

Proposed Bus Maintenance Facility Twin Valley Community Local School District

100 Education Drive
West Alexandria, Ohio 45381

DESIGN TEAM

ARCHITECT:



CIVIL ENGINEERS:



STRUCTURAL / PME ENGINEERS:



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CODE REVIEW

DESCRIPTION:	CONSTRUCTION OF NEW BUS MAINTENANCE FACILITY AND SUPPORT OFFICES
JURISDICTION:	CITY OF WEST ALEXANDRIA, FREBLE COUNTY
ZONING:	CLASS 'E', LAND USE '1/C'
PARKING:	PER CIVIL DOCUMENTS
BUILDING CODE:	2017 OHIO BUILDING CODE [OBC]
CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION	311.2: PROPOSED USE GROUP: B / S-1, REPAIR GARAGE
CHAPTER 4: SPECIAL REQUIREMENTS BASED UPON OCCUPANCY	406.8.1: MIXED USED SHALL BE ALLOWED IN SAME BUILDING AS A REPAIR GARAGE SUBJECT TO SECTION 508.1
406.8.2: VENTILATION REQUIRED - REFER TO MECHANICAL DRAWINGS.	406.8.5: SPRINKLER SYSTEM - PER 903.2.4.1 [NOT REQUIRED LESS THAN 5,000 SF - NOT PROVIDED]
CHAPTER 5: GENERAL BUILDING HEIGHT AND AREA	TABLE 504.3: ALLOWABLE HEIGHT: B/S-1, NONSPRINKLERED, TYPE V B = 40' PROPOSED HEIGHT = ± 21', OK
505.2: MEZZANINE SHALL BE CONSIDERED A PORTION OF THE STORY BELOW. MEZZANINE SHALL NOT CONTRIBUTE TO BUILDING AREA OR NUMBER OF STORIES REGULATED BY SECTION 505.1. CLEAR HEIGHT ABOVE AND BELOW MUST BE 7' - 0".	505.1.1: AREA OF MEZZANINE SHALL NOT BE GREATER THAN 1/3 OF THE FLOOR AREA OF THAT ROOM / SPACE
ROOM / SPACE = 4,955 SF [1/3 = 1,651 SF ALLOWED], MEZZANINE = 1,434 SF [OK]	505.1.3: MEZZANINE SHALL BE OPEN AND UNOBSTRUCTED TO THE ROOM IN WHICH IT IS LOCATED EXCEPT FOR WALLS NOT MORE THAN 42" [COMPLIES]
TABLE 505.4: ALLOWABLE STORIES: S-1 MOST RESTRICTIVE, NONSPRINKLERED, TYPE V B = 1 STORY	PROPOSED STORIES = 1, OK
TABLE 506.2: ALLOWABLE AREA: B [MOST RESTRICTIVE], NS, TYPE V B = 9,000 SF PER STORY	ACTUAL AREA = 4,955 SF, OK
508.1: EACH PORTION OF A BUILDING SHALL BE INDIVIDUALLY CLASSIFIED IN ACCORDANCE WITH SECTION 302.1.	508.3: NON-SEPARATED OCCUPANCIES
508.3.2: ALLOWABLE BUILDING AREA AND HEIGHT PER THE MOST RESTRICTIVE ALLOWANCES FOR THE OCCUPANCY.	508.3.3: NO SEPARATION IS REQUIRED BETWEEN NONSEPARATED OCCUPANCIES.
509: INCIDENTAL USES - NONE APPLY	CHAPTER 6: TYPES OF CONSTRUCTION
602.2: CONSTRUCTION TYPE: V B	TABLE 601: PRIMARY STRUCTURAL FRAME = 0 HOUR
EXTERIOR BEARING WALLS = 0 HOUR	INTERIOR BEARING WALLS = 0 HOUR
NON-BEARING WALLS = 0 HOUR	FLOOR CONSTRUCTION = 0 HOUR
ROOF CONSTRUCTION = 0 HOUR	CHAPTER 7: FIRE-RESISTANCE RATED CONSTRUCTION
TABLE 705.8: MAXIMUM AREA OF EXTERIOR WALL OPENINGS UNPROTECTED, X > 30' = UNLIMITED OPENINGS PERMITTED	CHAPTER 8: INTERIOR FINISHES
TABLE 805.11: INTERIOR WALL AND CEILING FINISH REQUIREMENTS	USE NONSPRINKLERED
EXIT ENCLOSURES AND PASSAGEWAYS: CLASS A B B	CORRIDORS: CLASS B B
ROOMS AND ENCLOSED SPACES: CLASS C C	804.4.2: INTERIOR FLOOR FINISHES - MINIMUM CRITICAL RADIANT FLUX = B, S-1 USE = CLASS II
CHAPTER 9: FIRE PROTECTION SYSTEMS	903.2.9.1: USE GROUP S-1, REPAIR GARAGES: COMMERCIAL MOTOR VEHICLE REPAIR, FIRE AREA IS LESS THAN 5,000 SF. - AUTOMATIC FIRE SPRINKLER SYSTEM NOT REQUIRED - NOT PROVIDED.
905: STANDPIPE - NOT REQUIRED, NOT PROVIDED	906: PORTABLE FIRE EXTINGUISHERS IN ACCORDANCE WITH FIRE CODE SECTION 2311.6 AND LOCAL F.D.
907: FIRE ALARM NOT REQUIRED. - NOT PROVIDED	

CHAPTER 10: MEANS OF EGRESS	TABLE 1004.1.2: OCCUPANT LOAD	BUSINESS AREAS 1/100 SF [2,244 SF] = 23 OCCUPANTS	INDUSTRIAL AREAS 1/100 SF [3,541 SF] = 36 OCCUPANTS	ACCESSORY STORAGE AREAS 1/300 SF - [MEZZANINE/STORAGE 1,886 SF] = 7 OCCUPANTS	ALL EGRESS DOORS = 66 OCCUPANTS
BUILDING TOTAL	TABLE 1005.3: EGRESS WIDTH	OCCUPANCY 66 X 20 = 13.2" REQUIRED	ACTUAL = 4 DOORS AT 36" WIDE TO EXTERIOR	TABLE 1006.3.1: MINIMUM NUMBER OF EXITS 0-500 OCCUPANTS = 2 [4 EXITS PROVIDED]	1007.1: ACCESSIBLE MEANS OF EGRESS: ACCESSIBLE MEANS OF EGRESS PROVIDED AT ALL EGRESS DOORS
TABLE 1012.2: B/S-1 WITHOUT SPRINKLER SYSTEM = 200' TRAVEL DISTANCE	ACTUAL TRAVEL DISTANCE = 91'	CHAPTER 11: ACCESSIBILITY ICC ANSI A11.1 - 2009 SAFE HARBOR	1104.1: ACCESSIBLE ROUTE PROVIDED	1105.1: ACCESSIBLE ENTRANCE - PROVIDED	1106.1: ACCESSIBLE PARKING - PROVIDED, REFER TO CIVIL DRAWINGS
1109.1: ACCESSIBLE TOILET ROOMS - PROVIDED	1111.1: ACCESSIBLE SIGNAGE - PROVIDED AT REQUIRED ELEMENTS	CHAPTER 13: ENERGY EFFICIENCY	1301.5.1: BUILDING SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE INTERNATIONAL ENERGY CONSERVATION CODE / THE REQUIREMENTS OF ASHRAE 90.1. THIS BUILDING COMPLIES WITH CHAPTER 4 OF THE OHIO ENERGY CODE CLIMATE ZONE 5	TABLE C402.2: ATTIC WOOD FRAME BUILDING WALLS UNHEATED SLABS	R-38 R-20 R-10 [24" BELOW]
CHAPTER 16: STRUCTURAL: REFER TO STRUCTURAL DRAWINGS - 5.2.1	CHAPTER 17: SPECIAL INSPECTIONS: REFER TO 5.2.1	CHAPTER 21: PLUMBING SYSTEMS	TABLE 2102.1: OCCUPANT LOAD OF 66 [33 EACH MEN / WOMEN]	REPAIR GARAGE	REQ'D B S-1 PROVIDED
MEN	WATERCLOSETS 1/50 = 0.66	LAVATORIES 1/80 = 0.41	1/100 = 0.033	1 [OK]	1 [OK]
WOMEN	WATERCLOSETS 1/50 = 0.66	LAVATORIES 1/80 = 0.41	1/100 = 0.033	1 [OK]	1 [OK]
SHOWER N/A	DRINKING FOUNTAINS 1/100 = 2	N/A	1/1000	1	WATER COOLER W/ CUP DISPENSER 1 [OK]
SERVICE SINK 1					
2102.2: WHERE A BUILDING OR TENANT SPACE REQUIRES SEPARATE TOILET FACILITY FOR EACH SEX AND EACH IS REQUIRED TO HAVE ONLY ONE WATER CLOSET, TWO FAMILY / ASSISTED USE TOILET FACILITIES SHALL BE PERMITTED TO SERVE AS THE REQUIRED SEPARATE FACILITIES. THESE SHALL NOT BE REQUIRED TO BE IDENTIFIED FOR EXCLUSIVE USE BY EITHER SEX. IDENTIFIED AS 'TOILET' ON DRAWINGS					

ABBREVIATIONS

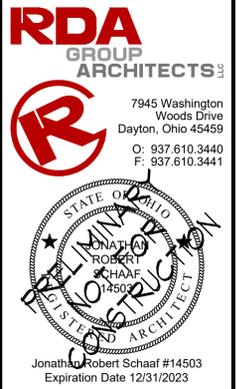
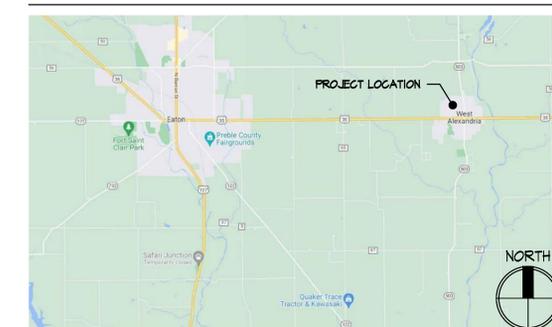
ADAAG	AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES	REQ'D	REQUIRED
AFF	ABOVE FINISH FLOOR	RO	ROUGH OPENING
ALUM	ALUMINUM	SIM	SIMILAR
ATC	ACOUSTIC TILE CEILING	SM	SHEET METAL
BLKG	BLOCKING	SPEC	SPECIFICATION
BET	BETWEEN	SS	STAINLESS STEEL
BRG	BEARING	SQ	SQUARE
BTM	BOTTOM	STL	STEEL
CIP	CAST IN PLACE	T.O.	TOP OF
CL	CENTERLINE	TYP	TYPICAL
CL6	CEILING	UFAS	UNIFORM FEDERAL ACCESSIBILITY STD.
CT	CERAMIC TILE	WRB	WEATHER RESISTIVE BARRIER
CLR	CLEAR	WWF	WELDED WIRE FABRIC
COL	COLUMN		
CPT	CARPET		
CONC	CONCRETE		
CMU	CONCRETE MASONRY UNIT		
CONT	CONTINUOUS		
CJ	CONTROL JOINT		
DF	DRINKING FOUNTAIN		
DIA	DIAMETER		
DS	DOWNSPOUT		
DTL	DETAIL		
DW	DISHWASHER		
ELEV	ELEVATION		
EQ	EQUAL		
EX	EXISTING		
FD	FLOOR DRAIN		
FPN	FOUNDATION		
FE	FIRE EXTINGUISHER		
FF	FINISH FLOOR		
FIN	FINISHED		
FRT	FIRE RETARDANT TREATED		
FSE	FOOD SERVICE EQUIPMENT		
FTG	FOOTING		
FV	FIELD VERIFY		
GA	GAUGE		
GYP BD	GYPSUM BOARD		
GC	GENERAL CONTRACTOR		
HM	HOLLOW METAL		
HT	HEIGHT		
HOR	HORIZONTAL		
MAX	MAXIMUM		
MEGH	MECHANICAL		
MO	MASONRY OPENING		
MTD	MOUNTED		
MTL	METAL		
NIC	NOT IN CONTRACT		
NTS	NOT TO SCALE		
OC	ON CENTER		
OPG	OPENING		
PEMB	PRE-ENGINEERED METAL BUILDING		
PTD	PAINTED		
QT	QUARRY TILE		
RAD	RADIUS		
RD	ROOF DRAIN		
REF	REFRIGERATOR		

WALL / SYMBOL LEGEND

	NEW WOOD STUD FRAME WALL
	NEW CONCRETE FOUNDATION WALL
	WALL TYPE KEY
	EXHAUST FAN - VENT DIRECT TO EXTERIOR
	NEW CONSTRUCTION KEY NOTE
	REFLECTED CEILING KEY NOTE
	WINDOW TYPE KEY
	DOOR TYPE KEY
	SECTION TAG
	ELEVATION TAG

THE PLANS AND SPECIFICATIONS ARE INTENDED TO DEPICT THE GENERAL SCOPE, LAYOUT AND QUALITY OF WORKMANSHIP REQUIRED. THE DOCUMENTS ARE NOT AN INSTRUCTION MANUAL TO EXECUTE THE WORK. WORK IS INTENDED TO SHOW OR DESCRIBE IN DETAIL EVERY ITEM NECESSARY FOR THE PROPER INSTALLATION OF THE WORK. THE MEANS AND METHODS REQUIRED TO EXECUTE THE WORK DESCRIBED IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL INCLUDE THE ANCILLARY WORK REQUIRED, WHETHER EXPLICITLY STATED OR NOT, FOR THE PROPER COMPLETION OF THE WORK AS INTENDED. THE CONTRACTOR IS REQUIRED TO MEET OR EXCEED BUILDING CODE REQUIREMENTS, APPLICABLE INDUSTRY STANDARDS, ASTM STANDARDS, AND/OR MANUFACTURER INSTALLATION REQUIREMENTS AS THEY RELATE TO THE WORK. THE PLANS AND SPECIFICATIONS REPRESENT A SINGLE COMPLETE DESIGN PACKAGE INDICATING THE INTENDED SCOPE OF THE PROJECT IN ITS ENTIRETY. AS SUCH, THE PROJECT IS STRUCTURED TO BE AWARDED TO A SINGLE PRIME CONTRACTOR. THE DOCUMENTS DO NOT DELINEATE BID PACKAGES OR ASSIGN RESPONSIBILITIES TO ANY SUBSEQUENT SUBCONTRACTORS, DICTATE CONSTRUCTION SEQUENCING, NOR PROVIDE COORDINATION BETWEEN ANY TRADES. SUCH ACTIVITIES ARE THE RESPONSIBILITY OF THE HOLDER OF THE CONSTRUCTION CONTRACT. IN THE EVENT OF A DISCREPANCY WITHIN THE DRAWINGS OR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT REPRESENTED IN THE DOCUMENTS SHALL PREVAIL.

VICINITY MAP



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Twin Valley Community
Local School District
100 Education Drive
West Alexandria, Ohio 45381

Print Record

01/06/23 Review
02/02/23 Progress Set
02/10/23 Progress Set
02/24/23 Bid/Const. Set

Project Number

2022-071

Date

February 24, 2023

Sheet Title

PROJECT INFORMATION

Sheet Number

G1.1

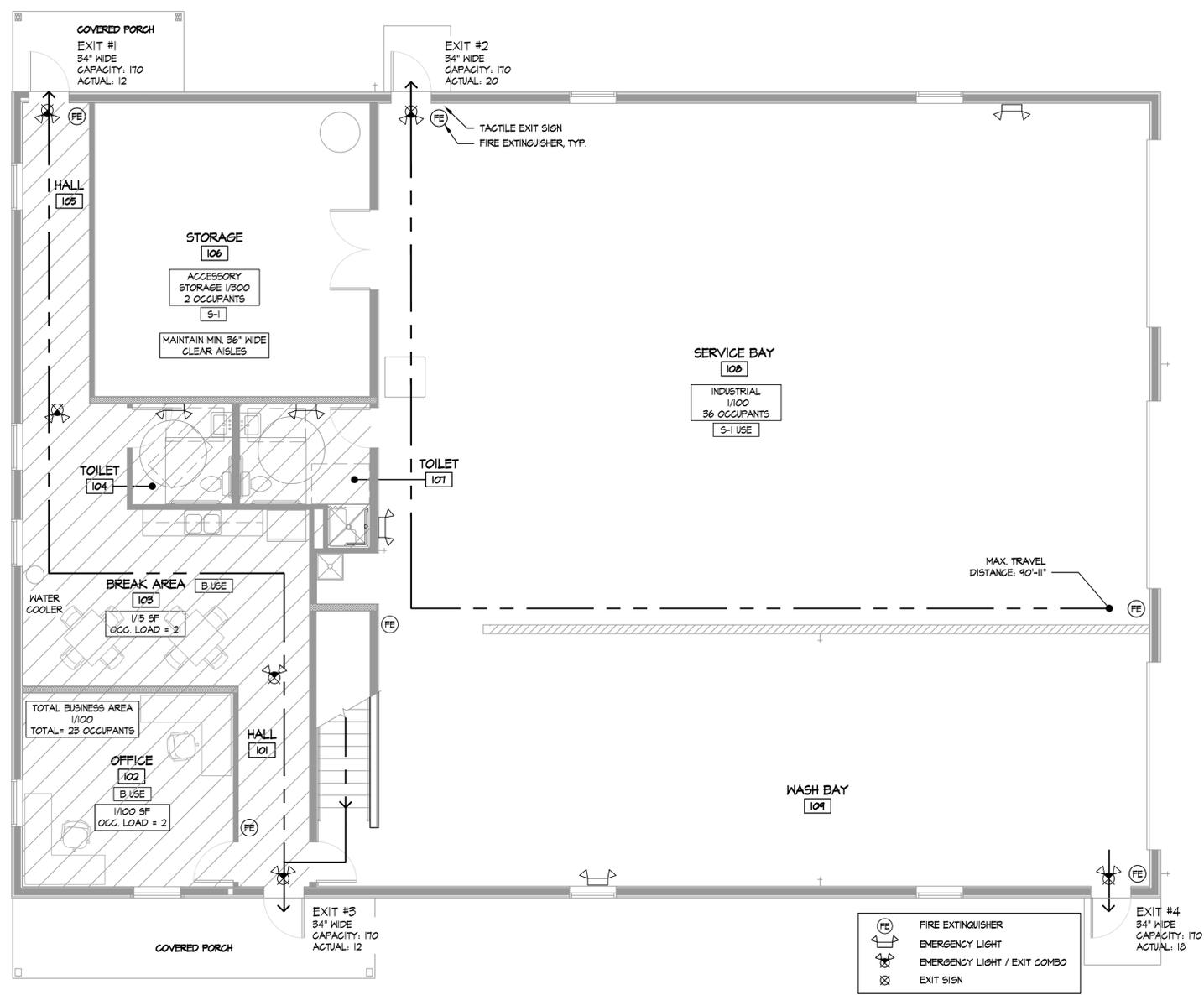
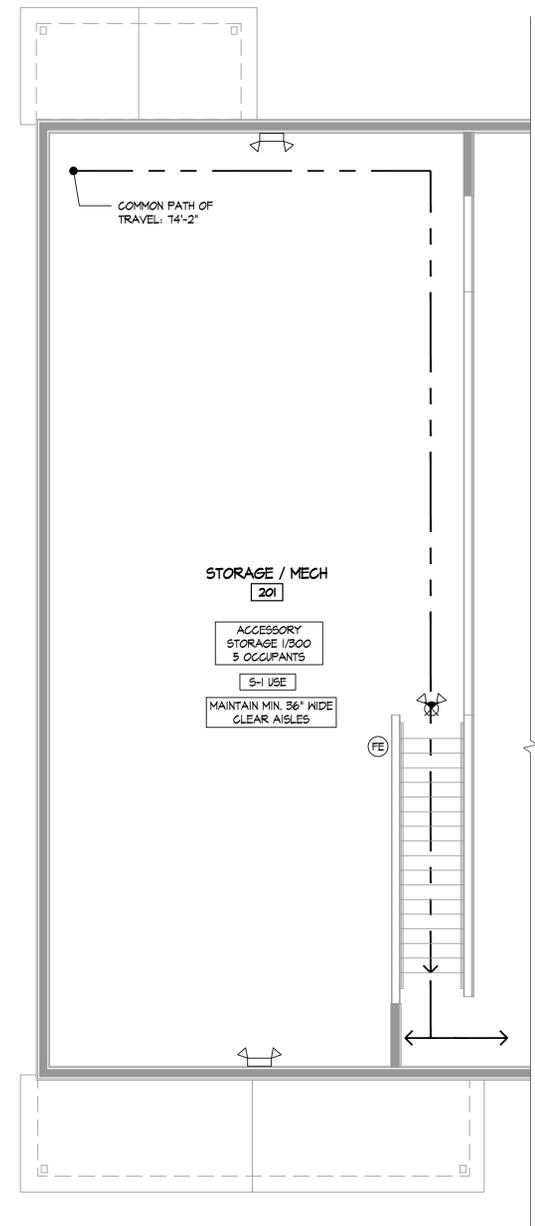


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Print Record
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Project Number
2022-071
Date
February 24, 2023
Sheet Title
CODE REVIEW PLANS

Sheet Number
G1.2



	FIRE EXTINGUISHER
	EMERGENCY LIGHT
	EMERGENCY LIGHT / EXIT COMBO
	EXIT SIGN

ACCESSIBILITY SIGNAGE NOTES:

CHARACTER PROPORTION:
LETTERS AND NUMBERS ON SIGNS SHALL HAVE A WIDTH-TO-HEIGHT RATIO BETWEEN 3.5 AND 1.1 AND A STROKE-WIDTH-TO-HEIGHT RATIO BETWEEN 1.5 AND 1.1:0.

RAISED AND BRAILLE CHARACTERS AND PICTORIAL SYMBOL SIGNS (PICTOGRAMS):
LETTERS AND NUMERALS SHALL BE RAISED 1/32 IN, UPPER CASE, SANS SERIF OR SIMPLE SERIF TYPE AND SHALL BE ACCOMPANIED WITH GRADE BRAILLE. RAISED CHARACTERS SHALL BE AT LEAST 5/8 IN. (16 MM) HIGH, BUT NO HIGHER THAN 2 IN. (50 MM). PICTOGRAMS SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM. THE BORDER DIMENSION OF THE PICTOGRAM SHALL BE 6 IN. (152 MM) MINIMUM OF HEIGHT.

FINISH AND CONTRAST:
THE CHARACTERS AND BACKGROUND OF SIGNS SHALL BE EGGSHELL, MATTE, OR OTHER NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND.

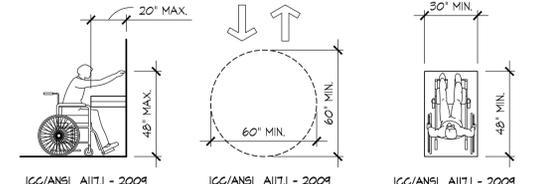
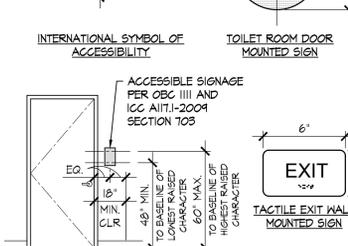
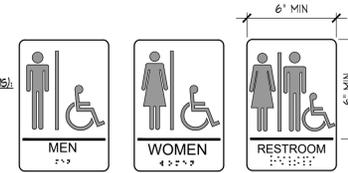
MOUNTING LOCATION AND HEIGHT:
WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR, WHERE THERE IS NO WALL SPACE TO THE LATCH SIDE OF THE DOOR, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL. MOUNTING LOCATION FOR SUCH SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3 IN. (76 MM) OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR. MOUNTING HEIGHT SHALL BE 60 IN. (1525 MM) ABOVE THE FINISH FLOOR TO THE CENTERLINE OF THE SIGN.

SYMBOLS OF ACCESSIBILITY:
FACILITIES AND ELEMENTS REQUIRED TO BE IDENTIFIED AS ACCESSIBLE BY SECTION 4.1 OF THE A.D.A.A.G. SHALL USE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

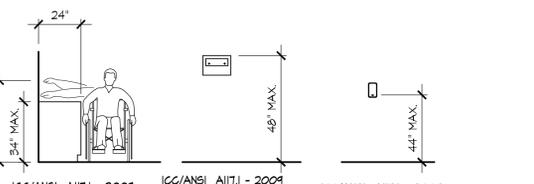
DOOR CLOSER:
18" MIN. A.F.F.
WHERE PROVIDED, VISION LIGHTS SHALL EXTEND TO WITHIN 48" OF FLOOR. DOOR HARDWARE SHALL BE LOCATED BTWN. 34" AND 48" A.F.F. BOTTOM 10" OF DOOR SHALL BE SMOOTH.

ICC/ANSI A117.1 - 2009 CHAPTER 4 404.2.2 "INTERPOLATION"
DOOR HARDWARE MOUNTING HEIGHTS

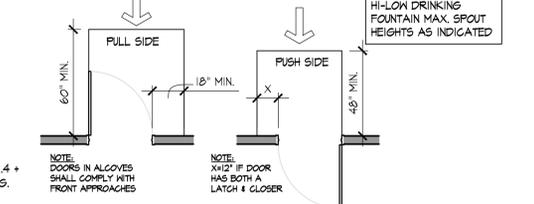
ACCESSIBILITY SIGNAGE DETAILS



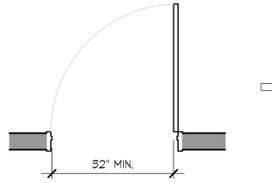
ICC/ANSI A117.1 - 2009 CHAPTER 3 FIG. 303.2.2 (A) **MAXIMUM FORWARD REACH OVER AN OBSTRUCTION**
ICC/ANSI A117.1 - 2009 CHAPTER 3 FIG. 304.3(A) **WHEELCHAIR TURNING SPACE 60" DIAMETER SPACE**
ICC/ANSI A117.1 - 2009 CHAPTER 3 FIG. 305.3 **MINIMUM CLEAR FLOOR SPACE FOR WHEELCHAIRS**



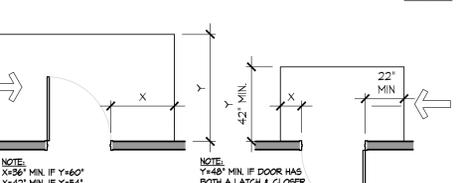
ICC/ANSI A117.1 - 2009 CHAPTER 3 FIG. 303.3.2 (B) **MAXIMUM SIDE REACH OVER AN OBSTRUCTION**
ICC/ANSI A117.1 - 2009 CHAPTER 3 FIG. 303.3.1 "INTERPOLATION" **DISPENSERS PAPER TOWEL DISPENSER**
ICC/ANSI A117.1 - 2009 CHAPTER 3 FIG. 303.2.2 (B) "INTERPOLATION" **DISPENSERS SOAP DISPENSER**



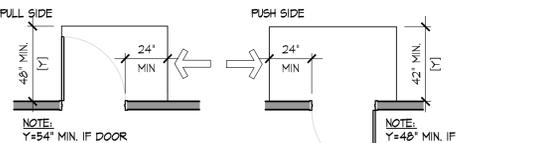
ICC/ANSI A117.1 - 2009 CHAPTER 6 FIG. 602.5 (A) + 602.4 + CHAPTER 3 FIG. 306.2 (A) + FIG. 306.3 (A) "INTERPOLATION" **DRINKING FOUNTAIN AND WATER COOLERS SPOUT HEIGHT**
ICC/ANSI A117.1 - 2009 CHAPTER 4 FIG. 404.2.3 (A) + (B) **MANEUVERING CLEARANCE AT DOORS FRONT APPROACHES - SWING DOORS**



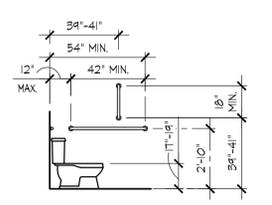
ICC/ANSI A117.1 - 2009 CHAPTER 4 FIG. 404.2.2 (A) **CLEAR WIDTH HINGED DOOR**



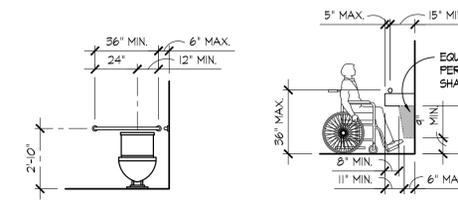
ICC/ANSI A117.1 - 2009 CHAPTER 4 FIG. 404.2.3 (C) + (D) + (E) **MANEUVERING CLEARANCE AT DOORS HINGE SIDE APPROACHES - SWING DOORS**



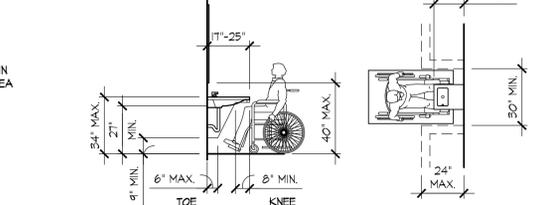
ICC/ANSI A117.1 - 2009 CHAPTER 4 FIG. 404.2.3 (F) + (G) **MANEUVERING CLEARANCE AT DOORS LATCH SIDE APPROACHES - SWING DOORS**



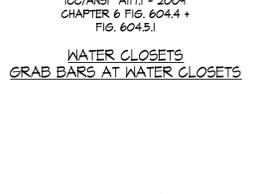
ICC/ANSI A117.1 - 2009 CHAPTER 6 FIG. 604.4 + FIG. 604.5.1 **WATER CLOSETS GRAB BARS AT WATER CLOSETS**



ICC/ANSI A117.1 - 2009 CHAPTER 6 FIG. 604.5.2 **WATER CLOSETS GRAB BARS AT WATER CLOSETS**



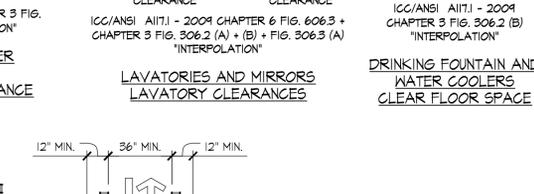
ICC/ANSI A117.1 - 2009 CHAPTER 6 FIG. 606.3 + CHAPTER 3 FIG. 306.2 (A) + (B) + FIG. 306.3 (A) "INTERPOLATION" **LAVATORIES AND MIRRORS LAVATORY CLEARANCES**



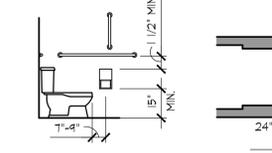
ICC/ANSI A117.1 - 2009 CHAPTER 6 FIG. 602.5 (A) + 602.4 + CHAPTER 3 FIG. 306.2 (A) + FIG. 306.3 (A) "INTERPOLATION" **DRINKING FOUNTAIN AND WATER COOLERS SPOUT HEIGHT AND KNEE CLEARANCE**



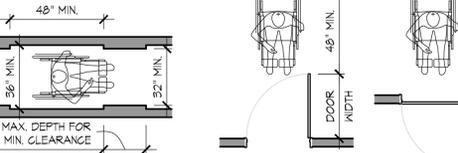
ICC/ANSI A117.1 - 2009 CHAPTER 6 FIG. 606.3 + CHAPTER 3 FIG. 306.2 (A) + (B) + FIG. 306.3 (A) "INTERPOLATION" **LAVATORIES AND MIRRORS LAVATORY CLEARANCES**



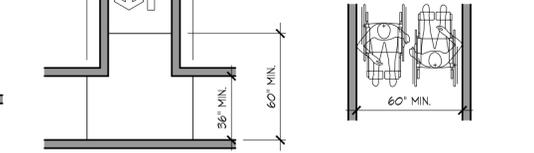
ICC/ANSI A117.1 - 2009 CHAPTER 3 FIG. 306.2 (B) "INTERPOLATION" **DRINKING FOUNTAIN AND WATER COOLERS CLEAR FLOOR SPACE**



ICC/ANSI A117.1 - 2009 CHAPTER 6 FIG. 604.7 (A) **DISPENSERS TOILET PAPER DISPENSER**



ICC/ANSI A117.1 - 2009 CHAPTER 4 FIG. 403.5 **WHEELCHAIR PASSAGE WIDTH MINIMUM CLEAR WIDTH FOR SINGLE WHEELCHAIR**



ICC/ANSI A117.1 - 2009 CHAPTER 4 FIG. 404.2.5 (A) + (C) **TWO DOORS IN SERIES**

RDA GROUP ARCHITECTS
7945 Washington Woods Drive
Dayton, Ohio 45458
O: 937.610.3440
F: 937.610.3441

STATE OF OHIO
REGISTERED ARCHITECT
JONATHAN ROBERT SCHAAF #14503
Expiration Date 12/31/2023

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Proposed Bus Maintenance Facility
Twin Valley Community Local School District
100 Education Drive
West Alexandria, Ohio 45381

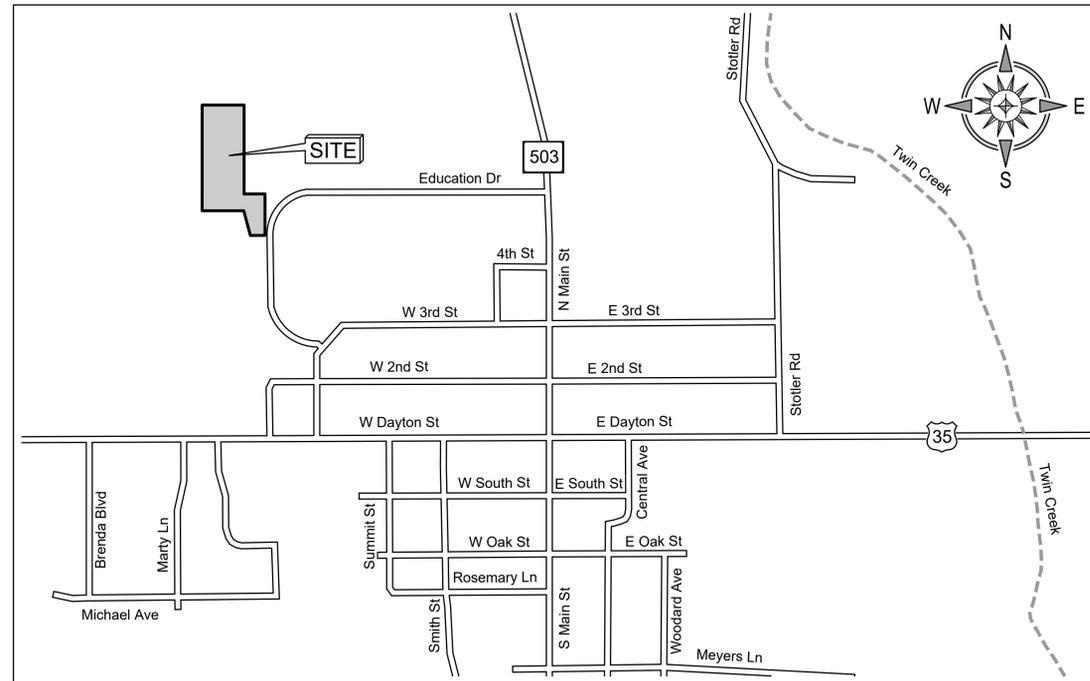
Print Record
01/06/23 Review
02/02/23 Progress Set
02/10/23 Progress Set
02/24/23 Bid/Const. Set
Project Number
2022-071
Date
February 24, 2023
Sheet Title
ACCESSIBILITY STANDARDS
Sheet Number
G1.3

SITE DEVELOPMENT PLAN FOR: TWIN VALLEY SCHOOLS BUS MAINTENANCE FACILITY

100 Education Drive
West Alexandria, Preble County, Ohio

GENERAL CONSTRUCTION NOTES

1. Site/Civil Specifications: All plans, construction, materials, workmanship, and methods shall be in accordance with the current "Rules and Regulations" of the Village of West Alexandria, Preble County and the Ohio Department of Transportation Construction and Material Specifications. When in conflict, the Village requirements shall prevail, followed by the County.
2. Prior to the start of construction, the Contractor shall be responsible for ensuring that all required permits and approvals have been obtained. No construction or fabrication shall begin until the Contractor has received and reviewed all plans and other documents approved by all the permitting authorities. The Contractor shall post all bonds, pay all fees, and provide proof of insurance as required to obtain permits.
3. All sediment and erosion control measures, as shown on Sheet C-6.0 and C-6.1, shall be in place prior to the start of any demolition, clearing and grubbing, or construction operations. Erosion control measures shall conform to all Local, State, and Federal regulations and requirements.
4. North arrow, existing topography, and bearings based on field survey of the subject property prepared by Burkhardt Engineering in June 2022.
5. Information on existing utilities has been compiled from available information including utility company and municipal records and field survey and is not guaranteed correct and complete. Utilities are shown to alert the Contractor to their presence and the Contractor is solely responsible for determining actual locations and elevations of all utilities. Prior to demolition or construction, the Contractor shall contact "811", 72 hours before commencement of work and verify all utility locations.
6. The Contractor shall provide and maintain traffic control devices for protection of vehicles and pedestrians consisting of drums, barriers, signs, lights, fences and uniformed traffic officers as required by Local and State Authorities.
7. The Contractor shall protect all iron pins, monuments and property corners during construction. Any Contractor disturbed pins, monuments, etc. shall be reset by a Professional Land Surveyor (Registered with the State) at the expense of the Contractor.
8. Any disturbance incurred to any adjacent properties or public right-of-way during demolition and construction shall be restored to its original condition or better, in accordance with and to the satisfaction of Local and State Authorities.
9. The Contractor shall abide by all OSHA, Federal, State, and Local regulations when operating cranes, booms, hoists, etc. in close proximity to overhead electric lines. If Contractor must operate equipment close to electrical lines, contact the local Utility Provider to make arrangements for proper safeguards.
10. All material schedules shown on the plans are for general information only. The Contractor shall prepare their material schedules based upon their plan review. All schedules shall be verified in the field by the Contractor prior to ordering materials or performing work.
11. All work within public rights-of-way shall be in accordance with the Village of West Alexandria and the Ohio Department of Transportation rules, specifications, and regulations.



VICINITY MAP
NOT TO SCALE

DESIGN TEAM

CIVIL ENGINEER / CONSULTANT
Burkhardt Engineering
Contact: Jonathan Burkhardt
Phone: 937.388.0060
Email: jdburkhardt@burkhardtinc.com

ARCHITECT

RDA Group Architects, LLC
Contact: Jonathan Schaaf
Phone: 937.610.3440
Email: jrs@rda-group.com

PROJECT SUMMARY

Project will include the demolition and removal of utilities, vegetation, pavement, etc. as necessary to construct the Bus Garage and its associated pavement, parking facilities, utilities, landscaping, signage and any other proposed improvements which are needed to service the facility.

PROPERTY INFORMATION

Address: 100 Education Dr., West Alexandria, OH, 45381
Legal Description: OUTLOT 1 SCHOOL EX-2000 #FE-3578
Area: 5.21 acres
Legal Description: OUTLOT 33 SCHOOL FKA K3663330000004001
Area: 28.344 acres
Zoning: E
Flood Zone Designation: FIRM # 39135C0260D, effective date: March 02, 2010.
Zone "X" : Areas determined to be outside the 0.2% annual chance floodplain.

SHEET INDEX

- C-1.0 : Title Sheet
- C-1.1 : Existing Conditions & Demolition Plan
- C-2.0 : Site Plan
- C-3.0 : Grading Plan
- C-4.0 : Utility Plan
- C-4.1 : Utility Plan - East
- C-5.0 : Details
- C-6.0 : Storm Water Pollution Prevention Plan
- C-6.1 : Storm Water Pollution Prevention Notes & Details
- C-7.0 : Storm Water Management Plan

Note: Architectural, Structural, Mechanical, Electrical and Plumbing Plans in separate set.

