connections are complete.
B. Foundation walls must be braced until the complete floor or roof systems is completed. Do not backfill until floor or roof systems are in place.
C. Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self-supporting.

7.5. All expansion joints (E.J.) shown in the structural drawings shall be considered seismic separation joints, unless noted otherwise.

7.6. Submittals: A copy of all shop drawings that have been submitted for review must be kept at the construction site for reference. These drawings must bear the appropriate review stamps. The shop drawing review shall not relieve the Contractor of the responsibility of completing the project according to the contract documents. The General Contractor shall review and mark all shop drawings prior to submitting them to the Architect for review. Shop Drawings made from reproductions of (these) contract drawings will be rejected.

7.7. Project Coordination: It shall be the responsibility of the General Contractor to coordinate with all trades any and all items that are to be integrated into the structural system. Openings or penetrations through, or attachments to the structural system that are not indicated on these drawings shall be the responsibility of the General Contractor and shall be coordinated with the Architect/Engineers. The order of construction is the responsibility of the General Contractor. It is the Contractor's obligation to provide all items necessary for the chosen procedure.

7.8. Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, Contractor shall notify Architect/Engineer prior to fabrication or construction within that area.

7.9. Notice of Copyright: The structural drawings, plans, schedules, notes and details are hereby copyrighted by Reaveley Engineers. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the project is not to be construed as publication in derogation of Reaveley Engineers' reserved rights. The documents defining the structure are instruments of service prepared by Reaveley Engineers for one use only. Furthermore, these documents shall not be reproduced, or copied, in whole or in part by the Contractor or subcontractors for preparation of shop drawings or other submittals.

8. Quality Assurance

8.1. Quality Assurance Agency Requirements:
A. The Owner shall engage a qualified Quality Assurance Agency (QAA) to provide all special inspection and quality assurance testing for the project. The QAA shall provide all information necessary for the building official to determine that the agency meets the applicable requirements.
1. The QAA shall be objective, competent and independent from the Contractor responsible for the work being inspected. The agency shall disclose to the building official and the registered design professional in responsible charge possible conflicts of interest so that objectivity can be confirmed.
2. The QAA shall have adequate equipment to perform required tests. The equipment shall be periodically calibrated.
3. The QAA shall employ experienced personnel educated in conducting, supervising and evaluating tests and special inspections. Experience or training shall be considered relevant where the documented experience or training is related in complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities.
4. The QAA shall send copies of all inspection and testing reports to the building official, Owner, Architect, Engineer and Contractor. Reports shall indicate that the work inspected was or was not completed in conformance to the approved construction documents. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the, Architect and Engineer.
5. The QAA shall submit a final report documenting required special inspections and tests, and correction of any discrepancies noted in the inspections or tests. The final report shall be distributed to the building official, Owner, Architect and Engineer in a timely manner prior to the completion of the project.

8.2. Contractor Responsibilities:
A. The Contractor shall submit a written statement of responsibility to the building official and the Owner or the owner's authorized agent prior to the commencement of work on the systems or components listed in the statement of special inspections. The Contractor's statement of responsibility shall contain acknowledgement or awareness of the special requirements contained in the statement of special inspections.
B. Notification of QAA: The Contractor shall notify the QAA in a timely manner so that inspection and testing may be performed as outlined in the statement of special inspections.

8.3. Structural Observations by the Engineer of Record.
A. The Engineer of Record will perform structural observations at critical phases of the project. Observations will be made on a periodic basis throughout the construction of the structural system. Copies of the Engineer's report will be distributed to the Architect, Contractor, Owner, and building official.
B. Observation visits to the site by the Engineer's field representatives shall not be construed as inspection or approval of construction.

9. Statement of Special Inspections

9.1. The following materials, systems and components require special inspection or testing per Chapter 17 of the International Building Code (IBC).

9.2. For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases, periodic inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task. Frequency marked with (E) designates periodic inspections that must be performed prior to or upon completion of every task.

Structural Steel per IBC Section 1705.2.1, 1705.12.1 & 1705.13.1

Item	Frequency	Detailed Instructions
Prior to Welding (Table N5.4-1, AISC 360-16):		
Verify welding procedures (WPS) and consumable certificates	Periodic (E)	
Material identification	Periodic	Verify type and grade of material.
Welder identification	Periodic	A system shall be maintained by which a welder who has welded a joint or member can be identified.
Fit-up groove welds	Periodic	Verify joint preparation, dimensions, cleanliness, tacking, and backing.
Access holes	Periodic	Verify configuration and finish.
Fit-up of fillet welds	Periodic	Verify alignment, gaps at root, cleanliness of steel surfaces, and tack weld quality and location.
During Welding (Table N5.4-2, AISC 360-16):		
Use of qualified welders	Periodic	Verify that welders are appropriately qualified.
Control and handling of welding consumables	Periodic	Verify packaging and exposure control.
Cracked tack welds	Periodic	Verify that welding does not occur over cracked tack welds.
Environmental conditions	Periodic	Verify wind speed is within limits as well as precipitation and temperature.
WPS followed	Periodic	Verify items such as settings on welding equipment, travel speed, welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained, and proper position.

Item	Frequency	Detailed Instructions
Welding techniques	Periodic	Verify interpass and final cleaning, each pass is within profile limitations, and each pass meets quality requirements.
Steel headed stud anchors	Periodic	Verify placement and installation of steel headed stud anchors.
After Welding (Table N5.4-3, AISC 360-10):		
Welds cleaned	Periodic	Verify that welds have been properly cleaned.
Size, length, and location of welds	Periodic (E)	
Welds meet visual acceptance criteria	Periodic (E)	Verify weld meets visual acceptance criteria based upon crack prohibition, weld/base-metal fusion, crater cross section, weld profiles, weld size, undercut, and porosity.
Arc strikes	Periodic (E)	
k-area	Periodic (E)	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. of the weld.
Weld access holes in rolled heavy shapes and built-up heavy shapes (flange >2")	Periodic (E)	After rolled heavy shapes and built-up heavy shapes are welded, visually inspect the weld access holes for cracks.
Backing & weld tabs removed	Periodic (E)	
Repair activities	Periodic (E)	
Document acceptance or rejection of welded joint/member	Periodic (E)	
No prohibited welds	Periodic (E)	Verify no prohibited welds have been added without approval of the EOR.
Nondestructive Testing (Section N5.5, AISC 360-16):		
CJP welds (Risk Cat. III or IV)	Periodic (E)	Ultrasonic testing shall be performed on 100% of CJP groove welds in butt, T- and corner joints subject to transversely applied tension loading in materials 5/16-inch thick or greater per Section N5.5b. A reduction in the rate of ultrasonic testing is allowed per Section N5.5e.
Welded joints subject to fatigue	Periodic (E)	Reduction of ultrasonic testing is prohibited.
Prior to Bolting (Table N5.6-1, AISC 360-16):		
Certifications of fasteners	Continuous	
Fasteners marked	Periodic	Verify that fasteners have been marked in accordance with ASTM requirements.
Proper fasteners for joint	Periodic	Verify grade, type, and bolt length if threads are excluded from the shear plane.
Proper bolting procedure	Periodic	Verify proper procedure is used for the joint detail.
Connecting elements	Periodic	Verify appropriate faying surface condition and hole preparation, if specified, meet requirements.
Pre-installation verification testing	Periodic	Observe and document verification testing by installation personnel for fastener assemblies and methods used.
Proper storage	Periodic	Verify proper storage of bolts, nuts, washers, and other fastener components.
During Bolting (Table N5.6-2, AISC 360-16):		
Fastener assemblies	Periodic	Verify that fastener assemblies are of suitable condition, paced in all holes, and washers and nuts are positioned as required.
Snug-tight prior to pretensioning	Periodic	Verify that joints are brought to snug-tight condition prior to pretensioning operation.
Fastener component	Periodic	Verify that fastener component not turned by wrench is prevented from rotating.
Pretensioned fasteners	Periodic	Verify that fasteners are Pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward the free edges.
After Bolting (Table N5.6-3, AISC 360-16):		
Document acceptance or rejection of bolted connections	Periodic (E)	
Other Steel Inspections (Section N5.8, AISC 360-16: Table J8-1, J10-1, AISC 341-17):		
Structural steel details	Periodic	All fabricated steel or steel frames shall be inspected to verify compliance with the details shown in the construction documents, such as braces, stiffeners, member locations, and proper application of joint details at each connection.

Item	Frequency	Detailed Instructions
Anchor rods and other embedments supporting structural steel	Periodic	Shall be on the premises during the placement of anchor rods and other embedments supporting structural steel for compliance with construction documents. Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.
Galvanized steel members	Periodic	Exposed cut surfaces of galvanized structural steel main members and exposed corners of rectangular HSS shall be visually inspected for cracks subsequent to galvanizing. Cracks shall be repaired or the member shall be rejected.
Steel Elements of Composite Construction (Table N6.1, AISC 360-16; Tables J9-1 thru J9-3, AISC 341-17):		
Placement and installation of steel deck	Continuous	
Placement and installation of steel headed stud anchors	Continuous	
Document acceptance or rejection of steel elements	Continuous	
Reinforcing steel	Periodic	Verify appropriate reinforcement size, spacing, and orientation; that it has not been re-bent in field; that it is correctly tied and supported; and that required steel clearances have been provided.
Composite member size	Periodic	Verify that composite member is the required size.

Steel Construction Other Than Structural Steel per IBC Section 1705.2.2

Item	Frequency	Detailed Instructions
Steel Roof and Floor Decks (IBC Table 1705.2.2):		
Material verification of cold-formed steel deck	Periodic	Confirm that identification markings are provided to conform to ASTM standards specified on construction documents.
Floor and roof deck welds	Periodic	Visual inspection is required to confirm that weld meets acceptance criteria of AWS D1.3. Welder qualifications should also be verified.

Concrete Construction per IBC Sections 1705.3 &1705.12

Item	Frequency	Detailed Instructions
Reinforcing steel	Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Welding of reinforcing steel	Periodic	Verify weldability of reinforcing steel other than A706. Continuous inspection is required for welding of reinforcing steel used in intermediate or special concrete moment frames, boundary elements of special structural walls or shear reinforcement.
Cast-in bolts & embeds	Periodic	
Post-installed adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	Continuous	All post-installed anchors/dowels shall be special inspected in accordance with the approved code evaluation report and with ACI Section 17.8.2.
Post-installed mechanical anchors and adhesive anchors not defined above	Periodic	
Use of required mix design	Periodic	Verify that all mixes used comply with the approved construction documents; ACI 318: Ch. 19, 26.4.3-26.4.4; and IBC 1904.1, 1908.2, 1908.3.

Item	Frequency	Detailed Instructions
Concrete sampling for strength tests, slump, air content, and temperature	Continuous	Samples for strength tests shall be taken in accordance with ASTM C172, cured per ASTM C31 and tested in accordance with ASTM C39 by a testing agency complying with ASTM C1077. Acceptance criteria for strength tests shall be per ACI 318 Section 26.12.3. For each mix placed, samples shall be taken not less than once a day, nor less than once for each 150 yd³ of concrete, nor less than once for each 5000 ft² of surface area for slabs or walls. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.
Concrete & shotcrete placement	Continuous	
Curing temperature and techniques	Periodic	Verify that concrete is maintained at a temperature of at least 50°F and in a moist condition for at least 7 days after placement. Verify that high-early-strength concrete is maintained at a temperature of at least 50°F and in a moist condition for at least 3 days after placement. Accelerated curing methods may be used (see ACI 318: 26.5.3.2(c)). Shotcrete shall be maintained at a temperature of at least 40°F for the same period of time as noted for concrete and kept in the moist condition during curing periods in accordance to IBC 1908.9 All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
In-situ strength verification	Periodic	Verify that adequate strength has been achieved prior to the removal of shores and forms or the stressing of post-tensioned tendons.
Formwork	Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.
Reinforcement in special structural walls, and all components of special structural walls including coupling beams and wall piers	Continuous	Verify that ASTM A 615 reinforcing steel used in these areas complies with ACI 318: 20.2.2.5 by means of certified mill test reports. If this reinforcing steel is to be welded chemical tests shall be performed in accordance with AWS D1.4.
Welding of Reinforcing Steel (IBC Table 1705.3):		
Verification of weldability	Periodic	Verify weldability of reinforcing steel other than A706 based upon carbon equivalent and in accordance with AWS D1.4. Continuous inspection is required for welding of reinforcing steel used in intermediate or special concrete moment frames, boundary elements of special structural walls or shear reinforcement.
Other reinforcing steel	Periodic	Visually inspect all welds in accordance with AWS D1.4.
Single-pass fillet welds, 5/16" max	Periodic	
All other welds	Continuous	

Masonry Construction per IBC Section 1705.4

Item	Frequency	Detailed Instructions
Prior to Construction (Article 3.1.1, TMS-402/ACI 530.1-13):		
Review material certificates, mix designs, test results and construction procedures	Periodic	Verify that materials conform to the requirements of the approved construction documents. Mix design, test results, material certificates, and construction procedures should be submitted for review. Mortar mix designs shall conform to ASTM C 270 while grout shall comply with the proportion or strength requirements of ASTM C 476 or be based upon compressive strength tests in accordance with ASTM C1019. Material certificates shall be provided for the following: reinforcement; anchors, ties, fasteners, and metal accessories; masonry units; mortar and grout materials. Construction procedures for cold-weather or hot-weather construction shall be reviewed.
Verify f'_m and f'_{AAC} prior to construction	Periodic	Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Section 1.4B of ACI 530.1-13 prior to construction.
Proportions of site-prepared mortar	Periodic	Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C 270, and that it is mixed in accordance with Article 2.6 A of TMS-602/ACI 530.1-13.
Construction of mortar joints	Periodic	Verify that mortar joints comply with Article 3.3 B of TMS-602/ACI 530.1-13.
Properties of thin-bed mortar for AAC masonry	Periodic	Verify that mortar complies with Article 2.1 C of TMS-602/ACI 530.1-13.
Preparation of required grout specimens, mortar specimens and/or prisms shall be observed	Periodic	If the prism test method is used a minimum of three prisms shall be constructed in accordance with ASTM C1314. If the unit strength method is selected the compressive strength of the grout shall be determined per ASTM C1019 (not required if grout complies with ASTM C476).
Prior to Grouting (Table 3.1.2, TMS-402/ACI 530-13):		
Grout space	Periodic	Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per Article 3.2 D and 3.2 F of TMS-602/ACI 530.1-13.
Grade, type, and size of reinforcement and anchor bolts	Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors comply with the approved construction documents and Section 1.6 of TMS 402/ACI 530-13.
Placement of reinforcement and connectors	Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors are installed in accordance with the approved construction documents and Articles 3.2 E, 3.4, and 3.6 A of TMS 602/ACI 530.1-13.
Proportions of site-prepared grout	Periodic	Verify that grout is proportioned per ASTM C 476 and has a slump between 8-11 inches. Self-consolidated grout shall not be proportioned onsite. (see Articles 2.6 B and 2.4 G.1.b of TMS 602/ACI 530.1-13. *Continuous inspection is required for Risk Category IV buildings.*
Placement of masonry units and construction of mortar joints	Periodic	Verify that face shells and head joints are fully mortared and that vertical cells are aligned and unobstructed openings for grout are provided. All units are to be clean and placed while mortar is soft and plastic. Verify that mortar joints are placed in accordance with Article 3.3 B of TMS 602/ACI 530.1-13.
During Masonry Construction (Table 3.1.2, TMS-402/ACI530-13):		
Size and location of structural elements	Periodic	Verify that structural elements are placed in locations specified on the approved construction documents and to the tolerances noted in Section 3.3F of TMS 602/ACI 530.1-13.
Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	Periodic	Verify that correct anchorages and connections are provided per the approved plans and Sections 1.16.4.3 and 1.17.1 of TMS 402/ACI 530-13. Verify that structural elements are placed in locations specified on the approved construction documents. Headed or bent bar anchor bolts shall be embedded in grout.
Welding of reinforcement	Continuous	

Item	Frequency	Detailed Instructions
Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F)	Periodic	Verify that cold-weather construction is performed in accordance with Article 1.8 C of TMS 602/ACI 530.1-13 and hot weather construction per Article 1.8 D of TMS 602/ACI 530.1-13.
Placement of grout	Continuous	
Self-consolidating grout	Continuous	
Placement of AAC masonry units and construction of thin-bed mortar joints	Periodic	Verify that mortar is placed in accordance with Article 3.3 B.8 of TMS-602/ACI 530.1-13.
Observation of grout specimens, mortar specimens, and/or prisms	Periodic	Confirm that specimens/prisms are performed as required by Article 1.4 of TMS-602/ACI 530.1-13. *Continuous inspection is required for Risk Category IV buildings.*
Minimum Testing:		
Verification of Slump Flow and Visual Stability Index (VSI) for self-consolidating grout	Periodic	Compressive strength tests should be performed in accordance with ASTM C 1019 for slump flow and ASTM C 1611 for VSI.
Verification of f'_m and f'_{AAC}	Periodic	Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Article 1.4 B of TMS 602/ACI 530.1-13 prior to construction. *For Risk Category IV buildings this should be verified at every 5,000ft² of construction.*
Verification of proportions of materials in premixed or pre-blended mortar and grout	Periodic	Verify that proportions for mortar meet ASTM C 270 and proportions for grout meet ASTM C 476. This applies to *Risk Category IV buildings only.*
Post-installed anchors or dowels		All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report.

Soils per IBC Section 1705.6

Item	Frequency	Detailed Instructions
Verify subgrade is adequate to achieve design bearing capacity	Periodic	Prior to placement of concrete.
Verify excavations extend to proper depth and material	Periodic	Prior to placement of compacted fill or concrete.
Verify that subgrade has been appropriately prepared prior to placing compacted fill	Periodic	Prior to placement of compacted fill.
Perform classification and testing of compacted fill materials	Periodic	All materials shall be checked at each lift for proper classifications and gradations not less than once for each 10,000ft² of surface area.
Verify proper materials, densities and lift thicknesses during placement and compaction.	Continuous	

Driven Deep Foundations per IBC Section 1705.7

Item	Frequency	Detailed Instructions
Verify materials, sizes and lengths	Continuous	
Determine capacities and conduct necessary load tests	Continuous	
Observe drilling operations	Continuous	
Verify placement locations & plumbness, confirm type & size of hammer, record number of blows per foot, record tip and butt elevations and document any damage to element	Continuous	
Perform additional inspections for steel, concrete or other specialty elements.		Steel and concrete as indicated above. Specialty items per ICC-ES report.

Cast-In-Place Deep Foundations per IBC Section 1705.8

Item	Frequency	Detailed Instructions
Observe drilling operation and reporting	Continuous	
Verify placement locations & plumbness, confirm element diameters, lengths, embedment and adequate end-bearing capacity. Record concrete or grout volumes.	Continuous	
Perform additional inspections for concrete elements.		.

Helical Pile Foundations per IBC Section 1705.9

Item	Frequency	Detailed Instructions
Record installation equipment used, pile dimensions, tip elevations, final depth and final installation torque	Continuous	
Verify that helical piles used match the approved submittal	Continuous	

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CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:

GENERAL STRUCTURAL NOTES

SHEET NUMBER:

SE002

SHEET OF

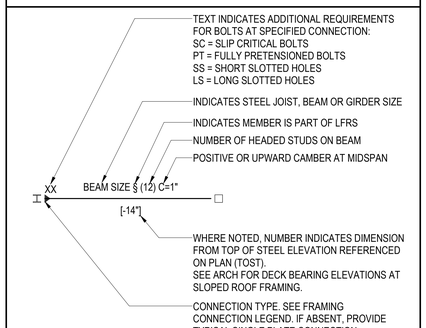
PLAN LEGEND

- FOOTING STEP
- FOOTING - CONTINUOUS
- FOOTING - THICKENED SLAB
- FOOTING - SQUARE FOOTING - RECTANGULAR FOOTING - MAT FOOTING
- 0" CHANGE IN ELEVATION
- SLAB BLOCK-OUT AT COLUMN
- CJ SLAB CONTROL/CONSTRUCTION JOINT
- SPECIAL SLAB OR DECK AREA
- SPECIAL SLAB OR DECK AREA
- SPECIAL SLAB OR DECK AREA
- RECESSED/DEPRESSED SLAB
- OPENING
- CONCRETE HOUSEKEEPING PAD
- INDICATES ROOF DAVIT ARM BASE
- INDICATES WINDOW WASHING TIE-BACK
- CONCRETE BEAM
- CONCRETE OVER STEEL DECK
- STEEL DECK
- STEEL GRATE

- CONCRETE WALL
- CONCRETE WALL - RECESSED (FDTN PLAN) CONCRETE LINTEL (FRAMING PLAN)
- CONCRETE WALL - RECESSED AT DOOR
- CONCRETE PIER IN CONCRETE WALL. TOP OF PIER RECESSED BELOW SLAB.
- CONCRETE COLUMN
- CONCRETE JAMB COLUMN POURED MONOLITHIC WITH CONCRETE WALL
- MASONRY WALL
- MASONRY WALL - RECESSED (FDTN PLAN) MASONRY LINTEL (FRAMING PLAN)
- MASONRY COLUMN IN MASONRY WALL
- STEEL STUD WALL - STRUCTURAL
- STEEL HEADER IN STEEL STUD WALL
- BRICK WALL
- BRICK WALL - RECESSED (FDTN PLAN) BRICK LINTEL (FRAMING PLAN)
- BRICK COLUMN IN BRICK WALL
- STEEL BEAM OR GIRDER
- STEEL JOIST OR PURLIN
- STEEL BEAM OR GIRDER
- STEEL JOIST OR PURLIN
- STEEL ANGLE BRACE / KICKER. SEE B1/SF501 FOR SLAB EDGE KICKER.
- STEEL COLUMN - TUBE (HSS)
- STEEL COLUMN - WIDE FLANGE
- STEEL COLUMN - PIPE (HSS)

- EXISTING FOOTING - CONTINUOUS
- EXISTING FOOTING - THICKENED SLAB
- EXISTING FOOTING - SQUARE, RECTANGULAR, OR MAT
- EXISTING CONCRETE SHEAR WALL, FOUNDATION WALL OR RETAINING WALL
- EXISTING OPENING THROUGH CONCRETE WALL
- EXISTING CONCRETE PIER IN CONCRETE WALL. PIER RECESSED BELOW SLAB.
- EXISTING CONCRETE COLUMN
- NEW OPENING THROUGH EXISTING CONCRETE WALL
- EXISTING MASONRY WALL
- EXISTING OPENING THROUGH MASONRY WALL
- NEW OPENING THROUGH EXISTING MASONRY WALL
- EXISTING MASONRY COLUMN IN MASONRY WALL
- EXISTING STEEL COLUMN - TUBE
- EXISTING STEEL COLUMN - WIDE FLANGE
- EXISTING STEEL COLUMN - PIPE
- EXISTING STEEL BRACED FRAME
- EXISTING SLAB BLOCK-OUT AT COLUMN
- CJ EXISTING SLAB CONTROL/CONSTRUCTION JOINT
- EXISTING STEEL BEAM OR GIRDER
- EXISTING STEEL JOIST OR PURLIN
- EXISTING CROSS BRIDGING
- EXISTING HORIZONTAL BRIDGING
- EXISTING TO BE REMOVED
- EXISTING OPENING

STEEL FRAMING MEMBER DESIGNATION



STEEL FRAMING CONNECTION LEGEND

- GRAVITY BEAM MOMENT CONNECTION A2/SF601
- WELDED SINGLE PLATE COLLECTOR/CHORD CONNECTION B1/SF601
- DROP-IN BEAM CONNECTION A4/SF602

ABBREVIATIONS

@	AT
AB	ANCHOR BOLT (S)
ABV	ABOVE
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
BLDG	BUILDING
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
CJ	CONSTRUCTION JOINT OR CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
D.B.	DECK BEARING
db	DIAMETER OF REINFORCING BAR
DBA	DEFORMED BAR ANCHORS
DBL	DOUBLE
DET	DETAIL
DIA (OR Ø)	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DK	DECK
DN	DOWN
DWG	DRAWING
DWL	DOWEL
E.F.	EACH FACE
E.J.	EXPANSION JOINT (SEISMIC SEPARATION JOINT)
E.W.	EACH WAY
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST (E)	EXISTING
EXP	EXPANSION / EXPOSED
EXT	EXTERIOR
F.D.	FLOOR DRAIN
F.F.	FINISH FLOOR
F.V.	FIELD VERIFY
FDTN	FOUNDATION
FIN	FINISH
FL	FLOOR
FT	FOOT
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GLB	GLU-LAMINATED BEAM
GR	GRADE
GSN	GENERAL STRUCTURAL NOTES
HB	HORIZONTAL BRIDGING
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHORS
HSS	HOLLOW STRUCTURAL STEEL
HT	HEIGHT
I.F.	INSIDE FACE
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
IN	INCH
INSUL	INSULATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIPS - 1,000 POUNDS
KLF	KIPS PER LINEAL FOOT
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
Ld, Lt, Lsb, Lsbt, Ldc, Lsc	SEE CONCRETE REINFORCING BAR DEVELOPMENT AND LAP LENGTH SCHEDULE
LF	LINEAL FOOT
LFRS	LATERAL FORCE RESISTING SYSTEM (SFRS & WFRS)
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
MAS	MASONRY
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MFGR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NORM	NORMAL
NTS	NOT TO SCALE
O.C.	ON CENTER
O.F.	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OWSJ	OPEN WEB STEEL JOIST
P.T.	POST-TENSIONED
PCF	POUNDS/CUBIC FOOT
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS/LINEAL FOOT
PNL	PANEL
PSF	POUNDS/SQ FOOT
PSI	POUNDS/SQ INCH
R.D.	ROOF DRAIN
REINF	REINFORCING

ABBREVIATIONS

REQD	REQUIRED
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SI	SPECIAL INSPECTION (SP. INSP.)
SIM	SIMILAR
SOG	SLAB ON GRADE
SQ	SQUARE
STAG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
T & B	TOP AND BOTTOM
T.O.	TOP OF
TEMP	TEMPERATURE
THDS	THREADS
TOC	TOP OF CONCRETE
TOCP	TOP OF CONCRETE PIER
TOF	TOP OF FOOTING
TOS	TOP OF SLAB
TOST	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W.P.	WORK POINT
W/	WITH
WF	WIDE FLANGE
WFRS	WIND FORCE RESISTING SYSTEM
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD

PLAN MARKS

BF-#	BRACED FRAME
CB-#	CONCRETE BEAM
CC-#	CONCRETE COLUMN
CCSS-#	CANTILEVERED CONCRETE SUSPENDED SLAB
CDP-#	CONCRETE DRILLED PIER
CFW-#	CONCRETE FOUNDATION WALL
CGB-#	CONCRETE GRADE BEAM
CJ-#	CONCRETE JOIST
CJC-#	CONCRETE JAMB COLUMN
CL-#	CONCRETE LINTEL
CP-#	CONCRETE PIER
CRW-#	CONCRETE RETAINING WALL
CSG-#	CONCRETE SLAB ON GRADE
CSH-#	CONCRETE SHEAR HEAD
CSS-#	CONCRETE SUSPENDED SLAB
CSW-#	CONCRETE SHEAR WALL
CW-#	CONCRETE WALL
FC#	CONTINUOUS FOOTING
FM#	MAT FOOTING
FR#	RECTANGULAR FOOTING
FS#	SQUARE FOOTING
FTS#	THICKENED SLAB FOOTING
HD-#	HOLD DOWN ANCHOR
MC-#	MASONRY COLUMN
MF-#	MOMENT FRAME
ML-#	MASONRY LINTEL
MP-#	MASONRY PIER
MW-#	MASONRY WALL
PTB-#	POST-TENSIONED CONCRETE BEAM
SBP-#	STEEL BASE PLATE
SC-#	STEEL COLUMN
SCP-#	STEEL CAP PLATE
SD-#	STEEL DECK
SDA-#	STEEL DECK ATTACHMENT
SG-#	STEEL GIRDER
SJ-#	STEEL JOIST
SND-#	SNOW DRIFT
WB-#	WOOD BEAM
WBW-#	WOOD BEARING WALL
WC-#	WOOD COLUMN
WD-#	WOOD DIAPHRAGM
WJ-#	WOOD JOIST
WSW-#	WOOD SHEAR WALL

STRUCTURAL DRAWING LIST

SHT NO.	SHT NAME
SE001	GENERAL STRUCTURAL NOTES
SE002	GENERAL STRUCTURAL NOTES
SE003	LEGENDS & ABBREVIATIONS
SB101	FOOTING AND FOUNDATION PLAN
SB501	TYPICAL FOOTING & FOUNDATION DETAILS
SB502	TYPICAL FOOTING & FOUNDATION DETAILS
SB503	FOOTING & FOUNDATION DETAILS
SB601	CONCRETE SCHEDULES
SB602	REINFORCING SCHEDULES
SB611	MASONRY SCHEDULES
SF101	LEVEL 1 FRAMING PLAN
SF102	LEVEL 2 FRAMING PLAN
SF103	ROOF FRAMING PLAN
SF501	TYPICAL CONCRETE OVER STEEL DECK DETAILS
SF502	COMPOSITE STEEL FLOOR DETAILS
SF503	STEEL BEAM TO MASONRY WALL
SF511	TYPICAL ROOF FRAMING DETAILS
SF514	STEEL BEAM TO MASONRY WALLS
SF515	STEEL ROOF FRAMING DETAILS
SF551	NON-BEARING MASONRY WALL BRACING
SF552	NON-STRUCTURAL DETAILS
SF601	TYPICAL STEEL FRAMING SCHEDULES
SF602	STEEL COLUMN SCHEDULE AND DETAILS
SF603	STEEL DECK SCHEDULES

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:

LEGENDS & ABBREVIATIONS

SHEET NUMBER:

SE003

SHEET OF

EXISTING BUILDING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DETAILING, FABRICATING, ERECTING OR INSTALLING ANY STRUCTURAL ELEMENT. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM IN A TIMELY MANNER SUCH THAT WORK WILL NOT BE DELAYED.

2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING OF EXISTING STRUCTURE DURING CONSTRUCTION.

FOOTING & FOUNDATION PLAN NOTES

1. SEE ARCHITECTURAL, CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE RETAINING AND / OR SITE WALLS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

2. SEE TYPICAL STEP DETAIL AT CONTINUOUS FOOTING AND TYPICAL STEP DETAIL AT MAT FOOTING FOR REINFORCING REQUIREMENTS -/--- , -/--- . SEE -/--- FOR TYPICAL EXTERIOR TO INTERIOR FOOTING STEP DETAIL.

3. PROVIDE REINFORCEMENT AT WALL ENDS, INTERSECTIONS AND OPENINGS PER TYPICAL DETAILS -/--- AND -/--- .

4. DOWEL ALL CONCRETE WALLS TO FOOTING PER TYPICAL DETAIL -/--- .

5. PROVIDE COMPACTED STRUCTURAL FILL UNDER ALL CONCRETE FOOTINGS PER TYPICAL DETAIL -/--- .

SLAB ON GRADE PLAN NOTES

1. ALL SLABS ON GRADE SHALL BE 4 INCHES THICK, UNLESS NOTED OTHERWISE. SEE TYPICAL CONCRETE SLAB ON GRADE PROFILE DETAIL B5/SB501 FOR SUBGRADE REQUIREMENTS.

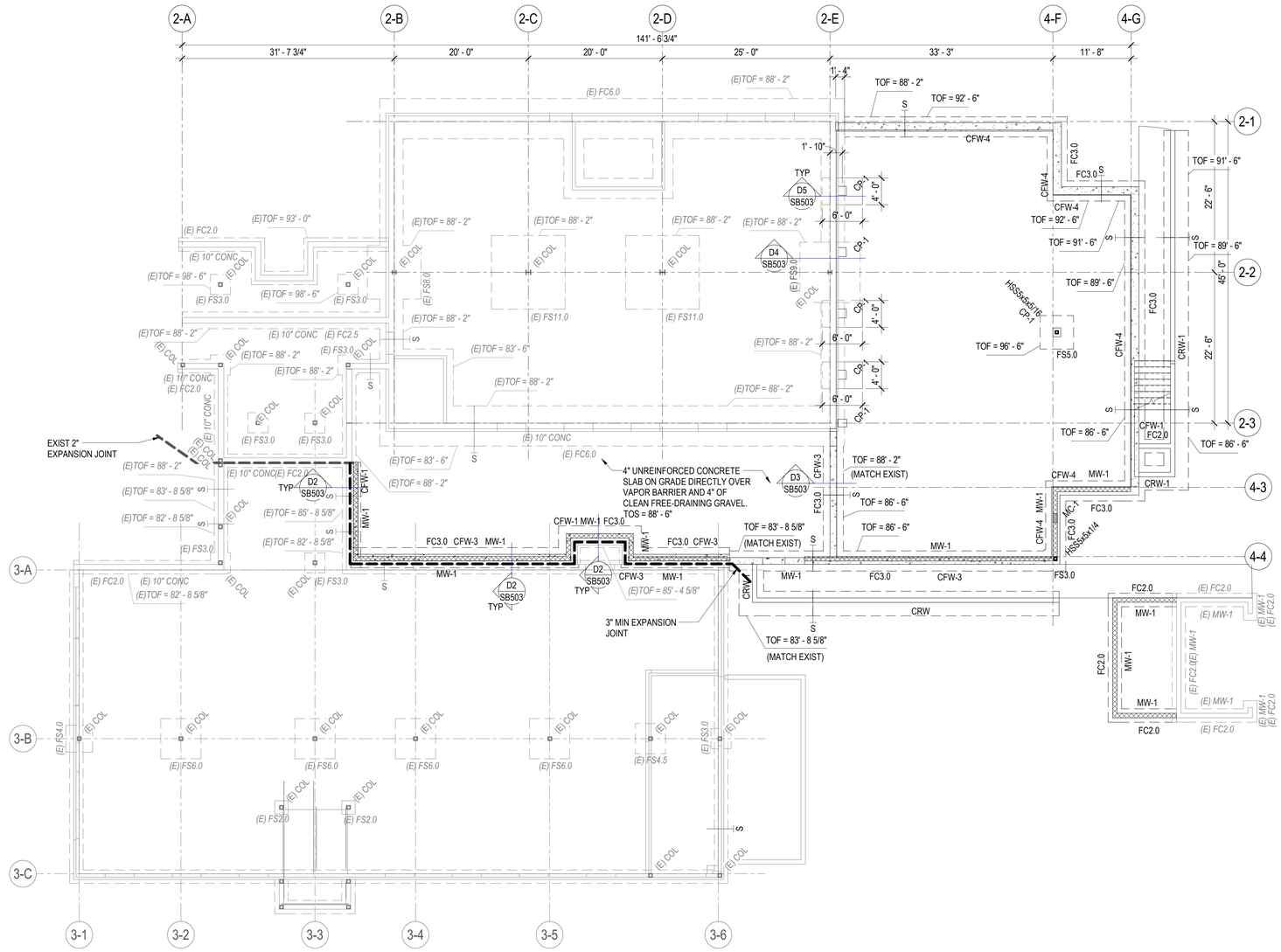
2. SEE ARCHITECTURAL, CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE WORK AT DOORS, SIDEWALKS, ETC.

3. SEE ARCHITECTURAL DRAWINGS AND FINISH SCHEDULE FOR SLAB DEPRESSIONS, SLOPES TO DRAINS AND SLAB AREAS TO RECEIVE FLOOR TILE.

4. SEE TYPICAL CONCRETE SLAB ON GRADE DETAILS FOR CONSTRUCTION JOINTS, CONTROL JOINTS AND ADDITIONAL SLAB REINFORCING C2/SB501.

5. SUBMIT SLAB ON GRADE CONTROL JOINT PLAN FOR REVIEW.

6. PROVIDE HOUSEKEEPING PADS AND CURBS PER DETAIL C4/SB501. VERIFY DIMENSIONS AND LOCATIONS OF CURBS AND PADS WITH MECHANICAL AND EQUIPMENT SUPPLIER.



A1 / SB101 FOOTING AND FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

PROJECT NORTH

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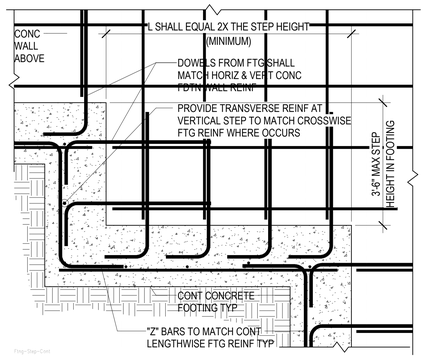
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FOOTING AND FOUNDATION PLAN

SHEET NUMBER:

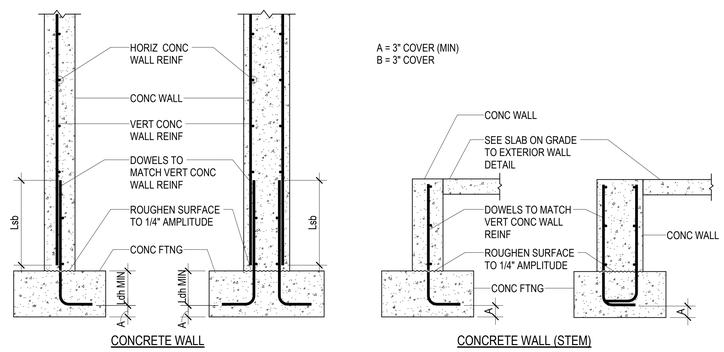
SB101

SHEET OF



D1 SB501 TYPICAL STEP DETAIL AT CONTINUOUS FOOTING

NO SCALE

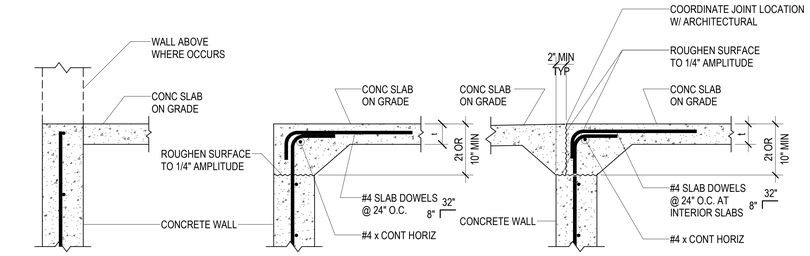


CONCRETE WALL

CONCRETE WALL (STEM)

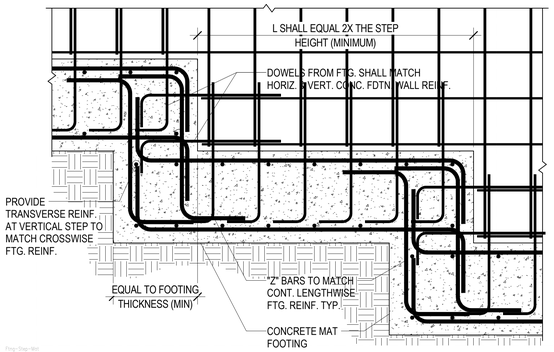
D2 SB501 TYPICAL CONCRETE WALL CONNECTION TO CONCRETE FOOTING

NO SCALE



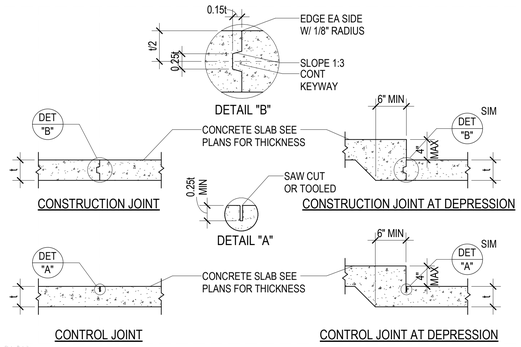
D4 SB501 TYPICAL CONCRETE SLAB ON GRADE TO CONCRETE WALL

NO SCALE



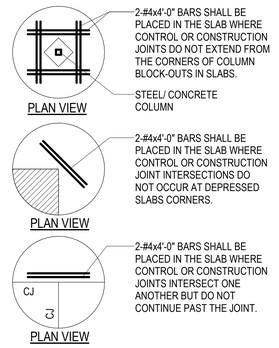
C1 SB501 TYPICAL STEP DETAIL AT MAT FOOTING

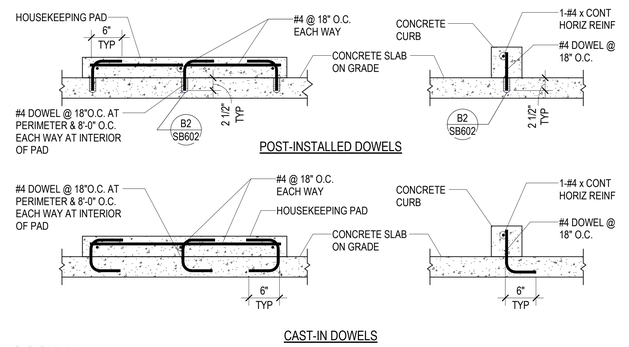
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C2 SB501 TYPICAL CONCRETE SLAB ON GRADE DETAILS

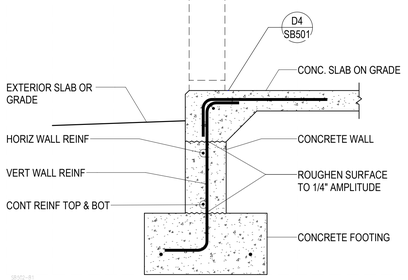
NO SCALE





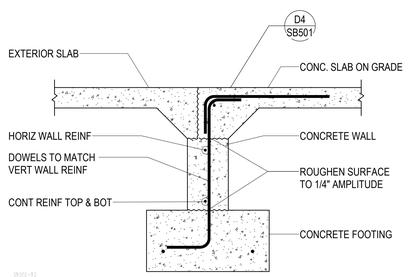
C4 SB501 TYPICAL HOUSEKEEPING PAD & CURB DETAILS AT CONCRETE SLAB ON GRADE

NO SCALE



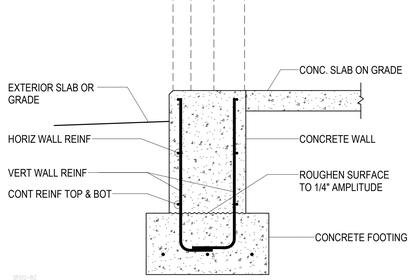
B1 SB501 TYPICAL CONCRETE SLAB TO FOUNDATION WALL AT CURTAIN WALL

NO SCALE



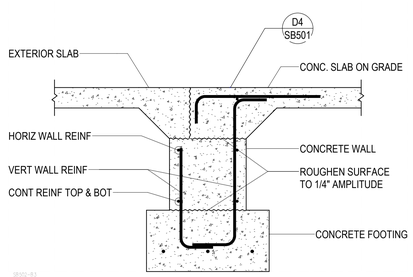
B2 SB501 TYPICAL CONCRETE SLAB TO FOUNDATION WALL AT DOOR OPENING

NO SCALE



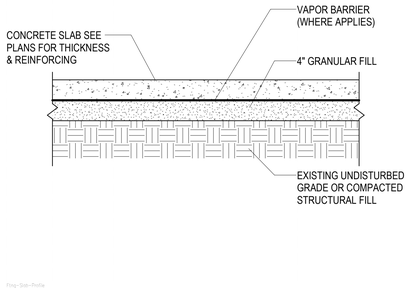
B3 SB501 TYPICAL CONCRETE WALL ON CONCRETE FOOTING

NO SCALE



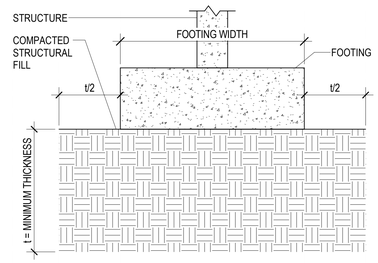
B4 SB501 TYPICAL CONCRETE SLAB TO FOUNDATION WALL AT DOOR OPENING

NO SCALE



B5 SB501 TYPICAL CONCRETE SLAB ON GRADE PROFILE

NO SCALE



A5 SB501 TYPICAL COMPACTED STRUCTURAL FILL DETAIL

NO SCALE

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

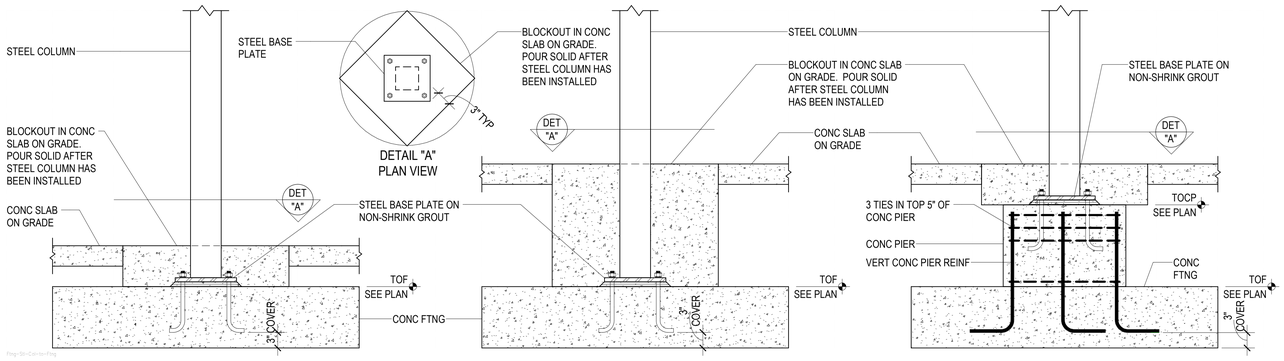
SHEET TITLE:

TYPICAL FOOTING & FOUNDATION DETAILS

SHEET NUMBER:

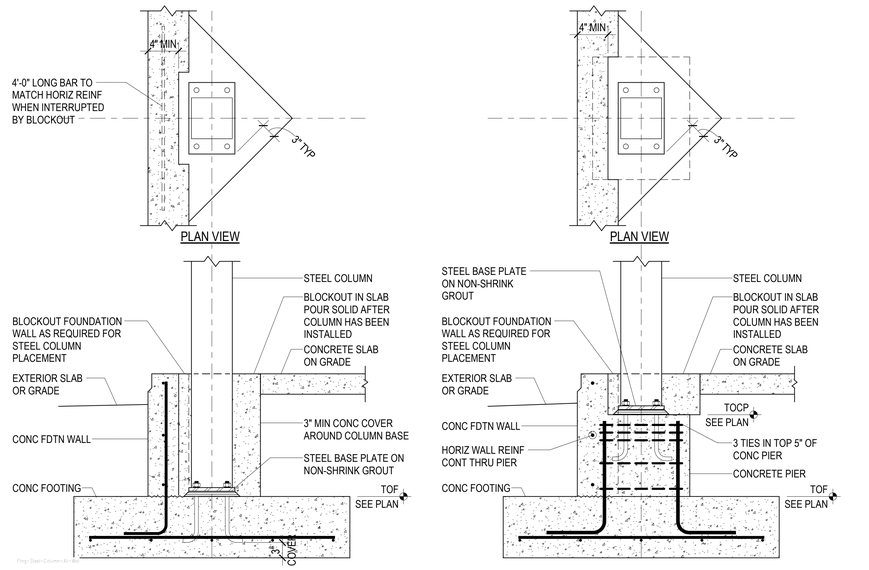
SB501

SHEET OF



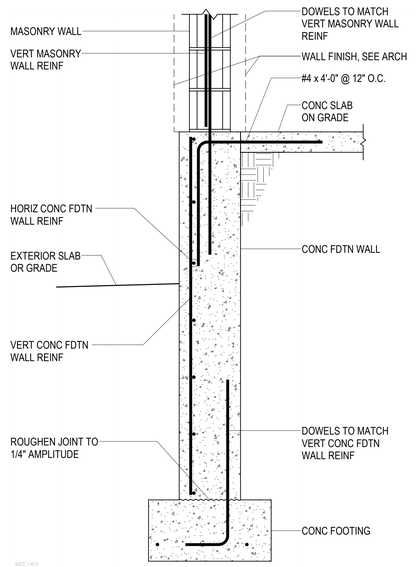
D1 / SB502 TYPICAL STEEL COLUMN CONNECTION TO CONCRETE FOOTING/CONCRETE PIER

NO SCALE



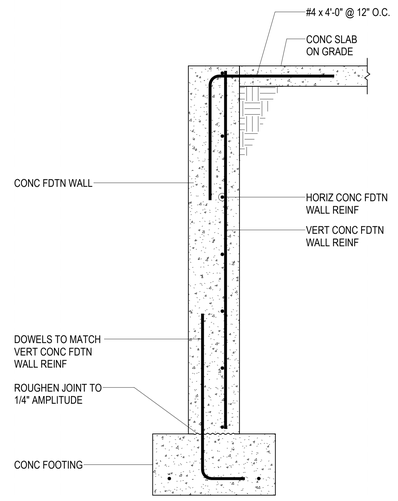
D4 / SB502 TYPICAL STEEL COLUMN BASE AGAINST CONCRETE FOUNDATION WALL

NO SCALE



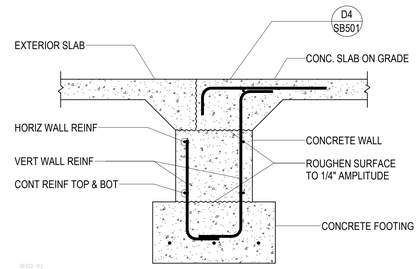
A3 / SB502 TYPICAL MASONRY WALL ON CONCRETE FOUNDATION WALL

NO SCALE



A4 / SB502 TYPICAL MASONRY WALL ON CONCRETE FOUNDATION WALL

NO SCALE



A5 / SB502 TYPICAL CONCRETE SLAB TO FOUNDATION WALL AT DOOR OPENING

NO SCALE

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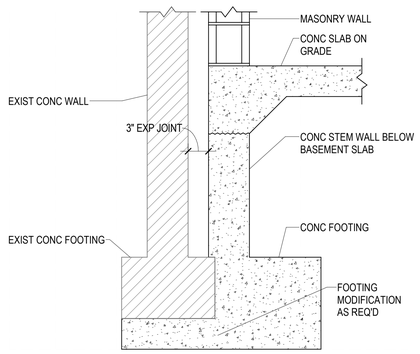
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TYPICAL FOOTING & FOUNDATION DETAILS

SHEET NUMBER:

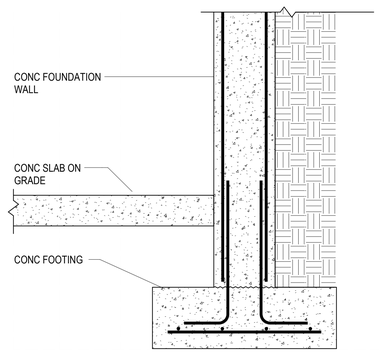
SB502

SHEET OF



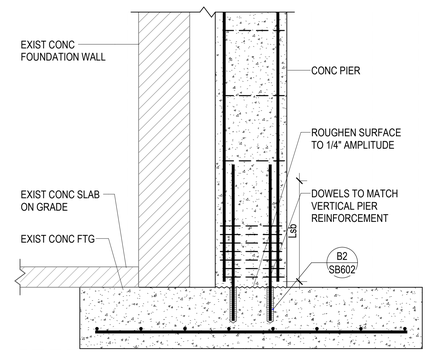
D2 / SB503 CONC PIER ON NEW CONC FOOTING

SCALE: 1" = 1'-0"



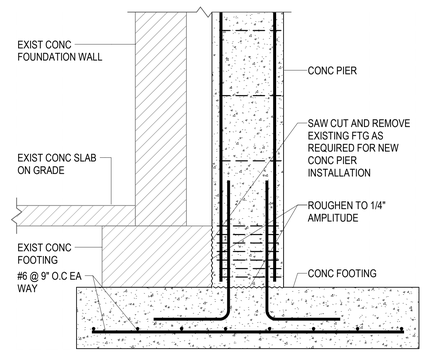
D3 / SB503 CONC PIER ON NEW CONC FOOTING

NO SCALE



D4 / SB503 CONC PIER ON NEW CONC FOOTING

NO SCALE



D5 / SB503 CONC PIER ON NEW CONC FOOTING

NO SCALE

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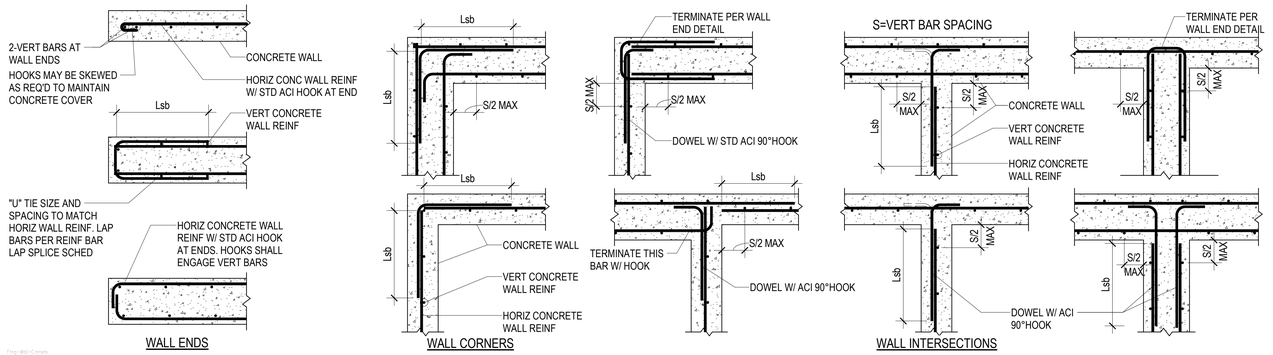
SHEET TITLE:

FOOTING & FOUNDATION DETAILS

SHEET NUMBER:

SB503

SHEET OF



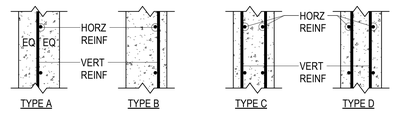
D2 SB601 TYPICAL CONCRETE WALL REINFORCING AT ENDS, CORNERS AND INTERSECTIONS (PLAN VIEWS)

NO SCALE

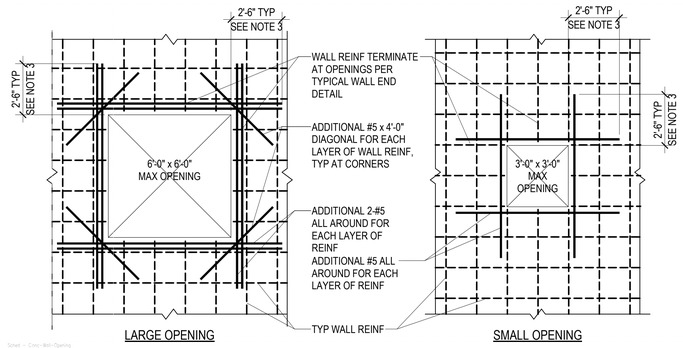
CONCRETE FOUNDATION WALL SCHEDULE					
MARK	THICK	HORIZONTAL REINFORCING	VERTICAL REINFORCING	T & B HORIZ. BARS	PLACEMENT
CFW-1	8"	#4 @ 10" O.C.	#5 @ 18" O.C.	1 - #4	TYPE A
CFW-3	1' - 0"	#4 @ 12" O.C. E.F.	#6 @ 12" O.C. E.F.	1 - #5 E.F.	TYPE C
CFW-4	1' - 3"	#5 @ 16" O.C. E.F.	#5 @ 12" O.C. E.F.	1 - #5 E.F.	TYPE C

NOTES:
1. HORIZONTAL WALL REINFORCING SHALL BE CONTINUOUS THRU CONSTRUCTION & CONTROL JOINTS.
2. SPLICES IN HORIZONTAL WALL REINFORCING SHALL BE TYPE Lsb, STAGGERED SUCH THAT SPLICES DO NOT OVERLAP. SPLICES IN TWO CURTAINS SHALL NOT OCCUR IN THE SAME LOCATION.

PLACEMENT TYPE



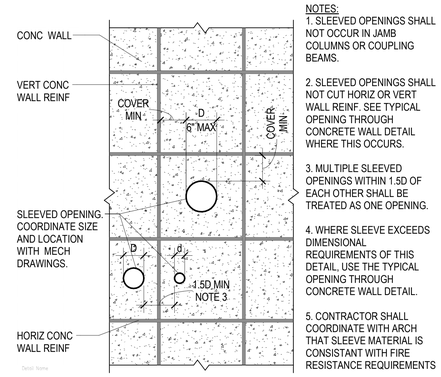
E.F. = EACH FACE
O.F. = OUTSIDE FACE (AGAINST SOIL)
I.F. = INSIDE FACE
3L = THREE LAYERS



NOTES:
1. OMIT ADDED REINFORCEMENT SHOWN WHEN SPECIAL REINFORCEMENT INDICATED ON PLANS OR DETAILS, EXCEEDS THIS REINFORCEMENT.
2. CONTRACTOR SHALL VERIFY ALL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS WITH THE STRUCTURAL ENGINEER BEFORE PLACEMENT.
3. WHEN EDGE OF CONCRETE CLOSE TO OPENING WILL NOT ALLOW THIS LENGTH TERMINATE AT EDGE WITH STANDARD HOOK.
4. WHERE MULTIPLE OPENINGS OCCUR WITHIN TWO TIMES THE OPENING DIMENSION, THE GROUP OF OPENINGS SHALL BE TREATED AS A SINGLE OPENING

C2 SB601 TYPICAL OPENINGS THROUGH CONCRETE WALLS

NO SCALE

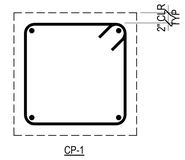


NOTES:
1. SLEEVED OPENINGS SHALL NOT OCCUR IN JAMB COLUMNS OR COUPLING BEAMS.
2. SLEEVED OPENINGS SHALL NOT CUT HORIZ OR VERT WALL REINF. SEE TYPICAL OPENING THROUGH CONCRETE WALL DETAIL WHERE THIS OCCURS.
3. MULTIPLE SLEEVED OPENINGS WITHIN 1.5D OF EACH OTHER SHALL BE TREATED AS ONE OPENING.
4. WHERE SLEEVE EXCEEDS DIMENSIONAL REQUIREMENTS OF THIS DETAIL, USE THE TYPICAL OPENING THROUGH CONCRETE WALL DETAIL.
5. CONTRACTOR SHALL COORDINATE WITH ARCH THAT SLEEVE MATERIAL IS CONSISTANT WITH FIRE RESISTANCE REQUIREMENTS

C4 SB601 TYPICAL SLEEVED OPENING THROUGH CONCRETE WALL

NO SCALE

CONCRETE PIER SCHEDULE					
	DIMENSIONS		REINFORCING		
MARK	DEPTH	WIDTH	VERTICAL	TIES	REMARKS
CP-1	1' - 4"	1' - 2"	4 - #6	#4 @ 12" O.C.	

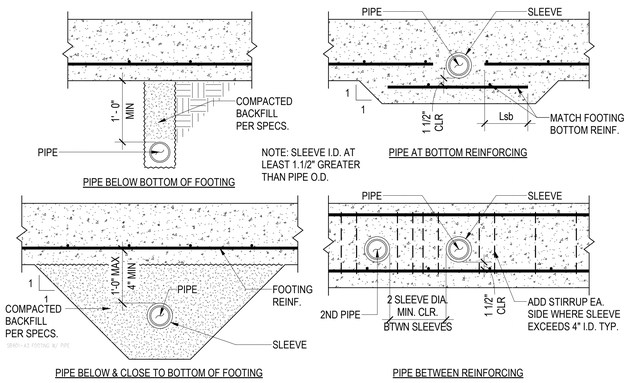


C5 SB601 CONCRETE PIER REINFORCEMENT/TIE DIAGRAM - PLAN

NO SCALE

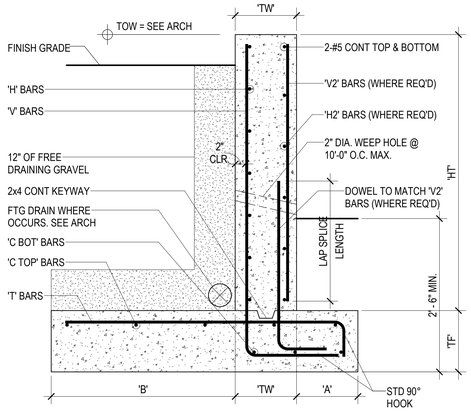
CONCRETE FOOTING SCHEDULE												
				CROSSWISE REINFORCING				LENGTHWISE REINFORCING				
MARK	WIDTH	LENGTH	THICK	NO.	SIZE	LENGTH	SPACE	NO.	SIZE	LENGTH	SPACE	REMARKS
FC1.5	1' - 6"	CONT.	1' - 0"	--	NONE	REQ'D	--	3	#4	CONT.	6"	
FC2.0	2' - 0"	CONT.	1' - 0"	--	NONE	REQ'D	--	3	#4	CONT.	9"	
FC3.0	3' - 0"	CONT.	1' - 0"	--	#5	2' - 6"	14"	3	#5	CONT.	15"	
FS3.0	3' - 0"	3' - 0"	1' - 0"	5	#4	2' - 6"	7.5"	5	#4	2' - 6"	7.5"	
FS5.0	5' - 0"	5' - 0"	1' - 3"	6	#5	4' - 6"	10.8"	6	#5	4' - 6"	10.8"	

1. PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER UNLESS NOTED OTHERWISE.
2. TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING WITH 2" CLEAR CONCRETE COVER.
3. SPOT FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND CONTINUOUS FOOTINGS SHALL BE CENTERED UNDER WALLS, UNLESS NOTED OTHERWISE.
4. ALL FOOTINGS SHALL BE FORMED. FOOTINGS SHALL NOT BE EARTH FORMED OR OVERSIZED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.



A3 SB601 PIPES PENETRATING & ADJACENT TO FOOTINGS OR GRADE BEAMS

NO SCALE



CONCRETE RETAINING WALL SCHEDULE																			
							'V' BARS		'H' BARS		'V2' BARS		'H2' BARS		'T' BARS		'C TOP' BARS		'C BOT' BARS	
MARK	"HT"	'A'	'B'	'TW'	'TF'		SIZE	SPACE	SIZE	SPACE	SIZE	SPACE	SIZE	SPACE	SIZE	SPACE	SIZE	SPACE	SIZE	SPACE
1. 'V' BARS SHALL NOT BE SPLICED BELOW MID-HEIGHT OF WALL																				
2. FOR WALLSINDICATED BY (*), ONE HALF OF THE 'V' BARS CAN BE DISCONTINUED FROM MID-HEIGHT TO TOP OF WALL.																				

A1 SB601 TYPICAL CONCRETE RETAINING WALL SCHEDULE AND DETAIL

NO SCALE

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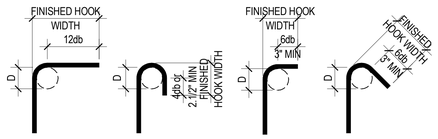
SHEET TITLE:

CONCRETE SCHEDULES

SHEET NUMBER:

SB601

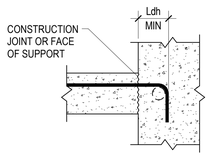
SHEET OF



90° HOOK | 180° HOOK | 90° TIE HOOK | 135° TIE HOOK

END HOOK SCHEDULE						
BAR SIZE	STANDARD FINISHED HOOK WIDTH			SEISMIC FINISHED HOOK WIDTH		
	D	90° HOOK	180° HOOK	D	90° TIE HOOK	135° TIE HOOK
#3	2.1/4"	6"	3"	1.1/2"	4"	4.1/4"
#4	3"	8"	4"	2"	4.1/2"	4.1/2"
#5	3.1/4"	10"	5"	2.1/2"	6"	5.1/2"
#6	4.1/2"	12"	6"	4.1/2"	--	8"
#7	5.1/4"	14"	7"	5.1/4"	--	9"
#8	6"	16"	8"	6"	--	10.1/2"
#9	9.1/2"	19"	11.3/4"	--	--	--
#10	10.3/4"	22"	13.1/4"	--	--	--
#11	12"	24"	14.3/4"	--	--	--
#14	18.1/4"	31"	21.3/4"	--	--	--
#18	24"	41"	28.1/2"	--	--	--

D1 SB602 REINFORCEMENT END HOOK SCHEDULE
NO SCALE



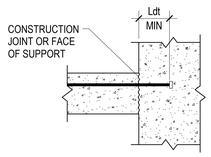
TENSION HOOK DEVELOPMENT LENGTH (Ldh)					
BAR SIZE	NORMAL WEIGHT CONCRETE, f'c = PSI				
	3,000	4,000	4,500	5,000	6,000
#3	6"	6"	6"	6"	6"
#4	8"	7"	7"	7"	7"
#5	10"	9"	8"	8"	7"
#6	12"	10"	10"	9"	8"
#7	14"	12"	11"	11"	10"
#8	16"	14"	13"	12"	11"
#9	18"	15"	14"	14"	13"
#10	20"	17"	16"	15"	14"
#11	22"	19"	18"	17"	16"
#14	37"	32"	31"	29"	27"
#18	50"	43"	41"	39"	35"

NOTES:
1. VALUES HERE VALID FOR ALL CASES IF:
   SIDE COVER ≥ 2.1/2"
   END COVER ≥ 2"

2. MULTIPLY VALUES IN SCHEDULE BY 1.33 FOR LIGHTWEIGHT CONCRETE

3. MULTIPLY VALUES IN SCHEDULE BY 1.2 FOR USE WITH EPOXY COATED REBAR

D2 SB602 TENSION HOOK DEVELOPMENT SCHEDULE
NO SCALE



TENSION HEADED BAR DEVELOPMENT LENGTH (Ldt)					
BAR SIZE	NORMAL WEIGHT CONCRETE, f'c = PSI				
	3,000	4,000	4,500	5,000	6,000
#3	7"	6"	6"	6"	6"
#4	9"	8"	8"	7"	7"
#5	11"	10"	9"	9"	8"
#6	14"	12"	11"	11"	10"
#7	16"	14"	13"	12"	11"
#8	18"	16"	15"	14"	13"
#9	20"	18"	17"	16"	14"
#10	23"	20"	19"	18"	16"
#11	25"	22"	21"	20"	18"

NOTES:
1. VALUES HERE VALID FOR ALL CASES IF:
   A. CLEAR COVER OF BAR ≥ 2"db. WHERE db IS BAR DIAMETER IN INCHES
   B. CLEAR SPACING BETWEEN BARS ≥ 4"db
   C. NET BEARING AREA OF HEAD Abrg ≥ 4"Ab, WHERE Ab IS AREA OF BAR

2. MULTIPLY VALUES IN SCHEDULE BY 1.2 FOR USE WITH EPOXY COATED REBAR.

3. FOR GRADE 60 REINFORCING ONLY.

D3 SB602 TENSION HEADED BAR DEVELOPMENT SCHEDULE
NO SCALE

CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULE																						
BAR SIZE	f'c = 3000 PSI				f'c = 4000 PSI				f'c = 4500 PSI				f'c = 5000 PSI				f'c = 6000 PSI				f'c = ALL	
	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ldc	Lsc
#3	17"	22"	22"	28"	15"	19"	19"	25"	14"	18"	18"	23"	13"	17"	17"	22"	12"	16"	16"	20"	8"	12"
#4	22"	29"	29"	38"	19"	25"	25"	33"	18"	24"	24"	31"	17"	23"	23"	29"	16"	21"	21"	27"	10"	15"
#5	28"	36"	36"	47"	24"	31"	31"	41"	23"	30"	30"	38"	22"	28"	28"	36"	20"	26"	26"	33"	12"	19"
#6	33"	43"	43"	56"	29"	37"	37"	49"	27"	35"	35"	46"	26"	34"	34"	44"	24"	31"	31"	40"	15"	23"
#7	48"	63"	63"	81"	42"	54"	54"	71"	40"	51"	51"	67"	38"	49"	49"	63"	34"	45"	45"	58"	17"	27"
#8	55"	72"	72"	93"	48"	62"	62"	81"	45"	59"	59"	76"	43"	56"	56"	72"	39"	51"	51"	66"	19"	30"
#9	62"	81"	81"	105"	54"	70"	70"	91"	51"	66"	66"	86"	48"	63"	63"	81"	44"	57"	57"	74"	22"	34"
#10	70"	91"	91"	118"	61"	79"	79"	102"	57"	74"	74"	96"	54"	71"	71"	92"	50"	64"	64"	84"	24"	39"
#11	78"	101"	101"	131"	67"	87"	87"	114"	64"	82"	82"	107"	60"	78"	78"	102"	55"	71"	71"	93"	27"	43"
#14	93"	121"	NA	NA	81"	105"	NA	NA	76"	99"	NA	NA	72"	94"	NA	NA	66"	86"	NA	NA	33"	NA
#18	124"	161"	NA	NA	108"	140"	NA	NA	101"	132"	NA	NA	96"	125"	NA	NA	88"	114"	NA	NA	43"	NA

NOTES:
1. DEFINITIONS:
   Ld: TENSION DEVELOPMENT LENGTH FOR REINFORCEMENT SATISFYING THE FOLLOWING CONDITIONS:
   SLABS AND WALLS: CLEAR SPACING > 2db AND CONCRETE CLEAR COVER > db
   BEAMS AND COLUMNS: CLEAR COVER SPACING > db AND CONCRETE CLEAR COVER > db
   Lt: DEVELOPMENT LENGTH FOR TOP BARS IN TENSION
   Lsb: TENSION LAP SPLICE LENGTH FOR OTHER THAN TOP BARS (CLASS B)
   Lsbt: TENSION LAP SPLICE LENGTH OF TOP BARS.
   Ldc: DEVELOPMENT LENGTH FOR BARS IN COMPRESSION
   Lsc: TIED COLUMN LAP SPLICE IN COMPRESSION
   db: NOMINAL BAR DIAMETER (INCHES)
   TOP BARS: HORIZONTAL BEAM REINFORCEMENT WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW

2. MULTIPLY VALUES IN SCHEDULE BY 1.5 IF CLEAR SPACING OR CONCRETE COVER DO NOT MEET REQUIREMENTS FOR Ld IN NOTE 1.

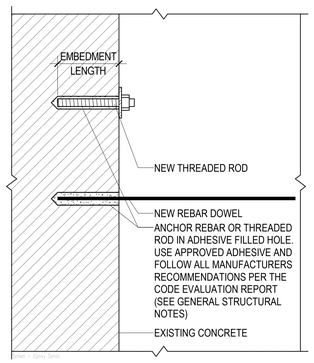
3. MULTIPLY VALUES IN SCHEDULE BY 1.3 FOR USE IN LIGHTWEIGHT AGGREGATE CONCRETE.

4. FOR EPOXY COATED BAR: MULTIPLY VALUES IN SCHEDULE BY 1.5 FOR BARS WITH CLEAR COVER < 3db OR CLEAR SPACING < 6db. OTHERWISE MULTIPLY VALUES BY 1.2.

5. a. FOR BUNDLED BARS OF THREE OR LESS MULTIPLY LENGTHS BY 1.2.
   b. FOR BUNDLED BARS OF FOUR OR MORE MULTIPLY LENGTHS BY 1.33.
   c. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED.

6. SCHEDULE LENGTHS ARE FOR fy=60ksi REINFORCING, MULTIPLY LENGTHS BY 1.25 FOR fy=75ksi REINFORCING.

7. LAP SPLICES ARE NOT PERMITTED FOR #14 & #18 BARS. USE BAR COUPLERS PER G.S.N.



ADHESIVE ANCHORS IN CONCRETE SCHEDULE			
REINFORCING BAR		THREADED ROD	
DOWEL SIZE	EMBEDMENT LENGTH (SEE NOTE #2)	SIZE	EMBEDMENT LENGTH (SEE NOTE #2)
#3	4"	3/8"Ø	4 1/2"
#4	6"	1/2"Ø	6"
#5	9"	5/8"Ø	7 1/2"
#6	10"	3/4"Ø	9"
#7	12 1/2"	7/8"Ø	10 1/2"
#8	13"	1"Ø	12"
#9	14"	1 1/4"Ø	15"
#10	18"		
#11	19"		

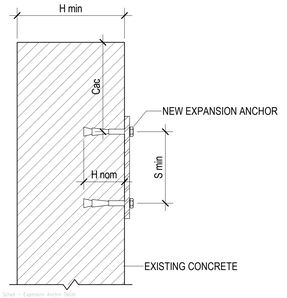
NOTES:
1. THIS SCHEDULE SHALL BE USED ONLY WHERE SPECIFICALLY REFERENCED ON THE DRAWINGS AND AT OTHER LOCATIONS WITH APPROVAL OF THE STRUCTURAL ENGINEER.

2. EMBEDMENT LENGTHS SPECIFIED ON PLANS OR DETAILS TAKE PRECEDENCE OVER EMBEDMENT LENGTHS IN THIS SCHEDULE.

3. WHERE THE THICKNESS OF THE EXISTING CONCRETE MEMBER IS NOT SUFFICIENT TO ACHIEVE SCHEDULED EMBEDMENT AND SPECIFIED CLEAR COVER FOR THE ANCHOR, CONTACT THE STRUCTURAL ENGINEER.

4. SEE GENERAL STRUCTURAL NOTES FOR LIST OF APPROVED ADHESIVES AND OTHER REQUIREMENTS FOR ADHESIVE ANCHORING.

B2 SB602 ADHESIVE ANCHORS IN CONCRETE SCHEDULE
NO SCALE



EXPANSION ANCHORS IN CONCRETE SCHEDULE				
ANCHOR SIZE	MINIMUM EDGE DISTANCE (Cac)	EMBEDMENT LENGTH (H nom)	MINIMUM CONCRETE THICKNESS (H min)	MINIMUM ANCHOR SPACING (S min)
3/8"Ø	6.1/2"	2.7/8"	4.1/2"	3.3/4"
1/2"Ø	10"	3.7/8"	6"	5"
5/8"Ø	10"	5.1/8"	8"	6"
3/4"Ø	16"	5.3/4"	10"	7"

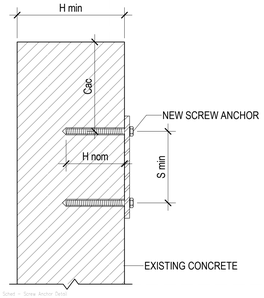
NOTES:
1. THIS SCHEDULE SHALL BE USED ONLY WHERE SPECIFICALLY REFERENCED ON THE DRAWINGS. ANCHORS AT OTHER LOCATIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

2. EDGE DISTANCE, Cac, AND EMBEDMENT LENGTHS, H nom, AND ANCHOR SPACING SPECIFIED ON PLANS OR DETAILS TAKE PRECEDENCE OVER VALUES IN THIS SCHEDULE.

