Department of Licensing and Regulatory Affairs

1st Floor Ottawa Building
611 W. Ottawa Street
Lansing, MI 48933

Final Report - Approved

Application Number: PR2023BCC-002591

Report Date: 03/29/2024
Description : New one-story with a penthouse addition to existing structure for commercial kitchen and dining space. Addition totals 11,124 square feet and includes plumbing, HVAC, electrical, food service equipment, communications and IT, and associated site work for new construction.
Address : 8303 PLATT RD, SALINE, MI, 48176
Record Type : Bureau of Construction Codes Plan Review Application
Document Filename : 491.20167.SDW CFP - Create Kitchen - Bid and Construction Set_Sealed.pdf

Reviewer Contact Information:

Reviewer Name	Reviewer Email	Reviewer Phone
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Daniel Morris	MorrisD9@michigan.gov	517-927-9734

General Comments

Markups for this Approved Document or Plan

Comment ID	Page Ref	Reviewer : Department	Review Comments
20	1	Brian Hamilton : Building	PLEASE NOTE: This is a CONDITIONAL AND PARTIAL approval. Final approval is subject to your State of Michigan assigned Building Inspectors determination pending final inspection. Any issue found to be non-compliant may be written as a violation. Provide a Temporary Egress Exit Plan to be approved by your State Building Inspector PRIOR to commencement of work. This plan shall include the alternate egress exit travel path's and their distances for use WHILE THE BUILDING IS UNDER CONSTRUCTION. -CONTACT YOUR ASSIGNED BUILDING INSPECTOR FOR A WALK THROUGH TO OBTAIN HIS APPROVAL. - MBC2015, 1001.2 - Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the minimum width or required capacity of the means of egress to less than required by this code. - MBC2015, 3310.2 - Maintenance of means of egress. Required means of egress shall be MAINTAINED AT ALL TIMES during construction, demolition, remodeling or alterations and additions to any building.