PLANNING AND ZONING REQUIREMENTS

Reference: Village of West Alexandria
Zone: E - Education Uses
Proposed Use: School Bus Garage and Parking Lot

PERMITTING CONTACT INFORMATION:

VILLAGE ADMINISTRATOR
Contact: Adam Beneke
Telephone: 937-533-1154
Email: va@westalexoh.com

PLANNING AND ZONING
Zoning Department
Contact: Adam Beneke
Telephone: 937-839-4168
Email: zoning@westalexoh.com

UTILITY CONTACT INFORMATION:

SANITARY SEWER, STORM SEWER & WATER
Service Department
Contact: Jim Hans
Telephone: 937-839-4151
Email: water@westalexoh.com



R1

Date

Description

Item

SITE DEVELOPMENT PLAN FOR
**TWIN VALLEY SCHOOLS
 BUS MAINTENANCE FACILITY**
 100 EDUCATION DRIVE
 WEST ALEXANDRIA, PREBLE COUNTY, OHIO



Design: MKS	Proj: 22.174
Draw: MKS	Dwg: 22.174.DWG
Check: JDB	Tab: C-1.0 TS
Scale: N/A	

Date: 02.24.2023

Sheet: TITLE SHEET

Sheet No.: C-1.0

ISSUE LOG	
Description	Date
Bid/Construction Set	02.24.23

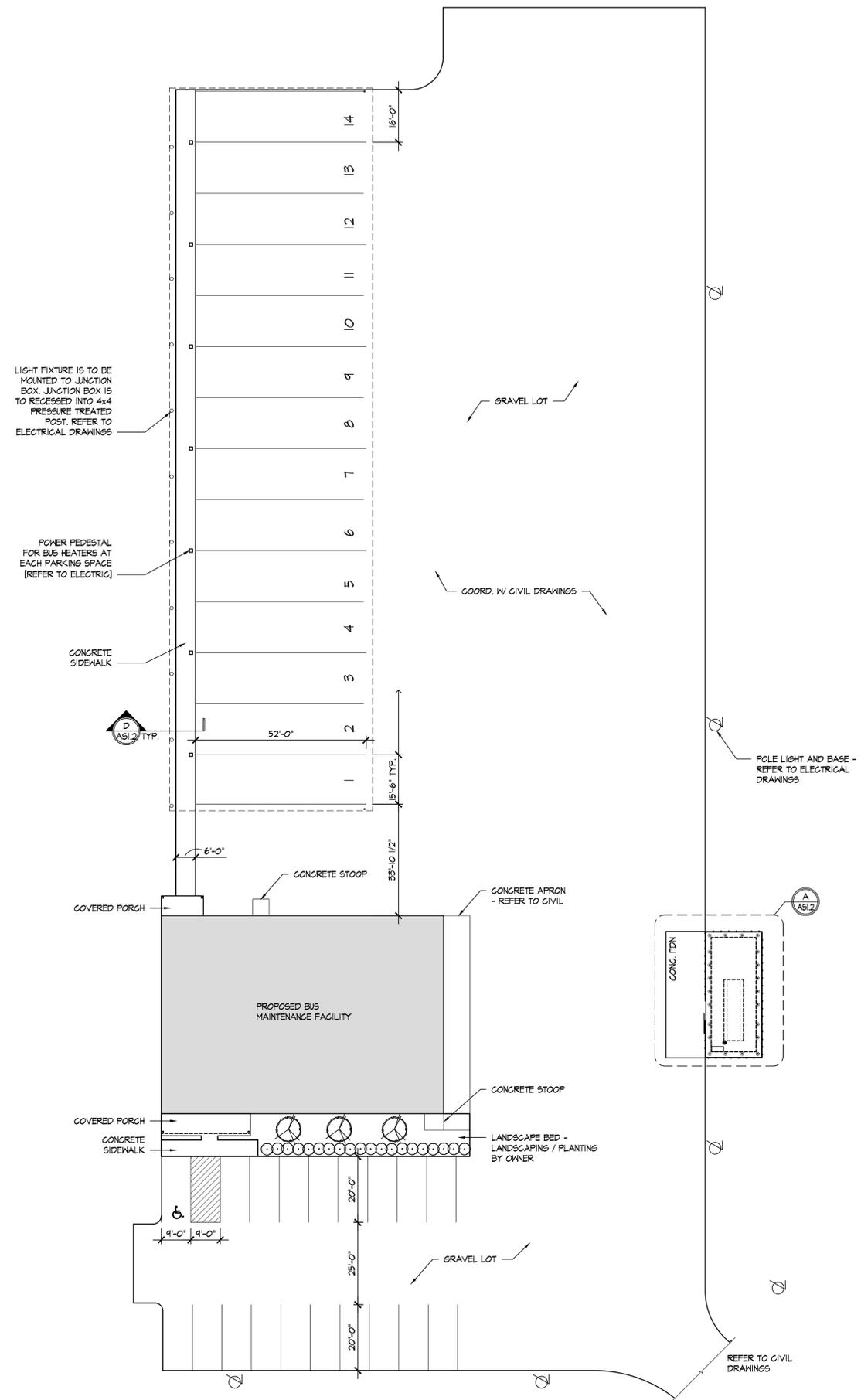




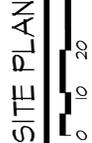
Jonathan Robert Schaaf #14503
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Proposed Bus Maintenance Facility
Twin Valley Community
Local School District
100 Education Drive
West Alexandria, Ohio 45381



NORTH



SCALE: 1" = 20'-0"

ARCHITECTURAL SITE PLAN

Print Record

- 01/06/23 Review
- 02/02/23 Progress Set
- 02/10/23 Progress Set
- 02/24/23 Bid/Const. Set

Project Number

2022-071

Date

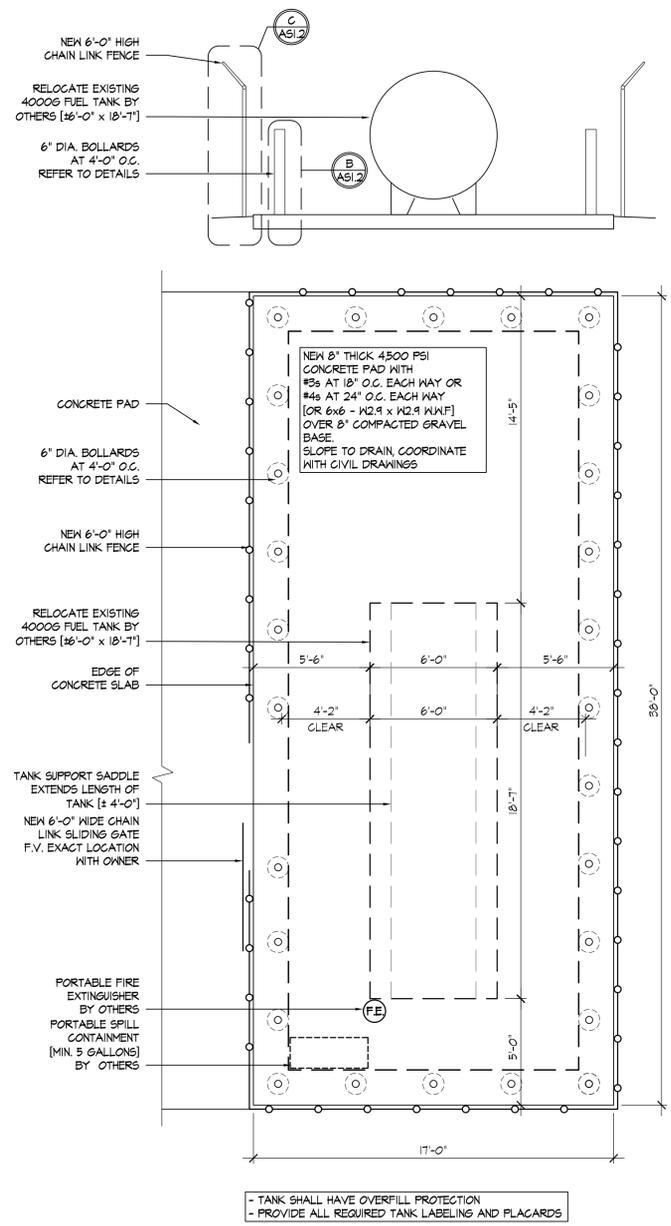
February 24, 2023

Sheet Title

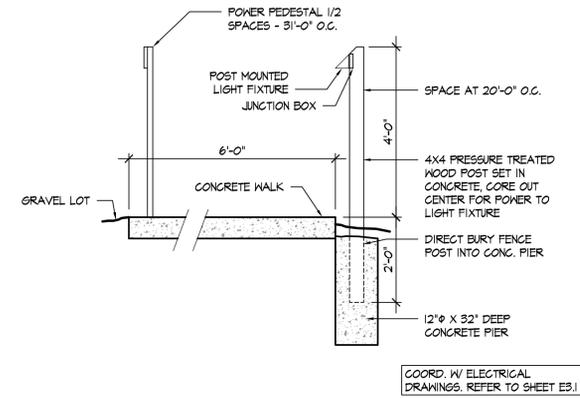
ARCHITECTURAL SITE PLAN

Sheet Number

ASI.1

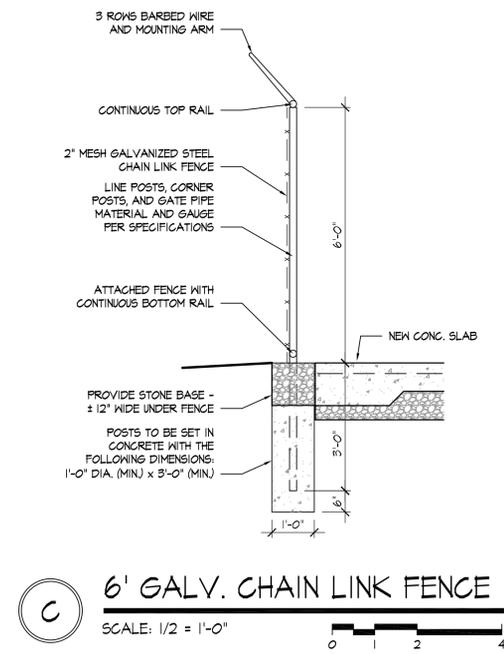
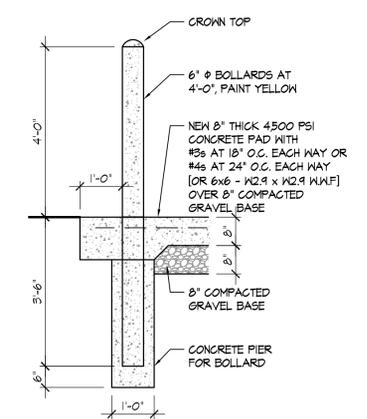


A ENLARGED FUEL TANK PLAN
SCALE: 1/4" = 1'-0"
0 2 4 8



B FUEL TANK BOLLARD DETAIL
SCALE: 1/2" = 1'-0"
0 1 2 4

POST EXCAVATION:	A. 4' FENCE: 36" BELOW GRADE
	B. 6' FENCE: 36" BELOW GRADE
	C. 8' FENCE: 36" BELOW GRADE
	D. 12' FENCE: 48" BELOW GRADE
	E. 18' FENCE: 48" BELOW GRADE
CONCRETE DIAMETER:	A. 4' FENCE: 12" DIA.
	B. 6' FENCE: 12" DIA.
	C. 8' FENCE: 12" DIA.
	D. 12' FENCE: 16" DIA.
	E. 18' FENCE: 16" DIA.
LINE POSTS: SPACE LINE POSTS UNIFORMLY AT:	A. 4' FENCE: 10' O.C. MAX
	B. 6' FENCE: 10' O.C. MAX
	C. 8' FENCE: 8' O.C. MAX
	D. 12' FENCE: 8' O.C. MAX
	E. 18' FENCE: 8' O.C. MAX
TOP, BOTTOM, MIDDLE AND INTERMEDIATE RAILS: 1.86"	
STEEL LINE POST:	A. HEIGHT UP TO AND INCLUDING 6': 1.9"
	B. HEIGHT OVER 6' UP TO AND INCLUDING 8': 2.875"
	C. HEIGHT OVER 8' UP TO AND INCLUDING 12': 4.0"
	D. HEIGHT OVER 12' UP TO AND INCLUDING 18': 4.0"
STEEL END, CORNER AND PULL POST:	A. HEIGHT UP TO AND INCLUDING 6': 2.375"
	B. HEIGHT OVER 6' UP TO AND INCLUDING 8': 4.0"
	C. HEIGHT OVER 8' UP TO AND INCLUDING 12': 6.625"
	D. HEIGHT OVER 12' UP TO AND INCLUDING 18': 6.625"
SWING GATE POST:	A. GATE LEAF WIDTH UP TO AND INCLUDING 6': 4.0" OD PIPE
	B. GATE LEAF WIDTH OVER 4' TO 10': 6.625" OD PIPE



C 6' GALV. CHAIN LINK FENCE
SCALE: 1/2" = 1'-0"
0 1 2 4

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Twin Valley Community
Local School District
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West Alexandria, Ohio 45381

Print Record

01/06/23	Review
02/02/23	Progress Set
02/10/23	Progress Set
02/24/23	Bid/Const. Set

Project Number	2022-071
Date	February 24, 2023
Sheet Title	SITE DETAILS

Sheet Number
AS1.2

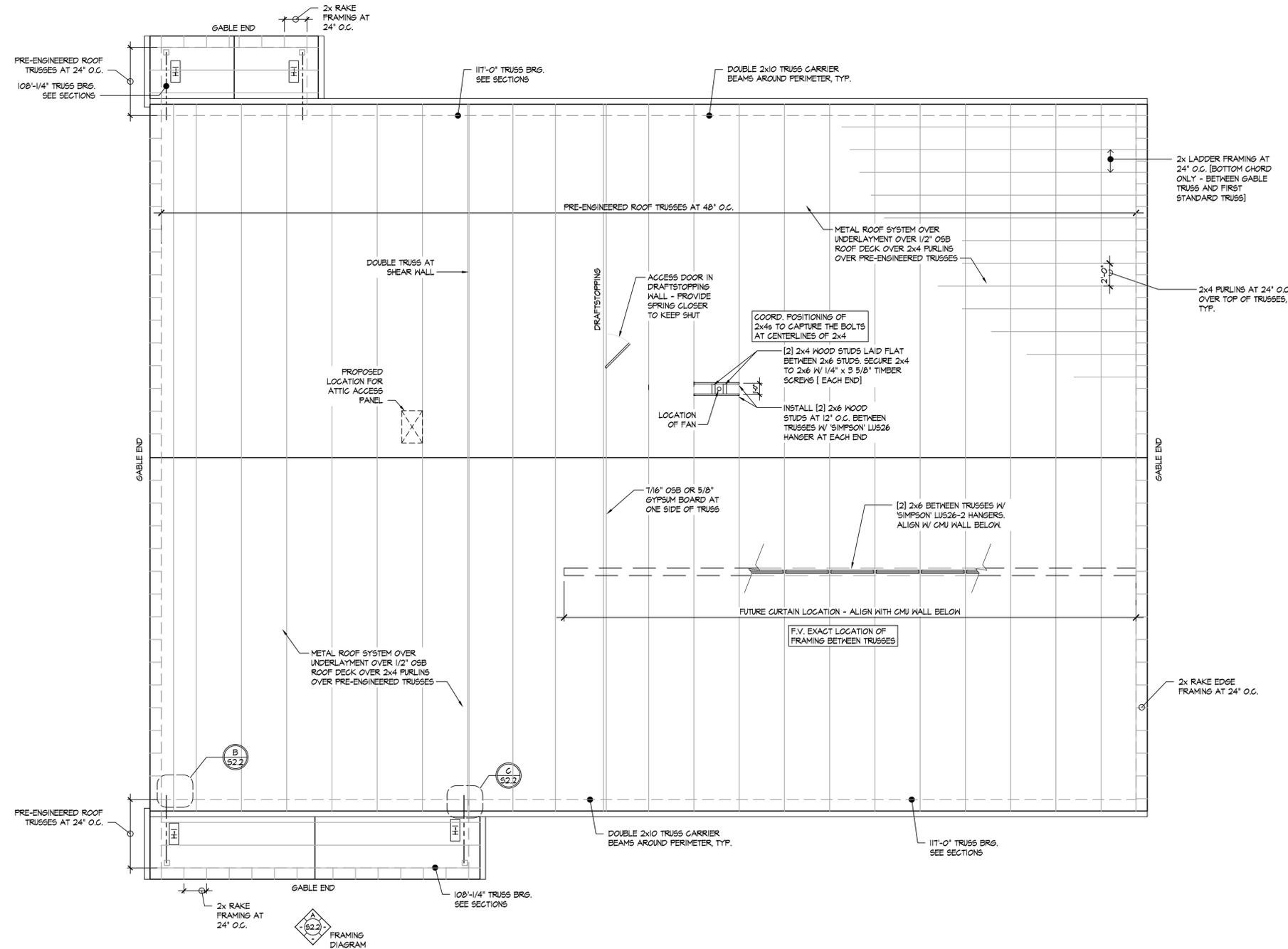
ROOF DESIGN / FRAMING NOTES:

1. ALL ROOF PITCHES ARE AS NOTED ON ROOF PLAN. ADJUST TRUSS HEIGHTS TO ALLOW FASCIA TO ALIGN AS APPROPRIATE.
2. REFER TO PLAN AND SECTIONS FOR BEARING HEIGHTS.
3. PROVIDE H-CLIPS AT ALL ROOF SHEATHING JOINTS.
4. ALL TRUSSES AND RAFTERS SHALL BE SECURED TO WALL FRAMING WITH HURRICANE STYLE ANCHOR STRAPS. ALL STRAPS SHALL BE ABLE TO RESIST UPLIFT FORCES SHOWN ON THE TRUSS DRAWINGS, BUT FOR NEVER LESS THAN ITS LB.
5. PROVIDE ATTIC DRAFT STOPPING TO UNDERSIDE OF ROOF DECK. MAXIMUM ALLOWABLE AREA 3,000 S.F.
6. PRE-ENGINEERED ROOF TRUSSES SHALL BE DESIGNED FOR 10 PSF BOTTOM CHORD DEAD LOAD, 10 PSF TOP CHORD DEAD LOAD AND 25 PSF TOP CHORD LIVE LOAD. TRUSSES SHALL BE DESIGNED FOR A TOTAL LOAD DEFLECTION OF L/240.
7. TRUSSES SHALL NOT BE SPACED FARTHER APART THAN 48' O.C.
8. PROVIDE 1/2" OSB ROOF SHEATHING W/ 8d NAILS AT 6' O.C. [EDGE] AND 12' O.C. [FIELD].

BEAM / HEADER / LINTEL SCHEDULE

#	SIZE
H-1	[2] 2x10 SYP #1 [ONE ON EACH SIDE OF THE POST] W/ [2] 1/2" DIA. THRU-BOLTS, TYP.
H-2	[3] 2x10 SYP #1
H-3	[3] 2x12 SYP #1
H-4	[2] 2x10 SYP #1 [TO ANCHOR H-1 BETWEEN POSTS]

** COORDINATE WITH FLOOR PLAN FOR HEADER REQUIREMENTS



ROOF FRAMING PLAN
 SCALE: 3/16" = 1'-0"
 NORTH

RDA GROUP ARCHITECTS
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 Dayton, Ohio 45459
 O: 937.610.3440
 F: 937.610.3441

STATE OF OHIO
 JONATHAN ROBERT SCHAAF
 ARCHITECT
 #14503
 EXPIRES 12/31/2023

Jonathan Robert Schaaf #14503
 Expiration Date 12/31/2023

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Proposed Bus Maintenance Facility
 Twin Valley Community
 Local School District
 100 Education Drive
 West Alexandria, Ohio 45381

Print Record

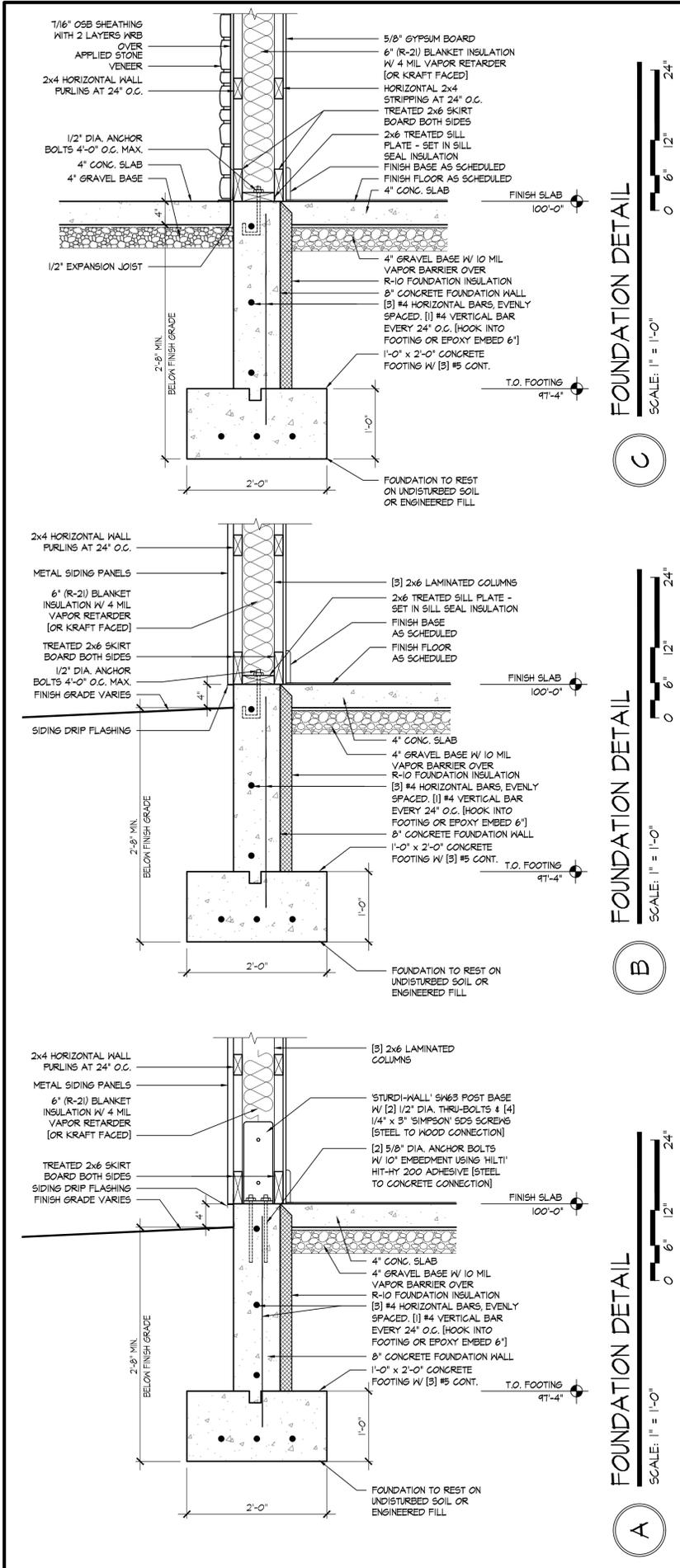
01/06/23	Review
02/02/23	Progress Set
02/10/23	Progress Set
02/24/23	Bid/Const. Set

Project Number
2022-071

Date
February 24, 2023

Sheet Title
ROOF FRAMING PLAN

Sheet Number
51.2



PART 1: SCHEDULE OF SPECIAL INSPECTIONS

NO.	ITEM	REQUIRED	CONTINUOUS INSPECTION	PERIODIC INSPECTION
3	CONCRETE CONSTRUCTION (1705.3 OBC) - WELDING REINFORCING BARS - MATERIAL TESTS	X		X
6	SOILS (1705.6 OBC)	X		X

PART 2: LIST OF SPECIAL INSPECTORS

NO.	ITEM	INSPECTION COMPANY	NAME OF INSPECTOR
1	SPECIAL CASES (1705.1 OBC)		
2	STEEL CONSTRUCTION (1705.2 OBC)		
3	CONCRETE CONSTRUCTION (ACI 301, ACI 318, ACI 315, ACI 308 FOR WINTER CONCRETING) AND ACI 305 (FOR HOT WEATHER CONCRETING)		
4	MASONRY CONSTRUCTION (1705.4 OBC)		
5	WOOD CONSTRUCTION (1705.5 OBC)		
6	SOILS (1705.6 OBC)		
7	DRIVEN DEEP FOUNDATION (1705.7 OBC)		
8	CAST-IN-PLACE DEEP FOUNDATION (1705.8 OBC)		
9	HELICAL PILE FOUNDATION (1705.9 OBC)		
10	FABRICATED ITEMS (1705.10 OBC)		
11	WIND RESISTANCE (1705.11 OBC)		
12	SEISMIC RESISTANCE (1705.12 OBC)		
13	TESTING FOR SEISMIC RESISTANCE (1705.13 OBC)		
14	SPRAYED FIRE-RESISTANT MATERIALS (1705.14 OBC)		
15	FIRE RESISTANT COATINGS (1705.15 OBC)		
16	EPIS SYSTEM (1705.16 OBC)		
17	FIRE-RESISTANT PENETRATION/Joint (1705.17 OBC)		
18	TESTING FOR SMOKE CONTROL (1705.18 OBC)		

SUPPLEMENTAL STRUCTURAL SPECIFICATIONS:

GENERAL STRUCTURAL NOTES

- GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE CONTRACT DOCUMENTS AS TO THE QUALITY OR QUANTITY OF WORK REQUIRED, THE BETTER QUALITY OR GREATER QUANTITY SHALL BE PROVIDED UNLESS INSTRUCTIONS ARE OTHERWISE GIVEN IN WRITING.
- GOVERNING CODE: 2017 OHIO BUILDING CODE.
 - THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS, OR TIE-DOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
 - IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
 - THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS RELATING TO EXISTING CONSTRUCTION AND EXISTING SERVICE ON THE SITE.

CONCRETE

- COMPLY WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301)", ACI 318, ACI 315, ACI 308 (FOR WINTER CONCRETING) AND ACI 305 (FOR HOT WEATHER CONCRETING).
- KEEP COPY OF "FIELD REFERENCE MANUAL" (ACI PUBLICATION SP-15 LATEST EDITION) AT PROJECT FIELD OFFICE.
- PROVIDE CONCRETE WITH THE FOLLOWING 28 DAY SPECIFIED STRENGTHS:
 - 4500 PSI WITH 4-6% ENTRAINED AIR - CONCRETE EXPOSED TO THE WEATHER IN THE FINISHED STRUCTURE, WATER CEMENT RATIO ≤ 0.45
 - 3000 PSI WITH 5/8" AGGREGATE & 1" SLUMP - MASONRY GROUT FILL, W/O ENTRAINED AIR - JOISTS, BEAMS, COLUMNS, AND ELEVATED SLAB.
 - 4000 PSI WITHOUT ENTRAINED AIR - SLAB ON GRADE WITH FIBERMESH TOPPING
 - 3500 PSI WITH 5/8" AGGREGATE & FIBERMESH REINFORCING-PRECAST
- TESTING LABORATORY TO SUBMIT ONE COPY OF ALL CONCRETE TEST REPORTS DIRECTLY TO STRUCTURAL ENGINEER.
- PROVIDE REINFORCING STEEL ASTM A615, A996 TYPE R OR TYPE A WITH 60 KSI MINIMUM YIELD POINT.
- REINFORCE ALL SLABS WITH FIBERMESH
 - LAP ALL COMPRESSION SPLICES 30 BAR DIAMETERS. PROVIDE TENSION LAPS IN ACCORDANCE WITH THE FOLLOWING:
 - A. IF MORE THAN 50% OF THE BARS ARE LAP SPLICED WITHIN A LAP LENGTH, PROVIDE LAPS IN ACCORDANCE WITH THE FOLLOWING TABLE (CLASS B SPLICES CATEGORY 3) UNLESS NOTED OTHERWISE:

BAR SIZE	#4	#5	#6	#7	#8	#9
TOP BAR	1'-4"	2'-5"	3'-0"	3'-10"	5'-3"	6'-10"
OTHER BAR	1'-4"	1'-10"	2'-3"	2'-11"	4'-0"	5'-3"
 - * HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE BELOW
 - B. IF LESS THAN ONE-HALF OF THE BARS ARE LAP SPLICED WITHIN A LAP LENGTH, THE ABOVE TABULATED LAP LENGTHS MAY BE DECREASED 30% (CLASS A SPLICES)
 - C. LAP WIRE MESH 12"
- FURNISH CLEARANCES BETWEEN REINFORCING STEEL AND CONCRETE SURFACE AS FOLLOWS:
 - 3" - CONCRETE PLACED AGAINST GROUND
 - 2" - FORMED SURFACES EXPOSED TO WEATHER OR GROUND
 - 1 1/2" - BEAMS AND COLUMNS
 - 3/4" - SLABS, JOISTS AND WALLS NOT EXPOSED TO WEATHER
- BEND ALL HORIZONTAL BOND BEAM AND FOOTING BARS 1'-6" AROUND CORNERS OR PROVIDE CORNER BARS WITH 3'-0" LAP.
- PROVIDE HORIZONTAL KEYWAYS IN CONSTRUCTION JOINTS IN BEAMS, JOISTS, SUPPORTED SLABS AND WALL FOOTINGS - MINIMUM 1/2" DEPTH WITH HEIGHT EQUAL TO ONE-THIRD OF MEMBER DEPTH.

LINTEL NOTES

- PROVIDE LINTELS FOR ALL DOOR, WINDOW, DUCT AND OTHER OPENINGS IN MASONRY WALLS. FOR UNSCHEDULED LINTELS, SEE ARCHITECTURAL DOOR SCHEDULE AND VIEW WINDOW DETAILS AND APPLY NOTES 2 THROUGH 7.
- WHERE ARCHITECTURAL DETAILS SPECIFY ANGLE LINTELS PER SCHEDULE.
- WHERE A STEEL SECTION PLUS A PLATE IS SPECIFIED, EXTEND THE PLATE THE LENGTH OF BEARING EACH SIDE OF MASONRY OPENING.
- PROVIDE LINTELS ABOVE MECHANICAL OPENINGS IN ALL BEARING WALLS WHERE THE OPENINGS OCCUR BELOW THE FIRST BLOCK COURSE FROM THE ROOF DECK. NON-BEARING WALLS WILL NOT REQUIRE LINTELS IF OPENING IS EXTENDED TO THE DECK. CHECK ARCHITECTURAL AND MECHANICAL DRAWINGS TO DETERMINE IF THIS REQUIREMENT EXISTS. USE TABLE IN NOTE 2 ABOVE TO DETERMINE THE ANGLES REQUIRED FOR OPENING SIZE, TO A MAXIMUM OF 4'-0". USE TABLE IN NOTE 3 ABOVE TO DETERMINE THE SECTION REQUIRED FOR OPENING SIZE GREATER THAN 4'-0". THE BOND BEAM MAY REPLACE STEEL SECTIONS ON NON-BEARING WALLS FOR OPENINGS NOT EXCEEDING 3'-0".
- ALL BEAM LINTELS SHALL BE CENTERED IN WALL UNLESS SPECIFICALLY DIMENSIONED OTHERWISE ON THE STRUCTURAL DRAWINGS.
- AT MASONRY OPENINGS HAVING CONTROL JOINTS AT ONE OR BOTH ENDS, PROVIDE A BOND BREAK AT ALL CONTACT SURFACES FOR THE LINTEL AT ITS BEARING POINT TO ALLOW HORIZONTAL MOVEMENT. PLACE BACKER ROD BETWEEN THE END OF LINTELS AND MASONRY TO PERMIT MOVEMENT.
- AT MECHANICAL OPENINGS LESS THAN 16" WIDE IN MASONRY WALLS, PROVIDE 1/4" PLATE LINTEL.
- ALL LINTELS IN EXTERIOR WALLS OR STEEL EXPOSED TO THE WEATHER IN THE FINISHED STRUCTURE SHALL BE GALVANIZED OR PAINTED.
- WHERE LINTELS ARE PERPENDICULAR OR SKENED TO EXTERIOR VENEER THE BEARING INDICATED ON DRAWING IS ON THE STRUCTURAL ELEMENT (NOT ON VENEER) UNLESS OTHERWISE NOTED.

WOOD FRAMING

- SPECIFICATIONS AND STANDARDS: DESIGN AND DETAILING OF CONNECTIONS SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION AS RECOMMENDED BY NATION FOREST PRODUCTS ASSOCIATION MATERIALS.
 - A. USE ONLY STRESS GRADE LUMBER WITH THE FOLLOWING MINIMUM PROPERTIES FOR DIMENSIONAL LUMBER FRAMING, UNLESS NOTED OTHERWISE ON DRAWING.

TYPE OF MEMBER	FB	FV	E
1. STUDS IN BEARING WALLS	875/1006	155	1,400,000 PSI
2. JOISTS & HEADERS	1200/1360	175	1,600,000 PSI
3. BEAMS	1200/1360	175	1,600,000 PSI
4. PARALLAMS	2400	290	2,000,000 PSI
 - B. TRUSSES - SEE TRUSS NOTES.
 - C. ALL STRUCTURAL LUMBER SHALL BE KILN DRIED TO 19% MOISTURE CONTENT.
 - 1. LIGHT GAUGE JOIST HANGERS AND FRAMING ANCHORS - 16 OR 18 GA. GALVANIZED STEEL SIZED FOR FULL LOAD CARRYING CAPACITY OF SUPPORTED MEMBER. PROVIDE SIMPSON HANGERS OR APPROVED EQUAL. USE ASTM 6185 GALVANIZED CONNECTORS WITH PRESERVATIVE TREATED WOOD UNLESS STAINLESS STEEL IS SPECIFIED ON DRAWINGS. USE GALVANIZED FASTENERS MEETING ASTM A193 WITH GALV. CONNECTORS IN EXTERIOR USES USE STAINLESS STEEL TYPE 316L FASTENERS WITH STAINLESS CONNECTORS.
 - 2. PLYWOOD SHEATHING:
 - ROOFS - 5/8" OSB SHEATHING. PANEL INDEX 24/0. EXCEPT WHERE NOTED OTHERWISE. USE 8d (0.131" x 2 1/2" MIN.)
 - 3. WHERE PLYWOOD FILLERS ARE CALLED OUT WITH LINTELS, THEY SHALL BE CONTINUOUS PIECES FOR LENGTH OF OPENING AND SHALL BE NAILED TO 2X5 WITH TWO ROWS OF 10d NAILS AT 12" O.C.

- PROVIDE SOLID BLOCKING IN FLOOR CONSTRUCTION UNDER BEARING WALLS, POSTS, MULTIPLE STUDS OR BEAM BEARINGS.
 - ALL MULTIPLE STUDS AT BEAM AND LINTEL BEARING SHALL BE NAILED TOGETHER WITH 10d AT 12" O.C.
 - MULTIPLE MEMBER BEAMS AND LINTELS SHALL BE NAILED TOGETHER WITH TWO ROWS OF 10d AT 12" O.C. USE 16d NAILS FOR MICROLAMMS.
 - PROVIDE DOUBLE STUDS AT ALL LINTEL AND WOOD BEAM BEARINGS UNLESS NOTED OTHERWISE.
 - WHEN SCREWS OR LAG BOLTS ARE REQUIRED, PILOT HOLES SHOULD BE USED FOR THE INSTALLATION. PROVIDE HOLE 50% OF FASTENER DIAMETER FOR S-P-F AND 70% FOR SO. PINE OR OAK.
 - FOR LUMBER EXPOSED TO WEATHER USE PRESERVATIVE TREATED LUMBER WITH ACG PRESERVATIVE. PROVIDE 0.20 PCF RETENTION FOR ABOVE GROUND USE. PROVIDE 0.40 PCF RETENTION FOR GROUND CONTACT USE & 0.60 PCF RETENTION FOR IN GROUND USE. BORATE PRESERVATIVE SHOULD BE USED FOR INTERIOR SILL PLATES ON CONCRETE OF MASONRY.
- CONSTRUCTION REQUIREMENTS:**
- MAKE ALL CUTS TRUE AND SQUARE FOR FULL BEARING AT STRUCTURAL JOINTS.
 - PROVIDE PLYWOOD NAILING AS RECOMMENDED BY THE AMERICAN PLYWOOD ASSOCIATION.
 - CONNECT ALL FRAMING AND SHEATHING SECURELY TOGETHER WITH NAILS, SPLICES, OR FRAMING ANGLES. FOLLOW MINIMUM REQUIREMENTS OF OHIO BUILDING CODE TABLE 2304.4.1 "FASTENING SCHEDULE" UNLESS NOTED OTHERWISE ON DRAWINGS.
 - NAILING REQUIREMENTS ARE BASED ON COMMON NAIL SIZES. ADDITIONAL NAILING WILL BE REQUIRED IF CEMENT COATED SINKERS OR BOX NAILS ARE USED. OBTAIN WRITTEN APPROVAL FROM STRUCTURAL ENGINEER BEFORE MAKING ANY SUBSTITUTION. NAIL GUL NAILS SHOULD MATCH THE DIAMETER OF THE SPECIFIED NAIL.
 - ALL SILL PLATES IN CONTACT WITH MASONRY WITHIN 8" OF EARTH OR ON CONCRETE BEARINGS ON EARTH SHALL BE PRESERVATIVE TREATED.

WOOD TRUSS NOTES

- TRUSS FABRICATOR TO DESIGN ALL TRUSS CONNECTIONS AND SUBMIT SHOP DRAWINGS FOR ALL TRUSSES/ DO NOT DEVIATE FROM TRUSS CONFIGURATION SHOWN ON DRAWINGS.
- PROVIDE UPWARD CAMBER IN TRUSS EQUAL TO THE LONG TERM DEAD LOAD DEFLECTION OF THE TRUSS.
- FOR FORCES SHOWN ON DRAWINGS (+) INDICATES TENSION; (-) INDICATES COMPRESSION.
- ALL TRUSS MEMBERS TO BE #2 SOUTHERN PINE KILN DRIED UNLESS NOTED OTHERWISE. ALL MEMBERS SHALL BE CUT TO BEAR AND BUTTED TIGHT. #5 KEBS ARE NOT PERMITTED.
- THE PROCEDURE AND EXECUTION OF ERECTING THE TRUSSES IS THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE TRUSSES DURING ERECTION AS WELL AS ALL PERMANENT BRACING REQUIRED. FOLLOW BRACING RECOMMENDATIONS OF BUILDING COMPONENT SAFETY INFORMATION BCSI 1-03 BY INTCA & TPI.
- ATTACH PERMANENT LATERAL BRACING TO WALLS OR ROOF FRAMING AT EACH END AND PROVIDE "X" BRACING AT 20' MAX. SPACINGS.
- DESIGN LOADS:
 - TOP CHORD: LIVE LOAD 25 PSF DEAD LOAD 10 PSF
 - BOTTOM CHORD: DEAD LOAD 10 PSF
- PROVIDE LARGER WEB MEMBERS AT CARRIER TRUSSES AS NECESSARY TO PROVIDE SUPPORT FOR MEMBERS FRAMING INTO TRUSS.
- PROVIDE WEDGE BLOCKS OR BOTTOM CHORD REINFORCING AS REQUIRED WHEN INTERSECTION OF CENTROID OF TOP CHORD AND BOTTOM CHORD OF TRUSS DOES NOT OCCUR OVER SUPPORT.
- PROVIDE PLYWOOD OR OSB SHEATHING TO BRACE TRUSS TOP CHORD TO ALL LOCATIONS OF PROVIDE CONTINUOUS 1x4 LATERAL BRACING AT 24" O.C. AT TRUSS TOP CHORD AND AT ALL TRUSS TOP CHORD PANEL POINTS.
- PROVIDE BOTTOM CHORD LATERAL BRACING FOR TRUSSES THAT ARE LIGHTLY LOADED TO RESIST UPLIFT FORCES.
- PROVIDE LARGER CHORD OF WEB MEMBERS WHERE REQUIRED FOR FASTENING AND SUPPORT OF JOIST HANGERS.
- PROVIDE HURRICANE CLIPS AT EACH END OF TRUSSES TO RESIST UPLIFT FORCES SHOWN ON THE TRUSS SHOP DRAWINGS UNLESS NOTED OTHERWISE ON DRAWINGS.

MISCELLANEOUS

- DESIGN SOIL BEARING 1500 PSF. NOTIFY ARCHITECT AND ENGINEER IF SOIL BEARING CAPACITY IS LESS THAN ASSUMED.
- VERIFY BEFORE FABRICATION OF CONSTRUCTION, ALL OPENINGS, LINTELS, EQUIPMENT SUPPORTS AND OTHER CONSTRUCTION PROVIDED FOR MECHANICAL WORK.
- STRUCTURAL SUPPORTS ARE DESIGNED FOR EQUIPMENT LOADS (INCLUDING CONCRETE PADS UNDER EQUIPMENT) SHOWN ON DRAWINGS. VERIFY EQUIPMENT WEIGHTS AND DIMENSIONS AND CONTACT STRUCTURAL ENGINEER IF ACTUAL WEIGHTS ARE GREATER THAN SHOWN.

DESIGN LOADS

- SOIL BEARING CAPACITY: 1500 PSF - ASSUMED [REFER TO GEOTECHNICAL REPORT BY ALT AND HITZIG]
- FLOOR LIVE LOAD: MEZZANINE / STORAGE LIVE LOAD [LIGHT]: 125 PSF OFFICE LIVE LOAD: 50 PSF LOBBIES AND FIRST-FLOOR CORRIDORS: 100 PSF GARAGE: DESIGN LOAD FOR BUSES, EXCEEDS 10,000 LBS GROSS VEHICLE WEIGHT RATING FOR LIVE LOAD REQUIREMENT
- ROOF LIVE LOAD: 20 PSF GROUND SNOW LOAD: 20 PSF ICE ON SNOW: 5 PSF SNOW EXPOSURE FACTOR: 0.7 SNOW LOAD IMPORTANCE FACTOR: 1.0 THERMAL FACTOR: 1.0 SEISMIC DESIGN CATEGORY: B
- GUARDRAILS: 200 PLF, SINGLE CONCENTRATED LOAD ALONG TOP

WIND LOAD:

- ULTIMATE DESIGN WIND SPEED: 115 MPH, 3 SEC. GUST
- EXPOSURE: C
- WIND IMPORTANCE FACTOR: 1.0
- BUILDING CATEGORY: I
- INTERNAL PRESSURE COEFFICIENT: +/- 0.18

FLOOD DESIGN:

- SITE IS NOT LOCATED IN FLOOD PRONE AREA, PER CORP. OF ENGINEERS.

SPECIAL LOADS: REFER TO PLANS AS APPLICABLE.