3. ANCHORS LOCATED WHERE THE THICKNESS OF THE EXISTING CONCRETE MEMBER DOES NOT MEET THE REQUIRED MINIMUM CONCRETE THICKNESS MUST BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

4. SEE GENERAL STRUCTURAL NOTES FOR LIST OF APPROVED ANCHORS AND OTHER REQUIREMENTS FOR USING EXPANSION ANCHORS.

B4 SB602 EXPANSION ANCHORS IN CONCRETE SCHEDULE
NO SCALE



SCREW ANCHORS IN CONCRETE SCHEDULE				
ANCHOR SIZE	MINIMUM EDGE DISTANCE (Cac)	EMBEDMENT LENGTH (H nom)	MINIMUM CONCRETE THICKNESS (H min)	MINIMUM ANCHOR SPACING (S min)
3/8"Ø	3.3/4"	3.1/4"	5"	3"
1/2"Ø	4.1/2"	4"	6.1/4"	3.1/2"
5/8"Ø	6.3/8"	5.1/2	8.1/2"	3.3/4"
3/4"Ø	7.5/16"	6.1/4"	10"	4.1/2"

NOTES:
1. THIS SCHEDULE SHALL BE USED ONLY WHERE SPECIFICALLY REFERENCED ON THE DRAWINGS AND AT OTHER LOCATIONS WITH APPROVAL OF THE STRUCTURAL ENGINEER.

2. EDGE DISTANCE, Cac, AND EMBEDMENT LENGTHS, H nom, AND ANCHOR SPACING SPECIFIED ON PLANS OR DETAILS TAKE PRECEDENCE OVER VALUES IN THIS SCHEDULE.

3. ANCHORS LOCATED WHERE THE THICKNESS OF THE EXISTING CONCRETE MEMBER DOES NOT MEET THE REQUIRED MINIMUM CONCRETE THICKNESS MUST BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION..

4. SPECIAL INSPECTION IS REQUIRED DURING INSTALLATION OF ALL SCREW ANCHORS PER THE CODE EVALUATION REPORT FOR THE ANCHOR AND THE QUALITY ASSURANCE SECTION OF THE GENERAL STRUCTURAL NOTES.

5. SEE GENERAL STRUCTURAL NOTES FOR LIST OF APPROVED ANCHORS AND OTHER REQUIREMENTS FOR USING SCREW ANCHORS.

6. SCREW ANCHORS SHALL ONLY BE USED IN INTERIOR DRY LOCATIONS

A4 SB602 SCREW ANCHORS IN CONCRETE SCHEDULE
NO SCALE

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EDA PROJECT NUMBER: Project Number

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PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

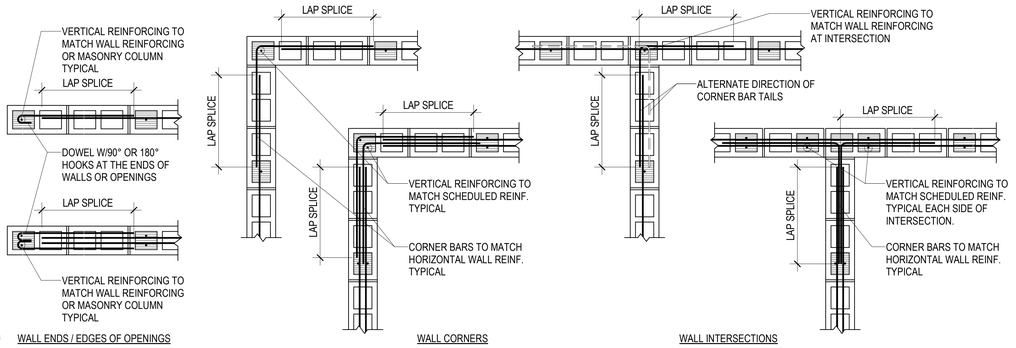
ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:
REINFORCING SCHEDULES

SHEET NUMBER:
SB602

SHEET OF



D1 / SB611 — TYPICAL MASONRY WALL END, CORNER AND INTERSECTION DETAILS

NO SCALE

MASONRY WALL SCHEDULE						
			REINFORCING			
MARK	THICK	MATERIAL	VERTICAL	HORIZONTAL	TYPE	REMARKS
MW-1	8"	CMU	#5 @ 32" O.C.	#5 @ 32" O.C.	TYPE 1	

NOTES
1. SEE PLANS, DETAILS AND GENERAL STRUCTURAL NOTES FOR ADDITIONAL REINFORCING REQUIREMENTS.
2. GROUT SOLID ALL CELLS BELOW GRADE, CELLS CONTAINING EMBEDS (HSA'S, DBA'S, ANCHOR BOLTS, ETC.), AND CELLS CONTAINING REINFORCING. CONSOLIDATE GROUT AS PER THE GENERAL STRUCTURAL NOTES.
3. HORIZONTAL WALL REINFORCING SHALL CONTINUE THROUGH MASONRY LINTELS. WHERE BOTH HORIZONTAL WALL REINFORCING AND LINTEL REINFORCING OCCUR IN THE SAME COURSE, THE LARGER BARS ARE TO REPLACE THE SMALLER BARS.

MASONRY REINFORCING BAR LAP SPLICE SCHEDULE											
BAR SIZE	f'm = 2000 psi							f'm = 2500 psi			
	6" CMU	8" CMU		10" CMU		12" CMU		6" BRICK	8" BRICK		
	CLASS	CLASS		CLASS		CLASS		CLASS	CLASS		
	A	A	B	A	B	A	B	A	A	B	
#3	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	
#4	18"	13"	21"	12"	20"	12"	20"	16"	12"	20"	
#5	28"	20"	35"	16"	32"	13"	32"	25"	18"	33"	
#6	**	38"	54"	29"	54"	24"	54"	**	34"	54"	
#7	-	52"	**	40"	**	33"	63"	-	47"	-	
#8	-	**	-	61"	**	50"	**	-	**	-	
#9	-	-	-	79"	-	64"	-	-	-	-	

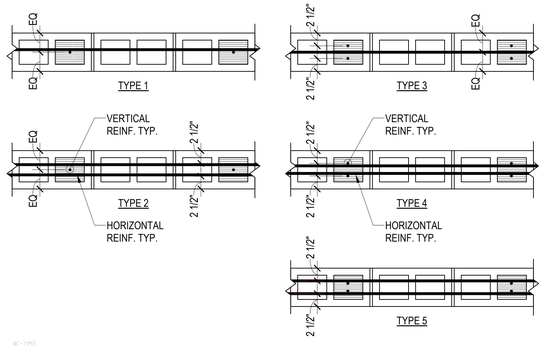
NOTES:
1. CLASS A SPLICES MAY BE USED WHEN ONLY ONE BAR IS CONTINUOUS IN THE MASONRY CELL OR COURSE.

2. CLASS B SPLICES SHALL BE USED WHEN TWO BARS ARE CONTINUOUS IN THE MASONRY CELL OR COURSE.

3. ** INDICATES THAT A LAP SPLICE IS NOT ALLOWED AND MECHANICAL BAR COUPLERS ARE REQUIRED FOR THE BAR SPLICES. SPLICES SHALL BE OFFSET 2'-0" TO AVOID CONGESTION.

4. WHERE VERTICAL BARS HAVE A REQUIRED LAP SPLICE GREATER THAN THE HEIGHT OF THE GROUT POUR, THE BAR SPLICE SHALL BE MADE WITH A MECHANICAL BAR COUPLER. WHERE THE HEIGHT OF THE GROUT POUR EXCEEDS 60 INCHES, HIGH LIFT GROUTING PROCEDURES SHALL BE FOLLOWED.

5. WHERE MECHANICAL BAR COUPLERS ARE USED, THE CONNECTOR SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR IN TENSION AND COMPRESSION.



C3 / SB611 — TYPICAL MASONRY WALL TYPES - PLAN VIEW

NO SCALE

MASONRY LINTEL SCHEDULE						
MARK	DIMENSIONS		REINFORCING		MAXIMUM SPAN	REMARKS
	DEPTH	WIDTH	HORIZONTAL	STIRRUPS		
ML-1	8"	6",8",10" OR 12"	1- #4 CONT.	--	3'-4"	
ML-2	16"	6",8",10" OR 12"	1- #6 CONT. TOP & BOTTOM	--	5'-4"	
ML-3	24"	6",8",10" OR 12"	1- #7 CONT. TOP & BOTTOM	#3 @ 8" O.C.	8'-0"	
ML-4	32"	6",8",10" OR 12"	1- #7 CONT. TOP & BOTTOM	#3 @ 8" O.C.	10'-0"	

NOTES:
1. MASONRY LINTELS ML-1 THROUGH ML-4 SHALL BE USED OVER OPENINGS IN MASONRY WALLS WHEN A SPECIFIC MASONRY LINTEL IS NOT OTHERWISE SPECIFIED. THE MASONRY LINTEL TO BE USED SHALL BE DETERMINED BY THE MAXIMUM SPAN AS SPECIFIED IN THIS SCHEDULE. WHEN A SPECIFIC MASONRY LINTEL IS CALLED OUT ON THE PLAN, THE MAXIMUM SPAN AS NOTED IN THIS SCHEDULE SHALL NOT APPLY

2. MASONRY LINTELS ML-1 THROUGH ML-4 SHALL NOT BE LOCATED BELOW ANY FLOOR, OR ROOF BEAM, OR GIRDER, OR ANY OTHER CONCENTRATED LOAD UNLESS SHOWN SPECIFICALLY ON THE PLAN SHEET. JOISTS SHALL NOT BEAR ON ANY LINTEL LESS THAN 16" DEEP.

3. FOR MASONRY LINTELS NOT SHOWN ON THE DRAWINGS THAT CARRY ANY FLOOR, OR ROOF BEAM, OR GIRDER, OR ANY OTHER CONCENTRATED LOAD, OR THAT SPAN GREATER THAN 10'-0" CONSULT THE STRUCTURAL ENGINEER.

4. EXTEND ALL HORIZONTAL REINFORCING 48 BAR DIAMETERS BEYOND THE EDGE OF THE OPENING. IF HORIZONTAL REINFORCING CANNOT BE EXTENDED 48 BAR DIAMETERS BEYOND THE EDGE OF THE OPENING, PROVIDE 90 DEGREE STANDARD HOOK.

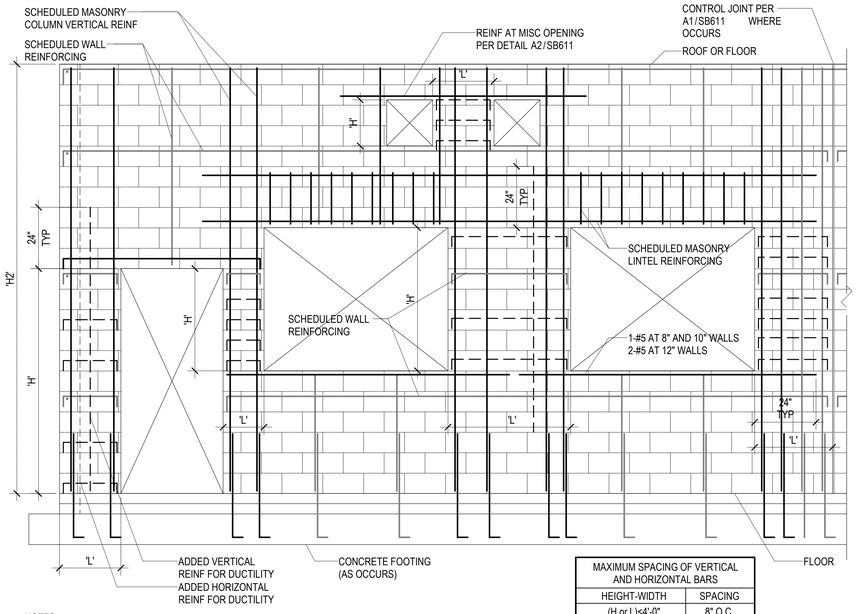
5. GROUT MASONRY LINTELS MONOLITHICALLY WITH THE SUPPORT WALL OR COLUMN AT EACH END.

6. SPLICE TOP BARS AT MIDSPAN OF LINTEL ONLY.

7. SPLICE BOTTOM BARS OVER SUPPORTS ONLY.

8. FOR WALL ABOVE LINTEL, DOWEL VERTICAL REINFORCING INTO FULL DEPTH OF THE LINTEL OR 48 BAR DIAMETERS, WHICHEVER IS LESS.

9. HORIZONTAL WALL REINFORCING SHALL CONTINUE THROUGH MASONRY LINTELS. WHERE BOTH HORIZONTAL WALL REINFORCING AND LINTEL REINFORCING WOULD OCCUR IN THE SAME COURSE, THE LARGER BARS ARE TO REPLACE THE SMALLER BARS.



NOTES:
1. ADDED BAR SIZE SHALL BE 1-#4 MINIMUM.
2. ALL ADDED BARS SHALL BE EMBEDDED IN GROUT.
3. ALL ADDED HORIZONTAL REINFORCING SHALL BE TERMINATED WITH A 90° OR 180° STANDARD HOOK AROUND THE VERTICAL REINFORCING.
4. FOR WALLS WITH 'H2' AND 'L'≥12'-0" OR LARGER ADDITIONAL REINFORCING FOR DUCTILITY IS NOT REQUIRED.

WALL REINFORCING LEGEND
- SCHEDULED WALL REINF
- SCHEDULED OPENING REINF
- ADDED REINF FOR DUCTILITY

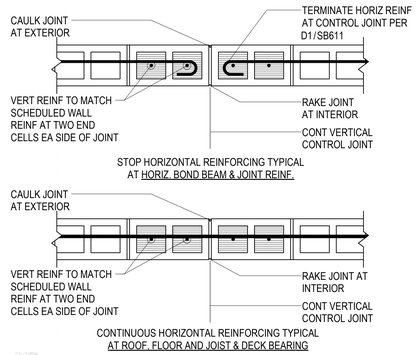
MAXIMUM SPACING OF VERTICAL AND HORIZONTAL BARS	
HEIGHT-WIDTH	SPACING
(H or L)<4'-0"	8" O.C.
4'-0"≤(H or L)<6'-0"	16" O.C.
6'-0"≤(H or L)<8'-0"	24" O.C.
8'-0"≤(H or L)<10'-0"	32" O.C.
10'-0"≤(H or L)<12'-0"	40" O.C.
12'-0"≤(H or L)	48" O.C.

B1 / SB611 — TYPICAL MASONRY WALL OPENINGS WITH ADDITIONAL DUCTILITY REINFORCMENT FOR MASONRY SHEAR WALLS

NO SCALE

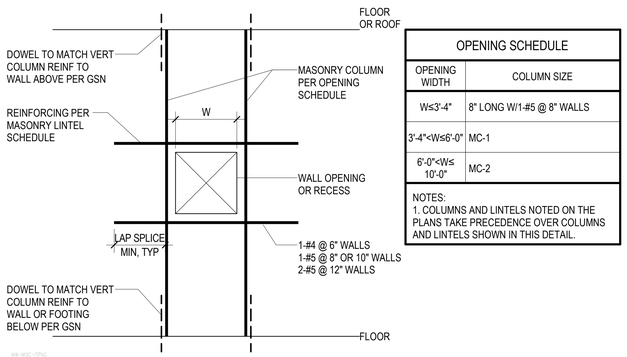
MASONRY COLUMN SCHEDULE						
	DIMENSIONS		REINFORCING			
MARK	WIDTH	DEPTH	VERTICAL	TIES	TYPE	REMARKS
MC-1	8"	1' - 4"	2 - #5	#3 @ 8" O.C.	TYPE 1	

NOTES
1. HORIZONTAL WALL REINFORCING BARS SHALL BE CONTINUOUS THROUGH MASONRY COLUMNS. AT WALL ENDS OR OPENINGS TERMINATE HORIZONTAL WALL REINFORCING WITH A 90° OR 180° HOOK.
2. FOR TYPE 2 & 2A COLUMNS, HORIZONTAL WALL REINFORCING SHALL BE LOCATED TO THE INSIDE OF VERTICAL COLUMN BARS..
3. UNLESS NOTED OTHERWISE, VERTICAL COLUMN REINFORCING AND TIES SHALL EXTEND THE FULL STORY HEIGHT OF THE WALL.
4. MASONRY COLUMN VERTICAL BARS OR DOWELS IN CONCRETE FOUNDATION WALLS SHALL HAVE TIES TO MATCH MASONRY COLUMN TIES.
5. VERTICAL REINFORCING IN TYPE 1 & 2 COLUMNS SHALL BE DISTRIBUTED EQUALLY IN EACH CELL.
6. PLACE VERTICAL COLUMN BARS IN EACH END CELL FOR TYPE 1A & 2A COLUMNS. REMAINING REINFORCING SHALL BE SPACED EQUALLY THROUGHOUT THE COLUMN WITH ONE BAR PER CELL FOR TYPE 1A AND TWO BARS PER CELL FOR TYPE 2A.
7. ALL CELLS IN COLUMNS SHALL BE GROUTED SOLID.



A1 / SB611 — TYPICAL CONTROL JOINTS IN MASONRY WALLS

NO SCALE

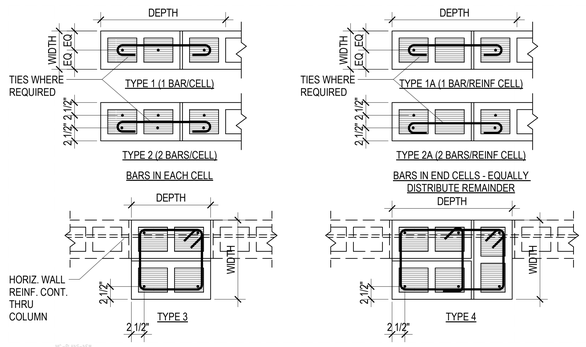


OPENING SCHEDULE	
OPENING WIDTH	COLUMN SIZE
W≤3'-4"	8" LONG W/1-#5 @ 8" WALLS
3'-4"<W≤6'-0"	MC-1
6'-0"<W≤ 10'-0"	MC-2

NOTES:
1. COLUMNS AND LINTELS NOTED ON THE PLANS TAKE PRECEDENCE OVER COLUMNS AND LINTELS SHOWN IN THIS DETAIL.

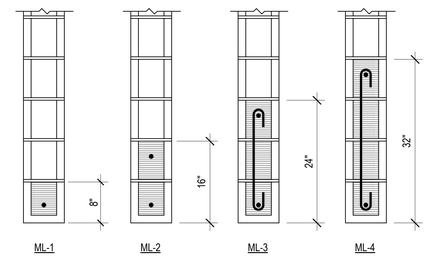
A2 / SB611 — TYPICAL REINFORCING AROUND MISCELLANEOUS OR RECESSED MASONRY OPENINGS

NO SCALE



A3 / SB611 — TYPICAL MASONRY COLUMN TYPES - PLAN VIEW

NO SCALE



A5 / SB611 — TYPICAL MASONRY LINTEL DETAILS

NO SCALE

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EDA PROJECT NUMBER: Project Number

NOT FOR CONSTRUCTION

PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:
MASONRY SCHEDULES

SHEET NUMBER:
SB611

SHEET OF

EXISTING BUILDING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DETAILING, FABRICATING, ERECTING OR INSTALLING ANY STRUCTURAL ELEMENT. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM IN A TIMELY MANNER SUCH THAT WORK WILL NOT BE DELAYED.

2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING OF EXISTING STRUCTURE DURING CONSTRUCTION.

SLAB ON GRADE PLAN NOTES

1. ALL SLABS ON GRADE SHALL BE 4 INCHES THICK, UNLESS NOTED OTHERWISE. SEE TYPICAL CONCRETE SLAB ON GRADE PROFILE DETAIL B5/SB501 FOR SUBGRADE REQUIREMENTS.

2. SEE ARCHITECTURAL, CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE WORK AT DOORS, SIDEWALKS, ETC.

3. SEE ARCHITECTURAL DRAWINGS AND FINISH SCHEDULE FOR SLAB DEPRESSIONS, SLOPES TO DRAINS AND SLAB AREAS TO RECEIVE FLOOR TILE.

4. SEE TYPICAL CONCRETE SLAB ON GRADE DETAILS FOR CONSTRUCTION JOINTS, CONTROL JOINTS AND ADDITIONAL SLAB REINFORCING C2/SB501.

5. SUBMIT SLAB ON GRADE CONTROL JOINT PLAN FOR REVIEW.

6. PROVIDE HOUSEKEEPING PADS AND CURBS PER DETAIL C4/SB501. VERIFY DIMENSIONS AND LOCATIONS OF CURBS AND PADS WITH MECHANICAL AND EQUIPMENT SUPPLIER.

COMPOSITE STEEL FRAMING PLAN NOTES

1. SEE STEEL DECK SCHEDULE ON SHEET SF603 FOR DECK PROFILE, DECK ATTACHMENT, CONCRETE FILL AND SLAB REINFORCEMENT REQUIREMENTS.

2. PROVIDE CONTROL JOINTS IN CONCRETE SLABS OVER STEEL DECK PER DETAIL D4/SF501 AND GSN SECTION 3.4.H. SUBMIT CONTROL JOINT AND SLAB REINFORCEMENT PLANS FOR REVIEW.

3. PROVIDE REINFORCEMENT/FRAMING AT OPENINGS THROUGH STEEL DECK PER TYPICAL OPENING REINFORCING DETAIL D1/SF501.

4. SEE C1/SF501 FOR TYPICAL STUD PLACEMENT DIAGRAMS FOR HEADED STUD ANCHORS ON COMPOSITE BEAMS. ADJUST STUD HEIGHT AT SLAB RECESSES PER DETAIL B5/SF501.

5. PROVIDE STEEL DECK FILLER PER DETAIL C2/SF501 WHERE REQUIRED FOR HEADED STUD PLACEMENT.

6. DO NOT PLACE CONDUIT IN CONCRETE OVER STEEL DECK.

7. PROVIDE HOUSEKEEPING PADS AND CURBS PER DETAIL C4/SF501. VERIFY DIMENSIONS AND LOCATIONS OF CURBS AND PADS WITH MECHANICAL AND EQUIPMENT SUPPLIER.

8. STRUCTURE OVER MECHANICAL ROOMS HAS BEEN DESIGNED FOR UP TO __ PSF FOR PIPES AND OTHER HANGING LOADS. IF THIS ALLOWANCE IS EXCEEDED, CONTACT ENGINEER PRIOR TO INSTALLATION.

MASONRY WALL NOTES

1. TERMINATE HORIZONTAL REINFORCEMENT AT CONTROL JOINTS IN MASONRY WALLS PER DETAIL A1/SB611.

2. PROVIDE ADDITIONAL HORIZONTAL AND VERTICAL REINFORCING AT WALL CORNERS, EDGES OF OPENINGS, WALL ENDS, AND WALL INTERSECTIONS PER D1/SB611.

3. SEE A2/SB611 FOR TYPICAL REINFORCING AROUND MISCELLANEOUS OR RECESSED MASONRY WALL OPENINGS.

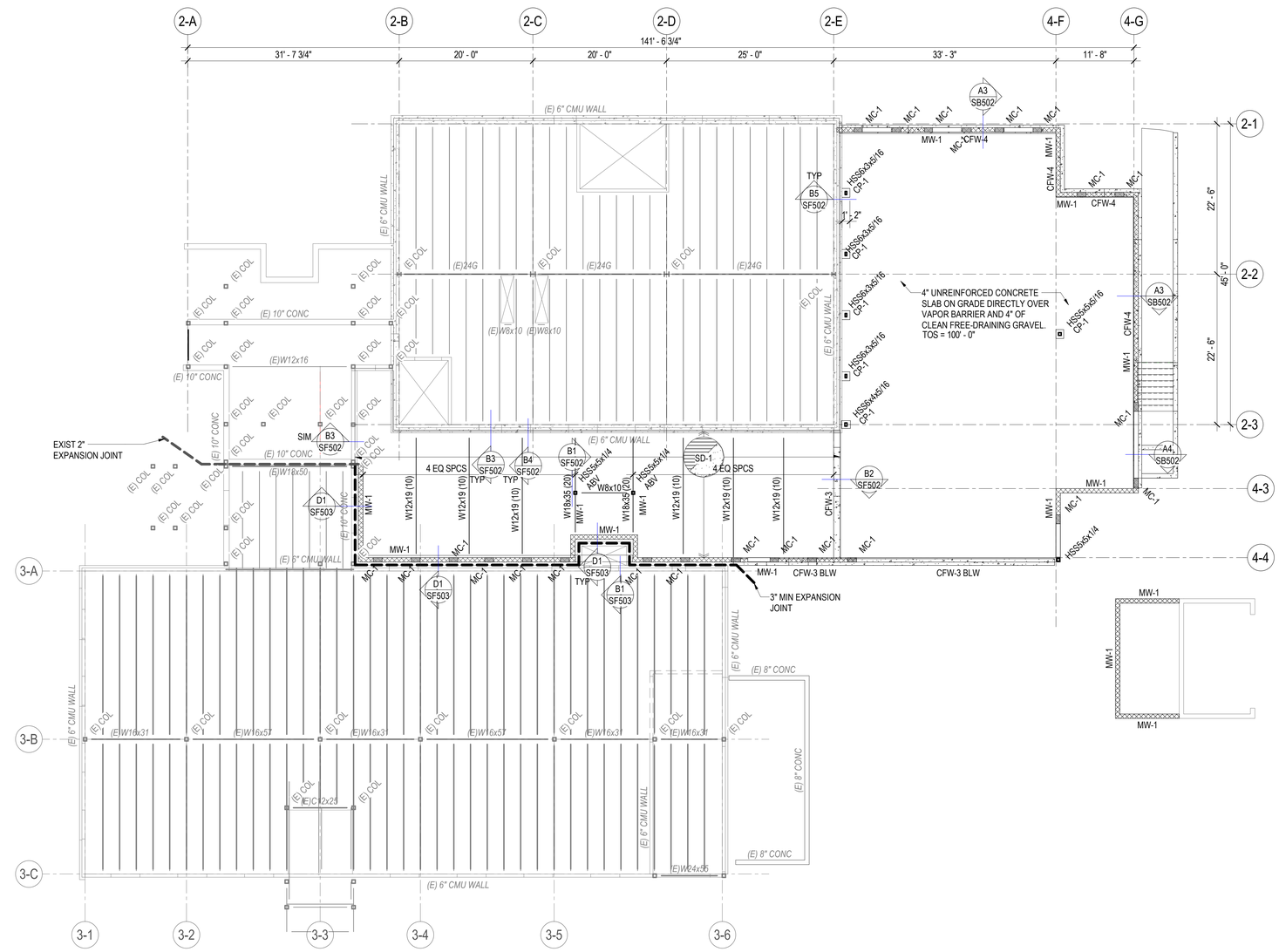
4. SEE B1/SB611 FOR REQUIRED ADDITIONAL DUCTILITY REINFORCING IN LOAD BEARING MASONRY WALLS.

5. SEE D5/SF552 FOR NON-BEARING MASONRY WALL BEARING ON CONCRETE OVER STEEL DECK.

6. SEE ARCHITECTURAL FOR TOP OF NON-BEARING WALL LOCATIONS.

7. SEE -/--- FOR TYPICAL NON-BEARING MASONRY WALL BRACING DETAIL BELOW UNDERSIDE OF STEEL BEAMS & OPEN WEB STEEL JOISTS.

8. SEE DETAILS C1/SF551 C2/SF551 C3/SF551 C4/SF551 FOR TYPICAL NON-BEARING MASONRY WALL BRACING BELOW UNDERSIDE OF ROOF STRUCTURE.



A3 SF101 LEVEL 1 FRAMING PLAN PLAN

SCALE: 1/8" = 1'-0"

PROJECT NORTH

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:

LEVEL 1 FRAMING PLAN

SHEET NUMBER:

SF101

SHEET OF

EXISTING BUILDING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DETAILING, FABRICATING, ERECTING OR INSTALLING ANY STRUCTURAL ELEMENT. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM IN A TIMELY MANNER SUCH THAT WORK WILL NOT BE DELAYED.

2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING OF EXISTING STRUCTURE DURING CONSTRUCTION.

COMPOSITE STEEL FRAMING PLAN NOTES

1. SEE STEEL DECK SCHEDULE ON SHEET SF603 FOR DECK PROFILE, DECK ATTACHMENT, CONCRETE FILL AND SLAB REINFORCEMENT REQUIREMENTS.

2. PROVIDE CONTROL JOINTS IN CONCRETE SLABS OVER STEEL DECK PER DETAIL D4/SF501 AND GSN SECTION 3.4.H. SUBMIT CONTROL JOINT AND SLAB REINFORCEMENT PLANS FOR REVIEW.

3. PROVIDE REINFORCEMENT/FRAMING AT OPENINGS THROUGH STEEL DECK PER TYPICAL OPENING REINFORCING DETAIL D1/SF501.

4. SEE C1/SF501 FOR TYPICAL STUD PLACEMENT DIAGRAMS FOR HEADED STUD ANCHORS ON COMPOSITE BEAMS. ADJUST STUD HEIGHT AT SLAB RECESSES PER DETAIL B5/SF501.

5. PROVIDE STEEL DECK FILLER PER DETAIL C2/SF501 WHERE REQUIRED FOR HEADED STUD PLACEMENT.

6. DO NOT PLACE CONDUIT IN CONCRETE OVER STEEL DECK.

7. PROVIDE HOUSEKEEPING PADS AND CURBS PER DETAIL C4/SF501. VERIFY DIMENSIONS AND LOCATIONS OF CURBS AND PADS WITH MECHANICAL AND EQUIPMENT SUPPLIER.

8. STRUCTURE OVER MECHANICAL ROOMS HAS BEEN DESIGNED FOR UP TO __ PSF FOR PIPES AND OTHER HANGING LOADS. IF THIS ALLOWANCE IS EXCEEDED, CONTACT ENGINEER PRIOR TO INSTALLATION.

MASONRY WALL NOTES

1. TERMINATE HORIZONTAL REINFORCEMENT AT CONTROL JOINTS IN MASONRY WALLS PER DETAIL A1/SB611.

2. PROVIDE ADDITIONAL HORIZONTAL AND VERTICAL REINFORCING AT WALL CORNERS, EDGES OF OPENINGS, WALL ENDS, AND WALL INTERSECTIONS PER D1/SB611.

3. SEE A2/SB611 FOR TYPICAL REINFORCING AROUND MISCELLANEOUS OR RECESSED MASONRY WALL OPENINGS.

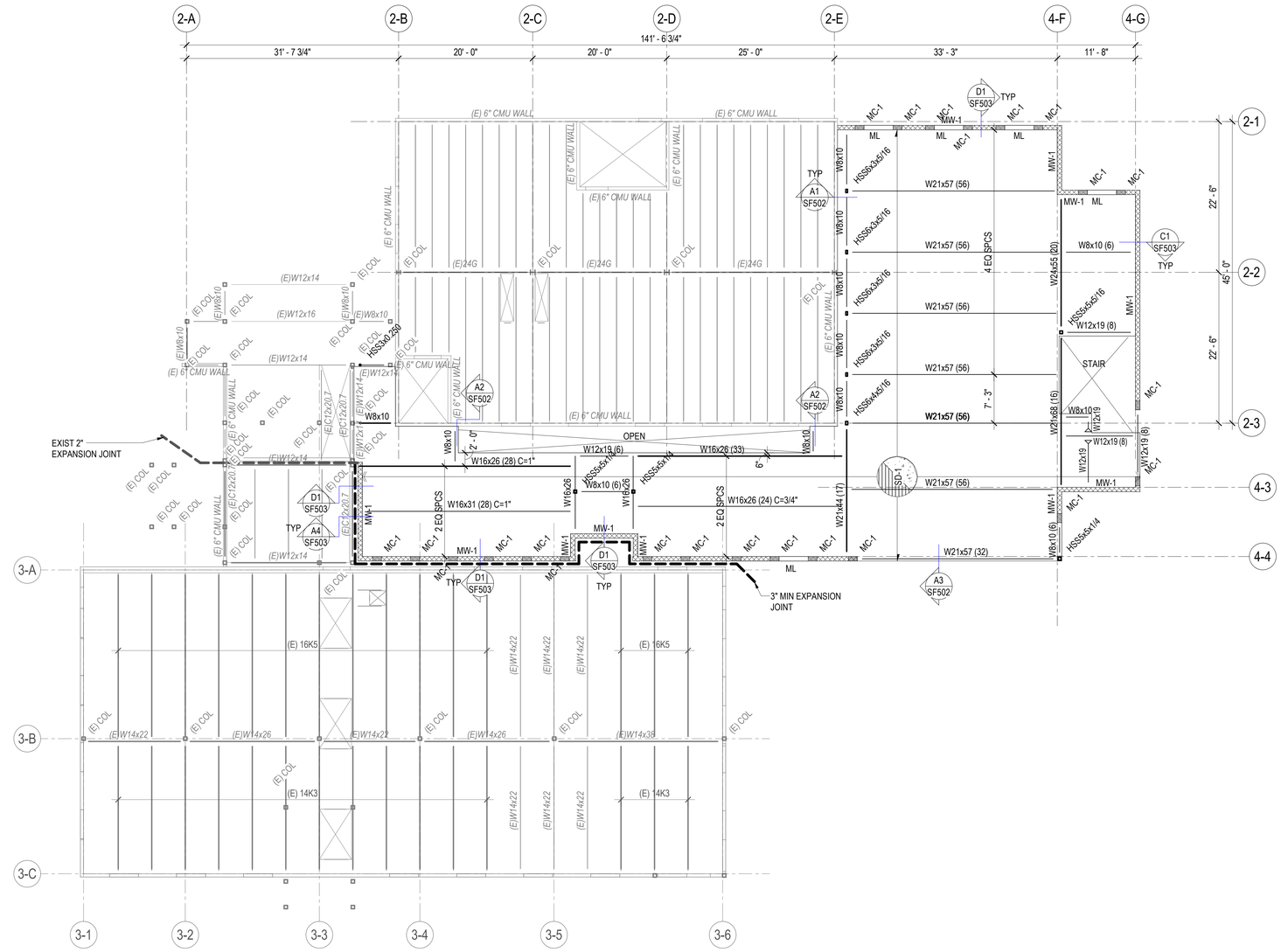
4. SEE B1/SB611 FOR REQUIRED ADDITIONAL DUCTILITY REINFORCING IN LOAD BEARING MASONRY WALLS.

5. SEE D5/SF552 FOR NON-BEARING MASONRY WALL BEARING ON CONCRETE OVER STEEL DECK.

6. SEE ARCHITECTURAL FOR TOP OF NON-BEARING WALL LOCATIONS.

7. SEE -/--- FOR TYPICAL NON-BEARING MASONRY WALL BRACING DETAIL BELOW UNDERSIDE OF STEEL BEAMS & OPEN WEB STEEL JOISTS.

8. SEE DETAILS C1/SF551 C2/SF551 C3/SF551 C4/SF551 FOR TYPICAL NON-BEARING MASONRY WALL BRACING BELOW UNDERSIDE OF ROOF STRUCTURE.



A3 / SF102 LEVEL 2 FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"

PROJECT NORTH

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:

LEVEL 2 FRAMING PLAN

SHEET NUMBER:

SF102

SHEET OF

EXISTING BUILDING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DETAILING, FABRICATING, ERECTING OR INSTALLING ANY STRUCTURAL ELEMENT. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM IN A TIMELY MANNER SUCH THAT WORK WILL NOT BE DELAYED.

2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING OF EXISTING STRUCTURE DURING CONSTRUCTION.

NON-COMPOSITE FRAMING PLAN NOTES

1. SEE STEEL DECK SCHEDULE ON SHEET SF603 FOR DECK PROFILE AND DECK ATTACHMENT REQUIREMENTS.

2. PROVIDE FRAMING AT OPENINGS THROUGH STEEL DECK PER DETAIL D1/SF511. FOR ROUND OPENINGS LESS THAN 12 INCHES IN DIAMETER SEE DETAIL D2/SF511.

3. VERIFY SIZE WEIGHT, LOCATION AND CONFIGURATION OF ALL ROOF TOP EQUIPMENT WITH ARCHITECT AND MECHANICAL ENGINEER. PROVIDE STEEL FRAMES FOR SUPPORT OF ROOF TOP EQUIPMENT PER DETAIL D3/SF511. COORDINATE OPENINGS WITH MECHANICAL & ELECTRICAL.

4. SEE DETAIL D5/SF515 FOR SUPPORT OF HANGING MECHANICAL UNITS.

5. SEE ARCHITECTURAL FOR ROOF SLOPES AND DRAINS. PROVIDE STEEL FRAMES OR REINFORCE OPENINGS PER DETAIL D4/SF511.

MASONRY WALL NOTES

1. TERMINATE HORIZONTAL REINFORCEMENT AT CONTROL JOINTS IN MASONRY WALLS PER DETAIL A1/SB611.

2. PROVIDE ADDITIONAL HORIZONTAL AND VERTICAL REINFORCING AT WALL CORNERS, EDGES OF OPENINGS, WALL ENDS, AND WALL INTERSECTIONS PER D1/SB611.

3. SEE A2/SB611 FOR TYPICAL REINFORCING AROUND MISCELLANEOUS OR RECESSED MASONRY WALL OPENINGS.

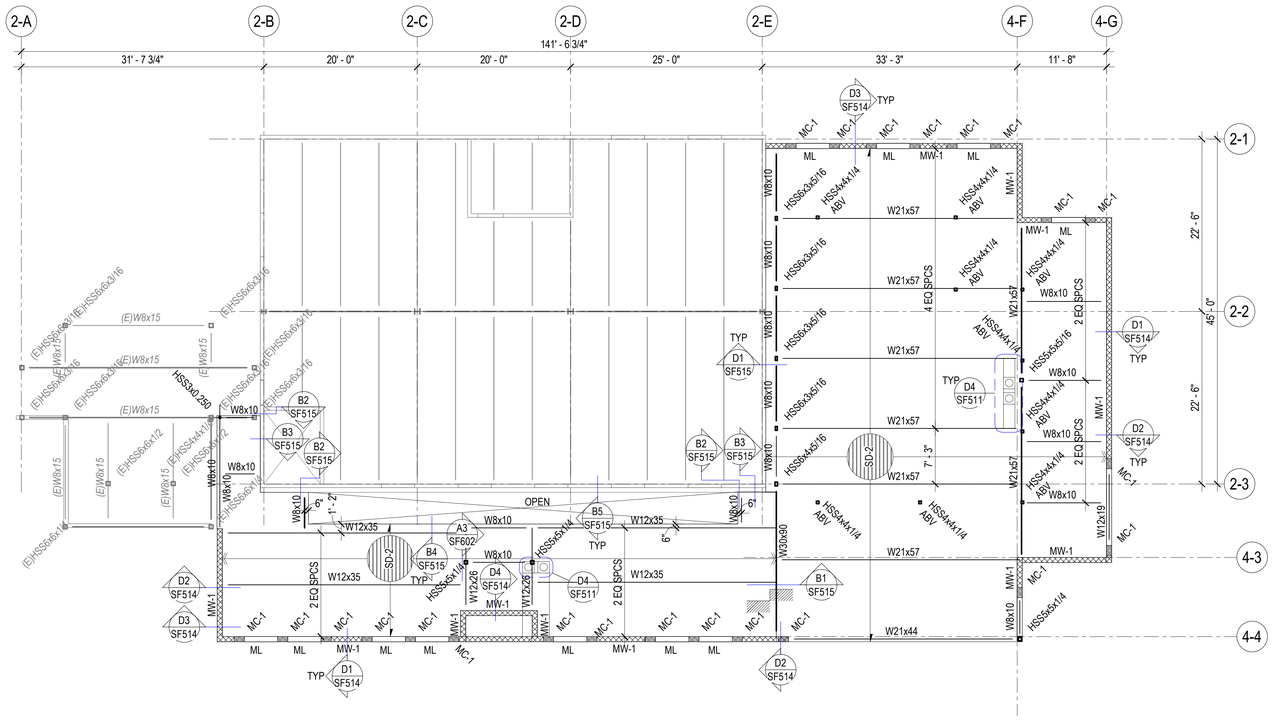
4. SEE B1/SB611 FOR REQUIRED ADDITIONAL DUCTILITY REINFORCING IN LOAD BEARING MASONRY WALLS.

5. SEE D5/SF552 FOR NON-BEARING MASONRY WALL BEARING ON CONCRETE OVER STEEL DECK.

6. SEE ARCHITECTURAL FOR TOP OF NON-BEARING WALL LOCATIONS.

7. SEE -/--- FOR TYPICAL NON-BEARING MASONRY WALL BRACING DETAIL BELOW UNDERSIDE OF STEEL BEAMS & OPEN WEB STEEL JOISTS.

8. SEE DETAILS C1/SF551 C2/SF551 C3/SF551 C4/SF551 FOR TYPICAL NON-BEARING MASONRY WALL BRACING BELOW UNDERSIDE OF ROOF STRUCTURE.



A3 / SF103 ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"

PROJECT NORTH

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

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1	50% CD DRAWINGS	11.12.21

ISSUE DATE:

12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

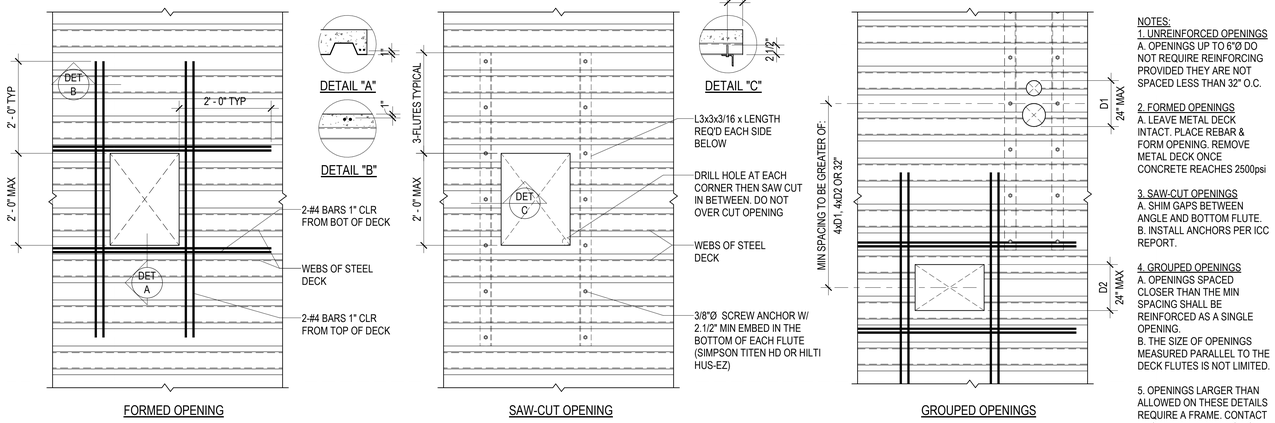
SHEET TITLE:

ROOF FRAMING PLAN

SHEET NUMBER:

SF103

SHEET OF



NOTES:

1. UNREINFORCED OPENINGS
A. OPENINGS UP TO 6"Ø DO NOT REQUIRE REINFORCING PROVIDED THEY ARE NOT SPACED LESS THAN 32" O.C.

2. FORMED OPENINGS
A. LEAVE METAL DECK INTACT. PLACE REBAR & FORM OPENING. REMOVE METAL DECK ONCE CONCRETE REACHES 2500psi

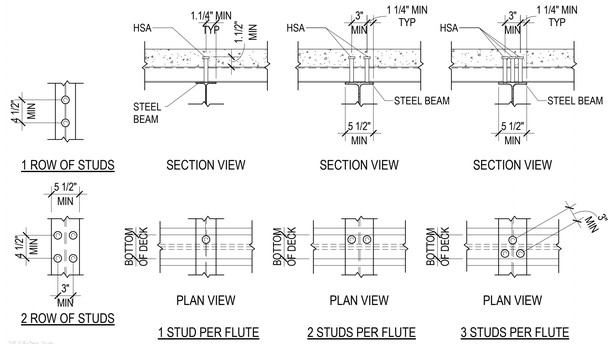
3. SAW-CUT OPENINGS
A. SHIM GAPS BETWEEN ANGLE AND BOTTOM FLUTE.
B. INSTALL ANCHORS PER ICC REPORT.

4. GROUPED OPENINGS
A. OPENINGS SPACED CLOSER THAN THE MIN SPACING SHALL BE REINFORCED AS A SINGLE OPENING.
B. THE SIZE OF OPENINGS MEASURED PARALLEL TO THE DECK FLUTES IS NOT LIMITED.

5. OPENINGS LARGER THAN ALLOWED ON THESE DETAILS REQUIRE A FRAME. CONTACT ENGINEER IF FRAME IS NOT PROVIDED ON THE PLAN.

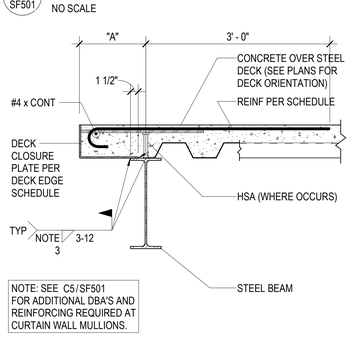
D1 / SF501 — TYPICAL MISCELLANEOUS FLOOR OPENING (UP TO 24") REINFORCING DETAIL FOR COMPOSITE STEEL DECK

NO SCALE



C1 / SF501 — TYPICAL STUD PLACEMENT DIAGRAMS

NO SCALE



NOTE: SEE C5/SF501 FOR ADDITIONAL DBA'S AND REINFORCING REQUIRED AT CURTAIN WALL MULLIONS.

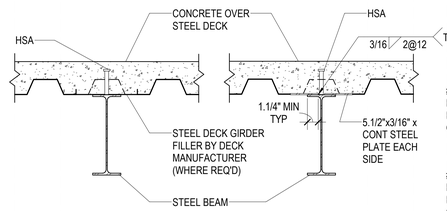
TYPICAL SLAB EDGE DETAIL

DECK EDGE SCHEDULE			
"A"	DECK CLOSURE PLATE		REINFORCING
	THICKNESS	ANCHORS	
0" TO 6"	3/16"	1/2" Ø x 18" LONG DBA @ 24" O.C.	NONE
UP TO 12"	3/16"	1/2" Ø x 24" LONG DBA @ 24" O.C.	#4 @ 12" O.C.
UP TO 15"	1/4"	1/2" Ø x 24" LONG DBA @ 24" O.C.	#4 @ 12" O.C.
UP TO 18"	5/16"	1/2" Ø x 24" LONG DBA @ 24" O.C.	#4 @ 10" O.C.
UP TO 20"	3/8"	1/2" Ø x 24" LONG DBA @ 24" O.C.	#4 @ 8" O.C.
OVER 20"	USE BRACED SLAB EDGE DETAILS		

NOTES:
1. CONTRACTOR SHALL VERIFY ALL DECK EDGE DIMENSIONS WITH ARCH. DRAWINGS PRIOR TO DETAILING AND FABRICATION OF CLOSURE PLATES.
2. COORDINATE CLOSURE PLATES WITH EMBED BLOCKOUTS OR INSERTS THAT ARE REQ'D TO SUPPORT CLADDING, ELEVATOR RAILS & SILLS ETC.
3. CLOSURE PLATE WELD THICKNESS SHALL BE THE PLATE THICKNESS MINUS 1/16" (3/16" MIN)

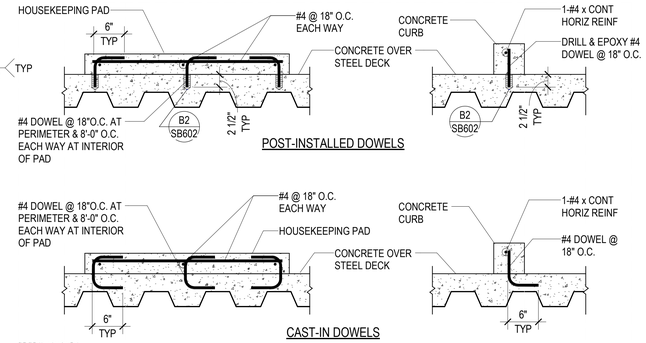
C2 / SF501 — TYPICAL COMPOSITE DECK BEARING DETAIL AT STEEL BEAM (DECK GIRDER FILLER)

NO SCALE

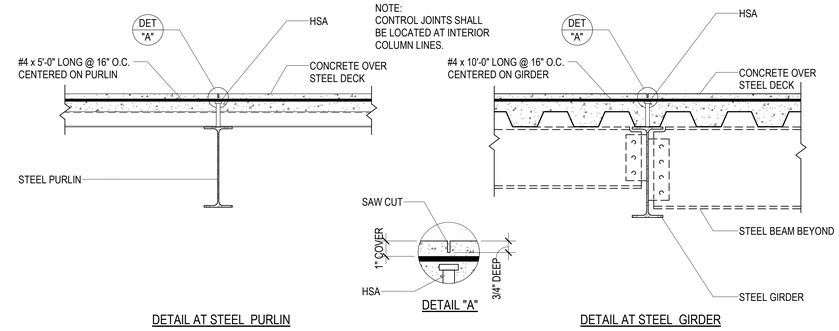


C4 / SF501 — TYPICAL HOUSEKEEPING PAD & CURB DETAILS AT CONCRETE OVER STEEL DECK

NO SCALE



NOTE:
CONTROL JOINTS SHALL BE LOCATED AT INTERIOR COLUMN LINES.

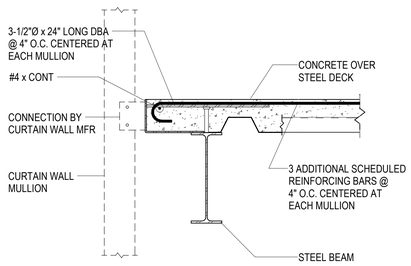


D4 / SF501 — TYPICAL COMPOSITE DECK CONTROL JOINTS

NO SCALE

C5 / SF501 — TYPICAL DECK EDGE REINFORCEMENT AT CURTAIN WALL MULLIONS

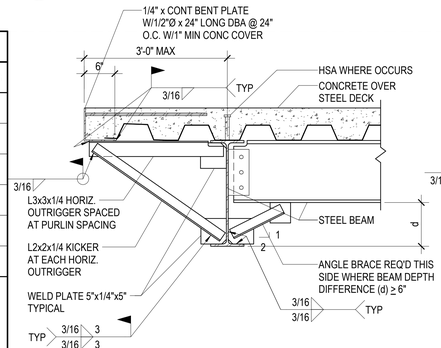
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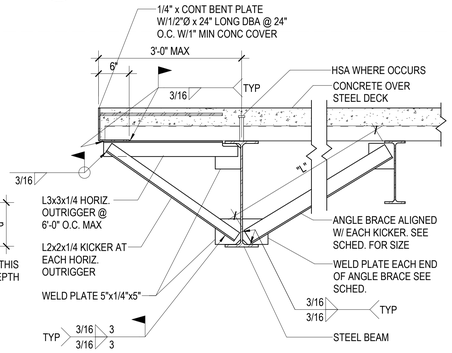


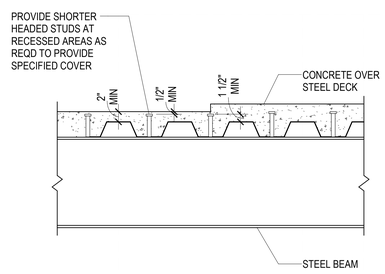
NOTE:
COORDINATE ADDITIONAL REINFORCEMENT AND MULLION LOCATIONS WITH CURTAIN WALL SUBCONTRACTOR DRAWINGS.

ANGLE BRACE SCHEDULE		
BRACE LENGTH "L"	ANGLE BRACE SIZE	WELD PLATE SIZE
UP TO 4'-0"	L2x2x1/4	4"x1/4"x4"
4'-0" TO 8'-0"	L3x3x1/4	4"x1/4"x4"
8'-0" TO 12'-0"	2-L2.1/2x2.1/2x1/4	4"x3/8"x4"
OVER 12'-0"	2-L3x3x1/4	5"x3/8"x5"

NOTE:
1. WHERE DOUBLE ANGLES ARE USED PROVIDE 3"x3/8" SPACER PLATES AT THIRD POINTS.





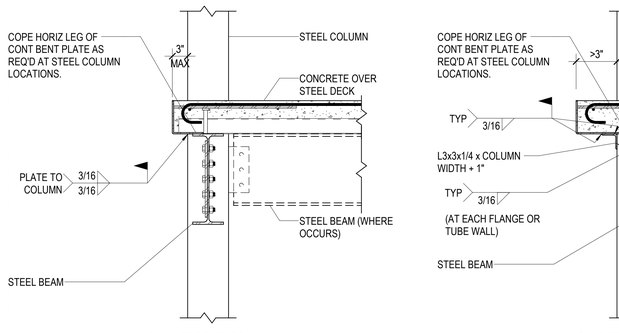


B5 / SF501 — TYPICAL COMPOSITE STEEL BEAM AT SLAB RECESS

NO SCALE

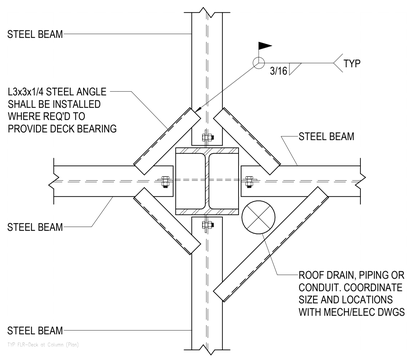
B1 / SF501 — TYPICAL CONCRETE OVER STEEL DECK SLAB EDGE DETAILS AT STEEL BEAMS

NO SCALE



A1 / SF501 — TYPICAL CONCRETE OVER STEEL DECK SLAB EDGE DETAILS AT STEEL COLUMNS

NO SCALE



A4 / SF501 — TYPICAL DECK BEARING AT STEEL COLUMN (PLAN VIEW)

NO SCALE

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1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

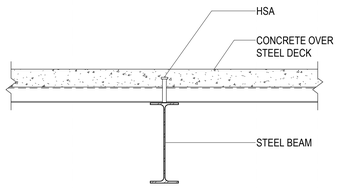
SHEET TITLE:

TYPICAL CONCRETE OVER STEEL DECK DETAILS

SHEET NUMBER:

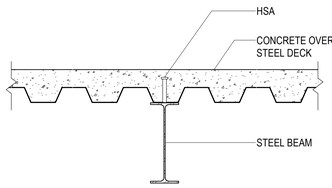
SF501

SHEET OF



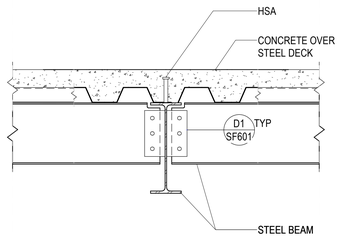
D1 SF502 TYPICAL COMPOSITE STEEL BEAM

NO SCALE



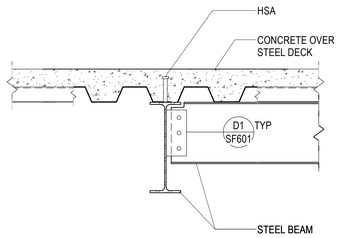
D2 SF502 TYPICAL COMPOSITE STEEL BEAM

NO SCALE



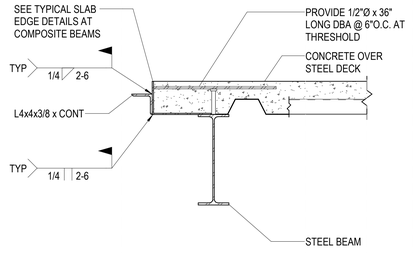
D3 SF502 TYPICAL COMPOSITE STEEL BEAM W/ STEEL BEAM TWO SIDES

NO SCALE



D4 SF502 TYPICAL COMPOSITE STEEL BEAM W/ STEEL BEAM ONE SIDE

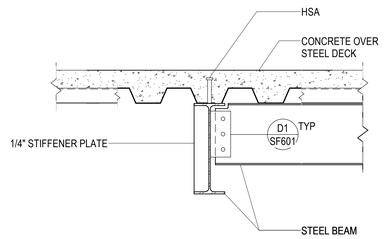
NO SCALE



NOTE: THIS DETAIL SHALL BE PROVIDED AT ALL ELEVATOR DOOR THRESHOLDS. COORDINATE WITH ELEVATOR SUPPLIER AND ARCHITECT.

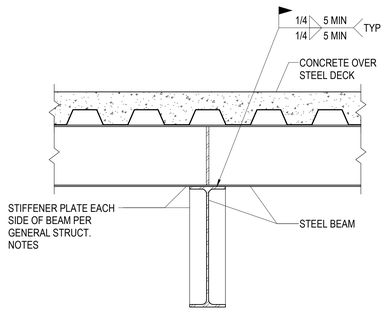
D5 SF502 TYPICAL ELEVATOR THRESHOLD DETAIL

NO SCALE



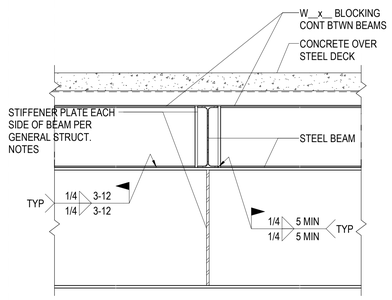
C1 SF502 TYPICAL COMPOSITE STEEL BEAM W/ STEEL BEAM ONE SIDE

NO SCALE



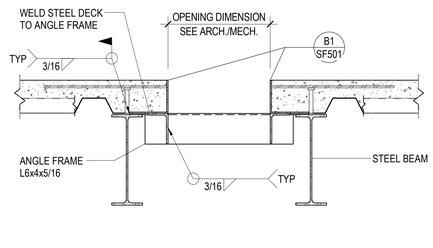
C2 SF502 TYPICAL CANTILEVERED STEEL BEAM AT STEEL GIRDER

NO SCALE



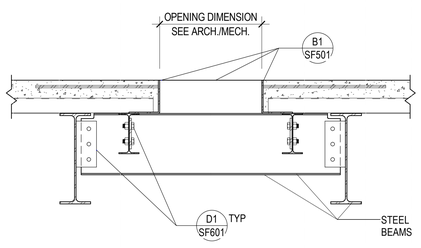
C3 SF502 TYPICAL CANTILEVERED STEEL BEAM AT STEEL GIRDER

NO SCALE



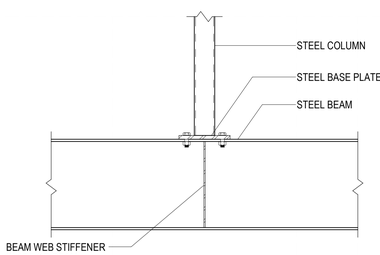
C4 SF502 TYPICAL FLOOR OPENING W/ ANGLE FRAME

NO SCALE



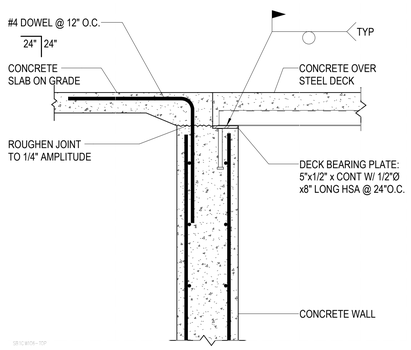
C5 SF502 TYPICAL FRAMED FLOOR OPENING DETAIL

NO SCALE



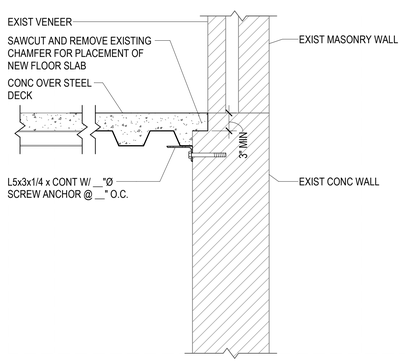
B1 SF502 STEEL BEAM W/ STEEL COLUMN ABOVE

NO SCALE



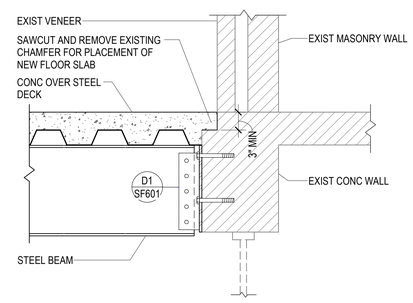
B2 SF502 TYPICAL COMPOSITE FLOOR DECK BEARING AT CONCRETE WALL

NO SCALE



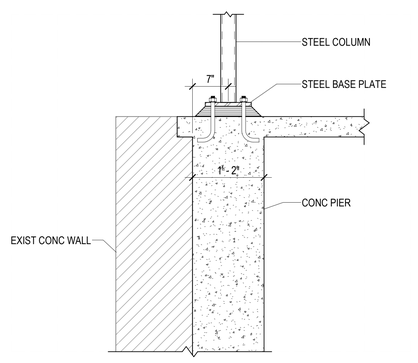
B3 SF502 NEW CONCRETE OVER STEEL DECK TO EXISTING CONC WALL

NO SCALE



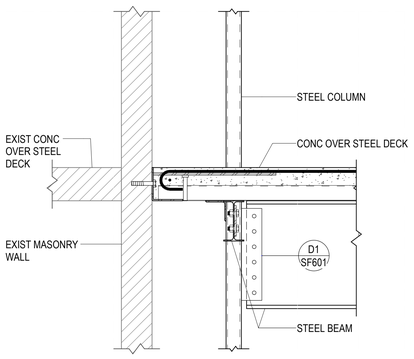
B4 SF502 NEW CONCRETE OVER STEEL DECK TO EXISTING CONC WALL

NO SCALE



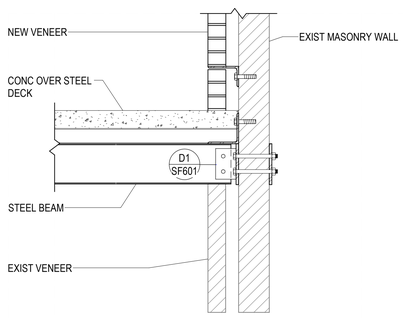
B5 SF502 NEW CONCRETE OVER STEEL DECK TO EXISTING CONC WALL

NO SCALE



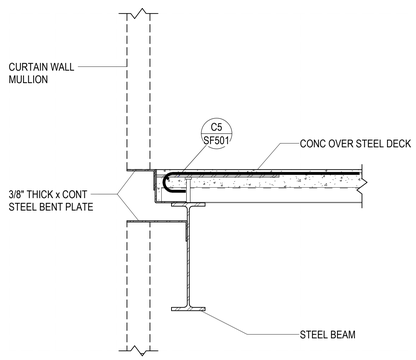
A1 SF502 NEW CONCRETE OVER STEEL DECK TO EXISTING MASONRY WALL

NO SCALE



A2 SF502 NEW CONCRETE OVER STEEL DECK TO EXISTING MASONRY WALL

NO SCALE



A3 SF502 NEW CONCRETE OVER STEEL DECK AT CURTAIN WALL

NO SCALE

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1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

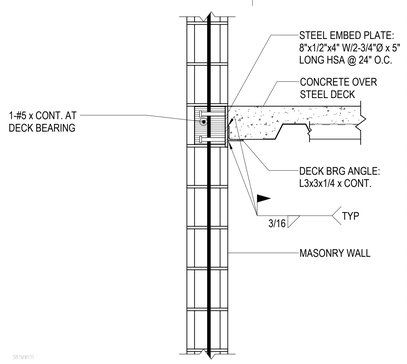
SHEET TITLE:

COMPOSITE STEEL FLOOR DETAILS

SHEET NUMBER:

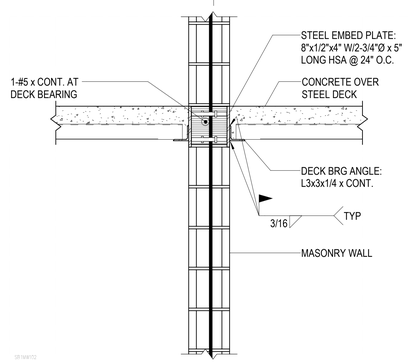
SF502

SHEET OF



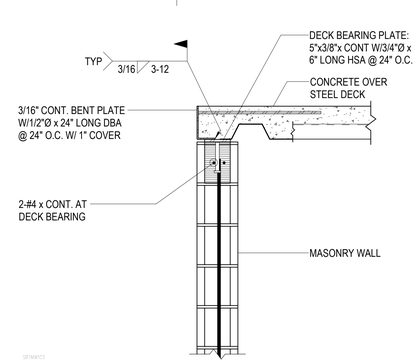
D1 / SF503 — TYPICAL DECK BEARING AT MASONRY WALL

NO SCALE



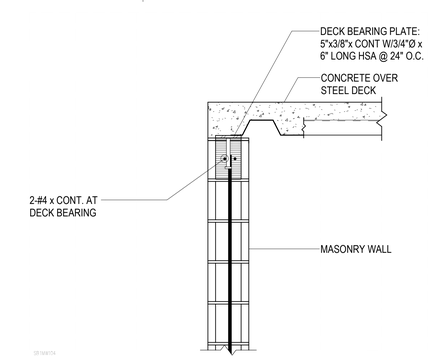
D2 / SF503 — TYPICAL DECK BEARING AT MASONRY WALL

NO SCALE



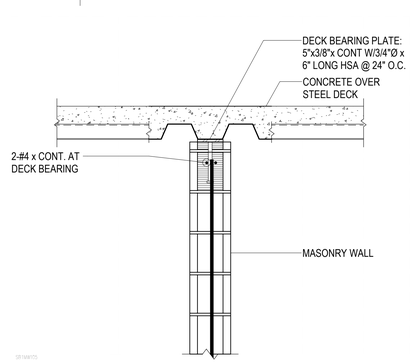
D3 / SF503 — TYPICAL DECK BEARING AT MASONRY WALL

NO SCALE



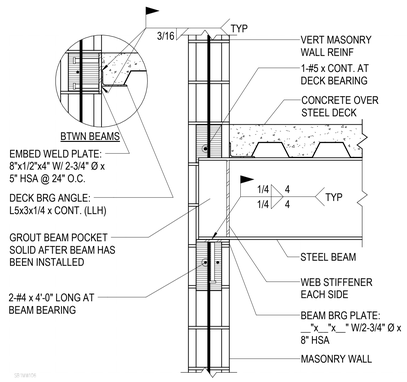
D4 / SF503 — TYPICAL DECK BEARING AT MASONRY WALL

NO SCALE



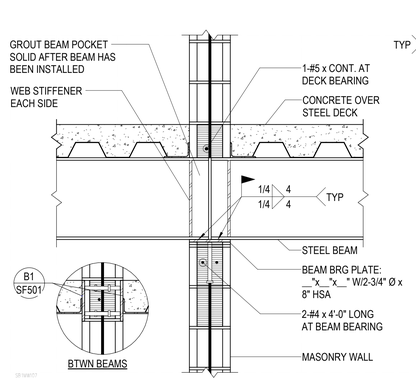
D5 / SF503 — TYPICAL DECK BEARING AT MASONRY WAL

NO SCALE



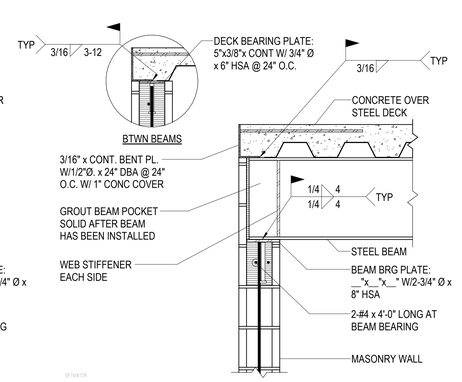
C1 / SF503 — TYPICAL BEAM/DECK BEARING AT MASONRY WALL

NO SCALE



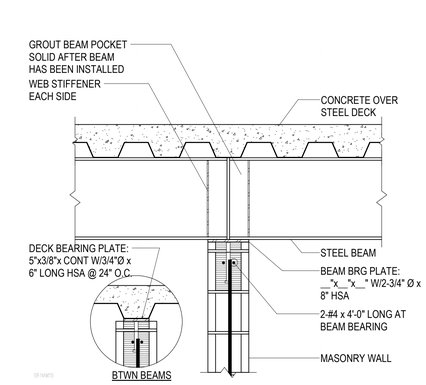
C2 / SF503 — TYPICAL BEAM/DECK BEARING AT MASONRY WALL

NO SCALE



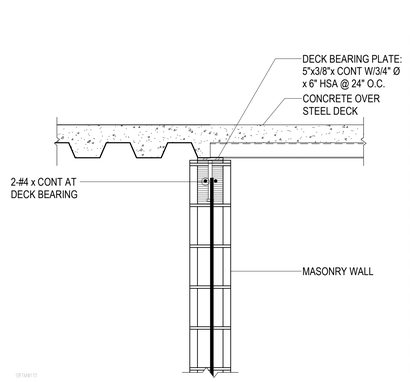
C3 / SF503 — TYPICAL BEAM/DECK BEARING AT MASONRY WALL

NO SCALE



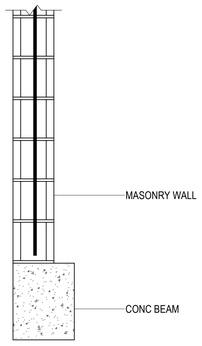
C4 / SF503 — TYPICAL STEEL BEAM BEARING AT MASONRY WALL

NO SCALE



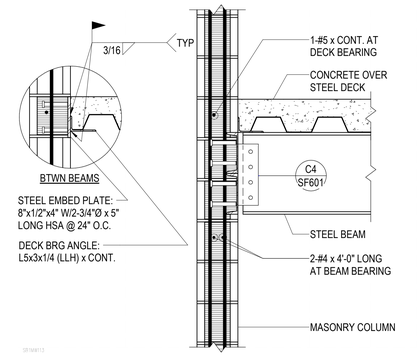
C5 / SF503 — TYPICAL DECK BEARING AT MASONRY WALL

NO SCALE



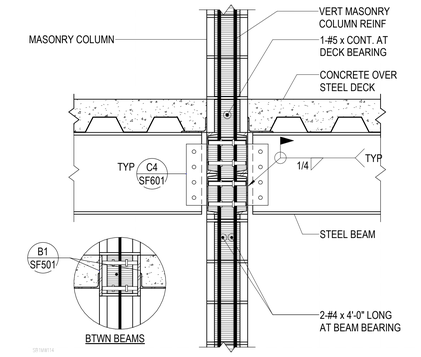
B1 / SF503 — TYPICAL BEAM/DECK BEARING AT MASONRY COLUMN

NO SCALE



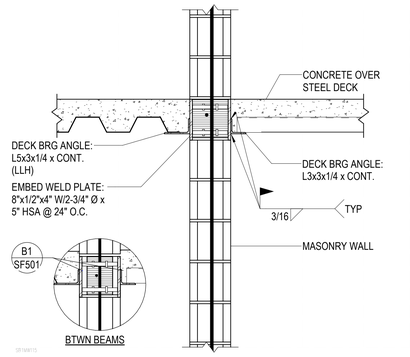
B3 / SF503 — TYPICAL BEAM/DECK BEARING AT MASONRY COLUMN

NO SCALE



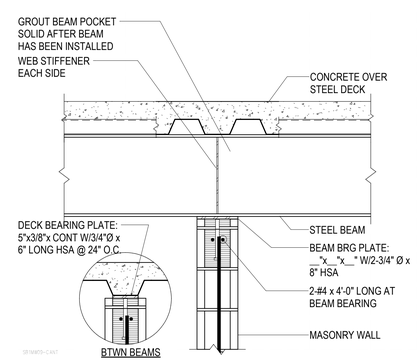
B4 / SF503 — TYPICAL BEAM/DECK BEARING AT MASONRY COLUMN

NO SCALE



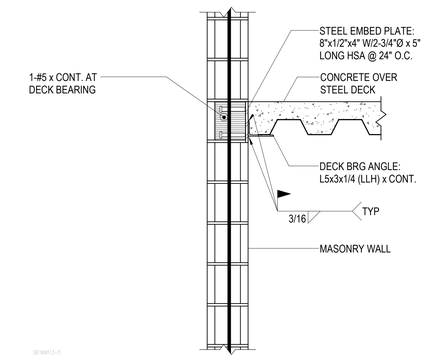
B5 / SF503 — TYPICAL DECK BEARING AT MASONRY WALL

NO SCALE



A3 / SF503 — TYPICAL STEEL BEAM BEARING AT MASONRY WALL

NO SCALE



A4 / SF503 — TYPICAL BEAM/DECK BEARING AT MASONRY COLUMN

NO SCALE

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PROJECT TITLE:

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REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

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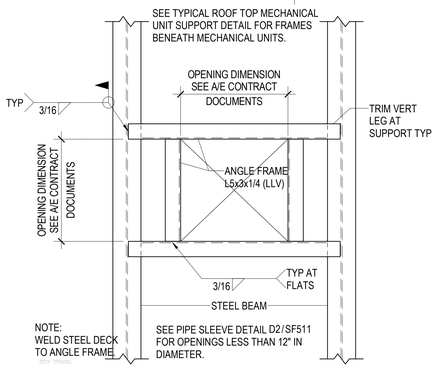
SHEET TITLE:

STEEL BEAM TO MASONRY WALL

SHEET NUMBER:

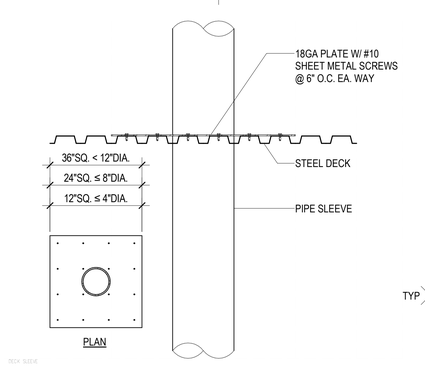
SF503

SHEET OF



D1 SF511 TYPICAL ROOF OPENING DETAIL (PLAN VIEW)

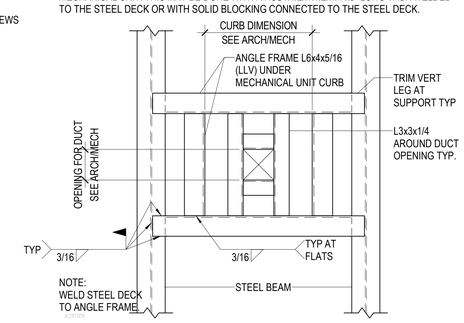
NO SCALE



D2 SF511 TYPICAL PIPE SLEEVE HOLE THRU ROOF DECK

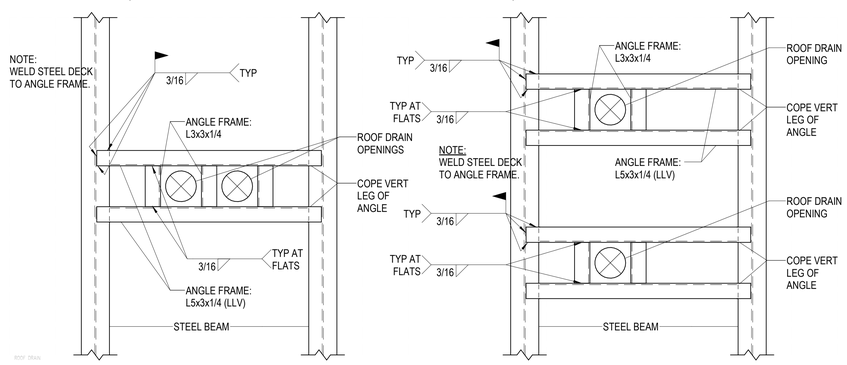
NO SCALE

WHERE THE MECHANICAL UNIT WEIGHS LESS THAN 600#, THE L6x4x5/16 SUPPORT ANGLES MAY CHANGED TO L5x3x1/4 (LLV).
SOLID BLOCK THE FLUTES OF THE STEEL DECK BENEATH THE CURB OF THE MECHANICAL UNIT. THIS MAY BE DONE WITH A HSS1.1/2x1.1/2x1/4 x6" LONG TACK WELDED TO THE STEEL DECK OR WITH SOLID BLOCKING CONNECTED TO THE STEEL DECK.