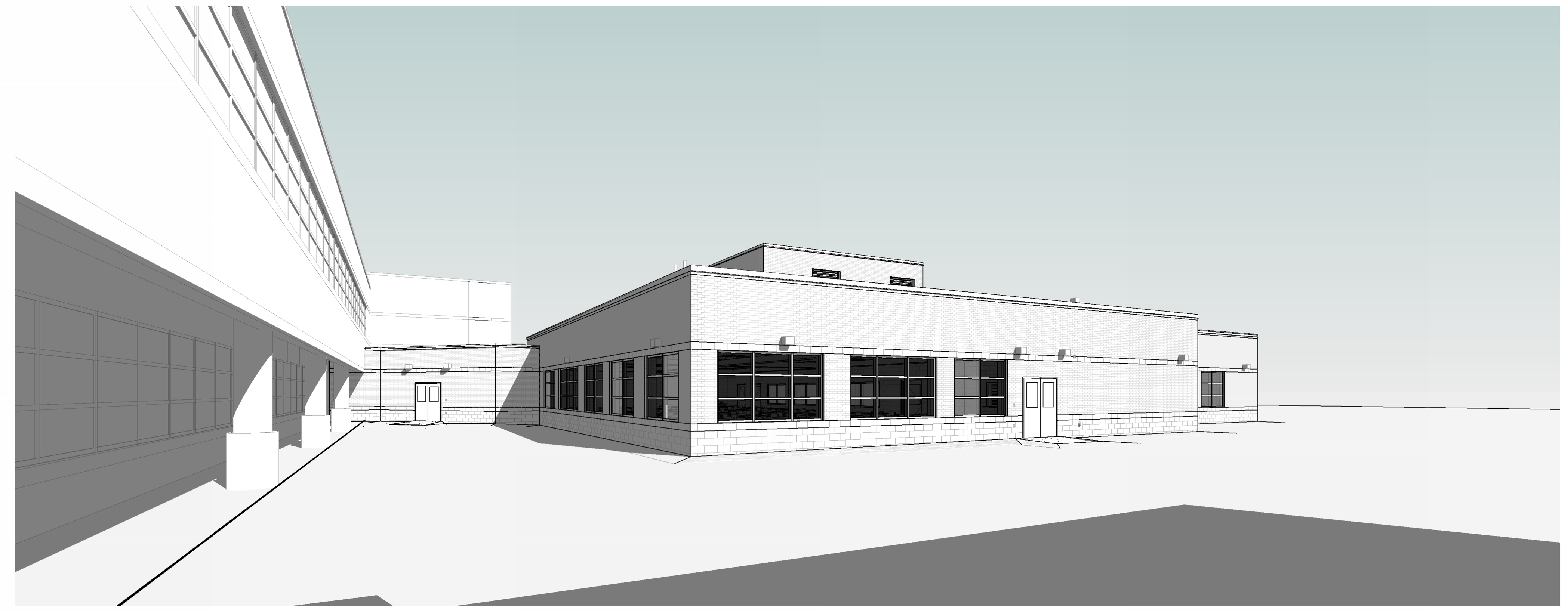
Comment ID	Page Ref	Reviewer : Department	Review Comments
21	1	Brian Hamilton : Building	- The applicant of this submittal is responsible for the submission of F.P.S. Shop Drawings. Certificates of Occupancy shall not be issued without approved F.P.S. drawings unless otherwise determined by your assigned Building Inspector. - MBC2015, 107.2.2 - Fire protection system shop drawings. Shop drawings for the fire protection system(s) shall be submitted to indicate conformance to this code and the construction documents and shall be approved prior to the start of system installation. - MBC2015, 3312.1 - Completion before occupancy. In buildings where an automatic sprinkler system is required by this code, it shall be unlawful to occupy any portion of a building or structure until the automatic sprinkler system installation has been tested and approved, except as provided in Section 111.3.
22	1	Brian Hamilton : Building	- MBC2015, - 714.1.1 Ducts and air transfer openings. Penetrations of fire-resistance-rated walls by ducts that are not protected with dampers shall comply with Sections 714.2 through 714.3.3. Penetrations of horizontal assemblies not protected with a shaft as permitted by Section 717.6, and not required to be protected with fire dampers by other sections of this code, shall comply with Sections 714.4 through 714.5.2. Ducts and air transfer openings that are protected with dampers shall comply with Section 717.
5	70	Neil Pline : Electrical	NEC, Section 250.52(A)(3) - The foundation reinforcing steel, a concrete-encased electrode, is required to be connected to the building grounding electrode system for all new construction. This requirement also applies to building additions unless it can be shown that there is an existing electrode of this type currently installed and connected in a proper manner.
3	71	Neil Pline : Electrical	NEC, Sections 220.16(B), 220.12, and 220.14 - All additions and changes shall not overload existing circuits, panels, or the total service.
4	72	Neil Pline : Electrical	NEC, Section 210.8(B) - Other than dwelling units Ground-fault circuit-interrupter protection is required at all single-phase receptacles rated 150 volts to ground or less, 50 amperes or less and three-phase receptacles rated 150 volts to ground or less, 100 amperes or less installed in kitchens.
24	40	Daniel Morris : Mechanical	IFGC, 404.20 - Before any system of piping is put in service or concealed; it shall be tested to ensure that it is gas tight. Testing, inspection and purging of piping systems shall comply with Section 406.
25	42	Daniel Morris : Mechanical	MMC, Section 1204.2 - Required thickness. Hydronic piping shall be insulated to the thickness required by the International Energy Conservation Code.
26	42	Daniel Morris : Mechanical	MMC, Section 1208.1 - General. Hydronic piping systems shall be tested hydrostatically at one and one-half times the maximum system design pressure, but not less than 100 psi (689 kPa). The duration of each test shall be not less than 15 minutes.
17	54	Daniel Morris : Mechanical	MMC, Section 508.1.1 - Makeup air temperature. The temperature differential between makeup air and the air in the conditioned space shall not exceed 10°F (6°C) except where the added heating and cooling loads of the makeup air do not exceed the capacity of the HVAC system.
18	54	Daniel Morris : Mechanical	MMC, Section 508.1.2 - Air balance. Design plans for a facility with a commercial kitchen ventilation system shall include a schedule or diagram indicating the design outdoor air balance.
19	54	Daniel Morris : Mechanical	MMC, Section 106.3.1 - Provide detailed drawings of kitchen hood showing setback, clearances, duct design with offsets and roof or sidewall penetration. Provide an air table and make up air design details. Fire suppression plan also to be submitted if required per hood type.
14	39	Allon Robbins : Plumbing	MPC, Section 308.6 - Where horizontal pipes 4 inches (102 mm) and larger convey drainage or waste, and where a pipe fitting in that piping changes the flow direction greater than 45 degrees (0.79 rad), rigid bracing or other rigid support arrangements shall be installed to resist movement of the upstream pipe in the direction of pipe flow. A change of flow direction into a vertical pipe shall not require the upstream pipe to be braced.
15	47	Allon Robbins : Plumbing	MPC, Section 701.8 - Direct connection of a steam exhaust, blow off, or drip pipe, shall not be made with the building drainage system. Wastewater where discharged into the building drainage system shall be at a temperature not greater than 140° F (60° C). Where higher temperatures exist, approved cooling methods shall be provided.

Comment ID	Page Ref	Reviewer : Department	Review Comments
16	47	Allon Robbins : Plumbing	MPC, Section 607.1 - 1) In nonresidential occupancies, hot water or tempered water shall be supplied for bathing and washing purposes. Tempered water shall be supplied through a water temperature limiting device that conforms to ASSE 1070 and shall limit the tempered water to a maximum of 110°F (43°C). This provision does not supersede the requirement for protective shower valves in accordance with Section 412.3 of the code. 2) Tempered water shall be supplied to bathing and hand washing facilities in the occupancies identified in the following by individual water temperature limiting devices to individual fixtures: a. Elementary Schools. b. Child Care Centers. c. Day Care Centers. d. Nurseries. e. Adult group homes. f. Adult congregate homes. g. Children's camps. h. At accessible plumbing fixtures.

491/20167.SDW - PHASE 500:

CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN

SALINE, MICHIGAN



BUILDING
These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

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MT. PLEASANT, MICHIGAN 48858
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FOOD SERVICE:
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PHONE: (616) 863-8132

INDEX OF DRAWINGS:

STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER — Alexander Jeremy Tempie — License No. 6201063593

Structural
September 18, 2023
MAI #2021-1530
JEREMIAH ANDRE GOURD NO. 52415

STATE OF MICHIGAN — DENNIS P. SCZOMAK ENGINEER No. 6201036881

STATE OF MICHIGAN — MYRON SCOTT GIBBS ENGINEER No. 6201061469

MECHANICAL
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PLUMBING
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ELECTRICAL
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NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE	CONTRACT NO.
171CODHHS7255	Y22003

STATE OF MICHIGAN — JASON GOFF ARCHITECT No. 1301064623 — LICENSED ARCHITECT

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
TITLE SHEET

PROJECT NUMBER	SHEET NUMBER
2021094	TS
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: C.D.S.	