DEFLECTION LIMITATION CRITERIA

ALLOWABLE DEFLECTION OF STRUCTURAL MEMBERS	
INTERIOR WALLS / PARTITIONS	H/80
FLOORS	L/360
ALL OTHER STRUCTURAL COMPONENTS	L/240
EXTERIOR WALLS (PLASTER / STUCCO)	H/260
EXTERIOR WALLS W/ BRITTLE FINISH	H/240
EXTERIOR WALLS W/ FLEXIBLE FINISH	H/180
(H/80 PREVAILS DUE TO INTERIOR GYPSUM BOARD)	
LINTELS SUPPORTING MASONRY VENEER	L/600

RDA GROUP ARCHITECTS

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STATE OF OHIO
Professional Engineer
Jonathan Robert Schaaf #14503
Expiration Date 12/31/2023

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Proposed Bus Maintenance Facility
Twin Valley Community
Local School District
100 Education Drive
West Alexandria, Ohio 45381

Print Record

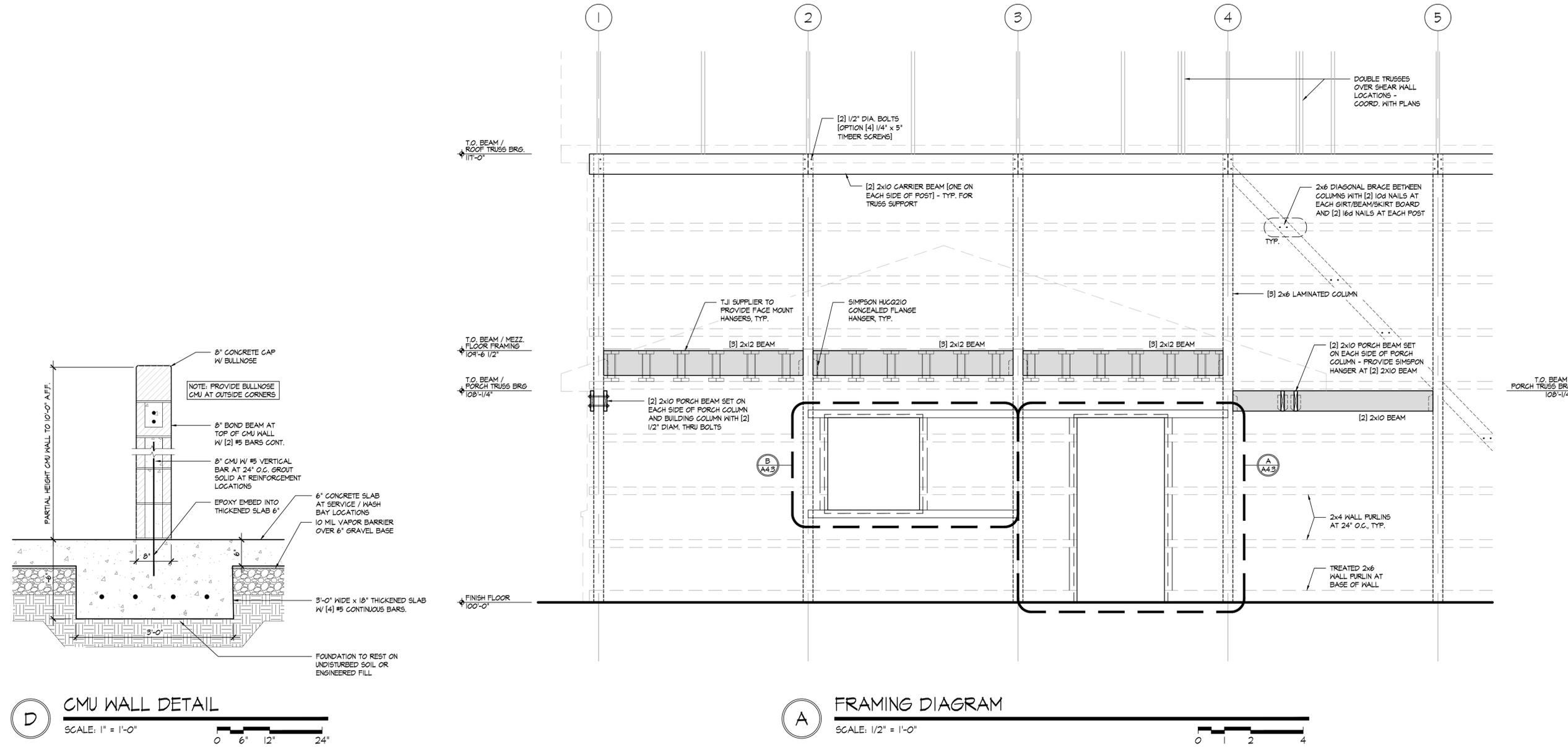
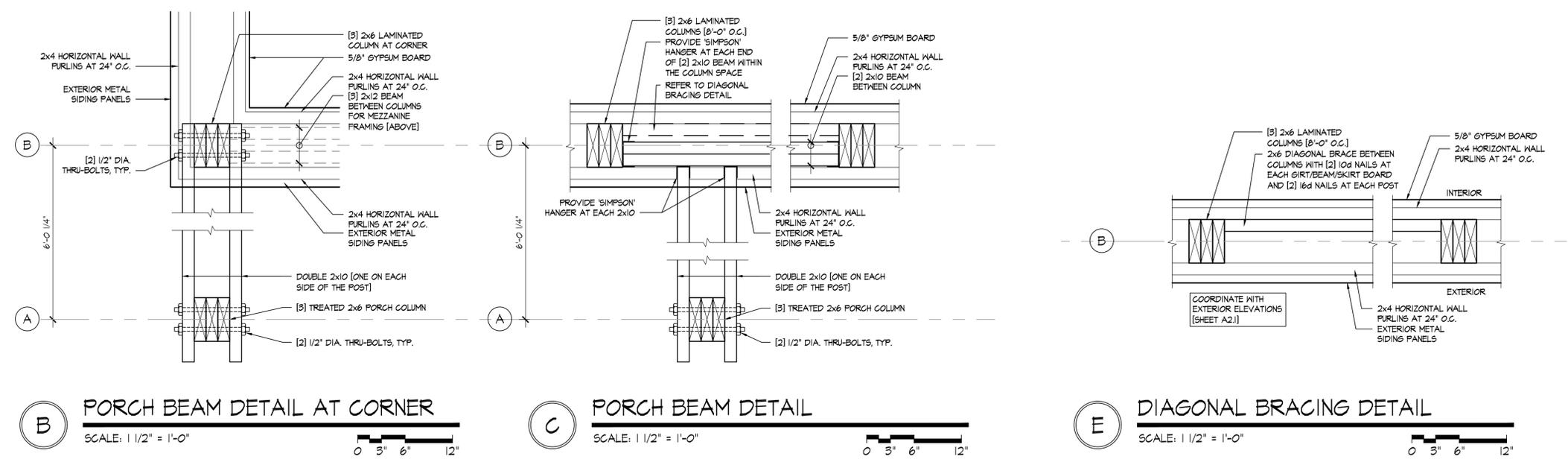
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02/02/23 Progress Set
02/10/23 Progress Set
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Project Number
2022-071

Date
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Sheet Title
STRUCTURAL NOTES, DETAILS

Sheet Number
52.1



Proposed Bus Maintenance Facility
**Twin Valley Community
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Sheet Title
STRUCTURAL DETAILS

Sheet Number
52.2

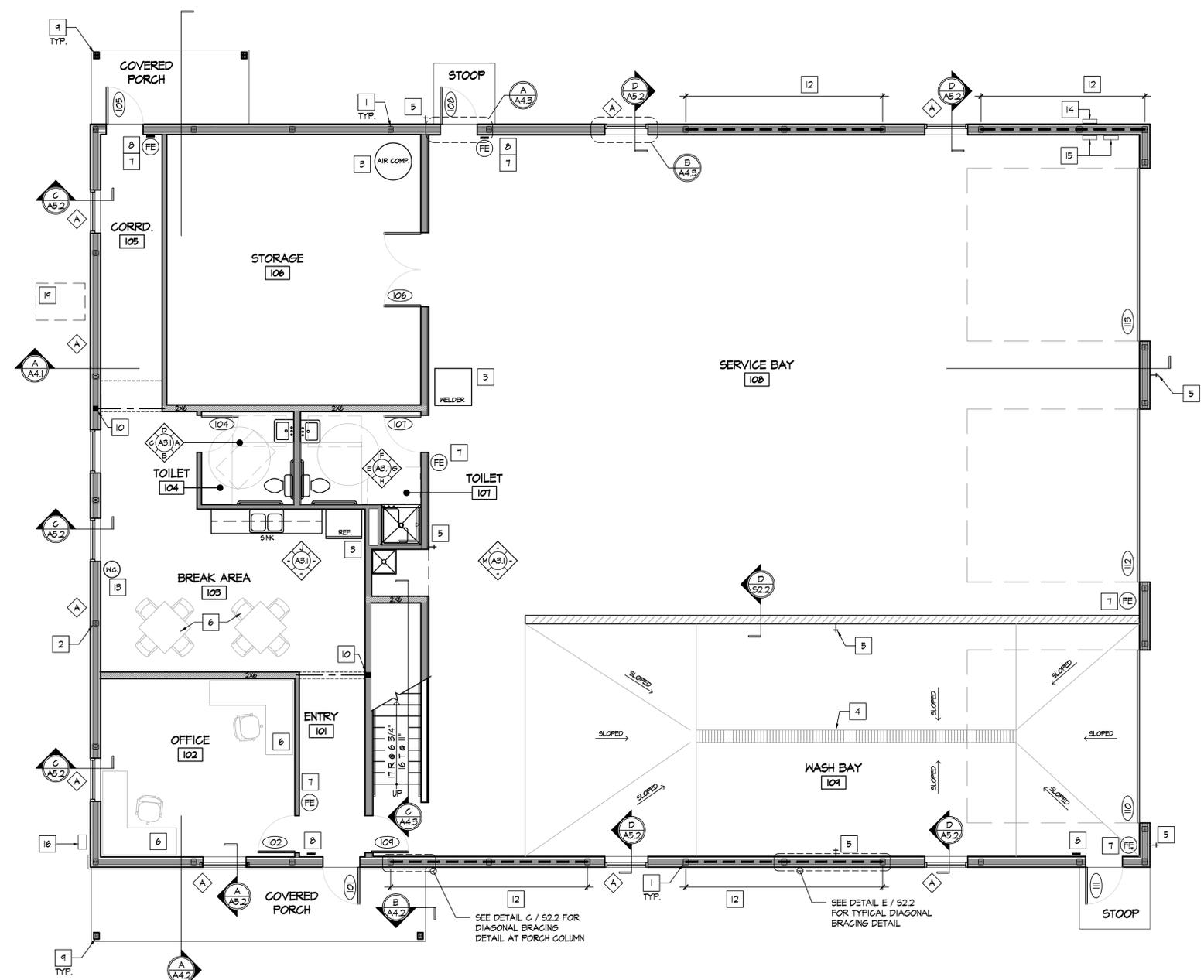
[NOT ALL NOTES USED ON THIS SHEET]
NEW CONSTRUCTION KEY NOTES

1. [3] 2x6 LAMINATED EAVE COLUMNS [8'-0" O.C.] MSR MACHINE STRESS RATED 2400 PSI BENDING. REFER TO WALL TYPES ON A1.3
2. [3] 2x6 LAMINATED GABLE END COLUMNS [10'-0" O.C.] MSR MACHINE STRESS RATED 2400 PSI BENDING. REFER TO WALL TYPES ON A1.3
3. EQUIPMENT BY OWNER. TYP. [CONTRACTOR TO PROVIDE BLOCKING FOR WALL MOUNTED ITEMS, TYP.]
4. TRENCH DRAIN AT WASH BAY. SLOPE CONCRETE SLAB TO DRAIN. REFER TO PLUMBING DRAWINGS
5. HOSE BIB, TYP. - REFER TO PLUMBING DRAWINGS
6. FURNISHINGS BY OWNER. TYP.
7. FIRE EXTINGUISHER. COORDINATE FINAL LOCATION WITH FIRE DEPARTMENT AS APPLICABLE.
8. INSTALL TACTILE EXIT SIGN ADJACENT TO ALL EGRESS DOORS, TYP.
9. [3] 2x6 TREATED PORCH COLUMN W/ METAL WRAP
10. LOAD BRG [2] 2x6 POST
11. 6'-0" REMOVABLE GATE AT THIS LOCATION
12. 2x6 DIAGONAL BRACE BETWEEN COLUMNS WITH [2] 10d NAILS AT EACH GIRT/BEAM/SKIRT BOARD AND [2] 16d NAILS AT EACH POST.
13. WATER COOLER - BY OWNER
14. INCOMING ELECTRIC SERVICE AND METER - REFER TO ELECTRICAL DRAWINGS
15. ELECTRICAL LOAD CENTERS - REFER TO ELECTRICAL DRAWINGS
16. INCOMING GAS SERVICE AND METER - REFER TO PLUMBING DRAWINGS
17. FURNACE / HYAC SYSTEM - REFER TO HYAC DRAWINGS
18. WATER HEATER - REFER TO PLUMBING DRAWINGS
19. CONDENSING UNIT - REFER TO HYAC DRAWINGS

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 ARCHITECT
 JONATHAN ROBERT SCHAAF #14503
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GENERAL NOTES

1. COORDINATE ALL ROUGH IN LOCATIONS WITH EQUIPMENT REQUIREMENTS, ETC.
2. COORDINATE ANY APPLICABLE FINISHES WITH OWNER.
3. FURNISHINGS AND ACCESSORIES BY OWNER.
4. INSTALL SEALANT AT ALL APPLICABLE INTERIOR AND EXTERIOR JOINTS.
5. FIELD COORDINATE FRAMING CONDITIONS & COORDINATE ANY DISCREPANCIES W/ ARCHITECT.
6. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS & CONDITIONS.
7. INSTALL FIRESTOP BLOCKING AT ALL LOCATIONS REQUIRED BY FRAMING, SOFFITS, ETC. TO ELIMINATE ALL OPEN STUD CAVITIES. PROVIDE FIRESTOP BLOCKING AT CEILING LINE AS REGD TYPICAL.
8. PROVIDE FIRE EXTINGUISHERS/CABINETS AS REQUIRED BY LOCAL FIRE DEPARTMENT.
9. COORDINATE WORK WITH APPLICABLE PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS. PROVIDE ANY REQUIRED ACCESS PANELS, ETC. TO ACCESS CONCEALED WORK.
10. DIMENSIONS
 - A. DIMENSIONS ARE TO FACE OF EXISTING FINISHES AND TO FACE OF STUD FOR NEW WALL FRAMING.
 - B. INTERIOR WOOD STUD PARTITIONS ARE 3-1/2" UNLESS NOTED OTHERWISE.
 - C. DO NOT SCALE DRAWINGS.
 - D. REFER TO DRAWING NOTES AND DETAILS FOR ANY SPECIAL NOTES THAT GOVERN LAYOUT.
11. LAYOUT
 - A. LOCATE JAMBS MINIMUM OF 4" FROM CORNER TO OUTSIDE EDGE OF FRAME WHERE POSSIBLE, EXCEPT WHERE NOTED OTHERWISE.
 - B. MAINTAIN ALL MANEUVERING CLEARANCE FOR ALL DOORS PER "MANEUVERING CLEARANCES AT DOORS DIAGRAM BASED UPON FIGURE 404.2.2 ANSI. COORDINATE ALL CONFLICTS WITH THE ARCHITECT.
12. ADJUSTMENTS
 - A. CAULK ALL OPEN JOINTS, INCLUDING GAPS BETWEEN COUNTERTOPS, B. CABINETS, FRAMES, TRIM, AND WALLS. FILL ALL JOINTS SLIGHTLY CONCAVE.
 - C. LUBRICATE AND ADJUST ALL OPERATING MECHANISMS, INCLUDING DOOR HARDWARE, FOR SMOOTH OPERATION.
13. FINISHES - REFER TO FINISH PLANS/SCHEDULES. COORDINATE ALL WITH OWNER AS APPLICABLE.
14. PROVIDE WOOD BLOCKING AS REQUIRED TO SUPPORT WALL MOUNTED ITEMS, CASEWORK, COUNTERTOPS, TOILET ACCESSORIES, DOOR STOPS, AND AS SPECIFICALLY NOTED. CONCEAL ALL BLOCKING IN WALLS. BLOCKING SHALL BE A MINIMUM OF 2x6. FIELD COORDINATE.

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Sheet Title
PROPOSED FLOOR PLAN
Sheet Number
A1.1

PROPOSED FLOOR PLAN
 SCALE: 3/16" = 1'-0"
 0 3 6 12
 NORTH

Proposed Bus Maintenance Facility
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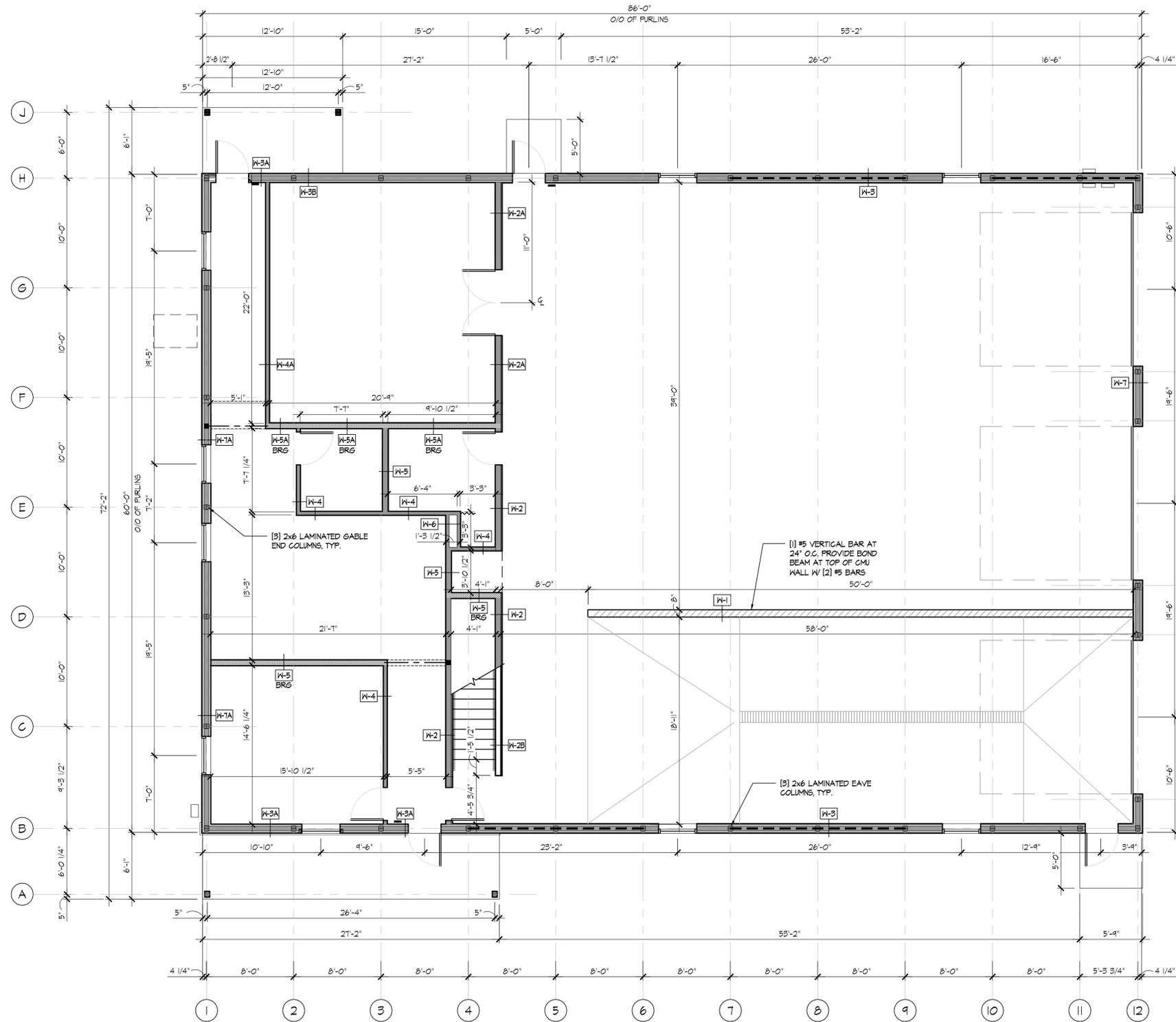
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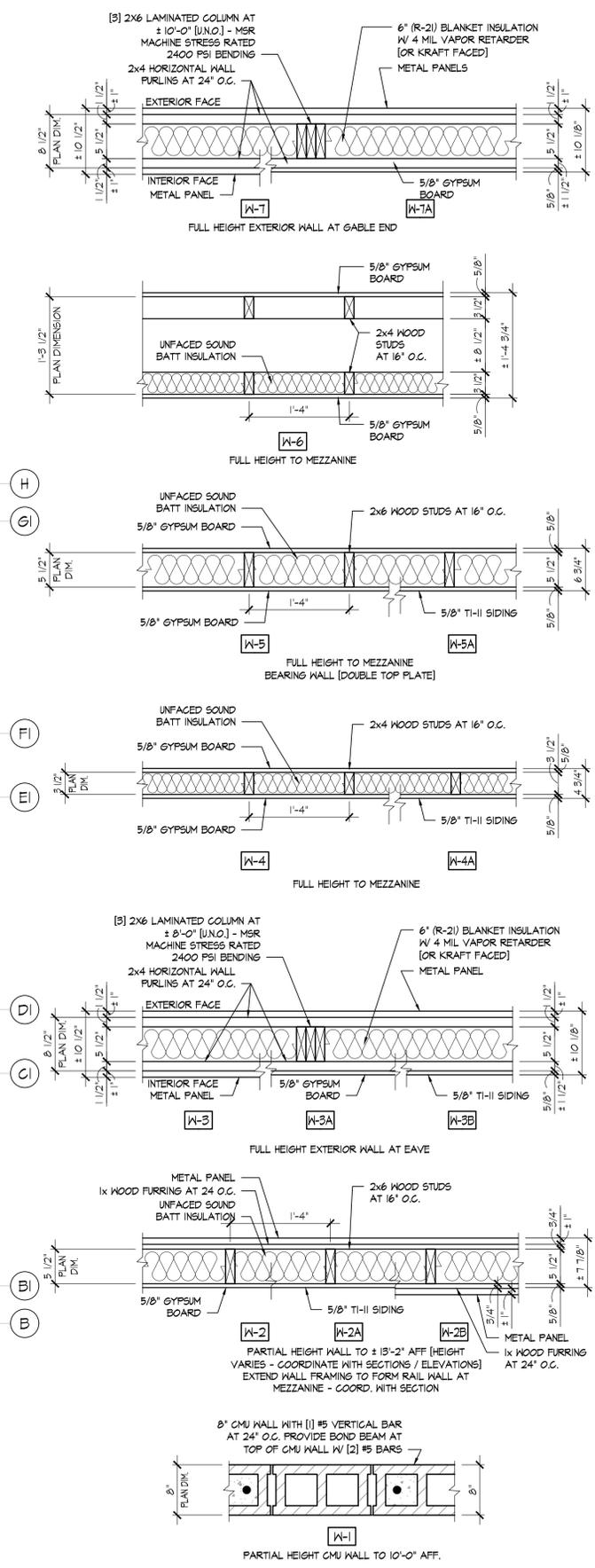
Date
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Sheet Title
DIMENSIONED FLOOR PLAN
WALL TYPES

Sheet Number



A DIMENSIONED FLOOR PLAN
 SCALE: 3/16" = 1'-0"
 0 3 6 12



B WALL TYPES
 SCALE: 1" = 1'-0"
 0 6" 12" 24"

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Sheet Title
 REFLECTED CEILING PLANS

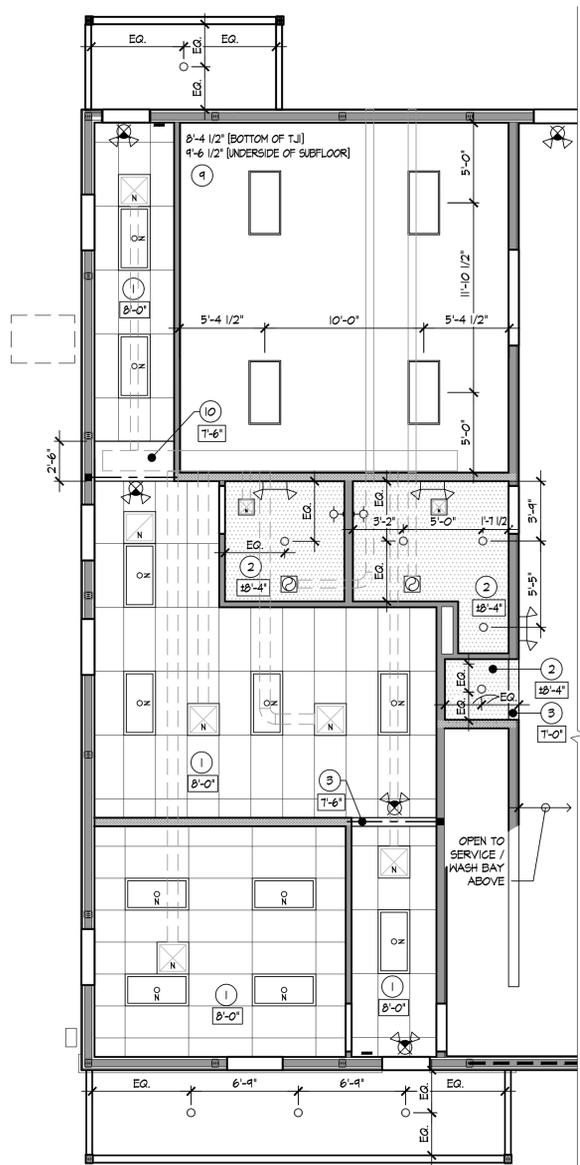
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A1.3

REFLECTED CEILING PLAN KEY NOTES

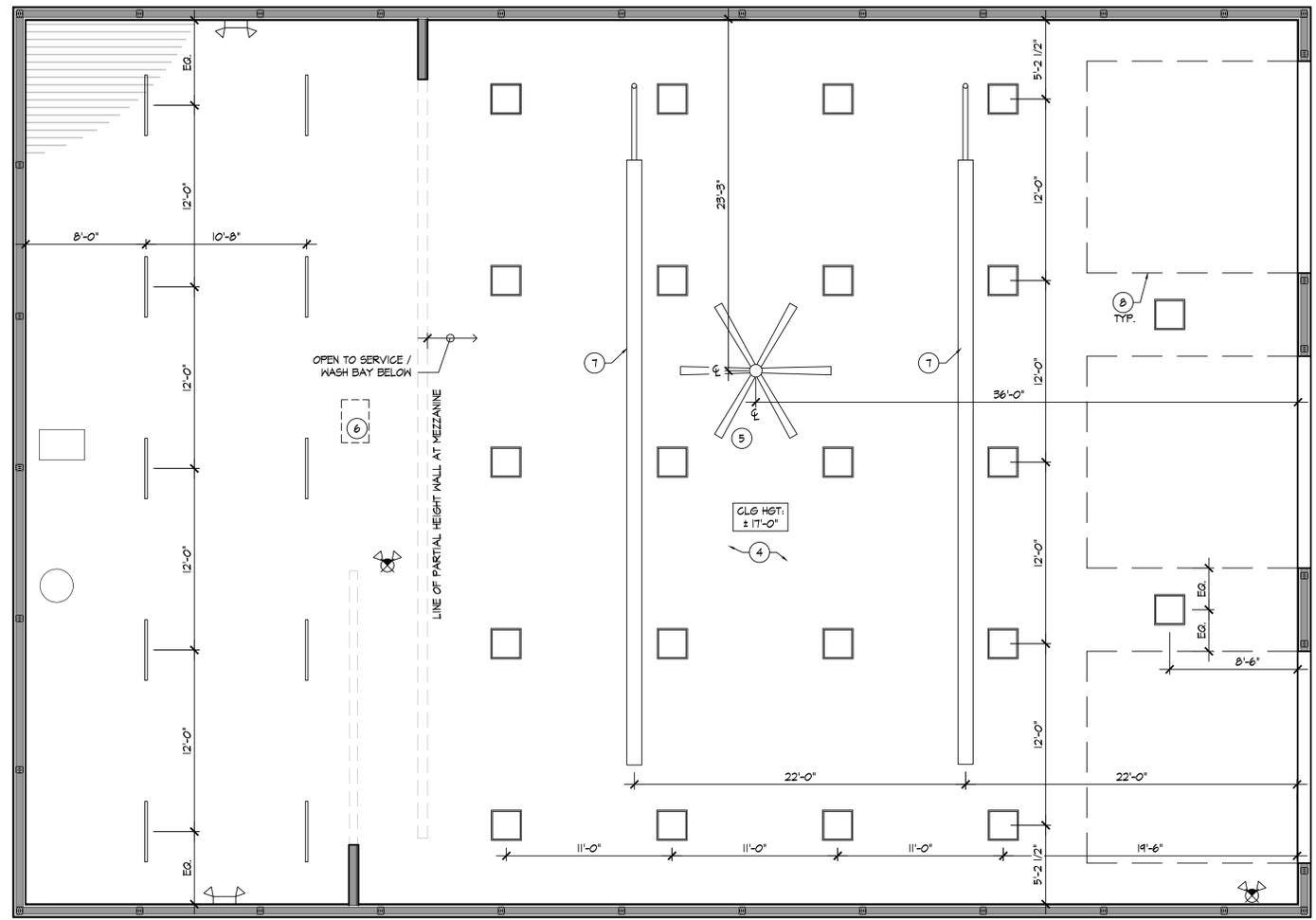
1. ACOUSTICAL TILE CEILING [ATC-1] AT HEIGHT INDICATED.
2. GYPSUM BOARD CEILING AT HEIGHT INDICATED.
3. GYPSUM BOARD BULKHEAD AT HEIGHT INDICATED.
4. METAL LINER PANELS CEILING AT HEIGHT INDICATED.
5. INDUSTRIAL FAN. REFER TO ELECTRICAL DRAWINGS.
6. 22x30 ATTIC ACCESS PANEL.
7. RADIANT HEATER, REFER TO MECHANICAL DRAWINGS.
8. LINE OF OVERHEAD DOOR.
9. EXPOSED STRUCTURE AT THIS LOCATION.
10. GYPSUM BOARD SOFFIT AT HEIGHT INDICATED.

SYMBOL LEGEND

-  ACOUSTIC TILE CEILING, HEIGHT AS INDICATED
-  GYPSUM BOARD CEILING, HEIGHT AS INDICATED
-  METAL LINER PANELS CEILING, HEIGHT AS INDICATED
-  RECESSED CAN LT. FIXTURE
COORD. WITH ELECTRICAL DRAWINGS
-  VANITY / SCONCE LT. FIXTURE
COORD. WITH ELECTRICAL DRAWINGS
-  EMERGENCY LIGHT
-  COMBO SIGN / LIGHT
COORD. WITH ELECTRICAL DRAWINGS
-  EXIT SIGN
-  2x2 LED LIGHT FIXTURE
-  2x4 LED LIGHT FIXTURE
-  4' SURFACE MOUNT STRIP LIGHT FIXTURE
COORD. WITH ELECTRICAL DRAWINGS
-  HVAC DIFFUSERS, REFER TO MECHANICAL DWG.
-  EXHAUST FAN - VENT DIRECT TO EXTERIOR -
COORDINATE WITH HVAC DRAWINGS BY OTHERS



A FIRST FLOOR REFLECTED CEILING PLAN
 SCALE: 3/16" = 1'-0"
 0 3 6 12



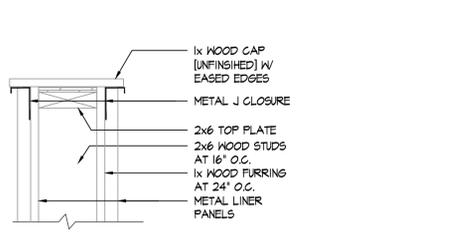
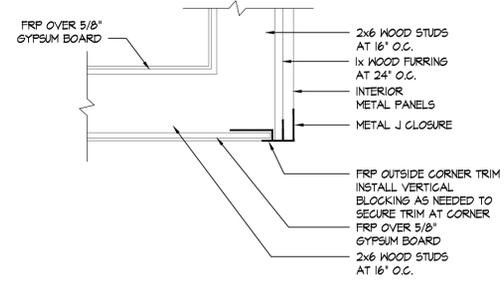
B MEZZANINE REFLECTED CEILING PLAN
 SCALE: 3/16" = 1'-0"
 0 3 6 12

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Sheet Title
FINISH PLANS
Sheet Number
A1.4

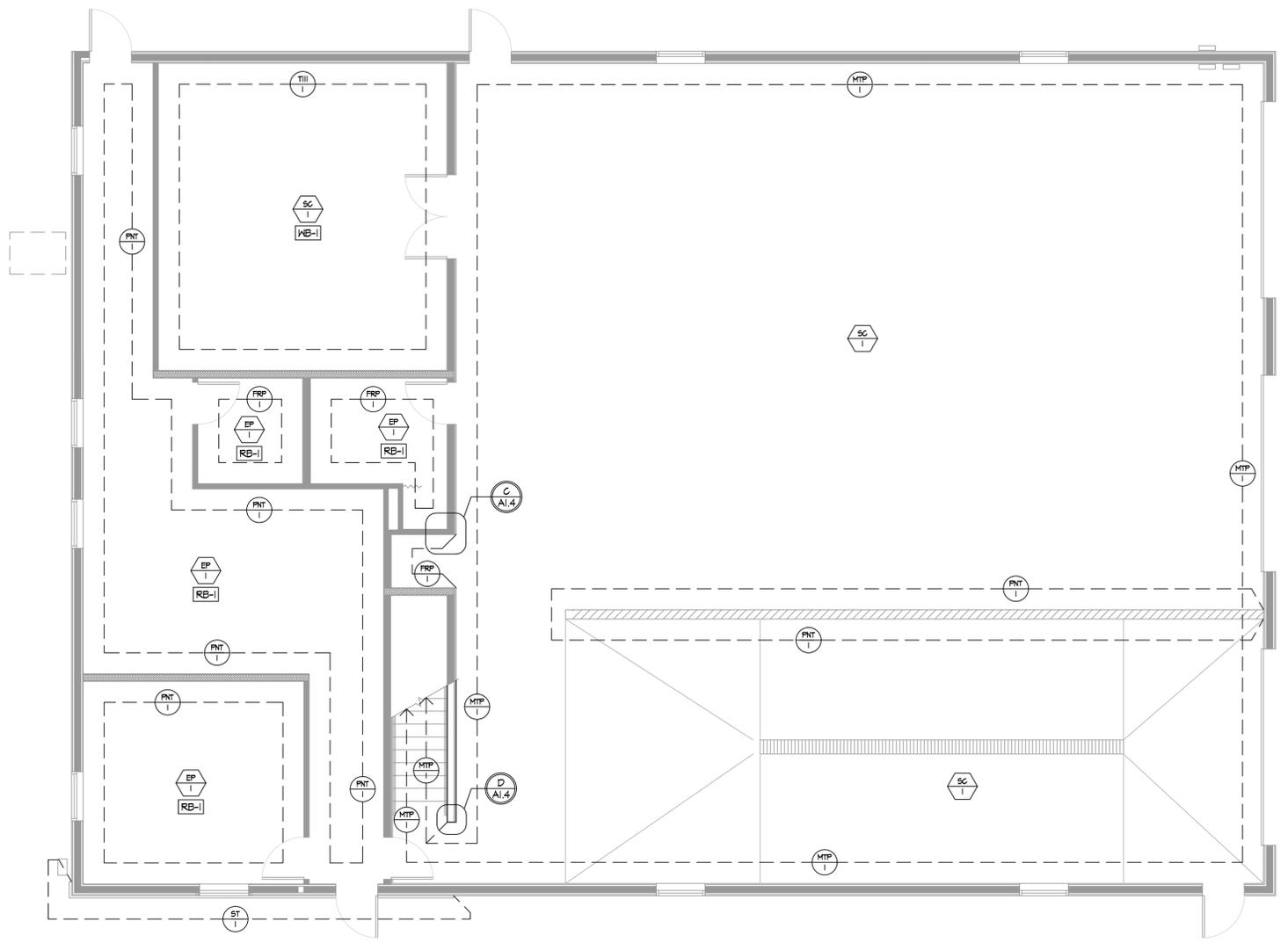
GENERAL NOTES

- ALL PAINTS TO BE NO-VOC IN NATURE. ALL PAINTS TO BE PURCHASED/MANUFACTURED AS SPECIFIED (IE- SHERWIN WILLIAMS PAINTS SHALL BE PURCHASED FROM SHERWIN WILLIAMS SUPPLIERS, ETC).
- ALL FIRE EXTINGUISHER CABINETS ARE TO BE PAINTED A SEMI-GLOSS FINISH TO MATCH ADJACENT WALL FINISH UNLESS OTHERWISE NOTED.
- ALL ACCESS PANELS ARE TO BE PAINTED A SEMI-GLOSS FINISH TO MATCH ADJACENT WALL FINISH UNLESS OTHERWISE NOTED.
- ALL GYPSUM BOARD CEILINGS ARE TO BE PAINTED WHITE.
- ALL DRYWALL SURFACES NOT INDICATED ON THE PLANS TO BE PAINTED PNT-1 UNLESS OTHERWISE NOTED.
- PAINT OR WALLCOVER FACE OF BULKHEAD TO MATCH BELOW WALL FINISH. UNDERSIDE OF BULKHEAD TO BE PAINTED WHITE.
- ALL FINISHES SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO ORDERING.
- CONTRACTOR SHALL USE MANUFACTURER'S RECOMMENDED ADHESIVES THAT ARE NON-TOXIC, LOW ODOR AND SOLVENT-FREE ADHESIVES SHALL BE ANTIMICROBIAL, WITH NO HAZARDOUS VAPORS AND CONTAIN NO CARCINOGENIC MATERIALS PER CURRENT OSHA REGULATIONS.
- ALL AREAS TO RECEIVE RB-1 BASE, COVE PROFILE AT VINYL FLOORING.
- ALL FLOORING TO BE INSTALLED USING THE TOOLS, ADHESIVES, INSTALLATION AND SEAMING METHODS RECOMMENDED BY MANUFACTURER'S INSTRUCTIONS.
- CONTRACTOR SHALL PROVIDE SMOOTH AND LEVEL TRANSITION BETWEEN ADJACENT FLOORING SURFACES. CONTRACTOR TO VERIFY AND CONFIRM THAT APPROPRIATE TRANSITIONS ARE USED AT THE INTENDED LOCATIONS.
- FINISH PRODUCTS SHALL BE FROM THE SAME DYE LOT.
- ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND REGULATIONS AND AUTHORITIES HAVING JURISDICTION.
- INSTALLATION OF ALL MATERIALS AND SYSTEMS SHALL COMPLY WITH APPLICABLE MANUFACTURER'S RECOMMENDATIONS FOR THE TYPE OF INSTALLATION. FOR PRODUCTS AND/OR EQUIPMENT HAVING A MANUFACTURER'S WARRANTY AVAILABLE, THE INSTALLATION SHALL BE AS REQUIRED FOR SUCH WARRANTY TO BE IN EFFECT.
- COORDINATE FLOOR PREP REQUIRED FOR PROPOSED FLOOR FINISHES.
- PROVIDE FLOOR PREP AS REQUIRED FOR NEW HOLLOW METAL DOOR FRAMES TO SET TIGHT TO FINISH FLOOR (NO GAPS PERMITTED BEYOND SEALANT JOINT)

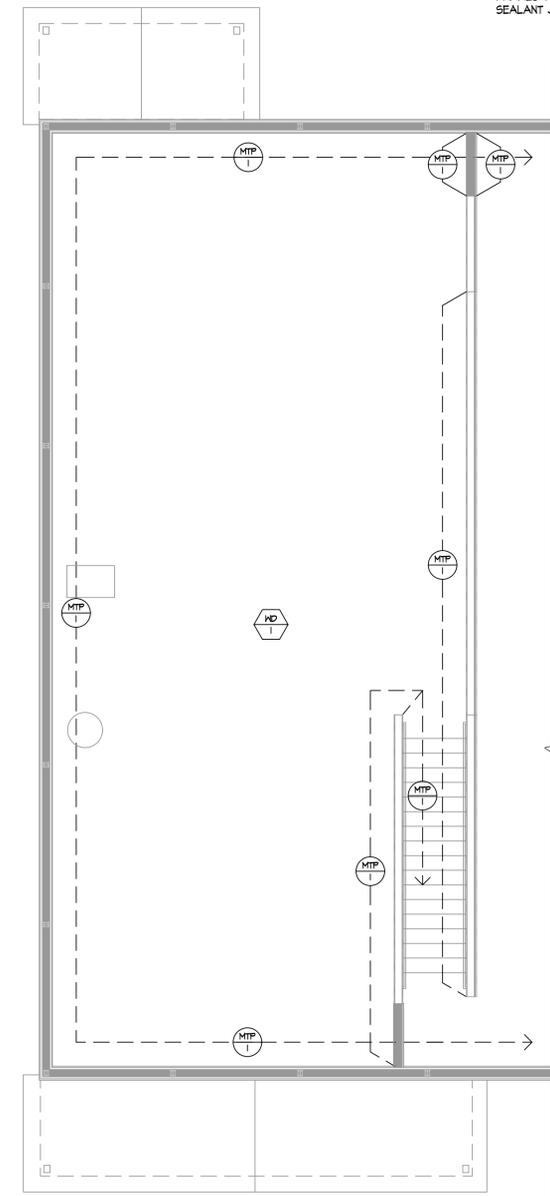


C MATERIAL TRANSITION DETAIL
 SCALE: 1 1/2" = 1'-0"

D MATERIAL TRANSITION DETAIL
 SCALE: 1 1/2" = 1'-0"



A FIRST FLOOR FINISH PLAN
 SCALE: 3/16" = 1'-0"



B MEZZANINE FINISH PLAN
 SCALE: 3/16" = 1'-0"

DRAWING KEY

- PNT-1 WALL FINISH TYPE
- GYP WALL FINISH # SPECIFICATION
- VCT-2 FLOOR FINISH
- FINISH # SPEC.
- VER-1 FLOOR FINISH
- LOC-1 LOCATION OF FLOORING TRANSITION
- VER-2 FLOOR FINISH

FINISH SPECIFICATIONS

- PNT-1:** GENERAL PAINT
 MANUF: SHERWIN WILLIAMS
 COLOR: GRAY MATTERS (SW 7066)
 FINISH: SATIN
 - RB-1:** RUBBER WALL BASE
 MANUF: ROPPE, 100 SERIES
 COLOR: 123 CHARCOAL
 SIZE: 4"
 - MTP-1:** METAL LINER PANEL
 MANUF: LESTER
 COLOR: BONE WHITE
 - TIII-1:** FLYWOOD SIDING PANEL (8" O.C.)
 MANUF: TBD
 FINISH: UNFINISHED
 - WD-1:** WOOD SUBFLOOR
 MANUF: TBD
 FINISH: UNFINISHED
 - WB-1:** WOOD BASE
 MANUF: TBD
 FINISH: UNFINISHED
 SIZE: 1x4
 - FRP-1:** FRP PANELS
 MANUF: TBD
 COLOR: WHITE
 - SC-1:** SEALED CONCRETE FINISH
 - ST-1:** APPLIED STONE VENEER
 MANUF: TBD
 COLOR:
 - EP-1:** EPOXY FLOOR
 MANUF: TORGINOL
 COLOR: 1/4" F6606 (1 PARTS)
 1/4" F1040 (1 PARTS)
 1/8" F4978 (1 PART)
 1/8" F1800 (1 PART)
 - PL-1:** PLASTIC LAMINATE
 MANUF: WILSONART
 COLOR: HANGSPUN SLTE (5035-50)
 FINISH: FINE VELVET FINISH
 - PL-2:** PLASTIC LAMINATE
 MANUF: FORMICA
 COLOR: STOP RED (034-50)
 FINISH: MATTE
- [SEE SPECS FOR ADDITIONAL CUSTOM EPOXY INFORMATION]

[X-#] BEAM / HEADER / LINTEL SCHEDULE

#	SIZE
H-1	[2] 2x10 SYP #1 [ONE ON EACH SIDE OF THE POST] w/ [2] 1/2" DIA. THRU-BOLTS, TYP.
H-2	[3] 2x10 SYP #1
H-3	[3] 2x12 SYP #1
H-4	[2] 2x10 SYP #1 [TO ANCHOR H-1 BETWEEN POSTS]

** COORDINATE WITH FLOOR PLAN FOR HEADER REQUIREMENTS

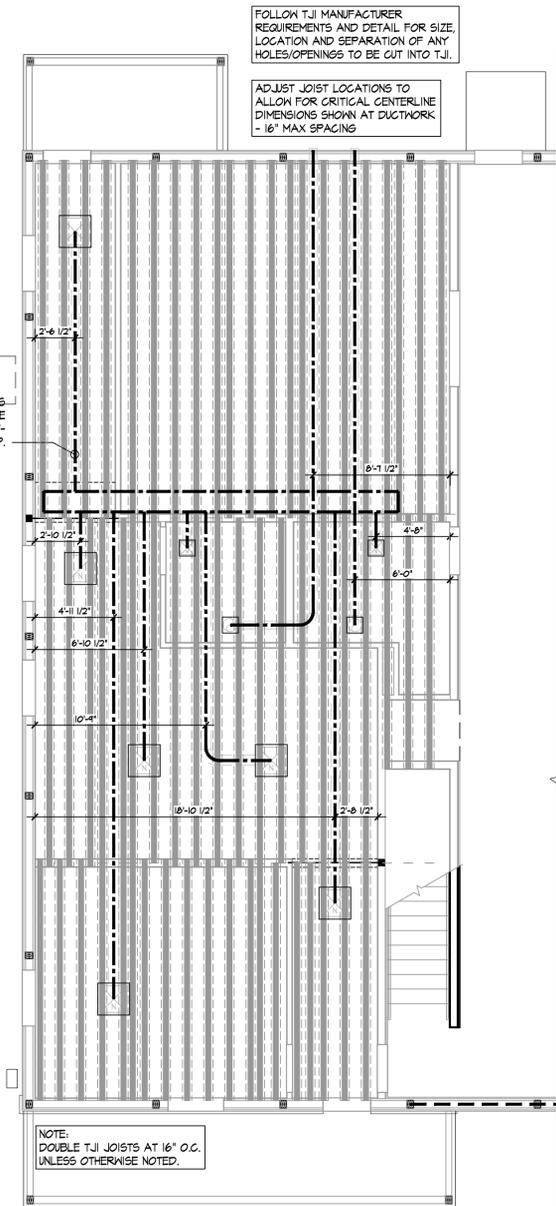
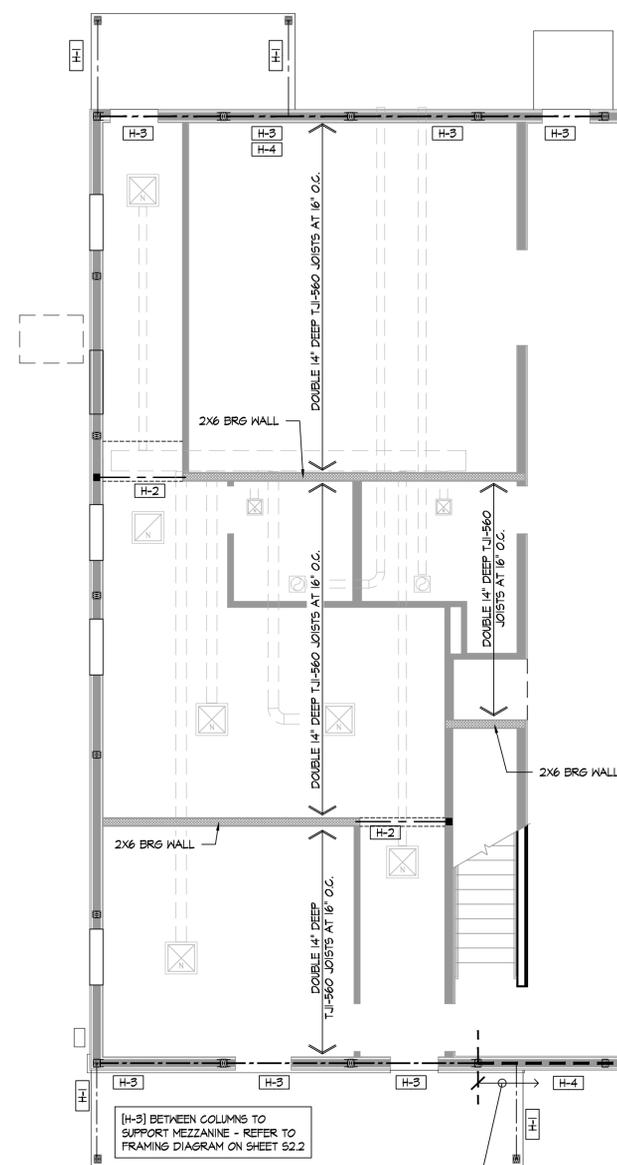
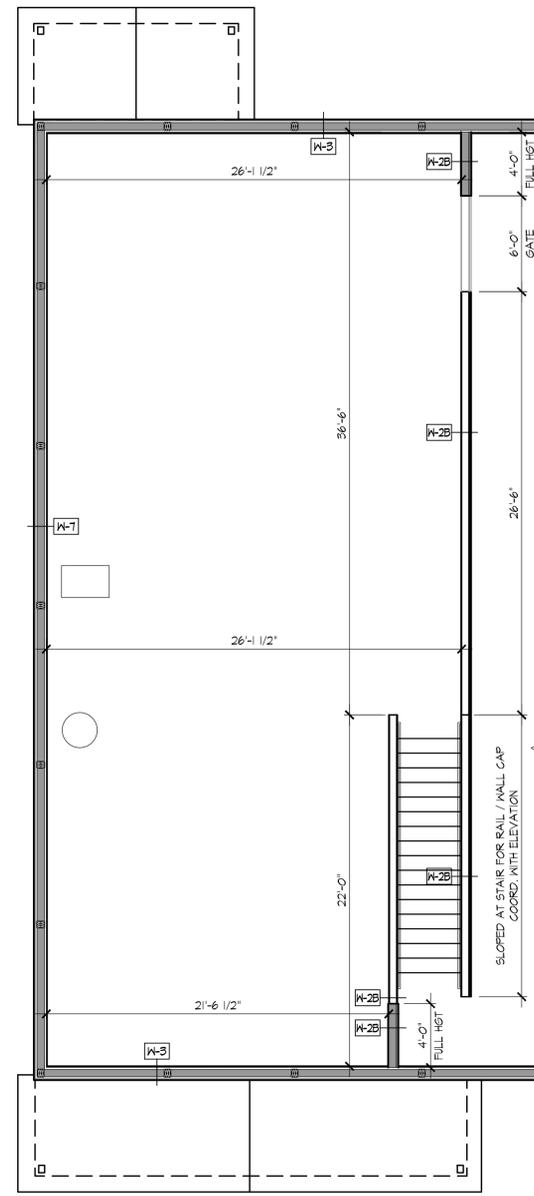
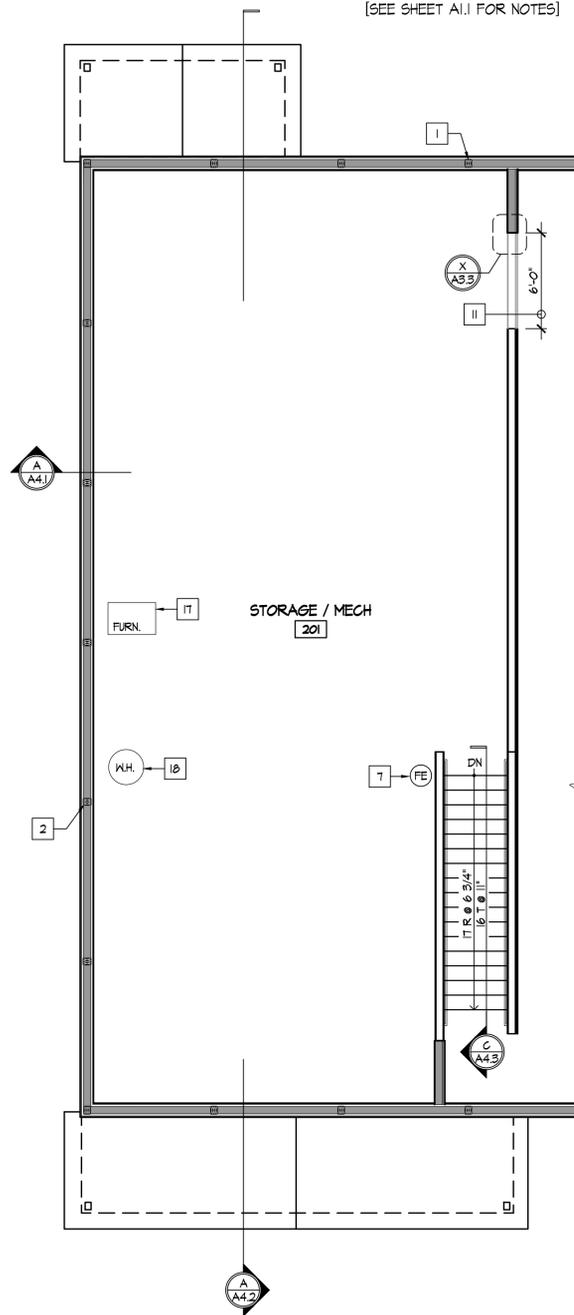


Jonathan Robert Schaaf #14503
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[SEE SHEET A1.1 FOR NOTES]

[SEE SHEET A1.2 FOR WALL TYPES]

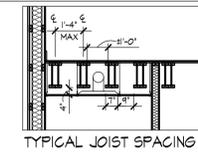


FOLLOW TJI MANUFACTURER REQUIREMENTS AND DETAIL FOR SIZE, LOCATION AND SEPARATION OF ANY HOLES/OPENINGS TO BE CUT INTO TJI.