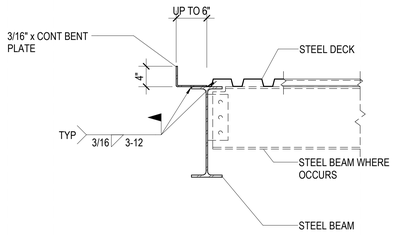
D3 SF511 TYP ROOF TOP MECHANICAL UNIT SUPPORT DETAIL (PLAN VIEW)

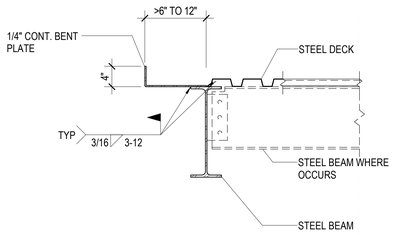
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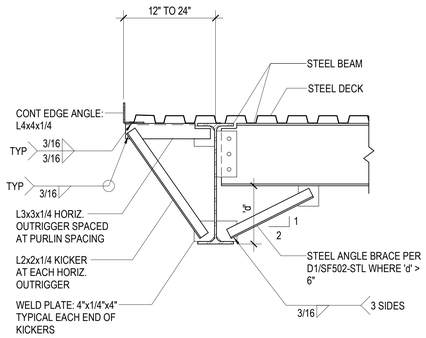


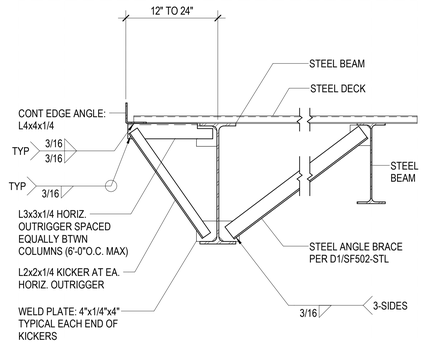
D4 SF511 TYPICAL ROOF DRAIN OPENING (PLAN VIEW)

NO SCALE









C1 SF511 TYPICAL ROOF EDGE DETAILS AT STEEL BEAMS

NO SCALE

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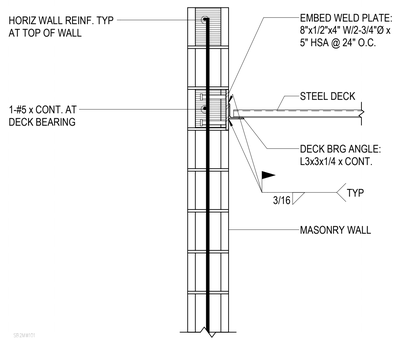
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TYPICAL ROOF FRAMING DETAILS

SHEET NUMBER:

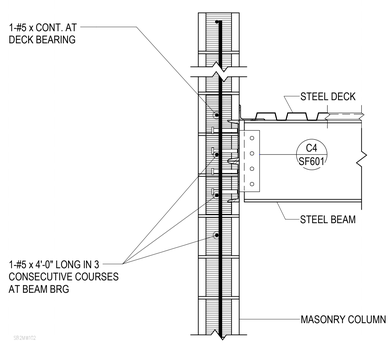
SF511

SHEET OF



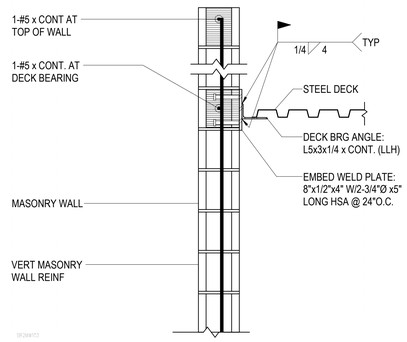
D1 / SF514 TYPICAL DECK BEARING AT MASONRY WALL

NO SCALE



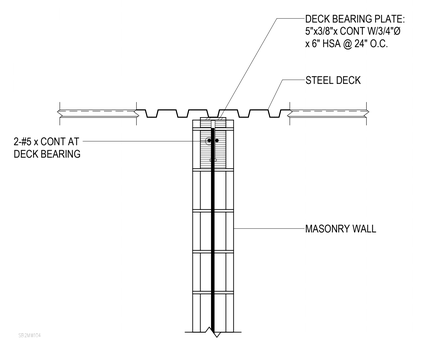
D2 / SF514 TYPICAL STEEL BEAM BEARING AT MASONRY WALL

NO SCALE



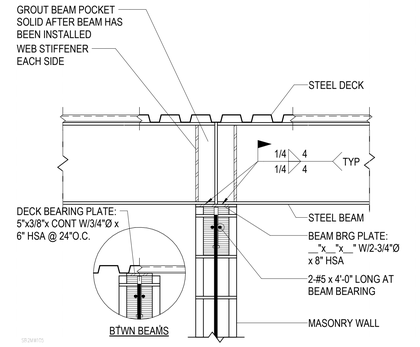
D3 / SF514 TYPICAL ROOF DECK CONNECTION TO MASONRY WALL

NO SCALE



D4 / SF514 TYPICAL ROOF DECK BEARING AT MASONRY WALL

NO SCALE



D5 / SF514 TYPICAL STEEL BEAM/DECK BEARING AT MASONRY WALL

NO SCALE

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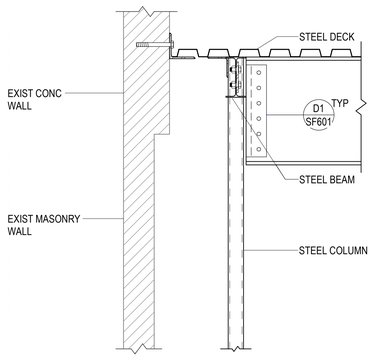
SHEET TITLE:

STEEL BEAM TO MASONRY WALLS

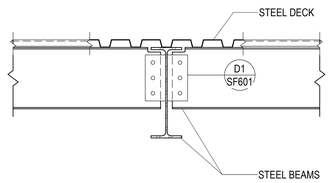
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SF514

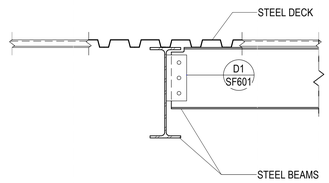
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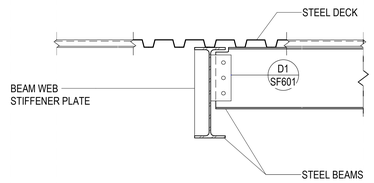
D1 SF515 NEW ROOF FRAMING INTO EXIST CONC WALL
NO SCALE



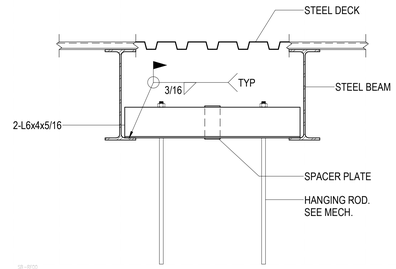
D2 SF515 TYP STEEL ROOF BEAM CONNECTION - TWO SIDES
NO SCALE



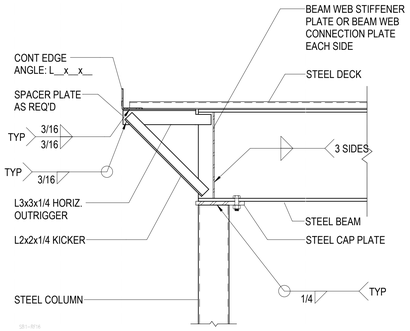
D3 SF515 TYPICAL STEEL ROOF BEAM CONNECTION - ONE SIDE
NO SCALE



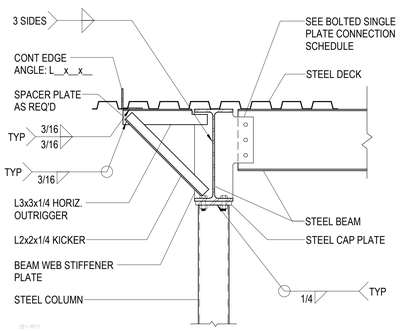
D4 SF515 TYPICAL STEEL ROOF BEAM CONNECTION - ONE SIDE
NO SCALE



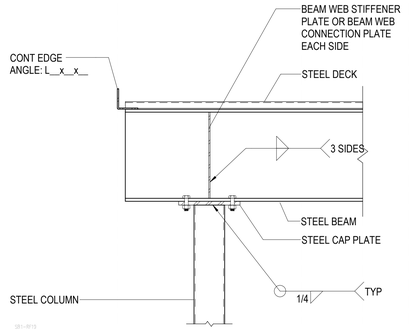
D5 SF515 TYPICAL HANGING MECHANICAL UNIT SUPPORT DETAIL
NO SCALE



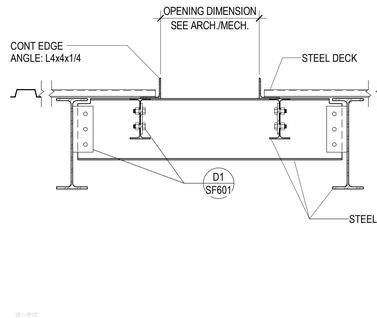
C1 SF515 TYPICAL STEEL COLUMN/BEAM AT ROOF EDGE DETAIL FOR > 12" DIMENSION
NO SCALE



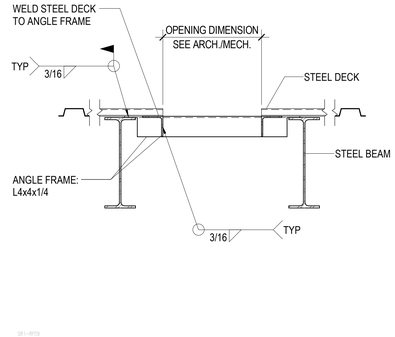
C2 SF515 TYPICAL STEEL COLUMN/BEAM AT ROOF EDGE DETAIL FOR > 12" DIMENSION
NO SCALE



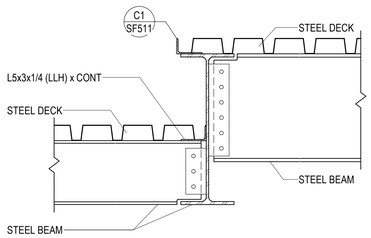
C3 SF515 TYPICAL STEEL COLUMN/BEAM AT ROOF EDGE DETAIL FOR > 12" DIMENSION
NO SCALE



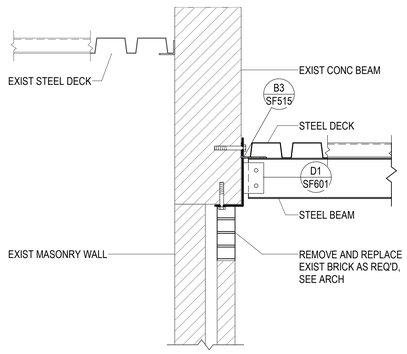
C4 SF515 TYPICAL FRAMED ROOF OPENING DETAIL
NO SCALE



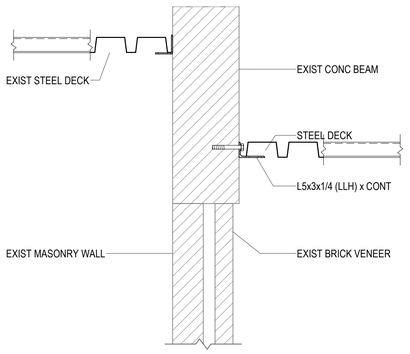
C5 SF515 TYPICAL ROOF OPENING W/ ANGLE FRAME
NO SCALE



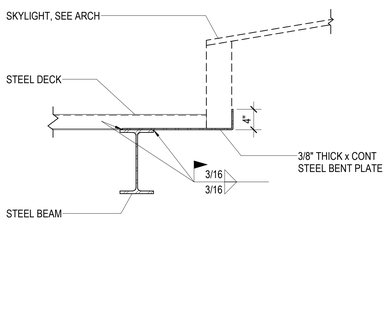
B1 SF515 STEEL BEAM CONNECTION AT ROOF STEP
NO SCALE



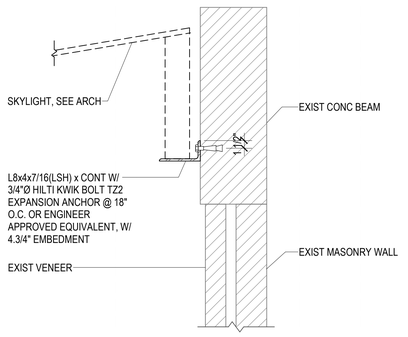
B2 SF515 STEEL BEAM CONNECTION AT EXIST CONC BEAM
NO SCALE



B3 SF515 STEEL DECK AT EXIST CONC BEAM
NO SCALE



B4 SF515 STEEL BEAM AT SKYLIGHT
NO SCALE



B5 SF515 SKYLIGHT TO EXISTING CONCRETE BEAM
NO SCALE

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PROJECT TITLE:
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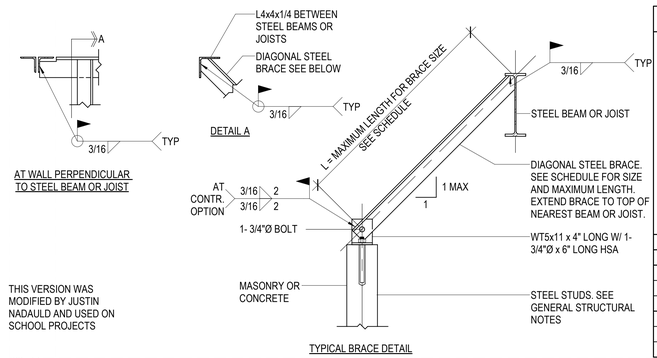
REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021
UNIVERSITY PROJECT NUMBER:

SHEET TITLE:
STEEL ROOF FRAMING DETAILS

SHEET NUMBER:
SF515
SHEET OF

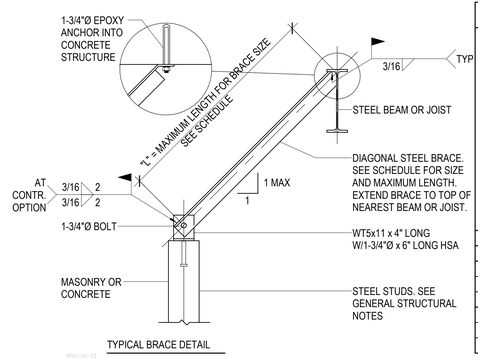


THIS VERSION WAS MODIFIED BY JUSTIN NADAULD AND USED ON SCHOOL PROJECTS

NON-BEARING MASONRY OR CONCRETE WALL BRACING NOTES
1. ALL NON-BEARING WALLS AND PARTITIONS SHALL BE BRACED AT THE TOP TO RESIST LATERAL FORCES.
2. WALL AND PARTITIONS MAY BE BRACED BY INTERSECTING WALLS PROVIDED THAT THE WALLS OR PARTITIONS THAT SUPPORT THE WALL ARE EQUAL TO OR GREATER IN HEIGHT THAN THE WALL WHICH THEY BRACE. THE LENGTH OF THE MASONRY SUPPORT WALL SHALL BE 4' - 0" MINIMUM. THE MAXIMUM LENGTH OF WALL WHICH MAY BE BRACED WITH OTHER WALLS IS SIXTEEN FEET (16' - 0") FOR MASONRY WALLS.
3. WALLS WHICH DO NOT MEET THE REQUIREMENTS OF NOTE #2 SHALL BE BRACED ACCORDING TO THE FOLLOWING RULE: A. WALLS AND PARTITIONS THAT ARE TERMINATED JUST ABOVE THE CEILING SHALL BE BRACED ACCORDING TO THIS DETAIL. SPACING OF BRACES SHALL NOT EXCEED 8' - 0" FROM ANOTHER BRACE OR INTERSECTING WALL. SEE BRACE SCHEDULE FOR CORRECT SIZE AND MAXIMUM LENGTH.

NON-BEARING MASONRY OR CONCRETE WALL BRACE SCHEDULE	
BRACE SIZE	MAX LENGTH "L"
L2.1/2x2.1/2x3/16	8' - 0"
L3x3x3/16	9' - 6"
L3.1/2x3.1/2x1/4	11' - 0"
L4x4x1/4	13' - 0"
L5x5x5/16	16' - 3"
L6x6x5/16	19' - 9"

D1 / SF551 NON-BEARING MASONRY/CONCRETE WALL BRACING DETAIL & SCHEDULE
NO SCALE



NON-BEARING MASONRY OR CONCRETE WALL BRACING NOTES
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L4x4x1/4	13' - 0"
L5x5x5/16	16' - 3"
L6x6x5/16	19' - 9"

D3 / SF551 NON-BEARING MASONRY/CONCRETE WALL BRACING DETAIL & SCHEDULE
NO SCALE

NOTE: WALLS MAY BE BRACED BY INTERSECTING WALLS PROVIDED THAT THE WALLS PROVIDING THE BRACING ARE EQUAL TO OR GREATER IN HEIGHT THAN THE WALL THEY BRACE. THE LENGTH OF THE MASONRY SUPPORT WALL SHALL BE 4'-0" MINIMUM. THE MAXIMUM LENGTH OF THE WALL THAT MAY BE BRACED WITH OTHER WALLS IS 16'-0".



C1 / SF551 NON LOAD BEARING MASONRY WALL BRACE TO UNDERSIDE OF STEEL JOIST
NO SCALE

NOTE: WALLS MAY BE BRACED BY INTERSECTING WALLS PROVIDED THAT THE WALLS PROVIDING THE BRACING ARE EQUAL TO OR GREATER IN HEIGHT THAN THE WALL THEY BRACE. THE LENGTH OF THE MASONRY SUPPORT WALL SHALL BE 4'-0" MINIMUM. THE MAXIMUM LENGTH OF THE WALL THAT MAY BE BRACED WITH OTHER WALLS IS 16'-0".



C2 / SF551 NON LOAD BEARING MASONRY WALL BRACE TO UNDERSIDE OF STEEL JOIST
NO SCALE

NOTE: WALLS MAY BE BRACED BY INTERSECTING WALLS PROVIDED THAT THE WALLS PROVIDING THE BRACING ARE EQUAL TO OR GREATER IN HEIGHT THAN THE WALL THEY BRACE. THE LENGTH OF THE MASONRY SUPPORT WALL SHALL BE 4'-0" MINIMUM. THE MAXIMUM LENGTH OF THE WALL THAT MAY BE BRACED WITH OTHER WALLS IS 16'-0".



C3 / SF551 NON LOAD BEARING MASONRY WALL BRACE TO UNDERSIDE OF STEEL JOIST
NO SCALE

NOTE: WALLS MAY BE BRACED BY INTERSECTING WALLS PROVIDED THAT THE WALLS PROVIDING THE BRACING ARE EQUAL TO OR GREATER IN HEIGHT THAN THE WALL THEY BRACE. THE LENGTH OF THE MASONRY SUPPORT WALL SHALL BE 4'-0" MINIMUM. THE MAXIMUM LENGTH OF THE WALL THAT MAY BE BRACED WITH OTHER WALLS IS 16'-0".

C4 / SF551 NON LOAD BEARING MASONRY WALL BRACE TO UNDERSIDE OF STEEL JOIST
NO SCALE

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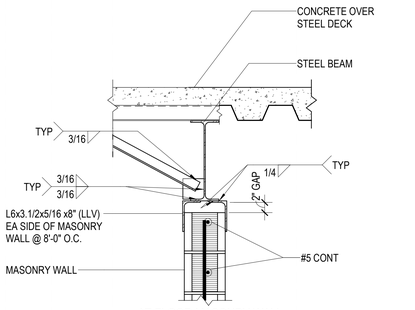
ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

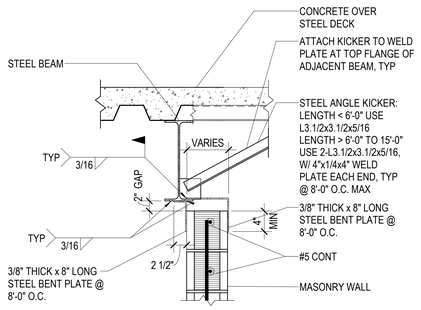
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NON-BEARING MASONRY WALL BRACING

SHEET NUMBER:
SF551

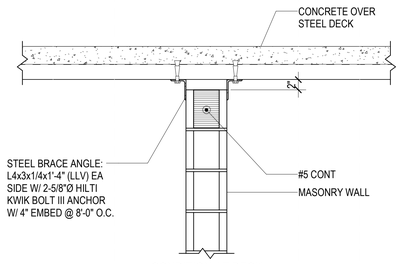
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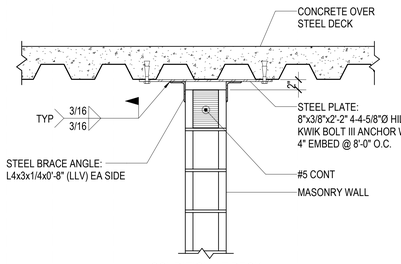
AT FLOOR MASONRY WALL CENTERED ON STEEL BEAM



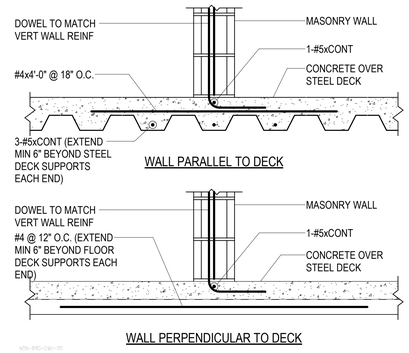
AT FLOOR MASONRY WALL OFFSET FROM STEEL BEAM



CONDITION AT DECK PERPENDICULAR TO WALL



CONDITION AT DECK PARALLEL TO WALL



D1 SF552 TYPICAL NON-BEARING MASONRY WALL CONNECTION TO FLOOR

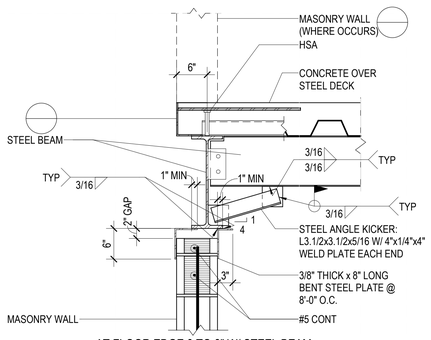
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D3 SF552 TYPICAL NON-BEARING MASONRY WALL CONNECTION TO FLOOR

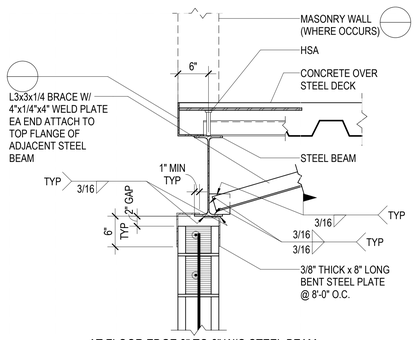
NO SCALE

D5 SF552 TYPICAL MASONRY WALL BEARING AT FLOOR

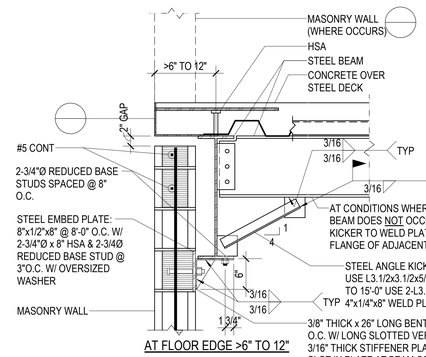
NO SCALE



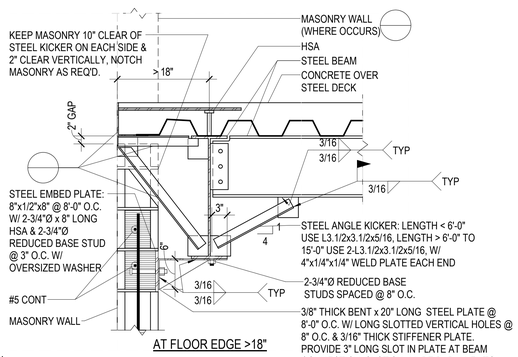
AT FLOOR EDGE 0 TO 6" W/ STEEL BEAM



AT FLOOR EDGE 0" TO 6" W/O STEEL BEAM



AT FLOOR EDGE >6" TO 12"



AT FLOOR EDGE >18"

C1 SF552 TYPICAL NON-BEARING MASONRY WALL CONNECTION TO FLOOR

NO SCALE

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REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

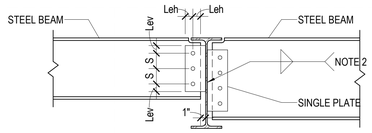
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NON-STRUCTURAL DETAILS

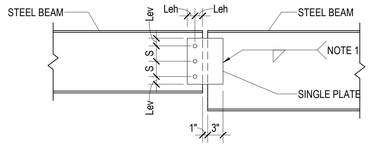
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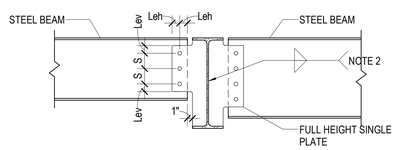
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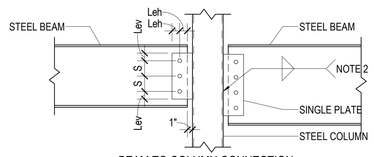
BEAM TO BEAM CONNECTION



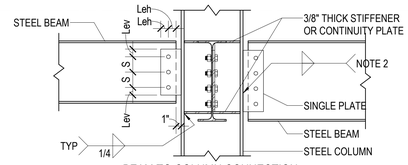
BEAM TO BEAM CONNECTION



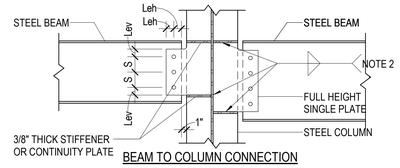
BEAM TO BEAM CONNECTION AT FULL HEIGHT STIFFENER



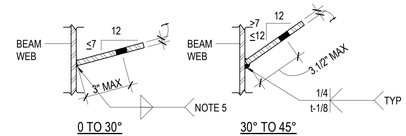
BEAM TO COLUMN CONNECTION

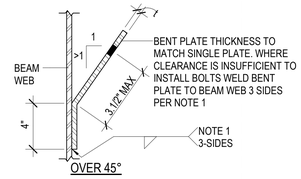


BEAM TO COLUMN CONNECTION



BEAM TO COLUMN CONNECTION





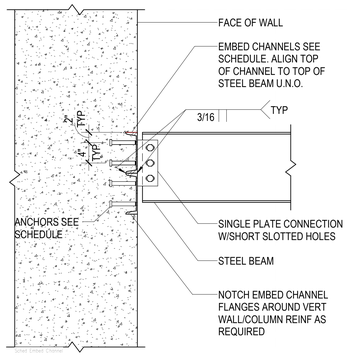
SKEWED CONNECTION (PLAN VIEW)

SINGLE PLATE CONNECTION SCHEDULE			
BEAM SIZE	WEB PLATE THICKNESS (t)	A325N BOLTS	
		NUMBER	SIZE
W8 AND W10	3/8"	2	7/8"Ø
W12 AND W14	3/8"	3	7/8"Ø
W16	3/8"	4	7/8"Ø
W18 AND W21	3/8"	5	7/8"Ø
W24	3/8"	6	7/8"Ø
W27	3/8"	7	7/8"Ø
W30	3/8"	8	7/8"Ø
W33	3/8"	9	7/8"Ø
W36	3/8"	10	7/8"Ø
W40	3/8"	11	7/8"Ø
W44	3/8"	12	7/8"Ø

NOTES:
1. FILLET WELDS ONE SIDE SHALL EQUAL THE PLATE THICKNESS MINUS 1/16" (1/4" MIN.)
2. FILLET WELDS TWO SIDES SHALL BE 5/8 THE PLATE THICKNESS (1/4" MIN.) EACH SIDE
3. BOLT EDGE DISTANCE SHALL BE AS FOLLOWS: Leh = 2 x BOLT DIAMETER; Lev = 1.1/2".
4. BOLT SPACING (S) SHALL BE 3".
5. AT SKEWED JOINTS PROVIDE AN EQUIVALENT LEG SIZE TO NOTE 2 PER AWS D1.1.
6. PROVIDE SHORT SLOTTED HOLES WHEN 6 OR MORE BOLTS ARE REQUIRED AND BOLT DIAMETER IS ≤ 3/4".

D1 / SF601 TYPICAL SINGLE PLATE CONNECTION DETAILS AND SCHEDULE

NO SCALE



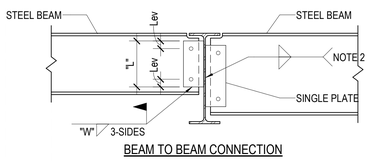
CONNECTION SCHEDULE		
BEAM DEPTH	EMBED CHANNEL	ANCHORS
TO 10"	1-C8x18.75x12"	4-3/4"Ø x 5" LONG HSA
TO 16"	2-C8x18.75x12"	8-3/4"Ø x 5" LONG HSA
TO 24"	3-C8x18.75x12"	12-3/4"Ø x 5" LONG HSA

NOTES:
1. WELD MULTIPLE EMBEDS TOGETHER WITH BUTT WELD EACH SIDE, FULL LENGTH.

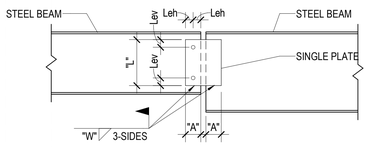
2. PROVIDE 2" EDGE DISTANCE FROM END OF CHANNEL EMBED TO CENTER OF HSA, TYPICAL.

C4 / SF601 TYPICAL EMBED CHANNEL CONNECTION SCHEDULE

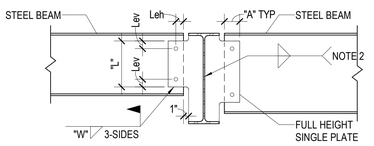
NO SCALE



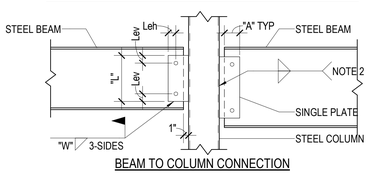
BEAM TO BEAM CONNECTION



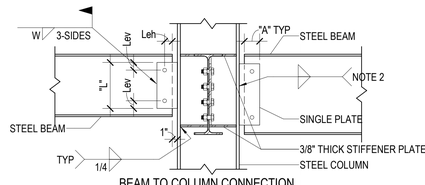
BEAM TO BEAM CONNECTION



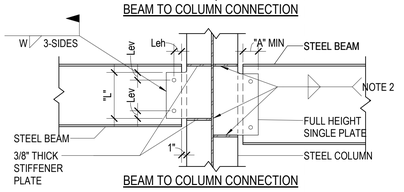
BEAM TO BEAM CONNECTION AT FULL HEIGHT STIFFENER



BEAM TO COLUMN CONNECTION



BEAM TO COLUMN CONNECTION



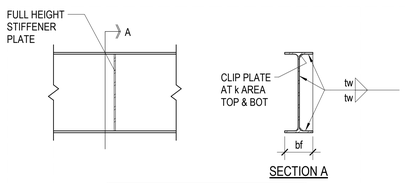
BEAM TO COLUMN CONNECTION

SINGLE PLATE COLLECTOR/CHORD CONNECTION SCHEDULE					
BEAM SIZE	WEB PLATE			WELD "W"	ERECTION BOLTS
	"L"	"A"	THICKNESS		
BEAM SIZE	__"	__"	__"	_/_"	#

NOTES:
1. ERECTION BOLT SHALL BE 7/8"Ø A325N BOLTS.
2. FILLET WELDS TWO SIDES SHALL BE 5/8 THE PLATE THICKNESS (1/4" MIN.) EACH SIDE
3. BOLT EDGE DISTANCE SHALL AS FOLLOWS: Leh = 2 x BOLT DIAMETER; Lev = 1.1/2".
4. BOLT SPACING (S) SHALL BE 3" MINIMUM.

B1 / SF601 TYPICAL WELDED SINGLE PLATE COLLECTOR/CHORD CONNECTION DETAILS AND SCHEDULE

NO SCALE



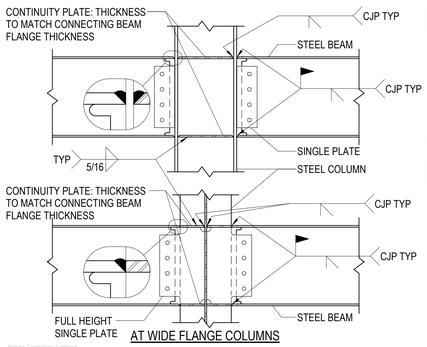
SECTION A

WELD SCHEDULE		
bf	THICKNESS*	tw
UP TO 8.25"	1/4"	3/16"
> 8.25" ≤ 12.25"	3/8"	1/4"
> 12.25" ≤ 16.5"	1/2"	5/16"
> 16.5" ≤ 22"	5/8"	5/16"

* STIFFENER THICKNESS IS BASED UPON WIDTH OF BEAM FLANGE (bf) UNLESS NOTED OTHERWISE IN DETAILS

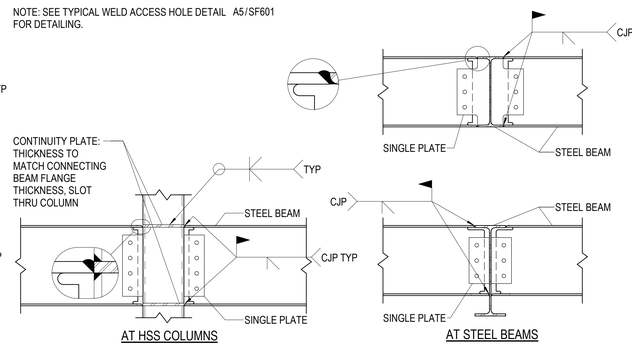
A1 / SF601 TYPICAL STIFFENER PLATE DETAIL

NO SCALE



AT WIDE FLANGE COLUMNS

NOTE: SEE TYPICAL WELD ACCESS HOLE DETAIL A5/SF601 FOR DETAILING.

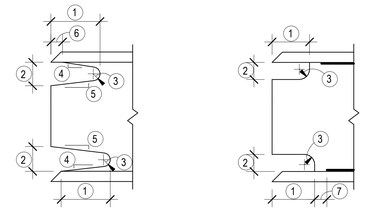


AT HSS COLUMNS

AT STEEL BEAMS

A2 / SF601 TYPICAL GRAVITY BEAM MOMENT CONNECTION

NO SCALE



ROLLED SHAPES AND BUILT-UP SHAPES ASSEMBLED PRIOR TO CUTTING THE WELD ACCESS HOLE.

BUILT-UP SHAPES ASSEMBLED AFTER CUTTING THE WELD ACCESS HOLE.

NOTES:
1. LENGTH: NOT LESS THAN THE GREATER OF 1.5 x WEB THICKNESS OR 1.1/2"
2. HEIGHT: NOT LESS THAN THE GREATER OF 1.0 x WEB THICKNESS OR 3/4" BUT NEED NOT EXCEED 2"
3. RADIUS: 3/8" MIN. GRIND THE THERMALLY CUT SURFACES OF WELD ACCESS HOLES IN HEAVY SHAPES AS DEFINED IN AISC 360-16 SECTIONS A3.1(c) AND (d).
4. SLOPE FORMS A TRANSITION FROM WEB TO THE FLANGE.
5. SLOPE MAY BE HORIZONTAL.
6. THE BOTTOM OF THE TOP FLANGE IS TO BE CONTOURED TO PERMIT THE TIGHT FIT BACKING BARS WHERE THEY ARE TO BE USED.
7. THE WEB-TO-FLANGE WELD OF BUILT-UP MEMBERS IS TO BE HELD BACK A DISTANCE OF AT LEAST THE WELD SIZE FROM THE EDGE OF THE ACCESS HOLE.

A5 / SF601 TYPICAL WELD ACCESS HOLE DETAIL

NO SCALE

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PROJECT TITLE:

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ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:

TYPICAL STEEL FRAMING SCHEDULES

SHEET NUMBER:

SF601

SHEET OF

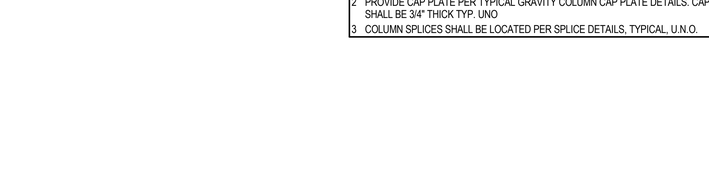
STEEL COLUMN SCHEDULE NOTES
1 SEE GRAVITY COLUMN STEEL BASE PLATE SCHEDULE FOR MINIMUM ANCHOR BOLT REQUIREMENTS
2 PROVIDE CAP PLATE PER TYPICAL GRAVITY COLUMN CAP PLATE DETAILS. CAP PLATE THICKNESS SHALL BE 3/4" THICK TYP. UNO
3 COLUMN SPLICES SHALL BE LOCATED PER SPLICE DETAILS, TYPICAL, U.N.O.

STEEL BASE PLATE SCHEDULE						
BASE PLATE MARK	N	B	THICK-NESS	C	TYPE	REMARKS
SBP-1	N	B	T	C	W1	
SBP-2						

NOTES:
1. BASE PLATES BEARING ON CONCRETE SHALL BE INSTALLED W/ 4-3/4"Ø ANCHOR RODS UNO. PROJECT ANCHOR RODS 3" (MIN.) ABOVE THE TOP OF THE BASE PLATE. ALL BOLTS SHALL BE INSTALLED W/ HARDENED WASHERS BENEATH THE NUT. ANY BOLT HOLES LARGER THAN THE BOLT DIAMETER PLUS 5/16" SHALL HAVE 5/16" PLATE WASHERS INSTALLED BENEATH THE HARDENED WASHERS.
2. BASE PLATES BEARING ON STEEL SHALL BE INSTALLED W/4-7/8"Ø A325 BOLTS, UNLESS NOTED OTHERWISE.
3. DO NOT WELD ANCHOR RODS

B1 SF602 TYPICAL STEEL BASE PLATE SCHEDULE & DETAILS FOR GRAVITY COLUMNS

NO SCALE



G = WORKABLE GAGE OF SUPPORTED BEAM PER AISC MANUAL TABLE 1-1 OR 3 x BOLT DIAMETER, WHICHEVER IS GREATEST.

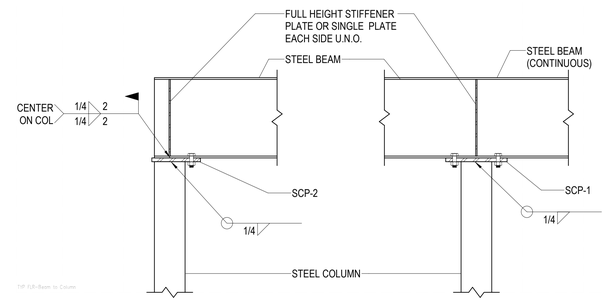
D = COLUMN WIDTH + 1", BEAM WIDTH + 1", OR G + 3", WHICHEVER IS GREATEST.

NOTES:
1. ALL BOLTS IN CAP PLATES SHALL BE 7/8"Ø A325N IN STANDARD HOLES TYPICAL UNO.

2. CAP PLATE THICKNESS SHALL BE 3/4" TYPICAL UNO.

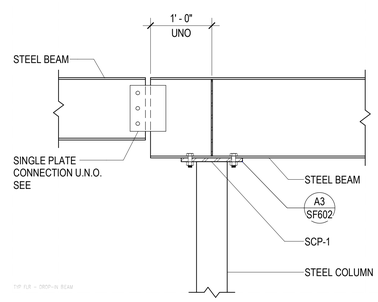
B4 SF602 TYPICAL STEEL CAP PLATE DETAILS FOR GRAVITY COLUMNS

NO SCALE



A3 SF602 TYPICAL STEEL BEAM BEARING ON STEEL COLUMN

NO SCALE



A4 SF602 TYPICAL DROP-IN BEAM BEARING ON STEEL COLUMN

NO SCALE

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12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:

STEEL COLUMN SCHEDULE AND DETAILS

SHEET NUMBER:

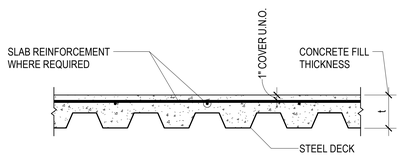
SF602

SHEET OF

STEEL DECK SCHEDULE

MARK	STEEL DECK				CONCRETE FILL			STEEL DECK ATTACHMENT	MIN. ALLOWABLE SHEAR CAPACITY	NOTES
	PROFILE	MIN I (in⁴/ft)	MIN S (in³/ft)	FINISH	THICKNESS (t)	TYPE	REINFORCEMENT			
SD-1	TYPE W3 3" DEEP x 20 GA	0.907	0.510	PHOSPHATIZED/ PAINTED	6.1/2"	LIGHT WEIGHT	6x6-W2.0xW2.0 WWF OR FIBER	SDA-1	1810 PLF @ 10'-0"	2 HR FIRE RATING
SD-2	TYPE N 3" DEEP x 20 GA	0.889	0.452	GALVANIZED (G60)	-	-	-	SDA-4	1124 PLF @ 10'-0"	-

NOTES:
1. STEEL DECK SHALL COMPLY WITH LATEST REQUIREMENTS OF THE STEEL DECK INSTITUTE (SDI).
2. SUBMIT CURRENT CODE EVALUATION REPORT (ICC OR IAPMO) WITH LOAD AND LATERAL SHEAR CAPACITIES WITH SHOP DRAWINGS.
3. FIBER REINFORCEMENT, WHEN REQUIRED IN SCHEDULE, SHALL BE MACROSYNTHETIC FIBER REINFORCEMENT PER THE CONCRETE MATERIALS SECTION OF THE GENERAL STRUCTURAL NOTES.
4: ALL DECK SHALL BE 3-SPAN CONTINUOUS MINIMUM WHERE POSSIBLE. IN AREAS WHERE 3-SPAN CONDITIONS ARE NOT POSSIBLE THE CONTRACTOR SHALL VERIFY UN-SHORED DECK IS PERMITTED BY THE DECK MANUFACTURER FOR THE SPAN CONDITION, SPAN LENGTH, AND DECK GAUGE. WHERE DECK DOES NOT MEET THE REQUIREMENTS FOR UN-SHORED DECK, THE CONTRACTOR SHALL EITHER PROVIDE HEAVIER GAUGE DECK TO ALLOW FOR UN-SHORED DECK OR PROVIDE SHORING.
5. STEEL DECK WITHOUT CONCRETE FILL SHALL NOT BE USED TO SUPPORT LOADS FROM PLUMBING, HVAC DUCTS, LIGHT FIXTURES, ARCHITECTURAL ELEMENTS OR EQUIPMENT OF ANY KIND, UNLESS SPECIFICALLY NOTED OTHERWISE. LIGHTWEIGHT SUSPENDED ACOUSTICAL CEILINGS WITH A TOTAL WEIGHT PER WIRE NOT EXCEEDING 50# MAY BE HUNG FROM THE STEEL ROOF DECK. THE HANGERS SHOULD BE STAGGERED TO DISTRIBUTE THE LOAD OVER MULTIPLE DECK FLUTES.
6. DECK SHALL HAVE 2" MINIMUM BEARING ON ALL SUPPORTING MEMBERS (MEMBERS PERPENDICULAR TO DECK) UNO. DECKS SHALL HAVE 1.1/2" MINIMUM BEARING AT PARALLEL MEMBERS.
7. DO NOT EMBED CONDUITS OR PIPES IN CONCRETE FILL OVER STEEL DECKS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.
8. SEE TYPICAL DETAILS FOR REINFORCEMENT REQUIRED AT OPENINGS THROUGH STEEL DECK. OPENING REINFORCING SHALL BE INSTALLED PRIOR TO SAW CUTTING OPENINGS.
9. PROVIDE GALVANIZED STEEL DECK ABOVE & BELOW MECHANICAL ROOMS.
10.SEE PLANS AND DETAILS FOR LOCATIONS WHERE ADDITIONAL SLAB REINFORCEMENT IS REQUIRED.



CONCRETE SLAB OVER STEEL DECK PROFILE

STEEL DECK ATTACHMENT SCHEDULE

MARK	WELDED			MECHANICAL		
	SUPPORTS	PARALLEL	SIDE LAP	SUPPORTS	PARALLEL	SIDE LAP
SDA-1	PW @ 36/4	PW @ 12" O.C.	3/16" BP @ 18" O.C.	-	-	-
SDA-2	PW @ 32/5	PW @ 12" O.C.	1.1/2" TSW @ 18" O.C.	PAF @ 32/5	PAF @ 12" O.C.	PSC @ 8" O.C.

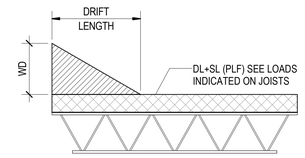
NOTES:
1. PW = PUDDLE WELD - 1/2" EFFECTIVE DIAMETER ARC SPOT WELD AT INTERIOR FLUTES, 1" X 3/8" EFFECTIVE ARC SEAM WELD AT SUPPORTS ADJACENT TO SIDELAP.
2. TSW = TOP SEAM WELD - 1.1/2" LONG TOP SEAM WELDS BETWEEN ADJACENT PIECES OF DECKING. CRIMP SIDE SEAMS BEFORE WELDING INTERLOCKING SEAMS.
3. BP = BUTTON PUNCH - 3/16" BUTTON PUNCH BETWEEN ADJACENT PIECES OF DECK. CRIMP SEAMS BEFORE BUTTON PUNCHING INTERLOCKING SEAMS.
4. PAF = POWDER ACTUATED FASTENER -
   HILTI X-HSN 24 AT SUPPORTS 3/16" THROUGH 3/8" THICK
   HILTI X-ENP-19 L15 AT SUPPORTS 1/4" THICK AND GREATER
   PNEUTEK SDK61075 AT SUPPORTS 0.113" THROUGH 0.155" THICK
   PNEUTEK SDK63075 AT SUPPORTS 0.155" THROUGH 0.250" THICK
   PNEUTEK K64062 AT SUPPORTS 0.187" THROUGH 0.312" THICK
   PNEUTEK K66062 OR K66075 AT SUPPORTS 0.281" THICK AND GREATER
5. SDS = SELF DRILLING SCREW. WHERE SIDELAPS HAVE SCREWED CONNECTION, THE DECK PROVIDED SHALL HAVE A SCREWABLE SIDE SEAM, UNO.
6. PSC = PROPRIETARY SIDELAP CONNECTION - VERCO SIDELAP CONNECTION 2 FOR VERCO PUNCHLOK II SYSTEM, ASC DELTA GRIP FOR ASC DECKS.
7. SPACING AT SUPPORTS IS NOTED AS (DECK PANEL WIDTH)/(ATTACHMENTS PER PANEL). FOR EXAMPLE: PW @ 36/4 INDICATES A 36" WIDE DECK SHEET WITH 4 PUDDLE WELDS AT EACH SUPPORT.
8. HEADED STUD ANCHORS WELDED THROUGH DECK WITH 1" MINIMUM COVER FROM EDGE OF DECK TO STUD CENTERLINE MAY BE SUBSTITUTED ONE FOR ONE FOR PW. ALIGN AND SECURE DECK IN POSITION BEFORE INSTALLING STUDS.
9. SEE PLANS AND SFRS SHEETS FOR ADDITIONAL FASTENERS REQUIRED AT MEMBERS DENOTED AS SFRS. OMIT ATTACHMENTS WHERE DENOTED AS PROTECTED ZONES IN SFRS.
10. ALL WELDED SURFACES SHALL BE DRY BEFORE WELDING DECK OR STUDS TO SUPPORTS.
11. ALIGN AND SECURE DECK IN POSITION BEFORE WELDING OR INSTALLING FASTENERS OR STUDS.
12. ALTERNATE MEANS OF DECK ATTACHMENT ARE PERMITTED WITH APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT THE PROPOSED ATTACHMENT SYSTEM AND THE CODE EVALUATION REPORT DEMONSTRATING THE SYSTEM HAS THE STRENGTH TO MEET THE SPECIFIED DECK SHEAR. IF THE ALTERNATE METHOD IS APPROVED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE DECK TYPE AND PROFILE IS COMPATIBLE WITH THE FASTENING SYSTEM.



SNOW DRIFT SCHEDULE

MARK	DRIFT LENGTH	WD (PSF)

NOTES:
1. FOR OWSJ DESIGN DRIFT LOADS SHALL BE IN ADDITION TO ALL LOADS INDICATED ON PLANS.
2. SNOW DRIFT VALUES IN SCHEDULE ARE IN UNITS OF PSF. MULTIPLY LOADS BY JOIST SPACING TO OBTAIN PLF LOADING FOR JOIST DESIGN.



A5/SF603 SNOW DRIFT SCHEDULE
SCALE: 1" = 1'-0"

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SHEET TITLE:
STEEL DECK SCHEDULES

SHEET NUMBER:
SF603

SHEET OF

MECHANICAL LEGEND

NOTE: NOT ALL SYMBOLS WILL BE USED ON SHEETS.

BURIED OR UNDERFLOOR DUCT	
DUCT SIZE (IN)FIRST FIGURE IS SIDE SHOWN	18/12
FLEXIBLE DUCT (HELICAL)	
FLEXIBLE DUCT CONNECTION	
SPIN-IN W/ MVD	
AIR FLOW STATION	
COMBINATION FIRE/SMOKE DAMPER	
FIRE DAMPER	
GRAVITY BACKDRAFT DAMPER	
MANUAL VOLUME DAMPER	
MOTORIZED DAMPER	
SMOKE DAMPER	
THERMOSTAT OR TEMP SENSOR W/ EQUIPMENT TAG	XX
RADIAL SUPPLY DIFFUSERS	
RETURN GRILLE	
SUPPLY DIFFUSER	
SUPPLY SLOT DIFFUSER	
DUCT TRANSITION	
ELBOW W/ TURNING VANES	
TEE W/ 45° ENTRY	
WYE W/ 45° ENTRY	
EXHAUST AIR DUCT DOWN	
EXHAUST AIR DUCT SECTION	
EXHAUST AIR DUCT UP	
RETURN AIR DUCT DOWN	
RETURN AIR DUCT SECTION	
RETURN AIR DUCT UP	
SUPPLY AIR DUCT DOWN	
SUPPLY AIR DUCT SECTION	
SUPPLY AIR DUCT UP	
FIRE DEPT. HORN & LIGHT	
FIRE HOSE CABINET	
POST TYPE FDC CONNECTION	
WALL TYPE FDC CONNECTION	
YARD HYDRANT	
FLOOR DRAIN	
FLOOR OR GRADE CLEANOUT	
FLOOR SINK	
GRADE CLEANOUT W/ CONCRETE PAD	
HOSE BIBB OR SILLCOCK	
MANHOLE	
REDUCED PRESSURE BACKFLOW PREVENTOR	RPBP
VENT THROUGH THE ROOF	
WALL CLEANOUT	
EXPANSION JOINT	
FLEXIBLE PIPE CONNECTION	
HEAT TRACING	
CHILLED WATER RETURN	X" CHR

CHILLED WATER SUPPLY	X" CHS
CONDENSER WATER RETURN	X" CR
CONDENSER WATER SUPPLY	X" CS
HEATING WATER RETURN	X" HWR
HEATING WATER SUPPLY	X" HWS
RADIANT FLOOR RETURN	X" RFR
RADIANT FLOOR SUPPLY	X" RFS
REFRIGERANT LIQUID	X" RL
REFRIGERANT SUCTION	X" RS
SNOWMELT RETURN	X" SMR
SNOWMELT SUPPLY	X" SMS
STEAM	X" S
STEAM CONDENSATE RETURN	X" SCR
GROUND LOOP RETURN	X" GLR
GROUND LOOP SUPPLY	X" GLS
HOT GAS	X" HG
HOT GAS BYPASS	X" HGBP
AQUASTAT	
FLOW SWITCH	
IN-LINE PUMP	
PRESSURE GAUGE W/ GAUGE COCK	
STRAINER	
TEMPERATURE & PRESSURE TEST PLUG	
TEMPERATURE SENSING WELL	
THERMOMETER	
VENTURI FLOW METER	
DIRECTION OF FLOW	
ELBOW DOWN	
ELBOW UP	
PIPE CAP	
REDUCER	
TEE DOWN	
UNION	
CONDENSATE DRAIN	X" D
DOMESTIC COLD WATER	X" DCW
DOMESTIC HOT WATER	X" DHW
DOMESTIC HOT WATER RECIRC.	X" DHWR
FIRE SERVICE	X" F
GREASE WASTE ABOVE GRADE	X" GW
GREASE WASTE BELOW GRADE	X" GW
NATURAL GAS	X" G
OVERFLOW DRAIN	X" OD
ROOF DRAIN	X" RD
SANITARY (PLBG) VENT	X" V
SANITARY WASTE ABOVE GRADE	X" W
SANITARY WASTE BELOW GRADE	X" W
COMPRESSED AIR	X" CA
TEMPERED WATER	X" T

ARGON	X" AR
CARBON DIOXIDE	X" CO2
DEIONIZED WATER RETURN	X" DI
DEIONIZED WATER SUPPLY	X" DIR
FUEL OIL RETURN	X" FOR
FUEL OIL SUPPLY	X" FOS
HELIUM	X" HE
HYDROGEN	X" H
INDUSTRIAL WATER (NON-POTABLE)	X" IW
MEDICAL AIR	X" MA
NITROGEN	X" N
NITROUS OXIDE	X" N2O
OXYGEN	X" O2
PROPANE	X" P
REVERSE OSMOSIS	X" RO
VACUUM	X" VAC
WATER TREATMENT	X" WT
ACCESS PANEL	
CARBON DIOXIDE SENSOR	
CARBON MONOXIDE SENSOR	
HUMIDISTAT OR HUMIDITY SENSOR	
NITROGEN DIOXIDE SENSOR	
POINT OF CONNECTION TO EXISTING	
POINT OF REMOVAL FROM EXISTING	
AIR VENT (AUTOMATIC)	
AUTOMATIC CONTROL VALVE (2-WAY)	
AUTOMATIC CONTROL VALVE (3-WAY)	
BALL VALVE	
BUTTERFLY VALVE	
CALIBRATED BALANCE VALVE	
CHECK (SWING OR LIFT AS REQ'D) VALVE	
CURB COCK	
GAS COCK	
GATE OS & Y PATTERN VALVE	
GATE VALVE	
MOTORIZED ACTUATOR	M
P&T RELIEF VALVE	
PET COCK OR GAUGE COCK	
PLUG VALVE	
PRESSURE REDUCING VALVE	
SOLENOID VALVE	
THERMAL EXPANSION VALVE	
DETAIL TAG	DETAIL NO. / DRAWING NO.
KEYED NOTE	NOTE NO.
SECTION CUT LINE	SECTION NO. / DRAWING NO.

ABBREVIATIONS

	NOTE: NOT ALL ABBREVIATIONS WILL BE USED ON SHEETS.
AD	ACCESS DOOR
AF	AIRFOIL
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
BI	BACKWARD INCLINE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU/H	BRITISH THERMAL UNITS PER HOUR
CAP	CAPACITY
CBV	CALIBRATED BALANCE VALVE
CFM	CUBIC FEET PER MINUTE
CV	CONSTANT VOLUME
CV	CONTROL VALVE
DB	DRY BULB
DCW	DOMESTIC COLD WATER
DF	DRINKING FOUNTAIN
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRC
DIA	DIAMETER
DN	DOWN
DSN	DOWN SPOUT NOZZLE
DW	DISHWASHER
E	EXISTING
EA	EACH OR EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
ELEV	ELEVATION
ENCL	ENCLOSURE
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FO	FLAT OVAL
FPM	FEET PER MINUTE
FS	FLOOR SINK
FT	FEET
FV	FACE VELOCITY
GA	GAUGE
GAL	GALLON
GD	GARAGE DRAIN
GEA	GREASE EXHAUST AIR
GPM	GALLONS PER MINUTE
HP	HORSE POWER
HR	HOUR
HT	HEIGHT
IN	INCH
INWC	INCHES OF WATER COLUMN
INWG	INCHES OF WATER GAUGE
L	LAVATORY OR LOUVER
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS
MECH	MECHANICAL
MIN	MINIMUM
MPSA	MEDUIM PRESSURE SUPPLY AIR
MUA	MAKE-UP AIR
MVD	MANUAL VOLUME DAMPER
NC	NOISE CRITERIA OR NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OD	OVERFLOW DRAIN
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
PD	PRESSURE DROP
PG	PROPYLENE GLYCOL
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
RAD	RADIUS
RD	ROOF DRAIN
RLF	RELIEF AIR
RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
SA	SUPPLY AIR OR SHOCK ARRESTOR
SEN	SENSIBLE
SF	SQUARE FEET
SIM	SIMILAR
SL	SEA LEVEL
SP	STATIC PRESSURE
SS	SERVICE SINK OR STAINLESS STEEL
TOD	TOP OF DUCT
TSP	TOTAL STATIC PRESSURE
TYP.	TYPICAL
U	URINAL
V	VENT
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VTR	VENT THROUGH THE ROOF
W	WASTE
W/	WITH
W/O	WITHOUT
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEANOUT
WHA	WATER HAMMER ARRESTOR
WPD	WATER PRESSURE DROP
WT	WEIGHT
Ø	ROUND OR DIAMETER

DRAWING INDEX

#	SHEET NAME
M001	MECHANICAL LEGEND, SYMBOLS & ABBREVIATIONS
M100D	BASEMENT MECHANICAL DEMO PLAN
M100	BASEMENT MECHANICAL PLAN
M101	LEVEL 1 MECHANICAL PLAN
M102	LEVEL 2 MECHANICAL PLAN
M103	ROOF LEVEL MECHANICAL AND PLUMBING PLAN
M200	BASEMENT PIPING PLAN
M201	LEVEL 1 PIPING PLAN
M202	LEVEL 2 PIPING PLAN
M501	MECHANICAL DETAILS
M601	MECHANICAL SCHEDULES
M701	MECHANICAL SCHEMATICS
P100D	BASEMENT PLUMBING DEMO PLAN
P100	BASEMENT FLOOR PLUMBING PLAN
P101	LEVEL 1 PLUMBING PLAN
P102	LEVEL 2 PLUMBING PLAN
P401	ENLARGED PLUMBING PLANS
P501	PLUMBING DETAILS
P601	PLUMBING SCHEDULES

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MECHANICAL LEGEND, SYMBOLS & ABBREVIATIONS

SHEET NUMBER:

M001

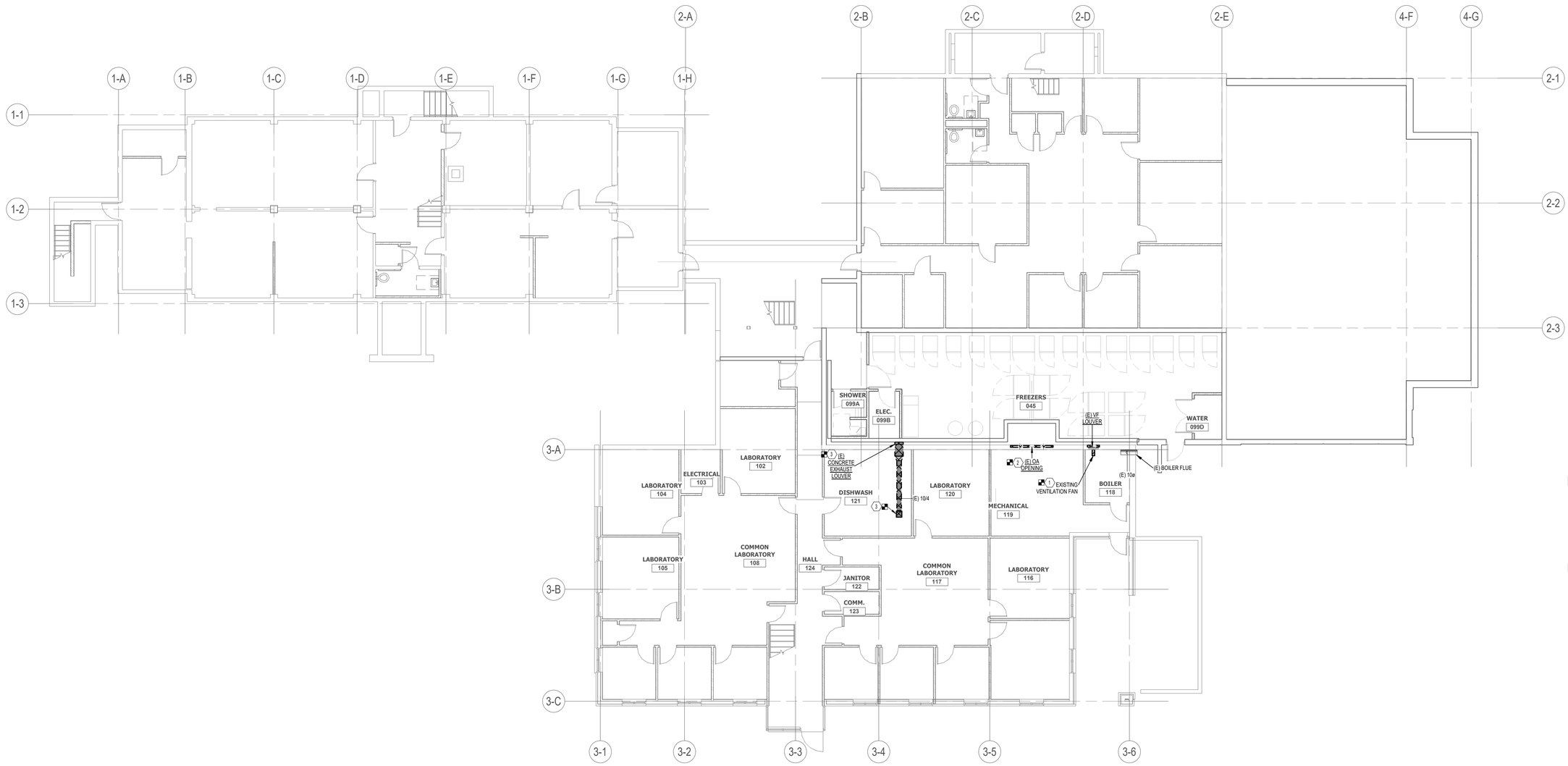
SHEET OF

GENERAL NOTES

A. RUNOUTS TO DIFFUSERS ARE TO BE NECK SIZE UNLESS OTHERWISE NOTED ON DRAWINGS.
B. PROVIDE A RETURN SOUND BOOT AT EACH CEILING RETURN GRILLE THAT IS NOT DUCTED, IN ACCORDANCE WITH DETAIL 2 ON SHEET M501.
C. COORDINATE DUCT ROUTING WITH PLUMBING AND MECHANICAL PIPING. PROVIDE OFFSETS AS REQUIRED.

KEYED NOTES

1 REMOVE AND RELOCATE EXISTING VENTILATION FAN AND LOUVER. PATCH WALL. SEE M100 FOR NEW LOCATION.
2 REMOVE EXISTING OUTSIDE AIR LOUVER.
3 REMOVE EXISTING CONCRETE EXHAUST LOUVER AND ASSOCIATED DUCT BACK TO CEILING. SEE M100 FOR EXHAUST REROUTE.



1 BASEMENT MECHANICAL DEMO PLAN
SCALE: 1/8" = 1'-0"

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BASEMENT MECHANICAL DEMO PLAN

SHEET NUMBER:
M100D

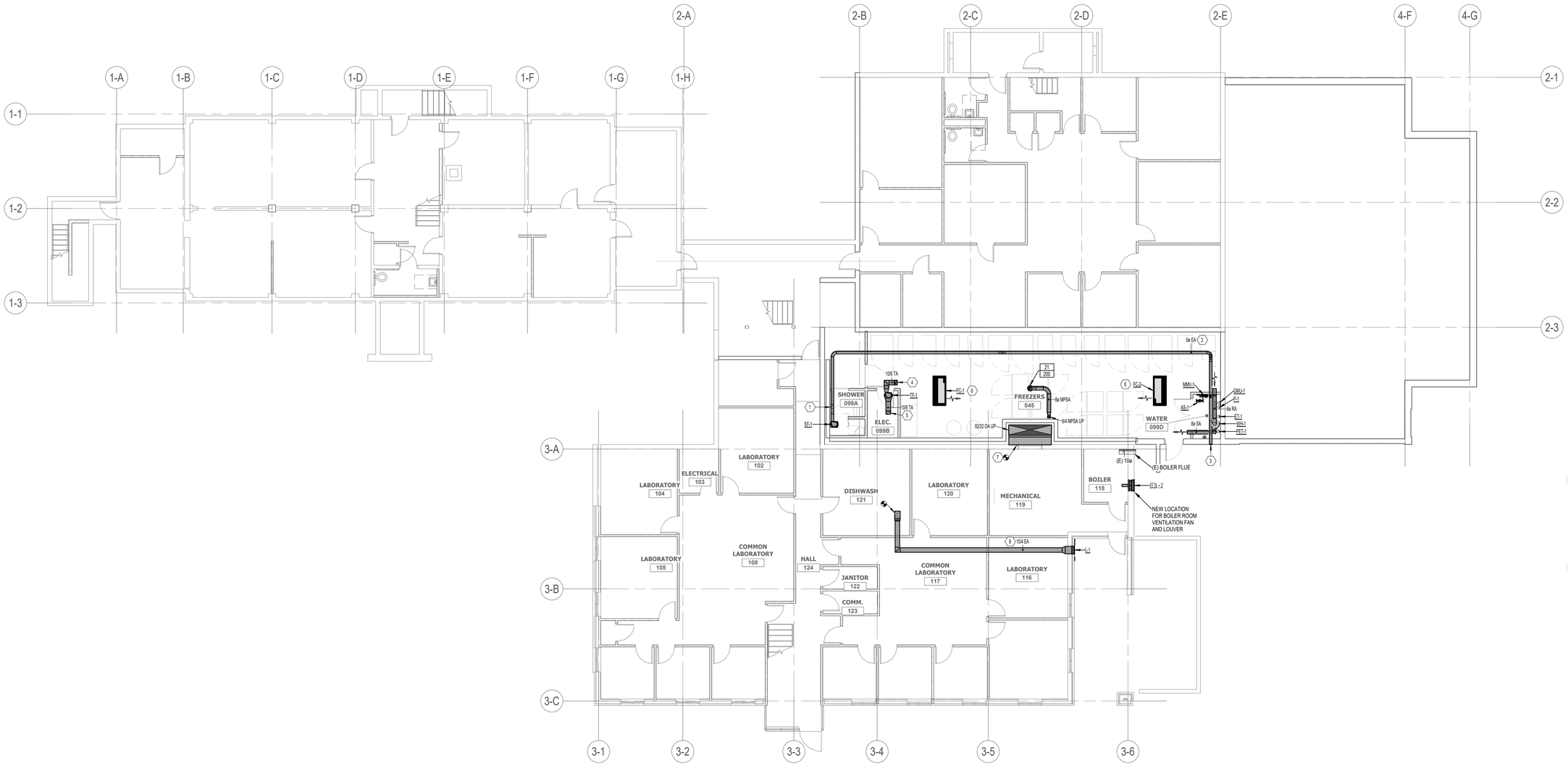
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C. COORDINATE DUCT ROUTING WITH PLUMBING AND MECHANICAL PIPING. PROVIDE OFFSETS AS REQUIRED.

KEYED NOTES

1 PROVIDE OFFSETS IN DUCT AS NECESSARY.
2 ROUTE DUCT TIGHT TO STRUCTURE.
3 TERMINATE EXHAUST DUCT AT EXTERIOR WALL WITH BRICK VENT. SEE EXHAUST FAN SCHEDULE.
4 PROVIDE ELBOW UP AT TRANSFER AIR DUCT AND LEAVE DUCT OPEN TO SPACE. PROVIDE WIRE MESH SCREEN OVER DUCT OPENING.
5 PROVIDE ELBOW DOWN AT TRANSFER AIR DUCT IN ELECTRICAL ROOM AND LEAVE DUCT OPEN TO SPACE. PROVIDE WIRE MESH SCREEN OVER DUCT OPENING.
6 FAN COIL SUSPENDED FROM DECK ABOVE SUCH THAT THE SUPPLY GRILL DIRECTS AIR BELOW BEAMS. INSTALL ABOVE OPEN FLOOR AREA (NOT DIRECTLY ABOVE FREEZERS) TO ALLOW MAINTENANCE ACCESS TO ALL SIDES.
7 CONNECT NEW OUTSIDE AIR DUCT TO EXISTING OUTSIDE AIR PLENUM. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE CONNECTION WITH EXISTING DUCT.
8 PROVIDE OFFSETS IN DUCT AS NECESSARY TO AVOID EXISTING STRUCTURE, LIGHTING, CONDUIT, ETC.



1 BASEMENT MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

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BASEMENT MECHANICAL PLAN

SHEET NUMBER:
M100

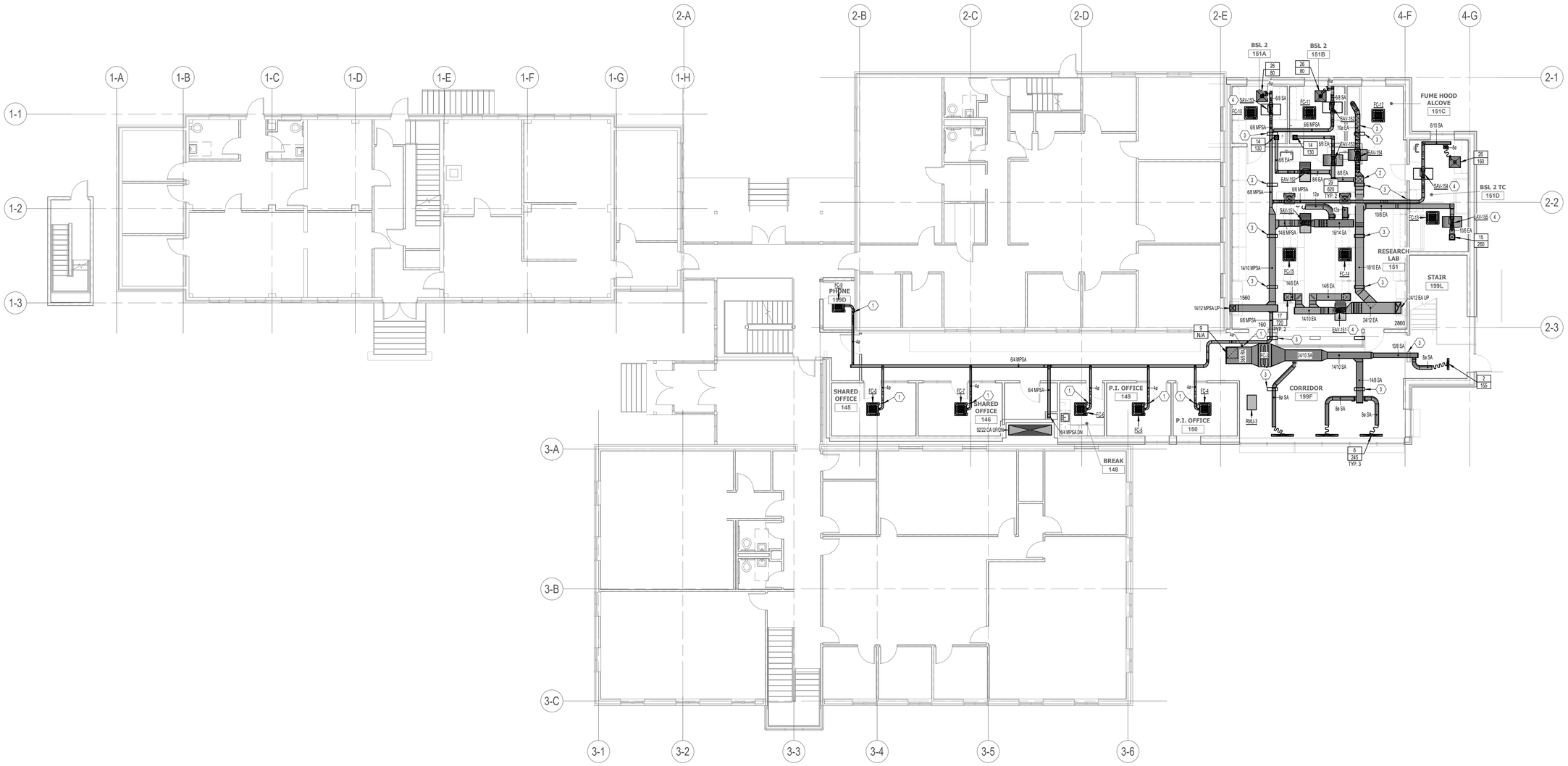
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B. PROVIDE A RETURN SOUND BOOT AT EACH CEILING RETURN GRILLE THAT IS NOT DUCTED, IN ACCORDANCE WITH DETAIL 2 ON SHEET M501.
C. COORDINATE DUCT ROUTING WITH PLUMBING AND MECHANICAL PIPING. PROVIDE OFFSETS AS REQUIRED.

