Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ARCHITECT

App Architecture

615 Woodside Drive
Englewood, Ohio 45322
(937) 836-8898

CIVIL ENGINEER

Choice One Engineering

8956 Glendale Milford Road, Suite 1
Loveland, Ohio 45140
(513)239-8554

LANDSCAPE ARCHITECT

Yellow Springs Design, LLC

830 Xenia Avenue
Yellow Springs, Ohio 45387
(937) 767-8199

MECHANICAL & ELECTRICAL ENGINEERS

Nauman & Zelinski, LLC

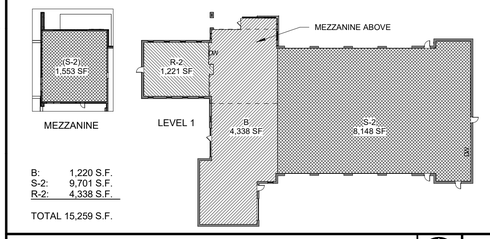
204 South Ludlow Street, Suite 400
Dayton, Ohio 45402
(937) 223-3821

STRUCTURAL ENGINEER

Jezerinac Geers & Associates

5640 Frantz Road
Dublin, Ohio 43017
(614) 766-0066

USE GROUP PLAN

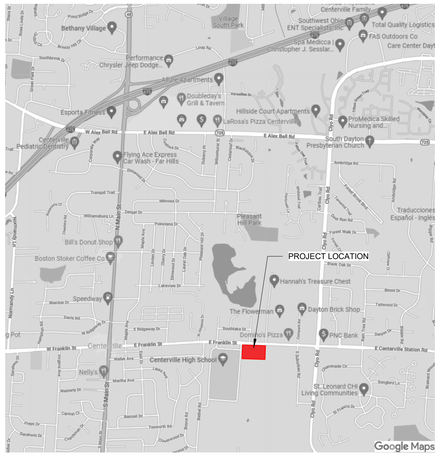


B: 1,220 S.F.
S-2: 9,701 S.F.
R-2: 4,338 S.F.

TOTAL 15,259 S.F.

DRAWING INDEX

VICINITY MAP



CODE INFORMATION (OBC 2017)

PROJECT DESCRIPTION:

PROJECT CONSISTS OF CONSTRUCTION OF A NEW FIRE STATION.

BUILDING DESCRIPTION:

FIRE STATION: 1 STORY + MEZZANINE

BUILDING IS CONSTRUCTED OF LIMITED COMBUSTIBLE AND NON-COMBUSTIBLE MATERIALS: STEEL FRAMING AND STEEL JOIST SYSTEM WITH METAL DECK (APPARATUS BAYS) AND FIRE-RETARDANT PLYWOOD DECK (SUPPORT AREAS), AND CONCRETE SLAB. LOAD BEARING EXTERIOR MASONRY WALL AT APPARATUS BAYS; LOAD BEARING AND NON-LOAD BEARING COLD-FORMED METAL FRAMING WITH BRICK VENEER EXTERIOR WALLS FOR SUPPORT AREAS.

USE GROUP CLASSIFICATION:(REFER TO USE GROUP PLAN THIS SHEET)

OBC (302) USE GROUP= B: STATION OFFICES AND LIVING AREAS
R-2: CREW SLEEPING QUARTERS
S-2: APPARATUS BAYS AND MEZZANINE

0BC (508.3) MIXED OCCUPANCIES=
UNSEPARATED MIXED USE
EXCEPTION 2: R-2 DWELLING AND SLEEPING UNITS SHALL BE SEPARATED FROM OTHER OCCUPANCIES CONTIGUOUS TO THEM IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 420.

0BC (708.3) FIRE RESISTANCE RATING=
EXCEPTION 2: DWELLING UNIT AND SLEEPING UNIT SEPARATIONS IN BUILDINGS OF TYPE IIB, IIIB, AND VB CONSTRUCTION SHALL HAVE FIRE-RESISTANT RATINGS OF NOT LESS THAN 1/2-HOUR IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM.

SLEEPING UNITS TO HAVE 20 MIN. RATED DOORS AND FRAMES IN ACCORDANCE WITH OBC TABLE 716.5.

CONSTRUCTION TYPE CLASSIFICATION:

OBC (602) CONSTRUCTION TYPE= II B

OCCUPANT LOAD

OBC (1004) ALLOWABLE= 100 S.F. PER OCCUPANT

FIRE STATION
B: 1,221 S.F. / 100 = 12
S-2: 9,701 S.F. / 300 = 32
R-2: 4,338 S.F. / 200 = 21
TOTAL = 65 OCCUPANTS

DESIGN OCCUPANT LOAD=
B: 8
S-2: 0
R-2: 8
TOTAL = 16 OCCUPANTS

(PRIMARILY USED TO DETERMINE STORM SHELTER OCCUPANCY)

FIRE PROTECTION

BUILDING DESCRIPTION= FULLY SUPPRESSED

CONCEALED SPACES EXCEPTION FOR ATTIC SPACE PER NFPA 13 - 8.15.1.2 "CONCEALED SPACES NOT REQUIRING SPRINKLER PROTECTION" AND 8.15.2.1.2.1

HEIGHT AND AREA LIMITATIONS OBC (503) BUILDING AREA & HEIGHT

ALLOWABLE = 68,480 S.F.

NEW CONSTRUCTION FIRST FLOOR: 13,706 S.F.
MEZZANINE: 1,553 S.F.
TOTAL = 15,259 S.F.

ALLOWABLE HEIGHT = 60'-0" FT. (4 STORY)
ACTUAL HEIGHT = 30'-9" FT. (1 STORY)

USE GROUP	TABLE 506.2 AREA	TOTAL ALLOWABLE
B	92,000 S.F.	R-2 IS THE MOST RESTRICTIVE
R-2	64,000 S.F.	USE GROUP AT 64,000 S.F.
S-2	104,500 S.F.	ALLOWABLE

PLUMBING FIXTURES REQUIRED

USE GROUP	WC	LAVS	SHOWERS	D.F.	SERVICE SINK
B	1	1	0	1	1
R-2	1	1	1	1	1
S-2	0	0	0 (EYEWASH/SHOWER)	0	0
TOTAL	2	2	1	2	2

PLUMBING FIXTURES PROPOSED

USE GROUP	WC	LAVS	SHOWERS	D.F.	SERVICE SINK
TOTAL	5	5	5/1 (SHOWER/EYEWASH)	0	2

OPC 2015 SECTION 410.4 SUBSTITUTION. POTABLE DRINKING WATER WILL BE AVAILABLE IN THE KITCHEN AS A SUBSTITUTION FOR DRINKING FOUNTAIN.

STORM SHELTER PROVISIONS

REFER TO SHEET G0.02 FOR STORM SHELTER INFORMATION.

OTHER PROVISIONS

A STANDBY GENERATOR WILL SUPPORT THE ENTIRE BUILDING, ALL EMERGENCY SYSTEMS (EXIT/EGRESS LIGHTING, FIRE ALARM, ETC.) SHALL HAVE BATTERY BACKUP.

REFER TO SHEET S0.1 FOR ADDITIONAL CODE NOTES AND REFERENCES

GOVERNING CODE: 2017 OHIO BUILDING CODE.

BUILDING RISK CATEGORY: CATEGORY IV

DESIGN LOADS:

FLOOR LIVE LOADS (WITH ALLOWABLE REDUCTIONS WHERE APPLICABLE)
- STAIRS & EXITS 100 PSF
- MEZZANINE/STORAGE (LIGHT) 125 PSF

OTHER PROVISIONS (CONTINUED)

ROOF LIVE LOADS
- ORDINARY FLAT, PITCHED, AND CURVED ROOFS 20 PSF

SNOW
- GROUND SNOW LOAD (Pg) 20 PSF
- FLAT ROOF SNOW LOAD (Pf) 24 PSF
- SNOW EXPOSURE FACTOR (Ce) 1.0
- SNOW LOAD IMPORTANCE FACTOR (Is) 1.2
- THERMAL FACTOR (Ct) 1.0
- SNOW DRIFTING SEE PLAN

WIND
- BASIC ULTIMATE WIND SPEED (Vult) 120 MPH
- BASIC ALLOWABLE WIND SPEED (Vasd) 90 MPH
- SITE EXPOSURE CATEGORY B
- INTERNAL PRESSURE COEFFICIENT (Gcpi) +/-0.18

SEISMIC
- SEISMIC IMPORTANCE FACTOR 1 1.5
- MAPPED SPECTRAL RESPONSE ACCELERATION, Ss 0.147
- MAPPED SPECTRAL RESPONSE ACCELERATION, S1 0.072
- SEISMIC SITE CLASS C
- DESIGN SPECTRAL RESPONSE ACCELERATION, SDS 0.118
- DESIGN SPECTRAL RESPONSE ACCELERATION, SD1 0.072
- SEISMIC DESIGN CATEGORY C
- BASIC SEISMIC FORCE-RESISTING SYSTEM(S)
  1. STEEL SYSTEMS NOT SPECIFICALLY DETAILED
  2. ORDINARY REINFORCED MASONRY SHEAR WALLS
  3. LIGHT-FRAME (COLD-FORMED STEEL) WALL SYSTEMS USING FLAT STRAP BRACING
- RESPONSE MODIFICATION COEFFICIENT(S), R 3.5
- SEISMIC RESPONSE COEFFICIENT(S), Cs 0.050
- SEISMIC DESIGN BASE SHEAR, V 21.5 K
- ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

GEOTECHNICAL
- GEOTECHNICAL ENGINEER: CBC ENGINEERS
- REFERENCE REPORT ID OR NUMBER: 24541D-1-1221-02
- REFERENCE REPORT DATE: 12/16/2021
- FOUNDATION TYPE: SHALLOW SPREAD FOOTING
- ALLOWABLE DESIGN BEARING PRESSURE 1,500 PSF

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Timothy J Bement License #12305
Expiration Date 12/31/2023

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ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

TITLE
COVER SHEET

SHEET NO.
G0.01

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STORM SHELTER INFORMATION

GOVERNING CODES:
- OBC 2017, SECTION 423 STORM SHELTERS
- ICC 500 2014

THIS SHELTER IS CLASSIFIED AS A COMMUNITY TORNADO SHELTER.
THE SHELTER IS LOCATED ON THE MAIN FLOOR LEVEL OF THE FIRE STATION.

THE SHELTER IS DESIGNED TO ACCOMMODATE 16 OCCUPANTS.

ICC 500, 2014 CHAPTER 3: STRUCTURAL DESIGN CRITERIA

THE TORNADO SHELTER HAS BEEN DESIGNED PER THE REQUIREMENTS OF ICC 500 - 2014.

- SHELTER DESIGN WIND SPEED, V(ult): 250 mph
- WIND EXPOSURE CATEGORY: C
- INTERNAL PRESSURE COEFFICIENT (GCpi): +/- 0.55
- TOPOGRAPHICAL FACTOR: 1.0
- DIRECTIONALITY FACTOR: 1.0
- MINIMUM FOUNDATION CAPACITY REQUIREMENTS: REFER TO STRUCTURAL DRAWINGS
- SHELTER INSTALLATION REQUIREMENTS: REFER TO STRUCTURAL DRAWINGS

REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL STRUCTURAL NOTES AND DETAILS.

ICC 500, 2014 CHAPTER 4: SITING

THE SHELTER IS NOT BEING CONSTRUCTED WITHIN AN AREA SUSCEPTIBLE TO FLOODING PER FEMA.

THE SITE IS LOCATED OUTSIDE OF ANY FLOOD PLAINS. THEREFORE, BASE FLOOD ELEVATION IS NOT APPLICABLE.

THE SHELTER FINISHED FLOOR ELEVATION IS 992.71.

THE SHELTER IS NOT LOCATED IN A PRECAUTIONARY ZONE.
PER A SEARCH OF SARA TITLE III FACILITY REPORTS BY THE MONTGOMERY/GREENE COUNTIES LOCAL EMERGENCY RESPONSE COUNCIL, NO HAZARDOUS SUBSTANCE FACILITIES OR STORAGE WERE DISCOVERED.

ICC 500 2014, SECTION 501 COMMUNITY SHELTERS

TABLE 501.1.1 (TORNADO) - OCCUPANCY DENSITY
- 5 SF/STANDING OR SEATED MINIMUM
- 10 SF/WHEELCHAIR SPACE (1:200)

501.1.2.2 - ALTERNATIVE CALCULATION OF USABLE FLOOR AREA

GROSS AREA = 11' - 8" x 13' - 3 5/8"	=	155.19 SF
WALL AREA	-	39.55 SF
FIXED OBJECTS	-	22.42 SF
NET CLEAR AREA		93.22 SF

MAXIMUM OCCUPANCY = 15 OCCUPANTS + 1 WHEELCHAIR
DECLARED BUILDING OCCUPANCY = 16 OCCUPANTS

501.2 - NUMBER OF DOORS
- BASED ON SHELTER OCCUPANCY, ONLY ONE MEANS OF EGRESS IS REQUIRED.
- PER EXCEPTION LISTED UNDER 501.2, NO EMERGENCY ESCAPE OPENING IS REQUIRED FOR SHELTERS WITH AN OCCUPANT LOAD NOT EXCEEDING 16 OCCUPANTS.

501.3 - DIRECTION OF SWING
- DOOR SHALL SWING INTO THE SHELTER SPACE IN ACCORDANCE WITH OBC 2017.
- DOOR ASSEMBLY TO BE TESTED AND LABELED IN ACCORDANCE WITH ICC 500 2014, CHAPTER 8 AND ASTM E361.

504 - SIGNAGE FOR COMMUNITY SHELTERS
- REFER TO VIEWS D4 & F1 ON THIS SHEET FOR SIGNAGE LOCATIONS.
- REFER TO SIGNAGE LEGEND ON SHEET A0.04 FOR SIGNAGE DETAILS.

ICC 500, 2014 CHAPTER 6: FIRE SAFETY

601.1 - FIRE SEPARATION
- ALL SHELTER WALLS ARE 2 HOUR FIRE RATED PARTITIONS. UL DESIGN NO. U905.
- SHELTER HORIZONTAL ASSEMBLY (CEILING/ROOF) IS A 2 HR. RATED ASSEMBLY. UL DESIGN NO. D219.

602 - FIRE EXTINGUISHERS
- A WALL HUNG FIRE EXTINGUISHER IS PROVIDED MEETING IBC AND NFPA 10 REQUIREMENTS.
- REFER TO SHEET A0.01 FOR MOUNTING DETAILS.

ICC 500, 2014 CHAPTER 7: SHELTER ESSENTIAL FEATURES AND ACCESSORIES

SECTION 702: TORNADO SHELTERS
STORM SHELTER OCCUPANCY IS 16 PEOPLE.

TABLE 702.1.1
- VENTILATION OPENING REQUIREMENTS ARE 5 SQ. IN. PER OCCUPANT. 16 OCCUPANTS REQUIRE 80 SQ. IN. FREE AREA TOTAL.
- A MINIMUM OF 50% OF THE VENTILATION OPENING IS TO BE PROVIDED ABOVE 72" AND A MINIMUM OF 25% OF THE VENTILATION OPENING IS TO BE PROVIDED WITHIN 46" OF THE FLOOR.
- 64 SQ. IN. FREE AREA (80% OF REQUIRED 80 SQ. IN.) IS PROVIDED ABOVE 72" VIA A 10X8 OPENING WITH A TYPE "A" FIRE DAMPER (FREE AREA IS 8X8 -- SUBSTRACT 2 IN FOR FIRE DAMPER).
- 32 SQ. IN. FREE AREA (40% OF REQUIRED 80 SQ. IN.) IS PROVIDED WITHIN 46" OF THE FLOOR VIA A 12X12 ICC-500 RATED LOUVER AND TYPE "A" FIRE DAMPER. (SUBTRACT 2 IN FOR DAMPER & 27% FREE AREA OF LOUVER)
- VENTILATION OPENINGS ARE LOCATED ON OPPOSITE ENDS OF THE SHELTER TO PROMOTE CROSS VENTILATION OF THE SPACE.
- REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

TABLE 702.2
- ONE WATER CLOSET IS REQUIRED.
- THE LAVATORY IS NOT REQUIRED.
- HAND SANITIZER WILL BE STORED BY THE OWNER.

BASED ON 3 WATER CLOSET USES PER 8HR PERIOD PER OCCUPANT (FROM L.E.E.D.), IN A 2 HR PERIOD THAT IS 3/4 USES PER PERSON.
FOR 16 PEOPLE, 12 FLUSHES WILL BE REQUIRED.

THE TANK WILL BE FILLED ON ENTRY INTO THE SPACE AS A STORM SHELTER, THE FIRE DEPARTMENT WILL NEED TO STORE ENOUGH WATER TO ACCOMMODATE ALL FLUSHES.

EACH TANK FILL/FLUSH REQUIRES 1.6 GALLONS OF WATER, 1.6 GALLONS PER FLUSH X 12 = 20 GALLONS MINIMUM OF POTABLE WATER NEED TO BE MADE AVAILABLE FOR WATER CLOSET USAGE.

ADDITIONAL POTABLE WATER SHALL BE STORED FOR DRINKING.
INCLUDE THESE REQUIREMENTS IN THE OWNER'S INSTRUCTIONS.

REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

702.3 EMERGENCY LIGHTING
- LIGHTING FIXTURES WILL BE CONNECTED TO AN EMERGENCY BATTERY BACK-UP TO POWER LIGHTS IN SHELTER FOR A MINIMUM OF 2 HOURS UPON LOSS OF NORMAL POWER. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
- A MINIMUM OF (3) FLASHLIGHTS >20 LUMENS EACH ARE TO BE STORED IN THE SHELTER.

STORM SHELTER SPECIAL INSTRUCTIONS

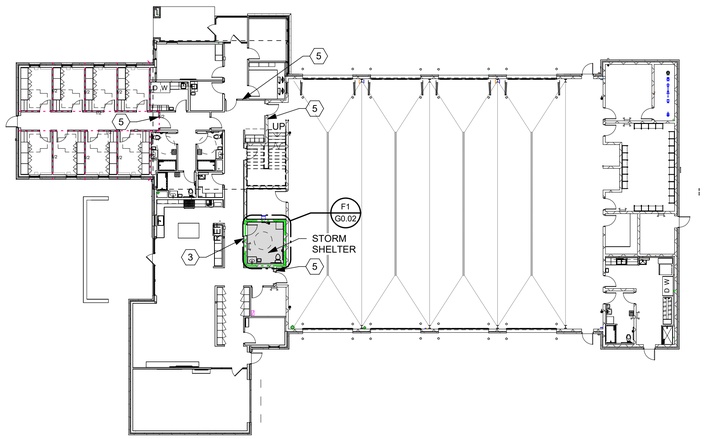
STORM EVENT OPERATIONS PLAN

POSITION DESIGNATED PERSONNEL AT DOOR TO ENSURE THAT ONCE ALL OCCUPANTS ARE INSIDE SHELTER, DOOR REMAINS CLOSED AND LOCKED DURING THE ENTIRE STORM EVENT.
- OPENING DOOR DURING HIGH PRE-EVENT OR EVENT WINDS COULD DAMAGE THE DEVICE. REMOVE THE DEVICE, OR MAKE IT WHERE THE DEVICE CANNOT BE RE-CLOSED MAKING ALL SHELTER OCCUPANTS VULNERABLE TO THE WIND EVENT FOR WHICH THEY ARE SEEKING PROTECTION.

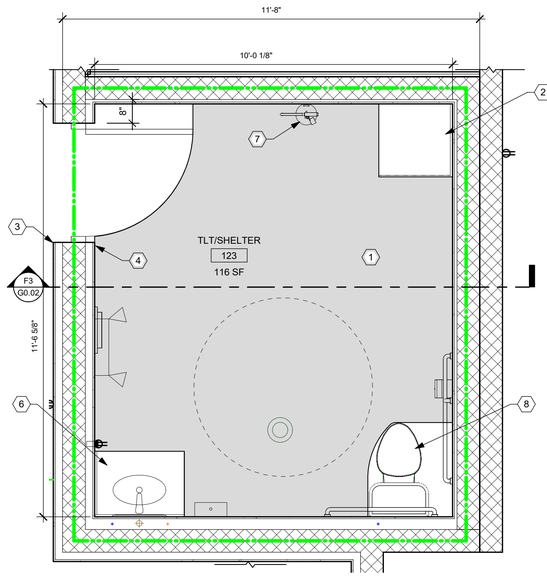
SHELTER OCCUPANTS ARE NOT TO PHYSICALLY CONTACT THE EXTERIOR WALLS OR OPENING PROTECTIVE DEVICES OF THE SHELTER.
- VERY LARGE POINT LOADS CREATED BY DEBRIS MAY BE EXERTED ON THE EXTERIOR WALL AND THIS KINETIC ENERGY MAY BE TRANSFERRED THROUGH THE SHELTER WALL WHICH COULD INJURE AN INDIVIDUAL THAT IS CONTACT WITH THE EXTERIOR WALL OF THE SHELTER.

STORAGE CABINET CONTENTS

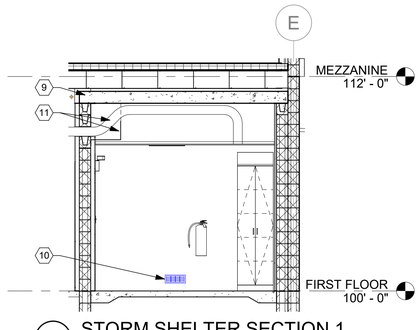
- 20 GALLONS OF POTABLE WATER FOR TOILET FLUSHING (TO BE STORED ON BOTTOM SHELF)
- 2 CASES OF 16 OZ. WATER BOTTLES (EQUALING 3 GALLONS) FOR DRINKING
- HAND SANITIZER
- FIRST AID KIT
- (3) FLASHLIGHTS WITH > 20 LUMENS OUTPUT EACH
- EVACUATION TOOLS
  - HAMMER
  - PRY BAR
  - WORK GLOVES



D4 KEY PLAN
1" = 20'-0"



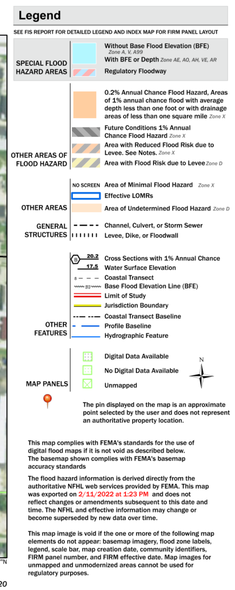
F1 TLT/SHELTER 123 ENLARGED PLAN
1/2" = 1'-0"



F3 STORM SHELTER SECTION 1
1/4" = 1'-0"

National Flood Hazard Layer FIRMette

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020



CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 SHADED AREA REPRESENTS ACTUAL CLEAR FLOOR AREA OF 93 S.F. TOTAL ROOM AREA IS 116 S.F.

2 STORAGE CABINET FOR WATER AND EMERGENCY SUPPLIES. REFER TO F2/A8.03 FOR DETAILS.

3 SIGN TYPE 3. REFER TO SIGNAGE LEGEND ON SHEET A0.04 FOR DETAILS.

4 SIGN TYPE 4. REFER TO SIGNAGE LEGEND ON SHEET A0.04 FOR DETAILS.

5 SIGN TYPE 5. REFER TO SIGNAGE LEGEND ON SHEET A0.04 FOR DETAILS.

6 ADA LAVATORY. REFER TO PLUMBING DRAWINGS AND MOUNTING AND CLEARANCE STANDARDS ON SHEET A0.01 FOR DETAILS.

7 WALL MOUNTED FIRE EXTINGUISHER. CFCI. REFER TO SHEET A1.11 FOR DETAILS.

8 ADA TOILET. REFER TO PLUMBING DRAWINGS AND MOUNTING AND CLEARANCE STANDARDS ON SHEET A0.01 FOR DETAILS.

9 CONCRETE LID IS INDEPENDENT OF ROOF STRUCTURE ABOVE. REFEER TO STRUCTURAL DRAWINGS FOR DETAILS.

10 LOW AIR VENTILATION LOUVER. REFER TO HVAC DRAWINGS FOR DETAILS.

11 REFER TO HVAC DRAWINGS FOR DUCT PENETRATIONS. REFER TO S4.3 FOR SHROUD DETAILS.

GENERAL NOTES

A. THE SHEET CONTAINS A GENERAL OVERVIEW OF TORNADO SHELTER INFORMATION. FOR FURTHER NOTES AND DETAILS REFER TO THE PERTINENT DISCIPLINE'S DRAWINGS CONTAINED IN THE THIS SET.

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Timothy J Bement License #12305
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TITLE
STORM SHELTER

SHEET NO.
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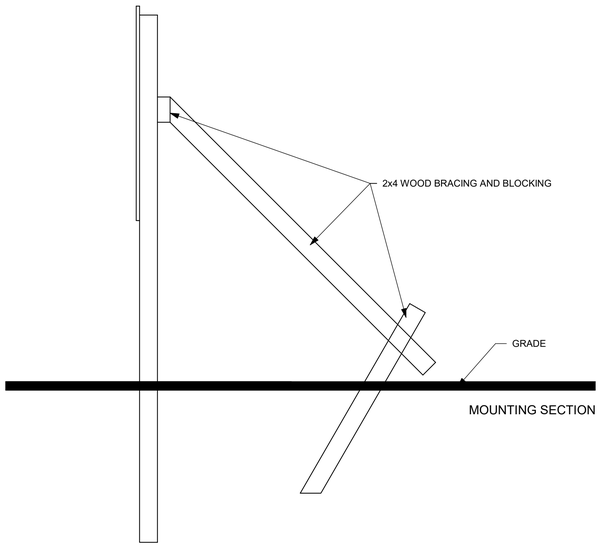
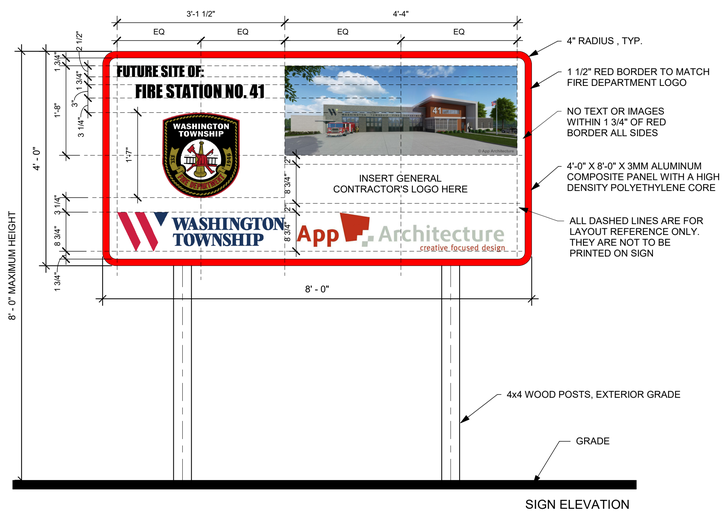
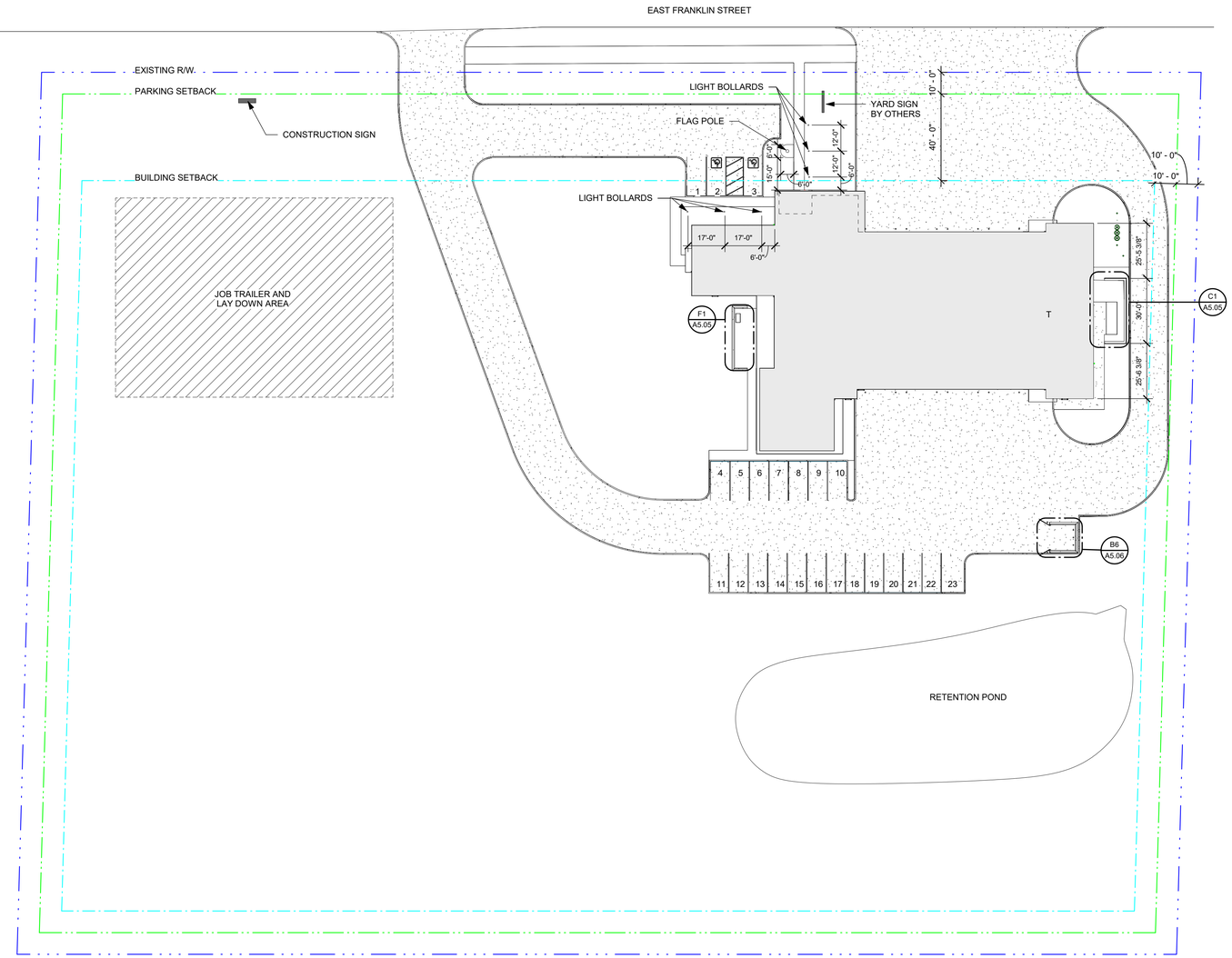


CONSTRUCTION SIGN NOTES:

A. LEFT JUSTIFY "FUTURE SITE OF:"
B. CENTER JUSTIFY "FIRE STATION No. 65", FIRE DEPARTMENT & CONGER LOGOS
C. RIGHT JUSTIFY APP ARCHITECTURE AND BEAVERCREEK TWP LOGOS UNDER FIRE STATION IMAGE. MATCH WIDTH.
D. CONGER CONSTRUCTION GROUP & APP ARCHITECTURE LOGOS TO BE SAME HEIGHT. 10" +/-.
E. FIRE DEPARTMENT LOGO SIZED TO BE 2" BELOW "FIRE STATION No: 65" & 2" ABOVE CONGER LOGO.
F. ALL LETTERS TO BE UPPER CASE VINYL
G. ALL LETTERS TO BE SOLID BLACK
H. COORDINATE LOCATION WITH OWNER
I. PAINT ALL POSTS, BRACING AND BLOCKING TO MATCH BACKGROUND COLOR
J. ALL LOGOS AND ARTWORK TO BE VINYL GRAPHICS. IMAGERY TO BE PROVIDED BY ARCHITECT.
K. SIGN TO BE REMOVED UPON CONSTRUCTION COMPLETION.



F1 CONSTRUCTION SIGN
3/4" = 1'-0"



E4 SITE COORDINATION PLAN
1" = 30'-0"

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TITLE
SITE COORDINATION PLAN

SHEET NO.
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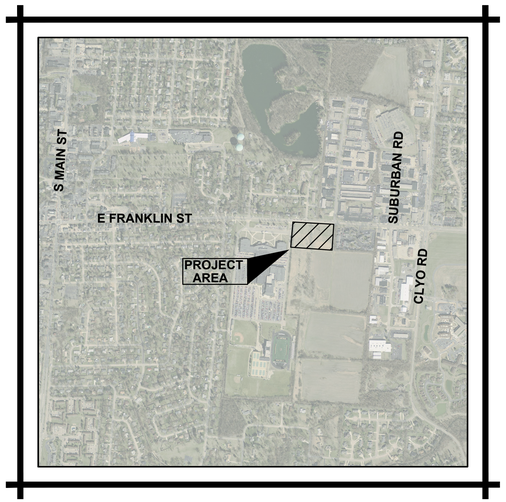
WASHINGTON TOWNSHIP FIRE STATION 41



VICINITY MAP

CITY OF CENTERVILLE
WASHINGTON TOWNSHIP
MONTGOMERY COUNTY, OHIO

INDEX OF SHEETS

2019 SPECIFICATIONS

THE CONSTRUCTION STANDARDS AND DRAWINGS OF THE CITY OF CENTERVILLE AND THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND GENERAL NOTES LISTED IN THE PLAN, SHALL GOVERN THIS IMPROVEMENT. THE MOST RESTRICTIVE SHALL APPLY.

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW BUILDING AND ASSOCIATED DRIVES AND PARKING FOR THE WASHINGTON TOWNSHIP FIRE DEPARTMENT, LOCATED ON FRANKLIN STREET WITHIN THE CITY OF CENTERVILLE. SITE WORK TO INCLUDE STORM SEWER, SANITARY SEWER, WATER, SITE GRADING, PAVEMENT WORK AND BUILDING CONSTRUCTION.

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

STANDARD CONSTRUCTION DRAWINGS		ODOT STANDARD CONSTRUCTION DRAWINGS	
		BP–7.1	7–14–2020
		HW–2.2	7–20–2018
		ODOT SUPPLEMENTAL SPECIFICATIONS	
		800	10–15–2021
		832	10–19–2018

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MARCH 22, 2022

MICHAEL L. SEEGER, P.E. P.E.–#81748 — 3–22–2022 DATE

STATE OF OHIO · MICHAEL LEWIS SEEGER · 81748 · REGISTERED PROFESSIONAL ENGINEER

CHOICE ONE ENGINEERING RELEASE FOR CONSTRUCTION MAR. 22, 2022

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STATE OF OHIO · MICHAEL LEWIS SEEGER · 81748 · REGISTERED PROFESSIONAL ENGINEER

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1	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	JAC
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TITLE
TITLE SHEET

SHEET NO.
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1/11/2022 9:32:44 AM

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON NAVD 88 (ODOT VRS GEOID 18).

GENERAL NOTES AND DETAILS

ALL CONSTRUCTION METHODS, MATERIALS, AND SPECIFICATIONS SHALL COMPLY WITH THE LATEST VERSION OF THE CITY OF CENTERVILLE STANDARDS AND SPECIFICATIONS AND/OR THE LATEST VERSION OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION STANDARDS AND SPECIFICATIONS (INCLUDING CURRENT SUPPLEMENTAL SPECIFICATIONS 800 AND 832), WHICHEVER IS MORE RESTRICTIVE AS DETERMINED BY THE CITY OF CENTERVILLE. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE APPLICABLE SPECIFICATION SECTIONS IN THE ARCHITECTURAL PROJECT MANUAL DATES MARCH 22, 2022.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC. EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION ACCORDING TO THE BEST AVAILABLE DATA. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING THEM IN THE FIELD PRIOR TO CONSTRUCTION AND WILL BE RESPONSIBLE FOR ANY DAMAGE DONE TO THEM. CONTRACTOR TO CONTACT OHIO UTILITIES PROTECTION SERVICE (1-800-362-2764) 48 HOURS PRIOR TO CONSTRUCTION.

NON-MEMBERS MUST BE CALLED DIRECTLY.

UTILITY OWNERSHIP

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

STREETS, STORM SEWER, WATER AND SANITARY
CITY OF CENTERVILLE
7970 S SUBURBAN ROAD
CENTERVILLE, OH 45458
(937) 428-4782

TELEPHONE
AT&T OHIO
7201 FAR HILLS AVENUE
CENTERVILLE, OH 45459
(937) 296-3894
ATTN: JESSE WEAD

ELECTRIC
AES OHIO
1900 DRYDEN ROAD
DAYTON, OH 45439
(937) 608-2814
ATTN: WILLIAM GOURLEY

CABLE
CHARTER COMMUNICATIONS
3691 TURNER ROAD
DAYTON, OH 45415
(937) 405-3786
ATTN: JACOB HOUDESHELL

GAS
CENTERPOINT ENERGY
2345 E MAIN STREET
DANVILLE, IN 46122
(317) 718-3639
ATTN: JEFF PIKE

OHIO UTILITIES PROTECTION
SERVICE 2 WORKING DAYS BEFORE
YOU DIG CALL TOLL FREE
800-362-2764

UTILITY INTERFERENCE

IF, DURING THE CONSTRUCTION, INTERFERENCE ARISES WITH EXISTING UTILITIES IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY AND COORDINATE AS NEEDED WITH THE UTILITY COMPANY INVOLVED. ANY AND ALL WORK REQUIRED FOR PRIVATE UTILITIES SHALL BE COORDINATED WITH AND, IF REQUIRED, DONE BY THEIR RESPECTIVE OWNERS, UNLESS OTHERWISE NOTED ON THESE PLANS. THE CONTRACTOR SHALL NOTIFY, AT LEAST 7 DAYS BEFORE BREAKING GROUND, ALL PUBLIC SERVICE CORPORATIONS HAVING WIRES, POLES, PIPES, CONDUITS, MANHOLES, OR OTHER STRUCTURES THAT MAY BE AFFECTED BY THIS OPERATION, INCLUDING ALL STRUCTURES WHICH ARE AFFECTED AND NOT SHOWN ON THESE PLANS.

EXISTING TILE HOOKUPS

THE DRAINAGE TILE CURRENTLY CONNECTED TO THE EXISTING STORM SEWER SHALL BE CONNECTED TO THE PROPOSED STORM SEWER. ANY DRAINAGE TILE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. ALL TILE REMOVED, REPLACED AND/OR CONNECTED TO THE STORM SEWER SHALL BE NOTED ON THE RECORD DRAWINGS AND SHALL BE INSPECTED BY THE CITY OF CENTERVILLE BEFORE THEY ARE COVERED.

ALL FIELD OR STORM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS OR PLUGGED AS APPROVED AND DIRECTED BY THE CITY OF CENTERVILLE. CONNECTION OF INTERSECTING DRAIN TILES AND THE PROPOSED STORM SEWER SHALL BE THROUGH MANUFACTURED TEES, UNLESS OTHERWISE APPROVED BY THE CITY OF CENTERVILLE. COST OF THIS ITEM SHALL BE INCLUDED IN THE COST OF THE CONTRACTORS OVERALL LUMP SUM BID FOR THE PROJECT.

GEOTECHNICAL ENGINEERING REPORT

CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT FOR THE PROPOSED PROJECT AND PERFORM ALL GEOTECHNICAL WORK IN ACCORDANCE WITH THIS REPORT.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, CITY OF CENTERVILLE SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT THE EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, CITY OF CENTERVILLE SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY. COST OF THIS ITEM SHALL BE INCLUDED IN THE COST OF THE CONTRACTORS OVERALL LUMP SUM BID FOR THE PROJECT.

MUD

THE TRACKING OR SPILLAGE OF MUD, DIRT, OR DEBRIS UPON PUBLIC STREETS IS PROHIBITED AND ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR.

EXISTING UTILITY CONFLICT NOTE

IF A CONFLICT ARISES WITH EXISTING UTILITIES, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND APPROPRIATE UTILITY COMPANY TO GET THE CONFLICT RESOLVED.

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. CHOICE ONE ENGINEERING CORPORATION MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN-SERVICE OR ABANDONED. CHOICE ONE ENGINEERING CORPORATION FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. CHOICE ONE ENGINEERING CORPORATION HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

CAD FILE DISCLAIMER

THE CAD FILE ASSOCIATED WITH THESE CONSTRUCTION PLANS IS A NON-CERTIFIED DOCUMENT. ANY USE OF THE INFORMATION OBTAINED OR DERIVED FROM THE ASSOCIATED CAD FILE WILL BE AT THE RECEIVING PARTY/USER'S RISK. CHOICE ONE ENGINEERING CORP. OFFERS NO WARRANTY AS TO THE ACCURACY OF THE INFORMATION IN THE CAD FILE OR THAT REVISIONS HAVE BEEN ISSUED AFTER THE CAD DRAWING WAS RELEASED. RECEIVING PARTIES/USERS SHALL HOLD HARMLESS TO THE MAXIMUM EXTENT ALLOWED BY LAW CHOICE ONE ENGINEERING CORP. FROM ANY USE OF THE CAD FILE BY THE RECEIVING PARTY/USER. IN ALL CIRCUMSTANCES, AND AT ALL TIMES, THE PUBLISHED PAPER AND/OR PDF DRAWINGS FOR THE PROJECT SHALL SUPERSEDE THE CAD FILES. IN THE CASE OF AN INCONSISTENCY BETWEEN THE PUBLISHED PAPER/PDF DRAWINGS AND THE ASSOCIATED CAD FILE, THE PUBLISHED PAPER/PDF DRAWINGS SHALL GOVERN THE PROJECT AND ALL WORK.

SAFETY

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.

DEWATERING

ANY NECESSARY DEWATERING OR PUMPING NECESSARY FOR THE CONSTRUCTION OF ANY ITEMS SHALL BE INCIDENTAL TO THOSE PARTICULAR CONSTRUCTION ITEMS AND SHALL BE INCLUDED IN THE CONTRACTORS OVERALL LUMP SUM BID FOR THE PROJECT.

CLEAN WATER NOTE

ROOF DRAINS, FOUNDATION DRAINS, AND ALL OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SYSTEM ARE PROHIBITED.

SANITARY SEWER/LATERAL NOTE

ALL SANITARY SEWER LINES AND SANITARY LATERALS MUST BE INSTALLED WITH 40 INCHES MINIMUM OF COVER OR BELOW FROST DEPTH WHICHEVER IS GREATER.

RETENTION BASIN CLAY LINER NOTE

WHEN A RETENTION BASIN IS SHOWN, CONTRACTOR TO VERIFY SOIL IS SUITABLE TO HOLD WATER FOR PERMANENT POOL. IF FOUND THAT THE SOIL IS UNSUITABLE FOR PERMANENTLY HOLDING WATER, AN 18" THICK COMPACTED CLAY LINER SHALL BE INSTALLED THROUGHOUT THE ENTIRE WET POOL PORTION OF THE RETENTION BASIN. COST OF THIS ITEM SHALL BE INCLUDED IN THE OVERALL LUMP SUM BID FOR THE PROJECT.

STORM SEWER INSTALLATION

THIS WORK CONSISTS OF CONSTRUCTING STORM SEWER. THE CONTRACTOR SHALL PROVIDE ALL TOOLS AND EQUIPMENT REQUIRED FOR INSTALLING THESE ITEMS. THE WORK ALSO INCLUDES FURNISHING ALL MATERIALS, EXCAVATING, BEDDING, LAYING PIPE, JOINTING, BACKFILLING, REMOVAL AND RESTORATION OF DISTURBED FACILITIES AND SURFACES, CURB REPAIR, SIDEWALK REPAIR, PAVEMENT REPAIR (i.e. PAVEMENT IN STREETS, ALLEYS AND DRIVEWAYS), DISPOSAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIALS, AND OTHER WORK NECESSARY TO COMPLETE THE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE TO FIELD LOCATE ALL EXISTING STORM SEWER, AND OTHER UTILITIES, PRIOR TO INSTALLING THE PROPOSED STORM SEWER SYSTEM. THE EXISTING STORM SEWER AND LATERALS SHOWN ON THE PLANS ARE IN THE APPROXIMATE LOCATION AND IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD LOCATE PROPOSED TIE-INS TO THE EXISTING STORM PRIOR TO ANY STORM SEWER CONSTRUCTION. ALL TIE-INS SHALL BE THROUGH PREMANUFACTURED TEES OR HOLES INSTALLED USING A CORING MACHINE. PIPE MAY BE ANY OF THE PIPE TYPES LISTED BELOW UNLESS OTHERWISE SPECIFIED ON THE PLANS.

TYPES OF PIPE PERMITTED	ODOT MATERIALS NUMBERS
CORRUGATED POLYETHYLENE SMOOTH-LINED PIPE (CPSLP)	707.33
POLYPROPYLENE CORRUGATED DOUBLE WALL PIPE (PCDWP)	707.65
POLYVINYL CHLORIDE SOLID WALL PIPE (SDR-35)	707.45
REINFORCED CONCRETE PIPE	706.02

GENERAL NOTES

1. INSTALL AND TEST ALL UTILITIES PER THE LATEST VERSION OF THE CITY OF CENTERVILLE STANDARDS.

2. ALL DISTURBED AREAS AND ALL NON-PAVEMENT AREAS SHALL HAVE A MINIMUM OF 6" OF TOP SOIL PLACED AND ARE TO BE SEEDED AND MULCHED PER ODOT ITEM 659.

3. ALL CONCRETE USED FOR HEAVY DUTY PAVEMENT(S) AND STANDARD DUTY PAVEMENT(S) SHALL BE ODOT QC-1P AND REINFORCED WITH CONCRETE FIBERS AS SPECIFIED IN THE PROPOSED PAVEMENT SECTION(S). ALL OTHER CONCRETE (WALKS, CURBS, ETC.) SHALL BE ODOT QC MISC. (CEMENT ONLY - NO POZZOLAN MATERIAL) REINFORCED WITH 3 LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO FIBRILLATED MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES.

4. CONTRACTOR TO BE RESPONSIBLE FOR ANY PERMITS OR FEES THAT MAY BE NECESSARY FOR THE COMPLETION OF THE SITE WORK.

5. ALL WORK SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL ADA REGULATIONS AND STANDARDS.

6. ALL ITEMS ON SITE PLAN SHALL BE CONSTRUCTED PER THE LATEST VERSION OF THE CITY OF CENTERVILLE STANDARDS.

STORM AND SANITARY CONDUITS/STRUCTURES AND RELATED WORK

THIS ITEM OF WORK SHALL CONSIST OF THE WORK AS DESCRIBED IN OHIO DEPARTMENT OF TRANSPORTATION ITEM 611, PIPE CULVERTS, SEWERS, DRAINS, AND DRAINAGE STRUCTURES, EXCEPT AS HEREIN MODIFIED.

THE INSTALLATION OF ALL STORM SEWER, SANITARY SEWER, AND ALL CORRESPONDING STRUCTURES SHALL BE PER MANUFACTURER'S RECOMMENDATIONS OR AS NOTED ON THE PLANS. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN A HIGH STANDARD OF WORK. CONTRACTOR IS RESPONSIBLE TO ENSURE ALL WORK IS PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR AS NOTED ON THE PLANS. CONTRACTOR SHALL ALSO ENSURE THAT ALL ITEMS ARE FULLY AND PROPERLY FUNCTIONAL, AND TO A QUALITY ACCEPTABLE TO THE OWNER.

ALL PIPE CULVERTS, CONDUITS, SEWERS, DRAINS, AND DRAINAGE STRUCTURES (CATCH BASINS, YARD DRAINS, MANHOLES, ETC.) SHALL MEET THE MATERIAL REQUIREMENTS OF THIS ITEM. THE FOLLOWING ITEMS WILL NOT BE REQUIRED UNLESS OTHERWISE NOTED: 1) INSTALLATION PLAN, 2) CONSTRUCTION INSPECTION FORMS, 3) PERFORMANCE INSPECTIONS AND REPORTS, 4) CONDUIT AND DRAINAGE STRUCTURE EVALUATIONS.

THE CONTRACTOR SHALL ENSURE THE CONDUIT BEDDING AND BACKFILL COMPACTION DENSITY MEETS ASTM D698 (98% STANDARD PROCTOR). TESTING MAY BE REQUIRED IF DEEMED NECESSARY BY THE OWNER OR THE OWNER'S REPRESENTATIVE.

MAINTAINING TRAFFIC

MAINTAIN TRAFFIC AS INDICATED IN THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", ALSO THE FOLLOWING REQUIREMENTS SHALL APPLY.

EXCAVATIONS WITHIN PUBLIC RIGHT-OF-WAY LIMITS SHALL BE CLOSED AT TIMES WHEN WORK IS NOT BEING PERFORMED.

LOCAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT DURING THE TIME THAT AN APPROVED CLOSURE AND DETOUR IS ALLOWED BY THE GOVERNING AUTHORITY.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING NECESSARY TRAFFIC CONTROL DEVICES AND PAVEMENT REPAIR MATERIALS TO MAINTAIN THE TRAVELED PAVEMENT SAFELY.

NO SHUT DOWN OF ANY OWNER FACILITY DRIVE, ROADWAY OR PARKING LOT WILL BE ALLOWED WITHOUT WRITTEN CONSENT FROM THE OWNER. ALL OWNER ROADWAYS MUST HAVE AT LEAST ONE LANE OPEN AT ALL TIMES. NO STAGING OF TRUCKS OUTSIDE OF CONSTRUCTION LIMITS WILL BE PERMITTED WITHOUT CONSENT FROM THE OWNER.

SUBCONTRACTOR SUPERVISION

THE CONTRACTOR IS REQUIRED TO HAVE SOMEONE ON-SITE TO SUPERVISE THE SUBCONTRACTOR FOR QUALITY CONTROL PURPOSES AND TO PROVIDE ANY NECESSARY ASSISTANCE TO THE SUBCONTRACTOR TO ENSURE QUALITY WORK. COST OF THIS ITEM SHALL BE INCLUDED IN THE COST OF THE CONTRACTORS OVERALL LUMP SUM BID FOR THE PROJECT.

EXCAVATION AND EMBANKMENT

TOPSOIL SHALL BE REMOVED FROM ALL DISTURBED AREAS AND ALL AREAS TO BE EXCAVATED OR EMBANKED. A MINIMUM OF 6" OF TOPSOIL SHALL BE FINE GRADED ON ALL DISTURBED AREAS.

ALL EMBANKMENT SHALL BE COMPACTED TO A MINIMUM OF 100% STANDARD PROCTOR OR AS DETERMINED BY THE OWNER. TESTING MAY BE REQUIRED BY THE OWNER.

SAWCUT PAVEMENT JOINTS

MORE THAN ONE SAWCUT MAY BE NECESSARY TO ENSURE A CLEAN CUT. JUST PRIOR TO ASPHALT OR CONCRETE PLACEMENT, ASPHALT MATERIAL SHALL BE PLACED ON THE VERTICAL FACE OF SAWCUT JOINTS PRIOR TO PAVING AS PER 401.14. AFTER THE ASPHALT WORK IS COMPLETED, THE TRANSVERSE JOINTS SHALL BE SEALED WITH LIQUID ASPHALT.

ChoiceOne Engineering

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81745
REGISTERED
PROFESSIONAL ENGINEER

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

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WATER LINE CROSSING SEPARATION

CONTRACTOR SHALL LOWER/DIP ANY EXISTING OR PROPOSED WATER LINES AS NEEDED TO OBTAIN AN 18" MINIMUM SEPARATION DISTANCE FROM THE WATER LINE TO ANY STORM OR SANITARY SEWER. WATER LINE SHALL BE LAID AT LEAST 10' HORIZONTALLY FROM ANY SEWERS. WHENEVER A SANITARY OR STORM SEWER AND WATER LINE MUST CROSS, THE SEWER AND WATER SHALL BE LAID AT SUCH AN ELEVATION THAT THERE IS AT LEAST 18" OF SEPARATION BETWEEN THE OUTSIDE WALLS OF THE TWO PIPES. ALSO ONE FULL LENGTH OF WATERLINE SHALL BE LOCATED SO THE JOINTS ARE AS FAR FROM THE STORM AND SANITARY SEWERS AS POSSIBLE. IF IT IS ABSOLUTELY IMPOSSIBLE TO MAINTAIN THE 18" VERTICAL SEPARATION, THE SEWER SHALL BE CONSTRUCTED OF WATER LINE TYPE MATERIALS WHICH WOULD BE ABLE TO WITHSTAND A 100 PSI PRESSURE TEST (NOTE: DO NOT PRESSURE TEST SEWER TO 100 PSI). THESE REQUIREMENTS WILL EXTEND FOR THE DISTANCE OF THE ENTIRE SPAN. NO CHANGE OF MATERIALS ARE ALLOWED MID-SPAN. COST OF THIS ITEM SHALL BE INCLUDED IN THE COST OF THE CONTRACTOR'S OVERALL LUMP SUM BID FOR THE PROJECT.

PAVEMENT MARKINGS

ALL PAVEMENT MARKINGS SHALL BE PER ODOT ITEM 640 AND 642. ALL PAVEMENT MARKINGS TO BE TYPE 1, UNLESS APPLICATION IS REQUIRED WHEN AIR AND PAVEMENT TEMPERATURES ARE BETWEEN 35 °F AND 50 °F, THEN OBTAIN APPROVAL FROM THE OWNER AND APPLY ONLY PRE-QUALIFIED TYPE 1A COLD WEATHER TRAFFIC PAINT MATERIALS PER ITEM 642 AND 740.

ALL MARKING LAYOUT AND COLOR SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

DOWNSPOUTS

THE CONTRACTOR SHALL CONNECT ANY DOWNSPOUTS AS SHOWN ON THE SITE PLAN OR TO THE CLOSEST STORM PIPING OR CATCH BASINS USING CPSLP OR PVC SDR-35 SEWER OR APPROVED EQUAL.

UTILITIES

CONTRACTOR SHALL INSTALL AND/OR COORDINATE THE INSTALLATION OF GAS, ELECTRIC, TELEPHONE, CABLE TELEVISION, FIBER OPTIC, ETC.. CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES PRIOR TO INSTALLATION OF ANY FACILITIES. ALL UTILITIES SHALL BE INSTALLED PER EACH PARTICULAR UTILITY COMPANY'S STANDARDS AND PROCEDURES. CONTRACTOR TO VERIFY ACTUAL SIZES, LOCATIONS (POINTS OF ENTRY INTO THE BUILDING) AND INVERTS OF ALL UTILITIES TYING INTO THE BUILDING WITH ALL ARCHITECT PLANS (BUILDING, PLUMBING, ELECTRICAL, ETC.) BEFORE CONSTRUCTION.

ASPHALT PAVEMENT REPLACEMENT NOTE

ANY EXISTING PAVEMENT THAT IS TO BE REMOVED SHALL BE SAWCUT FULL DEPTH AND RESTORED TO MATCH THE EXISTING PAVEMENT CROSS SECTION UNLESS OTHERWISE NOTED IN THE PLANS.

ASPHALT

ALL ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY TO THIS PROJECT EXCEPT FOR ODOT ITEM 401.20 ASPHALT BINDER PRICE ADJUSTMENT (ASPHALT CONCRETE BID ITEMS ARE NOT ELIGIBLE FOR ANY ASPHALT BINDER PRICE ADJUSTMENT).

ALL ASPHALT DELIVERED SHALL BE ACCOMPANIED WITH A LOAD TICKET AS PER ITEM 401.21.

REVIEW OF DRAINAGE FACILITIES

BEFORE FINAL ACCEPTANCE BY THE OWNER, REPRESENTATIVES OF THE OWNER, AND THE CONTRACTOR, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. ALL EXISTING SEWERS INSPECTED BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO PRE-EXISTING CONDITION OF THE SEWER. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY OF CENTERVILLE AND/OR OWNER.

ALL NEW CONDUITS, UNDERDRAINS (INCLUDING THE STONE BACKFILL ABOVE THE UNDERDRAIN PIPING), INLETS, CATCH BASINS, MANHOLES, SWALES/DITCHES, AND DETENTION/RETENTION BASINS CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER (INCLUDING SEDIMENT) AND IN A CLEAN CONDITION AND FULLY AND PROPERLY FUNCTIONAL BEFORE THE PROJECT WILL BE ACCEPTED BY THE OWNER.

CLEARING AND GRUBBING

CONTRACTOR TO CLEAR THE AREA AS SHOWN ON THE PLANS AND/OR AS NEEDED TO WORK ON THIS PROJECT. UNLESS STATED ELSEWHERE IN THE PLANS, CLEARING AND GRUBBING IS TO BE KEPT TO A MINIMUM IN ORDER TO PRESERVE THE WOODED AREAS.

MODIFICATIONS

ANY MODIFICATIONS TO THE SPECIFICATIONS OR CHANGES TO THE WORK AS SHOWN ON THE DRAWINGS MUST HAVE PRIOR WRITTEN APPROVAL BY THE OWNER.

RESTORATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY DISTURBED AND/OR DAMAGED AREAS, INCLUDING PAVEMENT, TO CONDITIONS EQUAL TO OR BETTER THAN CONDITIONS PRIOR TO CONSTRUCTION OR TO THE SATISFACTION OF THE OWNER.

MISCELLANEOUS

THE INTENT OF THESE DRAWINGS IS TO INCLUDE ALL ITEMS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK BY THE CONTRACTOR. PERFORMANCE BY THE CONTRACTOR SHALL BE REQUIRED TO THE EXTENT CONSISTENT WITH THE CONTRACT DOCUMENTS AND REASONABLY INFERABLE FROM THEM AS BEING NECESSARY TO PRODUCE THE INTENDED RESULTS.

IN THE CASE OF AN INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATIONS OR WITHIN EITHER DOCUMENT, THE BETTER QUALITY OR GREATER QUANTITY OF WORK SHALL BE PROVIDED IN ACCORDANCE WITH THE OWNER'S REPRESENTATIVE'S INTERPRETATION.

CONTRACTORS SHALL VERIFY ALL GRADES, ELEVATIONS, AND EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

CONTRACTOR'S LUMP SUM BID PRICE SHALL INCLUDE ALL ITEMS AND OPERATIONS NEEDED, REQUIRED AND NECESSARY FOR THE PROPER EXECUTION OF THE PROJECT AND TO COMPLETE ALL WORK.

GRAFFITI AND VANDALISM

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF ANY CONCRETE WORK OR OTHER ITEMS UNDER THIS CONTRACT WHICH IS DEEMED UNACCEPTABLE BY THE OWNER DUE TO GRAFFITI OR VANDALISM DAMAGE.

OWNER COORDINATION NOTES

THE CONTRACTOR SHALL COORDINATE THE PROPOSED WORK WITH THE OWNER'S REPRESENTATIVE PRIOR TO PERFORMING ANY WORK ON SITE. IF THE CONTRACTOR IS TO ENGAGE IN ANY OPERATIONS THAT AFFECT THE EXISTING FACILITY OPERATIONS, THE CONTRACTOR SHALL COORDINATE THE SCHEDULING OF SUCH ACTIVITIES WITH THE OWNER'S REPRESENTATIVE PRIOR TO PERFORMING ANY SUCH OPERATIONS OR ACTIVITIES.

THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SUPPORT, BRACING, AND OTHER DEVICES AS MAY BE REQUIRED OR AS DIRECTED BY OWNER'S REPRESENTATIVE OR THE ENGINEER TO PROTECT THE SAFETY OF THE PUBLIC, ADJACENT STRUCTURES, ROADWAY AND/OR UTILITIES. ALL WORK TO BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.

GENERAL NOTES FOR CIVIL WORK

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND IS TO INCLUDE SUCH COSTS AS A PART OF THE LUMP SUM PRICE ON THE PROJECT.

2. THE CONTRACTOR IS RESPONSIBLE TO CONTACT THE APPROPRIATE UNDERGROUND UTILITY MARKING SERVICE PRIOR TO THE START OF ANY CONSTRUCTION IN ORDER TO AVOID CONFLICTS WITH EXISTING UTILITIES. IF CONFLICTS ARE DISCOVERED, THE CONTRACTOR IS TO NOTIFY THE OWNER PRIOR TO THE START OF ANY WORK THAT WOULD BE IN CONFLICT WITH THE UTILITIES.

3. THE CONTRACTOR IS TO VISIT AND INVESTIGATE THE PROJECT SITE, PRIOR TO BIDDING, IN ORDER TO DETERMINE THE EXISTING GROUND AND SITE CONDITIONS. FOR SOIL TYPE AND GROUND WATER TABLE, THE CONTRACTOR IS ENCOURAGED TO UTILIZE ANY AVAILABLE DATA TO ESTIMATE GROUND CONDITIONS. SHOULD THE BIDDING CONTRACTOR REQUIRE ADDITIONAL TEST HOLES PRIOR TO BIDDING IN ORDER TO DETERMINE OR VALIDATE GROUND CONDITIONS, THIS CAN BE COMPLETED AT THE DISCRETION OF THE OWNER. NO TEST HOLES ARE TO BE DUG WITHOUT CONTACTING THE OWNER'S REPRESENTATIVE PRIOR TO EXCAVATION AND WITHOUT RECEIVING WRITTEN APPROVAL FROM THE OWNER'S REPRESENTATIVE TO DO SO.

4. THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS WITH REGARD TO EXCAVATION, SAFETY, QUALITY AND WORK PROGRESS. IT IS THE CONTRACTORS RESPONSIBILITY TO COMPLY WITH THESE THROUGHOUT CONSTRUCTION OPERATIONS.

5. THE LOCATION OF MATERIALS STORED ON SITE MUST RECEIVE THE APPROVAL OF THE OWNER. IN GENERAL, MATERIALS SHOULD BE STORED SO AS TO MINIMIZE THE INCONVENIENCE TO THE OWNER.

6. TRENCH EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH THE BID SPECIFICATIONS AND IN ACCORDANCE WITH ALL APPLICABLE OSHA RULES AND REGULATIONS. IN ADDITION, THE OWNER MAY HAVE ADDITIONAL REQUIREMENTS FOR EXCAVATION AND TRENCHING ON OWNER PROPERTY THAT MAY BE MORE STRINGENT THAN CURRENT LOCAL OR OSHA REQUIREMENTS. IN THIS CASE, THE OWNERS REQUIREMENTS ARE TO BE FOLLOWED UNLESS THIS ACTION WOULD BE CONSIDERED NON-COMPLIANT WITH CURRENT GOVERNING CODES OR REGULATIONS AS DEFINED BY LOCAL OR GOVERNING AUTHORITIES. WHERE A NON-COMPLIANCE ISSUE IS NOTED, THE CONTRACTOR IS TO MAKE THE OWNER AND ENGINEER AWARE OF THE GOVERNING CODE.

7. THE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR, REPLACE, AND/OR RECONNECT ANY EXISTING DRAINAGE TILES, NOT SHOWN ON THE PLANS, WHICH CROSS THROUGH THE EXCAVATED TRENCH. ANY DRAINAGE TILES ENCOUNTERED ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER AND A MEASUREMENT TAKEN FROM THE NEAREST MANHOLE OR INLET STRUCTURE TO THE CENTERLINE OF THE TILE. THIS INFORMATION SHALL BE PROVIDED TO THE OWNER AS PART OF THE RECORD DRAWINGS.

8. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPAIRS TO ANY UTILITY LINE(S) THAT THE CONTRACTOR DAMAGES UNLESS OTHERWISE CLEARLY THE RESPONSIBILITY OF THE UTILITY COMPANY.

9. THE CONTRACTOR WILL REPLACE ALL DAMAGED OR REMOVED DRIVES AND PAVEMENT WITH THE REQUIRED THICKNESS SHOWN ON THE PLANS OR MATCH EXISTING IF GREATER.

10. ALL DISTURBED LAWN AREAS SHALL BE GRADED TO DRAIN TO THE NEAREST INLET STRUCTURE.

11. CONTRACTOR SHALL USE PROPER EROSION CONTROL TECHNIQUES TO MAINTAIN GRADE PRIOR TO SEEDING.

12. CONTRACTOR TO REFER TO ODOT SPECIFICATION, ITEM 659 FOR SEEDING AND MULCHING UNLESS OTHERWISE SPECIFIED. CONTRACTOR WILL NOT SEED ANY AREA UNTIL OWNER HAS INSPECTED FINAL TOPSOIL GRADING.

13. CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE ALL FENCES, LAWN DECORATIONS, TREES, SHRUBS, PLANTING, VEGETATION ETC. WHICH IS DAMAGED, DISTURBED OR REMOVED DURING CONSTRUCTION.

ITEM 304 AGGREGATE BASE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE WORK AS DESCRIBED IN OHIO DEPARTMENT OF TRANSPORTATION ITEM 304 AGGREGATE BASE, EXCEPT AS HEREIN MODIFIED.

THIS ITEM SHALL ALSO INCLUDE SATURATING THE AGGREGATE BASE WITH WATER DURING PLACEMENT OF EACH LIFT PRIOR TO COMPACTION. THIS WORK SHALL INCLUDE "PROOF ROLLING" WITH LOADED TANDEM DUMP TRUCK AS DIRECTED BY THE OWNER'S REPRESENTATIVE UNTIL NO DEFLECTION OR TIRE INDENTATION IN THE AGGREGATE SUB-BASE/BASE IS PRESENT.

PAYMENT FOR ITEM 304 AGGREGATE BASE FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE AND SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

ITEM 659 SEEDING AND MULCHING, CLASS 1 (LAWN MIXTURE), AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE WORK AS DESCRIBED IN OHIO DEPARTMENT OF TRANSPORTATION ITEM 659, SEEDING AND MULCHING, EXCEPT AS HEREIN MODIFIED.

ALL DISTURBED AREAS OR AREAS DESIGNATED FOR SEEDING SHALL BE GRADED AND SEEDED AND SHALL HAVE A MINIMUM OF 6" OF TOPSOIL OVER THE ENTIRE AREA. TESTING THE PH OF ANY EXISTING OR IMPORTED TOPSOIL PER ODOT 659.02 SHALL BE WAIVED. THE AREA SHALL BE HAND-RAKED AND DRESSED READY FOR SEEDING. NO STONE OVER 1" IN SIZE PERMITTED IN THE TOP 6".

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL.

IT'S THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE THE REQUIRED GERMINATION RATES AND ENSURE THE GRASS IS ESTABLISHED TO THE SATISFACTION OF THE OWNER WHICH MAY REQUIRE WATERING, REGRADING/ADDING TOPSOIL AND RESEEDING. ANY AREAS THAT HAVE ERODED OR WHERE NEW GRASS DID NOT GERMINATE SHALL BE ADDRESSED BY THE CONTRACTOR UNTIL THE AREAS ARE STABILIZED, SHAPED, AND DRAINED, AS INDICATED IN THE PLANS.

ANY DISTURBED AREA, OUTSIDE OF THE PROJECT WORK LIMITS, CAUSED BY THE CONTRACTOR'S WORK, SHALL BE RESTORED TO THE SATISFACTION OF THE PROPERTY OWNER AND PROJECT OWNER'S REPRESENTATIVE, AT THE CONTRACTOR'S SOLE EXPENSE. THIS ITEM INCLUDES: TOPSOIL, SEEDING, MULCHING, COMMERCIAL FERTILIZER, WATER, AND REPAIR SEEDING AND MULCHING.

PAYMENT FOR ITEM 659 SEEDING AND MULCHING, CLASS 1 (LAWN MIXTURE), AS PER PLAN, FOR ALL ABOVE OPERATIONS, SHALL BE INCLUDED IN THE LUMP SUM BID PRICE AND SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

PAVEMENT STRIPING NOTES

ANY PROPOSED PAVEMENT MARKING SHALL BE STRIPED AS PART OF THIS WORK.

ALL PAVEMENT MARKING LINES SHALL BE WHITE (DO NOT REQUIRE REFLECTOR BEADS) AND SHALL CONSIST OF 4" WIDE LINES.

ALL PAVEMENT MARKINGS SHALL BE PER ODOT ITEM 640 AND 642. ALL PAVEMENT MARKINGS TO BE TYPE 1, UNLESS APPLICATION IS REQUIRED WHEN AIR AND PAVEMENT TEMPERATURES ARE BETWEEN 35 °F AND 50 °F, THEN OBTAIN APPROVAL FROM THE OWNER AND APPLY ONLY PRE-QUALIFIED TYPE 1A COLD WEATHER TRAFFIC PAINT MATERIALS PER ITEM 642 AND 740.

ALL MARKING LAYOUT AND COLOR SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

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SHEET NO.
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GENERAL NOTES FOR CONCRETE WORK

ALL WORK TO BE PER ODOT ITEM 451 AND 452 EXCEPT AS HEREIN MODIFIED

CONCRETE NOTES:

1. ALL CONCRETE USED FOR HEAVY DUTY PAVEMENT(S) AND STANDARD DUTY PAVEMENT(S) SHALL BE ODOT QC–1P AND REINFORCED WITH CONCRETE FIBERS AS SPECIFIED IN THE PROPOSED PAVEMENT SECTION(S). ALL OTHER CONCRETE (WALKS, CURBS, ETC.) SHALL BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL) REINFORCED WITH 3 LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO FIBRILLATED MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES.

2. THE COARSE AGGREGATE USED IN THE CONCRETE SHALL MEET THE CURRENT REQUIREMENTS OF OHIO DOT 703.13; TESTING ACCORDING TO ODOT SUPPLEMENT 1024 – METHOD OF TESTING COARSE AGGREGATES TO DETERMINE SUSCEPTIBILITY TO D–CRACKING USING ASTM C 666, PROCEDURE B, STANDARD TEST METHOD FOR RESISTANCE OF CONCRETE TO RAPID FREEZING AND THAWING. THE OHIO DOT MAINTAINS A LIST OF SUCH APPROVED AGGREGATE SOURCES.

CONCRETE PAVEMENT THICKENED EDGE NOTES:

1. CONCRETE PAVEMENT SHALL HAVE THICKENED EDGE ISOLATION JOINTS WITHIN THE PAVED AREAS AT THICKNESS TRANSITIONS AND WHERE JOINT SPACINGS MUST CHANGE AS WELL AS THICKENED EDGES WHERE TRAFFIC WILL CROSS TO AN ASPHALT OR GRAVEL PAVEMENT.

2. THICKENED EDGES SHALL CONSISTS OF A MINIMUM OF A 2" INCREASE IN THE THICKNESS OF THE CONCRETE PAVEMENT ALONG A MINIMUM OF THE OUTER 4 FEET OF THE PAVEMENT. THE 2" THICKNESS INCREASE SHALL TRANSITION OVER A MINIMUM OF 4 FEET.

CONCRETE PAVEMENT CONTRACTION JOINT NOTES:

1. ALL WORK TO BE PER ODOT ITEM 451.09, D. CONTRACTION JOINTS.

2. PROPOSED CONCRETE PAVEMENT AREAS SHALL BE JOINTED AS CLOSE TO SQUARE AS POSSIBLE.JOINT SPACING MAY VARY SLIGHTLY DEPENDING ON THE LENGTH AND WIDTH OF THE PROPOSED PAVEMENT AREAS. JOINT SPACING SHALL TYPICALLY RANGE FROM 6'X6' TO A MAXIMUM JOINT SPACING OF 12'X12' (FOR PAVEMENT THICKNESS GREATER THAN 6" THIS MAXIMUM JOINT SPACING CAN BE INCREASED TO 15'X15'). IN ALL CASES THE PAVEMENT SHALL BE JOINTED SO THAT THE MAXIMUM ASPECT RATIO (OF PANEL LENGTH TO WIDTH) OF THE JOINTING IS 1.25:1 OR LESS.

3. TIE/LINE UP THE CONTRACTION JOINTS IN THE CONCRETE PAVEMENT TO EXTEND THRU THE CONTRACTION JOINTS IN ANY ADJACENT CURB OR CURB AND GUTTER, RETAINING WALLS, CURBING, ETC. UNLESS ISOLATED FROM THESE BY AN ISOLATION JOINT.

4. FORM WEAKENED–PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS NOTED AND/OR AS INDICATED IN THE PLANS. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE–FOURTH OF THE CONCRETE THICKNESS. CONTRACTION JOINTS SHALL BE SAWCUT WHENEVER POSSIBLE.

5. CONSTRUCT CONTRACTION JOINTS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED.

6. IF SKEWED JOINT INTERSECTIONS ARE PRESENT/REQUIRED, USE 1.5 TO 3 FT "DOGLEGS" TO AVOID ACUTE ANGLE JOINT INTERSECTIONS (HAVING ANGLES LESS THAN 60 DEGREES) AT ANY SKEWED JOINT INTERSECTIONS, IN ORDER TO PREVENT RANDOM CRACKS AT THOSE LOCATIONS.

TIE BARS:

1. INSTALL #4 TIE BARS AT 30" ON CENTER WHERE THE PROPOSED CONCRETE PAVEMENT MATCHES UP TO ANY EXISTING OR PROPOSED CURB/CURB&GUTTER OR OTHER CONCRETE PAVEMENT. CONTRACTOR TO ENSURE THE CONTRACTION JOINTS IN THE CONCRETE PAVEMENT SHALL MATCH THE CONTRACTION JOINTS IN THE CURB/CURB&GUTTER OR OTHER CONCRETE PAVEMENT.

2. PER SECTION 3.8.3 OF ACI 330R–08, INSTALL #4 TIE BARS AT 30" ON CENTER ON CENTERLINE JOINTS OF SEPARATE DRIVES AND ACCESS ROADS THAT HAVE A SINGLE LONGITUDINAL JOINT. TIE BARS SHALL ALSO BE INSTALLED TO TIE THE FIRST LONGITUDINAL JOINT FROM THE PAVEMENT EDGE, WHERE CURB/CURB&GUTTER OR A THICKENED EDGE IS NOT PRESENT, TO KEEP THE OUTSIDE SLAB FROM SEPARATING FROM THE PAVEMENT. CONTRACTOR TO ENSURE THE CONTRACTION JOINTS MATCH/LINE UP ON EACH SIDE OF THE TIE BARS IN THE CONCRETE PAVEMENT/DRIVES/ROADS.

CONCRETE PAVEMENT EXPANSION/ISOLATION JOINT NOTES:

PROPOSED CONCRETE PAVEMENT AREAS SHALL BE ISOLATED FROM ALL STRUCTURES, FIXED OBJECTS AND ALL SURROUNDING EXISTING AND PROPOSED CONCRETE PAVEMENT, BUILDING/RETAINING WALLS, FOUNDATIONS, SLABS/PADS, CATCH BASINS/MANHOLES, ETC. USING ISOLATION/EXPANSION JOINTS. FOR LONG EXPANSES (OVER 100') OF PROPOSED CONCRETE PAVEMENT, EXPANSION JOINTS SHALL ALSO BE PLACED AS NEEDED AT APPROXIMATE 100'–200' INTERVALS OVER THE LENGTH OF THE CONCRETE PAVEMENT TO TRY TO MINIMIZE UPHEAVAL DURING HIGH TEMPERATURES. THESE 100'–200' INTERVAL JOINTS SHALL BE PLACED PERPENDICULAR TO THE LONGEST DIMENSION OF THE PAVEMENT.

CONCRETE PAVEMENT CAULK NOTE:

PLACE JOINT FILLER (TREMCO THC 901 POLYURETHANE CAULK) IN LIME STONE COLOR IN THE TOP 1/2" – 3/4" OF JOINT FOLLOWING MANUFACTURER INSTALLATION RECOMMENDATION. CONTRACTOR TO PLACE WHITE SILICA SAND ON TOP OF JOINT FILLER AFTER INITIAL SET.

ADDITIONAL CONCRETE PAVEMENT NOTES:

1. CURING COMPOUND: APPLY WHITE PIGMENTED CURING COMPOUND ON ALL SURFACES, INCLUDING BACK, IMMEDIATELY AFTER FINISHING SURFACES

2. FINISHING: ALL WORK TO BE PER ODOT 451.10. PRIOR TO FINISHING, CONTRACTOR TO VERIFY WITH THE OWNER OR OWNER'S REP. WHAT TYPE/KIND OF FINISH IS REQUIRED (FLOATED/TROWLED, ROUGH BROOM, ROUGH BROOM AND TINING, ETC.)

CONSTRUCTION JOINTS NOTES:

CONSTRUCTION JOINTS SHALL BE REQUIRED TO PROVIDE THE INTERFACE BETWEEN AREAS OF CONCRETE PLACED AT DIFFERENT TIMES DURING THE COURSE OF THE PROJECT. BUTT–TYPE CONSTRUCTION JOINTS SHALL BE THICKENED A MINIMUM OF 2" BY TAPERING OVER A MINIMUM OF A 4 FOOT DISTANCE OR BY THE USE OF DOWELS. IF DOWELS ARE USED, ALL WORK TO BE PER ODOT ITEM 451.10, E. CONSTRUCTION JOINTS.

GENERAL NOTES FOR THE UTILITY PLAN

EXISTING UTILITY NOTES:

CONTRACTOR SHALL DETERMINE THE TYPE OF SERVICE FOR ALL EXISTING UNDERGROUND LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION AND SHALL ENSURE THE FOLLOWING:

1. THAT ALL EXISTING STORM LINES OR ANY OTHER EXISTING CLEAN WATER DRAINAGE LINES THAT ARE DISCOVERED AND/OR ENCOUNTERED DURING CONSTRUCTION AND ARE OR NEED TO REMAIN IN SERVICE ARE ROUTED AS NEEDED TO ENSURE THAT THEY ARE CONNECTED INTO THE PROPOSED OR EXISTING STORM SEWER.

2. THAT ALL EXISTING SANITARY LINES THAT ARE DISCOVERED AND/OR ENCOUNTERED DURING CONSTRUCTION AND ARE TO REMAIN IN SERVICE ARE ROUTED AS NEEDED TO ENSURE THAT THEY ARE CONNECTED INTO ACTIVE EXISTING SANITARY SEWER LINES/STRUCTURES OR INTO PROPOSED SANITARY SEWER LINES/STRUCTURES.

3. THAT ALL EXISTING WATER LINES THAT ARE DISCOVERED AND/OR ENCOUNTERED DURING CONSTRUCTION AND ARE TO REMAIN IN SERVICE ARE ROUTED AS NEEDED TO ENSURE THAT THEY ARE CONNECTED INTO ACTIVE EXISTING WATER LINES OR INTO PROPOSED WATER LINES.

ALL WORK TO BE PER AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND TO BE WITNESSED BY THE OWNER'S REP. COST OF THIS ITEM SHALL BE INCLUDED IN THE COST OF THE CONTRACTOR'S OVERALL LUMP SUM BID FOR THE PROJECT.

LOCATE EXISTING UTILITIES NOTE:

THIS ITEM OF WORK MAY BE PERFORMED ON AS NEEDED BASIS AND SHALL CONSIST OF THE CONTRACTOR FIELD LOCATING THE VARIOUS EXISTING UTILITY LINES LOCATION, SIZE, AND DEPTH PRIOR TO PERFORMING ANY PROPOSED WORK OR ONCE WORK HAS BEGUN. THIS WORK MAY ALSO REQUIRE THE CONTRACTOR TO INSPECT THE LINES BY OTHER METHODS SUCH AS DYE TESTING OR CAMERA/VIDEO TO FIND THE ORIGIN AND LOCATION OF THE LINE. THE CONTRACTOR SHALL COOPERATE AND COORDINATE WITH THE OWNER AS NEEDED TO ENSURE EXISTING FACILITY OPERATIONS ARE MAINTAINED.

ALL WORK TO BE PER AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND TO BE WITNESSED BY THE OWNER'S REPRESENTATIVE. COST OF THIS ITEM SHALL BE INCLUDED IN THE COST OF THE CONTRACTOR'S OVERALL LUMP SUM BID FOR THE PROJECT.

UNKNOWN EXISTING UNDERGROUND UTILITIES:

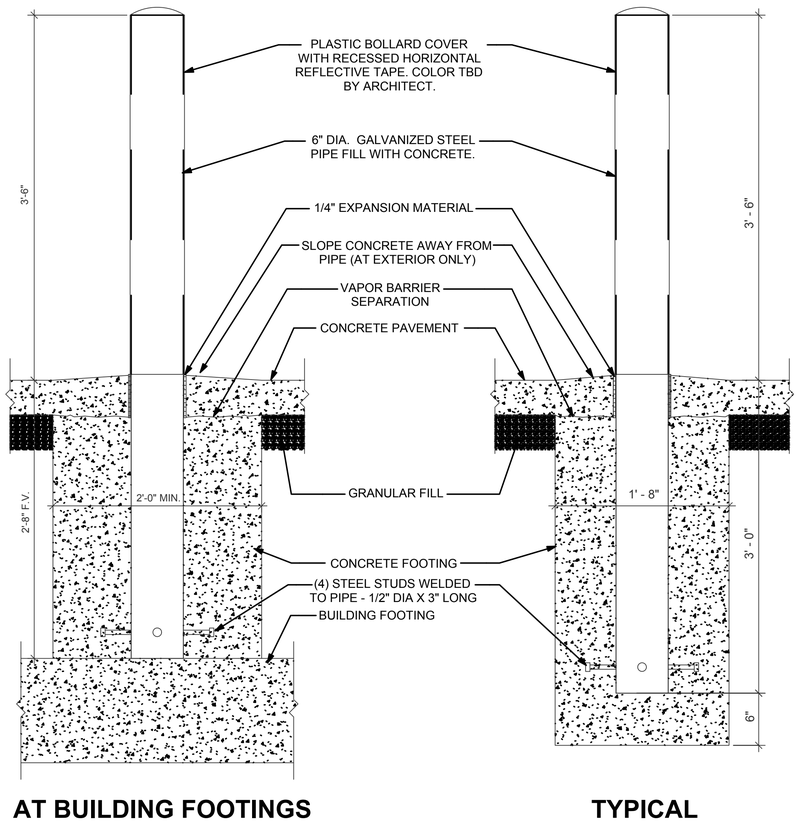
CONTRACTOR TO BE AWARE THERE MAY BE OTHER UNKNOWN SERVICES OR UNKNOWN UNDERGROUND UTILITIES OR ITEMS WHICH MAY BE LOCATED WITHIN THE SITE AND MAY REQUIRE REMOVAL OR REROUTING IN ORDER TO PERFORM THE PROPOSED PROJECT. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY OF ANY UNKNOWN UNDERGROUND UTILITIES OR OTHER ITEMS WHICH ARE ENCOUNTERED AND WORK WITH THE OWNER TO DECIDE HOW THESE ITEMS SHOULD BE HANDLED.

GAS, ELECTRIC, COMMUNICATION CONFLICT NOTE:

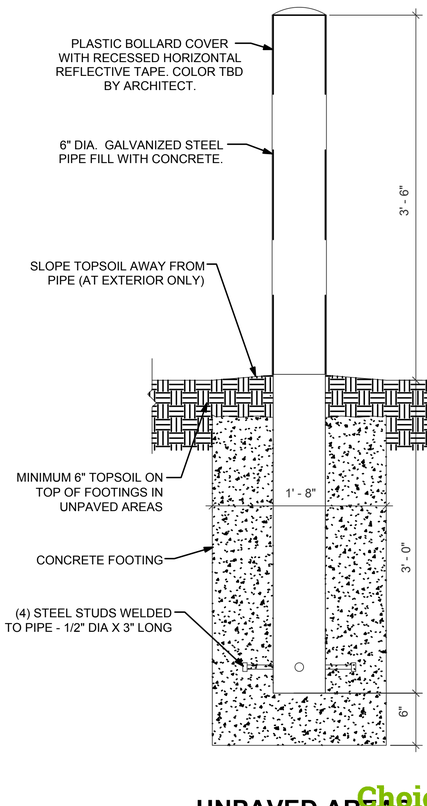
CONTRACTOR TO LOWER/DIP THESE UTILITIES AS NEEDED TO AVOID CONFLICTS WITH ANY PROPOSED OR EXISTING SANITARY OR STORM OR WATER LINES THEY MAY CONFLICT WITH. IF THESE UTILITY LINES CONFLICT WITH ANY PROPOSED OR EXISTING WATERLINES THEN CONTRACTOR TO DETERMINE WHETHER TO LOWER/DIP THE WATERLINE OR LOWER/DIP THE GAS/ELECTRIC/COMMUNICATION LINE(S). CONTRACTOR MAY NEED TO CONSULT WITH AND OBTAIN OWNER'S APPROVAL AS TO WHICH UTILITY WILL BE LOWERED PRIOR TO PERFORMING THIS WORK. COST OF THIS ITEM SHALL BE INCLUDED IN THE COST OF THE CONTRACTOR'S OVERALL LUMP SUM BID FOR THE PROJECT.

EXISTING "APPROXIMATE" AND/OR "PER PLANS" UNDERGROUND UTILITIES NOTE:

EXISTING UNDERGROUND UTILITIES LABELED AS "APPROXIMATE" AND/OR "PER PLANS" HAVE BEEN SHOWN BASED ON PREVIOUS PLANS AND OLD SITE INFORMATION AND THEIR EXACT LOCATION, DEPTH, SIZE, TYPE, SLOPE, ETC. ARE UNKNOWN. CONTRACTOR SHALL TAKE THIS INTO ACCOUNT FOR ALL WORK RELATED TO AND/OR INVOLVING THESE UTILITIES AND SHALL FIELD VERIFY AND/OR DETERMINE ALL INFO FOR THESE UTILITIES PRIOR TO CONSTRUCTION.



AT BUILDING FOOTINGS



UNPAVED AREAS

TYPICAL

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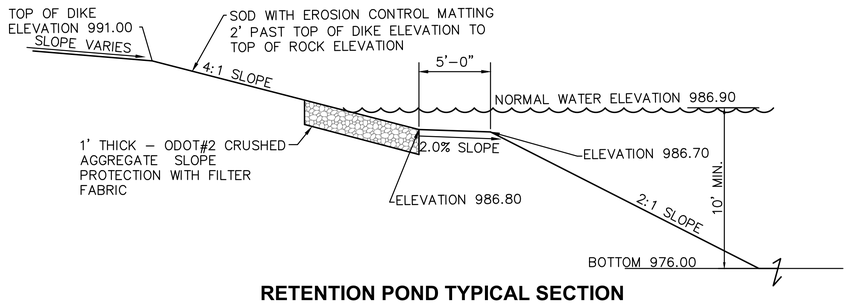
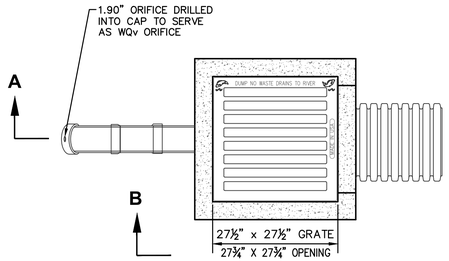
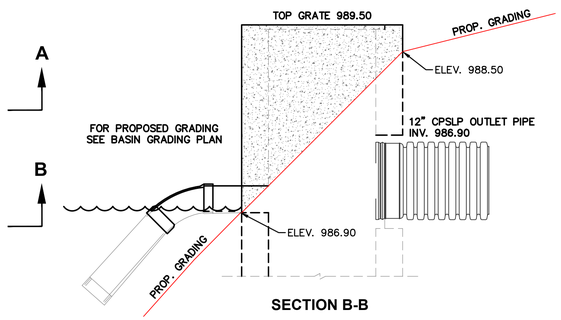


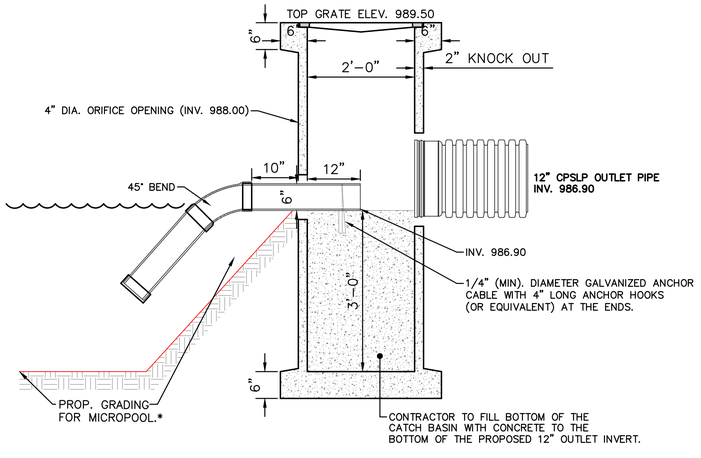
RETENTION POND TYPICAL SECTION



PLAN VIEW



SECTION B-B



SECTION A-A

NOTES

A. GRATE SHALL BE NEENAH CATALOG NO. R–4871 (TYPE B GRATE) OR EQUIVALENT. CONTRACTOR SHALL FASTEN/BOLT DOWN GRATE TO STRUCTURE TO ENSURE GRATE IS SECURELY FASTENED IN PLACE.

B. PRECAST CONSTRUCTION IS REQUIRED, UNLESS OTHERWISE APPROVED, AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13. KNOCKOUTS CAN BE PROVIDED IN PRECAST CONSTRUCTION. PRECAST WALLS SHALL HAVE A SUFFICIENT AMOUNT OF REINFORCEMENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

2-2B CATCH BASIN (RETENTION BASIN) OUTLET STRUCTURE #1

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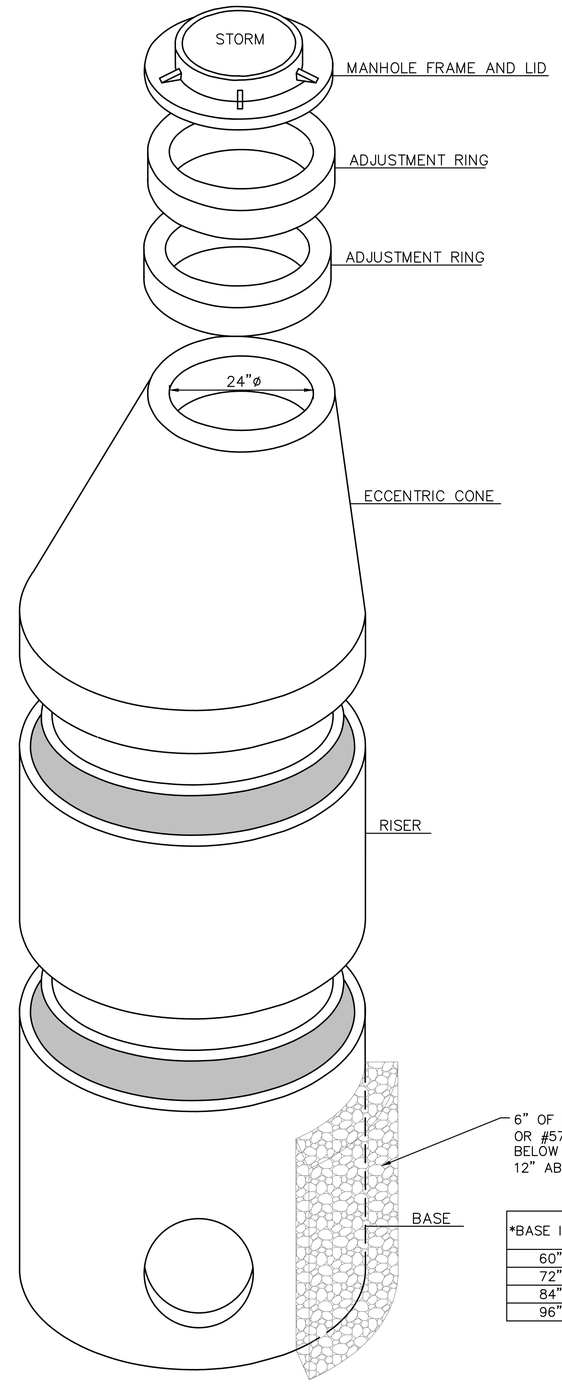
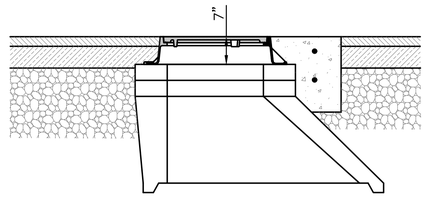


6" OF COMPACTED STRUCTURAL BACKFILL (ODOT #67 OR #57), IN 12" LIFTS, SHALL BE PLACED FROM 6" BELOW THE PRECAST MANHOLE BASE SECTION UP TO 12" ABOVE THE HIGHEST INLET PIPE

*BASE I.D.	MIN "t" WALL THICKNESS	MAXIMUM PIPE SIZE
60"	5"	36"
72"	6"	48"
84"	7"	54"
96"	8"	60"

48" DIA. MANHOLE
FOR 30" & SMALLER PIPE
(*SEE TABLE FOR PIPE SIZES GREATER THAN 30")

NO. 3 STORM MANHOLE



MANHOLE IN PAVEMENT

NOTES

A. EACH STORM SEWER MANHOLE SHALL BE CONSTRUCTED PER ODOT'S NO. 3 MANHOLE STANDARD CONSTRUCTION DRAWINGS WITH THE FOLLOWING MODIFICATIONS:

B. MANHOLE FRAME SHALL BE EQUAL TO NEENAH R–1642 OR EAST JORDAN IRON WORKS 1040Z. MANHOLE LID/COVER SHALL BE EQUAL TO NEENAH R–1642, TYPE B, SOLID LID OR EAST JORDAN IRON WORKS 1040A, SOLID LID. THE LID/COVER SHALL HAVE "STORM" STAMPED ON IT. FOR A GRATED LID PROVIDE NEENAH R–2370 TYPE G OR EQUAL. A RUBBER SEAL OR MASTIC SEAL BETWEEN THE MANHOLE FRAME AND TOP SECTION OF ADJUSTING RINGS IS REQUIRED.

C. PRECAST ADJUSTMENT RINGS SHALL BE 2" MIN. AND 12" MAX. NO MORE THAN TWO ADJUSTMENT RINGS OR A HEIGHT GREATER THAN 16" WILL BE ALLOWED. ADJUSTMENT RINGS TO BE GROUTED OR IF OUT OF PAVEMENT, USE CONSEAL CS–102 SEALANT OR EQUIVALENT.

D. TOP AND TRANSITION (OR REDUCER) SECTIONS SHALL BE AN ECCENTRIC CONE WITH THE OPTION OF USING A FLAT SLAB IF SITE CONDITIONS REQUIRE IT.

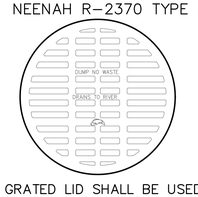
E. ALL PIPES INTRUDING INTO THE MANHOLE SHALL BE AS MINIMAL AS POSSIBLE TO ALLOW FOR A PROPER SEAL WITH NON–SHRINK GROUT.

F. CONNECTIONS BETWEEN STORM SEWER AND PRECAST MANHOLE SECTIONS SHALL BE BE COMPLETED WITH NON–SHRINK GROUT, HAND PLACED, SMOOTHED AND BRUSHED ON BOTH SIDES OF THE CONNECTION.

G. JOINTS BETWEEN PRECAST MANHOLE SECTIONS SHALL BE SEALED WITH AN O–RING GASKET MEETING ASTM SPEC. 443. JOINTS TO BE KEPT TO A MINIMUM.

H. DUE TO PIPE ORIENTATION, LARGER DIAMETER PRECAST MANHOLE BASE SECTIONS MAY BE REQUIRED. CONTRACTOR AND PRECAST SUPPLIER TO VERIFY MANHOLE DIAMETER (SEE CHART BELOW).

NEENAH R–2370 TYPE G



GRATED LID SHALL BE USED IF CALLED OUT IN THE PLANS

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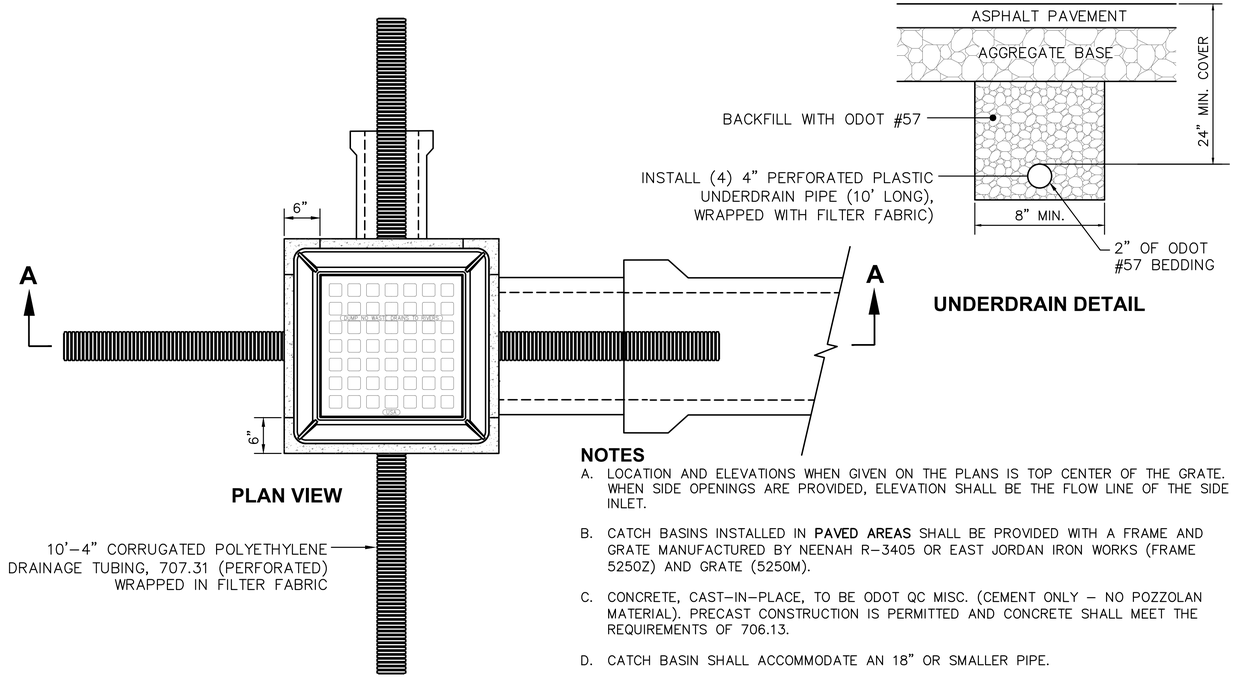


UNDERDRAIN DETAIL

NOTES

A. LOCATION AND ELEVATIONS WHEN GIVEN ON THE PLANS IS TOP CENTER OF THE GRATE. WHEN SIDE OPENINGS ARE PROVIDED, ELEVATION SHALL BE THE FLOW LINE OF THE SIDE INLET.

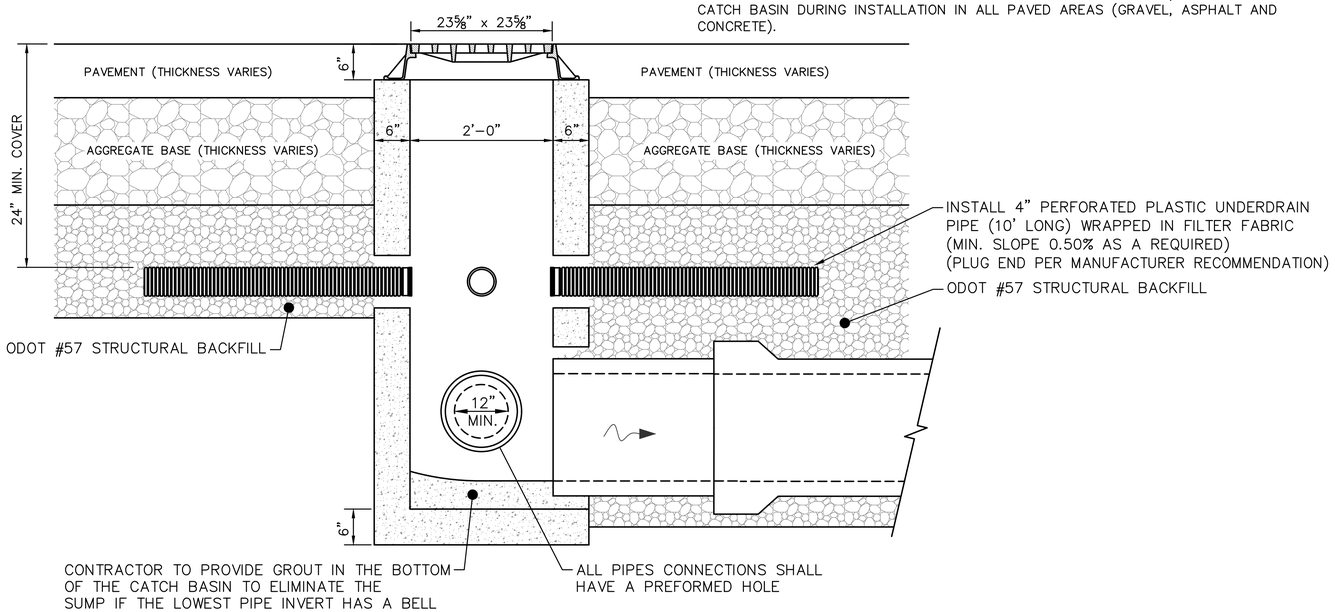
B. CATCH BASINS INSTALLED IN **PAVED AREAS** SHALL BE PROVIDED WITH A FRAME AND GRATE MANUFACTURED BY NEENAH R–3405 OR EAST JORDAN IRON WORKS (FRAME 5250Z) AND GRATE (5250M).

C. CONCRETE, CAST–IN–PLACE, TO BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL). PRECAST CONSTRUCTION IS PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13.

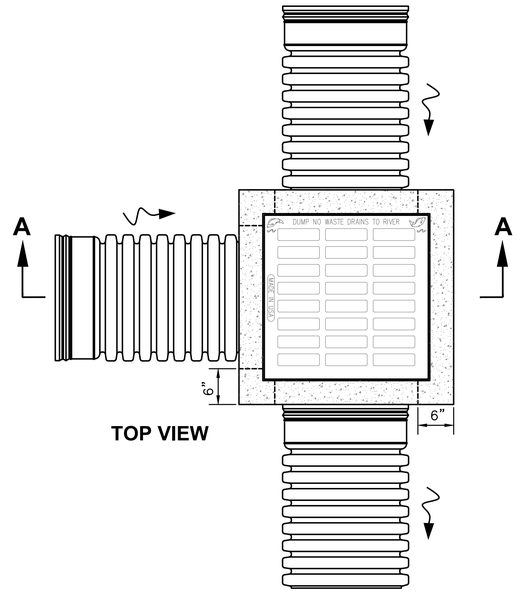
D. CATCH BASIN SHALL ACCOMMODATE AN 18" OR SMALLER PIPE.

E. PIPE TO INTRUDE INTO CATCH BASIN 1" MAXIMUM AND PIPE MUST BE CUT PARALLEL TO CATCH BASIN. CONTRACTOR TO USE NON–SHRINK GROUT COMPLETELY SEAL AROUND THE PIPE AND CATCH BASIN.

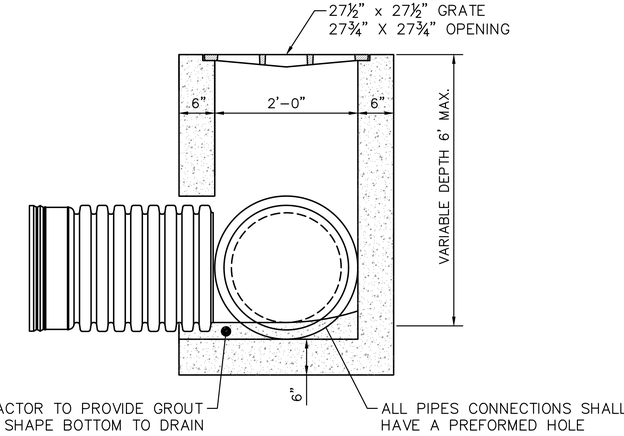
F. THE CONTRACTOR SHALL ENSURE THE FRAME IS SECURELY BOLTED/FASTENED TO THE CATCH BASIN DURING INSTALLATION IN ALL PAVED AREAS (GRAVEL, ASPHALT AND CONCRETE).



2-2B CATCH BASIN (PAVED AREAS WITH UNDERDRAINS)



TOP VIEW



SECTION A-A

NOTES

A. LOCATION AND ELEVATIONS WHEN GIVEN ON THE PLANS IS TOP CENTER OF THE GRATE. WHEN SIDE OPENINGS ARE PROVIDED, ELEVATION SHALL BE THE FLOW LINE OF THE SIDE INLET.

B. CATCH BASINS INSTALLED IN **NON–PAVED AREAS** SHALL BE PROVIDED WITH A RECESSED GRATE MANUFACTURED BY NEENAH CATALOG NO. R–4859–C (TYPE A) OR EAST JORDAN IRON WORKS 5110 (TYPE M3) OR EQUIVALENT.

C. CONCRETE, CAST–IN–PLACE, TO BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL). PRECAST CONSTRUCTION IS PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13.

D. CATCH BASIN SHALL ACCOMMODATE AN 18" OR SMALLER PIPE.

E. PIPE TO INTRUDE INTO CATCH BASIN 1" MAXIMUM AND PIPE MUST BE CUT PARALLEL TO CATCH BASIN. CONTRACTOR TO USE NON–SHRINK GROUT COMPLETELY SEAL AROUND THE PIPE AND CATCH BASIN.

2-2B CATCH BASIN (NON-PAVED AREAS)

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ISSUE

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1	03/22/2022	FOR CONSTRUCTION

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JOB NO.	3952.00
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CHECKED	MLS

TITLE
GENERAL DETAILS

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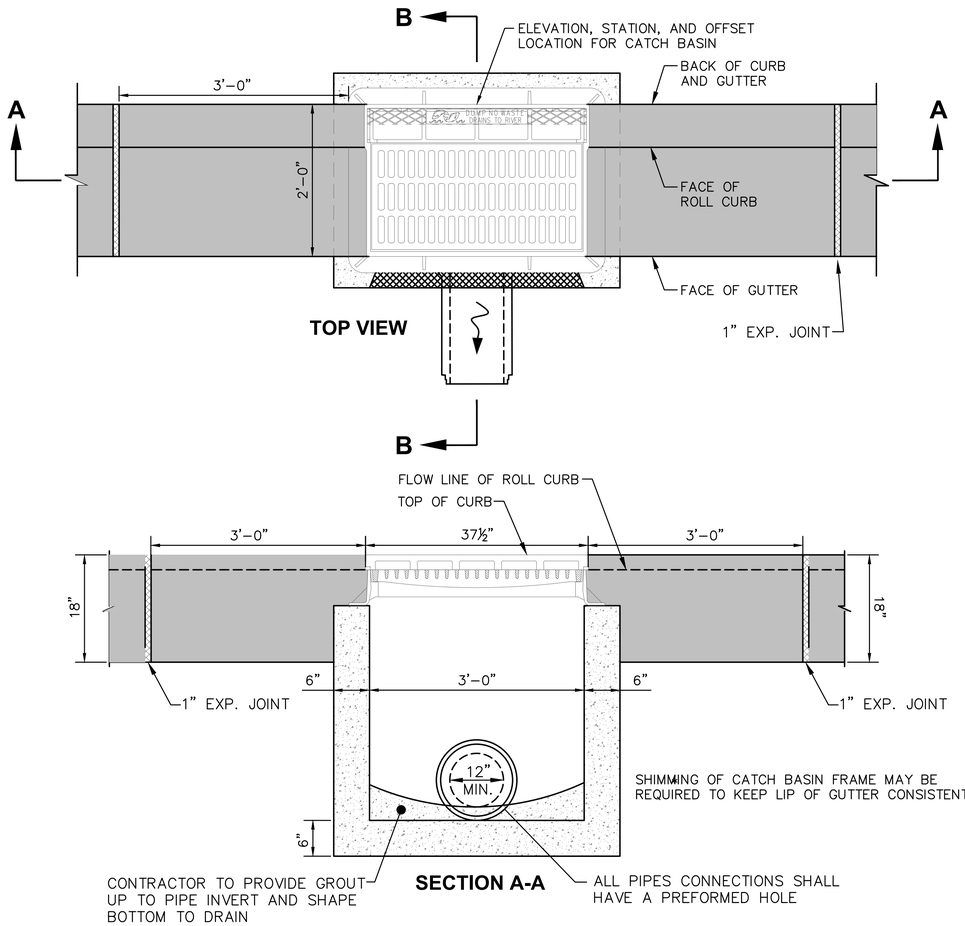


NOTES

A. INLET FRAME SHALL BE NEENAH R-3067 OR EAST JORDAN IRON WORKS 7030Z1 OR EQUIVALENT.

B. CURB BOX/HOOD – NOT REQUIRED (SEE NOTE C).

C. CATCH BASINS IN DRIVE APPROACHES (TO BE AVOIDED, IF POSSIBLE) SHALL BE PROVIDED WITH A CURB PLATE INSTEAD OF A CURB BOX (NEENAH R-3067 WITH CURB PLATE) OR EAST JORDAN IRON WORKS 7030Z2 DRIVE OVER CURB FRAME OR EQUAL.

D. STANDARD GRATE SHALL BE NEENAH TYPE A, OR EQUIVALENT. ALL BAR EDGES TO BE ROUNDED 1/8" RADIUS.

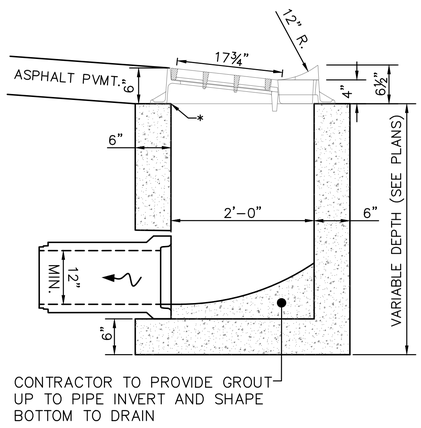
E. CONCRETE, CAST-IN-PLACE, TO BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL). PRECAST CONSTRUCTION IS PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13.

F. EXPANSION JOINTS SHALL BE PER ODOT 705.03, AASHTO M153, VINYL RUBBER MATERIAL MANUFACTURED BY RIGHT/POINTE, W.R. MEADOWS, OSCODA PLASTICS OR EQUAL AND BE INSTALLED AS INDICATED IN THE DETAIL.

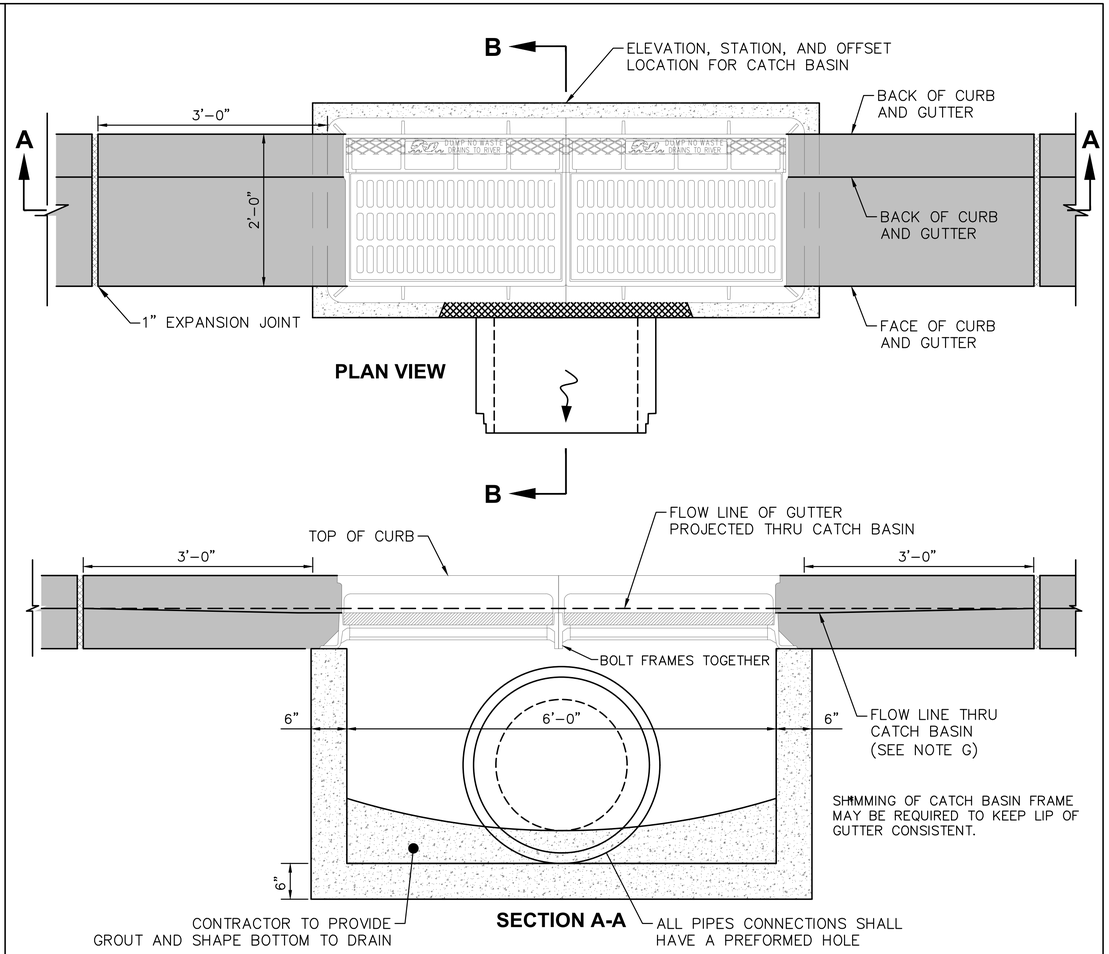
G. PIPE TO INTRUDE INTO CATCH BASIN 1" MAXIMUM AND PIPE MUST BE CUT PARALLEL TO CATCH BASIN. KNOCK-OUT PANELS SHALL BE COMPLETELY FILLED WITH NON-SHRINK GROUT AT ALL PIPE CONNECTIONS. USE NON-SHRINK GROUT AROUND PIPE TO SEAL BETWEEN PIPE AND CATCH BASIN.

H. FLOW LINE SHALL MATCH THE COMBINATION ROLL CURB AND GUTTER ON EACH SIDE.

I. ALL GRATES SHALL BE BICYCLE SAFE.



TYPE 1 CATCH BASIN (IN ROLL CURB AND GUTTER)



NOTES

A. INLET FRAME SHALL BE EAST JORDAN IRON WORKS 7031Z1 (LH) AND (RH) OR NEENAH R-3295-2 OR EQUIVALENT.

B. CURB BOX/HOOD, FOR TYPE 2 COMBINATION CURB AND GUTTER, SHALL BE NEENAH (3" RADIUS) R-3067 OR EAST JORDAN IRON WORKS TYPE T4.

C. CURB BOX/HOOD FOR CATCH BASINS IN DRIVE APPROACHES (TO BE AVOIDED, IF POSSIBLE) SHALL BE EAST JORDAN IRON WORKS TYPE T3 OR NEENAH (R-3067-R FRAME) OR APPROVED EQUAL.

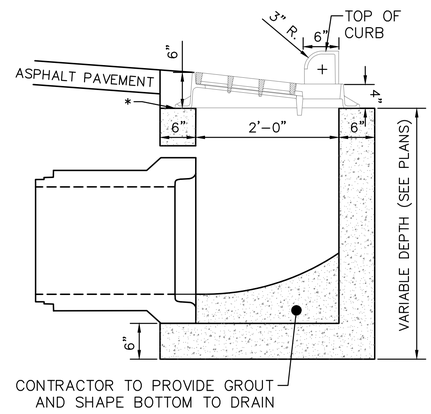
D. STANDARD GRATE SHALL BE NEENAH TYPE A, OR EQUIVALENT. ALL BAR EDGES TO BE ROUNDED 1/8" RADIUS.

E. CONCRETE, CAST-IN-PLACE, TO BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL). PRECAST CONSTRUCTION PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13.

F. PIPE TO INTRUDE INTO CATCH BASIN 1" MAXIMUM AND PIPE MUST BE CUT PARALLEL TO CATCH BASIN. USE NON-SHRINK GROUT AROUND PIPE TO SEAL BETWEEN PIPE AND CATCH BASIN.

G. DROP FLOW LINE 1/2" WITHIN BLOCK OUT OF COMBINED CURB AND GUTTER WHILE KEEPING LIP OF GUTTER CONSISTENT WITH TOP OF CURB.

H. ALL GRATES SHALL BE BICYCLE SAFE.



TYPE 1A CATCH BASIN - DOUBLE WIDE

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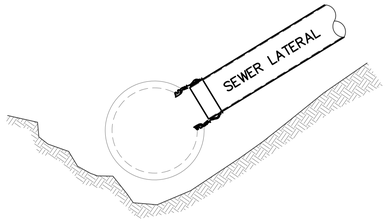
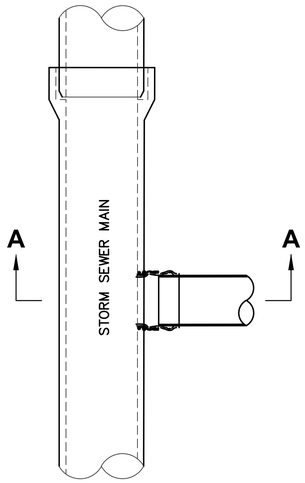




SECTION A-A

NOTES

A. THE INSERTA TEE GASKETED CONNECTION FITTING TYPE SHALL MATCH THE STORM SEWER MAIN MATERIAL AND BE MANUFACTURED BY FOWLER MANUFACTURING OR EQUAL.

B. RECOMMEND CUTTING HOLE WITH A HOLE SAW FOR PVC PIPE AND A DIAMOND BIT FOR CONCRETE OR CLAY PIPE. THE HOLE SAW SIZE SHOULD FOLLOW THE MANUFACTURERS RECOMMENDATIONS. CONTRACTOR IS RESPONSIBLE TO FIX ANY LOOSE CONNECTIONS DUE TO IMPROPER HOLE SIZE.

C. INSERTA TEES SHALL BE USED WHEREVER POSSIBLE AND BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

INSERTA TEE (LATERAL TO MAIN) CONNECTION

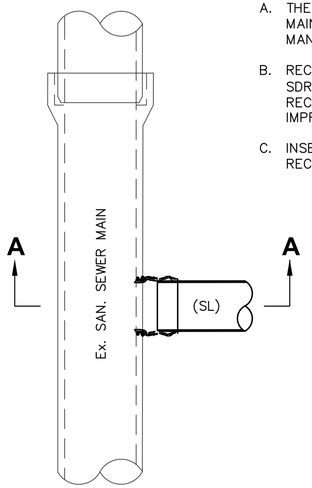
NTS

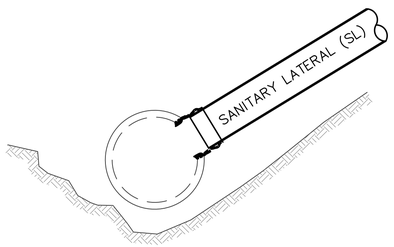
NOTES

A. THE INSERTA TEE GASKETED CONNECTION FITTING TYPE SHALL MATCH THE SANITARY SEWER MAIN MATERIAL (PVC SDR-35 OR SDR-26) AND BE MANUFACTURED BY FOWLER MANUFACTURING OR EQUAL.

B. RECOMMENDED METHOD OF HOLE CUTTING HOLE WITH A HOLE SAW FOR (PVC SDR-35 AND SDR-26) PIPE. THE HOLE SAW SIZE SHOULD FOLLOW THE MANUFACTURERS RECOMMENDATIONS. CONTRACTOR IS RESPONSIBLE TO FIX ANY LOOSE CONNECTIONS DUE TO IMPROPER HOLE SIZE.

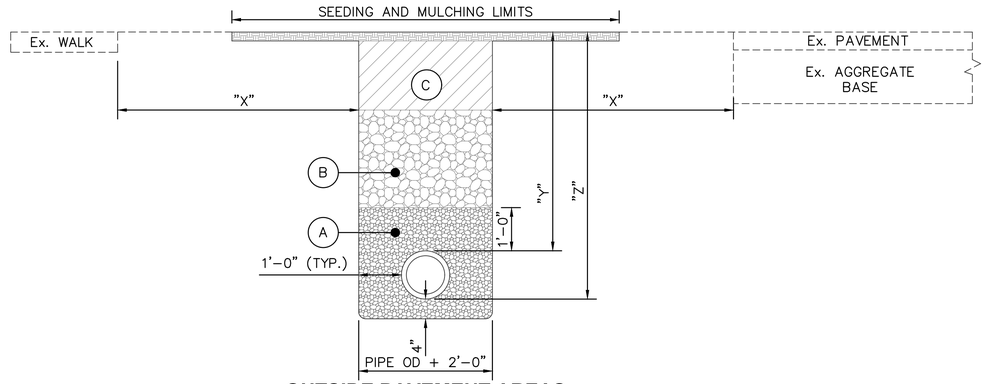
C. INSERTA TEES SHALL BE USED WHEREVER POSSIBLE AND BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.





SECTION A-A

Ex. SEWER MAIN LATERAL CONNECTION (INSERTA TEE)

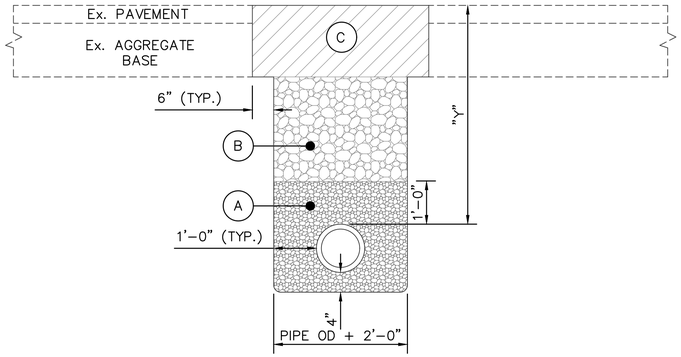


OUTSIDE PAVEMENT AREAS

"X"= DISTANCE FROM EDGE OF TRENCH TO EDGE OF CLOSEST PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, STONE AREA OR WALKS.

"Z"= DISTANCE FROM TOP OF BEDDING TO FINISH SURFACE.

"Y"= DEPTH OF COVER FOR PROPOSED CONDUIT
WATER MAINS.....4'-6" MIN. (REFER TO PROFILE)
STORM SEWERS.....2'-0" MIN. (REFER TO PROFILE)
SANITARY SEWERS.....4'-0" MIN. (REFER TO PROFILE)



IN PAVEMENT AREAS

NOTES

(A.) BEDDING SHALL BE PER ODOT 703.11 "STRUCTURAL BACKFILL FOR 611 BEDDING AND BACKFILL" TYPE 3 (#57 OR #67 AGGREGATE), OR OTHER APPROVED EQUIVALENT BY THE **CITY**. THERE SHALL BE 4" MIN. BEDDING BELOW THE PIPE. THE FOLLOWING BEDDING MATERIAL SHALL BE USED PER PROPOSED CONDUIT:

- WATER MAIN, WATER SERVICES, FIRE HYDRANTS AND APPURTENANCES – SHALL BE NATURAL CRUSHED STONE OR NATURAL GRAVEL.
- STORM AND SANITARY SEWERS – SHALL BE CRUSHED LIMESTONE OR NATURAL CRUSHED STONE.

(B.) STRUCTURAL BACKFILL – DENSITY TEST TO 95% OF ASTM D698 STANDARD PROCTOR CURVE MAY BE REQUIRED BY **CITY** TO BE COMPLETED BY A CERTIFIED COMMERCIAL TESTING LABORATORY.

FOR "OUTSIDE PAVEMENT AREAS":
ALL TRENCHES WHERE "X" IS GREATER THAN "Z", THE BACKFILL MATERIAL SHALL BE COMPACTED NATIVE MATERIAL IN 12" MAXIMUM LIFTS OR AS APPROVED BY THE **CITY**. NO MATERIAL SHALL BE USED FOR BACKFILLING THAT CONTAINS STONE, ROCKS, ETC., GREATER THAN 3" DIAMETER.

ALL TRENCHES WHERE "Z" IS GREATER THAN "X", THE BACKFILL MATERIAL SHALL BE ODOT ITEM 703.11, TYPE 1 (#304 AGGREGATE). THE AGGREGATE SHALL BE COMPACTED IN 12" MAXIMUM LIFTS AND BE USED UNTIL THE BACKFILL HEIGHT RESULTS IN "X" BEING GREATER THAN "Z" AT WHICH TIME NATIVE BACKFILL CAN BE USED.

FOR "IN PAVEMENT AREAS":
ALL TRENCHES SHALL HAVE ODOT ITEM 703.11, TYPE 1 (#304 AGGREGATE) BACKFILL PLACED FROM THE TOP OF THE BEDDING TO THE BOTTOM OF THE ROADWAY BASE.

(C.) ALL "OUTSIDE PAVEMENT AREAS" SHALL RECEIVE A MIN. OF 6" OF TOPSOIL OVER THE COMPACTED MATERIAL AND THEN SEEDED PER ODOT 659. ALL "IN PAVEMENT AREAS" SHALL FOLLOW THE CORRESPONDING PAVEMENT COMPOSITION PROVIDED IN THE HATCH LEGEND. THE TRENCH DETAIL SHOWS THE PAVEMENT REPAIR LIMITS. ANY PAVEMENT REPAIR BEYOND THIS WILL BE AT THE COST OF THE CONTRACTOR.

TRENCH DETAIL

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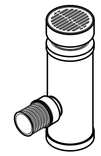
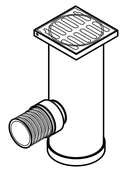
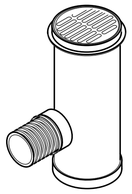


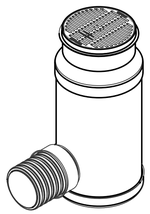
8"Ø AND 10"Ø BASIN



12"Ø AND 15" Ø BASIN



18"Ø - 30" Ø BASIN



36" Ø BASIN

BEEHIVE / DOME GRATE

YARD DRAIN
NTS

NOTES
A. LOCATION AND ELEVATIONS WHEN GIVEN ON THE PLANS IS TOP CENTER OF THE GRATE.

B. THE MINIMAL BASIN DIAMETER SHOULD BE AS STATED AND CALLED FOR IN THE PLANS. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE BASIN MANUFACTURER, **NYLOPLAST**, TO DETERMINE IF A LARGER DIAMETER BASIN THAN THAT WHICH IS STATED IS NEEDED BASED ON THE PIPE CONFIGURATION AND TO SUPPLY THE LARGER DIAMETER IF NEEDED. CONTRACTOR TO INSTALL PER MANUFACTURERS RECOMMENDATIONS.

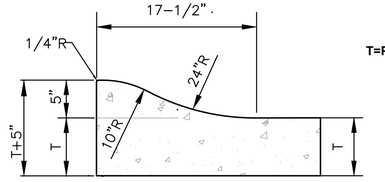
C. THE FRAME AND GRATE SHALL BE THE STANDARD OPTION DUCTILE IRON PER ASTM A536 GRADE 70–50–05. **(NYLOPLAST – 8" #0899CGS, 10" #1099CGS, 12" #1299CGS.....36" #3099CGS)**

D. THE BASINS SHALL BE MANUFACTURED FROM PVC PIPE STOCK (RAW MATERIAL PER ASTM D1784 CELL CLASS 12454), UTILIZING A THERMOFORMING PROCESS TO REFORM THE PIPE STOCK TO SPECIFIED CONFIGURATION. A WATERTIGHT CONNECTION SHALL CONFORM TO ASTM D3212. FLEXIBLE ELASTOMERIC SEALS SHALL CONFORM TO ASTM F477. PER ASTM D1784 CELL CLASS 12454. **(NYLOPLAST – 8" #2808AG, 10" #2810AG, 12" #2812AG.....36" #2836AG)**

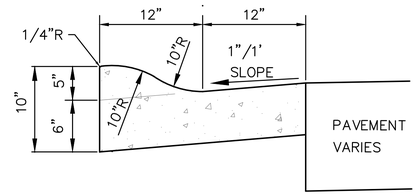
E. THE BASIN ADAPTOR CONNECTIONS HAVE THE CAPABILITY TO CONNECT INTO VARIOUS TYPES (HDPE, PVC SDR–35, PVC SCG–40, PVC C900, CORRUGATED/RIBBED PVC.

F. ALL YARD DRAINS THAT ARE INSTALLED WITHIN PLANTING BEDS AND/OR MULCH BEDS SHALL HAVE A BEEHIVE/DOME GRATE WITH A STONE COLLAR SURROUNDING THEM TO PREVENT MULCH FROM WASHING INTO THE BASIN. STONE COLLAR TO BE 6" WIDE BY 6" THICK AROUND THE ENTIRE PERIMETER OF THE BASIN AND CONSIST OF 1" TO 2" ROUND RIVER ROCK. CONTRACTOR SHALL FASTEN/BOLT DOWN GRATE TO BASIN TO ENSURE GRATE IS SECURELY FASTENED IN PLACE.

G. IF GRATES ARE LOCATED WITHIN PAVED OR WALKING AREAS, GRATES MUST BE SAFE FOR PEDESTRIAN TRAFFIC PER ADA REQUIREMENTS, BE LOCKING, BE DUCTILE IRON, AND MEET H–10 LOADING.



INTEGRAL CURB AND GUTTER



TYPE 1 COMBINATION ROLL CURB AND GUTTER

NOTES
A. CONCRETE AND WORK SHALL MEET THE REQUIREMENTS SET FORTH IN ODOT ITEM 609 CURBING.

B. CURBING SHALL HAVE CONTRACTION JOINTS EVERY 10' AND EXPANSION JOINTS EVERY 50'.

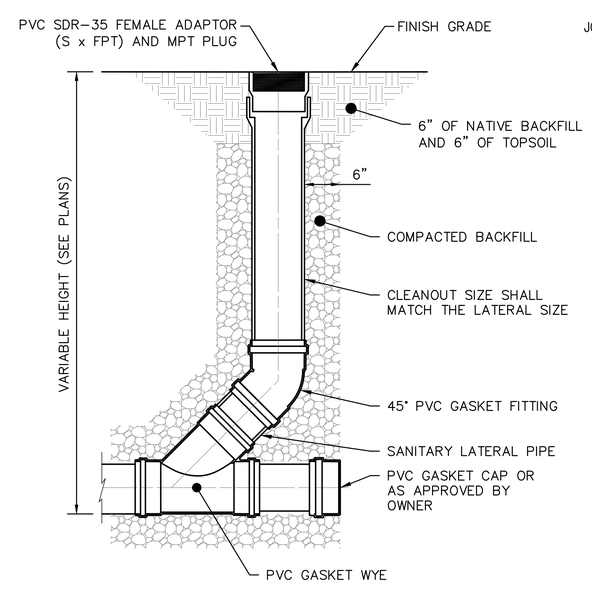
C. MINIMUM OF 6" OF ODOT 304 SHALL BE PLACED UNDER CURBING.

D. CURBING SHALL BE BACKFILLED IMMEDIATELY AFTER FORMS ARE REMOVED OR AS SOON AS PRACTICAL WHEN SLIPFORMING PRIOR TO OTHER CONSTRUCTION OPERATIONS.

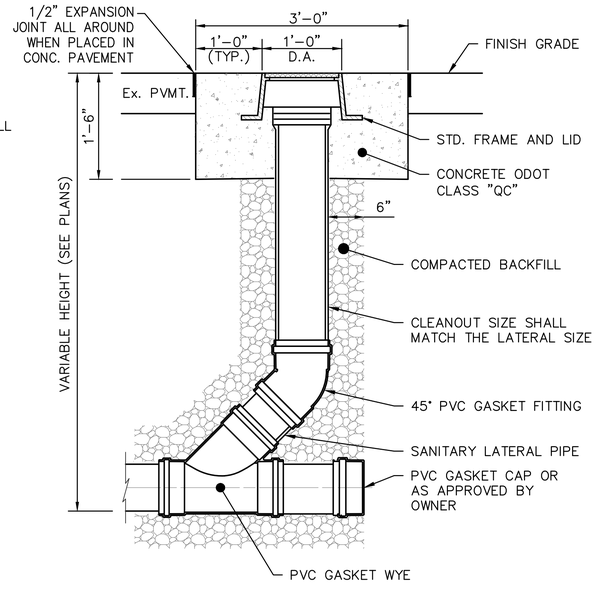
E. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.

F. APPLY WHITE PIGMENTED CURING COMPOUND ON ALL SURFACES INCLUDING BACK IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

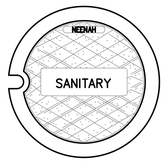
G. ALL CONCRETE SHALL BE ODOT QC1 (CEMENT ONLY – NO POZZOLAN MATERIAL).



ONE-WAY CLEANOUT DETAIL
(NON–TRAFFIC AREAS)



ONE-WAY CLEANOUT DETAIL
(TRAFFIC AREAS)



CLEANOUT LID

NOTES
A. CLEANOUT REQUIRED AT THE R/W OR EASEMENT LINE UNLESS OTHERWISE SHOWN IN THE PLANS.

B. CLEANOUT MATERIALS SHALL BE SCH. 40 (GLUED JOINTS) OR SDR–35 PVC AND THE DIA. SHALL MATCH THE LATERAL PIPE DIA.

C. TRACER WIRE REQUIRED FOR EACH SANITARY SEWER LATERAL FROM THE MAIN TO THE CLEANOUT. TRACER WIRE SHALL BE EXTENDED UP THE CLEANOUT RISER TO A POINT JUST BELOW CLEANOUT CAP WHERE A 3/16" HOLE SHALL BE DRILLED THROUGH THE WALL OF THE PIPE.

D. CLEANOUT FRAME AND LID SHALL BE NEENAH R–1976, EJIW 1578ZPT FRAME/1578A LID, OR SIGMA VB2276. LID MARKED "SANITARY"

E. THE CLEANOUT AND ALL THE COMPONENTS SHOWN IN THE DETAILS SHALL BE INCLUDED IN THE COST OF ITEM 611 SANITARY SEWER LATERALS.

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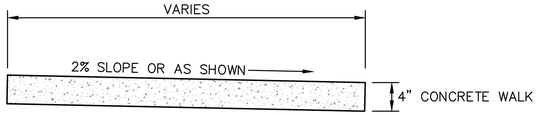


NOTES

A. WALK TO BE POURED ON 4" MINIMUM ODOT #304 OR ODOT #411 AGGREGATE.

B. PROVIDE EDGING AND BROOM FINISH TO ALL EXPOSED SURFACES.

C. CONCRETE SHALL CONFORM TO ODOT ITEM 499 CONCRETE AND WORK SHALL CONFORM TO ODOT ITEM 608, UNLESS OTHERWISE SPECIFIED WITHIN.

D. USE WHITE PIGMENTED CURING COMPOUND IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

E. ALL CONCRETE SHALL BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL).

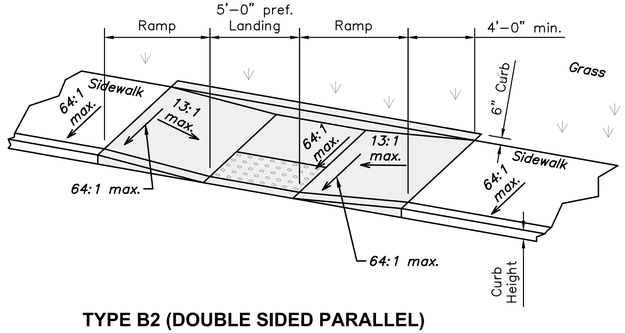
F. PROPOSED CONCRETE WALK SHALL BE JOINTED AS CLOSE TO SQUARE AS POSSIBLE. JOINT SPACING MAY VARY SLIGHTLY DEPENDING ON THE LENGTH AND WIDTH OF THE PROPOSED SIDEWALK AREAS. JOINT SPACING SHALL TYPICALLY RANGE FROM 4'X4' TO 10'X10'. IN ALL CASES THE SIDEWALK SHALL BE JOINTED SO THAT THE MAXIMUM ASPECT RATIO (OF PANEL LENGTH TO WIDTH) OF THE JOINTING IS 1.25:1 OR LESS. CONTRACTOR TO VERIFY METHOD AND TYPE OF CONTROL JOINTING WITH OWNER PRIOR TO PERFORMING WORK.

G. SIDEWALK SHALL HAVE EXPANSION JOINTS EVERY 100'.

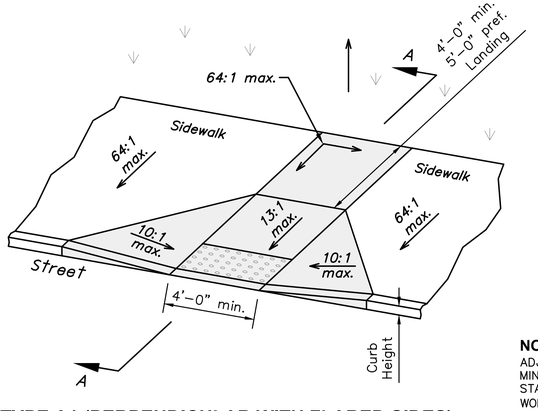
H. **CONCRETE TO INCLUDE 3 LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO SYNTHETIC MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES.**

CONCRETE WALK

NTS

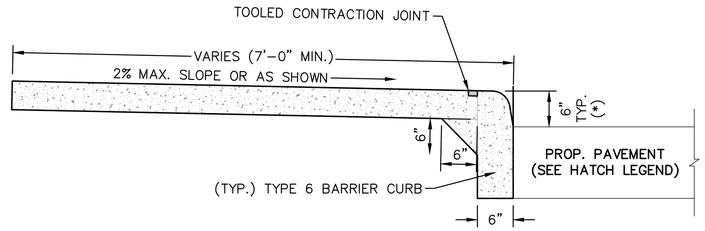


TYPE B2 (DOUBLE SIDED PARALLEL)



TYPE A1 (PERPENDICULAR WITH FLARED SIDES)

NOTE
ADJUST AS NEEDED PER SITE CONDITIONS/REQUIREMENTS WITHIN ALLOWABLE MINIMUM WIDTHS AND MAXIMUM SLOPES ALLOWED PER ADA REGULATIONS AND STANDARDS. SEE ODOT DRAWING SERIES BP–7.1 FOR CURB RAMP DETAILS. ALL WORK TO BE PER APPROVED AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS AND LOCAL ACCESSIBILITY CODE AND PER ODOT'S BP–7.1 DRAWING SERIES.



NOTES

A. WALK TO BE POURED ON 4" MINIMUM ODOT #304 OR ODOT #411 AGGREGATE.

B. PROVIDE EDGING AND BROOM FINISH TO ALL EXPOSED SURFACES.

C. CONCRETE SHALL CONFORM TO ODOT ITEM 499 CONCRETE AND WORK SHALL CONFORM TO ODOT ITEM 608, UNLESS OTHERWISE SPECIFIED WITHIN.

D. USE WHITE PIGMENTED CURING COMPOUND IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

E. ALL CONCRETE SHALL BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL).

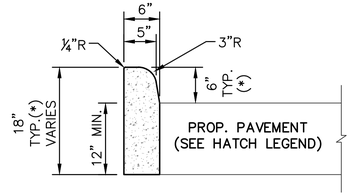
F. PROPOSED CONCRETE SIDEWALK SHALL BE JOINTED AS CLOSE TO SQUARE AS POSSIBLE. JOINT SPACING MAY VARY SLIGHTLY DEPENDING ON THE LENGTH AND WIDTH OF THE PROPOSED SIDEWALK AREAS. JOINT SPACING SHALL TYPICALLY RANGE FROM 4'X4' TO 10'X10'. IN ALL CASES THE SIDEWALK SHALL BE JOINTED SO THAT THE MAXIMUM ASPECT RATIO (OF PANEL LENGTH TO WIDTH) OF THE JOINTING IS 1.25:1 OR LESS. CONTRACTOR TO VERIFY METHOD AND TYPE OF CONTROL JOINTING WITH OWNER PRIOR TO PERFORMING WORK.

G. CURB/SIDEWALK SHALL HAVE EXPANSION JOINTS EVERY 100'.

H. **CONCRETE TO INCLUDE 3 LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO SYNTHETIC MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES.**

COMBINED CURB AND WALK

NTS



NOTES

A. (*) HEIGHT VARIES WITH CURB EXPOSURE.

B. CONCRETE WORK SHALL MEET THE REQUIREMENTS SET FORTH IN ODOT ITEM 609 CURBING.

C. CURBING SHALL HAVE CONTRACTION JOINTS EVERY 10' AND EXPANSION JOINTS EVERY 100'.

D. MINIMUM OF 6" OF ODOT 304 SHALL BE PLACED UNDER CURBING.

E. CURBING SHALL BE BACKFILLED IMMEDIATELY AFTER FORMS ARE REMOVED OR AS SOON AS PRACTICAL WHEN SLIPFORMING PRIOR TO OTHER CONSTRUCTION OPERATIONS.

F. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.

G. APPLY WHITE PIGMENTED CURING COMPOUND ON ALL SURFACES INCLUDING BACK IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

H. ALL CONCRETE SHALL BE ODOT QC MISC. (CEMENT ONLY – NO POZZOLAN MATERIAL).

I. **CONCRETE TO INCLUDE 3 LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO SYNTHETIC MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES.**

TYPE 6 BARRIER CURB

NTS

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ISSUE

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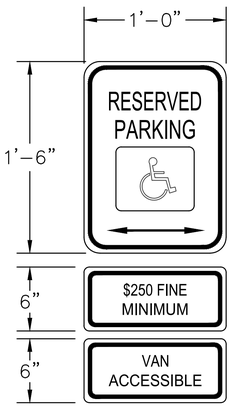
TITLE
GENERAL DETAILS

SHEET NO.
C0.10

NUMBER OF PARKING SPACE REQUIREMENTS	
TOTAL NUMBER OF PARKING SPACES PROVIDED	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
1 TO 25	1
26 TO 50	2
51 TO 75	3
76 TO 100	4
101 TO 150	5
151 TO 200	6
201 TO 300	7
301 TO 400	8
401 TO 500	9
501 TO 1000	2 PERCENT OF TOTAL
1001 AND OVER	20, PLUS 1 FOR EACH 100, OR FRACTION THEREOF, OVER 1000
NOTE: ONE OUT OF EVERY (6) ACCESSIBLE PARKING SPACES, BUT NOT LESS THEN ONE, IS REQUIRED TO BE VAN ACCESSIBLE	



NOTES

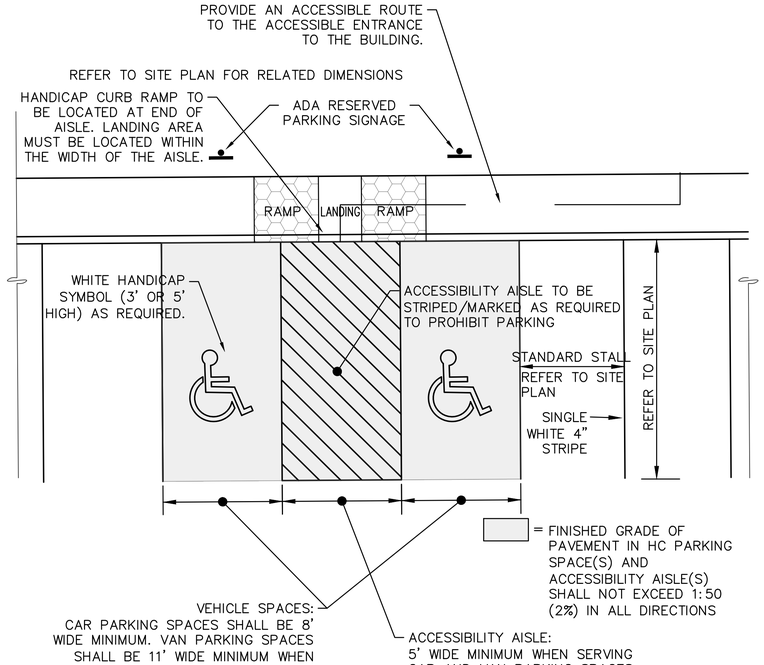
A. SIGNS: "RESERVED PARKING" SIGN (USDOT STANDARD R7-8 SIGN). THIS IS A STANDARD SIGN AND MAY BE ORDERED FROM ANY TRAFFIC SIGN SUPPLIER BY NUMBER. THE SIGN MUST BE SUPPLEMENTED WITH A "$250 FINE MINIMUM" SIGN (USDOT STANDARD R7-H8b SIGN) AND A "VAN ACCESSIBLE" SIGN (USDOT STANDARD R7-8a SIGN) AS APPLICABLE. CONFIRM WITH LOCAL REGULATIONS.

B. A U.S. DEPARTMENT OF TRANSPORTATION R7-8 (RESERVED PARKING) AND SUPPLEMENTAL SIGNS AS NOTED ABOVE MUST BE MOUNTED ON A PERMANENT POST SO THAT THE LOWER EDGE OF THE BOTTOM MOST SIGN IS AT LEAST FIVE FEET ABOVE THE PAVEMENT/GROUND. THE POST MUST BE MOUNTED IN THE CENTER OF THE ADA ACCESSIBLE PARKING SPACE, NO MORE THAN FIVE FEET FROM THE FRONT OF THE PARKING SPACE. ONE SIGN REQUIRED FOR EACH ACCESSIBLE PARKING SPACE. ALL WORK SHALL CONFORM WITH ALL FEDERAL, STATE AND LOCAL AMERICANS WITH DISABILITIES ACT (ADA) REGULATIONS AND STANDARDS AND LOCAL ACCESSIBILITY CODE.

C. ALL HANDICAP PARKING SPACES MUST ALSO HAVE A PAINTED INTERNATIONAL SYMBOL OF ACCESSIBILITY CENTERED IN THE PARKING STALL.

A.D.A. RESERVED PARKING SIGN

NTS



NOTES:

THE MINIMUM COMBINED WIDTH FOR A VAN PARKING SPACE AND ACCESSIBILITY AISLE IS 16' WIDE.

THE MINIMUM COMBINED WIDTH FOR A CAR PARKING SPACE AND ACCESSIBILITY AISLE IS 13' WIDE.

TYPICAL HANDICAP PARKING SPACE AND STRIPING PLAN

(FOR REFERENCE ONLY) - NTS

SITE ACCESSIBILITY NOTES

A. REFER TO SITE PLAN FOR EXACT LOCATION OF HANDICAP PARKING, ACCESSIBILITY AISLES, WALKWAYS AND RAMPS.

B. ALL WALKWAYS, RAMPS, AND HANDICAP PARKING SIGNAGE, ETC. SHALL COMPLY WITH AND MEET APPROVED AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS AND LOCAL ACCESSIBILITY CODE.

C. ONE OUT OF EVERY SIX (6) ACCESSIBLE PARKING SPACES, BUT NOT LESS THAN ONE, IS REQUIRED TO BE VAN ACCESSIBLE.

D. ACCESSIBLE RAMPS: REFER TO SITE PLAN FOR TYPE/STYLE OF HANDICAP RAMP(S).

E. FINISHED GRADES OF PAVEMENT IN HC PARKING AND ACCESSIBILITY AISLE SHALL NOT EXCEED 1:50 SLOPE IN ANY DIRECTION.

HANDICAP ACCESSIBILITY ROUTE NOTES

ALL ACCESSIBILITY ROUTES SHALL COMPLY WITH AND MEET APPROVED AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS AND LOCAL ACCESSIBILITY CODE.

A. ACCESSIBLE ROUTES MUST CONNECT HC PARKING SPACES TO ACCESSIBLE ENTRANCES.

B. ACCESSIBLE ROUTES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING COMPONENTS: WALKING SURFACES WITH A RUNNING SLOPE NOT STEEPER THAN 1:20, RAMPS AND CURB RAMPS EXCLUDING THE FLARED SIDES. ALL COMPONENTS OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE APPLICABLE ADA REQUIREMENTS.

C. THE PREFERRED LOCATION FOR ACCESSIBLE ROUTES IS IN FRONT OF THE PARKED VEHICLES.

D. HC PARKING ACCESS AISLES MUST JOIN TO AN ACCESSIBLE ROUTE.

E. WHEN ACCESSIBLE ROUTES CROSS VEHICULAR TRAVEL LANES, MARK THE CROSSINGS TO ENHANCE PEDESTRIAN SAFETY.

F. ENSURE THE CLEAR WIDTH OF THE ACCESSIBLE ROUTE IS NOT OBSTRUCTED. IF NEEDED, INSTALL PARKING BLOCKS ON PARKING STALLS TO PREVENT VEHICLE OVERHANGS FROM REDUCING THE CLEAR WIDTH OF THE ACCESSIBLE ROUTE.

HANDICAP RAMP GENERAL NOTES

ALL RAMPS SHALL COMPLY WITH AND MEET APPROVED AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS AND LOCAL ACCESSIBILITY CODE.

RAMPS:

A. SLOPE: RAMP RUNS SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 13:1.

B. CROSS SLOPE: CROSS SLOPE OF RAMP RUNS SHALL NOT BE STEEPER THAN 64:1.

C. CLEAR WIDTH: THE CLEAR WIDTH OF A RAMP RUN AND, WHERE HANDRAILS ARE PROVIDED, THE CLEAR WIDTH BETWEEN HANDRAILS SHALL BE 36" MINIMUM.

D. RISE: THE RISE FOR ANY RAMP RUN SHALL BE 30" MAXIMUM.

E. HANDRAILS: RAMP RUNS WITH A RISE GREATER THAN 6" SHALL HAVE ADA COMPLIANT HANDRAILS.

F. EDGE PROTECTION: ADA COMPLIANT EDGE PROTECTION SHALL BE PROVIDED ON EACH SIDE OF RAMP RUNS AND AT EACH RAMP LANDING.

RAMP LANDINGS:

A. RAMPS SHALL HAVE LANDINGS AT THE TOP AND BOTTOM OF EACH RAMP RUN.

B. SLOPE: LANDINGS SHALL BE RELATIVITY LEVEL WITH SLOPES NOT STEEPER THAN 64:1 IN ANY DIRECTION.

C. WIDTH: THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING.

D. LENGTH: THE LANDING CLEAR LENGTH SHALL BE 60" LONG MINIMUM.

E. CHANGE IN DIRECTION: RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS SHALL HAVE A CLEAR LANDING 60" X 60" MINIMUM.

HANDICAP CURB RAMP NOTES:

ALL RAMPS SHALL COMPLY WITH AND MEET APPROVED AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS AND LOCAL ACCESSIBILITY CODE.

A. SLOPE: RAMP SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 13:1.

B. COUNTER SLOPE: COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 1:20. THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS, AND STREETS SHALL BE AT THE SAME LEVEL. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF A CURB RAMP, LANDING, OR BLENDED TRANSITIONS SHALL BE 20:1 OR FLATTER.

C. SIDES OF CURB RAMPS: WHERE PROVIDED, CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10.

D. LANDINGS: LANDINGS SHALL BE PROVIDED AT THE TOPS OF CURB RAMPS. RAMP LANDINGS SHALL BE 4' MIN. X 4' MIN. (5'X5' PREFERRED) WITH A 64:1 OR FLATTER CROSS SLOPE AND RUNNING SLOPE. WHILE RAMPS MAY BE SKEWED TO THE CROSSWALK, THE ENTIRE LOWER LANDING AREA MUST FALL WITHIN THE CROSS WALK THAT THE RAMP SERVES AND CANNOT BE LOCATED IN THE TRAVELED LANE OF OPPOSING TRAFFIC. THE BOTTOM EDGE OF THE RAMP SHALL CHANGE PLANES PERPENDICULAR TO THE LANDING. THE EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER AND SURFACE SLOPES THAT MEET GRADE BREAKS SHALL ALSO BE FLUSH.

E. LOCATION: CURB RAMPS AND THE FLARED SIDES OF CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES, PARKING SPACES, OR PARKING ACCESS AISLES. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.

F. DIAGONAL CURB RAMPS: DIAGONAL OR CORNER TYPE CURB RAMPS WITH RETURNED CURBS OR OTHER WELL-DEFINED EDGES SHALL HAVE THE EDGES PARALLEL TO THE DIRECTION OF PEDESTRIAN FLOW. THE BOTTOM OF DIAGONAL CURB RAMPS SHALL HAVE A CLEAR SPACE 48 INCHES MINIMUM OUTSIDE ACTIVE TRAFFIC LANES OF THE ROADWAY. DIAGONAL CURB RAMPS PROVIDED AT MARKED CROSSINGS SHALL PROVIDE THE 48 INCHES MINIMUM CLEAR SPACE WITHIN THE MARKINGS. DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 24 INCHES LONG MINIMUM LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING.

G. ISLANDS: RAISED ISLANDS IN CROSSINGS SHALL BE CUT THROUGH LEVEL WITH THE STREET OR HAVE CURB RAMPS AT BOTH SIDES. EACH CURB RAMP SHALL HAVE A LEVEL AREA 48 INCHES LONG MINIMUM BY 36 INCHES WIDE MINIMUM (48" PREFERRED) AT THE TOP OF THE CURB RAMP IN THE PART OF THE ISLAND INTERSECTED BY THE CROSSINGS. EACH 48 INCH MINIMUM BY 36 INCH MINIMUM (48" PREFERRED) AREA SHALL BE ORIENTED SO THAT THE 48 INCH MINIMUM LENGTH IS IN THE DIRECTION OF THE RUNNING SLOPE OF THE CURB RAMP IT SERVES. THE 48 INCH MINIMUM BY 36 INCH MINIMUM (48" PREFERRED) AREAS AND THE ACCESSIBLE ROUTE SHALL BE PERMITTED TO OVERLAP.

H. DRAINAGE: CONTRACTOR IS TO ENSURE THE BASE OF EACH CONSTRUCTED CURB RAMP ALLOWS FOR PROPER DRAINAGE, WITHOUT EXCEEDING ALLOWABLE CROSS SLOPE OR RAMP VERTICAL CHANGE IN LEVEL EXCEEDING ⅛" BETWEEN THE 1) PAVEMENT AND GUTTER, AND 2) GUTTER AND RAMP, ARE NOT ALLOWED.

I. SURFACE TEXTURE: TEXTURE CONCRETE SURFACES BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES TO BE ROUGHER THAN THE ADJACENT WALK.

J. JOINTS: PROVIDE EXPANSION JOINTS IN THE CURB RAMP AS EXTENSIONS OF WALK JOINTS AND CONSISTENT WITH ITEM 608.03 REQUIREMENTS FOR A NEW CONCRETE WALK. PROVIDE A 1/2" ITEM 705.03 EXPANSION JOINT FILLER AROUND THE EDGE OF RAMPS BUILT IN EXISTING CONCRETE WALKS. LINES SHOWN ON THIS DRAWING INDICATE THE RAMP EDGES AND SLOPE CHANGES, AND DO NOT NECESSARILY INDICATE JOINT LINES.

K. EXISTING SIDEWALKS: IN EXISTING SIDEWALKS, WHERE THE MAXIMUM RAMP SLOPE (13:1) IS NOT FEASIBLE DUE TO SITE CONSTRAINTS (E.G. UTILITY POLES OR VAULTS, RIGHT-OF-WAY LIMITS) IT MAY BE REDUCED AS FOLLOWS:

10:1 FOR A MAX. RISE OF 6",
8:1 FOR A MAX. RISE OF 3",
6:1 OVER A MAX. RUN OF 2'-0" FOR HISTORIC AREAS WHERE A FLATTER SLOPE IS NOT FEASIBLE.

TO PREVENT CHASING THE GRADE INDEFINITELY, THE TRANSITION FROM EXISTING SIDEWALK TO THE SHADED CURB RAMP AREA IS NOT REQUIRED TO EXCEED 15 FEET IN LENGTH.

DETECTABLE WARNINGS:

A. INSTALL DETECTABLE WARNING ON CURB RAMP WITH APPROVED MATERIALS. THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP (EXCLUSIVE OF FLARED SIDES) AND SHALL EXTEND EITHER THE FULL DEPTH OF THE CURB RAMP OR 24 INCHES DEEP MINIMUM MEASURED FROM THE BACK OF THE CURB ON THE RAMP SURFACE.

B. INSTALL ALL PROPRIETARY PRODUCTS AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

C. THE DEPTH OF CONCRETE UNDERNEATH DETECTABLE WARNING PRODUCTS SHALL BE A MINIMUM OF 4" THICK.

D. COLOR OF DETECTABLE WARNINGS SHOULD CONTRAST WITH SURROUNDING CONCRETE WALK AND RAMP (BLACK IS NOT AN ACCEPTABLE COLOR).

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TITLE
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C0.11

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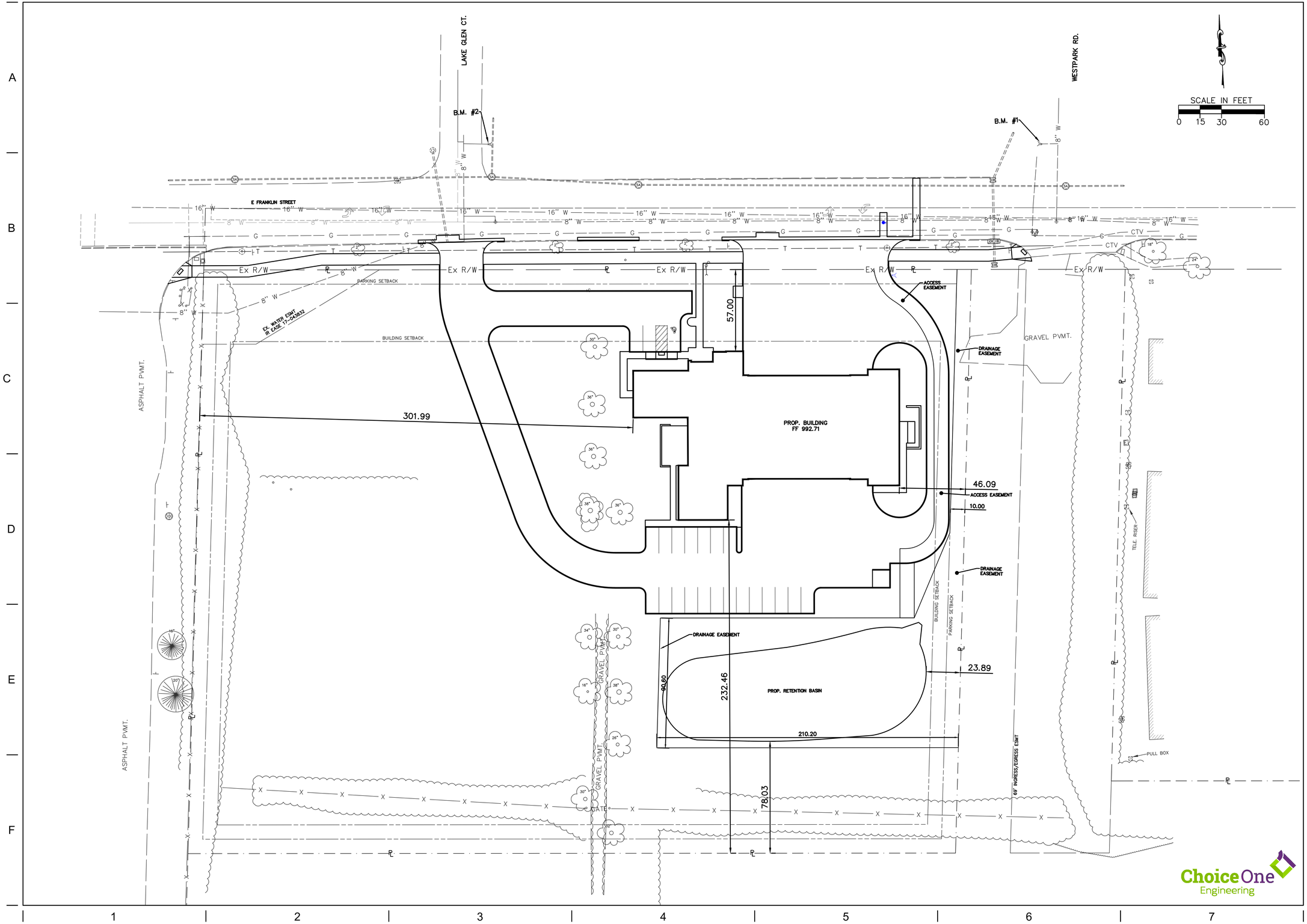

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TITLE
SETBACK DIMENSIONS PLAN

SHEET NO.
C1.01

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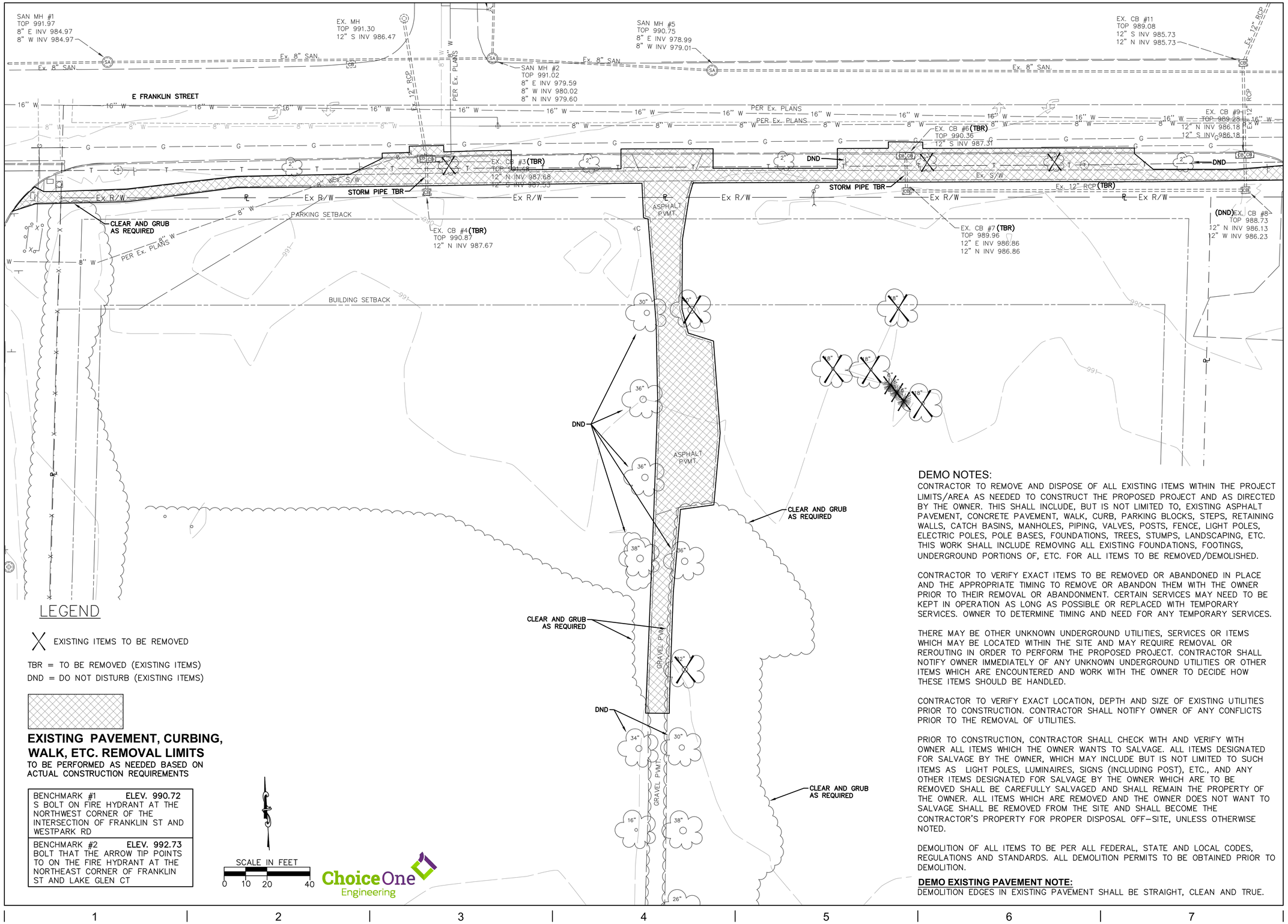

LEGEND

X EXISTING ITEMS TO BE REMOVED

TBR = TO BE REMOVED (EXISTING ITEMS)
DND = DO NOT DISTURB (EXISTING ITEMS)

EXISTING PAVEMENT, CURBING, WALK, ETC. REMOVAL LIMITS
TO BE PERFORMED AS NEEDED BASED ON ACTUAL CONSTRUCTION REQUIREMENTS

BENCHMARK #1 S BOLT ON FIRE HYDRANT AT THE NORTHWEST CORNER OF THE INTERSECTION OF FRANKLIN ST AND WESTPARK RD	ELEV. 990.72
BENCHMARK #2 BOLT THAT THE ARROW TIP POINTS TO ON THE FIRE HYDRANT AT THE NORTHEAST CORNER OF FRANKLIN ST AND LAKE GLEN CT	ELEV. 992.73

SCALE IN FEET
0 10 20 40

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DEMO NOTES:

CONTRACTOR TO REMOVE AND DISPOSE OF ALL EXISTING ITEMS WITHIN THE PROJECT LIMITS/AREA AS NEEDED TO CONSTRUCT THE PROPOSED PROJECT AND AS DIRECTED BY THE OWNER. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO, EXISTING ASPHALT PAVEMENT, CONCRETE PAVEMENT, WALK, CURB, PARKING BLOCKS, STEPS, RETAINING WALLS, CATCH BASINS, MANHOLES, PIPING, VALVES, POSTS, FENCE, LIGHT POLES, ELECTRIC POLES, POLE BASES, FOUNDATIONS, TREES, STUMPS, LANDSCAPING, ETC. THIS WORK SHALL INCLUDE REMOVING ALL EXISTING FOUNDATIONS, FOOTINGS, UNDERGROUND PORTIONS OF, ETC. FOR ALL ITEMS TO BE REMOVED/DEMOLISHED.