ADJUST JOIST LOCATIONS TO ALLOW FOR CRITICAL CENTERLINE DIMENSIONS SHOWN AT DUCTWORK - 16" MAX SPACING

NOTE: DOUBLE TJI JOISTS AT 16" O.C. UNLESS OTHERWISE NOTED.

DOUBLE TJI JOISTS TO BE SPACED TO ALLOW FOR LIMITED ALTERATION TO JOISTS.



A PROPOSED MEZZANINE PLAN
SCALE: 3/16" = 1'-0"
0 3 6 12

B PROPOSED MEZZANINE DIMENSIONED PLAN
SCALE: 3/16" = 1'-0"
0 3 6 12

C MEZZANINE FRAMING PLAN
SCALE: 3/16" = 1'-0"
0 3 6 12

C MEZZANINE JOISTS SPACING PLAN
SCALE: 3/16" = 1'-0"
0 3 6 12

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MEZZANINE PLANS

Sheet Number
A1.5

ROOF DESIGN / FRAMING NOTES:

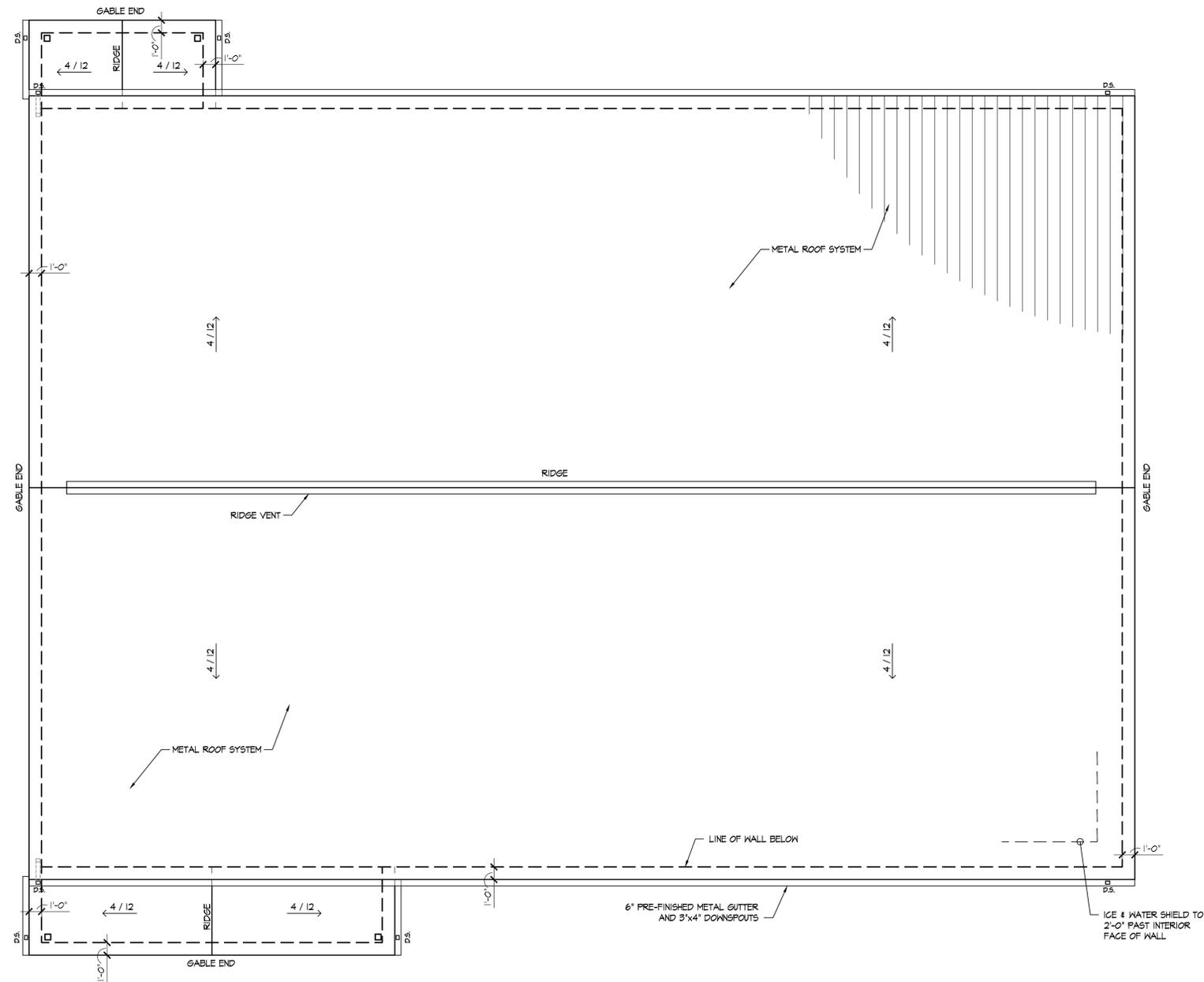
1. ALL ROOF PITCHES ARE AS NOTED ON ROOF PLAN. ADJUST TRUSS HEIGHTS TO ALLOW FASCIA TO ALIGN AS APPROPRIATE.
2. REFER TO PLAN AND SECTIONS FOR BEARING HEIGHTS.
3. PROVIDE H-CLIPS AT ALL ROOF SHEATHING JOINTS.
4. ALL TRUSSES SHALL BE SECURED TO WALL FRAMING WITH HURRICANE STYLE ANCHOR STRAPS. ALL STRAPS SHALL BE ABLE TO RESIST UPLIFT FORCES SHOWN ON THE TRUSS DRAWINGS, BUT FOR NEVER LESS THAN ITS LB.
5. PROVIDE ATTIC DRAFT STOPPING TO UNDERSIDE OF ROOF DECK. MAXIMUM ALLOWABLE AREA 3,000 S.F.
6. PRE-ENGINEERED WOOD ROOF TRUSSES SHALL BE DESIGNED FOR 10 PSF BOTTOM CHORD DEAD LOAD, 10 PSF TOP CHORD DEAD LOAD AND 25 PSF TOP CHORD LIVE LOAD. TRUSSES SHALL BE DESIGNED FOR A TOTAL LOAD DEFLECTION OF L/240.
7. TRUSSES SHALL NOT BE SPACED FARTHER APART THAN 48' O.C.

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 EXPIRES 12/31/2023

Jonathon Robert Schaaf #14503
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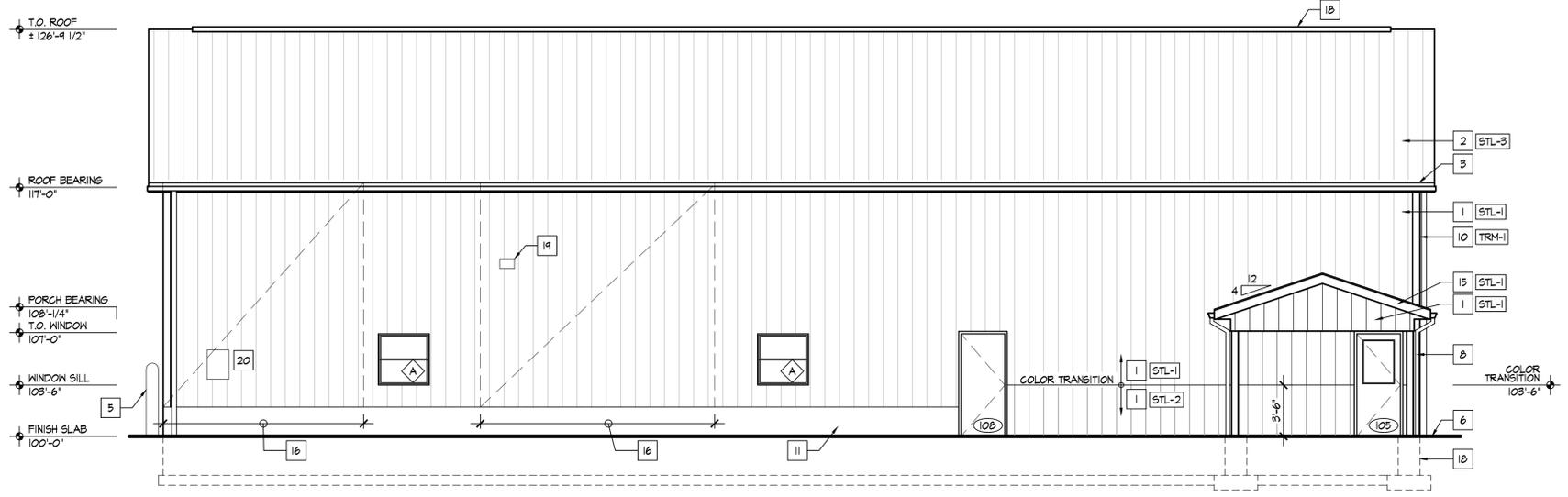
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ROOF PLAN
 SCALE: 3/16" = 1'-0"
 0 3 6 12

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ROOF PLAN
Sheet Number
A1.6



A NORTH EXTERIOR ELEVATION
SCALE: 3/16" = 1'-0"
0 3 6 12

EXTERIOR FINISH SPECIFICATIONS

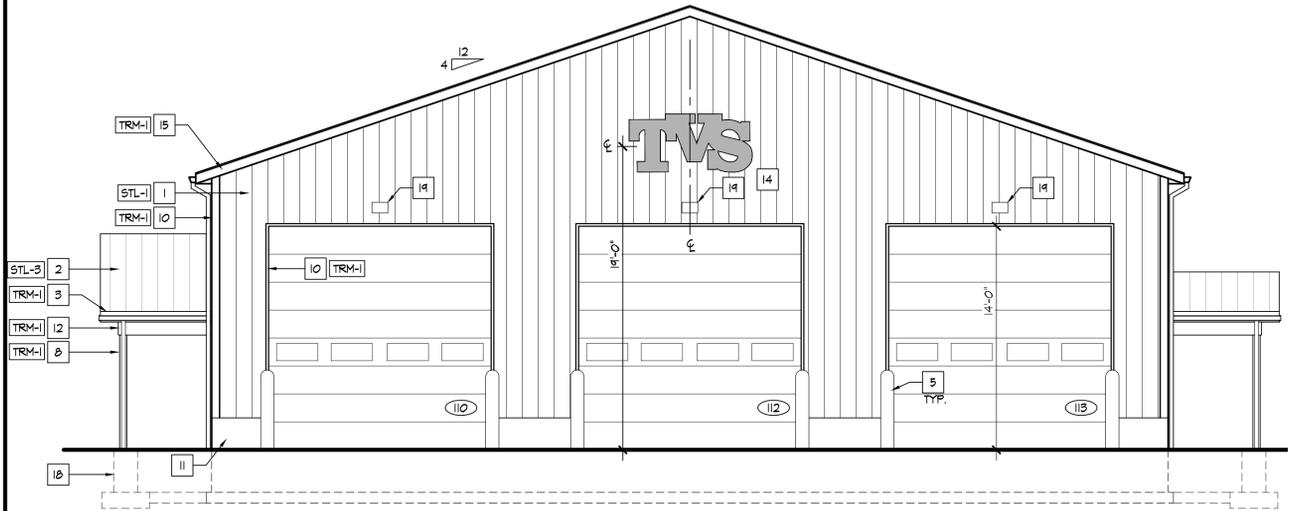
- STL-1: MAIN METAL SIDING
MANUF: LESTER
COLOR: REGAL RED
- STL-2: ACCENT METAL SIDING
MANUF: LESTER
COLOR: PEPPER GRAY
- STL-3: ROOF METAL PANELS
MANUF: LESTER
COLOR: PEPPER GRAY
- TRM-1: TRIM
MANUF: LESTER
COLOR: PEPPER GRAY

ELEVATION KEY NOTES

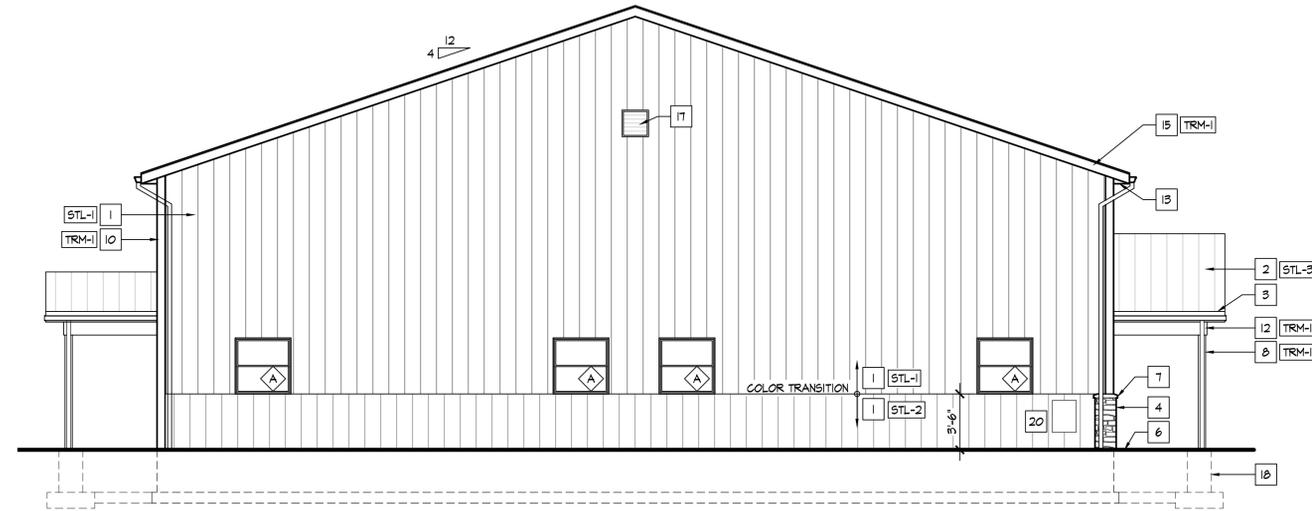
1. PRE-FINISHED METAL SIDING
2. PRE-FINISHED METAL ROOF PANELS
3. PRE-FINISHED METAL WRAP OVER 2x6 FASCIA WITH PRE-FINISHED ALUMINUM GUTTER OVER
4. APPLIED STONE VENEER
5. BOLLARD
6. FINISH GRADE
7. STONE GAP
8. PRE-FINISHED METAL WRAP OVER BUILT UP TREATED [5] 2x6 COLUMN
9. PRE-FINISHED METAL WRAP OVER FRAMING TO MATCH WRAPPED BEAM
10. PRE-FINISHED METAL TRIM
11. CONCRETE STEM WALL
12. ALUMINUM WRAP PORCH BEAM
13. VENTED VINYL SOFFIT
14. SIGN BY OWNER. COORDINATE INSTALLATION AND ROUGH IN REQUIREMENTS WITH SUPPLIER
15. PRE-FINISHED METAL WRAP OVER 2x6 RAKE. FOR ADDITIONAL INFORMATION
16. LOCATION OF DIAGONAL BRACING SEE SHEET A11
17. GABLE END EXHAUST FAN, PAINT TO MATCH SIDING
18. RIDGE VENT
19. WALL MOUNTED LIGHT FIXTURE. REFER TO ELECTRICAL DRAWINGS.
20. ELECTRICAL SERVICE / METER. REFER TO ELECTRICAL.
21. GAS SERVICE / METER. REFER TO PLUMBING.

METAL SIDING, ROOF, SOFFIT, AND ASSOCIATED TRIM PANELS SHALL BE INSTALLED PER MANUFACTURER DETAILS TO CREATE A WATERTIGHT CONDITION. PROVIDE ALL SUPPLEMENTAL COMPONENTS AS NECESSARY

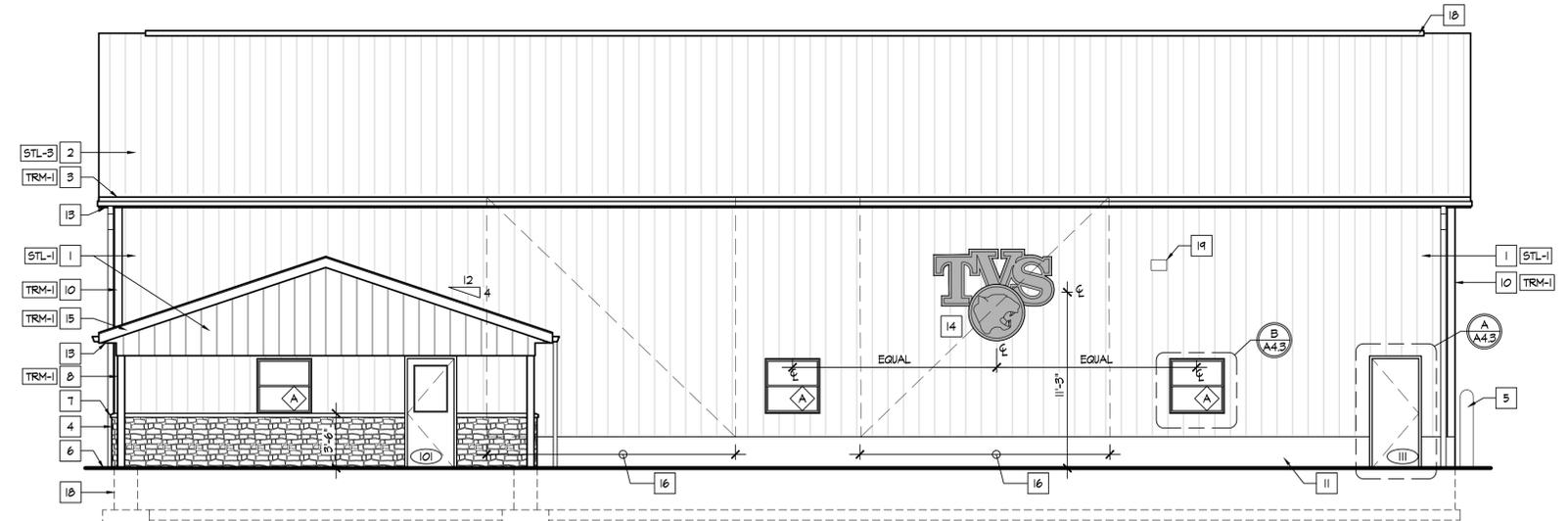
WRAP ANY/ALL WOOD COMPONENTS WITH METAL INTEGRAL TO THE SIDING AND ROOF PANELS



B EAST EXTERIOR ELEVATION
SCALE: 3/16" = 1'-0"
0 3 6 12



C WEST EXTERIOR ELEVATION
SCALE: 3/16" = 1'-0"
0 3 6 12



D SOUTH EXTERIOR ELEVATION
SCALE: 3/16" = 1'-0"
0 3 6 12

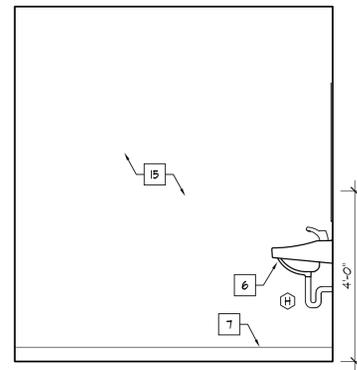
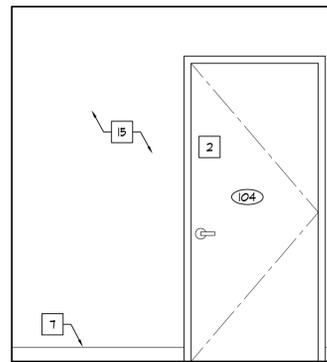
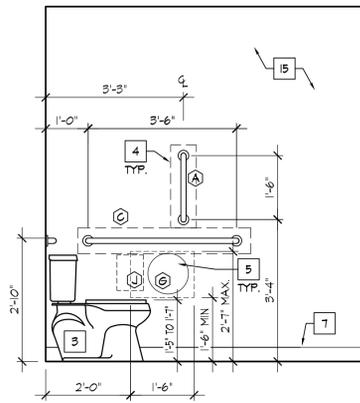
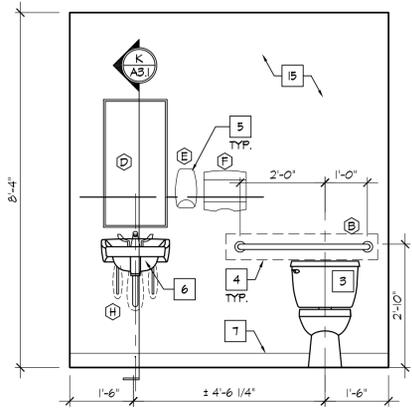
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STATE OF OHIO
PROFESSIONAL ARCHITECT
JONATHAN ROBERT SCHAAF #14503
Expiration Date 12/31/2023

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Twin Valley Community Local School District
100 Education Drive
West Alexandria, Ohio 45381

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02/02/23 Progress Set
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02/24/23 Bid/Const. Set
Project Number
2022-071
Date
February 24, 2023
Sheet Title
EXTERIOR ELEVATIONS
Sheet Number
A2.1



A

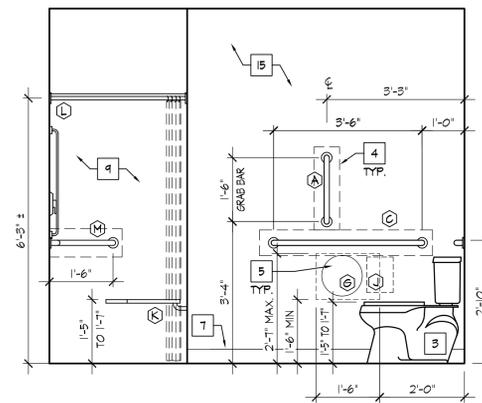
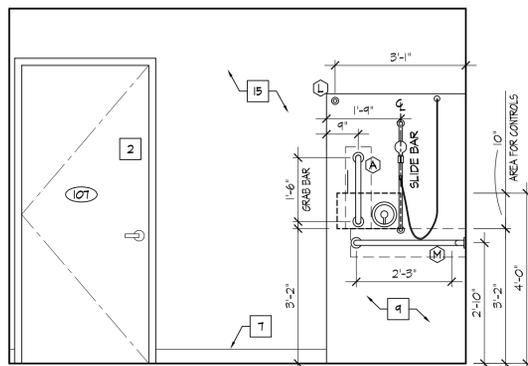
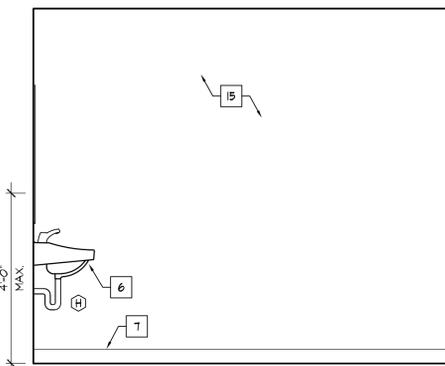
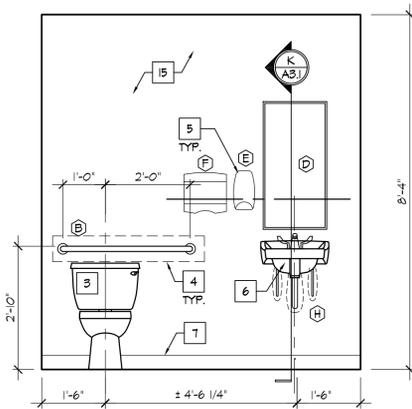
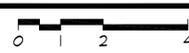
B

C

D

TOILET #104

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



E

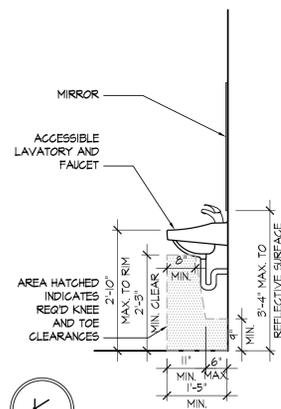
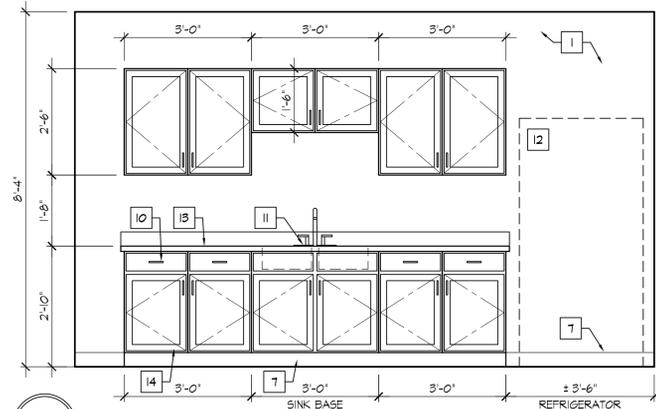
F

G

H

TOILET #107

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



J

K

L

M

BREAK AREA #103

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

LAV. DETAIL

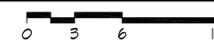
SCALE: 1/2" = 1'-0"

SIGN DETAIL

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

WEST WALL AT WASH BAY / SERVICE BAY

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



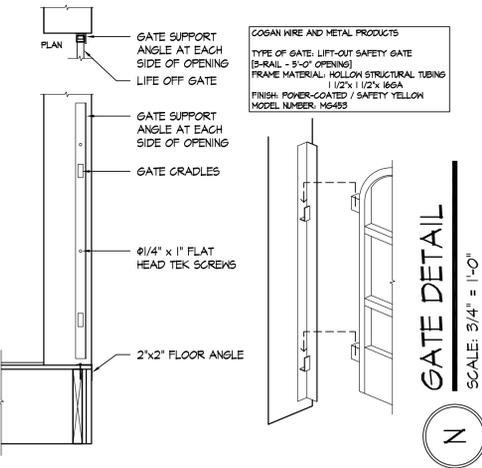
INTERIOR ELEVATION KEY NOTES

1. PAINTED GYPSUM BOARD, REFER TO WALL FINISH PLAN
2. DOOR/FRAME - REFER TO DOOR SCHEDULE
3. ACCESSIBLE WATER CLOSET, NOTE THAT LEVER SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET
4. PROVIDE 2x8 BLOCKING WHERE REQ'D AT ALL TOILET ACCESSORIES, TYPICAL
5. TOILET ROOM ACCESSORIES, TYP. REFER TO SCHEDULE
6. ACCESSIBLE WALL HUNG LAVATORY AND FAUCET
7. WALL BASE, AS SCHEDULED. REFER TO FINISH PLAN / SCHEDULE
8. NOT USED
9. PREFAB ACCESSIBLE SHOWER STALL. REFER TO PLUMBING DRAWINGS.
10. DOOR / DRAWER PULLS.
11. SINK / FAUCET. REFER TO PLUMBING DRAWINGS
12. EQUIPMENT, BY OWNER
13. PLASTIC LAMINATE COUNTERTOP AND 4" BACKSPLASH. [PL-1] SEE FINISH SCHEDULE, SHEET A1.4
14. PLASTIC LAMINATE CASEWORK. [PL-2] SEE FINISH SCHEDULE, SHEET A1.4
15. 5/8" MOISTURE RESISTANT GYP. BD. WITH FRP OVER
16. METAL LINER PANELS
17. PARTIAL HEIGHT WALL, SEE WALL TYPES.
18. OUTLINE OF STAIR, SEE SECTION C/A4.3

TOILET ACCESSORY SCHEDULE

MARK	SIZE	MODEL
A	18" GRAB BAR	BOBRICK #5806
B	36" GRAB BAR	BOBRICK #5806
C	42" GRAB BAR	BOBRICK #5806
D	18" X 36" MIRROR	BOBRICK #B-165
E	SOAP DISPENSER	PROVIDED BY OWNER, INSTALLED BY GC
F	PAPER TOWEL DISPENSER	PROVIDED BY OWNER, INSTALLED BY GC
G	TOILET PAPER DISPENSER	PROVIDED BY OWNER, INSTALLED BY GC
H	SUPPLY/DRAIN PIPING WRAP	TRU BRO
J	SANITARY NAPKIN RECEPTACLE	PROVIDED BY OWNER, INSTALLED BY GC
K	FOLDING SHOWER SEAT	BOBRICK #B-5181
L	SHOWER CURTAIN ROD	BOBRICK #B-207x36
M	SHOWER GRAB BAR	BOBRICK #6861

- ALL TOILET ACCESSORIES AS MANUFACTURED BY ASI, BOBRICK, BRADLEY OR EQUAL. SUBMIT CUT SHEETS TO OWNER FOR APPROVAL.
- FIELD COORDINATE ALL TOILET ACCESSORY LOCATIONS, CONFORM TO ALL ACCESSIBILITY INSTALLATION REQUIREMENTS.
- PROVIDE AND INSTALL FRP BLOCKING AS REQUIRED FOR ALL TOILET ROOM ACCESSORIES.
- COORDINATE WITH OWNER FOR FINAL SPECS/FINISHES



GATE DETAIL

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

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STATE OF OHIO
 ARCHITECT
 JONATHAN ROBERT SCHAAF #14503
 EXPIRATION DATE 12/31/2023

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 INTERIOR ELEVATIONS

Sheet Number

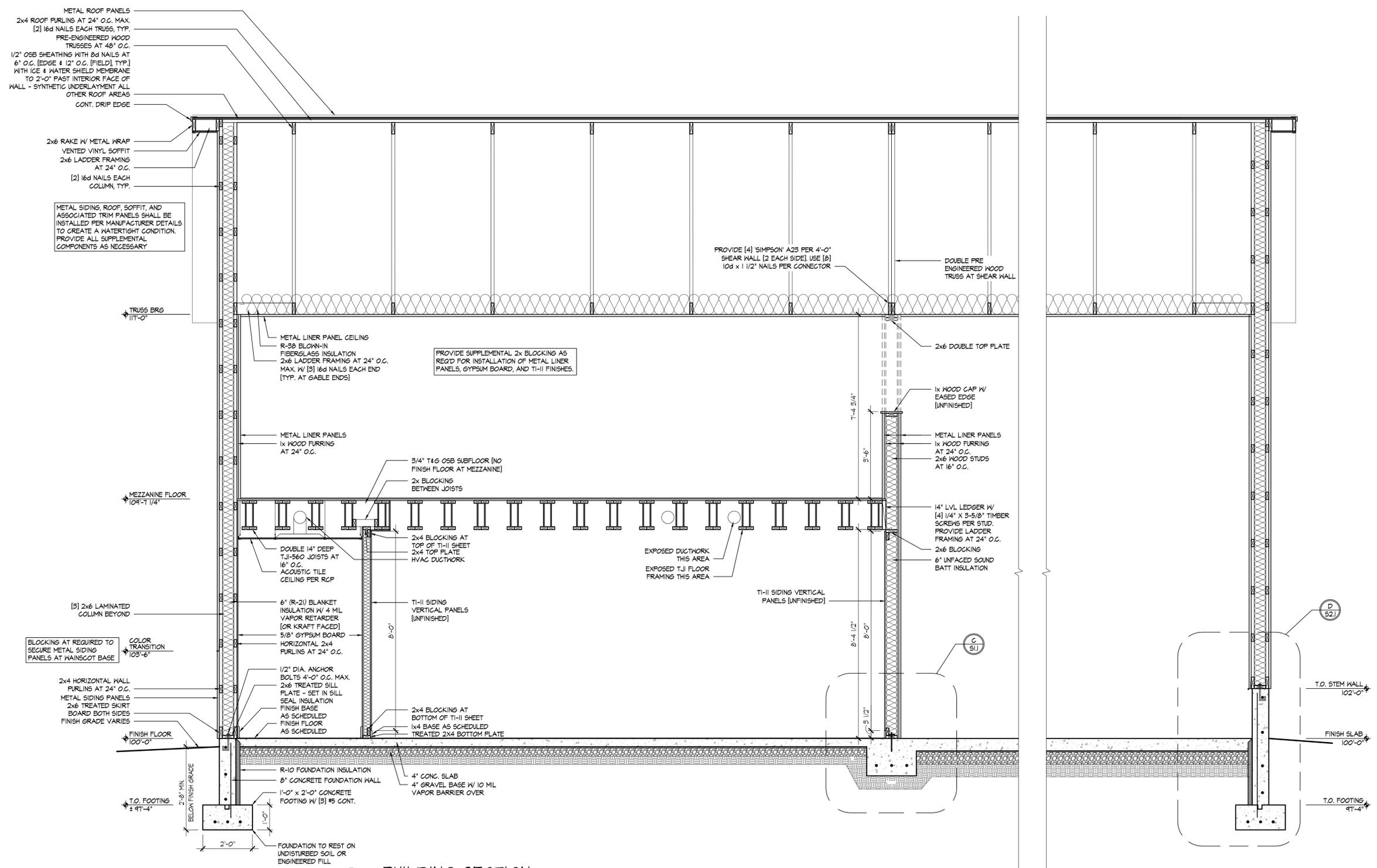
A3.1



Jonathan Robert Schaeff #14503
Expiration Date 12/31/2023

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Proposed Bus Maintenance Facility
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A BUILDING SECTION
 SCALE: 1/2" = 1'-0"
 0 1 2 4

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Project Number	2022-071
Date	February 24, 2023
Sheet Title	BUILDING SECTION

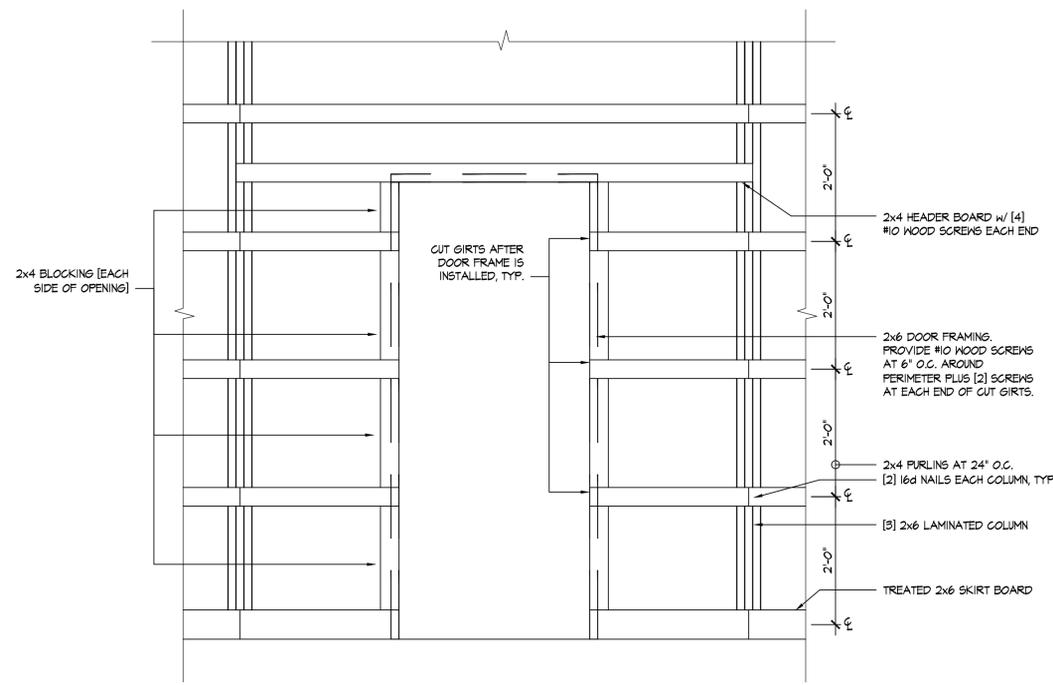
Sheet Number
A4.1



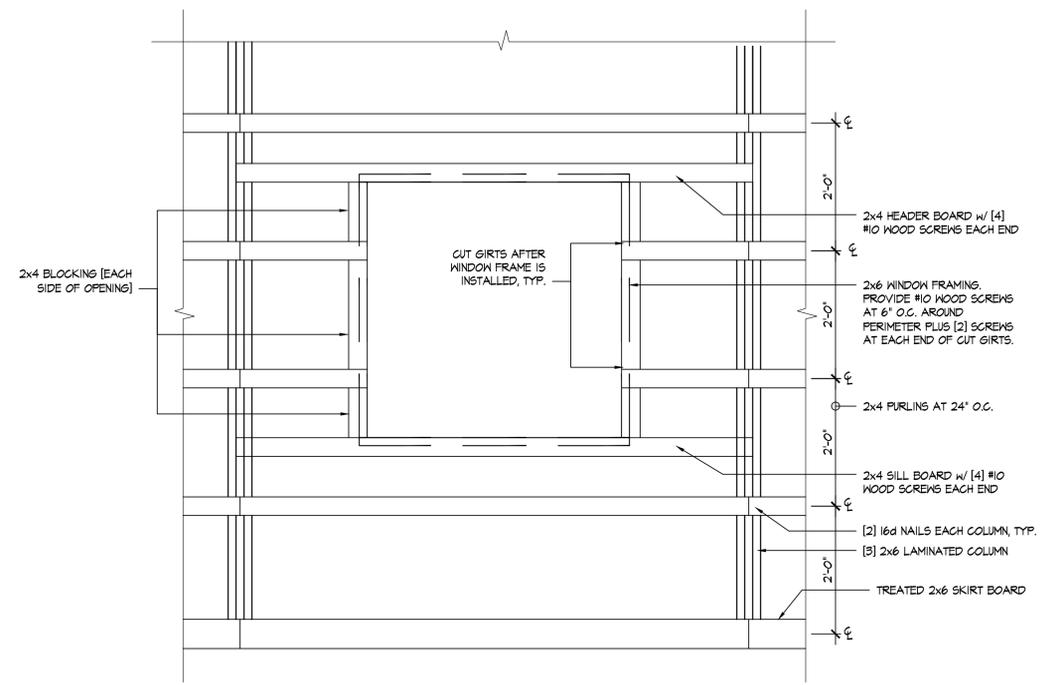
Jonathan Robert Schaaf #14503
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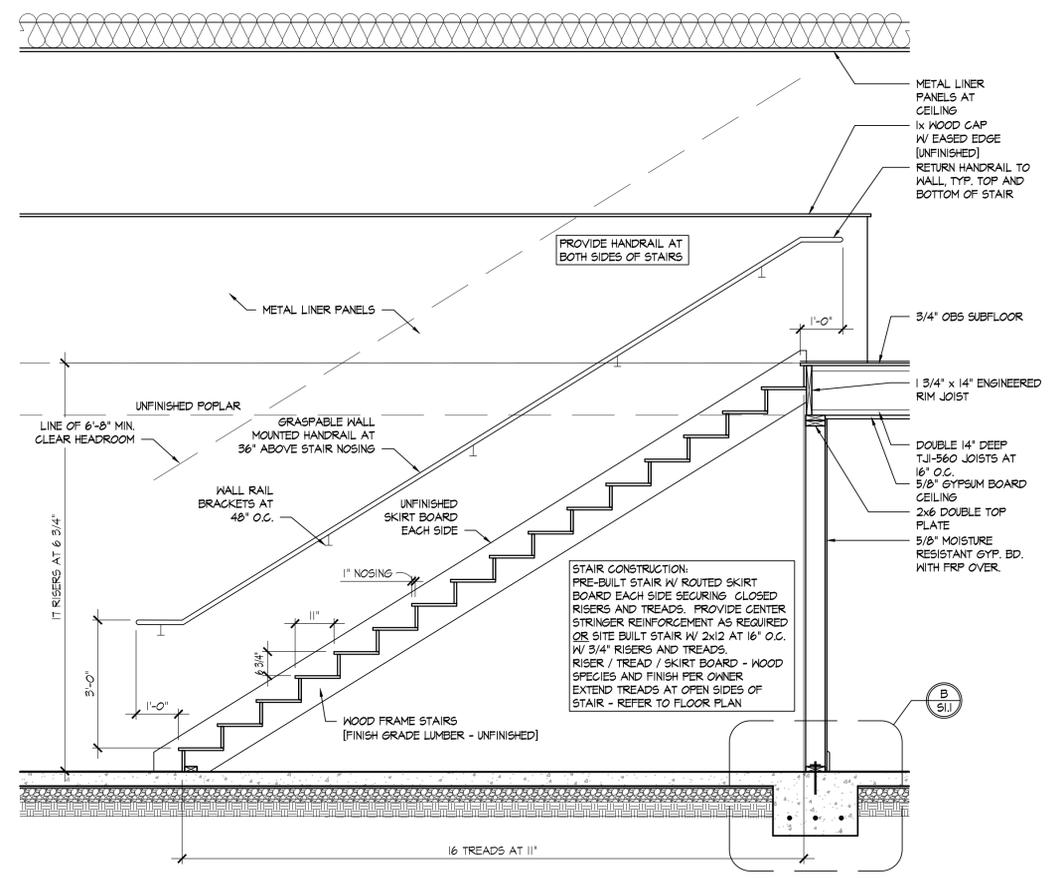
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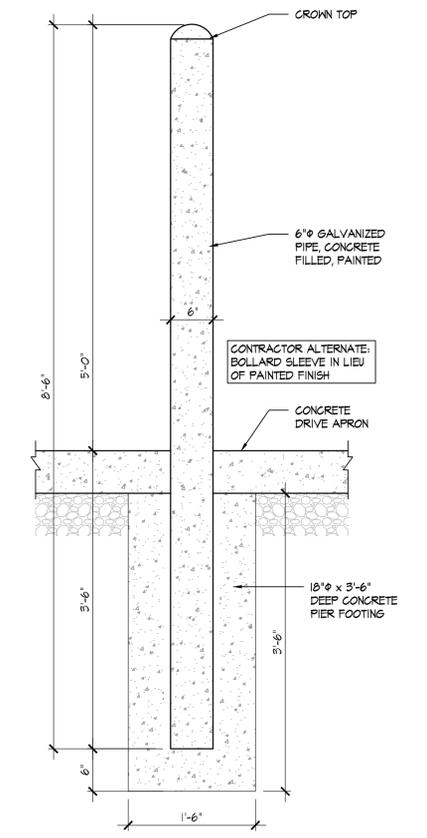
A ELEVATION - TYPICAL DOOR FRAMING
SCALE: 3/4" = 1'-0"
[SIMILAR AT OPPOSITE FACE]



B ELEVATION - TYPICAL WINDOW FRAMING
SCALE: 3/4" = 1'-0"
[SIMILAR AT OPPOSITE FACE]



C SECTION AT STAIR
SCALE: 1/2" = 1'-0"
0 1 2 4



F SECTION AT BOLLARD
SCALE: 1" = 1'-0"
0 6 12 24

Print Record

01/06/23	Review
02/02/23	Progress Set
02/10/23	Progress Set
02/24/23	Bid/Const. Set

Project Number	2022-071
Date	February 24, 2023
Sheet Title	SECTIONS

Sheet Number
A4.3

PLUMBING SPECIFICATIONS

A. GENERAL CONDITIONS

- WORK UNDER THIS CONTRACT SHALL CONSIST OF, BUT NOT LIMITED TO; FURNISHINGS, INSTALLATION, TESTING, AND WARRANTY OF PLUMBING AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
- PLUMBING SHALL BE INSTALLED BY A LICENSED CONTRACTOR. WARRANTY SHALL BE FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
- THE WORD "PROVIDE" SHALL BE DEFINED TO MEAN "FURNISH AND INSTALL, COMPLETE, AND OPERATING."
- WHERE THE WORD "EQUAL TO" IS USED THE CONTRACTOR SHALL HAVE THE OPTION OF SELECTING BETWEEN ON OF THE ADDITIONAL NAMES OR MANUFACTURERS LISTED OR MAY SUBMIT PRODUCTS SUBJECT TO ENGINEER'S APPROVAL.
- ALL PERMIT AND INSPECTION FEES ARE TO BE INCLUDED IN CONTRACTOR'S SCOPE.
- PROVIDE THE OWNER CERTIFICATES OF APPROVAL FROM INSPECTION AGENCIES.
- WORK MUST CONFORM TO ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS, ORDINANCES, AND REGULATIONS.
- PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL FEES AND PERMITS ASSOCIATED WITH HIS PORTION OF THE WORK.
- PLUMBING CONTRACTOR SHALL COORDINATE ALL ASPECTS OF WORK WITH OTHER TRADES PRIOR TO AND DURING CONSTRUCTION/INSTALLATION.
- WORK PLANS TO BE CONSIDERED AS DIAGRAMMATIC AND ALONG WITH THE SPECIFICATIONS, REFLECT A MINIMUM ACCEPTABLE STANDARD. ALL WORK SHALL CONFORM TO THE OHIO PLUMBING CODE, AND THE AMERICANS WITH DISABILITIES ACT GUIDELINES.
- UNLESS OTHERWISE NOTED, ALL FLOOR DRAINS SHALL BE THREE (3") INCH IN SIZE.
- WHEN A CONFLICT BETWEEN PLANS AND SPECIFICATIONS OR NOTES OCCURS, THE ENGINEER SHALL DECIDE WHICH GOVERNS. GENERALLY, THE MORE RESTRICTIVE, MORE SPECIFIC, OR STRICTER PROVISION SHALL GOVERN. IF ANY DISCREPANCIES ARE DISCOVERED ON THE PLANS OR BETWEEN THE PLANS AND THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER AND OBTAIN CLARIFICATION OF THE INTENT FROM THE ENGINEER PRIOR TO CONSTRUCTION OR INSTALLATION OF PROPOSED IMPROVEMENTS.
- REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE HEIGHTS AND ACCESSIBILITY REQUIREMENTS.