KEYED NOTES

1 AUTOMATIC BALANCE DAMPER FOR VENTILATION AIR. RUSKIN 'ABD' OR EQUAL. REFER TO FAN COIL SCHEDULE FOR OUTSIDE AIR FLOW RATE.
2 STAINLESS STEEL DUCT FOR FUME HOOD EXHAUST; EXTENT SHOWN AS HATCHED. TRANSITION TO GALVANIZED AFTER JUNCTION WITH GENERAL EXHAUST DUCT.
3 ROUTE DUCT THROUGH OPENING IN STRUCTURE. COORDINATE WITH STRUCTURAL PLANS AND GENERAL CONTRACTOR. PROVIDE CONTINUOUS INSULATION THROUGH BEAM PENETRATION TO AVOID METAL ON METAL CONDITION.
4 PROVIDE ALL REQUIRED CLEARANCES ON ALL SIDES OF VENTURI VALVE AS RECOMMENDED BY MANUFACTURER. PROVIDE OFFSETS IN DUCT AS NECESSARY, TYPICAL ALL VALVES.



1 LEVEL 1 MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

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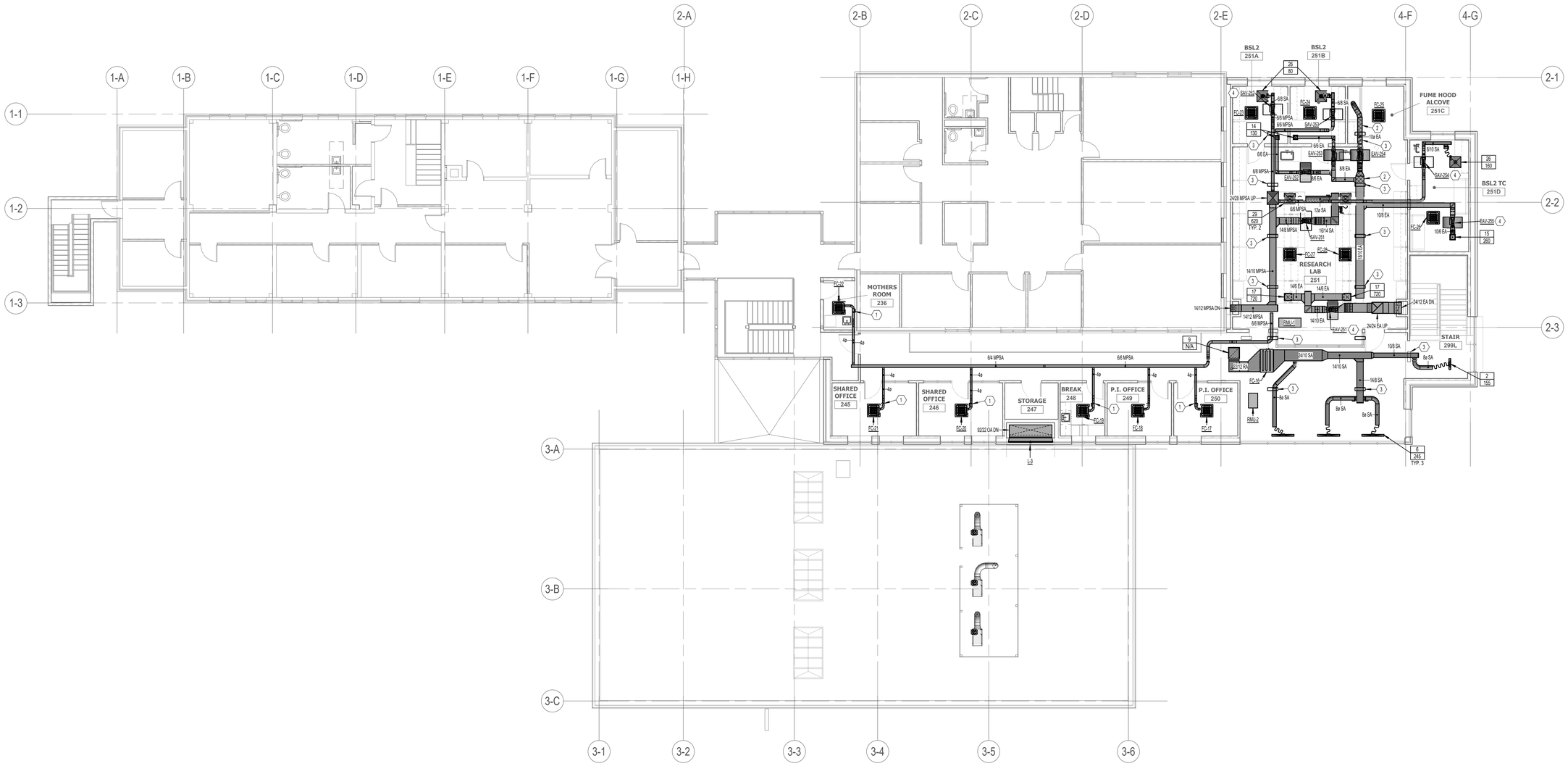
SHEET NUMBER:
M101
SHEET OF

GENERAL NOTES

A. RUNOUTS TO DIFFUSERS ARE TO BE NECK SIZE UNLESS OTHERWISE NOTED ON DRAWINGS.
B. PROVIDE A RETURN SOUND BOOT AT EACH CEILING RETURN GRILLE THAT IS NOT DUCTED, IN ACCORDANCE WITH DETAIL 2 ON SHEET M501.
C. COORDINATE DUCT ROUTING WITH PLUMBING AND MECHANICAL PIPING. PROVIDE OFFSETS AS REQUIRED.
D. DUCT PLACEMENT IS COORDINATED WITH OPENING IN STRUCTURAL BEAMS. FIELD VERIFY ALL OPENINGS AND COORDINATE WITH STRUCTURAL DRAWINGS. PROVIDE OFFSETS IN DUCT AS NECESSARY TO AVOID INTERFERENCE.

KEYED NOTES

1 AUTOMATIC BALANCE DAMPER FOR VENTILATION AIR. RUSKIN 'ABD' OR EQUAL. REFER TO FAN COIL SCHEDULE FOR OUTSIDE AIR FLOW RATE.
2 STAINLESS STEEL DUCT FOR FUME HOOD EXHAUST; EXTENT SHOWN AS HATCHED. TRANSITION TO GALVANIZED AFTER JUNCTION WITH GENERAL EXHAUST DUCT.
3 ROUTE DUCT THROUGH OPENING IN STRUCTURE. COORDINATE WITH STRUCTURAL PLANS AND GENERAL CONTRACTOR. PROVIDE CONTINUOUS INSULATION THROUGH BEAM PENETRATION TO AVOID METAL ON METAL CONDITION.
4 PROVIDE ALL REQUIRED CLEARANCES ON ALL SIDES OF VENTURI VALVE AS RECOMMENDED BY MANUFACTURER. PROVIDE OFFSETS IN DUCT AS NECESSARY, TYPICAL ALL VALVES.



1 LEVEL 2 MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

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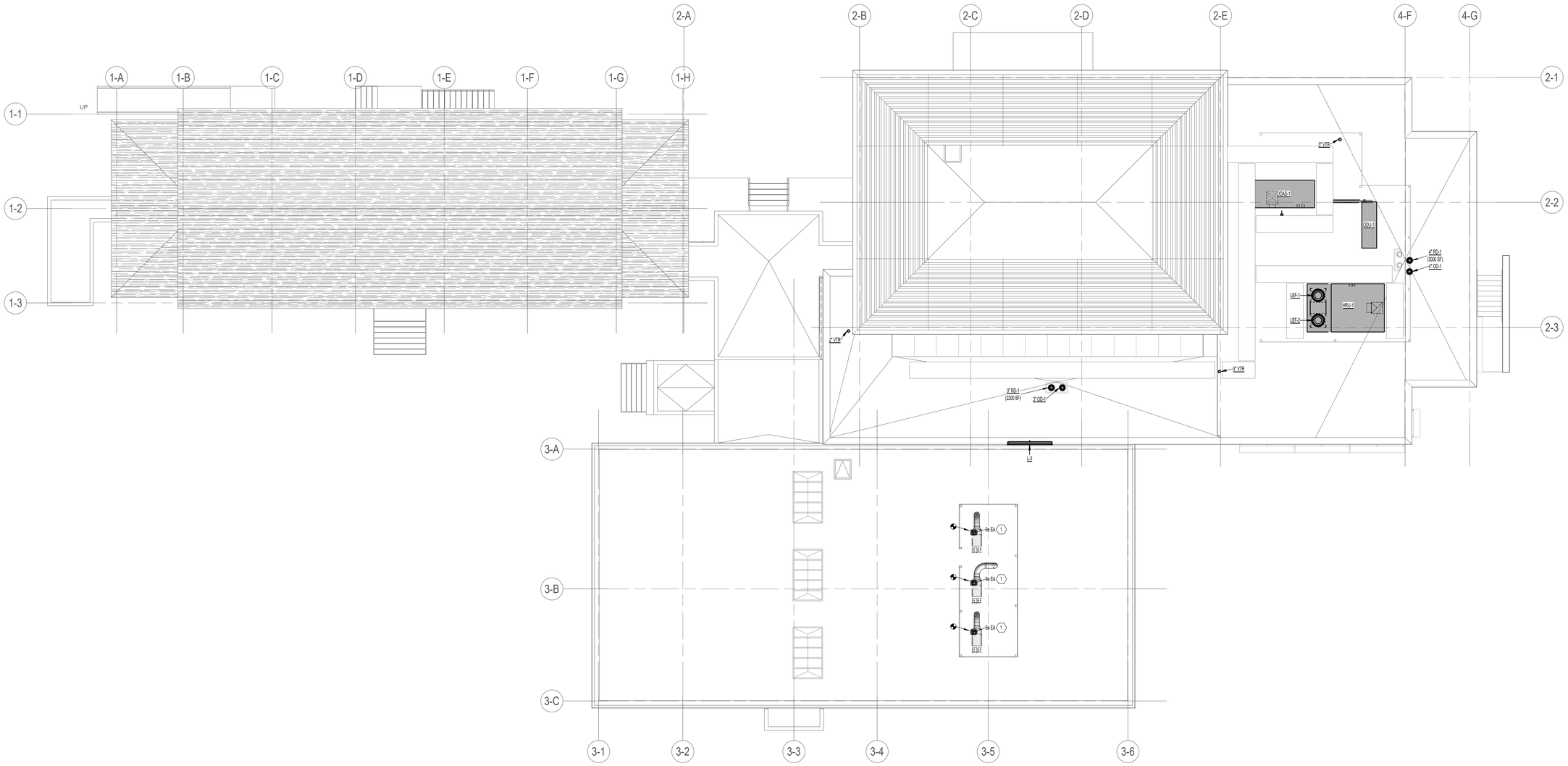
SHEET NUMBER:
M102
SHEET OF

GENERAL NOTES

A. ROOF GENERAL NOTES.

KEYED NOTES

1 REPLACE EXISTING EXHAUST STACKS WITH WELDED STAINLESS STEEL. PROVIDE 10 FOOT STACK HEIGHT (FROM FAN OUTLET). REATTACH GUY WIRE SUPPORTS. MEASURE TOTAL AIRFLOW AS PART OF SECTION 230593 TESTING, ADJUSTING AND BALANCING. ADJUST FAN SPEED TO ACHIEVE 1,300 CFM.



1 ROOF MECHANICAL AND PLUMBING PLAN

SCALE: 1/8" = 1'-0"

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ROOF LEVEL MECHANICAL AND PLUMBING PLAN

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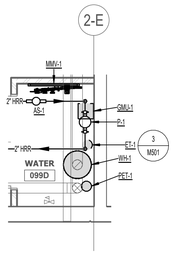
M103

SHEET OF

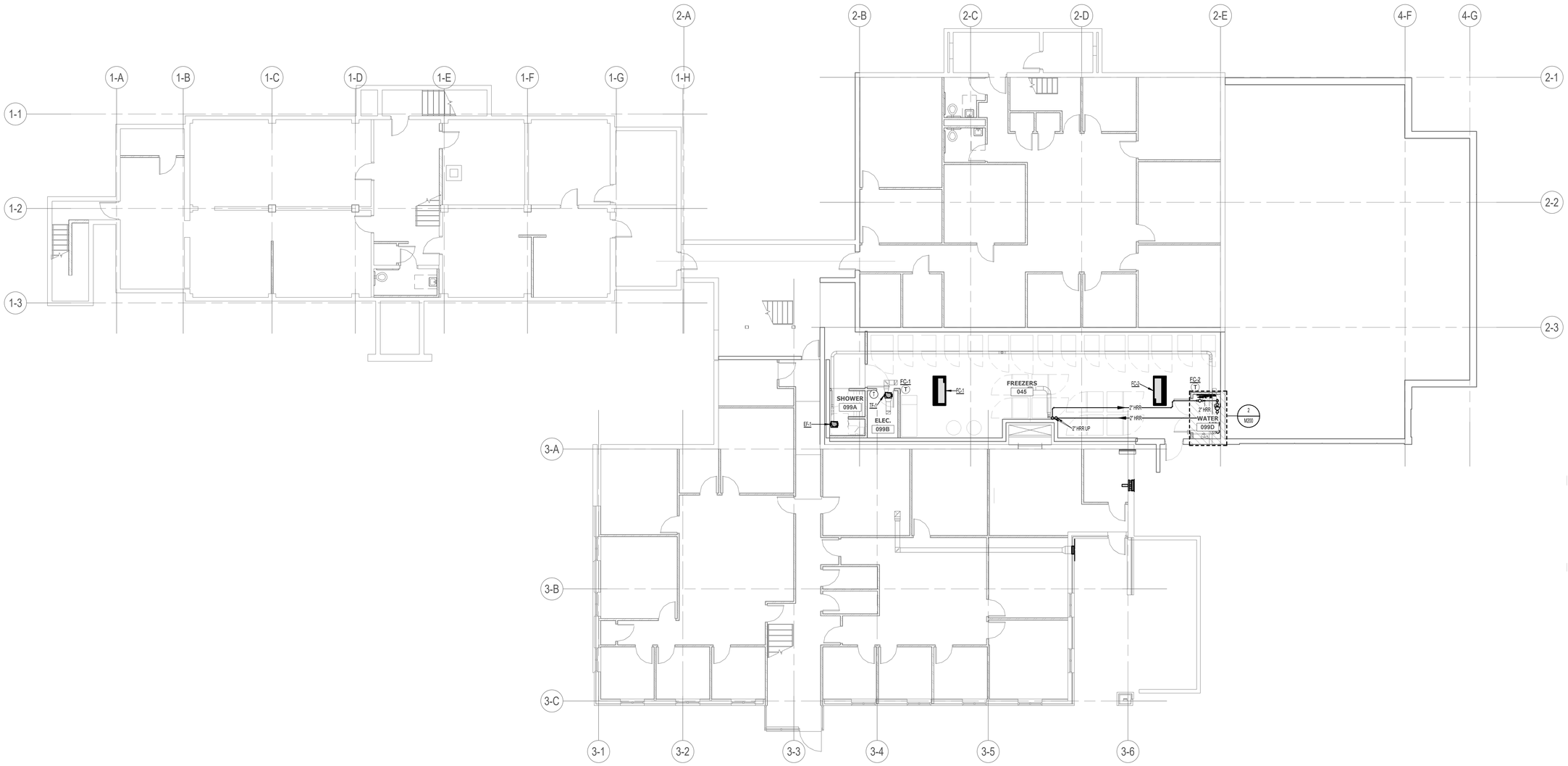
GENERAL NOTES

A. REFRIGERANT PIPING TO INDIVIDUAL VRF FAN COILS NOT SHOWN FOR CLARITY BUT MUST BE INSTALLED PER MANUFACTURER'S SIZING REQUIREMENTS BASED ON ROUTING LENGTH, ELBOWS, ETC. FOLLOW ALL MANUFACTURER'S REQUIREMENTS FOR REFRIGERANT PIPE ROUTING AND INSTALLATION.

KEYED NOTES



2 ENLARGED BASEMENT WATER 099D PIPING PLAN
SCALE: 1/4" = 1'-0"



1 BASEMENT PIPING PLAN
SCALE: 1/8" = 1'-0"

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SHEET TITLE:
BASEMENT PIPING PLAN

SHEET NUMBER:
M200
SHEET OF

GENERAL NOTES

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KEYED NOTES



1 LEVEL 1 PIPING PLAN
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LEVEL 1 PIPING PLAN

SHEET NUMBER:
M201

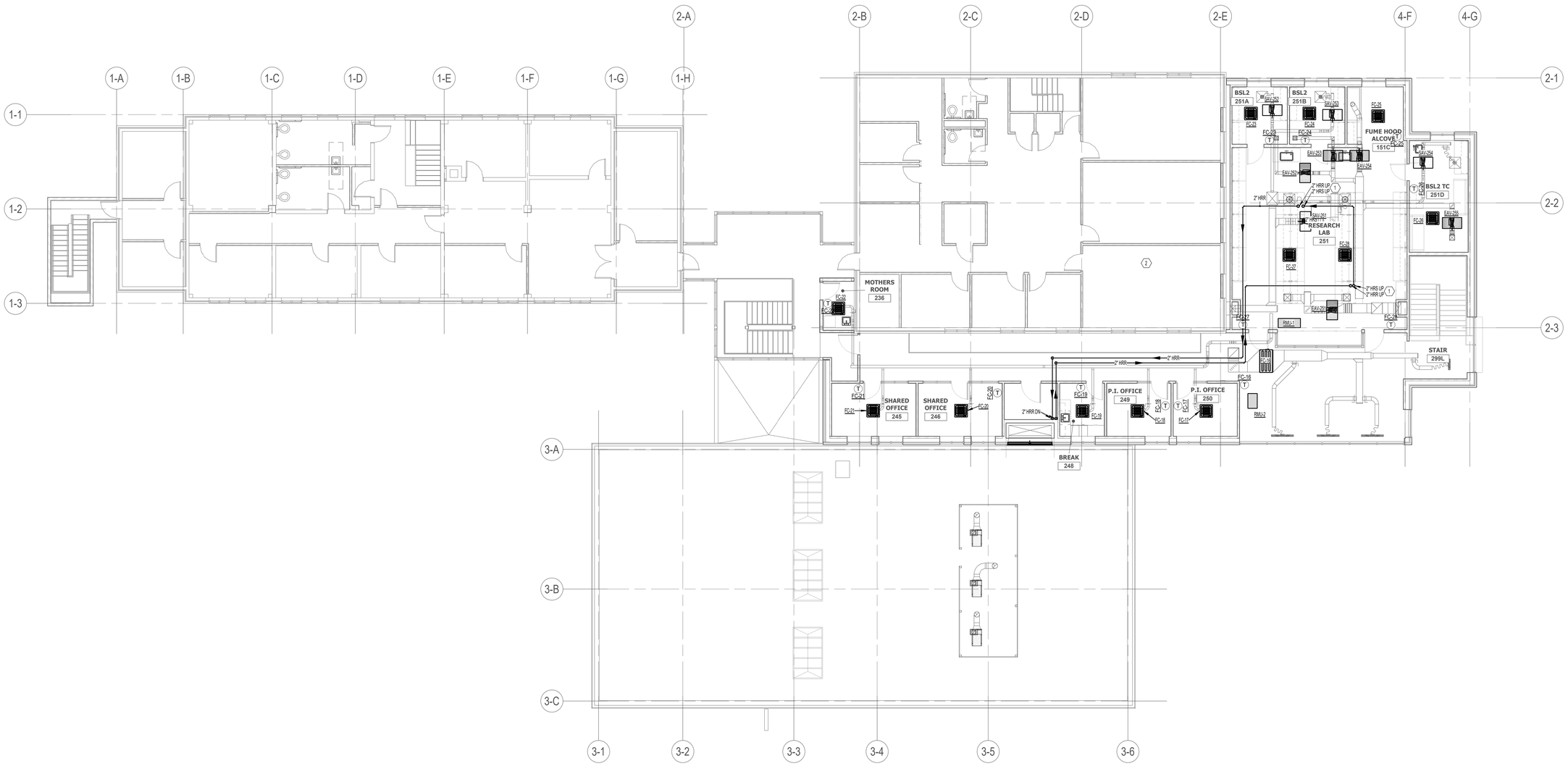
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KEYED NOTES

1. HEAT RECOVERY PIPING (HRR/HRS) RISES UP INSIDE THE ROOF CURB OF THE EQUIPMENT ABOVE. COORDINATE EXACT LOCATION WITH EQUIPMENT FOOTPRINT LAYOUT.
2.



1 LEVEL 2 PIPING PLAN
SCALE: 1/8" = 1'-0"

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

COLVIN ENGINEERING ASSOCIATES
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PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

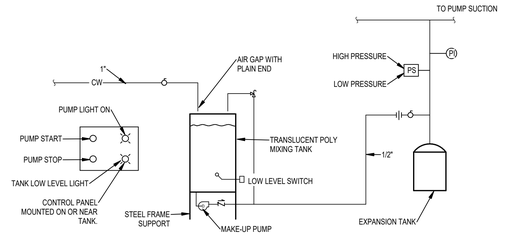
ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:
LEVEL 2 PIPING PLAN

SHEET NUMBER:
M202

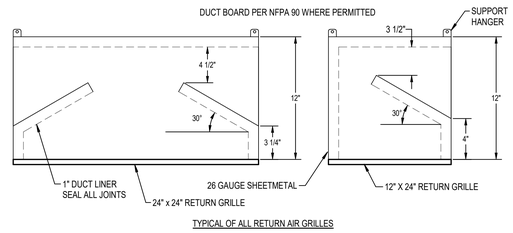
SHEET OF



CONTROL SEQUENCE: ADJUSTABLE LOW PRESSURE SWITCH SHALL ENERGIZE THE LOW PRESSURE INDICATOR LIGHT AND CLOSE THE REMOTE ALARM CONTACTS. MOMENTARY PUSH BUTTON SHALL START MAKE-UP PUMP. PUMP SHALL BE STOPPED BY ADJUSTABLE HIGH PRESSURE SWITCH OR MOMENTARY PUSH BUTTON STOP SWITCH. FLOAT SWITCH IN MIXING TANK SHALL ENERGIZE THE LOW LEVEL INDICATOR LIGHT, WHEN LEVEL DROPS BELOW 1/4 FULL.

1 GLYCOL MAKE-UP SYSTEM

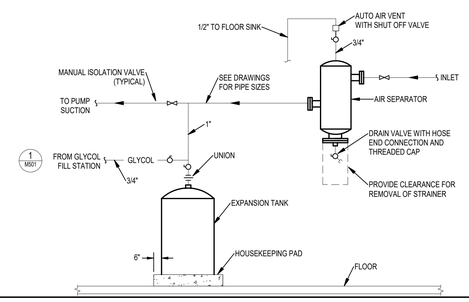
SCALE: NONE



TYPICAL OF ALL RETURN AIR GRILLES

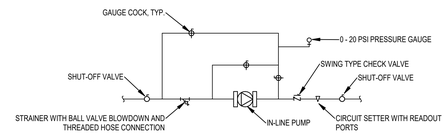
2 RETURN AIR SOUND BOOT

SCALE: NONE



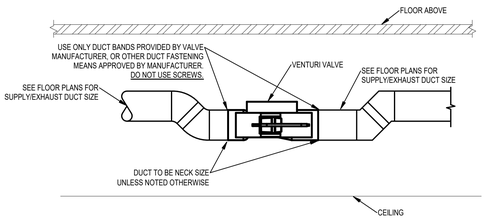
3 AIR SEPARATOR - EXPANSION TANK PIPING (W/ GLYCOL)

SCALE: NONE



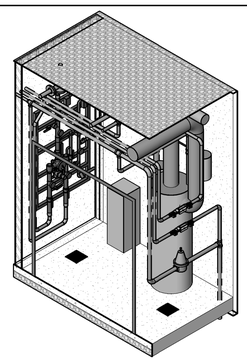
4 PUMP - INLINE PIPING

SCALE: NONE



5 VENTURI AIR VALVE INSTALLATION DETAIL

SCALE: NONE



6 WATER ROOM PERSPECTIVE

SCALE: NONE

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REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:

MECHANICAL DETAILS

SHEET NUMBER:

M501

SHEET OF

LABORATORY VENTURI SUPPLY VALVE (SAV)

PLAN CODE	INCOMING DUCT SIZE (IN)	MINIMUM AIR FLOW (CFM)	MAXIMUM AIR FLOW (CFM)	MAX AIR P. D. (IN WC)	MANUFACTURER	MODEL NO
SAV-151	14 X 8	470	1240	0.6	ANTEC	VV 112
SAV-152	6 X 6	50	80	0.6	ANTEC	VV 108
SAV-153	6 X 6	50	80	0.6	ANTEC	VV 108
SAV-154	6 X 6	150	160	0.6	ANTEC	VV 108
SAV-251	14 X 8	470	1240	0.6	ANTEC	VV 112
SAV-252	6 X 6	50	80	0.6	ANTEC	VV 108
SAV-253	6 X 6	50	80	0.6	ANTEC	VV 108
SAV-254	6 X 6	150	160	0.6	ANTEC	VV 108

LABORATORY VENTURI EXHAUST VALVE (EAV)

PLAN CODE	INCOMING DUCT SIZE (IN)	MINIMUM AIR FLOW (CFM)	MAXIMUM AIRFLOW (CFM)	MAX AIR P.D. (IN WC)	MANUFACTURER	MODEL NO
EAV-151	20 X 12	540	1440	0.6	ANTEC	VV 112
EAV-152	8 X 6	85	130	0.6	ANTEC	VV 108
EAV-153	8 X 6	85	130	0.6	ANTEC	VV 108
EAV-154	10 X 10	340	900	0.6	ANTEC	VV 112
EAV-155	10 X 8	130	260	0.6	ANTEC	VV108
EAV-251	20 X 12	540	1440	0.6	ANTEC	VV 112
EAV-252	8 X 6	85	130	0.6	ANTEC	VV 108
EAV-253	8 X 6	85	130	0.6	ANTEC	VV 108
EAV-254	10 X 10	340	900	0.6	ANTEC	VV 112
EAV-255	10 X 8	130	260	0.6	ANTEC	VV108

STORM LOUVER (L)

1. CUSTOM COLOR TO BE SELECTED BY ARCHITECT FROM FULL PALETTE.

PLAN CODE	DUTY	AIRFLOW (CFM)	MINIMUM FREE AREA	MAX PRESSURE DROP (IN. W.C.)	MAXIMUM DIMENSIONS			FINISH	MANUFACTURER	REMARKS
					WIDTH	HEIGHT	DEPTH			
L-1	WEST WING DISHWASH EXHAUST	125	0.89 SF	0.10	16"	8"	4"	BAKED ENAMEL	ELF81S30	1
L-2	WEST WING BOILER ROOM VENTILATION	125		0.10	24"	24"	6"	BAKED ENAMEL	ELF6350DMP	1
L-3	WEST WING AHU OA	17,000	31.5 SF	0.05	96"	72"	6"	BAKED ENAMEL	ELF6350DMP	1

VRF REFRIGERANT MANAGEMENT UNIT (RMU)

1. PROVIDE WITH INTEGRAL CONDENSATE PUMP WHERE OPTION IS AVAILABLE; OTHERWISE, PROVIDE 120V CONDENSATE PUMP WITH MINIMUM 1.0 GPM AT 30 FT TDH.
2. ON STAND-BY POWER.

PLAN CODE	OUTDOOR UNIT	NUMBER OF PORTS	MIN. PORT CAPACITY (BTU/H)	TYPE	ELECTRICAL		MAXIMUM SIZE			MANUFACTURER & MODEL NO.	REMARKS
					VOLTAGE/PHASE	MCA	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)		
RMU-1	ODU-1	16	54,000	MAIN	208 / 1	1.6	46"	22"	10"	MITSUBISHI TCMBM1016JA11N4	1, 2
RMU-2	ODU-1	8	54,000	SUB	208 / 1	1.6	36"	22"	10"	MITSUBISHI TCMBS0108KB11N4	1, 2
RMU-3	ODU-1	8	54,000	SUB	208 / 1	1.6	36"	22"	10"	MITSUBISHI TCMBS0108KB11N4	1, 2

AIR DEVICE SCHEDULE

PLAN CODE: A = GRILLE, B = CFM

* VERIFY FRAME TYPE OF ALL DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLANS BEFORE ORDERING.

PLAN CODE	TYPE AND DUTY	DIMENSIONS		CEILING TYPE*	MAX CFM	MAX T.P. (IN WC)	NC LEVEL MAX	MIN THROW (FT)(T50)	MANUFACTURER	MODEL	COMMENTS
		FACE SIZE	NECK SIZE								
2	LINEAR SUPPLY	24"L	8"Ø	MATCH CEILING	160	0.09	33	13	TEMPO	L.D.	2 @ 1" SLOT
6	LINEAR SUPPLY	48"L	10"Ø	MATCH CEILING	320	0.09	33	13	TEMPO	L.D.	2 @ 1" SLOT
9	PERFORATED RETURN	24" X 24"	22" X 22"	MATCH CEILING	1200	0.05	17	-	TITUS	PAR	
14	PERFORATED EXHAUST	10" X 10"	8" X 8"	MATCH CEILING	225	0.12	12	-	TITUS	8F	
15	PERFORATED EXHAUST	12" X 12"	10" X 10"	MATCH CEILING	360	0.12	14	-	TITUS	8F	
17	PERFORATED EXHAUST	16" X 16"	14" X 14"	MATCH CEILING	750	0.12	17	-	TITUS	8F	
21	RADIAL BLADE	12"Ø	8"Ø	SURFACE	210	0.14	29	8	AIR DIFFUSION PRODUCTS	DNR	RECOMMENDED MINIMUM DISTANCE BETWEEN DIFFUSERS IN A 9'-0" CEILING IS THE MINIMUM THROW DISTANCE
26	RADIAL BLADE	24" X 24"	8"Ø	GRID	210	0.14	29	8	AIR DIFFUSION PRODUCTS	DNR	
29	RADIAL BLADE	24" X 24"	14"Ø	GRID	640	0.14	30	14			

VRF FAN COIL UNIT SCHEDULE (FC)

1. COOLING CAPACITY AT 75°F DB / 62°F WB. HEATING CAPACITY AT 70°F DB. SUBMIT UNIT DATA AT THESE CONDITIONS IN ADDITION TO AHRI STANDARD CONDITIONS.
2. PROVIDE WITH INTEGRAL CONDENSATE PUMP WHERE OPTION IS AVAILABLE; OTHERWISE, PROVIDE 120V CONDENSATE PUMP WITH MINIMUM 1.0 GPM AT 30 FT TDH.
3. CONNECT TO STAND-BY POWER (INCLUDING THE 120V CONDENSATE PUMP IF SUPPLIED SEPARATELY).

PLAN CODE	AREA SERVED	OUTDOOR UNIT	TYPE	SUPPLY AIRFLOW HIGH SPEED (CFM)	MINIMUM OUTSIDE AIR (CFM)	SOUND LEVEL @ HI SPEED (dBA)	ELECTRICAL		TOTAL COOLING (BTU/HR)	TOTAL HEATING (BTU/HR)	MAXIMUM DIMENSIONS				MANUFACTURER & MODEL NO.	REMARKS
							VOLTAGE / PHASE	MCA			LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS) (LBS)		
FC-1	FREEZERS 045	ODU-1	CEILING SUSPENDED	1,095	100	45	208/1	1.3	28,100	25,400	28"	63"	10"	100	MITSUBISHI TPCFYP036KM140B	1, 2, 3
FC-2	FREEZERS 045	ODU-1	CEILING SUSPENDED	1,095	100	45	208/1	1.3	28,100	25,400	28"	63"	10"	100	MITSUBISHI TPCFYP036KM140B	1, 2, 3
FC-3	CORRIDOR 199F	ODU-1	CONCEALED DUCTED	880	70	40	208/1	2.9	23,400	21,600	29"	50"	11"	100	MITSUBISHI TPEFYP030MA144A	1, 2, 3
FC-4	P.I. OFFICE 150	ODU-1	4-WAY CEILING CASSETTE	315	15	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-5	P.I. OFFICE 149	ODU-1	4-WAY CEILING CASSETTE	315	15	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-6	BREAK 148	ODU-1	4-WAY CEILING CASSETTE	315	10	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-7	SHARED OFFICE 146	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-8	SHARED OFFICE 145	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-9	PHONE 199D	ODU-1	4-WAY CEILING CASSETTE	315	10	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-10	BSL 2 151A	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-11	BSL 2 151B	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-12	RESEARCH LAB 151 (EXTERIOR)	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-13	BSL 2 TC 151D	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-14	RESEARCH LAB 151	ODU-1	4-WAY CEILING CASSETTE	315	110	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-15	RESEARCH LAB 151	ODU-1	4-WAY CEILING CASSETTE	315	110	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-16	CORRIDOR 299F	ODU-1	CONCEALED DUCTED	880	70	40	208/1	2.9	23,400	21,600	29"	50"	11"	100	MITSUBISHI TPEFYP030MA144A	1, 2, 3
FC-17	P.I. OFFICE 250	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	8"	13"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-18	P.I. OFFICE 249	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-19	SHARED OFFICE 245	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-20	SHARED OFFICE 246	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-21	SHARED OFFICE 245	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-22	SHARED OFFICE 245	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-23	BSL 2 251A	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-24	BSL 2 251B	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-25	RESEARCH LAB 251 (EXTERIOR)	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-26	BSL 2 TC 251D	ODU-1	4-WAY CEILING CASSETTE	315	20	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-27	RESEARCH LAB 251	ODU-1	4-WAY CEILING CASSETTE	315	110	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3
FC-28	RESEARCH LAB 251	ODU-1	4-WAY CEILING CASSETTE	315	110	35	208/1	0.3	6,200	5,700	24"	24"	10"	50	MITSUBISHI TPLFYP008FM140A	1, 2, 3

HEAT RECOVERY VRF OUTDOOR UNIT (ODU)

1. MULTI-CHASSIS UNIT; EACH CHASSIS REQUIRES INDIVIDUAL DISCONNECT AND ELECTRICAL SERVICE.
2. ON STAND-BY POWER.

PLAN CODE	SERVICE	SYSTEM TYPE	REFRIGERANT	NOMINAL COOLING CAPACITY (MBTU)	NOMINAL HEATING CAPACITY (BTUH)	OUTDOOR AMBIENT, °F (HEATING/COOLING)	ELECTRICAL DATA			MAX ALLOWABLE DIMENSIONS			MAX ALLOWABLE SOUND POWER (dBA)	MAX WEIGHT (LBS)	MANUFACTURER & MODEL NO.	REMARKS
							VOLT/PH	MCA (CHASSIS #1 / #2)	MOCP (CHASSIS #1 / #2)	WIDTH	DEPTH	HEIGHT				
ODU-1	LAB & OFFICE FAN COILS	MULTI-FRAME HEAT RECOVERY HEAT PUMP VRF	R-410A	264	295	9.0 / 98.0	208 / 3	49 / 41	80 / 60	100"	32"	72"	87	1,500	MITSUBISH TURYE2643BN40A	1, 2

DEDICATED OUTDOOR AIR SYSTEM (DOAS)

1. DIMENSIONS LISTED BELOW ARE OUTSIDE DIMENSIONS, INCLUDING AIR INTAKE HOODS AND CONDENSER FANS. ACTUAL CURB FOOTPRINT SHALL NOT EXCEED 60" WIDTH x 130" LENGTH.
2. ARRANGE COILS AND OTHER EQUIPMENT TO ALLOW PIPE RISERS TO RISE THROUGH THE CURB, INSIDE THE UNIT. EXTERNAL CHASES OR RISERS NOT PERMITTED.
3. SUPPLY FAN AND CONTROLS ARE TO BE POWERED ON A SEPARATE CIRCUIT (CIRCUIT #2) FROM THE REST OF THE UNIT ELECTRICAL EQUIPMENT. SUPPLY FAN CIRCUIT TO BE ON STAND-BY POWER.

PLAN CODE	DUTY	DIRECT-DRIVE SUPPLY FAN							DX COOLING SECTION							HEATING (HEAT PUMP + ELECTRIC RESISTANCE)						HEAT RECOVERY RUNAROUND COIL									ELECTRICAL			MAX. DIMENSIONS				MANUFACTURER	MODEL NO	REMARKS
		CFM (ALT)	ESP	TSP	RPM	BHP	HP	VFD (YES/NO)	REFRIGERANT	TOTAL MBH	SENSIBLE MBH	COOLING EAT DB (°F)	COOLING EAT WB (°F)	UNIT LAT DB (°F)	UNIT LAT WB (°F)	OUTDOOR AMBIENT (DB °F)	PRIMARY HEAT TYPE	HEAT PUMP CAPACITY (MBH @ 47F)	MINIMUM COP (@ 47F)	SECONDARY HEAT TYPE	ELECTRIC RESISTANCE INPUT (kW)	OUTPUT CONTROL	HEATING EAT (°F)	HEATING LAT (°F)	CAPACITY (BTU/H)	MAX. FACE VELOCITY (FPM)	MAX. APD (IN. W.C.)	EAT (°F)	LAT (°F)	FLUID	EFT (°F)	LFT (°F)	FLOW (GPM)	MAX FLUID PD (FT. H2O)	VOLTAGE/PHASE	MCA (CIRCUIT #1 / #2)	MOCP (CIRCUIT #1 / #2)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	OPERATING WEIGHT (LBS)			
DOAS-1	OUTSIDE AIR (ALL SPACES)	3,700	2.5	3.6	2,071	2.9	3.0	YES	R-410a	105	105	98.0	62.5	64.0	50.0	98.0	DX HEAT PUMP	105	3.8	ELECTRIC RESISTANCE	50	MODULATING (SCR)	22.0	72.0	63,000	300	0.10	9.9	27.0	30% P.G.	52	35	8	5	208 / 3	157 / 21	175 / 35	152"	96"	52"	3,200	AAON	RN-011	1, 2, 3

EXHAUST FAN SCHEDULE (EF)

PLAN CODE	SYSTEM DUTY	TYPE EQUIP	CFM	ESP @ ELEV	FAN RPM	WATTS	AMPS	VOLTAGE	PHASE	SONES	DAMPER (GRAVITY OR MOTOR)	METHOD OF CONTROL	OPENING SIZE (IN)	HEIGHT (N)	DIAMETER (IN)	MAX OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL NO	REMARKS
EF-1	SHOWER 039	CEILING EXHAUST	100	0.25	1075	39	0.42	120	1	2.5	GRAVITY	INTEGRATE WITH LIGHT SWITCH	12 X 14	7	6	25	COOK	GC-148	PROVIDE WITH WHITE PLASTIC GRILLE, 62.2 FAN/LIGHT CONTRL, BV2 100-400 BRICK VENT, INTEGRAL BD DAMPER, AND GEMINI ISOLATOR KIT.

TRANSFER FAN SCHEDULE (TF)

PLAN CODE	SYSTEM DUTY	TYPE EQUIP	CFM	ESP @ ELEV	FAN RPM	WATTS	AMPS	VOLTAGE	PHASE	SONES	METHOD OF CONTROL	LENGTH (IN)	WIDTH (N)	HEIGHT (IN)	MAX OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL NO	REMARKS
TF-1	ELECTRICAL 099A	CABINET FAN	100	0.25	1075	39	0.42	120	1	2.5	WALL THERMOSTAT	13	16	9	20	COOK	GN-148	

PUMP SCHEDULE (P)

1. ON STANDBY POWER.

PLAN CODE	TYPE	DUTY	FLOW (GPM)	HEAD (FT H20)	MAXIMUM ALLOWABLE BHP	FLUID	MOTOR					MAX WEIGHT (LBS)	MANUFACTURER	MODEL NO	REMARKS
							SIZE (HP)	SPEED (RPM)	VOLTAGE	PHASE	VFD				
P-1	INLINE CIRCULATOR, PERMANENT MAGNET MOTOR	HEAT RECOVERY RUN AROUND LOOP	10	35	0.25	30% P.G.	0.25	4,518	120	1	INTEGRAL TO PUMP	40	GRUNDFOS	MAGNA3 32-120 GF	1

EXPANSION TANK SCHEDULE (ET)

PLAN CODE	SYSTEM SERVED	WATER TEMP (°F)	% GLYCOL	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	PRE-CHARGE (PSI)	MAX DIMENSIONS			MANUFACTURER	MODEL NO
							DIAMETER (IN)	HEIGHT (IN)	OPERATING WEIGHT (LBS)		
ET-1	HEAT RECOVERY RUN AROUND LOOP	40	30	2.0	1.0	30	8	14	15	B&G	HFT-15

AIR SEPARATOR SCHEDULE (AS)

PLAN CODE	SYSTEM SERVED	CONNECTION SIZE	MAX GPM	MAX. PD (FT)	MAX DIMENSIONS (IN)			OPERATING WT (LBS)	MANUFACTURER	MODEL
					DIAMETER	HEIGHT	FLANGE TO FLANGE			
AS-1	HEAT RECOVERY LOOP	1.5"	30	1.0	3"	10"	3.5"	10	SPIROTHERM	VJR 150TM

LAB EXHAUST HEAT RECOVERY AIR HANDLER

LAB EXHAUST HEAT RECOVERY UNIT

1. UNIT TO BE ON STAND-BY POWER.
2. HEAT RECOVERY AIR HANDLER CASING AND LAB EXHAUST FANS ARE TO BE ASSEMBLED ON A SINGLE SKID.
3. ELECTRICAL CONNECTIONS: (1) 120V SINGLE-POINT CONNECTION FOR LIGHTING/CONTROLS; (1) 208V/3PH SINGLE-POINT CONNECTIONS FOR VFD SERVING LEF-1; (1) 208V/3PH SINGLE-POINT CONNECTION FOR VFD SERVING LEF-2.

PLAN CODE	DUTY	AIRFLOW (CFM)	ESP (IN. W.C.).	FILTERS	HEAT RECOVERY COIL											EXHAUST FANS	MAXIMUM OVERALL DIMENSIONS					MANUFACTURER	REMARKS
					TOTAL CAPACITY (BTU/H)	SENSIBLE CAPACITY (BTU/H)	MAX FACE VELOCITY (FPM)	EAT DB/WB (°F)	LAT DB/WB (°F)	MAX AIR PD (IN. W.C.)	FLUID	FLOW (GPM)	EFT, °F	LFT, °F	MAX FLUID PD (FT H2O)	COIL ARRANGEMENT		LENGTH	WIDTH	HEIGHT (TOP OF CASING)	HEIGHT (TOP OF FANS)	WEIGHT (LBS)		
HRU-1	LAB EXHAUST	4,000	2.5	4" MERV-8	74,000	74,000	525	70 / 51.5	49.5 / 42.8	0.65	30% P.G.	8	34.7	51.8	10	1 COIL: 28.5" H x 39" L, 6 ROW/11 FPI	SEE 'LEF' SCHEDULE	166"	108"	48"	128"	8,000	ENERGY LABS	1, 2

LAB EXHAUST FAN SCHEDULE (LEF)

1. CONNECTED TO STANDBY POWER.
2. PROVIDE LEF-1 AND LEF-2 TOGETHER AS 1X2 FAN ASSEMBLY WITH COMMON MIXING BOX BASE, REAR EXHAUST INLET, FRONT BYPASS INLET. INTEGRATE WITH HRU-1 BASE SKID. INCLUDE INLET AND BYPASS DAMPERS WITH FANS. PROVIDE DAMPER ACTUATORS AS PART OF 230900 WORK.
3. ONE VFD PER FAN MOTOR. PROVIDE VFD WITH FANS / HRU-1, PREMOUNTED AND PREWIRED FROM VFD TO FAN MOTOR.

PLAN CODE	AREA SERVED	TYPE	CFM @ ELEV	TSP @ ELEV	FAN RPM	MOTOR				dB(A) INLET/OUTLET	VFD	MAX OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL NO	REMARKS
						BHP	HP	VOLTAGE	PHASE						
LEF-1	LABORATORY SPACES	MIXED FLOW, DIRECT DRIVE W/ BIFURCATED HOUSING	4,000	3.5"	1,725	4.9	7.5	208	3	79 / 79	YES	1,800	COOK	180-QMX DLE	1, 2, 3
LEF-2	LABORATORY SPACES	MIXED FLOW, DIRECT DRIVE W/ BIFURCATED HOUSING	4,000	3.5"	1,725	4.9	7.5	208	3	79 / 79	YES	1,800	COOK	180-QMX DLE	1, 2, 3

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PROJECT TITLE:
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#	Description	Date
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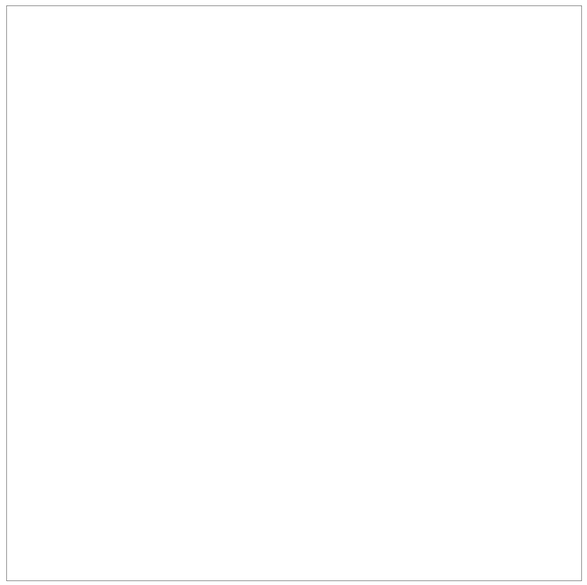
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MECHANICAL SCHEDULES

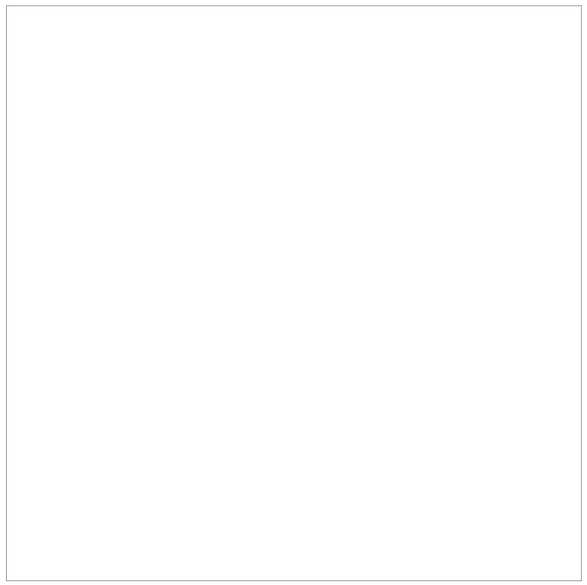
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M601

SHEET OF

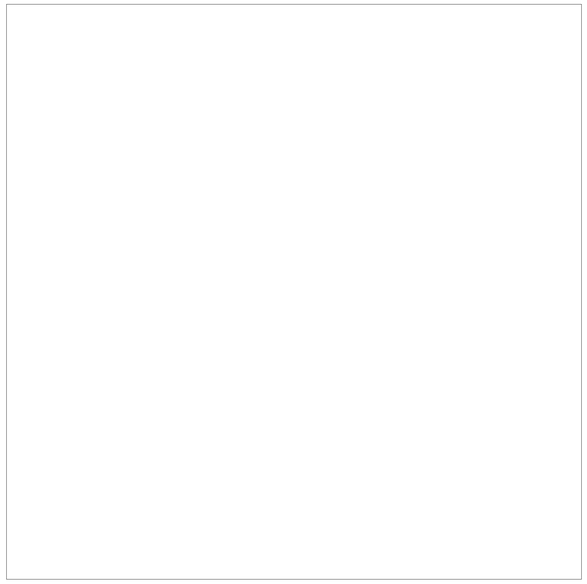
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1 LAB EXHAST FAN SCHEMATIC
SCALE: NONE



3 BOILER ROOM VENTILATION FAN SCHEMATIC
SCALE: NONE



2 LAB VENTILATION SYSTEM IN ALARM MODE
SCALE: NONE

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MECHANICAL SCHEMATICS

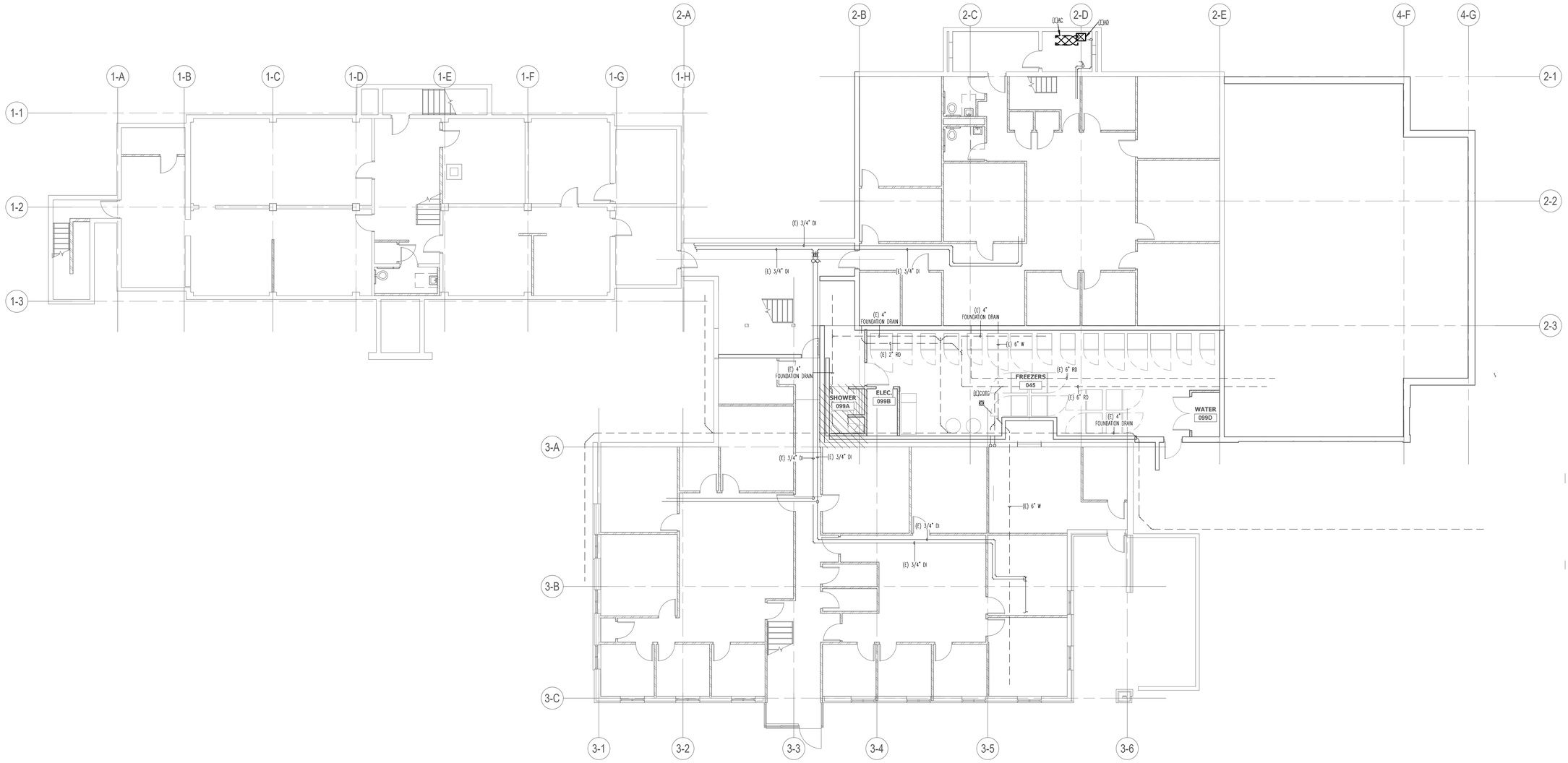
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M701

SHEET OF

GENERAL NOTES

A. PLUMBING GENERAL NOTES.

KEYED NOTES



1 BASEMENT PLUMBING DEMO PLAN

SCALE: 1/8" = 1'-0"

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SHEET TITLE:

BASEMENT PLUMBING DEMO PLAN

SHEET NUMBER:

P100D

SHEET OF

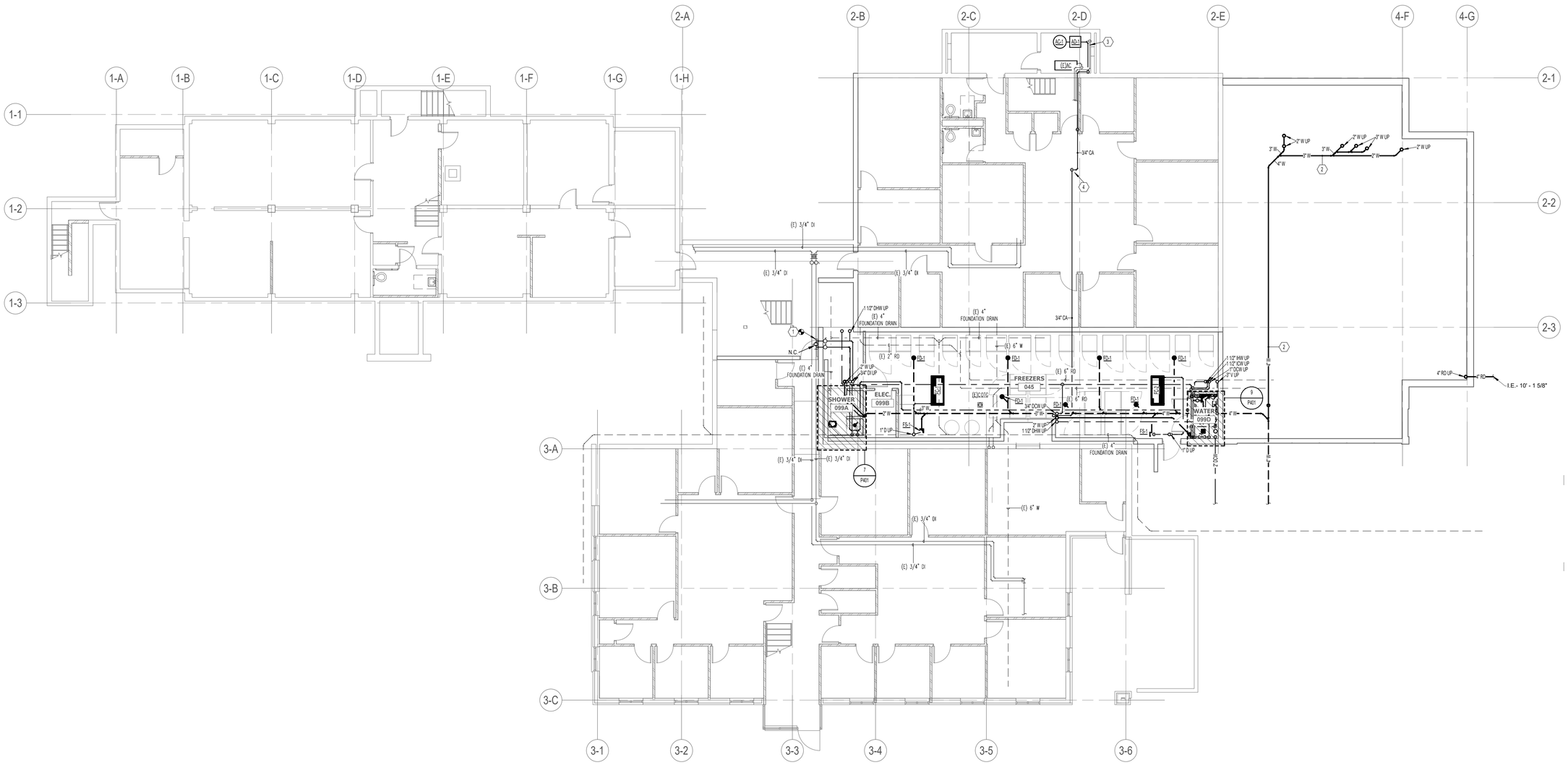
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GENERAL NOTES

A. PLUMBING GENERAL NOTES.

KEYED NOTES

1. TIE INTO EXISTING DEIONIZED WATER LOOP AT THIS APPROXIMATE LOCATION. PROVIDE ISOLATION VALVES AS SHOWN. VALVE ADDED TO EXISTING LINE TO BE IN THE NORMALLY CLOSED POSITION. FIELD VERIFY EXISTING CONDITIONS AND CONNECTION POINT PRIOR TO BEGINNING WORK.
2. WASTE PIPE SERVING SINKS AND FIXTURES IN BSL2 ROOMS AND RESEARCH LABS ARE TO BE LAB WASTE MATERIAL PER SPECIFICATION 221410. EXTEND LAB WASTE PIPING TO MAIN WASTE EXITING BUILDING.
3. CONNECT EXISTING LAB 1/2" CA PIPE INTO THE NEW 3/4" CA PIPE INSIDE THE AIR COMPRESSOR ROOM.
4. ROUTE NEW CA PIPING ABOVE EXISTING CEILING. PROVIDE OFFSETS AS NECESSARY TO AVOID EXISTING STRUCTURE, ELECTRICAL, AND ALL OTHER EXISTING CONDITIONS.



1 BASEMENT PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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SHEET TITLE:
BASEMENT FLOOR PLUMBING PLAN

SHEET NUMBER:
P100

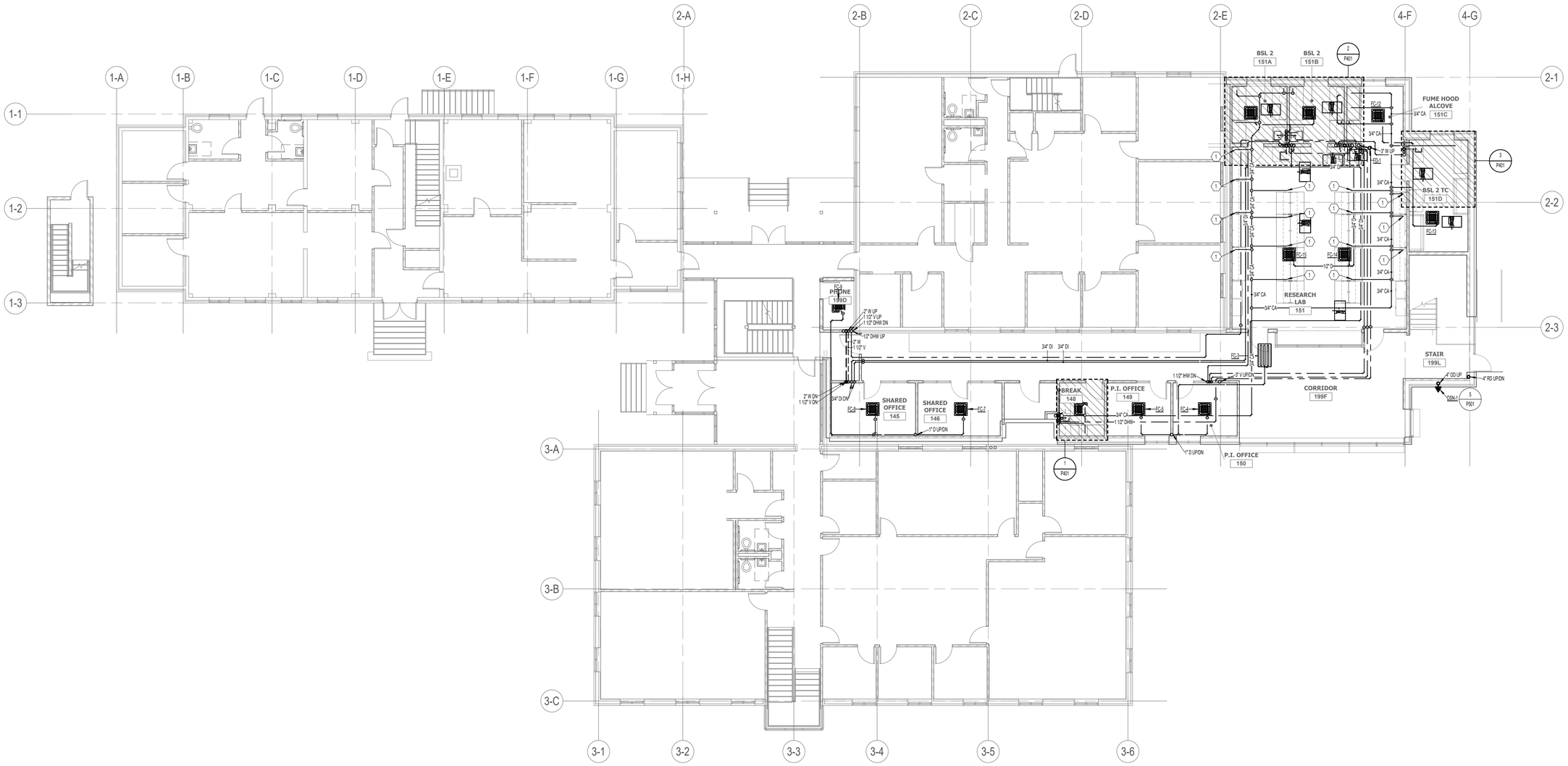
SHEET OF

GENERAL NOTES

A. PLUMBING GENERAL NOTES.

KEYED NOTES

1 1/2" CA BRANCH. CONNECT COMPRESSED AIR TO CEILING SERVICE PANEL. COORDINATE EXACT LOCATION WITH LAB DRAWINGS AND REFLECTED CEILING PLANS. PROVIDE ALL NECESSARY OFFSETS, REDUCERS AND OTHER PIPE ACCESSORIES TO MAKE CONNECTION.



1 LEVEL 1 PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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SHEET TITLE:
LEVEL 1 PLUMBING PLAN

SHEET NUMBER:
P101

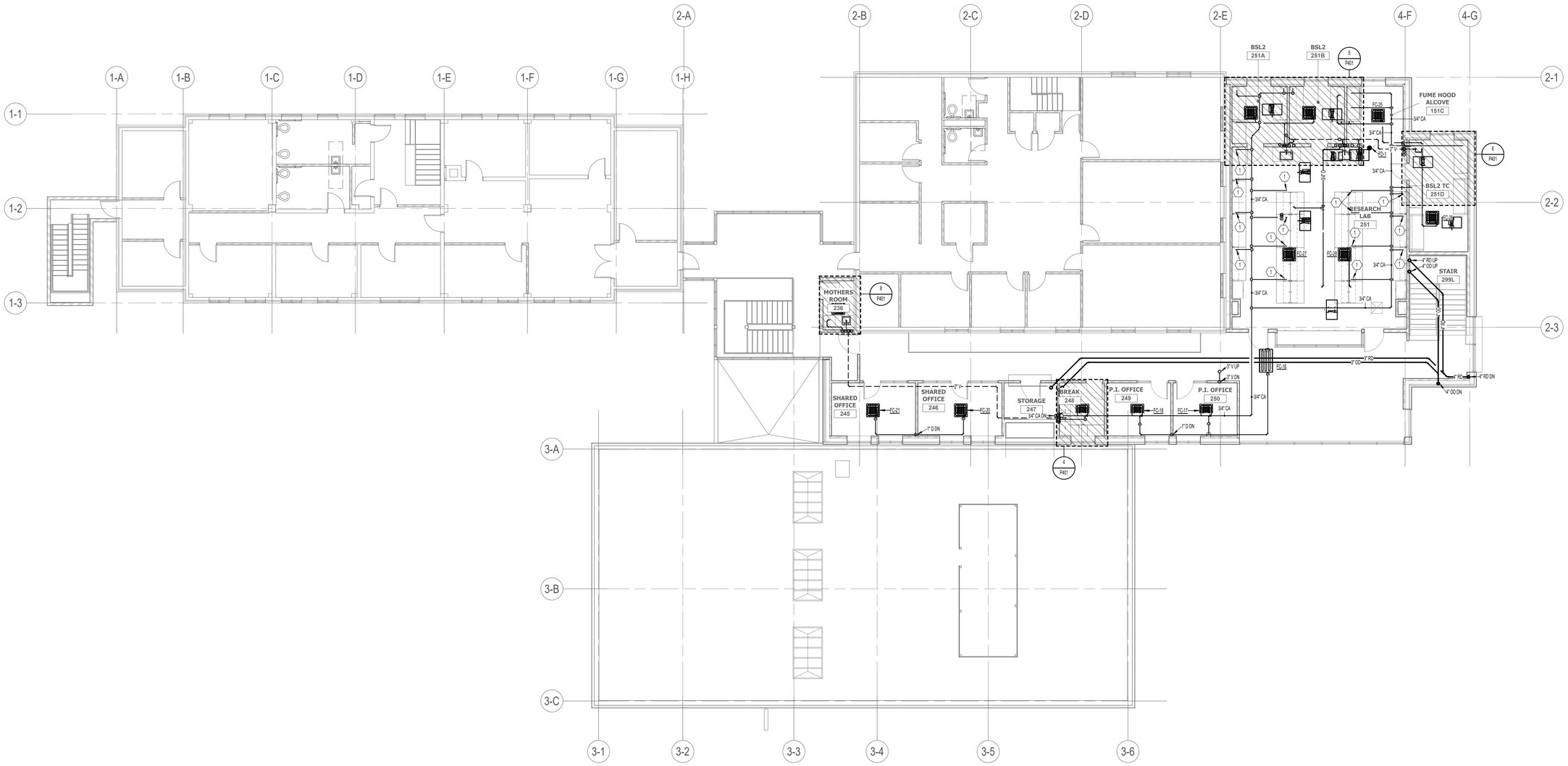
SHEET OF

GENERAL NOTES

A. PLUMBING GENERAL NOTES.

KEYED NOTES

1 1/2" CA BRANCH. CONNECT COMPRESSED AIR TO CEILING SERVICE PANEL. COORDINATE EXACT LOCATION WITH LAB DRAWINGS AND REFLECTED CEILING PLANS. PROVIDE ALL NECESSARY OFFSETS, REDUCERS AND OTHER PIPE ACCESSORIES TO MAKE CONNECTION.



1 LEVEL 2 PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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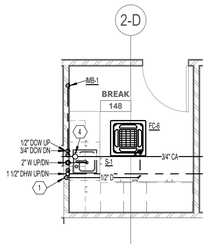
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LEVEL 2 PLUMBING PLAN

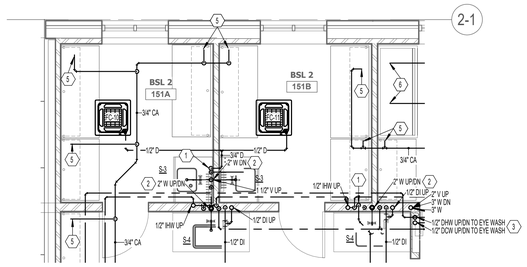
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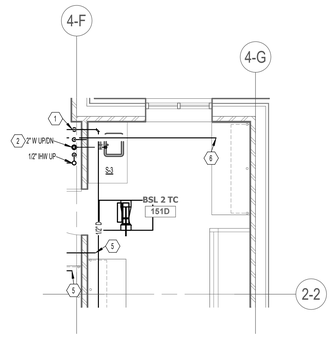
SHEET OF



1 ENLARGED BREAK 148 PLUMBING PLAN
SCALE: 1/4" = 1'-0"



2 ENLARGED BSL 2 151A & 151B PLUMBING PLAN
SCALE: 1/4" = 1'-0"



3 ENLARGED BSL 2 TC 144 PLUMBING PLAN
SCALE: 1/4" = 1'-0"

KEYED NOTES

1. ROUTE CONDENSATE DOWN WALL AND TIE INTO SINK TAILPIECE.
2. WASTE PIPE SERVING SINKS AND FIXTURES IN BSL2 ROOMS AND RESEARCH LABS ARE TO BE LAB WASTE MATERIAL PER SPECIFICATION 221410. EXTEND LAB WASTE PIPING TO MAIN WASTE EXITING BUILDING.
3. PROVIDE HOT/COLD PIPING TO THE MIXING VALVE AS SHOWN. ALSO PROVIDE TEMPERED WATER PIPING FROM THE MIXING VALVE TO THE EYEWASH/SHOWER CONNECTIONS IF NOT ALREADY PIPED FROM THE FACTORY.
4. PROVIDE ISOLATION VALVE IN COMPRESSED AIR LINE AT EACH FLOOR BRANCH.
5. 1/2" CA BRANCH. CONNECT COMPRESSED AIR TO CEILING SERVICE PANEL. COORDINATE EXACT LOCATION WITH LAB DRAWINGS AND REFLECTED CEILING PLANS. PROVIDE ALL NECESSARY OFFSETS, REDUCERS AND OTHER PIPE ACCESSORIES TO MAKE CONNECTION.
6. 1/2" CA BRANCH. CONNECT COMPRESSED AIR TO FUME HOOD / SAFETY CABINET. COORDINATE EXACT LOCATION WITH FUME HOOD / CABINET MANUFACTURER'S REQUIREMENTS. PROVIDE ALL NECESSARY OFFSETS, REDUCERS AND OTHER PIPE ACCESSORIES TO MAKE CONNECTION.