CONTRACTOR TO VERIFY EXACT ITEMS TO BE REMOVED OR ABANDONED IN PLACE AND THE APPROPRIATE TIMING TO REMOVE OR ABANDON THEM WITH THE OWNER PRIOR TO THEIR REMOVAL OR ABANDONMENT. CERTAIN SERVICES MAY NEED TO BE KEPT IN OPERATION AS LONG AS POSSIBLE OR REPLACED WITH TEMPORARY SERVICES. OWNER TO DETERMINE TIMING AND NEED FOR ANY TEMPORARY SERVICES.

THERE MAY BE OTHER UNKNOWN UNDERGROUND UTILITIES, SERVICES OR ITEMS WHICH MAY BE LOCATED WITHIN THE SITE AND MAY REQUIRE REMOVAL OR REROUTING IN ORDER TO PERFORM THE PROPOSED PROJECT. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY OF ANY UNKNOWN UNDERGROUND UTILITIES OR OTHER ITEMS WHICH ARE ENCOUNTERED AND WORK WITH THE OWNER TO DECIDE HOW THESE ITEMS SHOULD BE HANDLED.

CONTRACTOR TO VERIFY EXACT LOCATION, DEPTH AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER OF ANY CONFLICTS PRIOR TO THE REMOVAL OF UTILITIES.

PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CHECK WITH AND VERIFY WITH OWNER ALL ITEMS WHICH THE OWNER WANTS TO SALVAGE. ALL ITEMS DESIGNATED FOR SALVAGE BY THE OWNER, WHICH MAY INCLUDE BUT IS NOT LIMITED TO SUCH ITEMS AS LIGHT POLES, LUMINAIRES, SIGNS (INCLUDING POST), ETC., AND ANY OTHER ITEMS DESIGNATED FOR SALVAGE BY THE OWNER WHICH ARE TO BE REMOVED SHALL BE CAREFULLY SALVAGED AND SHALL REMAIN THE PROPERTY OF THE OWNER. ALL ITEMS WHICH ARE REMOVED AND THE OWNER DOES NOT WANT TO SALVAGE SHALL BE REMOVED FROM THE SITE AND SHALL BECOME THE CONTRACTOR'S PROPERTY FOR PROPER DISPOSAL OFF-SITE, UNLESS OTHERWISE NOTED.

DEMOLITION OF ALL ITEMS TO BE PER ALL FEDERAL, STATE AND LOCAL CODES, REGULATIONS AND STANDARDS. ALL DEMOLITION PERMITS TO BE OBTAINED PRIOR TO DEMOLITION.

DEMO EXISTING PAVEMENT NOTE:
DEMOLITION EDGES IN EXISTING PAVEMENT SHALL BE STRAIGHT, CLEAN AND TRUE.

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DEMOLITION PLAN

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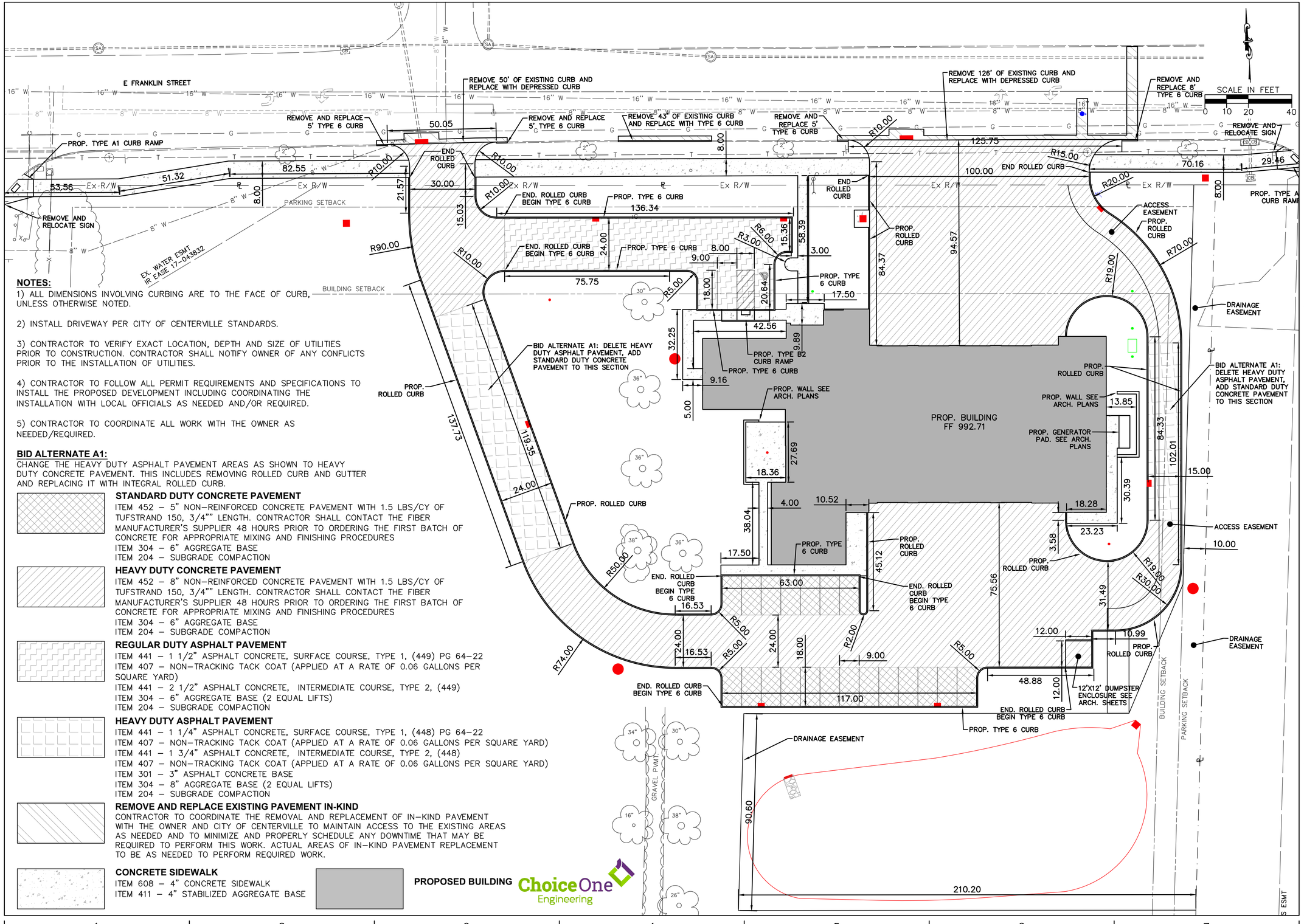

NOTES:

1) ALL DIMENSIONS INVOLVING CURBING ARE TO THE FACE OF CURB, UNLESS OTHERWISE NOTED.

2) INSTALL DRIVEWAY PER CITY OF CENTERVILLE STANDARDS.

3) CONTRACTOR TO VERIFY EXACT LOCATION, DEPTH AND SIZE OF UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER OF ANY CONFLICTS PRIOR TO THE INSTALLATION OF UTILITIES.

4) CONTRACTOR TO FOLLOW ALL PERMIT REQUIREMENTS AND SPECIFICATIONS TO INSTALL THE PROPOSED DEVELOPMENT INCLUDING COORDINATING THE INSTALLATION WITH LOCAL OFFICIALS AS NEEDED AND/OR REQUIRED.

5) CONTRACTOR TO COORDINATE ALL WORK WITH THE OWNER AS NEEDED/REQUIRED.

BID ALTERNATE A1:

CHANGE THE HEAVY DUTY ASPHALT PAVEMENT AREAS AS SHOWN TO HEAVY DUTY CONCRETE PAVEMENT. THIS INCLUDES REMOVING ROLLED CURB AND GUTTER AND REPLACING IT WITH INTEGRAL ROLLED CURB.

STANDARD DUTY CONCRETE PAVEMENT
ITEM 452 – 5" NON–REINFORCED CONCRETE PAVEMENT WITH 1.5 LBS/CY OF TUFSTRAND 150, 3/4"" LENGTH. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES
ITEM 304 – 6" AGGREGATE BASE
ITEM 204 – SUBGRADE COMPACTION

HEAVY DUTY CONCRETE PAVEMENT
ITEM 452 – 8" NON–REINFORCED CONCRETE PAVEMENT WITH 1.5 LBS/CY OF TUFSTRAND 150, 3/4"" LENGTH. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES
ITEM 304 – 6" AGGREGATE BASE
ITEM 204 – SUBGRADE COMPACTION

REGULAR DUTY ASPHALT PAVEMENT
ITEM 441 – 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, (449) PG 64–22
ITEM 407 – NON–TRACKING TACK COAT (APPLIED AT A RATE OF 0.06 GALLONS PER SQUARE YARD)
ITEM 441 – 2 1/2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, (449)
ITEM 304 – 6" AGGREGATE BASE (2 EQUAL LIFTS)
ITEM 204 – SUBGRADE COMPACTION

HEAVY DUTY ASPHALT PAVEMENT
ITEM 441 – 1 1/4" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, (448) PG 64–22
ITEM 407 – NON–TRACKING TACK COAT (APPLIED AT A RATE OF 0.06 GALLONS PER SQUARE YARD)
ITEM 441 – 1 3/4" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, (448)
ITEM 407 – NON–TRACKING TACK COAT (APPLIED AT A RATE OF 0.06 GALLONS PER SQUARE YARD)
ITEM 301 – 3" ASPHALT CONCRETE BASE
ITEM 304 – 8" AGGREGATE BASE (2 EQUAL LIFTS)
ITEM 204 – SUBGRADE COMPACTION

REMOVE AND REPLACE EXISTING PAVEMENT IN-KIND
CONTRACTOR TO COORDINATE THE REMOVAL AND REPLACEMENT OF IN–KIND PAVEMENT WITH THE OWNER AND CITY OF CENTERVILLE TO MAINTAIN ACCESS TO THE EXISTING AREAS AS NEEDED AND TO MINIMIZE AND PROPERLY SCHEDULE ANY DOWNTIME THAT MAY BE REQUIRED TO PERFORM THIS WORK. ACTUAL AREAS OF IN–KIND PAVEMENT REPLACEMENT TO BE AS NEEDED TO PERFORM REQUIRED WORK.

CONCRETE SIDEWALK
ITEM 608 – 4" CONCRETE SIDEWALK
ITEM 411 – 4" STABILIZED AGGREGATE BASE

PROPOSED BUILDING

ChoiceOne Engineering

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MICHAEL LEWIS SEEGER
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Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

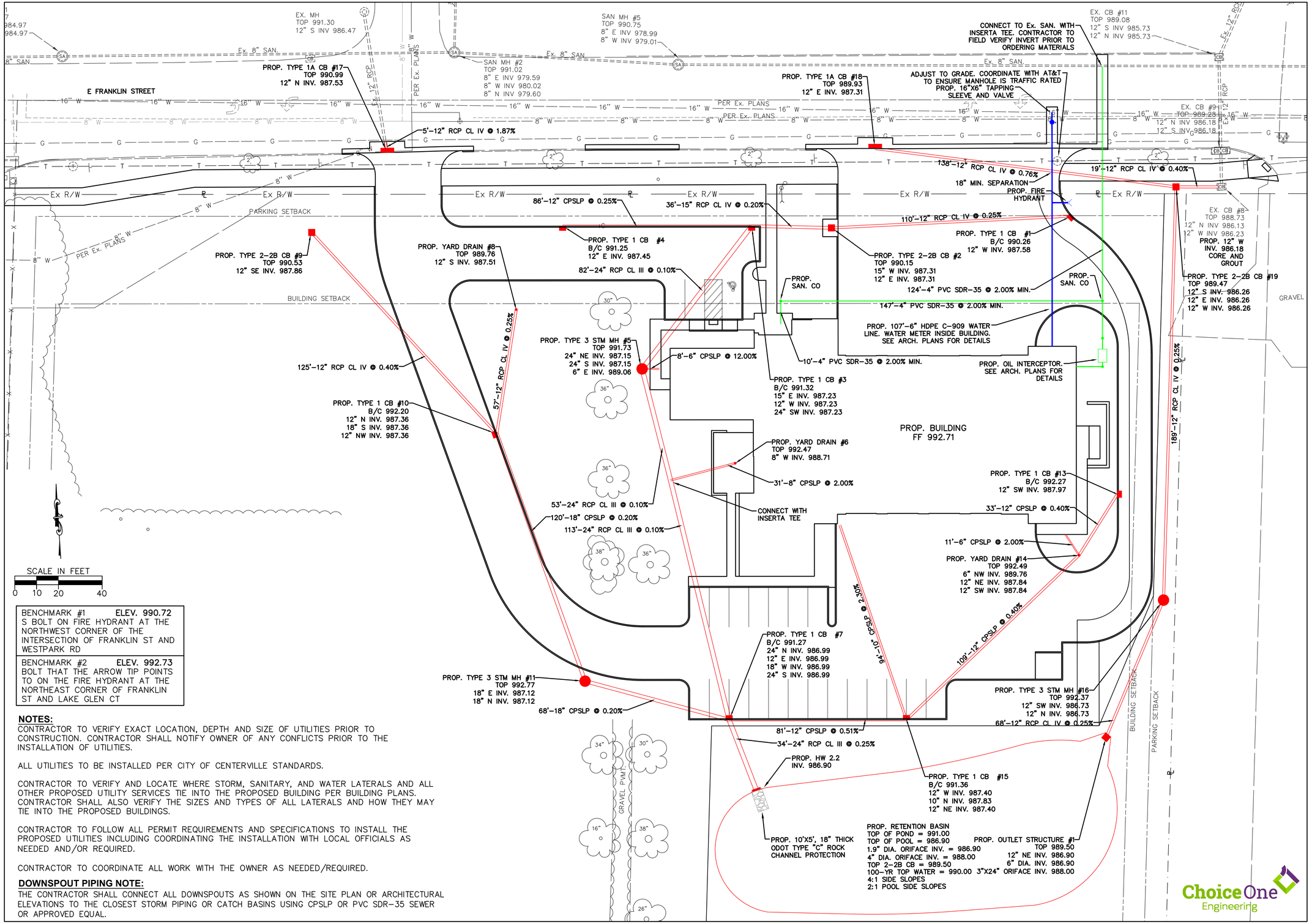
ISSUE

NO.	DATE	DESCRIPTION
1	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	JAC
CHECKED	MLS

TITLE
DIMENSIONING AND PAVEMENT PLAN

SHEET NO.
C1.03



BENCHMARK #1	ELEV. 990.72
S BOLT ON FIRE HYDRANT AT THE NORTHWEST CORNER OF THE INTERSECTION OF FRANKLIN ST AND WESTPARK RD	
BENCHMARK #2	ELEV. 992.73
BOLT THAT THE ARROW TIP POINTS TO ON THE FIRE HYDRANT AT THE NORTHEAST CORNER OF FRANKLIN ST AND LAKE GLEN CT	

NOTES:

CONTRACTOR TO VERIFY EXACT LOCATION, DEPTH AND SIZE OF UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER OF ANY CONFLICTS PRIOR TO THE INSTALLATION OF UTILITIES.

ALL UTILITIES TO BE INSTALLED PER CITY OF CENTERVILLE STANDARDS.

CONTRACTOR TO VERIFY AND LOCATE WHERE STORM, SANITARY, AND WATER LATERALS AND ALL OTHER PROPOSED UTILITY SERVICES TIE INTO THE PROPOSED BUILDING PER BUILDING PLANS. CONTRACTOR SHALL ALSO VERIFY THE SIZES AND TYPES OF ALL LATERALS AND HOW THEY MAY TIE INTO THE PROPOSED BUILDINGS.

CONTRACTOR TO FOLLOW ALL PERMIT REQUIREMENTS AND SPECIFICATIONS TO INSTALL THE PROPOSED UTILITIES INCLUDING COORDINATING THE INSTALLATION WITH LOCAL OFFICIALS AS NEEDED AND/OR REQUIRED.

CONTRACTOR TO COORDINATE ALL WORK WITH THE OWNER AS NEEDED/REQUIRED.

DOWNSPOUT PIPING NOTE:

THE CONTRACTOR SHALL CONNECT ALL DOWNSPOUTS AS SHOWN ON THE SITE PLAN OR ARCHITECTURAL ELEVATIONS TO THE CLOSEST STORM PIPING OR CATCH BASINS USING CPSLP OR PVC SDR-35 SEWER OR APPROVED EQUAL.

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TITLE
UTILITY PLAN

SHEET NO.
C2.01

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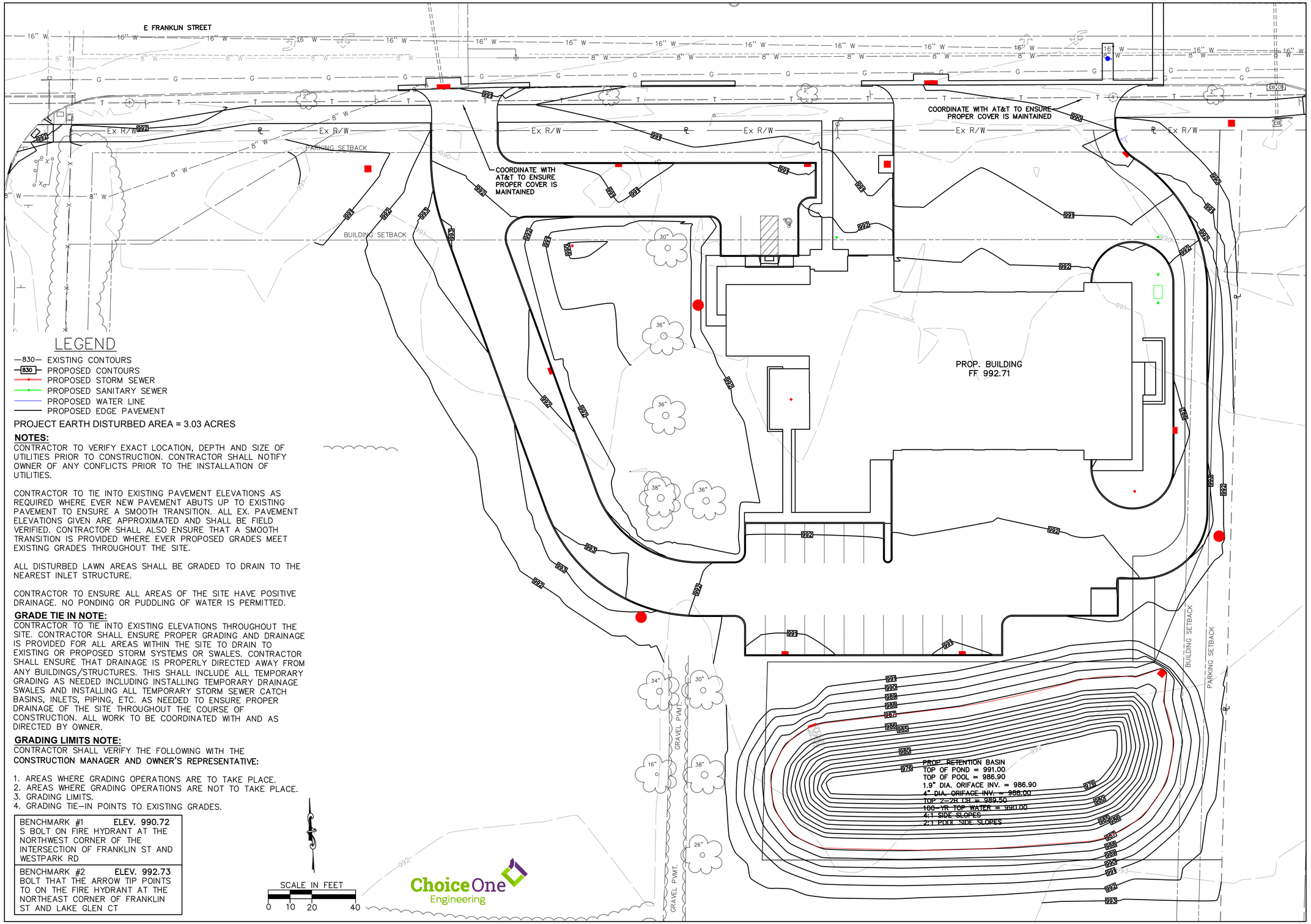

LEGEND

- 830 EXISTING CONTOURS
- 830 PROPOSED CONTOURS
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATER LINE
- PROPOSED EDGE PAVEMENT

PROJECT EARTH DISTURBED AREA = 3.03 ACRES

NOTES:

CONTRACTOR TO VERIFY EXACT LOCATION, DEPTH AND SIZE OF UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER OF ANY CONFLICTS PRIOR TO THE INSTALLATION OF UTILITIES.

CONTRACTOR TO TIE INTO EXISTING PAVEMENT ELEVATIONS AS REQUIRED WHERE EVER NEW PAVEMENT ABUTS UP TO EXISTING PAVEMENT TO ENSURE A SMOOTH TRANSITION. ALL EX. PAVEMENT ELEVATIONS GIVEN ARE APPROXIMATED AND SHALL BE FIELD VERIFIED. CONTRACTOR SHALL ALSO ENSURE THAT A SMOOTH TRANSITION IS PROVIDED WHERE EVER PROPOSED GRADES MEET EXISTING GRADES THROUGHOUT THE SITE.

ALL DISTURBED LAWN AREAS SHALL BE GRADED TO DRAIN TO THE NEAREST INLET STRUCTURE.

CONTRACTOR TO ENSURE ALL AREAS OF THE SITE HAVE POSITIVE DRAINAGE. NO PONDING OR PUDDLING OF WATER IS PERMITTED.

GRADE TIE IN NOTE:

CONTRACTOR TO TIE INTO EXISTING ELEVATIONS THROUGHOUT THE SITE. CONTRACTOR SHALL ENSURE PROPER GRADING AND DRAINAGE IS PROVIDED FOR ALL AREAS WITHIN THE SITE TO DRAIN TO EXISTING OR PROPOSED STORM SYSTEMS OR SWALES. CONTRACTOR SHALL ENSURE THAT DRAINAGE IS PROPERLY DIRECTED AWAY FROM ANY BUILDINGS/STRUCTURES. THIS SHALL INCLUDE ALL TEMPORARY GRADING AS NEEDED INCLUDING INSTALLING TEMPORARY DRAINAGE SWALES AND INSTALLING ALL TEMPORARY STORM SEWER CATCH BASINS, INLETS, PIPING, ETC. AS NEEDED TO ENSURE PROPER DRAINAGE OF THE SITE THROUGHOUT THE COURSE OF CONSTRUCTION. ALL WORK TO BE COORDINATED WITH AND AS DIRECTED BY OWNER.

GRADING LIMITS NOTE:

CONTRACTOR SHALL VERIFY THE FOLLOWING WITH THE **CONSTRUCTION MANAGER AND OWNER'S REPRESENTATIVE:**

1. AREAS WHERE GRADING OPERATIONS ARE TO TAKE PLACE.
2. AREAS WHERE GRADING OPERATIONS ARE NOT TO TAKE PLACE.
3. GRADING LIMITS.
4. GRADING TIE-IN POINTS TO EXISTING GRADES.

BENCHMARK #1 S BOLT ON FIRE HYDRANT AT THE NORTHWEST CORNER OF THE INTERSECTION OF FRANKLIN ST AND WESTPARK RD	**ELEV. 990.72**
BENCHMARK #2 BOLT THAT THE ARROW TIP POINTS TO ON THE FIRE HYDRANT AT THE NORTHEAST CORNER OF FRANKLIN ST AND LAKE GLEN CT	**ELEV. 992.73**

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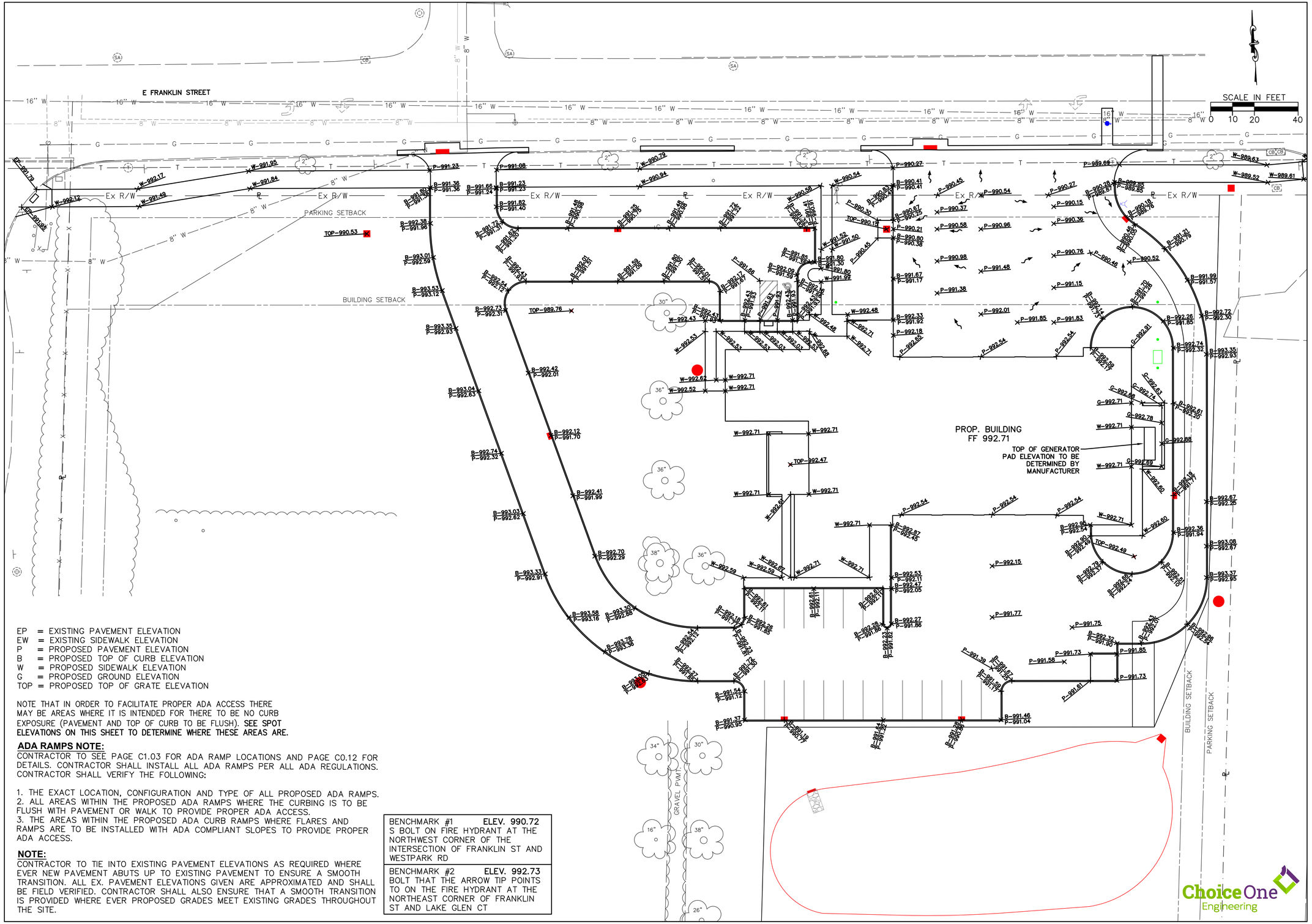
TITLE
GRADING PLAN

SHEET NO.
C3.01



EP = EXISTING PAVEMENT ELEVATION
EW = EXISTING SIDEWALK ELEVATION
P = PROPOSED PAVEMENT ELEVATION
B = PROPOSED TOP OF CURB ELEVATION
W = PROPOSED SIDEWALK ELEVATION
G = PROPOSED GROUND ELEVATION
TOP = PROPOSED TOP OF GRATE ELEVATION

NOTE THAT IN ORDER TO FACILITATE PROPER ADA ACCESS THERE MAY BE AREAS WHERE IT IS INTENDED FOR THERE TO BE NO CURB EXPOSURE (PAVEMENT AND TOP OF CURB TO BE FLUSH). **SEE SPOT ELEVATIONS ON THIS SHEET TO DETERMINE WHERE THESE AREAS ARE.**

ADA RAMPS NOTE:

CONTRACTOR TO SEE PAGE C1.03 FOR ADA RAMP LOCATIONS AND PAGE C0.12 FOR DETAILS. CONTRACTOR SHALL INSTALL ALL ADA RAMPS PER ALL ADA REGULATIONS. CONTRACTOR SHALL VERIFY THE FOLLOWING:

1. THE EXACT LOCATION, CONFIGURATION AND TYPE OF ALL PROPOSED ADA RAMPS.
2. ALL AREAS WITHIN THE PROPOSED ADA RAMPS WHERE THE CURBING IS TO BE FLUSH WITH PAVEMENT OR WALK TO PROVIDE PROPER ADA ACCESS.
3. THE AREAS WITHIN THE PROPOSED ADA CURB RAMPS WHERE FLARES AND RAMPS ARE TO BE INSTALLED WITH ADA COMPLIANT SLOPES TO PROVIDE PROPER ADA ACCESS.

NOTE:

CONTRACTOR TO TIE INTO EXISTING PAVEMENT ELEVATIONS AS REQUIRED WHERE EVER NEW PAVEMENT ABUTS UP TO EXISTING PAVEMENT TO ENSURE A SMOOTH TRANSITION. ALL EX. PAVEMENT ELEVATIONS GIVEN ARE APPROXIMATED AND SHALL BE FIELD VERIFIED. CONTRACTOR SHALL ALSO ENSURE THAT A SMOOTH TRANSITION IS PROVIDED WHERE EVER PROPOSED GRADES MEET EXISTING GRADES THROUGHOUT THE SITE.

BENCHMARK #1	ELEV. 990.72
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TITLE
PAVEMENT ELEVATIONS PLAN

SHEET NO.
C3.02

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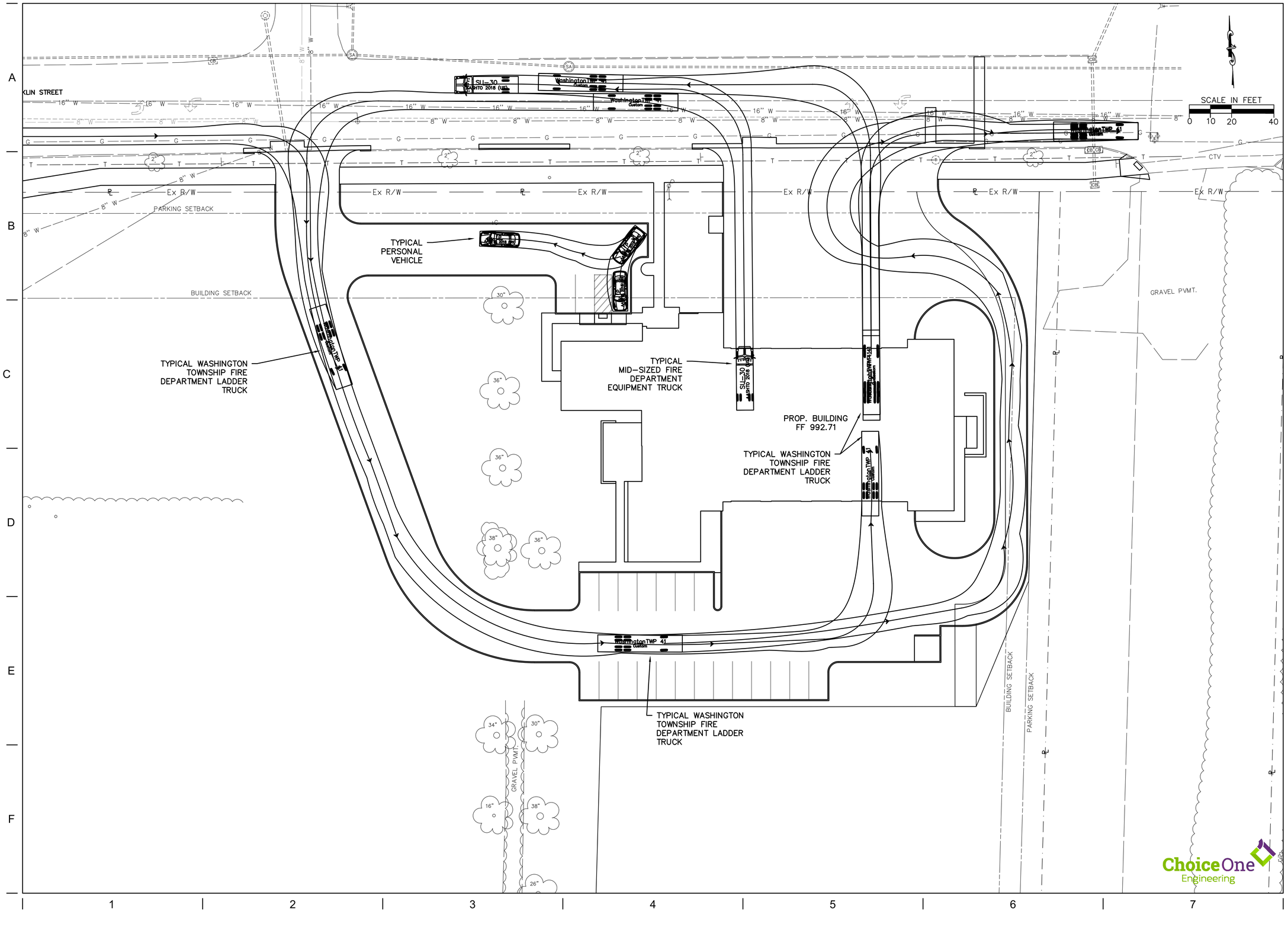

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DATE	03/22/2022
JOB NO.	3952.00
DRAWN	JAC
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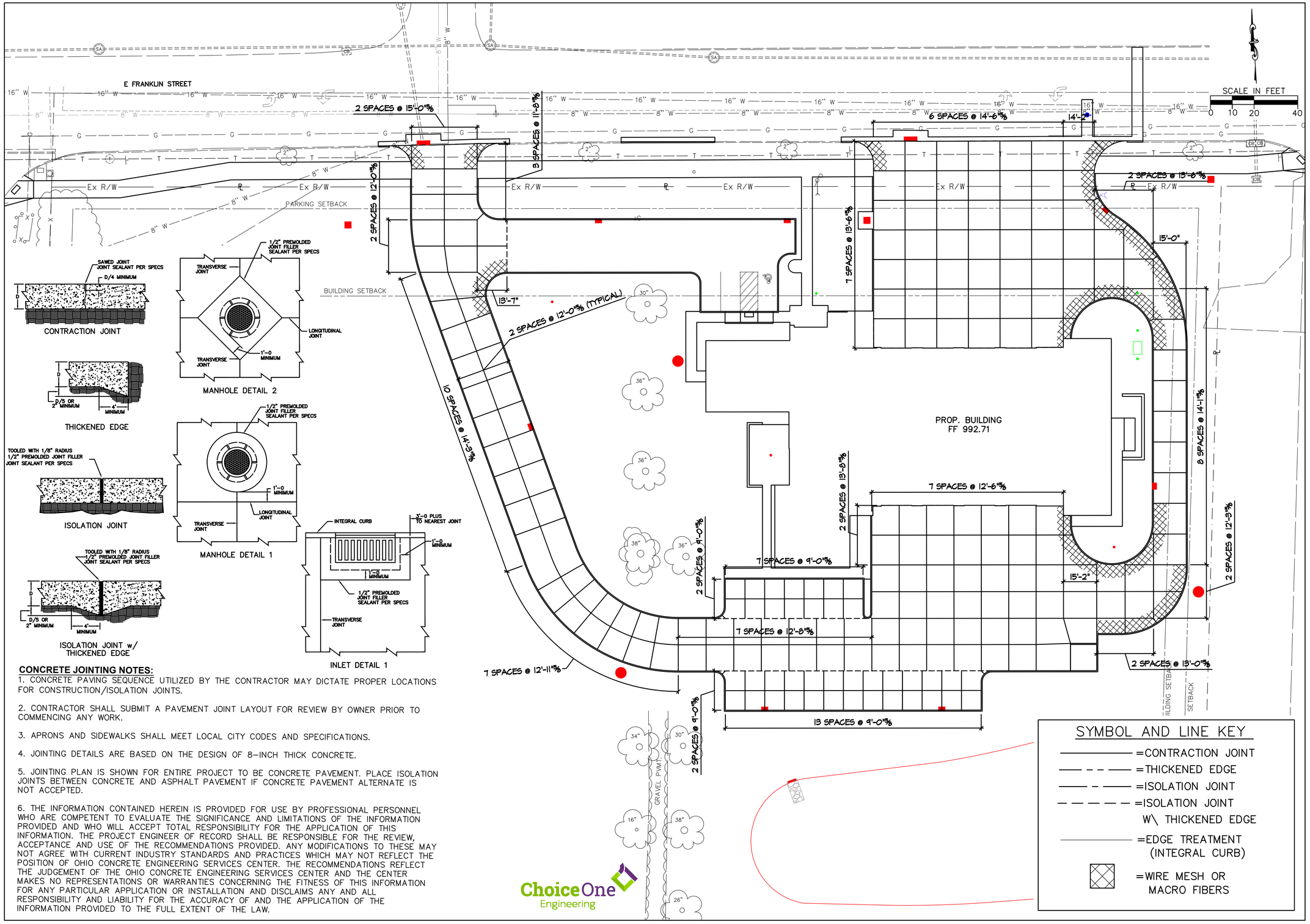
TITLE
VEHICLE TURNING PLAN

SHEET NO.
C4.01

ChoiceOne Engineering



CONTRACTION JOINT

MANHOLE DETAIL 2

THICKENED EDGE

ISOLATION JOINT

MANHOLE DETAIL 1

ISOLATION JOINT w/
THICKENED EDGE

INLET DETAIL 1

CONCRETE JOINTING NOTES:

1. CONCRETE PAVING SEQUENCE UTILIZED BY THE CONTRACTOR MAY DICTATE PROPER LOCATIONS FOR CONSTRUCTION/ISOLATION JOINTS.

2. CONTRACTOR SHALL SUBMIT A PAVEMENT JOINT LAYOUT FOR REVIEW BY OWNER PRIOR TO COMMENCING ANY WORK.

3. APRONS AND SIDEWALKS SHALL MEET LOCAL CITY CODES AND SPECIFICATIONS.

4. JOINTING DETAILS ARE BASED ON THE DESIGN OF 8-INCH THICK CONCRETE.

5. JOINTING PLAN IS SHOWN FOR ENTIRE PROJECT TO BE CONCRETE PAVEMENT. PLACE ISOLATION JOINTS BETWEEN CONCRETE AND ASPHALT PAVEMENT IF CONCRETE PAVEMENT ALTERNATE IS NOT ACCEPTED.

6. THE INFORMATION CONTAINED HEREIN IS PROVIDED FOR USE BY PROFESSIONAL PERSONNEL WHO ARE COMPETENT TO EVALUATE THE SIGNIFICANCE AND LIMITATIONS OF THE INFORMATION PROVIDED AND WHO WILL ACCEPT TOTAL RESPONSIBILITY FOR THE APPLICATION OF THIS INFORMATION. THE PROJECT ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR THE REVIEW, ACCEPTANCE AND USE OF THE RECOMMENDATIONS PROVIDED. ANY MODIFICATIONS TO THESE MAY NOT AGREE WITH CURRENT INDUSTRY STANDARDS AND PRACTICES WHICH MAY NOT REFLECT THE POSITION OF OHIO CONCRETE ENGINEERING SERVICES CENTER. THE RECOMMENDATIONS REFLECT THE JUDGEMENT OF THE OHIO CONCRETE ENGINEERING SERVICES CENTER AND THE CENTER MAKES NO REPRESENTATIONS OR WARRANTIES CONCERNING THE FITNESS OF THIS INFORMATION FOR ANY PARTICULAR APPLICATION OR INSTALLATION AND DISCLAIMS ANY AND ALL RESPONSIBILITY AND LIABILITY FOR THE ACCURACY OF AND THE APPLICATION OF THE INFORMATION PROVIDED TO THE FULL EXTENT OF THE LAW.

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SYMBOL AND LINE KEY

- =CONTRACTION JOINT
- =THICKENED EDGE
- =ISOLATION JOINT
- =ISOLATION JOINT W\ THICKENED EDGE
- =EDGE TREATMENT (INTEGRAL CURB)
- =WIRE MESH OR MACRO FIBERS

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TITLE
CONCRETE PAVEMENT JOINT LAYOUT

SHEET NO.
C4.02

WASHINGTON TOWNSHIP FIRE STATION 41 - SWPPP

CITY OF CENTERVILLE
MONTGOMERY COUNTY, OHIO
INDEX OF SHEETS

VICINITY MAP

SWPPP NOTE

THIS STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN PREPARED FOR **WASHINGTON TOWNSHIP FIRE DEPARTMENT** FOR THE PERFORMANCE OF **THE WASHINGTON TOWNSHIP FIRE STATION 41 PROJECT IN MONTGOMERY COUNTY, OHIO**. ALL WORK SHALL BE PER AND COMPLY WITH THE OEPA CONSTRUCTION SITE STORM WATER GENERAL PERMIT, PERMIT #OHC000005. THIS INCLUDES FILING A CO–PERMITTEE NOI FORM WITH THE OEPA FOR ALL OPERATORS ENGAGED IN SITE WORK ON THE SITE. CONTRACTOR SHALL FOLLOW THE SPECIFICATIONS, INSTALLATION, MAINTENANCE AND REQUIREMENTS OF ODOT'S CURRENT SUPPLEMENTAL SPECIFICATION 832 "TEMPORARY SEDIMENT AND EROSION CONTROL." COMPLIANCE WITH SUPPLEMENTAL SPECIFICATION 832 SHALL INCLUDE THE STANDARD CONSTRUCTION DRAWING REFERENCES LISTED IN SECTION 832.03, BUT SHALL NOT INCLUDE SECTION 832.11 "INSPECTIONS AND SWPPP UPDATES." ALL INSPECTIONS AND SWPPP UPDATES SHALL BE PER THE OEPA CONSTRUCTION SITE STORM WATER GENERAL PERMIT, PERMIT #OHC000005. ALL WORK SHALL ALSO BE PER THE CURRENT ODOT CMS 107.19. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH LOCAL STORMWATER AND EROSION CONTROL REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH AND INSTALLING ALL ITEMS NOTED AND AS REQUIRED BY OEPA AND LOCAL AUTHORITIES FOR MEETING ALL STORM WATER POLLUTION PREVENTION REQUIREMENTS. **WASHINGTON TOWNSHIP FIRE DEPARTMENT AND THE SELECTED CONTRACTOR** SHALL BE THE RESPONSIBLE PARTY IN CHARGE OF THE SWPPP AND ASSOCIATED BMP'S.

SITE DATA

LOCATION SOIL TYPES_____**XENIA AND FINCASTLE SILTY LOAMS**
EARTH DISTURBED AREA_____**3.03 ACRES**
PROPOSED IMPERVIOUS AREA ADDED: _____**1.26 ACRES**
PRE–CONSTRUCTION RUNOFF COEFFICIENT: _____**0.30**
POST–CONSTRUCTION RUNOFF COEFFICIENT: ____**0.50**
DESCRIPTION OF PRIOR LAND USE_____**EMPTY GRASS LOT/AGRICULTURAL FIELD**
EXISTING QUALITY OF DISCHARGE FROM SITE____**UNTREATED IMPERVIOUS RUNOFF**
IMMEDIATE RECEIVING WATERS: _____**ON–SITE DETENTION**
SUBSEQUENT RECEIVING WATERS: _____**CITY STORM SEWER**
LATITUDE **39.628396°** LONGITUDE **–84.144937°**

WATERS EDGE NOTE

ALL MATERIAL AND EQUIPMENT STAGING OR STORAGE AREAS, DEWATERING AREAS, CONCRETE TRUCK WASH OUT AREAS, CONSTRUCTION ACCESS LOCATIONS, AND VEHICLE FUELING AND REFUELING LOCATIONS MUST BE LOCATED A MINIMUM OF 100' FROM ANY CREEK/RIVER/STREAM WATERS EDGE.

CLEAN STORM SYSTEM NOTE

IMMEDIATELY PRIOR TO FINAL COMPLETION OF THE PROJECT, CONTRACTOR SHALL ENSURE THE ENTIRE STORM SYSTEM, INCLUDING BUT NOT LIMITED TO, THE DETENTION/RETENTION BASIN(S), CATCH BASINS, MANHOLES, PIPING, UNDERDRAINS AND UNDERDRAIN TRENCHES ARE FREE FROM SEDIMENTATION AND OTHER POLLUTANTS AND FOREIGN MATERIALS AND ARE TO BE CLEANED AS NEEDED TO ENSURE MAXIMUM STORMWATER QUALITY AND FULL FUNCTIONALITY.

OFFSITE CONSTRUCTION ACTIVITIES

IT IS EXPECTED ALL CONSTRUCTION ACTIVITIES WILL TAKE PLACE ON SITE.

SPILL REPORTING REQUIREMENTS

IN THE EVENT OF A SMALL RELEASE (LESS THAN 25 GALLONS) OF PETROLEUM WASTE, SPECIAL HANDING PROCEDURES MUST BE USED. IN THE EVENT OF A LARGE RELEASE (25 GALLONS OR MORE) OF PETROLEUM WASTE, YOU MUST CONTACT THE OHIO EPA (AT 1–800–282–9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE (LEPC) WITHIN 30 MINUTES OF A SPILL OF 25 OR MORE GALLONS.

VEHICLE FUELING

VEHICLE FUELING AND MAINTENANCE WILL BE PERFORMED VIA A SMALL REFUEL TANK ON THE BACK OF A PICK–UP TRUCK.

OPEN BURNING NOTE

OPEN BURNING IS NOT PERMITTED IN THE CORPORATION LIMIT.

CONTACT INFORMATION

FACILITY SITE LOCATION: **SOUTHWEST CORNER OF THE INTERSECTION OF E FRANKLIN STREET AND THE CENTERVILLE HIGH SCHOOL ENTRANCE, SOUTH OF LAKE GLEN CT. ZIP CODE: 45459**
OWNER: **WASHINGTON TOWNSHIP FIRE DEPARTMENT, SCOTT KUJAWA, 937–433–3083, 8320 McEWEN ROAD, WASHINGTON TOWNSHIP, OH 45458, scott.kujawa@washingtontwp.org**
SWPPP CONTACT/CONTRACTOR CONTACT – **TBD**

SWPPP AND INSPECTION REPORTS LOCATION

NOTE: THE SWPPP AND INSPECTION REPORTS WILL BE KEPT ON–SITE IN THE JOB TRAILER/FOREMAN'S PICK–UP.

WASTE DISPOSAL NOTE

CONTAINERS (e.g. DUMPSTERS, DRUMS) MUST BE AVAILABLE FOR THE DISPOSAL OF DEBRIS, TRASH, HAZARDOUS MATERIAL AND PETROLEUM WASTES. ALL CONTAINERS MUST BE COVERED AND LEAK–PROOF.

CLEAN HARD FILL NOTE

NO CLEAN CONSTRUCTION WASTES SHALL BE DISPOSED OF INTO THE PROPERTY.

FUELING AND STAGING NOTE

CONTRACTOR'S STAGING AND STORAGE AREA WILL BE LOCATED WITHIN CONSTRUCTION LIMITS OF THE PROJECT. FUEL TANKS AND OTHER HAZARDOUS MATERIALS TO BE SAFELY STORED, PROTECTED, AND PROPERLY HANDLED BY CONTRACTOR. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE NO POLLUTANTS FROM THE STAGING/STORAGE AREA LEAVE THE SITE OR ENTER ADJACENT SURFACE WATERS OR THE STORM SYSTEM. CONTRACTOR SHALL CLEAN UP AND PROPERLY DISPOSE OF ANY WASTE MATERIALS.

SOIL STOCKPILE NOTE

CONTRACTOR'S SHALL LOCATE SOIL STOCKPILE AREAS WITHIN THE PROJECT AREA SO AS NOT TO BE WITHIN THE IMMEDIATE PROXIMITY OF ANY SURFACE WATERS OR STORM INLET STRUCTURES. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE NO POLLUTANTS FROM THE STOCKPILE AREA LEAVE THE SITE OR ENTER ADJACENT SURFACE WATERS OR THE STORM SYSTEM. THESE MEASURES MAY INCLUDE BUT SHALL NOT BE LIMITED TO INSTALLING FILTER FABRIC FENCE AROUND STOCKPILE, TEMPORARILY COVERING THE STOCKPILE AND/OR TEMPORARILY SEEDING THE STOCKPILE.

DEWATERING NOTE

PUMPING OF SEDIMENT LADEN WATER FROM TRENCHES OR ANY OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, DITCH OR STREAM CORRIDORS, ANY WETLANDS OR STORM SEWERS IS PROHIBITED. ALL SUCH WATER SHALL BE PROPERLY FILTERED OR SETTLED TO REMOVE SOIL PARTICLES PRIOR TO ITS RELEASE. IF AN AREA OF THE SITE OR TRENCH NEEDS DEWATERED, IT SHOULD BE PUMPED FROM A SUMP PIT WITH A SOCK FILTER OR OTHER TYPE OF FILTERING DEVICE ON THE DISCHARGE OF THE HOSE. DO NOT ALLOW DISCHARGED WATER TO PASS OVER DISTURBED GROUND. IF THE DISCHARGE WATER IS BEING PUMPED INTO A SEDIMENT POND THEN NO FILTER IS REQUIRED AT THE END OF THE HOSE. IF THE GROUNDWATER MUST BE LOWERED, THE WATER MAY BE FREELY DISCHARGED AS LONG AS THE WATER REMAINS CLEAN. DO NOT CO–MINGLE CLEAN GROUND WATER WITH SEDIMENT LADEN WATER OR DISCHARGE IT BY ALLOWING IT TO PASS OVER DISTURBED GROUND.

LOG/DOCUMENTATION SHEETS

AS PART OF THE SWPPP, THE CONTRACTOR SHALL MAINTAIN LOG/DOCUMENTATION SHEETS FOR THE FOLLOWING:
1) A SIGNATURE LOG CONTAINING THE SIGNATURES OF ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED IN THE IMPLEMENTATION OF THE SWPPP AS PROOF ACKNOWLEDGING THAT THEY REVIEWED AND UNDERSTAND THE CONDITIONS AND RESPONSIBILITIES OF THE SWPPP.
2) A GRADING AND STABILIZATION LOG DOCUMENTING THE PROJECTS GRADING AND STABILIZATION ACTIVITIES AND
3) A SWPPP AMENDMENT LOG DOCUMENTING CHANGES/AMENDMENTS TO THE SWPPP, WHICH OCCUR AFTER CONSTRUCTION ACTIVITIES COMMENCE.

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MARCH 22, 2022

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE CONSTRUCTION A NEW BUILDING AND ASSOCIATED DRIVES AND PARKING FOR THE WASHINGTON TOWNSHIP FIRE DEPARTMENT, LOCATED ON FRANKLIN STREET WITHIN THE CITY OF CENTERVILLE. SITE WORK TO INCLUDE STORM SEWER, SANITARY SEWER, WATER, SITE GRADING, PAVEMENT WORK AND BUILDING CONSTRUCTION.

PROJECT WORK CONSTRUCTION DATES

START: **SPRING 2022**
ESTIMATED COMPLETION: **WINTER 2022**

EROSION CONTROL NOTES

A. INSTALL AND MAINTAIN FILTER FABRIC FENCE AND INLET PROTECTION WHERE SHOWN AND AS NEEDED TO MINIMIZE SEDIMENT LADEN WATER FROM LEAVING THE SITE OR ENTERING ANY STORM SYSTEM, ADJACENT DITCHES, STREAMS ETC. IF STORMWATER RUNOFF CONTAINING SEDIMENTS IS FOUND TO BE LEAVING THE PROJECT SITE IN AN AREA WHERE NO BMP/CONTROL MEASURE IS SHOWN OR IN PLACE, CONTRACTOR SHALL IMMEDIATELY INSTALL THE APPROPRIATE BMP/CONTROL MEASURE AS NEEDED TO REMEDY THE SITUATION (TYP. INLET PROTECTION, FILTER FABRIC FENCE, ETC.).

B. INSTALL INLET PROTECTION ON ALL STORM INLET STRUCTURES (YARD DRAINS, CATCH BASINS, MANHOLES WITH GRATED LIDS, ETC.) AND TO ANY EXISTING STORM STRUCTURES WITHIN THE PROJECT AREA WHICH MAY RECEIVE RUNOFF FROM THE CONSTRUCTION SITE AS NEEDED. INLET PROTECTION MAY CONSIST OF DEVICES SUCH AS SEDCAGE (WWW.SEDCATCH.COM), DANDY BAGS, SEDIGUARD FILTERS, FLEXSTORM INLET FILTERS, SEDIMENT FENCE OR OTHER DEVICES WHICH ARE EFFECTIVE AT MINIMIZING THE AMOUNT OF SEDIMENT ENTERING THE STRUCTURE.

C. CONTRACTOR IS RESPONSIBLE FOR IMMEDIATELY CLEANING UP ANY MUD, DIRT AND DEBRIS WHICH IS TRACKED OR SPILLED ONTO THE ROADWAYS.

D. PRE CONSTRUCTION – CONTRACTOR IS RESPONSIBLE TO INSTALL A CONSTRUCTION ENTRANCE AS NEEDED TO MINIMIZE ANY MUD, DIRT AND DEBRIS TRACKED ONTO THE ROADWAYS.

E. DURING CONSTRUCTION – THE CONTRACTOR MUST MAINTAIN EROSION CONTROL UNTIL AREA IS STABILIZED INCLUDING TEMPORARY SEEDING AS NEEDED. CONTRACTOR SHALL TEMPORARYILY SEED ALL CRITICAL EXPOSED SLOPES TO MINIMIZE SEDIMENT RUNOFF.

F. FINAL/POST CONSTRUCTION – CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS. CONTRACTOR SHALL ENSURE GRASS IS PERMANENTLY AND PROPERLY ESTABLISHED IN ALL AREAS WHERE GRASS IS SPECIFIED. ALL SEDIMENT AND EROSION CONTROL STRUCTURES, INCLUDING SEDIMENT FENCE, SHALL REMAIN IN PLACE UNTIL GRASS IS IN PLACE AND SITE IS STABILIZED. ONCE SITE IS STABILIZED AND ALL CONSTRUCTION IS COMPLETE, ALL SEDIMENT FENCE, INLET PROTECTION AND ANY OTHER TEMPORARY BMP'S SHALL BE REMOVED FROM THE SITE.

BMP NOTES

FOR ALL BMP'S INSTALLED, ENSURE THAT THE PONDING OF WATER BEHIND THE BMP WILL NOT DAMAGE PROPERTY OR POSE A SAFETY THREAT. IF PERIODIC INSPECTIONS OR OTHER INFORMATION INDICATES A CONTROL MEASURE/BMP HAS BEEN USED INAPPROPRIATELY, THE CONTRACTOR MUST REPLACE AND ADJUST THE CONTROL/BMP TO MEET SITE CONDITIONS AS REQUIRED. THE CONTRACTOR SHALL ADJUST THE SWPPP AND ITS CONTROLS/BMPS AND THEIR QUANTITIES TO MEET FIELD CONDITIONS AND THE OHIO EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION ACTIVITIES GENERAL PERMIT.

MAINTENANCE NOTE

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ENSURE ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED IN A FUNCTIONAL CONDITION UNTIL ALL UP–SLOPE AREAS THEY CONTROL ARE PERMANENTLY STABILIZED. THE SWP3 SHALL BE DESIGNED TO MINIMIZE MAINTENANCE REQUIREMENTS. THE APPLICANT SHALL PROVIDE A DESCRIPTION OF MAINTENANCE PROCEDURES NEEDED TO ENSURE THE CONTINUED PERFORMANCE OF CONTROL PRACTICES.

SWPPP AND INSPECTION AVAILABILITY AND UPDATES NOTE

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ENSURE THE IMMEDIATE AVAILABILITY OF THE SWPPP AND INSPECTION REPORTS ON–SITE. THE CONTRACTOR SHALL ALSO BE SOLELY RESPONSIBLE TO PERFORM AND DOCUMENT ALL REQUIRED SWPPP INSPECTIONS AND ALL UPDATES AND AMENDMENTS TO THE SWPPP.

DOCUMENTATION AND GOVERNMENT INSPECTION NOTE

CONTRACTOR(S) SHALL PROVIDE THE OWNER'S REPRESENTATIVE A WRITTEN COPY OF THEIR CO–PERMITTEE APPLICATION AND ANY OTHER DOCUMENTATION THE CONTRACTOR(S) MAY SEND OR RECEIVE FROM THE OEPA OR ANY OTHER GOVERNING AUTHORITIES.

IF AN INSPECTOR OR REPRESENTATIVE FROM THE OEPA OR ANY OTHER GOVERNING AUTHORITY IS ON–SITE, THE CONTRACTOR SHALL IMMEDIATELY CONTACT AND NOTIFY THE OWNER'S REPRESENTATIVE.

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ISSUE

NO.	DATE	DESCRIPTION
1	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	JAC
CHECKED	MLS

TITLE
SWPPP TITLE SHEET

SHEET NO.
C5.01

IMPLEMENTATION SCHEDULE (EROSION CONSTRUCTION SEQUENCE)

THE CONTRACTOR OR ITS APPOINTED REPRESENTATIVES WILL ASSUME RESPONSIBILITY FOR INSTALLATION, INSPECTION AND MAINTENANCE OF ALL SOIL EROSION CONTROL MEASURES DURING CONSTRUCTION. THE INSTALLATION OF THE SOIL EROSION CONTROL MEASURES WILL BE COMPLETED, AS FOLLOWS:

A. PRIOR TO ANY GRADING OR EARTHWORK:

A–1. SILT FENCE AND INLET PROTECTION (ON EX. STORM STRUCTURES) TO BE INSTALLED AS SHOWN ON SWPPP

A–2. INSTALL CONSTRUCTION ENTRANCE(S) IF NEEDED AS SHOWN ON SWPPP. INSTALLATION OF ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES, E.G. ROCK CHECK DAMS, CONCRETE WASHOUT PIT, SEDIMENT BASIN, ETC.

B. PERFORM ROUGH GRADING, INSTALL UTILITIES, BUILDINGS, PAVEMENT:

B–1. CLEAR AND GRUB AREA AS NEEDED

B–2. PERFORM SITE GRADING. INSTALL BUILDING(S)

B–3. INSTALL SANITARY, STORM, WATER LINES, OTHER UTILITIES, GRAVEL BASE, AND CURB AND GUTTER, AS PER PLAN(S), INSTALL INLET PROTECTION ON ALL PROPOSED STORM INLET STRUCTURES AS INDICATED ON THE PLANS AS SOON AS THEY ARE INSTALLED.

B–4 PERFORM TEMPORARY SEEDING AS NEEDED ON ANY DISTURBED AREAS PER THE TIME REQUIREMENTS FOR TEMPORARY SEEDING SPECIFIED ON THIS DRAWING.

B–5 INSTALL PAVEMENT.

C. PERFORM FINAL GRADING.

C–1. PLACE TOPSOIL AND PERFORM FINAL RAKING AND GRADING ON ALL DISTURBED AREAS.

C–2. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED (SEEDED AND/OR MULCHED).

C–3. CLEAN UP SITE, AND ONCE SITE HAS REACHED FINAL STABILIZATION REMOVE ALL TEMPORARY BMP'S.

NOTES: A) CARE WILL BE TAKEN NOT TO DISTURB ANY EXISTING NATURAL VEGETATION NOT INVOLVED IN THE CONSTRUCTION PROCESS, WHENEVER POSSIBLE. B) TIMELY INSPECTIONS OF THE EROSION CONTROL MEASURES WILL BE MADE, BY THE CONTRACTOR, EVERY 7 DAYS, AND/OR AFTER ANY RAINFALL OF AT LEAST 1/2" IN A 24–HOUR PERIOD. REPORTS MUST BE KEPT ON–SITE AND SUPPLIED TO THE GOVERNING AUTHORITY IF REQUESTED.

INSPECTION SCHEDULE

A. THE SITE WILL BE INSPECTED PER OHIO EPA PERMIT No. OHC000005:

PART III.G.2.I

INSPECTIONS. THE PERMITTEE SHALL ASSIGN 'QUALIFIED INSPECTION PERSONNEL' TO CONDUCT INSPECTIONS TO ENSURE THAT THE CONTROL PRACTICES ARE FUNCTIONAL AND TO EVALUATE WHETHER THE SWP3 IS ADEQUATE AND PROPERLY IMPLEMENTED IN ACCORDANCE WITH THE SCHEDULE PROPOSED IN PART III.G.1.G OF THE OHC000005 PERMIT OR WHETHER ADDITIONAL CONTROL MEASURES ARE REQUIRED. AT A MINIMUM, PROCEDURES IN A SWP3 SHALL PROVIDE THAT ALL CONTROLS ON THE SITE ARE INSPECTED;

* AFTER ANY STORM EVENT GREATER THAN ONE–HALF INCH OF RAIN PER 24–HOUR PERIOD BY THE END OF THE NEXT CALENDAR DAY, EXCLUDING WEEKENDS AND HOLIDAYS UNLESS WORK IS SCHEDULED; AND
* ONCE EVERY SEVEN CALENDAR DAYS.

THE INSPECTION FREQUENCY MAY BE REDUCED TO AT LEAST ONCE EVERY MONTH FOR DORMANT SITES IF:

* THE ENTIRE SITE IS TEMPORARILY STABILIZED OR
* RUNOFF IS UNLIKELY DUE TO WEATHER CONDITIONS FOR EXTENDED PERIODS OF TIME (E.G. SITE IS COVERED WITH SNOW, ICE, OR THE GROUND IS FROZEN).

THE BEGINNING AND ENDING DATES OF ANY REDUCED INSPECTION FREQUENCY SHALL BE DOCUMENTED IN THE SWP3. ONCE A DEFINABLE AREA HAS ACHIEVED FINAL STABILIZATION, THE AREA MAY BE MARKED ON THE SWP3 AND NO FURTHER INSPECTION REQUIREMENTS SHALL APPLY TO THAT PORTION OF THE SITE.

FOLLOWING EACH INSPECTION, A CHECKLIST MUST BE COMPLETED AND SIGNED BY THE QUALIFIED INSPECTION PERSONNEL REPRESENTATIVE. AT A MINIMUM, THE INSPECTION REPORT SHALL INCLUDE:

i. THE INSPECTION DATE;
ii. NAMES, TITLES, AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION;
iii. WEATHER INFORMATION FOR THE PERIOD SINCE THE LAST INSPECTION (OR SINCE COMMENCEMENT OF CONSTRUCTION ACTIVITY IF THE FIRST INSPECTION) INCLUDING A BEST ESTIMATE OF THE BEGINNING OF EACH STORM EVENT, DURATION OF EACH STORM EVENT, APPROXIMATE AMOUNT OF RAINFALL FOR EACH STORM EVENT (IN INCHES), AND WHETHER ANY DISCHARGES OCCURRED;
iv. WEATHER INFORMATION AND A DESCRIPTION OF ANY DISCHARGES OCCURRING AT THE TIME OF THE INSPECTION;
v. LOCATION(S) OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE;
vi. LOCATION(S) OF BMPS THAT NEED TO BE MAINTAINED;
vii. LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION;
viii. LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION; AND
ix. CORRECTIVE ACTION REQUIRED INCLUDING ANY CHANGES TO THE SWP3 NECESSARY AND IMPLEMENTATION DATES.

DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF OR THE POTENTIAL FOR POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE SWP3 SHALL BE OBSERVED TO ENSURE THAT THOSE ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO THE RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF–SITE VEHICLE TRACKING.

THE PERMITTEE SHALL MAINTAIN FOR THREE YEARS FOLLOWING THE SUBMITTAL OF A NOTICE OF TERMINATION FORM, A RECORD SUMMARIZING THE RESULTS OF THE INSPECTION, NAMES(S) AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION, THE DATE(S) OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE SWP3 AND A CERTIFICATION AS TO WHETHER THE FACILITY IS IN COMPLIANCE WITH THE SWP3 AND THE PERMIT AND IDENTIFY ANY INCIDENTS OF NON–COMPLIANCE. THE RECORD AND CERTIFICATION SHALL BE SIGNED IN ACCORDANCE WITH PART V.G. OF THIS PERMIT.

i. WHEN PRACTICES REQUIRE REPAIR OR MAINTENANCE. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE IS IN NEED OF REPAIR OR MAINTENANCE, WITH THE EXCEPTION OF A SEDIMENT SETTLING POND, IT SHALL BE REPAIRED OR MAINTAINED WITHIN 3 DAYS OF THE INSPECTION. SEDIMENT SETTLING PONDS SHALL BE REPAIRED OR MAINTAINED WITHIN 10 DAYS OF THE INSPECTION.

ii. WHEN PRACTICES FAIL TO PROVIDE THEIR INTENDED FUNCTION. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE FAILS TO PERFORM ITS INTENDED FUNCTION AND THAT ANOTHER, MORE APPROPRIATE CONTROL PRACTICE IS REQUIRED, THE SWP3 SHALL BE AMENDED AND THE NEW CONTROL PRACTICE SHALL BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION.

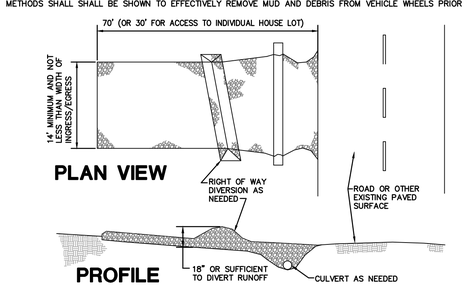
iii. WHEN PRACTICES DEPICTED ON THE SWP3 ARE NOT INSTALLED. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE HAS NOT BEEN IMPLEMENTED IN ACCORDANCE WITH THE SCHEDULE CONTAINED IN PART III.G.1.H OF THIS PERMIT, THE CONTROL PRACTICE SHALL BE IMPLEMENTED WITHIN 10 DAYS FROM THE DATE OF THE INSPECTION. IF THE INSPECTION REVEALS THAT THE PLANNED CONTROL PRACTICE IS NOT NEEDED, THE RECORD SHALL CONTAIN A STATEMENT OF EXPLANATION AS TO WHY THE CONTROL PRACTICE IS NOT NEEDED.

B. VEGETATIVE PLANTINGS – SPRING PLANTINGS WILL BE CHECKED DURING SUMMER OR EARLY FALL.
C. REPAIRS – ANY EROSION CONTROL MEASURES, STRUCTURAL MEASURES, OR OTHER RELATED ITEMS IN NEED OF REPAIR WILL BE MADE WITHIN 7 DAYS.
D. MOWING – DRAINAGE WAYS, DITCHES, AND OTHER AREAS THAT SUPPORT A DESIGNED FLOW OF WATER WILL BE MOWED REGULARLY TO MAINTAIN THAT FLOW.
E. FERTILIZATION – SEEDED AREAS WHERE THE SEED HAS NOT PRODUCED A GOOD COVER WILL BE INSPECTED AND FERTILIZED AS NECESSARY.

CONSTRUCTION ENTRANCE

A. STONE SIZE – 2" STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
B. LENGTH – THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS, BUT NOT LESS THAN 70' (EXCEPT ON SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
C. THICKNESS – THE STONE LAYER SHALL BE AT LEAST 6" THICK.
D. WIDTH – THE ENTRANCE SHALL BE AT LEAST 10' WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
E. BEDDING – A GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL HAVE A GRAB TENSILE STRENGTH OF AT LEAST 200 LBS. AND A MULLEN BURST STRENGTH OF AT LEAST 190 LBS.
F. CULVERT – A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE, IF NEEDED, TO PREVENT SURFACE WATER FLOWING ACROSS THE ENTRANCE FROM BEING DIRECTED OUT ONTO PAVED SURFACES (IF DRIVE IS PLACED ACROSS A DITCH).
G. WATER BAR – A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE, IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES (IF DRIVE IS PLACED ON A SLOPE).
H. MAINTENANCE – TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
I. CONSTRUCTION ENTRANCE SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFFSITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
J. CONSTRUCTION ENTRANCES ARE INSTALLED TO MINIMIZE OFFSITE TRACKING OF SEDIMENTS. A STONE ACCESS DRIVE SHOULD BE INSTALLED AT EVERY POINT WHERE VEHICLES ENTER OR EXIT THE SITE. EVERY INDIVIDUAL LOT SHOULD ALSO HAVE ITS OWN DRIVE ONCE CONSTRUCTION ON THE LOT BEGINS.

NOTE: ALTERNATIVE STABILIZATION METHODS FOR CONSTRUCTION ENTRANCE/EXIT SUCH AS MANUFACTURED STEEL PLATES, GRID PLATES, ETC. OR STEEL PIPES/GRATINGS WILL ALSO BE CONSIDERED BUT WILL REQUIRE WRITTEN APPROVAL FROM THE OWNER PRIOR TO THE USE OF SUCH ALTERNATIVE METHODS AS ON–SITE CONSTRUCTION ENTRANCES/EXIT. ANY PROPOSED ALTERNATIVE METHODS SHALL BE SHOWN TO EFFECTIVELY REMOVE MUD AND DEBRIS FROM VEHICLE WHEELS PRIOR TO EXITING THE SITE.



CONSTRUCTION ENTRANCE DETAIL

NON-SEDIMENT POLLUTION CONTROL

A. CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, SHALL BE MADE AWARE OF THE FOLLOWNG GENERAL GUIDELINES:

DISPOSAL AND HANDLING OF HAZARDOUS AND OTHER CONSTRUCTION WASTE

DO:
* PREVENT SPILLS
* USE PRODUCTS UP
* FOLLOW LABEL DIRECTIONS FOR DISPOSAL
* REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
* RECYCLE WASTE WHENEVER POSSIBLE

DON'T
* DON'T POUR INTO WATERWAYS, STORM DRAINS, OR ONTO THE GROUND
* DON'T POUR DOWN THE SINK, FLOOR DRAIN, OR SEPTIC TANKS
* DON'T BURY CHEMICALS OR CONTAINERS
* DON'T BURN CHEMICALS OR CONTAINERS
* DON'T MIX CHEMICALS TOGETHER

B. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM, AND ANY HAZARDOUS MATERIALS TO BE USED ON SITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.

C. NO WASTE MATERIALS SHALL BE BURIED ON SITE. SITE PERSONNEL, INCLUDING SUBCONTRACTORS, SHALL BE NOTIFIED THAT NO CONSTRUCTION–RELATED MATERIALS ARE TO BE BURIED ON SITE.

D. MIXING, PUMPING, TRANSFERRING, OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH, OR STORM DRAIN.

E. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES, OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.

F. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER.

G. IF HAZARDOUS SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST OR KITTY LITTER AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL–BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. CONTACT OHIO EPA (1–800–282–9378),

H. SPILLS OF 25 GAL. OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO OHIO EPA (1–800–282–9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MIN. OF THE DISCOVERY OF THE RELEASE.

I. STREETS NEED TO BE SWEPT AS OFTEN AS NECESSARY TO KEEP THEM CLEAN AND FREE FROM SEDIMENT. SEDIMENT TO BE SWEPT BACK ONTO THE LOT – NOT DOWN THE STORM SEWER.

J. STOCKPILES OF SOIL AND OTHER MATERIALS SHALL BE STORED AWAY FROM WATERCOURSES, DITCHES, OR STORM DRAINS, AND SHALL HAVE EROSION CONTROL MATERIALS PLACED AROUND THEM.

K. ALL STREAM CROSSINGS SHALL BE CONSTRUCTED ENTIRELY OF NON–ERODIBLE MATERIAL.

PROCESS WASTEWATER/LEACHATE MANAGEMENT NOTE

ALL PROCESS WASTEWATERS (e.g. EQUIPMENT WASHING, LEACHATE ASSOCIATED WITH ON–SITE WASTE DISPOSAL, AND CONCRETE WASH–OUTS) MUST BE COLLECTED AND DISPOSED OF PROPERLY (e.g. TO A PUBLICLY–OWNED TREATMENT WORKS). THE NPDES CONSTRUCTION STORM WATER GENERAL PERMIT ONLY AUTHORIZES THE DISCHARGE OF STORM WATER AND CERTAIN UNCONTAMINATED NON–STORM WATERS. THE DISCHARGE OF NON–STORM WATERS TO WATERS OF THE STATE MAY BE IN VIOLATION OF LOCAL, STATE, AND FEDERAL LAWS OR REGULATIONS.

HANDLING OF TOXIC OR HAZARDOUS MATERIALS NOTE

NO SOLID, SANITARY, OR TOXIC WASTE IS TO BE DISPOSED OF ON THE PROJECT SITE. RECYCLING OF USED OR UNUSED HAZARDOUS MATERIALS SHALL NOT OCCUR ON SITE EITHER. AREAS DESIGNATED FOR CEMENT TRUCK WASHOUTS, AND VEHICLE FUELING SHALL NOT TAKE PLACE ON PARKING LOT BASE.

CONSTRUCTION CHEMICAL COMPOUNDS NOTE

NO MIXING OR STORAGE OF CHEMICAL COMPOUNDS SUCH AS FERTILIZERS, LIME, ASPHALT, OR CONCRETE ARE PERMITTED TO TAKE PLACE ON–SITE. ALL MIXING SHALL TAKE PLACE BEFORE ENTERING THE SITE.

CONSTRUCTION & DEMOLITION DEBRIS NOTE

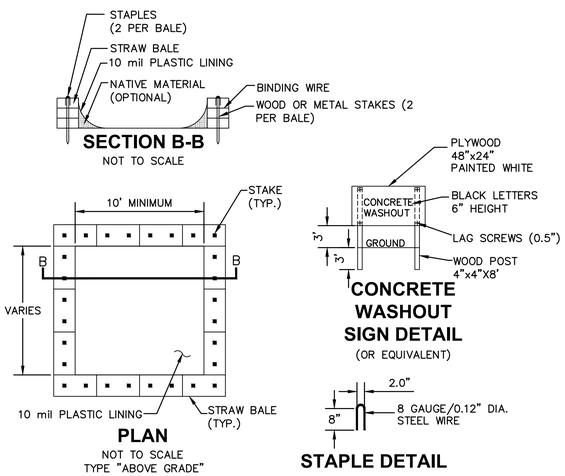
ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&DD) WASTE SHALL BE DISPOSED OF IN AN OHIO EPA APPROVED C&DD LANDFILL AS REQUIRED BY OHIO REVISED CODE (ORC) 3714. MATERIALS WHICH CONTAIN ASBESTOS MUST COMPLY WITH AIR POLLUTION REGULATIONS (SEE OHIO ADMINISTRATIVE CODE 3745–20).

CONTAMINATED SOILS NOTE

SOILS CONTAMINATED BY PETROLEUM OR OTHER CHEMICAL SPILLS SHALL BE HANDLED AND DISPOSED OF PROPERLY. ALL CONTAMINATED SOILS MUST BE TREATED AND/OR DISPOSED OF IN AN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITY (TSDFs). IF CONTAMINATION HAPPENS TO OCCUR, TARPS ARE TO BE USED TO PREVENT STORM WATER FROM COMING INTO CONTACT WITH THE MATERIAL.

CONCRETE WASHOUT NOTE

CONCRETE WASHOUT OPERATIONS SHALL TAKE PLACE WITHIN THE PROPOSED PROJECT AREA UTILIZING THE CONTRACTOR'S PORTABLE CONCRETE WASHOUT CONTAINER OR WITHIN A BERMED/CONTAINED AREA. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE WASHOUT MATERIAL DOES NOT LEAVE THE WASHOUT AREA OR ENTER THE STORM SYSTEM. CONTRACTOR SHALL CLEAN UP AND PROPERLY DISPOSE OF ALL LEFTOVER WASHOUT MATERIAL.



CONCRETE WASHOUT DETAIL

DUST CONTROL

DUST CONTROL SHALL BE PROVIDED AS NEEDED TO PREVENT SEDIMENT FROM BECOMING AIRBORNE. MEASURES SHALL INCLUDE WATERING VIA A WATER TRUCK OR OTHER WATERING DEVICE AS NEEDED TO REDUCE AND/OR ELIMINATE AIRBORNE DUST CREATED BY CONSTRUCTION AND CONSTRUCTION RELATED ACTIVITIES.

CONSTRUCTION OF A FILTER BARRIER (SILT FENCE)

A. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.

B. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.

C. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.

D. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.

E. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5' (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.

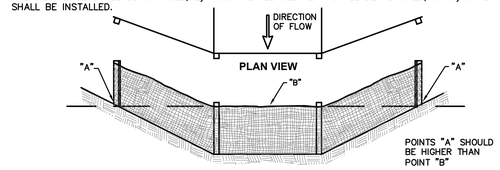
F. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16" ABOVE THE ORIGINAL GROUND SURFACE.

G. THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6" DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.

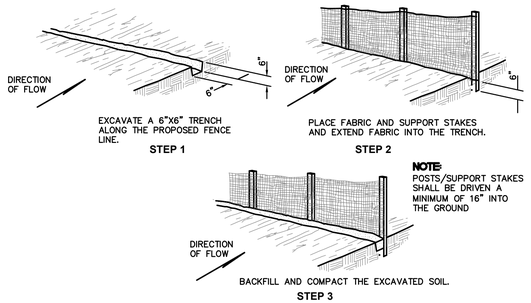
H. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8" OF CLOTH IS BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6" DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.

I. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.

J. MAINTENANCE – SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. ALL THE GAPS AND TEARS IN THE FENCE MUST BE ELIMINATED AND REPAIRED. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.



DITCH CHECK FILTER FABRIC FENCE



DITCH CHECK FILTER FABRIC FENCE

FILTER FABRIC FENCE DETAIL

CRITERIA FOR SILT FENCE MATERIAL

A. FENCE POSTS – THE LENGTH SHALL BE A MINIMUM OF 48" LONG. WOOD POSTS WILL BE 2"–BY–2" HARDWOOD OF SOUND QUALITY. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 5'. POSTS/SUPPORT STAKES SHALL BE DRIVEN A MINIMUM OF 16" INTO THE GROUND.

B. SILT FENCE FABRIC SHALL CONFORM TO THE AASHTO SILT FENCE SPECIFICATION 100X AND SHALL HAVE A MINIMUM 100# GRAB TENSILE. SILT FENCE SHALL ALSO CONFORM TO THE MOST REGENT ODOT STANDARD FOR SEDIMENT/SILT FENCE (TABLE 712.09–1)

C. SILT FENCE SHALL BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

PERMANENT STABILIZATION

ALL AREAS AT FINAL GRADE MUST BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF REACHING FINAL GRADE. THIS IS USUALLY ACCOMPLISHED BY USING SEED AND MULCH, BUT SPECIAL MEASURES ARE SOMETIMES REQUIRED. THIS IS PARTICULARLY TRUE IN DRAINAGE DITCHES/SWALES, LOW AREAS, DETENTION POND BOTTOMS AND SIDES OR ON STEEP SLOPES. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, THE INSTALLATION OF EROSION CONTROL BLANKETS AND/OR MATTING, ADDITION OF TOPSOIL, OR ROCK RIP–RAP. CONTRACTOR SHALL UTILIZE THESE AND ANY OTHER SPECIAL MEASURES AS NEEDED TO PERMANENTLY STABILIZE THE SITE. PERMANENT SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 AND AUGUST 1 TO SEPTEMBER 30. DORMANT SEEDING CAN BE DONE FROM NOVEMBER 20 TO MARCH 15. AT ALL OTHER TIMES OF THE YEAR, THE AREA SHOULD BE TEMPORARILY STABILIZED UNTIL A PERMANENT SEEDING CAN BE APPLIED.

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE.
ANY AREAS WITHIN 50' OF A SURFACE WATER OF THE STATE (STREAM, WATERWAY, WATER BODY, ETC.) AND AT FINAL GRADE	WITHIN 2 DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE.	WITHIN 7 DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.

SOILS EXPOSED NOTE

CONTRACTOR SHALL PLAN AND IMPLEMENT CONSTRUCTION AND GRADING ACTIVITIES TO MINIMIZE THE AMOUNT OF SOIL EXPOSED DURING CONSTRUCTION ACTIVITIES.

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Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
1	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
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CHECKED	MLS

TITLE
SWPPP - EROSION CONTROL NOTES AND DETAILS

SHEET NO.
C5.02

Choice One Engineering

TEMPORARY SEEDING SPECIES SELECTION			
SEEDING DATES	SPECIES	L.B./1000 SQ. FT.	PER ACRE
MARCH 1 TO AUGUST 15	OATS	3	4 BUSHELS
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
	PERENNIAL RYEGRASS	1	40 LBS.
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
AUGUST 16 TO NOVEMBER 1	RYE	3	2 BUSHELS
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
	WHEAT	1	2 BUSHELS
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
	PERENNIAL RYEGRASS	1	40 LBS.
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
NOVEMBER 1 TO SPRING SEEDING	USE MULCH ONLY, SODDING PRACTICES OR DORMANT SEEDING		
NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.			

SPECIFICATIONS FOR TEMPORARY SEEDING

A. TO MINIMIZE COSTS OF TEMPORARY STABILIZATION, LEAVE NATURAL COVER IN PLACE FOR AS LONG AS POSSIBLE. ONLY DISTURB AREAS YOU INTEND TO WORK WITHIN THE NEXT 14 DAYS.

B. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.

C. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. HOWEVER, TEMPORARY SEEDING SHALL NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.

D. SOIL AMENDMENTS – APPLICATIONS OF TEMPORARY VEGETATION SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. SOIL TESTS SHOULD BE TAKEN ON THE SITE TO PREDICT THE NEED FOR LIME AND FERTILIZER.

E. SEEDING METHOD – SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY PLACED USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING

A. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES AND WITH FAVORABLE SOIL CONDITIONS AND ON VERY FLAT AREAS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.

B. MATERIALS:
- STRAW – IF STRAW IS USED, IT SHALL BE UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/ACRE OR 90 LBS./1,000 SQ. FT. (TWO TO THREE BALES). THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND–SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQ. FT. SECTIONS AND SPREAD TWO 45 LBS. BALES OF STRAW IN EACH SECTION.
- HYDROSEEDERS – IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2,000 LB/AC. OR 46 LBS./1,000 SQ. FT.
- OTHER – OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS/AC.
- STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
  - –MECHANICAL – A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED, BUT GENERALLY, BE LEFT LONGER THAN 6".
  - –MULCH NETTINGS – NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATION RUN OFF AND ON CRITICAL SLOPES.
  - –SYNTHETIC BINDERS – SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI–TAC), DCA–70, PETROSET, TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
  - –WOOD CELLULOSE FIBER – WOOD–CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LBS./AC. THE WOOD–CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS./1000 GAL.

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50' OF A SURFACE WATER OF THE STATE (STREAM, WATERWAY, WATER BODY, ETC.) AND NOT AT FINAL GRADE.	WITHIN 2 DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN 1 YEAR, AND NOT WITHIN 50' OF A SURFACE WATER OF THE STATE (STREAM, WATERWAY, WATER BODY, ETC.)	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST 7 DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S).
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER
WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED.	

PERMANENT STABILIZATION

ODOT ITEM 659 SEEDING AND MULCHING, CLASS 1 (LAWN MIXTURE), AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE WORK AS DESCRIBED IN OHIO DEPARTMENT OF TRANSPORTATION ITEM 659, SEEDING AND MULCHING, EXCEPT AS HEREIN MODIFIED.

ALL DISTURBED AREAS OR AREAS DESIGNATED FOR SEEDING SHALL BE GRADED AND SEEDED AND SHALL HAVE A MINIMUM OF 6" OF TOPSOIL OVER THE ENTIRE AREA. TESTING THE PH OF ANY EXISTING OR IMPORTED TOPSOIL PER ODOT 659.02 SHALL BE WAIVED. THE AREA SHALL BE HAND–RAKED AND DRESSED READY FOR SEEDING. NO STONE OVER 1" IN SIZE PERMITTED IN THE TOP 6".

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL.

IT'S THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE THE REQUIRED GERMINATION RATES AND ENSURE THE GRASS IS ESTABLISHED TO THE SATISFACTION OF THE OWNER WHICH MAY REQUIRE WATERING, REGRADING/ADDING TOPSOIL AND RESEEDING. ANY AREAS THAT HAVE ERODED OR WHERE NEW GRASS DID NOT GERMINATE SHALL BE ADDRESSED BY THE CONTRACTOR UNTIL THE AREAS ARE STABILIZED, SHAPED, AND DRAINED, AS INDICATED IN THE PLANS.

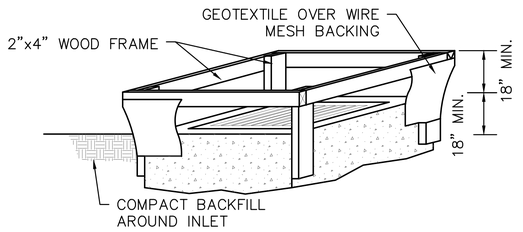
ANY DISTURBED AREA, OUTSIDE OF THE PROJECT WORK LIMITS, CAUSED BY THE CONTRACTOR'S WORK, SHALL BE RESTORED TO THE SATISFACTION OF THE PROPERTY OWNER AND PROJECT OWNER'S REPRESENTATIVE, AT THE CONTRACTOR'S SOLE EXPENSE.

THIS ITEM INCLUDES: TOPSOIL, SEEDING, MULCHING, COMMERCIAL FERTILIZER, WATER, AND REPAIR SEEDING AND MULCHING.

THE ABOVE SHALL BE INCIDENTAL TO THE PROJECT.

INLET PROTECTION FOR STORM STRUCTURES W/ GRATE

INLET PROTECTION MAY CONSIST OF SEDIMENT FENCE AND/OR DEVICES SUCH AS FLEX STORM INLET FILTERS, SEDCAGE (WWW.SEDCATCH.COM), DANDY BAGS, SEDIGUARD FILTERS, OR OTHER DEVICES (ALTERNATE PRODUCTS WHOSE PERFORMANCE IS EQUAL TO OR EXCEEDS THOSE LISTED) WHICH ARE EFFECTIVE AT MINIMIZING THE AMOUNT OF SEDIMENT ENTERING THE STRUCTURE . INSTALL INLET PROTECTION ON ALL PROPOSED YARD DRAINS, CATCH BASINS AND MANHOLES WITH GRATED LIDS AND TO ALL EXISTING STORM STRUCTURES WITH GRATED LIDS WITHIN THE PROJECT AREA WHICH MAY RECEIVE RUNOFF FROM THE CONSTRUCTION SITE.



NOTES

A. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.

B. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH OF AT LEAST 18".

C. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2" BY 4" CONSTRUCTION GRADE LUMBER. THE 2" BY 4" POST SHALL BE DRIVEN 1' INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2" BY 4" FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6" BELOW ADJACENT ROAD, IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

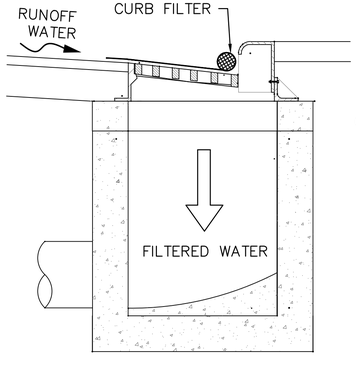
D. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.

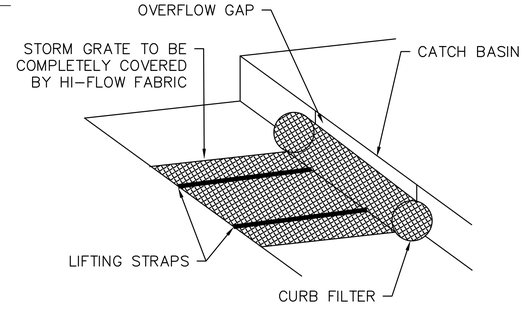
E. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20–40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAY ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.

F. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.

G. A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION, AND IF RUNOFF BY PASSING THE INLET WILL NOT FLOW TO A SETTING POND, THE TOP OF EARTH DIKES SHALL BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME.

INLET PROTECTION IN SWALES, DITCH LINES OR YARD INLETS





NOTES

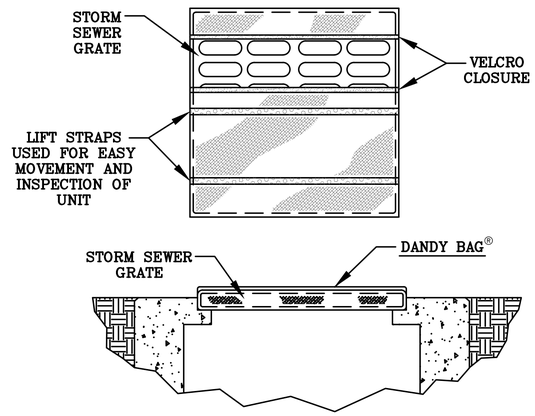
A. DANDY CURB BAG, SEDIGUARDS, OR ALTERNATE PRODUCT WHOSE PERFORMANCE IS EQUAL TO OR EXCEEDS THOSE LISTED MAY BE USED.

B. REMOVE SEDIMENT FROM CURB INLET PROTECTION BEFORE IT HINDERS THE FILTERING CAPACITY.
- DANDY CURB BAG: LIFT GRATE AND REMOVE DANDY BAG, CLEAN ACCUMULATED SEDIMENT AND REPLACE BAG AS REQUIRED BY MANUFACTURER.
- SEDIGUARD: CLEAN SEDIGUARD ONCE IT IS DRY WITH A STIFF BROOM AFTER EVERY RAIN.
- ALTERNATE PRODUCTS: CLEAN AS REQUIRED PER MANUFACTURER'S RECCOMENDATIONS

C. INLET PROTECTION SHOULD NEVER INTERFERE WITH SAFETY OF ACTIVE TRAFFIC.

CURB INLET SEDIMENT FILTER DETAIL

DANDY BAG®



DETAIL OF INLET SEDIMENT CONTROL DEVICE

DANDY BAG®
SPECIFICATIONS

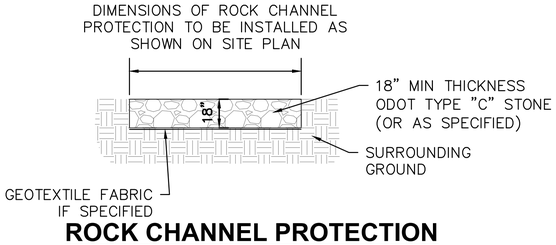
NOTE: THE DANDY BAG® WILL BE **MANUFACTURED IN THE U.S.A.** FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HI–FLOW DANDY BAG® (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	$l/min/m^2$ (gal/min/ft^2)	5907 (145)
Permittivity	ASTM D 4491	Sec^{-1}	2.1

*Note: All Dandy Bags® can be ordered with optional oil absorbent pillows

INLET PROTECTION - DANDY BAG



ROCK CHANNEL PROTECTION DETAIL FOR PIPE OUTLET

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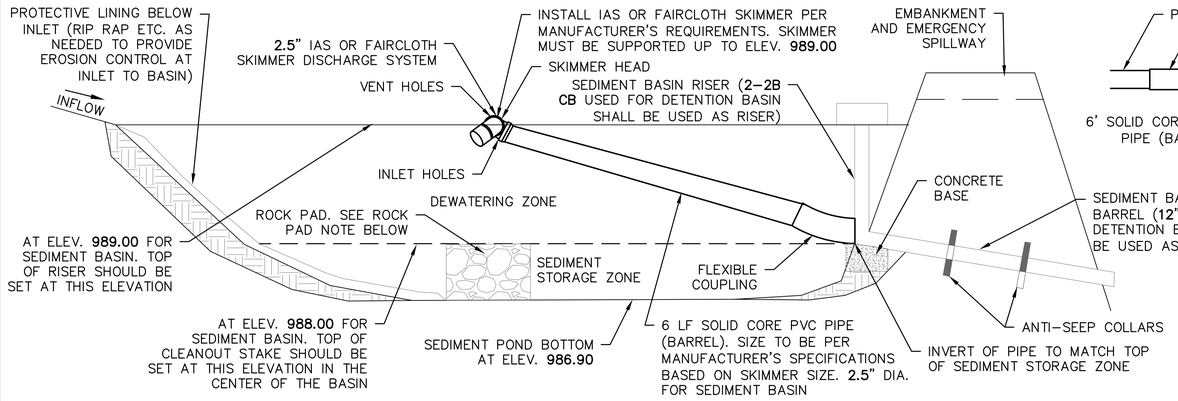
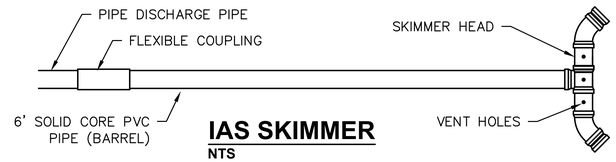
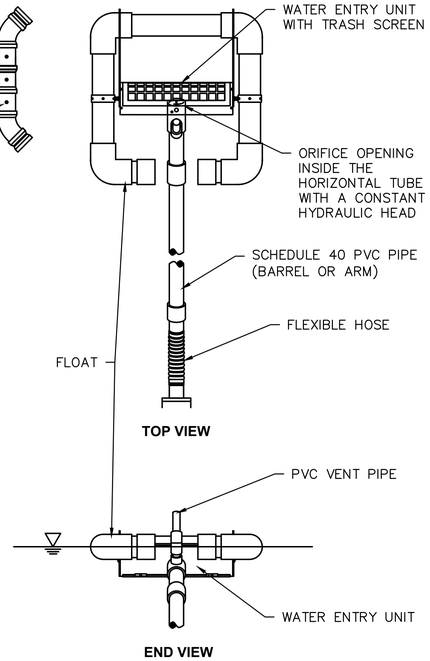


CROSS SECTION DETAIL

SEDIMENT BASIN



IAS SKIMMER
NTS



FAIRCLOTH SKIMMER
NTS

NOTES

A. SEDIMENT BASINS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE UPSLOPE LAND DISTURBANCE BEGINS.

B. SITE PREPARATION –THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEANOUT. GULLIES AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. THE SURFACE OF THE FOUNDATION AREA WILL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE EMBANKMENT MATERIAL.

C. EMBANKMENT –THE FILL MATERIAL SHALL BE FREE OF ALL SOD, ROOTS, FROZEN SOIL, STONES OVER 6 IN. IN DIAMETER, AND OTHER OBJECTIONABLE MATERIAL. THE PLACING AND SPREADING OF THE FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL SHALL BE BROUGHT UP IN APPROXIMATELY 6 IN. HORIZONTAL LAYERS OR OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED. CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER EACH LAYER IN A WAY THAT WILL RESULT IN THE REQUIRED COMPACTION. SPECIAL EQUIPMENT SHALL BE USED WHEN THE REQUIRED COMPACTION CANNOT BE OBTAINED WITHOUT IT. THE MOISTURE CONTENT OF FILL MATERIAL SHALL BE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED. THE EMBANKMENTS OF THE SEDIMENT BASIN AND THE AREAS THAT LIE DOWNSTREAM OF THE POND MUST BE STABILIZED.

D. PIPE SPILLWAY –THE PIPE CONDUIT BARREL SHALL BE PLACED ON A FIRM FOUNDATION TO THE LINES AND GRADES SHOWN ON THE PLANS. CONNECTIONS BETWEEN THE RISER AND BARREL, THE ANTI-SEEP COLLARS AND BARREL AND ALL PIPE JOINTS SHALL BE WATERTIGHT. SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND THE CONDUIT IN LAYERS AND EACH LAYER SHALL BE COMPACTED TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. ALL COMPACTION WITHIN 2 FT. OF THE PIPE SPILLWAY WILL BE ACCOMPLISHED WITH HAND-OPERATED TAMPING EQUIPMENT.

E. RISER PIPE BASE –THE RISER PIPE SHALL BE SET A MINIMUM OF 6 IN. IN THE CONCRETE BASE.

F. TRASH RACKS –THE TOP OF THE RISER SHALL BE FITTED WITH TRASH RACKS FIRMLY FASTENED TO THE RISER PIPE.

G. SEED AND MULCH –THE SEDIMENT BASIN SHALL BE STABILIZED IMMEDIATELY FOLLOWING ITS CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT OR EMERGENCY SPILLWAY REMAIN BARE FOR MORE THAN 7 DAYS.

H. SEDIMENT CLEANOUT –SEDIMENT SHALL BE REMOVED AND THE SEDIMENT BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT FILLS TO THE DESIGN DEPTH OF THE SEDIMENT STORAGE ZONE. THIS ELEVATION SHALL BE MARKED ON A CLEANOUT STAKE NEAR THE CENTER OF THE BASIN. SEDIMENT REMOVED FROM THE BASIN SHALL BE PLACED SO THAT IT WILL NOT ERODE.

I. FINAL REMOVAL – SEDIMENT BASINS SHALL BE REMOVED AFTER THE UPSTREAM DRAINAGE AREA IS STABILIZED OR AS INDICATED IN THE PLANS. DEWATERING AND REMOVAL SHALL NOT CAUSE SEDIMENT TO BE DISCHARGED. THE SEDIMENT BASIN SITE AND SEDIMENT REMOVED FROM THE BASIN SHALL BE STABILIZED.

OPERATIONS AND MAINTENANCE

SEDIMENT BASINS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT.
NECESSARY ACTIVITIES ARE SHOWN AS FOLLOWS:

A. ESTABLISH VEGETATIVE COVER AND FERTILIZE AS NECESSARY TO MAINTAIN A VIGOROUS COVER IN AND AROUND THE SEDIMENT BASIN.

B. REMOVE UNDESIRABLE VEGETATION PERIODICALLY TO PREVENT GROWTH OF TREES AND SHRUBS ON THE EMBANKMENT AND SPILLWAY AREAS.

C. PROMPTLY REPAIR ERODED AREAS. REESTABLISH VEGETATIVE COVER IMMEDIATELY WHERE SCOUR EROSION HAS REMOVED ESTABLISHED SEEDING.

D. PROMPTLY REMOVE ANY BURROWING RODENTS THAT MAY INVADE AREAS OF THE EMBANKMENT.

E. REMOVE TRASH AND DEBRIS THAT MAY BLOCK SPILLWAYS AND ACCUMULATE IN THE POND.

F. CHECK SPILLWAY OUTLETS AND POINTS OF INFLOW TO ENSURE DRAINAGE IS NOT CAUSING EROSION AND THAT OUTLETS ARE NOT CLOGGED. REPLACE DISPLACED RIPRAP IMMEDIATELY.

ROCK PAD NOTE

IT IS VERY IMPORTANT THAT A ROCK PAD BE CONSTRUCTED TO THE HEIGHT OF THE TOP OF THE SEDIMENT STORAGE ZONE. IF THIS IS NOT DONE OR IF THE PAD IS NOT BUILT TO THE SAME HEIGHT AS THE TOP OF THE SEDIMENT STORAGE ZONE, THE SKIMMER WILL NOT FUNCTION PROPERLY .

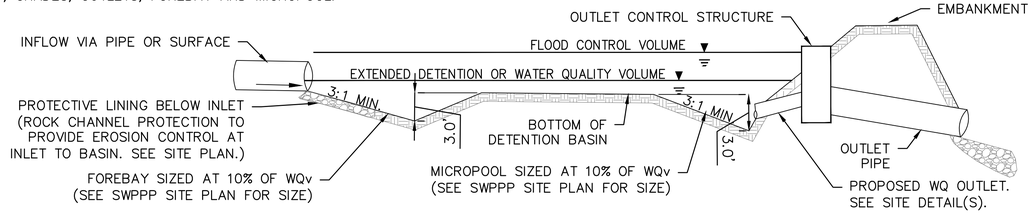
WHEN COMPLETE THE IAS FLEXIBLE COUPLING SHOULD BE LYING FLAT ON THE ROCK PAD. THE UNIT WILL BE TOUCHING AT TWO POINTS: THE TOP OF THE BARREL/MIDDLE OF THE SKIMMER HEAD AND THE POINT AT WHICH THE BARREL IS ATTACHED TO THE IAS FLEXIBLE COUPLING. SEE MANUFACTURER'S ASSEMBLY INSTRUCTIONS.

SEDIMENT BASIN CALCULATIONS

REQUIRED SEDIMENT STORAGE VOLUME = 37 C.Y./ACRE * **3.03** ACRES = **113** C.Y.
TOP OF SEDIMENT STORAGE ZONE ELEVATION = **988.00** (**572** C.Y.). SET CLEANOUT STAKE AT THIS ELEVATION.
REQUIRED DEWATERING ZONE VOLUME = 67 C.Y./ACRE * **3.03** ACRES = **203** C.Y.
DEWATERING ZONE VOLUME (BETWEEN **989.00** AND **988.00**) = **601** C.Y.
TOTAL BASIN VOLUME REQUIRED TO TOP OF DEWATERING ZONE = **113** C.Y. + **203** C.Y. = **316** C.Y.
TOP OF DEWATERING ZONE ELEVATION = **989.00** (**1,174** C.Y.)
TOTAL SEDIMENT BASIN VOLUME PROVIDED TO ELEV. **991.00** = **2,626** C.Y.
RISER AND BARREL: PROPOSED **12**" DETENTION OUTLET AND **2-2B** CB ARE TO BE USED AS OUTLET FOR SEDIMENT BASIN.
DEWATERING TIME : **2.66** DAYS
601 C.Y. * 27 = **16,308** C.F. VOLUME TO BE DEWATERED
USING A **FAIRCLOTH/IAS** WATER QUALITY SKIMMER WITH A **2.5**" SKIMMER SIZE, IT DISCHARGES **6,137** CF PER 24 HOURS THEREFORE IT WILL TAKE **2.66** DAYS TO DEWATER THIS SEDIMENT BASIN.

SEDIMENT BASIN CONVERT TO SITE DETENTION BASIN NOTE

UPON COMPLETION OF THE PROJECT, IF THE SEDIMENT BASIN IS TO SERVE AND FUNCTION AS A SITE DETENTION/RETENTION BASIN, ALL SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT BASIN WHICH IS ABOVE ITS PROPOSED FINAL SURFACE GRADES THROUGHOUT THE BASIN AND ALSO AS NEEDED TO PLACE ANY REQUIRED TOPSOIL. UPON PROJECT COMPLETION AND FINAL CLEANING, THE SEDIMENT BASIN SHOULD BE ESTABLISHED TO ITS PROPOSED RETENTION/DETENTION BASIN DESIGN INCLUDING CAPACITY, GRADES, OUTLETS, FOREBAY AND MICROPOOL.



FOREBAY AND MICROPOOL CROSS SECTION

TYPICAL MAINTENANCE ACTIVITIES FOR DETENTION BASINS

POTENTIAL POLLUTANT SOURCES POST CONSTRUCTION THAT SHOULD BE MONITORED INCLUDE: TRASH, FERTILIZERS, GRAINS, HERBICIDES, PESTICIDES, LAWN TREATMENT APPLICATIONS ALONG WITH ASSORTED FUELS, OILS, GREASE, HYDRAULIC FLUID, AND OTHER VEHICULAR FLUIDS ASSOCIATED WITH TRAFFIC THROUGHOUT THE DEVELOPED SITE.

MONTHLY: MOW EMBANKMENT AND CLEAN TRASH AND DEBRIS FROM OUTLET STRUCTURE. ADDRESS ANY ACCUMULATION OF HYDROCARBONS.

ANNUALLY: INSPECT EMBANKMENT AND OUTLET STRUCTURE FOR DAMAGE AND PROPER FLOW. REMOVE WOODY VEGETATION AND FIX ANY ERODING AREAS. MONITOR SEDIMENT ACCUMULATIONS IN FOREBAY AND MAIN POOL.

SEMI-ANNUALLY: INSPECT WETLAND AREAS FOR INVASIVE PLANS

3-7 YEARS: REMOVE SEDIMENT FROM FOREBAYS.

15-20 YEARS: MONITOR SEDIMENT ACCUMULATIONS IN THE MAIN POOL AND CLEAN AS POND BECOMES EUTROPHIC OR POOL VOLUME IS REDUCED SIGNIFICANTLY.

FINAL DETENTION BASIN

ChoiceOne Engineering

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creative focused design
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C5.04

LEGEND

- –830– EXISTING CONTOURS
- 830 PROPOSED CONTOURS
- PROPOSED STORM SEWER
- PROPOSED CONSTRUCTION LIMITS
- F PROPOSED FILTER FABRIC FENCE MEASURE
- PROPOSED INLET PROTECTION
- PROPOSED CONSTRUCTION ENTRANCE

THIS AREA IS TO BE USED FOR CONSTRUCTION VEHICLE FUELING AND MAINTENANCE. AN ABOVE GROUND STORAGE TANK OF LESS THAN 500 GALLONS WILL BE USED AS THE FUEL SOURCE. THIS AREA WILL ALSO BE USED FOR RECEIVING CONCRETE CHUTE AND OTHER CONCRETE WASH WATERS. THIS SHALL NOT OCCUR ON STREET SUBGRADE OR BASE.

SEDIMENT BASIN CALCULATIONS

SEDIMENT BASIN FOR SITE DEVELOPMENT
REQUIRED SEDIMENT BASIN VOLUME = 3.03 ACRES X 67 C.Y./AC. = 203 C.Y.
TOTAL SEDIMENT BASIN VOLUME TO ELEV. 991.00 = 2,626 C.Y.
SET TOP OF SEDIMENT BASIN RISER PIPE AT AN ELEVATION OF 988.50

WATER QUALITY AND POST CONSTRUCTION STORM WATER MANAGEMENT AND TREATMENT:

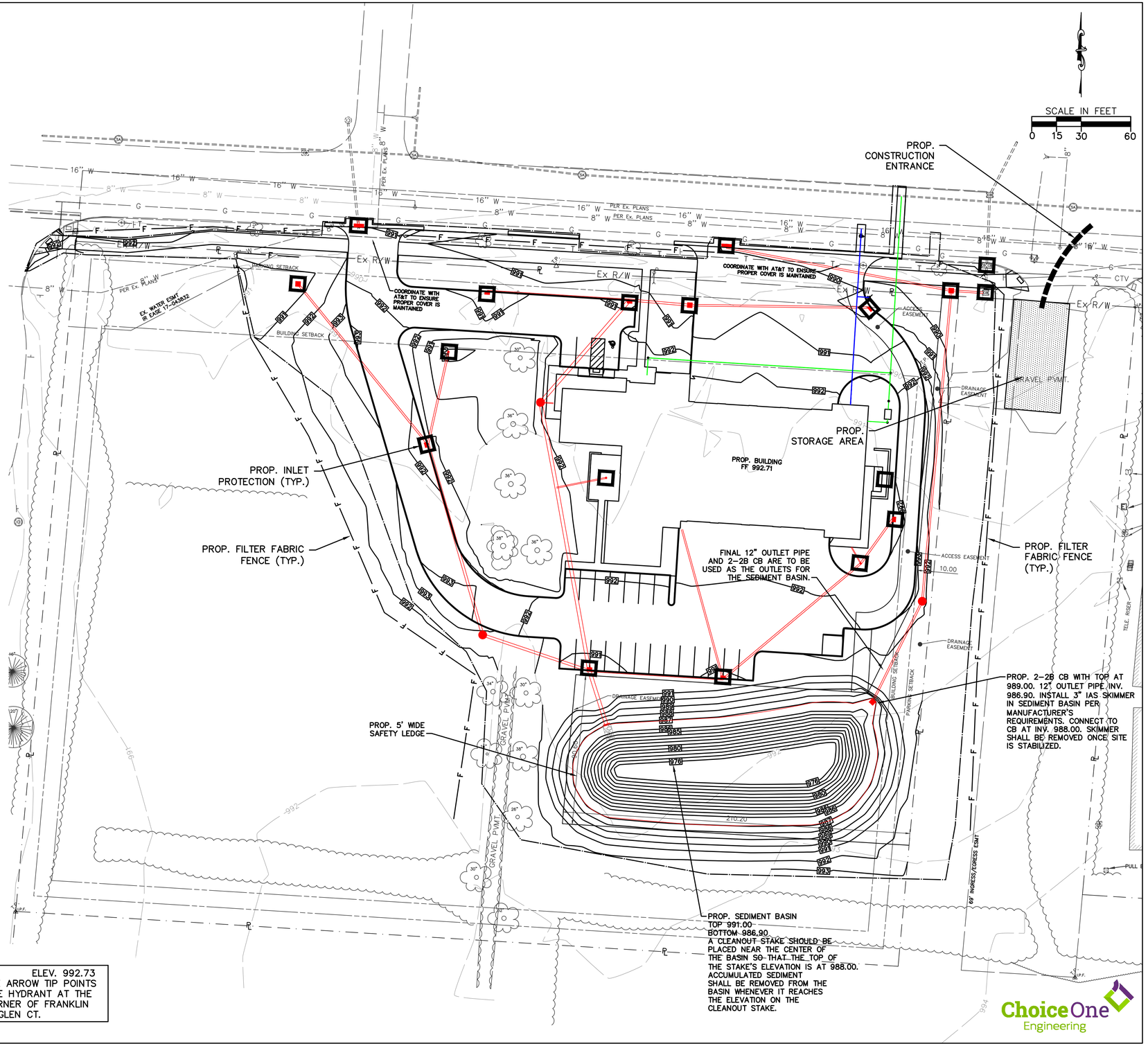
THE FIRST 0.90" OF STORMWATER RUNOFF FOR THE SITE WILL BE CONTROLLED VIA FILTRATION (AND SOME INFILTRATION) BY THE GRASSED AREAS IN AND AROUND THE PROPOSED IMPERVIOUS AREAS, GRASSED SWALES, AND GRASSED BOTTOM OF THE RETENTION BASIN. ADDITIONAL POLLUTANTS WILL ALSO SETTLE OUT OVER TIME IN THE RETENTION BASIN. THE ON-SITE RETENTION BASIN HAS BEEN DESIGNED TO TREAT THE WATER QUALITY VOLUME (WQv) USING A REDUCED SIZED ORIFICE FOR AN OUTLET AS FOLLOWS:

RETENTION BASIN WITH PERMANENT POOL:

-RELEASE THE RUNOFF FROM A 0.90" RAIN EVENT ON THE SITE DRAINAGE AREA OVER 24 HOURS OR LONGER AND
-THE FIRST HALF OF THE TOTAL VOLUME GENERATED BY THE RUNOFF FROM A 0.90" RAIN EVENT IS RETAINED FOR GREATER THAN 8 HOURS.

POST-CONSTRUCTION STORM WATER MANAGEMENT WATER QUALITY VOLUME FOR DEVELOPMENT USING 0.90 INCHES OF RAIN:
RETENTION BASIN:
WQv=0.32*0.90*4.18/12=4,370 CU FT
15,463 CU FT PROVIDED TO ELEV. 988.00.
THE RETENTION BASIN HAS AN OUTLET WITH A 1.9" DIA. ORIFICE THAT RELEASES APPROX. 32.76% OF THE WQv AT 8 HOURS AND APPROX. 98.29% AT 24 HOURS

SEE SEPARATE STORMWATER CALCS. FOR ADDITIONAL DETAILS IF NEEDED



BENCHMARK #1 ELEV. 990.72
SOUTH BOLT ON FIRE HYDRANT AT THE NORTHWEST CORNER OF THE INTERSECTION OF FRANKLIN ST. AND WESTPARK RD.

BENCHMARK #2 ELEV. 992.73
BOLD THAT THE ARROW TIP POINTS TO ON THE FIRE HYDRANT AT THE NORTHEAST CORNER OF FRANKLIN ST. AND LAKE GLEN CT.

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81748
REGISTERED
PROFESSIONAL ENGINEER

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

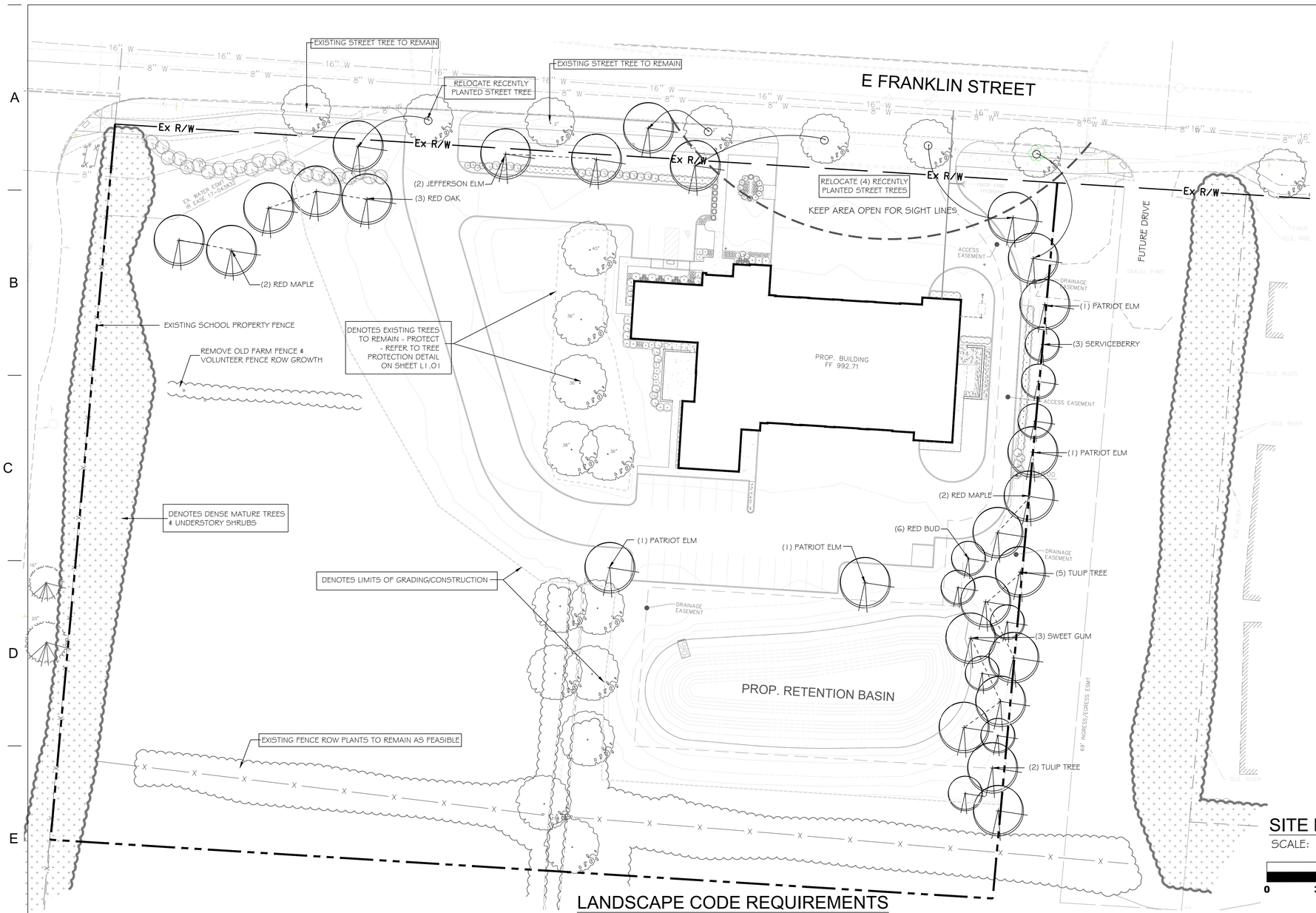
ISSUE

NO.	DATE	DESCRIPTION
1	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	JAC
CHECKED	MLS

TITLE
SWPPP - EROSION CONTROL PLAN

SHEET NO.
C5.05



LANDSCAPE REQUIREMENTS

1. DIAMETERS OF PLANT MATERIALS AS DRAWN ARE REPRESENTATIVE OF PLANTS AT OR NEAR MATURITY RATHER THAN AT INITIAL PLANTING. THE TREES AND SHRUBS THAT ARE PLANTED SHALL BE OF THE SPECIES AND SIZE SPECIFIED ON THE APPROVED PLANS.

2. THE PLANT LIST IS INTENDED AS A GUIDE FOR THE LANDSCAPE CONTRACTOR. IN THE EVENT OF A DISCREPANCY BETWEEN THE NUMBER OF PLANT ON THE PLANT LIST AND ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.

3. ADJUSTMENTS IN LOCATIONS OF PLANT MATERIALS MAY BE NECESSARY DUE TO NEW OR EXISTING UTILITIES OR SITE OBSTRUCTIONS. ADVISE PROJECT MANAGER BEFORE ADJUSTMENTS ARE MADE.

4. TREES AND SHRUBS SHALL BE NURSERY GROWN UNLESS OTHERWISE APPROVED AND BE HEALTHY AND VIGOROUS PLANTS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD, INJURIES, ABRASIONS OF THE BARK, PLANT DISEASES, INSECT PEST EGGS, BORERS AND ALL FORMS OF INFESTATIONS OF OBJECTIONABLE DISFIGUREMENTS. PLANTS SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS AND CONFORM IN GENERAL TO REPRESENTATIVE SPECIES.

5. BALLED AND BURLAPPED TREES AND SHRUBS SHOULD BE DUG WITH FIRM, NATURAL BALLS OF EARTH OF ADEQUATE SIZE AS SPECIFIED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, "AMERICAN STANDARD FOR NURSERY STOCK" WITH THE BALLS SECURELY WRAPPED.

6. ALL SHRUBS OCCURRING IN A CONTINUOUS ROW OR FORMAL ARRANGEMENT SHALL HAVE UNIFORM HEIGHT, SPREAD AND HABIT OF GROWTH. FOR PERENNIAL LOCATIONS, FILL AREA WITH QUANTITY OF PLANTS DESIGNATED; EVENLY SPACED.

7. A MINIMUM OF 8" DEPTH OF NEW TOPSOIL SHALL BE PLACED IN ALL BED AREA BY THE LANDSCAPE CONTRACTOR PRIOR TO PLANT INSTALLATION. BACKFILL ALL SHRUBS & TREES WITH ONE PART COMPOST TO THREE PARTS TOPSOIL.

8. MULCH TREES AND SHRUBS WITH A MIN. 3" DEPTH OF SHREDDED HARDWOOD MULCH. MULCH PERENNIALS WITH 2" DEPTH. MULCH SHALL EXTEND IN A CONTINUOUS LAYER WITH THE PLANTING BEDS FROM FACE TO FACE OF SITE STRUCTURE - WALKS, CURBS, BUILDING OR OTHER PLANT BED LIMITS.

9. ALL BED EDGES SHALL BE SPADE-CUT AND CLOSELY ALIGN AS POSSIBLE WITH THE EDGES AS SHOWN ON THE DRAWING. KEEP MULCH A MIN. OF ½" BELOW ADJACENT PAVED SURFACES.

10. SEED OR SOD ALL LAWN DISTURBED AREAS WITHIN THE PROJECT LIMITS AS NOTED ON THE CIVIL DRAWINGS; INCLUDING OUT TO PAVEMENT EDGES. REFER TO CIVIL DRAWINGS AND VERIFY EXTENT OF SOD WORK WITH THE PROJECT MANAGER.

11. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE-YEAR FROM THE DATE OF ACCEPTANCE. PRIOR TO THE END OF THE WARRANTY PERIOD THE LANDSCAPE CONTRACTOR SHALL REPLACE ALL TREES, SHRUBS OR OTHER PLANTINGS NOT ALIVE OR IN A HEALTHY GROWING CONDITION.

SITE LANDSCAPE PLAN

SCALE: 1" = 30'

0 30 60 90 120

GRAPHIC SCALE

LANDSCAPE CODE REQUIREMENTS

BUFFER YARDS:

EAST FRANKLIN STREET:
REQUIRED: ADJACENT TO PUBLIC STREET 3 CANOPY TREES AND 15 SHRUBS PER 100 LF
535± LF (MINUS VEHICLE ENTRANCE & EXIT APRONS) = 405 LF / 100 = 4.05

4.05 X 3 = 12.15 OR 13 CANOPY TREES REQUIRED
7 EXISTING STREET TREES (5 Relocated)
7 PROPOSED STREET TREES
14 TREES AS SHOWN

4.05 X 15 = 60.75 or 61 SHRUBS REQUIRED
74 SHRUBS AS SHOWN

EAST PROPERTY LINE ADJACENT TO B-2
REQUIRED: 2 CANOPY TREES, 4 UNDERSTORY TREES AND 6 SHRUBS PER 100 LF

450 LF (MINUS ROW) = 408/100 = 4.08
4.08 X 2 = 8.16 OR 9 CANOPY TREES REQUIRED
13 CANOPY TREES AS SHOWN (Use 4 for substitutions)
4.08 X 4 = 16.32 OR 17 UNDERSTORY TREES REQUIRED
9 UNDERSTORY TREES + '8' substitutions AS SHOWN
4.08 X 6 = 24.48 OR 25 SHRUBS REQUIRED
29 SHRUBS AS SHOWN

BUFFER YARDS:

WEST PROPERTY LINE ADJACENT TO HIGH SCHOOL (ZONED R-1D)
A NON-RESIDENTIAL USE .
REQUIRED: 2 CANOPY TREES, 4 UNDERSTORY TREES AND 6 SHRUBS PER 100 LF

450 LF (MINUS ROW) =408 /100 = 4.08
4.08 X 2 = 8.16 OR 9 CANOPY TREES REQUIRED
4.08 X 4 = 16.32 OR 17 UNDERSTORY TREES REQUIRED
4.08 X 6 = 24.48 OR 25 SHRUBS REQUIRED

EXISTING DENSE WOODED FENCE ROW MEETS REQUIREMENTS

SOUTH PROPERTY LINE (ZONED I-PD)
A NON-RESIDENTIAL USE .
REQUIRED: 2 CANOPY TREES, 4 UNDERSTORY TREES AND 6 SHRUBS PER 100 LF

535± LF /100 = 5.35
5.35 X 2 = 10.7 or 11 CANOPY TREES REQUIRED
5.35 X 4 = 21.4 or 23 UNDERSTORY TREES REQUIRED
5.35 X 6 = 32.1 or 33 SHRUBS REQUIRED

EXISTING FENCE ROW PLANTINGS MEETS REQUIREMENTS

PARKING AREA LANDSCAPE:

REQUIRED: 8% OF A PARKING LOT 6000 SF OR LARGER SHALL BE LANDSCAPED

VISITOR FRONT PARKING LOT	ONLY 2184 SF	NOT APPLICABLE
STAFF PARKING LOT	ONLY 5400 SF	NOT APPLICABLE

UP TO 50% OF THE REQUIRED LANDSCAPE MATERIALS MAY BE SUBSTITUTED SUBJECT TO THE FOLLOWING RATIOS: 1 CANOPY TREE = 2 UNDERSTORY TREES; 1 UNDERSTORY TREE = 3 SHRUBS; 1 CANOPY TREE = 6 SHRUBS. THIS DOES NOT APPLY TO REQUIRED LANDSCAPING ADJACENT TO OR ABUTTING A PUBLIC STREET OR SINGLE-FAMILY RESIDENTIAL USE.

OHIO Utilities Protection SERVICE
811 or 1-800-362-2764 Call Before You Dig

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: OHIO ONE CALL AT 811 OR 1-800-362-2764 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF OHIO ONE CALL.

SITE PLANT MATERIALS LIST

QTY	SHADE TREES	MIN. INSTALLED SIZE
4	RED MAPLE - Acer rubrum* 'October Glory'	2-1/2" cal. B/B
3	SWEETGUM - Liquidambar styraciflua*	2-1/2" cal. B/B
5	TULIP TREE - Linodendron tulipifera*	2-1/2" cal. B/B
3	RED OAK - Quercus borealis*	2-1/2" cal. B/B
2	JEFFERSON AMERICAN ELM - Ulmus americana* 'Jefferson'	2-1/2" cal. B/B
4	PATRIOT ELM - Ulmus x 'Patriot'	2-1/2" cal. B/B
	UNDERSTORY TREES	
3	SERVICEBERRY - Amelanchier x grandiflora'*	1-1/2" cal. B/B
6	RED BUD - Cersis canadensis*	1-1/2" cal. B/B

**DENOTES OHIO (LOCAL) NATIVE PLANTS*

LANDSCAPE ARCHITECT:
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STATE OF OHIO ROGER E. BEAL REGISTERED LANDSCAPE ARCHITECT
ROGER E. BEAL
REGISTRATION NO: LA 8100433

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

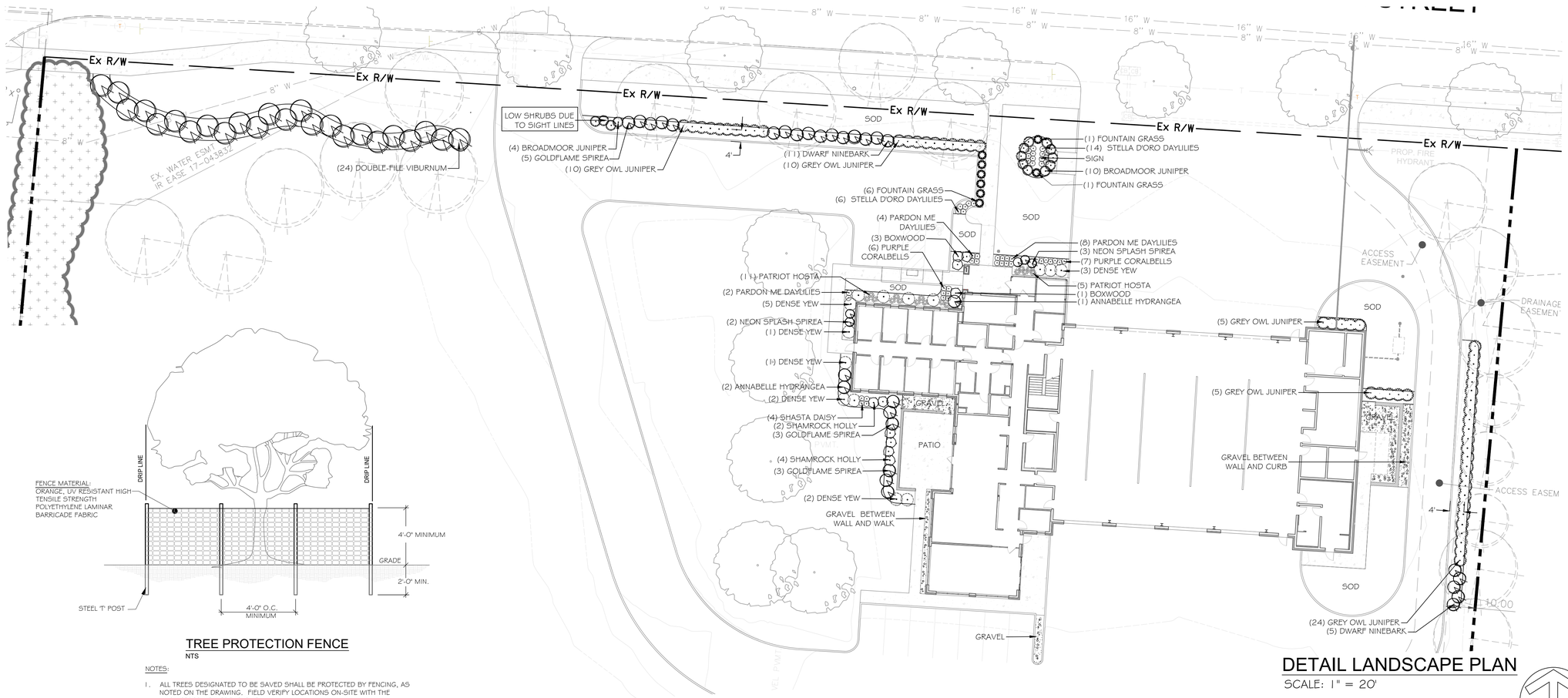
ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	2000.00
DRAWN	reb
CHECKED	reb

TITLE
SITE LANDSCAPE PLAN

SHEET NO.
L1.00



TREE PROTECTION FENCE

NTS

NOTES:

1. ALL TREES DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING, AS NOTED ON THE DRAWING. FIELD VERIFY LOCATIONS ON-SITE WITH THE ARCHITECTS REPRESENTATIVE.
2. INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA PRIOR TO INITIATING ANY CONSTRUCTION ACTIVITY IN THE AREA, INCLUDING GRADING.
3. LOW HANGING LIMBS OF SAVED TREES SHALL BE PRUNED PRIOR TO GRADING, OR ANY EQUIPMENT MOBILIZATION ONSITE. THE PURPOSE OF THIS REQUIREMENT IS TO AVOID TEARING LIMBS BY HEAVY EQUIPMENT.
4. NO OILS, GAS, CHEMICALS, LIQUID WASTE, SOLID WASTE, CONSTRUCTION MACHINERY OR CONSTRUCTION MATERIALS SHALL BE STORED OR ALLOWED TO STAND FOR ANY PERIOD OF TIME WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
5. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

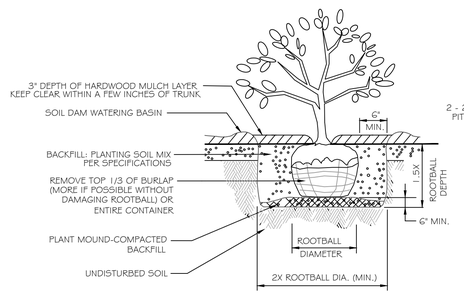
DETAIL LANDSCAPE PLAN

SCALE: 1" = 20'

0 20 40 80 100

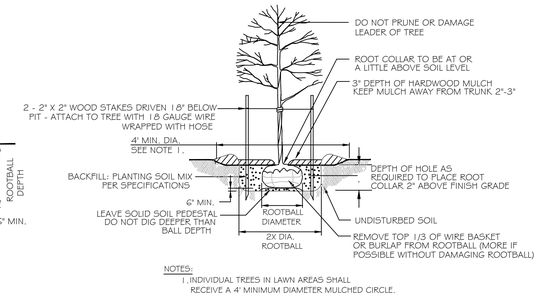
GRAPHIC SCALE

PLANT INSTALLATION DETAILS



SHRUB PLANTING DETAIL

NTS

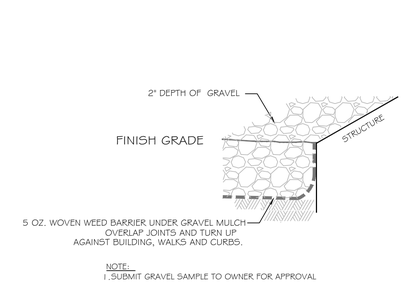


NOTES:

1. INDIVIDUAL TREES IN LAWN AREAS SHALL RECEIVE A 4' MINIMUM DIAMETER MULCHED CIRCLE.

TREE PLANTING DETAIL

NTS



NOTE:

1. SUBMIT GRAVEL SAMPLE TO OWNER FOR APPROVAL

GRAVEL DETAIL

NTS

PLANT MATERIALS LIST

QTY.	SHRUBS	MINIMUM INSTALLED SIZE
4	BOXWOOD - Buxus x 'Green Velvet'	# 3 cont.
3	ANNABELLE HYDRANGEA - Hydrangea arborescens 'Annabelle'	# 3 cont.
6	SHAMROCK HOLLY - Ilex glabra 'Shamrock'	# 3 cont.
14	BROADMOOR JUNIPER - Juniperus sabina 'Broadmoor'	# 3 cont.
54	GREY OWL JUNIPER - Juniperus virginiana 'Grey Owl'	24-30" B/B or cont.
16	DWARF NINEBARK - Physocarpus opulifolius 'Donna May'	# 3 cont.
11	GOLDFLAME SPIREA - Spirea bumalda 'Goldflame'	# 3 cont.
5	NEON FLASH SPIREA - Spiraea japonica 'Neon Flash'	# 3 cont.
14	DENSE TAXUS- Taxus media densiformis	22"- 24" spread B/B
24	DOUBLE-FILE VIBURNUM - Viburnum plicatum tom. 'Mariesii'	36" ht. B/B
	PERENNIALS/ GRASSES	
14	PARDON ME RED DAYLILIES - Hemerocallis x 'Pardon Me'	#1 cont.
20	STELLA D'ORO DAYLILIES - Hemerocallis x ' Stella de Oro'	#1 cont.
13	PURPLE CORALBELLS - Heuchera micr.x 'Palace Purple'	#1 cont.
16	PATRIOT HOSTA - Hosta x 'Patriot'	#2 cont.
4	SHASTA DAISY - Leuanthemum superbum 'Snowcap'	#2 cont.
8	FOUNTAIN GRASS - Pennisetum alopecuroides	#3 cont.

LANDSCAPE ARCHITECT:

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LICENSED IN: OH, KY, PA, IN, IL, MO, MI, VA, TX, OK, KS, AZ, NM, CO & UT

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STATE OF OHIO
ROGER E. BEAL
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REGISTERED LANDSCAPE ARCHITECT
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Washington Township

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716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	2000.00
DRAWN	reb
CHECKED	reb

TITLE

DETAIL LANDSCAPE PLAN

SHEET NO.

L1.01

ABBREVIATIONS

SYMBOL	
@	AT
&	AND
∠	ANGLE
Ø	DIAMETER
℄	CENTER LINE
℄	PLATE

A	
ABV	ABOVE
A/C	AIR CONDITIONING
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLER UNIT
AL	ALUMINUM
ALT	ALTERNATE
ANOD	ANODIZED
ANCH	ANCHOR
APPROX	APPROXIMATELY
ARCH	ARCHITECT OR ARCHITECTURAL
ATTEN	ATTENUATED
AUTO	AUTOMATIC
AVG	AVERAGE

B	
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT

C	
CAB	CABINET
CB	CATCH BASIN
C/C	CENTER TO CENTER
CF	CUBIC FOOT
CFCI	CONTRACTOR FURNISH, CONTRACTOR INSTALL
CFOI	CONTRACTOR FURNISH, OWNER INSTALL
CG	CORNER GUARD
CJ	CONTROL JOINT
CLG	CEILING
CL	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUE
CPU	CENTRAL PROCESSING UNIT (COMPUTER)
CY	CUBIC YARD

D	
DBL	DOUBLE
DEMO	DEMOLISH, DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DS	DOWNSPOUT
DWG	DRAWING
DTL	DETAIL

E	
EA	EACH
EC	ELECTRICAL CONTRACTOR
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATION OR ELEVATOR
EMERG	EMERGENCY
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXIST OR EX	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F	
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FIN	FINISH OR FINISHED
FLR	FLOOR
FND	FOUNDATION
FRT	FIRE RETARDANT TREATED WOOD
FT	FOOT OR FEET OR FULLY TEMPERED
FTG	FOOTING
FUR	FURRING
FV	FIELD VERIFY
FOW	FACE OF WALL

G	
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GD	GRADE OR GRADING
GEN	GENERAL
GL	GLASS OR GLAZING
GND	GROUND
GYP	GYPSUM
GWB	GYPSUM BOARD
GWT	GLAZED WALL TILE

H	
HB	HOSE BIBB
HDW	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HWD	HARDWARE

I	
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDE (D) (ING)
INT	INTERIOR
INV	INVERT

J	
JB	JUNCTION BOX
JC	JANITOR CLOSET

L	
L	LONG
LAV	LAVATORY
LBS	POUNDS
LH	LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LTL	LINTEL
LVR	LOUVER

M	
M	MEN OR METER
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MOUNTING HEIGHT, MANHOLE
MIL	THOUSANDTHS OF AN INCH
MM	MILLIMETER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTL	METAL

N	
N	NORTH OR NITROGEN
NC	NURSE CALL
NIC	NOT IN CONTRACT
NO	NUMBER OR NITROUS OXIDE
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE

O	
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISH, CONTRACTOR INSTALL
OFOI	OWNER FURNISH, OWNER INSTALL
OFVI	OWNER FURNISH, VENDOR INSTALL
OH	OVERHEAD
OHD	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
O_2	OXYGEN

P	
PAR	PARALLEL
PC	PLUMBING CONTRACTOR
PCF	POUNDS PER CUBIC FOOT
PL	PLATE OR PROPERTY LINE
PLBG	PLUMBING
PLWD	PLYWOOD
PME	PLUMBING, MECHANICAL & ELECTRICAL
PNL	PANEL
PR	PAIR
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE

Q	
QTY	QUANTITY

R	
R	RADIUS
RA	RETURN AIR
RB	RUBBER BASE
RD	ROOF DRAIN
RECEPT	RECEPTACLE
REF	REFERENCE
REINF	REINFORCE
REQD	REQUIRED
RET	RETURN
REV	REVISION
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY

S	
S	SOUTH
SAN	SANITARY
SB	SINK BASE
SCHED	SCHEDULE
SEAL	SEALANT
SECT	SECTION
SF	SQUARE FEET
SG	SAFETY GLASS
SH	SPRINKLER HEAD OR SHOWER HEAD
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SPEC	SPECIFICATION(S)
SPK	SPEAKER
SQ	SQUARE
ST	STREET
STC	SOUND TRANSMISSION CLASSIFICATION
STD	STANDARD
STL	STEEL
STR	STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
SYS	SYSTEM

T	
T & G	TONGUE & GROOVE
TB	TOWEL BAR
T&B	TOP AND BOTTOM
TEL	TELEPHONE
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TOM	TOP OF MASONRY
TOW	TOP OF WALL
TRANS	TRANSFORMER
TV	TELEVISION
TYP	TYPICAL

U	
UC	UNDER CABINET OR COUNTER
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE

V	
V	VACUUM
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VS	VACUUM SLIDE

W	
W	WIDE OR WEST OR WOMEN
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET OR WALL CABINET
WD	WOOD
WIN	WINDOW
WP	WORK POINT
WPT	WOOD PRESERVATIVE TREATMENT
WT	WEIGHT
WWF	WELDED WIRE FABRIC

REFERENCE SYMBOLS

DRAWING TITLE

A1 FIRST FLOOR PLAN
1/4" = 1' - 0"

- DRAWING TITLE
- SCALE OF DRAWING
- DRAWING REFERENCE NUMBER

INTERIOR ELEVATIONS

1 / 4 A1.1 2 / 3

- DRAWING REFERENCE NUMBER
- DRAWING SHEET NUMBER

BUILDING/DETAIL SECTION

B1 / A1.1

- DRAWING REFERENCE NUMBER
- DRAWING SHEET NUMBER

ENLARGED DETAIL

B1 / A1.1

- DRAWING REFERENCE NUMBER
- DRAWING SHEET NUMBER

EXTERIOR ELEVATIONS

1 / 4 A1.1 2 / 3

- DRAWING REFERENCE NUMBER
- DRAWING SHEET NUMBER

MATCH LINE

A1 / A1.1

- DRAWING REFERENCE NUMBER
- DRAWING SHEET NUMBER

MATERIAL SYMBOLS IN SECTION

- EARTH
- GRANULAR FILL
- CONCRETE
- CMU BLOCK
- BLOCKING / SHIM
- LOOSE OR BATT INSULATION
- RIGID INSULATION
- STEEL
- PLYWOOD
- BRICK
- SOLID SURFACE
- GYPSUM / PLASTER
- WOOD, FINISHED
- WOOD, DIMENSIONAL

DRAWING SYMBOLS

COLUMN CENTER LINES

A / 1

ROOM SYMBOL

ROOM NAME — ROOM NAME
101 — ROOM NUMBER

PLAN SYMBOLS

- 00 — CONSTRUCTION NOTES
- 00 — DEMOLITION NOTES
- 00 — ACCESSORIES (LETTERS)
- 101 — DOOR NUMBER SYMBOL
- 101 — WINDOW SYMBOL
- A1 — WALL TYPE
- 00 — REVISION / CHANGE
- CG — CORNER GUARD
- EWP — END WALL PROTECTOR
- FEC — FIRE EXTINGUISHER CABINET
- TRUE NORTH
- PROJECT NORTH

ELEVATION SYMBOLS

- CHANGE IN ELEVATION
- ELEVATION

TYPICAL WALL CONVENTIONS

- EXISTING CONSTRUCTION TO BE REMOVED
- EXISTING CONSTRUCTION TO REMAIN
- NEW CONSTRUCTION (NEW BUILDING OR ADDITION)

REFLECTED CEILING SYMBOLS

- SURFACE MOUNTED LIGHT FIXTURES
- RECESSED LIGHT FIXTURES
- CALL LIGHT
- EXIT LIGHT
- SUPPLY DIFFUSER
- RETURN
- S — SMOKE DETECTOR
- S — SPEAKER
- SPRINKLER HEAD
- CURTAIN OR IV TRACK
- 9' - 6" — CEILING HEIGHT
- CEILING FAN

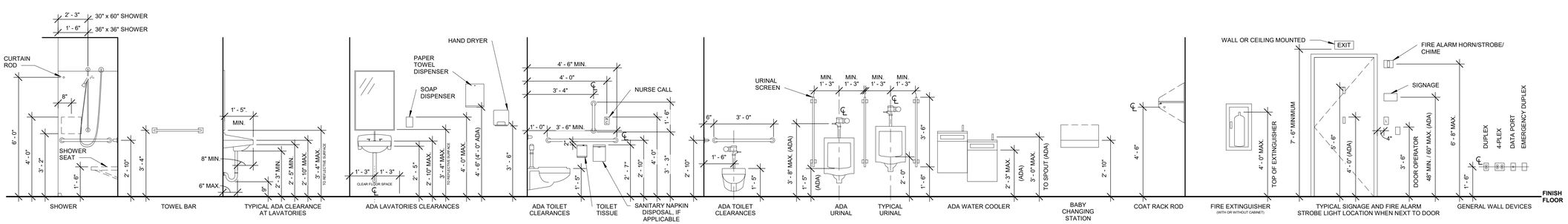
INTERIOR ELEVATION SYMBOLS

- DUPLEX RECEPTACLE
- TELE/DATA OUTLET
- L — LIGHT SWITCH
- DUPLEX RECEPTACLE (EMERGENCY POWER)
- NC — NURSE CALL BUTTON
- CB — CODE BLUE BUTTON
- MEDICAL GAS OUTLET
- T — TEMPERED GLASS
- S — SPANDREL GLASS

FIRE BARRIER LEGEND

- SMOKE RESISTIVE
- 1 — 1 HR. FIRE BARRIER
- 1S — 1 HR. FIRE/SMOKE BARRIER
- 2 — 2 HR. FIRE BARRIER
- 2S — 2 HR. FIRE/SMOKE BARRIER
- 3 — 3 HR. FIRE BARRIER

ALL SYMBOLS OR ABBREVIATIONS MIGHT NOT NECESSARILY BE USED ON THIS PROJECT.
ADDITIONAL SYMBOLS OR ABBREVIATIONS MAY APPEAR ON SUBSEQUENT SHEETS.



SHOWER — TOWEL BAR — TYPICAL ADA CLEARANCE AT LAVATORIES — ADA LAVATORIES CLEARANCES — ADA TOILET CLEARANCES — TOILET TISSUE — SANITARY NAPKIN DISPOSAL, IF APPLICABLE — ADA TOILET CLEARANCES — ADA URINAL — TYPICAL URINAL — ADA WATER COOLER — BABY CHANGING STATION — COAT RACK ROD — FIRE EXTINGUISHER (WITH OR WITHOUT CABINET) — TYPICAL SIGNAGE AND FIRE ALARM STROBE LIGHT LOCATION WHEN NEXT TO DOOR — GENERAL WALL DEVICES

MOUNTING & CLEARANCE STANDARDS N.T.S.

(FOLLOW THESE UNLESS NOTED OTHERWISE)

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STATE OF OHIO REGISTERED ARCHITECT TIMOTHY J BEMENT 12305
Timothy J Bement, License #12305
Expiration Date 12/31/2023

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

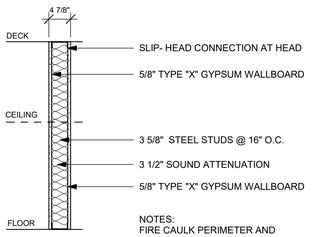
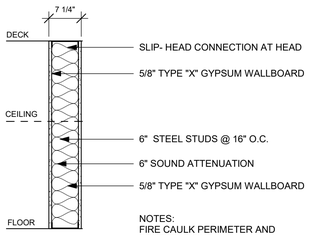
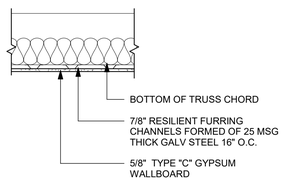
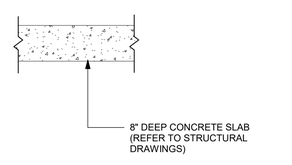
DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

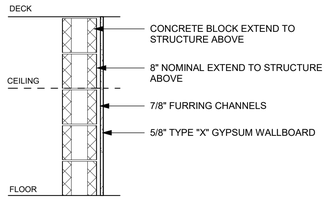
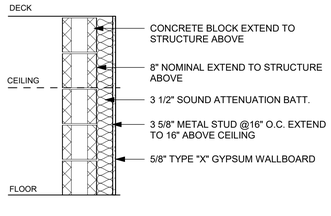
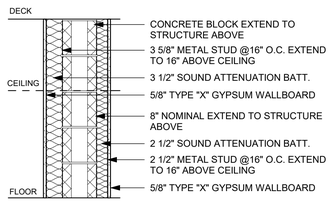
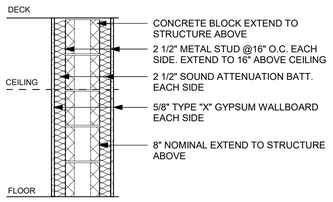
TITLE
ABBREVIATIONS AND SYMBOLS

SHEET NO.
A0.01

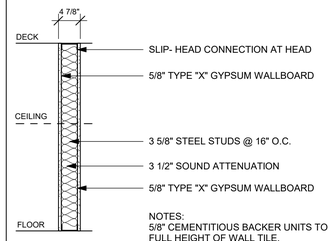
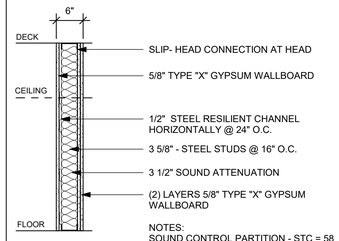
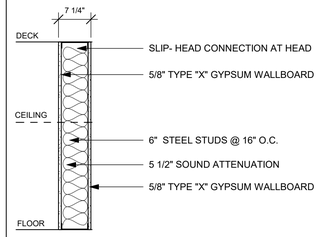
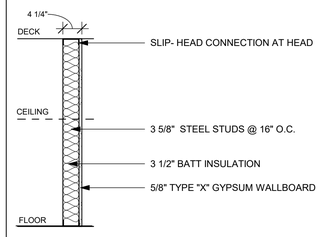
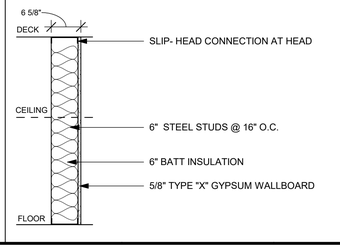
3/22/2022 3:17:43 PM

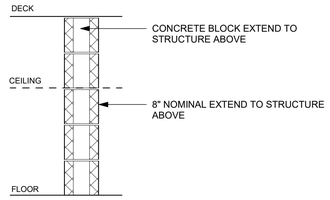
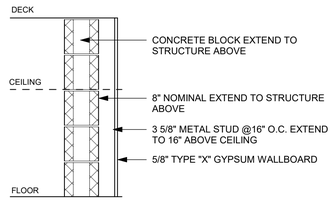
INTERIOR WALL TYPES SCHEDULE — RATED

TYPE	BASE WALL WIDTH	FIRE RATING — TESTING AGENCY, ASSEMBLY NO.	DETAILS & NOTES
F1	3 5/8"	1/2 HR. UL NO. U407	 NOTES: FIRE CAULK PERIMETER AND PENETRATIONS.
F2	6"	1/2 HR. UL NO. U407	 NOTES: FIRE CAULK PERIMETER AND PENETRATIONS.
F3	--	1 HR. UL NO. P522	(HORIZONTAL ASSEMBLY) 
F4	8"	2 HR. UL NO. D219	(HORIZONTAL ASSEMBLY) INSTALL OVER TORNADO SHELTER 

TYPE	BASE WALL WIDTH	FIRE RATING — TESTING AGENCY, ASSEMBLY NO.	DETAILS & NOTES
M3	7 5/8"	2 HR. UL NO. U905	
M4	7 5/8"	2 HR. UL NO. U905	
M5	7 5/8"	2 HR. UL NO. U905	
M6	7 5/8"	2 HR. UL NO. U905	

INTERIOR WALL TYPES SCHEDULE — NON-RATED

TYPE	BASE WALL WIDTH	FIRE RATING — TESTING AGENCY, ASSEMBLY NO.	DETAILS & NOTES
A1	3 5/8"	- -	 NOTES: 5/8" CEMENTITIOUS BACKER UNITS TO FULL HEIGHT OF WALL TILE.
A2	3 5/8"	- -	 NOTES: SOUND CONTROL PARTITION - STC = 58
B1	6"		
D1	3 5/8"		
D2	6"		

TYPE	BASE WALL WIDTH	FIRE RATING — TESTING AGENCY, ASSEMBLY NO.	DETAILS & NOTES
M1	7 5/8"		
M1A	3 5/8"		
M2	7 5/8"		

GENERAL NOTES

A. MOISTURE/MOLD RESISTANT (PURPLE) GYPSUM BOARD SHALL BE USED BEHIND ALL SINKS, SERVICE SINKS AND SHOWER AREAS. EXTEND MINIMUM 24" BEYOND PLUMBING FIXTURES.

B. PROVIDE & INSTALL DEFLECTION TRACK AT ALL INTERIOR WALLS THAT EXTEND TO DECK.

C. UL TEST NUMBERS FOR INTERIOR PARTITIONS WILL VARY DEPENDING ON THE MANUFACTURER OF COMPONENTS ACTUALLY USED. MAINTAIN RATING AND ADVISE IF WALL THICKNESS WILL CHANGE.

D. DRYWALL CONTRACTOR TO PAINT WALL RATINGS LABELS AT MAXIMUM 12 FEET O.C. ON ALL FIRE RATED PARTITIONS. LABEL TO BE PAINTED ABOVE CEILING WITH A STENCIL MIN. OF 4 INCHES IN HEIGHT, BLACK COLOR.

E. FIRE RATED WALLS AND SMOKE PARTITIONS ARE TO BE CONSTRUCTED TIGHT TO STRUCTURE. PIPING AND OTHER PENETRATIONS. ALL PENETRATIONS AND PERIMETER OF WALLS TO BE FIRE CAULKED.

F. STEEL STUD PARTITIONS SHALL BE BRACED TO STRUCTURE ABOVE.

G. REFER TO FLOOR PLANS FOR LOCATIONS OF INTERIOR PARTITION TYPES.

H. ALL PARTITIONS TO SCHEDULED TO RECEIVE WALL TILE SHALL HAVE CEMENTITIOUS BACKER UNIT TO FULL HEIGHT OF WALL TILE.

I. ALL PENETRATIONS IN FIRE RATED PARTITIONS SHALL BE FIRESTOPPED, WHETHER THEY ARE NEW OR EXISTING. INCLUDING THOSE CREATED BY THE REMOVAL OF AN EXISTING PENETRATING ITEM. FIRESTOPPING SYSTEMS SHALL BE FM OR U.L. LABORATORY APPROVED PRODUCTS.

J. APPLY ACOUSTICAL SEALANT AT ENTIRE PERIMETER OF ALL GYPSUM BOARD PARTITIONS.

K. AT ALL STC-RATED ACOUSTICAL / SOUND CONTROL TYPE PARTITIONS APPLY ACOUSTICAL SEALANT AT PERIMETER OF PARTITION AND AROUND ELECTRICAL RECEPTACLES, PIPES AND & DUCT PENETRATIONS. ACOUSTICAL SEALANT SHALL BE APPLIED TO BOTH FACES OF PARTITION.

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Timothy J Bement, License #12305
Expiration Date 12/31/2023

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

TITLE
WALL TYPES

SHEET NO.
A0.02

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ROOM FINISH SCHEDULE REMARKS

No.	REMARK
1.	REFER TO INTERIOR ELEVATIONS AND FINISHES PLAN FOR MATERIAL CALL OUTS AND LOCATIONS.
2.	ROOM FEATURES A PORCELAIN TILE WALL BASE ON THREE NON-TILED WALLS. TILE BASE TO BE CAPPED WITH A BRUSHED ALIMINUM SCHLUTER RONDEC STRIP WHERE TILE BASE MEETS GYP. BD.
3.	ROOM FEATURES IMMERSIVE MURAL -FULL HEIGHT ON NORTH AND EAST WALLS. PLEASE CONTACT SUPPLIER FOR ARTWORK PARTICULARS AND CONTROL SAMPLES FOR ARCHITECT REVIEW.
4.	VINYL WALL PROTECTION, THIS AREA. PANELS TO BE BUTT SEAMED, WITH COLOR MATCHED CAULK, AND CAPPED AND EDGED WITH INPRO FAUX ALUMINUM CAP STRIP.
5.	WOOD CEILING THIS AREA, REFER TO REFLECTED CEILING PLAN FOR LOCATION AND EXTENTS.
6.	WHERE FLOOR TILE ABUTS CONCRETE FLOOR, USE SCHLUTER STRIP RENO-U SATIN NICKEL ANNODIZED 3/8" .
7.	WHERE WALK-OFF MAT MEETS FINISHED CONCRETE FLOOR USE JOHNSONITE 1/4" MATERIAL TO SUBFLOOR REDUCER. SLT178 L COLOR IRONSTONE
8.	PORCELAIN TILE WALL BASE TO BE INSTALLED AS FOLLOWS: PTWB-2 TO BE USED ON TILED "WET WALLS." PTWB-1 TO BE USED ON PAINTED GYPSUM BOARD WALLS.
9.	VWP-1 ON WEST GYP. BD. WALL AT MEZZANINE LEVEL UP TO 48" A.F.F. REFER TO SHEET A6.01 FOR DETAILS.
10.	WALK-OFF MAT (MAT-1) AT DOORWAYS AS SHOWN ON FINISHES PLAN, SHEET A1.41.