PIPING NOTES

- FIXTURES TO BE COMPLETE WITH SUPPLY PIPES WITH STOPS. SUPPLIES AND STOPS TO BE CHROME PLATE W/SET SCREW ESCUTCHEONS, WHERE EXPOSED TO VIEW.
- ACCESSIBLE SHUTOFF VALVES SHALL BE PROVIDED FOR EACH TOILET ROOM AND EXTERIOR WALL HYDRANTS. PLUMBING CONTRACTOR TO PROVIDE 8"x8" (MIN.) ACCESS PANELS FOR SHUTOFF VALVES WHERE REQUIRED, COORDINATE TYPE AND FINISH WITH DIV. 8 REQUIREMENTS.
- PROVIDE SHOCK ARRESTORS AT COLD AND HOT WATER CONNECTIONS TO WASHING MACHINE AND REFRIGERATOR ICE MAKER. PROVIDE AIR CHAMBERS AT WATER SUPPLY CONNECTIONS TO ALL OTHER FIXTURE OR PROVIDE SHOCK ARRESTORS PER FIXTURE GROUP AS RECOMMENDED BY PDI INSTITUTE AND MANUFACTURER.
- PLUMBING VENTS SHALL BE A MINIMUM OF 12'-0" FROM ANY HVAC OUTDOOR AIR OPENINGS.
- PROVIDE CLEANOUTS AT BASE OF ALL DWV AND STORM RISERS AND WITHIN 5'-0" (EITHER SIDE) OF EXTERIOR WALL AS REQUIRED BY CODE, WHETHER OR NOT DIRECTLY INDICATED ON PLUMBING PLAN.
- DRAINAGE (STORM OR SANITARY) PIPE SIZE BELOW FLOOR TO BE 2" MINIMUM. FOR SIZES REFER TO PLANS AND ISOMETRICS.
- ROUTE GAS AND WATER PIPING AS HIGH AS POSSIBLE, OFFSET WHERE IN CONFLICT WITH OTHER TRADES.
- GAS MAIN ROUTED THROUGH CEILING SPACE SHALL BE INSTALLED IN SUCH A MANNER SO AS NOT TO SUBJECT PIPING TO POSSIBLE DAMAGE. VALVES SHALL NOT BE INSTALLED IN CEILING SPACE.
- NATURAL GAS EQUIPMENT CONNECTIONS SHALL BE PROVIDED WITH VALVES, UNIONS, DIRT LEGS, ETC. AS NECESSARY FOR A COMPLETE INSTALLATION. INSTALL "AGA" APPROVED FLEXIBLE GAS SUPPLY CONNECTION WHERE SPECIFICALLY NOTED. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- BACKFILL AROUND UNDERGROUND PIPING WITH 3/8" CLEAN (CA-16) GRAVEL ALL AROUND. BACKFILL A MINIMUM OF TWO TIMES THE PIPE OUTSIDE DIAMETER. PRIOR TO FINAL BACKFILL. PVC PIPING SHALL BE PROPERLY SUPPORTED EVERY 4'-0" ALONG ITS HORIZONTAL RUN PRIOR TO BACKFILLING.
- DWV, SUPPLY, GAS AND STORM PIPING ROUTED THROUGH FINISHED AREAS SHALL BE CONCEALED ABOVE CEILING OR IN FURRED-OUT WALL. DWV, SUPPLY, GAS AND STORM PIPING PIPING SHALL NOT BE EXPOSED IN FINISHED AREAS, EXCEPT WHERE NOTED ON DRAWINGS.

EQUIPMENT NOTES:

- INSTALL ALL THERMOMETERS IN ACCESSIBLE AND READABLE POSITIONS.

FINISH NOTES:

- PAINT ALL PLUMBING PIPE SUPPORTS WITH A RUST INHIBITIVE PRIMER AND TWO COATS OF GLOSS GRAY OR BLACK ENAMEL OR ACRYLIC PAINT.
- PAINT ALL UNINSULATED/UNJACKETED PLUMBING PIPING EXPOSED TO OUTDOORS, INCLUDING PIPING COMPONENTS, VALVES, UNIONS, & ETC., WITH ONE COAT OF RUST INHIBITIVE PRIMER AND TWO COATS OF GLOSS ENAMEL OR ACRYLIC PAINT.
- THE PLUMBING CONTRACTOR SHALL PROVIDE ALL FIRESTOPPING FOR PLUMBING PIPE PENETRATIONS THROUGH SMOKE AND FIRE RATED ASSEMBLIES. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL RATED ASSEMBLIES. ALL PENETRATIONS SHALL BE FIRESTOPPED TO ORIGINAL ASSEMBLY RATING AND FLOOR PENETRATIONS SEALED WATER TIGHT WITH A FLEXIBLE SEALANT.
-

B. INSTALLATIONS

- INSPECT THE EXISTING FACILITY AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. HOWEVER, MAKE FIELD ADJUSTMENTS TO INSURE CORRECT FIT.
- PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL EQUIPMENT OR ABOVE ACCESS TO SAME PER "NEC" GUIDELINES.
- WORK SHALL BE PLANNED AND EXECUTED TO PROVIDE REASONABLY CONTINUOUS SERVICE OF EXISTING FACILITIES.
- PROVIDE WALL OR CEILING ACCESS PANELS WHERE REQUIRED FOR ACCESS TO CONCEALED VALVES, EQUIPMENT, ET. PANELS SHALL BE MINIMUM 18"x18" OR LARGER AS REQUIRED AND SHALL BE COMPATIBLE WITH THE AREA IN WHICH THEY ARE INSTALLED. PANELS IN FIRE RATED BUILDING ELEMENTS SHALL BE LABELED IN COMPLIANCE WITH THE RATING OF THE BUILDING ELEMENT.
- PROVIDE ALL CUTTING AND PATCHING NECESSARY TO INSTALL THE WORK. SAW CUT OR DRILL OPENINGS.
- ALL FERROUS METAL WHICH IS NOT FACTORY SHOP PAINTED, GALVANIZED WHICH WILL BE EXPOSED IN FINISHED AREAS OR OUTSIDE THE BUILDING SHALL BE PRIME COATED.
- PROVIDE PIPE SLEEVES AT PENETRATIONS OF BUILDING ELEMENTS. SLEEVES MAY BE GALVANIZED SHEET METAL OR STEEL PIPE. FIRE STOPPING SHALL BE PROVIDED AT ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES. FIRE STOPPING SHALL BE UL LISTED AND PROVIDE A FIRE RATING EQUAL TO THAT OF THE CONSTRUCTION BEING PENETRATED.
- ALL WELDERS SHALL BE FULLY CERTIFIED IN ACCORDANCE WITH ASME QUALIFICATIONS.
- PROVIDE PIPE LABELING AND VALVE TAGGING USING MANUFACTURED LABELS: TAGS IN COMPLIANCE WITH ANSI A13.1
- FLUSH NEW PIPING SYSTEM PRIOR TO OPERATION. PROVIDE SERVICES OF A FIRM REGULARLY ENGAGED IN DISINFECTION SERVICES TO DISINFECT THE DOMESTIC WATER SYSTEM IN ACCORDANCE WITH AWWA GUIDELINES.
- BALANCE DOMESTIC HOT WATER RECIRCULATION SYSTEM TO FLOW RATES INDICATED ON THE DRAWINGS.
- PREPARE TEST AND INSPECTION REPORTS.
- TEST AND CERTIFY BACKFLOW PREVENTERS AND PRESSURE VACUUM BREAKERS ACCORDING TO CODE AND STANDARD PER AUTHORITY HAVING JURISDICTION.
- REPLACE DEFECTIVE PRODUCTS AND/OR MATERIALS WITH NEW.
- PROVIDE ATMOSPHERIC VENT DRAIN CONNECTION ON BACKFLOW PREVENTERS AND EXTEND PIPING TO FLOOR DRAIN FOR INDIRECT DISCHARGE WITH MINIMUM 2" AIR GAP.

C. INSTALLATIONS

- BEFORE CONSTRUCTION OR INSTALLATION OF MATERIALS OR EQUIPMENT; CONTRACTOR SHALL SUBMIT AN ELECTRONIC COPY OF SHOP DRAWINGS TO BE REVIEWED BY THE ENGINEER.
- SHOP DRAWINGS SHALL INDICATE INDIVIDUAL COMPONENTS, MODEL NUMBERS, AND ELECTRICAL INFORMATION.
- SHOP DRAWINGS FOR THE FOLLOWING SHALL BE SUBMITTED.
 - PIPE FITTINGS
 - VALVES
 - HEATERS
 - PLUMBING FIXTURES
 - DRAINS, CLEANOUTS, AND CARRIERS

D. TESTING

- ALL PIPING PROVIDED SHALL BE PRESSURE TESTED.
 - DOMESTIC WATER: HYDROSTATIC AT 125 PSI FOR 1.5 TIMES MAXIMUM OPERATING PRESSURE FOR 6 HOURS.
 - UNDERGROUND WATER: HYDROSTATIC AT 125 PSI FOR 6 HOURS AND/OR IN CONFORMANCE WITH AWWA PROCEDURES.
 - SOIL, WASTE, VENT, AND STORM: IN CONFORMANCE WITH PLUMBING CODE.
 - INTERIOR NATURAL GAS: 50 PSI COMPRESSED AIR FOR 6 HOURS.

E. EXCAVATION: EXCAVATE FOR ALL UNDERGROUND PIPING. BACKFILL AND COMPACT TO FINISH GRADE OR TO LEVELS CONSISTENT WITH THE GENERAL CONTRACTOR'S ACTIVITIES. PROVIDE COMPACTED BACKFILL OF GRADED PEA GRAVEL, GRADED COURSE SAND, OR CRUSHED LIMESTONE (MAXIMUM 0.75" SIZE) UNDER ANY PAVED OR OTHER HARD SURFACED AREAS. EXCAVATION, TRENCH WALL SUPPORTING AND OPEN TRENCH BARRICADING, AND SIGNAGE SHALL BE PER OSHA AND LOCAL REQUIREMENTS. A UTILITY LOCATOR SERVICE SHALL BE PROVIDED TO IDENTIFY AND/OR VERIFY THE LOCATION OF EXISTING PRIVATE UTILITIES WITHIN THE EXCAVATION AREA.

F. HANGERS: ALL INTERIOR ABOVE GRADE PIPING SHALL BE SUPPORTED BY ATTACHMENT TO THE BUILDING STRUCTURAL ELEMENTS. HANGER ROD SIZES AND HANGER/SUPPORT SPACING SHALL BE PER THE FOLLOWING SCHEDULES. FIRE SUPPRESSION HANGER AND SUPPORT REQUIREMENTS SHALL BE PER NFPA STANDARDS.

PIPE SIZE	MINIMUM HANGER ROD DIAMETER
≤ 1"	0.25"
1.25"-3"	0.375"
4"-6"	0.5"

PIPE MATERIAL SIZE	MAXIMUM HANGER/SUPPORT SPACING	
	VERTICAL	
STEEL	BASE AND 15'	
COPPER	BASE AND 10'	
CAST IRON	BASE AND EACH FLOOR LEVEL	
PLASTIC	PER MANUFACTURER	
HORIZONTAL		
STEEL/ ≤ 2"	8'	
STEEL/ 2.5"-6"	10'	
STEEL/ > 6"	12'	
COPPER/ ≤ 1.25"	6'	
COPPER/ ≤ 1.5"-2"	8'	
COPPER/ > 2"	10'	
CAST IRON	10' AND EACH FITTING/JOINT	
PLASTIC	PER MANUFACTURER	

G. INSULATION: PROVIDE INSULATION ON ALL NEW DOMESTIC WATER AND INTERIOR HORIZONTAL STORM DRAINAGE PIPING (INCLUDING HORIZONTAL OVERFLOW DRAINAGE PIPING AND THE UNDERSIDE OF ALL ROOF DRAIN SLUMPS) WITH FIBERGLASS/TUBULAR CLOSED CELL PIPE INSULATION IN COMPLIANCE WITH ASHRAE 90.1. FIBERGLASS INSULATION SHALL BE FACTORY MOLDED TUBULAR FIBERGLASS WITH ALL SERVICE JACKET, INTEGRAL VAPOR BARRIER, AND FACTORY ADHESIVE OVERLAPPING JOINTS. PROVIDE FACTORY MOLDED PVC COVERS AND INSULATION FOR FITTINGS, VALVES, AND DEVICES. TUBULAR CLOSED CELL INSULATION SHALL BE FOAM PLASTIC TYPE WITH PRESSURE-SENSITIVE ADHESIVE TAPE CLOSURE SYSTEM AND/OR VAPOR SEALING ADHESIVE. COMPOSITE INSULATING SYSTEMS SHALL NOT EXCEED A MAXIMUM FLAME SPREAD OF 25 ADEN SMOKE DEVELOPMENT OF 50 AS ESTABLISHED BY NFPA TEST METHODS. FIBERGLASS INSULATION MANUFACTURERS: OWENS-CORNING, JOHNS MANVILLE, MASON, OR KNAUFF. TUBULAR CLOSED CELL INSULATION SHALL BE EQUAL TO ARMSTRONG ARMACELL ARMAFLEX 2000. INSULATION THICKNESS SHALL COMPLY WITH THE FOLLOWING SCHEDULE:

PIPE SYSTEM	RUNOUTS <12'	≤1"	1.25"-2"	2.5"-4"	5"-6"	≥6"
DOMESTIC COLD WATER	0.5"	0.5"	0.5"	1.0"	1.0"	1.0"
DOMESTIC HOT WATER	0.5"	1.0"	1.0"	1.5"	1.5"	1.5"
DOMESTIC HOT RETURN	0.5"	1.0"	1.0"	1.5"	1.5"	1.5"
STORM (INCLUDING OVERFLOW)	-	-	-	1.0"	1.0"	1.0"

H. PLUMBING FIXTURES: PROVIDE PLUMBING FIXTURES COMPLETE WITH SUPPORTS, CARRIERS, AND SUPPLY AND WASTE TRIM. SUPPLIES TO EACH FIXTURE SHALL BE INDIVIDUALLY VALVED. ALL WASTE AND SUPPLY TRIM SHALL BE CHROME PLATED BRASS. FIXTURES SHALL BE WHITE UNLESS OTHERWISE SPECIFIED. SEAL JOINTS AROUND EACH FIXTURE AT THE WALL, FLOOR, AND ANY ADJACENT CONSTRUCTION. JOINT SEALANT SHALL BE ONE PART, MILDEW RESISTANT SILICONE, ASTM C920, TYPE S, GRADE NS, CLASS 25 WITH FUNGICIDE, EQUAL TO PECORA 898.

I. VALVES: VALVES SHALL BE TWO-PIECE, BRONZE BODY, BALL TYPE, 150 WSP, EQUAL TO NIBCO T-580-70, T-585-70, AND T-580-70-66. CHECK VALVES SHALL BE BRONZE, SWING TYPE, 125 WSP, EQUAL TO NIBCO T-413-Y. BALANCING SHUTOFF VALVES SHALL BE GLOBE TYPE, POSITIVE SHUTOFF DESIGN, 125 PSI, WITH MEMORY STOP, GAUGE PORTS, AND PORTABLE GAUGE KIT, EQUAL TO ARMSTRONG CBV SERIES.

J. PIPING

- INTERIOR DOMESTIC WATER: PIPING SHALL BE TYPE L SEAMLESS HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST BRONZE FITTINGS AND SOLDERED JOINTS. SOLDER SHALL BE LEAD-FREE TIN ALLOW, 95-5 TIN-ANTIMONY, OR SILVER BEARING TIN. UNDER FLOOR BURIED PIPING SHALL BE TYPE K SOFT COPPER TUBING WITH SILVER BRAZED JOINTS. PIPE NIPPLES EXTENDING OUT OF THE WALL TO SERVE FIXTURES SHALL BE CHROME PLATED BRASS WITH SCREWED ENDS.
- INTERIOR SOIL, WASTE, AND VENT PIPING INCLUDING IN GRADE BELOW THE FLOOR SLAB, SHALL BE SCHEDULE 40 PVC, ASTM D2665, FITTING SHALL BE DRAINAGE TYPE. JOINTS SHALL BE SOLVENT WELDED. FLOOR DRAIN TRAPS SHALL BE THE SAME MATERIAL AS THE CONNECTING PIPING. PROVIDE CLEANOUTS WHERE SHOWN ON THE DRAWINGS AND WHERE REQUIRED BY THE GOVERNING PLUMBING CODE.
- EXTERIOR NATURAL GAS SERVICE PIPING: PIPING SHALL BE AS APPROVED BY THE GAS COMPANY. PIPING SHALL BE POLYETHYLENE PLASTIC, PE 2306 OR 2406, TYPE II, GRADE 3, OR PE3406 OR 3408, TYPE III, GRADE 3, CONFORMING TO ASTM D2513. FITTINGS SHALL BE MOLDED POLYETHYLENE AND JOINTS SHALL BE BUTT HEAT-FUSION TYPE CONFORMING TO ASTM D2513 AND D2683. UNDERGROUND VALVES SHALL BE PLASTIC BALL VALVE, 125 PSI, EQUAL TO NORDSTROM POLYVALVE. PROVIDE A VALVE BOX AND COVER AT GRADE. ABOVE GROUND VALVES SHALL BE IRON BODY LUBRICATED PLUG VALVE, 200 PSI, EQUAL TO NORDSTROM #142 AND #143. PROVIDE MINIMUM 30" OF BURIAL DEPTH AND A COPPER TRACER WIRE. VERIFY WITH THE GAS COMPANY THE LOCATION OF CONNECTION TO SOURCE, AVAILABLE GAS PRESSURE, SERVICE SIZE, METER AND REGULATOR SETTING REQUIREMENTS, ETC. BEFORE INSTALLING ANY WORK. CONTRACTOR SHALL BE A FULLY QUALIFIED INSTALLER TO PERFORM COVERED TASKS AS REQUIRED BY THE DOT AND PUCCO OPERATOR QUALIFICATION RULE AND SHALL BE LISTED AS A QUALIFIED CONTRACTOR OF THE SERVING GAS COMPANY.
- INTERIOR NATURAL GAS PIPING: PIPING SHALL BE SCHEDULE 40 BLACK STEEL, ASTM A53, TYPE E OR F. FITTINGS SHALL BE STEEL WELDING TYPE AND THREADED MALLEABLE IRON TYPE, CONSISTENT WITH JOINT REQUIREMENTS. JOINTS SHALL BE WELDED, EXCEPT THAT THREADED JOINTS MAY BE USED ON THREADED VALVES AND UNIONS, AT FINAL CONNECTIONS TO EQUIPMENT. VALVES, UNIONS, AND THREADED JOINTS ARE NOT PERMITTED IN INACCESSIBLE CONCEALED LOCATIONS. SHUTOFF VALVES 2" AND SMALLER SHALL BE TWO-PIECE FORGED BRASS BALL VALVE, 600 PSI NON-SHOCK WOG, SCREWED ENDS, EQUAL TO HAMMOND 8901. SHUTOFF VALVES 2.5" AND LARGER SHALL BE IRON BODY LUBRICATED PLUG VALVE, 200 PSI, FLANGED ENDS, EQUAL TO NORDSTROM #143. MATERIALS AND INSTALLATION SHALL CONFORM TO THE INTERNATIONAL FUEL GAS CODE AND NFPA 54 NATIONAL FUEL GAS CODE. VENT PIPING SHALL BE EXTENDED INDIVIDUALLY FROM EACH GAS VENTING DEVICE TO OUTSIDE THE BUILDING.

PLUMBING LEGEND

SYMBOL	DESCRIPTION	ABBREVIATIONS	
	VENT PIPING	ADA	AMERICAN WITH DISABILITIES ACT
	SANITARY PIPING	AFF	ABOVE FINISHED FLOOR
	GREASE WASTE PIPING	BFP	BACKFLOW PREVENTER
	NATURAL GAS PIPING	CO	CLEANOUT
	DOMESTIC COLD WATER PIPING	CW	DOMESTIC COLD WATER
	DOMESTIC HOT WATER PIPING	DS	DOWNSPOUT
	DOMESTIC HOT WATER RETURN PIPING	ET	EXPANSION TANK
	BALL VALVE	EX	EXISTING
	CHECK VALVE	FCO	FLOOR CLEANOUT
	BALANCING VALVE	FD	FLOOR DRAIN
	BACKFLOW PREVENTER	FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR
	HOT WATER RETURN RECIRCULATION PUMP	GMR	GAS METER/REGULATOR
	PIPE CAP	GS	GAS SERVICE
	PIPE UP	GT	GREASE TRAP OR KITCHEN WASTE
	PIPE DOWN	HB	HOSE BIBB
	EXISTING PIPING TO REMAIN	HD	HUB DRAIN
	EXISTING PIPING TO BE DEMOLISHED	HW	DOMESTIC HOT WATER
	NEW PIPING	HWR	DOMESTIC HOT WATER RETURN
	FLOW ARROW	IND	INDIRECT WASTE
	KEYNOTE DESIGNATION	LV	LAVATORY
	KITCHEN EQUIPMENT DESIGNATION	MB	MOP BASIN
	DETAIL DESIGNATION	NG	NATURAL GAS
		NP	NON POTABLE WATER
		NTS	NOT TO SCALE
		OD	OVERFLOW STORM DRAIN
		ODS	OVERFLOW DOWNSPOUT
		SAN	SANITARY
		SD	STORM DRAIN
		SK	SINK
		TP	TRAP PRIMER
		TYP.	TYPICAL
		UR	URINAL
		VR	VENT RISER
		VS	VENT STACK
		VTR	VENT THRU ROOF
		WC	WATER CLOSET
		WCO	WALL CLEANOUT
		WH	WATER HEATER
		WM	WATER METER
		WS	WATER SERVICE
		WTC	WATER COOLER
		YCO	YARD CLEANOUT



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Sheet Title
PLUMBING LEGEND AND GENERAL NOTES

Sheet Number

PO. 1

PLUMBING INDEX OF DRAWINGS	
SHEET NUMBER	SHEET NAME
P0.1	PLUMBING LEGEND AND GENERAL NOTES
P0.2	PLUMBING SCHEDULES & DETAILS
P1.1	FIRST FLOOR PLAN - SANITARY
P1.2	FIRST FLOOR PLAN - DOMESTIC & NATURAL GAS
P1.3	MEZZANINE PLUMBING PLAN
P2.1	PLUMBING ISOMETRICS

GAS PIPE SIZING	
PIPE SIZE (BLACK STEEL)	MAX MBH
0.5"	44
0.75"	92
1"	173
1.25"	355
1.5"	532

GENERAL NOTES:
 1. SIZING BASED ON LESS THAN 2 PSIG PRESSURE, 0.5 PSIG DROP PER TABLE 402.4(2) OF IFGC
 2. TOTAL DEVELOPED LENGTH = 125 FT.

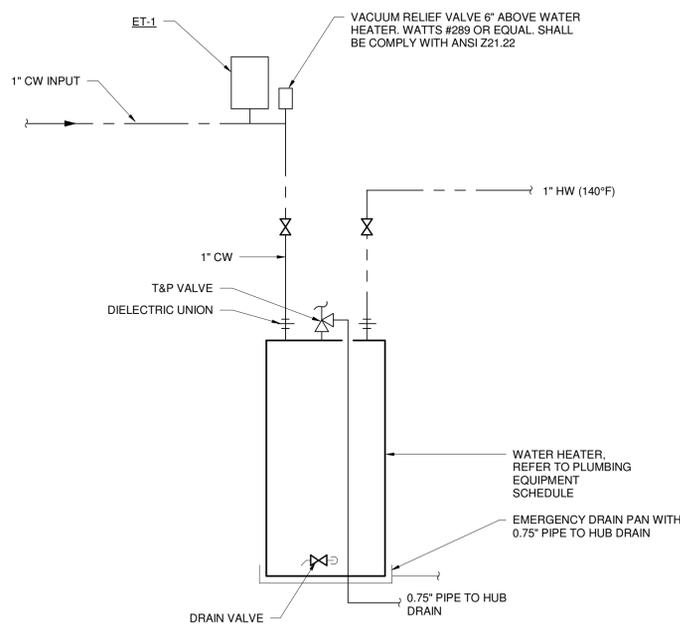
PLUMBING FIXTURE SCHEDULE									
PLAN MARK	FIXTURE TYPE	DESCRIPTION	SAN.	VENT	CW	HW	ACCESSORIES		
A1	WATER CLOSET ADA	AMERICAN STANDARD MODEL #215AA.004.020 "CADET PRO RIGHT HEIGHT"; ELONGATED, 1.6 GPF, WHITE VITREOUS CHINA, WITH OLSONITE #95 ELONGATED, WHITE, OPEN FRONT, NO COVER SEAT, WITH SELF SUSTAINING HINGE, 481310-100 BOLT CAPS.	3.0"	1.5"	0.50"				
B1	LAVATORY	AMERICAN STANDARD MODEL #0355.012 "LUCERNE", WALL MOUNT, WHITE VITREOUS CHINA, 4" CENTER FAUCET HOLES, GRID STRAINER; AMERICAN STANDARD MODEL #6114.116.002, SINGLE CONTROL CENTERSET FAUCET W/ 4" CENTER, LESS DRAIN; 1/2" SUPPLY AND STOP (TWO REQUIRED); 1-1/2" CAST BRASS L.A. "P" TRAP. SUPPLY AND INSTALL PLUMEX #3011 WHITE DRAIN INSULATOR.	1.5"	1.5"	0.50"	0.5"	PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE. SET DISCHARGE TEMPERATURE TO 110°F.		
B2	SINK	AMERICAN STANDARD MODEL COLONY #22DB.6332283S.075.33" X 22" STAINLESS STEEL COUNTERTOP MOUNT, DOUBLE BOWL, 3 HOLES, 4" CENTER FAUCET HOLES; AMERICAN STANDARD MODEL #7074.300 "COLONY PRO" PULL DOWN SPRAY FAUCET W/ 4" CENTER, LESS DRAIN, 3/8" SUPPLY AND STOP (TWO REQUIRED); 1-1/2" CAST BRASS L.A. "P" TRAP.	1.5"	1.5"	0.50"	0.5"	PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE. SET DISCHARGE TEMPERATURE TO 110°F.		
D1	MOP/UTILITY SINK	MUSTEE PRECAST MODEL #63M (24"x24"x10"); T&S BRASS FAUCET MODEL #B-0655-BSTR CHROME PLATED WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD ON SPOUT; MUSTEE #65.600 HOSE BRACKET, 30" LONG FLEXIBLE, HEAVY DUTY 5/8" RUBBER HOSE, CLOTH REINFORCED WITH 3/4" BRASS COUPLING AT ONE END.	3.0"	1.5"	0.50"	0.5"			
S1	SHOWER	AQUATIC 1363BFC-WH 36"x36"x75-1/8 FREEDOMLINE SHOWER W/ RH SEAT, GRAB BAR, PRESSURE BALANCING MIXING VALVE, AND HAND-HELD SHOWER ASSEMBLY.	2.0"	1.5"	0.50"	0.5"			

PLUMBING EQUIPMENT SCHEDULE										
PLAN MARK	DESCRIPTION	COLD WATER	TEMPERED	HOT WATER (140°F)	NATURAL GAS	NON POTABLE	WASTE	INDIRECT	FLOOR DRAIN	NOTES
EW-1	EMERGENCY EYE WASH - BRADLEY #S1944011BBC DUAL PURPOSE STATIONARY/ REMOVABLE EYE/FACE WASH		0.5"							3
FPWH-1	WOODFORD MODEL #65 SERIES, FREEZELESS, AUTOMATIC DRAIN, VACUUM BREAKER, BRASS FINISH, AND STAINLESS STEEL TRIM.	0.75"								1
FPWH-2	ZURN MODEL #Z1348-BFP, FREEZELESS, AUTOMATIC DRAIN, VACUUM BREAKER, BRASS FINISH, AND EXTERIOR CHROME FINISH.	0.75"		0.75"						1
IMB-1	ICE MAKER BOX - EQUAL TO GUY GRAY WHITE POWDER COATED WITH LEAD FREE HAMMER ARRESTER VALVES	0.5"								
OI-1	OIL INTERCEPTOR - STRIEM OS-100 (100 GPM - BELOW SLAB)							3.0"		2
RPZ-1	REDUCED PRESSURE BACKFLOW ASSEMBLY - EQUAL TO WATTS SERIES 009	1.5"								
TMV-1	THERMOSTATIC MIXING VALVE - BRADLEY #S19-2000 EFX8 SS	0.5"		0.5"						
WH-1	NATURAL GAS WATER HEATER - A.O. SMITH BTH-120, 60 GALLON, 120 MBH, 27.75" DIAMETER x 55.5"H, 138 GPH RECOVERY AT 100°F TEMP RISE.	1.5"		1.5"						

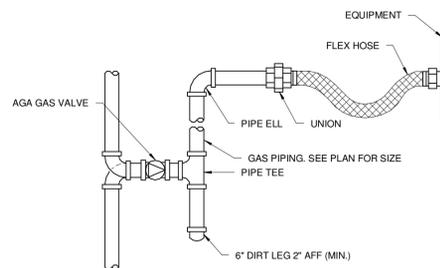
NOTES:
 1. MOUNT AT 18" A.F.G.
 2. INSTALL PER MANUFACTURER GUIDELINES. PROVIDE RISERS AS NECESSARY FOR COVER TO BE FLUSH WITH FINISHED FLOOR.
 3. PROVIDE WATTS SD BFP AND THERMOSTATIC MIXING VALVE WITH SURFACE MOUNTED CABINET **TMV-1**.

DRAIN AND CLEANOUT SCHEDULE																																		
PLAN MARK	APPROVED SUPPLIERS - J.R. SMITH, JOSAM, WATTS, ZURN	ZURN CATALOG NO.	TYPE				BODY			OUTLET			STRAINER/GRATE				TOP FINISH		ADDITIONAL FEATURES					SEE NOTE										
			FLOOR	ROOF	TRENCH	DECK	CAST IRON	BRASS	HDPE	STAINLESS STEEL	SIZE	BOTTOM	END	SIZE	ADJUSTABLE	FLAT	DOME	RECESSED	FUNNEL	HINGED	1/2 GRATE	NICKEL-BRONZE	CAST IRON		POLYETHYLENE	STAINLESS STEEL	ANCHOR FLANGE	FLASHING CLAMP	DBL. DRAINAGE	SED. BUCKET	AUX. STRAINER	GRAVELSTOP	U/DECK CLAMP	TRAP PRIMER
FD-1		ZN415-BZ1	X				X			3"	X		6"	X							X					X	X	X						1
TD-1		Z882			X			X				X	12" WIDE		X							X				X	X	X						2,3
FCO		ZN1400-B	X				X			6"	X		7-7/8"	X							X													
GCO		Z1474-VP	X				X								X							X												

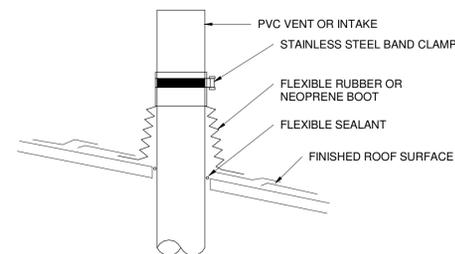
NOTES:
 1. PROVIDE TRAP SEAL PROTECTION DEVICE EQUAL TO Z1072.
 2. SLOPE TO MIDDLE.
 3. EACH SECTION 13'-0" LONG.



① WATER HEATER PIPING DETAIL
NTS



② GAS EQUIPMENT CONNECTION
NTS



③ PLUMBING VENT THROUGH SLOPED ROOF
NTS



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Sheet Title
PLUMBING SCHEDULES & DETAILS

Sheet Number

PO.2

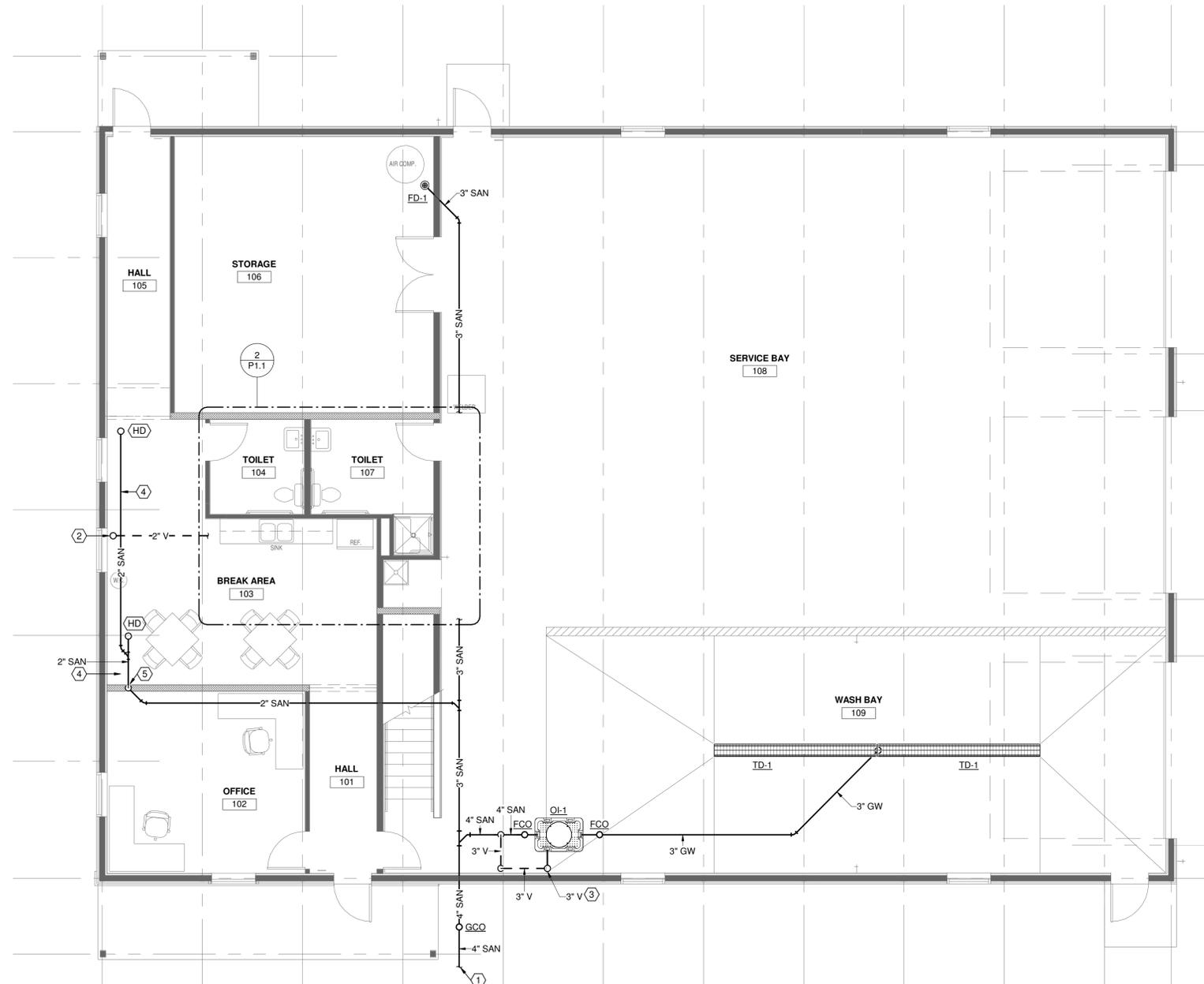
- DRAWING NOTES**
1. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
 2. VENT PIPING UP TO MEZZANINE.
 3. VENT PIPING UP TO STRUCTURE ABOVE.
 4. ROUTE SANITARY PIPING IN FLOOR FRAMING ABOVE.
 5. ROUTE SANITARY PIPING DOWN TO BELOW SLAB.



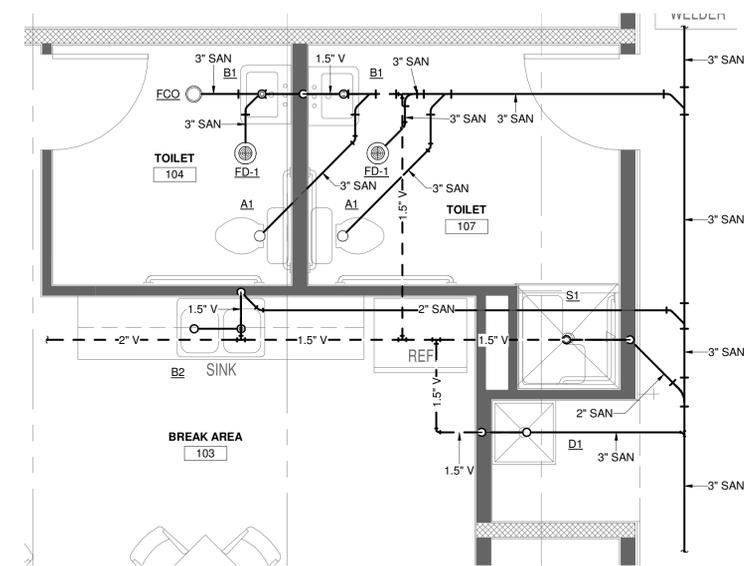
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1 FIRST FLOOR PLAN - SANITARY
3/16" = 1'-0"



2 ENLARGED PLUMBING PLAN - SANITARY
3/8" = 1'-0"

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FIRST FLOOR PLAN - SANITARY
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P1.1

DRAWING NOTES

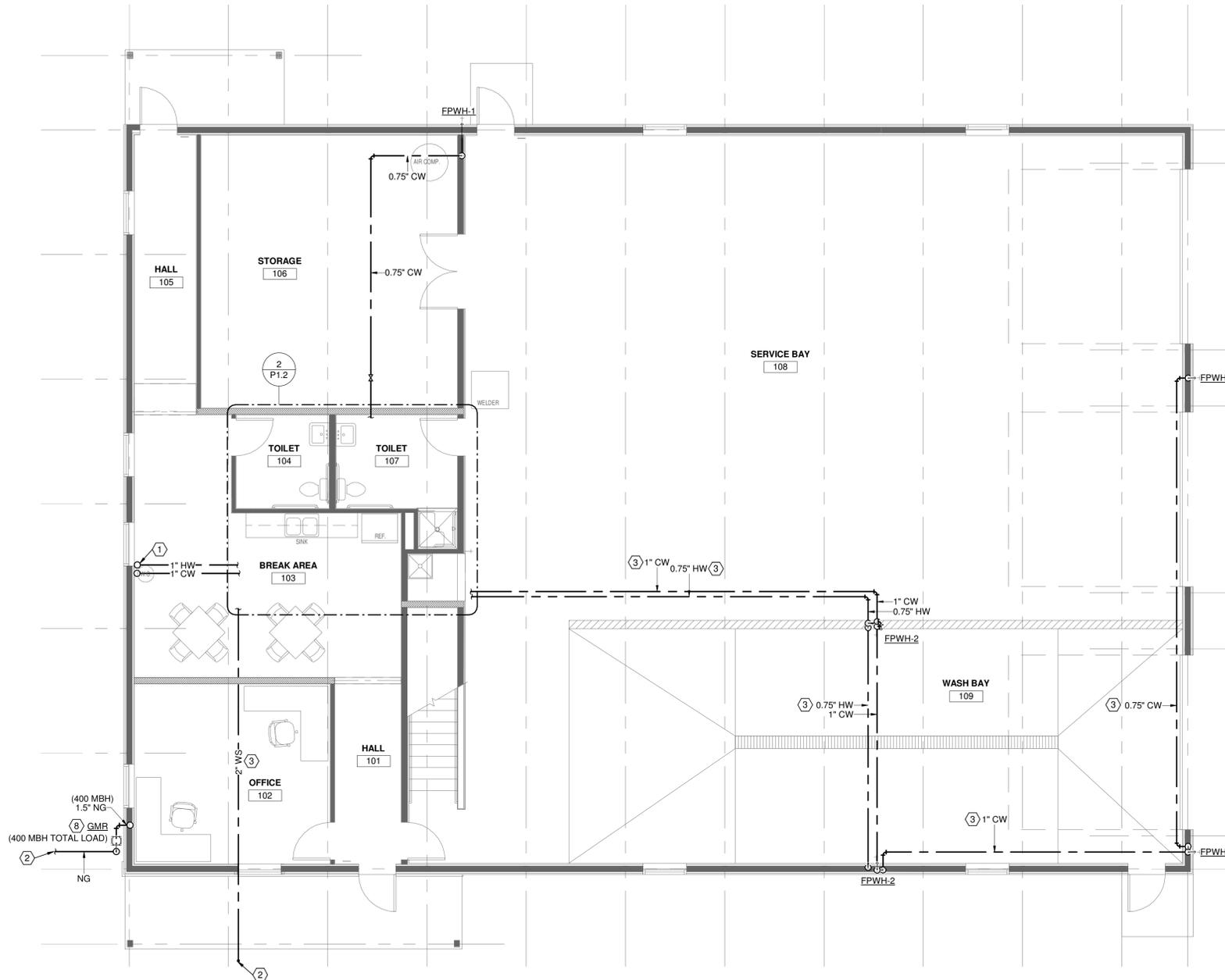
1. 1" HOT AND COLD WATER PIPING UP TO MEZZANINE.
2. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. PIPING LOCATED BELOW SLAB.
4. PROVIDE 1.5" DOMESTIC WATER SERVICE ASSEMBLY PER AHJ REQUIREMENTS.
5. PROVIDE SURFACE MOUNTED CABINET WITH THERMOSTATIC MIXING VALVE FOR EMERGENCY EYE WASH. COORDINATE MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH IN. REFER TO PLUMBING EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
6. PROVIDE DUAL PURPOSE EYE WASH. COORDINATE MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH IN. REFER TO PLUMBING EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
7. HOT AND COLD WATER PIPING DOWN TO BELOW SLAB.
8. NEW GAS METER BY UTILITY COMPANY.