STRUCTURE SYMBOLS

EXISTING CATCH BASIN IN CURB LINE
PROPOSED CATCH BASIN IN CURB LINE
EXISTING CATCH BASIN IN GREEN SPACE
PROPOSED CATCH BASIN IN GREEN SPACE
EXISTING STORM MANHOLE
PROPOSED STORM MANHOLE
PROPOSED CULVERT END SECTION
EXISTING HEADWALL
PROPOSED HEADWALL
EXISTING GATE VALVE AND BOX
EXISTING WATER SHUT OFF (CURB BOX)
PROPOSED GATE VALVE AND BOX
EXISTING GATE VALVE AND WELL
PROPOSED GATE VALVE AND WELL
EXISTING SPRINKLER HEAD
EXISTING WATER WELL
EXISTING FIRE HYDRANT
PROPOSED FIRE HYDRANT
PROPOSED WATER MAIN FITTINGS
EXISTING CLEAN OUT
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
EXISTING MONITORING WELL

EXISTING TOPOGRAPHICAL SYMBOLS

SIGN
STREET SIGN
END OF PIPE
SWAMP OR WETLAND
DECIDUOUS TREE
CONIFEROUS TREE
TREE STUMP
MAIL BOX
SOIL BORING
ROCK
METAL POST
BUMPER BLOCK

UTILITY SYMBOLS

UTILITY POLE
GUY ANCHOR CABLE
LIGHT POLE / ORNAMENTAL LIGHT
POWER LIGHT POLE
TELEPHONE MANHOLE
UNDERGROUND GAS LINE MARKER
GAS RISER
GAS VENT
GAS VALVE
RAILROAD SIGNAL
METAL LIGHT POLE
OUTLET
CIRCUIT BREAKER PANEL
ELECTRICAL TRANSFORMER PAD
ELECTRICAL TRANSFORMER RISER
ELECTRIC METER
TELEPHONE PEDESTAL / RISER
TRAFFIC SIGNAL ON POLE
PHONE BOOTH / PAY PHONE

SURVEY SYMBOLS

MONUMENT
BENCHMARK
TRAVERSE POINT
SECTION CORNER
FOUND SURVEY MONUMENTATION

MISCELLANEOUS SYMBOLS

EXISTING STORM SEWER STRUCTURE NUMBER
EXISTING SANITARY SEWER STRUCTURE NUMBER
PROPOSED STORM SEWER STRUCTURE NUMBER
PROPOSED SANITARY SEWER STRUCTURE NUMBER
FLOW DIRECTION
EXISTING RIP-RAP
PROPOSED RIP-RAP

CAUTION SYMBOLS

••CAUTION•• HAZARDOUS FLAMMABLE MATERIAL UNDERGROUND	USED WITH UNDERGROUND GAS & ELECTRICAL LINES
••CAUTION•• FIBER OPTIC	USED WITH FIBER OPTICS LINES

PLAN VIEW LINE TYPES

EXISTING STORM SEWER
EXISTING CULVERT
PROPOSED STORM SEWER LESS THAN 24"
PROPOSED STORM SEWER 24" AND GREATER
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
EXISTING WATER MAIN
PROPOSED WATER MAIN
SECTION LINE
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EASEMENT
EXISTING CENTER LINE DITCH
PROPOSED DITCH CENTERLINE
EXISTING CENTER LINE ROADWAY
PARCEL LINE / LOT LINE
EXISTING OVERHEAD UTILITIES
UNDERGROUND ELECTRICAL LINE
GAS LINE OR PETROLEUM PIPELINE
UNDERGROUND TELEPHONE LINE
UNDERGROUND CABLE TV LINE
UNDERGROUND FIBER OPTIC
PROJECT CONTROL LINE
TREE LINE
BRUSH LINE
EXISTING FENCE
PROPOSED FENCE
EXISTING GUARD RAIL
PROPOSED SLOPE STAKE LINE
PROPOSED SILT FENCE

TOPOGRAPHY

EXISTING CONTOURS MAJOR
EXISTING CONTOURS MINOR
PROPOSED CONTOUR MAJOR
PROPOSED CONTOURS MINOR

PARCEL INFORMATION

401-069	PARCEL/TAX IDENTIFICATION NUMBER
#5324	ADDRESS/BUSINESS NAME

PAVEMENT IDENTIFICATION

EXISTING CURB AND GUTTER

HATCHING LEGEND

REMOVE PAVEMENT
REMOVE SIDEWALK
PROPOSED CONCRETE SIDEWALK
PROPOSED CONCRETE PAVEMENT
PROPOSED HMA PAVEMENT
SAND BACKFILL (PROFILE)

PROPOSED CALLOUTS

TOPO CALLOUTS	PLAN VIEW	
ADJ	ADJ	ADJUST STRUCTURE
ADJ-X	ADJ-X	ADJUST STRUCTURE W/ NEW COVER
ADJ-B/O	ADJ-B/O	ADJUST STRUCTURE BY OTHERS
REC	REC	RECONSTRUCT STRUCTURE
REL	REL	RELOCATE
REL-B/O	REL-B/O	RELOCATE BY OTHERS
REM	R	REMOVE
R&R	R&R	REMOVE AND REPLACE
SALV	SALV	SALVAGE
SAVE	S	SAVE
ABN	A	ABANDON
CLR	C	CLEARING
	B	BULKHEAD
	SR-F	SIDEWALK RAMP TYPE
	6	SOIL EROSION CONTROL MEASURE

