LIGHTBRIDGE ACADEMY

8525 MONTAGUE ST., TAMPA, FL 33626

BULDING CODE NOTES

THIS PROJECT IS DESIGNED UNDER THE FOLLOWING CODES:
1. 2023 FLORIDA BUILDING CODE - BUILDING, 8TH EDITION
2. 2023 FLORIDA BUILDING CODE - MECHANICAL, 8TH EDITION
3. NATIONAL ELECTRICAL CODE, (NEC) 2020
4. 2023 FLORIDA BUILDING CODE - ENERGY CONSERVATION, 8TH EDITION
5. 2023 FLORIDA BUILDING CODE - PLUMBING, 8TH EDITION
6. 2023 FLORIDA BUILDING CODE - FUEL GAS, 8TH EDITION
7. 2023 FLORIDA BUILDING CODE - TEST PROTOCOLS FOR HIGH VELOCITY HURRICANE ZONE, 8TH EDITION
8. 2023 FLORIDA BUILDING CODE - ACCESSIBILITY, 8TH EDITION
9. 2023 FLORIDA FIRE PREVENTION CODE, 8TH EDITION
10. 2022 NATIONAL FIRE ALARM AND SIGNALING CODE, NFPA 72

FLOOD ZONE INFORMATION
BUILDING IS NOT LOCATED IN ANY A FLOOD HAZARD AREAS BASED ON INFORMATION FROM THE FEMA FLOOR MAP SERVICE.
THE LOWEST FINISHED FLOOR ELEVATION IS PLUS/MINUS 28.00 AMSL

PROJECT DESCRIPTION
NEW CONSTRUCTION OF A 11,500 SQUARE FOOT, SINGLE STORY FULLY SPRINKLED BUILDING TO SERVE AS A CHILDCARE FACILITY. FIRE SEPARATION DISTANCE IS GREATER THAN 30 FEET. ENTIRE CHILDCARE IS AT THE LEVEL OF EXIT DISCHARGE.

CONSTRUCTION TYPE: TYPE V B

USE AND OCCUPANCY (CHAPTER 3 - SECTION 305.2 AND SECTION 308.6)
THE BUILDING IS DESIGNED UNDER THE I-4 OCCUPANCY AS PER OF THE 2023 FBC, 8TH EDITION AND AS A DAY CARE OCCUPANCY UNDER SECTION 466 OF THE 2023 FBC, 8TH EDITION.
CHILDCARE FACILITY - I-4. THE BUILDING IS A CHILD DAY CARE CENTER WHICH IS CLASSIFIED AS A I-4 USE GROUP AS PER SECTION 308.6 OF FLBC.

OCCUPANCY (AS PER NFPA 101, 2023 FLORIDA FIRE PREVENTION CODE, 8TH EDITION)
THE BUILDING IS DESIGNED AS A MIXED OCCUPANCY INCLUDING A NEW ASSEMBLY OCCUPANCIES (CHAPTER 12), NEW EDUCATIONAL OCCUPANCIES (CHAPTER 14), NEW DAY-CARE OCCUPANCIES (CHAPTER 16) AS PER SECTION 101-15:6.1.14.2.2.

DAY CARE OCCUPANCIES (SECTION 366 (2023 FBC, 8TH EDITION)
SECTION 466.6 BUILDING TO BE PROTECTED BY AN AUTOMATIC EXTINGUISHING SYSTEM
SECTION 466.7 DETECTION AND ALARM SYSTEMS
SECTION 466.7.1.1 OCCUPANT NOTIFICATION SIGNALS SHALL BE AUDIBLE AND VISUAL SIGNALS IN ACCORDANCE WITH NFPA 72 AND FLORIDA BUILDING CODE, ACCESSIBILITY. THE GENERAL EVACUATION ALARM SIGNAL SHALL OPERATE THROUGHOUT THE ENTIRE BUILDING.
SECTION 466.7.1.2 THE FIRE ALARM SYSTEM SHALL BE ARRANGED TO TRANSMIT THE ALARM AUTOMATICALLY TO THE FIRE DEPARTMENT IN ACCORDANCE WITH NFPA 72.
SECTION 466.7.2 A SMOKE DETECTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72, WITH PLACEMENT OF DETECTORS IN THE CORRIDORS OF ALL FLOORS OCCUPIED BY THE DAY CARE OCCUPANCY. DETECTORS ALSO SHALL BE INSTALLED IN LOUNGES, RECREATION AREAS AND SLEEPING ROOMS IN THE DAY CARE OCCUPANCY.

GENERAL BUILDING HEIGHTS AND AREAS CHAPTER 5 (2023 FBC, 8TH EDITION)

		ALLOWED E	ALLOWED I-4	PROPOSED	COMPLIES
	SPRINKLED		YES		-
	CONSTRUCTION TYPE	ANY	ANY	TYPE VB	YES
TABLE 504.3	BUILDING HEIGHT	60 FEET	60 FEET	26' - 2"	YES
TABLE 504.4	BUILDING STORIES	2 STORIES	2 STORIES	1 STORY	YES
TABLE 506.2	BUILDING AREA	38,000 SF	36,000 SF	11,500 SF	YES

THE OCCUPANCIES ARE DESIGNED AS NONSEPARATED OCCUPANCIES AS PER SECTION 504 OF THE 2023 FBC, EIGHTH EDITION. SEE SHEET G104 FOR SPACE OCCUPANCY CLASSIFICATIONS.

TYPES OF CONSTRUCTION CHAPTER 6 (2023 FBC, 8TH EDITION)
BUILDING CONSTRUCTION TYPE IS VB

TABLE 601					
PRIMARY STRUCTURAL FRAME	EXTERIOR BEARING WALL	INTERIOR BEARING WALL	INTERIOR NON-BEARING WALL	FLOOR CONSTRUCTION	ROOF CONSTRUCTION
0	0	0	0	0	0

FIRE SEPARATION DISTANCE IS GREATER THAN 30', ALLOWING FOR NO FIRE RESISTANCE RATING AT EXTERIOR WALLS AS PER TABLE 601 OF THE 2023 FBC, EIGHTH EDITION.

FIRE AND SMOKE PROTECTION FEATURES - SEE DWG. G104 FOR CODE INFORMATION

INTERIOR FINISHES CHAPTER 8 (2023 FBC, 8TH EDITION)

TABLE 803.11			
GROUP	INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS	CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS	ROOMS AND ENCLOSED SPACES
E	B	C	C
I-4	B	B	B

DECORATIVE MATERIALS AND TRIM TO COMPLY WITH SECTION 803 OF THE 2023 FBC, EIGHTH EDITION.

1. 803.1.2 INTERIOR WALL AND CEILING FINISH MATERIALS. FINISH MATERIALS SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
2. 803.1.2. CLASS B. FLAME SPREAD INDEX 26-75; SMOKE-DEVELOPED INDEX 0-450.

FIRE PROTECTION SYSTEMS CHAPTER 9 (2023 FBC, 8TH EDITION)
903.2.6 GROUP I - AN AUTOMATIC SPRINKLER SYSTEM SHALL BE PROVIDED THROUGHOUT BUILDINGS WITH A GROUP I FIRE AREA.
906.1 - PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED IN GROUP E & I OCCUPANCIES.
907.2.3 GROUP E - A MANUAL FIRE ALARM SYSTEM THAT INITIATES THE OCCUPANT NOTIFICATION SIGNAL UTILIZING AN EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM MEETING THE REQUIREMENTS OF SECTION 907.5.2.2AND INSTALLED IN ACCORDANCE WITH SECTION 907.6SHALL BE INSTALLED IN GROUP E OCCUPANCIES. WHEN AUTOMATIC SPRINKLER SYSTEMS OR SMOKE DETECTORS ARE INSTALLED, SUCH SYSTEMS OR DETECTORS SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM.
907.2.6 GROUP I - A MANUAL FIRE ALARM SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH SECTION 907.5 SHALL BE INSTALLED IN GROUP I OCCUPANCIES. AN AUTOMATIC SMOKE DETECTION SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH SECTION 907.5SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 907.2.6.1, 907.2.6.2AND 907.2.6.3.3.
912.1 FIRE DEPARTMENT CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE NFPA STANDARD APPLICABLE TO THE SYSTEM DESIGN AND SHALL COMPLY WITH SECTIONS 912.2 THROUGH 912.6.

MEANS OF EGRESS - SEE DWG. G004 FOR CODE INFORMATION

WIND SPEEDS: ASCE 7-16
1. RISK CATEGORY II - 158 MPH

WIND LOADS CHAPTER 1609 (2023 FBC, 8TH EDITION)
1. ALL EXTERIOR BUILDING COMPONENTS INCLUDING GLAZING SYSTEMS, DOORS AND ROOF ARE DESIGNED TO COMPLY WITH THE REQUIREMENTS OF THIS SECTION. SEE THE STRUCTURAL DRAWINGS FOR MORE INFORMATION.

PLUMBING FIXTURE COUNT

	USE: A-3		USE: B	USE: E	USE: I-4	USE: S
WATER CLOSETS	54 OCCUPANTS		5	128 OCCUPANTS	62 OCCUPANTS	1 OCCUPANT
	1 MALE	1 FEMALE	1 PER 25	1 PER 50	1 PER 15	1 PER 100
	1 per 125	1 per 65	5/25 = .20	128/50 = 2.56	62/15 = 4.14	1/100 = .1
	27/125 = .22	27/65 = .42				
	22 + .42 = .64					
	1 WATER CLOSET		1 WATER CLOSET	3 WATER CLOSETS	5 WATER CLOSETS	1 WATER CLOSET
	1+1+3+5+1 = 17 WATER CLOSETS REQUIRED					
	16 WATER CLOSETS PROVIDED					

	USE: A-3	USE: B	USE: E	USE: I-4	USE: S
LAVATORIES	54 OCCUPANTS	5 OCCUPANTS	103 OCCUPANTS	73 OCCUPANTS	1 OCCUPANT
	1 PER 200	1 PER 25	1 PER 50	1 PER 15	1 PER 15
	54/200 = .27	5/25 = .20	128/50 = 2.56	62/15 = 4.14	1/15 = 0.07
	1 LAVATORY	1 LAVATORY	3 LAVATORIES	5 LAVATORIES	1 LAVATORY
	1+1+3+5+1 = 11 LAVATORIES REQUIRED				
	28 LAVATORIES PROVIDED				

BATHTUBS/SHOWERS	USE: I-4
	251 OCCUPANTS
	1 BATHTUB/SHOWER REQUIRED
	1 BATHTUB/SHOWER PROVIDED

DRINKING FOUNTAIN	USE: I-4
	251 OCCUPANTS
	1 PER 100
	234/100 = 2.32
	3 DRINKING FOUNTAINS REQUIRED
	3 DRINKING FOUNTAINS PROVIDED

OTHER	USE: I-4
	1 SERVICE SINK REQUIRED
	1 SERVICE SINK PROVIDED

PROJECT CONTACT LIST

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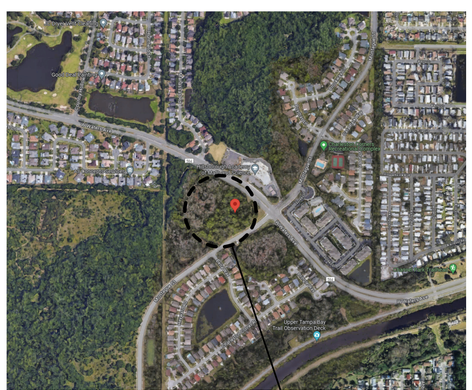
ABBREVIATIONS

A.C.T.	ACOUSTICAL CLG. TILE	EA.	EACH	LT.	LIGHT	REQD.	REQUIRED
ADJ.	ADJACENT	ELEC.	ELECTRICAL				
A.F.F.	ABOVE FINISH FLOOR	ELEV.	ELEVATOR	MAR.	MARBLE	SIM.	SIMILAR
ALUM.	ALUMINUM	EL.	ELEVATION	MAX.	MAXIMUM	SPEC.	SPECIFICATIONS
ANG.	ANGLE	EQUIP.	EQUIPMENT	MECH.	MECHANICAL	S.F.	SQUARE FEET
		EXIST.	EXISTING	MFR.	MANUFACTURER	ST. STL.	STAINLESS STEEL
BLK.	BLOCKING	EQ.	EQUAL	MIN.	MINIMUM	STL.	STEEL
BD.	BOARD	F.D.	FLOOR DRAIN	MISC.	MISCELLANEOUS	STRUCT.	STRUCTURAL
BLDG.	BUILDING			M.O.	MASONRY OPENING	SUSP.	SUSPENDED
B.O.	BOTTOM OF	FIN.	FINISH	MTL.	METAL		
		F.P.	FIREPROOF			T & S	TAPE & SPACKLE
CLG.	CEILING	F.P.S.C.	FIREPROOF SELF-CLOSING	NOM.	NOMINAL	TEL.	TELEPHONE
CL.	CENTER LINE	FL.	FLOOR	N.	NORTH	THK.	THICK
CONC.	CONCRETE	FR.	FIRE RATED	N.C.	NON-CORROSIVE	T.O.	TOP OF
CONST.	CONSTRUCTION	FLUOR.	FLUORESCENT	N.I.C.	NOT IN CONTRACT	TYP.	TYPICAL
C.M.U.	CONC. MASONRY UNIT	FT.	FEET	N.T.S.	NOT TO SCALE		
				NO.	NUMBER	U.C.	UNDERCUT
DIAG.	DIAGONAL	GALV.	GALVANIZED			UNF.	UNFINISHED
DEMO.	DEMOLITION	GA.	GAUGE	O.C.	ON CENTER	U.O.N.	UNLESS OTHERWISE NOTED
DET.	DETAIL	G.C.	GENERAL CONTRACTOR	OPNG.	OPENING		
D.F.	DRINKING FOUNTAIN	G.W.B.	GYPSUM WALL BOARD	OPP.	OPPOSITE	V.C.T.	VINYL COMPOSITION TILE
DIA.	DIAMETER	GYP.	GYPSUM			VEST.	VESTIBULE
DIM.	DIMENSION			PTD.	PAINTED	V.I.F.	VERIFY IN FIELD
DN.	DOWN	HT.	HEIGHT	PART.	PARTITION		
D.O.	DITTO	H.M.	HOLLOW METAL	PL.	PLATE	WD.	WOOD
DWG.	DRAWING			PLAM.	PLASTIC LAMINATE	W/	WITH
		INSUL.	INSULATION	PLYWD.	PLYWOOD	W/O	WITHOUT

PRODUCT APPROVALS

PRODUCT TYPE	MANUFACTURER	MODEL #/ SERIES	FLPA#	MIAMI-DADE NOA
EXTERIOR INSULATION FINISH SYSTEM	STO	STO THERM CI	FL21034.1	17-0727.03
HOLLOW METAL DOORS	ALLEGION-SCHLAGE LOCK COMPANY	H-SERIES	FL12400.3	-
HOLLOW METAL DOORS W/ LIGHT	ALLEGION-SCHLAGE LOCK COMPANY	H-SERIES	FL1592.1	-
ROOF SYSTEM	GAF	TIMBERLINE HD	FL10124.1	-
STOREFRONT DOORS	KAWNEER	350 IR / 500 IR, IMPACT, EXTERIOR	FL17053	-
STOREFRONT GLAZING SYSTEM	KAWNEER	TRIFAB 450, NON-IMPACT, INTERIOR	FL7237	-
VINYL-CLAD WOOD FRAME WINDOWS	ANDERSEN WINDOWS & DOORS	400 SERIES, IMPACT, EXTERIOR	FL15905	-

AERIAL LOCATION MAP N.T.S.



LIST OF DRAWINGS

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G002	ACCESSIBILITY SHEET	
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A404	ENLARGED BUILDING ELEVATIONS	3
A405	CASEWORK ELEVATIONS & DETAILS	3
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S102	ATTIC & ROOF FRAMING PLAN, SCHEDULES & NOTES	
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NOT FOR REGULATORY APPROVAL, PERMITTING, OR CONSTRUCTION

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Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT
LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
COVER SHEET

Rev. #	Revision Date	Revision Description
3	09/16/2024	LIGHTBRIDGE COMMENTS
1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
G000

GENERAL CONDITIONS AND NOTES:

1. THE CONSTRUCTION DOCUMENTS CONSIST OF THE WORKING DRAWINGS HEREIN, THE PROJECT MANUAL AND ALL ADDENDA, IN THE EVENT OF A CONFLICT OF DISCREPANCY BETWEEN THE DOCUMENTS, THE CONTRACTOR SHALL BRING SUCH CONFLICT OR DISCREPANCY TO THE ATTENTION OF THE ARCHITECT FOR CLARITY PRIOR TO SUBMITTING A BID.

2. THE ARCHITECT HAS BEEN RETAINED TO PERFORM AT NORMAL SERVICE STANDARDS FOR THE PREPARATION OF THESE PLANS AND SPECIFICATIONS. THE ARCHITECT HAS NOT BEEN RETAINED TO PERFORM OTHER SERVICES SUCH AS: CIVIL, SOILS, SPECIAL INSPECTIONS OR SERVICES SUCH AS LEGAL, ENVIRONMENTAL, REAL ESTATE, CONSTRUCTION CONTRACTING OR CONTRACTOR SUPERVISOR.

3. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR SOILS OR SUBSURFACE ENGINEERING OR CONDITIONS.

4. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR OBTAINING MUNICIPAL APPROVALS, SUCH AS BUILDING DEPARTMENT, ENVIRONMENTAL OR ZONING. THE ARCHITECT SHALL ASSIST THE OWNER AND CONTRACTOR IN THAT EFFORT AS THE NEED ARISES.

5. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTIONS OF THE OWNER OR CONTRACTOR. NOR HAS THE ARCHITECT BEEN RETAINED OR ARE THEY RESPONSIBLE FOR SUPERVISION OF THE CONTRACTOR, DESIGN OF SAFETY PROVISIONS AT THE SITE, CONSTRUCTION SCHEDULES OR MEANS AND METHODS OF THE CONSTRUCTION.

6. THE CONTRACTOR AND OWNER SHALL BE RESPONSIBLE FOR THE SAFE MAINTENANCE OF THE BUILDING AND IT'S FACILITIES.

7. ALL MATERIALS, FORMS, ASSEMBLIES AND METHODS OF CONSTRUCTION AND SERVICE EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND MEET ALL MUNICIPAL REQUIREMENTS.

8. INTENT OF THIS SPECIFICATION AND GENERAL CONDITIONS:
   MENTIONED HEREIN OR INDICATIONS ON DRAWINGS OR ARTICLES, OPERATIONS, METHODS OR MATERIALS, REQUIRES THAT THE CONTRACTOR PROVIDE EACH ITEM MENTIONED, INDICATED OR IMPLIED TO ACHIEVE THE INTENDED "PROJECT", BUILDING AND SITE WORK, ACCORDING TO THE METHODS OF BEST CONSTRUCTION PRACTICE (OR OF QUALITY OR METHOD SPECIFICALLY NOTED.) IN NO EVENT IS ANY ARTICLE, OPERATION, METHOD OR MATERIAL TO FALL BELOW BEST QUALITY AND FIRST CLASS TRADE. SAFETY STANDARDS AND ZONING AND CODE REQUIREMENTS. IN EVENT OF CONFLICTING STANDARDS, CODES OR SPECIFICATION REQUIREMENTS, THE METHOD, EQUIPMENT AND OPERATION OR MATERIAL OF BEST AND SAFEST QUALITY IS TO GOVERN THE WORK. ALL EQUIPMENT AND MATERIAL IS TO BE NEW AND IS TO BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE SPECIFIED. ALL WORK, ARTICLES, OPERATIONS, METHODS AND MATERIALS ARE TO BE APPROVED BY GOVERNING BUILDING OFFICIALS.

9. GENERAL RESPONSIBILITY:
   THE CONTRACTOR SHALL LAY OUT ALL WORK AND BE RESPONSIBLE FOR IT'S CORRECTNESS AND SAFETY AND SHALL PROVIDE ALL NECESSARY LINES, LEVELS AND DIMENSIONS AS NOTED. ALL MEASUREMENTS SHALL BE VERIFIED AT THE SITE AND BUILDING BY THE CONTRACTOR AND TRADES BEFORE ORDERING MATERIALS OR DOING ANY WORK. ANY DISCREPANCIES IN SITE, SOIL CONDITIONS, EXISTING BUILDING CONDITIONS, PLANS AND DETAILS MUST BE REPORTED TO THE ARCHITECT AT ONCE. NO CHANGES OR SUBSTITUTIONS MAY BE MADE UNLESS APPROVED BY OWNER AND ARCHITECT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE MAINTENANCE OF THE SITE, BUILDING AND ITS FACILITIES AND PROVIDE INSURANCE COVERAGE REQUIRED BY LAW AND GOOD STANDARD PRACTICE.

11. ALL MATERIALS, FORM ASSEMBLIES AND METHODS OF CONSTRUCTION AND SERVICE EQUIPMENT SHALL MEET THE FOLLOWING REQUIREMENTS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR:
    11.1 THEY SHALL HAVE BEEN ACCEPTED BY GOVERNING LOCAL AND STATE AGENCIES CODES AT THE EFFECTED DATE OF THE CONTRACT
    11.2. SHALL HAVE BEEN ACCEPTED FOR USE UNDER THE PRESCRIBED CODE TEST METHODS.

12. AT LEAST 48 HOURS WRITTEN NOTICE SHALL BE GIVEN TO THE BUILDING DEPARTMENT BEFORE COMMENCEMENT OF WORK AND A BUILDING PERMIT OBTAINED BEFORE STARTING ANY WORK.

13. ALTERED GRADES EXCEEDING 30 DEGREE SLOPE SHALL HAVE A RETAINING WALL FILED AND APPROVED BY THE DEPARTMENT OF BUILDING BEFORE START OF SUCH WORK.

14. ARCHITECT'S STATUS:
    THE ARCHITECT IS RESPONSIBLE ONLY TO THE EXTENT OF PROVIDING THE CONSTRUCTION DOCUMENTS, PLANS AND SPECIFICATIONS FOR THIS PROJECT SCOPE. THE ARCHITECT SHALL INTERPRET CONSTRUCTION DOCUMENTS TO THE BEST OF HIS KNOWLEDGE AND BASED ON HIS PROFESSIONAL OPINION, WILL DEFINE THEIR MEANING. THE ARCHITECT IS NOT RESPONSIBLE FOR MEANS AND METHODS OF THE CONTRACTOR AND IS NOT RESPONSIBLE FOR SAFETY ON THE JOB OR DELAYS IN CONSTRUCTION. THE ARCHITECT SHALL NOT BE RESPONSIBLE NOR BE HELD LIABLE FOR SITE OR CONSTRUCTION SAFETY CONDITIONS, CONSTRUCTION MEANS OR METHODS. THE ARCHITECT IS NOT RESPONSIBLE FOR ADMINISTRATION OF THE CONSTRUCTION. THE ARCHITECT IS NOT RESPONSIBLE FOR ACTIONS OF THE DEVELOPER, CONTRACTOR, SUB CONTRACTORS OR OWNER-USER.

15. SCOPE OF WORK:
    THE CONTRACTOR SHALL CONSTRUCT THE PROJECT AS DESCRIBED IN THE CONTRACT DOCUMENTS (THE WORKING DRAWINGS AND SPECIFICATIONS). THE WORD "ARCHITECT" SHALL DESCRIBE JUSTIN A. MIHALIK, A.I.A. THE PROJECT IS DESIGNED TO CONFORM WITH ALL GOVERNING BUILDING CODES AND ZONING REQUIREMENTS AND THOSE ENGAGED IN THE WORK ARE DIRECTED TO MEET THOSE ENDS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.

16. CONTRACTOR'S INSURANCE:
    THE CONTRACTOR SHALL FILE WITH THE OWNER, CERTIFICATES OF THE FOLLOWING COVERAGE INCLUDED BUT NOT LIMITED TO:
    A. WORKMEN'S COMPENSATION INSURANCE AS REQUIRED BY ALL GOVERNING LAW.
    B. PUBLIC LIABILITY INSURANCE COVERING ANY ONE PERSON AND COVERING SEVERAL PERSONS PER THE A.I.A. DOCUMENTS AS A MINIMUM. MORE COVERAGE MAY BE DESIRED OR NEEDED.
    C. PROPERTY DAMAGE INSURANCE: THE CONTRACTOR SHALL OBTAIN AND FILE WITH THE OWNER A CERTIFICATE FOR PROPERTY DAMAGE INSURANCE COVERING EACH ACCIDENT AND COVERING THE AGGREGATE OF OPERATIONS MINIMUM PER THE ABOVE MENTIONED A.I.A. DOCUMENT REQUIRES "AS A MINIMUM". MORE COVERAGE MAY BE DESIRED OR NEEDED.
    D. COMPREHENSIVE GL OF $2M+
    E. AUTO INSURANCE OF $1M
    F. WORKMAN'S COMP INSURANCE

OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES, ON A PRIMARY & NON-CONTRIBUTORY BASIS, WITH A WAIVER OF SUBROGATION, AND 30 DAYS ADVANCED WRITTEN NOTICE OF CANCELLATION.

THE CONTRACTOR SHALL OBTAIN INSURANCE AND PROVIDE CERTIFICATES OF INSURANCE TO THE OWNER. THE CERTIFICATES SHALL CONTAIN A 30 DAY NOTICE OF CANCELLATION CLAUSE ADDRESSED TO OWNER.

17. REQUIRED DOCUMENTATION:
    THE OWNER SHALL PROVIDE ALL NECESSARY SURVEYS, SOIL REPORTS AND PERTINENT DATA NEEDED OR REQUESTED BY THE ARCHITECT IN ORDER TO PREPARE PLANS AND SPECIFICATIONS.

18. OWNER'S INSURANCE:
    THE OWNER SHALL EFFECT AND MAINTAIN ALL INSURANCE COVERAGES AS REQUIRED.
    ALL INSURANCE DESCRIBED HEREIN IS A RECOMMENDED MINIMUM. MORE COVERAGE MAY BE NEEDED.

19. VISITING THE SITE:
    19.1 THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE CONDITIONS THAT EXIST. THE CONTRACTOR SHALL INFORM THE OWNER AND ARCHITECT OF ANY CONDITIONS WHICH ARE NOT COVERED BY THE WORKING DRAWINGS OR SPECIFICATIONS OR DISCREPANCIES IN EXISTING CONDITIONS.
    19.2 BLOOMFIELD DRIVE TO BE UNOBSTRUCTED AND NOT BLOCKED IN ANY WAY DURING CONSTRUCTION AND DEVELOPMENT OF THIS PARCEL.

20. LAYOUT OF WORK:
    A SURVEY IS TO BE MADE AVAILABLE FROM THE OWNER TO THE CONTRACTOR BEFORE STARTING WORK. THE CONTRACTOR SHALL LAY OUT THE WORK AND ESTABLISH ELEVATIONS, ACCURATELY MARKED ON SUBSTANTIAL BATTER BOARDS.

21. MEASUREMENTS AND DIMENSIONS:
    MEASUREMENTS AND DIMENSIONS, INDICATED ON THE DRAWINGS ARE NOMINAL. THEY SHALL BE ADHERED TO WHEREVER PRACTICAL. MAJOR DEVIATIONS IN DIMENSIONS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION BEFORE PROCEEDING WITH WORK. PRIOR TO CONTRACTOR'S PURCHASE OF ANY BUILT-IN EQUIPMENT OR CABINETS, THE CONTRACTOR IS TO TAKE FIELD DIMENSIONS AND SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS.

22. TAXES:
    THE CONTRACTOR IS LIABLE FOR ALL STATE AND FEDERAL EMPLOYER'S AND EMPLOYEE'S TAXES, SALES TAXES AND WITHHOLDING TAXES.

23. GUARANTEE:
    THE CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE BUILDING AND A CERTIFICATE OF OCCUPANCY IS OBTAINED.

24. CONTRACT DRAWINGS:
    THE CONTRACT DRAWINGS, WHICH ACCOMPANY AND FORM A PART OF THESE DOCUMENTS ARE ATTACHED HEREINAFTER. THE CONTRACT DRAWINGS DO NOT SHOW ALL THE DETAILS OF THE WORK AND ARE INTENDED ONLY TO ILLUSTRATE THE CHARACTER AND EXTENT OF THE WORK TO BE PERFORMED. ACCORDINGLY, THEY MAY BE SUPPLEMENTED DURING THE PERFORMANCE OF THE WORK BY THE ARCHITECT OR BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ARCHITECT TO THE EXTENT NECESSARY TO FURTHER ILLUSTRATE THE WORK AND SHALL, AT ALL TIMES, REMAIN THE POSSESSION OF THE ARCHITECT.

25. ADDITIONAL DRAWINGS:
    THE CONTRACTOR SHALL PROVIDE ALL SHOP DRAWINGS WHICH MAY BE NECESSARY OR REQUIRED. THE SIZE OF THE DRAWINGS, THE NUMBER OF COPIES AND THE DETAILS TO BE SHOWN THEREON SHALL BE AS APPROVED BY THE OWNER IN ADVANCE OF THEIR PREPARATION. BEFORE ISSUING ANY SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT PRINTS THEREOF, INCLUDING THE REQUIRED NUMBER OF REVISED PRINTS, UNTIL THE DRAWINGS ARE APPROVED BY THE OWNER. AFTER APPROVAL THEREOF, NO CHANGE SHALL BE MADE THEREON UNLESS APPROVED, IN WRITING, BY THE OWNER. TRACINGS OF SHOP DRAWINGS SHALL BE DELIVERED TO THE OWNER PRIOR TO FINAL PAYMENT.

26. LAWS AND ORDINANCES:
    IN ORDER TO EFFECTUATE THE WORK PROPERLY, THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF FEDERAL, STATE, MUNICIPAL AND DEPARTMENTAL LAWS, CODES ORDINANCES, RULES, REGULATIONS AND ORDERS WHICH WOULD AFFECT THE WORK AND ITS PERFORMANCE AND THOSE ENGAGED THEREIN. THE WORK IS TO CONFORM WITH ALL GOVERNING BUILDING CODES, AND ZONING REQUIREMENTS AND THOSE ENGAGED THEREIN ARE DIRECTED TO MEET THOSE ENDS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECTS & OWNER IMMEDIATELY.

27. APPROVALS:
    ANY APPROVAL BY THE ARCHITECT OR ANYTHING DONE OR PROPOSED TO BE DONE BY THE CONTRACTOR SHALL BE CONSTRUED MERELY TO MEAN THAT AT THAT TIME THE ARCHITECT KNOWS OF NO GOOD REASON FOR OBJECTING TO THERETO: AND NO SUCH APPROVAL SHALL RELIEVE THE CONTRACTOR FROM HIS FULL RESPONSIBILITY FOR THE COMPLETE AND ACCURATE PERFORMANCE OF THE WORK IN ACCORDANCE HEREWITH OR FROM ANY DUTY, OBLIGATION OR LIABILITY IMPOSED UPON HIM BY THE CONTRACT OR FROM RESPONSIBILITY FOR INJURIES TO PERSONS OR DAMAGE TO PROPERTY.

28. CONTRACTOR'S REPRESENTATIVE:
    DURING THE PERFORMANCE OF ANY WORK AT THE SITE, THE CONTRACTOR SHALL HAVE A REPRESENTATIVE PRESENT WHO SHALL BE AUTHORIZED BY THE CONTRACTOR TO SUPERVISE THE WORK AND BE RESPONSIBLE FOR SAFELY CONDUCTING OPERATIONS AND ACTIVITIES. THE SUPERVISOR SHOULD BE DEDICATED TO THE PROJECT FOR ITS DURATION AND NOT BE REPLACED WITHOUT 30 DAYS NOTICE TO THE OWNER.

29. INSPECTIONS:
    ALL CONTROLLED INSPECTIONS SHALL BE PERFORMED BY THE BUILDING DEPARTMENT. THE CONTRACTOR SHALL PROVIDE THE REQUIRED NOTICE FOR SAME AND BE PRESENT FOR ALL SUCH INSPECTIONS.

    THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE PERSON DESIGNATED, WITH AMPLE NOTICE, TO MAKE SUCH INSPECTIONS.

    REPORTS OF ALL INSPECTIONS OF MATERIALS AND REQUIRED TESTS SHALL BE FILED WITH THE OWNER WITH A SIGNED STATEMENT BY THE PERSON DESIGNATED FOR SUCH INSPECTION BEFORE FINAL PAYMENT.

    INSPECTIONS INCLUDE BUT SHALL NOT BE LIMITED TO:

    A. SUB SOIL TEST
    B. INSPECTION OF SUB-GRADE PRIOR TO INSTALLATION OF ANY FOOTINGS.
    C. PLACEMENT OF CONCRETE MATERIALS FOR STRUCTURAL ELEMENTS
    D. FOUNDATIONS
    E. FIRE STOPPING FOR PENETRATIONS
    F. ELECTRICAL, PLUMBING AND MECHANICAL.

30. FINAL INSPECTION:
    WHEN, IN THE OPINION OF THE CONTRACTOR, THE WORK IS COMPLETED AND READY FOR FINAL INSPECTION, HE SHALL NOTIFY THE OWNER AND BUILDING DEPARTMENT OFFICIAL AND THE OWNER EITHER IN PERSON OR BY A DESIGNATED REPRESENTATIVE, WILL INSPECT THE WORK. BEFORE A CERTIFICATE OF FINAL COMPLETION WILL BE ISSUED BY THE OWNER AND BUILDING DEPARTMENT OFFICIALS, ANY DEFECTS OR OMISSIONS NOTED ON THIS INSPECTION MUST BE MADE GOOD BY THE CONTRACTOR.

31. SURVEYS:
    FINAL SURVEY - AN ACCURATE AND COMPLETE PROPERTY SURVEY, MADE AND SEALED BY A PROFESSIONAL LICENSED LAND SURVEYOR, MAY BE REQUIRED. AFTER COMPLETION OF ALL WORK, THIS SURVEY MAY BE REQUIRED TO SHOW LOCATION OF NEW WORK, ELEVATION OF FLOOR LEVELS, ELEVATIONS OF FINISHED GRADES AND ELEVATIONS AT PROPERTY LINE INTERSECTIONS, LOCATION AND BOUNDARIES OF THE LOT, AND ALL BUILDINGS. IF MUNICIPAL OR OTHER AGENCIES REQUIRE SUCH A SURVEY, IT SHALL BE ORDERED BY THE CONTRACTOR AND PAID FOR BY THE OWNER.

    THE CONTRACTOR SHALL PROTECT AREAS ADJACENT TO THE WORK AND SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL MAINTAIN THE JOB SITE AND BUILDING IN A NEAT, CLEAN AND SAFE CONDITION AND SHALL, AT COMPLETION OF THE JOB, TURN OVER THE SITE AND BUILDING TO THE OWNERS IN A CONDITION SUITABLE TO MOVE IN, ALL SURFACES SHALL BE CLEAN AND READY FOR FURNISHING.

    THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE MAINTENANCE OF THE BUILDING AND ITS FACILITIES AND IS RESPONSIBLE FOR CONSTRUCTING THE WORK ACCORDING TO PLANS AND SPECIFICATIONS.

    THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS, CONDITIONS, NOTES, WORK, ETC. AT THE JOB SITE BEFORE ANY WORK IS STARTED, BE RESPONSIBLE FOR SAME AND REPORT ANY AND ALL DISCREPANCIES TO THE ARCHITECT BEFORE WORK IS STARTED WITH AMPLE TIME FOR CHANGES TO BE MADE.

    ALL PLANS ARE REQUIRED TO HAVE THE APPROVAL OF THE MUNICIPAL AUTHORITIES AND OTHER AGENCIES. THE PLANS ARE SUBJECT TO REVIEW AND COMMENT PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE ARCHITECT WILL SUPPLY THREE (3) COPIES OF SIGNED AND SEALED SETS OF PLANS FOR THE CONTRACTOR TO PRESENT TO MUNICIPAL AUTHORITIES. NO WORK IS TO BE DONE UNTIL A BUILDING PERMIT IS OBTAINED.

32. CHANGES TO THE BUILDING DESIGN:

    NO CHANGES ARE TO BE MADE TO THE BUILDING WHICH DEVIATE FROM THESE GENERAL CONDITIONS, TECHNICAL NOTES OR CONSTRUCTION DOCUMENTS, WITHOUT THE PRIOR APPROVAL OF THE ARCHITECT & OWNER.

33. WORK INCLUDED:

    THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO COMPLETE ALL WORK DESCRIBED WITHIN THE CONSTRUCTION DOCUMENTS.

3

Responsibility Matrix and Vendor Information - as of 9/10/2024

Items	Required or Recommended	Vendor	Supplied	Installed	Lead Time	Notes:
Access Control	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
All Low Voltage Wiring including Termination, Plugs, and Plates	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
Appliances	N/A	Local Supplier	**Franchisee**	Landlord	4-6 Weeks	Dryer: Gas Dryer preferred with Venting.
Artwork	Required	Effective	**Franchisee**	**Franchisee**	4-6 Weeks	
Bathroom Partitions	Recommended	Atlantic Partitions Co.	Landlord	Landlord		
BenQ TV's	Required	PCG	**Franchisee**	Landlord	4-6 Weeks	Wiring By Mellin Tech
Bulletin Boards/Chair Rail	N/A	GC	Landlord	Landlord		
Cabinetry	N/A	GC	Landlord	Landlord	12-16 Weeks	
Cubbies in Classrooms	Required	Beckers **or** Lakeshore	**Franchisee**	Landlord		
CCTV Cameras	Required	Watch Me Grow	**Franchisee**	**Franchisee**	8-12 Weeks	Wiring By Mellin Tech
CCTV Wiring	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
Classroom Furniture	Required	Beckers **or** Lakeshore	**Franchisee**	**Franchisee**	14-16 Weeks	
Corner Guards	Required	IPC Door and Wall Protection System	Landlord	Landlord	4-6 Weeks	
Door Releases	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
Facial Recognition	Required	Mellin Tech	**Franchisee**	Landlord	14-16 Weeks	Wiring By Mellin Tech
Finger Guards	Required	FingerSafe	Landlord	Landlord		MK1A and MK1B
Fire Alarm	N/A	GC	Landlord	Landlord		
HVAC Micron	Required	RGF	Landlord	Landlord	8-10 Weeks	
I.T. Rack Equipment	Required	PCG	**Franchisee**	**Franchisee**	4-6 Weeks	Wiring By Mellin Tech
Interior and Exterior Signage	Required	Effective	**Franchisee**	**Franchisee**	14-16 Weeks	
Interior and Exterior Signage Wiring	N/A	GC	Landlord	Landlord		Monument sign and Building sign
Internet Services	Required	Mellin Tech	**Franchisee**	**Franchisee**	14-20 Weeks	Wiring By Mellin Tech
Office Furniture	Required	WB Mason	**Franchisee**	**Franchisee**	8-10 Weeks	
PA Speaker and Amp	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
Panic Button	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
Phone Wiring	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
Phones	Required	Mellin Tech	**Franchisee**	Landlord	4-6 Weeks	Wiring By Mellin Tech
Playground Equipment	Required	Xceed **or** Horizon Concepts	**Franchisee**	**Franchisee**	14-16 Weeks	
Playground Fence	N/A	GC	Landlord	Landlord		
Playground Footings for Shade	N/A	GC	Landlord	Landlord		
Playground Shade and Pole	Required	Xceed **or** Horizon Concepts	**Franchisee**	**Franchisee**	14-16 Weeks	
Playground Surface	Required	Forever Lawn **or** Horizon Concepts	Landlord	Landlord	14-16 Weeks	
PT, TP, Soap Dispensers	Required	WB Mason	**Franchisee**	Landlord	4-6 Weeks	
Security System	Required	Mellin Tech	Landlord	Landlord		Wiring By Mellin Tech
Vinyl Wall Covering	Required	Koroseal	Landlord	Landlord	16 Weeks	
Water Filtration	Required	WB Mason	**Franchisee**	**Franchisee**	4-6 Weeks	
Window Treatments	Required	MAG Resources	**Franchisee**	**Franchisee**	8-10 Weeks	
Mechanical Equipment/Electrical Switching	Required	GC	Landlord	Landlord	45-55 Weeks	Ordered within 30 days of contract issue
Closeout Binder with As-Builts and Manuals/Maintenance	Required	GC	Landlord	Landlord		Prior to Punch List, walk Franchisee through how to operate their systems

Atlantic Partitions Co
908.788.4105 or 908.797.8168

Becker's School Supplies
Shari Tate; shari.tate@cjbinc.com
770.653.8952

Xceed Recreation Group, Inc
Alex Daubert; alex@xceedrecreation.com
717.965.2808

Effective Sign Works
Mike Sonlin; mike@effectivesignworks.com
609.747.9600 x 208
Heather Bates: heather@effectivesignworks.com
609.747.9600 x 202

Mellin Tech
Greg Mellin; greg@mellintech.com
763.208.9898

Power Consulting Group (PCG)
Wendy Tipton; wtipton@powerconsulting.com
212.202.5806
Tim Adams; tadams@powerconsulting.com
212.202.5815

Kintronics, Inc
Dennis Gallene; dennis@kintronics.com
914.944.3425 x 11

Watch me Grow
John Lewison; john.lewison@watchmegrow.com
360.359.4757

WB Mason
John Jacobson; john.jacobson@wbmason.com

HVAC - Microcon Units
Rom Laureano; rlaureano@rgf.com
561.318.4679

MAG Resources
Jason Giovanini
Account Manager
J2.giovanini@magresources.net
P. 330.294.0494 | C. 330.419.8699
www.magresources.net

Horizon Concepts
James P. Hines, CPSI
jhines@horizonconceptsinc.net
O 631-271-1963
C 516-864-1522

Forever Lawn
Robb Wolf; robb@foreverlawn.com
330.499.8873 / 330.806.7123

Koroseal
National Account; na@koroseal.com
866.628.2280

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www.colliersengineering.com

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

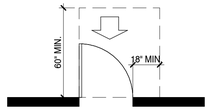
SHEET TITLE:

GENERAL CONDITIONS SHEET

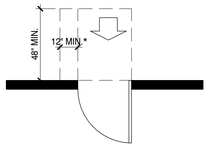
REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

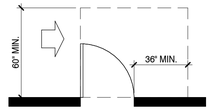
SHEET NO.
G001



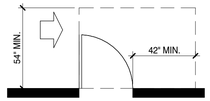
(a) FRONT APPROACH, PULL SIDE



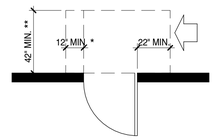
(b) FRONT APPROACH, PUSH SIDE



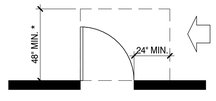
(c) HINGE APPROACH, PULL SIDE



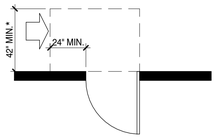
(d) HINGE APPROACH, PULL SIDE



(e) HINGE APPROACH, PUSH SIDE



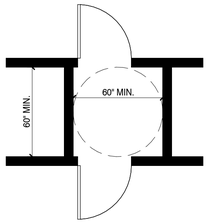
(f) LATCH APPROACH, PULL SIDE



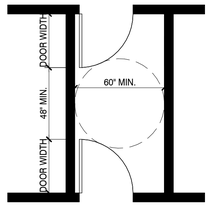
(g) LATCH APPROACH, PUSH SIDE

FIGURE 404.2.3.2

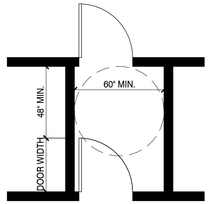
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS



PLAN (a)



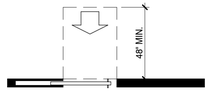
PLAN (b)



PLAN (c)

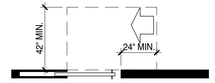
FIGURE 404.2.5.

TWO DOORS IN A SERIES



(a) FRONT APPROACH

(b) POCKET OR HINGE APPROACH



(c) STOP OR LATCH APPROACH

MANEUVERING CLEARANCE AT SLIDING AND FOLDING DOORS

SCALES

MANEUVERING CLEARANCES

SCALE: 1/4" = 1'-0"

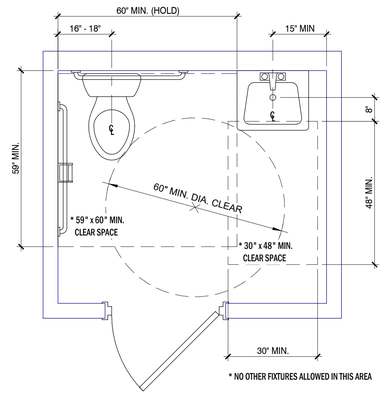


FIGURE 604.3
CLEARANCE FOR WATER CLOSET

FIGURE 305.3 & 306.3
CLEARANCE FOR LAVATORY

FIGURE 604.2 (a)
WATER CLOSET LOCATION

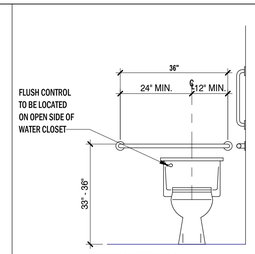


FIGURE 604.5.2 SECTION 609.4.1

REAR WALL GRAB BAR FOR WC

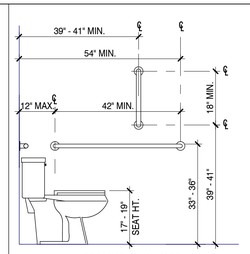


FIGURE 604.5.1 SECTION 609.4.4

SIDE WALL GRAB BAR FOR WC
WATER CLOSET SEAT HEIGHT

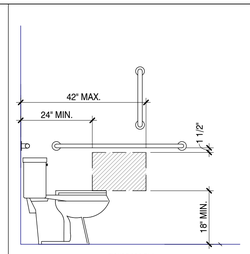


FIGURE 604.7(a)

DISPENSER OUTLET LOCATION

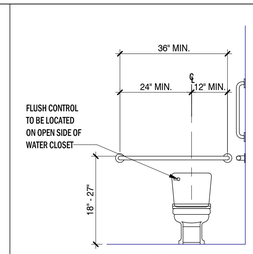


FIGURE 609.4.2 SECTION 609.4.1

CHILDREN'S POSITION FOR GRAB BAR

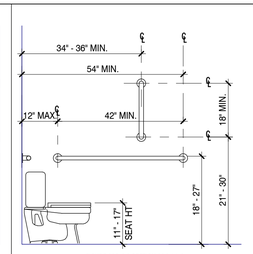


FIGURE 609.4.2 SECTION 604.11.4

CHILDREN'S POSITION FOR GRAB BAR

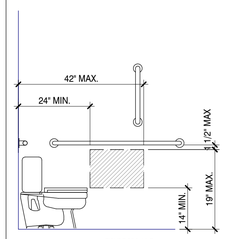
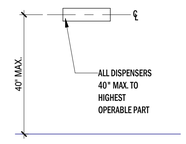


FIGURE 604.11.7

CHILDREN'S DISPENSER OUTLET LOCATION



DISPENSER HEIGHT

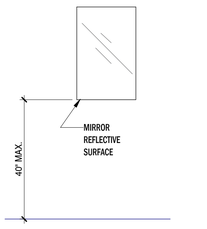


FIGURE 603.3

MIRROR LOCATION

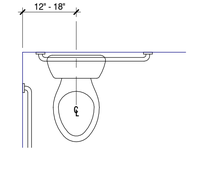


FIGURE 604.11.2

CHILDREN'S WATER CLOSET LOCATION

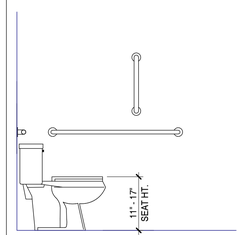


FIGURE 604.11.4

CHILDREN'S WATER CLOSET HEIGHT

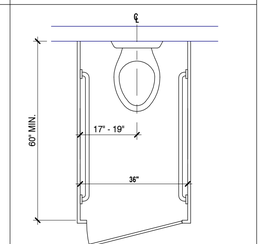


FIGURE 604.10

AMBULATORY ACCESSIBLE COMPARTMENT

1. DIMENSIONS SHOWN DESCRIBE MINIMUM REQUIREMENTS ONLY. REFER TO CONSTRUCTION DOCUMENTS FOR SIZE AND LOCATIONS FOR SPECIFIC FIXTURES AND ACCESSORIES

2. REPORTED MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO HIGHEST OPERABLE CONTROL.

NOTES

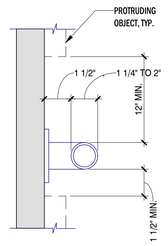


FIGURE 609.2(a) & 609.3

SIZE AND SPACING OF GRAB BARS

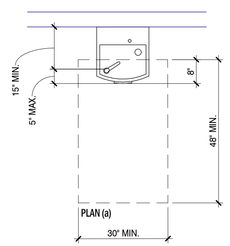
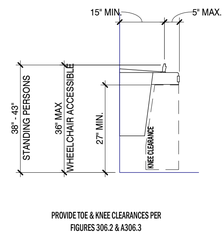


FIGURE 602.5(a)

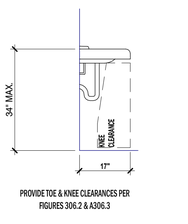
DRINKING FOUNTAIN SPOUT LOCATION



PROVIDE TOE & KNEE CLEARANCES PER FIGURES 306.2 & A306.3

FIGURE 602.5(b)

DRINKING FOUNTAIN SPOUT LOCATION



PROVIDE TOE & KNEE CLEARANCES PER FIGURES 306.2 & A306.3

FIGURE 606.3(b)

HEIGHT OF LAVATORIES AND SINKS

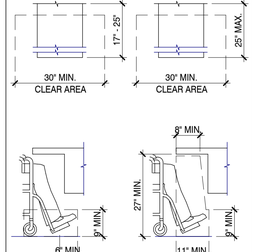


FIGURE 306.2

TOE CLEARANCE

FIGURE 306.3

KNEE CLEARANCE

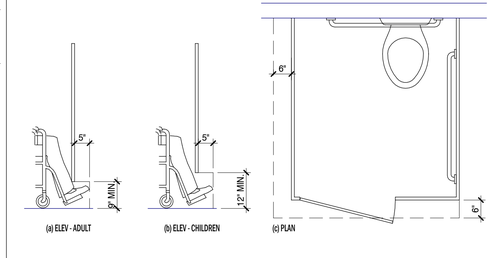


FIGURE 604.9.5

WHEELCHAIR ACCESSIBLE
COMPARTMENT TOE CLEARANCE

TOILET ROOM, FIXTURES AND ACCESSORIES

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

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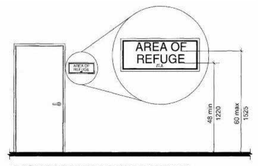
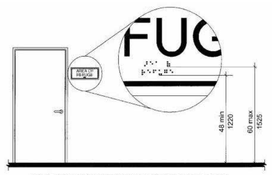


Note: For braille character mounting height see Section 703.4.5

FIG. 703.3.10
HEIGHT OF RAISED CHARACTERS ABOVE FLOOR



Note: For raised character mounting height see Section 703.3.10

FIG. 703.4.5
HEIGHT OF BRAILLE CHARACTERS ABOVE FLOOR

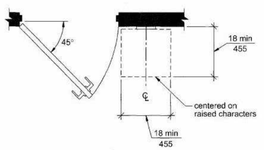
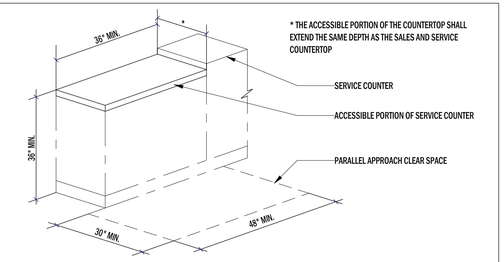


FIG. 703.3.11
LOCATION OF SIGNS AT DOORS

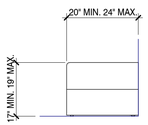
BRAILLE SIGNAGE DETAIL

N.T.S.

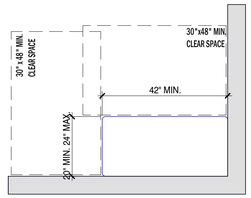


SECTION 904
ACCESSIBLE PORTION OF SERVICE COUNTER

SERVICE COUNTER | SCALE: 1/2" = 1'-0"



SECTION 903 (b)
BENCH HEIGHT



SECTION 903 (a)
BENCH SIZES & OPTIONS FOR CLEAR FLOOR SPACES

BENCHES

BENCHES | SCALE: 1/2" = 1'-0"

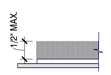


FIGURE 302.2

CARPET ON FLOOR SURFACES

FIGURE 303.2

CARPET ON FLOOR SURFACES

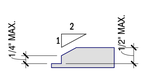


FIGURE 303.3 (a)

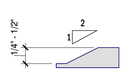
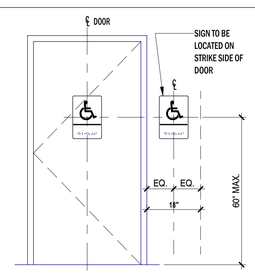


FIGURE 303.3 (b)

BEVELED CHANGES IN LEVEL

LEVEL CHANGES | SCALE: 6" = 1'-0"



TOILET ROOM SIGNAGE ELEVATION

UNISEX TOILET ROOM | WOMEN TOILET ROOM | MEN TOILET ROOM

TOILET ROOM SIGNAGE

SIGNS | SCALE: 1/2" = 1'-0"

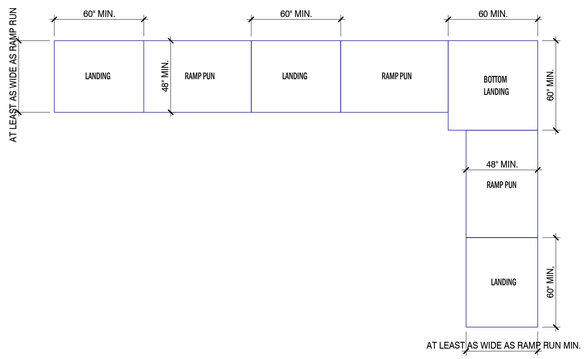


FIGURE 405.7 AND SECTION 405

RAMP LANDINGS

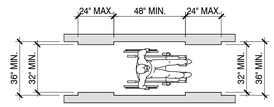


FIGURE 403.5

CLEAR WIDTH OF AN ACCESSIBLE ROUTE

ACCESSIBLE ROUTES

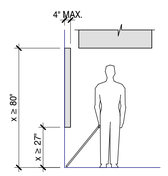


FIGURE 307.2

LIMITS OF PROTRUDING OBJECTS

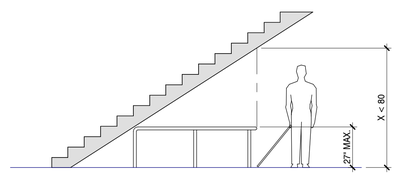


FIGURE 307.4

REDUCED VERTICAL CLEARANCE

PROTRUDING OBJECTS

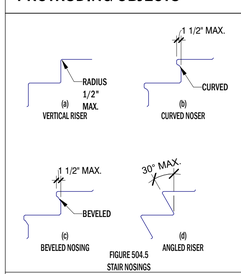


FIGURE 504.5
STAIR NOSINGS

STAIR NOSINGS

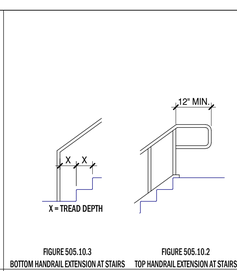


FIGURE 505.10.3
BOTTOM HANDRAIL EXTENSION AT STAIRS

FIGURE 505.10.2
TOP HANDRAIL EXTENSION AT STAIRS

STAIR HANDRAIL EXTENSIONS

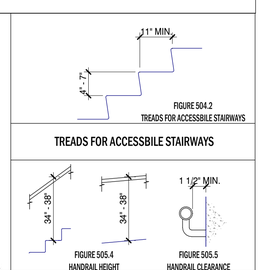


FIGURE 504.2
TREADS FOR ACCESSSBILE STAIRWAYS

TREADS FOR ACCESSBILE STAIRWAYS

FIGURE 505.4
HANDRAIL HEIGHT

FIGURE 505.5
HANDRAIL CLEARANCE

HANDRAIL HEIGHT

STAIRS

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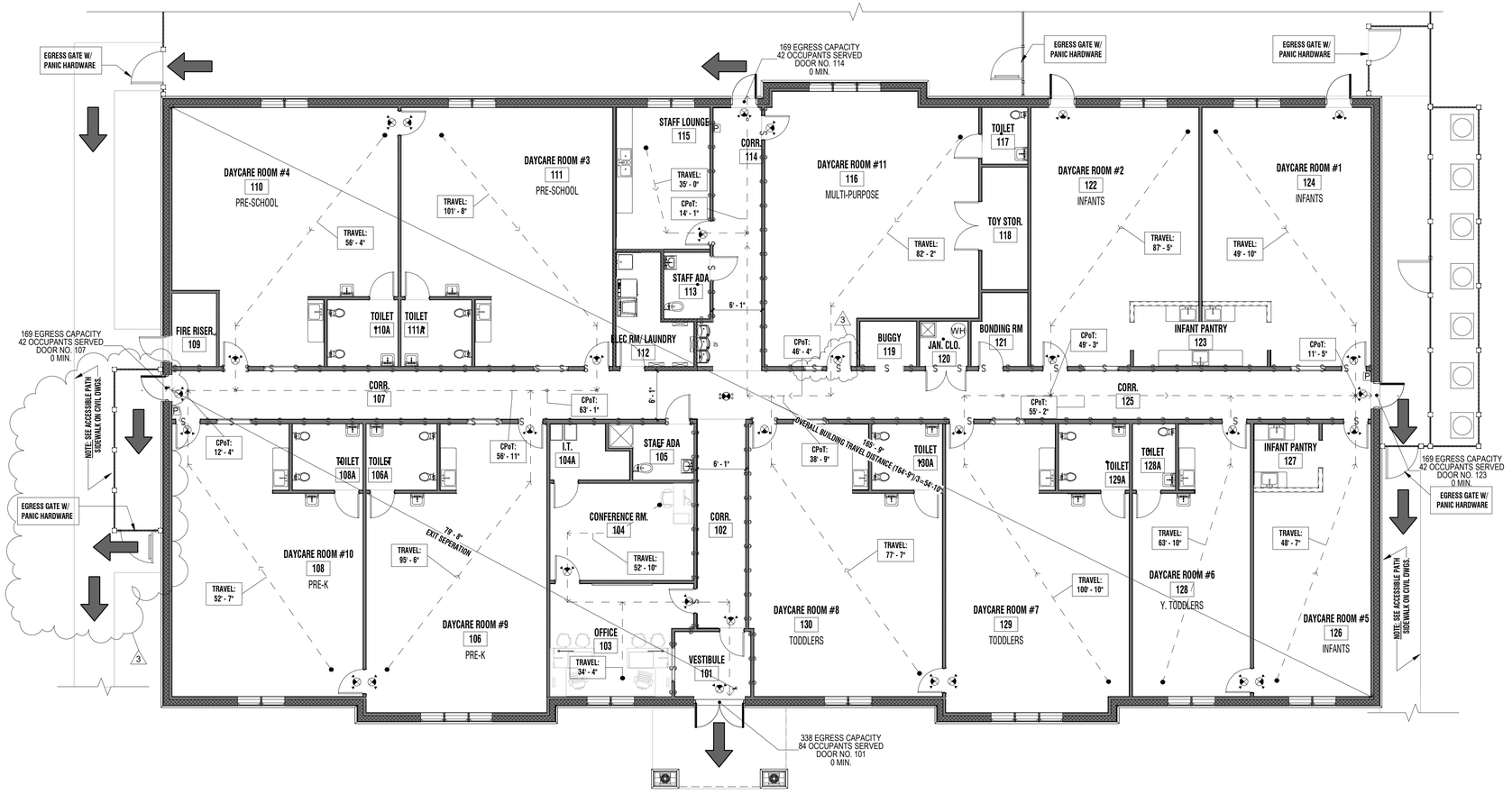

1 LIFE SAFETY PLAN

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

ROOM OCCUPANCY SCHEDULE

NO.	ROOM NAME	OCCUPANT LOAD FACTOR	AREA	AREA PER OCCUPANT	GROSS OR NET	OCCUPANT LOAD	# OF OCCUPANTS
103	OFFICE	BUSINESS AREA	227 SF	150 SF	GROSS	1.511434	2
104	CONFERENCE RM.	BUSINESS AREA	215 SF	150 SF	GROSS	1.430693	2
104A	I.T.	ACCESSORY STORAGE AREA, MECHANICAL EQUIPMENT ROOM	59 SF	300 SF	GROSS	0.19628	1
106	PRE-K	DAY CARE	704 SF	35 SF	NET	20.108422	21
108	PRE-K	DAY CARE	703 SF	35 SF	NET	20.0874	21
110	PRE-SCHOOL	DAY CARE	746 SF	35 SF	NET	21.302593	22
111	PRE-SCHOOL	DAY CARE	744 SF	35 SF	NET	21.255879	22
112	ELEC RM/ LAUNDRY	BUSINESS AREA	101 SF	150 SF	GROSS	0.671913	1
116	MULTI-PURPOSE	ASSEMBLY WITHOUT FIXED SEATS: UNCONCENTRATED (TABLES AND CHAIRS)	801 SF	15 SF	NET	53.397196	54
120	JAN. CLO.	ACCESSORY STORAGE AREA, MECHANICAL EQUIPMENT ROOM	33 SF	300 SF	GROSS	0.111047	1
122	INFANTS	DAY CARE	602 SF	35 SF	NET	17.186593	18
124	INFANTS	DAY CARE	606 SF	35 SF	NET	17.300089	18
126	INFANTS	DAY CARE	422 SF	35 SF	NET	12.044294	13
128	Y. TODDLERS	DAY CARE	426 SF	35 SF	NET	12.162391	13
129	TODDLERS	DAY CARE	712 SF	35 SF	NET	20.333634	21
130	TODDLERS	DAY CARE	709 SF	35 SF	NET	20.245686	21
TOTALS: 16			7806 SF				251

GENERAL NOTES

1 REFER TO DWG. G000 FOR BUILDING CODE INFORMATION.
2 REFER TO DWG. G001 & G002 FOR GENERAL CONDITIONS.
3 REFER TO DWG. A101 FOR CONSTRUCTION PLAN

MEANS OF EGRESS CODE NOTES:

USE AND OCCUPANCY CHAPTER 3 (2023 FBC, 8TH EDITION)
303.1.3 ASSOCIATED WITH GROUP E OCCUPANCIES - A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES THAT IS ASSOCIATED WITH A GROUP E OCCUPANCY IS NOT CONSIDERED A SEPARATE OCCUPANCY.

MIXED USE AND OCCUPANCY CHAPTER 5 (2023 FBC, 8TH EDITION)
508.3 THIS BUILDING IS DESIGNED AS A NONSEPARATED OCCUPANCY AND COMPLIES WITH THE PROVISIONS OF THIS SECTION. THEREFORE NO SEPARATIONS ARE REQUIRED.

FIRE AND SMOKE PROTECTION FEATURES CHAPTER 7 (2023 FBC, 8TH EDITION)
TABLE 705.2 MINIMUM DISTANCE OF PROJECTION
FIRE SEPARATION DISTANCE IS GREATER THAN 30 FEET. MINIMUM DISTANCE OF PROJECTION FROM LINE USED TO DETERMINE FIRE SEPARATION DISTANCE SHALL BE GREATER THAN 20 FEET.

MEANS OF EGRESS CHAPTER 10 (2023 FBC, 8TH EDITION)

1003.2 CEILING HEIGHT - THE MEANS OF EGRESS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7 FEET 6 INCHES.

1003.4 FLOOR SURFACE - WALKING SURFACES OF THE MEANS OF EGRESS SHALL HAVE A SLIP-RESISTANT SURFACE AND BE SECURELY ATTACHED.

1003.6 MEANS OF EGRESS CONTINUITY - THE PATH OF EGRESS TRAVEL ALONG A MEANS OF EGRESS SHALL NOT BE INTERRUPTED BY A BUILDING ELEMENT OTHER THAN A MEANS OF EGRESS COMPONENT AS SPECIFIED IN THIS CHAPTER. OBSTRUCTIONS SHALL NOT BE PLACED IN THE MINIMUM WIDTH OR REQUIRED CAPACITY OF A MEANS OF EGRESS COMPONENT EXCEPT PROJECTIONS PERMITTED BY THIS CHAPTER. THE MINIMUM WIDTH OR REQUIRED CAPACITY OF A MEANS OF EGRESS SYSTEM SHALL NOT BE DIMINISHED ALONG THE PATH OF EGRESS TRAVEL.

TABLE 1004.5 OCCUPANCY LOAD

GROUP A	MULTIPURPOSE	801	NET 15*(REF NOTE 1)	54 OCCUPANTS
GROUP B	OFFICE	227	150 GROSS	2 OCCUPANTS
	CONFERENCE RM.	215	150 GROSS	2 OCCUPANTS
	STAFF LOUNGE		SEE NOTE 1 BELOW	0 OCCUPANTS
	LAUNDRY		SEE NOTE 1 BELOW	0 OCCUPANTS
GROUP I-4	CLASSROOMS	3476	35 NET* (REF NOTE 2)	100 OCCUPANTS
GROUP E	CLASSROOMS	2898	35 NET* (REF NOTE 2)	83 OCCUPANTS
GROUP S	JANITOR CLOSET	33	300 GROSS	1 OCCUPANTS
TOTAL OCCUPANTS:				251 OCCUPANTS

NOTE 1: MULTIPURPOSE ROOM IS ONLY OCCUPIED BY CHILDREN AND STAFF COUNTED FOR THE CLASSROOMS. LAUNDRY, STORAGE, & STAFF LOUNGE ARE ONLY OCCUPIED BY STAFF COUNTED FOR OTHER BUSINESS SPACES.

NOTE 2: CLASSROOM OCCUPANCIES BASED ON MAXIMUM NUMBER OF CHILDREN AND TEACHERS REQUIRED BY FLORIDA DEPARTMENT OF CHILD AND FAMILIES LICENSING.

1005.3.2 EGRESS CAPACITY - DOOR CAPACITY REQUIRED - 251 OCC. X 0.2 = 50.2 INCHES
-DOOR CAPACITY PROVIDED 3 EXITS X 32 IN. = 96 INCHES
1 EXIT X 68 IN. = 68 INCHES
TOTAL = 214.2 INCHES

1006.2.2.4 DAY CARE MEANS OF EGRESS - DAY CARE FACILITIES, ROOMS OR SPACES WHERE CARE IS PROVIDED FOR MORE THAN 10 CHILDREN THAT ARE 2 1/2 YEARS OF AGE OR LESS, SHALL HAVE ACCESS TO NOT LESS THAN TWO EXITS OR EXIT ACCESS DOORWAYS.
- 2 EXITS ARE PROVIDED FROM EACH CLASSROOM.

TABLE 1006.2.1 - USE GROUP I-4: 75 FEET MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE, COMPLIES

TABLE 1006.3.1 - REQUIRES 2 EXITS TO BE PROVIDED.
- 4 EXITS ARE PROVIDED.

1007.1.1 TWO EXITS OR EXIT ACCESS DOORWAYS. - WHERE TWO EXITS ARE REQUIRED FROM ANY PORTION OF THE EXIT ACCESS, THEY SHALL BE PLACED A DISTANCE APART EQUAL TO NOT LESS THAN ONE-HALF OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE BUILDING OR AREA TO BE SERVED MEASURED IN A STRAIGHT LINE BETWEEN THEM.

EXCEPTION: WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1OR 903.3.1.2, THE SEPARATION DISTANCE SHALL BE NOT LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVED.
- AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 OR SECTION 903.3.1.2 SHALL BE PROVIDED.
- FIRST FLOOR BUILDING DIAGONAL DISTANCE = 165'-9" / 3 = 54'-10" MINIMUM DISTANCE BETWEEN EXIT DOORS, 79'-8" PROVIDED.

1008.1 MEANS OF EGRESS ILLUMINATION - ILLUMINATION SHALL BE PROVIDED IN THE MEANS OF EGRESS IN ACCORDANCE WITH SECTION 1008.2. UNDER EMERGENCY POWER, MEANS OF EGRESS ILLUMINATION SHALL COMPLY WITH SECTION 1008.3.

TABLE 1017.2 - USE GROUP I-4: 200 FEET MAXIMUM TRAVEL DISTANCE. 101'-8" PROVIDED.

NFPA 101: SEPARATION OF MEANS OF EGRESS
12.3.6 ASSEMBLY OCCUPANCIES
(2) CORRIDOR AND LOBBY PROTECTION SHALL NOT BE REQUIRED IN BUILDINGS PROTECTED THROUGHOUT BY AN APPROVED, SUPERVISED AUTOMATIC SPRINKLER SYSTEM.
15.3.6 EDUCATIONAL OCCUPANCIES
(2) CORRIDOR WALLS SHALL NOT BE REQUIRED TO BE RATED, PROVIDED THAT SUCH WALLS FORM SMOKE PARTITIONS

LEGEND

TRAVEL: 1' - 0" — TRAVEL DISTANCE TAG / MEASURED DISTANCE
CPoT: 1' - 0" — COMMON PATH OF TRAVEL TAG / MEASURED DISTANCE
DEAD END: 1' - 0" — DEAD END TAG / MEASURED DISTANCE
PATH OF TRAVEL
EMERGENCY LIGHT W/ EXIT SIGN COMBO, W/ BATTERY BACKUP
EXISTING EXIT SIGN WITH DIRECTIONALS
NEW EXIT SIGN WITH DIRECTIONALS
FEC — FIRE EXTINGUISHER CABINET
P — PULL SWITCH

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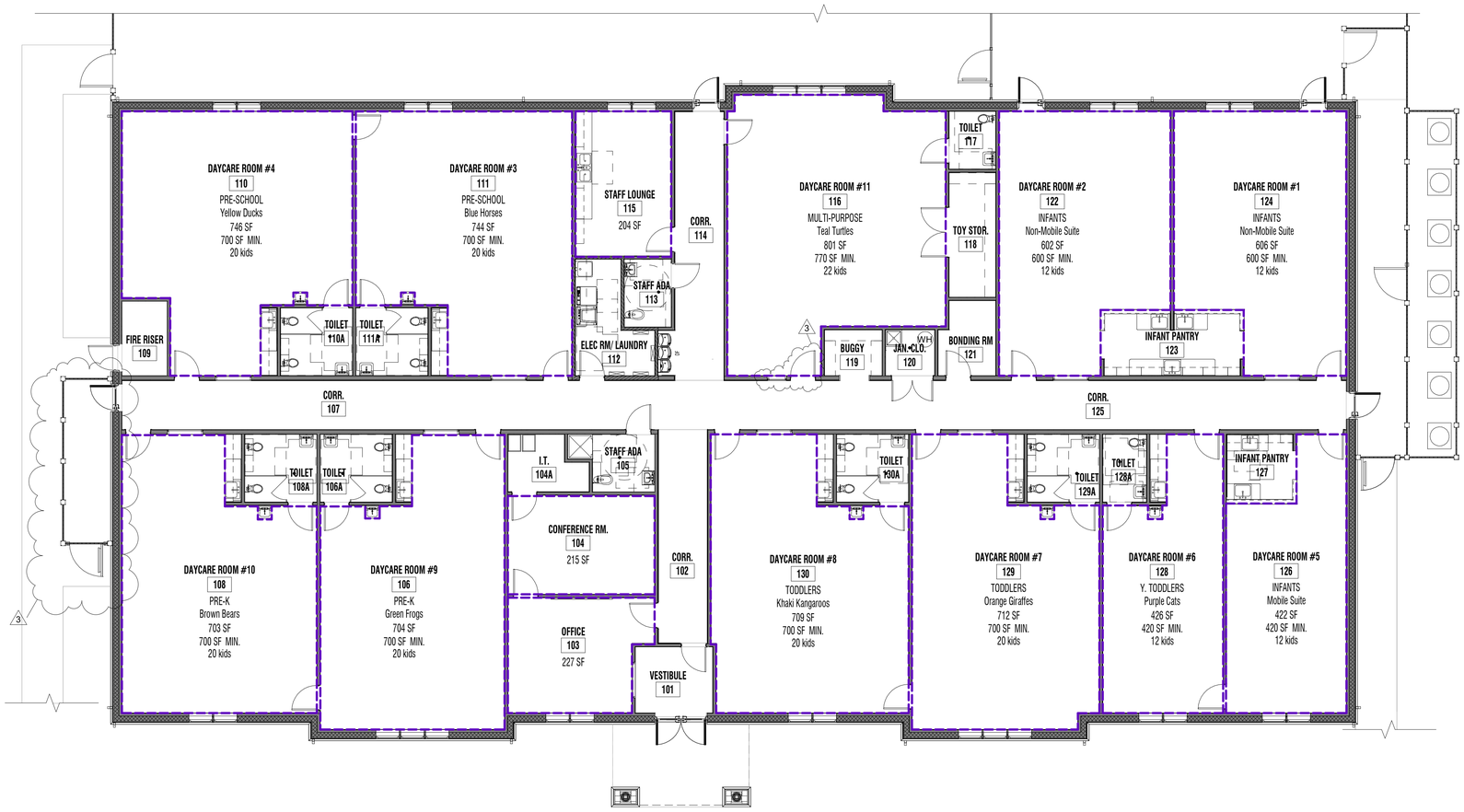

1 LICENSING PLAN

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

GENERAL NOTES

1 REFER TO DWG. G000 FOR BUILDING CODE INFORMATION.
2 REFER TO DWG. G001 & G002 FOR GENERAL CONDITIONS.
3 REFER TO DWG. A101 FOR CONSTRUCTION PLAN

LICENSING NOTES

1. ALL CLASSROOMS DESIGNED UNDER GROUP I-4.
2. BUILDING IS FULLY SPRINKLERED.
3. BUILDING EQUIPPED W/ EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM PER GROUP E.
4. EGRESS TO THE CORRIDOR IS PERMITTED.

CHILDCARE LICENSING

	TYPE	AGE	ACTUAL AREA	REQUIRED AREA	TEACHER: CHILD RATIO	MAX # OF CHILDREN	# OF STAFF
	OFFICE		227				3
	STAFF LOUNGE		205				-
	INFANTS - NON MOBILE	0 TO 12 MONTHS	606	600	1:4	12	3
	INFANTS - NON MOBILE	0 TO 12 MONTHS	602	600	1:4	12	3
	INFANTS - MOBILE	12 TO 18 MONTHS	422	420	1:6	12	2
	YOUNG TODDLERS	18 TO 24 MONTHS	426	420	1:6	12	2
	TODDLERS	2 TO 3 YEARS	712	700	1:10	20	2
	TODDLERS	2 TO 3 YEARS	709	700	1:10	20	2
	PRE-SCHOOL	3 TO 4 YEARS	744	700	1:15	20	2
	PRE-SCHOOL	3 TO 4 YEARS	746	700	1:15	20	2
	PRE-K	4 TO 5 YEARS	704	700	1:20	20	1
	PRE-K	4 TO 5 YEARS	703	700	1:20	20	1
				PROFORMA TOTAL		168	23
	MULTI-PURPOSE	ALL	801	770		20	1
			7,608	TOTAL WITH MPR		188	24

BASED ON 35 S.F. / CHILD PER FLORIDA REGULATIONS

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

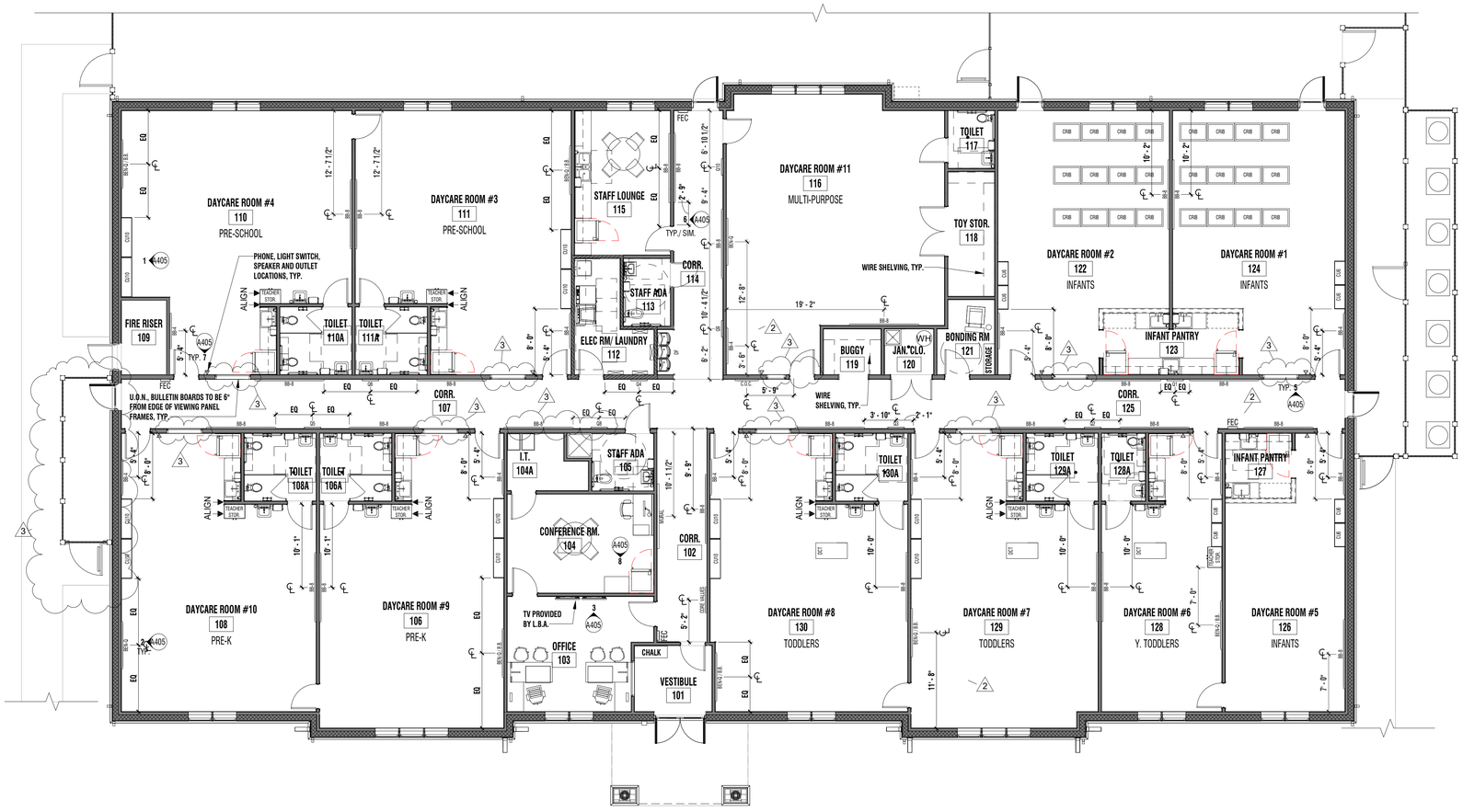
SHEET TITLE:

LICENSING FLOOR PLAN, LICENSING CHART, & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
G005



1 FURNITURE PLAN

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

GENERAL NOTES - FURNITURE

1. REFER TO DWG. G000 FOR BUILDING CODE INFORMATION.
2. REFER TO DWG. G001 & G002 FOR GENERAL CONDITIONS.
3. REFER TO DWG. A101 FOR CONSTRUCTION PLAN.
4. REFER TO DWG. A405 FOR CUBBIES AND EQUIPMENT
5. REFER TO DWG. A406 FOR CORRIDOR ELEVATIONS.
6. CONTRACTOR TO INSTALL ARTWORK. CONTRACTOR TO COORDINATE FINAL LOCATIONS WITH LIGHTBRIDGE ACADEMY. ARTWORK PROVIDED BY LIGHTBRIDGE ACADEMY.
7. CUBBIES SUPPLIED BY LIGHTBRIDGE ACADEMY. BULLETIN BOARDS SUPPLIED & INSTALLED BY GENERAL CONTRACTOR.

LEGEND

BB-4	BULLETIN BOARD - 3'-3" X 4'
BB-'X'	BULLETIN BOARD ('X' = LENGTH OF BULLETIN BOARD IN FEET)
BEN-Q	INTERACTIVE WHITE BOARD
BEN-Q/B.B.	BULLETIN BOARD 3'-3" X 5'-6" INSTALLED; WIRING FOR FUTURE INTERACTIVE BEN-Q BOARD INSTALLED
C(#)	# = AMOUNT OF CUBBIES FLOOR-MOUNTED CUBBY UNIT
TEACHER STOR.	TEACHER STORAGE CABINET
CRIB	INFANT CRIB
DCT	DIAPER CHANGING TABLE
	REFRIGERATOR - PROVIDED BY L.B.A.
CORE VALUES	CORE VALUES
C.O.C.	CIRCLE OF CARE GRAPHIC
MURAL	MURAL
Q	QUOTE - SEE PROJECT MANUAL
CHALK	CHALK BOARD - 4' X 4'
	PAPER TOWEL HOLDER
	SOAP DISPENSER

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5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

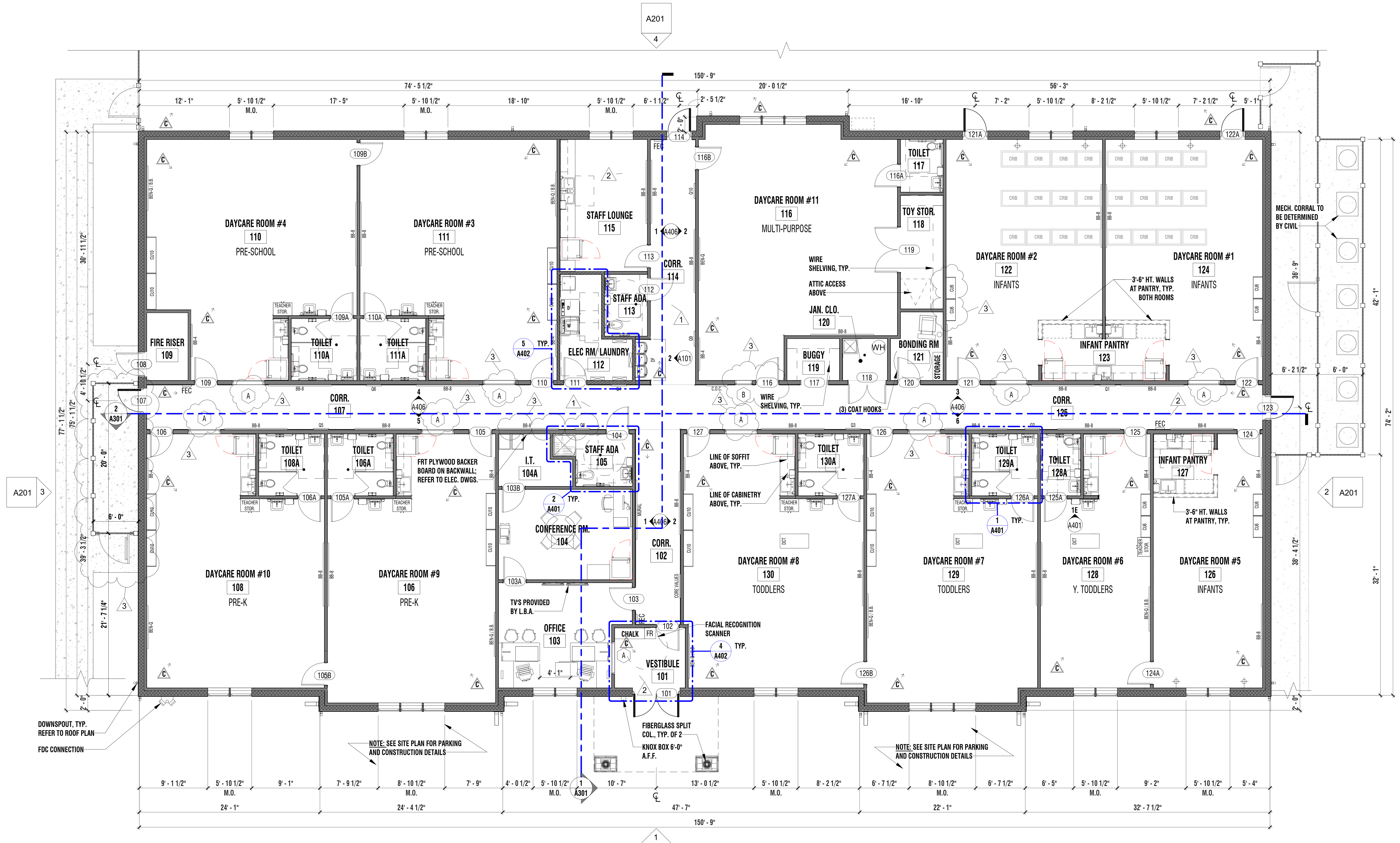
SHEET TITLE:

FURNITURE FLOOR PLANS, NOTES, & LEGEND

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
2	08/27/2024	LIGHTBRIDGE COMMENTS
1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

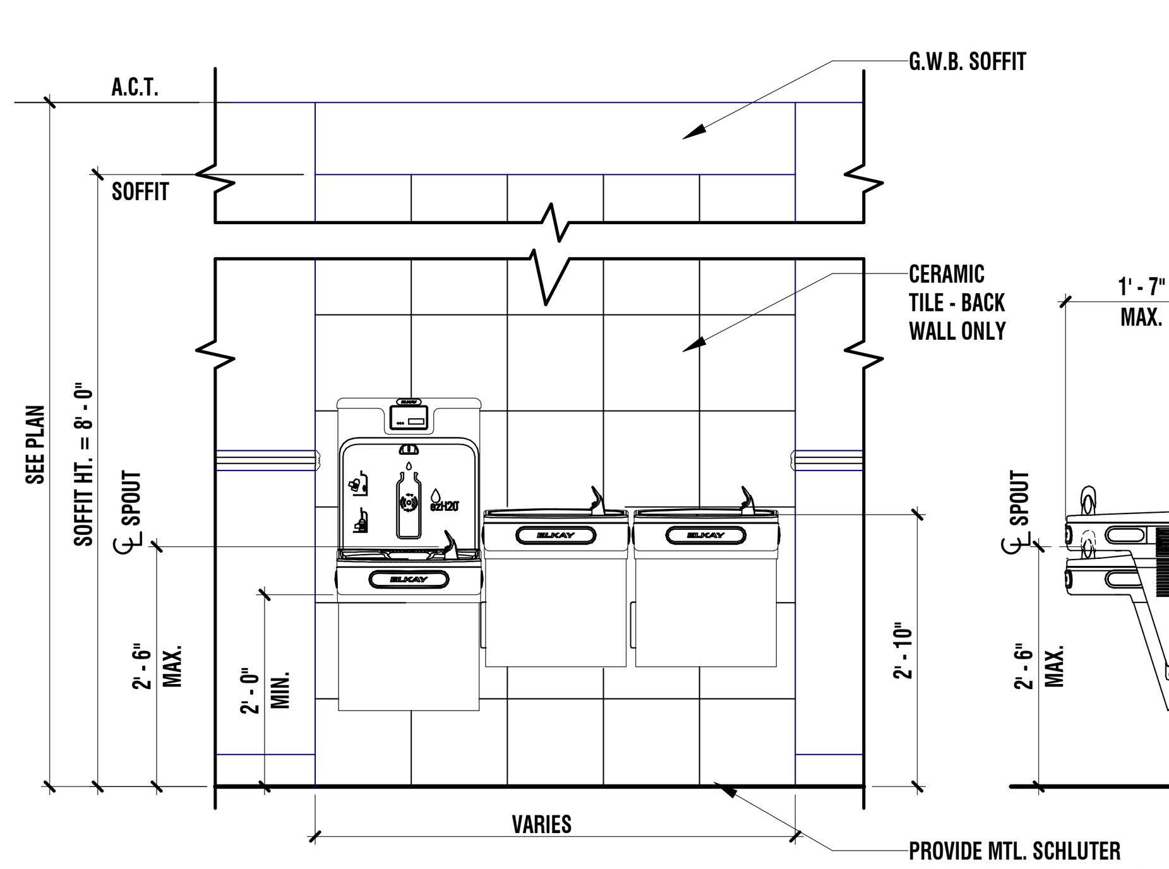
JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
G006

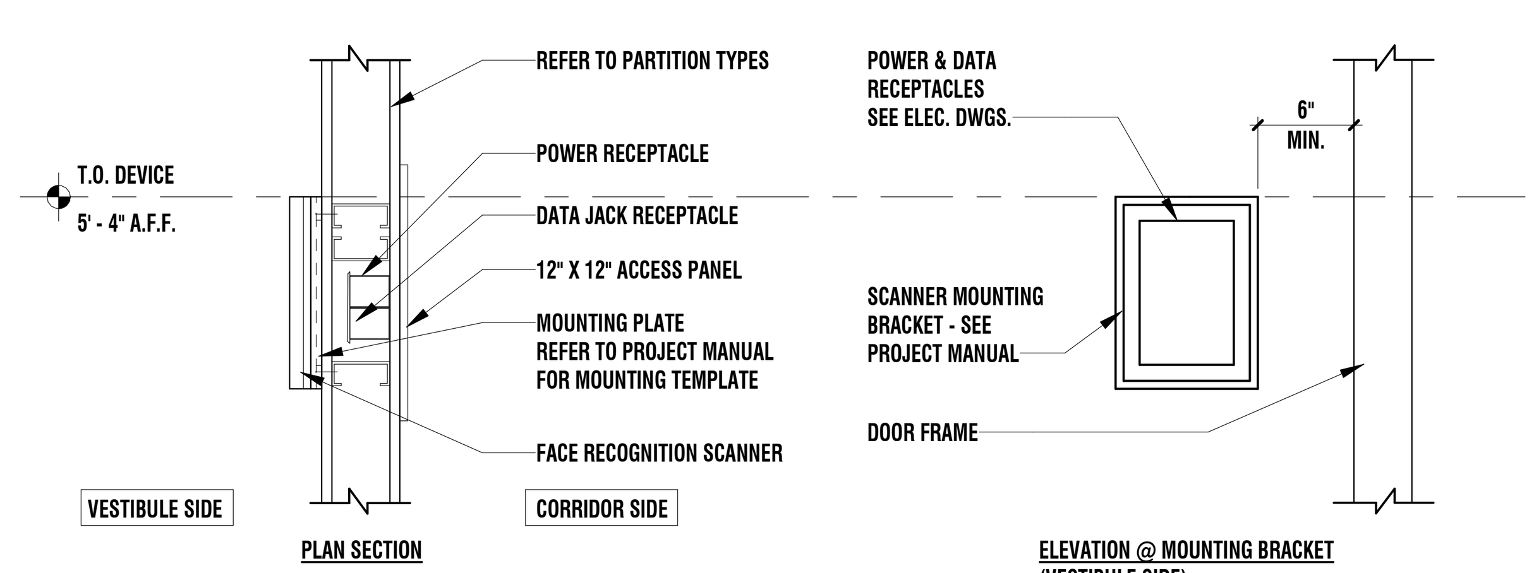


1 **CONSTRUCTION PLAN**
SCALE: 1/8" = 1'-0"

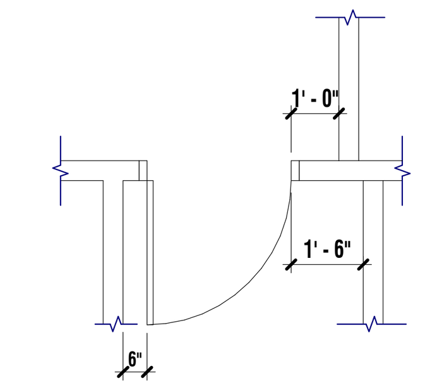
TOTAL GROSS FLOOR AREA: 11,500 SF



2 **WATER FOUNTAIN DETAIL**
SCALE: 1/2" = 1'-0"

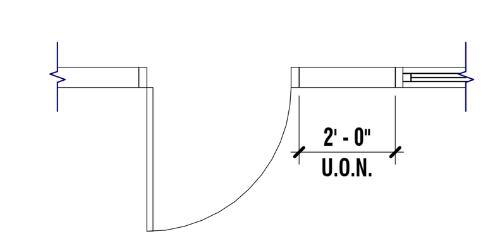


3 **FACIAL RECOGNITION SCANNER**
SCALE: 1" = 1'-0"



NOTES:
1. INSTALL DOOR/ DOOR FRAME SUCH THAT MINIMUM HINGE SIDE OF DOOR IS 6" FROM WALL, UNLESS OTHERWISE NOTED.
2. REFER TO ACCESSIBILITY SHEET FOR ADDITIONAL CLEARANCE REQUIREMENTS.

4 **TYP. PLAN @ DOOR LOCATION**
SCALE: 1/4" = 1'-0"



5 **TYP. PLAN @ VIEWING PANEL**
SCALE: 1/4" = 1'-0"

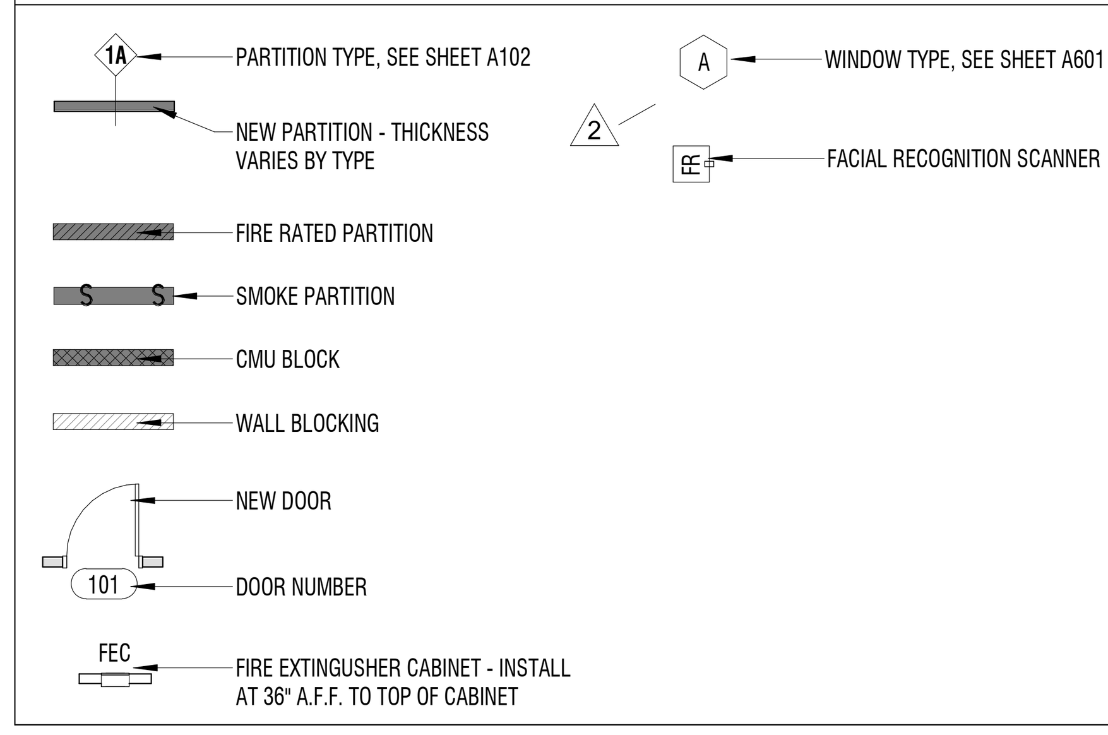
GENERAL NOTES:

1. SEE DWG. G001 FOR GENERAL CONDITIONS.
2. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
3. SEE DWG. A103 FOR REFLECTED CEILING PLAN.
4. SEE DWG. A104 FOR FINISH FLOOR PLAN, SCHEDULES, LEGEND, & NOTES.
5. SEE DWG. A201 FOR BUILDING ELEVATIONS & NOTES.
6. SEE DWGS. A401 & A402 FOR TOILET ROOM PLANS AND ELEVATIONS.
7. SEE DWG. A601 FOR DOOR & FRAME SCHEDULE & DOOR & FRAME TYPES.
8. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL INFORMATION.
9. SEE ENGINEERING DRAWINGS FOR MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.

CONSTRUCTION NOTES:

1. ALL DIMENSIONS SHOWN ARE FROM FINISH SURFACE TO FINISH SURFACE.
2. FINAL LOCATION OF ALL BULLETIN BOARDS AND CUBBIES TO BE DETERMINED BY LIGHTBRIDGE ACADEMY.
3. CONTRACTOR SHALL COORDINATE SITE INSPECTIONS WITH LIGHTBRIDGE ACADEMY.
4. PROVIDE IN-WALL BLOCKING FOR ALL WALL MOUNTED FURNITURE, EQUIPMENT AND PLUMBING ACCESSORIES.
5. ALL WOOD TRIM TO HAVE 1/4" DIA. ROUNDED CORNERS.
6. PROVIDE CORNER GUARD @ ALL OUTSIDE CORNERS WITHIN CORRIDORS AND CLASSROOMS.
7. ALL COUNTER TOP SURFACES TO BE 34" ABOVE FINISHED FLOOR. BASE CABINET TOE KICK TO BE PER MANUFACTURER SPECS1.
8. SHELVING:
   A. TOY STORAGE/STORAGE/I.T. CLOSET - PROVIDE THREE ROWS OF 16" DEEP WIRE SHELVES WHERE INDICATED ON PLAN AT HEIGHTS 36", 54", & 72" ABOVE FINISHED FLOOR.
   B. BUGGY ROOM - PROVIDE TWO 16" DEEP WIRE SHELVES WHERE INDICATED ON PLAN AT HEIGHT OF 48" AND 66" ABOVE FINISHED FLOOR.
   C. LAUNDRY ROOM - PROVIDE ONE 16" DEEP WIRE SHELF WHERE INDICATED ON PLAN AT HEIGHT OF 60" ABOVE FINISHED FLOOR.
9. PROVIDE 48" WIDE CABINET ABOVE A.D.A. TOILET IN CLASSROOM TOILET ROOMS - SEE DRAWING A400.
10. GENERAL CONTRACTOR TO SUBMIT PARTITION LAYOUT DRAWINGS TO ARCHITECT FOR WRITTEN APPROVAL PRIOR TO START OF PARTITION CONSTRUCTION.
11. G.C. TO COORDINATE TRUSS LOCATIONS BASED ON TOILETS AND BOX OUT WASTE PIPES WHERE NEEDED TO MAINTAIN LOCATIONS OF TOILETS ON PLANS.

LEGEND



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OWNER
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TAMPA, FL. 33611

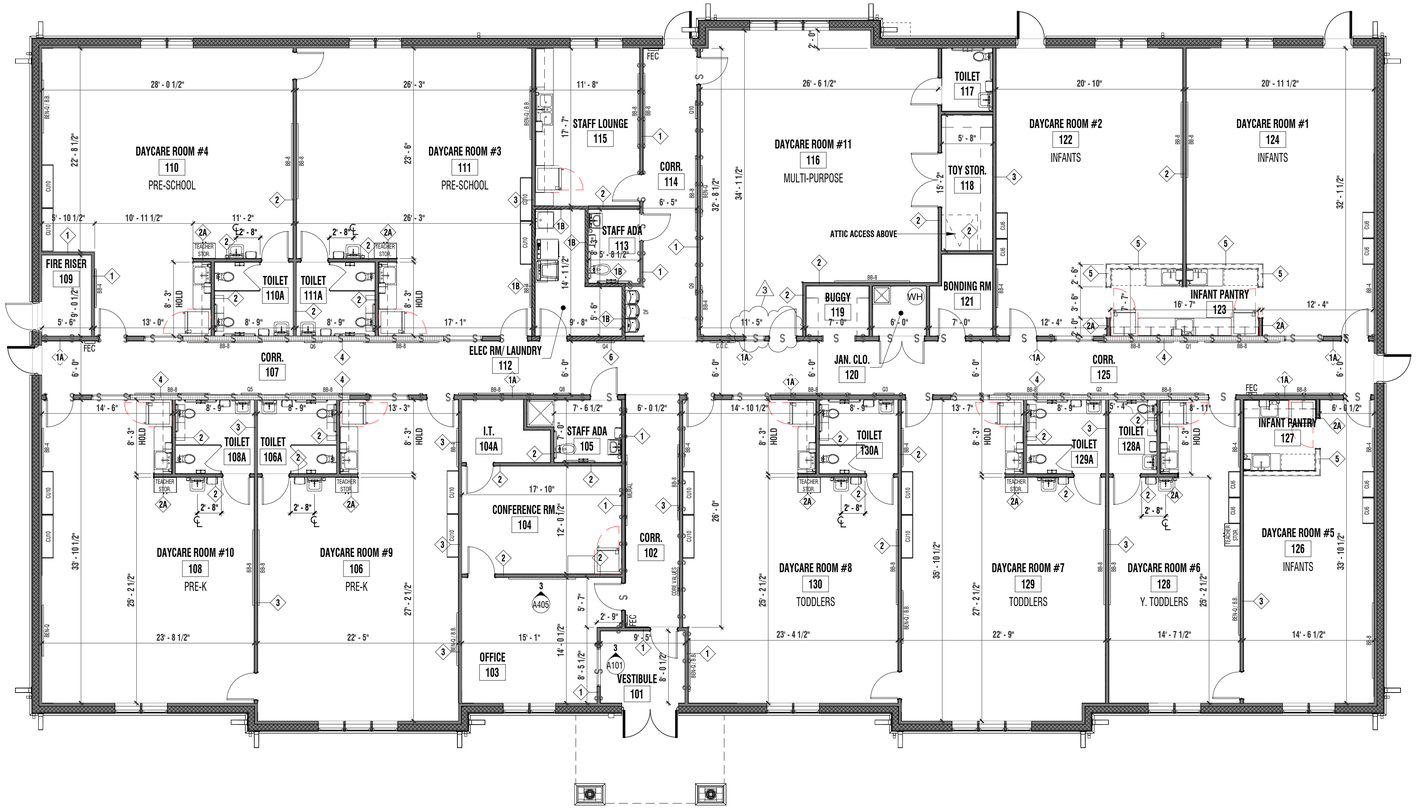
LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
FIRST FLOOR CONSTRUCTION PLAN, LEGEND & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
2	08/27/2024	LIGHTBRIDGE COMMENTS
1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

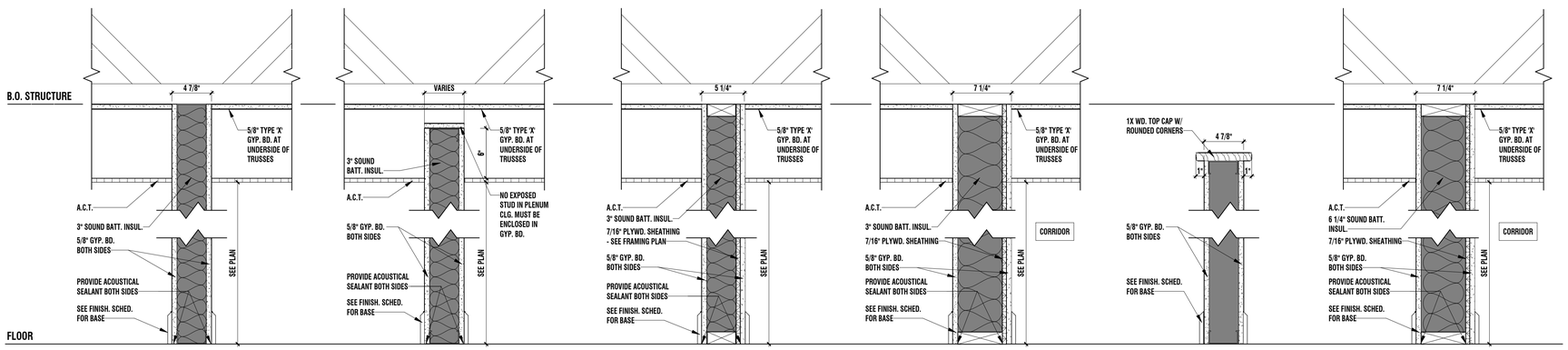
JOB NUMBER:	24001265A
DATE:	04/17/2024
DRAWN BY:	KM/JF/JW
CHECKED BY:	MV

SHEET NO.
A101



1 PARTITION LAYOUT PLAN

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



1 — 3-5/8" 20 GAUGE MTL. STUD, AT 16" O.C. W/ 5/8" GYP. BD. BOTH SIDES

1A — 5 1/2" 20 GAUGE MTL. STUD, AT 16" O.C. W/ 5/8" GYP. BD. BOTH SIDES

1B — 1-HOUR RATED: 3-5/8" MTL. STUD, AT 16" O.C. W/ 5/8" TYPE 'X' GYP. BD. BOTH SIDES. SHALL CONFORM WITH UL ASSEMBLY U407. "J" BEAD AT THE BOTTOM OF GYP. BD. AND GYP. BD. TO SIT ON SLAB - TYP.

2 — 3-5/8" 20 GAUGE MTL. STUD, AT 16" O.C. W/ 5/8" GYP. BD. BOTH SIDES

2A — NO INSULATION - 3-5/8" 20 GAUGE MTL. STUD, AT 16" O.C. W/ 5/8" GYP. BD. BOTH SIDES

2B — 5-1/2" MTL. STUD, AT 16" O.C. W/ 5/8" GYP. BD. BOTH SIDES

3 — SHEAR WALL 2"x4" WD. STUD, AT 16" O.C. W/ 7/16" PLYWD. SHEATHING ONE SIDE, 5/8" GYP. BD. BOTH SIDES

4 — SHEAR WALL 2"x6" WD. STUD, AT 16" O.C. W/ 7/16" PLYWD. SHEATHING ONE SIDE, 5/8" GYP. BD. BOTH SIDES

5 — 3-5/8" 20 GAUGE MTL. STUD, AT 16" O.C. W/ 5/8" GYP. BD. BOTH SIDES

6 — SHEAR WALL 1-HOUR RATED: 2"x6" WD. STUD, AT 16" O.C. W/ 7/16" PLYWD. SHEATHING ONE SIDE, W/ 5/8" TYPE 'X' GYP. BD. BOTH SIDES. SHALL CONFORM WITH UL ASSEMBLY U305. "J" BEAD AT THE BOTTOM OF GYP. BD. AND GYP. BD. TO SIT ON SLAB - TYP.

2 PARTITION TYPES

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

GENERAL NOTES:

1. SEE DWG. G001 FOR GENERAL CONDITIONS.
2. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
3. SEE DWG. A103 FOR REFLECTED CEILING PLAN.
4. SEE DWG. A104 FOR FINISH FLOOR PLAN, SCHEDULES, LEGEND, & NOTES.
5. SEE DWG. A201 FOR BUILDING ELEVATIONS & NOTES.
6. SEE DWGS. A401 & A402 FOR TOILET ROOM PLANS AND ELEVATIONS.
7. SEE DWG. A601 FOR DOOR & FRAME SCHEDULE & DOOR & FRAME TYPES.
8. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL INFORMATION.
9. SEE ENGINEERING DRAWINGS FOR MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.

CONSTRUCTION NOTES:

1. ALL DIMENSIONS SHOWN ARE FROM FINISH SURFACE TO FINISH SURFACE.
2. FINAL LOCATION OF ALL BULLETIN BOARDS AND CUBBIES TO BE DETERMINED BY LIGHTBRIDGE ACADEMY.
3. CONTRACTOR SHALL COORDINATE SITE INSPECTIONS WITH LIGHTBRIDGE ACADEMY.
4. PROVIDE IN-WALL BLOCKING FOR ALL WALL MOUNTED FURNITURE, EQUIPMENT AND PLUMBING ACCESSORIES.
5. ALL WOOD TRIM TO HAVE 1/4" DIA. ROUNDED CORNERS.
6. PROVIDE CORNER GUARD @ ALL OUTSIDE CORNERS WITHIN CORRIDORS AND CLASSROOMS.
7. ALL COUNTER TOP SURFACES TO BE 34" ABOVE FINISHED FLOOR. BASE CABINET TOE KICK TO BE PER MANUFACTURER SPECS1.
8. SHELVING:
   A. TOY STORAGE I.T. STORAGE - PROVIDE THREE ROWS OF 16" DEEP WIRE SHELVES WHERE INDICATED ON PLAN AT HEIGHTS 36", 54", & 72" ABOVE FINISHED FLOOR.
   B. BUGGY ROOM - PROVIDE TWO 16" DEEP WIRE SHELVES WHERE INDICATED ON PLAN AT HEIGHT OF 48" AND 66" ABOVE FINISHED FLOOR.
   C. LAUNDRY ROOM - PROVIDE ONE 16" DEEP WIRE SHELF WHERE INDICATED ON PLAN AT HEIGHT OF 60" ABOVE FINISHED FLOOR
9. PROVIDE 48" WIDE CABINET ABOVE A.D.A. TOILET IN CLASSROOM TOILET ROOMS - SEE DRAWING A400.
10. GENERAL CONTRACTOR TO SUBMIT PARTITION LAYOUT DRAWINGS TO ARCHITECT FOR WRITTEN APPROVAL PRIOR TO START OF PARTITION CONSTRUCTION.
11. G.C. TO COORDINATE TRUSS LOCATIONS BASED ON TOILETS AND BOX OUT WASTE PIPES WHERE NEEDED TO MAINTAIN LOCATIONS OF TOILETS ON PLANS.