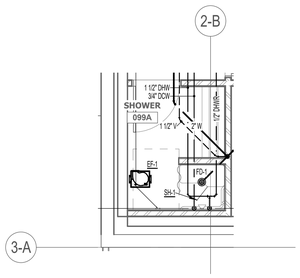
GENERAL NOTES

A. ENLARGED PLUMBING GENERAL NOTES

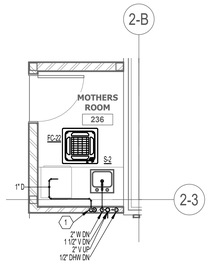
4 ENLARGED BREAK 248 PLUMBING PLAN
SCALE: 1/4" = 1'-0"

5 ENLARGED BSL 2 251A & 251B PLUMBING PLAN
SCALE: 1/4" = 1'-0"

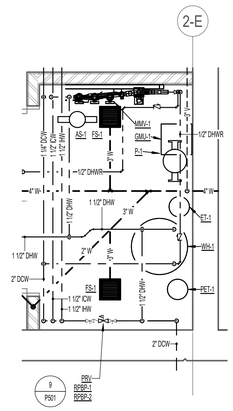
6 ENLARGED BSL 2 TC 244 PLUMBING PLAN
SCALE: 1/2" = 1'-0"



7 ENLARGED SHOWER 039 PLUMBING PLAN
SCALE: 1/4" = 1'-0"



8 ENLARGED MOTHERS ROOM 240 PLUMBING PLAN
SCALE: 1/4" = 1'-0"



9 ENLARGED BASEMENT WATER 099D PLUMBING PLAN
SCALE: 1/2" = 1'-0"

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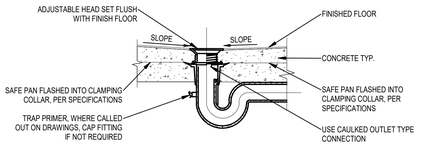
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ENLARGED PLUMBING PLANS

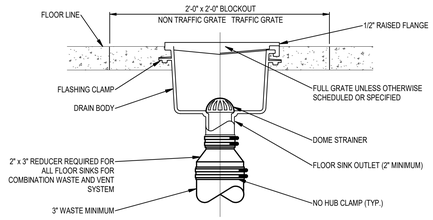
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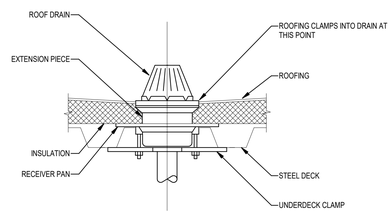
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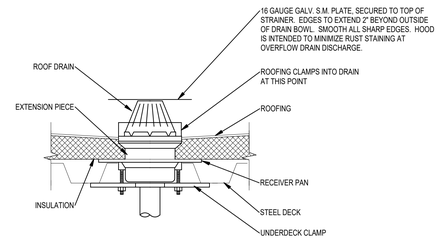
1 FLOOR DRAIN IN SUSPENDED SLAB
SCALE: NONE



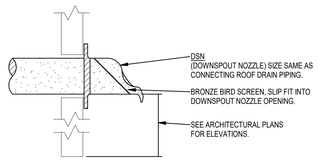
2 FLOOR SINK
SCALE: NONE



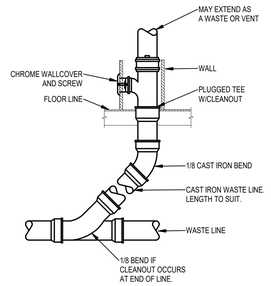
3 ROOF DRAIN
SCALE: NONE



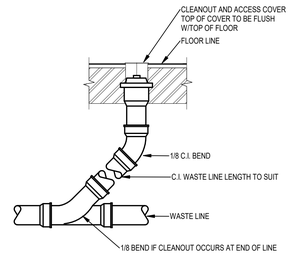
4 OVERFLOW ROOF DRAIN-HOOD
SCALE: NONE



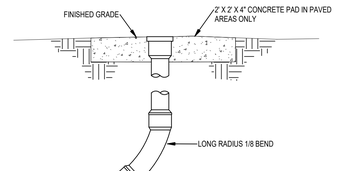
5 DOWNSPOUT NOZZLE
SCALE: NONE



6 CLEANOUT - WALL INSTALLATION
SCALE: NONE

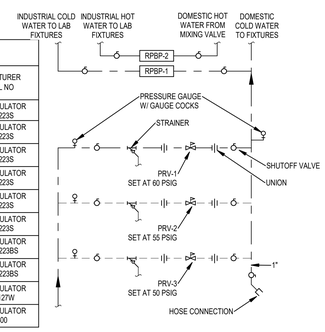


7 CLEANOUT - FLOOR MOUNT
SCALE: NONE

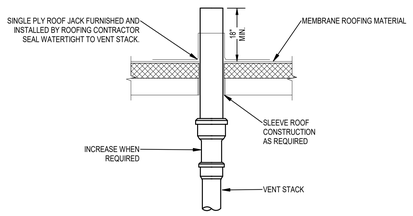


8 CLEANOUT - SURFACE
SCALE: NONE

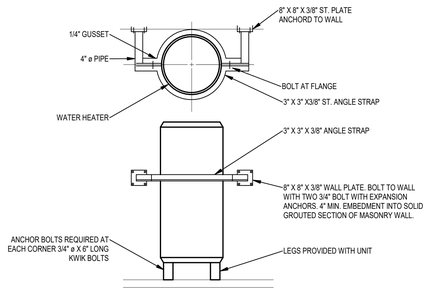
PRV SCHEDULE			
PLAN CODE	SIZE	MAX GPM @ 10 PSI ΔP	MANUFACTURER & MODEL NO
PRV-X	3/4"	20	WATTS REGULATOR SERIES 223S
PRV-X	1"	29	WATTS REGULATOR SERIES 223S
PRV-X	1 1/4"	46	WATTS REGULATOR SERIES 223S
PRV-X	1 1/2"	80	WATTS REGULATOR SERIES 223S
PRV-X	2"	100	WATTS REGULATOR SERIES 223S
PRV-X	2 1/2"	105	WATTS REGULATOR SERIES 223S
PRV-X	2 1/2"	130	WATTS REGULATOR SERIES N223BS
PRV-X	3"	180	WATTS REGULATOR SERIES N223BS
PRV-X	4"	230	WATTS REGULATOR SERIES 127W
PRV-X	6"	438	WATTS REGULATOR NO. 2300



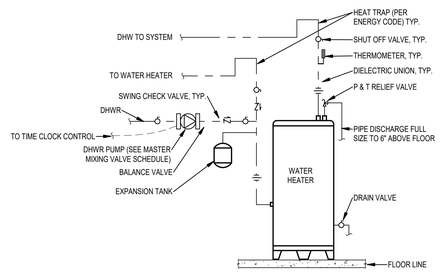
9 DOMESTIC WATER - PRV STATION AND RPBP
SCALE: NONE



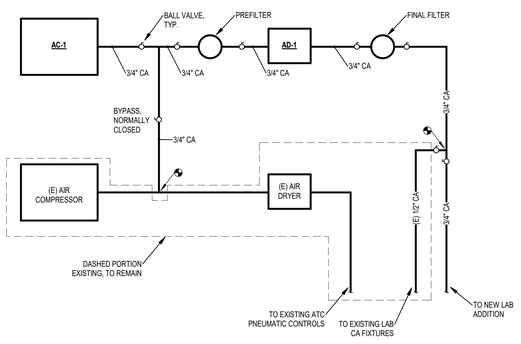
10 VENT THROUGH ROOF
SCALE: NONE



11 WATER HEATER - FLOOR MOUNTED ANCHOR
SCALE: NONE



12 WATER HEATER PIPING - (FLOOR MOUNTED)
SCALE: NONE



13 AIR COMPRESSOR SCHEMATIC
SCALE: NONE

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PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD DRAWINGS	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

SHEET TITLE:
PLUMBING DETAILS

SHEET NUMBER:
P501

SHEET OF

HEAT PUMP WATER HEATER SCHEDULE (WH)

PLAN CODE	SYSTEM SERVED	UNIFORM ENERGY FACTOR	STORAGE CAPACITY (GAL)	RECOVERY (GAL/HR)	TEMP. RISE (°F)	VOLTAGE / PHASE	FLA	DIAMETER (IN)	HEIGHT (IN)	WEIGHT (LBS)	MANUFACTURER & MODEL NO.	REMARKS
WH-1	DOMESTIC HOT WATER	3.42	50	66	90	208/1	30	22	63	600	A.O. SMITH FPTU 50	PROVIDE DUCT ACCESSORY KIT

PLUMBING EXPANSION TANK SCHEDULE (PET)

PLAN CODE	SYSTEM DUTY	WATER TEMP (°F)	TANK (GAL)	ACCEPTANCE VOLUME (GAL)	PRE CHARGE (PSI)	DIAMETER (IN)	HEIGHT (IN)	WEIGHT (LBS)	MANUFACTURER	MODEL NO	REMARKS
PET-1	WH-1	140	2.0	0.9	55	8	14	15	AMTROL	THERM-X-TROL ST-5C-DD	

MASTER MIXING VALVE ASSEMBLY SCHEDULE (MMV)

1. INLINE BRONZE CIRCULATOR.
2. PROVIDE WITH STARTS AND DISCONNECT.
3. FACTOR INSTALLED REDUNDANT CIRCULATORS.

PLAN CODE	MINIMUM GPM	MAXIMUM GPM	PD @ MAX FLOW (PSI)	INLET SIZE (IN)	OUTLET SIZE (IN)	DIMENSIONS			RECIRC PUMP						MANUFACTURER	MODEL NO	REMARKS
						HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	PLAN CODE	FLOW (GPM)	PRESSURE (FT)	HP	VOLTAGE	PHASE	MFR & MODEL NO.			
MMV-1																	

AIR COMPRESSOR (AC)

PLAN CODE	TYPE EQUIP	AFCM @ 90 PSIG	RECEIVER CAPACITY (GAL)	VOLT/PH	HP	MANUFACTURER	MODEL #	REMARKS
AC-1	TWO-STAGE RECIPROCATING, VERTICAL RECEIVER TANK	17.2	80	208 / 1	5	INGERSOLL RAND	2475N5	-

AIR DRYER (AD)

1. PROVIDE WITH PARTICULATE FILTER AND COALESCING FILTER.

PLAN CODE	DUTY	SCFM	DEWPOINT (°F)	TYPE	VOLTAGE / PHASE	MCA	LENGTH	WIDTH	HEIGHT	MANUFACTURER	MODEL #	REMARKS
AD-1	AC-1	25	38	REFRIGERATED (R-134A)	120 / 1	5	16"	16"	22"	SPX HANKISON	HPR25	1

PLUMBING FIXTURE SCHEDULE

PLAN CODE	DESCRIPTION	C.W.	H.W.	WASTE	VENT	STORM	REMARKS
DSN-1	DOWNSPOUT NOZZLE	-	-	-	-	SEE PLANS	JAY R. SMITH MANUFACTURING COMPANY FIG. 1770Y-BS-NB DOWNSPOUT WITH BIRD SCREEN AND NICKEL BRONZE FINISH. OR EQUAL.
FD-1	FLOOR DRAIN	-	-	SEE PLANS	SEE PLANS		JAY R. SMITH MANUFACTURING COMPANY FIG. 2005Y-LI-HP-SS DUCO CAST IRON FLOOR DRAIN. ADJUSTABLE STRAINER WITH ROUND GRATE. PROVIDE A DEEP SEAL TRAP. WHERE NOTED ON PLANS, PROVIDE TRAP PRIMER CONNECTION PORT. OTHERWISE, PROVIDE TRAP SEAL. SEE PLANS FOR OUTLET SIZE. STRAINER HEAD MUST BE HEEL PROOF. OR EQUAL.
FS-1	FLOOR SINK	-	-	SEE PLANS	SEE PLANS	-	JAY R. SMITH MANUFACTURING COMPANY SQUARE FLOOR SINK, FIG. 3150Y. CAST IRON CONSTRUCTION WITH ENAMEL ACID RESISTANT INTERIOR FINISH. MINIMUM DIMENSIONS: 12" x 12" x 8". WITH DOME STRAINER AND NICKEL BRONZE 1/2 GRATE. PROVIDE WITH DEEP SEAL TRAP AND PROSET TRAPGUARD
IMB-1	ICE MAKER BOX	1/2"	-	-	-	-	OATEY SQUARE 39156 NOTE: IF DEVICE IS TO BE LOCATED WITHIN A FIRE-RATED WALL ASSEMBLY, BOX SHALL ALSO BE FIRE-RATED. WALL RATINGS BY ARCHITECTURAL
OD-1	OVERFLOW (SECONDARY) ROOF DRAIN	-	-	-	-	SEE PLANS	JAY R. SMITH MANUFACTURING COMPANY FIG. 1080Y-R-C-CID-U LARGE GENERAL PURPOSE ROOF DRAIN WITH ADJUSTABLE EXTENSION. PROVIDE WITH DUCO CAST IRON BODY, FLASHING CLAMP WITH GRAVEL STOP, 2" CAST IRON WATER DAM, CAST IRON DOME, UNDERDECK CLAMP, SUMP RECEIVER, AND VANDAL PROOF SECURITY SCREWS. OR EQUAL.
RD-1	PRIMARY ROOF DRAIN	-	-	-	-	SEE PLANS	JAY R. SMITH MANUFACTURING COMPANY FIG. 1015Y-R-C-CID-U LARGE GENERAL PURPOSE ROOF DRAIN WITH ADJUSTABLE EXTENSION. PROVIDE WITH DUCO CAST IRON BODY, FLASHING CLAMP WITH GRAVEL STOP, CAST IRON DOME, UNDERDECK CLAMP, SUMP RECEIVER, AND VANDAL PROOF SECURITY SCREWS. OR EQUAL.
S-1	SINGLE COMPARTMENT, SELF-RIMMING 18 GA. STAINLESS STEEL SINK WITH STRAINER, GOOSENECK SWING SPOUT FAUCET WITH WING HANDLES.	1/2"	1/2"	1 1/2"	1 1/4"	-	
S-2	SINGLE COMPARTMENT, SELF-RIMMING 18 GA. STAINLESS STEEL SINK WITH STRAINER, GOOSENECK FAUCET WITH WING HANDLE.	1/2"	1/2"	1 1/2"	1 1/4"	-	
S-3	SINGLE COMPARTMENT SINK WITH STRAINER, GOOSENECK LAB FAUCET, AND DECK MOUNTED EYEWASH.	1/2"	1/2"	1 1/2"	1 1/4"	-	SINK: SEE ARCHITECTURAL / LAB DRAWINGS SINK FAUCET: WATERSAVER L412VB-BH
S-4	SINGLE COMPARTMENT SINK WITH STRAINER, GOOSENECK LAB FAUCET, AND SEPARATE SINGLE LAB FAUCET FOR DI WATER.	1/2"	1/2"	1 1/2"	1 1/4"	-	SINK: SEE ARCHITECTURAL / LAB DRAWINGS SINK FAUCET: WATERSAVER L412VB-BH RODI FAUCET: WATERSAVER L611VB-BH
SH-1	PRESSURE BALANCING MIXING VALVE WITH LEVER HANDLE, DIVERTER WITH INTEGRAL VOLUME CONTROL, FLEX METAL HOSE, SLIDE ROD WITH HAND SHOWER, ADA COMPLIANT, TEMPERATURE LIMIT STOPS	1/2"	1/2"	2"	1 1/4"	-	SYMMONS 96-500-B30-V-X-2.0

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SHEET TITLE:

PLUMBING SCHEDULES

SHEET NUMBER:

P601

SHEET OF

LIGHTING SYMBOLS

1. LIGHT FIXTURE SYMBOLS ARE GENERAL IN NATURE AND MAY BE SHOWN ON THE DRAWINGS IN VARIOUS SIZES AND SHAPES. REFER TO THE LIGHT FIXTURE SCHEDULE FOR SPECIFICATION INFORMATION.
2. ARROWS INDICATE AIMING DIRECTION.

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
	ARM-MOUNTED SINGLE-HEAD LIGHT FIXTURE AND POLE	AS SPECIFIED OR DETAILED	
	ARM-MOUNTED DOUBLE-HEAD LIGHT FIXTURE AND POLE	AS SPECIFIED OR DETAILED	
	POST-TOP SINGLE-HEAD, LIGHT FIXTURE AND POLE	AS SPECIFIED OR DETAILED	
	WALL-MOUNTED FIXTURE	AS SPECIFIED OR DETAILED	REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT
	LIGHT BOLLARD	AS SPECIFIED OR DETAILED	
	FLOOD LIGHT	AS SPECIFIED OR DETAILED	
	RECESSED WALL FIXTURE OR STEP LIGHT	AS SPECIFIED OR DETAILED	REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT
	LIGHT FIXTURES	AS SPECIFIED OR DETAILED	
	WALL-MOUNTED LINEAR LIGHT FIXTURE	AS SPECIFIED OR DETAILED	
	LINEAR WALL WASHER	AS SPECIFIED OR DETAILED	
	RECESSED DOWN LIGHT	AS SPECIFIED OR DETAILED	
	RECESSED WALL-WASHER OR DIRECTIONAL DOWNLIGHT	AS SPECIFIED OR DETAILED	
	SURFACE OR PENDANT-MOUNTED LIGHT FIXTURE	AS SPECIFIED OR DETAILED	
	TRACK OR MONO-POINT LIGHT FIXTURE	AS SPECIFIED OR DETAILED	
	WALL SCONCE	AS SPECIFIED OR DETAILED	
	LINEAR PENDANT LIGHT FIXTURE	CEILING	
	EGRESS LIGHT FIXTURE	AS SPECIFIED OR DETAILED	THIS IS AN EXAMPLE OF AN EGRESS LIGHT FIXTURE. EGRESS LIGHT FIXTURES ARE HALF-SHADED DIAGONALLY
	EMERGENCY (NON-EGRESS) LIGHT FIXTURE	AS SPECIFIED OR DETAILED	THIS IS AN EXAMPLE OF AN EMERGENCY (NON-EGRESS) LIGHT FIXTURE. EMERGENCY FIXTURES ARE FULLY-SHADED.
	CEILING MOUNTED EXIT SIGN	CEILING	DARKENED PORTION OF SIGN INDICATES FACE(S); ARROW(S) INDICATE CHEVRON DIRECTION(S)
	WALL-MOUNTED EXIT SIGN	WALL ABOVE DOOR	
	WALL-MOUNTED EXIT SIGN W/ EMERGENCY LIGHT FIXTURE	WALL ABOVE DOOR	
IN	CEILING MOUNTED IN USE SIGN	CEILING	
IN	WALL-MOUNTED IN USE SIGN	WALL ABOVE DOOR	
TC	TIME CLOCK		
	EMERGENCY LIGHT FIXTURE	AS NOTED	
P	ELECTRIC PHOTOCELL	N/A	MOUNT ON ROOF FACING NORTH SKY
XXXX	LIGHT FIXTURE CALLOUT (LETTER DENOTES FIXTURE TYPE)		

FIRE ALARM SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
T	BEAM DETECTOR - TRANSMITTER	4" BELOW CEILING TO TOP OF DETECTOR	
R	BEAM DETECTOR - RECEIVER	4" BELOW CEILING TO TOP OF DETECTOR	
EOL	END OF LINE RESISTOR	PER MANUF. REC.	
T	TAMPER SWITCH	AT VALVE	
W	WATER FLOW INDICATOR	ON FIRE RISER	
FSD	FIRE/SMOKE DAMPER		
X	HEAT DETECTOR	CEILING	SUBSCRIPT INDICATES SPECIFIC REQUIREMENTS/OPTIONS: 'SB' DEVICE WITH SOUNDER BASE 'R' DEVICE WITH ADDRESSABLE RELAY 'RES' DEVICE HAS 120V, SMOKE ALARM W/BATTERY BACKUP
CO X	CARBON MONOXIDE DETECTOR		
X	SMOKE DETECTOR		
X	HEAT DETECTOR	WALL MOUNTED: MAX 12" FROM BOTTOM OF CEILING	
CO X	CARBON MONOXIDE DETECTOR		
X	SMOKE DETECTOR		
D	DUCT SMOKE DETECTOR	SIDE OF DUCT	
F	FIRE ALARM MANUAL STATION		
Z	CONTROL MODULE	AT DEVICE(S) TO BE CONTROLLED	
I	MONITOR MODULE	AT DEVICE(S) TO MONITOR	
R	FAN SHUTDOWN RELAY	AT CONTROL PANEL	
D	MAGNETIC DOOR HOLDER	COORDINATE WITH DOOR INSTALLER	COORDINATE WITH DOOR INSTALLER; SUBSCRIPT 'I' INDICATES TO MOUNT AT FLOOR LEVEL
WF	WATER FLOOD CONTROL		
H	AUDIO HORN	INDOOR - 96" FROM FINISH FLOOR TO TOP OF DEVICE. OUTDOOR - 120" FROM FINISH FLOOR TO TOP OF DEVICE.	SUBSCRIPT 'WP' INDICATES THAT A WEATHER PROOF BACK BOX IS REQ. NUMERIC SUBSCRIPT INDICATES CANDELA RATING OF STROBE (I.E. - 15, 75, 110)
S	FIRE ALARM VISUAL STROBE		
S	CONCEAL FIRE ALARM VISUAL STROBE		
HS	FIRE ALARM AUDIO/VISUAL HORN/STROBE		
HS	CONCEAL FIRE ALARM AUDIO/VISUAL HORN/STROBE		
HS	CEILING MOUNTED FIRE ALARM AUDIO/VISUAL HORN/STROBE		
S	FIRE ALARM AUDIO SPEAKER		
S	CEILING MOUNTED FIRE ALARM AUDIO SPEAKER		
S	FIRE ALARM AUDIO/VISUAL SPEAKER/STROBE		
S	CONCEAL FIRE ALARM AUDIO/VISUAL SPEAKER/STROBE		
S	CEILING MOUNTED FIRE ALARM AUDIO/VISUAL SPEAKER/STROBE		
F	FIRE FIGHTERS TELEPHONE JACK	+48"	
	FIRE PROTECTION SPRINKLER RISER BELL	+90"	FURNISHED BY FIRE PROTECTION CONTRACTOR AND INSTALLED AND CONNECTED BY DIV. 26
FACP	FIRE ALARM CONTROL PANEL		
ASD	FIRE ALARM CONTROL PANEL		

INTRUSION DETECTION SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
MD	MOTION DETECTOR	CEILING	SUBSCRIPT DENOTES DEGREES OF MONITORED AREA
D	DURESS PUSH-BUTTON	BELOW DESK	
OHS	OVERHEAD MAGNETIC CONTACT DOOR SWITCH	DOOR	
D	MAGNETIC CONTACT DOOR SWITCH	DOOR	
G	GLASS BREAK DETECTOR	CEILING	
S	SIREN	+90"	
REX	REQUEST FOR EXIT	DOOR	

WIRING DEVICE SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
	SPLIT-WIRED DUPLEX RECEPTACLE	+18"	
	SIMPLEX RECEPTACLE	+18"	
	DUPLEX RECEPTACLE	+18"	
	FOURPLEX RECEPTACLE	+18"	
	125/250V RECEPTACLE	+18"	RANGE – NEMA 14-50R DRYER – NEMA 14-30R
	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE	+18"	
	GROUND FAULT CIRCUIT INTERRUPTER FOURPLEX RECEPTACLE	+18"	
	EMERGENCY DUPLEX RECEPTACLE	+18"	
	EMERGENCY FOURPLEX RECEPTACLE	+18"	
	MULTI-OUTLET ASSEMBLY	4" ABOVE BACKSPLASH	
	POWER / TELEPHONE POLE	FLOOR/CEILING	
(4-PLEX)	CORD DROP	REFER TO FLOOR PLANS	REFER TO DETAIL. REFER TO PLANS.
(4-PLEX)	CORD REEL	REFER TO FLOOR PLANS	REFER TO DETAIL. REFER TO PLANS.
(5-20R)	SPECIAL PURPOSE OUTLET	+18"	SUBSCRIPT IN PARENTHESIS INDICATES NEMA CONFIGURATION IF SHOWN. REFER TO DRAWINGS AND/OR EQUIPMENT SCHEDULES. CONFIRM EXACT CONFIGURATION WITH OWNER PRIOR TO INSTALLATION.

GENERAL WIRING DEVICES

SYMBOL	DESCRIPTION	MOUNTING
B#	FLOOR BOX - REFER TO SUBSCRIPT AND FLOOR BOX SCHEDULE FOR MORE INFORMATION	
P	PROVIDE 4" SQUARE DEEP OUTLET BOX AND ELECTRICAL CONNECTIONS TO SYSTEMS FURNITURE. COORDINATE SYSTEM FURNITURE WIRING REQUIREMENTS AND OUTLET BOX LOCATIONS WITH SYSTEM FURNITURE SUPPLIER/INSTALLER PRIOR TO ROUGH-IN. WHIP FROM OUTLET BOX TO SYSTEMS FURNITURE TO BE PROVIDED BY SYSTEM FURNITURE INSTALLER.	
C	PROVIDE BOX WITH GROMMETTED COVER PLATE FOR COMMUNICATION CABLING SIZE BOX PER NEC. COORDINATE PLACEMENT OF OUTLET BOXES IN WALLS AND COLUMNS WITH SYSTEM FURNITURE SUPPLIER/INSTALLER PRIOR TO ROUGH-IN. EXTEND CONDUIT WITH NYLON PULL ROPE TO ACCESSIBLE CEILING SPACE. REFER TO TELECOM RISER DIAGRAM FOR CONDUIT SIZING TERMINATE CONDUIT IN CEILING SPACE WITH A NYLON BUSHING.	
P#	POKE THROUGH - REFER TO SUBSCRIPT AND FLOOR BOX SCHEDULE FOR MORE INFORMATION.	
	MULTI-SERVICE POKE-THRU WITH FURNITURE FEED CONNECTIONS. (POWER, COMMUNICATIONS AND A/V)	FLOOR
P	"TOMBSTONE" (LEGRANDE 525) OUTLET BOX WITH FURNITURE FEED CONNECTIONS. (POWER ONLY)	FLOOR
C	"TOMBSTONE" (LEGRANDE 525) OUTLET BOX WITH FURNITURE FEED CONNECTIONS. (COMMUNICATIONS ONLY)	FLOOR

LIGHTING CONTROLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
$	SINGLE-POLE TOGGLE SWITCH	+48"	
$a	SINGLE-POLE TOGGLE SWITCH	+48"	SUBSCRIPT KEYS SWITCH TO FIXTURES CONTROLLED.
$2	DOUBLE-POLE TOGGLE SWITCH	+48"	
$3	THREE-WAY TOGGLE SWITCH	+48"	
$4	FOUR-WAY TOGGLE SWITCH	+48"	
$K	KEY-OPERATED SINGLE-POLE TOGGLE SWITCH	+48"	
$P	SINGLE-POLE TOGGLE SWITCH WITH PILOT LIGHT	+48"	
$DIM	DIMMER SWITCH	+48"	RATE DIMMER SWITCH FOR MAXIMUM POSSIBLE WATTAGE
$TIM	TIMER SWITCH	+48"	
$OS	OCCUPANCY SENSOR	+48"	REFER TO OCCUPANCY SENSOR SCHEDULE FOR MORE INFORMATION "#" SPECIFIES TYPE
$$	(2) SINGLE-POLE TOGGLE SWITCH	+48"	DUAL LEVEL SWITCH OUTBOARD LAMPS SEPARATELY FROM INBOARD LAMPS.
$LV	LOW VOLTAGE SWITCH	+48"	REFER TO LOW VOLTAGE SWITCH SCHEDULE FOR MORE INFORMATION "#" SPECIFIES TYPE
$3PM	3-POSITION MOMENTARY CONTACT SWITCH	+48"	REFER TO DETAIL UP-ON: CENTER-NEUTRAL; DOWN-OFF
$3PN	3-POSITION MAINTAINED CONTACT SWITCH	+48"	UP-ON; CENTER-OFF; DOWN-ON
a #	OCCUPANCY SENSOR	CEILING	"a" LOWER CASE SPECIFIES ZONE "#" SPECIFIES TYPE REFER TO OCCUPANCY SCHEDULE
a #	DIGITAL DAYLIGHT SENSOR	CEILING	"a" LOWER CASE LETTER SPECIFIES ZONE "#" SPECIFIES THE FOOTCANDLE SETTING THE SENSOR SHALL BE SET TO
TP	WALL MOUNT GRAPHIC TOUCH PAD CONTROLLER	+48"	
EC	EMERENCY CONTROLLER	ACCESSIBLE ABOVE CEILING	
LC	LOAD CONTROLLER	ACCESSIBLE ABOVE CEILING	
PP	POWER PACK	ACCESSIBLE ABOVE CEILING	
RC	ROOM CONTROLLER	ACCESSIBLE ABOVE CEILING	

ACCESS CONTROL SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
REX	REQUEST-TO-EXIT MOTION DETECTOR	CEILING	
S	ELECTROMAGNETIC DOOR STRIKE	DOOR	
D	MAGNETIC DOOR CONTACT SWITCH	DOOR	
M	MAGNETIC LOCK	DOOR	
OHS	OVERHEAD SECURITY	DOOR	
OHD	OVERHEAD DOOR CONTACT	DOOR	
EL	ELECTRIFIED LEVER	DOOR	
EP	ELECTRIFIED PANIC HARDWARE	DOOR	
G	GLASS BREAK HARDWARE	CEILING/WALL	
PS	POWER SUPPLY	CEILING/WALL	
IL	INTEGRATED LOCK	+46"	
PP	PUSH PLATE FOR AUTOMATIC DOOR OPERATOR	+46"	
ADO	AUTOMATIC DOOR OPERATOR	DOOR	
KP	KEYPAD	+48"	
CK	CARD READER / KEYPAD	+48"	
MK	MAGNETIC STRIP CARD READER / KEYPAD	+48"	
CR	CARD READER	+48"	
MR	MAGNETIC STRIP CARD READER	+48"	
AUTO	AUTOMATIC SLIDING DOOR	DOOR	

TELEPHONE / DATA SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
	TELEPHONE OUTLET	+18"	
	DATA OUTLET	+18"	
	COMBINATION TELEPHONE/DATA OUTLET	+18"	
	TELEPHONE TERMINAL BOARD	TOP AT 72"	
	WIRELESS ACCESS POINT	CEILING	
W	WIRELESS ACCESS POINT	SEE PLANS	

GENERAL SYMBOLS

SYMBOL	DESCRIPTION	REMARKS
XX	KEYED NOTE	
1 / E-1	DETAIL REFERENCE	TOP NUMBER INDICATES DETAIL NUMBER; BOTTOM LETTER-NUMBER INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN; WHERE NOT SPECIFICALLY REFERENCED, DETAIL IS GENERAL IN NATURE AND SHALL APPLY WHERE APPLICABLE.
2 / E-2	ELEVATION REFERENCE	TOP NUMBER INDICATES ELEVATION NUMBER; BOTTOM LETTER-NUMBER INDICATES WHERE ELEVATION IS SHOWN.
3 / E-2	SECTION REFERENCE	TOP NUMBER INDICATES ELEVATION NUMBER; BOTTOM LETTER-NUMBER INDICATES WHERE ELEVATION IS SHOWN.
100	ARCHITECTURAL ROOM NUMBER	
AHU 1	EQUIPMENT NAME / NUMBER	TOP NUMBER ABBREVIATES EQUIPMENT NAME OR TYPE; BOTTOM NUMBER INDICATES EQUIPMENT NUMBER. REFER TO EQUIPMENT SCHEDULE.
1	REVISION NUMBER	USED TO DENOTE CHANGES EITHER ISSUED BY ADDENDUM OR DURING CONSTRUCTION AND TO DENOTE RECORD DRAWING CHANGES.
	REVISION CLOUD	USED TO DENOTE AREAS, DEVICES, EQUIPMENT DETAILS, ETC. AFFECTED BY THE REVISION.
	BREAKLINE	USED TO BREAK DRAWINGS.
LCD-###	LIGHTING CONTROL WIRING DIAGRAM CALLOUT	

BRANCH CIRCUITING SYMBOLS

SYMBOL	DESCRIPTION	REMARKS
	BRANCH CIRCUIT HOME RUN TO PANEL	ARROWS: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS REQUIRED.
	BRANCH CIRCUITING (U.N.O.) CONTINUATION	
	CONDUIT STUB-IN	CAP AND MARK
	INCOMING SERVICE	
	UNDERGROUND FEEDER	
J	JUNCTION BOX	MOUNT AS NOTED. SUBSCRIPT 'F' INDICATES TO PROVIDE A FLOOR BOX WITH BLANK COVERPLATE.
	BRANCH CIRCUITING (U.N.O.) TURNED UP OR TOWARDS OBSERVER.	
	BRANCH CIRCUITING (U.N.O.) TURNED DOWN OR AWAY FROM OBSERVER.	
	2 CIRCUIT, BRANCH CIRCUIT HOME RUN TO PANEL	ARROWS: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS REQUIRED.
	3 CIRCUIT, 4 WIRE BRANCH CIRCUIT HOME RUN TO PANEL	ARROWS: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS REQUIRED.

ELECTRONIC SYSTEM GENERAL SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
PANEL NAME	ELECTRONIC SYSTEM PANELBOARD (SURFACE MOUNT)	TOP AT 72"	ELECTRONIC SYSTEMS MAY INCLUDE BUT ARE NOT SPECIFICALLY LIMITED TO, TELEPHONE, DATA, TELEVISION, LIGHTING CONTROL, CLOCKS, FIRE ALARM, ACCESS CONTROL, SECURITY, CCTV, SOUND SYSTEM, NURSE CALL, OR INTERCOM.
PANEL NAME	ELECTRONIC SYSTEM PANELBOARD (FLUSH MOUNT)	TOP AT 72"	
	ELECTRONIC SYSTEM TERMINAL BOARD	TOP AT 72"	
	TWO POST DATA RACK		
	FOUR POST DATA RACK		

EQUIPMENT AND CONTROL SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
$T	MANUAL STARTER WITH THERMAL OVERLOAD(S)	AT EQUIPMENT	
	ELECTRIC MOTOR		
J	NON-FUSED DISCONNECT SWITCH	+60"	
FJ	FUSED DISCONNECT SWITCH	+60"	
J	CIRCUIT BREAKER AND ENCLOSURE	+60"	
J	MAGNETIC STARTER	+60"	
J	COMBINATION MAGNETIC STARTER / FUSED DISCONNECT	+60"	
J	COMBINATION MAGNETIC STARTER / NON-FUSED DISCONNECT	+60"	
J	COMBINATION MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP)	+60"	
VFD	COMBINATION VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP)	FLOOR OR WALL AS SPECIFIED	TOP AT +72" IF WALL MOUNTED
	LOAD CENTER (SURFACE-MOUNTED)	TOP AT +72"	14"W X 3"D
	LOAD CENTER (FLUSH-MOUNTED)	TOP AT +72"	14"W X 3"D
	LIGHTING AND APPLIANCE PANELBOARD (SURFACE-MOUNTED)	TOP AT +72"	20"W X 6"D
	LIGHTING AND APPLIANCE PANELBOARD (FLUSH-MOUNTED)	TOP AT +72"	20"W X 6"D
	POWER DISTRIBUTION PANELBOARD	WALL	THESE SYMBOLS ARE GENERAL IN NATURE AND MAY VARY IN SIZE AND SHAPE TO SUIT APPLICATION. CROSS HATCHING INDICATES "MAIN PANELBOARD OR SWITCHBOARD" NAME IS INDICATED IN SEMI-QUOTES (I.E. 'L2A', 'MDP')
	SWITCHBOARD	FLOOR	
T-#	WET TYPE TRANSFORMER	PAD MOUNT	
T-#	DRY TYPE TRANSFORMER	PAD MOUNT	
T-#	DRY TYPE TRANSFORMER	WALL MOUNT	
	METER BASE	TOP AT +72"	
PB	PULL BOX		
E	ELECTRIC VEHICLE CAR CHARGING STATION	FLOOR	
S	PAD MOUNTED UTILITY SWITCHGEAR		
SE	PAD MOUNTED UTILITY SECTIONALIZER		

ELECTRICAL SYMBOL SCHEDULE GENERAL NOTES

1. MOUNT ALL OUTLETS, DEVICES, AND EQUIPMENT AT HEIGHTS INDICATED BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS. UNLESS NOTED OTHERWISE, HEIGHTS ARE GIVEN FROM FINISHED FLOOR TO CENTER OF OUTLET BOX.
2. WHERE OUTLETS, DEVICES, AND EQUIPMENT ARE NOTED BY SUBSCRIPTS, REFER TO ABBREVIATION SCHEDULE FOR DEFINED REQUIREMENTS.
3. WHERE OUTLETS, DEVICES AND EQUIPMENT ARE NOTED BY THE SUBSCRIPT 'A', MOUNT AT 4" ABOVE COUNTER. IF COUNTER HAS A BACK SPLASH, MOUNT AT 4" ABOVE BACK SPLASH. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS AND COORDINATE WITH CASEWORK SUPPLIER.
4. NOT ALL ELECTRICAL SYMBOLS MAY BE USED.

ABBREVIATION SCHEDULE

NOTE: NOT ALL ABBREVIATIONS MAY BE USED.

A	ABOVE COUNTER	LSI	LONG-TIME, SHORT-TIME INSTANTANEOUS
A	AMP OR AMPS	LSIG	LONG-TIME, SHORT-TIME INSTANTANEOUS GROUND FAULT
ACC	ACCESS CONTROL		
ADJ	ADJACENT	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MCA	MINIMUM CIRCUIT AMPS
AHJ	AUTHORITY HAVING JURISDICTION	MCB	MAIN CIRCUIT BREAKER
AL	ALUMINUM	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	MV	MEDIUM VOLTAGE
AUX	AUXILIARY	MW	MICROWAVE
BAS	BUILDING AUTOMATION SYSTEM	NC	NORMALLY CLOSED
BLDG	BUILDING	NEC	NATIONAL ELECTRIC CODE
C	CONDUIT	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	NL	NIGHT LIGHT
CKT	CIRCUIT	NO	NORMALLY OPEN
CLG	CEILING	OC	ON CENTER(S)
CO	CONVENIENCE OUTLETS	OCP	OVER CURRENT PROTECTION
CU	COPPER	OCPD	OVER CURRENT PROTECTION DEVICE
DAS	DISTRIBUTED ANTENNA SYSTEM	PA	PUBLIC ADDRESS
(E)	EXISTING	PH	PHASE
EA	EACH	PV	PHOTOVOLTAIC
ELEC	ELECTRICAL	PWR	POWER
EM	EMERGENCY	QTY	QUANTITY
EMT	ELECTRIC METALLIC TUBING	R	REMOVE
ENT	ELECTRIC NONMETALLIC TUBING	REF	REFRIGERATOR
EQUIP	EQUIPMENT	REQ	REQUIREMENTS
EWC	ELECTRIC WATER COOLER	RGC	RIGID GALVANIZED CONDUIT
EXP	EXPLOSION PROOF	RMC	RIGID METAL CONDUIT
FA	FIRE ALARM	RMP	ROCKY MOUNTAIN POWER
FACP	FIRE ALARM CONTROL PANEL	RNC	RIGID NONMETALLIC CONDUIT
FLA	FULL LOAD AMPS	RR	REMOVE AND RELOCATE
FMC	FLEXIBLE METAL CONDUIT	SCP	SECURITY CONTROL PANEL
FO	FIBER OPTIC	SFL	SUB-FEED LUGS
FOB	FREIGHT ON BOARD	SPD	SURGE PROTECTIVE DEVICE
FTL	FEED-THROUGH LUGS	SS	SURGE SUPPRESSION
GND	GROUND CONDUCTOR	TTB	TELEPHONE TERMINAL BOARD
HOA	HAND-OFF-AUTO	TR	TAMPER RESISTANT
HP	HORSE POWER	TYP	TYPICAL
ID	INTRUSION DETECTION	UF	UNDER FLOOR
IG	ISOLATED GROUND	UG	INTERMEDIATE METAL CONDUIT
IMC	INTERMEDIATE METAL CONDUIT	UNO	UNLESS NOTED OTHERWISE
INS	INSULATED	USB	UNIVERSAL SERIAL BUS
ISO	ISOLATED	VSS	VIDEO SURVEILLANCE SYSTEM
KVA	KILO VOLT AMPERES	W/	WITH
KW	KILOWATTS	WO/	WITHOUT
LFNC	LIQUID-TIGHT NONMETAL CONDUIT	WP	WEATHER PROOF
LS	LONG-TIME, SHORT-TIME	XFMR	TRANSFORMER

SHEET INDEX

EG001	GENERAL NOTES AND SYMBOLS LISTS
ES101	SITE PLAN - ELECTRICAL
ES501	SITE DETAILS
ED100	FLOOR PLAN - ELECTRICAL DEMOLITION
EL100	BASEMENT FLOOR PLAN - LIGHTING PLAN
EL101	LEVEL 1 FLOOR PLAN - LIGHTING PLAN
EL102	LEVEL 2 FLOOR PLAN - LIGHTING PLAN
EL501	LIGHTING DETAILS
EL502	LIGHTING WIRING DIAGRAM
EL601	LIGHT FIXTURE SCHEDULE AND NOTES
EP100	BASEMENT FLOOR PLAN - POWER PLAN
EP101	LEVEL 1 FLOOR PLAN - POWER PLAN
EP102	LEVEL 2 FLOOR PLAN - POWER PLAN
EP103	ROOF LEVEL POWER PLAN
EP501	POWER DETAILS
EP502	POWER DETAILS
EP641	POWER SCHEDULES
EP701	ONE-LINE DIAGRAM - POWER
EP702	ONE-LINE DIAGRAM - POWER
EP801	PANEL SCHEDULES
EP802	PANEL SCHEDULES
EC101	FLOOR PLAN - TELECOM
EC501	TELECOM DETAILS
EC502	TELECOM DETAILS
EC701	TELECOM RISER DIAGRAMS
EY100	BASEMENT FLOOR PLAN - SYSTEMS
EY101	LEVEL 1 FLOOR PLAN - SYSTEMS
EY102	LEVEL 2 FLOOR PLAN - SYSTEMS PLAN
EY501	ACCESS CONTROL DOOR ROUGH-IN DETAILS
EY701	FIRE ALARM RISER DIAGRAM

GENERAL PROJECT NOTES

1. DIVISION 26000 CONTRACTOR IS RESPONSIBLE FOR READING AND APPLYING WHAT IS IN THE SPECIFICATIONS TO THIS PROJECT. ANYTHING THAT IS NOT INCLUDED ON THE PROJECT THAT IS CALLED OUT IN THE SPECIFICATION SHALL BE LISTED ON THE SUBSTANTIAL COMPLETION PUNCHLIST. THE CONTRACTOR WILL BE REQUIRED TO REMEDY THESE DEFICIENCIES WITHOUT ADDITIONAL COSTS TO OWNER. THERE WILL BE NO EXCEPTIONS.
2. THE CONTRACTOR MAY SCHEDULE A PRE-CONSTRUCTION MEETING. AT THEIR DISCRETION, WITH THE ELECTRICAL ENGINEER TO REVIEW THE DRAWINGS AND SPECIFICATIONS. THE MEETING SHALL BE A MAXIMUM OF ONE HOUR AND SHALL TAKE PLACE AT THE ENGINEER'S OFFICE.
3. THE FOLLOWING ITEMS ARE SOME OF THE REQUIREMENTS THAT ARE LISTED IN THE SPECIFICATIONS. THESE ITEMS ARE NOT ALL INCLUSIVE AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE TO ALL REQUIREMENTS OF THE SPECIFICATIONS:
   A. INSULATED THROAT CONNECTORS OR PLASTIC BUSHINGS SHALL BE UTILIZED FOR ALL CONDUIT SIZED USED ON THIS PROJECT.
   B. THE CONTRACTOR IS RESPONSIBLE FOR UPSIZING CONDUCTORS FOR VOLTAGE DROP PER THE NEC REGARDLESS OF WHETHER IT IS SHOWN ON THE PLANS OR NOT.
   C. THE CONTRACTOR SHALL LABEL ALL ELECTRICAL EQUIPMENT AS IT IS CALLED OUT IN THE SPECIFICATIONS.
   D. THE CONTRACTOR SHALL PROVIDE SEISMIC SUPPORT AND BRACING FOR ALL LIGHT FIXTURES AND ELECTRICAL EQUIPMENT AS REQUIRED BY APPLICABLE LOCAL AND NATIONAL CODES.
4. THE CONTRACTOR SHALL FOLLOW THE PANELBOARD SCHEDULES AS INDICATED IN THE DRAWINGS. EACH CIRCUIT BREAKER HAS BEEN ASSIGNED TO SPECIFIC AREA OF THE BUILDING. NO DEVIATION WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ELECTRICAL ENGINEER.
5. AT A MINIMUM THE CONTRACTOR SHALL INSTALL THE WIRE SIZE AS CALLED OUT ON THE ONE-LINE DIAGRAM. HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE WIRE IS SIZED LARGE ENOUGH TO ALLOW FOR VOLTAGE DROP.
6. THE CONTRACTOR SHALL VERIFY ALL MECHANICAL OVERCURRENT DEVICES FOR THE ACTUAL MECHANICAL EQUIPMENT SUPPLIED ON THE JOB, PRIOR TO RELEASE OF ANY ELECTRICAL DISTRIBUTION EQUIPMENT. CONTACT THE ELECTRICAL ENGINEER WITH ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING THE BID, AND SHALL EXAMINE ALL PHYSICAL CONDITIONS WHICH MAY BE MATERIAL TO THE PERFORMANCE OF HIS WORK. NO ADDITIONAL PAYMENTS WILL BE ALLOWED TO THE CONTRACTOR AS A RESULT OF EXTRA WORK MADE NECESSARY BY HIS FAILURE TO DO SO. ANY CASE OF DISCREPANCY OR LACK OF CLARITY SHALL BE PROMPTLY IDENTIFIED TO THE OWNER'S REPRESENTATIVE AND THE ENGINEER FOR CLARIFICATION.

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EDA PROJECT NUMBER: 221011

NOT FOR CONSTRUCTION

PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
GENERAL NOTES AND SYMBOLS LISTS

SHEET NUMBER:
EG001

SHEET 1 OF

UTILITY REQUIREMENTS:

1. BURY CONDUITS PER UNIVERSITY OF UTAH REQUIREMENTS. REFER TO SITE DETAIL SHEETS FOR TRENCHING REQUIREMENTS.
2. VERIFY AND COMPLY WITH ALL UNIVERSITY OF UTAH REQUIREMENTS.

KEYED NOTES

(E)

S1 REFER TO ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

S2 PROVIDE CIRCUIT FOR GENERATOR ENGINE BLOCK HEATER PER GENERATOR MANUFACTURER.

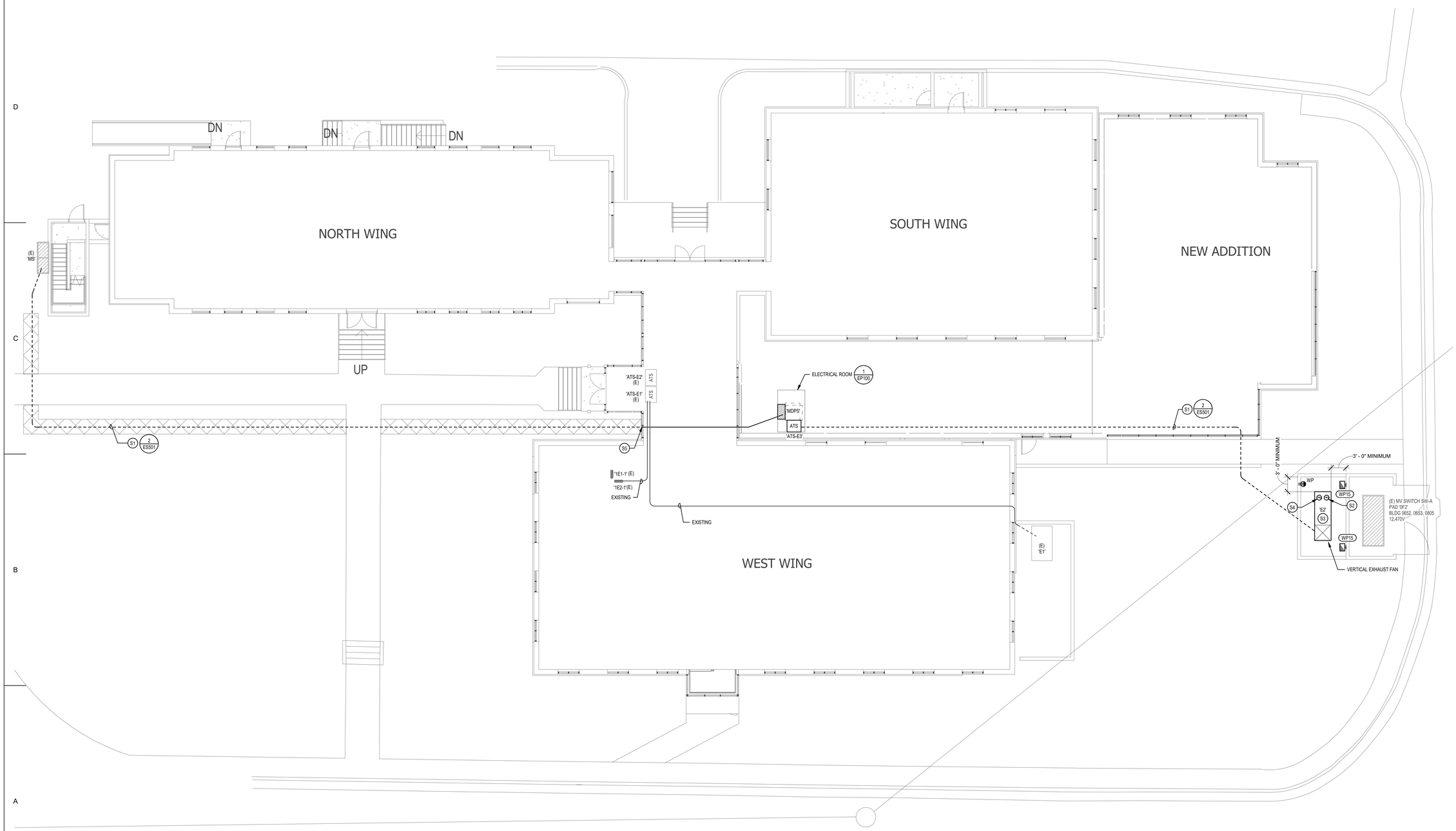
S3 STANDBY GENERATOR. REFER TO ONE-LINE DIAGRAM AND SPECS FOR ADDITIONAL INFORMATION. GENERATOR HOUSING DIMENSIONS ARE BASED ON CUMMINS ENCLOSURE AND SKID MOUNTED FUEL TANK. APPROVED ALTERNATE MANUFACTURER GENERATORS SHALL BE ABLE TO FIT IN ENCLOSURE WHILE PROVIDING THE REQUIRED WORKING CLEARANCES. CONTRACTOR TO BE RESPONSIBLE OF COSTS OF INCREASING MASONRY ENCLOSURE SIZE FOR GENERATORS LARGER THAN THE BASIS OF DESIGN.

S4 PROVIDE 120V AC CIRCUIT FOR BATTERY CHARGER PER GENERATOR MANUFACTURER.

S5 PENETRATE EXISTING EXTERIOR WALL AND RUN FEEDER ABOVE THE CEILING OF THE BASEMENT FLOOR. PROVIDE CORE DRILLING AND SEALANT AS REQUIRED. COORDINATE INSTALLATION WITH OWNER AND ARCHITECT.

SITE GENERAL NOTES:

1. PROVIDE ALL REQUIRED BACKFILLING, ETC. FOR ALL CONDUITS. PROVIDE REQUIRED BACKFILL MATERIAL AS DIRECTED BY EACH UTILITY.
2. COORDINATE ALL LOCATIONS AND ROUTING WORK IN THE FIELD.
3. ROUTE CONDUITS A MINIMUM OF 2' AND A MAXIMUM OF 4' BELOW THE GRADE AND BUILDING FLOOR SLAB.
4. MINIMUM CONDUIT FOR SITE WORK SHALL BE 1".
5. CONDUIT ROUTING SHOWN IS SCHEMATIC AND FOR CLARIFICATION COORDINATE LOCATION WITH ALL AFFECTED TRADES.
6. PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN POWER AND COMMUNICATION CONDUITS.
7. ALL CONDUITS THAT EXTEND THROUGH CONCRETE SHALL BE GALVANIZED RIGID CONDUIT AND WRAPPED WITH TWO (2) LAYERS OF PVC TAPE.
8. ALL ELBOWS THAT ARE UNDER THE FINISHED GRADE SHALL BE GALVANIZED RIGID CONDUIT AND WRAPPED WITH TWO (2) LAYERS OF PVC TAPE.



1 **ELECTRICAL SITE PLAN**
SCALE: **1/8" = 1'-0"**

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UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: SITE PLAN - ELECTRICAL

SHEET NUMBER: ES101

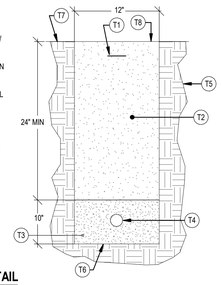
SHEET OF

TRENCHING GENERAL NOTES:

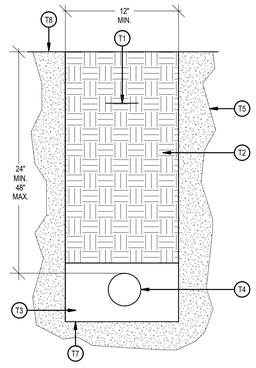
1. PROVIDE 1/4" NYLON PULL ROPES IN ALL CONDUITS.
2. ALL MARKER TAPE SHALL CONTAIN #10 TRACER WIRE.

TRENCHING KEYED NOTES:

- T1 MARKER TAPE WITH TRACER WIRE LABELED, "CAUTION BURIED ELECTRIC CONDUITS BELOW" DIRECTLY OVER POWER CONDUITS 6" MINIMUM BELOW GRADE.
- T2 CLEAN BACKFILL CONTAINING NO ROCKS LARGER THAN 4" DIA.
- T3 BACKFILL MATERIAL WITHIN 4" TO 6" OF CONDUIT SHALL PASS THROUGH A 3/4" SIEVE FRAME OR SAND WITHOUT ANY SHARP OR FOREIGN OBJECTS.
- T4 ALL CONDUITS SHOWN SHALL BE SCHEDULE 40 MINIMUM 1" PVC. REFER TO PLANS FOR QUANTITY AND SIZE.
- T5 UNDISTURBED EARTH.
- T6 TRENCHES SHALL BE A UNIFORM DEPTH FOR ENTIRE LENGTH OF TRENCH SO CONDUITS CAN SITE FLAT (HORIZONTAL) WITH THE GROUND.
- T7 FINISHED GRADE.
- T8 PATH/REPAIR TO MATCH EXISTING SURFACE.



6 SITE LIGHTING TRENCHING DETAIL
SCALE: NTS



TRENCHING KEYED NOTES:

1. PROVIDE 1/4" NYLON ROPES IN ALL CONDUITS.
2. HORIZONTAL AND VERTICAL SEPARATION BETWEEN CONDUIT SHALL BE MAINTAINED BY INSTALLING HIGH IMPACT SPACERS WITH HORIZONTAL INTERVALS OF EIGHT FEET.
3. ALL MARKER TAPE SHALL CONTAIN #10 TRACER WIRE.
4. REFER TO THE ROCKY MOUNTAIN POWER SIX STATE ESR FOR ADDITIONAL INFORMATION.
5. VERIFY ALL REQUIREMENTS WITH UTILITES PRIOR TO TRENCHING.

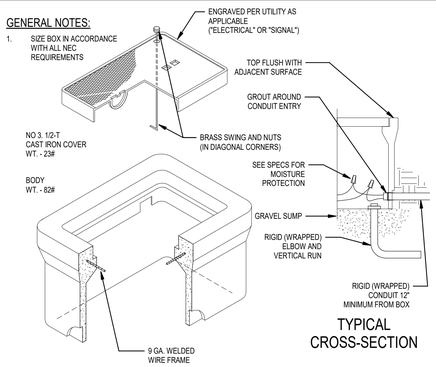
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- T3 BACKFILL MATERIAL WITHIN 4" TO 6" OF CONDUIT SHALL PASS THROUGH A 3/4" SIEVE FRAME OR SAND WITHOUT ANY SHARP OR FOREIGN OBJECTS.
- T4 ALL CONDUITS SHOWN SHALL BE SCHEDULE 40 PVC. REFER TO ONE-LINE DIAGRAM FOR NUMBER AND SIZE OF CONDUITS.
- T5 UNDISTURBED EARTH.
- T6 MARKER TAPE WITH TRACER WIRE LABELED, "CAUTION BURIED DATA/COMMUNICATION CONDUIT BELOW" DIRECTLY OVER DATA/COMM CONDUITS.
- T7 TRENCHES SHALL BE A UNIFORM DEPTH FOR ENTIRE LENGTH OF TRENCH SO CONDUITS CAN SITE FLAT (HORIZONTAL) WITH THE GROUND.
- T8 FINISHED GRADE.

2 POWER TRENCHING DETAIL
SCALE: NTS

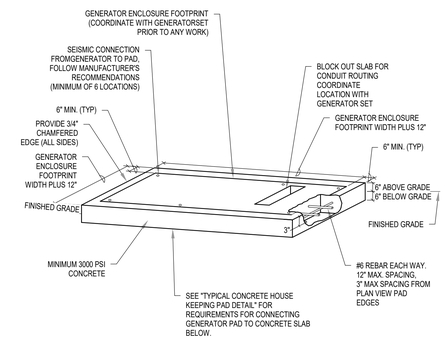
GENERAL NOTES:

1. SIZE BOX IN ACCORDANCE WITH ALL NEC REQUIREMENTS



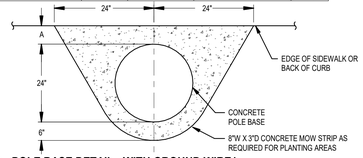
TYPICAL CROSS-SECTION

4 CONCRETE JUNCTION BOX
SCALE: NTS



5 GENERATOR PAD DETAIL
SCALE: NTS

LIGHT POLE MOW STRIP AND CONCRETE BASE REQUIREMENTS				
	MOW STRIP REQUIRED (6"W X3"D)	BASE HEIGHT ABOVE GRADE (INCHES)	DISTANCE FROM SIDEWALK BICYCLE PATH, OR BACK OF CURB "A" (INCHES)	PAINTED YELLOW
PLANTING AREA	YES	12	N/A	NO
NEAR SIDEWALK (PLANTING AREAS)	YES	12	6	NO
NEAR SIDEWALK (HARDSCAPE AREAS)	NO	12	6	NO
NEAR BICYCLE PATH (PLANTING AREAS)	NO	12	18	NO
NEAR BICYCLE PATH (HARDSCAPE AREAS)	NO	12	18	NO
PARKING LOT (INTERIOR TO LOT OR WITHIN 24" OF BACK OF PARKING LOT CURB)	NO	30	24	YES
ROADWAY	NO	12	12	NO



1 POLE BASE DETAIL - WITH GROUND WIRE1
SCALE: NTS

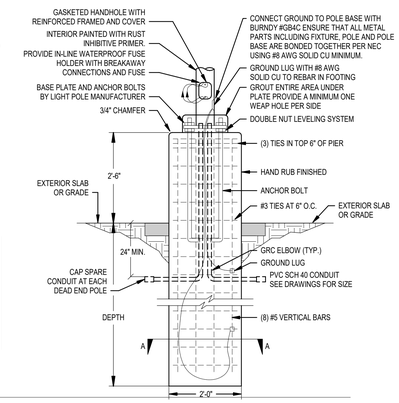
NOTE: DESIGN SHOWN FOR CONCRETE POLE BASE IS SHOW FOR INFORMATIONAL PURPOSES ONLY TO CONVEY THE NECESSARY REQUIREMENTS. CONTRACTOR SHALL BE REQUIRED TO PROVIDE A POLE BASE DESIGN AND ASSOCIATED STRUCTURAL CALCULATIONS AND SUBMIT THEM AS A DEFERRED SUBMITTAL FOR REVIEW. THE DESIGN SHALL BE STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF UTAH, AND SHALL BE BASED UPON THE ACTUAL POLES, FIXTURES, SOIL CONDITIONS, WIND SPEED, ETC.



SECTION A-A

POLE HEIGHT	V ult = 115 MPH FTG DEPTH	V ult = 150 MPH FTG DEPTH
8'-0"	4'-0"	4'-0"
12'-0"	4'-0"	5'-0"
20'-0"	5'-0"	6'-0"
30'-0"	6'-0"	7'-0"
40'-0"	6'-0"	8'-0"
60'-0"	?	?

DESIGN CRITERIA:
2018 IBC
Ss = 2.0, SOIL SITE CLASS D
LATERAL SOIL BRG = 100 PSI/FT
ASSUMED 4.0 FT² AT TOP POLE



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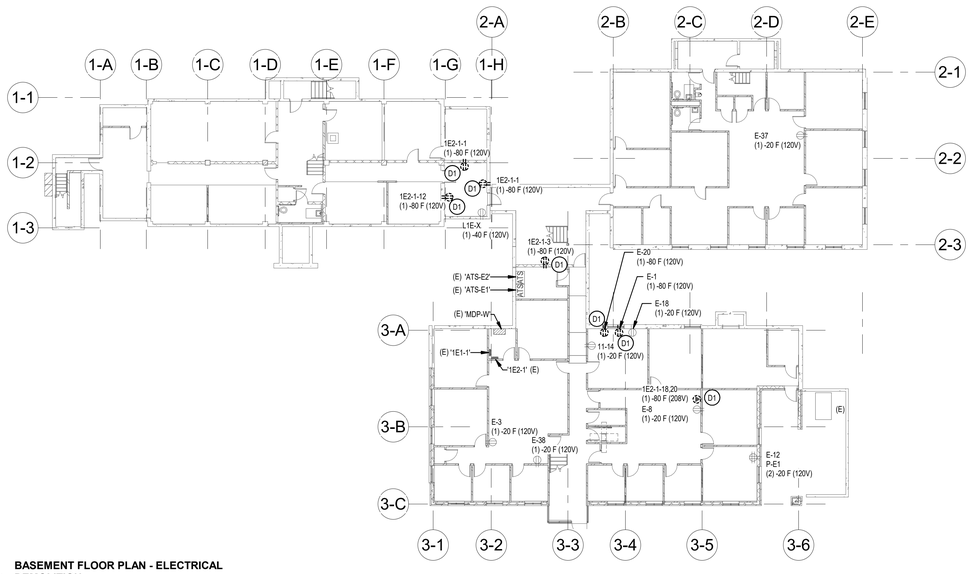
ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
SITE DETAILS

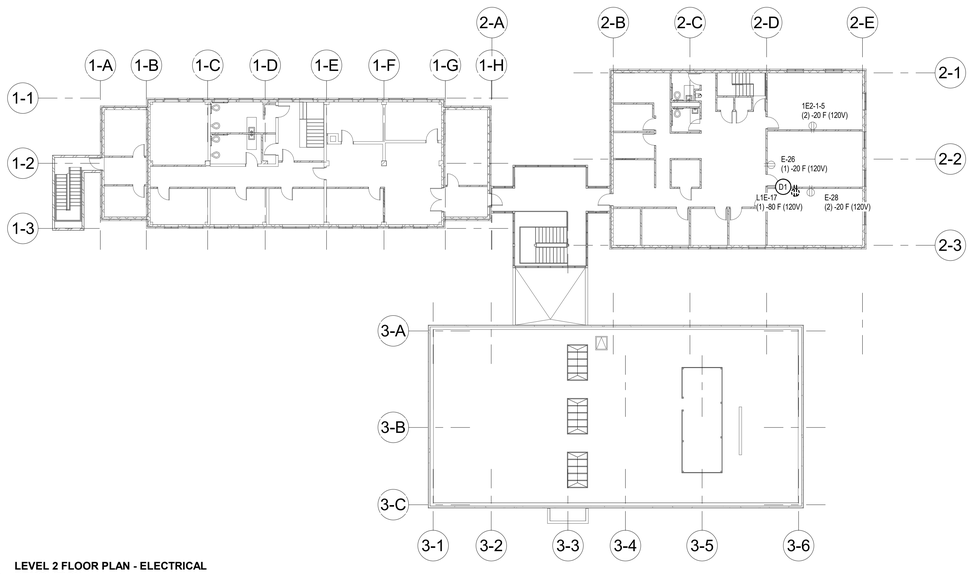
SHEET NUMBER:
ES501

SHEET OF



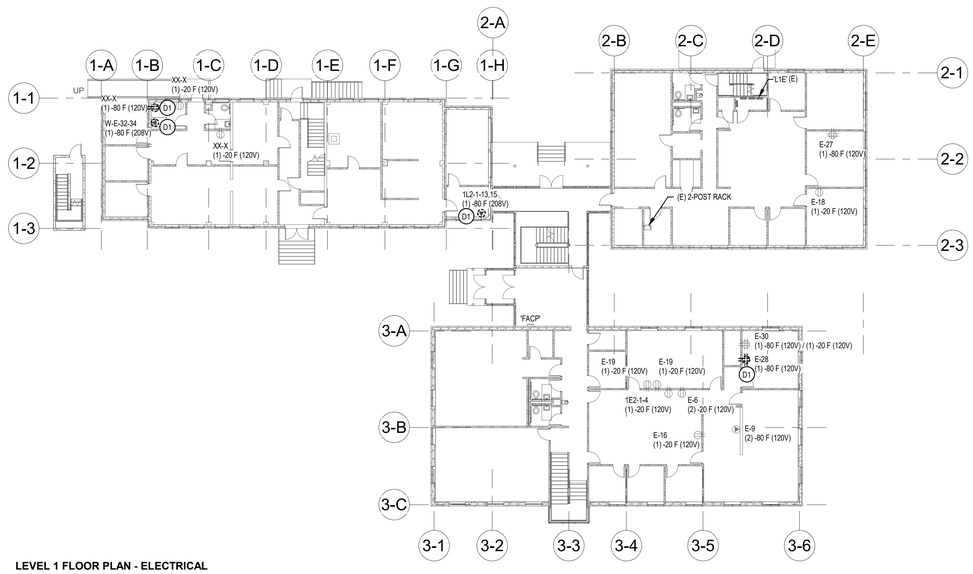
BASEMENT FLOOR PLAN - ELECTRICAL DEMOLITION

1 SCALE: **1/16" = 1'-0"**



LEVEL 2 FLOOR PLAN - ELECTRICAL DEMOLITION

3 SCALE: **1/16" = 1'-0"**



LEVEL 1 FLOOR PLAN - ELECTRICAL DEMOLITION

2 SCALE: **1/16" = 1'-0"**

GENERAL DEMOLITION NOTES:

1. UNLESS SPECIFICALLY NOTED OTHERWISE, REMOVE ALL ELECTRICAL ITEMS SHOWN IN DARK AND DASHED LINES. LIGHT AND SOLID ITEMS ARE TO REMAIN. DEMOLITION ITEMS ARE SHOWN TO GIVE A BASIC DESCRIPTION OF THE EXTENT OF DEMOLITION WORK, BUT MAY NOT BE INCLUSIVE. PROVIDE DEMOLITION WORK IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
   - A. DISCONNECT AND REMOVE ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. REQUIRED FOR PROPER COMPLETION OF THE WORK WHETHER SHOWN OR NOT.
   - B. RELOCATE, REWIRE, AND/OR RECONNECT ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. THAT FOR ANY REASON OBSTRUCTS CONSTRUCTION.
   - C. LEAVE ALL EXISTING FIXTURES, DEVICES, EQUIPMENT, ETC. IN PORTIONS OF THE BUILDING NOT BEING REMODELED, IN WORKING CONDITION. RESTORE ALL INTERRUPTED BRANCH CIRCUITS, FEEDERS, ETC.
   - D. REMOVE AND DISPOSE OF ALL RACEWAYS, CONDUCTORS, BOXES, DEVICES, EQUIPMENT, ETC. THAT ARE NOT TO BE REUSED. TERMINATE AT ACCESSIBLE JUNCTION BOX BY PROVIDING PROPER KNOCK-OUT CLOSURE, TAPE CONDUCTORS, LABEL AS "SPARE" WITH CIRCUIT NO., ZONE NO, OR OTHER CHARACTERISTIC IDENTIFYING SOURCE.
   - E. EXISTING RACEWAYS MAY BE REUSED, IF IN PLACE, WHERE POSSIBLE, AND WHERE IN COMPLIANCE WITH THE SPECIFICATIONS AND THE INTENT OF THE CONTRACT DOCUMENTS. UPGRADE AND OR PROVIDE NEW CONDUIT SUPPORTS WHERE NECESSARY FOR ALL RACEWAYS BEING REUSED. ENSURE INTEGRITY OF EXISTING RACEWAYS BEFORE REUSE.
   - F. CONCEAL ALL RACEWAY AND WIRING IN EXISTING WALLS, CEILINGS, FLOORS, ETC. THE USE OF WIREMOLD IS PERMITTED ONLY WHERE SPECIFICALLY NOTED ON DRAWING.
   - G. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOFS, ETC.
   - H. COORDINATE WITH OWNER WHAT EQUIPMENT SHOULD BE DISPOSED OF AND WHAT EQUIPMENT IS TO BE RETURNED TO OWNER.
   - I. FIRE ALARM SYSTEM MUST REMAIN OPERATIONAL DURING ALL PHASES OF CONSTRUCTION.

KEYED NOTES

D1 EXISTING OUTLET FEEDING RELOCATED FREEZER SHALL BE DEMOLISHED ALONG WITH ALL ASSOCIATED CONDUCTORS BACK TO SOURCE. PROVIDE NEW BLANK COVER PLATE FOR OUTLET BOX.

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

22294

SHEET TITLE:

FLOOR PLAN - ELECTRICAL DEMOLITION

SHEET NUMBER:

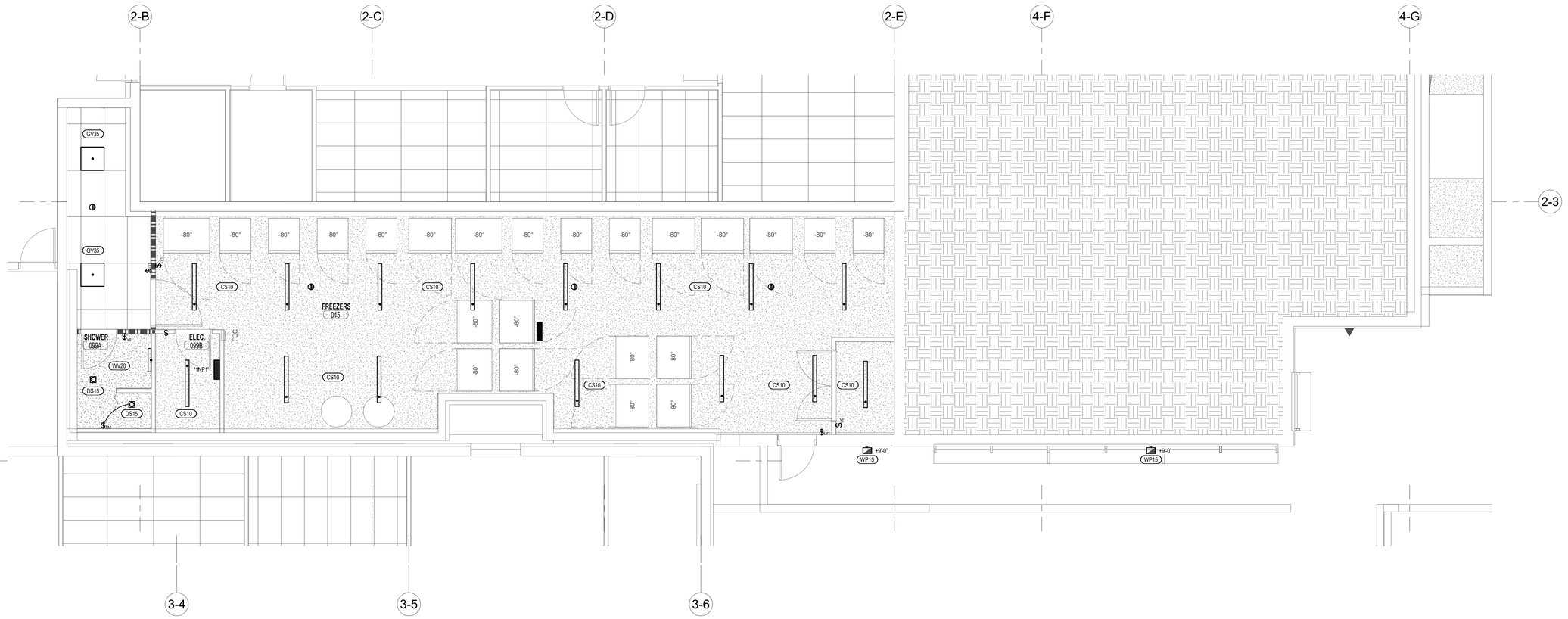
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SHEET OF

LIGHTING GENERAL NOTES:

1. REFER TO LIGHTING DETAILS SHEETS FOR TYPICAL CONTROL WIRING DIAGRAMS. PROVIDE COMPLETE SYSTEM WITH ALL REQUIRED CONDUIT, WIRING, SWITCHES, SENSORS, POWER PACK, ETC.
2. LOCATE POWER PACKS AND ROOM CONTROLLERS ABOVE ACCESSIBLE CEILING NEAR ROOM ENTRANCES.
3. CONFIRM ALL LOCATIONS OF LIGHT FIXTURES WITH ARCHITECT PRIOR TO INSTALLATION.
4. PROVIDE UNSWITCHED HOT FOR ALL EMERGENCY LIGHTS AND BATTERY PACKS.

KEYED NOTES (#)



1 **BASEMENT FLOOR PLAN - LIGHTING PLAN**
SCALE: **1/4" = 1'-0"**

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BASEMENT FLOOR PLAN - LIGHTING PLAN

SHEET NUMBER:

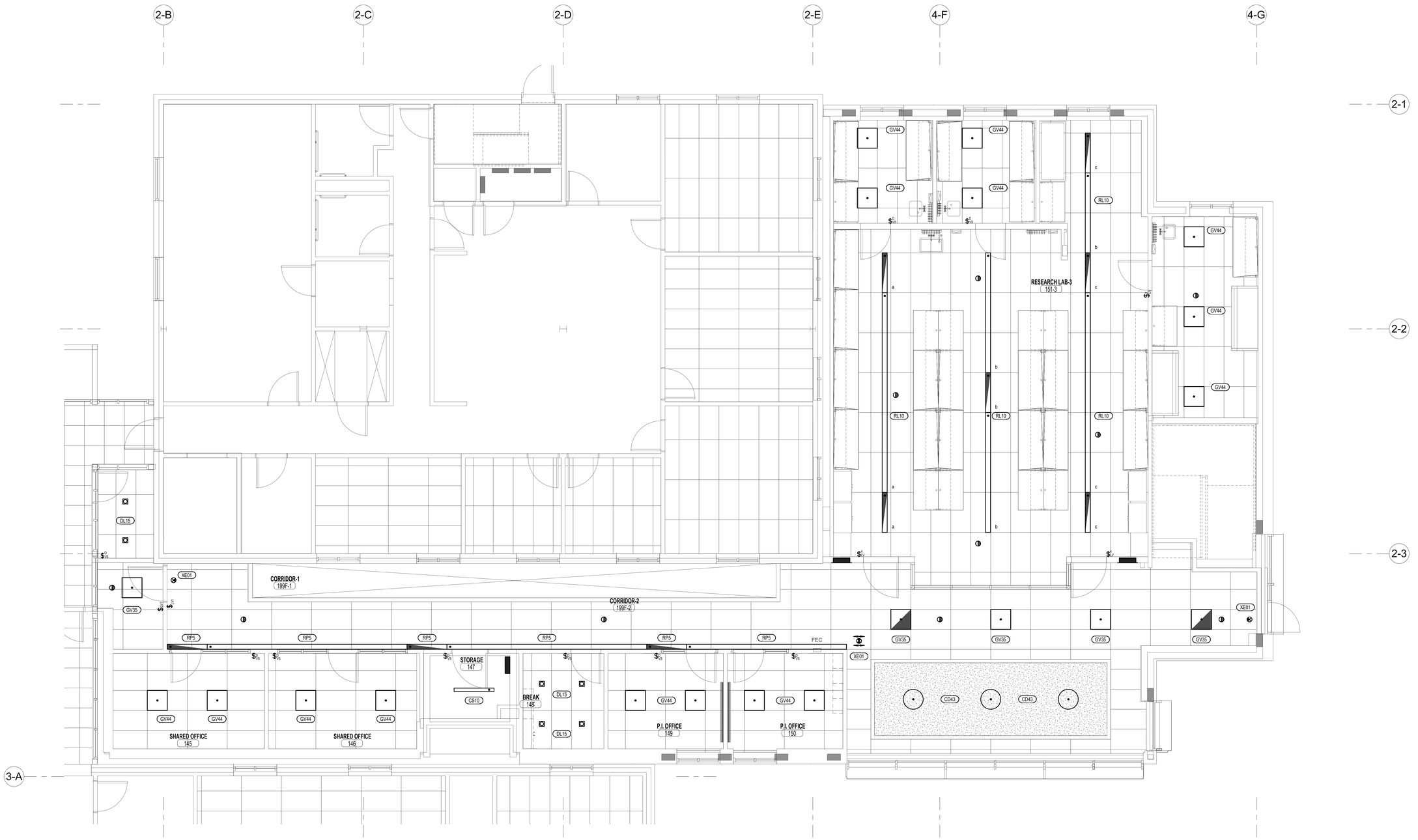
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SHEET OF

LIGHTING GENERAL NOTES:

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2. LOCATE POWER PACKS AND ROOM CONTROLLERS ABOVE ACCESSIBLE CEILING NEAR ROOM ENTRANCES.
3. CONFIRM ALL LOCATIONS OF LIGHT FIXTURES WITH ARCHITECT PRIOR TO INSTALLATION.
4. PROVIDE UNSWITCHED HOT FOR ALL EMERGENCY LIGHTS AND BATTERY PACKS.