BUILDING
These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

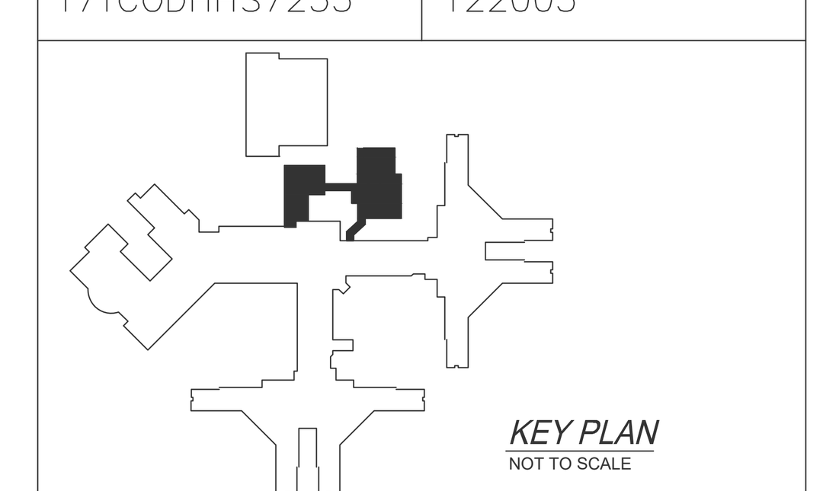
STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER
Alexander Jeremy Temple
License No. 6201063933

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICE ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, DIRECTOR

FILE NO. 491/20167.SDW

FUNDING CODE 171CODHHS7255
CONTRACT NO. Y22003



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ROWE PROFESSIONAL SERVICES COMPANY

PROJECT TITLE
491/20167.SDW CFP – PHASE 500
CENTER FOR FORENSIC PSYCHIATRY – CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
CIVIL LEGEND

PROJECT NUMBER 2021094
PROJECT DATE SEPTEMBER 6, 2023
CHECKED BY A.J.T.
SHEET NUMBER C1.01

GENERAL CONSTRUCTION NOTES

EMERGENCY CONTACTS
BEFORE BEGINNING WORK ON THE PROJECT, THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH THE NAMES AND TELEPHONE NUMBERS OF EMERGENCY CONTACTS. AT LEAST ONE PERSON REPRESENTING THE CONTRACTOR SHALL BE AVAILABLE TO RESPOND TO EMERGENCIES THROUGHOUT THE LIFE OF THE PROJECT, 24 HOURS A DAY, 7 DAYS A WEEK.

UNDERGROUND UTILITY IDENTIFICATION AND LOCATION
CONTRACTOR TO COMPLETE GROUND PENETRATING RADAR WITHIN CONSTRUCTION LIMITS TO DETERMINE THE EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO BEGINNING EXCAVATION.

PUBLIC UTILITIES
EXISTING UTILITIES ARE SHOWN BASED UPON RECORDS AND LOCATIONS PROVIDED BY UTILITY AGENCIES. THE INFORMATION SHOWN IS CONSIDERED APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR. UNLESS THE PLANS SPECIFICALLY SHOW THAT EXISTING UTILITIES ARE TO BE MOVED, THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN EXISTING UTILITIES.

VERIFICATION OF UNDERGROUND UTILITIES
THE CONTRACTOR SHALL EXCAVATE AND LOCATE ALL EXISTING UTILITIES IN THE PROJECT AREA IN ADVANCE OF CONSTRUCTION TO VERIFY THEIR ACTUAL LOCATION. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL MAKE SUCH CHANGES TO GRADE AND ALIGNMENT OF PROPOSED WORK AS DIRECTED BY THE ENGINEER TO AVOID CONFLICTS, AT NO INCREASE IN COST TO THE OWNER.

UTILITY SERVICE
UNLESS SPECIFICALLY PROVIDED OTHERWISE IN THE CONTRACT DOCUMENTS, ALL EXISTING UTILITIES ARE TO REMAIN IN SERVICE DURING THE PROJECT.

PRIVATE IRRIGATION SYSTEMS
THE CONTRACTOR SHALL COORDINATE WITH THE FACILITY TO DETERMINE THE LOCATION OF THE IRRIGATION SYSTEM PRIOR TO THE START OF CONSTRUCTION. THE SYSTEM IS TO BE REVISED TO ACCOMMODATE PROPOSED SITE WORK.

SOIL BORINGS / PAVEMENT CORES
IF PROVIDED ON THE PLANS OR IN THE CONTRACT DOCUMENTS, LOGS OF SOIL BORINGS OR PAVEMENT CORES REPRESENT THE SUBSURFACE CONDITIONS ENCOUNTERED AT SPECIFIC POINTS. THE INFORMATION IS PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY.

MAINTAINING TRAFFIC
LOCAL AND EMERGENCY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES WITHIN THE PROJECT AREA.

WHEN EXCAVATION, FRESH CONCRETE, OR OTHER CONSTRUCTION WORK WILL RESULT IN THE CLOSURE OF A STREET OR DRIVEWAY FOR A PERIOD OF TIME, THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL AFFECTED RESIDENTS AND BUSINESSES IN ADVANCE.