LEGEND

- 1A — PARTITION TYPE, SEE SHEET A102
- NEW PARTITION - THICKNESS VARIES BY TYPE
- FIRE RATED PARTITION
- SMOKE PARTITION
- CMU BLOCK
- WALL BLOCKING
- NEW DOOR
- 101 — DOOR NUMBER
- FEC — FIRE EXTINGUSHER CABINET - INSTALL AT 36" A.F.F. TO TOP OF CABINET
- A — WINDOW TYPE, SEE SHEET A601
- 2 / EC — FACIAL RECOGNITION SCANNER

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LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

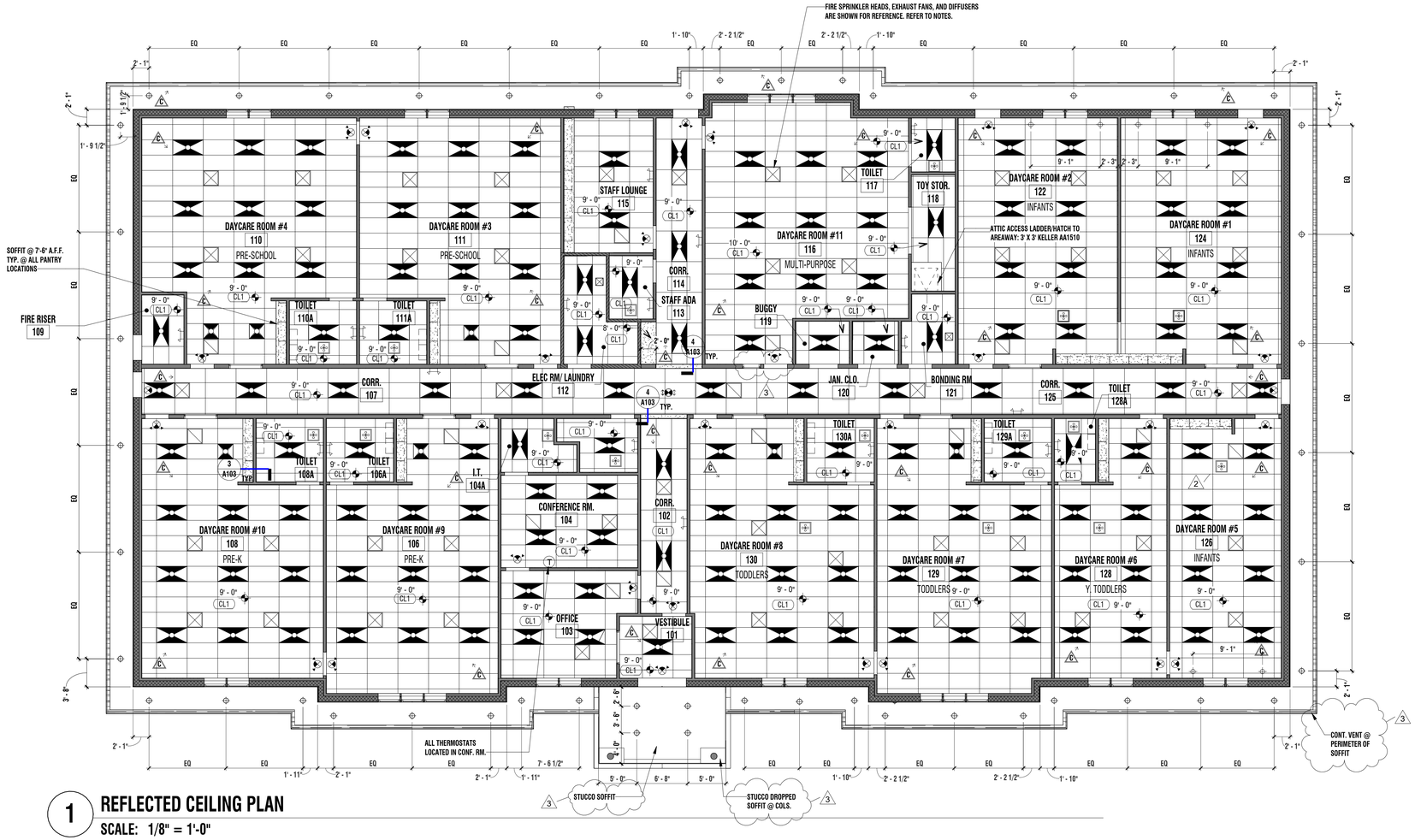
PARTITION LAYOUT PLANS, DETAILS & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

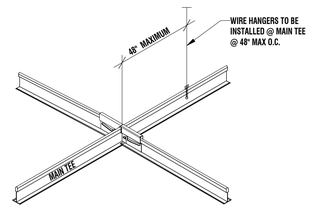
SHEET NO.
A102

Autodesk Docs://Lightbridge Academy - Westshore, FL/Lightbridge Academy - Westshore, FL_11 Classroom_R22.rvt
5/27/2024 4:46:52 PM



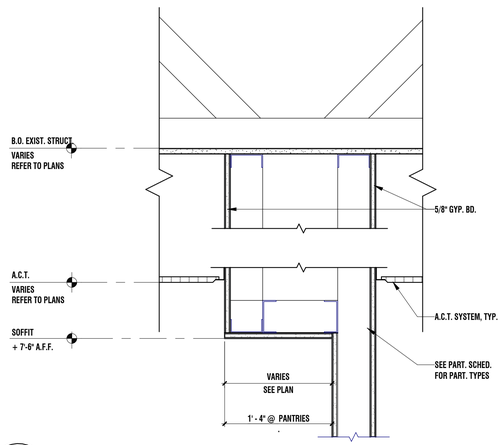
1 REFLECTED CEILING PLAN

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



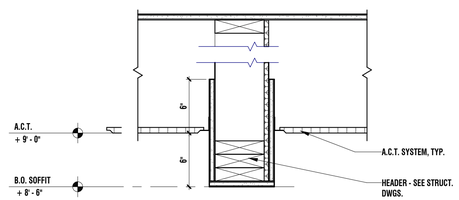
2 ACOUSTICAL CEILING DETAIL

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



3 SOFFIT DETAIL

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



4 HEADER DETAIL

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

GENERAL NOTES:

1. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
2. SEE DWG. A104 FOR FINISH FLOOR PLAN, SCHEDULES, LEGEND, & NOTES.
3. SEE ENGINEERING DRAWINGS FOR MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.

CONSTRUCTION NOTES:

1. ALL GYPSUM BOARD CEILINGS AND SOFFITS ARE TO BE PAINTED, SEE FINISH PLAN FOR COLOR.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK ABOVE CEILING AND NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALLING CEILING GRID.
3. RETAINING CLIPS ARE TO BE USED ON CEILING IN VESTIBULE.
4. 36" x 36" ATTIC ACCESS WITH 30" MIN. CLEAR HEADROOM. HATCH SHALL HAVE R-10 MIN. INSULATION & WEATHERSTRIPPED.
5. FIRE SPRINKLER HEADS, EXHAUST FANS, AND DIFFUSERS ARE SHOWN FOR REFERENCE. COORDINATE WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION.

LEGEND

- FIXTURE TYPE - REFER TO SCHEDULE & ELECTRICAL DRAWINGS
- BUILDING STANDARD 2X4 LIGHT FIXTURE
- BUILDING STANDARD LIGHT FIXTURE. SEE TYPICAL 2X4 NOTES ABOVE.
- BUILDING STANDARD ILLUMINATED EXIT LIGHT. SOLID AREA DENOTES DIRECTION OF FACE PLATE.
- INDICATES EMERGENCY LIGHT HEADS
- INDICATES DIRECTIONAL ARROWS
- EXTERIOR EMERGENCY FIXTURE
- SURFACE MOUNTED EXTERIOR SCONCE
- SURFACE MOUNTED INTERIOR SCONCE
- RECESSED DOWNLIGHT
- XX'-XX" CEILING ELEVATION MARKER
- CEILING GRID
- GYPSUM BOARD
- DIFFUSER - SUPPLY
- DIFFUSER - RETURN
- EXHAUST FAN
- SPRINKLER
- EMERGENCY LIGHT FIXTURE WITH EMERGENCY EXIT LIGHTING PACK AND BATTERY BACK UP.
- THERMOSTAT
- FINISH TAG - REFER TO FINISH LEGEND
- CAMERA

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LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
REFLECTED CEILING PLANS, DETAILS, LEGEND & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
2	08/27/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A103

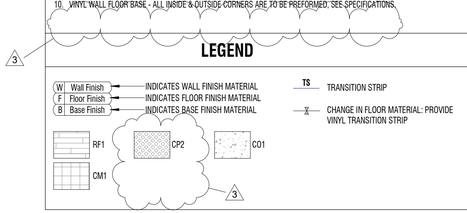
1 FINISH PLAN

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

GENERAL NOTES:

1. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
2. SEE DWG. A103 FOR REFLECTED CEILING PLAN.
3. SEE DWG. A601 FOR DOOR & FRAME SCHEDULE & DOOR & FRAME TYPES.
4. CONTRACTOR TO COORDINATE LOCATION OF ACCENT WALL WITH LIGHTBRIDGE ACADEMY.
5. PROVIDE TRANSITION STRIPS AT DOORWAYS, ALIGN WITH THE FACE OF THE ROOM SIDE DOOR FRAME. SEE DWG. A601.
6. CONTRACTOR SHALL INSTALL CARPETING AT THE END OF CONSTRUCTION TO AVOID CONSTRUCTION DUST.
7. SEE SPECIFICATION FOR FINISHES.
8. ALL WOOD TRIM TO HAVE 1/4" DIA. ROUNDED CORNERS.
9. PROVIDE CORNER GUARD @ ALL OUTSIDE CORNERS WITHIN CORRIDORS AND CLASSROOMS.
10. VINYL WALL FLOOR BASE - ALL INSIDE & OUTSIDE CORNERS ARE TO BE PREFORMED. SEE SPECIFICATIONS.

LEGEND



SCHEDULE - FINISH PLAN ABBREVIATIONS

Category	Key Name	Comments on Finish
CEILING	CL	ACOUSTICAL, SPECIALTY, AND WOOD
CERAMIC	CM	ANYTHING REQUIRING A SETTING BED AND GROUT, INCLUDING STACKED STONE
CONCRETE	CO	STAINED, STAMPED, SEALED, PATTERNED, AND POLISHED
CARPET	CP	INCLUDES CARPET BASE
CHAIR RAIL	CR	WOOD, RUBBER, PLASTIC OR OTHER RUNNING TRIM APPLIED TO WALLS
EXISTING TO REMAIN	EX	
FABRIC	FB	UPHOLSTERY AND WINDOW COVERING INCLUDING LEATHER AND VINYL
GLASS	GL	CLEAR, BACK PAINTED, FILMED, PATTERNED, FRITTED, TEXTURED AND MIRRORED
MISCELLANEOUS	MA	COVERS ITEMS NOT DESCRIBED BY OTHER CATEGORIES
METAL	MT	INCLUDES ALL UNPAINTED METALS
NOT IN CONTRACT	NIC	
PLASTIC LAMINATE	PL	ANY LAMINATE APPLIED TO A SUBSTRATE, INCLUDING METAL, PLASTIC , AND WOOD
PAINT	PT	INCLUDES PAINT TREATMENTS LIKE ZOLOTONE
RESILIENT FINISH	RF	VCT,SHEET VINYL, RUBBER, VINYL WOOD PLANK AND CORK
STUCCO	SC	PORTLAND BASED NON-EIFS TYPE APPLICATIONS
SOLID SURFACE	SS	CORIAN, 3FORM, SILESTONE, AVONITE, COMPAC
STONE	ST	INCLUDES STONE BASE, WALL CLADDING AND COUNTERTOPS
TERRAZZO	TZ	POURED IN PLACE APPLICATIONS
VERIFY IN FIELD	VIF	
WALL BASE	WB	ALL WALL BASES INCLUDING RUBBER, VINYL, AND WOOD - EXCLUDING STONE AND CARPET BASES
WALL COVERING	WC	VINYL, FABRIC, AND SPECIALTY
WOOD	WD	REAL WOOD IN ALL APPLICATIONS EXCLUDING BASE
FINISH LEGEND KEY	XD	INDICATES FINISH TO BE DETERMINED
FINISH PREFIXES		
EXTERIOR	E.	INDICATES EXTERIOR APPLIED FINISHES
FURNITURE	F.	INDICATES FURNITURE APPLIED FINISHES

FIRST FLOOR ROOM FINISH SCHEDULE

NO.	ROOM	FLOOR	BASE	WALL	CEILING	ACCENT PAINT	REMARKS
101	VESTIBULE	CP2	WB1	PT1	CL1		INSTALL CLG. TILE CLIPS
102	CORR.	RF1	WB1	PT1,CR1,WC1	CL1, CL2		
103	OFFICE	RF1	WB1	PT6	CL1		
104	CONFERENCE RM.	RF1	WB1	PT6	CL1		
104A	I.T.	RF1	WB1	PT1	CL1		
105	STAFF ADA	CM1	-	PT14,CM1	CL1		
106	PRE-K	RF1	WB1	PT1,CR1,WC1	CL1, CL2	PT11	GYP. BD. @ PANTRY AREA
106A	TOILET	CM1	-	PT16,CM1	CL1		
107	CORR.	RF1	WB1	PT1,CR1,WC1	CL1		
108	PRE-K	RF1	WB1	PT1,CR1,WC1	CL1, CL2	PT12	GYP. BD. @ PANTRY AREA
108A	TOILET	CM1	-	PT16,CM1	CL1		
109	FIRE RISER	CO1	WB1	PT1	CL1		
110	PRE-SCHOOL	RF1	WB1	PT1,CR1,WC1	CL1	PT9	GYP. BD. @ PANTRY AREA
110A	TOILET	CM1	-	PT16,CM1	CL1		
111	PRE-SCHOOL	RF1	WB1	PT1,CR1,WC1	CL1	PT10	GYP. BD. @ PANTRY AREA
111A	TOILET	CM1	-	PT16,CM1	CL1		
112	ELEC RM/ LAUNDRY	CM1	CM1	PT16	CL1		PROVIDE F.R.P. WAINSCOT 72" HIGH ON WET WALLS
113	STAFF ADA	CM1	-	PT14,CM1	CL1		
114	CORR.	RF1	WB1	PT1,CR1,WC1	CL1, CL2		CM2 IN AREA OF DRINKING FOUNTAINS. GYP. BD. @ SOFFIT.
115	STAFF LOUNGE	RF1	WB1	PT13	CL1, CL2		GYP. BD. @ PANTRY AREA
116	MULTI-PURPOSE	RF1	WB1	PT1,CR1,WC1	CL1	PT8	
117	TOILET	CM1	-	PT16,CM1	CL1		
118	TOY STOR.	RF1	WB1	PT1	CL1		
119	BUGGY	RF1	WB1	PT1,CR1,WC1	CL1		
120	JAN. CLO.	CM1	CM1	PT16	CL1	-	PROVIDE F.R.P. WAINSCOT 72" HIGH ON WET WALLS
121	BONDING RM	RF1	WB1	PT1	CL1		
122	INFANTS	RF1	WB1	PT1,CR1,WC1	CL1	PT2	
123	INFANT PANTRY	RF1	WB1	PT1,CR1,WC1	CL1, CL2		GYP. BD. @ PANTRY AREA
124	INFANTS	RF1	WB1	PT1,CR1,WC1	CL1	PT2	
125	CORR.	RF1	WB1	PT1,CR1,WC1	CL1		
126	INFANTS	RF1	WB1	PT1,CR1,WC1	CL1	PT2	
127	INFANT PANTRY	RF1	WB1	PT1,CR1,WC1	CL1, CL2		GYP. BD. @ PANTRY AREA
128	Y. TODDLERS	RF1	WB1	PT1,CR1,WC1	CL1, CL2	PT3	GYP. BD. @ PANTRY AREA
128A	TOILET	CM1	-	PT16,CM1	CL1		
129	TODDLERS	RF1	WB1	PT1,CR1,WC1	CL1, CL2	PT5	GYP. BD. @ PANTRY AREA
129A	TOILET	CM1	-	PT16,CM1	CL1		
130	TODDLERS	RF1	WB1	PT1,CR1,WC1	CL1, CL2	PT6	GYP. BD. @ PANTRY AREA
130A	TOILET	CM1	-	PT16,CM1	CL1		

SCHEDULE - FINISH LEGEND

Mark	Description	Manufacturer	Finish Specification	Install Pattern	Comments	Fire Rating	Product Sales Contact
CG1	CORNER GUARD	IPC DOOR AND WALL PROTECTION SYSTEMS	2" X 2" 90 DEGREES; THICKNESS: 0.8 INCH; COLOR: 0278 SAND DUNE	APPLIED WITH ADHESIVE			
CL1	ACOUSTIC CEILING TILE - 24" X 48"	ARMSTRONG	CORTEGA SECOND LOOK ANGLED TEGULAR	15/16" PRELUDE XL GRID			
CL2	GYPSUM BOARD	SHERWIN WILLIAMS	CEILING BRIGHT WHITE SW7007	FLAT	GYP. BOARD CEILINGS, FURR DOWNS, AND BULKHEADS		
CM1	CERAMIC TILE - 12"X12"	DALTILE/LATICRETE	AFFINITY BEIGE / 'PLASMA' GROUT, COLOR: MARBLE BEIGE #17	STRAIGHT GRID; 1/8" GROUT JOINTS	SCHLUTER TRANSITIONS - REFERENCE DETAILS; ALIGN JOINTS BETWEEN FLOOR AND WALL TILES		
CO1	EPOX	SEE SPEC	SEE SPEC	-	EXPOSED SLAB TO BE EPOXY PAINTED		
CP2	CARPET TILE	MOHAWK	STEP IN STYLE II; COLOR 859 WALNUT	24"X24" MULTIDIRECTIONAL TILE	AT ENTRY VESTIBULE		
FRP	FIBER REINFORCED PLASTIC	SEE SPEC	SEE SPEC	-			
GL1	CLEAR TEMPERED LAMINATED GLAZING	-	1/4" LAMINATED TEMPERED GLASS WITH SAFETY LAMINATION; GASKET COLOR TO MATCH FRAME/CHANNEL	-	TYPICAL FOR ALL GLAZING. REFER TO ELEVATIONS	-	
PT1	ACCENT PAINT	SHERWIN WILLIAMS	KILIM BEIGE SW6106	PROMAR200 EGGSHELL	STANDARD PAINT, UNLESS NOTED OTHERWISE		
PT2	ACCENT PAINT	SHERWIN WILLIAMS	RAIN SW6219	PROMAR200 EGGSHELL			
PT3	ACCENT PAINT	SHERWIN WILLIAMS	THISTLE SW6283	PROMAR200 EGGSHELL			
PT4	ACCENT PAINT	SHERWIN WILLIAMS	BOLD BRICK SW6327	PROMAR200 EGGSHELL			
PT5	ACCENT PAINT	SHERWIN WILLIAMS	BAKED CLAY SW6340	PROMAR200 EGGSHELL			
PT6	ACCENT PAINT	SHERWIN WILLIAMS	CAMELBACK SW6122	PROMAR200 EGGSHELL	AT OFFICE AND CONFERENCE ROOM PAINT ALL WALLS		
PT7	ACCENT PAINT	SHERWIN WILLIAMS	GOLD FLEECE SW6388	PROMAR200 EGGSHELL			
PT8	ACCENT PAINT	SHERWIN WILLIAMS	COMPOSED SW6472	PROMAR200 EGGSHELL		-	
PT9	ACCENT PAINT	SHERWIN WILLIAMS	HUMBLE GOLD SW6380	PROMAR200 EGGSHELL			
PT10	ACCENT PAINT	SHERWIN WILLIAMS	AQUA SPHERE SW7613	PROMAR200 EGGSHELL			
PT11	ACCENT PAINT	SHERWIN WILLIAMS	GREEN SPROUT SW7728	PROMAR200 EGGSHELL			
PT12	ACCENT PAINT	SHERWIN WILLIAMS	HOPSACK SW6109	PROMAR200 EGGSHELL			
PT13	ACCENT PAINT	SHERWIN WILLIAMS	SILVERMIST SW7621	PROMAR200 EGGSHELL	AT STAFF LOUNGE PAINT ALL WALLS		
PT14	STAFF TOILETS	SHERWIN WILLIAMS	SILVERMIST SW7621	EMERALD SEMIGLOSS			
PT15	DOOR FRAME AND TRIM PAINT	SHERWIN WILLIAMS	ALABASTER SW7008	EMERALD SEMIGLOSS	DOOR FRAMES, VISION PANEL TRIM, CHAIR RAIL, WINDOW SILLS & TRIM, BULLETIN BOARD TRIM		
PT16	TOILET ROOMS	SHERWIN WILLIAMS	KILIM BEIGE SW6106	EMERALD SEMIGLOSS	AT CHILDREN'S TOILET ROOMS		
RF1	LVT - LUXURY VINYL TILE	MOHAWK	COLLECTION: VIVID STEP WOOD; STYLE: W723 VINTAGE OAK	6X48 PLANK, RANDOM LAY			
WB1	RUBBER BASE	JOHNSONITE	4" BASE; COLOR 49 BEIGE	ROLL GOODS, PREFORMED CORNERS	COVE PROFILE AT HARD SURFACE FLOORS, STRAIGHT PROFILE AT CARPET		
WC1	VINYL WALL COVERING	KOROSEAL	STYLE: CHIMAYO; COLOR: C521-26 SAGE BRUSH	ROLL WIDTH: 52/54"			

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER

8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

FINISH PLAN, SCHEDULES, LEGEND & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
2	08/27/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A104

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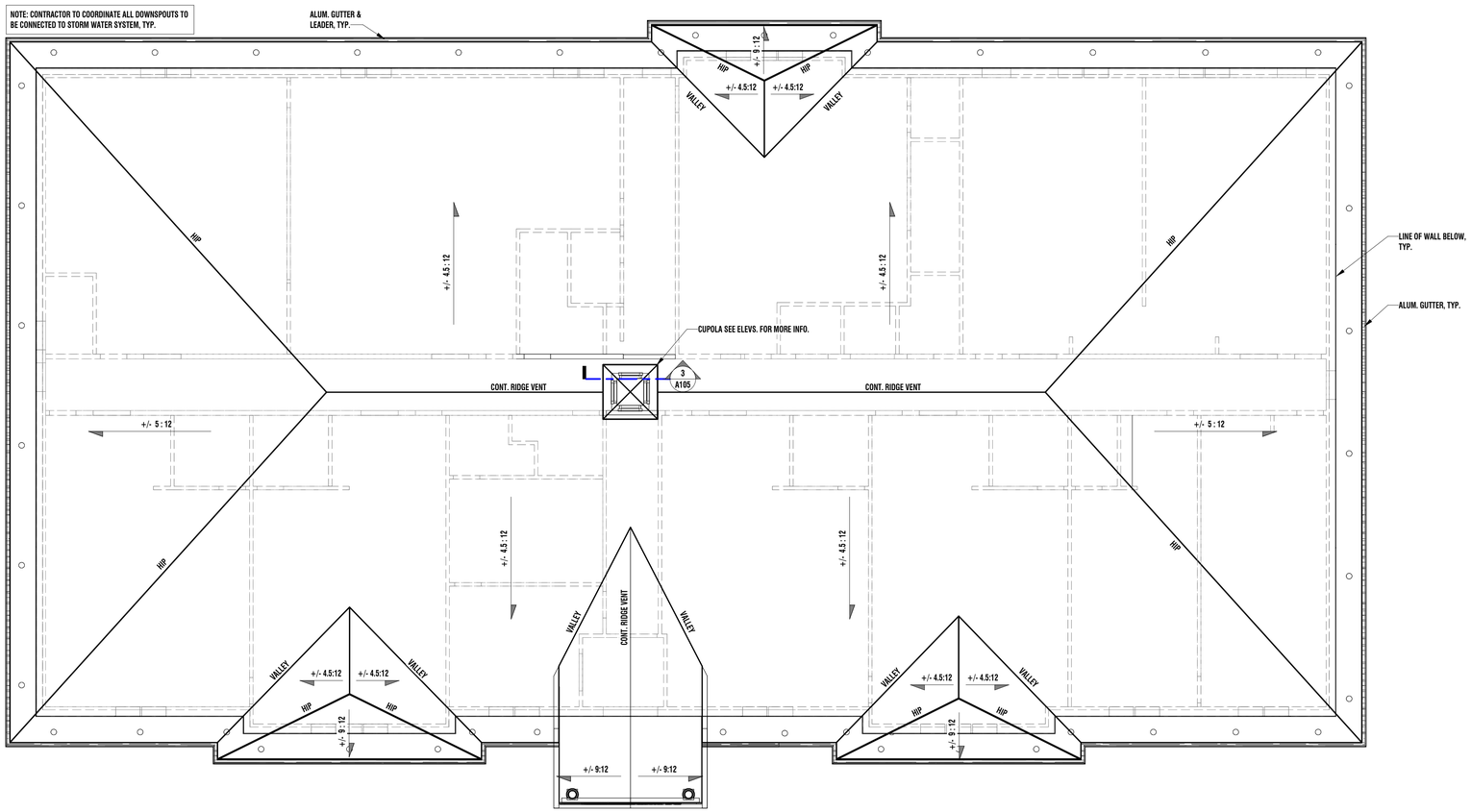
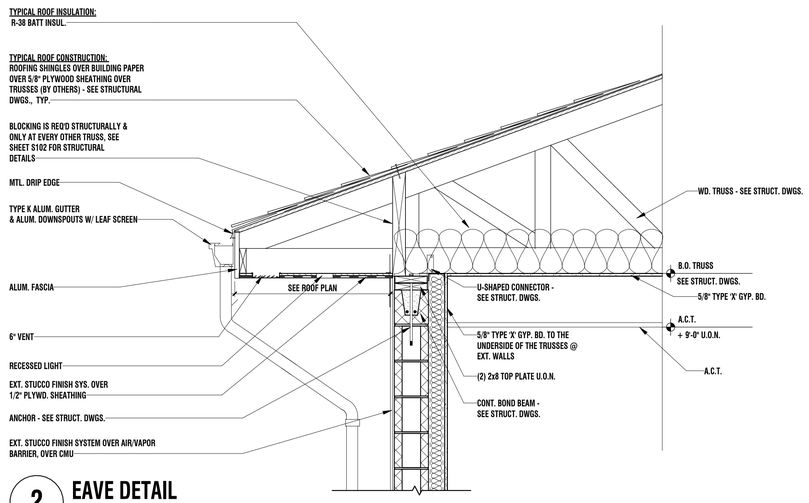


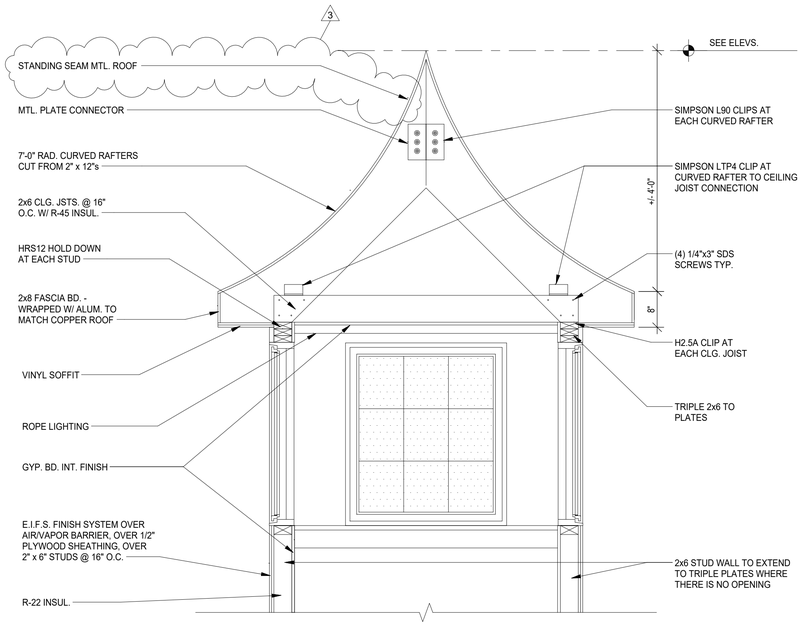
1 ROOF PLAN

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



2 EAVE DETAIL

SCALE: 3/4" = 1'-0"



NOTE: ALL LUMBER SHALL BE D-FIR #2 OR BETTER GRADE

3 UPDATED CUPOLA SECTION

SCALE: 3/4" = 1'-0"

GENERAL NOTES:

1. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
2. SEE STRUCTURAL DRAWINGS FOR ATTIC AND ROOF FRAMING
3. MECHANICAL, PLUMBING, AND ELECTRICAL SERVICE DESIGN TO BE PROVIDED BY THE CONTRACTOR.
4. REFER TO SPECIFICATIONS FOR ROOFING, FLASHING, AND RELATED MATERIALS

CONSTRUCTION NOTES:

1. TRUSSES DESIGN TO BE PROVIDED BY A FLORIDA LICENSED PROFESSIONAL ENGINEER
2. PROVIDE 3/4" PLYWOOD IN ATTIC FOR ACCESS TO MECHANICAL EQUIPMENT.
3. ATTIC ACCESS TO BE SIZED FOR LARGEST PIECE OF EQUIPMENT FOR FUTURE REPLACEMENT PER BUILDING CODE.
4. ALL PLUMBING WASTE VENT AND EXHAUST VENTS TO BE LOCATED TO THE REAR SIDE OF THE ROOF RIDGE.
5. CONTRACTOR SHALL COORDINATE LOCATIONS OF LEADER PIPES W/ SITE DRAINAGE.
6. CONTRACTOR TO COORDINATE LOCATIONS OF MECHANICAL EQUIPMENT WITH TRUSS MANUFACTURER.
7. SPRINKLERS SHALL BE INSTALLED INTO THE ATTIC/ROOF STRUCTURE, SEE SPRINKLER DWGS

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LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ROOF PLAN, DETAILS & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
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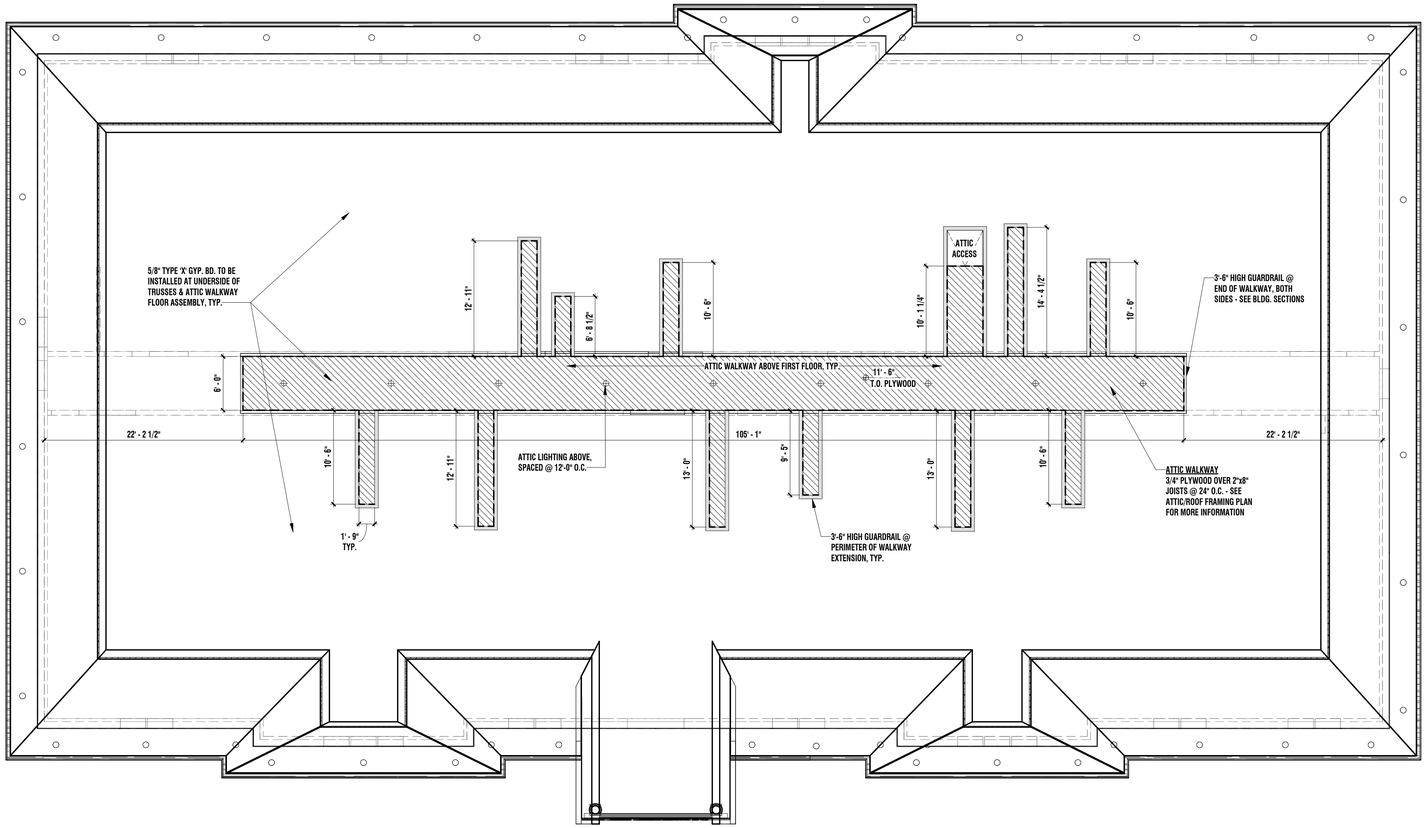

1 ATTIC PLAN

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

GENERAL NOTES:

1. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
2. SEE STRUCTURAL DRAWINGS FOR ATTIC AND ROOF FRAMING
3. MECHANICAL, PLUMBING, AND ELECTRICAL SERVICE DESIGN TO BE PROVIDED BY THE CONTRACTOR.
4. REFER TO SPECIFICATIONS FOR ROOFING, FLASHING, AND RELATED MATERIALS

CONSTRUCTION NOTES:

1. TRUSSES DESIGN TO BE PROVIDED BY A N.C. LICENSED PROFESSIONAL ENGINEER
2. PROVIDE 3/4" PLYWOOD IN ATTIC FOR ACCESS TO MECHANICAL EQUIPMENT.
3. ATTIC ACCESS TO BE SIZED FOR LARGEST PIECE OF EQUIPMENT FOR FUTURE REPLACEMENT PER BUILDING CODE.
4. ALL PLUMBING WASTE VENT AND EXHAUST VENTS TO BE LOCATED TO THE REAR SIDE OF THE ROOF RIDGE.
5. CONTRACTOR SHALL COORDINATE LOCATIONS OF LEADER PIPES W/ SITE DRAINAGE.
6. CONTRACTOR TO COORDINATE LOCATIONS OF MECHANICAL EQUIPMENT WITH TRUSS MANUFACTURER.
7. SPRINKLERS SHALL BE INSTALLED INTO THE ATTIC/ROOF STRUCTURE, SEE SPRINKLER DWGS

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LEGAL DESCRIPTION

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004339-0150

SHEET TITLE:

ATTIC PLAN

REV.	DATE	REMARKS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
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SHEET NO.
A106

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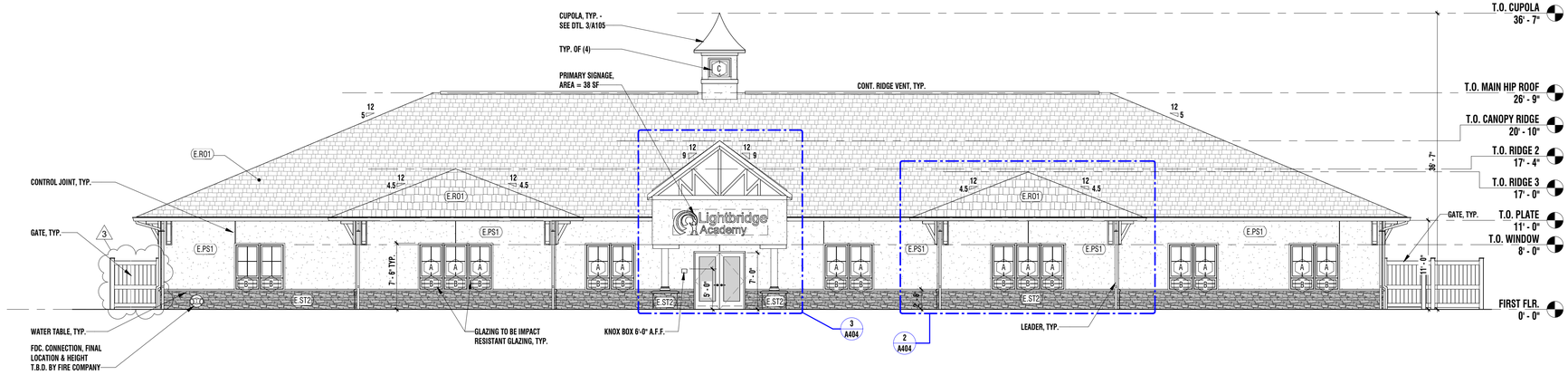
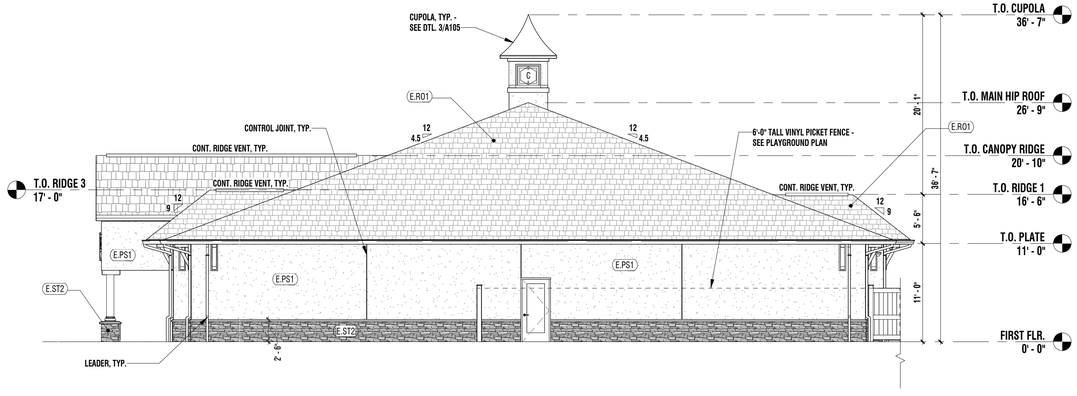
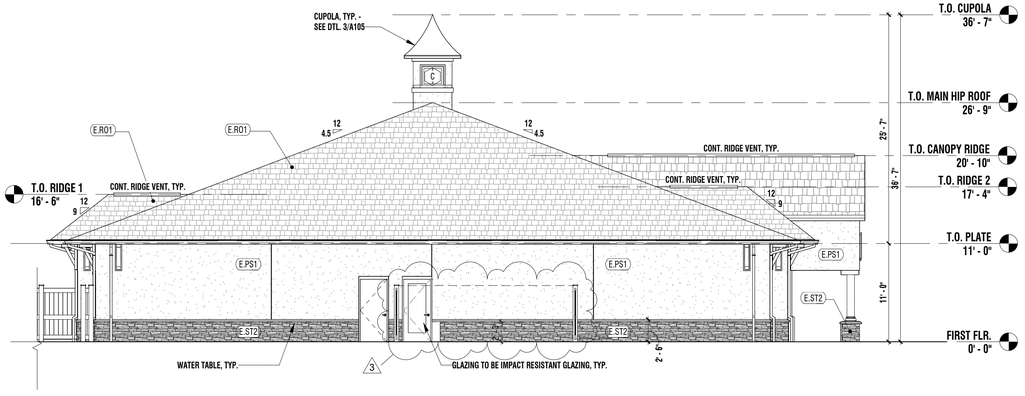


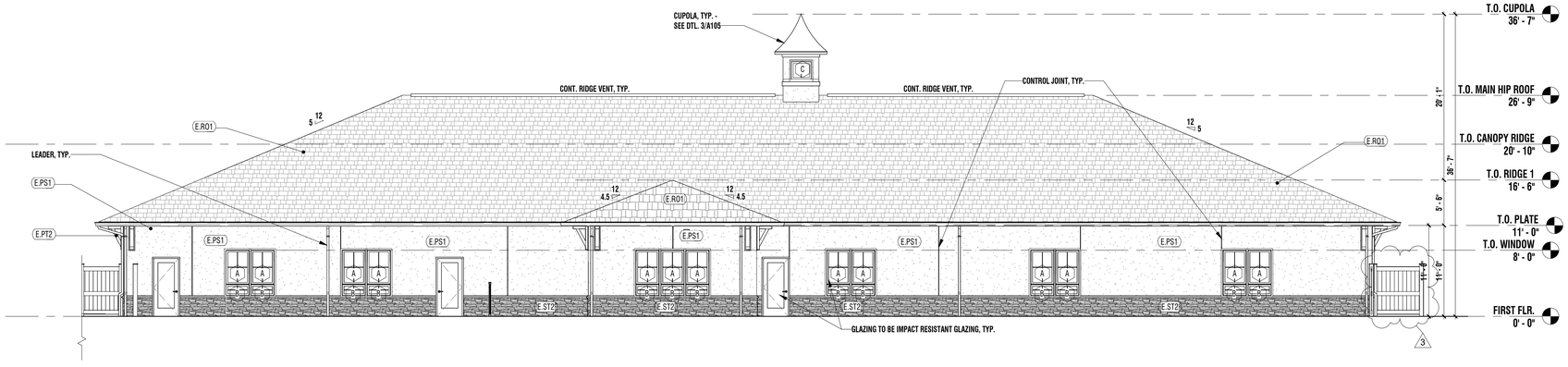
1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"



2 EAST ELEVATION
SCALE: 1/8" = 1'-0"



3 WEST ELEVATION
SCALE: 1/8" = 1'-0"



4 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

EXTERIOR FINISHES

MARK	DESCRIPTION	COLOR
E.000	-	-
E.MT1	METAL COPING	9433 WHITE
E.PS1	PAINTED STUCCO - BODY	10611 MOONLIT SAND
E.PS3	PAINTED STUCCO - TRIM	9433 WHITE
E.PT1	PAINT	10611 MOONLIT SAND
E.PT2	EXTERIOR PAINT - ACCENT COLOR	
E.PV1	PVC - UV RESISTANT	
E.RO1	PREMIUM ASPHALT ROOF SHINGLES	
E.ST2	CULTURED STONE	

WINDOW SCHEDULE		
	MODEL	SIZE
A	P3040	3' - 0" x 4' - 0"
B	AR31	3' - 0" x 1' - 5"
C	CN12	1' - 9" x 2' - 0 5/8"

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LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
BUILDING ELEVATIONS, SCHEDULES & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
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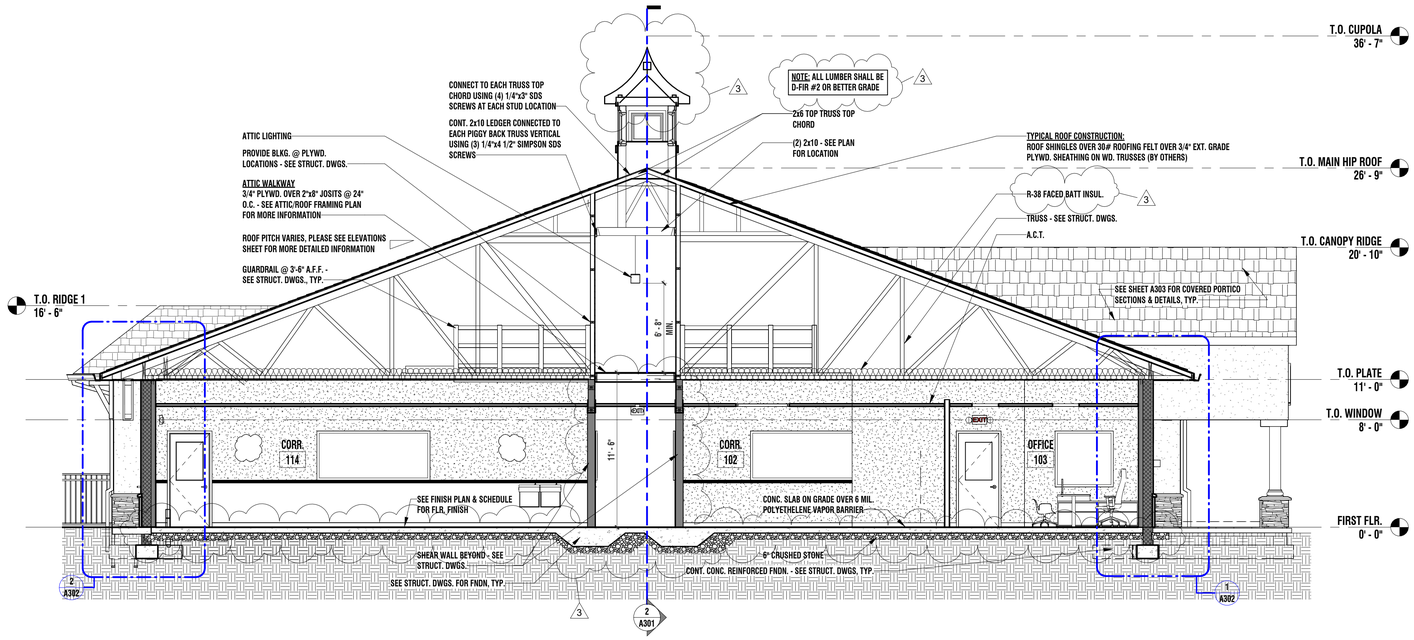
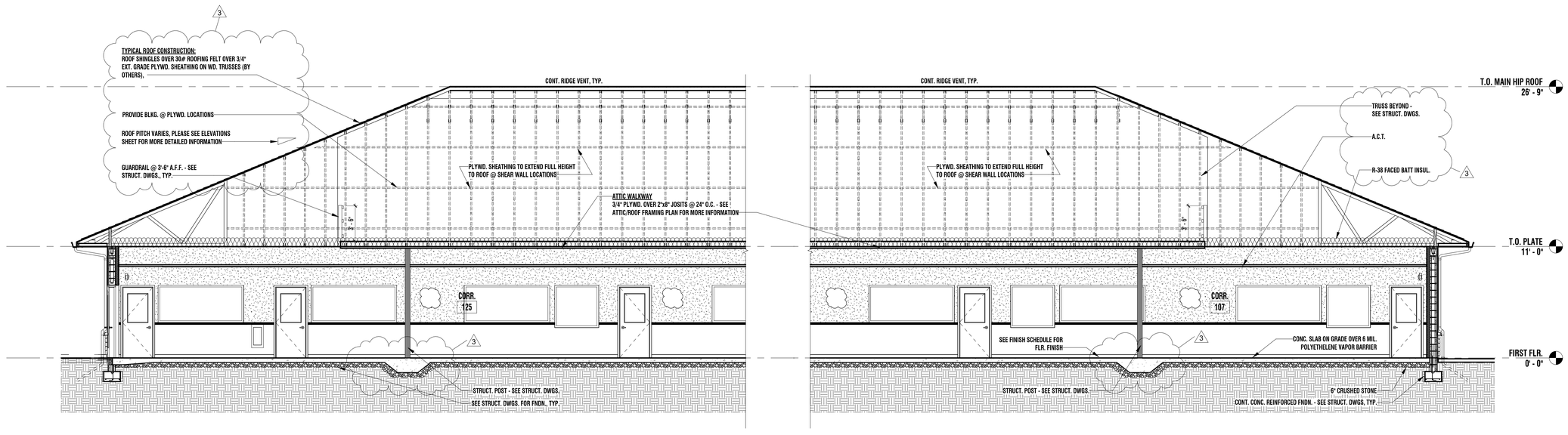


1 CROSS SECTION

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



2 LONGITUDINAL SECTION

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

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LEGAL DESCRIPTION

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004339-0150

SHEET TITLE:

BUILDING SECTIONS

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
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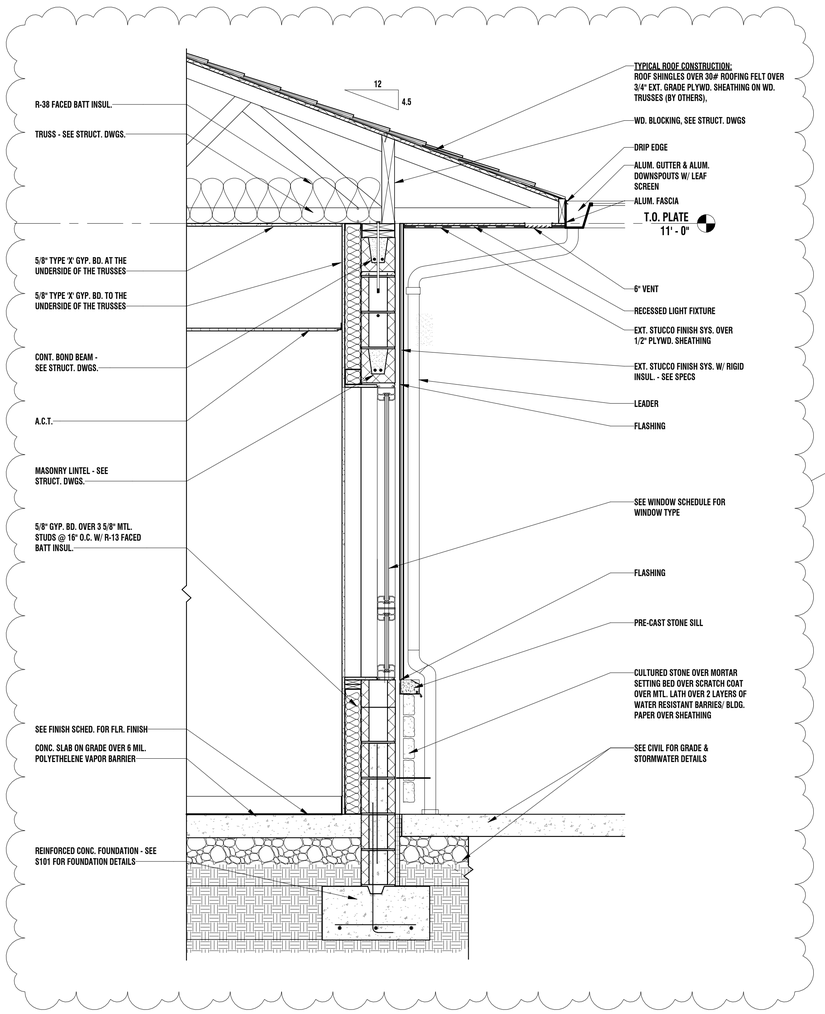
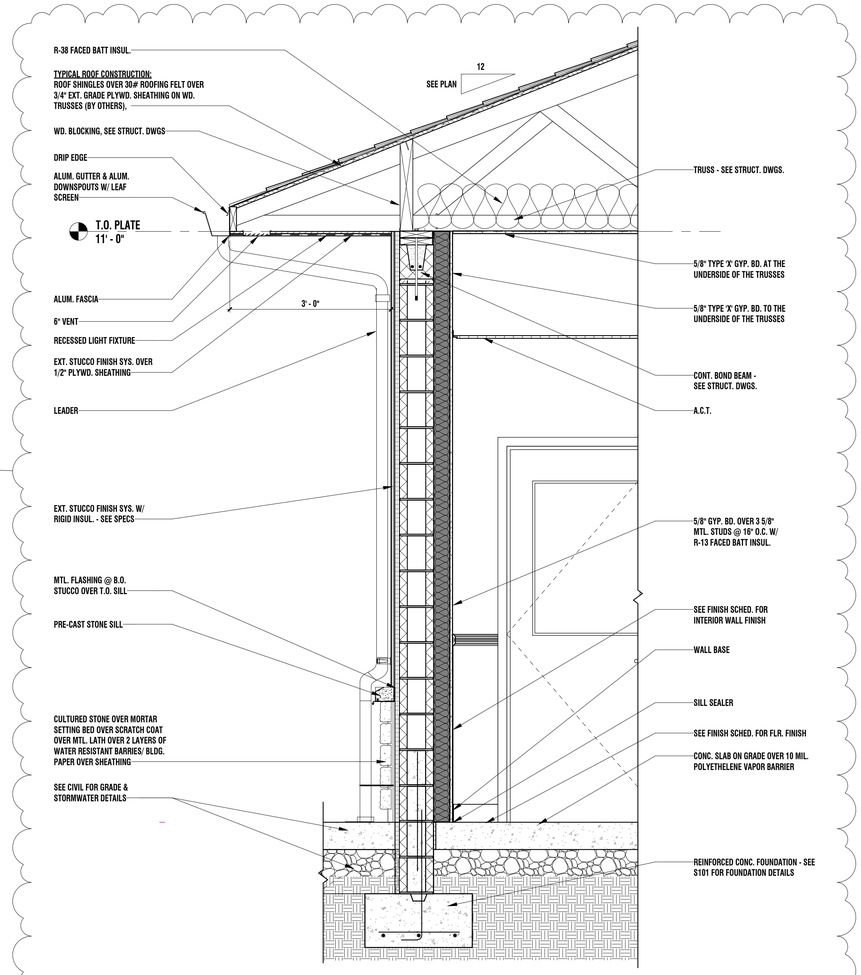


1 TYP. WALL SECTION @ WINDOW

SCALE: 3/4" = 1'-0"



2 TYP. WALL SECTION

SCALE: 3/4" = 1'-0"

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

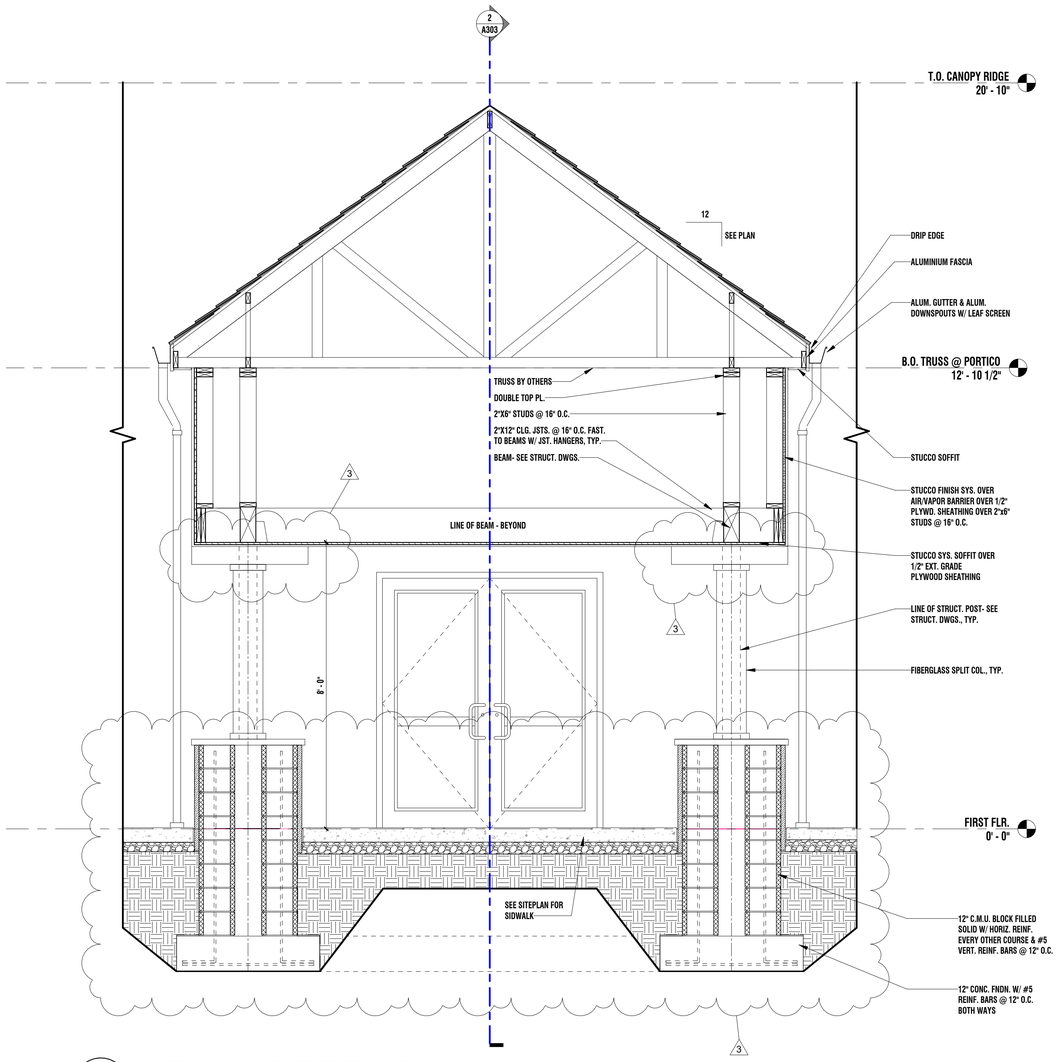
SHEET TITLE:

WALL SECTIONS

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A302



1 SECTION @ COVERED ENTRANCE

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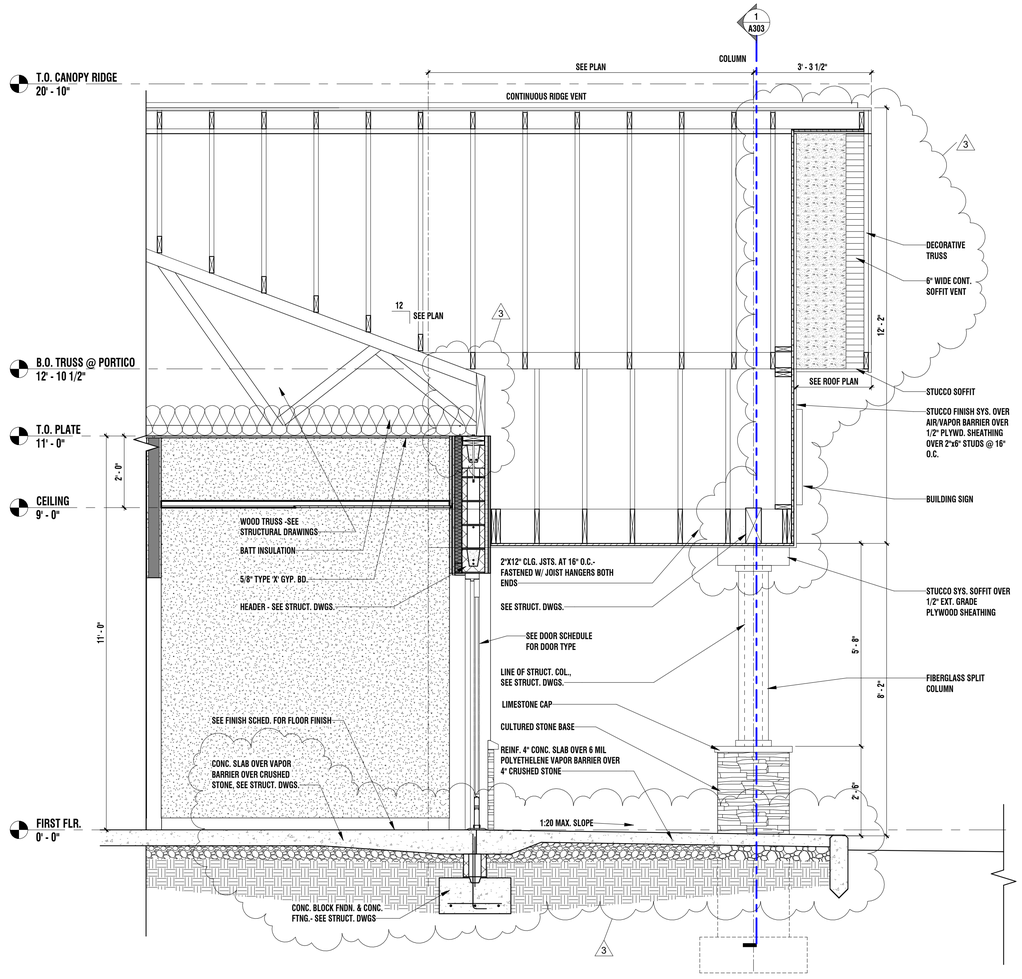

2 SECTION @ COVERED ENTRANCE

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

JAM ARCH
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ARCHITECT OF RECORD:
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FOLIO: 004339-0100
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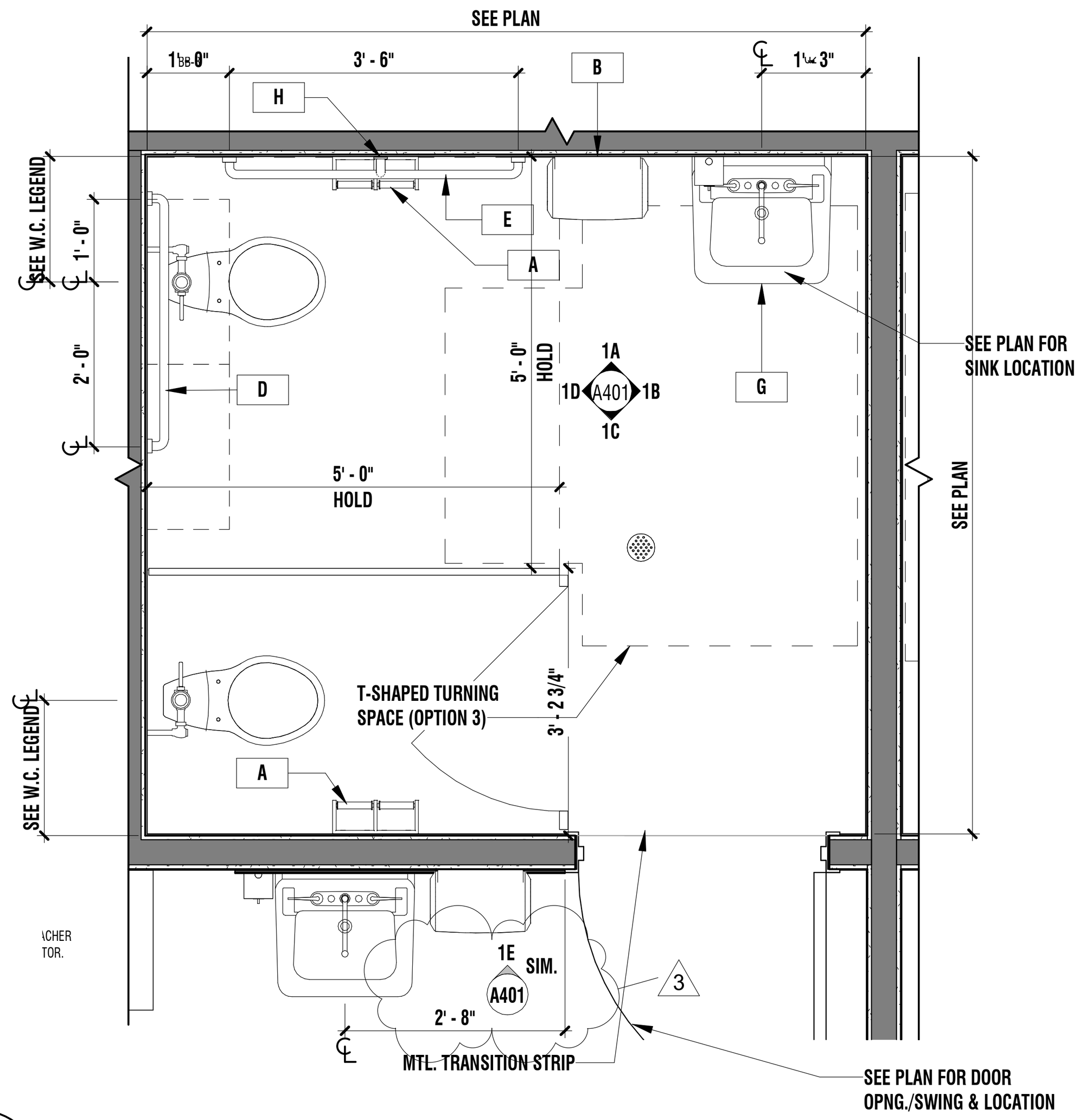
SHEET TITLE:

PORTICO SECTIONS

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A303



1 TYP. CLASSROOM TOILET PLAN
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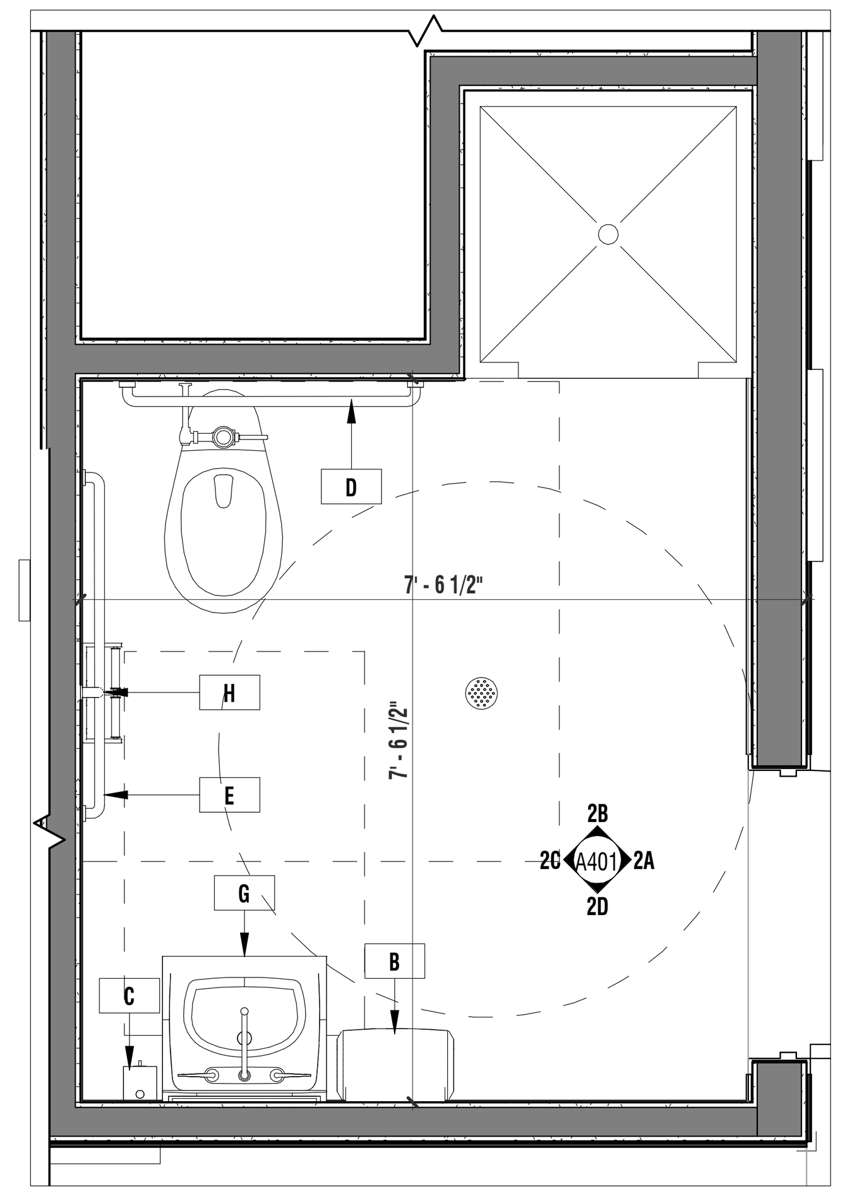
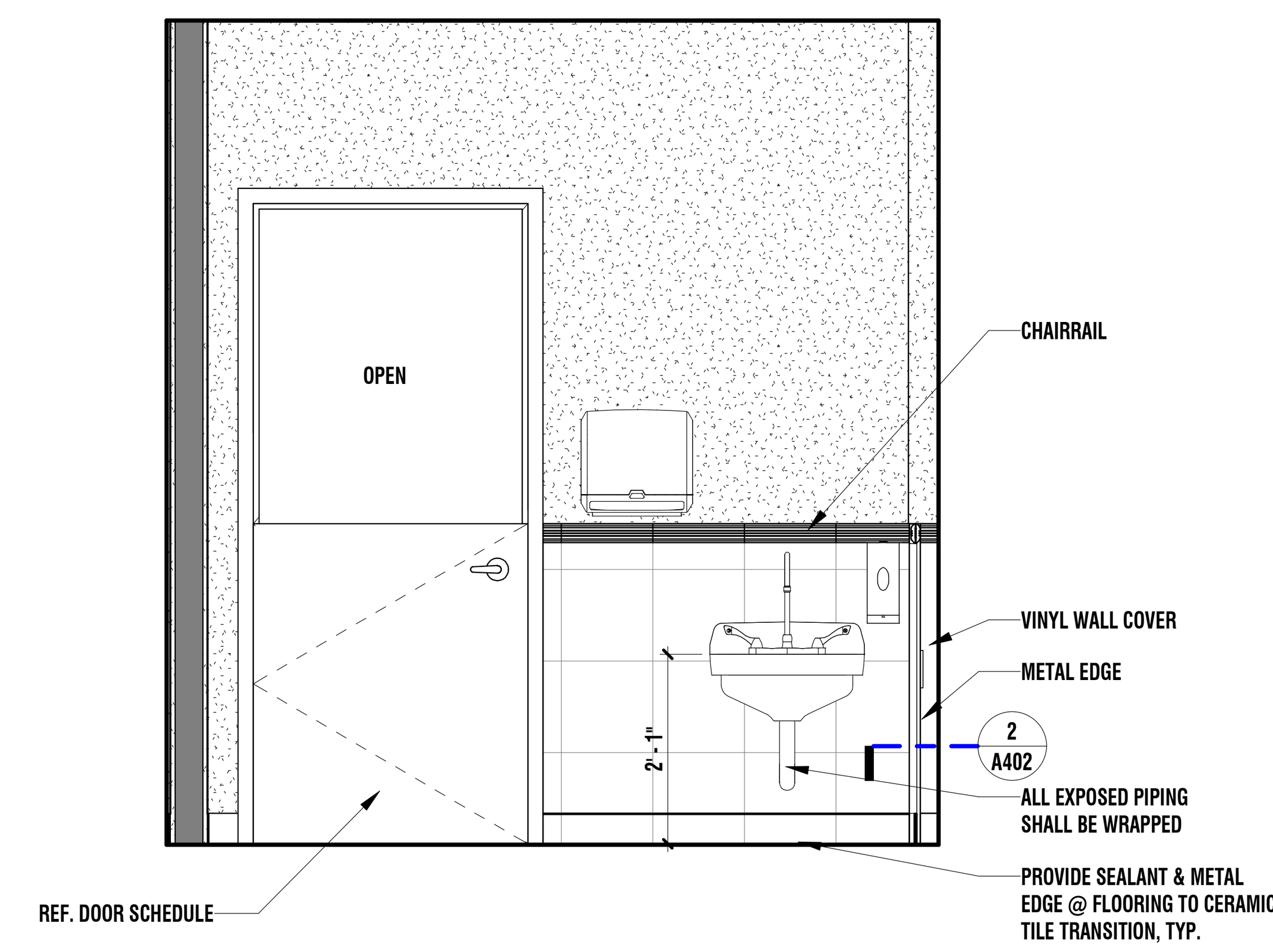


2 STAFF TOILET PLAN
SCALE: 1/2" = 1'-0"



1E TYP. CLASSROOM HANDSINK
SCALE: 1/2" = 1'-0"

GENERAL NOTES -TOILET ROOM

1. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
2. SEE DWG. A103 FOR REFLECTED CEILING PLAN.
3. SEE DWG. A104 FOR FINISH FLOOR PLAN, SCHEDULES, LEGEND, & NOTES.
4. ALL DIMENSIONS SHOWN ARE FROM FINISH SURFACE TO FINISH SURFACE.
5. ALL MIRRORS ARE TO BE CENTERED WITH LAVATORY.
6. CHILDREN TOILET DESIGN SHALL COMPLY WITH 2017 ICC A117.1
7. TOILET FLUSH HANDLE TO BE LOCATED ON THE OPEN ROOM SIDE OF THE TOILET.
8. PROVIDE WOOD BLOCKING FOR ALL WALL MOUNTED FURNITURE, EQUIPMENT AND PLUMBING ACCESSORIES.
9. SEE DWG. G003 FOR ADA/BRAILLE SIGNAGE.
10. SEE SPECIFICATION FOR METAL TILE TRIM AND TRANSITION STRIP.
11. SEE PLUMBING DRAWINGS FOR PLUMBING FIXTURES.

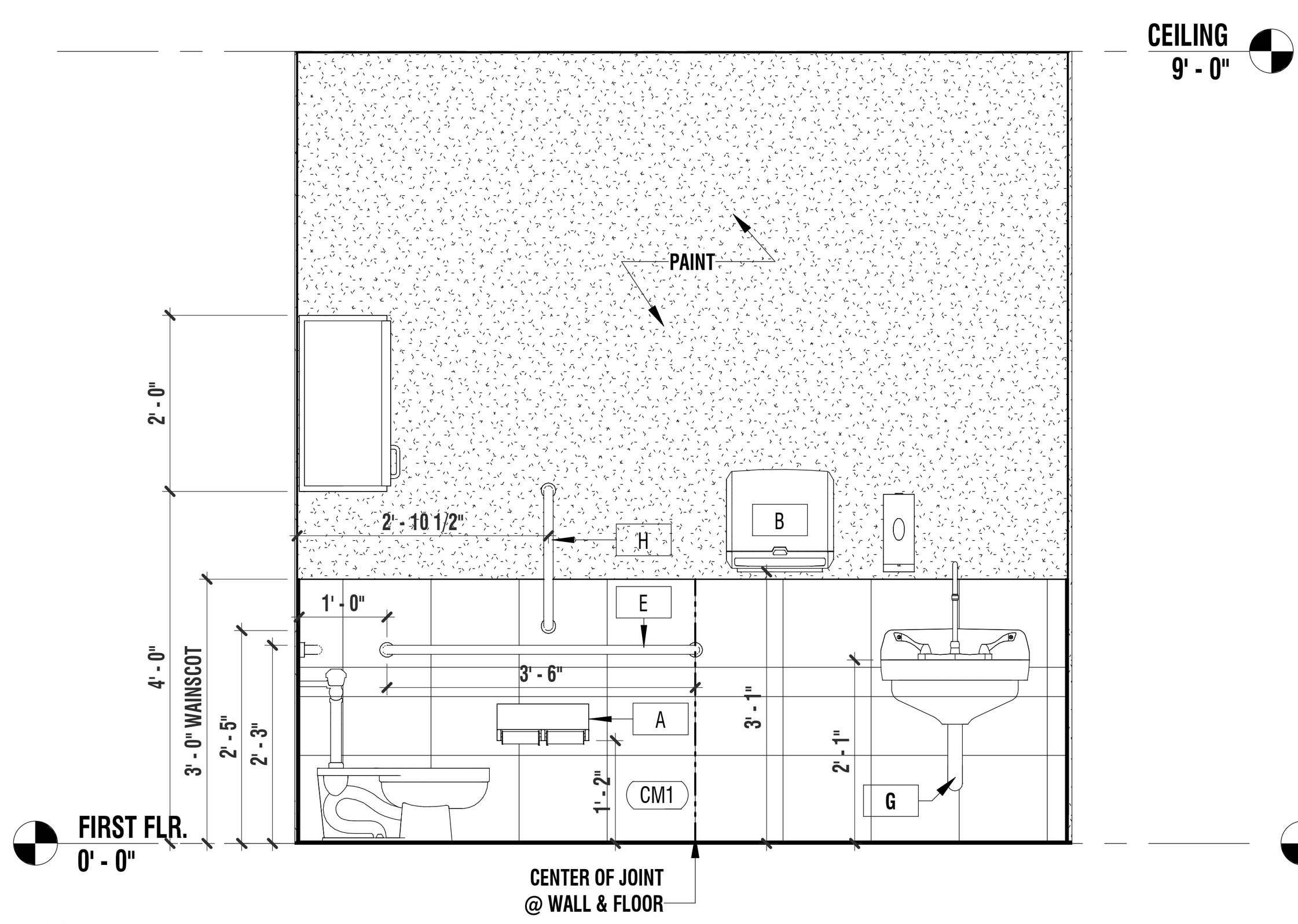
W.C. LEGEND

FIXTURE	℄ DISTANCE FIXTURE TO SIDE WALL
WC-1	12"
WC-2	16"
WC-3	18"

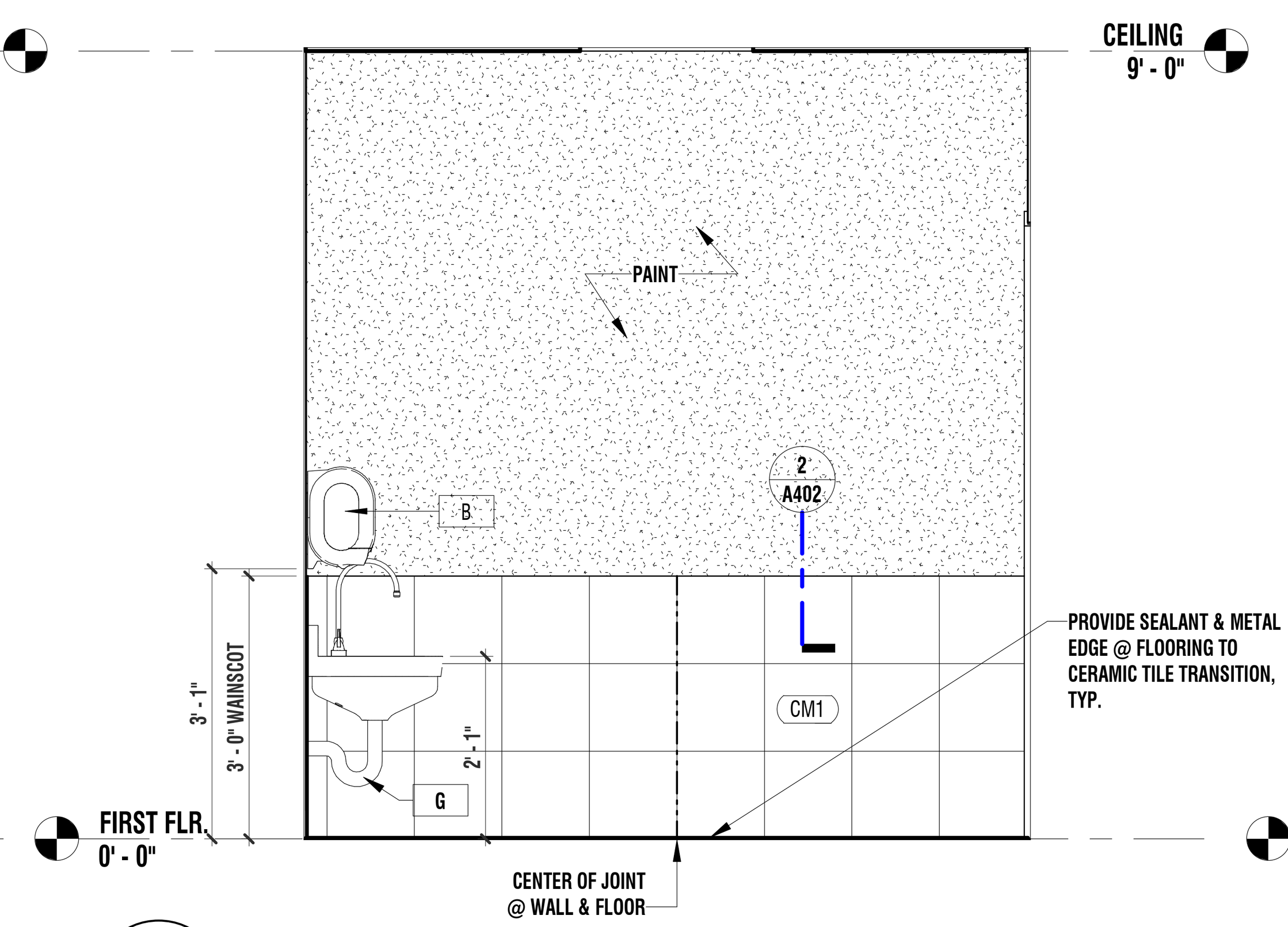
*REFER TO PLUMBING DWGS. FOR WATER CLOSET SPECIFICATIONS & ASSIGNMENTS

ACCESSORY SCHEDULE

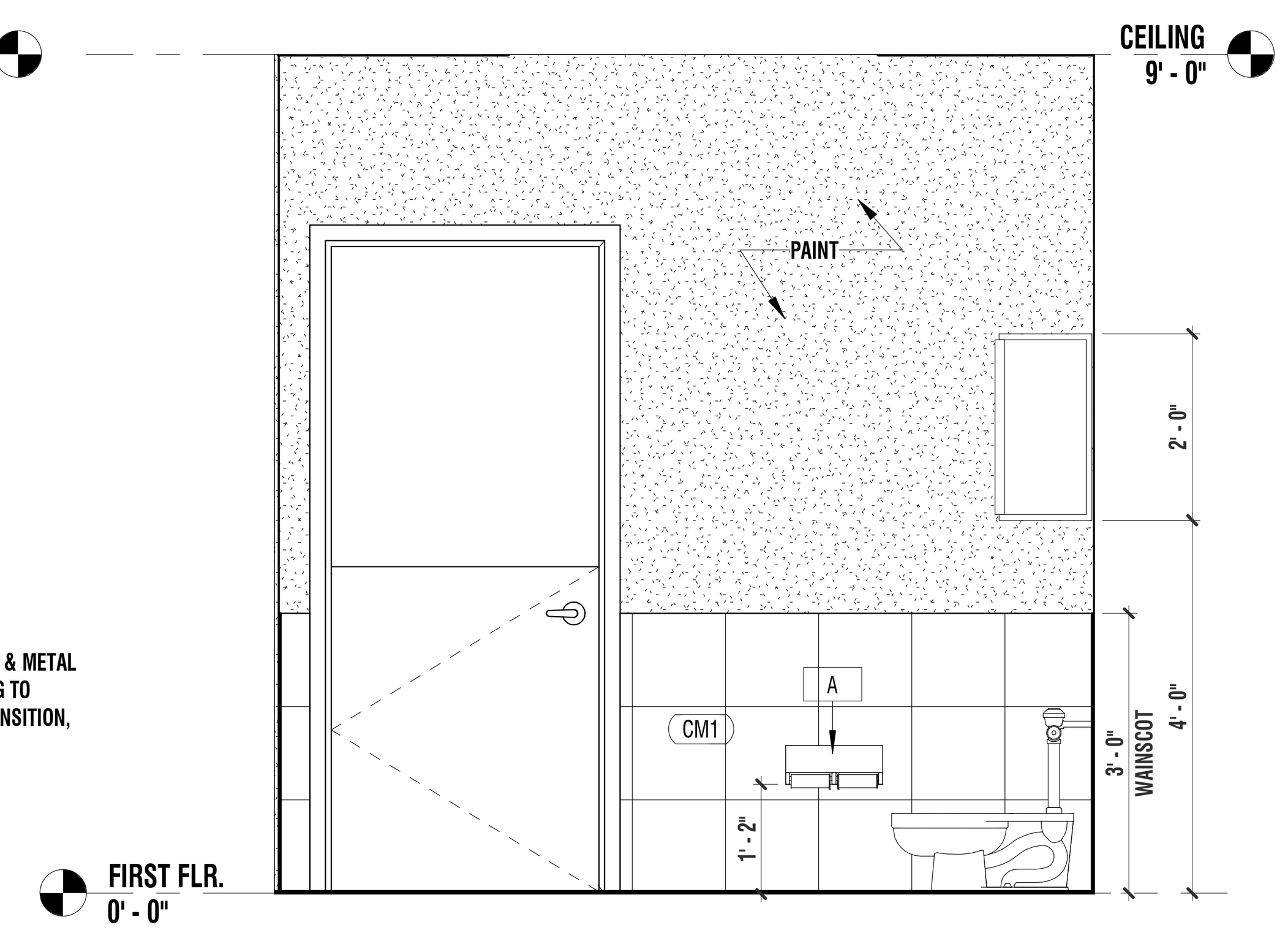
A	SINGLE-ROLL TOILET TISSUE DISPENSER - SUPPLIED BY L.B.A.
B	SURFACE-MOUNTED PAPER TOWEL DISPENSER - SUPPLIED BY L.B.A.
C	SOAP DISPENSER - SUPPLIED BY L.B.A.
D	GRAB BAR - BOBRICK #B-5806.99x36 PEENED GRIPPING
E	GRAB BAR - BOBRICK #B-5806.99x42 PEENED GRIPPING
F	MIRRORS - BOBRICK #B-1658 -18"x30" TEMPERED GLASS MIRROR.
G	USE PRE-FORMED INSULATION ON H.W. PIPING & DRAIN
H	GRAB BAR - BOBRICK #B-5806.99x18 PEENED GRIPPING
I	COAT HOOK - #B-682



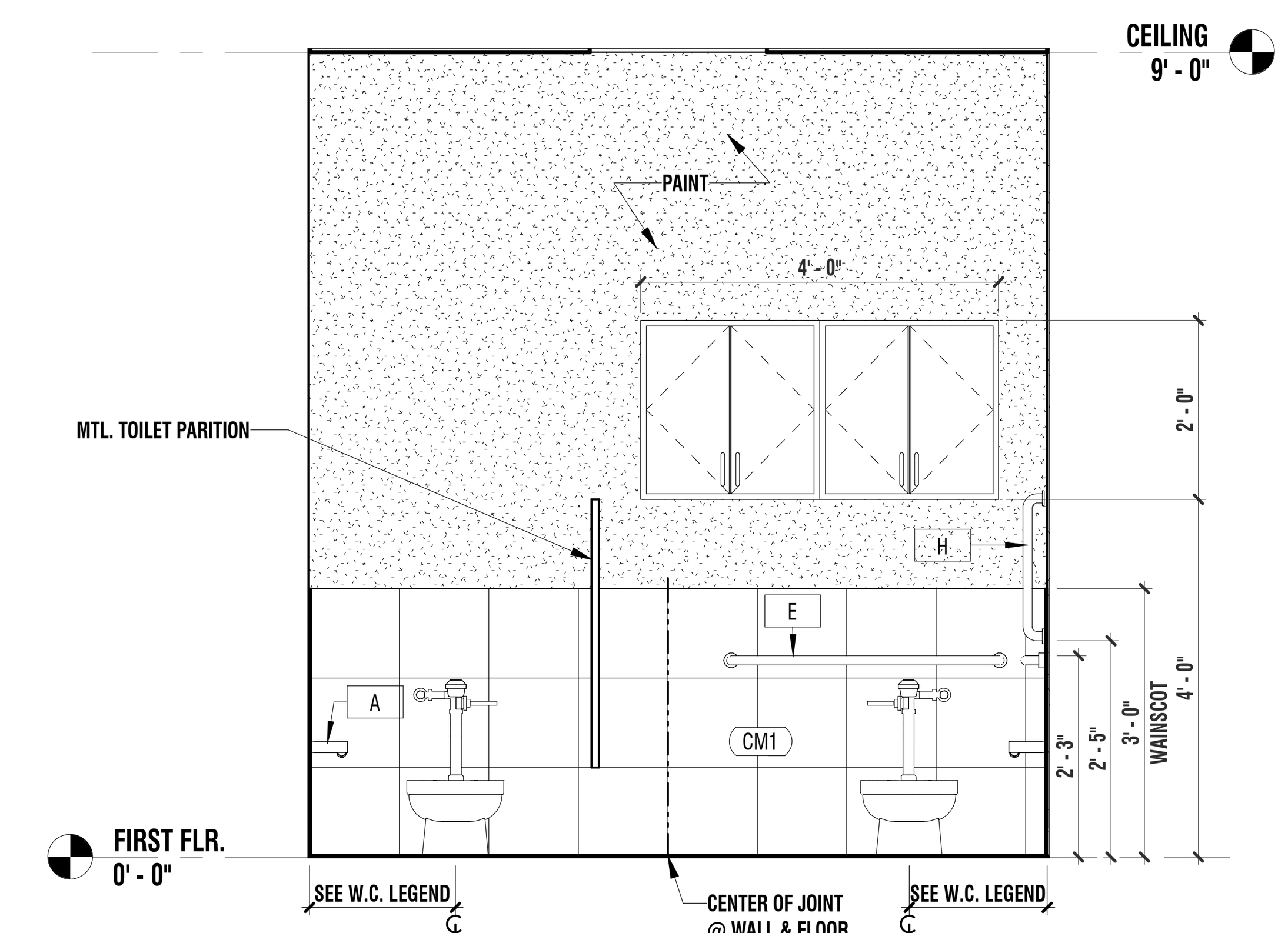
1A TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



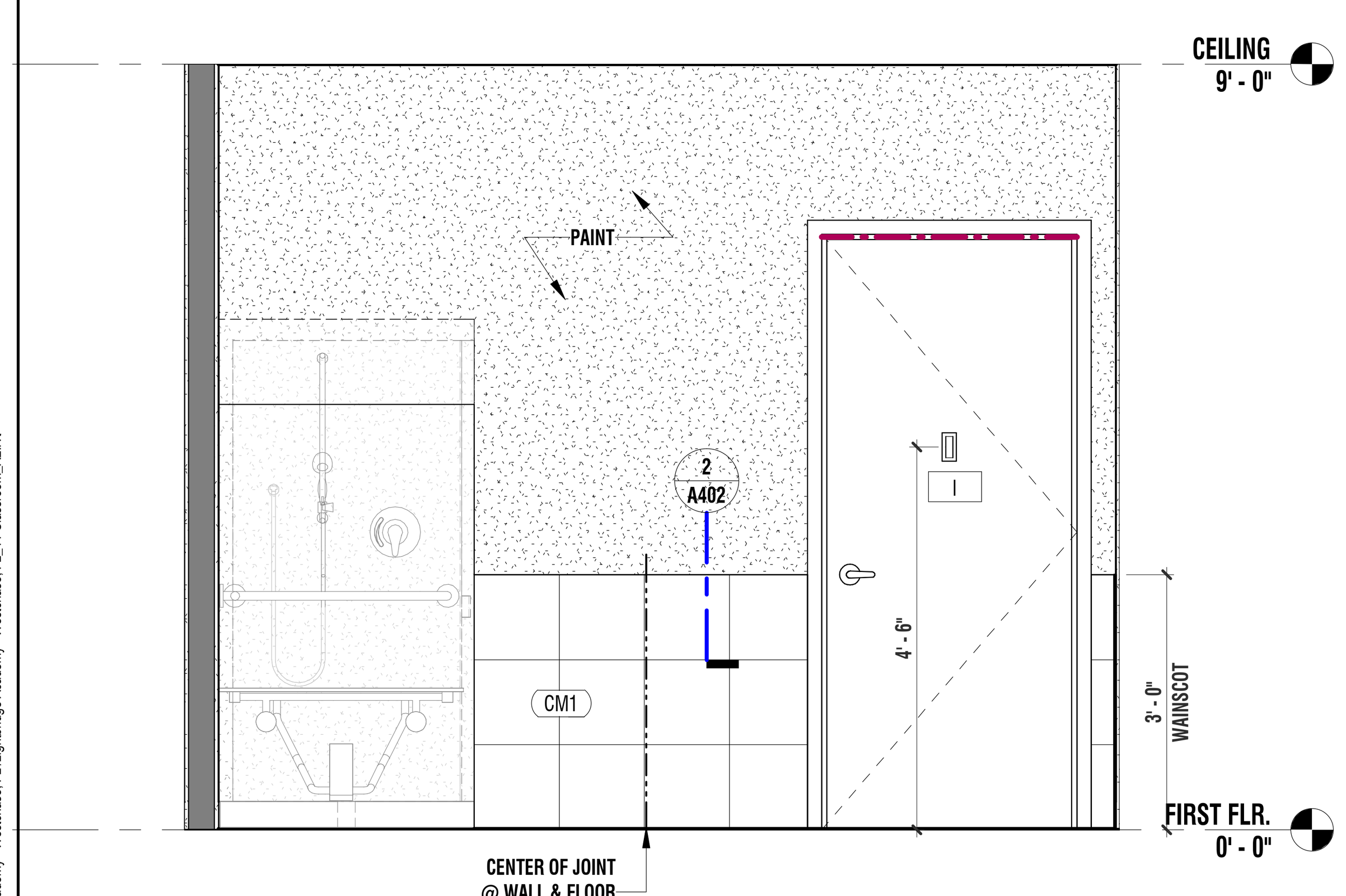
1B TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



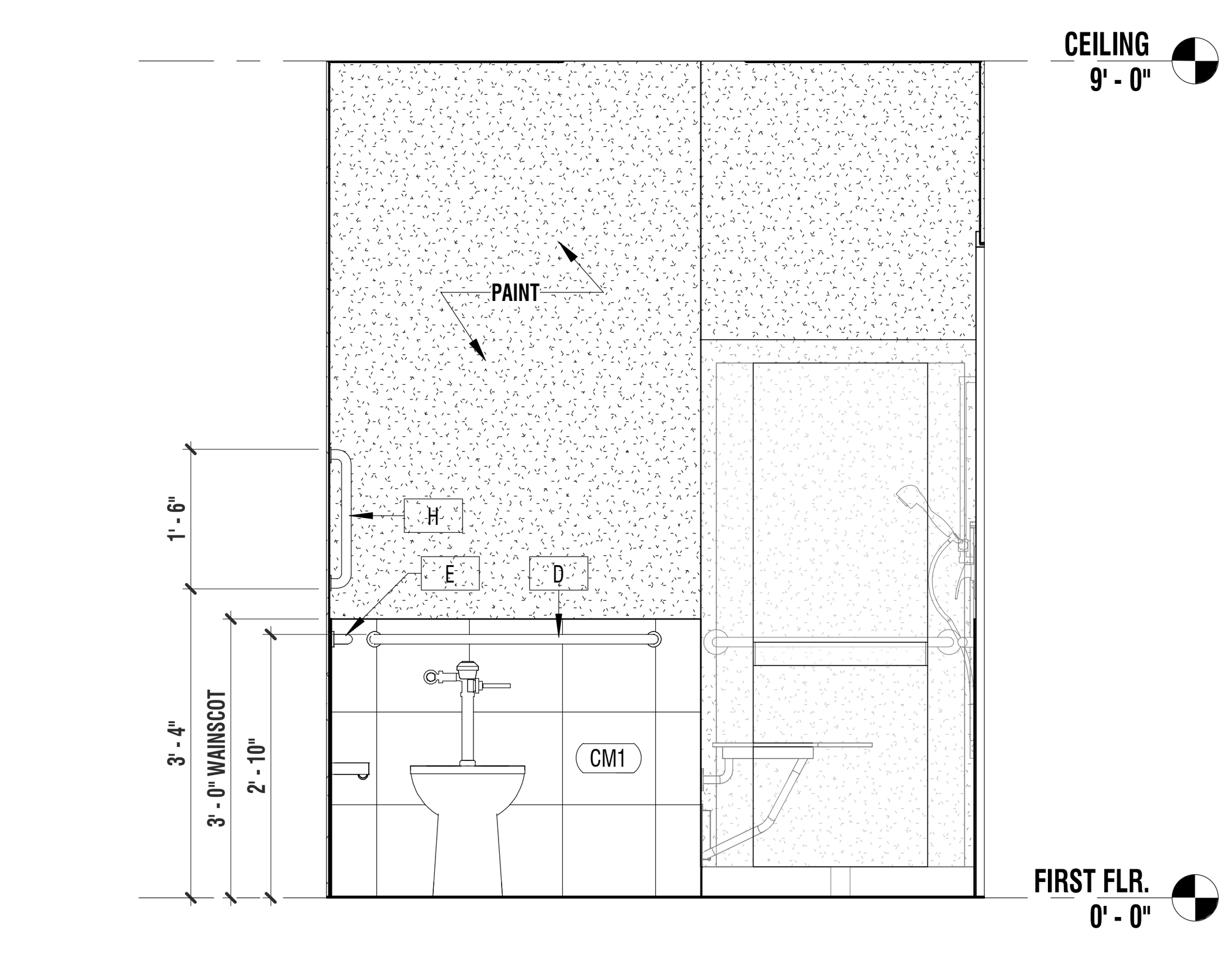
1C TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



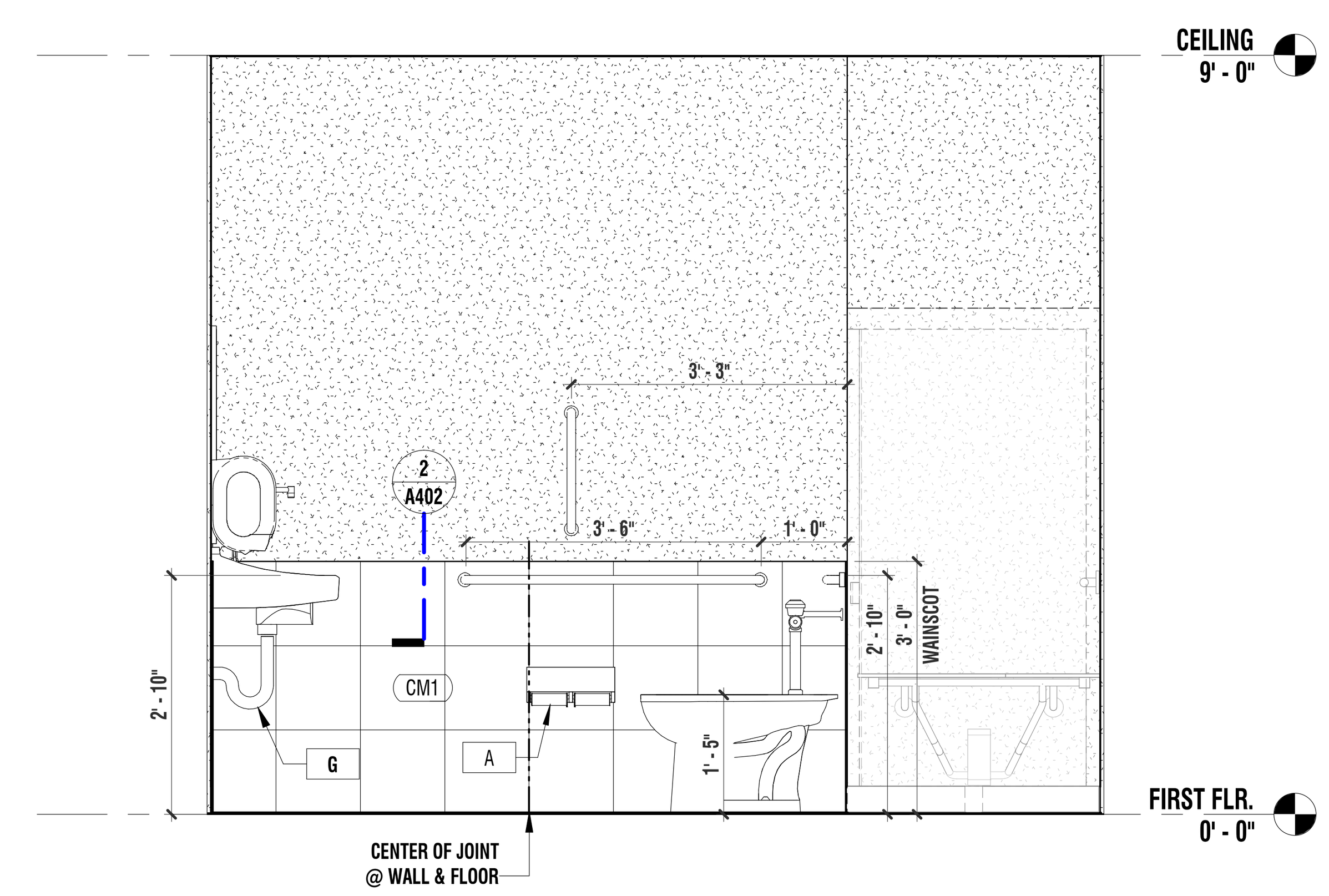
1D TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



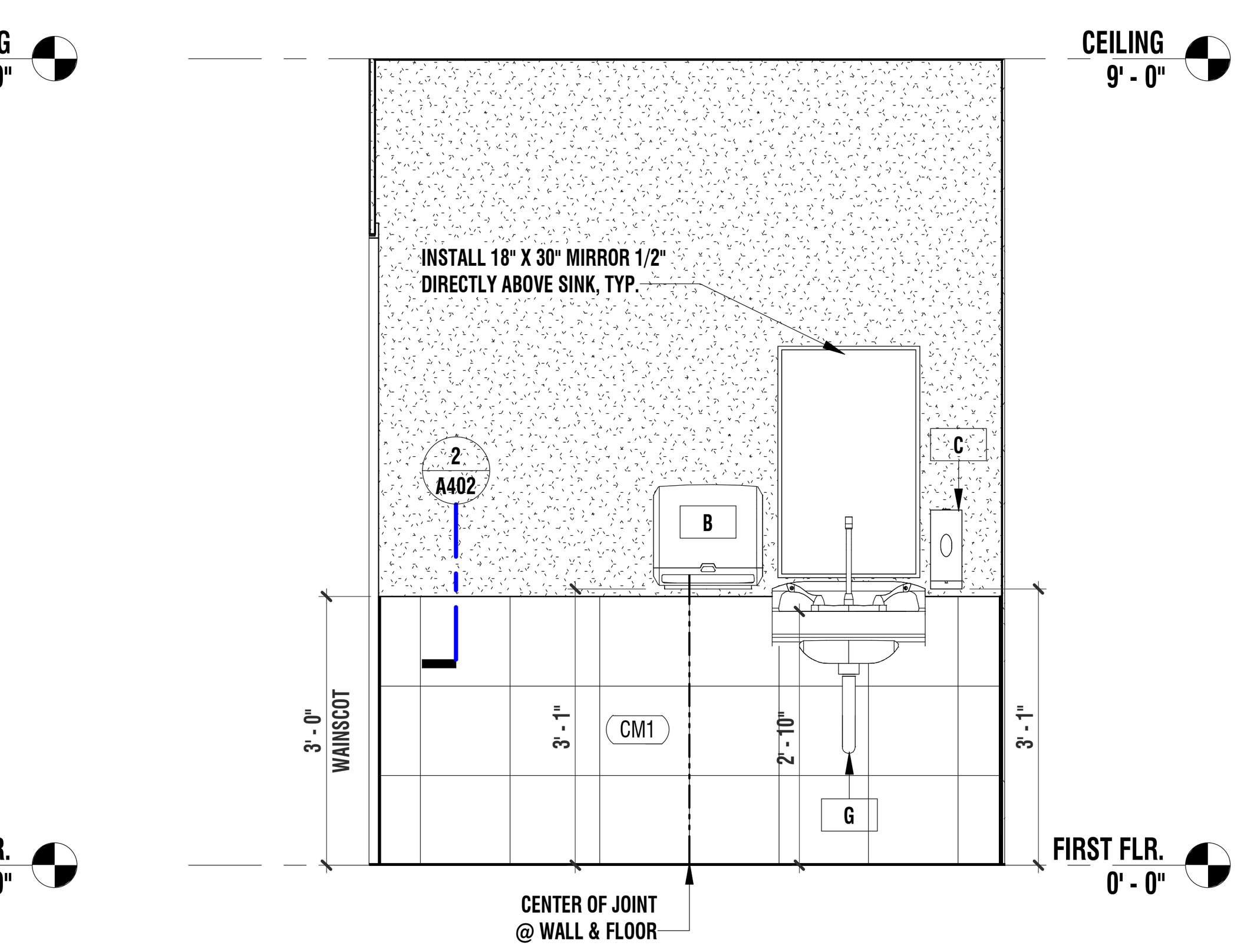
2A TYP. STAFF TOILET ELEV.
SCALE: 1/2" = 1'-0"



2B TYP. STAFF TOILET ELEV.
SCALE: 1/2" = 1'-0"



2C TYP. STAFF TOILET ELEV.
SCALE: 1/2" = 1'-0"



2D TYP. STAFF TOILET ELEV.
SCALE: 1/2" = 1'-0"

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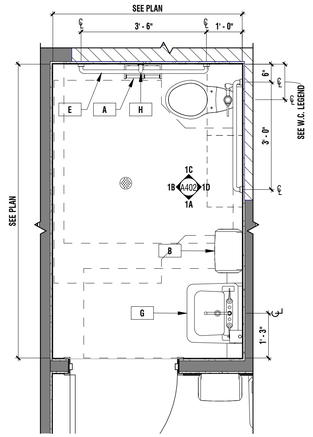
SHEET TITLE:
ENLARGED TOILET PLANS & ELEVATIONS SCHEDULE & NOTES

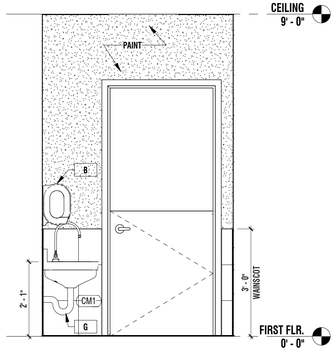
REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

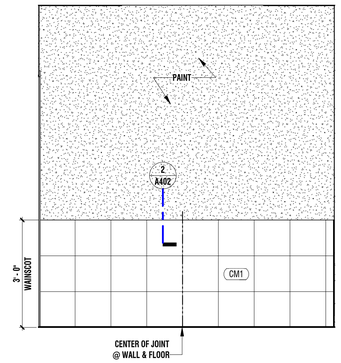
SHEET NO.
A401



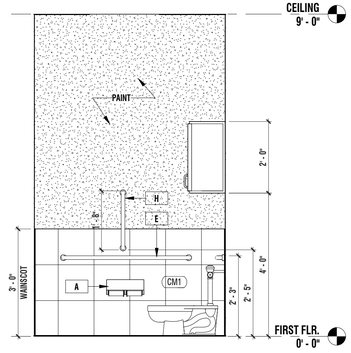
1 TYP. CLASSROOM TOILET PLAN
SCALE: 1/2" = 1'-0"



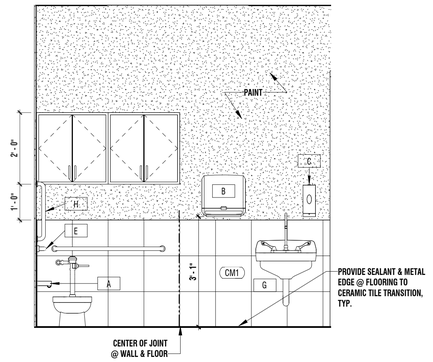
1A TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



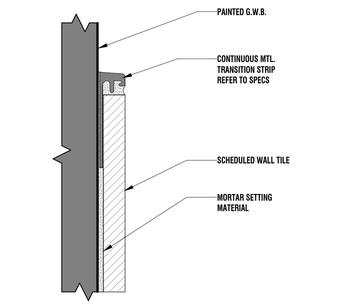
1B TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



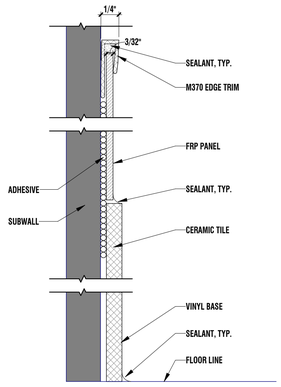
1C TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



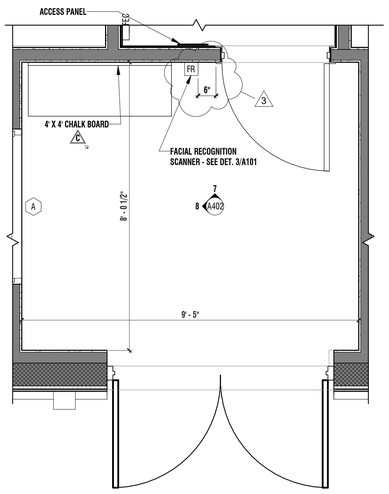
1D TYP. CLASSROOM TOILET ELEV.
SCALE: 1/2" = 1'-0"



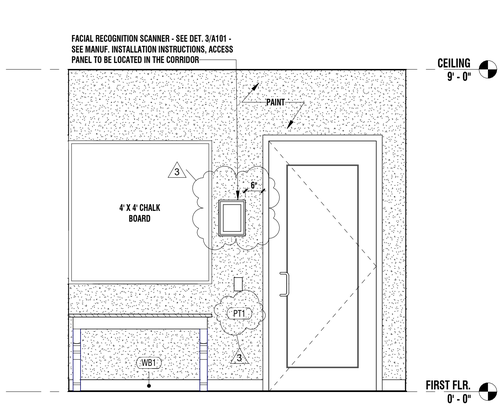
2 TYP. MTL. TRIM DETAIL
SCALE: 12" = 1'-0"



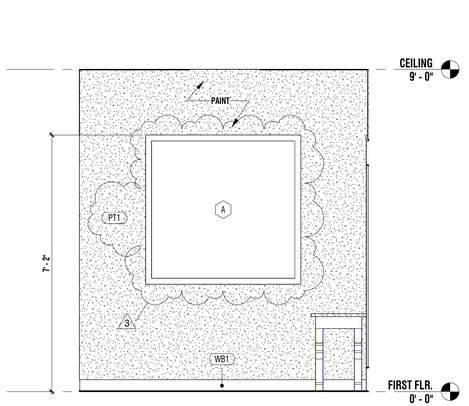
3 TYP. FRP DETAIL
SCALE: 12" = 1'-0"



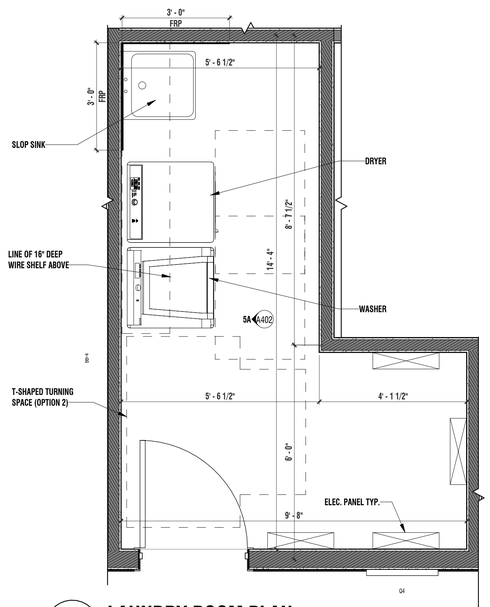
4 ENLARGED VESTIBULE PLAN
SCALE: 1/2" = 1'-0"



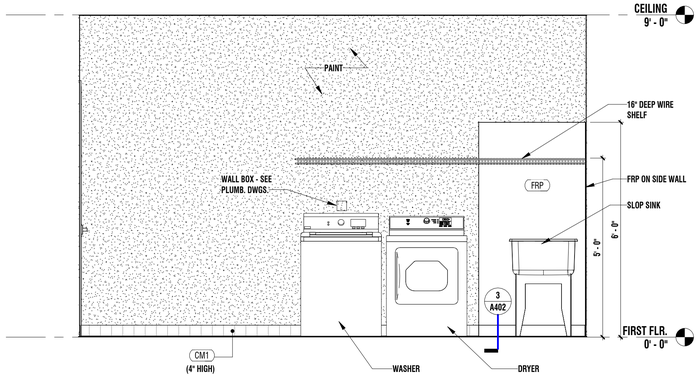
7 VESTIBULE ELEVATION
SCALE: 1/2" = 1'-0"



8 VESTIBULE ELEVATION
SCALE: 1/2" = 1'-0"



5 LAUNDRY ROOM PLAN
SCALE: 1/2" = 1'-0"



5A LAUNDRY ELEVATION
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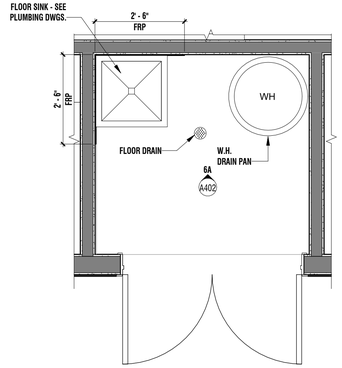
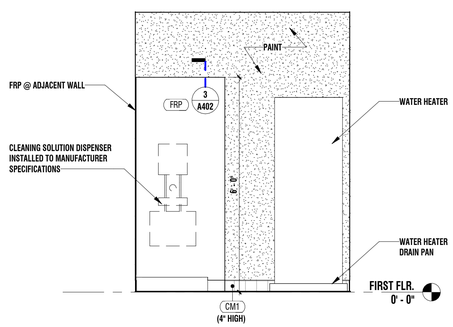


6 UTILITY ROOM PLAN
SCALE: 1/2" = 1'-0"



6A UTILITY ROOM ELEVATION
SCALE: 1/2" = 1'-0"

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ENLARGED INTERIOR PLANS, ELEVATIONS AND DETAILS

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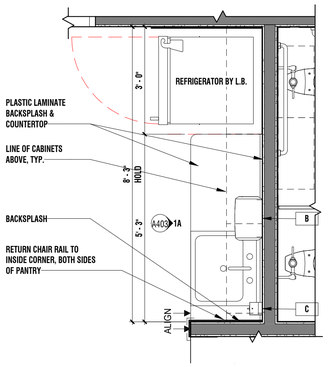
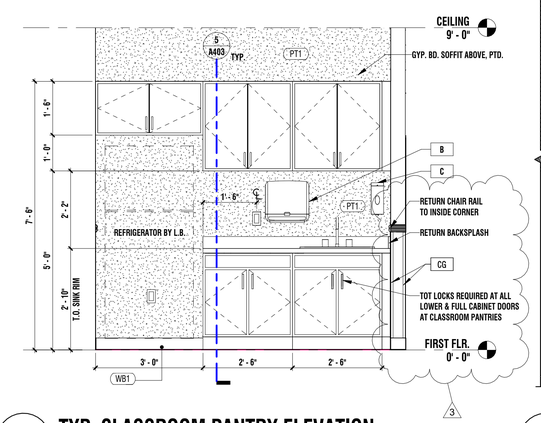
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

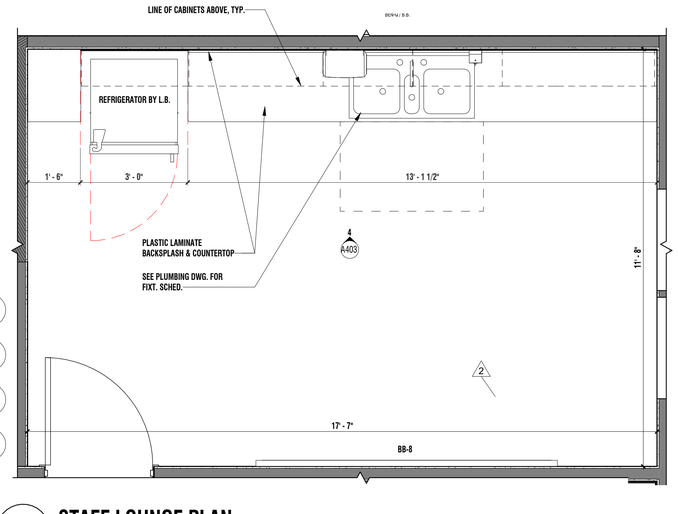
SHEET NO.
A402





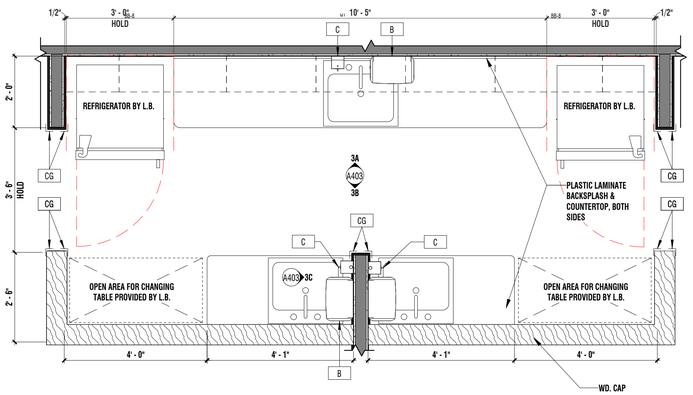
1 TYP. CLASSROOM PANTRY PLAN
SCALE: 1/2" = 1'-0"

1A TYP. CLASSROOM PANTRY ELEVATION
SCALE: 1/2" = 1'-0"

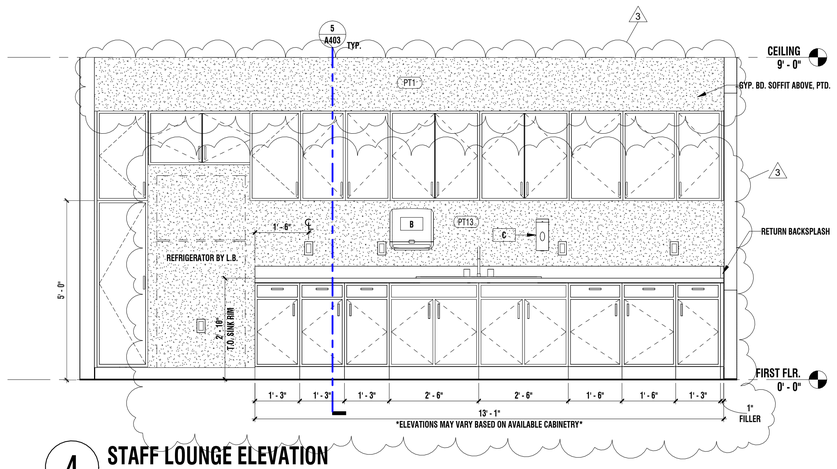


2 STAFF LOUNGE PLAN
SCALE: 1/2" = 1'-0"

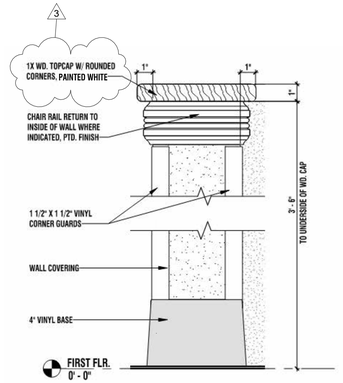
ACCESSORY SCHEDULE	
B	SURFACE-MOUNTED PAPER TOWEL DISPENSER - SUPPLIED BY L.B.A.
C	SOAP DISPENSER - SUPPLIED BY L.B.A.
CG	1 1/2" X 1 1/2" VINYL CORNER GUARDS



3 TYP. INFANT SUITE PLAN
SCALE: 1/2" = 1'-0"

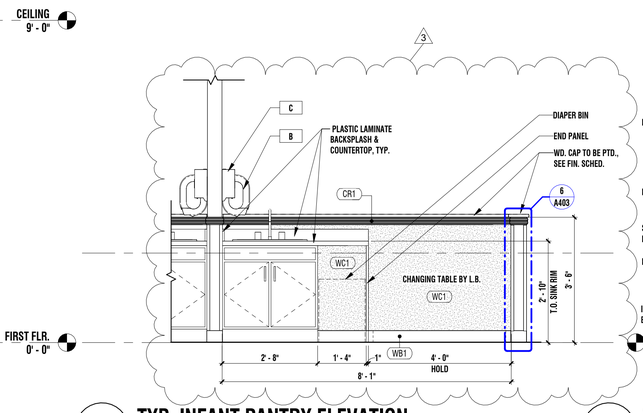


4 STAFF LOUNGE ELEVATION
SCALE: 1/2" = 1'-0"

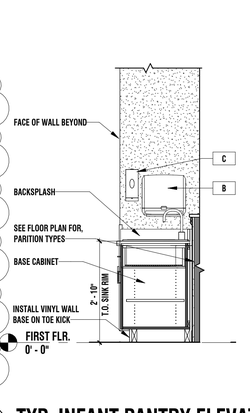


6 TYP. HALF WALL ELEVATION
SCALE: 3" = 1'-0"

3A TYP. INFANT PANTRY ELEVATION
SCALE: 1/2" = 1'-0"



3B TYP. INFANT PANTRY ELEVATION
SCALE: 1/2" = 1'-0"



3C TYP. INFANT PANTRY ELEVATION
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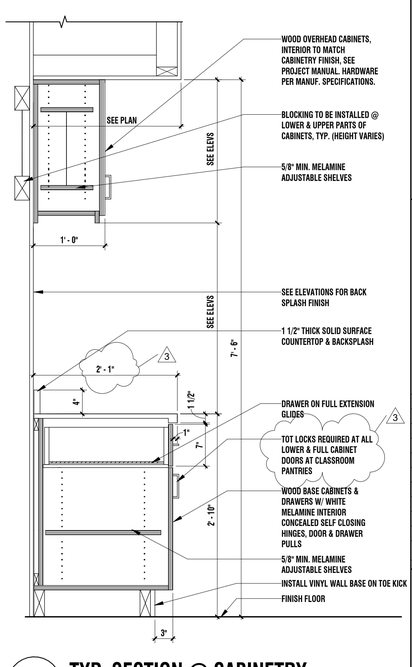

5 TYP. SECTION @ CABINETRY
SCALE: 1" = 1'-0"

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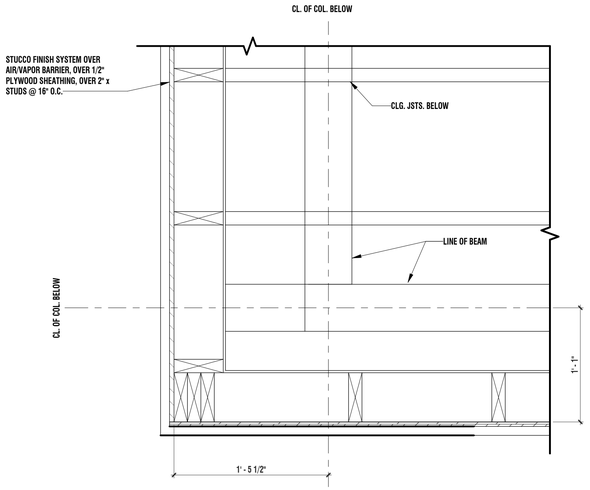
2	08/27/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

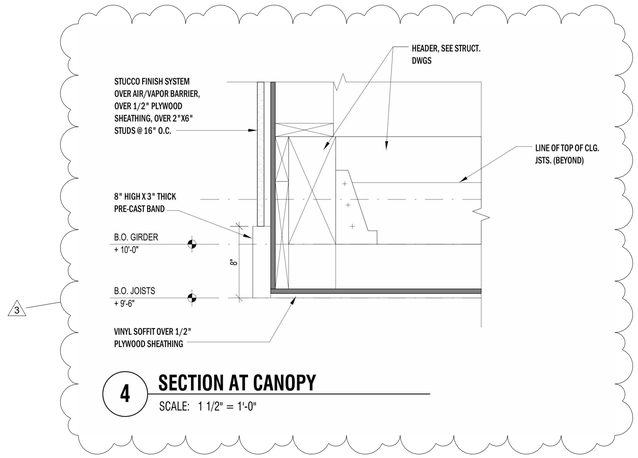
JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A403



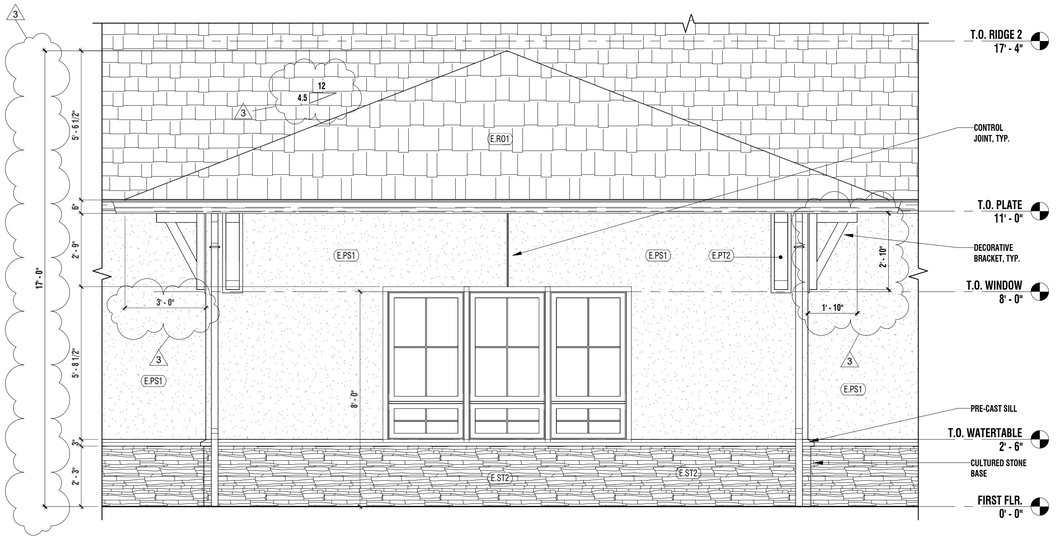
1 PLAN SECTION AT CANOPY

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



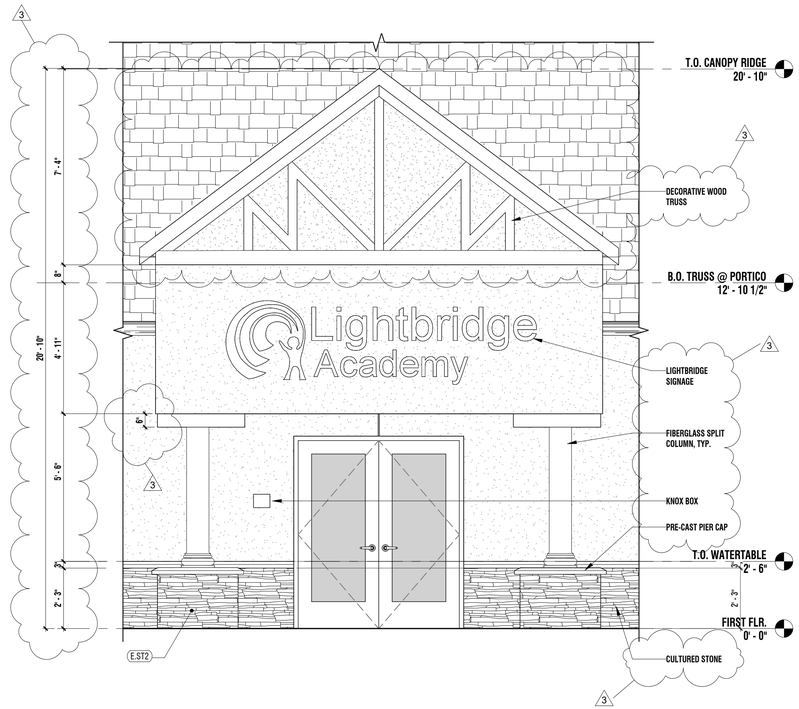
4 SECTION AT CANOPY

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



2 ELEVATION DETAIL

SCALE: 3/8" = 1'-0"



3 PORTICO ELEVATION

SCALE: 3/8" = 1'-0"

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Bergmann Architectural Associates, Inc.