KEYED NOTES (#)



1 **LEVEL 1 FLOOR PLAN - LIGHTING PLAN**
SCALE: **1/4" = 1'-0"**

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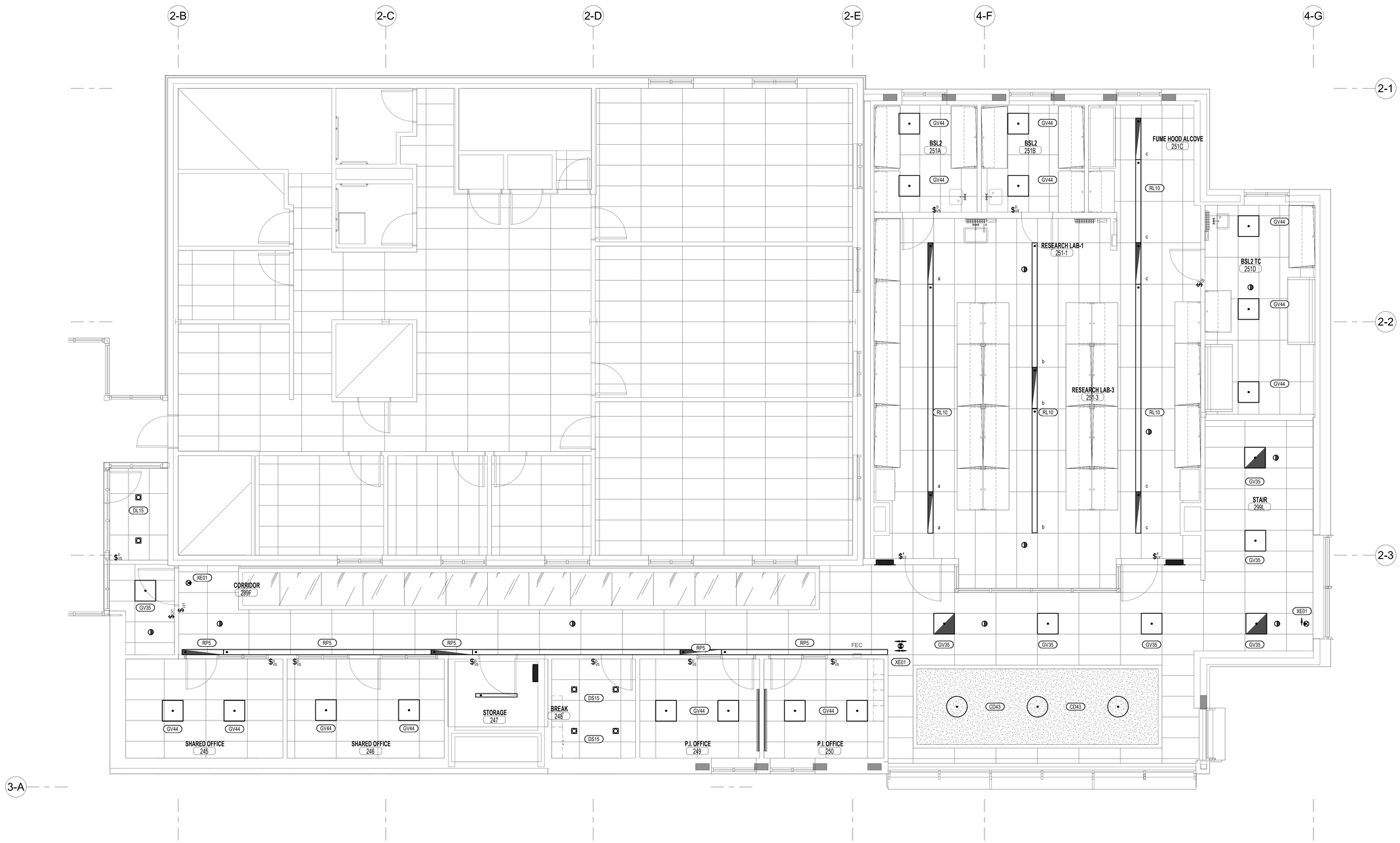
UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE:

LEVEL 1 FLOOR PLAN - LIGHTING PLAN

SHEET NUMBER: EL101

SHEET OF



1 **LEVEL 2 FLOOR PLAN - LIGHTING PLAN**
SCALE: 1/4" = 1'-0"

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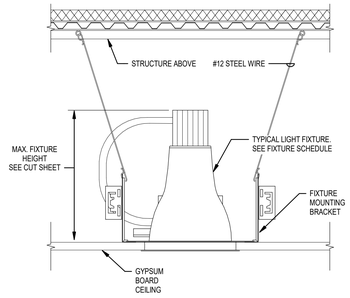
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LEVEL 2 FLOOR PLAN - LIGHTING PLAN

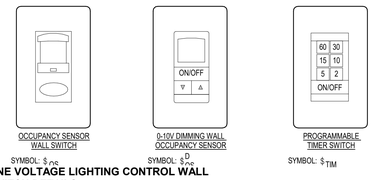
SHEET NUMBER:

EL102

SHEET OF



6 RECESSED CAN GYP MOUNTING DETAIL
SCALE: NTS



OCCUPANCY SENSOR WALL SWITCH — SYMBOL: $_{OC}$

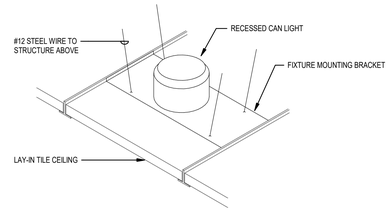
0-10V DIMMING WALL OCCUPANCY SENSOR — SYMBOL: $_{OC}^{D}$

PROGRAMMABLE TIMER SWITCH — SYMBOL: $_{TIM}$

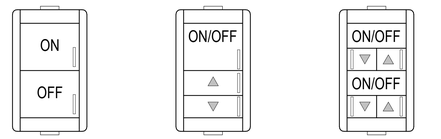
2 LINE VOLTAGE LIGHTING CONTROL WALL SWITCH DETAILS
SCALE: 6" = 1'-0"

GENERAL NOTES:

1. FIXTURE SHALL BE CENTERED IN CEILING TILE.
2. COORDINATE WITH MECHANICAL DUCTWORK AND EQUIPMENT.



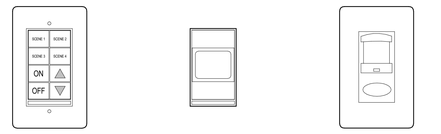
5 RECESSED CAN GRID MOUNTING DETAIL
SCALE: NTS



SINGLE CHANNEL ON/OFF — SYMBOL: $_{LV1}$

SINGLE CHANNEL ON/OFF+ RAISE/LOWER — SYMBOL: $_{LV2}$

TWO CHANNEL ON/OFF+ RAISE/LOWER — SYMBOL: $_{LV3}$



4 SCENE CONTROLLER ON/OFF + RAISE/LOWER — SYMBOL: $_{LV4}$

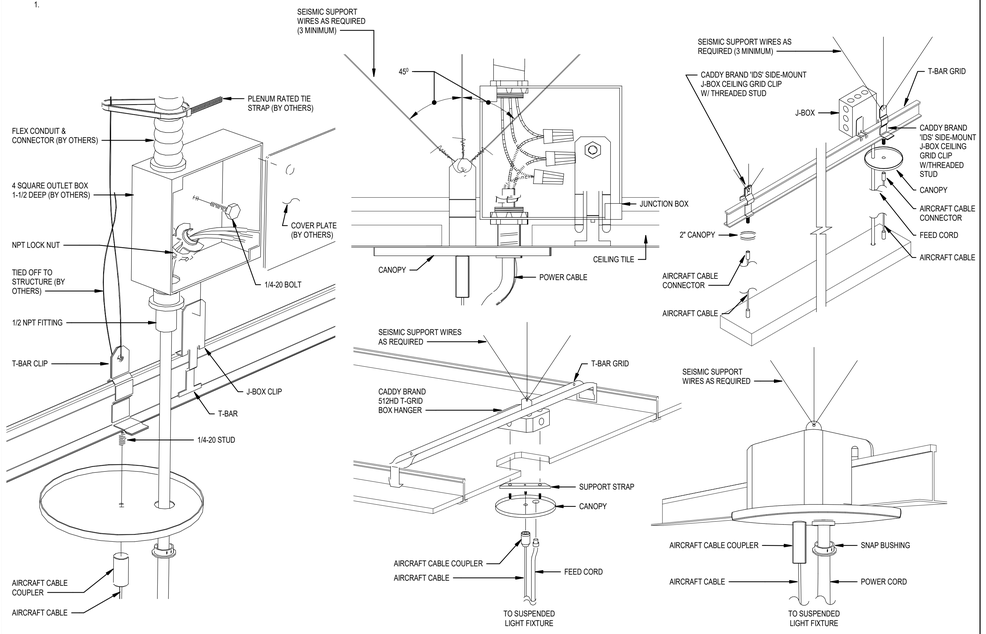
GRAPHIC WALLPOD — SYMBOL: $_{TP}$

OCCUPANCY SENSOR WALL SWITCH — SYMBOL: $_{OS}^{LV}$

7 LOW VOLTAGE LIGHTING CONTROL WALL SWITCH DETAILS
SCALE: 6" = 1'-0"

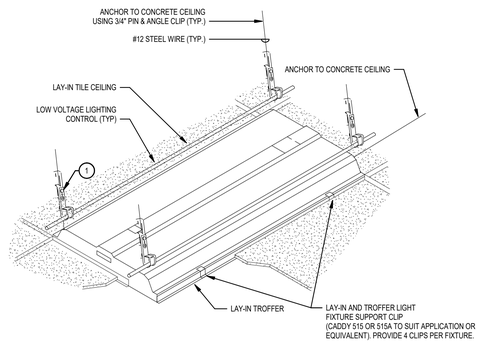
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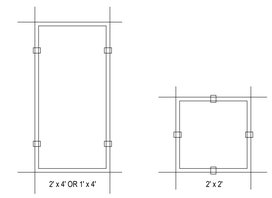


NOTE:
SIMILAR CONSTRUCTION/MOUNTING TO BE USED ON NON-POWER FEED SUPPORT

1 SUSPENDED LIGHT FIXTURE DETAIL
SCALE: NTS

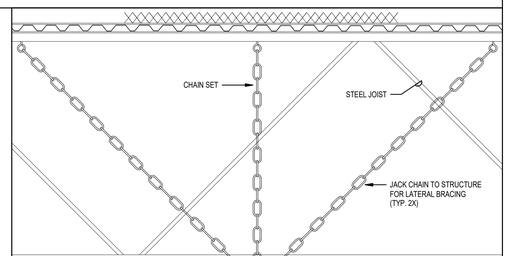


1 PROVIDE J-HOOKS WITH ROD/WIRE CLIP (CADDY 124Z34 OR APPROVED EQUIVALENT) IN QUANTITIES AS MAY BE REQUIRED FOR ROUTING OF LOW VOLTAGE LIGHTING CONTROL CABLES. INSTALL SUPPORTS AND CLIPS 12" ABOVE RECESSED LAY-IN LIGHT FIXTURES. SECURE CABLES AT A SPACING OF NOT MORE THAN 60" ON CENTERS. SUPPLEMENT WITH J-HOOKS SUSPENDED CABLES AT A SPACING OF NOT MORE THAN 60" ON CENTERS. SUPPLEMENT WITH J-HOOKS SUSPENDED BY ALL-THREAD AS MAY BE REQUIRED TO MEET SPACING CRITERIA. INSTALLATION SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE NEC 300.11. ALL CABLES SHALL BE ROUTED IN A NEAT WORKMANLIKE MANNER PARALLEL AND PERPENDICULAR TO CEILING GRIDS.



SUPPORT CLIP ARRANGEMENT DIAGRAMS

4 RECESSED GRID LIGHT FIXTURE SUPPORT DETAIL - WITH CABLE MANAGEMENT
SCALE: NTS



3 TYPICAL CHAIN HUNG LIGHT FIXTURE DETAIL
SCALE: NTS

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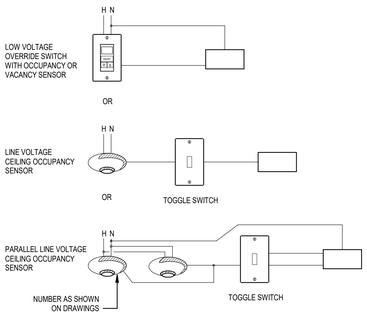
ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: LIGHTING DETAILS

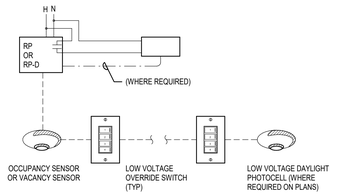
SHEET NUMBER: EL501

SHEET OF



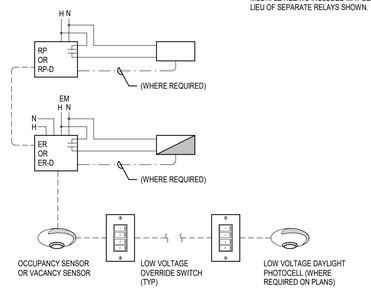
9 TYPICAL LINE VOLTAGE WIRING DIAGRAM
SCALE: NTS

1. PROVIDE SEPARATE RELAY FOR DAYLIGHT ZONES SHOWN ON THE DRAWINGS.
2. ROOM CONTROLLERS OR POWER PACKS WITH MULTIPLE RELAYS INCLUDED MAY BE PROVIDED IN LIEU OF SEPARATE RELAYS SHOWN.



7 TYPICAL LOW-VOLTAGE WIRING DIAGRAM
SCALE: NTS

1. PROVIDE SEPARATE RELAY FOR DAYLIGHT ZONES SHOWN ON THE DRAWINGS.
2. ROOM CONTROLLERS OR POWER PACKS WITH MULTIPLE RELAYS INCLUDED MAY BE PROVIDED IN LIEU OF SEPARATE RELAYS SHOWN.



5 TYPICAL LOW-VOLTAGE WITH EGRESS WIRING DIAGRAM
SCALE: NTS

LIGHTING WIRING DIAGRAMS

SYMBOL	DESCRIPTION	MOUNTING	REMARKS
	LIGHT SWITCH	+48"	
	LOW VOLTAGE LIGHT SWITCH	+48"	
	WALL MOUNT GRAPHIC TOUCH PAD CONTROLLER	+48"	
	OCCUPANCY SENSOR OR VACANCY SENSOR (AS NOTED ON PLANS)	CEILING	
	DIGITAL DAYLIGHT SENSOR	CEILING	
a	NORMAL POWER LIGHTING LOAD	CEILING	"a" LOWER CASE LETTER SPECIFIES ZONE
a	EMERGENCY POWER LIGHTING LOAD	CEILING	"a" LOWER CASE LETTER SPECIFIES ZONE
H N XX	RP: RELAY PACK RP-D: DIMMING RELAY PACK LC: RECEPTACLE LOAD CONTROLLER	ABOVE ACCESSIBLE CEILING	RELAYS MAY BE COMBINED IN ROOM CONTROLLER OR POWER PACKS.
EM H N N H EXX	ER: EMERGENCY RELAY PACK ER-D: EMERGENCY DIMMING RELAY PACK	ABOVE ACCESSIBLE CEILING	RELAYS MAY BE COMBINED IN ROOM CONTROLLER OR POWER PACKS. MUST BE UL 924 RATED FOR EMERGENCY LOADS.
———	3/4"C WITH LIGHTING BRACH CIRCUIT WIRING		
—·—·—·—	3/4"C WITH 0-10V DIMMING WIRING		
– – – – –	3/4"C WITH CAT 5 CABLING		

LIGHTING CONTROL NOTES

1. PROGRAMMING SHALL BE COMPLETED BY THE CONTRACTOR PRIOR TO SUBSTANTIAL COMPLETION.
2. CONTRACTOR SHALL MODIFY PROGRAMMING AND PRESET SCENES AS REQUESTED BY OWNER.
3. PROVIDE FINE TUNING PROGRAMMING MODIFICATIONS AS REQUESTED BY THE OWNER WITHIN 6 MONTHS AFTER BUILDING OCCUPANCY.
4. IN ADDITION TO PRESET SCENES PROVIDE INDIVIDUAL CONTROL FOR EACH ZONE.
5. ALL WIRING DIAGRAMS ARE GENERAL IN NATURE. SPECIFIC CONFIGURATION AND QUANTITIES DUE TO MANUFACTURER AVAILABILITY WILL VARY. CONTRACTOR MUST PROVIDE ALL REQUIRED PARTS OF THE SYSTEM TO PERFORM AS INTENDED.
6. REFER TO FLOOR PLANS FOR EXACT DEVICE COUNT, DEVICE TYPE, QUANTITY OF POWER PACKS, AND PHOTOCELL SETTINGS.

1. ROOM CONTROLLERS OR POWER PACKS WITH MULTIPLE RELAYS INCLUDED MAY BE PROVIDED IN LIEU OF SEPARATE RELAYS SHOWN.

8 TYPICAL ZONED LOW-VOLTAGE WIRING DIAGRAM
SCALE: NTS

1. ROOM CONTROLLERS OR POWER PACKS WITH MULTIPLE RELAYS INCLUDED MAY BE PROVIDED IN LIEU OF SEPARATE RELAYS SHOWN.
2. LIGHTING SHALL NOT DIM BELOW 1 FC OF ILLUMINATION PER IBC 1008.2.1 DURING NORMAL OPERATION. UPON POWER LOSS, REFER TO LIGHTING CONTROL SYSTEM REQUIREMENTS FOR ADDITIONAL INFORMATION.

6 TYPICAL ZONED LOW-VOLTAGE WITH EGRESS WIRING DIAGRAM
SCALE: NTS

1 NETWORK LIGHTING CONTROL SYSTEM WIRING DIAGRAM
SCALE: NTS

LIGHTING CONTROLS DIAGRAMS AS SHOWN ARE FOR BASIC CONCEPT AND LAYOUT. LIGHTING CONTROLS SYSTEM SUPPLIER TO PROVIDE INSTALLATION DRAWINGS THAT RELFECT THE ACUTAL INSTALLATION REQUIREMENTS, WIRING AND ALL REQUIRED DEVICES. SEE EL702 AND LIGHTING PLANS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

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SHEET NUMBER: EL502
SHEET OF

LIGHTING CONTROL SYSTEM REQUIREMENTS:

NETWORKED LOW-VOLTAGE LIGHTING CONTROL SYSTEMS: PROVIDE A DIGITAL, DISTRIBUTED INTELLIGENT, NETWORKED LOW-VOLTAGE LIGHTING CONTROL SYSTEM FOR THE FOLLOWING ROOMS/AREAS:

- LABS
- STAIRS
- MAIN CIRCULATION SPACES
- BUILDING EXTERIOR

THE SYSTEM SHALL INCLUDE, BUT IS NOT LIMITED TO CEILING-MOUNTED OCCUPANCY SENSORS, LIGHT LEVEL SENSORS, LOW VOLTAGE CONTROL WALL SWITCHES, RELAY PACKS/ROOM CONTROLLERS, GATEWAYS, BRIDGES, EQUIPMENT, LOW VOLTAGE CABLES, INTERNET CONNECTION, SOFTWARE, PROGRAMMING, ETC.

PROVIDE SOFTWARE FOR THE ABILITY TO REMOTELY CONFIGURE AND MONITOR EVERY NETWORKED SYSTEM DEVICE. PROVIDE BACNET SOFTWARE PLUG-IN TO ENABLE SOFTWARE TO ACT AS A BACNET IP 'GATEWAY' BETWEEN THE NETWORK AND THE OWNER'S BUILDING MANAGEMENT SYSTEM. THE SOFTWARE SHALL HAVE A SIMPLE AND QUICK SETUP TOOL FOR CREATING CUSTOM CONFIGURATION PROFILES THAT CAN EITHER BE SCHEDULED OR RUN ON DEMAND. THE SOFTWARE SHALL ALLOW FOR:

- VIEWING DEVICE PROPERTIES
- CUSTOMIZING ALL DEVICE NAMES
- CONFIGURING ALL DEVICE DEFAULT SETTINGS
- EDITING DEVICE CURRENT SETTINGS
- OBSERVING REAL-TIME DEVICE OPERATIONAL STATUSES
- VIEWING ENERGY CONSUMPTION
- UPDATING DEVICE FIRMWARE
- GROUPING NETWORK DEVICES
- CREATING LIGHTING PROFILES THAT OUTLINE DEVICE OPERATION
- SCHEDULING PROFILES TO RUN AT PRESCRIBED TIMES WITH OPTIONAL RECURRENCES
- MANAGING USER ACCESS OF GATEWAYS AND THE SOFTWARE PROGRAM
- PRINTING REPORTS ON THE NETWORK INVENTORY AND PROFILES
- REMOTE TECHNICAL SUPPORT VIA THE INTERNET

PROVIDE RELAY PACKS/ROOM CONTROLLERS IN TYPES AND RATINGS AS MAY BE REQUIRED FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM WHETHER SHOWN ON THE DRAWINGS OR NOT. WHERE RELAY PACKS/ROOM CONTROLLERS ARE SERVING LOADS IN HIGH CEILING AREAS, LOCATE RELAY PACKS/ROOM CONTROLLERS IN THE ELECTRICAL ROOM WHERE LINE VOLTAGE WIRING IS ORIGINATING FROM.

THE SYSTEM SHALL METER EACH POINT OF CONTROL AND PROVIDE ENERGY USAGE AND POWER DEMAND DATA BACK TO THE OWNER'S BUILDING MANAGEMENT SYSTEM

OCCUPANCY SENSORS SHALL BE SET FOR "MANUAL ON - AUTO OFF" IN THE FOLLOWING SPACES:

- LABS

OCCUPANCY SENSORS SHALL BE SET FOR "AUTO ON - AUTO OFF" IN THE FOLLOWING SPACES:

- STAIRS
- MAIN CIRCULATION SPACES

ALL CEILING-MOUNTED OCCUPANCY SENSORS SHALL BE PROVIDED WITH AN AUXILIARY CONTACT FOR HVAC CONTROL.

ALL LOW VOLTAGE LIGHTING CONTROL SWITCHES SHALL HAVE EACH SCENE NAME SILKSCREENED ONTO THE FRONT OF THE SWITCH IN BLACK LETTERS AS MAY BE REQUESTED BY THE ARCHITECT. COORDINATE SCENE NAME WITH ARCHITECT/OWNER.

EXTERIOR BUILDING LIGHTING SHALL HAVE INTEGRAL PHOTOCELL. PROVIDE RELAY PACKS FOR EXTERIOR LIGHTING IN THE ELECTRICAL ROOM AND PROGRAM ON A SCHEDULE THAT MEETS IECC 2018 AND OWNER REQUIREMENTS.

STANDALONE LOW VOLTAGE LIGHTING CONTROL SYSTEMS: PROVIDE DIGITAL STANDALONE LOW VOLTAGE LIGHTING CONTROL SYSTEMS IN THE FOLLOWING ROOMS/AREAS:

- CONFERENCE ROOMS
- OFFICES
- WORK ROOMS
- LARGE STORAGE ROOMS

THE SYSTEMS SHALL INCLUDE, BUT IS NOT LIMITED TO CEILING-MOUNTED OCCUPANCY SENSORS, LIGHT LEVELS SENSORS, LOW VOLTAGE CONTROL WALL SWITCHES, RELAY PACKS/ROOM CONTROLLERS, LOW VOLTAGE CABLES, PROGRAMMING, ETC.

PROVIDE RELAY PACKS/ROOM CONTROLLERS IN TYPES AND RATINGS AS MAY BE REQUIRED FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM WHETHER SHOWN ON THE DRAWINGS OR NOT. WHERE RELAY PACKS ARE SERVING LOADS IN HIGH CEILING AREAS, LOCATE POWER PACKS IN THE ELECTRICAL ROOM WHERE LINE VOLTAGE WIRING IS ORIGINATING FROM.

OCCUPANCY SENSORS SHALL BE SET FOR "MANUAL ON - AUTO OFF" WITH A 10 MINUTE DELAY IN THE FOLLOWING SPACES:

- CONFERENCE ROOMS (WITH NATURAL DAY LIGHT)
- OFFICES (WITH NATURAL DAY LIGHT)

OCCUPANCY SENSORS SHALL BE SET FOR "AUTO 50% ON - AUTO OFF" WITH A 10 MINUTE DELAY IN THE FOLLOWING SPACES:

- CONFERENCE ROOMS (WITHOUT NATURAL DAY LIGHT)
- OFFICES (WITHOUT NATURAL DAY LIGHT)
- LARGE RESTROOMS
- WORK ROOMS
- LARGE STORAGE ROOMS
- SMALL VESTIBULES AND PASSAGE WAYS (100% AUTO ON)
- LABS
- MAIN CIRCULATION SPACES
- BUILDING EXTERIOR

ALL CEILING-MOUNTED OCCUPANCY SENSORS SHALL BE PROVIDED WITH AN AUXILIARY CONTACT FOR HVAC CONTROL.

ALL LOW VOLTAGE LIGHTING CONTROL SWITCHES SHALL HAVE EACH SCENE NAME SILKSCREENED ONTO THE FRONT OF THE SWITCH IN BLACK LETTERS. COORDINATE SCENE NAME WITH ARCHITECT/OWNER.

COORDINATE WITH OWNER/ARCHITECT ON PROGRAMMING SCENES (PER ZONING SHOWN ON DRAWINGS), TASK TUNING, ETC. EACH STANDALONE SYSTEM SHALL BE PROGRAMMED TO REVERT BACK TO ITS NORMAL "ON" POSITION ONE HOUR AFTER SELECTING A SCENE OR RAISING OR LOWERING A LIGHTING ZONE.

LINE-VOLTAGE LIGHTING CONTROL SYSTEM: PROVIDE LINE-VOLTAGE LIGHTING CONTROL SYSTEMS IN THE FOLLOWING ROOMS/AREAS:

WALL BOX OCCUPANCY SENSORS:
- CUSTODIANS
- SMALL STORAGE ROOMS
- SMALL TOILET ROOMS
- LARGE STORAGE ROOMS

SET OCCUPANCY SENSOR TO HAVE A 10 MINUTE DELAY

OCCUPANCY SENSORS: PLEASE NOTE THAT ELECTRICAL DRAWINGS INDICATE LOCATIONS OF OCCUPANCY SENSORS IN APPROXIMATE LOCATIONS AND QUANTITIES. PROVIDE OCCUPANCY SENSORS IN LOCATIONS, QUANTITIES, AND TYPES AS RECOMMENDED BY THE MANUFACTURE. PROVIDE COMPLETE PRODUCT DATA AND SHOP DRAWINGS INDICATING THE PROPOSED TYPES, COVERAGE PATTERNS, LOCATIONS, AND QUANTITIES. COORDINATE THE LOCATION OF ALL DEVICES WITH CEILING GRIDS, LIGHT FIXTURES, CEILING DIFFUSERS, SPRINKLER HEADS, ETC.

LIGHT LEVEL SENSORS: PLEASE NOTE THAT THE ELECTRICAL DRAWINGS INDICATED LOCATIONS OF LIGHT LEVEL SENSOR IN APPROXIMATE LOCATIONS ONLY. PROVIDE LIGHT LEVEL SENSORS IN LOCATIONS AND TYPES AND RECOMMENDED BY THE MANUFACTURER. PROVIDE COMPLETE PRODUCT DATA AND SHOP DRAWINGS INDICATING THE PROPOSED TYPES AND LOCATIONS. COORDINATE THE LOCATION OF ALL DEVICES WITH CEILING GRIDS, LIGHT FIXTURES, CEILING DIFFUSERS, SPRINKLER HEADS, ETC.

ZONING REQUIREMENTS: IT IS PERMISSIBLE FOR ZONES OF LIGHT FIXTURES TO BE CONTROLLED BY COMMON POWER PACKS IN LIEU OF INDIVIDUAL POWER PACKS FOR EACH LIGHT FIXTURE EXCEPT AS FOLLOWS:

1. EGRESS LIGHT FIXTURES IN EACH ZONE SHALL BE PROVIDED WITH A RELAY PACK/ROOM CONTROLLER UL 924 LISTED FOR EMERGENCY OPERATIONS. SEE EMERGENCY OPERATIONS BELOW.
2. EACH ROOM OR AREA SHALL BE CONSIDERED A SEPARATE ZONE, UNLESS NOTED OTHERWISE. PLEASE NOTE THAT SOME ROOMS HAVE MULTIPLE ZONES. REFER TO THE LIGHTING PLANS FOR DELINEATED LIGHTING ZONES.
3. DIFFERENT LIGHT FIXTURE TYPES IN EACH ZONE SHALL HAVE SEPARATE POWER PACKS.
4. POWER PACKS SHALL BE RATED IN AMPERAGES AND VOLTAGES AS MAY BE REQUIRED TO SUIT APPLICATION.
5. PROVIDE A MINIMUM OF AT LEAST 10% EXTRA POWER PACKS OF EACH SIZE AND TYPE UTILIZED AND ZONE AS MAY BE DIRECTED BY THE ELECTRICAL ENGINEER.

TASK TUNING:

SET THE DEFAULT (MAXIMUM) LIGHT LEVELS TO SUIT THE PARTICULAR TASK OR USE OF A WORKSPACE AS FOLLOWS:

FUNCTION / SPACE ILLUMINANCE (AVG. FOOTCANDLES)	
COMMONS	10 FC
STAIRS	10 FC
VESTIBULES	10 FC
LABS	50 FC (AMBIENT)
OFFICES	35 FC
CONFERENCE ROOMS	30 FC
WORK ROOMS	30 FC
LARGE STORAGE ROOMS	10 FC
CORRIDORS	10 FC
LARGE RESTROOMS:	15 FC
SMALL TOILET ROOMS:	15 FC

VALUES INDICATED ABOVE ARE AVERAGE FOOTCANDLE LEVELS ON THE TASK SURFACE. TAKE METER READING AT THE COMPLETION OF THE PROJECT AS MAY BE REQUIRED TO APPROPRIATELY TUNE EACH SPACE; METER TO BE FURNISHED BY LIGHTING CONTROL SUPPLIER.

LUMEN MAINTENANCE: WHERE AVAILABLE AS A STANDARD FEATURE, PROVIDE LIGHT FIXTURES WITH AN 80% LUMEN MAINTENANCE FEATURE. IF THIS FEATURE IS NOT AVAILABLE, PLEASE INDICATE THIS IS AN EXCEPTION ON THE BID FORM.

DIMMING LEADS: PROVIDE DIMMING LEADS TO ALL FIXTURES THAT HAVE THE FOLLOWING:
1. NETWORK LOW-VOLTAGE LIGHTING CONTROL SYSTEMS.
2. STAND ALONE LOW-VOLTAGE LIGHTING CONTROL SYSTEMS.
3. ANYWHERE TASK TUNING IS REQUIRED.

EMERGENCY OPERATION (GENERATOR/INVERTER): PROVIDE A UL 924 LISTED METHOD FOR OPERATING EGRESS LIGHT FIXTURES. THIS SHALL INCLUDE UL 924 LISTED POWER PACKS/ROOM CONTROLLERS FOR GROUPS OF LIGHT FIXTURES OR PROVIDE GENERATOR TRANSFER DEVICES EQUIVALENT TO BODINE GTD OR ITOA ETS FOR EACH INDIVIDUAL OR GROUPS OF LIGHT FIXTURES DEPENDING UPON THE APPLICATION. REFER TO FLOOR PLANS, LIGHTING DETAILS, AND LIGHT FIXTURES SCHEDULE. ALL EGRESS LIGHT FIXTURES SHALL BE SWITCHED OFF WITH OTHER NORMAL-POWERED LIGHT FIXTURES DURING NORMAL OPERATION, BUT POWERED "FULL ON" DURING AN EMERGENCY OPERATION.

LOW VOLTAGE CABLES: PROVIDE CABLES IN TYPES AND SIZES IN ACCORDANCE WITH ALL MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. CABLES SHALL BE PLENUM RATED AND SUPPORTED BY J-HOOKS ATTACHED TO LIGHT FIXTURE DROP WIRES AT 12" ABOVE RECESSED LAY-IN LIGHT FIXTURES. SECURE CABLES AT A SPACING OF NOT MORE THAN 60" ON CENTERS. PROVIDE J-HOOKS SUPPORTED FROM ALL-THREAD AS MAY BE REQUIRED TO MEET SPACING CRITERIA. INSTALLATION SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE NEC 300.11. ALL CABLES SHALL BE ROUTED IN A NEAT WORKMANLIKE MANNER PARALLEL AND/OR PERPENDICULAR TO CEILING GRIDS.

SHOP DRAWINGS AND PRODUCT DATA:

PRODUCT DATA: PROVIDE PRODUCT DATA FOR ALL SYSTEM COMPONENTS CLEARLY DELINEATING THE DEVICES WHICH ARE TO BE PROVIDED.

SHOP DRAWINGS: PROVIDE 1/8" SCALED 30" X 42" AUTOCAD DRAWINGS SHOWING THE LIGHTING CONTROL SYSTEM DEVICES PLACED ON THE CEILING AND FLOOR PLANS, OBTAIN FLOOR AND CEILING PLANS FROM THE ARCHITECT. DRAWINGS SHALL INCLUDE COMPLETE LINE AND LOW VOLTAGE INTERCONNECTION REQUIREMENTS. PROVIDE SEPARATE LINE AND LOW VOLTAGE DRAWINGS AS MAY BE REQUIRED FOR CLARITY. LOW VOLTAGE DRAWING SHALL INCLUDE LENGTHS OF ALL CABLES. INCLUDE COMPLETE WIRING DIAGRAMS, ONE-LINE DIAGRAMS, DETAILS, ETC.

PROGRAMMING SCHEDULES: PROVIDE COMPLETE SEQUENCING AND PROGRAMMING SCHEDULES FOR ALL DEVICES, ZONES, AND SCENES.

RECORD DRAWINGS: AT THE COMPLETION OF THE PROJECT, PROVIDE UPDATED SHOP DRAWINGS INCLUDING ALL CHANGES MADE DURING CONSTRUCTION. INDICATE EXACT LOCATION BY DIMENSION OF ALL POWER PACKS AND OTHER DEVICES MOUNTED ABOVE ACCESSIBLE CEILINGS.

WARRANTY: WARRANTY ALL WORK INCLUDING PARTS AND LABOR FOR A PERIOD OF ONE YEAR.

PROGRAMMING: PROGRAMING ALL SYSTEMS AS DIRECTED BY THE ELECTRICAL ENGINEER. MEET WITH THE ELECTRICAL ENGINEER AT THEIR OFFICE PRIOR TO PREPARATION OF SHOP DRAWINGS TO DISCUSS SPECIFIC PROGRAMMING AND ZONING REQUIREMENTS. EACH NETWORKED OR STANDALONE SYSTEM SHALL BE PROGRAMMED TO REVERT BACK TO ITS NORMAL "ON" POSITION ONE HOUR AFTER SELECTING A SCENE OR RAISING OR LOWERING A LIGHTING ZONE.

COMMISSIONING: COMMISSION EACH PORTION OF THE LIGHTING CONTROL SYSTEMS AT THE COMPLETION OF THE PROJECT TO VERIFY THAT THE SYSTEM PERFORMS AS INTENDED. COORDINATE COMMISSION SERVICES WITH COMMISSIONING AGENT. ASSIST THE OWNER IN PROGRAMMING AND MAPPING THE SYSTEM FOR INTEGRATION INTO THE BACNET BUILDING MANAGEMENT SYSTEM TO THEIR SATISFACTION.

RETRO - COMMISSIONING: DURING THE ONE YEAR WARRANTY PERIOD, PROVIDE RETRO-COMMISSIONING SERVICES AT THREE MONTH, SIX MONTH, NINE MONTH, AND ONE YEAR MARKS. PROVIDE AT LEAST 8 HOURS OF COMMISSIONING SERVICE FOR EACH OF THE FOUR RETRO-COMMISSIONING PERIODS. THIS WILL INCLUDE MEETING WITH THE OWNER TO RECEIVE FEEDBACK ON THE SYSTEM AND MAKING CHANGES TO THE SYSTEM INCLUDING PROGRAMMING, TASK TUNING, ETC.

TRAINING: PROVIDE EIGHT HOURS OF TRAINING FROM A FACTORY TRAINED AND CERTIFIED TECHNICIAN AT THE COMPLETION OF THE PROJECT. SCHEDULE TRAINING WITH THE OWNER.

BIDDING REQUIREMENTS (OWNER SPECIFIC MANUFACTURERS): BIDDERS SHALL BREAK OUT THE LIGHT FIXTURE PACKAGE SEPARATE FROM THE LIGHTING CONTROL SYSTEM. ALL SPECIAL FEATURES PERTAINING TO LIGHTING CONTROLS ASSOCIATED WITH THE LIGHT FIXTURES SHALL BE CONSIDERED LIGHTING CONTROLS. BIDDERS WHO DO NOT CONFORM TO THIS REQUIREMENT MAY BE DISQUALIFIED.

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	SOURCE	ELECTRICAL		APPROVED MANUFACTURERS	CATALOG INFORMATION	COMMENTS / NOTES
			VOLTAGE	LOAD		SERIES NUMBER	
CD43	CEILING MOUNTED DECORATIVE LIGHT FIXTURE.	LED 3300 LUMENS 3500K INTEGRAL DRIVER DIM 0-10V	120 V	32			
CS10	4' STRIP LIGHT FIXTURE WITH CURVED LENS AND WIRE GUARD. 36" CHAIN HANGING KIT. DLC PREMIUM LISTED.	LED 4000 LUMENS INTEGRAL DRIVER 3500K 0-10V DIM	120 V	10	METALUX (OR APPROVED EQUIVALENT)	SNLED	LOAD SHOWN IS PER LINEAR FOOT.
DL15	OPEN REFLECTOR ROUND LED RECESSED DOWNLIGHT WITH 4" APERTURE. SEMI-SPECULAR, MATTE-DIFFUSE REFLECTOR. 50° LIGHT DISTRIBUTION.	LED 1500 LUMENS 3500K INTEGRAL DRIVER 0-10V DIM	120 V	16	PORTFOLIO (OR APPROVED EQUIVALENT)	LD4B	PROVIDE MOUNTING AS REQUIRED FOR HARD LID AND LAY-IN MOUNTING. REFER TO DRAWINGS FOR MORE INFORMATION.
DS15	OPEN REFLECTOR ROUND LED RECESSED DOWNLIGHT WITH 6" APERTURE. SEMI-SPECULAR, MATTE-DIFFUSE REFLECTOR. 50° LIGHT DISTRIBUTION. WET LOCATION LISTED FOR SHOWER.	LED 1500 LUMENS 3500K REMOTE DRIVER 0-10V DIM	120 V	16	PORTFOLIO (OR APPROVED EQUIVALENT)	LD6B	
GV35	2'X2' VOLUMETRICLAY-IN GRID MOUNTED TROFFER WITH CENTER ROUND FROSTED ACRYLIC DIFFUSE LENS AND SLIGHTLY ELEVATED SIDE PANEL LENSES. HINGED DOOR FOR FIXTURE ACCESS. DIE-FORMED CODE GAUGE COLD ROLLED STEEL HOUSING. DLC PREMIUM LISTED.	LED 3500 LUMENS 3500K INTEGRAL DRIVER 0-10V DIM	120 V	31	METALUX (OR APPROVED EQUIVALENT)	22RLN	
GV44	2'X2' VOLUMETRICLAY-IN GRID MOUNTED TROFFER WITH CENTER ROUND FROSTED ACRYLIC DIFFUSE LENS AND SLIGHTLY ELEVATED SIDE PANEL LENSES. HINGED DOOR FOR FIXTURE ACCESS. DIE-FORMED CODE GAUGE COLD ROLLED STEEL HOUSING. DLC PREMIUM LISTED.	LED 4800 LUMENS 0-10V DIM	120 V	40	METALUX (OR APPROVED EQUIVALENT)	22RLN	
RL10	4" WIDE FLANGE RECESSED LINEAR FIXTURE WITH FLUSH OPAL LENS. EXTRUDED ALUMINUM HOUSING. MATCH LENGTH SHOWN ON THE DRAWING.	LED 1000 LM/FT 3500L INTEGRAL DRIVER 0-10V DIM	120 V	10	MARK LTG (OR APPROVED EQUIVALENT)	SL4L	LOAD SHOWN IS PER 1' OF LENGTH. REFER TO FLOOR PLAN FOR LENGTHS AND EM CIRCUITS SECTIONS. 18" DROP LENGTH TO BOTTOM OF THE FIXTURE.
RP5	3" WIDE FLANGE RECESSED LINEAR FIXTURE WITH 2" REGRESS DIFFUSE LENS. EXTRUDED ALUMINUM HOUSING. MATCH LENGTH SHOWN ON THE DRAWINGS/ CEILING PERIMETER MOUNTING WITH FIXTURE MOUNTED TO WALL AND CEILING GRID. TELESCOPING END PIECES TO MATCH LENGTH OF WALL.	LED 500 LM/FT 3500K INTEGRAL DRIVER 0-10V DIM	120 V	5	MOJO ILLUMINATION (OR APPROVED EQUIVALENT)	L63PER	LOAD SHOWN IS PER 1' OF LENGTH. REFER TO FLOOR PLAN FOR LENGTHS AND EM CIRCUITS SECTIONS. 18" DROP LENGTH TO BOTTOM OF THE FIXTURE.
WP15	EXTERIOR WALL PACK, TWO PIECE DIE-CAST EXTRUDED ALUMINUM HOUSING. TYPE 2 DISTRIBUTION.	LED 2500 LUMENS 4000K INTEGRAL DRIVER 0-10V DIM	120 V	19	LITHONIA (OR APPROVED EQUIVALENT)	DSXW1	
WV20	2' LONG SQUARE VANITY LIGHT WITH ACRYLIC DIFFUSER.	LED 1725 LUMENS 3500K INTEGRAL DRIVER	120 V	18	LITHONIA (OR APPROVED EQUIVALENT)	FMVCSLS	MOUNT JUST ABOVE MIRROR. COORDINATE WITH ARCHITECT FOR EXACT HEIGHT.
XE01	DIE-CAST ALUMINUM EDGE-LIT, LED EXIT SIGN. SINGLE FACE. CLEAR BACKGROUND. BRUSHED ALUMINUM FINISH. RECESSED CEILING, WALL BACK, OR WALL END MOUNT. AC ONLY.	LED	120 V	2	LITHONIA (OR APPROVED EQUIVALENT)	LRP	REFER TO FLOOR PLANS FOR REQUIRED MOUNTINGS AND CHEVERON ARROWS.

LIGHT FIXTURE GENERAL NOTES

1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.
2. CONFIRM MOUNTING HEIGHTS AND LOCATIONS OF ALL LIGHT FIXTURES WITH ARCHITECTURAL ELEVATIONS AND / OR ARCHITECT.
3. REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE REQUIREMENTS.
4. CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.
5. ALL LIGHT FIXTURES ARE TO BE 3500K FOR INTERIOR APPLICATIONS AND 4000K FOR EXTERIOR APPLICATIONS, UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.
6. ALL LIGHT FIXTURES ARE TO BE A MINIMUM OF 80 CRI UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.
7. ALL LED SOURCES MUST MEET L80 AT 50,000 HRS MINIMUM UNLESS OTHERWISE NOTED.
8. CONFIRM ALL MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO RELEASE.
9. ALL LIGHT FIXTURES ARE TO HAVE AN EFFICACY OF 80 LUMENS PER WATT MINIMUM.

BIDDING REQUIREMENTS

1. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM.
2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS NOT ALLOWED AND MUST BE BID SEPARATELY. I.E. LIGHT FIXTURES, THEATRICAL LIGHTING, SPORTS LIGHTING AND ALL LIGHTING CONTROLS.
3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS DISTRIBUTORS AND / OR CONTRACTOR.
4. WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.

LIGHT FIXTURE PRIOR APPROVAL REQUIREMENTS

1. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT.
2. PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST (8) WORKING DAYS BEFORE BID TIME. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.
3. ITEMS THAT ARE SUBMITTED AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). VERBAL APPROVALS WILL NOT BE GIVEN ON ANY ITEM.
4. IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN.
5. PRIOR APPROVALS SHALL CONSIST OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. ALL SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED. PRODUCTS WITHOUT PHOTOMETRIC DATA WILL NOT BE APPROVED.
6. LIGHTING PACKAGES WILL BE REVIEWED FOR GENERAL PROJECT COMPLIANCE ONLY. AN IN-DEPTH REVIEW OF ANY ALTERNATE FIXTURES WILL BE DONE DURING THE SUBMITTAL REVIEW PROCESS. ANY FIXTURES THAT ARE NOT TRULY EQUAL, AND / OR DO NOT COMPLY WITH ALL OF THE REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS, WILL NOT BE APPROVED. IF EQUIMENT IS DISAPPROVED FOR BIDDING, CONTRACTOR SHALL SUPPLY SPECIFIED EQUIPMENT AT NO EXTRA COST TO THE OWNER.

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: LIGHT FIXTURE SCHEDULE AND NOTES

SHEET NUMBER: EL601

SHEET OF

SPECIAL NOTE:

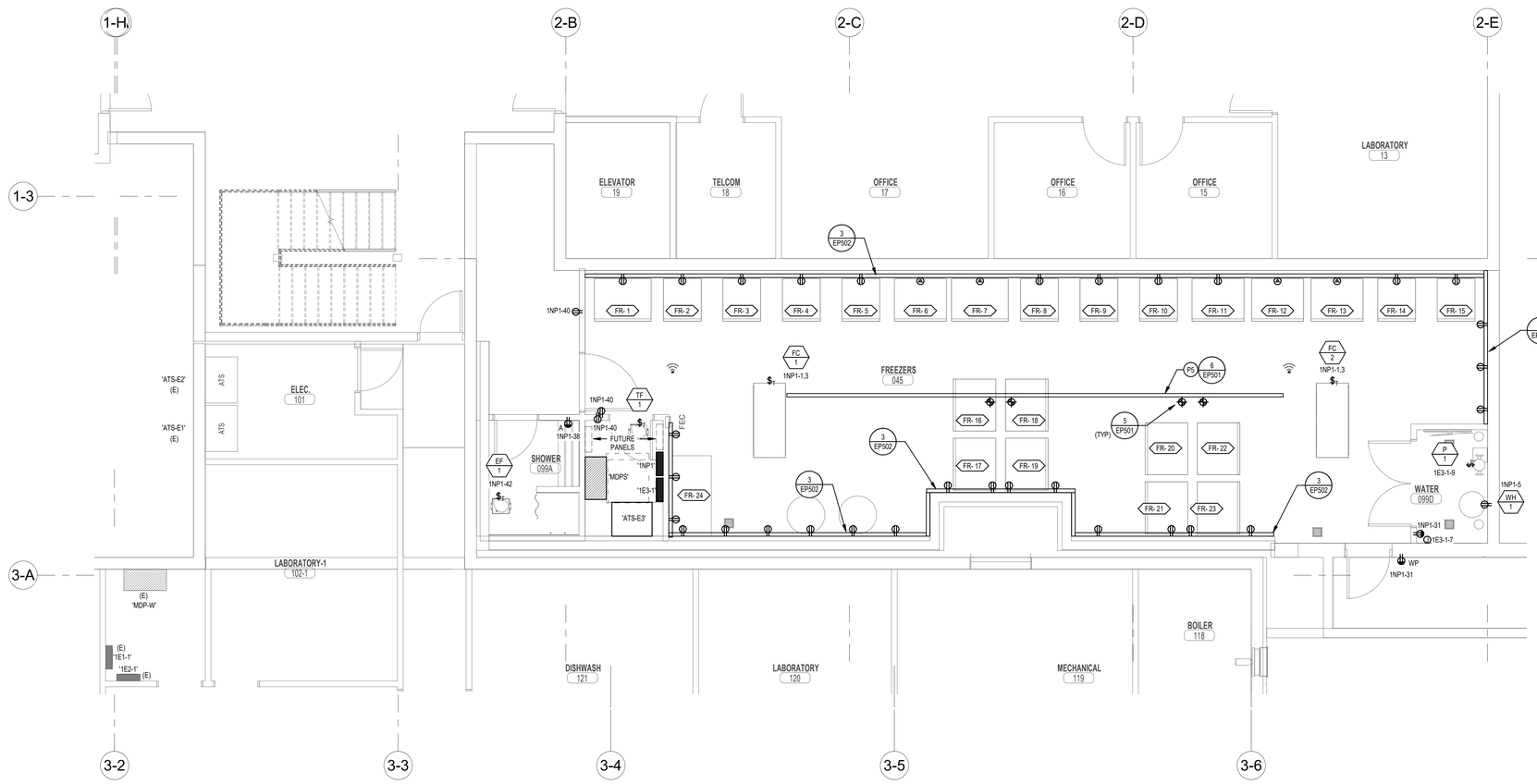
PROVIDE BUDGET COSTS FOR ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT FOR THE DD BUDGET. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

POWER GENERAL NOTES:

1. ALL 120V, 20AMP OUTLETS THAT ARE WITHIN 6' OF ANY SINK SHALL BE GFCI.
2. THE DIVISION 26 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS AND CONDUIT RUNS.

KEYED NOTES (#)

P5 208V, 3Ø, 40A STARLINE BUSWAY SYSTEM WITH MODULAR CORD DROPS. PROVIDE MOUNTING HARDWARE, FEEDER BOX, ETC. AS REQUIRED FOR A COMPLETE SYSTEM. REFER TO DETAILS ON SHEET EP501 FOR ADDITIONAL INFORMATION.



1 **BASEMENT FLOOR PLAN - POWER PLAN**
SCALE: **1/4" = 1'-0"**

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SHEET TITLE: BASEMENT FLOOR PLAN - POWER PLAN

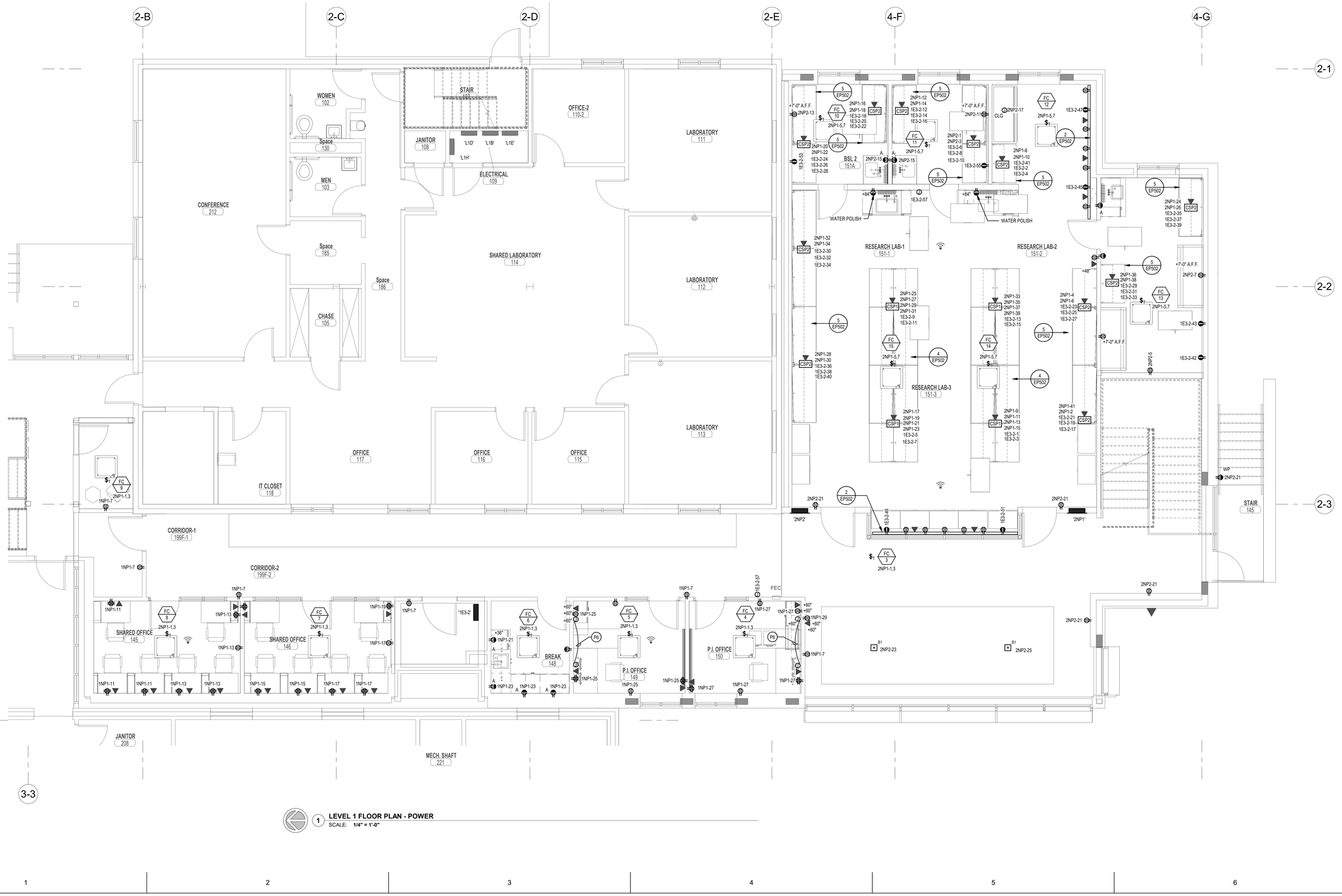
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POWER GENERAL NOTES:

1. ALL 120V, 20AMP OUTLETS THAT ARE WITHIN 6' OF ANY SINK SHALL BE GFCI.
2. THE DIVISION 26 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS AND CONDUIT RUNS.

KEYED NOTES (#)

P6 PROVIDE 1" CONDUIT FOR HDMI CABLE.



1 **LEVEL 1 FLOOR PLAN - POWER**
SCALE: **1/4" = 1'-0"**

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UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE:
LEVEL 1 FLOOR PLAN - POWER PLAN

SHEET NUMBER: EP101

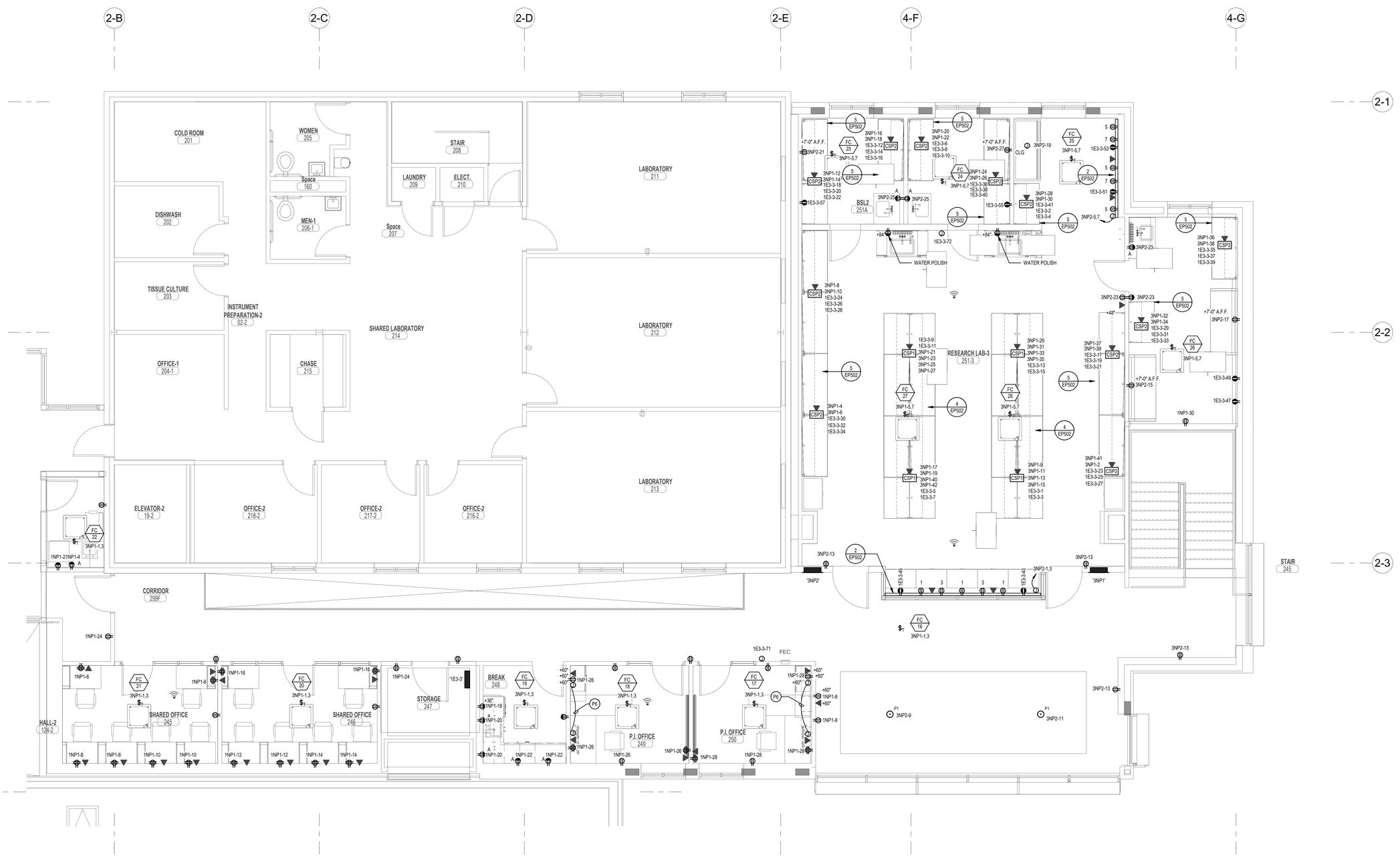
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POWER GENERAL NOTES:

1. ALL 120V, 20AMP OUTLETS THAT ARE WITHIN 6' OF ANY SINK SHALL BE GFCI.
2. THE DIVISION 26 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS AND CONDUIT RUNS.

KEYED NOTES (#)

P6 PROVIDE 1" CONDUIT FOR HDMI CABLE.



1 **LEVEL 2 FLOOR PLAN - POWER PLAN**
SCALE: **1/4" = 1'-0"**

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PROJECT TITLE:

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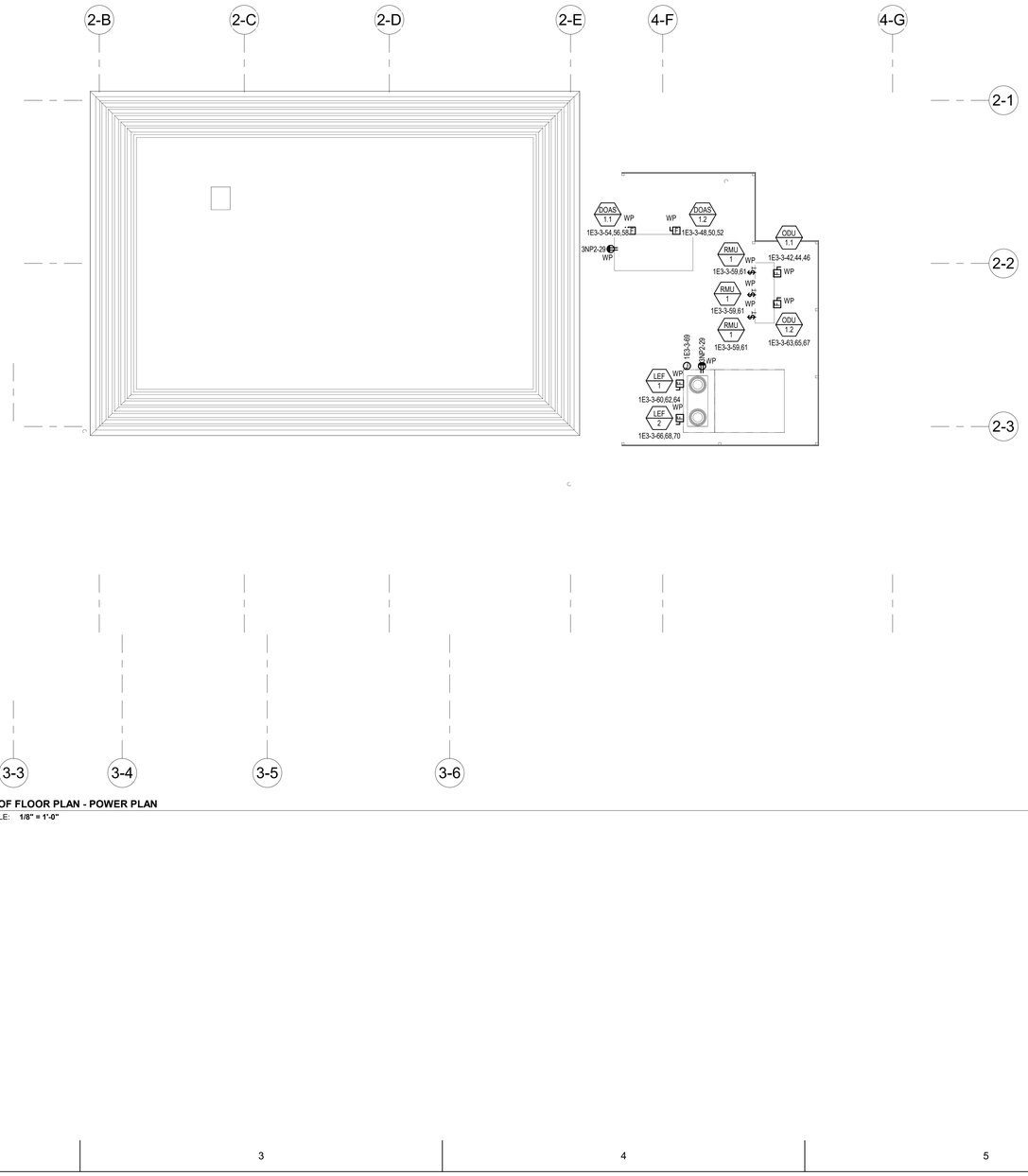
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UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
LEVEL 2 FLOOR PLAN - POWER PLAN

SHEET NUMBER:
EP102

SHEET OF



1 **ROOF FLOOR PLAN - POWER PLAN**
SCALE: **1/8" = 1'-0"**

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UNIVERSITY PROJECT NUMBER:

22294

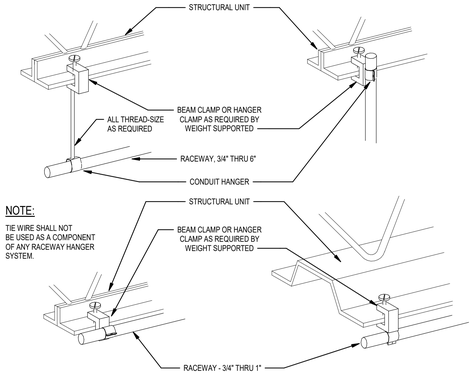
SHEET TITLE:

ROOF LEVEL POWER PLAN

SHEET NUMBER:

EP103

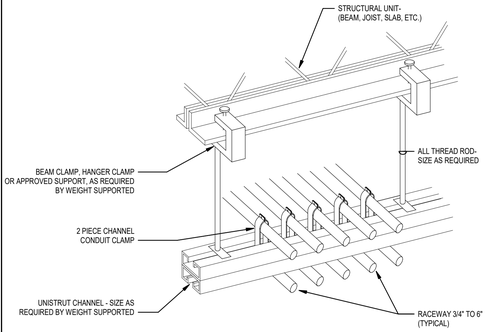
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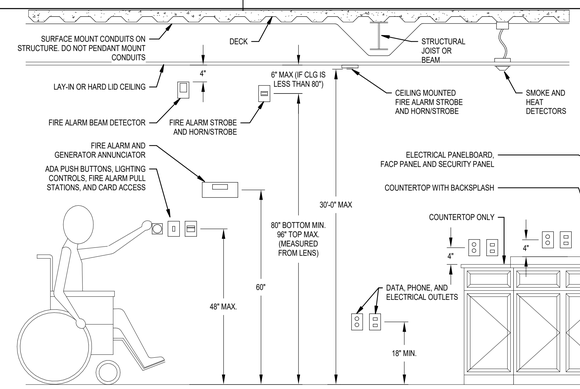
NOTE:

TIE WIRE SHALL NOT BE USED AS A COMPONENT OF ANY RACEWAY HANGER SYSTEM.

3 TYPICAL RACEWAY DETAIL
SCALE: NTS



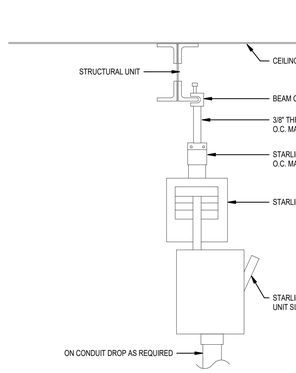
2 MULTIPLE RACEWAY SUPPORT DETAIL
SCALE: NTS



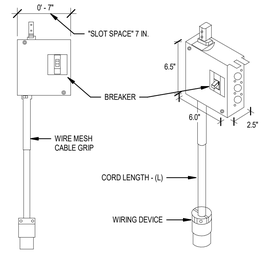
1 TYPICAL DEVICE ELEVATION DETAIL
SCALE: NTS

GENERAL NOTES:

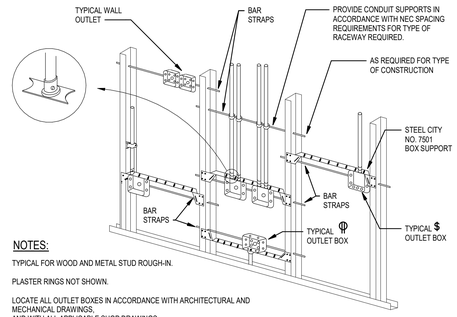
1. MOUNT ALL OUTLETS, DEVICES, AND EQUIPMENT AT HEIGHTS INDICATED BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS. UNLESS NOTED OTHERWISE , HIEGHTS ARE GIVEN FROM FINISHED FLOOR TO CENTER OF OUTLET BOX.
2. WHERE OUTLETS, DEVICES AND EQUIPMENT ARE NOTED BY THE SUBSCRIPT 'A', MOUNT AT 4" ABOVE COUNTER. IF COUNTER HAS A BACK SPLASH, MOUNT AT 4" ABOVE BACK SPLASH. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS AND COORDINATE WITH CASEWORK SUPPLIER.



6 STARLINE BUSWAY MOUNTED DETAIL
SCALE: NTS



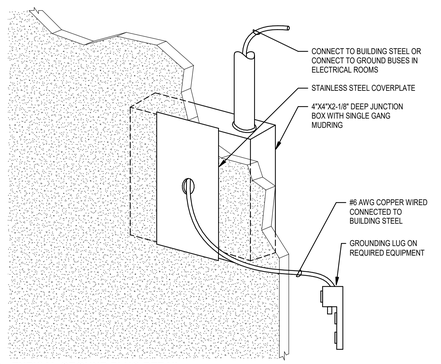
5 STARLINE CORD DROP DETAIL
SCALE: NTS



NOTES:

1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH UBC 4303 OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAMESTUD SPACE MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.

4 TYPICAL ROUGH-IN REQUIREMENTS
SCALE: NTS



7 TYPICAL GROUND PLUG DETAIL
SCALE: NTS

CEILING SERVICE PANEL SCHEDULE

	120V RECEPTACLE		120V EM RECEPTACLE		208V RECEPTACLE		208V EM RECEPTACLE		
Type	NEMA TYPE	NUMBER	NEMA TYPE	NUMBER	NEMA TYPE	NUMBER	NEMA TYPE	NUMBER	COMMENTS
CSP1	L 5-20R	2	L 5-20R	2	L 5-20R	2	-	-	REFER TO EC SHEETS FOR NUMBER OF DATA DROPS REQUIRED AT EACH CSP. PANELS SHALL BE PROVIDED BY DIV 11 ALONG WITH ALL ASSOCIATED POWER AND DATA RECEPTACLES. ELECTRICAL CONECTIONS SHALL BE BY DIV 26 AND 27. COORDINATE ALL REQUIRMENTS WITH PANEL SUPPLIER.
CSP2	L 5-20R	3	L 5-20R						REFER TO EC SHEETS FOR NUMBER OF DATA DROPS REQUIRED AT EACH CSP. PANELS SHALL BE PROVIDED BY DIV 11 ALONG WITH ALL ASSOCIATED POWER AND DATA RECEPTACLES. ELECTRICAL CONECTIONS SHALL BE BY DIV 26 AND 27. COORDINATE ALL REQUIRMENTS WITH PANEL SUPPLIER.

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EDA PROJECT NUMBER: 221011

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

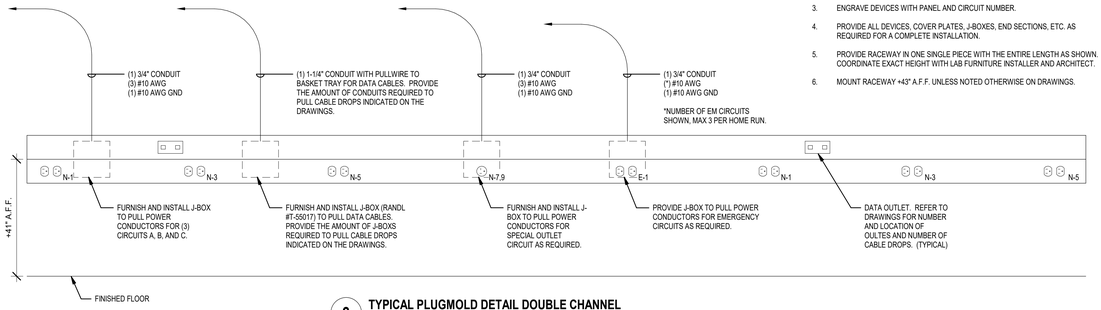
ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: POWER DETAILS

SHEET NUMBER: EP501

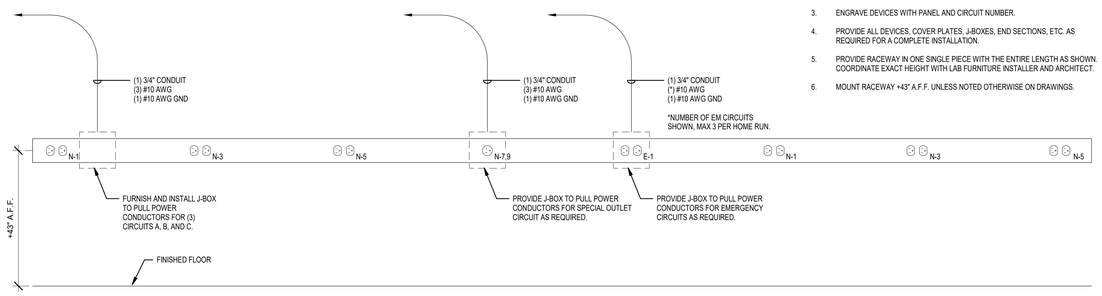
SHEET OF



NOTE:

1. PROVIDE ALUMINUM RACEWAY (LEGRAND #ALA4800, OR APPROVED EQUIVALENT) IN THE APPROXIMATE LOCATION SHOWN. RACEWAY DIMENSIONS ARE 8" HIGH X 2 1/4" DEEP.
2. REFER TO DRAWINGS FOR NUMBER OF POWER OUTLETS AND ASSOCIATED CIRCUITS.
3. ENGRAVE DEVICES WITH PANEL AND CIRCUIT NUMBER.
4. PROVIDE ALL DEVICES, COVER PLATES, J-BOXES, END SECTIONS, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.
5. PROVIDE RACEWAY IN ONE SINGLE PIECE WITH THE ENTIRE LENGTH AS SHOWN. COORDINATE EXACT HEIGHT WITH LAB FURNITURE INSTALLER AND ARCHITECT.
6. MOUNT RACEWAY +43" A.F.F. UNLESS NOTED OTHERWISE ON DRAWINGS.

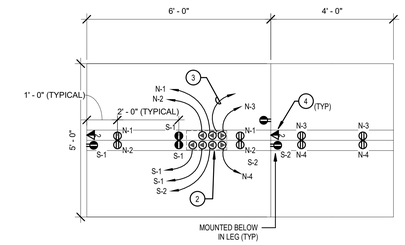
2 TYPICAL PLUGMOLD DETAIL DOUBLE CHANNEL
SCALE: NTS



NOTE:

1. PROVIDE ALUMINUM RACEWAY (LEGRAND #AL3300, OR APPROVED EQUIVALENT) IN THE APPROXIMATE LOCATION SHOWN.
2. REFER TO DRAWINGS FOR NUMBER OF POWER OUTLETS AND ASSOCIATED CIRCUITS.
3. ENGRAVE DEVICES WITH PANEL AND CIRCUIT NUMBER.
4. PROVIDE ALL DEVICES, COVER PLATES, J-BOXES, END SECTIONS, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.
5. PROVIDE RACEWAY IN ONE SINGLE PIECE WITH THE ENTIRE LENGTH AS SHOWN. COORDINATE EXACT HEIGHT WITH LAB FURNITURE INSTALLER AND ARCHITECT.
6. MOUNT RACEWAY +43" A.F.F. UNLESS NOTED OTHERWISE ON DRAWINGS.