ROOM FINISH SCHEDULE

ROOM No.	ROOM NAME	FLOOR	BASE	WAINSCOT		WALLS				CEILING	REMARKS
				MAT.	HT.	N	S	E	W	MAT.	
100	VESTIBULE	MAT-1	RB-3			P-1	P-1	P-1	P-1	APC-1	7
101	OFFICE	PC	RB-3			P-2	P-1	P-2	P-1	APC-1	
102	REPORT	PC	RB-3			P-1	P-1	P-1	P-1	APC-1	
103	FLEX	PC	RB-3			P-1	P-1	P-1	P-1	APC-1	
104	EXAM	PC	RB-3			P-1	P-1	P-1	P-1	APC-1	
105	LAUNDRY	PC	RB-3			P-1	P-1	P-1	P-1	APC-1	
106	DORM	PC	RB-3	VWP-2	45"	VWP-2/P-3	P-1	VWP-2/P-3	P-1	APC-1	1,4
107	DORM	PC	RB-3	VWP-2	45"	VWP-2/P-3	P-1	VWP-2/P-3	P-1	APC-1	1,4
108	DORM	PC	RB-3	VWP-2	45"	VWP-2/P-3	P-1	VWP-2/P-3	P-1	APC-1	1,4
109	DORM	PC	RB-3	VWP-2	45"	VWP-2/P-3	P-1	VWP-2/P-3	P-1	APC-1	1,4
110	DORM	PC	RB-3	VWP-2	45"	P-1	VWP-2/P-3	VWP-2/P-3	P-1	APC-1	1,4
111	DORM	PC	RB-3	VWP-2	45"	P-1	VWP-2/P-3	P-1	VWP-2/P-3	APC-1	1,4
112	DORM	PC	RB-3	VWP-2	45"	P-1	VWP-2/P-3	P-1	VWP-2/P-3	APC-1	1,4
113	DORM	PC	RB-3	VWP-2	45"	P-1	VWP-2/P-3	P-1	VWP-2/P-3	APC-1	1,4
114	TLT/SHWR	PMT-1	PTWB-1/2			EP-2	EP-2	PTW-1-4	EP-2	APC-1	1,2,6,8
115	TLT/SHWR	PMT-1	PTWB-1/2			EP-2	PTW-1-4	EP-2	EP-2	APC-1	1,2,6,8
116	TLT/SHWR	PMT-1	PTWB-1/2			EP-2	EP-2	PTW-1-4	EP-2	APC-1	1,2,6,8
117	JAN.	PC	RB-2	VWP-1	FH	VWP-1	VWP-1	VWP-1	VWP-1	APC-1	
118	KITCHEN	PC	RB-3			PT-1,2,3	-	P-1/P-4	P-1	GYB/P-1	1,5
119	DINING	PC	RB-3			-	-	P-1/P-4	P-1	GYB/P-1/WD-1	1,5
120	DAYROOM	PC	RB-3			P-1	P-3/WD-1	P-1/P-4	P-1	GYB/P-1/WD-1	1,5
121	FITNESS	RT-1	RB-3	VWP-2	80"	VWP-2/P-2	VWP-2/P-2	P-1	VWP-2/P-2	APC-1	1,4
122	DECOMPRESS	PC	RB-3			VWC-1	P-1	VWC-1	P-1	APC-1	3
123	TLT/SHELTER	PC	PTWB-1/2			EP-2	PTW-1-4	EP-2	EP-2	APC-1	1,2,8
124	EMS SUPPLY	SC	RB-1			P-1	P-1	P-1	P-1	APC-1	
125	IT/PHONE	SC	RB-1			P-1	P-1	P-1	P-1	EXPOSED	
126	TLT/SHWR	EFP	RB-2			EP-1	EP-1	EP-1	EP-1	APC-2	
127	DECON	EFP	RB-2	VWP-1	FH	VWP-1	EP-1	VWP-1	EP-1	APC-2	1
128	SCBA/STOR.	SC	RB-1			EP-1	EP-1	EP-1	EP-1	APC-2	
129	TOG RM.	SC	RB-2			EP-1	EP-1	EP-1	EP-1	APC-2	
130	HOSE RACK	SC	RB-1			EP-1	EP-1	EP-1	-	GYB/P-1	
131	HOSE DRY	SC	RB-1			EP-1	EP-1	EP-1	-	EXPOSED	
132	STOR./MAINT.	SC	RB-1			EP-1	EP-1	EP-1	EP-1	APC-1	
133	WATER	SC	RB-1			EP-1	EP-1	EP-1	EP-1	EXPOSED	
134	ELECTRIC	SC	RB-1			EP-1	EP-1	EP-1	EP-1	EXPOSED	
B01	APP BAY	SC				EP-1	EP-1	-	EP-1	EXPOSED	
B02	APP BAY	SC				EP-1	EP-1	-	-	EXPOSED	
B03	APP BAY	SC				EP-1	EP-1	-	-	EXPOSED	
B04	APP BAY	SC				EP-1	EP-1	-	-	EXPOSED	
B05	EQUIP. BAY	SC				EP-1	EP-1	EP-1	-	EXPOSED	
C01	CORR.	PC	RB-3			P-1	P-2	P-2	P-2	APC-1	
C02	CORR.	PC	RB-3			P-1	P-1	P-1	P-1	APC-1	1,7,10
C03	CORR.	PC	RB-3			P-1	P-1	P-1	P-1	APC-1	
C04	CORR.	PC	RB-3			P-1	P-1	P-1	P-1	APC-1	7,10
M01	TRAINING	SC	RB-1			P-1	P-1	P-1	P-1	GYB/P-1	
M02	MECHANICAL	SC	RB-1			P-1	P-1	P-1	P-1	GYB/P-1	
M03	QUARTERMASTER	SC	RB-1			P-1	P-1	P-1	P-1	GYB/P-1	
S01	STAIR	SC		VWP-1	48"	EP-1	EP-1	EP-1	VWP-1/EP-1	GYB/P-1	9

MATERIAL LEGEND

ITEM	MATERIAL	MANUFACTURER	MATERIAL MODEL NO.	COLOR	CONTACT INFO	FLAME / SMOKE	COMMENTS
BASE							
PTWB-1	PORCELAIN TILE WALL BASE	CROSSVILLE	CBX13.10612CBS 6"x12" COVE BASE UPS	SLINKY	DIANE CALABRESE, 513-309-5779		TILE BASE. NON-TILED WALLS PER ELEVATIONS.
PTWB-2	PORCELAIN TILE WALL BASE	CROSSVILLE	CBX13.10612CBS 6"x12" COVE BASE UPS	BLUE SUEDE SHOES	DIANE CALABRESE, 513-309-5779		TILE BASE. TILED WALLS PER ELEVATIONS.
RB-1	RUBBER BASE 4"	JOHNSONITE/TARKETT	TSB 469 4 X 120 1/8 TOE	MISTIFY 469	TRISHA ROE-KEEL, 513.207.5309		
RB-2	RUBBER BASE 6"	JOHNSONITE/TARKETT	TSB 469 6 X 120 1/8 TOE	MISTIFY 469	TRISHA ROE-KEEL, 513.207.5309		
RB-3	MILLWORK	JOHNSOITE/TARKETT	PART NUMBER MW 469 F. REVEAL 4.25"	MISTIFY 469	TRISHA ROE-KEEL, 513.207.5309		
CASEWORK							
BB	BUTCHER BLOCK COUNTER						WORK SURFACE IN ROOM 128
PL-1	PLASTIC LAMINATE	WILSONART	7964K-12	SKYLINE WALNUT	DONNA ARIAPAD, 513.295.0038		
PL-2	PLASTIC LAMINATE	WILSONART	4942-38	CRISP LINEN	DONNA ARIAPAD, 513.295.0038		ALL PL-2 COUNTER TOPS TO BE 1-1/4" THICK WITH PATTERN MATCHING PVC EDGE BANDING ON EXPOSED EDGES.
SSC	STAINLESS STEEL COUNTER						COUNTER WITH INTEGRAL SINK IN ROOM 127
SSM-1	SOLID SURFACE	LX HAUSYS HI-MACS	W103	COBBLESTONE	MICHELLE ALLEN, 513.214.9939		
SSM-2	SOLID SURFACE	LX HAUSYS HI-MACS	1612-AC	ARTIC WHITE	MICHELLE ALLEN, 513.214.9939		MDOEL 1612-AC INTEGRAL ADA LAVATORY BOWL
CEILING							
APC-1	ACOUSTIC PANEL CEILING	ARMSTRONG	686 ANGLED TEGULAR	WHITE	JEN McCOY 513.919.2263	CLASS A	
APC-2	ACOUSTIC PANEL CEILING	ARMSTRONG	868 SQUARE LAY-IN (CLEAN ROOM TYPE)	WHITE	JEN McCOY 513.919.2263	CLASS A	
EXPOSED							ALL EXPOSED STRUCTURE TO BE PAINTED PER SPECIFICATIONS
GYB / P1	GYPSUM BOARD PAINTED	SHERWIN WILLIAMS		SW7008 ALABASTER	ANGIE JULIAN, 317.714.5610		
WD-1	LINEAR WOOD CEILING	ARMSTRONG	6440W1 WOODWORKS LINEAR VENEERED PLANKS 3.75"x96"X.75"	NATURAL VARIATIONS WALNUT	JEN McCOY 513.919.2263	CLASS A	
FLOOR							
EFP	EPOXY FLOOR PAINT	REFER TO SPECIFICATIONS		TBD			COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE
MAT-1	WALK-OFF MAT	SHAW CONTRACT	WELCOME II TILE, 5T031 24"x24x.25"	WALNUT 31750	AMY CLARK, 513.375.7429	CLASS 1 >450	ITEM TO BE QUARTER TURN INSTALLED.
PC	POLISHED CONCRETE						
PMT-1	PORCELAIN MOSAIC TILE	CROSSVILLE	CBX13.10303UPS 3"x3" UPS (12"x12" SHEET MOUNTED MOSAIC)	I SEE THE MOON	DIANE CALABRESE, 513-309-5779		
RT-1	RUBBER TILE / SPORTS TILE	JOHNSONITE/TARKETT	COMI RA5 297006725 24"x24" INTERLOCKING TILE	SPECKLED BLUESTONE	TRISHA ROE-KEEL, 513.207.5309		
SC	SEALED CONCRETE						
SPECIALTY							
CC	CUBICLE CURTAIN	INPRO CORP	BRONZE SERIES CUBICLE CURTAIN	SPUNK (GRAPHITE)	LESLIE FREDRICK, 513.646.2163	NFPA701	
CG-1	CORNER GUARD	INPRO CORP	REFER TO SHEET A0.11 FOR DETAILS.	STAINLESS STEEL	LESLIE FREDRICK, 513.646.2163		90 DEGREES. 48" TALL. INSTALL AT TOP OF BASE.
CG-2	CORNER GUARD		REFER TO SHEET A0.11 AND SPECIFICATION SECTION 05 5000 FOR DETAILS.	GALVANIZED STEEL			8'-0". INSTALL AT FLOOR LEVEL.
EG	END GUARD	INPRO CORP	REFER TO SHEET A0.11 FOR DETAILS.	STAINLESS STEEL	LESLIE FREDRICK, 513.646.2163		48" TALL. INSTALL AT TOP OF BASE.
TB-1	TACKBOARD MATERIAL	CARNEGIE	METEOR	705	BELINDA BINFORD 513.310.6696	CLASS A	TACKBOARD IN DAYROOM 120. REFER TO SHEET A7.02 FOR DETAILS.
WALL							
EP-1	EPOXY PAINT	SHERWIN WILLIAMS	SW 7008	SW7008 ALABASTER	ANGIE JULIAN, 317.714.5610		
EP-2	EPOXY PAINT	SHERWIN WILLIAMS	SW 7017	SW7017 DORIAN GRAY	ANGIE JULIAN, 317.714.5610		INTERIOR HM DOORS, FRAMES, AND TOILET ROOMS.
EP-3	EPOXY PAINT	SHERWIN WILLIAMS	TBD - COLOR MATCH 4-FOLD DOORS		ANGIE JULIAN, 317.714.5610		EXTERIOR HM DOORS AND FRAMES
P-1	PAINT	SHERWIN WILLIAMS	SW 7008	SW7008 ALABASTER	ANGIE JULIAN, 317.714.5610		
P-2	PAINT	SHERWIN WILLIAMS	SW7017	SW7017 DORIAN GRAY	ANGIE JULIAN, 317.714.5610		
P-3	PAINT	SHERWIN WILLIAMS	SW6250	SW6250 GRANITE PEAK	ANGIE JULIAN, 317.714.5610		
P-4	PAINT	SHERWIN WILLIAMS	SW6095	SW6095 TOASTY	ANGIE JULIAN, 317.714.5610		
PMWT-1	PORCELAIN MOSAIC WALL TILE	CROSSVILLE	CBX13.10303UPS 3"x3" UPS, ACCENT MOSAIC	SLINKY	DIANE CALABRESE, 513-309-5779		
PMWT-2	PORCELAIN MOSAIC WALL TILE	CROSSVILLE	CBX13.10303UPS 3"x3" UPS, ACCENT MOSAIC	BLUE SUEDE SHOES	DIANE CALABRESE, 513-309-5779		
PWT-1	PORCELAIN WALL TILE	CROSSVILLE	CBX03.10412UPS 4"x12" FIELD TILE, UPS	SLINKY	DIANE CALABRESE, 513-309-5779		4"x12" SPECIAL SIZE ALLOW EXTRA TIME FOR ORDER
PWT-2	PORCELAIN WALL TILE	CROSSVILLE	CBX03.10412UPS 4"x12" ACCENT TILE, UPS	BLUE SUEDE SHOES	DIANE CALABRESE, 513-309-5779		4"x12" SPECIAL SIZE ALLOW EXTRA TIME FOR ORDER
PWT-3	PORCELAIN WALL TILE	CROSSVILLE	CBX03.10412UPS 4"x12" ACCENT TILE, UPS	TREE HOUSE	DIANE CALABRESE, 513-309-5779		4"x12" SPECIAL SIZE ALLOW EXTRA TIME FOR ORDER
PWT-4	PORCELAIN WALL TILE	CROSSVILLE	CBX03.10412UPS 4"x12" ACCENT TILE, UPS	I SEE THE MOON	DIANE CALABRESE, 513-309-5779		4"x12" SPECIAL SIZE ALLOW EXTRA TIME FOR ORDER
VWC-1	VINYL WALL COVERING - MURAL	MDC WALL COVERING	CUSTOM WALL MURAL	TRANQUIL STAR PANORAMA, 3047K	CHRISSY VAN WINKLE, 513.668.7283	CLASS A	
VWP-1	VINYL WALL PROTECTION	INPRO CORP	PALLADIUM RIGID SHEET WALL PROTECTION .060	MONTERREY	LESLIE FREDRICK, 513.646.2163	CLASS A	
VWP-2	VINYL WALL PROTECTION	INPRO CORP	PALLADIUM RIGID SHEET WALL PROTECTION .060	FIBRE FOSSIL	LESLIE FREDRICK, 513.646.2163	CLASS A	

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615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
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STATE OF OHIO TIMOTHY J BEMENT 12305 REGISTERED ARCHITECT

Timothy J Bement, License #12305
Expiration Date 12/31/2023

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

TITLE
FINISH SCHEDULES

SHEET NO.
A0.03

3/22/2022 3:17:45 PM

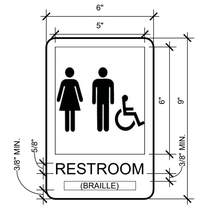
DOOR AND FRAME SCHEDULE

DOOR No.	ROOM NAME	HDW. SET	DOOR SIZE W	DOOR SIZE H	DOOR T	DOOR MAT.	DOOR TYPE	DOOR FIN.	DOOR U/C	FRAME MAT.	FRAME TYPE	FRAME FIN.	FRAME DETAILS JAMB	FRAME DETAILS HEAD	FRAME DETAILS SILL	FIRE RTG.	REMARKS
100-A	VESTIBULE	2.0	3' - 0"	7' - 0"		AL	AL-2	ANODIZED		AL		-	--	A1/A0.08	B1/A0.08		2, 10
100C	VESTIBULE	5.0	3' - 0"	7' - 0"		AL	AL-1	ANODIZED		AL		-	--	A1/A0.08	B1/A0.08		10
101	OFFICE	10.0	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08			
102	REPORT	10.0	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08			
103	FLEX	10.0	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08			
104	EXAM	16.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		-	
105	LAUNDRY	16.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		-	
106	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
107	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
108	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
109	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
110	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
111	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
112	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
113	DORM	13.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	
114	TLT/SHWR	12.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	3/4"	HM	1	EP-2	B5/A0.08	C5/A0.08		-	1
115	TLT/SHWR	12.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	3/4"	HM	1	EP-2	B5/A0.08	C5/A0.08		-	1
116	TLT/SHWR	12.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	3/4"	HM	1	EP-2	B5/A0.08	C5/A0.08		-	1
117	JAN.	16.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN	3/4"	HM	1	EP-2	B5/A0.08	C5/A0.08		-	
119	DINING	1.0	3' - 0"	7' - 0"		AL	AL-2	ANODIZED		AL		-	--	A1/A0.08	B1/A0.08		2, 10
121-A	FITNESS	6.0	3' - 0"	7' - 0"		AL	AL-1	ANODIZED		AL		-	--	A1/A0.08	B1/A0.08		10
121-B	FITNESS	--	12' - 0"	8' - 9 3/8"	1 3/4"	AL	BF-1	ANODIZED		AL		-		B1/A0.09	D1/A0.09		10, 12
122	DECOMPRESS	11.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		-	
123	TLT/SHELTER	8.0	3' - 0"	7' - 0"	1 3/4"	HM	F2	EP-2		HM	2	EP-2	F2/A0.08	F1/A0.08		90 MIN.	1, 3, 4, 6
124	EMS SUPPLY	9.1	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3		HM	2	EP-3	B3/A0.08	C3/A0.08		-	
125	IT/PHONE	9.0	3' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.06		-	
126-A	TLT/SHWR	14.0	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3	3/4"	HM	2	EP-3	B3/A0.08	C3/A0.08		-	1
126-B	TLT/SHWR	14.0	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3	3/4"	HM	2	EP-3	B3/A0.08	C3/A0.08		-	1
127-A	DECON	7.1	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3		HM	2	EP-3	B3/A0.08	C3/A0.08		-	
127-B	DECON	3.1	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3		HM	2	EP-3	F6/A0.08	F4/A0.08			2, 7
128	SCBA/STOR.	16.1	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3		HM	2	EP-3	B3/A0.08	C3/A0.08		-	
129-A	TOG RM.	7.1	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3		HM	2	EP-3	B3/A0.08	C3/A0.08		-	
129-B	TOG RM.	7.1	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3		HM	2	EP-3	B3/A0.08	C3/A0.08		-	
132	STOR./MAINT.	16.1	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3		HM	2	EP-3	B3/A0.08	C3/A0.08		-	
133	WATER	16.0	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-3		HM	2	EP-3	B3/A0.08	C3/A0.08		-	
134	ELECTRIC	4.0	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3		HM	2	EP-3	F6/A0.08	F4/A0.08			7
B05-A	EQUIP. BAY	3.0	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3		HM	2	EP-3	F6/A0.08	F4/A0.08			2, 7
B05-B	EQUIP. BAY	3.0	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-3		HM	2	EP-3	F6/A0.08	F4/A0.08			2, 7
C01	CORR.	7.0	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08			5A
C02-A	APP BAY	7.1	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-2/EP-3		HM	2	EP-2/EP-3	B3/A0.08	C3/A0.08			5B, 11
C02-B	APP BAY	7.1	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-2/EP-3		HM	2	EP-2/EP-3	B3/A0.08	C3/A0.08			5B, 11
C02-C	CORR.	3.0	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-2/EP-3		HM	2	EP-2/EP-3	B6/A0.08	D6/A0.08			2, 7, 11
C03	CORR.	7.0	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08			
C04-A	CORR.	3.0	3' - 0"	7' - 0"	1 3/4"	HM	NL1	EP-2/EP-3		HM	2	EP-2/EP-3	B6/A0.08	D6/A0.08			2, 7, 11
C04-B	CORR.	7.0	3' - 0"	7' - 0"	1 3/4"	WD	NL1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		20 MIN.	5A
M02A	MECHANICAL	16.0	4' - 0"	7' - 0"	1 3/4"	HM	F1	EP-2		HM	1	EP-2	B5/A0.08	C5/A0.08		-	
M02B	MECHANICAL	--	2' - 6"	4' - 0"	1 3/4"	HM	-	EP-3		HM			--	-	-	-	9
M03	QUARTERMASTER	15.0	6' - 0"	7' - 0"	1 3/4"	WD	F1	STAIN		HM	1	EP-2	B5/A0.08	C5/A0.08		-	
OH-1	APP BAY	17.0	14' - 0"	14' - 0"	2"	STEEL	FF1	PWDR COATED		-	-	-	C1/A0.06	C5/A0.06	F5/A0.06	-	8
OH-2	APP BAY	17.0	14' - 0"	14' - 0"	2"	STEEL	FF1	PWDR COATED		-	-	-	C1/A0.06	C5/A0.06	F5/A0.06	-	8
OH-3	APP BAY	17.0	14' - 0"	14' - 0"	2"	STEEL	FF1	PWDR COATED		-	-	-	C1/A0.06	C5/A0.06	F5/A0.06	-	8
OH-4	APP BAY	17.0	14' - 0"	14' - 0"	2"	STEEL	FF1	PWDR COATED		-	-	-	C1/A0.06	C5/A0.06	F5/A0.06	-	8
OH-5	APP BAY	17.0	14' - 0"	14' - 0"	2"	AL	OH1	PWDR COATED		-	-	-	B1/A0.07	D5/A0.07	F5/A0.07		8
OH-6	APP BAY	17.0	14' - 0"	14' - 0"	2"	AL	OH1	PWDR COATED		-	-	-	B1/A0.07	D5/A0.07	F5/A0.07		8
OH-7	APP BAY	17.0	14' - 0"	14' - 0"	2"	AL	OH1	PWDR COATED		-	-	-	B1/A0.07	D5/A0.07	F5/A0.07		8
OH-8	APP BAY	17.0	14' - 0"	14' - 0"	2"	AL	OH1	PWDR COATED		-	-	-	B1/A0.07	D5/A0.07	F5/A0.07		8
S01	STAIR	16.0	3' - 0"	7' - 0"	1 3/4"	HM	F1	EP-2		HM	2	EP-2	B3/A0.08	C3/A0.08		-	

DOOR REMARKS

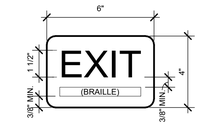
No.	REMARK
1	SIGN TYPE 1 THIS DOOR. REFER TO SIGNAGE LEGEND.
2	SIGN TYPE 2 THIS DOOR. REFER TO SIGNAGE LEGEND.
3	SIGN TYPE 3 THIS DOOR. REFER TO SIGNAGE LEGEND.
4	SIGN TYPE 4 THIS DOOR. REFER TO SIGNAGE LEGEND.
5A	SIGN TYPE 5 THIS DOOR, PUSH SIDE. REFER TO SIGNAGE LEGEND.
5B	SIGN TYPE 5 THIS DOOR, PULL SIDE. REFER TO SIGNAGE LEGEND.
6	HIGH IMPACT DOOR AND FRAME TO MEET ICC 500 STANDARDS. COORDINATE UNDERCUT WITH DOOR AND HARDWARE MANUFACTURER TO ENSURE COMPLIANCE.
7	HIGH R-VALUE INSULATED DOOR. INSULAED GLAZING IN TYPE NL1.
8	HEIGHT AND WIDTH DIMENSIONS ARE FOR OPENING. REFER TO DOOR ELEVATIONS FOR ACTUAL DOOR SIZES.
9	ROOF ACCESS DOOR. BASIS OF DESIGN: ACUDOR, MODEL WD-800, 30" X 48". INSTALL @ 18" A.F.F.
10	REFER TO STOREFRONT AND WINDOW SCHEDULE FOR MORE DETAILS.
11	INTERIOR OF DOOR AND FRAME = EP-2. EXTERIOR OF DOOR AND FRAME = EP-3.
12	BASIS OF DESIGN: WESTERN WINDOW SERIES 9500 (3L1R), BI-FOLD, THERMAL BREAK FLOOR LOAD, FOLD OUT W/ FLUSH THRESHOLD SILL. ENTRY FUNCTION DOOR HARDWARE BY DOOR MANUFACTURER.

SIGNAGE LEGEND



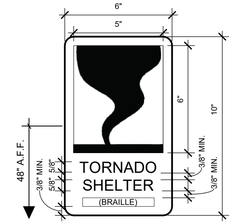
UNISEX RESTROOM - TYPE 1

3" = 1'-0"



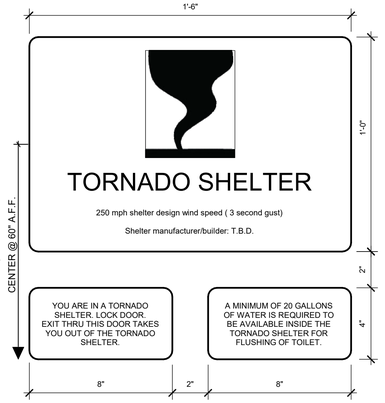
EXIT SIGN - TYPE 2

3" = 1'-0"



TORNADO SHELTER - TYPE 3

3" = 1'-0"



TORNADO SHELTER - TYPE 4

3" = 1'-0"

TORNADO SHELTER - TYPE 5

3" = 1'-0"

SIGN NOTES

A. ALL SIGNS ARE CFCI.

B. ALL SIGNS SHALL HAVE BRAILLE LETTERING BENEATH TEXT, TYPICAL.

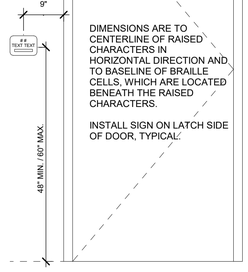
C. SIGNS MOUNTED ON GLASS AT DOOR NEED TO BE MOUNTED WITH ADHESIVE AND MATCHING BACKER PLATE FOR OTHER SIDE OF GLASS.

D. TEXT AND GRAPHICS TO BE NON-GLARE COLOR IN HIGH CONTRAST WITH BACKGROUND. SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.

E. BACKGROUND TO BE NON-GLARE COLOR IN HIGH CONTRAST WITH TEXT AND GRAPHICS. SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.

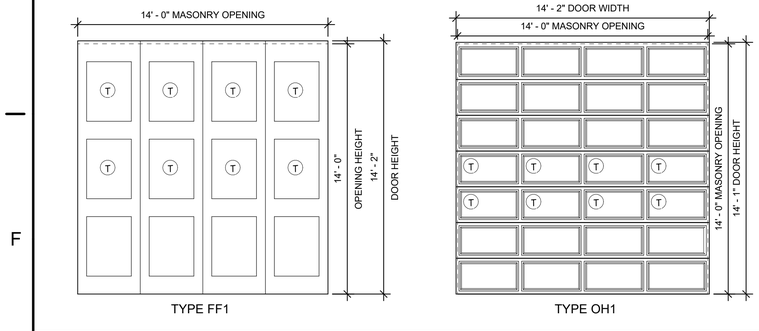
F. 1/2" RADIUS CORNERS.

G. ALL TEXT ON SIGNS LOCATED NEXT TO INTERIOR DOORS WILL BE 1/32" RAISED CHARACTERS, UPPERCASE, AND VIEWABLE AT LESS THAN 6 FEET.

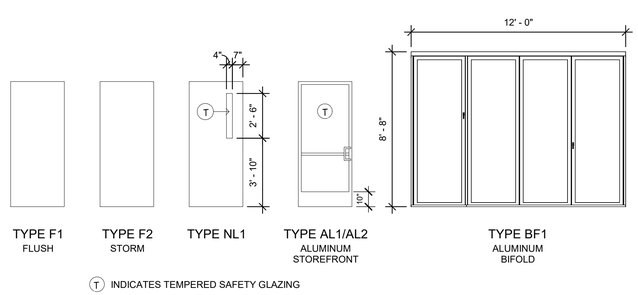


SIGNAGE LOCATION

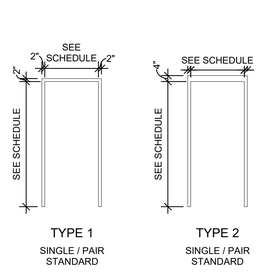
3/4" = 1'-0"



APPARATUS BAY DOOR ELEVATIONS



DOOR ELEVATIONS



FRAME ELEVATIONS

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO ★ TIMOTHY J. BEMENT 12305 ★ REGISTERED ARCHITECT

Timothy J Bement License #12305
Expiration Date 12/31/2023

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

TITLE
DOOR SCHEDULES

SHEET NO.
A0.04

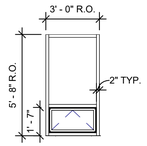
3/22/2022 3:17:48 PM

STOREFRONT SCHEDULE									
TYPE	QUANTITY	ROUGH OPENING WIDTH	ROUGH OPENING HEIGHT	FRAME MATERIAL	JAMB	HEAD	SILL	HEAD HEIGHT	COMMENTS
SF1	10	3' - 0"	5' - 8"	ALUM.	F1/A0.09	B3/A0.09	D3/A0.09	8' - 8"	1, 3, 7
SF2	1	3' - 0"	5' - 2"	ALUM.	F1/A0.09	B3/A0.09	F3/A0.09	8' - 8"	1
SF3	1	16' - 0"	8' - 8"	ALUM.	F1/A0.09	B3/A0.09	C1/A0.08	8' - 8"	1, 3, 4
SF4	2	14' - 0"	2' - 0"	ALUM.	F1/A0.09	B3/A0.09	F3/A0.09	8' - 8"	1
SF5A	2	12' - 0"	2' - 0"	ALUM.	F1/A0.09	B3/A0.09	F3/A0.09	8' - 8"	1
SF5B	2	11' - 8"	2' - 0"	ALUM.	F1/A0.09	B5/A0.09	D5/A0.09	19' - 4"	1, 6
SF6	2	71' - 0"	2' - 0"	ALUM.	F1/A0.09	B5/A0.09	D5/A0.09	19' - 4"	1, 6
SF7	1	3' - 0"	5' - 8"	ALUM.	F3/A0.10	B3/A0.10	D3/A0.10	8' - 8"	1
SF8	4	3' - 8"	4' - 0"	ALUM.	F1/A0.10 - F6/A0.10	B1/A0.10	D1/A0.10	21' - 0"	1
SF9	3	5' - 9"	4' - 0"	ALUM.	F3/A0.10 - F6/A0.10	B3/A0.10	D3/A0.10	21' - 0"	1
SF10A	1	8' - 5 1/2"	9' - 0"	ALUM.	F6/A0.10	F3/A5.02	D3/A0.09	12' - 0"	1, 3
SF10B	1	6' - 7 1/2"	9' - 0"	ALUM.	F6/A0.10 - D6/A0.10	F3/A5.02	D3/A0.09	12' - 0"	1, 3
SF11A	1	10' - 10 1/4"	9' - 0"	ALUM.	D6/A0.10	F3/A5.02	D3/A0.09	12' - 0"	1
SF11B	1	8' - 5 3/4"	12' - 0"	ALUM.	F6/A0.10 - D6/A0.10	F3/A5.02	C1/A0.08	12' - 0"	1
SF12	1	6' - 4"	12' - 0"	ALUM.	D6/A0.10	F3/A5.02 SIM.	C1/A0.08	12' - 0"	1, 4
SF13	1	6' - 4"	8' - 7"	ALUM.	C2/A0.08	B2/A0.08	C1/A0.08	8' - 7"	2, 5
SF14	1	3' - 0"	4' - 0"	ALUM.	F5/A0.10	B5/A0.10	D5/A0.10	7' - 4"	1
SF15	1	10' - 0 1/2"	8' - 0"	ALUM.	C2/A0.08	B2/A0.08	C1/A0.08	8' - 0"	2, 5

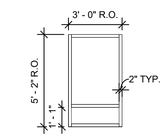
WINDOW COMMENTS

1	BASIS OF DESIGN: KAWNEER TRIFAB VERRSAGLAZE 451T FRAMING SYSTEM WITH 2" x 4 1/2" MULLIONS AND 1" INSULATED, TINTED GLAZING UNLESS NOTED OTHERWISE.
2	BASIS OF DESIGN: KAWNEER TRIFAB VERRSAGLAZE 450 FRAMING SYSTEM WITH 1 3/4" x 4 1/2" MULLIONS AND 1/4" GLAZING UNLESS NOTED OTHERWISE.
3	OPERABLE WINDOW BASIS OF DESIGN: KAWNEER GLASSVENT PROJECT-OUT WINDOWS.
4	EXTERIOR DOOR BASIS OF DESIGN: KAWNEER INSULCAD 560 WIDE STILE THERMAL ENTRANCE DOOR.
5	INTERIOR DOOR BASIS OF DESIGN: KAWNEER 500 WIDE STILE STANDARD ENTRANCE DOOR.
6	REFER TO ELEVATIONS FOR LOCATIONS
7	SILL DETAIL FOR SF1 IN ROOM 103 IS SIMILAR TO D1/A0.10

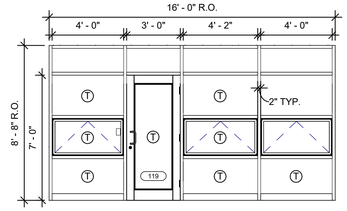
ALL STOREFRONT: 1/4" MAXIMUM CAULK JOINT AT JAMBS AND HEADS.
5/8" MAXIMUM CAULK JOINT AT SILLS.



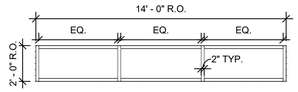
B4 ELEVATION SF1
1/4" = 1'-0"



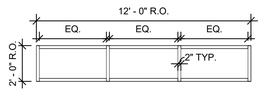
B5 ELEVATION SF2
1/4" = 1'-0"



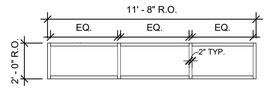
B6 ELEVATION SF3
1/4" = 1'-0"



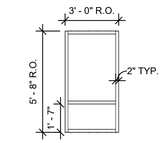
C1 ELEVATION SF4
1/4" = 1'-0"



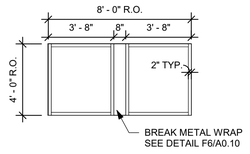
C2 ELEVATION SF5A
1/4" = 1'-0"



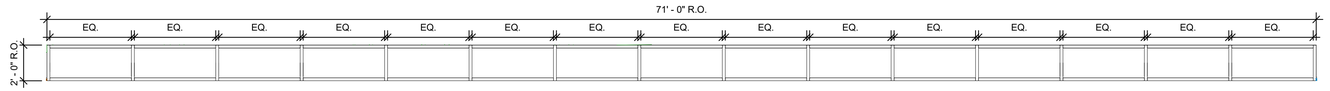
C3 ELEVATION SF5B
1/4" = 1'-0"



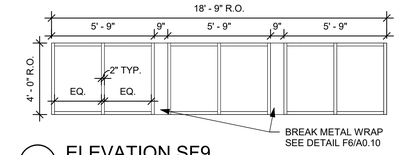
C5 ELEVATION SF7
1/4" = 1'-0"



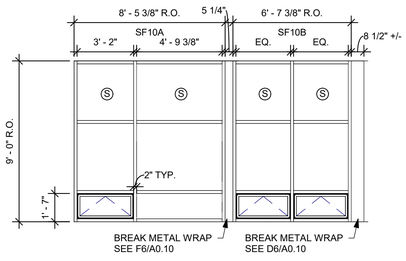
C6 ELEVATION SF8
1/4" = 1'-0" * ELEVATION SHOWS (2) SF8 WINDOWS



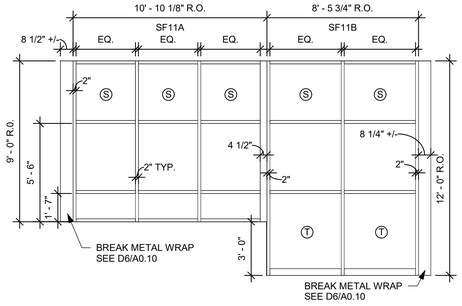
D1 ELEVATION SF6
1/4" = 1'-0"



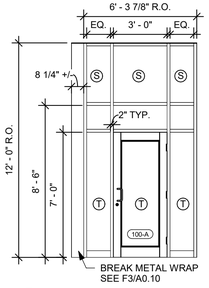
D6 ELEVATION SF9
1/4" = 1'-0" * ELEVATION SHOWS ALL (3) SF9 WINDOWS



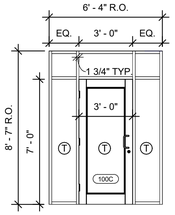
E1 ELEVATION SF10A AND SF10B
1/4" = 1'-0"



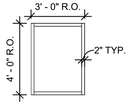
E2 ELEVATION SF11A AND SF11B
1/4" = 1'-0"



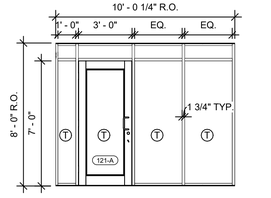
E4 ELEVATION SF12
1/4" = 1'-0"



E5 ELEVATION SF13
1/4" = 1'-0"



E6 ELEVATION SF14
1/4" = 1'-0"



E7 ELEVATION SF15
1/4" = 1'-0"

T INDICATES TEMPERED GLAZING

S INDICATES SPANDREL GLAZING

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615 Woodside Drive, Englewood, Ohio 45322
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STATE OF OHIO TIMOTHY J BEMENT 12305 REGISTERED ARCHITECT
Timothy J Bement License #12305
Expiration Date 12/31/2023

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

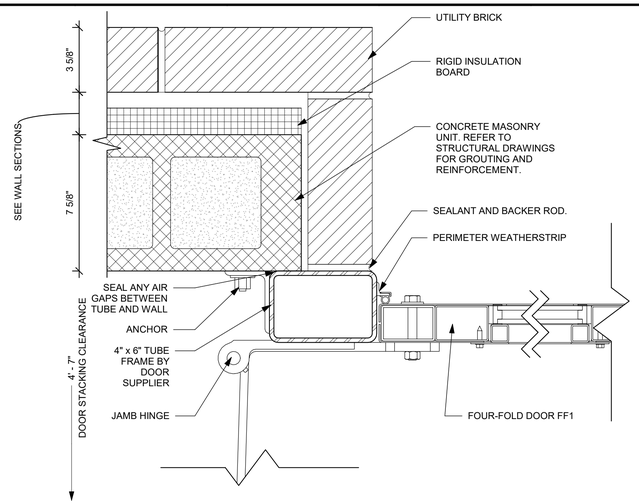
ISSUE		
NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

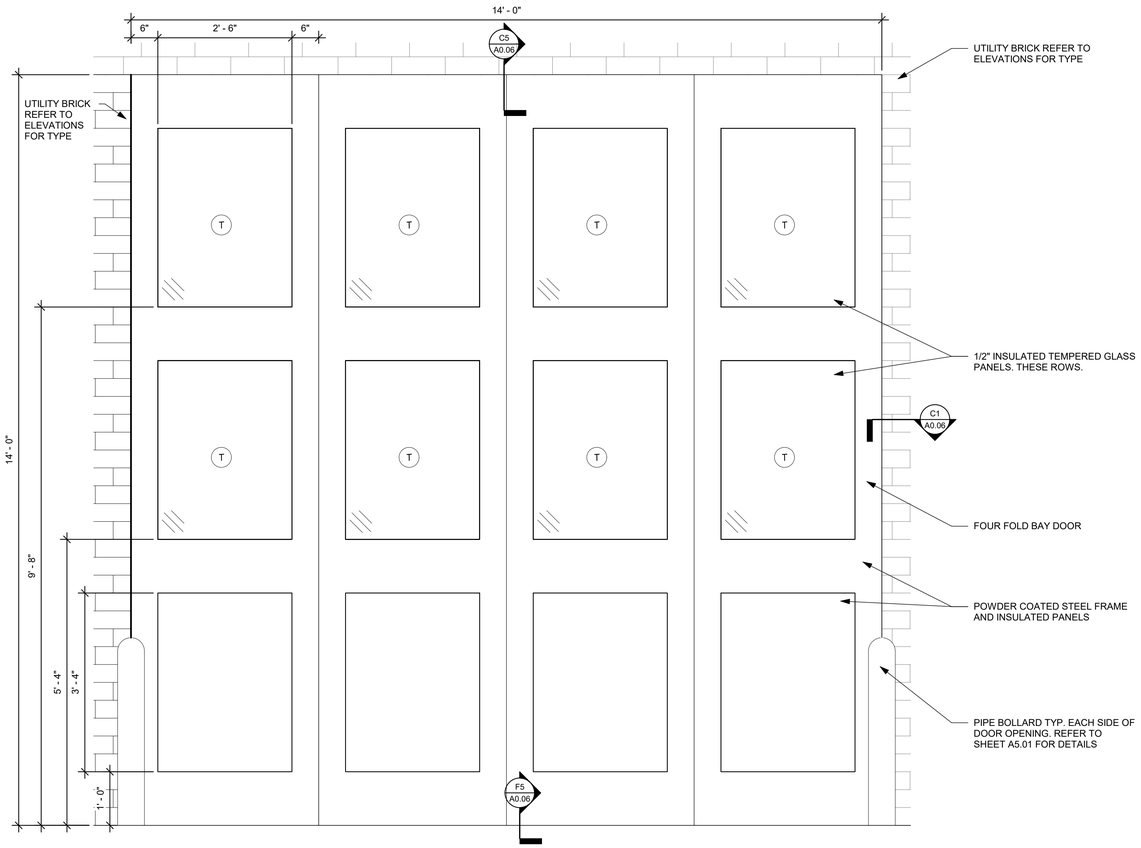
TITLE
STOREFRONT AND WINDOW SCHEDULE

SHEET NO.
A0.05

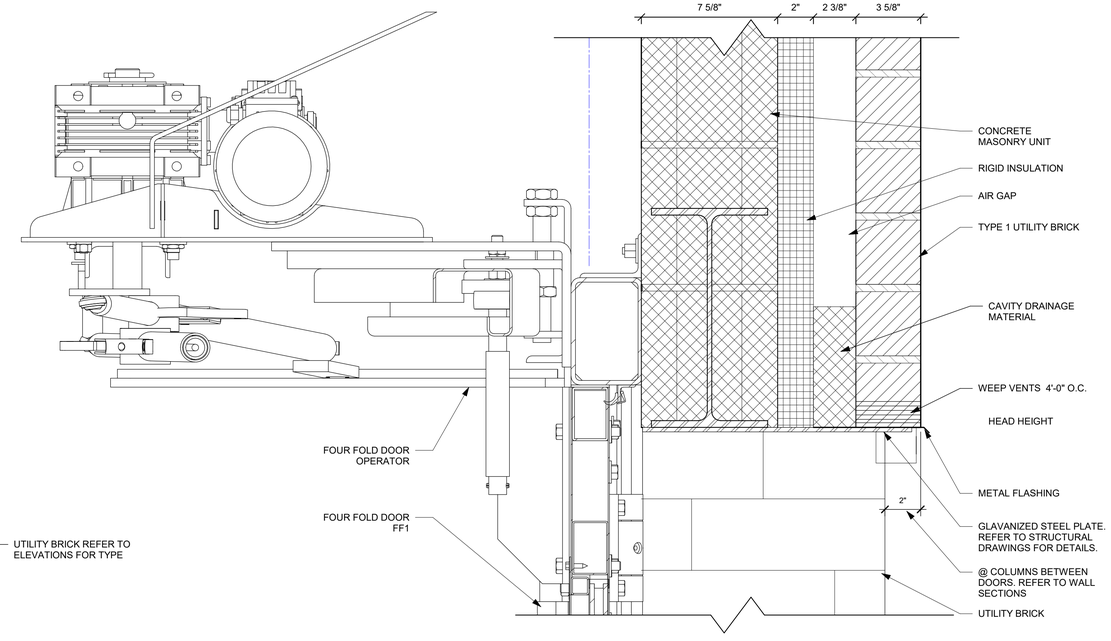
3/22/2022 3:17:51 PM



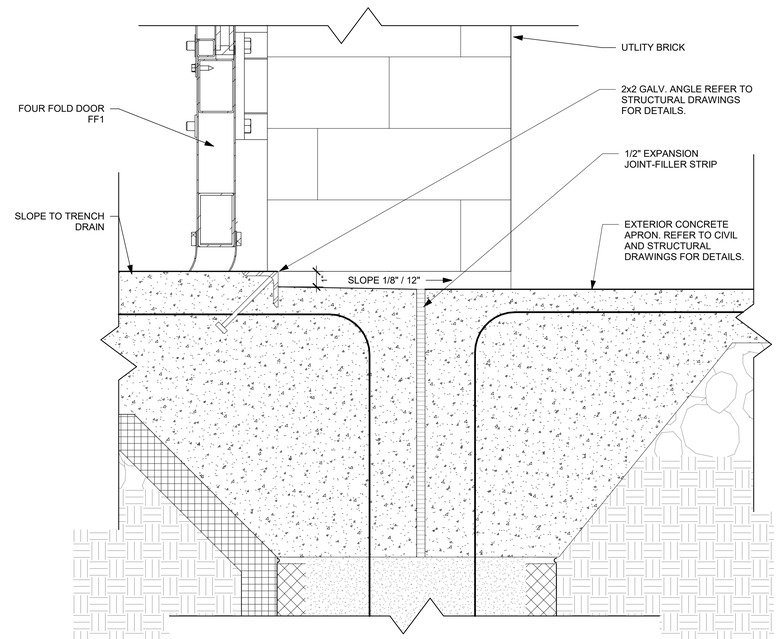
C1 JAMB DETAIL - FOUR FOLD DOOR
3" = 1'-0"



F1 FOLDING DOOR DETAIL - EXTERIOR
3/4" = 1'-0"



C5 HEAD DETAIL - FOUR FOLD DOOR
3" = 1'-0"



F5 SILL DETAIL - FOUR FOLD DOOR
3" = 1'-0"

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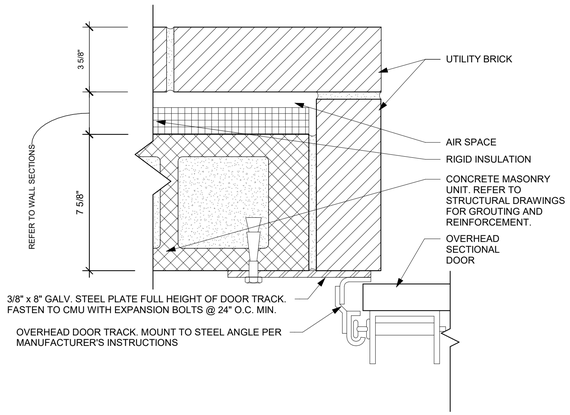
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

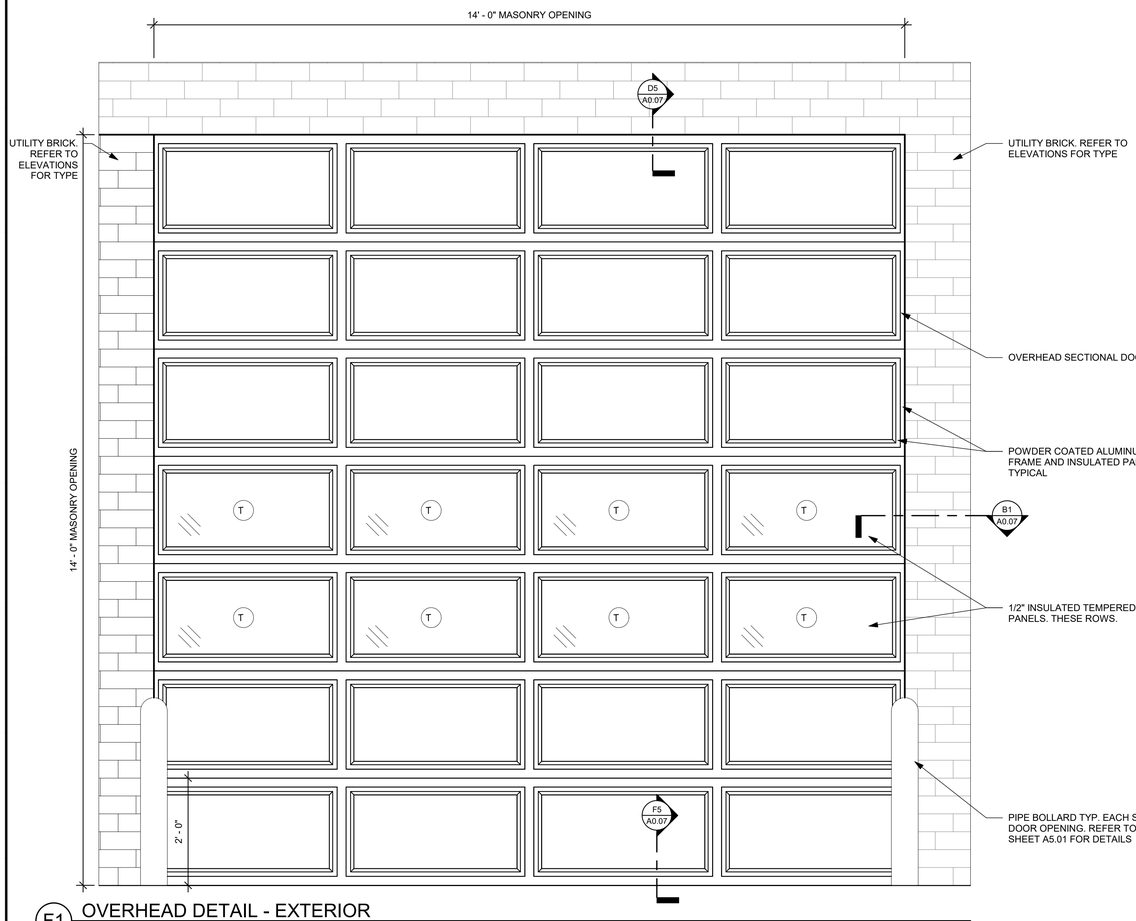
TITLE
APPARATUS BAY DOOR DETAILS - FOUR FOLD DOOR

SHEET NO.
A0.06

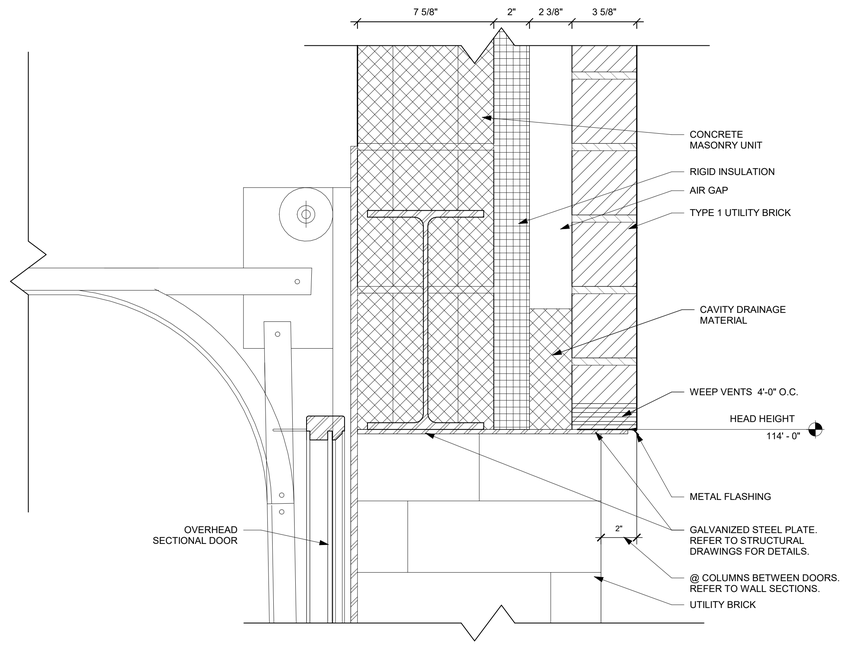
3/22/2022 3:17:53 PM



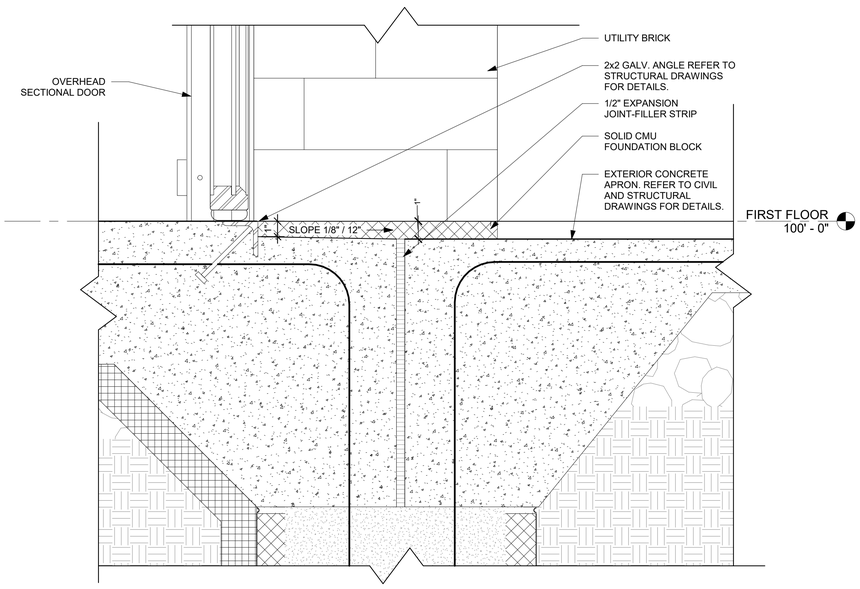
B1 JAMB DETAIL - OVERHEAD DOOR
3" = 1'-0"



F1 OVERHEAD DETAIL - EXTERIOR
3/4" = 1'-0"



D5 HEAD DETAIL - OVERHEAD DOOR
3" = 1'-0"



F5 SILL DETAIL - OVERHEAD DOOR
3" = 1'-0"

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ISSUE

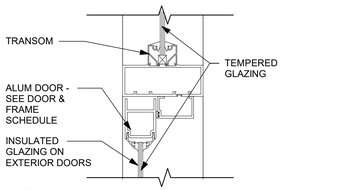
NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

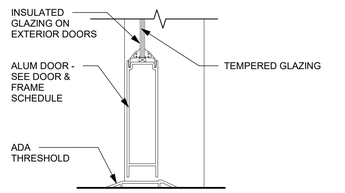
TITLE
APPARATUS BAY DOOR DETAILS - OVERHEAD DOOR

SHEET NO.
A0.07

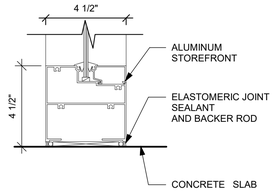
3/22/2022 3:17:54 PM



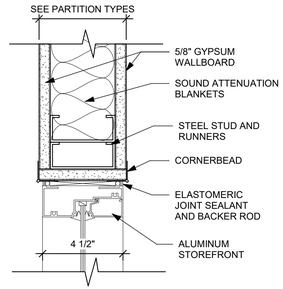
A1 HEAD DETAIL - STOREFRONT
3" = 1'-0"



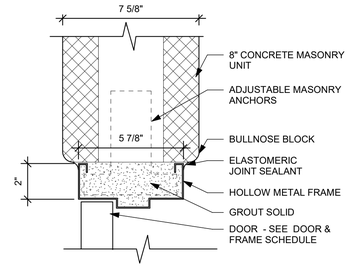
B1 SILL DETAIL - STOREFRONT
3" = 1'-0"



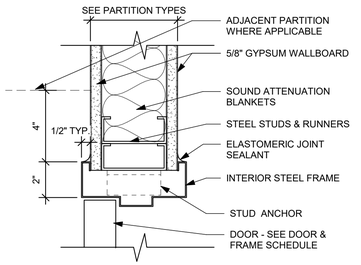
C1 SILL DETAIL - STOREFRONT
3" = 1'-0"



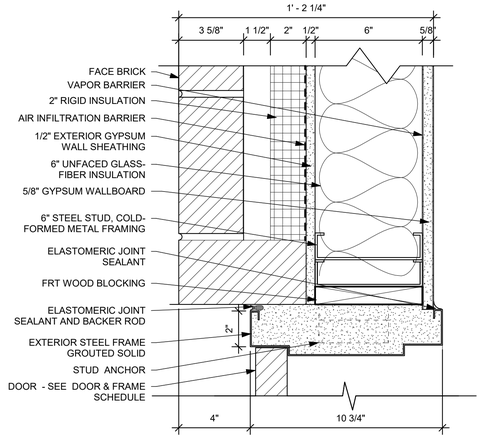
B2 JAMB DETAIL - STOREFRONT
3" = 1'-0"



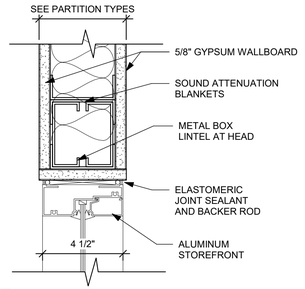
B3 JAMB DETAIL - MASONRY
3" = 1'-0"



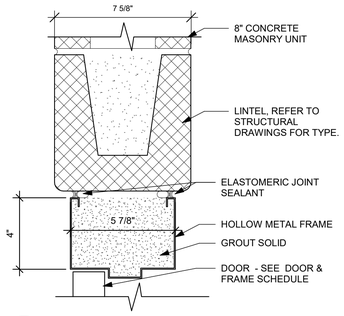
B5 JAMB DETAIL
3" = 1'-0"



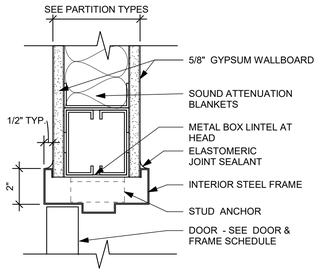
B6 JAMB DETAIL - METAL STUD
3" = 1'-0"



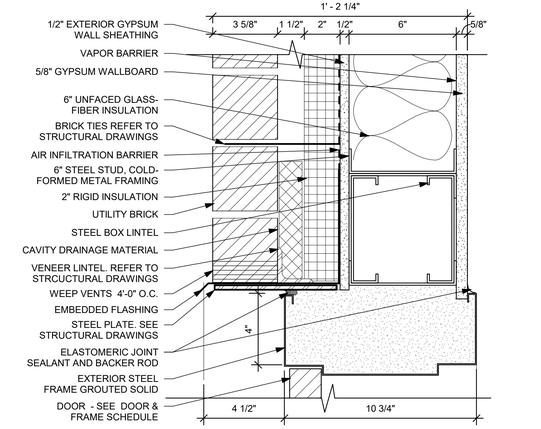
C2 HEAD DETAIL - STOREFRONT
3" = 1'-0"



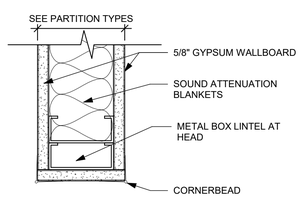
C3 HEAD DETAIL - MASONRY
3" = 1'-0"



C5 HEAD DETAIL
3" = 1'-0"

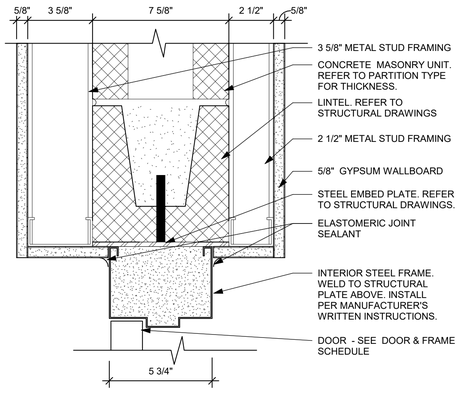


B6 HEAD DETAIL - METAL STUD
3" = 1'-0"

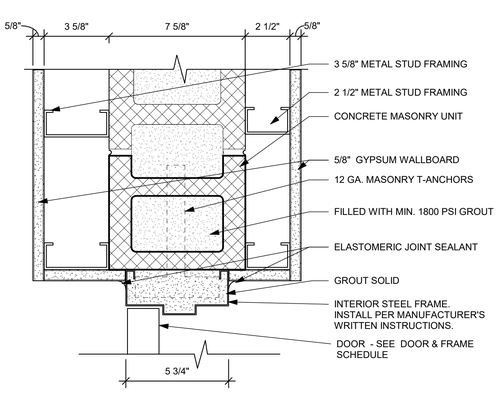


D1 TYP. HEAD DETAIL - WALL OPENING
3" = 1'-0"

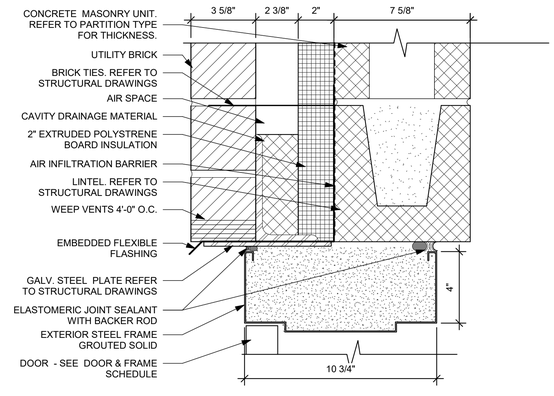
D2 TYP. JAMB DETAIL - WALL OPENING
3" = 1'-0"



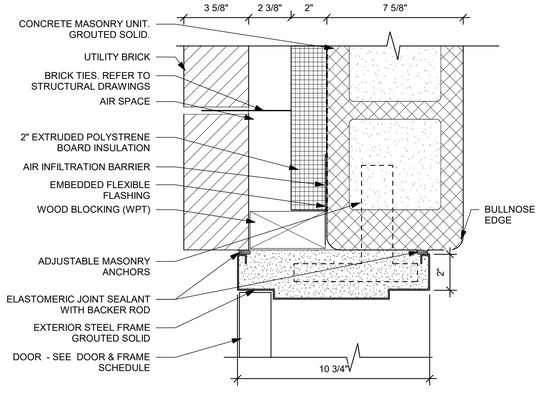
F1 HEAD DETAIL - HOLLOW METAL (STORM)
3" = 1'-0"



F2 JAMB DETAIL - HOLLOW METAL (STORM)
3" = 1'-0"



F4 HEAD DETAIL - APPARATUS BAYS
3" = 1'-0"



F6 JAMB DETAIL - APPARATUS BAYS
3" = 1'-0"

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Timothy J Bement, License #12305
Expiration Date 12/31/2023

Washington Township
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716 East Franklin Street, Centerville, Ohio 45458

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TITLE
DOOR AND WINDOW DETAILS

SHEET NO.
A0.08

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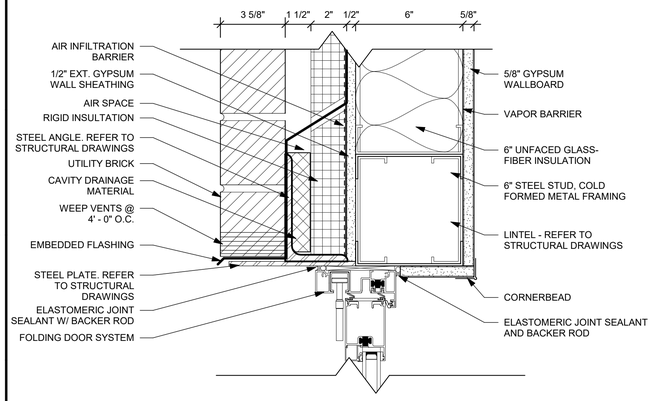
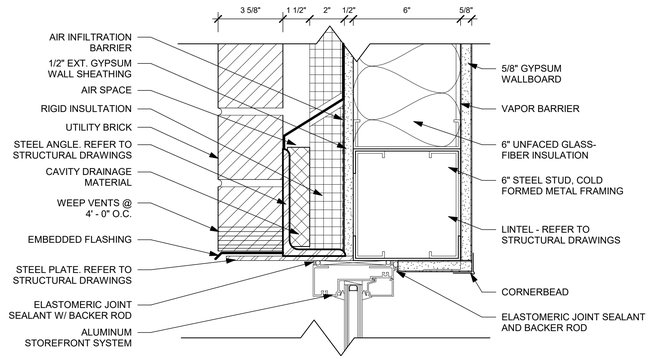
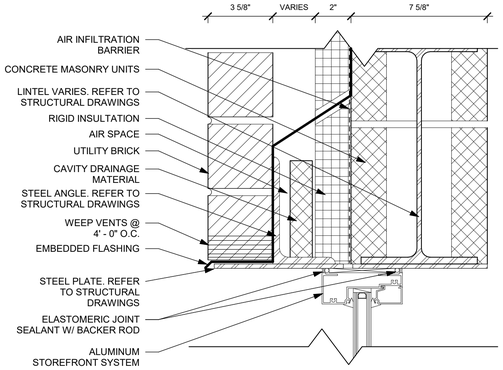


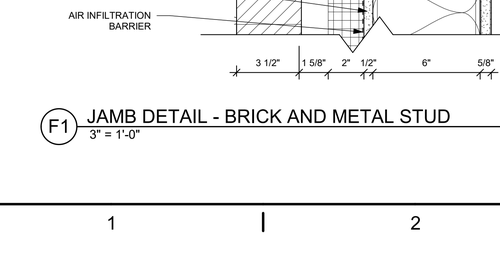
B1 HEAD DETAIL - FOLDING DOOR
3" = 1'-0"



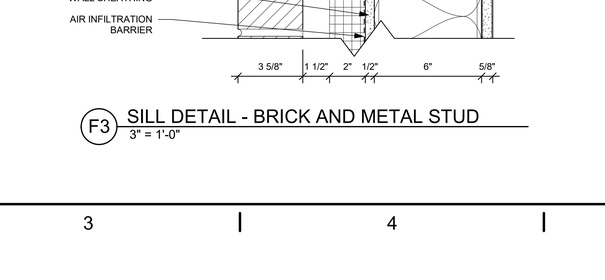
B3 HEAD DETAIL - BRICK AND METAL STUD
3" = 1'-0"



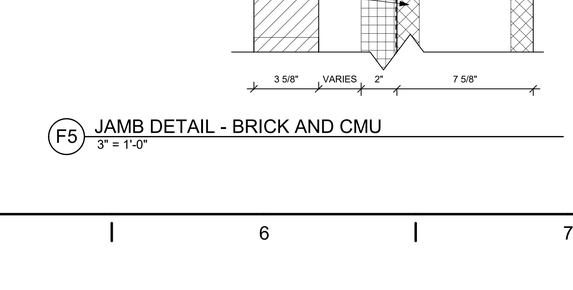
B5 HEAD DETAIL - BRICK AND CMU
3" = 1'-0"



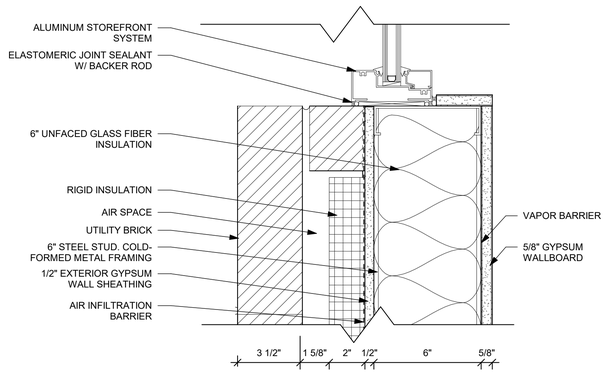
D1 FOLDING DOOR SILL DETAIL
3" = 1'-0"



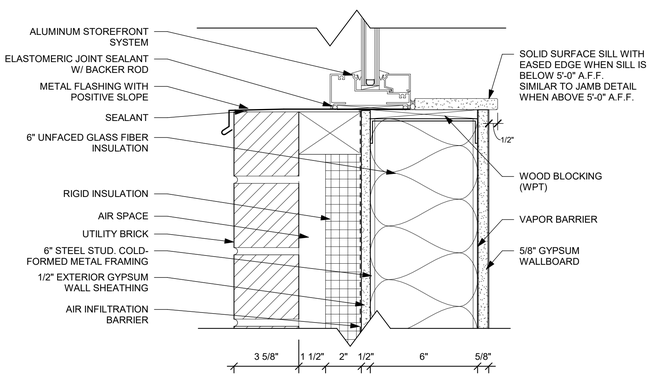
D3 SILL DETAIL - BRICK AND METAL STUD WITH SILL
3" = 1'-0"



D5 SILL DETAIL - BRICK AND CMU
3" = 1'-0"



F1 JAMB DETAIL - BRICK AND METAL STUD
3" = 1'-0"



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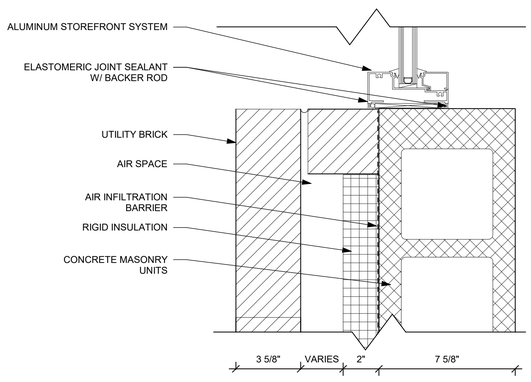
3" = 1'-0"



F5 JAMB DETAIL - BRICK AND CMU
3" = 1'-0"

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STOREFRONT AND WINDOW DETAILS

SHEET NO.
A0.09

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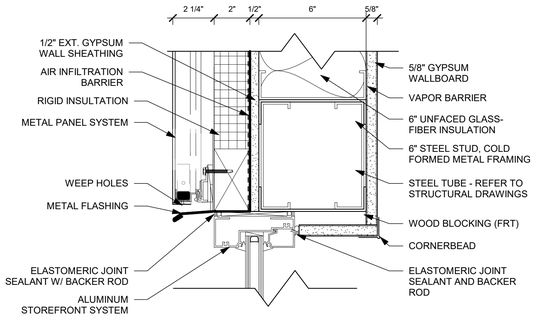
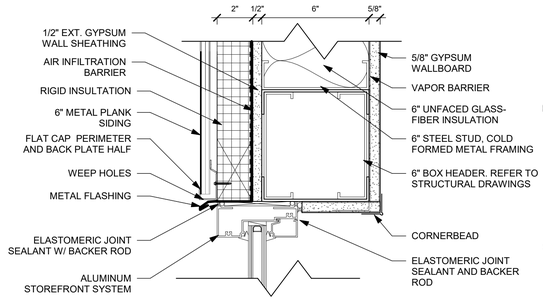
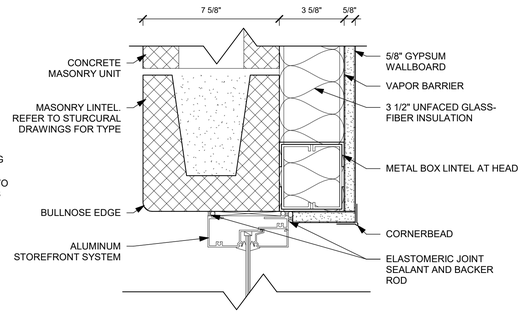


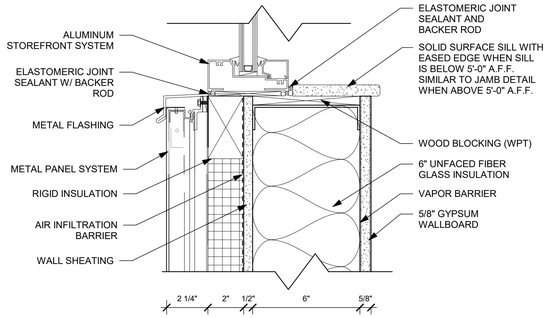
B1 HEAD DETAIL - METAL PANEL
3" = 1'-0"



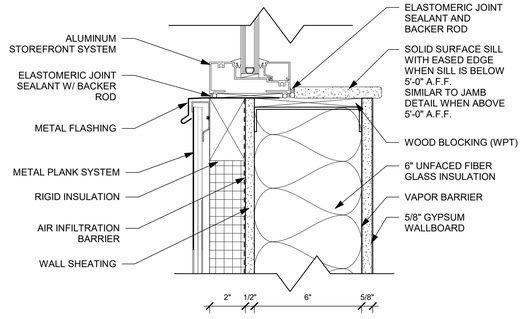
B3 HEAD DETAIL - METAL PLANK
3" = 1'-0"



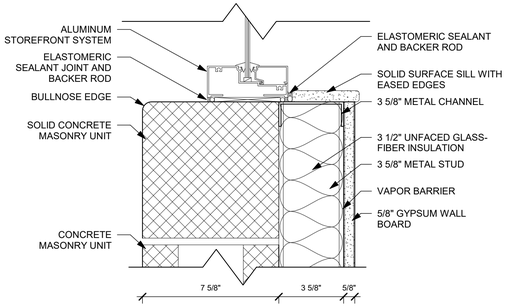
B5 HEAD DETAIL - INTERIOR STOREFRONT
3" = 1'-0"



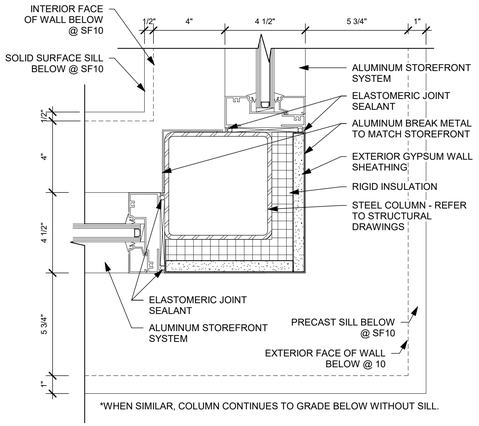
D1 SILL DETAIL - METAL PANEL
3" = 1'-0"



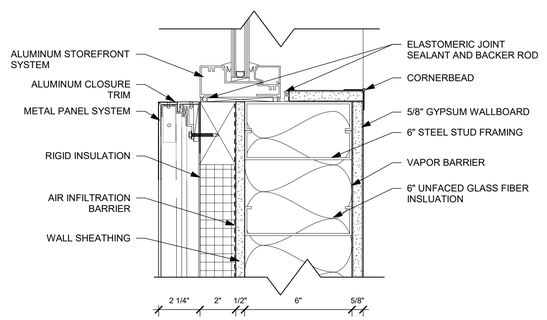
D3 SILL DETAIL - METAL PLANK
3" = 1'-0"



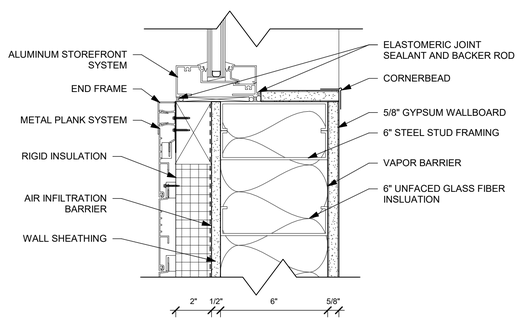
D5 SILL DETAIL - INTERIOR STOREFRONT
3" = 1'-0"



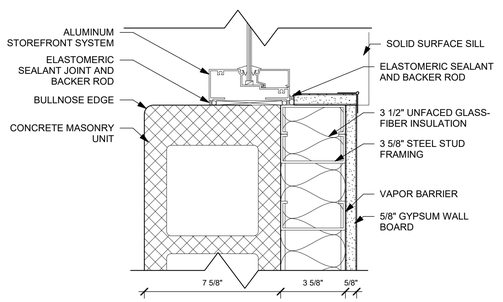
D6 JAMB/CORNER DETAIL
3" = 1'-0"



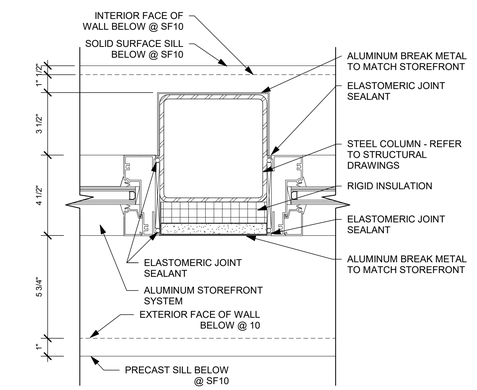
F1 JAMB DETAIL - METAL PANEL
3" = 1'-0"



F3 JAMB DETAIL - METAL PLANK
3" = 1'-0"



F5 JAMB DETAIL - INTERIOR STOREFRONT
3" = 1'-0"



F6 COLUMN WRAP DETAIL
3" = 1'-0"

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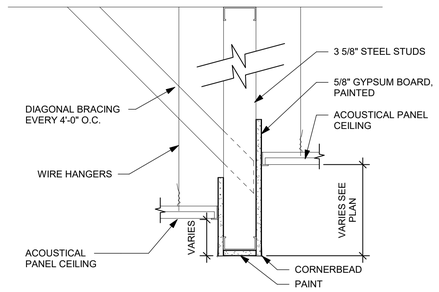
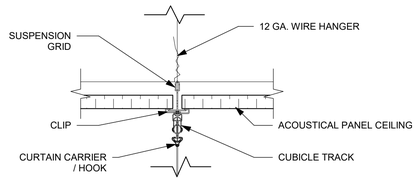
STOREFRONT AND WINDOW DETAILS

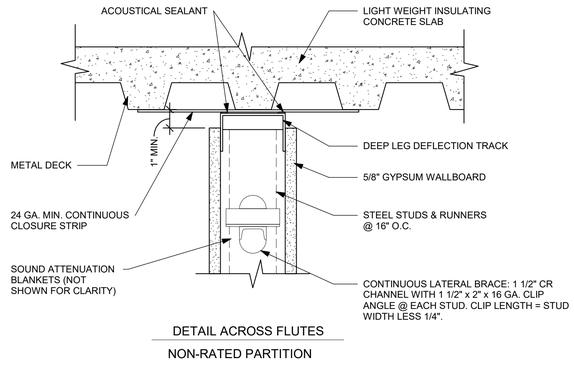
SHEET NO.
A0.10



B1 BULKHEAD DETAIL
1 1/2" = 1'-0"



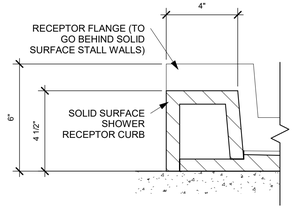
B3 CUBICLE CURTAIN TRACK DETAIL
3" = 1'-0"



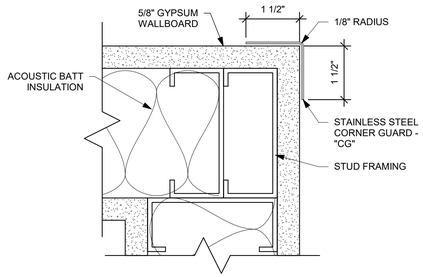
DETAIL ACROSS FLUTES

NON-RATED PARTITION

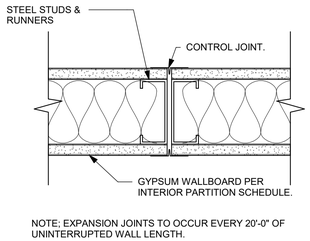
B4 TYP. DEFLECTION TRACK DETAIL UNDER MEZZANINE
3" = 1'-0"



B6 CURB STYLE SHOWER CURB SECTION
3" = 1'-0"

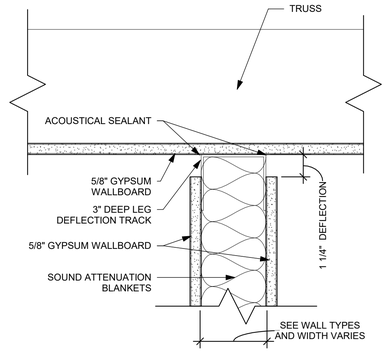


D1 CG-1 CORNER GUARD
6" = 1'-0"

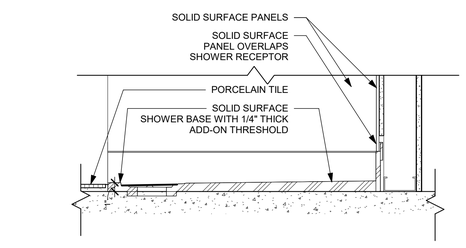


NOTE; EXPANSION JOINTS TO OCCUR EVERY 20'-0" OF UNINTERRUPTED WALL LENGTH.

D2 TYPICAL EXPANSION JOINT DETAIL
3" = 1'-0"

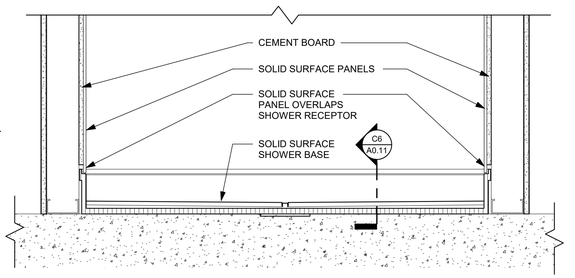


D4 TYPICAL DEFLECTION TRACK DETAIL (NON RATED)
3" = 1'-0"



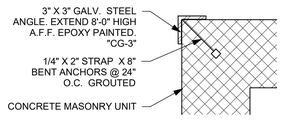
C6 TRENCH DRAIN SHOWER RECEPTOR SECTION
1 1/2" = 1'-0"

REFER TO MANUFACTURER'S INSTALLATION DETAILS



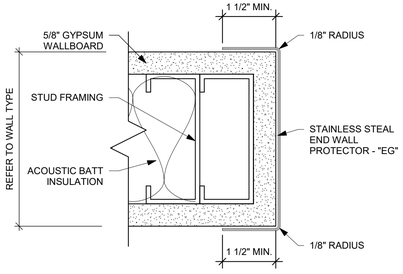
E6 TRENCH DRAIN STYLE SHOWER RECEPTER DETAIL
1 1/2" = 1'-0"

REFER TO MANUFACTURER'S INSTALLATION DETAILS

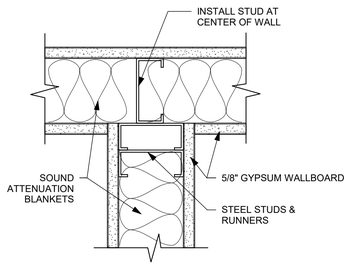


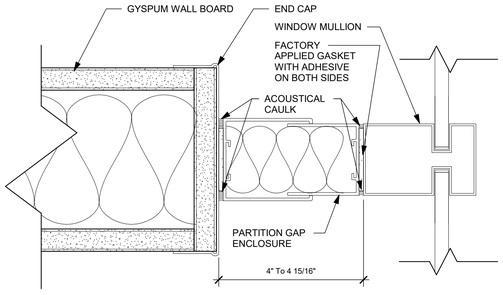
NOTE: INSTALL CORNER GUARD WHERE INDICATED ON FLOOR PLAN

F1 CG-2 CORNER GUARD AT MASONRY WALL
1 1/2" = 1'-0"



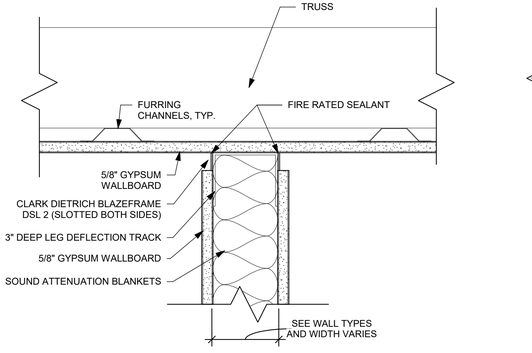
E1 EG - END WALL PROTECTOR
6" = 1'-0"



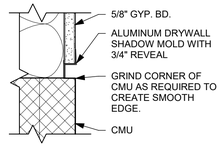


E2 WALL PARTITION DETAIL
3" = 1'-0"

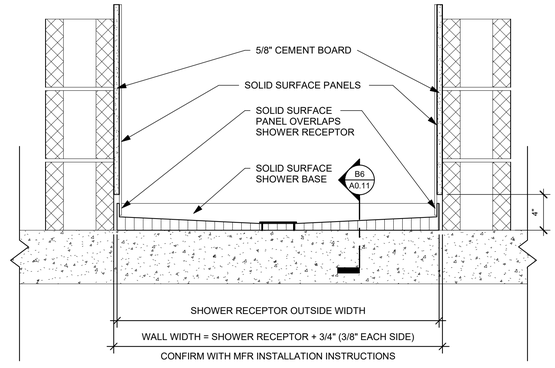
F2 PARTITION GAP ENCLOSURE
6" = 1'-0" BASIS OF DESIGN: MULLION MATE -SERIES 40 BY GORDON ARCHITECTURAL+ ENGINEERED SOLUTIONS



F4 TYPICAL DEFLECTION TRACK DETAIL (RATED)
3" = 1'-0"



F5 CMU - GYP. BD. DETAIL
3" = 1'-0"



F6 CURB STYLE SHOWER RECEPTOR DETAIL
1 1/2" = 1'-0"

REFER TO MANUFACTURER'S INSTALLATION DETAILS

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INTERIOR DETAILS

SHEET NO.
A0.11

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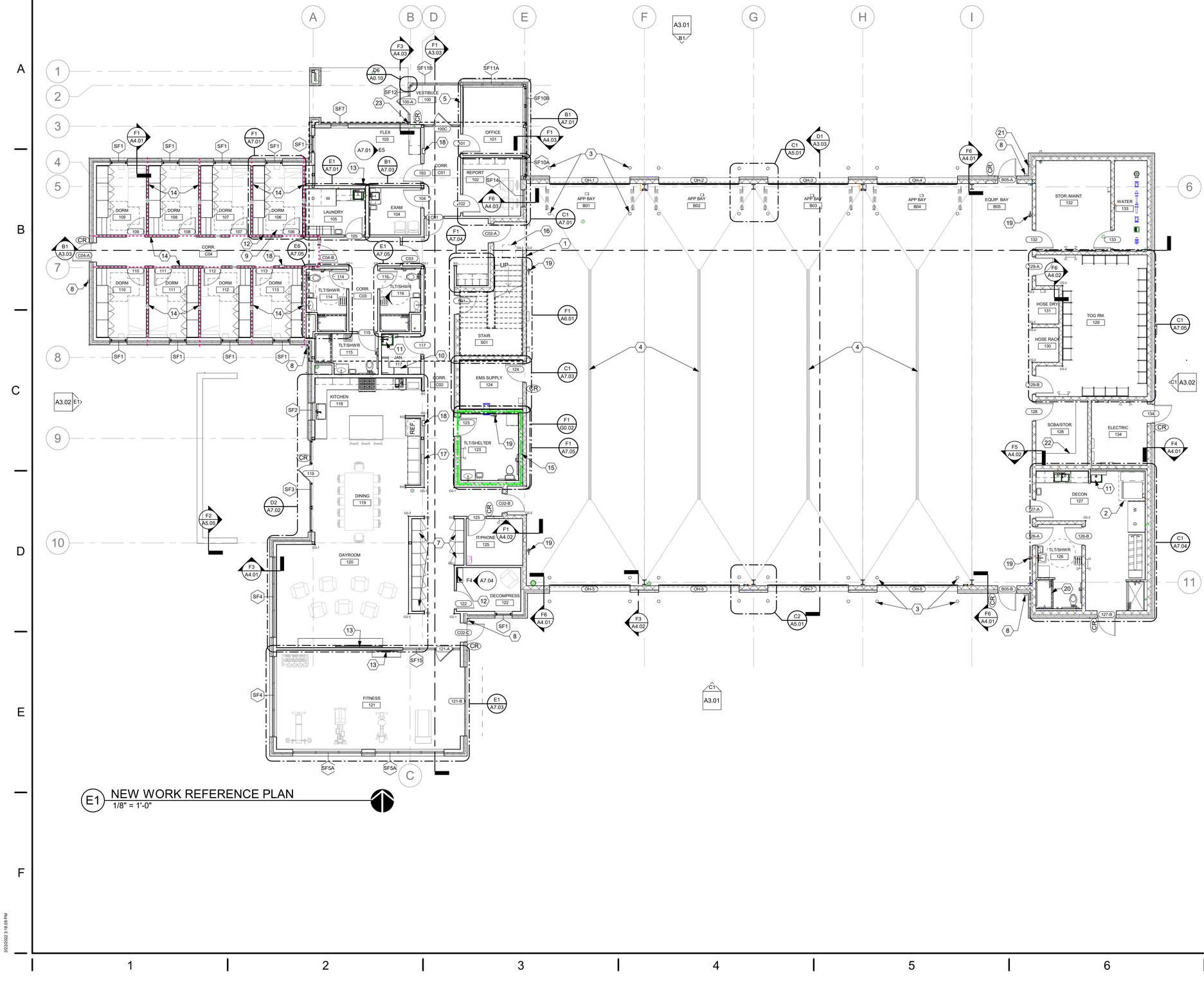

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 DASHED LINE INDICATES MEZZANINE ABOVE.

2 THICKENED SLAB AT TOG WASHER. REFER TO STRUCTURE DRAWINGS FOR DETAILS. COORDINATE WITH MANUFACTURER REQUIREMENTS.

3 METAL PIPE BOLLARD. TYPICAL ALL BI-FOLD AND OVERHEAD DOORS. REFER TO ENLARGED PLANS AND CIVIL DRAWINGS FOR DETAILS.

4 TRENCH DRAIN. REFER TO PLUMBING DRAWINGS FOR DETAILS.

5 ADD BLOCKING FOR INSTALLATION OF PLAQUE. COORDINATE WITH OWNER.

7 CREW LOCKERS. TYPE LKR. REFER TO H1/A8.2 FOR DETAILS. TYP. OF 12.

8 DOWNSPOUT LOCATION. REFER TO SHEET A5.01 FOR DOWNSPOUT ADAPTOR DETAILS. CUT NOTCH OUT OF WATER TABLE BAND AS REQUIRED TO ALLOW DOWNSPOUT TO RUN STRAIGHT DOWN THE WALL.

9 T-SHAPED TURNING SPACE PER FIGURE 304.3 OF THE ICC A117.1-2009. TYPICAL ALL DORM ROOMS.

10 (4) ADJUSTABLE SHELVES. REFER TO C1/A8.02 FOR DETAILS.

11 MOP SINK WITH MOP HANGER ABOVE. REFER TO PLUMBING DRAWINGS AND EQUIPMENT PLAN.

12 ADD BLOCKING FOR FUTURE TV WALL MOUNT @ 66" A.F.F. TYPICAL ALL DORM ROOMS AND ROOM 122.

13 ADD BLOCKING FOR TV WALL MOUNT @ 66" A.F.F.

14 1/2 HOUR RATED PARTITION AROUND R-2 USE AS INDICATED. PROVIDE 1 HR. RATED CEILING ASSEMBLY (F3) PER UL DESIGN NO. P522. REFER TO SHEET A0.02 FOR RATED ASSEMBLY DETAILS.

15 2 HOUR RATED PARTITIONS AROUND TORNADO SHELTER AS INDICATED. PROVIDE 2 HR. RATED CEILING ASSEMBLY (F4) PER UL DESIGN NO. D219. REFER TO SHEET A0.02 FOR RATED ASSEMBLY DETAILS.

16 TRAINING MANHOLE ABOVE. REFER TO F4/A1.21 FOR DETAILS.

17 ELECTRIC PANEL. REFER TO ELECTRICAL DRAWINGS.

18 SEMI-RECESSED FIRE EXTINGUISHER CABINET WITH 10LB., ABC DRY CHEMICAL FIRE EXTINGUISHER. REFER TO SPECIFICATIONS AND MOUNTING AND CLEARANCE STANDARDS ON SHEET A0.01 FOR DETAILS.

19 WALL HUNG FIRE EXTINGUISHER. 10 LB., ABC DRY CHEMICAL. OFCI. REFER TO SPECIFICATIONS. COORDINATE EXACT LOCATION WITH WALL MOUNTED PME ITEMS.

20 RECESS SLAB 7/8" AT SHOWER BASE THIS LOCATION. COORDINATE WITH MANUFACTURER'S WRITTEN INSRUCTIONS.

21 KNOX BOX RAPID ENTRY KEY STORAGE SYSTEM. RECESSED MOUNT@ 4'-0" A.F.F. CFCI.

22 BUTCHER BLOCK (BB) WORK SURFACE @ 36" A.F.F. SUPPORT BRACKETS @ 48" O.C. MAX. SIMILAR TO WORK SURFACE DETAIL ON SHEET A8.01.

23 3-1/2" FRT BLOCKING TO ENSURE STOREFRONT JAMB IS CLEAR OF EXTERIOR METAL PLANK SIDING. WRAP WITH ALUMINUM BREAK METAL TO MATCH STOREFRONT

GENERAL NOTES

A. ALL INTERIOR PARTITIONS ARE TYPE A1 U.N.O.

B. ALL PARTITIONS TO BE CONSTRUCTED TO STRUCTURE ABOVE U.N.O.

C. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

D. REFER TO EQUIPMENT PLAN AND ELEVATIONS FOR TOILET ROOM ACCESSORY CALLOUTS.

E. FOR SIDEWALKS AND EXTERIOR PADS REFER TO CIVIL SITE PLAN AND LANDSCAPE PLAN.

F. "CG" INDICATES CORNER GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

G. "EG" INDICATES END WALL GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

H. ALL EXPOSED STRUCTURAL STEEL TO BE EPOXY PAINTED.

I. HINGE SIDE OF DOORS ARE 6" FROM ADJACENT WALL U.N.O.

J. DIMENSIONS ARE FROM FINISHED FACE TO FINISHED FACE U.N.O.

K. FURINTURE SHOWN FOR REFERENCE ONLY.

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ISSUE

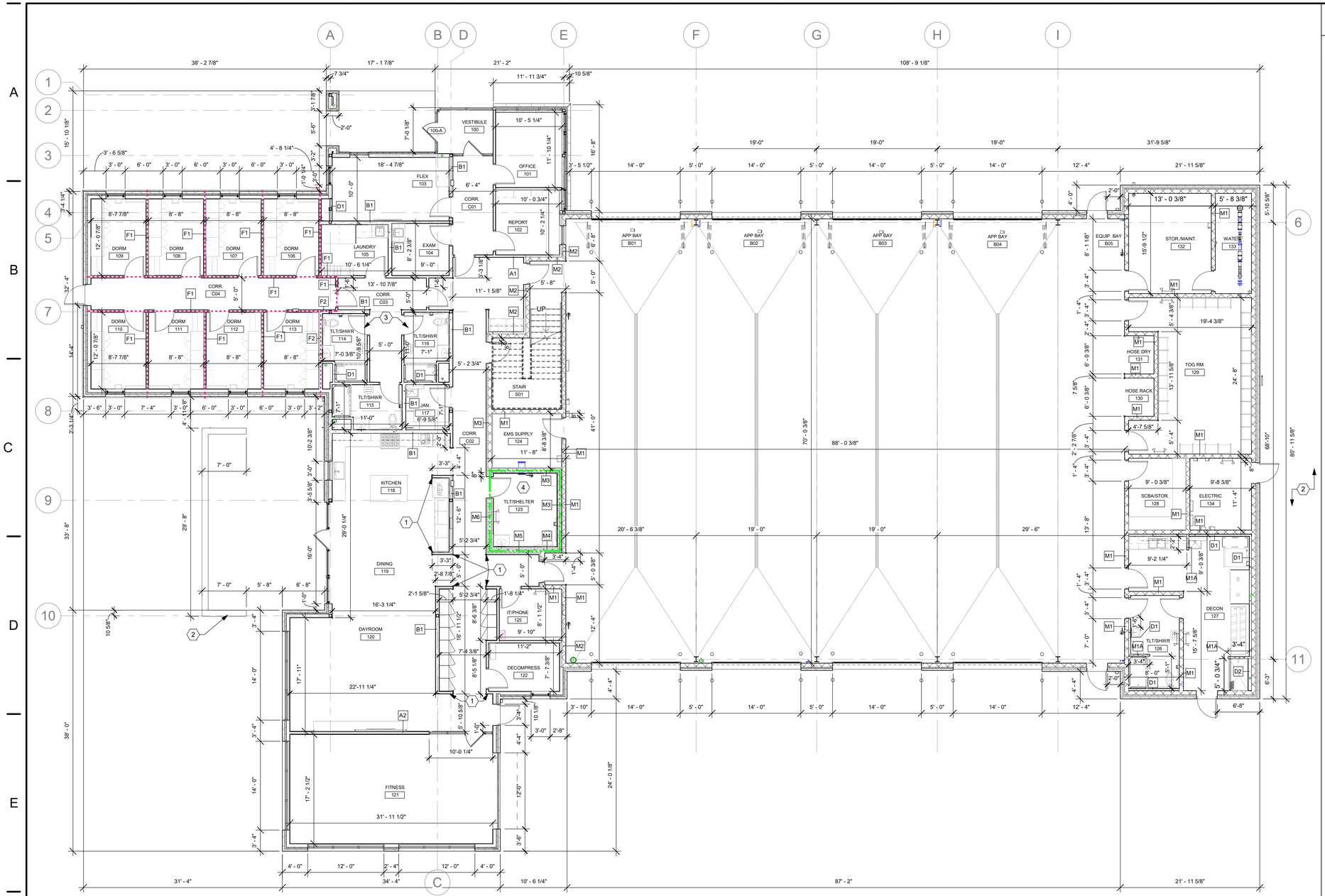
NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

TITLE
LEVEL 1 FLOOR PLAN ANNOTATED

SHEET NO.
A1.11

3/22/2022 3:18:08 PM



E1 NEW WORK DIMENSION PLAN
1/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 ALIGN.

2 REFER TO SHEET A5.05 FOR ADDITIONAL ENCLOSURE DIMENSIONS.

3 REFER TO INTERIOR ELEVATIONS AND ENLARGED PLANS FOR ADDITIONAL TOILET ROOM DIMENSIONS.

4 REFER TO GO.02 FOR ADDITIONAL TLT/SHELTER DIMENSIONS.

GENERAL NOTES

A. ALL INTERIOR PARTITIONS ARE TYPE A1 U.N.O.

B. ALL PARTITIONS TO BE CONSTRUCTED TO STRUCTURE ABOVE U.N.O.

C. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

D. REFER TO EQUIPMENT PLAN AND ELEVATIONS FOR TOILET ROOM ACCESSORY CALLOUTS.

E. FOR SIDEWALKS AND EXTERIOR PADS REFER TO CIVIL SITE PLAN AND LANDSCAPE PLAN.

F. "CG" INDICATES CORNER GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

G. "EG" INDICATES END WALL GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

H. ALL EXPOSED STRUCTURAL STEEL TO BE EPOXY PAINTED.

I. HINGE SIDE OF DOORS ARE 6" FROM ADJACENT WALL U.N.O.

J. DIMENSIONS ARE FROM FINISHED FACE TO FINISHED FACE U.N.O.

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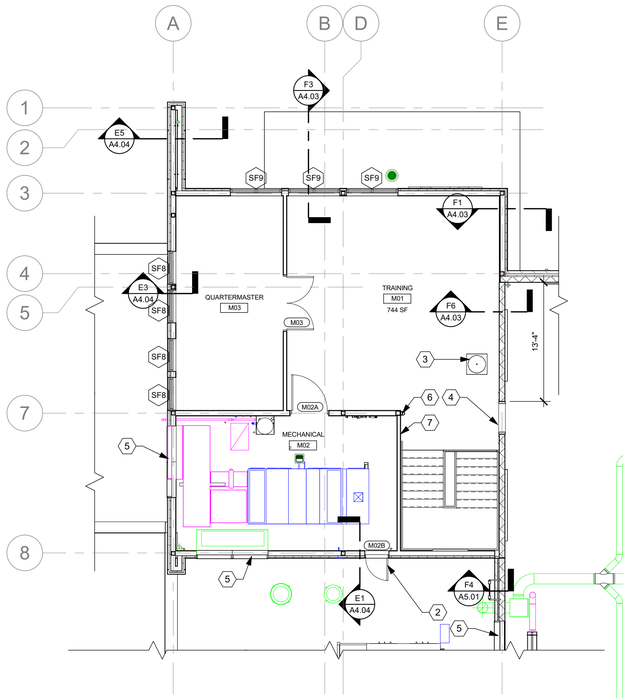
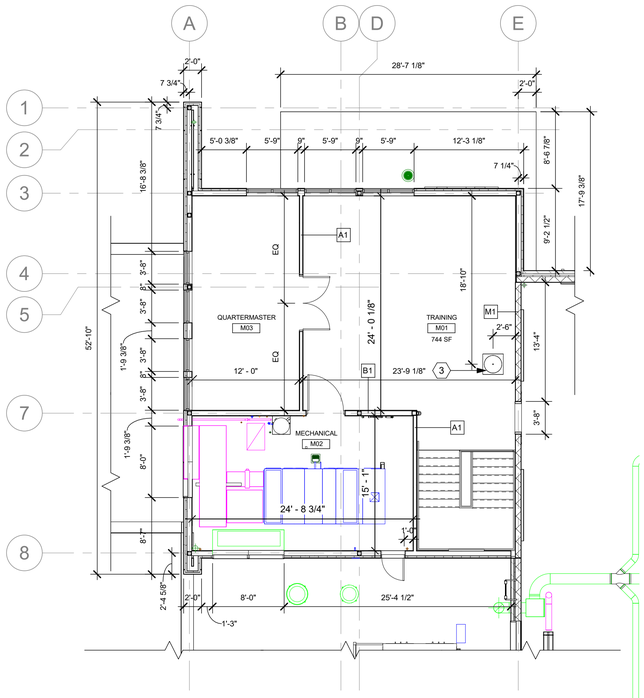
TITLE
LEVEL 1 FLOOR PLAN DIMENSIONED

SHEET NO.
A1.12

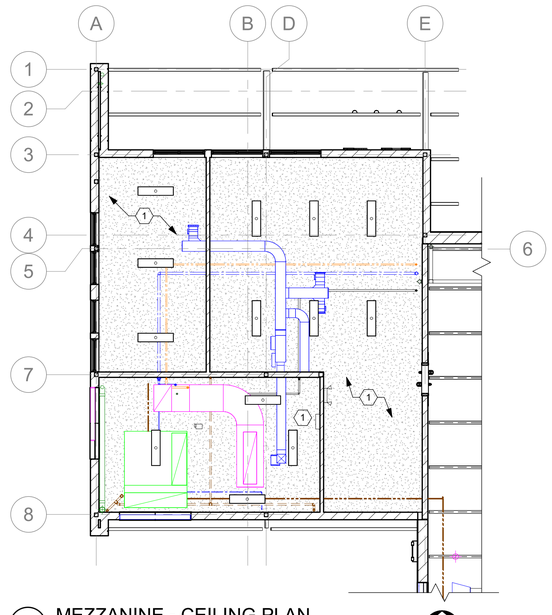
3/22/2022 3:16:12 PM



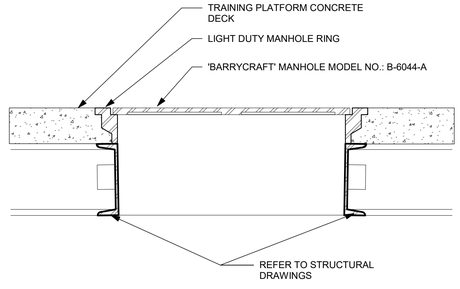
D1 MEZZANINE - SCHEMATIC PLAN
1/8" = 1'-0"



D3 MEZZANINE - DIMENSION PLAN
1/8" = 1'-0"



F1 MEZZANINE - CEILING PLAN
1/8" = 1'-0"



F4 CONFINED SPACE MANHOLE DETAIL
1 1/2" = 1'-0"

CONSTRUCTION NOTES

(00) INDICATES CONSTRUCTION NOTE.

1 GYPSUM BOARD CEILING ATTACHED TO STEEL FRAMING ABOVE.

2 30" x 48" HOLLOW METAL INSULATED ACCESS DOOR.

3 TRAINING MANHOLE. REFER TO THIS SHEET FOR DETAILS. COORDINATE EXACT LOCATION WITH STRUCTURE BELOW.

4 TRAINING WINDOW OPENING. SEE SHEET D4 & D6/A3.03 FOR DETAILS.

5 EXHAUST LOUVER. REFER TO MECHANICAL PLANS AND SHEET A5.09 FOR DETAILS.

6 3/4" STEEL SWIVEL RAPELLING ANCHOR. 10,000 LB WEIGHT CAPACITY. COORDINATE MOUNTING HEIGHT WITH OWNER.

7 VINYL WALL PROTECTION (VWP-1) UP TO 48" A.F.F. REFER TO A6.01 FOR DETAILS.

GENERAL NOTES

A. ALL INTERIOR PARTITIONS ARE TYPE A1 U.N.O.

B. ALL PARTITIONS TO BE CONSTRUCTED TO STRUCTURE ABOVE U.N.O.

C. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

D. REFER TO EQUIPMENT PLAN AND ELEVATIONS FOR TOILET ROOM ACCESSORY CALLOUTS.

E. FOR SIDEWALKS AND EXTERIOR PADS REFER TO CIVIL SITE PLAN AND LANDSCAPE PLAN.

F. "CG" INDICATES CORNER GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

G. "EG" INDICATES END WALL GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

H. ALL EXPOSED STRUCTURAL STEEL TO BE EPOXY PAINTED.

I. HINGE SIDE OF DOORS ARE 6" FROM ADJACENT WALL U.N.O.

J. DIMENSIONS ARE FROM FINISHED FACE TO FINISHED FACE U.N.O.

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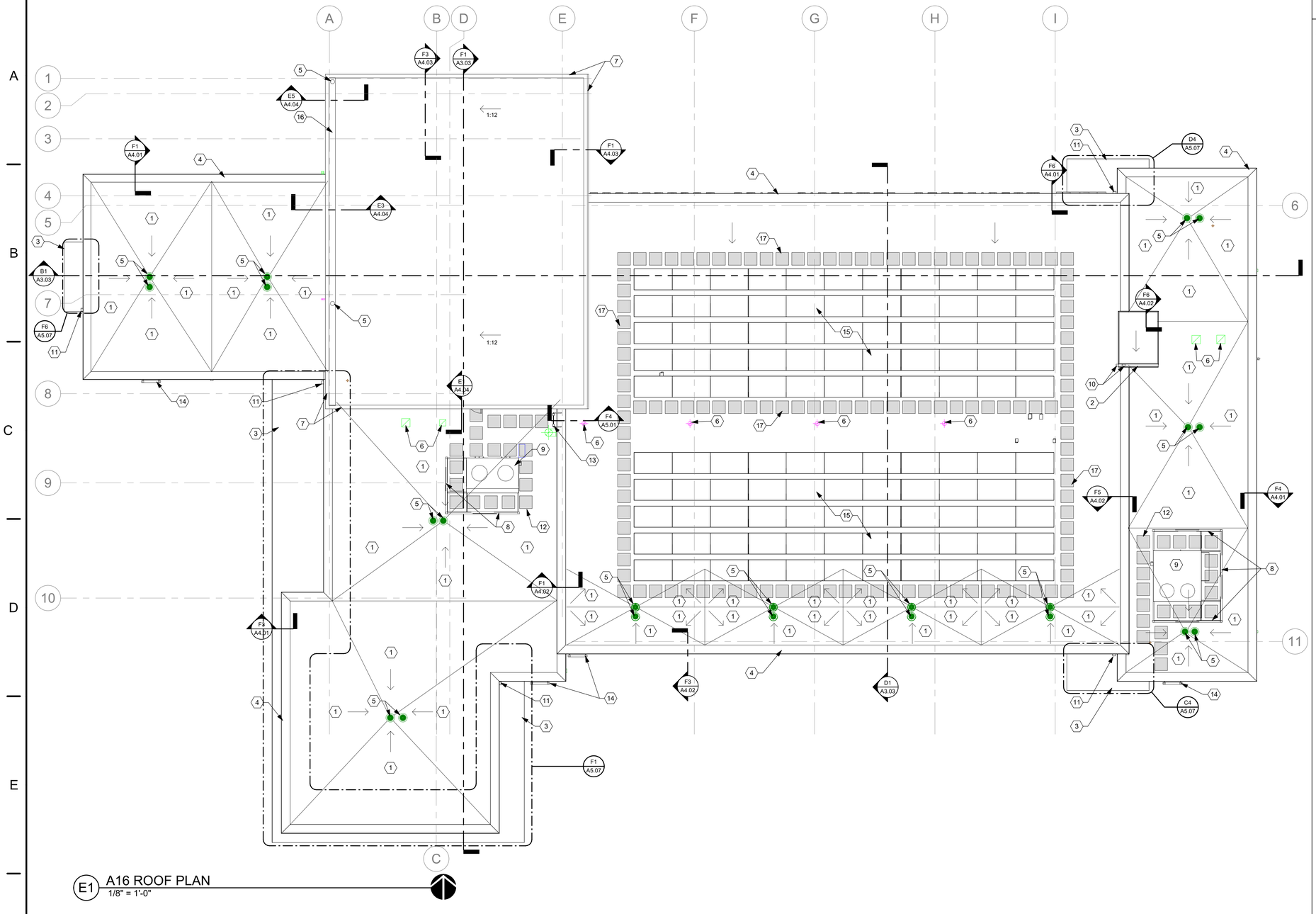
TITLE
MEZZANINE FLOOR PLANS

SHEET NO.
A1.21

3/22/2022 3:18:17 PM



E1 A16 ROOF PLAN
1/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 TAPERED INSULATION OVER BASE LAYER INSULATION. 1/8:12 MIN.

2 PREFINISHED ALUMINUM GUTTER.

3 PREMANUFACTURED METAL AWNING. REFER TO SHEET A5.07 & A5.08 FOR DETAILS.

4 COPING. REFER TO WALL SECTIONS.

5 ROOF DRAINS. REFER TO PLUMBING DRAWINGS.

6 ROOF VENTS. REFER TO MECHANICAL DRAWINGS.

7 METAL PANEL SYSTEM PARAPET. REFER TO A5.03 FOR DETAILS.

8 ROOF TOP EQUIPMENT SCREEN SYSTEM. REFER TO SPECIFICATIONS.

9 ROOF TOP MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS.

10 DOWNSPOUT TO DRAIN ON TO APPARATUS BAY ROOF.

11 DOWNSPOUT LOCATION. REFER TO SHEET A5.01 FOR DOWNSPOUT ADAPTOR DETAILS.

12 WALKING PADS, TYPICAL.

13 ROOF ACCESS LADDER. REFER TO SECTION FOR DETAILS.

14 OFFSET PARAPET GUARD RAIL. 36" LONG x 12" TALL. BASIS OF DESIGN: ALSOLU, VECTACO OFFSET PARAPET GUARD RAIL, VAD-D1 OR APPROVED EQUAL. SECURE THROUGH BRICK VENEER AND INTO CMU WALL OR BLOCKING WITHIN STUD WALL.

15 PV PANELS. BID ALTERNATE E1.

16 INTERNAL GUTTER. SLOPE TOWARDS NORTH DRAIN. REFER TO SHEET A5.02 FOR DETAILS.

17 WALKING PADS AROUND PV PANELS TO BE INCLUDED WITH BID ALTERNATE E1.

GENERAL NOTES

A. COORDINATE ROOF PENETRATIONS WITH PLUMBING, ELECTRICAL, AND MECHANICAL DRAWINGS.

B. ALL PENETRATIONS THROUGH ROOF SHALL BE PAINTED TO MATCH ROOF.

C. ALL ROOFS SLOPED TO DRAINS AT 1/8:12 WITH TAPERED INSULATION U.N.O.

D. ALL ROOFS EPDM OVER R20 RIGID INSULATION.

INDICATES DIRECTION OF ROOF OR TAPERED INSULATION SLOPE.

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TITLE
ROOF PLAN

SHEET NO.
A1.31

3/24/2022 9:12:47 AM

FLOORING LEGEND

EFP	PMT-1
MAT-1	RT-1
PC	SC

REFER TO MATERIAL LEGEND ON SHEET A0.03 FOR MATERIAL DETAILS.

E1 NEW WORK FINISHES PLAN
1/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 METAL TRANSITION STRIP BETWEEN FLOOR TYPES.

2 4" WIDE PAINTED LINES IN APPARATUS BAYS AND NORTH AND SOUTH APRONS. CONTRACTOR TO REVIEW LAYOUT WITH OWNER PRIOR TO MATERIAL APPLICATION.

3 STRIPING PAINT TO BE ENNIS-FLINT EF SERIES PRODUCT. WB YEL OH FAST DRY. PRODUCT CODE: 983522. INSTALL PER MANUFACTURER'S WRITTEN INSTUCTIONS.

GENERAL NOTES

A. CONTRACTOR TO REVIEW APPARATUS BAY STRIPING LAYOUT WITH OWNER PRIOR TO MATERIAL APPLICATION.

B. INSTALL ALL MATERIALS PER MANUFACTURERS' WRITTEN INSTRUCTIONS.

C. CONTRACTOR TO SUBMIT WALL TILE LAYOUT PATTERNS FOR REVIEW PRIOR TO INSTALLATION.

D. REFER TO INTERIOR ELEVATIONS FOR TLT/SHWR ROOM AND KITCHEN TILE LAYOUTS.

E. PRE-INSTALLATION/COORDINATION MEETING MUST BE HELD PRIOR TO THE INSTALLATION OF FLOOR/WALL TILE.

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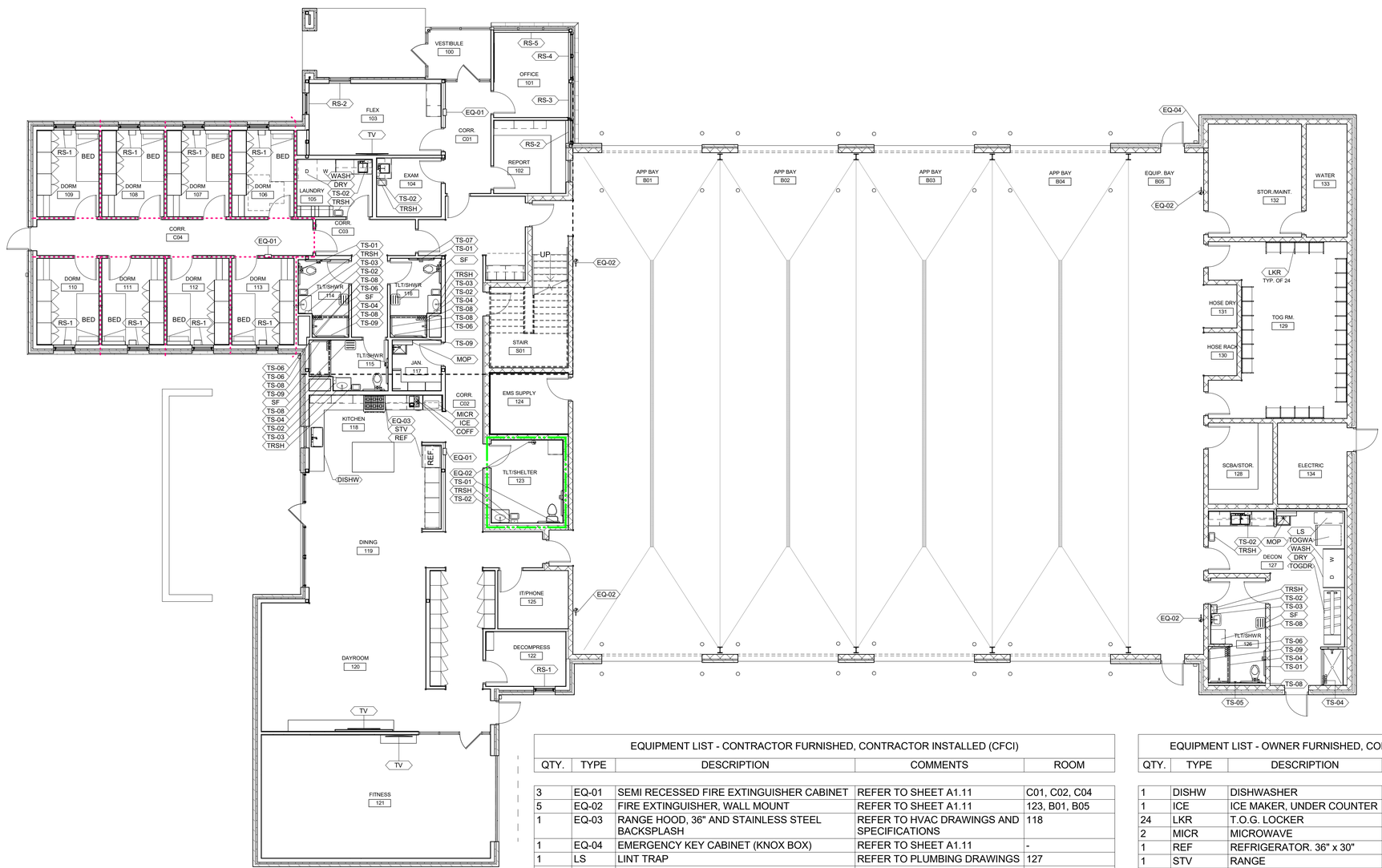
TITLE
FINISHES PLAN

SHEET NO.
A1.41

3/22/2022 3:18:39 PM



E1 EQUIPMENT PLAN
1/8" = 1'-0"

EQUIPMENT LIST - CONTRACTOR FURNISHED, CONTRACTOR INSTALLED (CFCI)

QTY.	TYPE	DESCRIPTION	COMMENTS	ROOM
3	EQ-01	SEMI RECESSED FIRE EXTINGUISHER CABINET	REFER TO SHEET A1.11	C01, C02, C04
5	EQ-02	FIRE EXTINGUISHER, WALL MOUNT	REFER TO SHEET A1.11	123, B01, B05
1	EQ-03	RANGE HOOD, 36" AND STAINLESS STEEL BACKSPLASH	REFER TO HVAC DRAWINGS AND SPECIFICATIONS	118
1	EQ-04	EMERGENCY KEY CABINET (KNOX BOX)	REFER TO SHEET A1.11	-
1	LS	LINT TRAP	REFER TO PLUMBING DRAWINGS	127
1	MH	MAN HOLE COVER	REFER TO A5.01 FOR DETAILS	M01
2	MOP	MOP HANGER WITH OVERSHELF	REFER TO SPECIFICATIONS	117, 127
9	RS-1	BLACK OUT ROLL SHADE 3'-0"	REFER TO SPECIFICATIONS	106,107, 108, 109, 110,111,112,113, 122
3	RS-2	ROOM DARKENING SHADE 3'-0"	REFER TO SPECIFICATIONS	102, 103
1	RS-3	ROOM DARKENING SHADE 4'-10"	REFER TO SPECIFICATIONS	101
1	RS-4	ROOM DARKENING SHADE 6'-7"	REFER TO SPECIFICATIONS	101
1	RS-5	ROOM DARKENING SHADE 10'-5"	REFER TO SPECIFICATIONS	101
4	SF	SEAT, FOLDING	REFER TO SPECIFICATIONS	114, 115, 116, 126
8	TRSH	TRASH CAN	REFER TO SPECIFICATIONS	104, 105, 114, 115, 116,123, 126, 127
5	TS-01	GRAB BAR, STAINLESS STEEL, (3) PIECE ASSEMBLY, 1.25" DIA.	REFER TO SPECIFICATIONS	114, 115, 116, 126
8	TS-02	PAPER TOWEL DISPENSER	REFER TO SPECIFICATIONS	104, 105, 114, 115, 116, 126, 127
5	TS-03	MIRROR, WALL - 18" x 36"	REFER TO SPECIFICATIONS	114, 115, 116, 123, 126
5	TS-04	SHOWER ROD AND CURTAIN	REFER TO SPECIFICATIONS	114, 115, 116, 126
4	TS-05	ROBE HOOK, DOUBLE	REFER TO SPECIFICATIONS	114, 115, 116, 126
8	TS-06	SOAP DISH, CORNER	REFER TO SPECIFICATIONS	114, 115, 116, 126
5	TS-07	TOILET TISSUE DISPENSER	REFER TO SPECIFICATIONS	114, 115, 116, 123, 126
8	TS-08	GRAB BAR, STAINLESS STEEL 30" x 1.25" DIA.	REFER TO SPECIFICATIONS	114, 115, 116, 126
4	TS-09	GRAB BAR, STAINLESS STEEL 48" x 1.25" DIA.	REFER TO SPECIFICATIONS	114, 115, 116, 126

EQUIPMENT LIST - OWNER FURNISHED, CONTRACTOR INSTALLED (OFCI)

QTY.	TYPE	DESCRIPTION	COMMENTS	ROOM
1	DISHW	DISHWASHER		118
1	ICE	ICE MAKER, UNDER COUNTER		118
24	LKR	T.O.G. LOCKER		129
2	MICR	MICROWAVE		118
1	REF	REFRIGERATOR. 36" x 30"		118
1	STV	RANGE		118
1	TOGDR	TOG DRYER		127
1	TOGWA	TOG WASHER		127
3	TV	LED TELEVISION		103, 120, 121

EQUIPMENT LIST - OWNER FURNISHED, OWNER INSTALLED (OFOI)

QTY.	TYPE	DESCRIPTION	COMMENTS	ROOM
1	COFF	COFFEE MAKER		118

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DRAWN	CMS/MLG
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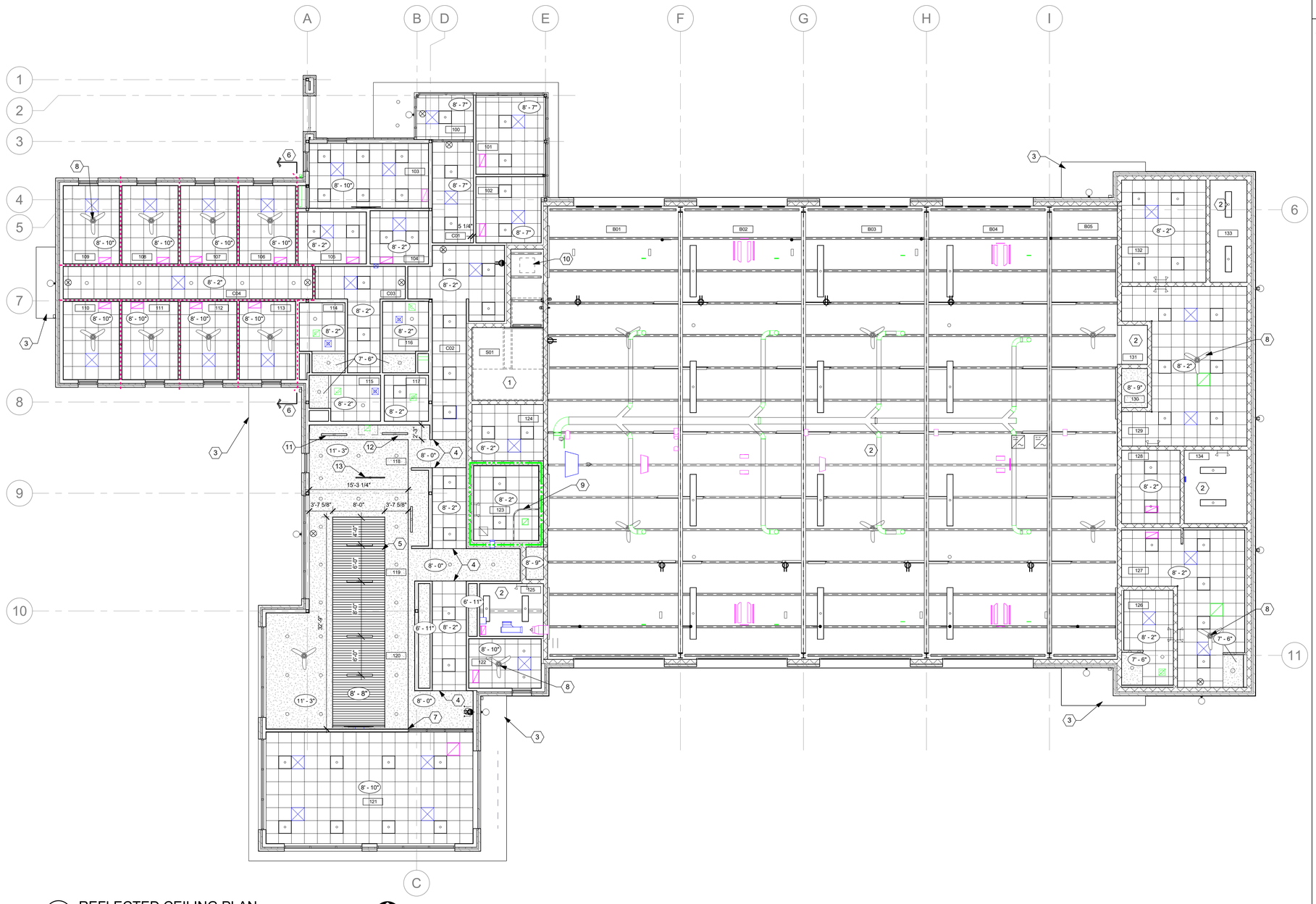
TITLE
EQUIPMENT PLAN

SHEET NO.
A1.51

3/22/2022 3:18:44 PM



E1 REFLECTED CEILING PLAN
1/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 OPEN TO MEZZANINE ABOVE.

2 OPEN TO STRUCTURE ABOVE.

3 METAL AWNING. REFER TO SHEET A5.06 FOR DETAILS.

4 FRAMED GYPSUM BULKHEAD AT CHANGES IN CEILING HEIGHTS. REFER TO SHEET A0.11 FOR DETAILS.

5 ARMSTRONG LINEAR WOOD CEILING. APPLY TO WALL AND CURVE INTO SUSPENDED CEILING. REFER TO INTERIOR ELEVATIONS AND MATERIAL LEGEND FOR DETAILS.

6 CEILING TYPE F3. U.L. P522 RATED CEILING MOUNTED TO UNDERSIDE OF ROOF STRUCTURE REQUIRED IN R-2 SLEEPING AREA (EVERYTHING WEST OF 1/2 HOUR RATED PARTITION).

7 ALIGN.

8 CEILING FAN TO BE CENTERED IN CEILING TILE WHEN IN APC CEILING. TYPICAL.

9 CUBICAL CURTAIN, TRACK, & TOP MESH. REFER TO SHEET A0.11 FOR DETAILS. BASIS OF DESIGN: INPRO CORPORATION, FORMATRAC. PVC CURTAIN TRACK: NOT LESS THAN 1-1/4" WIDE x 15/16" HIGH. CURTAIN GROMMETS: TWO-PIECE, ROLLED EDGE, RUSTPROOF, NICKEL PLATED BRASS; SPACED NOT MORE THAN 6" O.C.; MACHINED INTO TOP HEM. MESH TOP: NOT LESS THAN 22" HIGH MESH TOP OF No. 50 NYLON MESH. CURTAIN TIEBACK: NICKEL-PLATED BRASS CHAIN; ONE AT WET WALL.

10 TRAINING MANHOLE ABOVE. REFER TO F4/A1.21 FOR DETAILS.

11 LIGHT FIXTURE TO BE CENTERED BETWEEN WALL AND RANGE HOOD.

12 LIGHT FIXTURE TO BE CENTERED BETWEEN MICROWAVE CABINET (TM) AND RANGE HOOD.

13 LINEAR PENDANT LIGHT FIXTURE TO BE CENTERED OVER ISLAND CASEWORK.

GENERAL NOTES

A. REFER TO ROOM FINISH SCHEDULE, MATERIALS LEGEND, AND SPECIFICATIONS FOR CEILING TYPES AND FINISHES.

B. LAYOUT GRIDS TO BALANCE BORDER WIDTHS AT OPPOSITE EDGES. BORDER TILES TO BE 3" MINIMUM U.N.O. INSTALL EDGE MOLDING AT PERIMETER U.N.O.

C. REFER TO PME DRAWINGS FOR DEVICE DESCRIPTIONS.

D. ALL EXPOSED GYPSUM PLASTER BOARD SURFACES SHALL BE PAINTED.

E. EXPOSED STRUCTURE SHALL BE PAINTED PER SPECIFICATIONS.

F. GENERAL CONTRACTOR TO COORDINATE THE LOCATION OF ALL LOCUTION ALERTING SYSTEM DEVICES WITH THE DEVICES SHOWN ON THIS PLAN.

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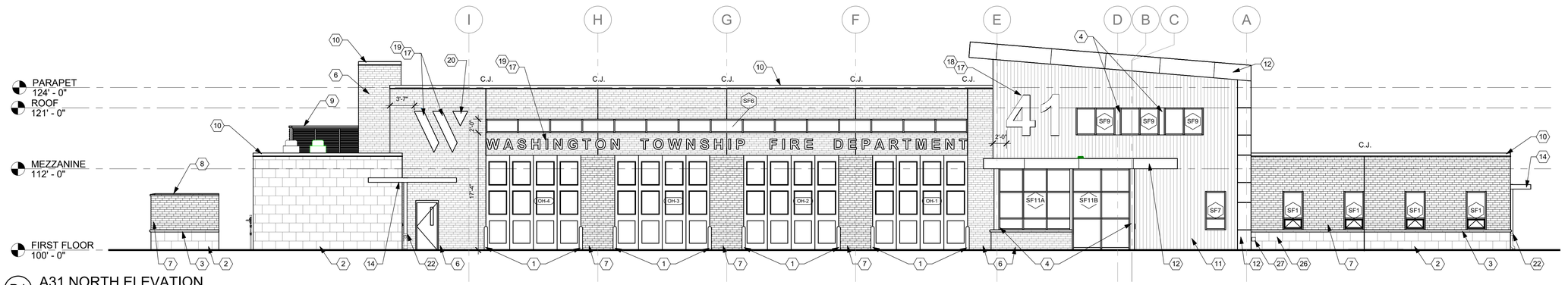
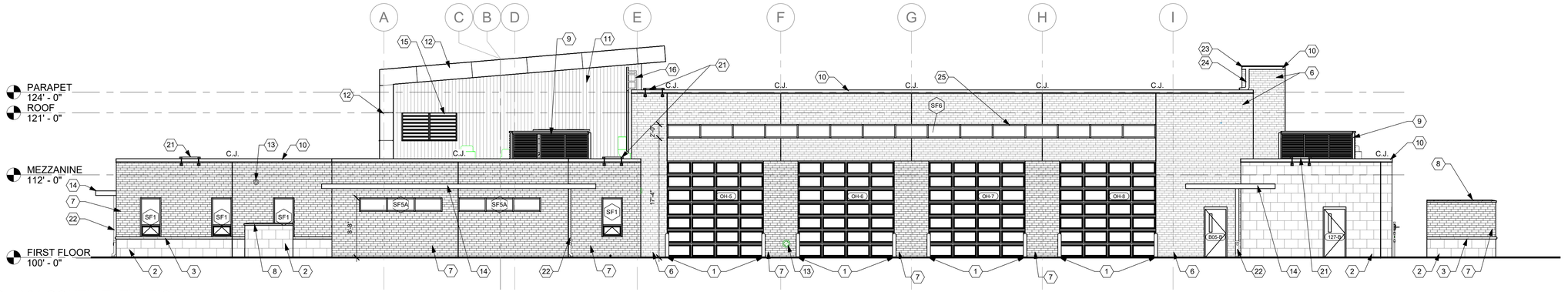
TITLE
REFLECTED CEILING PLAN

SHEET NO.
A2.11

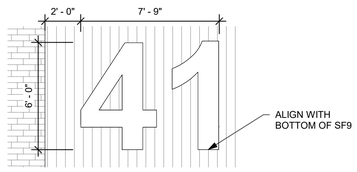
3/23/2022 9:44:59 AM



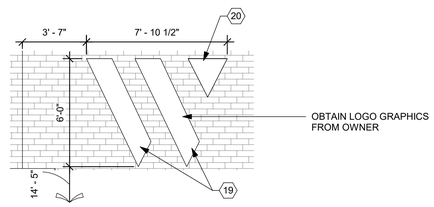
B1 A31 NORTH ELEVATION
1/8" = 1'-0"



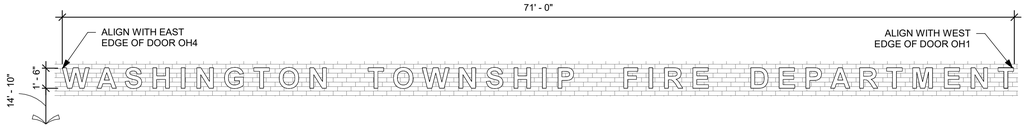
C1 A31 SOUTH ELEVATION
1/8" = 1'-0"



E1 DIMENSIONAL LETTERING DETAIL A
1/4" = 1'-0"



E2 DIMENSIONAL LETTERING DETAIL B
1/4" = 1'-0"



F1 DIMENSIONAL LETTERING DETAIL C
3/16" = 1'-0"

CONSTRUCTION NOTES

NOT ALL NOTES USED ON THIS SHEET.

(00) INDICATES CONSTRUCTION NOTE.

1 METAL PIPE BOLLARD (TYP) AT ALL APPARATUS BAY DOORS AND WHERE NOTED. REFER TO SHEET A5.01 FOR DETAILS
2 16" X 24" BURNISHED BLOCK VENEER.
3 BURNISHED MASONRY WATER TABLE.
4 BREAK METAL TO MATCH STOREFRONT MULLIONS.
6 TYPE 1 UTILITY BRICK.
7 TYPE 2 UTILITY BRICK.
8 BURNISHED MASONRY CAP.
9 ROOF TOP EQUIPMENT SCREEN SYSTEM. REFER TO SPECIFICATIONS.
10 PREFINISHED GALVALUME COPING.
11 VERTICAL METAL PLANK SYSTEM.
12 METAL PANEL SYSTEM.
13 OVERFLOW ROOF DRAIN OUTLET. REFER TO PLUMBING DRAWINGS.
14 METAL AWNING. REFER TO SHEETS A5.07 & A5.08 FOR DETAILS.
15 PREFINISHED ALUMINUM LOUVERS. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS. REFER TO DETAILS ON SHEET A5.09. COORDINATE WITH MECHANICAL AND STRUCTURAL DRAWINGS.
16 METAL PARAPET LADDER. SEE SHEET F4/A5.01 FOR DETAILS
17 METAL DIMENSIONAL LETTERING. 2" DEEP CHANNEL LETTERS WITH 1/8" THICK ALUMINUM FACES SET UP TO BE STUD MOUNTED TO BUILDING. PROVIDE SPACERS TO ALLOW LETTERING TO BE OFFSET 1" FROM FACE OF BUILDING FACADE. FONT TO BE ARIAL BOLD TYPE FACE, HEIGHT AND JUSTIFICATION AS SHOWN. 1
18 NON-ILLUMINATED LETTERS. PREFINISHED SILVER FROM MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS TO MATCH METAL PANEL SIDING.
19 BACKLIT ILLUMINATED LETTERS. PREFINISHED BLACK FROM MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS.
20 BACKLIT ILLUMINATED LETTERS. PREFINISHED YELLOW FROM MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS.
21 PARAPET GUARD RAIL. REFER TO ROOF PLAN FOR DETAILS.
22 4"X6" GALVALUME DOWNSPOUT. REFER TO A5.01 FOR DOWNSPOUT ADAPTOR DETAILS.
23 6" PREFINISHED GALVALUME GUTTER.
24 4"x 6" PREFINISHED GALVALUME DOWNSPOUT TO MATCH GUTTER. DISCHARGE ONTO APPARATUS BAY ROOF.
25 ALIGN SF6 JAMBS WITH BAY DOOR JAMBS BELOW.
26 METAL PANEL SYSTEM.
27 DRYER VENT.

GENERAL NOTES

A. "CJ"=MASONRY CONTROL JOINT.
B. FOR SIDEWALKS AND EXTERIOR PADS REFER TO CIVIL SITE PLAN AND LANDSCAPE PLAN.
C. ALL MASONRY VENEER IS 1/3 RUNNING BOND.

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Expiration Date 12/31/2023

Washington Township
Fire Station 41
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ISSUE

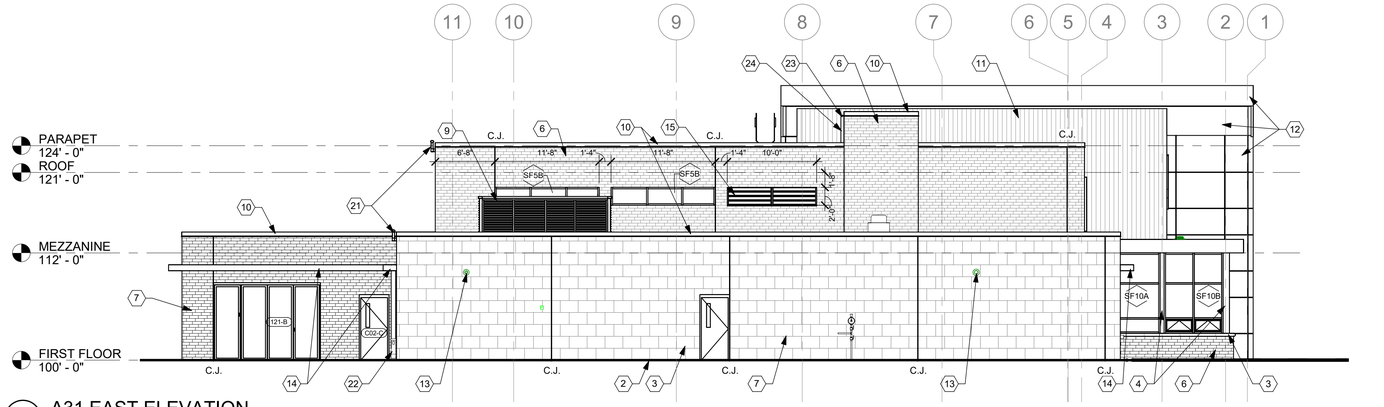
NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION
1	04/22/2022	ADDENDUM 2

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

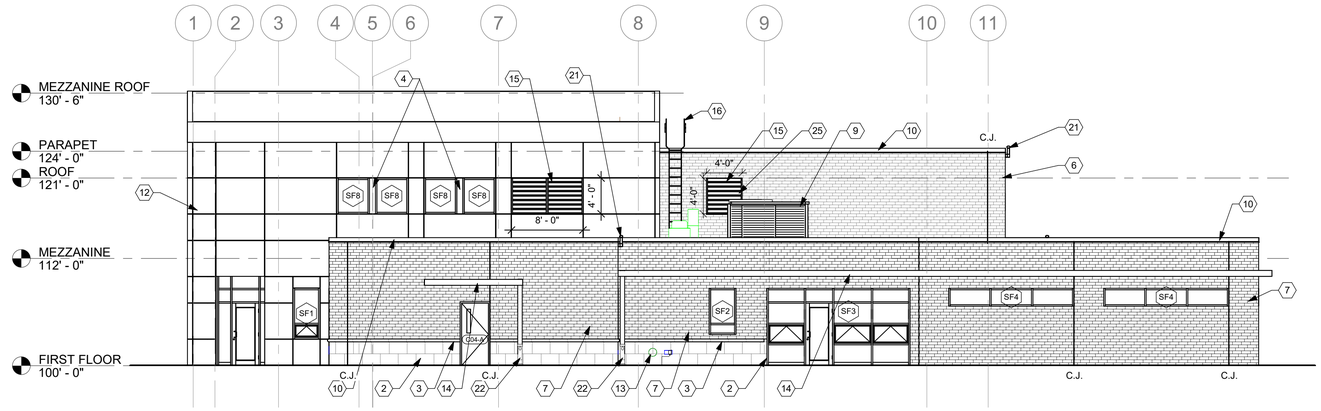
TITLE
EXTERIOR ELEVATIONS

SHEET NO.
A3.01

4/21/2022 8:48:52 AM



C1 A31 EAST ELEVATION
1/8" = 1'-0"



E1 A31 WEST ELEVATION
1/8" = 1'-0"

CONSTRUCTION NOTES

NOT ALL NOTES USED ON THIS SHEET.

(00) INDICATES CONSTRUCTION NOTE.

1 METAL PIPE BOLLARD (TYP) AT ALL APPARATUS BAY DOORS AND WHERE NOTED. REFER TO SHEET A5.01 FOR DETAILS

2 16" X 24" BURNISHED BLOCK VENEER.

3 BURNISHED MASONRY WATER TABLE.

4 BREAK METAL TO MATCH STOREFRONT MULLIONS.

6 TYPE 1 UTILITY BRICK.

7 TYPE 2 UTILITY BRICK.

8 BURNISHED MASONRY CAP.

9 ROOF TOP EQUIPMENT SCREEN SYSTEM. REFER TO SPECIFICATIONS.

10 PREFINISHED GALVALUME COPING.

11 VERTICAL METAL PLANK SYSTEM.

12 METAL PANEL SYSTEM.

13 OVERFLOW ROOF DRAIN OUTLET. REFER TO PLUMBING DRAWINGS.

14 METAL AWNING. REFER TO SHEETS A5.07 & A5.08 FOR DETAILS.

15 PREFINISHED ALUMINUM LOUVERS. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS. REFER TO DETAILS ON SHEET A5.09. COORDINATE WITH MECHANICAL AND STRUCTURAL DRAWINGS.

16 METAL PARAPET LADDER. SEE SHEET F4/A5.01 FOR DETAILS.

17 METAL DIMENSIONAL LETTERING. 1" DEEP CHANNEL LETTERS WITH 1/8" THICK ALUMINUM FACES SET UP TO BE STUD MOUNTED TO BUILDING. PROVIDE SPACERS TO ALLOW LETTERING TO BE OFFSET 1" FROM FACE OF BUILDING FACADE. FONT TO BE ARIAL BOLD TYPE FACE, HEIGHT AND JUSTIFICATION AS SHOWN.

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23 6" PREFINISHED GALVALUME GUTTER.

24 4"x 6" PREFINISHED GALVALUME DOWNSPOUT TO MATCH GUTTER. DISCHARGE ONTO APPARATUS BAY ROOF.

25 ALIGN SF6 JAMBS WITH BAY DOOR JAMBS BELOW.

26 METAL PANEL SYSTEM.

27 DRYER VENT.

GENERAL NOTES

A. "CJ"=MASONRY CONTROL JOINT.

B. FOR SIDEWALKS AND EXTERIOR PADS REFER TO CIVIL SITE PLAN AND LANDSCAPE PLAN.

C. ALL MASONRY VENEER IS 1/3 RUNNING BOND.

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ISSUE		
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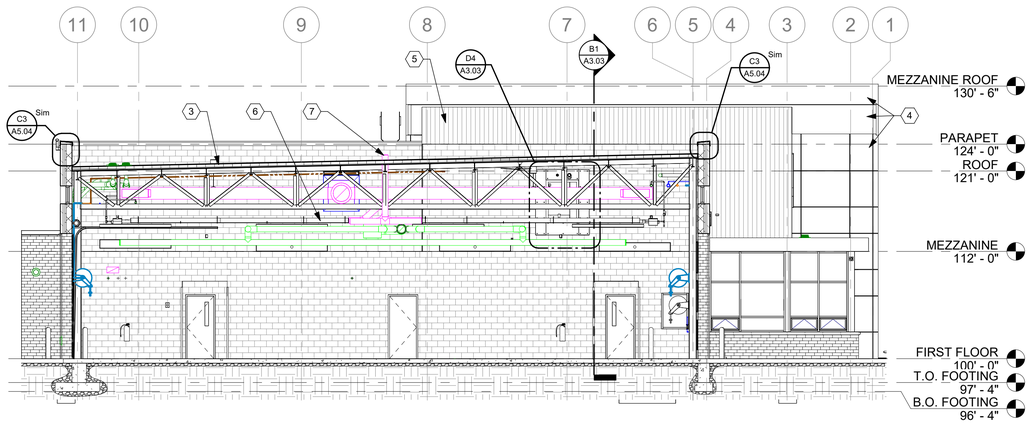
DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS/MLG
CHECKED	TJB

TITLE
EXTERIOR ELEVATIONS

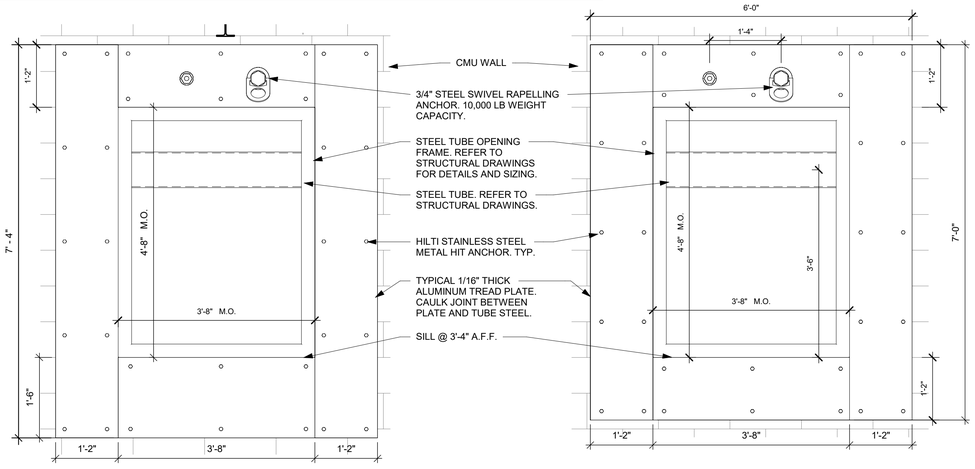
SHEET NO.
A3.02

3/24/2022 9:12:59 AM

B1 NORTH SECTION
1/8" = 1'-0"

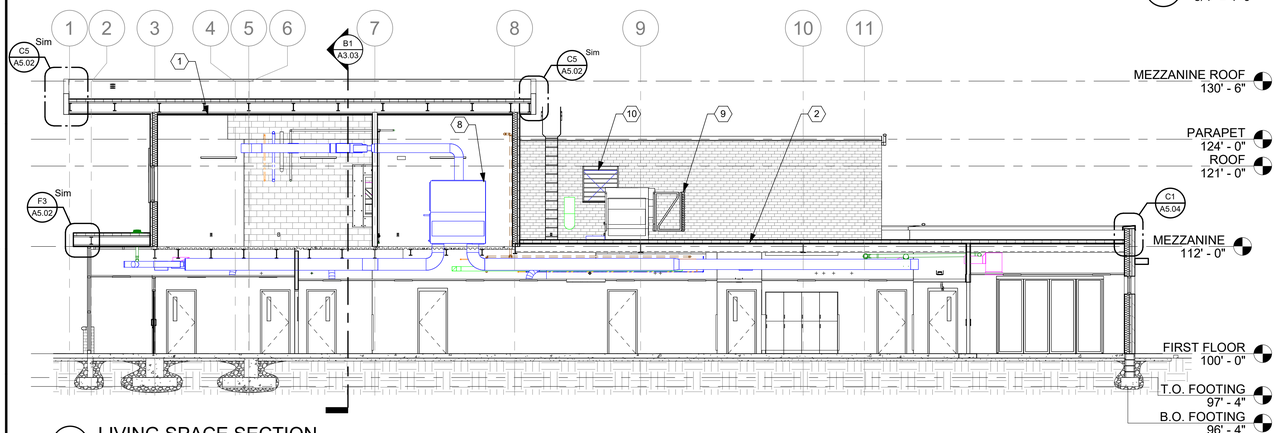


D1 APPARATUS BAY SECTION
1/8" = 1'-0"



D4 MEZZANINE WINDOW EXTERIOR
3/4" = 1'-0"

D6 MEZZANINE WINDOW INTERIOR
3/4" = 1'-0"



F1 LIVING SPACE SECTION
1/8" = 1'-0"

CONSTRUCTION NOTES

(00) INDICATES CONSTRUCTION NOTE.

1. 5/8" TYPE "X" GYPSUM WALL BOARD CEILING ATTACHED TO BOTTOM OF STRUCTURE.
2. EPDM MEMBRANE OVER R20 INSULATION MIN. AND 5/8" FRT PLYWOOD DECK.
3. EPDM MEMBRANE OVER R20 INSULATION MIN. OVER 1-1/2" METAL DECK.
4. METAL PANEL SYSTEM. REFER TO A5.02 & A5.03 FOR DETAILS.
5. METAL PLANK SYSTEM. REFER TO SHEET A5.03 FOR DETAILS.
6. RADIANT HEATER. TYP. BETWEEN EACH BAY. REFER TO MECHANICAL DRAWINGS FOR DETAILS.
7. EXHAUST STACK. REFER TO MECHANICAL DRAWINGS FOR PENETRATION DETAILS.
8. AHU AND MECHANICAL SYSTEMS. REFER TO MECHANICAL DRAWINGS FOR DETAILS.
9. ROOF TOP EQUIPMENT SCREEN SYSTEM. REFER TO SPECIFICATIONS.
10. PREFINISHED ALUMINUM LOUVERS. COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS. REFER TO DETAILS. COORDINATE WITH MECHANICAL AND STRUCTURAL DRAWINGS.

GENERAL NOTES

A. "CJ"=MASONRY CONTROL JOINT

B. FOR SIDEWALKS AND EXTERIOR PADS REFER TO CIVIL SITE PLAN AND LANDSCAPE PLAN.

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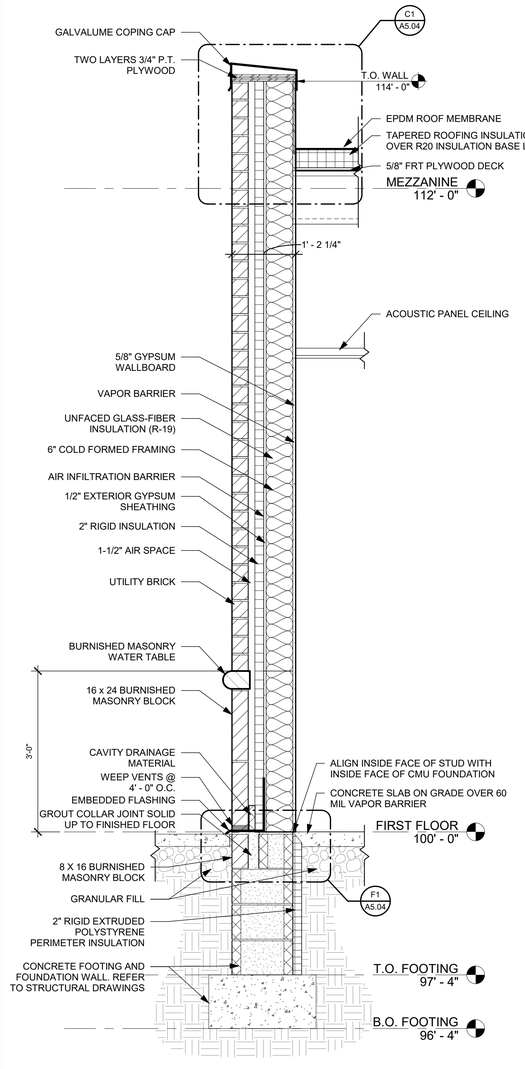
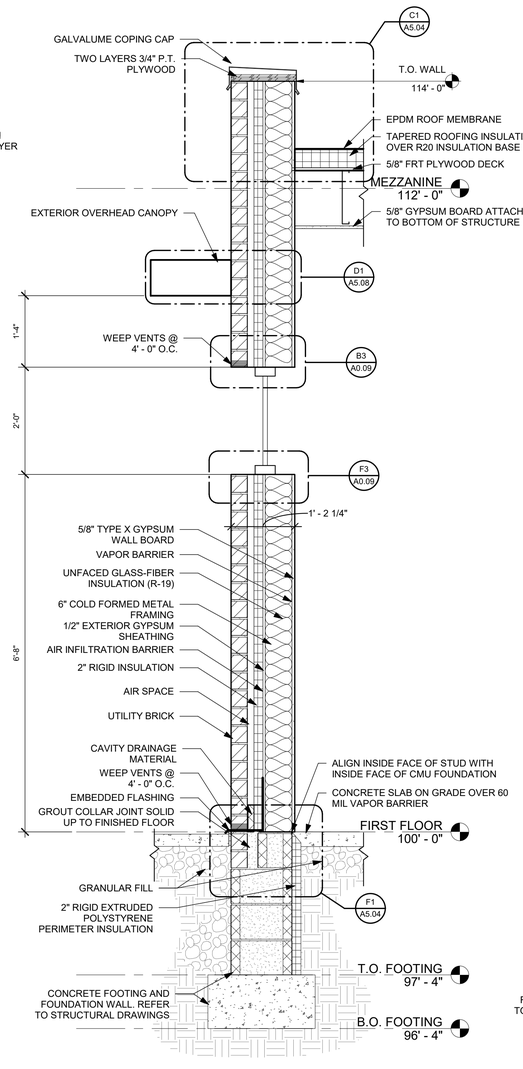
TITLE
BUILDING SECTIONS

SHEET NO.
A3.03

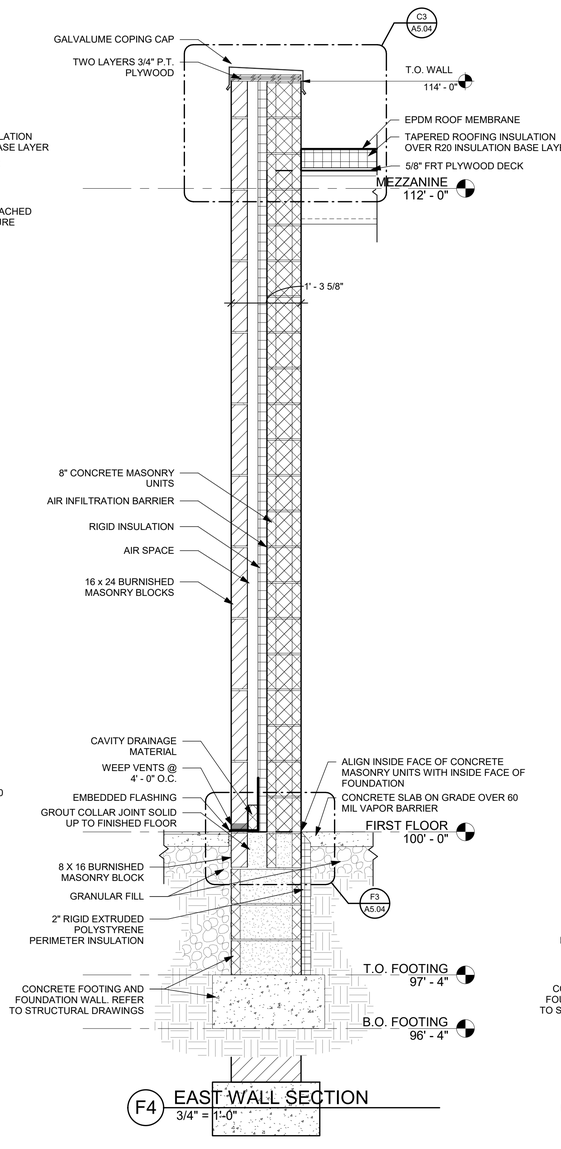
3/24/2022 9:12:59 AM



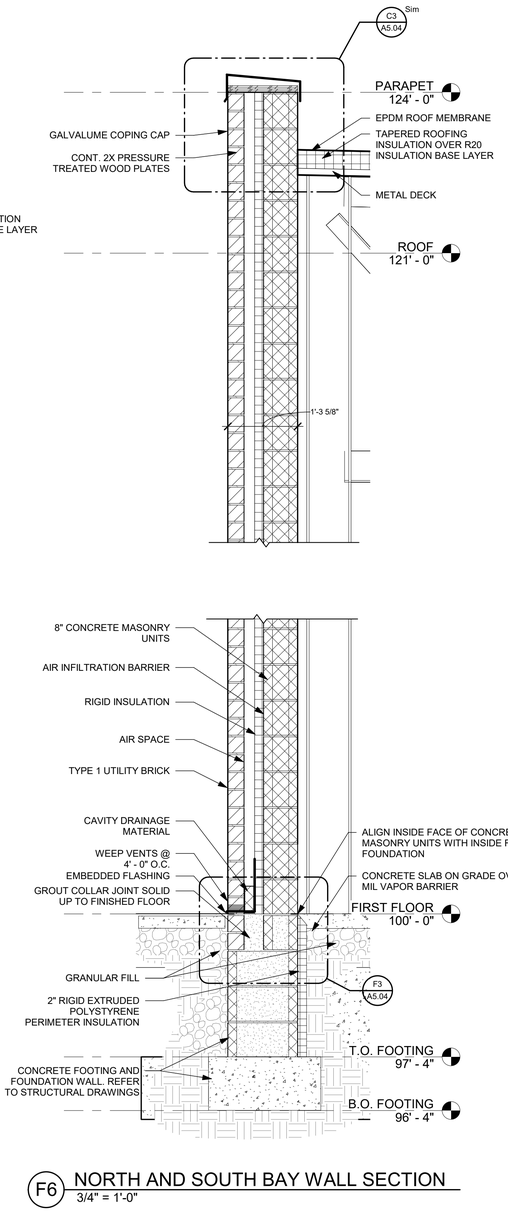
F1 DORM WALL SECTION
3/4" = 1'-0"



F3 DAYROOM WALL SECTION
3/4" = 1'-0"



F4 EAST WALL SECTION
3/4" = 1'-0"



F6 NORTH AND SOUTH BAY WALL SECTION
3/4" = 1'-0"

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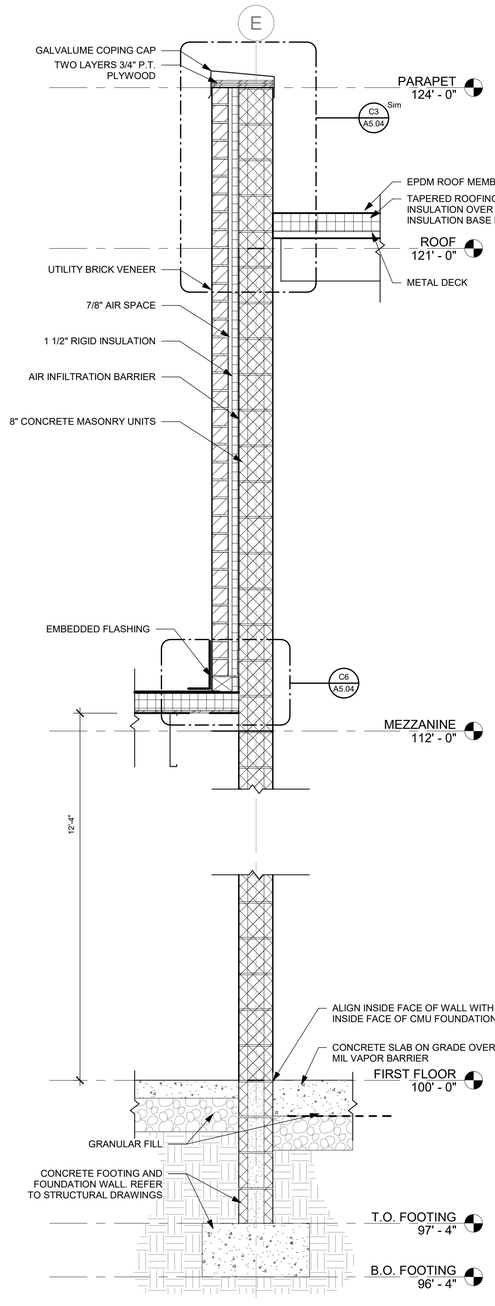
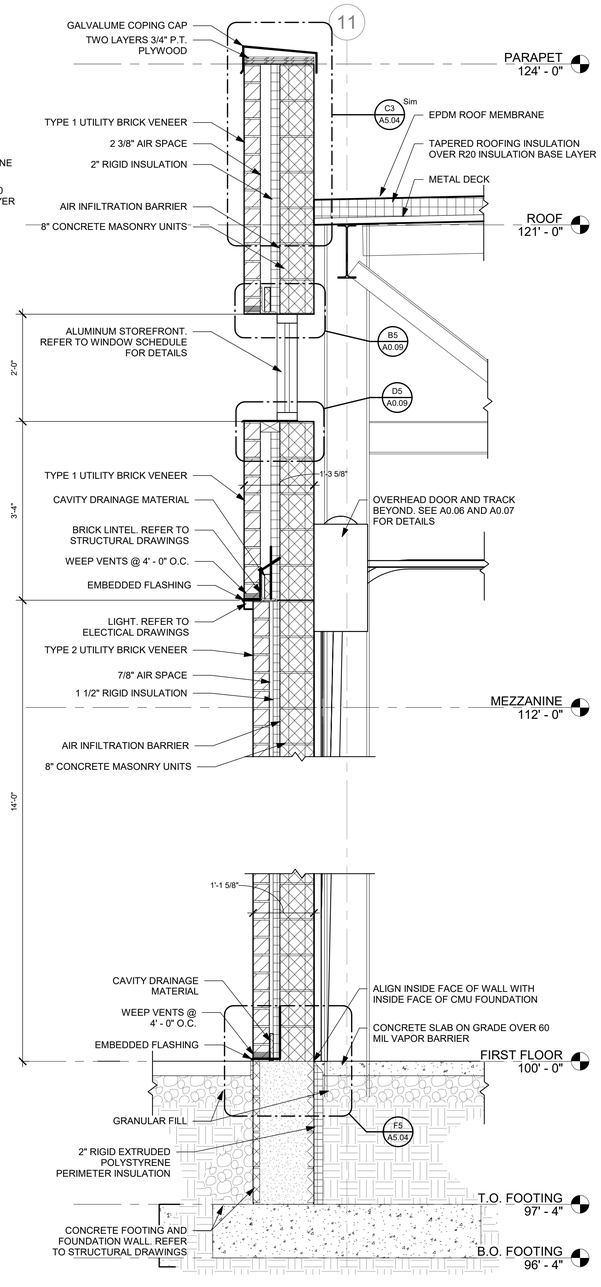
TITLE
WALL SECTIONS

SHEET NO.
A4.01

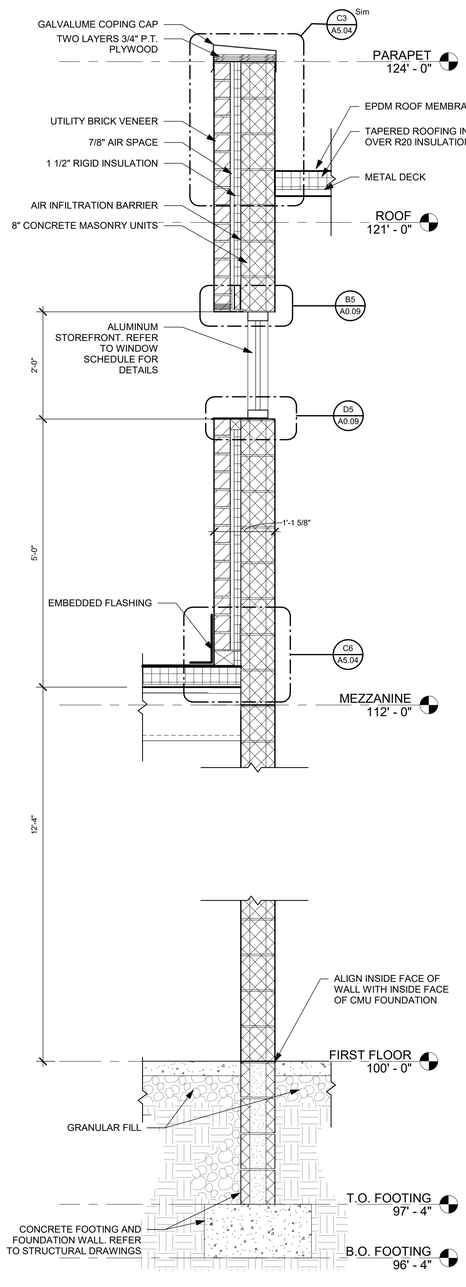
3/24/2022 9:13:01 AM



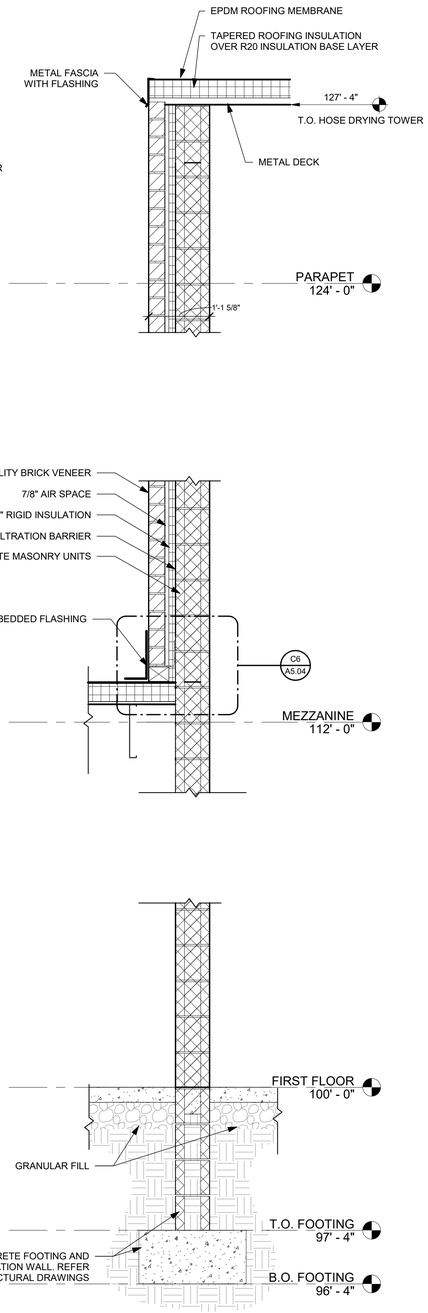
F1 WEST APPARATUS WALL SECTION
3/4" = 1'-0"



F3 NORTH / SOUTH APPARATUS BAY WALL SECTION
3/4" = 1'-0"



F5 EAST APPARATUS BAY WALL SECTION
3/4" = 1'-0"



F6 HOSE DRYING TOWER WALL SECTION
3/4" = 1'-0"

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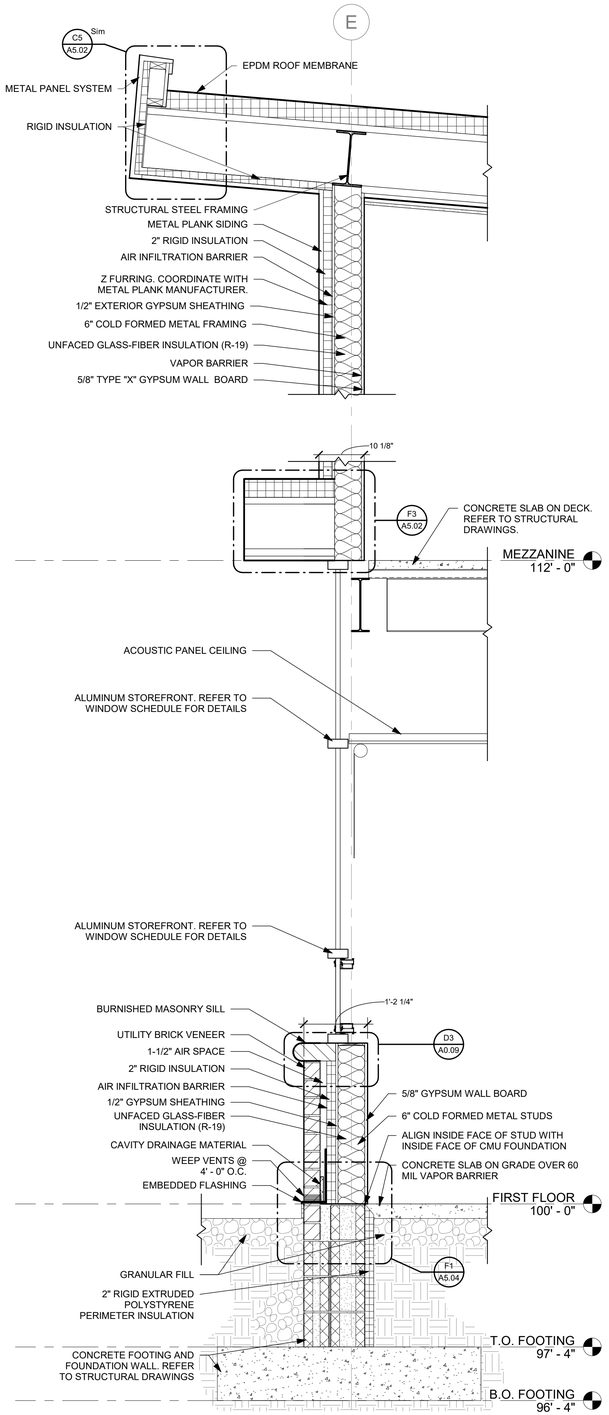
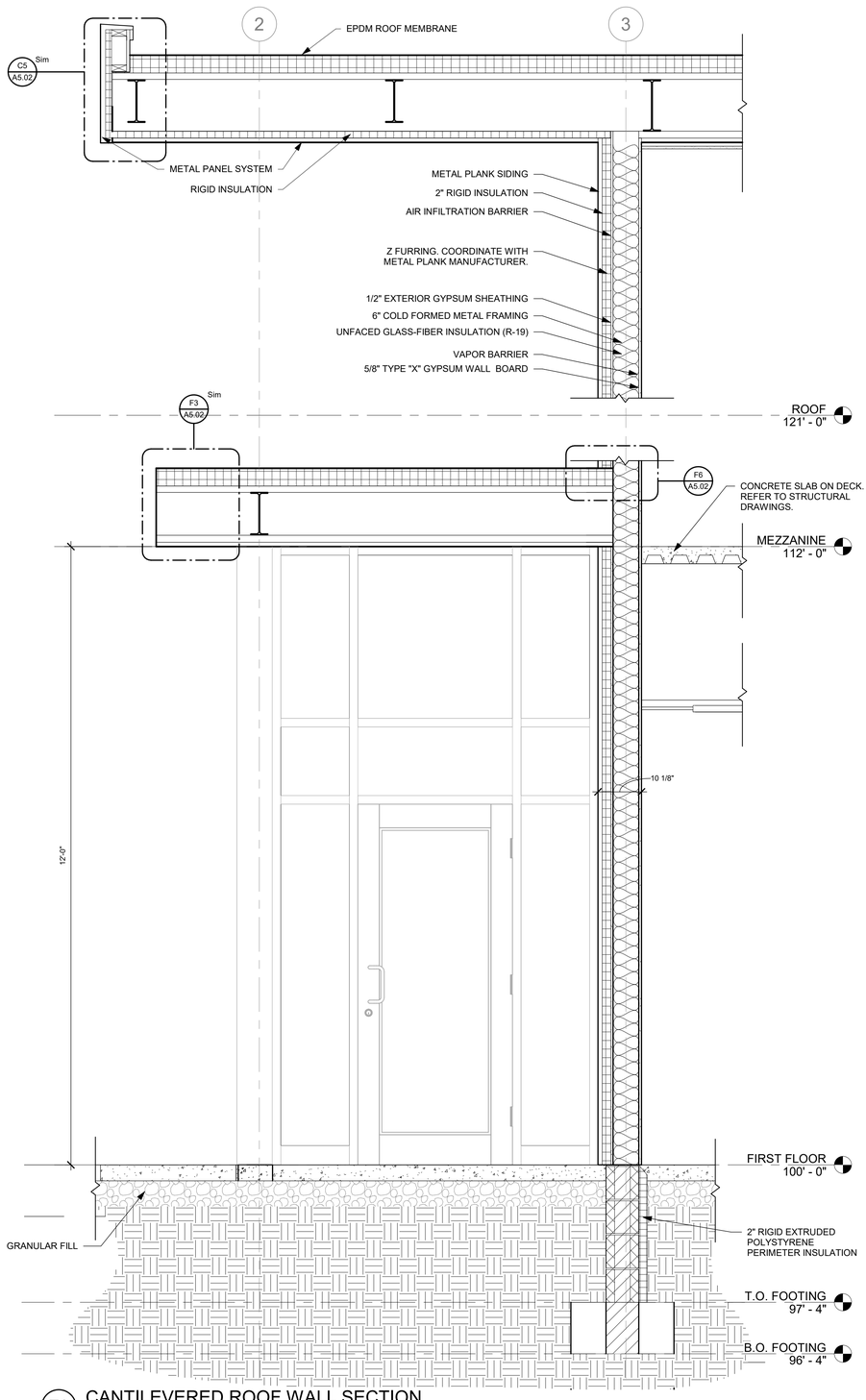
TITLE
WALL SECTIONS

SHEET NO.
A4.02

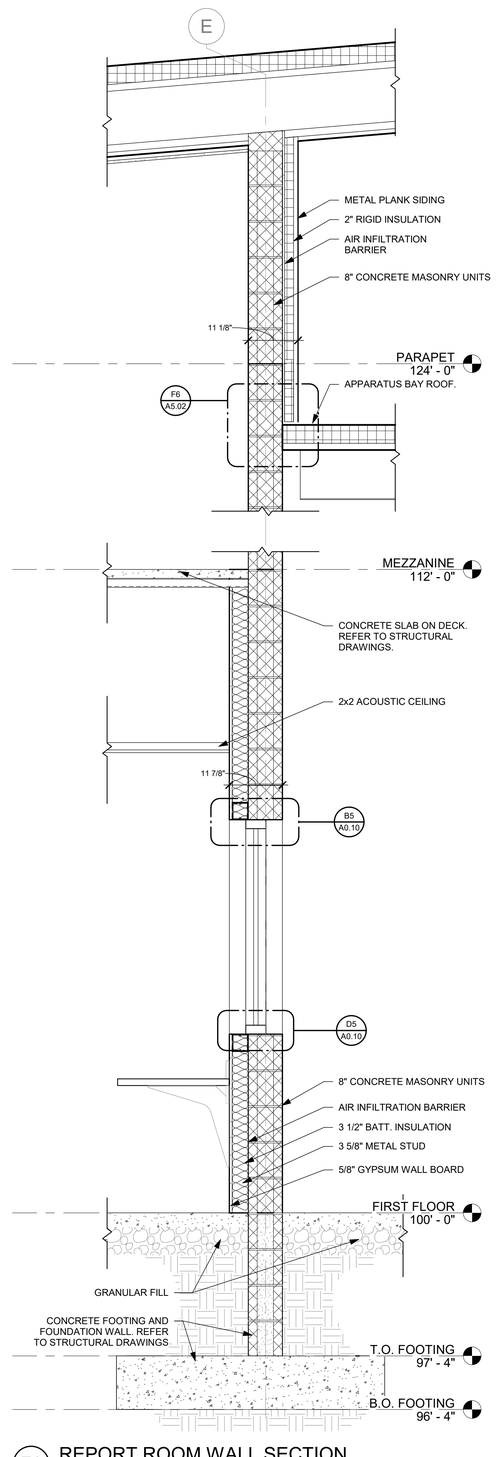
3/24/2022 9:13:03 AM



F1 EAST VESTIBULE WALL SECTION
3/4" = 1'-0"



F3 CANTILEVERED ROOF WALL SECTION
3/4" = 1'-0"



F6 REPORT ROOM WALL SECTION
3/4" = 1'-0"

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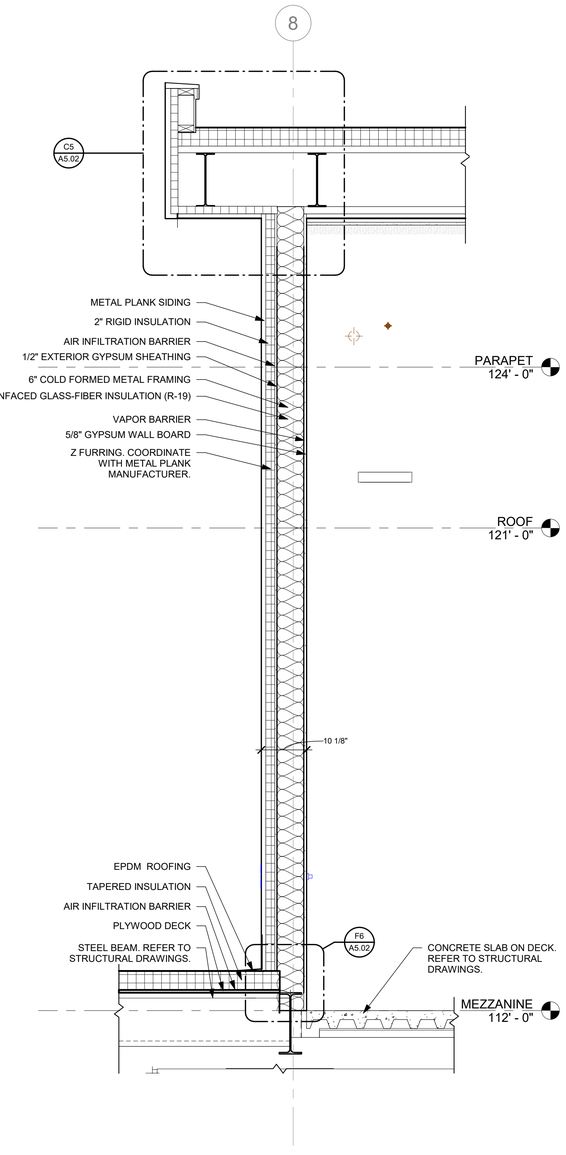
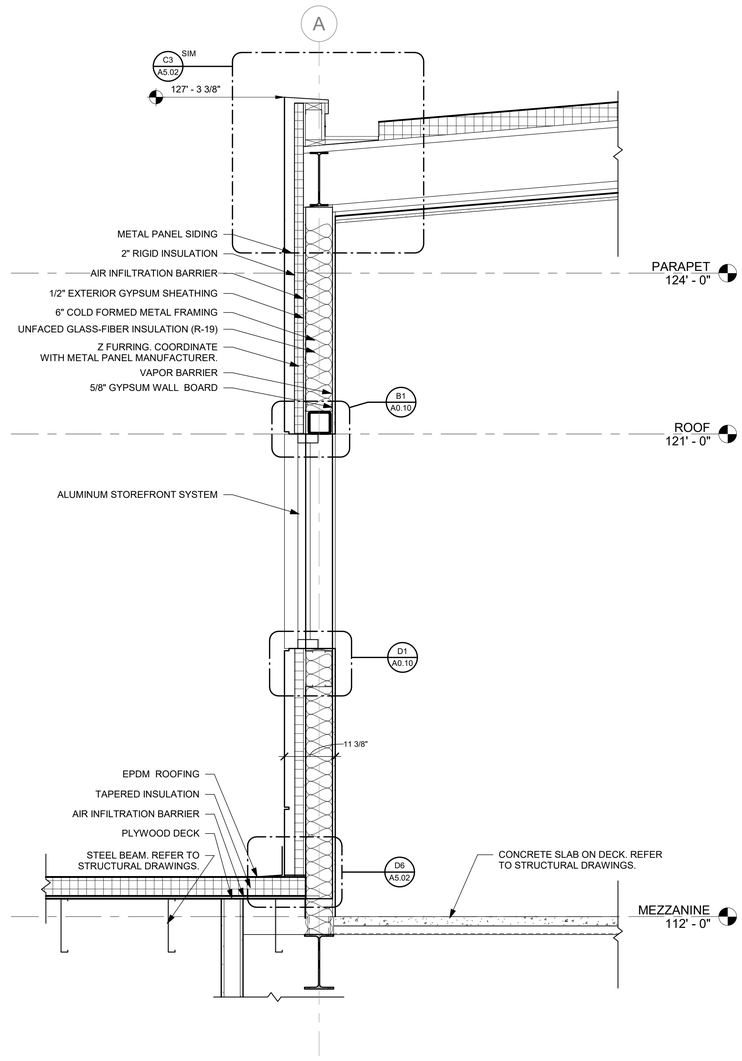
TITLE
WALL SECTIONS

SHEET NO.
A4.03

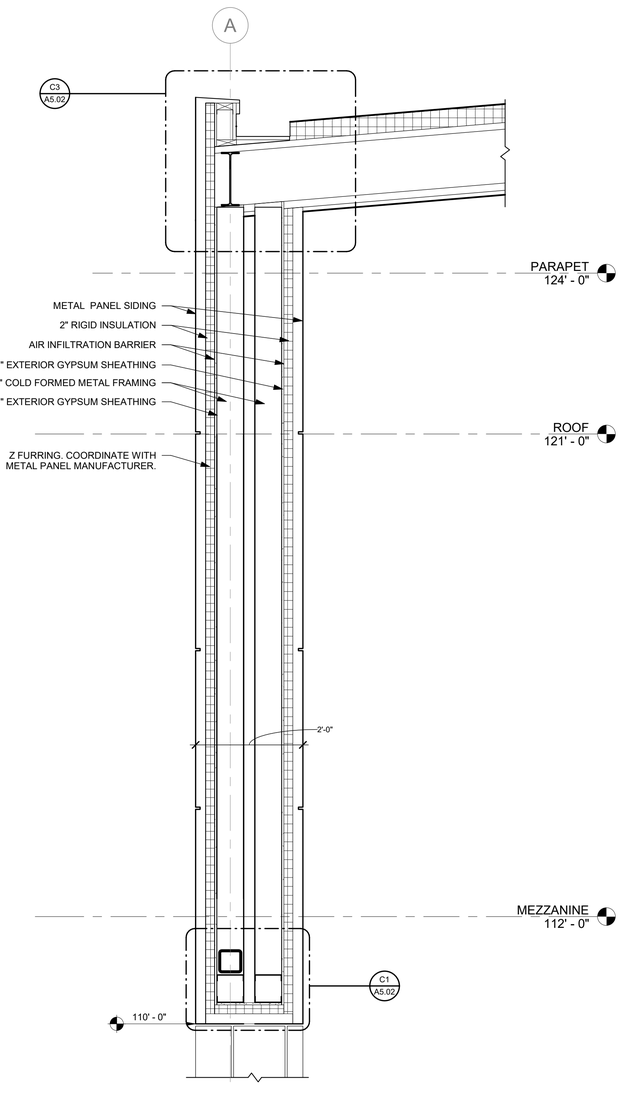
3/22/2022 3:19:14 PM



E1 SOUTH MEZZANINE WALL SECTION
3/4" = 1'-0"



E3 WEST MEZZANINE WALL SECTION
3/4" = 1'-0"



E5 METAL PANEL COLUMN WALL SECTION
3/4" = 1'-0"

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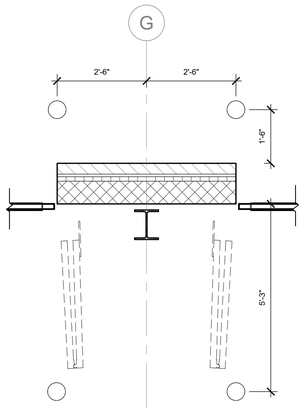
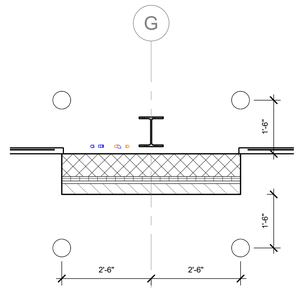
TITLE
WALL SECTIONS

SHEET NO.
A4.04

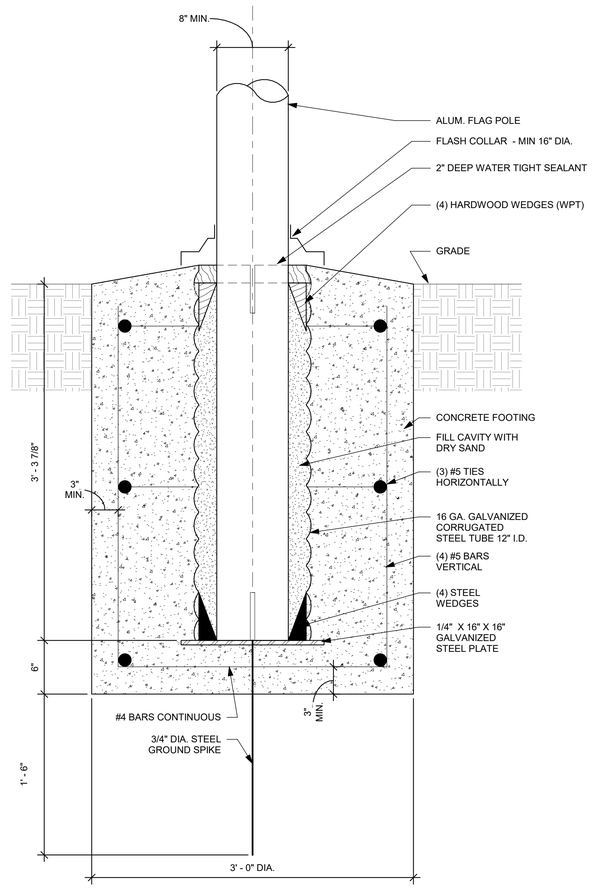
3/22/2022 3:10:16 PM



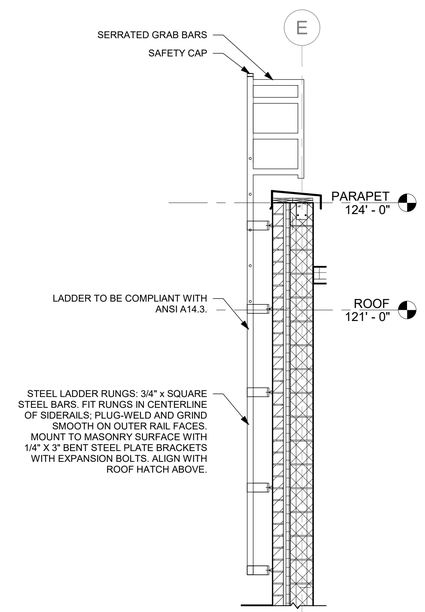
C1 TYP. BOLLARD LOCATIONS - NORTH DOORS
1/2" = 1'-0" REFERS TO THE CIVIL DRAWINGS FOR ADDITIONAL BOLLARD DETAILS.