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NOT FOR REGULATORY APPROVAL, PERMITTING, OR CONSTRUCTION

JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

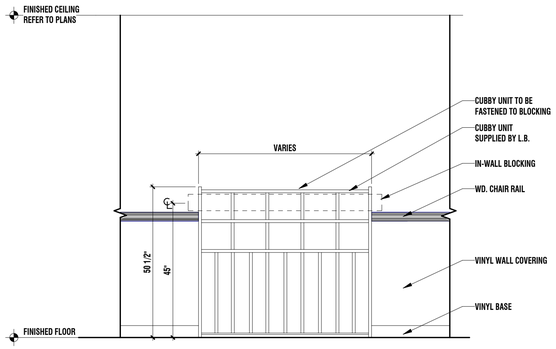
SHEET TITLE:

ENLARGED BUILDING ELEVATIONS

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

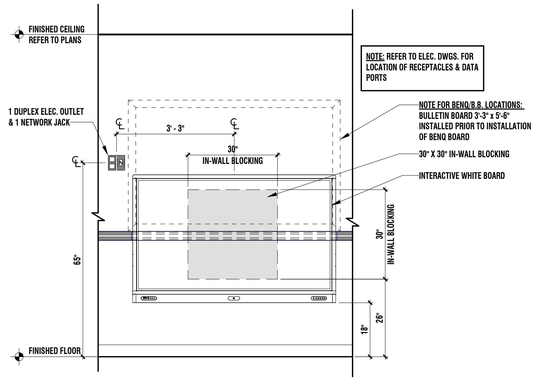
JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A404



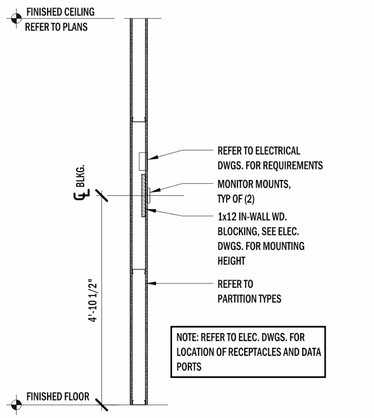
1 FLOOR-MOUNTED CUBBY ELEVATION

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



2 BENQ BLOCKING ELEVATION

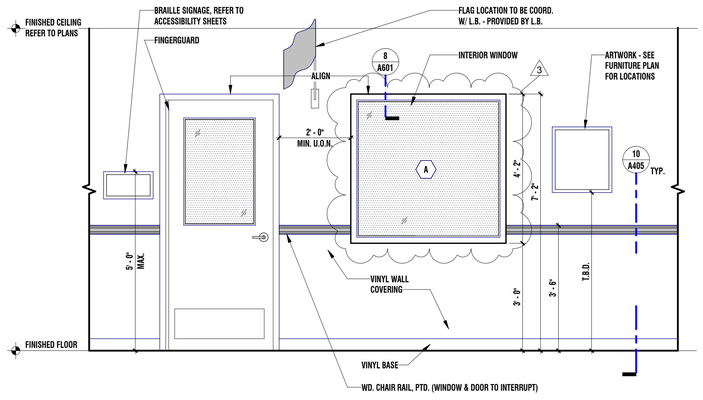
SCALE: 1/2" = 1'-0"



3 TV BLOCKING DETAIL

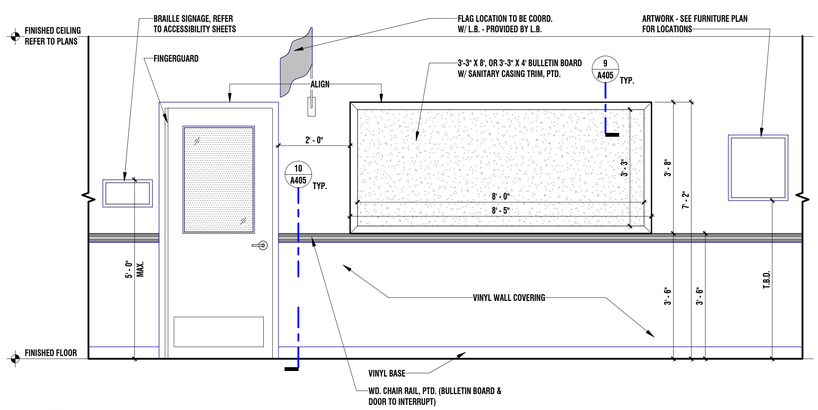
SCALE: 1/2" = 1'-0"

4 NOT USED



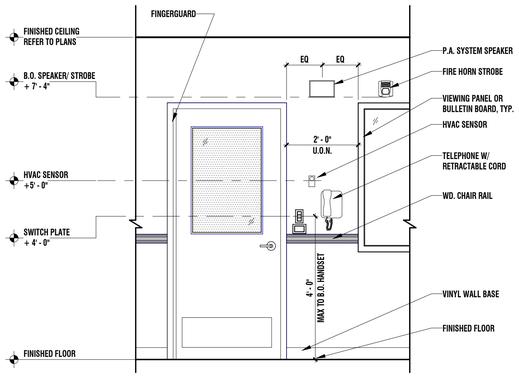
5 TYPICAL CORRIDOR ELEVATION @ VIEWING PANEL

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



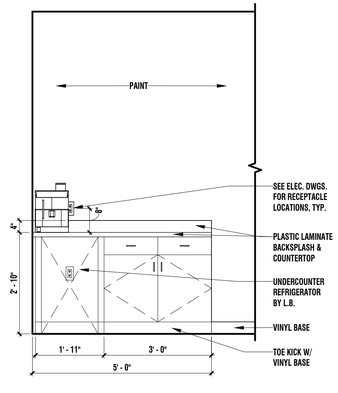
6 TYPICAL CORRIDOR ELEVATION @ BULLETIN BOARD

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



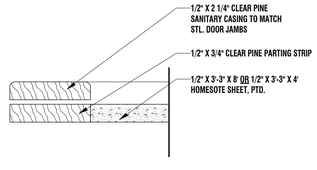
7 CLASSROOM ELEVATION

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



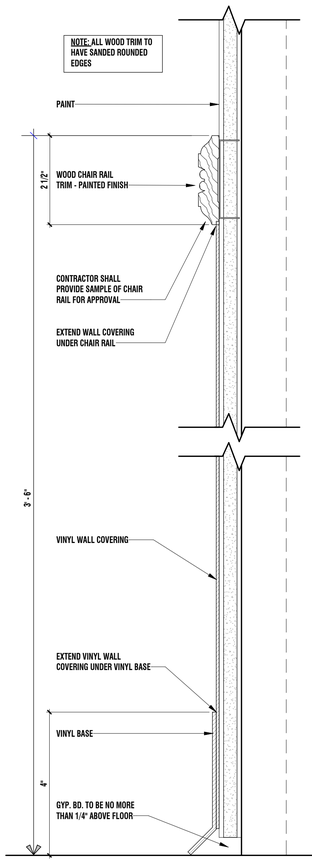
8 HOSPITALITY CENTER

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



9 BULLETIN BD. EDGE DETAIL

SCALE: 6" = 1'-0"



10 TYP. WAINSCOT DETAIL

SCALE: 6" = 1'-0"

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OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

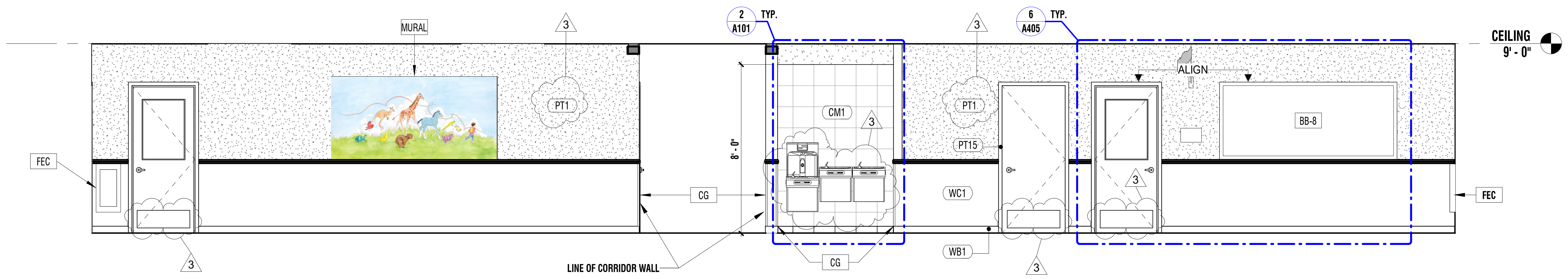
LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
CASEWORK ELEVATIONS & DETAILS

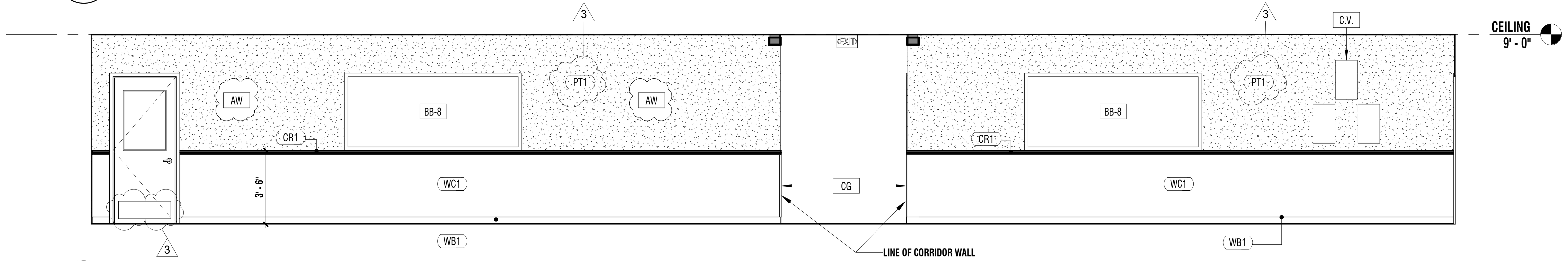
REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
2	08/27/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

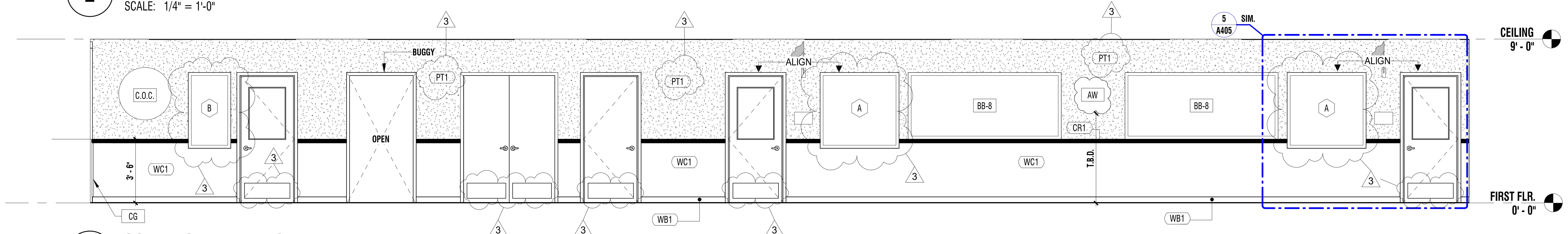
SHEET NO.
A405



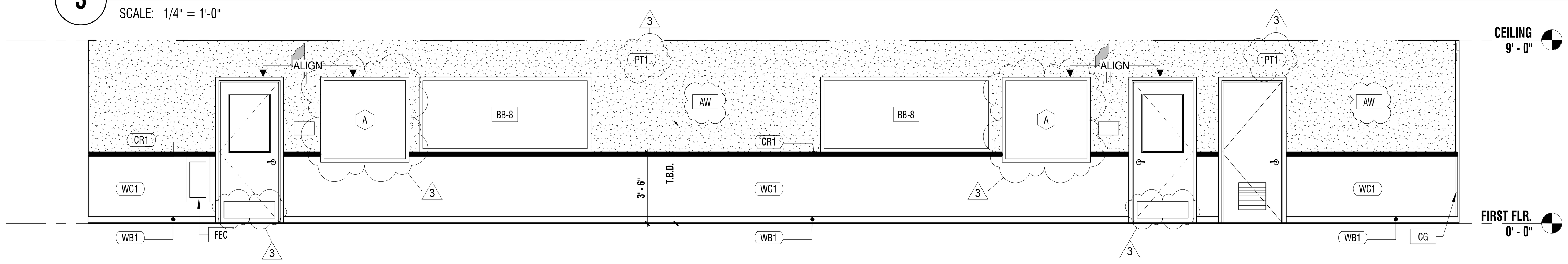
1 CORRIDOR ELEVATION
SCALE: 1/4" = 1'-0"



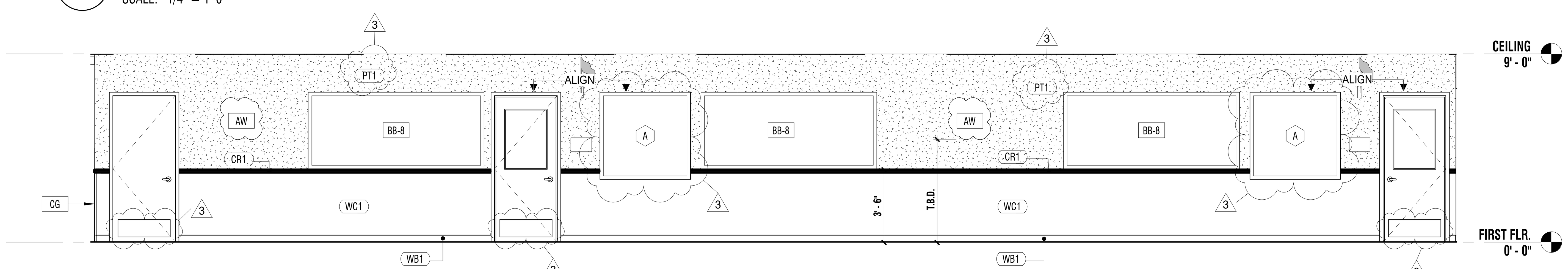
2 CORRIDOR ELEVATION
SCALE: 1/4" = 1'-0"



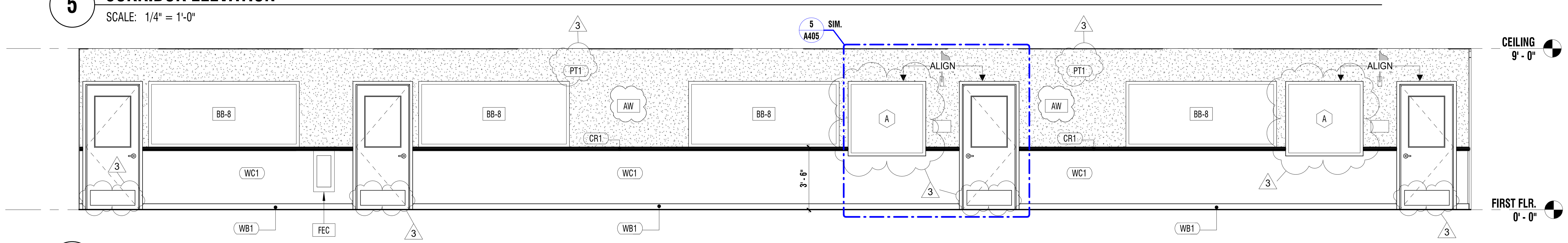
3 CORRIDOR ELEVATION
SCALE: 1/4" = 1'-0"



4 CORRIDOR ELEVATION
SCALE: 1/4" = 1'-0"



5 CORRIDOR ELEVATION
SCALE: 1/4" = 1'-0"



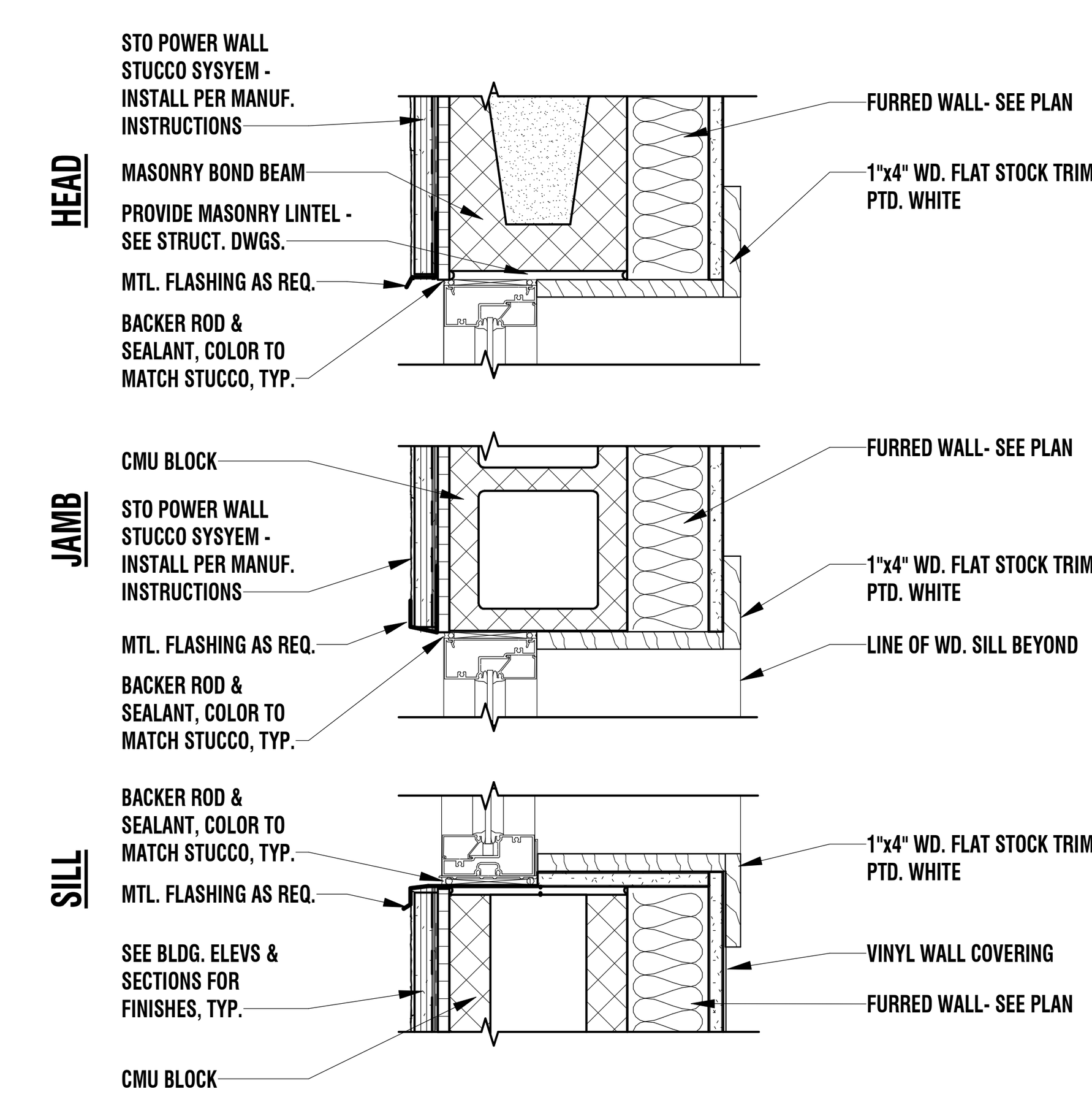
6 CORRIDOR ELEVATION
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

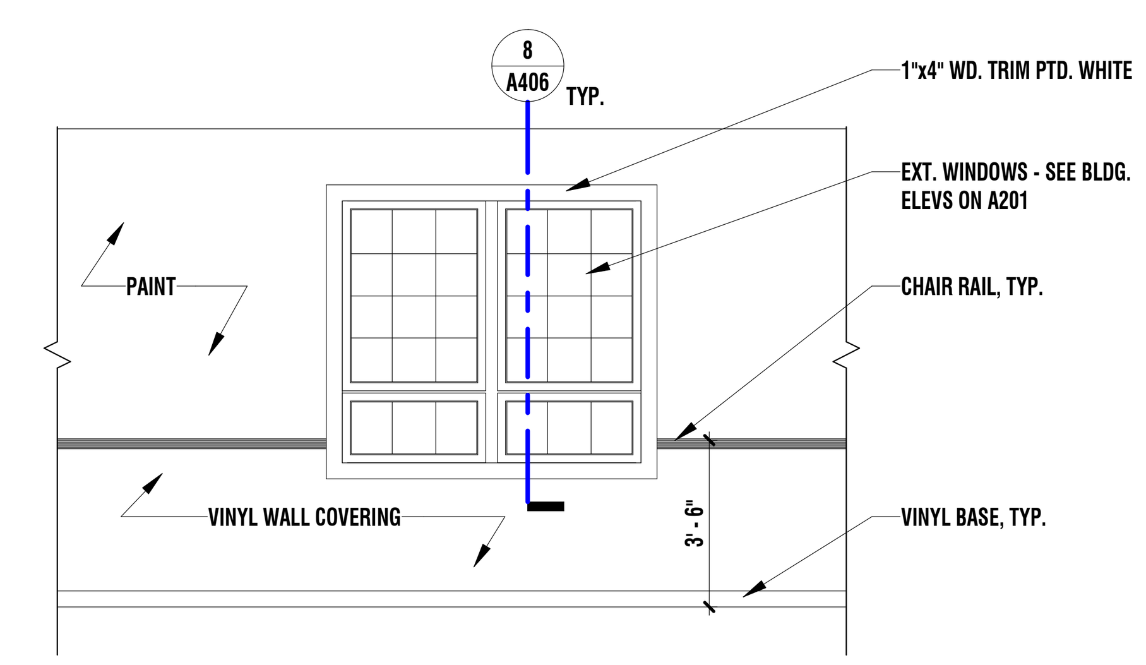
1. SEE DWG. G006 FOR ART WORK LOCATIONS.

LEGEND

?	INDICATES FINISH MATERIAL - REFER TO FINISH SCHEDULE
A	INDICATES WINDOW TAG - REFER TO WINDOW SCHEDULE
1i	EQUIPMENT TAG - REFER TO FURNITURE PLAN



8 TYP. EXT. VINYL WINDOW DETAIL
SCALE: 1 1/2" = 1'-0"



7 TYP. EXT. WINDOW ELEVATION
SCALE: 1/4" = 1'-0"

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LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

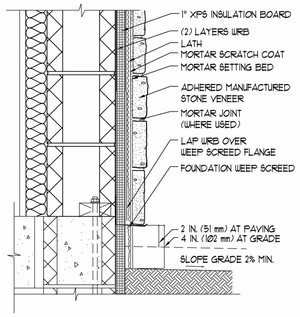
SHEET TITLE:

CORRIDOR ELEVATIONS & DETAILS

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

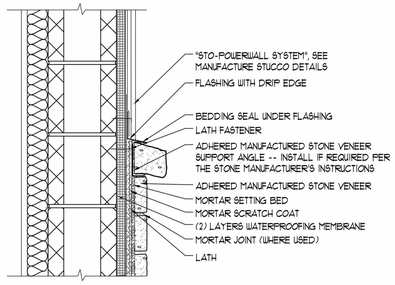
JOB NUMBER:	24001265A
DATE:	04/17/2024
DRAWN BY:	KM/JF/JW
CHECKED BY:	MV

SHEET NO.
A406



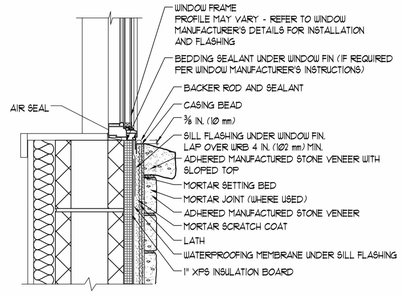
1 SECTION @ BASE

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



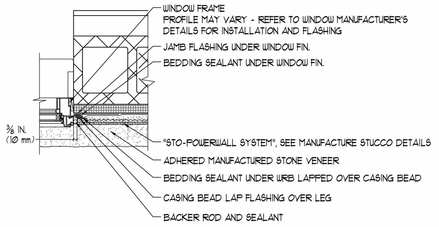
2 SECTION @ PRE-CAST SILL

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



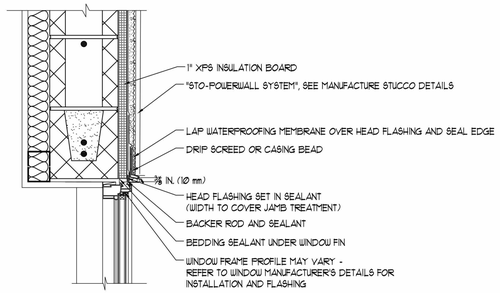
3 SECTION @ WINDOW SILL

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



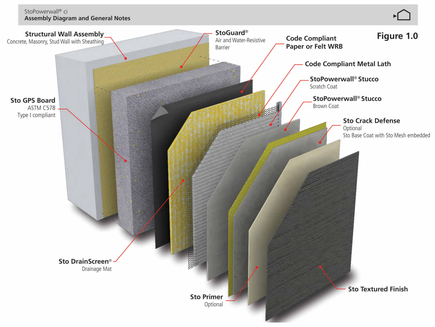
4 SECTION @ WINDOW JAMB

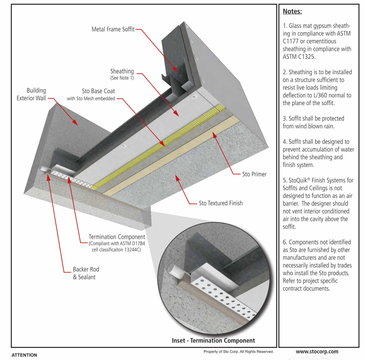
SCALE: 1 1/2" = 1'-0"



5 SECTION @ WINDOW HEAD

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





sto

StoQuik® Finish System for Soffits & Ceilings
Termination at Abutting Wall

Detail No.: 14.20
Date: October 2023

Notes:

1. Glass mat gypsum sheathing in compliance with ASTM C1177 or cementitious sheathing in compliance with ASTM C1325.

2. Sheathing is to be installed on a structure sufficient to resist live loads limiting deflection to L/360 normal to the plane of the soffit.

3. Soffit shall be protected from wind/blown rain.

4. Soffit shall be designed to prevent accumulation of water behind the sheathing and finish system.

5. StoQuik® Finish Systems for Soffits and Ceilings is not designed to function as an air barrier. The designer should not vent interior conditioned air into the cavity above the soffit.

6. Components not identified as Sto are furnished by other manufacturers and are not necessarily installed by trades who install the Sto products. Refer to project specific contract documents.

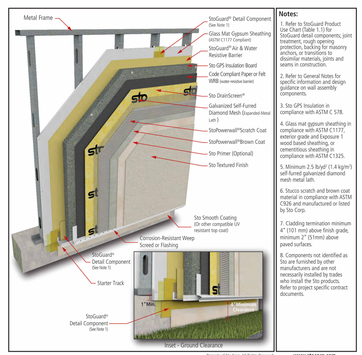
www.stocorp.com

↑ Back to Top

sto

StoPowerwall® ci
Termination at Grade: Sheathing over Foundation

Detail No.: 63s.03
Date: August 2023



Notes:

1. Refer to StoGuard Product Use Chart (Table 1.1) for StoGuard detail components; joint treatment, rough opening protection, backing for masonry anchors, or transitions to dissimilar materials, joints and seams in construction.

2. Refer to General Notes for specific information and design guidance on wall assembly components.

3. Sto GPS Insulation in compliance with ASTM C 578.

4. Glass mat gypsum sheathing in compliance with ASTM C1177, exterior grade and Exposure 1 wood based sheathing, or cementitious sheathing in compliance with ASTM C1325.

5. Minimum 2.5 lb/yd² (1.4 kg/m²) self-furred galvanized diamond mesh metal lath.

6. Stucco scratch and brown coat material in compliance with ASTM C926 and manufactured or listed by Sto Corp.

7. Cladding termination minimum 4" (101 mm) above finish grade, minimum 2" (51mm) above paved surfaces.

8. Components not identified as Sto are furnished by other manufacturers and are not necessarily installed by trades who install the Sto products. Refer to project specific contract documents.

www.stocorp.com

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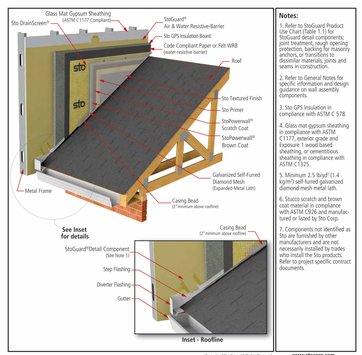
sto

StoPowerwall® ci
Roof / Wall Abutment

Detail No.: 63s.16
Date: August 2023



Notes:

1. Refer to StoGuard Product Use Chart (Table 1.1) for StoGuard detail components; joint treatment, rough opening protection, backing for masonry anchors, or transitions to dissimilar materials, joints and seams in construction.

2. Refer to General Notes for specific information and design guidance on wall assembly components.

3. Sto GPS Insulation in compliance with ASTM C 578.

4. Glass mat gypsum sheathing in compliance with ASTM C1177, exterior grade and Exposure 1 wood based sheathing, or cementitious sheathing in compliance with ASTM C1325.

5. Minimum 2.5 lb/yd² (1.4 kg/m²) self-furred galvanized diamond mesh metal lath.

6. Stucco scratch and brown coat material in compliance with ASTM C926 and manufactured or listed by Sto Corp.

7. Components not identified as Sto are furnished by other manufacturers and are not necessarily installed by trades who install the Sto products. Refer to project specific contract documents.

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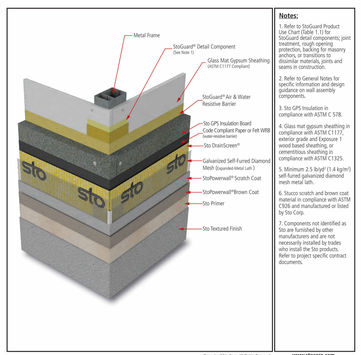
sto

StoPowerwall® ci
Outside Corner: Common Substrate

Detail No.: 63s.14
Date: August 2023



Notes:

1. Refer to StoGuard Product Use Chart (Table 1.1) for StoGuard detail components; joint treatment, rough opening protection, backing for masonry anchors, or transitions to dissimilar materials, joints and seams in construction.

2. Refer to General Notes for specific information and design guidance on wall assembly components.

3. Sto GPS Insulation in compliance with ASTM C 578.

4. Glass mat gypsum sheathing in compliance with ASTM C1177, exterior grade and Exposure 1 wood based sheathing, or cementitious sheathing in compliance with ASTM C1325.

5. Minimum 2.5 lb/yd² (1.4 kg/m²) self-furred galvanized diamond mesh metal lath.

6. Stucco scratch and brown coat material in compliance with ASTM C926 and manufactured or listed by Sto Corp.

7. Components not identified as Sto are furnished by other manufacturers and are not necessarily installed by trades who install the Sto products. Refer to project specific contract documents.

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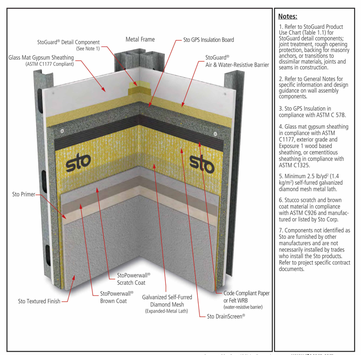
↑ Back to Top

sto

StoPowerwall® ci
Inside Corner: Common Substrate

Detail No.: 63s.12
Date: August 2023



Notes:

1. Refer to StoGuard Product Use Chart (Table 1.1) for StoGuard detail components; joint treatment, rough opening protection, backing for masonry anchors, or transitions to dissimilar materials, joints and seams in construction.

2. Refer to General Notes for specific information and design guidance on wall assembly components.

3. Sto GPS Insulation in compliance with ASTM C 578.

4. Glass mat gypsum sheathing in compliance with ASTM C1177, exterior grade and Exposure 1 wood based sheathing, or cementitious sheathing in compliance with ASTM C1325.

5. Minimum 2.5 lb/yd² (1.4 kg/m²) self-furred galvanized diamond mesh metal lath.

6. Stucco scratch and brown coat material in compliance with ASTM C926 and manufactured or listed by Sto Corp.

7. Components not identified as Sto are furnished by other manufacturers and are not necessarily installed by trades who install the Sto products. Refer to project specific contract documents.

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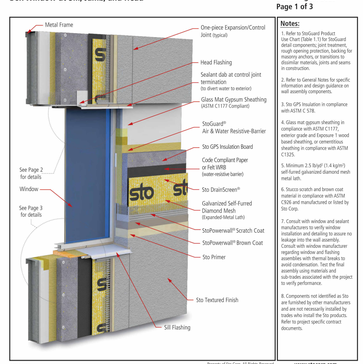
sto

StoPowerwall® ci
Box Window at Sill, Jamb, and Head

Detail No.: 63s.05
Date: August 2023
Page 1 of 3



Notes:

1. Refer to StoGuard Product Use Chart (Table 1.1) for StoGuard detail components; joint treatment, rough opening protection, backing for masonry anchors, or transitions to dissimilar materials, joints and seams in construction.

2. Refer to General Notes for specific information and design guidance on wall assembly components.

3. Sto GPS Insulation in compliance with ASTM C 578.

4. Glass mat gypsum sheathing in compliance with ASTM C1177, exterior grade and Exposure 1 wood based sheathing, or cementitious sheathing in compliance with ASTM C1325.

5. Minimum 2.5 lb/yd² (1.4 kg/m²) self-furred galvanized diamond mesh metal lath.

6. Stucco scratch and brown coat material in compliance with ASTM C926 and manufactured or listed by Sto Corp.

7. Consult with window and sealant manufacturers to verify window installation and detailing to assure no leakage into the wall assembly. Refer to window manufacturer regarding window and flashing assemblies with thermal breaks to avoid condensation. Test the final assembly using materials and sub-trades associated with the project to verify performance.

8. Components not identified as Sto are furnished by other manufacturers and are not necessarily installed by trades who install the Sto products. Refer to project specific contract documents.

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PROJECT

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TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

EXTERIOR DETAILS

REV.	DATE	REMARKS
1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

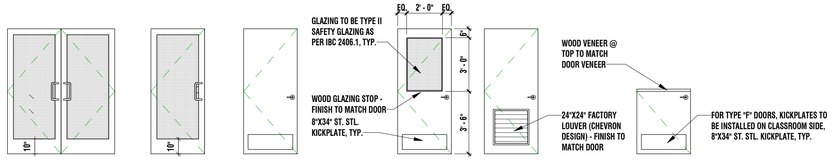
SHEET NO.
A501

DOOR AND FRAME SCHEDULE

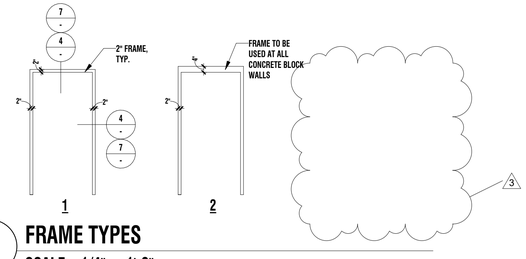
Door Number	From	To	FR / DR TYPE	DOOR Width	DOOR Height	DOOR Thickness	DOOR Material	Frame Jamb	Frame Head	Frame Material	- Saddle	- Hardware	Comments
101	VESTIBULE	EXTERIOR	2/A	(2) 3' -0"	7' - 0"	1 3/4"	ALUM./GL.	5/A601	5/A601	ALUM.	9/A601	HW-2	PROVIDE PANIC HARDWARE, CLOSER
102	VESTIBULE	CORR.	2/B	3' - 0"	7' - 0"	1 3/4"	ALUM./GL.	6/A601	6/A601	ALUM.	9/A601	HW-2.1	PROVIDE PANIC HARDWARE, ELECTRIC STRIKE, CLOSER
103	OFFICE	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-6	FINGERSAFE MK1A & MK1B, CLOSER, ENSURE BACK OF LOCK BUTTON DOESN'T HIT WALL STOP
103A	OFFICE	CONFERENCE RM.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-6	CLOSER, ENSURE BACK OF LOCK BUTTON DOESN'T HIT WALL STOP
103B	CONFERENCE RM.	I.T.	1/E	3' - 0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	-	HW-5.3	UNDERCUT 1"
104	CORR.	STAFF ADA	1/C	3' - 0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-3	UNDERCUT 1", FINGERSAFE MKIA, CLOSER, ENSURE BACK OF LOCK BUTTON DOESN'T HIT WALL STOP
105	PRE-K	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
105A	PRE-K	TOILET	1/F	3' - 0"	3' -6"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-4.1	FINGERSAFE MK1A & MK1B
105B	PRE-K	PRE-K	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
106	PRE-K	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
106A	TOILET	PRE-K	1/F	3' - 0"	3' -6"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-4.1	FINGERSAFE MK1A & MK1B
107	CORR.	EXTERIOR	2/B	3' - 0"	7' - 0"	1 3/4"	ALUM./GL.	5/A601	5/A601	ALUM.	9/A601	HW-2.2	PROVIDE PANIC HARDWARE, CLOSER, EXIT ALARM
108	FIRE RISER	EXTERIOR	2/C	3' - 0"	7' - 0"	1 3/4"	H.M.	5/A601	5/A601	H.M.	9/A601	HW-5.1	INSULATED, CLOSER
109	PRE-SCHOOL	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
109A	PRE-SCHOOL	TOILET	1/F	3' - 0"	3' -6"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-4.1	FINGERSAFE MK1A & MK1B
109B	PRE-SCHOOL	PRE-SCHOOL	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
110	PRE-SCHOOL	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
110A	TOILET	PRE-SCHOOL	1/F	3' - 0"	3' -6"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-4.1	FINGERSAFE MK1A & MK1B
111	CORR.	ELEC RM/ LAUNDRY	1/E	3' - 0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-5	FINGERSAFE MK1B, CLOSER, 60 MIN. FIRE RATED DOOR
112	STAFF ADA	CORR.	1/C	3' - 0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-3	UNDERCUT 1", FINGERSAFE MKIA, CLOSER, ENSURE BACK OF LOCK BUTTON DOESN'T HIT WALL STOP
113	STAFF LOUNGE	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-6	UNDERCUT 1", FINGERSAFE MKIA, CLOSER, ENSURE BACK OF LOCK BUTTON DOESN'T HIT WALL STOP
114	CORR.	PRE-SCHOOL PLAYGROUND	2/B	3' - 0"	7' - 0"	1 3/4"	ALUM./GL.	5/A601	5/A601	ALUM.	9/A601	HW-2.3	PROVIDE PANIC HARDWARE, FINGERSAFE MK1A & MK1B, CLOSER, ELECTRIC STRIKE, EXIT ALARM & KEYPAD
116	CORR.	MULTI-PURPOSE	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
116A	MULTI-PURPOSE	TOILET	1/C	3' - 0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-3	UNDERCUT 1", FINGERSAFE MKIA, CLOSER, ENSURE BACK OF LOCK BUTTON DOESN'T HIT WALL STOP
116B	MULTI-PURPOSE	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
117	BUGGY	CORR.	1/-	3' - 6"	7' - 0"	1 3/4"	-	7/A601	7/A601	-	-	-	OPEN FRAME
118	CORR.	JAN. CLO.	1/E	(2) 3' -0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-5.2	UNDERCUT 1", FINGERSAFE MK1A & MK1B, CLOSER
119	MULTI-PURPOSE	TOY STOR.	1/C	(2) 3' -0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	-	HW-5.2	UNDERCUT 1", FINGERSAFE MK1B
120	BONDING RM	CORR.	1/C	3' - 0"	7' - 0"	1 3/4"	WD.	4/A601	4/A601	H.M.	-	HW-3	UNDERCUT 1", FINGERSAFE MK1A, ENSURE BACK OF LOCK BUTTON DOESN'T HIT WALL STOP
121	INFANTS	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
121A	INFANTS	INFANT PLAYGROUND	2/B	3' - 0"	7' - 0"	1 3/4"	ALUM./GL.	5/A601	5/A601	ALUM.	9/A601	HW-2.3	PROVIDE PANIC HARDWARE, FINGERSAFE MK1A & MK1B, CLOSER, ELECTRIC STRIKE, EXIT ALARM & KEYPAD
122	INFANTS	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
122A	INFANTS	INFANT PLAYGROUND	2/B	3' - 0"	7' - 0"	1 3/4"	ALUM./GL.	5/A601	5/A601	ALUM.	9/A601	HW-2.3	PROVIDE PANIC HARDWARE, FINGERSAFE MK1A & MK1B, CLOSER, ELECTRIC STRIKE, EXIT ALARM & KEYPAD
123	CORR.	EXTERIOR	2/B	3' - 0"	7' - 0"	1 3/4"	ALUM./GL.	5/A601	5/A601	ALUM.	9/A601	HW-2.2	PROVIDE PANIC HARDWARE, CLOSER, EXIT ALARM
124	CORR.	INFANTS	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
124A	Y. TODDLERS	INFANTS	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
125	CORR.	Y. TODDLERS	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
125A	Y. TODDLERS	TOILET	1/F	3' - 0"	3' -6"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-4.1	FINGERSAFE MK1A & MK1B
126	TODDLERS	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
126A	TODDLERS	TOILET	1/F	3' - 0"	3' -6"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-4.1	FINGERSAFE MK1A & MK1B
126B	TODDLERS	TODDLERS	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
127	TODDLERS	CORR.	1/D	3' - 0"	7' - 0"	1 3/4"	WD./GL.	4/A601	4/A601	H.M.	-	HW-4.5	FINGERSAFE MK1A & MK1B, CLOSER, LOCKDOWN MAGNETIC STRIP
127A	TODDLERS	TOILET	1/F	3' - 0"	3' -6"	1 3/4"	WD.	4/A601	4/A601	H.M.	11/A601	HW-4.1	FINGERSAFE MK1A & MK1B

DOOR, FRAME & HARDWARE NOTES:

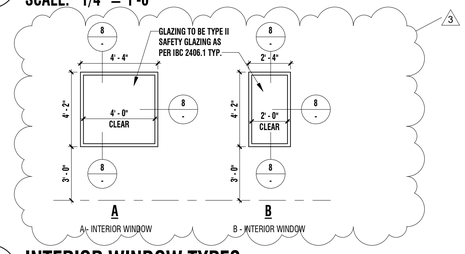
1. ALL HARDWARE TO BE AS PER ICC/ANSI A117.1-404.2.6.
2. CONTRACTOR TO COORDINATE DOOR FRAME THROAT WIDTHS WITH WALL THICKNESS, SEE STRUCTURAL DRAWINGS.
3. ALL EXTERIOR DOORS TO BE PROVIDED WITH FULL WEATHERSEALS.
4. ALL EXTERIOR DOORS AND GLAZING TO BE INSULATED TYPE.
5. PANIC HARDWARE SHALL BE MOUNTED AT HEIGHTS IN ACCORDANCE WITH THE BUILDING CODE.
6. ALL KICKPLATES TO BE ST. STL. ALL EXTERIOR DOORS (NOT STOREFRONT TYPE) TO RECEIVE KICKPLATES ON INTERIOR SIDE ONLY.
7. FOR SIGNAGE LOCATIONS, SEE DET. 9/A402.
8. SEE SPECIFICATIONS FOR FINGER GUARDS.
9. ALL EXTERIOR DOORS FROM CLASSROOM AND CORRIDORS, EXCEPT FOR MAIN ENTRY, TO RECEIVE CONTACT ALARM DEVICE, MODEL # 45174 - MANUFACTURED BY G.E.
10. ALL DOORS AT CORRIDORS TO BE COMPLIANT FOR INSTALLATION IN A SMOKE PARTITION.



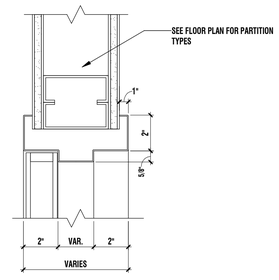
1 DOOR TYPES
SCALE: 1/4" = 1'-0"



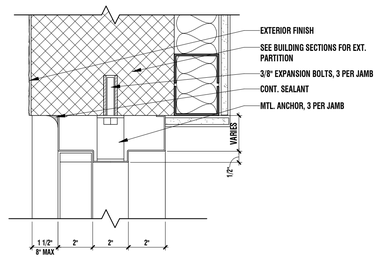
2 FRAME TYPES
SCALE: 1/4" = 1'-0"



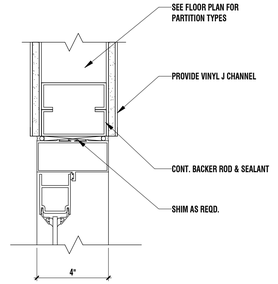
3 INTERIOR WINDOW TYPES
SCALE: 1/4" = 1'-0"



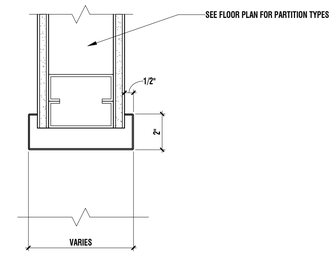
4 HEAD/JAMB DETAIL
SCALE: 3" = 1'-0"



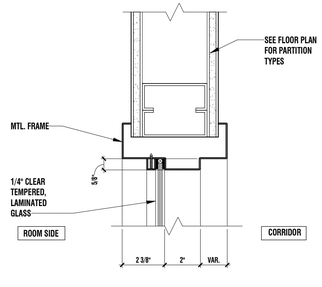
5 HEAD/JAMB DETAIL
SCALE: 3" = 1'-0"



6 HEAD/JAMB DETAIL
SCALE: 3" = 1'-0"



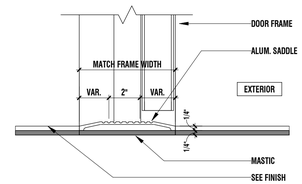
7 HEAD/JAMB DETAIL
SCALE: 3" = 1'-0"



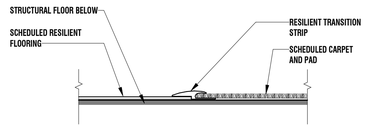
8 HEAD/JAMB DETAIL
SCALE: 3" = 1'-0"

GENERAL NOTES:

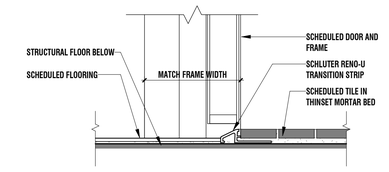
1. SEE DWG. G001 FOR GENERAL CONDITIONS.
2. SEE DWG. A101 FOR CONSTRUCTION FLOOR PLAN, DETAILS, & NOTES.
3. SEE DWG. A104 FOR FINISH FLOOR PLAN, SCHEDULES, LEGEND, & NOTES.
4. SEE SPECIFICATIONS FOR DOOR HARDWARE.



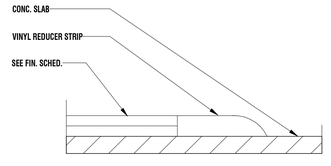
9 SADDLE DETAIL
SCALE: 3" = 1'-0"



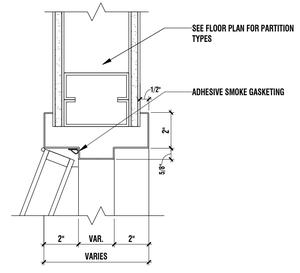
10 TRANSITION DETAIL
SCALE: 3" = 1'-0"



11 TRANSITION DETAIL
SCALE: 3" = 1'-0"



12 REDUCER DETAIL
SCALE: 3" = 1'-0"



13 HEAD/JAMB DETAIL @ SMOKE PARTITIONS
SCALE: 3" = 1'-0"

JAM ARCH
IS NOW COLLIERS ENGINEERING & DESIGN
ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
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ph: (813) 553-3231 fax: (973) 291-3740
www.colliersengineering.com

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT
LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

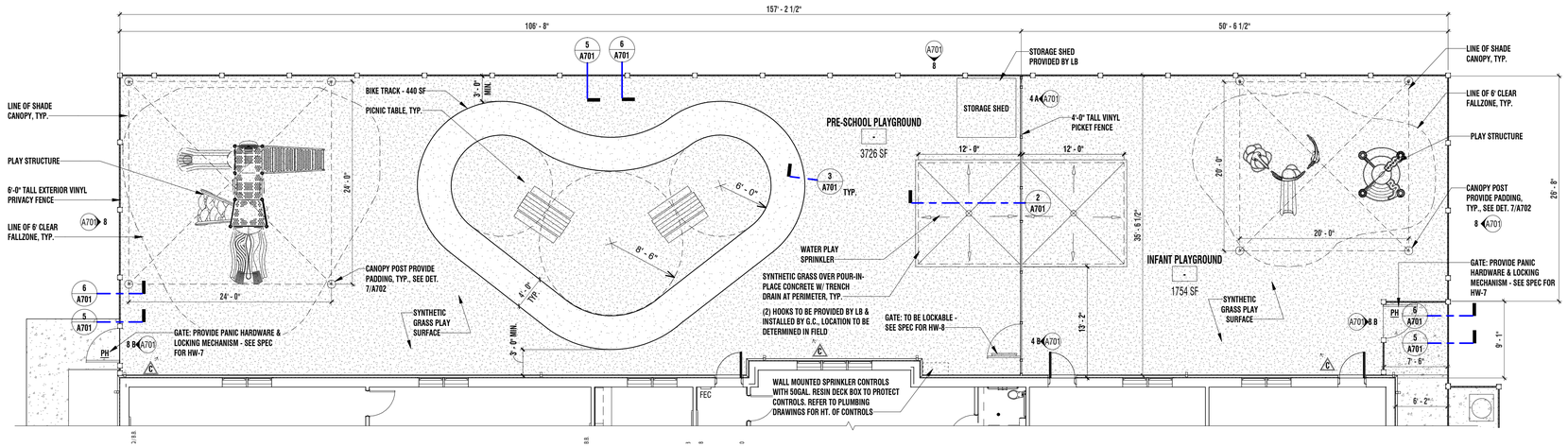
LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
DOOR & FRAME SCHEDULES, DETAILS & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A601

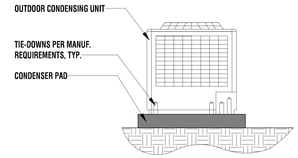


1 PLAYGROUND PLAN

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

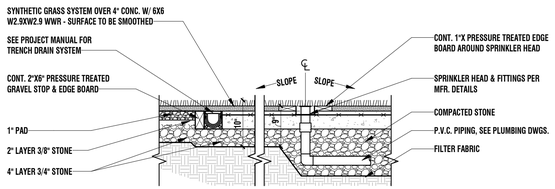
GENERAL NOTES - PLAYGROUND

1. REFER TO DWG. G001 FOR GENERAL CONDITIONS.
2. REFER TO DWG. A104 FOR FINISH PLAN & SCHEDULE.
3. REFER TO CIVIL ENGINEERING DRAWINGS FOR PLAYGROUND BOUNDARIES.
4. CIVIL ENGINEER TO ENSURE PROPER DRAINAGE IS INSTALLED FOR PLAYGROUND AREA.
5. CONTRACTOR SHALL PREPARE BASE MATERIAL IN ACCORDANCE WITH ENGINEER'S SPECIFICATIONS.
6. SYNTHETIC GRASS SHALL BE PLAYGROUND GRASS ULTRA AS MANUFACTURED BY "FOREVERLAWN", OR APPROVED EQUAL.
7. COORDINATE SYNTHETIC GRASS INSTALLATION REQUIREMENTS WITH VENDOR PRIOR TO START OF WORK.
8. PADDING SHALL BE INSTALLED AND IN ACCORDANCE WITH CHILDCARE REGULATIONS.
9. CONTRACTOR TO PROVIDE AND COORDINATE CONCRETE FOOTINGS REQUIRED AT PLAY SHADES.
10. NO ROOF DRAINS OR DOWNSPOUTS TO EMPTY DIRECTLY INTO PLAYGROUND. MUST CONNECT TO UNDERGROUND STORM SYSTEM.
11. THE FOLLOWING ITEMS ARE TO BE IN PLACE PRIOR TO COMMENCEMENT OF VENDOR INSTALLATION :
    - 3/8" CRUSHED STONE TO BE INSTALLED 1.5" BELOW FINISHED GRADE.
    - TOP OF STONE TO TOP OF CONCRETE OR DOOR JAMB SHOULD BE 1.5"
    - ASPHALT TO BE INSTALLED
    - SHADE POLES INSTALLED.
    - ALL FENCING TO BE INSTALLED,
    - PLAY SPRINKLERS TO BE INSTALLED AT 1" ABOVE STONE GRADE.
    - PLAY STRUCTURES TO BE INSTALLED



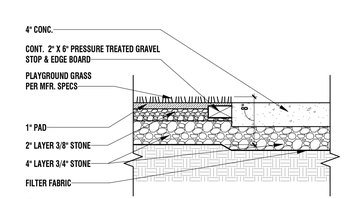
9 TYP. OUTDOOR CONDENSER UNIT

SCALE: 3/4" = 1'-0"



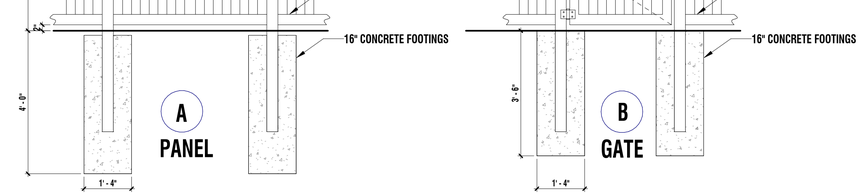
2 TRENCH DRAIN & WATER PLAY DETAIL

SCALE: 3/4" = 1'-0"



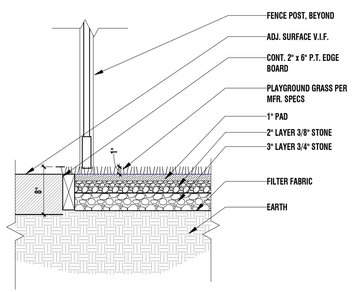
3 BIKE TRACK DETAIL

SCALE: 1" = 1'-0"



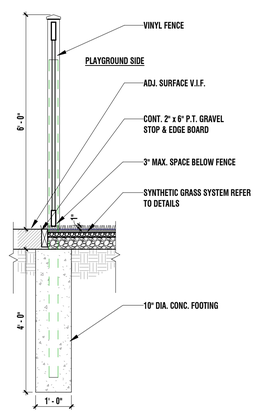
4 INTERIOR FENCE ELEVATIONS

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



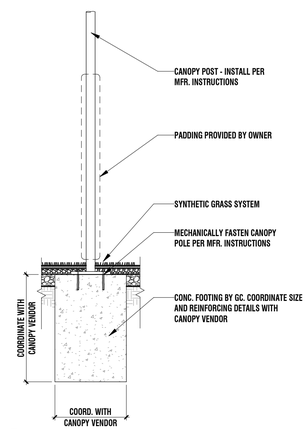
5 PLAYGROUND DETAIL

SCALE: 1" = 1'-0"



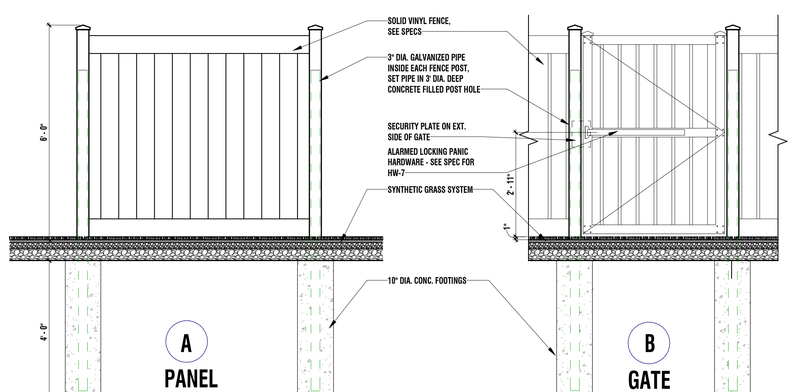
6 FENCE SECTION

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



7 CANOPY POST FOOTING

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



8 PRIVACY FENCE ELEVATIONS

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

JAM ARCH
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PRELIMINARY FOR REVIEW ONLY
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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

PLAYGROUND PLAN, DETAILS & NOTES

REV.	DATE	REMARKS
3	09/16/2024	LIGHTBRIDGE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
A701

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STRUCTURAL GENERAL NOTES:

1.0 GENERAL

1. All work shall conform to the "2023 Florida Building Code" and to all other applicable Federal, State, and Local regulations.
2. In case of conflict between the General Notes, Specifications, and details, the most rigid requirements shall govern.
3. Work not indicated on a part of the drawings but reasonably implied to be similar to that shown at corresponding places shall be repeated.
4. Job site safety and construction procedures are the sole responsibility of the Contractor.
5. The Contractor shall provide for dewatering as required during excavation and construction.
6. The Contractor shall coordinate openings, sleeves, concrete housekeeping pads, inserts, and depressions shown on the Architectural, Structural, Mechanical, Electrical, and Plumbing Drawings.
7. See Architectural Drawings for locations of masonry and drywall non-load bearing partitions. Provide slip connections that allow vertical movement at the heads of all such partitions. Connections shall be designed to support the top of the walls laterally for the code-required lateral load.
8. All costs of investigation and/or redesign due to Contractor improper installation of structural elements or other items not in conformance with the Contract Documents shall be at the Contractor's expense.
9. The structural drawings shall be used in conjunction with the specifications, architectural and mechanical drawings. If there is a discrepancy between drawings, it is the Contractor's responsibility to notify the Architect prior to performing the work.
10. If the existing field conditions do not permit the installation of the work in accordance with the details shown, the Contractor shall notify the Architect/Engineer immediately and provide a sketch of the condition with his proposed modification of the details given on the Contract Documents. Do not commence work until condition is resolved and modification is approved by the Architect.
11. The Contractor shall be responsible to determine allowable construction loads and to provide design and construction of falsework, formwork, stagings, bracing, sheeting, and shoring, etc.
12. Contractor to provide sheeting, bracing, and underpinning as necessary to prevent any lateral or vertical movements of existing buildings, streets, and any existing utility lines.
13. The Contractor shall submit, for review, drawings and calculations for all performance assemblies identified in the General Notes and listed below: The design of these assemblies is the responsibility of the Contractor's Engineer registered in the Project's jurisdiction. All submittals shall bear this Engineer's seal and signature. Review shall be for general conformance with the project requirements as indicated on the Drawings and in the General Notes.
    A. Non-load bearing stud wall and curtain wall systems and related connections: Designs shall take into account all vertical and lateral loads required by applicable building codes. Back up system and curtain wall shall be designed for a maximum deflection of 1/600 of the span, or 3/8", whichever is less, at the applicable design wind load without the code applied reduction factors.
14. Shop drawings for all structural materials to be submitted to Architect for review prior to the start of fabrication or commencement of work. Review period shall be a minimum of two (2) weeks.
15. Reproduction of any portion of the Structural Contract Drawings for resubmittal as shop drawings is prohibited. Shop drawings produced in such a manner will be rejected and returned.
16. Shop drawings shall bear the Contractor's stamp of approval which shall constitute certification that the Contractor has verified all construction criteria, materials, and similar data and has checked each drawing for completeness, coordination, and compliance with the Contract Documents.
17. Submit periodic reports within one business day after receipt by the Contractor to Architect/Engineer and the construction code official during construction. Submit final inspection report summary for each division of work, certified by a licensed professional Engineer, that inspections were performed and that work was performed in accordance with Contract Documents.
18. The Owner shall engage a testing agency to provide testing services as indicated in each section of these General Notes.
19. All materials shall be stored to protect them from exposure to the elements.

2.0 EARTHWORK

1. Engineered (controlled compacted) fill within the building area shall be constructed prior to footing excavation.
2. Excavation shall be performed so as not to disturb existing adjacent buildings, streets, and utility lines. Verify location of all utilities prior to commencement of work. Hand excavate around utilities as required.
3. See the specifications and geotechnical report for excavation, backfill and preparation of the foundation and slab-on-grade subgrade, including compaction requirements.
4. Compact soil to not less than the following percentages of maximum density of modified proctor (ASTM D1557):
    Under building foundations - 95%
    Under building slabs, steps, pavements - 92%
5. Remove existing vegetation, topsoil, and unsatisfactory soil materials. Proof roll subgrade to obtain uniformly densified substrata prior to placing fill material evenly in 8" thick (maximum) layers and compacting to required density.
6. The Owner/Contractor shall retain the services of a Professional Geotechnical Engineer, subject to the approval of the Architect, to perform soil testing and inspection. The engineer shall inspect the subgrade to verify bearing levels and ensure that the safe bearing capacity meets or exceeds the design value indicated below. Reports shall be submitted to the Architect outlining the work performed and test results.

3.0 FOUNDATIONS

1. Foundations have been designed and footing elevations established on the basis of a Subsurface Investigation Report and recommendations prepared by Tierra Inc., dated May 20th, 2024. See the report for additional requirements. The requirements contained in the geotechnical report are part of the Construction Documents.
2. Footings shall bear on undisturbed stratum or engineered fill with a minimum bearing capacity of 2,000 psf.
3. Prior to footing concrete placement, the footing subgrade shall be approved by the inspecting Geotechnical Engineer. If conditions prove to be unacceptable at elevations shown, footing bottoms shall be lowered to acceptable subgrade material. Fill over-excavation with lean concrete (2,500 psi).
4. The bottom of exterior footings shall be a minimum of 18 inchesh below finished grade.
5. Slabs on grade shall bear on mechanically compacted soil capable of supporting 150 psf. Drainage fill under slabs shall be compacted gravel or crushed stone.
6. Concrete for foundations shall be poured on the same day the subgrade is approved by the Geotechnical Engineer.
7. Utility lines shall not be placed through or below foundations without the Structural Engineer's approval.
8. The Contractor shall observe water conditions at the site and take the necessary precautions to ensure that the foundation excavations remain dry during construction. Any sheeting or shoring required for dewatering shall be the responsibility of the Contractor.

4.0 CAST-IN-PLACE CONCRETE

1. Concrete shall be designed and detailed in accordance with the Building Code Requirements for Structural Concrete (ACI-318-19), and constructed in accordance with the CRSI Manual of Standard Practice.
2. Concrete shall have a minimum compressive 28-day strength of 4,000 psi. Air Entrainment 2% to 4% in all exposed concrete work.
3. Maximum water/cement ratios:
    A. Foundations 0.47
    B. Interior Slabs 0.47
4. All concrete shall be normal weight concrete (144 pcf +) with all cement conforming to ASTM C150, Type I. Maximum aggregate size shall be 1-1/2" for footings and 3/4" for walls and slabs, conforming to ASTM C33.
5. Reinforcing steel: ASTM A615 Grade 60.
6. Welded Wire Reinforcement: (WWR) ASTM A-185.
7. Leveling Grout shall be non-shrink, non-metallic type, factory pre-mixed grout in accordance with CE-CRD-C621 or ASTM C109, with a minimum compressive 28-day strength of 5,000 psi.
8. Reinforcing steel clear cover shall be as follows unless noted otherwise:
    A. Concrete cast against and permanently exposed to earth 3".
    B. Concrete exposed to earth or weather
        #6 bars and larger 2"
        #5 bars and smaller 1-1/2"
    C. Concrete not exposed to weather or in contact with ground
        Slabs, walls, joists
        #11 bars and smaller 3/4"
        Beams and columns
        Primary reinforcement, ties, stirrups, or spirals 1-1/2"
9. Submit to Architect/Engineer reinforcing steel shop drawings for approval and mix designs for review prior to placing any concrete.
10. All reinforcement shall be securely held in place while placing concrete. If required, additional bars, stirrups or chairs shall be provided by the Contractor to furnish support for all bars.
11. Lap welded wire reinforcement two (2) full wire spaces at splices and wire together.
12. Provide plastic tipped bolsters and chairs at all locations where the concrete surface in contact with the bolsters or chairs is exposed.
13. Placing of concrete shall not start until the placement of reinforcing has been approved by the Inspection Agency.
14. Bonding agent shall be used where new concrete is placed against existing concrete.
15. Epoxy adhesive shall be used where dowels are to be installed into existing concrete. Submit manufacturer information for engineer review.
16. No sleeve shall be placed through any concrete element unless shown on the approved shop drawings or specifically authorized in writing by the Structural Engineer. The Contractor shall verify dimensions and locations of all slots, pipe sleeves, etc. as required for mechanical trades before concrete is placed.
17. Pipes or conduits placed in slabs shall not have an outside diameter larger than 1/3 the slab thickness and shall not be spaced closer than 3 diameters on center. Aluminum conduits shall not be placed in concrete. No conduits shall be placed in slabs within 12 inches of column face or face of bearing wall. No conduits may be placed in exterior slabs or slabs subjected to fluids.
18. Prior to placing concrete, the Contractor shall submit for review by the structural engineer, a concrete pour schedule showing location of all proposed construction joints and waterstops.
19. Prior to concrete placement, the Contractor shall submit to the structural engineer for review, concrete mix designs prepared in accordance with the specifications and requirements indicated in the general notes.
20. Concrete shall not be pumped through aluminum pipes and shall not be placed in contact with aluminum forms, mixing drums, buggies, chutes, conveyors or other equipment made of aluminum.
21. All inserts and sleeves shall be cast-in-place whenever feasible. Drilled or powder driven fasteners will be permitted when proven to the satisfaction of the Structural Engineer that the fasteners will not spall the concrete and have the same capacity as cast-in-place inserts.
22. When installing expansion bolts or adhesive anchors, the Contractor shall take measures to avoid drilling or cutting of any existing reinforcing and destruction of concrete. Holes shall be blown clean prior to placing bolts or adhesive anchors.
23. Early drying out of concrete, especially during the first 24 hours, shall be carefully guarded against. All surfaces shall be moist cured or protected using a membrane curing agent applied as soon as forms are removed. If membrane curing agent is used, exercise care not to damage coating.
24. Cold weather concreting shall be in accordance with ACI-306. Hot weather concreting shall be in accordance with ACI-305R.
25. Throughout construction, the concrete work shall be adequately protected against damage due to excessive loading, construction equipment, materials or methods, ice, rain, snow, excessive heat, and freezing temperatures.
26. Prepare concrete test cylinders from each day's pour. Cylinders shall be properly cured and stored. Sample fresh concrete in accordance with ASTM C172.
27. Retain laboratory to provide testing service. Slump per ASTM C143l air content per ASTM C231 or C173, cylinder tests per ASTM C31 and C39. One set of six (6) cylinders for each 50 cubic yards for each mix used. Reports of all tests to be submitted to the Architect.

5.0 MASONRY

1. Masonry has been designed in accordance with the Building Code Requirements for Masonry Structures (TMS 402-2016) and shall be constructed in accordance with the Specifications for Masonry Structures (TMS 602-2016), except where otherwise modified by these General Notes and Specifications.
2. Mortar shall conform to ASTM C270, Type M or S. All Portland cement shall conform to ASTM C150, Type I. Lime shall conform to ASTM C207 and masonry cement shall conform to ASTM C91.
3. Grout shall conform to ASTM C476 and shall have a minimum 28 day compressive strength of 3000 psi. Slump of grout shall be 8 to 10 inches and the maximum aggregate size shall be 3/8" (aggregate graded to produce fine grout in conformance with ASTM C476 and C404).
4. Concrete Block Units:
    A. Solid and hollow load bearing units per ASTM C90, Type N-1, as required to provide 28 day compressive strength, f'm as noted below.
5. Minimum 28-day compressive strength of masonry, f'm shall be 2,000 psi, unless noted otherwise.
6. Full bed and head joints shall be provided.
7. Horizontal Joint Reinforcing: ASTM A82; 9-gage truss-type, galvanized.
8. Deformed bar reinforcement shall conform to ASTM A615, Grade 60 and shall be full height of walls unless otherwise noted. Provide bar spacers and positioners as required to properly locate and stabilize reinforcing during grouting operations. Grout all reinforced cells solid with grout.
9. Hollow concrete units below grade and slab on grade shall be normal weight and have all cells grouted solid.
10. Provide and install temporary bracing required insuring stability of all walls during construction and until erection of attached structural framing is completed.
11. Provide galvanized horizontal joint reinforcement in all walls and partitions at 16" o.c. unless otherwise shown or noted. Provide one (1) piece prefabricated units at 8" o.c. at all wall corners and intersections.
12. Lap splices for deformed reinforcing bars used in masonry construction shall be 50 bar diameters.
13. Submit grout mix design and masonry unit certifications to the Architect for review.
14. Grout placement shall not start until the placement of reinforcing has been approved by the Inspection Agency.
15. Fill all cells in top two courses below finished floor, CMU lintels, bond beams, and beam bearings and cells with reinforcement full height solid with grout.
16. Allow grout in reinforced CMU walls to cure a minimum of 48 hours before imposing concentrated or other loads from above.
17. Provide masonry anchors set on coursing and attached to all beams at 32" o.c. horizontal, columns at 24" o.c. vertical, partitions and walls at 16" o.c at all beams, columns, partitions and walls abutting or embedded in masonry unless noted otherwise on Architectural and Structural drawings.
18. Provide bond beams with two (2) #5 horizontal reinforcement continuous in all masonry walls at each framing level. Provide a minimum of two (2) #5 bars at the ends of all walls and on each side of each opening.
19. All piers and partitions shall be bonded or anchored to adjacent masonry walls. Provide ties to adjacent floor and roof construction in accordance with details on drawings.
20. The Contractor shall verify all openings below lintels indicated are adequate to accept doorframes, louvers, etc. as shown on the Architectural and Mechanical Drawings. Notify the Architect and Structural Engineer of any discrepancies prior to lintel installation.
21. No openings shall be placed above any lintel within a height less than or equal to the width of the clear opening below the lintel, unless specifically shown or approved by the Structural Engineer.
22. All masonry work to be executed in cold weather shall be in conformance with the recommendations for cold weather construction found in the Building Code Requirements for Masonry Structures (ACI 530-13/ASCE 5-13) and shall be constructed in accordance with the Specifications for Masonry Structures (ACI 530.1-13/ASCE 6-13) with the following additions: For all conditions when temperatures fall below 40 degrees F, the temperature of the newly laid masonry or newly grouted masonry shall be maintained above 32 degrees F for a minimum of 24 hours using the methods described in ACI 530.1.
23. The Testing and Inspection Agency shall monitor the proportioning, mixing, and consistency of mortar and grout; the placement of mortar, grout, and masonry units; and the placement of reinforcing steel for compliance with the Contract Documents.
24. All wall sections and piers less than two square feet in cross-sectional area shall be fully grouted.
25. Provide vertical masonry control joints at maximum 25'-0" on center unless detailed on Architectural drawings, coordinate locations with Architect.

6.0 STRUCTURAL STEEL

**** ENGINEER NOTE **** (Select either 1, 2 or 3 below.)

1. Fabrication and erection of structural steel shall conform to the "Steel Construction Manual", 15th Edition, American Institute of Steel Construction including Specifications for Structural Steel Buildings, Specification for Structural Joints Using ASTM A325 or A490 Bolts, and AISC Code of Standard Practice.
2. All welding shall be performed by certified welders and shall conform to "Structural Welding Code ANSI/AWS D1.1-10", American Welding Society.
3. Wide flange shapes: ASTM A992 or A572, Grade 50.
4. Structural shapes & plates: ASTM A36, A572 or A992.
5. Welding electrodes shall be E70XX for manual arc welding and F7X-EXXX for submerged arc welding. All welders shall be certified by the AWS. Minimum weld size shall be 3/16" unless noted otherwise.
6. Visually inspect all fillet welds. 10% of all field fillet welds in primary connections and multi-pass welds shall be tested by the magnetic particle method, complying with E109, performed on the root pass and on the finished weld.
7. All steel shall be thoroughly cleaned by power tool cleaning prior to painting. All architecturally exposed structural steel shall be cleaned with commercial blast cleaning.
8. All dissimilar metals shall be treated or properly separated to prevent galvanic and/or corrosive effects.
9. All bracing or truss connections, which have not been specifically detailed, shall be designed by a professional engineer registered in the project's jurisdiction for the forces noted on the elevations and details. This shall include all gusset plates, filler plates, angles, stiffeners, bolts or welds, or other material required for the connection. Stamped calculations for the connection design shall be submitted along with the shop drawings for review by the engineer.

7.0 STRUCTURAL WOOD

1. Design, fabrication, and construction of wood framing shall conform with the following codes and standards.
    A. "National Design Specifications for Wood Construction", 2018 Edition. (with supplement), American Forest and Paper Association.
    B. "Timber Construction Manual", Sixth Edition, as adopted by the American Institute of Timber Construction, including the "Code of Standard Practice", AITC 104-03.
    C. ANSI/TPI 1-2014 "Design Specifications for Metal Plate-Connected Wood Truss Construction and Commentary", Truss Plate Institute.
    D. Building Component Safety Information BCSI 1-18 "Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses," Wood Truss Council of America and Truss Plate Institute.
2. Design, detail, and install prefabricated trusses including erection bracing and special reinforcement. Submit the following:
    A. Design calculations with bearing points, loadings, stress diagrams, allowable stresses, joint plate and member sizes, splices, member bracing requirements, etc.
    B. Complete truss fabrication drawings indicating location, spacing, and details of all trusses, including member diagrams, sizes, grades, joint plate sizes and locations.
    C. Complete erection drawings with size and location of temporary bracing, including provisions for field assembly of special individual trusses. Erection drawings shall be specifically prepared for this project; mere reference to Handling, Installing, and Bracing Booklet, BCSI 1-03 is not acceptable.
    D. Wood trusses shall conform to the most current applicable version of the design specifications for light metal plate connected wood roof trusses, of the Truss Plate Institute, Inc. and the National design Specifications for Stress Grade Lumber and its fastening, of the National Forest Products Association.
    E. The deflection of the floor and roof trusses under the indicated loads and at the span and spacings shown on the contract drawings shall meet the following criteria:
        a. The deflection due to live load shall not exceed the span length/360.
        b. The deflection due to the total loads shall not exceed the span length/240.
    F. The wood truss manufacturer shall specify and provide all bracing at top and bottom chords required to stabilize the floor or roof structure during and after construction, in addition to the bracing indicated on the structural drawings.
    G. The wood truss manufacturer shall submit structural calculations stamped by a registered professional engineer licensed to practice in the product's jurisdiction for all truss types, which indicates truss capacities and deflections.
    H. Erection shall be in accordance with Truss Plate Institute recommendations.
3. Base Design Values for roof/floor joist framing: Doug-Fir No. 1 and No.2 (Fb = 850 psi, Fv = 180 psi, E = 1,600,000 psi) minimum.
4. Base Design Value for non-load bearing wood studs and bracing: Doug Fir Stud Minimum compression parallel to grain Fc = 850 psi, minimum tension parallel to grain, Ft = 400 psi, minimum compression perpendicular to grain, 625 psi.
5. All plywood sheathing shall comply with APA. Plywood shall meet C-D Interior APA, Structural I and II C-D Interior APA, or Structural I and II C-C Exterior APA. Attachment to be in accordance with IBC requirements. All plywood to have exterior glue.
6. Roof sheathing shall be APA rated sheathing, 3/4" thick, 42/20.
7. Floor Sheathing shall be APA rated Sturd-I-Floor, 3/4" thick, 48/24.
8. Wall sheathing shall be APA rated sheathing 7/16" thick, 32/16.
9. Wood framing marked Microllam LVL (laminated veneer lumber) shall be as manufactured by Weyerhauser or approved equal. Minimum extreme fiber in bending, Fb = 2,900 psi; minimum horizontal shear, Fv = 285 psi; minimum modulus of elasticity, E = 2,000,000 psi.
10. Wood framing marked Parallam PSL (parallel strand lumber) shall be as manufactured by Truss Joist MacMillan or approved equal. Minimum extreme fiber in bending, Fb = 2,900 psi; minimum horizontal shear, Fv = 290 psi; minimum modulus of elasticity, E = 2,000,000 psi.
11. All members shown on plan with designation "PSL" shall be parallam PSL members. All parallam structural lumber shall be APA rated, exposure I. All adhesives shall comply with ANSI/AIV A190.1 "Wet-Use" Type.
12. All side loaded parallam beams or columns shall be solid and shall not be composed of multiple plies. Top loaded parallam beams may be composed of multiple plies of 1-3/4" inch thickness members and shall be nailed by minimum of two rows of 16d nails at 12 inches on center and glued together with an exterior type adhesive.
13. All parallam beam ends which frame into beams shall be hung with hangers as manufactured by Kant-Sag or with approved substitutes with working load capacities equivalent to the "THD" or "DHO" series hangers.
14. Provide end-coat sealing to end and cross cuts after cutting to final length for all parallam beams.
15. Provide nailing pattern in compliance with IBC recommended fastening schedule when joining two or more framing members.
16. Base Design Value for all other structural wood framing: minimum extreme fiber in bending, Fb = 850 psi; minimum horizontal shear, Fv = 180 psi; minimum compression parallel to grain, Fc = 1,400 psi.
17. Hanger connections for joists, beams, trusses, and manufactured wood framing shall be Strong-Tie connectors by Simpson (Trus Joist MacMillan).
18. See International Building Code for minimum bracing and fastening requirements.
19. Members shall be set with crown up and have a minimum of 3" bearing.
20. Splice double sole plates directly over stud. Stagger splice of each plate.
21. Guys and other bracing required to provide lateral stability to wood frames shall be adequately sized and anchored. This bracing shall remain until permanent bracing elements and attached construction is installed.
22. The wood structure is a non-self-supporting frame and is dependent upon diaphragm action of the panels and attachment to the shear walls for stability and for resistance to wind and seismic forces. Provide all temporary supports required for stability and for resistance to wind and seismic forces until these elements are complete and are capable of providing this support.
23. All bolts and lag bolts shall be fitted with galvanized, malleable iron or steel plate washers.
24. No field alteration of pre-fabricated trusses is permitted unless done in accordance with truss manufacturer's approved modification details.
25. All wood members exposed to exterior to be pressure treated.
26. Provide fasteners, anchors and connectors with adequate corrosion protection, where in contact with treated wood. Provide minimum ZMAX coating where Simpson connectors are used in contact with treated wood.

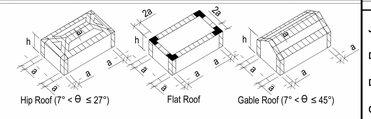
8.0 DESIGN DATA

1. Governing Code: 2023 Florida State Building Code
2. Roof Live Load
    A. Live Load 20 PSF
3. Wind Load:
    A. Ultimate Wind Speed (Risk Category II) 142 MPH
    B. Wind Exposure
    C. Internal Pressure Coefficient +/- 0.018
    D. Components & Cladding Wind Pressure: As per the Code
4. Earthquake Design Data:
    A. Seismic Occupancy Category II
    B. Seismic Importance Factor, I 1.0
    C. Ss (Mapped Spectral Response Acc. at Short Period) 0.053
    D. S1 (Mapped Spectral Response Acc. at 1 Second Period) 0.03
    E. Seismic Site Classification D
    F. Sds (Spectral Response Coefficient) 0.057
    G. Sd1 (Spectral Response Coefficient) 0.048
    H. Seismic Design Category A
    I. Basic Seismic Force Resisting System: Intermediate Masonry Shear Walls
    J. R 3.5
    K. Cs 0.01
    L. Analysis Procedure: Equivalent Lateral Force Procedure

COMPONENTS AND CLADDING (PSF)(5) ASCE 7-16

EFFECTIVE AREA	ROOF ZONES (4)			WALL ZONES (3)	
	1	2	3	4	5
10	40	49	85	35	43
20	39	45	77	34	38
50	37	41	67	32	36
100	35	37	60	30	34

Interior Zones
Roofs-Zone 1/Walls-Zone 4
End Zones
Roofs-Zone 2/Walls-Zone 5
Corner Zones
Roofs - Zone 3



NOTES:
1. H = MEAN ROOF HEIGHT = 27 FT.
2. A = END/CORNER WIDTH = 8 FT.
3. WALL ZONE DESIGN PRESSURES SHALL BE CONSIDERED TO ACT AS BOTH POSITIVE AND NEGATIVE
4. ROOF ZONE DESIGN PRESSURES ARE NEGATIVE PRESSURES (UPLIFT).
5. DESIGN PRESSURES SHOWN ARE BASED ON ALLOWABLE STRESS DESIGN.

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

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8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
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5706 S. MACDILL AVE.
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JOB NUMBER: 24001265A
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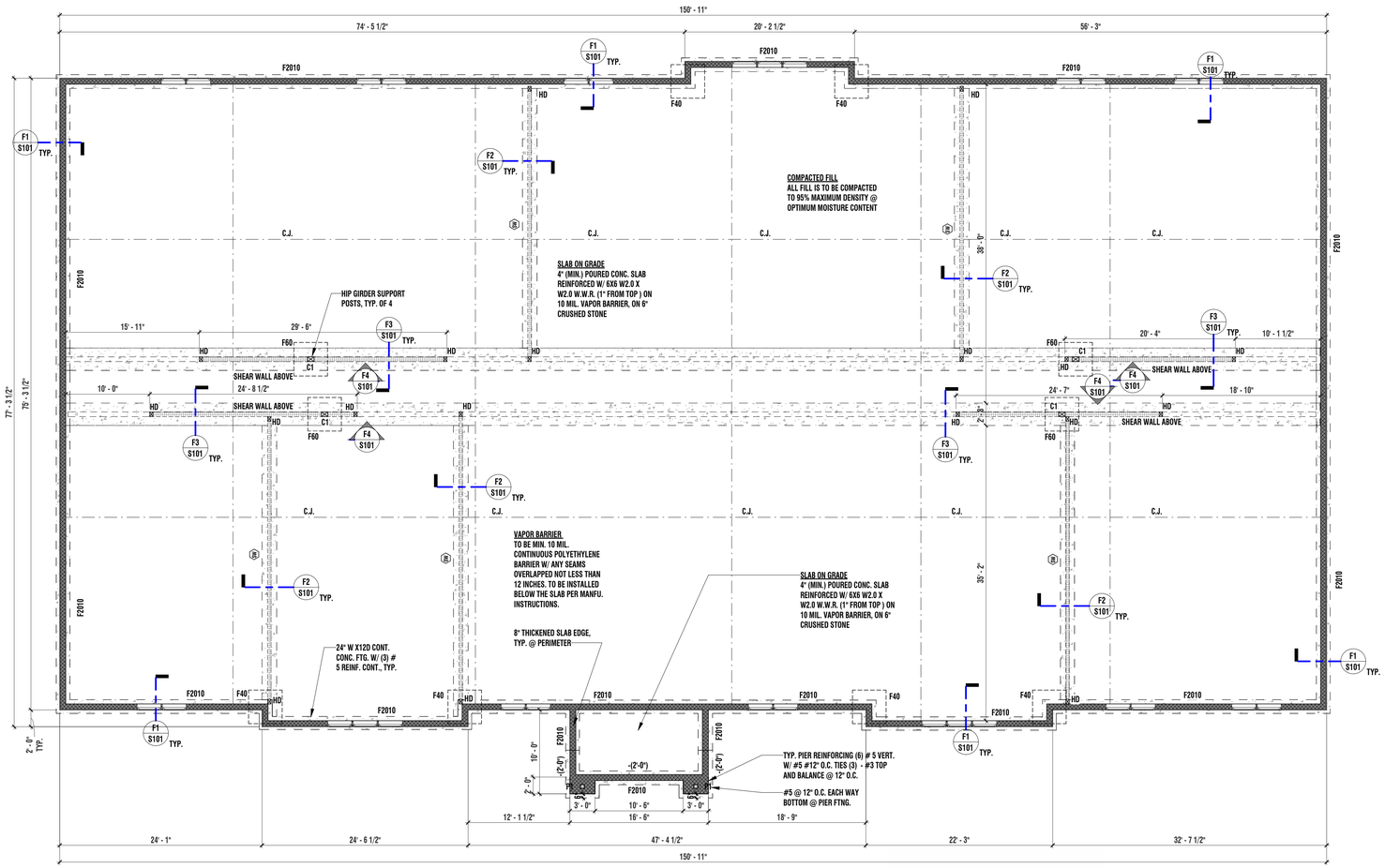


1 FOUNDATION PLAN

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

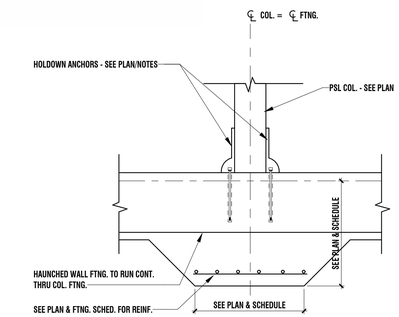
NOTES:

1. TOP OF FINISHED FIRST FLOOR EL. 18.00' REFERENCES AS DATUM EL. 0'-0".
2. TOP OF PROPOSED FOOTING ELEVATION IS AT (-1"- 4") FROM DATUM UNLESS NOTED THUS ( ) ON PLAN FROM DATUM.
3. SW - DENOTES WOOD SHEATED SHEAR WALL W/ 7/16" PLYWOOD SHEATHING ONE SIDE FASTENED TO 2X4 STUDS AT 16" OC. ALL EDGES TO BE BLOCKED. PROVIDE 8D NAILS @ 6" OC ALL EDGES, 12" OC IN FIELD.
4. CJ - DENOTES CONTROL / CONSTRUCTION JOINT. MAXIMUM SPACING OF JOINTS NOT TO EXCEED 15' - 0".
5. S-1 - DENOTES 4" SLAB ON GRADE REINFORCED W/ 6X6 - W2.0 X W2.0 WWR ON 10 MIL VAPOR BARRIER ON 6" DRAINAGE FILL.
6. F_ - DENOTES CONCRETE FOOTING. SEE SCHEDULE FOR SIZE AND REINFORCEMENT.
7. C1 - DENOTES 5 - 1/4" X 7" PSL COLUMN BELOW HIP GIRDER ABOVE. PROVIDE (2) SIMPSON HDU4 HOLDOWN ANCHORS WITH 5/8" DIA. ASTM F1554 GRADE 36 ANCHORS (12" MIN. EMBED)
8. HD - DENOTES LOCATION OF SIMPSON HDU4 HOLDOWN ANCHOR W/ 5/8" DIA. ASTM F1554 GRADE 36 ANCHORS. SET USING HILTI HY200 ADHESIVE W/ 12" MIN. EMBEDMENT. PROVIDE TRIPLE STUDS AT ALL HOLDOWN ANCHORS.
9. COORDINATE SLAB DEPRESSIONS WITH ARCHITECTURAL AND MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS
10. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
11. SEE TYPICAL DETAIL DRAWINGS FOR TYPICAL DETAILS NOT REFERENCED ON PLANS.
12. FOR ADDITIONAL INFORMATION, SEE GENERAL NOTES.
13. DENOTES 2X6 BEARING WALL WITH NO. 2 D. FIR STUDS @ 16" OC MAX.

FOOTING SCHEDULE

MARK	SIZE	DEPTH	REINFORCING
F40	4'-0" X 4'-0"	1'-0"	(4) # 5 EW, BOT
F60	6'-0" X 6'-0"	2'-4"	(6) # 5 EW, BOT
F2010	2'-0" CONT.	1'-0"	(3) # 5 CONT., #5 @ 24" TRANSVERSE

REQUIRED VERIFICATION AND INSPECTION	CONTIN/OUS	PERIODIC	REFERENCED STANDARD
STEEL CONSTRUCTION			
• Material Verification of high-strength bolts, nuts and washers	------	X	AISC 360, Section A3.3
• Inspection of Welding - Visual Single Pass Welds 5/16" and less	------	X	AWS D1.1, AISC 360, Table Section N5.4
CONCRETE CONSTRUCTION			
• Inspect Reinforcing steel, including placement	------	X	ACI 318: CHP 20, 25.2, 25.3, 26.4.1-26.6.3
• Inspect anchors post-installed in hardened concrete members			
a. Adhesive anchors installed horizontally or upwardly inclined orientations to resist sustained tension loads.	X	X	ACI 318:17.8.2.4 ACI 318: 17.8.2
b. Mechanical anchors and adhesive anchors not defined in 4.a	X	X	ACI 318:17.8.2.4 ACI 318: 17.8.2
• Verifying use of required design mix	------	X	ACI 318: Ch. 19, 26.4.3, 26.4.4
• Concrete Sampling for Strength, Slump, Temperature and Air Content	X	------	ACI 318: 26.12, ASTM C31, ACI 318: 26.5, 26.12
• Inspection of Formwork for Shape, Location and Dimensions of Members being Formed	------	X	ACI 318: 26.11.2(b)
• Inspection for maintenance of specified curing temperature and technique	------	X	ACI 318:26.5.3-26.5.5/IBC 1908.9
MASONRY CONSTRUCTION			
1. As masonry construction begins, the following shall be verified for compliance:			
• Proportions of site-prepared mortar	------	X	TMS 402-16 TMS 602-16
• Construction of mortar joints	------	X	TMS 402-16 TMS 602-16
• Location of reinforcement, connectors, anchorages	------	X	TMS 402-16 TMS 602-16
2. The inspection program shall verify:			
• Size and location of structural elements	------	X	TMS 402-16 TMS 602-16
• Type, size, and location of anchors	------	X	TMS 402-16, TMS 602-16,
• Specified size, grade and type of reinforcement	------	X	TMS 402-16 TMS 602-16
3. Prior to grouting, the following shall be verified for compliance:			
• Grout space is clean	------	X	TMS 402-16 TMS 602-16
• Placement of reinforcement and connectors	------	X	TMS 402-16 TMS 602-16
4. Preparation of grout and mortar specimens	X	------	TMS 402-16 TMS 602-16
SOIL			
• Verify Materials below shallow footings are adequate to achieve design bearing capacity	------	X	
• Verify Excavations are extended to proper depth and have reached proper material	------	X	
• Perform Classification and testing of compacted fill material	------	X	
• Verify use of proper materials, densities and fill thicknesses during placement and compaction of controlled fill	X	------	
• Prior to placement of controlled fill, observed subgrade and verify that site has been prepared properly.	------	X	
EPOXY ANCHORS	------	X	
WOOD CONSTRUCTION			
1. Prefabricated trusses: Refer to shop fabrication special inspection requirements	------	X	
2. Exterior walls & shear walls: the special inspector shall verify that the following components of exterior walls and interior walls are in accordance with the construction documents.	------	X	
a. The size and grade of the wood structural panel sheathing.	------	X	
b. The fastener type, size, embedment, spacing, and location.	------	X	
c. The type and installation of fasteners, hold-downs, blocking, sheathing laps, and all detailed connections to roof and floor diaphragms and other construction at the tops and bottoms of walls.	------	X	
d. The size, grade and spacing of wall members including plates, studs and headers.	------	X	
3. Roof & floor sheathing: the special inspector shall verify that the following components of roof and floor diaphragms are in accordance with the construction documents:	------	X	
a. The size and grade of the wood structural panel sheathing	------	X	
b. The fastener type, size, embedment, spacing, and location.	------	X	
c. The installation and nominal size of blocking and framing members at adjoining panel edges.	------	X	



F4 SECTION

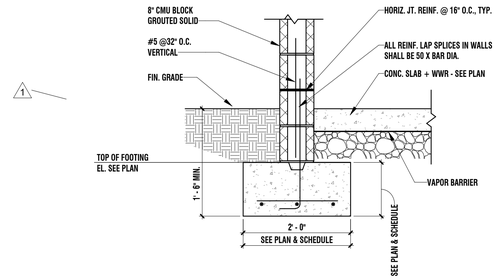
NOT TO SCALE

GENERAL NOTES:

1. SEE DWG. G001 FOR GENERAL CONDITIONS.
2. SEE DWG. A101 FOR CONSTRUCITON PLAN.

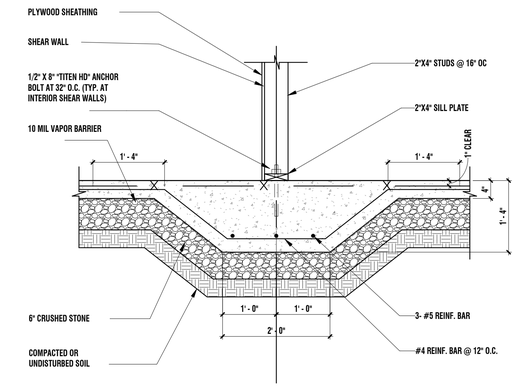
CONSTRUCTION NOTES:

1. CONTRACTOR SHALL PROVIDE WOOD TRUSS SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL BE SIGNED AND SEALED BY A FL PROFESSIONAL ENGINEER.
2. CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL ROOF TOP EQUIPMENT. ALL LOADS SHALL BE PROVIDED TO THE TRUSS MANUFACTURER. ALL FRAMED OPENINGS SHALL BE HEADERED OFF WITH DOUBLE MEMBERS FASTENED WITH METAL JOIST HANGERS TO BEARING TRUSSES.
3. CONTRACTOR TO COORDINATE LOCATIONS OF POSTS WITH DOOR AND WINDOW OPENINGS.
4. PROVIDE TRIPLE STUDS AT ALL TRUSS GIRDER BEARING LOCATIONS.



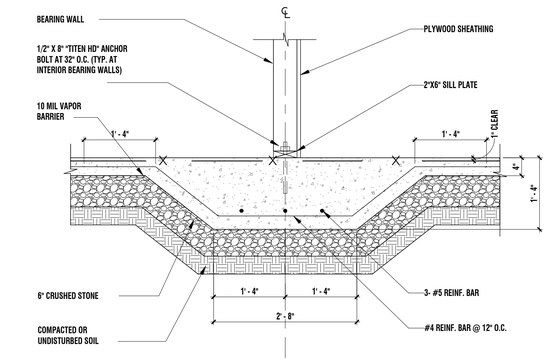
F1 SECTION

NOT TO SCALE



F2 SECTION

SCALE: 3/4" = 1'-0"



F3 INTERIOR WALL FOOTING DETAIL

SCALE: 3/4" = 1'-0"

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER

8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

FOUNDATION PLAN, DETAILS, & NOTES

REV.	DATE	REMARKS
1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
S101

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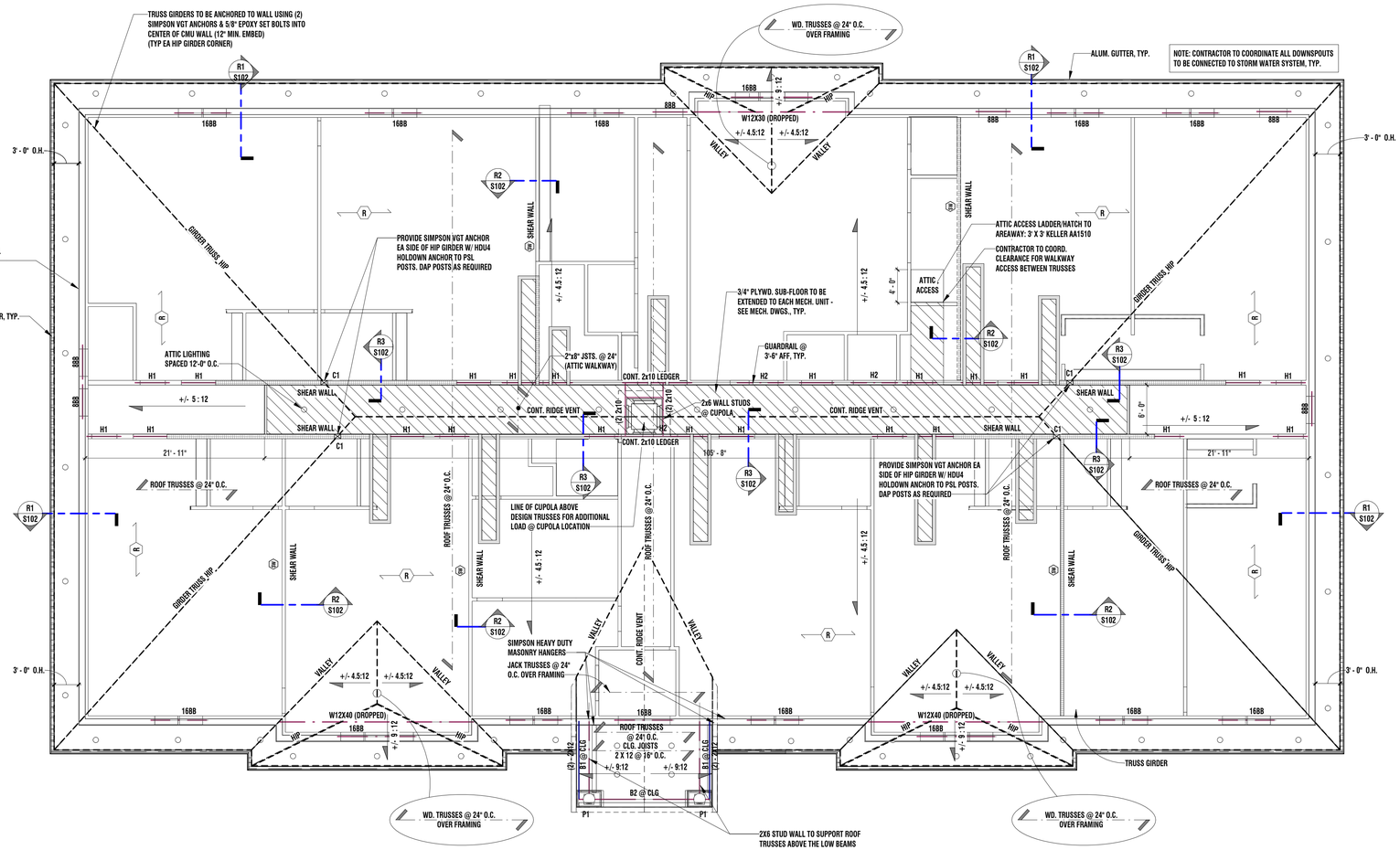


1 ATTIC/ROOF FRAMING PLAN

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

NOTES:

1. (SW) - DENOTES WOOD SHEATED SHEAR WALL W/ 7/16" PLYWOOD SHEATHING ONE SIDE FASTENED TO 2X4 OR 2X6 STUDS AT 16" OC. ALL EDGES TO BE BLOCKED. PROVIDE 8D NAILS @ 6" OC ALL EDGES, 12" OC IN FIELD.
2. (R) - DENOTES SPAN OF 3/4" PLYWOOD ROOF DECK SECURED TO THE FRAMING MEMBERS W/ 10d RING SHANK AT 6" ON CENTER
3. ALL WIDE FLANGE SHAPES SHALL BE ASTM-A572 OR ASTM A992 GRADE 50 (50 KSI YIELD).
4. THE GC/CM SHALL OBTAIN CERTIFIED MANUFACTURER'S DRAWINGS FOR ALL EQUIPMENT SHOWN. THE GC/CM SHALL COORDINATE DIMENSIONS FOR FRAMING ASSOCIATED WITH THE SUPPORT OF THE EQUIPMENT WITH THE MECHANICAL CONTRACTOR FOR EQUIPMENT PURCHASED, PRIOR TO STEEL FABRICATION.
5. THE GC/CM SHALL COORDINATE ALL OPENINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND TYPICAL DETAILS.
6. SEE DRAWINGS FOR TYPICAL DETAILS NOT REFERENCED IN PLAN.
7. FOR ADDITIONAL INFORMATION, SEE GENERAL NOTES.
8. 8BBX - DENOTES BOND BEAM LINTEL BY "X" INCHES IN DEPTH. SEE DETAILS FOR REINFORCEMENT AND ADDITIONAL INFORMATION.
9. ALL WOOD TRUSSES TO BE DESIGNED FOR A 15 PSF TOP CHORD DEAD LOAD AND A 10 PSF BOTTOM CHORD DEAD LOAD WITH A 20 PSF TOP CHORD LIVE LOAD.
10. BP1 DENOTES 3/4" X 7" X 12" BEARING PLATE WITH (2) 3/4" X 15" LONG DEFORMED BAR ANCHORS. FIELD WELD BEAMS TO BEARING PLATES. FIELD WELD BEAMS TO BEARING PLATES. UNLESS OTHERWISE NOTED ON PLAN, ALL BEAMS SHALL HAVE BP1 BEARING PLATES.
11. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND ELEVATIONS.