3 TYPICAL PLUGMOLD DETAIL SINGLE CHANNEL
SCALE: NTS



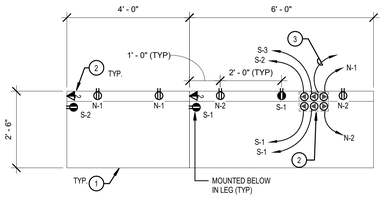
4 TYPICAL DOUBLE LAB BENCH CIRCUITING AND CONNECTION DETAIL
SCALE: NTS

(#) KEYED NOTES:

1. LAB BENCH OUTLETS ARE PRE-WIRED IN PLUGMOLD PROVIDED WITH BENCH.
2. REFER TO CEILING SERVICE PANEL SCHEDULE FOR MORE INFORMATION.
3. PROVIDE (1) 1 1/4"C. WITH PULLCORD TO TELE/DATA BASKET TRAY. REFER TO CEILING SERVICE PANEL SCHEDULE FOR TOTAL DATA DROPS.
4. LOCATIONS OF DATA OUTLETS ARE FOR COORDINATION ONLY. CEILING SERVICE PANELS ARE MEANT TO SUPPLY 2 DATA DROPS PER BENCH. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR MORE INFORMATION. PROVIDE 2 PORT TELE/DATA FACEPLATE FOR EACH DATA OUTLET IN LAB BENCHES.

GENERAL NOTES:

1. SEE FLOOR PLANS FOR ACTUAL LAB BENCH CIRCUIT NUMBERS.
2. ALL DEVICES SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER.
3. STANDBY OUTLETS SHALL BE RED DEVICES WITH RED COVER PLATE.
4. DETAIL SHOWS TYPICAL CIRCUITING AND CONNECTIONS. REFER TO FLOOR PLANS FOR EXACT BENCH SECTIONS (LENGTH AND NUMBER). APPLY SAME TYPICAL WIRING TO BENCHES ON FLOOR PLANS.
5. CEILING SERVICE PANELS ARE DESIGNED TO SERVE (2) LAB BENCHES. EACH BENCH SHALL HAVE TWO NORMAL POWER PLUGS AND TWO STANDBY PLUGS TO TIE INTO CEILING SERVICE PANELS. REFER TO CEILING SERVICE PANEL SCHEDULE FOR RECEPTICALS PROVIDED.
6. ALL CONDUCTORS FOR POWER CIRCUITS SHALL UTILIZE #10 AWG.
7. COORDINATE CEILING PANEL LOCATIONS WITH ARCH.



5 TYPICAL SINGLE LAB BENCH CIRCUITING AND CONNECTION DETAIL
SCALE: NTS

(#) KEYED NOTES:

1. LAB BENCH OUTLETS ARE PRE-WIRED IN PLUGMOLD PROVIDED WITH BENCH.
2. REFER TO CEILING SERVICE PANEL SCHEDULE FOR MORE INFORMATION.
3. PROVIDE (1) 1 1/4"C. WITH PULLCORD TO TELE/DATA BASKET TRAY. REFER TO CEILING SERVICE PANEL SCHEDULE FOR TOTAL DATA DROPS.
4. LOCATIONS OF DATA OUTLETS ARE FOR COORDINATION ONLY. CEILING SERVICE PANELS ARE MEANT TO SUPPLY 2 DATA DROPS PER BENCH. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR MORE INFORMATION. PROVIDE 2 PORT TELE/DATA FACEPLATE FOR EACH DATA OUTLET IN LAB BENCHES.

GENERAL NOTES:

1. SEE FLOOR PLANS FOR ACTUAL LAB BENCH CIRCUIT NUMBERS.
2. ALL DEVICES SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER.
3. STANDBY OUTLETS SHALL BE RED DEVICES WITH RED COVER PLATE.
4. DETAIL SHOWS TYPICAL CIRCUITING AND CONNECTIONS. REFER TO FLOOR PLANS FOR EXACT BENCH SECTIONS (LENGTH AND NUMBER). APPLY SAME TYPICAL WIRING TO BENCHES ON FLOOR PLANS.
5. CEILING SERVICE PANELS ARE DESIGNED TO SERVE UP TO (3) LAB BENCHES. EACH BENCH SHALL HAVE ONE NORMAL POWER PLUG AND ONE STANDBY PLUG TO TIE INTO CEILING SERVICE PANELS. REFER TO CEILING SERVICE PANEL SCHEDULE FOR RECEPTICALS PROVIDED.
6. ALL CONDUCTORS FOR POWER CIRCUITS SHALL UTILIZE #10 AWG.
7. COORDINATE CEILING PANEL LOCATIONS WITH ARCH.

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
22294

SHEET TITLE:
POWER DETAILS

SHEET NUMBER:
EP502

SHEET OF

CEILING SERVICE PANEL SCHEDULE

	120V RECEPTACLE		120V EM RECEPTACLE		208V RECEPTACLE		208V EM RECEPTACLE		
Type	NEMA TYPE	NUMBER	NEMA TYPE	NUMBER	NEMA TYPE	NUMBER	NEMA TYPE	NUMBER	COMMENTS
CSP1	L 5-20R	2	L 5-20R	2	L 5-20R	2	-	-	REFER TO EC SHEETS FOR NUMBER OF DATA DROPS REQUIRED AT EACH CSP. PANELS SHALL BE PROVIDED BY DIV 11 ALONG WITH ALL ASSOCIATED POWER AND DATA RECEPTACLES. ELECTRICAL CONECTIONS SHALL BE BY DIV 26 AND 27. COORDINATE ALL REQUIRMENTS WITH PANEL SUPPLIER.
CSP2	L 5-20R	3	L 5-20R						REFER TO EC SHEETS FOR NUMBER OF DATA DROPS REQUIRED AT EACH CSP. PANELS SHALL BE PROVIDED BY DIV 11 ALONG WITH ALL ASSOCIATED POWER AND DATA RECEPTACLES. ELECTRICAL CONECTIONS SHALL BE BY DIV 26 AND 27. COORDINATE ALL REQUIRMENTS WITH PANEL SUPPLIER.

FREEZER EQUIPMENT SCHEDULE

UNIT NAME			ELECTRICAL INPUT					FEEDER					DISCONNECT / CONNECTION AT UNIT					
									CONDUIT	WIRE			CONNECTI	OCP		DISCONNECT		
TYPE	No.	DESCRIPTION	LOAD	TYPE	VOLTS	PHASE	AMPS	QTY	SIZE	QTY	SIZE	EQPT GND	NOTE	ON TYPE	SIZE	POLES	SIZE	POLES	REMARKS
FR	1	-80° FREEZER	16	FLA	120 V	1	16 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	2	-80° FREEZER	9	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	3	-80° FREEZER	9	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	4	-80° FREEZER	9	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	5	-80° FREEZER	9	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	6	-80° FREEZER	9	FLA	208 V	1	9 A	1	3/4"	2	12	12		6-20R	-	-	-	-	
FR	7	-80° FREEZER	9	FLA	208 V	1	9 A	1	3/4"	2	12	12		6-20R	-	-	-	-	
FR	8	-80° FREEZER	9	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	9	-80° FREEZER	9	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	10	-80° FREEZER	9	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	11	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	12	-80° FREEZER	9	FLA	208 V	1	9 A	1	3/4"	2	12	12		6-20R	-	-	-	-	
FR	13	-80° FREEZER	9	FLA	208 V	1	9 A	1	3/4"	2	12	12		6-20R	-	-	-	-	
FR	14	-80° FREEZER	16	FLA	120 V	1	16 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	15	-80° FREEZER	10.5	FLA	120 V	1	11 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	16	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	17	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	18	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	19	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	20	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	21	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	22	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	23	-80° FREEZER	8.5	FLA	120 V	1	9 A	1	3/4"	2	12	12		5-20R	-	-	-	-	
FR	24	-80° FREEZER	15.5	FLA	120 V	1	16 A	1	3/4"	2	12	12		5-20R	-	-	-	-	

MECHANICAL EQUIPMENT SCHEDULE

UNIT NAME			ELECTRICAL INPUT					FEEDER					STARTER / DISCONNECT / CONNECTION AT UNIT							
									CONDUIT	WIRE				STARTER	OCP		DISCONNECT			
TYPE	No.	DESCRIPTION	LOAD	TYPE	VOLTS	PHASE	AMPS	QTY	SIZE	QTY	SIZE	EQPT GND	NOTE	SIZE	SIZE	POLES	SIZE	POLES	ENCLOSURE	REMARKS
DOAS	1.1	DEDICATED OUTDOOR AIR SYSTEM	157	MCA	208 V	3	157 A													
DOAS	1.2	DEDICATED OUTDOOR AIR SYSTEM	21	MCA	208 V	3	21 A													
EF	1	EXHAUST FAN	0.5	FLA	120 V	1	0.5 A													
FC	1	FAN COIL	0.97	FLA	208 V	1	1 A													
FC	2	FAN COIL	0.97	FLA	208 V	1	1 A													
FC	3	FAN COIL	2.3	FLA	208 V	1	2.3 A													
FC	4	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	5	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	6	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	7	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	8	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	9	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	10	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	11	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	12	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	13	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	14	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	15	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	16	FAN COIL	2.3	FLA	208 V	1	2.3 A													
FC	17	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	18	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	19	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	20	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	21	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	22	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	23	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	24	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	25	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	26	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	27	FAN COIL	0.2	FLA	208 V	1	0.2 A													
FC	28	FAN COIL	0.2	FLA	208 V	1	0.2 A													
LEF	1	LAB EXHAUST FANS	7.5	HP	208 V	3	25.3 A													
LEF	2	LAB EXHAUST FANS	7.5	HP	208 V	3	25.3 A													
ODU	1.1	HEAT RECOVERY VRF OUTDOOR UNIT	49	MCA	208 V	3	49 A													
ODU	1.2	HEAT RECOVERY VRF OUTDOOR UNIT	41	MCA	208 V	3	41 A													
P	1	PUMP	0.25	HP	120 V	1	5.8 A													
RMU	1	VRF REFRIGERANT MANAGEMENT UNIT	1.6	MCA	208 V	1	1.6 A													
TF	1	TRANSFER FAN	0.5	FLA	120 V	1	0.5 A													
WH	1	WATER HEATER	0.5	KVA	120 V	1	4.2 A													

STARTER/DISCONNECT/CONNECTION AT UNIT NOTES:

1. MANUAL STARTER WITH THERMAL OVERLOAD
2. MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION & LOW VOLTAGE RELAY / CONTACTOR FOR ATC CONTROL.
3. COMBINATION MAGNETIC STARTER / FUSED DISCONNECT
4. COMBINATION MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP)
5. COMBINATION VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP)
6. REDUCED VOLTAGE STARTER
7. COMBINATION TWO-SPEED STARTER / FUSED DISCONNECT
8. COMBINATION TWO-SPEED STARTER / MOTOR CIRCUIT PROTECTOR (MCP)
9. NON-FUSED DISCONNECT SWITCH
10. FUSED DISCONNECT SWITCH
11. BREAKER AND ENCLOSURE
12. DIRECT CONNECTION
13. DUPLEX RECEPTACLE OUTLET
14. SPECIAL PURPOSE OUTLET
15. SHUNT-TRIP DISCONNECT
16. MANUAL MOTOR STARTER SWITCH
17. MAGNETIC STARTER
18. FUSED ELEVATOR SWITCH
19. PROVIDE LATE-MAKE-EARLY-BREAK DISCONNECT

A. FURNISHED, INSTALLED & CONNECTED UNDER DIVISION 26.
B. FURNISHED & INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTIONS UNDER DIVISION 26
C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26
D. FURNISHED, INSTALLED & CONNECTED UNDER ANOTHER DIVISION
E. FURNISHED BY OWNER, INSTALLED & CONNECTED BY DIVISION 26

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND SIZE FEEDER, STARTER, DISCONNECT AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OF ACTUAL EQUIPMENT SUPPLIED.
2. REFER TO FEEDER SCHEDULE ON THE ONE-LINE DIAGRAM FOR CONDUIT AND WIRE SIZES.
3. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS PRIOR TO BID.
4. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER TRADE SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION BY ELECTRICAL CONTRACTOR AND COORDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN.
5. SIZE ALL FUSES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

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EDA PROJECT NUMBER: 221011

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

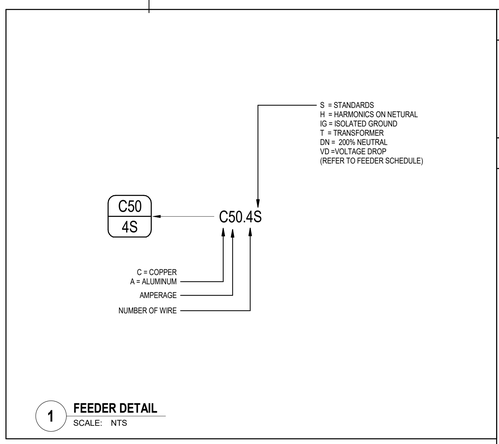
ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: POWER SCHEDULES

SHEET NUMBER: EP641

SHEET OF



1 **FEEDER DETAIL**
SCALE: NTS

TRANSFER SWITCH SCHEDULE

NAME	VOLTAGE	POLES	WIRES	AMPERAGE	SHORT CIRCUIT CURRENT RATING	NEMA RATING	TRANSFER DELAY
ATS-E3	208 V	3	4	400 A	0 A		

FEEDER SCHEDULE

FEEDER				CONDUCTOR		EQ		
Feeder	Type	# OF SETS	CONDUIT DIAMETER	#	SIZE	GND COND	ISOLATED GROUND	SYSTEM BONDING
A225	4S	1	2-1/2	4	300	4	-	-
C50	4S	1	1	4	6	10	-	-
C100	4S	1	1-1/2	4	1	8	-	-
C125	3S	1	1-1/2	3	1	6	-	-
C225	4S	1	2-1/2	4	4/0	4	-	-
C400	4S	2	2-1/2	4	3/0	3	-	-
C600	4S	2	3	4	350	1	-	-

GENERAL ONE-LINE NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE AVAILABLE FAULT CURRENT WITH THE OWNER PRIOR TO BIDDING AND PROVIDE EQUIPMENT RATED ACCORDINGLY. SUBMIT FAULT CURRENT CALCULATIONS WITH SHOP DRAWINGS SUBMITTAL.
2. PROVIDE FULL LENGTH VERTICAL BUSSING ALL IN ALL SWITCHBOARDS, DISTRIBUTION PANELBOARDS, AND PANELBOARDS.
3. COORDINATE SPACE WITH ALL OTHER TRADES TO MAINTAIN ALL CODE-REQUITED CLEARANCES.

SELECTIVE COORDINATION REQUIREMENTS:

A. CONTRACTOR SHALL PROVIDE ALL OF THE FOLLOWING FOR EMERGENCY, LEGALLY REQUIRED STANDBY, AND OPTIONAL STANDBY POWER SYSTEMS.
   a. FAULT CURRENT ANALYSIS.
   b. ARC-FLASH STUDY.
   c. SELECTIVE COORDINATION STUDY AND SETTINGS OF ALL ADJUSTABLE TRIP OVERCURRENT PROTECTION DEVICES.

B. THE SELECTIVE COORDINATION OF THE SYSTEM (DOWN TO THE SMALLEST OVERCURRENT PROTECTIVE DEVICE) SHALL BE COORDINATED TO A LEVEL OF 0.1 SECONDS.

C. CONTRACTOR SHALL PROVIDE BUSSMAN QUIK-SPEC FUSIBLE PANELBOARD (OR APPROVED EQUIVALENT), ELECTRONIC SOLID STATE ADJUSTABLE TRIP (LSI) CIRCUIT BREAKERS, AND/OR CIRCUIT BREAKERS WITH LARGER FRAME SIZES AS NECESSARY TO ENSURE PROPER SELECTIVE COORDINATION. REFER TO SPECIFICATIONS FOR ADDITIONAL SELECTIVE COORDINATION REQUIREMENTS ON EMERGENCY, LEGALLY REQUIRED STANDBY, AND OPTIONAL STANDBY POWER SYSTEMS.

D. A PRELIMINARY SELECTIVE COORDINATION STUDY AND DEVICE SETTINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL. NO ELECTRICAL EQUIPMENT SUBMITTAL SHALL BE SUBMITTED FOR APPROVAL PRIOR TO SUBMITTING THE PRELIMINARY SELECTIVE COORDINATION STUDY AND DEVICE SETTINGS OF THE PROPOSED ELECTRICAL DISTRIBUTION EQUIPMENT AND ASSOCIATED OVERCURRENT DEVICES. THE STUDY SHALL BE SUBMITTED FOR REVIEW BY THE ELECTRICAL ENGINEER AND OWNER TO ENSURE CONFORMANCE TO THE CONSTRUCTION DOCUMENTS. NO ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE ELEASED UNTIL THE SELECTIVE COORDINATION STUDY SHOWS PROPER COORDINATION OF ALL SYSTEM ELEMENTS.

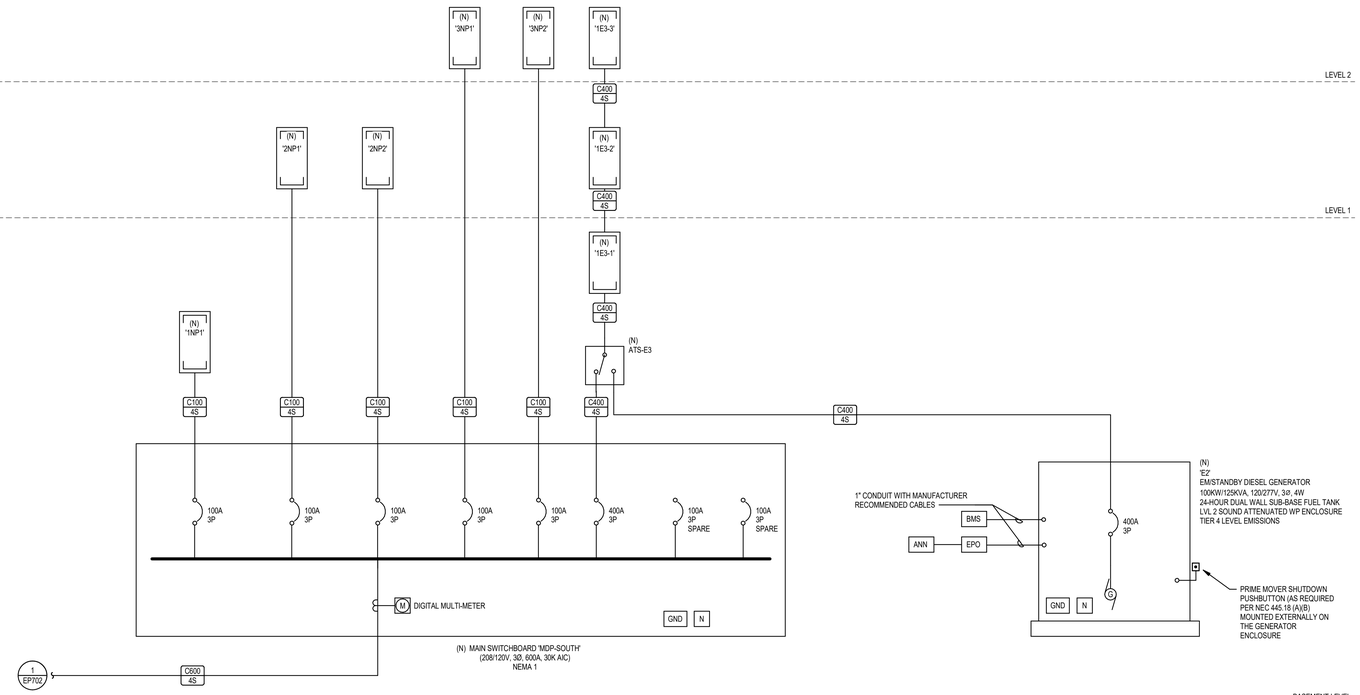
E. AT THE END OF THE PROJECT A COMPLETE FAULT CURRENT, ARC-FLASH, AND SELECTIVE COORDINATION STUDY SHALL BE SUBMITTED FOR REVIEW.

F. ONCE PRELIMINARY SELECTIVE COORDINATION STUDY IS COMPLETED, THE WITHSTAND RATING FOR THE AUTOMATIC TRANSFER SWITCHES (ATS) SHALL BE COORDINATED WITH THE SPECIFIC BREAKERS FEEDING ATS THAT ARE PROVIDED.

FEEDER GENERAL NOTES:

1. CONTRACTOR SHALL REVIEW ONE-LINE DIAGRAM AND CONFIRM FEEDER WIRE SIZES. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO BID. IF DISCREPANCIES EXIST, CONTRACTOR SHALL PROVIDE CORRECT WIRE SIZE BASED ON ACTUAL BREAKER SIZE AND ANY VOLTAGE DROP ADJUSTMENTS. SEE NEC 210.19, 215.2, 250.112, AND 310,15.
2. ALL GROUNDING WIRES SHOWN IN FEEDER SCHEDULE ARE COPPER WIRES.
3. ALL SYSTEM BONDING JUMPER CONDUCTORS SHOWN ARE TO BE RUN IN EACH PARALLEL FEEDER SET.

KEYED NOTES



3 **POWER SINGLE LINE DIAGRAM 1**
SCALE: NTS

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

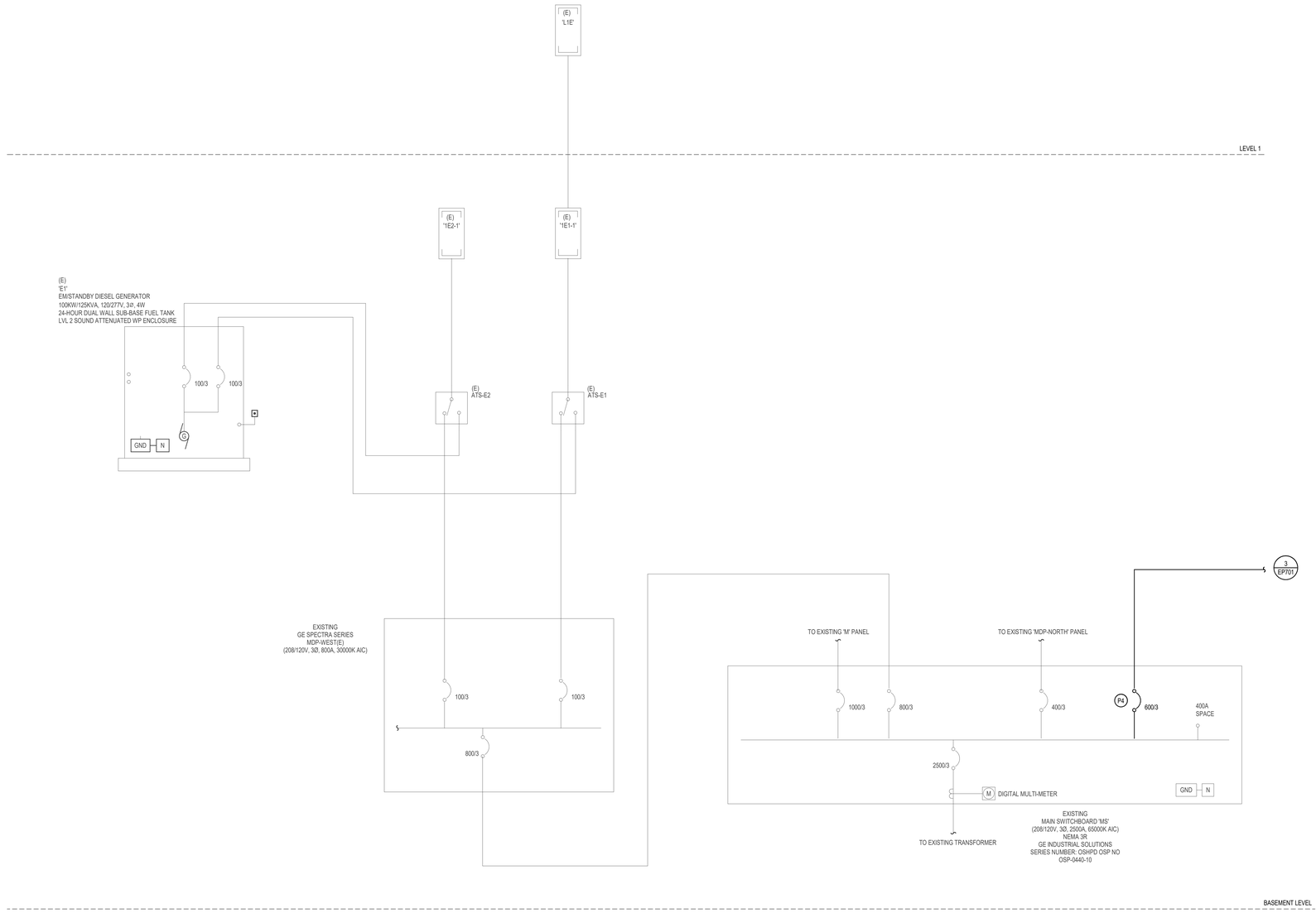
SHEET TITLE: ONE-LINE DIAGRAM - POWER

SHEET NUMBER: EP701

SHEET OF

KEYED NOTES

P4 PROVIDE NEW BREAKER OF THE SAME TYPE AND AIC RATING AS EXISTING.



1 **POWER SINGLE LINE DIAGRAM 2**
SCALE: **12" = 1'-0"**

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

22294

SHEET TITLE:

ONE-LINE DIAGRAM - POWER

SHEET NUMBER:

EP702

SHEET OF

PANELBOARD SCHEDULE

PANEL NAME: 1E2-1

MOUNTING: SURFACE | **ENCLOSURE:** NEMA 1 | **DOOR TYPE:** (EXISTING)
VOLTAGE: 120/208 Wye | **PHASE:** 3 | **WIRES:** 4 | **Min. A.I.C. RATING:**
LOCATION: ELECTRICAL 103 | **MAIN TYPE:** MCB | **BUS RATING:** 250 A | **MCB RATING:** 100A | **BUS MATERIAL:** COPPER
FEED FROM: | **SPD:** CAT C | **NEUTRAL RATING:** 100% | **ISOLATED GROUND:**

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
					1	0 VA			2	--	1	20 A	-SPARE-	9
					3		0 VA		4	--	1	20 A	-SPARE-	9
					5			0 VA	6	--	1	20 A	FREEZER	9
9	FREEZER	20 A	1	--	7	0 VA	0 VA		8	--	1	20 A	FREEZER	9
9	-SPARE-	20 A	1	--	9		0 VA	0 VA	10	--	1	20 A	J BOX	9
9	-SPARE-	20 A	1	--	11			0 VA	12					
9	-SPARE-	20 A	1	--	13	0 VA	0 VA		14	--	2	20 A	FREEZER	9
9	FREEZER	20 A	2	--	15		0 VA	0 VA	16	--	--	--	--	--
--	--	--	--	--	17			0 VA	18					
9	-SPARE-	20 A	1	--	19	0 VA			20					
9	-SPARE-	20 A	3	--	21		0 VA	0 VA	22	--	--	--	-SPACE ONLY-	--
--	--	--	--	--	23			0 VA	24	--	--	--	-SPACE ONLY-	--
--	--	--	--	--	25	0 VA	0 VA		26	--	--	--	-SPACE ONLY-	--
9	-SPARE-	20 A	3	--	27		0 VA	0 VA	28	--	--	--	-SPACE ONLY-	--
--	--	--	--	--	29			0 VA	30	--	--	--	-SPACE ONLY-	--
--	--	--	--	--	31	0 VA	0 VA		32	--	--	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	--	--	33		0 VA	0 VA	34	--	--	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	--	--	35			0 VA	36	--	--	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	--	--	37	0 VA	0 VA		38	--	--	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	--	--	39		0 VA	0 VA	40	--	--	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	--	--	41			0 VA	42	--	--	--	-SPACE ONLY-	--
	TOTAL CONNECTED LOAD PER PHASE (VA)					0 VA	0 VA	0 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					0 A	0 A	0 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	0 A
M	Motor	0 VA	0.00%	0 VA	**Total Est. Demand Current:**	0 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANELBOARD SCHEDULE

PANEL NAME: 1E1-1

MOUNTING: SURFACE | **ENCLOSURE:** NEMA 1 | **DOOR TYPE:** (EXISTING)
VOLTAGE: 120/208 Wye | **PHASE:** 3 | **WIRES:** 4 | **Min. A.I.C. RATING:**
LOCATION: ELECTRICAL 103 | **MAIN TYPE:** MLO | **BUS RATING:** 125 A | **MCB RATING:** - | **BUS MATERIAL:** COPPER
FEED FROM: | **SPD:** CAT A | **NEUTRAL RATING:** 100% | **ISOLATED GROUND:**

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
					1	0 VA			2	--	1	20 A	ATC PANEL	9
9	COMM LAB 52 OUTLETS N	20 A	1	--	3		0 VA	0 VA	4	--	1	20 A	ATC PANEL	9
9	COMM RM 99H OUTLETS W&S	20 A	1	--	5			0 VA	6	--	1	20 A	LAB 160 OUTLET E	9
9	COMM RM 99H OUTLETS E	20 A	1	--	7	0 VA	0 VA		8	--	1	20 A	LAB 60G OUTLET S	9
9	LAB 160E OUTLETS W-2	20 A	1	--	9		0 VA	0 VA	10	--	1	20 A	LAB 60G OUTLETS CENTER	9
9	LAB 160E OUTLETS E-2	20 A	1	--	11			0 VA	12	--	1	20 A	LAB 60E OUTLETS S	9
9	COM LAB 160 & 160J OUTLETS	20 A	1	--	13	0 VA	0 VA		14	--	1	20 A	RM 160J OUTLETS	9
9	LAB 160J OUTLETS SE	20 A	1	--	15		0 VA	0 VA	16	--	1	20 A	RM 160S OUTLETS	9
9	LAB 160J OUTLETS NE	20 A	1	--	17			0 VA	18	--	1	20 A	WALL RM 070 OUTLETS	9
9	LAB 160J OUTLETS W-2	20 A	1	--	19	0 VA			20					
9	FIRE ALARM CONTROL PANEL	20 A	1	--	21		0 VA	0 VA	22	--	1	20 A	RM107 EAST WALL OUTLETS	9
9	UPPER LEVEL EM LIGHTS	20 A	1	--	23			0 VA	24	--	1	20 A	RM107 WEST WALL OUTLETS	9
9	FIRE/SMOKE DAMPER	20 A	1	--	25	0 VA	0 VA		26	--	1	20 A	RM 101 SOUTH WALL OUTLETS	9
9	LOWER LEVEL EM LIGHTS	20 A	1	--	27		0 VA	0 VA	28	--	1	20 A	RM 160H OUTLETS	9
9	LIGHTS THRU PHOTOCELL	20 A	1	--	29			0 VA	30	--	1	20 A	RM 160H OUTLETS	9
--	-SPACE ONLY-	--	--	--	31	0 VA	0 VA		32	--	2	20 A	RM107 SOUTH WALL OUTLET	9
--	-SPACE ONLY-	--	--	--	33		0 VA	0 VA	34	--	--	--	--	--
9	-SPARE-	20 A	1	--	35			0 VA	36	--	--	--	-SPACE ONLY-	--
9	L1E	40 A	3	--	37	0 VA	0 VA		38	--	1	20 A	RM 52 H OUTLET WEST SIDE	9
--	--	--	--	--	39		0 VA	0 VA	40	--	1	20 A	RM 52 OUTLET	9
--	--	--	--	--	41			0 VA	42	--	--	--	-SPACE ONLY-	--
	TOTAL CONNECTED LOAD PER PHASE (VA)					0 VA	0 VA	0 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					0 A	0 A	0 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	0 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	0 A
M	Motor	0 VA	0.00%	0 VA	**Total Est. Demand Current:**	0 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

DISTRIBUTION BOARD LOAD SUMMARY

BOARD NAME: MDP-W

VOLTAGE: 120/208 Wye
PHASE: 3
WIRES: 4
(EXISTING)

CKT#	LOAD DESCRIPTION	A	B	C	LOAD AMP	KEYED NOTE
1	P1B	0 kVA			--	9
2	P1A	0 kVA			--	9
3	EF-3	0 kVA			--	9
4	EF1	0 kVA			--	9
5	EF2	0 kVA			--	9
6	AIR HANDLER	0 kVA			--	9
7	ATS-E2	0 kVA			--	9
8	ATS-E1	0 kVA			--	9
9	1PP	0 kVA			--	9
10	2PP	0 kVA			--	9
11	CU	0 kVA			--	9
12	-SPACE ONLY-	0 kVA			--	--
	TOTAL CONNECTED LOAD:	0 VA	0 VA	0 VA		
	TOTAL CONNECTED CURRENT:	0 A	0 A	0 A		

TYPE	LOAD CLASSIFICAITON	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND
P	Panel	0 VA	0.00%	0 VA
R	Receptacle	0 VA	0.00%	0 VA
L	Lighting	0 VA	0.00%	0 VA
C	Continuous	0 VA	0.00%	0 VA
E	Equipment	0 VA	0.00%	0 VA
M	Motor	0 VA	0.00%	0 VA
K	Kitchen	0 VA	0.00%	0 VA
O	Other	0 VA	0.00%	0 VA

DISTRIBUTION BOARD TOTALS
TOTAL CONNECTED LOAD: 0 VA
25% OF LARGEST MOTOR:
TOTAL ESTIMATED DEMAND LOAD: 0 VA
TOTAL CONNECTED CURRENT: 0 A
TOTAL ESTIMATED DEMAND CURRENT: 0 A

KEYED NOTES:

EXISTING OUTLET CIRCUITS IN PANEL 1E1-1SHALL BE RECIRCUITED TO PANEL 1E2-1. ALL EMERGENCY LIGHTING AND FIRE ALARM CIRCUIT SHALL REMAIN.

PANELBOARD SCHEDULE

PANEL NAME: 1E3-1

MOUNTING: SURFACE | **ENCLOSURE:** NEMA 1 | **DOOR TYPE:**
VOLTAGE: 120/208 Wye | **PHASE:** 3 | **WIRES:** 4 | **Min. A.I.C. RATING:**
LOCATION: ELEC. 099B | **MAIN TYPE:** | **BUS RATING:** | **MCB RATING:** | **BUS MATERIAL:** COPPER
FEED FROM: | **SPD:** | **NEUTRAL RATING:** | **ISOLATED GROUND:**

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	EQUIPMENT FREEZERS 040	60 A	3		1	4000 VA	0 VA		2		1	20 A	EQUIPMENT RESEARCH LAB-1...	
--	--	--	--	--	3		4000 VA	0 VA	4		1	20 A	EQUIPMENT RESEARCH LAB-1...	
--	--	--	--	--	5			4000 VA	6					
	EQUIPMENT WATER 099D	20 A	1		7	0 VA			8					
	MOTOR WATER 099D	20 A	1		9		696 VA		10					
					11				12					
					13				14					
					15				16					
					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					
	TOTAL CONNECTED LOAD PER PHASE (VA)					4000 VA	4696 VA	4000 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					33 A	39 A	33 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	0 VA	0.00%	0 VA	**Total Conn. Load:**	12696 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	12870 VA
E	Equipment	12000 VA	100.00%	12000 VA	**Total Conn. Current:**	35 A
M	Motor	696 VA	125.00%	870 VA	**Total Est. Demand Current:**	36 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANELBOARD SCHEDULE

PANEL NAME: L1E

MOUNTING: SURFACE | **ENCLOSURE:** NEMA 1 | **DOOR TYPE:** (EXISTING)
VOLTAGE: 120/208 Wye | **PHASE:** 3 | **WIRES:** 4 | **Min. A.I.C. RATING:**
LOCATION: ELECTRICAL 109 | **MAIN TYPE:** MCB | **BUS RATING:** 100 A | **MCB RATING:** 100 A | **BUS MATERIAL:** COPPER
FEED FROM: | **SPD:** CAT A | **NEUTRAL RATING:** 100% | **ISOLATED GROUND:**

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
9	LIGHTS RM 30 A	20 A	1	--	1	0 VA	0 VA		2	--	1	20 A	RECP TELEPHJONE BOARD	9
9	RECEP RM20	20 A	1	--	3		0 VA	0 VA	4	--	1	20 A	-SPARE-	9
9	LIGHTS BASEMENT	20 A	1	--	5			0 VA	6	--	1	20 A	RECEP RM 227	9
9	RECP RM 37	20 A	1	--	7	0 VA	0 VA		8	--	1	20 A	RECEP RM 139	9
9	FACP	20 A	1	--	9		0 VA	0 VA	10	--	1	20 A	RECEP RM 229	9
9	RECP RM 39	20 A	1	--	11			0 VA	12	--	1	20 A	RECEP RM 139	9
9	LIGHTS BASEMENT	20 A	1	--	13	0 VA	0 VA		14	--	1	20 A	RECEP RM 231	9
9	RECEP RM 41	20 A	1	--	15		0 VA	0 VA	16	--	1	20 A	RECEP RM 131	9
9	LIGHTS FIRST FLOOR	20 A	1	--	17			0 VA	18	--	1	20 A	RECEP RM 225	9
9	RECEP RM30	20 A	1	--	19	0 VA	0 VA		20	--	1	20 A	-SPARE-	9
9	LIGHTS SECOND FLOOR	20 A	1	--	21		0 VA	0 VA	22	--	1	20 A	RECEP RM 221	9
9	FREEZER RM 100	20 A	1	--	23			0 VA	24	--	1	20 A	RECEP RM 131	9
9	RECEP RM 225	20 A	1	--	25	0 VA	0 VA		26	--	1	20 A	OLD BUILDING EM LIGHTS	9
9	RECEP RM 137	20 A	1	--	27		0 VA	0 VA	28	--	1	20 A	RECEP RM 30	9
9	RTU 404	20 A	1	--	29			0 VA	30	--	1	20 A	OLD BLDF EM LIGHTS	9
9	RECEP RM 139	20 A	1	--	31	0 VA	0 VA		32	--	1	20 A	RECEP RM 33	9
9	RECEP RM 231	20 A	1	--	33		0 VA	0 VA	34	--	1	20 A	OUTLET FOR FREEZER ROOM	9
9	RECEP RM 141	20 A	1	--	35			0 VA	36	--	1	20 A	RECEP RM 132	9
9	EVAPORATOR FANS	20 A	1	--	37	0 VA	0 VA		38	--	1	20 A	OUTLET FOR FREEZER ROOM	9
9	RECEP PANEL RM 100T	20 A	1	--	39		0 VA	0 VA	40	--	1	20 A	FACP	9
9	EVAPORATOR FANS FROM...	20 A	1	--	41			0 VA	42					
	TOTAL CONNECTED LOAD PER PHASE (VA)					0 VA	0 VA	0 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					0 A	0 A	0 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	0 VA	0.00%	0 VA	**Total Conn. Load:**	0 VA
L	Lighting	730 VA	125.00%	913 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	19301 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	66 A
M	Motor	964 VA	112.97%	1089 VA	**Total Est. Demand Current:**	54 A
K	Kitchen	2400 VA	100.00%	2400 VA		
O	Other	0 VA	0.00%	0 VA		

EXISTING OUTLET CIRCUITS IN PANEL L1E SHALL BE RECIRCUITED TO PANEL 1E3-1. ALL EMERGENCY LIGHTING AND FIRE ALARM CIRCUIT SHALL REMAIN.

PANELBOARD SCHEDULE

PANEL NAME: 2NP1

MOUNTING: SURFACE | **ENCLOSURE:** NEMA 1 | **DOOR TYPE:** DOOR-IN-DOOR | **(NEW)**
VOLTAGE: 120/208 Wye | **PHASE:** 3 | **WIRES:** 4 | **Min. A.I.C. RATING:**
LOCATION: CORRIDOR-1 199F-1 | **MAIN TYPE:** MLO | **BUS RATING:** 100 A | **MCB RATING:** - | **BUS MATERIAL:** COPPER
FEED FROM: | **SPD:** CAT A | **NEUTRAL RATING:** 100% | **ISOLATED GROUND:** -

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	MOTOR	20 A	2		1	364 VA	0 VA		2		1	20 A	EQUIPMENT RESEARCH LAB-1...	
--	--	--	--	--	3		364 VA	0 VA	4		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	MOTOR RESEARCH LAB-1 151-1	20 A	2		5			125 VA	6		1	20 A	EQUIPMENT RESEARCH LAB-1...	
--	--	--	--	--	7	125 VA	0 VA		8		1	20 A	EQUIPMENT	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		9		0 VA	0 VA	10		1	20 A	EQUIPMENT	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		11			0 VA	12		1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		13	0 VA	0 VA		14		1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		15		0 VA	0 VA	16		1	20 A	EQUIPMENT BSL 2 151A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		17			0 VA	18		1	20 A	EQUIPMENT BSL 2 151A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		19	0 VA	0 VA		20		1	20 A	EQUIPMENT BSL 2 151A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		21		0 VA	0 VA	22		1	20 A	EQUIPMENT BSL 2 151A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		23			0 VA	24		1	20 A	EQUIPMENT BSL 2 TC 151D	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		25	0 VA	0 VA		26		1	20 A	EQUIPMENT BSL 2 TC 151D	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		27		0 VA	0 VA	28		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		29			0 VA	30		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		31	0 VA	0 VA		32		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		33		0 VA	0 VA	34		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		35			0 VA	36		1	20 A	EQUIPMENT BSL 2 TC 151D	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		37	0 VA	0 VA		38		1	20 A	EQUIPMENT BSL 2 TC 151D	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		39		0 VA		40					
	EQUIPMENT RESEARCH LAB-1...	20 A	1		41			0 VA	42					
	TOTAL CONNECTED LOAD PER PHASE (VA)					489 VA	364 VA	125 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					4 A	3 A	1 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	0 VA	0.00%	0 VA	**Total Conn. Load:**	978 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	1097 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	3 A
M	Motor	978 VA	112.23%	1097 VA	**Total Est. Demand Current:**	3 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANELBOARD SCHEDULE

PANEL NAME: 1NP1

MOUNTING: SURFACE | **ENCLOSURE:** NEMA 1 | **DOOR TYPE:** DOOR-IN-DOOR | **(NEW)**
VOLTAGE: 120/208 Wye | **PHASE:** 3 | **WIRES:** 4 | **Min. A.I.C. RATING:**
LOCATION: ELEC. 099B | **MAIN TYPE:** MLO | **BUS RATING:** 100 A | **MCB RATING:** - | **BUS MATERIAL:** COPPER
FEED FROM: | **SPD:** CAT A | **NEUTRAL RATING:** 100% | **ISOLATED GROUND:** -

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	MOTOR FREEZERS 045	20 A	2		1	202 VA	180 VA		2		1	20 A	RECEPTACLE	
--	--	--	--	--	3		202 VA	360 VA	4		1	20 A	RECEPTACLE	
	MOTOR WATER 099D	20 A	1		5			500 VA	6		1	20 A	RECEPTACLE SHARED OFFIC...	
	RECEPTACLE	20 A	1		7	1080 VA	720 VA		8		1	20 A	RECEPTACLE SHARED OFFIC...	
	RECEPTACLE CORRIDOR 299F	20 A	1		9		360 VA	720 VA	10		1	20 A	RECEPTACLE SHARED OFFIC...	
	RECEPTACLE SHARED OFFIC...	20 A	1		11			1080 VA	720 VA	12		1	20 A	RECEPTACLE SHARED OFFIC...
	RECEPTACLE SHARED OFFIC...	20 A	1		13	1260 VA	720 VA		14		1	20 A	RECEPTACLE SHARED OFFIC...	
	RECEPTACLE SHARED OFFIC...	20 A	1		15		720 VA	720 VA	16		1	20 A	RECEPTACLE SHARED OFFIC...	
	RECEPTACLE SHARED OFFIC...	20 A	1		17			900 VA	1200 VA	18		1	20 A	KITCHEN BREAK 248
	RECEPTACLE SHARED OFFIC...	20 A	1		19	720 VA	360 VA		20		1	20 A	RECEPTACLE BREAK 248	
	KITCHEN BREAK 148	20 A	1		21		1200 VA	360 VA	22		1	20 A	RECEPTACLE BREAK 248	
	RECEPTACLE BREAK 148	20 A	1		23			540 VA	1260 VA	24		1	20 A	RECEPTACLE BREAK 248
	RECEPTACLE P.I. OFFICE 149	20 A	1		25	1260 VA	1080 VA		26		1	20 A	RECEPTACLE P.I. OFFICE 249	
	RECEPTACLE P.I. OFFICE 150	20 A	1		27		1260 VA	1260 VA	28		1	20 A	RECEPTACLE P.I. OFFICE 250	
	RECEPTACLE CORRIDOR-1...	20 A	1		29			180 VA	180 VA	30		1	20 A	RECEPTACLE BSL2 TC 251D
	RECEPTACLE WATER 099D	20 A	1		31	360 VA			32					
					33				34					
					35				36					
					37		180 VA		38		1	20 A	RECEPTACLE SHOWER 099A	
					39			540 VA	40		1	20 A	RECEPTACLE ELEC. 099B	
					41			790 VA	42		1	20 A	LIGHTING	
	TOTAL CONNECTED LOAD PER PHASE (VA)					8122 VA	7702 VA	8070 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					68 A	64 A	68 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	19800 VA	75.25%	14900 VA	**Total Conn. Load:**	23894 VA
L	Lighting	730 VA	125.00%	913 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	19301 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	66 A
M	Motor	964 VA	112.97%	1089 VA	**Total Est. Demand Current:**	54 A
K	Kitchen	2400 VA	100.00%	2400 VA		
O	Other	0 VA	0.00%	0 VA		

PANEL LEGEND

1E2-1	1E1-1	MDP-W
1E3-1	L1E	
2NP2	1NP1	

PANELBOARD SCHEDULE KEYED NOTE:

1. PROVIDE CLASS A GROUND FAULT INTERRUPTER TYPE CIRCUIT BREAKER.
2. PROVIDE ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER
3. PROVIDE 30 MILLIAMPERE EQUIPMENT GROUND FAULT PROTECTOR TYPE CIRCUIT BREAKER.
4. PROVIDE SHUNT TRIP CIRCUIT BREAKER WITH 120 V COIL.
5. PROVIDE HACR RATED CIRCUIT BREAKER.
6. PROVIDE HANDLE CLAMP FOR HOLDING CIRCUIT BREAKER IN THE "ON" OR "OFF" POSITION.
7. PROVIDE SWITCHING RATED CIRCUIT BREAKER.
8. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD (WHERE PANEL IS LOCATED AS EXISTING) OF SAME MANUFACTURER AND A.I.C. RATING AS EXISTING.
9. EXISTING LOAD

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE: PANEL SCHEDULES

SHEET NUMBER: EP

PANELBOARD SCHEDULE

PANEL NAME: 1E3-3

MOUNTING: SURFACE | **VOLTAGE:** 120/208 Wye | **LOCATION:** STORAGE 247 | **FEED FROM:**
ENCLOSURE: NEMA 1 | **PHASE:** 3 | **MAIN TYPE:** | **SPD:**
DOOR TYPE: | **WIRES:** 4 | **BUS RATING:** | **NEUTRAL RATING:**
Min. A.I.C. RATING: | **MCB RATING:** | **ISOLATED GROUND:**
BUS MATERIAL: COPPER

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	EQUIPMENT RESEARCH LAB-1...	20 A	1		1	0 VA	0 VA		2		1	20 A	EQUIPMENT FUME HOOD...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		3		0 VA	0 VA	4		1	20 A	EQUIPMENT FUME HOOD...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		5			0 VA	0 VA	6	1	20 A	EQUIPMENT BSL2 251B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		7	0 VA	0 VA		8		1	20 A	EQUIPMENT BSL2 251B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		9		0 VA	0 VA	10		1	20 A	EQUIPMENT BSL2 251B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		11			0 VA	0 VA	12	1	20 A	EQUIPMENT BSL2 251A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		13	0 VA	0 VA		14		1	20 A	EQUIPMENT BSL2 251A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		15		0 VA	0 VA	16		1	20 A	EQUIPMENT BSL2 251A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		17			0 VA	0 VA	18	1	20 A	EQUIPMENT BSL2 251A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		19	0 VA	0 VA		20		1	20 A	EQUIPMENT BSL2 251A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		21		0 VA	0 VA	22		1	20 A	EQUIPMENT BSL2 251A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		23			0 VA	0 VA	24	1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		25	0 VA	0 VA		26		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		27		0 VA	0 VA	28		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT BSL2 TC 251D	20 A	1		29			0 VA	0 VA	30	1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT BSL2 TC 251D	20 A	1		31	0 VA	0 VA		32		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT BSL2 TC 251D	20 A	1		33		0 VA	0 VA	34		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT BSL2 TC 251D	20 A	1		35			0 VA	0 VA	36	1	20 A	EQUIPMENT BSL2 251B	
	EQUIPMENT BSL2 TC 251D	20 A	1		37	0 VA	0 VA		38		1	20 A	EQUIPMENT BSL2 251B	
	EQUIPMENT BSL2 TC 251D	20 A	1		39		0 VA	0 VA	40		1	20 A	EQUIPMENT BSL2 251B	
	EQUIPMENT FUME HOOD...	20 A	1		41			0 VA	5884 VA	42	3	20 A	MOTOR	
	RECEPTACLE RESEARCH LAB-...	20 A	1		43	180 VA	5884 VA			44	--	--	--	--
	RECEPTACLE RESEARCH LAB-...	20 A	1		45			180 VA	5884 VA	46	--	--	--	--
	RECEPTACLE BSL2 TC 251D	20 A	1		47			180 VA	2522 VA	48	3	20 A	MOTOR	
	RECEPTACLE BSL2 TC 251D	20 A	1		49	180 VA	2522 VA			50	--	--	--	--
	RECEPTACLE FUME HOOD...	20 A	1		51			180 VA	2522 VA	52	--	--	--	--
	RECEPTACLE FUME HOOD...	20 A	1		53			180 VA	18854...	54	3	20 A	MOTOR	
	RECEPTACLE BSL2 251B	20 A	1		55	180 VA	18854...			56	--	--	--	--
	RECEPTACLE BSL2 251A	20 A	1		57			180 VA	18854...	58	--	--	--	--
	MOTOR	20 A	2		59			499 VA	3038 VA	60	3	20 A	MOTOR	
--	--	--	--	--	61	499 VA	3038 VA			62	--	--	--	--
	MOTOR	20 A	3		63		4924 VA	3038 VA		64	--	--	--	--
--	--	--	--	--	65			4924 VA	3038 VA	66	3	20 A	MOTOR	
--	--	--	--	--	67	4924 VA	3038 VA			68	--	--	--	--
	EQUIPMENT	20 A	1		69		0 VA	3038 VA		70	--	--	--	--
	EQUIPMENT CORRIDOR 299F	20 A	1		71			0 VA	0 VA	72		1	20 A	EQUIPMENT RESEARCH LAB-1...
	TOTAL CONNECTED LOAD PER PHASE (VA)					39300 VA	38800 VA	39120 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					328 A	323 A	326 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	1440 VA	100.00%	1440 VA	**Total Conn. Load:**	117219 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	131360 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	325 A
M	Motor	115779 VA	112.21%	129920 VA	**Total Est. Demand Current:**	365 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANEL NAME: 3NP1

MOUNTING: SURFACE | **VOLTAGE:** 120/208 Wye | **LOCATION:** CORRIDOR 299F | **FEED FROM:**
ENCLOSURE: NEMA 1 | **PHASE:** 3 | **MAIN TYPE:** MLO | **SPD:** CAT A
DOOR TYPE: DOOR-IN-DOOR | **WIRES:** 4 | **BUS RATING:** 100 A | **NEUTRAL RATING:** 100%
(NEW) | **Min. A.I.C. RATING:** | **MCB RATING:** - | **ISOLATED GROUND:** -
BUS MATERIAL: COPPER

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	MOTOR	20 A	2		1	364 VA	0 VA		2		1	20 A	EQUIPMENT RESEARCH LAB-1...	
--	--	--	--	--	3		364 VA	0 VA	4		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	MOTOR RESEARCH LAB-1 251-1	20 A	2		5			125 VA	0 VA	6	1	20 A	EQUIPMENT RESEARCH LAB-1...	
--	--	--	--	--	7	125 VA	0 VA		8		1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		9			0 VA	0 VA	10	1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		11				0 VA	0 VA	12	1	20 A	EQUIPMENT BSL2 251A
	EQUIPMENT RESEARCH LAB-1...	20 A	1		13	0 VA	0 VA				14	1	20 A	EQUIPMENT BSL2 251A
	EQUIPMENT RESEARCH LAB-1...	20 A	1		15			0 VA	0 VA	16	1	20 A	EQUIPMENT BSL2 251A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		17				0 VA	0 VA	18	1	20 A	EQUIPMENT BSL2 251A
	EQUIPMENT RESEARCH LAB-1...	20 A	1		19	0 VA	0 VA				20	1	20 A	EQUIPMENT BSL2 251B
	EQUIPMENT RESEARCH LAB-1...	20 A	1		21			0 VA	0 VA	22	1	20 A	EQUIPMENT BSL2 251B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		23				0 VA	0 VA	24	1	20 A	EQUIPMENT BSL2 251B
	EQUIPMENT RESEARCH LAB-1...	20 A	1		25	0 VA	0 VA				26	1	20 A	EQUIPMENT BSL2 251B
	EQUIPMENT RESEARCH LAB-1...	20 A	1		27			0 VA	0 VA	28	1	20 A	EQUIPMENT FUME HOOD...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		29				0 VA	0 VA	30	1	20 A	EQUIPMENT FUME HOOD...
	EQUIPMENT RESEARCH LAB-1...	20 A	1		31	0 VA	0 VA				32	1	20 A	EQUIPMENT BSL2 TC 251D
	EQUIPMENT RESEARCH LAB-1...	20 A	1		33			0 VA	0 VA	34	1	20 A	EQUIPMENT BSL2 TC 251D	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		35				0 VA	0 VA	36	1	20 A	EQUIPMENT BSL2 TC 251D
	EQUIPMENT RESEARCH LAB-1...	20 A	1		37	0 VA	0 VA				38	1	20 A	EQUIPMENT BSL2 TC 251D
	EQUIPMENT RESEARCH LAB-1...	20 A	1		39			0 VA	0 VA	40	1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		41				0 VA	0 VA	42	1	20 A	EQUIPMENT RESEARCH LAB-1...
	TOTAL CONNECTED LOAD PER PHASE (VA)					489 VA	364 VA	125 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					4 A	3 A	1 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	0 VA	0.00%	0 VA	**Total Conn. Load:**	978 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	1097 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	3 A
M	Motor	978 VA	112.23%	1097 VA	**Total Est. Demand Current:**	3 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANEL NAME: 2NP2

MOUNTING: SURFACE | **VOLTAGE:** 120/208 Wye | **LOCATION:** CORRIDOR-1 199F-1 | **FEED FROM:**
ENCLOSURE: NEMA 1 | **PHASE:** 3 | **MAIN TYPE:** MLO | **SPD:** CAT A
DOOR TYPE: DOOR-IN-DOOR | **WIRES:** 4 | **BUS RATING:** 100 A | **NEUTRAL RATING:** 100%
(NEW) | **Min. A.I.C. RATING:** | **MCB RATING:** - | **ISOLATED GROUND:** -
BUS MATERIAL: COPPER

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	EQUIPMENT BSL 2 151B	20 A	1		1	0 VA			2					
	EQUIPMENT BSL 2 151B	20 A	1		3		0 VA		4					
	RECEPTACLE BSL 2 TC 151D	20 A	1		5			180 VA	6					
	RECEPTACLE BSL 2 TC 151D	20 A	1		7	180 VA			8					
	RECEPTACLE BSL 2 TC 151D	20 A	1		9		180 VA		10					
	RECEPTACLE BSL 2 151B	20 A	1		11			180 VA	12					
	RECEPTACLE BSL 2 151A	20 A	1		13	180 VA			14					
	RECEPTACLE BSL 2 151A	20 A	1		15		360 VA		16					
	EQUIPMENT	20 A	1		17			0 VA	18					
	RECEPTACLE BSL 2 TC 151D	20 A	1		19	540 VA			20					
	RECEPTACLE CORRIDOR-1...	20 A	1		21		900 VA		22					
	EQUIPMENT CORRIDOR-1...	20 A	1		23			180 VA	24					
	EQUIPMENT CORRIDOR-1...	20 A	1		25	180 VA			26					
					27				28					
					29				30					
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
	TOTAL CONNECTED LOAD PER PHASE (VA)					1080 VA	1440 VA	540 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					10 A	13 A	5 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	2700 VA	100.00%	2700 VA	**Total Conn. Load:**	3060 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	3060 VA
E	Equipment	360 VA	100.00%	360 VA	**Total Conn. Current:**	8 A
M	Motor	0 VA	0.00%	0 VA	**Total Est. Demand Current:**	8 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANEL NAME: 1E3-2

MOUNTING: SURFACE | **VOLTAGE:** 120/208 Wye | **LOCATION:** STORAGE 147 | **FEED FROM:**
ENCLOSURE: NEMA 1 | **PHASE:** 3 | **MAIN TYPE:** | **SPD:**
DOOR TYPE: | **WIRES:** 4 | **BUS RATING:** | **NEUTRAL RATING:**
Min. A.I.C. RATING: | **MCB RATING:** | **ISOLATED GROUND:**
BUS MATERIAL: COPPER

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	EQUIPMENT RESEARCH LAB-1...	20 A	1		1	0 VA	0 VA		2		1	20 A	EQUIPMENT	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		3		0 VA	0 VA	4		1	20 A	EQUIPMENT	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		5			0 VA	0 VA	6	1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		7	0 VA	0 VA		8		1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		9		0 VA	0 VA	10		1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		11			0 VA	0 VA	12	1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		13	0 VA	0 VA		14		1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		15		0 VA	0 VA	16		1	20 A	EQUIPMENT BSL 2 151B	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		17			0 VA	0 VA	18	1	20 A	EQUIPMENT BSL 2 151A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		19	0 VA	0 VA				20	1	20 A	EQUIPMENT BSL 2 151A
	EQUIPMENT RESEARCH LAB-1...	20 A	1		21			0 VA	0 VA	22	1	20 A	EQUIPMENT BSL 2 151A	
	EQUIPMENT RESEARCH LAB-1...	20 A	1		23				0 VA	0 VA	24	1	20 A	EQUIPMENT BSL 2 151A
	EQUIPMENT RESEARCH LAB-1...	20 A	1		25	0 VA	0 VA				26	1	20 A	EQUIPMENT BSL 2 151A
	EQUIPMENT RESEARCH LAB-1...	20 A	1		27			0 VA	0 VA	28	1	20 A	EQUIPMENT BSL 2 151A	
	EQUIPMENT BSL 2 TC 151D	20 A	1		29				0 VA	0 VA	30	1	20 A	EQUIPMENT RESEARCH LAB-1...
	EQUIPMENT BSL 2 TC 151D	20 A	1		31	0 VA	0 VA				32	1	20 A	EQUIPMENT RESEARCH LAB-1...
	EQUIPMENT BSL 2 TC 151D	20 A	1		33			0 VA	0 VA	34	1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT BSL 2 TC 151D	20 A	1		35				0 VA	0 VA	36	1	20 A	EQUIPMENT RESEARCH LAB-1...
	EQUIPMENT BSL 2 TC 151D	20 A	1		37	0 VA	0 VA				38	1	20 A	EQUIPMENT RESEARCH LAB-1...
	EQUIPMENT BSL 2 TC 151D	20 A	1		39			0 VA	0 VA	40	1	20 A	EQUIPMENT RESEARCH LAB-1...	
	EQUIPMENT	20 A	1		41			0 VA	180 VA	42	1	20 A	RECEPTACLE BSL 2 TC 151D	
	RECEPTACLE BSL 2 TC 151D	20 A	1		43	180 VA				44				
	RECEPTACLE	20 A	1		45		180 VA			46				
	RECEPTACLE	20 A	1		47			180 VA		48				
	RECEPTACLE RESEARCH LAB-...	20 A	1		49	180 VA				50				
	RECEPTACLE RESEARCH LAB-...	20 A	1		51		180 VA			52				
	RECEPTACLE BSL 2 151A	20 A	1		53			180 VA		54				
	RECEPTACLE BSL 2 151B	20 A	1		55	180 VA				56				
	EQUIPMENT CORRIDOR-1...	20 A	1		57		0 VA			58				
					59					60				
					61					62				
					63					64				
					65					66				
					67					68				
					69					70				
					71					72				
	TOTAL CONNECTED LOAD PER PHASE (VA)					540 VA	360 VA	540 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					5 A	3 A	5 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	1440 VA	100.00%	1440 VA	**Total Conn. Load:**	1440 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	1440 VA
E	Equipment	0 VA	0.00%	0 VA	**Total Conn. Current:**	4 A
M	Motor	0 VA	0.00%	0 VA	**Total Est. Demand Current:**	4 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANEL NAME: 3NP2

MOUNTING: SURFACE | **VOLTAGE:** 120/208 Wye | **LOCATION:** CORRIDOR 299F | **FEED FROM:**
ENCLOSURE: NEMA 1 | **PHASE:** 3 | **MAIN TYPE:** MLO | **SPD:** CAT A
DOOR TYPE: DOOR-IN-DOOR | **WIRES:** 4 | **BUS RATING:** 100 A | **NEUTRAL RATING:** 100%
(NEW) | **Min. A.I.C. RATING:** | **MCB RATING:** - | **ISOLATED GROUND:** -
BUS MATERIAL: COPPER

BRANCH BREAKERS

KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	Load Type	CKT #	A	B	C	CKT #	Load Type	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
	EQUIPMENT RESEARCH LAB-1...	20 A	2		1	0 VA			2					
--	--	--	--	--	3		0 VA		4					
	EQUIPMENT FUME HOOD...	20 A	2		5			0 VA	6					
--	--	--	--	--	7	0 VA			8					
	EQUIPMENT	20 A	1		9		180 VA		10					
	EQUIPMENT	20 A	1		11			180 VA	12					
	RECEPTACLE CORRIDOR 299F	20 A	1		13	720 VA			14					
	RECEPTACLE BSL2 TC 251D	20 A	1		15		180 VA		16					
	RECEPTACLE BSL2 TC 251D	20 A	1		17			180 VA	18					
	EQUIPMENT FUME HOOD...	20 A	1		19	0 VA			20					
	RECEPTACLE BSL2 251A	20 A	1		21		180 VA		22					
	RECEPTACLE BSL2 TC 251D	20 A	1		23			540 VA	24					
	RECEPTACLE BSL2 251B	20 A	1		25	360 VA			26					
	RECEPTACLE BSL2 251B	20 A	1		27		180 VA		28					
	RECEPTACLE	20 A	1		29			360 VA	30					
					31				32					
					33				34					
					35				36					
					37				38					
					39				40					
					41				42					
	TOTAL CONNECTED LOAD PER PHASE (VA)					1080 VA	720 VA	1260 VA						
	TOTAL CONNECTED CURRENT PER PHASE (AMPS)					9 A	6 A	11 A						

TYPE	LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
P	Panel	0 VA	0.00%	0 VA		
R	Receptacle	2700 VA	100.00%	2700 VA	**Total Conn. Load:**	3060 VA
L	Lighting	0 VA	0.00%	0 VA	**25% OF LARGEST MOTOR:**	
C	Continuous	0 VA	0.00%	0 VA	**Total Est. Demand:**	3060 VA
E	Equipment	360 VA	100.00%	360 VA	**Total Conn. Current:**	8 A
M	Motor	0 VA	0.00%	0 VA	**Total Est. Demand Current:**	8 A
K	Kitchen	0 VA	0.00%	0 VA		
O	Other	0 VA	0.00%	0 VA		

PANEL LEGEND

1E3-3	3NP1	2NP2
	1E3-2	3NP2

PANELBOARD SCHEDULE KEYED NOTE:

1. PROVIDE CLASS A GROUND FAULT INTERRUPTER TYPE CIRCUIT BREAKER.
2. PROVIDE ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER
3. PROVIDE 30 MILLIAMPERE EQUIPMENT GROUND FAULT PROTECTOR TYPE CIRCUIT BREAKER.
4. PROVIDE SHUNT TRIP CIRCUIT BREAKER WITH 120 V COIL.
5. PROVIDE HACR RATED CIRCUIT BREAKER.
6. PROVIDE HANDLE CLAMP FOR HOLDING CIRCUIT BREAKER IN THE "ON" OR "OFF" POSITION.
7. PROVIDE SWITCHING RATED CIRCUIT BREAKER.
8. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD (WHERE PANEL IS LOCATED AS EXISTING) OF SAME MANUFACTURER AND A.I.C. RATING AS EXISTING.
9. EXISTING LOAD

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

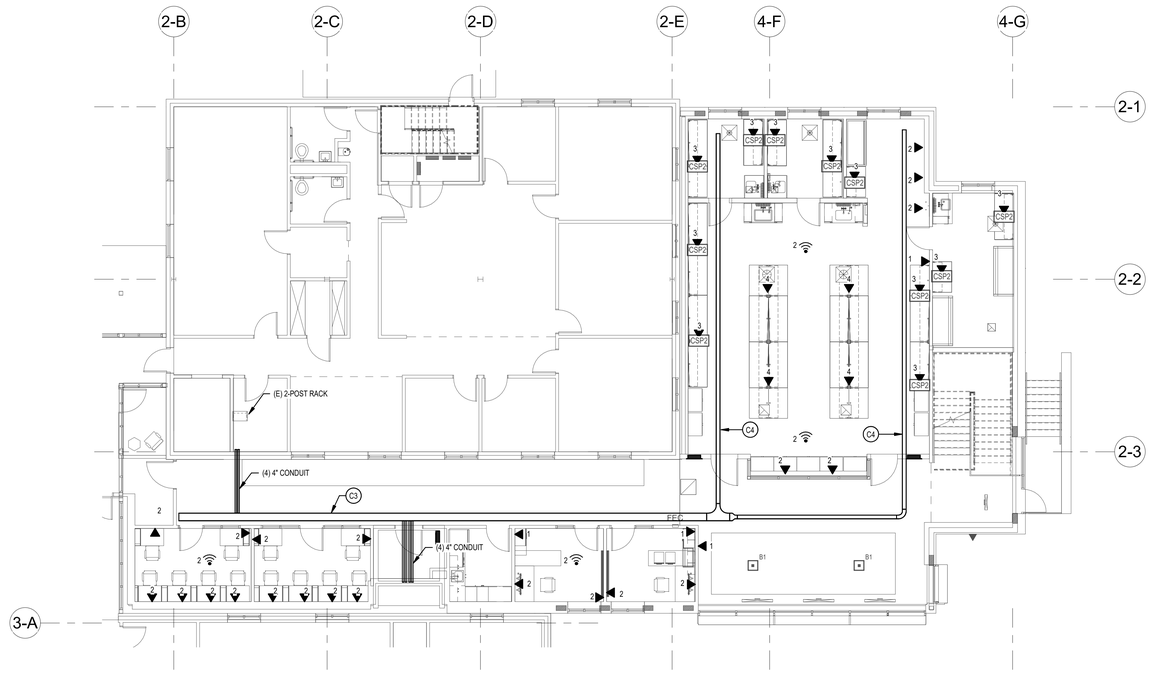
ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

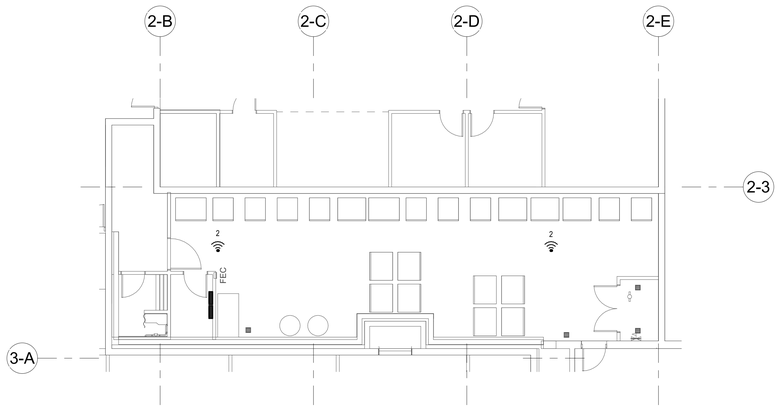
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SHEET NUMBER: EP802

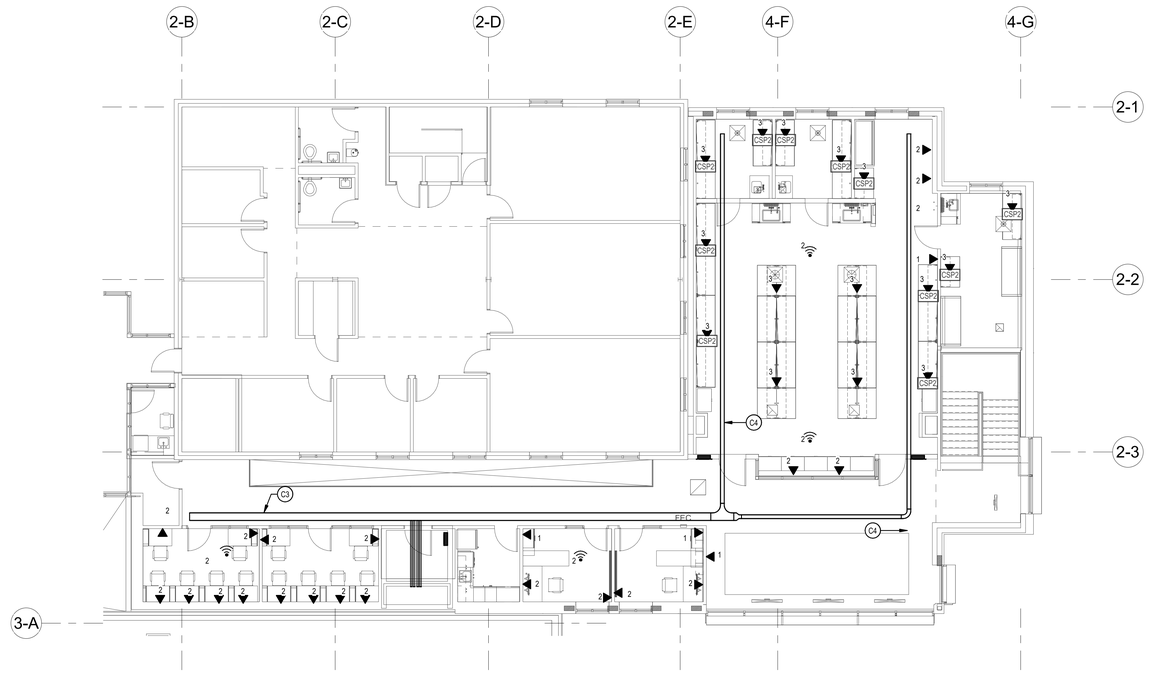
SHEET OF



1 **LEVEL 1 FLOOR PLAN - TELECOM**
SCALE: **1/8" = 1'-0"**



3 **BASEMENT FLOOR PLAN - TELECOM**
SCALE: **1/8" = 1'-0"**



2 **LEVEL 2 FLOOR PLAN - TELECOM**
SCALE: **1/8" = 1'-0"**

TELECOMMUNICATION GENERAL NOTES:

1. NO EXPOSED COMMUNICATIONS CONDUIT ALLOWED IN BUILDING UNLESS APPROVED IN ADVANCED BY OWNER/ARCHITECT.
2. ALL TELECOMMUNICATIONS OUTLETS SHALL BE LABELED IN ACCORDANCE WITH TIA/EIA 606-B. LABELING SHALL BE PROVIDED AT BOTH THE OUTLET AND THE TERMINATING END IN THE COMMUNICATIONS ROOM.
3. ALL DATA OUTLETS SHALL COMPLY WITH TIA/EIA 568. 1-D, AND TIA/EIA 569-D, AND BE WIRED IN ACCORDANCE WITH TIS/EIA T568-C.2.
4. ALL CONDUIT FOR TELECOMMUNICATIONS PURPOSES SHALL BE EMT AND SHALL BE SIZED PER ANSI/TIA/EIA 569-D. MINIMUM CONDUIT SIZE FOR ANY TELECOMMUNICATIONS CABLE SHALL BE 1". CONDUIT SHALL NOT BE FILLED TO GREATER THAN 50% OF IT'S MAXIMUM CABLE CARRYING CAPACITY.
5. THE DIVISION 27 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS. CONDUIT, AND CABLE TRAY RUNS.

KEYED NOTES (#)

C3 PROVIDE A 12" WIDE, 4" HIGH BASKET TYPE CABLE TRAY WITH SOLID BOTTOM INSERT. PROVIDE BONDING JUMPER AT ALL THE JOINTS AND GROUND THE TRAY WITH #6 THHN GND CONDUCTOR TO 'TMGB' IN THE MAIN TELECOM ROOM. COORDINATE WITH GENERAL CONTRACTOR AND ARCHITECT FOR EXACT HEIGHT AND LOCATION.

C4 PROVIDE A 6" WIDE, 4" HIGH BASKET TYPE CABLE TRAY WITH SOLID BOTTOM INSERT. PROVIDE BONDING JUMPER AT ALL THE JOINTS AND GROUND THE TRAY WITH #6 THHN GND CONDUCTOR TO 'TMGB' IN THE MAIN TELECOM ROOM. COORDINATE WITH GENERAL CONTRACTOR AND ARCHITECT FOR EXACT HEIGHT AND LOCATION.