THE CONTRACTOR SHALL NOTIFY EMERGENCY RESPONSE AGENCIES IN ADVANCE OF ROAD CLOSURES OR THE ESTABLISHMENT OF DETOURS.

SCHEDULE
THE CONTRACTOR SHALL COMPLETE ALL WORK IN AN EXPEDITIOUS MANNER AND SHALL NOT STOP WORK ON THE PROJECT ONCE BEGUN.

ALIGNMENT
ALIGNMENT AND GRADES FOR CURB AND GUTTER (INCLUDING THROUGH RAMPS AND DRIVEWAY OPENINGS) SHOWN ON THE PLANS ARE FOR THE TOP, BACK OF CURB, UNLESS SPECIFICALLY SHOWN OTHERWISE ON THE PLANS.

THE HORIZONTAL ALIGNMENT SHOWN ON THE DRAWINGS FOR DRAINAGE STRUCTURES LOCATED IN THE CURB LINE IS TO THE CENTER OF THE CASTING.

THE HORIZONTAL ALIGNMENT SHOWN ON THE DRAWINGS FOR DRAINAGE STRUCTURES WHICH ARE NOT IN THE CURB LINE AND FOR MANHOLES IS TO THE CENTER OF THE STRUCTURE.

WHERE RIM ELEVATIONS ARE PROVIDED ON THE PLANS FOR MANHOLE CASTINGS, THE ELEVATION PROVIDED IS FOR THE TOP OF THE CASTING.

WHERE RIM ELEVATIONS ARE PROVIDED FOR INLET TYPE CASTINGS, THE ELEVATIONS ARE PROVIDED AS FOLLOWS:
- CURB INLETS – THE ELEVATION OF THE TOP OF CURB
- ALL OTHER INLETS – THE ELEVATION OF THE FLOW LINE

WHERE RIM ELEVATIONS ARE PROVIDED ON THE PLANS FOR INLETS OR MANHOLE CASTINGS, THE ELEVATIONS PROVIDED ARE CONSIDERED PRELIMINARY. THE CONTRACTOR SHALL MAKE THE FINAL ADJUSTMENT FOLLOWING THE ESTABLISHMENT OF ACTUAL GRADING AND PAVEMENT ELEVATIONS.

CONSTRUCTION STAKING
WHEN CONSTRUCTION STAKING IS TO BE PROVIDED BY THE ENGINEER OR OWNER, THE CONTRACTOR SHALL REQUEST STAKING AT LEAST THREE WORKING DAYS IN ADVANCE.

WHEN CONSTRUCTION STAKING IS TO BE PROVIDED BY THE ENGINEER OR OWNER, STAKING WILL BE PROVIDED ONE TIME. THE CONTRACTOR SHALL PROTECT AND PRESERVE SURVEY CONTROL AND STAKING. RE-STAKING WILL BE AT THE CONTRACTOR'S EXPENSE.

SURVEY CORNERS, BENCHMARKS, AND CONTROL POINTS
THE CONTRACTOR SHALL PRESERVE ALL GOVERNMENT CORNERS, PROPERTY CORNERS, BENCHMARKS, SURVEY CONTROL POINTS AND OTHER SURVEY POINTS WITHIN THE PROJECT AREA. WHERE CORNERS, BENCHMARKS, OR SURVEY POINTS ARE ENCOUNTERED WHICH WILL BE DISTURBED BY THE CONTRACTOR'S ACTIVITIES; A LICENSED SURVEYOR SHALL WITNESS THE POINT BEFORE DISTURBANCE AND SHALL RE-SET THE POINT FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PAY THE SURVEYOR TO WITNESS AND TO RE-SET THE POINTS.

PROTECTION OF TREES, SHRUBS, AND LANDSCAPING
ALL TREES, SHRUBS, AND LANDSCAPING WITHIN THE CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED TREES, SHRUBS, AND LANDSCAPING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION SIGNING AND BARRICADING
THE CONTRACTOR SHALL PROTECT HAZARDOUS AREAS WITH BARRICADES. BARRICADES LEFT IN PLACE AFTER SUNSET SHALL BE LIGHTED.

THE CONTRACTOR SHALL PROVIDE SUITABLE SANDBAGS OR OTHER SUITABLE MEASURES FOR ANCHORING OF TEMPORARY SIGNS AND BARRICADES, TO PREVENT THEIR TIPPING OR DISPLACEMENT BY WIND OR AIR FLOW FROM VEHICLES.

THE CONTRACTOR SHALL PROVIDE SIGNING, BARRICADES, TRAFFIC REGULATORS, CONES, AND OTHER TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER STREETS OR ROADS IN THE PROJECT AREA, THE CURRENT MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL COVER OR REMOVE TEMPORARY SIGNS DURING PERIODS WHEN THEY ARE NOT APPROPRIATE.

TURF ESTABLISHMENT
ALL DISTURBED AREAS WHICH ARE NOT TO BE SURFACED WITH PAVEMENT, AGGREGATE OR OTHER APPROVED SURFACES SHALL BE ESTABLISHED WITH TURF.

TURF AREAS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE.

DISTURBED AREAS SHALL BE SURFACED WITH FOUR INCHES OF SCREENED TOPSOIL.

THE CONTRACTOR IS RESPONSIBLE TO ESTABLISH TURF WHICH IS SUBSTANTIALLY FREE OF BARE SPOTS AND FREE OF WEEDS. THE GROUND SURFACE IN TURF AREAS SHALL BE SMOOTH AND PROVIDE A NATURAL TRANSITION TO ADJACENT, UNDISTURBED AREAS.