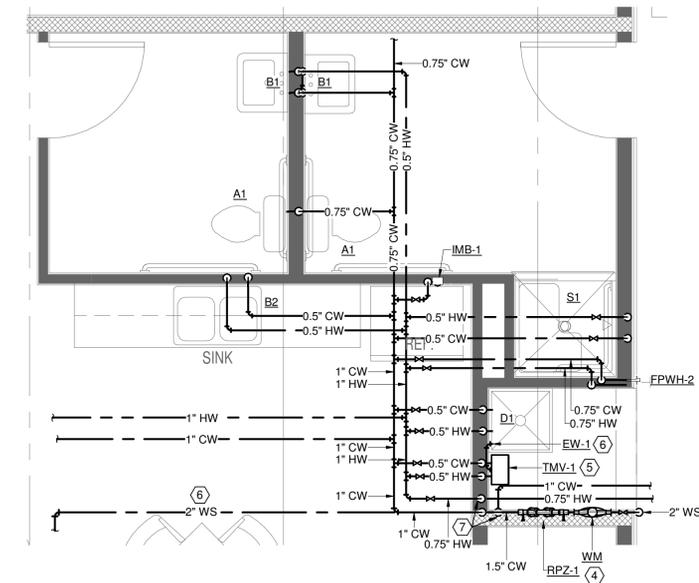
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① FIRST FLOOR PLAN - DOMESTIC & NATURAL GAS
3/16" = 1'-0"



② ENLARGED PLUMBING PLAN - DOMESTIC
3/8" = 1'-0"

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FIRST FLOOR PLAN -
DOMESTIC & NATURAL GAS

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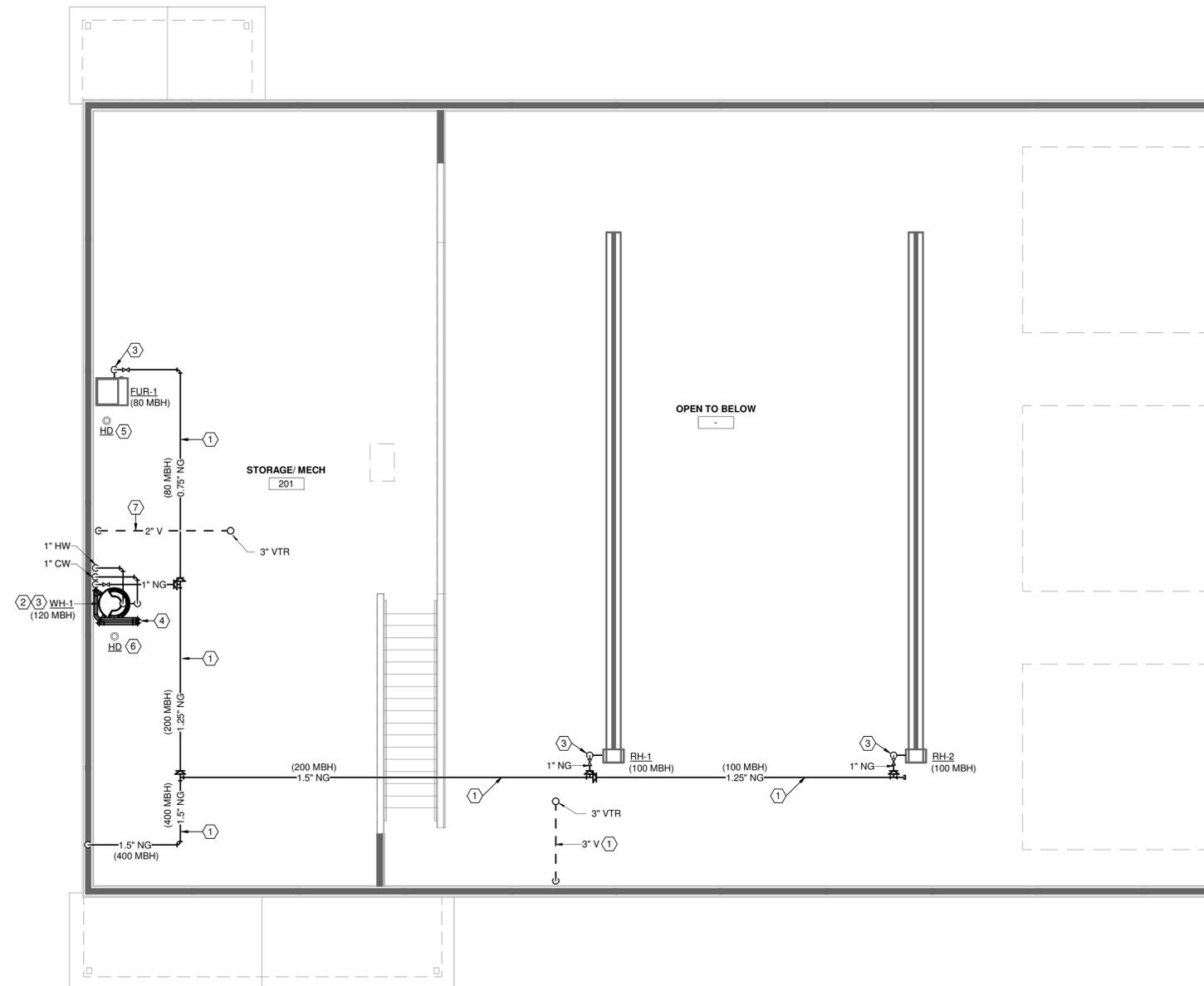
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DRAWING NOTES

1. ROUTE PIPING TIGHT TO UNDERSIDE OF ROOF STRUCTURE.
2. NEW FLOOR SET NATURAL GAS WATER HEATER. EXPANSION TANK MOUNTED ON WALL USING WALL BRACKET EQUAL TO HOLD-RITE MODEL QS-U. TANK SHALL NOT BE SUPPORTED BY PIPING. REFER TO WATER HEATER PIPING DETAIL 1/P0.2 FOR ADDITIONAL INFORMATION.
3. PROVIDE DIRT LEG, GAS ISOLATION VALVE, UNION, AND FLEXIBLE HOSE CONNECTION TO MECHANICAL EQUIPMENT. REFER TO DETAIL 2/P0.2 FOR ADDITIONAL INFORMATION.
4. PROVIDE CONCENTRIC VENT KIT FOR WATER HEATER COMBUSTION AIR AND EXHAUST AIR PIPING. INSTALL PER MANUFACTURER REQUIREMENTS. LOCATE ROOF PENETRATION A MINIMUM OF 10'-0" FROM ANY MECHANICAL INTAKE AIR DUCT.
5. PROVIDE HUB DRAIN FOR FURNACE CONDENSATE DRAIN.
6. PROVIDE HUB DRAIN FOR WATER HEATER T&P RELIEF VALVE.
7. ROUTE VENT PIPING IN ATTIC SPACE.



MEZZANINE PLUMBING PLAN
3/16" = 1'-0"

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MEZZANINE PLUMBING PLAN
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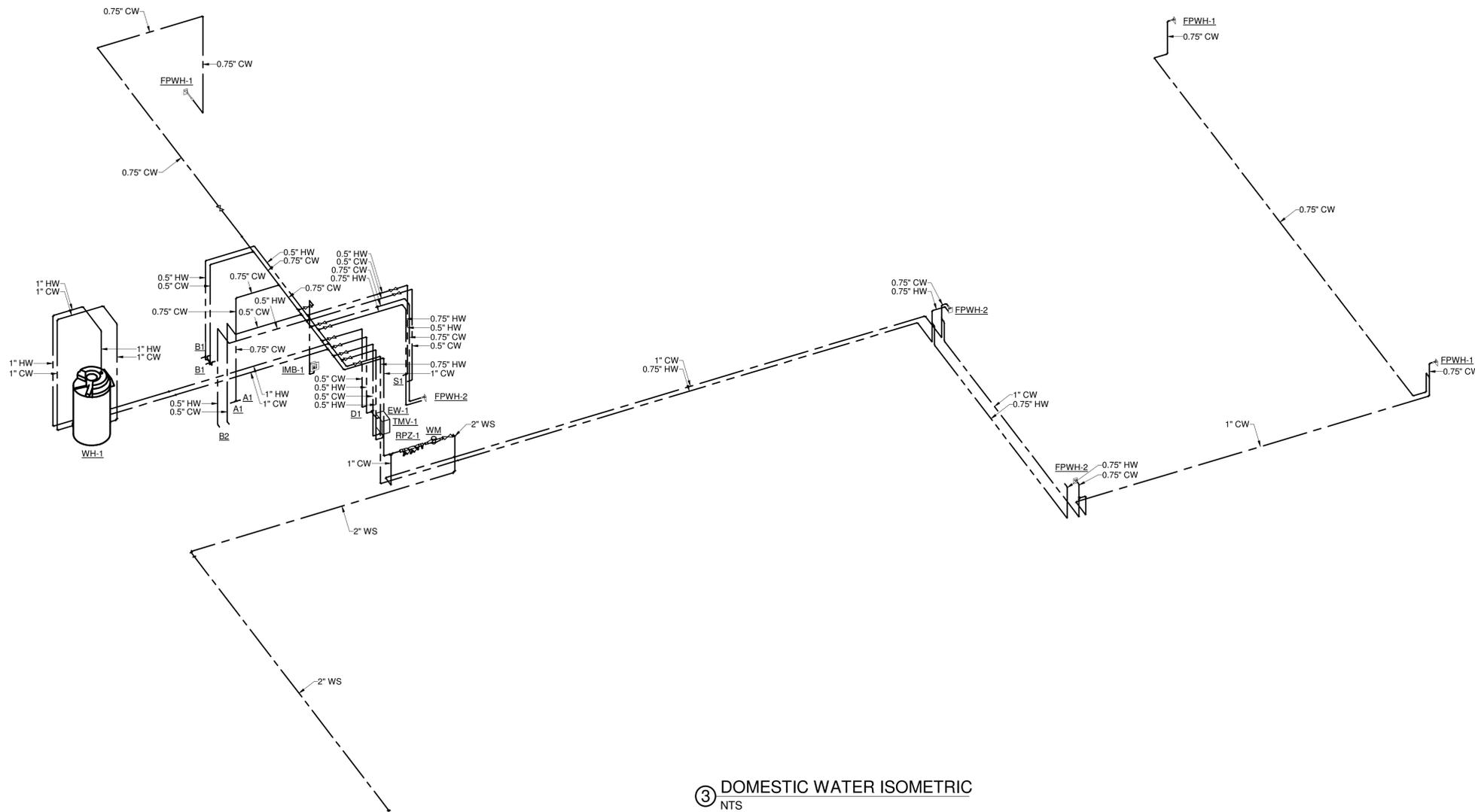
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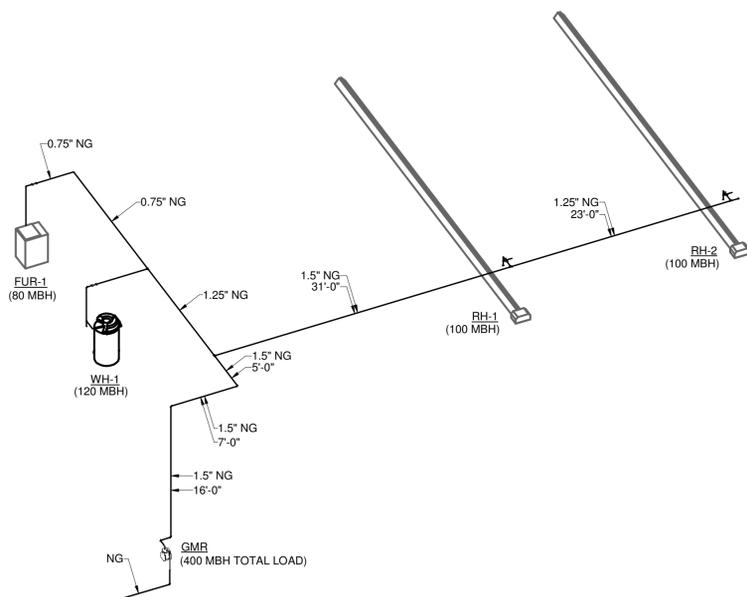
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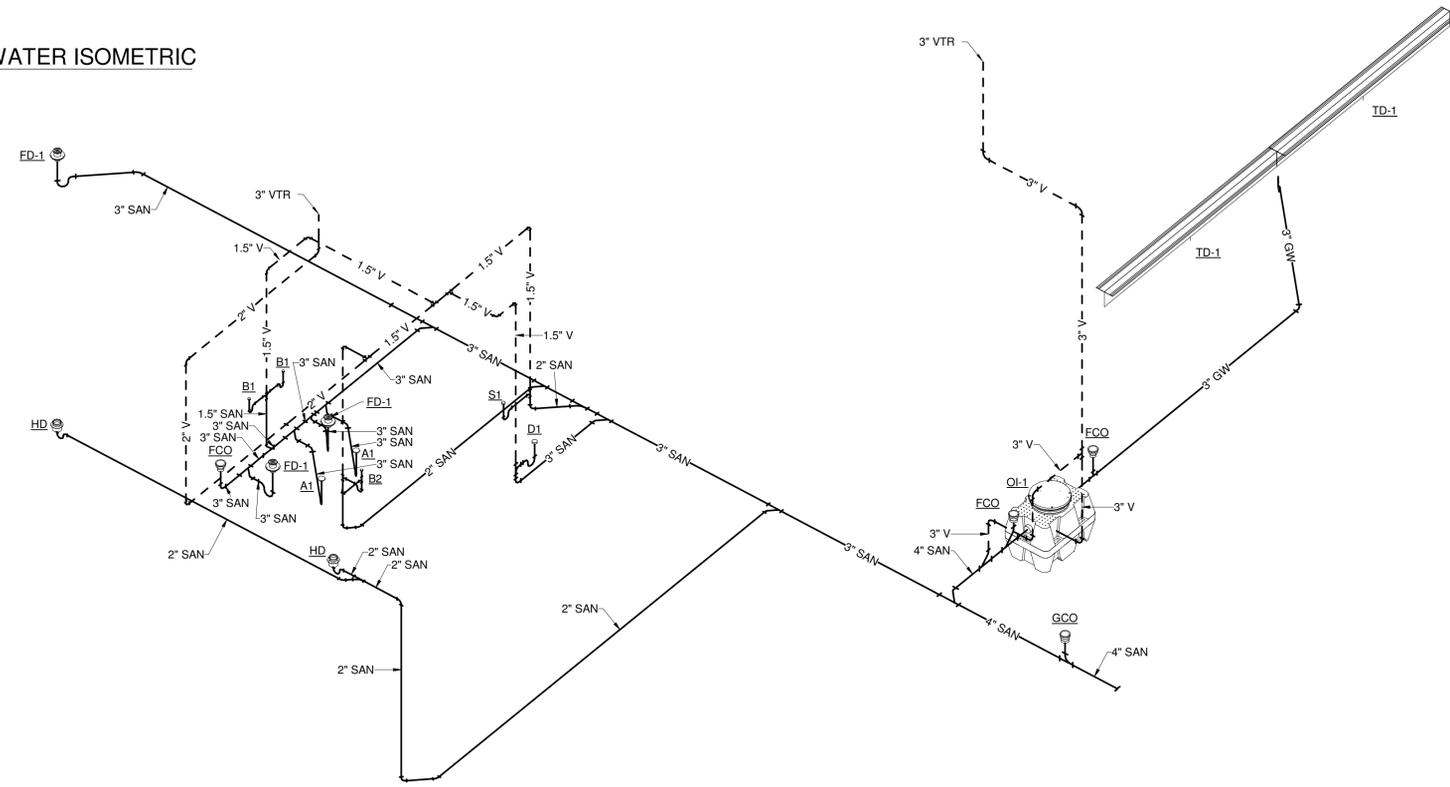
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③ DOMESTIC WATER ISOMETRIC
NTS



② NATURAL GAS ISOMETRIC
NTS



① SANITARY AND VENT ISOMETRIC
NTS

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GENERAL NOTES

- A. DO NOT SCALE DRAWINGS. IF DIMENSIONS CANNOT BE DETERMINED OR DOCUMENTS ARE IN CONFLICT (WITH THEMSELVES OR FIELD CONDITIONS), THE CONTRACTOR MUST OBTAIN CLARIFICATION FROM THE ARCHITECT PRIOR TO CONTINUATION OF WORK.
- B. CONTRACTOR(S) SHALL VISIT THE SITE TO ACQUAINT THEMSELVES WITH THE EXISTING OR NEWLY INSTALLED CONDITIONS. CONTRACTOR(S) SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, UTILITIES, AND EXISTING OR NEWLY INSTALLED CONDITIONS PRIOR TO CONSTRUCTION.
- C. THE CONSTRUCTION DOCUMENTS AND DRAWING NOTES / SPECIFICATIONS ARE INTENDED TO DESCRIBE AND PROVIDE FOR A FINISHED PIECE OF WORK. THE WORK SHALL BE COMPLETED IN EVERY DETAIL EVEN THOUGH EVERY ITEM NECESSARILY INVOLVED IS NOT PARTICULARLY MENTIONED OR SPECIFIED. ALL WORK SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND / OR MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS. IF ANY CONTRACTOR IS IN DOUBT AS TO THE TRUE MEANING OF ANY PART OF THE DOCUMENTS, OR FINDS DISCREPANCIES IN OR OMISSIONS FROM ANY PART OF THE DOCUMENTS, HE MUST CONTACT THE ARCHITECT FOR CLARIFICATION.
- D. ALL DIMENSIONS ARE TO FACE OF STUD, CONCRETE, MASONRY, OR CENTERLINE OF COLUMN, UNLESS NOTED OTHERWISE. WHEN EXISTING CONDITIONS ARE SHOWN, DIMENSIONS ARE TO FACE OF EXISTING FINISH, UNLESS NOTED OTHERWISE.
- E. FINISH FLOOR ELEVATIONS ARE FOR GENERAL REFERENCE. REFER TO CIVIL SHEETS FOR ACTUAL FINISH FLOOR ELEVATIONS.
- F. EQUIPMENT AND FURNITURE SHOWN IS FOR REFERENCE ONLY. EQUIPMENT AND FURNITURE PROVIDED BY OWNER (UNLESS NOTED OTHERWISE). COORDINATE EQUIPMENT AND FURNITURE INSTALLATION AND UTILITY CONNECTIONS WITH OWNER AND OWNER'S SUPPLIER.
- G. **DEFINITIONS:**
NECESSARY: WORK NEEDED TO COMPLETE THE WORK TO "MAKE IT OPERATIONAL".
REQUIRED: WORK NEEDED TO BE IN COMPLIANCE WITH BUILDING CODE, GOVERNING CODE, OR JURISDICTION HAVING AUTHORITY.
PROVIDE: RESPONSIBLE FOR PURCHASE, DELIVERY, RECEIVING, INSPECTION, STORAGE, PREPARATION, AND INSTALLATION OF ITEM(S).
FURNISH: RESPONSIBLE FOR PURCHASE AND DELIVERY OF ITEM(S).
INSTALL: RESPONSIBLE FOR RECEIVING, INSPECTION, STORAGE, PREPARATION, AND INSTALLATION OF ITEM(S).
BASIS OF DESIGN: AN ACCEPTABLE MANUFACTURER OR PRODUCT, DESIGNATED BY THE DESIGN PROFESSIONAL, WHICH EXHIBITS THE INTENDED STANDARDS AND DESIGN CRITERIA THAT MUST BE MET FOR PERFORMANCE. THE ITEM(S) INDICATED MAY BE PROVIDED OR AN ITEM OF EQUIVALENT APPEARANCE, AESTHETIC, QUALITY, MATERIAL, CONSTRUCTION, AND PERFORMANCE MAY BE SUBSTITUTED SUBJECT TO THE ARCHITECT'S OR DESIGN PROFESSIONAL'S APPROVAL. (REFER TO THE "SUBSTITUTIONS" SPECIFICATION FOR ADDITIONAL INFORMATION)
OR EQUAL: MAY FOLLOW A "BASIS OF DESIGN" OR OTHER SPECIFIED MANUFACTURER OR PRODUCT AND INDICATES THAT AN ITEM OF EQUIVALENT APPEARANCE, AESTHETIC, QUALITY, MATERIAL, CONSTRUCTION, AND PERFORMANCE MAY BE SUBSTITUTED SUBJECT TO THE ARCHITECT'S OR DESIGN PROFESSIONAL'S APPROVAL. (REFER TO THE "SUBSTITUTIONS" SPECIFICATION FOR ADDITIONAL INFORMATION)

HVAC GENERAL SPECIFICATIONS

- A. UPON COMPLETION OF ALL HVAC WORK, THE CONTRACTOR SHALL SUBMIT (2) COPIES OF THE MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT TO THE OWNER. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A COMPLETE SET OF RECORD DRAWINGS WITH ANY AND ALL CHANGES OR MODIFICATIONS TO THE DESIGN, CONSTRUCTION, SYSTEMS, OR EQUIPMENT CLEARLY INDICATED; SHOP DRAWINGS; INFORMATION ON THE THERMOSTATS, CONTROL WIRING DIAGRAMS, AND OTHER PERTINENT INFORMATION.
- B. **HVAC EQUIPMENT:** ALL EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT WITH ALL DEVICES, APPURTENANCES, AND ACCESSORIES PROVIDED TO MEET THE DESIGN INTENT AND OPERATION OF THE SYSTEMS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL AIR CONDITIONING EQUIPMENT MUST HAVE A CONDENSATE DRAIN AND BE TRAPPED IN ACCORDANCE WITH MANUFACTURER'S DATA. ALL COMPRESSORS ARE TO INCLUDE A 5-YEAR EXTENDED WARRANTY.
- C. **GAS PIPING (IF INCLUDED IN THE PROJECT):** CONTRACTOR TO COORDINATE (INCLUDING VERIFICATION OF EXISTING SYSTEM EQUIPMENT, MAINS, LINE SIZES, AND REQUIREMENTS) AND SIZE GAS PIPING PER MANUFACTURER'S RECOMMENDATIONS, LOCAL CODE, AND UTILITY COMPANY REQUIREMENTS, UNLESS PROVIDED OTHERWISE IN THE CONSTRUCTION DOCUMENTS - **ARCHITECT/ENGINEER TO REVIEW AND APPROVE GAS PIPING SIZING PRIOR TO INSTALLATION.** GAS PIPING TO BE INSTALLED PER NFPA 54 AND REFER TO PLUMBING GENERAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- D. **REFRIGERANT LINE SET:** HVAC CONTRACTOR TO SIZE REFRIGERANT LINE SET SIZES PER MANUFACTURER'S RECOMMENDATIONS AND FIELD CONDITIONS - **ARCHITECT/ENGINEER TO REVIEW AND APPROVE LINE SET SIZES PRIOR TO INSTALLATION.** GAS PIPING TO BE INSTALLED PER NFPA 54 AND REFER TO PLUMBING GENERAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- E. **NOISE AND VIBRATION:** MECHANICAL AND ELECTRICAL EQUIPMENT IS TO OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION. ALL MOTOR OPERATED OR ROTATING EQUIPMENT IS TO BE VIBRATION ISOLATED OR FREE FROM ALL BEAMS, COLUMNS, FLOORS, CEILINGS, JOISTS, WALLS, AND OTHER PARTS OF THE BUILDING STRUCTURE. HANGER RODS FOR ALL PIPING, EQUIPMENT, AND DUCTWORK CONNECTED TO MOTOR OPERATED OR ROTATING EQUIPMENT IS TO BE PROVIDED WITH KINETICS OR APPROVED EQUAL FIBERGLASS ISOS. HANGER COLLARS SHALL BE INSTALLED IN ALL CONNECTIONS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, ETC.) AND DUCTS. THE FLEXIBLE CONNECTION IS TO BE RATED FOR THE OPERATING PRESSURE OF THE SYSTEM.
- F. **CURBS AND STEEL FRAMING FOR SUPPORT:** PROVIDE ALL NECESSARY CURBS AND STEEL FRAMING REQUIRED TO INSTALL ALL HVAC EQUIPMENT AS DESCRIBED OR IMPLIED ON THE DRAWINGS. CURBS SHALL BE OF THE SAME MANUFACTURER OF THE EQUIPMENT SUPPORTED. INSULATE UNDER THE COMPRESSOR SECTION TO PREVENT CONDENSATION. ALL CURBS MUST BE INSTALLED SO THAT TOP OF CURBS ARE LEVEL.
- G. **DUCTWORK:** DUCTWORK IS TO BE FABRICATED WITH GALVANIZED SHEET STEEL (NO FIBERGLASS ALLOWED) IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE" AND NAIMA "FIBROUS GLASS DUCT CONSTRUCTION STANDARDS" LATEST EDITIONS; CONFORMING TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS. ALL JOINTS, SEAMS, AND CONNECTIONS MUST BE SECURELY FASTENED AND SEALED AIRTIGHT IN COMPLIANCE WITH THE INTERNATIONAL ENERGY CONSERVATION CODE AND OHIO MECHANICAL CODE.
- H. **BRANCH DUCTWORK:** ALL DUCT BRANCHES TO DIFFUSERS ARE TO BE RECTANGULAR OR ROUND RIGID DUCT. ALL BRANCH TAKEOFFS FROM RECTANGULAR MAINS TO BE CONNECTED TO SPIN COLLARS WITH SCOOPS AND QUADRANT DAMPERS.
- I. **FLEXIBLE DUCTWORK:** FLEX DUCTWORK IS TO BE NFPA 90 AND 90A APPROVED INDICATING NO VINYL, TESTED IN ACCORDANCE WITH UL 181, AND LISTED AND LABELED AS CLASS 0 OR CLASS 1 DUCT. NO FLEX DUCT RUN TO EXCEED **8'-0" MAXIMUM** TOTAL LENGTH AT ANY ONE LOCATION. ALL FLEX CONNECTIONS TO BE TAPED AND STRAPPED PER MANUFACTURER'S INSTRUCTIONS. FLEXIBLE AIR DUCT MAY ONLY BE USED IN VERTICAL APPLICATIONS. **FLEXIBLE DUCTWORK IS NOT PERMITTED TO BE USED FOR RETURN DUCTWORK.**
- J. **DUCTWORK INSULATION:** INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES. INSULATION MUST COMPLY WITH NFPA 90A. DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS. INSULATE DUCTWORK PER THE DUCT CONSTRUCTION SCHEDULE. PROVIDE DUCTWORK INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, AND SIMILAR PENETRATIONS. ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM C411, OR AS REQUIRED BY LOCAL CODES.
- K. WHERE ROUND DUCTWORK IS INDICATED ON PLANS, PROVIDE RECTANGULAR DUCTWORK. IF ROUND DUCTWORK CANNOT BE INSTALLED BECAUSE OF OBSTRUCTIONS, INSUFFICIENT CLEARANCES OR OTHER CAUSES DUE TO FIELD CONDITIONS, CONTRACTOR'S OPTION TO INSTALL RECTANGULAR DUCTWORK IN LIEU OF INDICATED ROUND DUCTWORK AT OTHER LOCATIONS. SIZE ALL RECTANGULAR DUCTWORK CONVERSIONS COMPARABLE TO INDICATED DUCTWORK SIZE PER SMACNA "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE," LATEST EDITION. SHOULD THE CONTRACTOR BE IN DOUBT OF THE REQUIREMENTS UNDER THIS SECTION, DUCTWORK SIZING, OR SHOULD ANY DISCREPANCY BE REVEALED BASED ON FIELD CONDITIONS, IMMEDIATELY CONTACT THE ARCHITECT FOR CLARIFICATION.
- L. PROVIDE A FLEXIBLE CONNECTION BETWEEN BONNET AND RIGID DUCT ON ALL SUPPLY AND RETURN DUCTWORK.
- M. **DIFFUSERS, GRILLES, REGISTERS, AND DAMPERS:** PROVIDE DIFFUSERS, GRILLES, AND REGISTERS AS SCHEDULED. DEVICES TO BE COMPLETE WITH BALANCING DAMPERS, FRAMES, AND ALL ACCESSORIES. FINISH AS INDICATED. PROVIDE UL LISTED (UL555) FIRE RATED DAMPERS AT ALL FIRE PARTITION OR FIRE BARRIER PENETRATIONS, WHETHER SHOWN OR NOT SHOWN ON THE PLANS. ALL GRAVITY DAMPERS REQUIRE SEALS.
- N. **SUPPORT AND BRACING:** INSTALL RIGID ROUND AND RECTANGULAR METAL DUCTWORK WITH APPROVED SUPPORT SYSTEMS INDICATED IN SMACNA STANDARDS AND STATE BUILDING CODE. SUPPORT HORIZONTAL DUCTS AT A MAXIMUM INTERVAL OF 10 FEET AND WITHIN 2 FEET OF EACH ELBOW AND WITHIN 4 FEET OF EACH BRANCH INTERSECTION USING DOUBLE STRAP HANGERS ON EACH SIDE OF FITTING. SUPPORT VERTICAL DUCTS AT A MAXIMUM INTERVAL OF 10 FEET AND AT EACH FLOOR. FLEXIBLE AND OTHER FACTORY MADE DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. NO WOOD SHALL BE USED TO SUPPORT OR BRACE DUCTS. PROVIDE SWAY AND SEISMIC BRACING AS REQUIRED BY STATE AND LOCAL CODES. PROVIDE FIXED ANCHORS AT EACH MECHANICAL DIFFUSER OR GRILLE TO CEILING GRID. CEILING GRID CONTRACTOR TO PROVIDE SUPPORT WIRES AT OPPOSITE CORNERS OF LIGHT FIXTURES, MECHANICAL DIFFUSERS, AND GRILLES TO STRUCTURE ABOVE.

HVAC GENERAL SPECIFICATIONS CONT'D

- O. **CONTROLS:** EACH UNIT TO BE CONTROLLED BY THERMOSTAT WITH PROPER STAGES OF HEATING AND COOLING - MOUNTED AT 54" AFF (REFER TO MECHANICAL SHEETS FOR MODEL NO. AND LOCATION). CONTROL WIRING IS TO BE FURNISHED AND INSTALLED BY THE HVAC CONTRACTOR. POWER WIRING IS TO BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- P. **POWER AND CONTROL WIRING:** ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY POWER WIRING FOR HVAC EQUIPMENT FROM SUITABLE FUSED DISCONNECT SOURCE TO UNIT WITH FUSED DISCONNECT TO MEET NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL CODES. HVAC CONTRACTOR TO PROVIDE 24 VOLT OR LESS CONTROL WIRING.
- Q. **STARTUP:** HVAC CONTRACTOR TO PROVIDE STARTUP PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.
- R. **AIRFLOW AND TESTING:** ALL DUCT AS PER SMACNA GUIDELINES. THE SYSTEM TO BE BALANCED AND TESTED BY AN INDEPENDENT, "NEBB" CERTIFIED, BALANCING CONTRACTOR PER "NEBB".
- S. PROCEDURES. THE HVAC CONTRACTOR SHALL INCLUDE THE COST OF THE BALANCING AND TESTING IN HIS BID. THE BALANCING CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TRANSPORTATION, AND EQUIPMENT NECESSARY TO COMPLETELY BALANCE THE AIR FLOW FOR THE HVAC SYSTEMS AS SHOWN ON THE DRAWINGS. HVAC CONTRACTOR SHALL INSTALL NEW FILTERS IN ALL UNITS PRIOR TO THE AIR BALANCE. THE COMPLETE AIR BALANCE SHALL TAKE PLACE WITH OUTSIDE AIR DAMPERS IN MINIMUM POSITION. BALANCE THE SYSTEM TO WITHIN +5 PERCENT OF THE DESIGN REQUIREMENTS. THE HVAC CONTRACTOR AT NO ADDITIONAL COST SHALL PERFORM ANY REQUIRED CHANGES REQUIRED TO ACHIEVE SPECIFIED FLOW RATES. ALL CONTROL SEQUENCES SHALL BE TESTED (INTERLOCKED EQUIPMENT, SMOKE DETECTORS, SMOKE EVACUATION, ECONOMIZER, CO2 SENSORS, ETC.) AND OPERATING STATUS RECORDED IN THE REPORT. A DIGITAL OR THREE (3) PRINTED COPIES OF THE BALANCE AND TESTING REPORT SHALL BE PROVIDED TO THE OWNER, OWNER'S REPRESENTATIVE, OR ARCHITECT BEFORE PROJECT CLOSE OUT FOR REVIEW. THE BALANCING CONTRACTOR SHALL RECHECK ANY ITEMS THAT THE OWNER OR ARCHITECT DEEMS REASONABLY NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- T. VENTILATION AND COMBUSTION AIR INTAKE: PROVIDE OUTSIDE VENTILATION AIR BY NATURAL VENTILATION OR MECHANICAL EQUIPMENT AS REQUIRED BY THE MECHANICAL CODE (REFER TO OUTSIDE AIR VENTILATION SCHEDULE). IF GAS-FIRED EQUIPMENT IS USED, VERIFY THAT THE MECHANICAL ROOM AND / OR MECHANICAL EQUIPMENT ARE PROVIDED WITH ADEQUATE COMBUSTION AND DILUTION AIR IN COMPLIANCE WITH THE MECHANICAL CODE. PROVIDE ADDITIONAL AIR AS REQUIRED. PROVIDE A VENT DESIGNED FOR THE TYPE OF APPLIANCE BEING VENTED FOR ALL GAS-FIRED EQUIPMENT TO THE EXTERIOR. PROVIDE VENTS DIRECTLY TO THE EXTERIOR FOR ALL EXHAUST FANS. ALL EXHAUST AND INTAKE OPENINGS MUST BE LOCATED A MINIMUM OF 10 FEET FROM LIT LINES OR BUILDINGS ON THE SAME LOT.
- U. PROVIDE A SMOKE DETECTOR IN RETURN AIR SYSTEMS WITH A DESIGN CAPACITY GREATER THAN 2,000 CFM IN THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS, EXHAUST AIR CONNECTIONS, OUTDOOR AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT AND APPLIANCES (PER OMC SECTION 606.2.1). WHERE TWO OR MORE UNITS SHARE THE SAME RETURN, THE COMBINED AMOUNT OF CFM SHALL BE USED IN DETERMINING WHETHER A DUCT SMOKE DETECTOR IS REQUIRED. COORDINATE THESE REQUIREMENTS BETWEEN THE HVAC AND THE ELECTRICAL OR FIRE ALARM CONTRACTORS.
- V. PROVIDE ACCESS TO ALL DAMPERS, CONTROLS, AND OTHER ITEMS IN DUCTWORK THAT REQUIRE SERVICE OR INSPECTION. IF THE ACCESS PANEL LOCATION IS EXPOSED, THE OWNER OR THE ARCHITECT MUST APPROVE IT PRIOR TO INSTALLATION. ACCESS PANELS ARE NOT REQUIRED ABOVE LAV-IN GRID TYPE CEILINGS.
- W. ALL HVAC EVAPORATORS AND COOLING COILS REQUIRE A CONDENSATE DRAIN, WHICH IS CONVEYED TO AN APPROPRIATE PLACE OF DISPOSAL, TYPICALLY INDIRECTLY INTO A FLOOR DRAIN. A SECONDARY DRAIN OR AUXILIARY DRAIN PAN (WITH A SEPARATE DRAIN OR A WATER LEVEL DETECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT OFF THE EQUIPMENT SERVED PRIOR TO OVERFLOW OF THE AUXILIARY DRAIN PAN) IS REQUIRED FOR ANY EQUIPMENT THAT PRODUCES CONDENSATE AND WHERE DAMAGE MAY OCCUR AS A RESULT OF OVERFLOW FROM THE EQUIPMENT DRAIN PAN OR STOPPAGE IN THE CONDENSATE DRAIN (PER OMC SECTION 307.2.3). COORDINATE THESE REQUIREMENTS BETWEEN THE HVAC AND PLUMBING CONTRACTORS AND THE ARCHITECT.
- X. ALL ROOF AND/OR EXTERIOR WALL PENETRATIONS ARE TO BE SEALED AIR AND WATER TIGHT, COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS. ALL EQUIPMENT, PIPES, DUCTS, ETC. ARE TO BE INSTALLED CONCEALED ABOVE THE CEILING UNLESS SHOWN OTHERWISE.
- Y. VERIFY ALL SUSPENDED MECHANICAL LOADS WITH ARCHITECT PRIOR TO ORDERING NEW MECHANICAL EQUIPMENT.
- Z. HVAC CONTRACTOR TO COORDINATE ROUTING AND LOCATION OF ALL DEVICES WITH BUILDING STRUCTURE AND OTHER CEILING MOUNTED DEVICES.
- AA. HVAC CONTRACTOR TO REVIEW DRAWINGS FOR COMPLIANCE WITH LOCAL CODES AND WITH AUTHORITIES HAVING JURISDICTION OVER THIS PROJECT. CONTACT ARCHITECT WITH ANY QUESTIONS OR CONCERNS.

DUCTWORK SYMBOL LEGEND			
	SUPPLY OR OUTSIDE AIR DUCT UP		RADIUS RECTANGULAR ELBOW
	RETURN OR EXHAUST AIR DUCT UP		SUPPLY OR OUTSIDE AIR ROUND DUCT UP
	SUPPLY OR OUTSIDE AIR DUCT DOWN		RETURN OR EXHAUST AIR ROUND DUCT UP
	RETURN OR EXHAUST AIR DUCT DOWN		ROUND DUCT DOWN
	SUPPLY OR OUTSIDE AIR DUCT OFFSET		ROUND OFFSET
	RETURN AIR DUCT OFFSET		ROUND ELBOW
	MANUAL BALANCING DAMPER		ROUND WYE
	MOTORIZED DAMPER		RECTANGULAR BRANCH TAKEOFF
	FIRE DAMPER		RECTANGULAR DUCT TERMINATION
	RECTANGULAR TO ROUND TRANSITION		ROUND DUCT TERMINATION
	RECTANGULAR TRANSITION		
	STANDARD RECTANGULAR ELBOW		

ANNOTATION SYMBOL LEGEND			
	THERMOSTAT OR TEMP. SENSOR		SECTION SYMBOL
	HUMIDISTAT		EQUIPMENT PLAN MARK
	SWITCH		CONNECT TO EXISTING
	KEYED NOTE SYMBOL		DETAIL SYMBOL
	VAV TERMINAL UNIT MARK		
	AHU-1 EQUIPMENT MARK		
	AIR DEVICE MARK - NECK SIZE		
	ROUND DUCT SIZE		
	RECTANGULAR DUCT SIZE		

AIR DEVICE AND DUCT ACCESS. LEGEND			
	RETURN AIR GRILLE		SUPPLY AIR DIFFUSER (HARD CONNECTION)
	SUPPLY AIR DIFFUSER WITH FLEXIBLE RUNOUT AND DAMPER		RETURN OR EXH. GRILLE (HARD CONNECTION)
	SIDEWALL DIFFUSER		14X14 TRANSFER OPENING IN WALL
	SUPPLY AIR DIFFUSER (HARD CONNECTION)		TRANSFER OPENING IN WALL
	RETURN OR EXH. GRILLE (HARD CONNECTION)		

PIPE SYMBOL LEGEND	
	PIPE DOWN
	PIPE UP
	TEE DOWN
	TEE UP
	PIPE BREAK (FOR CLARITY)
	CAPPED PIPE
	REFRIGERANT SUCTION PIPE
	REFRIGERANT HOT GAS PIPE

HVAC INDEX OF DRAWINGS	
SHEET NUMBER	SHEET NAME
H0.1	HVAC LEGEND AND GENERAL NOTES
H0.2	HVAC SCHEDULES & DETAILS
H1.1	HVAC FLOOR PLAN



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Proposed Bus Maintenance Facility
Twin Valley Community
Local School District
100 Education Drive
West Alexandria, Ohio 45381

Print Record

02/24/23 Bid/Const. Set

Project Number

2023011

Date

February 24, 2023

Sheet Title

HVAC LEGEND AND GENERAL NOTES

Sheet Number

H0.1

VENTILATION SCHEDULE								
ROOM NUMBER	ROOM NAME	OCCUPANCY TYPE	AREA (SF)	OCCUPANT DENSITY (#/1000SF)	PEOPLE AIR RATE (CFM/PERSON)	AREA AIR RATE (CFM/SF)	NUMBER OF PEOPLE	MINIMUM OA AIRFLOW (CFM)
101	HALL	CORRIDOR	80	0	0	0.06	0	5
102	OFFICE	OFFICE	228	5	5	0.06	2	24
103	BREAK AREA	BREAK	345	25	5	0.06	9	66
104	TOILET		56					
105	HALL	CORRIDOR	112	0	0	0.06	0	7
106	STORAGE		453					
107	TOILET		84					
108	SERVICE BAY	MAINTENANCE	2270	0	0	0.5	0	1135
109	WASH BAY	MAINTENANCE	1117	0	0	0.5	0	559
201	STORAGE/ MECH		1421					
			6167					1796

GAS FIRED RADIANT HEATER SCHEDULE								
PLAN MARK	DESCRIPTION	BASIS OF DESIGN		INPUT MBH	ELECTRIC		TUBE LENGTH	NOTES
		MANUF.	MODEL		V/PH	MCA		
RH-1	SINGLE STAGE, LOW INTENSITY	RE-VERBER-RAY	DES3-40-100	100	120/1	1.7	41'-1"	1
RH-2	SINGLE STAGE, LOW INTENSITY	RE-VERBER-RAY	DES3-40-100	100	120/1	1.7	41'-1"	1

NOTES:
1. PROVIDE WITH POLISHED ALUMINUM REFLECTOR, FLEXIBLE GAS CONNECTOR, 24V CONTROL TRANSFORMER AND DIGITAL HEATING ONLY LOW VOLTAGE THERMOSTAT.