HEADER SCHEDULE

NO.	SIZE	JACK STUD	KING STUD
H-1	(3) 2" x 6"	(2) 2x6	(1) 2x6
H-2	(3) 2" x 10"	(2) 2x6	(2) 2x6

NOTE: NAIL ALL MULTIPLE PLY HEADERS TOGETHER W/ (3) ROWS OF 10d NAILS @ 8" O.C. TOENAIL ALL HEADERS TO KING STUDS W/ MIN. (6) 10d @ 6" O.C. ALL HEADERS SHALL BE D-FIR #2 OR BETTER GRADE LUMBER

BEARING WALL SCHEDULE

DESCRIPTION	FLOOR	STUDS	SPACING
CORRIDOR/LOAD BEARING SHEAR WALLS	N/A	2x6	16"
NON-LOAD BEARING SHEAR WALLS	N/A	2x4	16"

NOTE: ALL WALL STUDS & PLATES SHALL BE D-FIR #2 OR BETTER GRADE LUMBER

NON - LOAD BEARING WALL HEADER SCHEDULE

(FOR ALL HEADERS NOT SHOWN ON PLAN)

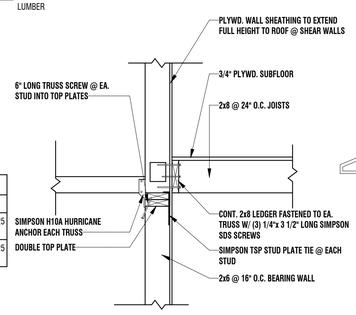
OPENING WIDTH	HEADER SIZE
UP TO 4' - 0"	(2) 2" X 6"
4' - 0" TO 6' - 0"	(2) 2" X 8"
6' - 0" TO 9' - 0"	(2) 2" X 12"

BEAM SCHEDULE

NO.	SIZE	CONNECTOR	COMMENTS
B-1	5 1/4" x 11 7/8" PARALLAM	SIMPSON CCTQ-SDS COLUMN CAP	PROVIDE SIMPOSON HGUMS.25 HANGER @ MASONRY WALL
B-2	5 1/4" x 11 7/8" PARALLAM	SIMPSON CCTQ-SDS COLUMN CAP	PROVIDE SIMPOSON HGUMS.25 HANGER @ MASONRY WALL

BEAM SCHEDULE

NO.	SIZE	BASE
P-1	5 1/4" x 5 1/4"	PB66

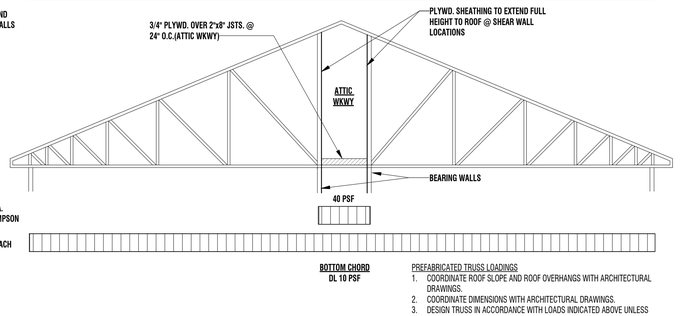


R3 SECTION

SCALE: 3/4" = 1'-0"

2 TRUSS LOADING DIAGRAM

NOT TO SCALE



PREFABRICATED TRUSS LOADINGS

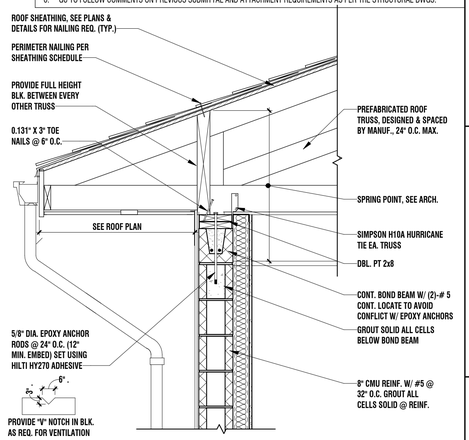
1. COORDINATE ROOF SLOPE AND ROOF OVERHANGS WITH ARCHITECTURAL DRAWINGS.
2. COORDINATE DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
3. DESIGN TRUSS IN ACCORDANCE WITH LOADS INDICATED ABOVE UNLESS OTHERWISE NOTED.
4. ROOF TRUSS TO BE DESIGNED TO SUPPORT HVAC EQUIPMENT AS REQUIRED. COORDINATE LOCATIONS WITH MECHANICAL DRAWINGS.
5. DESIGN TRUSS FOR ADDITIONAL WIND LOADING PER GENERAL NOTES.

GENERAL NOTES:

1. SEE DWG. G001 FOR GENERAL CONDITIONS.
2. SEE DWG. S100 FOR FOUNDATION PLAN.
3. SEE DWG. A105 FOR ROOF PLAN.

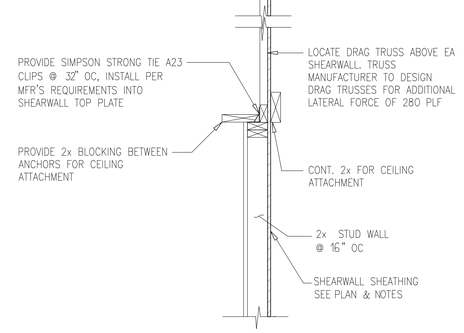
CONSTRUCTION NOTES:

1. CONTRACTOR SHALL PROVIDE WOOD TRUSS SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL BE SIGNED AND SEALED BY A FL PROFFESIONAL ENGINEER.
2. CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL ROOF TOP EQUIPMENT. ALL LOADS SHALL BE PROVIDED TO THE TRUSS MANUFACTURER ALL FRAMED OPENINGS SHALL BE HEADERED OFF WITH DOUBLE MEMBERS FASTENED WITH METAL JOIST HANGERS TO BEARING TRUSSES.
3. CONTRACTOR TO COORDINATE LOCATIONS OF POSTS WITH DOOR AND WINDOW OPENINGS.
4. ALL TRUSS BEARING SHALL HAVE SIMPSON H2.5A MINIMUM.
5. BOTTOM OF TRUSSES TO BE 11'-0" A.F.F.
6. GC TO FOLLOW COMMENTS ON PREVIOUS SUBMITTAL AND ATTACHMENT REQUIREMENTS AS PER THE STRUCTURAL DWGS.



R1 SECTION

NOT TO SCALE



R2 ROOF DETAIL

NOT TO SCALE

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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150

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Innovators in Educational Child Care

PROJECT

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OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ATTIC & ROOF FRAMING PLAN, SCHEDULES & NOTES

REV.	DATE	REMARKS
	05/17/2024	ISSUE FOR REVIEW

JOB NUMBER: 24001265A
DATE: 04/17/2024
DRAWN BY: KM/JF/JW
CHECKED BY: MV

SHEET NO.
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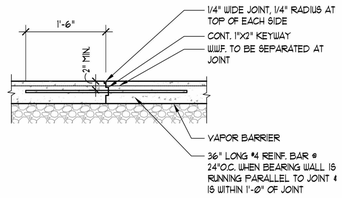
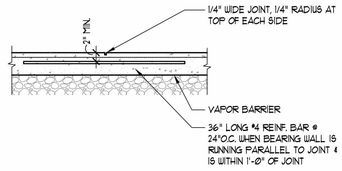


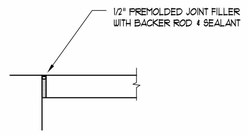
1 CONSTRUCTION JOINT DETAIL

SCALE: 3/4" = 1'-0"



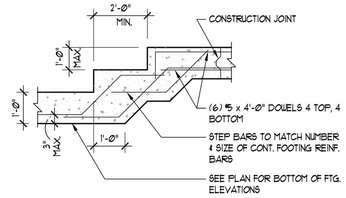
2 CONTROL JOINT DETAIL

SCALE: 3/4" = 1'-0"



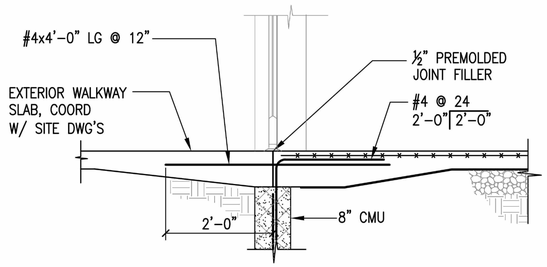
3 ISOLATION JOINT DETAIL

SCALE: 3/4" = 1'-0"



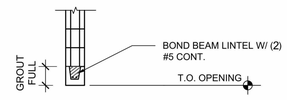
4 STEPPED FOOTING DETAIL

SCALE: 3/4" = 1'-0"



5 SECTION @ DOOR & CURTAIN WALL

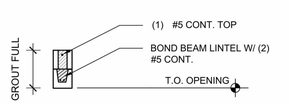
SCALE: N.T.S.



NOTE: TYP. @ ALL OPENINGS 4'-6" OR LESS
NOTE: BOND BEAM AND REINFORCEMENT SHALL EXTEND 16" MIN. BEYOND MASONRY OPENING. SHORE MASONRY DURING CONSTRUCTION

6 LINTEL 8BB8 DETAIL

SCALE: N.T.S.



NOTE: BOND BEAM AND REINFORCEMENT SHALL EXTEND 16" MIN. BEYOND MASONRY OPENING. SHORE MASONRY DURING CONSTRUCTION.

7 LINTEL 8BB16 DETAIL

SCALE: N.T.S.

WALL FASTENING SCHEDULE

CONNECTION (NAIL SIZE AND POSITION EXAGGER. FOR ILLUSTRATIVE PURPOSES)	FASTENER MIN. NOMINAL LENGTH IN INCHES x MIN. NOMINAL NAIL DIA. IN INCHES	QUANTITY PER CONNECTION OR SPACING BETWEEN FASTENERS (INCHES ON – CENTER)
TOP OR SOLE PLATE TO STUD (FACE NAIL)	3½"x0.162" NAIL (16d COMMON)	2
	3"x0.131" NAILS	3
	3"x0.120" NAILS	4
DOUBLE 2x4 TOP PLATE	3"x0.148" NAIL (10d COMMON)	16" OC
	3½"x0.162" NAIL (16d COMMON)	
	3"x0.131" NAILS	12" OC
	3"x0.120" NAILS	
INTERIOR BEARING WALL SILL PLATE TO CONCRETE	HILTI "X–CP72P8S23" POWDER ACTUATED FASTENERS W/ 23 MM WASHERS	SEE SHEAR WALL SHEATHING SCHEDULE
INTERIOR BEARING WALL SILL PLATE TO WOOD	¾"x0.131" NAILS	4" OC
	3"x0.120" NAILS	3" OC
STUD TO TOP OR SOLE PLATE (TOE–NAIL)	3½"x0.162" NAIL (16d COMMON)	3
	3"x0.131" NAILS	4
	3"x0.120" NAILS	
CAP/TOP PLATE LAPS AND INTERSECTIONS	3½"x0.162" NAIL (16d COMMON)	2 EACH SIDE OF LAP
	3"x0.131" NAILS	3 EACH SIDE OF LAP
	3"x0.120" NAILS	
DOUBLE STUD	3½"x0.148" NAIL (10d COMMON)	12" OC
	3"x0.131" NAILS	8" OC
	3"x0.120" NAILS	
CORNER STUD	3½"x0.162" NAIL (16d COMMON)	24" OC
	3"x0.131" NAILS	16"OC
	3"x0.120" NAILS	12" OC

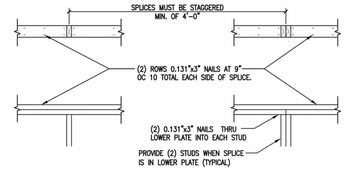
TD22 S–301 TYPICAL WALL FASTENING SCHEDULE

NAIL SCHEDULE

PENNY WEIGHT	LENGTH	DIAMETER
6d	2	0.113
8d	2.5	0.131
10d	3	0.148
12d	3.25	0.148
16d	3.5	0.162
20d	4	0.192

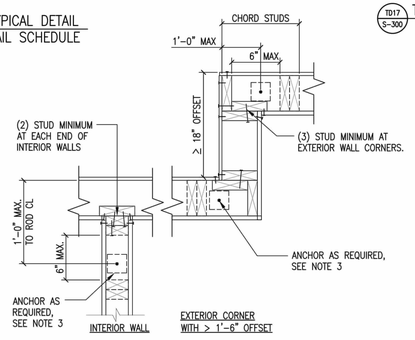
NOTES:
1. ALL NAILS FOR THE PROJECT SHALL BE COMMON WIRE NAILS.
2. SEE STRUCTURAL NOTES ON DRAWING FOR INFORMATION REGARDING SUBSTITUTIONS.

TD7 S–300 TYPICAL DETAIL NAIL SCHEDULE



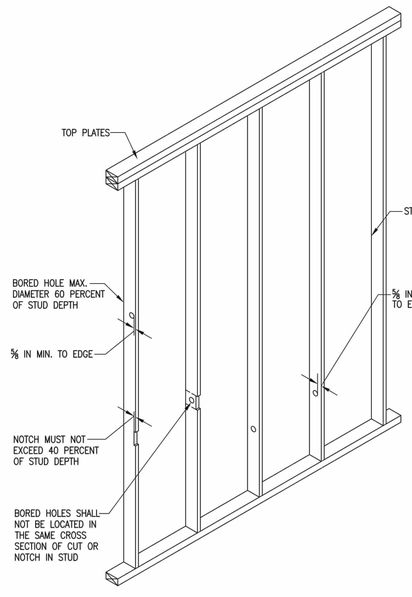
BOTTOM PLATE CONTINUOUS — SPLICES IN BOTH PLATES SHALL OCCUR OVER A STUD (TYP) — TOP PLATE CONTINUOUS

TD17 S–300 TYPICAL TOP PLATE SPLICE

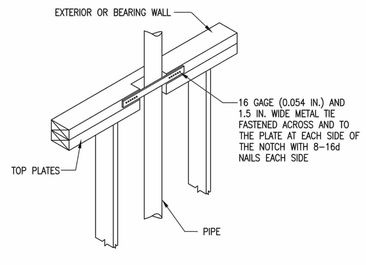


TD24 S–301 STUD WALL CORNER AND INTERSECTION FRAMING

NOTE:
1. ATTACH EXTERIOR AND INTERIOR SHEATHING TO STUDS PER PLANS AND SCHEDULES.
2. NAIL ALL BUILT–UP STUDS WITH 0.131"x3" NAILS SPACED AT 8" O.C.
3. SEE SHEARWALL LAYOUT PLAN AND REFERENCE DETAILS FOR REQUIRED ANCHOR RODS AT THE ENDS OF SHEARWALLS. ANCHOR RODS SHALL BE CENTERED IN WALL ±½" TOLERANCE.



TD20 S–301 TYPICAL DETAIL NOTCHING AND BORED HOLE LIMITATIONS FOR INTERIOR NONBEARING WALLS



TD21 S–301 TYPICAL DETAIL TOP PLATE FRAMING TO ACCOMMODATE PIPING

ROOF FASTENING SCHEDULE

CONNECTION (NAIL SIZE AND POSITION EXAGGER. FOR ILLUSTRATIVE PURPOSES)	FASTENER MIN. NOMINAL LENGTH IN INCHES x MIN. NOMINAL NAIL DIA. IN INCHES	QUANTITY PER CONNECTION
CEILING JOIST TO PLATE	3½"x0.162" NAIL (16d COMMON)	3
	3"x0.131" NAILS	5
	3"x0.120" NAILS	
ROOF RAFTERS TO PLATE (TOE–NAILED) / ROOF TRUSS TO PLATE (TOE–NAILED)	2½"x0.131" NAIL (0.131"x3"COMMON)	3
	3½"x0.162" NAIL (16d COMMON)	
	3"x0.131" NAILS	
	3"x0.120" NAILS	4
JACK RAFTERS TO HIP (TOE–NAILED)	3"x0.148" NAIL (10d COMMON)	3
	3½"x0.162" NAIL (16d COMMON)	
	3"x0.131" NAILS	4
	3"x0.120" NAILS	
JACK RAFTERS TO HIP (FACE–NAILED)	3½"x0.162" NAIL (16d COMMON)	2
	3"x0.148" NAIL (10d COMMON)	3
	3"x0.131" NAILS	
	3"x0.120" NAILS	4
ROOF RAFTER TO RIDGE BEAM (FACE–NAILED) (ONLY THE ATTACHMENT OF THE TOP RAFTER IS ILLUSTRATED)	3½"x0.162" NAIL (16d COMMON)	2
	3"x0.131" NAILS	3
	3"x0.120" NAILS	4
ROOF RAFTER TO RIDGE BEAM (TOE NAILED)	3½"x0.162" NAIL (16d COMMON)	2
	3"x0.131" NAILS	3
	3"x0.120" NAILS	4

TD23 S–301 TYPICAL ROOF FASTENING SCHEDULE

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FOLIO: 004339-0100
004339-0150

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TYPICAL DETAILS

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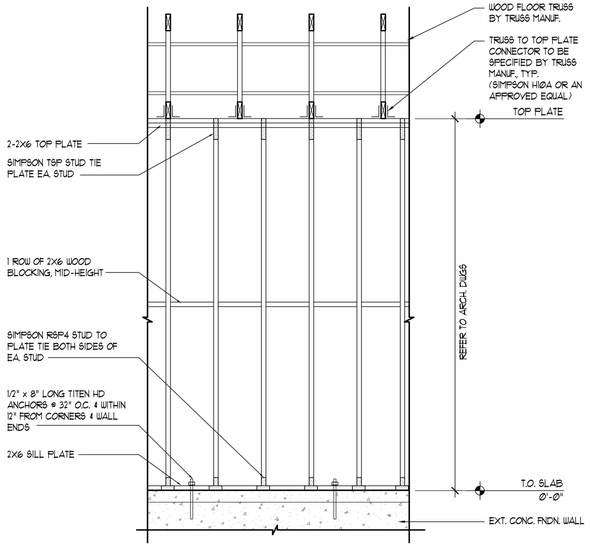
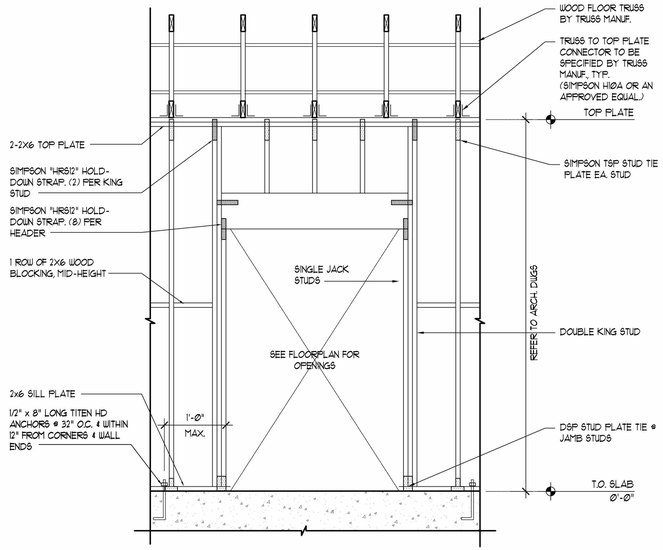


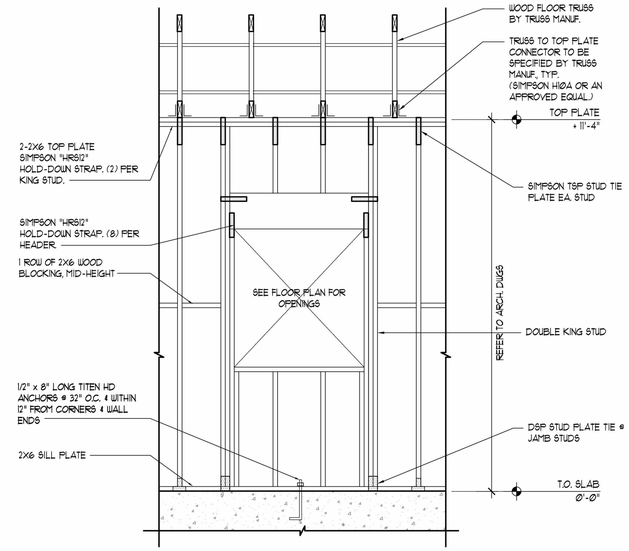
1 BEARING WALL DETAIL

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



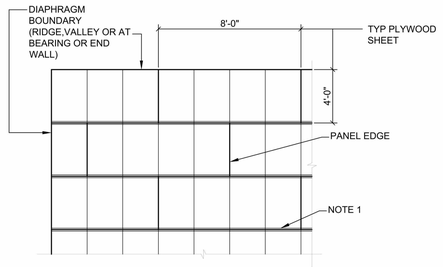
2 DOOR FRAMING DETAIL

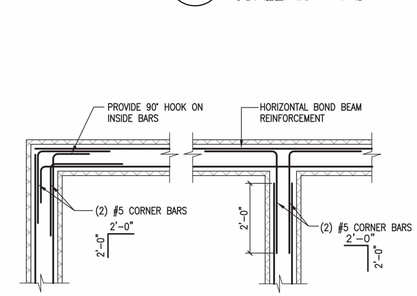
SCALE: 1/2" = 1'-0"



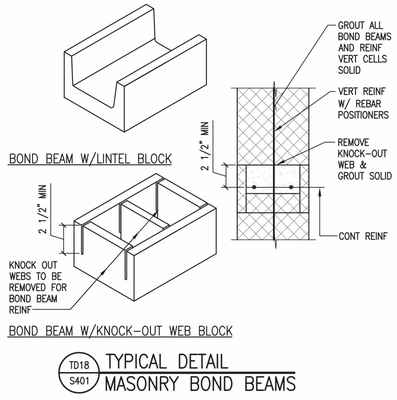
3 WINDOW FRAMING DETAIL

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





TD17 / S401 TYPICAL DETAIL
HORIZONTAL REINFORCEMENT IN BOND BEAMS



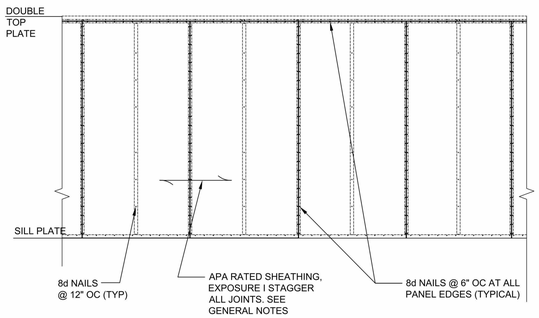
TD18 / S401 TYPICAL DETAIL
MASONRY BOND BEAMS

FLOOR AND ROOF SHEATHING DIAPHRAGM ATTACHMENT SCHEDULE									
ZONE	PANEL GRADE	COMMON NAIL SIZE	MIN NAIL PENETRATION IN FRAMING	MIN NOMINAL PANEL THICKNESS	MIN NOMINAL WIDTH OF MEMBER	BLOCKED (NOTE 1)	NAIL SPACING @ DIAPHRAGM BOUNDARY AND PANEL EDGES	MAX NAIL SPACING @ INTERMEDIATE FRAMING MEMBERS	SHEAR CAPACITY
ROOF	APA RATED SHEATING EXP 1, EXP 2 OR EXT: AND OTHER APA GRADES EXCEPT SPECIES GROUP 5	10d RING SHANK	1 1/2"	3/4"	2"	NO	6" O.C.	6" O.C.	240 PLF

NOTE:
1. WHERE BLOCKING IS REQUIRED PROVIDE 2x4 BETWEEN FRAMING/TRUSSES AT EACH PLYWOOD JOINT NAILED TO FRAMING EACH END.
2. PROVIDE H- CLIPS MID-WAY BETWEEN SUPPORTS ALONG PANEL EDGES.

4 ROOF PANEL NAIL SPACING & SCHEDULE

N.T.S.



NOTE:
PROVIDE BLOCKING AT ALL PANEL EDGES

5 PLYWOOD WALL NAIL SHEATHING DIAGRAM

N.T.S.

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SHEET TITLE:
STRUCTURAL FRAMING DETAILS

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S202

MECHANICAL DRAWING / REVISION LOG

●	NEW OR REVISED ISSUE
○	NON REVISED ISSUE

ISSUE:	DATE:
ISSUED FOR PERMIT	7/15/2024
PERMIT RESPONSE COMMENTS	

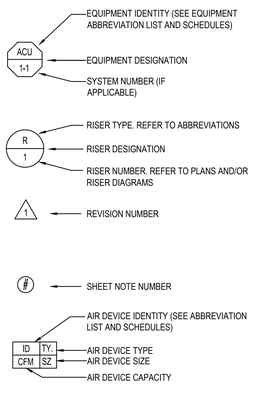
NUMBER	NAME					
M-001	MECHANICAL COVER SHEET	●	●			
M-101	MECHANICAL FLOOR PLAN	●	●			
M-103	MECHANICAL ROOF PLAN	●	●			
M-301	MECHANICAL SPECIFICATIONS	●	●			
M401	MECHANICAL DETAILS SHEET	●	●			
M-601	MECHANICAL VENTILATION CALCULATION SHEET 1 OF 2	●	●			
M-602	MECHANICAL VENTILATION CALCULATION SHEET 2 OF2	●	●			
M-603	MECHANICAL SCHEDULES	●	●			

GOVERNING CODES:

2023 FLORIDA BUILDING CODE
2023 FLORIDA MECHANICAL CODE
2023 FLORIDA PLUMBING CODE
2023 FLORIDA ENERGY CONSERVATION CODE
2019 FLORIDA SPRINKLER CODE
2020 FLORIDA ELECTRICAL CODE

KEY TO SYMBOLS

SYMBOL DESCRIPTION



DUCTWORK SYMBOLS

	SUPPLY AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT UP
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT UP
	EXHAUST AIR DUCT DOWN
	DUCT WITH ACOUSTIC LINING
	CEILING DIFFUSER
	CEILING GRILLE
T S	THERMOSTAT, SENSOR
C	CONTROL PANEL
U	UNDERCUT DOOR
	FIRE DAMPER (HORIZONTAL/VERTICAL)
	FIRE DAMPER (HORIZONTAL/VERTICAL)
	COMBINATION FIRE/SMOKE DAMPER (HORIZONTAL/VERTICAL)
	VOLUME DAMPER
	ACCESS DOOR
	ROOF TOP UNIT (RTU)
	CONDENSING UNIT (CU)/AIR HANDLER UNIT (AHU)
	ROOF MOUNTED EXHAUST FAN
DSD	DUCT SMOKE DETECTOR
	UNIT HEATER
	CABINET UNIT HEATER
SD	SMOKE DETECTOR
	WALL GRILLE
	CEILING MOUNTED HEATER
	DRYERBOX
	X-VENT (DOUBLE AND TRIPLE EXHAUST)
	CEILING MOUNTED EXHAUST FAN
M	MOTORIZED DAMPER
G	NATURAL GAS PIPING

MECHANICAL GENERAL NOTES

1. LOW PRESSURE BRANCH DUCTWORK (SUPPLY AND RETURN) SHALL BE PROVIDED WITH VOLUME CONTROL DAMPERS AS REQUIRED.

2. PROVIDE FIRE DAMPERS AT FIRE RATED WALL PENETRATIONS AS REQUIRED. SHEET METAL ACCESS DOORS AS WELL AS ACCESS DOORS IN FINISHED CONSTRUCTION SHALL BE PROVIDED FOR ALL DAMPERS AS REQUIRED.

3. BORDER TYPES, COLOR, FINISHES, AND METHOD OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH THE ARCHITECTURAL CEILING DETAILS AND SPECIFICATIONS.

4. THERMOSTATS SHOULD BE LOCATED 4'-0" A.F.F. IN THE CONFERENCE ROOM. TEMPERATURE SENSORS IN CLASSROOMS ARE TO BE LOCATED 5'-0" A.F.F. WHERE INDICATED ON PLANS (SEE M-101). FINAL LOCATIONS TO BE VERIFIED WITH THE ARCHITECT. MANUFACTURER'S LOGO SHALL NOT BE EXPOSED.

5. WHERE PIPING CONNECTIONS FOR EQUIPMENT SUCH AS PUMPS, UNIT HEATERS, HEAT EXCHANGERS, ETC. DIFFER FROM THE LINE SIZE PIPING, IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO FURNISH AND INSTALL THE NECESSARY REDUCER/EXPANDER FITTINGS TO ENABLE CONNECTION BETWEEN THE PIPING SYSTEM AND THE EQUIPMENT.

6. REFER TO SCHEDULE SHEETS FOR THE DIFFUSER, GRILLE AND REGISTER SPECIFICATIONS.

7. HVAC DESIGN CRITERIA SHALL COMPLY WITH THE STATE ENERGY CONSERVATION CONSTRUCTION CODE, AND THE AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS (ASHRAE) GUIDELINES, ETC.

8. ALL METAL LOUVERS, AND ALL BLANK OFF PANELS (INSULATED OR NOT INSULATED, ACTIVE OR INACTIVE) FOR LOUVERS SHALL BE PROVIDED UNDER THIS SECTION OF THE SPECIFICATIONS. WIRE MESH SCREENS FOR LOUVERS SHALL BE PROVIDED BY THE LOUVER MANUFACTURER. ALL OTHER WIRE MESH SCREENS SHALL BE PROVIDED UNDER THIS SECTION OF THE SPECIFICATIONS.

9. THIS CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH ANY WORK. WHERE DISCREPANCIES OCCUR BETWEEN THESE DOCUMENTS AND EXISTING CONDITIONS, THE DISCREPANCY SHALL BE REPORTED TO THE OWNER AND/OR ENGINEER FOR EXPEDITING AND RESOLVE.

10. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER. CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION. ISOLATE WORK AREAS BY MEANS OF TEMPORARY PARTITIONS AND/OR TARPS TO KEEP DUST AND DIRT WITHIN THE CONSTRUCTION AREA.

11. CONTRACTOR SHALL REPLACE ALL HVAC FILTERS AT TIME OF CERTIFICATE OF OCCUPANCY.

ABBREVIATIONS

AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTICAL LINING
ALD	AUTOMATIC LOUVER DAMPER
BDD	BACK DRAFT DAMPER
BMS	BUILDING MANAGEMENT SYSTEM
BRD	BAROMETRIC RELIEF DAMPER
BRR	BUILDING RETURN RISER
BSR	BUILDING SUPPLY RISER
BVR	BUILDING VENTILATION RISER
CAV	CONSTANT AIR VOLUME
CD	CEILING DIFFUSER
COD	CLEAN OUT DOOR
CP	CONDENSATE PUMP
CR (G)	CEILING REGISTER OR GRILLE
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CCUH	CEILING CABINET UNIT HEATER
EMR	ELEVATOR MACHINE ROOM
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EX	EXHAUST
EXR	EXHAUST RISER
FAI	FRESH AIR INTAKE
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FL	FIRE LIFT
GEF	GARAGE EXHAUST FAN
FSD	COMBINATION FIRE/SMOKE DAMPER
KEX	KITCHEN EXHAUST
KMUA	KITCHEN MAKE UP AIR
MER	MECHANICAL EQUIPMENT ROOM
MLWMS	METAL LOUVER WITH WIRE MESH SCREEN
NC	NORMALLY CLOSED
NK	NECK SIZE
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
PC	PUMPED CONDENSATE
RA	RETURN AIR
RG	RETURN GRILLE
RTU	ROOF TOP UNIT
S	SUPPY
SA	SUPPLY AIR
SD	SMOKE DAMPER
SF	SQUARE FEET
SPR	STAIR PRESSURIZATION RETURN
SR	SIDE REGISTER
SPF	STAIR PRESSURIZATION FAN
S/S	STAINLESS STEEL
TR	TOP REGISTER
TR (G)	TOP REGISTER OR GRILLE
TXR	TOILET EXHAUST RETURN
TX	TOILET EXHAUST FAN
TXF	TOILET EXHAUST FAN
UC	UNDERCUT DOOR (1 INCH)
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
VD	VOLUME DAMPER
VI	VIBRATOR ISOLATOR
WMS	WIRE MESH SCREEN

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FOLIO: 004339-0100
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MECHANICAL COVER SHEET

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

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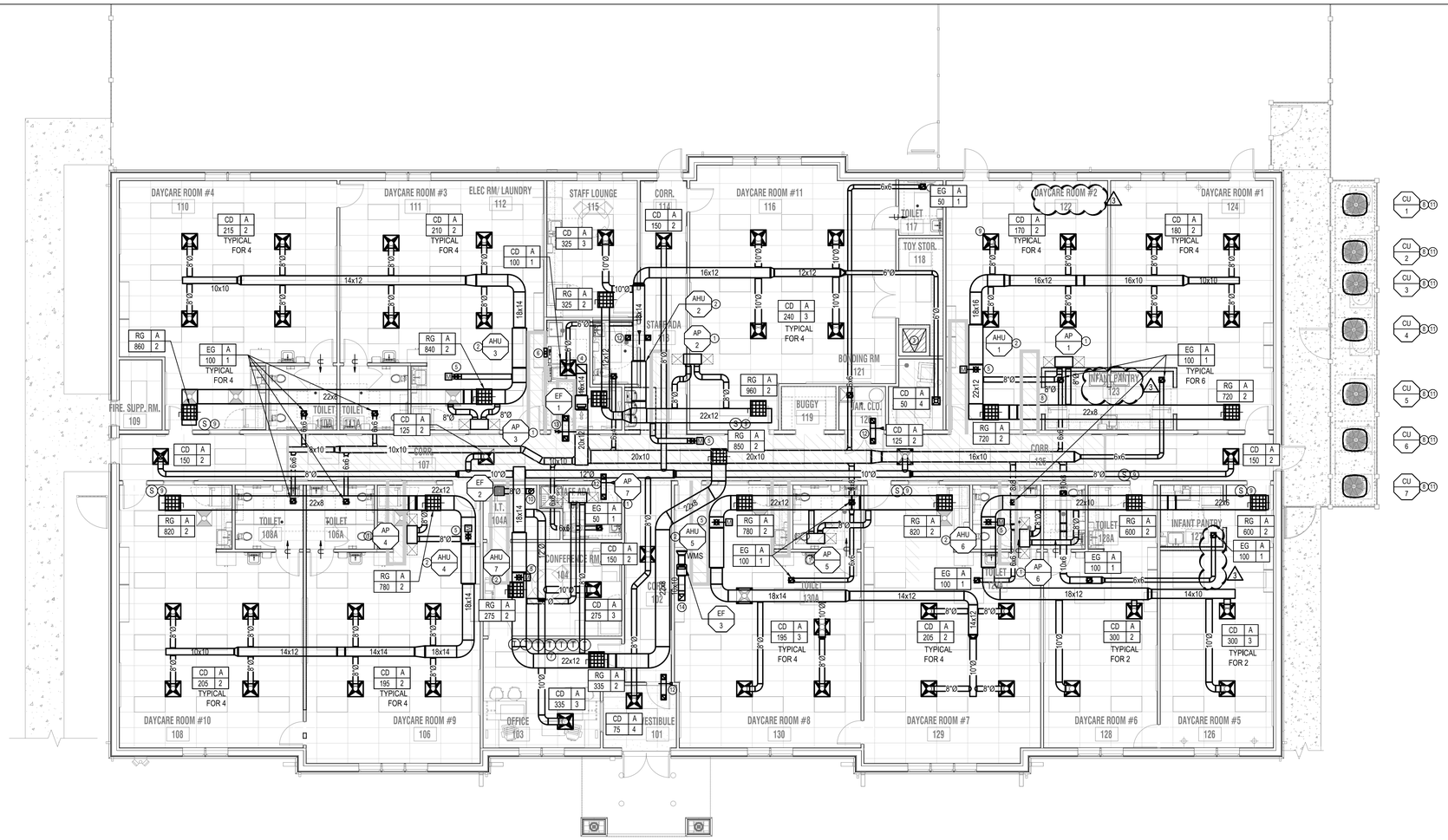

1 MECHANICAL FLOOR PLAN

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

0 4 8 16 FEET

MECHANICAL GENERAL NOTES:

1. ALL DUCTWORK WITHIN THE ATTIC SPACE TO HAVE MINIMUM R-8 EXTERNAL INSULATION THAT IS AT LEAST 1½ INCHES THICK.
2. ALL ROUND RIGID AND FLEXIBLE DUCTWORK WITHIN THE SPACE TO HAVE EXTERNAL INSULATION.
3. ALL PENETRATIONS REQUIRED FOR EQUIPMENT (DUCT, PIPES, ETC.) THROUGH ANY WALL SHALL BE PROPERLY SEALED OFF TO MAINTAIN THE INTEGRITY OF THE STRUCTURE.
4. PROVIDE VOLUME DAMPERS ON EACH BRANCH TAKE OFF FROM DUCT MAIN, AND ON EACH DIFFUSER TAKE OFF FROM BRANCH DUCT OR MAIN.
5. UNDERCUT ALL DOORS AS NOTED ON THIS PLAN 1"

MECHANICAL KEY NOTES:

1. 1. INSTALL MICROCON-600 UNITS AS PER MANUFACTURER'S GUIDELINES. THE INTAKE AND OUTLET TAKEOFFS FOR THE UNIT ON THE RETURN AIR MAIN TRUNK SHALL BE AT LEAST 6 FEET APART.
2. 2. INSTALL AHU IN THE ATTIC AS PER MANUFACTURER'S SPECIFICATIONS. PUMP CONDENSATE TO MOP SINK IN THE JANITOR'S CLOSET.
3. CONTRACTOR SHALL AVOID ANY OBSTRUCTION OF THE ATTIC ACCESS HATCH. CONTRACTOR TO AVOID ROUTING ANY DUCTS, PIPES, ETC ABOVE THE HATCH.
4. 16x14 EXHAUST DUCT UP THROUGH THE ROOF ABOVE. TERMINATE ABOVE THE ROOF WITH A ROOF CAP.
5. 8"Ø OA DUCT UP THROUGH THE ROOF. TERMINATE ABOVE THE ROOF LEVEL WITH A ROOF CAP. PROVIDE NORMALLY CLOSED MOTORIZED DAMPER IN THE DUCT. INTERLOCK DAMPER OPERATION WITH IT'S ASSOCIATED UNIT. DAMPER SHALL OPEN WHEN AHU ACTIVATES.
6. 3. PROVIDE DRYERBOX VENT BOX MODEL 350. RUN 4"Ø DRYER EXHAUST UP THROUGH THE ROOF. PROVIDE DRYER RATED ROOF CAP AT TERMINATION. ELEVATE ROOF CAP MINIMUM 24" ABOVE ROOF LEVEL.
7. PROVIDE THERMOSTATS FOR ALL HVAC UNITS (7 TOTAL). COORDINATE FINAL LOCATION WITH ARCHITECT.
8. RUN REFRIGERANT PIPING FORM THE INDOOR UNIT TO CONDENSING UNIT ON GRADE.
9. RUN CONTROL WIRING FROM TEMPERATURE SENSOR IN THE CLASSROOM TO THE CORRESPONDING THERMOSTAT LOCATED IN THE OFFICE.
10. 6" EXHAUST DUCT UP TO ROOF, ENDS WITH A ROOF CAP.
11. INSTALL CONDENSING UNIT ON CONCRETE PAD AS PER MANUFACTURER'S INSTRUCTIONS. FASTEN CONDENSING UNIT TO CONCRETE PAD.
12. INSTALL 8x6 SHEETMETAL TRANSFER ASSEMBLY WITH A SMOKE DAMPER AT THE WALL PENETRATION.
13. INSTALL 10x6 SHEETMETAL TRANSFER ASSEMBLY WITH A FIRE/SMOKE DAMPER AT THE WALL PENETRATION.
14. 10x10 UP TO ROOF, TERMINATE WITH GRAVITY EXHAUST.

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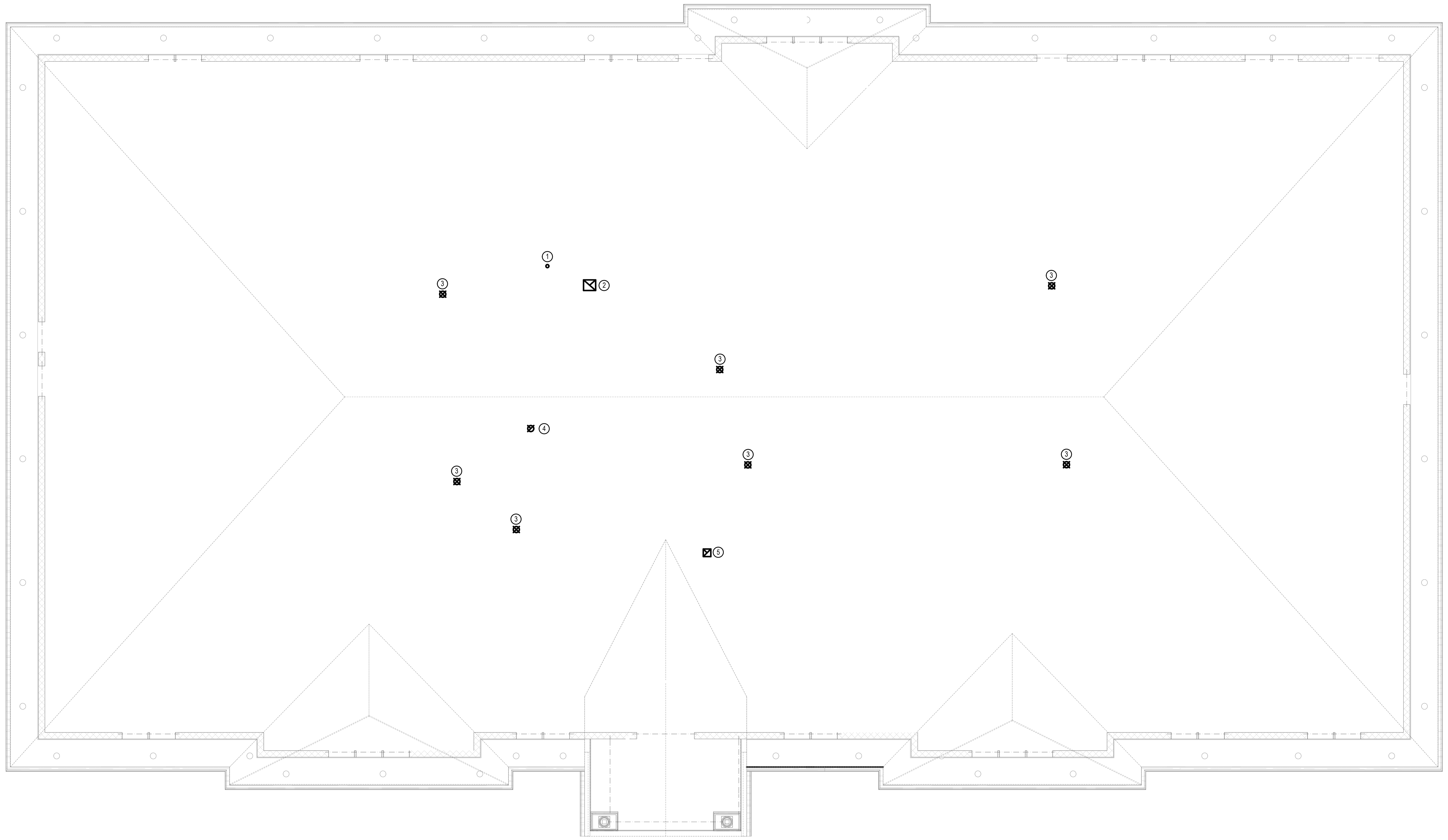

1 MECHANICAL ROOF PLAN

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

0 4 8 16 FEET

MECHANICAL GENERAL NOTES:

1. EXHAUST FANS, PLUMBING VENTS, AND ANY OTHER EXHAUST SHOULD BE LOCATED MINIMUM 10' FROM ANY MECHANICAL AIR INTAKE.
2. ALL PENETRATIONS REQUIRED FOR EQUIPMENT (DUCT, PIPES, ETC.) THROUGH ANY WALL SHALL BE PROPERLY SEALED OFF TO MAINTAIN THE INTEGRITY OF THE STRUCTURE.

MECHANICAL KEY NOTES:

(1) 4"Ø DRYER EXHAUST DUCT DOWN TO THE FLOOR BELOW. TERMINATE EXHAUST DUCT WITH DRYER RATED ROOF CAP, AND TERMINATE MINIMUM 24" ABOVE THE ROOF LEVEL.

(2) 16x14 EXHAUST DUCT UP THROUGH THE ROOF ABOVE. TERMINATE ABOVE THE ROOF WITH A ROOF CAP.

(3) 8"Ø OA DUCT UP THROUGH THE ROOF. TERMINATE ABOVE THE ROOF LEVEL WITH A ROOF CAP. PROVIDE NORMALLY CLOSED MOTORIZED DAMPER IN THE DUCT. INTERLOCK DAMPER OPERATION WITH IT'S ASSOCIATED UNIT. DAMPER SHALL OPEN WHEN AHU ACTIVATES. BALANCE OA DUCT TO REQUIRED CFM.

(4) 6"Ø EXHAUST DUCT FROM IT ROOM. TERMINATE ABOVE THE ROOF WITH A ROOF CAP.

(5) 10X10 EXHAUST DUCT FROM ATTIC. TERMINATE ABOVE THE ROOF WITH A GRAVITY EXHAUST VENTILATOR.

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004339-0150

SHEET TITLE:

MECHANICAL ROOF PLAN

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A

DATE:

DRAWN BY: GS/SS/LG

CHECKED BY: AK

SHEET NO.
M-103

1. SCOPE OF WORK

1.1. THE WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, HOISTING, SCAFFOLDING, SUPPORT, SUPERVISION., SERVICES AND OPERATIONS NECESSARY TO COMPLETE THE INSTALLATION OF THE HEATING, VENTILATING AND AIR CONDITIONING WORK SHOWN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.

2. GENERAL CONDITIONS - HVAC

2.1. THE GENERAL CONDITIONS AND THE SUPPLEMENTARY CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AND THE ARCHITECTS AND ENGINEER'S SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

2.2. THE ENTIRE INSTALLATION SHALL CONFORM WITH THE MOST RECENTLY REVISED VERSION OF ALL APPLICABLE LAWS, RULES, REGULATIONS, CODES, ORDINANCES OF FEDERAL, STATE AND LOCAL AUTHORITES HAVING JURISDICTION, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: THE STATE ENERGY CONSERVATION CODE, IBC CODE, NATIONAL ELECTRIC CODE, INDUSTRIAL RISK INSURERS, ELECTRIC TESTING LABORATORY, ASHRAE, ASME, NFPA, AND UL.

2.3. ALL WORK AND MATERIALS SHALL BE GUARANTEED AS TO QUALITY AND WORKMANSHIP, AND GUARANTEED AGAINST ALL DEFECTS, FOR A PERIOD OF ONE YEAR.

2.4. THE CONTRACTOR AND SUBCONTRACTORS, IF ANY, COVENANT AND AGREE:

2.4.1. TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER, ARCHITECT AND CONSULTING ENGINEERS AGAINST ANY LIABILITY, LOSS, DAMAGE OR EXPENSE, INCLUDING ATTORNEYS' FEES, ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, HIS SUBCONTRACTORS OR HIS OR THEIR AGENTS, SERVANTS AND EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM OR THEM IN PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH OR PERSONAL INJURY OR PROPERTY DAMAGE OR IMPROPER CONSTRUCTION, CONSTRUCTION TECHNIQUES, OR THE USE OF IMPROPER OR INAPPROPRIATE MATERIALS, METHODS OR TOOLS.

2.4.2. TO EXECUTE THE WORK IN THE BEST AND MOST THOROUGH MANNER AND TO THE SATISFACTION OF THE OWNER, ARCHITECT AND CONSULTING ENGINEERS, WHO WILL JOINTLY INTERPRET THE MEANING OF THE DRAWINGS AND SPECIFICATIONS AND SHALL HAVE THE POWER TO REJECT ANY WORK AND MATERIALS WHICH, IN THEIR JUDGMENT, ARE NOT IN FULL ACCORDANCE THEREWITH.

2.4.3. TO BE RESPONSIBLE FOR ALL MATERIAL UNTIL COMPLETION AND FINAL ACCEPTANCE. REPLACE ANY MATERIAL AND/OR EQUIPMENT WHICH MAY BE DAMAGED, LOST OR STOLEN AND TO DO OVER ANY REJECTED WORK WITHOUT ADDITIONAL COST TO THE OWNER. GUARD THE BUILDING AND ITS CONTENTS AGAINST DAMAGE BY THE CONTRACTOR OR HIS EMPLOYEES, AND MAKE GOOD ANY DAMAGE FREE OF CHARGE.

2.4.4. THAT HE WILL PROVIDE AND MAINTAIN A SAFE PLACE TO WORK AND THAT HE WILL COMPLY WITH ALL LAWS AND REGULATIONS OF ANY GOVERNMENTAL AUTHORITY HAVING JURISDICTION THEREOF, AND THAT HE AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER, ARCHITECT AND CONSULTING ENGINEERS FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE OR EXPENSE, INCLUDING ATTORNEY'S FEES, ARISING FROM A FAILURE OR ALLEGED FAILURE ON HIS PART PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM OR THEM IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT, ERROR OR OMISSION ALLEGEDLY RESULTING IN THE DEATH OR PERSONAL INJURY OR PROPERTY DAMAGE OR IMPROPER CONSTRUCTION, CONSTRUCTION TECHNIQUES, OR THE USE OF IMPROPER OR INAPPROPRIATE MATERIAL OR TOOLS.

2.4.5. THAT ANY CONTROVERSY OR DISPUTE TO WHICH THE CONTRACTOR, OWNER, ARCHITECT OR CONSULTING ENGINEERS ARE PARTIES SHALL BE SUBMITTED TO ARBITRATION BEFORE THE AMERICAN ARBITRATION ASSOCIATION FOR DECISION IN ACCORDANCE WITH THE RULES OF SUCH ASSOCIATION FOR CONSTRUCTION INDUSTRY DISPUTES. THE CONTRACTOR AGREES TO MAKE AVAILABLE TO THE CONSULTING ENGINEERS, ON DEMAND, SIGNED COPIES OF THE CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR AND BETWEEN THE CONTRACTOR AND HIS SUBCONTRACTORS. THE CONTRACTOR AGREES THAT BY SUBMITTING A BID WHICH IS ACCEPTED, THIS PARAGRAPH SHALL BE DEEMED A WRITTEN AGREEMENT TO SUBMIT TO ARBITRATION ANY CONTROVERSY THEREAFTER ARISING.

2.4.6. PUT WORK IN PLACE AS FAST AS REASONABLY POSSIBLE; AT ALL TIMES, KEEP A COMPETENT FOREMAN IN CHARGE OF THE WORK AND FACILITATE ITS INSPECTION BY THE CONTRACTOR, ARCHITECT AND CONSULTING ENGINEERS.

2.4.7. EXCEPT FOR SUCH CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE OWNER, ARCHITECT AND CONSULTING ENGINEERS, IN ACCORDANCE WITH ALTERNATES OR OPTIONS STATED HEREAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, COMPLETE IN EVERY WAY FOR EFFICIENT AND SATISFACTORY OPERATION WHEN DELIVERED TO THE OWNER.

2.4.8. THAT THE MATERIALS WILL BE NEW AND THE WORKMANSHIP SUPPLIED UNDER THESE SPECIFICATIONS WILL BE OF THE BEST GRADE, THE APPARATUS WILL BE ERECTED IN A PRACTICAL AND FIRST CLASS MANNER, IT WILL BE COMPLETE AND READY FOR OPERATION, NOTHING OMITTED IN THE WAY OF LABOR AND MATERIAL REQUIRED TO MAKE IT SO, ALTHOUGH NOT SPECIFICALLY SHOWN IN DETAIL OR MENTIONED HEREIN, AND THAT IT WILL BE DELIVERED IN GOOD WORKING ORDER, COMPLETE AND PERFECT IN EVERY RESPECT WITHOUT ADDITIONAL COST.

2.4.9. THAT SUBMISSION OF A BID IS A REPRESENTATION THAT THEY HAVE BECOME THOROUGHLY ACQUAINTED WITH THE WORK INVOLVED AND HAVE OBTAINED AND VERIFIED AT THE BUILDING ALL MEASUREMENTS NECESSARY FOR THE PROPER INSTALLATION OF WORK. FURNISH TO ALL SECTIONS ANY INFORMATION RELATING TO WORK OF THIS SECTION NECESSARY FOR THE PROPER INSTALLATION OF THEIR SECTIONS. THE CONTRACTOR SHALL COORDINATE FOR FINISHES ADJACENT TO WORK OF THIS SECTION AND TO ARRANGE TO HAVE VISIBLE PORTIONS OF WORK FIT IN AND HARMONIZE WITH THE FINISH IN A MANNER SATISFACTORY TO THE ARCHITECT.

2.4.10. TO MAKE EVERY EFFORT TO FURNISH ALL EQUIPMENT OF ANY GENERIC TYPE FROM ONE MANUFACTURER.

2.4.11. WHERE INCONSISTENCIES OCCUR BETWEEN THE PLANS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT ITSELF, THE ITEM OR ARRANGEMENT OF BETTER QUALITY, GREATER QUANTITY OR HIGHER COST HAS BEEN INCLUDED IN THE BASE BID.

2.5. THE CONTRACTOR SHALL PREPARE AND SUBMIT ALL APPLICATIONS TO AUTHORITIES AND OBTAIN ALL NECESSARY BUILDING PERMITS, EQUIPMENT USE PERMITS, COMPLETE ALL TESTS AND PAY ALL NECESSARY FEES.

2.6. THE CONTRACTOR SHALL PROTECT ALL EXISTING SURFACES, UTILITIES, MECHANICAL SYSTEMS, ETC., AND REPAIR ALL DAMAGES TO SAME DURING THE COURSE OF THIS CONTRACTOR'S WORK, AT HIS EXPENSE.

2.7. REMOVABLE ACCESS TILES OR ACCESS DOORS ARE REQUIRED IN HUNG CEILING FOR VOLUME DAMPERS, FIRE DAMPERS, AUTOMATIC LOUVER DAMPERS, SMOKE DETECTORS, VALVES, AND ALL OTHER MECHANICAL EQUIPMENT WHICH REQUIRES SERVICE. FURNISH ACCESS LOCATION REQUIREMENTS TO CONSTRUCTION MANAGER/GENERAL CONTRACTOR. SUBMIT PROPOSED LOCATIONS TO ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION

2.8. SUBMIT SHEET METAL SHOP STANDARDS, EQUIPMENT CUTS, DETAILED COORDINATED SHOP DRAWINGS OF ALL PIPING AND DUCT LAYOUTS FOR APPROVAL. PREPARE AND SUBMIT DRAWINGS SHOWING THE METHOD OF SUPPORT AND WEIGHT OF ALL EQUIPMENT, PIPING AND DUCTWORK FOR REVIEW BY THE ARCHITECT, ENGINEER AND BUILDING STRUCTURAL ENGINEER. PROMPTLY REVISE SHOP DRAWINGS AS REQUIRED BY THE OWNER, ARCHITECT OR ENGINEER AND RESUBMIT FOR FINAL APPROVAL. NO WORK SHALL START UNTIL EQUIPMENT CUTS, SHOP STANDARDS AND SHOP DRAWINGS ARE SUBMITTED AND APPROVED BY ARCHITECT AND/OR ENGINEER. COORDINATED DRAWINGS SHALL INCLUDE ALL MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION AND GENERAL CONSTRUCTION DRAWINGS.

2.9. THE ARCHITECT AND/OR ENGINEER WILL REVIEW SHOP DRAWINGS AND/OR SAMPLES WITH REASONABLE PROMPTNESS AND WILL RETURN THEM TO THE CONTRACTOR STAMPED TO INDICATE THE APPROPRIATE ACTION AS FOLLOWS:

2.9.1. "NO EXCEPTION TAKEN" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE CONTRACT DOCUMENTS.

2.9.2. "MAKE CORRECTIONS NOTED" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE ARCHITECT'S AND/OR ENGINEERS NOTATIONS AND THE CONTRACT DOCUMENTS. A COPY OF THE CORRECTED SUBMITTAL MUST BE RETURNED TO THE ARCHITECT AND/OR ENGINEER FOR RECORD. IF, FOR ANY REASON, THE CONTRACTOR CANNOT COMPLY WITH THE NOTATIONS, THE CONTRACTOR MUST RESUBMIT AS DESCRIBED FOR SUBMITTALS STAMPED "REVISE AND RESUBMIT"

2.9.3. "REVISE AND RESUBMIT" MEANS THAT THE CONTRACTOR MUST COMPLY WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND RESUBMIT BEFORE FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE PROJECT SITE.

2.9.4. "REJECTED" MEANS THAT THE SUBMITTAL DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS AND THAT FABRICATION, MANUFACTURE OR CONSTRUCTION SHALL NOT PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE PROJECT SITE.

2.9.5 PREPARE AND FURNISH TO THE OWNER "AS-BUILT" DRAWINGS UTILIZING THE LATEST VERSION OF AUTOCAD EMPLOYING THE BUILDING OWNER'S LAYERING SYSTEM FOR ALL WORK INSTALLED. PROVIDE OPERATING AND MAINTENANCE MANUALS (3 COPIES), INCLUDING WIRING DIAGRAMS, LUBRICATION CHARTS AND RECOMMENDED PREVENTATIVE MAINTENANCE PROCEDURES, FOR EACH SYSTEM OR PIECE OF EQUIPMENT.

3.FIRE DAMPERS

3.1. FIRE DAMPERS SHALL BE DYNAMIC TYPE, RATED TO CLOSE AGAINST AIR FLOW WITH A MINIMUM 6.0 INCHES W.G. PRESSURE DIFFERENTIAL ACROSS THE CLOSED DAMPER, UL LISTED AND BE APPROVED FOR USE AND BEAR THE LABEL OF THE LOCAL GOVERNING AGENCY WHERE REQUIRED.

3.2. REFER TO ARCHITECT'S DRAWINGS FOR LOCATION OF FIRE-RATED PARTITIONS. INSTALL FIRE DAMPERS WITH ACCESS DOORS IN ALL EXISTING AND NEW DUCTWORK, ALL RETURN AIR OPENINGS AND/OR MASONRY OPENINGS WHICH CROSS FIRE- RATED PARTITIONS.

3.3. FIRE DAMPERS MUST BE INSTALLED IN ACCORDANCE WITH UL555 AND MANUFACTURER'S INSTRUCTIONS. EXISTING FIRE DAMPERS MUST BE PROVIDED WITH ANGLE IRON FRAMES WHERE REQUIRED.

4.GRILLES, REGISTERS, DIFFUSERS

4.1 CEILING DIFFUSERS, RETURN GRILLES AND REGISTERS SHALL BE SIZED IN ACCORDANCE WITH THE TABLES ON THE DRAWING. SUPPLY REGISTERS SHALL BE FURNISHED WITH O.B.D.'S AND PATTERN CONTROLLERS. RETURN REGISTERS SHALL BE PROVIDED WITH O.B.D.'S. FRAME AND BORDER TYPES ARE TO BE COMPATIBLE WITH CEILING CONSTRUCTION. THE COLOR OF ALL AIR DEVICES IS SUBJECT TO THE OWNERS APPROVAL. PROVIDE BLANK- OFF BAFFLES IN CEILING DIFFUSERS AS SHOWN ON DRAWINGS. FOR EXACT LOCATIONS OF DIFFUSERS, GRILLES AND REGISTERS, REFER TO ARCHITECTURAL DRAWINGS.

4.2 AIR DISTRIBUTION DEVICES (DIFFUSERS, REGISTERS, LINEARS, AIR SLOTS, ETC.) INSTALLED IN INACCESSIBLE CEILINGS SHALL BE PROVIDED WITH REMOTE DUCT MOUNTED OBD'S OPERABLE THROUGH THE FACE OF THE AIR DISTRIBUTION DEVICE.

4.3 AS PART OF THIS WORK, ALL AIR OUTLETS SHOWN ON DESIGN DRAWINGS SHALL BE BALANCED BY AN INDEPENDENT BALANCER. SUBMIT BALANCING REPORTS FOR APPROVAL TO ARCHITECT AND ENGINEER.

5.SHEETMETAL AND DUCTWORK

5.1. DUCT LAYOUT SHOWN IS A SCHEMATIC REPRESENTATION OF DESIGN INTENT. NO ADDED COMPENSATION SHALL BE PERMITTED FOR VARIATIONS DUE TO FIELD CONDITIONS. COORDINATION WITH BOTH NEW AND EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. ANY MAJOR VARIANCES OR DISCREPANCIES ARE TO BE INDICATED ON THE SHOP DRAWINGS AND REPORTED TO THE ARCHITECT AND/OR ENGINEER.

5.2. SHEET METAL DUCT AND PLENUM CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF SMACNA, "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE" LATEST EDITION, WITH THE EXCEPTIONS HEREIN NOTED.

5.3. SHOP STANDARDS FOR SHEET METAL AND DUCT CONSTRUCTION MUST BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.

5.4. NEW SUPPLY DUCTWORK FROM A/C UNIT SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH TABLE 1-5 FOR 1" OR LESS PRESSURE.

5.6. ALL BRANCH DUCTWORK (SUPPLY AND RETURN) SHALL BE PROVIDED WITH VOLUME CONTROL DAMPERS. VOLUME CONTROL DAMPERS SHALL BE OF THE QUADRANT TYPE CONSTRUCTED IN ACCORDANCE WITH FIGURES 2-12 AND 2-13 OF THE SMACNA STANDARDS.

5.7. WHEREVER REINFORCING IS REQUIRED ON 2 SIDES, THE ENDS OF THE REINFORCING MUST BE CONNECTED TOGETHER BY MEANS OF RODS OR ANGLES AS SHOWN IN FIGURE 1-11 OF THE SMACNA STANDARDS.

5.8. THE USE OF BUTTON PUNCH, SNAP-LOCK (L-2), STANDING SEAM (L-4) AND SINGLE CORNER SEAM (L0-5) LONGITUDINAL SEAMS IS PROHIBITED.

5.9. THE FOLLOWING TRANSVERSE JOINTS ARE NOT PERMITTED: LAP (T-4), REINFORCED S SLIP (T-7), STANDING SEAMS (T-15 AND T-16), POCKET LOCK (T-17, T-18 AND T-19) AND CAPPED FLANGE (T-20).

5.10. WHERE MANUFACTURED TRANSVERSE JOINTS ARE USED (SMACNA T-25A, T-25B, I.E. DUCT MATE, TDC, TDF ETC.), THEY SHALL BE SUBMITTED WITH AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S STANDARDS FOR CONSTRUCTION AND INSTALLATION.

6. DUCTWORK ACCESSORIES

6.1. VOLUME DAMPERS TO BE FACTORY FABRICATED, WITH REQUIRED HARDWARE AND ACCESSORIES. CLOSE DUCT PENETRATIONS FOR DAMPER COMPONENTS TO SEAL DUCT CONSISTENT WITH PRESSURE CLASS.

6.1.1 VOLUME DAMPERS: MULTIPLE-OPPOSED BLADE TYPE IN RECTANGULAR APPLICATIONS, AND SINGLE-BLADE IN ROUND APPLICATIONS, STANDARD LEAKAGE RATING, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.

A. STEEL FRAMES: HAT-SHAPED, GALVANIZED SHEET STEEL CHANNELS, MINIMUM OF 0.064 INCH THICK, WITH MITERED AND WELDED CORNERS, FRAMES WITH FLANGES WHERE INDICATED FOR ATTACHING TO WALLS AND FLANGELESS FRAMES WHERE INDICATED FOR INSTALLING IN DUCTS.

B. ROLL-FORMED STEEL BLADES: 0.064-INCH THICK, GALVANIZED SHEET STEEL.

C. BLADE AXLES: GALVANIZED STEEL

D. BEARINGS: OIL-IMPREGNATED BRONZE

E. TIE BARS AND BRACKETS: GALVANIZED STEEL.

6.2. ACCESS DOORS TO BE FABRICATED AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS.

6.2.1 DOORS RECTANGULAR DUCT: DOUBLE WALL, DUCT MOUNTING, SQUARE OR RECTANGULAR, FABRICATED OF GALVANIZED SHEET METAL WITH INSULATION TO MATCH ADJACENT DUCTWORK AND THICKNESS AS INDICATED FOR DUCT PRESSURE CLASS. INCLUDE 1 BY 1 INCH BUTT OR PIANO HINGE AND CAM LATCHES.

6.2.2. FRAME: GALVANIZED SHEET STEEL, WITH BEND-OVER TABS AND FOAM GASKETS. PROVIDE NUMBER OF HINGES AND LOCKS AS FOLLOWS:

A. LESS THAN 12 INCHES SQUARE: SECURE WITH TWO SASH LOCKS

B. UP TO 18 INCHES SQUARE: TWO HINGES AND TWO SASH LOCKS

C. UP TO 24 BY 48 INCHES: THREE HINGES AND TWO COMPRESSION LATCHES WITH OUTSIDE AND INSIDE HANDLES

D. SIZES 24 BY 48 INCHES AND LARGER: ONE ADDITIONAL HINGE

6.2.3. DOORS ROUND DUCT: DOUBLE WALL, DUCT MOUNTING, AND ROUND, FABRICATED OF GALVANIZED SHEET METAL WITH INSULATION FILL AND 1-INCH THICKNESS. INCLUDE CAM LATCHES.

6.2.4. FRAME: GALVANIZED SHEET STEEL, WITH SPIN-IN NOTCHED FRAME. SEAL AROUND FRAME ATTACHMENT TO DUCT AND DOOR TO FRAME WITH NEOPRENE OR FOAM RUBBER.

6.2.5. ACCESS DOORS TO BE FABRICATED AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS.

6.3. TEMPORARY TEST HOLES: CUT OR DRILL IN DUCTS AS REQUIRED. CAP WITH NEAT PATCHES, NEOPRENE PLUGS, THREADED PLUGS, OR THREADED OR TWIST-ON METAL CAPS.

6.4. TURNING VANES: GALVANIZED STEEL SHALL BE DOUBLE THICKNESS VANES WITH 2-INCH INSIDE RADIUS WHERE CALLED OUT ON PLANS.

6.5. WIRE MESH SCREEN (WMS): No. 16 USSG, 4" SQUARE MESH IN 1-INCH WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME.

7. SMOKE AND COMBINATION FIRE AND SMOKE DAMPERS

7.1. DAMPER AND ACTUATOR TESTED AND LABELED ACCORDING TO UL555S AND UL 555. RATING AS REQUIRED FOR THE APPLICATION BUT NOT LESS THAN 1-1/2 HOUR RATING. LEAKAGE CLASSIFICATION SHALL BE UL555S CLASS I OR CLASS II. TEMPERATURE RATING: MINIMUM 250 DEGRESS VELOCITY AND PRESSURE RATING: MINIMUM 2,000 FPM VELOCITY AND MINIMUM 4 INCHES WATER GAGE PRESSURE RATINGS IN LOW VELOCITY (LESS THAN OR EQUAL TO 2,000 FPM) APPLICATIONS.

7.2. THERMAL SWITCH: RESETABLE, 165 DEGREES F RATED.

7.3. FRAME AND BLADES: 0.064-INCH, GALVANIZED SHEET STEEL.

7.4. MOUNTING SLEEVE: FACTORY-INSTALLED, MINIMUM 0.040-INCH THICK, GALVANIZED SHEET STEEL, LENGTH TO SUIT WALL OR FLOOR APPLICATION.

7.5. DAMPER MOTORS: PROVIDE FOR TWO-POSITION ACTION.

A. SPRING RETURN MOTORS: BRUSHLESS DC MOTOR WITH POSITION INDICATOR. EQUIPPED WITH AN INTEGRAL SPIRAL-SPRING MECHANISM.

B. ELECTRICAL CONNECTION: 115V, SINGLE PHASE, 60HZ.

8. DUCTWORK INSULATION AND ACOUSTIC TREATMENT

8.1. THERMAL AND ACOUSTICAL INSULATION AND ACCESSORY MATERIALS SHALL BE LISTED AND LABELED BY UNDERWRITERS LABORATORIES, INC., FOR A FIRE HAZARD CLASSIFICATION NOT TO EXCEED THE FOLLOWING: FLAME SPREAD, 25; FUEL CONTRIBUTION, 50; SMOKE DEVELOPED, 50, AS TESTED UNDER ASTM E-84, NFPA 255 OR UL 723 PROCEDURES.

8.2. WHERE INDICATED AND AS REQUIRED BY CODE, DUCTWORK SHALL BE ACOUSTICALLY LINED WITH 1 INCH THICK, 1-1/2 POUND DENSITY, MATTE-FACE DUCT-LINER FORMULATED WITH AN IMMOBILIZED EPA REGISTERED ANTI-MICROBIAL AGENT. DIMENSIONS OF LINED DUCTS ARE CLEAR INSIDE WITH LINING INSTALLED. DUCT LINER SHALL BE ADHERED BY A FIRE RETARDANT ADHESIVE. MECHANICAL FASTENERS SUCH AS GRIP NAILS, WHICH DO NOT PIERCE THE SHEET METAL SHALL BE INSTALLED ON 16 INCH CENTERS ON TOP SECTIONS (WHEN WIDTH EXCEEDS 16 INCHES), AND ON SIDES (WHEN HEIGHT EXCEEDS 24 INCHES). ALL ABUTTING EDGES OF ACOUSTIC LINING SHALL BE CAULKED, AND EXPOSED EDGES OF ACOUSTIC LINING SHALL BE PROVIDED WITH SHEET METAL NOSINGS.

8.3. AS REQUIRED BY CODE, ALL RECTANGULAR SUPPLY DUCTWORK WITHIN 15 FEET AND RETURN DUCTWORK WITHIN 10 FEET OF THE HVAC UNIT SHALL BE INTERNALLY LINED. INTERNAL LINING SHALL BE 1-INCH THICK, 1-1/2 LB DENSITY LINER. LINER SHALL HAVE A COATED SURFACE EXPOSED TO AIRSTREAM TO PREVENT EROSION. APPLY ADHESIVES AND MECHANICAL FASTENERS AS RECOMMENDED BY SMACNA AND THE MANUFACTURER TO PREVENT LINER SEPARATION FROM THE DUCT. ALL TRANSVERSE EDGES SHALL BE COATED WITH ADHESIVE.

8.4. CONCEALED NEW AND SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED WITH A MINIMUM R-8 INCH THICK, 3/4 POUND DENSITY FIBER GLASS BLANKET WITH FACTORY-APPLIED SCRIM REINFORCED, FOIL FACED VAPOR BARRIER (FSK) WITH 2 INCH FLANGE. WRAP INSULATION TIGHTLY ON DUCT AND FIRMLY BUTT ALL JOINTS WITH 2 INCH FLANGE OVERLAP AT ALL SEAMS. ADHERE TO DUCT WITH 2/3 COVERAGE OF ADHESIVE APPLIED 4 INCH WIDE BANDS, 8 INCHES ON CENTERS. SEAL ALL JOINTS AND SEAMS WITH MINIMUM 3 INCH WIDE FSK TAPE. SUPPORT INSULATION ON THE BOTTOM OF RECTANGULAR DUCTS OVER 36 INCHES WIDE WITH A SINGLE ROW OF WELD PINS AND SPEED WASHERS, WIRE WRAPPING IS NOT PERMITTED. CUT WELD PINS OFF FLUSH WITH TOP OF SPEED WASHERS AND COVER WITH FSK TAPE TO MAINTAIN VAPOR BARRIER. WHERE ACOUSTICAL LINING IS INDICATED, NO THERMAL INSULATION IS REQUIRED.

9. REFRIGERANT PIPING AND FITTINGS

9.1. HARD COPPER TUBE: ASTM B280, TYPE ACR, CLEAN, DRY, DRAWN TEMPER, AND CAPPED.

9.1.1 SOFT COPPER TUBE: ASTM B280, TYPE ACR, CLEAN, DRY, ANNEALED TEMPER, AND CAPPED. ANNEALED COPPER TUBING MUST NOT BE USED FOR PIPING WITH AN OUTSIDE DIAMETER (O.D.) LARGER THAN 0.625-INCH.

9.2. FITTINGS: COPPER, ASME B16.22, WROUGHT COPPER STREAMLINED PATTERN

9.3. JOINING MATERIALS: BRAZING FILLER METALS, AWS A5.8, CLASSIFICATION BAg-1 (SILVER) FLARED: BRONZE OR BRASS FOR REFRIGERATION, ASME B16.26

9.4. MOISTURE INDICATORS: 500 PSIG OPERATING PRESSURE, 200°F OPERATING TEMPERATURE, FORGED BRASS BODY, WITH REPLACEABLE, POLISHED, OPTICAL VIEWING WINDOW WITH COLOR-CODED MOISTURE INDICATOR, AND SOLDER-END CONNECTIONS.

9.5. FILTER DRYER: 350 PSIG OPERATING PRESSURE, 225°F OPERATING TEMPERATURE, STEEL SHELL, AND WROUGHT-COPPER FITTINGS, FOR SOLDER-END CONNECTION, MOLDED-FELT CORE SURROUNDED BY DESICCANT.

9.6. FIELD QUALITY CONTROL: INSPECT AND TEST REFRIGERANT PIPING ACCORDING TO ASME B31.5, CHAPTER VI.

9.7. PIPING TEST: PRESSURE TEST WITH NITROGEN TO 200 PSIG. PERFORM FINAL TESTS AT 27-PSIG VACUUM AND 200 PSIG USING HALIDE TORCH OR ELECTRONIC LEAK DETECTOR. TEST TO NO LEAKAGE.

9.7.1 TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED OR MALFUNCTIONING CONTROLS OR EQUIPMENT.

9.7.2 REPAIR LEAKS USING NEW MATERIALS; RETEST.

9.8. PIPING INSULATION: FLEXIBLE ELASTOMERIC, CLOSED-CELL, SPONGE OR EXPANDED-RUBBER MATERIALS. COMPLY ASTM C534, TYPE I FOR TUBULAR MATERIALS. TEMPERATURE: -70°F TO 220°F. THERMAL CONDUCTIVITY: 0.27 AVERAGE MAXIMUM AT 75°F FIRE PERFORMANCE CHARACTERISTICS: FLAME SPREAD-25, SMOKE DEVELOPMENT-50.

9.8.1 INSULATION THICKNESS: 1" THICK INSULATION FOR PIPING 1-1/2" AND BELOW, 1-1/2" THICK INSULATION FOR PIPING 2" TO 4".

9.9 REFRIGERANT LINE SIZES BETWEEN INDOOR AND OUTDOOR EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR CAPACITIES REQUIRED AND PIPE LENGTHS TO BE INSTALLED.

10. CONDENSATE DRAIN PIPING

10.1. CONDENSATE DRAIN PIPING AND FITTINGS SHALL BE TYPE PVC. PIPE SHALL BE INSTALLED WITH A MINIMUM SLOPE OF 1/8-INCH PER FOOT. PIPING SHALL BE INSULATED, WHERE CALLED OUT ON PLANS, WITH MINIMUM .5" THICK ARMSTRONG AP ARMAFLEX OR EQUAL.

11. PIPING SUPPORT

11.1. SUPPORT PIPING WITH ADJUSTABLE HANGERS OR SUPPORTS. SPACE HANGERS OR SUPPORTS, AS NECESSARY TO MAINTAIN SLOPE AND PREVENT SAGGING. DO NOT USE PERFORATED METAL STRAP IRON OR BAND IRON HANGERS. OFFSETS IN HANGERS SHALL NOT BE PERMITTED. THREADS SHALL BE ON ENDS ONLY WHERE HANGER RODS ARE INSTALLED EXPOSED IN FINISHED AREAS.

11.2. USE HANGERS OR SUPPORTS ON INSULATED PIPING SIZED TO PERMIT INSULATION PASSING CONTINUOUSLY THROUGH HANGER. SUPPORT INSULATED PIPING OUTSIDE OF COVERING. USE 16-GAUGE GALVANIZED SHEET METAL SHIELDS FOR PROTECTING PIPE COVERING. SHIELDS SHALL BE A MINIMUM OF SIX-INCHES LONG FOR PIPE SIZES UP THROUGH 2-1/2-INCHES AND NINE-INCHES LONG FOR THREE THROUGH SIX-INCH PIPE. WHERE ROLLER SUPPORTS OR HANGERS ARE USED PIPE COVERING PROTECTION SADDLES SHALL BE USED IN LIEU OF SHIELDS. SADDLES AND SHIELDS SHALL BE STANDARD CATALOGUED PRODUCTS.

11.3. HANGERS SUPPORTING COPPER PIPE SHALL BE COPPER PLATED STEEL.

11.4. PIPE HANGERS SHALL BE SUPPORTED FROM BUILDING STRUCTURE WITH "C" CLAMPS SIZED AND PLACED TO ACCOMMODATE THE LOADS IMPOSED BY THE PIPING SYSTEM.

11.5. HANGERS, SUPPORTS AND APPURTENANCES SHALL BE AS MANUFACTURED BY F&S CENTRAL, CARPENTER AND PATERSON, GRINNELL OR APPROVED EQUAL. THE FOLLOWING, AS MANUFACTURED BY F&S CENTRAL ARE REPRESENTATIVE OF THE TYPES AND QUALITY REQUIRED. PIPE RINGS-FIG. No. 4, 22, AND 86; CLAMPS-FIG. No. 88, 91 AND 92; BRACKETS-FIG. No. 65, 800, 801, 805 AND 850; RODS AND ROD ATTACHMENTS-FIG. No. 225, 226, 11, 33, 39, AND 966; SADDLES-FIG. No. 420, 421, 424 AND 427. 11.6. HANGER SPACING: THE SPACING OF SINGLE HANGERS FOR STRAIGHT RUNS OF PIPE SHALL NOT EXCEED SPANS LISTED IN TABLE. THE SPACING OF MULTIPLE TRAPEZE HANGERS SHALL NOT EXCEED TEN FEET. A HANGER SHALL BE PLACED WITHIN ONE FOOT OF EACH HORIZONTAL ELBOW.

HANGER SPACING TABLE

PIPE SIZE (IN)	MAX. SPAN (FEET)	MIN. ROD SIZE (IN)
$\frac{1}{2}$ TO 1	5'-0"	$\frac{1}{4}$"
1 $\frac{1}{4}$	7'-0"	$\frac{3}{8}$"
1-$\frac{1}{2}$ TO 2	8'-0"	$\frac{3}{8}$"
2-1/2	9'-0"	$\frac{3}{8}$"

12. TESTING AND BALANCING

12.1. HVAC CONTRACTOR SHALL PERFORM PROPORTIONAL BALANCING AND PROVIDE REPORTS FOR REVIEW AND APPROVAL.

12.2. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS AND BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. ADJUSTMENT OF TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR ADJUSTMENT ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE GENERATION IN THE TERMINAL AREAS AND UTILIZE MINIMUM FAN ENERGY.

12.3. FANS AND AIR HANDLING UNITS SHALL BE BALANCED TO WITHIN +5% OF THEIR CAPACITIES. ALL OTHER AIR QUANTITIES SHALL BE BALANCED TO WITHIN +10% OF THE DESIGN QUANTITIES.

13. CLEANING

13.1. DUCTWORK: DUCTS SHALL BE THROUGHLY CLEANED SO THAT NO DIRT OR DUST SHALL BE DISCHARGED FROM DIFFUSERS, REGISTERS, OR GRILLES WHEN SYSTEM IS IN OPERATION.

13.2. EQUIPMENT: AFTER COMPLETION OF PROJECT, CLEAN THE EXTERIOR SURFACE OF EQUIPMENT INCLUDED IN THIS SECTION, INCLUDING REMOVAL OF CONCRETE RESIDUE.

13.3. WORK AREA: AFTER COMPLETION OF PROJECT, REMOVE ALL CONSTRUCTION DEBRIS, TEMPORARY FACILITIES AND EQUIPMENT FROM WORK AREA. CLEAN WORK AREA TO PERMIT OCCUPATION.

14. CONTROLS

14.1. THE HVAC CONTRACTOR SHALL PROVIDE ALL MATERIAL, COMPONENTS, DEVICES, LOCAL THERMOSTATS, SAFETY DEVICES, CONTROL PANELS, CONTROL DAMPERS (LOW LEAKAGE TYPE), CONTROLLERS, TRANSFORMERS, ACTUATORS, SENSING DEVICES, TIME CLOCKS, RELAYS, CONTROL WIRING DIAGRAMS (LINE AND LOW VOLTAGE), INTERLOCKING WIRING, SMOKE DETECTORS, LABOR, ETC, INDICATED, REQUIRED OR SPECIFIED.

14.2. WORK SHALL INCLUDE ALL WIRING, CONTROL EQUIPMENT, AND ACCESSORIES NECESSARY TO MAKE THIS SYSTEM COMPLETE. ALL WIRING SHALL BE 24 VOLT. COORDINATE WITH MANUFACTURER FOR INTERCONNECTION WITH CONTROLS INCLUDED IN EQUIPMENT.

JAM ARCH
IS NOW COLLIERS ENGINEERING & DESIGN

ARCHITECT OF RECORD:
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www.colliersengineering.com

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ARMEN KHACHATURIAN, P.E. – FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL
33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

MECHANICAL
SPECIFICATIONS

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
M-301

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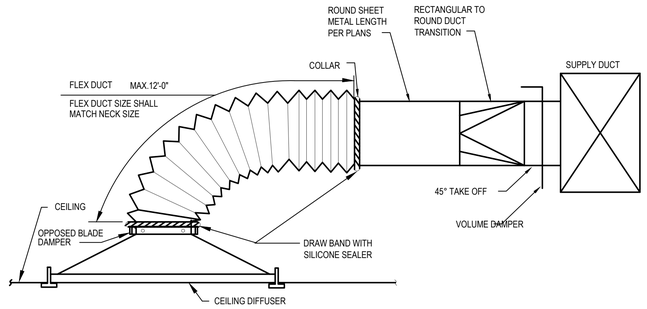
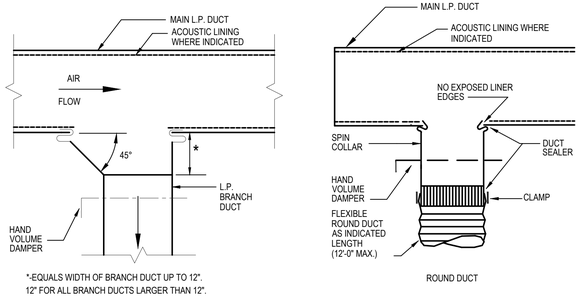


TYPICAL DIFFUSER CONNECTION

(SIDE OF DUCT CONNECTION)
NOT TO SCALE

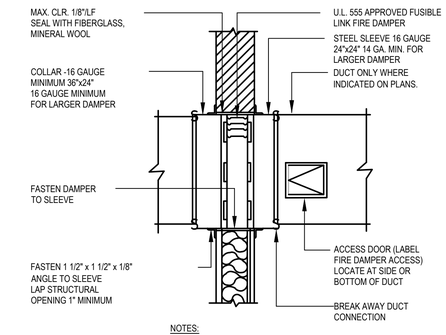


TYPICAL SUPPLY AIR BRANCH DUCT TAKE-0FF

NOT TO SCALE

TYPICAL LOW PRESSURE BRANCH DUCT TAKE-OFF

NOT TO SCALE

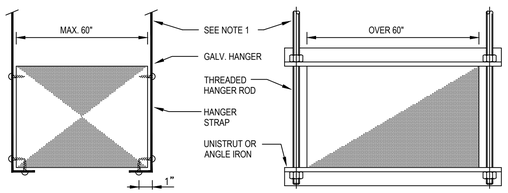


NOTES:

1. FIRE STOPPING SHALL BE PROVIDED IN ACCORDANCE WITH UL 1479 OR ASTM E814.
2. ALL FIRE DAMPERS AND FIRE/SMOKE DAMPERS SHALL BE INSTALLED AS PER MANUFACTURER'S RECCOMENDATIONS

FIRE DAMPER DETAIL

NOT TO SCALE

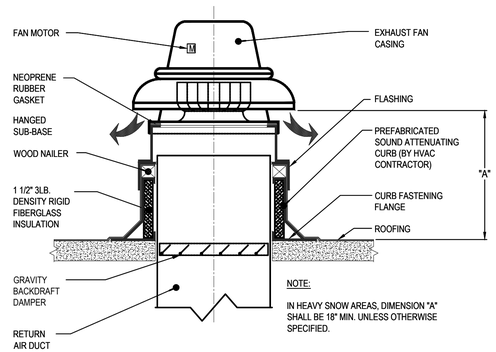


NOTES:

1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

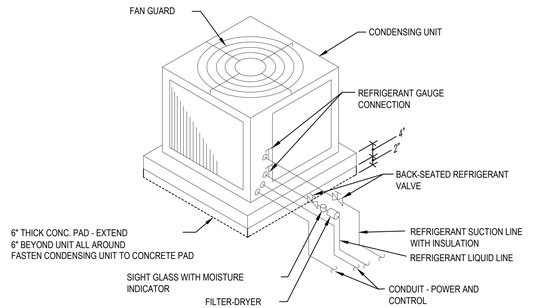
DUCT HANGER SUPPORT DETAIL

NOT TO SCALE



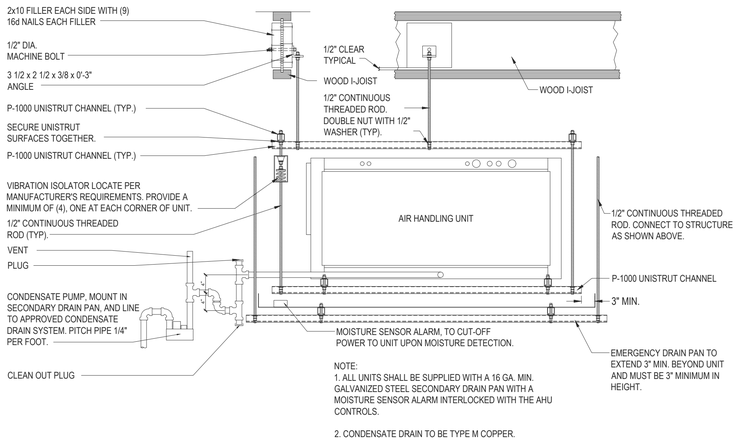
ROOF MOUNTED EXHAUST FAN DETAIL

NOT TO SCALE



CONDENSING UNIT MOUNTED AT GRADE

NOT TO SCALE

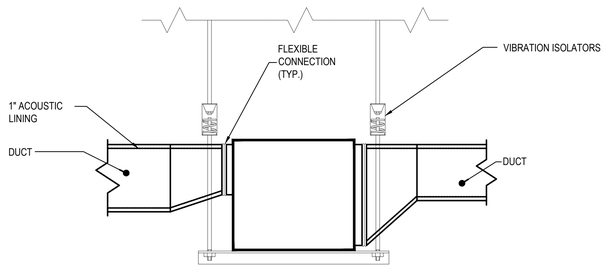


NOTE:
1. ALL UNITS SHALL BE SUPPLIED WITH A 16 GA. MIN. GALVANIZED STEEL SECONDARY DRAIN PAN WITH A MOISTURE SENSOR ALARM INTERLOCKED WITH THE AHU CONTROLS.

2. CONDENSATE DRAIN TO BE TYPE M COPPER.

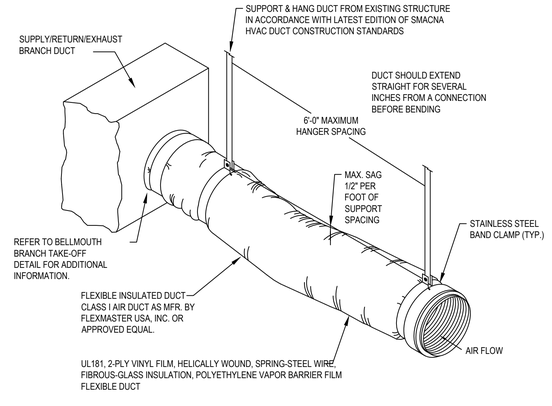
AIR HANDLING UNIT SUPPORT DETAIL

NOT TO SCALE



EQUIPMENT SUPPORT DETAIL

NOT TO SCALE



FLEXIBLE DUCT SUPPORT DETAIL

NOT TO SCALE

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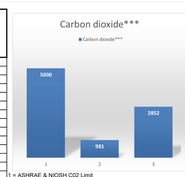

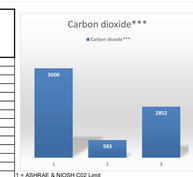

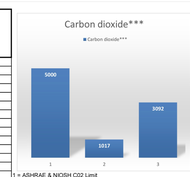

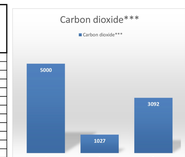

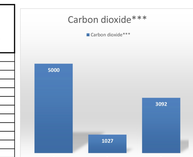

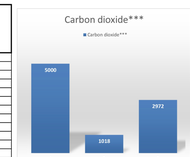

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 1	Educational Facilities	Daycare (through Age 4)	672.0	15.0	10.0	0.18	150	121	0.8	339 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	75	720	645	0.90	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00107	Yes	0.00048	OSHA
Acetone	250.0	0.00162	0.00043	Yes	0.00654	NIOSH
Ammonia	25.00	0.01361	0.01029	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00025	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00007	Yes	0.00133	NIOSH
Carbon dioxide***	5000	981	2852	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00012	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00052	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00010	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00022	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2 **IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2**

Phenomenal Aire Cleaning Air Naturally	Top Product Innovations P.O. Box 3118 Indian Trail, NC 28079 Phone: (888) 505-2988 Fax: (704) 821-3413 Web: www.topproductinnovations.com	TOP PRODUCT INNOVATIONS INDOOR AIR QUALITY SOFTWARE© COPYRIGHT 2008-2017 TOP PRODUCT INNOVATIONS - ALL RIGHTS RESERVED UNAUTHORIZED USE OR COPYING STRICTLY PROHIBITED	Date	-
			Job Name	-
			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 2	Educational Facilities	Daycare (through Age 4)	667.0	15.0	10.0	0.18	150	120	0.8	338 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	75	680	605	0.89	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00113	Yes	0.00048	OSHA
Acetone	250.0	0.00163	0.00045	Yes	0.00654	NIOSH
Ammonia	25.00	0.01365	0.01083	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00026	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00008	Yes	0.00133	NIOSH
Carbon dioxide***	5000	983	2852	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00013	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00054	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00010	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00023	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

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Building materials and furnishings assumed to have no VOCs and off-gassing is complete

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			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 3	Educational Facilities	Daycare (through Age 4)	848.0	22.0	10.0	0.18	220	153	0.8	466 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	100	840	740	0.88	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00121	Yes	0.00048	OSHA
Acetone	250.0	0.00165	0.00052	Yes	0.00654	NIOSH
Ammonia	25.00	0.01440	0.01274	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00028	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00009	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1017	3092	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00014	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00058	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00011	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00024	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
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*VRP = Ventilation Rate Procedure, OA = Outside Air
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			Job Name	-
			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 4	Educational Facilities	Daycare (through Age 4)	846.0	22.0	10.0	0.18	220	152	0.8	465 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	100	860	760	0.88	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00118	Yes	0.00048	OSHA
Acetone	250.0	0.00165	0.00051	Yes	0.00654	NIOSH
Ammonia	25.00	0.01441	0.01247	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00027	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00009	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1017	3092	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00014	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00057	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00011	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00024	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2 **IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2**

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			Job Name	-
			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
CLASS 5	Educational Facilities	Daycare (through Age 4)	495.0	14.0	10.0	0.18	140	89	0.8	286 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	60	600	540	0.90	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00103	Yes	0.00048	OSHA
Acetone	250.0	0.00166	0.00046	Yes	0.00654	NIOSH
Ammonia	25.00	0.01484	0.01154	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00024	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00008	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1037	3252	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00077	0.00013	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00003	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00050	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00010	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00021	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2 **IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2**

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			Job Name	-
			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 6	Educational Facilities	Daycare (through Age 4)	494.0	14.0	10.0	0.18	140	89	0.8	286 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	60	600	540	0.90	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00103	Yes	0.00048	OSHA
Acetone	250.0	0.00166	0.00046	Yes	0.00654	NIOSH
Ammonia	25.00	0.01485	0.01154	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00024	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00008	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1037	3252	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00077	0.00013	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00003	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00050	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00010	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00021	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2 **IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2**

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			Job Name	-
			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 7	Educational Facilities	Daycare (through Age 4)	812.0	22.0	10.0	0.18	220	146	0.8	458 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	100	820	720	0.88	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00123	Yes	0.00048	OSHA
Acetone	250.0	0.00166	0.00053	Yes	0.00654	NIOSH
Ammonia	25.00	0.01462	0.01302	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00029	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00009	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1027	3092	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00015	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00060	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00011	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00025	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2 **IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2**

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			Job Name	-
			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 8	Educational Facilities	Daycare (through Age 4)	812.0	22.0	10.0	0.18	220	146	0.8	458 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	100	780	680	0.87	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00129	Yes	0.00048	OSHA
Acetone	250.0	0.00166	0.00055	Yes	0.00654	NIOSH
Ammonia	25.00	0.01462	0.01361	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00030	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00009	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1027	3092	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00015	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00062	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00012	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00026	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

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Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2 **IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2**

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			Job Name	-
			Representative	-
			Engineer	-
			Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 9	Educational Facilities	Daycare (through Age 4)	806.0	21.0	10.0	0.18	210	145	0.8	444 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	100	780	680	0.87	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00129	Yes	0.00048	OSHA
Acetone	250.0	0.00165	0.00053	Yes	0.00654	NIOSH
Ammonia	25.00	0.01442	0.01300	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00030	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00009	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1018	2972	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00015	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00062	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00012	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00026	Yes	0.00000	OSHA

1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2 **IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2**

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			Representative	-
			Engineer	-
			Contractor	-

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PROJECT

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8525 MONTAGUE ST., TAMPA, FL
33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

MECHANICAL VENTILATION CALCULATION - SHEET 1 OF 2

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
M-601

Autodesk Docs://Lightbridge Academy - Westchase, FL /Lightbridge Academy - Westchase, FL_11 Classroom_R2.rvt
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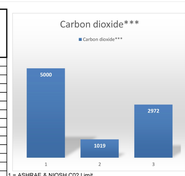
Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 10	Educational Facilities	Daycare (through Age 4)	801.0	21.0	10.0	0.18	210	144	0.8	443 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	100	820	720	0.88	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00123	Yes	0.00048	OSHA
Acetone	250.0	0.00165	0.00051	Yes	0.00654	NIOSH
Ammonia	25.00	0.01445	0.01243	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00028	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00009	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1019	2972	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00076	0.00014	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00060	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00011	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00025	Yes	0.00000	OSHA



1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
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Engineer	-
Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Classroom 11	Educational Facilities	Daycare (through Age 4)	840.0	25.0	10.0	0.18	250	151	0.8	502 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	100	1000	900	0.90	0.8	Standing (desk work)	B	Constant	Constant

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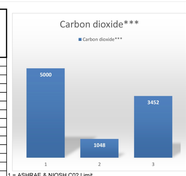
Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01112	0.00104	Yes	0.00048	OSHA
Acetone	250.0	0.00167	0.00049	Yes	0.00654	NIOSH
Ammonia	25.00	0.01510	0.01235	Yes	0.21460	NIOSH
Benzene	1.0000	0.00252	0.00024	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00018	0.00009	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1048	3452	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00077	0.00013	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00003	Yes	0.00001	OSHA
Toluene	100.0000	0.00533	0.00050	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00077	0.00010	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00021	Yes	0.00000	OSHA



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*VRP = Ventilation Rate Procedure, OA = Outside Air
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Is IAQ acceptable at reduced outside air levels?	Yes

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Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
conference	Educational Facilities	Conference/Meeting	218.0	5.0	5.0	0.06	25	13	0.8	48 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	30	275	245	0.89	0.8	Standing (desk work)	B	Constant	Constant

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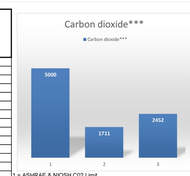
Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01115	0.00111	Yes	0.00048	OSHA
Acetone	250.0	0.00212	0.00039	Yes	0.00654	NIOSH
Ammonia	25.00	0.02990	0.00896	Yes	0.21460	NIOSH
Benzene	1.0000	0.00253	0.00026	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00028	0.00006	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1711	2452	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00085	0.00012	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00535	0.00054	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00081	0.00010	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00023	Yes	0.00000	OSHA



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*VRP = Ventilation Rate Procedure, OA = Outside Air
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Is IAQ acceptable at reduced outside air levels?	Yes

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Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
corridor	Educational Facilities	Corridors	1,297.0	0.0	0.0	0.06	0	78	0.8	97 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	75	850	775	0.91	0.8	Mild Exercise	B	Constant	Constant

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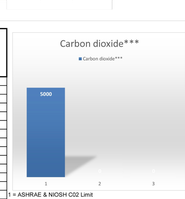
Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01109	0.00090	Yes	0.00081	OSHA
Acetone	250.0	0.00126	0.00010	Yes	0.01092	NIOSH
Ammonia	25.00	0.00173	0.00014	Yes	0.35815	NIOSH
Benzene	1.0000	0.00250	0.00020	Yes	0.00037	OSHA
2- Butanone (MEK)	200.0	0.00010	0.00001	Yes	0.00223	NIOSH
Carbon dioxide***	5000			Yes	736	NIOSH
Chloroform	2.0000	0.00010	0.00001	Yes	0.00007	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094		Yes	0.00000	NA
Methanol	200.0	0.00000		Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00069	0.00006	Yes	0.00202	OSHA
Propane	1000.0	0.00998		Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00003	Yes	0.00002	OSHA
Toluene	100.0000	0.00531	0.00043	Yes	0.00053	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00073	0.00006	Yes	0.00097	NIOSH
Xylene	100.0000	0.00230	0.00019	Yes	0.00000	OSHA



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Is IAQ acceptable at reduced outside air levels?	Yes

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Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Office	Educational Facilities	Office Space	227.0	6.0	5.0	0.06	30	14	0.8	55 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	30	340	310	0.91	0.8	Standing (desk work)	B	Constant	Constant

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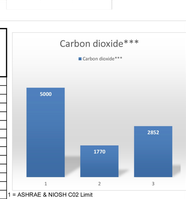
Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01115	0.00092	Yes	0.00048	OSHA
Acetone	250.0	0.00216	0.00037	Yes	0.00654	NIOSH
Ammonia	25.00	0.03124	0.00884	Yes	0.21460	NIOSH
Benzene	1.0000	0.00253	0.00021	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00029	0.00006	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1770	2852	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00086	0.00011	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00003	Yes	0.00001	OSHA
Toluene	100.0000	0.00535	0.00044	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00081	0.00008	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00019	Yes	0.00000	OSHA



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Is IAQ acceptable at reduced outside air levels?	Yes

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Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
Staff lounge	Educational Facilities	Office Space	186.0	5.0	5.0	0.06	25	11	0.8	45 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	35	275	240	0.87	0.8	Standing (desk work)	B	Constant	Constant

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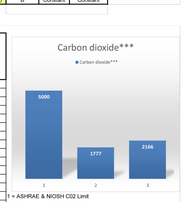
Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01116	0.00127	Yes	0.00048	OSHA
Acetone	250.0	0.00217	0.00041	Yes	0.00654	NIOSH
Ammonia	25.00	0.03140	0.00885	Yes	0.21460	NIOSH
Benzene	1.0000	0.00253	0.00029	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00029	0.00007	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1777	2166	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00001	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00086	0.00013	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00004	Yes	0.00001	OSHA
Toluene	100.0000	0.00535	0.00061	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00081	0.00011	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00026	Yes	0.00000	OSHA



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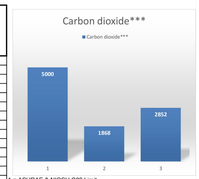
Contractor	-

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft) Az	Zone Max Occupancy Pz	Table 6.1 OA per Occupant Rp	Table 6.1 cfm/ft2 Ra	Pz * Rp Pz * Rp	Az * Ra Az * Ra	Table 6.2 Ventilation Effectiveness Ez	Outdoor Air to Zone (CFM) with Ez correction (Vbz/Ez)
bonding room	Educational Facilities	Office Space	59.0	2.0	5.0	0.06	10	4	0.8	17 OA required per VRP

Zone Height (feet)	Desired Outside Air (Vo) IAQP	Supply Air (Vs)	Return Air (Vr)	Recirc. Flow Factor (R)	Ventilation Effectiveness (Ez)	Level of Physical Activity	Filter Location	HVAC Flow Type	Outdoor Air Flow Type
9	10	60	50	0.83	0.8	Standing (desk work)	B	Constant	Constant

All yellow shaded boxes require user input or review

Indoor Contaminants Generated By People & Introduced in the Outside Air	Maximum Threshold Value (PPM)	Steady State Using the VRP* (Prescribed OA) Plasma Off	Steady State Using the IAQ Method (Reduced OA) Plasma On	Is Steady State Level Acceptable at Reduced OA Levels?	Contaminant Generation Rate (PPM)	Cognizant Authority**
Acetaldehyde	100.0	0.01116	0.00162	Yes	0.00048	OSHA
Acetone	250.0	0.00223	0.00065	Yes	0.00654	NIOSH
Ammonia	25.00	0.03342	0.01558	Yes	0.21460	NIOSH
Benzene	1.0000	0.00254	0.00037	Yes	0.00022	OSHA
2- Butanone (MEK)	200.0	0.00030	0.00011	Yes	0.00133	NIOSH
Carbon dioxide***	5000	1868	2852	Yes	441	NIOSH
Chloroform	2.0000	0.00011	0.00002	Yes	0.00004	NIOSH
Dioxane	100.0	0.00000	0.00000	Yes	0.00000	OSHA
Hydrogen Sulfide	10.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methane	NA	1.68094	1.68094	Yes	0.00000	NA
Methanol	200.0	0.00000	0.00000	Yes	0.00000	NIOSH
Methylene Chloride	25.0	0.00087	0.00019	Yes	0.00121	OSHA
Propane	1000.0	0.00998	0.00998	Yes	0.00000	NIOSH
Tetrachloroethane	5.0000	0.00000	0.00000	Yes	0.00000	OSHA
Tetrachloroethylene	100.0000	0.00037	0.00005	Yes	0.00001	OSHA
Toluene	100.0000	0.00536	0.00078	Yes	0.00032	NIOSH
1,1,1 - Trichloroethane	350.0000	0.00082	0.00015	Yes	0.00058	NIOSH
Xylene	100.0000	0.00230	0.00033	Yes	0.00000	OSHA



1 = ASHRAE & NIOSH C02 Limit
2 = C02 Level at Ventilation Rate OA Flow Rate
3 = C02 Level at IAQ Procedure OA Flow Rate
*VRP = Ventilation Rate Procedure, OA = Outside Air
**OSHA, NIOSH & WHO most conservative values used

***Carbon dioxide has been provided for reference only for gathering demand control ventilation (DCV) setpoints. The National Research Council was commissioned by the US Navy to prove C02 is not a contaminant of concern when using air purification to control the other contaminants of concern, as found on submarines.

Building materials and furnishings assumed to have no VOCs and off-gassing is complete

Is IAQ acceptable at reduced outside air levels?	Yes

VERSION 1.6 running ASHRAE 62.1-2016
Exhaust flow rates may differ from Table 6.5 based on ASHRAE 62 IAQP via Section 6.5.2
IMC 2006 & later allows for ASHRAE 62 IAQP through the engineered exception found in Section 403.2

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Date	-
Job Name	-
Representative	-
Engineer	-
Contractor	-

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FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL
33626

OWNER

8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

MECHANICAL VENTILATION CALCULATION - SHEET 2 OF 2

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
M-602

AIR COOLED HEAT PUMP CONDENSING UNIT SCHEDULE

CU X

TAG	MANUFACTURER	MODEL	COOLING CAPACITY			HEATING CAPACITY		COMPRESSOR			CONDENSER FAN SECTION			ELECTRICAL					SEER	HSPF	WEIGHT LBS	REMARKS
			NOM TONS	TOTAL MBH	SENSIBLE MBH	@47F°	@17F°	RLA	LRA	REFRIG	DIA (IN)	MIN. MOTOR HP	FLA	VOLTS	PHASE	HZ	MCA	MOCP				
CU-1	TRANE	4TWA4042A3	3.5	43.2	32.9	37	24.2	13.5	88.0	R-410A	-	0.2	1.1	208	3	60	18	30	14.5	9	208	1,2,3,4,5
CU-2	TRANE	4TWA4042A3	3.5	43.2	32.9	37	24.2	13.5	88.0	R-410A	-	0.2	1.1	208	3	60	18	30	14.5	9	208	1,2,3,4,5
CU-3	TRANE	4TWA4048A3	4.0	48.2	35.9	41.5	27	13.7	82.1	R-410A	-	0.2	1.1	208	3	60	18	30	14.5	8.2	218	1,2,3,4,5
CU-4	TRANE	4TWA4048A3	4.0	48.2	35.9	41.5	27	13.7	82.1	R-410A	-	0.2	1.1	208	3	60	18	30	14.5	8.2	218	1,2,3,4,5
CU-5	TRANE	4TWA4048A3	4.0	48.6	37.1	41.5	27	13.7	82.1	R-410A	-	0.2	1.1	208	3	60	18	30	14.5	8.2	218	1,2,3,4,5
CU-6	TRANE	4TWA4036A3	3.0	35.3	26.8	31.6	20.4	9.9	70.0	R-410A	-	0.125	0.80	208	3	60	13	20	14.5	8.5	216	1,2,3,4,5
CU-7	TRANE	4TWA4042A3	3.5	43.2	32.9	37	24.2	13.5	88.0	R-410A	-	0.2	1.1	208	3	60	18	30	14.5	9	208	1,2,3,4,5

NOTES:
1. PROVIDE POWER DISCONNECT REFER TO ELECTRICAL PLANS.
2. UNITS SHALL BE RATED AT 95 DEG F DB / 75 DEG F WB.
3. PROVIDE NON-BLEED TXV KIT FOR COOLING COIL.
4. FIELD VERIFY OVERALL REFRIGERANT LINE LENGTH AND SIZES. CONFIRM LENGTH AND SIZES WITH MANUFACTURER.
5. PROVIDE E-COATED COILS.

AIR HANDLING UNITS

? ?

TAG	MANUFACTURER	MODEL	NOMINAL COOLING CAPACITY		HEATING CAPACITY (BTU/HR)	BLOWER FAN SECTION					ELECTRICAL					WEIGHT LBS	REMARKS
			TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)		SUPPLY CFM	OA CFM	EXT. S.P. (in)	MIN. MOTOR HP	RPM	VOLTS	PHASE	HZ	MCA	MOCP		
AHU-1	TRANE	GAM5B0C42M31	43200	32900	37000	1400	150	0.7	0.50	VARY	208	1	60	5	15	153	1,2,3,4
AHU-2	TRANE	GAM5B0C42M31	43200	32900	37000	1400	150	0.7	0.50	VARY	208	1	60	5	15	153	1,2,3,4
AHU-3	TRANE	GAM5B0C48M41	48200	35900	41500	1600	200	0.7	0.75	VARY	208	1	60	8	15	166	1,2,3,4
AHU-4	TRANE	GAM5B0C48M41	48200	35900	41500	1600	200	0.7	0.75	VARY	208	1	60	8	15	166	1,2,3,4
AHU-5	TRANE	GAM5B0C48M41	48682	37156	41500	1700	200	0.7	0.75	VARY	208	1	60	8	15	166	1,2,3,4
AHU-6	TRANE	GAM5B0C42M31	35300	26800	31600	1200	150	0.7	0.50	VARY	208	1	60	5	15	153	1,2,3,4
AHU-7	TRANE	GAM5B0C42M31	43200	32900	37000	1400	150	0.7	0.50	VARY	208	1	60	5	15	153	1,2,3,4

NOTE:
1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE 7-DAY FULLY PROGRAMMABLE THERMOSTAT.
3. PROVIDE 4" DRAIN PAN, CONDENSATE OVERFLOW SWITCH AND CONDENSATE PUMP. SEE DETAIL ON SHEET M-401.
4. PROVIDE WITH VIBRATION ISOLATION.

VENTILATION TABLE

ZONE NAME	ZONE AREA (SQ.FT.)	ZONE POPULATION # OF PEOPLE	PRIMARY AIRLFOW RATE (CFM)	OA RATE PER PERSON (CFM)	OA RATE PER AREA (CFM)	OA RATE REQUIRED FOR PEOPLE (CFM)	OA RATE REQUIRED FOR AREA (CFM)	OA RATE IN BREATHING ZONE (CFM)	AIR DISTRIBUTION EFFECTIVENESS	MINIMUM OA REQUIRED IN ZONE BEFORE IAQ	MINIMUM OA REQUIRED IN ZONE AFTER IAQ	CFM OF OA SUPPLIED
DAYCARE 1	672	15	720	10	0.18	150	121.0	271	0.8	217	75	200
DAYCARE 2	667	15	680	10	0.18	150	120.1	270	0.8	216	75	
DAYCARE 3	848	22	840	10	0.18	220	152.6	373	0.8	298	100	
DAYCARE 4	846	22	860	10	0.18	220	152.3	372	0.8	298	100	70
DAYCARE 5	495	14	600	10	0.18	140	89.1	229	0.8	183	60	90
DAYCARE 6	494	14	600	10	0.18	140	88.9	229	0.8	183	60	
DAYCARE 7	812	22	820	10	0.18	220	146.2	366	0.8	293	100	90
DAYCARE 8	812	22	780	10	0.18	220	146.2	366	0.8	293	100	100
DAYCARE 9	806	21	780	10	0.18	210	145.1	355	0.8	284	100	
DAYCARE 10	801	21	820	10	0.18	210	144.2	354	0.8	283	100	70
DAYCARE 11	840	25	1,000	10	0.18	250	151.2	401	0.8	321	100	70
STAFF LOUNGE	203	5	250	5	0.06	25	12.2	37	0.8	30		50
OFFICE	227	6	340	5	0.06	30	13.6	44	0.8	35		25
CONFERENCE	218	5	275	5	0.06	25	13.1	38	0.8	30		20
BONDING	59	2	50	5	0.06	10	3.5	14	0.8	11		20
CORRIDOR	1297	0	850	0	0.06	0	77.8	78	0.8	62		100

EXHAUST FAN SCHEDULE

EF X

TAG	MANUFACTURER	MODEL	LOCATION	AREA SERVED	FAN PERFORMANCE			ELECTRICAL DATA					WEIGHT LBS	REMARKS
					CFM	ESP	FAN RPM	HP/ WATTS	RPM	VOLTS	PHASE	HZ		
EF-1	GREENHECK	SQ-120-VG	ATTIC	TOILET ROOMS	1500	0.75	1682	1/2 HP	1725	208	1	60	60	1,2,3,4
EF-2	GREENHECK	SP-A-90	CEILING	IT ROOM	50	0.30	832	11 W	-	115	1	60	12	2,3,4,5
EF-3	GREENHECK	SQ-90-VG	ATTIC	ATTIC	300	0.38	1388	1/10 HP	1725	208	1	60	43	2,3,4,6

NOTES:
1. FAN SHALL RUN DURING OPERATING HOURS OF THE BUILDING.
2. PROVIDE WITH DISCONNECT SWITCH.
3. PROVIDE VIBRATION ISOLATION.
4. PROVIDE GRAVITY BACK DRAFT DAMPER.
5. FAN SHALL OPERATE 24/7.
6. FAN SHALL BE CONTROLLED BY HUMIDISTAT MOUNTED IN ATTIC.

AIR TERMINAL

ID TYP CFM SZ

TAG	MANUFACTURER	MODEL	TYPE	CFM RANGE	NECK SIZE	NOMINAL FACE SIZE	REMARKS
CD-1	TITUS	TMSA	SUPPLY DIFFUSER	0-100	6"Ø	24x24	1-3
CD-2	TITUS	TMSA	SUPPLY DIFFUSER	100-225	8"Ø	24x24	1-3
CD-3	TITUS	TMSA	SUPPLY DIFFUSER	225-400	10"Ø	24x24	1-3
CD-4	TITUS	TMSA	SUPPLY DIFFUSER	0-100	6"Ø	12x12	1-3
RG-1	TITUS	350RL	RETURN GRILLE	0-550	12x12	24x24	1-3
RG-2	TITUS	350RL	RETURN GRILLE	0-1400	20x20	24x24	1-3
EG-1	TITUS	350RL	EXHAUST GRILLE	0-100	6x6	12x12	1-3
EG-2	TITUS	350RL	EXHAUST GRILLE	0-250	8x8	12x12	1-3

NOTES:
1. BORDER TYPE TO BE COMPATIBLE WITH CEILING TYPE.
2. COLOR AND FINISH TO BE REVIEWED AND APPROVED BY THE ARCHITECT.
3. PROVIDE VOLUME BRANCH DAMPER. WHERE LOCATED IN INACCESSIBLE AREAS, PROVIDE CABLE OPERATED DAMPER LOCATED IN THE BRANCH, OPERABLE THROUGH THE FACE OF THE DIFFUSER (KEY OPERATED).