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE WATERING, WEEDING, RESEEDING, AND REWORKING AS NECESSARY TO ESTABLISH TURF AREAS TO THE REQUIRED STANDARD.

ADA COMPLIANCE
ALL PROPOSED CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA), AND APPLICABLE GUIDELINES OR STANDARDS. WHERE EXISTING CONDITIONS AND/OR THE REQUIREMENTS OF THE PLANS WILL RESULT IN FINISHED CONDITIONS THAT DO NOT MEET THE ADA REQUIREMENTS, GUIDELINES, OR STANDARDS; THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO REMOVE AND REPLACE WORK DETERMINED TO BE NOT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS, GUIDELINES, OR STANDARDS.

EARTHWORK
THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF THE EARTHWORK QUANTITIES, AND BASE HIS BID ON HIS DETERMINATION OF THE QUANTITIES OF WORK REQUIRED.

IF ADDITIONAL FILL MATERIAL MUST BE PROVIDED TO ATTAIN THE FINISH GRADES SHOWN ON THE PLANS, THE CONTRACTOR SHALL PROVIDE THE REQUIRED FILL MATERIAL, UNLESS A SPECIFIC BORROW AREA IS IDENTIFIED ON THE PLANS.

EXCESS SOILS RESULTING FROM EXCAVATION AND EARTHWORK SHALL BECOME THE CONTRACTOR'S PROPERTY AND DISPOSED OF PROPERLY, UNLESS AN AREA(S) HAS BEEN DESIGNATED FOR STOCKPILING OR "BLENDING IN" THE EXCESS MATERIAL WITHIN THE PROJECT LIMITS.

BACKFILL AND EMBANKMENT
BACKFILL OF AN EXCAVATION UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE, SHALL BE SAND, MEETING THE REQUIREMENTS OF GRANULAR MATERIAL CLASS III AS DESCRIBED IN THE CURRENT MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE SAND BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

BACKFILL OF AN EXCAVATION WHICH IS NOT UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE MAY BE SUITABLE EXCAVATED MATERIAL OR OTHER SOIL, WHICH IS FREE OF ORGANIC MATTER, STONES AND ROCKS, ROOTS, BROKEN CONCRETE, FROZEN MATERIAL, OR DEBRIS. THE BACKFILL SHALL BE COMPACTED TO AT LEAST 90% OF ITS MAXIMUM UNIT WEIGHT.

THE CONTRACTOR SHALL INDICATE THE SOURCE OF SAND USED FOR BACKFILL TO THE ENGINEER, AND PROVIDE THE ENGINEER WITH THE RESULTS OF A GRADATION TEST PERFORMED ON A SAMPLE OF THE SAND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF USING SAND FROM OTHER SOURCES.

EMBANKMENT USED TO BUILD THE SUBGRADE TO REQUIRED ELEVATION SHALL BE SUITABLE SOIL EXCAVATED FROM THE PROJECT SITE, OR FURNISHED BY THE CONTRACTOR FROM OTHER SOURCES. SUITABLE SOIL IS FREE FROM ORGANIC MATTER, ROCKS AND STONES, FROZEN MATERIAL, BROKEN CONCRETE, AND DEBRIS.

EMBANKMENT CONSTRUCTED OF GRANULAR SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 10 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

EMBANKMENT CONSTRUCTED OF COHESIVE SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 10 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

DENSITY TESTING
THE MAXIMUM UNIT WEIGHT OF SAND AND OTHER GRANULAR SOILS WILL BE DETERMINED BY THE ONE POINT CONE TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

THE MAXIMUM UNIT WEIGHT OF COHESIVE SOILS WILL BE DETERMINED BY THE ONE POINT PROCTOR TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

DRAINAGE
THE CONTRACTOR SHALL MAINTAIN DRAINAGE OF THE PROJECT AREA AND ADJACENT AREAS. WHERE EXISTING DRAINAGE FACILITIES ARE DISTURBED OR BLOCKED BY CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY PROVISIONS FOR DRAINAGE.

WHERE CONSTRUCTION HAS DISTURBED EXISTING DITCHES, SWALES, OR OTHER DRAINAGE FACILITIES; THE CONTRACTOR SHALL RESTORE THEM TO THEIR GRADES AND DIMENSIONS WHICH EXISTED PRIOR TO THE BEGINNING OF CONSTRUCTION, UNLESS DIRECTED OTHERWISE.

DRAINAGE SHALL NOT BE REROUTED ONTO ADJACENT PROPERTIES NOR ALLOWED TO DRAIN ONTO ADJACENT PROPERTIES AT AN INCREASED RATE, AS A RESULT OF THE CONTRACTOR'S WORK.

SIDEWALK CONSTRUCTION
SIDEWALKS SHALL BE CONSTRUCTED TO PROVIDE POSITIVE DRAINAGE OF THE SIDEWALK AND ADJACENT SURFACES.

EXCEPT WHERE NECESSARY TO PROVIDE POSITIVE DRAINAGE OR MEET EXISTING SURFACES, SIDEWALK SHALL BE CONSTRUCTED WITH A CROSS SLOPE SLOPED TOWARD THE STREET.

SIDEWALK CROSS SLOPES SHALL NOT EXCEED 2%

IN TURF AREAS, THE SURFACE OF THE SIDEWALK SHALL BE ABOUT 1/4 INCH HIGHER THAN THE ADJACENT GROUND SURFACES, EXCEPT WHERE NECESSARY TO PROVIDE POSITIVE DRAINAGE OR MEET EXISTING SIDEWALKS, CURBS, OR PAVEMENTS.