FURNACE SCHEDULE															
PLAN MARK	BASIS OF DESIGN		CFM	VENT. AIR CFM	ESP	HEATING		NOM. COOL CAPACITY (TONS)	DIMENSION			NOTES			
	MFR	MODEL				MBH INPUT	MBH OUTPUT		WIDTH	DEPTH	HEIGHT		V/PH	MCA	MCOCP
FUR-1	CARRIER	59SC2D	1,200	102	0.50"	80	75	4	17.5"	29"	34"	120/1	9.9	15	1,2,3,4,5

GENERAL NOTES:
A ACCEPTABLE ALTERNATE MANUFACTURER BY RHEEM OR BRYANT.
B REFRIGERANT PIPING TO BE SIZED BY MANUFACTURER.

NOTES:
1. PROVIDE WITH NON-FUSED DISCONNECT SWITCH.
2. PROVIDE MATCHED EVAPORATOR COIL AND CONDENSING UNIT.
3. PROVIDE WITH FILTER RACK AND 1" PLEATED SPARE SET OF FILTERS.
4. PROVIDE CONCENTRIC VENT KIT AND NEUTRALIZING KIT.
5. PROVIDE WITH 7-DAY PROGRAMMABLE THERMOSTAT.

AIR COOLED CONDENSING UNIT SCHEDULE												
PLAN MARK	ASSOCIATED INDOOR UNIT	BASIS OF DESIGN		NOM. TONS	AMB. TEMP (°F)	MIN. UNIT EER	REFRIG.	ELECTRICAL			NOTES	
		MFR	MODEL					V/PH	MCA	MCOCP		
CU-1	FUR-1	CARRIER	24ACC6	4	95	16	R410A	208-230/1	20.8	35	1	

GENERAL NOTES:
A ACCEPTABLE ALTERNATE MANUFACTURER BY CARRIER OR BRYANT.

NOTES:
1. PROVIDE WITH CONCRETE OR COMPOSITE EQUIPMENT PAD.

FAN SCHEDULE												
PLAN MARK	TYPE	MANUF.	MODEL	CFM	ESP (WC)	WHEEL SIZE	DRIVE	MAX. SONES	ELECTRICAL			NOTES
									HP	VOLT	PHASE	
EF-1	SIDEWALL PROPELLER	GREENHECK	SE	1,695	0.38	-	DIRECT	-	0.5	208	1	2
EF-2	CEILING EXHAUST	GREENHECK	SPB-110	110	0.25	-	DIRECT	2.0	80W	120	1	1,3
EF-3	CEILING EXHAUST	GREENHECK	SPB-110	110	0.25	-	DIRECT	2.0	80W	120	1	1,3
HV-1	HVLS - 10 FT DIA.	-	-	41,000	-	-	DIRECT	-	0.25	120	1	4

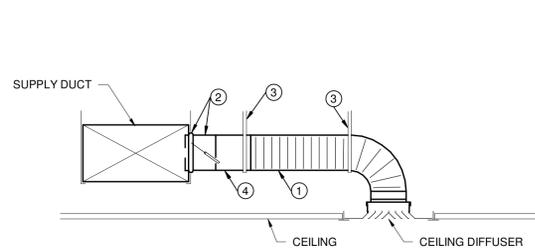
NOTES:
1. PROVIDE WITH INTEGRAL DISCONNECT SWITCH, BACKDRAFT DAMPER AND MOTOR SPEED SELECTOR.
2. PROVIDE WITH MOTOR GUARD, BACKDRAFT DAMPER, WALL SLEEVE AND EXTERIOR LOUVER. FAN SHALL BE CONTROLLED BY WALL STARTER. WIRING BY E.C.
3. FAN SHALL BE CONTROLLED BY OCCUPANCY SENSOR.
4. FAN TO MOUNTED TO WOOD TRUSSES. FAN SHALL BE SEURED TO STRUCTURE PER MANUFACTURER GUIDELINES. FAN SHALL BE CONTROLLED BY WALL SWITCH.

DIFFUSERS, REGISTERS, GRILLES AND LOUVERS SCHEDULE								
PLAN MARK	DESCRIPTION	BASIS OF DESIGN		MOUNTING	FINISH	MATERIAL	DAMPER TYPE	NOTES
		MFR	MODEL					
A1	SQUARE FACE DIFFUSER, 24"x24" FACE	TITUS	TMS	LAY-IN	WHITE	STEEL	-	-
B1	EGGGRATE RETURN GRILLE	TITUS	50F	LAY-IN	WHITE	STEEL	-	-
C1	DBL DEFLECTION SUPPLY GRILLE	TITUS	272RL	SURFACE	WHITE	STEEL	OPP. BLADE DMPR	-
D1	RETURN GRILLE	TITUS	350RL	SURFACE	WHITE	STEEL	OPP. BLADE DMPR	-

GENERAL NOTES:
A PRICE AND KRUEGER ACCEPTABLE ALTERNATE MANUFACTURERS.

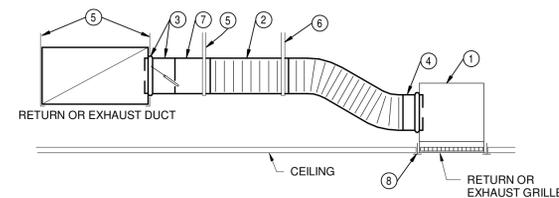
NOTES:

HVAC DESIGN CRITERIA			
GENERAL DESIGN INFORMATION		OUTDOOR DESIGN INFORMATION	
BUILDING LOCATION: WEST ALEXANDRIA, OHIO		SUMMER DRY BULB: 91.1°F (ASHRAE 0.4%)	SUMMER WET BULB: 73.8°F (ASHRAE 0.4%)
		WINTER DRY BULB: 0.8°F (ASHRAE 99.6%)	
INDOOR DESIGN INFORMATION		APPLICABLE CODES	
INDOOR SUMMER DRY BULB: 75°F	INDOOR SUMMER RH%: 60% MAX.	BUILDING: MECHANICAL: PLUMBING: VENTILATION: ENERGY:	OBC-2017 OMC-2017 OPC-2017 ASHRAE 62.1-2016 ASHRAE 90.1-2010
INDOOR WINTER DRY BULB: 70°F	INDOOR WINTER RH%: AMBIENT		



- NOTES
- INSULATED FLEXIBLE DUCT SAME DIAMETER AS BRANCH DUCT, 6 FT. MAXIMUM TOTAL LENGTH PER AIR DEVICE. STRETCH FLEXIBLE DUCT TO AT LEAST 90% OF FULLY EXTENDED LENGTH.
 - SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE WITH MANUAL DAMPER, DAMPER SHAFT IN HORIZONTAL. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN DUCT WITH INTERNAL INSULATION, AND EXTENDED DAMPER SHAFT AND HANDLE WITH STAND-OFF TO ACCOMMODATE EXTERNAL INSULATION.
 - DUCT STRAP HANGER. ATTACH TO STRUCTURE.
 - ROUND SHEET METAL BRANCH DUCT, SAME SIZE AS DIFFUSER INLET UNLESS NOTED OTHERWISE.

1 CEILING DIFFUSER DUCT CONNECTION
NTS



- NOTES
- SHEET METAL PLENUM, FULL SIZE OF GRILLE NECK, MINIMUM 4" TALLER THAN DUCT RUNOUT SIZE, WITH SAME INTERNAL OR EXTERNAL INSULATION AS RETURN OR EXHAUST DUCT, CONNECT TO GRILLE.
 - FLEXIBLE DUCT, SAME DIAMETER AS BRANCH DUCT, 7 FT. MAXIMUM TOTAL LENGTH PER AIR DEVICE. STRETCH FLEXIBLE DUCT TO AT LEAST 90% OF FULLY EXTENDED LENGTH.
 - SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE WITH MANUAL DAMPER, DAMPER SHAFT IN HORIZONTAL. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN DUCT WITH INTERNAL INSULATION. EXTENDED DAMPER SHAFT AND HANDLE WITH STAND-OFF REQUIRED FOR EXTERNALLY INSULATED DUCTWORK.
 - SPIN-IN TAP FITTING, NO DAMPER.
 - DUCT STRAP HANGER. ATTACH TO STRUCTURE.
 - STRAP HANGER REQUIRED IF LENGTH OF FLEXIBLE DUCT IS LONGER THAN 4 FT.
 - ROUND SHEET METAL BRANCH DUCT, SIZE AS INDICATED IN ADJACENT SCHEDULE UNLESS NOTED OTHERWISE ON PLANS.
 - CEILING T-BAR SUPPORT (FOR LAY-IN APPLICATIONS). COORDINATE AND VERIFY T-BAR TYPE FOR COMPATIBILITY WITH GRILLE.

2 RETURN/EXHAUST GRILLE DUCTED CONNECTION
NTS



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Proposed Bus Maintenance Facility
Twin Valley Community
Local School District
100 Education Drive
West Alexandria, Ohio 45381

Print Record

02/24/23 Bid/Const. Set

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2023011

Date

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Sheet Title

HVAC SCHEDULES & DETAILS

Sheet Number

HO.2



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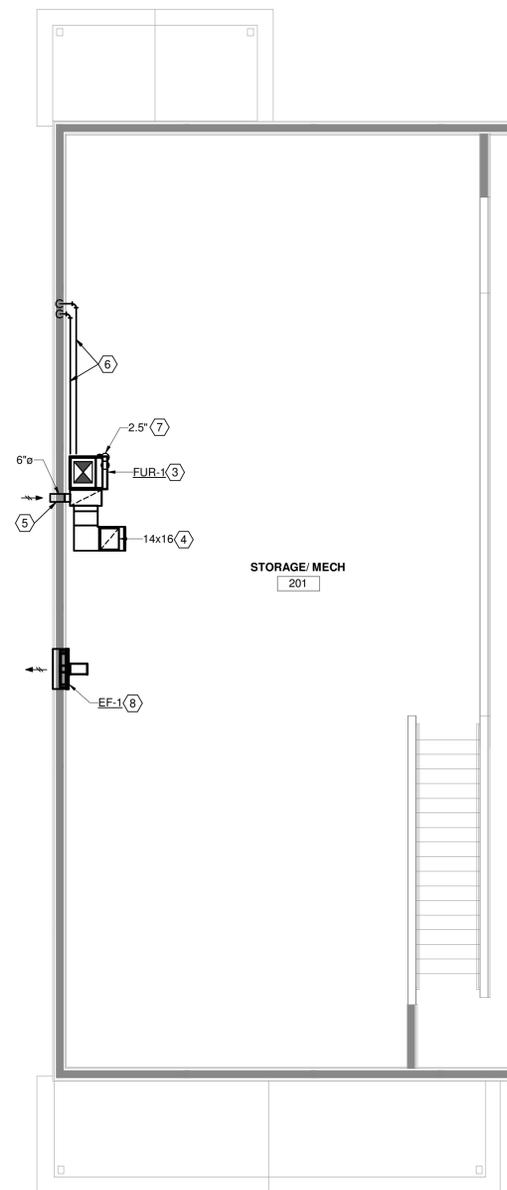
DRAWING NOTES

1. PROVIDE NEW GAS FIRED RADIANT HEATER. MOUNT HEATER APPROXIMATELY 15'-0" AFF. COORDINATE MOUNTING HEIGHT AND LOCATION WITH OTHER TRADES.
2. EXTEND RADIANT HEATER VENT PIPING UP THRU ROOF. TERMINATE PER MANUFACTURER GUIDELINES. SEAL PENETRATION WATERTIGHT.
3. PROVIDE NEW BOTTOM DISCHARGE FURNACE MOUNTED ON MEZZANINE FLOOR. SUPPLY DISCHARGE DOWN TO FLOOR FRAMING BELOW. REFER TO FIRST FLOOR PLAN FOR CONTINUATION. ROUTE SCHEDULE 40 PVC CONDENSATE DRAIN PIPING TO HUB DRAIN PROVIDED BY PLUMBING CONTRACTOR. REFER TO PLUMBING DRAWINGS FOR LOCATION.
4. DUCT DOWN TO FLOOR FRAMING BELOW. REFER TO FIRST FLOOR PLAN FOR CONTINUATION.
5. PROVIDE VENTILATION AIR DUCT FROM RETURN DUCT MAIN TO EXTERIOR. TERMINATE WITH WALL VENT CAP. PROVIDE WITH MANUAL BALANCE DAMPER. BALANCE INTAKE AIR TO AIRFLOW INDICATED IN FURNACE SCHEDULE.
6. REFRIGERANT PIPING TO BE ROUTED ON EXTERIOR WALL AND DOWN TO FLOOR BELOW.
7. ROUTE SCHEDULE 40 PVC FURNACE VENT AND INTAKE PIPING UP THROUGH ROOF ABOVE. TERMINATE PER MANUFACTURER GUIDELINES.
8. PROVIDE SIDE WALL PROPELLER VENTILATION FAN. PROVIDE WITH WALL SLEEVE, BACKDRAFT DAMPER, MOTOR GUARD AND INTERIOR MOTOR ACCESS. MOUNT FAN APPROXIMATELY 10'-0" ABOVE MEZZANINE FLOOR. COORDINATE FINAL MOUNTING HEIGHT IN FIELD.
9. ROUTE REFRIGERANT PIPING DOWN WALL AND OUT TO CONDENSING UNIT.
10. PROVIDE CONDENSING UNIT WITH COMPOSITE EQUIPMENT MOUNTING PAD.
11. DUCT ROUTED IN FLOOR FRAMING. COORDINATE WITH OTHER TRADES PRIOR TO INSTALLATION.
12. EXTEND EXHAUST FAN DISCHARGE TO EXTERIOR WALL AND TERMINATE WITH WALL VENT CAP. PAINT VENT CAP TO MATCH EXTERIOR.
13. PROVIDE THERMOSTAT AND CARBON MONOXIDE DETECTOR TO CONTROL SIDEWALL VENTILATION FAN. FAN SHALL RUN ON RISE IN SPACE TEMPERATURE ABOVE SETPOINT. "FAN" SETTING OR RISE IN CARBON MONOXIDE ABOVE SETPOINT.
14. PROVIDE TRANSFER AIR GRILLES AND DUCT AS INDICATED.
15. PROVIDE HI-LO TRANSFER AIR GRILLES UTILIZING WALL FRAMING AS AIR PATH. MOUNT HALL GRILLE 7'-0" AFF AND STORAGE GRILLE AT 1'-6" AFF.
16. PROVIDE HIGH VOLUME LOW SPEED FAN. FAN SHALL BE SUSPENDED FROM ROOF STRUCTURE PER MANUFACTURER GUIDELINES. FAN CONTROLLED BY WALL SWITCH. REFER TO ELECTRICAL DRAWINGS FOR SWITCH LOCATION.

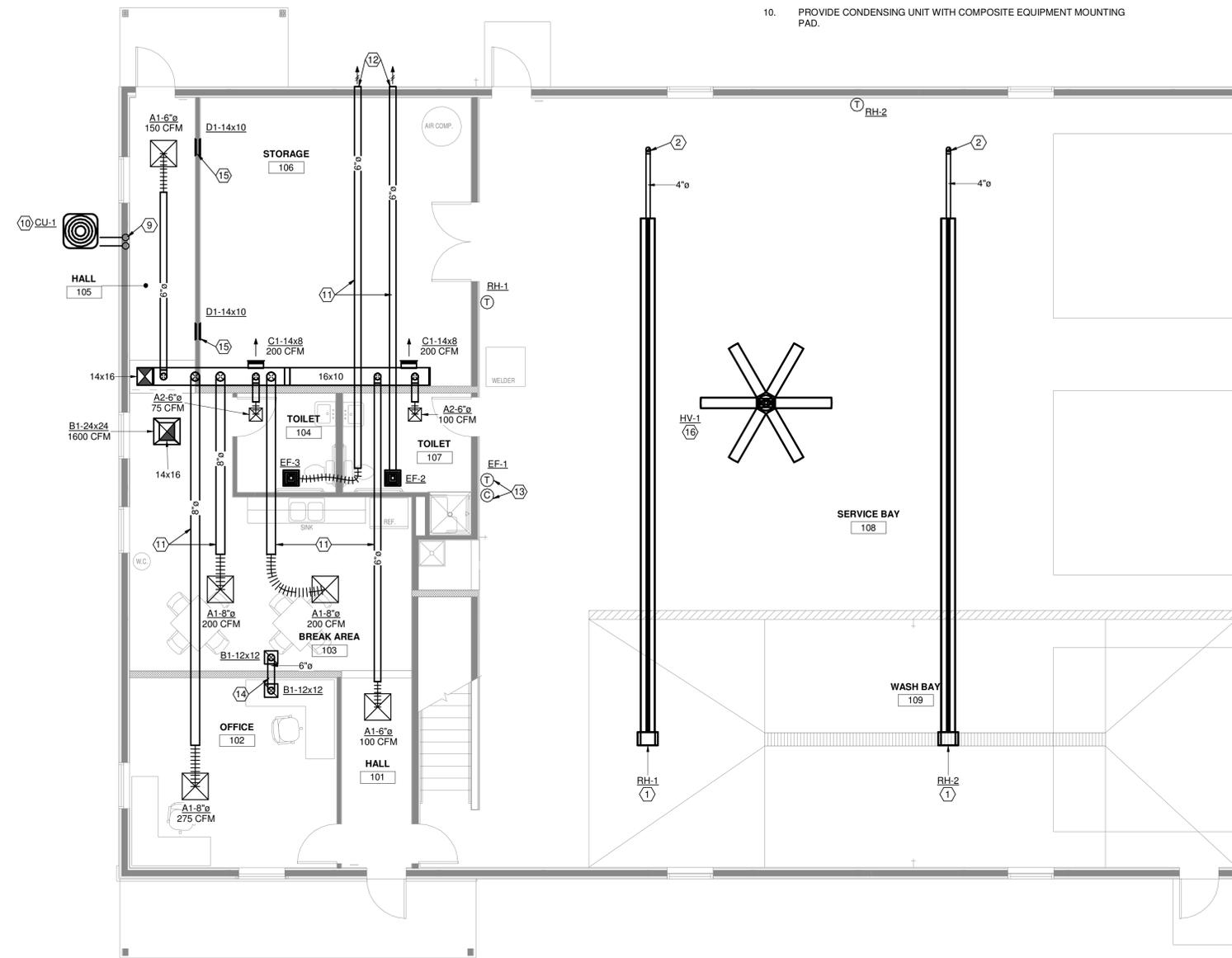
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HVAC FLOOR PLAN
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H1.1



② MEZZANINE PLAN
3/16" = 1'-0"



① FIRST FLOOR PLAN
3/16" = 1'-0"

GENERAL LIGHTING/POWER NOTES

- LIGHT FIXTURES DESIGNATED AS "NIGHT LIGHTS" SHALL BE ON UNSWITCHED CIRCUIT, UNLESS NOTED.
- EXIT LIGHTS SHALL BE ON UNSWITCHED CIRCUIT, UNLESS NOTED.
- ALL RECESSED DOWNLIGHTS MOUNTED IN GRID CEILING SHALL BE CENTERED IN CEILING TILE, UNLESS NOTED.
- IN ALL MECHANICAL ROOMS, COORDINATE EXACT LOCATION OF LIGHT FIXTURES WITH HVAC DUCTWORK.
- CONDUCTORS FOR BRANCH CIRCUITRY ARE #12 AWG MINIMUM, UNLESS NOTED. DERATE PER CODE WHERE CIRCUITS ARE COMBINED.
- ALL HOMERUN CONDUCTORS BACK TO PANEL SHALL BE #10 AWG MINIMUM, UNLESS NOTED. PROVIDE A GREEN GROUND CONDUCTOR IN ALL BRANCH CIRCUITRY. DERATE PER CODE WHERE CIRCUITS ARE COMBINED.
- ALL CONDUIT DROPS FOR PLENUM RATED CABLES SHALL BE PROVIDED WITH A CONDUIT BUSHING ABOVE CEILING.
- WHERE TERMINATED IN J-BOX, ALL SPARE CIRCUITRY SHALL BE LABELED WITH PANEL AND CIRCUIT NUMBER.
- COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE ALL NECESSARY AUXILIARY CONTACTS, RELAY, ETC. IN MOTOR STARTERS FOR REQUIRED CONTROL OF MECHANICAL EQUIPMENT.
- DO NOT SUPPORT CONDUIT OFF OF CEILING GRID. CEILING GRID SUPPORTS, MECHANICAL SUPPORTS, OR ANY OTHER TRADES' SUPPORTS. INSTALL CONDUITS AND BOXES ON SEPARATE SUPPORTS FROM BAR JOIST OR STRUCTURE.
- COORDINATE OUTLET LOCATIONS FOR ALL KITCHEN EQUIPMENT PRIOR TO ROUGH-IN.
- NEW FIRE ALARM DEVICES SHOWN FOR REFERENCE ONLY. FINAL DESIGN AND PERMIT DRAWINGS TO BE PROVIDED BY FIRE ALARM MANUFACTURERS THROUGH A DELEGATED DESIGN APPROACH. ANNUNCIATING STROBES SHALL BE SYNCHRONIZED. PROVIDE ADEQUATE POWER FOR NEW PANELS TO SUPPORT ALL NEW DEVICES PROVIDING ADDITIONAL 20% CAPACITY ON NAC CIRCUIT.

ABBREVIATIONS

A	AMPS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BKR	BREAKER
C	CONDUIT
CATV	CABLE TELEVISION
CUH	CABINET UNIT HEATER
CKT	CIRCUIT
Cu	COPPER
E	EXISTING
EFC	EXHAUST FAN
ELEC	ELECTRICAL
EM	EMERGENCY
EMT	EMERGENCY METALLIC TUBING
FCU	FAN COIL UNIT
G	GROUND
GFI	GROUND FAULT INTERRUPTER
GRC	GALVANIZED RIGID CONDUIT
HP	HORSEPOWER
J	JUNCTION BOX
KVA	KILOVOLT AMPERE
KW	KILOWATTS
LGTG	LIGHTING
MECH	MECHANICAL
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
PVC	POLYVINYL CHLORIDE
P	PHASE (POLE)
TTB	TELEPHONE TERMINAL BOX
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VOLTS
VAV	VARIABLE AIR VOLUME
VIF	VERIFY IN FIELD
W	WATTS
WC	WATER COOLER
WP	WEATHERPROOF
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE

GENERAL PROJECT NOTES

- WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL, STATE OF OHIO, 2017 NEC AND NATIONAL CODES, RECOMMENDATIONS, REGULATIONS, AND REQUIREMENTS.
- COORDINATE ELECTRICAL REQUIREMENTS FOR NEW WORK WITH THE PLUMBING AND MECHANICAL CONTRACTORS. VERIFY VOLTAGE, PHASE AND ACCESSORY REQUIREMENTS, SUCH AS MOTOR STARTERS AND DISCONNECTS.
- CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR HIS WORK. OPENING IN WALLS, FLOORS AND CEILINGS SHALL BE FILLED IN, PATCHED, PAINTED AND FINISHED IN A MANNER TO MATCH THE QUALITY OF THE EXISTING, LIKE ADJACENT SURFACES.
- NEW OPENINGS IN EXISTING WALLS AND FLOORS SHALL BE CORE DRILLED OR SAW CUT. OPENINGS IN NEW WALLS AND FLOORS SHALL BE PLANNED AND COORDINATED WITH GENERAL CONTRACTOR FOR THE INSTALLATION OF APPROPRIATE SLEEVES.
- ALL CONDUIT SHALL BE 3/4" MINIMUM U.N.O. MC CABLE IS ALLOWED.
- CONDUIT SHALL BE CONCEALED IN CEILING OR WALLS WHEREVER POSSIBLE.
- ALL BRANCH CIRCUITS AND FEEDERS SHALL CONTAIN A GREEN INSULATED GROUND CONDUCTOR. GROUNDING BY MEANS OF RACEWAY IS NOT PERMITTED.
- REFER TO MECHANICAL, PLUMBING, AND ARCHITECTURAL PLANS FOR EXACT LOCATION OF EQUIPMENT.
- CONTRACTOR SHALL COORDINATE EXACT HEIGHT OF DEVICES DESIGNED AS OVER COUNTER WITH CASE WORK AND FURNITURE DRAWINGS.
- VERIFY CEILING TYPES PER THE ARCHITECTURAL REFLECTED CEILING PLAN. PROVIDE APPROPRIATE TYPE FIXTURE, LAY-IN FOR GRID, FLANGE FOR DRYWALL, ETC.
- VERIFY AND COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF ALL DEVICES MOUNTED IN CASEWORK OR ABOVE COUNTERS WITH SPECIFIC EQUIPMENT FURNISHED.
- NO MORE THAN 3 PHASE CONDUCTORS SHALL BE INSTALLED IN ANY ONE CIRCUIT, UNLESS NOTED OTHERWISE. EACH BRANCH CIRCUIT SHALL CONTAIN THEIR OWN NEUTRAL CONDUCTOR. NO SHARED NEUTRALS.
- CONTRACTOR SHALL PROVIDE ALL FIRESTOPPING FOR CONDUIT OR CABLE TRAY PENETRATIONS THAT PENETRATE ACOUSTICAL RATED OR SMOKE AND FIRE RATED ASSEMBLIES. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL RATED ASSEMBLIES. ALL RATED PENETRATIONS SHALL BE FIRESTOPPED TO ORIGINAL ASSEMBLY RATING. ALL NON-RATED FLOOR PENETRATIONS SHALL BE SEALED WATER TIGHT WITH A FLEXIBLE SEALANT.
- PROVIDE ALL PULL BOXES, IN ACCESSIBLE AREA, THAT EXCEED NEC NUMBER OF BENDS OR LENGTH IN FEEDER AND BRANCH CIRCUITS. INSTALL BOXES WHERE REQUIRED PER CODE.
- ALL WIRING DEVICES SHALL BE OF HEAVY DUTY COMMERCIAL GRADE CONSTRUCTION. REFER TO ARCHITECTURAL SHEETS AND CODE SHEET FOR ALL FIRE-RATED PARTITION LOCATIONS AND RATINGS. COORDINATE COLORS WITH ARCHITECT.
- CONTRACTOR IS RESPONSIBLE FOR ALL CORE-DRILLS REQUIRED FOR INSTALLATION OF ELECTRICAL WORK.
- ROUTING OF CIRCUITRY INSTALLED IN CASEWORK, CABINETRIES, ETC. SHALL BE COORDINATED FOR PROPER CONCEALMENT AND FUNCTION OF CASEWORK, CABINETRIES, ETC.
- VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION, TRENCHING, OR DRILLING.
- ALL ROOF PENETRATIONS OR PATCHES SHALL BE MADE PER ROOFING MANUFACTURER WARRANTY REQUIREMENTS.
- ALL EXPOSED METAL CONDUITS ARE TO BE PAINTED TO MATCH THE ADJACENT SURFACE. COORDINATION OF PAINTING OF CONDUIT IS TO BE BY THE ELECTRICAL CONTRACTOR, WITH PAINTING BY OTHERS.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED JUNCTION BOXES, PULL BOXES, ETC FOR A COMPLETE INSTALLATION PER THE N.E.C. AND LOCAL CODES. ALL CONDUCTORS SHALL BE RATED FOR 90 DEGREE CELSIUS.
- COORDINATE WORK WITH OTHER TRADES. COORDINATION OR SCHEDULING SHALL BE RESPONSIBILITY OF THE INVOLVED CONTRACTORS.
- ALL LOW VOLTAGE CABLING INSTALLED IN SPACES WITHOUT A LAY-IN OR WITH A HARD CEILING SHALL BE INSTALLED IN CONDUIT AND BOXES.

ELECTRICAL LEGEND

LIGHTING		FIRE ALARM	
A1	LIGHTING FIXTURE. REFER TO FIXTURE SCHEDULE. LETTER INDICATES TYPE.	FIRE ALARM PULL STATION, 44" AFF MOUNTING HEIGHT	FIRE ALARM HORN/STROBE, 80" AFF MOUNTING HEIGHT
A1	EMERGENCY LIGHTING FIXTURE WITH EMERGENCY BALLAST. "NL" INDICATES NIGHT LIGHT CIRCUIT. FULL LUMEN OUTPUT MINIMUM 1400 LUMENS ON LAMP (NL - NIGHT LIGHT - FIXTURE TO OPERATE CONTINUOUSLY).	FIRE ALARM DUCT MOUNTED SMOKE DETECTOR. S = SUPPLY, R = RETURN - COORDINATE WITH DUCTWORK. MAKE SAMPLING TUBE FULL WIDTH OF DUCT IN LENGTH. PROVIDE SMOKE DETECTOR FOR DAMPER OPERATION AND 120 VOLT POWER CONNECTION AS SHOWN ON THE POWER DRAWINGS. COORDINATE ALL CONNECTIONS WITH MECHANICAL CONTRACTOR. CONNECT TO ALARM SYSTEM.	FIRE ALARM CEILING MOUNTED SMOKE DETECTOR.
C1	LIGHTING FIXTURE. LETTER INDICATES TYPE.	FIRE ALARM ANNUNCIATOR PANEL.	FIRE ALARM CONTROL PANEL.
C1	EMERGENCY LIGHTING FIXTURE WITH EMERGENCY BALLAST OR POWERED THROUGH INVERTER SYSTEM.	FIRE ALARM STROBE, 80" AFF MOUNTING HEIGHT.	BLUE EXTERIOR STROBE LIGHT FOR FIRE DEPARTMENT CONNECTION WP - WEATHERPROOF
X1	CEILING MOUNTED EXIT SIGN. REFER TO FIXTURE SCHEDULE. SHADED AREA DENOTES FACE OF UNIT. CONNECT TO LOCAL UNSWITCHED LIGHTING CIRCUIT.	SPRINKLER SYSTEM FLOW SWITCH FURNISHED AND INSTALLED BY THE FIRE PROTECTION CONTRACTOR, CONNECTED BY ELECTRICAL CONTRACTOR.	SPRINKLER SYSTEM GATE VALVE. SUPERVISORY SWITCH FURNISHED AND INSTALLED BY THE FIRE PROTECTION CONTRACTOR, CONNECTED BY ELECTRICAL CONTRACTOR.
X1	WALL MOUNTED EXIT SIGN. REFER TO FIXTURE SCHEDULE. SHADED AREA DENOTES FACE OF UNIT. CONNECT TO LOCAL UNSWITCHED LIGHTING CIRCUIT.	FIRE ALARM STROBE, 80" AFF MOUNTING HEIGHT.	MAGNETIC DOOR HOLD OPEN.
§	SINGLE POLE WALL SWITCH. 120/277 VOLT, 20 AMP. 44" AFF.	FIRE ALARM REMOTE POWER SUPPLY.	FIRE ALARM MONITOR MODULE.
3 §	THREE WAY WALL SWITCH. 120/277V, 20 AMP. 44" AFF	FIRE ALARM CONTROL RELAY MODULE.	END OF THE LINE RESISTOR.
4 §	FOUR WAY WALL SWITCH. 120/277V, 20 AMP. 44" AFF	FIRE ALARM CONTROL RELAY MODULE.	FIRE ALARM CONTROL RELAY MODULE.
OC §	OCCUPANCY SENSOR WALL SWITCH. 120/277V, 20 AMP. 44" AFF	FIRE ALARM CONTROL RELAY MODULE.	
OCD §	OCCUPANCY SENSOR WALL SWITCH WITH 0-10V DIMMING. 120/277V, 20 AMP. 44" AFF		
P §	SINGLE POLE WALL SWITCH WITH PILOT LIGHT. 120/277V, 20 AMP. 44" AFF		
xx	EXTERIOR LIGHT FIXTURE. ER, EXISTING TO REMAIN, PL1 - NEW FIXTURE. REFER TO FIXTURE SCHEDULE.		
	EMERGENCY EGRESS LIGHT. REFER TO FIXTURE SCHEDULE.		
	CEILING MOUNTED OCCUPANCY SENSOR.		
	PHOTOCELL.		
POWER		DOOR ACCESS	
	DUPLEX RECEPTACLE. 120 VOLT, 20 AMP. 18" AFF UNO.	ELECTRIC DOOR STRIKE.	DOOR SWITCH/CONTACT.
	DUPLEX RECEPTACLE WITH USB PLUG. 120 VOLT, 20 AMP. 18" AFF UNO.	KEY OR KEYCARD ACTIVATED SWITCH IN TAMPER PROOF ENCLOSURE. WP - WEATHERPROOF.	HANDICAP DOOR ACCESS BUTTON IN FLUSH WALL BOX.
	DUPLEX RECEPTACLE MOUNTED AT 46" OR ABOVE BACKSPASH. 120 VOLT, 20 AMP.		
	DOUBLE DUPLEX RECEPTACLE. 120 VOLT, 20 AMP. 18" AFF UNO.		
	120 VOLT DOUBLE DUPLEX, 20 AMP RECEPTACLE MOUNTED AT 46" AFF OR 4" ABOVE BACKSPASH.		
	DUPLEX RECEPTACLE WITH GROUND FAULT PROTECTION. 120 VOLT, 20 AMP. 18" AFF UNO, WP-WEATHERPROOF BOX		
	FLUSH FLOOR DUPLEX RECEPTACLE IN FLOOR BOX		
	120 VOLT SINGLE 20 AMP RECEPTACLE.		
	DUPLEX RECEPTACLE. CEILING MOUNTED		
	SPECIAL PURPOSE RECEPTACLE. REFER TO FLOOR PLANS FOR NEMA CONFIGURATION.		
	FRACTIONAL HP MOTOR STARTER WITH THERMAL OVERLOADS.		
	ELECTRICAL MOTOR. INDICATES FINAL CONNECTION REQUIRED.		
	HOMERUN TO PANELBOARD. NOTION INDICATES PANEL AND CIRCUIT NUMBER. (ALL CONDUCTORS SHALL BE #10 UNLESS NOTED OTHERWISE.)		
	ELECTRICAL PANELBOARD.		
	JUNCTION BOX.		
	CONDUIT STUB-OUT AND CAP BELOW GRADE. MARK STUB-OUT AT GRADE LEVEL.		
	UNDERGROUND HIGH VOLTAGE OR SECONDARY SERVICE FEED.		
	SAFETY DISCONNECT SWITCH (NON-FUSED), 4X INDICATES ENCLOSURE TYPE.		
	SAFETY DISCONNECT SWITCH (FUSED).		
	COMBINATON MOTOR STARTER/DISCONNECT. WITH HOA SWITCH AT UNIT (FUSIBLE). OR (CIRCUIT BREAKER FOR ELEVATOR).		
	TRANSFORMER (NUMBER INDICATES WHICH TRANSFORMER).		
	HAND DRYER, VERIFY MOUNTING WITH SUPPLIER		
GENERAL			
	DETAIL # _____ DETAIL REFERENCE TAG, DRAWING # REFER TO DETAIL SHEETS		
	KEYNOTE FOR DRAWING		
	DETAIL REFERENCE TAG (SECTION)		
	MECHANICAL EQUIPMENT TAG. REFER TO EQUIPMENT DATA SCHEDULE.		
	INDICATES NEW WORK.		
	INDICATES TO BE REMOVED.		
	INDICATES EXISTING TO REMAIN.		

ELECTRICAL INDEX OF DRAWINGS

SHEET NUMBER	SHEET NAME
E0.1	ELECTRICAL LEGEND AND GENERAL NOTES
E0.2	ELECTRICAL EQUIPMENT AND LIGHTING SCHEDULE
E1.1	ELECTRICAL POWER PLAN
E1.2	ELECTRICAL LIGHTING PLAN
E2.1	ELECTRICAL MEZZANINE POWER PLAN
E2.2	ELECTRICAL MEZZANINE LIGHTING PLAN
E2.3	ELECTRICAL SITE PLAN
E3.1	ELECTRICAL DETAILS
E4.1	PANELBOARD SCHEDULES AND SINGLE LINE DIAGRAM



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ELECTRICAL LEGEND AND GENERAL NOTES

Sheet Number

EO. 1

EQUIPMENT ELECTRICAL DATA SCHEDULE

PLAN SYMBOL	DESCRIPTION/LOCATION	LOAD CHARACTERISTICS						STARTER					DISCONNECT				CTRL DEVICE			PANEL	CIRCUIT	FEEDER SIZE/ RACEWAY	NOTES	PLAN SYMBOL		
		KW	HP	VOLTAGE	PHASE	FLA	SPREED DRIVE	TYPE	NEMA SIZE	FURNISH BY	INSTALL BY	AVAIL. RELAY	LOCATION	TYPE	FURNISH BY	INSTALL BY	SWITCH/ FUSE SIZE	LOCATION	TYPE						FURNISH BY	INSTALL BY
CU-1	CONDENSING UNIT	-	-	208	1	20.8	-	-	-	ES	ES	-	IN UNIT	-	EC	EC	35A/60A	NEAR UNIT	-	-	-	A	17,19	(3) #8, (1) #10 GRD. IN 1" C.	-	CU-1
FUR-1	FURNACE	-	-	120	1	9.9	-	-	ES	ES	-	IN UNIT	-	EC	EC	15A	-	-	-	-	-	A	18	(3) #12, (1) #12 GRD. IN .75" C.	-	FUR-1
EF-1	EXHAUST FAN	-	.5	120	1	-	-	-	ES	ES	-	IN UNIT	-	EC	EC	20A	-	-	-	-	-	A	27	(3) #12, (1) #12 GRD. IN .75" C.	-	EF-1
EF-2	EXHAUST FAN	.8	-	120	1	-	-	-	ES	ES	-	IN UNIT	-	EC	EC	20A	-	-	-	-	-	A	23	(3) #12, (1) #12 GRD. IN .75" C.	-	EF-2
EF-3	EXHAUST FAN	.8	-	120	1	-	-	-	ES	ES	-	IN UNIT	-	EC	EC	20A	-	-	-	-	-	A	23	(3) #12, (1) #12 GRD. IN .75" C.	-	EF-3

ABBREVIATIONS:
 CC - CONTROL CONTRACTOR FS - FUSED SWITCH GC - GENERAL CONTRACTOR VC - VENTILATION CONTRACTOR
 CP - CORD/PLUG FSC - FIRE SUPPRESSION CONTRACTOR HC - HEATING CONTRACTOR TS - THERMOSTAT
 EC - ELECTRICAL CONTRACTOR FSEC - FOOD SERVICE EQUIP. CONTRACTOR PC - PLUMBING CONTRACTOR NFS - NON FUSED SWITCH
 ES - EQUIPMENT SUPPLIER FVNR - FULL VOLTAGE NON-REVERSING SC - SPRINKLER CONTRACTOR SW - HORSEPOWER RATED SWITCH

NOTES:
 1 - XXX



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LIGHTING FIXTURE SCHEDULE

FIXTURE SYMBOL	FIXTURE VOLTAGE	FIXTURE INPUT WATTS	TEMPERATURE (K)	DELIVERED LUMENS	MANUFACTURER AND MODEL NUMBER	OTHER ACCEPTABLE MANUFACTURER	DIFFUSER MEDIA	CLASSIFICATION	TRIM COLOR						MOUNTING	SIZE (IN.)			NOTES
									WHITE	NICKEL	CHROME	BLACK	BRONZE	SEE NOTE		DIAMETER OR WIDTH	LENGTH	DEPTH	
A1	120	30	3,500	3,197	COLUMBIA #CFP24-55/41/3435	AS PRE-APPROVED	EDGE LIT LED	N	X						R	24	48	2	-
A1S	120	30	3,500	3,197	COLUMBIA #CFP24-55/41/3435-SRPSMK-24	AS PRE-APPROVED	EDGE LIT LED	N	X						S	24	48	2	-
A2	120	75.9	-	10,527	COLUMBIA #CLB-2-40-LX-W-ED-U	AS PRE-APPROVED	HIGH BAY	N	X						C	10	23	2	-
B1	120	31	3,500	3,847	COLUMBIA #CFP14-55/41/3435	AS PRE-APPROVED	EDGE LIT LED	N	X						S	12	48	2	-
C1	120	13	3,500	1,378	PRESCOLITE #LBRST-6RD-M-SLSL-CWCS9-WH	AS PRE-APPROVED	WHITE REFLECTOR	N	X						R	6	DIA	4.36	-
E1	120	6	3,500	173	WAC LIGHTING #WS-73118-BK	AS PRE-APPROVED	-	N			X				WM	3	18	2	-
LP1	-	-	-	-	QSSI #PSSS30507ZS	AS PRE-APPROVED	-	N				X			P	5	360	5	-
LP2	-	-	-	-	GARDCO #08TRS-35-11-T2-BRP-SBRKT-RBH-L2-36-T2D4L-BZ	AS PRE-APPROVED	-	N				X			P	5	360	5	-
FL1	208	289	4,000	44,416	GARDCO #PFF-138L-700-NW-G2-SF-AIRP-208-SP2-BZ	AS PRE-APPROVED	-	N				X			P	5	360	5	3
PL1	120	120	4,000	16,709	PRODIGY LIGHTING #PL-ALPW-120W-UNV-T4-DB-TRU	AS PRE-APPROVED	-	N				X			P	12.4	23.5	4.5	1
PL2	120	100	4,000	13,270	PRODIGY LIGHTING #PL-ALPW-100W-UNV-T3-DB-TRU	AS PRE-APPROVED	-	N				X			P	12.4	23.5	4.5	1
WP1	120	40	4,000	4,743	PRODIGY LIGHTING #PL-WPFC-40W-CT4-UNV-BR-SP-40	AS PRE-APPROVED	-	N				X			WM	14.17	9.25	6.53	-
Z1	120	6	4,000	180	SISTEMALUX #S.6250	AS PRE-APPROVED	-	N				X			R	4	4	1.5	-
X1	120	-	-	-	COMPASS #CCR	AS PRE-APPROVED	EMERGENCY EGRESS	EM	X						UNIVERSAL	19.25	8.125	1.75	-
ER	120	-	-	-	COMPASS #CORS	AS PRE-APPROVED	EMERGENCY EGRESS	EM	X						WM-8'-0"	4.5	DIA	6.7	-
WV	120	-	-	-	COMPASS #CU2	AS PRE-APPROVED	EMERGENCY EGRESS	EM	X						WM-8'-0"	4	9	2.75	-

NOTES:
 1. PROVIDE TYPE LP1 LIGHT POLE ON CONCRETE BASE. REFER TO DETAIL.
 2. BRONZE.
 3. PROVIDE TYPE LP2 LIGHT POLE ON CONCRETE BASE. REFER TO DETAIL.