C2 TYP. BOLLARD LOCATIONS - SOUTH DOORS
1/2" = 1'-0" REFERS TO THE CIVIL DRAWINGS FOR ADDITIONAL BOLLARD DETAILS.

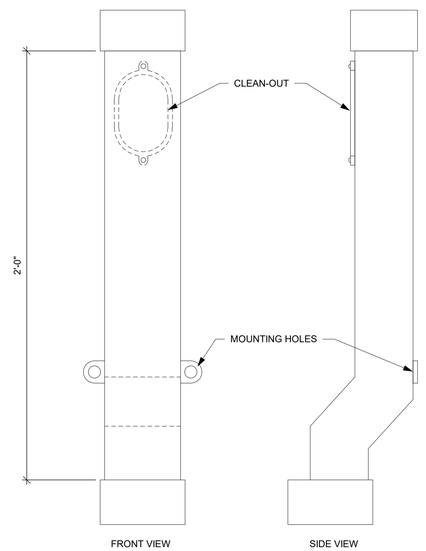


F2 FLAG POLE FOUNDATION DETAIL
1 1/2" = 1'-0"



F4 PARAPET ROOF LADDER DETAILS
1/2" = 1'-0"

BASIS OF DESIGN: PIEDMONT MANUFACTURING, PIEDMONT PIPE DOWNSPOUT - MODEL SO. OFFSETS AND SIZING TO BE COORDINATED WITH DOWNSPOUTS AND STORM PIPING. ADAPTOR COLOR TO BE PICKED BY ARCHITECT FROM MANUFACTURER'S STANDARD OPTIONS.



F6 DOWNSPOUT ADAPTOR
3" = 1'-0"

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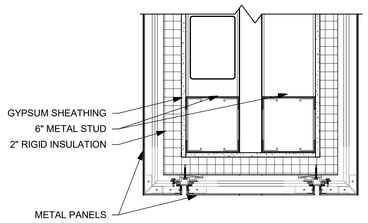
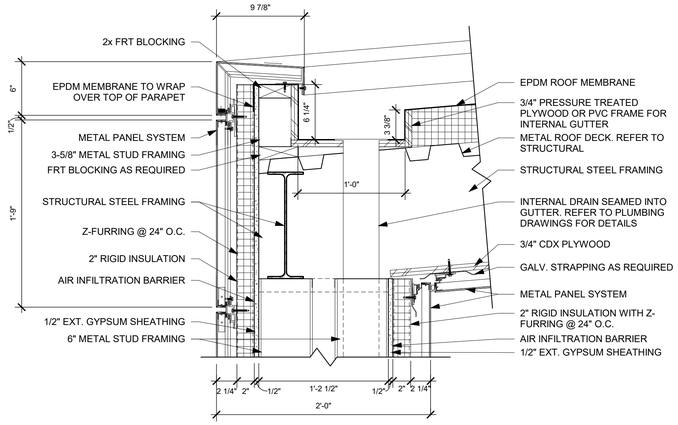
TITLE
EXTERIOR DETAILS

SHEET NO.
A5.01

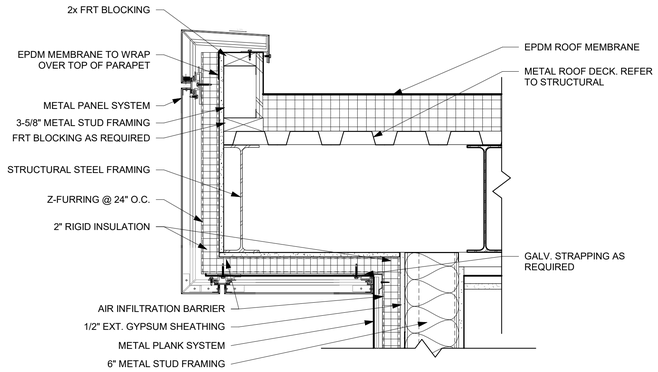
3/22/2022 3:19:17 PM



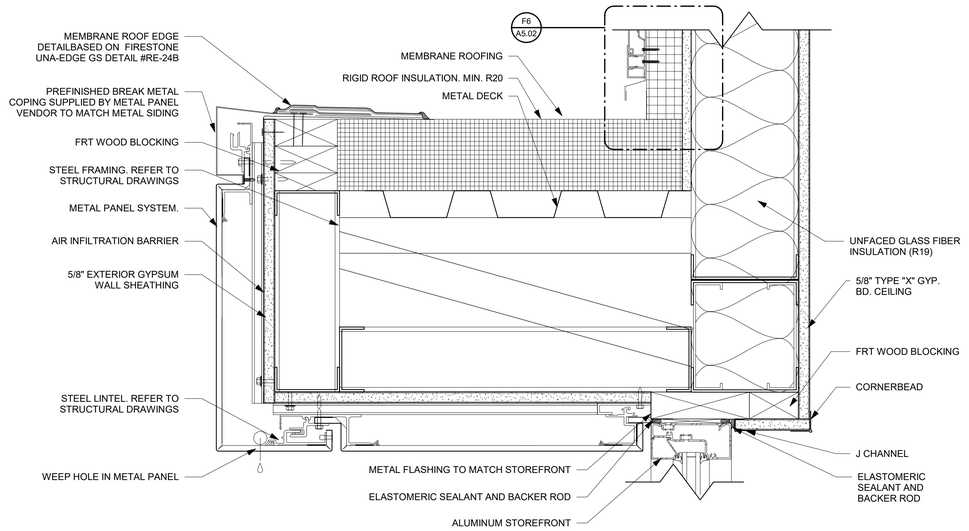
C1 METAL PANEL HEAD DETAIL
1 1/2" = 1'-0"



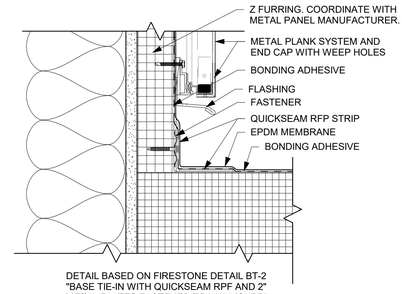
C3 INTERAL GUTTER DETAIL
1 1/2" = 1'-0"



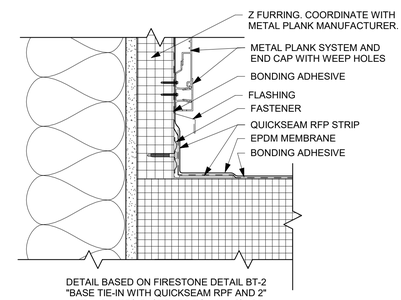
C5 SOFFIT RETURN DETAIL
1 1/2" = 1'-0"



F3 METAL PANEL/SOFFIT DETAIL A
3" = 1'-0"



D6 EPDM DETAIL @ METAL PANEL
3" = 1'-0"



F6 EPDM DETAIL @ METAL PLANK
3" = 1'-0"

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ISSUE

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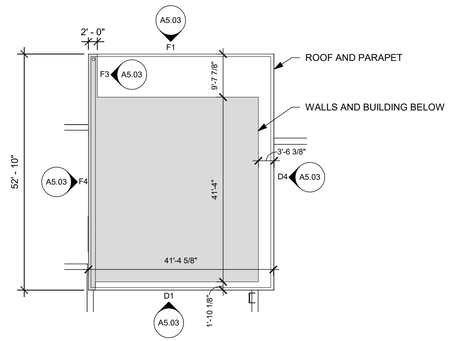
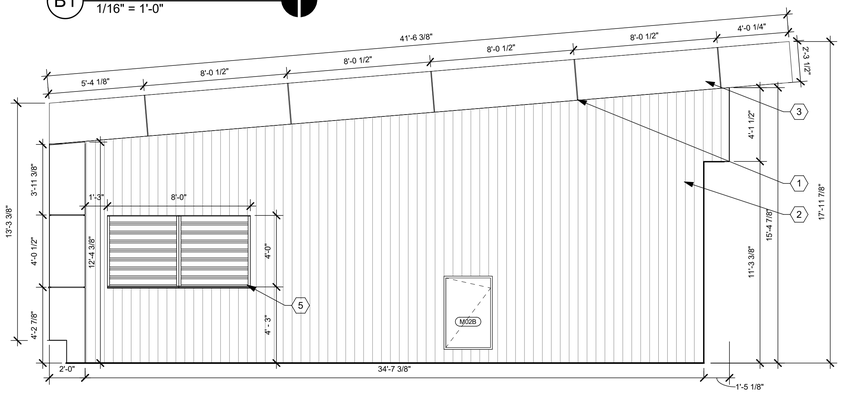
TITLE
EXTERIOR DETAILS - METAL PANELS

SHEET NO.
A5.02

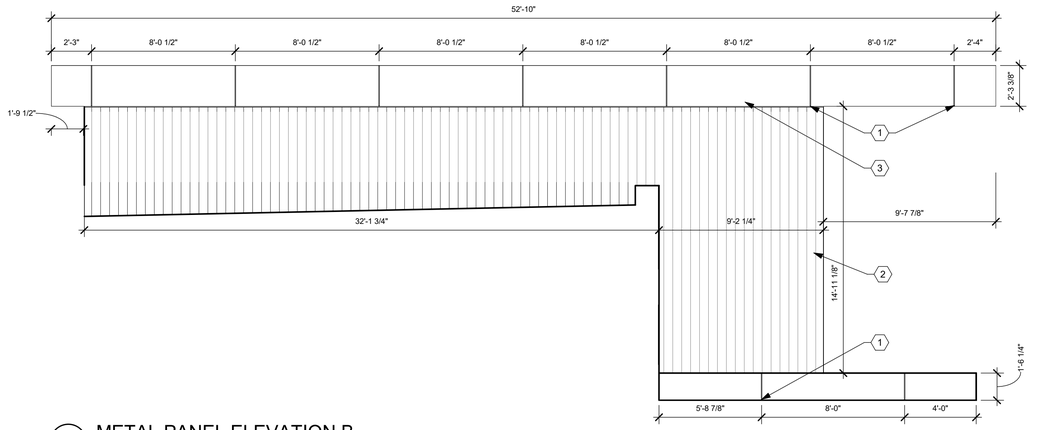
3/24/2022 9:13:54 AM



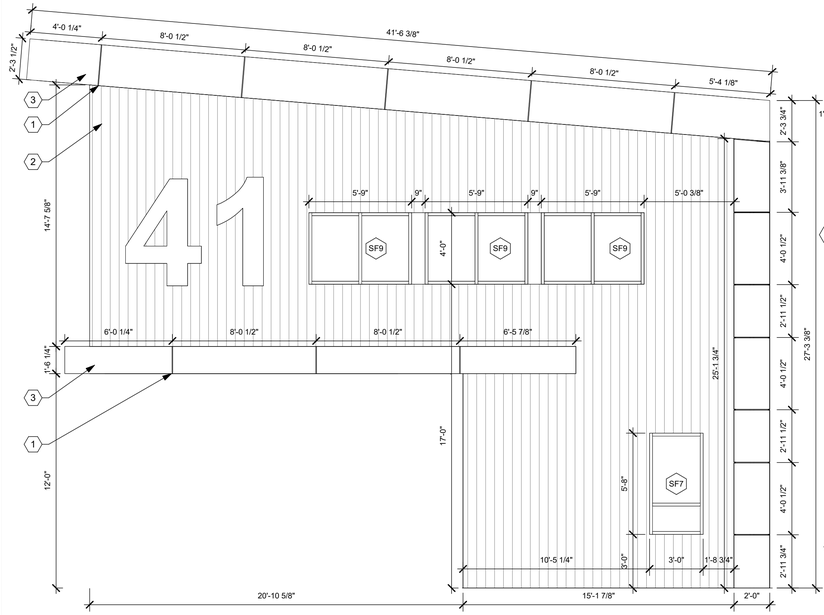
B1 MEZZANINE ROOF
1/16" = 1'-0"



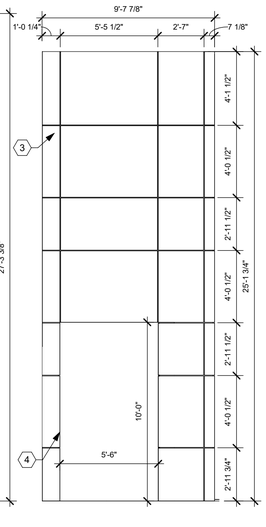
D1 METAL PANEL ELEVATION A
1/4" = 1'-0"



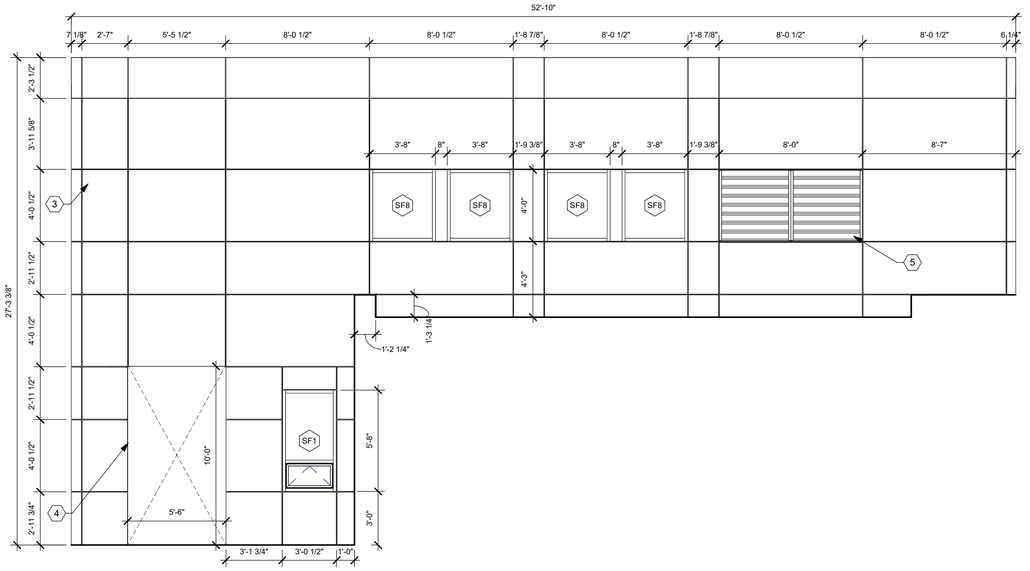
D4 METAL PANEL ELEVATION B
1/4" = 1'-0"



F1 METAL PANEL ELEVATION C
1/4" = 1'-0"



F3 METAL PANEL ELEVATION D
1/4" = 1'-0"



F4 METAL PANEL ELEVATION E
1/4" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 METAL PANELS AND REVEALS CONTINUE ALONG UNDERSIDE OF OVERHANG TO THE FACE OF WALL BEYOND.

2 METAL PLANK.

3 METAL PANELS.

4 OPENING IN METAL PANEL WALL.

5 METAL EXHAUST LOUVER. REFER TO MECHANICAL DRAWINGS AND SHEET A5.09.

GENERAL NOTES

A. FIELD VERIFY BUILT CONDITION PRIOR TO FABRICATION.

B. ALL DIMENSIONS TAKEN TO CENTER OF PANEL REVEALS.

C. ALL REVEALS TO BE 1/2".

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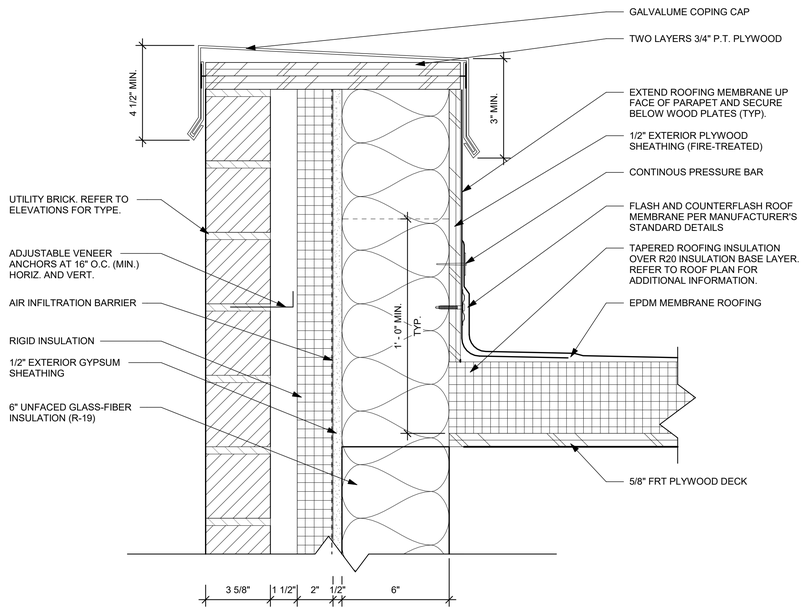
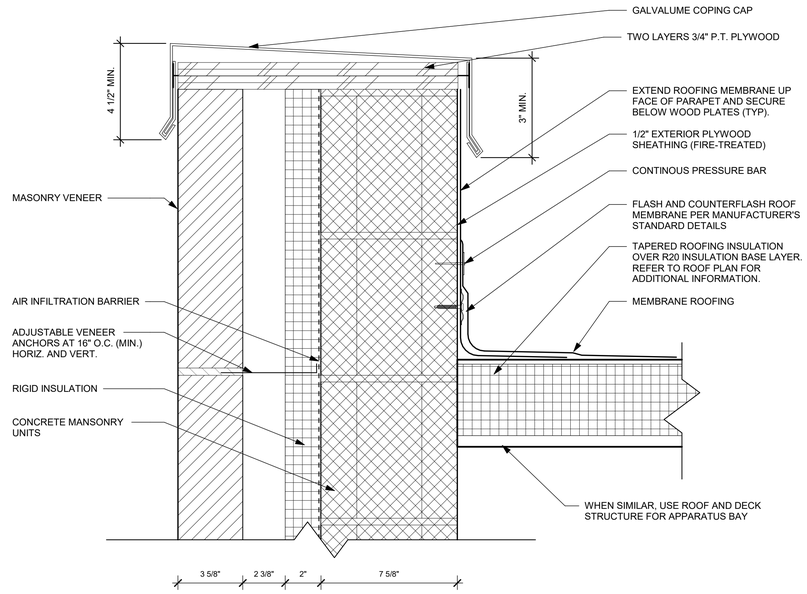
TITLE
EXTERIOR DETAILS - METAL PANELS

SHEET NO.
A5.03

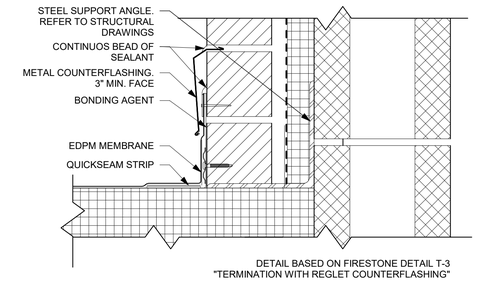
3/22/2022 3:19:20 PM



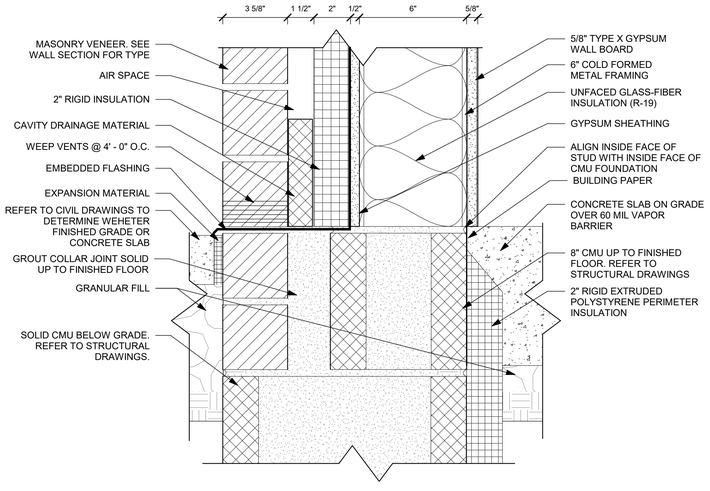
C1 PARAPET DETAIL
3" = 1'-0"



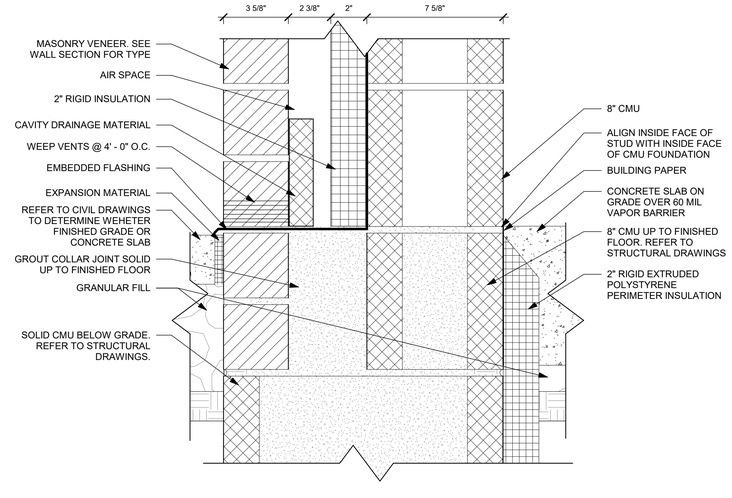
C3 PARAPET DETAIL
3" = 1'-0"



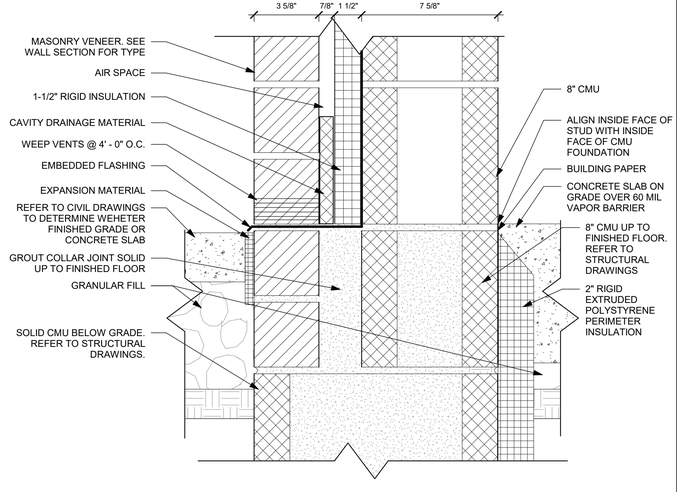
C6 EPDM DETAIL @ BRICK
3" = 1'-0"



F1 FOUNDATION DETAIL
3" = 1'-0"



F3 FOUNDATION DETAIL
3" = 1'-0"



F5 FOUNDATION DETAIL
3" = 1'-0"

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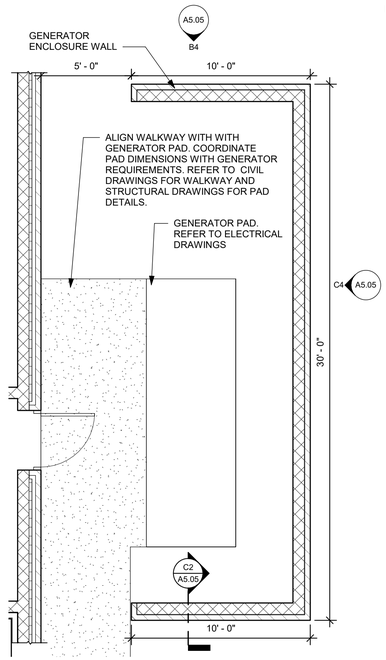
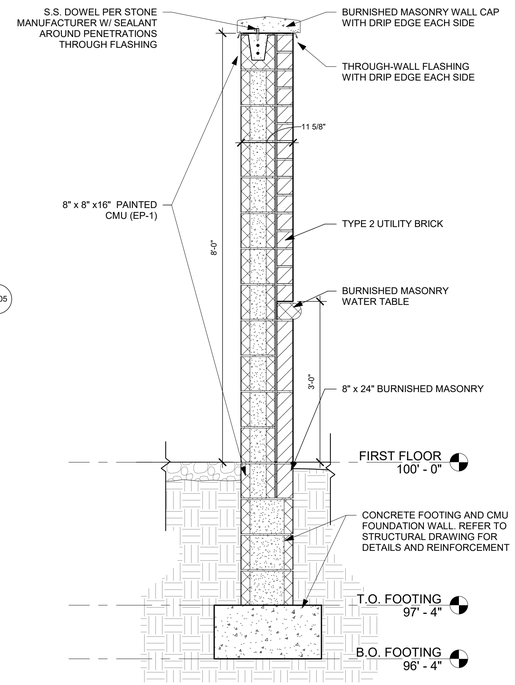
TITLE
EXTERIOR DETAILS - ROOF AND FOUNDATIONS

SHEET NO.
A5.04

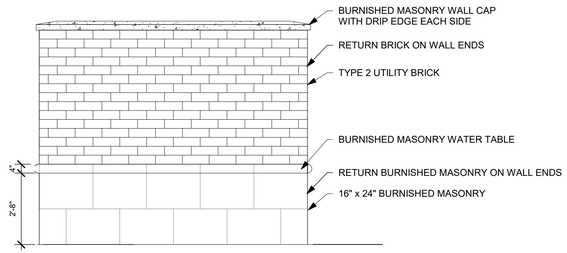
3/24/2022 9:13:06 AM



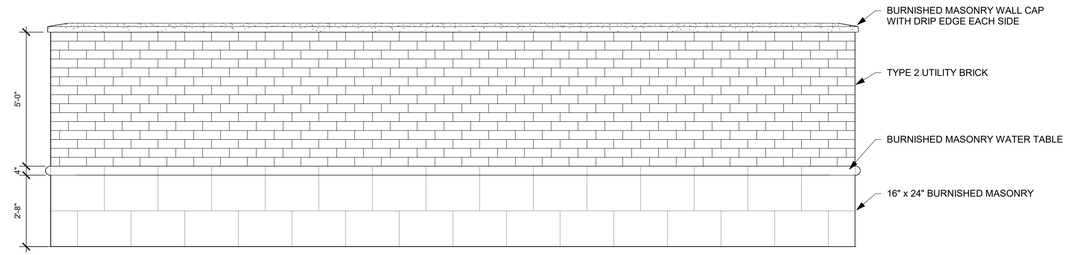
C1 GENERATOR ENCLOSURE PLAN
1/4" = 1'-0"



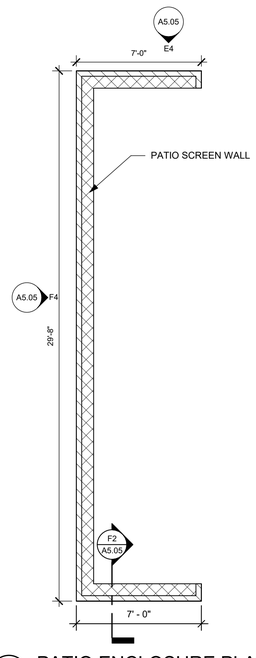
C2 GENERATOR ENCLOSURE SECTION
3/4" = 1'-0"



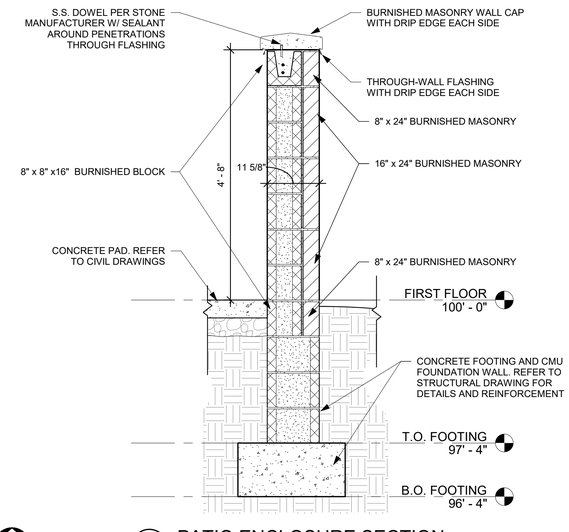
B4 GENERATOR ENCLOSURE NORTH
3/8" = 1'-0"
SOUTH WALL SIMILAR



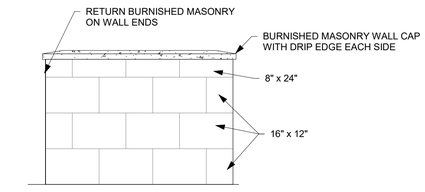
C4 GENERATOR ENCLOSURE EAST
3/8" = 1'-0"



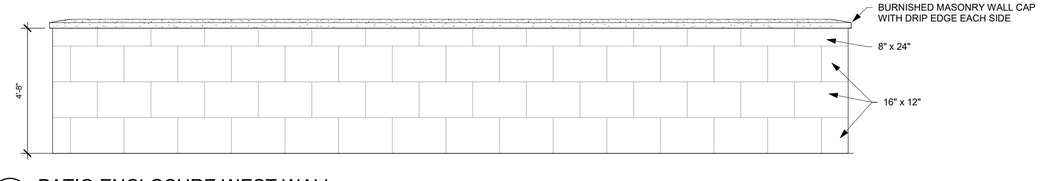
F1 PATIO ENCLOSURE PLAN
1/4" = 1'-0"



F2 PATIO ENCLOSURE SECTION
3/4" = 1'-0"



E4 PATIO ENCLOSURE NORTH WALL
3/8" = 1'-0"
SOUTH WALL SIMILAR



F4 PATIO ENCLOSURE WEST WALL
3/8" = 1'-0"

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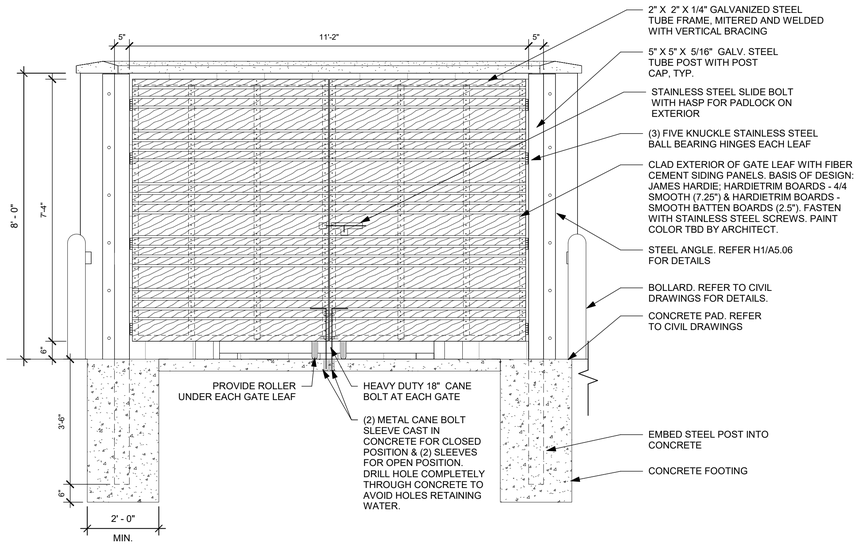
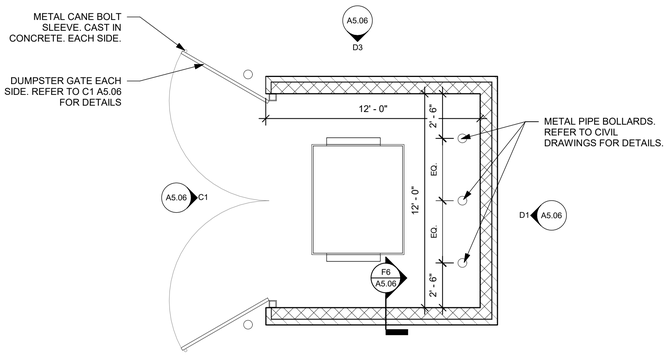
TITLE
EXTERIOR DETAILS - GENERATOR ENCLOSURE AND PATIO

SHEET NO.
A5.05

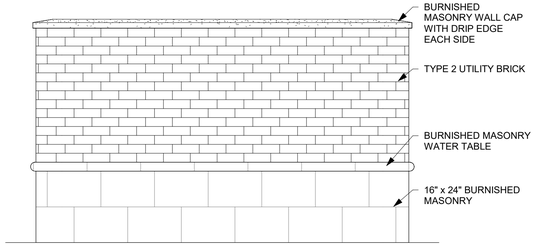
3/22/2022 3:19:23 PM



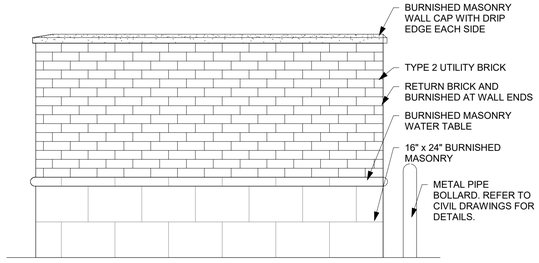
C1 DUMPSTER GATE DETAIL
1/2" = 1'-0"



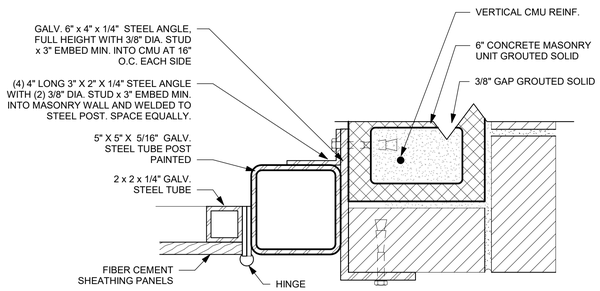
B6 DUMPSTER PLAN
1/4" = 1'-0"



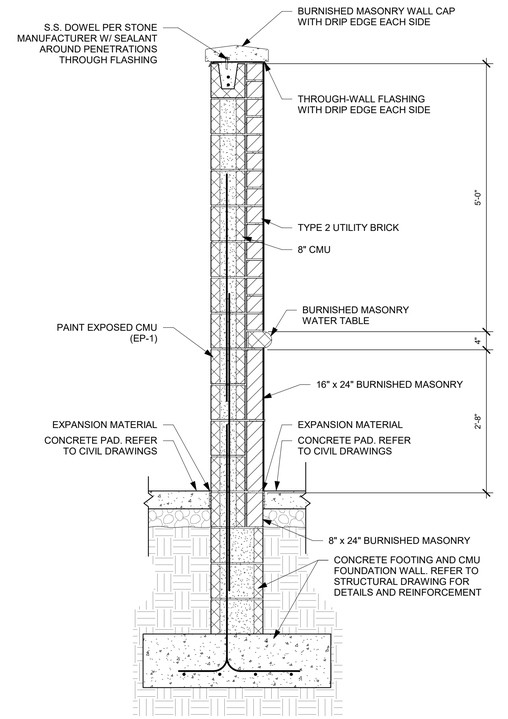
D1 DUMSTER ENCLOSURE EAST
3/8" = 1'-0"



D3 DUMPSTER ENCLOSURE NORTH
3/8" = 1'-0"
SOUTH WALL SIMILAR



F1 GATE JAMB DETAIL
3" = 1'-0"



F6 SCREEN WALL SECTION
3/4" = 1'-0"

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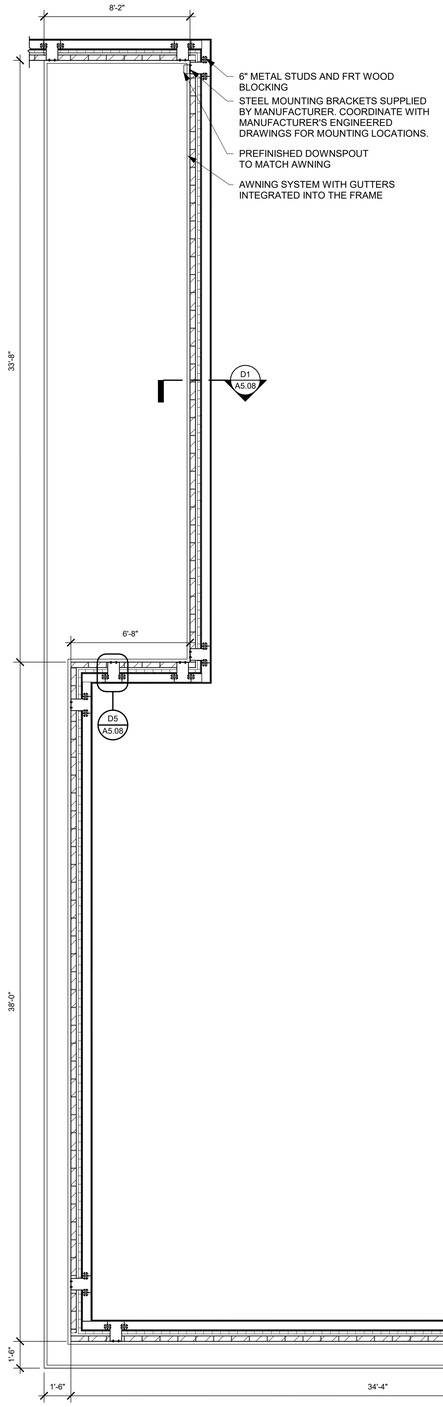
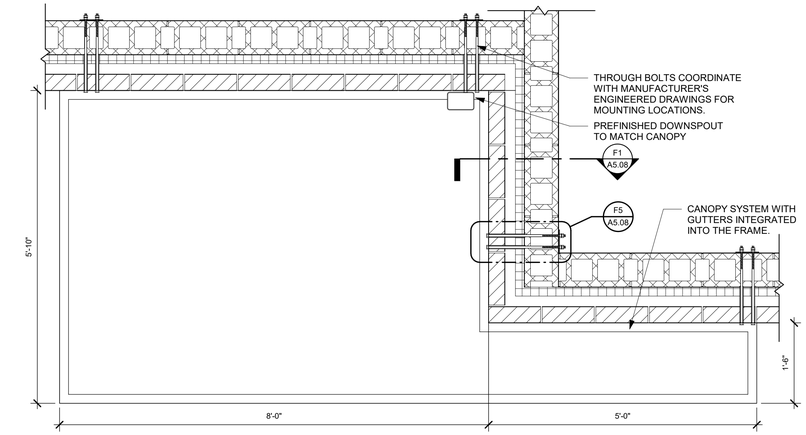
TITLE
EXTERIOR DETAILS - DUMPSTER

SHEET NO.
A5.06

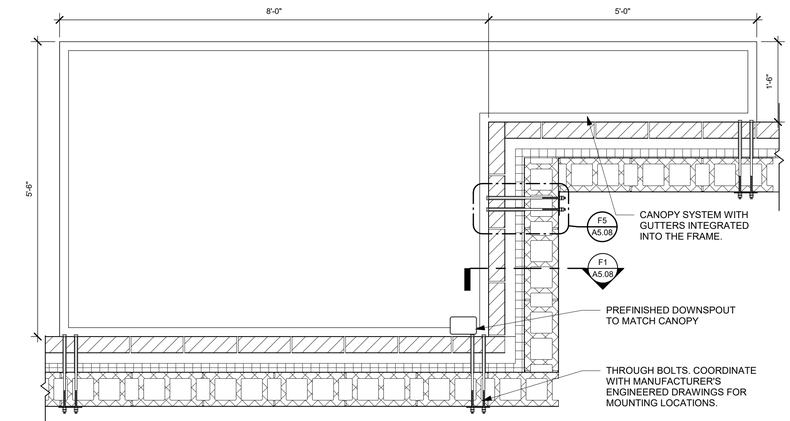
3/22/2022 3:19:25 PM



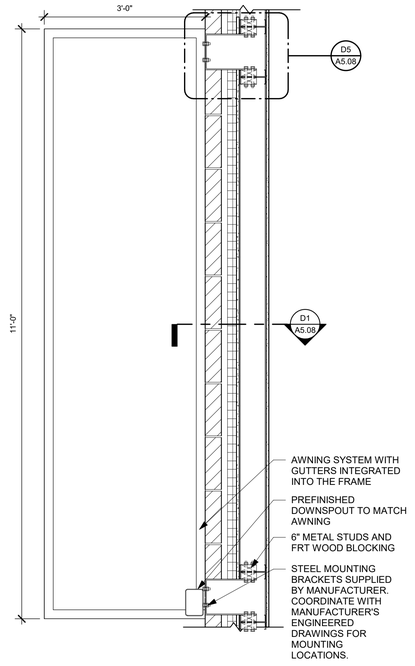
F1 METAL AWNING PLAN - DINING AND FITNESS ENTRANCES
1/4" = 1'-0"



C4 METAL AWNING PLAN - SOUTH APPARATUS BAY
3/4" = 1'-0"



D4 METAL AWNING PLAN - NORTH APPARATUS BAY
3/4" = 1'-0"



F6 METAL AWNING PLAN - WEST ENTRANCE
3/4" = 1'-0"

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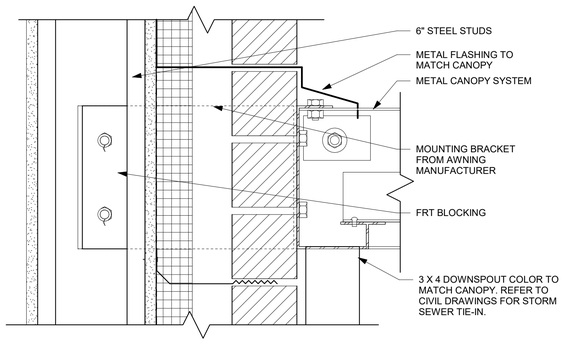
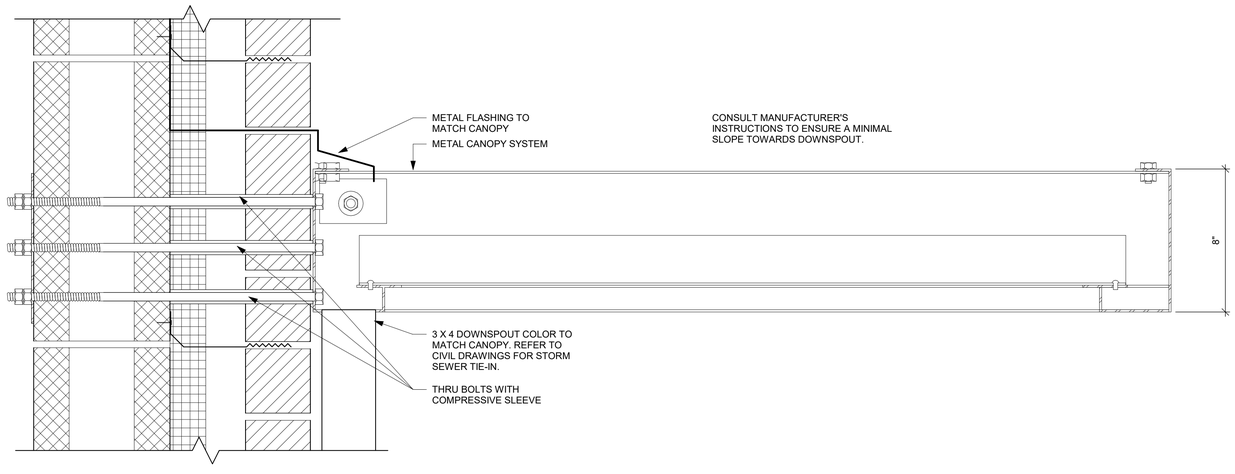
TITLE
EXTERIOR DETAILS - AWNINGS

SHEET NO.
A5.07

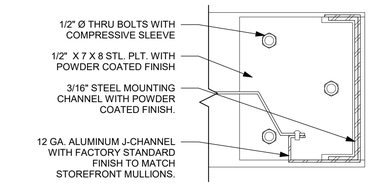
3/22/2022 3:19:26 PM



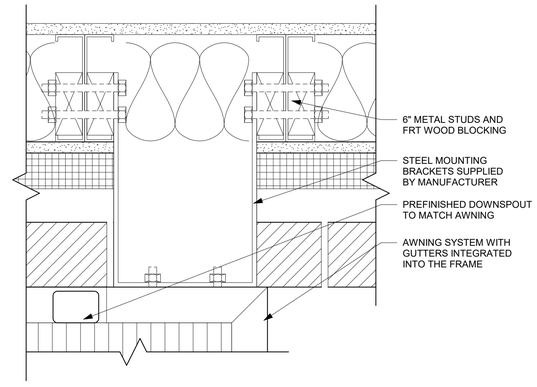
D1 AWNING SECTION - STUD WALL
3" = 1'-0"



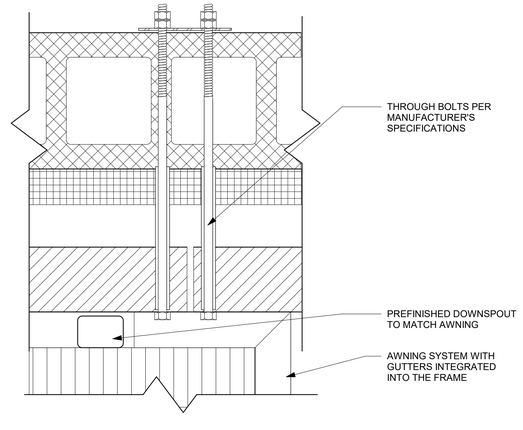
F1 AWNING SECTION - MASONRY WALL
3" = 1'-0"



B5 CONNECTION PLATE DETAIL
3" = 1'-0"



D5 CONNECTION DETAIL STUD WALL
3" = 1'-0"



F5 CONNECTION DETAIL - MASONRY WALL
3" = 1'-0"

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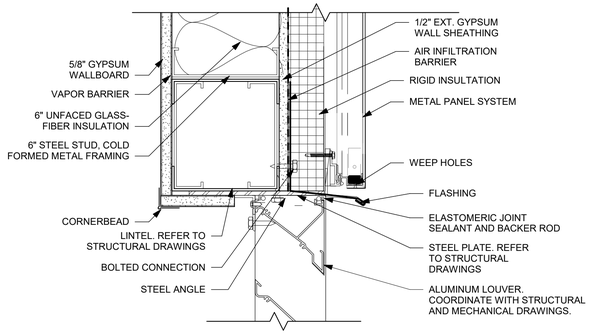
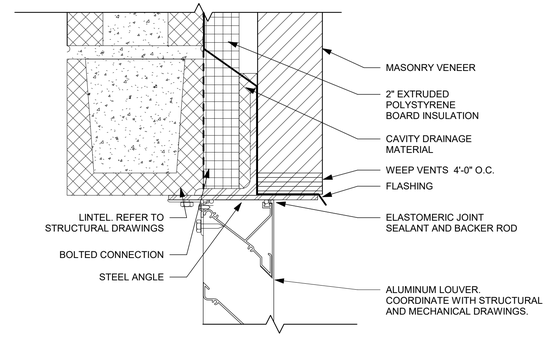
TITLE
EXTERIOR DETAILS - AWNINGS

SHEET NO.
A5.08

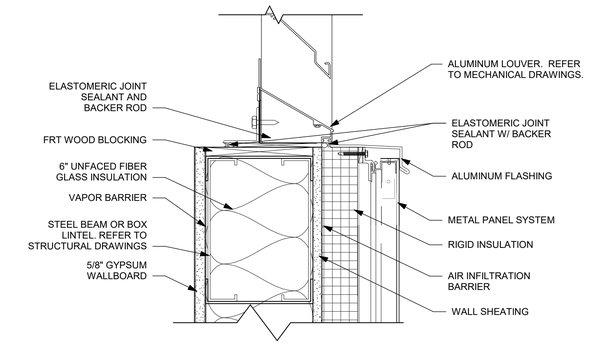
3/22/2022 3:19:27 PM



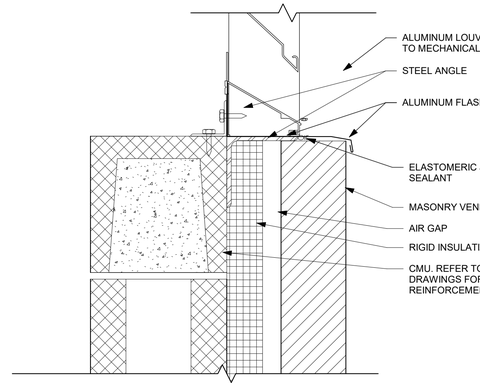
B3 LOUVER HEAD DETAIL - METAL PANEL
3" = 1'-0"



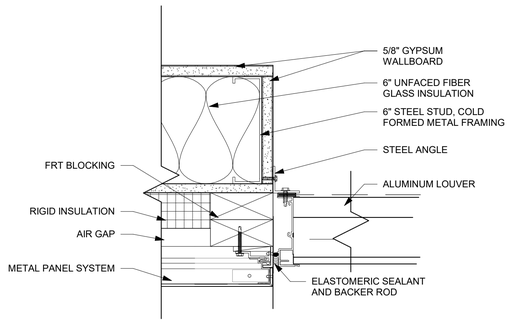
B6 LOUVER HEAD DETAIL - BRICK
3" = 1'-0"



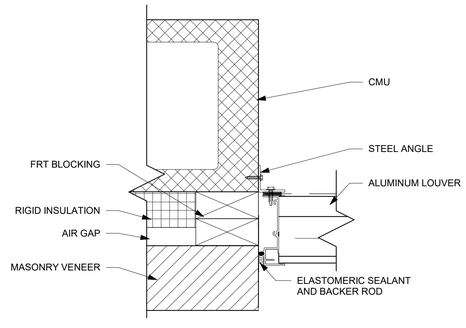
D3 LOUVER SILL DETAIL - METAL PANEL
3" = 1'-0"



D6 LOUVER SILL DETAIL - BRICK
3" = 1'-0"



F3 LOUVER JAMB DETAIL-METAL PANEL
3" = 1'-0"



F6 LOUVER JAMB DETAIL-BRICK
3" = 1'-0"

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TITLE
EXTERIOR DETAILS - LOUVERS

SHEET NO.
A5.09

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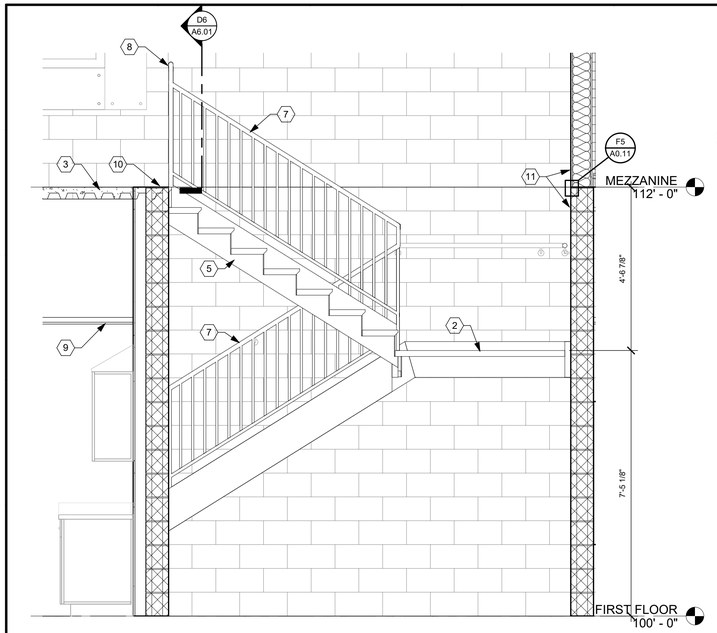
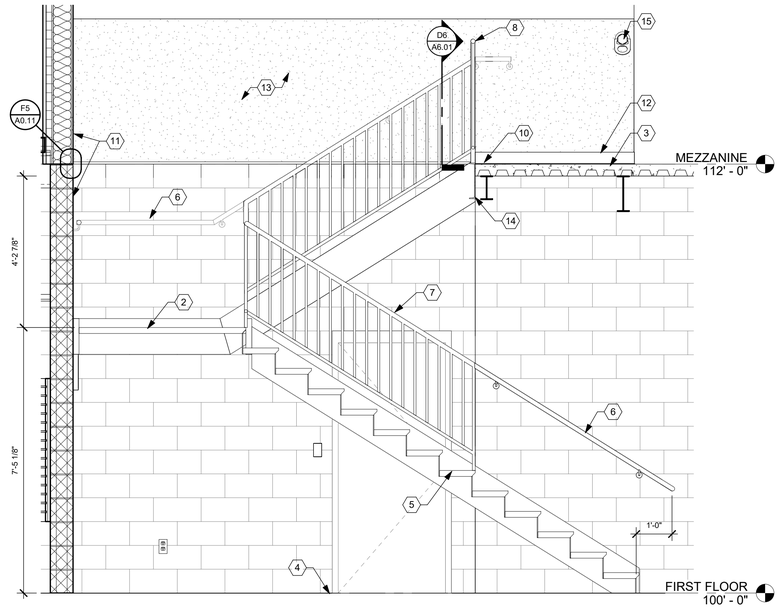
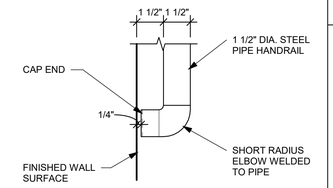


C1 STAIR WEST SECTION
1/2" = 1'-0"

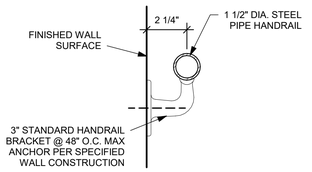


C3 STAIR EAST SECTION
1/2" = 1'-0"



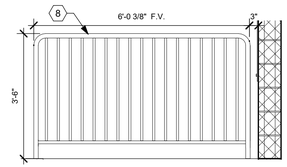
PLAN VIEW

NOTE: GRIND SMOOTH ALL WELDS AND EASE SHARP CORNERS



SECTION

C6 HAND RAIL DETAILS
3" = 1'-0"



D6 GUARDRAIL DETAIL
1/2" = 1'-0"

CONSTRUCTION NOTES

INDICATES CONSTRUCTION NOTE.

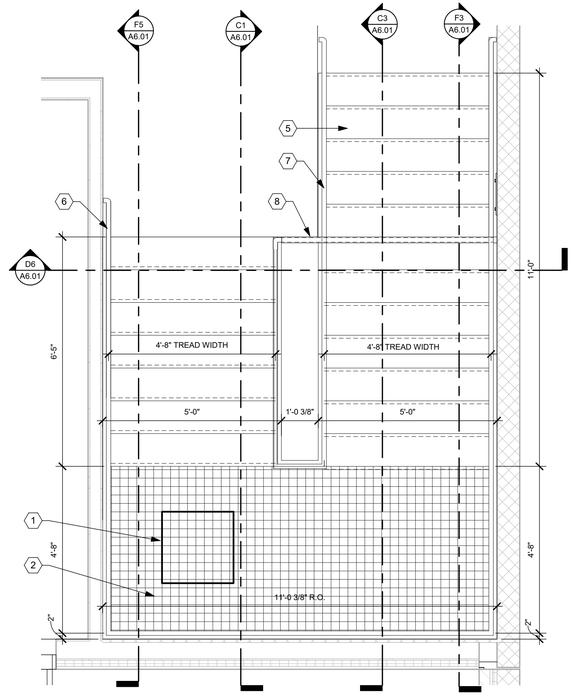
00

1. 2' x 2' REMOVABLE SECTION OF GRATED FLOOR.
2. INTERMEDIATE LANDING TO BE METAL GRATE FOR CONFINED SPACE TRAINING.
3. CONCRETE FLOOR SLAB OVER METAL DECK. REFER TO STRUCTURAL DRAWINGS.
4. CONCRETE SLAB ON GRADE. REFER TO STRUCTURAL DRAWINGS.
5. STEEL PAN STAIR WITH WITH POURED CONCRETE TREADS.
6. 1 1/2" PIPE HANDRAILING WITH WALL BRACKETS AT 4'-0" O.C. MAXIMUM TYPICAL. RETURN TO WALL AT ENDS.
7. 1 1/2" PIPE HANDRAILING WITH WALL BRACKETS AT 4'-0" O.C. MAXIMUM TYPICAL. RETURN TO WALL AT BOTTOM END. ATTACH TO HANDRAIL WITH BALLUSTERS AND PICKETS WHEN BEYOND WALL AND RETURN TO GUARDRAIL AT TOP LANDING.
8. 1 1/2" PIPE GUARD RAILING WITH 3/4" DIAMETER STEEL PICKETS. SPACING BETWEEN PICKETS < 4 3/4" O.C. 1 1/2" BOTTOM RAIL <4 3/4" O.C. ABOVE FINISHED FLOOR.
9. APC CEILING. REFER TO ROOM FINISH SCHEDULE AND MATERIAL LEGEND FOR DETAILS.
10. GUARD RAIL BALLUSTERS TO BE WELDED TO METAL DECK. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
11. ALIGN FACE OF DRYWALL WITH FACE OF CMU
12. 4" RUBBER BASE (RB-1).
13. VINYL WALL PROTECTION (VWP-1) UP TO 48" A.F.F.
14. CONTINUE STAIR STRINGER ALONG FACE OF MEZZANINE SLAB. ATTACH RAILING TO STRINGER. REFER TO STRUCTURAL DRAWINGS FOR STEEL CONNECTIONS ALONG FACE OF SLAB.
15. 3/4" STEEL SWIVEL RAPELLING ANCHOR. 10,000 LB WEIGHT CAPACITY. COORDINATE MOUNTING HEIGHT WITH OWNER.

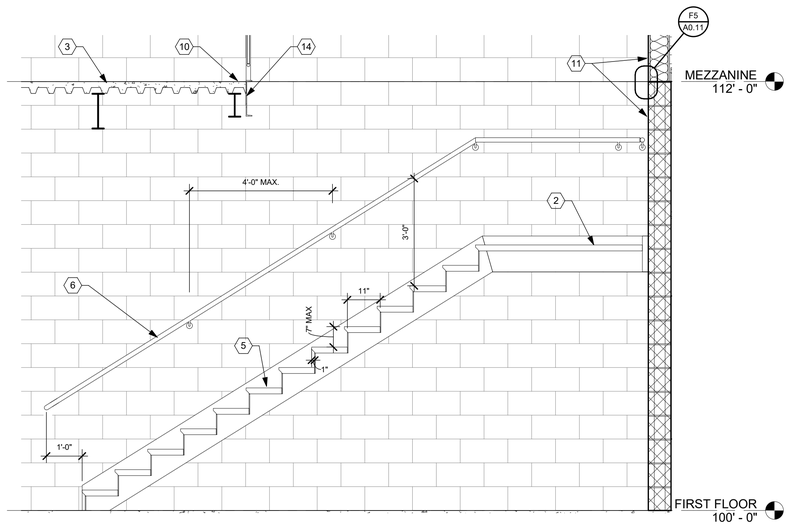
GENERAL NOTES

A. RADIUS/ GRIND/ EASE CORNERS AND SURFACES SMOOTH ON RAILS, POSTS, WELDS, AND CONNECTORS.

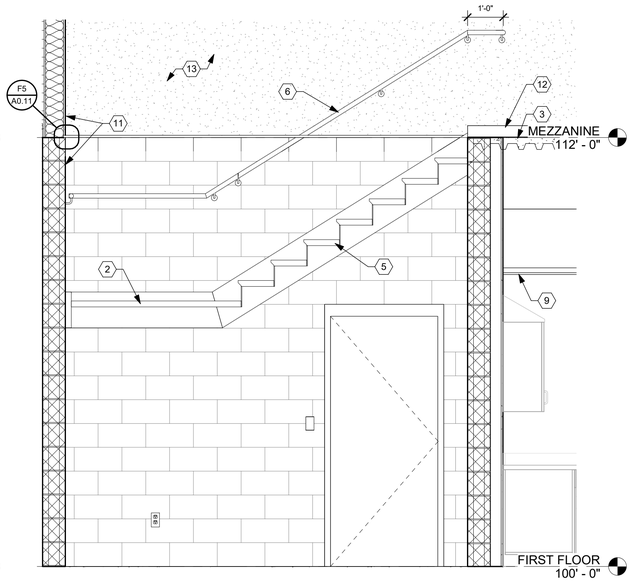
B. ALL RAILS, STRINGERS, AND STRUCTURE SHALL BE EPOXY PAINTED.



F1 MEZZANINE STAIR PLAN
1/2" = 1'-0"



F3 STAIR WEST SECTION
1/2" = 1'-0"



F5 STAIR EAST SECTION
1/2" = 1'-0"

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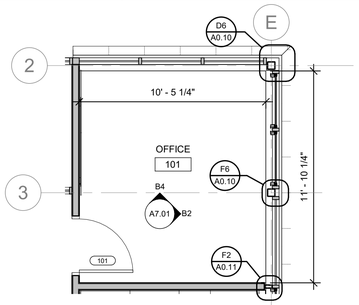
CHECKED	TJB

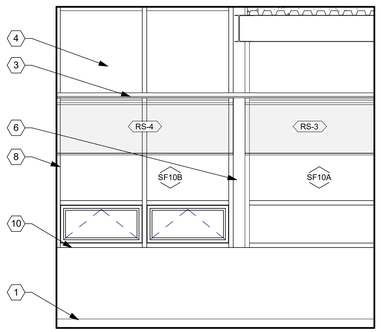
TITLE
VERTICAL CIRCULATION

SHEET NO.
A6.01

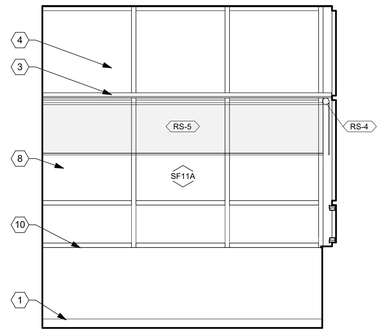
3/22/2022 3:19:32 PM



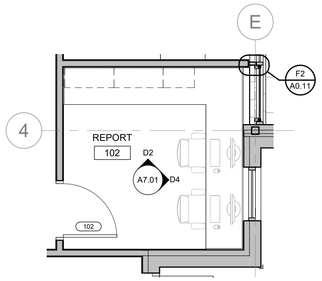
B1 OFFICE 101 ENLARGED PLAN
1/4" = 1'-0"



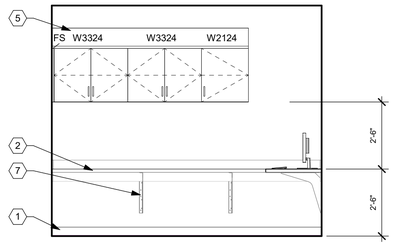
B2 OFFICE 101 EAST WALL
3/8" = 1'-0"



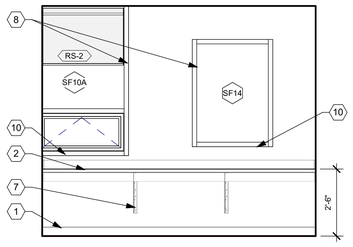
B4 OFFICE 101 NORTH WALL
3/8" = 1'-0"



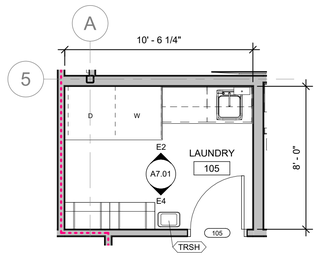
C1 REPORT 102 ENLARGED PLAN
1/4" = 1'-0"



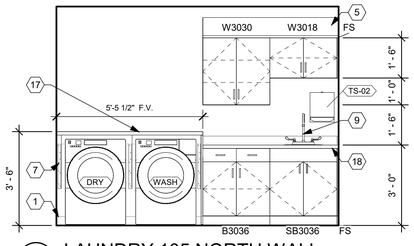
D2 REPORT 102 NORTH WALL
3/8" = 1'-0"



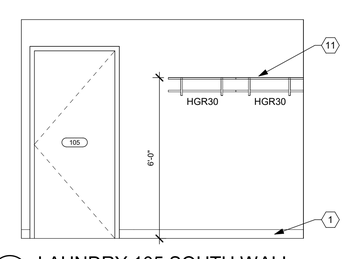
D4 REPORT 102 WEST WALL
3/8" = 1'-0"



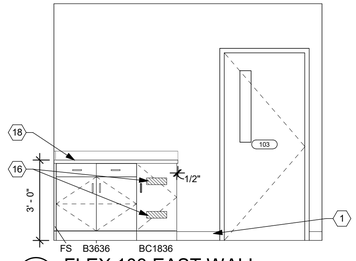
E1 LAUNDRY 105 ENLARGED PLAN
1/4" = 1'-0"



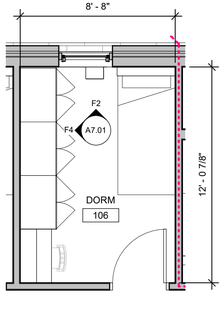
E2 LAUNDRY 105 NORTH WALL
3/8" = 1'-0"



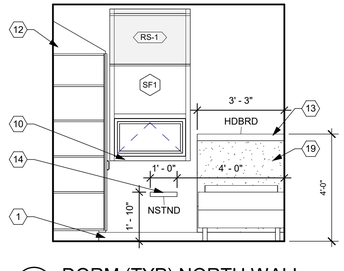
E4 LAUNDRY 105 SOUTH WALL
3/8" = 1'-0"



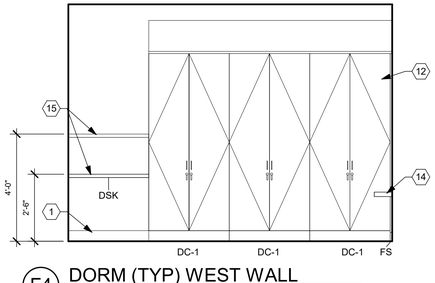
E5 FLEX 103 EAST WALL
3/8" = 1'-0"



F1 DORM 106 ENLARGED PLAN (TYP.)
1/4" = 1'-0"



F2 DORM (TYP) NORTH WALL
3/8" = 1'-0"



F4 DORM (TYP) WEST WALL
3/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 WALL BASE. REFER TO FINISH SCHEDULE.

2 PLASTIC LAMINATE WORK SURFACE WITH BACK AND SIDE SPLASHES. REFER TO A8.01 FOR DETAILS.

3 ACOUSTICAL PANEL CEILING.

4 SPANDREL PANELS ABOVE CEILING.

5 PLASTIC LAMINATE (PL-1) SLOPED TOP.

6 BREAK METAL WRAP AROUND COLUMN. REFER TO F6/A0.10 FOR DETAILS.

7 METAL WORKTOP SUPPORT BRACKETS SPACED 4' - 0" O.C. MAX.

8 ALUMINUM STOREFRONT SYSTEM. REFER TO SHEET A0.05 FOR DETAILS.

9 DROP IN METAL SINK. REFER TO PLUMBING DRAWINGS.

10 SOLID SURFACE SILL (SSM-1).

11 LAUNDRY SHELF WITH HANGER ROD (HGR). REFER TO SHEET A8.02 FOR DETAILS.

12 DORM CABINET. REFER TO SHEET A8.02 FOR DETAILS.

13 HEABOARD (HDBRD). REFER TO SHEET A8.02 FOR DETAILS.

14 NIGHTSTAND (NSTND). REFER TO SHEET A8.02 FOR DETAILS.

15 DORM WORK SURFACE (DSK). REFER TO SHEET A8.01 FOR DETAILS.

16 METAL AIR VENT GRILLE. BASIS OF DESIGN: MOCKETT GT (3" X 9").

17 LAUNDRY WORKSURFACE WITH END PANEL. REFER TO SHEET A8.01 FOR DETAILS.

18 PLASTIC LAMINATE (PL-1) COUNTERTOP WITH PVC EDGE BANDING AND BACK AND SIDE SPLASHES.

19 VINYL WALL PROTECTION (VWP-2). REFER TO FINISH SCHEDULE.

GENERAL NOTES

A. REFER TO ROOM FINISH SCHEDULE, MATERIAL LEGEND, AND FINISHES PLANS FOR FINISH AND MATERIAL DETAILS.

B. ELECTRICAL INFORMATION SHOWN FOR REFERENCE ONLY. REFER TO ELECTRICAL PLANS FOR DETAILS.

C. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

D. REFER TO ELEVATIONS ON SHEET A0.01 FOR TOILET ROOM ACCESSORY MOUNTING HEIGHTS AND CLEARANCES.

E. "CG" INDICATES CORNER GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

F. ALL COUNTERTOPS AND WORK SURFACES TO HAVE BACK AND SIDE SPLASHES WHEREVER THE SURFACE ABUTS A WALL.

G. MATCHING SCRIBE STRIPS TO BE PROVIDED TO FILL GAPS AND IRREGULARITIES WHERE THE EDGE OF CABINETS AND LOCKERS MEET WALLS. FILLER STRIPS ALSO TO BE PROVIDED AT CABINETRY AND LOCKER CORNERS TO FILL ANY GAPS LEFT TO ALLOW DOORS AND DRAWERS TO FUNCTION PROPERLY.

H. PROVIDE FINISHED END ON ALL EXPOSED SURFACES OF CASEWORK.

I. DIMENSIONS ARE FROM FACE OF GYP. BD. TO FACE OF GYP. BD.

J. REFER TO THE NEW WORK DIMENSION PLAN ON SHEET A1.12 FOR WALL TYPES.

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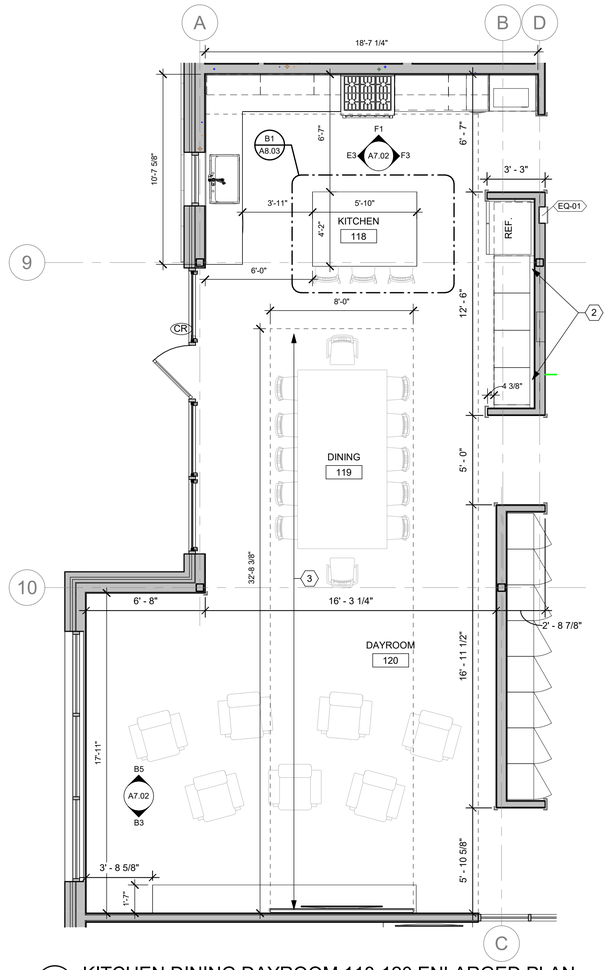
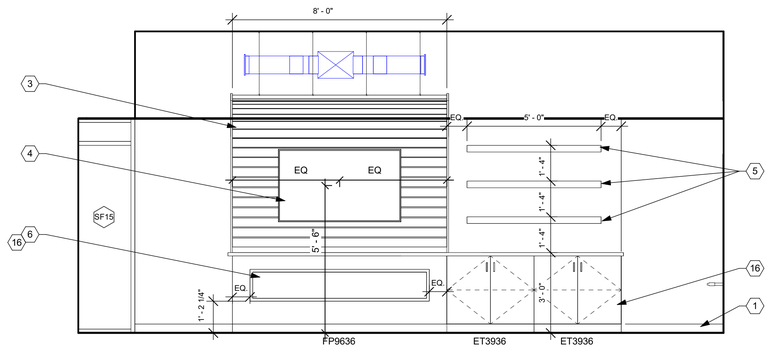
TITLE
INTERIOR ELEVATIONS

SHEET NO.
A7.01

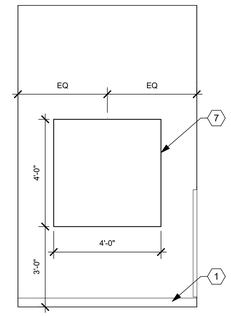
3/22/2022 3:19:35 PM



D2 KITCHEN DINING DAYROOM 118-120 ENLARGED PLAN
1/4" = 1'-0"



B3 DAYROOM 120 SOUTH WALL
3/8" = 1'-0"



B5 DAYROOM 120 NORTH WALL
3/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 WALL BASE. REFER TO FINISH SCHEDULE.

2 BLOCKING BEHIND PANTRY CABINETS (PC). REFER TO F6/A8.03 FOR DETAILS.

3 ARMSTRONG LINEAR WOOD CEILING WITH SOLID WOOD TRIM BAND STAINED TO MATCH AROUND PERIMETER. APPLY TO WALL AND CURVE INTO SUSPENDED CEILING AS DIMENSIONED.

4 TV. OFCI. BLOCK AS REQUIRED WITH FRT BLOCKING.

5 14" x 60" SHELVES. REFER TO B4/A8.02 FOR DETAILS.

6 LED FIREPLACE. BASIS OF DESIGN: MODERN FLAMES, LANDSCAPE PRO SLIM, 80". MODEL LPS-8014 OR ARCHITECT APPROVED EQUAL.

7 4' x 4' TACKBOARD. REFER TO MATERIAL LEGEND FOR FABRIC. PROVIDE FABRIC IN 54" WIDTHS. WRAP FABRIC AROUND EDGES AND SECURE TO BACK OF PANEL. CORE MATERIAL TO BE 3/4" THICK NCFR HOMASOTE BY THE HOMOSOTE COMPANY. MOUNT TO WALL WITH HIDDEN BRACKET HARDWARE.

8 PORECELAIN WALL TILE (PWT-1). REFER TO FINISH SCHEDULE A0.03.

9 PORECELAIN MOSAIC WALL TILE (PMWT-2). REFER TO FINISH SCHEDULE A0.03.

10 PORECELAIN MOSAIC WALL TILE (PMWT-1). REFER TO FINISH SCHEDULE A0.03.

11 SOFFIT OVERHEAD. REFER TO CEIING PLAN.

12 HOOD OVER RANGE. REFER TO MECHANICAL DRAWINGS.

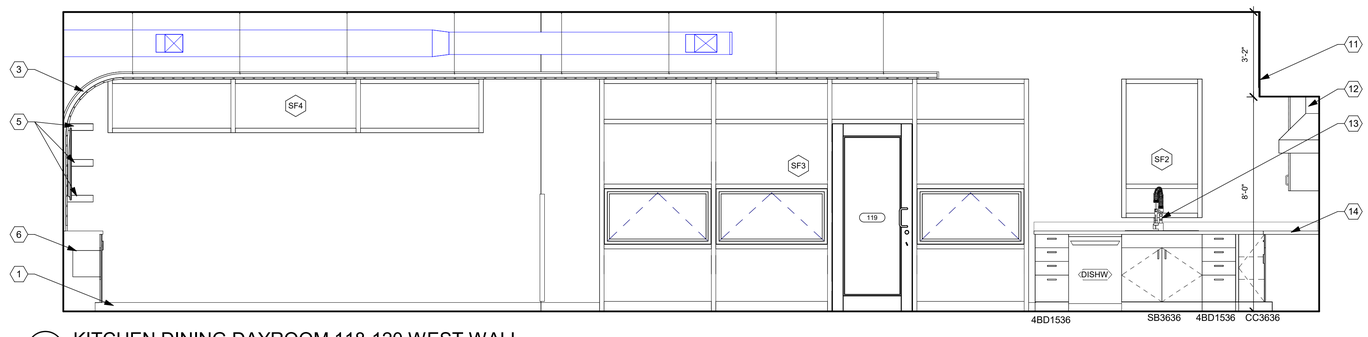
13 FAUCET AND SINK. REFER TO PLUMBING DRAWINGS.

14 SOLID SURFACE COUNTERTOP (SSM-1) WITH BACK AND SIDE SPLASHES.

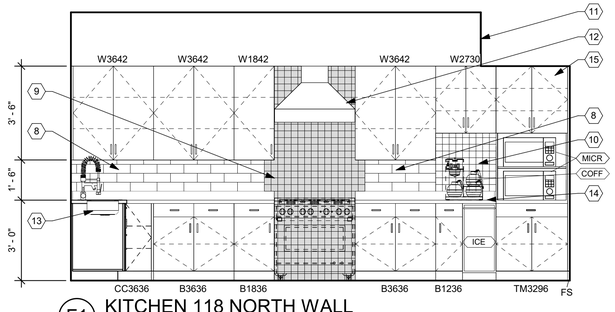
15 SPECIALTY MICROWAVE CABINET. REFER TO A8.03 FOR DETAILS.

16 REFER TO SHEET A8.03 FOR (FP) AND (ET) CASEWORK DETAILS.

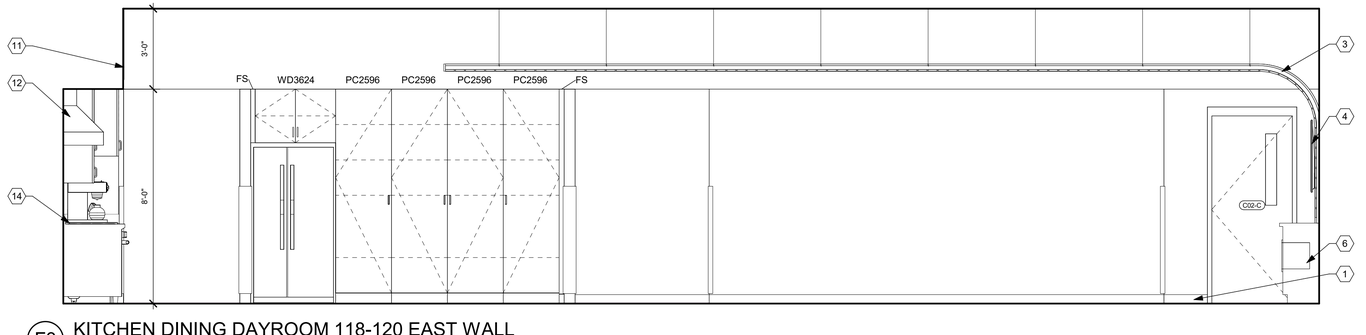
REFER TO A7.1 FOR ADDITIONAL GENERAL NOTES



E3 KITCHEN DINING DAYROOM 118-120 WEST WALL
3/8" = 1'-0"



F1 KITCHEN 118 NORTH WALL
3/8" = 1'-0"



F3 KITCHEN DINING DAYROOM 118-120 EAST WALL
3/8" = 1'-0"

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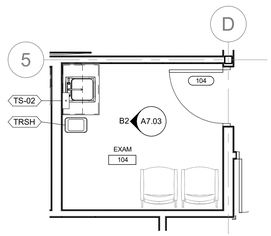
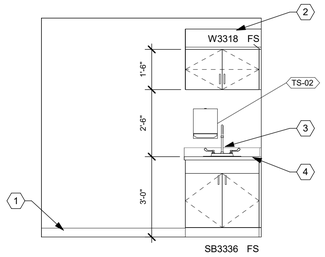
TITLE
INTERIOR ELEVATIONS

SHEET NO.
A7.02

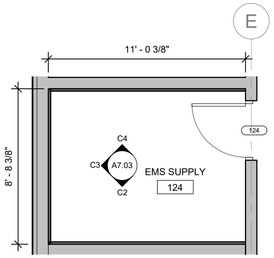
3/22/2022 3:19:38 PM



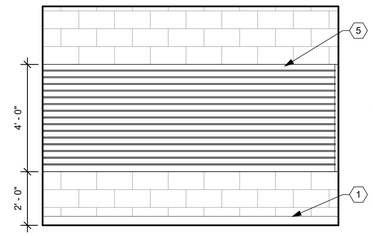
B1 EXAM 104 ENLARGED PLAN
1/4" = 1'-0"



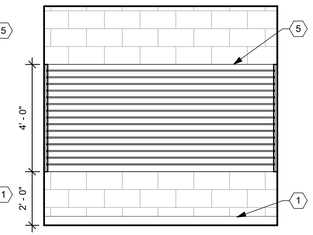
B2 EXAM 104 WEST WALL
3/8" = 1'-0"



C1 EMS SUPPLY 124 ENLARGED PLAN
1/4" = 1'-0"

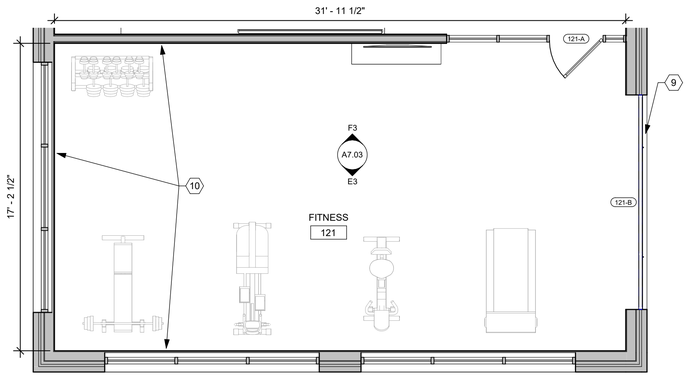


C2 EMS SUPPLY 124 SOUTH WALL
3/8" = 1'-0"

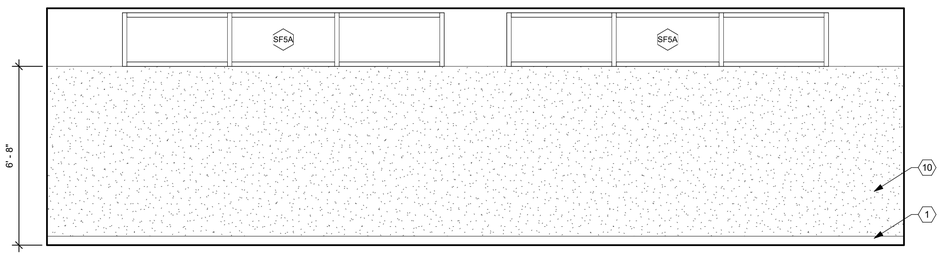


C3 EMS SUPPLY 124 WEST WALL
3/8" = 1'-0"

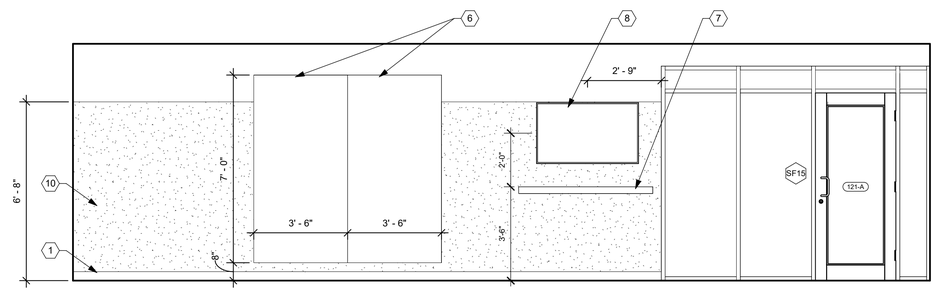
C4 EMS SUPPLY 124 NORTH WALL
3/8" = 1'-0"



E1 FITNESS 121 ENLARGED PLAN
1/4" = 1'-0"



E3 FITNESS 121 SOUTH WALL
3/8" = 1'-0"



F3 FITNESS 121 NORTH WALL
3/8" = 1'-0"

CONSTRUCTION NOTES

(00) INDICATES CONSTRUCTION NOTE.

1 WALL BASE. REFER TO FINISH SCHEDULE.

2 PLASTIC LAMINATE SLOPED TOP. REFER TO (A8.01) FOR DETAILS.

3 SINK. REFER TO PLUMBING DRAWINGS.

4 SOLID SURFACE (SSM-1) COUNTERTOP WITH WITH BACK AND SIDE SPLASHES.

5 SLATWALL PANELS.

6 (2) 42" x 84" MIRRORS.

7 14" x 60" SHELF. REFER TO TYP. SHELF DETAIL ON SHEET A8.02.

8 TV. OFCI.

9 BI-FOLD DOOR TYPE BF1. REFER TO SHEET A0.04 FOR DETAILS.

10 VINYL WALL PROTECTION (VWP-2). REFER TO FINISH SCHEDULE.

GENERAL NOTES

A. REFER TO ROOM FINISH SCHEDULE, MATERIAL LEGEND, AND FINISHES PLANS FOR FINISH AND MATERIAL DETAILS.

B. ELECTRICAL INFORMATION SHOWN FOR REFERENCE ONLY. REFER TO ELECTRICAL PLANS FOR DETAILS.

C. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

D. REFER TO ELEVATIONS ON SHEET A0.01 FOR TOILET ROOM ACCESSORY MOUNTING HEIGHTS AND CLEARANCES.

E. "CG" INDICATES CORNER GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

F. ALL COUNTERTOPS AND WORK SURFACES TO HAVE BACK AND SIDE SPLASHES WHEREVER THE SURFACE ABUTS A WALL.

G. MATCHING SCRIBE STRIPS TO BE PROVIDED TO FILL GAPS AND IRREGULARITIES WHERE THE EDGE OF CABINETS AND LOCKERS MEET WALLS. FILLER STRIPS ALSO TO BE PROVIDED AT CABINETRY AND LOCKER CORNERS TO FILL ANY GAPS LEFT TO ALLOW DOORS AND DRAWERS TO FUNCTION PROPERLY.

H. PROVIDE FINISHED END ON ALL EXPOSED SURFACES OF CASEWORK.

I. DIMENSIONS ARE FROM FACE OF GYP. BD. TO FACE OF GYP. BD.

J. REFER TO THE NEW WORK DIMENSION PLAN ON SHEET A1.12 FOR WALL TYPES.

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Timothy J Bement License #12305
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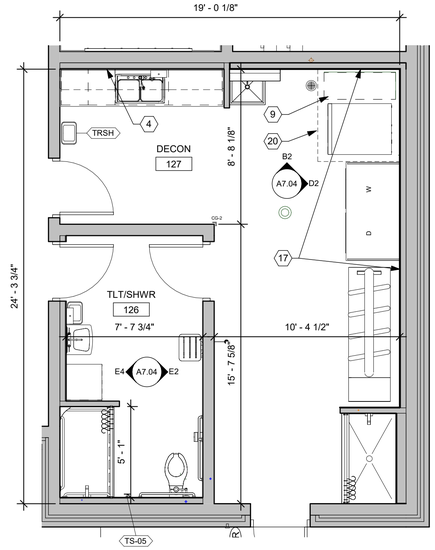
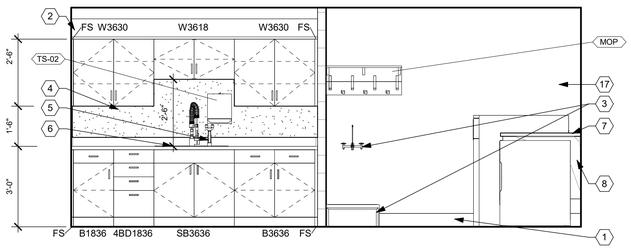
TITLE
INTERIOR ELEVATIONS

SHEET NO.
A7.03

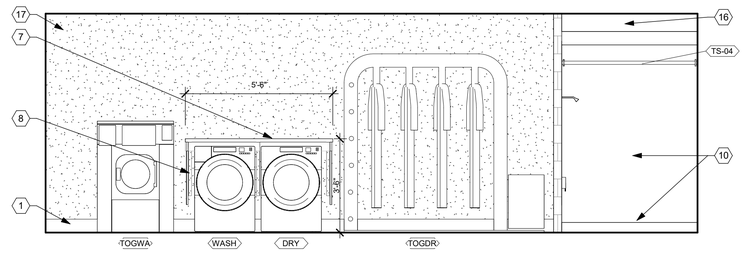
3/22/2022 3:19:41 PM



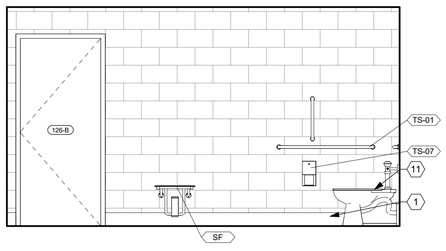
C1 DECON/TLT./SHOWER 126 -127 ENLARGED PLAN
1/4" = 1'-0"



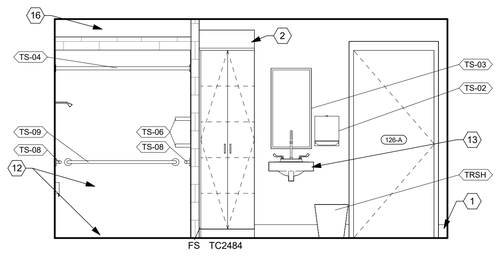
B2 ROOM 127 NORTH WALL
3/8" = 1'-0"



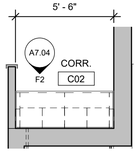
D2 ROOM 127 EAST WALL
3/8" = 1'-0"



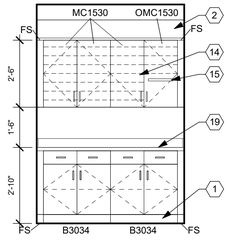
E2 ROOM 126 EAST WALL
3/8" = 1'-0"



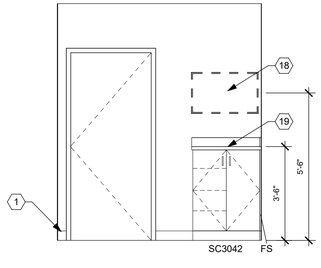
E4 ROOM 126 WEST WALL
3/8" = 1'-0"



F1 CORRIDOR C02 ENLARGED PLAN
1/4" = 1'-0"



F2 CORRIDOR C02 SOUTH WALL
3/8" = 1'-0"



F4 ROOM 122 WEST WALL
3/8" = 1'-0"

CONSTRUCTION NOTES

(00) INDICATES CONSTRUCTION NOTE.

1 WALL BASE. REFER TO FINISH SCHEDULE.

2 PLASTIC LAMINATE SLOPED TOP. REFER TO A8.01 FOR DETAILS.

3 MOP SINK. REFER TO PLUMBING DRAWINGS.

4 <varies>

5 EYE WASH STATION.

6 STAINLESS COUNTER WITH BACK AND SIDE SPLASHES AND INTEGRAL STEEL SINK.

7 LAUNDRY WORKSURFACE WITH END PANELS. REFER TO SHEET A8.01 FOR DETAILS.

8 METAL WORKTOP SUPPORT BRACKETS SPACED 4' - 0" O.C. MAX. COORDINATE BRACKET LOCATIONS WITH EQUIPMENT.

9 RECESSED LINT TRAP. REFER TO PLUMBING DRAWINGS FOR DETAILS.

10 CURB STYLE SHOWER PAN AND ENCLOSURE WITH CURB. REFER TO F6/A0.11 FOR DETAILS.

11 TOILET. REFER TO PLUMBING DRAWINGS.

12 TRENCH DRAIN SHOWER PAN AND ENCLOSURE. REFER TO E6/A0.11 FOR DETAILS.

13 WALL HUNG SINK. REFER TO PLUMBING DRAWINGS FOR DETAILS.

14 MAIL CABINET (MC). REFER TO D3/A8.03 FOR DETAILS.

15 OUTGOING MAIL BOX CABINET (OMC). REFER TO D5/A8.03 FOR DETAILS.

16 GYPSUM BOARD SOFFIT AND CEILING 7' - 6" A.F.F.

17 VINYL WALL PROTECTION (VWP-1) FULL HEIGHT OF NORTH AND EAST WALLS.

18 PROVIDE FRT BLOCKING FOR FUTURE WALL MOUNTED TV.

19 PLASTIC LAMINATE (PL-2) COUNTERTOP WITH BACK AND SIDE SPLASHES AND PVC EDGE BANDING TO MATCH LAMINATE.

20 THICKENED SLAB AT TOG WASHER. REFER TO STRUCTURE DRAWINGS FOR DETAILS. COORDINATE WITH MANUFACTURER REQUIREMENTS.

GENERAL NOTES

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B. ELECTRICAL INFORMATION SHOWN FOR REFERENCE ONLY. REFER TO ELECTRICAL PLANS FOR DETAILS.

C. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

D. REFER TO ELEVATIONS OF SHEET A0.01 FOR TOILET ROOM ACCESSORY MOUNTING HEIGHTS AND CLEARANCES.

E. "CG" INDICATES CORNER GUARD. REFER TO INTERIOR DETAILS FOR MORE INFORMATION.

F. ALL COUNTERTOPS AND WORK SURFACES TO HAVE BACK AND SIDE SPLASHES WHEREVER THE SURFACE ABUTS A WALL.

G. MATCHING SCRIBE STRIPS TO NE PROVIDED TO FILL ALL GAPS AND IRREGULARITIES WHERE THE EDGE OF CABINETS AND LOCKERS MEET WALLS. FILLER STRIPS ALSO TO BE PROVIDED AT CABINETRY AND LOCKERS CORNERS TO FILL ANY GAPS LEFT TO ALLOW DOORS AND DRAWERS TO FUNCTION PROPERLY.

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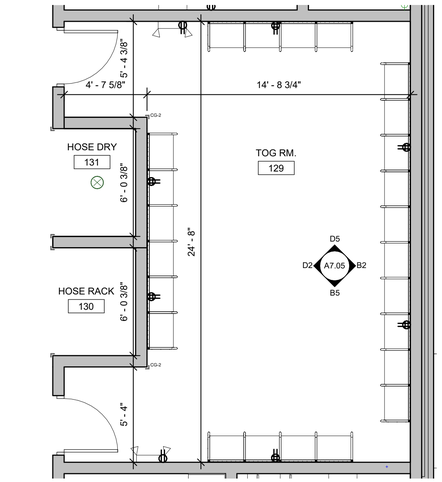
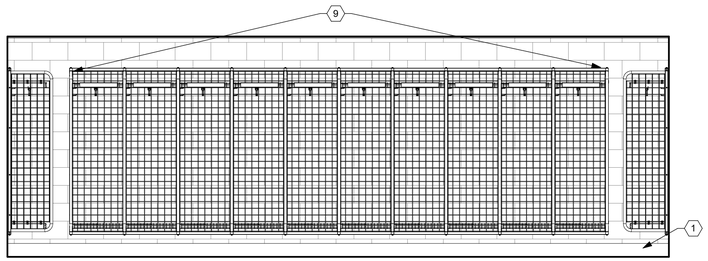
TITLE
INTERIOR ELEVATIONS

SHEET NO.
A7.04

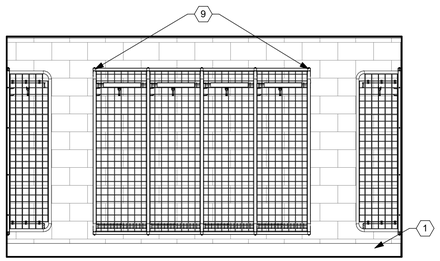
3/22/2022 3:19:44 PM



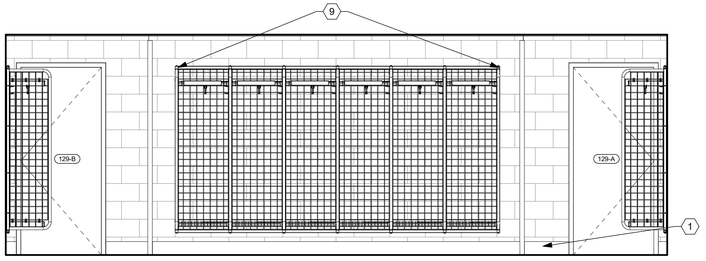
C1 TOG 129 ENLARGED PLAN
1/4" = 1'-0"



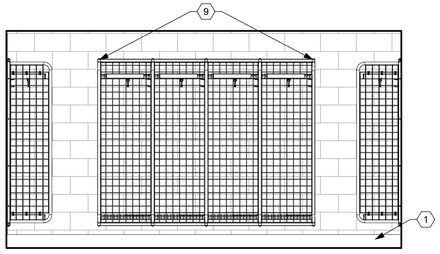
B2 TOG 129 EAST WALL
3/8" = 1'-0"



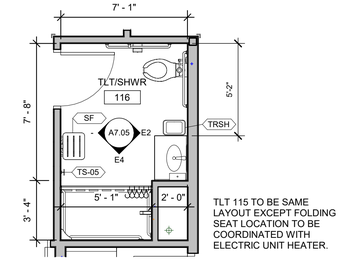
B5 TOG 129 SOUTH WALL
3/8" = 1'-0"



D2 TOG 129 WEST WALL
3/8" = 1'-0"

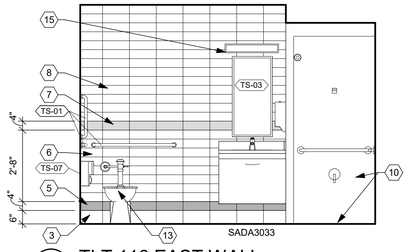


D5 TOG 129 NORTH WALL
3/8" = 1'-0"

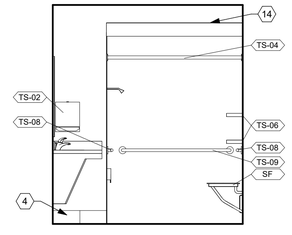


TLT 115 TO BE SAME LAYOUT EXCEPT FOLDING SEAT LOCATION TO BE COORDINATED WITH ELECTRIC UNIT HEATER.

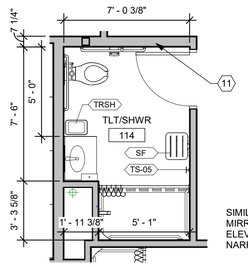
E1 TLT 116 ENLARGED PLAN
1/4" = 1'-0"



E2 TLT 116 EAST WALL
3/8" = 1'-0"

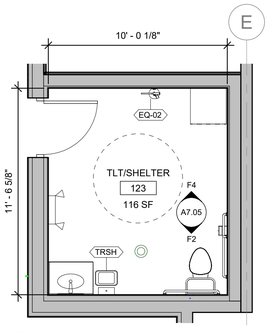


E4 TLT 116 SOUTH WALL
3/8" = 1'-0"

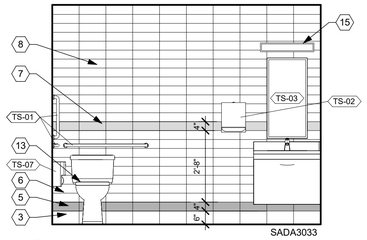


SIMILAR TO 116 WITH MIRRORED LAYOUT AND ELEVATIONS EXCEPT 2" NARROWER

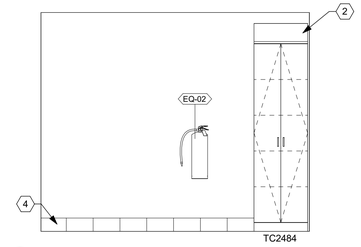
E6 TLT 114 ENLARGED PLAN
1/4" = 1'-0"



F1 TLT/SHELTER 123 ENLARGED PLAN
1/4" = 1'-0"



F2 TLT/SHELTER 123 SOUTH WALL
3/8" = 1'-0"



F4 TLT/SHELTER 123 NORTH WALL
3/8" = 1'-0"

CONSTRUCTION NOTES

00 INDICATES CONSTRUCTION NOTE.

1 WALL BASE. REFER TO FINISH SCHEDULE.

2 PLASTIC LAMINATE SLOPED TOP. REFER TO F3/A8.03 FOR DETAILS.

3 PORCELAIN TILE WALL BASE (PTWB-2). REFER TO FINISH SCHEDULE A0.03.

4 PORCELAIN TILE WALL BASE (PTWB-1). REFER TO FINISH SCHEDULE A0.03.

5 PORCELAIN WALL TILE (PWT-4). REFER TO FINISH SCHEDULE A0.03.

6 PORCELAIN WALL TILE (PWT-2). REFER TO FINISH SCHEDULE A0.03.

7 PORCELAIN WALL TILE (PWT-3). REFER TO FINISH SCHEDULE A0.03.

8 PORCELAIN WALL TILE (PWT-1). REFER TO FINISH SCHEDULE A0.03.

9 TURN OUT GEAR LOCKERS.

10 TRENCH DRAIN SHOWER PAN AND ENCLOSURE. REFER TO E6/A0.11 FOR DETAILS.

11 6" STUD WALL.

13 TOILET. REFER TO PLUMBING DRAWINGS.

14 SOFFIT @ 7' - 6" A.F.F.

15 ABOVE MIRROR LIGHT. REFER TO ELECTRICAL DRAWINGS.

GENERAL NOTES

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C. PROVIDE FIRE RETARDANT WOOD BLOCKING BEHIND ALL WALL HUNG ACCESSORIES, CABINETS, FURNISHINGS, HANDRAILS U.N.O.

D. REFER TO ELEVATIONS OF SHEET A0.01 FOR TOILET ROOM ACCESSORY MOUNTING HEIGHTS AND CLEARANCES.

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H. PROVIDE FINISHED END ON ALL EXPOSED SURFACES OF CASEWORK.

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INTERIOR ELEVATIONS

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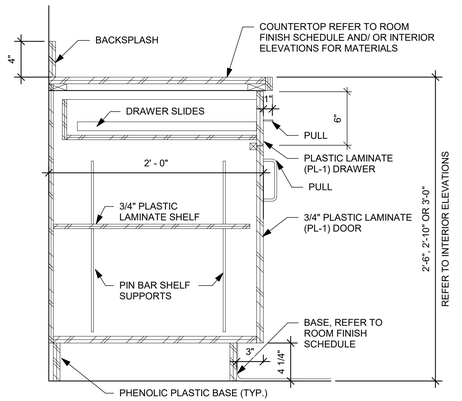
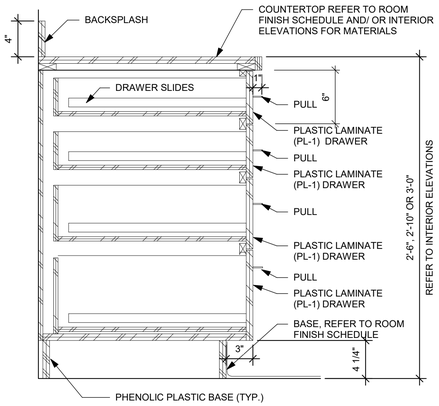
A7.05

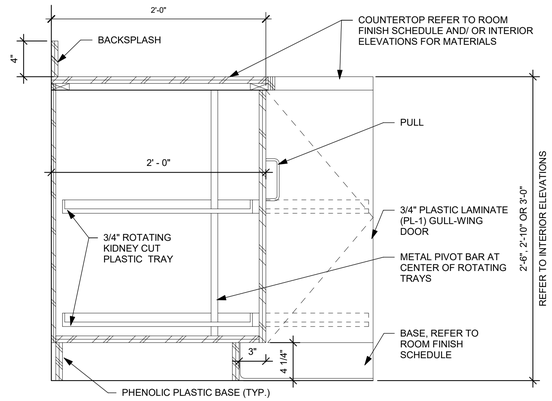
3/22/2022 3:19:56 PM



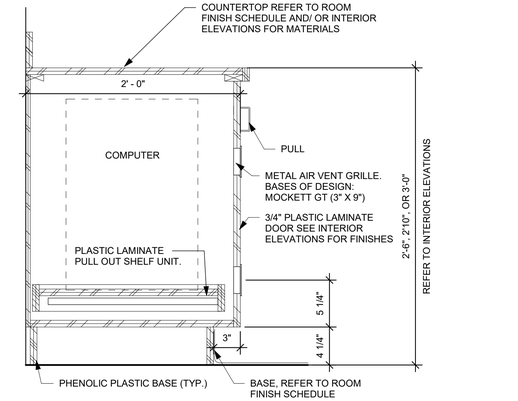
B1 TYP. BASE CABINET (B) DETAIL
1 1/2" = 1'-0"



B2 4-DRAWER BASE CABINET (4BD) DETAIL
1 1/2" = 1'-0"



B4 CORNER CABINET (CC) DETAIL
1 1/2" = 1'-0"



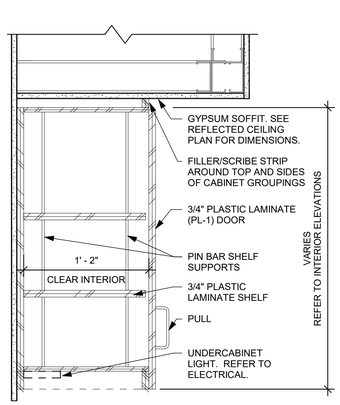
B6 TYP. COMPUTER BASE CABINET (BC) DETAIL
1 1/2" = 1'-0"

E1 TYP. SINK BASE CABINET (SB) DETAIL
1 1/2" = 1'-0"

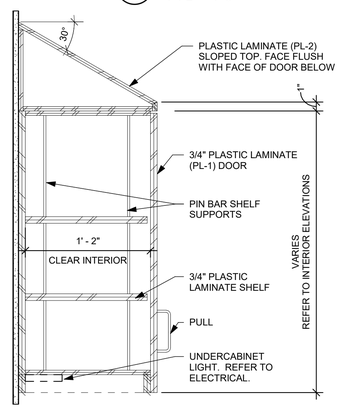
E2 "ADA" SINK (SADA) DETAIL
1 1/2" = 1'-0"

E4 TYP. DORM WORK SURFACE (DSK) DETAIL
1 1/2" = 1'-0"

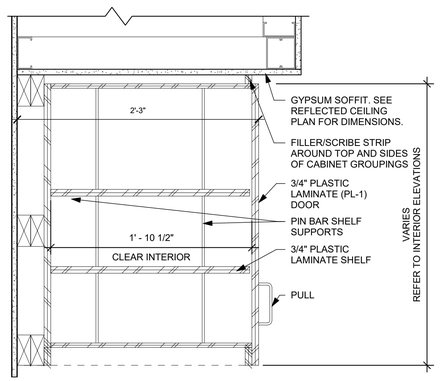
E6 LAUNDRY WORK SURFACE DETAIL
1 1/2" = 1'-0"



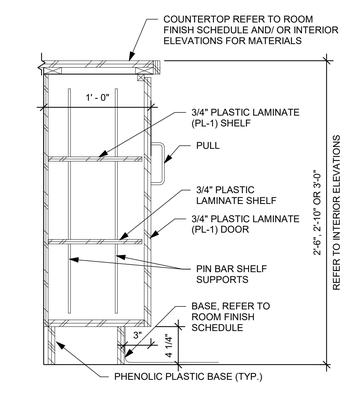
F1 WALL CABINET (W) AT SOFFIT
1 1/2" = 1'-0"



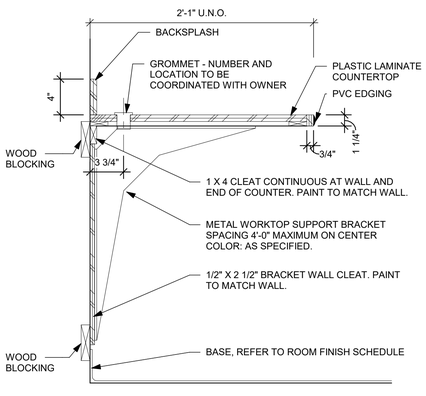
F2 WALL CABINET (W) DETAIL
1 1/2" = 1'-0"



F3 WALL CABINET (WD) DETAIL
1 1/2" = 1'-0"



F5 TYP. BASE CABINET (BS) DETAIL
1 1/2" = 1'-0"



F6 TYP. WORK SURFACE DETAIL
1 1/2" = 1'-0"

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Timothy J Bement License #12305
Expiration Date 12/31/2023

Washington Township
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716 East Franklin Street, Centerville, Ohio 45458

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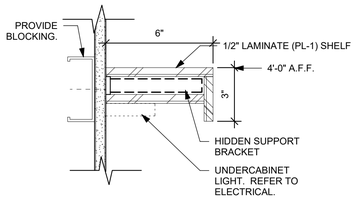
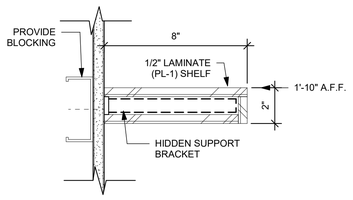
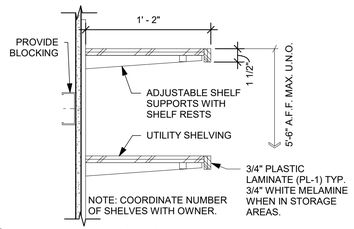


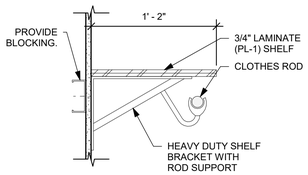
B1 DORM HEADBOARD SHELF (HDBRD) DETAIL
3" = 1'-0"



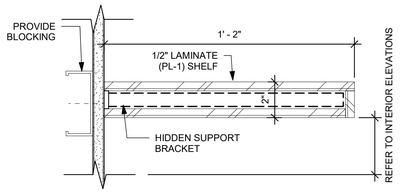
B2 DORM NIGHT STAND SHELF (NSTND) DETAIL
3" = 1'-0"



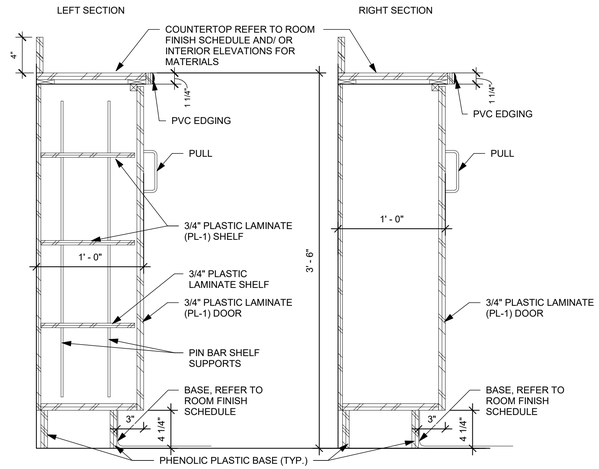
C1 ADJUSTABLE SHELVING DETAIL
1 1/2" = 1'-0"



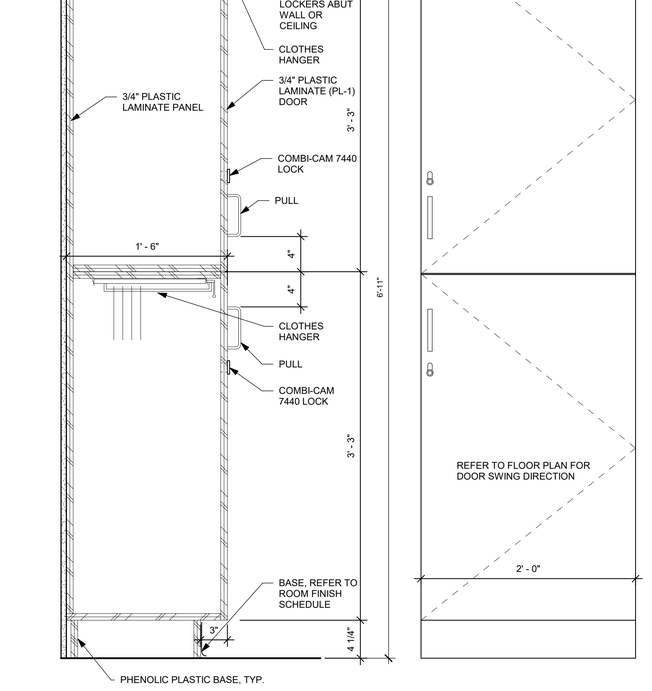
B5 HANGER ROD W/ SHELF (HGR) DETAIL
1 1/2" = 1'-0"



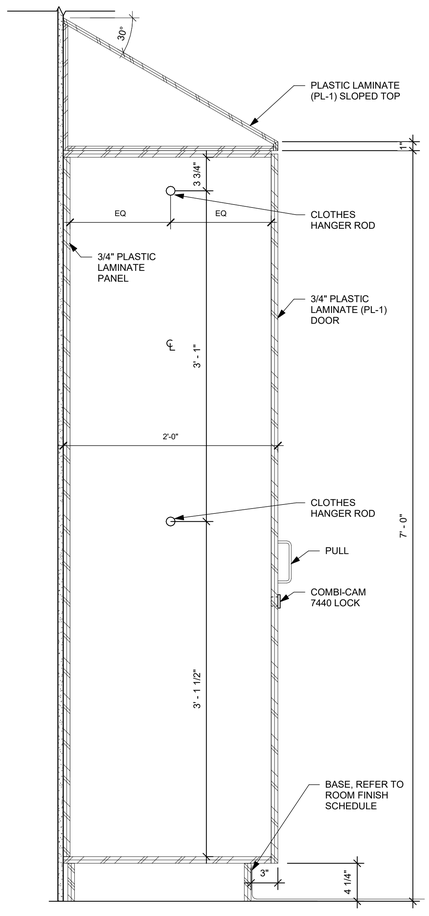
B4 TYP. SHELF DETAIL
3" = 1'-0"



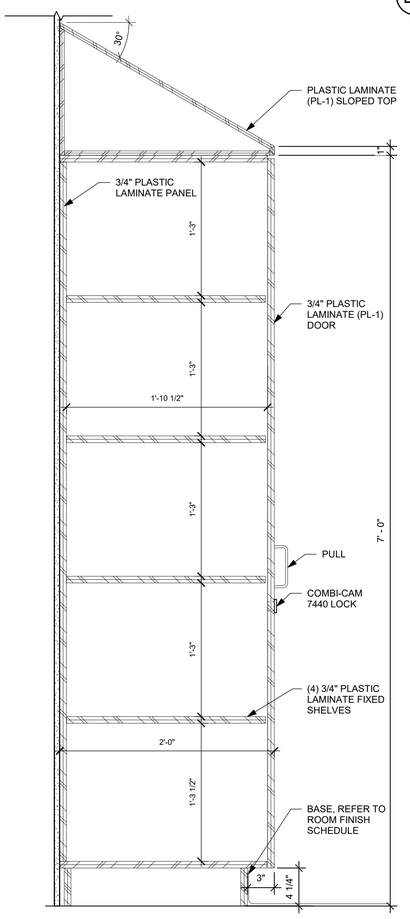
B6 TYP. STORAGE CABINET (SC) DETAIL
1 1/2" = 1'-0"



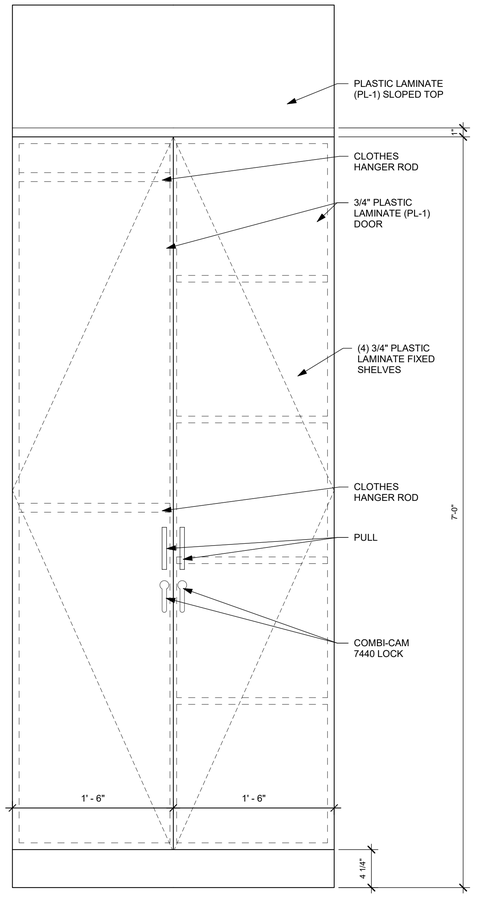
F1 TYP. LOCKER (LKR) DETAIL AND ELEVATION
1 1/2" = 1'-0"



F3 DORM CABINET (DC-1) - SHELVES
1 1/2" = 1'-0"



F4 DORM CABINET (DC-1) - HANGER
1 1/2" = 1'-0"



F6 DORM CABINET DC-1 ELEVATION
1 1/2" = 1'-0"

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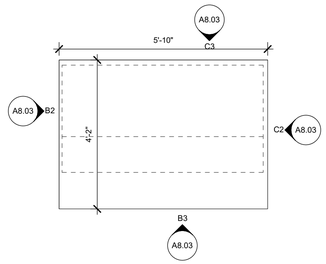
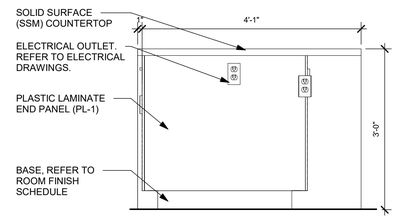
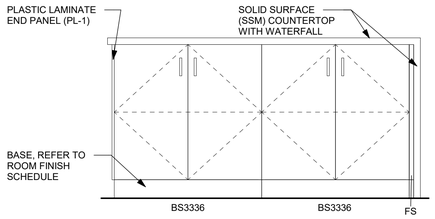


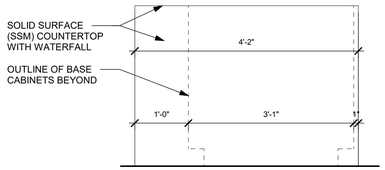
B1 KITCHEN ISLAND ENLARGED PLAN
1/2" = 1'-0"



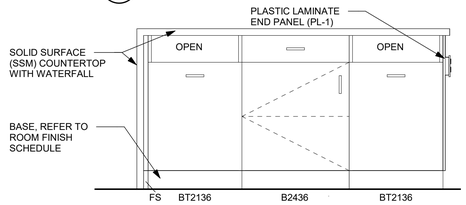
B2 KITCHEN ISLAND WEST
3/4" = 1'-0"



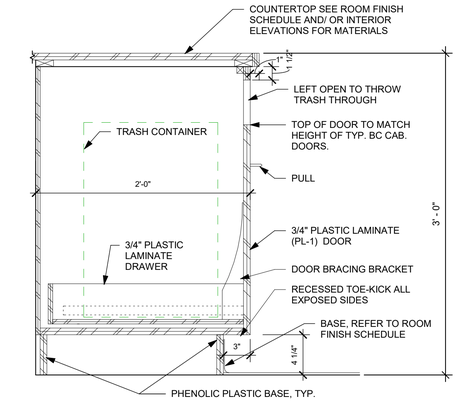
B3 KITCHEN ISLAND SOUTH
3/4" = 1'-0"



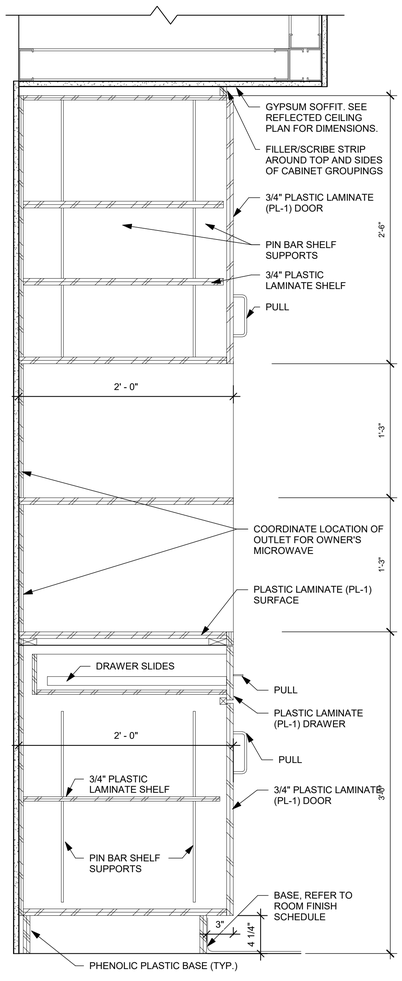
C2 KITCHEN ISLAND EAST
3/4" = 1'-0"



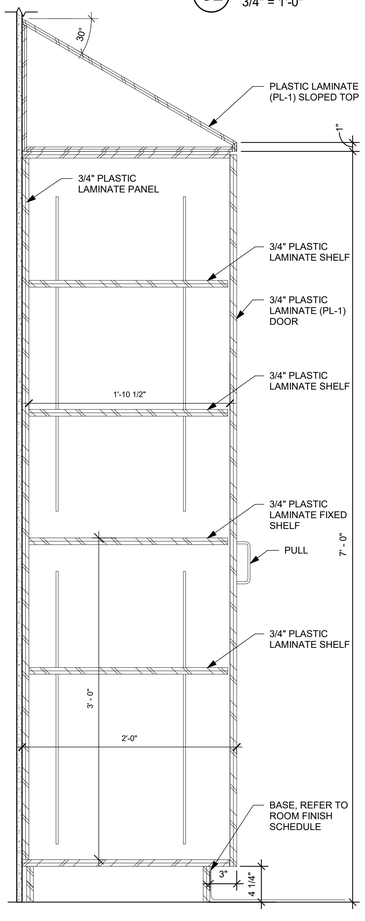
C3 KITCHEN ISLAND NORTH
3/4" = 1'-0"



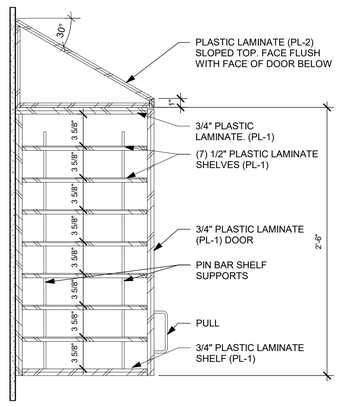
B6 TYP. TRASH BASE CABINET (BT) DETAIL
1 1/2" = 1'-0"



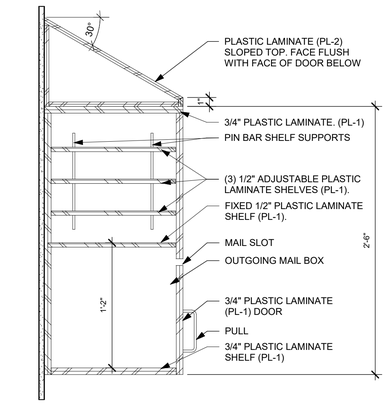
F1 TALL MICROWAVE CABINET (TM) DETAIL
1 1/2" = 1'-0"



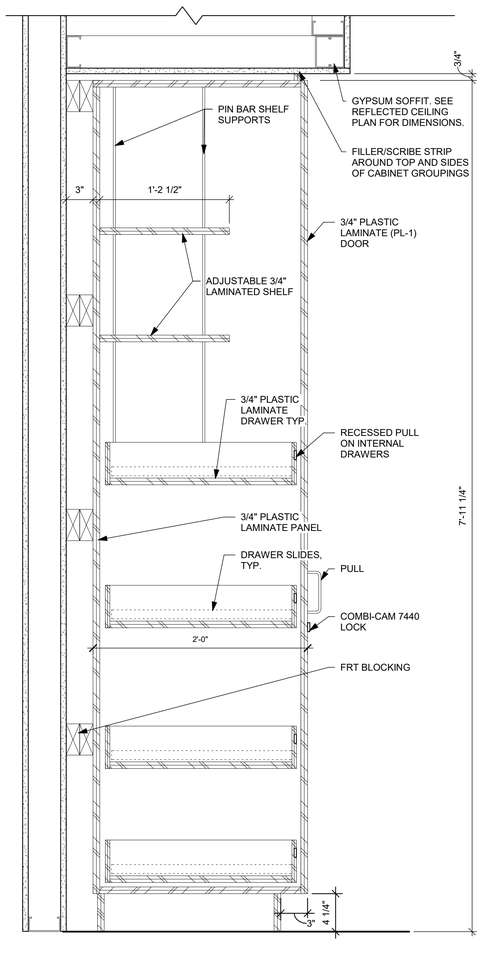
F2 TALL CABINET (TC) DETAIL
1 1/2" = 1'-0"



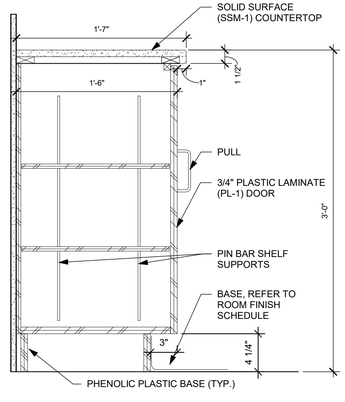
D3 TYPICAL MAIL CABINET (MC)
1 1/2" = 1'-0"



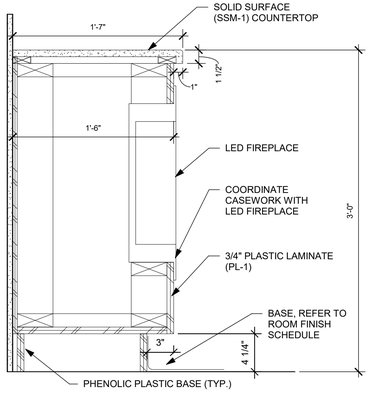
D5 OUTGOING MAILBOX CABINET (OMC)
1 1/2" = 1'-0"



F6 PANTRY CABINET (PC) DETAIL
1 1/2" = 1'-0"



F3 ENTERTAINMENT CABINET (ET)
1 1/2" = 1'-0"



F5 FIREPLACE CABINET (FP)
1 1/2" = 1'-0"

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GENERAL STRUCTURAL NOTES

GENERAL

1. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE CONSTRUCTION IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS, OR TIEDOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL IS TO REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.

2. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

3. MECHANICAL EQUIPMENT LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO MECHANICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR IS TO OBTAIN APPROVAL OF MECHANICAL AND OTHER TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN MECHANICAL REQUIREMENTS TO BE BORNE BY MECHANICAL CONTRACTOR.

4. DO NOT SCALE THE DRAWINGS WHERE DIMENSIONS ARE NOT SPECIFICALLY GIVEN. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN. COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO AUGMENT, NOR SUPERSEDE THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS.

5. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE ARCHITECT IMMEDIATELY WHERE CONFLICTS EXIST WITHIN THE DRAWINGS OR BETWEEN THE DRAWINGS AND FIELD CONDITIONS.

6. THROUGHOUT THESE PLANS, THE TERM "PROVIDE" IS DEFINED AS "SUPPLY AND INSTALL".

7. SHOP DRAWINGS ARE TO BE SUBMITTED BY COMPLETE ERECTION PHASE OR SEQUENCE. LIMITS OF EACH INDIVIDUAL ERECTION PHASE OR SEQUENCE ARE TO BE CLEARLY INDICATED ON THE PLANS. INCOMPLETE OR PIECEMEAL SHOP DRAWINGS WILL BE RETURNED PRIOR TO REVIEW. RESUBMITTALS ARE TO HAVE REVISIONS CLEARLY MARKED OR IDENTIFIED. THE CONTRACTOR SHALL REVIEW AND ACCEPT FULL RESPONSIBILITY FOR DIMENSIONAL CORRECTNESS. ALL SHOP DRAWINGS MUST BEAR THE APPROVAL STAMP OF THE CONTRACTOR PRIOR TO REVIEW BY THE ARCHITECT OR ENGINEER.

8. PREFABRICATED ITEMS SHOWN ON THE STRUCTURAL DRAWINGS ARE REFERENCED FOR GENERAL COORDINATION PURPOSES ONLY, AND MAY INCLUDE BUT NOT BE LIMITED TO: STAIRS, HANDRAILS, CURTAIN WALLS, STOREFRONT SYSTEMS, AWNINGS, AND PREFABRICATED FRAMING MEMBERS. THESE SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS REQUIRED BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS. JEZERINAC GEERS WILL REVIEW THE DESIGN METHODOLOGY, LOADS, AND INSTALLATION DETAILS AS PART OF THE SHOP DRAWING REVIEW PROCESS, AND MAY REQUEST A SEALED CALCULATION PACKAGE FOR REVIEW.

9. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS OR WITH EACH OTHER, THE STRICTEST PROVISION WILL GOVERN.

10. CODE INFORMATION

- GOVERNING CODE:	2017 OHIO BUILDING CODE
- BUILDING RISK CATEGORY:	CATEGORY IV
FLOOR LIVE LOADS (WITH ALLOWABLE REDUCTIONS WERE APPLICABLE)	
- ASSEMBLY / TRAINING	100 PSF
- STORAGE & MECH.	125 PSF
- STAIRS & EXITS	100 PSF
ROOF LIVE LOADS	
- ORDINARY ROOFS	20 PSF
SNOW LOADS	
- GROUND SNOW LOAD (Pg)	20 PSF
- FLAT ROOF SNOW LOAD (Pf)	24 PSF
- SNOW EXPOSURE FACTOR (Ce)	1.0
- SNOW LOAD IMPORTANCE FACTOR (Is)	1.2
- THERMAL FACTOR (Ct)	1.0
- SNOW DRIFTING	SEE PLAN
WIND LOADS	
- WIND IMPORTANCE FACTOR	1.15
- BASIC ULTIMATE WIND SPEED (V ult)	120 MPH
- BASIC ALLOWABLE WIND SPEED (V asd)	90 MPH
- SITE EXPOSURE CATEGORY	B
- INTERNAL PRESSURE COEFFICIENT	+/- 0.18
SEISMIC LOADS:	
- SEISMIC IMPORTANCE FACTOR	1.5
- MAPPED SPECTRAL RESPONSE ACCELERATION (Ss)	0.147
- MAPPED SPECTRAL RESPONSE ACCELERATION (S1)	0.072
- SEISMIC SITE CLASS	C
- DESIGN SPECTRAL RESPONSE ACCELERATION (Sds)	0.118
- DESIGN SPECTRAL RESPONSE ACCELERATION (Sd1)	0.082
- SEISMIC DESIGN CATEGORY	C
- RESPONSE MODIFICATION COEFFICIENT (R)	3.5
- SEISMIC RESPONSE COEFFICIENT (Cs)	0.050
- SEISMIC DESIGN BASE SHEAR (V)	21.5 K
- ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE
- BASIC SEISMIC FORCE-RESISTING SYSTEM:	INTERMEDIATE REINFORCED MASONRY SHEAR WALLS
SPECIAL LOADS	
- INTERIOR WALLS & PARTITIONS	5 PSF HORIZONTAL
- HANDRAIL LOADS (ANY DIRECTION)	50 PLF/200# CONC.
- RETAINING WALLS	50 PCF
- BASEMENT WALLS	60 PCF
GEOTECHNICAL:	
- GEOTECHNICAL ENGINEER:	CBC ENGINEERS
- REFERENCE REPORT I.D. OR NUMBER:	24541D-1-1221-02
- REFERENCE REPORT DATE:	DECEMBER 16, 2021
- ALLOWABLE DESIGN BEARING PRESSURE:	1,500 PSF
- FOUNDATION TYPE:	SHALLOW SPREAD FOOTINGS

REINFORCED CONCRETE

1. SPECIFICATIONS: IN GENERAL, COMPLY WITH ACI-301-16, "SPECIFICATIONS FOR STRUCTURAL CONCRETE".

2. MATERIALS:
   A. STRUCTURAL CONCRETE:

MIX USAGE	f'c (PSI)	MAX w/cm	AIR CONTENT
LEAN CONCRETE	1,500	---	---
FOOTINGS & INTERIOR COLUMN PIERS	3,500	0.55	---
INTERIOR SLABS ON GRADE	4,000	0.45	---
SLABS ON METAL DECK (W/ FIBER MESH)	3,500	0.45	---
STAIR PAN FILL (W/ #8 AGGREGATE)	3,500	0.45	---
STRUCTURAL CONCRETE SLABS	5,000	0.42	---
EXTERIOR FOUNDATION STEMWALLS, EXTERIOR FOUNDATION WALLS, & EXTERIOR COLUMN PIERS	4,500	0.45	5%-7%
EXTERIOR SLABS ON GRADE & EXTERIOR CONCRETE NOT OTHERWISE IDENTIFIED	4,500	0.45	5%-7%

   B. ALL DEFORMED REINFORCING BARS: FY = 60,000 PSI.
   C. CEMENT: PORTLAND CEMENT, ASTM C150, TYPE 1. ALL CEMENT FOR CONCRETE EXPOSED TO VIEW IS TO BE FROM THE SAME MILL.
   D. AGGREGATES: ASTM C33, USE SIZE NO. 57 FOR ALL MIXES UNLESS NOTED OTHERWISE.
   E. ADMIXTURES:
      1. WATER-REDUCING, LOW AND MID RANGE: ASTM C494, TYPE A OR D.
      2. HIGH-RANGE WATER REDUCING, SUPERPLASTICIZER: ASTM C494, TYPE F OR G.
   F. AIR-ENTRAINING: ASTM C260.
   G. FLY-ASH: ASTM C618, TYPE C OR F.
   H. NON-CHLORIDE, NON-CORROSIVE ACCELERATOR: ASTM C494, TYPE C OR E.
   I. VAPOR RETARDER SHALL CONFORM TO ASTM E1745 "STANDARD SPECIFICATION FOR PLASTIC WATER VAPOR RETARDERS USED IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS", CLASS A.
   J. VAPOR RETARDER SHALL BE INSTALLED IN ACCORDANCE WITH ASTM E1643 "STANDARD PRACTICE FOR INSTALLATION OF WATER VAPOR RETARDERS USED IN CONTACT WITH EARTH OR GRANULAR FILL UNDER CONCRETE SLABS. THE VAPOR RETARDER/BARRIER SHALL BE A MINIMUM OF 15 MILS THICK AND PLACED DIRECTLY ON THE GRANULAR FILL, BELOW THE CONCRETE FLOOR SLAB. LAP JOINTS A MINIMUM OF 6 INCHES AND SEAL WITH MANUFACTURER'S RECOMMENDED TAPE OR ADHESIVE.

3. FIELD MANUAL: PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, SP-15 IN THE FIELD OFFICE AT ALL TIMES.

4. SUBMITTALS:
   A. SUBMIT A MIX DESIGN FOR EACH MIXTURE USAGE REQUIRED FOR THE PROJECT. CONCRETE PROPORTIONS ARE TO BE ESTABLISHED ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL MIXTURES.
   B. SUBMIT PLACING DRAWINGS FOR ALL REINFORCING. INDICATE STRENGTH, SIZE, AND DETAILS OF ALL BAR REINFORCING.
   C. SUBMIT PRODUCT LITERATURE FOR ADMIXTURES AND CURING COMPOUNDS PROPOSED FOR USE.
   D. SUBMIT REPORTS OF ALL REQUIRED TESTING AND INSPECTIONS.

5. CONTINGENCIES:
   A. PROVIDE LEAN CONCRETE UNDER FOUNDATIONS FOR ACCIDENTAL OVER EXCAVATION, SOFT SPOTS, AND UTILITY TRENCHES.

6. FOOTINGS, PIERS, WALLS:
   A. DOWELS IN FOOTINGS TO MATCH VERTICAL PIER OR WALL REINFORCING.
   B. PROVIDE CORNER BARS AT WALL AND FOOTING CORNERS TO MATCH HORIZONTAL REINFORCING. MINIMUM LENGTH OF EACH LEG - 36 BAR DIAMETERS.

7. SPLICES:
   A. LAP SPLICE REINFORCING BARS AS SCHEDULED.

8. CONSTRUCTION JOINTS:
   A. CONSTRUCTION JOINTS PERMITTED ONLY WHERE SHOWN OR AS APPROVED BY THE STRUCTURAL ENGINEER.

9. FINISHES:
   A. PER ACI 117, SURFACES OF INTERIOR SLABS ON GRADE ARE TO BE FINISHED TO THE FOLLOWING TOLERANCES: FLOOR FLATNESS F(f)=30 AND LEVELNESS F(l)=20 UNLESS NOTED OTHERWISE IN SPECIFICATIONS.
   B. TYPICAL INTERIOR FLOOR AREAS TO RECEIVE CARPET, RESILIENT FLOOR COVERING, OR TO REMAIN EXPOSED - TROWELED FINISH.
   C. INTERIOR FLOOR AREAS TO RECEIVE QUARRY TILE OR CERAMIC TILE - FLOATED FINISH.
   D. EXTERIOR SLABS - BROOM FINISH.

10. CURING:
   A. CURING IS TO COMMENCE IMMEDIATELY AFTER CONCRETE PLACEMENT AND CONTINUE FOR AT LEAST 7 DAYS. DO NOT ALLOW CURING TO BE DELAYED OVERNIGHT.
   B. INTERIOR SLABS TO RECEIVE QUARRY TILE OR CERAMIC TILE ARE TO BE MOIST-CURED WITHOUT THE USE OF A CURING COMPOUND.
   C. ALL OTHER SLABS MAY BE EITHER MOIST-CURED OR RECEIVE AN APPLICATION OF CURING COMPOUND.

11. FIELD QUALITY CONTROL:
   A. OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. IF CONCRETE IS PUMPED, OBTAIN CONCRETE AT DISCHARGE END.
   B. FOR EACH CLASS OF CONCRETE, OTHER THAN LEAN CONCRETE, PERFORM ONE STRENGTH TEST FOR EACH 50 YARDS, OR FRACTION THEREOF, FOR ONE DAY PLACEMENT.
   C. DETERMINE SLUMP FOR EACH STRENGTH TEST.
   D. DETERMINE AIR CONTENT FOR EACH STRENGTH TEST OF EXTERIOR EXPOSED CONCRETE.
   E. MAINTAIN RECORDS OF ALL TESTS INDICATING EXACT LOCATION OF THE STRUCTURE REPRESENTED BY EACH TEST.

MASONRY

1. MATERIALS:
   A. CONCRETE BLOCK: ASTM C90 (HOLLOW AND SOLID), MINIMUM NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS = 2,600 PSI.
   B. MORTAR: ASTM 270 TYPE S, MINIMUM COMPRESSIVE STRENGTH = 1,800 PSI
   C. GROUT FOR BOND BEAM AND CORE FILL: ASTM C476, COARSE TYPE WITH f'c = 2,500 PSI MIN.
   D. DESIGN COMPRESSIVE STRENGTH OF MASONRY SYSTEM: f'm = 2,250 PSI
   E. HORIZONTAL JOINT REINFORCING: STANDARD LADDER TYPE, 9 GA., MILL GALVANIZED FINISH. PROVIDE AT 8" O.C. BELOW GRADE, AND 16" O.C. ABOVE GRADE, UNLESS NOTED OTHERWISE.

2. CONTROL JOINTS:
   A. PROVIDE CONTROL JOINTS IN ALL MASONRY WALLS AT A SPACING NOT TO EXCEED THREE TIMES THE WALL HEIGHT OR 24 FEET ON CENTER, WHICHEVER IS SMALLER. IN ADDITION, PROVIDE CONTROL JOINTS AT THE ENDS OF LINTELS, CHANGES IN WALL HEIGHT, CHANGES IN WALL THICKNESS, WITHIN 2 FEET OF WALL CORNERS AND INTERSECTIONS, TRANSITIONS FROM INTERIOR WALL TO EXTERIOR WALL, AND TRANSITIONS FROM WALL BEARING ON FOUNDATION TO WALL BEARING ON FLOOR SLAB.

3. MISCELLANEOUS:
   A. PROVIDE 100% SOLID CMU BEARING, MINIMUM 3 COURSES UNDER BEAMS, 2 COURSES UNDER JOISTS, UNLESS DETAILED OTHERWISE.
   B. PROVIDE SOLID OR GROUT-FILLED CMU FOR ALL BELOW-GRADE FOUNDATION WALLS.
   C. FILL CORE SOLID AROUND CAST-IN ANCHOR RODS.
   D. PROVIDE SOLID CMU OR SOLIDLY FILLED HOLLOW CMU AT ALL EPOXY ANCHOR AND WEDGE ANCHOR LOCATIONS. EXTEND SOLID AREA AT LEAST 8" IN ALL DIRECTIONS FROM CENTER OF ANCHOR.
   E. SET WELD PLATES IN BOND BEAMS AFTER THE GROUT IS PLACED, BUT WHILE IT IS STILL PLASTIC.
   F. FILL ALL BEARING POCKETS AROUND BEAM SEATS WITH SOLID CMU.
   G. HOLLOW MASONRY UNITS TO BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. WEBS ARE TO ALSO BE BEDDED IN ALL COURSES OF PIERS, PILASTERS, THE STARTING COURSE ON FOOTINGS, AND WHEN ADJACENT TO CELLS OR CAVITIES TO BE REINFORCED OR FILLED WITH CONCRETE OR GROUT. SOLID UNITS TO BE LAID WITH FULL HEAD AND BED JOINTS.
   H. PROVIDE APPROPRIATE MASONRY ANCHORS AT 16" O.C. MAX. TO TIE MASONRY TO ABUTTING STEEL COLUMNS, STEEL BEAM WEBS, AND ALL ABUTTING CONCRETE SURFACES.
   I. WHERE HOLLOW MASONRY UNITS ARE USED ABOVE HOLLOW MASONRY UNITS OF A DIFFERENT THICKNESS, PROVIDE A CONTINUOUS COURSE OF SOLID MASONRY AT LEAST 8" HIGH BELOW THE TRANSITION.
   J. LAP SPLICE REINFORCING BARS AS SCHEDULED.
   K. ALL GROUTING OF MASONRY WALLS IS TO BE BY THE LOW-LIFT GROUTING METHOD (MAXIMUM LIFT HEIGHT 5'-0"), UNLESS CLEAN-OUTS AND INSPECTIONS ARE PROVIDED.

STRUCTURAL STEEL

1. MATERIALS:
   A. STRUCTURAL STEEL WIDE FLANGE SHAPES: ASTM A992, Fy = 50 KSI
   B. STRUCTURAL STEEL CHANNELS, ANGLES, ETC.: ASTM A36, Fy = 36 KSI
   C. STRUCTURAL STEEL PLATES: UNLESS NOTED OTHERWISE - ASTM A36, Fy = 36 KSI; ASTM A529 OR A572, Fy = 50 KSI, WHERE NOTED
   D. HIGH STRENGTH BOLTS: ASTM A325 OR A490
   E. ANCHOR RODS: ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE
   F. ELECTRODES: SERIES E70
   G. RECTANGULAR HSS: ASTM A500, GRADE C, FY = 50 KSI
   H. STRUCTURAL PIPES: ASTM A53, GRADE B, FY = 35 KSI
   I. SHEAR STUDS: ASTM A108, FY = 60 KSI
   J. DEFORMED BAR ANCHORS: ASTM A496, Fy = 70 KSI

2. SPECIFICATIONS:
   A. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1. UNLESS SPECIFICALLY SHOWN OTHERWISE, DESIGN, FABRICATION AND ERECTION TO BE GOVERNED BY THE LATEST REVISIONS OF:
      1. AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
      2. AISC CODE OF STANDARD PRACTICE.
      3. STRUCTURAL WELDING CODE, AWS D1.1 OF THE AMERICAN WELDING SOCIETY.
      4. SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

3. SUBMITTALS:
   A. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL WHICH INCLUDE ERECTION PLANS, CONNECTION DETAILS, AND SHOP DETAILS INDICATING CUTS, COPES, CAMBERS, CONNECTIONS, HOLES, THREADED FASTENER TYPES AND SIZES, AND SIZES AND LENGTHS OF WELDS.
   B. INDICATE MATERIAL SPECIFICATIONS, STRENGTHS, AND FINISHES.

4. CONNECTIONS:
   A. FIELD CONNECTIONS ARE TO BE BOLTED, EXCEPT AS INDICATED OTHERWISE. SHOP CONNECTIONS MAY BE WELDED OR BOLTED.
   B. CONNECTIONS ARE TO BE DESIGNED BY THE FABRICATOR TO DEVELOP EITHER 110% OF THE FULL UNIFORM LOAD CAPACITY OF THE MEMBER (55% EACH END), OR THE FORCES SHOWN ON THE PLANS. MINIMUM CONNECTION CAPACITY TO BE 15 KIPS. FOLLOW INSTRUCTIONS ON DRAWINGS FOR GENERAL ARRANGEMENT OR PARTICULAR DETAILS.
   C. MISCELLANEOUS STEEL MEMBERS (ANGLES, CHANNELS, ETC.) THAT SUPPORT DECK AROUND THE PERIMETER OF A FLOOR OR ROOF SHALL BE CONTINUOUS. WHERE SPLICES IN THESE MEMBERS MUST OCCUR TO FACILITATE ERECTION, PROVIDE PARTIAL PENETRATION SQUARE GROOVE WELD (BUTT JOINT) W/ 3/16" EFFECTIVE THROAT ON ONE SIDE, EACH LEG.

5. COATINGS:
   A. DO NOT PAINT STEEL OR ANCHOR RODS WHICH WILL BE ENCASED IN CONCRETE OR MASONRY, NOR ANY STEEL WHICH IS SCHEDULED TO RECEIVE SPRAY-APPLIED OR INTUMESCENT-MASTIC FIREPROOFING.
   B. PAINT ALL INTERIOR EXPOSED STEEL (INCLUDING INTERIOR LINTELS) WITH TWO COATS OF RED-OXIDE PRIMER.
   C. HOT-DIP GALVANIZE ALL EXTERIOR STEEL (INCLUDING LINTELS AND BRICK SHELF ANGLES).
   D. PROVIDE A FIELD-APPLIED COAT OF ASPHALT-MASTIC PAINT FOR ALL BELOW-GRADE STEEL (INCLUDING ANCHOR RODS, NUTS, WASHERS, BASE PLATES, AND THE BELOW-GRADE PORTION OF COLUMNS) WHICH IS NOT FULLY ENCASED IN CONCRETE.
   E. INTERIOR NON-EXPOSED STEEL NEED NOT BE PRIME PAINTED.

6. MISCELLANEOUS:
   A. PROVIDE HOLES FOR OTHERS. IF OPENING IS NOT SHOWN ON THE STRUCTURAL DRAWINGS, OBTAIN PRIOR APPROVAL.
   B. STEEL SUPPORTING OR CONNECTING TO MECHANICAL AND OTHER EQUIPMENT AND ROOF OPENINGS AS SHOWN ON ARCHITECTURAL, MECHANICAL AND/OR ON STRUCTURAL DRAWINGS IS SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR IS TO RECONCILE EXACT SIZE AND LOCATION WITH MECHANICAL AND OTHER REQUIREMENTS BEFORE PROCEEDING WITH THIS WORK.
   C. GROUT UNDER BEARING PLATES TO BE NON-METALLIC, NON-SHRINKING TYPE.
   D. STEEL BELOW GRADE TO BE PROTECTED BY A MINIMUM OF 3" OF CONCRETE, 4" OF SOLID MASONRY, OR A FIELD-APPLIED COAT OF ASPHALT-MASTIC PAINT.
   E. PROVIDE 1/4" THICK SETTING PLATES FOR ALL BEAMS AND BEAM LINTELS BEARING ON MASONRY OR CONCRETE WHICH DO NOT REQUIRE A THICKER BEARING PLATE.
   F. PROVIDE HEAVY PLATE WASHERS AT ALL ANCHOR RODS.
   G. FINISH ENDS OF ALL COLUMNS, STIFFENERS AND ALL OTHER MEMBERS IN DIRECT BEARING.
   H. PROVIDE BOLT HOLES FOR WOOD NAILERS BOLTED TO BEAMS.
   I. STEEL IN CONTACT WITH PRESSURE-TREATED LUMBER IS TO BE PROTECTED FROM CORROSION FROM PRESERVATIVE CHEMICALS WITH A 20 MIL (MIN.) VAPOR BARRIER. BOLTS AND SCREWS THROUGH PRESSURE-TREATED LUMBER ARE TO BE HOT DIPPED GALVANIZED PER ASTM A153 WITH A MINIMUM G185 COATING OR STAINLESS STEEL WITH CHEMICAL COMPOSITION CONFORMING TO AISI 303/304 OR AISI 316.
   J. PROVIDE MISCELLANEOUS ANGLES OR CHANNELS TO SUPPORT DECK EDGES AROUND COLUMNS THAT EXTEND THROUGH THE DECK.
   K. PROVIDE ADDITIONAL SUPPORT FOR ALL DECK OPENINGS THAT ARE EQUAL TO OR GREATER THAN 12" IN WIDTH OR DIAMETER. NOT ALL DECK OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE SIZE AND LOCATION WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND OTHER TRADES.
   L. SEE ARCHITECTURAL SECTIONS AND DETAILS FOR ALL MISCELLANEOUS STRUCTURAL STEEL NOT OTHERWISE INDICATED IN THE STRUCTURAL DRAWINGS.

7. FIELD QUALITY CONTROL:
   A. INSPECTION AGENCY IS TO PERFORM INSPECTION OF BOLTED CONNECTIONS PER THE REQUIREMENTS OF AISC SPECIFICATION FOR STRUCTURAL JOINTS.

METAL DECK

1. MATERIALS:
   A. GALVANIZED SHEET STEEL: ASTM A653
   B. ROOF DECK: 1-1/2" DEEP, WIDE RIB, GALVANIZED.
   C. FLOOR DECK: 1" DEEP, CONFORM, GALVANIZED

2. BASIS OF DESIGN:
   A. FLOOR DECK: BEAM/JOIST SPACINGS SHOWN ON FRAMING PLANS INDICATE MAXIMUM SPACINGS FOR UNSHORED FLOOR CONSTRUCTION. GENERAL CONTRACTOR MUST VERIFY CHOSEN SUPPLIER'S FLOOR DECK WILL SUPPORT THE CONCRETE THICKNESS INDICATED FOR UNSHORED CONSTRUCTION AT THESE SPACINGS.
   B. ROOF DECK: BEAM/JOIST SPACINGS SHOWN ON FRAMING PLANS INDICATE MAXIMUM SPACINGS TO SUPPORT ROOF LIVE, SNOW LOADS (INCLUDING DRIFTING), AND WIND LOADS. DECK MANUFACTURER TO SUPPLY DECK CAPABLE OF SUPPORTING MAXIMUM LOADING INDICATED AT BEAM/JOIST SPACINGS PROVIDED. SEE GENERAL STRUCTURAL NOTES, ROOF FRAMING PLAN NOTES, AND ROOF FRAMING PLAN OR SNOW DRIFT PLAN TO OBTAIN THESE VALUES.

3. SPECIFICATIONS:
   A. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS. DESIGN, FABRICATION, AND ERECTION TO BE GOVERNED BY THE LATEST REVISIONS OF:
      1. AISI "SPECIFICATION OF THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."
      2. STRUCTURAL WELDING CODE, AWS D1.3 OF THE AMERICAN WELDING SOCIETY.
      3. SDI "DESIGN MANUAL FOR FLOOR DECK AND ROOF DECKS".

4. CONNECTIONS:
   A. DECK TO STRUCTURAL STEEL: 5/8" DIAMETER PUDDLE WELDS.
   B. DECK TO COLD-FORMED TRUSSES OR FRAMING: #12 SCREWS.
   C. SIDE LAP FASTENING: #10 SCREWS.
   D. ROOF DECK FASTENING TO RESIST A GROSS UPLIFT OF 30 PSF MINIMUM.

5. FINISH:
   A. GALVANIZED: CONFORM TO ASTM A653, G60.

6. METAL DECK AS FORMWORK:
   A. IN METAL DECK APPLICATIONS WHICH RECEIVE CONCRETE FILL, THE DECK IS DESIGNED TO SUPPORT THE SELF WEIGHT OF DECK, CONCRETE, AND A UNIFORM CONSTRUCTION LIVE LOAD OF 20 PSF WHICH IS CONSIDERED ADEQUATE FOR TYPICAL CONSTRUCTION APPLICATIONS THAT CONSIST OF CONCRETE TRANSPORT AND PLACEMENT BY HOSE AND CONCRETE FINISHING USING HAND TOOLS. BULK DUMPING OF CONCRETE USING BUCKETS, CHUTES OR HANDCARTS, OR THE USE OF HEAVIER MOTORIZED FINISHING EQUIPMENT SUCH AS POWER SCREEDS MAY REQUIRE REDESIGN OF THE DECK. NOTIFY THE E.O.R. ONCE MEANS-AND-METHODS OF CONCRETE PLACEMENT ARE ESTABLISHED.

7. MISCELLANEOUS:
   A. UNITS ARE TO BE CONTINUOUS OVER AT LEAST THREE SPANS. WHERE FEWER THAN THREE SPANS ARE NEEDED, GAGE IS TO BE INCREASED AS REQUIRED TO OBTAIN THE SAME DESIGN STRENGTH AS THE THREE-SPAN CONDITION. END LAPS ARE ONLY BE LOCATED OVER SUPPORTS.
   B. FIELD CUTTING TO BE PERFORMED WITH A SAW.
   C. METAL DECK SHOULD BE PROTECTED FROM CORROSION FROM PRESERVATIVE CHEMICALS IN PRESSURE-TREATED LUMBER WITH A MINIMUM 20 MIL VAPOR BARRIER. ALL FASTENERS AND CONNECTORS IN CONTACT WITH PRESSURE-TREATED LUMBER ARE TO BE HOT DIPPED GALVANIZED PER ASTM A153 AND ASTM A123 WITH A MINIMUM G185 COATING.
   D. PROVIDE ADDITIONAL SUPPORT FOR ALL DECK OPENINGS THAT ARE EQUAL TO OR GREATER THAN 12" IN WIDTH OR DIAMETER. NOT ALL DECK OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE SIZE AND LOCATION WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND OTHER TRADES.

COLD FORMED METAL FRAMING

1. MATERIALS:
   A. COLD-FORMED METAL STUDS AND JOISTS SHOWN ON THE CONTRACT DOCUMENTS ARE DESIGNATED BY "DEPTH", "SHAPE", "WIDTH", AND "THICKNESS" AS FOLLOWS:
      1. DEPTH: 362 (3-5/8"), 600 (6"), 800 (8"), ETC.
      2. SHAPE: S (C-SHAPE), T (TRACK), U (CHANNEL)
      3. WIDTH: 125 (1-1/4"), 162 (1-5/8"), 200 (2"), ETC.
      4. THICKNESS: -43 (18 GA.), -54 (16 GA.), -68 (14 GA.), -97 (12 GA.)

      EXAMPLE: 600S162-54 = 6" C-SHAPE, 1 5/8" FLANGE, 16 GA.

   B. ALL 18 GA AND LIGHTER STUDS TO BE 33 KSI MATERIAL; ALL 16 GA AND HEAVIER STUDS TO BE 50 KSI MATERIAL.
   C. ALL TRACKS AND ACCESSORIES: FY = 33 KSI MINIMUM.

2. SPECIFICATIONS:
   A. WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS. DESIGN, FABRICATION, AND ERECTION TO BE GOVERNED BY LATEST REVISIONS OF:
      1. AISI "SPECIFICATION OF THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."
      2. STRUCTURAL WELDING CODE, AWS D1.3 OF THE AMERICAN WELDING SOCIETY.

3. SUBMITTALS:
   A. SUBMIT MANUFACTURER'S STANDARD PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF COLD-FORMED METAL FRAMING AND ACCESSORY REQUIRED.
   B. SUBMIT FULLY DIMENSIONED ERECTION PLANS AND CONNECTION DETAILS INDICATING ALL COMPONENT AND MEMBER LOCATIONS, ORIENTATION, AND LAYOUT. PLANS TO INCLUDE MEMBER SIZES, TYPES, GAGE DESIGNATIONS, QUANTITY AND SPACING. ALSO INCLUDE DETAILS OF CONNECTIONS NOTED SCREW TYPES, QUANTITIES, LOCATIONS, WELD SIZES, LENGTHS, AND LOCATIONS, AND ADDITIONAL STRAPPING, BRACING, OR ACCESSORIES REQUIRED FOR A PROPER AND COMPLETE INSTALLATION.

4. CONNECTIONS:
   A. FIELD CONNECTIONS MAY BE EITHER WELDED OR SCREWED, EXCEPT AS SPECIFICALLY DETAILED OTHERWISE.
   B. WELD SIZE TO BE 1/8" WITH AWS TYPE 6013 OR 7014 ROD.
   C. EXCEPT AS NOTED OTHERWISE, MECHANICAL FASTENERS TO BE SELF TAPPING #10-16 SCREWS.

5. FINISH:
   A. ALL MATERIAL TO BE GALVANIZED COATED IN ACCORDANCE WITH ASTM A525 G-60.
   B. TOUCH-UP FIELD WELDS WITH ZINC RICH PAINT.

6. MISCELLANEOUS:
   A. ALL FIELD CUTTING TO BE PERFORMED WITH A SAW.
   B. TRACKS TO BE SECURELY ANCHORED TO SUPPORTING STRUCTURE WITH WELD OR SCREW AT EACH SIDE OF TRACKS.
   C. PROVIDE HORIZONTAL BRIDGING AT 6'-0" O.C. MAX. FOR ALL STUD WALLS UNLESS NOTED OTHERWISE. BRIDGING IS NOT REQUIRED FOR PORTIONS OF INTERIOR NON-LOADBEARING STUD WALLS WHERE BOTH SIDES ARE FACED WITH SHEATHING.
   D. JOISTS TO BE LOCATED DIRECTLY OVER BEARING WALL STUDS UNLESS A LOAD DISTRIBUTION MEMBER IS PROVIDED AT THE TOP TRACK.
   E. BEARING WALL STUDS ARE TO BE LOCATED DIRECTLY BELOW JOIST OR ROOF TRUSS BEARING UNLESS A LOAD DISTRIBUTION MEMBER IS PROVIDED AT THE TOP TRACK.
   F. END BLOCKING OR CONTINUOUS TRACK IS TO BE PROVIDED WHERE JOIST ENDS ARE NOT OTHERWISE RESTRAINED FROM ROTATION.
   G. WEB PUNCH-OUTS FOR BEAMS, JOISTS, AND RAFTERS ARE TO BE LOCATED A MINIMUM OF 10" AWAY FROM BEARING AND CONCENTRATED LOAD LOCATIONS. IF A PUNCH-OUT FALLS WITHIN 10" OF THESE LOCATIONS, PROVIDE REINFORCEMENT FOR THE MEMBER AS REQUIRED. ALTERNATELY, UN-PUNCHED SECTIONS MAY BE PROVIDED FOR BEAMS, JOISTS, AND RAFTERS.
   H. EACH MEMBER OF MULTIPLE MEMBER COLUMNS ARE TO BE SCREWED TOGETHER USING FULL-HEIGHT TRACKS AND #10 SCREWS AT 12" O.C. ALTERNATELY, MULTIPLE MEMBER COLUMNS MAY BE WELDED TOGETHER WITH A 1" WELD AT 18" ON CENTER, EACH SIDE, EACH PIECE, FOR THE FULL LENGTH OF THE COLUMN.