SIDEWALK SHALL BE CONSTRUCTED ON A SAND BASE, COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN SIDEWALK FORMS HAVE BEEN SET AND THE SAND BASE PREPARED. CONCRETE SHALL NOT BE PLACED UNTIL THE ENGINEER HAS OBSERVED THE FORMS. CONCRETE DELIVERY SHALL BE SCHEDULED TO ALLOW SUFFICIENT TIME FOR ADJUSTMENT OF THE FORMS, IN THE EVENT THAT ADJUSTMENT IS NECESSARY.

THE CONTRACTOR SHALL PROTECT FRESH CONCRETE FROM DAMAGE BY THE WEATHER, TRAFFIC, OR VANDALISM. DAMAGED CONCRETE SHALL BE REPLACED BY THE CONTRACTOR'S EXPENSE.

STORM SEWER CONSTRUCTION NOTES
DRAINAGE STRUCTURES SHALL BE CONSTRUCTED FROM PRECAST CONCRETE MANHOLE SECTIONS, MEETING ASTM C478.

SUMPS IN DRAINAGE STRUCTURES AND PIPELINES SHALL BE FREE OF SEDIMENT AND DEBRIS AT THE TIME OF ACCEPTANCE BY THE OWNER.

ROAD PROJECTS
ADJUSTING STRUCTURES
WHERE CASTINGS FOR MANHOLES, CATCH BASINS, INLETS, VALVE BOXES, AND MONUMENT BOXES ARE TO BE ADJUSTED TO MEET A NEW PAVEMENT SURFACE ELEVATION, THE FINAL ADJUSTMENT SHALL NOT BE COMPLETED UNTIL ALL PAVEMENT COURSES HAVE BEEN PLACED EXCEPT THE FINAL COURSE. THE FINAL ADJUSTMENT SHALL BE COMPLETED JUST PRIOR TO PLACEMENT OF THE FINAL COURSE OF PAVEMENT.

THE MATERIALS AND PROCEDURES FOR ADJUSTING STRUCTURES SHALL MEET THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION OVER THE ROAD AND UTILITIES.

SUBGRADE PREPARATION
TOPSOIL, PEAT, AND ORGANIC MATERIAL SHALL BE EXCAVATED AND REMOVED.

SOFT AND YIELDING SOILS SHALL BE REMOVED OR DRIED IF THE RESULT OF EXCESSIVE MOISTURE CONTENT.

PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENT ON A SUBGRADE; THE SUBGRADE SHALL BE PROOF-ROLLED TO DETERMINE THE SUITABILITY OF THE SUBGRADE. THE CONTRACTOR SHALL DRIVE A HEAVY PIECE OF WHEELED CONSTRUCTION EQUIPMENT OVER THE SUBGRADE WHILE THE ENGINEER IS OBSERVING. THE CONSTRUCTION OF FILLS, SUBBASE, OR PAVEMENTS SHALL NOT PROCEED UNTIL THE SUBGRADE HAS BEEN DEMONSTRATED TO BE FREE OF SOFT AREAS.

THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE MOISTURE CONTENT OF SUBGRADE SOILS WITHIN A SUITABLE RANGE TO ALLOW FOR COMPACTION TO THE REQUIRED DENSITY. WHEN THE SOIL IS TOO DRY, THE CONTRACTOR SHALL ADD WATER. WHEN THE SOIL IS TOO WET, THE CONTRACTOR SHALL PROVIDE DRAINAGE OR AERATE THE SOIL.

THE SURFACE OF THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT, PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENTS.

HOT MIX ASPHALT (HMA) PAVING
PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE SHALL BE SWEPT TO REMOVE ALL DIRT AND DEBRIS.

A BITUMINOUS BOND COAT SHALL BE APPLIED TO PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE AND ALLOWED TO CURE PRIOR TO CONSTRUCTING THE NEW PAVEMENT COURSE.

HMA PAVEMENT SHALL NOT BE PLACED WHEN THE SURFACE BEING OVERLAID IS WET, OR WHEN RAIN IS FORECAST OR THREATENING.

DRIVEWAY CONSTRUCTION
DRIVEWAY SLOPES SHALL NOT EXCEED 10%, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE ON THE PLANS OR DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS WITH SUITABLE NOTICE BEFORE REMOVING AND REPLACING AN EXISTING DRIVEWAY.

WATER MAIN CONSTRUCTION NOTES
HYDRANTS, VALVES, AND OTHER MATERIALS SHALL MEET THE OWNER'S STANDARDS, WITH REGARD TO MANUFACTURER AND MODEL, AND DETAILS SUCH AS OPENING DIRECTION, HYDRANT COLOR, HYDRANT CONFIGURATION, AND HYDRANT THREAD PATTERN.

WATER MAIN MATERIALS:	
HYDRANT	5 1/4 INCH AMERICAN FLOW CONTROL PACER OR EAST JORDAN IRON WORKS, BR5; WITH 5 1/4 INCH AMERICAN FLOW CONTROL PACER OR EAST JORDAN IRON WORKS, BR5; WITH COLOR: RED
VALVES	RESILIENT WEDGE GATE VALVES (MUELLER OR EAST JORDAN), OPENS COUNTER CLOCKWISE

NEW WATER MAIN SHALL NOT BE CONNECTED TO THE EXISTING WATER MAIN WITHOUT THE APPROVAL OF THE OWNER.