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PROJECT TITLE:

CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:

22294

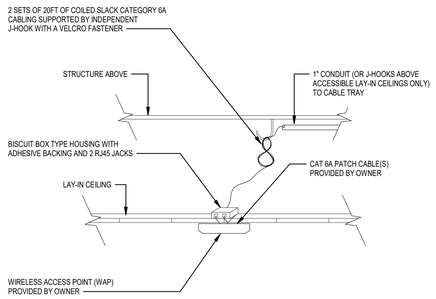
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FLOOR PLAN - TELECOM

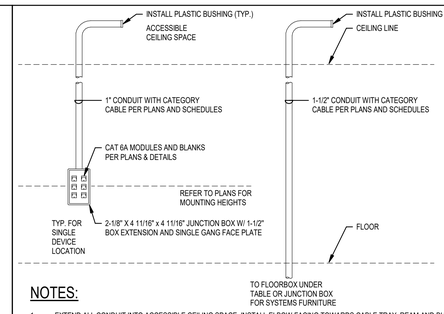
SHEET NUMBER:

EC101

SHEET OF



1 HARD LID DROPPED CEILING MOUNTED WAP DETAIL
SCALE: NTS



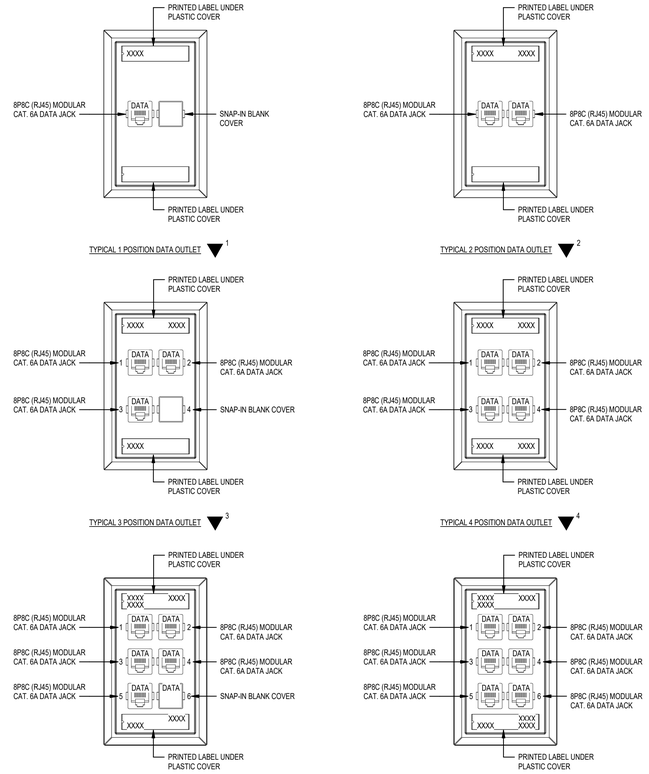
NOTES:

1. EXTEND ALL CONDUIT INTO ACCESSIBLE CEILING SPACE. INSTALL ELBOW FACING TOWARDS CABLE TRAY. REAM AND BUSH ALL CONDUIT ENDS TO PREVENT CABLE DAMAGE DURING PULL. ROUTE CONDUIT DIRECTLY TO CABLE TRAY UNLESS ABOVE ACCESSIBLE LAY-IN CEILING.
2. IF PATHWAY GOES IN OR BELOW GROUND FLOOR SLAB, PROVIDE WITH CABLING SUITABLE FOR WET LOCATION INSTALLATIONS.
3. CONDUIT SIZES MAY NEED TO BE INCREASED DEPENDING ON TOTAL NUMBER OF CABLES INSTALLED. SEE CONDUIT SIZING CHART TO DETERMINE IF LARGER CONDUIT IS REQUIRED. SIZES INDICATED ARE MINIMUMS.

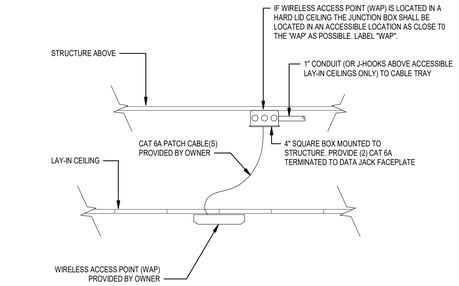
2 VOICE/DATA ROUGH-IN DETAIL
SCALE: NTS

NOTES:

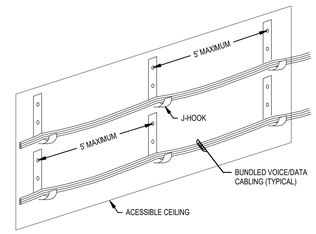
1. PROVIDE SNAP-IN BLANKS IN ALL UNUSED PORTS.
2. COORDINATE THE DATA FACEPLATE COLOR WITH THE ELECTRICAL CONTRACTOR SUCH THAT THEY MATCH EXACTLY THAT OF THE ADJACENT ELECTRICAL RECEPTACLE COVER PLATE.
3. COORDINATE WITH ELECTRICAL CONTRACTOR AND APPROVED FLOOR BOXES SUCH THAT ALL NECESSARY ACCESSORIES AND PROPER FACEPLATES COMPATIBLE WITH FLOOR BOXES ARE PROVIDED.
4. SEE SPECIFICATION SECTION 271500 AND 270553 FOR DETAILS AND ADDITIONAL REQUIREMENTS.



5 TYPICAL DATA JACKWALL PLATE DETAILS
SCALE: NTS



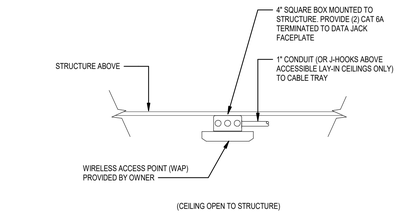
3 LAY-IN DROPPED CEILING MOUNTED WAP DETAIL
SCALE: NTS



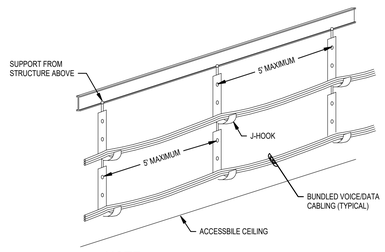
NOTE:

1. MOUNT J-HOOKS SUCH THAT CABLE IS A MINIMUM OF 3" ABOVE FINISHED CEILING.

4 TYPICAL WALL MOUNTED J-HOOK DETAIL
SCALE: NTS



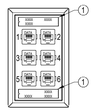
6 OPEN CEILING STRUCTURE MOUNTED WAP DETAIL
SCALE: NTS



NOTE:

1. MOUNT J-HOOKS SUCH THAT CABLE IS A MINIMUM OF 3" ABOVE FINISHED CEILING.

7 TYPICAL STRUCTURE MOUNTED J-HOOK DETAIL
SCALE: NTS



WHERE:
X : NUMBER OF DROPS (CABLES) AND COMPLETED JACKS.

KEYED NOTES: (#)

1. PROVIDE A MACHINE PRINTED LABEL PERMANENTLY FIXED TO THE FACEPLATE. FORMAT SHALL BE "FA-AN" WHERE THE LABEL MATCHES THE PATCH PANEL/IDC LABEL FOR EXAMPLE "1A-B01" = TELECOM ROOM A, PATCH PANEL B, PORT 01.

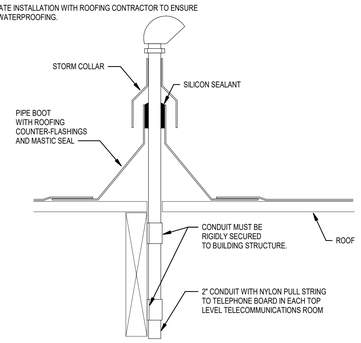
GENERAL NOTES:

1. THE DETAILS INDICATED ON THE DRAWINGS ARE NOT INTENDED TO IMPLY SPECIFIC MANUFACTURERS OR OUTLET TYPES. THEY ARE MERELY INTENDED TO DESCRIBE THE DESIGN INTENT. THOSE MANUFACTURERS LISTED IN THE SPECIFICATIONS MAY BE USED. IT IS UNDERSTOOD THAT EQUIPMENT MAY VARY SLIGHTLY BY MANUFACTURER.
2. REFER TO OUTLET DETAILS FOR ALL PORT QUANTITIES AND FACEPLATE TYPES.

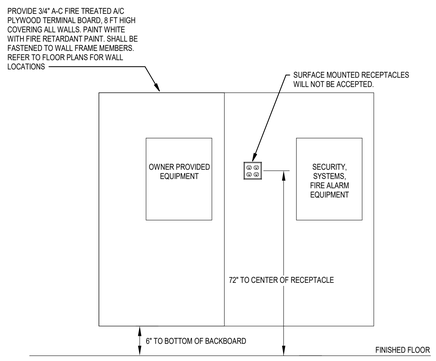
8 OUTLET LABELING REQUIREMENTS KEY PLAN
SCALE: NTS

GENERAL NOTES:

1. VERIFY EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION WITH ROOFING CONTRACTOR TO ENSURE PROPER WATERPROOFING.



9 WEATHERHEAD DETAIL
SCALE: NTS



10 TELEPHONE TERMINAL BOARD (TYPICAL DETAIL)
SCALE: NTS

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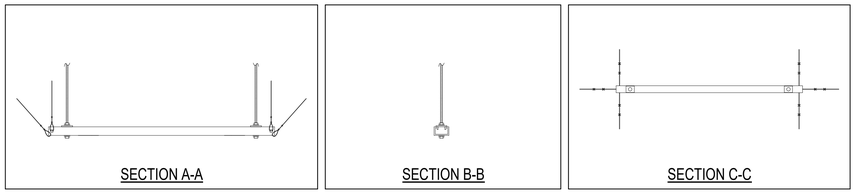
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SHEET TITLE: TELECOM DETAILS

SHEET NUMBER: EC501

SHEET 1 OF 1



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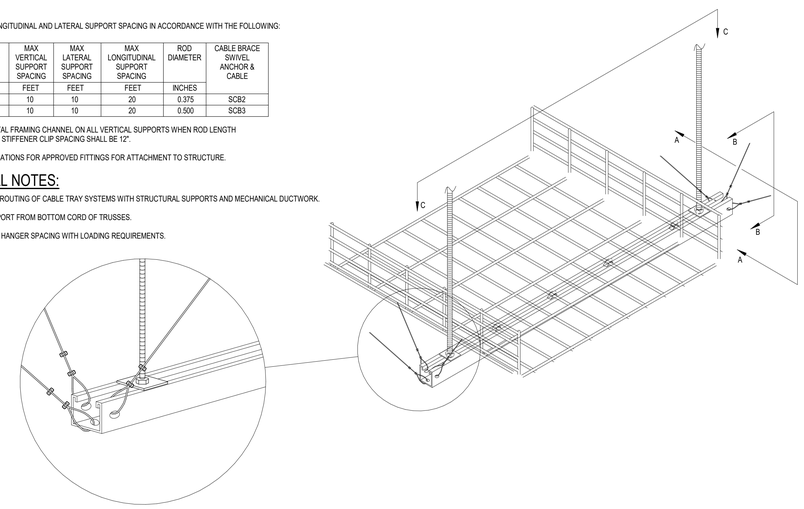
1. PROVIDE LONGITUDINAL AND LATERAL SUPPORT SPACING IN ACCORDANCE WITH THE FOLLOWING:

MAXIMUM CABLE TRAY PLUS CABLE WT.	MAX VERTICAL SUPPORT SPACING	MAX LATERAL SUPPORT SPACING	MAX LONGITUDINAL SUPPORT SPACING	ROD DIAMETER	CABLE BRACE SWIVEL ANCHOR & CABLE
POUNDS/FOOT	FEET	FEET	FEET	INCHES	
25	10	10	20	0.375	SCB2
50	10	10	20	0.500	SCB3

2. PROVIDE METAL FRAMING CHANNEL ON ALL VERTICAL SUPPORTS WHEN ROD LENGTH EXCEEDS 14". STIFFENER CLIP SPACING SHALL BE 12".
3. SEE SPECIFICATIONS FOR APPROVED FITTINGS FOR ATTACHMENT TO STRUCTURE.

GENERAL NOTES:

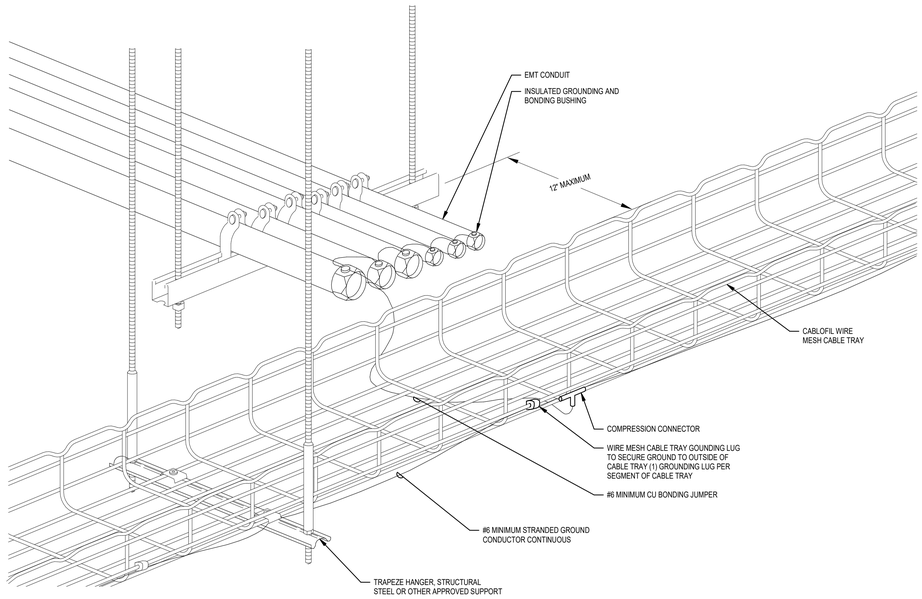
1. COORDINATE ROUTING OF CABLE TRAY SYSTEMS WITH STRUCTURAL SUPPORTS AND MECHANICAL DUCTWORK.
2. DO NOT SUPPORT FROM BOTTOM CORD OF TRUSSES.
3. COORDINATE HANGER SPACING WITH LOADING REQUIREMENTS.



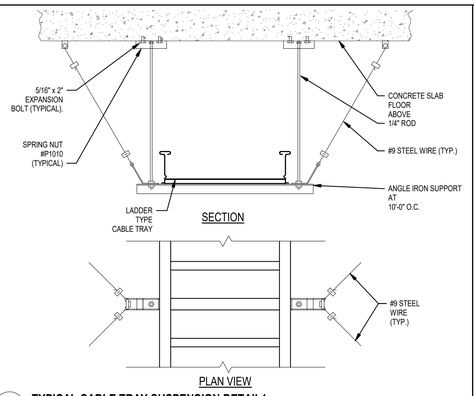
1 SEISMIC BRACING FOR CABLE TRAY
SCALE: NTS

NOTES:

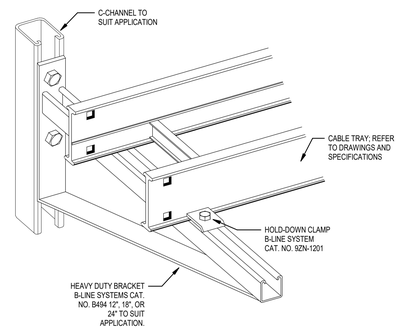
1. ALL CABLE TRAY SHALL BE INSTALLED WITH A CONTINUOUS COPPER GROUND SIZED AND SECURED TO THE OUTSIDE OF THE CABLE TRAY IN ACCORDANCE WITH THE DETAIL SHOWN BELOW.
2. EXTEND BONDING CONDUCTOR BACK TO NEAREST 'TMGB' AND/OR 'TGB' INSIDE TELECOM ROOMS.
3. SEE SPECIFICATION SECTION 260526, 270526, AND 270536 FOR DETAILS.



2 WIRE BASKET CABLE TRAY BONDING
SCALE: NTS



3 TYPICAL CABLE TRAY SUSPENSION DETAIL1
SCALE: NTS



4 WALL SUPPORTED CABLE TRAY DETAIL
SCALE: NTS

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PROJECT TITLE:

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SHEET TITLE:
TELECOM DETAILS

SHEET NUMBER:
EC502

SHEET OF

COMM. ROOM 4239 EQUIPMENT RACK

FLOOR MOUNTED RACK 'R1S1'

RU	SEE NOTE #5	RU
42	RACK PDU 'A' (EXISTING) [1U]	42
41		41
40	48 STRAND FIBER PATCH PANEL (LIU) [2U]	40
39	(EXISTING)	39
38	HORIZONTAL CABLE MANAGEMENT [2U]	38
37	(EXISTING)	37
36	48 STRAND FIBER PATCH PANEL (LIU) [2U]	36
35	(EXISTING)	35
34	HORIZONTAL CABLE MANAGEMENT [2U]	34
33	(EXISTING)	33
32	RACK PDU 'B' (EXISTING) [1U]	32
31		31
30	RACK PDU 'B' (EXISTING) [1U]	30
29	RACK PDU 'B' (EXISTING) [1U]	29
28	48 PORT DATA PATCH PANEL [2U]	28
27	**SEE NOTE #1**	27
26	HORIZONTAL CABLE MANAGEMENT [2U]	26
25		25
24	48 PORT DATA PATCH PANEL [2U]	24
23	**SEE NOTE #1**	23
22		22
21		21
20	RACK PDU 'B' (BY OWNER) [1U]	20
19		19
18		18
17		17
16		16
15		15
14	PHONE AND	14
13	NETWORK EQUIPMENT	13
12	(PROVIDED BY OWNER)	12
11		11
10		10
9		9
8		8
7	HORIZONTAL CABLE MANAGEMENT [1U]	7
6	MODULAR SURGE PROTECTION [2U]	6
5	**SEE NOTE #4**	5
4	UPS 'A' (BY OWNER) [2U]	4
3	(20A, 1P, 120V, DEDICATED EM CIRCUIT INPUT BY DIV 26)	3
2	UPS 'B' (BY OWNER) [2U]	2
1	(30A, 2P, 208V , DEDICATED EM CIRCUIT INPUT BY DIV 26)	1

GENERAL NOTE: ALL EQUIPMENT / CABINETS / CABLING / WIRE MANAGEMENT / ETC. BY CONTRACTOR UNLESS NOTED OTHERWISE

NOTE 1: PROVIDE 48 PORT CAT6 DATA PATCH PANEL. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. SEE CABLE SCHEDULE FOR JACK COLORS. PROVIDE 12" PATCH CORDS. PROVIDE (1) PER JACK PLUS 10% SPARE.

NOTE 2: FIBER SWITCH AND ASSOCIATED HORIZONTAL CABLE MANAGEMENT ONLY REQUIRED IF MORE THAN FOUR TR'S/TE'S ON SITE.

NOTE 3: EXACT VISION RECORDING SERVER.

NOTE 4: DITEK CORP DTK-RM12FP RACK MOUNT MODULE SURGE PROTECTION WITH DTK-MRJPOEM MODULES (OR APPROVED EQUIVALENT.

COMMUNICATIONS CABLING SCHEDULE

DATA DEVICE DESCRIPTION	ANSI/TIA CATEGORY	# OF CABLES PER OUTLET	JACKET COLOR	JACK COLOR	CABLE TYPE	CABLE RATING
WIRELESS ACCESS POINT (WAP)	CAT 6A	1	WHITE	GRAY	U/UTP	PLENUM
CCTV IP CAMERA INTERIOR	-	1	PINK	GRAY	-	PLENUM
CCTV IP CAMERA EXTERIOR	-	1	PINK	GRAY	-	OUTDOOR/FILLED
FLOOR BOX / POKE-THRU DEVICE	CAT 6	2-8	WHITE	WHITE	U/UTP	PLENUM
SYSTEM FURNITURE WALL BOX	CAT 6	1-8	WHITE	WHITE	U/UTP	PLENUM
WORKSTATION OUTLET	CAT 6	1	WHITE	WHITE	U/UTP	PLENUM
MISC. DATA DROP	CAT 6	1	WHITE	WHITE	U/UTP	PLENUM
MISC. ANALOG PHONE	CAT 6	1	BLUE	BLUE	U/UTP	PLENUM
		1	WHITE	WHITE	U/UTP	PLENUM
MULTI-FUNCTION PRINTER/FAX	CAT 6	1	BLUE (ANALOG)	BLUE	U/UTP	PLENUM
BACKBONE COPPER	CAT 3	PER DRAWINGS	GRAY	N/A	U/UTP	PLENUM

* MANUFACTURER PREFERED CABLES.

TELECOM CONDUIT SIZING SCHEDULE

TRADE SIZE	TOTAL AREA	TOTAL INTERNAL	CABLE OUTSIDE DIAMETER (INCHES) AND MAXIMUM CABLES PER CONDUIT							
INCHES	100%	DIAMETER (IN.)	0.13	0.18	0.22	0.24	0.29	0.31	0.37	0.53	0.62
1/2" (SEE NOTE 2)	0.304	0.622	6	3	2	2	1	1	1	0	0
3/4"	0.533	0.824	11	6	4	3	2	2	1	1	0
1"	0.864	1.049	18	10	6	5	4	3	2	1	1
1-1/4"	1.496	1.38	32	16	11	9	6	6	4	2	1
1-1/2"	2.036	1.61	43	22	15	13	9	8	5	3	2
2"	6.356	2.067	71	37	25	21	14	12	9	4	3
2-1/2"	5.858	2.731	124	64	43	36	25	22	15	7	5
3"	8.846	3.356	187	97	65	55	37	33	23	11	8
3-1/2"	11.545	3.834	244	127	85	71	49	43	30	15	11
4"	14.753	4.334	311	162	109	91	63	55	38	19	14

1. CHART IS BASED UPON ELECTRICAL METALLIC TUBING (EMT).
2. 3/4" CONDUIT IS THE MINIMUM SIZE ACCEPTABLE ON THIS PROJECT.
3. CONTRACTOR SHALL ADJUST CONDUIT SIZE BASED UPON APPROVED CABLE TYPE, SIZE AND QUANTITY TO BE INSTALLED.
4. PROVIDE FOR 25% FUTURE CAPACITY IN EACH CONDUIT.
5. NO MORE THAN THREE WORK AREA OUTLETS SHALL BE FED FROM A SINGLE CONDUIT RUN. PROVIDE SEPRATE CONDUIT FOR MORE THAN THREE.
6. THIS TABLE ASSUMES A FILL FACTOR OF 40% AND A MAXIMUM OF (2) 90 DEGREE BENDS BETWEEN PULL POINTS.
7. 0.24 CABLE OUTSIDE DIAMETER IS TYPICAL FOR CAT 6 CABLES. .29 IS TYPICAL FOR CAT 6A CABLES. VERIFY WITH APPROVED PRODUCTS.

TELECOM RISER BLOCK DEFINITIONS

FTU	RACK MOUNTED FIBER TERMINATION UNIT
110 BLOCK (#)	RACK MOUNTED 110 BLOCK, (#) = PAIR QTY
BEP	WALL MOUNTED BUILDING ENTRANCE PROTECTOR (SURGE PROTECTION)
RACK PATCH	RACK MOUNTED PATCH PANELS

NOTE: ALL ITEMS NOTED ABOVE ARE PROVIDED BY CONTRACTOR

1 PARTIAL TELECOMMUNICATIONS RISER DIAGRAM FOR ADDITION
SCALE: NTS

TELECOMMUNICATIONS STANDARDS/GUIDELINES:

CONTRACTOR SHALL FOLLOW ALL OF THE STANDARDS/REQUIREMENTS BELOW; WHICH ABIDES BY ALL BICSI AND TIA STANDARDS AND INSTALLATION PRACTICES. THESE GUIDELINES ARE MEANT AS A REFERENCE ONLY AND NOT AS A COMPLETE SET OF STANDARDS. IF THERE ARE ANY QUESTIONS OR CONCERNS PLEASE CONTACT DESIGN ENGINEER OR UIT.

GENERAL ITEMS
1) ALL TELECOM ROOMS SHALL BE LINED WITH ¾" A/C OR BETTER PLYWOOD EXTENDING 8' HIGH WITH OUTLETS EXTENDING FLUSH WITH THE SURFACE OF THE WOOD AT 6 FT ABOVE FINISHED FLOOR.
2) ALL CONDUITS EXTENDING FROM THE FLOOR SHOULD EXTEND 1-3" AFF AND NO MORE THAN 2" OFF ANY WALL.
3) CONDUIT ROWS SHOULD NOT EXCEED TWO DEEP
4) CONDUITS THAT ENTER A TELECOM ROOM SHOULD TERMINATE NEAR THE CORNERS TO ALLOW FOR PROPER RACKING.
5) ALL PATHWAYS MUST NOT EXCEED 295' FROM THE TELECOM RACK TO THE DATA OUTLET.
6) ALL PENETRATIONS THROUGH FIRE RATED WALL SHALL BE PROVIDED WITH FIRE RATED PATHWAYS, PUTTY PADS AND FIRE CAULKING SUCH THAT THE WALL RAITING IS MAINTAINED. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
7) REFER TO DRAWINGS AND SPECIFICATIONS FOR ALL OUTLET/DEVICE INSTALLATION REQUIREMENTS AND LOCATIONS.
8) ACCESS CONTROL WIRING SHALL TERMINATE AT WALL MOUNTED ACCESS CONTROL / SECURITY PANELS INSIDE TELECOM ROOMS, NOT AT TELECOM RACKS.
6) UNLESS OTHERWISE NOTED, ALL CABLE SHALL BE INSTALLED IN CONDUIT OR SUPPORTED BY J-HOOKS AT ACCESSIBLE LAY-IN CEILING LOCATIONS ONLY, WITH THE EXCEPTION OF PATCH CABLES. PROVIDE CONTINUOUS CONDUIT AT OPEN CEILINGS AND FOR CCTV CAMERA CABLING.

ACCEPTABLE CONDUIT RUNS
1) MUST NOT HAVE A BEND OVER 90 DEGREES OR AN AGGREGATE OF BENDS IN EXCESS OF 180 DEGREES BETWEEN PULL POINTS.
2) CONDUIT SEGMENTS SHALL NOT EXCEED 100' WITHOUT A PULL POINT.
3) CONDUIT RUNS SHOULD BE LIMITED TO LESS THAN 150'
4) ALL EMPTY CONDUITS SHALL BE EQUIPPED WITH A PULL CORD THAT HAS A MINIMUM RATING OF 200LBS.
5) ALL CONDUIT LOCATED BELOW GRADE OR IN THE SLAB SHALL BE 1" MINIMUM. CATEGORY CABLING RAN BELOW GRADE OR IN THE SLAB SHALL BE OF THE WET LOCATION LISTED TYPE.
6) ALL CONDUIT RUNS SHALL BE SINGLE CONTINUOUS RUNS FROM THE VOICE/DATA OUTLET TO THE NEAREST CABLE TRAY. JUNCTION BOXES ARE ALLOWED IN ACCESSIBLE LOCATIONS ONLY. J-HOOKS MAY BE USED AT ACCESSIBLE LOCATIONS ABOVE LAY-IN CEILINGS.
7) FLEXIBLE METALLIC AND FLEXIBLE NONMETALLIC CONDUIT ARE PROHIBITED.

PATHWAYS AND CABLE SUPPORT
1) PATHWAYS MUST HAVE ADEQUATE SUPPORT TO WITHSTAND PULLING THE CABLES
2) PATHWAYS SHOULD BE INSTALLED AT LEAST 3" OF CLEAR VERTICAL SPACE ABOVE THE CEILING TILES AND T-BARS TO ENSURE ACCESSIBILITY, AND SHOULD AT NO POINT REST OR BE SUPPORTED BY ANY COMPONENT OF THE SUSPENDED CEILING
3) J-HOOKS SHOULD AT NO POINT EXCEED 5' FOR ADEQUATE SUPPORT
4) PROVIDE CABLE TRAYS AS INDICATED ON THE DRAWINGS. FOR AREAS EXCEEDING 75 DATA CABLES, NOT WITH CABLE TRAY, ADDITIONAL CABLE TRAY SHALL BE PROVIDED FOR ADEQUATE SUPPORT.

CABLE TRAYS / BASKET TRAY
1) ALL CABLE TRAYS MUST BE INSTALLED TO MEET NATIONAL AND LOCAL BUILDING CODES
2) THE INSIDE OF A CABLE TRAY MUST BE FREE OF BURRS, SHARP EDGES, OR PROJECTIONS THAT CAN DAMAGE THE CABLE DURING INSTALLATION
3) ELEVATION CHANGES AND OFFSETS MUST BE KEPT TO A MINIMUM
4) TRAY SHOULD EXTEND AT LEAST 1" INTO THE TELECOM ROOM THEN WATERFALL TO LOWER CABLE RUNWAY SYSTEM TO ACCOMODATE INTERNAL RACKING
5) CONDUIT SHOULD EXTEND FROM THE TELECOM OUTLET LOCATED IN THE WORK AREA WITH A 90 DEGREE BEND AT TOP OF WALL DIRECTED TOWARDS NEAREST CABLE TRAY. CONDUIT SHALL BE USED AT ALL INACCESSIBLE AND OPEN CEILING LOCATIONS. CONDUIT SLEEVES SHALL BE PROVIDED THROUGH ALL WALL PENETRATIONS BETWEEN WHERE CONDUIT ENTERS CEILING FROM OUTLET BELOW TO NEAREST CABLE TRAY. ACCOUNT FOR TOTAL NUMBER OF CABLES PLUS 50% FUTURE CAPACITY WITH SLEEVES.
6) TRAYS SHOULD BE SUPPORTED EVERY 5' AND WITHIN 24" ON EACH SIDE OF A FITTING (UNLESS OTHERWISE NOTED BY THE MANUFACTURER)
7) ALL METALLIC CABLE TRAYS MUST BE GROUNDED, MARKED AND ALL SECTIONS BONDED IN ACCORDANCE WITH APPLICABLE CODES, STANDARDS AND REGULATIONS
8) PATHWAYS SHOULD BE KEPT IN COMMON AREAS AS MUCH AS POSSIBLE TO AVOID FUTURE MAINTENANCE OCCURRING IN PRIVATE WORK AREAS OR CLASSROOMS OR CONFERENCE ROOMS.
9) CABLE TRAYS SHOULD BE SIZED TO BE AT 40% FILL MAXIMUM AT THE END OF THE INSTALL, AND NO MORE THAN 60% FILL AT PROJECT COMPLETION. LARGER OR ADDITIONAL CABLE TRAY SHALL BE PROVIDED AS NECESSARY TO MEET THESE REQUIREMENTS.

GROUNDING AND BONDING
1) IF THERE IS A CONFLICT BETWEEN LOCAL SAFETY CODE, OWNER, OR THE MANUFACTURES REQUIREMENTS, THE CONFLICT SHOULD BE RESOLVED WITH THE AHJ BEFORE PROCEEDING.
2) ENTRANCE FACILITY (EF) MUST CONTAIN THE TMGB (4" WIDE 1/4 " THICK AND NO LESS THAN 12"IN LENGTH) THIS WILL SERVE AS THE DEDICATED EXTENSION OF THE BUILDING AC GROUNDING ELECTRODE SYSTEM FOR THE TELECOM INFRASTRUCTURE
3) THE PLACEMENT OF THIS BUS-BAR MUST BE IN CLOSE PROXIMITY TO THE PRIMARY/ SECONDARY SURGE PROTECTION, CABLE SHEATHS, AND ENTRANCE CONDUITS.
4) TELECOM ROOMS MUST CONTAIN TGBS (2" WIDE ¼" THICK AND NO LESS THAN 12" IN LENGTH)
5) EACH TGB OR TMGB MUST HAVE AN EFFECTIVE BONDING CONNECTION TO THE NEAREST APPROVED BUILDING GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING SYSTEM.
6) THE INSTALLATION OF THE TELECOM BONDING BACKBONE (CONNECTS THE TMGB TO TGB'S AND SHOULD BE RUN AS SHORT AND STRAIGHT AS POSSIBLE

OUTSIDE PLANT
1) OUTSIDE COMMUNICATIONS RACEWAYS SHOULD NOT EXCEED 600' BETWEEN MANHOLES OR PULL POINTS
2) ALL SPARE COMM. RACEWAYS SHALL HAVE A PULL ROPE INSTALLED DURING INITIAL INSTALLATION (200LB)
3) UNDERGROUND OR BURIED ENTRANCES MUST BE PIPED DIRECTLY TO THE ENTRANCE FACILITY.
4) CONDUIT STUBS ENTERING A BUILDING MUST EXTEND NO LESS THAN 5' INTO UNDISTURBED EARTH
5) SEPARATION FROM POWER OR OTHER FOREIGN CONDUIT (3" IF ENCASED IN CONCRETE OR 12" IF DIRECT BURIED
6) SEPARATION FROM GAS, OIL, WATER, (6" WHEN CROSSING AND 12' WHEN PARALLEL
7) WHEN OUTSIDE COMM. PATHWAYS CROSS ANY ROAD (PAVED OR DIRT) A MINIMUM DEPTH OF 40" MUST BE MAINTAINED
8) UNDERGROUND ENTRANCES SHOULD NOT HAVE MORE THAN 2 -90 DEGREE BENDS BETWEEN PULL POINTS

LABELING
1) ALL CABLES MUST HAVE A PRINTED LABEL THAT WRAPS AROUND THE CABLE AT THE PATCH PANEL AND OUTLET.
2) ALL PATCH PANELS SHALL BE LABELED WITH A PRINTED LABEL SECURED TO PATCH PANEL.
3) ALL COPPER BACKBONE CABLES SHALL HAVE LABELS THAT WRAP AROUND THEM DESIGNATING THEIR DESTINATION AND SOURCE. SEE SPECIFICATION SECTION 270553 - "IDENTIFICATION SYSTEMS FOR COMMUNICATION SYSTEMS.
4) ALL 110 BLOCKS SHALL BE TYPED LABELED EVERY 4 PAIR FOR HORIZONTAL CABLE, AND EVERY 5 PAIR FOR MULTI-PAIR DISTRIBUTION CABLE.

TELECOM RISER KEYED NOTES: (#)

1. STUB CONDUIT TO NEAREST CABLE TRAY AND PROVIDE BUSHING. J-HOOKS MAY ONLY BE USED FOR CAT CABLING ABOVE LAY-IN CEILINGS WHERE ACCESSIBLE.

2. PROVIDE ADDITIONAL PATCH PANELS IN EXISTING RACK FOR NEW HORIZONTAL DISTRIBUTION.

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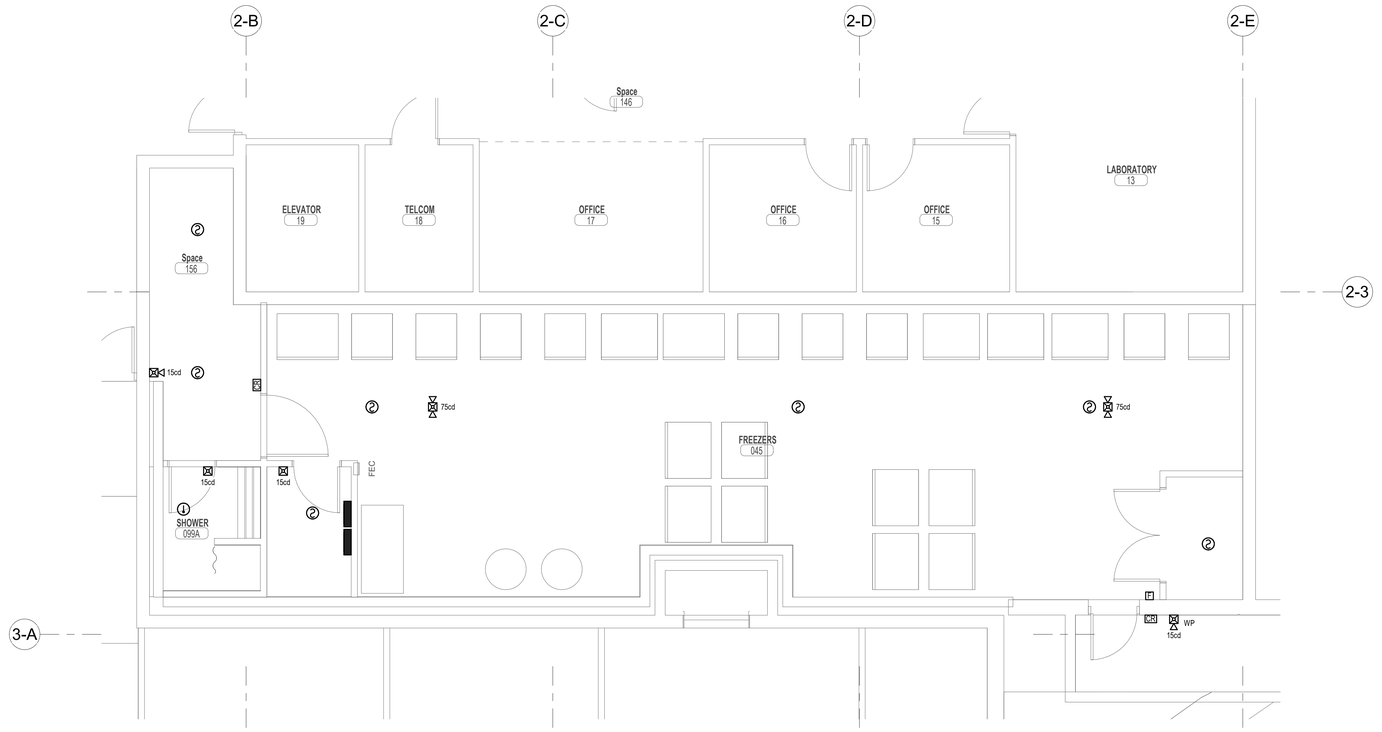
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TELECOM RISER DIAGRAMS

SHEET NUMBER:

EC701

SHEET OF



1 **BASEMENT FLOOR PLAN - SYSTEMS PLAN**
SCALE: **1/4" = 1'-0"**

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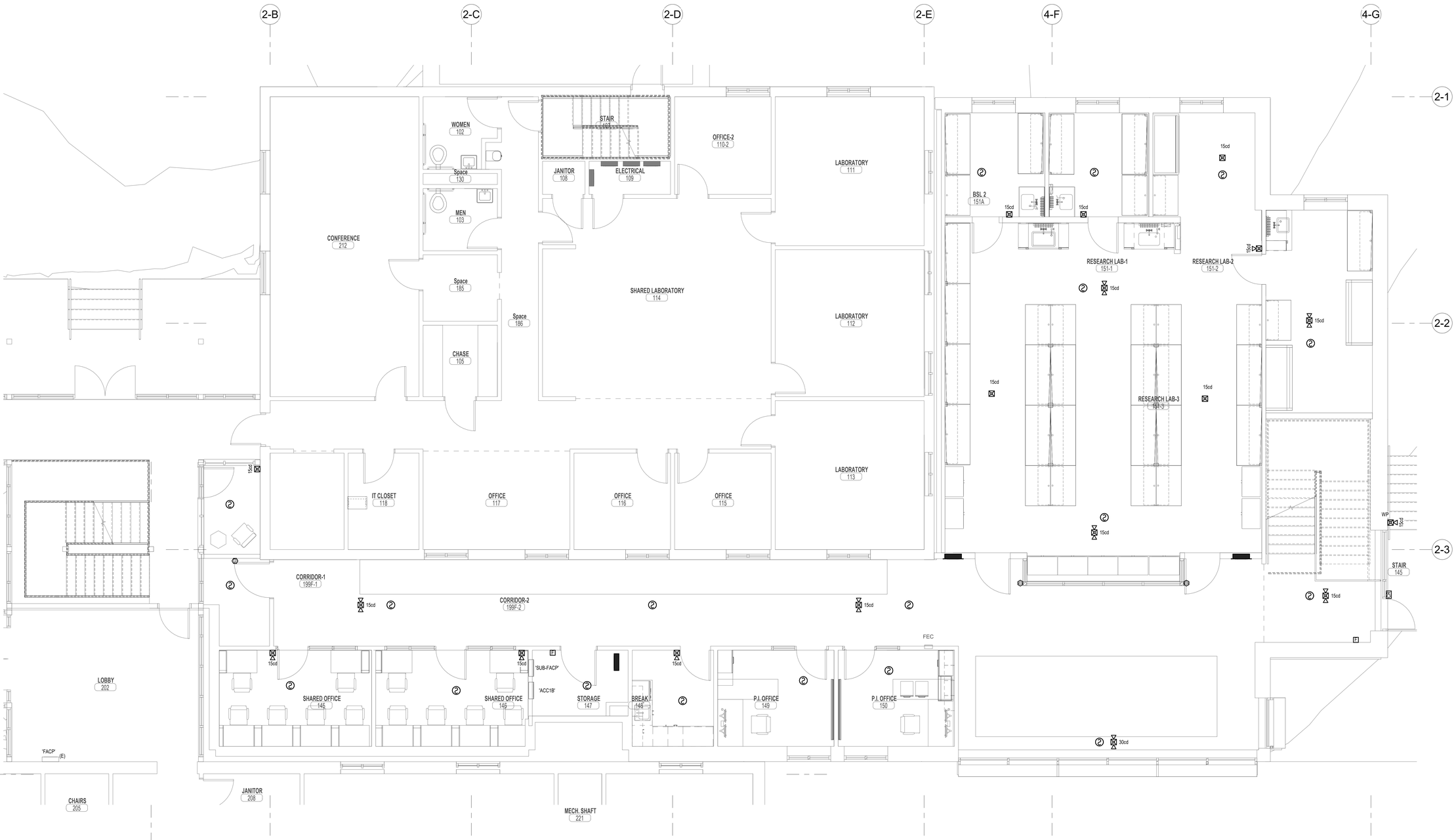
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EY100

SHEET OF

SYSTEMS GENERAL NOTES:

1. COORDINATE ALL WALL MOUNTED LOCATIONS WITH THE ARCHITECT.
2. DO NOT LOCATE ANY FIRE ALARM DEVICES BEHIND DOORS OR SHELVING. REFER TO THE ARCHITECTURAL DRAWINGS FOR SHELVING LOCATIONS.
3. THE DIVISION 28 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS, AND CONDUIT RUNS.
4. ALL CONDUITS THAT TERMINATE ABOVE THE CEILING SHALL TERMINATE WITH NYLON BUSHING.
5. CONTRACTOR SHALL COORDINATE ALL CEILING MOUNTED DEVICES WITH THE LIGHTING PLANS. RELOCATE DEVICES AS NECESSARY. RELOCATED DEVICES SHALL COMPLY WITH ALL NFPA SPACING REQUIREMENTS.
6. ALL FIRE ALARM DEVICE LOCATIONS, EQUIPMENT LOCATIONS, RISER DIAGRAM, ETC., ARE SCHEMATIC IN NATURE AND ARE SHOWN TO PROVIDE INTENT OF THE FIRE ALARM SYSTEM TO BE PROVIDED. FIRE ALARM SYSTEM SUPPLIER SHALL PROVIDE BID AND SHOP DRAWINGS THAT INCLUDE A FULL CODE COMPLIANT DESIGN INCLUDING ALL NOTIFICATION AND INITIATION DEVICES REQUIRED WHETHER SHOWN OR NOT.

KEYED NOTES (#)



1 **LEVEL 1 FLOOR PLAN - SYSTEMS PLAN**
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SHEET NUMBER: EY101

SHEET OF



1 **LEVEL 2 FLOOR PLAN - SYSTEMS PLAN**
SCALE: **1/4" = 1'-0"**

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SHEET TITLE:
LEVEL 2 FLOOR PLAN - SYSTEMS PLAN

SHEET NUMBER:
EY102

SHEET OF

ACCESS CONTROL COORDINATION REQUIREMENTS:

CODE REFERENCES AND REQUIREMENTS:
2016 NFPA 101 - LIFE SAFETY CODE
- 7.2.1.5.6(5) REQUIRES THAT LOSS OF POWER WILL UNLOCK THE ELECTRICALLY CONTROLLED DOOR HARDWARE.
  7.2.1.6.2.(4) REQUIRES THAT ACTIVATION OF THE BUILDING FIRE ALARM SYSTEM UNLOCK ALL DOORS LOCATED IN THE PATH OF EGRESS. 2016 NFPA 80 - FIRE DOORS AND OTHER OPENING PROTECTIVES

2016 NFPA 60 - FIRE DOORS AND OTHER OPENING PROTECTIVES
- 6.1.3.4 REQUIRES THAT POWER OPERATED FIRE DOORS HAVE A RELEASING DEVICE TO AUTOMATICALLY RELEASE POWER UPON FIRE ALARM.
- 6.4.4.3.3 REQUIRES THAT FIRE RATED DOORS BE POSITIVELY LATCHED TO MAINTAIN THE FIRE RATING, ALL ELECTRIC STRIKES USED IN FIRE RATED DOORS MUST BE FAIL SECURE.

2012 IBC - INTERNATIONAL BUILDING CODE
- 1010.1.9.8 REQUIRES ELECTROMAGNETICALLY LOCKED DOORS HAVE A SENSOR RELEASE SWITCH EITHER AUTOMATIC OR BY A READILY ACCESSIBLE WALL MOUNTED PUSHBUTTON TO RELEASE THE LOCK WITHIN 5' OF THE DOOR.

INTEGRATION WITH FIRE ALARM
ALL MAGNETIC LOCKS SHALL BE UNLOCKED DURING A GENERAL FIRE ALARM. THIS ACTION IS NOT REQUIRED IF SYSTEM IS IN ALARM BY MEANS OF A MANUAL PULL STATION. AUTOMATIC DETECTION DEVICES SUCH AS SMOKE DETECTORS OR SPRINKLER FLOW REQUIRE UNLOCKING AND THE DOOR MUST REMAIN UNLOCKED UNTIL FIRE ALARM SYSTEM RESET. CONTRACTOR SHALL INCLUDE ALL FIRE ALARM INTERFACE EQUIPMENT SUCH AS ADDRESSABLE CONTROL MODULES OR BY CONTACT CLOSURE SIGNALING TO THE ACCESS CONTROL PANELS AS NECESSARY TO MEET THE CODE REQUIREMENTS. ALL DOORS IN STAIRWELLS MUST ALLOW FOR RE-ENTRY.

TO ENSURE A COMPLETE AND OPERATING ACCESS CONTROL SYSTEM AND TO ELIMINATE DELAYS, INSUFFICIENT OR UNNECESSARY WORK BY ALL OF THE ENTITIES INVOLVED, THE FOLLOWING STEPS SHALL BE COMPLETED. THE FAILURE TO DO SO RESULTING IN ADDED COSTS AND LOST TIME WILL BE BORN SOLELY BY THE CONTRACTOR. NO ADDITIONAL PAYMENTS WILL BE MADE BY THE OWNER TO COVER WORK DESCRIBED BELOW.

DURING THE BIDDING PROCESS:
1. THE ELECTRICAL CONTRACTOR SHALL REVIEW THE FLOORPLAN DRAWINGS AND DETAILS ON THIS SHEET. THE FLOORPLANS WILL INDICATE WHICH DOORS HAVE ACCESS CONTROL EQUIPMENT REQUIRING ROUGH-IN. DEVICE LOCATIONS REQUIRING JUNCTION BOXES WILL BE SHOWN ON THE FLOORPLANS, BUT ALL CONDUIT AND HARDWARE REQUIREMENTS CAN ONLY BE DETERMINED BY REFERRING TO THE SPECIFIC DOOR ROUGH-IN DETAILS AND THE ARCHITECTURAL DOOR HARDWARE SPECIFICATION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
2. THE ELECTRICAL CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DOOR HARDWARE SCHEDULE, DOOR HARDWARE SPECIFICATIONS, AND DEFINED EGRESS PATHS. IDENTIFY ACCESS CONTROLLED DOORS LOCATED IN FIRE RATED WALLS AND IN PATHS OF EGRESS REQUIRING ADDITIONAL CONTROL DEVICES.
3. THE ELECTRICAL CONTRACTOR SHALL VERIFY WHICH DOORS USING AN ELECTRIFIED EXIT DEVICE WILL REQUIRE 120V AT THE DOOR. THIS IS MANUFACTURER SPECIFIC AND MUST BE CONFIRMED WITH THE GENERAL CONTRACTOR ACCORDING TO WHICH HARDWARE SUPPLIER BEING USED.

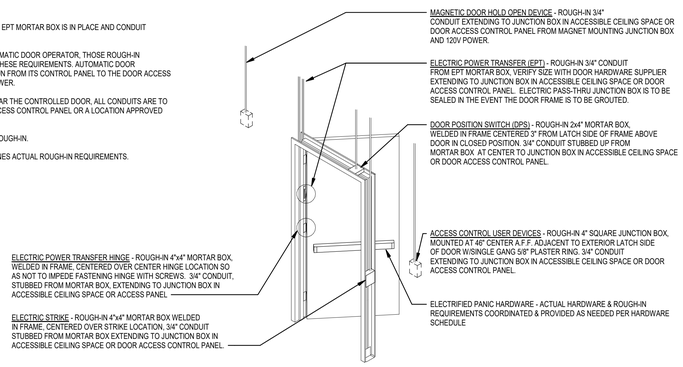
POST-BID, DURING THE SUBMITTAL PROCESS:
4. DURING THE SUBMITTAL PROCESS, THE ELECTRICAL CONTRACTOR SHALL REVIEW THE APPROVED DOOR HARDWARE SUBMITTAL TO CONFIRM THE FINAL HARDWARE SETS PRIOR TO ANY ROUGH-IN. ANY QUESTIONS SHALL BE ISSUED BY FORMAL RFI.
5. MEET WITH THE ACCESS CONTROL VENDOR TO REVIEW ALL FINAL INTEGRATION AND ROUGH-IN REQUIREMENTS. ONLY AFTER CONFIRMING THE FINAL DOOR HARDWARE AND ACCESS CONTROL SYSTEM REQUIREMENTS SHALL ANY ROUGH-IN WORK BEGIN.

GENERAL NOTES:

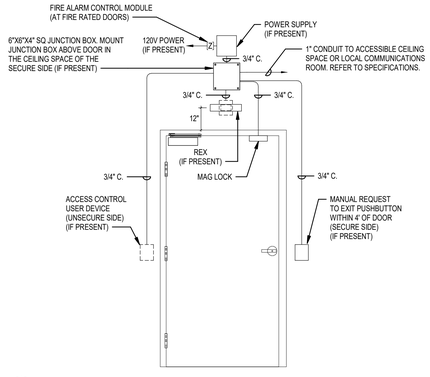
1. THE DOOR DETAILS SHOWN BELOW ARE GENERAL ROUGH-IN DETAILS AND NOT ALL DEVICES SHOWN MAY BE PRESENT FOR EACH DOOR. CONTRACTOR SHALL REFER TO THE DOOR HARDWARE SCHEDULE IN THE ARCHITECTS DRAWINGS AND SPECS TO DETERMINE WHAT DEVICES ARE PRESENT FOR EACH DOOR REQUIRING CARD ACCESS DOOR EQUIPMENT.
2. NOT ALL DOOR STYLE DETAILS SHOWN BELOW MAY BE INCLUDED IN THE PROJECT.
3. ALL CONDUIT SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
4. THE DOOR ROUGH-IN INFORMATION SHOWN ON THESE DRAWINGS ARE SCHEMATIC IN NATURE AND CANNOT ACCOUNT FOR ALL SPECIFIC VENDOR REQUIREMENTS, OR ACTUAL DOOR HARDWARE PROVIDED. COORDINATE SPECIFIC LOCATIONS WITH SECURITY CONTRACTOR AND APPROVED DOOR HARDWARE SCHEDULES PRIOR TO ROUGH-IN. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE CONDUIT RACEWAY SYSTEM AT THE DOOR AND BACK TO LOCAL ELECTRICAL ROOM.
5. IF REX IS NOT INCLUDED IN DOOR HANDLE OR EXIT DEVICE, PROVIDE BOX FOR WALL MOUNTED REX DEVICE. VERIFY WITH DOOR HARDWARE PRIOR TO ROUGH-IN.
6. PROVIDE CONDUIT AND DEVICE BACK BOX ROUGH-IN AT ALL CARD READER DOOR LOCATIONS. CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED AND ALL BOXES SHALL BE 4 SQUARE WITH A SINGLE GANG MUD RING FOR DEVICES OR JUST A SINGLE GANG BOX IF INSTALLED AT THE DOOR FRAME.
7. A SINGLE FIRE ALARM CONTROL MODULE MAY BE USED TO CONTROL THE POWER TO MULTIPLE DOORS IF COORDINATED WITH THE ACCESS CONTROL SYSTEM VENDOR TO WIRE DOORS SEPARATE FROM OTHER DOORS TOGETHER ON THE SAME POWER SUPPLY LOOP.
8. IF NO ACCESSIBLE CEILING SPACE IS NEAR THE CONTROLLED DOOR, ALL CONDUITS ARE TO BE RUN CONTINUOUS TO THE DOOR ACCESS CONTROL PANEL UNLESS A LOCATION IS DETERMINED TO BE ACCEPTABLE TO THE ENGINEER PRIOR TO INSTALLATION.

GENERAL NOTES:

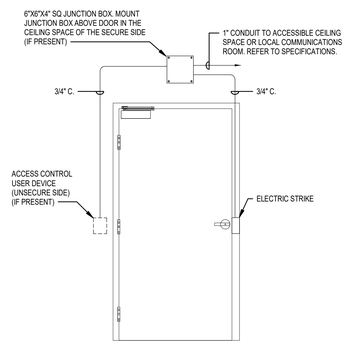
1. IF DOOR IS TO BE GROUTED MAKE SURE EPT MORTAR BOX IS IN PLACE AND CONDUIT CONNECTED AND SEALED.
2. IF DOOR IS TO BE EQUIPPED WITH AUTOMATIC DOOR OPERATOR, THOSE ROUGH-IN PROVISIONS SHALL BE IN ADDITION TO THESE REQUIREMENTS. AUTOMATIC DOOR OPERATORS SHALL HAVE COMPLETE RUN FROM ITS CONTROL PANEL TO THE DOOR ACCESS CONTROL PANEL AND INCLUDE 120V POWER.
3. IF NO ACCESSIBLE CEILING SPACE IS NEAR THE CONTROLLED DOOR, ALL CONDUITS ARE TO BE RUN CONTINUOUS TO THE DOOR ACCESS CONTROL PANEL OR A LOCATION APPROVED BY THE OWNER.
4. FOR DOUBLE DOORS, DUPLICATE THE ROUGH-IN.
5. DOOR HARDWARE SCHEDULE DETERMINES ACTUAL ROUGH-IN REQUIREMENTS.



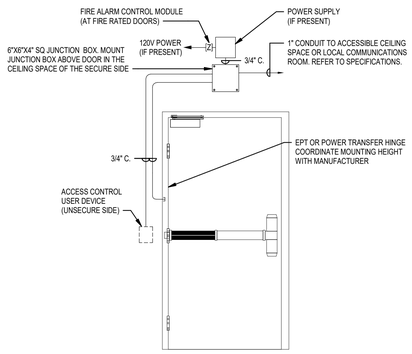
4 TYPICAL BOX AND CONDUIT REQUIREMENTS ROUGH-IN DETAIL
SCALE: NTS



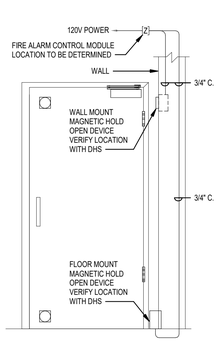
5 TYPICAL ELECTRO-MAGNETIC LOCK ROUGH-IN DETAIL
SCALE: NTS
M (SYMBOL)



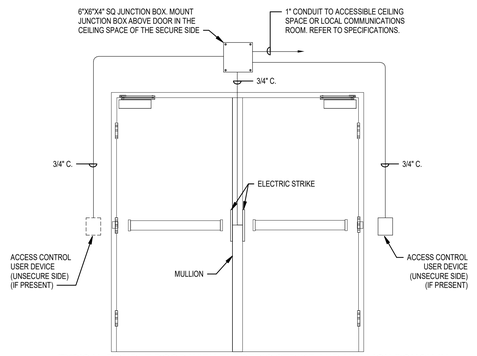
6 TYPICAL ELECTRIC STRIKE ROUGH-IN DETAIL
SCALE: NTS
S (SYMBOL)



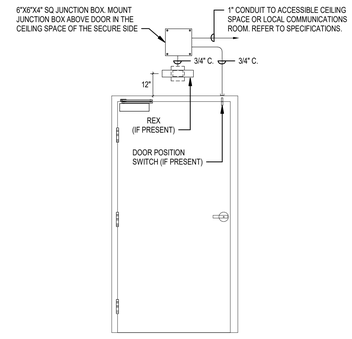
7 TYPICAL ELECTRIFIED PANIC HARDWARE ROUGH-IN DETAIL
SCALE: NTS
EP (SYMBOL)



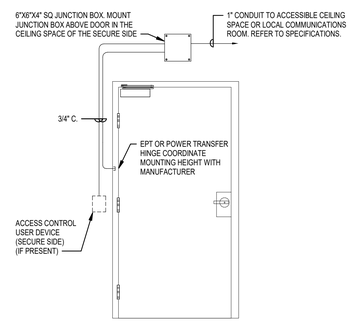
8 TYPICAL MAGNETIC DOOR HOLD OPEN DEVICE ROUGH-IN DETAIL
SCALE: NTS
D (SYMBOL)



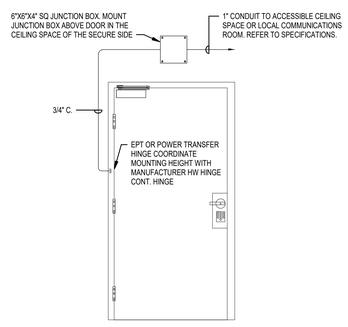
9 TYPICAL DOUBLE DOOR WITH ELECTRIC STRIKE AND MULLION ROUGH-IN DETAIL
SCALE: NTS
S S (SYMBOL)



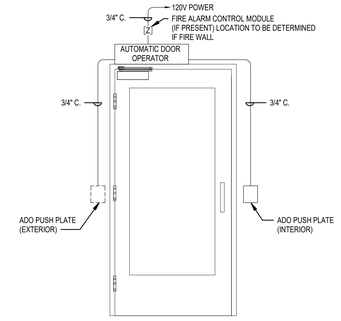
10 TYPICAL DOOR POSITION SWITCH ROUGH-IN DETAIL
SCALE: NTS
D (SYMBOL)



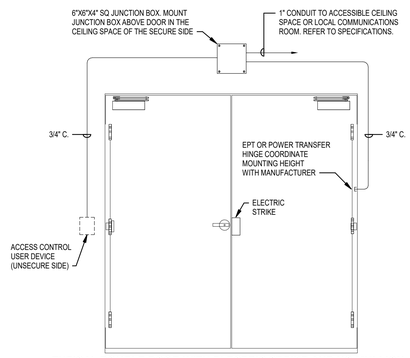
11 TYPICAL ELECTRIFIED LEVER ROUGH-IN DETAIL
SCALE: NTS
EP (SYMBOL)



12 TYPICAL INTEGRATED LOCKSET DOOR ROUGH-IN DETAIL
SCALE: NTS
L (SYMBOL)



13 TYPICAL AUTOMATIC DOOR OPERATOR ROUGH-IN DETAIL
SCALE: NTS
ADO (SYMBOL)



14 TYPICAL DOUBLE DOOR WITH ELECTRIC STRIKE AND NO MULLION ROUGH-IN DETAIL
SCALE: NTS
S S (SYMBOL)

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EDA PROJECT NUMBER: 221011

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PROJECT TITLE:
CVRTI BUILDING ADDITION

REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

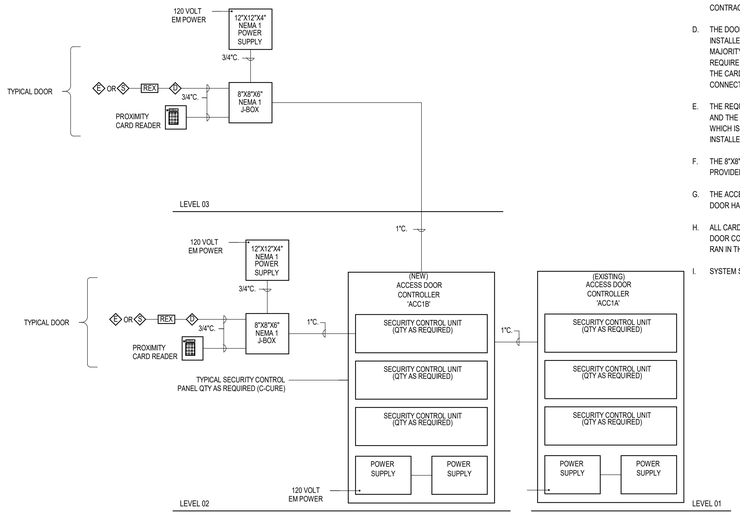
ISSUE DATE: 12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER: 22294

SHEET TITLE:
ACCESS CONTROL DOOR ROUGH-IN DETAILS

SHEET NUMBER: EY501

SHEET OF



2 CARD ACCESS RISER DIAGRAM
SCALE: NONE

CARD ACCESS SYSTEM GENERAL NOTES:

A. THE CONTRACTOR SHALL PROVIDE A COMPETE RACEWAY SYSTEM FOR THIS SYSTEM AS SHOWN IN THE RISER DIAGRAM. THE CONTRACTOR SHALL EXTEND A CONDUIT FROM EACH DOOR BACK TO THE DOOR CONTROLLERS WHICH WILL BE LOCATED IN THE COMMUNICATIONS ROOM ON THE CORRESPONDING FLOOR. COORDINATE THE CONDUIT ROUGH-IN WITH THE CARD ACCESS SYSTEM CONTRACTOR.

B. THE ACCESS DOOR CONTROLLERS SHALL BE INSTALLED INTO A 24"X24"X9" TERMINAL CABINET. PROVIDE THE NUMBER OF ACCESS DOOR CONTROLLERS AND CABINETS NECESSARY TO HANDLE ALL DOORS REQUIRING CARD ACCESS.

C. THE POWER SUPPLY FOR THE DOOR LATCHES SHALL BE FURNISHED BY THE DOOR HARDWARE SUPPLIER AND INSTALLED BY THE DIVISION 26 CONTRACTOR.

D. THE DOOR CONTACT SWITCH WILL BE FURNISHED BY THE DOOR HARDWARE INSTALLER AND WILL BE LOCATED IN THE HINGE OF THE DOOR IN THE MAJORITY OF THE DOORS. HOWEVER, THERE ARE A FEW DOORS THAT REQUIRE THE DOOR POSITION SWITCH TO BE LOCATED IN THE DOOR JAMB. THE CARD ACCESS SYSTEM INSTALLER SHALL MAKE ALL WIRING CONNECTIONS.

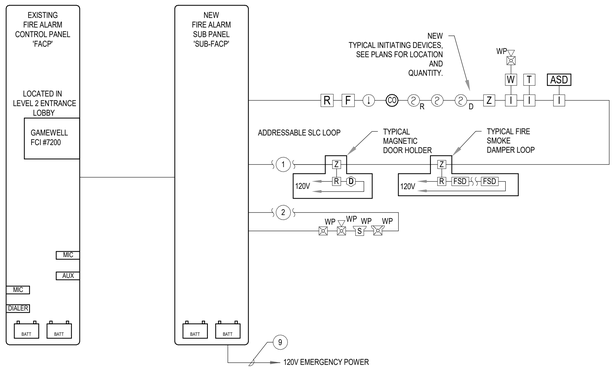
E. THE REQUEST FOR EXIST DEVICE WILL BE LOCATED IN THE DOOR HANDSET AND THE DOOR HANDSET WILL BE ELECTRIFIED BY THE POWER SUPPLY WHICH IS SHOWN ON THE RISER DIAGRAM. THE CARD ACCESS SYSTEM INSTALLER SHALL MAKE ALL WIRING CONNECTIONS TO THESE DEVICES.

F. THE 8"X8"X6" NEMA 1 JUNCTION BOX LOCATED AT EACH DOOR SHALL BE PROVIDED BY THE DIVISION 26 CONTRACTOR.

G. THE ACCESS DOOR INSTALLER SHALL COORDINATE ALL WORK WITH THE DOOR HARDWARE INSTALLER.

H. ALL CARD ACCESS SYSTEM WIRING SHALL RUN IN CONDUIT BACK TO THE DOOR CONTROLLERS ON THEIR PERSPECTIVE LEVEL. NO WIRING SHALL BE RAN IN THE CABLE TRAY.

I. SYSTEM SHALL CONFORM TO ALL U-CARD STANDARDS AND REQUIREMENTS.



1 FIRE ALARM SYSTEM RISER DIAGRAM1
SCALE: NTS

FIRE ALARM SYSTEM GENERAL NOTES:

1. PROVIDE MULTI-CHANNEL EMERGENCY VOICE/ ALARM ADDRESSABLE FIRE ALARM SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. THE SYSTEM SHALL BE PROGRAMMED SO THAT IF ANY INITIATION DEVICE IS ACTUATED, AN ALARM SIGNAL WHICH IS AUDIBLE THROUGHOUT THE BUILDING ZONES AS REQUIRED BY THE FIRE MARSHAL WILL BE ACTIVATED.
3. WIRING SHALL BE CONTINUOUS FROM ONE DEVICE TO ANOTHER. NO SPLICING IS ALLOWED. REFER TO THE SPECIFICATIONS FOR THE OWNER CABLING REQUIREMENTS.
4. PROVIDE FIRE ALARM MAP OF THE BUILDING SHOWING ALL FIRE ALARM SYSTEM DEVICES. MAP TO INCLUDE BUT NOT LIMITED TO THE FOLLOWING :
   A. EXACT LOCATIONS OF ALL DEVICES, FIRE ALARM CONTROL PANEL AND NAC PANELS.
   B. ROOM NAMES.
   C. ALL DEVICE ADDRESS SHALL BE INDICATED ON THE DRAWINGS.
   D. ALL MAPS SHALL BE 11"X17" . PROVIDE ONE SET IN A SLEEVED 3 RING BINDER. DELIVER 3 RING BINDER WITH MAPS TO THE ELECTRICAL ENGINEER FOR REVIEW AND APPROVAL AS PART OF THE CLOSE OUT DOCUMENTS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. FIRE ALARM RISER CABLING SHALL BE RUN IN CONDUIT. MINIMUM CONDUIT SIZE SHALL BE 3/4". ALL CONDUIT, JUNCTION BOXES AND FITTINGS SHALL BE RED IN COLOR AND LABELED PER ALL OWNER STANDARDS. ALL CABLING SHALL BE RATED FOR USE IN A FIRE ALARM SYSTEM PER ALL NFPA AND NEC REQUIREMENTS.
6. THE FIRE ALARM SYSTEM SUPPLIER SHALL PROVIDE COMPUTER DRAFTED SHOP DRAWINGS OF THE ENTIRE FIRE ALARM SYSTEM USING FLOOR PLANS PROVIDED BY THE ENGINEER. SHOP DRAWINGS TO INCLUDE BATTERY CALCULATIONS, VOLTAGE DROP CALCULATIONS, PLANS, SECTIONS, ELEVATIONS, FINAL DEVICE LOCATIONS AND ADDRESS, CONDUIT SIZE AND ROUTING AND ALL CONDUCTOR SIZES (SEE SPEC FOR OWNER STANDARDS). TYPICAL RISERS AND CALCULATIONS WILL NOT BE ACCEPTED. ALL SHOP DRAWINGS SHALL BE PREPARED AND APPROVED BY A NICET CERTIFIED FIRE ALARM TECHNICIAN, LEVEL III OR GREATER.
7. ALL NOTIFICATION DEVICE CIRCUIT VOLTAGE DROP CALCULATIONS SHALL BE DONE IN COMPLIANCE WITH NFPA 72. THE FIRE ALARM SYSTEM SUPPLIER TO DETERMINE THE AMOUNT NOTIFICATION DEVICE CIRCUITS THAT ARE REQUIRED BASED ON THE NUMBER OF NOTIFICATION DEVICES SHOWN ON THE DRAWINGS. THE FIRE ALARM SUPPLIER SHALL DETERMINE THE AMOUNT OF 'NAC' PANELS THAT WILL BE REQUIRED BASES ON THE QUANTITY OF NOTIFICATION DEVICE CIRCUITS.
8. FAN SHUT DOWN RELAY(S) IN THE AIR HANDLING EQUIPMENT SHALL BE NORMALLY ENERGIZED, AND CONNECTED THROUGH AND CONTROLLED BY A NORMALLY CLOSED CONTACT IN THE FIRE ALARM PANEL, OR A NORMALLY CLOSED CONTACT OF A REMOTE RELAY UNDER SUPERVISION BY THE MAIN PANEL. THE RELAYS WILL TRANSFER ON ALARM, AND SHALL NOT RESTORE UNTIL THE PANEL IS RESET.
9. AUDIBLE ANNUNCIATION DEVICES SHALL BE SILENCE-ABLE VIA THE FACP FRONT PANEL WHILE ALLOWING VISUAL ANNUNCIATION DEVICES TO REMAIN IN ALARM.
7. SUBMIT TO THE LOCAL AUTHORITY HAVING JURISDICTION, A MINIMUM OF TWO SETS OF PLANS, COMPLETE WITH MANUFACTURER CUT SHEETS, AND BATTERY CALCULATIONS AND FIRE COMMAND CENTER LAYOUT. PLANS MUST BE INK SIGNED BY A NICET LEVEL III OR BETTER IN FIRE ALARM SYSTEMS.
8. VERIFY AND COMPLY WITH ALL CURRENT STATE, LOCAL AND NATIONAL CODES. COMPLY WITH ALL NEC AND NFPA REQUIREMENTS.
9. UPON CLOSE OUT OF THE PROJECT THE FIRE ALARM SYSTEM SUPPLIER TO PROVIDE A CD(S) WITH CAD AND PDF DRAWINGS OF THE BUILDING FIRE ALARM MAP, CAD AND PDF AS-BUILT DRAWINGS, GENERAL PROGRAMMING, SITE SPECIFIC PROGRAMMING, O&M MANUALS FOR THE FIRE ALARM SYSTEM AND A TUTORIAL ON PROGRAMMING THE SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
10. CONTRACTOR IS RESPONSIBLE FOR MAKING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITRY AS REQUIRED ACCOMMODATING THE RELOCATION OF EQUIPMENT AND/OR DEVICES WHICH ARE AFFECTED BY ANY AUTHORIZED CHANGE. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
11. FIRE RATINGS SHALL BE MAINTAINED FOR ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION.
12. THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS FIRE ALARM CIRCUIT CONTROL. THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
13. POWER-LIMITED AND NONPOWER-LIMITED CIRCUIT WIRING MUST REMAIN SEPARATED IN CABINET. ALL POWER-LIMITED CIRCUIT WIRING MUST REMAIN AT LEAST 0.25 AWAY FROM ANY NON POWER- LIMITED CIRCUIT WIRING. FURTHERMORE, ALL POWER-LIMITED AND NONPOWER-LIMITED CIRCUIT WIRING MUST ENTER AND EXIT THE CABINET THROUGH DIFFERENT KNOCKOUTS AND/OR SEPARATE CONDUITS.
14. MAINTAIN 40 PERCENT CONDUIT FILL RATIO AS PER NEC REGULATIONS.
15. WHEN UTILIZING SHIELDED CABLES, TIE SHIELDS THROUGH AND INSULATE AT EACH JUNCTION BOX. INSULATE AND TAPE BACK TO BACK END OF JUNCTION BOX.
16. WHEN UTILIZING CLASS A CIRCUITS, SEPARATE OUTGOING AND RETURN CONDUCTORS BY A MINIMUM OF 12" WHERE RUN VERTICALLY AND 48" WHERE RUN HORIZONTALLY.
17. ALL FIRE ALARM CABLING SHALL BE ACCEPTABLE TO THE FIRE ALARM EQUIPMENT MANUFACTURER FOR THE INTENDED PURPOSE.
18. FIRE ALARM CABLE INSTALLED IN DUCTS, PLENUMS, AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE FPLP.
19. FIRE ALARM CABLES INSTALLED IN VERTICAL RUNS AND PENETRATE MORE THAN ONE FLOOR OR CABLES INSTALLED IN VERTICAL SHAFTS SHALL BE TYPE FPLR.
20. SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER CONSTRUCTION CLEAN-UP IS COMPLETED AND FINAL.
21. LOCATE SMOKE DETECTORS A MINIMUM OF THREE (3) FEET FROM MECHANICAL DIFFUSERS.
22. PROVIDE SYNCHRONIZATION OF ALL VISUAL NOTIFICATION APPLIANCE CIRCUITS.
23. VERIFY ALL FIELD SELECTABLE AUDIBILITY SETTINGS OF NOTIFICATION APPLIANCES WITH FIRE ALARM CONTRACTOR TO ENSURE. INTELLIGIBILITY
24. UPON COMPLETION OF THE FIRE ALARM SYSTEM INSTALLATION AND PROGRAMMING, THE INSTALLING CONTRACTOR SHALL PERFORM FINAL TESTING OF THE ENTIRE SYSTEM, PER ALL APPLICABLE CODES, AND SHALL COORDINATE AND PERFORM A FINAL FIRE ALARM SYSTEM INSPECTION.
25. INSTALLING CONTRACTOR SHALL, PHYSICALLY, LABEL ALL INITIATING DEVICES. THESE LABELS SHALL BE IN PLACE PRIOR TO START-UP AND TESTING.

KEYED NOTES: (#)

1. PROVIDE NOTIFICATION APPLIANCE CIRCUIT PANEL (NAC) INCLUDING SPEAKER/STROBE, SPEAKER, AND STROBE CIRCUIT MODULES, POWER SUPPLIES, AND BATTERIES IN QUANTITY AS NEEDED TO SERVE DEVICES SHOWN ON FLOORPLANS.

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PROJECT TITLE:
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REVISIONS:

#	Description	Date
1	50% CD Drawing	11.12.21

ISSUE DATE:
12 NOVEMBER 2021

UNIVERSITY PROJECT NUMBER:
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SHEET TITLE:
FIRE ALARM RISER DIAGRAM

SHEET NUMBER:
EY701

SHEET OF