AIR PURIFICATION SYSTEM

AP X

TAG	MANUFACTURER	MODEL	LOCATION	AREA SERVED	CFM	ELECTRICAL					WEIGHT LBS	REMARKS
						POWER(W)	VOLTS	PHASE	HZ	AMPERAGE(A)		
AP-1,2,3,4,5,6,7	RGF ENVIRONMENTAL GROUP	MICROCON-600	MAIN SUPPLY DUCT	SEE PLAN	600	225	120	1	60	2	40	1,2,3,4,5,6

NOTES:
1. UNIT SHALL BE INSTALLED IN PARALLEL WITH THE MAIN RETURN DUCT (FOR EACH UNIT) IN THE CEILING AS PER MANUFACTURER'S GUIDELINES.
2. UNIT SHALL BE EQUIPPED WITH FILTRATION AND HALO-LED SYSTEM CAPABLE OF BIPOLAR IONIZATION TO REDUCE VENTILATION DEMAND OF SPACED SERVED.
3. PROVIDE ELECTRICAL OUTLET WITHIN 7 FEET OF THE UNIT AS PER MANUFACTURER GUIDELINES.
4. MAINTAIN MINIMUM 6 FEET BETWEEN THE UNIT INLET AND OUTLET.
5. INTERLOCK THE AP UNIT WITH THE AHU.
6. ALL PRICING AND ORDERS MUST BE DONE THROUGH RGF. CONTACT ROM LAUREANO, RLAUREANO@RGF.COM ; 561-318-4679.

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FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

MECHANICAL SCHEDULES

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
M-603

ELECTRICAL DRAWING / REVISION LOG

● NEW OR REVISED ISSUE
○ NON REVISED ISSUE

NUMBER	NAME	ISSUE:	DATE: 07/15/2024 ISSUED FOR PERMIT	08/14/2024 PERMIT RESPONSE COMMENTS	09/16/2024 LIGHTBRIDGE COMMENTS
E001	ELECTRICAL COVER SHEET		●	●	●
E002	ELECTRICAL GENERAL NOTES		●	●	●
E003	ELECTRICAL POWER AND LIGHTING NOTES		●	●	●
E101	ELECTRICAL FIRST FLOOR POWER PLAN		●	●	●
E102	ELECTRICAL ATTIC POWER PLAN		●	●	●
E201	ELECTRICAL FIRST FLOOR LIGHTING PLAN		●	●	●
E202	ELECTRICAL ATTIC LIGHTING PLAN		●	●	●
E301	ELECTRICAL SPECIFICATIONS		●	●	●
E302	ELECTRICAL SPECIFICATIONS		●	●	●
E401	ELECTRICAL DETAILS		●	●	●
E402	ELECTRICAL DETAILS		●	●	●
E403	ELECTRICAL DETAILS		●	●	●
E404	LIGHTBRIDGE ACADEMY ELECTRICAL EQUIPMENT DETAILS		●	●	●
E405	LIGHTBRIDGE ACADEMY ELECTRICAL EQUIPMENT DETAILS		●	●	●
E406	LIGHTBRIDGE ACADEMY LOW-VOLTAGE DETAILS		●	●	●
E501	ELECTRICAL RISER DIAGRAMS		●	●	●
E601	ELECTRICAL PANEL SCHEDULES		●	●	●

ELECTRICAL SYMBOLS LEGEND

J	JUNCTION BOX
a	SINGLE POLE, 120/277V LIGHT SWITCH: COMMERCIAL GRADE 'A' REPRESENTS CONTROL DESIGNATION.
a 3	SINGLE POLE, 120/277V 3-WAY LIGHT SWITCH: COMMERCIAL GRADE 'a' REPRESENTS CONTROL DESIGNATION.
a OS	OCCUPANCY (AUTO ON/AUTO OFF) SENSOR SWITCH. WATTSTOPPER #DW-100. (VS INDICATES VACANCY MODE (MANUAL ON/AUTO OFF))
a OS	OCCUPANCY (AUTO ON/AUTO OFF) SENSOR DIMMER SWITCH. WATTSTOPPER #PW-311 (VS INDICATES VACANCY MODE (MANUAL ON/AUTO OFF))
D	SINGLE POLE, 120/277V DIMMER SWITCH: COMMERCIAL GRADE 'a' REPRESENTS CONTROL DESIGNATION.
VS a	CEILING MTD. VACANCY SENSOR. WATTSTOPPER #DT-300 W/ BZ-150 POWERPACK. 'a' REPRESENTS CONTROL DESIGN. (MANUAL ON/AUTO OFF).
OS a	CEILING MTD. OCCUPANCY SENSOR. WATTSTOPPER #UT-300 SERIES W/ BZ-150 POWERPACK. 'a' REPRESENTS CONTROL DESIGN.
	120V 20A DUPLEX RECEPTACLE COMMERCIAL GRADE.
	120V 20A GFI DUPLEX RECEPTACLE COMMERCIAL GRADE. MOUNTED @ 42" A.F.F. (U.O.N.)
	120V 20A QUAD RECEPTACLE COMMERCIAL GRADE.
	120V 20A CEILING MTD. DUPLEX RECEPTACLE COMMERCIAL GRADE.
TM a	THERMAL DISCONNECT SWITCH. SIZE AS REQUIRED.
a b c	UNFUSED DISCONNECT SWITCH. 'A'=NEMA RATING, 'B'=SWITCH RATING, 'C'=NUMBER OF POLES.
a b/c	FUSED DISCONNECT SWITCH. 'A'=NEMA RATING, 'B'=SWITCH RATING, 'C'=FUSE SIZE, 'D'= NUMBER OF POLES.
	SURFACE MOUNTED ELECTRICAL PANELBOARD.
	TELEPHONE OUTLET, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE CEILING.
	DATA OUTLET, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE CEILING.
	COMBINATION TELEPHONE/DATA OUTLET, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE CEILING.
P	P.A. SYSTEM/MUSIC SPEAKER. EC TO PROVIDE 4X4 BACK BOX & 3/4"C STUBBED ABOVE HUNG CEILING.
Wi-Fi	WI-FI BOOSTER
S a,b 2	WATTSTOPPER LOW VOLTAGE 2 BUTTON ANALOG SWITCH LVSW-102. 'A','B' REPRESENT CONTROL DESIGNATION.
S a,b,c 3	WATTSTOPPER LOW VOLTAGE 3 BUTTON ANALOG SWITCH LVSW-103. 'A','B','C' REPRESENT CONTROL DESIGNATION.
S a,b,c,d 4	WATTSTOPPER LOW VOLTAGE 4 BUTTON ANALOG SWITCH LVSW-104. 'A','B','C','D' REPRESENT CONTROL DESIGNATION.

FIRE ALARM DEVICE LEGEND

F	FIRE ALARM 30 CD STROBE NOTIFICATION DEVICE U.O.N
F	MANUAL FIRE ALARM PULL STATION (PROVIDE COVER WITH LOCAL ALARM WHERE ACCESSIBLE TO CHILDREN, INCLUDING CLASSROOMS AND HALLS)
F	FIRE ALARM 75 CD SPEAKER/STROBE NOTIFICATION DEVICE, U.O.N.
F WP	OUTDOOR RATED FIRE ALARM 75 CD SPEAKER/STROBE NOTIFICATION DEVICE
R	RELAY
IAM	INTERFACEABLE ADDRESSABLE MODULE
IAM	IAM WITH RELAY
R	TEST/RESET KEY SWITCH W/ LED
SD	SMOKE DETECTOR
SD/CO	COMBO CARBON MONOXIDE & SMOKE DETECTOR EQUIPPED WITH TEMPORAL 4 SOUNDER BASE
CO	CARBON MONOXIDE DETECTOR EQUIPPED WITH TEMPORAL 4 SOUNDER BASE
HD	HEAT DETECTOR
DSD	DUCT SMOKE DETECTOR
FSD	FIRE SMOKE DAMPER LOCATION. PROVIDE IAM W/RELAY AT FSD AND SMOKE DETECTOR WITHIN 5FT OF FSD.
WF	MONITOR MODULE FOR WATER FLOW
TS	MONITOR MODULE FOR TAMPER SWITCH
DR	MONITOR MODULE WITH 120V RATED RELAY FOR DOOR RELEASE.
FACP	FIRE ALARM CONTROL PANEL
RAAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL

SECURITY DEVICE LEGEND

FR	FACIAL RECOGNITION SYSTEM SCANNER, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING.
C	CAMERA. PROVIDE 3/4" CONDUIT TO SERVER ROOM WHERE WIRING IS EXPOSED.
MD	MOTION DETECTOR, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING. SENSOR TO BE PROVIDED ON EXTERIOR DOOR.
KP	KEYPAD DOOR ENTRY. REFER TO LIGHTBRIDGE RESPONSIBILITY MATRIX, LOW VOLTAGE DRAWINGS, AND ARCHITECTURAL DRAWINGS FOR EXACT TYPES OF KEYPADS AND CONTROL SEQUENCING. PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING.
PB	PANIC BUTTON, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING.
DR	DOOR RELEASE BUTTON. PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING.
DB	DOOR BELL, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING.
SA	SECURITY ALARM CONTROL KEYPAD, PROVIDE BACKBOX & 1" EC STUBBED AND BUSHED ABOVE ACCESSIBLE CEILING.

NOTE: ALL CONDUIT, BACK BOXES, AND WIRING TO BE PROVIDED AND INSTALLED BY CONTRACTOR. ALL CAMERA SYSTEMS TO BE PROVIDED BY LIGHTBRIDGE/FRANCHISEE. ALL SECURITY SYSTEMS TO BE PROVIDED BY CONTRACTOR.

ELECTRICAL ABBREVIATIONS

A	AMPERE
A/C	AIR CONDITIONING
A.F.F.	ABOVE FINISH FLOOR
A.R.	AS REQUIRED
ARCH	ARCHITECT
B.B.	BASE BUILDING
BLDG	BUILDING
C, CDT	CONDUIT
C/B	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CLG	CEILING
CRAC	COMPUTER ROOM AIR CONDITIONER
D	DEMOLISH
DEPT.	DEPARTMENT
DJ	DOOR JAM
DN	DOWN
DP	DISTRIBUTION PANEL
DWG	DRAWING
E, EX	EXISTING
EC	EMPTY CONDUIT
EM	EMERGENCY
EQUIP	EQUIPMENT
ER	EXISTING TO BE RELOCATED
ETR	EXISTING TO REMAIN
FIXT	FIXTURE
FL	FLOOR
FLUOR	FLUORESCENT
G, GND	GROUND
GALV	GALVANIZED
GFI	GROUND FAULT INTERRUPTER
HVAC	HEATING, VENTILATING & AIR CONDITIONING
IG	ISOLATED GROUND
LP	LIGHTING PANEL
KW	KILOWATT
LS	LIFE SAFETY
MANF	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
M.O.A.	MULTI-OUTLET ASSEMBLY
MTD	MOUNTED
N	NEW
NL	NIGHT LIGHT
N.I.C	NOT IN CONTRACT
No., #	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
POTS	PLAIN OLD TELEPHONE SERVICE
R, RE	RELOCATED EXISTING EQUIPMENT
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
SPEC	SPECIFICATION
SW	SWITCH
TC	TIME CLOCK
TEL	TELEPHONE
TRAC	TECHNOLOGY ROOM AIR CONDITIONER
T/F, XFMR	TRANSFORMER
TYP.	TYPICAL
U.O.N	UNLESS OTHERWISE NOTED
UP	UTILITY PANEL
V	VOLT
W/	WITH
WP	WEATHER PROOF WHILE IN USE

HVAC SMOKE CONTROL DEVICES

1. DUCT SMOKE DETECTOR:
   - A. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL DOCUMENTS FOR QUANTITIES AND LOCATIONS OF DUCT SMOKE DETECTORS.
   - B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE REQUIRED NUMBER OF DUCT SMOKE DETECTORS FOR INSTALLATION BY THE MECHANICAL CONTRACTOR.
   - C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL WIRING, PROGRAMMING, CONNECTION, REMOTE TRIGGERED INDICATION DEVICES AND TEST SWITCHES.
   - D. EACH DUCT SMOKE DETECTORS SHALL HAVE AN ASSOCIATED REMOTE TRIGGERED INDICATOR DEVICE AND TEST SWITCH WHICH SHALL BE INSTALLED AND TO BE COORDINATED WITH ARCHITECT FOR EXACT LOCATION.
   - E. ARRANGE FOR FAN SHUTDOWN BY FIRE ALARM SYSTEM.
   - F. REGARDLESS, IF INDICATED ELSEWHERE, PROVIDE SUFFICIENT NUMBER OF DUCT SMOKE DETECTORS TO COVER ASSOCIATED DUCTWORK CONFIGURATION IF A SINGLE DUCT DETECTOR CANNOT BE INSTALLED.
   - G. ALL UNITS 2,000 CFM OR GREATER SHALL BE PROVIDED WITH DUCT SMOKE DETECTOR.
   - H. UNITS 15,000 CFM OR GREATER SHALL BE PROVIDED WITH DUCT DETECTORS IN BOTH SUPPLY AND RETURN.
2. FIRE SMOKE DAMPERS:
   - A. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL DOCUMENTS FOR QUANTITIES AND LOCATIONS OF ALL FIRE SMOKE DAMPERS.
   - B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE WIRING FROM EACH FIRE SMOKE DAMPER BACK TO THE MAIN FIRE ALARM PANEL AND ARRANGE FOR EACH DAMPER TO OPERATE IN RESPONSE TO ACTIVATION OF THE FIRE ALARM SYSTEM.
   - C. THE DAMPERS SHALL BE CONTROLLED VIA A COMMAND FROM THE FIRE ALARM SYSTEM PANEL.
   - D. PROVIDE CONTROL WIRING FROM THE MAIN FIRE ALARM PANEL AND ARRANGE TO OPEN/CLOSE OR POSITION DAMPERS AS PER THE SEQUENCE OF OPERATIONS SPECIFIED BY THE MECHANICAL ENGINEER'S DOCUMENTS.

TYPICAL DEVICE MOUNTING HEIGHTS (U.O.N.)

RECEPTACLES (UON)	18" AFF
RECEPTACLES (COUNTER)	42" AFF
LIGHT SWITCHES	48" AFF TO TOP OF DEVICE
DISCONNECT SWITCHES	NEC 404.8(A)
TELEPHONE OUTLETS	50" AFF (U.O.N)
COMPUTER OUTLETS	18" AFF (U.O.N)
FIRE ALARM PULL STATION	42" AFF TO BOTTOM OF DEVICE / 44" AFF TO CENTER OF DEVICE
FIRE ALARM AUDIO/VISUAL ALARM	88" AFF TO BOTTOM OF DEVICE (80" AFF MIN TO BOTTOM OF LENS/96" AFF MAX)
EXIT LIGHTS (WALL MTD)	12" ABOVE DOOR
EMERGENCY LIGHTS(WALL MTD)	90" AFF
TV OUTLETS	68" AFF (U.O.N)
AUDIO OUTLETS	90" AFF (U.O.N)
DOOR RELEASE BUTTON	48" AFF (U.O.N)
PA ANNUNCIATOR PANEL	48" AFF TO TOP OF DEVICE
PA SPEAKERS	88" AFF TO BOTTOM OF DEVICE
PANIC BUTTON	48" AFF (U.O.N)

NOTE: DIMENSIONS ARE TO DEVICE CENTERLINE (U.O.N.)

POWER CONDUCTORS AND CABLES AND INSTALLATION METHODS:

ALL OF THE BELOW ARE GENERAL REFERENCE ONLY. RACEWAYS AND WIRING METHODS MUST BE UTILIZED ONLY WHERE AND WHEN PERMITTED BY CODE.

FEEDER/ BRANCH CIRCUITS	LOCATION	CONDUCTORS/CABLES
FEEDERS	CONCEALED IN CEILINGS, WALLS, PARTITIONS	CONDUCTORS IN EMT, MC CABLE
FEEDERS	CONCEALED IN CONCRETE, BELOW SLAB-GRADE, UNDERGROUND	CONDUCTORS IN PVC/RGS CONDUITS
FEEDERS	OUTDOOR, EXPOSED, DAMP OR WET LOCATIONS	CONDUCTORS IN RGS CONDUITS
FEEDERS	SERVICE ENTRANCE	SCHEDULE 40 PVC WITH GRS ELBOW AND STUB UPS THROUGH CONCRETE SLABS
BRANCH CIRCUITS	EXPOSED, INCLUDING CRAWL SPACES	CONDUCTORS IN EMT CONDUITS
BRANCH CIRCUITS	CONCEALED IN CEILINGS, WALLS AND PARTITIONS.	CONDUCTORS IN EMT CONDUIT, AC CABLE/ MC CABLE

GENERAL LIGHTING NOTES

REFER TO LIGHTING CONSULTANT AND ARCHITECTURAL DRAWINGS FOR FIXTURE SCHEDULES AND INFORMATION RELATED TO LIGHTING. OBTAIN LATEST CONTROL AND LUTRON DRAWINGS AND COORDINATE REQUIRED CIRCUITING.

CODE COMPLIANCE

1	OCCUPANCY TYPE	INSTITUTIONAL, I-4
2	GOVERNING CODES AND REGULATIONS.	2023 FLORIDA BUILDING CODE (IBC 2021) 2020 FLORIDA ELECTRICAL CODE (NFPA 70, 2020) 2021 FLORIDA ENERGY CODE (ASHRAE 90.1 - 2019) 2019 FLORIDA FIRE ALARM CODE (NFPA 72 2019)

CODE COMPLIANT INSTALLATION MEANS/METHODS AND MATERIAL USED

ALL REFERENCES IN THE CONSTRUCTION DOCUMENTS, INCLUDING SPECIFICATIONS, TO THE TYPE OF MATERIALS AND COMMON INSTALLATION PRACTICES SHALL BE USED AS A GUIDELINE AND MAY BE MODIFIED BY THE CONTRACTOR. ANY MODIFICATION SHALL COMPLY WITH APPLICABLE CODE REQUIREMENTS (SHARED NEUTRAL, GROUNDING, COMBINING CIRCUITRY, COPPER VERSUS ALUMINUM, ETC.) AND OTHER DIRECTIVES, AND REGULATIONS MANDATED BY LOCAL AUTHORITIES HAVING JURISDICTION.

SEC, A/V, TELE/COM NOTE

THIS CONTRACTOR IS RESPONSIBLE FOR OBTAINING COPIES OF ANY SECURITY, A/V, AND TELE/COM DRAWINGS AND PROVIDING ALL ROUGH-IN, INCLUDING EMPTY CONDUITS, SLEEVES, STUB-UPS AND BACK BOXES AS WELL AS POWER CIRCUITS, DEVICES AND OTHER APPURTENANCES AS NECESSARY FOR A COMPLETE, OPERATIONAL SECURITY, A/V AND TELE/COM SYSTEM FOR THE BUILDING AS SPECIFIED THEREIN. ALL ASSOCIATED SECURITY, A/V AND TELE/COM WORK IS PART OF THIS CONTRACT AND SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S BID.

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FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER

8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ELECTRICAL COVER SHEET

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-001

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIAL, AND LABOR TO SATISFY A COMPLETE AND WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.

2. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED.

3. ALL WORK ON THE DRAWINGS SHALL BE CONSIDERED AS NEW UNLESS IF EXPLICITLY CALLED OUT AS EXISTING. UPON COMPLETION OF ALL ELECTRICAL WORK, ELECTRICAL CONTRACTOR SHALL ADJUST AND TEST ALL CIRCUITS, OUTLETS, SWITCHES, LIGHTS, MOTORS, AND ANY OTHER ELECTRICAL ITEMS INSTALLED.

4. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, SIZES AND LOCATION OF EQUIPMENT AND WIRING ARE SHOWN TO SCALE WHERE POSSIBLE, BUT MAY BE DISTORTED FOR CLARITY ON THE DRAWINGS. FINAL LOCATION OF OUTLETS AND EQUIPMENT SHALL BE AS APPROVED BY THE ARCHITECT OR HIS REPRESENTATIVE OR OWNERS AGENTS. IT IS NOT WITHIN THE SCOPE OF DRAWINGS TO SHOW ALL NECESSARY BENDS, OFFSETS, PULL BOXES AND OBSTRUCTIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL HIS WORK TO CONFORM TO THE STRUCTURE, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAN.

5. FIELD MOUNTED DEVICES SUCH AS SWITCHES, MOTOR STARTERS, RECEPTACLES, ETC., ARE SHOWN IN THEIR APPROXIMATE LOCATION. SWITCH MOUNTING HEIGHT SHALL BE 48" ABOVE FINISHED FLOOR AND RECEPTACLE MOUNTING HEIGHT SHALL BE 18" ABOVE FINISHED FLOOR.

6. ALL RECEPTACLES SHALL BE GROUNDING TYPE.

7. ALL RECEPTACLES INSTALLED IN BATHROOMS AND KITCHENS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION AS REQUIRED BY THE NATIONAL ELECTRIC CODE 210.8(A)(1) & 210.8(A)(6).

8. ALL ELECTRIC MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND U.L. OR EQUALLY APPROVED.

9. CONTRACTOR TO CONFIRM EXACT LOCATION OF METERS WITH ELECTRIC UTILITY.

10. SUBMIT TO THE OWNER CERTIFICATES OF INSPECTIONS IN DUPLICATE FROM AN APPROVED INSPECTION AGENCY UPON COMPLETION.

11. BIDDERS, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT AND CAREFULLY EXAMINE THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH CONDITIONS AND WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH EXAMINATION BEEN MADE.

12. FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS, AS SHOWN ON ARCHITECTURAL, HVAC, PLUMBING AND/OR ELECTRICAL DRAWINGS. COORDINATE WITH OTHER TRADES FOR DETAILS OF INSTALLATION AND WIRING REQUIREMENTS. THE TERM "WIRING" AS USED HEREIN SHALL INCLUDE FURNISHING AND INSTALLING CONDUIT, WIRES, JUNCTION/OUTLET BOXES, DISCONNECTS, OVERCURRENT PROTECTION AND FINAL CONNECTIONS. COORDINATE FINAL CONDUCTOR SIZES, QUANTITIES, VOLTAGE REQUIREMENTS, AND OVERCURRENT DEVICE AND OUTLET RATINGS WITH ACTUAL EQUIPMENT TO BE FURNISHED TO THE SITE PRIOR TO FINALIZING WIRING INSTALLATION. MINOR ADJUSTMENTS TO WIRING REQUIREMENTS NECESSARY TO ACCOMMODATE ACTUAL FURNISHED EQUIPMENT SHALL BE PROVIDED AT NO ADDITIONAL COST TO OWNER.

13. VERIFY LOCATIONS AND QUANTITY OF ALL ELECTRICAL EQUIPMENT WITH ARCHITECTURAL DRAWINGS OR INTERIOR DETAILS. IN CENTERING OUTLETS AND LOCATING BOXES OR OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS, MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILING, ETC., AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.

14. VERIFY THAT NO CONFLICTS EXIST WHICH WOULD PROHIBIT THE INSTALLATION OF AND ALL MECHANICAL, TELEPHONE, ELECTRICAL, LIGHTING, PLUMBING AND SPRINKLER EQUIPMENT (INCLUDING ALL REQUIRED PIPING, DUCTWORK AND CONDUITS) DUE TO CLEARANCE REQUIREMENTS FOR MAINTENANCE AND ACCESS TO ALL TRADES EQUIPMENT AS PER N.E.C. DEDICATED SPACE REQUIREMENTS.

15. NOT USED.

16. ALL WORKS SHOWN ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR, UNLESS OTHERWISE INDICATED.

17. SEE MECHANICAL CONTRACT DOCUMENTS FOR EXACT QUANTITY, LOCATION AND ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT.

18. SEE PLUMBING/FIRE PROTECTION CONTRACT DOCUMENTS FOR EXACT QUANTITY, LOCATION AND ELECTRICAL CHARACTERISTICS OF PLUMBING/FIRE PROTECTION EQUIPMENT.

19. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL FINAL CONNECTIONS.

20. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTION TO EQUIPMENT TERMINALS, IF NOT AN INTEGRAL PART OF THE EQUIPMENT, AND SPLICES SHALL BE BY MEANS OF APPROVED COMPRESSION TYPE COPPER CONNECTORS.

21. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND LOCATION OF LIGHT FIXTURES ON PLAN. COORDINATE FIXTURE LOCATIONS WITH FIRE PROTECTION AND MECHANICAL/CONTRACTOR. NOTIFY ARCHITECT OF ANY CONFLICTS.

22. SEE ARCHITECTURAL FOR EXACT QUANTITY & LOCATIONS OF LIGHTING FIXTURES AND TYPE OF CEILING CONSTRUCTION. WHERE DISCREPANCIES IN LOCATION OCCUR BETWEEN ARCHITECTURAL AND ENGINEERING DRAWINGS, THE ARCHITECTURAL DRAWINGS GOVERN.

23. SEE ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT QUANTITY & LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND OUTLETS FOR ELECTRICAL DEVICES, WHERE APPLICABLE.

24. COORDINATE LOCATION OF ALL DEVICES (I.E.. DETECTORS, FIXTURES, AND ALL OTHER CEILING MOUNTED DEVICES) WITH OTHER TRADES (I.E.. DUCTWORK, SPRINKLERS, ETC.).

25. LIGHTING AND APPLIANCE CIRCUIT NUMBERS NOTED ON PLANS ARE INTENDED AS A GUIDE. FINAL NUMBERING SYSTEM TO BE NOTED ON AS-BUILT DRAWINGS AND ON TYPED PANELBOARD DIRECTORY CARDS.

26. WHEREVER A CIRCUIT OR HOMERUN IS NOTED (I.E. AT EACH LOCATION WHERE A JUNCTION/PULL BOX WITH A HOMERUN NOTATION IS INDICATED FOR AN ITEM OF EQUIPMENT, AT EACH LOCATION WHERE A DISCONNECT SWITCH FOR A MOTOR IS INDICATED WITH THE FEEDER SIZING PER SCHEDULE, ETC.) CONNECT THE ITEM WITH THE REQUIRED CONDUIT AND WIRE FROM SOURCE TO LOAD.

27. QUANTITY AND SIZE OF WIRE (CABLE) AND SIZE OF CONDUIT SHALL BE AS REQUIRED BY CODE IF NOT SPECIFICALLY INDICATED, NOTED SIZES ARE FOR REFERENCE AND ARE MINIMUMS. INCREASE WIRE SIZE AS REQUIRED FOR VOLTAGE DROP.

28. THE TYPE OF CONDUIT SHALL BE AS FOLLOWS FOR ALL FEEDERS AND DISTRIBUTION CIRCUITS, UNLESS OTHERWISE SPECIFIED.

APPLICATION	TYPE OF CONDUIT
BURIED IN CONCRETE OR MASONRY, OR OUTDOORS	GALV. RIGID STEEL
SERVICE ENTRANCE	PVC
SUPPLY TO DISTRIBUTION PANELS AND HVAC EQUIPMENT	EMT OR MC (OR NM FOR TYPES III, IV AND V CONSTRUCTION)
BRANCH CIRCUITS	EMT OR MC (OR NM FOR TYPES III, IV AND V CONSTRUCTION)

29. PROVIDE ALL NECESSARY CONNECTIONS.
30. PROVIDE ALL REQUIRED GROUNDING. ALL GROUND WIRE SHALL BE ENCLOSED IN CONDUIT.

31. PROVIDE ALL AUXILIARY STEEL MEMBERS AS REQUIRED FOR THE SUPPORT OF ELECTRICAL WORK TO BUILDING STRUCTURE. SECURE ALL SUPPORTS TO BUILDING STRUCTURE AS REQUIRED.

32. RACEWAY AND CONDUIT ROUTING SHOWN IS DIAGRAMMATIC AND INDICATES GENERAL INTENT, ACTUAL ROUTING MUST BE COORDINATED WITH FIELD CONDITIONS AND ADJUSTED AS REQUIRED. FINAL ROUTING OF CONDUITS AND RACEWAY SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR

33. UNLESS OTHERWISE INDICATED ALL RACEWAYS SHALL BE INSTALLED CONCEALED IN FINISHED AREAS.

34. RUN EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGELS TO WALLS.

35. POWER WIRING SHALL BE COPPER CONDUCTOR WITH "THHN OR THWN" INSULATION RATED 600 VOLTS MINIMUM CONDUCTOR SIZE, MINIMUM WIRE SIZE OF POWER WIRING SHALL BE #12 AWG. LIGHTING AND RECEPTACLE BRANCH CIRCUIT WIRING SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON DRAWINGS OR SCHEDULES INCREASE CONDUIT SIZE TO SUIT AS REQUIRED TO COMPLY WITH VOLTAGE DROP REQUIREMENTS AND NOT TO EXCEED 3% OF VOLTAGE DROP FROM CIRCUIT BREAKER TO THE FURTHEST OUTLET. QUANTITY OF CONDUCTORS SHALL BE AS REQUIRED.

36. FURNISH FISH WIRE IN EACH RACEWAY RUN IN WHICH WIRING IS NOT INSTALLED.

37. WIRING TO AND FROM AN ITEM SHALL BE SIZED THE SAME UNLESS OTHERWISE REQUIRED. PIPE SLEEVES SHALL BE PROVIDED WHERE CONDUITS ARE ROUTED THROUGH FOUNDATION WALLS.

38. PIPE SLEEVES SHALL BE GROUTED IN WALLS. SEALANT SHALL BE APPLIED AROUND THE CONDUIT IN THE SLEEVE IN ORDER TO PREVENT INGRESS OF MOISTURE. THE WALL PENETRATION SHALL BE COMPLETELY WATERPROOFED.

39. BOLT ON TYPE LUGS SHALL BE FASTENED WITH TWO BOLTS MINIMUM.

40. INTERCONNECT DEVICES/FIXTURES WITH SAME CIRCUIT NUMBER WITH REQUIRED WIRE AND CONDUIT AND ENERGIZE FROM CIRCUIT IN ASSOCIATED PANEL.

41. PROVIDE ALL REQUIRED PULL, JUNCTION, OUTLET BOXES AND TROUGHS.

42. COVERS OF JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE.

43. PROVIDE BACKBOXES FOR ALL DEVICES, EQUIPMENT, ETC.

44. PROVIDE BLANK COVER PLATES OVER ALL UNUSED OPENINGS IN PANELBOARDS, PULL AND JUNCTION BOXES AND TROUGHS,

45. INSTALL AND CONNECT EVERY STARTER AND VARIABLE FREQUENCY DRIVE FURNISHED BY OTHER TRADES/VENDORS ON THIS PROJECT.

46. RATING OF DISCONNECT SWITCHES TO MATCH OVERCURRENT PROTECTIVE DEVICE U.O.N.

47. EXIT LIGHTS, EMERGENCY BATTERY PACKS & NIGHT LIGHTS SHALL NOT BE SWITCHED. CONNECT TO UNSWITCHED LEG OF ASSOCIATED CIRCUIT.

48. CIRCUITS FOR COMPUTER RECEPTACLES AND LIGHTING SHALL BE PROVIDED WITH A SEPARATE GROUND WIRE.

49. EACH BRANCH CIRCUIT SERVING SHALL BE PROVIDED WITH GROUND WIRE AS REQUIRED.

50. PROVIDE ALL NECESSARY TEMPORARY AND INTERIM ELECTRICAL POWER WORK (PANELS, LIGHTING FIXTURES, DISCONNECT SWITCHES, RECEPTACLES, WIRE, CONDUITS, BREAKERS, CONNECTIONS, FUSES, FUEL, ETC.) REQUIRED TO INSTALL THE PERMANENT WORK.

51. WHENEVER EXCAVATION OR CUTTING OF SLABS ARE PERFORMED, THE CONTRACTOR SHALL HIRE AN EXPERT TO PERFORM SUBSURFACE SCANS TO IDENTIFY AND FLAG UTILITIES, SO THEY ARE NOT DAMAGED. NOTIFY THE APPROPRIATE AGENCIES AND PERFORM A MARK-OUT PRIOR TO ANY EXCAVATION.

52. LOCATE JUNCTION AND PULL BOXES TO BE CONCEALED IN FINISH SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. PROVIDE PULL BOXES WHERE NECESSARY FOR WIRE PULLING. COORDINATE ALL BOX LOCATIONS WITH OTHER TRADES. COVERS OF JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE.

53. UPON COMPLETION OF ALL ELECTRICAL WORK, ELECTRICAL CONTRACTOR SHALL BALANCE ALL PANELBOARDS AFFECTED TO WITHIN 10 % DEVIATION BETWEEN PHASES.

54. AFTER COMPLETION OF WORK, CLEAN UP ALL RESULTANT DEBRIS AND REMOVE FROM THE SITE.

55. ALL PENETRATIONS THROUGH FIRE RATED WALLS OR FLOORS SHALL BE SEALED TO PREVENT THE SPREAD OF SMOKE AND FIRE. THE FIRE RATING OF THE PENETRATION SEALING METHOD SHALL MATCH THE RATING OF THE WALL OR FLOOR. PROVIDE ONLY UL LISTED MATERIAL AND COMPONENTS.

56. PROVIDE GFI TYPE PROTECTION FOR ANY DEVICE WITHIN 6' OF SINK, WATER OR LIQUIDS AND LOCATED OUTSIDE OF THE BUILDING.

57. THE CONTRACTOR SHALL TAG EACH AND EVERY PANELBOARD, DISCONNECT SWITCH MOTOR STARTER OR CONTROLLER AND CONTROL DEVICE INSTALLED OR WIRED UNDER THIS CONTRACT, TAGGING SHALL BE BY MEANS OF ENGRAVED PHENOLIC NAMEPLATES (WHITE LETTERING, BLACK BACKGROUND). EMERGENCY DISTRIBUTION SYSTEM COMPONENTS SHALL UTILIZE WHITE LETTERING ON RED BACKGROUNDS.

58. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
    - A. THE NATIONAL ELECTRIC CODE, STATE LAWS, AND ALL OTHER REGULATIONS GOVERNING WORK OF THIS NATURE.
    - B. UNDERWRITERS LABORATORIES, INC. (UL)
    - C. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
    - D. AMERICAN DISABILITIES ACT (ADA), 2010
    - E. ALL LOCAL JURISDICTION DIRECTIVES AND REQUIREMENTS.
    - F. APPLICABLE NFPA SECTIONS.

59. WHERE DISCREPANCIES IN EQUIPMENT, DEVICE, AND FIXTURE LOCATIONS OCCUR BETWEEN ARCHITECTURAL AND ENGINEERING DRAWINGS, ARCHITECTURAL DRAWINGS GOVERN.

60. ALL ABOVE COUNTER RECEPTACLE OUTLETS IN THE KITCHEN(S) SHALL BE GFI TYPE.

61. "BACK-TO-BACK" ELECTRICAL OUTLETS IN ADJACENT ROOMS SHALL BE INSTALLED AS FOLLOWS:
    - A. BOXES LOCATED ON OPPOSITE SIDES OF WALLS OR PARTITIONS SHALL BE SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 24 in. THIS MINIMUM SEPARATION DISTANCE BETWEEN BOXES MAY BE REDUCED WHEN WALL OPENING PROTECTIVE MATERIALS (CLIV) ARE INSTALLED ACCORDING TO THE REQUIREMENTS OF THE CLASSIFICATION.

62. UNLESS INDICATED OTHERWISE, ALL CURRENT CARRYING CONDUCTORS SHALL BE COPPER.

63. PROVIDE CABLE SUPPORT BOXES IN ALL VERTICAL CONDUIT RUNS AS PER CODE REQUIRED SPACING.

64. GROUNDING
    - A. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING SYSTEMS (AS REQUIRED) IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
    - B. GROUND SHALL CONSIST OF CONNECTING THE NEUTRAL CONDUCTOR OF THE EQUIPMENT TO A GROUND SOURCE.

65. GROUND CONTINUITY SHALL BE MAINTAINED THROUGHOUT.

66. DISTRIBUTION EQUIPMENT SHALL BE BRACED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.

67. NOTIFY ENGINEER OF CONFLICTS BETWEEN DRAWINGS AND SPECIFICATIONS BEFORE SUBMITTAL OF BID PROPOSAL. THE ENGINEER'S DECISION WILL GOVERN EITHER BEFORE OR AFTER BIDDING.

68. FURNISH ALL PERMITS AND FILINGS AS REQUIRED AS A PART OF THIS CONTRACT.

69. COLOR OF ALL WIRING DEVICES (SWITCHES, RECEPTACLES, PLATES, ETC.) SHALL BE APPROVED BY THE ARCHITECT PRIOR TO PURCHASE.

70. ELECTRICAL CONTRACTOR SHALL COORDINATE FINAL LOCATION OF REMOTE CONTROL OVERRIDE RELAY SWITCHES IN FIELD WITH ARCHITECT OR REFER TO ARCHITECT'S DRAWINGS.

71. FURNISH ALL PERMITS AND FILINGS AS REQUIRED AS PART OF THIS CONTRACT. PAY ALL REQUIRED APPLICATION AND FILING FEES.

72. UNLESS OTHERWISE DIRECTED BY ARCHITECT, PROVIDE STAINLESS STEEL COVER PLATES FOR UNUSED JUNCTION BOXES REQUIRED BY BUT NOT LIMITED TO TELECOMMUNICATION, SECURITY, AUDIO VISUAL SYSTEM DEVICES.

73. DISTRIBUTION SYSTEM SHALL BE FULLY RATED. SHORT CIRCUIT INTERRUPTING CAPACITY FOR ALL PANELBOARDS SHALL NOT BE LESS THAN INDICATED IN THE CONTRACT DOCUMENTS AND SHALL BE INCREASED AS REQUIRED BY THE SHORT CIRCUIT COORDINATION AND ARC FLASH HAZARD ANALYSIS STUDY WITHOUT ADDITIONAL COST TO THE OWNER.

74. USE RIGID GALVANIZED STEEL FOR ALL BENDS AND STUB-UPS IN UNDERGROUND CONDUITS.

75. SERVICE ENTRANCE
    - A. COMPLY WITH ALL OF THE CONTRACT DOCUMENTS, INCLUDING DRAWINGS, SCHEDULES, GENERAL AND SUPPLEMENTARY CONDITIONS, GENERAL REQUIREMENTS.
    - B. THE WORK COVERED BY THIS SECTION OF THE SPECIFICATIONS SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES TO FURNISH AND INSTALL NEW SERVICE EQUIPMENT AS DESCRIBED HEREIN AND SHOWN ON THE DRAWINGS.
    - C. THIS CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE UTILITY COMPANY (SERVICE LAYOUT, ETC.) AND SPECIFICATIONS FOR THE ACCURATE AND TIMELY COMPLETION OF THE SERVICE WORK.
    - D. THIS CONTRACTOR SHALL MAKE APPLICATION FOR THE REQUIRED PERMITS AND APPROVALS, THE NEW SERVICE FACILITIES IN THE NAME OF THE OWNER AND BEAR ALL COSTS IN RELATION TO THE INSTALLATION OF THE PERMANENT ELECTRIC SERVICE FOR THE BUILDING. THE ELECTRICAL CONTRACTOR SHALL:
        - 1) FURNISH AND INSTALL ALL SERVICE EQUIPMENT AS REQUIRED.
        - 2) FURNISH AND INSTALLED REQUIRED RACEWAY AND CABLE FROM UTILITY TO NEW SERVICE EQUIPMENT.
    - E. THE WORK OF THE ELECTRICAL CONTRACTOR SHALL GENERALLY BE AS FOLLOWS:
        - 1) BOND AND GROUND ALL CABLES, CONDUITS, AND ELECTRICAL EQUIPMENT IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY, THE ELECTRICAL CODE AND ALL AUTHORITIES HAVING JURISDICTION.
        - 2) INSTALL ALL SERVICE AND METERING EQUIPMENT, METERING CURRENT TRANSFORMERS AND ASSOCIATED METER WIRING. PROVIDE AND INSTALL ANY METERING COMPONENTS AND MATERIAL NOT PROVIDED BY THE UTILITY COMPANY. PROVIDE FOR CONNECTIONS TO TOTALIZING METERS IF PRESENT.
        - 3) INSTALL ALL MATERIALS PER UTILITY COMPANY SPECIFICATIONS.
    - F. THE CONTRACTOR SHALL, BEFORE SUBMITTING HIS BID, CONSULT WITH REPRESENTATIVE OF THE UTILITY COMPANY TO DETERMINE THE EXTENT OF HIS WORK REGARDING THE ELECTRIC SERVICE AND THEIR REQUIREMENTS FOR INSTALLATION OF SAME. HE SHALL PAY ANY AND ALL CHARGES IN CONNECTION WITH THE ELECTRIC SERVICE AS REQUIRED BY THE UTILITY COMPANY. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY, THE ELECTRIC CODE AND ALL OTHER MUNICIPAL AGENCIES AND DEPARTMENTS HAVING JURISDICTION. NO ALLOWANCE WILL BE MADE IF THE CONTRACTOR FAILS TO CONSULT THE UTILITY COMPANY REGARDING SAME.
    - G. ALL PRODUCTS SHALL BE AS RECOMMENDED AND APPROVED BY UTILITY COMPANY. CONTRACTOR SHALL SECURE THE APPROVAL OF THE UTILITY COMPANY FOR ALL EQUIPMENT PRIOR TO INSTALLATION.
    - H. PROVIDE 6" DIAMETER SLEEVES (GRS) THRU FOUNDATION WALL FOR ELECTRICAL SERVICE CONDUITS. FOUNDATION WALL PENETRATION SHALL BE DONE USING CORE DRILL. QUANTITY OF SLEEVES AS REQUIRED. PROVIDE MINIMUM 2 SPARE SLEEVES.
    - I. PROVIDE WATERPROOF LINK SEAL AROUND RIGID STEEL CONDUIT AT BOTH THE EXTERIOR AND INTERIOR OF THE FOUNDATION WALL. HYDRAULIC NON-SHRINK GROUT SHALL BE APPLIED IN THE EXTERIOR AND INTERIOR AFTER INSTALLATION OF LINK SEAL. PROVIDE ADDITIONAL MATERIALS IF REQUIRED BY ARCHITECT.
    - J. PROVIDE 4"AWG COPPER GROUND CONDUCTOR CONNECTED TO RE-BAR IN BUILDING FOOTING AND EXTEND TO MAIN SWITCHBOARD LOCATION. LEAVE SUFFICIENT SLACK TO CONNECT TO MAIN SWITCHBOARD GROUND BUS. CONDUCTOR SHALL NOT BE SPLICED. CONNECT TO RE-BAR VIA EXOTHERMIC WELD CONNECTION. RE-BAR MUST BE MINIMUM 1/2" DIAMETER AND 20 FEET IN LENGTH.

76. PROVIDE CONDUIT EXPANSION/DEFLECTION COUPLING BETWEEN BUILDINGS AND WHERE SUBJECT TO VIBRATION.

77. PROVIDE CONDUIT EXPANSION FITTINGS AT EVERY CONCRETE AND STRUCTURAL EXPANSION OR CONTROL JOINT .

78. ALL NORMAL POWER EXTERIOR ELECTRICAL INSTALLATIONS SHALL BE WEATHERPROOF, NEMA 3R TYPE. ALL EMERGENCY POWER EXTERIOR ELECTRICAL INSTALLATIONS SHALL BE WEATHERPROOF, NEMA 4X TYPE.

79. PROVIDE GROUND FAULT PROTECTION AS REQUIRED BY THE ELECTRICAL CODE.

80. ALL RECEPTACLES SERVED FROM THE EMERGENCY SYSTEM SHALL HAVE THE PANELBOARD AND CIRCUIT NUMBER SERVING THEM MARKED ON A FACEPLATE.

81. SHORT CIRCUIT, COORDINATION AND ARC FLASH STUDY SHALL BE PREPARED BY THE ENGINEER LICENSED IN THE STATE AND SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL. EQUIPMENT SHALL BE NOT BE PURCHASED PRIOR TO EQUIPMENT APPROVAL.

82. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO FURNISH AND INSTALL ELECTRICAL WIRING TO ALL ELECTRICAL HEATING EQUIPMENT SUCH AS BUT NOT LIMITED TO CABINET UNIT HEATERS, UNIT HEATERS, HEAT TRACING, ELECTRIC FIN TUBE RADIATOR, ELECTRIC RADIANT FLOOR, ELECTRIC RADIAN HEATERS, ETC. REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

83. PROVIDE CONDUIT EXPANSION/DEFLECTION FITTINGS BETWEEN BUILDINGS, AND WHERE SUBJECT TO VIBRATION.

84. CONTRACTOR TO ARRANGE WIRING FOR INTERFACING 3 PHASE TO SINGLE PHASE WIRING AND BALANCING THE LOAD.

85. PROVIDE PANIC HARDWARE FOR ALL DOORS IN MAIN ELECTRICAL ROOMS. DOORS SHALL SWING OUT OF THE ROOM AND SHALL BE EQUIPPED WITH CRASH-BAR TYPE OPENING DEVICES ON THE INSIDE AND PASSAGE HANDLES ON THE OUTSIDE.

86. ALL EQUIPMENT AND DEVICES LOCATED IN FIRE ALARM CONTROL ROOM SHALL BE INSTALLED NO LESS THAN 3 FEET ABOVE FINISHED FLOOR AND ABOVE FLOOD LEVEL.

87. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED ABOVE BASE FLOOD ELEVATION.

88. SHOP DRAWINGS SHALL IDENTIFY ALL OPTIONS PROVIDED AND LIST ALL DEVIATIONS FROM SPECIFICATIONS AND DRAWINGS. IF THERE ARE NO DEVIATIONS FROM SPECIFICATION, INCLUDE A STATEMENT THAT SHOP DRAWING IS IN EXACT COMPLIANCE WITH SPECIFICATIONS.

89. UNLESS INDICATED OTHERWISE ALL DISCONNECTS, STARTERS AND VARIABLE FREQUENCY DRIVES (VFD'S) SHALL BE LOCATED 10 FEET FROM ASSOCIATED EQUIPMENT. FOR OUTDOOR EQUIPMENT, PROVIDE NEMA 3R DISCONNECTS, STARTERS AND VFD'S. ALL ELECTRICAL DEVICES SHALL BE INDEPENDENTLY SUPPORTED.EXTERIOR MOUNTED VFD'S SHALL BE PROVIDED WITH INTERNAL HEATER.

90. FOR EQUIPMENT REQUIRING EMERGENCY SHUT OFF, PROVIDE EMERGENCY PUSHBUTTON AND ASSOCIATED CONTROL WIRING AS PER MANUFACTURER RECOMMENDATIONS.

91. PROVIDE CONTROL WIRING FOR ALL REMOTE EQUIPMENT. COORDINATE EXACT REQUIREMENTS WITH THE EQUIPMENT MANUFACTURER.

92. ELECTRICAL DEVICES AND INSTALLATIONS SHALL COMPLY WITH APPLICABLE ENERGY CONSERVATION CODE SECTIONS.

93. FOR EACH ELECTRICAL PANELBOARD PROVIDE INSTALLED CLOSED CELL NEOPRENE FOAM TAPE PANEL AND DRYWALL AROUND ACCESS DOOR.

94. ALL CONDUIT PENETRATIONS SHALL BE SEALED. GAPS SHALL BE FILLED WITH BACKER ROD AS NECESSARY AND FILLED WITH MINIMUM OF 25-YEAR SEALANT COMPATIBLE WITH SURFACES. WHERE SMOOTH SURFACE ALLOW, MECHANICAL GASKET SEALS MAY BE USED WHEN APPROVED BY THE ARCHITECT.

95. ALL SPACES, EXCEPT THOSE INTENDED FOR 24 HOUR OPERATION, OR WHERE AUTOMATIC SHUTOFF WOULD ENDANGER THE SAFETY OF THE OCCUPANTS, MUST HAVE OCCUPANCY SENSORS OR AUTOMATIC BI-LEVEL LIGHTING CONTROLS.

97. NOT USED.

98. PROVIDE 4" HIGH HOUSEKEEPING PAD FOR EACH FLOOR (FREE) STANDING ELECTRICAL EQUIPMENT. PAD SHALL EXTEND 3" BEYOND FOOTPRINT OF THE EQUIPMENT UNLESS OTHERWISE DIRECTED BY ARCHITECT, PROVIDE STAINLESS STEEL COVER PLATES FOR UNUSED JUNCTION BOXES.

99. ALL EMERGENCY AND STANDBY POWER FEEDERS SHALL BE A LISTED ELECTRICAL CIRCUIT PROTECTIVE SYSTEM WITH A MINIMUM OF 2 HOUR FIRE RATING, UNLESS PERMITTED OTHERWISE BY APPLICABLE ELECTRICAL CODE.

100. NOT USED.

103. SPECIAL PURPOSE RECEPTACLE OUTLET NEMA CONFIGURATION SHALL MATCH ASSOCIATED EQUIPMENT PLUG RATING.

104. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT AND EXTENDING FROM THE FLOOR TO THE HEIGHT OF SIX FEET ABOVE THE EQUIPMENT OR TO THE STRUCTURAL CEILING SHALL BE DEDICATED TO THE ELECTRICAL INSTALLATION. NO PIPING, DUCTS, LEAK PROTECTION APPARATUS OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE LOCATED IN THIS ZONE. WORKING CLEARANCES AROUND ELECTRICAL EQUIPMENT SHALL BE PROVIDED AS PER NEC SECTION 110.26. NO STORAGE IS PERMITTED WITHIN WORKING CLEARANCE SPACE.

105. VOLTAGE DROP SHALL NOT EXCEED 5% FROM POINT OF SERVICE TO THE FURTHEST ELECTRICAL OUTLET OR DEVICE. 20 AMP HOME RUN CIRCUITS MORE THAN 75 FEET FROM THE PANEL- BOARD SHALL BE MADE WITH #10 AWG OR LARGER AS REQUIRED TO LIMIT VOLTAGE DROP TO 2% MAXIMUM.

106. ALL COMMUNICATION WIRING SHALL BE INSTALLED AS PER NEC 2017, SECTION 800.

107. CODE COMPLIANT ARC-FLASH WARNING LABELS SHALL BE PROVIDED AS PER RESULTS OF SHORT CIRCUIT AND COORDINATION STUDY.

108. PERFORMANCE AND WITNESSING OF TESTS
    - A. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND QUALIFIED PERSONNEL OR FIRM TO PERFORM ALL REQUIRED TESTS.
    - B. ALL NEW AND RECONNECTED ELECTRICAL CIRCUIT SHALL BE TESTED TO INSURE CIRCUIT CONTINUITY, INSULATION RESISTANCE, PROPER SPLICING AND GROUNDING IN ACCORDANCE WITH THE LATEST STANDARDS AS STATED ABOVE. BEFORE CONNECTING POWER CABLES TO MOTORS, THE INSULATION RESISTANCE OF ALL MOTOR WINDINGS SHALL BE TESTED IN ACCORDANCE WITH THE ABOVE STANDARDS.
    - C. ANY CONTRACTOR FURNISHED AND/OR INSTALLED SPLICE, RECOMMENDED VOLTAGE AND INSULATION RESISTANCE TESTS, SHALL BE CONNECTED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
    - D. NO EQUIPMENT SHALL BE ENERGIZED UNTIL ALL TESTS AND ADJUSTMENTS HAVE BEEN MADE.
    - E. THREE COPIES OF ALL TEST RESULTS SHALL BE DELIVERED TO THE OWNER.

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FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL
33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ELECTRICAL GENERAL NOTES

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-002

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FIRE ALARM NOTES

1. ALL ROUTING OF CABLES FOR FIRE ALARM SYSTEM SHALL BE DIRECTED AND APPROVED BY ARCHITECT.
2. THE FIRE ALARM RISER DIAGRAM SHOWN IS AN INDICATION OF THE WORK REQUIRED AND SHALL BE USED FOR ESTIMATING PURPOSES ONLY AND IS NOT A POINT-TO-POINT WIRING DIAGRAM.
3. THE OPERATION OF THE FIRE ALARM INSTALLATION DOES NOT CONSTITUTE AN ACCEPTANCE OF THE WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES FIRE DEPARTMENT AND UNDERWRITERS.
4. INCLUDE ALL FEES FOR FILING APPROVALS, AND SELF CERTIFICATION OF THE FIRE ALARM INSTALLATION.
5. SYSTEM SHALL INCLUDE FAN SHUTDOWN FUNCTIONS PER THE SEQUENCE OF OPERATION. UTILIZE INTELLIGENT DEVICES AND MODELS AS SHOWN ON THE DRAWINGS.
6. THE FOLLOWING SPECIAL INSPECTIONS SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR:
   A. FIRE ALARM TEST.
7. THE FIRE ALARM CONTRACTOR SHALL PROVIDE AN ADDRESSABLE RELAY AT EACH AHU AND EF. CONTRACTOR TO PROVIDE WIRING TO THE STARTER OR VFD TO ENSURE SHUTDOWN NO MATTER WHAT POSITION DEVICE IS IN (I.E. HAND, AUTO, ETC.) THE BMS SYSTEM MUST ALSO RECEIVE A SIGNAL FROM THIS RELAY SO THAT A "SECONDARY SHUTDOWN" CAN BE PERFORMED TO PREVENT UNNECESSARY ALARMS.
8. DEVICES AND OUTLETS WHERE SUBJECTED TO PHYSICAL DAMAGE (GYMNASIUM, PLAYFIELD, ETC.) SHALL BE PROPERLY PROTECTED BY MEANS OF GUARDMESH, PLEXIGLAS COVERS, ETC.
9. ALL WIRING, POWER, CONDUCTORS, CONDUITS ETC. SHALL MEET NATIONAL ELECTRICAL CODE 2020 ARTICLE 760.
10. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2021 FLORIDA BUILDING CODE AND NFPA 72 2019 EDITION.
11. ALL FIRE ALARM CIRCUITS SHALL BE SIZED TO A MAXIMUM OF 80% OF CAPACITY.
12. ALL FIRE ALARM CIRCUITS SHALL BE WIRED NFPA (CLASS B) WITH THE EXCEPTION OF THE NETWORK CIRCUIT WHICH SHALL BE NFPA (CLASS A). ALL AUDIBLE AND VISUAL CIRCUITS SHALL BE CLASS B.
13. CONDUITS MAY NOT ENTER THE TOP OF ANY FIRE ALARM EQUIPMENT CABINET.
14. ALL FIRE ALARM EQUIPMENT SHALL BE INSTALLED WITH AESTHETICS IN MIND. CABINETS SHALL BE SEMI FLUSH MOUNTED AND CABLE TRAYS SHALL BE HIDDEN.
15. ALL FIRE ALARM WIRE SHALL BE CLEARLY LABELED IN JUNCTION BOXES AND CABINETS. ALL TERMINALS SHALL BE NUMBERED AND LABELED. ALL CONNECTIONS SHALL BE EITHER SOLDERED, APPROVED TERMINAL STRIPS OR SCOTCH LOCKS.
16. ALL LOW VOLTAGE FIRE ALARM CONDUCTORS SHALL BE PROTECTED BY EITHER BUILDING CONSTRUCTION OR CONDUIT TO 8 FEET ABOVE THE FINISHED FLOOR. SUPPRESSION AND EXTINGUISHING SYSTEM WIRING, MECHANICAL AND ELECTRICAL ROOMS AND OTHER LOCATIONS SUBJECT TO MECHANICAL DAMAGE SHALL BE IN FULL RIGID CONDUIT.
17. FIRE ALARM CABLES SHALL NOT BE MIXED WITH NON FIRE ALARM CABLING. LOW VOLTAGE FIRE ALARM CABLING SHALL NOT BE MIXED OR WIRED NEAR ANY AC CIRCUIT.
18. ALL NOTIFICATION CIRCUITS SHALL BE A MINIMUM OF 14 AWG AND ALL OTHER LOW VOLTAGE FIRE ALARM CIRCUITS SHALL BE 18 AWG MINIMUM.
19. VERTICAL RISER CABLE FOR ALL SYSTEMS THAT INCLUDE STAGED EVACUATION (ANYTHING OTHER THAN A GENERAL ALARM SEQUENCE) SHALL BE A 2 HOUR RATED ASSEMBLY.
20. POLARITY SHALL BE OBSERVED ON ALL CIRCUITS. T-TAPPING SHALL NOT BE ALLOWED ON ANY NOTIFICATION CIRCUITS (HORN, STROBE OR SPEAKER). T-TAPPING SHALL NOT BE PERMITTED ON ADDRESSABLE CIRCUITS WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER.
21. ALL WIRING SHALL BE INSPECTED TO ASSURE THERE ARE NO OPENS, SHORTS OR EARTH GROUNDS.
22. SHIELDED CONDUCTORS OR RUNNING IN SEPARATE RACEWAY SHALL BE AS INSTRUCTED BY THE FIRE ALARM MANUFACTURER'S DOCUMENTATION. ALL NON-POWER LIMITED WIRING, INCLUDING CIRCUITS FOR CENTRALIZED AMPLIFIERS SHALL BE RUN IN A SEPARATE RACEWAY (NOTE: CENTRALIZED AMPLIFIERS "AMP RACKS" ARE NOT PERMITTED ON NEW SYSTEMS).
23. ALL FIRE ALARM CONTROL PANELS SHALL BE GROUNDED USING A MINIMUM #10AWG GREEN THHN OR EQUIVALENT, CONNECTED TO THE BUILDING ELECTRIC SERVICE GROUND BUS. THE GROUND SHALL BE CONTINUED TO ALL OTHER FIRE ALARM EQUIPMENT CABINETS.
24. A CENTRAL STATION DIALER AND TWO DEDICATED PHONE LINES SHALL BE PROVIDED. THE DIALER SHALL BE CAPABLE OF SENDING DEDICATED SIGNALS FOR THE FOLLOWING EVENTS: ALARM, MANUAL STATION, WATERFLOW, SUPERVISORY, TROUBLE, FIRE PUMP RUNNING AND PUMP TROUBLE. IF A SEPARATE CENTRAL STATION DIALER IS PROVIDED (NOT PANEL MOUNTED), INCLUDE SEPARATE FDS.
25. ALL AREA OR DUCT SMOKE DETECTORS SHALL BE PHOTO-ELECTRIC TYPE.
26. SMOKE DETECTORS MUST BE MOUNTED AT LEAST 3 FT AWAY FROM ANY AIR REGISTER.
27. ALL CEILING MOUNT DEVICES MUST BE SECURELY FASTENED TO BUILDING CONSTRUCTION.
28. DEVICE LOCATIONS MUST BE READILY ACCESSIBLE TO ALLOW FOR MAINTENANCE AND REPAIR.
29. DUCT MOUNTED SMOKE DETECTORS SHALL BE MOUNTED ON THE DUCTWORK IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. ALL DUCT DETECTORS SHALL BE PROVIDED WITH A REMOTE LED.
30. MANUAL STATIONS SHALL BE MOUNTED 48 INCHES ABOVE THE FINISHED FLOOR TO THE HANDLE OF THE STATION AND SHALL BE PAINTED FIRE DEPARTMENT RED. ALL MANUAL STATION SHALL BE INSTALLED SO THAT THEY ARE KEPT UN-OBSTRUCTED AT ALL TIMES.
31. NOTIFICATION DEVICES THAT INCLUDE A STROBE SHALL BE MOUNTED 80 INCHES OFF THE FINISHED FLOOR TO THE BOTTOM OF THE STROBE, NOT THE ELECTRICAL BOX.
32. ALL AUXILIARY RELAYS FOR FAN SHUTDOWN, DOOR RELEASE, DAMPER CONTROL, ETC SHALL BE WIRED A MAXIMUM OF 3 FT FROM THE CONTROLLED DEVICE. THE AUXILIARY RELAY SHALL FUNCTION WITHIN THE REQUIRED VOLTAGE AND CURRENT OF THE CONTROLLED DEVICE. SLAVE OR INTERPOSING RELAYS SHALL BE INCLUDED AND POWERED BY THE FIRE ALARM CONTROL PANEL IN A FAIL-SAFE (FIRE FUNCTION) POSITION. POWER TO THE INTERPOSING RELAY SHALL BE MONITORED BY THE FIRE ALARM SYSTEM.
33. THE FIRE DEPARTMENT SHALL APPROVE THE PLANS PRIOR TO THE BEGINNING OF ANY WORK.
34. LOCATIONS OF ALL FIRE ALARM EQUIPMENT SHALL BE SUBJECT TO THE FIRE DEPARTMENT APPROVAL. NO CHANGE OR MODIFICATION TO THE SYSTEM OR PLANS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD. IF ANY CHANGES ARE MADE TO THE DRAWINGS PRIOR TO OR DURING INSTALLATION, AS BUILT PLANS SHALL BE PREPARED BY THE ENGINEER AND FILED WITH THE APPROPRIATE AGENCIES FOR FINAL ACCEPTANCE.
35. THE CONTRACTOR SHALL RETAIN A FL STATE PE TO SIGN AND SEAL ALL NECESSARY DOCUMENTS REQUIRED FOR INSPECTION AND TO OBTAIN A FINAL LETTER OF APPROVAL. THIS SHALL INCLUDE A SIGNED AND SEALED AS-BUILT DRAWING, STATEMENT OF OPERATION, AN NFPA PROGRAMMING MATRIX. THESE DOCUMENTS SHALL BE SUBMITTED AS NECESSARY TO THE FIRE DEPARTMENT AND DEPARTMENT OF BUILDINGS TO OBTAIN A FIRE ALARM INSPECTION. IF A LETTER OF DEFECT IS ISSUED, THE CONTRACTOR SHALL CORRECT ALL ITEMS AND SUBMIT A SIGNED AND SEALED CORRECTIONS TO THE FIRE DEPARTMENT TO OBTAIN A FINAL LETTER OF APPROVAL AT NO ADDITIONAL COST.
36. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY AND ALL ABANDONED FIRE ALARM CABINETS, DEVICES, AND WIRE. PAINT, PATCH AND CLEANUP SHALL ALSO BE INCLUDED.
37. ALL MANUAL PULL STATIONS SHALL BE FURNISHED WITH PROTECTIVE COVERS WITH LOCAL HORN WITH BATTERY BACKUP. LOCAL HORN SHALL NOT BE CONNECTED TO FIRE ALARM.
38. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN CONDUIT UNLESS CONCEALED IN CEILING AND WALL VOIDS. ALL WIRING SHALL BE UL APPROVED FOR ITS USE AND INSTALLATION.
39. ALL FIRE ALARM SYSTEM JUNCTION BOXES, CABINETS, ENCLOSURES, ETC. MUST BE IDENTIFIED AS PER NFPA 72 AND N.E.C. REQUIREMENTS.
40. SHOP DRAWINGS FOR FIRE ALARM SYSTEMS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO SYSTEM INSTALLATION, AND SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL OF THE FOLLOWING:
   A. A FLOOR PLAN THAT INDICATES THE USE OF ALL ROOMS.
   B. LOCATIONS OF ALARM-INITIATING DEVICES.
   C. LOCATIONS OF ALARM NOTIFICATION APPLIANCES, INCLUDING CANDELA RATINGS FOR VISIBLE ALARM NOTIFICATION APPLIANCES.
   D. LOCATION OF FIRE ALARM CONTROL UNIT, TRANSPONDERS AND NOTIFICATION POWER SUPPLIES.
   E. ANNUNCIATORS.
   F. POWER CONNECTION.
   G. BATTERY CALCULATIONS.
   H. CONDUCTOR TYPE AND SIZES.
   I. VOLTAGE DROP CALCULATIONS.
   J. MANUFACTURERS' DATA SHEETS INDICATING MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
   K. DETAILS OF CEILING HEIGHT AND CONSTRUCTION.
   L. THE INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS.
   M. CLASSIFICATION OF THE SUPERVISING STATION.

POWER DISTRIBUTION NOTES

1. UNLESS OTHERWISE NOTED, ALL ELECTRICAL OUTLETS AND EQUIPMENT LOCATED WITHIN AREA DESIGNATED ON ELECTRICAL PLANS SHALL BE CIRCUITED TO ELECTRICAL PANELS LOCATED IN THE SAME AREA. THE ELECTRICAL CONNECTIONS SHALL BE AS FOLLOWS:
   A. APL PANELS:
      - LIGHTING (120V) AND RECEPTACLE OUTLETS.
      - MISCELLANEOUS APPLIANCE LOADS SMALLER THAN 10kVA.
      - MECHANICAL SYSTEM EQUIPMENT RATED FOR 120V OR 208V SYSTEM OPERATION.
   B. PPL PANELS:
      - MISCELLANEOUS APPLIANCE LOADS AND MECHANICAL SYSTEM MOTORS RATED FOR 208V SYSTEM OPERATION.
2. EQUIPMENT INSTALLATION
   A. MOTOR CONTROL EQUIPMENT (MOTOR STARTERS, VFD'S, ETC.) FOR ALL HVAC AND PLUMBING SYSTEMS SHALL BE FURNISHED BY RESPECTIVE TRADE AND INSTALLED AS PART OF ELECTRICAL WORK AS REQUIRED. INCLUDE THIS WORK FOR EACH HVAC AND PLUMBING SYSTEM MOTOR THAT IS NOT A PART OF A PACKAGE SYSTEM. PROVIDE DISCONNECT SWITCH SIZED AS REQUIRED FOR EACH MECHANICAL EQUIPMENT MOTOR UNLESS COMBINATION MOTOR STARTER OR VFD IS PROVIDED AT MOTOR LOCATION.
   B. REFER TO HVAC AND PLUMBING DRAWINGS FOR MORE INFORMATION REGARDING MOTOR CONTROL EQUIPMENT AND ALL MECHANICAL EQUIPMENT EXACT LOCATIONS, TYPES (MOTOR STARTERS OR VFD'S), SIZES AND QUANTITIES.
3. CIRCUITRY GROUND RULES:
   A. PROVIDE CIRCUITRY FOR ALL "NON-STANDARD" WIRING DEVICES (OTHER THAN 20A, 120V OUTLETS) ON THE BASIS OF ONE RECEPTACLE PER CIRCUIT (OVERCURRENT DEVICE IN PANEL SIZED TO MATCH AMPERE RATING OF "NON-STANDARD" WIRING DEVICE WIRED TO THE PANEL AS REQUIRED.
   B. PROVIDE ONE (1) DEDICATED CIRCUIT FOR EACH HVAC AND PLUMBING ITEM (SUPPLY AND EXHAUST FANS, PUMPS RATED FOR 120V OR 208V SYSTEM OPERATION, ELECTRICAL HEATERS, ETC.), SECURITY, IT AND AV EQUIPMENT AND DEVICES. REFER TO HVAC, PLUMBING, SECURITY, IT AND AV DRAWINGS FOR FINAL LOCATIONS, SIZES AND QUANTITIES OF THESE ITEMS. THE CIRCUITS PROVISIONS SHALL BE AS FOLLOWS:
      1) ELECTRICAL LOADS RATED FOR 120V, 1 PH SYSTEM OPERATION:
         - 2#12 & 1#12G CONDUCTORS IN 3/4" CONDUIT.
         - 1P-20A OVERCURRENT PROTECTION DEVICE IN THE NEAREST `APL' PANEL.
      2) ELECTRICAL LOADS RATED FOR 208V, 1 PH SYSTEM OPERATION:
         - 2#12 & 1#12G CONDUCTORS IN 3/4" CONDUIT.
         - 2P-20A OVERCURRENT PROTECTION DEVICE IN THE NEAREST `APL' PANEL.
      3) ELECTRICAL LOADS RATED FOR 208V, 3 PH SYSTEM OPERATION:
         - 3#12 & 1#12G CONDUCTORS IN 3/4" CONDUIT.
         - 3P-20A OVERCURRENT DEVICE IN THE NEAREST `PPL' PANEL.
      4) ELECTRICAL LOADS RATED FOR 208V, 3 PH SYSTEM OPERATION:
         - 3#12 & 1#12G CONDUCTORS IN 3/4" CONDUIT.
         - 3P-20A OVERCURRENT DEVICE IN THE NEAREST `PPL' PANEL.
      5) ALL OTHER LOADS:
         - AS SHOWN ON PANEL SCHEDULES AND/OR AS REQUIRED.
   C. UNLESS OTHERWISE NOTED, EACH 20A CIRCUIT SHALL BE PROVIDED WITH #12 AWG CONDUCTORS (QUANTITIES AS REQUIRED FOR THE CONNECTED LOAD) IN 3/4" CONDUIT (MINIMUM). WIRE SIZE SHALL BE INCREASED AS REQUIRED TO ACCOMMODATE VOLTAGE DROP. VOLTAGE DROP SHALL BE LIMITED TO 2% FOR EACH FEEDER AND 3% FOR BRANCH CIRCUITRY.
   D. PROVIDE ONE (1) 20A, 120V BRANCH CIRCUIT FOR MAXIMUM OF FOUR (4) 20A, 120V COMPUTER RECEPTACLE OUTLETS.
   E. PROVIDE CIRCUITRY FOR CONVENIENCE RECEPTACLES ON THE BASIS OF EIGHT (8) DUPLEX RECEPTACLES PER 20 AMP CIRCUIT WIRED TO THE NEAREST NORMAL LIGHTING AND APPLIANCE PANEL.
   F. PROVIDE DEDICATED 120V, 20A CIRCUIT TO EACH SOLENOID VALVE.
   G. PROVIDE WIRING FROM EACH SOLENOID VALVE TO BMS AND FIRE ALARM PANEL.
4. PROVIDE CABLE SUPPORT BOXES AND PULL BOXES AS REQUIRED. SIZE AS PER ASSOCIATED SECTIONS OF APPLICABLE ELECTRICAL CODE.
5. PROVIDE ALL CONVENIENCE AND SPECIAL DEDICATED OUTLETS, HARDWIRED CONNECTIONS.
6. WITH ALL ASSOCIATED CIRCUITRY AND OVERCURRENT DEVICES AS REQUIRED FOR EACH DEVICE OR EQUIPMENT THAT REQUIRES ELECTRICAL POWER. REFER TO ARCHITECTURAL, MECHANICAL, LOW VOLTAGE SYSTEM SYSTEM INCLUDING SECURITY, IT AND AV, ETC. CONTRACT DOCUMENTS FOR EXACT LOCATIONS, QUANTITIES AND POWER REQUIREMENTS FOR SUCH ITEMS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, QUANTITIES, AND MOUNTING HEIGHTS OF ALL ELECTRICAL DEVICES.
8. LOCATING AND ROUTING CIRCUITRY:
   A. ALL CIRCUITRY SHALL BE RUN CONCEALED EXCEPT AS FOLLOWS:
      1) HORIZONTALLY AT THE CEILING OF PERMANENTLY UNFINISHED SPACES WHICH ARE NOT ASSIGNED TO MECHANICAL OR ELECTRICAL EQUIPMENT.
      2) HORIZONTALLY AND VERTICALLY IN MECHANICAL EQUIPMENT SPACES.
      3) HORIZONTALLY AND VERTICALLY IN ELECTRIC EQUIPMENT ROOMS.
      4) WHERE SPECIFICALLY ALLOWED BY THE ARCHITECT AND OWNER.
9. FINAL LOCATIONS OF NEW ELECTRICAL PANELS NOT BEING INSTALLED IN ELECTRICAL SPACES SHALL BE COORDINATED WITH THE ARCHITECT.
10. BRANCH CIRCUIT SIZES AND MAX LENGTHS SHALL COMPLY WITH VOLTAGE DROP REQUIREMENTS AND SATISFY LOADS
11. ALL FREE STANDING ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH 3" HIGH CONCRETE PAD.
12. MISCELLANEOUS LOW VOLTAGE SYSTEMS:
   A. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING EMPTY CONDUITS, RACEWAYS, BOXES, ETC. FOR VARIOUS LOW VOLTAGE SYSTEMS SUCH AS:
      1) TELECOMMUNICATION
      2) CABLE TV
      3) SECURITY
      4) AUDIO/VISUAL
      5) OTHER SYSTEMS AS REQUIRED.
   B. SPECIFIC REQUIREMENTS OF EACH SYSTEM SHALL BE AS OUTLINED IN LIGHTBRIDGE ACADEMY'S RESPONSIBILITY MATRIX SCHEDULE.
   C. ALL THE ABOVE SYSTEMS' CENTRAL EQUIPMENT, DEVICES AND VARIOUS COMPONENTS, WIRING AND CONNECTIONS ARE FURNISHED AND INSTALLED SEPARATE FROM ELECTRICAL WORK.
   D. THE CONTRACTOR SHALL PROVIDE ALL POWER CIRCUITRY AS REQUIRED FOR LOW VOLTAGE SYSTEMS' CENTRAL EQUIPMENT AND DEVICES. FINAL LOCATIONS AND POWER REQUIREMENTS FOR THESE ITEMS SHALL BE COORDINATED WITH RESPECTIVE CONSULTANTS.
   E. REFER TO LIGHTBRIDGE ACADEMY'S RESPONSIBILITY MATRIX SCHEDULE FOR ADDITIONAL REQUIREMENTS.
13. SECURITY AND COMMUNICATION SYSTEM
   A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR EMPTY CONDUIT ROUGH-IN.
   B. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL 120 VOLT POWER WIRING.
   C. PROVIDE FIRE ALARM SYSTEM TIE-IN WHERE REQUIRED.
   D. THIS CONTRACTOR SHALL CONTACT SYSTEM PROVIDER/VENDOR TO VERIFY HIS FULL SCOPE OF WORK.
   E. PROVIDE JUNCTION BOX WITH BUSHED HOLE COVERPLATE FOR EACH CCTV CAMERA.
   F. PROVIDE ALL REQUIRED OUTLETS AND OUTLET TYPES IN THE TELECOM ROOMS AS PER TELECOMMUNICATION DRAWINGS.
   G. REFER TO LIGHTBRIDGE ACADEMY'S RESPONSIBILITY MATRIX SCHEDULE FOR ADDITIONAL REQUIREMENTS.

LIGHTING NOTES

1. GENERAL:
   A. ELECTRICAL DRAWINGS INDICATE LIGHTING POWER AND CIRCUITING REQUIREMENTS ONLY. LIGHTING LAYOUTS AND LOCATION OF CONTROL DEVICES INCLUDING OCCUPANCY/VACANCY SENSORS SHALL BE AS PER ARCHITECTURAL AND/OR LIGHTING CONSULTANT DRAWINGS.
   B. CONNECT EXIT SIGNS TO A DEDICATED 20A CIRCUIT, ONE CIRCUIT PER FLOOR. PROVIDE ON-POSITION LOCK-OUT ON THE CIRCUIT BREAKER.
   C. LIGHTING FIXTURES IN MORE THAN ONE ROOM OR AREA MAY BE CONNECTED TO THE SAME 20A CIRCUIT.
   D. PROVIDE EMERGENCY BYPASS RELAY FOR EACH GROUP OF EMERGENCY LIGHTS CONTROLLED BY WALL SWITCH SUCH THAT THE SWITCH WILL BE BYPASSED AND EMERGENCY LIGHTS WILL COME ON IN THE EVENT OF FAILURE OF NORMAL POWER.
   E. LIGHTING CONTROL SHALL COMPLY WITH APPLICABLE ENERGY CONSERVATION CODE REQUIREMENTS, INCLUDING DAYLIGHT ZONES. DAYLIGHT ZONE SHALL INCLUDE ANY FIXTURE WITHIN FIFTEEN FEET FROM THE WINDOW. ALL FIXTURES WITHIN DAYLIGHT ZONE SHALL BE SEPARATELY SWITCHED FROM FIXTURES THAT ARE NOT IN THE DAYLIGHT ZONE. COORDINATE THE EXTENT OF DAYLIGHT ZONE WITH LIGHTING CONSULTANT.
   F. OCCUPANCY SENSORS - AUTO 'ON' AND AUTO 'OFF'.
      1) LOW VOLTAGE CEILING AND/OR WALL MOUNTED
      2) DUAL TECHNOLOGY (ULTRASOUND, INFRARED) ONLY.
   H. VACANCY SENSOR-MANUAL 'ON' AND AUTO 'OFF'
      1) LOW VOLTAGE CEILING AND/OR WALL MOUNTED
      2) DUAL TECHNOLOGY (ULTRASOUND, INFRARED) ONLY.
      3) PROVIDE IN FOLLOWING SPACES:
         a) CONFERENCE/MEETING ROOM
         b) OFFICES SMALLER THAN 200 S.F. IN AREA.
         c) DAYCARE ROOMS
         d) STAFF LOUNGE
   I. EMERGENCY LIGHTING FIXTURES SHALL BE FED FROM EMERGENCY CIRCUIT
   J. EMERGENCY FIXTURES NOT REQUIRED OR INTENDED FOR CONTINUOUS OPERATION SHALL BE CONTROLLED BY OCCUPANCY SENSORS WITH MANUAL SWITCH WITH BYPASS RELAY.
   K. NORMAL LIGHTING FIXTURES SHALL BE FED FROM NORMAL POWER CIRCUITS AND SHALL BE CONTROLLED BY A CEILING MOUNTED OCCUPANCY/VACANCY SENSOR, A LOCAL SWITCH AND RELAY PANEL.
   L. ALL SPACES, EXCEPT THOSE INTENDED FOR 24 HOUR OPERATION, OR WHERE AUTOMATIC SHUTOFF WOULD ENDANGER THE SAFETY OF THE OCCUPANTS, MUST HAVE OCCUPANCY SENSORS OR AUTOMATIC BI-LEVEL LIGHTING CONTROLS.
2. OFFICES:
   A. LIGHTING SHALL BE CONTROLLED BY LOCAL WALL MOUNTED SWITCHES AND OCCUPANCY OR VACANCY SENSOR(S).
3. RESTROOMS:
   A. EMERGENCY LIGHTING FIXTURES: MINIMUM ONE LIGHTING FIXTURES IN EACH RESTROOM SHALL BE FED FROM EMERGENCY CIRCUIT AND CONTROLLED BY RELAY PANEL.
   B. NORMAL LIGHTING FIXTURES SHALL BE FED FROM NORMAL POWER CIRCUITS AND SHALL BE CONTROLLED BY A WALL OR CEILING MOUNTED OCCUPANCY SENSOR, A SWITCH AND RELAY PANEL.
4. MECHANICAL/ELECTRICAL/EQUIPMENT ROOMS:
   A. CONTROL VIA LOCAL MANUAL ON/OFF SWITCH.
   B. CIRCUITS ON LIFE SAFETY PANEL.
5. CORRIDORS, OPEN PUBLIC SPACES:
   A. CONTROLLED VIA TIME SCHEDULE LIGHTING CONTROL PANEL/ CONTACTOR.
   B. PROVIDE LOCAL OVERRIDE SWITCH.
7. EXIT SIGNS:
   F. EXIT SIGNS SHALL BE FED FROM UNSWITCHED LEG OF THE EMERGENCY CIRCUITS. EXIT SIGNS SHALL NOT BE SWITCHED.
8. CLOSETS/STORAGE ROOM >50 SQFT & <1000 SQFT (VS CONTROLLED)
   A. CONTROLLED VIA WALL VACANCY SENSOR SWITCH OR CEILING OCCUPANCY SENSOR.
   B. MANUAL ON/AUTOMATIC OFF. 20-MINUTES OFF SETTING.
   C. PROVIDE LOCAL OVERRIDE SWITCH.
9. EXTERIOR (TIME CONTROLLED AND PHOTOSENSOR)
   A. CONTROLLED VIA TIME SCHEDULE DEVICE AND PHOTOCELL. SHALL OPERATE AS PHOTOCELL ON AND TIME SCHEDULE OFF. COORDINATE WITH OWNER FOR SCHEDULE.
   B. PROVIDE SYSTEM OVERRIDE SWITCH. MAXIMUM OVERRIDE 2HRS.
10. SAFE AREAS FIXTURE SHALL BE PROVIDED WITH EMERGENCY FIXTURES SHALL (NOT BE SWITCHED) AND SHALL PROVIDE MINIMUM 5 FOOT CANDLES AT THE FLOOR LEVEL, STAIRS, STEPS, RAMPS AND ESCALATORS WITHIN THE SAFE AREA.
11. LIGHTING SYSTEM
   A. PROVIDE LIGHTING FIXTURES, EXIT SIGNS, LIGHT SWITCHES, OCCUPANCY SENSORS, DIMMING SYSTEMS AND OTHER DEVICES AND EQUIPMENT FOR LIGHTING AND LIGHTING CONTROL SYSTEMS AS REQUIRED.
   B. FINAL CONNECTION TO LIGHTING FIXTURES SHALL BE MADE USING 90 DEGREE CELSIUS WIRE. PROVIDE ALL CONDUIT AND WIRE, BOXES CEILING OUTLETS, FIXTURE WHIPS, LIGHTING CONTROL DEVICES AND COVER PLATES REQUIRED TO IMPLEMENT THE CIRCUITING AS REQUIRED.
   C. ALL FLUORESCENT FIXTURES SHALL BE EQUIPPED WITH ENERGY EFFICIENT LAMPS AND ELECTRONIC BALLASTS.
   D. WHERE MORE THAN ONE SWITCH OCCURS IN THE SAME LOCATION, THEY SHALL BE INSTALLED IN A GANG-TYPE BOX UNDER ONE COVER PLATE.
   E. PROVIDE GROUND WIRE WITH ALL FLEXIBLE CONDUIT CONNECTION TO EACH LIGHTING FIXTURE.
   F. REFER TO ARCHITECTURAL DRAWINGS FOR SYMBOLS AND LOCATIONS OF LIGHTING CONTROL DEVICES SUCH AS LIGHTING SWITCHES, OCCUPANCY SENSORS, LIGHT SENSORS, ETC.
   G. REFER TO LIGHTING CONSULTANT AND LIGHTING CONTROL SYSTEM LOAD SCHEDULES FOR INFORMATION REGARDING LIGHTING ZONES.
   H. SEE SPECIFICATIONS FOR LIGHTING FIXTURE DESCRIPTIONS, OPERATING VOLTAGE AND LAMPING.
   I. SEE SPECIFICATIONS FOR LIGHTING CONTROL STRATEGY FOR ALL AREAS.
   J. SEE ARCHITECTURAL REFLECTED CEILING PLANS AND DETAILS TO CONFIRM EXACT LOCATION OF ALL FIXTURES AND MOUNTING.
   K. PROVIDE ONE CENTRAL PHOTOCELL AND RELATED CONTROL PANEL TO CONTROL ALL EXTERIOR LIGHTING.
   L. PROVIDE ALL CONDUIT, WIRE AND BOXES AS WELL AS CEILING OUTLETS AND WHIPS REQUIRED TO ENERGIZE LIGHTING FIXTURES AS SHOWN.
   M. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY AND INDICATE DESIGN INTENT ONLY.
   N. ALL BRANCH CIRCUIT WIRING SHALL BE RUN CONCEALED IN WALLS AND ABOVE HUNG CEILING, U.O.N. FINAL CONNECTIONS TO LIGHTING FIXTURES SHALL BE MADE WITH WIRING HAVING 90°C RATED INSULATION.
   O. LIGHTING FIXTURES USED AS EMERGENCY "NIGHT LIGHT" AND EXIT SIGNS SHALL BE UNSWITCHED.
   P. FOR ADDITIONAL LIGHTING INFORMATION SEE ARCHITECTURAL DRAWINGS.
   Q. LIGHTING FIXTURES LOADS CIRCUITED FROM 20A/1P CIRCUIT BREAKER SHALL NOT EXCEED 1500 WATT FOR 120V AND 3000 WATT FOR 277V DISTRIBUTION .
   R. SYMBOLS FOR LIGHTING FIXTURES ARE BASED ON ARCHITECTS DRAWINGS. INCLUDED FOR COORDINATION AND INFORMATION PURPOSES ONLY. REFER TO ARCHITECTS DRAWINGS FOR EXACT TYPE, SYMBOLS, LOCATION AND QUANTITY OF FIXTURES.
   S. PROVIDE DIMMING BALLAST OR COMPATIBLE LED DRIVER FOR ALL LIGHTING FIXTURES REQUIRED TO BE DIMMED.
   T. OBTAIN LATEST CONTROL AND LUTRON DRAWINGS AND COORDINATE REQUIRED CIRCUITING.
   U. 80 PERCENT OF LIGHT FIXTURES MUST BE 'ENERGY STAR' QUALIFIED OR HAVE 'ENERGY STAR' QUALIFIED LAMPS INSTALLED.

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Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
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5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ELECTRICAL POWER & LIGHTING NOTES

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
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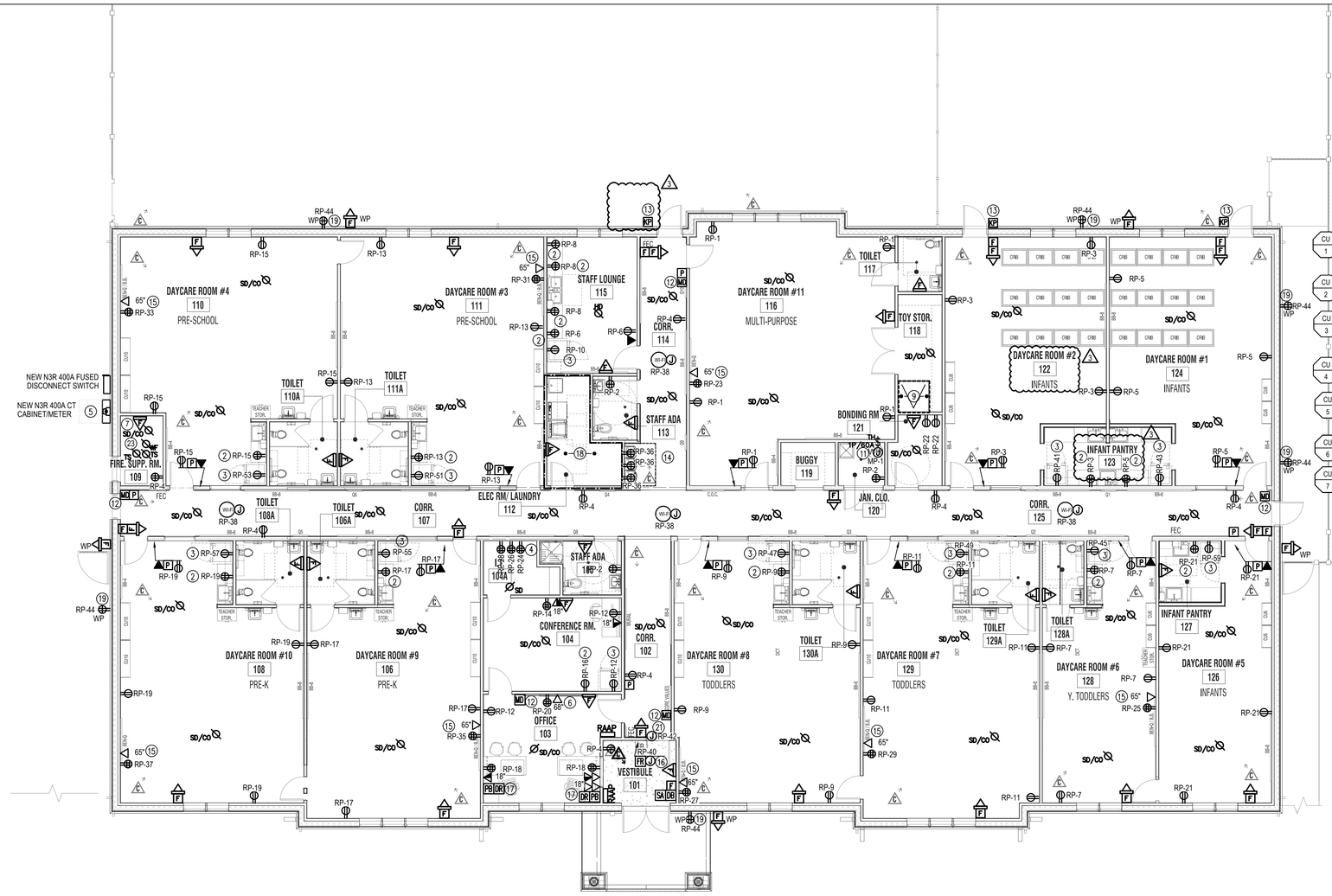
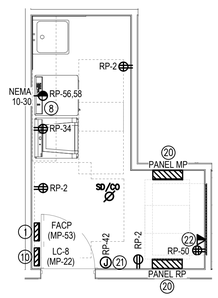
SHEET NO.
E-003



ELECTRICAL FIRST FLOOR POWER PLAN

SCALE: ⅛" = 1'-0"



ENLARGED ELECTRICAL ROOM PART PLAN

SCALE: ½" = 1'-0"

ELECTRICAL GENERAL REQUIREMENTS:

TELEPHONE
1. CONTRACTOR SHALL PROVIDE AND INSTALL TELEPHONE CABLES AT LOCATIONS SHOWN ON PLANS.
2. CONTRACTOR SHALL TERMINATE ALL CABLING TO I.T. CLOSET AND PROVIDE ALL JACKS & PLATES.

RECEPTACLES:
1. ALL RECEPTACLES SHALL BE TAMPER RESISTANT AS MANUFACTURED BY "PASS & SEYMOUR", CHILD PROOF GFCI RECEPTACLE.

PANEL BOARDS:
1. CIRCUIT BREAKERS SHALL HAVE A COMMON TRIP ON ALL MULTI-POLE BREAKERS AND CONTRACTOR TO PROVIDE LABELING.
2. BUS AND HARDWARE SHALL BE BRACED FOR INTERRUPTING CAPACITY AS SHOWN ON PANEL BOARD SCHEDULE. BREAKERS SHALL MATCH AIC RATING OF PANEL AT PANEL VOLTAGE. ALL BUSSING SHALL BE COPPER.
3. PROVIDE EACH PANEL BOARD WITH GREEN CODED GROUND BAR, FOR GREEN EQUIPMENT GROUND WIRES, EACH BAR TO HAVE A MINIMUM CAPACITY FOR THE NUMBER OF POLES IN PANEL WITH SOLDER-LESS, BOX LUGS FOR WIRE SIZE NO. 12 MINIMUM TO NO. 4 MAXIMUM. ONE WIRE PER LUG. LOCATE BAR ADJACENT TO NEUTRAL BAR BOLT OR WELD TO BACK BOX.
4. MAIN CIRCUIT BREAKERS & SWITCH BOARDS WHERE REQUIRED, MUST BE APPROVED BY LOCAL UTILITY.
5. PROVIDE 208Y/120V PANEL-BOARDS WITH AN ISOLATED NEUTRAL BAR. THERE SHALL BE AS MANY TERMINALS AS THERE ARE CIRCUIT POLES. THE TERMINAL FOR THE FEEDER NEUTRAL SHALL MATCH THE SIZE OF THE FEEDER PHASE TERMINATION(S).
6. CONTRACTOR SHALL LABEL ALL CIRCUIT BREAKERS.

OUTLET BOXES
1. CONTRACTOR SHALL INSTALL ALL DISTRIBUTION DEVICES, INCLUDING J-BOXES. SWITCHES AND RECEPTACLES PER LOCAL BUILDING CODES AND THE APPROVED PLANS. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATION OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM. SHARED TOILET BETWEEN CLASSROOMS SHALL BE SWITCHED FOR THREE WAY OPERATIONS.
2. GALVANIZED STAMPED STEEL FOR ALL INTERIOR LOCATIONS. MOUNT ALL BOXES SO THAT COVERS AND PLATES WILL MOUNT FLUSH WITH THE WALL AND CEILING FINISH SURFACE. PROVIDED PLASTER RINGS AS NECESSARY. GOOF RINGS ARE ACCEPTABLE.
3. SUITABLE GALVANIZED BARS, ROD GANGERS OR CADDY CLIPS SHALL BE USED THROUGHOUT THE WORK. WOODEN SUPPORTS, STRIPES, TIE WIRES, OR MAKESHIFT DEVICES SHALL NOT BE USED.
4. BOXES SHALL NOT BE LESS THAN 1 ½" DEEP. IN GENERAL OUTLET BOXES SHALL BE OF SUFFICIENT DEPTH SO THAT CONDUIT ENTERING WITHIN TILE WALLS NEED NOT BE OFFSET SO THAT TILES HAVE TO BE CHIPPED OR ALTERED. ALL BOXES SHALL BE SET LEVEL AND PLUMB.
5. PROVIDE RAIN TIGHT CAST METAL BOXES WITH THREADED CONDUIT HOLES AND CAST METAL FACE PLATES, COVERS SHALL MAINTAIN RATING WHILE IN USE.
6. REFER TO "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET FOR MOUNTING HEIGHTS. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER.
7. WHEN INSTALLED (IN MASONRY WALLS), LOCATE BOTTOM OF BOX AT NEAREST MASONRY JOINT TO DIMENSION INDICATED. WHERE OUTLETS OCCUR ABOVE COUNTERS, OR CABINETS, CORRELATE HEIGHT OF OUTLET WITH EQUIPMENT SO DEVICE WILL CLEAR ALL TRIM.
8. ALL RECEPTACLE AND SWITCH PLATES SHALL BE WHITE.

SAFETY SWITCHES:
1. SAFETY SWITCHES, FUSIBLE HEAVY DUTY.

METER CENTER:
1. WHERE REQUIRED, METER MUST BE APPROVED BY LOCAL UTILITY.

WIRING DEVICES:
1. PROVIDE SPECIFICATION GRADE WIRING DEVICES OF 20 AMP RATING MINIMUM. AS REQUIRED ON THE PLANS. SWITCHES SHALL BE QUIET TYPE.
2. SWITCHES, WHERE REQUIRED SHALL BE MOUNTED ON THE STRIKE SIDE OF DOORS AS FINALLY HUNG.
3. DEVICES SHALL HAVE SMOOTH NYLON PLATE-FIT & TYPE AS REQUIRED BY DEVICE. OUTLETS WITHOUT DEVICES. EXCEPT TELEPHONE, TO HAVE BLANK PLATES. FASTEN PLATES IN PLACE BY OVAL, HEAD, SCREWS MATCHING PLATE.

PUBLIC ANNOUNCEMENT SYSTEM:
1. PUBLIC ANNOUNCEMENT SYSTEM SHALL BE WIRED FOR THE FOLLOWING ZONES:
   A. ZONE 1 - CLASSROOMS
   B. ZONE 2 - CORRIDOR
   C. ZONE 3 - PLAYGROUND
   D. ZONE 4 - MULTI-PURPOSE ROOM
2. CONTRACTOR IS RESPONSIBLE FOR FULL SYSTEM INCLUNDING ALL WIRING,TERMINATIONS,PLUGS, PLATES AND MATERIALS.

VOICE/DATA, TELEPHONE, CCTV, SECURITY:
1. SEE PROJECT MANUAL FOR SPECIFICATIONS.
2. GC'S LOW-VOLTAGE (VOICE/DATA,TELEPHONE,CCTV,SECURITY) CONTRACTOR TO PROVIDE WIRING, TERMINATION, PLUGS, PLATES, & MATERIALS NEEDED TO PROVIDE A FULLY FUNCTIONING SYSTEM.
3. CONTRACTOR SHALL TERMINATE ALL CABLING TO I.T. CLOSET.

ELECTRICAL GENERAL NOTES

1.	THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
2.	ALL WIRING/CABLING AND OTHER TELCO/DATA DEVICES SHALL BE PROVIDED BY GC'S CONTRACTOR. GENERAL CONTRACTOR SHALL VERIFY LOCATIONS OF DEVICES AND PROVIDE NECESSARY ROUGH-INS WITH WIRING TERMINATION.
3.	MOUNTING HEIGHTS FOR WALL OUTLETS AS PER "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER.
4.	CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT.
5.	ALL RECEPTACLES SHALL BE TAMPER RESISTANT.
6.	PROVIDE GFCI RECEPTACLES WHERE SHOWN AND AS REQUIRED BY CODE. ALL RECEPTACLES SHALL BE TAMPER RESISTANT. PROVIDE GFCI RECEPTACLES IF DISTANCE FROM THE SINK IS WITHIN 6' AS PER NEC REQUIREMENTS.
7.	CONTRACTOR SHALL PROVIDE AND INSTALL COMPUTER ROUGH-INS IN OFFICE AND CONFERENCE ROOM AS PER THE APPROVED PLANS.
8.	CONTRACTOR SHALL COORDINATE DEVICE LOCATIONS & INSTALLATION OF SECURITY SYSTEM WITH LIGHTBRIDGE.
9.	CONTRACTOR TO REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF WHITEBOARDS.
10.	G.C. SHALL PROVIDE AND INSTALL A DOOR BELL IN THE VESTIBULE AREA. LOCATED AND WIRED TO BE HEARD IN THE LOBBY AREA AND OFFICE.
11.	CONTRACTOR SHALL COORDINATE ANY CHANGES OR MODIFICATIONS TO THE PLANS WITH BOTH THE ARCHITECT/ENGINEER & OWNER.

ELECTRICAL KEY NOTES

1	APPROXIMATE LOCATION OF FIRE ALARM CONTROL PANEL. COORDINATE EXACT LOCATION WITH FIRE MARSHAL.
2	COUNTER-TOP RECEPTACLE TO BE MOUNTED 42" AFF TO CENTER OF RECEPTACLE. COORDINATE FOR FINAL LOCATION.
3	RECEPTACLE FOR REFRIGERATOR TO BE MOUNTED AT 18" AFF. COORDINATE FOR FINAL LOCATION.
4	COORDINATE COMPUTER/SERVER CLOSET REQUIREMENTS WITH IT VENDOR. (3) QUAD RECEPTACLES MOUNTED AT 48" AFF. EQUIPMENT SHALL BE MOUNTED ON FULL WALL FIRE RATED BACK BOARD. SEE DETAIL ON DRAWING E-406.
5	EC TO VERIFY EXACT LOCATION OF INCOMING SERVICE AND COORDINATE EXACT LOCATION OF CT CABINET/METER AND SERVICE DISCONNECTS PRIOR TO BID AND INSTALLATION.
6	REFER TO WATCHMEGROW TV SETUP DETAIL ON E-404 FOR INSTALLATION REQUIREMENTS.
7	PROVIDE 120V CIRCUIT FOR DRY VALVE ASSEMBLY AIR COMPRESSOR AND PRESSURE SWITCH. COORDINATE FINAL LOCATION OF EQUIPMENT WITH SPRINKLER CONTRACTOR.
8	COORDINATE EXACT ELECTRICAL REQUIREMENTS AND RECEPTACLE TYPE FOR WASHER/DRYER WITH MANUFACTURER PRIOR TO BID AND INSTALLATION.
9	NO PIPES, DUCT, WIRES TO BE INSTALLED ABOVE CEILING IN THIS AREA.
10	EC SHALL FURNISH AND INSTALL LIGHTING RELAY PANEL (WATTSTOPPER LC8 OR APPROVED EQUAL). REFER TO ELECTRICAL DETAILS SHEET FOR FURTHER REQUIREMENTS.
11	POWER FOR WATER HEATER AND RECIRC. PUMP. COORDINATE EXACT CONTROL REQUIREMENTS WITH MANUFACTURER PRIOR TO BID AND INSTALLATION.
12	CONTRACTOR SHALL FIELD VERIFY FINAL LOCATION FOR ALL MOTION DETECTOR SYSTEMS PRIOR TO INSTALLATION.
13	CONTRACTOR SHALL FIELD VERIFY FINAL MOUNTING HEIGHT AND LOCATION OF KEYPAD TO BE INSTALLED AT PLAYGROUND DOORS PRIOR TO BID AND INSTALLATION.
14	EC TO COORDINATE EXACT REQUIREMENTS FOR WATER COOLER WITH MANUFACTURER PRIOR TO BID AND INSTALLATION.
15	REFER TO INTERACTIVE WHITEBOARD DETAIL ON SHEET E-405 FOR INSTALLATION REQUIREMENTS.
16	POWER IS IN THE WALL FOR FACIAL RECOGNITION SYSTEM. REFER TO DRAWING A-101 FOR PLACEMENT DETAIL, AND E-404 FOR FURTHER DETAILS. COORDINATE EXACT REQUIREMENTS WITH LOW VOLTAGE SYSTEM CONSULTANT.
17	CONTRACTOR SHALL FIELD VERIFY FINAL MOUNTING LOCATION OF DOOR RELEASE/PANIC BUTTON. MOUNTING HEIGHT SHALL BE 48" AFF.
18	REFER TO ENLARGED ELECTRICAL ROOM PART PLAN ON THIS SHEET FOR FURTHER REQUIREMENTS. ALL EQUIPMENT SHALL BE MOUNTED ON FIRE RATED PLYWOOD BACKBOARD IN THIS ROOM.
19	EC TO VERIFY FINAL LOCATION OF OUTDOOR RECEPTACLES PRIOR TO BID AND INSTALLATION.
20	EC SHALL FURNISH & INSTALL FULL WALL FIRE-RATED PLYWOOD BACKBOARD. MOUNT ALL ELECTRICAL PANELS ON BACKBOARD.
21	PROVIDE 120V CIRCUIT FOR ACCESS CONTROL PANEL FOR ELECTRIC DOOR STRIKE SYSTEM. REFER TO PANEL SCHEDULE FOR CIRCUITING. DOOR STRIKE LOCATIONS AS SHOWN ON PLAN.
22	FULL WALL FIRE RATED PLYWOOD BACKBOARD. MOUNT BLACKBOX UNIT AND ACCESSORIES ON BACKBOARD. (2) 4" CONDUITS FOR TELEPHONE SERVICE AT TENANT'S TEL/DATA BACKBOARD. COORDINATE REQUIREMENTS WITH LOCAL TELEPHONE DISTRIBUTION BOARD. MAINTAIN REQUIRED CLEARANCES.
23	EC TO COORDINATE EXACT LOCATIONS AND QUANTITIES OF WATER FLOW AND TAMPER SWITCH WITH SPRINKLER CONTRACTOR

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FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
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OWNER
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TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ELECTRICAL FIRST FLOOR POWER PLAN

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
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JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-101

Autodesk Docs://Lightbridge Academy - Westshore, FL / Lightbridge Academy - Westshore, FL / 1 Classroom_R21.rvt
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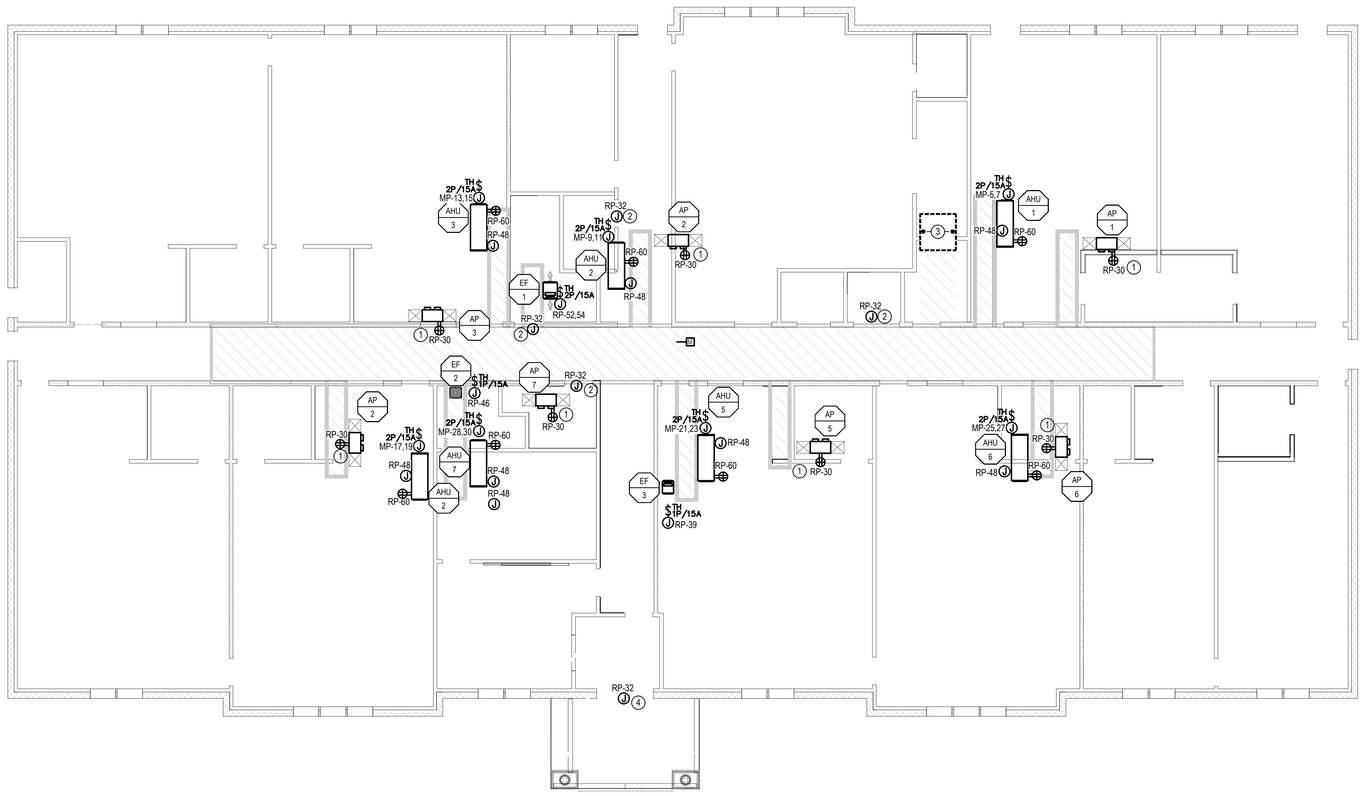

ELECTRICAL GENERAL NOTES

1.	THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
2.	ALL WIRING/CABLING AND OTHER TELCO/DATA DEVICES SHALL BE PROVIDED BY GC'S CONTRACTOR. GENERAL CONTRACTOR SHALL VERIFY LOCATIONS OF DEVICES AND PROVIDE NECESSARY ROUGH-INS WITH WIRING TERMINATION.
3.	MOUNTING HEIGHTS FOR WALL OUTLETS AS PER "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER.
4.	CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT.
5.	ALL RECEPTACLES SHALL BE TAMPER RESISTANT.
6.	PROVIDE GFCI RECEPTACLES WHERE SHOWN AND AS REQUIRED BY CODE. ALL RECEPTACLES SHALL BE TAMPER RESISTANT. PROVIDE GFCI RECEPTACLES IF DISTANCE FROM THE SINK IS WITHIN 6' AS PER NEC REQUIREMENTS.
7.	CONTRACTOR SHALL PROVIDE AND INSTALL COMPUTER ROUGH-INS IN OFFICE AND CONFERENCE ROOM AS PER THE APPROVED PLANS.
8.	CONTRACTOR SHALL COORDINATE DEVICE LOCATIONS & INSTALLATION OF SECURITY SYSTEM WITH LIGHTBRIDGE.
9.	CONTRACTOR TO REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF WHITEBOARDS.
10.	G.C. SHALL PROVIDE AND INSTALL A DOOR BELL IN THE VESTIBULE AREA. LOCATED AND WIRED TO BE HEARD IN THE LOBBY AREA AND OFFICE.
11.	CONTRACTOR SHALL COORDINATE ANY CHANGES OR MODIFICATIONS TO THE PLANS WITH BOTH THE ARCHITECT/ENGINEER & OWNER.

ELECTRICAL KEY NOTES

1	RECEPTACLE FOR MICROCON UNITS TO BE LOCATED ABOVE CEILING. EC SHALL NOT RUN FLEXIBLE CORD WIRING FOR UNIT UNLESS SPECIFICALLY REQUIRED BY MANUFACTURER. PROVIDE J-BOX AND DISCONNECT SWITCH FOR HARDWIRED UNITS. DISCONNECT ONLY REQUIRED IF NOT INTEGRAL OR IF POWERED VIA RECEPTACLE.
2	PROVIDE JUNCTION BOX FOR MOTORIZED DAMPER POWER. REFER TO MECHANICAL PLANS FOR EXACT DAMPER LOCATION.
3	ATTIC ACCESS. NO PIPES, DUCT, WIRES TO BE INSTALLED ABOVE CEILING IN THIS AREA.

ELECTRICAL GENERAL REQUIREMENTS:

TELEPHONE
1. CONTRACTOR SHALL PROVIDE AND INSTALL TELEPHONE CABLES AT LOCATIONS SHOWN ON PLANS.
2. CONTRACTOR SHALL TERMINATE ALL CABLING TO I.T. CLOSET AND PROVIDE ALL JACKS & PLATES.

RECEPTACLES:
1. ALL RECEPTACLES SHALL BE TAMPER RESISTANT AS MANUFACTURED BY "PASS & SEYMOUR", CHILD PROOF GFCI RECEPTACLE.

PANEL BOARDS:
1. CIRCUIT BREAKERS SHALL HAVE A COMMON TRIP ON ALL MULTI-POLE BREAKERS AND CONTRACTOR TO PROVIDE LABELING.
2. BUS AND HARDWARE SHALL BE BRACED FOR INTERRUPTING CAPACITY AS SHOWN ON PANEL BOARD SCHEDULE. BREAKERS SHALL MATCH AIC RATING OF PANEL AT PANEL VOLTAGE. ALL BUSSING SHALL BE COPPER.
3. PROVIDE EACH PANEL BOARD WITH GREEN CODED GROUND BAR, FOR GREEN EQUIPMENT GROUND WIRES. EACH BAR TO HAVE A MINIMUM CAPACITY FOR THE NUMBER OF POLES IN PANEL WITH SOLDER-LESS, BOX LUGS FOR WIRE SIZE NO. 12 MINIMUM TO NO. 4 MAXIMUM. ONE WIRE PER LUG. LOCATE BAR ADJACENT TO NEUTRAL BAR BOLT OR WELD TO BACK BOX.
4. MAIN CIRCUIT BREAKERS & SWITCH BOARDS WHERE REQUIRED, MUST BE APPROVED BY LOCAL UTILITY.
5. PROVIDE 208Y/120V PANEL-BOARDS WITH AN ISOLATED NEUTRAL BAR. THERE SHALL BE AS MANY TERMINALS AS THERE ARE CIRCUIT POLES. THE TERMINAL FOR THE FEEDER NEUTRAL SHALL MATCH THE SIZE OF THE FEEDER PHASE TERMINATION(S).
6. CONTRACTOR SHALL LABEL ALL CIRCUIT BREAKERS.

OUTLET BOXES
1. CONTRACTOR SHALL INSTALL ALL DISTRIBUTION DEVICES, INCLUDING J-BOXES. SWITCHES AND RECEPTACLES PER LOCAL BUILDING CODES AND THE APPROVED PLANS. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATION OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM. SHARED TOILET BETWEEN CLASSROOMS SHALL BE SWITCHED FOR THREE WAY OPERATIONS.
2. GALVANIZED STAMPED STEEL FOR ALL INTERIOR LOCATIONS. MOUNT ALL BOXES SO THAT COVERS AND PLATES WILL MOUNT FLUSH WITH THE WALL AND CEILING FINISH SURFACE. PROVIDED PLASTER RINGS AS NECESSARY. GOOF RINGS ARE ACCEPTABLE.
3. SUITABLE GALVANIZED BARS, ROD GANGERS OR CADDY CLIPS SHALL BE USED THROUGHOUT THE WORK. WOODEN SUPPORTS, STRIPES, TIE WIRES, OR MAKESHIFT DEVICES SHALL NOT BE USED.
4. BOXES SHALL NOT BE LESS THAN 1-½" DEEP. IN GENERAL OUTLET BOXES SHALL BE OF SUFFICIENT DEPTH SO THAT CONDUIT ENTERING WITHIN TILE WALLS NEED NOT BE OFFSET SO THAT TILES HAVE TO BE CHIPPED OR ALTERED. ALL BOXES SHALL BE SET LEVEL AND PLUMB.
5. PROVIDE RAIN TIGHT CAST METAL BOXES WITH THREADED CONDUIT HOLES AND CAST METAL FACE PLATES, COVERS SHALL MAINTAIN RATING WHILE IN USE.
6. REFER TO "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET FOR MOUNTING HEIGHTS. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER.
7. WHEN INSTALLED (IN MASONRY WALLS), LOCATE BOTTOM OF BOX AT NEAREST MASONRY JOINT TO DIMENSION INDICATED. WHERE OUTLETS OCCUR ABOVE COUNTERS, OR CABINETS, CORRELATE HEIGHT OF OUTLET WITH EQUIPMENT SO DEVICE WILL CLEAR ALL TRIM.
8. ALL RECEPTACLE AND SWITCH PLATES SHALL BE WHITE.