POST-INSTALLED ANCHOR SYSTEMS

1. GENERAL:
   A. LISTED ANCHOR PRODUCTS PROVIDED BELOW ARE NOT TO BE USED AS INTERCHANGEABLE PRODUCTS. EACH ANCHOR HAS DEFINED CAPACITIES BASED UPON TESTED PERFORMANCE WITH APPLICABLE SAFETY FACTORS AND WILL VARY ACROSS MANUFACTURERS. TYPES OF ANCHORS INDICATED THROUGHOUT THE DESIGN DOCUMENTS ARE DETAILED FOR THEIR SPECIFIC PURPOSE AND CAPACITY. SUBSTITUTION OF ANCHORS FROM THOSE SPECIFIED ARE ONLY ALLOWED AFTER ENGINEER REVIEW AND APPROVAL OR AMENDMENT FROM WRITTEN REQUEST BY THE CONTRACTOR.
   B. PROVIDE ANCHORAGE MATCHING MANUFACTURER, TYPE, DIAMETER, EMBEDMENT, AND BASE MATERIAL AS INDICATED IN THE DOCUMENTS.
   C. ALL POST-INSTALLED ANCHORS TO BE HAMMER DRILLED. FOLLOW ALL HOLE CLEANING AND INSTALLATION INSTRUCTIONS AS STIPULATED BY THE ANCHOR MANUFACTURER. FOLLOW ALL OSHA GUIDELINES FOR CONCRETE DRILLING AS IT PERTAINS TO SILICA DUST.
   D. INSTALLATION OF ADHESIVE ANCHORS MUST BE PERFORMED BY PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS THROUGH MANUFACTURER TRAINING PROGRAMS.
   E. INSTALLATION OF ADHESIVE ANCHORS IN THE HORIZONTAL OR UPWARDLY INCLINED ORIENTATION AND WHERE SUPPORTING SUSTAINED TENSION LOADS SHALL BE INSTALLED BY CERTIFIED PERSONNEL BY ACI/CRSI INSTALLATION PROGRAMS.
   F. MINIMUM CONCRETE AGE FOR POST-INSTALLED ADHESIVE ANCHORS SHALL BE NOT LESS THAN 28 DAYS.
   G. ALL ANCHORS IN CONTACT WITH PRESSURE TREATED LUMBER ARE TO BE HOT DIPPED GALVANIZED PER ASTM A153 WITH A MINIMUM G185 COATING OR STAINLESS STEEL WITH CHEMICAL COMPOSITION CONFORMING TO AISI 303/304 OR AISI 316. FASTENERS AND CONNECTORS ARE TO BE OF THE SAME MATERIAL, STAINLESS STEEL OR HOT DIPPED GALVANIZED, DO NOT MIX MATERIALS.
   H. MINIMUM EMBEDMENT FOR EXPANSION ANCHORAGE SYSTEMS IS TO BE 7 BOLT DIAMETERS. MINIMUM EMBEDMENT FOR SCREW ANCHORAGE AND ADHESIVE ANCHORAGE SYSTEMS IS TO BE 9 BOLT DIAMETERS.

2. ANCHORAGE TO CONCRETE
   A. ACCEPTABLE MECHANICAL EXPANSION ANCHORAGE SYSTEMS:
      1. DEWALT POWER STUD +SDI WEDGE EXPANSION ANCHOR
      2. HILTI KWIK BOLT 3 EXPANSION ANCHOR
      3. HILTI KWIK BOLT TZ EXPANSION ANCHOR
      4. SIMPSON STRONG-BOLT 2 WEDGE EXPANSION ANCHOR
   B. ACCEPTABLE MECHANICAL SLEEVE ANCHORAGE SYSTEMS: (MAY NOT BE USED TO SECURE MAIN BUILDING FRAME COMPONENTS)
      1. DEWALT LOK-BOLT AS SLEEVE ANCHOR
      2. HILTI HLC SLEEVE ANCHOR
      3. SIMPSON SLEEVE-ALL SLEEVE ANCHOR
   C. ACCEPTABLE MECHANICAL SCREW ANCHORAGE SYSTEMS:
      1. DEWALT SCREW-BOLT+
      2. HILTI KWIK HUS-EZ SCREW ANCHOR
      3. SIMPSON TITEN HD SCREW ANCHOR
   D. ACCEPTABLE ADHESIVE ANCHORAGE SYSTEMS:
      1. DEWALT AC200+ ADHESIVE FOR REINFORCING BAR
      2. DEWALT PURE50+ ADHESIVE FOR THREADED ROD AND REINFORCING BAR
      3. DEWALT PURE110+ ADHESIVE FOR THREADED ROD AND REINFORCING BAR
      4. HILTI HIT-HY 200 ADHESIVE FOR THREADED ROD, REINFORCING BAR, AND HILTI SPECIFIC ROD AND INSERT SYSTEMS.
      5. HILTI HIT-RE 500 ADHESIVE FOR THREADED ROD AND REINFORCING BAR.
      6. HILTI HIT-RE 100 ADHESIVE FOR THREADED ROD AND REINFORCING BAR.
      7. SIMPSON AT-XP ADHESIVE FOR THREADED ROD AND REINFORCING BAR.
      8. SIMPSON SET-3G ADHESIVE FOR THREADED ROD AND REINFORCING BAR.

3. ANCHORAGE TO CONCRETE MASONRY OR BRICK MASONRY AS INDICATED:
   A. FOLLOW ALL MANUFACTURERS INSTALLATION INSTRUCTIONS IN REGARD TO LOCATION OF ANCHORS AWAY FROM HEAD JOINTS, MINIMUM EDGE DISTANCES, AND MINIMUM ANCHOR SPACING.
   B. ACCEPTABLE MECHANICAL EXPANSION ANCHORAGE SYSTEMS:
      1. DEWALT POWER STUD +SDI WEDGE EXPANSION ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
      2. HILTI KWIK BOLT 3 EXPANSION ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
      3. SIMPSON STRONG-BOLT 2 WEDGE EXPANSION ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
   C. ACCEPTABLE MECHANICAL SLEEVE ANCHORAGE SYSTEMS: (MAY NOT BE USED TO SECURE MAIN BUILDING FRAME COMPONENTS)
      1. DEWALT LOK-BOLT AS SLEEVE ANCHOR IN GROUT FILLED, SOLID, OR HOLLOW CONCRETE MASONRY, AND SOLID BRICK MASONRY
      2. HILTI HLC SLEEVE ANCHOR IN GROUT FILLED, SOLID, OR HOLLOW CONCRETE MASONRY, AND SOLID BRICK MASONRY
      3. SIMPSON SLEEVE-ALL SLEEVE ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
   D. ACCEPTABLE MECHANICAL SCREW ANCHORAGE SYSTEMS:
      1. HILTI KWIK HUS-EZ SCREW ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY
      2. DEWALT SCREW-BOLT+ SCREW ANCHOR IN GROUT FILLED OR SOLID CONCRETE MASONRY AND BRICK MASONRY
      3. SIMPSON TITEN HD SCREW ANCHOR IN GROUT FILLED, SOLID, OR HOLLOW CONCRETE MASONRY
   E. ACCEPTABLE ADHESIVE ANCHORAGE SYSTEMS:
      1. DEWALT AC100+ GOLD FOR THREADED ROD AND REINFORCING BAR IN GROUT FILLED MASONRY CONSTRUCTION. USE WITH SCREEN TUBES IN HOLLOW MASONRY CONSTRUCTION.
      2. HILTI HIT-HY 270 ADHESIVE FOR THREADED ROD, REINFORCING BAR, AND HILTI SPECIFIC ROD AND INSERT SYSTEMS IN GROUT FILLED OR SOLID CONCRETE MASONRY CONSTRUCTION. USE WITH SCREEN TUBES IN HOLLOW MASONRY, MULIT-WYTHE MASONRY, OR BRICK WITH HOLES CONSTRUCTION.
      3. SIMPSON SET-XP ADHESIVE FOR THREADED ROD AND REINFORCING BAR IN GROUT FILLED, SOLID, AND HOLLOW CONCRETE MASONRY.

GENERAL STORM SHELTER NOTES

1. DESIGN CRITERIA:

TYPE OF STORM SHELTER:	COMMUNITY TORNADO
MINIMUM SOIL BEARING PRESSUE:	1,500 PSF
ROOF LIVE LOADS:	
- SHELTER ROOF	100 PSF
WIND LOADS:	
- BASIC WIND SPEED (Vu)	250 MPH
- EXPOSURE CATEGORY	EXPOSURE C
- INTERNAL PRESSURE COEFF. (Gcpi)	+/- 0.55
- TOPOGRAPHIC FACTOR (Kzt)	1.0
- DIRECTIONALITY FACTOR (Kd)	1.0

2. THE STORM SHELTER AREA HAS BEEN DESIGNED IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS OF ICC 500-2014, "STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS".

3. IMPACT RESISTANCE:
   A. WALL AND ROOF SYSTEMS HAVE BEEN SELECTED FOR DEBRIS IMPACT RESISTANCE TESTED IN ACCORDANCE WITH ASTM E 1886. SEE THE "SUMMARY ON DEBRIS IMPACT TESTING OF BUILDING ASSEMBLIES" BY TEXAS TECH UNIVERSITY (et. al.), DATED AUGUST 2006 FOR REFERENCED TEST SPECIMEN NUMBERS.
   B. WALL SYSTEM IS TO BE 8 INCH MINIMUM REINFORCED CONCRETE MASONRY WITH #4 MIN. VERT. REINFORCING BARS GROUTED INTO EVERY CELL. ASSEMBLY HAS BEEN TESTED FOR A 15-POUND 2x4 TRAVELING AT 100 MPH PER TTU TABLE A.5, TEST NO. 1.
   C. ROOF SYSTEM IS TO BE 4-INCH MINIMUM REINFORCED CONCRETE WITH #4 MIN. REINFORCING BARS AT 12 INCHES O.C. EACH WAY. ASSEMBLY HAS BEEN TESTED FOR A 15-POUND 2x4 TRAVELING AT 67 MPH PER TTU TABLE A.6, TEST NO. 37.

4. OPENINGS AND WALL JOINTS:
   A. WINDOWS, DOORS, AND LOUVERS ARE TO BE SELECTED TO WITHSTAND THE DESIGN WIND LOADS SPECIFIED ABOVE, AND FOR DEBRIS IMPACT RESISTANCE TESTED IN ACCORDANCE WITH ASTM E 1886 FOR A 15-POUND 2x4 TRAVELING AT 100 MPH.
   B. PROVIDE PLATE SHROUDS AS INDICATED AT ALL OPENINGS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) IN THE STORM SHELTER ENVELOPE EXCEEDING 3-1/2 SQUARE INCHES OR 2-1/16 INCH DIAMETER.
   C. CONTROL JOINTS IN MASONRY CONSTRUCTION MAY NOT EXCEED 3/8 INCH AND MUST BE SEALED IN ACCORDANCE WITH TMS 602, SECTION 2.5 A. ALL OTHER WALL JOINTS EXCEEDING 3/8 INCH ARE TO BE PROTECTED WITH A STEEL PLATE OR BAR AS INDICATED.

STORM SHELTER QUALITY ASSURANCE PLAN

JGA PROJECT NAME: WASHINGTON TOWNSHIP FIRE STATION 41
JGA PROJECT NUMBER: 21.27.518

1. THE REQUIREMENTS SPECIFIED IN THIS QUALITY ASSURANCE PLAN ARE APPLICABLE TO ALL ELEMENTS WITHIN THE IDENTIFIED "STORM SHELTER" PORTION OF THE PROJECT. THESE REQUIREMENTS ARE EXTENDED TO ALL REFERENCED DETAILS AND ALL NOTED COMPONENTS THEREOF. SEE THE PLANS FOR AREA(S) DESIGNATED AS THE "STORM SHELTER" CONSTRUCTION.

2. PRIOR TO CONSTRUCTION OF THE STORM SHELTER PORTION OF THE PROJECT, THE OWNER IS TO RETAIN AN INDEPENDENT AGENCY TO PERFORM THE SPECIAL INSPECTIONS, TESTING, AND STRUCTURAL OBSERVATIONS REQUIRED IN THIS QUALITY ASSURANCE PLAN. WHERE APPLICABLE, INDIVIDUALS PERFORMING SPECIAL INSPECTIONS AND TESTING ARE TO BE QUALIFIED THROUGH RECOGNIZED INDUSTRY CERTIFICATION. INDIVIDUALS PERFORMING STRUCTURAL OBSERVATIONS ARE TO REGISTERED DESIGN PROFESSIONALS IN THE JURISDICTION OF THE PROJECT.

3. ON A REGULAR BASIS, THE SPECIAL INSPECTION AND STRUCTURAL OBSERVATION AGENCY SHALL SUBMIT WRITTEN REPORTS IDENTIFYING DEFICIENCIES IN THE STORM SHELTER CONSTRUCTION. THE CONTRACTOR/CM SHALL BE RESPONSIBLE FOR PROMPTLY CORRECTING ALL DEFICIENCIES INDICATED IN THESE WRITTEN REPORTS. AT THE COMPLETION OF THE STORM SHELTER CONSTRUCTION, THE AGENCY SHALL SUBMIT A STATEMENT INDICATING THAT ALL DEFICIENCIES IDENTIFIED DURING CONSTRUCTION HAVE BEEN PROPERLY ADDRESSED, AND THAT STRUCTURAL OBSERVATIONS HAVE BEEN REGULARLY PERFORMED. ALL REPORTS ARE TO BE SUBMITTED TO THE OWNER, ARCHITECT, CONSTRUCTION MANAGER, AND THE AUTHORITY HAVING JURISDICTION.

4. EACH CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ELEMENTS OF THE STORM SHELTER SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER, ARCHITECT, CONSTRUCTION MANAGER, AND THE AUTHORITY HAVING JURISDICTION. PARTIES RESPONSIBLE FOR THIS STATEMENT INCLUDE, BUT ARE NOT LIMITED TO, THE SITE GRADING CONTRACTOR, CAST-IN-PLACE CONCRETE SUPPLIER AND CONTRACTOR, STRUCTURAL STEEL FABRICATOR AND ERECTOR, MASONRY CONTRACTOR, REINFORCING STEEL FABRICATOR AND IRON WORKERS, PRECAST MANUFACTURER AND ERECTOR, DOOR MANUFACTURER AND INSTALLER, AND OPENING PROTECTIVE DEVICE FABRICATOR AND ERECTOR. THIS STATEMENT IS TO INCLUDE THE FOLLOWING:
   A. ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS IN THE QUALITY ASSURANCE PLAN.
   B. ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.
   C. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
   D. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

5. THE FOLLOWING SPECIAL INSPECTIONS AND TESTING OF THE STORM SHELTER CONSTRUCTION ARE TO BE PERFORMED AS PART OF THIS QUALITY ASSURANCE PLAN. THESE REQUIREMENTS ARE IN ADDITION TO THE TESTING AND INSPECTIONS REQUIRED FOR THE REMAINDER OF THE BUILDING:

   A. SOILS
      i. PERIODICALLY INSPECT SOILS BELOW FOOTINGS FOR ADEQUATE BEARING CAPACITY AND CONSISTENCY WITH GEOTECHNICAL REPORT. INSPECT REMOVAL OF UNSUITABLE MATERIAL AND PREPARATION OF SUBGRADE PRIOR TO PLACEMENT OF CONTROLLED FILL.
      j. PERIODICALLY VERIFY DEPTH AND WIDTH OF FOUNDATION EXCAVATIONS.

   B. CONCRETE (FOOTINGS, PIERS, TOPPINGS SLABS, SLABS ON METAL DECK, SLABS ON GRADE, CAPS/ROOFS)
      i. PERIODICALLY INSPECT SIZE, SPACING, COVER, POSITIONING, AND GRADE OF REINFORCING STEEL. VERIFY THAT REINFORCING BARS ARE FREE OF FORM OIL OR OTHER DELETERIOUS MATERIALS. INSPECT BAR LAPS AND MECHANICAL SPLICES. VERIFY THAT BARS ARE ADEQUATELY TIED AND SUPPORTED ON CHAIRS OR BOLSTERS.
      j. PERIODICALLY INSPECT SIZE, POSITIONING, AND EMBEDMENT OF ANCHOR RODS, WELD PLATES, AND ALL OTHER CAST-IN EMBEDDED ITEMS. INSPECT CONCRETE PLACEMENT AND CONSOLIDATION AROUND ANCHORS.
      CONTINUOUSLY INSPECT SIZE, POSITIONING, EMBEDMENT, AND INSTALLATION OF POST-INSTALLED CHEMICAL AND MECHANICAL ANCHORS. VERIFY INSTALLATION PROCEDURE IS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PULL-TEST ANCHORS THAT ARE DEEMED SUSPECT DUE TO IMPROPER TORQUE AND/OR INADEQUATE EMBEDMENT DEPTH.
      iv. PERIODICALLY VERIFY USE OF PROPER MIX DESIGN.
      v. PERIODICALLY VERIFY FORM WORK FOR SHAPE, LOCATION, AND DIMENSIONS OF CONCRETE BEING FORMED.
      vi. PERIODICALLY INSPECT PLACEMENT OF CONCRETE. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED. INSPECT CURING, COLD-WEATHER PROTECTION, AND HOT-WEATHER PROTECTION PROCEDURES.
      vii. PERIODICALLY SAMPLE AND TEST CONCRETE FOR COMPRESSIVE STRENGTH, SLUMP, AIR CONTENT, AND TEMPERATURE. SAMPLE EACH 50 CUBIC YARDS OF CONCRETE, OR FRACTION THEREOF, PLACED IN ANY ONE DAY.

   C. MASONRY
      i. CONTINUOUSLY INSPECT PROPORTIONING, MIXING, AND RETEMPERING OF MORTAR AND GROUT. INSPECT CONSTRUCTION OF MORTAR JOINTS INCLUDING TOOLING AND FILLING OF HEAD JOINTS.
      j. CONTINUOUSLY INSPECT SIZE, LAYOUT, BONDING, GROUT SPACE, AND PLACEMENT OF MASONRY UNITS.
      k. CONTINUOUSLY INSPECT PLACEMENT, SIZE, GRADE, POSITIONING, AND LAPPING OF REINFORCING STEEL.
      iv. CONTINUOUSLY INSPECT PLACEMENT AND CONSOLIDATION OF GROUT. INSPECT MASONRY CLEAN-OUTS FOR HIGH-LIFT GROUTING.
      v. CONTINUOUSLY INSPECT SIZE, POSITIONING, AND EMBEDMENT OF ANCHOR RODS, WELD PLATES, AND ALL OTHER CAST-IN EMBEDDED ITEMS. INSPECT CONCRETE PLACEMENT AND CONSOLIDATION AROUND ANCHORS.
      vi. CONTINUOUSLY INSPECT SIZE, POSITIONING, EMBEDMENT AND INSTALLATION OF POST-INSTALLED CHEMICAL AND MECHANICAL ANCHORS. VERIFY INSTALLATION PROCEDURE IS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PULL-TEST ANCHORS THAT ARE DEEMED SUSPECT DUE TO IMPROPER TORQUE AND/OR INADEQUATE EMBEDMENT DEPTH.
      vii. CONTINUOUSLY INSPECT COLD-WEATHER PROTECTION AND HOT-WEATHER PROTECTION PROCEDURES. VERIFY THAT WALL CAVITIES ARE PROTECTED AGAINST PRECIPITATION.
      viii. CONTINUOUSLY SAMPLE AND TEST COMPRESSIVE STRENGTH OF MORTAR AND GROUT CUBE SAMPLES. TEST COMPRESSIVE STRENGTH OF ASSEMBLED MASONRY PRISMS.

   D. STEEL
      i. PERIODICALLY INSPECT INSTALLATION AND TIGHTENING OF BEARING-TYPE HIGH-STRENGTH BOLTS.
      j. CONTINUOUSLY VERIFY PROPER TIGHTENING SEQUENCE FOR SLIP-CRITICAL BOLTED CONNECTIONS. VERIFY THAT SPLINES HAVE SEPARATED FROM TENSION CONTROL BOLTS.
      k. PERIODICALLY VERIFY SIZE AND LENGTH, AND VISUALLY INSPECT ALL SINGLE-PASS FILLET WELDS NOT EXCEEDING 5/16 INCH IN SIZE.
      iv. CONTINUOUSLY VERIFY SIZE AND LENGTH, INSPECT PRE-HEAT, POST-HEAT, AND SURFACE PREPARATION BETWEEN PASSES, AND ULTRASONICALLY TEST ALL FILLET WELDS EXCEEDING 5/16 INCH IN SIZE, ALL MULTI-PASS FILLET WELDS, AND ALL PARTIAL AND COMPLETE PENETRATION GROOVE WELDS.
      v. PERIODICALLY INSPECT STEEL FRAMING FOR COMPLIANCE WITH STRUCTURAL DRAWINGS, INCLUDING BRACING, MEMBER CONFIGURATION, AND CONNECTION DETAILS.

   E. OPENING PROTECTIVE DEVICES
      i. CONTINUOUSLY INSPECT SHOP-FABRICATED OPENING PROTECTIVE BAFFLES PRIOR TO INSTALLATION TO VERIFY THAT COMPONENT SIZES AND WELDS MATCH DRAWINGS AND SPECIFICATIONS.
      j. CONTINUOUSLY INSPECT INSTALLATION OF DOOR ANCHORAGES AND ANCHORAGE OF PROTECTIVE BAFFLES FOR OPENINGS.
      k. UPON COMPLETION, VERIFY THE PROPER OPERATION OF DOORS AND SHUTTERS. CONFIRM MAXIMUM ALLOWABLE GAPS AT THRESHOLDS, SILLS, JAMBS, AND HEADS OF OPENING LEAFS.

6. THE FOLLOWING STRUCTURAL OBSERVATIONS OF THE STORM SHELTER CONSTRUCTION ARE TO PERFORMED AS PART OF THIS QUALITY ASSURANCE PLAN. THESE OBSERVATIONS ARE TO VISUALLY VERIFY THAT THE IDENTIFIED ASSEMBLIES ARE BEING BUILT IN GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. ADDITIONAL OBSERVATIONS OF THE CONSTRUCTION ARE TO BE PERFORMED AT THE OBSERVER'S DISCRETION.

   A. FOUNDATIONS
      i. VERIFY THAT DOWEL BARS IN FOUNDATIONS AND SLABS ARE BEING PROVIDED WHERE INDICATED. VERIFY THAT DOWELS HAVE BEEN SHORTENED AT LOCATIONS WHERE THE HOST BUILDING IS DESIGNED TO BREAK-FREE FROM THE STORM SHELTER CONSTRUCTION.
      j. VERIFY THAT ANCHOR BOLTS HAVE BEEN PROVIDED WITH SUFFICIENT LENGTHS TO RECEIVE FURTHER CONSTRUCTION. VERIFY THAT ANCHORS HAVE NOT BEEN BENT OR OTHERWISE MODIFIED.

   B. WALLS
      i. VERIFY THAT OPENINGS ARE BEING BUILT AS INDICATED.
      j. VERIFY THAT SUFFICIENT LAP LENGTHS ARE BEING PROVIDED BETWEEN SEQUENCES OF CONSTRUCTION.
      k. VERIFY THAT CAST-IN AND POST-INSTALLED ANCHORS HAVE SUFFICIENT LENGTH TO RECEIVE FURTHER CONSTRUCTION. VERIFY THAT ANCHORAGES HAVE NOT BEEN BENT OR OTHERWISE MODIFIED.
      iv. VERIFY THAT PROPER CAST-IN ITEMS FOR DOORS AND SHUTTERS ARE BEING PROVIDED.
      v. VERIFY THAT VERTICAL CONTROL JOINTS ARE 3/8" OR LESS IN WIDTH, AND HAVE BEEN FILLED ACCORDING TO TMS 602 FOR MASONRY OR ASTM C920 FOR CONCRETE.
      vi. VERIFY THAT BOND PATTERN AT CORNERS HAS BEEN CONSTRUCTED AS INDICATED.

   C. ROOFS
      i. VERIFY THAT ANCHORAGES BETWEEN THE STORM SHELTER WALLS AND ROOFS ARE BEING PROVIDED AS INDICATED.
      j. VERIFY THAT MEMBER BRACING, CONFIGURATION, AND CONNECTIONS HAVE BEEN PROVIDED AS INDICATED.
      k. VERIFY THAT DOWELS, BARS, AND/OR ANCHORAGES HAVE BEEN SHORTENED AT LOCATIONS WHERE THE HOST BUILDING IS DESIGNED TO BREAK-FREE FROM THE STORM SHELTER CONSTRUCTION.
      iv. VERIFY FILLING OF GAPS AND JOINTS BETWEEN ROOF FRAMING MEMBERS, AND AT BEARING LOCATIONS.

   D. OPENINGS
      i. VERIFY THAT POST-INSTALLED ANCHORAGES OF OPENING PROTECTIVE DEVICES HAVE BEEN INSTALLED.
      j. VERIFY THAT PROTECTIVE BAFFLES HAVE BEEN PROVIDED FOR ALL PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE.

ABBREVIATIONS

AB	ANCHOR BOLT
ADD'L	ADDITIONAL
ALUM	ALUMINUM
ARCH	ARCHITECTURAL
B/ or BO	BOTTOM OF
BFB	BOTTOM FLANGE BRACE
BLDG	BUILDING
BM	BEAM
BOT	BOTTOM
CFMF	COLD-FORMED METAL FRAMING
CFMT	COLD-FORMED METAL TRUSS
CJ	CONTROL OR CONSTRUCTION JOINT
CLR	CLEAR
CM	CONSTRUCTION MANAGER
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
CY	CUBIC YARD
DBL	DOUBLE
DEMO	DEMOLISH OR DEMOLITION
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
ENG	ENGINEER
EW	EACH WAY
EXP	EXPANSION
FDN	FOUNDATION
FIN	FINISH OR FINISHED
FLR	FLOOR
FO	FACE OF
FTG	FOOTING
FRTW	FIRE-RETARDANT TREATED WOOD
FV	FIELD VERIFY
GA	GAGE
GALV	GALVANIZE
GC	GENERAL CONTRACTOR
HC	HOLLOW CORE
HORIZ	HORIZONTAL
ID	INSIDE DIMENSION
IF	INSIDE FACE
INT	INTERIOR
JST	JOIST
JT	JOINT
KB	KICKER BRACE
L	ANGLE
LGMF	LIGHT GAGE METAL FRAMING
LLBB	LONG LEG BACK-TO-BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LW	LONG WAY
MAS	MASONRY
MAX	MAXIMUM
MIN	MINIMUM
MTL	METAL
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPP	OPPOSITE
OPNG	OPENING
OSB	ORIENTED STRAND BOARD
PAF	POWDER ACTUATED FASTENERS
PC	PRECAST
PEMB	PRE-ENGINEERED METAL BUILDING
PERP	PERPENDICULAR
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
REINF	REINFORCING
REQ'D	REQUIRED
SCHED	SCHEDULE
SECT	SECTION
SER	STRUCTURAL ENGINEER OF RECORD
SF	SQUARE FOOT
SL	SLOPED
SLBB	SHORT LEG BACK-TO-BACK
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
SW	SHORT WAY
SY	SQUARE YARD
SYM	SYMMETRICAL
T/ or TO	TOP OF
T&B	TOP AND BOTTOM
TEMP	TEMPORARY OR TEMPERATURE
T&G	TONGUE AND GROOVE
TYP	TYPICAL
UN	UNLESS NOTED
UNO	UNLESS NOTED OTHERWISE
VB	VAPOR BARRIER
VERT	VERICAL
VIF	VERIFY IN FIELD
W	WIDE FLANGE
W/	WITH
W/O	WITHOUT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD

Jezerinac Geers
Structural Engineering

PROJECT NUMBER:	21.27.518
DESIGNED BY:	JEA
DRAWN BY:	CMS (R22)
CHECKED BY:	SNF
DOCUMENT STATUS:	☐ PROGRESS ■ PERMIT ■ BIDDING ■ CONSTRUCTION

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ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS (R22)
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TITLE
GENERAL STRUCTURAL NOTES

SHEET NO.
S0.1

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IN ACCORDANCE WITH CHAPTER 17 OF THE REFERENCE BUILDING CODE, THE OWNER SHALL EMPLOY INSPECTION AGENCIES TO PERFORM SPECIAL INSPECTIONS DURING CONSTRUCTION INCLUDING INSPECTIONS OF SHOP-FABRICATED ITEMS WHEN APPLICABLE. ALL INSPECTION AGENCIES, INCLUDING FABRICATION FACILITIES, WHEN REQUIRED, SHALL BE QUALIFIED AND APPROVED BY THE BUILDING OFFICIAL. REFER TO OTHER DISCIPLINES FOR SPECIAL INSPECTIONS OF NON-STRUCTURAL SYSTEMS.

TABLE 1 STATEMENT OF SPECIAL INSPECTIONS FOR STRUCTURAL DISCIPLINE

REQUIRED SPECIAL INSPECTIONS AND TESTS FOR SOILS		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	---	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	---	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	---	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	---
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	---	X

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT.	---	X
2. INSPECT ANCHORS CAST IN CONCRETE.	---	X
3. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.		
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	---
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4A.	---	X
4. VERIFY USE OF REQUIRED DESIGN MIX.	---	X
5. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	---
6. INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	---
7. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	---	X
8. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	---	X

'LEVEL C' QUALITY ASSURANCE REQUIRED SPECIAL INSPECTIONS AND TESTS OF MASONRY CONSTRUCTION		
MINIMUM TESTS		
VERIFICATION OF f'_m AND f'_{AAC} IN ACCORDANCE WITH ARTICLE 1.4B PRIOR TO CONSTRUCTION AND FOR EVERY 5,000 SQ. FT. DURING CONSTRUCTION.		
VERIFICATION OF PROPORTIONS OF MATERIALS IN PREMIXED OR PREBLENDED MORTAR AND GROUT OTHER THAN SELF-CONSOLIDATING GROUT AS DELIVERED TO THE PROJECT SITE.		
VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH ARTICLE 1.5.B.1.b.3 FOR SELF CONSOLIDATING GROUT		
MINIMUM SPECIAL INSPECTION		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	---	X
2. VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:		
A. PROPORTIONS OF SITE-MIXED MORTAR AND GROUT.	---	X
B. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS.	---	X
C. PLACEMENT OF MASONRY UNITS AND CONSTRUCTION OF MORTAR JOINTS.	---	X
D. PLACEMENT OF REINFORCEMENT AND CONNECTORS	X	---
E. GROUT SPACE PRIOR TO GROUTING	X	---
F. PLACEMENT OF GROUT.	X	---
G. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.	---	X
H. TYPE, SIZE, AND LOCATIONS OF ANCHORS INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.	X	---
I. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40° F) OR HOT WEATHER (TEMPERATURE ABOVE 90° F).	---	X
3. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS.	X	---

REQUIRED SPECIAL INSPECTIONS AND TESTS OF COLD-FORMED STEEL — LIGHT FRAME CONSTRUCTION		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. WELDING OPERATIONS OF ELEMENTS OF THE MAIN WINDFORCE-RESISTING SYSTEM	---	X
2. SCREW ATTACHMENT, BOLTING, ANCHORING, AND OTHER FASTENING OF ELEMENTS OF THE MAIN WINDFORCE-RESISTING SYSTEM, INCLUDING SHEAR WALLS, BRACES, DIAPHRAGMS, COLLECTORS (DRAG STRUTS) AND HOLD-DOWNS.	---	X

TABLE 2 STATEMENT OF SPECIAL INSPECTIONS FOR STRUCTURAL DISCIPLINE

REQUIRED SPECIAL INSPECTIONS AND TESTS FOR STEEL DECK		
TYPE	PERFORM	OBSERVE
1. INSPECTION OR EXECUTION TASKS PRIOR TO DECK PLACEMENT:		
A. VERIFY COMPLIANCE OF MATERIALS (DECK AND DECK ACCESSORIES) WITH CONSTRUCTION DOCUMENTS, INCLUDING PROFILES, MATERIAL PROPERTIES, AND BASE METAL THICKNESS.	X	---
B. DOCUMENT ACCEPTANCE OR REJECTION OF DECK AND DECK ACCESSORIES.	X	---
2. INSPECTION OR EXECUTION TASKS AFTER DECK PLACEMENT:		
A. VERIFY COMPLIANCE OF DECK AND ALL DECK ACCESSORIES INSTALLATION WITH CONSTRUCTION DOCUMENTS.	X	---
B. VERIFY DECK MATERIALS ARE REPRESENTED BY THE MILL CERTIFICATIONS THAT COMPLY WITH THE CONSTRUCTION DOCUMENTS.	X	---
C. DOCUMENT ACCEPTED OR REJECTION OF INSTALLATION OF DECK AND DECK ACCESSORIES.	X	---
3. INSPECTION OR EXECUTION TASKS PRIOR TO WELDING:		
A. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE.	---	X
B. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE.	---	X
C. MATERIAL IDENTIFICATION (TYPE/GRADE).	---	X
D. CHECK WELDING EQUIPMENT.	---	X
4. INSPECTION OR EXECUTION TASKS DURING WELDING:		
A. USE OF QUALIFIED WELDERS.	---	X
B. CONTROL AND HANDLING OF WELDED CONSUMABLES	---	X
C. ENVIRONMENTAL CONDITIONS (WIND SPEED, MOISTURE, TEMPERATURE).	---	X
D. WPS FOLLOWED.	---	X
5. INSPECTION OR EXECUTION TASKS AFTER WELDING:		
A. VERIFY SIZE AND LOCATION OF WELDS, INCLUDING SUPPORT, SIDELAP, AND PERIMETER WELDS.	X	---
B. WELDS MEET VISUAL ACCEPTANCE CRITERIA.	X	---
C. VERIFY REPAIR ACTIVITIES.	X	---
D. DOCUMENT ACCEPTANCE OR REJECTION OF WELDS	X	---

STEEL DECK INSPECTION NOTES:
1. "PERFORM" — SHALL MEAN TO PERFORM THESE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH ITEM OR ELEMENT.
2. "OBSERVE" — SHALL MEAN TO INSPECT THESE ITEMS ON AN INTERMITTENT BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS. FREQUENCY OF OBSERVATIONS SHALL BE ADEQUATE TO CONFIRM THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE APPLICABLE DOCUMENTS. IN THE EVENT THAT OBSERVATIONS DETERMINE THAT THE MATERIALS AND/OR WORKMANSHIP ARE NOT IN CONFORMANCE WITH THE APPLICABLE DOCUMENTS, ADDITIONAL INSPECTIONS SHALL BE PERFORMED TO DETERMINE THE EXTENT OF NON-CONFORMANCE.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF STRUCTURAL STEEL CONSTRUCTION		
TYPE	PERFORM	OBSERVE
1. INSPECTION TASKS PRIOR TO WELDING:		
A. WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS.	---	X
B. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE.	X	---
C. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE.	X	---
D. MATERIAL IDENTIFICATION (TYPE/GRADE)	---	X
E. WELDER IDENTIFICATION SYSTEM.	---	X
F. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY):		
• JOINT PREPARATIONS	---	X
• DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL.	---	X
• CLEANLINESS (CONDITION OF STEEL SURFACES).	---	X
• TACKING (TACK WELD QUALITY AND LOCATION).	---	X
• BACKING TYPE AND FIT (IF APPLICABLE).	---	X
G. FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y-, AND K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY):		
• JOINT PREPARATIONS.	---	X
• DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL.	---	X
• CLEANLINESS (CONDITION OF STEEL SURFACES).	---	X
• TACKING (TACK WELD QUALITY AND LOCATION).	---	X
H. CONFIGURATION AND FINISH OF ACCESS HOLES.	---	X
I. FIT-UP OF FILLET WELDS:		
• DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL.	---	X
• CLEANLINESS (CONDITION OF STEEL SURFACES).	---	X
• TACKING (TACK WELD QUALITY AND LOCATION).	---	X
2. INSPECTION TASKS DURING WELDING:		
A. CONTROL AND HANDLING OF WELDING CONSUMABLES.		
• PACKAGING	---	X
• EXPOSURE CONTROL	---	X
B. NO WELDING OVER CRACKED TACK WELDS.	---	X
C. ENVIRONMENTAL CONDITIONS:		
• WIND SPEED WITHIN LIMITS.	---	X
• PRECIPITATION AND TEMPERATURE	---	X
D. WPS FOLLOWED:		
• SETTINGS ON WELDING EQUIPMENT	---	X
• TRAVEL SPEED	---	X
• SELECTED WELDING MATERIALS	---	X
• SHIELDING GAS TYPE/FLOW RATE	---	X
• PREHEAT APPLIED	---	X
• INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.)	---	X
• PROPER POSITION (F, V, H, OH)	---	X
• TRAVEL SPEED	---	X
E. WELDING TECHNIQUES		
• INTERPASS AND FINAL CLEANING	---	X
• EACH PASS WITHIN PROFILE LIMITATIONS	---	X
• EACH PASS MEETS QUALITY REQUIREMENTS	---	X
F. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	X	---
3. INSPECTION TASKS AFTER WELDING:		
A. WELDS CLEANED.	---	X
B. SIZE, LENGTH, AND LOCATION OF WELDS	X	---
C. WELDS MEET VISUAL ACCEPTANCE CRITERIA:		
• CRACK PROHIBITION	X	---
• WELD /BASE-METAL FUSION	X	---
• CRATER CROSS SECTION	X	---
• WELD PROFILES	X	---
• WELD SIZE	X	---
• UNDERCUT	X	---
• POROSITY	X	---
D. ARC STRIKES.	X	---
E. K-AREA	X	---
F. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES.	X	---
G. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED).	X	---
H. REPAIR ACTIVITIES.	X	---
I. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER.	X	---
J. NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR.	---	X
K. NON-DESTRUCTIVE TESTING FOR COMPLETE-JOINT-PENETRATION (CJP) WELDS:		
• UT SHALL BE PERFORMED ON ALL CJP JOINTS IN MATERIAL 5/16" AND GREATER.	X	---
4. INSPECTION TASKS AFTER BOLTING:		
A. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS.	X	---
5. ANCHOR ROD PLACEMENT		
A. INSPECTION DURING PLACEMENT OF ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS (ANCHOR DIAMETER, GRADE, TYPE, AND LENGTH OF THE ANCHOR ROD OR EMBEDED ITEM AND THE EXTENT OR DEPTH OF EMBEDMENT INTO THE CONCRETE) PRIOR TO PLACEMENT OF CONCRETE.	---	X
6. INSPECTION OF THE FABRICATED STEEL OR ERECTED STEEL FRAME IN COMPLIANCE WITH THE DETAILS SHOWN ON THE CONSTRUCTION DOCUMENTS.	---	X

STRUCTURAL STEEL INSPECTION NOTES:
1. "PERFORM" — THESE TASKS SHALL BE PERFORMED FOR EACH WELDED/BOLTED JOINT OR MEMBER
2. "OBSERVE" — THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE.

LAP SPLICE SCHEDULE FOR CONCRETE REINFORCING

3,000 psi & 3,500 psi CONCRETE UNCOATED REINFORCING BARS

BAR SIZE	3/4" CLR.		1 1/2" CLR. AND GREATER	
#4	3'-1"	2'-4"	3'-1"	2'-4"
#5	3'-10"	3'-0"	3'-10"	3'-0"
#6	4'-8"	3'-7"	4'-8"	3'-7"
#7	7'-6"	5'-9"	6'-9"	5'-2"
#8	9'-3"	7'-1"	7'-9"	5'-11"
#9	11'-2"	8'-7"	8'-8"	6'-8"
#10	13'-6"	10'-4"	9'-10"	7'-6"
#11	15'-10"	12'-2"	10'-11"	8'-4"

LAP SPLICE SCHEDULE FOR CONCRETE REINFORCING

4,000 psi & 4,500 psi CONCRETE UNCOATED REINFORCING BARS

BAR SIZE	3/4" CLR.		1 1/2" CLR. AND GREATER	
#4	2'-8"	2'-1"	2'-8"	2'-1"
#5	3'-4"	2'-7"	3'-4"	2'-7"
#6	4'-0"	3'-1"	4'-0"	3'-1"
#7	6'-6"	5'-0"	5'-10"	4'-6"
#8	8'-0"	6'-2"	6'-8"	5'-2"
#9	9'-8"	7'-6"	7'-6"	5'-10"
#10	11'-8"	9'-0"	8'-6"	6'-6"
#11	13'-8"	10'-6"	9'-5"	7'-3"

LAP SPLICE SCHEDULE FOR MASONRY REINFORCING

f'm = 2,500 psi	BAR CENTERED IN WALL d = t/2			
	ld (in)			
BAR #	8" CMU	10" CMU	12" CMU	14" CMU
#3	1'-0"	1'-0"	1'-0"	1'-0"
#4	1'-0"	1'-0"	1'-0"	1'-0"
#5	1'-6"	1'-2"	1'-0"	1'-0"
#6	2'-10"	2'-2"	1'-9"	1'-6"
#7	3'-11"	3'-0"	2'-5"	2'-1"
#8	5'-11"	4'-7"	3'-9"	3'-2"
#9	-	5'-11"	4'-9"	4'-0"

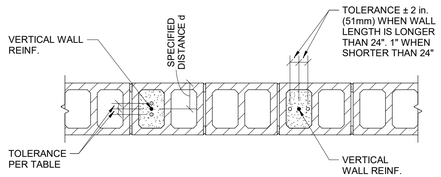
1. " * " INDICATES LAP LENGTH GREATER THAN MAXIMUM ALLOWABLE HEIGHT OF 5'-0" FOR LOW-LIFT GROUTING.
2. APPLICABLE ONLY FOR BARS CENTERED IN MASONRY CELL.
3. APPLICABLE ONLY FOR 60 KSI STEEL AND ASTM C90 BLOCK.

1. TOP BARS / OTHER BARS — TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BAR.
2. BAR SPACING TO BE A MINIMUM OF THREE DIAMETERS UNLESS NOTED OR SCHEDULED OTHERWISE.
3. APPLICABLE ONLY FOR 60 KSI STEEL AND NORMAL WEIGHT CONCRETE.
4. IN LIEU OF LAP SPLICING, BARS MAY BE SPLICED BY MECHANICAL MEANS WHICH DEVELOP AT LEAST 125% OF THE BAR'S SPECIFIED YIELD STRENGTH.

REINFORCING COVER/TOLERANCE (#3 - #11 BARS)

EXPOSURE CONDITION	MIN. COVER (U.N.O.)	PLACEMENT TOLERANCE
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"	0", +3"
EXPOSED TO EARTH OR WEATHER - #5 AND SMALLER BARS: - #6 AND LARGER BARS:	1-1/2" 2"	-1/4", +1/2" -1/4", +1/2"
NEITHER EXPOSED TO WEATHER, NOR IN CONTACT WITH GROUND - SLABS AND WALLS: - BEAMS, COLUMNS, & PIERS: (TO TIES OR STIRRUPS)	3/4" 1-1/2"	-1/4", +3/8" -1/4", +1/2"

"-" INDICATES TOLERANCE TOWARDS MEMBER FACE.
"+" INDICATES TOLERANCE AWAY FROM MEMBER FACE.



SPECIFIED DISTANCE d FROM FACE OF WALL TO CENTER OF REINFORCEMENT	ALLOWABLE TOLERANCE
d ≤ 8 in. (203 mm) 8 in. (203 mm) < d ≤ 24 in. (607 mm) d > 24 in. (607 mm)	± 1/2 in. (13 mm) ± 1 in. (25 mm) ± 1-1/4 in. (32 mm)

PROVIDE 1/2" MIN. CLEAR BETWEEN REINFORCING BARS AND THE INSIDE FACE OF THE MASONRY CELL.

CMU REINFORCING TOLERANCE LIMITATION

App Architecture
creative focused design
615 Woodside Drive, Englewood, Ohio 45322
T 937.836.8898 F 937.832.3696
www.app-arch.com

STATE OF OHIO
STANLEY N. FULLER
E-67148
REGISTERED PROFESSIONAL ENGINEER

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS (R22)
CHECKED	SNF

TITLE
GENERAL STRUCTURAL SCHEDULES AND DETAILS

SHEET NO.
S0.2

3/22/2022 11:40:25 AM

CONT. WALL FOOTING SCHEDULE

MARK	SIZE	REINFORCING
F24	2'-0" x 1'-0" DP.	(2) #5 CONT. BOTTOM
F36	3'-0" x 1'-0" DP.	(3) #5 CONT. BOTTOM
F42	3'-6" x 1'-2" DP.	(4) #5 CONT. BOTTOM
TS24	2'-0" x 1'-0" DP.	SEE 10/S2.2

SPREAD FOOTING SCHEDULE

MARK	SIZE	REINFORCING
F4.0	4'-0" x 4'-0" x 1'-0" DP.	(4) #5 EACH WAY BOTTOM
F5.0	5'-0" x 5'-0" x 1'-0" DP.	(5) #5 EACH WAY BOTTOM
F6.0	6'-0" x 6'-0" x 1'-2" DP.	(6) #6 EACH WAY BOTTOM
F7.0	7'-0" x 7'-0" x 1'-2" DP.	(7) #6 EACH WAY BOTTOM
F8.0	8'-0" x 8'-0" x 1'-4" DP.	(8) #6 EACH WAY BOTTOM

MAT FOOTING SCHEDULE

MARK	THICKNESS	REINFORCING
M1	1'-0"	#8 @ 10" O.C. TOP EA. WAY, #4 W/ STD. HOOK E.E. @ 12" O.C. BOT. EA. WAY

WALL SCHEDULE

MARK	STUD SIZE AND SPACING	COMMENTS
W1	600S162-43 @ 16" O.C.	-
W2	600S162-54 @ 16" O.C.	-
W3	362S162-54 @ 16" O.C.	-

WALL SCHEDULE NOTES:

1. BEARING WALL STUDS ARE TO ALIGN DIRECTLY BELOW THE JOIST OR TRUSS THAT THE WALL IS SUPPORTING.
2. REVIEW ALL FRAMING DETAILS FOR TYPICAL ARRANGEMENT OF STUDS, BEARING CONDITIONS, BRIDGING, AND BLOCKING REQUIREMENTS.
3. ALL MULTIPLE MEMBERS SHALL BE INTERCONNECTED TOGETHER WITH #10 SCREWS AT 12" ON CENTER OR 1" WELDS AT 18" ON CENTER.
4. ALL ENDS OF AXIAL LOAD BEARING WALL STUDS SHALL HAVE SQUARE END CUTS AND SHALL BE SEATED TIGHT AGAINST TRACK WITH A MAXIMUM GAP TOLERANCE OF 1/8" BETWEEN THE END OF THE STUD AND THE WEB OF THE TRACK.
5. ALL STUDS SHALL OF ONE CONTINUOUS MEMBER AND SHALL NOT BE SPLICED WITHOUT AN APPROVED DESIGN.

HEADER SCHEDULE

MARK	MAIN MEMBERS	TRACK TOP & BOT.	SILL TRACK	JAMB STUDS EA. END	CONNECTION SCREWS EA. END	COMMENTS
H1	600S162-54	600T125-43	600T125-43	1	(6) #10	-
H2	600S162-54	362T125-43	-	1	(6) #12	-
H3	800S162-54	600T125-54	600T125-54	2	(8) #12	-
H4	1000S162-54	600T125-54	-	2	(10) #12	-
H5	1000S162-54	600T125-54	600T125-54	2	(10) #12	-
H6	1200S200-54	600T125-43	-	2	(12) #12	-

HEADER SCHEDULE NOTES:

1. ALL HEADER MEMBERS AND JAMB STUDS SHALL BE OF ONE CONTINUOUS PIECE. SPLICING OF MEMBERS IS NOT PERMITTED.
2. PUNCHED WEB OPENINGS ARE NOT PERMITTED IN HEADER MEMBER FRAMING.
3. SEE FRAMING SECTIONS FOR TYPICAL HEADER, SILL, AND JAMB FRAMING CONSTRUCTION.
4. PROVIDE 'H1' HEADERS FOR ALL OPENINGS NOT DESIGNATED ON THE FRAMING PLANS.

SHEARWALL SCHEDULE

MARK	SHEATHING PANEL	PANEL APPLICATION	SHEATHING PANEL FASTENING			SOLE PLATE ANCHORAGE	END STUDS	END ANCHORAGE	COMMENTS
			FASTENER	PANEL EDGES	PANEL FIELD				
SW1	1/2" GYP WALLBOARD	BOTH SIDES	#6	7	7	1/2" EXPANSION ANCHORS @ 32"...	2	S/DTT2Z-SDS2.5 W/ 1/2" ANCHOR ROD	-
SW2	1/2" GYP WALLBOARD	BOTH SIDES	#6	7	7	1/2" EXPANSION ANCHORS @ 24"...	2	S/HDU4-SDS2.5 W/ 5/8" ANCHOR ROD	-

SHEARWALL SCHEDULE NOTES:

1. ALL PANEL EDGES SHALL BE LOCATED ON STUDS, BLOCKING, BLOCKING LAID FLATWAYS AGAINST SHEATHING, PLATES, OR RIM BOARD.
2. FASTENER SUBSTITUTIONS ARE NOT PERMITTED, UNLESS APPROVED ENGINEER REVIEW IS COMPLETED AT CONTRACTOR'S EXPENSE.
3. COORDINATE SOLE PLATE ANCHORAGES WITH TYPICAL CONSTRUCTION DETAILS INDICATED THROUGHOUT STRUCTURAL DRAWINGS.
4. SEE STRUCTURAL DETAILS FOR TOP AND BOTTOM PLATE SPLICING DETAIL.

FOUNDATION NOTES

1. ▼ INDICATES FOOTING STEP PER SECTION 1/S2.1. STEP AT A RATIO NOT TO EXCEED ONE VERTICAL TO TWO HORIZONTAL.
2. ( ) INDICATES APPROXIMATE LOCATION AND INVERT ELEVATION OF UNDERGROUND UTILITIES. COORDINATE THE LOCATION AND DEPTH OF ALL UNDERGROUND MECHANICAL, ELECTRICAL, PLUMBING, AND/OR CIVIL WORK PRIOR TO CONSTRUCTION. NOT ALL UNDERGROUND UTILITIES ARE SHOWN ON THE STRUCTURAL DRAWINGS. FOUNDATIONS BUILT PRIOR TO THE INSTALLATION OF UNDERGROUND UTILITIES ARE TO BE STEPPED OR DROPPED COMPLETELY BELOW THE UTILITY DEPTH PER SECTION 1/S2.1 AND SLEEVED PER SECTION 2/S2.1. WHERE UNDERGROUND UTILITIES ARE IN PLACE PRIOR TO FOUNDATION CONSTRUCTION, THEY ARE TO BE ENCASED PER SECTION 3/S2.1. SEE SECTION 5/S2.1 FOR TRENCH EXCAVATION AND UTILITY PLACEMENT REQUIREMENTS FOR WORK THAT IS LAID ADJACENT TO FOOTINGS.
3. SW# INDICATES WOOD PANEL SHEARWALL. SEE SHEARWALL SCHEDULE ON SHEET S4.1 FOR END ANCHORAGE REQUIREMENTS AND SECTION 4/S2.1 FOR ANCHOR BOLTS TO BE PLACED DURING FOUNDATION CONSTRUCTION.
4. P(x) INDICATES CONCRETE PIER TYPE PER DETAILS ON SHEET S2.1.
5. DESIGN SOIL BEARING PRESSURE = 1,500 PSF BASED ON GEOTECHNICAL EXPLORATION REPORT BY CBC ENGINEERS, DATED DECEMBER 16, 2021. REFERENCE THIS REPORT FOR ANY REQUIRED SOIL REMEDIATION PRIOR TO FOUNDATION AND/OR SLAB-ON-GRADE CONSTRUCTION. PLACE NO CONCRETE PRIOR TO INSPECTION AND APPROVAL OF BEARING SURFACES BY SOILS ENGINEER.
6. BOTTOM OF FOOTINGS ARE TO BE AT LEAST 32-INCHES BELOW THE ADJACENT EXTERIOR FINISHED GRADE FOR FROST PROTECTION.
7. KEEP FOUNDATIONS FREE OF WATER AT ALL TIMES. REPLACE WEAKENED SOIL WITH LEAN CONCRETE OR FLOWABLE FILL.
8. ELEVATIONS SHOWN ON FOOTINGS INDICATE ELEVATION AT TOP OF FOOTING. REFERENCE ELEVATION/TOP OF CONCRETE SLAB ELEVATION AS NOTED ON PLANS. COORDINATE ABSOLUTE ELEVATION OF TOP OF SLAB WITH SITE DRAWINGS.
9. PROVIDE CORNER BARS AT ALL FOOTING AND CONCRETE WALL INTERSECTIONS PER DETAIL 6/S2.1.
10. PROVIDE FOUNDATION DOWELS TO MATCH SIZE AND SPACING OF VERTICAL MASONRY WALL REINFORCING AS SHOWN ON THE WALL AND/OR FRAMING PLANS. WHERE VERTICAL REINFORCING IS INTERRUPTED BY OPENING IN WALL (DOOR, WINDOW, LOUVER, ETC.) PROVIDE ONE ADDITIONAL DOWEL AT EACH JAMB FOR EACH 6'-0" OF OPENING WIDTH. SEE SECTION 7/S2.1 FOR DOWEL PLACEMENT AND SCHEDULE ON SHEET S0.1 FOR LENGTH OF LAP SPLICES.
11. SEE ELEVATION A/S4.2 FOR TYPICAL REINFORCED MASONRY WALL CONSTRUCTION.
12. SEE SECTION 8/S2.1 FOR TYPICAL OUTDOOR MECHANICAL EQUIPMENT PADS.
13. SEE SHEET S4.1 FOR COLUMN SCHEDULE AND DETAILS.
14. SEE SHEET S0.1 FOR GENERAL STRUCTURAL INFORMATION.

SLAB NOTES

1. SLAB CONSTRUCTION:

   4" CONCRETE SLAB ON GRADE W/ 6x6 W2.9/W2.9 WWF, OVER 15-MIL VAPOR BARRIER, OVER 4" COMPACTED STONE SUBBASE. MESH IS TO BE SUPPORTED DURING CONCRETE PLACEMENT ON CHAIRS OR BOLSTERS AT MID-DEPTH OF SLAB. WIRE MESH ON THIS PROJECT IS AN INTEGRAL COMPONENT OF THE FOUNDATION DESIGN AND MAY NOT BE REPLACED WITH FIBER ADDITIVE. SEE PLAN FOR FINISHED FLOOR ELEVATIONS. COORDINATE TOP OF SLAB ELEVATION WITH THICKNESS OF ARCHITECTURAL FINISHED FLOOR PRODUCTS.

   8" CONCRETE SLAB ON GRADE W/ #5 REINFORCING BARS AT 18" O.C. EACH WAY, OVER 6" COMPACTED STONE SUBBASE. BARS ARE TO BE SUPPORTED DURING CONCRETE PLACEMENT ON CHAIRS OR BOLSTERS AT MID-DEPTH OF SLAB. SEE PLAN FOR FINISHED FLOOR ELEVATIONS.
2. INDICATES SLAB CONTROL/CONSTRUCTION JOINT PER SECTION 1/S2.2. CONTROL JOINTS ARE TO BE LOCATED IN AREAS SHOWN AT A SPACING NOT TO EXCEED 12'-0" O.C. UNLESS DIMENSIONED OTHERWISE. PROVIDE CONTROL JOINTS AT COLUMNS PER DETAIL 2/S2.2. COORDINATE CONTROL JOINT LAYOUT WITH ARCHITECTURAL FLOOR FINISH PATTERNS.
3. REFER TO DIVISION 31 SPECIFICATIONS FOR DEPTH AND PLACEMENT OF DRAINAGE FILL AND DIVISION 3 FOR VAPOR BARRIER OR RETARDER BELOW SLABS ON GRADE.
4. SEE SECTIONS 3/S2.2 AND 4/S2.2 FOR TYPICAL INTERIOR TO EXTERIOR SLAB ON GRADE CONSTRUCTION AT DOOR OPENINGS.
5. SEE SHEET S0.1 FOR GENERAL STRUCTURAL INFORMATION.

STORM SHELTER CAP FRAMING NOTES

1. DESIGN LIVE LOADS:

   ROOF LIVE 100 PSF
2. ROOF CONSTRUCTION:

   8" THICK CAST-IN-PLACE CONCRETE SLAB. SEE PLANS AND/OR SECTIONS FOR REINFORCING SIZE, SPACING, LAYOUT, AND POSITION.
3. INDICATES OPENING IN CAP. DETERMINE EXACT SIZE AND LOCATION FROM ARCHITECTURAL AND MECHANICAL DRAWINGS. NOT ALL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS. PROVIDE PLATE SHROUDS PER SECTION 7/S4.3 AT ALL ROOF OPENINGS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) EXCEEDING 3-1/2 SQUARE INCHES OR 2-1/16 INCH DIAMETER.
4. TOP OF SLAB ELEVATION NOTED ON PLAN. REFERENCE ELEVATION 100'-0" = TOP OF FIRST FLOOR SLAB ON GRADE.
5. PROVIDE PLATE SHROUDS PER SECTIONS 8/S4.3 AND 9/S4.3 AT ALL WALL OPENINGS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) EXCEEDING 3-1/2 SQUARE INCHES OR 2-1/16 INCH DIAMETER.
6. CONSTRUCT CORNERS OF STORM SHELTER MASONRY WALLS PER DETAIL 5/S4.3.
7. SEE SHEET S0.1 FOR GENERAL STRUCTURAL INFORMATION.

GENERAL FRAMING NOTES

1. ▶ INDICATES MOMENT CONNECTION PER SECTION 4/S4.4 (BEAM-TO-BEAM).
2. < (xx)K > INDICATES UNFACTORED (ASD) BEAM REACTION IN KIPS. FABRICATOR TO PROVIDE CONNECTION ADEQUATE TO SUPPORT LOAD GIVEN. WHERE REACTIONS ARE NOT GIVEN, DESIGN BEAM CONNECTIONS FOR 110% OF THE UNIFORM LOAD CAPACITY LISTED IN THE THIRTEENTH EDITION AISC MANUAL, TABLE 3-6 (55% EACH END).
3. SEE PLAN FOR MASONRY BEARING LENGTH IN INCHES OR BEARING PLATE SIZE AND THICKNESS. WHERE NO BEARING PLATE IS SPECIFICALLY INDICATED, PROVIDE 1/4" SETTING PLATE AND 3/4" ANCHOR BOLTS AT ALL BEAM AND BEAM LINTEL BEARING LOCATIONS AS SHOWN IN SECTIONS 1/S4.3 AND 2/S4.3.
4. SEE SHEET S4.1 FOR COLUMN SCHEDULE AND DETAILS.
5. SEE SHEET S0.1 FOR GENERAL STRUCTURAL INFORMATION.

FLOOR FRAMING NOTES

1. DESIGN LIVE LOADS:

   ASSEMBLY / TRAINING 100 PSF
   STORAGE & MECHANICAL 125 PSF
   STAIRS AND EXITS 100 PSF
2. FLOOR CONSTRUCTION:

   4" (OVERALL) FIBER-REINFORCED CONCRETE SLAB W/ 4x4-W2.9/W2.9 WWF ON 1" x 22 GA. METAL DECK. MESH IS TO BE SUPPORTED DURING CONCRETE PLACEMENT ON CHAIRS OR BOLSTERS AT MID-DEPTH OF SLAB, HALF-WAY BETWEEN THE TOP OF DECK RIBS AND THE TOP OF SLAB. WIRE MESH IS AN INTEGRAL COMPONENT OF THE SLAB DESIGN AND MAY NOT BE REPLACED WITH FIBER ADDITIVE. SEE SECTION 4/S4.4 FOR TYPICAL DECK ATTACHMENT TO SUPPORTING STRUCTURE.
3. INDICATES FLOOR OPENING. DETERMINE EXACT SIZE AND LOCATION FROM ARCHITECTURAL AND MECHANICAL DRAWINGS. NOT ALL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS. SEE SECTION 6/S4.4 FOR FRAMING OF ALL OPENINGS EQUAL TO OR GREATER THAN 12" SQUARE OR DIAMETER. ADDITIONAL FRAMING IS NOT REQUIRED FOR OPENINGS LESS THAN 12" SQUARE.
4. TOP OF STRUCTURAL STEEL / DECK BEARING ELEVATION 111'-8" UNLESS NOTED OTHERWISE. SEE PLAN FOR OTHER TOP OF STEEL ELEVATIONS. REFERENCE ELEVATION 100'-0" = TOP OF FIRST FLOOR SLAB ON GRADE.
5. SLABS ON METAL DECK ARE TO BE FINISHED TO A THEORETICAL LEVEL. THICKNESSES GIVEN ARE APPLICABLE AT COLUMNS, BEARING WALLS, AND OTHER RIGID SUPPORTING ELEMENTS. SLABS MAY, THEREFORE, BE THICKER AT MID-SPAN OF SUPPORT DUE TO DEFLECTION UNDER WET CONCRETE. THE CONTRACTOR IS TO CONSIDER THE VOLUME OF THIS ADDITIONAL CONCRETE IN THEIR BID.

ROOF FRAMING NOTES

1. DESIGN LIVE/SNOW LOADS:

   ROOF LIVE 20 PSF
   ROOF SNOW 24 PSF + DRIFT
2. ROOF CONSTRUCTION:

   1-1/2" x 22 GA WIDE RIB METAL DECK. SEE SECTION 5/S4.4 FOR TYPICAL ATTACHMENT TO SUPPORTING STRUCTURE.

   5/8" NOMINAL, FIRE-RETARDANT TREATED, APA RATED SHEATHING, EXPOSURE 1, WITH A 40/20 MINIMUM SPAN RATING. PROVIDE No. 8 SCREWS FOR FRAMING THICKNESSES UP TO 54 MILS AND No. 10 SCREWS FOR FRAMING MEMBERS OVER 54 MILS. SPACE SCREWS AT 6" O.C. AT ALL PANEL EDGES AND 12" O.C. AT ALL INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE. PANEL EDGES NEED NOT BE BLOCKED UNLESS NOTED OR DETAILED OTHERWISE.
3. INDICATES ROOF OPENING. DETERMINE EXACT SIZE AND LOCATION FROM ARCHITECTURAL AND MECHANICAL DRAWINGS. NOT ALL OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS. SEE SECTIONS 7/S4.4 AND 8/S4.4 FOR FRAMING OF ALL OPENINGS EQUAL TO OR GREATER THAN 12" SQUARE OR DIAMETER. SIZE OF OPENING IS NOT TO EXCEED THE TYPICAL CLEAR DISTANCE BETWEEN FRAMING MEMBERS OR TRUSSES. NOTIFY THE ARCHITECT BEFORE PROCEEDING IF OPENINGS CANNOT BE FIT BETWEEN FRAMING MEMBERS.
4. INDICATES SNOW DRIFT LOAD ON ROOF.
5. TOP OF STRUCTURAL STEEL, JOIST BEARING, OR TRUSS BEARING ELEVATION NOTED ON PLAN. REFERENCE ELEVATION 100'-0" = TOP OF FIRST FLOOR SLAB ON GRADE.

MASONRY WALL NOTES

1. ML(d) INDICATES MASONRY BOND BEAM LINTEL PER SECTION 1/S4.2. USE STANDARD SCHEDULED BOND BEAM LINTELS FOR ALL EXPOSED NON-LOADBEARING ARCHITECTURAL OPENINGS IN MASONRY WALLS UNLESS NOTED OTHERWISE.
2. WL(d) INDICATES WIDE-FLANGE STEEL BEAM LINTEL PER SECTION 2/S4.2. PROVIDE 1/4" SETTING PLATE AND 3/4" ANCHOR BOLTS EACH END PER SECTION 1/S4.3.
3. VL(d) INDICATES VENEER LINTEL PER SECTION 3/S4.2. USE STANDARD SCHEDULED VENEER LINTELS FOR ALL OPENINGS IN BRICK OR MASONRY VENEERS UNLESS NOTED OTHERWISE.
4. SEE PLAN FOR VERTICAL MASONRY WALL REINFORCING. ALL REINFORCING IS TO RUN FULL HEIGHT OF WALL UNLESS NOTED OTHERWISE. WHERE SPACING OF VERTICAL REINFORCING IS INTERRUPTED BY OPENING IN WALL (DOOR, WINDOW, LOUVER, ETC.) PROVIDE ONE FULL-HEIGHT REINFORCING BAR AT EACH JAMB FOR EACH 6'-0" OF OPENING WIDTH. SEE SCHEDULE ON SHEET S0.1 FOR LENGTH OF LAP SPLICES.
5. NOT ALL LINTELS ARE SHOWN ON THESE PLANS. SEE ARCHITECTURAL DRAWINGS FOR LOCATION, WIDTH, HEIGHT, AND ELEVATION OF ALL EXPOSED OPENINGS. COORDINATE LOCATION, WIDTH, HEIGHT, AND ELEVATION OF ALL CONCEALED OPENINGS WITH APPROPRIATE TRADE CONTRACTOR.
6. LINTELS ARE NOT REQUIRED FOR OPENINGS IN CMU WALLS LESS THAN 16" WIDE AND IN BRICK VENEERS LESS THAN 8" WIDE. MASONRY CONTRACTOR IS TO COORDINATE ALL OPENING REQUIREMENTS WITH APPROPRIATE TRADE CONTRACTOR. SEE SECTION 4/S4.2 FOR SPACING LIMITS ON INDIVIDUAL PIPE PENETRATIONS.
7. SEE ELEVATION A/S4.2 FOR TYPICAL REINFORCED MASONRY WALL CONSTRUCTION. PROVIDE CORNER BARS AT ALL MASONRY BOND BEAM INTERSECTIONS PER DETAIL 5/S4.2. INSTALL VENEER LEDGE ANGLES PER SECTION 3/S4.3. SEE DETAIL 4/S4.3 FOR POSITIONING OF REINFORCING BARS INDICATED TO BE "STAGGERED".
8. PROVIDE CONTROL JOINTS IN ALL MASONRY WALLS AT A SPACING NOT TO EXCEED THREE TIMES THE WALL HEIGHT OR 24 FEET ON CENTER, WHICHEVER IS SMALLER. IN ADDITION, PROVIDE CONTROL JOINTS AT THE ENDS OF LINTELS, CHANGES IN WALL HEIGHT, CHANGES IN WALL THICKNESS, WITHIN 2 FEET OF WALL CORNERS AND INTERSECTIONS, TRANSITIONS FROM INTERIOR WALL TO EXTERIOR WALL, AND TRANSITIONS FROM WALL BEARING ON FOUNDATION TO WALL BEARING ON FLOOR SLAB.
9. CONSTRUCT CORNERS OF STORM SHELTER MASONRY WALLS PER DETAIL 5/S4.3. CONSTRUCT JAMBS OF STORM SHELTER OPENINGS PER DETAIL 6/S4.3.
10. SEE SHEET S0.1 FOR GENERAL STRUCTURAL INFORMATION.

STUD WALL NOTES

1. TYPICAL WALL SHEATHING:

   5/8" GYPSUM WALLBOARD. PROVIDE No. 6 x 1-1/4" TYPE S OR W SCREWS AT 7" O.C. AROUND ALL PANEL EDGES AND AT 7" O.C. FOR ALL INTERMEDIATE SUPPORTS UNLESS NOTED OR SCHEDULED OTHERWISE. ALL PANEL EDGES ARE TO BE FULLY BLOCKED AT SHEARWALL LOCATIONS.
2. H(x) INDICATES OPENING HEADER PER SECTION 1/S4.4. SEE ARCHITECTURAL DRAWINGS FOR LOCATION, EXTENT, AND ELEVATION OF ALL OPENINGS. SEE HEADER SCHEDULE FOR SIZES AND SUPPORT REQUIREMENTS. SEE SECTION 2/S4.4 FOR SILL CONSTRUCTION WHERE APPLICABLE.
3. (#) INDICATES BUILT-UP STUD COLUMN WITH NUMBER OF STUDS REQUIRED TO CREATE THE COLUMN. PROVIDE A MINIMUM OF TWO FULL-HEIGHT STUDS AT ALL BEAMS AND HEADERS UNLESS NOTED OR SCHEDULED OTHERWISE.
4. SW# INDICATES SHEARWALL. SEE SHEARWALL SCHEDULE FOR SHEAR PANEL ATTACHMENT, BLOCKING, AND ANCHORAGE REQUIREMENTS.
5. WALL STUDS ARE TO EXTEND CONTINUOUS FOR FULL HEIGHT OF WALL UNLESS NOTED OTHERWISE. WHERE STUDS ARE INTERRUPTED BY OPENING IN WALL (WIDOW, LOUVER, ETC.) PROVIDE ONE FULL-HEIGHT KING STUD AT EACH JAMB FOR EACH 2'-0" OF OPENING WIDTH.
6. PROVIDE STUD BRIDGING/BLOCKING AT 4'-0" O.C. FOR ALL METAL STUD WALLS. WHERE SHEATHING PANELS NEED NOT BE BLOCKED, PROPRIETARY BRIDGING SYSTEMS MAY BE USED IF APPROVED BY THE ARCHITECT PRIOR TO CONSTRUCTION.
7. ALL WALL DIMENSIONS SHOWN ARE TO FACE OF STUD.
8. SEE SHEET S0.1 FOR GENERAL STRUCTURAL INFORMATION.

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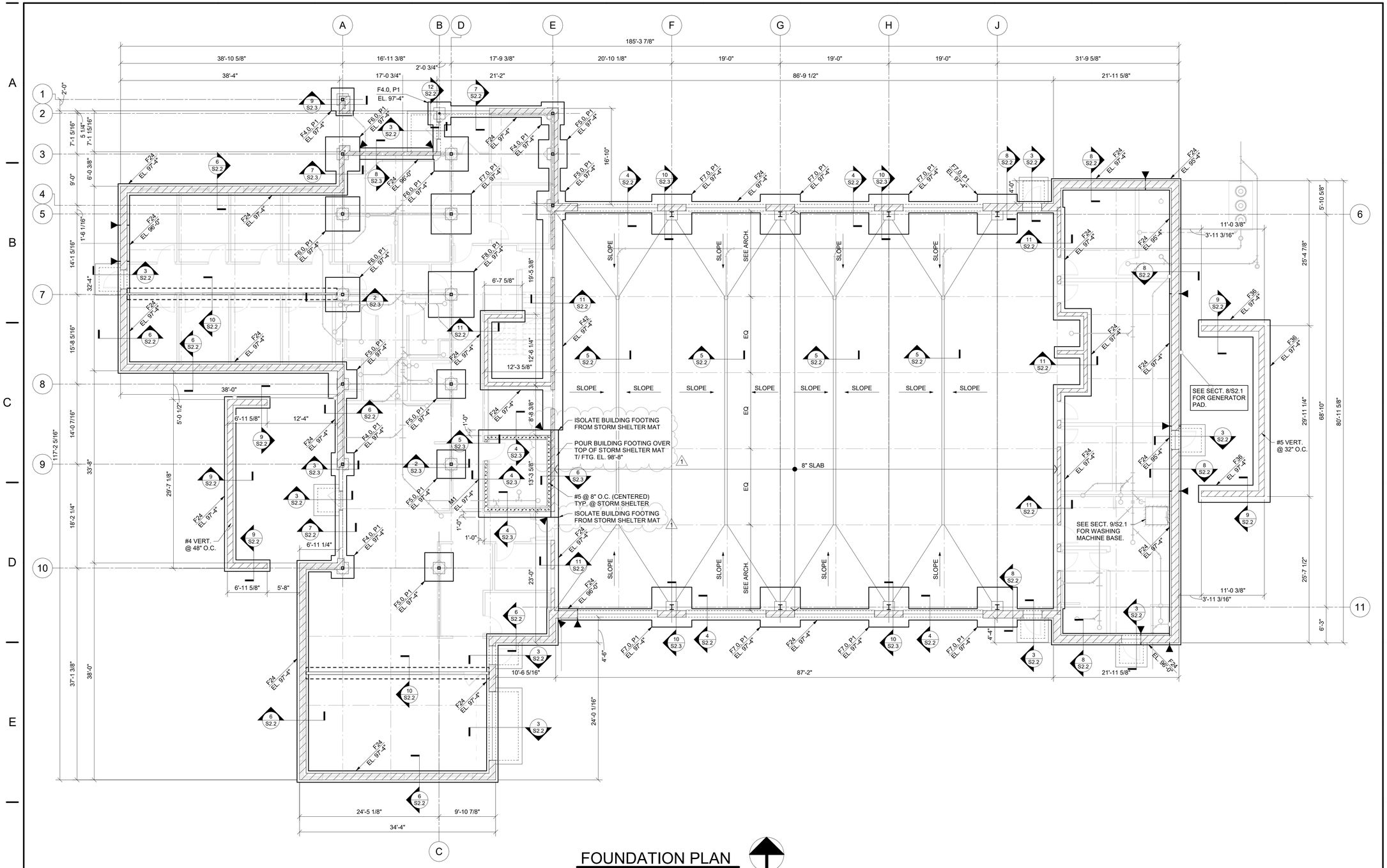
TITLE
STRUCTURAL PLAN NOTES AND SCHEDULES

SHEET NO.
S0.3

3/22/2022 11:40:26 AM



FOUNDATION PLAN

1/8" = 1'-0"

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1	04/14/2022	ADDENDUM NO. 1

DATE	03/22/2022
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TITLE
FOUNDATION PLAN

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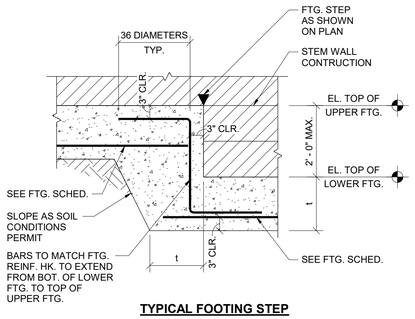
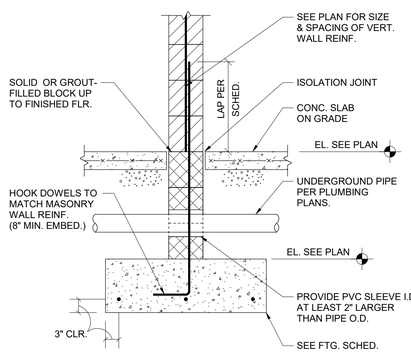


TYPICAL FOOTING STEP

SECTION 1 — 3/4" = 1'-0"



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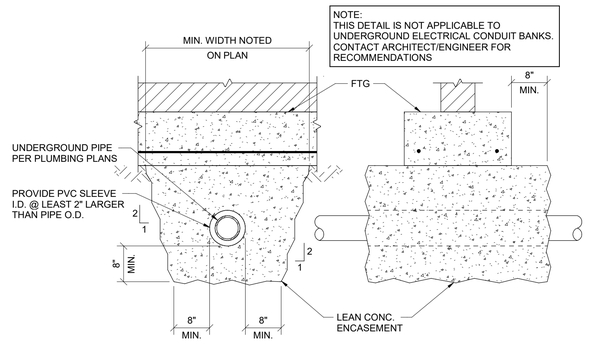
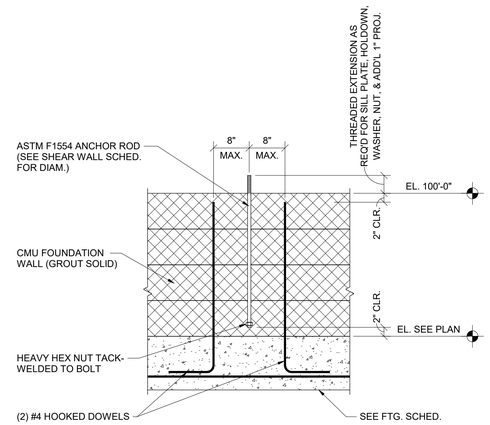
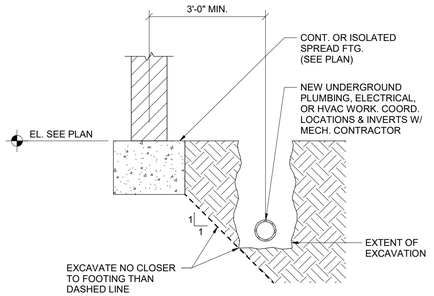


TYPICAL PLUMBING UNDER FOOTING

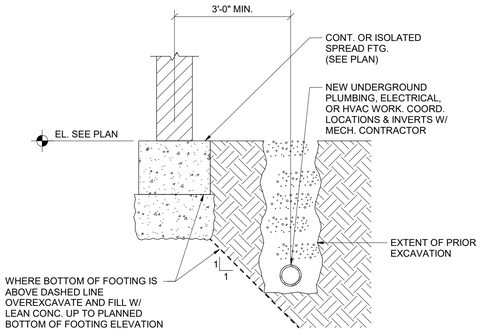
SECTION 3 — 3/4" = 1'-0"



SECTION 4 — 3/4" = 1'-0"

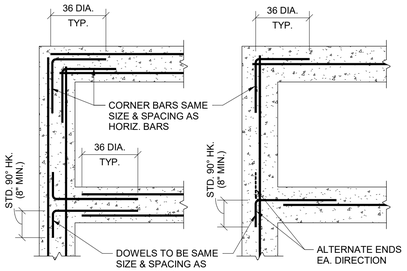


TYPICAL EXCAVATION CLEARANCE REQUIREMENTS AT NEW UNDERGROUND WORK



TYPICAL OVEREXCAVATION REQUIREMENTS AT IN-PLACE UNDERGROUND WORK

SECTION 5 — 3/4" = 1'-0"



TYPICAL CORNER BARS FOR CONCRETE WALL AND FOOTING CONSTRUCTION

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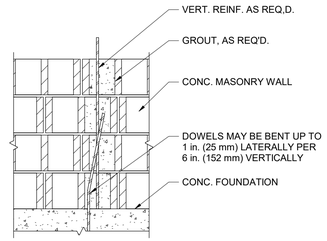
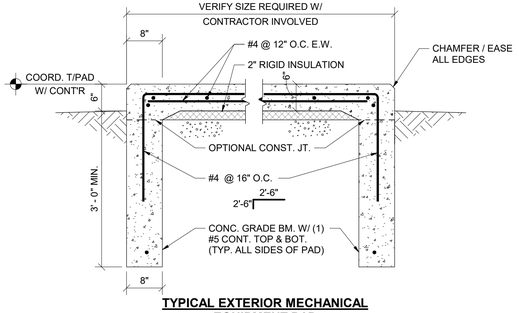


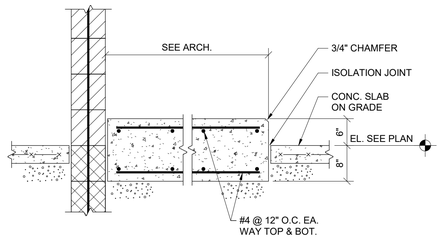
CMU REINFORCING DOWEL PLACEMENT

SECTION 7 — 3/4" = 1'-0"



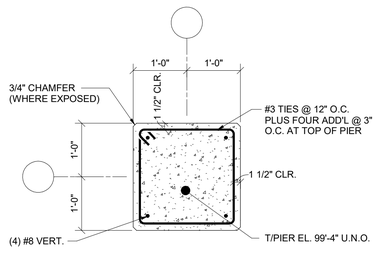
TYPICAL EXTERIOR MECHANICAL EQUIPMENT PAD

SECTION 8 — 3/4" = 1'-0"



TYPICAL INDUSTRIAL WASHING MACHINE BASE

SECTION 9 — 3/4" = 1'-0"



PIER P1

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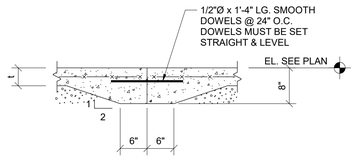

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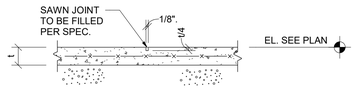
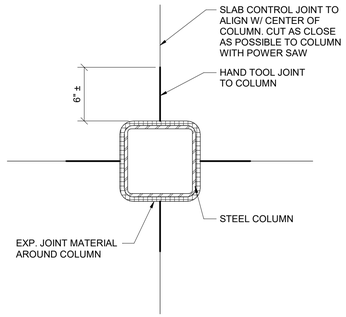
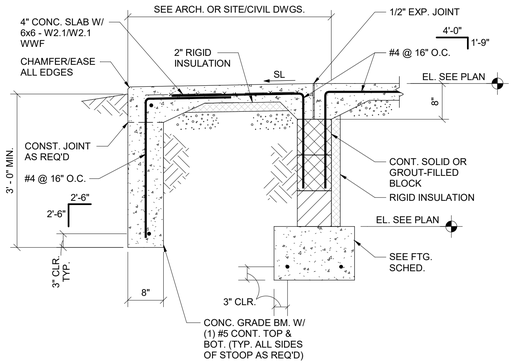
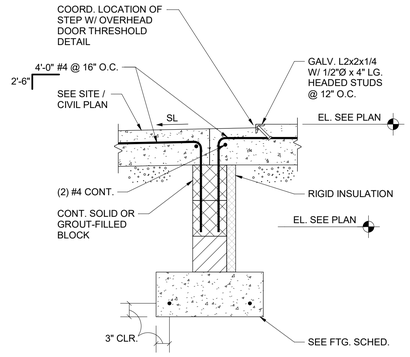


TYPICAL FLOOR CONTROL JOINT





TYPICAL INTERIOR-TO-EXTERIOR SLAB TRANSITION



TYPICAL INTERIOR-TO-EXTERIOR SLAB AT OVERHEAD DOORS

SECTION 1
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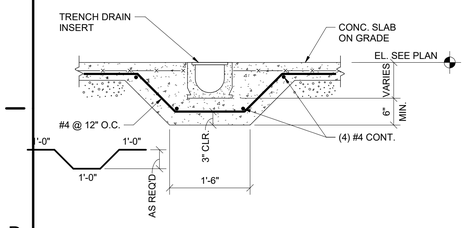
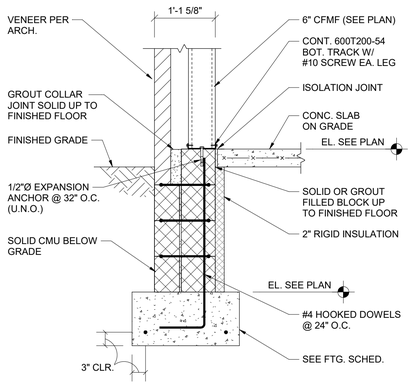
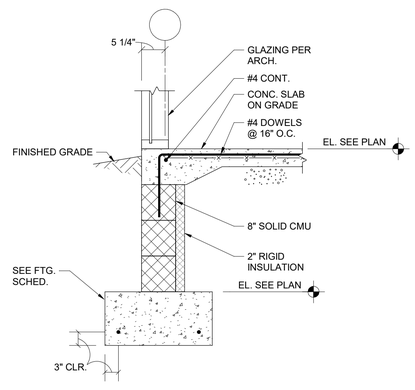


SECTION 2
1 1/2" = 1'-0"



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



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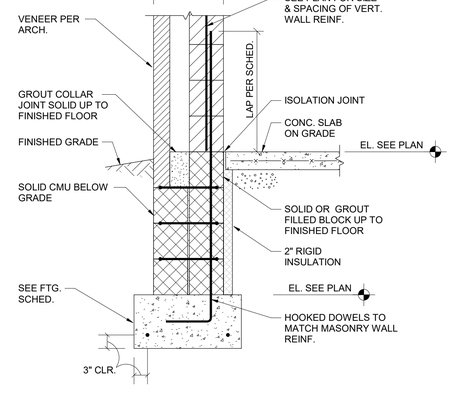

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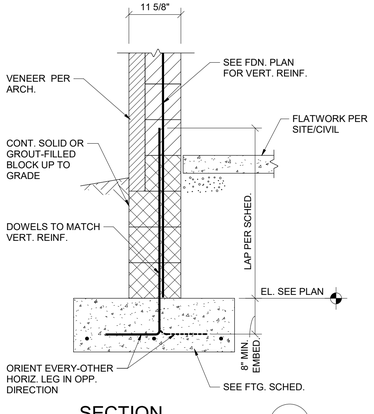

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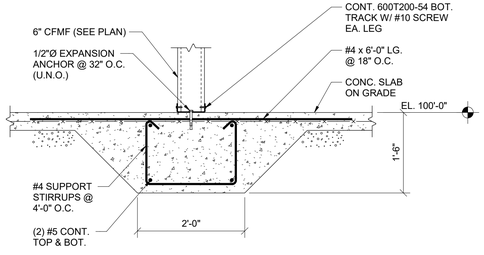

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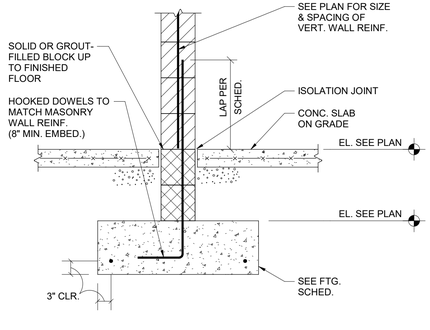

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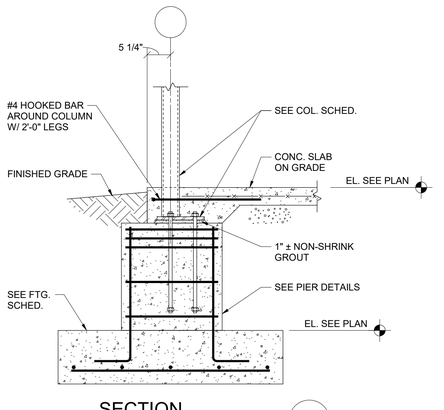

SECTION 9
3/4" = 1'-0"

SECTION 10
3/4" = 1'-0"

SECTION 11
3/4" = 1'-0"

SECTION 12
3/4" = 1'-0"

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TITLE
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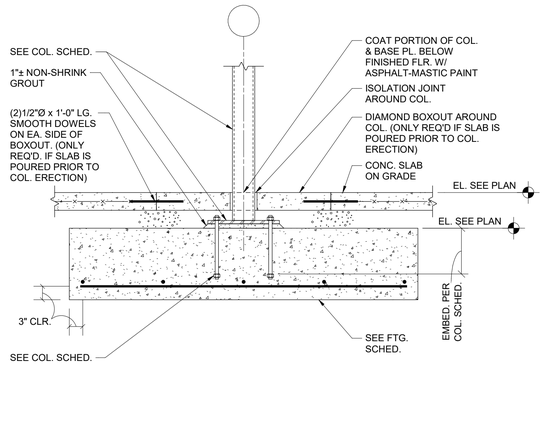

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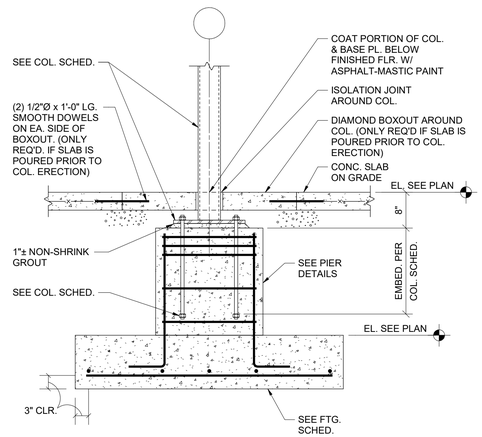

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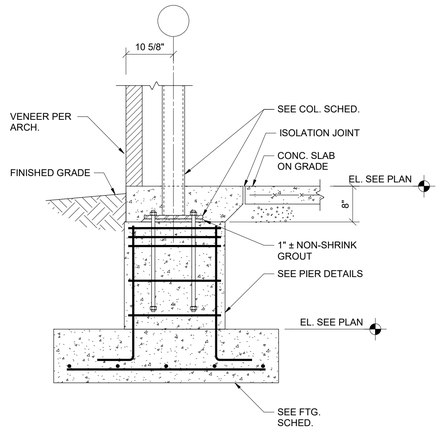

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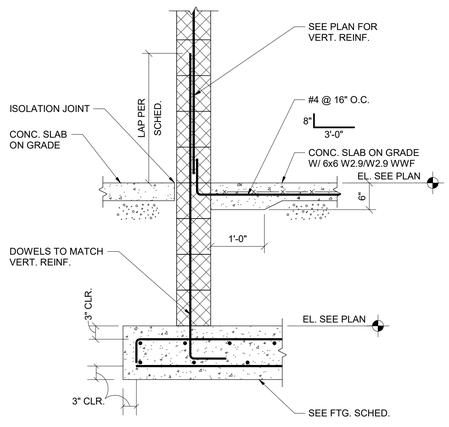

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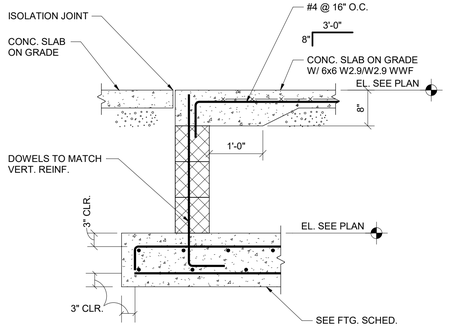

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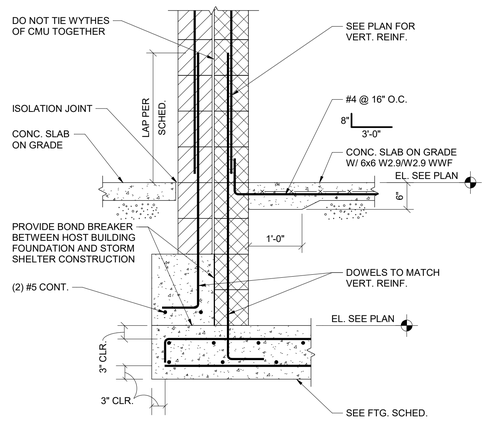

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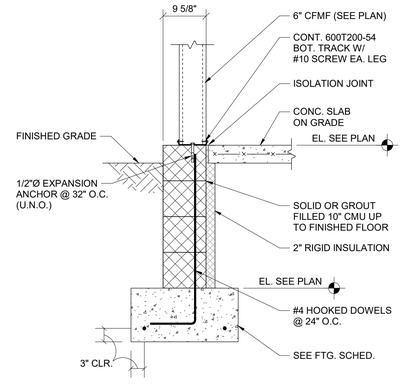

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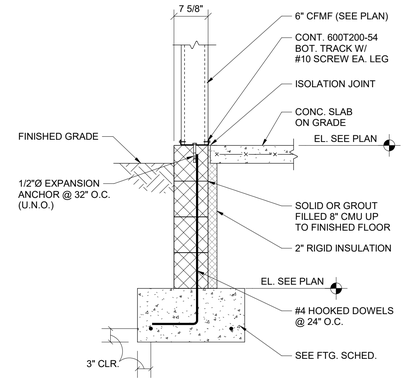

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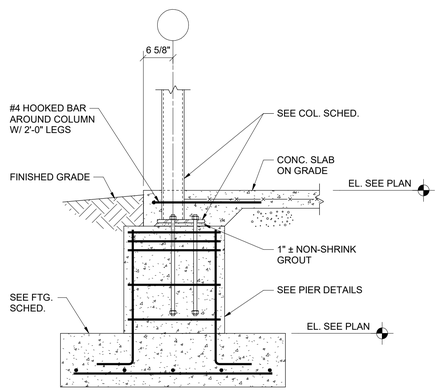

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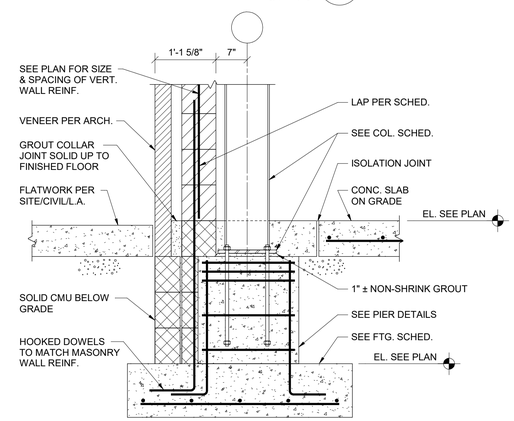

SECTION 10
3/4" = 1'-0"

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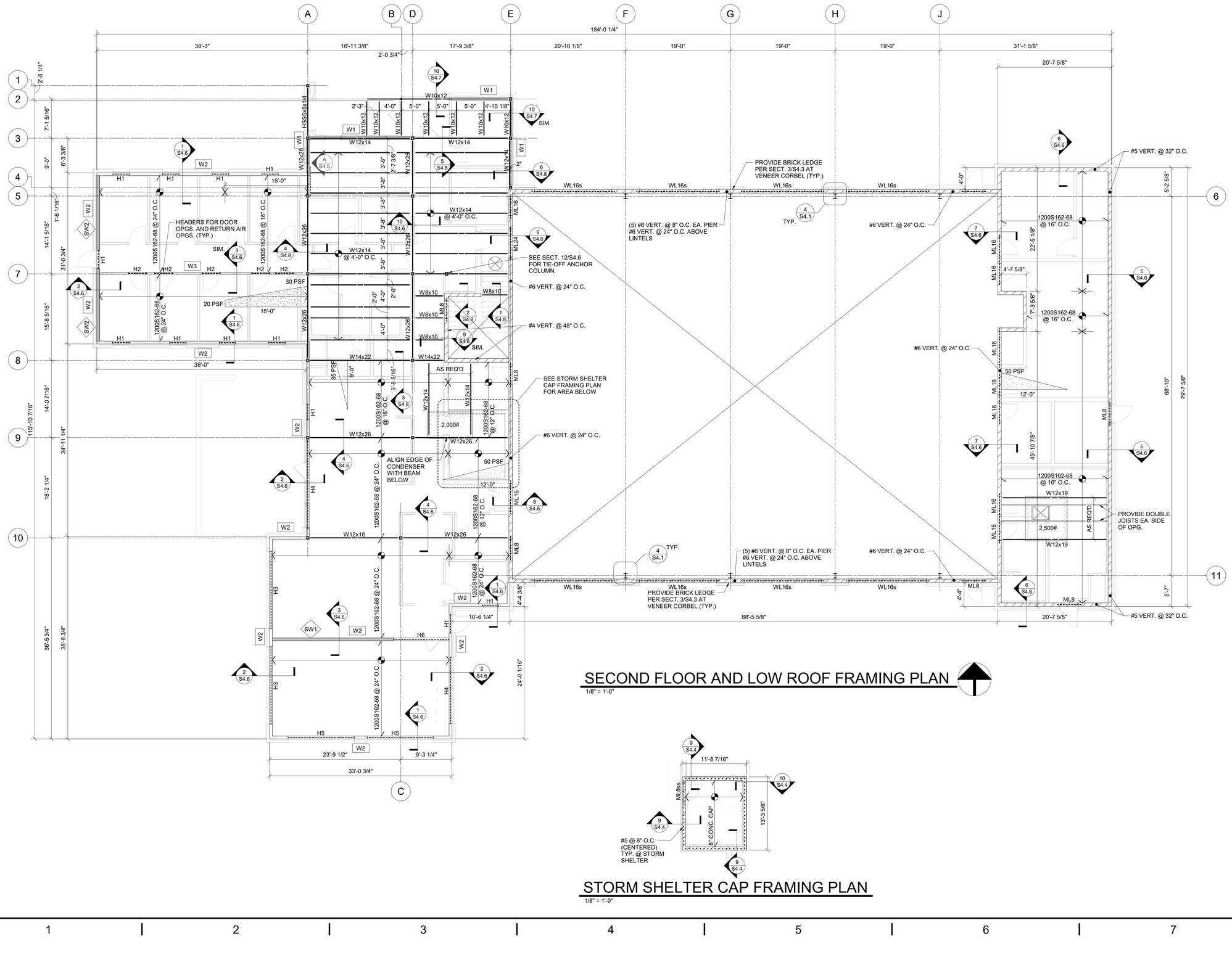

SECOND FLOOR AND LOW ROOF FRAMING PLAN

1/8" = 1'-0"

STORM SHELTER CAP FRAMING PLAN

1/8" = 1'-0"

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TITLE
SECOND FLOOR AND LOW ROOF FRAMING PLAN

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S3.1

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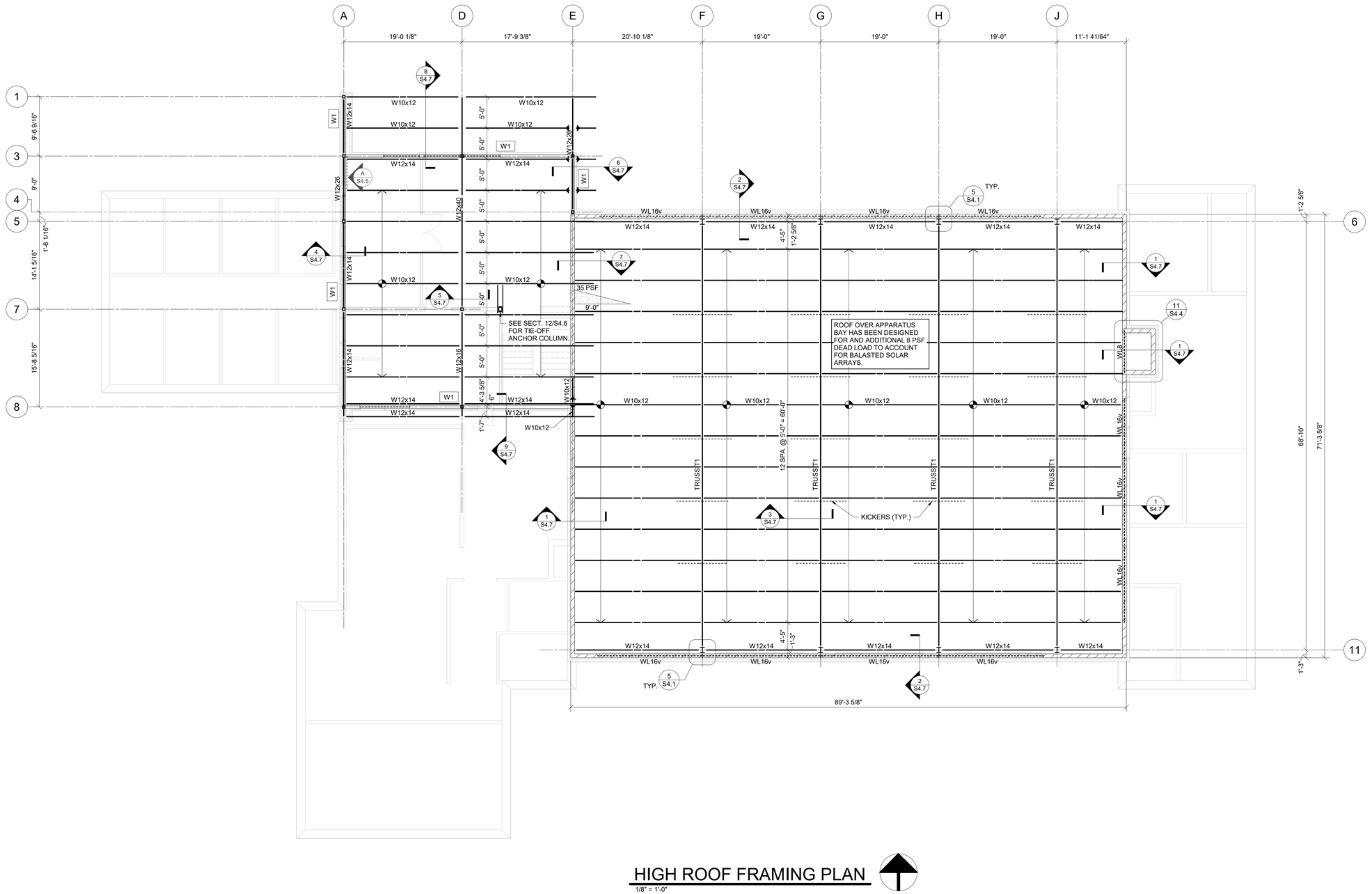

HIGH ROOF FRAMING PLAN

1/8" = 1'-0"

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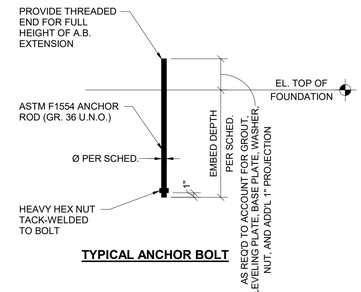
HIGH ROOF FRAMING PLAN

SHEET NO.
S3.2

3/22/2022 11:40:32 AM

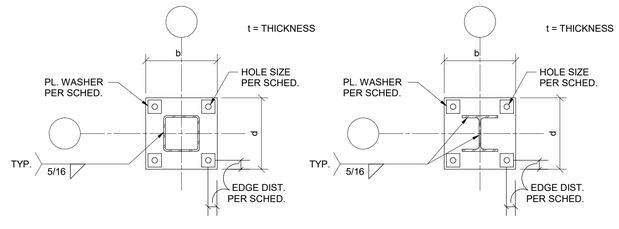
APP. BAY T/ STEEL																				APP. BAY T/ STEEL
121'-0"																				121'-0"
2ND FLOOR T/ STEEL	HSS5x5x3/8	HSS5x5x3/8	HSS5x5x3/8	HSS5x5x1/4	HSS5x5x1/4					HSS6x6x1/4		HSS5x5x1/4	HSS5x5x1/4			HSS5x5x1/4	HSS5x5x1/4			2ND FLOOR T/ STEEL
111'-8"						HSS5x5x1/4	HSS5x5x1/4	3"Ø STD.	HSS5x5x1/4		HSS5x5x1/4			HSS5x5x1/4	HSS5x5x1/4			W10x39	W10x39	W10x39	111'-8"
Foundation																				Foundation
100'-0"																				100'-0"
Column Locations	A-1	A-3	A-5	A-7	A-8	A-9	A-10	B-2	C-10	D-3	D-5	D-7	D-8	D-9	E-2	E-3	E-4	F-6	F-11	G-6	
BASE PLATE TYPE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	BASE PLATE TYPE
BASE PLATE SIZE	3/4 x 14 x 14	1 x 14 x 14	1 x 14 x 14	3/4 x 14 x 14	3/4 x 14 x 14	3/4 x 14 x 14	3/4 x 14 x 14	3/4 x 7 x 7	3/4 x 14 x 14	3/4 x 14 x 14	3/4 x 14 x 14	1 x 14 x 14	1 x 14 x 14	3/4 x 14 x 14	3/4 x 14 x 14	3/4 x 14 x 14	3/4 x 14 x 14	1 1/4 x 16 x 16	1 1/4 x 16 x 16	1 1/4 x 16 x 16	BASE PLATE SIZE
ANCHOR BOLTS SIZE (Ø x EMBED DEPTH)	(4) 3/4"Ø W/ 9" EMBED	(4) 1"Ø W/ 22" EMBED	(4) 1"Ø W/ 22" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	ANCHOR BOLTS SIZE (Ø x EMBED DEPTH)

APP. BAY T/ STEEL						APP. BAY T/ STEEL
121'-0"						121'-0"
2ND FLOOR T/ STEEL						2ND FLOOR T/ STEEL
111'-8"	W10x39	W10x39	W10x39	W10x39	W10x39	111'-8"
Foundation						Foundation
100'-0"						100'-0"
Column Locations	G-11	H-6	H-11	J-6	J-11	
BASE PLATE TYPE	B	B	B	B	B	BASE PLATE TYPE
BASE PLATE SIZE	1 1/4 x 16 x 16	1 1/4 x 16 x 16	1 1/4 x 16 x 16	1 1/4 x 16 x 16	1 1/4 x 16 x 16	BASE PLATE SIZE
ANCHOR BOLTS SIZE (Ø x EMBED DEPTH)	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	(4) 3/4"Ø W/ 9" EMBED	ANCHOR BOLTS SIZE (Ø x EMBED DEPTH)



TYPICAL ANCHOR BOLT

BASE PLATE DETAILING SCHEDULE			
BOLT SIZE	BASE PLATE HOLE SIZE	EDGE DISTANCE	PLATE WASHER
3/4"Ø	1-5/16"Ø	1-1/2"	1/4" x 2-1/2" SQ.
1"Ø	1-13/16"Ø	2"	3/8" x 3" SQ.



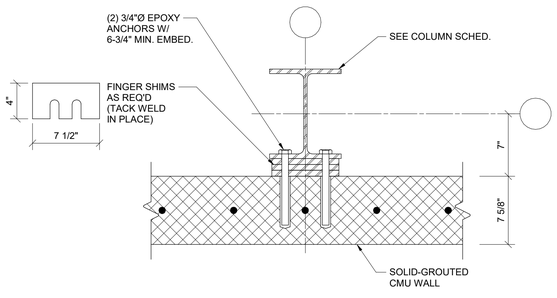
TYPE A **TYPE B**

BASE PLATE DETAILS

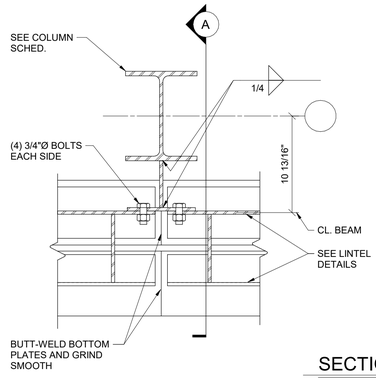
SECTION 1 — 3/4" = 1'-0"

SECTION 2 — 3/4" = 1'-0"

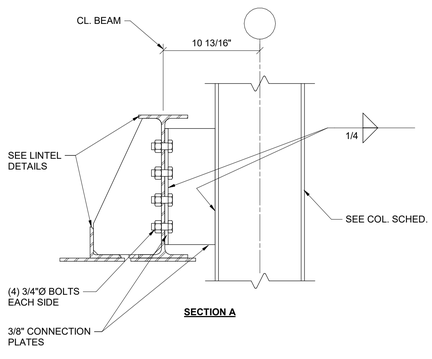
SECTION 3 — 3/4" = 1'-0"



SECTION 4 — 1 1/2" = 1'-0"



SECTION 5 — 1 1/2" = 1'-0"



SECTION A

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716 East Franklin Street, Centerville, Ohio 45458

ISSUE

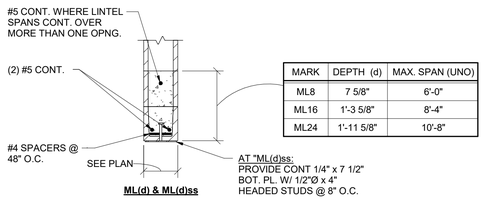
NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS (R22)
CHECKED	SNF

TITLE
COLUMN SCHEDULE AND DETAILS

SHEET NO.
S4.1

3/22/2022 11:40:53 AM



MARK	DEPTH (d)	MAX. SPAN (UNO)
ML8	7 5/8"	6'-0"
ML16	1'-3 5/8"	8'-4"
ML24	1'-11 5/8"	10'-8"

ML(d) & ML(d)ss

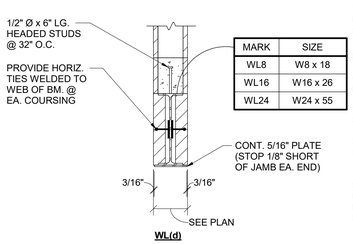
MASONRY LINTEL NOTES

1. FILL IS 2500 PSI (MINIMUM) GROUT. USE FINE GROUT FOR WALLS 6 INCHES AND LESS.
2. FOR TYPE OF CMU AND TYPE OF BOND, SEE SPECIFICATION SECTION 04/2000.
3. LINTELS SHALL BEAR ON SOLID CMU OR ON 2 FILLED COURSES.
4. MAXIMUM SPANS DO NOT APPLY TO LOAD BEARING WALLS.
5. BOND PATTERN OF LINTEL TO MATCH THAT OF SURROUNDING WALL.
6. BOTTOM OF LINTEL SHALL BE SMOOTH MASONRY WITH NO CORES EXPOSED.
7. 14" LINTELS MAY BE MADE-UP OF TWO PIECES IF 14" BOND BEAM UNITS ARE NOT AVAILABLE.
8. PROVIDE 8" MINIMUM BEARING EACH END FOR 8" AND 16" DEEP LINTELS. USE 16" MINIMUM BEARING FOR 24" (AND DEEPER) LINTELS.
9. PROVIDE SCORED BLOCK AS REQUIRED TO MATCH ADJACENT WALL FINISH. REFER TO INTERIOR FINISH SCHEDULE FOR LOCATION OF ALL SCORED BLOCK.
10. PROVIDE TWO LAYERS OF 15-MIL PLASTIC VAPOR BARRIER BELOW ALL LINTEL BEARINGS AND CAULK FACE JOINT.

MASONRY LINTELS

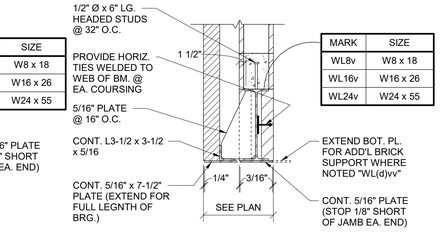
SECTION 1 — 3/4" = 1'-0"

STEEL BEAM LINTELS



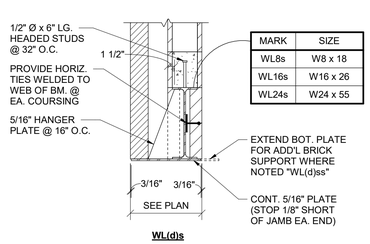
MARK	SIZE
WL8	W8 x 18
WL16	W16 x 26
WL24	W24 x 55

WL(d)



MARK	SIZE
WL8v	W8 x 18
WL16v	W16 x 26
WL24v	W24 x 55

WL(d)v



MARK	SIZE
WL8s	W8 x 18
WL16s	W16 x 26
WL24s	W24 x 55

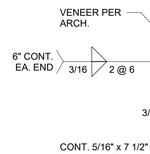
WL(d)s

STEEL BEAM LINTEL NOTES

1. LINTELS SHALL BEAR ON SOLID MASONRY OR ON TWO CMU COURSES FULLY GROUTED.
2. FURNISH AND INSTALL ALL LOOSE LINTELS REQUIRED FOR ALL OPENINGS IN MASONRY, INCLUDING MECHANICAL AND ELECTRICAL WORK, WHETHER SPECIFICALLY NOTED ON DRAWINGS OR NOT.
3. ALL LINTELS AT EXTERIOR LOCATIONS OR OTHERWISE SUBJECT TO WEATHER OR CORROSIVE ATMOSPHERE SHALL BE GALVANIZED.
4. PROVIDE 8" MINIMUM BEARING EACH END FOR 8" AND 16" DEEP SPAN LINTELS. USE 12" MINIMUM BEARING EACH END FOR 24" (AND DEEPER) SPAN LINTELS.
5. PROVIDE TWO LAYERS OF 15-MIL PLASTIC VAPOR BARRIER BELOW ALL LINTEL BEARINGS AND CAULK FACE JOINT.

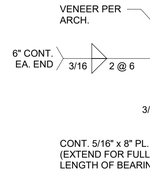
SECTION 2 — 3/4" = 1'-0"

VENEER LINTELS



MARK	SIZE	MAX. SPAN (UNO)
VL4	L4 x 3 1/2 x 5/16	6'-0"
VL6	L6 x 3 1/2 x 5/16 LLV	8'-4"

VL(d)



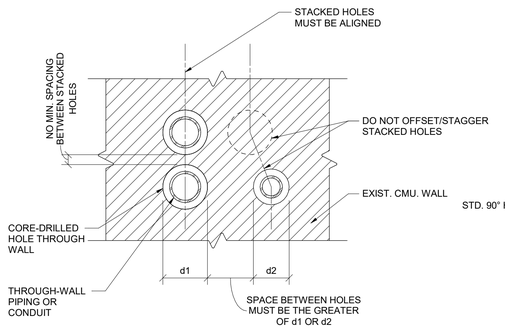
MARK	SIZE	MAX. SPAN (UNO)
CL8	C8 x 11.5	12'-0"
CL10	C10 x 15.3	15'-0"
CL12	C12 x 25	22'-0"

CL(d)

VENEER LINTEL NOTES

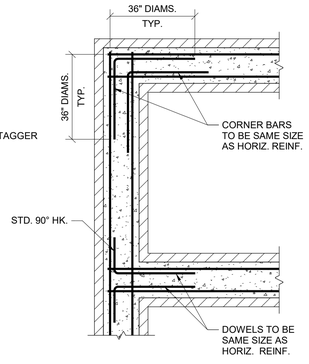
1. FURNISH AND INSTALL ALL LOOSE LINTELS REQUIRED FOR ALL OPENINGS IN MASONRY, INCLUDING MECHANICAL AND ELECTRICAL WORK, WHETHER SPECIFICALLY NOTED ON DRAWINGS OR NOT.
2. ALL LINTELS AT EXTERIOR LOCATIONS OR OTHERWISE SUBJECT TO WEATHER OR CORROSIVE ATMOSPHERE SHALL BE GALVANIZED.
3. PROVIDE 6" MINIMUM BEARING EACH END.
4. PROVIDE TWO LAYERS OF 15-MIL PLASTIC VAPOR BARRIER BELOW ALL LINTEL BEARINGS AND CAULK FACE JOINT.

SECTION 3 — 3/4" = 1'-0"



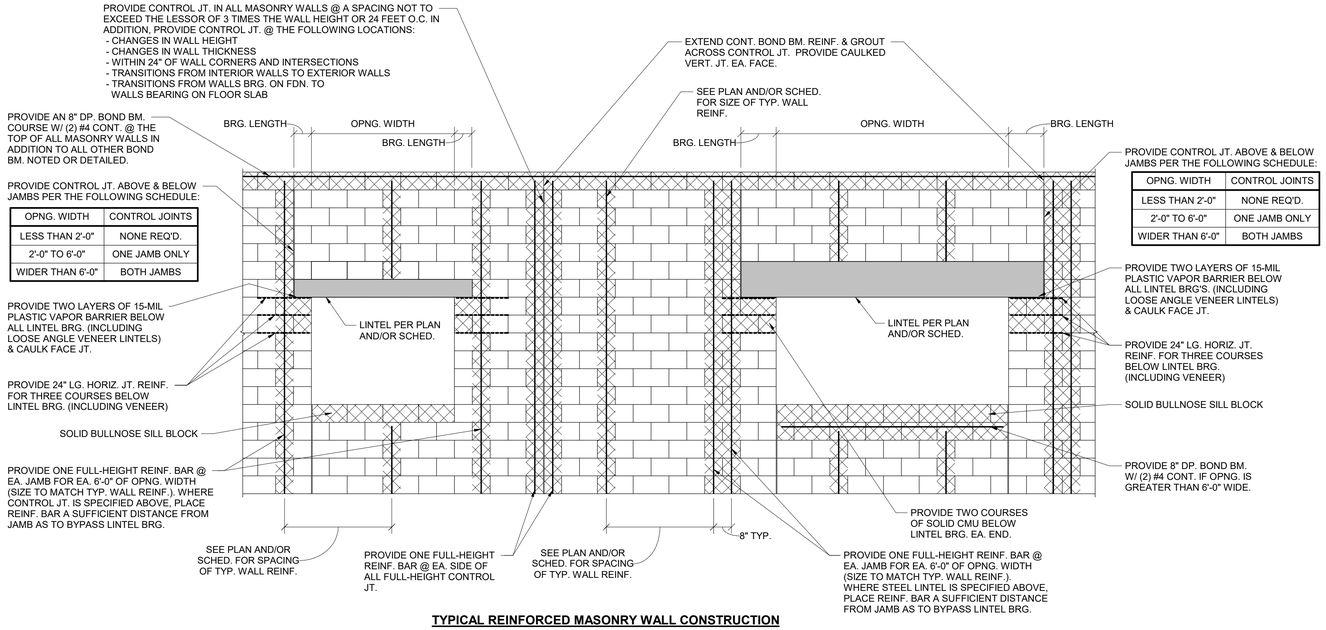
TYPICAL MASONRY WALL PENETRATIONS

SECTION 4 — 1 1/2" = 1'-0"



TYPICAL CORNER BARS FOR MASONRY BOND BEAMS

SECTION 5 — 3/4" = 1'-0"



OPNG. WIDTH	CONTROL JOINTS
LESS THAN 2'-0"	NONE REQ'D.
2'-0" TO 6'-0"	ONE JAMB ONLY
WIDER THAN 6'-0"	BOTH JAMBS

OPNG. WIDTH	CONTROL JOINTS
LESS THAN 2'-0"	NONE REQ'D.
2'-0" TO 6'-0"	ONE JAMB ONLY
WIDER THAN 6'-0"	BOTH JAMBS

TYPICAL REINFORCED MASONRY WALL CONSTRUCTION

ELEVATION A — 3/8" = 1'-0"

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ISSUE

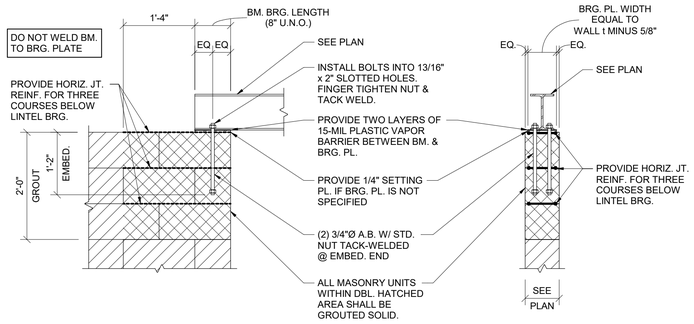
NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS (R22)
CHECKED	SNF

TITLE
FRAMING DETAILS

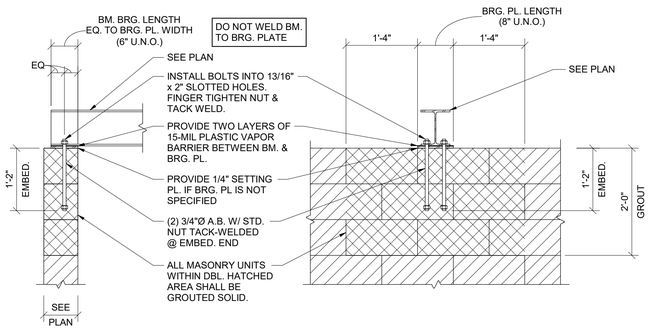
SHEET NO.
S4.2

3/22/2022 11:40:34 AM



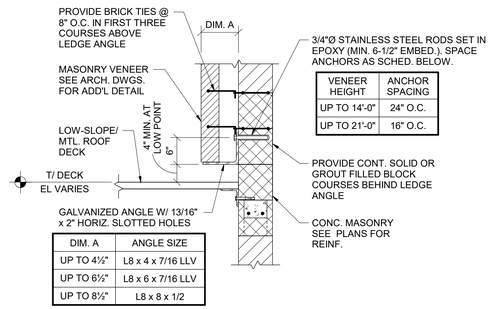
TYPICAL BEAM BEARING PARALLEL TO MASONRY WALL OR AT CORNER OF MASONRY WALL

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



TYPICAL BEAM BEARING PERPENDICULAR TO MASONRY WALL

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



VENEER HEIGHT	ANCHOR SPACING
UP TO 14'-0"	24" O.C.
UP TO 21'-0"	16" O.C.

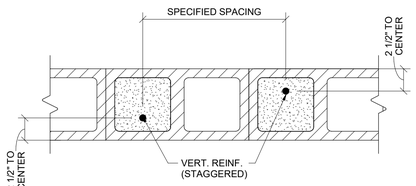
DIM. A	ANGLE SIZE
UP TO 4½"	L8 x 4 x 7/16 LLV
UP TO 6½"	L8 x 6 x 7/16 LLV
UP TO 8½"	L8 x 8 x 1/2

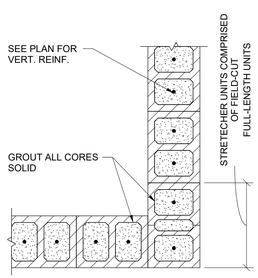
TYPICAL BRICK SUPPORT ANGLE ABOVE LOW-SLOPED ROOFS

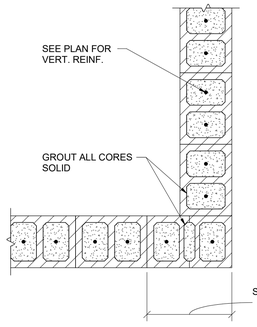
BRICK LEDGE ANGLE NOTES

1. SEE SCHEDULE FOR MAXIMUM SUPPORTED BRICK HEIGHTS. PROVIDE ADDITIONAL RELIEF ANGLES FOR HEIGHTS WHICH EXCEED THE MAXIMUM.
2. EPOXY (CHEMICAL ADHESIVE) SHALL HAVE THE FOLLOWING PUBLISHED MINIMUM ALLOWABLE LOAD CAPACITY:
   TENSION = 3000 LBS
   SHEAR = 3500 LBS
3. INSTALL ALL ANCHORS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS, INCLUDING THE FOLLOWING:
   a. USE PROPER SIZE CARBIDE DRILL BIT. DO NOT USE DIAMOND CORE BITS UNLESS SPECIFICALLY APPROVED BY EPOXY SUPPLIER.
   b. CLEAN HOLE WITH WIRE BRUSH AND BLOW OUT WITH COMPRESSED AIR.
   c. INSERT ADHESIVE AND TWIST ROD INTO PLACE. FASTENER MAY BE ADJUSTED DURING GEL TIME. DO NOT DISTURB BETWEEN TIME OF GEL AND FINAL TIME TO CURE.
   d. APPLY TORQUE AS REQUIRED BY MANUFACTURER.

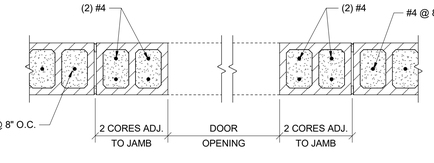
SECTION 3
3/4" = 1'-0"

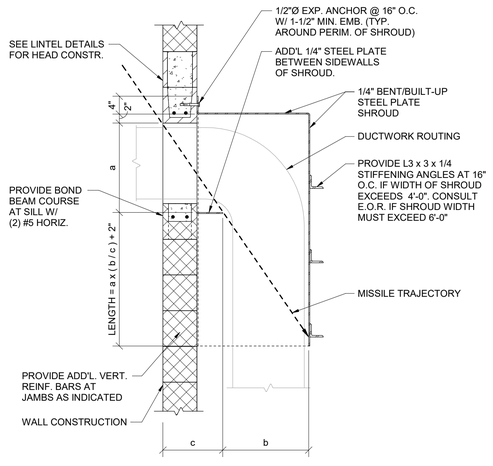






TYPICAL STAGGERED REINFORCING



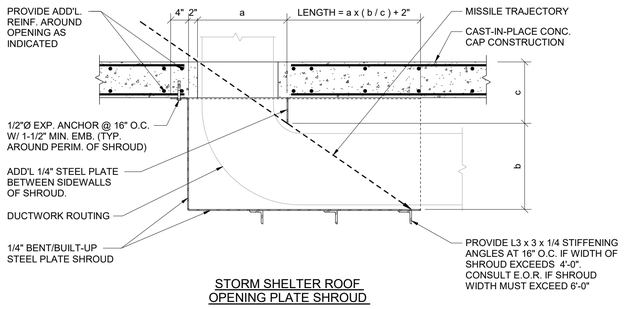


TYPICAL STORM SHELTER CORNER CONSTRUCTION

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

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

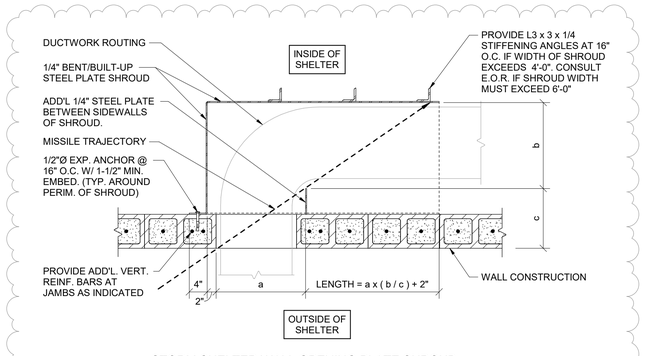
SECTION 6
3/4" = 1'-0"



STORM SHELTER ROOF OPENING PLATE SHROUD

NOTES:
1. PLATE SHROUDS ARE REQUIRED FOR ALL OPENINGS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) EXCEEDING 3-1/2 SQUARE INCHES OR 2-1/16 INCH DIAMETER
2. SHROUD MAY BE ORIENTED IN ANY DIRECTION
3. CONSULT ENGINEER OF RECORD IF SHROUD DIMENSIONS MUST DEVIATE FROM THOSE INDICATED

SECTION 8
3/4" = 1'-0"



STORM SHELTER WALL OPENING PLATE SHROUD (HORIZONTAL PLAN DETAIL)

NOTES:
1. PLATE SHROUDS ARE REQUIRED FOR ALL OPENINGS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) EXCEEDING 3-1/2 SQUARE INCHES OR 2-1/16 INCH DIAMETER
2. SHROUD MAY BE ORIENTED IN ANY DIRECTION
3. CONSULT ENGINEER OF RECORD IF SHROUD DIMENSIONS MUST DEVIATE FROM THOSE INDICATED

SECTION 9
3/4" = 1'-0"

STORM SHELTER WALL OPENING PLATE SHROUD

NOTES:
1. PLATE SHROUDS ARE REQUIRED FOR ALL OPENINGS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) EXCEEDING 3-1/2 SQUARE INCHES OR 2-1/16 INCH DIAMETER
2. SHROUD MAY BE ORIENTED IN ANY DIRECTION
3. CONSULT ENGINEER OF RECORD IF SHROUD DIMENSIONS MUST DEVIATE FROM THOSE INDICATED

SECTION 7
3/4" = 1'-0"

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ISSUE

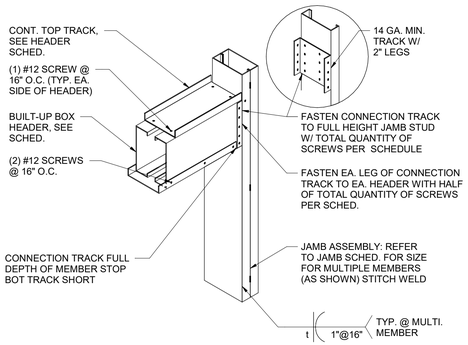
NO.	DATE	DESCRIPTION
	03/22/2022	FOR CONSTRUCTION
1	04/14/2022	ADDENDUM NO. 1

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS (R22)
CHECKED	SNF

TITLE
FRAMING DETAILS

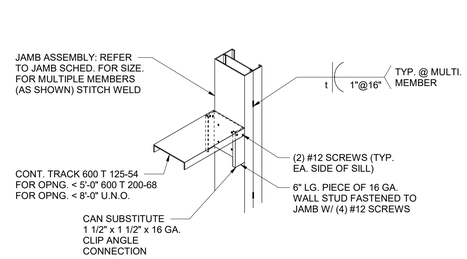
SHEET NO.
S4.3

4/13/2022 9:39:33 AM



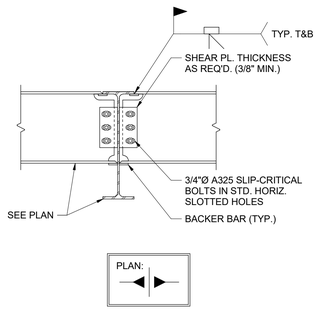
TYPICAL BOX HEADER CONNECTION

SECTION 1 — 1" = 1'-0"

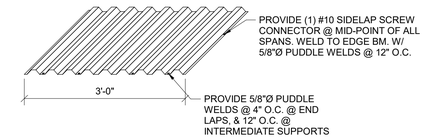


TYPICAL SILL CONNECTION

SECTION 2 — 1" = 1'-0"

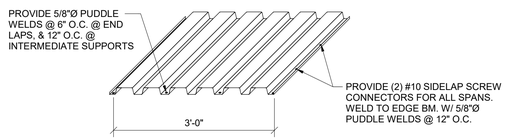


SECTION 3 — 3/4" = 1'-0"



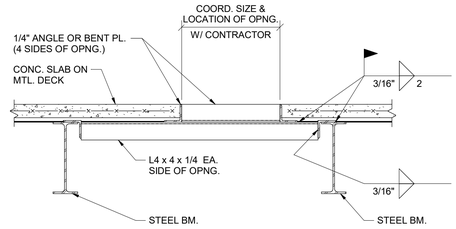
1" FORM DECK ATTACHMENT TO STEEL STRUCTURE
(36/4 - 1 PATTERN)

SECTION 4 — 3/4" = 1'-0"



1 1/2" METAL DECK ATTACHMENT TO STEEL STRUCTURE
(36/4 - 2 PATTERN)

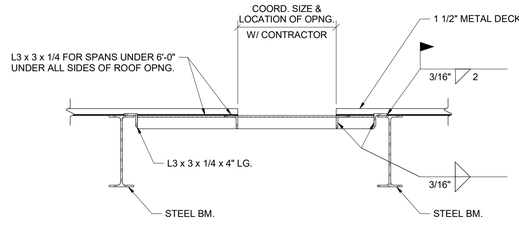
SECTION 5 — 3/4" = 1'-0"



OPENING FRAME IS TYPICAL FOR ALL FLOOR PENETRATIONS GREATER THAN OR EQUAL TO 12" SQUARE OR 12" DIAMETER

TYPICAL FLOOR OPENING FRAMING

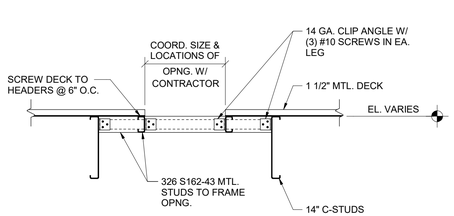
SECTION 6 — 3/4" = 1'-0"



OPENING FRAME IS TYPICAL FOR ALL ROOF PENETRATIONS GREATER THAN OR EQUAL TO 12" SQUARE OR 12" DIAMETER

TYPICAL ROOF OPENING FRAMING

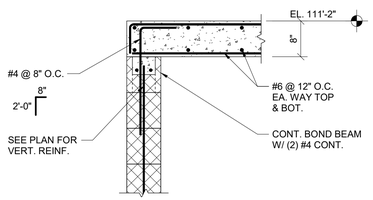
SECTION 7 — 3/4" = 1'-0"



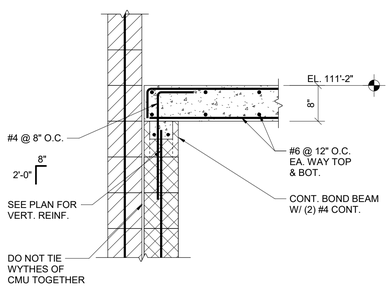
OPENING FRAME IS TYPICAL FOR ALL ROOF PENETRATIONS GREATER THAN OR EQUAL TO 12" SQUARE OR 12" DIAMETER

TYPICAL ROOF OPENING BETWEEN COLD-FORMED METAL TRUSSES

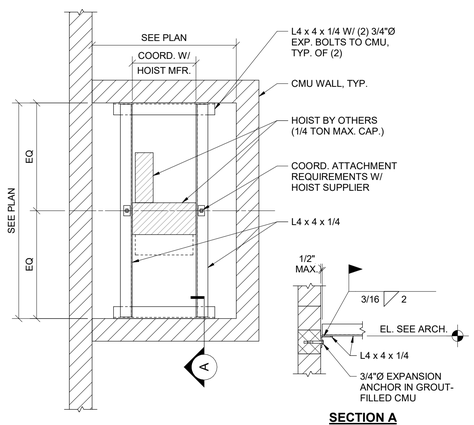
SECTION 8 — 3/4" = 1'-0"



SECTION 9 — 3/4" = 1'-0"



SECTION 10 — 3/4" = 1'-0"



HOIST SUPPORT FRAMING PLAN

SECTION A

SECTION 11 — 1/2" = 1'-0"

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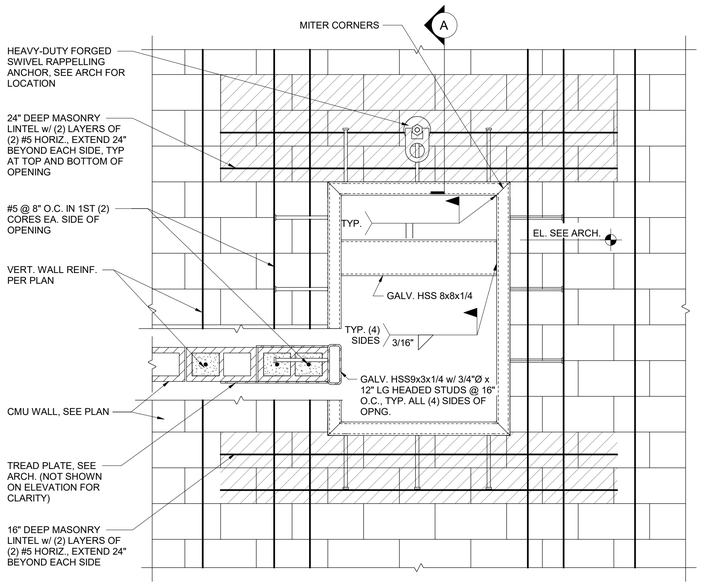
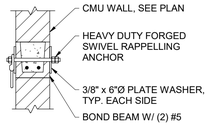
FRAMING DETAILS

SHEET NO.
S4.4

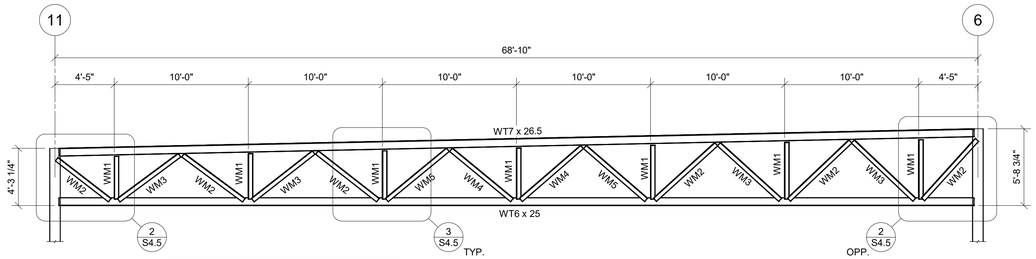
3/22/2022 11:40:36 AM



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



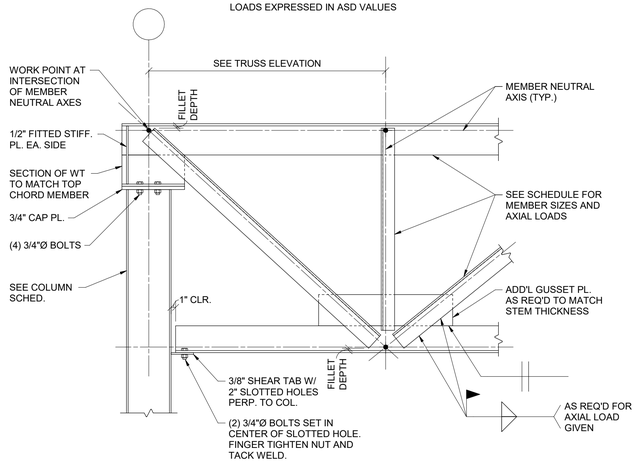
SECTION A



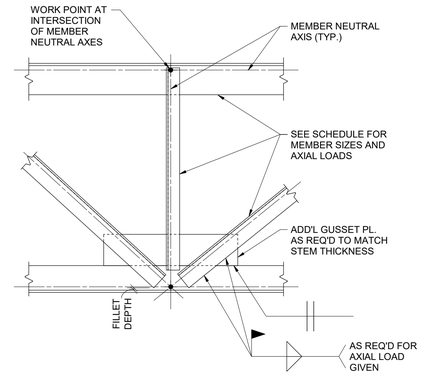
MARK	SIZE	LOAD
WM1	L3 x 3 x 3/8	C = 6.2K
WM2	(2) L4 x 4 x 3/8	T = 61.7K
WM3	(2) L4 x 4 x 3/8	C = 54.1K
WM4	(2) L2½ x 2½ x 3/8	T = 9.6K
WM5	(2) L2½ x 2½ x 3/8	C = 18.2K

NOTES:
"C" = COMPRESSION
"T" = TENSION
LOADS EXPRESSED IN ASD VALUES

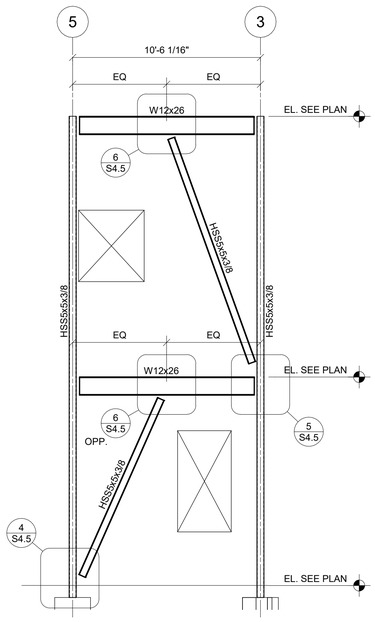
TRUSS T1
3/16" = 1'-0"



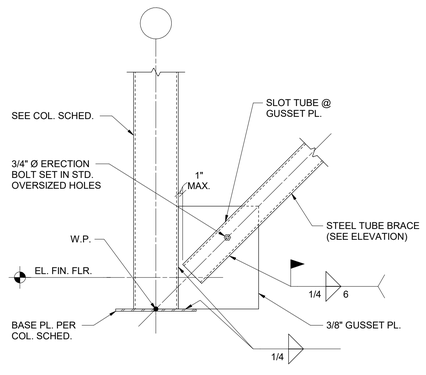
SECTION 2
3/4" = 1'-0"



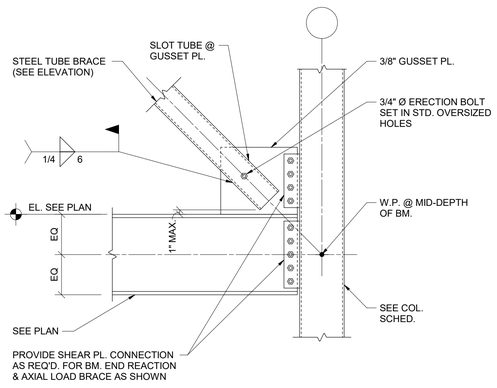
SECTION 3
3/4" = 1'-0"



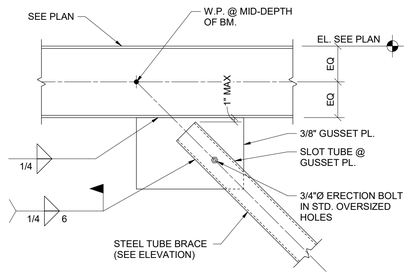
ELEVATION A
1/4" = 1'-0"



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



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



SECTION 6
3/4" = 1'-0"

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SHEET NO.
S4.5

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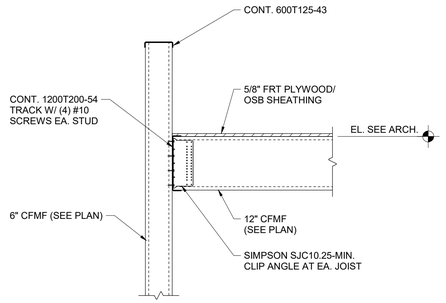
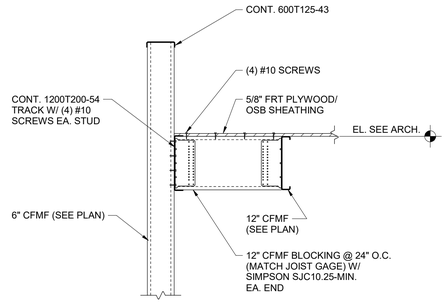
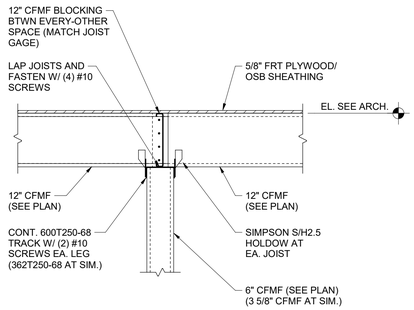


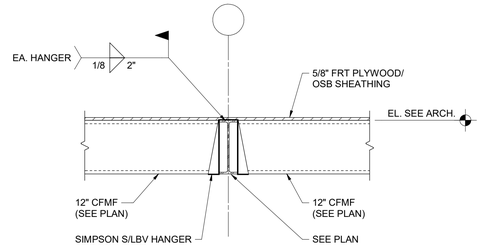
SECTION 1 — 3/4" = 1'-0"



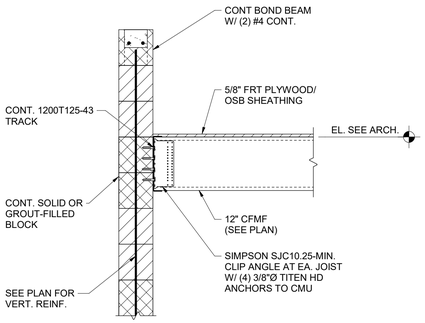
SECTION 2 — 3/4" = 1'-0"



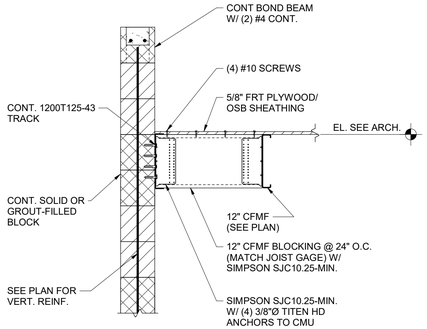
SECTION 3 — 3/4" = 1'-0"



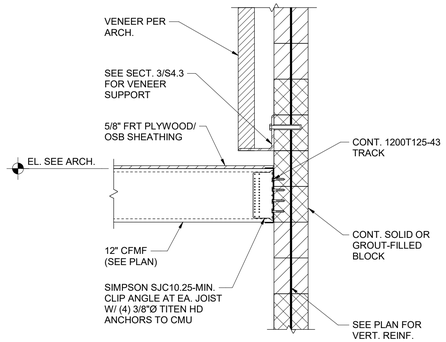
SECTION 4 — 3/4" = 1'-0"



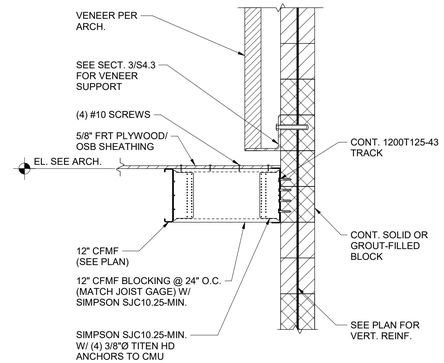
SECTION 5 — 3/4" = 1'-0"



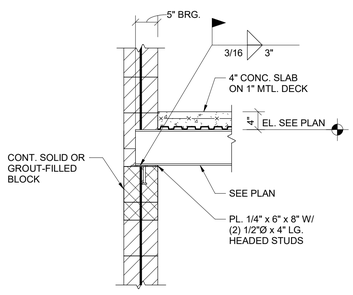
SECTION 6 — 3/4" = 1'-0"



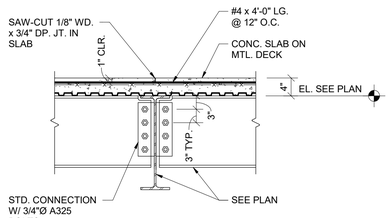
SECTION 7 — 3/4" = 1'-0"



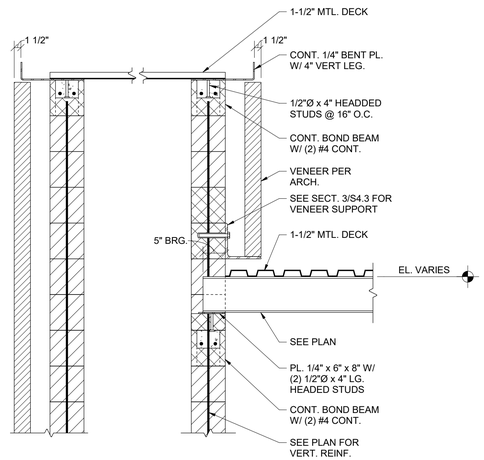
SECTION 8 — 3/4" = 1'-0"



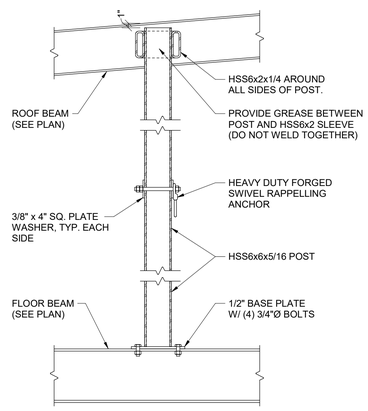
SECTION 9 — 3/4" = 1'-0"



SECTION 10 — 3/4" = 1'-0"



SECTION 11 — 3/4" = 1'-0"



SECTION 12 — 3/4" = 1'-0"

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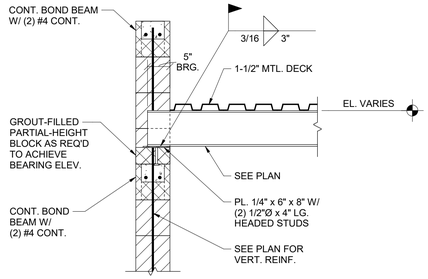
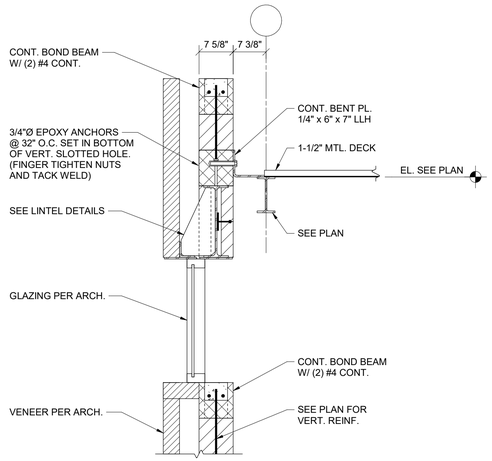
SHEET NO.
S4.6

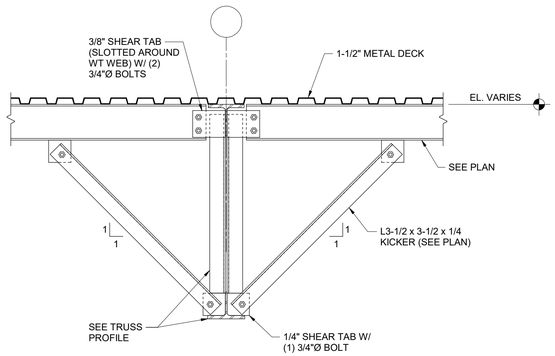
3/22/2022 11:40:38 AM



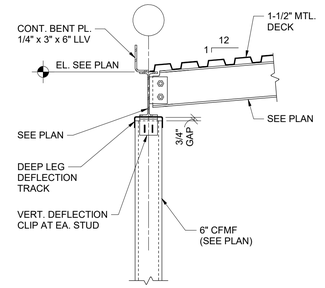
SECTION 1
3/4" = 1'-0"



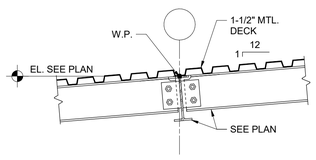
SECTION 2
3/4" = 1'-0"



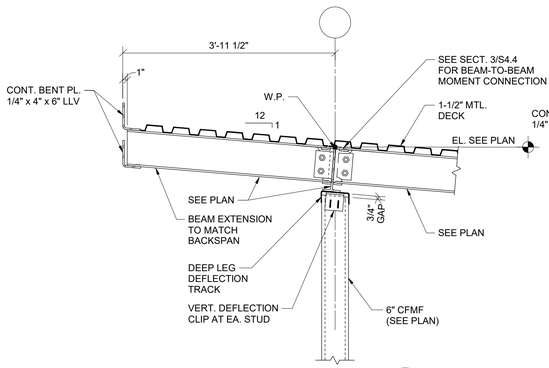
SECTION 3
3/4" = 1'-0"



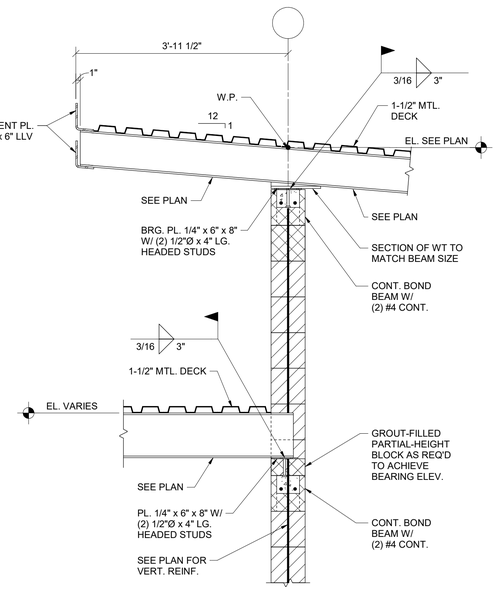
SECTION 4
3/4" = 1'-0"



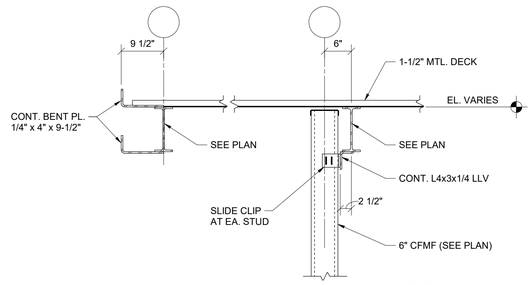
SECTION 5
3/4" = 1'-0"



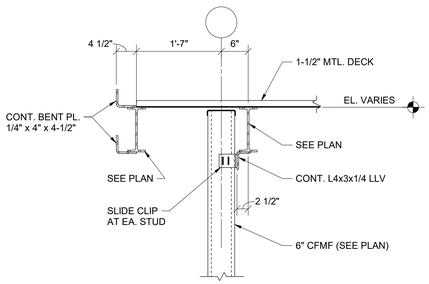
SECTION 6
3/4" = 1'-0"



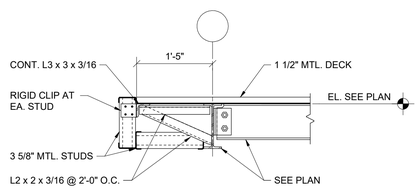
SECTION 7
3/4" = 1'-0"



SECTION 8
3/4" = 1'-0"



SECTION 9
3/4" = 1'-0"



SECTION 10
3/4" = 1'-0"

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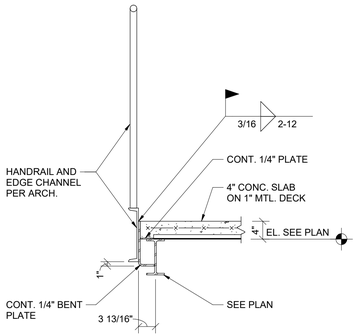
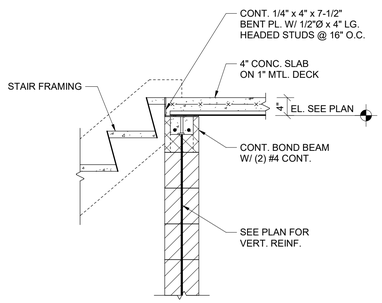


SECTION 1
3/4" = 1'-0"



SECTION 2
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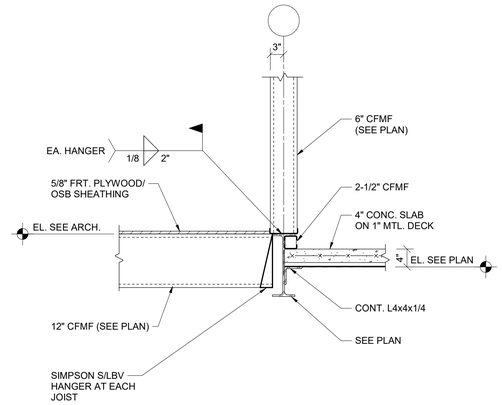
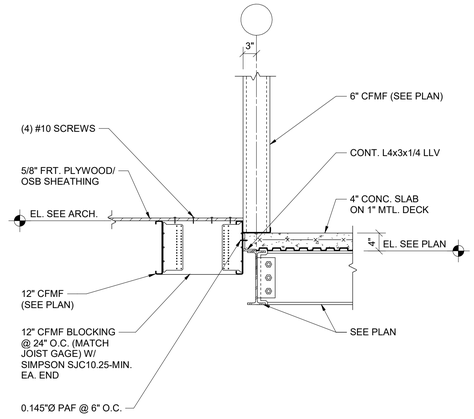
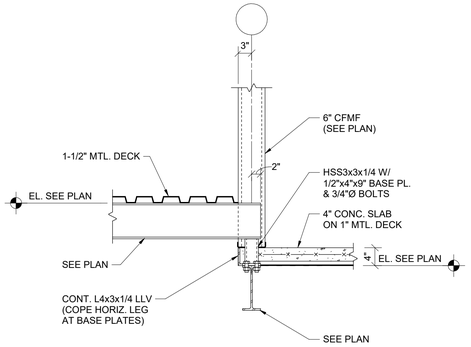


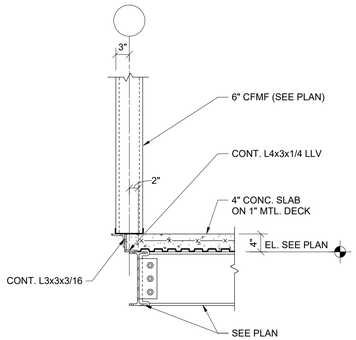
SECTION 3
3/4" = 1'-0"



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



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



SECTION 6
3/4" = 1'-0"

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	03/22/2022	FOR CONSTRUCTION

DATE	03/22/2022
JOB NO.	3952.00
DRAWN	CMS (R22)
CHECKED	SNF

TITLE
FRAMING DETAILS

SHEET NO.
S4.8

3/22/2022 11:40:40 AM

FIRE SUPPRESSION PIPING

GENERAL NOTES:

PIPING SHALL CONFORM TO OBC REQUIREMENTS.

PIPING INSTALLATION AND TESTING SHALL COMPLY WITH NFPA 13 (2016 EDITION).

PROVIDE PIPING SLEEVES AT WALLS IN NEW CONSTRUCTION.

PIPING SHALL BE PITCHED FOR DRAINAGE.

PROVIDE DIELECTRIC FITTINGS FOR TRANSITIONS BETWEEN FERROUS AND NON-FERROUS PIPING SYSTEMS.

CLOSE OPEN ENDS OF PIPING DURING CONSTRUCTION.

PIPE AND TUBING SHALL BE CUT AND FABRICATED TO FIELD MEASUREMENTS AND RUN PARALLEL TO NORMAL BUILDING LINES. PIPE INTERIOR SHALL BE CLEANED OF FOREIGN MATTER AND BURRS BEFORE ERECTION OF PIPE.

PIPING SHALL NOT BE RUN ABOVE ELECTRICAL SWITCHGEAR OR PANELBOARDS, NOR ABOVE THE ACCESS SPACE OF SUCH EQUIPMENT - NEC ARTICLE 384.

PIPING SYSTEM	TYPE
FIRE SERVICE PIPING (UNDERGROUND TO BUILDING)	D1, P1
FIRE SUPPRESSION PIPING	S2, S3
WET PIPE SPRINKLER 2.5" AND LARGER	S1, S2, S3
WET PIPE SPRINKLER 2" AND SMALLER	S2
FINAL CONNECTION TO SPRINKLER HEAD	F1
UNDERGROUND PIPING TO FDC	D1, P1

TYPE	DESCRIPTION	TYPE	DESCRIPTION
S1	**ROLL GROOVED BLACK STEEL** SCHEDULE 10, ASTM A135 OR ASTM A795 MALLEABLE/DUCTILE FITTINGS NITRILE /EPDM GASKETS ASTM A47/A47M OR A536	**P1**	**PVC AWWA C900 CLASS 200 DR18** BELL AND SPIGOT FABRICATED FITTINGS WITH ELASTROMERIC GASKET, UL1285
S2	**THREADED BLACK STEEL** SCHEDULE 40, ASTM A53 OR ASTM A795, 150 LB. MALLEABLE OR C.I. SCREWED FITTINGS	**D1**	**DUCTILE IRON** ANSI A21.51 & AWWA CLASS 53 OR 51 CEMENT LINED 250 LB. FITTINGS MECH JOINT
S3	**ROLL/CUT GROOVED BLACK STEEL** SCHEDULE 40, ASTM A53 OR ASTM A795 MALLEABLE/DUCTILE FITTINGS NITRILE /EPDM GASKETS ASTM A47/A47M OR A536	**F1**	**FLEXIBLE SPRINKLER HOSE FITTING** 36" LENGTH MAXIMUM FULLY STAINLESS STEEL FLEXIBLE HOSE WITH CEILING BRACKET UL 2443 AND FM 1637 175 PSI RATING FOLLOW FM STANDARDS FOR BEND RADIUS AND NUMBER OF BENDS

DESIGN CRITERIA

1. DESIGN AND INSTALLATION OF SERVICE MAIN AND WET PIPE SPRINKLER SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF THE 2017 OHIO BUILDING CODE, N.F.P.A. 13 (2016 EDITION), AND ALL AUTHORITIES HAVING JURISDICTION (AHJ).
2. WORKING PLANS AND HYDRAULIC CALCULATIONS SHALL BE PREPARED, SUBMITTED, AND APPROVED PRIOR TO INSTALLATION, BY THE FIRE SUPPRESSION CONTRACTOR. PLANS SHALL INCLUDE ALL ITEMS LISTED IN N.F.P.A. 13.
3. WATER SUPPLY DATA: THE FIRE SUPPRESSION CONTRACTOR IS RESPONSIBLE FOR CONDUCTING A FLOW TEST TO OBTAIN CURRENT WATER SUPPLY DATA FROM THE NEW WATER DISTRIBUTION SYSTEM FOR USE IN THE HYDRAULIC CALCULATIONS.
4. HYDRAULIC DESIGN CRITERIA FOR LIGHT HAZARD AREAS: (ALL AREAS EXCEPT WHERE NOTED OTHERWISE)
   - DENSITY: 0.10 GPM/SQ.FT.
   - DESIGN AREA: MOST DEMANDING 1500 SQ. FT. (REDUCTION WITH QUICK RESPONSE HEADS PERMITTED)
   - MAX SPRINKLER COVERAGE: 225 SQ. FT./HEAD
   - HOSE DEMAND: 100 GPM
   - DURATION: 30 MINUTES
5. HYDRAULIC DESIGN CRITERIA FOR ORDINARY HAZARD (GROUP 1) AREAS: (STORAGE ROOMS, MECHANICAL ROOMS, JANITOR'S ROOMS, KITCHEN, COMMUNICATION ROOMS)
   - DENSITY: 0.15 GPM/SQ.FT.
   - DESIGN AREA: MOST DEMANDING 1500 SQ. FT.
   - MAX SPRINKLER COVERAGE: 130 SQ. FT./HEAD
   - HOSE DEMAND: 250 GPM
   - DURATION: 60 MINUTES
6. HYDRAULIC DESIGN CRITERIA FOR ORDINARY HAZARD (GROUP 2) AREAS: (APPARATUS BAY)
   - DENSITY: 0.2 GPM/SQ.FT.
   - DESIGN AREA: MOST DEMANDING 1500 SQ. FT.
   - MAX SPRINKLER COVERAGE: 130 SQ. FT./HEAD
   - HOSE DEMAND: 250 GPM
   - DURATION: 60 MINUTES
7. ALL SPRINKLER HEADS SHALL BE QUICK RESPONSE TYPE.
8. SPRINKLER HEADS IN AREAS WITH FINISHED CEILINGS SHALL BE CONCEALED PENDENT TYPE WITH FLAT PLATE AND CUSTOM COLOR TO MATCH THE ADJACENT CEILING COLOR OR FINISH. / WHITE FINISH.
9. SPRINKLER HEADS IN AREAS WITH NO CEILINGS SHALL BE BRASS/ CUSTOM COLOR UPRIGHTS. SIDEWALL SPRINKLER HEADS MAY ALSO BE USED IN STAIRWELLS WHERE PROPER COVERAGE CAN BE PROVIDED.

GENERAL NOTES

A. PROVIDE A COMPLETE SPRINKLER SYSTEM THROUGHOUT THE BUILDING. BUILDING SHALL BE CONSIDERED FULLY SUPPRESSED AT COMPLETION OF PROJECT.

B. ALL FIRE SUPPRESSION EQUIPMENT SHALL BE UL LISTED FOR FIRE SUPPRESSION SERVICE.

C. ALL FIRE SUPPRESSION SYSTEMS (SERVICE MAIN, FIRE DEPT. CONNECTION, SPRINKLER SYSTEM, INSPECTOR TEST, DRAIN, ETC.) SHALL BE HYDROSTATICALLY TESTED AT 200 PSI FOR 2 HOURS WITH NO VISIBLE LEAKAGE. ALL CONCEALED PIPING SHALL BE AIR TESTED, WITH NO LEAKAGE, PRIOR TO FILLING SYSTEM WITH WATER. THE FIRE PROTECTION CONTRACTOR SHALL NOTIFY ALL AUTHORITIES HAVING JURISDICTION 24 HOURS PRIOR TO THE TEST TO ALLOW AHJ TO WITNESS ALL TESTS.

D. ALL VALVES CONTROLLING WATER SUPPLIES SHALL BE PROVIDED WITH TAMPER SWITCHES (SEE NOTE E).

E. THE FIRE SPRINKLER SYSTEM SHALL BE SUPERVISED BY AN APPROVED CENTRAL STATION FIRE ALARM SYSTEM IN ACCORDANCE WITH O.B.C. AND N.F.P.A. 72.

F. THE FIRE SUPPRESSION CONTRACTOR SHALL COORDINATE WIRING OF ELECTRICAL FIRE SUPPRESSION DEVICES AND EQUIPMENT WITH THE ELECTRICAL AND/OR FIRE ALARM CONTRACTOR. ALL FIRE ALARM WIRING BY ELECTRICAL CONTRACTOR. ALL DEVICES SHALL BE FURNISHED AND INSTALLED BY THE FIRE SUPPRESSION CONTRACTOR.

G. THE FIRE SUPPRESSION CONTRACTOR SHALL COORDINATE THE LAYOUT OF THE FIRE SUPPRESSION SYSTEM WITH ALL TRADES PRIOR TO INSTALLATION.

H. THE FIRE SUPPRESSION CONTRACTOR SHALL CENTER (WITHIN 1") ALL CONCEALED SPRINKLER HEADS INSTALLED IN ACOUSTICAL LAY-IN CEILING TILES. ALL PENDENT SPRINKLER HEADS IN CEILINGS SHALL BE SYMMETRICAL WITH LIGHTING AND AIR DEVICES.

I. VERIFY THE LOCATION AND TYPE OF FIRE DEPARTMENT CONNECTION WITH THE FIRE DEPARTMENT.

J. LOCAL SPRINKLER ALARM AND REMOTE ALARM AND SUPERVISION SHALL BE THRU THE FIRE ALARM SYSTEM PROVIDED BY THE E.C.

K. CONCEALED, NONCOMBUSTIBLE ATTIC SPACES DO NOT REQUIRE SPRINKLERS.

L. FINAL APPROVAL IS SUBJECT TO ACCEPTANCE AND TESTING BY ALL AHJ.

GENERAL LEGEND

EC	ELECTRICAL CONTRACTOR.
FC	FIRE SUPPRESSION CONTRACTOR.
GC	GENERAL CONTRACTOR.
HC	HVAC CONTRACTOR.
PC	PLUMBING CONTRACTOR
TC	TEMPERATURE CONTROLS CONTRACTOR
NIC	NOT IN CONTRACT.
AFF	ABOVE FINISHED FLOOR - TO BOTTOM OF ITEM UNLESS INDICATED OTHERWISE IN DRAWING.
(E)	EXISTING.
3	NOTE SYMBOL - APPLIES ONLY TO SHEET ON WHICH IS SHOWN.
2	DETAIL NOTE SYMBOL - APPLIES ONLY TO DETAIL ON WHICH IS SHOWN.
H-1	EQUIPMENT REFERENCE SYMBOL.
123	ROOM NUMBER.
B / H2	DETAIL SYMBOL DETAIL "B" SHOWN ON SHEET H2.
1 / P3.1	SECTION SYMBOL SECTION "1" DESIGNATION, SHOWN ON SHEET H2.1.
	CONNECTION, NEW TO EXISTING.
	ITEM TO BE REMOVED.
	EXISTING TO REMAIN.
	NEW ITEM.