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 AND LIGHTING SCHEDULE

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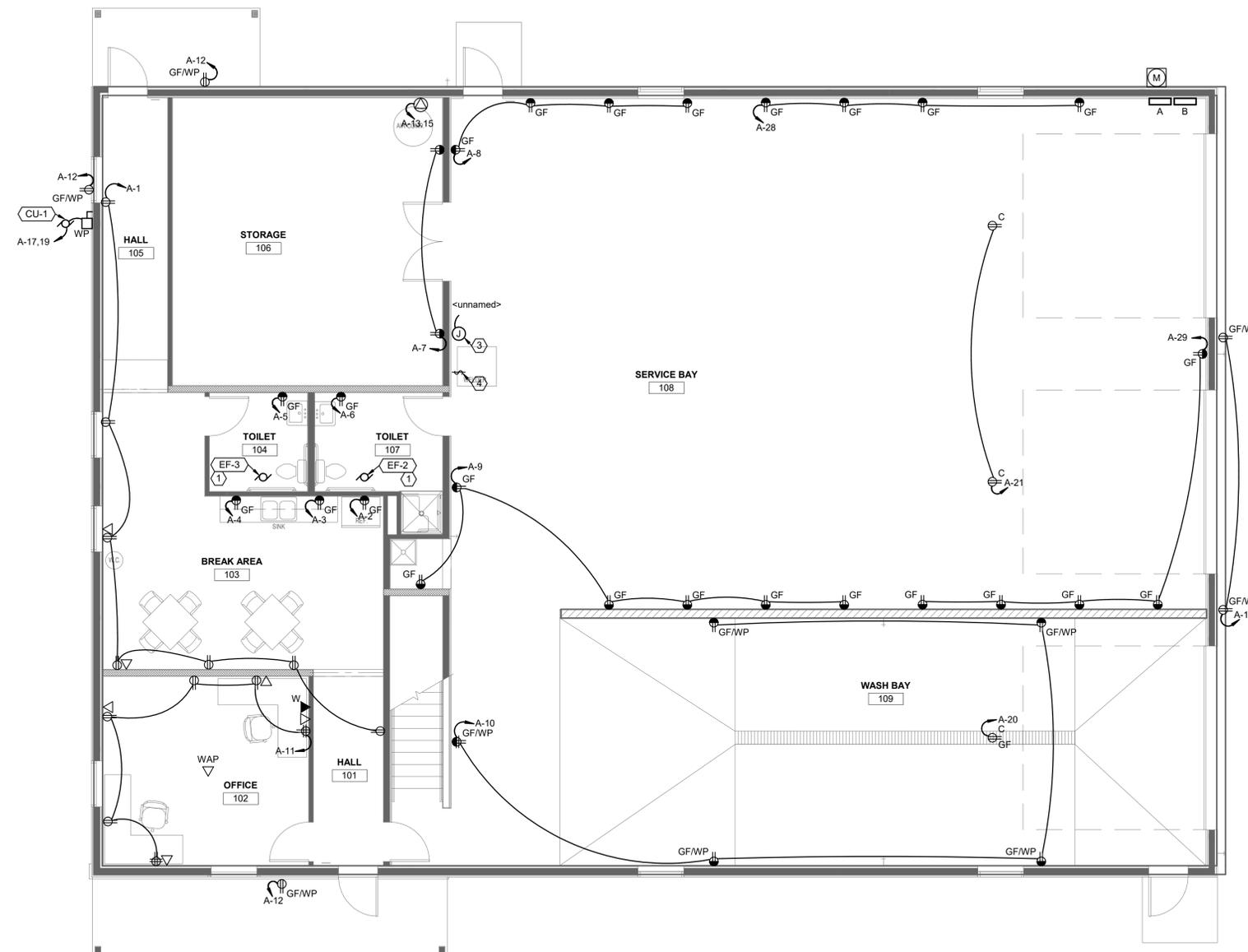
- DRAWING NOTES**
1. EXHAUST FAN IS TO BE POWERED THROUGH LIGHTING CIRCUIT AND CONTROLLED BY SWITCH IN SPACE.
 2. EC TO COORDINATE EXACT LOCATION OF CONTROL SWITCH FOR EXHAUST FAN WITH OWNER PRIOR TO ROUGH IN.
 3. EC TO COORDINATE EXACT LOCATION OF JUNCTION BOX FOR WELDER.
 4. EC TO PROVIDE CONTROL FOR HVLS. COORDINATE EXACT LOCATION OF CONTROL PRIOR TO ROUGH IN.



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① FIRST FLOOR POWER PLAN - NEW WORK
3/16" = 1'-0"

Proposed Bus Maintenance Facility
**Twin Valley Community
Local School District**
100 Education Drive
West Alexandria, Ohio 45381

Print Record
02/24/23 Bid/Const. Set
Project Number
2023011
Date
February 24, 2023
Sheet Title
ELECTRICAL POWER PLAN
Sheet Number

E1.1

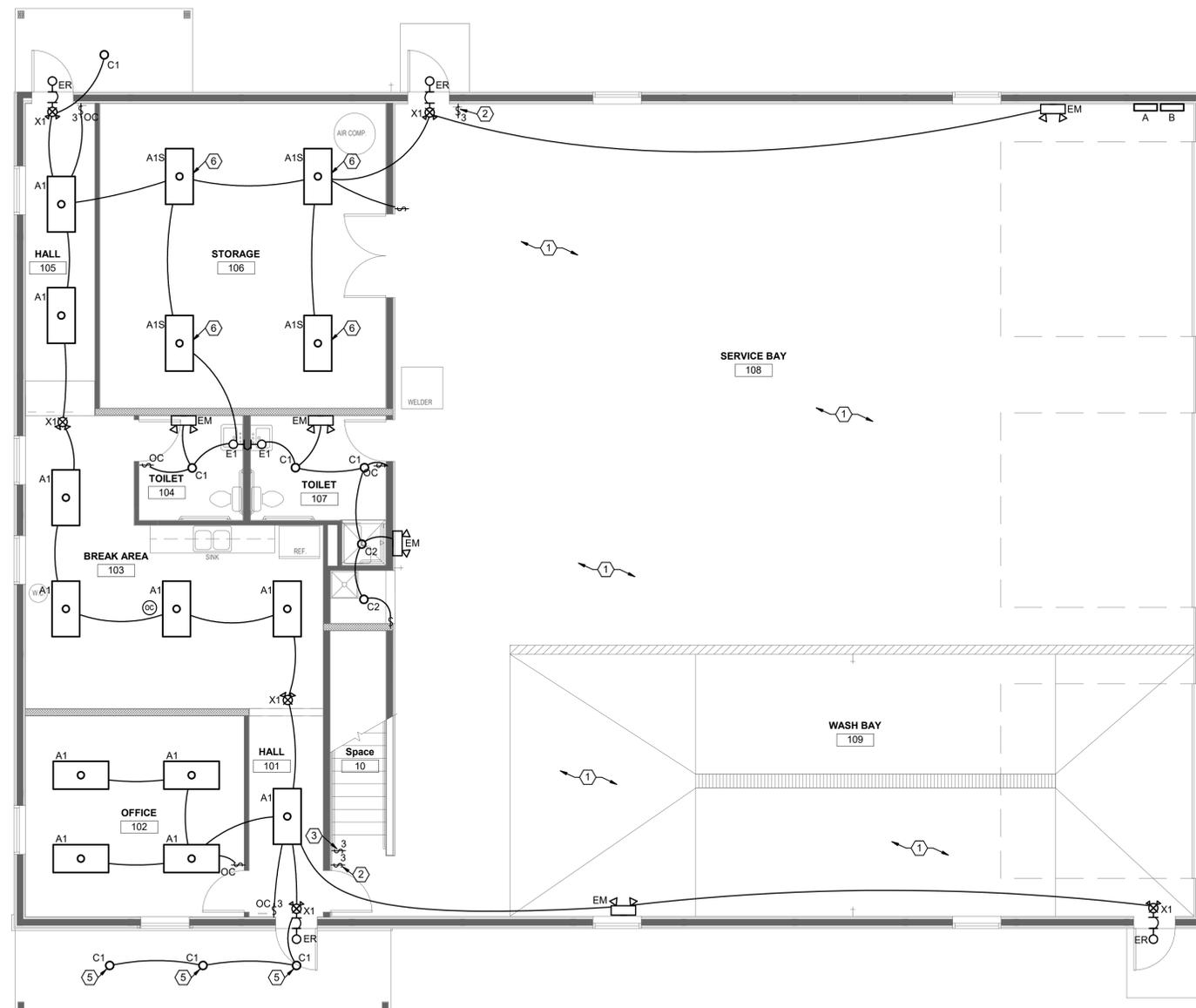
- DRAWING NOTES**
- REFER TO SHEET E2.2 FOR LIGHTING FIXTURE LOCATIONS IN SERVICE BAY.
 - SWITCHING TO CONTROL LIGHTING FIXTURES IN SERVICE BAY AREA.
 - SWITCH TO CONTROL MEZZANINE LIGHTING.
 - FIXTURES ARE TO SURFACE MOUNTED. REFER TO LIGHTING FIXTURE SCHEDULE FOR FURTHER INFORMATION.
 - PROVIDE PHOTOCELL CONTROL FOR EXTERIOR LIGHTING. MOUNT SENSOR ON THE NORTH SIDE OF BUILDING. CONTRACTOR TO ADJUST SENSOR FOR PROPER OPERATION.
 - PROVIDE BLOCKING AS NEEDED TO SURFACE MOUNT FIXTURES



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1 FIRST FLOOR LIGHTING PLAN - NEW WORK
3/16" = 1'-0"

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ELECTRICAL LIGHTING PLAN
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E1.2

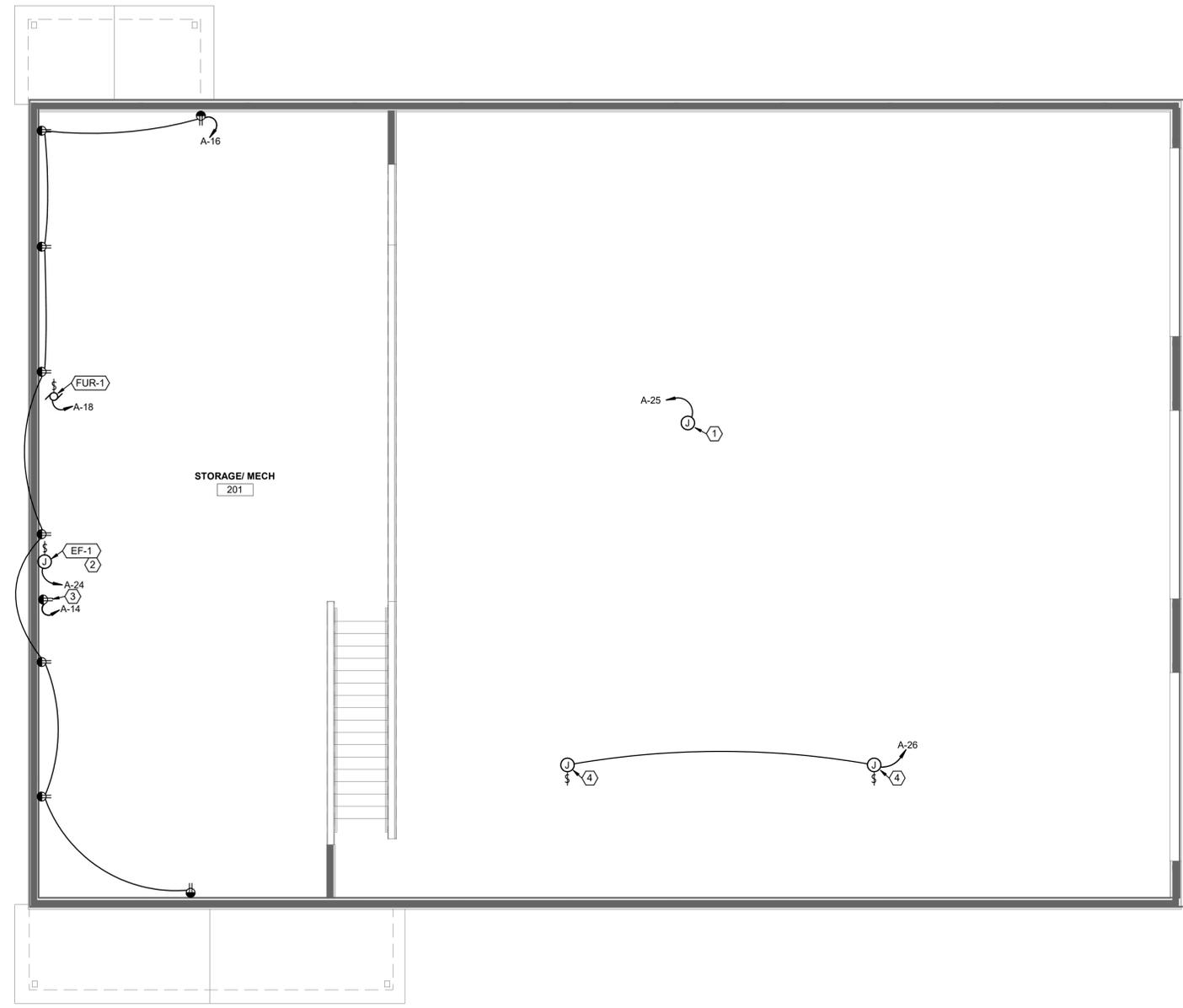
- DRAWING NOTES**
1. EC TO PROVIDE JUNCTION BOX FOR HVLS. EC TO COORDINATE EXACT LOCATION OF HVLS WITH HVAC PLANS PRIOR TO ROUGH IN. REFER TO SHEET E.1.1 FOR SWITCH LOCATION.
 2. EC TO PROVIDE JUNCTION BOX AND HP RATED SWITCH FOR EXHAUST FAN CONNECTION.
 3. RECEPTACLE TO SERVE GAS FIRED WATER HEATER. COORDINATE EXACT LOCATION OF RECEPTACLE WITH PC PRIOR TO ROUGH IN.
 4. EC TO PROVIDE JUNCTION BOX AND HP RATED SWITCH FOR HEATER CONNECTION.



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1 MEZZANINE POWER PLAN - NEW WORK
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ELECTRICAL MEZZANINE POWER PLAN
Sheet Number

E2.1

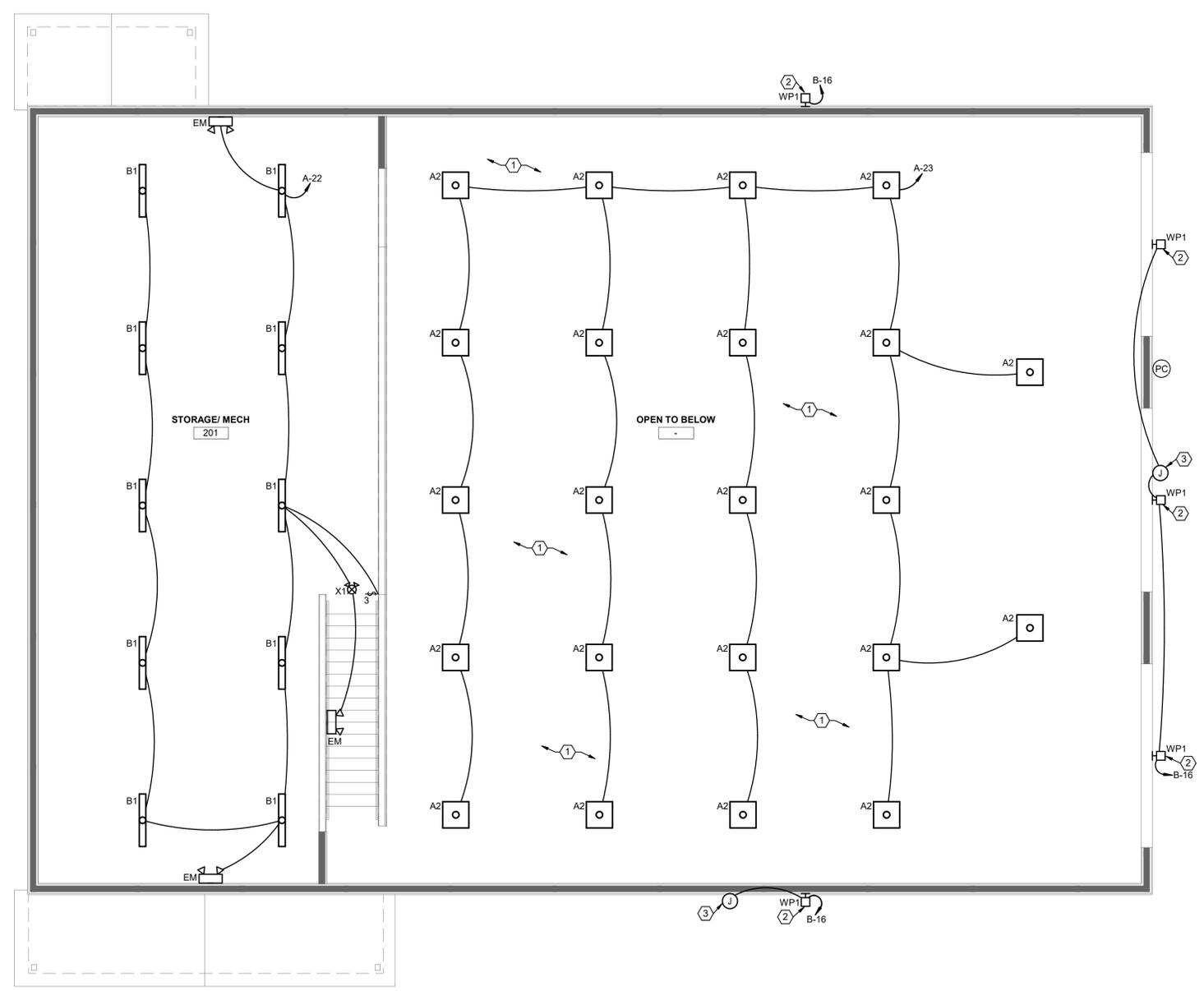
- DRAWING NOTES**
1. FIXTURES ARE TO BE MOUNTED TO CEILING SURFACE. REFER TO SHEET E2.1 FOR SWITCH LOCATIONS.
 2. PROVIDE PHOTOCELL CONTROL FOR EXTERIOR LIGHTING AND SIGNAGE. MOUNT SENSOR ON THE NORTH SIDE OF BUILDING. CONTRACTOR TO ADJUST SENSOR FOR PROPER OPERATION. PROVIDE LIGHTING CONTACTORS AS REQUIRED. REFER TO DETAIL 1 ON SHEET E3.1 FOR FURTHER INFORMATION.
 3. PROVIDE JUNCTION BOX FOR SIGNAGE. SIGNAGE IS TO BE CONTROLLED BY PHOTOCELL ON BUILDING. COORDINATE EXACT LOCATION OF JUNCTION BOX WITH ARCHITECTURAL PLANS PRIOR TO ROUGH IN.



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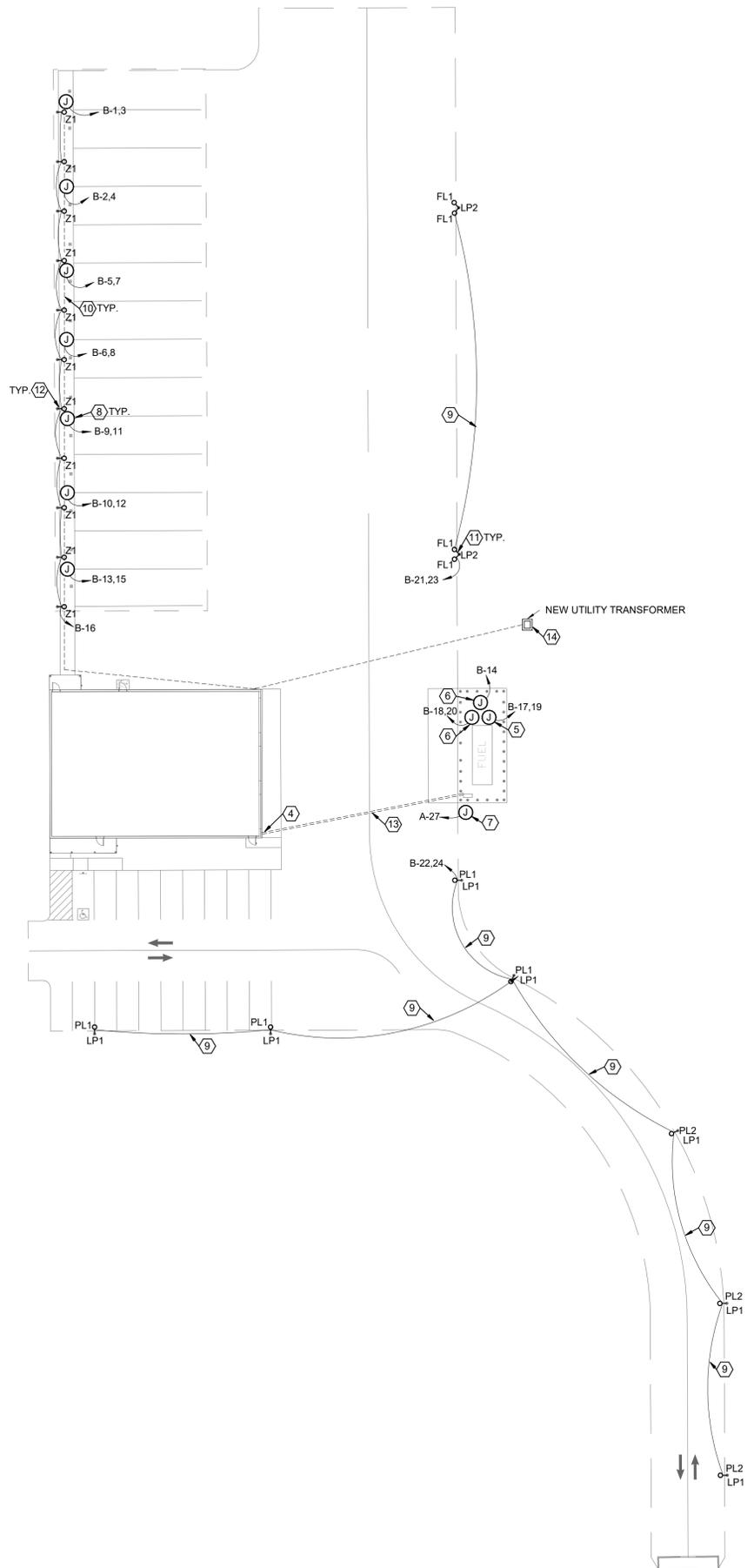


1 MEZZANINE LIGHTING PLAN - NEW WORK
3/16" = 1'-0"

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ELECTRICAL MEZZANINE LIGHTING PLAN
Sheet Number

E2.2



① SITE POWER AND LIGHTING PLAN - NEW WORK
1" = 30'-0"

DRAWING NOTES

1. PROVIDE (2) #12, (1) #12 GRD FROM CONTROL PANEL TO LIFT STATION ALSO PROVIDE (2) #14, (1) #14 GRD FOR HIGH LEVEL ALARM. BOTH CIRCUITS TO BE RAN IN SAME .75" C.
2. PROVIDE (2) #10, (1) #10 IN .75" C. FROM CONTROL PANEL TO PANEL A.
3. COORDINATE EXACT LOCATION OF CONTROL PANEL WITH PC PRIOR TO ROUGH IN.
4. CONTRACTOR TO INSTALL EPO. LOCATION TO BE COORDINATED AT SITE PRIOR TO ROUGH IN. EPO SHALL BE PROVIDED WITH LOCKING MEANS OR A LOCKING COVER TO SATISFY NEC 513.14 AND NEC 110.25. EPO WILL BE CONTROLLING A NORMALLY OPEN CONTACTOR THAT DISCONNECTS ALL CIRCUITS SERVING FUELING SKID.
5. PROVIDE (3) #10, (1) #10 IN .75" C.
6. PROVIDE (3) #12, (1) #12 IN .75" C.
7. COORDINATE EXACT LOCATION OF JUNCTION BOX FOR GATE OPERATOR PRIOR TO ROUGH IN.
8. PROVIDE NEW DIRECT BURY POWER PEDESTAL BY MILBANK #U5200-XL. POWER PEDESTAL SHALL HAVE 2, 20A/1P BREAKERS EACH SERVING 1 5-20R GFCI OUTLET. COORDINATE FINAL POWER PEDESTAL SPECS WITH OWNER PRIOR TO ORDERING. EC TO COORDINATE EXACT LOCATION OF POWER PEDESTALS PRIOR TO ROUGH IN.
9. PROVIDE (2) #3, (1) #8 GRD. IN 1.25" C.
10. ALL CONDUITS FROM POWER PEDESTALS TO PANEL SHALL BE BURIED BENEATH WALKWAY TO AVOID FUTURE CONSTRUCTION.
11. PROVIDE PHOTOCELL CONTROL FOR SITE LIGHTING. MOUNT SENSOR ON THE NORTH SIDE OF BUILDING. CONTRACTOR TO ADJUST SENSOR FOR PROPER OPERATION. PROVIDE LIGHTING CONTACTORS AS REQUIRED. REFER TO DETAIL 1 ON SHEET E3.1 FOR FURTHER INFORMATION.
12. LIGHTING FIXTURE IS TO BE MOUNTED TO JUNCTION BOX. JUNCTION BOX IS TO BE RECESSED INTO 4X4 PRESSURE TREATED POST. REFER TO DETAIL #4 ON SHEET E3.1 FOR FURTHER INFORMATION.
13. PROVIDE (2) 2" SPARE CONDUITS FROM FUEL TANK TO INTERIOR OF BUILDING AT SE CORNER OF BUILDING.
14. COORDINATE EXACT LOCATION OF NEW UTILITY TRANSFORMER WITH UTILITY COMPANY PRIOR TO ROUGH IN.
15. COORDINATE EXACT LOCATION OF NEW UTILITY TRANSFORMER WITH UTILITY COMPANY PRIOR TO ROUGH IN. REFER TO LIFT STATION SINGLELINE FOR FURTHER INFORMATION.

GENERAL NOTES

- A. PER ARTICLE 514 OF THE NFPA CODE DIESEL FUEL IS A "COMBUSTIBLE" LIQUID, NOT A FLAMMABLE LIQUID. THEREFORE, A DIESEL DISPENSING AREA IS NONCLASSIFIED AND ELECTRICAL EQUIPMENT AND WIRING IS NOT REQUIRED TO COMPLY WITH THE STRINGENT REQUIREMENTS OF CHAPTER 5.
- B. EACH CIRCUIT LEADING TO OR THROUGH A DISPENSER (INCLUDING EQUIPMENT FOR REMOTE PUMPING SYSTEMS) MUST HAVE A CLEARLY IDENTIFIED AND READILY ACCESSIBLE SWITCH (LOCATED REMOTE FROM THE DISPENSER) TO DISCONNECT SIMULTANEOUSLY ALL CONDUCTORS OF THE CIRCUIT (INCLUDING THE GROUNDED NEUTRAL CONDUCTOR). YOU CANT USE SINGLE-POLE BREAKERS WITH HANDLE TIES.
- C. YOU CAN USE SET-SCREW AND COMPRESSION COUPLINGS AND CONNECTORS FOR ELECTRICAL METALLIC TUBING (EMT), IMC, OR RMC INSTALLED IN A NONCLASSIFIED AREA, PROVIDING THE CIRCUIT DOES NOT PASS THROUGH, OR IS PART OF, ANY CIRCUIT WITHIN A HAZARDOUS CLASSIFIED LOCATION.
- D. PER NEC 514.9 (A) A LISTED SEAL SHALL BE PROVIDED IN EACH CONDUIT RUN ENTERING OR LEAVING A DISPENSER OR ANY CAVITIES OR ENCLOSURES IN DIRECT COMMUNICATION THEREWITH. THE SEALING FITTING OR LISTED EXPLOSION PROOF REDUCER AT THE SEAL SHALL BE THE FIRST FITTING AFTER THE CONDUIT EMERGES FROM THE EARTH OR CONCRETE.
- E. PER NEC 516.16 ALL METAL RACEWAYS, THE METAL ARMOR OR METALLIC SHEATH ON CABLES, AND ALL NON-CURRENT-CARRYING METAL PARTS OF FIXED AND PORTABLE ELECTRICAL EQUIPMENT, REGARDLESS OF VOLTAGE, SHALL BE GROUNDED AND BONDED. GROUNDING AND BONDING IN CLASS I LOCATION SHALL COMPLY WITH NEC 501.30



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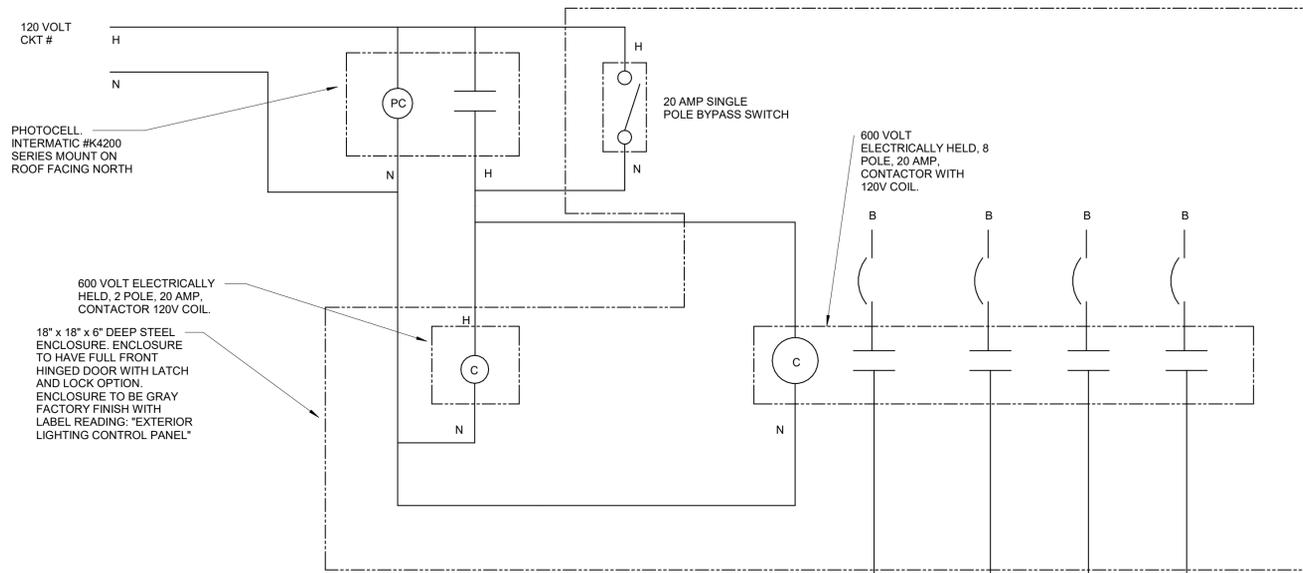


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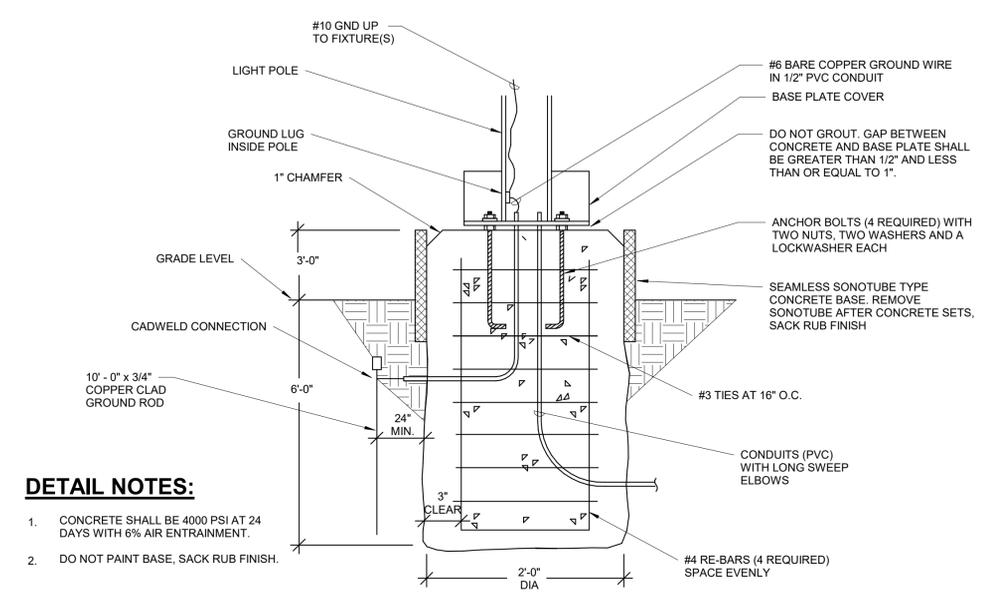
Proposed Bus Maintenance Facility
**Twin Valley Community
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ELECTRICAL SITE PLAN
Sheet Number

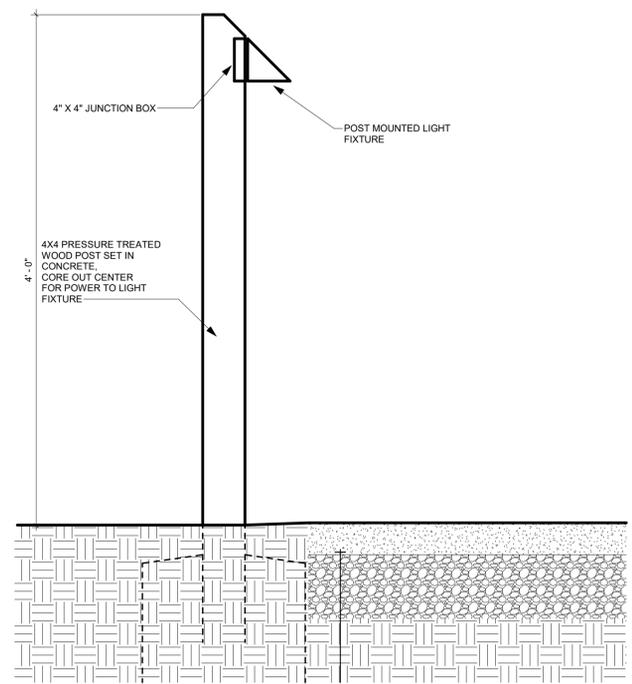
E2.3



1 EXTERIOR PHOTOCELL CONTROL DIAGRAM NTS



2 PARKING LOT POLE BASE NTS



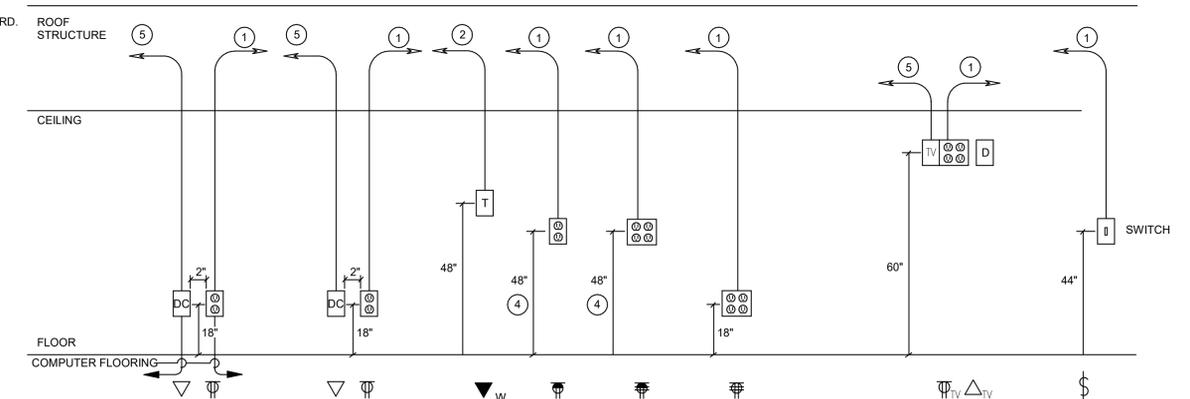
4 POST FIXTURE NTS

DETAIL NOTES:

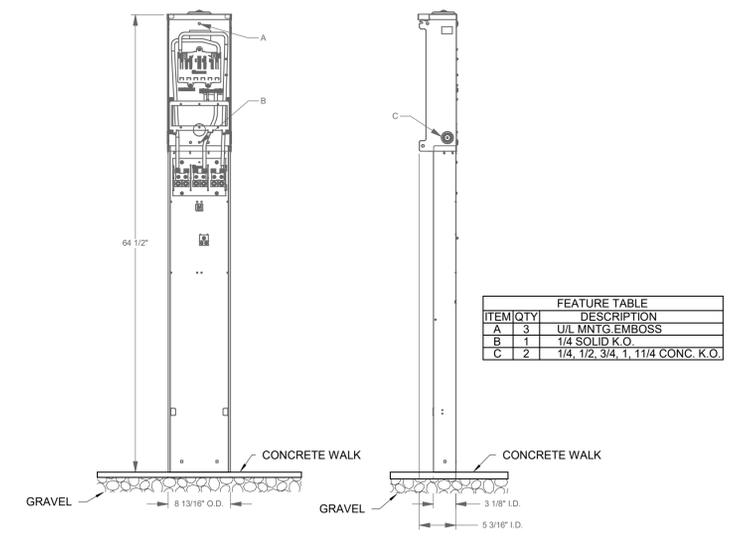
- 120V RECEPTACLE BRANCH CIRCUIT. REFER TO POWER PLANS
- 3/4" CONDUIT WITH CABLES TO CABLETRAY/DATA/COMM. BACKBOARD.
- SWITCH LEG OR 4" ABOVE BACKSPASH STUB 1" CONDUIT TO ABOVE ACCESSIBLE CEILING. PROVIDE BUSHING

LEGEND

- DC DATA/COMMUNICATIONS OUTLET
- T TELEPHONE OUTLET
- IV AV BOX
- 120V POWER OUTLET
- SWITCH
- DOUBLE DUPLEX 120V POWER OUTLET



5 TYPICAL DEVICE ELEVATION DETAILS NTS



3 POWER PEDESTAL DETAIL NTS



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Sheet Title
ELECTRICAL DETAILS

Sheet Number

E3.1

Branch Panel: A

Location: SERVICE BAY 108
 Supply From:
 Mounting: Surface
 Enclosure:

Volts: 120/240 Single
 Phases: 3
 Wires: 3

A.I.C. Rating:
 Mains Type: MB
 Mains Rating: 200A
 MCB Rating: 200A.

Notes:

CKT	Circuit Description	Trip	Poles	A	B	Poles	Trip	Circuit Description	CKT	
1	HALL 105/BREAK RM 103 RECEP.TS.	20 A	1	1260	1200			REFRIGERATOR RECEPT.	2	
3	BREAK AREA 103 GFCI RECEPT.	20 A	1		180	180	1	BREAK AREA 103 GFCI RECEPT.	4	
5	TOILET 104 GFCI	20 A	1	180	180			TOILET 107 GFCI	6	
7	STORAGE 106 RECEP.TS.	20 A	1		360	720	1	SERV. BAY RECEP.TS.	8	
9	SERV. BAY RECEP.TS.	20 A	1	1080	1080			WASH BAY 109 RECEP.TS.	10	
11	OFFICE 102 RECEP.TS.	20 A	1		1440	900	1	OUTSIDE GFCI/WP RECEP.TS	12	
13	AIR COMP. RECEPTACLE	60 A	2	4680	180			WATER HEATER RECEPT.	14	
15	--	--	--	--	4680	1440	1	MEZZ RECEP.TS.	16	
17	CONDENSING UNIT	35 A	2	2496	1188			FURNACE (FUR-1)	18	
19	--	--	--	--	2496	180	1	WASH BAY GARAGE DOOR RECEPT.	20	
21	GARAGE DOOR OP RECEP.TS.	20 A	1	360	1146			LIGHTING	22	
23	SERVICE BAY LIGHTING	20 A	1		1670	180	1	EXHAUST FAN	24	
25	HVLS	20 A	1	500	360			RADIANT HEATERS	26	
27	GATE OPERATOR	20 A	1		180	720	1	SERV. BAY RECEP.TS.	28	
29	SERV. BAY 108 RECEP.TS.	20 A	1	900	0			SPARE	30	
31	SPARE	20 A	1		0	0	1	SPARE	32	
33	SPARE	20 A	1	0	0			SPARE	34	
35	SPARE	20 A	1		0	0	1	SPARE	36	
37	SPACE	--	1	--	--			SPACE	38	
39	SPACE	--	1	--	--			SPACE	40	
41	SPACE	--	1	--	--			SPACE	42	
				Total Load:	16790 VA	15326 VA				
				Total Amps:	140 A	128 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Motor	6180 VA	120.19%	7428 VA	
Receptacle	23120 VA	71.63%	16560 VA	Total Conn. Load: 32115 VA
Lighting	2815 VA	100.00%	2815 VA	Total Est. Demand: 26803 VA
				Total Conn.: 134 A
				Total Est. Demand: 112 A

Notes:

Branch Panel: B

Location: SERVICE BAY 108
 Supply From:
 Mounting: Surface
 Enclosure:

Volts: 120/240 Single
 Phases: 3
 Wires: 3

A.I.C. Rating:
 Mains Type: MB
 Mains Rating: 200A
 MCB Rating: 200A.

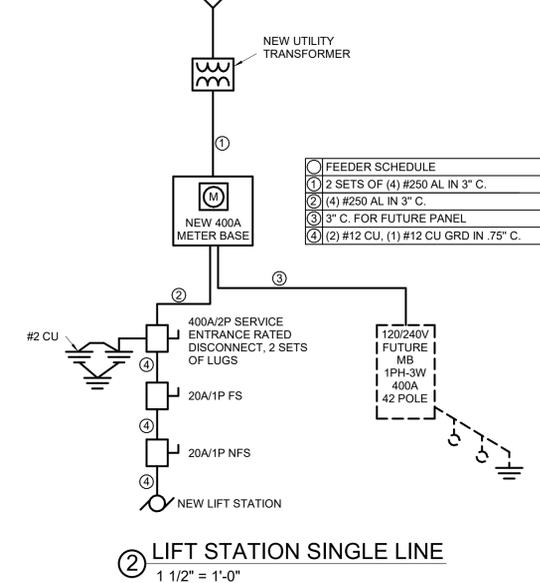
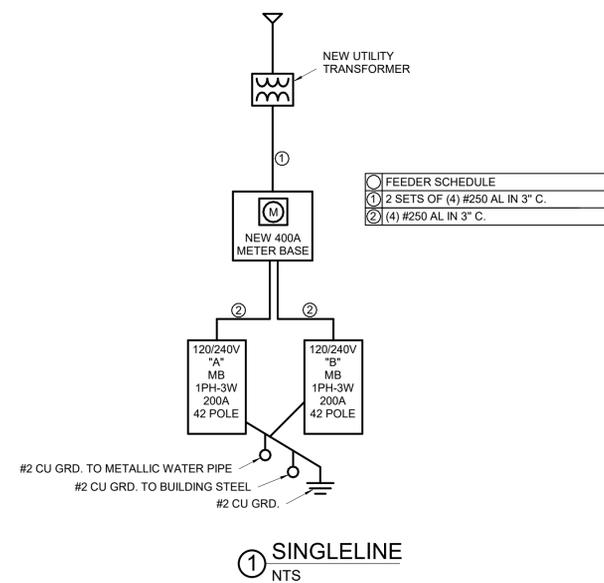
Notes:

CKT	Circuit Description	Trip	Poles	A	B	Poles	Trip	Circuit Description	CKT	
1	POWER PEDESTAL	20 A	2	1500	1500			POWER PEDESTAL	2	
3	--	--	--	--	1500	1500	--	--	4	
5	POWER PEDESTAL	20 A	2	1500	1500			POWER PEDESTAL	6	
7	--	--	--	--	1500	1500	--	--	8	
9	POWER PEDESTAL	20 A	2	1500	1500			POWER PEDESTAL	10	
11	--	--	--	--	1500	1500	--	--	12	
13	POWER PEDESTAL	20 A	2	1500	180			ALARM BOX	14	
15	--	--	--	--	1500	623	1	20 A	16	
17	FUEL MANAGEMENT SYSTEM	20 A	2	2400	800			EXTERIOR SITE LIGHTING - BUS LOT/BUILDING	18	
19	--	--	--	--	2400	800	2	20 A	20	
21	EXTERIOR SITE LIGHTING	20 A	2	578	240			EXTERIOR SITE LIGHTING	22	
23	--	--	--	--	578	240	--	--	24	
25	SPARE	20 A	1	0	0			SPARE	26	
27	SPARE	20 A	1		0	0	1	20 A	28	
29	SPARE	20 A	1	0	0			SPARE	30	
31	SPARE	20 A	1		0	0	1	20 A	32	
33	SPACE	--	1	--	--			SPACE	34	
35	SPACE	--	1	--	--			SPACE	36	
37	SPACE	--	1	--	--			SPACE	38	
39	SPACE	--	1	--	--			SPACE	40	
41	SPACE	--	1	--	--			SPACE	42	
				Total Load:	14659 VA	15102 VA				
				Total Amps:	122 A	126 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Lighting - Exterior	1702 VA	125.00%	2128 VA	
Receptacle	27940 VA	67.90%	18970 VA	Total Conn. Load: 29762 VA
Lighting	200 VA	100.00%	200 VA	Total Est. Demand: 21202 VA
				Total Conn.: 124 A
				Total Est. Demand: 88 A

Notes:



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PANELBOARD SCHEDULES
 AND SINGLE LINE DIAGRAM

Sheet Number

E4.1