SAFETY SWITCHES:
1. SAFETY SWITCHES, FUSIBLE HEAVY DUTY.

METER CENTER:
1. WHERE REQUIRED, METER MUST BE APPROVED BY LOCAL UTILITY.

WIRING DEVICES:
1. PROVIDE SPECIFICATION GRADE WIRING DEVICES OF 20 AMP RATING MINIMUM. AS REQUIRED ON THE PLANS. SWITCHES SHALL BE QUIET TYPE.
2. SWITCHES, WHERE REQUIRED SHALL BE MOUNTED ON THE STRIKE SIDE OF DOORS AS FINALLY HUNG.
3. DEVICES SHALL HAVE SMOOTH NYLON PLATE-FIT & TYPE AS REQUIRED BY DEVICE. OUTLETS WITHOUT DEVICES, EXCEPT TELEPHONE, TO HAVE BLANK PLATES. FASTEN PLATES IN PLACE BY OVAL, HEAD, SCREWS MATCHING PLATE.

PUBLIC ANNOUNCEMENT SYSTEM:
1. PUBLIC ANNOUNCEMENT SYSTEM SHALL BE WIRED FOR THE FOLLOWING ZONES:
   A. ZONE 1 - CLASSROOMS
   B. ZONE 2 - CORRIDOR
   C. ZONE 3 - PLAYGROUND
   D. ZONE 4 - MULTI-PURPOSE ROOM
2. CONTRACTOR IS RESPONSIBLE FOR FULL SYSTEM INCLUNDING ALL WIRING,TERMINATIONS,PLUGS, PLATES AND MATERIALS.

VOICE/DATA, TELEPHONE, CCTV, SECURITY:
1. SEE PROJECT MANUAL FOR SPECIFICATIONS.
2. GC'S LOW-VOLTAGE (VOICE/DATA,TELEPHONE,CCTV,SECURITY) CONTRACTOR TO PROVIDE WIRING, TERMINATION, PLUGS, PLATES, & MATERIALS NEEDED TO PROVIDE A FULLY FUNCTIONING SYSTEM.
3. CONTRACTOR SHALL TERMINATE ALL CABLING TO I.T. CLOSET.

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ARMEN KHACHATURIAN, P.E. – FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

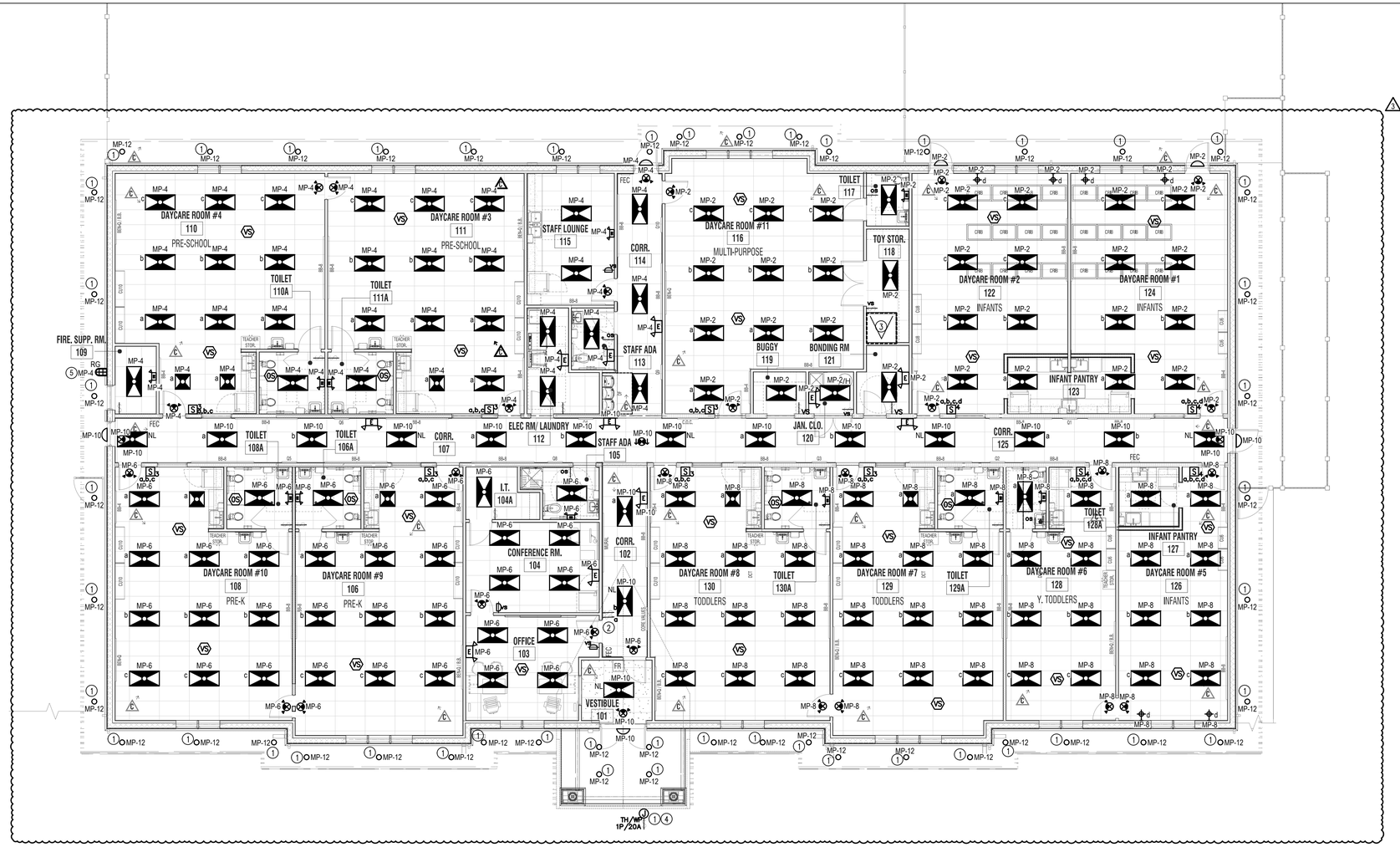
SHEET TITLE:

ELECTRICAL ATTIC POWER PLAN

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-102



ELECTRICAL FIRST FLOOR LIGHTING PLAN

SCALE: ⅛" = 1'-0"

LIGHTING GENERAL NOTES

1.	THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
2.	PROVIDE AN UN-SWITCHED HOT LEG TO ALL NIGHT LIGHT, EMERGENCY AND EXIT FIXTURES. ALL EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL BE WIRED LIGHTS AND SHOULD BE WIRED AS 'NL' (NIGHT LIGHT).
3.	EACH SPACE THAT IS ENCLOSED BY CEILING-HEIGHT PARTITIONS MUST HAVE AT LEAST ONE CONTROL DEVICE THAT INDEPENDENTLY CONTROLS THE GENERAL LIGHTING IN THE SPACE. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATIONS OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM.
4.	ALL OUTDOOR AND INDOOR LIGHTING FIXTURES SHALL BE CONNECTED TO PANELS AS PER CIRCUIT NUMBERS ON DRAWINGS.
5.	CONTRACTOR SHALL LOCATE VACANCY SENSOR WITH OVERRIDE WALL SWITCH AT HEIGHT AND LOCATION BEST SUITED FOR OPTIMUM PERFORMANCE. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN.
6.	ANY ACCESS/MAINTENANCE DOORS IN CEILING SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, ELECTRICAL CONDUITS/WIRES, OR OTHER HARD TO REMOVE OBJECTS. AT LEAST ONE SWITCH SHALL BE LOCATED AT THE USUAL POINT OF ENTRY AND EXIT OR AS REQUIRED BY CODE.
7.	EMERGENCY WALL PACK FIXTURES SHALL BE CONNECTED TO CIRCUIT SERVING FIXTURES LOCAL TO AREA.
8.	CONTRACTOR SHALL COORDINATE ANY CHANGES OR MODIFICATIONS TO THE PLANS WITH BOTH THE ARCHITECT/ENGINEER & OWNER.

ADDITIONAL LIGHTING COORDINATION NOTE:

THE NUMBER OF LIGHTING ZONES IN EACH CLASSROOM CORRESPONDS THE NUMBER OF BZ-150 POWERPACKS REQUIRED PER CLASSROOM. POWERPACKS TO BE PLACED ABOVE CEILING IN CLASSROOMS. REFER TO LIGHTING CONTROL DIAGRAM ON DRAWING E-402 FOR FURTHER COORDINATION AND DEVICES REQUIRED.

LIGHTING KEY NOTES

1	EXTERIOR LIGHTING AND SIGNAGE SHALL BE CONTROLLED VIA PHOTOCELL AND ALSO TIME SCHEDULE. SIGNAGE LIGHTING MUST BE SHUT OFF FROM THE HOURS OF MIDNIGHT TO 6AM. FINAL OPERATION SCHEDULE TO BE COORDINATED WITH LIGHTBRIDGE ACADEMY. COORDINATE EXACT LOCATION OF EXTERIOR SIGNAGE PRIOR TO BID AND INSTALLATION.
2	EC TO FURNISH AND INSTALL MOMENTARY SWITCHES (WATTSTOPPER DCC2 W/BZ-150 POWERPACK OR APPROVED EQUAL) FOR CORRIDOR LIGHTING.
3	NO PIPES, DUCT, WIRES TO BE INSTALLED ABOVE CEILING IN THIS AREA.
4	COORDINATE EXACT LOCATION OF SIGNAGE WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
5	JELLY JAR FIXTURE TO BE FITTED WITH RED GLOBE AND MOUNTED LOCAL TO FDC. FIRE DEPARTMENT CONNECTION, FINAL LOCATION T.B.D BY AUTHORITY HAVING JURISDICTION.

LIGHTING CONTROL NARRATIVE:

OPEN AREAS/CORRIDORS (TIME CONTROLLED):
1. CONTROLLED VIA TIME SCHEDULE LIGHTING CONTROL PANEL/CONTACTOR.
2. PROVIDE LOCAL MANUAL ON/OFF SWITCH DOWNSTREAM OF AUTOMATIC RELAYS.

CLASSROOMS/CLOSETS/STORAGE/OFFICE (VACANCY SENSOR CONTROLLED):
1. CONTROLLED VIA OCCUPANCY SENSORS IN VACANCY MODE.
2. MANUAL ON/AUTOMATIC OFF. 20-MINUTE OFF SETTING
3. PROVIDE LOCAL OVERRIDE SWITCH.

RESTROOMS (OCCUPANCY SENSOR CONTROLLED):
1. CONTROLLED VIA OCCUPANCY SENSORS.
2. AUTOMATIC ON/AUTOMATIC OFF. 15-MINUTE OFF SETTING

PROVIDE LOCAL OVERRIDE

UTILITY ROOMS (MANUALLY ON/OFF):
1. CONTROLLED VIA LOCAL MANUAL ON/OFF SWITCH

EXTERIOR SITE LIGHTING: (TIME CONTROLLED)
1. CONTROLLED PHOTOCELL ON AND TIME SCHEDULE OFF. COORDINATE WITH OWNER FOR SCHEDULE.

PROVIDE SYSTEM OVERRIDE SWITCH. MAXIMUM OVERRIDE 2HRS.

LIGHTING FIXTURE SCHEDULE

SYMBOL	ID	DESCRIPTION	MANF.	MODEL	LAMPS NO.	LAMPS TYPE	VOLTS	WATTS	MOUNTING	REMARKS
	F1	2X4 LED RECESSED TROFFER LIGHT FIXTURE	LITHONIA LIGHTING	2BLT4-30L-ADP-120-MP850	1	LED	120V	30W	RECESSED	FIXTURES TAGGED WITH "NL" SHALL BE WIRED AS A NIGHT LIGHT.
	F2	2X2 LED RECESSED TROFFER LIGHT FIXTURE	LITHONIA LIGHTING	2BLT2-33L-ADP-120-MP850	1	LED	120V	30W	RECESSED	FIXTURES TAGGED WITH "NL" SHALL BE WIRED AS A NIGHT LIGHT.
	F3	COMBINATION EXIT AND EMERGENCY LED LIGHTING FIXTURE	LITHONIA LIGHTING	ECR-LED-M6	2	LED	120-277V	4.3	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP
	F4	LED EXIT SIGN	LITHONIA LIGHTING	EXR-LED-M6	N/A	LED	120-277V	3.3	SURFACE	ARROWS DENOTE DIRECTIONAL FIXTURE AS NEEDED.PROVIDE 90 MINUTE BATTERY BACK UP
	F5	EXTERIOR EMERGENCY FIXTURE	LITHONIA LIGHTING	AFF-OEL-UVOLT-LTP-FCT-CW	1	LED	120-277V	15W	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP WITH COLD WEATHER OPTION.
	F6	INTERIOR SURFACE MOUNTED WALL FIXTURE	KICHLER SHAILENE	45572OZ	1	LED	120V	10W	WALL	USE 60W LED EQUIVALENT BULB. 2700K. TO BE MOUNTED AT 72" AFF. OLDE BRONZE FINISH.
	F8	6" RECESSED DOWNLIGHT	PRESCOLITE	LF6LEDG4-6LFLED6G435KWT	1	LED	120-277V	19.1	RECESSED	
	F9	EMERGENCY LED LIGHTING FIXTURE	LITHONIA LIGHTING	ELM6L LTP LED	2	LED	120-277V	10.6	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP
	F10	CUPOLA STRIP LIGHTING	AMERICAN LIGHTING	MINI-P2-NF	-	LED	120V	2.4W/FT	SURFACE	CUPOLA LIGHTING CONTROLLED VIA PHOTOCELL AND TIMECLOCK.
	F11	4' GENERAL PURPOSE STRIP LIGHT	COLUMBIA	MPS4-40ML-CW-EDU	-	LED	120-277V	40.1	SURFACE	-
RG	F12	JELLY JAR FIXTURE (WEATHERPROOF)	LITHONIA LIGHTING	OLVTWM	1	LED	120-277V	15W	WALL	PROVIDE RED GLOBE FIXTURE

LIGHTING FIXTURE SCHEDULE NOTES:
1. FIXTURES RATED FOR A HIGHER MAXIMUM WATTAGE SHALL BE FURNISHED WITH A CUSTOM MAXIMUM WATTAGE LABEL FROM THE MANUFACTURER. THE LABEL SHALL LIST THE MAXIMUM WATTAGE SHOWN IN THIS FIXTURE SCHEDULE.
2. REFER TO ARCHITECTURAL DRAWINGS FOR FINAL LIGHTING FIXTURE SCHEDULES AND EXACT FIXTURE LOCATIONS.
3. ALL COLORS, TRIMS, AND FINISHES SHALL BE APPROVED BY ARCHITECT.

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	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
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DRAWN BY: GS/SS/LG
CHECKED BY: AK

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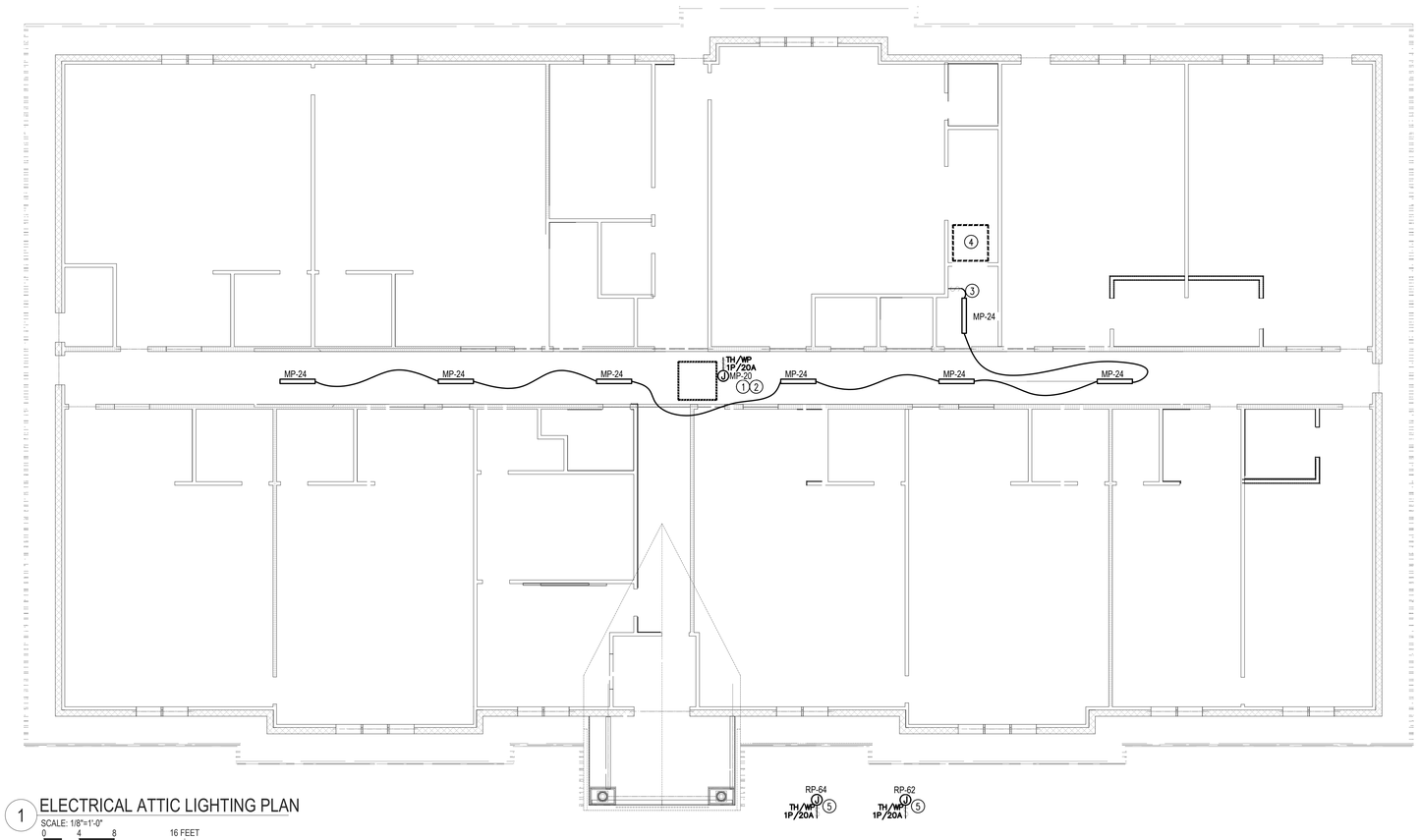
E-201



1 ELECTRICAL ATTIC LIGHTING PLAN

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

0 4 8 16 FEET

LIGHTING GENERAL NOTES

1.	THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
2.	PROVIDE AN UN-SWITCHED HOT LEG TO ALL NIGHT LIGHT, EMERGENCY AND EXIT FIXTURES. ALL EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL BE WIRED LIGHTS AND SHOULD BE WIRED AS 'NL' (NIGHT LIGHT).
3.	EACH SPACE THAT IS ENCLOSED BY CEILING-HEIGHT PARTITIONS MUST HAVE AT LEAST ONE CONTROL DEVICE THAT INDEPENDENTLY CONTROLS THE GENERAL LIGHTING IN THE SPACE. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATIONS OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM.
4.	ALL OUTDOOR AND INDOOR LIGHTING FIXTURES SHALL BE CONNECTED TO PANELS AS PER CIRCUIT NUMBERS ON DRAWINGS.
5.	CONTRACTOR SHALL LOCATE VACANCY SENSOR WITH OVERRIDE WALL SWITCH AT HEIGHT AND LOCATION BEST SUITED FOR OPTIMUM PERFORMANCE. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN.
6.	ANY ACCESS/MAINTENANCE DOORS IN CEILING SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, ELECTRICAL CONDUITS/WIRES, OR OTHER HARD TO REMOVE OBJECTS. AT LEAST ONE SWITCH SHALL BE LOCATED AT THE USUAL POINT OF ENTRY AND EXIT OR AS REQUIRED BY CODE.
7.	EMERGENCY WALL PACK FIXTURES SHALL BE CONNECTED TO CIRCUIT SERVING FIXTURES LOCAL TO AREA.
8.	CONTRACTOR SHALL COORDINATE ANY CHANGES OR MODIFICATIONS TO THE PLANS WITH BOTH THE ARCHITECT/ENGINEER & OWNER.

LIGHTING KEY NOTES

1	CUPOLA LIGHTING SHALL BE CONTROLLED VIA PHOTOCELL AND ALSO TIME SCHEDULE. COORDINATE EXACT LOCATION OF CUPOLA LIGHTING PRIOR TO BID AND INSTALLATION.
2	POWER FOR CUPOLA LIGHTING TO BE LOCATED ON ROOF ABOVE, COORDINATE EXACT SPECIFICATIONS AND FIXTURE LENGTH WITH OWNER/MANUFACTURER PRIOR TO BID AND INSTALLATION
3	SWITCH FOR ATTIC LIGHTING SHALL BE LOCATED NEXT TO ATTIC ACCESS HATCH. SWITCH MAY BE LOCATED IN TOY STORAGE ROOM FOR CONVENIENCE IF APPROVED BY ARCH/OWNER. REMOTE SWITCHES SHALL BE FURNISHED WITH PILOT LIGHT. FINAL LOCATION OF SWITCH SHALL BE COORDINATED IN FIELD.
4	ATTIC ACCESS. NO PIPES, DUCT, WIRES TO BE INSTALLED BELOW FLOOR IN THIS AREA.
5	EXTERIOR MONUMENT SIGN AND SITE LIGHTING SHALL BE CONTROLLED VIA PHOTOCELL AND ALSO TIME SCHEDULE. MONUMENT SIGNAGE LIGHTING MUST BE SHUT OFF FROM THE HOURS OF MIDNIGHT TO 6AM. SITE LIGHTING FINAL OPERATION SCHEDULE TO BE COORDINATED WITH LIGHTBRIDGE ACADEMY. COORDINATE EXACT LOCATION OF EXTERIOR MONUMENT SIGNAGE PRIOR TO BID AND INSTALLATION. CIRCUITS SHOWN FOR REFRENCE SEE SITE LIGHTING PLANS SHOWN ON CIVIL DRAWINGS FOR EXACT LOCATIONS AND QUANTITY OF FIXTURES.

LIGHTING FIXTURE SCHEDULE

SYMBOL	ID	DESCRIPTION	MANF.	MODEL	LAMPS NO.	LAMPS TYPE	VOLTS	WATTS	MOUNTING	REMARKS
	F1	2X4 LED RECESSED TROFFER LIGHT FIXTURE	LITHONIA LIGHTING	2BLT4-30L-ADP-120-MP850	1	LED	120V	30W	RECESSED	FIXTURES TAGGED WITH "NL" SHALL BE WIRED AS A NIGHT LIGHT.
	F2	2X2 LED RECESSED TROFFER LIGHT FIXTURE	LITHONIA LIGHTING	2BLT2-33L-ADP-120-MP850	1	LED	120V	30W	RECESSED	FIXTURES TAGGED WITH "NL" SHALL BE WIRED AS A NIGHT LIGHT.
	F3	COMBINATION EXIT AND EMERGENCY LED LIGHTING FIXTURE	LITHONIA LIGHTING	ECR-LED-M6	2	LED	120-277V	4.3	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP
	F4	LED EXIT SIGN	LITHONIA LIGHTING	EXR-LED-M6	N/A	LED	120-277V	3.3	SURFACE	ARROWS DENOTE DIRECTIONAL FIXTURE AS NEEDED.PROVIDE 90 MINUTE BATTERY BACK UP
	F5	EXTERIOR EMERGENCY FIXTURE	LITHONIA LIGHTING	AFF-OEL-UVOLT-LTP-FCT-CW	1	LED	120-277V	15W	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP WITH COLD WEATHER OPTION.
	F6	INTERIOR SURFACE MOUNTED WALL FIXTURE	KICHLER SHAILENE	45572OZ	1	LED	120V	10W	WALL	USE 60W LED EQUIVALENT BULB. 2700K. TO BE MOUNTED AT 72" AFF. OLDE BRONZE FINISH.
	F8	6" RECESSED DOWNLIGHT	PRESCOLITE	LF6LEDG4-6LFLED6G435KWT	1	LED	120-277V	19.1	RECESSED	
	F9	EMERGENCY LED LIGHTING FIXTURE	LITHONIA LIGHTING	ELM6L LTP LED	2	LED	120-277V	10.6	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP
	F10	CUPOLA STRIP LIGHTING	AMERICAN LIGHTING	MINI-P2-NF	-	LED	120V	2.4W/FT	SURFACE	CUPOLA LIGHTING CONTROLLED VIA PHOTOCELL AND TIMECLOCK.
	F11	4' GENERAL PURPOSE STRIP LIGHT	COLUMBIA	MPS4-40ML-CW-EDU	-	LED	120-277V	40.1	SURFACE	-
RG	F12	JELLY JAR FIXTURE (WEATHERPROOF)	LITHONIA LIGHTING	OLVTWM	1	LED	120-277V	15W	WALL	PROVIDE RED GLOBE FIXTURE

LIGHTING FIXTURE SCHEDULE NOTES:
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FOLIO: 004339-0100
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ELECTRICAL ATTIC LIGHTING PLAN

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-202

ELECTRICAL SPECIFICATIONS

1. GENERAL:

A. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL INTENT. ROUTING OF CONDUITS SHOWN IS DIAGRAMMATIC AND DOES NOT INCLUDE ALL OFFSETS, DROPS, PULL, JUNCTION AND CABLE SUPPORT BOXES AND RUNS. THIS CONTRACTOR SHALL INCLUDE ALL COSTS FOR MATERIAL AND LABOR ASSOCIATED WITH ROUTING OF CONDUITS TO AVOID OBSTRUCTIONS. COORDINATE FIELD CONDITIONS ASSOCIATED WITH EXISTING SERVICES, INCLUDING COORDINATION WITH OTHER TRADES AND THE OWNER. HEADROOM AND WORKING SPACE CLEARANCES SHALL BE MAINTAINED AS REQUIRED BY APPLICABLE CODES AND LOCAL AUTHORITIES HAVING JURISDICTION.

B. THIS CONTRACTOR'S WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: FURNISHING AND INSTALLATION OF ALL ELECTRICAL WORK, INCLUDING ELECTRICAL AND COMMUNICATIONS OUTLETS IN WALLS, FLOORS AND CEILINGS, LIGHTING FIXTURES WITH LAMPS, SWITCHES, DIMMERS, EMERGENCY BATTERY UNITS, ETC., AND ASSOCIATED BRANCH CIRCUIT WIRING, DISCONNECT SWITCHES, SPECIAL RECEPTACLES, ETC.

C. ALL SPECIAL EQUIPMENT, SUCH AS FANS, AIR CONDITIONING UNITS, COPIERS, ETC. WILL BE FURNISHED BY OTHERS (U.O.N.). WHERE EQUIPMENT REQUIRES PERMANENT CONNECTIONS, THESE CONNECTIONS SHALL BE PROVIDED WITH APPROPRIATE DISCONNECTING MEANS.

D. ALL APPLICABLE CODES, REGULATIONS AND LOCAL LAWS SHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. PRIOR TO SUBMITTING A PROPOSAL, CONTRACTOR SHALL NOTIFY THE OWNER OF ANY WORK OR MATERIAL WHICH IS NOT IN COMPLIANCE WITH ANY OF THE APPLICABLE LAWS AND REGULATIONS. ANY WORK PERFOREMED BY THE CONTRACTOR WITHOUT SUCH COORDINATION SHALL BE CORRECTED BY THE CONTRACTOR WITHOUT EXTRA COST TO THE OWNER.

E. VERIFY REQURIED SPACE CONDITIONS FOR EVERY PIECE OF THE EQUIPMENT. EQUIPMENT MAY NEED TO BE ASSEMBLED IN PLACE WHERE NECESSARY TO FIT WITHIN ACCESS CONSTRAINS

F. REFER TO FLOOR PLANS, DETAILS, SCHEDULES, AND DIAGRAMS FOR LOCATION OF THE EQUIPMENT. WHERE DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS OCCUR, PROVIDE GREATER NUMBER OF EACH QUANTITY OR SIZE.

G. EQUIPMENT SHALL BE INSTALLED TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR.

H. KEEP ALL EQUIPMENT AND MATERIALS OUT OF THE BUILDING EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS. CONSTRUCTION SITE SHALL BE KEPT FREE FROM DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK.

I. ALL OPENINGS AND PENETRATIONS SHALL BE PROPERLY SEALED.

J. WATERPROOFING INTEGRITY OF THE BUILDING SHALL BE MAINTAINED. ALL ROOFING WORK SHALL BE COORDINATED WITH ROOFING COMPANY RETAINED BY THIS CONTRACTOR.

K. PROVIDE 4-INCH HIGH CONCRETE PADS FOR FREE STANDING EQUIPMENT. EQUIPMENT PADS SHALL EXTEND 3" BYOND THE FOOTPRINT FO THE EQUIPMENT.

L. THE CONTRACTOR SHALL PROVIDE BID BASED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHERE NOTED OTHERWISE AND AS DIRECTED BY THE OWNER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

M. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND CONFORM TO NEMA, ANSI AND IEEE STANDARDS. EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) FOR INTENDED USE. REFURBISHED OR RECONDITIONED EQUIPMENT SHALL NOT BE USED.

N. ALL ELECTRICAL EQUIPMENT SHALL BE COMPLY WITH ANSI C84 REQUIREMENTS.

O. SUBMISSION OF A PROPOSAL SHALL BE INTERPRETED AS A PROOF THAT A CAREFUL EXAMINATION OF THE BUILDING, EQUIPMENT, ETC., INCLUDING THE ACCESS TO ALL AFFECTED SPACES HAVE BEEN MADE, AND THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND OBSTACLES THAT MAY IMPACT THE EXECUTION OF THE WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE DESIGN TEAM OF ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND FIELD CONDITIONS PRIOR TO SUBMITTAL OF THE BID. OWNER SHALL NOT BARE THE ADDITIONAL COST RESULTING FROM FAILURE OF PROPER EVALUATION OF THE EXISTING CONDITIONS.

P. FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING AS REQUIRED BY OWNER. INSURANCE COVERAGE SHALL BE PROVIDED IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

Q. ALL WORK SHALL BE PERFORMED AS DIRECTED BY THE CLIENT AND IN A MANNER ACCEPTABLE TO THE BUILDING OWNER. WORK SHALL BE EXECUTED TO MINIMIZE INCONVENIENCE OR DISTURBANCE TO ADJACENT PROPERTIES AND OCCUPANTS.

R. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS TESTED ALL SYSTEMS, ADJUSTED EQUIPMENT AND PROVIDED A PROOF THAT ALL REQUIRED FINAL MODIFICATIONS ARE MADE TO FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTIONS AND APPROVALS.

2. SCOPE OF WORK:

A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN COMPLIANCE WITH ALL APPLICABLE CODES.

B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS ARE MADE PART OF THIS CONTRACT SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.

C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO PROMPTLY REPLACE OR REPAIR, AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED, FOR ANY WORKMANSHIP IN WHICH DEFECTS DEVELOP WITHIN 2 YEARS FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL COMMENCE AS DIRECTED BY THE OWNER. ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK INCLUDING WORK BY OTHER TRADES AFFECTED BY THE DEFECTS, SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL AUTHORITIES HAVING JURISDICTION INCLUDING BUT NOT LIMITED TO THE BUILDING DEPARTMENT AND FIRE DEPARTMENT, OBTAIN PERMITS AND LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL ASSOCIATED FEES. THE CONTRACTOR SHALL ARRANGE FOR INSPECTIONS AND TESTS OF ALL WORK AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION AND PAY ALL FEES ASSOCIATED WITH SAME. THE CONTRACTOR SHALL FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES AND PERMIT SIGN-OFFS AS EVIDENCE OF COMPLETION AND ACCEPTANCE BY THE AUTHORITIES HAVING JURISDICTION.

E. ALL WORK SHALL BE DONE IN CONFORMANCE WITH ALL GOVERNING CODES, INCLUDING AMENDMENTS, BULLETINS, ETC., AS WELL AS STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER.

F. THE CONTRACTOR AGREES THAT HE AND HIS SUBCONTRACTORS, AGENTS, AND EMPLOYEES WILL PROVIDE AND MAINTAIN A SAFE PLACE TO WORK AND THAT HE AND THEY WILL COMPLY WITH ALL LAWS AND REGULATIONS OF ANY GOVERNMENTAL AUTHORITY HAVING JURISDICTION THEREOF AND THE CONTRACTOR AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE OR EXPENSE, INCLUDING ATTORNEY'S FEES ARISING FROM FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, HIS SUBCONTRACTORS AND HIS AND THEIR AGENTS, SERVANTS AND EMPLOYEES TO PROVIDE AND MAINTAIN A SAFE PLACE TO WORK OR TO COMPLY WITH ALL LAWS AND REGULATIONS OF ANY GOVERNMENTAL AUTHORITY HAVING JURISDICTION THEREOF.

G. THE CONTRACTOR AND EACH SUBCONTRACTOR AGREE TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE CONSULTING ENGINEER, ARCHITECT AND OWNER FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE OR EXPENSE, INCLUDING ATTORNEY'S FEES ARISING FROM A FAILURE OR ALLEGED FAILURE ON THE PART OF THE CONTRACTOR, HIS SUBCONTRACTORS, AGENTS AND EMPLOYEES PROPERLY TO DISCHARGE THE OBLIGATIONS ASSUMED BY HIM OR THEM IN THE PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH OR PERSONAL INJURY OR PROPERTY DAMAGE OR IMPROPER CONSTRUCTION, CONSTRUCTION TECHNIQUES OR THE USE OF IMPROPER OR INAPPROPRIATE MATERIAL OR TOOLS.

H. THE CONTRACTOR AGREES THAT ANY CONTROVERSY OR DISPUTE TO WHICH THE CONTRACTOR, THE ARCHITECT, AND THE CONSULTING ENGINEERS ARE PARTIES SHALL BE SUBMITTED TO ARBITRATION FOR DECISION IN ACCORDANCE WITH THE RULES OF SUCH ASSOCIATION FOR CONSTRUCTION INDUSTRY DISPUTES. ALL SUBCONTRACTORS LIKEWISE AGREE TO SUBMIT TO SUCH ARBITRATION ANY DISPUTE BETWEEN OR AMONG THEM, THE CONTRACTOR, THE ARCHITECT AND THE CONSULTING ENGINEERS, AND THE CONTRACTOR AGREES TO MAKE AVAILABLE TO THE CONSULTING ENGINEERS ON DEMAND SIGNED COPIES OF THE CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR AND BETWEEN THE CONTRACTOR AND HIS SUBCONTRACTORS. THE CONTRACTOR AND EACH SUBCONTRACTOR AGREE THAT BY SUBMITTING A BID WHICH IS ACCEPTED, THIS PARAGRAPH SHALL BE DEEMED A WRITTEN AGREEMENT TO SUBMIT ANY CONTROVERSY THEREAFTER ARISING ARBITRATION.

I. EXECUTE THE WORK IN THE BEST AND MOST THOROUGH MANNER & TO THE SATISFACTION OF THE CONSULTING ENGINEER, WHO WILL INTERPRET THE MEANING OF THE DRAWINGS AND SPECIFICATIONS AND SHALL HAVE THE POWER TO REJECT ANY WORK AND MATERIALS WHICH, IN THEIR JUDGMENT, ARE NOT IN FULL ACCORDANCE THEREWITH.

J. EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE CONSULTING ENGINEERS, IN ACCORDANCE WITH ALTERNATES OF OPTIONS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS, COMPLETE IN EVERY WAY AND READY FOR SATISFACTORY AND EFFICIENT OPERATION WHEN DELIVERED TO THE OWNER.

K. WHERE DISAGREEMENTS OCCUR BETWEEN THE PLANS AND THE SPECIFICATIONS, OR WITHIN EITHER DOCUMENT ITSELF, THE ITEM OR ARRANGEMENT OF BETTER QUALITY, GREATER QUANTITY OR HIGHER COST SHALL BE INCLUDED IN THE BASE BID.

L. THE DRAWINGS SHOW THE VARIOUS CONDUIT AND PIPING SYSTEMS SCHEMATICALLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY JUNCTION BOXES, PULL BOXES, SUPPORT AND ACCESSORIES TO MEET APPLICABLE CODES, BUILDING STANDARDS AND FULFILL CONTRACT DOCUMENTS. NO ADDED COMPENSATION WILL BE PERMITTED FOR VARIATIONS DUE TO FIELD CONDITIONS.

3. SHOP DRAWINGS

A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS INDICATING CAPACITY, WIRING, LAYOUT, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

B. ANY WORK OR EQUIPMENT INSTALLED PRIOR TO REVIEW OF SHOP DRAWINGS AND FOUND TO BE UNACCEPTABLE SHALL BE REMOVED AND MODIFIED AT THE CONTRACTOR'S SOLE EXPENSE INCLUDING ANY RESULTANT SCHEDULING DELAYS EXPERIENCED BY ANY TRADE.

C. THE ARCHITECT'S AND/OR ENGINEER'S REVIEW SHALL NOT BE CONSTRUED AS A COMPLETE OR DETAILED CHECK OF THE WORK SUBMITTED, NOR SHALL IT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS AND SAMPLES, OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH MAY HAVE BEEN OMITTED FROM SHOP DRAWING SUBMITTALS.

D. THE REVIEW OF A SEPARATE ITEM SHALL NOT INDICATE REVIEW OF THE COMPLETE ASSEMBLY IN WHICH IT FUNCTIONS.

E. ARCHITECT'S AND/OR ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES SHALL NOT BE CONSIDERED AS AUTHORIZING:
1) DEPARTURE FROM CONTRACT DOCUMENTS OR SPECIFICATIONS
2) ADDITIONAL COST TO THE OWNER
3) INCREASED TIME FOR COMPLETION OF THE WORK.

F. NO PART OF THE WORK SHALL BE STARTED UNTIL THE ARCHITECT AND/OR ENGINEER HAS REVIEWED AND APPROVED THE SHOP DRAWINGS AND SAMPLES FOR THAT PORTION OF THE WORK. THEREAFTER, THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE INDICATED STATUS OF THE REVIEWED SHOP DRAWING.

G. SUBMIT SAMPLES FOR REVIEW WHEN REQUESTED BY THE ARCHITECT AND/OR ENGINEER.

H. PROVIDE OPERATIONS AND MAINTENANCE MANUALS FOR ALL EQUIPMENT AND MATERIALS.

I. SUBMISSIONS:

1) ALL SUBMITTALS SHALL BE IN ELECTRONIC FORMAT. ALL CATALOG CUTS SHALL BE PROJECT SPECIFIC AND COMPLETE WITH ALL OPTIONS, DETAILS, MANUFACTURER NAMES, MODEL NUMBERS AND PARTS CLEARLY IDENTIFIED. GENERIC SHOP DRAWINGS WILL BE REJECTED.

J. SUBMIT SHOP DRAWINGS AND WIRING DIAGRAMS FOR THE FOLLOWING BUT NOT LIMITED TO (AS APPLICABLE):

1) OCCUPANCY AND VACANCY SENSORS, DAYLIGHT SENSORS, ETC.
2) DISCONNECT SWITCHES
3) FUSES
4) CIRCUIT BREAKERS
5) SWITCHGEAR, SWITCHBOARD, DISTRIBUTION, LIGHTING AND APPLIANCE PANELBOARD DRAWINGS (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).
6) RACEWAYS
7) WIRE AND CABLE
8) WALL SWITCHES AND DIMMERS
9) RECEPTACLES
10) CONTACTORS AND MOMENTARY CONTACT SWITCHES
11) LIGHTING FIXTURES, INCLUDING EXIT SIGNS AND SIGNAGE
12) FIRE ALARM SYSTEM EQUIPMENT, DEVICES, FLOOR PLANS, WIRING DIAGRAMS AND OPERATION MATRIX
13) LIGHTING DIMMING AND CONTROL SYSTEMS
14) METERING
15) TEST PROCEDURES AND REPORTS
16) SPD

4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

A. PREPARE AND FURNISH TO OWNER "AS BUILT" PLANS FOR ALL WORK INSTALLED. PROVIDE PDF AND ACAD FILES COMPLETED IN THE LATEST VERSION OF AUTOCAD. ALL DRAWINGS SHALL BE IN A STYLE SIMILAR WITH THE ENGINEERING DESIGN. THE ENGINEERING DESIGN CAD DRAWINGS OR BACKGROUNDS WILL BE FURNISHED FOR USE TO THIS CONTRACTOR FOR THE PURPOSE OF THIS SUBMISSION (SUBMIT ACAD INDEMNIFICATION AGREEMENT).

B. DURING CONSTRUCTION, KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK AS SHOWN ON DRAWINGS AND THAT WHICH IS ACTUALLY INSTALLED. THIS RECORD SET OF PRINTS SHALL BE KEPT AT JOB SITE FOR INSPECTION.

C. FINAL PAYMENT WILL BE WITHHELD UNTIL COMPLETION OF "AS-BUILT" DRAWINGS.

D. AS-BUILT DRAWINGS SHALL CONTAIN EXACT ROUTING AND ELEVATIONS OF ALL CONDUIT BANKS, ACTUAL PANELBOARD CIRCUIT BREAKER POLE POSITIONS USED FOR EACH CIRCUIT, AND EXACT LOCATION OF ALL EQUIPMENT. ALL DIMENSIONS SHALL BE REFERENCED TO BUILDING STRUCTURE CENTERLINES.

5. INSPECTIONS / TESTING

A. THIS CONTRACTOR WHO SHALL RETAIN SERVICES OF MANUFACTURER'S AUTHORIZED ACCREDITED REPRESENTATIVE OR INDEPENDENT 3RD PARTY TESTING AGENCY FOR INSPECTIONS AND SYSTEMS START-UP.

B. AFTER THE INSTALLATION OF THE ELECTRICAL WORK IS COMPLETE AND AT SUCH TIME AS THE OWNER MAY DIRECT, THE CONTRACTOR SHALL CONDUCT AN OPERATING TEST FOR APPROVAL. THE INSTALLATION SHALL BE DEMONSTRATED TO OPERATE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND PERSONNEL REQUIRED FOR TEST AND THE OWNER WILL FURNISH THE NECESSARY ELECTRICAL POWER.

C. THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO OBTAIN APPROVALS FROM THE ENGINEER AND THE INSPECTING AUTHORITIES WITHOUT ADDITIONAL COST TO THE OWNER.

6. GENERAL PROVISIONS FOR ELECTRICAL WORK

A. DEFINITIONS:

1) "PROVIDE": TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
3) "FURNISH": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
5) "WIRING": RACEWAY, FITTINGS, WIRE, WIRING CONNECTIONS, BOXES AND RELATED ITEMS.
6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
9) "CIRCUIT" INCLUDES, BUT IS NOT LIMITED TO, PROVIDING CONDUIT, WIRE, JUNCTION BOXES, DISCONNECTS AND MAKING CONNECTIONS AS REQUIRED FOR FULLY OPERATIONAL SYSTEM

B. GENERAL

1) THE DRAWINGS SHOW THE APPROXIMATE LOCATION OF ALL EQUIPMENT. THE EXACT LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER AND ARCHITECT WHO RESERVE THE RIGHTS TO MAKE MINOR CHANGES WITHOUT EXTRA COST. DESIGN INTENT SHOWN FOR ROUTING OF CONDUITS MAY BE MODIFIED TO ACCOMMODATE CONSTRUCTION CONDITIONS AND LIMITATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL COSTS IMPLICATIONS ASSOCIATED WITH UTILIZING SUBSTITUTE MANUFACTURERS IN ORDER TO ACCOMMODATE POSSIBLE PHYSICAL SIZE OR ELECTRIAL CONFIGURATION REQUIREMENTS.
2) THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED BENDS, OFFSETS, PULLBOXES, JUNCTION BOXES AND CABLE SUPPORT BOXES. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH OTHER TRADES.
3) THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ALL TRADES AS IT RELATES TO THE EXECUTION OF WORK AS REQUIRED TO MAINTAIN HEADROOM, CLEARANCES, CEILING HEIGHTS, ACCESS, OPENINGS AND PASSAGEWAYS. NO CLAIMS FOR EXTRAS COST ASSOCIATED WITH RESOLVING THE CONFLICTS WILL BE ACCEPTED FOR WORK THAT WAS EXECUTED PRIOR TO FORMAL APPROVAL.
4) WIRE ALL FIXTURES, DEVICES, OUTLETS, ETC., TO PANELS AND CONTROLS AS SHOWN IN CONRACT DOCUMENTS.
5) POWER DISTRIBUTION SYSTEM EQUIPMENT AND ASSOCIATED WIRING OF DIFFERENT VOLTAGE SYSTEMS, INCLUDING CONTROL WIRING, SHALL BE SEPARATED.
6) LOCATIONS INDICATED FOR WALL SWITCHES CEILING MOUNTED LIGHTING CONTROL DEVICES ARE SUBJECT TO COORDINATION WITH ARCHITECT AND/OR OWNER.
7) WALL MOUNTED ELECTRICAL WIRING FURRING AND FIREPROOFING SHALL BE COORDINATED WITH ARCHTECT. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH AND BE SECURED TO WALL CONSTRUCTION. PROVIDE LISTED BARRIERS/DIVIDERS BETWEEN NORMAL AND EMERGENCY POWER WIRING WHEN NORMAL AND EMEGENCY DEVICES ARE INSTALLED IN A COMMON OUTLET BOX.
8) CONCEAL BOXES IN FINISHED SPACES AND PROVIDE CODE REQUIRED ACCESS.
9) PROVIDE FLOOR-TO-CEILING CHANNELS FOR REQIRED SUPPORT.
10) CEILING RECESSED OUTLET BOXES SHALL BE ACCESSIBLE BY FIXTURE REMOVAL. SECURE TO BLACK IRON SUPPORT OR BUILDING STRUCTURE.
11) COORDINATE MOTOR BRANCH CIRCUIT WIRING AND PROVIDE REQUIRED BACK BOXES.

C. PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS WITHIN THE CONSTRUCTION SPACES FOR ALL TRADES. COORDINATE EXACT REQUIREMENTS WITH GENERAL CONTRACTOR OR CONSTRUCTION MANAGER. PROVIDE REQUIRED MAINTENANCE, INCLUDING REPLACMENT OF DEFECTIVE DEVICES AND DAMAGED OR BURNED-OUT LAMPS AND SOCKETS.

1) ALL RECEPTACLES SHALL BE GFCI TYPE AND HAVE PROTECTIVE COVERS.
2) ALL TEMPORARY LIGHTS SHALL BE UL APPROVED WITH ONE 100 WATT ROUGH SERVICE INCANDESCENT LAMP EVERY 100 SQUARE FEET.
3) PROVIDE WEATHERPROOF DEVICES AS REQUIRED.

D. QUALITY ASSURANCE

1) QUALITY AND GAUGE OF MATERIALS: NEW, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR OTHER NATIONALLY RECOGNIZED TESTING LABORATORIES (NRTL) AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT WHERE PERMITTED OTHERWISE.

E. PRODUCT DELIVERY, STORAGE AND HANDLING

1) WHERE NECESSARY, EQUIPMENT SHALL BE DELIVERED FROM MANUFACTURER IN SECTIONS SUITABLE TO FIT THROUGH AVAILABLE SPACES AND OPENINGS AND TO ACCOMMODATE RESTRICTIONS ASSOCIATED WITH BUILDING ELEVATORS. COORDINATE EQUIPMENT DELIVERY TIMES WITH BUILDING OWNER AND OTHER TRADES.
2) EQUIPMENT SHALL BE STORED TO BE PROTECTED FROM WEATHER ELEMENTS TO PREVENT DAMAGE.
3) REPLACEMENT OF DAMAGED EQUIPMENT DUE TO THE IMPROPER DELIVERY, STORAGE OR HANDLING WILL BE RESPONSIBILITY OF THIS CONTRACTOR AT NO EXTRA COST TO THE OWNER.

F. MATERIALS

1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT WHITE LETTERS ON BLACK BACKGROUNDS.

2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH PULL, JUNCTION AND CABLE SUPPORT BOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.

3) INSERTS AND SUPPORTS:
    a. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW.
    b. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.
    c. WHERE BUILDING CONSTRUCTION IS INADEQUATE FOR PROPER SUPPORT, PROVIDE ADDITIONAL FRAMING ELEMENTS. SUBMIT FOR REVIEW AND APPROVAL

G. BRUSH, CLEAN, REMOVE DEBRIS AND REPAIR ALL WORK PRIOR TO CONCEALING AND INSTALLATION ACCEPTANCE.

H. ALL WORK AND/OR EQUIPMENT INSTALLED OUTDOORS SHALL BE NEMA 3R RATED.

I. WHERE WORK IS ONGOING IN ELECTRICAL PANELS THE COVERS ARE NOT TO BE LEFT OFF UNLESS WORK IS CURRENTLY BEING PERFORMED ON THE PANEL. COVERS SHALL BE REPLACED EACH NIGHT AT THE END OF SHIFT.

J. FINAL LOCATIONS AND MOUNTING OF ALL ELECTRICAL DEVICES, SHALL BE COORDINATED WITH THE ARCHITECT.

K. PROVIDE ACCESS DOORS FOR CONCEALED ELECTRICAL EQUIPMENT, DEVICES OR BOXES THAT REQUIRE ACCESS. ALL ASSOCIATED WORK SHALL BE COORDINATED WITH THE ARCHITECT.

7. CUTTING AND PATCHING

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WHICH IS REQUIRED FOR THE PROPER INSTALLATION OF THE ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP, AND FINISH, AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK.

B. ANY REQUIRED CORE BORING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

8. COORDINATION

A. ELECTRICAL CONTRACTOR SHALL VERIFY FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, EQUIPMENT, RACEWAYS, ETC. WITH OTHER TRADES AND ARCHITECT. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXTRA COST TO THE OWNER

9. EQUIPMENT PROVIDED BY OTHERS

A. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CIRCUITS FOR EQUIPMENT PROVIDED BY OTHERS AS SHOWN IN CONTRACT DOCUMENTS. COORDINATE INSTALLATION WITH OTHER TRADES. CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED CIRCUITING AND NECESSARY ELECTRICAL ADJUSTMENTS.

10. LOW-VOLTAGE DISTRIBUTION EQUIPMENT

A. PROVIDE ALL REQUIRED POWER DISTRIBUTION SYSTEM EQUIPMENT INCLUDING BUT NOT LIMITED TO SWITCHES, FUSES, CIRCUIT BREAKERS, SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, ETC.

B. DISCONNECT SWITCHES SHALL BE FUSED OR NON-FUSED CONFIGURATION AS INDICATED IN CONTRACT DOCUMENTS OR REQUIRED BY CODE.

1) PROVIDE HEAVY DUTY SWITCHES AND HORSEPOWER RATED FOR MOTOR LOADS.
2) KNIFE-BLADE TYPE SWITCHES SHALL BE UL LISTED, LOAD BREAK, QUICK-MAKE-QUICK-BREAK WITH ARC QUENCHERS, UL CLASS R FUSES UP TO 600 AMP. SWITCHES SHALL BE GENERAL ELECTRIC QMR OR APPROVED EQUAL OF EATON OR SIEMENS. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.
3) SWITCHES RATED 800 AMPS AND ABOVE SHALL BE BOLTED PRESSURE TYPE CONTACT SWITCHES, MANUALLY OPERATED SIMILAR TO PRINGLE BOLTED PRESSURE SWITCH, TYPE QA WITH A MINIMUM INTERRUPTING CAPACITY OF 7-1/2 TIMES THE CONTINUOUS CURRENT RATING. SHORT CIRCUIT CURRENT CARRYING CAPACITY SHALL BE 200,000 AMPERES UNLESS OTHERWISE NOTED ON DRAWINGS.
4) HORSEPOWER RATED THERMAL SWITCHES (BRYANT OR AS APPROVED) SHALL BE USED FOR ALL MOTOR CIRCUITS. ELECTRICAL CONTRACTOR SHALL INSTALL WHERE APPLICABLE TOGGLE SWITCHES FOR USE AS DISCONNECT. THESE SWITCHES SHALL BE "T" RATED FOR RESISTANCE LOADS AND "M" RATED FOR MOTOR LOADS.
5) ALL SWITCHES SERVING STEP-UP TRANSFORMERS 300KVA AND ABOVE SHALL BE HIGH PRESSURE CONTACT SWITCH, GENERAL ELECTRIC TYPE HPC OR APPROVED EQUAL.
6) PROVIDE DISCONNECTS FOR ALL EQUIPMENT PER CODE AND COORDINATE ALL DISCONNECT SWITCH REQUIREMENTS AND LOCATIONS WITH THE ELECTRICAL INSPECTOR, VENDORS AND OTHER TRADES.

C. FUSES:

1) CIRCUITS 601 TO 4000 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK TIME-DELAY FUSES KRP-C (AMP) SP, CLASS L LISTED BY UL WITH AN INTERRUPTING RATING OF 200,000 AMPERES RMS SYMMETRICAL.

2) CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP) SP (250V) /LPS-RK (AMP) SP (600V) OR LPJ (AMP) SP (600V) (UL CLASS RK1 OR CLASS J IN RESTRICTED SPACE ONLY), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 200,000 AMPERES RMS SYMMETRICAL.

3) MOTOR CIRCUITS - ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP) SP (250V) /LPS-RK (AMP) SP (600V) OR LPJ (AMP) SP (600V) (UL CLASS RK1 OR CLASS J IN RESTRICTED SPACE ONLY), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 200,000 AMPERES RMS SYMMETRICAL.

4) ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER.

5) PROVIDE 1 SPARE SET (MINIMUM OF 3 FUSES) OF EACH RATING AND TYPE USED.

D. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE.

1) ALL EMERGENCY BREAKERS 100 AMPS AND ABOVE SHALL INCLUDE LSI ELECTRONIC TRIP UNITS UNLESS OTHERWISE NOTED.
2) MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE.
3) PROVIDE INTERCHANGEABLE TRIP FOR 225A FRAME AND ABOVE.
4) FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT TRIPPING, OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION.
5) INTERIOR ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, UNLESS REQUIRED OTHERWISE BY FIELD CONDITIONS.
6) PROVIDE 30mA GROUND FAULT EQUIPMENT PROTECTION (GFEP) BREAKERS FOR ALL ELECTRICAL HEAT TRACING CIRCUITS.
7) UNLESS REQUIRED OTHERWISE BY SHORT CIRCUIT STUDY, FRAMES AIC SHALL BE AS FOLLOWS:
    a. 120 VOLTS, 100-AMP FRAME: 10,000 AMPS MINIMUM.
    b. 208 OR 240 VOLTS, 100 AMP FRAME, 2 OR 3 POLES: 10,000 AMPS MINIMUM
    c. 208 OR 240 VOLTS, 225 AMP AND 400A FRAME, 2 OR 3 POLE (WITH INTERCHANGEABLE TRIP): 22,000 AMPS MINIMUM
    d. 277 VOLTS, 100-AMP FRAME: 14,000 AMPS MINIMUM.
    e. 480 VOLTS, 100 AMP FRAME, 2 OR 3 POLE: 22,000 AMPS MINIMUM
    f. 480 VOLTS, 225-AMP FRAME: 35,000 AMPS MINIMUM.
    g. 800A AND 1200 AMP FRAME: 65,000 AMPS MINIMUM
    h. 1600A AND 2000 AMP FRAME: 100,000 AMPS MINIMUM
    i. OVER 2000 AMP FRAME: 200,000 AMPS MINIMUM

E. SWITCHBOARD SHALL BE AS MANUFACTURED BY EATON, ABB/GENERAL ELECTRIC, SIEMENS, SQUARE-D OR APPROVED EQUAL. INSTALLATIONS SHALL BE IN ACCORDANCE WITH LOCAL AUTHORITIES HAVING JURISDICTION REQUIREMENTS.

F. EQUIPMENT INSTALLATION ARRANGEMENTS SHALL BE COORDINATED WITH AND APPROVED BY THE UTILITY COMPANY.

G. DISTRIBUTION BOARDS: OVERCURRENT PROTECTION DEVICES SHALL BE CIRCUIT-BREAKER OR FUSED SWITCH TYPE AS SHOWN ON DRAWINGS.

1) CABINETS SHALL BE GALVANIZED SHEET STEEL BACK BOX, WITH DOOR AND TRIM AND LAPPED AND WELDED CORNERS. HARDWARE SHALL BE CHROME PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN. HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN. HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180-DEG OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS. MINIMUM GUTTER SPACES FOR 400A PANEL AND UNDER SHALL BE 9 IN. SIDES, 8 IN. TOP AND BOTTOM; OVER 600A PANEL SHALL BE MINIMUM 9 IN. SIDES, 12 IN. TOP AND BOTTOM, INCREASES AS REQUIRED.

2) DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. A TYPEWRITTEN LIST INDICATING FEEDER CABLE AND CONDUIT SIZE, CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

H. PANELBOARDS: SWITCHING UNITS SHALL BE BOLT-ON CIRCUIT BREAKER TYPE OR FUSED SWITCH TYPE AS SHOWN ON DRAWINGS.

1) MINIMUM GUTTER SPACES SHALL BE 5-3/4 IN. SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. TYPEWRITTEN LIST INDICATING FEEDER CABLE AND CONDUIT SIZE, CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

2) PROVIDE COMMON TRIP HANDLES FOR MULTI-WIRE BRANCH CIRCUITS.

3) ENCLOSURES SHALL BE SURFACE OR FLUSH MOUNTED AS INDICATED. TRIMS SHALL BE SECURED TO PANEL WITH MACHINE SCREWS. COVERS SHALL BE HINGED DOOR-IN-DOOR CONSTRUCTION WITH CYLINDER LOCKS AND CATCHES. LOCKS MUST BE COMPATIBLE WITH BUILDING STANDARD KEY SYSTEM AND WHEN NONE EXISTS, THEY SHALL BE SIMILAR TO A YALE NO. 911 KEY.

4) ALL BUSES, INCLUDING NEUTRAL, SHALL BE ELECTRICAL GRADE HARD- DRAWN COPPER AND SIZED IN CONFORMANCE WITH NEMA STANDARDS. BUSES SHALL BE ARRANGED FOR SEQUENCE PHASING AND LOADS SHALL BE BALANCED AS EQUALLY AS POSSIBLE AMONGST THE THREE PHASES.

5) PANELBOARDS FOR COMMON AREAS AND SERVICE EQUIPMENT SHALL BE EQUIPPED WITH QUICK-MAKE, QUICK-BREAK FUSED SWITCHES OR BOLT-ON MOLDED CASE CIRCUIT BREAKERS OF REQUIRED VOLTAGE AND OF SIZE AND NUMBER OF POLES INDICATED ON THE SCHEDULES.

6) A TYPE WRITTEN DIRECTORY SHALL BE PROVIDED ON THE INSIDE OF THE DOOR OF EACH PANEL, INDICATING THE LOAD SERVED BY EACH CIRCUIT. UTILIZE ARCHITECTURAL DRAWINGS TO INDICATE ROOM NAMES AND NUMBERS OF ALL EQUIPMENT SERVED.

I. BUS BARS: PROVIDE HARD DRAWN COPPER, MINIMUM 98% CONDUCTIVITY, SILVER OR TIN PLATED AT JOINTS. CAPACITY SHALL BE AS NOTED. RATINGS FOR MAINS: MINIMUM SHALL BE EQUAL TO SIZE OF MAIN DISCONNECT OR SUPPLY FEEDER PROTECTIVE DEVICE AND CONTINUOUS FULL CAPACITY THROUGHOUT SWITCHBOARD.

J. GROUND BUS: GROUND SHALL BE 25% OF MAINS BUT NOT LESS THAN 1/2 SQ. IN. EXTEND LENGTH OF SWITCHBOARD AND BOLT TO EACH SECTION. LOCATE TO PERMIT DRILLING FOR FUTURE EXTENSION. IN SERVICE SWITCHBOARDS, CONNECT TO NEUTRAL BUS WITH DISCONNECTING LINK.

K. ENCLOSURE: PROVIDE FRONT AND/OR REAR ACCESSIBLE SWITCHGEAR AS INDICATED IN CONTRACT DOCUMENTS. ENCLOSURE SHALL BE BOLTED OR WELDED STEEL FRAMING OF SUFFICIENT STRENGTH TO MAINTAIN ALIGNMENT AND WITHSTAND RATED A.I.C.

L. FINISH SHALL BE RUST-RESISTIVE BAKED-ON PRIMER AND FINISH COAT OF MANUFACTURER'S SWITCHBOARD GRAY LACQUER, EXCEPT AS REQUESTED OTHERWISE BY THE OWNER. PROVIDE NAMEPLATES FOR SWITCHBOARD, SWITCHING UNITS AND DEVICES.

M. CURRENT TRANSFORMER CABINETS: PROVIDE IN ACCORDANCE WITH RULES OF UTILITY COMPANY AND SUBJECT TO ITS APPROVAL.

N. UTILITY METER PANS: PROVIDE TRANSFORMER TYPE WITH 10-POINT TEST BLOCK COMPLYING WITH UTILITY STANDARDS.

O. BALANCE THE LOADS BETWEEN PHASES TO WITHIN ±5%. LOADING SHALL BE BALANCED WITH ALL EQUIPMENT IN OPERATION AFTER THE SPACE IS OCCUPIED.

P. PROVIDE MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING IS NOT PERMITTED.

7) ALL SUPPLIED LUGS FOR EQUIPMENT REQUIRING HARD-WIRED CONNECTIONS, ETC. SHALL BE DOUBLE INDENT, 2 BOLT HOLE, LONG BARREL AND COMPRESSION TYPE.
8) PROVIDE DOUBLE INDENT "HEXAGONAL" COMPRESSION DIES AND TOOL (T & B OR BURNDY OR AS REVIEWED).
9) MECHANICAL LUGS, SINGLE INDENT COMPRESSION TOOLS AND UNIVERSAL DIES SHALL NOT BE PERMITTED.
10) ALL COMPRESSION TOOLS AND DIES SHALL BE MANUFACTURED BY THE LUG VENDOR.

R. MOUNTING HEIGHT SHALL BE A MAXIMUM OF 6 FT-7 IN. FROM FLOOR OR WORKING PLATFORM TO SWITCH OR CIRCUIT BREAKER CENTER OF THE GRIP OF THE OPERATING HANDLE.

S. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD.

11. SLEEVES

A. PROVIDE SLEEVES FOR ALL CONDUIT PASSING THROUGH FLOORS, WALLS, PARTITIONS AND ROOFS. SLEEVED ASSEMBLIES SHALL BE APPROVED FOR INTENDED USE FOR ALL WATERPROOF INSTALLATIONS (ROOF, FOUNDATION WALL, ETC.). PROVIDE OZ GEDNEY ASSEMBLIES, OR AS REVIEWED.

B. PROVIDE SLEEVES WITH AN INTERNAL DIAMETER. AT LEAST 1/2 INCH GREATER THAN OUTSIDE DIAMETER OF CONDUIT SERVED.

12. RACEWAYS:

A. RACEWAYS SHALL BE PROVIDED WITH REQUIRED FITTINGS, BOXES AND ACCESSORIES.

1) PROVIDE REQUIRED RACEWAY SUPPORT AND COORDINATE WITH STRUCTURAL ENGINEER.
2) MAINTAIN GROUNDING CONTINUITY.
3) EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS AND BUILDING STRUCTURE. PROVIDE MINIMUM OF 3 IN. SEPARTION FROM WATER, STEAM OR OTHER PIPING WHEN RUNNING PARALLEL AND 1 IN. WHEN CROSSING.
4) PROVIDE FISH OR PULL WIRE, NYLON ROPE.
5) PROVIDE REQUIRED FITTINGS AND ACCESSORIES LISTED FOR THE INTENDED USE.

B. MATERIALS

1) RACEWAYS:
    a. GALVANIZED RIGID STEEL CONDUIT (GRS): SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS WHERE A SUBJECT TO SEVERE PHYSICAL DAMAGE, ELECTRICAL ROOMS, MECHANICAL ROOMS AND SIMILAR SPACES, UNDERGROUND, CONCRETE ENCASED AND OUTDOOR AS PERMITTED BY CODE.
    b. ELECTRICAL METALLIC TUBING (EMT): SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS WHERE NOT A SUBJECT TO SEVERE PHYSICAL DAMAGE FOR INTERIOR APPLICATIONS AND AS PERMITTED BY CODE.
    c. METAL CLAD CABLE TYPE WITH INSULATED GROUND CONDUCTOR (MC): SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS TO MITIGATE VIBRATION TRANSMITION AT FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, LIGHTING FIXTURES, ETC. IN INTERIOR APPLICATIONS. LENGTH NOT TO EXCEED 6'.
    d. ARMORED CABLE TYPE WITH INSULATED GROUND CONDUCTOR (AC): SHALL BE UTILIZED FOR BRANCH CIRCUITS RATED 20A OR LESS. LENGTH NOT TO EXCEED 40'.
    e. WIREWAYS: FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.
    f. RIGID ALUMINUM CONDUIT: SHALL BE UTILIZED FOR BRANCH CIRCUITS IN CORROSIVE ENVIRONMENT AND WHERE NOT BEING A SUBJECT TO SEVERE PHYSICAL DAMAGE.
    g. LIQUIDATING FLEXIBLE METAL CONDUIT: SUNLIGHT RESISTANT OUTER JACKET WITH A FLEXIBLE METAL CORE. SHALL BE UTILIZED FOR PROTECTION FROM LIQUIDS, VAPORS OR SOLIDS AND WHERE NOT A SUBJECT TO PHYSICAL DAMAGE AS PERMITTED BY CODE.

2) EXPANSION FITTINGS: PROVIDE A LENGTH OF RUN AS PER MANUFACTURER'S RECOMMENDATIONS.

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ARMEN KHACHATURIAN, P.E. – FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL
33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ELECTRICAL SPECIFICATION

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-301

Autodesk Docs://Lightbridge Academy - Westchase, FL /Lightbridge Academy - Westchase, FL_11 Classroom_R2.rvt

9/17/2024 3:06:04 PM

3. BOXES

a. OUTLET BOXES SHALL BE CODE GAUGE GALVANIZED STAMPED STEEL, 4 INCH SQUARE BY 1-1/2 INCHES DEEP FOR POWER AND 4 INCHES SQUARE BY 2-1/2 INCHES DEEP FOR COMMUNICATION, FIRMLY ANCHORED IN PLACE.
b. BOX VOLUME SHALL BE AS REQUIRED BY GOVERNING CODES WITH BLANK COVERS PROVIDED FOR ALL BOXES USED FOR JUNCTION PURPOSES. GEM BOXES SHALL ONLY BE USED WHERE DIMENSIONAL RESTRAINTS EXIST AND WHERE THE CONTRACTOR HAS OBTAINED PERMISSION FROM THE ENGINEER. MULTI-GANG BOXES SHALL BE PROVIDED WITH EXTENSION COLLARS MOUNTED WITHIN 1/8 INCH OF OUTER SURFACE.
c. WHERE OUTLET BOXES ARE SHOWN FOR FLUSH MOUNTED DEVICES, A SINGLE GANG PLASTER RING SHALL BE PROVIDED, AND MOUNTED WITHIN 1/8 INCH OF OUTER SURFACE.
d. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. COORDINATE INSTALLATION WITH STRUCTURAL ENGINEER.
e. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP.
f. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED.
g. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER.
h. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 24 IN. OF HORIZONTAL SEPARATION.
i. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES.
j. FLOOR BOX SHALL BE COORDINATED WITH ARCHITECT AND BE SUITABLE FOR FLOOR CONSTRUCTION TYPE.
k. FLOOR OUTLETS SHALL BE FLUSH.
l. PROVIDE BARRIERS BETWEEN DIFFERENT.

A. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED TO SATISFY CODE REQUIRED CLEARANCES AND WORKING SPACES.

B. FIRE SEALANTS SHALL BE PROVIDED FOR RACEWAYS PENETRATIONS THROUGH SLEEVES OR OTHER OPENINGS THROUGH FIRE PARTITIONS.

C. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

D. FURNISH AND INSTALL ALL NECESSARY CABLE SUPPORT BOXES, PULL BOXES AND CONDUIT SUPPORTS, WHERE NOTED AND AS REQUIRED BY APPLICABLE CODES.

1) ALL LOW TENSION (COMMUNICATIONS, SECURITY, A/V, ETC.) CONDUIT, FIRE ALARM CONDUIT, ETC., WHICH HAVE RUNS IN EXCESS OF 100 FEET IN LENGTH AND/OR CONTAINING BENDS IN EXCESS OF 180 DEGREES SHALL BE PROVIDED WITH A PULLBOX.
2) ALL PULLBOXES SHALL BE LABELED FOR THEIR INTENDED USE.
3) DECALS SHALL BE PROVIDED TO INDICATE VOLTAGE LEVEL.
4) FIRE ALARM SYSTEM BOXES SHALL BE PAINTED RED, AND ALL WIRE AND CABLE PROVIDED UNDER THIS SECTION SHALL BE TAGGED (WITH FEEDER OR BRANCH CIRCUIT DESIGNATION) AT ALL BOXES.
5) WHERE CONDUIT BENDS ARE REQUIRED IN COMMUNICATIONS RACEWAY SYSTEMS, THE RADIUS OF THE RACEWAY BEND SHALL NOT BE LESS THAN TEN TIMES THE DIAMETER OF THE RACEWAY. PULL BOXES FOR COMMUNICATION RACEWAYS WILL BE PROVIDED IN STRAIGHT PULLS ONLY. LABEL EACH RACEWAY (PER TECHNOLOGY DEPT. REQUIREMENTS) EVERY 50 FEET HORIZONTALLY AND ON EACH FLOOR VERTICALLY. SUBMIT LABELING SYSTEM FOR REVIEW.
6) THIS CONTRACTOR SHALL PROVIDE ALL NECESSARY VERTICAL SUPPORT BOXES, AND CONDUIT OFFSETS REQUIRED AT NO ADDITIONAL COST TO THE OWNER, WHETHER OR NOT INDICATED ON PLANS. ALL VERTICAL SUPPORT BOXES, PULL BOXES, ETC. SHALL BE INSTALLED WHERE REQUIRED TO FACILITATE PULLS AND AT CODE REQUIRED INTERVALS.

H. PVC CONDUITS: ALL JOINTS SHALL BE CLEANED WITH AN APPROVED SOLVENT PRIOR TO GLUING TO ENSURE WATERTIGHT CONNECTION. ANY CONDUITS FOUND WITH WATER IN THEM SHALL BE REPLACED AT THE SOLE EXPENSE OF THE CONTRACTOR.

I. UNLESS SPECIFICALLY APPROVED, NO WIRES SHALL BE PULLED IN UNTIL THE CONDUIT SYSTEM IS COMPLETED. NO GREASE OR OIL SHALL BE USED TO FACILITATE THE PULLING OF WIRES; ONLY APPROVED PULLING COMPOUND SHALL BE USED. ALL WIRES SHALL BE CONTINUOUS BETWEEN OUTLET AND OUTLET, OR FROM PANELBOARD TO THE FIRST OUTLET. JOINTS THAT BECOME NECESSARY IN CIRCUIT WORK AT THE OUTLETS SHALL BE MADE WITH APPROVED PRESSURE CONNECTORS. ALL JOINTS SHALL BE COVERED WITH AN INSULATION EQUAL TO THAT ON THE CONDUCTORS. APPROVED PRESSURE CONNECTORS, IDEAL WINGNUTS, SCOTCH-LOCK, BUCHANAN, OR AS APPROVED, SHALL BE USED.

J. CONDUIT RUNS INDICATED ON PLAN ARE FOR REFERENCE ONLY. EXACT LOCATIONS AND ELEVATION SHALL BE DETERMINED AFTER COORDINATION WITH OTHER TRADES. THIS CONTRACTOR SHALL SUPPLY, AS PART OF THEIR SHOP DRAWING SUBMISSION, THE EXACT LOCATION OF ALL CEILING MOUNTED EQUIPMENT AND CONDUIT RUNS INCLUDING PROPOSED LOCATIONS AND MEANS OF SUPPORT AS WELL AS THE EXPECTED LOAD CONCENTRATION AT THE POINTS OF ATTACHMENT. THE ABOVE NOTED INFORMATION SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER BEFORE ANY WORK IS TO COMMENCE.

13. NOT USED.

14. WIRE AND CABLE:

A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG AND/OR KCMIL EXCEPT AS NOTED.

B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). UNLESS INDICATED OTHERWISE, GENERAL USE CABLING SHALL BE NO. 12 MINIMUM.

1) VOLTAGE DROP FOR BRACH CIRCUITRY SHALL NOT EXCEED 2% AT RATED LOAD. FOR ANY INSTANCE WHERE BRACH CIRCUITING IS EXCEEDING 2% VOLTAGE, CALCULATIONS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER. THE FINAL VOLTAGE DROP VALUES SHALL BE COMPLIANT WITH APPLICABLE CODE REQUIREMENTS.
2) VOLTAGE DROP FOR FEEDERS SHALL NOT EXCEED 3%. FOR ANY INSTANCE WHERE VOLTAGE DROP EXCEEDS 3% VOLTAGE, CALCULATIONS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER. THE FINAL VOLTAGE DROP VALUES SHALL BE COMPLIANT WITH APPLICABLE CODE REQUIREMENTS.

3) CONDUIT MINIMUM SIZE SHALL BE 3/4" U.O.N.

4) EACH CIRCUIT SHALL BE PROVIDED WITH A SEPARATE NEUTRAL CONDUCTOR WHEN NEUTRAL CONDUCTORS ARE REQUIRED.

5) WHEN MORE THAN THREE CURRENT CARRYING CONDUCTORS ARE RUNNING IN A RACEWAY, CONDUCTORS SHALL BE DERATED AS REQUIRED BY CODE.

C. UNLESS OTHERWISE NOTED, INSULATION SHALL BE RUBBER AND THERMOPLASTIC, 75 OR 90 DEG C MEETING ASTM AND ICEA STANDARDS. TYPE THHN/THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED.

1) UNDERGROUND SERVICE ENTRANCE CABLING SHALL BE 'USE' TYPE.

D. COLOR CODING SHALL BE AS FOLLOWS:

1) 120/208 VOLT SYSTEM:
BLACK FOR A PHASE
RED FOR B PHASE
BLUE FOR C PHASE

2) 277/480 VOLT SYSTEM:
BROWN FOR A PHASE
ORANGE FOR B PHASE
YELLOW FOR C PHASE

3) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT.

4) EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

E. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS.

1) FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS.
2) FOR CONTROL AND ALARM WIRING, INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS. SIMILAR TO STRANCO PRODUCTS, INC.

F. SPLICES AND TAPS UNDER 600 VOLTS SHALL UTILIZE:

1) CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE.
2) COPPER LUG CONNECTIONS TO BUS BARS: USE ANTI-SEIZE COMPOUND.
3) ALL CONNECTORS SHALL BE HEXAGONAL COMPRESSION TYPE. PROVIDE DOUBLE “HEXAGONAL" COMPRESSION DIES AND TOOL. MECHANICAL CONNECTORS, SINGLE INDENT COMPRESSION TOOLS AND UNIVERSAL DIES SHALL NOT BE PERMITTED. ALL COMPRESSION TOOLS AND DIES SHALL BE MANUFACTURED BY THE CONNECTOR VENDOR.

G. MAXIMUM OF 6 LIGHTING OR CONVENIENCE OUTLET CIRCUITS MAY BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED.

H. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.

I. PERFORM MEGGER TEST FOR 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND MOTOR BRANCH CIRCUITS OVER 25 HP. TEST SHALL BE EXECUTED PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE AS REQUIRED.

15. GROUNDING

A. GROUNDING CONDUCTOR SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS PROTECTED BY OVERCURRENT DEVICES.

B. SERVICE AND SEPARATELY DERIVED SYSTEM GROUNDING:

1) GROUND NEUTRAL SERVICE CONDUCTOR(S) THROUGH NEUTRAL BUS DISCONNECT LINK TO BUILDING GROUNDING ELECTRODE SYSTEM

2) SEPARATELY DERIVED AC SYSTEMS:
a. TRANSFORMERS
b. GENERATORS

3) GROUND CLAMPS SHALL BE BRONZE, SOLDERLESS TYPE WITH BRONZE SCREWS, SUITABLE FOR RECEIVING NOTED CONDUCTORS. MOUNT GROUND CLAMP ON WATER SERVICE AT STREET SIDE OF MAIN SERVICE VALVE. PROVIDE JUMPER TO BY-PASS WATER METER.

C. BOND ALL NONCURRENT CARRYING METAL PARTS OF DISTRIBUTION PANELS, SWITCHBOARDS, TRANSFORMER ENCLOSURES, RACEWAYS, BUSWAY ENCLOSURES, CONTROLLER ENCLOSURES, MOTOR FRAMES AND OTHER ELECTRICAL EQUIPMENT.

D. ALL COMPONENTS FOR GROUNDING SYSTEMS SHALL BE UL 467 LISTED.

E. MISCELLANEOUS:

1) GROUND THE FOLLOWING:

a. LOW VOLTAGE SYSTEMS
b. FIRE ALARM SYSTEM.
c. POWER DISTRIBUTION SYSTEM.
d. LINE AND LOAD SIDE OF A VFD'S.

16. POWER WIRING

A. PROVIDE ALL POWER WIRING IN RACEWAYS TO ALL EQUIPMENT.

B. PROVIDE ONE (1) DEDICATED 120V, 20A CIRCUIT FOR EACH HVAC CONTROL FOR NEAREST ELECTRICAL PANEL SERVING SIMILAR LOADS IN THE AREA. COORDINATE QUANTITIES AND LOCATIONS WITH HVAC/BMS CONTRACTOR.

C. PROVIDE CONNECTIONS TO COMBINATION FIRE SMOKE DAMPERS. ELECTRICAL CONTRACTOR SHALL INCLUDE ALL CONNECTIONS AND CIRCUITS AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE WITH MECHANICAL CONTRACTOR.

17. CONTROL WIRING

A. PROVIDE ALL CONTROL WIRING IN CONDUIT. INCLUDE MOUNTING AND WIRING OF ALL CONTROL DEVICES FURNISHED WITH EQUIPMENT.

18. WIRING DEVICES:

A. PROVIDE WIRING DEVICES AS MANUFACTURED BY LEVITON, HUBBELL, OR APPROVED EQUAL. ALL DEVICE'S TYPES AND FINISH ARE SUBJECT TO APPROVAL BY ARCHITECT.

B. SWITCHES SHALL BE GANGED WITH MULTI DEVICE COVER PLATES. SWITCHES AND DIMMER TYPES SHALL MATCH WHEN GANG TOGETHER.

1) IN FINISHED AREAS ARCHITECTURAL TYPE ROCKER SWITCH: LEVITON DECORA PLUS #5621-2 (SINGLE POLE), 5622-2 (DOUBLE POLE), 5623-2 (THREE WAY), 5624-2 (FOUR WAY).

2) ALL OTHER AREAS HEAVY-DUTY INDUSTRIAL TYPE TOGGLE SWITCH: LEVITON 1221-2 (SINGLE POLE), 1222-2 (DOUBLE POLE). 1223-2 (3 WAY), 1224-2 (4 WAY).

3) LOCKING TYPE: LEVITON 1221-21 (SINGLE POLE), 1222-21 (DOUBLE POLE), 1223-2L (THREE WAY), 1224-2L (FOUR WAY).

4) ILLUMINATED SWITCHES FOR FINISHED AREAS: LEVITON DECORA PLUS #5631-2 (SINGLE POLE, 120V).

5) ILLUMINATED SWITCHES FOR UNFINISHED AREAS: TOGGLE TYPE; LEVITON #1221-LH.

6) PILOT LIGHT SWITCHES IN FINISHED AREAS: LEVITON DECORA PLUS #5628-2 (SINGLE POLE).

7) PILOT LIGHT SWITCHES IN UNFINISHED AREAS: LEVITON DECORA PLUS # 1221-PLC (SINGLE POLE).

8) DIMMER SWITCHES: AS NOTED ON PLANS OR AS SPECIFIED BY ARCHITECT/LIGHTING DESIGNER. DIMMERS MUST BE COMPATIBLE WITH LIGHT FIXTURES.

C. CONVENIENCE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE, HEAVY DUTY, DUPLEX CONVENIENCE 120 VOLT, 2 POLE, 3 WIRE, 15 AND 20 AMP WITH U GROUND SLOT GROUNDED. DEVICE SHALL BE AS MANUFACTURED BY HUBBELL OR APPROVED EQUAL. COLOR AS PER ARCHITECT.

1) IN FINISHED AREAS: DECORA TYPE.
2) ALL 120V, 15 AND 20 AMP CIRCUIT BREAKERS INSTALLED IN DAMP AND WET LOCATIONS SHALL BE WEATHER-RESISTANT TYPE.
3) ALL 120V, 15 AND 20 AMP CIRCUIT BREAKERS SERVING BRANCH CIRCUITS IN DWELLING UNITS AS DEFINED BY NEC 210.12.(A) SHALL BE LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE.
4) ALL 120V, 15 AND 20 AMP OUTLETS IN DWELLING UNITS AS DEFINED BY NEC 210.8.(A) OR ANYWHERE WITHIN 6' FROM EDGE OF THE SINK SHALL HAVE GROUND FAULT CIRCUIT INTERRUPTOR (GFI) PROTECTION FOR PERSONNEL. NON-READILY ACCESIBLE OUTLETS FOR APPLIANCES SHALL BE PROVIDED WITH GFI RATED CIRCUIT BREAKERS WITH NON-GFI OUTLET.
5) ALL 120V, 15 AND 20 AMP CIRCUIT BREAKERS SERVING BRANCH CIRCUITS IN DWELLING UNITS AS DEFINED BY NEC 210.52 SHALL BE TAMPER PROOF.
6) ALL 120V, 15 AND 20 AMP OUTDOOR OUTLETS SHALL BE GFI TYPE WITH WEATHER TYPE COVER. COVER SHALL MAINTAIN WEATHER PROOF RATING WHEN OUTLET IS IN USE.

D. MOMENTARY CONTACT SWITCHES. FOR REMOTE CONTROL SWITCHES, SIMILAR TO LEVITON #1257.

E. PILOT LIGHTS: NEON LAMP, SIMILAR TO HUBBELL NO. T1375, WITH 125-VOLT LAMP.

F. DEVICE PLATES: COORDINATE WITH ARCHITECT FOR FINAL TYPE, COLOR, MATERIAL AND FINISH. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED THE VOLTAGE RATING.

1) ENGRAVED CIRCUIT IDENTIFICATION PLATE FOR EMERGENCY BRANCH CIRCUIT DEVICE.
2) REINFORCED THERMOPLASTIC BY SAME MANUFACTURER OF DEVICES.
3) OUTDOOR: STAINLESS STEEL COVERPLATE.
4) EMERGENCY DEVICE COVER PLATE SHALL BE RED.

G. COLORS: AS SPECIFIED AND COORDINATED WITH ARCHITECT.

H. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

I. COORDINATE ALL LOCATIONS AND HEIGHTS OF STUB-UPS AND OUTLETS IN FIELD WITH VENDORS AND/OR FURNITURE MANUFACTURERS' APPROVED SHOP DRAWINGS. ALL RECEPTACLES ARE TO BE ACCESSIBLE.

J. FINAL CONNECTIONS TO EQUIPMENT SHALL BE MADE ACCORDING TO VENDOR APPROVED SHOP DRAWINGS.

K. VERIFY ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT TO BE USED. RATING AND CONFIGURATION OF ALL SPECIAL PURPOSE OUTLETS INDICATED ON PLAN SHALL BE VERIFIED WITH EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION. ENSURE PROPER WIRING AND COMPATIBILITY WITH ATTACHMENT PLUGS OR JUNCTION BOXES THAT MAY BE FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT.

19. LIGHTING FIXTURES:

A. ARCHITECTURAL LIGHTING FIXTURE SCHEDULED ON ENGINEERING DRAWINGS IS SHOWN FOR INFORMATION AND COORDINATION PURPOSES ONLY. REFER TO LIGHTING DESIGNER AND/OR ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR COMPLETE LIGHTING INFORMATION.

B. LISTED CATALOG NUMBERS MAY NOT INLCUDE ALL REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. FIXTURES SHALL BE COMPLETE, WIRED AND EQUIPPED WITH ALL NECESSARY LAMPING, SOCKETS, DRIVERS/BALLASTS, SUPPORTING HARDWARE, ETC. AS REQUIRED FOR A COMPLETE ASSEMBLY.

C. FIXTURES SHALL COMPLY WITH ALL APPLICABLE CODES, REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND BUILDING STANDARDS. FIXTURES SHALL BE UL LISTED AND PROPERLY IDENTIFIED. NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) LISTED CERTIFICATION SUCH AS INTERTEK TESTING SERVICES (ETL) IS ACCEPTED.

D. ALL FIXTURES SHALL BE INDEPENDENTLY MOUNTED FROM BUILDING STRUCTURE AS REQUIRED AND NOT FROM CEILING GRID. ELECTRICAL INSTALLER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF CEILING CONSTRUCTION TYPES WITH LIGHTING FIXTURES.

E. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, QUANTITIES, AND INSTALLATION ARRANGEMENT REQUIREMENTS OF LIGHTING FIXTURES.

F. LED LIGHTING FIXTURES SHALL BE PROVIDED WITH HIGH POWER FACTOR, HIGH FREQUENCY ELECTRONIC BALLASTS AND COMPLY WITH IES STANDARDS RP-1 AND RP-24 AND NEMA STANDARD PUBLICATION LE-1. LED INDUSTRIAL FIXTURES SHALL COMPLY WITH RLM STANDARDS INSTITUTE AND SHALL BEAR THE RLM LABEL.

G. FURNISH ALL LAMPS AS INDICATED.

H. ALL LED FIXTURES SHALL HAVE MINIMUM 5 YEAR WARRANTIES ON LED BOARDS AND DRIVERS.

I. DIMMABLE FIXTURES SHALL BE PROVIDED WITH COMPATIBLE DIMMING BALLAST.

J. EMERGENCY DRIVER/BATTERY SHALL BE UL LISTED AND APPROVED FOR USE IN APPLICABLE JURISDICTION. FOR T8 LAMP, BATTERY SHALL BE BODINE OR IOTA WITH HIGHEST LEVEL OF OUTPUT WATTS. CONTRACTOR SHALL PROVIDE COLD TEMP/DAMP LOCATION/SLIM PROFILE EMERGENCY DRIVER/BATTERY AS NECESSARY FOR A COMPLETE FUNCTIONAL SYSTEM AS PER DESIGN INTENT. ALL EMERGENCY DRIVERS/BALLASTS SHALL INCLUDE A NON-SWITCHED CIRCUIT IN ADDITION TO THE CONTROLLED CIRCUIT FOR VOLTAGE MONITORING.

K. ALL LIGHTING FIXTURES AND CONTROL SHALL COMPLY WITH APPLICABLE VERSION OF ENERGY CONSERVATION CONSTRUCTION CODE.

L. ALL LIGHTING FIXTURES SHALL BE CONNECTED USING MAXIMUM 6 FOOT LENGTH OF FLEXIBLE METAL CONDUIT FROM ACCESSIBLE CEILING OUTLET BOX USING LOCK NUT TYPE FITTINGS WITH GROUNDING AS REQUIRED BY GOVERNING CODES. PROVIDE REQUIRED GROUND WIRE.

M. ALL SELF-CONTAINED EMERGENCY LIGHTING FIXTURES SHALL CONTAIN AN INTEGRAL EMERGENCY BATTERY UNIT, CONSISTING OF NICKEL-CADIUM BATTERY AND AN AUTOMATIC SOLID STATE CHARGER WITH VISIBLE CHARGING LED. UNIT SHALL PROVIDE 87.5 PERCENT RATED VOLTAGE OUTPUT FOR MINIMUM OF 90 MINUTES. EMERGENCY BATTERY UNIT SHALL BE AS MANUFACTURED BY LIGHT ALARMS ELECTRONICS CORP., EMERGI-LITE, DUAL-LITE OR APPROVED EQUAL.

N. ALL EXIT SIGNS SHALL BE PROVIDED WITH AN EMERGENCY BATTERY WITH 90 MINUTES (MIN.) OF BATTERY LIFE. BATTERY SHALL BE SPECIFIC TO EXIT SIGN MANUFACTURER.

O. BRANCH CIRCUITS SHALL IN ALL CASES CONTAIN THE NECESSARY NUMBER OF WIRES TO ACCOMMODE CONTROL INTENT. ALL LIGHTING CIRCUITS WHICH ARE CONTROLLED BY DIMMERS SHALL NOT SHARE A NEUTRAL WITH ANOTHER CIRCUIT, BUT SHALL HAVE A SEPARATE NEUTRAL CONDUCTOR TO THE PANEL, WHETHER OR NOT INDICATED ON PLAN.

P. ALL LIGHT FIXTURES SHALL BE SPECIFIED ON THE ELECTRICAL AND/OR ARCHITECTURAL DOCUMENTS. IT SHALL BE THIS CONTRACTOR RESPONSIBILITY TO OBTAIN THE EXACT FIXTURE SPECIFICATIONS FOR THE PROJECT PRIOR TO THE BID.

20. LOW VOLTAGE EMPTY CONDUIT SYSTEMS:

A. PROVIDE COMPLETE SYSTEM OF EMPTY CONDUIT, FITTINGS, BOXES, SLEEVES AND FISH/PULLING WIRES FOR LOW VOLTAGE SYSTEMS (VOICE, DATA, SECURITY, AUDIO/VISUAL, ETC., AS APPLICABLE).

B. INSTALLATION SHALL CONFORM TO REQUIREMENTS OF THE CONTRACT DRAWINGS AND EIA/TIA REQUIREMENTS.

C. CONDUITS FOR OUTLETS SHALL BE 1 IN. MINIMUM, TERMINATE WITH INSULATED BUSHING.

D. CONDUITS SHALL BE EMT or ENT AS PERMITTED BY CODE AND INSTALLED CONCEALED IN FINISHED AREAS.

E. CONDUITS SHALL BE GALVANIZED RIGID STEEL FOR OUTDOORS AND WHEN A SUBJECT TO PHYSICAL DAMAGE.

F. PROVIDE PULL WIRES (NYLON).

G. PROVIDE REQUIRED PULL BOXES.

H. BOND ALL RACEWAYS SYSTEMS TO PROVIDE A COMMON GROUND PATH.

I. ALL LOW VOLTAGE SYSTEMS EQUIPMENT, DEVICES AND WIRING SHALL BE PROVIDED AND INSTALLED BY GC'S CONTRACTOR. THIS CONTRACTOR SHALL PROVIDE BLANK COVER PLATES FOR DEVICES NOT IN USE.

21. UNDERGROUND SCOPE

A. COORDINATE ALL INCOMING SERVICES WORK WITH THE UTILITY COMPANY.
B. ALL TELECOMM CONDUITS RUNNING BELOW SLAB OR THE BUILDING STRUCTURE SHALL BE INSPECTED PRIOR TO COVERING WITH EARTH OR CONCRETE.
C. VERIFY LOCATION OF EQUIPMENT IN IDF AND MDF CLOSETS TO COORDINATE CONDUITS RISER LOCATION/TERMINATION POINT.
D. VERIFY THAT NO CONFLICTS EXIST WHICH WOULD PROHIBIT THE INSTALLATION OF ALL CONDUITS BELOW THE SLAB.
E. ALL WORKS SHOWN ON THE DRAWINGS SHALL BE COORDINATED WITH STRUCTURAL ENGINEER, PLUMBING ENGINEER AND ALL OTHER TRADES.
F. WHERE CONDUITS ARE CROSSING OR RUNNING PARALLEL TO OTHER SERVICES, THE REQUIRED SPACING SHALL BE COORDINATED WITH ASSOCIATED TRADE.
G. TELECOM/IT CONDUITS: PROVIDE ALL REQUIRED SUPPORTS, PULL BOXES, HAND HOLES, ETC AND COORDINATE ALL WORK AND EXACT REQUIREMENTS WITH 'IT' CONSULTANT.
H. RACEWAY ENCLOSURES, BOXES SHALL BE MECHANICALLY JOINED TO FORM A CONTINUOUS ELECTRICAL CONDUCTOR.
I. CONDUIT JOINTS AND ENDS SHALL BE CAREFULLY REAMED AFTER APPLICATION OF DIE. ENDS SHALL BE KEPT PLUGGED OR CAPPED DURING CONSTRUCTION.
J. FURNISH MINIMUM #14 GAUGE GALVANIZED STEEL DRAG WIRE OR EQUIVALENT IN ALL EMPTY CONDUIT RUNS. DRAG WIRE SHALL BE SECURELY FASTENED AT EACH END.
K. THE USE OF ALUMINUM CONDUIT WILL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED BY ENGINEER OR THE OWNER.
L. FURNISH EXPANSION FITTINGS ON ALL CONDUITS PASSING THROUGH STRUCTURAL EXPANSION JOINTS.
M. FOR EXPOSED FEEDERS USE RIGID GALVANIZED STEEL CONDUIT WITH THREADED FITTINGS.
N. ELECTRIC RACEWAY AND SUPPORTING SYSTEMS SHALL BE FURNISHED AND INSTALLED COMPLETE WITH ALL MATERIALS, FITTINGS, CONNECTIONS AND ACCESSORIES NECESSARY TO PROVIDE IN EACH INSTANCE.
O. UNDERGROUND RACEWAY SHALL BE SCHEDULE 80 PVC CONDUIT.
P. ALL UNDERGROUND HANGERS TO BE STAINLESS STEEL.
Q. ALL UNDERGROUND CONDUITS SHALL BE PROPERLY SUPPORTED FROM PILE CAPS DURING CONSTRUCTION AND INSTALLATION BEFORE SLAB IS SET AND POURED.
R. COORDINATE UNDERGROUND ELECTRICAL SERVICE RUNS WITH BUILDING STRUCTURE, BEAMS AND PILES.
S. AFTER CONDUCTORS ARE INSTALLED IN UNDERGROUND CONDUITS, PROPERLY SEAL BOTH ENDS OF THE CONDUITS TO PREVENT WATER/CONDENSATION ENTERING THE BUILDING.
T. ALL CONDUITS SHALL BE STUBED-OUT 5'-0" FROM BUILDING FOR UTILITY. ROUTING AS SHOWN IS FOR REFERENCE ONLY. ACTUAL ROUTING SHALL BE COORDINATED WITH UTILITY COMPANY AND OTHER TRADES.

22. INSTALLATION OF PRE-PURCHASED EQUIPMENT

A. INSTALLER/CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS AS REQUIRED TO INSTALL PRE-PURCHASED EQUIPMENT.

23. FIRE ALARM SYSTEM

A. FIRE ALARM EQUIPMENT, DEVICES AND COMPONENTS, WIRING AND CONNECTIONS, ETC., SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF APPLICABLE CODES, INDUSTRY STANDARDS, AUTHORITIES HAVING JURISDICTION AND OWNER. POWER SUPPLIES FOR VISIBLE NOTIFICATION DEVICES, BATTERIES, ETC. SHALL BE FURNISHED AS REQUIRED. INCLUDE ANY PROGRAMMING FOR FULLY OPERATIONAL SYSTEM. PROVIDE ALL LABOR AND MATERIALS FOR SYSTEM PRE-TEST AND TEST WITH SYSTEM MANUFACTURER AND FIRE DEPARTMENT.

B. EQUIPMENT PROVIDED BY OTHERS TO BE INSTALLED, WIRED, AND PROGRAMMED BY THIS CONTRACTOR.

24. ARC-FAULT, COORDINATION AND SHORT CIRCUIT STUDY

A. PROFESSIONAL ENGINEER, LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED, SHALL BE RESPONSIBLE FOR THE STUDY.

B. COMPLY WITH IEEE 242 FOR SHORT-CIRCUIT CURRENTS AND COORDINATION TIME INTERVALS.

C. COMPLY WITH IEEE 399 FOR GENERAL STUDY PROCEDURES.

D. IEEE 1584 -GUIDE FOR PERFORMING ARC-FLASH HAZARD CALCULATIONS.

E. STUDY SHALL BE PERFORMED UTILIZING COMPUTER SOFTWARE 'SKM SYSTEMS ANALYSIS, INC.' OR APPROVED EQUAL.

F. CALCULATE THE MAXIMUM AVAILABLE SHORT-CIRCUIT CURRENT IN AMPERES RMS SYMMETRICAL AT CIRCUIT-BREAKER POSITIONS OF THE ELECTRICAL POWER DISTRIBUTION SYSTEM. THE CALCULATION SHALL BE FOR A CURRENT IMMEDIATELY AFTER INITIATION AND FOR A THREE-PHASE BOLTED SHORT CIRCUIT AT EACH OF THE FOLLOWING:

1) SWITCHGEAR AND SWITCHBOARD BUS.
2) DISTRIBUTION PANELBOARD.
3) BRANCH CIRCUIT PANELBOARD.

G. NOT USED.

H. NOT USED.

I. NOT USED.

J. ARC FLASH HAZARD ANALYSIS STUDY PER THE REQUIREMENTS SET FORTH IN NFPA 70E -STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE. THE ARC FLASH HAZARD ANALYSIS SHALL BE PERFORMED ACCORDING TO THE IEEE 1584 EQUATIONS THAT ARE PRESENTED IN NFPA70E-2004, ANNEX D. PROVIDE AND INSTALL ARC-FLASH LABELS ON ALL EQUIPMENT. THE LABEL SHALL INCLUDE THE FOLLOWING INFORMATION, AT A MINIMUM:

1) LOCATION DESIGNATION
2) NOMINAL VOLTAGE
3) FLASH PROTECTION BOUNDARY
4) HAZARD RISK CATEGORY
5) INCIDENT ENERGY
6) WORKING DISTANCE
7) ENGINEERING REPORT NUMBER, REVISION NUMBER AND ISSUE DATE.

K. STUDY SHALL INCLUDE RECOMMENDATIONS FOR CORRECTIVE MEASURES REQUIRED TO COMPLY WITH CODE REQUIREMENTS FOR COORDINATION.

L. THE CONTRACTOR SHALL PERFORM FIELD ADJUSTMENTS OF THE PROTECTIVE DEVICES AS REQUIRED TO PLACE THE EQUIPMENT IN FINAL OPERATING CONDITION. THE SETTINGS SHALL BE IN ACCORDANCE WITH THE APPROVED SHORT CIRCUIT STUDY, PROTECTIVE DEVICE EVALUATION STUDY, AND PROTECTIVE DEVICE COORDINATION STUDY.

25. ELECTRICAL TESTING.

A. PROVIDE ALL NECESSARY METERS, INSTRUMENTS, TEMPORARY WIRING AND LABOR TO TEST AND ADJUST ALL EQUIPMENT AND WIRING INSTALLED AND/OR CONNECTED UNDER THIS CONTRACT, INCLUDING ELECTRICAL EQUIPMENT FURNISHED BY OTHERS, TO DETERMINE PROPER POLARITY, PHASING, FREEDOM FROM GROUND FAULTS AND SHORTS AND PROPER OPERATION OF EQUIPMENT. ALL MEASURING INSTRUMENTS MUST BE PROPERLY CALIBRATED.

B. APPLICABLE NETA STANDARDS.

C. CHECK ALL LIGHTING FIXTURES, LAMPS, RECEPTACLES, ELECTRICAL EQUIPMENT AND DEVICES FOR PROPER OPERATION AND REPLACE DEFECTIVE DEVICES.

D. MOTORS:

1) VERIFY MOTOR NAMEPLATE FOR HORSEPOWER, SPEED AND PHASE AND VOLTAGE.

2) PROVIDE FOLLOWING TESTS ON MOTORS START UP:

a. CHECK SHAFT ROTATION.
b. CHECK BEARING TEMPERATURE
c. CHECK MOTOR FOR SMOOTH OPERATION.
d. READING OF FULL LOAD CURRENT. IF READING IS OVER THE RATED FULL LOAD CURRENT, TAKE THE NECESSARY CORRECTIVE MEASURES.

E. PERFORM MEGOHMMETER TEST IN ACCORDANCE WITH MANUFACTURERS STANDARD FOR ALL FEEDERS PRIOR TO ENERGIZING AND REPLACE ANY DEFECTIVE RUNS.

26. NOT USED.

27. NOT USED.

28. FIRE STOPPING

A. PROVIDE ALL REQUIRED FIRE-STOPPING. WORK INCLUDES FIRE STOPPING PENETRATIONS OF FIRE-RESISTANCE RATED FLOORS, WALLS AND PARTITIONS.

B. SUBMIT MANUFACTURER'S PRODUCT DATA FOR EACH FIRE-STOPPING PRODUCT REQUIRED, INCLUDING INSTRUCTIONS FOR SUBSTRATE PREPARATION AND FIRE-STOPPING INSTALLATION.

C. PROVIDE MANUFACTURER'S STANDARD FIRE-STOPPING SEALANT WITH ACCESSORY MATERIALS, HAVING FIRE RESISTANCE RATINGS INDICATED AS ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES PER ASTM E814 BY UNDERWRITERS LABORATORY, INC. OR OTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

D. UNLESS REQUIRED OTHERWISE BY ARCHITECT, MANUFACTURERS INCLUDE THE FOLLOWING:

1) SPECIFIED TECHNOLOGIES INC. SPEC SEAL LC150 HILTI FS-ONE MAX

29. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS

A. SUBMIT WRITTEN CERTIFICATION THAT ELECTRICAL SYSTEMS ARE COMPLETE AND OPERATIONAL. SUBMIT CERTIFICATION WITH CONTRACTOR'S REQUEST FOR FINAL REVIEW.

1) AT THE TIME OF FINAL REVIEW OF ELECTRICAL WORK, DEMONSTRATE THE OPERATION OF ELECTRICAL SYSTEMS. FURNISH LABOR, APPARATUS AND EQUIPMENT FOR SYSTEMS' DEMONSTRATION. THE VARIOUS TEST SHALL BE WITNESSED AND APPROVED BY THE OWNER AND/OR THE OWNERS REPRESENTATIVE.

B. THE CONTRACTOR SHALL FURNISH ALL TEST EQUIPMENT, MATERIALS, LABOR, AND TEMPORARY POWER HOOK-UPS TO PERFORM START-UP AND ALL TESTS AS REQUIRED. ALL TEST PROCEDURES SHALL CONFORM TO THIS SPECIFICATION AND APPLICABLE STANDARDS INCLUDING BUT NOT LIMITED TO; ANSI, IEEE, NEMA, OSHA AND NETA.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTS AND TEST RECORDS. TEST RECORDS SHALL BE KEPT FOR EACH PIECE OF EQUIPMENT. COPIES SHALL BE FURNISHED TO THE ENGINEER FOR RECORD.

D. A VISUAL INSPECTION OF ALL ELECTRICAL EQUIPMENT, TO CHECK FOR THE FOREIGN MATERIAL, TIGHTNESS OF WIRING AND CONNECTION, PROPER GROUNDING, MATCHING NAMEPLATE CHARTS WITH SPECIFICATION, ETC., SHALL BE MADE PRIOR TO ACTUAL TESTING.

E. A COMPLETE OPERATIONAL TEST SHALL BE PERFORMED FOR THE FIRE ALARM SYSTEM.

30. SPECIAL TESTING SERVICES

A. FOR ELECTRICAL SYSTEMS SUCH AS EMERGENCY/STAND-BY POWER SYSTEMS, DIMMING/LIGHTING CONTROL SYSTEMS, FIRE ALARM SYSTEM OR SIMILAR, CONNECTIONS AND TESTING SHALL BE PERFORMED UNDER DIRECT SUPERVISION OF FACTORY AUTHORIZED PERSONEL AND AUTHORITIES HAVING JURISDICTION.

B. ANY AND ALL EXPENSES INCURRED BY THE EQUIPMENT MANUFACTURERS' REPRESENTATIVES RELATED TO THIS PROJECT, SHALL BE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

31. DESIGN MODIFICATIONS

A. THE ELECTRICAL SYSTEM SHOWN IN CONTRACT DOCUMENTS HAS BEEN BASED ON SPECIFIC MANUFACTURER'S DATA AVAILABLE DURING THE DESIGN PHASE. WHERE ANY MODIFICATIONS ARE REQUIRED TO ACCOMMODATE ACTUAL EQUIPMENT AND FIELD CONDITIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ELECTRICAL DESIGN MODIFICATIONS TO AFFECT SUCH CHANGES WITHIN THE INTENT OF THESE SPECIFICATIONS AND TO INFORM THE ENGINEER, IN WRITING, OF SUCH CHANGE. ASSOCIATED SCOPE REVISION SHALL NOT RESULT IN ADDITIONAL COST TO THE OWNER.

JAM ARCH
IS NOW COLLIERS ENGINEERING & DESIGN

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ARMEN KHACHATURIAN, P.E. – FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL
33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

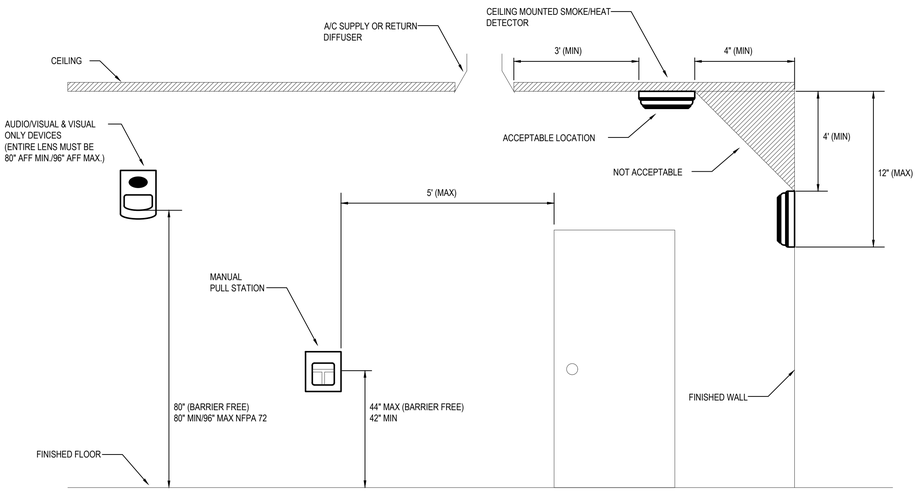
SHEET TITLE:

ELECTRICAL SPECIFICATION

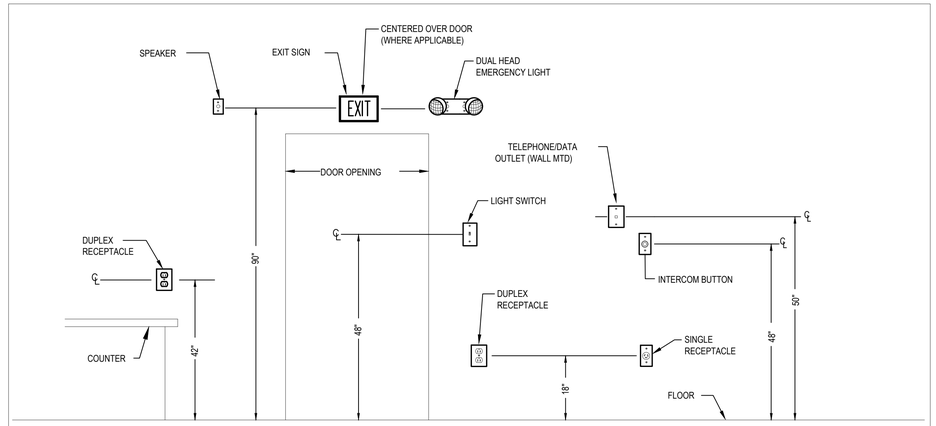
REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-302

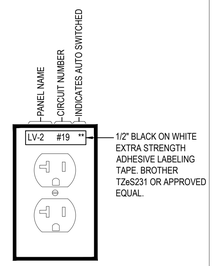


FIRE ALARM DEVICE TYPICAL MOUNTING HEIGHT
(N.T.S.)



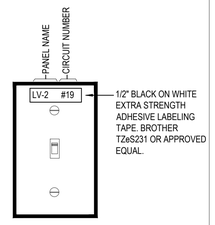
TYPICAL MOUNTING HEIGHT DETAIL
(N.T.S.)

NOTE: ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT NUMBER LABELS ON ALL RECEPTACLES IN LIGHTBRIDGE ACADEMY AS SHOWN BELOW



RECEPTACLE LABEL DETAIL
(N.T.S.)

NOTE: ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT NUMBER LABELS ON ALL SWITCHES IN LIGHTBRIDGE ACADEMY AS SHOWN BELOW



SWITCH LABEL DETAIL
(N.T.S.)

COPPER BRANCH CIRCUIT WIRE SIZING TABLES – 208V – 3% VOLTAGE DROP

	C/B TRIP	208V, 3P, 3W 120V/208V, 3P, 4W	208V, 2P, 2W 120V/208V, 2P, 3W	120V, 1P, 2W
DISTANCE IN FEET MINIMUM WIRE SIZE	15	177 273 429 12 10 8	153 236 371 578 12 10 8 6	88 136 214 333 500 625 12 10 8 6 4 3
DISTANCE IN FEET MINIMUM WIRE SIZE	20	132 205 322 12 10 8	115 177 279 433 12 10 8 6	66 102 161 250 375 469 12 10 8 6 4 3
DISTANCE IN FEET MINIMUM WIRE SIZE	30	136 214 334 10 8 6	118 186 289 433 10 8 6 4	68 107 167 250 313 375 10 8 6 4 3 2
DISTANCE IN FEET MINIMUM WIRE SIZE	40	161 250 375 8 6 4	139 217 325 406 8 6 4 3	80 125 188 234 281 352 8 6 4 3 2 1
DISTANCE IN FEET MINIMUM WIRE SIZE	50	129 200 300 8 6 4	111 173 260 325 8 6 4 3	64 100 150 188 225 281 8 6 4 3 2 1
DISTANCE IN FEET MINIMUM WIRE SIZE	60	167 250 313 6 4 3	144 217 271 325 6 4 3 2	83 125 156 188 234 6 4 3 2 1
DISTANCE IN FEET MINIMUM WIRE SIZE	70	214 268 322 4 3 2	168 232 279 348 4 3 2 1	107 134 161 201 4 3 2 1
DISTANCE IN FEET MINIMUM WIRE SIZE	80	188 235 281 4 3 2	163 203 244 305 4 3 2 1	94 117 141 176 4 3 2 1
DISTANCE IN FEET MINIMUM WIRE SIZE	90	208 250 313 3 2 1	181 217 271 3 2 1	104 125 156 3 2 1
DISTANCE IN FEET MINIMUM WIRE SIZE	100	188 225 281 3 2 1	163 195 244 3 2 1	94 113 141 3 2 1

NOTES:

1. READ ACROSS TO THE RIGHT FROM C/B TRIP TO DESIRED VOLTAGE CHARACTERISTICS AND NEXT GREATER DISTANCE THAN CIRCUIT IN QUESTION.
2. READ DOWN TO MINIMUM WIRE SIZE.
3. DISTANCES ARE TO THE CENTER OF CONCENTRATED LOAD SUCH AS CLASSROOM LIGHTING OR THE MIDPOINT OF DISTRIBUTED LOAD SUCH AS CORRIDOR LIGHTING.
4. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INCREASED IN SIZE PROPORTIONATELY PER NEC.

RACEWAY SIZING
ALL RACEWAYS SHALL BE SIZED IN ACCORDANCE WITH THE CURRENT NATIONAL ELECTRICAL CODE IN EFFECT AS A MINIMUM SIZE. THE MORE COMMON SIZES ARE INCLUDED HERE FOR THE CONTRACTOR'S CONVENIENCE.