FIRE SUPPRESSION LEGEND

F	FIRE SUPPRESSION PIPING
S	SPRINKLER SYSTEM PIPING
	SHUT-OFF VALVE, SEE SCHEDULE FOR TYPE
	CHECK VALVE
	VALVE ON RISER
	UNION
S	SUPERVISED VALVE
F	FLOW SWITCH
P	PRESSURE GAUGE
	CONNECTION, BOTTOM
	CONNECTION, TOP
	DIRECTION OF FLOW
	CAP

SEISMIC REQUIREMENTS

THIS PROJECT HAS SEISMIC REQUIREMENTS. REFER TO DRAWING H5.1

STORM SHELTER NOTES

PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE LARGER THAN 3 1/2 SQUARE INCHES IN AREA FOR RECTANGULAR OPENINGS OR 2 1/16" IN DIAMETER SHALL BE PROVIDED WITH AN OPENING PROTECTIVE DEVICE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF PROTECTIVE DEVICES.

FIRE SUPPRESSION INDEX OF DRAWINGS

App Architecture
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Fire Station 41

716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
1	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	DEG
CHECKED	JDZ

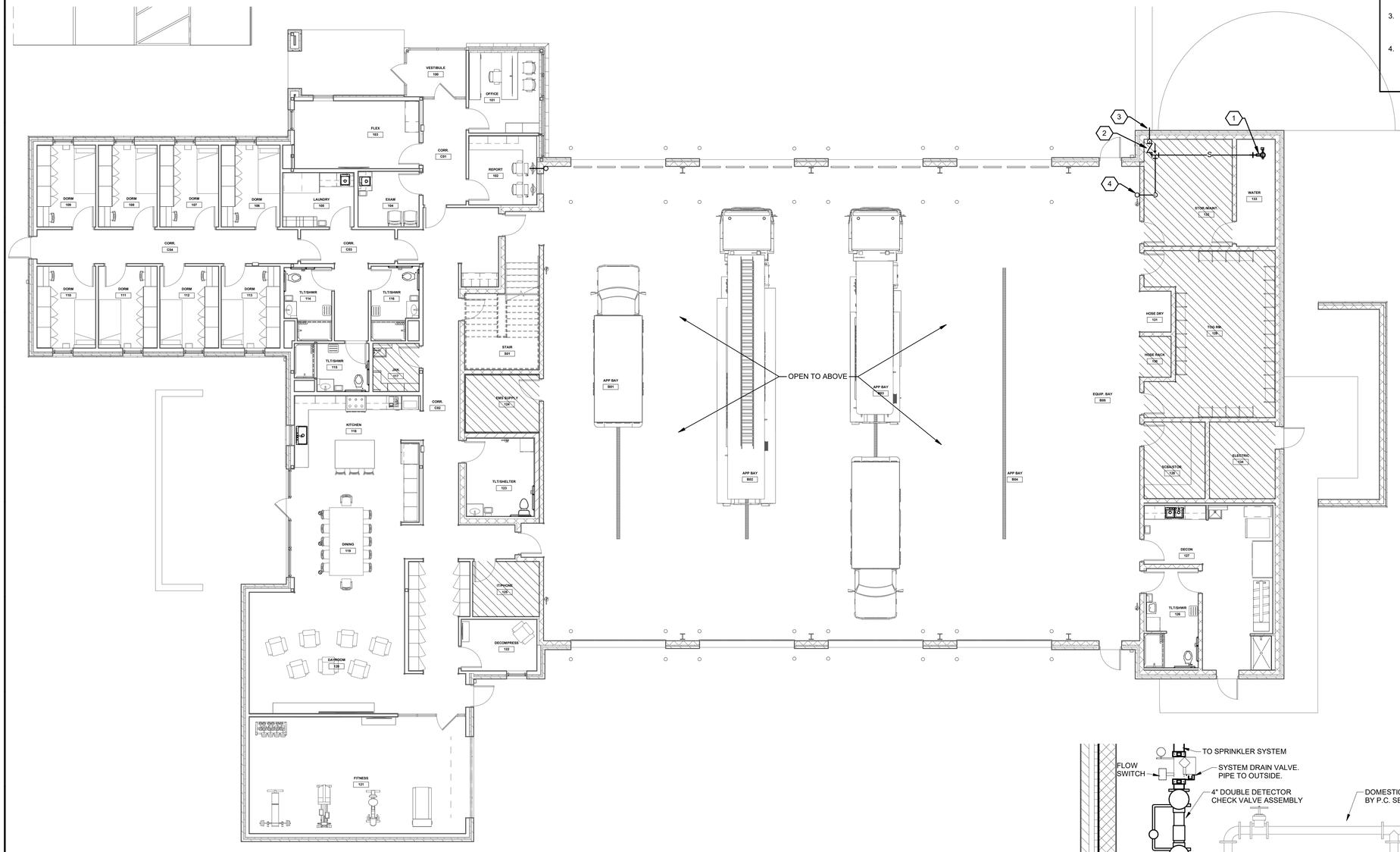
TITLE
LEGENDS AND SCHEDULES

SHEET NO.
F0.1

3/23/2022 12:18:22 PM

CONSTRUCTION NOTES

1. FIRE WATER SERVICE. SEE DETAIL THIS SHEET.
2. CHECK VALVE SERVING FIRE DEPARTMENT CONNECTION.
3. 5" STORTZ CONNECTION APPROX. 30" A.F.F. PROVIDE BALL DRIP ON BOTTOM OF PIPE DROP SERVING STORTZ CONNECTION. PIPE DISCHARGE TO OUTSIDE.
4. SPRINKLER RISER UP TO TOP OF APPARATUS BAY. SEE SHEET F1.2 FOR CONTINUATION. COORDINATE CLOSELY WITH OTHER TRADES.



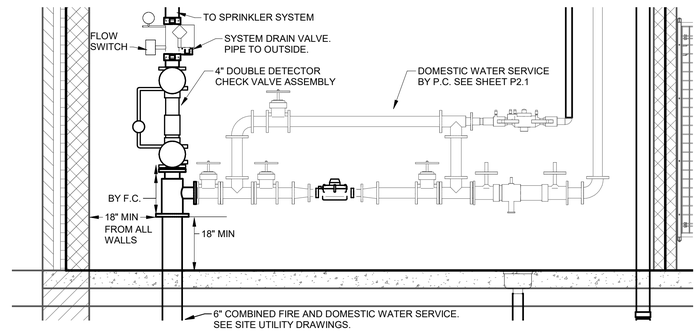
HAZARD CLASSIFICATIONS

NO HATCH	LIGHT HAZARD DENSITY - 0.10GPM/SP MAX AREA PER HAED - 225 SR HOSE ALLOWANCE - 100 GPM
	ORDINARY HAZARD GROUP 1 DENSITY - 0.15GPM/SP MAX AREA PER HAED - 130 SR HOSE ALLOWANCE - 250 GPM
	ORDINARY HAZARD GROUP 2 DENSITY - 0.20GPM/SP MAX AREA PER HAED - 130 SR HOSE ALLOWANCE - 250 GPM

FIRST FLOOR FIRE SUPPRESSION

0 4 8 16 24 32 40

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



FIRE SUPPRESSION WATER SERVICE

0 1 2 4 6 8 10

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

3/23/2022 12:18:25 PM

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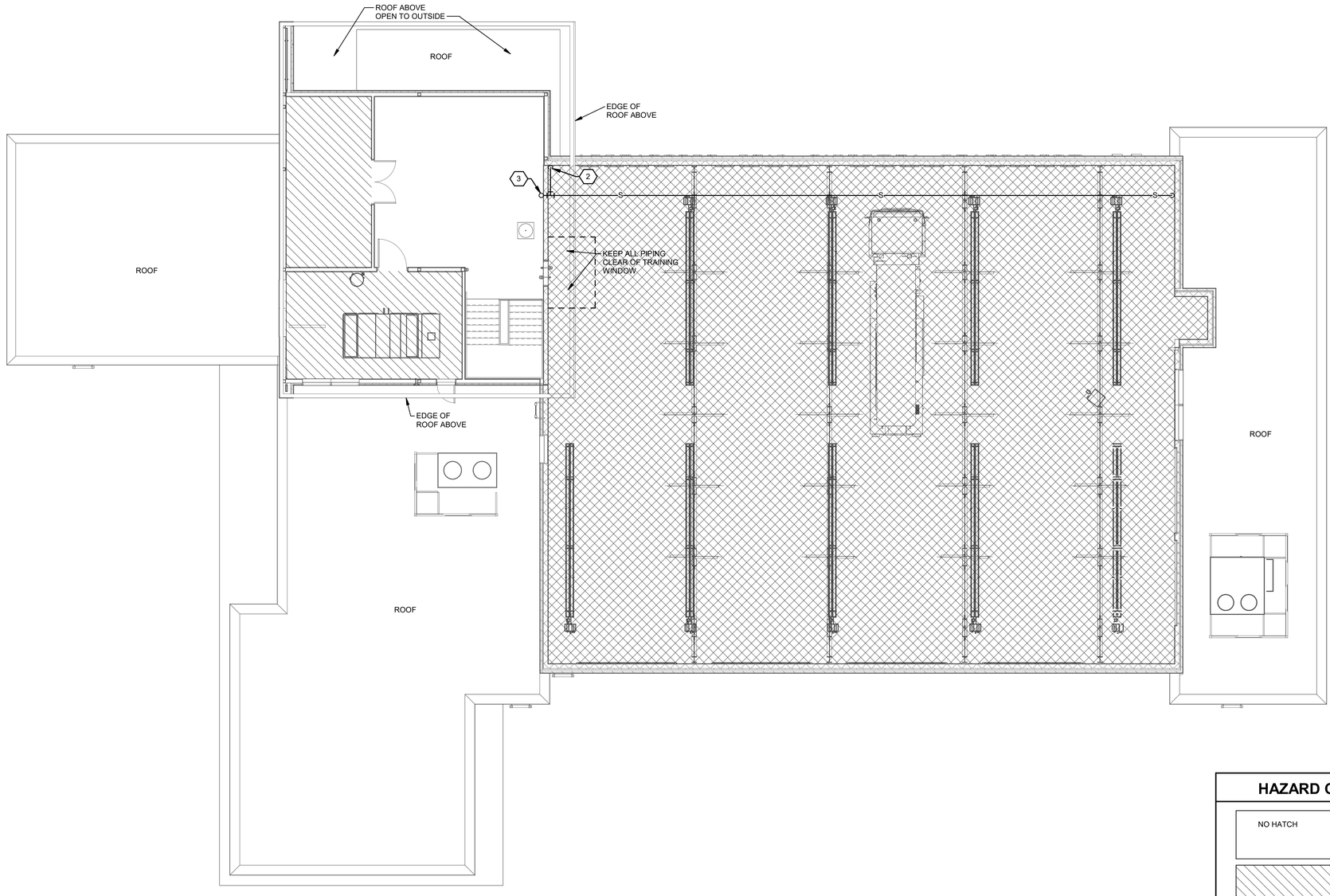
TITLE
FIRST FLOOR PLAN

SHEET NO.
F1.1

CONSTRUCTION NOTES

1. SPRINKLER RISER FROM BELOW. COORDINATE CAREFULLY WITH OTHER TRADES.
2. DROP SPRINKLER PIPING DOWN TO FIRST FLOOR.
3. SPRINKLER PIPING UP TO MEZZANINE STRUCTURE.



UPPER APPARATUS BAY AND MEZZANINE FIRE SUPPRESSION

N

0 4 8 16 24 32 40

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

HAZARD CLASSIFICATIONS

NO HATCH	LIGHT HAZARD DENSITY - 0.10GPM/SP MAX AREA PER HAED - 225 SR HOSE ALLOWANCE - 100 GPM
	ORDINARY HAZARD GROUP 1 DENSITY - 0.15GPM/SP MAX AREA PER HAED - 130 SR HOSE ALLOWANCE - 250 GPM
	ORDINARY HAZARD GROUP 2 DENSITY - 0.20GPM/SP MAX AREA PER HAED - 130 SR HOSE ALLOWANCE - 250 GPM

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CHECKED	JDZ

TITLE
MEZZANINE

SHEET NO.
F1.2

3/23/2022 12:18:28 PM

PLUMBING FIXTURE SCHEDULE

ITEM	FIXTURE DESCRIPTION	FIXTURE	SERVICES				MTG. HGT.	TRIM REQUIREMENTS						NOTES
			H.W.	C.W.	SAN.	VENT		SUPPLY	STOPS	WASTE	TRAP	CARRIERS	ACCESSORIES	
W1	WATER CLOSET/ VIT. CHINA/ FLOOR SET/ MANUAL FLUSH VALVE/ DUAL FLUSH 1.6 /GPF/ ELONGATED BOWL/ 16 1/2" RIM HEIGHT/ 1,000 MG MaP SCORE/ OPEN FRONT SEAT WITH LID...	AM. STANDARD # 3043.001	--	1"	4"	2"	--	SLOAN # WES 111-1.6/1.1	UNIT	UNIT	INTEGRAL	--	SEAT BEMIS # 1950SS	
W2	WATER CLOSET/ VIT. CHINA/ FLOOR SET/ TANK TYPE/ HANDLE ON RIGHT/ 1.6 GPF/ ELONGATED BOWL/ 16 1/2" RIM HEIGHT/ 1,000 MG MaP SCORE/ OPEN FRONT SEAT WITH LID...	AM. STANDARD # 211CA.105	--	1/2"	4"	2"	--	UNIT	MCGUIRE # LFBV2166	UNIT	INTEGRAL	--	SEAT BEMIS # 1950SS	
L1	LAVATORY/ SOLID SURFACE/ INTEGRAL WITH COUNTERTOP/ SINGLE LEVER CAST BRASS FAUCET/ 0.5 GPM/ ACCESSIBLE	BY OTHERS	1/2"	1/2"	1 1/4"	1 1/2"	--	AM. STANDARD # 6114.116	MCGUIRE # LFBV2165	WITH TRAP	MCGUIRE # PW2150WC		POWERS # LFE480	
L2	LAVATORY/ VIT, CHINA/ WALL HUNG/SINGLE LEVER CAST BRASS FAUCET/ 0.5 GPM/ ACCESSIBLE	AM. STANDARD # 0355.012	1/2"	1/2"	1 1/4"	1 1/2"	34" TO RIM	AM. STANDARD # # 6114.116	MCGUIRE # LFBV2165	WITH TRAP	MCGUIRE # PW2150WC	J.R.SMITH # 0710	POWERS # LFE480	
S1	SINK/ UNDERMOUNT/ SINGLE BOWL/ 30 1/2" x16" x 10" DEEP BOWL W BOTTOM GRID/ SINGLE LEVER FAUCET W PULL DOWN SPRAY W COIL/ DISPOSAL	ELKAY # EFRU311610TC	1/2"	1/2"	(2) 1 1/2"	1 1/2"	--	AM. STANDARD # 4332.350	MCGUIRE # LFBV2165	MCGUIRE # 151A	MCGUIRE # 8912 & # 111	--	INSINKERATOR # ESSENTIAL XTR	
S2	SINK/ ST. ST./ INTEGRAL W C'TOP/ DOUBLE BOWL/ SINGLE LEVER FAUCET W PULL DOWN SPRAY W COIL/ BASKET STRAINER/ EMERG. DRENCH HOSE WITH MIXING VALVE	BY OTHERS	(2) 1/2"	(2) 1/2"	(2) 1 1/2"	1 1/2"	--	AM. STANDARD # 4332.350	MCGUIRE # LFBV2165 (2 SETS REQ'D)	MCGUIRE # 151A	MCGUIRE # 8912 & # 111	--	GUARDIAN # G5022-HG & G3600LF	
S3	SINK/ ST.ST./ UNDERMOUNT/ SINGLE BOWL/ GOOSENECK & LEVER HANDLE FAUCET/	ELKAY # ELUH1212	1/2"	1/2"	1 1/2"	1 1/2"	--	AM. STANDARD # 7074.550	MCGUIRE # LFBV2165	MCGUIRE # 151A	MCGUIRE # 8912	--	--	
S4	SINK ST. ST. DROP-IN/ SINGLE BOWL/ SINGLE LEVER FAUCET WITH SIDE SPRAY	ELKAY # LR2219	1/2"	1/2"	1 1/2"	1 1/2"		AM. STANDARD # 7074.040	MCGUIRE # LFBV2165	MCGUIRE # 151A	MCGUIRE # 8912	--	--	
SH1	SHOWER/ STALL BY OTHERS/ TRENCH DRAIN STYLE/ MIXING VALVE WITH FIXED HEAD AND HAND HELD ON SLIDE BAR/ DIVERTER VALVE IN WALL	BY OTHERS	1/2"	1/2"	2"	1 1/2"	VALVE 42" HEAD 86"	POWERS # E710-M-2-N-Y-W	UNIT	UNIT	SAME AS SANITARY PIPING	--	--	
SH2	SHOWER/ STALL BY OTHERS/ CENTER DRAIN STYLE/ MIXING VALVE WITH FIXED HEAD AND HAND HELD ON SLIDE BAR/ DIVERTER VALVE IN WALL	BY OTHERS	1/2"	1/2"	2"	1 1/2"	VALVE 42" HEAD 86"	POWERS # E710-M-2-N-Y-W	UNIT	UNIT	SAME AS SANITARY PIPING	--	--	
M1	MOP SINK/ FLOOR SET/ 24" SQ. 10" DEEP/ MOLDED STONE/ ST. ST. CAPS/ ST.ST. WALL PANELS WALL MOUNTED FAUCET WITH INTEGRAL CHECK STOPS	FIAT # MSB2424	1/2"	1/2"	3"	1 1/2"	36" FAUCET	AM. STANDARD # 8354.112	UNIT	UNIT	SAME AS SANITARY PIPING		FIAT # E-88-AA (2 REQ'D), # MSG2424 (2 REQ'D.)	
WB1	WASHER UTILITY CONNECTION BOX/ 1/4 TURN BALL VALVES WITH WATER HAMMER ARRESTOR	OATEY # 38540	3/4"	3/4"	2"	1 1/2"	30"	UNIT	BALL VALVES ABOVE CEILING	UNIT	SAME AS SANITARY PIPING	--	--	
WB2	ICE MAKER CONNECTION BOX/ 1/4 TURN BALL VALVE/ 6' ST. ST. HOSE	OATEY # 38623	--	1/2"	-	-	24"	UNIT	BALL VALVE ABOVE CEILING	--	--	--	--	

EQUALS
AMERICAN STANDARD CHINA - KOHLER, ZURN, SLOAN
AMERICAN STANDARD FAUCETS - KOHLER, ZURN, CHICAGO
SLOAN FLUSH VALVES - ZURN
ELKAY SINKS - JUST, ADVANCED TABCO
MCGUIRE - WATTS, BRASS CRAFT
MCGUIRE "PROWRAP" - TRUEBRO "LAV GUARD", PLUMBEREX "PROEXTREME"

NOTES:
1.

DRAIN SCHEDULE

TAG	DESCRIPTION	MANUFACTURER MODEL NUMBER	OUTLET SIZE	FEATURES					STRAINER/GRATE							NOTES
				ANCHOR FLANGE	FLASHING CLAMP	UNDERDECK CLAMP	DBU DRAINAGE	SEDIMENT BUCKET	TOP/STRAINER SIZE	FLAT	DOME	OPEN (NO GRATE)	HALF OPEN	ADJUSTABLE	FUNNEL	
FD1	FLOOR DRAIN/ CAST IRON BODY/ NICKEL BRONZE TOP/ ADJUSTABLE	ZURN # ZN415-B7	3"	●			●		7" DIA	●				●	●	
FD2	FLOOR DRAIN/ CAST IRON BODY AND TOP/ MEDIUM DUTY/ LOOSE GRATE	ZURN # Z550	3"	●					9" DIA	●						
FD3	FLOOR DRAIN/ PVC BODY/APPROX 6" DEEP/ HALF TOP PVC FLAT/ FLAT GRATE/ FLAT STRAINER IN BOTTOM/...	SOIUX CHIEF # 8614P26	4"	●					11" SQ.	●			●			
FD4	FLOOR DRAIN/ PVC BODY/ APPROX 6" DEEP/ NO TOP GRATE/FLAT GRATE IN BOTTOM/ MEDIUM DUTY	SOIUX CHIEF # 86134PX6	3"	●					11" SQ.			●				
FD5	FLOOR DRAIN/ CAST IRON BODY AND TOP/ MEDIUM DUTY/ LOOSE GRATE/ OVAL FUNNEL	ZURN # Z550 & # Z329	3"	●					9" DIA.	●					●	
TD1	TRENCH DRAIN/ HDPE CONSTRUCTION/ HEAVY DUTY DUCTILE IRON SLOTTED GRATE	POLY CAST # DG0700AA W/ # DG0675HD GRATE & # DA0642BH LOCK	3"	●					6" WIDE 40± LONG	●						
RD	ROOF DRAIN/ CAST IRON BODY/ POLY DOME/ STATIC EXTENSION/ TOP MOUNT DECK PLATE	ZURN # Z100-E-DP	SIZE AS NOTED		●				12 5/16" DIA. (3", 4") 15 7/8" (6")		●					
SRD	SECONDARY ROOF DRAIN/ CAST IRON BODY/ POLY DOME/ STATIC EXTENSION/ TOP MOUNT DECK PLATE/ 2" EXTERIOR DAM	ZURN # Z100-E-DP-89	SIZE AS NOTED		●				12 5/16" DIA. (3" &, 4") 15 7/8" (6")		●					
RD2	ROOF DRAIN/ SET IN BUILT-IN GUTTER/ CAST IRON BODY/ POLY DOME/ TOP MOUNT DECK PLATE	ZURN # Z125-DP	4"		●				7 1/2" DIA		●					1.
SRD2	ROOF DRAIN/ SET IN BUILT-IN GUTTER/ CAST IRON BODY/ POLY DOME/ 2" EXTERNAL DAM/ TOP MOUNT...	ZURN # Z125-89-DP	4"		●				7 1/2" DIA		●					
SSO	SECONDARY STORM OUTLET/ POWDER COATED ALLUMIN	ZURN # ZF199	SIZE AS NOTED													
FCO	EXTRA HEAVY DUTY CLEANOUT/ FLOOR SET/ NICKEL-BRONZE TOP/ CAST IRON BODY/ MIP THREADED CONNECTION/ ABS PLUG	ZURN # ZN1400-K	SAME AS PIPE UP TO 4"		●					●				●		
DT1	DRAIN TROUGH W/ LINT TRAP/ 48"X18"X12"H/ POLYPROPYLENE/ PVC FILTER/ 4" SIDE INLET/ 4" OUTLET IN FRONT. RECESS FLUSH WITH FLOOR.	H-M COMPANY (513) 281-3832	4" W/ FCO													

NOTES
1. ROOF DECK PLATE WILL NEED TO BE CUT IN ODER TO SET IN GUTTER. SEE DETAIL C3 SHEET A5.02.

GENERAL NOTES - PLUMBING

A. ALL WORK SHALL BE N ACCORDANCE WITH THE 2017 VERSION OF THE OHIO BUILDING AND PLUMBING CODES, INCLUDING REFERENCED CODES AND STANDARDS.

B. OBTAIN A PLUMBING PERMIT AND SECURE INSPECTION AND APPROVAL OF THE CODE OFFICIAL.

C. COORDINATE EACH ROUGH-IN INSTALLATION REQUIREMENTS AND LOCATIONS WITH OTHER TRADES, ACTUAL EQUIPMENT OR CABINETRY PROVIDED AND FIELD CONDITIONS BEFORE PERFORMING WORK.

D. REFER TO ARCHITECTURAL CODE PLANS FOR LOCATIONS OF FIRE WALLS AN SMOKE PARTITIONS.
IN SMOKE PARTITIONS FILL SPACE AROUND PENETRATIONS WITH AN APPROVED MATERIAL TO LIMIT THE FREE PASSAGE OF SMOKE.
IN FIRE WALLS SEAL ALL PENETRATIONS WITH AN APPROVED FIRE STOPPING PRODUCT, SEE SPECIFICATIONS.

E. REFER TO DIAGRAMS, DETAILS, AND SCHEDULES FOR PIPING AND PIPE SIZES NOT SHOWN ON PLAN OR ON DIAGRAMS.

F. ALL PIPING IS ABOVE THE CEILING (AT THE CEILING IN EXPOSED STRUCTURE AREAS) UNLESS OTHERWISE INDICATED ON PLAN.

G. ALL EQUIPMENT AND MATERIAL REQUIRED FOR COMPLETE AND FUNCTIONAL PLUMBING SYSTEMS ARE INCLUDED IN THE CONTRACT. THE WORK SCOPE IN THE PROJECT MANUAL DEFINES THE FINAL CONTRACTUAL RESPONSIBILITY TO PROVIDE SUPPORTING EQUIPMENT, MATERIALS, FINISHING, UTILITY COST, ETC (EXAMPLES: CONCRETE PADS, PAINTING, TEMPORARY ELECTRIC/GAS COSTS) FOR PRECEDENCE OVER OTHER SPECIFICATION SECTIONS OR DRAWING REQUIREMENTS.

PLUMBING INDEX OF DRAWINGS

GENERAL LEGEND

EC	ELECTRICAL CONTRACTOR.
FC	FIRE SUPPRESSION CONTRACTOR.
GC	GENERAL CONTRACTOR.
HC	HVAC CONTRACTOR.
PC	PLUMBING CONTRACTOR
TC	TEMPERATURE CONTROLS CONTRACTOR
NIC	NOT IN CONTRACT.
AFF	ABOVE FINISHED FLOOR - TO BOTTOM OF ITEM UNLESS INDICATED OTHERWISE IN DRAWING.
(E)	EXISTING.
ES	EQUIPMENT SUPPLIER.
3	NOTE SYMBOL - APPLIES ONLY TO SHEET ON WHICH IS SHOWN.
2	DETAIL NOTE SYMBOL - APPLIES ONLY TO DETAIL ON WHICH IS SHOWN.
H-1	EQUIPMENT REFERENCE SYMBOL. ELECTRICAL CONNECTION REQUIRED.
123	ROOM NUMBER.
B / P2	DETAIL SYMBOL DETAIL "B" SHOWN ON SHEET P2.
1 / P3.1	SECTION SYMBOL SECTION "1" DESIGNATION, SHOWN ON SHEET P3.1.
	CONNECTION, NEW TO EXISTING.
FD1	UP TO SYMBOL UP TO "FD1", SHOWN ON FLOOR ABOVE

PLUMBING LEGEND

	SANITARY DRAIN
ST	STORM DRAIN
SST	SECONDARY STORM DRAIN
V	VENT
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
G	NATURAL GAS
A	COMPRESSED AIR
C.O.	CLEAN OUT
	SHUT-OFF VALVE, SEE SCHEDULE FOR TYPE
	CHECK VALVE
	BALANCING VALVE
	VALVE ON RISER
	UNION
R	REGULATOR
P	PRESSURE GAUGE
T	TEMPERATURE GAUGE
	CONNECTION, BOTTOM
	CONNECTION, TOP
	DIRECTION OF FLOW
	CAP
V.R.	VENT RISER
V.T.R.	VENT THRU ROOF
S.S.	SOIL STACK
V.S.	VENT STACK
D.S.	DOWNSPOUT (STORM)
S.D.S.	SECONDARY DOWNSPOUT (STORM)
S.S.O.	SECONDARY STORM OUTLET

SEISMIC REQUIREMENTS

THIS PROJECT HAS SEISMIC REQUIREMENTS. REFER TO DRAWING H5.1

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TITLE
LEGENDS AND SCHEDULES

SHEET NO.
P0.1

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PIPE INSULATION SCHEDULE - PLUMBING

GENERAL NOTES:

QUALITY ASSURANCE
FIRE, SMOKE RATINGS: FLAME SPREAD RATING OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS.

THICKNESSES SHALL CONFORM TO ASHRAE 90.1-2010 MINIMUMS.

GREEN GUARD INDOOR AIR QUALITY CERTIFIED.

EXECUTION
INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

COLD SERVICE PIPE INSULATION AND VAPOR BARRIER/JACKET TO BE CONTINUOUS THRU FLOOR AND WALL SLEEVES AT ALL PIPE DEVICES AND PUMP CASINGS.

INSULATION AND VAPOR BARRIER TO BE CONTINUOUS AT PIPE HANGERS AND SUPPORTS ON HORIZONTAL PIPING. PROVIDE HARDWOOD INSERT SUPPORT FOR PIPES 2.5" AND LARGER.

VERTICAL PIPE SUPPORTS SHALL ATTACH DIRECTLY TO PIPE. INSULATE SUPPORT AND OTHER SURFACES WITH FLEXIBLE CLOSED CELL INSULATION, SAME THICKNESS AS SYSTEM INSULATION ON COLD SERVICE PIPES TO PREVENT CONDENSATION.

INSULATION MAY BE OMITTED ON HOT WATER VALVES AND DEVICES 2" AND SMALLER PIPE SIZE.

PRIMARY AND SECONDARY ROOF DRAIN SUMPS SHALL BE INSULATED WITH 1" THICK INSULATION.

THE FIRST 10 FEET OF SECONDARY STORM PIPING AFTER THE DRAIN SHALL BE INSULATED.

ABOVE GRADE SANITARY DRAINAGE RECEIVING CONDENSATE SHALL BE INSULATED AS INDICATED BELOW FOR CONDENSATE DRAINAGE. WHERE THE DRAIN SUMP IS EXPOSED ON THE FLOOR BELOW, IT TOO SHALL BE INSULATED WITH 1" INSULATION.

SYSTEM & SIZE	INSULATION THICKNESS	TYPE	LOCATION
DOMESTIC COLD WATER 1.5" & SMALLER	0.5"	F1, P1	**INTERIOR**
DOMESTIC COLD WATER 2" & LARGER	1"	F1, P1	**INTERIOR**
DOMESTIC HOT WATER, TEMPERED WATER, & HOT AFTER RETURN 1.25" AND SMALLER	1"	F1, P1	**INTERIOR**
DOMESTIC HOT WATER, TEMPERED WATER, & HOT AFTER RETURN 1.5" AND SMALLER	1.5"	F1, P1	**INTERIOR**
INTERIOR HORIZONTAL STORM DRAINAGE	1"	F1, P1	**INTERIOR**
CONDENSATE DRAINAGE	1"	F1, P1	**INTERIOR**

TYPE	BASIS OF DESIGN	APPROVED EQUALS	DESCRIPTION
F1	OWENS-CORNING SSL1-ASJ	KNAUF 1000° PIPE, JOHNS MANVILLE MICRO-LOK HP	* INORGANIC GLASS FIBER WITH RESIN BONDING. * K=0.24 @ 100 DEG. F. * 3.5 - 5.5 PCF. * PREFORMED TUBULAR. * WHITE FSRK JACKET. * LONGITUDINAL LAP WITH SELF-SEALING ADHESIVE. * ELBOWS, TEES, VALVES, CAPS, ETC., WHITE ONE PIECE, PREMOLDED 25/50 0.20" PVC FITTING COVERS WITH HIGH DENSITY FIBERGLASS INSULATION INSERTS SAME THICKNESS, K=0.26 EQUAL TO ZESTON OR PROTO.
P1	AEROFLEX - AEROCEL EPDM	RUBATEX	* PREFORMED, FLEXIBLE CLOSED CELL EPDM, TUBULAR INSULATION, OR SHEET INSULATION. * K=0.25 @ 75 DEG. F. * CLEAN PIPE SURFACE WITH DENATURED ALCOHOL PRIOR TO INSULATING.

BUILDING SUPPLY SYSTEMS SCHEDULE WATER, COMPRESSED AIR, & GAS

GENERAL NOTES:

QUALITY ASSURANCE
PIPING SHALL CONFORM TO OBC REQUIREMENTS.

PIPING SHALL COMPLY WITH ASME B31.9 "BUILDING SERVICES PIPING".

ALL COMPONENTS OF DOMESTIC WATER SYSTEMS (CW, HW, & HWR) SHALL BE "LEAD FREE" IN ACCORDANCE WITH THE FEDERAL SAFE WATER ACT (S3874) DEFINITION AND CONFORM TO NSF 61.

PRODUCTS
DIELECTRIC CONNECTORS SHALL BE PROVIDED AT CONNECTIONS BETWEEN FERROUS & COPPER PIPING.

GAS PRESSURE REGULATORS SHALL BE CAST IRON SELF-OPERATING SPRING LOADED TYPE. VALVE 125 PSI. SPRING AND DIAPHRAGM CASINGS SHALL BE ALUMINUM. REGULATOR SHALL HAVE AN INTERNAL RELIEF VALVE ASSEMBLY, TAPPED VENT CONNECTION WITH REMOVABLE SCREEN ON THE SPRING CASING AND AN EXTERNAL PILOT OPERATOR TO AFFORD A 5% MAXIMUM DROOP. OVER-PRESSURE PROTECTION SHALL BE TEN TIMES THE INLET PRESSURE (OR HIGHER AS MAY BE REQUIRED BY THE GAS COMPANY). FISHER TYPE S102 OR S202 OR EQUAL BY SPRAGUE OR EQUIMETER.

UNIONS
COPPER TUBING - WROUGHT OR CAST COPPER, CLASS 150, SOLDERED ENDS
THREADED STEEL PIPE - MALLEABLE IRON W/GROUND SEAT, 300 LB SCREWED ENDS.

MECHANICALLY FORMED TEES AND COUPLINGS (T-DRILL) ARE NOT PERMITTED.

EXECUTION
PIPE AND TUBING SHALL BE CUT AND FABRICATED TO FIELD MEASUREMENTS AND RUN PARALLEL TO NORMAL BUILDING LINES. PIPE INTERIOR SHALL BE CLEANED OF FOREIGN MATTER AND BURRS BEFORE ERECTION OF PIPE.

ANNULAR SPACE AROUND PIPING THRU ALL WALLS SHALL BE SEALED OFF WITH PERMANENT PLIABLE CAULKING OR APPROVED PATCHING SEALANT.

PROVIDE PIPING SLEEVES AT FLOORS, WALLS & ROOFS IN NEW CONSTRUCTION. EXISTING WALLS TO BE SAW CUT TO PASS NEW PIPING.

PIPING SHALL NOT BE RUN ABOVE ELECTRICAL SWITCHGEAR OR PANELBOARDS, NOR ABOVE THE ACCESS SPACE OF SUCH EQUIPMENT - NEC ARTICLE 384.

PIPING SHALL BE PITCHED FOR DRAINAGE.

CLOSE OPEN ENDS OF PIPING DURING CONSTRUCTION.

MECHANICAL JOINT PIPING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

GAS PRESSURE REGULATORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROVIDE VALVED GAUGE TAPS UPSTREAM AND DOWNSTREAM OF THE REGULATOR VENT PIPING SHALL BE EXTENDED INDIVIDUALLY FROM EACH REGULATOR AND GAS VENTING DEVICE TO OUTSIDE THE BUILDING IN AN APPROVED LOCATION.

SUPPORT PIPING FROM BUILDING STRUCTURE WITH RODS, ANGLES & CLAMPS ATTACHED TO STRUCTURE. HANG PIPING WITH CLEVIS HANGER OR ROLLER SUPPORTS. HANGERS SHALL BE INSTALLED ON CENTERS AS RECOMMENDED BY MANUFACTURER.

CLEAN INTERIOR WATER PIPING AFTER INSTALLATION BY FLUSHING WITH CLEAN POTABLE WATER TO CLEAR ALL INTERNAL DEBRIS.

ALL DOMESTIC WATER PIPING SHALL BE DISINFECTED IN CONFORMANCE WITH AWWA C651-86. DOMESTIC WATER PIPING SHALL BE SANITIZED PRIOR TO PUTTING SYSTEM IN OPERATION.

EXTERIOR NATURAL GAS PIPING SHALL BE PAINTED WITH 2 COATED OF EXTERIOR GRADE PAINT FOR PROTECTION.

TESTING
DOMESTIC WATER PIPING - 125 PSI FOR MIN. 6 HOURS AT THE LOW POINT IN THE SYSTEM.

COMPRESSED AIR PIPING - 200 PSI FOR 6 HOURS.

NATURAL GAS PIPING - 100 PSI COMPRESSED AIR FOR 6 HOURS.

PIPING SYSTEM	TYPE
DOMESTIC WATER SERVICE PIPING 3" & LARGER	D1
DOMESTIC HOT, COLD AND RECIRCULATING WATER	C1, C4, C5
DOMESTIC COLD WATER BELOW GRADE	C8, PX1
NATURAL GAS AT PRESSURES 5 PSI & LESS	S1, S2
NATURAL GAS AT PRESSURES MORE THAN 5 PSI	S1
MISCELLANEOUS UNDERGROUND NATURAL GAS (OUTSIDE OF BUILDING)	PE1
COMPRESSED AIR 2.5" & SMALLER	S3

TYPE	DESCRIPTION	TYPE	DESCRIPTION
C1	**SOLDERED COPPER** TYPE "L" HARD COPPER ASTM B88 WROUGHT COPPER OR CAST BRONZE FITTINGS 95-5 SOLDER	**S1**	**WELDED BLACK STEEL** SCHEDULE 40, ASTM A53 TYPE E WROUGHT-STEEL WELDING FITTINGS: ASTM A 234/A 234M 150 LB. C.I. FITTINGS
C4	**GROOVED COPPER** TYPE "L" HARD COPPER ASTM B88 COPPER ASTM B75 UNS C12200 FITTINGS VICTAULIC STYLE 607 COUPLING	**S2**	**THREADED BLACK STEEL** SCHEDULE 40, ASTM A53 TYPE F 150 LB. C.I. FITTINGS
C5	**PRESS-FIT COPPER** TYPE "L" HARD COPPER ASTM B88 COPPER OR BRONZE FITTINGS ASTM B16.18 OR B16.22 250 DEG. F. EPDM SEALS	**S3**	**THREADED GALVANIZED STEEL** SCHEDULE 40, ASTM A53 TYPE E OR F CLASS 300 FITTINGS W/ PTFE TAPE ASME B16.3
C8	**TYPE "K" SOFT COPPER** ASTM B88 WROUGHT COPPER OR CAST BRONZE FITTINGS 95-5 SOLDER	**PE1**	**POLYETHYLENE** PE 2306, 2406 TYPE II GRADE 3, PE 3406, 3408 TYPE III, ASTM D2513 HEAT FUSION JOINTS
D1	**DUCTILE IRON** ANSI A21.51 & AWWA CLASS 53 OR 51 250 LB. FITTINGS FLANGED FITTINGS	**PX1**	**PEX TUBING** CROSSLINKED POLYETHYLENE TUBING, SDR 9, ASTM F877 METAL INSERT FITTINGS WITH COPPER OR STEEL CRIMP RING

BUILDING DRAIN SYSTEMS SCHEDULE STORM, SANITARY, & VENT

GENERAL NOTES:

QUALITY ASSURANCE
PIPING SHALL CONFORM TO OBC REQUIREMENTS.

PIPING SHALL COMPLY WITH ASME B31.9 "BUILDING SERVICES PIPING".

INSTALL CAST-IRON SOIL PIPING ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND FITTINGS."

ON PIPING 5" AND LARGER PROVIDE BRACING AT EVERY BRANCH OPENING OR CHANGE IN DIRECTION AS REQUIRED BY CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND FITTINGS."

INSTALL PVC SOIL AND WASTE DRAINAGE AND VENT PIPING ACCORDING TO ASTM D 2665.

PRODUCTS
PVC PIPING SHALL NOT BE USED IN SPACES USED AS PLENUMS.

EXECUTION
PIPE AND TUBING SHALL BE CUT AND FABRICATED TO FIELD MEASUREMENTS AND RUN PARALLEL TO NORMAL BUILDING LINES. PIPE INTERIOR SHALL BE CLEANED OF FOREIGN MATTER AND BURRS BEFORE ERECTION OF PIPE.

ANNULAR SPACE AROUND PIPING THRU ALL WALLS SHALL BE SEALED OFF WITH PERMANENT PLIABLE CAULKING OR APPROVED PATCHING SEALANT.

PROVIDE PIPING SLEEVES AT FLOORS, WALLS & ROOFS IN NEW CONSTRUCTION. EXISTING WALLS TO BE SAW CUT TO PASS NEW PIPING.

PIPING SHALL NOT BE RUN ABOVE ELECTRICAL SWITCHGEAR OR PANELBOARDS, NOR ABOVE THE ACCESS SPACE OF SUCH EQUIPMENT - NEC ARTICLE 384.

LAY BURIED BUILDING DRAINAGE PIPING BEGINNING AT LOW POINT OF EACH SYSTEM. INSTALL TRUE TO GRADES AND ALIGNMENT INDICATED, WITH UNBROKEN CONTINUITY OF INVERT.

SUPPORT PIPING FROM BUILDING STRUCTURE WITH RODS, ANGLES & CLAMPS ATTACHED TO STRUCTURE. HANG PIPING WITH CLEVIS HANGER OR ROLLER SUPPORTS. HANGERS SHALL BE INSTALLED ON CENTERS AS RECOMMENDED BY MANUFACTURER.

SLOPE DRAINAGE PIPING AT 1/4" PER FOOT (2%) FOR PIPING SMALLER THAN 3" AND 1/8" PER FOOT (1%) FOR PIPING 3" AND LARGER.

VENT PIPING SHALL BE PITCHED FOR DRAINAGE.

CLOSE OPEN ENDS OF PIPING DURING CONSTRUCTION.

COUPLINGS AND GASKETS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

MAKE CHANGES IN DIRECTION FOR SOIL AND WASTE DRAINAGE AND VENT PIPING USING APPROPRIATE BRANCHES, BENDS, AND LONG-SWEEP BENDS. SANITARY TEES AND SHORT-SWEEP 1/4 BENDS MAY BE USED ON VERTICAL STACKS IF CHANGE IN DIRECTION OF FLOW IS FROM HORIZONTAL TO VERTICAL.

DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

TESTING
PIPING SHALL BE TESTED IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.

PIPING SYSTEM	TYPE
SANITARY PIPING BELOW FLOOR SLAB IN GRADE	P1
SANITARY & VENT PIPING ABOVE THE FLOOR	P1, CI1, CI2
STORM DRAINAGE BELOW THE FLOOR IN SLAB	P1
STORM DRAINAGE ABOVE FLOOR	P1, CI1, CI2
INDIRECT DRAINS/CONDENSATE DRAIN LINES 1" & SMALLER	C1, C5, C8

TYPE	DESCRIPTION	TYPE	DESCRIPTION
CI1	**NO-HUB CAST IRON (STD)** SERVICE WEIGHT ASTM A888 OR CISPI 301 SHIELDED COUPLINGS ASTM C1277 OR CISPI 310 RUBBER SLEEVE ASTM C564	**C1**	**SOLDERED COPPER** TYPE "L" HARD COPPER ASTM B88 WROUGHT COPPER OR CAST BRONZE FITTINGS 95-5 SOLDER
CI2	**HUB & SPIGOT CAST IRON** ASTM A74, SERVICE CLASS DWV FITTING RUBBER GASKET ASTM C564	**C5**	**PRESS-FIT COPPER** TYPE "L" HARD COPPER ASTM B88 COPPER OR BRONZE FITTINGS ASTM B16.18 OR B16.22 250 DEG. F. EPDM SEALS
P1	**PVC** SCHEDULE 40 PVC ASTM D2665 AND D2321 DWV FITTINGS, ASTM D3311 GLUED JOINTS	**C8**	**TYPE "K" SOFT COPPER** ASTM B88 WROUGHT COPPER OR CAST BRONZE FITTINGS 95-5 SOLDER

GENERAL REQUIREMENTS

1. PROVIDE COMPLETE AND FUNCTIONAL PLUMBING SYSTEMS PER PLANS INCLUDING FURNISHING, INSTALLING, TESTING AND WARRANTY OF ALL WORK.
2. WORK SHALL BE IN ACCORDANCE WITH THE 2017 OHIO BUILDING AND OHIO PLUMBING CODES INCLUDING REFERENCED CODES AND STANDARDS, ALL FEDERAL AND LOCAL CODES AND ALL APPLICABLE LAWS, ORDINANCES AND REGULATIONS.
3. WORK SHALL BE PERFORMED USING BEST QUALITY INSTALLATION PRACTICE BY A QUALIFIED TRADE CONTRACTOR AND THEIR QUALIFIED SUBCONTRACTORS. ALL CONTRACTORS SHALL BE LICENSED AND BE BONDED FOR THE WORK.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND OWNER SAFETY STANDARDS AND PRACTICES. ALL ON SITE PERSONNEL SHALL BE SAFETY TRAINED AND OWNER CERTIFIED.
5. OBTAIN REQUIRED PERMITS RELATED TO THE WORK AND PAY ALL PERMIT AND INSPECTION FEES.
6. THE AUTHORITY HAVING JURISDICTION SHALL INSPECT AND APPROVE ALL WORK. PROVIDE A FINAL CERTIFICATE OF APPROVAL FROM THE AUTHORITY HAVING JURISDICTION AND PRESENT TO THE OWNER BEFORE REQUESTING FINAL PAYMENT AND RELEASE OF RETAINAGE.
7. PROTECT ALL FURNISHED MATERIAL AND EQUIPMENT FROM THEFT AND DETERIORATION OR CONTAMINATION DUE TO WEATHER OR CONSTRUCTION ACTIVITIES.
8. PROTECT OWNER'S PROPERTY AND PROPERTY OF OTHER CONTRACTORS.
9. REMOVE ALL CONSTRUCTION DEBRIS FROM SITE. RECYCLE DEBRIS WHERE POSSIBLE. DISPOSE OF ALL HAZARDOUS MATERIAL IN ACCORDANCE WITH ENVIRONMENTAL LAWS.
10. PROVIDE ALL CUTTING AND PATCHING REQUIRED TO INSTALL MATERIAL AND EQUIPMENT.
11. PROVIDE APPROPRIATE FIRESTOPPING SYSTEM FOR ANNULAR SPACE OPENINGS AROUND PIPE PENETRATIONS THROUGH FIRE RESISTANCE RATED CONSTRUCTION. ANNULAR SPACE OPENINGS AT PIPE PENETRATIONS IN NON RATED CONSTRUCTION TO BE CLOSED AIR AND WATER TIGHT.
12. MATERIALS AND EQUIPMENT SHALL BE ONE OF THE BRAND OR MANUFACTURERS LISTED OR AN APPROVED EQUAL.
13. ELECTRONIC SHOP DRAWINGS SHALL BE PROVIDED IN .PDF FORMAT FOR THE ENGINEER'S APPROVAL FOR ALL MATERIALS AND EQUIPMENT. SHOP DRAWINGS SHALL BE SPECIFICALLY EDITED TO ELIMINATE SUPERFLUOUS INFORMATION AND SHALL CLEARLY SHOW SPECIFICS FOR THE MATERIAL AND EQUIPMENT PROVIDED.
14. COORDINATE INSTALLATION OF ACTUAL EQUIPMENT AND SYSTEMS PROVIDED WITH OTHER TRADES AND NEW OR EXISTING CONDITIONS.
15. PROJECT CONDITIONS REQUIRE COORDINATION TO MAKE SYSTEMS FIT IN THE AVAILABLE SPACE. HVAC CONTRACTOR SHALL PROVIDE AN INITIAL ¼" =1'0" SET OF DRAWINGS AND DISTRIBUTED TO OTHER TRADE CONTRACTORS FOR COORDINATION. ALL CONTRACTORS SHALL COOPERATE TO MODIFY THEIR RESPECTIVE MATERIAL AND EQUIPMENT INSTALLATION AND DEPICT ON A DETAILED, FINISHED COORDINATION SET OF DRAWINGS BEFORE INSTALLATION. ALLOW FOR EXPECTED MINOR OFFSETS OR RELOCATION SYSTEM OR EQUIPMENT WITHOUT REQUEST FOR COMPENSATION ADJUSTMENT.
16. PROVIDE FINAL COORDINATION/INSTALLATION DRAWINGS TO THE OWNER IN BOUND PAPER AS WELL AS ELECTRONIC FORMAT FOR RECORD.
17. INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
18. INSTALL ALL MATERIAL AND EQUIPMENT TO PROVIDE REQUIRED CLEARANCES TO MEET CODE REQUIREMENTS, MANUFACTURER'S RECOMMENDATIONS AND MAINTENANCE SERVICE.
19. ALL WORK AREAS SHALL BE CLEANED TO MATCH ORIGINAL CONDITION.
20. MAINTAIN RECORD DRAWINGS AND PROVIDE TO THE OWNER OR HIS AGENT.
21. PROVIDE TWO (2) BOUND, PAPER COPIES OF ALL OPERATING AND MAINTENANCE MANUALS. PROVIDE AN ELECTRONIC COPY OF THE OPERATING AND MAINTENANCE MANUAL.
22. PROVIDE WARRANTY FOR ALL WORKMANSHIP, EQUIPMENT AND MATERIAL. WARRANTY SHALL BE 1 YEAR FOR PARTS AND LABOR, PROVIDE EXTENDED WARRANTY PERIOD FOR PARTS AND/OR LABOR AS IDENTIFIED OR AS STANDARD FOR CERTAIN ITEMS OF EQUIPMENT.
23. PROVIDE TRAINING AND MAINTENANCE INSTRUCTION FOR SYSTEMS AND EQUIPMENT TO THE OWNER.

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TITLE
MATERIAL SCHEDULES

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PIPE HANGER SCHEDULE - PLUMBING

GENERAL NOTES FOR PIPE HANGERS:

DESIGN SUPPORTS FOR MULTIPLE PIPES CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, SYSTEM CONTENTS, AND TEST WATER.

DESIGN SEISMIC-RESTRAINT HANGERS AND SUPPORTS FOR PIPING AND OBTAIN APPROVAL FROM AUTHORITIES HAVING JURISDICTION.

WELDING: QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO ASME BOILER AND PRESSURE VESSEL CODE: SECTION IX.

ATTACHMENT OF PIPE HANGER RODS TO THE STRUCTURE SHALL BE WITH:
1. PRE-SET CONCRETE INSERTS.
2. AFTER-SET STEEL EXPANSION TYPE CONCRETE INSERTS.
3. BEAM CLAMPS FOR STEEL CONSTRUCTION EQUAL TO ANVIL FIG. 92, 93, OR 94. UTILIZE SWIVEL TYPE IN SLOPED STEEL CONSTRUCTION TO PROVIDE VERTICAL SUPPORT OF PIPE WITHOUT BENDING HANGER RODS.
4. SIDE BEAM BRACKET FOR WOOD CONSTRUCTION EQUAL TO ANVIL FIG. 206.
5. CHANNEL SUPPORT SYSTEM EQUAL TO UNISTRUT OR HILTI.

ATTACHMENT TO MANUFACTURED TRUSSES AND OTHER ENGINEERED STRUCTURAL MEMBERS AND SUPPORTS SHALL BE DONE IN ACCORDANCE WITH THE STRUCTURAL MANUFACTURER'S RECOMMENDATIONS. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR TYPE OF ENGINEERED STRUCTURAL SYSTEMS BEING USED. CONNECTIONS TO THESE STRUCTURAL MEMBERS SHALL BE MADE WITH CONNECTION DEVICES AND METHODS APPROVED BY THE STRUCTURAL MANUFACTURER. PROVIDE ADDITIONAL SUPPORTS WITH SUPPLEMENTAL STEEL SHAPES WHEN SPACING BETWEEN STRUCTURAL MEMBERS EXCEEDS SPECIFIED DISTANCES.

ADJUST PIPE HANGERS TO PROPER ELEVATION AND SET HANGER RODS IN A VERTICAL POSITION BEFORE PIPE INSULATION IS INSTALLED.

THE FIRST TWO HANGERS ON PIPING CONNECTING TO MOTOR DRIVEN EQUIPMENT SHALL BE FITTED WITH A STEEL SPRING AND NEOPRENE VIBRATION ISOLATION SECTION SIMILAR TO MASON INDUSTRIES, NO. 30N.

TRAPEZE HANGERS FOR NUMEROUS PIPES RUN IN PARALLEL MAY BE UTILIZED. HORIZONTAL SUPPORT MEMBERS SHALL BE UNISTRUT TYPE SECTION WITH PIPE ROLLERS (TO ALLOW FOR EXPANSION TRAVEL) AND SPRING AND NUT CONNECTORS, SUSPENDED WITH HANGER RODS AND ATTACHMENTS SIMILAR TO INDIVIDUAL PIPE HANGER SUSPENSION.

SHORTENED EXTENDED LEGS OF PIPE RISER CLAMPS AS NEEDED TO MAINTAIN CONCEALMENT OF THE CLAMP WITHIN THE PIPE CHASE. INSURE THAT ADEQUATE SUPPORT IS STILL MAINTAINED.

HANGER ASSEMBLIES EXPOSED ON COMPLETION OF THE PROJECT SHALL BE PAINTED BEFORE INSTALLATION.

PIPE SUPPORTS FOR PIPE RUNNING ACROSS THE ROOF SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND AS DETAILED. INSTALL PROTECTIVE SLIP SHEETS OF ROOFING MEMBRANE UNDER THE BASES TO SATISFY REQUIREMENTS OF BOTH THE ROOFING MANUFACTURER AND THE SUPPORT SYSTEM MANUFACTURER.

IN PIPING SYSTEMS WITH MECHANICAL JOINT COUPLINGS, PIPE HANGERS SHALL BE PROVIDED ON HORIZONTAL PIPING AT NORMAL SPECIFIED INTERVALS AND, IN ADDITION, SO THAT NO PIPE SHALL BE LEFT UNSUPPORTED BETWEEN ANY TWO COUPLINGS NOR LEFT UNSUPPORTED WHENEVER A CHANGE IN DIRECTION TAKES PLACE. VERTICAL PIPING SHALL BE SUPPORTED AT NORMAL SPECIFIED INTERVALS OR EVERY OTHER PIPE LENGTH, WHICH EVER IS MORE FREQUENT. THE BASE OF THE RISER OR BASE FITTING SHALL BE SUPPORTED.

SYSTEM & SIZE	ORIENTATION & SIZE	SPACING
STEEL PIPING	VERTICAL	AT BASE AND 15FT MAXIMUM
	HORIZONTAL 2" & SMALLER	8 FT.
	HORIZONTAL 2.5" - 6"	10 FT.
	HORIZONTAL 8" & LARGER	12 FT.
CAST IRON	VERTICAL	AT BASE AND 15FT MAXIMUM
	HORIZONTAL	AT 10 FT. INTERVALS. SUPPORT EACH LENGTH OF PIPE NOT MORE THAN 18" FROM THE JOINT. SUPPORT TERMINAL ENDS OF HORIZONTAL RUNS AND BRANCHES AND EACH CHANGE IN DIRECTION. 5" AND LARGER PROVIDE BRACING TO PREVENT HORIZONTAL MOVEMENT IN ACCORDANCE WITH CISPI "SOIL PIPE AND FITTINGS HANDBOOK"
COPPER TUBING	VERTICAL	AT BASE AND 15FT MAXIMUM
	HORIZONTAL 1.25" & SMALLER	6 FT.
	HORIZONTAL 1.5" - 2"	8 FT.
	HORIZONTAL 2.5" & LARGER	10 FT.
PLASTIC PIPING	VERTICAL	PER MANUFACTURER'S RECOMMENDATION
	HORIZONTAL	PER MANUFACTURER'S RECOMMENDATION

VALVE SCHEDULE

GENERAL NOTES FOR VALVES:

QUALITY ASSURANCE
VALVES SHALL COMPLY WITH ANSI, ASTM AND ASME.

VALVES ON DOMESTIC WATER SYSTEMS SHALL BE "LEAD FREE" IN ACCORDANCE WITH THE FEDERAL SAFE WATER ACT (S3874) DEFINITION AND CONFORM TO NSF 61.

GROOVED END VALVES SHALL CONFORM TO ANSI/AWWA C-606.

PRODUCTS
WORKING PRESSURES SHALL EXCEED THOSE IMPOSED BY THE SERVICE APPLIED.

VALVES WHICH ARE INSULATED SHALL HAVE EXTENDED SHAFTS.

PROVIDE FLOW MEASURING GAUGES WITH COCKS, HOSES & CONNECTORS FOR BALANCING VALVES. PROVIDE METERING TOOL.

PROVIDE HOSE ADAPTORS ON DRAIN VALVES.

SWEAT END VALVES OF EQUAL CONSTRUCTION ARE ACCEPTABLE IN LIEU OF SCREWED ENDS.

IN MECHANICALLY JOINED SYSTEMS, VALVES OF EQUAL CONSTRUCTION WITH COMPATIBLE ENDS ARE ACCEPTABLE AND MAY BE MANUFACTURED BY THE COUPLING MANUFACTURER.

VALVE MANUFACTURERS:
BALL VALVES - NIBCO, WATTS, MILWAUKEE, APOLLO, CONBRACO, CRANE.
BALANCING VALVES - BELL & GOSSETT, ARMSTRONG, WATTS, CALEEFFI.
CHECK VALVES - NIBCO, STOCKHAM, WATTS.

EXECUTION
VALVES SHALL BE INSTALLED WITH STEM ABOVE CENTERLINE OF PIPE.

PIPING SYSTEM	VALVE TYPE					
	BUTTERFLY	BALL	CHECK	GATE	BALANCING	LUB. PLUG
DOMESTIC WATER SERVICE 2" AND LARGER				D18		
DOMESTIC WATER (CW, HW, & HWR) 2" AND SMALLER		B11, B14	C11, C13		E11	
DOMESTIC WATER (CW, HW, & HWR) 2.5" AND LARGER		B14	C12, C14 C16			
COMPRESSED AIR (150 PSI AND LESS) 2" AND SMALLER		B15				
COMPRESSED AIR (150 PSI AND LESS) 2.5" AND LARGER		B16				
INTERIOR NATURAL GAS 4" AND SMALLER		B17				
INTERIOR NATURAL GAS 4" AND LARGER						P11
EXTERIOR NATURAL GAS 3" AND SMALLER		B18				P11

TYPE	DESCRIPTION	TYPE	DESCRIPTION	TYPE	DESCRIPTION
B11	NIBCO T-585-80-LF, 150 W.S.P., TWO-PIECE BRONZE BODY, SCREWED ENDS, BRONZE BALL AND BRONZE STEM, TFE SEAT AND SEAL, HANDLE. NSF/ASME 61	**B17**	NIBCO T-FP-600A, 600 PSI NON-SHOCK COLD., 2 PIECE, BRASS BODY, SCREWED ENDS, FULL PORT, BRASS BALL, TFE SEAT, HANDLE. UL LISTED FOR GAS. ASME B16.44	**C14**	NIBCO F-910-LF 125 W.O.G., IN-LINE SPRING ACTUATED CENTER GUIDED SILENT CHECK, GLOBE STYLE, IRON BODY FOR INSTALLATION BETWEEN FLANGES, BRONZE SEAT AND DISC. NSF/ASME 61
B14	APOLLO 70LF-240, 150 WSP TWO-PIECE, LEAD-FREE BRONZE BODY, 316 STAINLESS STEEL BALL AND STEM, STANDARD PORT, TEFLON SEAT AND SEAL, HANDLE, NSF/ASME 61	**B18**	NIBCO T-585(OR 580)-70-UL, 600 PSI NON-SHOCK COLD, 2 PIECE, BRONZE BODY, SCREWED ENDS, FULL PORT, BRASS BALL, TFE SEAT, HANDLE. UL LISTED FOR GAS. ASME B16.33	**C16**	WATTS SERIES LFWCV, 125 W.S.P. BRONZE BODY, SCREWED ENDS, BRONZE SWING DISC, NSF/ASME 61
B15	NIBCO T-580-CS-R-66 1500 W.O.G., TWO-PIECE CARBON STEEL BODY, SCREWED ENDS, STAINLESS STEEL BALL AND STEM, TFE SEAT AND SEAL, HANDLE.	**C11**	NIBCO T-413-Y-LF, 125 W.S.P., BRONZE BODY, SCREWED ENDS, RENEWABLE BRONZE SWING DISC WITH TFE SEAT RING. NSF 61	**D18**	KENNEDY KS-FW 8068A, 200 PSI, NSF 61 EPOXY COATED CAST IRON BODY, RESILIENT WEDGE, O.S.& Y., FLANGED ENDS
B15	NIBCO T-580-CS-R-66 1500 W.O.G., TWO-PIECE CARBON STEEL BODY, SCREWED ENDS, STAINLESS STEEL BALL AND STEM, TFE SEAT AND SEAL, HANDLE.	**C12**	NIBCO T-938-33, 250 PSI WORKING WATER PRESSURE., DUCTILE IRON BODY, STAINLESS STEEL TRIM, FLANGED ENDS, RENEWABLE STAINLESS STEEL SWING DISC AND SEAT RING. NSF/ANSI 61-8	**E11**	BELL & GOSSETT CB-1LF 400 PSI, BRONZE BODY WITH BRASS BALL, SCREW CONNECTION, READOUT & DRAIN PORTS, TFE SEATS, CALIBRATED NAMEPLATE, HANDLE WITH MEMORY STOP, NSF/ASME 61
B16	NIBCO T-515-CS-F-66, 285 W.S.P., SPLIT CARBON STEEL BODY, FLANGED ENDS, STAINLESS STEEL BALL AND STEM, PTFE SEAT AND SEAL, HANDLE.	**C13**	NIBCO T-480-Y-LF, 125 W.S.P., IN-LINE SPRING ACTUATED CENTER GUIDED SILENT CHECK,BRONZE BODY, SCREWED ENDS, TFE DISC AND SEAT RING, NSF/ASME 61	**P11**	NORDSTROM NO. 143, 200 PSI, IRON BODY, ST. ST. STEM, FLANGED ENDS, WRENCH

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NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
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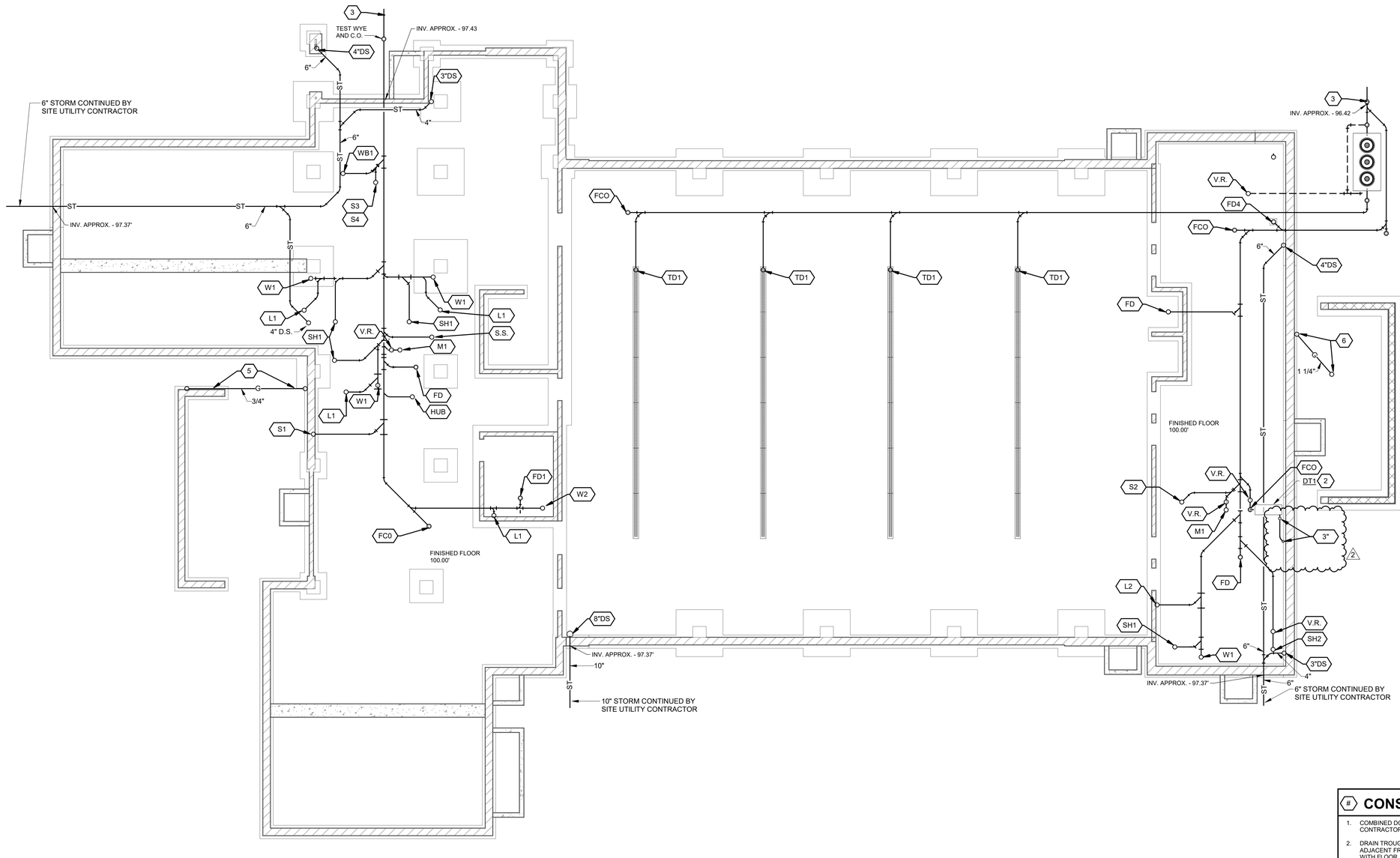
CHECKED	JDZ

TITLE
MATERIAL SCHEDULES

SHEET NO.
P0.3

5/12/2022 9:05:06 AM



UNDER FLOOR PLUMBING PLAN

N

0 4 8 16 24 32 40

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

CONSTRUCTION NOTES

1. COMBINED DOMESTIC AND FIRE WATER SERVICE BY SITE UTILITY CONTRACTOR.
2. DRAIN TROUGH DT1. PIPE ADJACENT COMMERCIAL WASHER AND ADJACENT FRONT LOAD WASHER TO SIDE INLET. RECESS FLUSH WITH FLOOR.
3. 4" SANITARY CONTINUED BY SITE UTILITY CONTRACTOR.
4. OIL INTERCEPTOR. SEE DETAIL SHEET P3.2.
5. 3/4" NATURAL GAS TO GRILL. PROVIDE ANODELESS RISER AT EITHER END.
6. 1 1/4" NATURAL GAS TO GENERATOR. PROVIDE ANODELESS RISER AT EITHER END.

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2	04/22/22	ADDENDUM No. 2

DATE	3/22/2022
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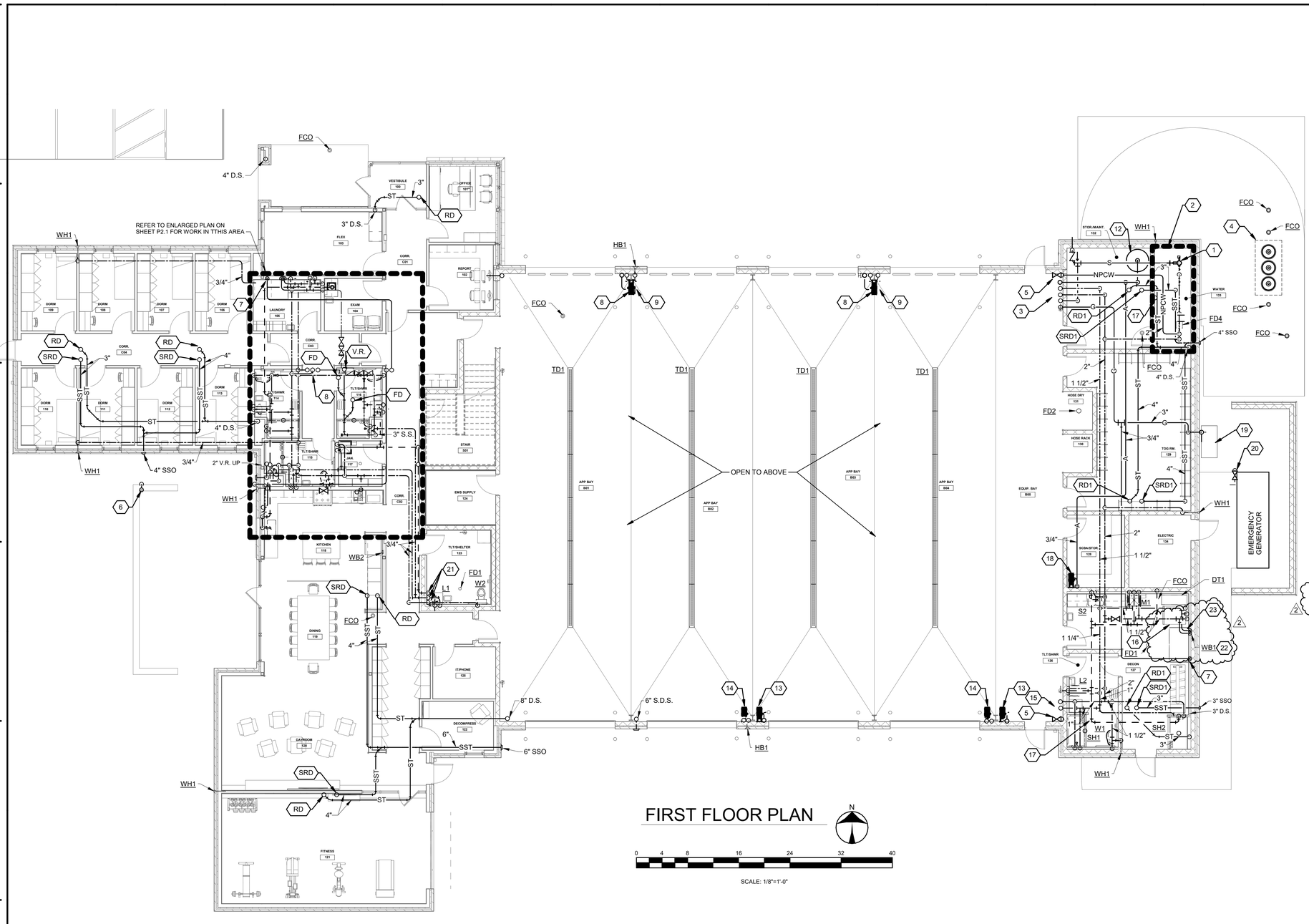
TITLE
UNDERFLOOR PIPING

SHEET NO.
P1.0F

5/12/2022 9:09:59 AM



FIRST FLOOR PLAN

N

0 4 8 16 24 32 40

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

CONSTRUCTION NOTES

1. 6" COMBINED WATER SERVICE BY FIRE SUPPRESSION CONTRACTOR.
2. REFER TO ENLARGED WATER SERVICE PLAN AND ELEVATION ON SHEET P2.1 FOR ADDITIONAL WORK IN THIS AREA
3. RISERS UP TO APPARATUS BAY STRUCTURE 2" NON-POTABLE WATER (UP AND DOWN), 1" COMPRESSED AIR, 1 1/2" DOMESTIC HOT WATER, 3" DOMESTIC COLD WATER, 4" SPRINKLER (BY F.S.C.), AND 3" GAS. SEE SHEET P2.1 FOR CONTINUATION.
4. OIL INTERCEPTOR BELOW GRADE. SEE UNDERFLOOR PIPING PLAN SHEET P1.0 AND DETAIL SHEET P3.2
5. 2" NON-POTABLE VALVE WITH 2" NTS THREADED OUTLET. MOUNT APPROX 36" A.F.F.
6. GAS SUPPLY BOX FOR GRILL. MOUNT 18" A.F.F. BURNABY # G0101-SS-50-B1 OR APPROVED EQUAL. GAS PIPING TO ENTER BOX FROM BELOW AND RUN THRU WALL IN A SLEEVE AND DROP 3/4" NATURAL GAS TO BELOW GROUND USING ANODELESS RISER. SEE UNDERFLOOR PLAN FOR CONTINUATION..
7. GAS SUPPLY BOX OATEY # 37563. MOUNT APPROX. 1'-6" A.F.F.
8. AIR HOSE REEL WITH MOUNTING BRACKET AND 50 LF OF 3/8" 300 PSI HOSE. REELCRAFT # 5650 OLP. MOUNT TO COLUMN APPROXIMATELY 9'-0" TO CENTER OF HOSE REEL.
9. HOSE REEL WITH MOUNTING BRACKET AND 50 LF OF 3/4" 250 PSI HOSE. REELCRAFT # GC83050 OLP. MOUNT TO COLUMN APPROXIMATELY 6'-0" TO CENTER OF HOSE REEL. FURNISH EXPOSED FAUCET BODY CENTRAL BRASS # 1380-L MOUNTED 36" A.F.F. CONNECT HOT AND COLD WATER FROM ABOVE TO FAUCET INLET AND PIPE DISCHARGE TO INLET OF HOSE REEL.
10. COMMERCIAL EXTRACTOR/WASHER. VALVE AND CONNECT 1" COLD AND 1" HOT WATER. PIPE 3" DISCHARGE TO TOP OF DRAIN TROUGH. PROVIDE A PDI "B" WATER HAMMER ARRESTOR ON BOTH COLD AND HOT WATER SUPPLIES.
11. DRAIN TROUGH WITH LINT TRAP 48"X18"X12" H. H-M COMPANY OR APPROVED EQUAL. PROVIDE 3" SIDE INLET FOR COMMERCIAL WASHER AND ADJACENT FRONT LOAD WASHER. RECESS FLUSH WITH FLOOR.
12. AIR COMPRESSOR. SEE DETAIL SHEET P3.2
13. AIR HOSE REEL WITH MOUNTING BRACKET AND 50 LF OF 3/8" 300 PSI HOSE. REELCRAFT # 5650 OLP. MOUNT TO WALL APPROXIMATELY 9'-0" TO CENTER OF HOSE REEL.
14. HOSE REEL WITH MOUNTING BRACKET AND 50 LF OF 3/4" 250 PSI HOSE. REELCRAFT # GC83050 OLP. MOUNT TO COLUMN APPROXIMATELY 9'-0" TO CENTER OF HOSE REEL. FURNISH EXPOSED FAUCET BODY CENTRAL BRASS # 1380-L MOUNTED 36" A.F.F. CONNECT HOT AND COLD WATER FROM ABOVE TO FAUCET INLET AND PIPE DISCHARGE TO INLET OF HOSE REEL.
15. RISERS UP TO APPARATUS BAY STRUCTURE 2" NON-POTABLE WATER (FROM ABOVE), 1" DOMESTIC HOT WATER, AND 1" DOMESTIC COLD WATER. SEE SHEET P2.1 FOR CONTINUATION.
16. COMMERCIAL EXTRACTOR/WASHER. VALVE AND CONNECT 1" COLD AND 1" HOT WATER. PROVIDE A PDI "B" WATER HAMMER ARRESTOR ON BOTH COLD AND HOLT WATER SUPPLIES. PIPE 3" DISCHARGE TO DRAIN TROUGH/LINT TRAP (SEE DIAGRAM).
17. 3" VENT THRU ROOF.
18. AIR HOSE REEL WITH MOUNTING BRACKET AND 50 LF OF 3/8" 300 PSI HOSE. REELCRAFT # 5650 OLP. MOUNT TO WALL APPROXIMATELY 6'-6" TO CENTER OF HOSE REEL.
19. NATURAL GAS SERVICE REGULATOR AND METER SETTING. SEE DETAIL SHEET P3.2
20. 1 1/4" NATURAL GAS TO EMERGENCY GENERATOR FROM BELOW GROUND. RISER OUT OF GRADE USING ANODELESS RISER. SEE UNDERFLOOR PLAN FOR CONTINUATION. SEE GAS CONNECTION DETAILS.
21. OFFSET PIPING FOR STORM SHELTER SHIELDING (SEE STORM SHELTER NOTE). COORDINATE CLOSELY WITH THEIR TRADES.
22. SUPPLY ONLY.
23. 3" STANDPIPE 18" A.F.F.

STORM SHELTER NOTES

PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE LARGER THAN 3 1/2 SQUARE INCHES IN AREA FOR RECTANGULAR OPENINGS OR 2 1/16" IN DIAMETER SHALL BE PROVIDED WITH AN OPENING PROTECTIVE DEVICE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF PROTECTIVE DEVICES.

WATER NOTE
SHELTER CAPACITY IS 16 PEOPLE. ONE WATER CLOSET IS REQUIRED. THE LAVATORY IS NOT REQUIRED. HAND SANITIZER WILL BE STORED BY THE OWNER.
BASED ON 3 WATER CLOSET USES PER 8 HOUR PERIOD (FROM L.E.E.D.), IN A 2 HOUR PERIOD THAT WOULD EQUAL 3/4 USES PER PERSON. FOR 16 PEOPLE, 12 FLUSHES WOULD BE REQUIRED. THE WATER CLOSET TANK WILL BE FILLED UPON ENTRY INTO THE SHELTER, SO ENOUGH WATER FOR 11 FLUSHES IS REQUIRED TO BE STORED IN THE SHELTER. AT 1.6 GALLONS PER FLUSH THAT WILL REQUIRED 17.6 GALLONS MINIMUM BE STORED FOR WATER CLOSET USAGE. ADDITIONAL POTABLE WATER SHALL BE STORED FOR DRINKING. INCLUDE THESE REQUIREMENTS IN THE OWNER'S INSTRUCTIONS.

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NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION
2	04/22/22	ADDENDUM No. 2

DATE	3/22/2022
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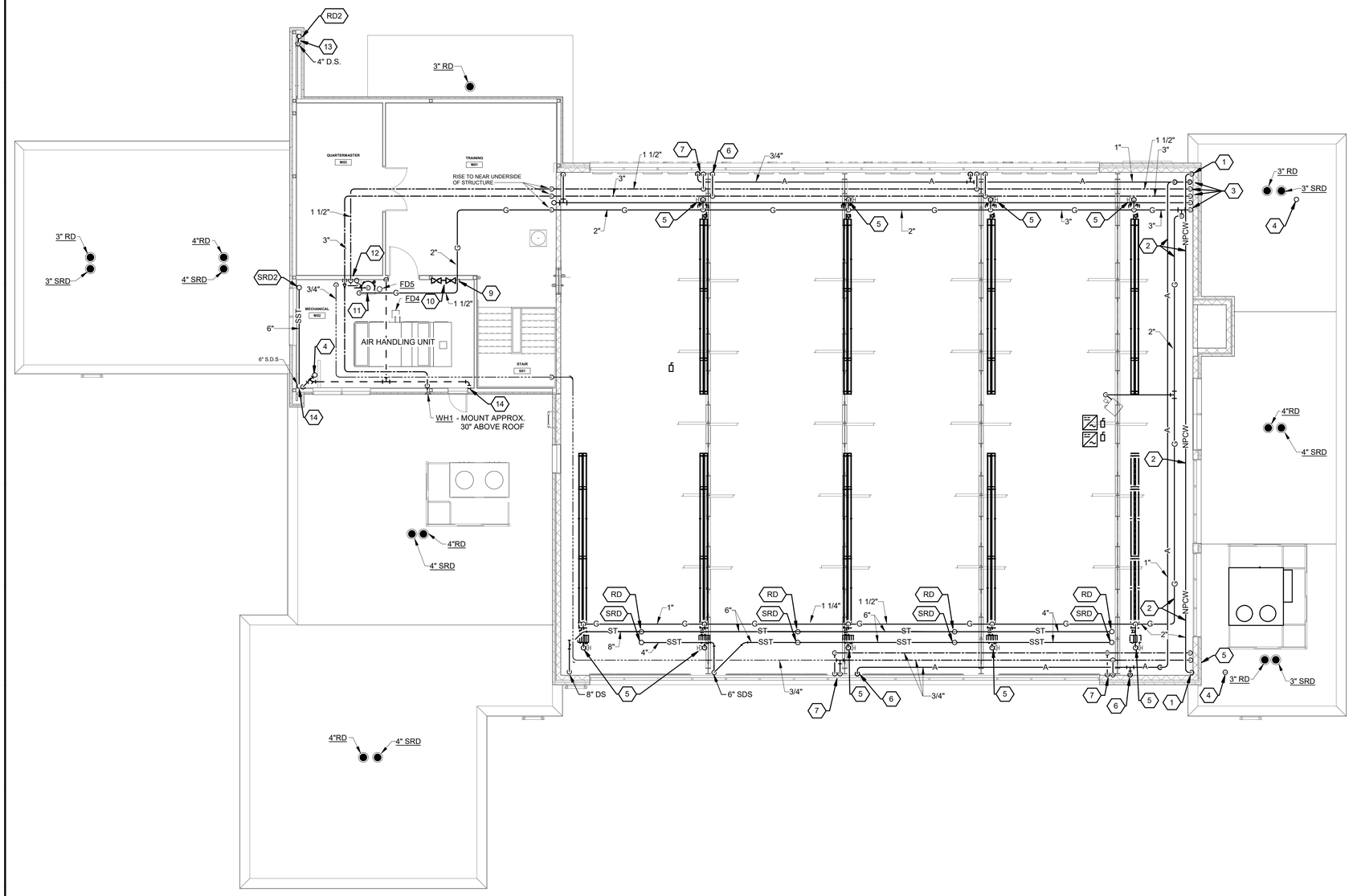
CHECKED	JDZ

TITLE
FIRST FLOOR

SHEET NO.
P1.1

5/12/2022 9:10:02 AM



CONSTRUCTION NOTES

1. 2" NON POTABLE WATER DOWN. SEE FIRST FLOOR PLAN.
2. PIPING NEAR UNDERSIDE OF STRUCTURE. FOLLOW SLOP OF STRUCTURE.
3. 1" COMPRESSED AIR. 1 1/2" DOMESTIC HOT WATER, 3" DOMESTIC COLD WATER, AND 3" NATURAL GAS DOWN TO FIRST FLOOR . SEE FIRST FLOOR PLAN FOR CONTINUATION.
4. 3" VENT THRU ROOF.
5. GAS FIRED RADIANT HEATER BY H.C. DROP 3/4" GAS DOWN TO UNIT VALVE AND CONNECT TO UNIT. PROVIDE FULL SIZE DIRT LEG. SEE GAS CONNECTION DETAIL.
6. DROP 3/4" COMPRESSED AIR DOWN TO HOSE REEL. SEE FIRST FLOOR PLAN.
7. DROP 1/2" COLD AND 1/2" HOT WATER DOWN TO SERVE HOSE REEL FAUCET. SEE FIRST FLOOR PLAN.
8. 1" COLD AND 1" HOT WATER FROM BELOW SEE FIRST FLOOR PLAN.
9. 1 1/2" GAS DOWN.
10. FIRE CALL GAS SOLENOID SHUT OFF SERVING KITCHEN RANGE AND OUTDOOR GRILL. SEE DETAIL SHEET P3.2.
11. DOMESTIC WATER HEATER. SEE DETAIL SHEET P3.2.
12. 1 1/4" HOT WATER, 2" COLD WATER AND 1/2" HOT WATER RETURN DOWN TO FIRST FLOOR. SEE ENLARGED CORE PLAN SHEET P2.1..
13. OFFSET 4" STORM PIPING AT 45 DEGREE ANGLE (OR GREATER).
14. VENT RISER FROM BELOW.

UPPER APPARATUS BAY AND MEZZANINE FLOOR PLAN

N

0 4 8 16 24 32 40

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

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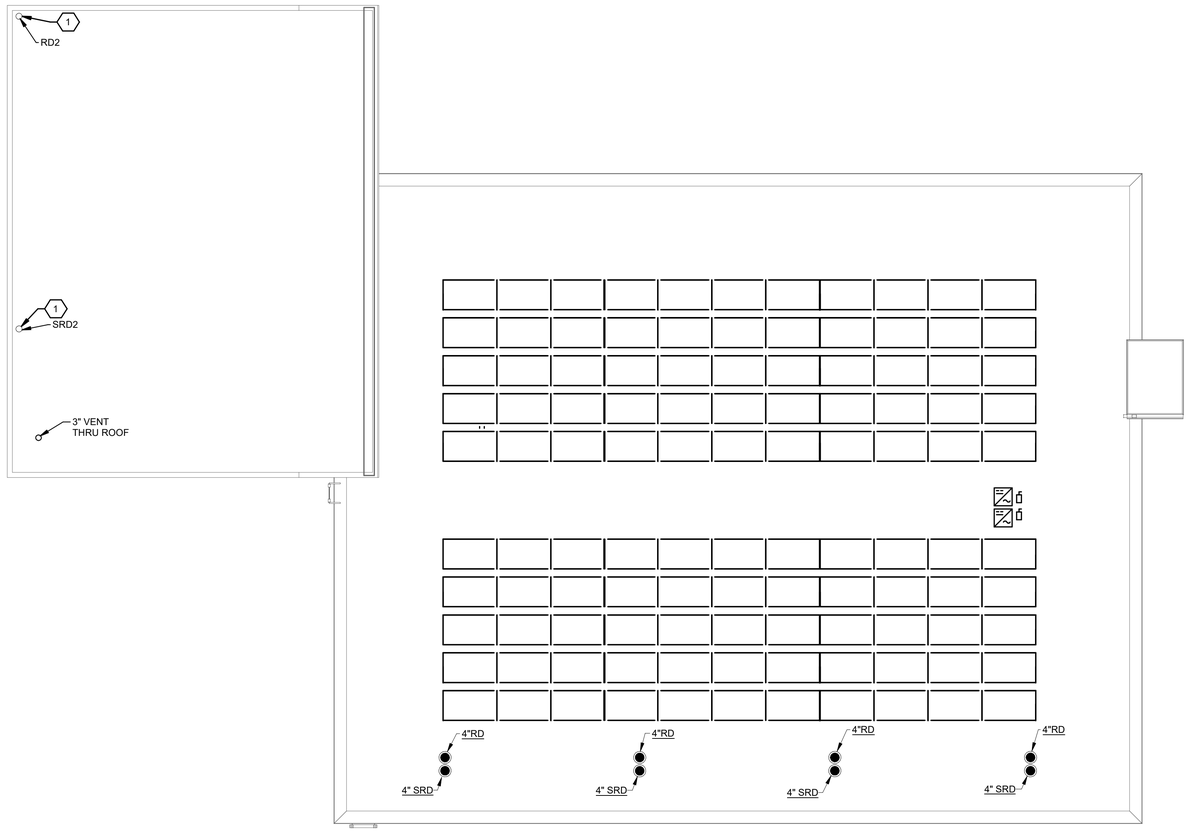
TITLE
UPPER APPARATUS BAY AND MEZZANINE PLAN

SHEET NO.
P1.2

5/12/2022 9:10:08 AM

CONSTRUCTION NOTES

1. ROOF DRAIN TO SIT IN 1'-0" WIDE INTERNAL GUTTER. SEE DETAIL C3 SHEET A5.02.



ROOF PLAN

N

0 4 8 16 24 32 40

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

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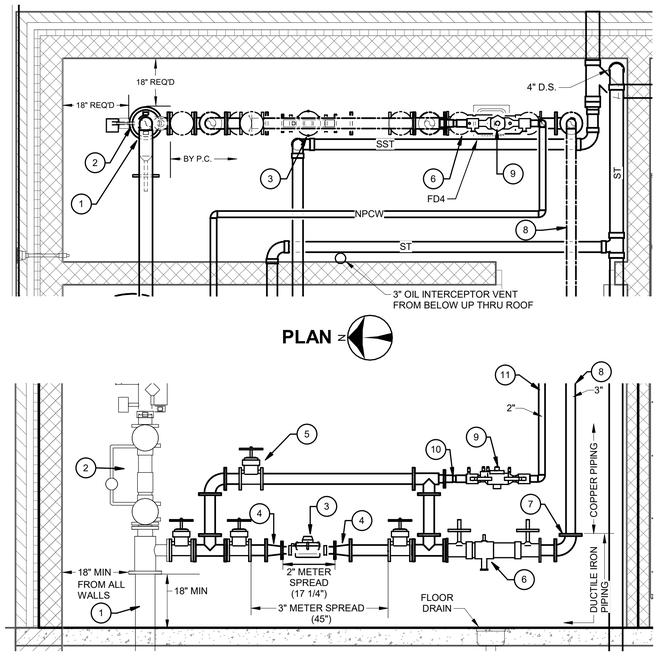
TITLE
ROOF PLAN

SHEET NO.
P1.3

5/12/2022 8:10:10 AM

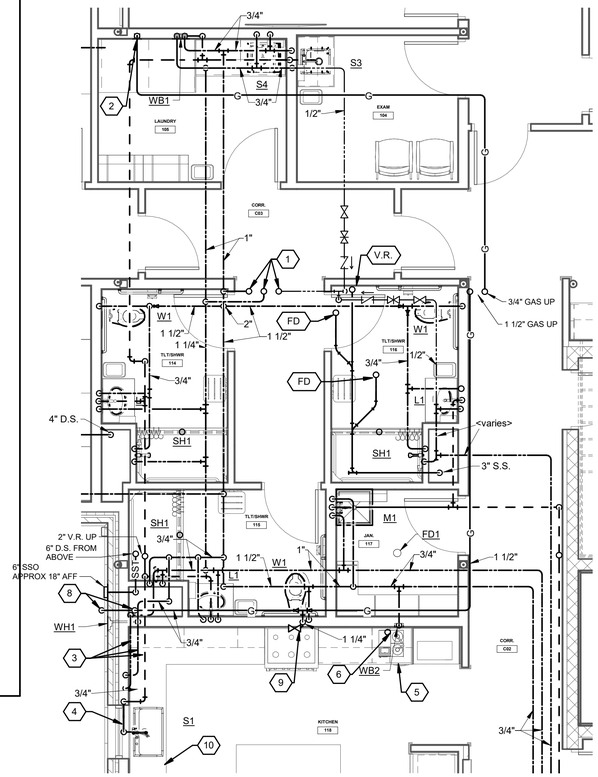


PLAN

ELEVATION

1. 6" WATER SERVICE ENTRANCE BY SITE UTILITY CONTRACTOR.
2. FIRE SERVICE 4" DOUBLE DETECTOR CHECK BACKFLOW ASSEMBLY BY F.S.C.
3. 2" DOMESTIC WATER METER IN 3" METER SPREAD SPACE.
4. 2" X 3" RECUDER.
5. 3" BY-PASS (VALVE NORMALLY CLOSED).
6. 3" REDUCED PRESSURE BACKFLOW PREVENTER. WATTS # 957 OR APPROVED EQUAL. PIPE DISCHARGE TO FLOOR DRAIN.
7. DI-ELECTRIC FLANGE. CHANGE FROM DUCTILE IRON PIPING TO COPPER PIPE.
8. 3" DOMESTIC WATER. SEE FLOOR PLAN FOR CONTINUATION.
9. 2" REDUCED PRESSURE BACKFLOW PREVENTER FOR NON-POTABLE WATER.
10. DI-ELECTRIC FITTING. CHANGE FROM DUCTILE IRON PIPING TO COPPER PIPE.
11. 2" NON-POTABLE WATER. SEE FLOOR PLAN FOR CONTINUATION.

1 WATER SERVICE DETAIL
N.T.S.



ENLARGED FIRST FLOOR TOILET ROOMS PLAN

N

0 2 4 8 12 16 20

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

CONSTRUCTION NOTES

1. 1 1/4" HOT WATER, 2" COLD WATER AND 1/2" HOT WATER RETURN FROM ABOVE.
2. GAS SUPPLY BOX OATEY # 37563. MOUNT APPROX. 1'-6" A.F.F.
3. PIPING IN JOIST SPACE.
4. OFFSET VENT IN WALL AT 45 DEGREE (OR GREATER) TILL ABOVE COUNTERTOP LEVEL (36") TO AVOID WINDOW FRAMING.
5. UNDERCOUNTER ICE MAKER BY OWNER.
6. 1.5" HUB DRAIN WITH 2" ADAPTER FOR ICE MAKER DRAIN. CENTER DRAIN IN OPENING FOR ICE MAKER AND KEEP 2" ADAPTER TIGHT TO WALL. TERMINATE APPROXIMATELY 1" ABOVE FINISHED FLOOR TO MAINTAIN 2" AIR GAP.
7. VENT TO RUN UNDER DUCTWORK. COORDINATE CLOSELY WITH H.C.
8. DROP 3/4" NATURAL GAS IN CHASE AND EXTEND TO OUTSIDE APPROXIMATELY 24" ABOVE GRADE AND DROP TO BELOW GROUND USING ANODELESS RISER. SEE UNDERFLOOR PLAN FOR CONTINUATION..
9. PROVIDE 3/4" BALL VALVE ALONG WALL NEAR FLOOR AND CONNECT TO RANGE PER MANUFACTURER'S RECOMMENDATIONS.
10. UNDER COUNTER RESIDENTIAL DISHWASHER. CONNECT TO HOT WATER FROM ADJACENT SINK AND EXTEND WASTE TO THE INLET SIDE OF THE SINK TRAP. PROVIDE AIR GAP FITTING (DEARBORN # DB-CP-4P) ON WASTE.

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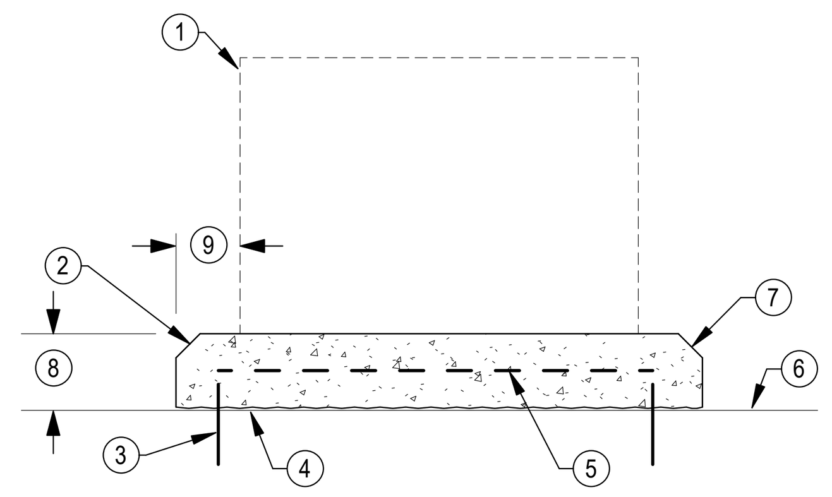
TITLE
ENLARGED FIRST FLOOR

SHEET NO.
P2.1

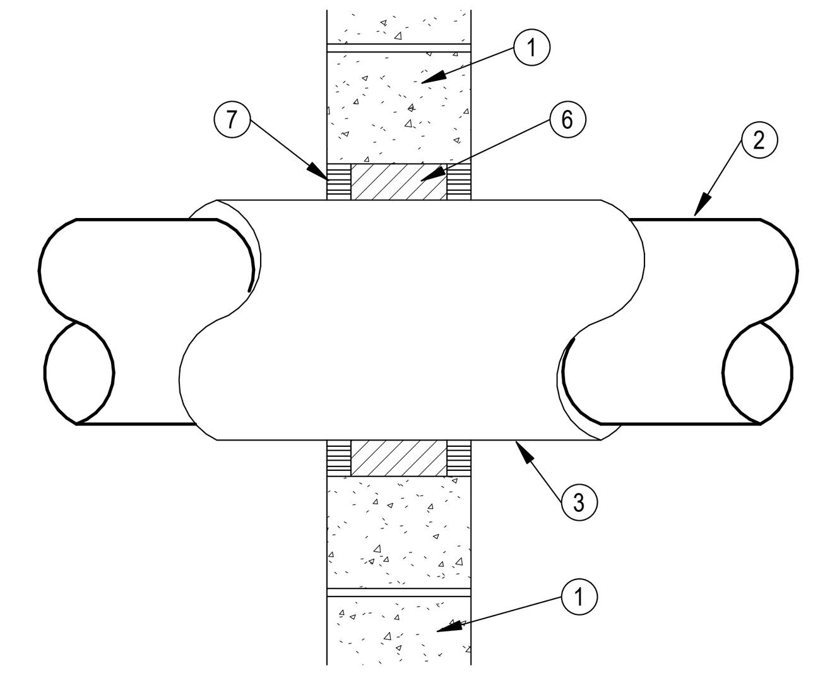
5/12/2022 9:10:13 AM



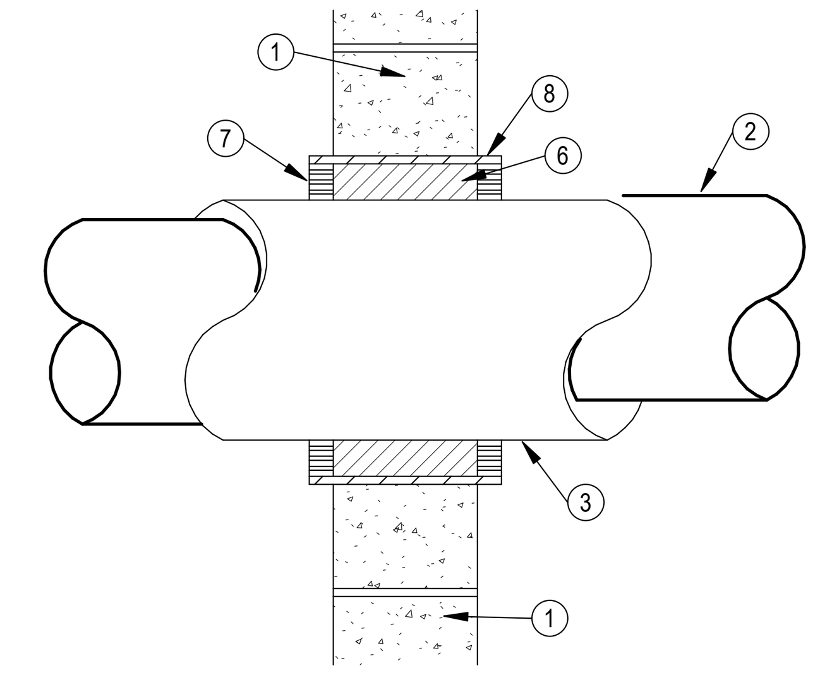
1. OUTLINE OF EQUIPMENT.
2. 4,000 PSI CONCRETE.
3. 1-#4 DOWEL, 6" LONG, EACH CORNER.
4. ROUGHEN SLAB & APPLY BONDING AGENT.
5. STEEL REINFORCING MESH.
6. FINISHED CONCRETE FLOOR.
7. 45 DEG. CHAMFER ALL AROUND.
8. 4" THICK CONCRETE SLAB.
9. MINIMUM 2" DISTANCE.

NOTE: OVERALL DIMENSION TO BE DETERMINED BY CONTRACTOR.

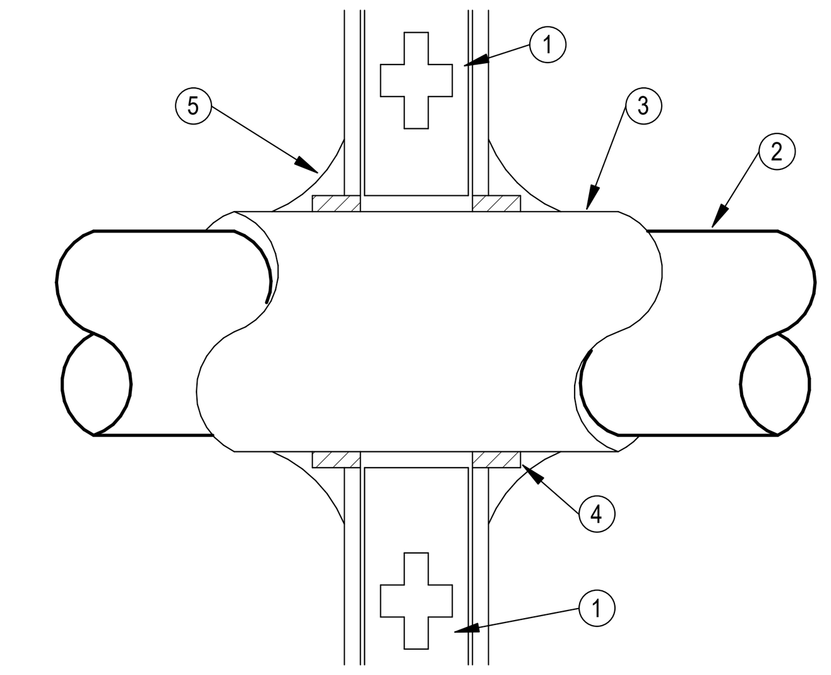
4 INTERIOR CONCRETE EQUIPMENT PAD
N.T.S.



CONCRETE/MASONRY CONSTRUCTION
1/2" - 1.5" PIPES



CONCRETE/MASONRY CONSTRUCTION
2" AND LARGER PIPES



GYPSUM CONSTRUCTION
ALL PIPE SIZES

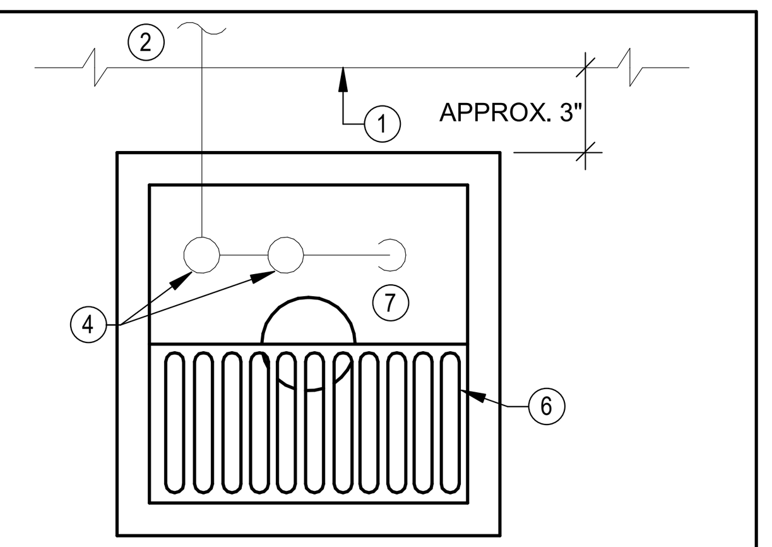
FIRESTOPPING MATERIALS INSTALLATION

- MANUFACTURERS: 3M FIRE PROTECTION PRODUCTS HILTI FIRESTOP SYSTEMS
- FIRESTOPPING MATERIAL INSTALLATION SHALL BE PER THE MANUFACTURERS DETAILED INSTALLATION DIAGRAMS AND INSTRUCTIONS.
- F-RATING OF PENETRATION SHALL BE NO LESS THAN THE FIRE RATING OF THE WALL.
- SUBMITTAL SHALL INCLUDE PRODUCT DATA AND DETAILED INSTALLATION SYSTEM DIAGRAMS.

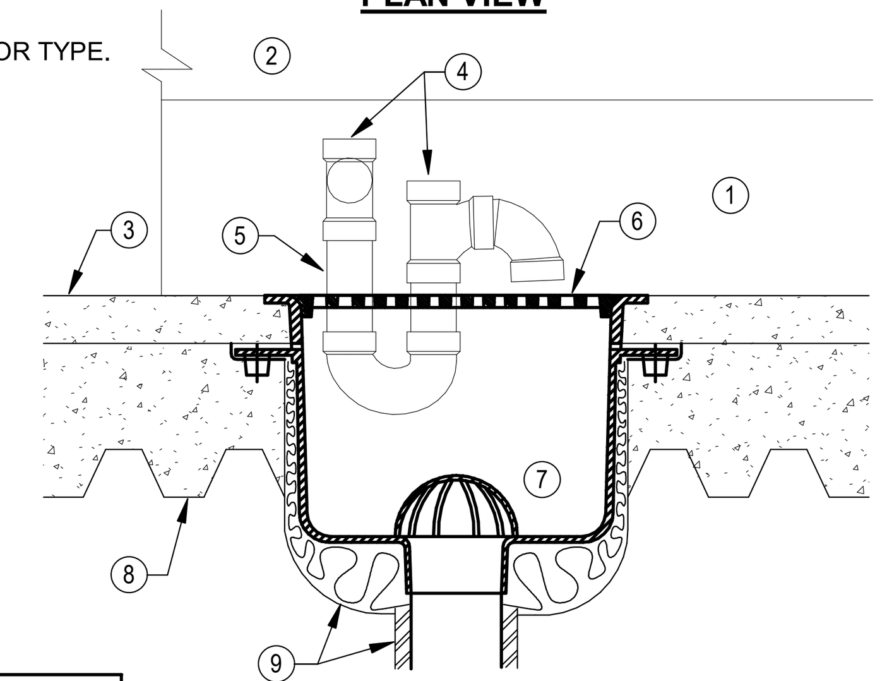
1. RATED WALL ASSEMBLY.
2. METALLIC PIPE OR TUBING.
3. PIPE INSULATION, CONTINUOUS THROUGH WALL OPENING, SEE SCHEDULE FOR THICKNESS.
4. APPROVED FIRESTOPPING VOID/CAVITY MATERIAL.
5. APPROVED FIRESTOPPING CAULK OR SEALANT.
6. PACKING MATERIAL, MINERAL WOOL BATT INSULATION.
7. APPROVED FIRESTOPPING CAULK OR SEALANT FLUSH WITH SURFACE OF WALL OR EDGE OF SLEEVE.
8. SCHEDULE 40 STEEL PIPE SLEEVE CAST OR GROUTED INTO WALL ASSEMBLY. ENDS FLUSH OR MAX. 2" BEYOND WALL SURFACE.

1 PIPE PENETRATIONS THRU FIRE RATED WALL
N.T.S.

1. A.H. UNIT BASE.
2. CHILLED WATER COIL SECTION OF A.H. UNIT.
3. 2" CONCRETE TOPPING BY G.C.
4. CLEANOUT.
5. DRAIN PIPING BY H.C. DISCHARGE OVER OPEN PORTION OF DRAIN. MAINTAIN MIN. 2" AIR GAP.
6. HALF STRAINER.
7. FLOOR SINK. SEE PLAN FOR TYPE.
8. METAL DECKING.
9. INSULATION.

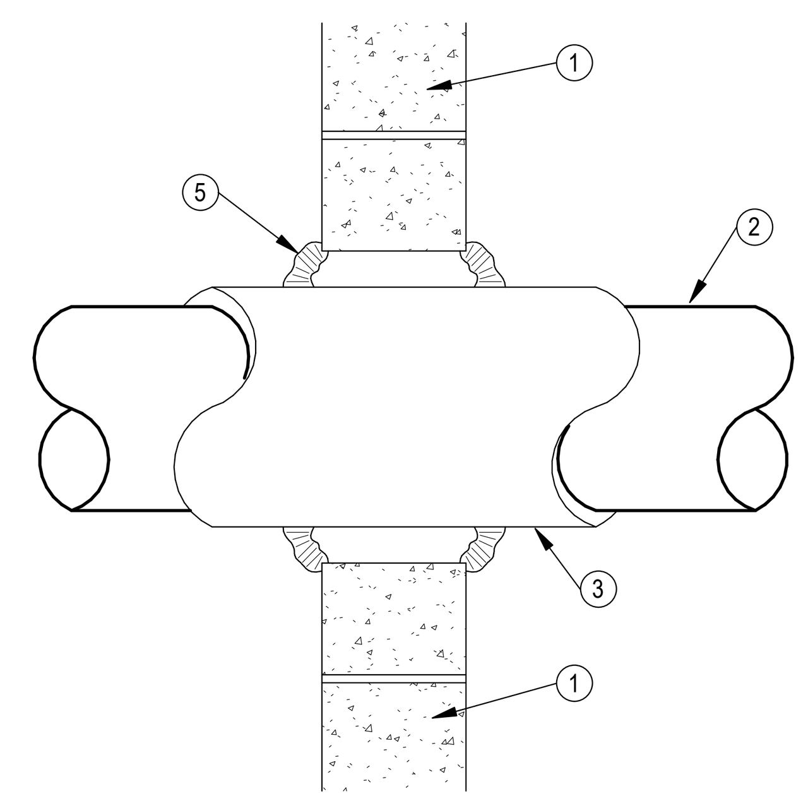


PLAN VIEW

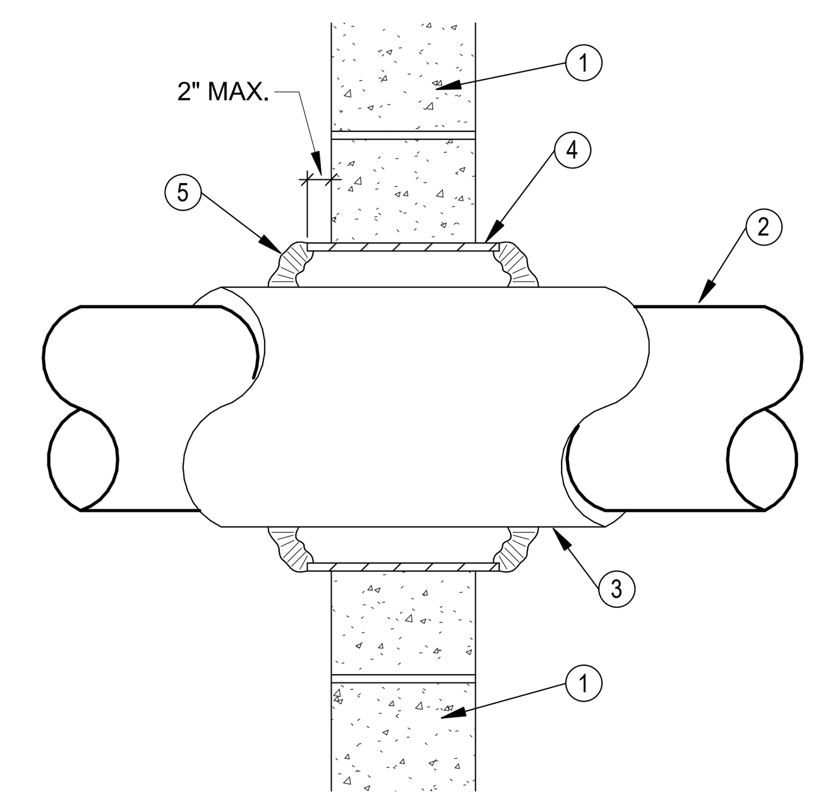


ELEVATION SECTION

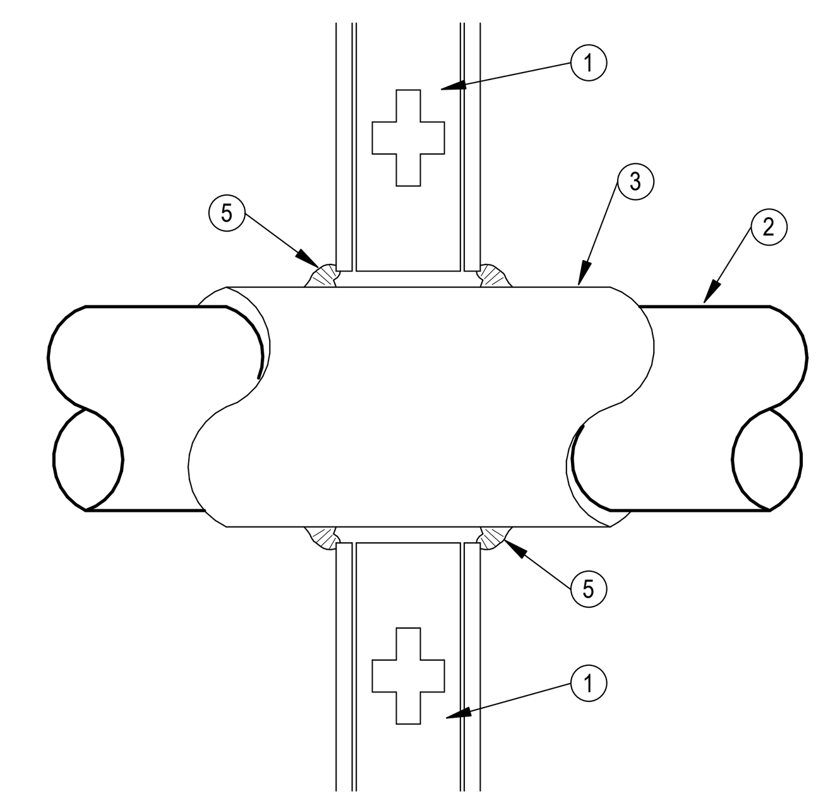
5 A.H. UNIT FLOOR DRAIN
N.T.S.



CONCRETE/MASONRY CONSTRUCTION
1/2" - 1.5" PIPES



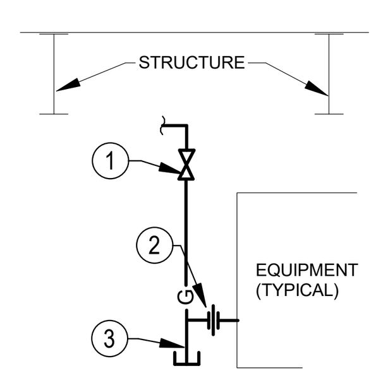
CONCRETE/MASONRY CONSTRUCTION
2" AND LARGER PIPES



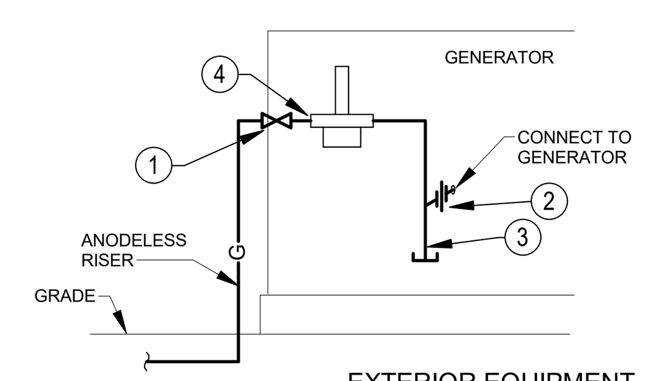
GYPSUM CONSTRUCTION
ALL PIPE SIZES

1. FULL HEIGHT INTERIOR WALL.
2. PIPE OR TUBING.
3. PIPE INSULATION, CONTINUOUS THROUGH WALL OPENING, SEE SCHEDULE FOR THICKNESS.
4. SCHEDULE 40 STEEL PIPE SLEEVE CAST OR GROUTED INTO WALL ASSEMBLY. ENDS FLUSH OR MAX. 2" BEYOND WALL SURFACE.
5. CAULK TO FILL VOID AT WALL/SLEEVE OPENING.

2 PIPE PENETRATIONS THRU NON-RATED WALL
N.T.S.

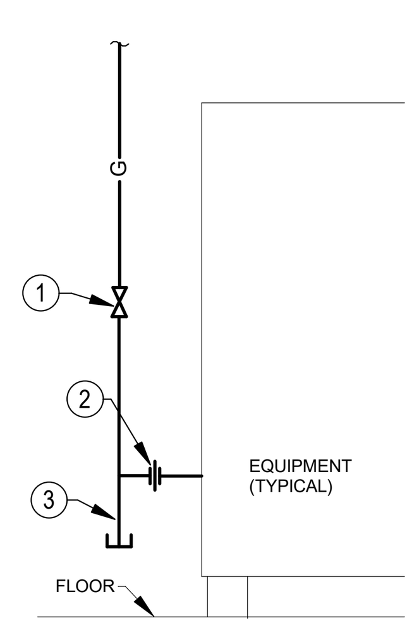


SUSPENDED EQUIPMENT

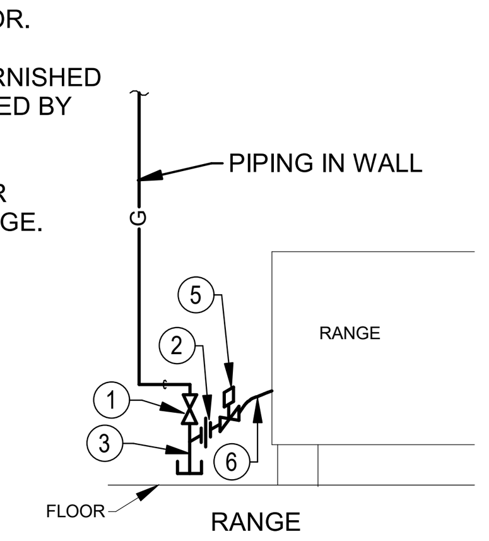


EXTERIOR EQUIPMENT

1. GAS VALVE.
2. UNION.
3. FULL SIZE DIRT LEG.
4. PRESSURE REGULATOR.
5. SOLENOID VALVE (FURNISHED WITH HOOD) FURNISHED BY H.C. INSTALED BY P.C.
6. FLEXIBLE CONNECTOR FURNISHED WITH RANGE.

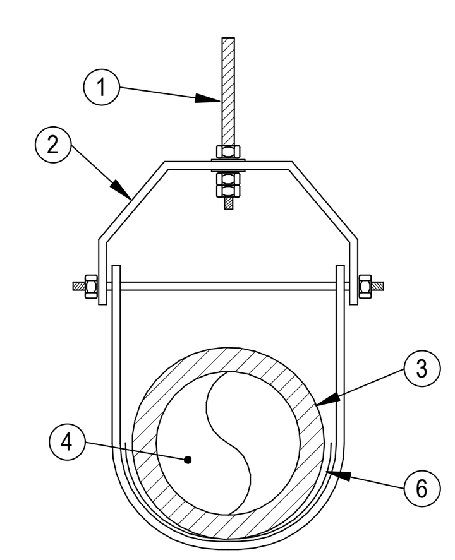


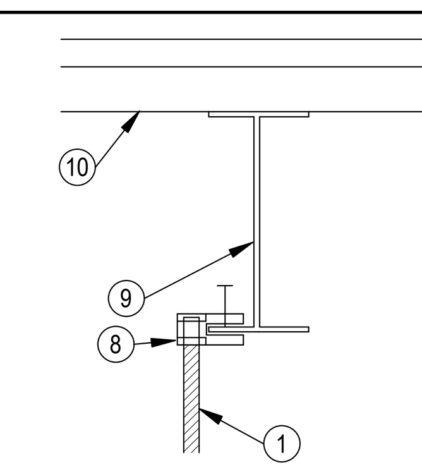
FLOOR SET EQUIPMENT



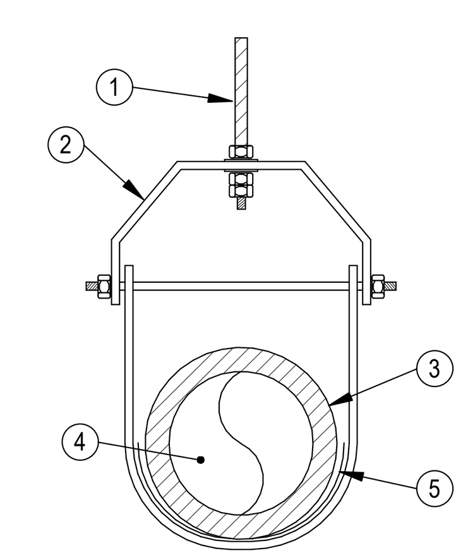
RANGE

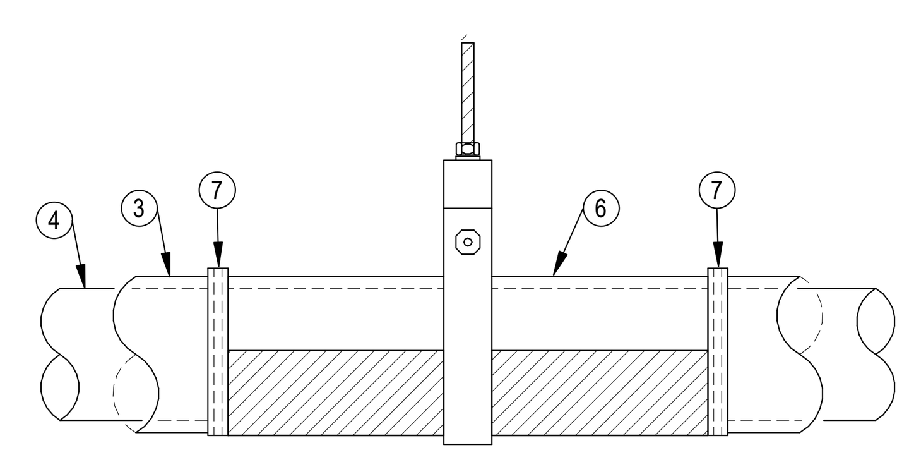
6 GAS CONNECTIONS
N.T.S.



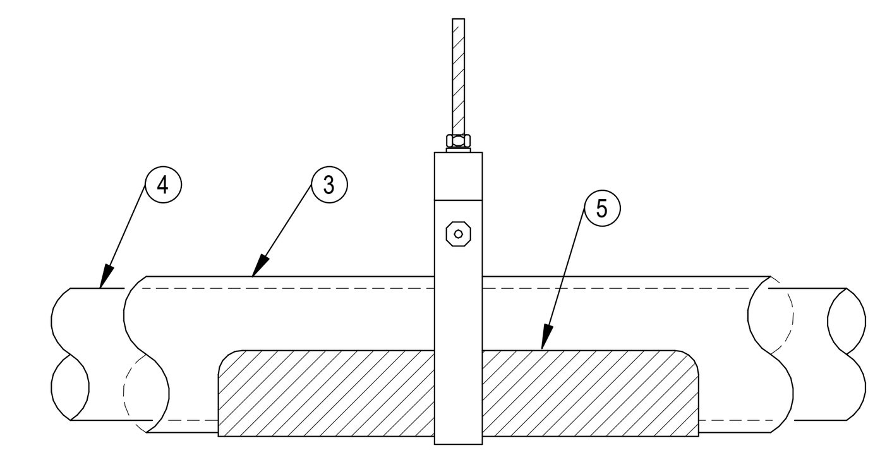


STEEL BEAM CONSTRUCTION
ALL PIPE SIZES





PIPING 2.5" & LARGER



PIPING 2.0" & SMALLER

1. GALVANIZED THREADED ROD. ADJUST NUTS & RODS FOR PROPER ELEVATION.
2. STEEL CLEVIS PIPE HANGER. EQUAL TO ANVIL FIG. 260.
3. PIPE INSULATION.
4. PIPE.
5. 12" LONG, 18 GA. GALVANIZED INSULATION SHIELD. EQUAL TO ANVIL FIG. 168. CONTINUOUS INSULATION.
6. 18" LONG INSULATED PIPE SADDLES. BUCKAROOS TRU-BALANCE 3300E OR EQUAL. PROVIDE WITH 3.75 LB. DENSITY PNENOLIC FOAM INSULATION WITH VAPOR RETARDER JACKET & BOTTOM GALVANIZED METAL INSULATION SHIELD. SADDLES TO MEET 25/50 FLAME/SMOKE RATING.
7. PIPE INSULATION AND SADDLE INSULATION SHALL BE TIGHTLY ABUTTED TOGETHER. SEAL WITH 4" WIDE VAPOR RETARDER TAPE WITH FACTORY APPLIED JACKET WITH ACRYLIC ADHESIVE TO ASSURE VAPORTIGHT SEAL.
8. THREADED ROD BEAM CLAMP.
9. STEEL JOIST OR BEAM.
10. METAL DECKING. DIRECT ATTACHMENT TO DECKING IS PROHIBITED. PROVIDE SUPPLEMENTAL STEEL ANGLES OR UNISTRUT WHERE REQUIRED FOR PROPER HANGER SPACING OR IN LIEU OF ATTACHMENTS SHOWN.

3 PIPE HANGERS
N.T.S.

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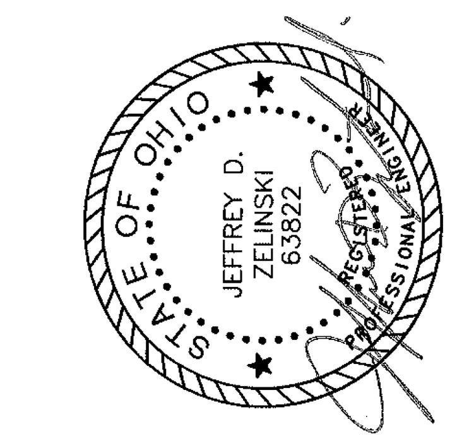

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ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
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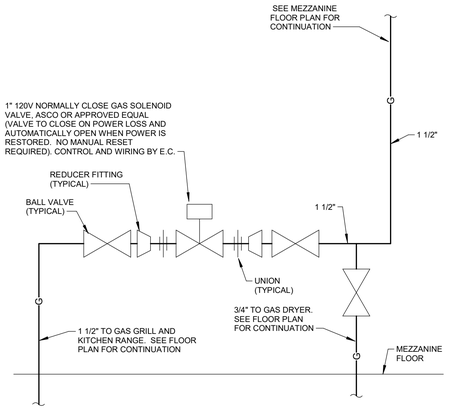
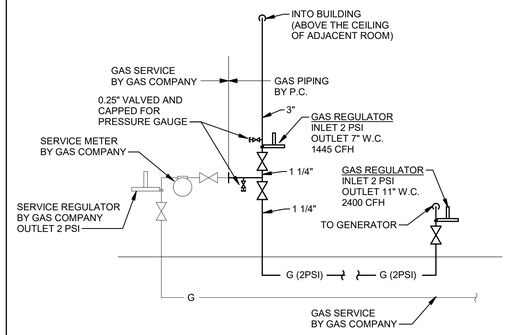
TITLE
DETAILS

SHEET NO.
P3.1

5/12/2022 9:10:14 AM



5 FIRE CALL GAS SHUTOFF SOLENOID VALVE
N.T.S.



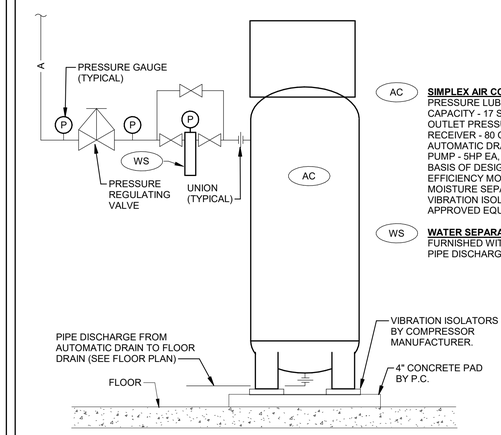
4 GAS SERVICE RISER
N.T.S.

GAS LOAD SCHEDULE

GENERAL NOTES

• PIPING SIZED USING THE LONGEST LENGTH METHOD.
•LOW PRESSURE (7" W.C.) GAS PIPING SIZED USING TABLE 402.4(2) OF THE 2015 IFC.

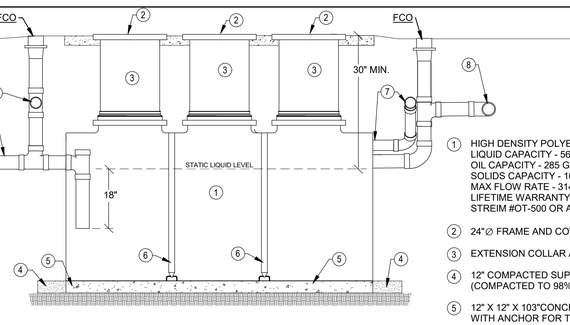
ITEM	LOAD	
WATER HEATER	200	CFH
GAS DRYERS (2@ 25 CFH EACH)	50	CFH
RANGE	120	CFH
GRILL	75	CFH
RADIANT GAS HEATERS (9 @ 80 CFH EA.)	720	CFH
GAS FIRE UNIT HEATER GUH-1	200	CFH
TOTAL @ 7" W.C.	**1365**	**CFH**
EMERGENCY GENERATOR @ 11" W.C.	2400	CFH
BUILDING TOTAL	**3765**	**CFH**



AC **SIMPLEX AIR COMPRESSOR MOUNTED ON TANK**
PRESSURE LUBRICATED RECIPROCATING COMPRESSOR
CAPACITY - 17 SCFM @ 175 PSI
OUTLET PRESSURE 175 PSI
RECEIVER - 80 GALLONS
AUTOMATIC DRAIN
PUMP - 5HP EA, 208 V 1 PH 40 AMPS
BASIS OF DESIGN - GARDNER DENVER # VPL5-8 WITH PREMIUM EFFICIENCY MOTOR UPGRADE, OPTIONAL AFTER COOLER AND MOISTURE SEPARATOR, LOW OIL PRESSURE SWITCH, (NEMA 1), VIBRATION ISOLATORS, AND ELECTRIC TANK DRAIN OR APPROVED EQUAL.

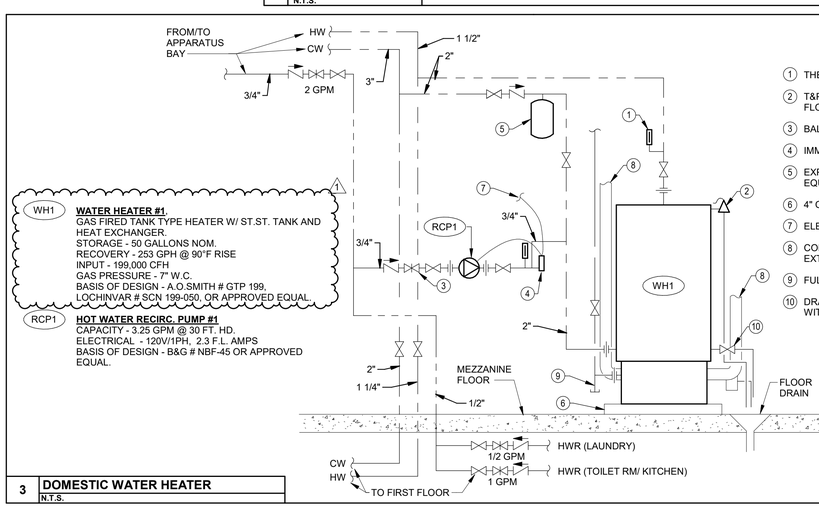
WS **WATER SEPARATOR**
FURNISHED WITH AIR COMPRESSOR
PIPE DISCHARGE TO FLOOR DRAIN.

1 AIR COMPRESSOR
N.T.S.



1. HIGH DENSITY POLYETHYLENE OIL INTERCEPTOR.
LIQUID CAPACITY - 560 GALLON
OIL CAPACITY - 285 GALLONS
SOLIDS CAPACITY - 162 GALLONS
MAX FLOW RATE - 314 GPM
LIFETIME WARRANTY
STREIM #OT-500 OR APPROVED EQUAL.
2. 24"∅ FRAME AND COVER SECURED IN 4" CONCRETE.
3. EXTENSION COLLAR AS REQUIRED
4. 12" COMPACTED SUPPORT SAND/GRAVEL MIX LAYER (COMPACTED TO 98% SPD)
5. 12" X 12" X 103"CONCRETE DEADMEN (2 REQUIRED) WITH ANCHOR FOR TIE DOWN TURNBUCKLES (4 REQUIRED).
6. HOLD DOWN KIT WITH CORROSION RESISTANT TURNBUCKLE AND NYLON STRAPS. STREIM # HDK-500
7. 3"∅ BASIN VENT. SEE UNDERGROUND PIPING PLAN FOR CONTINUATION.
8. 4" SANITARY FROM APPARATUS BAY TRENCH DRAIN. SEE UNDERGROUND PIPING PLAN FOR CONTINUATION
9. 4" SANITARY OUTLET. SEE UNDERGOUND PIPING PLAN FOR CONTINUATION.

2 OIL INTERCEPTOR
N.T.S.



1. THERMOMETER. (TYPICAL).
2. T&P SAFETY RELIEF VALVE. PIPE DISCHARGE TO FLOOR DRAIN W/ 2" MIN. AIR GAP.
3. BALANCING VALVE. BALANCE AT 2.5 GPM.
4. IMMERSION STAT TO CONTROL RECIRC. PUMP..
5. EXPANSION TANK. AMTROL # ST-5 OR APPROVED EQUAL.
6. 4" CONCRETE PAD.
7. ELECTRICAL POWER CONNECTION BY E.C.
8. COMBUSTION AIR AND VENT FLUES TO BE EXTENDED OUTDOORS BY H.C..
9. FULL-SIZED DIRT LEG.
10. DRAIN VALVE. PIPE DISCHARGE TO FLOOR DRAIN WITH 2" MIN. AIR GAP.

3 DOMESTIC WATER HEATER
N.T.S.

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STATE OF OHIO — JEFFREY D. ZELINSKI 63822 — REGISTERED ARCHITECT

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Washington Township
Fire Station 41
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ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION
1	04/14/22	ADDENDUM NO. 1

DATE	3/22/2022
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SHEET NO.
P3.2

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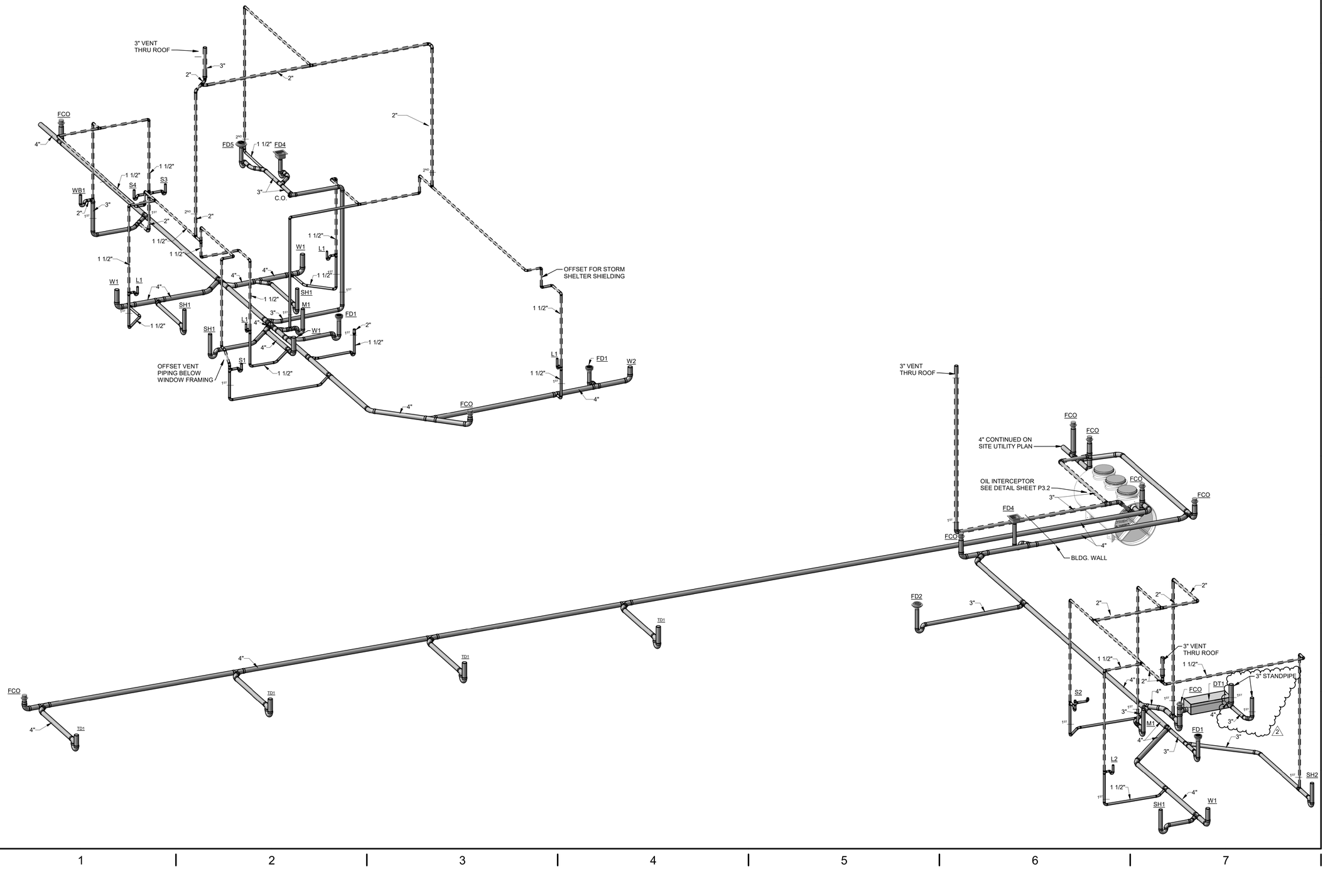

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2	04/22/22	ADDENDUM No. 2

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CHECKED	JDZ

TITLE
SOIL, WASTE AND VENT DIAGRAMS

SHEET NO.
P4.1

AIR DEVICE SCHEDULE

GENERAL NOTES

AIR DEVICES BASED ON PRICE, LOUVERS L-1-OA, L-1-VA, L-AB-OA, L-EA, L2, BASED ON GREENHECK LOUVER LSS BASED ON RUSKIN. REFER TO SPECIFICATIONS FOR OTHER MANUFACTURERS.

MAXIMUM SOUND LEVEL AT NC-25 AT INDICATED AIR FLOW.

BALANCING DAMPER GENERALLY PROVIDED IN DUCT, NOT AT DEVICE.

STANDARD WHITE BAKED ACRYLIC FINISH UNLESS NOTED OTHERWISE.

DIFFUSERS SHALL BE 4-WAY THROW UNLESS OTHERWISE NOTED OR INDICATED ON DRAWINGS.

VERIFY CEILING TYPE AND PROVIDE APPROPRIATE MOUNTING FRAME WHERE REQUIRED FOR OTHER THAN LAY-IN APPLICATION OR IN LINE "T" BAR.

TAG	DESCRIPTION	AREA SERVED	MODEL NO.	MATERIAL	ACCESSORIES	NOTES
S1 & S1A	2'X2' SQUARE PLAQUE DIFFUSER LAY-IN FRAME ROUND DUCT CONNECTION	MULT. SEE PLANS.	SPD (ASPD)	STEEL	INSULATED BACKPAN (STYLE 31)	1
S2 & S2A	LOUVERED SUPPLY GRILLE DOUBLE DEFLECTION W/ LONG FRONT BLADES, 3/4" BLADE SPACING	MULT. SEE PLANS.	520(620)	STEEL		1
S3 & S3A	1'X1' SQUARE PLAQUE DIFFUSER LAY-IN FRAME ROUND DUCT CONNECTION	MULT. SEE PLANS	SPD (ASPD)	STEEL	INSULATED BACKPAN (STYLE 31)	1
R1	RETURN/TRANSFER GRILLE DEVICE SIZE - 24" X 24" 45° HORIZONTAL BLADES 1/2" SPACING	MULT. SEE PLANS.	635	ALUMINUM	LAY-IN FRAME	
R2	RETURN/TRANSFER GRILLE DEVICE SIZE - 24" X 12" 45° HORIZONTAL BLADES 1/2" SPACING	MULT. SEE PLANS.	635	ALUMINUM	LAY-IN FRAME	
R3	LOUVERED FACE RETURN GRILLE DEVICE SIZE - INDICATED ON PLAN 45° HORIZONTAL BLADES 1/2" SPACING	MULT. SEE PLANS.	635	ALUMINUM	SURFACE MOUNT FRAME	2
R4	RETURN/TRANSFER GRILLE DEVICE SIZE - 16" X 16" 45° HORIZONTAL BLADES 1/2" SPACING	MULT. SEE PLANS.	635	ALUMINUM	SURFACE MOUNT	
E1	LOUVERED FACE EXHAUST GRILLE DEVICE SIZE - INDICATED ON PLAN 45° HORIZONTAL BLADES 1/2" SPACING	MULT. SEE PLANS.	635	ALUMINUM	SURFACE MOUNT	
E2	EXHAUST GRILLE DEVICE SIZE - 12" X 12" 45° HORIZONTAL BLADES 1/2" SPACING	MULT. SEE PLANS.	635	ALUMINUM	SURFACE MOUNT	
E3	EXHAUST GRILLE DEVICE SIZE - 16" X 16" 45° HORIZONTAL BLADES 1/2" SPACING	MULT. SEE PLANS.	635	ALUMINUM	SURFACE MOUNT	
L-1-OA	FIXED BLADE LOUVER DEVICE SIZE - 72" x 48" LOUVER FRAME SIZE - 4" FRAME MIN. 50% FREE AREA	AHU-1 OUTSIDE AIR	ESD-635	ALUMINUM	BLACK BIRDSCREEN	2
L-1-VA	FIXED BLADE LOUVER DEVICE SIZE - 96" x 48" LOUVER FRAME SIZE - 4" FRAME MIN. 50% FREE AREA	AHU-1 VENT AIR	ESD-635	ALUMINUM	BLACK BIRDSCREEN	2
L-AB-OA	FIXED BLADE LOUVER DEVICE SIZE - 118" x 24" LOUVER FRAME SIZE - 4" FRAME MIN. 50% FREE AREA	APPARATUS BAY EXHAUST AIR	ESD-635	ALUMINUM	BLACK BIRDSCREEN	2
L-AB-EA	FIXED BLADE LOUVER DEVICE SIZE - 48" x 48" LOUVER FRAME SIZE - 4" FRAME MIN. 50% FREE AREA	APPARATUS BAY OUTSIDE AIR	ESD-635	ALUMINUM	BLACK BIRDSCREEN	2
L2	FIXED BLADE LOUVER DEVICE SIZE - 16" x 8" LOUVER FRAME SIZE - 4" FRAME MIN. 50% FREE AREA	RADIO ROOM RELIEF AIR	ESD-635	ALUMINUM	-	2
L-SS	FIXED BLADE LOUVER DEVICE SIZE - 24" x 24" LOUVER FRAME SIZE - 6" FRAME MIN. 27% FREE AREA	STORM SHELTER INTAKE AIR	XP500 FCMA LOUVER	1/4" ALUMINUM	-	2

NOTES:

1. "A" DENOTES ALUMINUM CONSTRUCTION.
2. COLOR SELECTION BY ARCHITECT

PIPING LEGEND

- INDICATES DIRECTION OF FLOW
- CD — CONDENSATE DRAIN
- L — REFRIGERANT - LIQUID
- S — REFRIGERANT - SUCTION
- SHUT-OFF VALVE, SEE SCHEDULE FOR TYPE
- STRAINER, Y-TYPE
- CONNECTION, BOTTOM
- CONNECTION, TOP
- CONNECTION, SIDE
- ELBOW, 90°, LONG RADIUS
- ELBOW, 45°, LONG RADIUS
- ELBOW, TURNED UP
- ELBOW, TURNED DOWN
- UNION, SCREWED
- (P) — PRESSURE GAUGE
- TEMPERATURE GAUGE

DUCTWORK LEGEND

- 20/12 / 20/12 — RECTANGULAR DUCT, FIRST FIGURE IS SIDE SHOWN
- 10"ø / 10"ø — ROUND DUCT, DIAMETER INDICATED
- DOUBLE WALL DUCT, INTERIOR LINER PERFORATED
- DUCT WITH INTERIOR ACOUSTIC LINER
- FABRIC DUCT
- STAINLESS STEEL DUCT
- FLEXIBLE FABRIC STEEL DUCT
- INSULATED FLEXIBLE DUCT
- R — CHANGE OF ELEVATION, R = RISE, D = DROP
- ELBOW WITH TURNING VANES
- 20/12 — ROUND RUNOUT DUCT TAP TO RECTANGULAR DUCT WITH SPIN-IN FITTING, SEE DETAIL
- 10"ø — ROUND RUNOUT DUCT FITTING IN ROUND DUCT MAIN
- VOLUME DAMPER
- FD — FIRE DAMPER
- SD — SMOKE DAMPER
- FS — COMBINATION FIRE/SMOKE DAMPER
- S — DUCT MOUNTED SMOKE DETECTOR
- SUPPLY DUCT SECTION - RISE, DROP
- RETURN DUCT SECTION - RISE, DROP
- 1-02 — VARIABLE AIR VOLUME (VAV) UNIT ELECTRIC
1-02, VAV BOX TAG, SEE SCHEDULE AND DETAIL
1- INDICATES AHU/RTU NUMBER
02- INDICATES VAV BOX NUMBER
- 1-13 — VARIABLE AIR VOLUME UNIT WITHOUT REHEAT COIL
1-13, VAV BOX TAG, SEE SCHEDULE AND DETAIL
1- INDICATES AHU/RTU NUMBER
13- INDICATES VAV BOX NUMBER
- S1-8" / 200 — SUPPLY AIR DEVICE S1
SEE SCHEDULE AND DETAIL
8" NECK SIZE
200 = REQUIRED AIR FLOW (CFM)
- R1 — TRANSFER AIR DEVICE
24"x24" WITH PLENUM
R1 DEVICE TAG, SEE SCHEDULE AND DETAIL
- R1-10" / 300 — RETURN/EXHAUST
DEVICE TAG; RETURN, E=EXHAUST
10" NECK SIZE
300 = REQUIRED AIR FLOW (CFM)
DEVICE SIZE AS DEPICTED ON DRAWINGS OR AS INDICATED IN AIR DEVICE SCHEDULE
- S2-24/12 / 300-8' 6" — SIDEWALL AIR DEVICE S2
SEE AIR DEVICE SCHEDULE
24/12 = DEVICE SIZE
300 = AIR FLOW (CFM)
8' 6" = MOUNTING HEIGHT (AFF)
- (E) / 120 — EXISTING AIR DEVICE
REBALANCE TO AIR FLOW INDICATED
- (T) — ROOM TEMPERATURE SENSOR
- CO — ROOM CO2 SENSOR
(MAY BE IN COMMON HOUSING W/ TEMP.)

GENERAL NOTES - HVAC

1. PROVIDE COMPLETE AND FUNCTIONAL HVAC SYSTEMS PER HVAC PLANS INCLUDING FURNISHING, INSTALLING, TESTING AND WARRANTY OF ALL WORK.
2. WORK SHALL BE IN ACCORDANCE WITH THE 2017 OHIO BUILDING AND MECHANICAL CODES INCLUDING REFERENCED CODES AND STANDARDS, ALL FEDERAL, STATE, AND LOCAL CODES AND ALL APPLICABLE LAWS, ORDINANCES AND REGULATIONS.
3. WORK SHALL BE PERFORMED USING BEST QUALITY INSTALLATION PRACTICE BY A QUALIFIED TRADE CONTRACTOR AND THEIR QUALIFIED SUBCONTRACTORS. ALL CONTRACTORS SHALL BE LICENSED AND BE BONDED FOR THE WORK.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND OWNER SAFETY STANDARDS AND PRACTICES. ALL ON SITE PERSONNEL SHALL BE SAFETY TRAINED AND OWNER CERTIFIED.
5. OBTAIN REQUIRED PERMITS RELATED TO THE WORK AND PAY ALL PERMIT AND INSPECTION FEES.
6. THE AUTHORITY HAVING JURISDICTION SHALL INSPECT AND APPROVE ALL WORK. PROVIDE A FINAL CERTIFICATE OF APPROVAL FROM THE AUTHORITY HAVING JURISDICTION AND PRESENT TO THE OWNER BEFORE REQUESTING FINAL PAYMENT AND RELEASE OF RETAINAGE.
7. ALL EQUIPMENT AND MATERIAL REQUIRED FOR COMPLETE AND FUNCTIONAL HVAC SYSTEMS ARE INCLUDED IN THE CONTRACT.

GENERAL REQUIREMENTS - HVAC

1. PROTECT ALL FURNISHED MATERIAL AND EQUIPMENT FROM THEFT AND DETERIORATION OR CONTAMINATION DUE TO WEATHER OR CONSTRUCTION ACTIVITIES.
2. PROTECT OWNERS PROPERTY AND PROPERTY OF OTHER CONTRACTORS.
3. REMOVE ALL CONSTRUCTION DEBRIS FROM SITE. RECYCLE DEBRIS WHERE POSSIBLE. DISPOSE OF ALL HAZARDOUS MATERIAL IN ACCORDANCE WITH ENVIRONMENTAL LAWS.
4. PROVIDE ALL CUTTING AND PATCHING REQUIRED TO INSTALL MATERIAL AND EQUIPMENT.
5. EXISTING ROOF PATCHING SHALL BE SUBCONTRACTED TO A BONDED ROOFING CONTRACTOR FAMILIAR WITH THE ROOFING SYSTEM. MAINTAIN ANY REMAINING ROOF WARRANTY.
6. PROVIDE APPROPRIATE FIRESTOPPING SYSTEM FOR ANNULAR SPACE OPENINGS AROUND DUCT AND PIPE PENETRATIONS THROUGH FIRE RESISTANCE RATED CONSTRUCTION. ANNULAR SPACE OPENINGS AT DUCT OR PIPE PENETRATIONS IN NON RATED CONSTRUCTION TO BE CLOSED AIR AND WATER TIGHT.
7. MATERIALS AND EQUIPMENT SHALL BE ONE OF THE BRAND OR MANUFACTURERS LISTED OR AN APPROVED EQUAL.
8. ELECTRONIC SHOP DRAWINGS SHALL BE PROVIDED IN .PDF FORMAT FOR THE ENGINEER'S APPROVAL FOR ALL MATERIALS AND EQUIPMENT. SHOP DRAWINGS SHALL BE SPECIFICALLY EDITED TO ELIMINATE SUPERFLUOUS INFORMATION AND SHALL CLEARLY SHOW SPECIFICS FOR THE MATERIAL AND EQUIPMENT PROVIDED.
9. COORDINATE INSTALLATION OF ACTUAL EQUIPMENT AND SYSTEMS PROVIDED WITH OTHER TRADES AND NEW OR EXISTING CONDITIONS.
10. PROJECT CONDITIONS REQUIRE COORDINATION TO MAKE SYSTEMS FIT IN THE AVAILABLE SPACE. HVAC CONTRACTOR SHALL PROVIDE AN INITIAL ¼" =1'0" SET OF DRAWINGS AND DISTRIBUTED TO OTHER TRADE CONTRACTORS FOR COORDINATION. ALL CONTRACTORS SHALL COOPERATE TO MODIFY THEIR RESPECTIVE MATERIAL AND EQUIPMENT INSTALLATION AND DEPICT ON A DETAILED, FINISHED COORDINATION SET OF DRAWINGS BEFORE INSTALLATION. ALLOW FOR EXPECTED MINOR OFFSETS OR RELOCATION SYSTEM OR EQUIPMENT WITHOUT REQUEST FOR COMPENSATION ADJUSTMENT.
11. INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS. PROVIDE REQUIRED CLEARANCES TO MEET CODE REQUIREMENTS, MANUFACTURER'S RECOMMENDATIONS AND MAINTENANCE SERVICE.
12. ALL WORK AREAS SHALL BE CLEANED TO MATCH ORIGINAL CONDITION.
13. PROVIDE TESTING, ADJUSTING AND BALANCING (TAB) REPORTS FOR AIR AND WATER SYSTEMS. A CERTIFIED AABC OR NEBB FIRM SHALL PROVIDE THE BALANCE.
14. PROVIDE FINAL COORDINATION/INSTALLATION DRAWINGS TO THE OWNER IN BOUND PAPER AS WELL AS ELECTRONIC FORMAT FOR RECORD.
15. MAINTAIN RECORD DRAWINGS AND PROVIDE TO THE OWNER OR HIS AGENT.
16. PROVIDE TWO (2) BOUND, PAPER COPIES OF ALL OPERATING AND MAINTENANCE MANUALS. PROVIDE AN ELECTRONIC COPY OF THE OPERATING AND MAINTENANCE MANUAL.
17. PROVIDE WARRANTY FOR ALL WORKMANSHIP, EQUIPMENT AND MATERIAL. WARRANTY SHALL BE 1 YEAR FOR PART AND LABOR, PROVIDE EXTENDED WARRANTY PERIOD FOR PARTS AND/OR LABOR AS IDENTIFIED OR AS STANDARD FOR CERTAIN ITEMS OF EQUIPMENT.
18. PROVIDE TRAINING AND MAINTENANCE INSTRUCTION FOR SYSTEMS AND EQUIPMENT TO THE OWNER. TRAINING SHALL BE 16 HOURS OF TIME WITH MAXIMUM TRAINING PERIOD OF 4 HOURS.

GENERAL LEGEND

EC	ELECTRICAL CONTRACTOR
FC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
HC	HVAC CONTRACTOR
PC	PLUMBING CONTRACTOR
TC	TEMPERATURE CONTROLS CONTRACTOR
NIC	NOT IN CONTRACT
AFF	ABOVE FINISHED FLOOR - TO BOTTOM OF ITEM UNLESS INDICATED OTHERWISE IN DRAWING.
(E)	EXISTING
ES	EQUIPMENT SUPPLIER
EM	EMERGENCY
MH	MOUNTING HEIGHT
S	SURFACE MOUNTED
WP	WEATHER PROOF
3	NOTE SYMBOL - APPLIES ONLY TO SHEET ON WHICH IS SHOWN.
2	DETAIL NOTE SYMBOL - APPLIES ONLY TO DETAIL ON WHICH IS SHOWN.
H-1	EQUIPMENT REFERENCE SYMBOL. ELECTRICAL CONNECTION REQUIRED.
H-1	EQUIPMENT REFERENCE SYMBOL. NO ELECTRICAL CONNECTION REQUIRED.
123	ROOM NUMBER
2 / H3.1	DETAIL SYMBOL DETAIL "2" SHOWN ON SHEET H3.1.
1 / P3.1	SECTION SYMBOL SECTION "1" DESIGNATION, SHOWN ON SHEET H2.1.
	CONNECTION, NEW TO EXISTING
FD1	UP TO SYMBOL UP TO "FD1", SHOWN ON FLOOR ABOVE
	1 HOUR FIRE PROTECTION SEE SPECIFICATION FOR PENETRATION DETAILS
	2 HOUR FIRE PROTECTION SEE SPECIFICATION FOR PENETRATION DETAILS
	3 HOUR FIRE PROTECTION SEE SPECIFICATION FOR PENETRATION DETAILS
	ITEM TO BE REMOVED
	EXISTING TO REMAIN
	NEW ITEM

HVAC INDEX OF DRAWINGS

SEISMIC REQUIREMENTS

THIS PROJECT HAS SEISMIC REQUIREMENTS. REFER TO DRAWING H5.1

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ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	RS
CHECKED	JDZ

TITLE
LEGENDS AND SCHEDULES

SHEET NO.
H0.1

5/12/2022 9:08:53 AM

VARIABLE AIR VOLUME UNIT SCHEDULE

UNITS ARE VARIABLE AIR VOLUME, ELECTRIC REHEAT
ENTERING AIR TEMP. (DEG. F) 55
MAX AIR PRESSURE DROP INCLUDING HEATING COIL 0.5"
DESIGN BASIS - PRICE MODEL SDV
MAX. NC 25, WITH 10db ROOM ABSORBTION AT .75" S.P.
1.5" SP AND MAX. AIR FLOW
UNITS TO HAVE SCR CONTROL

UNIT NO.	LOCATION	INLET SIZE	COOLING CFM (MAX)	COOLING CFM (MIN)	HEATING CFM	MBH	KW	LAT	V/PH	SEE NOTES
1-01	DORM 109	5	200	40	140	6.8	2.0	100	208V / 1Φ	
1-02	DORMS 106, 107, 108, CORRIDOR C04	8	550	110	385	18.7	5.5	100	208V / 1Φ	
1-03	DORM 110	5	200	40	140	6.8	2.0	100	208V / 1Φ	
1-04	DORMS 111, 112, 113	7	450	90	315	15.3	4.5	100	208V / 1Φ	
1-05	FLEX 103	7	475	95	335	16.3	4.8	100	208V / 1Φ	
1-06	VESTIBULE 100	5	125	25	125	8.8	2.6	120	208V / 1Φ	
1-07	OFFICE 101	5	200	40	140	6.8	2.0	100	208V / 1Φ	
1-08	EXAM 104, LAUNDRY 105, CORRIDOR C03	7	375	75	265	12.9	3.8	100	208V / 1Φ	
1-09	REPORT 102, CORRIDOR C02	7	375	75	265	12.9	3.8	100	208V / 1Φ	
1-10	KITCHEN 118	8	525	105	370	17.9	5.3	100	208V / 1Φ	
1-11	EMS SUPPLY 124, CORRIDOR C02	6	275	55	195	9.5	2.8	100	208V / 1Φ	
1-12	DAYROOM 120, DINING 119	12	975	195	685	33.3	9.8	100	208V / 3Φ	
1-13	IT/PHONE 125	5	200	40	140	6.8	2.0	100	208V / 1Φ	
1-14	DECOMPRESSION 122	5	150	30	105	5.1	1.5	100	208V / 1Φ	
1-15	FITNESS 121	12	1275	255	895	43.5	12.7	100	208V / 3Φ	
1-16	TRAINING M01, MECHANICAL M02, QUARTERMASTER M03	8	600	120	420	20.4	6.0	100	208V / 3Φ	
2-01	STORAGE/MAINT 132, WATER 133	6	275	55	195	9.5	2.8	100	208V / 1Φ	
2-02	TOG ROOM 129	7	400	80	280	13.6	4.0	100	208V / 1Φ	
2-03	SCBA/STOR 128, ELECTRIC 134	5	250	50	175	8.5	2.5	100	208V / 1Φ	
2-04	DECON 127, TLT/SHOWER 126	7	475	95	335	16.3	4.8	100	208V / 1Φ	

FAN & ROOF VENTILATOR SCHEDULE

BASIS OD DESIGN - GREENHECK
REFER TO SPECIFICATIONS FOR OTHER MANUFACTURERS
VFD DRIVEN MOTORS SHALL BE PROVIDED WITH SHAFT GROUNDING RINGS, VFD DUTY MOTORS.
REFER TO INSTALLATION DETAILS.

TAG	SERVICE	AREA	DESCRIPTION	MODEL NUMBER & SIZE GREENHECK	ROOF OPENING (L x W)	CAPACITY		ELECTRICAL			ELECTRIC				DRIVE TYPE		MOUNTING				APPLICATION			ACCESSORIES & OPTIONS								CONTROLS					
						AIRFLOW (CFM)	E.S.P. (IN. W.C.)	MOTOR RPM	MOTOR HP	V/PH	DISCONNECT WITH FAN	DISCONNECT BY E.C.	VFD	ECM	DIRECT	BELT	ROOF CURB	BASEFLOOR	SUSPENDED, INLINE	WALL	CEILING	UL 762 GREASE RATED	UL 864 SMOKE CONTROL	HIGH TEMP (ABOVE 200 °F)	EXPLOSION PROOF	VIBRATION ISOLATION	INSULATION HOUSING	THERMAL CONTROL	SLOPING ROOF CURB	HINGED ROOF CURB	CURB EXTENSION	POWDER COAT FINISH	EPOXY INTERIOR FINISH	DDC CONTROLLED	MANUALONOFF SWITCH	DIAL SPEED CONTROLLER	MOTORIZED DAMPER	GRAVITY DAMPER	NOTES
EF-1	EXHAUST	APPARATUS BAY	DIRECT DRIVE INLINE	#SQ-22-07-070-VG	-	5000	0.75	850	2	208/3ø		•	•	•	•				•																	•		
EF-2	EXHAUST	LIVING QUARTERS RESTROOMS	ROOF-MOUNTED DOWNBLAST CENTRIFUGAL	#G-100-VG	14.5" SQ	475	0.5	1,150	1/4	120/1ø	•			•	•		•													•		•				•		
EF-3	EXHAUST	KITCHEN HOOD	ROOF-MOUNTED UPBLAST CENTRIFUGAL	#CUE -140HP-VG	18.5" SQ	600	1.0	1,350	1/2	120/1ø	•			•	•		•					•		•						•		•				•		5,6
EF-4	EXHAUST	RADIO ROOM	DIRECT DRIVE INLINE	#SQ-90-VG	-	200	0.35	1,250	1/10	120/1ø	•			•	•				•																			
EF-5	EXHAUST	TOG ROOM	ROOF-MOUNTED UPBLAST CENTRIFUGAL	#CUE-160HP-VG	18.5" SQ	400	0.4	1300	1/2	120/1ø	•			•	•		•													•		•				•		
EF-6	EXHAUST	DECON ROOM	ROOF-MOUNTED UPBLAST CENTRIFUGAL	#CUE-140HP-VG	18.5" SQ	625	0.4	1350	1/2	120/1ø	•			•	•		•													•		•				•		
VEF-1	SERVICE EXHAUST EXTRACTION	APPARATUS BAY	FORWARD CURVE CENTRIFUGAL	MAGNEGRIP CF 363-7.5	-	4400	6.0	3450	7.5	208/3ø	•																									•		7

NOTES:

1. DIAL SPEED CONTROLLER MOUNTED REMOTE ON WALL. REFER TO HVAC PLANS FOR LOCATION.
2. DIAL SPEED CONTROLLER MOUNTED ON FAN FOR BALANCING
3. MOTORIZED DAMPER PROVIDED AND INSTALLED BY H.C., E.C. TO PROVIDE POWER TO DAMPER ACTUATOR.
4. MANUAL ON/OFF SWITCH MOUNTED REMOTE. REFER TO ELECTRICAL PLAN FOR LOCATION.
5. FAN TO OPERATE FROM LOCAL SWITCH LOCATED ON HOOD AS WELL AS TO TURN ON WHEN HEAT SENSOR IN HOOD DETECTS TEMP > 125°F.
6. SS, GREASE RESISTANT DAMPER. PLACE IN HINGED CURB FOR DUCT CLEANING PURPOSES.
7. SEE MAGNEGRIP VEHICLE EXHAUST SYSTEM SCHEDULE FOR EXHAUST SYSTEM REQUIREMENTS.

HEATING UNIT SCHEDULE - GAS

REMOTE THERMOSTAT
BASIS OF DESIGN: REZNOR
GUH-1 REZNOR UDAS 200

UNIT NO.	SERVICE	MOUNTING	(MBH) INPUT/OUTPUT	CFM	W	AMPS	VOLT/PH	DIMENSIONS L (IN.)	DIMENSIONS D (IN.)	DIMENSIONS H (IN.)	WEIGHT	NOTES
GUH-1	APPARATUS BAY	HUNG FROM STRUCTURE	200/166	2500	400	5	120V/1PH	39"	42"	21"	235 LBS	1,2

NOTES:
1. PROVIDE STAINLESS STEEL HEAT EXCHANGER AND STAINLESS STEEL BURNERS.
2. PROVIDE SEISMIC SUPPORT.
3. MOUNT THERMOSTAT DOWNSTREAM OF DAMPER IN OA DUCT. SEE PLAN FOR LOCATION.

KITCHEN HOOD - KH-1 SCHEDULE

FIRE READY RESIDENTIAL FAN HOOD.
HOOD EQUAL TO GREENHECK GRRS-W-36-T-G-O-N.
FEATURES:
-EXHAUST COLLAR
-TOUCHSCREEN USER INTERFACE (MOUNTED ON FRONT OF HOOD)
-RECESSED LED LIGHTS
-3/4" GAS SOLENOID VALVE
-RANGE GAS SHUT OFF
-MANUAL PULL STATION
-INTEGRATED FIRE SUPPRESSION SYSTEM
-INTEGRATED SYSTEM CONTROLS (INTERLOCK WITH BAS)
-FIRE PIPING, GREASE FILTER

HOOD TO INCLUDE TEMPERATURE SENSOR WHICH WILL AUTOMATICALLY START EF-3 (REMOTE KITCHEN EF) WHEN TEMPERATURE EXCEEDS 125° (ADJ)

MAGNEGRIP - VEHICLE EXHAUST SYSTEM SCHEDULE VEF-1

FAN TYPE	ID#	AIRFLOW (CFM)	RPM	STATIC PRESSURE (IN WG)	VOLTS/ PHASE	HP	BREAKER	WIRE
MAGNEGRIP	CF363-7.5	*4400	3450	6 SP	208V/3PH	7.5	50 AMP	#6THHN

VEHICLE EXHAUST SYSTEM

DESCRIPTION	PART#	QTY	REMARKS
CONTROL PANEL	500181-08	1	
RAIN CAP	500157-14	1	
SUCTION RAIL	SSRM-721	4	1 HOSE DROP EACH
ADDITIONAL CRAB	52042-01	1	1 HOSE DROP EACH
TOTAL # OF HOSE DROPS:		5	CFM PER HOSE DROP: 628 CFM

REMARKS :

A. PROVIDE TRACK OR RAIL SYSTEM, TRANSITION ELBOW, HIGH TEMPERATURE HOSE, HOSE CLAMPS, NOZZLES TAIL PIPE CONNECTORS, FRESH AIR INTAKE, AND OTHER ITEMS REQUIRED FOR A COMPLETE INSTALLATION. H.C. SHALL SUBCONTRACT TO MAGNEGRIP FOR THIS SYSTEM.

B. PROVIDE WIRELESS CONTROL PANEL ACTIVATION, PRESSURE SENSORS, WIRELESS TRANSMITTERS, AND ADDITIONAL COMPONENTS IF REQUIRED FOR AUTOMATIC FAN CONTROL.

C. VEHICLE EXHAUST SYSTEM BY MAGNEGRIP. CONTACT MIKE WINKLER 513-489-4440 EXT 107

* AIRFLOW/FAN SIZED FOR 7 DROPS (628 CFM EA) - 5 PROPOSED & 2 FUTURE

RADIANT HEATER SCHEDULE - GAS

BASIS OF DESIGN: RE-VERBER-RAY, OR EQUAL BY SCHWANK SUPERTUBE OR ROBERTS GORDAN VANTAGE
RH-1 TO 9 MP-25-80
REMOTE THERMOSTAT

UNIT NO.	SERVICE	MOUNTING	(MBH) INPUT/OUTPUT	AMPS	VOLT/PH	DIMENSIONS L	WEIGHT	NOTES
RH-1	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	2,5,6
RH-2	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	1,6
RH-3	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	2,6
RH-4	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	1,6
RH-5	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	2,6
RH-6	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	3,6
RH-7	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	3,5
RH-8	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	3,4,5
RH-9	APPARATUS BAY	HUNG FROM STRUCTURE	80/72	5	120V/1PH	26'-5"	140 LBS	3,4,5

NOTES:
1. RH-2, RH-4 CONTROLLED BY THE SAME TEMPERATURE SENSOR. SEE FLOOR PLAN FOR LOCATION.
2. RH-1, RH-3, RH-5 CONTROLLED BY THE SAME TEMPERATURE SENSOR. SEE FLOOR PLAN FOR LOCATION.
3. RH-6, RH-7, RH-8, RH-9 CONTROLLED BY THE SAME TEMPERATURE SENSOR. SEE FLOOR PLAN FOR LOCATION. PROVIDE MOMENTARY WALL SWITCH TO RUN RH-6, RH-7, RH-8 AND RH-9 AT 100% (ADJ.) HEAT FOR 15 MIN (ADJ.)
4. PROVIDE SIDE SHIELD ON RADIANT TUBE TO PROJECT HEAT AWAY FROM THE WALL.
5. COORDINATE EQUIPMENT LOCATION WITH OTHER TRADES. PROVIDE SIDE SHIELDS AS NEEDED TO PROTECT EQUIPMENT (ELECTRIC HOSE REELS, FANS, VEHICLE EXHAUST EXTRACTION, ETC.)

ELECTRIC UNIT HEATER SCHEDULE

GENERAL NOTES
HEATING CAPACITY BASED ON 70° ΔT AIR TEMPERATURE DIFFERENCE.

UNIT NO.	DESCRIPTION	LOCATION	MANUFACTURER / MODEL	MOUNTING	INPUT (KW)	AIR FLOW (CFM)	DIMENSIONS L (IN.)	DIMENSIONS D (IN.)	DIMENSIONS H (IN.)	VOLTAGE / PHASE	NOTES
EUH-1	ELECTRIC WALL MOUNTED UNIT HEATER	ELECTRIC 134	QMARK AWH3150F	VERTICAL, WALL-MTD-RECESSED	1.5	100	20	16	4	120V/1PH	
EUH-2	ELECTRIC WALL MOUNTED UNIT HEATER	TOILET/SHOWER 115	QMARK AWH3150F	VERTICAL, WALL-MTD-RECESSED	1.5	100	20	16	4	120V/1PH	
EUH-3	ELECTRIC WALL MOUNTED UNIT HEATER	TOILET/SHELTER 123	QMARK AWH3150F	VERTICAL, WALL-MTD-RECESSED	1.5	100	20	16	4	120V/1PH	
EUH-4	ELECTRIC WALL MOUNTED UNIT HEATER	DAYROOM 120	QMARK AWH3150F	VERTICAL, WALL-MTD-RECESSED	1.5	100	20	16	4	120V/1PH	
EUH-5	ELECTRIC WALL MOUNTED UNIT HEATER	TOILET/SHOWER 126	QMARK AWH3150F	VERTICAL, WALL-MTD-RECESSED	1.5	100	20	16	4	120V/1PH	
EUH-6	ELECTRIC WALL MOUNTED UNIT HEATER	WATER 123	QMARK AWH3150F	VERTICAL, WALL-MTD-RECESSED	1.5	100	20	16	4	120V/1PH	

NOTES:

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ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION
2	04/22/22	ADDENDUM No. 2

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	RS
CHECKED	JDZ

TITLE
SCHEDULES

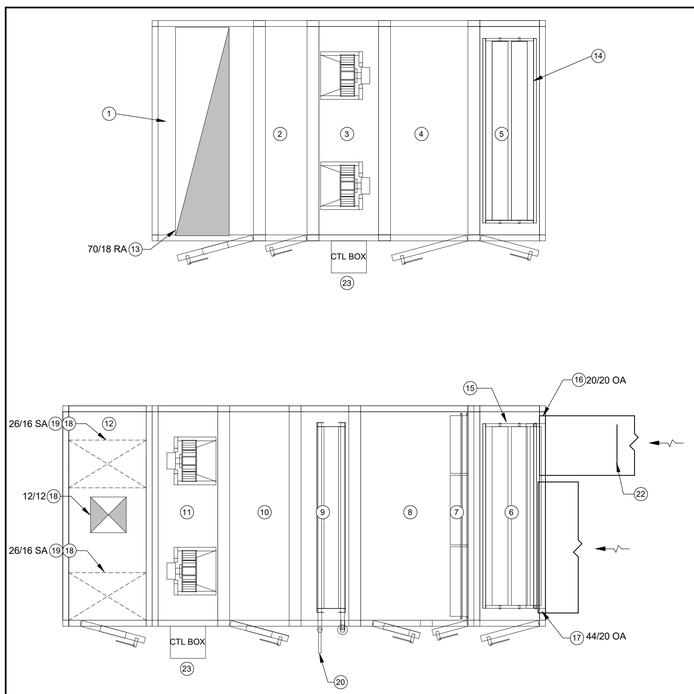
SHEET NO.
H0.2

5/12/2022 8:05:16 AM

AIR HANDLING UNIT - AHU-1

UNIT TAG	AHU-1
BASIS OF DESIGN	DAIKIN CAH014
SERVICE	LIVING QUARTERS
DESCRIPTION	VARIABLE VOLUME MULTI ZONE
MOUNTING	CURB & RAIL
EVAPORATOR FAN - QPAC ECM FAN ARRAY	
NO. FANS	2
AIRFLOW (CFM)	6000
ESP. (" W.G.)	2"
FAN SIZE (EA)	3000 (2) - 14"
MOTOR HP/ V-PH (EA)	5HP 208V/3PH
MIN. OUTSIDE AIR - CFM/%	1500-25%
VARIABLE FREQUENCY DRIVE	YES
ELECTRIC	
CIRCUIT SIZE MCA (SUPPLY FANS)	22.6 A
CIRCUIT SIZE MOCP (SUPPLY FANS)	30 A
VOLTAGE/PHASE	208V/3ø
FILTER	
PRE-FILTER TYPE	MERV-8 PREFILTER 2" PANEL, 14 FT² - 03" A.F.D (INITIAL)
FINAL FILTER TYPE	MERV-13 FILTER 4" RIGID CARTRIDGE 14 FT² - 0.5" A.F.D (INITIAL)
RELIEF FAN - QPAC ECM FAN ARRAY	
NO. FANS	2
TOTAL AIRFLOW (CFM)	5000
ESP. (" W.G.)	1"
CFM - FAN SIZE (EA)	2500 - 14" (2)
MOTOR HP/V-PH (EA)	2.5 HP 208V/3PH
INTEGRATED DRIVE	YES (2)
ELECTRIC	
CIRCUIT SIZE MCA (RETURN FANS)	11.5 A
CIRCUIT SIZE MOCP (RETURN FANS)	15 A
VOLTAGE/PHASE	208V/3ø
COOLING - BASED ON 95/76 (DB/WB) O.A. & 78 DB, 50% RH R.A.	
TOTAL (MBH)	281
SENSIBLE (MBH)	173
ENTER. AIR (DB/WB)	81/68
SUPPLY AIR (DB/WB)	53/52
MAX AP DROP (INCHES WG)	0.5
EER	
PHYSICAL UNIT DATA	
LENGTH	174"
WIDTH	74"
HEIGHT - NOT INCLUDING CURB	84"
MAX UNIT OP. WEIGHT (LBS)	4500

NOTES:
1. REFER TO PLAN AND ELEVATION DRAWINGS FOR COMPONENTS AND ARRANGEMENT.
2. PROVIDE ADDITIONAL 120V/1ø CIRCUIT TO POWER LIGHTS. BY E.C.



1. MIXING BOX SECTION WITH ACCESS DOOR AND INTERIOR LIGHTING.
2. ACCESS SECTION WITH ACCESS DOOR AND INTERIOR LIGHTING.
3. RETURN AIR ECM FAN ARRAY SECTION.
4. ACCESS SECTION WITH INTERIOR LIGHTING.
5. MIXING BOX SECTION WITH ACCESS DOOR .
6. MIXING BOX SECTION WITH ACCESS DOOR.
7. FILTER SECTION WITH ACCESS DOOR.
8. ACCESS SECTION WITH ACCESS DOOR AND INTERIOR LIGHTING.
9. COOLING COIL.
10. ACCESS SECTION WITH ACCESS DOOR AND INTERIOR LIGHTING.
11. SUPPLY AIR FAN ARRAY SECTION.
12. DISCHARGE PLENUM WITH ACCESS DOOR AND INTERIOR LIGHTING.
13. RETURN AIR DUCT. SIZE AS NOTED
14. VENT AIR DAMPER. THERMALLY INSULATED
15. RETURN AIR DAMPER.
16. MINIMUM OUTSIDE AIR DAMPER. THERMALLY INSULATED
17. ECONOMIZER OUTSIDE AIR DAMPER. THERMALLY INSULATED.
18. SUPPLY AIR DUCT. SIZE AS NOTED.
19. PROVIDE GALVANIZED STEEL SAFETY GRATING OVER DUCT OPENING.
20. 0.75" CONDENSATE PIPE TO FLOOR DRAIN.
21. 6" BASE RAIL.
22. TAMCO EBTRON AIR-IQ2 AIRFLOW MEASUREMENT STATION. MIN. 24" CLEARANCE FROM OA DAMPER.
23. FAN ARRAY CONTROL BOX.

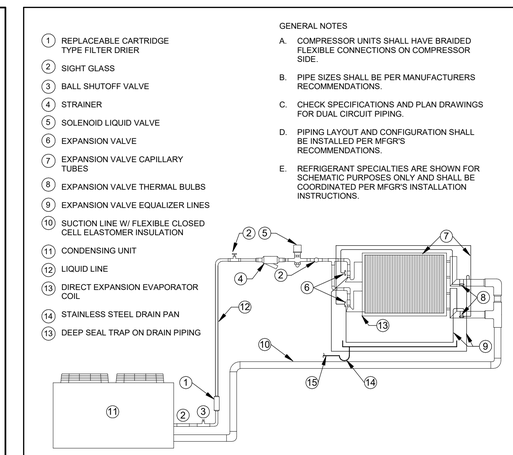
1 AIR HANDLING UNIT AH1 DETAILS
1/2" = 1'-0"

CONDENSING UNIT SCHEDULE

BASIS OF DESIGN: DIAKIN RCS 025D

UNIT	COOLING CAPACITY	REFRIGERANT			ELECTRICAL			DIMENSIONS			UNIT WEIGHT (LBS)	MODEL NO.	NOTES
	MBH @ 90°F	TYPE	FACTORY CHARGE (LBS)	ADDITIONAL CHARGE (LBS)	V-PH	MCA	MOCP	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)			
CU-1	284	410A	2	17	208V/3PH	125	175	99	58	56	2000	RCS 025D	

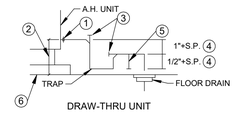
NOTES: 1



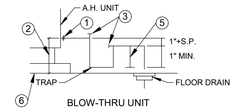
GENERAL NOTES
A. COMPRESSOR UNITS SHALL HAVE BRAIDED FLEXIBLE CONNECTIONS ON COMPRESSOR SIDE.
B. PIPE SIZES SHALL BE PER MANUFACTURERS RECOMMENDATIONS.
C. CHECK SPECIFICATIONS AND PLAN DRAWINGS FOR DUAL CIRCUIT PIPING.
D. PIPING LAYOUT AND CONFIGURATION SHALL BE INSTALLED PER MFGR'S RECOMMENDATIONS.
E. REFRIGERANT SPECIALTIES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY AND SHALL BE COORDINATED PER MFGR'S INSTALLATION INSTRUCTIONS.

1. REPLACEABLE CARTRIDGE TYPE FILTER DRIER
2. SIGHT GLASS
3. BALL SHUTOFF VALVE
4. STRAINER
5. SOLENOID LIQUID VALVE
6. EXPANSION VALVE
7. EXPANSION VALVE CAPILLARY TUBES
8. EXPANSION VALVE THERMAL BULBS
9. EXPANSION VALVE EQUALIZER LINES
10. SUCTION LINE W/ FLEXIBLE CLOSED CELL ELASTOMER INSULATION
11. CONDENSING UNIT
12. LIQUID LINE
13. DIRECT EXPANSION EVAPORATOR COIL
14. STAINLESS STEEL DRAIN PAN
13. DEEP SEAL TRAP ON DRAIN PIPING

2 REFRIGERANT PIPING DETAIL
N.T.S.



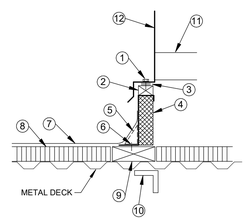
DRAW-THRU UNIT



BLOW-THRU UNIT

1. DRAIN PIPE SAME SIZE AS UNIT DRAIN PAN CONNECTION.
2. VERIFY REQUIRED HEIGHT FOR DRAIN PIPE AND TRAP INSTALLATION. PROVIDE ADDITIONAL BEAMS OR BACK-TO-BACK CHANNELS UNDER UNIT. IF REQUIRED, TO ATTAIN REQUIRED DIMENSION.
3. TEE WITH CLEANOUT PLUG.
4. 4" MINIMUM CENTERLINE TO CENTERLINE.
5. DRAIN CENTERLINE DIMENSION NOT LESS THAN SUPPLY FAN T.S.P. (INCH W.G.) + 2".
6. CONCRETE PAD OR STEEL BASE. SEE FLOOR PLANS.

3 COOLING COIL CONDENSATE PIPING
N.T.S.



1. SECURE EQUIPMENT TO CURB WITH 3/8" LAG BOLTS PER MFR. RECOMMENDATION.
2. PRESSURE TREATED WOOD NAILER.
3. GASKET PROVIDED WITH CONDENSING UNIT.
4. 14" HIGH ALUMINUM CURB WITH 1.5" FIBERGLASS INSULATION.
5. FLASHING, CANT STRIPS (IF REQUIRED), ROOFING MATERIAL & ROOFING CONSTRUCTION BY CONTRACTOR.
6. FASTEN CURB BASE TO BLOCKING.
7. EXISTING ROOFING.
8. EXISTING INSULATION.
9. PRESSURE TREATED WOOD BLOCKING BY H.C. FASTEN TO DECK. BLOCKING TO BE SAME SIZE AS INSULATION THICKNESS.
10. STEEL FRAMING BY H.C.
11. CONDENSING UNIT BASE.
12. CONDENSING UNIT.

4 CONDENSING UNIT ROOF CURB
N.T.S.

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ISSUE

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TITLE
AHU SCHEDULE AND DETAILS

SHEET NO.
H0.3

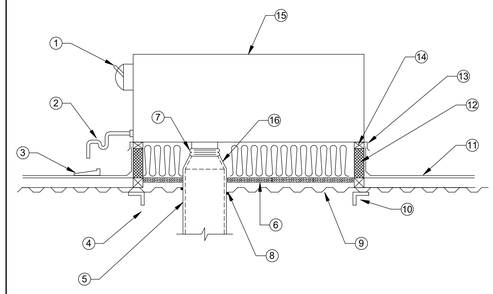
5/13/2022 9:08:59 AM

ROOFTOP UNIT SCHEDULE

UNIT TAG	RTU-1
BASIS OF DESIGN	DAIKIN DPS007A
SERVICE	DECON, TOG AND SCBA AREAS
DESCRIPTION	100% O.A.
MOUNTING	ROOF
EVAPORATOR FAN - ECM	
NO. FANS	1
AIRFLOW (CFM)	1500 CFM
ESP. (" W.G.)	2"
MIN. OUTSIDE AIR - CFM/%	1500 CFM - 100%
VARIABLE FREQUENCY DRIVE	YES
FILTER	
PRE-FILTER TYPE	MERV 8 PREFILTER 2"PANEL, 18 FT² - 0.1" A.F.D (INTEGRAL)
FINAL FILTER TYPE	MERV 14 FINAL FILTER 2"PANEL, 18 FT² - TOTAL 0.2" A.F.D (INTEGRAL)
COOLING - BASED ON 95/76 (DB/WB) O.A.	
TOTAL (MBH)	98
SENSIBLE (MBH)	61
ENTER. AIR (DB/WB)	95/76
SUPPLY AIR (DB/WB)	55/54
EER	11.8
HOT GAS REHEAT	
CAPACITY (MBH)	23
ENTER AIR	55
LEAVING AIR	72
HEATING - REQ. NATURAL GAS INPUT PRESSURE: 4.5" W.C. MIN./14" W.C. MAX. -BASED ON 0ºF O.A. -MODULATING TURN DOWN 10:1	
GAS INPUT (MBH)	200
OUTPUT (MBH)	160
ENTER. AIR DB	0°F
SUPPLY AIR (DB/WB)	100°F
ELECTRIC	
CIRCUIT SIZE MCA	33.9 A
MOCP	45 A
VOLTAGE/HZ/PHASE	208V/3PH
PHYSICAL UNIT DATA	
LENGTH	91"
WIDTH	97"
HEIGHT - NOT INCLUDING CURB	57"
MAX UNIT OP. WEIGHT (LBS)	2500
UNIT OPTIONS	
ECONOMIZER HOOD	•
MIN. O.A. HOOD	
CONSTANT AIR VOLUME	
VARIABLE AIR VOLUME	•
(1) INVERTER DUTY SCROLL COMPRESSOR	•
(1) FIXED SCROLL COMPRESSOR	•
STAINLESS STEEL HEAT EXCHANGER	
14" ROOF CURB ADAPTER	•
BAC NET CARD	1

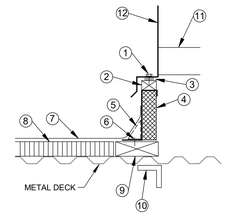
NOTES:

1. SEE ROOFTOP UNIT MOUNTING DETAIL, DETAIL 1, SHEET H0.4
2. COOLING COIL CONDENSATE TRAP PER DETAIL 3, SHEET H0.4
3. EBTRON AIR FLOW STATION



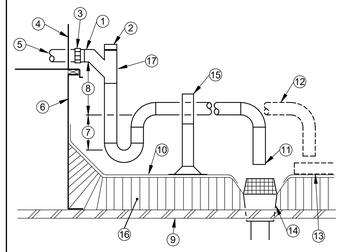
1. ELECTRICAL DISCONNECT W/ GFI RECEPTACLE SUPPLIED BY UNIT MANUFACTURER. POWER CONN. BY E.C.
2. CONDENSATE DRAIN, REFER TO DETAIL
3. PROVIDE CONCRETE SPLASH BLOCK ON NEOPRENE PAD UNDER CONDENSATE DRAIN
4. FILL ALL VOIDS BETWEEN ROOF DECK & BOTTOM OF UNIT WITH UNFACED BATT INSULATION
5. EXTERNALLY INSULATED SUPPLY DUCT, REFER TO PLANS FOR SIZE
6. PROVIDE TWO LAYERS OF 5/8" WATER RESISTANT GYPSUM BOARD ON ROOF DECK
7. FLEXIBLE DUCT CONNECTION, TYP.
8. SEAL AROUND DUCT PENETRATIONS, TYP.
9. ROOF OPENINGS SHALL BE NO LARGER THAN REQUIRED FOR DUCT PENETRATIONS.
10. STRUCTURAL SUPPORT BY OTHERS, TYP.
11. FLASHING, CANT STRIPS (IF REQUIRED), ROOFING MATERIAL & ROOF CONSTRUCTION BY ROOFING CONTRACTOR
12. 14" HIGH INSULATED ROOF CURB PROVIDED BY THE H.C. SEE DETAIL.
13. COUNTER FLASHING BY H.C.
14. NAILING STRIP
15. ROOFTOP UNIT - REFER TO PLANS FOR CAPACITIES
16. DUCT TRANSITION AS REQUIRED, TYP.

1 ROOFTOP UNIT
N.T.S.



1. SECURE EQUIPMENT TO CURB WITH 3/8" LAG BOLTS PER MFR. RECOMMENDATION.
2. PRESSURE TREATED WOOD NAILER.
3. GASKET PROVIDED WITH ROOFTOP UNIT.
4. 14" HIGH ALUMINUM CURB WITH 1.5" FIBERGLASS INSULATION.
5. FLASHING, CANT STRIPS (IF REQUIRED), ROOFING MATERIAL & ROOFING CONSTRUCTION BY CONTRACTOR.
6. FASTEN CURB BASE TO BLOCKING.
7. EXISTING ROOFING.
8. EXISTING INSULATION.
9. PRESSURE TREATED WOOD BLOCKING BY H.C. FASTEN TO DECK. BLOCKING TO BE SAME SIZE AS INSULATION THICKNESS.
10. STEEL FRAMING BY H.C.
11. ROOFTOP BASE.
12. ROOFTOP UNIT.

2 ROOFTOP UNIT ROOF CURB
N.T.S.



1. DRAIN PIPE. SAME SIZE AS UNIT OUTLET.
2. CLEANOUT PLUG.
3. UNION.
4. SIDE OF ROOFTOP UNIT.
5. FROM DRAIN PAN.
6. 14" HIGH ROOF CURB. SEE DETAIL.
7. 1/2 OF NO. 8 HEIGHT.
8. 1" + EACH 1" OF UNIT STATIC PRESSURE.
9. ROOF DECK.
10. ROOFING MEMBRANE.
11. OPEN DRAIN - 1" AIR GAP.
12. ALTERNATE ROUTING OF DRAIN.
13. 12"x12"x1" THICK CONCRETE SPLASH BLOCK. PLACE ON TOP OF ADDITIONAL PIECE OF ROOFING MEMBRANE.
14. ROOF DRAIN.
15. ADJUSTABLE PIPE SUPPORT. ERICO CADDY PYRAMID EZ OR EQUAL. SET SUPPORT ON MEMBRANE.
16. ROOF INSULATION.
17. DRAINAGE WYE FITTING.

3 ROOFTOP COOLING COIL CONDENSATE PIPING
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RTU SCHEDULE AND DETAILS

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H0.4

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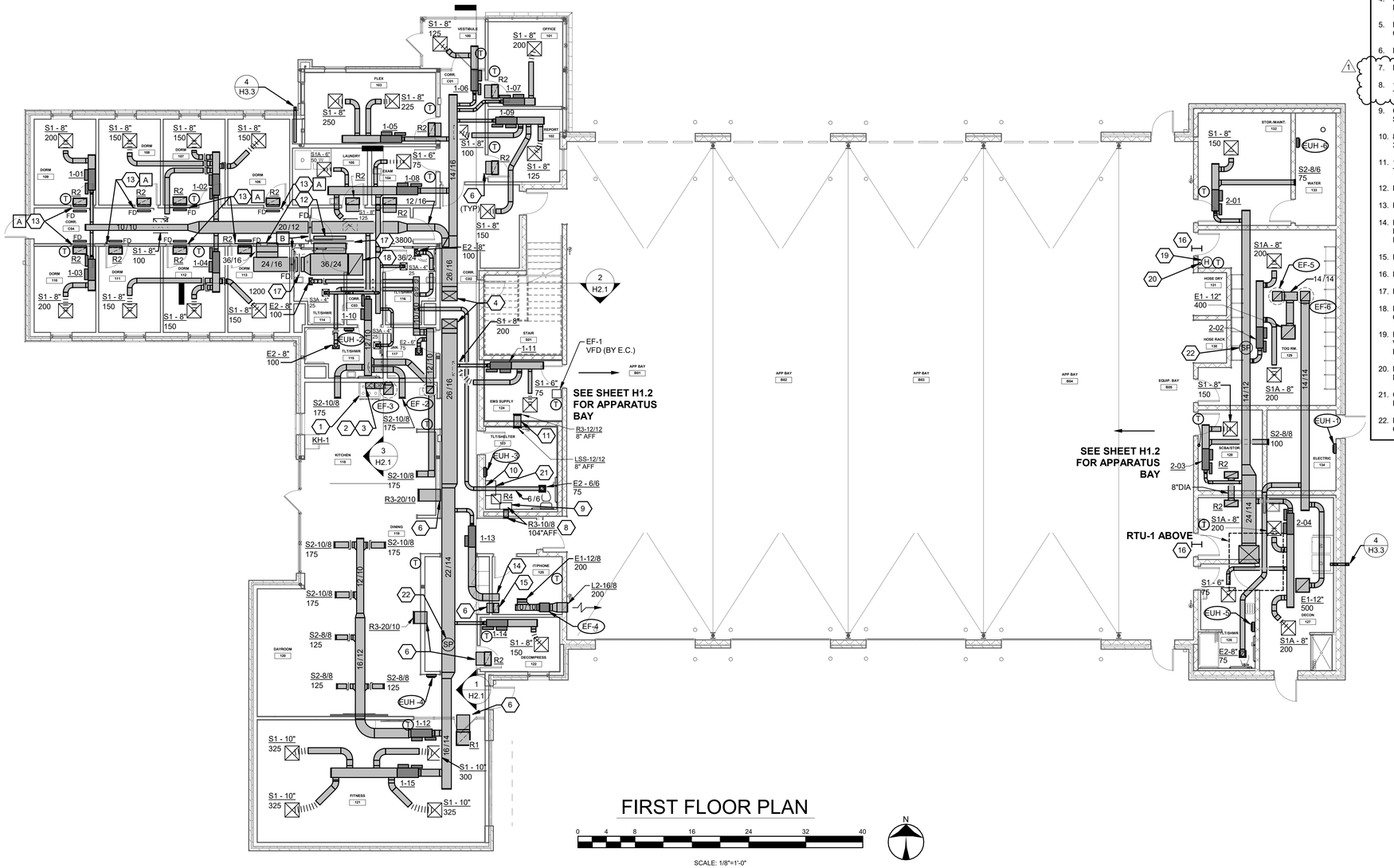

FIRST FLOOR PLAN

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

CONSTRUCTION NOTES

1. PROVIDE FIRE READY RESIDENTIAL FAN HOOD. SEE SCHEDULE ON SHEET H0.2 FOR SPECIFICATIONS.
2. MINIMUM 1/4" PER FOOT SLOPE BACK TO HOOD.
3. 10/10 WELDED STAINLESS STEEL DUCT WITH 2 LAYERS OF FIRE WRAP INSULATION. PROVIDE HINGED ACCESS DOOR FOR DUCT CLEANING.
4. SUPPLY AIR DUCT DOWN FROM AH-1 ON MEZZANINE. SEE SHEET H1.2 FOR CONTINUATION.
5. RETURN AIR DUCT UP TO AH-1 ON MEZZANINE. SEE SHEET H1.2 FOR CONTINUATION.
6. DUCT OPEN TO PLENUM.
7. NOTE NOT USED.
8. 10" WIDE BY 8" HIGH OPENING. 104" TO BOTTOM OF OPENING WITH TYPE "A" 3 HOUR FIRE DAMPER IN WALL.
9. G.C. TO PROVIDE SHROUD AROUND WALL OPENING. SEE DETAIL 7, SHEET S4.3.
10. 8" WIDE X 6" HIGH OPENING FOR DUCT PENETRATION WITH TYPE "A" 3 HOUR FIRE DAMPER IN WALL.
11. 12" WIDE BY 12" HIGH OPENING. 8" TO BOTTOM OF OPENING WITH TYPE "A" 3 HOUR FIRE DAMPER IN WALL.
12. PROVIDE BIRDSCREEN OVER OPENING.
13. PROVIDE 24/12 TYPE A FIRE DAMPER IN RETURN AIR DUCT.
14. RUN 12/6 DUCT DOWN TO 12" A.F.F. AND TERMINATE. PROVIDE BALANCE DAMPER IN DUCT DROP (4' A.F.F.). BALANCE TO AIRFLOW INDICATED ON PLAN.
15. RUN 12/6 TRANSFER AIR DUCT DOWN TO 12" A.F.F. AND TERMINATE.
16. PRESSURE SENSOR TO CONTROL EXHAUST FAN SPEED.
17. BALANCE RETURN AIR DAMPER TO AIRFLOW INDICATED ON PLAN.
18. RETURN AIR DUCT UP TO MEZZANINE. SEE SHEET H1.2 FOR CONTINUATION. DUCT SIZE AS NOTED ON PLAN.
19. HUMIDITY SENSOR. WHEN HUMIDITY RISES ABOVE 50% RH (ADJ), VAV BOX 2-02 TO RUN AS CONSTANT VOLUME BOX UNTIL RH DROPS BELOW 40% RH (ADJ).
20. PUSH BUTTON - PROVIDE A MOMENTARY WALL SWITCH TO MAINTAIN 100% VAV 2-02 AIRFLOW FOR 2 HOURS (ADJ).
21. G.C. TO PROVIDE SHROUD AROUND WALL OPENING/DUCT PENETRATION PER DETAIL 9, SHEET S4.3.
22. PROVIDE STATIC PRESSURE IN SUPPLY DUCT WHERE INDICATED ON PLAN.

STORM SHELTER NOTE

PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE LARGER THAN 3 1/2 SQUARE INCHES IN AREA FOR RECTANGLAR OPENINGS OR 2 1/16" IN DIAMETER SHALL BE PROVIDED WITH AN OPENING PROTECTIVE DEVICE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF PROTECTIVE DEVICES.

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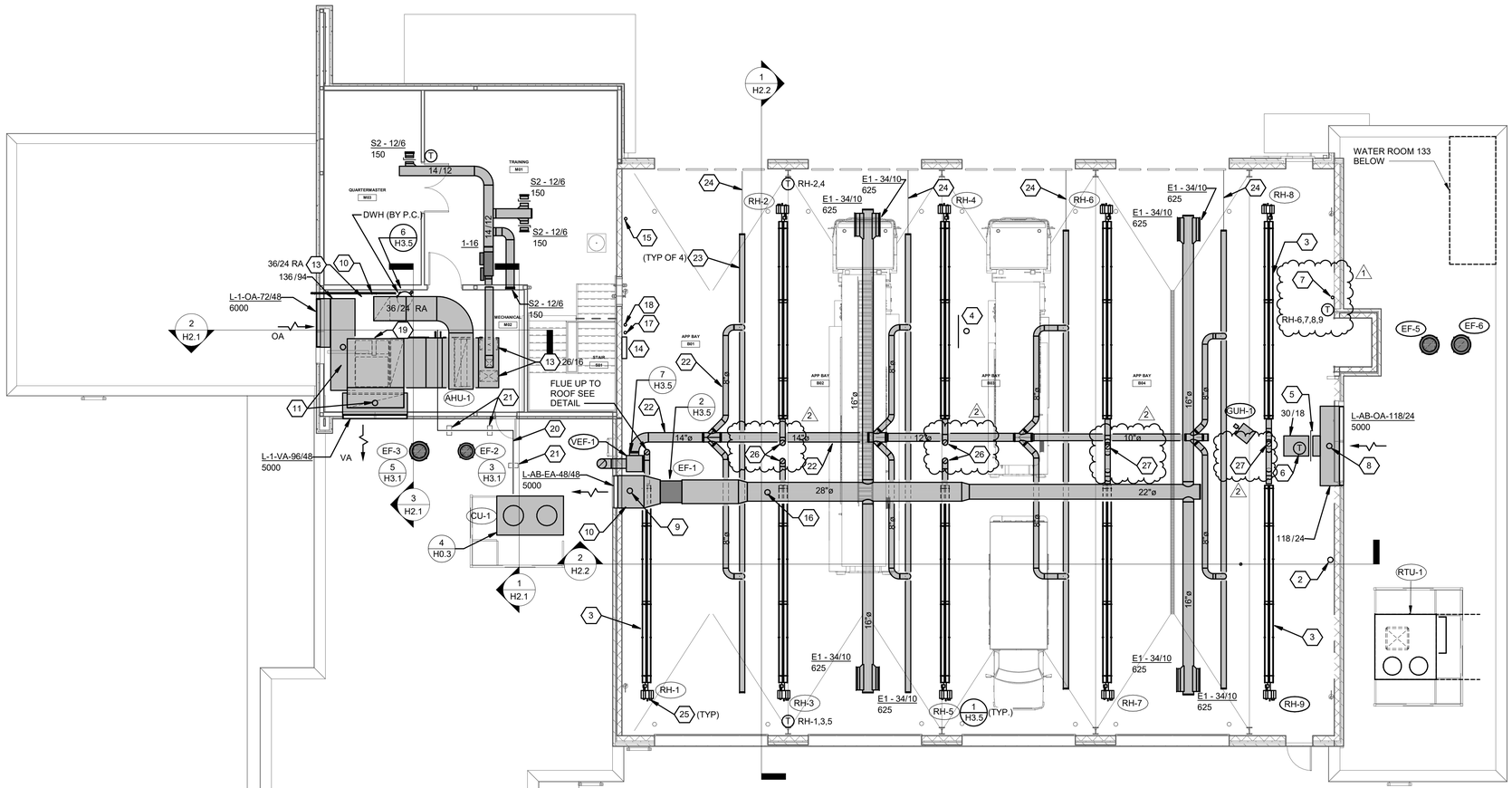
TITLE
FIRST FLOOR PLAN

SHEET NO.
H1.1

5/12/2022 9:09:03 AM



APPARATUS BAY AND MECHANICAL ROOM PLAN

0 4 8 16 24 32 40

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

N

CONSTRUCTION NOTES

1. BALANCE DAMPER TO AIRFLOW INDICATED ON PLAN.
2. CARBON MONOXIDE AND NITRIC OXIDE SENSOR. MOUNT SENSOR AT 4' A.F.F WIRE TO CONTROL PANEL. CONTROL PANEL TO DISPLAY NITRIC OXIDE AND CARBON MONOXIDE VALUE FOR EACH SENSOR.
3. PROVIDE SIDE DEFLECTOR PLATE TO DEFLECT HEAT FROM WALL.
4. PROVIDE DEFLECTOR PLATE TO DEFLECT HEAT FROM ELECTRIC CORD REELS, EXHAUST HOSE REEL AND AIR HOSE REELS. COORDINATE LOCATION OF DEFLECTORS WITH LOCATION OF REELS. DEFLECTOR PLATE TO EXTEND 3 FEET FROM BOTH SIDES OF REEL.
5. INTERLOCK AUTO DAMPER TO OPEN WHEN EF-1 RUNS ABOVE 10% SPEED (ADJ).
6. UH-1 TO RUN WHEN TEMPERATURE IN < 40°F (ADJ.)
7. WALL MOUNTED MOMENTARY SWITCH TO ENABLE HEATERS RH-6, 7, 8 & 9 TO FULL CAPACITY FOR 15 MINUTES (ADJ).
8. 0.75" DRAIN LINE W/1" INSULATION ROUTE DRAIN LINE TO FLOOR DRAIN IN WATER ROOM 133.
9. 0.75" DRAIN LINE W/1" INSULATION ROUTE DRAIN LINE TO FLOOR DRAIN IN JANITOR ROOM 117 BELOW.
10. SLOPE PLENUM MINIMUM 1/4" PER FOOT TOWARDS LOUVER FOR DRAINAGE.
11. 0.75" DRAIN LINE W/1" INSULATION. ROUTE DRAIN LINE TO FLOOR DRAIN IN MECHANICAL ROOM.
12. RETURN DUCT DOWN TO FIRST FLOOR SIZE AS NOTED ON PLAN SEE SHEET H1.1 FOR CONTINUATION.
13. SUPPLY DUCT DOWN TO FIRST FLOOR SIZE AS NOTED ON PLAN SEE SHEET H1.1 FOR CONTINUATION.
14. CARBON MONOXIDE AND NITRIC OXIDE MONITORING PANEL. PANEL TO HAVE EIGHT (8) DISPLAY READOUTS AND AUDIO/VISUAL ALARM. PROVIDE SEPARATE HORN/STROBE ALARM AND WIRE CONTROL PANEL TO ALARM WHEN ANY CO LEVEL> 50 PPM (ADJ.) AND ANY NO_2 LEVEL> 30 PPM (ADJ)
15. CARBON MONOXIDE AND NITRIC OXIDE SENSOR. MOUNT SENSOR AT 4' A.F.F AND 12' A.F.F WIRE TO CONTROL PANEL. CONTROL PANEL TO DISPLAY NITRIC OXIDE AND CARBON MONOXIDE VALUE FOR EACH SENSOR.
16. DUCT MOUNTED CARBON MONOXIDE AND NITRIC OXIDE SENSOR. WIRE TO CONTROL PANEL. CONTROL PANEL TO DISPLAY NITRIC OXIDE AND CARBON MONOXIDE VALUE FOR EACH SENSOR.
17. EF-1, RH-1,2,3,4,5,6,7,8,9 DISENGAGE OVERRIDE PUSH BUTTON.
18. EF-1 OVERRIDE ENGAGE PUSH BUTTON 30 MINUTE (ADJ.).
19. AIR FLOW MEASURING STATION IN MINIMUM OUTSIDE AIR DUCT, 20/20.
20. REFRIGERANT PIPE LINE SET.
21. ANVIL-STRUT H-BLOCK ROOFTOP SUPPORT SYSTEMS HBS-10-H-164-PG. 5' SUPPORT SPACING.
22. VEHICLE EXHAUST EXTRACTION DUCT.
23. VEHICLE EXHAUST SUCTION RAIL.
24. VEHICLE EXHAUST STRUCTURAL SUPPORT BY MAGNEGRIP, (THROUGH HC CONTRACT) TO RESTRAIN RAIL AGAINST BREAKAWAY FORCE.
25. COMBUSTION AIR OPEN TO APPARATUS BAY.
26. PROVIDE SEPARATE FLUE FOR RADIANT HEATERS.
27. RADIANT HEATERS TO HAVE COMBINED FLUE.

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TITLE
APPARATUS BAY

SHEET NO.
H1.2

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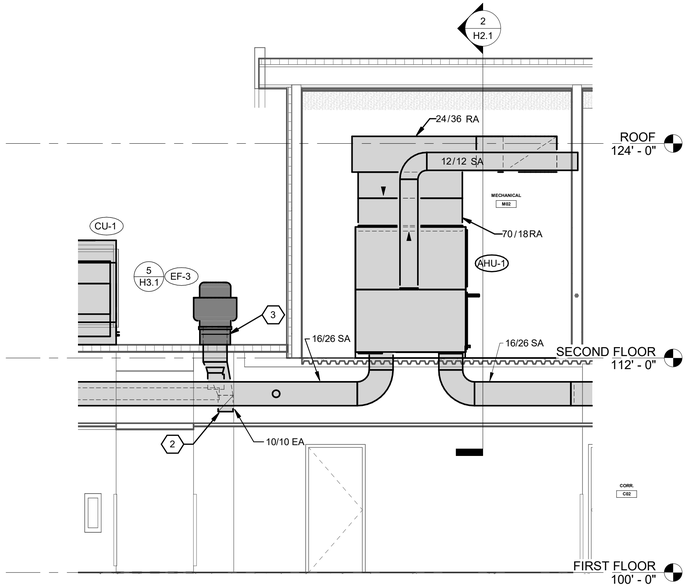
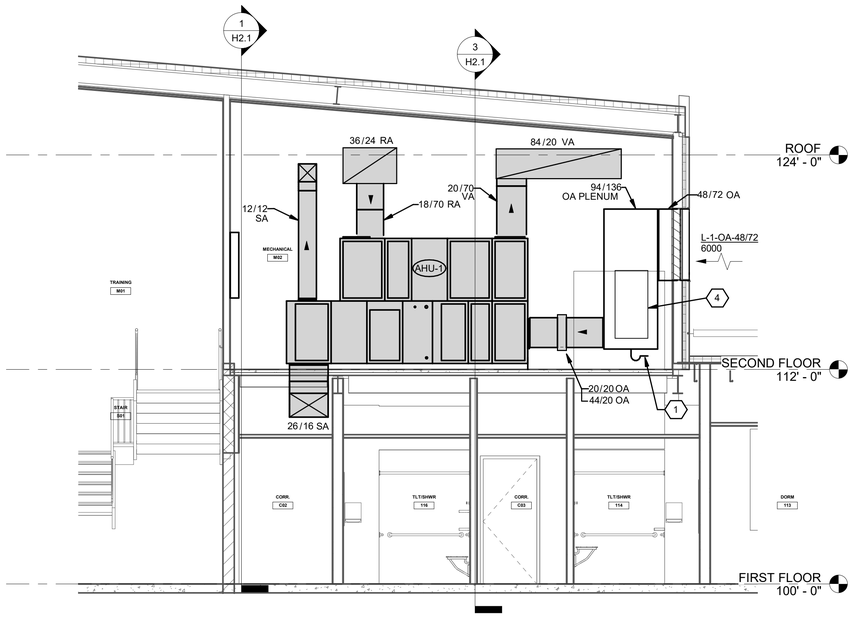


1 H2.1 MECHANICAL ROOM SECTION WEST

0 2 4 8 12 16 20

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



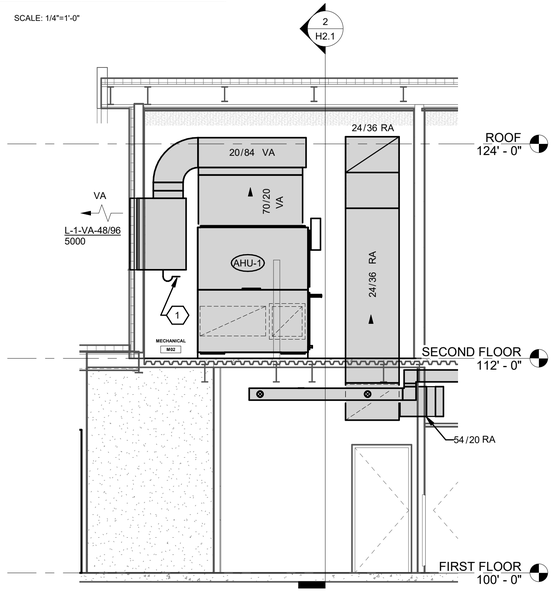
2 H2.1 MECHANICAL ROOM SECTION NORTH

0 2 4 8 12 16 20

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

CONSTRUCTION NOTES

1. PROVIDE 0.75" DRAIN LINE WITH 1" INSULATION. ROUTE TO FLOOR DRAIN AND TERMINATE.
2. SLOPE DUCT MINIMUM 1/4" PER FOOT BACK TO HOOD.
3. S.S. (GREASE RESISTANT) MOTORIZED DAMPER FOR EF-3, LOCATE IN HINGED EF-3 ROOF CURB FOR DUCT CLEANING PURPOSES.
4. ACCESS DOOR IN SIDE OF PLENUM.



3 H2.1 MECHANICAL ROOM SECTION WEST

0 2 4 8 12 16 20

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

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TITLE
SECTIONS -MECHANICAL ROOM

SHEET NO.
H2.1

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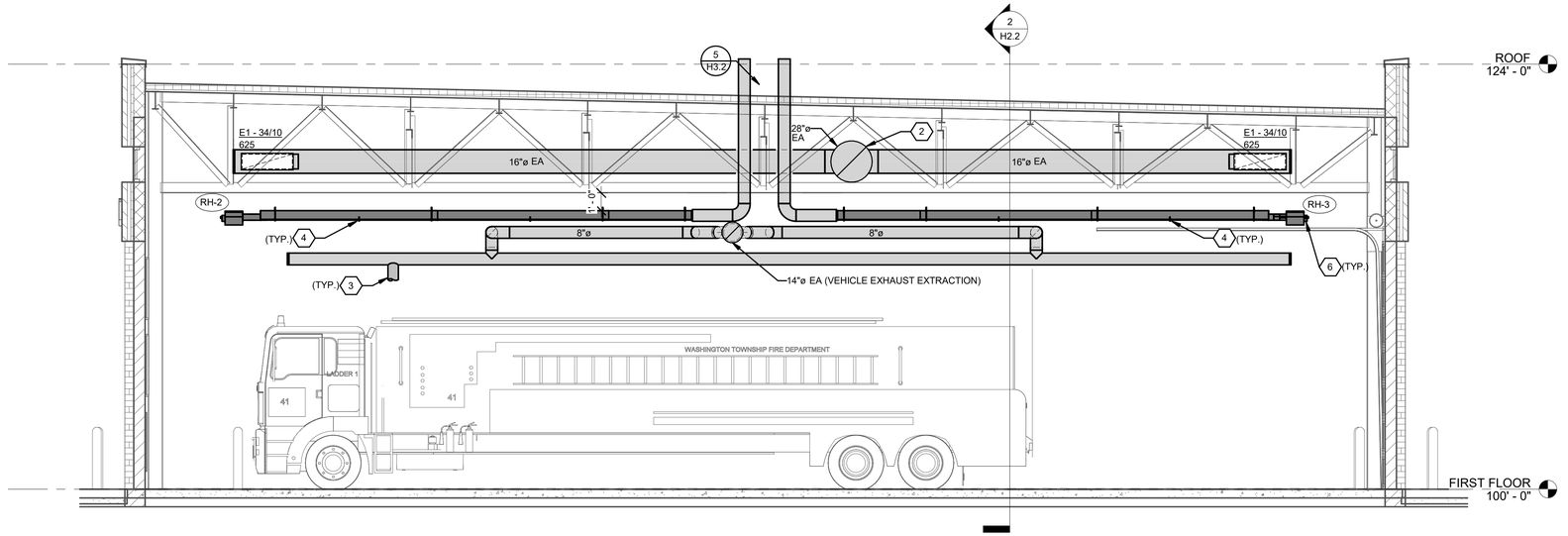


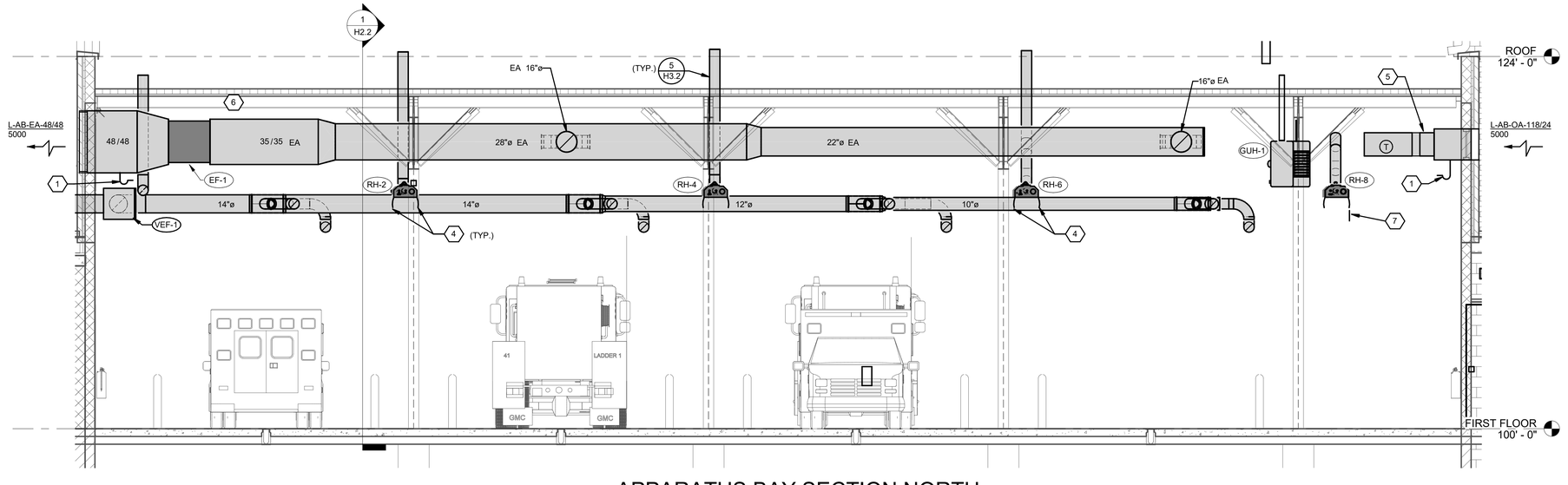
1 H2.2 APPARATUS BAY SECTION EAST

0 2 4 8 12 16 20

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

CONSTRUCTION NOTES

1. PROVIDE 0.75" DRAIN LINE WITH 1" INSULATION. ROUTE TO FLOOR DRAIN AND TERMINATE.
2. RUN EXHAUST DUCT IN JOIST WEBBING. COORDINATE LOCATION WITH STRUCTURE/JOIST MANUFACTURER.
3. VEHICLE EXHAUST HOSE DROP.
4. PROVIDE SIDE SHIELD TO PROTECT EQUIPMENT (ELECTRIC CORD REELS, FANS, VEHICLE EXHAUST EXTRACTION, ETC.) COORDINATE WITH EQUIPMENT LOCATION.
5. INTERLOCK AUTO DAMPER TO OPEN WHEN EF-1 RUNS ABOVE 10% SPEED.
6. COMBUSTION AIR OPEN TO ROOM.
7. PROVIDE SIDE SHIELD TO PROTECT WALL.



2 H2.2 APPARATUS BAY SECTION NORTH

0 2 4 8 12 16 20

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

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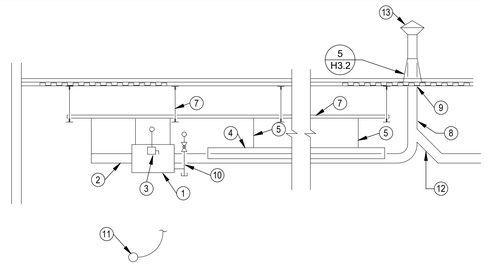
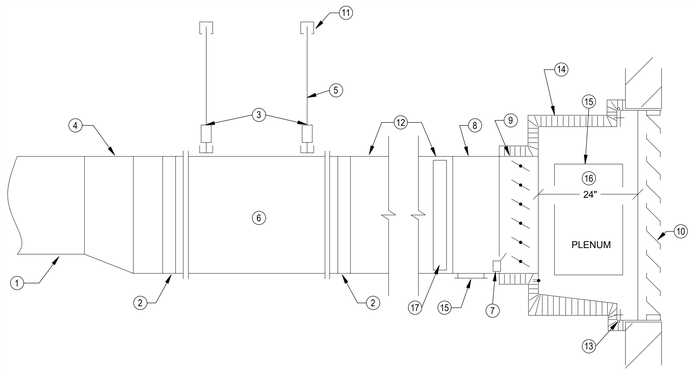
SHEET NO.
H2.2

5/12/2022 9:09:11 AM



1. RADIANT HEATER BURNER CONTROL BOX.
2. 4"⌀ INSULATED SINGLE WALL GALVANIZED COMBUSTION AIR DUCT. REFER TO SCHEDULE.
3. DISCONNECT SWITCH BY E.C.
4. BURNER REFLECTOR.
5. CHAIN HANGER. (TYP.)
6. ROOF STRUCTURE.
7. PROVIDE UNISTRUT CHANNELS TO SPAN STRUCTURAL ELEMENTS.
8. 4"⌀ TYPE B DOUBLE WALL GAS VENT.
9. S.S. FLASHING CONE. SEAL PENETRATION THRU ROOF WATERTIGHT.
10. GAS PIPE, VALVE & DIRT LEG & UNION BY P.C.
11. WALL MOUNTED THERMOSTAT BY H.C. REFER TO PLAN FOR MOUNTING LOCATION.
12. Y-FITTING.
13. FLUE VENT CAP.

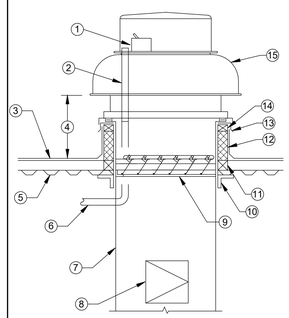
1 RADIANT HEATER
N.T.S



*NOTE: SUPPLY FANS ARE SIMILAR EXCEPT PROVIDE FILTER FRAME AT INTAKE PLENUM.

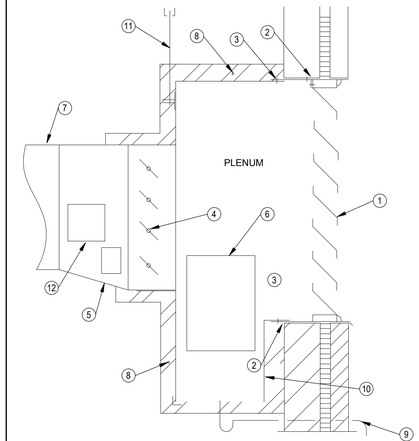
1. EXHAUST DUCT.
2. FLEXIBLE DUCT CONNECTION
3. NEOPRENE ISOLATOR HANGERS FOR FANS UNDER 1 HP; COMBINATION SPRING/NEOPRENE FOR FANS 1 HP AND LARGER.
4. TRANSITION FROM DUCT SIZE TO FAN INLET.
5. THREADED ROD
6. EXHAUST FAN.
7. DAMPER MOTOR ON EXTERIOR OF DUCT.
8. TRANSITION TO LOUVER SIZE
9. MOTORIZED DAMPER WITH ACTUATOR TO OPEN ON FAN OPERATION
10. LOUVER AND PLENUM CONNECTION FLANGE BY G.C.
11. SUPPLEMENTAL STEEL ANGLE OR CHANNEL. SPAN ACROSS STRUCTURAL ELEMENTS.
12. DUCT IS SAME SIZE AS FAN OUTLET.
13. PLENUM FLANGE TO CONNECT ON INTERIOR OF LOUVER FLANGE ALONG BOTTOM SEAL. SEAL ALL JOINTS, ALL FOUR SIDES.
14. INSULATE EXTERIOR OF DUCT TO PREVENT COLD DUCT SURFACES INSIDE OF BLDG.
15. ACCESS DOOR.
16. 24" PLENUM LENGTH EXCEPT WHERE NOTED OTHERWISE.
17. FILTER FRAME (SUPPLY FAN ONLY).

2 INLINE EXHAUST FAN
N.T.S.



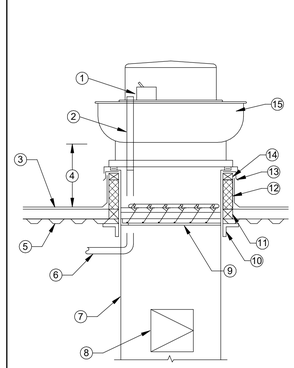
1. DISCONNECT SWITCH BY FAN MANUFACTURER.
2. WIRING CONDUIT CHASE BY FAN MANUFACTURER.
3. FLASHING, CANT STRIPS (IF REQUIRED), ROOFING MATERIAL & ROOF CONSTRUCTION BY ROOFING CONTRACTOR.
4. 18" MINIMUM.
5. ROOF DECK.
6. ELECTRIC CONDUIT BY E.C., SEAL DUCT PENETRATION.
7. EXHAUST DUCT-REFER TO PLANS/SCHEDULE FOR SIZE.
8. ACCESS DOOR.
9. BACKDRAFT DAMPER.
10. DUCT SUPPORT FRAMING ALL AROUND BY G.C. WHERE REQUIRED.
11. WOOD BLOCKING BY G.C.
12. CURB MINIMUM OF 14" ABOVE ROOF.
13. PREFABRICATED ROOF CURB.
14. SECURE FAN TO CURB MINIMUM 2 LOCATIONS PER SIDE WITH 3#8" LAG BOLTS MINIMUM.
15. DOWNBLAST CENTRIFUGAL EXHAUST FAN. REFER TO PLANS FOR CAPACITY.

3 ROOF MOUNTED EXHAUST FAN DETAIL — DOWNBLAST TYPE
N.T.S.



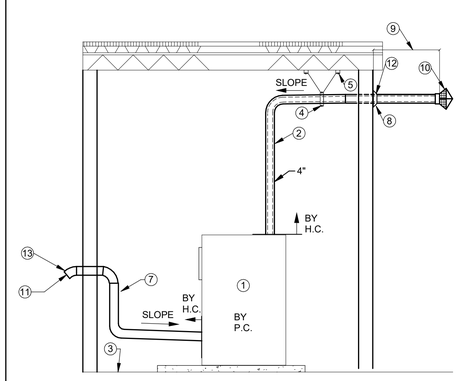
1. FRESH AIR OR VENT AIR LOUVER BY G.C. SEE ARCH. DWGS.
2. SLEEVE WITH FLANGE PROVIDED BY G.C.
3. OVERLAP FLANGE CONNECTION TO WALL LOUVER FLANGE.
   AUTOMATIC TWO POSITION DAMPER, INSULATING TYPE, TAMCO SERIES 9000. SEE PLANS.
5. DUCT TRANSITION.
6. ACCESS DOOR.
7. SHEETMETAL FRESH AIR OR VENT AIR DUCT.
8. INSULATE PLENUM ON EXTERIOR. INSULATE ALL OUTSIDE AIR DUCTWORK. INSULATE VENT DUCT BACK TO DAMPER.
9. 1.25" TRAPPED DRAIN LINE FOR ELEVATED LOUVERS. EXTEND TO EXTERIOR OF BUILDING & SPILL ON ROOF.
10. BOTTOM OF PLENUM SHALL BE WELDED STAINLESS STEEL, UP TO MINIMUM 12" ABOVE BOTTOM OF PLENUM.
11. SUPPORT PLENUM FROM STRUCTURAL MEMBERS. USE SUPPLEMENTAL ANGLES, CHANNELS AND THREADED RODS.
12. ACCESS DOOR TO DAMPER OPERATOR.

4 AH SYSTEM LOUVER CONNECTION
N.T.S.



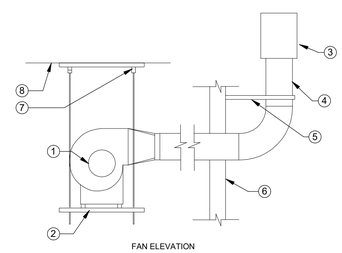
1. DISCONNECT SWITCH BY FAN MANUFACTURER.
2. WIRING CONDUIT CHASE BY FAN MANUFACTURER.
3. FLASHING, CANT STRIPS (IF REQUIRED), ROOFING MATERIAL & ROOF CONSTRUCTION BY ROOFING CONTRACTOR.
4. 18" MINIMUM.
5. ROOF DECK.
6. ELECTRIC CONDUIT BY E.C., SEAL DUCT PENETRATION.
7. EXHAUST DUCT-REFER TO PLANS/SCHEDULE FOR SIZE.
8. ACCESS DOOR.
9. BACKDRAFT DAMPER.
10. DUCT SUPPORT FRAMING ALL AROUND BY M.C. WHERE REQUIRED.
11. WOOD BLOCKING BY M.C.
12. CURB MINIMUM OF 14" ABOVE ROOF.
13. PREFABRICATED ROOF CURB.
14. SECURE FAN TO CURB MINIMUM 2 LOCATIONS PER SIDE WITH 3#8" LAG BOLTS MINIMUM.
15. UPBLAST CENTRIFUGAL EXHAUST FAN. REFER TO SCHEDULE FOR CAPACITY.

5 ROOF MOUNTED EXHAUST FAN DETAIL — UPBLAST
N.T.S.



1. DOMESTIC WATER HEATER BY P.C.
2. 4" ø SCHEDULE 40 CPVC FLUE. PITCH HORIZONTAL PIPING BACK TO WATER HEATER BY H.C.
3. FLOOR.
4. STEEL SUPPORT RING
5. UNISTRUT SUPPORTS. ATTACH TO STRUCTURAL STEEL JOISTS. DO NOT SUPPORT FROM DECK.
6. STEEL BAND HANGER.
7. 4" ø SCHEDULE 40 CPVC COMBUSTION AIR INTAKE. PITCH HORIZONTAL PIPING BACK TO WATER HEATER. BY H.C.
8. ADJUSTABLE ALUMINUM FLASHING CONE. ATTACH TO WALL.
9. FLUE HEIGHT MINIMUM 3' AWAY FROM SOFFIT.
10. VENT CAP WITH BIRDSCREEN.
11. COMBUSTION AIR OPENING MINIMUM 2' ABOVE ROOF.
12. SEALANT.
13. 45° TURN WITH BIRDSCREEN OVER COMBUSTION AIR OPENING.

6 CONDENSING HOT WATER HEATER — **COMBUSTION AIR AND FLUE**
N.T.S.



FAN ELEVATION

1. CF FAN
2. FAN MOUNTING SYSTEM
3. RAIN CAP
4. EXHAUST STACK
5. BRACING
6. WALL
7. VIBRATION ISOLATORS
8. CEILING STRUCTURE

7 VEHICLE EXHAUST FAN DETAIL
N.T.S.

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STATE OF OHIO
JEFFREY D. ZELINSKI
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REGISTERED ARCHITECT

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Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	RS
CHECKED	JDZ

TITLE
DETAILS

SHEET NO.
H3.1

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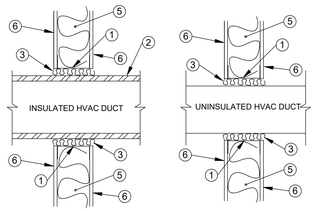
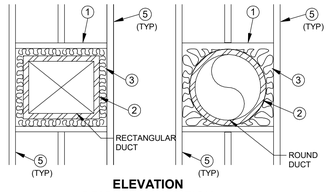
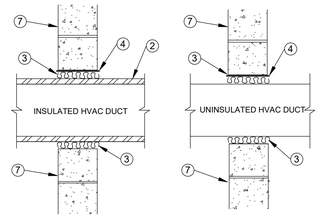


SECTION
DRYWALL PARTITION

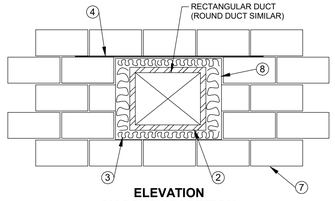


ELEVATION
DRYWALL PARTITION

1. WALL OPENING WITH FRAMING BY G.C.
2. DUCT INSULATION, SEE SCHEDULE FOR THICKNESS.
3. FILL VOID WITH 1.5" THICK, 0.75 P FIBERGLASS BATT INSULATION.
4. LINTEL BY G.C.
5. WOOD OR METAL STUDS AT 16" O.C. BY G.C.
6. DRYWALL BY G.C.
7. MASONRY WALL BY G.C.
8. FRAMED MASONRY OPENING BY G.C.



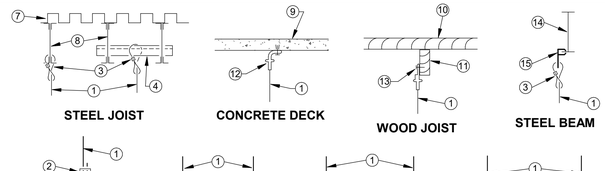
SECTION
MASONRY PARTITION



ELEVATION
MASONRY PARTITION

1 DUCT SEALING THRU NON-FIRE RATED WALL
N.T.S.

* NEW CONSTRUCTION, FRAMED OPENING, DUCT SIDE OR DIA. ≥ 12"

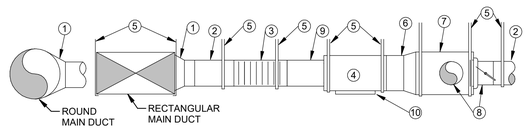


* HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN & LAYOUT OF DUCT HANGERS & SUPPORTS.
* ALL SUPPORT MATERIALS SHALL BE PAINTED, COATED OR GALVANIZED.
* STRUCTURE CONNECTIONS SHALL BE AT STRUCTURAL ELEMENTS ONLY. PROVIDE SPANNING STRUCTURAL ELEMENTS WHERE REQUIRED.
* SINGLE CHANNEL DUCT TRAPEZE CONNECTION DEVICES ARE NOT APPROVED.
* PROVIDE HANGER SPACING AS REQUIRED FOR SUPPORT. MAXIMUM 8 FT. SPACING EXCEPT FOR DUCT DIAMETER OR WIDTHS 36" & LARGER SHALL BE MAXIMUM 4 FT. SPACING.
* DESIGN SHALL MAINTAIN SUPPORT UPON FAILURE OF ANY INDIVIDUAL HANGER.
* STEEL CABLE DUCT SUPPORT SYSTEM A, B OR D SHALL BE UTILIZED WHERE DUCTS ARE EXPOSED IN NON MECHANICAL AREA.
* USE OF STRAP OR THREADED ROD HANGERS PER SMACNA ARE ALSO ACCEPTABLE IN ABOVE CEILING LOCATIONS.
* CABLE SUPPORTS & ACCESSORIES SHALL BE MANUFACTURED BY GRIPPLE OR EQUAL BY DUCTMATE OR DURODYNE.
* CABLE SUPPORTS & ACCESSORIES SHALL NOT BE PAINTED.

1. 1/8" DIA. OR 3/16" DIA. GALVANIZED STEEL CABLE, AISI 316 (GRIPPLE NO. 3 OR NO. 4).
2. CABLE LOCKING FASTENER, PERMITTED ONLY ON ROUND DUCT (GRIPPLE HF).
3. CABLE LOOP WITH LOCKING FASTENER (GRIPPLE HF).
4. UNISTRUT CHANNEL.
5. CORNER SADDLE (GRIPPLE).
6. GRIPPLE TRAPEZE SUPPORT (GRIPPLE NO. 3).
7. METAL DECK.
8. METAL JOIST.
9. CONCRETE SLAB.
10. WOOD DECK.
11. WOOD JOIST.
12. 90 DEG. EYELET. FASTEN TO CONC. WITH SCREWS, BOLTS OR POWER ACUATED TOOLS. (GRIPPLE 90 DEG. EYELET).
13. EYELET. FASTEN TO WOOD WITH SCREWS, BOLTS OR NAILS. (GRIPPLE EYELET).
14. STEEL BEAM.
15. BEAM CLIP - GRIPPLE GCB.

2 DUCT HANGERS & SUPPORTS
N.T.S.

WIRE HANGERS

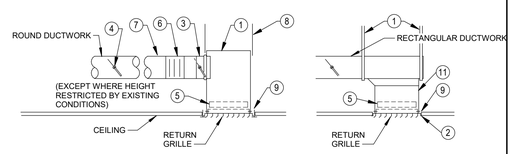


1. CONICAL TEE BRANCH FITTING.
2. ROUND SHEET METAL BRANCH DUCT. LENGTH AS REQUIRED. INSULATED.
3. INSULATED FLEXIBLE DUCT, 4' MAXIMUM LENGTH. STRETCH TO MINIMUM 90% OF FULLY EXTENDED LENGTH. DUCT SHALL BE FLEXMASTER TL-M ALUMINUM SPIRAL LINER WITH 1.5" INSULATION.
4. VAV REHEAT AIRFLOW CONTROL UNIT.
5. DUCT STRAP HANGER. ATTACH TO STRUCTURAL ELEMENTS.
6. ELECTRIC REHEAT COIL.
7. LOW PRESSURE RECTANGULAR SUPPLY DUCT. WHERE NOT SIZED ON THE DRAWINGS, SIZE TO MATCH COIL DIMENSIONS EXCEPT TRANSITION DUCT HEIGHT TO BE 2" HIGHER THAN LARGEST SPIN-IN BRANCH TAP FITTING.
8. SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE WITH MANUAL DAMPER AND INTEGRAL INSULATION GUARD SLEEVE.
9. 24" LONG SHEETMETAL AT BOX INLET - REDUCE LENGTH ONLY WHERE REQUIRED BY FIELD CONDITIONS.
10. ACCESS DOOR. LOCATE ON UNITS WITH REHEAT COILS ONLY.

NOTE:
COORDINATE WITH OTHER TRADES AND INSTALL VAV BOXES TO PROVIDE 18" SIDE AND UNOBSTRUCTED BOTTOM CLEARANCE TO CONTROLLER, ACTUATORS AND VALVES FOR MAINTENANCE. COORDINATE TO INSURE ACCESS IS PROVIDED BY SIMPLE REMOVAL OF ADJACENT UNRESTRICTED CEILING TILES (FREE OF CEILING MOUNTED DEVICES) WITHOUT NEED TO REMOVE LIGHTS OR CEILING GRID. ACCESS DOOR ON BOX IS FOR INSPECTION AND UPSTREAM COIL CLEANING. ACCESS DOOR USE IS RARE AND REMOVAL OF LIGHTS OR CEILING GRID TO GAIN ACCESS IS ACCEPTABLE.

MARK DESIGNATIONS AS SHOWN ON DRAWINGS ON ALL VAV BOXES WITH 2" HIGH PAINTED STENCIL LETTERING.

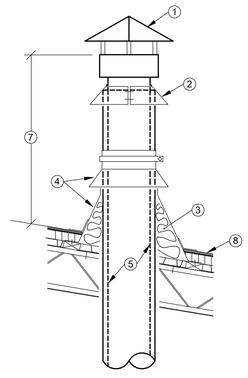
3 VARIABLE AIR VOLUME UNIT W/ REHEAT COIL
N.T.S.



1. PLENUM - SIZE TO MATCH GRILLE. PAINT INTERIOR OF PLENUM FLAT BLACK.
2. EXHAUST/RETURN GRILLE FRAME TO MATCH CEILING CONDITION.
3. SPIN-IN FITTING WITH BALANCING DAMPER, USE FOR ALL ACCESSIBLE CEILINGS.
4. PROVIDE REMOTE BALANCING DAMPER IN BRANCH DUCT ABOVE ACCESSIBLE CEILING FOR EACH GRILLE WHERE GRILLE IS INSTALLED ABOVE INACCESSIBLE CEILING (PREFERRED).
5. PROVIDE BALANCING DAMPER AT DEVICE ONLY WHERE DUCT MOUNTED DAMPER CANNOT BE PROVIDED DUE TO INACCESSIBLE CEILING.
6. FLEXIBLE DUCT ACCEPTABLE ABOVE ACCESSIBLE CEILING ONLY. MAX. 2 FT., REFER TO CEILING DIFFUSER DETAIL FOR INSTALLATION REQUIREMENTS.
7. SHEETMETAL DUCT.
8. SUPPORT PLENUM FROM STRUCTURE WITH DUCT STRAP HANGERS.
9. FASTEN SHEETMETAL PLENUM OR DUCT TO AIR DEVICE, EACH SIDE.
10. DUCT STRAP HANGER.
11. VIEWABLE PORTION OF DUCT INTERIOR TO BE PAINTED FLAT BLACK.

4 EXHAUST/RETURN GRILLE - DUCTED
N.T.S.

ALL EXTERIOR SURFACES OF FLUE & ACCESSORIES SHALL BE PROVIDED WITH POWDER COAT FINISH. COLOR SELECTED BY ARCHITECT.



1. RAIN CAP.
2. STORM COLLAR.
3. INSULATION.
4. FLASHING CONE & STORM COLLAR. SEE DETAIL.
5. STAINLESS STEEL DOUBLE WALL FLUE VENT. SEE SPECIFICATIONS.
6. FROM RADIANT HEATER, UNIT HEATER OR DOMESTIC WATER HEATER.
7. TOP OF FLUE OUTLET IS 4'-6" ABOVE 2/12 ROOF.
8. ROOF. SEE ARCH. DRAWINGS.
9. STEEL JOIST.

NOTE: PROVIDE VERTICAL AND HORIZONTAL SUPPORTS.

5 DOUBLE WALL DOM. HOT WATER FLUE, RADIANT HEATER & UNIT HEATER
N.T.S.

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REGISTERED ARCHITECT

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Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	RS
CHECKED	JDZ

TITLE
DETAILS

SHEET NO.
H3.2

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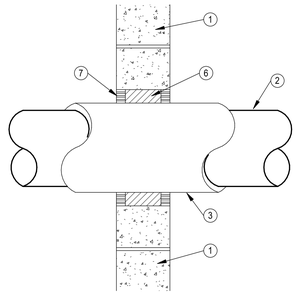


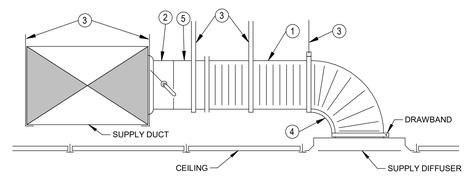
CONCRETE/MASONRY CONSTRUCTION
1/2" - 1.5" PIPES

FIRESTOPPING MATERIALS/INSTALLATION

- MANUFACTURERS: 3M FIRE PROTECTION PRODUCTS HILTI FIRESTOP SYSTEMS
- FIRESTOPPING MATERIAL INSTALLATION SHALL BE PER THE MANUFACTURERS DETAILED INSTALLATION DIAGRAMS AND INSTRUCTIONS.
- F-RATING OF PENETRATION SHALL BE NO LESS THAN THE FIRE RATING OF THE WALL.
- SUBMITTAL SHALL INCLUDE PRODUCT DATA AND DETAILED INSTALLATION SYSTEM DIAGRAMS.

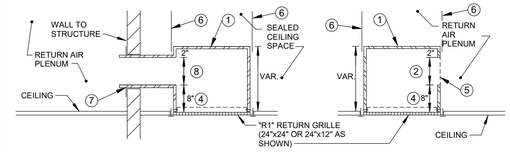
1. RATED WALL ASSEMBLY.
2. METALLIC PIPE OR TUBING.
3. PIPE INSULATION, CONTINUOUS THROUGH WALL OPENING, SEE SCHEDULE FOR THICKNESS.
4. PACKING MATERIAL, MINERAL WOOL BATT INSULATION.
5. APPROVED FIRESTOPPING CAULK OR SEALANT FLUSH WITH SURFACE OF WALL OR EDGE OF SLEEVE.

1 PIPE PENETRATIONS THRU FIRE RATED WALL
N.T.S.



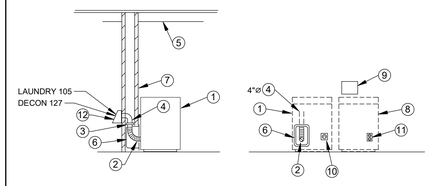
1. FLEXIBLE DUCT SAME DIAMETER AS DIFFUSER INLET (ABOVE ACCESSIBLE CEILING ONLY USE SHEETMETAL ONLY ABOVE INACCESSIBLE CEILING). 4 FT. MAXIMUM LENGTH. STRETCH TO MINIMUM 90% OF FULLY EXTENDED LENGTH. ADDITIONAL HANGER REQUIRED IF DUCT LENGTH EXCEEDS 3 FT.
2. SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE, WITH MANUAL DAMPER. DAMPER SHAFT IN HORIZONTAL. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN DUCT WITH INTERNAL INSULATION.
3. DUCT STRAP HANGER. ATTACH TO STRUCTURE. PER SMACNA.
4. 90 DEGREE FLEXIBLE ELBOW SUPPORT BY FLEXRIGHT, FLEXFLOW OR SMARTFLOW. PROVIDE WITH DRAWBANDS, UL-2043 RATING.
5. SHEETMETAL DUCT, SAME DIAMETER AS DIFFUSER INLET. LONGITUDINAL OR SPIRAL LOCK SEAM, 0.50" S.P. CONSTRUCTION. PROVIDE EXTERIOR INSULATION, 1.5" THICKNESS, 0.75" DENSITY FIBERGLASS WITH FOIL/KRAFT PAPER JACKET.

2 CEILING DIFFUSER
N.T.S.



1. 24"x24" OR 24"x12" NOMINAL SHEET METAL PLENUM LINED WITH 1/2" BLACK FIBERGLASS DUCT LINER.
2. 24"x12" GRILLE SIZE - 6" HIGH x FULL WIDTH
   24"x24" GRILLE SIZE - 12" HIGH x FULL WIDTH
3. EXTEND LINED RETURN AIR DUCT THRU WALL TO RETURN AIR PLENUM WHERE REQUIRED FOR FULL HEIGHT WALLS.
4. MINIMUM HEIGHT, EXCEPT WHERE HEIGHT IS RESTRICTED BY EXISTING CONDITIONS.
5. OPEN TO PLENUM ABOVE CEILING.
6. SUPPORT PLENUM FROM STRUCTURE WITH DUCT STRAP HANGERS.
7. FRAME OPENING THROUGH WALL AS REQUIRED AND SEAL WALL PENETRATION SMOKE TIGHT.
8. 24"x12" GRILLE SIZE - 6" HIGH x 20" WIDTH
   24"x24" GRILLE SIZE - 12" HIGH x 20" WIDTH

3 TRANSFER AIR GRILLE/PLENUM
N.T.S.



NOTE:
1. COORDINATE LOCATION OF VENT BOX WITH WASHER & DRYER PROVIDED AND WITH ELEC. & PLBG. CONTRACTORS ON LOCATION OF RECEPTACLES & WASHER BOX.

4" SIZE EXCEPT LARGER IF RECOMMENDED BY DRYER MANUFACTURER

1. DRYER.
2. FLEXIBLE ALUMINUM DUCT WITH METAL DRAWBAND CONNECTORS. FLEXMASTER TYPE NI-TL.
3. STAINLESS STEEL DUCT SUPPORT.
4. ALUMINUM SPIRAL DUCT.
5. LAY-IN CEILING.
6. RECESSED DRYER VENT BOX. FLUSH MTD. IN 6" STUD WALL. 22 GA. ALUMINIZED STEEL WITH FLANGE, 4" DIA. TOP OUTLET, 9"W'x18"Hx5.5"DP. INSIDE DIMENSION. FASTEN TO WALL AT FLANGE TO CONNECT TO STUDS. AMERICAN ALDES MODEL PN OR BY IN-O-VATE TECHNOLOGIES OR EQUAL. MOUNT BOTTOM AT 4" ABOVE FLOOR.
7. DRYWALL OR MASONRY ENCLOSURE BY G.C.
8. WASHER.
9. WASHER UTILITY BOX BY P.C.
10. 220 VOLT OUTLET BY E.C.
11. DOUBLE DUPLEX OUTLET BY E.C.
12. DRYER VENT THRU WALL WHERE INDICATED ON FLOOR PLANS. TERMINATE WITH HOODED WALL CAP. GREENHECK WC-4 WITH POWDER COAT FINISH, SELECTED BY ARCHITECT. COORDINATE PENETRATION DETAIL WITH MASON.

4 DRYER VENT
N.T.S.

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716 East Franklin Street, Centerville, Ohio 45458

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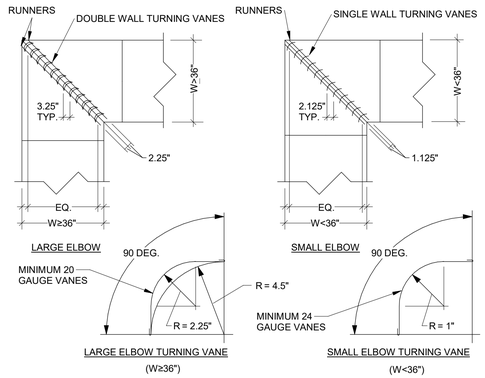
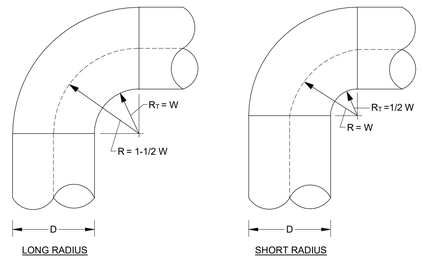


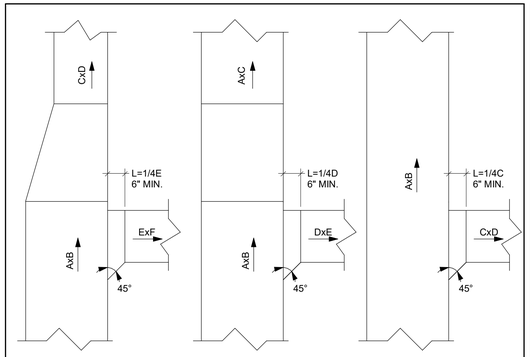
NOTES:
1. ALL VANES SHALL BE SECURE AND STABLE IN OPERATING POSITION.
2. VANES SHALL BE SECURELY FASTENED TO RUNNERS.
3. INSTALL VANES IN SECTIONS OR USE TIE RODS TO LIMIT THE UNBRACED LENGTH TO 60".
4. VANES ARE NOT TO HAVE TRAILING EDGES.

1 RECTANGULAR 90° MITERED ELBOW
N.T.S.



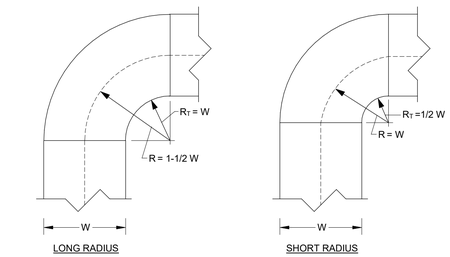
NOTES:
1. DIMENSION D AS SHOWN ON THE DRAWINGS.
2. USE LONG RADIUS ELBOWS ON ALL DUCTWORK SYSTEMS WHERE POSSIBLE OR UNLESS OTHERWISE INDICATED.
3. ONLY WHEN IT IS IMPOSSIBLE TO USE LONG RADIUS ELBOWS, USE LARGEST POSSIBLE RADIUS WITH A MINIMUM RADIUS EQUAL TO THAT OF A SHORT RADIUS ELBOW.

2 ROUND 90° RADIUS ELBOW
N.T.S.



NOTES:
1. DIMENSIONS A, B, C, D, E, AND F AS INDICATED ON THE DRAWINGS.
2. TRANSITIONS MAY BE FLAT ON TOP, FLAT ON BOTTOM OR CONCENTRIC.
3. SAME FOR RETURN AND EXHAUST DUCTS EXCEPT AIRFLOW IS REVERSED.
4. TAP HEIGHT DIMENSION SHOULD BE 2" SMALLER THAN MAIN DUCT HEIGHT.

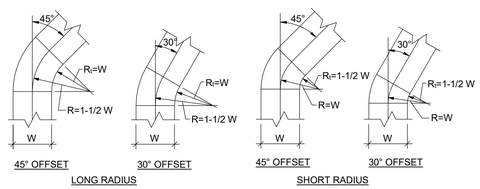
3 RECTANGULAR 90° SIDE TAP
N.T.S.



NOTES:
1. USE ONLY LONG RADIUS ELBOWS ON KITCHEN HOOD EXHAUST DUCTWORK.
2. USE LONG RADIUS ELBOWS ON ALL DUCTWORK SYSTEMS WHERE POSSIBLE OR UNLESS OTHERWISE INDICATED.
3. ONLY WHEN IT IS IMPOSSIBLE TO USE LONG RADIUS ELBOWS, USE LARGEST POSSIBLE RADIUS WITH A MINIMUM RADIUS EQUAL TO THAT OF A SHORT RADIUS ELBOW.

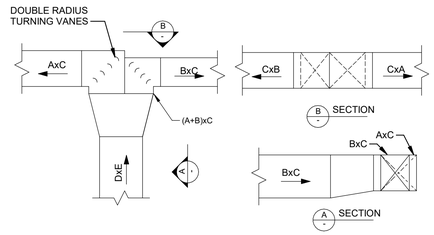
NOTE:
ELBOWS WITH 90 DEGREE SQUARE ON INSIDE RADIUS ARE NOT ACCEPTABLE.

4 RECTANGULAR 90° RADIUS ELBOW
N.T.S.



NOTES:
1. USE ONLY LONG RADIUS ELBOWS ON KITCHEN HOOD AND DISHWASHER HOOD EXHAUST DUCTWORK.
2. USE LONG RADIUS ELBOWS ON ALL DUCTWORK SYSTEMS WHERE POSSIBLE OR UNLESS OTHERWISE INDICATED.
3. ONLY WHEN IT IS IMPOSSIBLE TO USE LONG RADIUS ELBOWS, USE LARGEST POSSIBLE RADIUS WITH A MINIMUM RADIUS EQUAL TO THAT OF A SHORT RADIUS ELBOW.

5 RECTANGULAR 45° & 30° RADIUS ELBOW
N.T.S.



NOTES:
1. DIMENSIONS A, B, C, D, AND E AS INDICATED ON DRAWINGS.
2. TRANSITIONS SHOWN CONCENTRIC IN PLAN, MAY BE FLAT ON EITHER SIDE. TRANSITION SHOWN FLAT ON TOP IN SECTION, MAY BE FLAT ON BOTTOM OR CONCENTRIC. TRANSITION DUCT AS FIELD CONDITIONS DICTATE.
3. SAME FOR RETURN AND EXHAUST DUCTS EXCEPT AIRFLOW IS REVERSED.

6 RECTANGULAR TEE SQUARE ELBOW
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PIPE INSULATION SCHEDULE

QUALITY ASSURANCE
PRODUCTS SHALL COMPLY WITH ASTM E84 FIRE, SMOKE RATINGS:
- INDOORS - FLAME SPREAD RATING OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS.
- OUTDOORS - FLAME SPREAD RATING OF 75 OR LESS, SMOKE DEVELOPED RATING OF 150 OR LESS.

GREEN GUARD INDOOR AIR QUALITY CERTIFIED.

THICKNESSES SHALL COMPLY WITH MOST CURRENT VERSION OF ASHRAE 90.1.

PRODUCTS
REQUIREMENTS ARE FOR BOTH SUPPLY & RETURN SYSTEMS.

MANUFACTURERS:
FIBERGLASS - JOHNS MANVILLE, OWENS CORNING, KNAUF, MANSON INSULATION
CALCIUM SILICATE - PABCO, CALSILITE, JOHNS MANVILLE (IIG)
FLEXIBLE ELASTOMERIC - AEROFLEX, ARMACELL, RUBATEX
POLYISOCYANURATE - ITW

EXECUTION
INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

COLD SERVICE PIPE INSULATION AND VAPOR BARRIER/JACKET TO BE CONTINUOUS THRU FLOOR AND WALL SLEEVES AT ALL PIPE DEVICES AND PUMP CASINGS.

INSULATION AND VAPOR BARRIER TO BE CONTINUOUS AT PIPE HANGERS AND SUPPORTS ON HORIZONTAL PIPING.

VERTICAL PIPE SUPPORTS SHALL ATTACH DIRECTLY TO PIPE. INSULATE SUPPORT AND OTHER SURFACES WITH FLEXIBLE CLOSED CELL INSULATION, SAME THICKNESS AS SYSTEM INSULATION ON COLD SERVICE PIPES TO PREVENT CONDENSATION.

EXISTING PIPE INSULATION THAT IS DAMAGED, REMOVED OR NOT PRESENT WITHIN THE CONSTRUCTION AREA SHALL BE INSULATED PER SCHEDULE FOR THE SYSTEM SERVICE INDICATED.

INSULATION MAY BE OMITTED ON HOT WATER VALVES AND DEVICES 2" AND SMALLER PIPE SIZE (EXCEPT WITHIN 12" OF AIR REHEAT BOXES), HOT WATER PIPING WITHIN UNIT HEATERS, EXPOSED COOLING COIL CONDENSATE PIPING AND SAFETY RELIEF VALVE PIPING. SEE HEATING COIL PIPING DETAIL.

SYSTEM & SIZE	INSULATION THICKNESS	TYPE	LOCATION
REFRIGERANT LIQUID	0.75"	E1, E2	INTERIOR/EXTERIOR
REFRIGERANT HOT GAS	0.75"	E1, E2	INTERIOR/EXTERIOR
REFRIGERANT SUCTION	0.75"	E1, E2	INTERIOR/EXTERIOR
SINGLE WALL FLUE	1.5"	F3	INTERIOR
COOLING COIL CONDENSATE	0.5"	F1, F2, F3	INTERIOR

TYPE	BASIS OF DESIGN	APPROVED EQUALS	DESCRIPTION
E1	AEROFLEX #AEROCEL EPDM	- ARMACELL - RUBATEX	* FLEXIBLE, PRE-FORMED, CLOSED CELL, EPDM ELASTOMERIC TUBULAR INSULATION, OR SHEET INSULATION. * K=0.25 @ 75 DEG. F. * CLEAN PIPE SURFACE WITH DENATURED ALCOHOL PRIOR TO INSULATING.
E2	ARMACELL #AP ARMAFLEX FS	- AEROFLEX - RUBATEX	* FLEXIBLE, PRE-FORMED, CLOSED CELL, ELASTOMERIC TUBULAR INSULATION. * CLEAN PIPE SURFACE WITH DENATURED ALCOHOL PRIOR TO INSULATING. * K=0.25 @ 75 DEG. F. * 25/50 FLAME/SMOKE RATING. * PROVIDE 0.20" ROLL ALLOY ALUMINUM EMBOSSED JACKET SEAM SIDE DOWN WITH 0.50" WIDE, 0.015" S.S. STRAP AND SEALS EQUAL TO PABCO-CHILDERS METALS/GERRARD.
F1	OWENS CORNING #ALL SERVICE JACKET	- KNAUF #1000° PIPE, - JOHNS MANVILLE #MICRO-LOK HP	* PREFORMED, TUBULAR, INORGANIC GLASS FIBER WITH RESIN BONDING. * K=0.24 @ 100 DEG. F. * 3.5 - 5.5 PCF. * WHITE FSRK JACKET. * LONGITUDINAL LAP, SELF-SEALING ADHESIVE. * ELBOWS, TEES, VALVES, CAPS, ETC., WHITE ONE PIECE, PREMOLDED 25/50 0.20" PVC FITTING COVERS WITH HIGH DENSITY FIBERGLASS INSULATION INSERTS SAME THICKNESS, K=0.26 EQUAL TO ZESTON OR PROTO.
F2	OWENS CORNING #VAPORWICK	-	* HIGH DENSITY, FIBERGLASS INSULATION WITH ORGANIC BINDER AND SYNTHETIC WICKING MATERIAL. * K=0.24 @ 100 DEG. F. * WHITE, RESILIENT POLYMER FACING EQUAL TO PVC JACKETING. * AUXILIARY WICK MATERIAL FOR FITTINGS, ELBOWS, TEES, ETC.
F3	OWENS CORNING #PIPE SHIELD FIBERGLASS PIPE INSULATION	- KNAUF #1000° PIPE, - JOHNS MANVILLE #MICRO-LOK HP	* HIGH DENSITY, RESIN BONDED INORGANIC GLASS FIBERS, 850 DEG. F. RATED OPERATING TEMPERATURE. * PREFORMED TUBULAR. * K=0.54 @ 500 DEG. F. * LONGITUDINAL WRAP, SELF-SEALING ADHESIVE. * WHITE POLYMER JACKET, 225 DEG. F. RATING.

DUCT CONSTRUCTION AND SEALING

QUALITY ASSURANCE
- COMPLY WITH GENERAL WELDING PERSONNEL & PROCEDURES UNDER AWS D1.1/D1.1M, AWS D1.2/D1.2M & AWS D9.1/D9.1M.
- COMPLY WITH GENERAL DUCT CONSTRUCTION STANDARDS UNDER SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE - THIRD EDITION AND MOST CURRENT VERSION OF APPLICABLE ASHRAE 90.1 SECTION 6.4.4 AND ASHRAE 62.1 SECTIONS 5 & 7.
- COMPLY WITH SEISMIC REQUIREMENTS PRESCRIBED UNDER SMACNA DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE THIRD EDITION & ASCE/SEI 7.

PRODUCTS
ROUND SINGLE WALL DUCTWORK - 2" S.P. AND HIGHER
- CONTINUOUS HELICAL (SPIRAL) LOCK SEAM CONSTRUCTION.
- SLIP CONNECTIONS: GASKETED FLANGES ARE NOT ACCEPTABLE.
- USE 45 DEG. LATERAL TEES WHEREVER POSSIBLE.
- 90 DEG. TEES SHALL BE CONICAL SPIN-IN TYPE.
- DIE STAMPED ELBOWS, r/D = 1.5 (MIN.)
- RADIUSED, ANGLED (15" MAX.) OR MITERED (15" MAX.) OFFSETS.
- CONCENTRIC TRANSITIONS, 0 = 45° MAX.
- ECCENTRIC TRANSITIONS, 0 = 30° MAX.

ROUND DOUBLE WALL DUCTWORK - 2" S.P. AND HIGHER (SAME AS ABOVE EXCEPT:)
- INSULATION THICKNESS PER INSULATION SCHEDULE FOR INTENDED SERVICE.
- PERFORATED INNER LINER/SOLID INNER LINER.
- OUTER PRESSURE SHELL.

ROUND DUCTWORK - 1" S.P. OR LESS (SAME AS ABOVE EXCEPT:)
- LONGITUDINAL SEALED SEAM CONSTRUCTION ACCEPTABLE AT FINAL AIR DEVICE ONLY.
- STANDARD TEES ALLOWED.
- SEGMENTED ELBOWS ALLOWED.

RECTANGULAR DUCTW0RK - 2" S.P. AND HIGHER
- FLAT SLIP, STANDING DRIVE OR GASKETED FLANGE DUCT SYSTEM CONNECTIONS.
- RADIUS OR SQUARE THROAT WITH DOUBLE WALL TURNING VANES ELBOW.
- 45 DEG. ENTRY OR CONICAL SPIN-IN BRANCH CONNECTIONS.
- RADIUSED, ANGLED (15" MAX.) OR MITERED (15" MAX.) OFFSETS.
- CONCENTRIC TRANSITIONS, 0 = 45° MAX.
- ECCENTRIC TRANSITIONS, 0 = 30° MAX.
- BRANCH DUCTS SHALL BE CONICAL TEE FITTINGS.
- SQUARE THROAT, RADIUS HEEL 90° ELBOWS ARE NOT PERMITTED.

RECTANGULAR DUCTWORK - 1" S.P. OR LESS. SAME AS ABOVE EXCEPT:
- TURNING VANES IN ELBOWS NOT REQUIRED FOR AIR VELOCITIES LESS THAN 800 FPM.
- STRAIGHT TAP AND STANDARD SPIN-IN BRANCH CONNECTIONS PERMITTED.

FLEXIBLE DUCTWORK - SUPPLY/RETURN/TRANSFER/EXHAUST
- PROVIDE MANUFACTURED DUCT SUPPORTS AT 90 DEGREE ELBOWS TO CEILING AIR DEVICES.
- FLAME SPREAD LESS THAN 25, SMOKE DEVELOPMENT LESS THAN 50.

DUCT SEALANT & GASKETS
- GALVANIZED DUCT SEALANT - WATER BASED SYNTHETIC LATEX EMULSION, GRAY IN COLOR.
- FLANGE GASKETS - BUTYL RUBBER, NEOPRENE, OR EPDM POLYMER W/ POLYISOBUTYLENE PLASTICIZER.
- ALUMINUM DUCT SEALANT - ALUMINUM SILICONE, GRAY IN COLOR.
- PVC COATED DUCT SEALANT - PVS SEALANT OR CAULK/MINERAL IMPREGNATED FIBER TYPE.

DUCT HANGER SUPPORTS
- DUCT HANGER SUPPORTS SHALL DIRECTLY ATTACH TO DUCTWORK.
- EXTERIOR DUCT INSULATION WRAP SHALL BE APPLIED OVER DUCT AND HANGER SUPPORTS.
- ANGLE OR UNISTRUT SUPPORTS SHALL BE INSULATED A MINIMUM OF 4" BEYOND DUCT BEARING POINT TO PREVENT CONDENSATION.

EXECUTION
- DRAWINGS INDICATE GENERAL LOCATION OF DUCTWORK. COORDINATE DUCT LAYOUT CAREFULLY WITH OTHER TRADES TO AVOID CONFLICT. PROVIDE OFFSETS AS REQUIRED.
- SPAN DUCTWORK FROM STRUCTURAL CONCRETE/STEEL MEMBERS OR SUPPLEMENTARY STEEL SHAPES.
- FOR EXPOSED DUCTWORK, GRIND WELDS SMOOTH AND POLISH AND TRIM SEALANTS FLUSH WITH DUCT SURFACES.
- PROTECT DUCTWORK DURING CONSTRUCTION AND CLEAN PRIOR TO SYSTEM OPERATION.
- ROUTE DUCTWORK TO AVOID PASSING THRU TRANSFORMER VAULTS OR ABOVE ELECTRICAL SWITCHGEAR OR PANELBOARDS PER NEC REQUIREMENTS.
- SEAL DUCTS ACCORDING TO SMACNA SEAL CLASS NOTED IN SCHEDULE.
- SYSTEMS OPERATING AT 3" S.P. OR HIGHER AND ALL EXTERIOR DUCTWORK SHALL REQUIRE DUCT PRESSURE TESTING.
- WET DUCT SYSTEMS SHALL BE PITCHED FOR DRAINAGE. PROVIDE TRAPPED DRAIN AT SYSTEM LOW POINTS AND PIPE TO LOCAL DRAIN POINT.

DUCTWORK SYSTEM SCHEDULE

DUCTWORK SYSTEM	LOCATION	MATERIAL	SMACNA CLASS. S.P. CONSTR.	SMACNA CLASS. SEAL CLASS	NOTES
RETURN AIR	CONCEALED	G1	-2"	C	
RETURN AIR	EXPOSED	G1, G2	-2"	C	2
OUTDOOR RELIEF/EXHAUST AIR	ALL	G1	-2"	C	
OUTDOOR SUPPLY AIR	ALL	G1	4"	A	
EXHAUST AIR	CONCEALED	G1	-2"	C	
EXHAUST AIR	EXPOSED	G1, G2	-2"	C	2
AIR TRANSFER	ALL	G1	-1"	NOT REQ'D	
SUPPLY AIR - VAV UPSTREAM	CONCEALED	G1	+4"	A	
SUPPLY AIR - VAV UPSTREAM	EXPOSED	G1, G2	+4"	A	2
SUPPLY AIR - VAV DOWNSTREAM	CONCEALED	G1	+1"	C	
SUPPLY AIR - VAV DOWNSTREAM	EXPOSED	G1, G2	+1"	C	2
FLEXIBLE DUCTWORK - SUPPLY	CONCEALED OR UNCONDITIONED	C1	+10" -5"	N.A.	
FLEXIBLE DUCTWORK - RET/EXH./TRANSFER	CONCEALED	C2	+10" -5"	N.A.	
KITCHEN HOOD EXHAUST	CONCEALED	SS1	-2"	C	1
KITCHEN HOOD EXHAUST	EXPOSED	SS2	-2"	C	1
COMBUSTION AIR	ALL	P1	-2"	A	
EXHAUST FLUE	ALL	P1	+4"	A	

DUCTWORK MATERIALS SCHEDULE

TYPE	MATERIAL	DESCRIPTION
C1	CHLORINATED POLYETHYLENE	BLACK INNER FABRIC WITH GALVANIZED STEEL HELIX REINFORICING, R = 6.0 (MIN.) FIBERGLASS INSULATION, REINFORCED METALIZED VAPOR BARRIER, 0.05 PERM, UL 181, CLASS 1 DUCT, MEET NFPA 90A & 90B, 25/50 FLAME/SMOKE SPREAD
C2	CHLORINATED POLYETHYLENE	BLACK INNER FABRIC WITH GALVANIZED STEEL HELIX REINFORCING, R = 4.2 (MIN.) FIBERGLASS INSULATION, REINFORCED METALIZED VAPOR BARRIER, 0.05 PERM, UL 181, CLASS 1 DUCT, MEET NFPA 90A & 90B, 25/50 FLAME/SMOKE SPREAD.
G1	GALVANIZED STEEL	24 GA. MIN., HOT DIPPED, GALVANIZED BOTH SIDES, G90 PER ASTM A653.
G2	GALVANIZED STEEL	24 GA. MIN., HOT DIPPED, HEAT TREATED GALVANNEALED BOTH SIDES PER ASTM A653, PAINT UNIFORM GRAY MATTE APPEARANCE, A40 PER ASTM A653.
P1	CHLORINATED POLYVINYL CHLORIDE	SCHEDULE 80 CPVC PIPE PER ASTM F441, SOCKET END FITTINGS PER ASTM F439, SOLVENT WELDED JOINTS.
SS1	STAINLESS STEEL	TYPE 304 STAINLESS STEEL SHEET, 18 GA. MIN. - ASTM A480. CONTINUOUSLY WELDED. CONDITION A, NO ADDITIONAL FINISH.
SS2	STAINLESS STEEL	TYPE 304 STAINLESS STEEL SHEET, 18 GA. MIN. - ASTM A480. CONTINUOUSLY WELDED. CONDITION A, NO. 4 (BRUSHED)/ NO. 8 (MIRROR) POLISH FINISH WITH WELDS GROUND SMOOTH AND POLISHED.

NOTES:
1. DUCTWORK SYSTEMS ARE TO MATCH BASE MATERIALS FOR CONCEALED AND EXPOSED INSTALLATIONS.
2. FIELD PREPARE GALVANIZED DUCTWORK FOR PAINTING WITH AN ACID WASH OF VINEGAR.

DUCT INSULATION SCHEDULE

QUALITY ASSURANCE
INSULATION SHALL MEET NFPA 255, 25 FLAME SPREAD & 50 SMOKE DEVELOPMENT, UL 181, NFPA 90A/90B, ASTM 1136, AND ASTM E84.

MINIMUM INSULATION THICKNESS SHALL COMPLY WITH ASHRAE 90.1-2010.

PRODUCTS
- PROTECTIVE METAL JACKET COVERS - 0.016" ALUMINUM.

EXECUTION
- INSULATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

- DUCTWORK SHALL BE SEALED PRIOR TO INSTALLATION OF INSULATION.

- ALL EXTERIOR DUCT INSULATION SHALL BE SEALED WATERTIGHT.

- REINSULATE DUCTWORK WHERE EXISTING INSULATION IS DAMAGED IN CONNECTION OF NEW DUCTWORK.

- ALL INSULATION VAPOR BARRIERS SHALL BE MAINTAINED.

- ADHESIVE SHALL BE APPLIED TO AID INSTALLATION.

- REQUIRED INTERNAL DUCT LINING IS INDICATED ON DRAWINGS. LINED DUCTWORK NEED NOT BE FURTHER INSULATED.

- DUCT COILS, REHEAT BOX COILS, CONTROL DAMPER, FIRE DAMPERS & SMOKE DAMPERS SHALL BE INSULATED IF SYSTEM INSULATION IS INDICATED.

- ALL INSULATION SHALL BE MARKED WITH MANUFACTURER, "R" VALUE, FLAME SPREAD & SMOKE DEVELOPMENT.

SYSTEM	INSULATION THICKNESS	TYPE	LOCATION	NOTES
SUPPLY AIR DUCT	1.5"	1	CONCEALED	
SUPPLY AIR DUCT	2"	2	EXPOSED	
OUTDOOR AIR DUCT & PLENUMS	1.5"	1	CONCEALED	
OUTDOOR AIR DUCT & PLENUMS	2"	2	EXPOSED	
RETURN AIR DUCT	-	-	CONCEALED	
RETURN AIR DUCT	-	-	EXPOSED	
RELIEF AIR DUCT & PLENUMS	-	-	CONCEALED	
RELIEF AIR DUCT & PLENUMS	-	-	EXPOSED	
EXHAUST AIR DUCT & PLENUMS	-	-	CONCEALED	
EXHAUST AIR DUCT & PLENUMS	-	-	EXPOSED	
DISHWASHER EXHAUST DUCT	-	-		
KITCHEN HOOD EXHAUST DUCT	1.5"	3	INTERIOR	1

TYPE	BASIS OF DESIGN	APPROVED EQUALS	DESCRIPTION
1	OWENS-CORNING SOFTR TYPE 75	KNAUF JM CERTAIN TEED	MATERIAL FIBERGLASS DUCT WRAP ON DUCT K = 0.30 @ 75 DEG. F. DENSITY - 0.75 PCF JACKET - FOIL REINFORCED JOINTS - OVERLAPPING STAPLE ALL JOINTS AT 6" CENTERS. FASTENERS - MECHANICAL ON 24" & WIDER DUCT. ADHESIVE - NONE TAPE - 3" WIDE
2	OWENS-CORNING TYPE 703	KNAUF JM CERTAIN TEED	MATERIAL FIBERGLASS BOARD ON DUCT K = 0.23 @ 75 DEG. F. DENSITY - 3.0 PCF JACKET - ASJ JOINTS - BUTT FASTENERS - METAL PINS & CLIPS ON 12" CENTERS ADHESIVE - NONE TAPE - 3" WIDE VAPOR PATCHED
3	3M FIRE BARRIER DUCT WRAP 615	UNIFRAX	HIGH TEMPERATURE FIBROUS BLANKET FIBERGLASS REINFORCED ALUMINIZED POLYESTER FOIL. DENSITY - 6.0 PCF CONTINUOUS USE LIMIT = 1000 DEG. C. R-VALUE - 6.3 @ 77 DEG. F. SMOKE DEVELOPE INDEX - 0 FLAME SPREAD INDEX - 0 TAPE - FSK S.S. BANDING MATERIAL

NOTES:
1. PROVIDE TWO LAYERS OF FIRE BARRIER WRAP ON ALL INTERIOR KITCHEN HOOD GREASE DUCT.

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DUCT AND PIPE SCHEDULES

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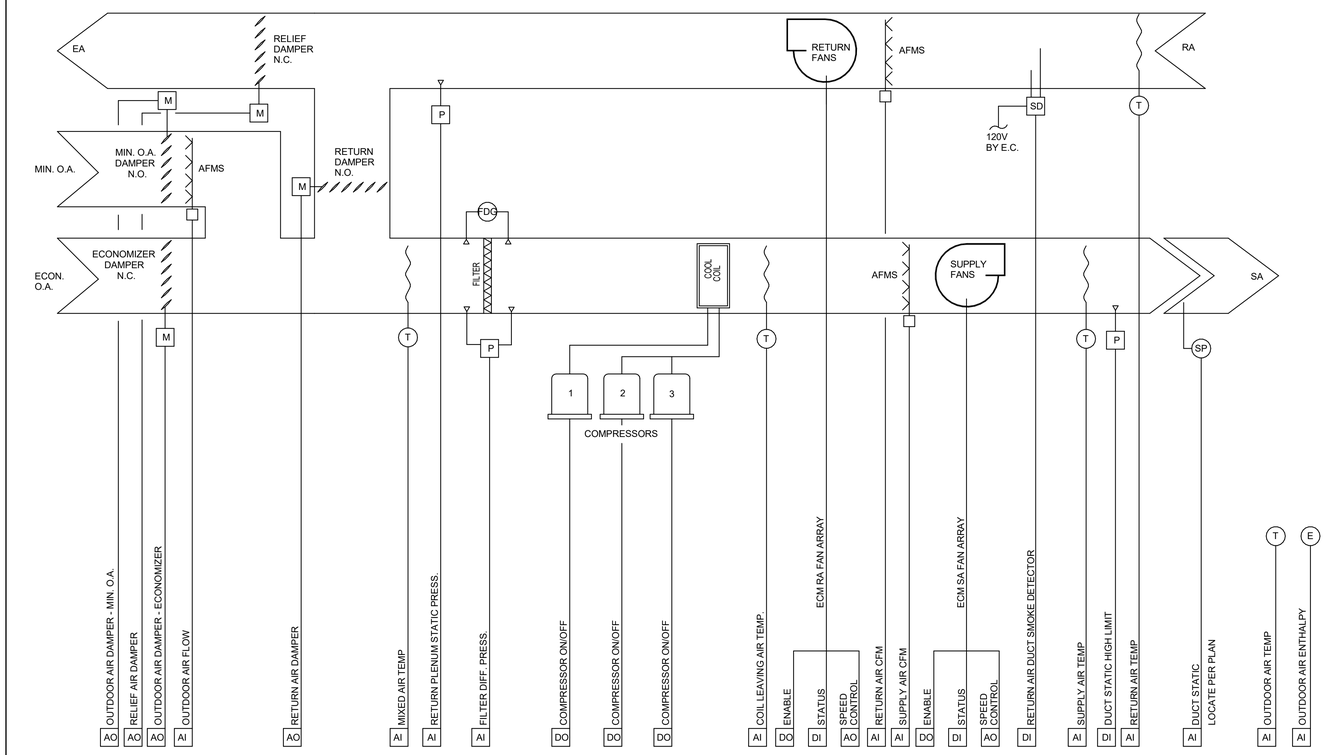
MONITORING AND ALARMS

A.	THE FOLLOWING POINTS SHALL BE MONITORED AND ALARMED AT THE MONITORING CONSOLE AND AS OTHERWISE SPECIFIED HEREINAFTER. THESE ARE IN ADDITION TO POINTS REQUIRED FOR OPERATIONAL CONTROL.	
B.	POINT DESCRIPTIONS	
	a.	CURRENT SENSING RELAYS - PROVIDE FOR: 1) AH-1 SUPPLY AIR FAN 2) CU-1 CONDENSING UNIT 3) RTU-1 SUPPLY AIR FAN 4) RTU-1 COMPRESSORS 5) EXHAUST FANS COORDINATE REQUIREMENTS FOR ECM EQUIPMENT.
	b.	HIGH/LOW TEMPERATURE ALARMS ON ALL DDC TEMPERATURE SENSORS WITH OFF-NORMAL MESSAGES.
	c.	GENERATOR TROUBLE.
	d.	TECHNOLOGY COMPUTER ROOM TEMPERATURE SENSOR, ALARM AT 80 DEG. F. (ADJ).
	e.	OUTSIDE AIR HUMIDITY (ANALOG, NO ALARM)
C.	WHEN INTERFACING WITH EQUIPMENT PROVIDING REMOTE ANALOG INPUT OR RECEIVING ANALOG OUTPUTS TO THE DDC SYSTEM OR WHEN MONITORING REQUIRES THE INSTALLATION OF EXTERNAL RELAYS AT THE EQUIPMENT BEING MONITORED, COORDINATE ALL REQUIREMENTS SUCH AS RANGE, SIGNAL CONDITION, GROUNDING, WIRING AND INPUT IMPEDANCE WITH THE SUPPLIER OF THE EQUIPMENT BEING MONITORED.	
D.	DIAL OUT ALARMS - DDC SYSTEM SHALL BE CAPABLE OF INITIATING DIAL OUT ALARM MESSAGE TO PAGERS, TELEPHONE OR INTERNET WHENEVER THE SYSTEM DETECTS AN ALARM. COORDINATE LIST OF DESIRED ALARMS AND INTERFACE WITH OWNERS' NOTIFICATION EQUIPMENT WITH THE SCHOOL DISTRICT.	



1 AHU-1 CONTROL DIAGRAM
N.T.S.

SEQUENCE OF OPERATION

OPERATION

THE AIR HANDLING SYSTEM SHALL OPERATE IN OCCUPIED MODE OF OPERATION, AT ALL TIMES, 24/7/365.

OCCUPIED MODE

WHEN IN THE OCCUPIED MODE THE MIN. OUTDOOR AIR DAMPER AND RETURN DAMPER SHALL MODULATE TO MAINTAIN THE MIN. VENTILATION AIR FLOW, AS SENSED BY THE AIR FLOW MEASURING STATION (AFMS). REGARDLESS OF MIN. OUTDOOR AIR FLOW, THE RETURN AIR DAMPER SHALL NOT CLOSE MORE THAN 50% UNLESS IN THE ECONOMIZER MODE BELOW.

THE ECONOMIZER DAMPERS (ECON. OPERATION), AND STAGED COMPRESSORS SHALL MODULATE IN SEQUENCE, WITHOUT OVERLAP, TO MAINTAIN THE SUPPLY AIR TEMPERATURE (SAT) SET POINT 55°F.

OUTSIDE AIR ECONOMIZER

THE ECONOMIZER SHALL BE ENABLED/DISABLED FROM THE GLOBAL OUTSIDE AIR TEMPERATURE SENSOR AND ENTHALPY SENSOR. WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 70 DEG F. AND THE ENTHALPY IS BELOW 28 BTU/LB, THE ECONOMIZER SHALL BE ENABLED. ABOVE EITHER VALUE THE ECONOMIZER SHALL BE DISABLED.

DURING ECONOMIZER CYCLE THE MINIMUM OUTSIDE AIR DAMPERS SHALL REMAIN 100% OPEN AND THE ECONOMIZER DAMPERS SHALL BE MODULATED OPEN AS REQUIRED TO MAINTAIN THE UNIT DISCHARGE AIR SET POINT. THE RETURN AIR DAMPERS SHALL INVERSELY TRACK THE OUTSIDE AIR DAMPERS.

PROVIDE A MIXED AIR TEMPERATURE SENSOR FOR LOW LIMIT CONTROL SET AT 50 DEG F. TO PREVENT OVER-OPENING THE OUTSIDE AIR DAMPERS.

RELIEF AIR DAMPER

THE RELIEF AIR DAMPER SHALL BE CLOSED UNTIL THE UNIT ENTERS THE ECONOMIZER MODE, AT WHICH TIME IT SHALL TRACK THE ECONOMIZER DAMPER.

FAN VOLUME CONTROL

SUPPLY FANS
THROUGH THE ECM FAN CONTROLLER THE FAN SPEED SHALL BE MODULATED TO MAINTAIN A DUCT STATIC PRESSURE SENSOR (LOCATION SHOWN ON THE DRAWINGS). INITIAL SET POINT SHALL BE 1 INCH STATIC BUT SHALL BE ADJUSTED TO THE LOWEST POSSIBLE READING BY THE BALANCING CONTRACTOR.

THE DUCT STATIC PRESSURE SHALL BE RESET BASED VAV TERMINAL UNIT DAMPER POSITIONS. IF ANY ONE VAV TERMINAL DAMPER EXCEEDS 95% OPEN THE STATIC PRESSURE SET POINT SHALL INCREASE BY 0.1" W.C. IF ALL DAMPER POSITIONS ARE LESS THAN 90% OPEN THEN THE SET POINT SHALL BE REDUCED BY 0.1". DAMPER POSITIONS SHALL BE POLLED AND SETPOINT RESET SHALL OCCUR EVERY 5 MINUTES. STATIC PRESSURE SET POINT RESET SHALL HAVE A MINIMUM AND MAXIMUM RESET RANGE INITIALLY SET AT 0.5" MINIMUM AND 1.5" MAXIMUM. THE RESET RANGE LIMITS SHALL BE DISPLAYED ON THE DDC AHU GRAPHIC AND ADJUSTABLE BY THE SYSTEM OPERATOR. THE SYSTEM OPERATION SHALL ALSO BE ABLE TO REMOVE SPECIFIC VAV UNITS FROM THE RESET SEQUENCE VIA THE SYSTEM GRAPHICS.

RETURN FANS
THROUGH THE ECM FAN CONTROLLER THE FAN SPEED SHALL BE MODULATED TO MAINTAIN THE RETURN FAN DISCHARGE PLENUM POSITIVE STATIC PRESSURE SET POINT. STATIC SET POINT SHALL BE DETERMINED BY THE BALANCING CONTRACTOR WITH THE UNIT IN THE MINIMUM OUTDOOR AIR POSITION.

SAFETIES

THE FOLLOWING SAFETIES SHALL BE PROVIDED TO STOP THE AIR HANDLING UNIT SUPPLY AND RETURN FANS AND POSITION CONTROL DEVICES TO THEIR "FAIL SAFE" POSITION, I.E. OUTSIDE AND RELIEF DAMPERS CLOSED, RETURN DAMPERS OPEN.

SUPPLY DUCT HIGH STATIC - SET POINT 4" (ADJ)
RETURN AIR SMOKE DETECTOR.

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TITLE
CONTROLS - AHU-1

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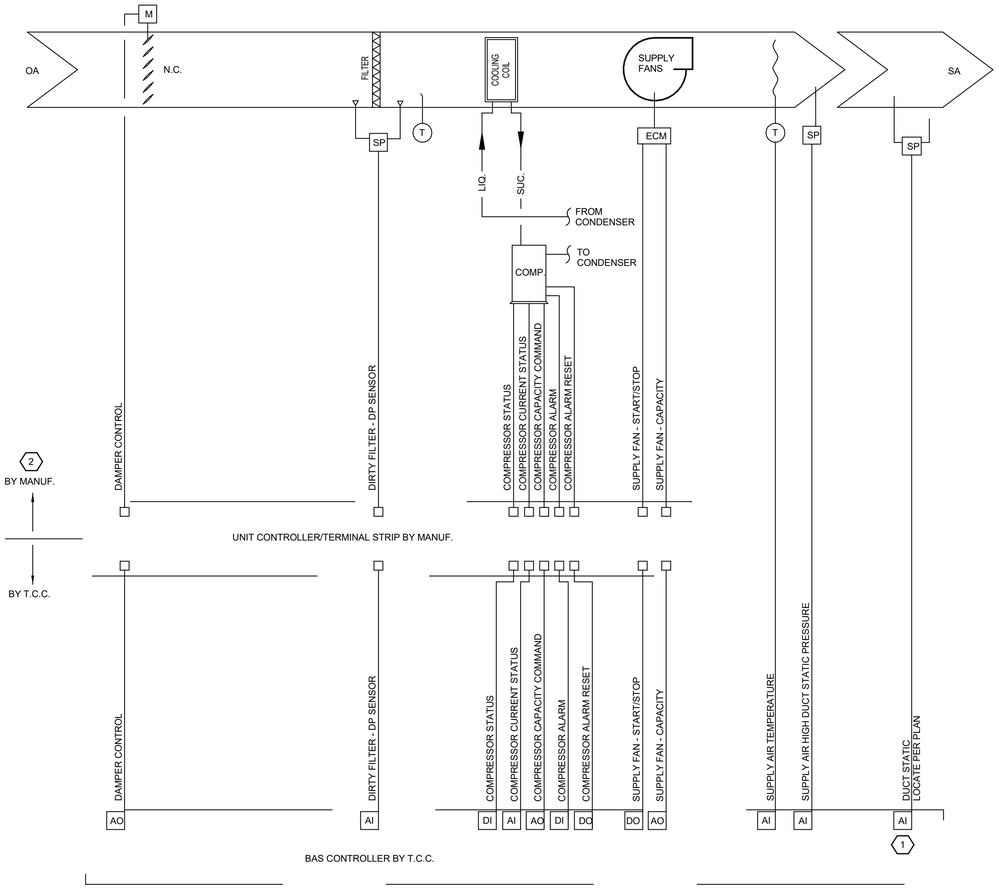

1 RTU-1 - 100% O.A. UNIT - CONTROL DIAGRAM
N.T.S.

#	CONSTRUCTION NOTES
1.	DUCT STATIC PRESSURE SENSORS TO BE LOCATED IN DOWNSTREAM DUCTWORK OF UNIT. REFER TO NEW WORK FLOOR PLAN FOR LOCATION.
2.	UNIT CONTROLLER TERMINAL STRIP, DEVICES, AND WIRING FROM THE UNIT TO THE UNIT CONTROLLER TERMINAL STRIP ARE BY THE UNIT MANUFACTURER.

SEQUENCE OF OPERATION

ROOFTOP UNIT SYSTEMS

SYSTEM DESCRIPTION - THE ROOFTOP UNIT WILL PROVIDE, COOLING, AND VENTILATION AIR FOR AREAS VIA NEW ELECTRIC REHEAT VAV AIR TERMINAL UNITS. THE UNIT INCLUDES A SELF-CONTAINED DX EVAPORATOR COOLING COIL, VARIABLE SPEED SUPPLY AND EXHAUST FANS. THE UNIT WILL INCLUDE A REFRIGERATION CIRCUIT CONTROLLER/TERMINAL STRIP.

CONTROL SEQUENCES (GENERAL)-

1. OCCUPIED MODE - THE AIR HANDLING UNIT SHALL BE SCHEDULED FOR A 24 HOUR, 7 DAY A WEEK OCCUPIED OPERATION.

2. SUPPLY AIR TEMPERATURE SET POINT - INVERTER DUTY COMPRESSOR SHALL BE MODULATED TO MAINTAIN A SUPPLY AIR TEMPERATURE (SAT) SET POINT. SET POINT SHALL BE 52 DEG. F.

3. SUPPLY FAN VOLUME CONTROL - SUPPLY FAN CAPACITY CONTROL SHALL BE THROUGH THE FAN VFD. THE VFD SHALL MODULATE TO SATISFY THE DUCT STATIC PRESSURE SENSOR LOCATED APPROXIMATELY 2/3 THE DISTANCE DOWNSTREAM IN THE RESPECTIVE DUCT SYSTEM. THE MINIMUM REQUIRED DUCT STATIC PRESSURE SET POINT SHALL INITIALLY BE SET TO 1.00" W.C. (ADJ.), COORDINATE WITH BALANCING CONTRACTOR TO ESTABLISH MINIMUM REQUIRED STATIC PRESSURE FOR TERMINAL UNIT OPERATION.

ADDITIONAL ALARMS & MONITORING POINTS:
- HIGH DUCT STATIC PRESSURE ALARM - REDUCE SUPPLY FAN SPEED TO MAINTAIN MAX. 2" S.P. (ADJ)

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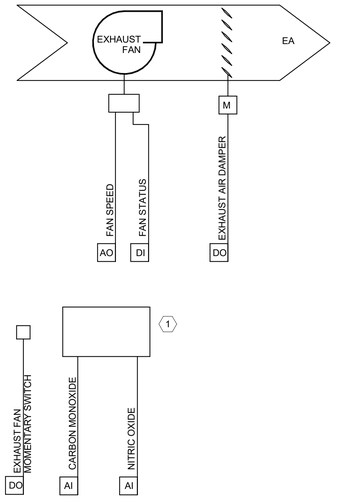
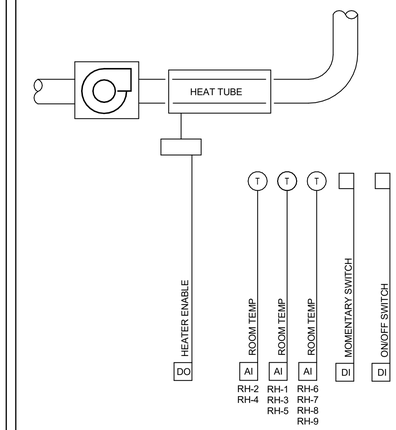


SEQUENCE OF OPERATION

A.	FAN OPERATION
	THE FAN START/STOP AND SPEED CONTROL SHALL BE VIA THE CO/NO MONITORING SYSTEM, OR A LOCAL MANUAL MOMENTARY OVER-RIDE WALL SWITCH.
	THE FAN SHALL OPERATE AT A 10% MINIMUM SPEED AT ALL TIMES, UNLESS AS INDICATED BELOW. WHILE AT MINIMUM SPEED THE ASSOCIATED INTAKE DAMPER SHALL REMAIN CLOSED. DAMPER SHALL OPEN WHEN THE FAN IS COMMANDED TO OPERATE ABOVE THE MIN. SPEED.
	THE FAN DISCHARGE AIR DAMPER SHALL REMAIN OPEN AT ALL TIMES THE FAN IS RUNNING. UPON A FAN SHUTDOWN THE DAMPER SHALL CLOSE.
B.	CO/NO MONITORING SYSTEM
	UPON A RISE IN CO OR NO LEVEL ABOVE SETPOINT THE FAN SHALL OPERATE AT 50% SPEED. UPON A CONTINUED RISE IN CO OR NO ABOVE THE THRESHOLD LIMIT (50 PPM CO OR 30 PPM NO. THE FAN SHALL OPERATE AT 100% SPEED. THE FAN SHALL RUN FOR A MINIMUM OF 30 MINUTES IN EITHER OF THESE MODES. AFTER A 30 MIN. PERIOD AND A DROP IN CO OR NO LEVELS BELOW 25% OF THE THRESHOLD LIMIT THE FAN SHALL RETURN TO 10% MIN. SPEED.
C.	MANUAL MOMENTARY WALL SWITCH
	THE MANUAL MOMENTARY OVER-RIDE SWITCH SHALL COMMAND THE FAN TO 40% SPEED FOR 1 HOUR (ADJ).

1	CARBON MONOXIDE/NITRIC OXIDE CONTROL PANEL. SEE H1.2 FOR MOUNTING LOCATION.

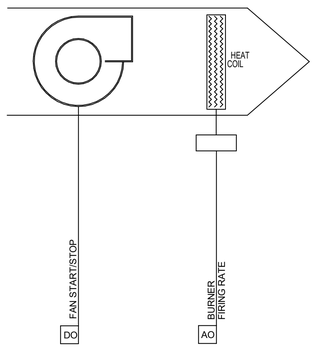
1 EF-1 - APPARATUS BAY CONTROL DIAGRAM
N.T.S.



SEQUENCE OF OPERATION

A.	THE DDC SYSTEM SHALL MONITOR THE RESPECTIVE SPACE TEMPERATURE SENSORS AND ENABLE THE RESPECTIVE HEATERS ACCORDINGLY. HEATERS SHALL SHARE TEMPERATURE SENSORS, AS NOTED ON SCHEDULE AND CONTROL DIAGRAM. INITIAL SETPOINTS SHALL BE 60 DEG. F.
B.	A WALL MOUNTED MOMENTARY SWITCH SHALL ENABLE HEATERS #6, #7, #8 AND #9 TO FULL CAPACITY FOR 15 MINUTES (ADJ).
C.	PROVIDE A WALL MOUNTED ON/OFF SWITCH THAT ALLOWS THE OWNER TO TURN ALL HEATERS OFF.

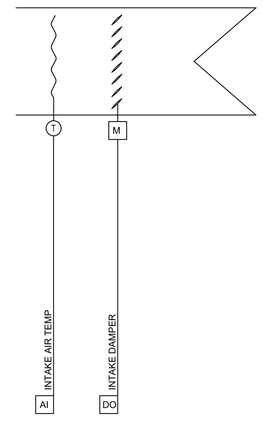
2 GAS-FIRED RADIANT HEATERS CONTROL SEQUENCE
N.T.S.



SEQUENCE OF OPERATION

A.	THE GAS-FIRED MODULATING HEATER SHALL OPERATE IN CONJUNCTION WITH THE INTAKE DAMPER TO PREHEAT INDUCED MAKE-UP AIR.
B.	THE MODULATING GAS BURNER SHALL FIRE INVERSELY BASED ON AN INTAKE AIR TEMPERATURE AT OR BELOW 40 DEG. F. (ADJ). INTAKE AIR TEMP. = 0 DEG. F. FIRING RATE = 100% INTAKE AIR TEMP. = 40 DEG. F. FIRING RATE = MIN. TURNDOWN.
C.	BURNER SHALL BE OFF IF ANY OF THE THREE RADIANT HEATER WALL TEMPERATURE SENSORS ARE OVER 75 DEG. F.

3 GAS-FIRED UNIT HEATER CONTROL SEQUENCE
N.T.S.



SEQUENCE OF OPERATION

A.	THE INTAKE DAMPER TO OPEN TO 100% WHEN EXHAUST FAN EF-1 IS OPERATING AT A SPEED ABOVE 10%. THE DAMPER IS TO CLOSE WHEN EXHAUST FAN EF-1 FAN SPEED DROPS TO 10% OR BELOW.
B.	TEMPERATURE SENSOR TO CONTROL GAS-FIRED UNIT HEATER GUH-1.

4 INTAKE DAMPER CONTROL SEQUENCE
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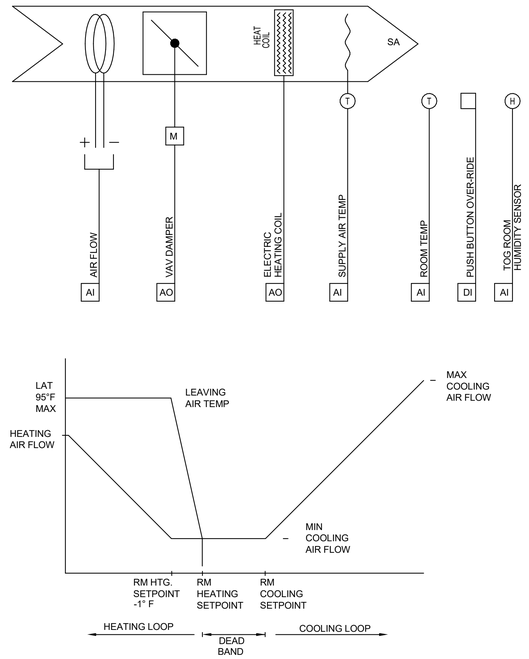
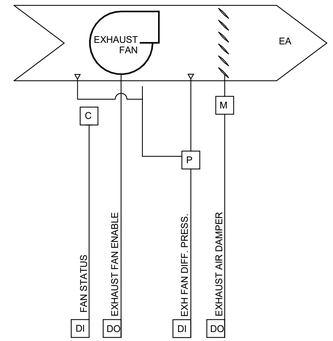


SEQUENCE OF OPERATION

A.	THE VAV BOX MANUFACTURER SHALL INCLUDE PNEUMATIC FLOW TAPS FROM THE AIR FLOW SENSOR ON THE BOX INLET AND AN INTEGRAL DAMPER WITH PROTRUDING SHAFT. ALL OTHER CONTROL COMPONENTS SHALL BE FURNISHED BY THE T.C.
B.	EACH TERMINAL UNIT SHALL OPERATE IN AN "OCCUPIED" OR "UNOCCUPIED" MODE OF OPERATION. OCCUPIED AND UNOCCUPIED SHALL BE DETERMINED FROM THE RESPECTIVE AIR HANDLING SYSTEM. ROOM TEMPERATURE SET POINTS: OCCUPIED: COOLING 72° F, HEATING 70° F UNOCCUPIED: COOLING 82° F, HEATING 62°F
C.	AS THE SPACE TEMPERATURE RISES ABOVE THE COOLING SET POINT THE AIR FLOW DAMPER SHALL MODULATE FROM THE MINIMUM TO THE MAXIMUM COOLING AIRFLOW. EITHER THE REHEAT COIL VALVE SHALL BE FULLY CLOSED OR THE ELECTRIC REHEAT COIL SHALL BE OFF. AS THE SPACE TEMPERATURE DROPS TOWARDS THE COOLING SET POINT THE AIR FLOW DAMPER SHALL MODULATE FROM THE MAXIMUM TO THE MINIMUM FLOW RATE. UPON AN CONTINUED DROP IN SPACE TEMPERATURE, THROUGH A DEADBAND THE TERMINAL UNIT SHALL THEN ENTER THE HEATING MODE. THE AIR FLOW SHALL BE SET AT THE MINIMUM FLOW AND THE ELECTRIC REHEAT COIL SHALL MODULATE ON. THE UNIT DISCHARGE AIR TEMPERATURE SHALL BE RESET VIA A PID LOOP FROM 55 DEG. F UP T 95 DEG F BASED ON ROOM TEMPERATURE BELOW THE HEATING SET POINT. AS THE SPACE TEMPERATURE CONTINUES TO DROP THE AIR FLOW SET POINT SHALL BE INCREASED TOWARD THE HEATING AIR FLOW SET POINT. THE MAXIMUM DISCHARGE AIR TEMPERATURE SHALL REMAIN LIMITED TO 95° F.
D.	DISCHARGE AIR TEMPERATURE SENSOR - PROVIDE A DISCHARGE AIR TEMPERATURE SENSOR IN THE SUPPLY DUCT (FIELD INSTALLED BY THE TEMPERATURE CONTROL SUBCONTRACTOR) FOR EACH REHEAT BOX FOR CONTROL, MONITORING AND TROUBLE SHOOTING PURPOSES. THE SENSOR SHALL BE A PRECISION THERMISTOR TYPE, WITH ACCURACY OF + OR - 0.5 DEG. F., MAXIMUM.
E.	DEHUMIDIFICATION MODE: WHEN THE ROOM ENTERS THE DEHUMIDIFICATION MODE THE ELECTRIC REHEAT TERMINAL UNITS SHALL OPEN TO FULL COOLING AIR FLOW AND THE ELECTRIC REHEAT COILS SHALL MODULATE TO PRODUCE A TERMINAL UNIT DISCHARGE AIR TEMPERATURE OF 75 DEG F.
	FOR TOG ROOM ONLY
F.	PUSH BUTTON OVER-RIDE SEQUENCE.

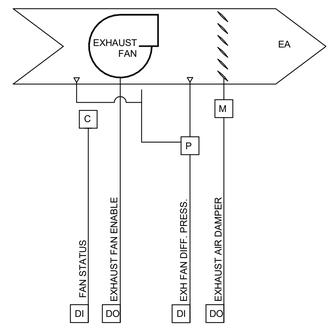
1 VAV UNIT W/ELEC REHEAT CONTROL SEQUENCE
N.T.S.



SEQUENCE OF OPERATION

A.	FAN OPERATION
	FAN SHALL OPERATE ON A SCHEDULED BASIS FROM DDC SYSTEM, INITIALLY SET TO OPERATE CONTINUOUSLY.

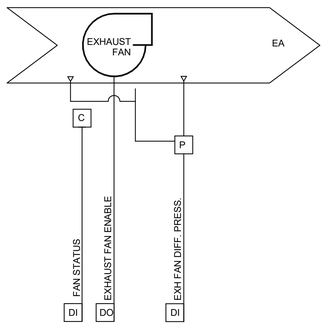
2 EF-2 - LIVING QUARTERS RESTROOMS CONTROL DIAGRAM
N.T.S.



SEQUENCE OF OPERATION

A.	FAN OPERATION
	FAN SHALL OPERATE FROM HOOD SWITCH PROVIDED BY HC (WIRED BY EC) OR FROM RATE OF RISE DETECTOR IN THE HOOD (PARALLEL WIRING). PROVIDE THE RATE OF RISE DETECTOR AND MOUNT IN THE EXHAUST DUCT ENTRY ON THE TOP OF THE HOOD TO TURN ON IF TEMPERATURE RISES TO ABOVE 125 DEG. F. (ADJ). FAN SHALL TURN OFF ON A FALL IN TEMPERATURE TO 100 DEG. F. WITH A MINIMUM RUN TIME OF 30 MINUTES (ADJ).

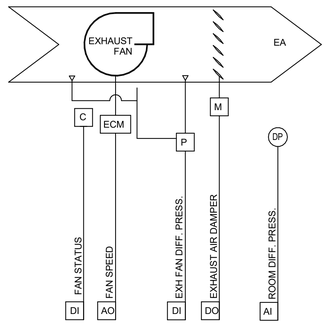
3 EF-3 - KITCHEN HOOD CONTROL DIAGRAM
N.T.S.



SEQUENCE OF OPERATION

A.	FAN OPERATION
	OPERATE FAN IN CONJUNCTION WITH COOLING ONLY VAV BOX 1-13 TO PROVIDE COOLING FOR THE SPACE. VAV BOX SHALL BE THE PRIORITY, WITH BOX DAMPER MODULATING OPEN TO CONTROL SPACE TEMPERATURE SETPOINT OF 70 DEG. F. (ADJ). ON A RISE IN SPACE TEMPERATURE 5 DEG. F. ABOVE SETPOINT FOR MORE THAN 10 MINUTES, EXHAUST FAN EF-4 SHALL OPERATE UNTIL ROOM TEMP DROPS TO SETPOINT.

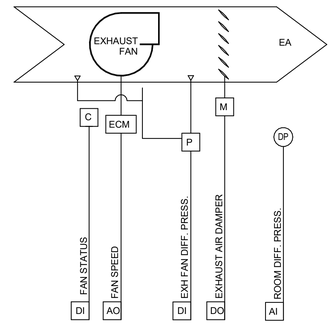
4 EF-4 - RADIO ROOM CONTROL DIAGRAM
N.T.S.



SEQUENCE OF OPERATION

A.	FAN OPERATION
	FAN SHALL MODULATE SPEED TO MAINTAIN ROOM DIFFERENTIAL PRESSURE.
	INITIAL ROOM DIFFERENTIAL SHALL BE 0.0" W,G, (ADJ).

5 EF-5 - TOG ROOM CONTROL DIAGRAM
N.T.S.



SEQUENCE OF OPERATION

A.	FAN OPERATION
	FAN TO RUN TO MAINTAIN PRESSURE. FAN SHALL OPERATE FROM ROOM PRESSURE MONITOR. IF PRESSURE RISES ABOVE 0.01" WG (ADJ), FAN SHALL TURN ON AND RUN TO MAINTAIN 0.0" WG (ADJ). IF ROOM DROPS BELOW 0.0" WG (ADJ), FAN TO TURN OFF.

6 EF-6 - DECON ROOM CONTROL DIAGRAM
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SEISMIC CONTROL SPECIFICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING:

1. SEISMIC CONTROL REQUIREMENTS.

1.2 PERFORMANCE REQUIREMENTS

A. SEISMIC CERTIFICATION AND ANALYSIS:

1. EACH TRADE CONTRACTOR SHALL RETAIN A SPECIALTY CONSULTANT OR EQUIPMENT MANUFACTURER TO DEVELOP A SEISMIC RESTRAINT SYSTEM AND PERFORM SEISMIC CALCULATIONS IN ACCORDANCE WITH THE OBC AND ASCE 7, AND ADDITIONAL REQUIREMENTS SPECIFIED IN THIS SECTION. A PROFESSIONAL ENGINEER EXPERIENCED IN SEISMIC RESTRAINT DESIGN AND INSTALLATION AND LICENSED IN THE STATE OF OHIO SHALL BE RESPONSIBLE FOR CALCULATIONS, RESTRAINT SELECTIONS AND INSTALLATION DETAILS.

2. THE SEISMIC RESTRAINT DESIGN SHALL CLEARLY INDICATE THE ATTACHMENT POINTS TO THE BUILDING STRUCTURE AND DESIGN FORCES IN ALL HORIZONTAL AND VERTICAL AXES AT THE ATTACHMENT POINTS. THE SEISMIC RESTRAINT ENGINEER SHALL COORDINATE ALL ATTACHMENTS WITH THE BUILDING'S STRUCTURAL ENGINEER OF RECORD, WHO SHALL VERIFY THE ATTACHMENT METHODS AND THE ABILITY OF THE BUILDING STRUCTURE TO ACCEPT THE LOADS IMPOSED.

3. THE SEISMIC RESTRAINT DESIGN SHALL BE BASED ON ACTUAL EQUIPMENT DATA (DIMENSIONS, WEIGHT, CENTER OF GRAVITY, ETC.) OBTAINED FROM SUBMITTALS OR THE MANUFACTURERS. THE EQUIPMENT MANUFACTURER SHALL VERIFY THAT THE ATTACHMENT POINTS ON THE EQUIPMENT CAN ACCEPT THE COMBINATION OF SEISMIC, WEIGHT, AND OTHER LOADS IMPOSED. FOR LIFE SAFETY SYSTEMS AND OTHER SYSTEMS THAT MUST REMAIN OPERATIONAL DURING AND AFTER AN EARTHQUAKE, THE MANUFACTURER SHALL PROVIDE CERTIFICATION THAT THE EQUIPMENT CAN ACCEPT THE LOADS IMPOSED AND REMAIN OPERATIONAL.

4. ANALYSIS SHALL INCLUDE CALCULATED DEAD LOADS, STATIC SEISMIC LOADS, AND CAPACITY OF MATERIALS UTILIZED FOR THE CONNECTION OF THE EQUIPMENT OR SYSTEM TO THE STRUCTURE. ANALYSIS SHALL DETAIL ANCHORING METHODS, BOLT DIAMETER, EMBEDMENT AND/OR WELDED LENGTH. ALL SEISMIC RESTRAINT DEVICES SHALL BE DESIGNED TO ACCEPT, WITHOUT FAILURE, THE FORCES DETAILED IN THE CODE ACTING THROUGH THE EQUIPMENT OR SYSTEM'S CENTER OF GRAVITY.

1.3 SUBMITTALS

A. DELEGATED-DESIGN SUBMITTAL: THE SEISMIC RESTRAINT DESIGN, CONSISTING OF CALCULATIONS, RESTRAINT SELECTION, INSTALLATION DETAILS, AND OTHER DOCUMENTATION, SHALL BE SUBMITTED. THIS SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, AS STATED ABOVE. THIS SUBMITTAL WILL BECOME PART OF THE PROJECT DESIGN CALCULATIONS, INCLUDED IN THE PROJECT RECORDS, AND WHEN REQUIRED, WILL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION.

B. SEISMIC RESTRAINT DEVICES: PRODUCT DATA, VERIFICATION OF SEISMIC CAPABILITIES AND INSTALLATION DETAILS.

C. WELDING CERTIFICATES.

D. FIELD QUALITY-CONTROL TEST REPORTS.

1.4 QUALITY ASSURANCE

A. COMPLY WITH SEISMIC-RESTRAINT REQUIREMENTS IN THE OBC UNLESS REQUIREMENTS IN THIS SECTION ARE MORE STRINGENT.

B. WELDING: QUALIFY PROCEDURES AND PERSONNEL ACCORDING TO AWS D1.1/D1.1M, "STRUCTURAL WELDING CODE - STEEL."

C. ALL SEISMIC RESTRAINTS AND COMBINATION ISOLATOR / RESTRAINTS SHALL HAVE VERIFICATION OF THEIR SEISMIC CAPABILITIES. MANUFACTURERS MAY VERIFY THEIR CAPABILITIES BY TESTING THAT IS WITNESSED BY AN INDEPENDENT PROFESSIONAL ENGINEER OR AN ASSOCIATION THAT HAS DEVELOPED A UNIFORM SET OF TEST STANDARDS. INDEPENDENT APPROVAL CAN ALSO BE OBTAINED BY AGENCIES SUCH AS OSHPD (OFFICE OF STATEWIDE HEALTH, PLANNING AND DEVELOPMENT) FROM THE STATE OF CALIFORNIA, NES, ICBO ES, FACTORY MUTUAL, UNDERWRITERS LAB, RECOGNIZED INDUSTRY STANDARDS ORGANIZATIONS SUCH AS VISCMA, ETC.

PART 2 - PRODUCTS

2.1 SEISMIC-RESTRAINT DEVICES

A. SEISMIC RESTRAINT DEVICES MAY INCLUDE ANY MANUFACTURER'S SYSTEM(S) SUITABLE FOR THE BUILDING CONSTRUCTION APPLICATION.

B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

1. THE VMC GROUP (VIBRATION MOUNTING AND CONTROLS)

2. MASON INDUSTRIES

3. KINETICS NOISE CONTROL.

SEISMIC GENERAL REQUIREMENTS

1. THE PROJECT HAS SEISMIC LOAD SUPPORT REQUIREMENTS BASED ON THE SEISMIC USE GROUP (OCCUPANCY) DESIGNATION OF THE FACILITY OF "IV" AND SEISMIC DESIGN CATEGORY "C". REFER TO DRAWING S0.01 FOR ADDITIONAL INFORMATION.

2. SEISMIC DESIGN REQUIREMENTS FOR MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE PROVIDED AS REQUIRED BY 2017 OHIO BUILDING CODE CHAPTER 16, SECTION 1613 EARTHQUAKE LOADS AND BY REFERENCE, THE AMERICAN SOCIETY OF STRUCTURAL ENGINEERS (ASCE) STANDARD 7-10 "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES" (2010).

3. CHAPTER 13 OF ASCE 7-10 DEFINES THE REQUIREMENTS FOR THE MECHANICAL AND ELECTRICAL COMPONENTS.

4. THE COMPONENT IMPORTANCE FACTOR, Ip SHALL BE 1.5 FOR ALL COMPONENTS PER ASCE 7-10, 13.1.3 SINCE THE COMPONENTS ARE REQUIRED TO FUNCTION FOR LIFE SAFETY PURPOSES AFTER AN EARTHQUAKE AS WELL AS THE COMPONENTS ARE ALL LOCATED WITHIN AN OCCUPANCY CATEGORY "IV" STRUCTURE.

5. ASCE 7-10, TABLE 13.6-1 DEFINES THE SEISMIC AMPLIFICATION FACTOR Ap AND RESPONSE FACTOR Rp FOR EACH COMPONENT THAT SHALL BE USED IN DETERMINING THE ATTACHMENT REQUIREMENTS.

6. CERTAIN COMPONENTS TO BE SEISMICALLY BRACED AND SUPPORTED ARE TO ALSO INCLUDE VIBRATION ISOLATION WHERE INDICATED.

7. COMPONENTS OR SYSTEMS CAN BE INSTALLED IN A MANNER TO REDUCE SEISMIC BRACING OR SUPPORT REQUIREMENTS. ALL MECHANICAL AND ELECTRICAL SYSTEMS MUST FUNCTION AFTER AN EARTHQUAKE. EQUIPMENT, COMPONENTS, PIPING, DUCTWORK, CONDUIT, COMMUNICATION CABLING, ETC. SHALL BE SEISMICALLY BRACED. GENERAL GUIDELINES OR APPROACH FOR PROJECT SYSTEMS:

A. DUCTWORK IS DESIGNED TO BE LESS THAN 6 SQ. FT., NO SEISMIC BRACING.

B. PIPING SHOULD BE HUNG TIGHT TO STRUCTURE WITH THREADED ROD LESS THAN 12", NO SEISMIC BRACING IF INSTALLED IN THIS MANNER.

C. HVAC SYSTEMS IN-LINE WITH DUCT SYSTEM (FANS, HUMIDIFIERS) ARE LESS THAN 75 LBS., NO SEISMIC BRACING.

D. FLOOR OR GRADE SET EQUIPMENT, TO BE ANCHORED TO EQUIPMENT PAD AND IN TURN SECURED TO THE FLOOR.

E. FIRE SUPPRESSION PIPING SHALL BE SEISMIC BRACED PER THE REQUIREMENTS OF NFPA 13.

F. FLOOR/WALL MOUNTED ELECTRICAL EQUIPMENT, PANELBOARDS, AUTOMATIC TRANSFER SWITCHES, ETC. SHALL BE SEISMICALLY BRACED/SUPPORTED.

G. LIGHTING FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF SUSPENDED CEILING SYSTEMS.

H. CEILING FANS SHALL BE SEISMICALLY BRACED/SUPPORTED.

I. CONDUITS 2.5" AND LARGER SHALL BE SEISMICALLY BRACED/SUPPORTED.

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ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	RS
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TITLE
SEISMIC REQUIREMENTS

SHEET NO.
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ELECTRICAL SPECIFICATIONS CONT.

AA. ALL OPEN CABLING SHALL BE PLENUM RATED AND INSTALLED ON J-HOOK SYSTEM ABOVE ACCESSIBLE CEILINGS. COORDINATE LOCATIONS AND TYPE/SIZE WITH THE SYSTEMS VENDOR FOR OPTIMUM CABLE ROUTING.

BB. DISCONNECT SWITCHES SHALL BE HEAVY DUTY; FUSIBLE TYPE TO UTILIZE 'RK1' FUSES.

CC. LIGHTING CONTROL OCCUPANCY SENSORS SHALL BE BY HUBBELL, LEVITON, COOPER CONTROLS OR SENSOR SWITCH. CEILING MOUNTED SENSORS SHALL BE LOW PROFILE, "DOME" TYPE SENSORS.

DD. EQUIPMENT, DUCTWORK AND PIPING SHALL NOT BE INSTALLED IN THE DEDICATED ELECTRICAL SPACE ABOVE OR IN THE WORKING SPACE REQUIRED AROUND ELECTRICAL SWITCHGEAR, MOTOR CONTROL CENTERS OR PANELBOARDS AS IDENTIFIED BY NEC 110.26 SPACES ABOUT ELECTRICAL EQUIPMENT – 600 VOLTS NOMINAL OR LESS. FOR EQUIPMENT RATED OVER 600 VOLTS NOMINAL – 110.32 WORK SPACE ABOUT EQUIPMENT – 110.33 ENTRANCE AND ACCESS TO WORK SPACE – 110.34 WORK SPACE AND GROUNDING. THE ELECTRICAL CONTRACTOR SHALL CAUTION OTHER TRADES TO COMPLY WITH THIS STIPULATION.

EE. PROVIDE ONE YEAR COMPLETE WARRANTY (PARTS, MATERIALS, LABOR), START OF WARRANTY FROM DATE OF BENEFICIAL OCCUPANCY AGREED TO IN WRITING.

ELECTRICAL SPECIFICATIONS

A. ALL ELECTRICAL WIRING, EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE 2017 OHIO BUILDING CODE, 2017 NATIONAL ELECTRIC CODE AND LOCAL CODES, LATEST ADOPTED EDITIONS.

B. ALL ELECTRICAL EQUIPMENT SHALL BE U.L. APPROVED AND COMMERCIAL GRADE. PANELBOARDS, CIRCUIT BREAKERS AND DISCONNECTS BY SQUARE D, SIEMENS, CUTLER-HAMMER OR G.E

C. SUBMIT ELECTRONIC SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO ORDERING FOR THE FOLLOWING EQUIPMENT: LIGHT FIXTURES, PANELBOARD(S), CIRCUIT BREAKER(S) AND WIRING DEVICES.

D. ALL POWER AND SYSTEMS WIRING SHALL BE INSTALLED IN CONDUIT RACEWAYS UNLESS OTHERWISE SPECIFICALLY NOTED.

E. STAGGER LOCATIONS OF RECESSED OUTLETS WHERE SHOWN ON OPPOSITE SIDES OF STUD WALL PARTITIONS TO PREVENT SOUND TRANSMISSION BETWEEN ROOMS.

F. DRAWINGS ARE SCHEMATIC IN NATURE TO REPRESENT REQUIRED EQUIPMENT/DEVICES AND ASSOCIATED POWER/CIRCUITRY. DRAWINGS SHALL NOT BE SCALED FOR DEVICE LOCATIONS. THE E.C. SHALL COORDINATE THE FINAL LOCATIONS OF ALL FLUSH MOUNTED DEVICES (INCLUDING FIRE ALARM AND TECHNOLOGY ROUGH-IN BOXES) WITH CASEWORK, FIXED FURNITURE, ETC. TO AVOID CONFLICTS AND VIEWING OBSTRUCTIONS. RECEPTACLES ASSOCIATED WITH/ADJACENT TO TECHNOLOGY OUTLET BOXES SHALL BE LOCATED AT THE SAME MOUNTING HEIGHT AND WITHIN 6" HORIZONTALLY UNLESS SPECIFICALLY NOTED OTHERWISE.

G. THE ARCHITECT SHALL RESERVE THE RIGHT TO MAKE MINOR ADJUSTMENT IN LOCATIONS OF SYSTEM RUNS AND COMPONENTS WHERE THEY CONSIDER SUCH ADJUSTMENTS DESIRABLE IN THE INTEREST OF CONCEALING WORK OR PRESENTING A BETTER APPEARANCE WHERE EXPOSED. ANY SUCH CHANGES SHALL BE ANTICIPATED AND REQUESTED SUFFICIENTLY IN ADVANCE SO AS TO NOT CAUSE EXTRA WORK, OR UNDULY DELAY THE WORK. COORDINATE WORK IN ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY ANY DIFFICULTIES WHICH CAN BE ANTICIPATED. WHERE ANY SYSTEM RUNS AND COMPONENTS ARE SO PLACED AS TO CAUSE OR CONTRIBUTE TO A CONFLICT, IT SHALL BE READJUSTED AT THE EXPENSE OF THE CONTRACTOR CAUSING SUCH CONFLICT. THE ARCHITECT'S DECISION SHALL BE FINAL IN REGARD TO ARRANGEMENT OF EQUIPMENT, CONDUIT(S), DEVICES, WIREWAYS ETC., WHERE CONFLICT ARISES.

H. ALL WIRING SHALL UTILIZE MIN. #12 AWG SIZE COPPER THHN/THWN STRANDED CONDUCTORS WITH INSULATION SUITABLE FOR THE APPLICATION. CONDUCTORS FOR ELECTRIC RADIANT HEATERS SHALL BE LISTED FOR THE APPLICATION.

I. PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT AND SEPARATE GREEN COLORED INSULATED COPPER GROUNDING CONDUCTOR FOR EACH BRANCH CIRCUIT. NEUTRAL WIRES FOR 120 VOLT CIRCUITS SHALL BE WHITE.

J. ALL CONDUCTORS SHALL BE INSTALLED IN MIN. 0.75" SIZE CONDUIT. EMT SHALL BE UTILIZED FOR INTERIOR FEEDERS AND BRANCH CIRCUITRY. MC CABLE SHALL ONLY BE ALLOWED FOR FINAL CONNECTION TO INDOOR LIGHT FIXTURES. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL OTHER FINAL CONNECTIONS TO MOVEABLE/VIBRATING EQUIPMENT. ALL EXTERIOR CONDUIT SHALL BE RIGID METAL CONDUIT.

K. EMT CONDUIT FITTINGS SHALL BE ALL STEEL SETSCREW TYPE.

L. ALL CONDUITS INSTALLED ON EXTERIOR OF BUILDING SHALL BE RIGID GALVANIZED TYPE WITH THREADED STEEL FITTINGS. UTILIZE COMPATIBLE NEMA 3R TYPE BOXES FOR ALL EXTERIOR FIXTURE AND OUTLET BOXES.

M. ALL EMPTY CONDUITS SHALL HAVE A NYLON PULLSTRING INSTALLED PER SPECIFICATIONS.

N. WIRING DEVICES SHALL BE SPECIFICATION GRADE, WHITE COLOR, WITH STAINLESS STEEL COVERPLATES, HUBBELL, P&S, COOPER OR LEVITON. PROVIDE TAMPER-RESISTANT RECEPTACLES IN LOCATIONS AS REQUIRED BY NEC 406.12.

O. ALL CONDUIT, FITTINGS, BENDS, ETC. SHALL BE PROPERLY SUPPORTED PER NEC AND NEATLY INSTALLED.

P. IDENTIFY PANEL AND CIRCUIT NUMBER ON ALL RECEPTACLE COVERPLATES WITH PRINTED LABELS WITH BLACK LETTERS ON CLEAR ADHESIVE BACKGROUND.

Q. PROVIDE TYPED PANEL DIRECTORIES INDICATING TYPE OF LOAD AND ROOM DESCRIPTION WITH ROOM NUMBER AND TYPE. UPDATE ALL EXISTING PANEL DIRECTORIES WITH NEW TYPED DIRECTORY CARDS WITH ALL CIRCUIT REVISIONS NOTED.

R. ALL SPARE BREAKERS IN PANELBOARDS SHALL BE TURNED 'OFF'.

S. THE TOTAL LOAD (AMPERES) OF ANY BRANCH CIRCUIT SHALL NOT EXCEED 80% OF THE RATED AMPACITY OF THE CIRCUIT BREAKER FOR THAT CIRCUIT.

T. THE ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS TO AVOID INTERFERENCE WITH THE BUILDING COMPONENTS, EXISTING UTILITIES, EQUIPMENT, ETC.

U. THE E.C. SHALL PROVIDE FIRESTOPPING FOR ALL PENETRATIONS THRU RATED WALLS. ALL FIRESTOPPING ASSEMBLIES SHALL BE LISTED AND APPROVED FOR THE ASSEMBLY AND PENETRATION UTILIZED.

V. IDENTIFY ALL BRANCH CIRCUITS AT ALL JUNCTION BOXES BY NEATLY PRINTING PANEL AND CIRCUIT NUMBERS ON BOX COVERS WITH INDELIBLE MARKER.

W. NEATLY LABEL BRANCH CIRCUIT NUMBERS ON EACH EXPOSED CONDUIT LEAVING PANELBOARDS WITH INDELIBLE MARKERS.

X. NEATLY LABEL PANEL AND BRANCH CIRCUIT NUMBERS ON EACH ACCESSIBLE OR EXPOSED CONDUIT ENTERING OR LEAVING ALL PULLBOXES AND JUNCTION BOXES WITH INDELIBLE MARKERS.

Y. LABEL ALL NORMAL POWER PANELBOARDS WITH PHENOLIC WHITE BACKGROUND AND BLACK LETTER PLATE WITH SOURCE OF FEEDER, SWITCH OR BREAKER NUMBER, VOLTAGE, PHASE, AND BRANCH.

Z. LABEL ALL NORMAL POWER DISCONNECT SWITCHES WITH PHENOLIC WHITE BACKGROUND AND BLACK LETTER PLATE WITH PANEL, CIRCUIT NUMBER, VOLTAGE, PHASE, FED FROM AND DESCRIPTION OF LOAD FED.

ELECTRICAL LEGEND CONT.

EM	OCCUPANCY SENSOR UL 924 RELAY TO TURN EMERGENCY SWITCHLEG LIGHTS 'ON' AND BYPASS SWITCH ON LOSS OF NORMAL POWER. DIMMED EMERGENCY FIXTURES TO BYPASS DIMMER CONTROL TO DRIVE DIMMED FIXTURES TO FULL BRIGHTNESS.
	DISCONNECT SWITCH
	MOTOR STARTER.
	COMBINATION MOTOR STARTER AND DISCONNECT SWITCH.
	ELECTRIC MOTOR.
UH	UNIT HEATER.
FC	FAN COIL UNIT.
	CIRCUIT BREAKER PANEL, FLUSH MOUNTED.
	CIRCUIT BREAKER PANEL, SURFACE MOUNTED.
	POWER PANEL OR SWITCHBOARD, SURFACE MOUNTED.
EB	ELECTRIC BASEBOARD HEATER.
▽	DATA OUTLET (18" M.H.). TWO GANG OUTLET BOX WITH SINGLE GANG TRIM RING AND BLANK COVERPLATE. STUB AN EMPTY 0.75" BUSHED CONDUIT OUT ABOVE ACCESSIBLE CEILING.
▼	TELEPHONE OUTLET (46" M.H.). SINGLE GANG OUTLET BOX WITH BLANK COVERPLATE. STUB AN EMPTY 0.75" BUSHED CONDUIT OUT ABOVE ACCESSIBLE CEILING.
▽AP	WIRELESS WIFI ACCESS POINT; CEILING MOUNTED. PROVIDE 1 DATA CABLE TO I.T. RACK.
F 15	FIRE ALARM HORN & SIGNAL LIGHT (80" A.F.F.). # WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A/R IS NOT SHOWN, THE STROBE SHALL BE RATED 110 CANDELA. "C" SUBSCRIPT INDICATES CEILING MOUNTED DEVICE. (1)
L 15	FIRE ALARM SIGNALING LIGHT (80" A.F.F.). # WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A/R IS NOT SHOWN, THE STROBE SHALL BE RATED 110 CANDELA. "C" SUBSCRIPT INDICATES CEILING MOUNTED DEVICE. (1)
F	FIRE ALARM SENDING STATION (46" M.H.).
S	CEILING MOUNTED SMOKE DETECTOR.
S CO	CEILING MOUNTED COMBINATION SMOKE/CO ALARM.
S/R	DUCT MOUNTED SMOKE DETECTOR (S/SUPPLY, R/RETURN).
D	ELECTRO-MAGNETIC DOOR HOLDER.
TV	TELEVISION ANTENNA OUTLET 60" AFF (OR AS NOTED) - 1-GANG BOX WITH 0.75"C. TO ABOVE CEILING. PROVIDE RG6 CABLE FROM BOX TO IT/PHONE ROOM.
CR	DOOR ACCESS CONTROL SYSTEM CARD READER - 46" M.H. REFER TO DETAIL 5 ON SHEET E0.4
CF	CCTV CAMERA ROUGH-IN BOX/ CONDUIT STUBB TO BUILDING INTERIOR. PROVIDE 1 DATA CABLE TO I.T. RACK.
W	WATER FLOW SWITCH.
V	SUPERVISED VALVE.
A	ELECTRIC DOOR OPERATOR, INCLUDING RELAYS, OPERATING SWITCHES AND LIMIT SWITCHES SHALL BE FURNISHED BY THE DOOR EQUIPMENT SUPPLIER AND INSTALLED BY THE E.C. IN ACCORDANCE WITH APPROVED WIRING DIAGRAMS BY THE EQUIPMENT SUPPLIER (120 VOLT SINGLE PHASE OPERATION).
P	PUSHPLATE DOOR CONTROLS FURNISHED BY THE DOOR EQUIPMENT SUPPLIER AND INSTALLED BY THE E.C. (42" M.H.).
▪	PUSH BUTTON (46" M.H.). SINGLE GANG BOX WITH 0.75" BUSHED CONDUIT TO ABOVE ACCESSIBLE CORRIDOR CEILING. OR REFER TO NOTE ON PLAN. (1)
SC	FLUSH MOUNTED CEILING SPEAKER. WITH CABLING TO TV BOX.
V	WALL MOUNTED SPEAKER VOLUME CONTROLLER (46" M.H.). SINGLE GANG BOX WITH 0.75" BUSHED CONDUIT TO ABOVE ACCESSIBLE CORRIDOR CEILING.

ELECTRICAL LEGEND

	ELECTRICAL CONNECTION REQUIRED.
	EXIT LIGHTING FIXTURE. ARROWS AS INDICATED.
H1 B1 a b	LIGHTING FIXTURE: CAPITAL LETTER DENOTES FIXTURES TYPE. LOWER CASE LETTER DENOTES SWITCHING ARRANGEMENT.
H1 B1	LIGHTING FIXTURE WITH INTEGRAL BATTERY BACKUP.
A-1&2	EACH ARROWHEAD REPRESENTS ONE COMPLETE CIRCUIT; CAPITAL LETTER DENOTES PANEL; NUMBER DENOTES CIRCUIT.
	WIRE & CONDUIT IN WALL OR ABOVE CEILING
	WIRE & CONDUIT UNDERGROUND
J	JUNCTION BOX.
	20A-125V SINGLE RECEPTACLE, NEMA 5-20R (18" M.H.).
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R (18" M.H.).
U	20A-125V DUPLEX RECEPTACLE WITH INTEGRAL USB CHARGING PORTS (2), NEMA 5-20R (18" M.H.). (2) (CHARGING PORTS SHALL BE TYPE A/C, MINIMUM 25 WATT CAPACITY).
	SPECIAL PURPOSE RECEPTACLE. REFER TO NOTE ON PLAN
	20A-125V DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, (18" M.H.) TWO-GANG ASSEMBLY.
D	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R, (46" M.H.) D = DOUBLE DUPLEX.
	20A-125V SPLIT DUPLEX RECEPTACLE, NEMA 5-20R WITH BOTTOM OUTLET CONTROLLED BY WALL SWITCH (18" M.H.).
GF	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R, WITH GROUND FAULT CIRCUIT INTERRUPTER (18" M.H.).
T	20A-125V TAMPERPROOF RECEPTACLE, NEMA 5-20R, (18" M.H.).
WP/GF	20A-125V WEATHERPROOF DUPLEX RECEPTACLE, NEMA 5-20R, WITH GROUND FAULT CIRCUIT INTERRUPTER (18" M.H.), WITH HUBBELL #WP26M CAST ALUMINUM "WHILE-IN-USE" COVER.
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R, IN HUBBELL BA-2436 FLUSH FLOOR BOX WITH SA-3825 COVERPLATE. PROVIDE CARPET FLANGE WHERE REQUIRED.
20	20A-125V/250V-1PH-4W SINGLE RECEPTACLE, NEMA 14-20R, (18" M.H.).
30	30A-125V/250V-1PH-4W SINGLE RECEPTACLE, NEMA 14-30R, (18" M.H.).
50	50A-125V/250V-1PH-4W SINGLE RECEPTACLE, NEMA 14-50R (18" M.H.)
	SINGLE POLE WALL SWITCH (46" M.H.)
2	TWO POLE WALL SWITCH (46" M.H.).
3	THREE-WAY WALL SWITCH (46" M.H.).
4	FOUR-WAY WALL SWITCH (46" M.H.).
OS	LIGHTING OCCUPANCY SENSOR WALL SWITCH (46" M.H.)
D	LIGHTING 0-10V LED DIMMER SWITCH WITH PRESET SLIDE CONTROL AND POWER ON-OFF 'DECORATOR' STYLE SWITCH (46" M.H.) UNLESS OTHERWISE INDICATED.
3D	LIGHTING 0-10V LED DIMMER SWITCH WITH PRESET SLIDE CONTROL AND 3-WAY POWER ON-OFF 'DECORATOR' STYLE SWITCH (46" M.H.) UNLESS OTHERWISE INDICATED.
V	SPEAKER VOLUME CONTROL (46" M.H.)
DV	0-10V LED COMBINATION VACANCY SENSOR AND DIMMER SWITCH WITH PRESET SLIDE CONTROL AND SEPARATE ON-OFF 'DECORATOR' STYLE SWITCH (46" M.H.) UNLESS OTHERWISE INDICATED, RATED MIN. 800 WATTS.
P	SWITCH WITH NEON PILOT LIGHT. ONE-GANG ASSEMBLY (46" M.H.).
K	KEY OPERATED WALL SWITCH (46" M.H.). HUBBELL # HBL 1221 RKL WITH #512RKL COVERPLATE.
D	LIGHTING DIMMER SWITCH WITH PRESET CONTROL (46" M.H.) 1000 WATT UNLESS OTHERWISE INDICATED. DIMMER TO MATCH TYPE OF LIGHTING LOAD.
R	SWITCH WITH RECEPTACLE (46" M.H.) STANDARD TWO-GANG ASSEMBLY OF SWITCH AND RECEPTACLE.
M	FLUSH FRACTIONAL HORSEPOWER MOTOR STARTER WITH NEON PILOT LIGHT. ONE-GANG ASSEMBLY (46" M.H.).
H	HP RATED WALL SWITCH (46" M.H.).
OS	OCCUPANCY SENSOR, CEILING MOUNTED.
OR	OCCUPANCY SENSOR CONTROL RELAY.

GENERAL NOTES

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2017 OHIO BUILDING CODE, INCLUDING REFERENCED CODES AND STANDARDS, ALL LOCAL AND STATE CODES AND MEET APPROVAL OF AUTHORITIES HAVING JURISDICTION.

B. BIDDERS SHALL INSPECT PROJECT SITE EXISTING CONDITIONS DURING BIDDING.

C. INCLUDE PAYMENT OF ALL PERMIT AND INSPECTION FEES AND OBTAIN AN ELECTRICAL PERMIT AND SECURE INSPECTION AND APPROVAL OF THE CODE OFFICIAL.

D. SUBMIT AN ELECTRONIC COPY OF SUBMITTAL DATA AND DESCRIPTIVE LITERATURE IN .PDF FORMAT FOR ALL FIXTURES AND EQUIPMENT.

E. WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY AND REPRESENT THE BEST PRACTICES OF THE INDUSTRY.

F. COORDINATE INSTALLATION WITH OTHER TRADES; PROVIDE OFFSETS AS REQUIRED.

G. INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

H. COORDINATE EACH ROUGH-IN INSTALLATION REQUIREMENTS AND LOCATIONS WITH OTHER TRADES, ACTUAL EQUIPMENT OR CABINETRY PROVIDED AND FIELD CONDITIONS BEFORE PERFORMING WORK.

I. REFER TO ARCHITECTURAL DRAWING ELEVATIONS FOR MOUNTING LOCATION INFORMATION, ARRANGEMENT AND HEIGHT FOR ALL DEVICES AT FURNISHINGS, CASEWORK, ETC.

J. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES. WHERE DISCREPANCIES MAY OCCUR BETWEEN THE ELECTRICAL PLANS AND THE ARCHITECTURAL CEILING PLANS ON QUANTITY OF FIXTURES, THE ELECTRICAL PLANS SHALL TAKE PRECEDENCE. COORDINATE FIXTURE LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS WITH PIPING AND DUCTWORK.

K. ALL EQUIPMENT AND MATERIAL REQUIRED FOR COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS SHALL BE INCLUDED IN THE CONTRACT.