WIRE SIZE	NO. OF CONDUCTORS	MINIMUM CONDUIT SIZE
12	3	3/4"
12	4	3/4"
12	5	3/4"
12	6	3/4"
12	7	3/4"
12	8	3/4"
10	3	3/4"
10	4	3/4"
10	5	3/4"
10	6	3/4"
10	7	3/4"
10	8	3/4"

WIRE SIZE	NO. OF CONDUCTORS	MINIMUM CONDUIT SIZE
8	3	3/4"
8	4	3/4"
8	5	3/4"
8	6	1"
8	7	1"
8	8	1"
6	3	3/4"
6	4	3/4"
6	5	1"
6	6	1"
6	7	1-1/4"
6	8	1-1/4"

NOTES TO PANELBOAD SCHEDULES AND BRANCH CIRCUIT WIRE SIZING TABLES.

WIRE SIZING
UNLESS OTHERWISE INDICATED, MINIMUM WIRE AMPACITY SHALL BE GREATER THAN OR EQUAL TO THE BRANCH CIRCUIT TRIP BASED ON COPPER CONDUCTOR WITH 90-DEGREE C THHN INSULATION APPLIED AT ITS 75-DEGREE C AMPACITY.

REFER TO THE BRANCH CIRCUIT WIRE SIZING TABLES FOR DISTANCE LIMITATIONS FOR THE MINIMUM WIRE SIZE AND FOR SELECTING THE PROPER WIRE SIZE FOR THE DISTANCE AND VOLTAGE DROP INVOLVED.

NUMBER OF CONDUCTORS
QUANTITIES OF WIRES SHALL BE BASED ON AN INDIVIDUAL HOMERUN FOR EACH CIRCUIT AS FOLLOWS.

	PHASE CONDUCTOR	FULL CIRCUIT SIZE NEUTRAL CONDUCTOR	FULL CIRCUIT SIZE EQUIPMENT GROUNDING CONDUCTOR	FULL CIRCUIT SIZE ISOLATED GROUND CONDUCTOR
1 POLE CIRCUIT	1	1	1	0
1 POLE DATA / COMPUTER CIRCUIT	1	1	1	1
2 POLE CIRCUIT	2	1	1	0
3 POLE CIRCUIT	3	1	1	0
3 POLE MOTOR CIRCUIT	3	0	1	0

	PHASE CONDUCTOR	FULL CIRCUIT SIZE NEUTRAL CONDUCTOR	FULL CIRCUIT SIZE EQUIPMENT GROUNDING CONDUCTOR	FULL CIRCUIT SIZE ISOLATED GROUND CONDUCTOR
TWO 1 POLE HOMERUNS	2	2	1	0
TWO 1 POLE DATA/COMP. CIRCUIT HOMERUNS	2	2	1	1
THREE 1 POLE HOMERUNS	3	3	1	0
THREE 1 POLE DATA/COMP. CIRCUIT HOMERUNS	3	3	1	1

CONSECUTIVE INDIVIDUAL 20 AMP LINE TO NEUTRAL BRANCH CIRCUITS MAY NOT BE COMBINED INTO MULTI-WIRE BRANCH CIRCUITS HAVING HOMERUNS WITH A COMMON NEUTRAL CONDUCTOR.

SINGLE PHASE, TWO POLE, TWO WIRE, LINE TO LINE, BRANCH CIRCUITS AND SINGLE PHASE, TWO POLE, THREE WIRE, LINE TO LINE PLUS NEUTRAL, BRANCH CIRCUITS SHALL HAVE INDIVIDUAL UNCOMBINED HOMERUNS.

COMBINED TWO AND THREE CIRCUIT HOMERUNS SHALL HAVE SEPARATE NEUTRALS FOR EACH BUT A COMMON EQUIPMENT GROUNDING CONDUCTOR AND A COMMON ISOLATED GROUNDING CONDUCTOR MAY BE USED.

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DRAWN BY: GS/SS/LG
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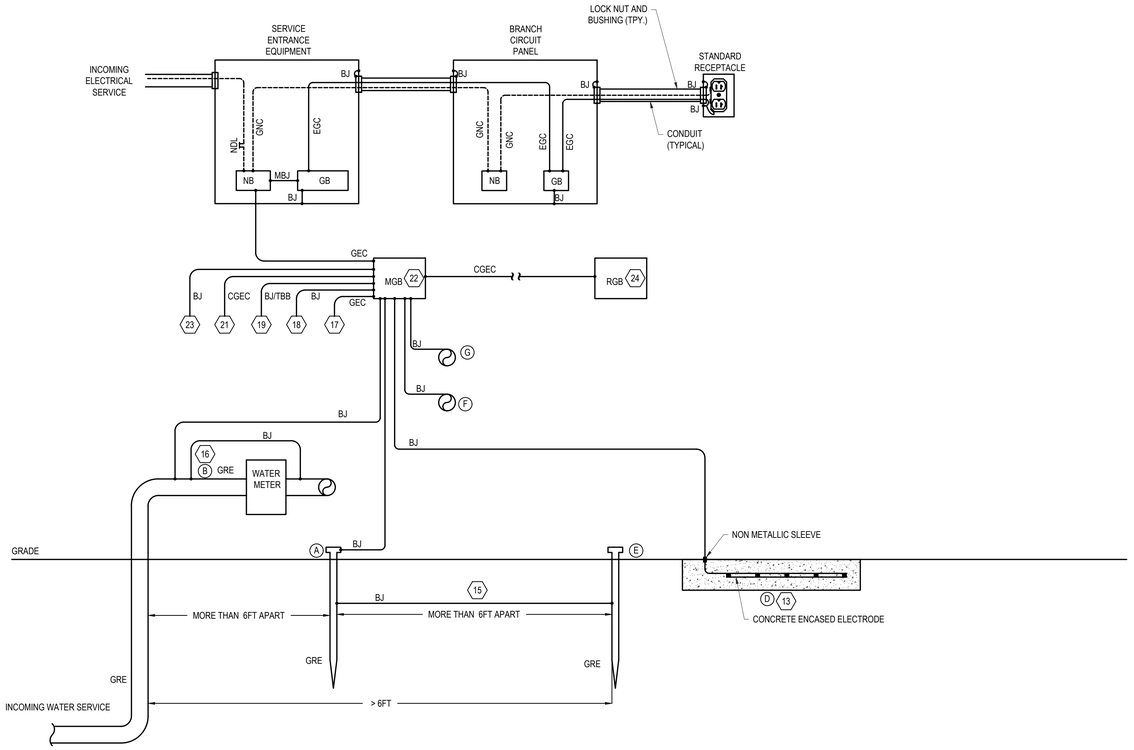
SHEET NO.
E-401



ELECTRICAL GROUNDING AND BONDING DETAILS

SCALE : NONE (1) (2) (8) (10) (11) (12)

(#) DETAIL NOTES:

1. DETAIL IS TYPICAL AND IS INTENDED TO ILLUSTRATE METHODS OF GROUNDING AND BONDING OF ELECTRICAL DISTRIBUTION SYSTEM COMPONENTS AND BUILDING ELEMENTS. CONTRACTOR SHALL ADAPT DETAILS TO SUIT THE PARTICULAR APPLICATION AND MAY SUBMIT ALTERNATIVE METHODS TO THE ENGINEER FOR CONSIDERATION.
2. DETAIL IS TYPICAL FOR METALLIC AND NONMETALLIC RACEWAY AND BOX SYSTEMS. FOR METALLIC RACEWAY SYSTEMS WITH U.L. LISTED AND APPROVED BONDING LOCKNUTS OR BUSHINGS AND NONMETALLIC RACEWAYS AND/OR BOXES, ELIMINATE THE BONDING JUMPERS BETWEEN THE RACEWAY AND THE BOX.
3. GROUND ROD SHALL NOT BE LESS THAN 3/4" DIAMETER AND 10 FEET IN LENGTH AND SHALL CONSIST OF THE FOLLOWING:
   - A. COPPER CLAD.
   - B. UNLESS PROTECTED AGAINST PHYSICAL DAMAGE ARE PERMITTED BY THE CODE, TOP OF GROUNDING ROD SHALL BE FLUSH WITH OR BELOW GROUND LEVEL.
   - C. INSTALLATION AND CONNECTION OF DRIVEN GROUND RODS MUST BE WITNESSED BY THE AUTHORITY HAVING JURISDICTION AND THE LOCATION(S) DOCUMENTED BY RECORDING THE DEPTH OF COVER AND MEASURED DISTANCES FROM TWO FIXED PERMANENT OBJECTS OR BUILDING APPURTENANCES.
4. GROUNDED NEUTRAL CONDUCTORS (GNC) AND EQUIPMENT GROUNDING CONDUCTORS (EGC) SHALL ALL BE INSULATED. GNC SHALL BE WHITE(OR GRAY). EGC SHALL BE GREEN.
5. GROUNDING ELECTRODE CONDUCTORS (GEC) SHALL BE INSULATED AND SHALL BE GREEN, UNLESS PERMITTED OTHERWISE BY AUTHORITIES HAVING JURISDICTION.
6. BONDING JUMPERS (BJ) MAY BE BARE WHERE COMPLETELY CONTAINED WITHIN AN ENCLOSURE OR INSTALLED EXPOSED IN LENGTHS OF SIX FEET OR LESS. WHERE INSTALLED IN RACEWAY OR EXPOSED IN LENGTHS GREATER THAN SIX FEET THEY SHALL BE INSULATED AND SHALL BE GREEN.
7. METHODS OF ESTABLISHING THE GROUNDING ELECTRODE SYSTEM SHALL BE AS PER NEC 250.53, INCLUDING COMBINATIONS OF GROUNDING ELECTRODE CONDUCTORS AND SUPPLEMENTAL ELECTRODES.
8. REFER TO NATIONAL ELECTRICAL CODE "GROUNDING ELECTRODE CONDUCTORS" TABLE (NEC 250.66) AND "EQUIPMENT GROUNDING CONDUCTORS" TABLE (NEC 250.122) FOR SIZING OF GROUNDING THAT IS NOT INDICATED IN THE SCHEDULES OR DIAGRAMS.
9. NOT USED.
10. NOT USED.
11. ELECTRICALLY CONTINUOUS METAL BAR JOISTS IN MASONRY CONSTRUCTION SHALL BE BONDED TO THE SERVICE ENTRANCE EQUIPMENT ENCLOSURE OR TO INTERIOR,GROUNDED, STRUCTURAL STEEL IN OTHER PORTIONS OF THE BUILDING.
12. THE EQUIPMENT GROUNDING CONDUCTOR OF CONDUITS SERVING GAS APPLIANCES MAY SERVE AS THE REQUIRED BONDING CONNECTION.
13. THE CONCRETE SURROUNDING A CONCRETE ENCASED ELECTRODE SHALL BE IN DIRECT CONTACT WITH THE EARTH. VAPOR BARRIERS AND THE LIKE NEGATE ITS USE AS A GROUNDING ELECTRODE. ELECTRODE SHALL BE LOCATED WITHIN AND NEAR THE BOTTOM OF A FOOTING. ELECTRODE SHALL CONSIST OF 20 FT. OF # 3/0 AWG BARE COPPER CONDUCTOR BONDED TO THE REINFORCING STEEL AT FOUR POINTS. COORDINATE INSPECTION OF PIGTAIL, SLEEVE, AND CONNECTION TO ELECTRODE WITH AUTHORITY HAVING JURISDICTION.
   - A. ENCASED IN A MINIMUM OF 2" CONCRETE.
   - B. CLAMPS SHALL BE U.L. LISTED.
14. NOT USED.
15. 1#6 MINIMUM BARE SOFT DRAWN COPPER CONDUCTOR.
16. WATER METER WITH JUMPER. TAP BEFORE THE METER SHALL BE WITHIN 5 FEET FROM THE POINT OF WATER PIPE ENTRANCE TO THE BUILDING.
17. SEPARATELY DERIVED GROUNDING SYSTEM (WHERE PROVIDED), SHALL BE GROUNDED AS PER NEC 250.30 AND GROUNDING ELECTRODE CONDUCTOR SHALL BE AS PER NEC 250.66. BONDING SYSTEM SHALL BE AS PER NEC 250.28 AND NEC 250.102.
18. TO GROUND LOOP CONDUCTOR INTERCONNECTING LIGHTNING PROTECTION SYSTEM GROUNDING ELECTRODES (WHERE PROVIDED).
19. TO TELECOMMUNICATION SYSTEM MAIN GROUND BUSBAR (WHERE PROVIDED). TELECOMMUNICATION BOUNDING BACKBONE CONDUCTOR (TBB) SHALL BE SIZED PER ANSI/TIA-607-B.
20. MAIN BONDING JUMPER SHALL BE PROVIDED AS PER NEC 250.28 AND NEC 250.102.
21. WHERE PROVIDED, COMMON GROUNDING ELECTRODE CONDUCTOR SHALL COMPLY WITH NEC 250.30.(A).(6).
22. MAIN GROUNDING BUSBAR SHALL BE SOLID COPPER, 1/ 4" THICK, 4" WIDE AND SUFFICIENT LENGTH TO ACCOMMODATE REQUIRED CONNECTIONS PLUS EXTRA 6" LENGTH FOR FUTURE CONNECTIONS. PROVIDE REQUIRED STAINLESS STEEL MOUNTING BRACKETS, INSULATORS AND MOUNTING HARDWARE. INSTALL IN READILY ACCESSIBLE LOCATION.
23. WHERE POOL, FOUNTAIN OR SIMILAR INSTALLATION IS CONSTRUCTED, PROVIDE REQUIRED BONDING AND GROUNDING OF EQUIPMENT AND CONDUCTIVE ELEMENTS. COORDINATE ASSOCIATED WORK WITH CONSULTANT SPECIFYING THE INSTALLATION.
24. RISER GROUND BUSBAR. REFER TO FLOOR PLANS FOR EXACT QUANTITY AND LOCATION.

KEY LEGEND GROUNDING ELECTRODES

(A)	GROUND ROD ELECTRODE NEC 250.52(A)(5)
(B)	METAL UNDERGROUND WATER SERVICE PIPE NEC 250.52(A)(1)
(C)	GROUNDED INTERIOR STRUCTURAL STEEL NEC 250.52(A)(2)
(D)	CONCRETE ENCASED ELECTRODE NEC 250.52(A)(3)
(E)	SUPPLEMENTAL GROUNDING ELECTRODE NEC 250.53.(A).(2)

NOTES:
1. GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED AS PER NEC 250.66.
2. OTHER GROUNDING ELECTRODES MAY BE USED AS PER NEC 250.52 WHEN APPROVED BY THE ENGINEER AND LOCAL AUTHORITIES HAVING JURISDICTION.

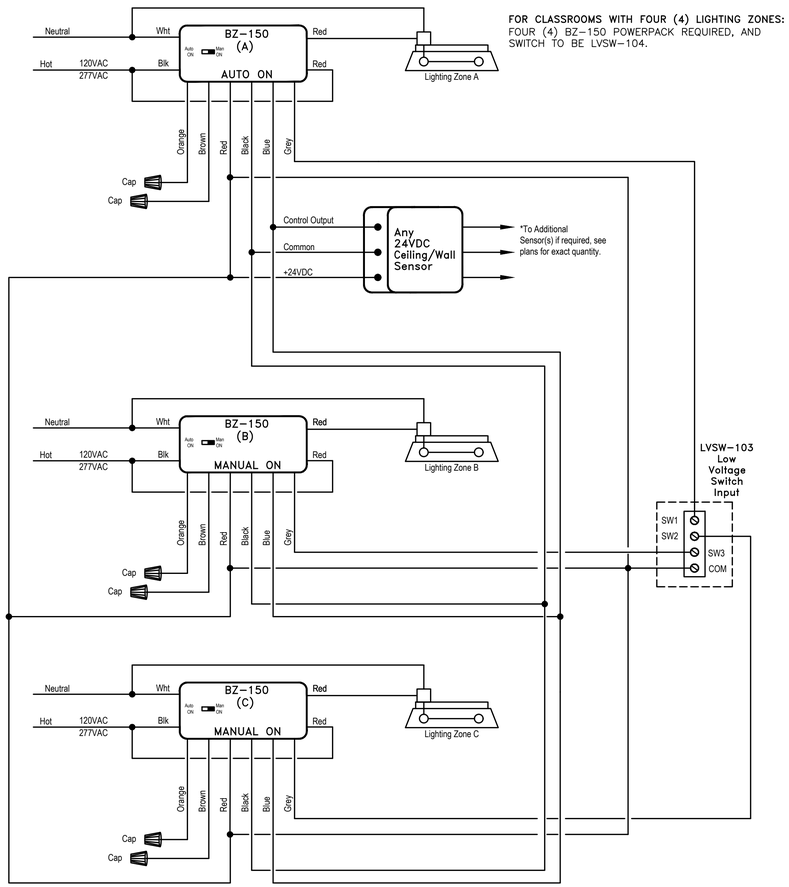
KEY LEGEND BONDING OF PIPING AND EXPOSED STRUCTURAL METAL

(F)	LOCAL INTERIOR HOT & COLD METAL WATER PIPING NEC 250.104(A)(1) AND NEC 250.104(D)(1)
(G)	METAL GAS SERVICE PIPING, AFTER THE METER NEC 250.104(B)

NOTES:
1. BOUNDING CONDUCTORS SHALL BE AS PER NEC 250.102.
2. BOUNDING METHOD SHALL BE AS PER NEC 250.104.

ABBREVIATIONS

BJ	BONDING JUMPER	(6)
CGEC	COMMON GROUNDING ELECTRODE CONDUCTOR	
GRE	GROUNDING ELECTRODE	(3)
GEC	GROUNDING ELECTRODE CONDUCTOR	(5)
GNC	GROUNDED NEUTRAL CONDUCTOR	(4)
EGC	EQUIPMENT GROUNDING CONDUCTOR	(4)
NB	NEUTRAL BUSBAR	
NDL	NEUTRAL DISCONNECT LINK	
MBJ	MAIN BONDING JUMPER	(20)
MGB	MAIN GROUND BUSBAR	
RGB	RISER GROUND BUSBAR	



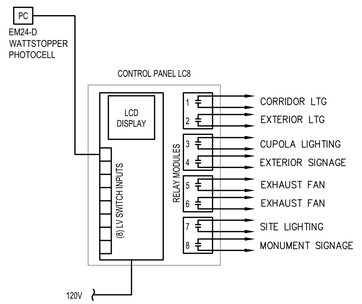
FOR CLASSROOMS WITH FOUR (4) LIGHTING ZONES: FOUR (4) BZ-150 POWERPACK REQUIRED, AND SWITCH TO BE LVSW-104.

LIGHTING CONTROL WIRING DIAGRAM FOR CLASSROOMS WITH (3) ZONES
(N.T.S.)

RELAY CONTROL SCHEDULE

CONTROL PANEL /CONTACTOR	RELAY DESIGN.	CIRCUIT CONTROLLED	CONTROL DESIGNATION	OVERRIDE DESIGNATION
LC8	1	MP-10	CORRIDOR LTG	PANEL
	2	MP-12	EXTERIOR BUILDING LTG	PC
	3	MP-20	CUPOLA LIGHTING	PC
	4	RP-66	EXTERIOR SIGNAGE	PC
	5	RP-52,54	EXHAUST FAN	PANEL
	6			
	7	RP-64	SITE LIGHTING	PC
	8	RP-62	MONUMENT SIGNAGE	PC

NOTES:
1. EC SHALL FURNISH AND INSTALL ALL EQUIPMENT SHOWN.
2. PROVIDE WATTSTOPPER LC-8 LIGHTING CONTROL PANEL.
3. PROVIDE 3 WIRE LOW VOLTAGE MOMENTARY OVERRIDE SWITCH.
4. TIME SCHEDULE TO BE COORDINATED WITH TENANT.
5. PROVIDE (3) DUAL SINGLE-POLE RELAYS MODULES AND (1) DOUBLE-POLE RELAY MODULE.
6. LV SWITCH SHALL SERVE AS MANUAL OVERRIDE SWITCH FOR GENERAL LIGHTING.
7. ALL 120V LOCAL SWITCHES SHALL BE WIRED DOWNSTREAM OF RELAYS.
8. COORDINATE EXACT LOCATION OF PHOTOCELL IN FIELD. PHOTOCELL SHALL FACE NORTHERN SKY.



AUTOMATIC LIGHTING CONTROL DETAIL
(N.T.S.)

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ARMEN KHACHATURIAN, P.E. - FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy SM
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

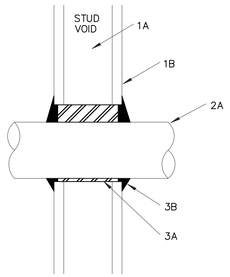
SHEET TITLE:

ELECTRICAL DETAILS

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-402

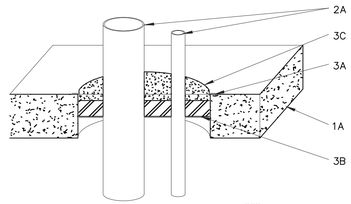


WALL ASSEMBLY
1A 1HR OR 2HR RATED MIN 2x3 STL STUDS @ MAX 24"oc
1B (1) LAYER (1HR) OR (2) LAYER (2HR) 5/8" GWB, TYPE X. MAX DIAMETER OPENING OF 24 SQ IN

PENETRANT
2A ONE OF THE FOLLOWING MAY BE USED:
MAX 24" STL PIPE OR CONDUIT
MAX 24" IRON PIPE
MAX 6" CONDUIT OR EMT
MAX 6" COPPER PIPE OR
ANNULAR SPACE: 1/8" TO MAX 1/2"

FIRESTOPPING
3A MINERAL WOOL BACKING FILLED TO DEPTH OF WALL SPACE
3B 1/4" SEALANT w/ 1/4" CROWN AND OVERLAP GWB 1/4" FOR 2HR OR ½" CROWN AND ½" OVERLAP FOR 1HR.

UL SYSTEM WL 1089
N.T.S.



FLOOR ASSEMBLY
1A 2HR RATED MIN 4–1/2" CONC FLOOR MAX OPENING OF 15"

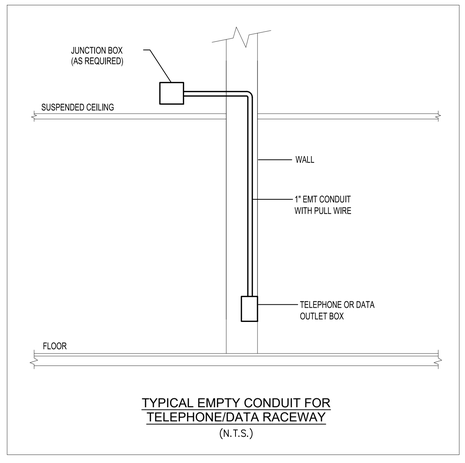
PENETRANT
2A UP TO 4 OF THE FOLLOWING IN ANY COMBINATION. ONLY 2 OF WHICH ARE GREATER THAN 2":
MAX 4" STL PIPE OR CONDUIT
MAX 4" COPPER PIPE OR TUBING
ANNULAR SPACE: 2" – 3"
MAX 4" EMT

FIRESTOPPING
3A MINERAL WOOL COMPRESSED INTO ANNULAR SPACE MIN 2
3B AT FLOOR SURFACE 1" DEEP SEALANT FINISHED FLUSH w/ FLOOR

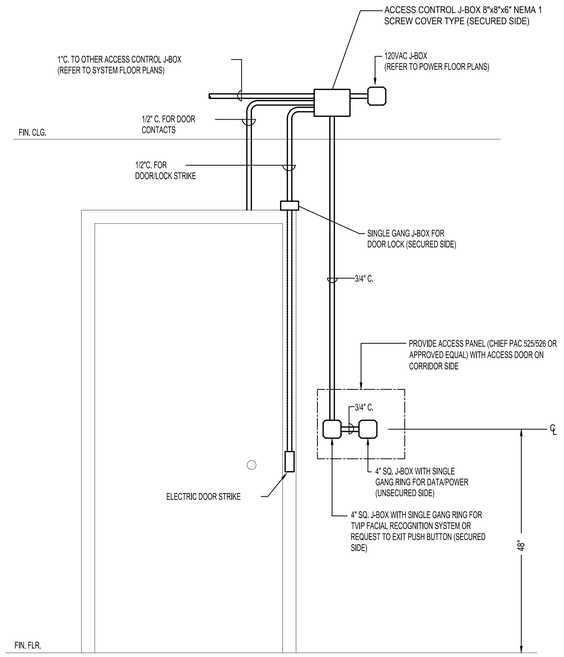
UL SYSTEM CAJ1088–F
N.T.S.

NOTE:
1. THE ABOVE DETAILS ARE PROVIDED TO AID IN THE INSTALLATION AND SELECTION OF THE UL LISTED DESIGN (FLAMESAFE FS–1900 SERIES SEALANT). THE CONTRACTOR SHALL SUBMIT PRODUCT DATA DETAILS AND SHOP DWGS FOR ALL PENETRATIONS.
2. SYSTEM DESIGN EVALUATED TO THE UL 1479 (ASTM E814) FIRE TESTS OF THROUGH – PENETRATION FIRESTOPS.
3. REFER TO THE UL LIST DESIGN FOR COMPLETE INFORMATION AND THE UL FIRE RESISTANCE DIRECTORY FOR COMPONENTS REQUIRING UL CLASSIFICATION.

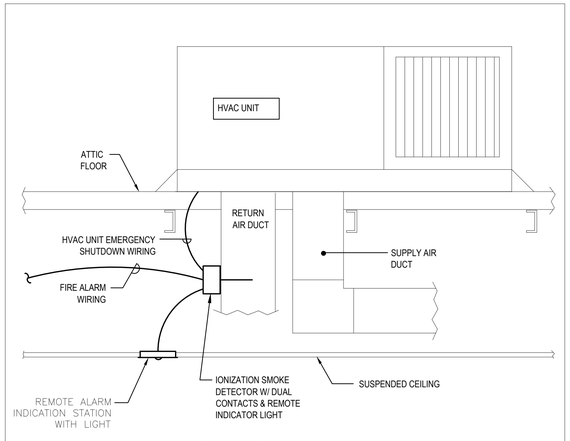
TYPICAL DETAILS OF CONDUITS THRU RATED WALLS OR FLOORS
NOT TO SCALE



TYPICAL EMPTY CONDUIT FOR TELEPHONE/DATA RACEWAY
(N.T.S.)



ACCESS CONTROL CONDUIT DETAIL FOR FACIAL RECOGNITION SYSTEM
(N.T.S.)



DUCT MOUNTED SMOKE DETECTOR DETAIL
- ROOFTOP HVAC UNIT
(N.T.S.)

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JOB NUMBER: 24001265A
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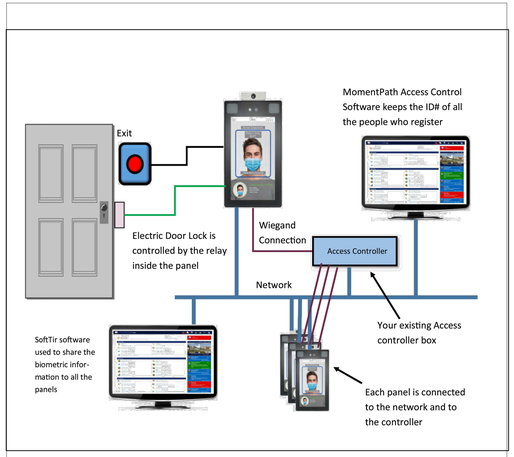
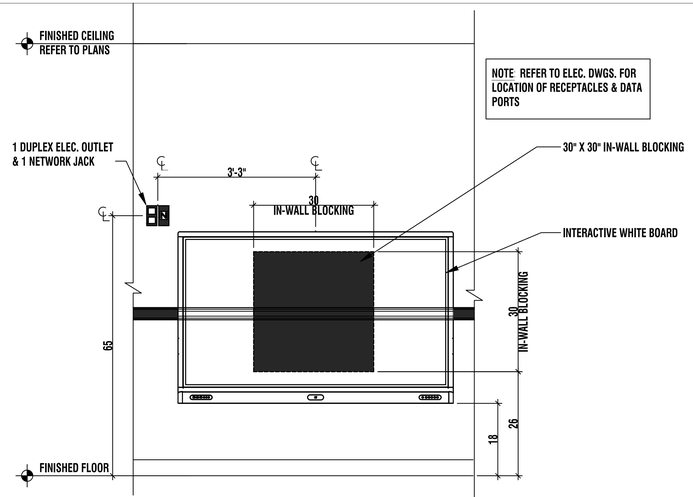
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-403



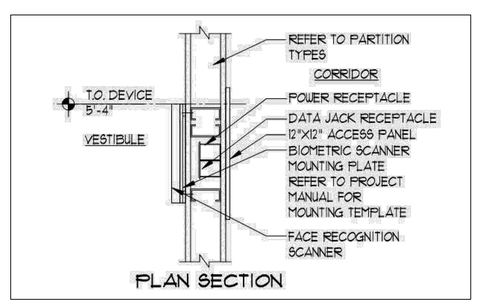
LIGHTBRIDGE PROJECTOR MOUNT ELEVATION

(N.T.S.)



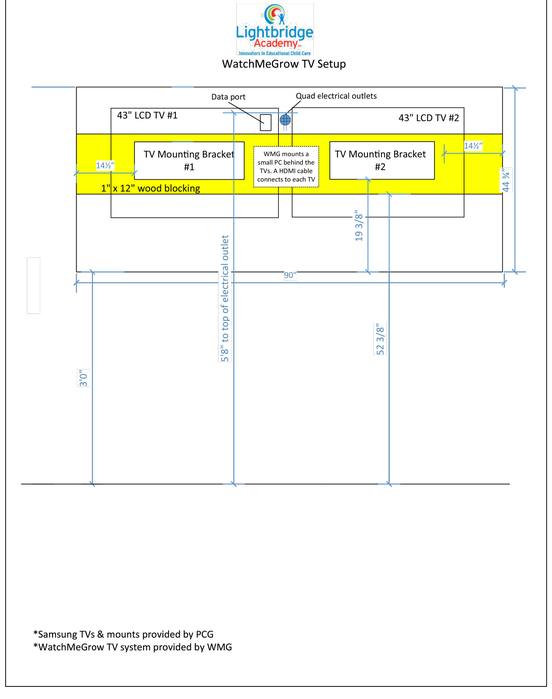
LIGHTBRIDGE INTERACTIVE WHITEBOARD ELEVATION

(N.T.S.)



FACIAL RECOGNITION SCANNER DETAIL

(N.T.S.)



WATCHMEGROW TV SETUP

(N.T.S.)

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DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-404

General Notes

- ❖ All Cables will be home run and terminated in designated IT Closet. (No splices or junction)
- ❖ All Cables will be routed above ceiling from designated endpoint to IT Closet.
- ❖ All Cables will be clearly identified & labeled on both ends of termination.
  - All Data and Voice cables will be CAT6 Plenum rated.
  - All Camera feed lines will be CAT6 Plenum Rated.
  - All Speaker wire will be 16 AWG 4 Conductor.
  - All Door access wiring will be 16 AWG 4 Conductor.
  - All Security cables will be 18 AWG 4 Conductor security grade.

RESPONSIBILITY MATRIX (LV)		
ITEM	DESCRIPTION	FURNISHED BY
Stubbed Conduit/Chases/ Back Boxes	Per Plan	GC/EC
Data, Voice, & Camera Cables	CAT6 Plenum Rated	GC/LV
Speaker, & Door Access	16AWG 4 Conductor	GC/LV
Security Cables	18 AWG 4 Conductor	GC/LV
Wood Back Board	3/4 Plywood	GC/EV
Classroom Penetrating Conduit	3/4 - 1"	GC/EC
IT Room 4" EMT Conduit sleeve	(2) 4"	GC/EC

Furnished By:
GC = General Contractor
EC = Electrical Contractor
LV = Low Voltage Contractor

Outlet & Endpoint Notes

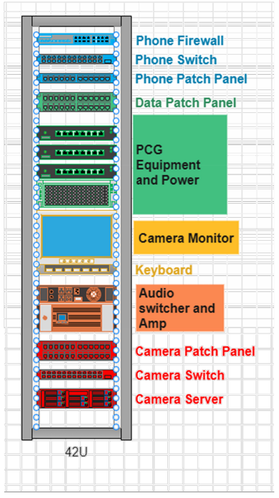
- ➢ Classroom data outlets will consist of (1) single CAT6 cable terminated on a single port keystone wall plate. These data cables will have a 1' service loop at outlet.
- ➢ Office desk data outlets will consist of (4) CAT6 cables per outlet, terminated to a 4-port keystone wall plate. These data cables will have a 1' service loop at outlet.
- ➢ The Wireless Access Point locations will have a (1) single CAT6 cable terminated to a keystone surface jack on a 3' service loop above ceiling grid.
- ➢ Voice outlets will have a single CAT6 terminated to a single keystone wall-phone plate.
- ➢ Camera feed lines will be (1) single CAT6 cable terminated to single surface jack with 8' service loop above ceiling grid. The two outdoor camera feeds will be ran outside through drilled out 1/2inch hole and a 3'service loop left outside.
- ➢ Speaker wire will be a (1) single 16/4 AWG with a 8' service loop above ceiling grid.
- ➢ Door Access wire will be (1) single 16/4 AWG with 10' service loop above door.

LEGEND

D 2	**Data Outlet** Number indicator for amount of dedicated home run CAT6 cable drops to IT Closet
V 1	**Voice Outlet** Number indicator for amount of dedicated home run CAT6 cable drop to IT Closet.
Camera	**Camera Outlet** (1) dedicated home run CAT6 cable drop to IT Closet. 3' Service loop in ceiling at camera location.
S	**Speaker Outlet** (1) dedicated home run 16/4 AWG cable drop from IT Closet. 8' Service loop in ceiling at speaker location.
Keypad	**Access Control Device** (1) dedicated home run 16/4 AWG wire drop from IT Closet, 10' Service loop in ceiling above door.
M	**Security Sensor S** (1) Dedicated home run 16/4 AWG wire drop from IT Closet. 3' Service loop in ceiling at sensor location.
IT CLOSET	**IT Closet** All cable and wire home runs meet and terminate here for all devices.

Rack Layout & Connections

Network Rack		Ports & Connections
Voice Firewall		
Voice Switch	⟵	Voice Connections
Voice Patch Panel (24p)	⟵	Voice Outlets
Data Patch Panel (48p)	⟵	Data Outlets
PCG Equipment	⟵	PCG Equipment
PCG Power		
Monitor & PA Mic		
Audio Swicther & Amp	⟵	Speaker Connectors
Camera Patch Panel (24p)	⟵	Camera Outlets
Camera switch	⟵	Camera Connection
Camera Server		
Rack Ups		



Wire Landing and Termination

Cable	Patch Panel	Room Location	Termination End Point
D-1	Data Patch Panel	Classroom	Single Wall plate
D-2	Data Patch Panel	Ben Q	Single Wall plate
D-3	Data Patch Panel	Classroom	Single Wall plate
D-4	Data Patch Panel	Classroom	Single Wall plate
D-5	Data Patch Panel	Classroom	Single Wall plate
D-6	Data Patch Panel	Classroom	Single Wall plate
D-7	Data Patch Panel	Classroom	Single Wall plate
D-8	Data Patch Panel	Classroom	Single Wall plate
D-9	Data Patch Panel	Classroom	Single Wall plate
D-10	Data Patch Panel	Classroom	Single Wall plate
D-11	Data Patch Panel	Classroom	Single Wall plate
D-12	Data Patch Panel	Classroom	Single Wall plate
D-13	Data Patch Panel	Classroom	Single Wall plate
D-14	Data Patch Panel	Classroom	Single Wall plate
D-15	Data Patch Panel	Classroom	Single Wall plate
D-16	Data Patch Panel	Classroom	Single Wall plate
D-17	Data Patch Panel	Classroom	Single Wall plate
D-18	Data Patch Panel	Classroom	Single Wall plate
D-19	Data Patch Panel	Classroom	Single Wall plate
D-20	Data Patch Panel	WAP	Above Ceiling in Hall 3' service loop
D-21	Data Patch Panel	WAP	Above Ceiling in Hall 3' service loop
D-22	Data Patch Panel	WAP	Above Ceiling in Hall 3' service loop
D-23	Data Patch Panel	Inside Fire Panel	Dual Wall plate
D-24	Data Patch Panel	Inside Fire Panel	Dual Wall plate
D-25	Data Patch Panel	Facial Recognition	In Wall behind access panel
D-26	Data Patch Panel	Facial Recognition	In Wall behind access panel
D-27	Data Patch Panel	Meeting Counter	Dual Wall plate
D-28	Data Patch Panel	Meeting Counter	Dual Wall plate
D-29	Data Patch Panel	Main Printer	Dual Wall plate
D-30	Data Patch Panel	Main Printer	Dual Wall plate
D-31	Data Patch Panel	Office monitor	Dual Wall plate
D-32	Data Patch Panel	Office monitor	Dual Wall plate
D-33	Data Patch Panel	Desk 1	Quad Wall Plate
D-34	Data Patch Panel	Desk 1	Quad Wall Plate
D-35	Data Patch Panel	Desk 1	Quad Wall Plate
D-36	Data Patch Panel	Desk 2	Quad Wall Plate
D-37	Data Patch Panel	Desk 2	Quad Wall Plate
D-38	Data Patch Panel	Desk 2	Quad Wall Plate

V-1	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-2	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-3	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-4	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-5	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-6	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-7	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-8	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-9	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-10	Phone Patch Panel	Classroom Wall	Single port Wall Mount Plate
V-11	Phone Patch Panel	Staff Lounge	Single port Wall Mount Plate
V-12	Phone Patch Panel	Desk 1	Quad Wall Plate
V-13	Phone Patch Panel	Desk 2	Quad Wall Plate

C-1	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-2	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-3	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-4	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-5	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-6	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-7	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-8	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-9	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-10	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-11	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-12	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-13	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-14	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-15	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-16	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-17	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-18	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-19	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-20	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-21	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-22	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-23	Camera Patch Panel	Camera	Above ceiling 3' service loop
C-24	Camera Patch Panel	Camera	Outside rear right
C-25	Camera Patch Panel	Camera	Outside rear right

JAM ARCH
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ARMEN KHACHATURIAN, P.E. – FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

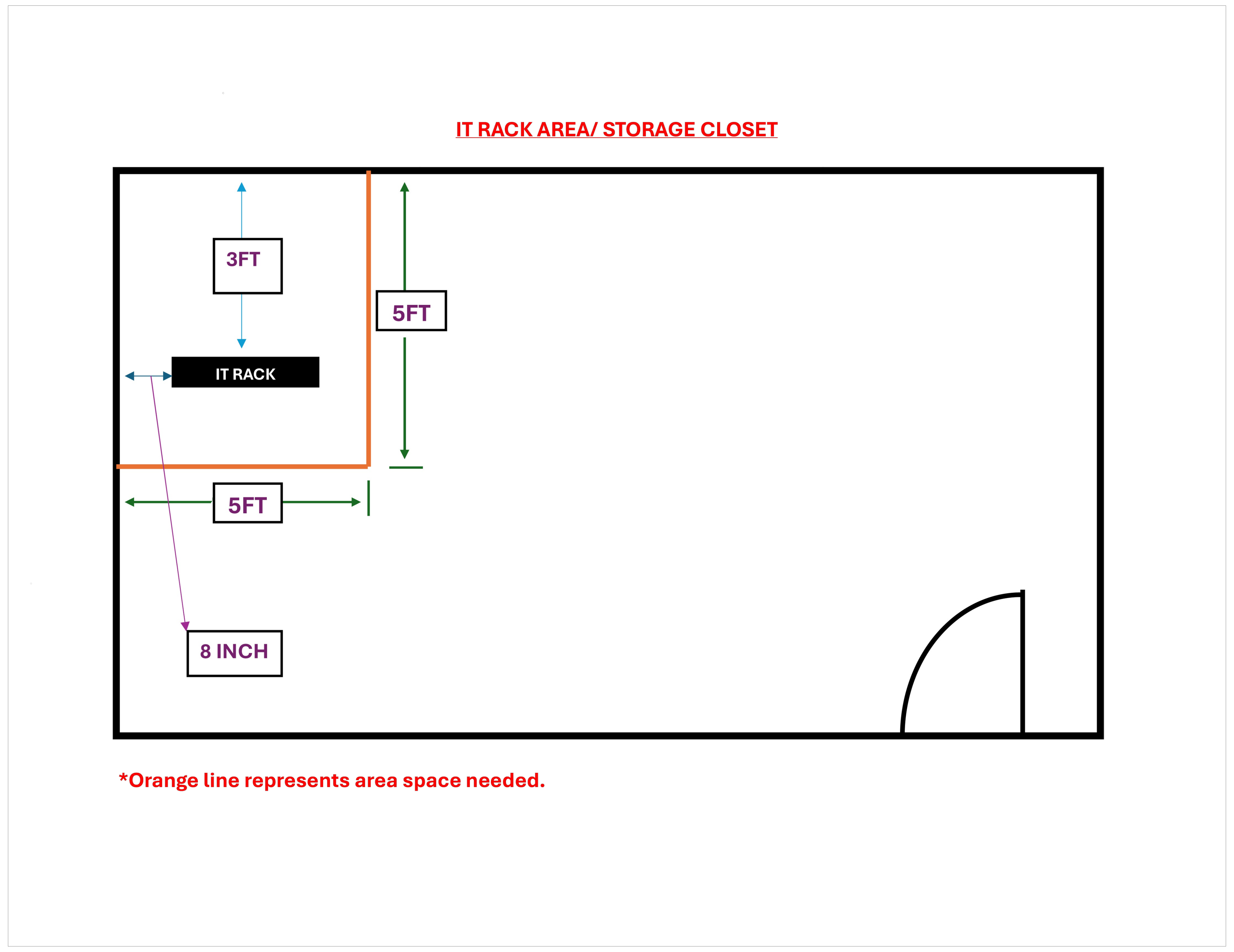
SHEET TITLE:

LIGHTBRIDGE ACADEMY ELECTRICAL EQUIPMENT DETAILS

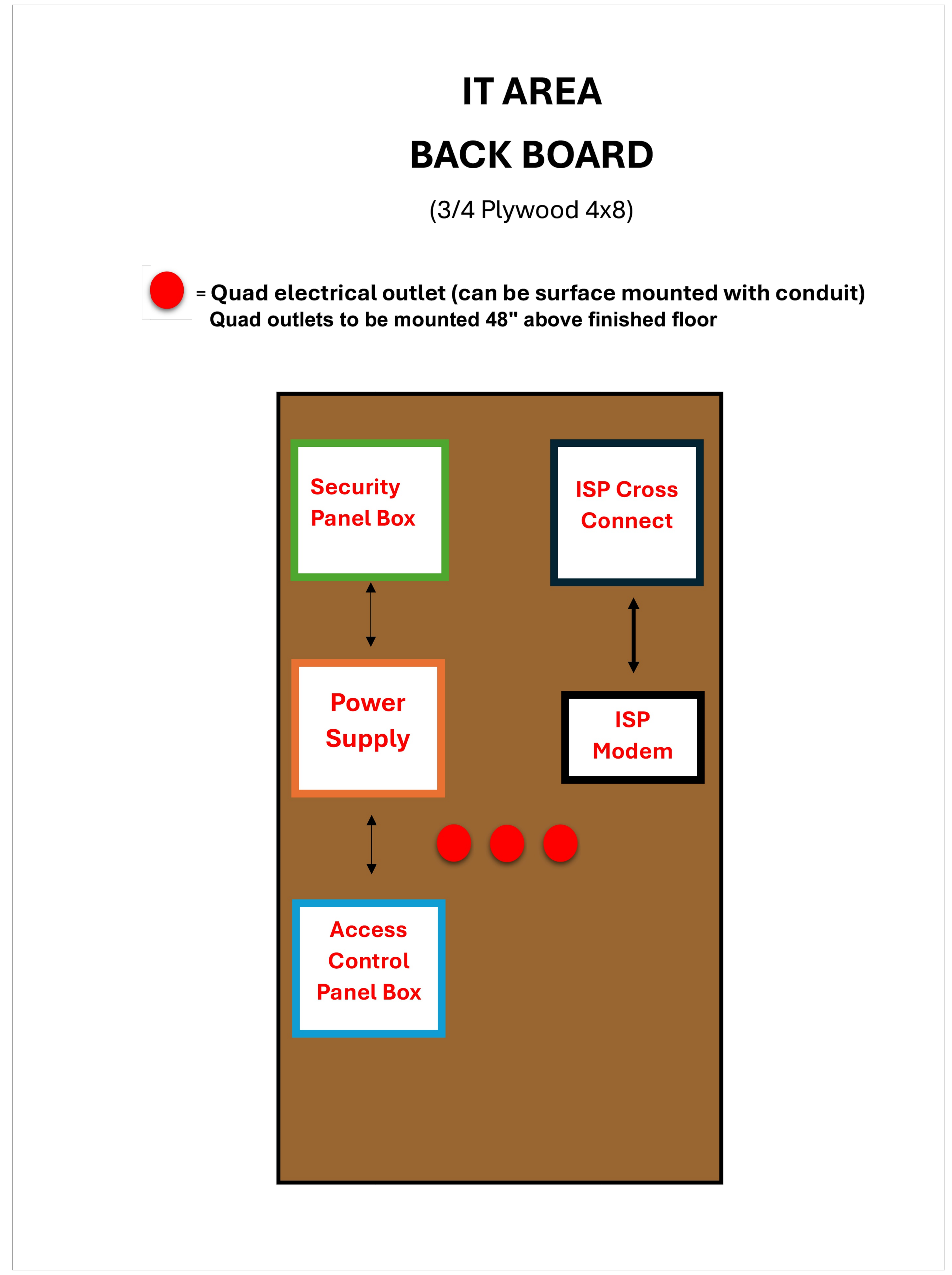
REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-405



LIGHTBRIDGE ACADEMY IT RACK AREA/ STORAGE CLOSET DETAIL
(N.T.S.)



LIGHTBRIDGE ACADEMY IT AREA BACK BOARD
(N.T.S.)

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PROJECT

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8525 MONTAGUE ST., TAMPA, FL
33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

LIGHTBRIDGE ACADEMY LOW-VOLTAGE DETAILS

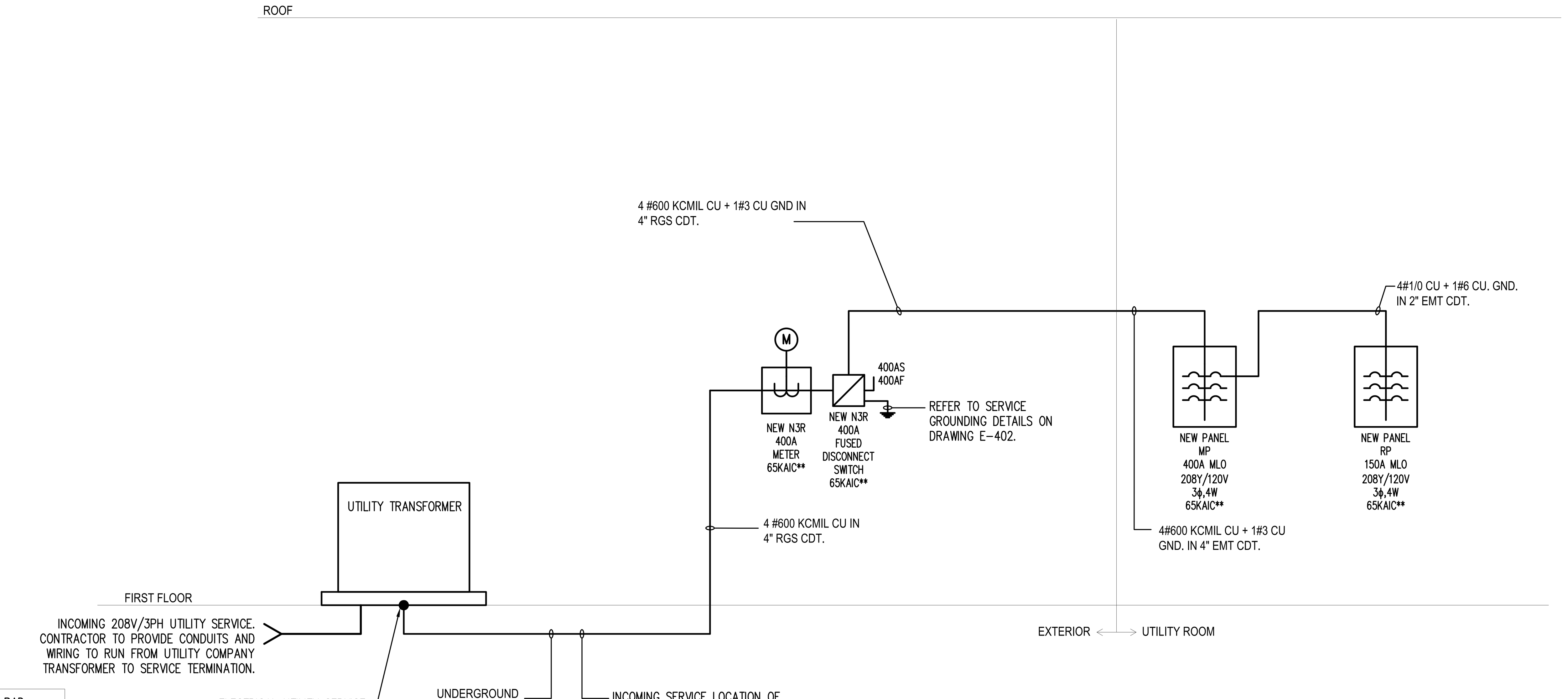
REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-406

LEGEND	
SYMBOL	DESCRIPTION
- - - - -	EXISTING TO REMAIN
———	NEW

LOCATION OF ELECTRICAL EQUIPMENT SHALL BE COORDINATED WITH AUTHORITIES HAVING JURISDICTION AND UTILITY COMPANY. ELECTRICAL CONTRACTOR TO VERIFY CONDUIT WIRE SIZE REQUIRED. REFER TO NATIONAL ELECTRIC CODE 2020.



** AVAILABLE FAULT CURRENT BASED ON A 150kVA PAD MOUNT TRANSFORMER PROVIDED BY AC ELECTRIC. EC SHALL OBTAIN ACTUAL AVAILABLE FAULT CURRENT AT THE TRANSFORMER ONCE AVAILABLE FROM TECO (TAMPA ELECTRIC COMPANY) AND SUBMIT TO ENGINEER OF RECORD FOR REVIEW.

ELECTRICAL ONE LINE DIAGRAM
(N.T.S.)

RISER DIAGRAM GENERAL NOTES

A. ELECTRICAL EQUIPMENT, AND MATERIAL SHALL BE LISTED, LABELED, AND INSTALLED PER RECOGNIZED ELECTRICAL TESTING LABORATORY.

B. PANELS AND SUB PANELS REQUIRE A LETTER ON LETTERHEAD FROM THE INSTALLER THAT THE TORQUE REQUIREMENTS HAVE BEEN MET TO THE MANUFACTURER'S INSTRUCTIONS.

C. TWO OR MORE CONDUCTORS THAT LAND ON A SINGLE LUG SHALL BE LISTED FOR THAT USE.

D. THE DESIGN TEMPERATURE OF THE CONDUCTORS AND THEIR TERMINATIONS SHALL BE 75°C.

E. PARALLEL FEEDER CONDUCTORS SHALL BE CUT TO EXACTLY THE SAME LENGTHS AND SHALL BE FROM THE SAME FACTORY RUN. ALL CONNECTIONS FOR SAME SHALL BE TORQUED TO IDENTICAL VALUES.

F. CONDUCTORS BELOW GRADE OR SUBJECT TO MOISTURE SHALL BE "XHHW-2".

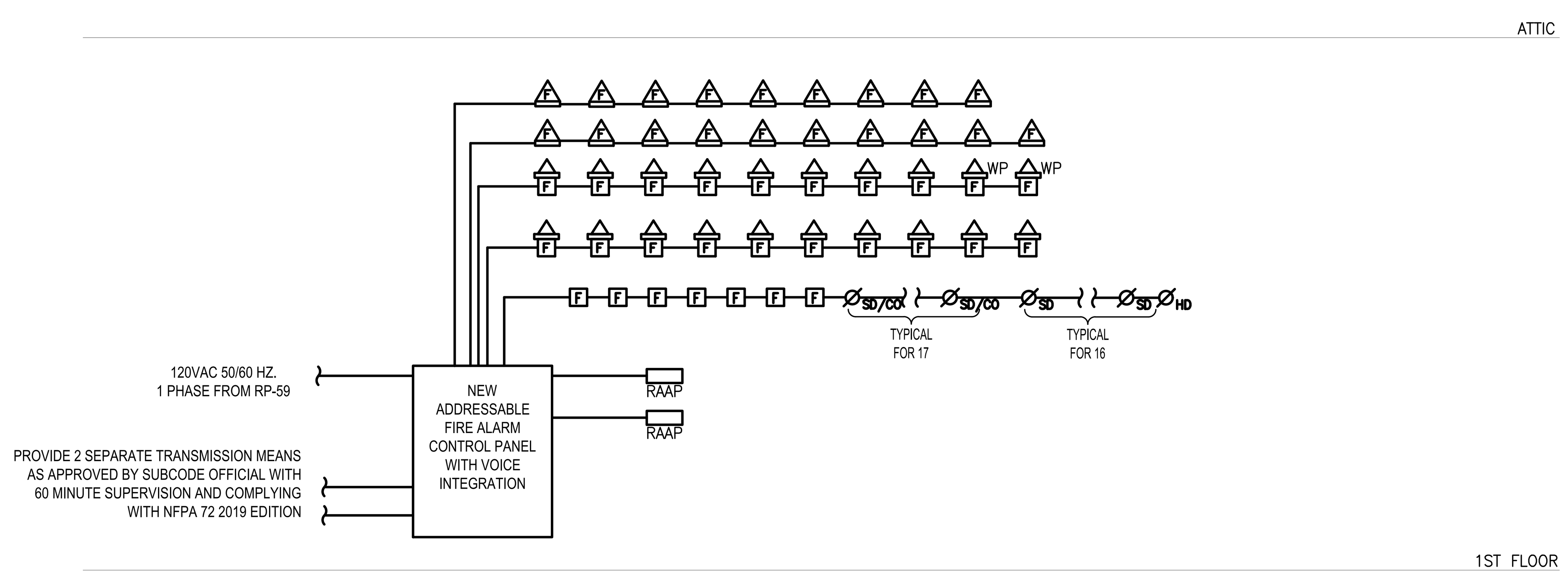
G. PROVIDE FACTORY SERIES COORDINATION FOR ALL CIRCUIT BREAKERS (INCLUDING ALL BRANCH BREAKERS), RELATIVE TO "UPSTREAM" BREAKERS, SO THAT ONLY THE BREAKER CLOSEST IN THE CIRCUIT TO THE LOAD TRIPS UPON AN OVERLOAD OR FAULT CONDITION.

H. POWER DISTRIBUTION EQUIPMENT SUPPLIER SHALL PROVIDE EQUIPMENT APPROPRIATELY RATED AND BRACED TO ACCOMMODATE THE AVAILABLE FAULT CURRENT AT THE UTILITY COMPANY TRANSFORMER SECONDARIES. THIS SUPPLIER SHALL ACCORDINGLY PROVIDE ANY RELATED CALCULATIONS SO THAT THEIR EQUIPMENT IS PROPERLY COORDINATED FOR THE AVAILABLE FAULT CURRENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THIS SUPPLIER WITH COPIES OF THE ELECTRICAL DOCUMENTS AS REQUIRED SO THAT PROPERLY RATED/BRACED EQUIPMENT IS PROVIDED UNDER BASE BID.

I. WORKING CLEARANCES SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT (SWITCHBOARDS, PANEL-BOARDS, TRANSFORMERS, STARTERS, DISCONNECTS, ETC. AS APPLICABLE) IN STRICT COMPLIANCE WITH N.E.C. CHAPTER 1, PART B, SECTION 110-26(A). LOCATIONS SHOWN ON FLOOR PLANS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH THE ABOVE N.E.C. REFERENCE. THIS REQUIREMENT APPLIES TO EQUIPMENT ON FLOOR PLANS AS WELL AS TO EQUIPMENT SHOWN ON RISER.

J. LOCATE ANY RELATED PULL-BOXES SO THAT THEY WILL BE FULLY ACCESSIBLE AFTER ALL CONSTRUCTION WORK IS COMPLETE. AS WITH ALL WORK, COORDINATE IN ADVANCE WITH ALL OTHER TRADES.

K. ALL INDOOR PANELS SHALL BE IN NEMA-1 ENCLOSURES AND ALL OUTDOOR PANELS SHALL BE NEMA-3R (U.O.N.).



FIRE ALARM RISER DIAGRAM
(N.T.S.)

FIRE ALARM SEQUENCE OF OPERATION

A. THE SYSTEM SHALL IDENTIFY ANY OFF NORMAL CONDITION AND LOG EACH CONDITION INTO THE SYSTEM DATABASE AS AN EVENT.

1. THE SYSTEM SHALL AUTOMATICALLY DISPLAY ON THE CONTROL PANEL LIQUID CRYSTAL DISPLAY THE FIRST EVENT OF THE HIGHEST PRIORITY BY TYPE. THE PRIORITIES AND TYPES SHALL BE ALARM, SUPERVISORY, TROUBLE, AND MONITOR.
2. THE SYSTEM SHALL HAVE A QUEUE OPERATION, AND SHALL NOT REQUIRE EVENT ACKNOWLEDGMENT BY THE SYSTEM OPERATOR. THE SYSTEM SHALL HAVE A LABELED COLOR CODED INDICATOR FOR EACH TYPE OF EVENT; ALARM - RED, SUPERVISORY - YELLOW, TROUBLE - YELLOW, MONITOR - YELLOW. WHEN AN UNSEEN EVENT EXISTS FOR A GIVEN TYPE, THE INDICATOR SHALL BE LIT.
3. FOR EACH EVENT, THE DISPLAY SHALL INCLUDE THE CURRENT TIME, THE TOTAL NUMBER OF EVENTS, THE TYPE OF EVENT, THE TIME THE EVENT OCCURRED AND UP TO A 42 CHARACTER CUSTOM USER DESCRIPTION.
4. THE USER SHALL BE ABLE TO REVIEW EACH EVENT BY SIMPLY SELECTING SCROLLING KEYS (UP-DOWN) FOR EACH EVENT TYPE.
5. ALARM, SUPERVISORY, OR TROUBLE EVENTS SHALL SOUND A SILENCING AUDIBLE SIGNAL AT THE CONTROL PANEL.

B. OPERATION OF ANY ALARM INITIATING DEVICE SHALL AUTOMATICALLY:

1. UPDATE THE CONTROL/DISPLAY AS DESCRIBED ABOVE (A.1.)
2. SOUND ALL AUDIBLE APPLIANCES IN A TEMPORAL-3 ON THE ALARMING FLOOR OR AS REQUIRED OTHERWISE BY LOCAL AUTHORITIES HAVING JURISDICTION IN ACCORDANCE WITH THE BUILDING'S FIRE SAFETY AND EVACUATION PLANS. ALL AUDIBLE APPLIANCES SHALL BE SYNCHRONIZED WITH EACH OTHER WHEN TWO OR MORE AUDIBLE DEVICES CAN BE HEARD. AUDIBLE DEVICES SHALL HAVE THE ABILITY TO BE SILENCED.
3. ACTIVATE ALL STROBE APPLIANCES. ALL STROBE APPLIANCES SHALL BE SYNCHRONIZED WITH EACH OTHER IN ANY LOCATION WITH TWO OR MORE DEVICES IN A COMMON FIELD OF VIEW. VISUAL DEVICES SHALL BE NON-SILENCED UNLESS THE SYSTEM IS SUCCESSFULLY RESET.
4. OPERATE CONTROL RELAY CONTACTS TO SHUTDOWN ALL HVAC UNITS SERVING THE FLOOR OF ALARM INITIATION.
5. VISUALLY ANNUNCIATE THE INDIVIDUAL POINT OF ALARM ON ALL REMOTE ANNUNCIATOR PANELS. THE VISUAL INDICATION SHALL REMAIN ON UNTIL THE ALARM CONDITION IS RESET TO NORMAL.
6. TRANSMIT AN ALARM CONDITION, VIA THE INTEGRAL CENTRAL STATION COMMUNICATOR, TO CENTRAL STATION/LOCAL FIRE DEPARTMENT (AS REQUIRED BY THE AHJ).

C. ACTIVATION OF A SPRINKLER SUPERVISORY INITIATING DEVICE (TAMPER SWITCH) SHALL:

1. UPDATE THE CONTROL/DISPLAY AS DESCRIBED ABOVE (A.1.)
2. TRANSMIT A SUPERVISORY CONDITION, VIA THE INTEGRAL CENTRAL STATION COMMUNICATOR, TO CENTRAL STATION/LOCAL FIRE DEPARTMENT (AS REQUIRED BY THE AHJ).
3. VISUALLY ANNUNCIATE THE INDIVIDUAL POINT ON ALL REMOTE ANNUNCIATOR PANELS. THE VISUAL INDICATION SHALL REMAIN ON UNTIL THE CONDITION IS RESET TO NORMAL.

D. THE ENTIRE FIRE ALARM SYSTEM WIRING SHALL BE ELECTRICALLY SUPERVISED TO AUTOMATICALLY DETECT AND REPORT TROUBLE CONDITIONS TO THE FIRE ALARM CONTROL PANEL. ANY OPENS, GROUNDS OR DISARRANGEMENT OF SYSTEM WIRING AND SHORTS ACROSS ALARM SIGNALING WIRING SHALL AUTOMATICALLY:

1. UPDATE THE CONTROL/DISPLAY AS DESCRIBED ABOVE (A.1.)
2. TRANSMIT A TROUBLE CONDITION, VIA THE INTEGRAL CENTRAL STATION COMMUNICATOR, TO CENTRAL STATION/LOCAL FIRE DEPARTMENT (AS REQUIRED BY THE AHJ).
3. VISUALLY AND AUDIBLY ANNUNCIATE A GENERAL TROUBLE CONDITION, ON THE REMOTE ANNUNCIATOR PANELS. THE VISUAL INDICATION SHALL REMAIN ON UNTIL THE TROUBLE CONDITION IS REPAIRED.

E. ACTIVATION OF CARBON MONOXIDE DETECTOR SHALL:
1. ACTUATE LOCAL VISIBLE COMMON SUPERVISORY SIGNAL INDICATOR AND DISPLAY ON LCD
2. ACTUATE LOCAL AUDIBLE SUPERVISORY SIGNAL
3. DISPLAY/PRINT CHANGE OF STATUS
4. TRANSMIT CO ALARM SIGNAL TO SUPERVISING STATION
5. SHUTDOWN ASSOCIATED CARBON MONOXIDE PRODUCING EQUIPMENT

FIRE ALARM GENERAL NOTES:

1. REFER TO FLOOR PLANS FOR TYPE, NUMBER AND LOCATION OF FIRE ALARM DEVICES REQUIRED.
2. THIS RISER DIAGRAM REPRESENTS TYPICAL FIRE ALARM SYSTEM DEVICES, INTERCONNECTIONS AND WIRING ARRANGEMENT. THE CONTRACTOR SHALL SUBMIT RISER DIAGRAM AND FLOOR PLANS INDICATING ALL COMPONENTS.
3. FOR EXACT LOCATION AND QUANTITY OF WATER FLOW/TAMPER SWITCHES REFER TO FIRE PROTECTION DRAWINGS PROVIDE ALL REQUIRED MODULES, WIRING, ETC.
4. FOR EXACT QUANTITY AND LOCATION OF DUCT MOUNTED DETECTORS AND FIRE SMOKE DAMPERS (FSM) REFER TO MECHANICAL DRAWINGS. FOR EACH FSM PROVIDE AND INSTALL DEDICATED SMOKE DETECTOR.
5. PROVIDE FIRE ALARM INTERFACE TERMINALS, CONTROL MODULES AS REQUIRED FOR SECURITY EQUIPMENT/DEVICES. SEE POWER PLANS FOR SECURITY DEVICE LOCATIONS.
6. ALL FIRE ALARM SYSTEM RISERS WIRING SHALL BE INSTALLED IN 2 HOUR FIRE RATED ENCLOSURE OR INSTALLED UTILIZING OTHER CODE APPROVED FIRE PROTECTION OR WIRING METHOD TO ACHIEVE REQUIRED FIRE RATING AND HAVE PATHWAY SURVIVABILITY LEVEL 2. ALL OTHER WIRING SHALL INCLUDE A PATHWAY LEVEL 1. COORDINATE EXACT REQUIREMENTS WITH LOCAL AUTHORITIES HAVING JURISDICTION.
   A. PATHWAY SURVIVABILITY LEVEL 2 MAY INCLUDE RETURN LOOP THAT SHALL RUN MINIMUM 20 FEET AWAY FROM THE RISER AS REQUIRED FOR SURVIVABILITY. COORDINATE EXACT REQUIREMENTS WITH LOCAL AUTHORITIES HAVING JURISDICTION.
7. A SINGLE FAULT (SHORT OR OPEN CIRCUIT) ON A PATHWAY CONNECTED TO THE ADDRESSABLE SIGNALING CIRCUIT (SLC) DEVICES SHALL NOT CAUSE THE LOSS OF THE DEVICES IN MORE THAN ONE ZONE. WHERE ADDRESSABLE SLC SERVE MORE THAN ONE ZONE, INCLUDE CLASS 'A' CIRCUITS AND SLC ISOLATION AS NECESSARY. PROVIDE REQUIRED ZONE ISOLATOR MODULES.

FIRE ALARM SPECIFICATIONS

1. NEW FIRE ALARM SYSTEM WORK
   A. MANUAL FIRE ALARM SYSTEM THAT ACTIVATES NON VOICE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE, SECTION 907.2.3. THE SYSTEM SHALL ALSO INCLUDE FAN SHUTDOWN FUNCTIONS PER THE SEQUENCE OF OPERATIONS. THE CONTROL PANEL SHALL BE FULLY ADDRESSABLE AND UTILIZE INTELLIGENT DEVICES AND MODULES AS SHOWN ON THE DRAWINGS.
   B. DUCT MOUNTED SMOKE DETECTORS: PROVIDE NEW DUCT MOUNTED SMOKE DETECTORS WHERE INDICATED ON THE DRAWINGS. PROVIDE SAMPLING TUBES, INTEGRATED TEST SWITCH AND REMOTE ALARM LED. DETECTORS SHALL FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR AND WILL BE INSTALLED BY THE HVAC CONTRACTOR. DUCT SMOKE DETECTORS SHALL BE WIRED INDIVIDUALLY BACK TO THE SPRINKLER AND SMOKE DETECTION ALARM SYSTEM. ACTIVATION OF THE DETECTOR SHALL INDICATE AN ALARM CONDITION ON THE SPRINKLER AND SMOKE DETECTION ALARM SYSTEM AND SUBSEQUENTLY SHUT DOWN THE ASSOCIATED AIR HANDLING UNIT.
   C. FAN SHUT DOWN: PROVIDE REQUIRED RELAYS FOR FAN SHUTDOWN IN ACCORDANCE WITH ALL APPLICABLE LOCAL LAWS AND AS INDICATED IN CONTRACT DOCUMENTS. FANS THAT WERE SHUTDOWN DURING SMOKE/FIRE CONDITION MUST NOT AUTOMATICALLY RE-START OR BE RE-ENERGIZED UPON RESET OF SPRINKLER AND SMOKE DETECTION ALARM CONTROL PANEL. A MANUAL MEANS OF RESTARTING THE FANS OR FAN SYSTEM SHALL FUNCTION INDEPENDENTLY.
   D. ALL NEW EQUIPMENT SHALL BE IN COMPLIANCE WITH ALL APPLICABLE LOCAL CODES AND REGULATIONS.
2. FIRE ALARM SYSTEM DIVISION OF WORK IS AS FOLLOWS:
   A. FIRE ALARM VENDOR WILL PROVIDE THE FOLLOWING INSTALLATION PACKAGE UNDER THIS CONTRACT:
      1) FURNISH ALL DRAWINGS, MATERIAL AND PROGRAM CHANGES.
      2) FILE DRAWINGS WITH LOCAL AUTHORITIES HAVING JURISDICTION.
      3) COORDINATE INSPECTIONS WITH LOCAL AUTHORITIES HAVING JURISDICTION.
      4) PROVIDE BUILDING OWNER WITH A LETTER ATTESTING THAT SAID SYSTEM(S) ARE FULLY OPERATIONAL PRIOR TO TENANT MOVE IN.
   B. ELECTRICAL CONTRACTOR SHALL:
      1) PURCHASE EQUIPMENT, DRAWINGS AND FILING FROM SYSTEM VENDOR.
      2) INSTALL EQUIPMENT AND WIRE RUNS TO DESIGNATED POINTS PER VENDOR DRAWINGS.
      3) FILE THE REQUIRED FORMS FOR HIS WORK WITH THE LOCAL AUTHORITIES HAVING JURISDICTION.
      4) CONTRACTOR SHALL BE AVAILABLE ON THE DATE OF ANY INSPECTION OR TEST OF SUCH SYSTEMS REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION.
3. TENANTS WILL NOT BE PERMITTED TO MOVE IN OR OCCUPY ANY AREAS UNTIL FIRE ALARM SYSTEM IS COMPLETE AND SYSTEM VENDOR CONFIRMS, IN WRITING, THAT THE SYSTEM(S) ARE OPERATIONAL.

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FOLIO: 004339-0100
004339-0150

SHEET TITLE:
ELECTRICAL RISER DIAGRAMS

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-501

PANEL DESIGNATION MP

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	54	4	65**

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE
1#12	2#12	1	GAS WATER HEATER/RECIRC PUMP	20	1	1000 970			1	20	CLASSROOM 1/2/11 LIGHTS	2	2#12	1#12
		3	SPARE	20	1		0 990		1	20	CLASSROOM 3/4/MISC. LIGHTS	4	2#12	1#12
1#12	2#12	5	AHU-1 AIR HANDLING UNIT	15	2			520 1020	1	20	CLASSROOM 9/10/MISC. LIGHTS	6	2#12	1#12
		7				520 1200			1	20	CLASSROOM 5/6/7/8 LIGHTS	8	2#12	1#12
1#12	2#12	9	AHU-2 AIR HANDLING UNIT	15	2		520 480		1	20	CORRIDOR LIGHTS	10	2#12	1#12
		11						520 936	1	20	CANOPY/EXTERIOR LIGHTS	12	2#12	1#12
1#12	2#12	13	AHU-3 AIR HANDLING UNIT	15	2	832 0			1	20	SPARE	14		
		15					832 0		1	20	SPARE	16		
1#12	2#12	17	AHU-4 AIR HANDLING UNIT	15	2			832 0	1	20	SPARE	18		
		19				832 500			1	20	CUPOLA LIGHTING	20	2#12	1#12
1#12	2#12	21	AHU-5 AIR HANDLING UNIT	15	2		832 500		1	20	LIGHTING CONTACTOR PANEL	22	2#12	1#12
		23						832 450	1	20	ATTIC LIGHTING	24	2#12	1#12
1#12	2#12	25	AHU-6 AIR HANDLING UNIT	15	2	520 0			1	20	SPARE	26		
		27					520 520					28		
		29						2160 520	1	15	AHU-7 AIR HANDLING UNIT	30	2#12	1#12
1#10	3#10	31	CU-1 CONDENSING UNIT	30	3	2160 2160						32		
		33					2160 2160		1	30	CU-5 CONDENSING UNIT	34	3#10	1#10
		35						2160 2160				36		
1#10	3#10	37	CU-2 CONDENSING UNIT	30	3	2160 1560						38		
		39					2160 1560		1	20	CU-6 CONDENSING UNIT	40	3#12	1#12
		41						2160 1560				42		
1#10	3#10	43	CU-3 CONDENSING UNIT	30	3	2160 2160						44		
		45					2160 2160		1	30	CU-7 CONDENSING UNIT	46	3#10	1#10
		47						2160 2160				48		
1#10	3#10	49	CU-4 CONDENSING UNIT	30	3	2160 15380						50		
		51					2160 15323		3	150	PANEL RP	52	SEE RISER	SEE RISER
* 1#12	2#12	53	FIRE ALARM CONTROL PANEL	20	1			500 12889				54		
					VA:	36,274	35,037	33,539						

CONNECTED LOAD
KVA: 104.9
AMPS: 291.3

REMARKS
(*) PROVIDE LOCKABLE IN "ON" POSITION CIRCUIT BREAKER
(**) FAULT CURRENT RATING FOR BID PURPOSES ONLY, PANEL MUST BE BRACED FOR ACTUAL AVAILABLE FAULT CURRENT ON SITE.

MAIN
BUS - AMPS
BRKR 400 AMPS
☒ NEW PANEL
☐ EXISTING PANEL
☐ MAIN CIRCUIT BREAKER
☒ MAIN LUGS ONLY
☐ FLUSH MOUNTED
☒ SURFACE MOUNTED
☐ BOTTOM FEED
☐ TOP FEED

OPTIONS
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
☐ OTHER: _____
☐ OTHER: _____

PANEL DESIGNATION RP

VOLTAGE	PHASE	POLES	WIRES	AIC
208Y/120V	3	84	4	65K**

G WIRE SIZE	Ø WIRE SIZE	CKT No.	DESCRIPTION	CB AMPS	CB POLES	PH. A VA	PH. B VA	PH. C VA	CB POLES	CB AMPS	DESCRIPTION	CKT No.	Ø WIRE SIZE	G WIRE SIZE	
1#12	2#12	1	CLASSROOM 11 OUTLETS	20	1	900 1080			1	20	GENERAL RECEPTACLES	2	2#12	1#12	
1#12	2#12	3	CLASSROOM 2 OUTLETS	20	1		900 1080		1	20	CORRIDOR RECEPTACLES	4	2#12	1#12	
1#12	2#12	5	CLASSROOM 1 OUTLETS	20	1			900 360	1	20	STAFF LOUNGE OUTLETS	6	2#12	1#12	
1#12	2#12	7	CLASSROOM 6 OUTLETS	20	1	900 540			1	20	STAFF LOUNGE OUTLETS	8	2#12	1#12	
1#12	2#12	9	CLASSROOM 8 OUTLETS	20	1		900 900		1	20	STAFF LOUNGE REFRIGERATOR	10	2#12	1#12	(G)
1#12	2#12	11	CLASSROOM 7 OUTLETS	20	1			900 360	1	20	CONF. ROOM RECEPTACLES	12	2#12	1#12	
1#12	2#12	13	CLASSROOM 3 OUTLETS	20	1	900 500			1	20	CONF. ROOM PRINTER/COPIER	14	2#12	1#12	
1#12	2#12	15	CLASSROOM 4 OUTLETS	20	1		900 800		1	20	CONF. ROOM REFRIGERATOR	16	2#12	1#12	(G)
1#12	2#12	17	CLASSROOM 9 OUTLETS	20	1			900 720	1	20	OFFICE WORKSTATIONS	18	2#12	1#12	
1#12	2#12	19	CLASSROOM 10 OUTLETS	20	1	900 540			1	20	WATCH EM GROW RECEPTACLES	20	2#12	1#12	
1#12	2#12	21	CLASSROOM 5 OUTLETS	20	1		900 360		1	20	BONDING ROOM RECEPTACLES	22	2#12	1#12	
1#12	2#12	23	CLASSROOM 11 IWB	20	1			360 360	1	20	DEDICATED IT QUAD OUTLET	24	2#12	1#12	
1#12	2#12	25	CLASSROOM 6 IWB	20	1	360 360			1	20	DEDICATED IT QUAD OUTLET	26	2#12	1#12	
1#12	2#12	27	CLASSROOM 8 IWB	20	1		360 360		1	20	DEDICATED IT QUAD OUTLET	28	2#12	1#12	
1#12	2#12	29	CLASSROOM 7 IWB	20	1			360 1575	1	20	MICROCON UNITS AP-1 THROUGH 7	30	2#12	1#12	
1#12	2#12	31	CLASSROOM 3 IWB	20	1	360 500			1	20	MOTORIZED DAMPER	32	2#12	1#12	
1#12	2#12	33	CLASSROOM 4 IWB	20	1		360 500		1	20	WASHER	34	2#12	1#12	3
1#12	2#12	35	CLASSROOM 9 IWB	20	1			360 1000	1	20	WATER FOUNTAINS	36	2#12	1#12	(G)
1#12	2#12	37	CLASSROOM 10 IWB	20	1	360 500			1	20	WIFI SYSTEM	38	2#12	1#12	
1#12	2#12	39	EXHAUST FAN EF-3	20	1		240 500		1	20	FACIAL RECOGNITION SYSTEM	40	2#12	1#12	
(G) 1#12	2#12	41	CLASSROOM 2 REFRIGERATOR	20	1			800 200	1	20	ELECTRIC DOOR STRIKE SYSTEM	42	2#12	1#12	
(G) 1#12	2#12	43	CLASSROOM 1 REFRIGERATOR	20	1	800 720			1	20	OUTDOOR RECEPTACLES	44	2#12	1#12	
(G) 1#12	2#12	45	CLASSROOM 6 REFRIGERATOR	20	1		800 13		1	20	IT EXHAUST FAN EF-2	46	2#12	1#12	
(G) 1#12	2#12	47	CLASSROOM 8 REFRIGERATOR	20	1			800 84	1	20	BIPOLAR IONIZATION FILTERS	48	2#12	1#12	
(G) 1#12	2#12	49	CLASSROOM 7 REFRIGERATOR	20	1	800 360			1	20	TEL/DATA RECEPTACLE	50	2#12	1#12	
(G) 1#12	2#12	51	CLASSROOM 3 REFRIGERATOR	20	1		800 250		1	20	BATHROOM EXHAUST FAN EF-1	52	2#12	1#12	
(G) 1#12	2#12	53	CLASSROOM 4 REFRIGERATOR	20	1			800 250				54			
(G) 1#12	2#12	55	CLASSROOM 9 REFRIGERATOR	20	1	800 2700			2	30	DRYER	56	2#10	1#10	
(G) 1#12	2#12	57	CLASSROOM 10 REFRIGERATOR	20	1		800 2700					58			
(G) 1#12	2#12	59	CLASSROOM 5 REFRIGERATOR	20	1			800 500	1	20	CONDENSATION PUMP	60	2#12	1#12	
		61	SPACE	20	1	500			1	20	MONUMENT SIGNAGE	62	2#8	1#10	
		63	SPACE	20	1		1000		1	20	SITE LIGHTING	64	2#8	1#10	
		65	SPACE	20	1			500	1	20	EXTERIOR SIGNAGE	66	2#12	1#12	
		67	SPACE	20	1				1	20	SPACE	68			
		69	SPACE	20	1				1	20	SPACE	70			
		71	SPACE	20	1				1	20	SPACE	72			
		73	SPACE	20	1				1	20	SPACE	74			
		75	SPACE	20	1				1	20	SPACE	76			
		77	SPACE	20	1				1	20	SPACE	78			
		79	SPACE	20	1				1	20	SPACE	80			
		81	SPACE	20	1				1	20	SPACE	82			
		83	SPACE	20	1				1	20	SPACE	84			
					VA:	15,380	15,323	12,889							

CONNECTED LOAD
KVA: 43.6
AMPS: 121.1

REMARKS
(G) PROVIDE GFCI CIRCUIT BREAKER
(**) FAULT CURRENT RATING FOR BID PURPOSES ONLY, PANEL MUST BE BRACED FOR ACTUAL AVAILABLE FAULT CURRENT ON SITE.

MAIN
BUS 150 AMPS
BRKR - AMPS
☒ NEW PANEL
☐ EXISTING PANEL
☐ MAIN CIRCUIT BREAKER
☒ MAIN LUGS ONLY
☐ FLUSH MOUNTED
☒ SURFACE MOUNTED
☐ BOTTOM FEED
☐ TOP FEED

OPTIONS
☐ 200% NEUTRAL
☒ GROUND BUS
☐ ISOLATED GROUND BUS
☐ DOOR-IN-DOOR CONSTRUCTION
☐ STAINLESS STEEL COVER
☐ NEMA 3R PANEL
☐ SUB-FEED MAIN C.B. (3P) QTY: _____ AMPS: _____
☐ CONTACTOR AMPS: _____ CKT'S CONTROLLED: _____
☐ OTHER: _____
☐ OTHER: _____

ELECTRICAL LOAD CALCULATION

LOAD TYPE	CONNECTED VA	MULTIPLIER PER NEC	ADJUSTED VA LOAD
LIGHTING	8,596	1.25	10,745.0
RECEPTACLES & MISC. UP TO 10,000 VA	10,000	1.00	10,000.0
RECEPTACLES & MISC. OVER 10,000 VA	4,400	0.50	2,200.0
ELECTRIC SPACE HEATING	0	0.00	0.0 *
AIR CONDITIONING	44,160	1.00	44,160.0
MISC. EQUIPMENT, FANS AND PUMPS	38,724	1.00	38,724.0
WATER HEATING	1000	1.00	1,000.0
TOTAL LOAD	106,880		106,829.0
MAXIMUM ANTICIPATED DRAW ON PANEL "MP" AT 208V, 3Ø IN AMPS:			296.7
RECOMMENDED SERVICE SIZE			400

* THE ELECTRIC SPACE HEATING LOAD HAS BEEN OMITTED FROM THE LOAD CALCULATION. AIRCONDITIONING & ELECTRIC SPACE HEATING LOADS WILL NOT OPERATE SIMULTANEOUSLY. THE LARGER OF THE LOADS HAS BEEN SELECTED.

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ARMEN KHACHATURIAN, P.E. – FL LICENSE #70236
PL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

ELECTRICAL PANEL SCHEDULE

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
E-601

PLUMBING DRAWING / REVISION LOG

● NEW OR REVISED ISSUE
○ NON REVISED ISSUE

ISSUE:	DATE:
ISSUED FOR PERMIT	07/15/2024
PERMIT RESPONSE COMMENTS	
LIGHTBRIDGE COMMENTS	09/16/2024

NUMBER	NAME				
P-001	PLUMBING COVER SHEET	●	●	●	
P-101	PLUMBING DRAINAGE FLOOR PLAN	●	●	●	
P-102	PLUMBING SUPPLY FLOOR PLAN	●	●	●	
P-103	PLUMBING ROOF PLAN PLAN	●			
P-201	PLUMBING DRAINAGE ISOMETRIC RISER DIAGRAMS	●	●	●	
P-202	PLUMBING SUPPLY ISOMETRIC RISER DIAGRAMS	●	●	●	
P-301	PLUMBING DETAILS	●	●	●	
P-401	PLUMBING SPECIFICATIONS	●	●	●	

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
BFP	BACK FLOW PREVENTOR
BLDG	BUILDING
CI	CAST IRON
℄	CENTER LINE
CLG	CEILING
CO	CLEAN OUT
CODP	CLEAN OUT DECK PLATE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CW	COLD WATER
DIA	DIAMETER
DIAG	DIAGRAM
DISCH	DISCHARGE
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA	EACH
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXT	EXTERNAL
°F	DEGREES FAHRENHEIT
FAI	FRESH AIR INLET
FD	FLOOR DRAIN
FLR	FLOOR
FP	FIRE PROTECTION
G	GAS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HR	HOUR
HTR	HEATER
HW	HOT WATER
INCL	INCLUDING
INV	INVERT
INWC	INCHES OF WATER COLUMN
LAV	LAVATORY
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NH	NO HUB
No	NUMBER
NO	NORMALLY OPEN
NPW	NON-POTABLE WATER
NOM	NOMINAL
NTS	NOT TO SCALE
OPG	OPENING
OZ	OUNCE
PART	PARTIAL
PEX	CROSS LINKED POLYETHYLENE TUBING
PH	PHASE
PIV	POST INDICATOR VALVE
POS	POSITIVE
PRESS	PRESSURE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PC	PLUMBING CONTRACTOR
QTY	QUANTITY
RD	ROOF DRAIN
REQD	REQUIRED
RM	ROOM
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SAN	SANITARY
SCH	SCHEDULE
SHO	SHOWER
SPEC	SPECIFICATION
S/S	SERVICE SINK
ST	STORM
STD	STANDARD
SUP	SUPPLY
SYS	SYSTEM
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TYP	TYPICAL
URN	URINAL
V	VENT
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WM	WATER METER

PIPING SYMBOLS

SYMBOL	DESCRIPTION
	HOT WATER RETICULATING PIPING
	COLD WATER PIPING
	TEMPERED WATER PIPING
	HOT WATER PIPING
CF	FILTERED COLD WATER
G	NATURAL GAS PIPING
SAN	SANITARY, SOIL, WASTE PIPING
ST	STORM PIPING
V	VENT PIPING
	EXISTING PIPING
	EXSITING PIPING TO BE REMOVED
PD	PUMP DISCHARGE
C	CONDENSATE PIPING

KEY TO SYMBOLS

SYMBOL — DESCRIPTION

- ACU / 1-1 — EQUIPMENT IDENTITY (SEE EQUIPMENT ABBREVIATION LIST AND SCHEDULES); EQUIPMENT DESIGNATION; SYSTEM NUMBER (IF APPLICABLE)
- R / 1 — RISER TYPE. REFER TO ABBREVIATIONS; RISER DESIGNATION; RISER NUMBER. REFER TO PLANS AND/OR RISER DIAGRAMS
- 1 / M-31 — SECTION NUMBER; SECTION DESIGNATION; SECTION DRAWING NUMBER
- 1 — REVISION NUMBER
- 1 — SHEET NOTE NUMBER
- CONNECT NEW TO EXISTING

KEY TO SYMBOLS

SYMBOL	DESCRIPTION
FCO	PIPE UP
FCO	PIPE DOWN
	SHUT OFF VALVE
	THREE WAY VALVE
	GAS COCK
M	WATER METER
	REDUCED PRESSURE ZONE ASSEMBLY
	CHECK VALVE
	STRAINER
	UNION
	CAPPED LINE
	THERMOMETER
	THERMOSTATIC MIXING VALVE
	FLOOR DRAIN
	FLOOR SINK
FCO	CLEAN OUT DECK PLATE
CO	CLEAN OUT
	POINT OF CONNECTION
	ROOF DRAIN
	HOSE BIB
	PUMP
	VACUUM RELIEF VALVE
	PRESSURE REDUCING VALVE
	BALANCING VALVE

MATERIAL SCHEDULE

SYSTEMS	PIPE: REQUIRED	SERVICE C.I. PIPE (HUB & SPIGOT)	NO-HUB C.I. PIPE	P.V.C. SCH. 40 DRAINAGE PIPE	C.P.V.C. SCH. 40	BLACK IRON	GALVANIZED STEEL	COPPER TUBING TYPE 'L'	COPPER TUBING TYPE DWV	DUCTILE IRON PIPE	X-LINKED POLYETHYLENE	FITTINGS: SERVICE C.I. FITTINGS (HUB & SPIGOT)	NO-HUB C.I. FITTINGS	P.V.C. D.W.V. FABRICATED	C.P.V.C. SCH. 40	BLACK IRON	GALVANIZED STEEL	COPPER SOLDER FITTINGS	FLANGED DUCTILE IRON PIPE	BRASS ASTM F1960 LISTED	JOINTS: ELASTOMERIC GASKET	PVC SOLVENT CEMENT	CPVC SOLVENT CEMENT	THREADED	SOLDERED 95-5	FLANGED DUCTILE IRON PIPE	COLD EXPANDSION RING
SANITARY BUILDING DRAIN (UNDER GROUND)	●	●		A								●		A							●	A					
SANITARY BUILDING DRAIN	●		●	A									●	A							●	A					
SANITARY STACKS	●		●	A									●	A							●	A					
SANITARY BRANCHES	●		●	A									●	A							●	A					
VENT STACKS	●		●	A									●	A							●	A					
VENT BRANCHES	●		●	A									●	A							●	A					
STORM BUILDING DRAIN (UNDER GROUND)	●	●		A								●		A							●	A					
STORM BUILDING DRAIN	●		●	A									●	A							●	A					
STORM STACKS	●		●	A									●	A							●	A					
STORM BRANCHES	●		●	A									●	A							●	A					
C.W. (SERVICE)	●									●									●								●
C.W. (DISTRIBUTION)	●							●										●							●		
H.W. (DISTRIBUTION)	●							●										●							●		
GAS (DISTRIBUTION)	●					●										●								●			
FLUE POWER VENTING	●			A	●									A	●						A	●					
INDIRECT WASTE	●			A					●					A				●			A				●		

NOTES:
"A" – PROVIDE DEDUCT ALTERNATE PRICE TO INSTALL ALTERNATE MATERIAL
ALL MATERIALS INSTALLED WITHIN A PLENUM ARE TO HAVE A 25 FLAME SPREAD & 50 SMOKE DEVELOPED WHEN TESTED ACCORDING TO ASTM E84 OR BE INSULATED WITH 3M FIRE BARRIER PLENUM WRAP 5A+, OR APPROVED EQUAL, SO AS TO COMPLY WITH THE ABOVE REQUIREMENTS.

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MAKE	MODEL	FAUCET	PIPING CONNECTIONS: COLD	HOT	TRAP	VENT	COMMENTS
SK-1	STAINLESS STEEL, SELF-RIMMING, TRIPLE COMPARTMENT SINK. FURNISH WITH TOP MOUNT TWO HANDLE ADA FAUCET.	ELKAY	CMR43224	AMERICAN STANDARD 7074.550.002	1/2"	1/2"	1½"	1½"	PROVIDE ¾" CW LINE THROUGH THE COUNTER FOR FUTURE CONNECTION FOR OVER THE COUNTER WATER DISPENSER.
SK-2	STAINLESS STEEL, SINGLE COMPARTMENT SINK. FURNISH WITH TOP MOUNT SINGLE HANDLE ADA FAUCET.	DAYTON (ELKAY)	DAYTON 125224DF	ELKAY LK2478CR	1/2"	1/2"	1½"	1½"	PROVIDE INDIVIDUAL THERMOSTATIC MIXING VALVE AT EACH FAUCET, WATTS LFe480 OR EQUAL. SET THERMOSTATIC MIXING VALVE TEMPERATURE AT 110°F MAXIMUM FOR ALL HAND SINKS.
SK-3	33"X23"X25" SINGLE PIECE SLOP SINK WITH 6" SWING SPOUT FAUCET WITH AERATOR.	MUSTEE	14CP UTILATUB	MUSTEE 93.600	1/2"	1/2"	3"	2"	COMBO LAUNDRY/UTILITY TUB, ALL ACCESSORIES AND FAUCET IS INCLUDED IN COMBO BOX.
LAV-1	VITREOUS CHINA LAVATORY FURNISH WITH CENTERSET, TWO HANDLE, FULLY ADA COMPLAINT	GERBER	12-654	GERBER 43-411	3/8"	3/8"	1½"	1½"	PROVIDE WITH 0.5 GPM AERATOR. TO BE INSTALLED @ 25" A.F.F. TO RIM IN ALL CHILDREN'S CLASSROOMS & TOILET ROOMS. PROVIDE INDIVIDUAL THERMOSTATIC MIXING VALVE AT EACH FAUCET, WATTS LFe480 OR EQUAL. SET THERMOSTATIC MIXING VALVE TEMPERATURE AT 110°F MAXIMUM FOR ALL LAVATORIES.
WC-1	ROUND FRONT BOWL FLOOR MOUNTED FLUSHOMETER VALVE 1.28GPF WATER CLOSET 10" BOWL HEIGHT, 12" HEIGHT TO TOP OF SEAT, 10" ROUGH-IN.	AMERICAN STANDARD	2282.001	AMERICAN ST. 6047.121.002	1"	NA	INTEGRAL	2"	PROVIDE TOILET SEAT OPEN FRONT TYPE, LEVER HANDLE HAS TO BE OPEN SIDE OF ROOM. DISTANCE FROM CENTERLINE OF TOILET TO FINISH SIDE WALL SHALL BE 12", SEE DWG#A400 FOR MORE DETAIL. ENSURE INCOMMING WATERLINE IS COORDINATED WITH REQUIRED GRAB BAR HEIGHTS.
WC-2	ELONGATED BOWL FLOOR MOUNTED FLUSHOMETER VALVE 1.28GPF WATER CLOSET, 15" BOWL HEIGHT, 10" ROUGH-IN.	AMERICAN STANDARD	3451.001	AMERICAN ST. 6047.121.002	1"	NA	INTEGRAL	2"	PROVIDE TOILET SEAT OPEN FRONT TYPE, LEVER HANDLE HAS TO BE OPEN SIDE OF ROOM. DISTANCE FROM CENTERLINE OF TOILET TO FINISH SIDE WALL SHALL BE 16", SEE DWG#A400 FOR MORE DETAIL. ENSURE INCOMMING WATERLINE IS COORDINATED WITH REQUIRED GRAB BAR HEIGHTS.
WC-3	HANDICAPPED ELONGATED BOWL FLOOR MOUNTED FLUSHOMETER VALVE 1.28GPF WATER CLOSET 16 1/2" BOWL HEIGHT, 17 1/8" HEIGHT TO TOP OF SEAT, 10" ROUGH-IN.	AMERICAN STANDARD	3461.001	AMERICAN ST. 6047.121.002	1"	NA	INTEGRAL	2"	PROVIDE TOILET SEAT OPEN FRONT TYPE, LEVER HANDLE HAS TO BE OPEN SIDE OF ROOM. DISTANCE FROM CENTERLINE OF TOILET TO FINISH SIDE WALL SHALL BE 18", SEE DWG#A400 FOR MORE DETAIL.
WF-1	VERSATILE BI-LEVEL ADA COOLER. CAPACITY OF 8.0 GPH, FILTER IS INCLUDED	ELKAY	LZSTL8LC		3/8"	NA	1½"	1¼"	115V/60HZ/5AMPS POWER SUPPLY
WF-2	BOTTLE FILLING STATION, REFRIGERATED & SINGLE ADA COOLER. CAPACITY OF 8.0 GPH, FILTER IS INCLUDED	ELKAY	LZS8WSLP		3/8"	NA	1½"	1¼"	115V/60HZ/5AMPS POWER SUPPLY
CW-1	FIRE RATED, RECESSED CLOTHES WASHER SUPPLY BOX WITH ¼ TURN BALL VALVES WITH WATER HAMMER ARRESTORS AND 2" STANDPIPE CONNECTION. PROVIDED WITH WHITE PLASTIC TRIM	OATEY	38478	INCLUDED	1/2"	1/2"	2"	1½"	
HB-1	ANIT-SIPHON, AUTOMATIC DRAINING NON FREEZE WALL HYDRANT WITH INTEGRAL BACKFLOW PREVENTER	ZURN	Z1321-C		1/2"	NA	NA	NA	
MS-1	FIBERGLASS MOP SERVICE BASIN, 24"X24"X10" WITH CHROME PLATED SERVICE FAUCET WITH WALL BRACE HOSE THREAD ON SPOUT & INTEGRAL VACUUM BREAKER.	MUSTEE	63M	MUSTEE 63.600A	1/2"	1/2"	3"	2"	PROVIDE WITH MUSTEE 65.600 MOP HANGER AND 67.2424 DURAGUARD WALL GUARDS. FAUCET HEIGHT TO BE 36" FROM BASIN.
PS-1	INTERCHANGEABLE FLUSH MOUNT FEATURE	BASKET WEAVE	BSWV-001LF-ZCS		1"	NA	NA	NA	RAIN DROP PRODUCTS LLC. PROVIDE LOW FLOW SPRINKLERS AND 1" CW SUPPLY.
SH-1	36X36 SHOWER RECEPTOR WITH PRESSURE BALANCING VALVE, 2.5 GPM HEAD SHOWER	FREEDOM SHOWERS	APFQ383 8BF1PRRFL		1/2"	1/2"	1½"	1½"	SET PRESSURE BALANCING VALVE IN FIELD TO LIMIT MAXIMUM TEMPERATURE TO 110°F. COORDINATE DRAIN REQUIREMENTS WITH SHOWER RECEPTOR

NATURAL GAS HOT WATER HEATER (POWER DIRECT VENT)

TAG	CAPACITY (GAL.)	RECOVERY GPH/°F TEMPERATURE RISE: 80	90	120	BTU INPUT PER HOUR	HT.	DIA.	WATER CONN. (IN.)	GAS CONN. (IN.)	VENT SIZE (IN.)	F.A.I. SIZE (IN.)	POWER REQ. (V/PH)	AMP (FLA)	MANUFACTURER MAKE AND MODEL	COMMENTS
WH-1	100	223	198	148	150,000	74.5"	33"	¾"	½"	3" CPVC	3" CPVC	120/1	5	A.O. SMITH CYCLONE MXI BTH-150(A)	NOTES 1,2

NOTES:
1. PROVIDE ALL PIPING ACCESSORIES AND APPURTENANCES AS PER THE HOT WATER HEATER INSTALLATION DETAIL.
2. COORDINATE LOCATION OF 120V CONTROL CIRCUIT FOR WATER HEATER.

BACKFLOW PREVENTERS / VACUUM BREAKERS SCHEDULE

APPLICATION	MFR.	MODEL #	DISCRIPTION
			REDUCED PRESSURE ZONE ASSEMBLIES LOCATED IN SPRINKLER ROOM
PLAYGROUND SPRINKLER/IRRIGATION	WATTS	1¼" LF009	
COFFEE MAKER	WATTS	LF288AC	COUNTERTOP VACUUM BREAKER

NOTES:
1. ADDITIONAL BACKFLOW PREVENTER OR VACUUM BREAKERS ARE NOT REQUIRED WHERE SUCH DEVICES ARE INSTALLED INTEGRAL TO THE EQUIPMENT.

FLOOR DRAIN SCHEDULE

TAG	LOCATION	MAKE	MODEL	DISCRIPTION	OUTLET SIZE	TRAP SEAL	TRAP PRIMER
FD-1	BATHROOMS	ZURN	Z415-6S-2NH	FLOOR DRAIN 6" SQUARE, 2" NO-HUB OUTLET	2"	4"	YES
TD-1	WATER SPRINKLER PLAY AREA	ZURN	Z884	TRENCH DRAIN, 3" NO-HUB OUTLET	3"	–	NO

NOTES:
1. ALL TRAPPED FLOOR DRAINS SHALL BE INSTALLED WITH AN ASSE 1018 OR ASSE 1044 TRAP SEAL PROTECTION DEVICE.

RECIRCULATION PUMP SCHEDULE

ITEM NO.	MANUFACTURER	MODEL	VOLTAGE	HP	RPM	GPM	FT. HD.
RP-1	TACO	006-B4-PNP	115/1/60	1/40	3250	2.0	9

NOTES:
1. RECIRCULATION PUMP IS PROVIDED WITH A AN INTEGRAL TIMER TO CONTROL PUMP ON / OFF TIMES OF DAY. PUMP TO BE PROVIDED WITH AND CONTROLLED BY AN AQUASTAT TO BE COORDINATED WITH THE LINE TEMPERATURE.

NOTE

1. THESE PLUMBING DRAWINGS ARE DIAGRAMMATIC AND ALL PIPING IS DIAGRAMMATIC.
2. DO NOT SCALE THESE PLUMBING DRAWINGS.
3. PROVIDE PLUMBING SHOP DRAWINGS FOR APPROVAL.

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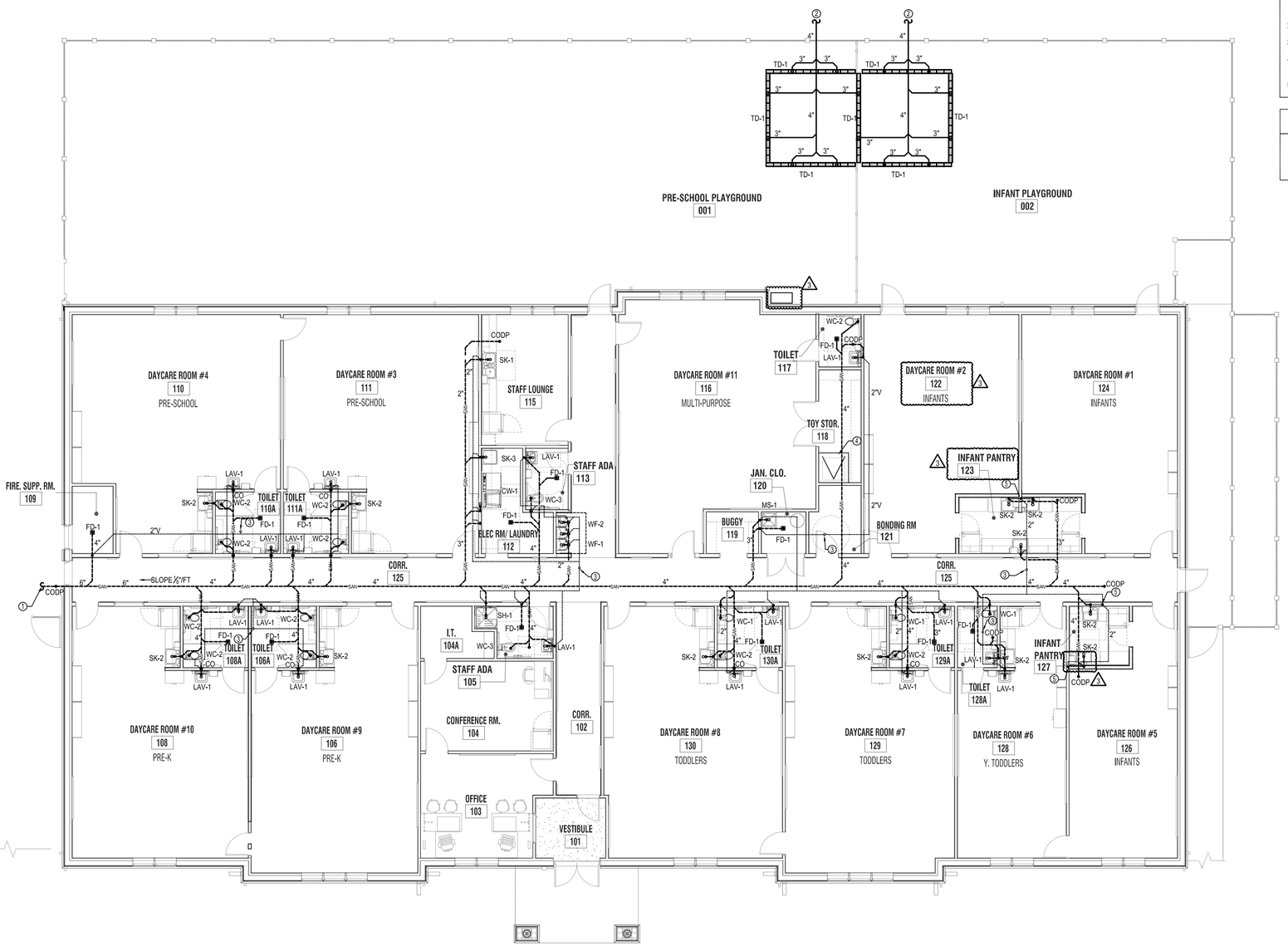
LEGAL DESCRIPTION
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
PLUMBING COVER SHEET

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
P-001



PLUMBING DESIGN KEY NOTES: (#)

1. CONNECT 6" SANITARY WASTE TO 6" SANITARY CONNECTION AS SHOWN ON CIVIL ENGINEER'S PLAN, COORDINATE IN FIELD EXACT LOCATION.
2. CONNECT TO NEAREST SITE UNDERDRAIN, BY CIVIL.
3. CONTRACTOR TO PROVIDE NEW 3" VENT THROUGH ROOF AS SHOWN ON PLAN.
4. ACCESS HATCH TO ATTIC AT CEILING. ALL PIPING AND PLUMBING APPURTENANCES AT THE CEILING SHALL BE INSTALLED CLEAR FROM THE HATCH.
5. COMBINE VENT PIPING BELOW COUNTER LEVEL, RISE AT FULL HEIGHT WALL.

PLUMBING GENERAL NOTES:

- PROVIDE ALL SANITARY, WASTE AND STORM PIPING WITH A MINIMUM PITCH OF ¼" PER FOOT FOR ALL PIPE SIZES 2½" OR SMALLER AND ½" PER FOOT FOR ALL PIPE SIZES 3" AND LARGER.

PLUMBING DRAINAGE FLOOR PLAN

SCALE: ⅛" = 1'-0"

JAM ARCH
IS NOW COLLIERS ENGINEERING & DESIGN

ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
5471 West Waters Avenue
Suite 100
Tampa, Florida 33634
ph: (813) 553-3231 fax: (973) 291-3740
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JUSTIN A. MIHALIK, AIA FL LIC. #: AR 95150
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KEA ENGINEERS
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ISELIN, NJ 08830
TEL (732) 635 0044 - FAX (732) 635 1777

ARMEN KHACHATURIAN, P.E. – FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

PLUMBING DRAINAGE FLOOR PLAN

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
P-101

(#) PLUMBING DESIGN KEY NOTES:

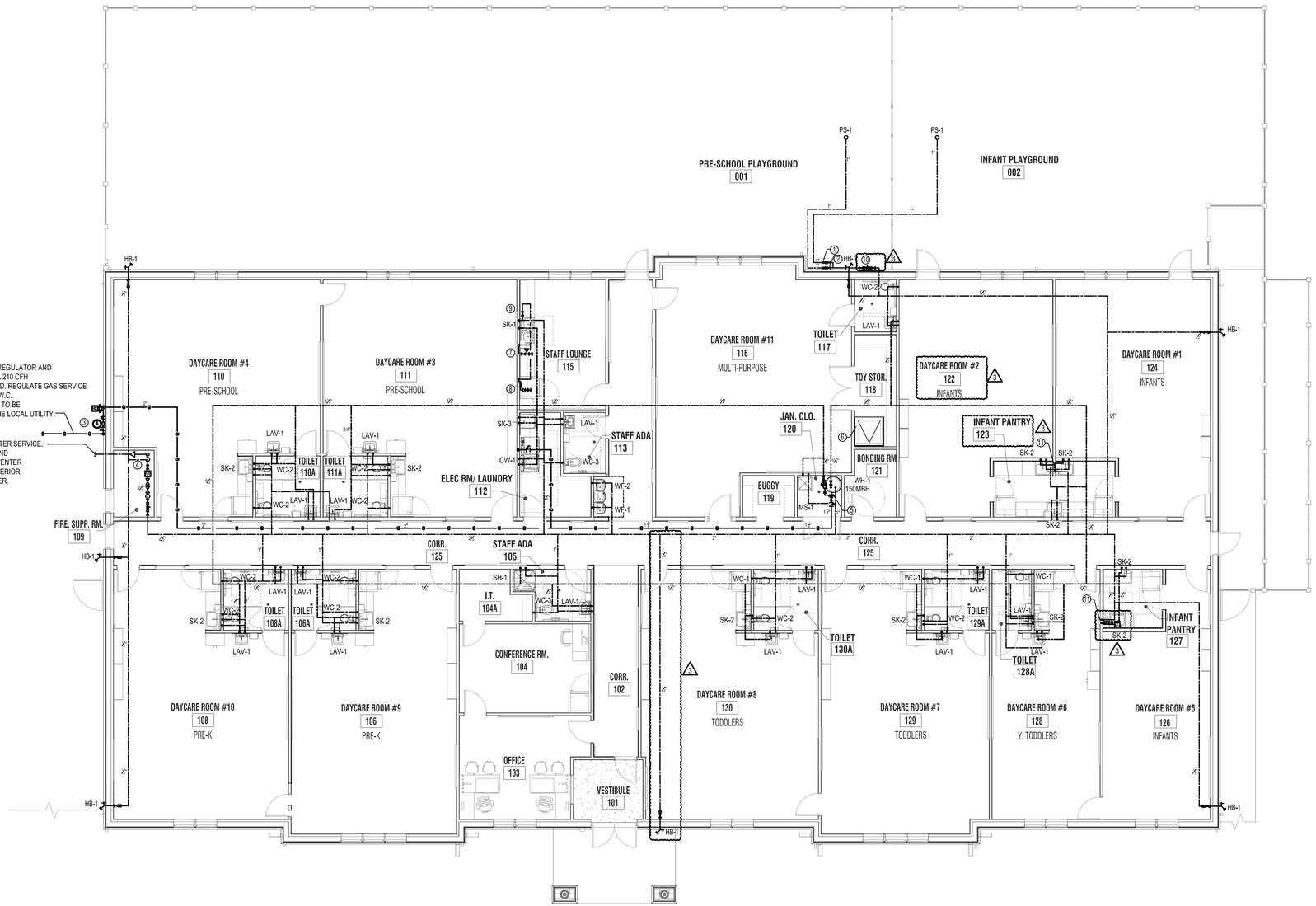
1. WATER SPRINKLER MANIFOLD TO BE LOCATED 17" AFF INSIDE 50 GAL. RESIN DECK BOX. CONTRACTOR TO COORDINATE EXACT DIMENSION OF DECK BOX AND INSTALLATION HEIGHT AND INFORM ARCH/OWNER OF ANY ISSUES PRIOR TO INSTALLATION IN FIELD. LOCATE RPZ ASSEMBLY IN SPRINKLER SERVICE ROOM.
2. PROVIDE EACH SPRINKLER CONNECTION WITH ISOLATION CONTROL VALVE AND FLOW CONTROL VALVE. FLOW CONTROL VALVE TO BE 1" WATTS IDROSET SERIES CSD OR EQUAL. ADJUST IN FIELD THE MAXIMUM FLOW FOR EACH SPRINKLER TO BE 1.4 GPM AS RECOMMENDED BY PS-1 SPRINKLER MANUFACTURER.
3. GAS PRESSURE REGULATOR AND SERVICE METER. 210 CFH CONNECTED LOAD. REGULATE GAS SERVICE PRESSURE TO 7"W.C.. FINAL LOCATION TO BE APPROVED BY THE LOCAL UTILITY.
4. LIGHTBRIDGE REQUIRES 2" COLD WATER SERVICE DUE TO FLUSHOMETER TOILETS. PROVIDE A 2" x 2½" REDUCER TO INCREASE PIPE SIZE TO 2½" AFTER THE DOMESTIC METER.
5. 3" AIR INTAKE AND EXHAUST FOR WH-1. PROVIDE COMBINED CONCENTRIC VENT KIT FOR AIR INTAKE AND EXHAUST OUTLETS TO ROOF, REFER TO MANUFACTURER'S RECOMMENDATIONS FOR VENT KIT INSTALLATION.
6. ACCESS HATCH TO ATTIC AT CEILING. ALL PIPING AND PLUMBING APPURTENANCES AT THE CEILING SHALL BE INSTALLED CLEAR FROM THE HATCH.
7. ¾" DOMESTIC COLD WATER CONNECTION FOR COUNTERTOP APPLIANCE. PROVIDE WITH ISOLATION SHUTOFF VALVE, VACUUM BREAKER, AND UNION FITTING.
8. ¾" DOMESTIC COLD WATER CONNECTION FOR INTEGRAL REFRIGERATOR ICE MAKER. PROVIDE WITH ISOLATION SHUTOFF VALVE, DUAL CHECK VALVE WITH ATMOSPHERIC VENT, AND UNION FITTING. PROVIDE OUTLET BOX AND ALL ACCESSORIES WITH WHITE TRIM OPTIONS.
9. PROVIDE CARTRIDGE WATER FILTER FOR PANTRY APPLIANCES. PROVIDE WITH (2) SPARE CARTRIDGES FOR TENANT USE.
10. 1½" RPZA FOR PLAYGROUND SPRINKLER SUPPLY.
11. HOT & COLD WATER BRANCH PIPING DROP BELOW COUNTER LEVEL IN FULL HEIGHT WALL.

PLUMBING GENERAL NOTES:

- PROVIDE THERMOSTATIC MIXING VALVE AT ALL LAVATORIES AND HAND WASHING SINKS AT TEMP 110°F.
- PROVIDE WATER HAMMER ARRESTOR AT EVERY QUICK CLOSING VALVE OF PLUMBING FIXTURES.
- CONTRACTOR/ARCH TO OBTAIN INCOMING STREET PRESSURE HYDRANT FLOW DATA BEFORE THE START OF CONSTRUCTION FROM THE UTILITY COMPANY TO DETERMINE IF THERE IS ADEQUATE WATER PRESSURE FOR FLUSHOMETER VALVE TOILETS.
- AT THE RECEIPT OF THE FLOW DATA, ENGINEER WILL DETERMINE THE FEASIBILITY OF THE USE OF FLUSHOMETER TOILETS. CONTRACTOR TO PROVIDE AN ADD-ALTERNATE PRICE IF A DOMESTIC WATER BOOSTER PUMP IS REQUIRED FOR THE USE OF FLUSHOMETER WATER CLOSETS. A BIGGER UTILITY ROOM MAY BE REQUIRED TO ACCOMMODATE A BOOSTER PUMP.

GAS SIZE BASED ON FLORIDA FUEL GAS CODE 2023
TABLE 402.4(2) SCHEDULE 40 METALLIC PIPE
GAS : NATURAL
INTEL PRESSURE : LESS THAN 2 PSI
PRESSURE DROP : 0.5 IN. W.C.
SPECIFIC GRAVITY : 0.60

MAXIMUM PIPE LENGTH 140 FEET
TOTAL LOAD : 210 MBH



PLUMBING SUPPLY FLOOR PLAN

SCALE: ⅛" = 1'-0"

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TAMPA, FL. 33611

LEGAL DESCRIPTION

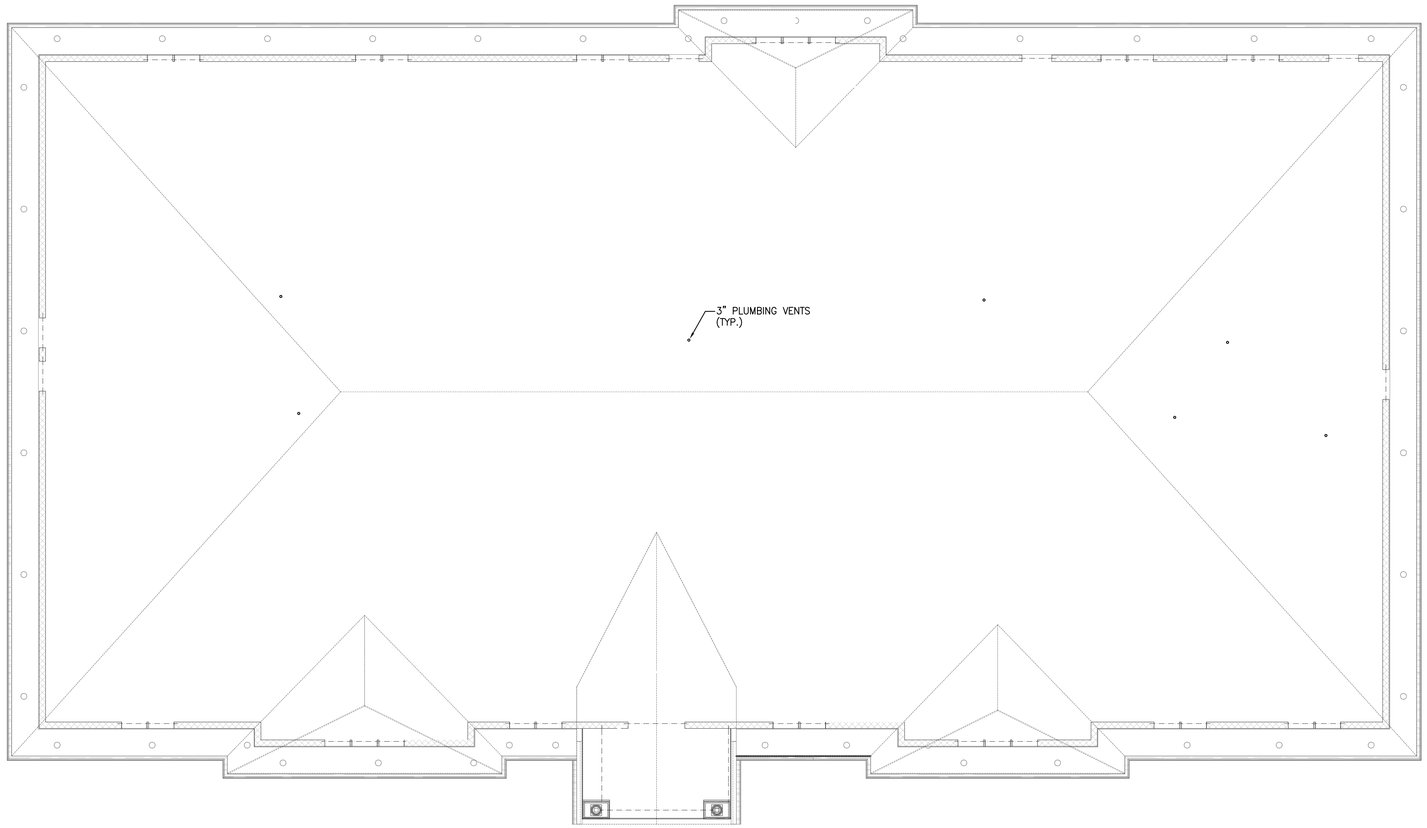
FOLIO: 004339-0100
004339-0150

SHEET TITLE:
PLUMBING SUPPLY FLOOR PLAN

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
P-102



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5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

PLUMBING ROOF PLAN

REV.	DATE	REMARKS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
P-103

PLUMBING DESIGN KEY NOTES: (#)

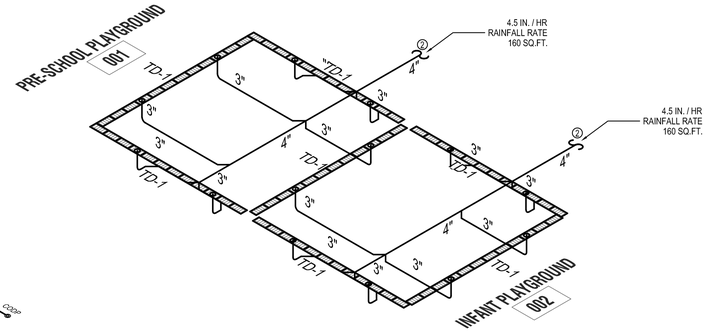
1. CONNECT 6" SANITARY WASTE TO 6" SANITARY CONNECTION AS SHOWN ON CIVIL ENGINEER'S PLAN, COORDINATE IN FIELD EXACT LOCATION.
2. CONNECT TO NEAREST SITE UNDERGROUND DRAINAGE, BY CIVIL.
3. CONTRACTOR TO PROVIDE NEW 3" VENT THROUGH ROOF AS SHOWN ON PLAN.
4. COMBINE VENT PIPING BELOW COUNTER LEVEL, RISE AT FULL HEIGHT WALL.
5. ACCESS HATCH TO ATTIC AT CEILING. ALL PIPING AND PLUMBING APPURTENANCES AT THE CEILING SHALL BE INSTALLED CLEAR FROM THE HATCH.

PLUMBING GENERAL NOTES:

- PROVIDE ALL SANITARY, WASTE AND STORM PIPING WITH A MINIMUM PITCH OF ¼" PER FOOT FOR ALL PIPE SIZES 2½" OR SMALLER AND ⅛" PER FOOT FOR ALL PIPE SIZES 3" AND LARGER.

SANITARY ISOMETRIC RISER DIAGRAM

SCALE: N.T.S.



STORM ISOMETRIC RISER DIAGRAM

SCALE: N.T.S.

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5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:
PLUMBING DRIANAGE ISOMETRIC RISER DIAGRAMS

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV2	08/14/2024	PERMIT RESPONSE COMMENTS
1	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

SHEET NO.
P-201

PLUMBING DESIGN KEY NOTES:

1. WATER SPRINKLER MANIFOLD TO BE LOCATED 17" AFF INSIDE 50 GAL. RESIN DECK BOX. CONTRACTOR TO COORDINATE EXACT DIMENSION OF DECK BOX AND INSTALLATION HEIGHT AND INFORM ARCH/OWNER OF ANY ISSUES PRIOR TO INSTALLATION IN FIELD. LOCATE RPZ ASSEMBLY IN HVAC CONDENSOR YARD.
2. PROVIDE EACH SPRINKLER CONNECTION WITH ISOLATION CONTROL VALVE AND FLOW CONTROL VALVE. FLOW CONTROL VALVE TO BE 1" WATTS IDROSET SERIES CSD OR EQUAL. ADJUST IN FIELD THE MAXIMUM FLOW FOR EACH SPRINKLER TO BE 1.4 GPM AS RECOMMENDED BY PS-1 SPRINKLER MANUFACTURER.
3. GAS PRESSURE REGULATOR AND SERVICE METER. 210 CFH CONNECTED LOAD. REGULATE GAS SERVICE PRESSURE TO 7"W.C.. FINAL LOCATION TO BE APPROVED BY THE LOCAL UTILITY.
4. LIGHTBRIDGE REQUIRES 2" COLD WATER SERVICE DUE TO FLUSHOMETER TOILETS. PROVIDE A 2" x 2½" REDUCER TO INCREASE PIPE SIZE TO 2½" AFTER THE DOMESTIC METER.
5. 3" AIR INTAKE AND EXHAUST FOR WH-1. PROVIDE COMBINED CONCENTRIC VENT KIT FOR AIR INTAKE AND EXHAUST OUTLETS TO ROOF, REFER TO MANUFACTURER'S RECOMMENDATIONS FOR VENT KIT INSTALLATION.
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9. 1½" RPZA FOR PLAYGROUND SPRINKLER SUPPLY.
10. HOT & COLD WATER BRANCH PIPING DROP BELOW COUNTER LEVEL IN FULL HEIGHT WALL.
11. ACCESS HATCH TO ATTIC AT CEILING. ALL PIPING AND PLUMBING APPURTENANCES AT THE CEILING SHALL BE INSTALLED CLEAR FROM THE HATCH.

PLUMBING GENERAL NOTES:

- PROVIDE THERMOSTATIC MIXING VALVE AT ALL LAVATORIES AND HAND WASHING SINKS AT TEMP 110°F.
- PROVIDE WATER HAMMER ARRESTOR AT EVERY QUICK CLOSING VALVE OF PLUMBING FIXTURES.
- CONTRACTOR/ARCH TO OBTAIN INCOMING STREET PRESSURE HYDRANT FLOW DATA BEFORE THE START OF CONSTRUCTION FROM THE UTILITY COMPANY TO DETERMINE IF THERE IS ADEQUATE WATER PRESSURE FOR FLUSHOMETER VALVE TOILETS.
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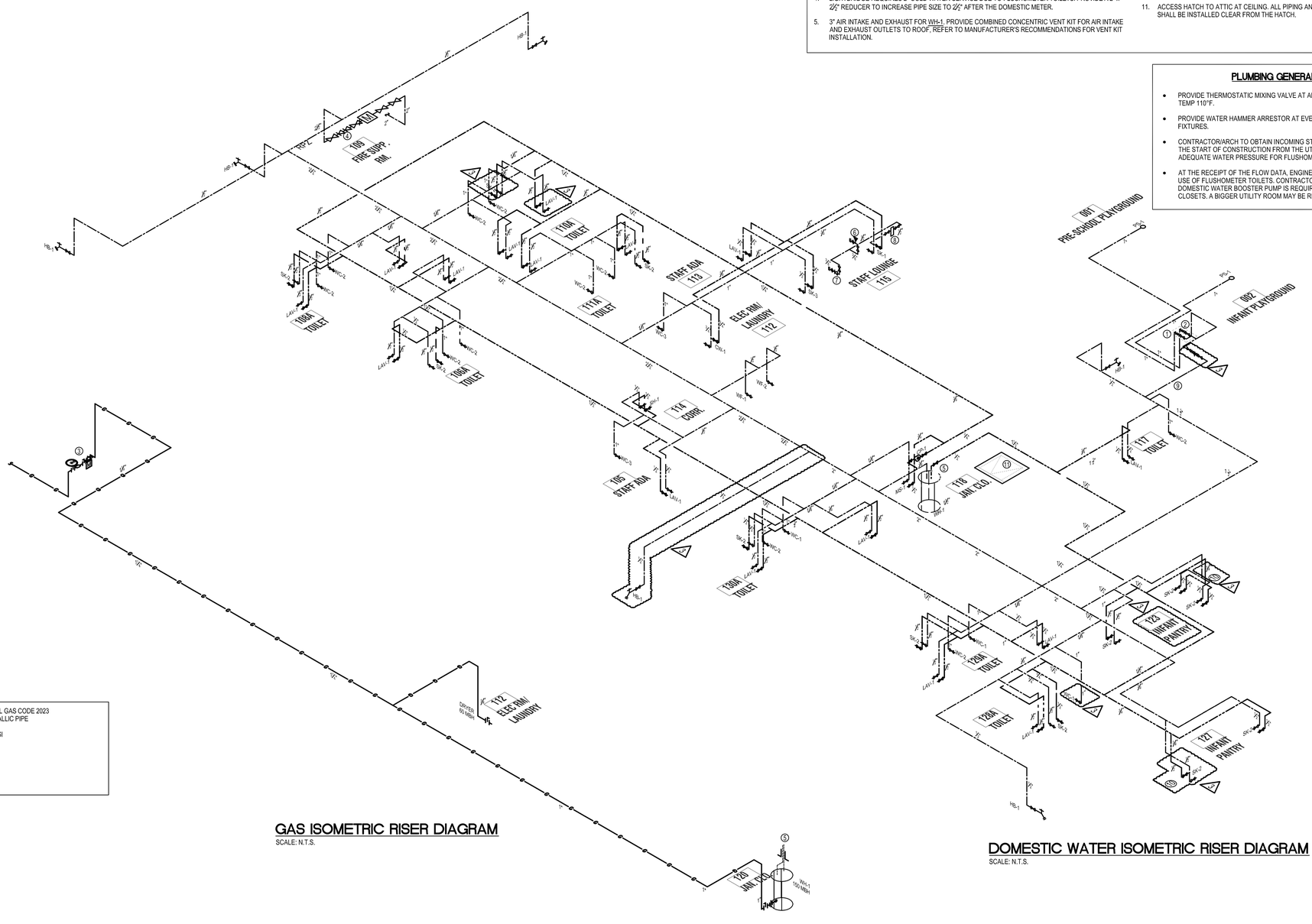

GAS SIZE BASED ON FLORIDA FUEL GAS CODE 2023
TABLE 402.4(2) SCHEDULE 40 METALLIC PIPE
GAS : NATURAL
INTEL PRESSURE : LESS THAN 2 PSI
PRESSURE DROP : 0.5 IN. W.C.
SPECIFIC GRAVITY : 0.60

MAXIMUM PIPE LENGTH 140 FEET
TOTAL LOAD : 210 MBH

GAS ISOMETRIC RISER DIAGRAM
SCALE: N.T.S.

DOMESTIC WATER ISOMETRIC RISER DIAGRAM
SCALE: N.T.S.

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LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

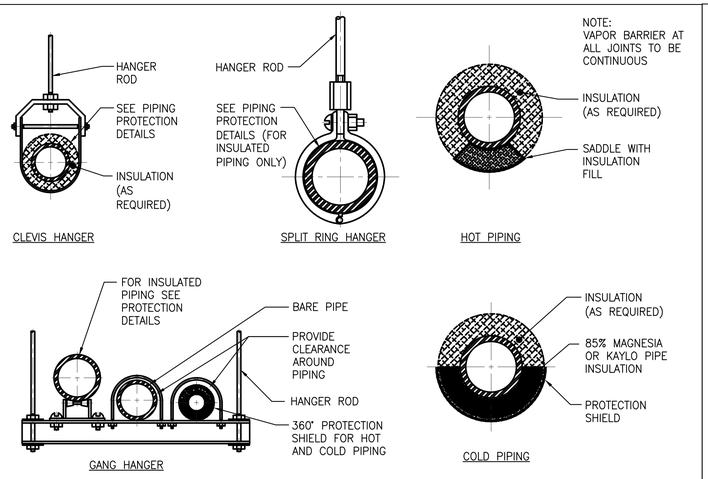
SHEET TITLE:

PLUMBING SUPPLY ISOMETRIC RISER DIAGRAMS

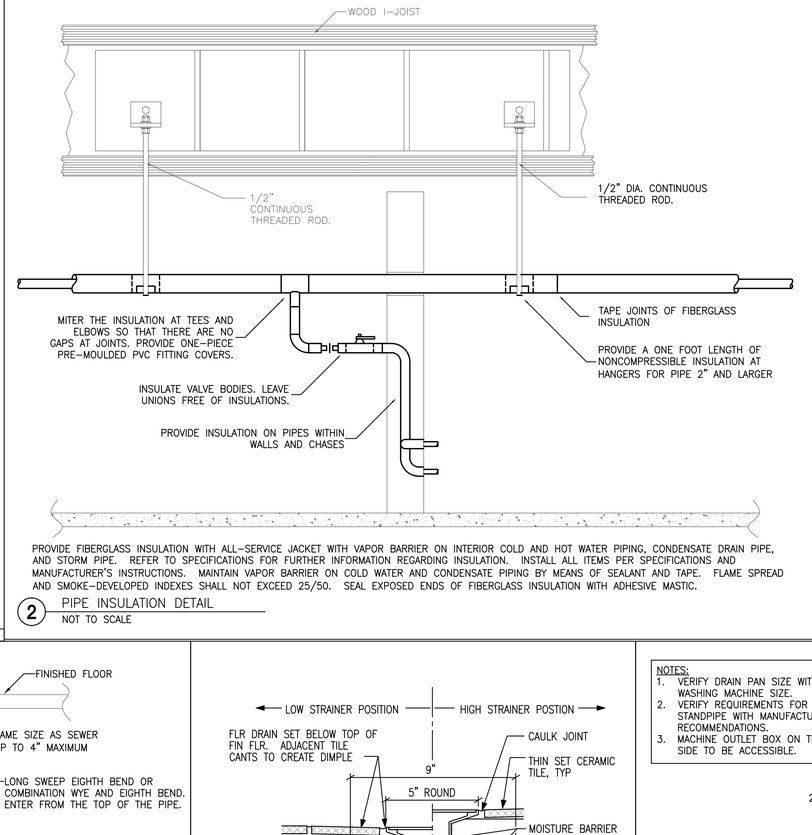
REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

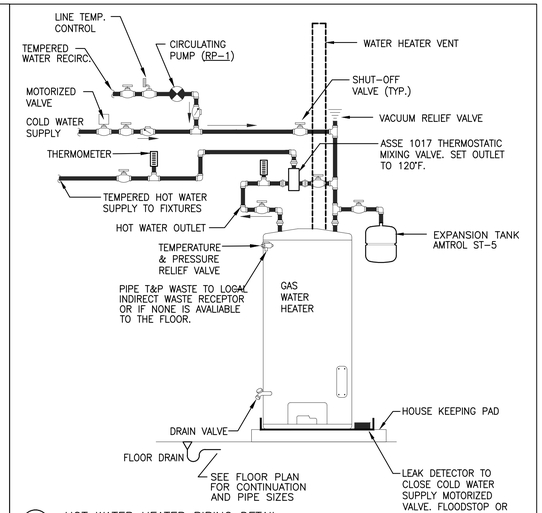
SHEET NO.
P-202



1 PIPING SUPPORT AND INSULATION DETAIL
NOT TO SCALE

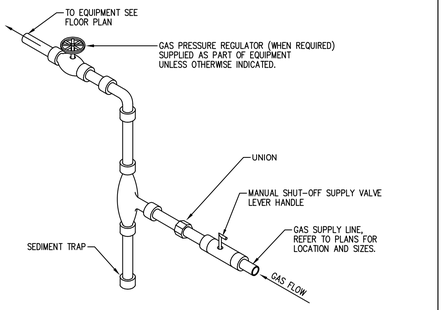


2 PIPE INSULATION DETAIL
NOT TO SCALE

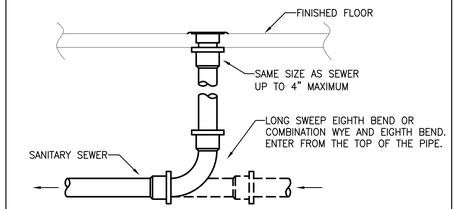


3 HOT WATER HEATER PIPING DETAIL
NOT TO SCALE

15083

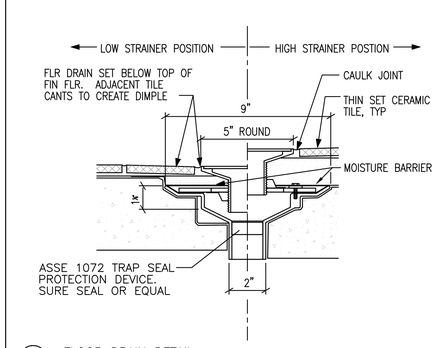


4 DETAIL OF GAS CONNECTION
NOT TO SCALE



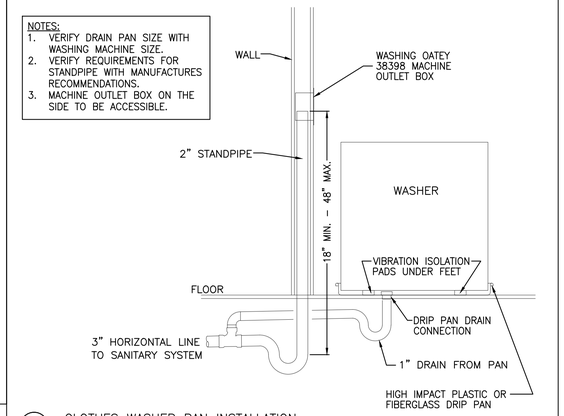
PROVIDE FLOOR CLEANOUTS WHERE SHOWN ON PLANS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. PROVIDE ROUND SECURED ADJUSTABLE TOP WITH "CO" ON COVER THAT IS SUITABLE FOR THE FLOOR FINISH (CARPET MARKER, RECESSED FOR TILE, SCORIATED FOR UNFINISHED FLOORS).

5 FLOOR CLEANOUT DETAIL
NOT TO SCALE

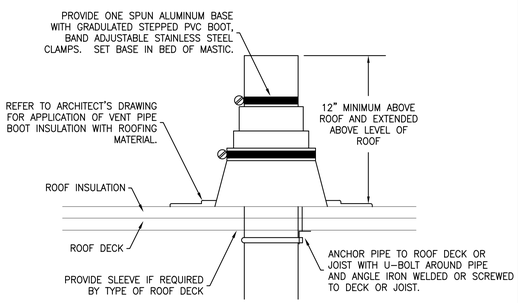


6 FLOOR DRAIN DETAIL
NOT TO SCALE

NOTES:
1. VERIFY DRAIN PAN SIZE WITH WASHING MACHINE SIZE.
2. VERIFY REQUIREMENTS FOR STANDPIPE WITH MANUFACTURES RECOMMENDATIONS.
3. MACHINE OUTLET BOX ON THE SIDE TO BE ACCESSIBLE.

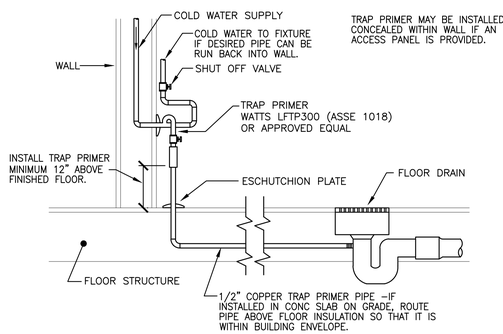


7 CLOTHES WASHER PAN INSTALLATION
NOT TO SCALE

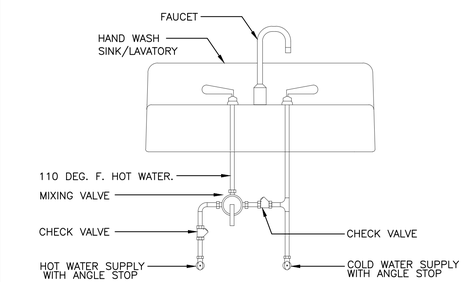


REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS. LOCATE VTR MINIMUM TEN FEET HORIZONTAL OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING OR FRESH AIR INTAKE, AND ONE FOOT FROM ANY VERTICAL SURFACE. PROVIDE 1" FIBERGLASS INSULATION WITH ALL-SERVICE JACKET ON VENT PIPE INSIDE BUILDING WITHIN SIX FEET OF VENT THRU ROOF LOCATION. VERIFY FLASHING AND COUNTER FLASHING WITH ROOFING CONTRACTOR.

8 VENT THROUGH ROOF DETAIL (VTR)
NOT TO SCALE



9 FLOOR DRAIN TRAP PRIMER DETAIL
NOT TO SCALE



10 LOCAL MIXING VALVE AT LAVATORY AND HAND SINKS
NOT TO SCALE

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SHEET TITLE:

PLUMBING DETAILS

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REV1	08/14/2024	PERMIT RESPONSE COMMENTS
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JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/ILG
CHECKED BY: AK

SHEET NO.
P-301

1. SCOPE OF WORK:

1.1. ALL WORK INDICATED ON THE DRAWINGS AND SPECIFICATIONS SHALL BE INCLUDED UNDER THE BASE BID, EXCEPT WHERE THERE IS SPECIFIC REFERENCE TO EXCLUSION AND INCORPORATION IN OTHER QUOTATIONS.

2. GENERAL:

2.1. EXISTING PIPING WHERE INDICATED FOR EXISTING SYSTEMS IS DIAGRAMMATIC ONLY.

2.2. BECOME THOROUGHLY FAMILIAR WITH ACTUAL BUILDING SYSTEMS, WHICH ARE TO BE CHANGED, ALTERED, OR TO WHICH NEW CONNECTIONS ARE TO BE MADE. VERIFY ALL EXISTING CONDITIONS INCLUDING PIPE SIZE, LOCATION, AND ELEVATION.

2.3. THE INTENT OF THE WORK IS INDICATED ON THE DRAWINGS AND DESCRIBED HEREINAFTER. NO CONSIDERATION WILL BE GRANTED FOR REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR REGARDING ACTUAL PHYSICAL CONDITIONS AT THE SITE.

2.4. COORDINATE WORK WITH ALL TRADES AND EXISTING CONDITIONS OF THE JOB SITE AND MAINTAIN REQUIRED CEILING HEIGHTS AND SPACE CONDITIONS.

2.5. ALL EQUIPMENT SHALL BE ASBESTOS FREE AND INDICATED AS SUCH.

2.6. PROVIDE APPROVED BACKFLOW PREVENTION FOR CONNECTION TO NON – POTABLE FIXTURES AND EQUIPMENT AS REQUIRED BY CODE.

2.7. ALL PIPING AND EQUIPMENT SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE. HANGERS AND SUPPORTS SHALL BE SPECIFICALLY APPROVED FOR USE IN EACH APPLICATION. WHERE OVERHEAD CONDITIONS DOES NOT PERMIT THE FASTENING OF HANGER RODS IN REQUIRED LOCATIONS, PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND APPROVED. DO NOT USE EXPANSION SHIELDS.

2.8. NO PLUMBING WORK SHALL BE HUNG FROM DUCTWORK OR THE HANGERS OF OTHER TRADES.

2.9. DUE TO THE NATURE OF ALTERATION WORK WHICH REQUIRES THE BUILDING OR FACILITY TO BE KEPT OPERABLE AT ALL TIMES, IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL ACTIVITIES, CONNECTIONS, SHUT DOWNS AND THE LIKE WITH THE GENERAL CONTRACTOR, TENANT, AND BUILDING OWNER. ANY INTERRUPTIONS OF BUILDING SERVICES INCLUDING PHYSICAL ACCESS TO ADJACENT SPACES MUST BE COORDINATED WITH THE BUILDING OWNER. ALL TEMPORARY CONNECTIONS OR AFTER–HOUR WORK SHALL BE SO ARRANGED WITH ALL PARTIES INVOLVED.

2.10. IF THIS TRADE MUST PERFORM WORK IN OCCUPIED AREAS, IT SHALL MAKE ARRANGEMENTS WITH THE GENERAL CONTRACTOR AND THE OWNER AS TO THE TIME AND METHOD IN WHICH THIS WORK SHALL BE PERFORMED. ARRANGE FOR ALL ADJACENT AREAS TO BE PROPERLY PROTECTED AGAINST DAMAGE, DEBRIS, DIRT AND DUST.

2.11. PROVIDE AS PART OF NEW WORK:

2.11.1. HANGERS AND SUPPORTS FOR PIPING
2.11.2. SCAFFOLDING, RIGGING, AND HOISTING
2.11.3. RUBBISH REMOVAL AND CLEANING
2.11.4. CUTTING AND PATCHING
2.11.5. SLEEVES, OPENINGS AND THE CORE DRILLING OF EXISTING SLABS
2.11.6. CAULKING, FIREPROOFING, AND THE PACKING AND FILLING OF SLEEVES AND OPENINGS
2.11.7. SHOP DRAWINGS AND "AS BUILT" DRAWINGS
2.11.8. OBTAINING ALL REQUIRED PERMITS, APPROVALS, ACCEPTANCE, FILING AND INSPECTION CERTIFICATES
2.11.9. GUARANTEE ALL WORK, LABOR AND MATERIALS FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE
2.11.10. VERIFYING EXISTING CONDITIONS AT THE PROJECT SITE
2.11.11. TESTS: OPERATION, PERFORMANCE AND CODE–REQUIRED TESTS
2.11.12. PROTECTION OF WORK AND ADJACENT SPACES DURING CONSTRUCTION
2.11.13. COORDINATION WITH OTHER TRADES
2.11.14. IDENTIFICATION: VALVE TAGS, VALVE TAG SCHEDULES, AND PIPING IDENTIFICATION

2.12. DRAWINGS ARE DIAGRAMMATIC AND THEREFORE DO NOT RELIEVE THIS CONTRACTOR FROM PROVIDING ALL WORK AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION ACCORDING TO THE REQUIREMENTS.

2.13. THE ARRANGEMENT, POSITION, AND CONNECTION OF PIPES, DRAINS, VALVES, ETC., INDICATED ON THE DRAWINGS SHALL BE TAKEN AS A CLOSE APPROXIMATION, AND WHILE THEY SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, THE RIGHT IS RESERVED BY THE OWNER TO CHANGE THE LOCATIONS TO ACCOMMODATE ANY CONDITIONS WHICH MAY ARISE DURING THE PROGRESS OF THE WORK, WITHOUT ADDITIONAL COMPENSATION TO THIS CONTRACTOR FOR SUCH CHANGES, PROVIDED THAT THE CHANGES ARE REQUESTED PRIOR TO THE INSTALLATION OF THIS CONTRACTOR'S WORK.

2.14. THE RESPONSIBILITY FOR ACCURATELY LAYING OUT THE WORK RESTS WITH THIS CONTRACTOR. SHOULD IT BE FOUND THAT ANY OF HIS WORK IS SO LAID OUT THAT INTERFERENCE WILL OCCUR, HE SHALL SO REPORT THAT TO THE GENERAL CONTRACTOR.

2.15. ALL MATERIALS AND FIXTURES USED FOR THE ENTIRE PLUMBING PROJECT SHALL BE NEW AND VOID OF ANY DEFECTS. ALL MATERIALS AND FIXTURES SHALL CARRY STANDARD MANUFACTURES WARRANTY AGAINST ANY DEFECTS AND / OR DEFICIENCIES.

3. CODES, PERMITS, AND INSPECTIONS:

3.1. INSTALL ALL WORK IN FULL ACCORDANCE WITH THE REQUIREMENTS OF ALL LOCAL AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION OVER THESE MATTERS, AS WELL AS WITH ANY REQUIREMENTS OF NFPA, UL, FM, ETC, AND OTHER APPLICABLE CODES.

3.2. SECURE AND PAY FOR ALL NECESSARY APPROVALS, PERMITS, INSPECTIONS, CARTING, LEGAL DUMPING, ETC., AND DELIVER THE OFFICIAL RECORDS OF THE GRANTING OF PERMITS TO THE OWNER.

3.3. PAY ALL FILING FEES TO OBTAIN RELEASE OF APPROVED PLANS.

3.4. PAY ROYALTIES OR FEES REQUIRED IN CONNECTION WITH THE USE OF PATENTED DEVICES OR SYSTEMS, AND SAVE THE OWNER, THE ARCHITECT, THE CONSULTING ENGINEER, AND THE TENANT HARMLESS FROM ANY CLAIMS OR LAWSUITS ARISING FROM SUCH USE, AND INDEMNIFY EACH THEREOF AGAINST ATTORNEYS' FEES IN CONNECTION THEREWITH.

3.5. PROVIDE ALL SIGNS REQUIRED BY THE MUNICIPAL AUTHORITIES.

4. GUARANTEES AND CERTIFICATIONS:

4.1. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP AS WELL AS DAMAGE TO THE WORK OF OTHER TRADES RESULTING FROM SAME SHALL BE REPLACED OR REPAIRED AS DIRECTED FOR THE DURATION OF STIPULATED GUARANTEE PERIODS. THE DURATION OF GUARANTEE PERIODS SHALL BE ONE YEAR FROM THE DATE SUBSTANTIAL COMPLETION.

5. ENGINEER'S REVIEW, SHOP DRAWINGS, AND CERTIFICATIONS:

5.1. PREPARE AND SUBMIT DETAILED SHOP DRAWINGS. THE ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES IS ONLY FOR THE CONVENIENCE OF THE OWNER IN FOLLOWING THE WORK AND DOES NOT RELIEVE THIS TRADE OF RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW SHALL NOT BE CONSTRUED AS A COMPLETE OR DETAILED CHECK OF THE WORK SUBMITTED, NOR SHALL IT RELIEVE THIS TRADE OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS AND SAMPLES, OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH HAVE BEEN OMITTED FROM THE SHOP DRAWING SUBMITTALS.

5.2. NO PART OF THE WORK SHALL BE STARTED IN THE SHOP OR IN THE FIELD UNTIL THE ENGINEER HAS REVIEWED THE SHOP DRAWINGS AND SAMPLES FOR THAT PORTION OF THE WORK. THEREAFTER, THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE INDICATED STATUS OF THE REVIEWED SHOP DRAWINGS. PRIOR TO ASSEMBLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED: SCALED FLOOR PLAN AND CEILING DRAWINGS WITH DIMENSIONED LOCATIONS OF ALL PIPING AND EQUIPMENT INCLUDING SIZES, ELEVATIONS, AND APPROPRIATE INDICATION OF COORDINATION BETWEEN STRUCTURAL AND MECHANICAL ELEMENTS. MANUFACTURER'S CATALOGUE CUTS OF ALL EQUIPMENT TO BE USED. SAMPLES OF ALL DEVICES, WHICH WILL BE CLEARLY VISIBLE TO VIEW. ALL SUBMITTALS SHALL BE PROPERLY IDENTIFIED WITH PROJECT NAME, ARCHITECT, ENGINEER, AND SUBCONTRACTOR'S NAME, ADDRESS, AND TELEPHONE NUMBER. PROVIDE CLEAR DETAILED REPRODUCIBLE "AS–BUILT" DRAWINGS UPON COMPLETION OF WORK AND PROVIDE SETS OF THE SAME TO LANDLORD AS DIRECTED.

5.3. THE ARCHITECT AND/OR ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES WITH REASONABLE PROMPTNESS AND WILL RETURN THEM TO THE CONTRACTOR STAMPED TO INDICATE THE APPROPRIATE ACTION AS FOLLOWS:

5.3.1. "NO EXCEPTIONS TAKEN" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE CONTRACT DOCUMENTS.

5.3.2. "MAKE CORRECTIONS NOTED" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND THE CONTRACT DOCUMENTS. A COPY OF THE CORRECTED SUBMITTAL SHALL BE RETURNED TO THE ARCHITECT AND/OR ENGINEER FOR RECORD. IF, FOR ANY REASON, THE CONTRACTOR CANNOT COMPLY WITH THE NOTATIONS, THE CONTRACTOR SHALL RESUBMIT AS DESCRIBED FOR SUBMITTALS STAMPED "REVISE AND RESUBMIT".

5.3.3. "REVISE AND RESUBMIT" MEANS THAT THE CONTRACTOR MUST COMPLY WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND RESUBMIT BEFORE FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.

5.3.4. "REJECTED" MEANS THAT THE SUBMITTAL DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS AND THAT FABRICATION, MANUFACTURER CONSTRUCTION SHALL NOT PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.

6. DEMOLITION, CONNECTIONS TO EXISTING WORK, AND ALTERATION:

6.1. REFER TO THE CONTRACT DOCUMENTS FOR THE EXTENT OF SYSTEMS TO BE REMOVED. THE CONTRACTOR SHALL FIELD VERIFY AND INCLUDE IN THE BID ALL REMOVALS REQUIRED FOR THE COMPLETION OF WORK.

6.2. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING SYSTEMS TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. SUBMIT TO OWNER AND ARCHITECT FOR APPROVAL, DATE AND SCHEDULE OF ALL NECESSARY TEMPORARY SHUTDOWNS OF EXISTING SERVICES. ALL SHUTDOWNS SHALL BE MADE AT SUCH TIMES AS THEY WILL NOT INTERFERE WITH REGULAR OPERATION OF EXISTING FACILITIES AND ONLY AFTER WRITTEN APPROVAL OF THE SAME HAS BEEN OBTAINED FROM OWNER.

6.3. MAKE TEMPORARY CONNECTIONS AS REQUIRED BETWEEN NEW AND EXISTING WORK TO INSURE CONTINUOUS OPERATION OF THE FACILITY. ALL COSTS ASSOCIATED WITH AND RESULTING FROM TEMPORARY CONNECTIONS SHALL BE BORNE BY THIS CONTRACTOR.

6.4. CONNECT NEW WORK TO EXISTING WORK IN A NEAT AND APPROVED MANNER. RESTORE ANY DISTURBED EXISTING WORK TO ITS ORIGINAL CONDITION.

6.5. PROVIDE CAPS, PLUGS, AND OUTLETS AS REQUIRED ON EXISTING PIPING.

6.6. REMOVE AND /OR RELOCATE EXISTING PIPING AND OTHER WORK AS REQUIRED TO COMPLETE FINAL INSTALLATION OF NEW PIPING WORK.

6.7. ANY PIPING RENDERED DEFUNCT BY THIS ALTERATION WORK SHALL BE REMOVED. ALERT THE ARCHITECT AND GENERAL CONTRACTOR OF ANY "DISCOVERED" ABANDONED PIPING. IN GENERAL, ALL ABANDONED, INACTIVE, OR SUPERFLUOUS PIPING, INCLUDING HANGERS AND CLAMPS SHALL BE REMOVED.

6.8. ALL NEW AND EXISTING SYSTEMS SHALL BE LEFT IN PERFECT WORKING ORDER UPON COMPLETION OF ALL NEW WORK.

7. CUTTING AND PATCHING:

7.1. DO ANY CUTTING REQUIRED FOR THE PASSAGE OR INSTALLATION OF PIPES, SUPPORTS, AND THE LIKE. IN GENERAL, OTHERS WILL DO DEMOLITION OF EXISTING WALLS AND CEILINGS.

7.2. OTHERS WILL DO ALL PATCHING. THE EXPENSE OF CUTTING AND RESTORING SURFACES TO THEIR ORIGINAL CONDITION WHEN CAUSED BY THIS TRADE'S FAILURE TO PERFORM ITS PRELIMINARY WORK SHALL BE BORNE BY THIS TRADE.

8. SLEEVES:

8.1. PROVIDE 18 GAUGE GALVANIZED SHEET METAL SLEEVES FOR ALL PIPES PASSING THROUGH WALLS OR FLOORS. PROVIDE SLEEVES WITH AN I.D. OF AT LEAST 1/2" GREATER THAN THE OUTSIDE OF THE PIPE, INCLUDING INSULATION WHICH MUST BE CONTINUOUS THROUGH THE SLEEVE. PACK SPACE BETWEEN PIPES AND SLEEVES WITH AN APPROVED FIRESTOP MATERIAL. WHERE SLEEVES PASS THROUGH RATED CONSTRUCTION, FIT ESCUTCHEONS ON BOTH SIDES OF CONSTRUCTION.

9. GENERAL INSTALLATION OF PIPE:

9.1. MAINTAIN A MINIMUM OF 1/8" PITCH PER FOOT IN THE DIRECTION OF FLOW ON ALL DRAINAGE LINES.

9.2. USE REDUCING FITTINGS, UNLESS OTHERWISE APPROVED IN SPECIAL CASES, IN MAKING REDUCTION IN SIZE OF PIPE. BUSHINGS WILL NOT BE ALLOWED UNLESS SPECIFICALLY APPROVED.

9.3. WHERE CHROME PLATED PIPING IS INSTALLED, CUT AND THREAD PIPE SO THAT NO UN–PLATED PIPE THREADS ARE VISIBLE UPON COMPLETING OF WORK.

9.4. CONNECTION TO GAS APPLIANCES SHALL INCLUDE AN EQUIPMENT SHUTOFF, A DIRT LEG AND FINAL CONNECTION SHALL BE MADE WITH A ANSI Z21.24 LISTED FLEXILE CONNECTOR SIZED PER EQUIPMENT CONNECTION SIZE WITH A MAXIMUM LENGTH OF 3' EXCEPT FOR RANGE AND DOMESTIC CLOTHES WASHER WHICH SHALL HAVE A MAX LENGTH OF 6'. CONNECTORS TO BE USED OUTDOORS SHALL ALSO BE ANSI Z21.75 LISTED. CONNECTORS FOR MOVABLE AND COMMERCIAL COOKING EQUIPMENT SHALL BE LISTED AS COMPLYING WITH ANSI Z21.69.

10. MATERIALS OF PIPING SYSTEMS:

10.1. PVC PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. FITTINGS SHALL CONFORM TO ASTM D 2665. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564, PRIMER SHALL CONFORM TO ASTM F 656. THE SYSTEM IS INTENDED FOR NON–PRESSURE DRAINAGE APPLICATIONS WHERE THE TEMPERATURE WILL NOT EXCEED 140'F. ANY PENETRATIONS OF FIRE RESISTANCE RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL BE PROTECTED WITH A FIRE COLLAR TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479.

10.2. HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A–888 AND CISPI STANDARD 301. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE . HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 FOR STANDARD COUPLINGS OR ASTM C–1540 FOR HEAVY DUTY COUPLINGS WHERE INDICATED. GASKETS SHALL CONFORM TO ASTM C–564. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. COUPLINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S BAND TIGHTENING SEQUENCE AND TORQUE. TIGHTEN BANDS WITH A PROPERLY CALIBRATED TORQUE LIMITING DEVICE. TEST THE SYSTEM HYDROSTATICALLY AFTER INSTALLATION TO 10 FT. OF HEAD (4.3 PSI MAXIMUM).

10.3. COPPER WATER PIPING SHALL BE SEAMLESS DRAWN OR EXTRUDED TYPE "L" COPPER TUBING, HARD TEMPER IN ACCORDANCE WITH ASTM B–88. FITTINGS SHALL BE WROUGHT OR CAST BRASS SOLDERED FITTINGS CONFORMING WITH ASME B16.18 OR ASME B16.22. SOLDER JOINTS SHALL BE MADE IN ACCORDANCE WITH ASTM B 828 USING ASTM B–32 LEAD FREE SOLDER AND ASTM B–813 FLUX. ALL COMPONENTS OF THE DOMESTIC WATER SYSTEM ARE TO BE NSF 61 LISTED FOR USE IN POTABLE WATER SYSTEMS.

10.4. CROSS–LINKED POLYETHYLENE TUBING SHALL MEET THE SDR–9 DIMENSION STANDARD AND PERFORMANCE SPECIFICATIONS OF ASTM F–876/F–877 AND CSA B137.5 AND BE APPROVED FOR USE WITH ASTM F1807 AND ASTM F1960 FITTING SYSTEMS. TUBING SYSTEM SHALL ALSO COMPLY WITH ANSI/NSF 14 AND 61 AS SUITABLE FOR USE WITH POTABLE WATER. TEMPERATURE AND PRESSURE RATINGS SHALL BE 160 PSI AT 73.4'F, 100 PSI AT 180'F, AND 80 PSI AT 200'F. ANY PENETRATIONS OF FIRE RESISTANCE RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL BE PROTECTED WITH A FIRE COLLAR TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479.

10.5. BLACK IRON PIPE SHALL BE SCHEDULE 40 WELDED PIPE CONFORMING TO ASTM A–53 OR SEAMLESS DRAWN PIPE CONFORMING TO ASTM A–53 AND A–106. PIPE SHALL BE INSTALL WITH TAPERED THREADED OR WELDED JOINTS. A SOFT SETTING THREAD SEALANT SHALL BE USED ON ALL THREADED JOINTS. FITTINGS SHALL BE BLACK MALLEABLE IRON FITTINGS.

10.6. CORRUGATED STAINLESS STEEL TUBING SHALL BE MANUFACTURED TO COMPLY WITH ANSI LC 1–97 WITH ALL ADDENDA AND BE LISTED BY CSA. TUBING SHALL BE MANUFACTURED FROM 300 SERIES STAINLESS STEEL STRIP CONFORMING TO ASTM A240. TUBING SHALL HAVE A UV RESISTANT, FIRE RATED POLYETHYLENE JACKET DESIGNED TO COMPLY WITH ASTM E–84 FOR FLAME SPREAD AND SMOKE DEVELOPMENT. TUBING SHALL BE RATED FOR OPERATION UP TO 5 PSI. FITTINGS SHALL BE BRASS FLARE FITTING AS LISTED BY CSA.

10.7. PROVIDE APPROVED TYPE VACUUM BREAKERS AND/OR CHECK VALVES, OR BACKFLOW PREVENTORS AS HEREIN SPECIFIED ON ALL EQUIPMENT AND FIXTURE CONNECTIONS REQUIRED BY CODE, INDICATED ON THE DRAWINGS, AS SPECIFIED, OR AS REQUIRED FOR THE PROPER FUNCTIONING OF THE EQUIPMENT.

10.8. ALL PIPING EXPOSED TO VIEW SHALL BE CHROME PLATED. THE TERM EXPOSED TO VIEW SHALL APPLY TO ALL PIPING FROM THE POINT WHERE IT LEAVES THE WALL, CEILING, OR FLOOR CONSTRUCTION, TO THE POINT OF FINAL CONNECTION TO THE FIXTURE. PIPING BUILT INTO FIXED BENCHWORK WITH ACCESS DOORS OR PANELS SHALL NOT BE CONSIDERED "EXPOSED TO VIEW."

11. INSULATION:

11.1. ON HOT AND COLD WATER PIPING, AND PIPING FROM WATER COOLERS, PROVIDE OWENS–CORNING ½" FIBERGLAS INSULATION WITH FACTORY APPLIED SELFSEALING VAPOR BARRIER JACKETS. FOR RECIRCULATED HOT WATER INSULATION SHALL BE 1" THICK. FOR COLD WATER SERVICE, ALL VAPOR BARRIERS SHALL BE SEALED AND CONTINUOUS.

11.2. ALL INSULATION AND VAPOR BARRIERS SHALL BE SEALED AND CONTINUOUS THROUGH HANGERS, SLEEVES, FITTINGS, VALVES, ETC.

11.3. ON RAIN CONDUCTORS WHICH PASS THROUGH OCCUPIED AREAS PROVIDE 1½" THICK FIBERGLASS INSULATION WITH FACTORY APPLIED SELFSEALING VAPOR BARRIER JACKET.

11.4. ALL EXPOSED SUPPLY AND WASTE PIPING UNDER PUBLIC LAVATORIES AND SINKS SHALL BE INSULATED TO PROTECT AGAINST CONTACT IN ACCORDANCE WITH ANSI A117.1 SECTION 606.6.

12. VALVES:

12.1. ALL WATER VALVES SHALL BE TWO PIECE, FULL PORT BALL VALVES WITH THREADED CONNECTIONS, APOLLO AS STANDARD. NOTE: SOLDERED OR BRAISED CONNECTIONS WILL NOT BE ACCEPTED.

12.2. GAS VALVES SHALL BE LOCKABLE PLUG VALVE–WALLWORTH NO.2911 OR AS APPROVED.

12.3. THERMOSTATIC MIXING VALVES SHALL BE INSTALLED TO PROVIDE TEMPERED WATER (MAX. TEMP. 110'F) TO PUBLIC USE HAND WASHING FACILITIES AND SHALL BE LISTED IN ACCORDANCE WITH ASSE 1070.

12.4. ALL CHECK VALVES ARE TO BE ASSE 1024 DUAL CHECK VALVES UNLESS OTHERWISE NOTED.

12.5. PRESSURE VACUUM BREAKERS SHALL BE INSTALLED 12" ABOVE THE HIGHEST OUTLET THEY ARE PROTECTING. THE VACUUM BREAKER SHALL RENDER POSITIVE PROTECTION AGAINST BACK–SIPHONAGE AND INCORPORATE A CHECK VALVE AND INLET SHUT–OFF.

12.6. VACUUM BREAKERS SHALL BE RATED TO 150 PSI WORKING PRESSURE AND SHALL WITHSTAND TEMPERATURES TO 170 F. THE VACUUM RELIEF VALVE MUST BE OF BRASS CONSTRUCTION WITH A SPRING LOADED DIAPHRAGM MEMBER TO ASSURE POSITIVE OPENING OF AIR INLET WHEN BACK–SIPHONAGE OCCURS. PRESSURE VACUUM BREAKERS SHALL BE WATTS # 800 OR AS APPROVED.

13. HANGERS:

13.1. PROVIDE SUITABLE AND SUBSTANTIAL HANGERS AND SUPPORTS FOR ALL PIPING. SUPPORT HORIZONTAL PIPING IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

MATERIAL	PIPE SIZE	MAX. HANGER
COPPER TUBE	1¼" & SMALLER	6'–0"
COPPER TUBE	1½" & LARGER	10'–0"
THREADED STEEL	1" & SMALLER	6'–0"
THREADED STEEL	1¼" & LARGER	10'–0"
PEX	ALL	32"
PVC	ALL	4'–0"
NO–HUB C.I.	ALL	5'–0"

13.2. THREADED ROD FOR HANGERS SUPPORTING PIPING UP TO 2" SHALL BE ⅜". FROM PIPING FROM 2½"–4" SHALL BE ½".

13.3. NO–HUB PIPING SHALL HAVE A MINIMUM OF TWO HANGERS PER LENGTH OF PIPE. PIPE HANGERS TO BE INSTALLED ON EACH SIDE OF THE JOINT.

14. PLUMBING FIXTURES:

14.1. ALL PLUMBING FIXTURES FINISHES AND TRIM SHALL BE SPECIFIED BY THE ARCHITECT.

14.2. ALL PIPING ESCUTCHEONS, FIXTURE TAILPIECES, TRAPS, ETC., EXPOSED TO VIEW TO BE CHROME PLATED.

14.3. PROVIDE FIXTURE SUPPORTS, I.E. CHAIR CARRIERS, LAVATORY SUPPORTS.

15. CLEANING:

15.1. PRIOR TO UTILIZATION THE POTABLE WATER SYSTEM SHALL BE FLUSHED WITH CLEAN WATER UNTIL WATER RUNS CLEAR AND FREE OF DEBRIS OR PARTICLES. FLUSHING SHALL BE PREFORMED WITH ANY STRAINERS OR AERATORS REMOVED.

15.2. AFTER FLUSHING, THE POTABLE WATER SYSTEM SHALL BE DISINFECTED BY FILLING THE SYSTEM WITH A WATER/ CHLORINE SOLUTION CONTAINING AT LEAST 50 PARTS PER MILLION OF CHLORINE; THE SOLUTION SHALL BE ALOUD TO STAND FOR AT LEAST 24 HOURS. ALTERNATELY A WATER/ CHLORINE SOLUTION CONTAINING AT LEAST 200 PARTS PER MILLION CAN BE USED FOR A DURATION OF AT LEAST 3 HOURS BUT NO MORE THAN 6 HOURS.

15.3. AFTER DISINFECTION THE SYSTEM SHALL BE FLUSHED WITH POTABLE WATER UNTIL THE CHLORINE LEVELS AT ALL OUTLETS ARE EQUAL TO THAT OF THE INCOMING WATER SUPPLY.

15.4. A CERTIFICATION OF PERFORMANCE AND LABORATORY TEST REPORT SHOWING THE ABSENCE OF COLIFORM ORGANISMS IN THE POTABLE WATER SYSTEM SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION.

16. TESTS:

16.1. PRIOR TO SUBMITTING AN APPLICATION FOR FINAL ACCEPTANCE OF THE WORK, ALL TESTS DEEMED NECESSARY TO SHOW PROPER EXECUTION OF THE WORK SHALL HAVE BEEN PERFORMED AND COMPLETED IN THE PRESENCE OF AN ARCHITECT'S / OWNER'S REPRESENTATIVE. SCHEDULING OF ALL TESTING PROCEDURES SHALL BE ARRANGED TO SUIT THE CONVENIENCE OF THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE.

16.2. SUBJECT THE DRAINS, WASTE AND VENT PIPING TO A WATER TEST IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS. THE SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE EQUIVALENT TO AT LEAST A TEN FOOT OF HEAD OF WATER. AFTER FILLING, DISCONNECT WATER SUPPLY AND LET IT STAND FOR FIFTEEN (15) MINUTES UNDER TEST, DURING WHICH TIME THERE SHALL BE NO LOSS OR LEAKAGE.

16.3. TEST ALL INTERIOR WATER DISTRIBUTION SYSTEMS TO A PRESSURE OF AT LEAST 50 PSI HIGHER THAN THEIR NORMAL OPERATING STATIC PRESSURE. MINIMUM TEST SHALL BE GAUGE SET AT 150 PSI, WHICH SHALL STAND FOR TWO HOURS WITH NO LOSS IN PRESSURE.

16.4. FURNISH AND PAY FOR ALL DEVICES, MATERIALS, SUPPLIES AND LABOR REQUIRED IN CONNECTION WITH TESTS. MAKE ALL TESTS IN THE PRESENCE, AND TO THE SATISFACTION OF THE OWNER, ENGINEER, PLUMBING AND OTHER INSPECTORS OF THE AGENCIES HAVING JURISDICTION, AND ANY APPLICABLE INSURANCE ASSOCIATIONS AND PUBLIC UTILITIES. REPAIR, OR IF REQUIRED BY THE ENGINEER, REPLACE DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE OWNER. REPEAT TESTS AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY. RESTORE TO ITS ORIGINAL CONDITION ANY WORK DAMAGED OR DISTURBED BY TESTS, ENGAGING THE ORIGINAL TRADES TO DO THE RESTORATION WORK. NOTIFY THE OWNER, ENGINEER, AND INSPECTORS HAVING JURISDICTION AT LEAST 48 HOURS IN ADVANCE OF MAKING THE REQUIRED TESTS SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS THE SAME.

16.5. TEST GAS DISTRIBUTION SYSTEM AT AN AIR PRESSURE OF 1.5 TIMES THE PROPOSED MAXIMUM WORKING PRESSURE BUT NOT LESS THAN 3 PSIG. THE TEST DURATION SHALL BE 30 MINUTES FOR EACH 500 CUBIC FEET OF PIPE OR FRACTION THERE OF WITH NO DROP IN PRESSURES.

16.6. ALL TESTABLE BACKFLOW PREVENTION DEVICES SHALL BE FIELD TESTED IN ACCORDANCE WITH ASSE 5010, BY ASSE 5000 CERTIFIED INDIVIDUAL, PRIOR TO FINAL INSPECTION. COPIES OF TEST RESULTS SHALL BE SENT TO THE AHJ AND WATER SUPPLIER.

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PROJECT

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OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:
PLUMBING SPECIFICATIONS

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
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FIRE PROTECTION DRAWING / REVISION LOG

● NEW OR REVISED ISSUE
○ NON REVISED ISSUE

ISSUE:	DATE:
ISSUED FOR PERMIT	07/15/2024
PERMIT RESPONSE COMMENTS	

NUMBER	NAME			
FP-001	FIRE PROTECTION COVER SHEET	●	●	
FP-101	FIRE PROTECTION FLOOR PLAN	●	●	
FP-102	FIRE PROTECTION ATTIC PLAN	●	●	
FP-301	FIRE PROTECTION SPECIFICATIONS	●	●	
FP-401	FIRE PROTECTION DETAILS	●	●	

SCHEDULE OF SPRINKLER HEADS

SYMBOL	MFR.	MODEL	SIN	TYPE	LOCATION	FINISH & REMARKS	TEMP. RATING	'K' FACTOR	HEAD COVERAGE	MIN. FLOW	MIN. PRESS.	LISTINGS
◉	RELIABLE	G5-56	RA3415	QUICK RESPONSE CONCEALED PENDANT	THROUGHOUT THE FACILITY IN AREAS WITH SUSPENDED CEILINGS UNLESS OTHERWISE NOTED	AS SELECTED BY ARCHITECT	175'F	5.6	225 SQ.FT. MAX	–	7 PSI	UL FM
○	RELIABLE	KFR56-300	RA3924	QUICK RESPONSE EXPOSED UPRIGHT	THROUGHOUT THE FACILITY IN AREAS WITH OPEN CEILINGS UNLESS OTHERWISE NOTED	AS SELECTED BY ARCHITECT	165'F	5.6	225 SQ.FT. MAX	–	7 PSI	UL
◎	VIKING	COIN	VK900	DRY "COIN" QUICK RESPONSE UPRIGHT	AS INDICATED ON PLANS	AS SELECTED BY ARCHITECT	175'F	4.2	–	–	7 PSI	UL

NOTES:

1. SPRINKLER HEADS SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE METAL WIRE GUARDS WHERE SPRINKLERS ARE SUBJECT TO DAMAGE, SUCH AS WITH-IN THE GYMNASIUM, ETC. AND SPRINKLER HEADS LOCATED UNDER HVAC DUCTS IN MECHANICAL EQUIPMENT ROOMS WHEN LOCATED LOWER THAN 7'-0" A.F.F. ETC.
3. ALL SPRINKLER HEADS THROUGHOUT THE FACILITY SHALL BE OF THE ORDINARY TEMPERATURE RATING EXCEPT AS FOLLOWS:
   a. SPRINKLER HEADS IN SHOWERS SHALL BE OF INTERMEDIATE TEMPERATURE RATING (175' TO 225').
   b. SPRINKLER HEADS LOCATED CLOSE TO HEATERS, STEAM PIPING OR LOW-PRESSURE BLOW-OFF VALVE SHALL BE OF THE TEMPERATURE RATING AS REQUIRED BY NFPA 13.
   c. ALL HEAT GENERATING EQUIPMENT WHICH CAN AFFECT THE TEMPERATURE RATING OF THE SPRINKLER HEADS SHALL BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS PRIOR TO SUBMISSION FOR APPROVAL.
4. SPRINKLER HEADS MINIMUM FLOW & MINIMUM PRESSURE REQUIREMENTS TO BE BASED ON HYDRAULIC CALCULATION DESIGN DENSITIES.
5. ALL SPRINKLER HEAD FINISHES TO BE APPROVED BY ARCHITECT.

SPRINKLER NOTES

1. THIS CONTRACTOR SHALL PROVIDE FIRE PROTECTION THROUGHOUT THE ENTIRE SPACE WITHIN THE SCOPE OF WORK AS REQUIRED BY THE LOCAL CODES, LOCAL FIRE DEPARTMENT REGULATIONS, BUILDING MANAGEMENT REQUIREMENTS AND NFPA 13 FOR THE DURATION OF THE PROJECT. ANY TEMPORARY FIRE PROTECTION SHALL BE REMOVED UPON ACTIVATION OF PERMANENT FIRE PROTECTION SYSTEM.
2. ALL SPRINKLER WORK, EQUIPMENT, AND MATERIALS FURNISHED UNDER THE FIRE PROTECTION SCOPE OF WORK SHALL BE IN COMPLETE ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE, NFPA 13, LOCAL CODE REQUIREMENTS, AND THE LOCAL AUTHORITY HAVING JURISDICTION.
3. ANY AND ALL PERMITS REQUIRED FOR INSTALLATION OF ANY MATERIAL SHALL BE OBTAINED AS PART OF THE WORK INCLUDING ALL FEES OR EXPENSES INCURRED.
4. ALL SPRINKLER HEADS SHALL BE QUICK RESPONSE. REFER TO SPECIFICATIONS AND SPRINKLER HEAD SCHEDULE FOR SPRINKLER HEAD INFORMATION.
5. SPRINKLER HEADS SHALL BE CENTERED IN TILE AND COORDINATED WITH ALL CEILING ELEMENTS SUCH AS LIGHTS AND DIFFUSERS. CONTRACTOR SHALL ALLOW FOR ALL REQUIRED FITTINGS TO ACHIEVE THIS AND INCLUDE THIS IN THEIR CONTRACT PRICE.
6. CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH NEW WORK OF OTHER TRADES AND EXISTING CONDITIONS. ROUTING OF SPRINKLER MAINS, BRANCHES AND HEADS SHALL BE THOROUGHLY COORDINATED WITH OTHER TRADES AND BUILDING STRUCTURE PRIOR TO SUBMISSION OF COORDINATED SHOP DRAWINGS. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR COORDINATING, PREPARING, AND SUBMITTING COORDINATION DRAWINGS FOR APPROVAL TO AUTHORITY HAVING JURISDICTION.
7. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING, PIPE SIZES, POINTS OF CONNECTIONS FIXTURES AND EQUIPMENT PRIOR TO COMMENCEMENT OF WORK.
8. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, STORAGE AND CUTTING OF ANY CEILING TILES TO ACCOMMODATE SPRINKLER HEADS NEW AND RELOCATED. THE CONTRACTOR SHALL ALSO REINSTALL THE CEILING TILES AND REPLACE ANY DAMAGED TILES AS IT RELATES TO THE FIRE PROTECTION SCOPE OF WORK.
9. MINIMUM PIPE SIZE TO ANY SPRINKLER HEAD SHALL BE 1 INCH.

FIRE PROTECTION MATERIAL SCHEDULE

SYSTEM	PIPE	FITTINGS	JOINTS	REMARKS
SPRINKLER	STEEL SCHED 40 BLACK	MALLEABLE IRON DUCTILE IRON	THREADED MECH. JOINT-FLANGED VICTAULIC	TO BE USED DOWNSTREAM OF SPRINKLER FLOOR CONTROL VALVE. ASSEMBLY, PIPE SIZE 2" & SMALLER.
SPRINKLER	BLACK	MALLEABLE IRON VICTAULIC DUCTILE IRON	MECH. JOINT-FLANGED VICTAULIC	TO BE USED ON RISERS AND MAINS, PIPE SIZES 2½" AND LARGER.
SPRINKLER DRAIN PIPE	STEEL SCHED 40 GALVANIZED	GALVANIZED	THREADED	

NOTES:
1. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE LOCAL AUTHORITIES.
2. USE OF ANY PIPING OR TUBING WITH ID & OD OTHER THEN SCHEDULE 10 & SCHEDULE 40 IS NOT PERMITTED.

PERFORMANCE SPECIFICATION CRITERIA

SPRINKLER PLANS AS SHOWN ARE FOR BIDDING PURPOSES ONLY. SPRINKLER CONTRACTOR IS TO OBTAIN CURRENT HYDRANT TEST DATA AND PROVIDE HYDRAULIC CALCULATIONS FOR SYSTEM PIPE SIZING IN ACCORDANCE WITH NFPA 13. CONTRACTOR IS TO SUBMIT SHOP DRAWINGS INDICATING HYDRAULIC CALCULATIONS, PIPING LAYOUT & SIZING. SHOP DRAWINGS AND CALCULATIONS ARE TO BE SIGNED & SEALED BY A PROFESSIONAL ENGINEER, AND REVIEWED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION. ALL WORK IS TO BE DONE IN ACCORDANCE WITH ALL STATE, LOCAL, GOVERNING AND APPLICABLE CODES.

FIRE PROTECTION DESIGN CRITERIA

SYSTEM TYPE	OCCUPANCY CLASSIFICATION	CODE REFERENCE	AREA OF OPERATION	MAX. PROTECTION AREA PER SPRINKLER	MINIMUM DENSITY (GPM/SQ.FT)	MAXIMUM SPACING	SPRINKLER HEAD LOCATION/TYPE
WET	ORDINARY HAZARD GROUP1	NFPA13	1500 FT.²	130 FT.²	0.15	15 FT.	CEILING/NO CEILING MECH. EQUIPMENT AREAS PENDANT OR UPRIGHT
WET	LIGHT HAZARD	NFPA13	1500 FT.²	225 FT.²	0.10	15 FT.	CEILING/NO CEILING PENDANT OR UPRIGHT
DRY	LIGHT HAZARD	NFPA13	1950 FT.²	144 FT.²	0.10	12 FT.	UNHEATED CEILING SPACE COIN PENDANT

FIRE HOSE VALVE, FIRE VALVE CABINET, FIRE DEPARTMENT CONNECTION SCHEDULE

TYPE	DESCRIPTION	SIZE	MANUFACTURER	MODEL NUMBER	NOTES
FHV	FIRE HOSE VALVE	2-1/2"	POTTER ROEMER	4065	2-1/2" WITH 4625 CAP AND CHAIN. PROVIDE CROKER MODEL 5375 PRESSURE REDUCING DEVICE.
FDC	FIRE DEPARTMENT SIAMESE	2-½"X 2-½"X 4"	POTTER ROEMER	5761	FLUSH MOUNTED

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ARMEN KHACHATURIAN, P.E. - FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER
8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

FIRE PROTECTION COVER SHEET

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
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FP-001

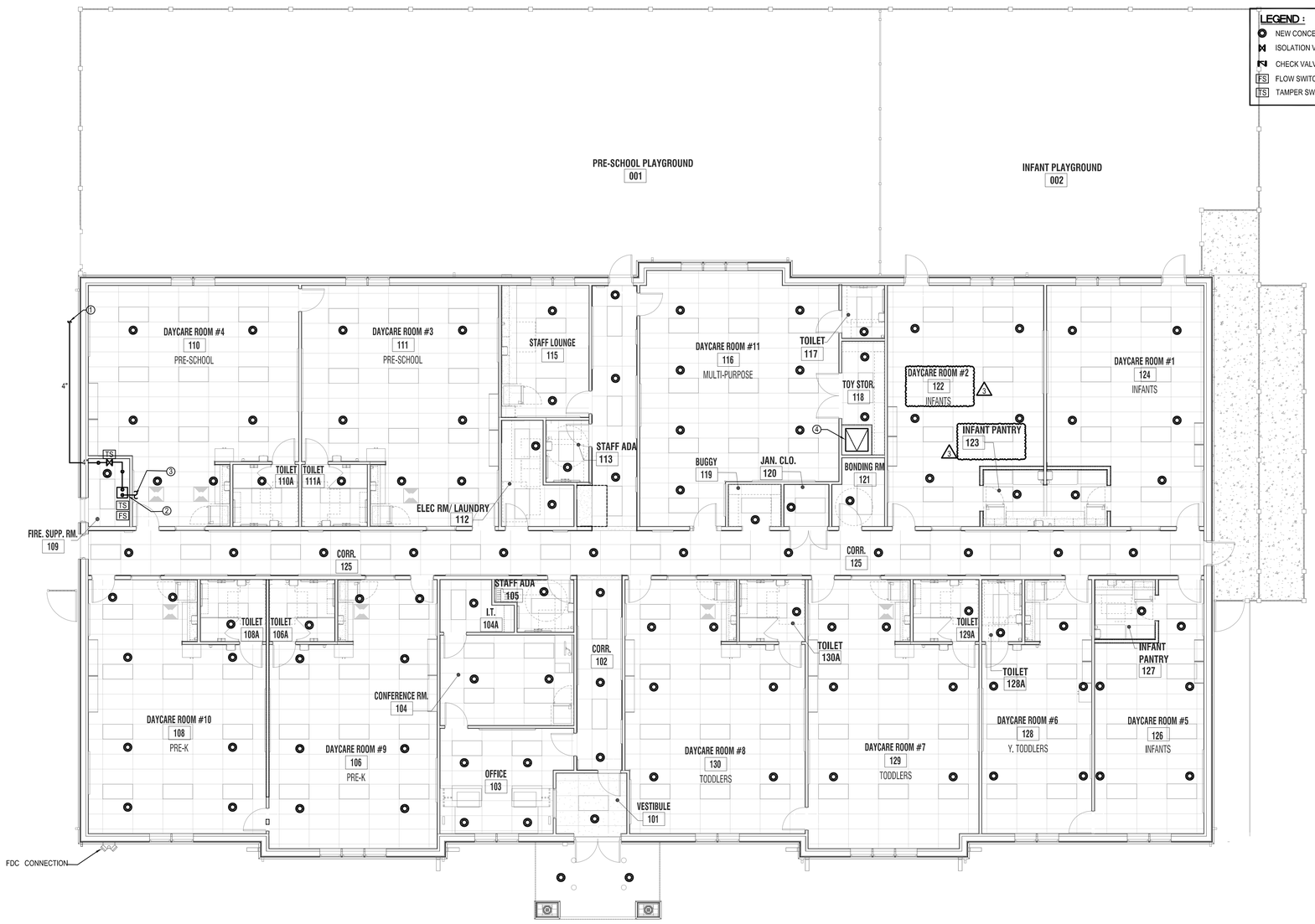
DESIGN AREA CRITERIA	
OCCUPANCY CLASSIFICATION:	LIGHT HAZARD
DESIGN DENSITY:	0.10 GPM/ SQ.FT.
K-FACTOR:	5.6

LEGEND :

- NEW CONCEALED SPRINKLER HEADS
- ISOLATION VALVE
- CHECK VALVE
- FS FLOW SWITCH
- TS TAMPER SWITCH

DRAWING NOTES

1. SPRINKLER CONTRACTOR TO COORDINATE SPRINKLER HEAD LOCATIONS, PIPING AND OTHER FIRE PROTECTION EQUIPMENT WITH HVAC EQUIPMENT, LIGHTING AND OTHER CEILING STRUCTURE.
2. ANY EXISTING FIRE PROTECTION FEED MAIN OR CROSS MAIN IN STREET TO BE COORDINATED WITH LANDLORD, VERIFY EXISTING PIPE SIZE BEFORE TIE-IN.
3. FIRE PROOFING TO BE COORDINATE WITH EACH FLOOR PENETRATION. NON COMBUSTIBLE CONCEALED CEILING SPACE NO HEADS ARE REQUIRED, FIELD VERIFY & PROVIDE HEADS IF IT IS REQUIRED AS PER NFPA STANDARD AND FIELD CONDITIONS.
4. ALL SPRINKLER HEADS IN AREA OF WORK TO BE FULLY COORDINATED WITH ALL NEW CEILING ELEMENTS IN ADDITION TO WORK FROM OTHER TRADES.
5. NEW BRANCHES SHALL BE EXTENDED FROM THE NEW 4 INCH SPRINKLER MAIN AS NEEDED TO PROVIDE COMPLETE SPRINKLER COVERAGE THROUGHOUT.
6. CONTRACTOR TO PROVIDE SPRINKLER HYDRAULIC CALCULATIONS BASED ON HYDRANT FLOW TEST NO OLDER THAN ONE YEAR IN ADDITION TO SHOP DRAWINGS FOR REVIEW AND APPROVAL.



FIRE PROTECTION DESIGN KEY NOTES:

1. 4" FIRE WATER SUPPLY FROM SITE. BACKFLOW PREVENTION DEVICE AND FIRE DEPARTMENT CONNECTION LOCATED AT EXTERIOR, BY CIVIL.
2. PROVIDE WET SPRINKLER RISER CONTROL VALVE ASSEMBLY TO SERVE SPRINKLER SYSTEM THROUGHOUT.
3. 4" SUPPLY TO SERVE WET SPRINKLERS THROUGHOUT.
4. ACCESS HATCH TO ATTIC AT CEILING. ALL PIPING AND SPRINKLER APPURTENANCES AT THE CEILING SHALL BE INSTALLED CLEAR FROM THE HATCH.

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TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

FIRE PROTECTION FLOOR PLAN

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
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DRAWING NOTES

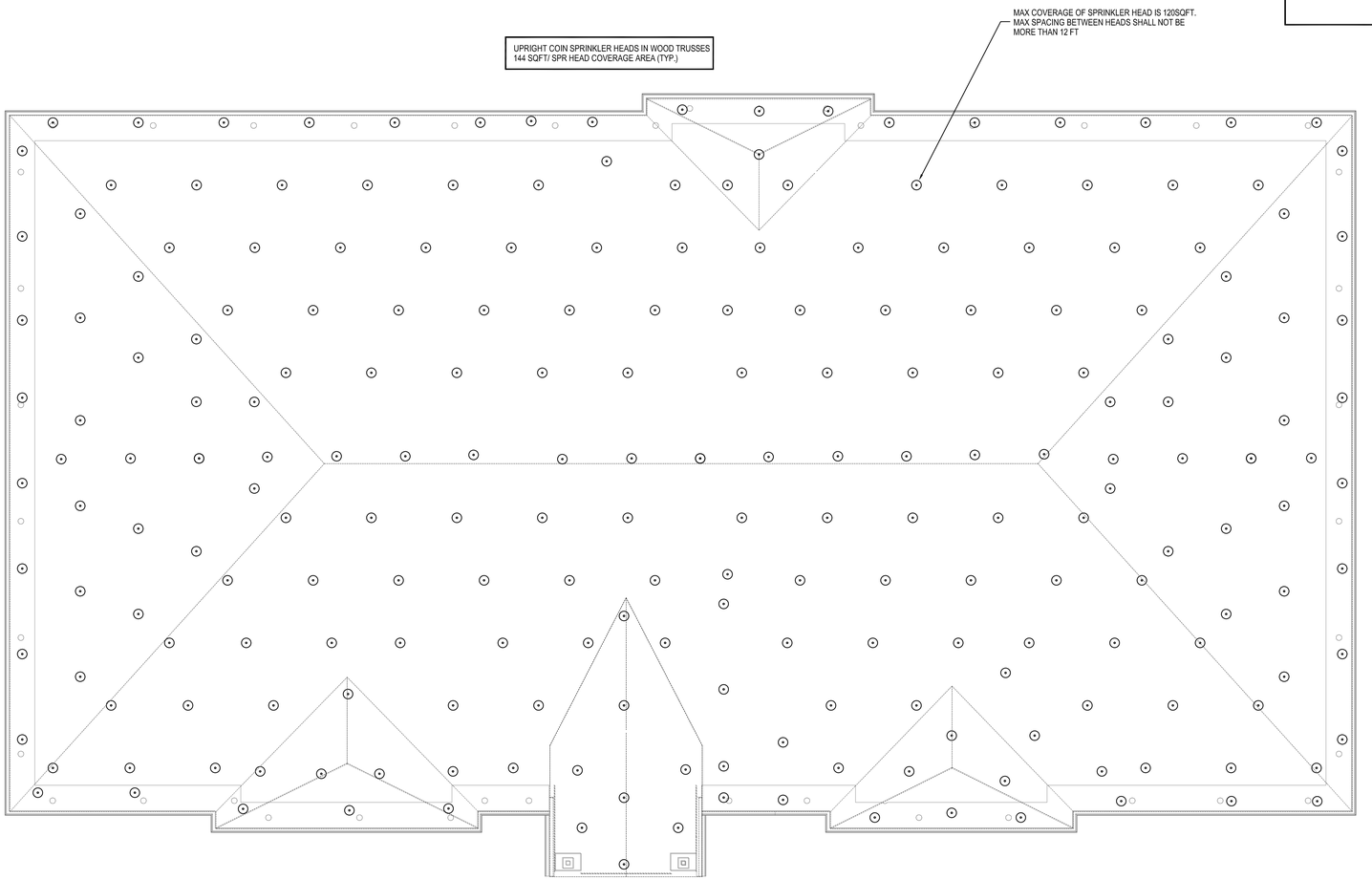
- SPRINKLER CONTRACTOR TO COORDINATE SPRINKLER HEAD LOCATIONS, PIPING AND OTHER FIRE PROTECTION EQUIPMENT WITH HVAC EQUIPMENT, LIGHTING AND OTHER CEILING STRUCTURE.
- ANY EXISTING FIRE PROTECTION FEED MAIN OR CROSS MAIN IN STREET TO BE COORDINATED WITH LANDLORD, VERIFY EXISTING PIPE SIZE BEFORE TIE-IN.
- FIRE PROOFING TO BE COORDINATE WITH EACH FLOOR PENETRATION. NON COMBUSTIBLE CONCEALED CEILING SPACE NO HEADS ARE REQUIRED, FIELD VERIFY & PROVIDE HEADS IF IT IS REQUIRED AS PER NFPA STANDARD AND FIELD CONDITIONS.
- ALL SPRINKLER HEADS IN AREA OF WORK TO BE FULLY COORDINATED WITH ALL NEW CEILING ELEMENTS IN ADDITION TO WORK FROM OTHER TRADES.
- NEW BRANCHES SHALL BE EXTENDED FROM THE NEW 4 INCH SPRINKLER MAIN AS NEEDED TO PROVIDE COMPLETE SPRINKLER COVERAGE THROUGHOUT.
- CONTRACTOR TO PROVIDE SPRINKLER HYDRAULIC CALCULATIONS BASED ON HYDRANT FLOW TEST NO OLDER THAN ONE YEAR IN ADDITION TO SHOP DRAWINGS FOR REVIEW AND APPROVAL.

LEGEND :

⊙ UPRIGHT COIN HEADS IN CONCEALED COMBUSTIBLE CEILING SPACE

DESIGN AREA CRITERIA

OCCUPANCY CLASSIFICATION:	LIGHT HAZARD (DRY)
DESIGN DENSITY:	0.10 GPM/ SQ.FT.
K-FACTOR:	5.6



FIRE PROTECTION ATTIC PLAN
SCALE: 1/8" = 1'-0"

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LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

SHEET TITLE:

FIRE PROTECTION ATTIC PLAN

REV.	DATE	REMARKS
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1. GENERAL:

1.1. ALL PROVISIONS IN THE GENERAL SPECIFICATIONS ABOVE APPLY TO THE FIRE PROTECTION SPECIFICATIONS.

1.2. THE FIRE PROTECTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE BUILDING CODE AND NFPA INSTALLATION OF SPRINKLER SYSTEMS. THE ENGINEERING PLANS PROVIDED ARE PRELIMINARY PLANS AS DEFINED IN NFPA PROVIDED FOR SCOPE AND REVIEW BY THE AUTHORITY HAVING JURISDICTION. WORKING PLANS AND HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA SHALL BE DESIGNED & PROVIDED BY THE SPRINKLER CONTRACTOR, SIGNED AND SEALED BY A P.E. LICENSED IN THE STATE HAVING JURISDICTION.

1.3. THE FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC, AND THEREFORE DO NOT RELIEVE THIS CONTRACTOR FROM PROVIDING ALL WORK AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION ACCORDING TO THEIR REQUIREMENTS. THE NUMBER AND SPACING OF SPRINKLER HEADS, SPACING AND SIZE OF A PIPE LOCATION AND NUMBER OF VALVES, METHOD OF DRAWING LINES, ALARM VALVES, AND ALL OTHER WORK AND DETAILS SHALL BE AS REQUIRED BY THE OWNER'S UNDERWRITES, NFPA, AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

1.4. THE SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF TILES, GRIDS AND/OR ALIGNED WITH LIGHTS, DIFFUSERS, ETC., AS INDICATED ON ARCHITECTURAL REFLECTED CEILING PLANS AND DETAILS. AT THE COMPLETION OF THE INSTALLATION, IF ANY HEADS ARE FOUND TO EXCEED THE ABOVE-MENTIONED TOLERANCE, SAME SHALL BE REMOVED AND REINSTALLED BY THIS CONTRACTOR.

1.5. THE ARRANGEMENT, POSITIONS AND CONNECTIONS OF PIPE, DRAINS, VALVES, ETC., SHOWN ON THE DRAWINGS SHALL BE TAKEN AS A CLOSE APPROXIMATION AND WHILE THEY SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, THE RIGHT IS RESERVED BY THE OWNER TO CHANGE LOCATIONS, TO ACCOMMODATE ANY CONDITIONS WHICH MAY ARISE DURING THE PROGRESS OF THE WORK, WITHOUT ADDITIONAL COMPENSATION TO THIS CONTRACTOR FOR SUCH CHANGES, PROVIDED THAT THE CHANGES ARE REQUESTED PRIOR TO THE INSTALLATION OF THIS CONTRACTOR'S WORK. THE RESPONSIBILITY FOR ACCURATELY LAYING OUT THE WORK RESTS WITH THIS CONTRACTOR. SHOULD IT BE FOUND THAT ANY OF HIS WORK IS SO LAID OUT THAT INTERFERENCE WILL OCCUR, HE SHALL SO REPORT THAT TO THE OWNER.

1.6. PROVIDE ALL SPRINKLER HEADS IN STRICT ACCORDANCE WITH APPROVED SHOP DRAWINGS. THE ARCHITECT AND OWNER RESERVE THE RIGHT TO REJECT ANY AND ALL WORK NOT IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS.

1.7. ALL PIPING AND EQUIPMENT SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE. HANGERS AND SUPPORTS SHALL BE SPECIFICALLY APPROVED FOR USE IN EACH APPLICATION. WHERE OVERHEAD CONDITIONS DOES NOT PERMIT THE FASTENING OF HANGER RODS IN REQUIRED LOCATIONS, PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND APPROVED. DO NOT USE EXPANSION SHIELDS.

1.8. NO FIRE PROTECTION WORK SHALL BE HUNG FROM DUCTWORK OR THE HANGERS OF OTHER TRADES.

1.9. BECOME THOROUGHLY FAMILIAR WITH ACTUAL BUILDING SYSTEMS, WHICH ARE TO BE CHANGED, ALTERED, OR TO WHICH NEW CONNECTIONS ARE TO BE MADE. VERIFY ALL EXISTING CONDITIONS INCLUDING PIPE SIZE, LOCATION, AND ELEVATION.

1.10. THE INTENT OF THE WORK IS INDICATED ON THE DRAWINGS AND DESCRIBED HEREINAFTER. NO CONSIDERATION WILL BE GRANTED FOR REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR REGARDING ACTUAL PHYSICAL CONDITIONS AT THE SITE.

1.11. COORDINATE WORK WITH ALL TRADES AND EXISTING CONDITIONS OF THE JOB SITE AND MAINTAIN REQUIRED CEILING HEIGHTS AND SPACE CONDITIONS.

1.12. ALL EQUIPMENT SHALL BE ASBESTOS FREE AND INDICATED AS SUCH.

1.13. THIS TRADE MUST PERFORM WORK IN OCCUPIED AREAS, IT SHALL MAKE ARRANGEMENTS WITH THE GENERAL CONTRACTOR AND THE OWNER AS TO THE TIME AND METHOD IN WHICH THIS WORK SHALL BE PERFORMED. ARRANGE FOR ALL ADJACENT AREAS TO BE PROPERLY PROTECTED AGAINST DAMAGE, DEBRIS, DIRT AND DUST.

1.14. PROVIDE AS PART OF NEW WORK:

1.14.1. HANGERS AND SUPPORTS FOR PIPING

1.14.2. SCAFFOLDING, RIGGING, AND HOISTING

1.14.3. RUBBISH REMOVAL AND CLEANING

1.14.4. CUTTING AND PATCHING

1.14.5. SLEEVES, OPENINGS AND THE CORE DRILLING OF SLABS

1.14.6. CAULKING, FIREPROOFING, AND THE PACKING AND FILLING OF SLEEVES AND OPENINGS

1.14.7. SHOP DRAWINGS AND "AS BUILT" DRAWINGS

1.14.8. OPERATING AND MAINTENANCE INSTRUCTIONS

1.14.9. OBTAINING ALL REQUIRED PERMITS, APPROVALS, ACCEPTANCE, FILING AND INSPECTION CERTIFICATES

1.14.10. GUARANTEE ALL WORK, LABOR AND MATERIALS FOR ONE YEAR FOLLOWING DATE OF SUBSTANTIAL COMPLETION

1.14.11. VERIFYING EXISTING CONDITIONS AT THE PROJECT SITE

1.14.12. SPARE PARTS AND TOOLS

1.14.13. TESTS: OPERATION, PERFORMANCE AND CODE-REQUIRED TESTS

1.14.14. PROTECTION OF WORK AND ADJACENT SPACES DURING CONSTRUCTION

1.14.15. COORDINATION WITH OTHER TRADES

1.14.16. IDENTIFICATION: VALVE TAGS, VALVE TAG SCHEDULES, AND PIPING IDENTIFICATION

2. SCOPE OF WORK:

2.1 PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORT AND SUPERVISION FOR THE FURNISHING AND INSTALLING OF ALL THE FIRE PROTECTION WORK, AND ALL RELATED WORK, COMPLETE, IN ACCORDANCE WITH THE CONTRACT DOCUMENT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

2.1.1. PROVIDE A COMPLETE AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH THE OWNERS UNDERWRITER'S, NFPA, AND THE RULES OF ALL AUTHORITIES HAVING JURISDICTION.

2.1.2. SPRINKLER SYSTEMS SHALL INCLUDE CONNECTIONS TO THE SPRINKLER PIPING AND PROVISION OF A COMBINATION SHUTOFF VALVE AND PRESSURE REDUCING VALVE, FLOW SWITCH AND A DRAIN/TEST CONNECTION CONNECTED TO A VERTICAL DRAIN RISER SERVING THE FLOOR CONTROL VALVE.

2.1.3. THE SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY CALCULATED TO THE FOLLOWING PARAMETERS:

2.1.3.1. OFFICE AREAS AND THE LIKE: LIGHT HAZARD, 0.10 GPM/SQ FT. OVER 1,500 SQ.FT.

2.1.3.2. STORAGE, SHOWROOM, MECHANICAL EQUIPMENT ROOMS: LIGHT HAZARD HAZARD, 0.15 GPM/SQ.FT. OVER 1,500 SQ.FT.

2.1.4. INCLUDE ALL PIPE, FITTINGS, BRANCHES, VALVES, ALARM VALVES, LADDERS, SIGNS, PROTECTIVE PAINTING, ALARM SWITCHES, TEST CONNECTION, SPRINKLER HEADS, DRAINS, TESTS, ALARM PANELS, ETC., IN FULL ACCORDANCE WITH UNDERWRITERS' AND MUNICIPAL REQUIREMENTS.

2.1.5. DO ANY CUTTING REQUIRED FOR THE PASSAGE OR INSTALLATION OF PIPES, SUPPORTS, AND THE LIKE. IN GENERAL, DEMOLITION OF WALLS AND CEILINGS WILL BE DONE BY OTHERS.

2.1.6. ALL PATCHING WILL BE DONE BY OTHERS. THE EXPENSE OF CUTTING AND RESTORING SURFACES TO THEIR ORIGINAL CONDITION WHEN CAUSED BY THIS TRADE'S FAILURE TO PERFORM ITS PRELIMINARY WORK, SHALL BE BORNED BY THIS TRADE.

3. SLEEVES:

3.1. PROVIDE SLEEVES FOR ALL PIPES PASSING THROUGH FLOORS, WALLS AND CONCRETE, OR CONCRETE FIREPROOFED BEAMS. SLEEVES IN CONCRETE BEAMS, THROUGH CONCRETE WALLS, AND EXPOSED PIPES PENETRATING FLOORS: SCHEDULE 40 STEEL PIPE. SLEEVES WITHIN FURRED OUT ENCLOSURES IN FLOORS, THROUGH PARTITIONS, STEEL BEAMS AND WALLS: 18 GAUGE GALVANIZED SHEET METAL.

3.2. PROVIDE SLEEVES WITH AN I.D. AT LEAST 1/2 IN. GREATER THAN OUTSIDE OF PIPE SERVED, INCLUDING PIPE INSULATION WHICH MUST BE CONTINUOUS THROUGH SLEEVE. FINISH SLEEVES FLUSH WITH UNDERSIDE OF SLAB AND 1 IN. ABOVE FINISHED FLOOR.

3.3. WHERE PIPING PENETRATES WALLS (OTHER THAN FOUNDATION WALLS), PARTITIONS, FLOOR SLABS, ETC., SPACE BETWEEN PIPING AND SLEEVE SHALL BE PACKED WITH "3M" M.E.A. APPROVED FIRE-RATED MATERIAL. WHERE SLEEVES PASS THROUGH FIRE-RATED CONSTRUCTION, FIT ESCUTCHEON ON BOTH SIDES OF CONSTRUCTION.

3.4. PROVIDE WATERPROOF TYPE PIPE SLEEVES, ZURN Z-197 WITH GALVANIZED SCHEDULE 40 PIPE EXTENSIONS WHERE PENETRATING MEMBRANE WATERPROOFED FLOORS.

4. CODES, PERMITS, AND INSPECTIONS:

4.1. INSTALL ALL WORK IN FULL ACCORDANCE WITH THE REQUIREMENTS OF LOCAL AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION OVER THESE MATTERS, AS WELL AS WITH ANY REQUIREMENTS OF NFPA, UL, FM, BSA, MEA, ETC, AND OTHER APPLICABLE CODES.

4.2. SECURE AND PAY FOR ALL NECESSARY APPROVALS, PERMITS, INSPECTIONS, CARTING, LEGAL DUMPING, ETC., AND DELIVER THE OFFICIAL RECORDS OF THE GRANTING OF PERMITS TO THE OWNER.

4.3. PAY ALL FILING FEES TO OBTAIN RELEASE OF APPROVED PLANS.

4.4. PAY ROYALTIES OR FEES REQUIRED IN CONNECTION WITH THE USE OF PATENTED DEVICES OR SYSTEMS, AND SAVE THE OWNER, THE ARCHITECT, THE CONSULTING ENGINEER, AND THE TENANT HARMLESS FROM ANY CLAIMS OR LAWSUITS ARISING FROM SUCH USE, AND INDEMNIFY EACH THEREOF AGAINST ATTORNEYS' FEES IN CONNECTION THEREWITH.

4.5. PROVIDE ALL SIGNS REQUIRED BY THE MUNICIPAL AUTHORITIES.

7. IDENTIFICATION OF SYSTEMS:

7.1. PROVIDE A TAG FOR EACH VALVE, THREE INCH DIAMETER BRASS OR ALUMINUM TAGS STAMPED WITH DESIGNATING NUMBERS TWO INCHES HIGH, PAINTED WITH WHITE ENAMEL; BACKGROUND PAINTED WITH RED ENAMEL. ATTACH TAG TO VALVE HANDLE OR SPINDLE WITH BRASS CHAIN.

8. HANGERS, INSERTS, AND PIPE SUPPORTS:

8.1. PROVIDE SUITABLE AND SUBSTANTIAL HANGERS AND SUPPORTS FOR ALL PIPING.

8.2. SPACE SUPPORTS SO THAT THERE IS AT LEAST ONE HANGER FOR EACH LENGTH OF PIPE, WITH ONE HANGER WITHIN 30 INCHES OF THE END SPRINKLER HEAD. WHERE THIS WOULD REQUIRE HANGERS CLOSER THAN 6 FEET 0 INCHES APART, HANGER SPACING MAY BE INCREASED TO 10 FEET 0 INCHES BETWEEN HANGERS FOR PIPES UP TO AND INCLUDING 2 INCH IPS AND 12 FEET 0 INCHES BETWEEN HANGERS FOR PIPES 2-1/2 INCH IPS AND LARGER. WHERE POSSIBLE, FASTEN HANGER RODS TO STRUCTURAL WOOD TRUSSES.

8.3. DO NOT HANG PIPING FROM DUCTWORK OR PIPING.

8.4. THIS CONTRACTOR MAY COORDINATE WITH THE OTHER CONTRACTORS TO USE COMMON MEANS OF SUPPORT. SUBMIT FOR APPROVAL ALL PERTINENT DESIGN DATA RELATING TO THE SUPPORT, AS WELL AS VERIFICATION OF THE RESPONSIBILITY FOR THE SUPPORT.

9. VALVES:

9.1 ALL WATER CONTROL VALVES WITHING THE BUILDING SHALL BE MILWAUKEE "GATE 2885-FP" OS&Y WEDGE GATE VALVES WITH PAINTED IRON WHEEL HANDLES, SHALL HAVE THE NAME OF THE MANUFACTURER AND WORKING PRESSURE CAST OR STAMPED THEREON.

9.2 VALVES CONTROLLING SPRINKLER BUTTERFLY, BALL OR OS&Y GATE VALVES.

9.2.1. BALL VALVES SHALL BE MILWAUKEE "BA-100" OR APPROVED ALL BRASS OR BRONZE CONSTRUCTION WITH REPLACEABLE TEFLON SEAT RING; TWO-PIECE UNION OR THREE-PIECE BOLTED CONSTRUCTION, WITH STUFFING BOX; WORKING PRESSURE SHALL NOT BE LESS THAN 175 PSI AT 175°F. AND SHALL CONFORM WITH ANSI STANDARDS. ALL VALVES SHALL BE STANDARD PORT UNLESS FULL-PORTED VALVES ARE INDICATED ON PLANS. THREADED VALVES USED IN BRAZED OR SOLDERED PIPING SYSTEMS SHALL BE FITTED WITH ADAPTERS. WHEN BRAZED OR SOLDERED END VALVES ARE USED, TEFLON SEATS MUST BE REMOVED PRIOR TO SOLDERING OR BRAZING.

9.2.2. BUTTERFLY VALVES SHALL BE MILWAUKEE BUTTERBALL "BB-SC" SERIES SLOW CLOSING INDICATING WAFER TYPE BUTTERFLY VALVE WITH OR WITHOUT SUPERVISORY TAMPER SWITCH ASSEMBLY (USE SCREWED LUG TYPE WHEN VALVE HAS TO PERFORM DEAD-END SERVICE); CAST IRON BODY TO 200 PSI WWP, DUCTILE IRON FOR HIGHER PRESSURES, INSTALLED BETWEEN FLANGES OF SIMILAR RATING. ACTUATORS SHALL BE MANUAL GEAR TYPE WITH HANDWHEEL; AND VALVE SHALL INCORPORATE A VISIBLE INDICATION OF OPEN OR CLOSED POSITION.

9.2.3. PRESSURE REGULATING VALVES (PRV) WHERE INSTALLED SHALL BE COMBINATION SHUTOFF AND PRESSURE REGULATING TYPE 400 PSI WWP BRONZE BODY WITH BALANCED PISTON. VALVE SHALL BE ZURN SERIES Z3004 "PRESSURE-TRU" OR POTTER ROEMER SERIES PRV-400-2.5 "REG-U-MATIC" OR AS APPROVED. PROVIDE PRESSURE GAUGE DOWNSTREAM OF PRV.

9.2.4. PROVIDE LADDERS TO ALL VALVES LOCATED MORE THAN 7 FEET 0 INCHES ABOVE FLOOR.

10. SPRINKLER HEADS:

10.1. PROVIDE AUTOMATIC SPRINKLER HEADS OF FINISH AS APPROVED BY THE OWNER, THE MUNICIPAL AUTHORITIES AND BY THE INSURING AGENCIES HAVING JURISDICTION. COVER PLATE FLUSH TYPE SPRINKLER HEADS SHALL BE RELIABLE MODEL "G4A" 5/16 INCH PLATE DIAMETER FINISH AS SELECTED BY OWNER; ALL OTHER SPRINKLER HEADS SHALL BE RELIABLE MODEL "G" AUTOMATIC WATER SPRAY HEADS, OR AS APPROVED.

10.2. ALL HEADS SHALL BE "STANDARD" 1/2 INCH DIAMETER ORIFICE, UPRIGHT, PENDENT, FLUSH TYPE PENDENT, COVER PLATE FLUSH TYPE, OR DRY TYPE PENDENT, TO FIT THE CONDITIONS IN WHICH THEY ARE INSTALLED.

10.3. ALL HEADS SHALL BE OF THE PROPER TEMPERATURE RATING FOR THE LOCATIONS IN WHICH THEY ARE INSTALLED. IN GENERAL, TEMPERATURE RATING SHALL BE 165°F., EXCEPT FOR MECHANICAL EQUIPMENT ROOMS, WHICH SHALL BE 286°F.

11. SPRINKLER SYSTEM APPURTENANCES:

11.1. PROVIDE THE SPRINKLER SYSTEM APPURTENANCES REQUIRED TO PROVIDE FIRE PROTECTION FOR THE WORK AREA.

11.2. DETECTOR CHECK VALVE SHALL BE WATTS MODEL No. 709DCDA.

12. ALARM DEVICES:

12.1. ALL INTERCONNECTING ELECTRICAL WIRING WILL BE FURNISHED UNDER THE SPECIFICATIONS OF OTHER TRADES. PROVIDE ALL SWITCHES DIRECTLY CONNECTED TO EQUIPMENT PROVIDED BY THIS TRADE, REQUIRED FOR THE TRANSMISSION OF ALARM IMPULSES. SWITCHES SHALL BE OPEN OR CLOSED TYPE TO CONFORM WITH THE ALARM SYSTEM TO WHICH THEY ARE CONNECTED.

12.2. PROVIDE TAMPER SWITCHES FOR THE FOLLOWING VALVES:

12.2.1. ALL VALVES CONTROLLING THE FLOW OF WATER TO SPRINKLER HEADS, INCLUDING FLOOR CONTROL VALVES, AND METER VALVES, ETC.

12.2.2. SWITCHES SHALL GIVE AN ALARM IF THE VALVES SERVED ARE CLOSED, THE SWITCHES ARE REMOVED, OR IF THE COVER IS OPENED. VALVE STEMS SHALL BE NOTCHED TO TAKE THE SWITCHES. SWITCHES SHALL BE ACME FIRE ALARM CO. TYPE OSYS-U, OR AS APPROVED.

12.3. PROVIDE THE FOLLOWING FLOW ALARM DEVICES:

12.3.1. RETARD CHAMBER AND CLOSED CIRCUIT ELECTRIC SWITCH FOR EACH ALARM VALVE.

12.3.2. PADDLE TYPE WATER FLOW DETECTORS, CLOSED CIRCUIT TYPE WITH AN ADJUSTABLE RETARD OR TIME DELAY TO PREVENT FALSE ALARMS DUE TO WATER PRESSURE SURGES. SWITCHES SHALL BE ACME FIRE ALARM CO., TYPE WFD, OR AS APPROVED.

13. SPRINKLER DRAINS:

13.1. PROVIDE ALL NECESSARY DRAIN VALVES, CAPPED NIPPLES, AUXILIARY PIPING, ETC., AS REQUIRED TO DRAIN TRAPPED PORTIONS OF THE SYSTEM.

13.2. INSPECTORS TEST CONNECTIONS SHALL BE PROVIDED WITH A SIGHT CONNECTION AND PIPED TO WASTE.

13.3. MAIN DRAIN AND TEST CONNECTION SHALL BE PIPED TO WASTE.

13.4. PROVIDE ALL PIPING REQUIRED TO SPILL THE DRAINS AND TEST CONNECTIONS TO THE FLOOR, FUNNEL OR OTHER DRAINAGE CONNECTIONS PROVIDED UNDER THE PLUMBING CONTRACT, OR ARRANGE WITH THE PLUMBING CONTRACTOR TO PROVIDE ADDITIONAL DRAINAGE FACILITIES, IN WHICH CASE PAY ALL CHARGES RELATED TO THE ADDITIONAL PLUMBING WORK.

14. ACCESS DOORS FOR FINISHED CONSTRUCTION:

14.1. PROVIDE ACCESS DOORS AS REQUIRED FOR ALL CONCEALED VALVES, CLEANOUTS AND OTHER ELEMENTS REQUIRING ACCESS ABOVE CEILINGS OR BEHIND WALLS OR AS INDICATED ON THE DRAWINGS. THE INSTALLATION OF ALL DOORS WILL BE PERFORMED UNDER THE SPECIFICATIONS OF ANOTHER TRADE. COORDINATE THE WORK AND ASSUME RESPONSIBILITY FOR THE ACCESSIBILITY OF ALL VALVES.

14.2. USE THE FOLLOWING TYPE DOORS AS MANUFACTURED BY KARP ASSOCIATES, INC.

14.2.1. IN PLASTER CEILINGS, KARP DSC 210-PL.

14.2.2. IN MASONRY ENCLOSURES (PIPE OR DUCT SHAFTS), KARP DSC-211-FRT WITH 1-1/2 INCH VERMICULITE PLASTER FILL. METAL LATH LINING FOR PLASTER SHALL BE SELF-FURRING TYPE, TACK WELDED TO PAN.

14.2.3. IN NON-RATED MASONRY, KARP DSC-211.

14.2.4. IN DRY WALL CONSTRUCTION, KARP DSC-214M.

14.3. SIZE ACCESS DOORS AS INDICATED ON THE DRAWINGS, OR AS SPECIFIED, BUT NOT SMALLER THAN 16 INCHES BY 16 INCHES. WHERE MORE THAN TWO VALVES ARE SERVED BY A DOOR AND THE BONNETS ARE WITHIN 12 INCHES OF THE FACE OF THE DOOR, THE SIZE OF THE DOOR SHALL BE INCREASED SO THAT ALL PORTIONS OF THE VALVES ARE WITHIN THE AREA DEFINED BY THE OPENING IN THE DOOR. WHERE THE BONNETS OF THE VALVES ARE MORE THAN 12 INCHES FROM THE FACE OF THE DOOR, THE DOORS SHALL HAVE A MINIMUM OF 20 INCH X 20 INCH CLEAR OPENING.

14.4. FURNISH BUTTONS OR TABS TO CEILING CONTRACTOR FOR SETTING, AS APPROVED BY ARCHITECT, TO INDICATE LOCATION OF VALVES, CLEANOUTS OR OTHER EQUIPMENT LOCATED ABOVE REMOVABLE TYPE CEILINGS WHERE ACCESS DOORS ARE NOT FURNISHED.

15. TESTS:

15.1. TEST THE SYSTEMS BEFORE ANY PAINT IS APPLIED.

15.2. TEST ALL SYSTEMS IN FULL ACCORDANCE WITH APPLICABLE UNDERWRITERS' AND MUNICIPAL REQUIREMENTS, BUT IN NO CASE SHALL THE SPRINKLER SYSTEM BE TESTED AT LESS THAN 200 LBS. HYDROSTATIC PRESSURE. APPLY THE TEST FOR A MINIMUM OF TWO (2) CONSECUTIVE HOURS WITH NO LOSS IN PRESSURE. PRIOR TO APPLYING THE HYDROSTATIC TEST ON A DRY PIPE SYSTEM, IT SHALL BE TESTED WITH 40 PSIG COMPRESSED AIR FOR A PERIOD OF 24 HOURS WITH A PRESSURE LOSS NOT TO EXCEED 1½" PSIG.

15.3. FURNISH AND PAY FOR ALL DEVICES, MATERIALS, SUPPLIES, LABOR AND POWER REQUIRED IN CONNECTION WITH TESTS. MAKE ALL TESTS IN THE PRESENCE AND TO THE SATISFACTION OF THE ENGINEER, INSURANCE UNDERWRITERS AND CITY INSPECTORS HAVING JURISDICTION.

15.4. REPAIR, OR IF REQUIRED BY THE ENGINEER REPLACE, DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE OWNER. REPEAT TESTS AS DIRECTED, UNTIL ALL WORK IS PROVEN SATISFACTORY.

15.5. RESTORE TO ITS ORIGINAL CONDITION ANY WORK DAMAGED OR DISTURBED BY TESTS, ENGAGING THE ORIGINAL TRADES TO DO THE WORK OF RESTORATION.

15.6. NOTIFY THE ENGINEER AND INSPECTORS HAVING JURISDICTION AT LEAST 48 HOURS IN ADVANCE OF MAKING THE REQUIRED TESTS, SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS THE TESTS.

15.7. TEST EQUIPMENT IN SERVICE AND DEMONSTRATE THAT THE EQUIPMENT PERFORMS THE WORK INTENDED FOR IT AND THAT IT COMPLIES WITH THE REQUIREMENTS OF THESE SPECIFICATIONS FOR SUCH EQUIPMENT.

16. GUARANTEES AND CERTIFICATIONS:

16.1. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP AS WELL AS DAMAGE TO THE WORK OF OTHER TRADES RESULTING FROM SAME SHALL BE REPLACED OR REPAIRED AS DIRECTED FOR THE DURATION OF STIPULATED GUARANTEE PERIODS. THE DURATION OF GUARANTEE PERIODS SHALL BE ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

17. ENGINEER'S REVIEW, SHOP DRAWINGS, AND CERTIFICATIONS:

17.1. PREPARE AND SUBMIT DETAILED SHOP DRAWINGS. THE ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES IS ONLY FOR THE CONVENIENCE OF THE OWNER IN FOLLOWING THE WORK AND DOES NOT RELIEVE THIS TRADE OF RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW SHALL NOT BE CONSTRUED AS A COMPLETE OR DETAILED CHECK OF THE WORK SUBMITTED, NOR SHALL IT RELIEVE THIS TRADE OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS AND SAMPLES, OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH HAVE BEEN OMITTED FROM THE SHOP DRAWING SUBMITTALS.

17.2. NO PART OF THE WORK SHALL BE STARTED IN THE SHOP OR IN THE FIELD UNTIL THE ENGINEER HAS REVIEWED THE SHOP DRAWINGS AND SAMPLES FOR THAT PORTION OF THE WORK. THEREAFTER, THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE INDICATED STATUS OF THE REVIEWED SHOP DRAWINGS. PRIOR TO ASSEMBLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED: SCALED FLOOR PLAN AND CEILING DRAWINGS WITH DIMENSIONED LOCATIONS OF ALL PIPING AND EQUIPMENT INCLUDING SIZES, ELEVATIONS, AND APPROPRIATE INDICATION OF COORDINATION BETWEEN STRUCTURAL AND MECHANICAL ELEMENTS. MANUFACTURER'S CATALOGUE CUTS OF ALL EQUIPMENT TO BE USED. SAMPLES OF ALL DEVICES, WHICH WILL BE CLEARLY VISIBLE TO VIEW. ALL SUBMITTALS SHALL BE PROPERLY IDENTIFIED WITH PROJECT NAME, ARCHITECT, ENGINEER, AND SUBCONTRACTOR'S NAME, ADDRESS, AND TELEPHONE NUMBER. PROVIDE CLEAR DETAILED REPRODUCIBLE "AS-BUILT" DRAWINGS UPON COMPLETION OF WORK AND PROVIDE SETS OF THE SAME TO OWNER AS DIRECTED.

17.3. THE ARCHITECT AND/OR ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES WITH REASONABLE PROMPTNESS AND WILL RETURN THEM TO THE CONTRACTOR STAMPED TO INDICATE THE APPROPRIATE ACTION AS FOLLOWS:

17.3.1. "NO EXCEPTIONS TAKEN" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE CONTRACT DOCUMENTS.

17.3.2. "MAKE CORRECTIONS NOTED" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND THE CONTRACT DOCUMENTS. A COPY OF THE CORRECTED SUBMITTAL SHALL BE RETURNED TO THE ARCHITECT AND/OR ENGINEER FOR RECORD. IF, FOR ANY REASON, THE CONTRACTOR CANNOT COMPLY WITH THE NOTATIONS, THE CONTRACTOR SHALL RESUBMIT AS DESCRIBED FOR SUBMITTALS STAMPED "REVISE AND RESUBMIT".

17.3.3. "REVISE AND RESUBMIT" MEANS THAT THE CONTRACTOR MUST COMPLY WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND RESUBMIT BEFORE FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.

17.3.4. "REJECTED" MEANS THAT THE SUBMITTAL DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS AND THAT FABRICATION, MANUFACTURER CONSTRUCTION SHALL NOT PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.

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ARMEN KHACHATURIAN, P.E. - FL LICENSE #70236
FL CERTIFICATE OF AUTHORIZATION #32501

Lightbridge Academy℠
Innovators in Educational Child Care

PROJECT

LIGHTBRIDGE ACADEMY
8525 MONTAGUE ST., TAMPA, FL 33626

OWNER

8525 N. MONTAGUE LLC
5706 S. MACDILL AVE.
TAMPA, FL. 33611

LEGAL DESCRIPTION

FOLIO: 004339-0100
004339-0150

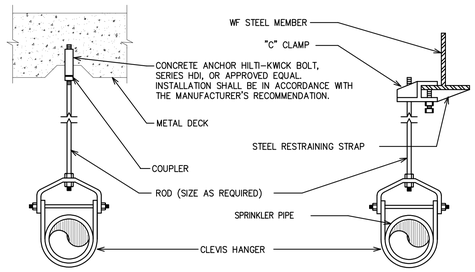
SHEET TITLE:

FIRE PROTECTION SPECIFICATIONS

REV.	DATE	REMARKS
REV3	09/16/2024	LIGHTBRIDGE COMMENTS
REV1	08/14/2024	PERMIT RESPONSE COMMENTS
	07/15/2024	ISSUED FOR PERMIT

JOB NUMBER: 24001265A
DATE:
DRAWN BY: GS/SS/LG
CHECKED BY: AK

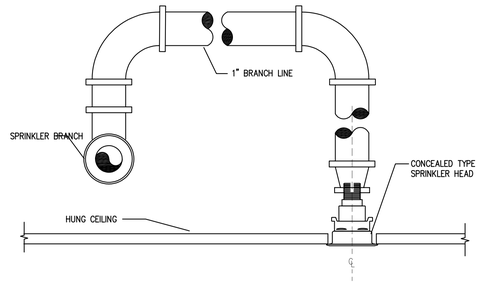
SHEET NO.
FP-301



NOTES:

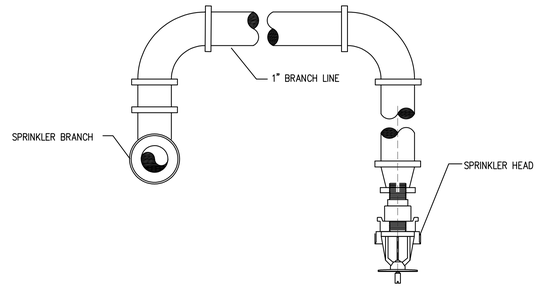
1. CLEVIS HANGERS REQUIRED ON PIPING LARGER THAN 1"
2. GENERAL PURPOSE HANGERS MAY BE USED ON 1" SPRINKLER PIPING ONLY.

TYPICAL HANGING DETAIL



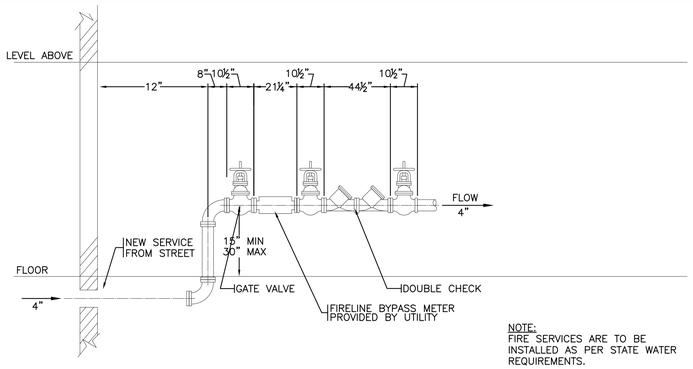
CONCEALED SPRINKLER HEAD INSTALLATION

NOT TO SCALE



PENDENT SPRINKLER HEAD INSTALLATION

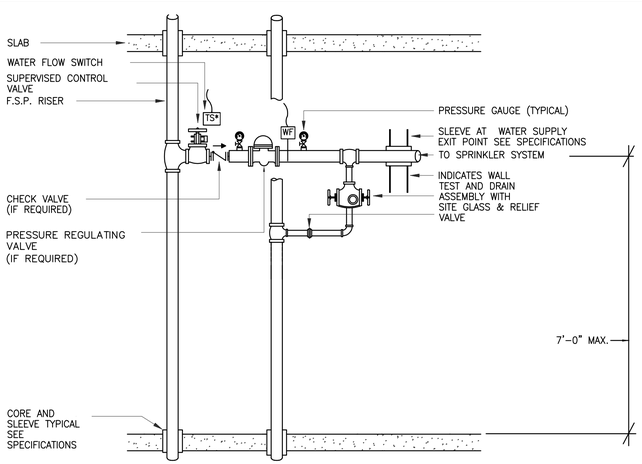
NOT TO SCALE



NOTE:
FIRE SERVICES ARE TO BE INSTALLED AS PER STATE WATER REQUIREMENTS.

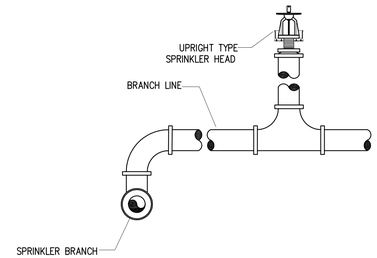
4" FIRE SERVICE CONNECTION DETAIL

NOT TO SCALE



TYPICAL FLOOR CONTROL ASSEMBLY DETAIL

NOT TO SCALE



UPRIGHT SPRINKLER HEAD INSTALLATION

NOT TO SCALE

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