ELECTRICAL INDEX OF DRAWINGS

SEISMIC REQUIREMENTS

THIS PROJECT HAS SEISMIC REQUIREMENTS. REFER TO DRAWING H5.1

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ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION
1	04/14/22	ADDENDUM NO. 1
2	04/22/22	ADDENDUM No. 2

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	TR
CHECKED	JDZ

TITLE

LEGEND

SHEET NO.

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LIGHTING FIXTURE SCHEDULE

FIXTURE SYMBOL	LUMINAIRE TYPE: LED	LUMINAIRE TYPE: LOW VOLTAGE	WATTS/ FIXTURE	LUMENS/ COLOR TEMP	FIXTURE VOLTAGE	MANUFACTURER & CATALOG NO.	OTHER ACCEPTABLE MANUFACTURES	DIFFUSING MEDIA	TRIM COLOR: WHITE	TRIM COLOR: BLACK	TRIM COLOR: ALUMINUM	TRIM COLOR: BRONZE	TRIM COLOR: STANDARD	TRIM COLOR: SEE NOTES	MOUNTED (S - SURFACE. R - RECESSED. SM - STEM MTD. WM - WALL MTD. C - CHAIN MTD. UC - UNDER CAB. CS - CLG. SURF.)	SIZE: WIDTH	SIZE: LENGTH	SIZE: DEPTH	SIZE: DIAMETER	SEE NOTES
A1	•		60	750 LUM/FT DN 250LUM/FT UP 4000K	120	NULITE # RWI3-B-FF-DG-03-L4O-1C-U-W-8	ALW (1)	FLAT DIFFUSE LENS	•						WM	3	96	2		
A2	•		22	2000 LUMENS/ 4000K	120	LUMENWERK #MIKR-HLO-LED-80-500-40-4'-120-MIKR-1-DTL-W	PINNACLE	FLAT DIFFUSE LENS							R(DRYWALL/WOOD CLG)	1	48	2		
B1	•		30	3600 LUMENS/ 4000K	120	LITHONIA# CPX 2X2 AL07 SWW M4	COLUMBIA, DAYBRITE	MATTE WHITE LENS	•						R(GRID)	24	24	2		
C1	•		40	5000 LUMENS/ 4000K	120	LITHONIA# CLX L48 5000LUM SEF FDL MVOLT G210 40K	COLUMBIA, DAYBRITE (1)	FLAT DIFFUSE LENS	•						WM/S/SM	3	48	3		
C2	•		80	10000 LUMENS/ 4000K	120	LITHONIA# CLX L96 100000LM SEF FDL MVOLT G210 40K	COLUMBIA, DAYBRITE	FLAT DIFFUSE LENS	•							3	96	3		
D1	•		30	2500 LUMENS/ 4000K	120	FINELITE# S17-LED-ACF-PF-4'-H-840-120V-SC	PRUDENTIAL (1)	ANGLED WHITE PERF DIFFUSER	•						WM (6'-0" A.F.F)	5	48	4		
D2	•		10	1300 LUMENS/ 3000K	120	LITHONIA# FMVTSL-24IN-MVOLT-30K-90CRI-BN-M4	COLUMBIA, DAYBRITE	SQUARE WHITE LENS	•						WM (7'-0" A.F.F)	6	24	4		
F1	•		14	1100 LUMENS	120	LITHONIA# WF6-LED-304050K-90CRI-MW	GREEN CREATIVE	FLAT WHITE LENS	•						R			1.5	6	1
F2	•		11	870 LUMENS/ 4000K	120	LITHONIA#6JBK-RD-40K-90-CRI-MW-M6	PRESCOLITE	REGRESSED WHITE BAFFLE	•						R			4	6	
F3	•		23	2000 LUMENS / 4000K	120	LITHONIA# LDN6CYL40/20 LO6ARLSS 120	PRESCOLITE	SEMI SPECULAR REFLECTOR	•						SM - 24" SOEM			36	6	
F4	•		10	1000 LUMENS/ 4000K	12	LITHONIA # WF6 ADJ LED 30K40K50K90 CRI M 8	WAC (1)	MATTE WHITE LENS	•						R			3	6	
F5	•		10	850 LUMENS/ 4000K	120	JUNO # JSF 5IN 07LM 40K 90 CRI 120 FRPC WHJSFTRIM 5INSN	GREEN CREATIVE	MATTE WHITE LENS		•					CS			1	5	8
F6	•		30	1250 LUMENS RGBW	120	GOTHAM # EVO-ARTC-RGBW/12-4AR-MD-LD-120-DMX-TR...	APPROVED EQUAL	SEMI SPECULAR	•						R			7	4	9,10
K1	•		10	2000 LUMENS/ 4000K	120	LITHONIA# WDGE2 LED-TFTM	HUBBELL (1)	WEDGE CUTOFF			•				WM	12	9	7		
K2	•			2.2W/FT / 4000K	120	ACOLYTE# AS 30	LUMENII	MATTE WHITE DIFFUSER			•				WM	1.3		1.2		5
P1	•		5	200 LUMENS	120	WAC # PD-ZZ754-AL	(2) AFX OR APPROVED EQUAL	LINEAR PENDANT			•				PENDANT			8	3	6
BL1	•		20	800 LUMENS / 4000K	120	LITHONIA# KBDB LED-12C-350-40K-SYM-120-DNAXD	HUBBELL				•				BOLLARD BASE		42		8	3
FL1	•		20	2000 LUMENS / 4000K	120	LITHONIA# DSXF1-LED-P1-40K-NSP-MVOLT-THK-DDBXD	HUBBELL	NARROW SPOT FLOODLIGHT			•				S (GRADE)					
FL2	•		20	2000 LUMENS / 4000K	120	LITHONIA #DSSF1-LED-P1-40K-WFL-MVOLT-THK-DDBXD	HUBBELL	WIDE FLOOD FLOODLIGHT			•				S (GRADE)					
PL1	•		125	8700 LUMENS / 4000K	120	LITHONIA# DSX1-LED-P3-40K-T3M-MVOLT-SPA-DDBXD/SSS-20-4G-DM19AS-DDBXD	BEACON	FULL CUTOFF (TYPE III)			•				20' (5") SQUARE STEEL POLE				(2)	7,11
PL1S	•		125	8700 LUMENS / 4000K	120	LITHONIA# DSX1-LED-P3-40K-T3M-MVOLT-SPA-DDBXD/SSS-20-4G-DM19AS-DDBXD	BEACON	FULL CUTOFF (SHIELDING)			•				20' (5") SQUARE STEEL POLE					4,7,11
PL2	•		125	8700 LUMENS / 4000K	120	LITHONIA# DSX1-LED-P3-40K-T3M-MVOLT-SPA-DDBXD/SSS-20-4G-DM19AS-DDBXD	BEACON	FULL CUTOFF (TYPE IV)			•				20' (5") SQUARE STEEL POLE					7,11
UC1	•		10	500 LUMENS / 4000K	120	LITHONIA# UPLD-SBIN-30K-90CRI-SWR-WH (1)	CONTECH, LAMAR (1)	MATTE WHITE LENS	•				2		UC (OR SHELF)		18			2
X1	•		5W		120	LITHONIA # LHQM-LED-R-HO-M6	COMPASS, CHLORIDE	LED EMERGENCY/EXIT RED LETTERS ON WHITE W/EM HEADS	•						WM OR CLG SURFACE ABOVE DOOR					
REM	•				120	LITHONIA # ERE-GY-T-RD-WP	COMPASS, CHLORIDE	LED REMOTE LAMP HEADS - 2 HEAD - ROUND				•			WM OR CLG SURFACE TO CANOPY				4	
EM	•		5	TWO 1W LAMPS	120	LITHONIA #EU2C	COMPASS, CHLORIDE	EMERGENCY LIGHT							WM 7'-6"	4	14	4		

NOTES:

1. SWITCHABLE COLOR TEMPERATURE.
2. INTEGRAL ROCKER SWITCH (HARD WIRED CONNECTION).
3. REFER TO BOLLARD BASE DETAIL.
4. HOUSE-SIDE SHIELD ON FIXTURE.
5. FIXTURE LENGTH CUSTOM TO FIT BETWEEN APPARATUS BAY DOORS. MOUNTED TO WALL DIRECTLY BELOW BRICK VENEER TRANSITION.
6. COORDINATE FIXTURE SUSPENSION HEIGHT WITH ARCHITECT.
7. REFER TO POLE BASE DETAIL.
8. PROVIDE SURFACE MOUNTED WEATHER PROOF BACK BOX FOR SURFACE MOUNTING TO UNDERSIDE OF CANOPY.
9. PROVIDE DMX512 WALLBOX TYPE CONTROLLER (TOUCHSCREEN), EQUAL TO ACUITY FRESCO EZ SOLO FOR CONTROL OF ROOM LIGHTS.
10. OPTIONAL LINEAR RECESSED FIXTURE MAY BE SUBMITTED FOR APPROVAL WITH EQUALIVANT LUMEN OUTPUT.
11. (2) FIXTURES SHALL HAVE 7-PIN CONTROL RECEPTACLE WITH SHORTING CAP, REFER TO SITE PLAN FOR POLE FIXTURES WITH CONVENIENCE RECEPTACLE AT BASE.

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ISSUE

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TITLE
SCHEDULES

SHEET NO.
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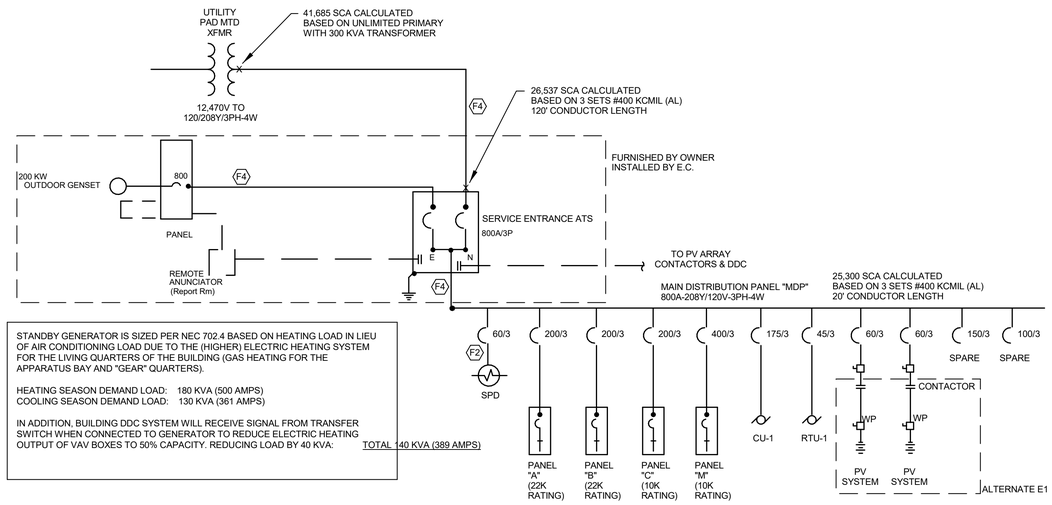

STANDBY GENERATOR IS SIZED PER NEC 702.4 BASED ON HEATING LOAD IN LIEU OF AIR CONDITIONING LOAD DUE TO THE (HIGHER) ELECTRIC HEATING SYSTEM FOR THE LIVING QUARTERS OF THE BUILDING (GAS HEATING FOR THE APPARATUS BAY AND "GEAR" QUARTERS).

HEATING SEASON DEMAND LOAD: 180 KVA (500 AMPS)
COOLING SEASON DEMAND LOAD: 130 KVA (361 AMPS)

IN ADDITION, BUILDING DDC SYSTEM WILL RECEIVE SIGNAL FROM TRANSFER SWITCH WHEN CONNECTED TO GENERATOR TO REDUCE ELECTRIC HEATING OUTPUT OF VAV BOXES TO 50% CAPACITY. REDUCING LOAD BY 40 KVA: TOTAL 140 KVA (389 AMPS)

MAIN DISTRIBUTION PANEL "MDP" (42K AIC RATING)

SPEC. REFERENCE NO.:		CONNECTED LOAD:	261 KVA
MAIN BUSSING:	800 AMPS	DEMAND LOAD:	180 KVA (500 AMPS)
FEEDER SIZE:	SEE FEEDER SCHEDULE	VOLTAGE:	208Y/120V-3PH-4W

SWITCH OR UNIT NO.	NAMEPLATE	APPROX. CONNECTED KVA LOAD	OVERCURRENT PROTECTION				FEEDER			
			FRAME SIZE	POLES	TRIP RATING	SEE NOTE	NUMBER OF CONDUCTORS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
1	PANEL "A"	36	200	3	200		4	250 (AL)	6 (CU)	3
2	PANEL "B"	61	200	3	200		4	250 (AL)	6 (CU)	3
3	PANEL "C"	30	200	3	200		4	250 (AL)	6 (CU)	3
4	PANEL "M"	87	400	3	400		2 SETS OF 4	250 (AL)	3 (CU)	3
5	PHOTOVOLTAIC	-20	60	3	60	1	4	6 (CU)	10 (CU)	1
6	PHOTOVOLTAIC	-20	60	3	60	1	4	6 (CU)	10 (CU)	1
7	RTU-1	11	60	3	45		3	6 (CU)	10 (CU)	1
8	CU-1	36	200	3	175		3	2/0 (CU)	6 (CU)	1.5
9	SPD		60	3	60		4	6	10	
10	SPARE		150	3						
11	SPARE		100	3						

NOTES:
1. BREAKER SHALL BE REVERSE CONNECTED OR LISTED FOR REVERSE FEED UTILIZATION FOR PV SYSTEM.

PANEL "A" (22K AIC RATING)

MOUNTING: SURFACE (ELEC ROOM)
CONN. LOAD: 36 KVA | DEMAND LOAD: 25 KVA (70 AMPS)
MAINS: 200A M.L.O. | VOLTAGE: 208Y/120V-3PH-4W

REMARKS	DEMAND KVA	CONNECTED KVA	BKR.	CKT. NO.		BKR.	CONNECTED KVA	DEMAND KVA	REMARKS
BAY DOOR 1		1.0-M	20/3	1	2	30/1	1.0-M		BAY DOOR 5
		1.0-M	-	3	4	30/1	1.0-M		BAY DOOR 6
		1.0-M	-	5	6	30/1	1.0-M		BAY DOOR 7
BAY DOOR 2		1.0-M	20/3	7	8	30/1	1.0-M		BAY DOOR 8
		0.2-C	-	9	10	20/1	1.6-R		S BAY REC
		0.2-C	-	11	12	20/1	1.2-M		RH2/RH4
BAY DOOR 3		0.6-R	20/3	13	14	20/1	1.2-M		RH6/RH8
		0.2-R	-	15	16	20/1	0.6-M		RH1
		0.2-R	-	17	18	20/1	1.2-M		RH3/RH5
BAY DOOR 4		0.2-R	20/3	19	20	20/1	1.2-M		RH7/RH9
		0.2-R	-	21	22	20/1	0.6-M		CF NORTH
		0.2-R	-	23	24	20/1	0.6-M		CF SOUTH
DOOR CNTRL		0.2-C	20/1	25	26	20/1	0.6-M		GUH-1
DOOR CNTRL		0.2-C	20/1	27	28	20/3	2.0-M		EF-1
N BAY REC		0.8-R	20/1	29	30	-			
CORD REEL		0.2-R	20/1*	31	32	50/3	8.5-M		VEF-1
CORD REEL		0.2-R	20/1*	33	34	-			
CORD REEL		0.2-R	20/1*	35	36	-			
CORD REEL		0.2-R	20/1*	37	38	-			
CORD REEL		0.2-R	20/1*	39	40	20/1	0.8-L		N APP BAY
CORD REEL		0.2-R	20/1*	41	42	20/1	0.8-L		S APP BAY
CORD REEL		0.2-R	20/1*	43	44	20/1	0.1-L		APP BAY NL
CORD REEL		0.2-R	20/1*	45	46	20/1			SPARE
CO/MOX		0.2-C	20/1	47	48	20/1			SPARE
SPARE			20/1	49	50	20/1			SPARE
SPARE			20/1	51	52	20/1			SPARE
SPARE			20/1	53	54	20/1			SPARE

M.B. - MAIN BREAKER, M.L.O. - MAIN LUGS ONLY, * - GFCI BREAKER
L - LIGHTING, R - RECEPTACLES, M - MOTOR, C - CONTROLS, H - RESISTANCE HEAT

PANEL "B" (22K AIC RATING)

MOUNTING: SURFACE (ELEC ROOM)
CONN. LOAD: 61 KVA | DEMAND LOAD: 43 KVA (119 AMPS)
MAINS: 200A M.L.O. | VOLTAGE: 208Y/120V-3PH-4W

REMARKS	DEMAND KVA	CONNECTED KVA	BKR.	CKT. NO.		BKR.	CONNECTED KVA	DEMAND KVA	REMARKS
VAV 2-01		2.8-H	20/2	1	2	60/3	8.0-M		HOSE HOIST
			-	3	4	-			
VAV 2-02		4.0-H	30/2	5	6	-			
			-	7	8	20/1	1.2-R		129
VAV 2-03		2.5-H	20/2	9	10	20/1	1.6-R		129
			-	11	12	20/1	1.6-R		128
VAV 2-04		4.8-H	30/2	13	14	20/1	0.2-C		F.A. PNL
			-	15	16	20/1	1.5-H		EH 134
AIR COMP		6.0-M	50/2	17	18	20/1	1.5-H		BLOCK HTR
			-	19	20	20/1	1.0-R		BATT. CHRGR
EH 133		1.5-H	20/1	21	22	20/1	1.2-R		126, 127
132, 133		0.8-R	20/1	23	24	20/1	1.5-H		EH 126
TOG WASH		8.0-M	60/3	25	26	20/1	1.0-M		127 DRYER
			-	27	28	20/1	1.0-M		WASH/DRY
			-	29	30	30/2	5.0-H/M		ELEC DRYER
EF-5		0.8-M	20/1	31	32	-			
EF-6		0.8-M	20/1	33	34	20/1	0.2-L		LTD HTY SPRE
134, EXTERIOR		0.4-R	20/1	35	36	20/1	1.6-R		128
EXT. SIGNAGE		1.0-L	20/1	37	38	20/1			SPARE
EXT. CANOPY		0.5-L	20/1	39	40	20/1			SPARE
EXT. PL1		1.1-L	30/2	41	42	20/1			SPARE
EXT. BL1/FL1		0.5-L	20/1	43	44	20/1			SPARE
POLE RECEPTS		0.6-R	20/1	45	46	20/1			SPARE
SPARE			20/1	47	48	20/1			SPARE
POND		3.0-M	60/3	49	50	20/1			SPARE
AERATOR			-	51	52	50/2			FUT.
			-	53	54	-			EV CHRGR

PANEL "C" (10K AIC RATING)

MOUNTING: FLUSH (CORRIDOR)
CONN. LOAD: 30 KVA | DEMAND LOAD: 22 KVA (61 AMPS)
MAINS: 200A M.L.O. | VOLTAGE: 208Y/120V-3PH-4W

REMARKS	DEMAND KVA	CONNECTED KVA	BKR.	CKT. NO.		BKR.	CONNECTED KVA	DEMAND KVA	REMARKS
109		1.0-R	20/1*	1	2	20/1	1.2-R		120
108		1.0-R	20/1*	3	4	20/1	1.2-R		120
107		1.0-R	20/1*	5	6	20/1	1.6-R		121
106		1.0-R	20/1*	7	8	20/1	1.0-R		TREADMILL
110		1.0-R	20/1*	9	10	20/1	1.4-R		122/CORR
111		1.0-R	20/1*	11	12	20/1	1.6-R		RR/CORR
112		1.0-R	20/1*	13	14	20/1	1.2-R		102
113		1.0-R	20/1*	15	16	20/1	1.0-R		101
FIREPLACE		1.5-R/H	20/1	17	18	20/1	1.4-R		103
REFRIG/ISLAND		1.0-R	20/1#	19	20	20/1	0.8-R		105
MICRO		1.2-R	20/1	21	22	20/1	1.5-M/R		WASHER DRYER
MICRO		1.2-R	20/1	23	24	30/2*			FUT DRYER
KITCH CNTR		0.4-R	20/1	25	26	-			
HOOD/RANGE		1.0-M/C	20/1	27	28	50/2			FUT. STOVE
KITCH CNTR		0.6-R	20/1	29	30	-			
DISHW/DISP		1.0-R	20/1	31	32	20/1	0.5-L		DORMS
KITCH CNTR		0.6-R	20/1	33	34	20/1	0.4-L		TR's/104/105
PATIO		0.4-R	20/1	35	36	20/1	0.4-L		118/119/120
MEZZ.		0.4-L	20/1	37	38	20/1	1.2-L		OFFICES/CORR
SPARE			20/1	39	40	20/1	0.5-L		KITCH/DAYRM
SPARE			20/1	41	42	20/1	0.4-R		125
SPARE			20/1	43	44	20/1	0.4-R		125
SPARE			20/1	45	46	20/1	0.4-R		125
SPARE			20/1	47	48	30/1	2.0-R		DATA RACK
SPARE			20/1	49	50	30/1	2.0-R		DATA RACK
SPARE			20/1	51	52	20/1			SPARE
SPARE			20/1	53	54	20/1			SPARE

M.B. - MAIN BREAKER, M.L.O. - MAIN LUGS ONLY, * - GFCI/AFCI BREAKER, # - GFCI BREAKER

PANEL "M" (10K AIC RATING)

MOUNTING: FLUSH (TRAINING RM)
CONN. LOAD: 87 KVA | DEMAND LOAD: 80 KVA (222 AMPS)
MAINS: 400A M.L.O. | VOLTAGE: 208Y/120V-3PH-4W

REMARKS	DEMAND KVA	CONNECTED KVA	BKR.	CKT. NO.		BKR.	CONNECTED KVA	DEMAND KVA	REMARKS
VAV 1-01		2.0-H	20/2	1	2	30/2	4.5-H		VAV 1-10
			-	3	4	-			
VAV 1-02		5.5-H	40/2	5	6	20/2	2.8-H		VAV 1-11
			-	7	8	-			
VAV 1-03		2.0-H	20/2	9	10	30/3	9.0-H		VAV 1-12
			-	11	12	-			
VAV 1-04		4.5-H	30/2	13	14	-			
			-	15	16	20/2	1.5-H		VAV 1-14
VAV 1-05		4.8-H	30/2	17	18	-			
			-	19	20	40/3	12.7-H		VAV 1-15
VAV 1-06		2.0-H	20/2	21	22	-			
			-	23	24	-			
VAV 1-07		2.0-H	20/2	25	26	30/3	9.0-H		VAV 1-16
			-	27	28	-			
VAV 1-08		3.8-H	30/2	29	30	-			
			-	31	32	30/3	6.3-M		AHU-1S
VAV 1-09		3.8-H	30/2	33	34	-			
			-	35	36	-			
EH 115		1.5-H	20/1	37	38	15/3	4.3-M		AHU-1R
EH 123		1.5-H	20/1	39	40	-			
EH 120		1.5-H	20/1	41	42	-			
SPARE			20/1	43	44	20/1	0.4-L		AHU LTS
SPARE			30/2	45	46	20/1	0.5-M		WTR HTR
			-	47	48	20/1	1.2-R		MEZZ
SPARE			20/2	49	50	20/1	0.5-M		EF-2
			-	51	52	20/1			SPARE
SPARE			20/1	53	54	20/1			SPARE
SPARE			40/2	55	56	30/3			SPARE
			-	57	58	-			
SPARE			20/1	59	60	-			
SPARE			20/1	61	62	20/1			SPARE
SPARE			20/1	63	64	20/1			SPARE
SPARE			20/1	65	66	20/1			SPARE
SPACE				67	68				SPACE
SPACE				69	70				SPACE
SPACE				71	72				SPACE

Final Coordinate Bay Door Power Requirements with Vendor

FEEDER SCHEDULE

F1	4-#2, #8 GRD. (CU.), 1.25"C.
F2	4-#6, #10 GRD. (CU.), 1.25"C.
F3	4-#10, #10 GRD. (CU.), 0.75"C.
F4	3 SETS OF 4-#400 KCMIL (AL.), #1/0 (CU) GRD., 4"C.

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SINGLE LINE AND SCHEDULES

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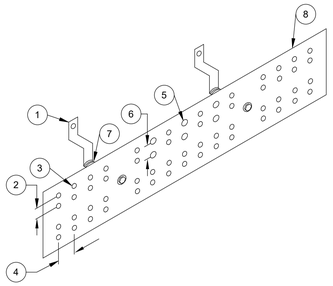
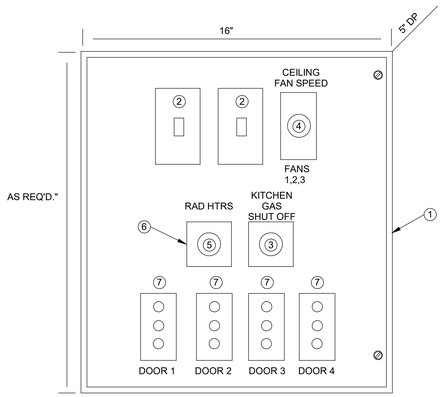


1. WALL MOUNTING BRACKET(S).
2. 5/8" (TYPICAL).
3. 5/16" DIA. HOLE (TYPICAL).
4. 1-1/8" (TYPICAL).
5. 7/16" DIA. HOLE (TYPICAL).
6. 1" (TYPICAL).
7. STANDOFF INSULATOR(S).
8. 1/4"x4"x16"L COPPER GROUND BAR.

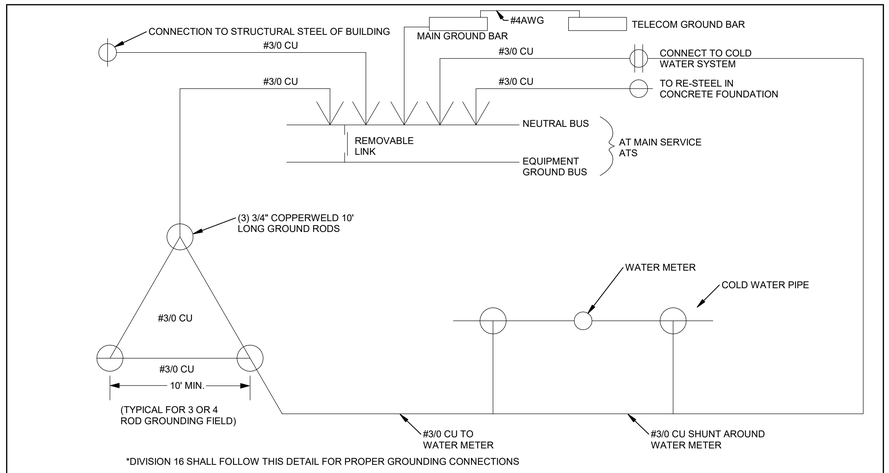
1 GROUND BAR BRACKET
N.T.S.



 # DETAIL NOTES

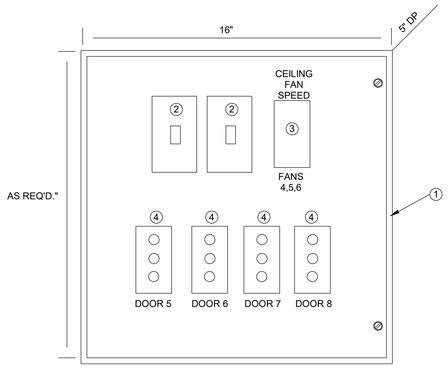
1. FLUSH MOUNTED ENCLOSURE WITH STAINLESS STEEL HINGED COVER FOR MOUNTING OF APPARATUS BAY LIGHT SWITCHES (2), CIRCULATION FAN CONTROLS (1), KITCHEN EM SHUTOFF BUTTON, OVERRIDE CONTROL BUTTON FOR APPARATUS BAY RADIANT HEAT SYSTEM
2. TOGGLE TYPE LIGHTING CONTROL SWITCH FOR APPARATUS BAY.
3. MAINTAINED CONTACT N.C., JUMBO MUSHROOM HEAD PUSH BUTTON ALLEN BRADLEY 800H OR APPROVED EQUAL.
4. APPARATUS BAY CIRCULATION FAN CONTROLLER (ON/OFF/REVERSE/SPEED).
5. RADIANT HEATER OVERRIDE SWITCH. WIRED TO DDC SYSTEM.
6. OVERRIDE SWITCHES FURNISHED BY H.C., INSTALLED AND WIRED BY E.C. COORDINATE WIRING REQUIREMENTS WITH H.C. AND EQUIPMENT VENDOR.
7. DOOR OPERATOR BUTTONS FURNISHED WITH EQUIPMENT, INSTALLED AND WIRED BY E.C.

2 APPARATUS BAY CONTROL PANEL DETAIL — **NORTH**
N.T.S.



*DIVISION 16 SHALL FOLLOW THIS DETAIL FOR PROPER GROUNDING CONNECTIONS

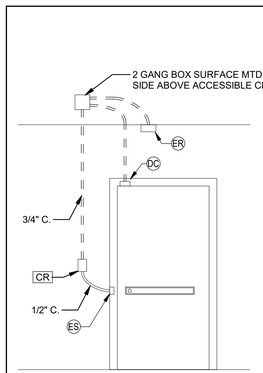
3 GROUNDING DETAIL
N.T.S.



 # DETAIL NOTES

1. FLUSH MOUNTED ENCLOSURE WITH STAINLESS STEEL HINGED COVER FOR MOUNTING OF APPARATUS BAY LIGHT SWITCHES (2), CIRCULATION FAN CONTROLS (1).
2. TOGGLE TYPE LIGHTING CONTROL SWITCH FOR APPARATUS BAY.
3. APPARATUS BAY CIRCULATION FAN CONTROLLER (ON/OFF/REVERSE/SPEED).
4. DOOR OPERATOR BUTTONS FURNISHED WITH EQUIPMENT, INSTALLED AND WIRED BY E.C.

4 APPARATUS BAY CONTROL PANEL DETAIL — **SOUTH**
N.T.S.



- CR CARD READER , SINGLE GANG DEEP BOX ON NON-SECURE SIDE, 46" M.H.
- ES ELECTRIC STRIKE, FURNISHED / INSTALLED BY DOOR HARDWARE SUPPLIER, ROUGH-IN BY E.C.
- DC DOOR CONTACT, FURNISHED/INSTALLED BY ACCESS CONTROL VENDOR. ROUGH-IN BY E.C.
- ER EXIT REQUEST SENSOR FURNISHED / INSTALLED BY ACCESS CONTROL VENDOR. ROUGH-IN BY E.C.

5 TYPICAL CARD READER INSTALLATION
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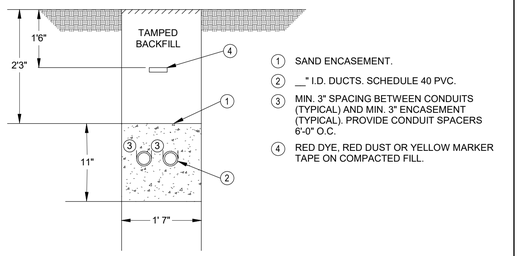

1 UNDERGROUND DUCTS
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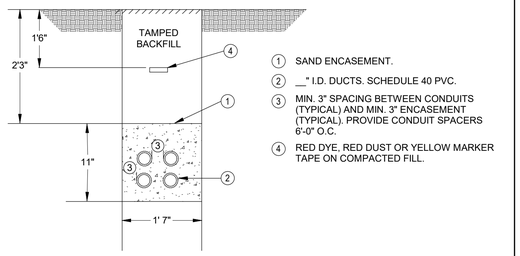

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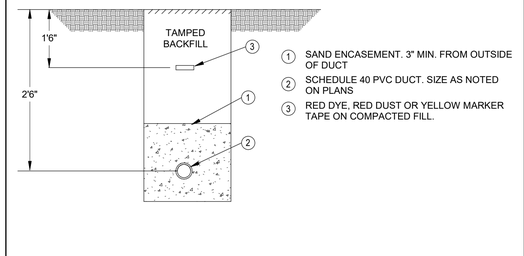

3 UNDERGROUND DUCTS
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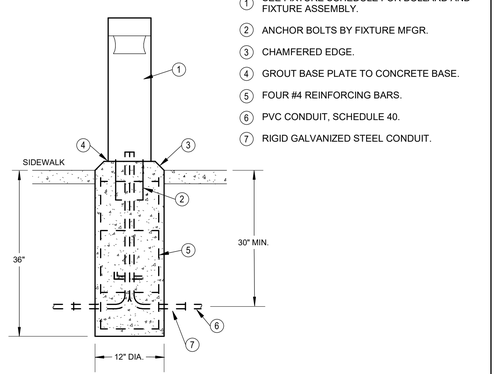

4 BOLLARD FIXTURE BASE DETAIL
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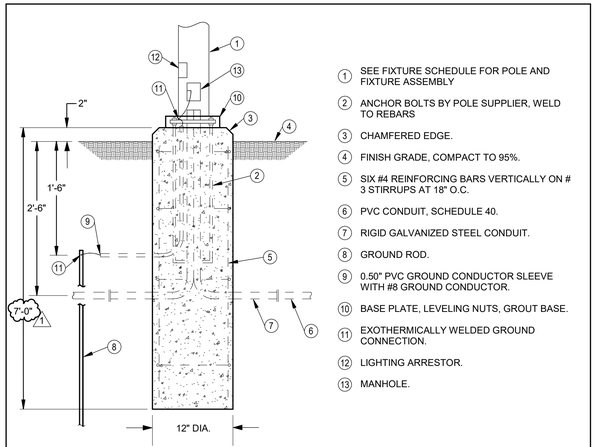

5 TYPICAL POLE BASE DETAIL
N.T.S.

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MOTORS, STARTERS, DISCONNECTS & CONTROLS

MOTOR										STARTERS													DISCONNECT MEANS											CONTROL					FEEDER				
			CHARACTERISTICS							TYPE							LOCATION						TYPE						LOCATION														
MOTOR NUMBER	CIRCUIT NUMBER	NAMEPLATE	HP (KVA OR FLA)	120V-1PH	208V-3PH	208V-1PH	480V-1PH	480V-3PH	LOCATION	NEMA SIZE	MANUAL	MAGNETIC	BUILT-IN MOTOR O/L	VFD	VFD W/BYPASS	NEAR MOTOR	MOTOR CONT. CNTR	EQUIP. CONT. PANEL	ROOM NUMBER	SEE NOTE	FURNISHED BY	DISC. SWITCH	MANUAL STARTER	RECEPTACLE	BREAKER	FUSIBLE	NEAR MOTOR	MOTOR. CONT. PANEL	EQUIP. CONT. PANEL	PANELBOARD	SEE NOTE	FURNISHED BY	INTERLOCK W/ MOTOR NO. BY EC	MANUAL AT STARTER	INTEGRAL W/ EQUIP.	BY H.C.	SEE NOTE	NO. OF CONDUCTORS	WIRE SIZE	GRD. SIZE	CONDUIT SIZE	SEE NOTE
RTU-1		ROOFTOP UNIT #1	33 MCA / 45 MOCP		•				EAST ROOF			•						•			HC	•					•					EC				•						3
AHU-1S	M-32/34/36	AHU #1 SUPPLY	22 MCA / 30 MOCP		•				MEZZANINE			ECM									HC	•					•					EC						3	10	10	.75	
AHU-1R	M-38/40/42	AHU #1 RETURN	12 MCA / 15 MOCP		•				MEZZANINE			ECM									HC	•					•					EC						3	12	12	.5	
CU-1		CONDENSING UNIT #1	125 MCA / 175 MOCP		•				WEST ROOF			•						•			HC	•					•					EC				•						3
EF-1		EXHAUST FAN 1	2HP		•				APP BAY					•							EC	•					•					EC	•			•		3	12	12	.5	
EF-2		EXHAUST FAN 2	1/4HP	•					WEST ROOF (TR'S)			ECM									HC	•					•					HC	•				1	2	12	12	.5	
EF-3		EXHAUST FAN 3	1/4HP	•					WEST ROOF (KITCHEN)			ECM									HC	•					•					HC	•				2	2	12	12	.5	
EF-4		EXHAUST FAN 4	1/4HP	•					IT ROOM			ECM									HC	•					•					HC	•				1	2	12	12	.5	
EF-5		EXHAUST FAN 5	1/2HP	•					EAST ROOF (DECON)			ECM									HC	•					•					HC	•			•		2	12	12	.5	
EF-6		EXHAUST FAN 6	1/2HP	•					EAST ROOF (TOG)			ECM									HC	•					•					HC	•			•		2	12	12	.5	
VEF-1		VEHICLE EXHAUST FAN 1	7.5 HP		•				APP BAY									•			ES	•					•					EC				•		2	12	12	.5	
GUH-1		GAS HEATER	5 AMPS	•					APP BAY (INTAKE)									•			HC	•					•					EC				•		2	12	12	.5	
RH-1		RADIANT HEATER 1	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-2		RADIANT HEATER 2	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-3		RADIANT HEATER 3	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-4		RADIANT HEATER 4	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-5		RADIANT HEATER 5	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-6		RADIANT HEATER 6	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-7		RADIANT HEATER 7	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-8		RADIANT HEATER 8	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
RH-9		RADIANT HEATER 9	5 AMPS	•					APP BAY									•			HC	•					•					EC				•		2	12	12	.5	
EUH-1		ELECTRIC HEATER 1	1.5 KW	•					ELECTRIC ROOM 134									•			HC	•						•				HC				•		2	12	12	.5	
EUH-2		ELECTRIC HEATER 2	1.5 KW	•					TLT 115									•			HC	•						•				HC				•		2	12	12	.5	
EUH-3		ELECTRIC HEATER 3	1.5 KW	•					TLT/SHOWER 123									•			HC	•						•				HC				•		2	12	12	.5	
EUH-4		ELECTRIC HEATER 4	1.5 KW	•					DAYROOM 120									•			HC	•						•				HC				•		2	12	12	.5	
EUH-5		ELECTRIC HEATER 5	1.5 KW	•					TLT/SHOWER 126									•			HC	•						•				HC				•		2	12	12	.5	
EUH-6		ELECTRIC HEATER 6	1.5 KW	•					WATER 133									•			HC	•						•				HC				•		2	12	12	.5	
VAV 1-01	M-1/3	VAV ELECTRIC HEAT 1-01	2.0KW			•			DORM 109									•			HC	•						•										2	12	12	.5	
VAV 1-02	M-5/7	VAV ELECTRIC HEAT 1-02	5.5KW			•			DORM 107									•			HC	•						•										2	8	10	.75	
VAV 1-03	M-9/11	VAV ELECTRIC HEAT 1-03	2.0KW			•			DORM 110									•			HC	•						•										2	12	12	.5	
VAV 1-04	M-13/15	VAV ELECTRIC HEAT 1-04	4.5KW			•			DORM 112									•			HC	•						•										2	10	10	.5	
VAV 1-05	M-17/19	VAV ELECTRIC HEAT 1-05	4.8KW			•			FLEX 100									•			HC	•						•										2	10	10	.5	
VAV 1-06	M-21/23	VAV ELECTRIC HEAT 1-06	2.0KW			•			VEST 100									•			HC	•						•										2	12	12	.5	
VAV 1-07	M-25/27	VAV ELECTRIC HEAT 1-07	2.0KW			•			OFFICE 101									•			HC	•						•										2	12	12	.5	
VAV 1-08	M-29/31	VAV ELECTRIC HEAT 1-08	3.8KW			•			EXAM 104									•			HC	•						•										2	10	10	.5	
VAV 1-09	M-33/25	VAV ELECTRIC HEAT 1-09	3.8KW			•			REPORT 102									•			HC	•						•										2	10	10	.5	
VAV 1-10	M-2/4	VAV ELECTRIC HEAT 1-10	4.5KW			•			KITCHEN 118									•			HC	•						•										2	10	10	.5	
VAV 1-11	M-6/8	VAV ELECTRIC HEAT 1-11	2.8KW			•			EMS 124									•			HC	•						•										2	12	12	.5	
VAV 1-12	M-10/12/14	VAV ELECTRIC HEAT 1-12	9.0KW		•				DAYROOM 128 (1)									•			HC	•						•										2	10	10	.5	
VAV 1-13	- (1)	VAV 1-13	NO POWER						IT/PHONE 125									•			HC	•						•														
VAV 1-14	M-16/18	VAV ELECTRIC HEAT 1-14	1.5KW			•			DECOMPRESS 122									•			HC	•						•										2	12	12	.5	
VAV 1-15	M-20/22/24	VAV ELECTRIC HEAT 1-15	12.7KW		•				FITNESS 121									•			HC	•						•										2	8	10	.75	
VAV 1-16	M-26/28/30	VAV ELECTRIC HEAT 1-16	9.0KW		• (1)				TRIANING									•			HC	•						•										2	10	10	.5	
VAV 2-01	B-1/3	VAV ELECTRIC HEAT 2-01	2.8KW			•			WATER/STORAGE 132/133									•			HC	•						•										2	12	12	.5	
VAV 2-02	B-5/7	VAV ELECTRIC HEAT 2-02	4.0KW			•			TOG 129									•			HC	•						•										2	10	10	.5	
VAV 2-03	B-9/11	VAV ELECTRIC HEAT 2-03	2.5KW			•			SCBA 128									•			HC	•						•										2	12	12	.5	
VAV 2-04	B-13/15	VAV ELECTRIC HEAT 2-04	4.8KW			•			DECON 127									•			HC	•						•										2	10	12	.5	

NOTE:

1. FAN TO RUN CONTINUOUS.
2. FAN CONTROLLED FROM KITCHEN HOOD SWITCH
3. SEE MDP SCHEDULE
4.
5.

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MSD&C SCHEDULE

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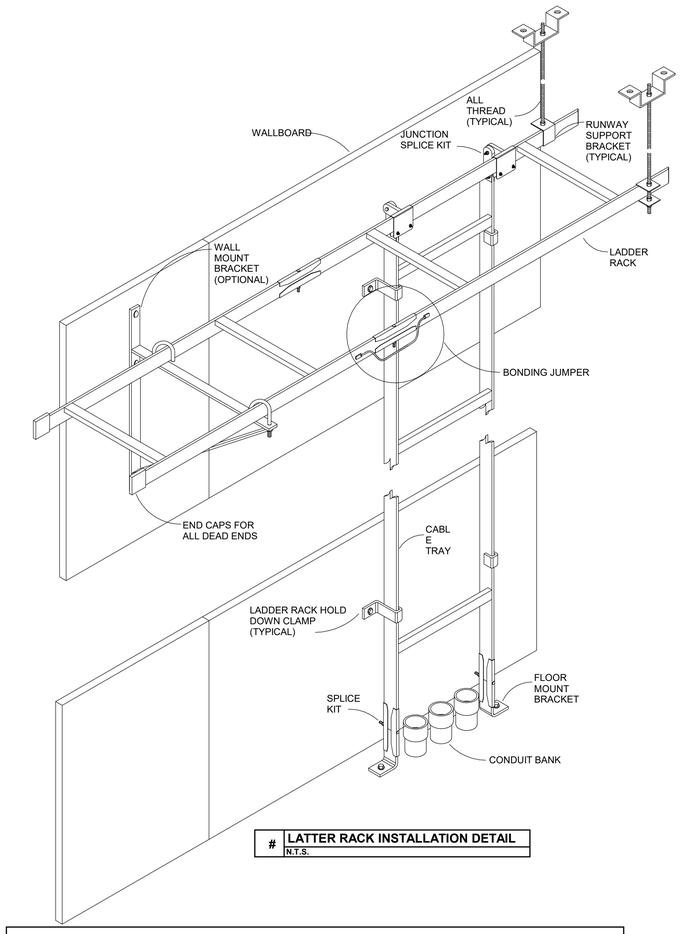

LATTER RACK INSTALLATION DETAIL
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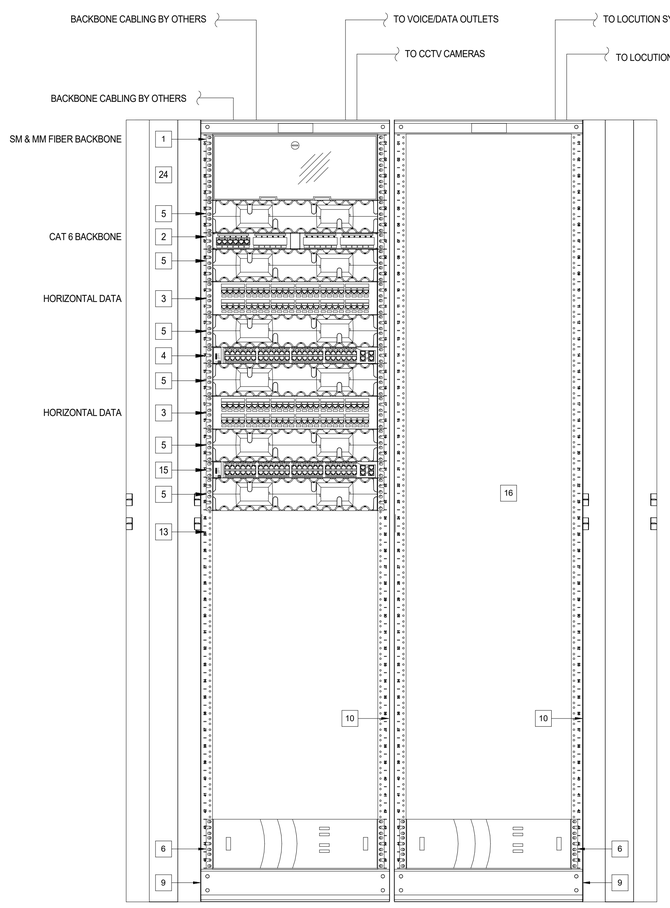
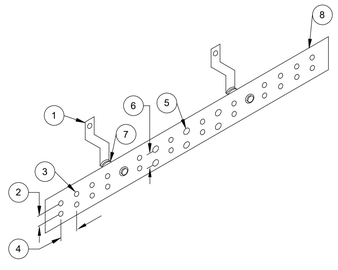


F TYPICAL RACK ELEVATION
N.T.S.

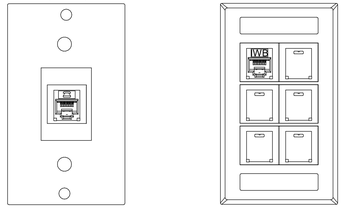
TELECOMMUNICATIONS RACK EQUIPMENT SCHEDULE

EQUIPMENT NUMBER	DESCRIPTION
1	FIBER OPTIC ENCLOSURE (BY OTHERS)
2	CAT 6 PATCH PANEL (BY E.C.)
3	48 PORT CAT 6 PATCH PANEL (BY E.C. AS REQUIRED FOR DATA CABLING INSTALLED)
4	48 PORT SWITCH (BY OTHERS)
5	2U HORIZONTAL WIRE MANAGEMENT (BY OTHERS)
6	UNINTERRUPTABLE POWER SUPPLY (BY OTHERS)
8	VERTICAL WIRE MANAGEMENT FRONT AND BACK SIDE
9	EQUIPMENT RACK (BY E.C.)
10	VERTICAL POWER STRIP (BY E.C.)
13	DVR (BY CCTV SYSTEM VENDOR)
14	WIRELESS LAN CONTROLLER (BY OTHERS)
15	48 PORT SWITCH PoE (FOR CCTV CABLING INSTALLED, BY E.C.)
16	DATA RACK FOR LOCUTION SYSTEM EQUIPMENT (RACK BY E.C.)
24	EQUIPMENT RACK/CABINET GROUNDING BUSBAR (MOUNTED IN REAR)

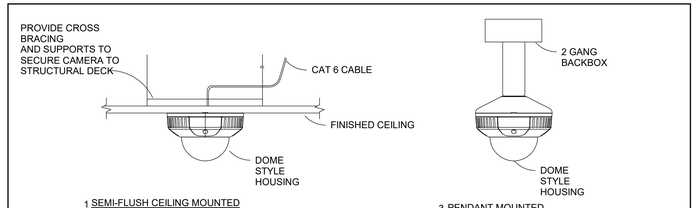


1. WALL MOUNTING BRACKET(S).
2. 5/8" (TYPICAL).
3. 5/16" DIA. HOLE (TYPICAL).
4. 1-1/8" (TYPICAL).
5. 7/16" DIA. HOLE (TYPICAL).
6. 1" (TYPICAL).
7. STANDOFF INSULATOR(S).
8. 1/4"x4"x16"L COPPER GROUND BAR.

TELECOMMUNICATION MAIN GROUND BAR



COMMUNICATIONS OUTLET FACEPLATE DETAILS
N.T.S.



CAMERA MOUNTING SCHEMATICS
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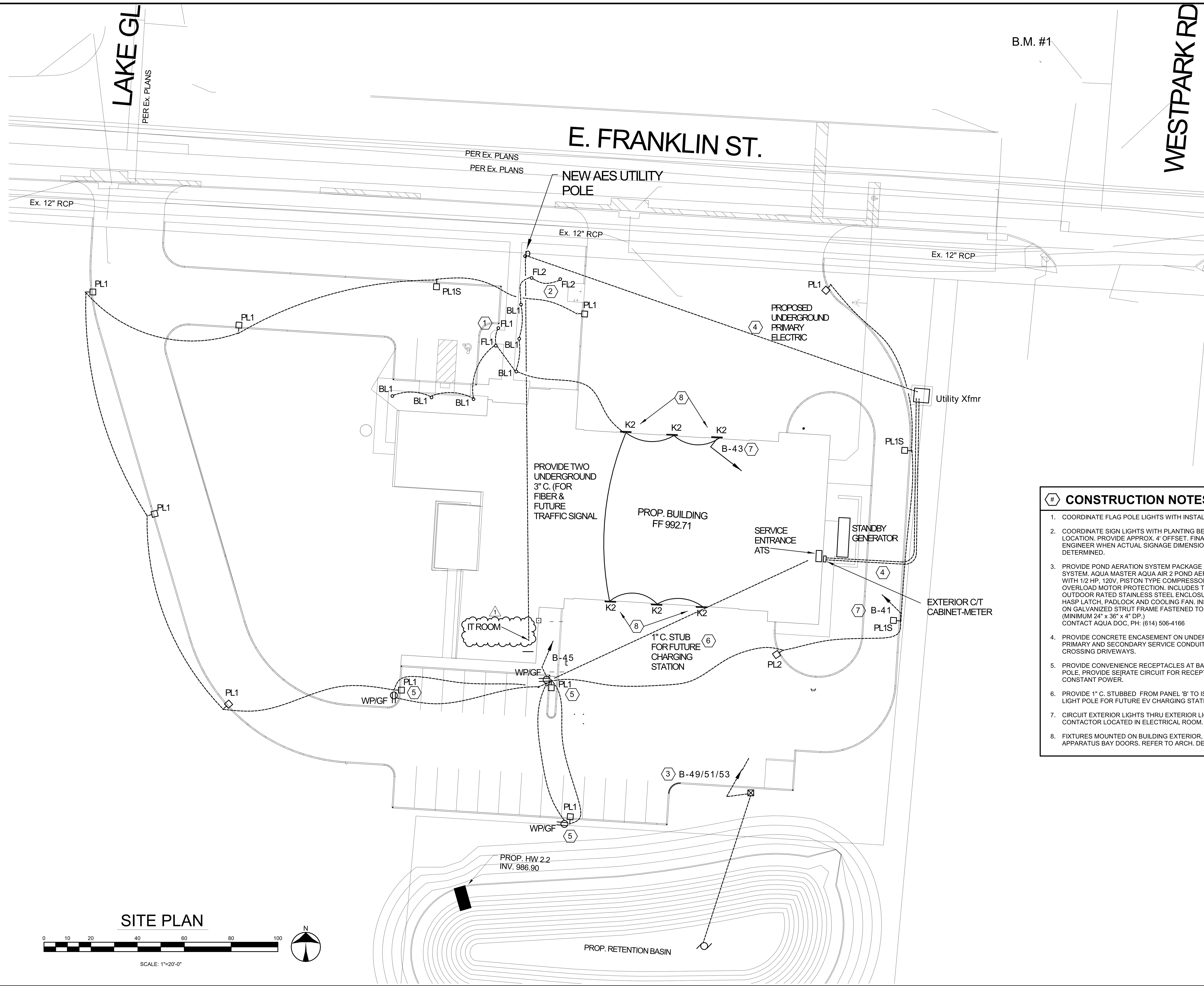

SITE PLAN

CONSTRUCTION NOTES

1. COORDINATE FLAG POLE LIGHTS WITH INSTALLER.
2. COORDINATE SIGN LIGHTS WITH PLANTING BED AND SIGN LOCATION. PROVIDE APPROX. 4' OFFSET. FINAL VERIFY WITH ENGINEER WHEN ACTUAL SIGNAGE DIMENSIONS ARE DETERMINED.
3. PROVIDE POND AERATION SYSTEM PACKAGE AND POWER TO SYSTEM. AQUA MASTER AQUA AIR 2 POND AERATION SYSTEM WITH 1/2 HP, 120V, PISTON TYPE COMPRESSOR WITH THERMAL OVERLOAD MOTOR PROTECTION. INCLUDES TUBING AND OUTDOOR RATED STAINLESS STEEL ENCLOSURE, COVER WITH HASP LATCH, PADLOCK AND COOLING FAN. INSTALLED BY E.C. ON GALVANIZED STRUT FRAME FASTENED TO CONCRETE PAD (MINIMUM 24" x 36" x 4" DP.)
CONTACT AQUA DOC, PH: (614) 506-4166
4. PROVIDE CONCRETE ENCASEMENT ON UNDERGROUND PRIMARY AND SECONDARY SERVICE CONDUITS WHERE CROSSING DRIVEWAYS.
5. PROVIDE CONVENIENCE RECEPTACLES AT BASE OF LIGHT POLE, PROVIDE SE[RATE CIRCUIT FOR RECEPTACLES FOR CONSTANT POWER.
6. PROVIDE 1" C. STUBBED FROM PANEL 'B' TO ISLAND BEYOND LIGHT POLE FOR FUTURE EV CHARGING STATION.
7. CIRCUIT EXTERIOR LIGHTS THRU EXTERIOR LIGHTING CONTACTOR LOCATED IN ELECTRICAL ROOM.
8. FIXTURES MOUNTED ON BUILDING EXTERIOR, BETWEEN APPARATUS BAY DOORS. REFER TO ARCH. DETAILS.

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SITE LIGHTING PLAN

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STORM SHELTER

A. PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE LARGER THAN 3-1/2 IN² AREA FOR RECTANGULAR OPENING OR 2 - 1/16" IN DIAMETER SHALL BE CONSIDERED OPENING AND SHALL BE PROVIDED WITH AN OPENING PROTECTIVE DEVICE. REFERENCE STRUCTURAL DRAWINGS.

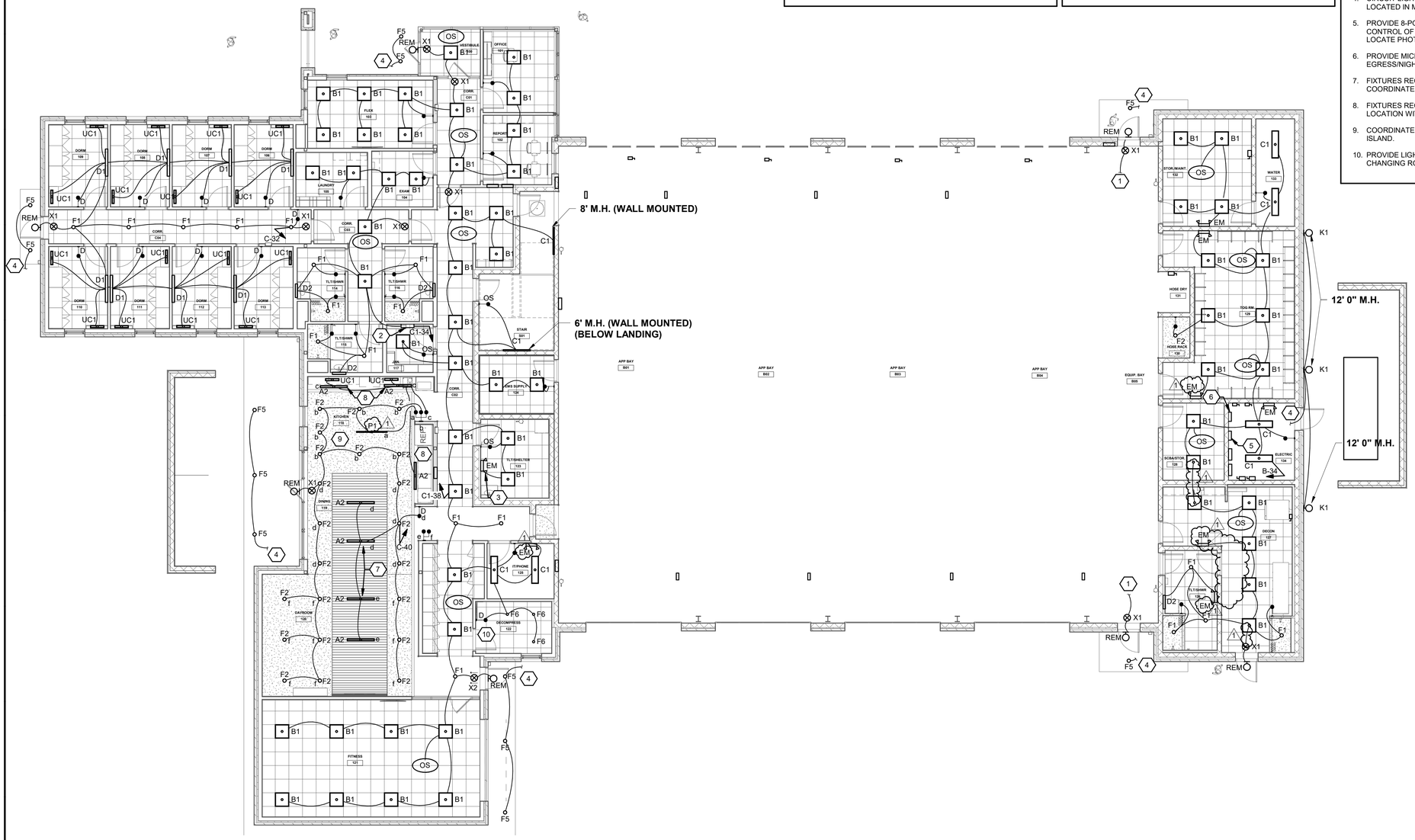
B. LIGHTING FIXTURES IN STORM SHELTER SHALL HAVE INTEGRAL EMERGENCY BATTERY BALLAST(S) IN FIXTURE(S) CAPABLE TO ILLUMINATE FIXTURE AT 1000 LUMENS FOR A MINIMUM OF 180 MINUTES (2 HOURS) OR THE E.C. SHALL PROVIDE SEPARATE EMERGENCY BATTERY LIGHTING UNIT WITH SIMILAR LUMEN OUTPUT AND BATTERY BACKUP.

GENERAL NOTES

A. CONNECT ALL EXIT/EMERGENCY EGRESS LIGHTING AHEAD OF LOCAL CONTROLS.

CONSTRUCTION NOTES

1. CONNECT EXIT/EM EGRESS LIGHT TO APPARATUS BAY LIGHTING CIRCUIT AHEAD OF CONTROLS.
2. PROVIDE 500 WATT MICRO-INVERTER (EMERGENCY LIGHTING BATTERY BACKUP) LOCATED ABOVE CEILING OF JANITOR CLOSET. UTILIZE FOR EM BACKUP OF TOILET ROOM CORE AREA LIGHTING.
3. PROVIDE EM LIGHT (EMERGENCY BATTERY BACKUP), IN SHELTER WITH HIGH OUTPUT BATTERY TO ILLUMINATE FOR MINIMUM OF 2 HOURS UPON LOSS OF NORMAL POWER. WALL MOUNT BELOW ACCESSIBLE CEILING.
4. CIRCUIT LIGHTS TO EXTERIOR LIGHTING CONTACTOR, LOCATED IN MAIN ELECTRIC ROOM, B-39.
5. PROVIDE 8-POLE LIGHTING CONTACTOR WITH 120V COIL FOR CONTROL OF EXTERIOR LIGHTING. PHOTOCELL ON/OFF. LOCATE PHOTOCELL ON ROOF PARAPET ABOVE.
6. PROVIDE MICRO INVERTER FOR APPARATUS BAY EMERGENCY EGRESS/NIGHT LIGHTS.
7. FIXTURES RECESSED IN WOOD CEILING FEATURE. COORDINATE INSTALLATION WITH ARCHITECT.
8. FIXTURES RECESSED IN DRYWALL SOFFIT. COORDINATE LOCATION WITH KITCHEN CABINETS. RANGE HOOD, ETC.
9. COORDINATE PENDANT FIXTURE LOCATION TO CENTER OVER ISLAND.
10. PROVIDE LIGHTING CONTROLLER /DIMMER FOR RGB COLOR CHANGING ROOM LIGHTS.



FIRST FLOOR CEILING PLAN

N

0 4 8 16 24 32 40

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

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NO.	DATE	DESCRIPTION
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1	04/14/22	ADDENDUM NO. 1

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	TR
CHECKED	JDZ

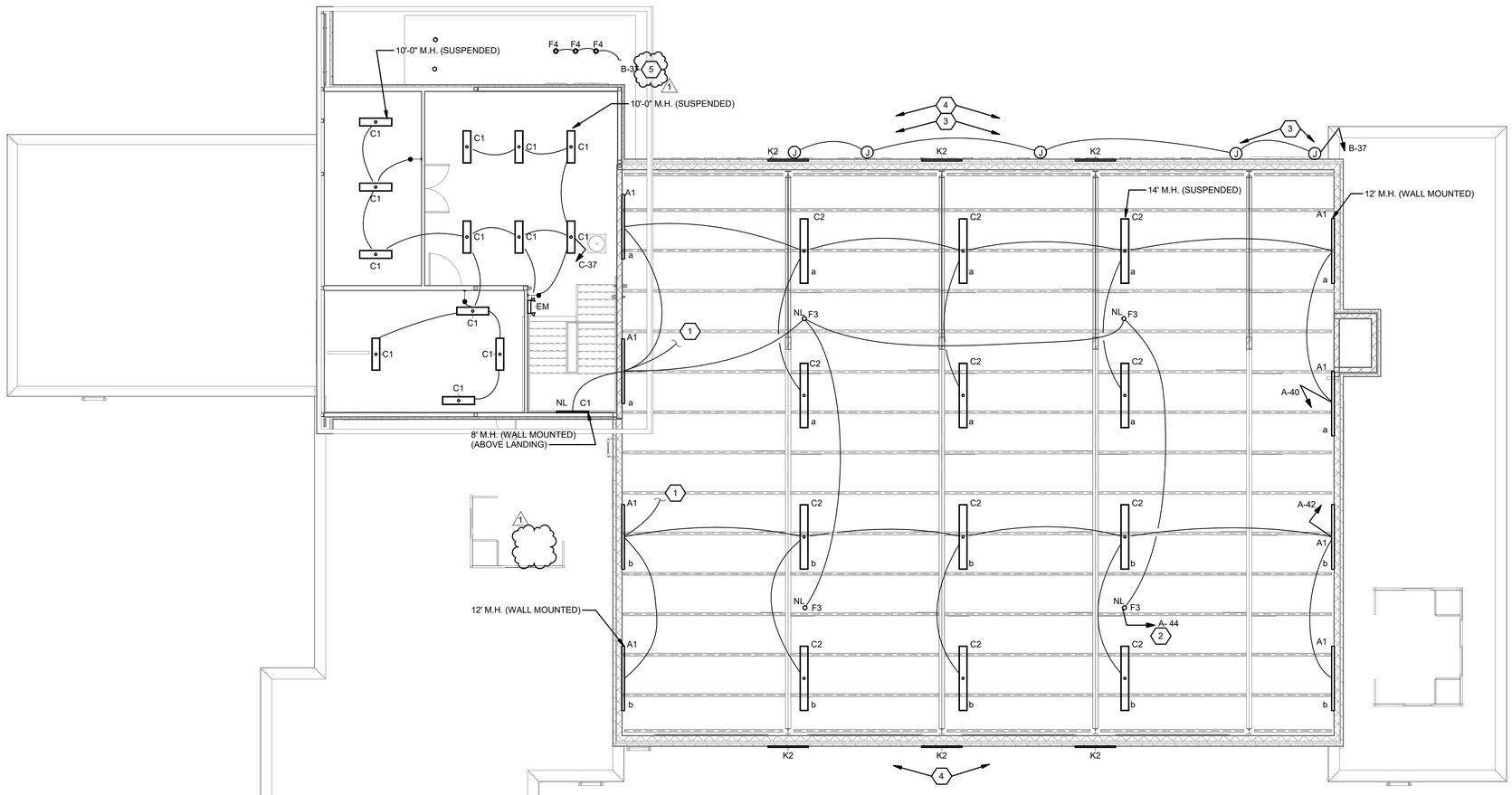
TITLE
FIRST FLOOR LIGHTING PLAN

SHEET NO.
E2.1

5/12/2022 8:54:12 AM

CONSTRUCTION NOTES

1. APPARATUS BAY LIGHTS CONTROLLED FROM SWITCH(ES) IN MASTER CONTROL PANEL. REFER TO DETAIL, SHEET E0.4 AND FIRST FLOOR LIGHTING PLAN FOR LOCATION.
2. APPARATUS BAY EMERGENCY EGRESS/NIGHT LIGHTS WIRED THRU EMERGENCY LIGHTING INVERTER, LOCATED IN MAIN ELECTRICAL ROOM.
3. PROVIDE CIRCUITRY/ROUGH-IN FOR BUILDING SIGNAGE BACK LIGHTING FROM EXTERIOR LIGHTING CONTACTOR IN MAIN ELECTRIC ROOM.
4. REFER TO SITE PLAN FOR K2 FIXTURE CIRCUITRY. LOCATE REMOTE DRIVER ON APPARATUS BAY WALL (INTERIOR).
5. SIGNAGE LIGHTS WIRED THRU EXTERIOR LIGHTING CONTACTOR, MAIN ELECTRIC ROOM.



SECOND FLOOR LIGHTING PLAN

0 4 8 16 24 32 40

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

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5/12/2022 8:54:13 AM

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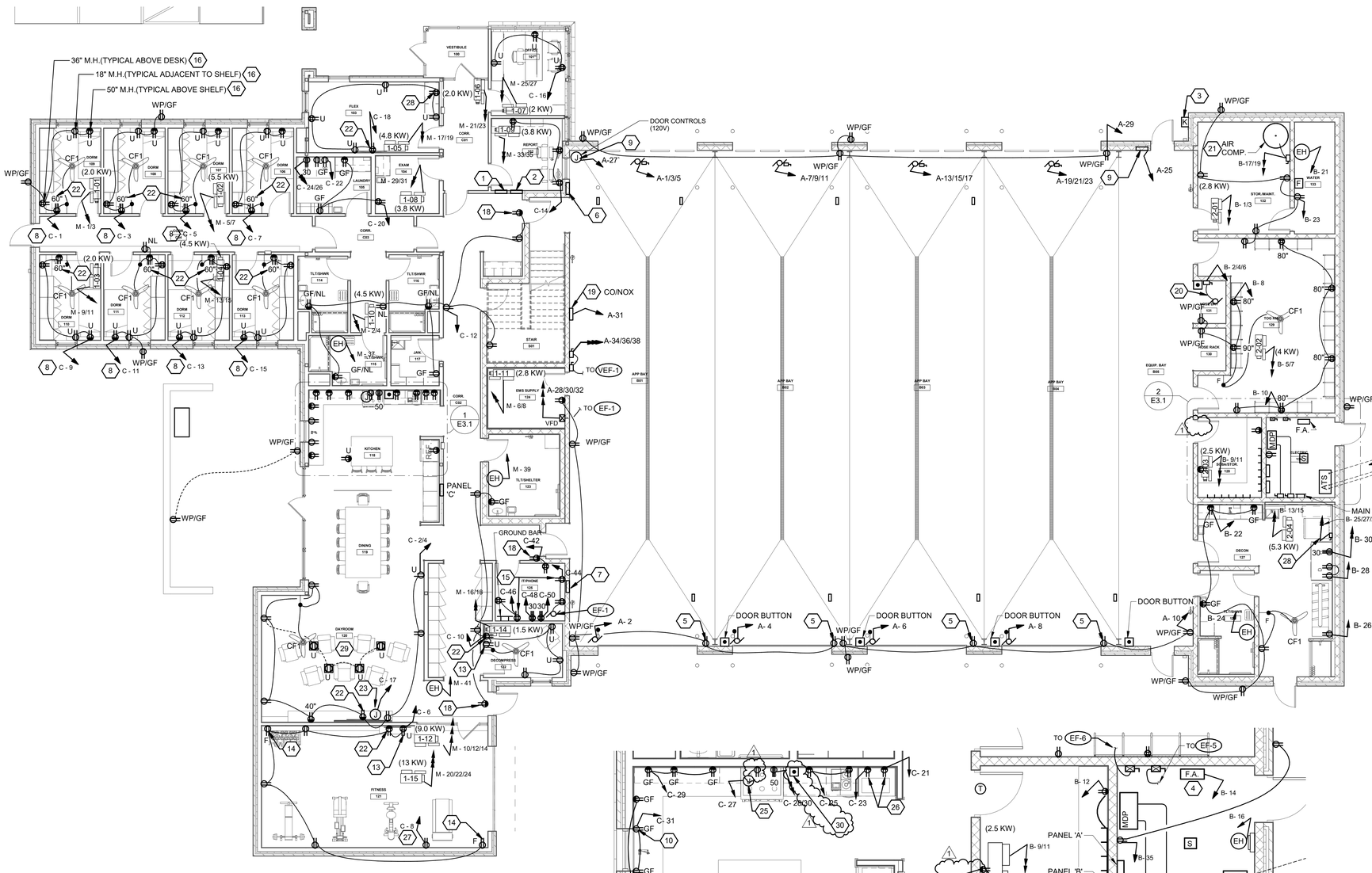
TITLE
MEZZANINE LIGHTING PLAN

SHEET NO.
E2.2



FIRST FLOOR POWER PLAN

0 4 8 16 24 32 40

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

N

ENLARGED KITCHEN PLAN

1

0 4 8 16 24 32 40

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

ENLARGED ELECTRICAL PLAN

2

0 4 8 16 24 32 40

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

CONSTRUCTION NOTES

1. GENERATOR ANNUNCIATOR.
2. FIRE ALARM REMOTE ANNUNCIATOR .
3. FLUSH MOUNTED KNOX BOX.
4. MAIN FIRE ALARM PANEL.
5. RECEPTACLE MOUNTED AT TOP OF DOOR OPENING TO POWER DOOR POSITION LIGHTS. LIGHTS BY DOOR SYSTEM VENDOR.
6. NORTH APPARATUS BAY CONTROL PANEL REFER TO DETAIL 2 SHEET E0.4.
7. SOUTH APPARATUS BAY CONTROL PANEL. REFER TO DETAIL 2 SHEET E0.4.
8. PROVIDE AFCI CIRCUIT BREAKER FOR DORM ROOM CIRCUIT.
9. PROVIDE 20A-120V POWER TO FOLDING DOOR CONTROL PANEL.
10. GFCI RECEPTACLE IN SINK BASE CABINET FOR GARBAGE DISPOSER. COORDINATE LOCATION WITH P.C. AND PROVIDE MATCHING CORD PLUG FOR DISPOSER. SINK MOUNTED CONTROL FURNISHED BY P.C. AND INSTALLED WIRED BY E.C.).
11. GFCI RECEPTACLE IN SINK BASE CABINET FOR DISHWASHER. COORDINATE LOCATION WITH P.C. AND PROVIDE MATCHING CORD/PLUG FOR UNIT.
12. PROVIDE PLUGMOLD ABOVE WORK COUNTER, 6' LONG WITH NEMA 5-20R RECEPTACLES SPACED 12" ON-CENTER.
13. COORDINATE RECEPTACLE MOUNTING HEIGHT/LOCATION BELOW TV OUTLET FOR CABINET MOUNTED A/V EQUIPMENT. PROVIDE WALL BOX AND RACEWAY TO TV MONITOR LOCATION FOR A/V CABLING AND RACEWAY TO ABOVE CEILING FOR ROUTING OF CEILING SPEAKER CABLING.
14. RECEPTACLE AT 72"M.H. FOR CONNECTION OF WALL MOUNTED OSCILLATING FAN. PROVIDE FAN EQUAL TO GLOBAL INDUSTRIAL #607050. 24" DIA. 7500 CFM, 120V CORD AND PLUG CONNECTED WITH 3 SPEED/OFF PULLCHAIN CONTROL.

CONSTRUCTION NOTES CONT'D

30. GAS SOLENOID RESET BUTTON, FLUSH MOUNTED ON WALL ADJACENT TO STOVE, ABOVE COUNTER.

CONSTRUCTION NOTES CONT'D

15. PROVIDE 3/4" x 4' x 8' PLYWOOD BACKBOARD (FIRE RATED) MOUNTED HORIZONTALLY ON SOUTH AND EAST WALLS OF I.T. ROOM. PAINT WHITE. SURFACE MOUNT RECEPTACLES ON BACKBOARDS. COORDINATE LOCATIONS WITH DATA RACK AND LOCATIONS/ACCESS CONTROL/ SECURITY EQUIPMENT.
16. COORDINATE MOUNTING HEIGHTS/LOCATIONS OF RECEPTACLES IN DORM ROOMS WITH SHELVES AND CASEWORK. CENTER CEILING FAN IN CEILING TILE.
17. PROVIDE 60A/3P DISCONNECT SWITCHES AND CONTACTORS FOR PV ARRAY SYSTEM. CONTACTORS WIRED TO ATS TO DE-ENERGIZE WHEN GENERATOR IS CONNECTED.
18. CLOCK HANGER RECEPTACLE ABOVE DOOR FRAME (ADJACENT TO DATA OUTLET FOR LOCUTION SYSTEM READER BOARD.
19. PROVIDE 120 POWER TO CO/NOX SYSTEM DETECTION SYSTEM (FURNISHED BY H.C.). COORDINATE LOCATION WITH H.C.
20. PROVIDE HOSE HOIST MOUNTED TO CEILING STRUCTURE ABOVE WITH FUSED SERVICE DISCONNECT AND REMOTE CONTROL STATION HARD WIRED AND INSTALLED AT BAY LEVEL (46"M.H.). SINGLE HOOK ASSEMBLY WITH STAINLESS STEEL COILING CABLE WITH MINIMUM 500 LB. LIFTING CAPACITY AND 30 FT. LIFT TRAVEL. EQUAL TO ELECTRO LIFT #207-LG. 208V-3PH WITH 120V CONTROL. COORDINATE INSTALLATION TO STRUCTURAL BEAM ABOVE.
21. PROVIDE FUSED DISCONNECT AND CONNECTION TO AIR COMPRESSOR. 5HP. - 208V-1PH.
22. LOCATE RECEPTACLE ADJACENT TO TV OUTLET BOX.
23. PROVIDE POWER CONNECTION FOR ELECTRICAL FIREPLACE, 1500W-120V.,COORDINATE CONNECTION REQUIREMENTS WITH EQUIPMENT SUPPLIER.
24. RECEPTACLE MOUNTED IN FACE OF ISLAND CABINET.
25. PROVIDE 120V POWER TO EXHAUST HOOD FOR CONNECTION TO EXHAUST FAN EF-3, RANGE CONTROL CIRCUIT AND HOOD LIGHT(S). HOOD INCLUDES FIRE SUPPRESSION SYSTEM FOR RANGE CONTROL POWER CIRCUIT AND GAS SUPPLY SOLENOID VALVE CONTROL. COORDINATE ROUGH-IN REQUIREMENTS AND WIRING WITH EQUIPMENT SUPPLIER.
26. COORDINATE RECEPTACLE MOUNTING HEIGHT, LOCATION, WITH MICROWAVE SHELF. REFER TO ARCHITECTURAL ELEVATIONS.
27. DEDICATED 20A-120V CIRCUIT FOR TREADMILL.
28. COORDINATE RECEPTACLE MOUNTING WITH CASE WORK FOR COMPUTER SHELF, REFER TO ARCH. ELEVATIONS.
29. FIELD COORDINATE FLOOR OUTLETS WITH ARCHITECT.

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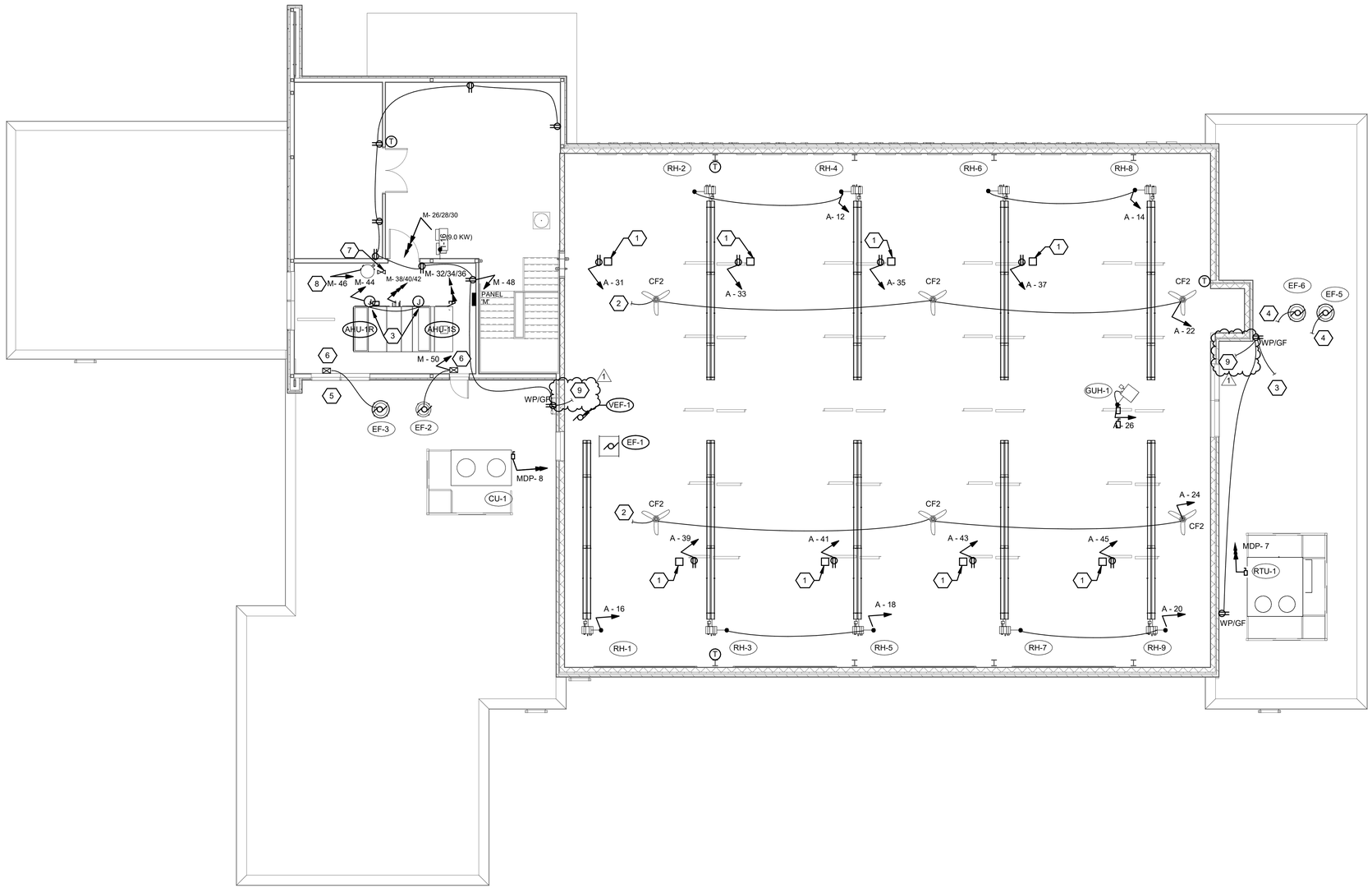
TITLE
FIRST FLOOR POWER PLAN

SHEET NO.
E3.1

5/12/2022 8:54:17 AM



SECOND FLOOR POWER PLAN

0 4 8 16 24 32 40

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

N

CONSTRUCTION NOTES

1. MOUNT RECEPTACLE AT CEILING STRUCTURE FOR CORD REEL PROVIDE CORD REEL AT CEILING STRUCTURE WITH 45' #12 AWG SJEOOW CORD AND NEMA 5-20 R CONNECTOR BODY. EQUAL TO REELCRAFT # L4000 SERIES. COORDINATE MOUNTING OF REEL TO CEILING STRUCTURE WITH ARCHITECT AND TO AVOID CONFLICT WITH OTHER TRADES.
2. CEILING FANS GROUP CONTROLLED FROM MASTER CONTROL PANEL (3 SPEED ON/OFF). REFER TO CONTROL PANEL DETAILS, SHEET E0.4 FOR CONTROLLER LOCATIONS AND GROUPING.
3. PROVIDE 120V CIRCUIT FROM ELECTRIC ROOM RECEPTACLE CIRCUIT.
4. DOWN TO ECM CONTROLLER IN ELECTRIC ROOM.
5. DOWN TO KITCHEN HOOD SWITCH (LOCATE ECM CONTROLLER, FURNISHED BY H.C.) IN MECHANICAL ROOM.
6. LOCATE ECM CONTROLLER (FURNISHED BY H.C.) IN MECH ROOM.
7. GAS SOLENOID VALVE FOR SUPPLY TO KITCHEN RANGE AND GRILLE LOCATED IN MEZZANINE. COORDINATE LOCATION WITH P.C. PROVIDE 120V CONTROL CIRCUIT, WIRED THRU EM STOP BUTTON LOCATED IN NORTH APPARATUS BAY CONTROL PANEL. PROVIDE RESET BUTTON, WIRED TO RESET (OPEN) SOLENOID, IN KITCHEN WALL ADJACENT TO RANGE.
8. COORDINATE 120V POWER/LOCAL DISCONNECT FOR WATER HEATER AND CIRCULATION PUMP.
9. UP TO CONVENIENCE RECEPTACLE ON ROOF ABOVE.

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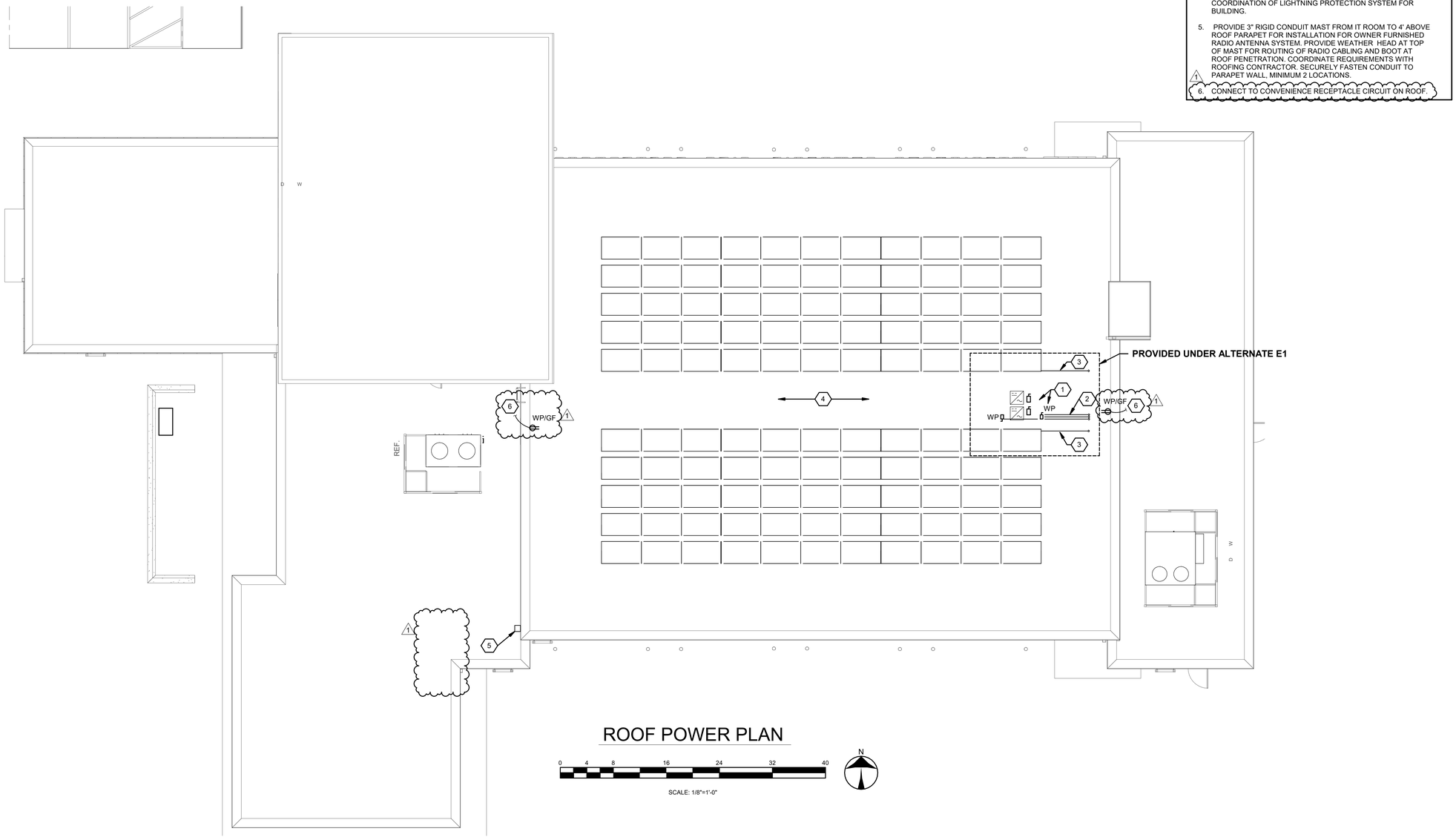
TITLE
MEZZANINE POWER PLAN

SHEET NO.
E3.2

5/12/2022 8:54:18 AM

CONSTRUCTION NOTES

1. PROVIDE LOCAL SERVICE DISCONNECT FOR EACH RECTIFIER FOR RV ARRAYS. REFER TO SOLAR PLANS.
2. TWO 3/4"C. DOWN TO MAIN ELECTRIC ROOM FROM RECTIFIER/CONTROLLER FOR COMMUNICATIONS/CONTROL WIRING. REFER TO SOLAR PLANS.
3. PROVIDE #6 GROUND WIRE, IN 3/4" PVC CONDUIT, DOWN TO MAIN ELE3CTRIC ROOM (MAIN GROUND BAR). COORDINATE ARRAY GROUNDING LUG LOCATION WITH ROOF PENETRATIONS FOR CONDUITS.
4. REFER TO ARCHITECTURAL, MECHANICAL AND SOLAR DRAWINGS FOR ROOF MOUNTED EQUIPMENT FOR COORDINATION OF LIGHTNING PROTECTION SYSTEM FOR BUILDING.
5. PROVIDE 3" RIGID CONDUIT MAST FROM IT ROOM TO 4' ABOVE ROOF PARAPET FOR INSTALLATION FOR OWNER FURNISHED RADIO ANTENNA SYSTEM. PROVIDE WEATHER HEAD AT TOP OF MAST FOR ROUTING OF RADIO CABLING AND BOOT AT ROOF PENETRATION. COORDINATE REQUIREMENTS WITH ROOFING CONTRACTOR. SECURELY FASTEN CONDUIT TO PARAPET WALL, MINIMUM 2 LOCATIONS.
6. CONNECT TO CONVENIENCE RECEPTACLE CIRCUIT ON ROOF.



ROOF POWER PLAN

0 4 8 16 24 32 40

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

N

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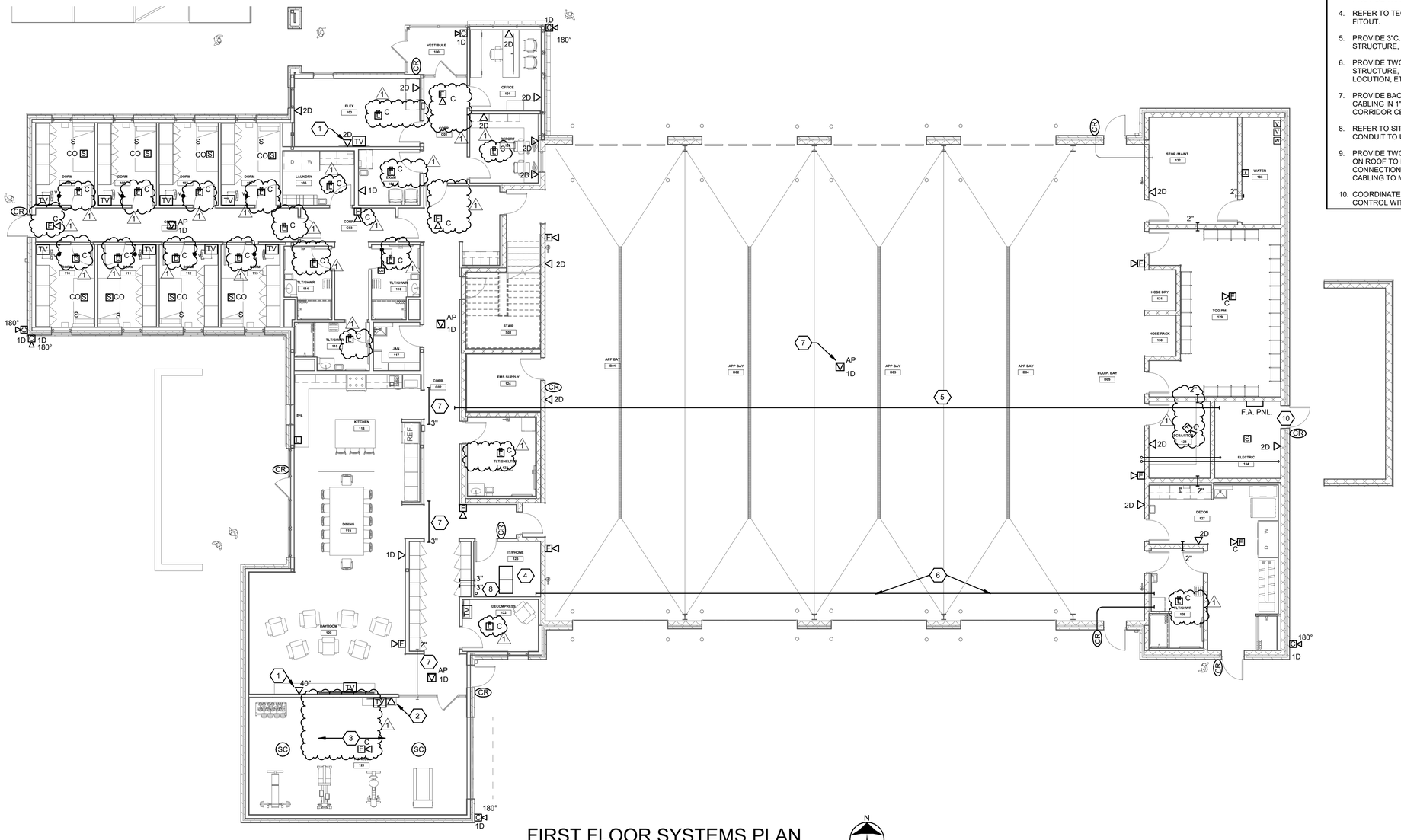
TITLE
ROOF POWER PLAN

SHEET NO.
E3.3

5/12/2022 8:54:20 AM



CONSTRUCTION NOTES

1. PROVIDE TWO GANG BOX WITH 1.25" CONDUIT TO TV WALL BOX FOR A/V CABLING (BY OWNER). COORDINATE LOCATIONS AND COVER PLATES WITH OWNER.
2. PROVIDE TWO GANG BOX WITH 1.25" CONDUIT TO TV WALL BOX FOR A/V CABLING AND 3/4"C. STUBBED ABOVE ACCESSIBLE CEILING FOR SPEAKER CABLING. COORDINATE LOCATIONS AND COVER PLATES WITH OWNER.
3. PROVIDE FLUSH CEILING SPEAKERS FOR 2x2 LAY-IN CEILING, 8 OHM FULL RANGE SPEAKER, EQUAL TO JBL #LCT SERIES. PROVIDE WIRING WITH 6' LOOP TO A/V BACK BOX IN ROOM.
4. REFER TO TECHNOLOGY DETAIL SHEET E0.7 FOR ROOM FITOUT.
5. PROVIDE 3"C. ACROSS APPARATUS BAY, AT CEILING STRUCTURE, FOR FIRE ALARM CABLING.
6. PROVIDE TWO 3"C. ACROSS APPARATUS BAY , AT CEILING STRUCTURE, FOR SYSTEMS CABLING (DATA, SECURITY, LOCUTION, ETC.).
7. PROVIDE BACKBOX AT CEILING STRUCTURE AND DATA CABLING IN 1"C. ACROSS APPARATUS BAY TO ABOVE CORRIDOR CEILING.
8. REFER TO SITE PLAN FOR ROUTING OF SERVICE ENTRANCE CONDUIT TO UTILITY POLE/PEDISTAL.
9. PROVIDE TWO 0.75"C. FROM PV SOLAR SYSTEM CONTROLLER ON ROOF TO MAIN ELECTRIC ROOM. ONE FOR CONTROL CONNECTION FROM SERVICE ENTRANCE ATS, ONE FOR DATA CABLING TO MAIN I.T. ROOM.
10. COORDINATE POWER SUPPLY FOR DOOR STRIKE/ACCESS CONTROL WITH EQUIPMENT VENDOR

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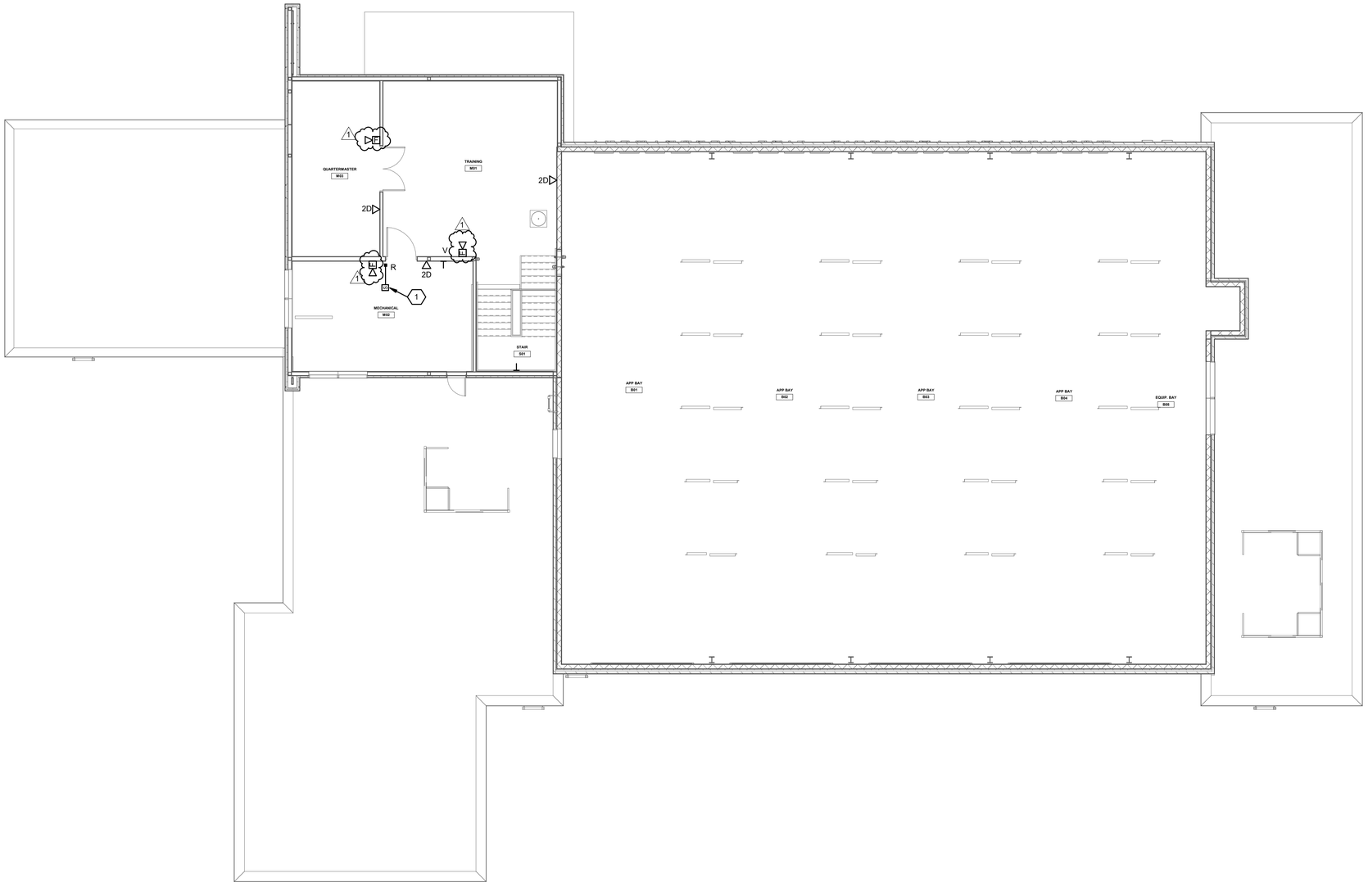
TITLE
FIRST FLOOR SYSTEMS PLAN

SHEET NO.
E4.1

5/12/2022 8:54:22 AM

CONSTRUCTION NOTES

1. LOCATE DUCT SMOKE DETECTORS (FOR A.H. SHUTDOWN), IN HORIZONTAL DUCT RUN. COORDINATE LOCATION WITH H.C.



SECOND FLOOR SYSTEMS PLAN

0 4 8 16 24 32 40

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

N

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TITLE
MEZZANINE SYSTEMS PLAN

SHEET NO.
E4.2

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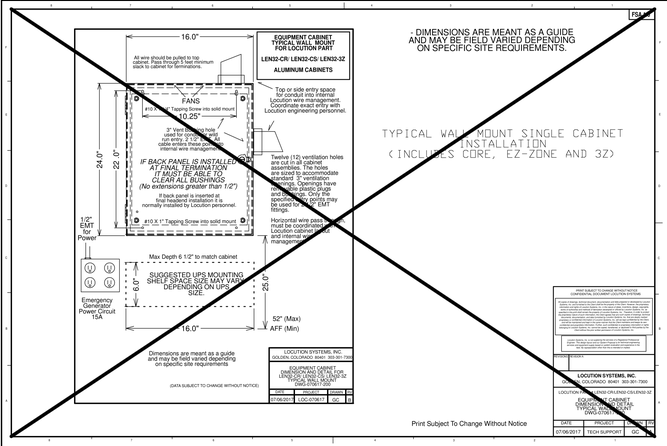
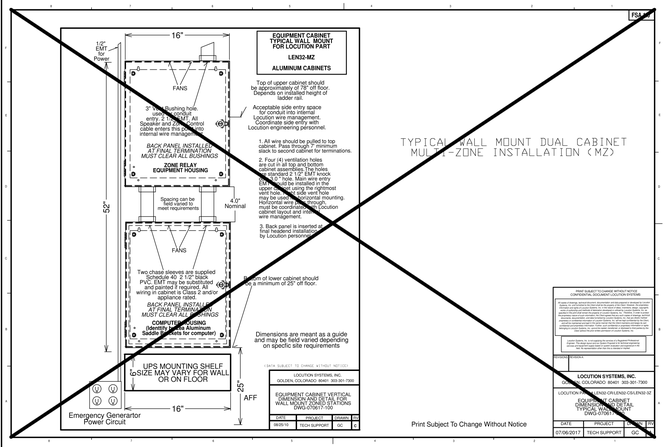


- DIMENSIONS ARE MEANT AS A GUIDE AND MAY BE FIELD VARIED DEPENDING ON SPECIFIC SITE REQUIREMENTS.

TYPICAL WALL MOUNT SINGLE CABINET INSTALLATION (INCLUDES CORE, EZ-ZONE AND 3Z)

Print Subject To Change Without Notice



TYPICAL WALL MOUNT DUAL CABINET MULTI-ZONE INSTALLATION (MZ)

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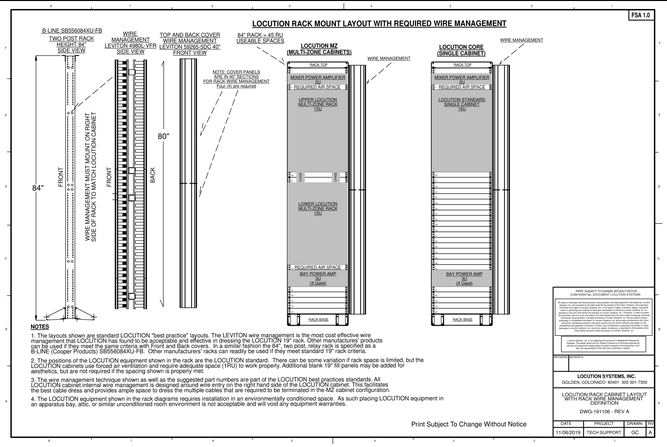

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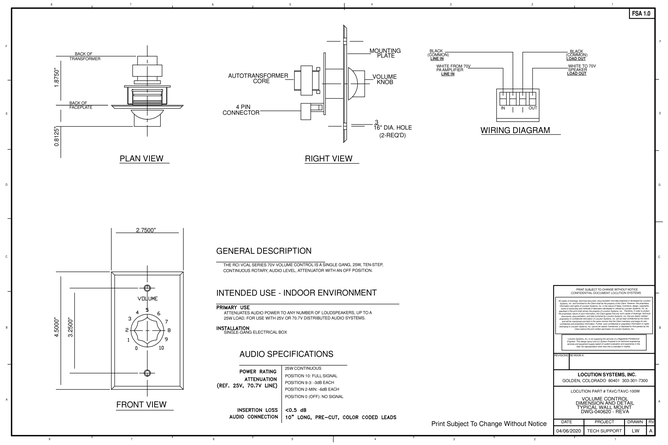

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ALERTING SYSTEM ROUGH-IN BOX SCHEDULE

EQUIPMENT TYPE	ELEC. ROUGH-IN BOX	RECOMMENDED MANUFACTURER	REMARKS
VOLUME CONTROL *	SINGLE GANG DEEP WELL * *	APPLETON 333	MINIMUM DEPTH 2.75", MAY BE A DOUBLE GANG BOX WITH SINGLE GANG SWITCH RING.
SM42T SPEAKER	4X4 BOX STANDARD DEPTH	APPLETON 4S-3/4	USES CUSTOM SUPPLIED MOUNTING PLATE THAT WILL ACCOMODATE 4X4 OR SINGLE GANG/ 4X4 PREFERRED.
CEILING SPEAKER STANDARD MOUNT	SPECIAL UL RATED TOP HAT STYLE BACK CAN AND TILE SUPPORT BRIDGE	LOCUTION SUPPLIED 8" SPEAKER, CAN AND TILE BRIDGE	INSTALLED PRIMARILY IN GRID CEILING. MAY USE BEAM CLAMP FOR STRUCTUAL CEILING INSTALLATION.
CEILING SPPEAKER BLIND MOUNT	SPECIAL UL RATED TOP HAT STYLE BACK WITH SUPPORT DOGS	LOCUTION SUPPLIED 8" SPEAKER AND CAN	USED IN HARD DECK (GYP BOARD) CEILINGS. MOUNTED FROM BELOW CEILING ACCESS.
FOCUSED H1 DORM SPEAKER	4 GANG ELECTRICAL BOX	RACO 953 OR APPLETON 4G5075S	SPECIAL BUSHING CLEARANCE REQUIRED. REFER TO LOCUTION DRAWING BLK-060606-102.20.
HORN SPEAKER	4X4 BOX STANDARD DEPTH	APPLETON 4S-3/4	HORN SPEAKER BASE MOUNTS DIRECTLY ON 4X4 BOX.
NVI EGRESS WALL LED LIGHT	4X4 BOX STANDARD DEPTH WITH 2 GANG SWITCH PLATE RING	APPLETON 4S-3/4 WITH APPLETON 8470A EXTENDER	REQUIRES MINIMAL BOX DEPTH AND CLEARANCE. MOUNTS ON DOUBLE GANG SWITCH TEMPLATE.
NVR CEILING LED	LOCUTION SUPPLIED	LOCUTION SUPPLIED CEILING FIXTURE	SPECIAL FIXTURE. REFER TO LOCUTION L116 NVR CUTSHEET FOR MOUNTING CAN.
EZ-ZONE CONTROLLER*	4X4 BOX DEEP WELL WITH 2 GANG SWITCH PLATE MOUNT* *	APPLETON 4SD 3/4 OR RACO 231 WITH APPLETON 8470 EXTENDER RING	REFER TO DWG 170919-101-REV A DRAWING FOR EXACT SPECIFICATIONS. 2-7/8" DEPTH IS CRITICAL
DOOR BELL	SINGLE GANG SWITCH PLATE	APPLETON M1-250 MASONARY OR APPLETON 1-1/2" DEEP WELL	MOST OFTEN A MASONARY BOX OR NEMA 4 SINGLE GANG BOX FOR OUTDOOR ENTRY LOCATIONS. APPLETON 111 FOR INDOOR APPLICATIONS.
ACK SWITCH (ACKNOWLEDGEMENT)	SINGLE GANG SWITCH PLATE	APPLETON M1-250 MASONARY OR APPLETON 1-1/2" DEEP WELL	APPLETON 111 FOR INDOOR APPLICATIONS.
DATA JACK	SINGLE GANG SWITCH PLATE	APPLETON 1-1/2" DEEP WELL	STANDARD
CEILING STROBE	4X4 BOX STANDARD DEPTH	APPLETON 4S-3/4	7" BASE COVER WITH CEILING STROBE. ALSO MOUNTS TO OCTAGONAL BOXES.
WALL STROBE	4X4 BOX STANDARD DEPTH	APPLETON 4S-3/4	7" BASE COVER WITH WALL STROBE. ALSO MOUNTS TO OCTAGONAL BOXES.
READER BOARD	SINGLE GANG PLATE FOR DATA SINGLE GANG PLATE FOR AC POWER	APPLETON 1-1/2" DEEP WELL	REFER TO DWG 140423 REV A CUT SHEET FOR FULL DETAIL.
STATION ZONE TRACKER (SZT)	SINGLE GANG PLATE FOR DATA SINGLE GANG PLATE FOR AC POWER	APPLETON 1-1/2" DEEP WELL	REFER TO DWG 140423 REV A CUT SHEET FOR FULL DETAIL. DWG-100903 REV A.
AMBIENT SENSE MIC	SINGLE GANG PLATE MOUNT	APPLETON 1-1/2" DEEP WELL	USED IN APPARATUS BAY CEILING FOR LEVEL ENHANCEMENT.

LOCUTION SPECIFICATIONS

- LOCUTION SPECIFICATIONS ARE GENERALLY MADE USING RACO OR APPLETON PART NUMBERS AS THEY ARE FAMILIAR AND READILY AVAILABLE. OTHER MANUFACTURERS CAN BE SUBSTITUTED IF THE SPECIFICATIONS MATCH.

- DEPTH OF THE ELECTRICAL BOX IS A PRIMARY CONSIDERATION FOR THE LOCUTION EQUIPMENT. A "DEEP WELL" SPECIFICATION DEFINES AN ELECTRICXAL BOX WITH AT LEAST 2.75" OF DEPTH. SINGLE GANG AND DOUBLE GANG PLATES CONNOTE THE INDUSTRY STANDARD SWITCH TEMPLATE AND BOX SIZE.

- THE ALERTING SYSTEM ROUGH-IN BOX SCHEDULE DEFINES THE MOST COMMON ELECTRICAL BOX TYPES USED BY LOCUTION EQUIPMENT. REFER TO THE REFERENCED CUT SHEETS FOR MORE DETAILED INFORMATION.

- NOTE: NOT ALL DEVICES ARE USED IN ALL STATION.

* DEPTH OF THESE BOXES IS CRITICAL IN THE CONSTRUCTION INSTALL PHASE. DEVICE MOUNT AND FUNCTION REQUIRES THIS 2-7/8" DEPTH. THERE ARE NO LAST MINUTE WORK AROUNDS POSSIBLE IN BLOCK OR DRYWALL.

DEVICE POWER DRAW

- READER BOARD FULL ON: APPROXIMATELY 40W @ 120VAC LINE INTERFACED SWITCHING REGULATOR.

- READERBOARD STBY: < 5W @120VAC.

- RESPONSE TIMER ON: APPROXIMATELY 500 ma DEPENDING ON AMBIENT LIGHT DRIVER ACTION.

- RESPONSE TIMER STBY: 0 ma /POWER OFF / DISPLAY BLANKED.

- NIGHT VISION ILLUMINATOR ON: 40 ma.
- NIGHT VISION ILLUMINATOR STBY: 0 ma POWER OFF.

- WALL/CEILING STROBE ON: 85 ma.
- WALL/CEILING STROBE STBY: 0 ma POWER IS OFF.

-MULTI-UNIT INDICATOR LIGHTS ON: 40 ma PER ELEMENT. 200 ma PER FIVE (5) POSITION INDICATOR.
-MULTI-UNIT INDICATOR LIGHTS STBY: 0 ma.

IMPORTANT

All LOCUTION cabinet switching outputs, and control inputs, are Class 2 low voltage only. No direct 120VAC switching within the Locution cabinet is permitted. All low voltage to high voltage interface equipment coils such as AC contactors or DC relays must be reactively suppressed.

Output Relay Contacts are rated @ 3A non-reactive

Standard Locution control and source voltage is +24 VDC

ANC 1

1.1.0 Electrical Contractor or Associated Low Voltage Contractor Responsibilities Guideline Only (Refer to Sales Contract and SOW for Exact Detail)

1) Supplying and installing all conduit and J-boxes required as per print for LOCUTION FSA Equipment. Includes multi-gang and deep well conduit boxes as per exact specification for bunk locations.

2) Supplying and installing AC power outlets as required for Locution communications equipment as specified on EE and LOCUTION print.

3) Installing Locution supplied communications wiring to all speaker and low voltage lighting locations.

4) Mounting and termination of Locution supplied recessed low voltage LED Egress light fixtures both grid and hard deck models.

5) Installation and wiring of low voltage recessed ceiling or wall mount LED fixtures. Installation of DALI low voltage driver units in integrated ceiling speaker/light combo when mounting recessed lighting fixtures according to locution supplied print.

6) Termination of required RJ-45 type data connectors in single gang jack covers. Locution normally uses a 568-B cable termination standard. This is applicable to all Station Zone Tracker, and READER BOARD locations. Power lines are to be stored with slack in same single gang box or terminated if specified on construction print.

7) Mounting and termination of Locution supplied ceiling speakers, back cans, mounting rails, and room volume controls in all areas including dorm rooms unless focused type speakers or other special speakers are specified.

8) Installing and terminating wall mount speakers and outside horns on 4X4 electrical boxes in Apparatus Bay and other designated areas.

9) Mounting and terminating all bunk Focused Wall Speakers, EZ-Zone Control modules, associated EZ- Zone RJ-45 connectors, and speaker volume controls in the bunk area. Focused Wall Speaker mounting must be completed after final finish to protect speaker cosmetics.

10) Installation of Locution supplied equipment apparatus case with associated conduit in Equipment Room. Installation of all AC power as per Electrical print.

11) Correctly tapping the wattage of speakers according to Locution print specifications during installation.

12) Installation of Locution defined integral backing board support in wall for Station Zone Tracker Touch Screen units based on Locution supplied print. Includes recessed single gang electrical box and single gang data jack box.

13) Installation of AC power at cabinet locations as defined by the construction print. These circuits must be included on the emergency backup generator load plan and be part of the electrical contractors scope of work.

14) Installation of all equipment to meet electrical, seismic, national and local building codes required at this station location.

1.1.1 Locution Responsibilities: Guideline Only (Refer to Sales Contract and SOW for Exact Detail)

1) Supplying all speaker, power, and Locution required data communications wire for alerting equipment based on Locution submitted print(s).

2) Supplying all equipment required for Locution FSA communications system based on submitted print counts and as per submitted documentation.

3) Project coordination and equipment delivery to agreed staging or dock location. Contractor must provide secure staging area.

4) Providing remote support to the designated installer for Locution provided hardware.

5) Providing remote support of final testing and integration of all Locution hardware and software systems.

NOMINAL EQUIPMENT MOUNTING HEIGHTS

APP BAY HORN SPEAKERS - 120" AFF

OUTSIDE HORN SPEAKERS - 120" AFF

APP BAY WALL SPEAKERS - 96" AFF

WALL SPEAKERS IN DORM - 84" AFF OR 10" FROM CEILING PLANE

VOLUME CONTROL - 48 "- 52" AFF MUST BE DEEP WELL 2 7/8" SINGLE GANG BOX

VOLUME CONTROL IN DORM - 52" AFF MUST BE DEEP WELL 2 7/8" SINGLE GANG BOX

MULTI UNIT INDICATOR - LOW SUSPENDED CEILING -72" AFF

MULTI UNIT INDICATOR - COMMON MOUNTING HEIGHT-80" AFF TO BOTTOM OF JUNCTION BOX OR 16" FROM CEILING PLANE.

RESPONSE TIMER - 108" AFF

STATION ZONE TRACKER - BOTTOM 50.5"AFF - TOP 63" AFF

REVISIONS	REVISION B: UPDATED LOCUTION RESPONSIBILITIES, UPDATED POWER DRAW, EMPHASIZED BOX DEPTH NOTE

LOCUTION SYSTEMS, INC.
GOLDEN, COLORADO 80401 303-301-7300

ELECTRICAL CONTRACTOR SPEC SHEET
LOCUTION FSA
DWG-200402-103 REV A FSA ANC 1

DATE	PROJECT	DRAWN	RV
07/08/2021	GENERIC	GC/LW	B

App Architecture
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www.app-arch.com

FOR COORDINATION ONLY

NAUMAN & ZELINSKI LLC.
204 S. Ludlow Street Suite 400 Dayton, Ohio 45402
Phone: (937) 223-5421 * Fax: (937) 223-3044

Washington Township
Fire Station 41
716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	TR
CHECKED	JDZ

TITLE
LOCUTION ELECTRICAL ROUGH-IN REQUIREMENTS

SHEET NO.
EL0.1

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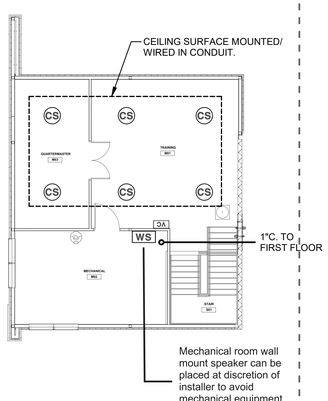
Locution Equipment		
	Description	**Quantity**
888	3 Digit Digitral Respose Timer - MDRT-3	3
MAMP-A03	Amplifier - Single 35W - MAMP-A03	1
MAMP-A24	Amplifier - Single 240W - MAMP-A24	1
DB	Door Bell - LSWI-DB	1
EZ	Locution EZ-Zone Cabinet - LCPN33-EZ	1
	MUI - Flush Mount - 5 Position - TMUI-FM5	2
EZ	NVI - Wall Mount - EZ-Zone - LNVI-EZ-H	8
m	NVI - Wall or Ceiling Mount - LNVI-H	12
E	NVR - Ceiling Mount - LNVR	2
	Reader Board - 1 Line - MLRB-1L	3
CS	Speaker - Ceiling - TSPK-CL	48
S/B	Speaker - Wall Baffle - TSPK-WB	26
"ZZZ"	Station Zone Tracker (Touch Panel) - MZTS	1
	Strobe - Indoor Ceiling Mount - TSTB-IN-C	2
	Strobe - Outdoor Wall Mount - TSTB-OU-W	1
RM-8	Volume Control - 50W - Rack Mounted - MAVC-50W-RM	1
VC	Volume Control - TAVC	16

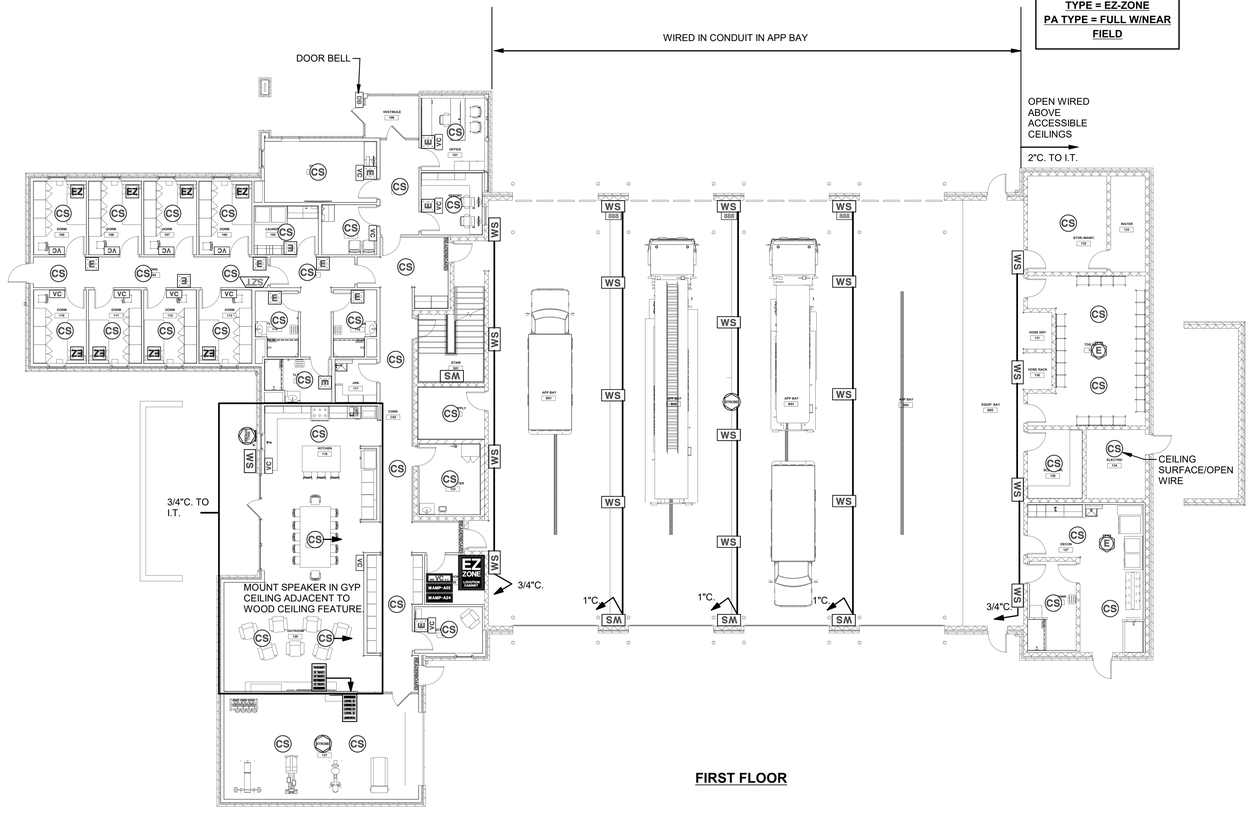
INSTALLATION REQUIREMENTS:

WASHINGTON TOWNSHIP, OH - FIRE STATION #41
716 E Franklin St.
Centerville OH 45459

LOCUTION SYSTEMS FSA
TYPE = EZ-ZONE
PA TYPE = FULL W/NEAR FIELD



SECOND FLOOR



FIRST FLOOR

INSTALLATION REFERENCE NOTES TO CIRCUIT NUMBERS ON PRINT FOR LOCUTION FSA HARDWARE

*Circuits 1 - 16. Only circuits applicable to print shown.

INSTALLATION NOTES AND ENHANCEMENTS

This drawing is an approximation based on customer provided prints and may contain inaccuracies, pertaining but not limited to, building features, dimensions, and scale. This is for the purpose of Locution FSA equipment installation only.

PRINT SUBJECT TO CHANGE WITHOUT NOTICE
CONFIDENTIAL DOCUMENT LOCUTION SYSTEMS

Locution Systems, Inc. is not supplying the services of a Registered Professional Engineer. This design layout and our System Proposal is for technical engineering services and equipment supply based on system evaluation and experience in the field. No representation other than this is intended or implied.

PHASE	DRAWN	DATE:	REVIEWED	DATE:	APPROVED	DATE:
TEMPLATE	TB	02/14/2022	DW	02/14/2022	DW	02/14/2022
MARK-UP	DW	02/25/2022		XX	DA/MO/YEAR	
CIRCUIT	XX	DA/MO/YEAR	XX	DA/MO/YEAR	XX	DA/MO/YEAR

Locution SYSTEMS INC.
GOLDEN, COLORADO 80401
303-301-7300

REVISION DESCRIPTION:	REV
	E

LOCUTION FSA EQUIPMENT ONLY
WASHINGTON TOWNSHIP, OH FIRE STATION #41
FIRST & SECOND FLOOR MARKED PRINT

716 E Franklin St. Centerville OH 45459

SIZE	17 x 11	**SHEET**	1 OF 1

LOCUTION SYSTEM PLAN

NOT TO SCALE

App Architecture
creative focused design
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FOR COORDINATION ONLY

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ISSUE

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	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	TR
CHECKED	JDZ

TITLE
LOCUTION SYSTEM PLAN

SHEET NO.
EL1.0

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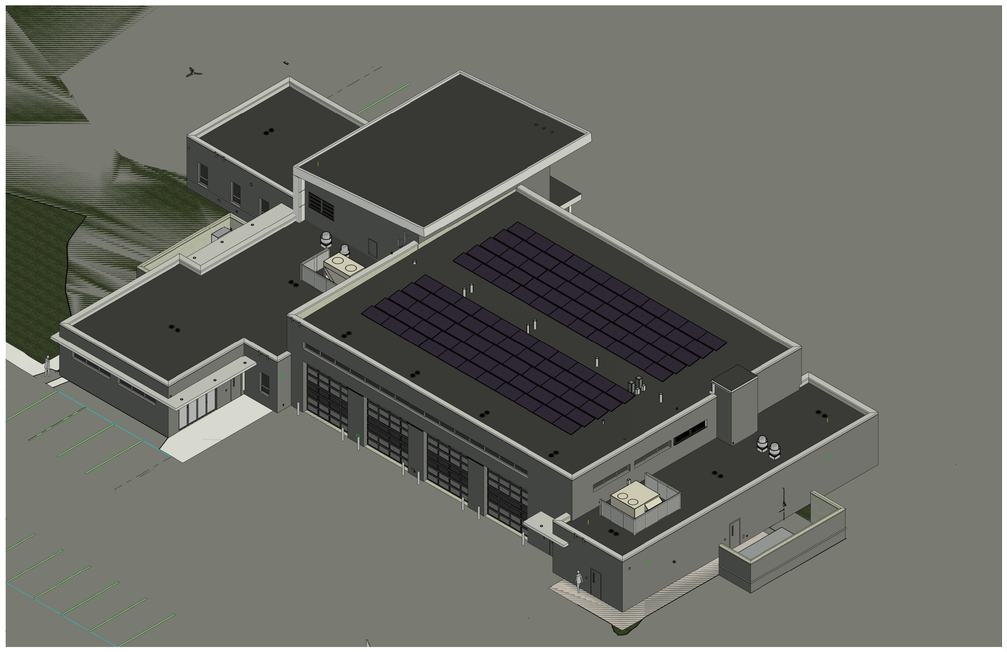

FIRE STATION 41 SOLAR ARRAY

N.T.S

SOLAR ARRAY SPECIFICATIONS

SOLAR PANELS:

1. INSTALLATION OF SOLAR MODULES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TO MAINTAIN ALL WARRANTIES.
2. PV MODULES SHALL BE CAREFULLY INSTALLED AS TO NOT DAMAGE THEM OR THE DC WIRING LEADS.
3. THE FOLLOWING SOLAR ARRAY COMMISSIONING SHALL BE COMPLETED PRIOR TO ENERGIZING THE INVERTERS TO ENSURE PROPER FUNCTION AND ENSURE NO EQUIPMENT IS DAMAGED.
   A. PERFORM A VISUAL INSPECTION OF ALL MODULES PRIOR TO INSTALLATION. REPORT ANY DAMAGE TO SUPPLIER/MANUFACTURER.
   B. CONFIRM VOLTAGES OF EACH PV STRING. RECORD DATA AND IMMEDIATELY INFORM THE ENGINEER OF ANY ISSUE.
   C. CONFIRM THE CURRENTS OF THE PV STRING. RECORD DATA AND IMMEDIATELY INFORM THE ENGINEER OF ANY ISSUE.
   D. CONFIRM ALL OTHER SYSTEM COMPONENTS: INVERTERS, DISCONNECTS, WIRING, ETC. ARE INSTALLED AND READY FOR USE. PERFORM AN INSPECTION OF ALL EXPOSED PV WIRING TO ENSURE IT IS SECURED TO THE MOUNTING SYSTEM AND NO WIRING HAS BEEN DAMAGED. CONFIRM ALL MODULES ARE PROPERLY SECURED AND NONE ARE LOOSE.

INVERTERS:

1. THE INVERTER SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.
2. THE INVERTER MANUFACTURER UTILIZES WEB APP AND/OR A PHONE APPLICATION, SETAPP, TO PROGRAM THE SYSTEM. REFER TO THE MANUFACTURER INSTALLATION GUIDE FOR MORE INFORMATION.
3. PRIOR TO TURNING ON THE INVERTER I.E., CLOSING THE CIRCUITS, THE FOLLOWING COMMISSIONING ITEMS SHALL BE COMPLETED TO ENSURE PROPER FUNCTION AND ENSURE NO EQUIPMENT IS DAMAGED.
   A. CONFIRM THE INVERTER IS ORIENTED AND MOUNTED PROPERLY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
   B. ENSURE ALL MODULE LEVEL COMPONENTS, DC-TO-DC OPTIMIZERS, ARE PROPERLY SYNCHRONIZED TO THE RESPECTIVE INVERTER.
   C. CONFIRM THE POLARITIES OF ALL PV STRING CIRCUITS CONNECTED TO THE INVERTER ARE CORRECT.
   D. CONFIRM THE DC VOLTAGE IS WITHIN THE MANUFACTURER'S SPECIFIED VOLTAGE RANGE.
   E. CONFIRM THE AC OUTPUT VOLTAGES ARE IN THE CORRECT PHASE.
   F. FOLLOW THE START-UP SEQUENCE OF THE MANUFACTURER'S INSTALLATION GUIDELINES.
   G. THIS BUILDING UTILIZES AN EMERGENCY GENERATOR THAT PROVIDES POWER TO THE ENTIRE ELECTRICAL SYSTEM DURING A UTILITY POWER OUTAGE. THE SOLAR ARRAY SHALL NOT OPERATE DURING TIMES OF EMERGENCY POWER USAGE TO ENSURE NO DAMAGE IS DONE TO THE GENERATOR. AC CONTACTORS ARE PROVIDED, SEE ELECTRICAL DRAWINGS, IN EACH AC OUTPUT CIRCUIT TO OPEN THE CIRCUIT UNDER EMERGENCY POWER. CONFIRM THESE DEVICES ARE OPERATION PRIOR TO INVERTER ACTIVATION.

MODULE LEVEL DEVICES (DC-TO-DC OPTIMIZERS)

1. ALL DC-TO-DC OPTIMIZERS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. THE BASIS OF DESIGN ROOF BALASTED MOUNTING SYSTEM INCLUDES THE PROVISION TO MOUNT MODULE LEVEL DEVICES.
2. ALL MODULE LEVEL COMPONENTS SHALL BE LINKED TO THE RESPECTIVE INVERTER.
3. MODULE LEVEL DEVICES SHALL BE CAPABLE OF PERFORMING AN ARRAY RAPID SHUTDOWN COMPLIANT WITH 2017 NEC 690.12.

PV SYSTEM ELECTRICAL NOTES

1. THE PROPOSED SOLAR ARRAY SYSTEM SHALL BE CONTROLLED BY THE SOLAREDGE WEB APPLICATION.
2. THE PV SOURCE CIRCUIT AND PV OUTPUT CONDUCTORS SHALL NOT BE CONTAINED WITHIN THE SAME CONDUIT.
3. ALL EXPOSED MODULE LEADS AND PV STRING WIRING SHALL BE MECHANICALLY SECURED IN A POSITION UNDER THE PANELS SUCH THAT NO WIRING IS EXPOSED TO SUNLIGHT NOR IN CONTACT WITH THE ROOF.
4. PER NEC SECTION 690.12, THE ARRAY IS EQUIPPED WITH A RAPID SHUTDOWN FEATURE TO LOWER OUTPUT VOLTAGES INSIDE AND OUTSIDE OF THE ARRAY BOUNDARY.

WIRING AND WIRING METHODS

1. REFERENCE THIS PROJECTS ELECTRICAL SPECIFICATIONS FOR INFORMATION ON WIRING METHODS.
2. ALL PV SYSTEM CIRCUIT CONDUCTORS SHALL BE INDENTIFIED AT ALL ACCESSIBLE POINTS OF TERMINATION, CONNECTION, AND SPLICES. EACH PV STRING SHALL BE LABELED WITH ITS RESPECTIVE INVERTER AND STRING NUMBER.
3. UTILIZE MC4 CONNECTORS ON PV STRINGS TO CONNECT TO THE DC-TO-DC OPTIMIZER OUTPUTS.
4. PV STRING WIRING SHALL BE USE-2, UV RESISTANT, 90˚C, WET RATED.
5. ALL CONDUIT, EXCEPT AS NOTED IN THE CONDUCTOR SCHEDULE, SHALL HAVE SEALED ENDS TO ENSURE NO WATER ENTERS THE CONDUIT.
6. EXTERIOR METAL CONDUIT RUNS OVER 100' SHALL HAVE AN EXPANSION JOINT INSTALLED EVERY 100'.
7. UTILIZE RUBBER SUPPORTS WITH UNISTRUT ANCHORS FOR CONDUIT RUN ON ROOFING.
8. THE PV ARRAY SHALL BE GROUNDED IN ACCORDANCE WITH THE BALASTED MOUNTING SYSTEM MANUFACTURER'S RECOMMENDATIONS. UTILIZE MANUFACTURER GROUNDING WIRING AND GROUNDING LUGS.

SOLAR ARRAY SPECIFICATIONS CONT'D.

INTERCONNECTION AND DISCONNECTION

1. PROPER DISCONNECTING MEANS SHALL BE PROVIDED TO ENSURE ALL CURRENT CARRYING CONDUCTORS FROM THE PV SYSTEM CAN BE ISOLATED FROM THE BUILDING.
2. THE PV SYSTEM DISCONNECTING MEANS SHALL HAVE RATINGS SUFFICIENT FOR THE MAXIMUM CIRCUIT CURRENT, AVAILABLE SHORT-CIRCUIT CURRENT.
3. A PERMANENT PLAQUE OR DIRECTORY DENOTING THE LOCATION OF ALL ELECTRIC POWER SOURCE DISCONNECTING MEANS ON OR IN THE PREMISES SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT THE LOCATION(S) OF THE SYSTEM DISCONNECT(S) FOR ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED.
4. REFER TO SHEET ES0.3 FOR ALL MARKINGS REQUIRED AT INTERCONNECTION AND DISCONNECTION POINTS.

MARKINGS

1. ALL PHYSICAL MARKINGS SHALL BE PERMANENT, REFLECTIVE, WEATHER RESISTANT AND SUITABLE FOR THE ENVIRONMENT. REFER TO SHEET ES0.3 FOR REQUIRED EQUIPMENT LABELS AND SPECIFICATION.
2. PV MODULES SHALL BE MARKED TO IDENTIFY LEAD POLARITIES, VOLTAGE, CURRENT AND POWER OUTPUT.

ELECTRICAL LEGEND

A-1&2	EACH ARROWHEAD REPRESENTS ONE COMPLETE CIRCUIT; CAPITAL LETTER DENOTES PANEL; NUMBER DENOTES CIRCUIT.
	WIRE & CONDUIT IN WALL, ABOVE CEILING & ON ROOF
	DC-TO-DC OPTIMIZER WIRING
	SOLAR MODULE
	INVERTER
1-1+	SOLAR MODULE WIRING • DASHED WIRING INDICATES DC-TO-DC OPTIMZER WIRING LEADS. • FIRST NUMBER INDICATES INVERTER • SECOND NUMBER INDICATES STRING # • '+' SYMBOL INDICATES THE POSITIVE DC WIRING HOMERUN TO THE INVERTER. SAME FOR '-' SYMBOL INDICATING THE NEGATIVE HOMERUN.
3	PV BALLASTED MOUNTING SYSTEM NUMBER INDICATES QUANTITY OF MOUNTING BLOCKS PER UNIT.
	DISCONNECT SWITCH

SOLAR GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2017 OHIO BUILDING CODE AND THE 2017 NATIONAL ELECTRIC CODE.
2. PROTECT EQUIPMENT FROM DAMAGE DURING CONSTRUCTION.
3. PROTECT OTHER TRADES' EQUIPMENT FROM DAMAGE AND THEFT.
4. MAINTAIN A CLEAN WORK SITE. ALL DEBRIS/TRASH SHALL BE REMOVED FROM SITE.
5. THE CONTRACTOR SHALL WORK IN ACCORDANCE WITH THE ROOFING CONTRACTOR TO MAINTAIN ANY ROOFING WARRANTY. CAREFUL ATTENTION SHALL BE GIVEN TO REMOVE ALL CONSTRUCTION EQUIPMENT AND DEBRIS FROM THE ROOF.
6. REFER TO ELECTRICAL SPECIFICATIONS FOR WIRING METHODS, CONDUIT, GROUNDING, ETC.
7. ALL EXTERIOR EQUIPMENT SHALL BE NEMA 3R RATED.
8. NO EQUIPMENT IN THIS ARRAY SHALL BE INSTALLED LESS THAN 10' FROM THE EDGE OF THE ROOF.
9. ELECTRONIC SHOP DRAWINGS SHALL BE PROVIDED IN .PDF FORMAT FOR THE ENGINEER'S APPROVAL FOR ALL MATERIALS AND EQUIPMENT. SHOP DRAWINGS SHALL BE SPECIFICALLY EDITED TO ELIMINATE SUPERFLUOUS INFORMATION AND SHALL CLEARLY SHOW SPECIFICS FOR THE MATERIAL AND EQUIPMENT PROVIDED.
10. COORDINATE INSTALLATION OF ACTUAL EQUIPMENT AND SYSTEMS PROVIDED WITH OTHER TRADES AND NEW OR EXISTING CONDITIONS.
11. INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS. PROVIDE REQUIRED CLEARANCES TO MEET CODE REQUIREMENTS, MANUFACTURER'S RECOMMENDATIONS AND MAINTENANCE SERVICE.
12. PROVIDE FINAL COORDINATION/INSTALLATION DRAWINGS TO THE OWNER IN BOUND PAPER AS WELL AS ELECTRONIC FORMAT FOR RECORD.
13. MAINTAIN RECORD DRAWINGS AND PROVIDE TO THE OWNER OR HIS AGENT.
14. PROVIDE TWO (2) BOUND, PAPER COPIES OF ALL OPERATING AND MAINTENANCE MANUALS. PROVIDE AN ELECTRONIC COPY OF THE OPERATING AND MAINTENANCE MANUAL.
15. PROVIDE WARRANTY FOR ALL WORKMANSHIP, EQUIPMENT AND MATERIAL. WARRANTY SHALL BE 1 YEAR FOR PART AND LABOR, PROVIDE EXTENDED WARRANTY PERIOD FOR PARTS AND/OR LABOR AS IDENTIFIED OR AS STANDARD FOR CERTAIN ITEMS OF EQUIPMENT.
16. PROVIDE TRAINING AND MAINTENANCE INSTRUCTION FOR SYSTEMS AND EQUIPMENT TO THE OWNER. TRAINING SHALL BE 4 HOURS OF TIME AND INCLUDE SETUP OF THE SOLAREDGE ONLINE WEB APP AND SMARTPHONE APP WITH THE OWNER.

ALTERNATE E1

ALL WORK INVOLVING THE INSTALLATION OF THE SOLAR ARRAY SHALL BE BID UNDER ALTERNATE E1.

ALTERNATE E1 INCLUDES ITEMS ON ELECTRICAL SHEETS E0.3 & E3.3 TO INTERCONNECT THE SOLAR ARRAY WITH THE BUILDING POWER SYSTEM.

SOLAR INDEX OF DRAWINGS

App Architecture
creative focused design
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www.app-arch.com

STATE OF OHIO
JEFFREY D. ZELINSKI
63522
REGISTERED ARCHITECT

EnerZ LLC.
Renewable Energy
Design & Consulting
937.643.2128

Washington Township

Fire Station 41

716 East Franklin Street, Centerville, Ohio 45458

ISSUE

NO.	DATE	DESCRIPTION
	03/22/22	FOR CONSTRUCTION

DATE	3/22/2022
JOB NO.	3952.00
DRAWN	DJZ
CHECKED	JDZ

TITLE

LEGEND, GENERAL NOTES AND SPECIFICATION

SHEET NO.

ES0.1

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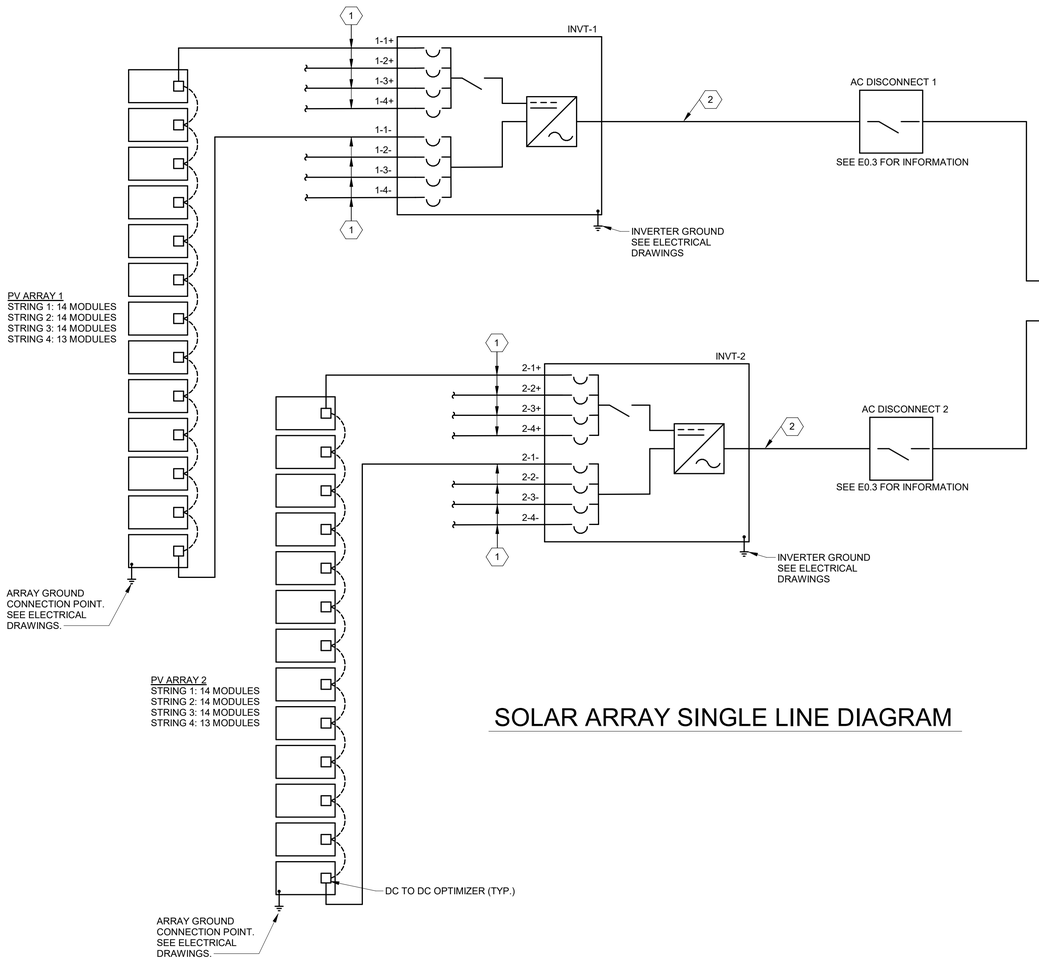


SOLAR ARRAY SINGLE LINE DIAGRAM

INVERTER SCHEDULE

BASIS OF DESIGN: SOLAREDGE

TAG	MODEL	DC (INPUT) MAX POWER [kW]	DC (INPUT) MAX. VOLTAGE	DC (INPUT) VOLTAGE RANGE	DC (INPUT) MAX. CURRENT	AC (OUTPUT) VOLTAGE/PHASE	AC (OUTPUT) CONTINUOUS POWER [kW]	AC (OUTPUT) CONTINUOUS CURRENT	PV MODULE DC-TO-DC OPTIMIZER MODEL	NOTES
INVT-1	SE17.3KUS	26	600	370 - 600	48.25	208V/3PH	17.3	48.25	P401	1-2
INVT-2	SE17.3KUS	26	600	370 - 600	48.25	208V/3PH	17.3	48.25	P401	1-2

NOTES:
1) INVERTER PROVIDED WITH DC SAFETY UNIT. UNIT CONTAINS DC DISCONNECT SWITCH.
2) SOLAREDGE INVERTERS REQUIRE USE OF SOLAREDGE MODULE LEVEL COMPONENTS.

DC TO DC OPTIMIZER SCHEDULE

BASIS OF DESIGN: SOLAREDGE
OPTIMIZER PERFORM ARRAY RAPID SHUTDOWN PER NEC 690.12

STRING SIZE	MODEL	DC (INPUT) MAX POWER [W]	DC (INPUT) VOLTAGE	DC (INPUT) CURRENT	DC (OUTPUT) VOLTAGE	DC (OUTPUT) CURRENT	NOTES
13	P401	420	37.6	10	46.15	8.125	1
14	P401	420	37.6	10	42.85	8.75	1

NOTES:
1. DC TO DC OPTIMIZERS CAN BE MOUNTED EITHER ON PV MODULE FRAMES OR MOUNTING SYSTEM.

SOLAR PANEL SCHEDULE

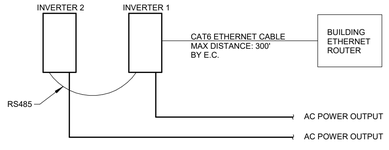
BASIS OF DESIGN: Q.CELL
EQUAL BY: SILFAB, LG & REC SOLAR
PERFORMANCE BASED ON STC

MODEL	MAX. POWER	VOLTAGE MPP	VOLTAGE OC	CURRENT MPP	CURRENT SC	EFFICIENCY	MATERIALS WARRANTY	POWER WARRANTY	DIMENSIONS LENGTH	DIMENSIONS WIDTH	DIMENSIONS HEIGHT	CONNECTOR TYPE	MODULE WEIGHT	NOTES
Q.PEAK-DUO-BLK-ML-G9+	375	37.6	45	9.98	10.47	19.80%	25 YEARS	25 YEARS	72-1/3"	40-1/2"	1-3"	MC4	43	

CONDUCTOR SCHEDULE

# TAG	CONDUCTOR RUN	CONDUCTOR TYPE	VOLTAGE	MATERIAL	TEMPERATURE RATING	CONTINUOUS STRING AMPACITY (13 & 14 MODULE STRINGS)	OVERCURRENT PROTECTION AMPACITY	CONDUCTOR SIZE	# OF CONDUCTORS	GROUND SIZE	CONDUIT SIZE	NOTES
1	DC-DC OUTPUT	PV WIRE	600VDC	COPPER	90	8.125 / 8.75	10.16 / 10.93	10	8	-	-	1
2	INVERTER OUTPUT	THWN-2	208Y/120V/3PH/4W	COPPER	90	48.25	60.3	8	3	10	1"	

NOTES:
1. OPEN WIRED ALONG ARRAY, PROVIDE 1"C FROM INVERTER TO UNDER ARRAY STRUCTURE FOR PROTECTION OF WIRING. PROVIDE GROUNDING BUSHING ON EACH END WITH #10 BONDING JUMPER.



SEQUENCE OF OPERATION

DESCRIPTION:

THE PV SYSTEM CONSISTS OF 110 PANELS, EACH WITH A MODULE LEVEL DC-TO-DC POWER OPTIMIZER, AND TWO SOLAR INVERTERS PROVIDING POWER TO THE BUILDINGS ELECTRIC SYSTEM. THE SYSTEM INVERTERS ARE DAISY CHAINED TOGETHER IN A MASTER/SLAVE CONFIGURATION. OPERATION OF THE SYSTEM IS CONTROLLED THROUGH THE MASTER INVERTER. THE MASTER INVERTER IS CONNECTED TO THE BUILDINGS INTERNET SYSTEM TO ESTABLISH AND MODIFY SYSTEM OPERATION THROUGH THE SOLAREDGE WEBAPP.

NORMAL OPERATION:

1. THE SOLAR INVERTER SHALL OPERATE 24/7/365. WHEN THE INVERTER IS ENERGIZED, THE INVERTER WILL VERIFY UTILITY POWER IS PRESENT ON THE AC SIDE, PERFORM ITS STARTUP SEQUENCE AND THEN COMMAND ON TO PRODUCE ELECTRICITY.
2. THE SYSTEM SHALL OPERATE CONTINUOUSLY UNLESS A DISCONNECT SWITCH IS THROWN, THE UTILITY LOSES POWER OR A FAULT IS DETECTED.

EMERGENCY POWER OPERATION

1. UNDER EMERGENCY POWER OPERATION THE INVERTERS SHALL NOT OPERATE. DURING A UTILITY POWER OUTAGE, CONTACTORS IN THE AC OUTPUT CIRCUITS SHALL OPEN. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. UPON RESTORATION OF UTILITY POWER, THE CONTRATORS SHALL CLOSE AND THE INVERTERS SHALL RESUME POWER PRODUCTION.

1 **SOLAR ARRAY CONTROLS**
N.T.S.

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EQUIPMENT SCHEDULES & SINGLE LINE DIAGRAM

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PHOTOVOLTAIC SYSTEM WARNING LABELS

VERIFY THAT SECTION TITLES REFERENCED IN THIS SECTION ARE CORRECT FOR THIS PROJECT'S SPECIFICATIONS; SECTION TITLES MAY HAVE CHANGED.

PART 1 - GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING:

1. PHOTOVOLTAIC WARNING LABELS

1.2 SUBMITTALS

A. PRODUCT DATA: FOR EACH ELECTRICAL IDENTIFICATION PRODUCT INDICATED.

1.3 QUALITY ASSURANCE

A. COMPLY WITH ANSI A13.1.

1.4 COORDINATION

A. COORDINATE IDENTIFICATION NAMES, ABBREVIATIONS, COLORS, AND OTHER FEATURES WITH REQUIREMENTS IN THE CONTRACT DOCUMENTS, SHOP DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND THE OPERATION AND MAINTENANCE MANUAL, AND WITH THOSE REQUIRED BY CODES, STANDARDS, AND 29 CFR 1910.145. USE CONSISTENT DESIGNATIONS THROUGHOUT PROJECT.

PART 2 - PRODUCTS

2.1 PHOTOVOLTAIC WARNING LABELS

A. SELF-ADHESIVE, ENGRAVED, LAMINATED PHENOLIC LABEL: ADHESIVE BACKED, COLORS SHALL FOLLOW THOSE SHOWN FOR EACH LABEL ON SHEET ES0.3. MINIMUM LETTER HEIGHT SHALL BE 3/8 INCH.

B. LABELS SHALL CONFORM WITH NEC CHAPTERS 690 AND 705 SPECIFIC TO SOLAR ARRAYS AND INTERCONNECTION.

PART 3 - EXECUTION

3.1 INSTALLATION

A. VERIFY IDENTITY OF EACH ITEM BEFORE INSTALLING IDENTIFICATION PRODUCTS. COORDINATE FIRST PARAGRAPH BELOW WITH DRAWINGS.

B. LOCATION: INSTALL IDENTIFICATION MATERIALS AND DEVICES AT LOCATIONS FOR MOST CONVENIENT VIEWING WITHOUT INTERFERENCE WITH OPERATION AND MAINTENANCE OF EQUIPMENT.

C. APPLY IDENTIFICATION DEVICES TO SURFACES THAT REQUIRE FINISH AFTER COMPLETING FINISH WORK.

D. SELF-ADHESIVE IDENTIFICATION PRODUCTS: CLEAN SURFACES BEFORE APPLICATION, USING MATERIALS AND METHODS RECOMMENDED BY MANUFACTURER OF IDENTIFICATION DEVICE.

E. ATTACH NONADHESIVE SIGNS AND PLATIC LABELS WITH SCREWS AND AUXILIARY HARDWARE APPROPRIATE TO THE LOCATION AND SUBSTRATE.

END OF SECTION

⚠ WARNING

ELECTRIC SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

(1) PLACARD TO BE PLACED ON EACH INVERTER AND AC DISCONNECT SWITCH

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

(1) PLACARD TO BE PLACED NEXT TO THE DC DISCONNECT SWITCH ON EACH INVERTER.
(1) PLACARD TO BE PLACED ON EACH AC DISCONNECT SWITCH.

MAXIMUM VOLTAGE	600VDC
MAXIMUM CIRCUIT CURRENT	48.25A
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)	8.75A

(1) PLACARD TO BE PLACED ON EACH AC DISCONNECT SWITCH.

DC DISCONNECT SWITCH

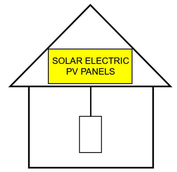
(1) PLACARD TO BE PLACED ON EACH DC DISCONNECT SWITCH.

AC DISCONNECT SWITCH

(1) PLACARD TO BE PLACED ON EACH AC DISCONNECT SWITCH.

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY



(1) PLACARD TO BE PLACED ON EACH INVERTER.

⚠ WARNING

THIS SERVICE METER IS ALSO SERVED BY A PHOTOVOLTAIC SYSTEM

(1) PLACARD TO BE PLACED AT THE SERVICE METER.

PV ARRAY
WARNING:
POWER SOURCE OUTPUT CONNNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

(1) PLACARD TO BE PLACED AT EACH CIRCUIT BREAKER INSIDE 'MDP'.

WARNING:
THIS EQUIPMENT FED BY MULTIPLE SOURCES.
TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR.

(1) PLACARD TO BE PLACED ON THE EXTERIOR OF MAIN DISTRIBUTION PANEL 'MDP'

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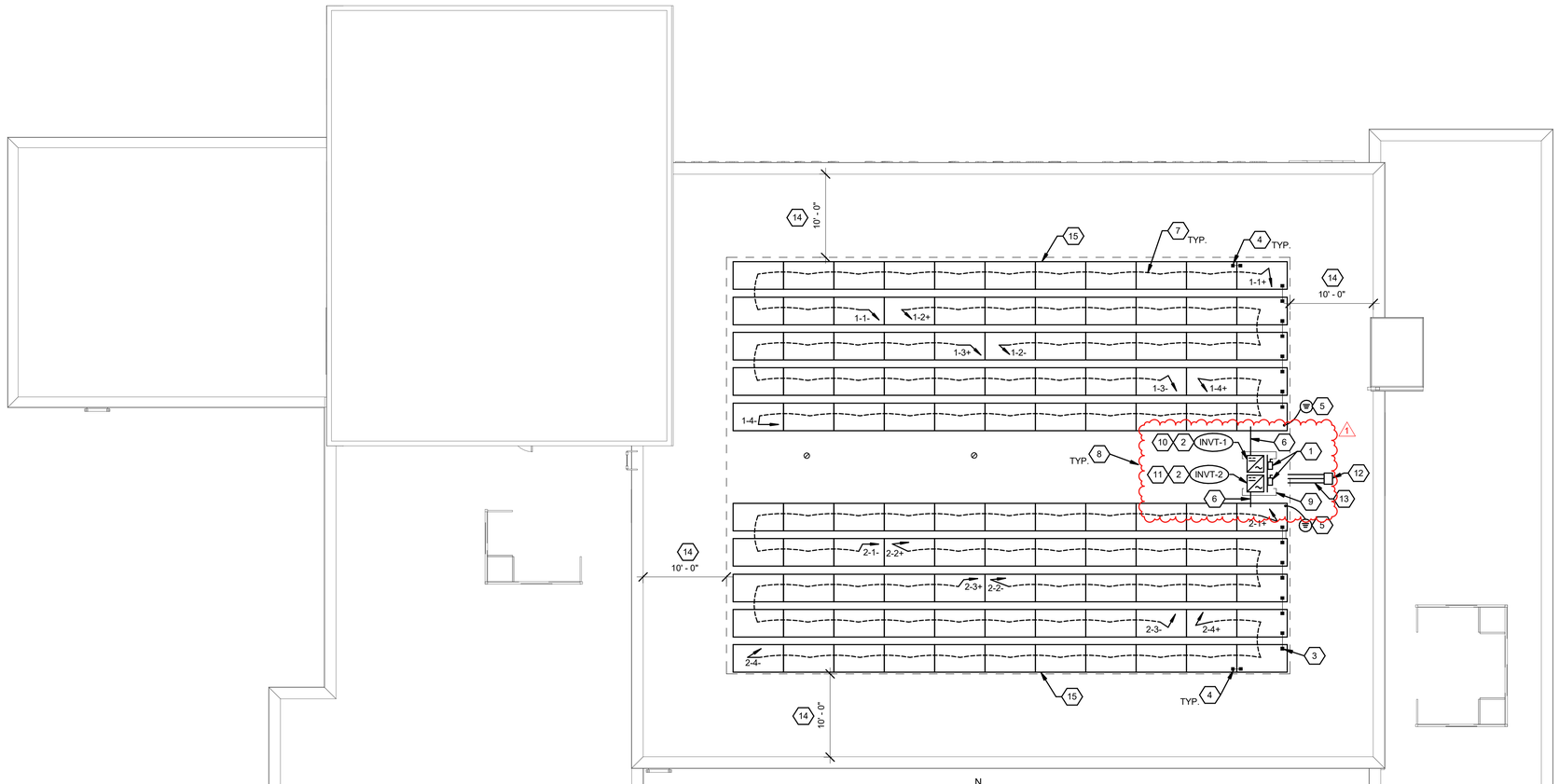


ROOF PLAN

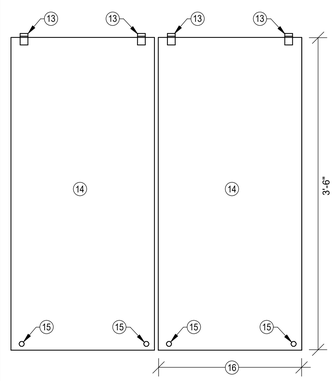
SCALE: 1/8" = 1'-0"

0 4 8 16 24 32 40

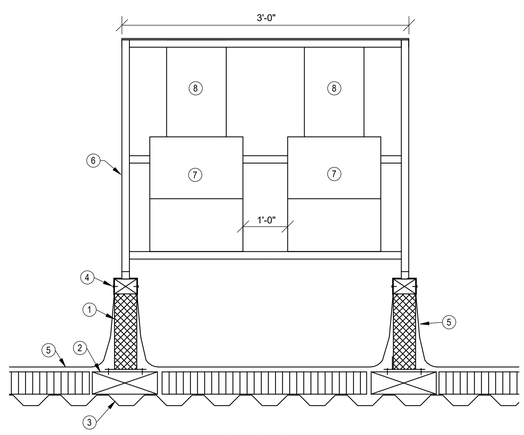
SCALE: 1/8"=1'-0"

CONSTRUCTION NOTES

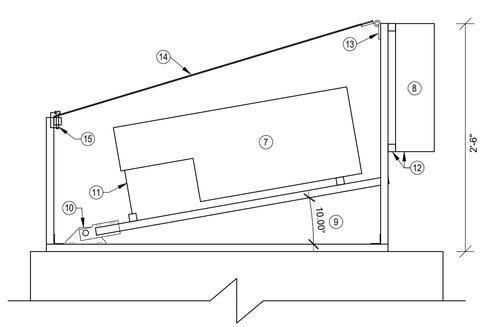
1. AC DISCONNECT SWITCH. MOUNT ON UNISTRUT FRAME.
2. INVERTER MOUNTED ON RAIL FRAME. SEE NOTE 9.
3. MODULE ROW BONDING JUMPER.
4. MODULE TO MODULE BONDING JUMPER. TYPICAL.
5. PV ARRAY GROUNDING POINT. INSTALL PER ROOF BALLASTED MOUNTING SYSTEM MANUFACTURER'S RECOMMENDATIONS.
6. 1" CONDUIT WITH 4 DC-TO-DC OPTIMIZER CIRCUITS, TOTAL 8 WIRES. CONDUIT PROVIDED FOR PROTECTION OF WIRES BETWEEN INVERTER AND ARRAY. REFER TO CONDUCTOR SCHEDULE FOR MORE INFORMATION.
7. DC-TO-DC OPTIMIZER STRING. WIRING INTEGRAL WITH OPTIMZER.
8. HVAC HEATING SYSTEM FLUE. TYPICAL.
9. PROVIDE ROOF RAIL CURB TO INSTALL INVERTERS AND AC DISCONNECT SWITCHES. SEE DETAIL, THIS SHEET. INSTALL SYSTEM CLOSE TO ARRAY 2 (SOUTH ARRAY) TO AVOID CASTING A SHADOW ON ARRAY 1.
10. MASTER INVERTER.
11. SLAVE INVERTER.
12. ROOF VAULT BY RPH MODEL #AWI-161010. SEE DETAIL 2, SHEET ES2.3.
13. AC OUTPUTS (2) AND DRY CONTACT CONDUIT FROM INVERTERS TO ROOF VALUT.
14. DASHED LINE INDICATES 10' SETBACK REQUIREMENT FOR EQUIPMENT FROM EDGE OF ROOF.
15. PLACE ROW OF MODULES INSIDE OF 10' SETBACK.



TOP VIEW



FRONT VIEW



SIDE VIEW

1. 12" ALUMINUM ROOF RAIL CURB WITH 1.5" THICK INSULATION.
2. WOOD BLOCKING.
3. ROOF DECK.
4. FASTEN COVER TO WOOD NAILER.
5. ROOFING BY OTHERS.
6. UNISTRUT FRAMING BY E.C. INVERTERS AND AC DISCONNECT SWITCHES MOUNTED TO FRAMING.
7. INVERTER.
8. AC DISCONNECT SWITCH.
9. UNISTRUT FRAMING MOUNTED AT NO LESS THAN A MINIMUM 10° INCLINE.
10. UNISTRUT PIVOT JOINT.
11. SECURE DC DISCONNECT SWITCH MOUNTING BRACKET TO UNISTRUT FRAME.
12. MOUNT AC DISCONNECT SWITCH TO UNISTRUT FRAME.
13. STAINLESS STEEL UNISTRUT HINGE. 270° OF FLEXIBILITY.
14. STAINLESS STEEL 16 GAUGE SHEET METAL COVER. MOUNT TO UNISTRUT HINGE. SHEET METAL SECTION COVERS ONE INVERTER, TWO REQUIRED.
15. STAINLESS STEEL WIRE-LOCK CLEVIS PIN. DRILL MOUNTING HOLE IN SHEET METAL, COORDINATE LOCATION WITH UNISTRUT TO LOCK METAL COVERS IN PLACE.
16. COORDINATE WIDTH OF PANEL WITH FRAME.

1 2 **RAIL CURB AND FRAMING** N.T.S.

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PANEL LAYOUT

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CONSTRUCTION NOTES

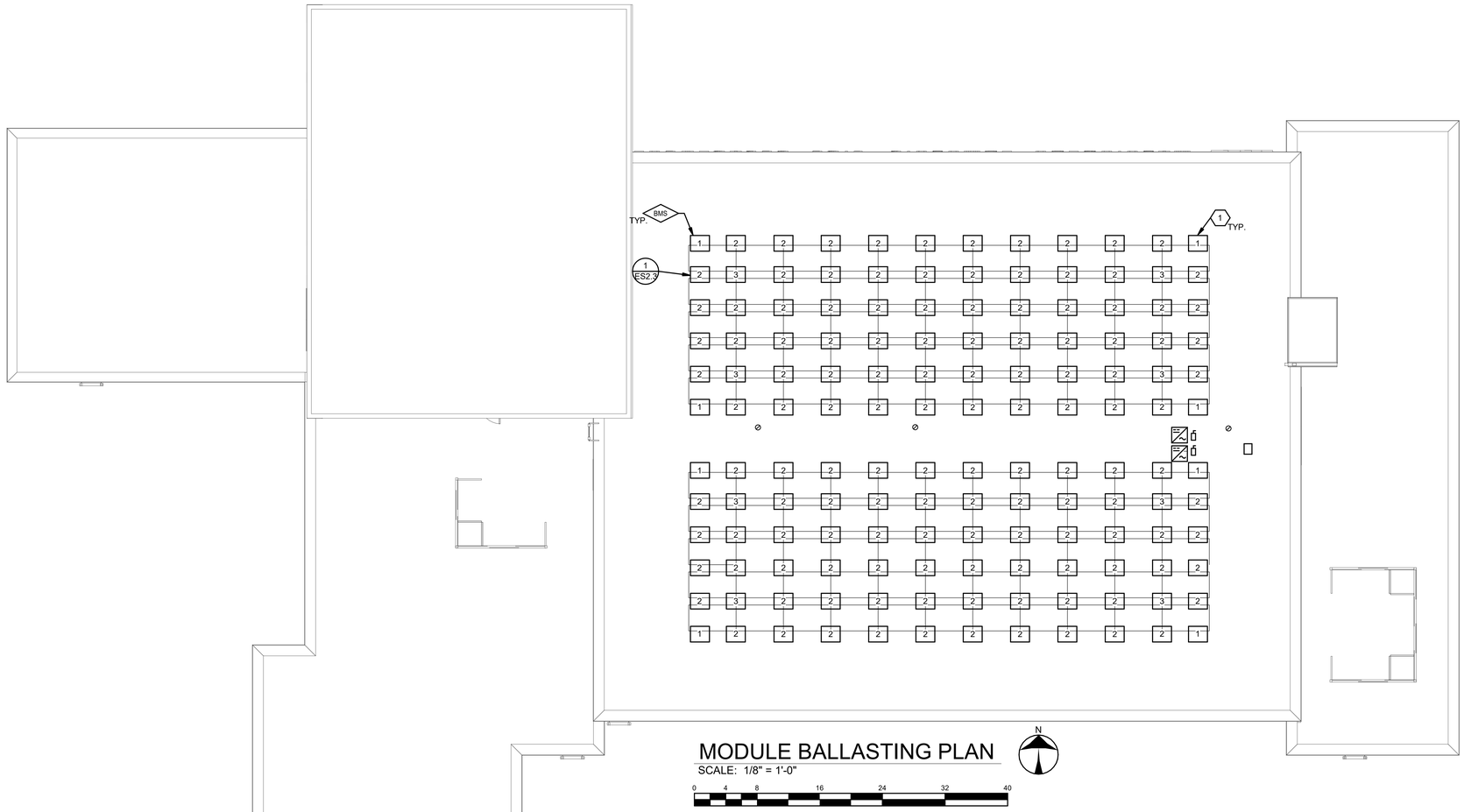
1. SOLAR MODULE BALLASTED MOUNTING UNIT. NUMBER INDICATES THE NUMBER OF BLOCKS IN A BALLASTED MOUNTING UNIT.

BALLASTED MOUNTING SYSTEM

BMS

PV MODULE BALLASTED ROOF MOUNTING SYSTEM
BASIS OF DESIGN: IRON RIDGE
MODEL: BX CHASIS
10° PV MODULE ANGLE
ALL MODULE CLAMPS, BONDING JUMPERS, GROUNDING LUGS, MLPE MOUNTING HARDWARE, AND CABLE TIES PROVIDED WITH MOUNTING SYSTEM.

ALL ANCHOR BLOCKS SHALL MEET THE FOLLOWING REQUIREMENTS:
- 16"L / 8"W / 4" H.
- 32-34 LBS
- MEETS ASTM C 1884 & ASTM C 1262

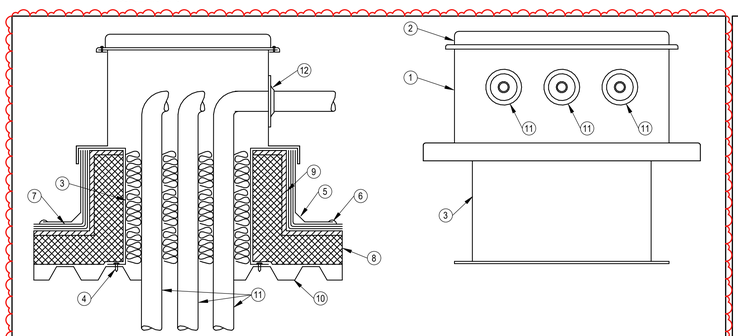


MODULE BALLASTING PLAN

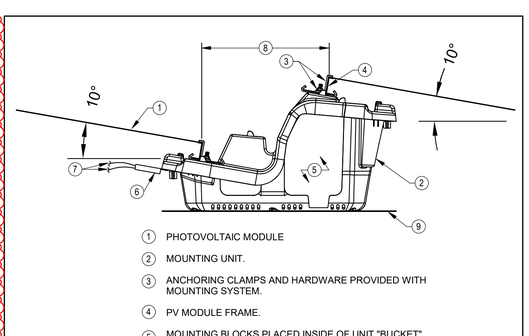
SCALE: 1/8" = 1'-0"

0 4 8 16 24 32 40

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



2 **ROOF PENETRATION HOUSING**
N.T.S.



1 **BALLASTED ROOF MOUNTING SYSTEM**
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