AT LEAST TEN FEET OF HORIZONTAL AND EIGHTEEN INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND SEWERS (STORM OR SANITARY).

THE DEPTH OF BURY SHOWN ON THE PLANS SHALL BE PROVIDED, AS A MINIMUM, OVER THE TOP OF THE WATER MAIN PIPE TO THE FINISHED GROUND OR PAVEMENT SURFACE. UNLESS SPECIFICALLY DIRECTED OTHERWISE ON THE DRAWINGS, THE DEPTH OF BURY SHOWN ON THE PLANS SHALL BE MAINTAINED BETWEEN THE BOTTOM OF DITCHES AND THE TOP OF THE PIPE.

ALL BENDS, TEES, PLUGS, HYDRANTS, VALVES, AND OTHER FITTINGS WHERE THRUST MAY OCCUR SHALL BE RESTRAINED APPROPRIATELY BY THRUST BLOCKS OR JOINT RESTRAINT.

EXISTING WATER VALVES SHALL BE OPERATED ONLY BY THE WATER DEPARTMENT'S PERSONNEL.

THE SHUTTING DOWN OF EXISTING WATER MAINS TO ALLOW FOR COMPLETING THE CONTRACTOR'S WORK SHALL BE SCHEDULED IN ADVANCE BY THE CONTRACTOR WITH THE OWNER. THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO AFFECTED WATER CUSTOMERS IN AT LEAST A DAY IN ADVANCE OF ANY SCHEDULED SERVICE DISRUPTIONS.

THE CONTRACTOR SHALL EXPOSE EXISTING MAINS TO VERIFY THE SIZE, MATERIALS, AND ANY FITTINGS NECESSARY BEFORE SHUTTING DOWN EXISTING WATER MAINS FOR NEW CONNECTIONS. ALL FITTINGS, PARTS, AND EQUIPMENT NECESSARY TO COMPLETE THE PROPOSED CONNECTIONS TO THE EXISTING MAIN SHALL BE AVAILABLE AT THE SITE BEFORE THE EXISTING MAIN IS SHUT DOWN.

THE COMPLETED WATER MAIN SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE. THE TEST PRESSURE SHALL BE 150 PSI. THE TEST DURATION SHALL BE 2 HOURS. THE CONTRACTOR SHALL CONDUCT SUCH PRELIMINARY TESTING TO EXPEL AIR AND VERIFY THAT THERE ARE NO LEAKS IN THE PIPELINE. THE TEST SHALL BE WITNESSED BY THE ENGINEER OR OWNER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR OWNER AT LEAST 24 HOURS IN ADVANCE OF THE TIME FOR TESTING.

IF THE CONTRACTOR ELECTS TO PRESSURE TEST AGAINST AN EXISTING VALVE, THE OWNER DOES NOT GUARANTEE THAT EXISTING VALVES CAN RESIST THE TEST PRESSURE. IF THE CONTRACTOR BELIEVES THAT AN EXISTING VALVE IS THE CAUSE OF A FAILED PRESSURE TEST, THE CONTRACTOR SHALL EITHER REPAIR THE VALVE AND RETEST OR TEST AGAINST A PLUG, AT THEIR EXPENSE.

UNLESS SPECIFICALLY PROVIDED OTHERWISE, THE CONTRACTOR IS RESPONSIBLE TO FURNISH WATER FOR TESTING AND DISINFECTION.

WATER FROM THE CONTRACTOR'S FLUSHING AND DISINFECTION ACTIVITIES SHALL BE DISPOSED OF TO PREVENT EROSION OR FLOODING.

THE CONTRACTOR SHALL FURNISH AND INSTALL CORPORATIONS, TAPS, PIPING, AND FITTINGS AS NECESSARY TO COMPLETE THE REQUIRED FLUSHING AND TESTING FOR ACCEPTANCE. AFTER ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL CORPORATIONS, TAPS, PIPING, AND FITTINGS USED FOR FLUSHING AND TESTING. TAPS TO THE WATER MAIN SHALL BE PLUGGED WITH BRASS PLUGS.

TAPS FOR SERVICE CONNECTIONS SHALL BE COMPLETED UNDER PRESSURE. THE CORPORATION AND SERVICE LEAD SHALL BE VISUALLY CHECKED FOR LEAKAGE WHILE UNDER PRESSURE. ALL JOINTS SHALL REMAIN EXPOSED UNTIL THE ENGINEER HAS OBSERVED THEM.

CORPORATIONS SHALL BE LEFT IN THE "OPEN" POSITION. CURB STOPS FOR FUTURE CONNECTIONS SHALL BE LEFT "CLOSED"; CURB STOPS FOR CURRENT WATER CUSTOMERS SHALL BE LEFT "OPEN" ONCE CONNECTED.

SANITARY SEWER CONSTRUCTION NOTES
THE NEW SANITARY SEWER SHALL NOT BE CONNECTED TO THE EXISTING SEWER UNTIL APPROVED BY THE OWNER.

AT LEAST TEN FEET OF HORIZONTAL AND EIGHTEEN INCHES OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE SEWER AND EXISTING WATER MAINS.

MANHOLES SHALL BE CONSTRUCTED FROM PRECAST CONCRETE MANHOLE SECTIONS, MEETING ASTM C443. MANHOLE JOINTS SHALL BE MADE WITH RUBBER O-RING GASKETS. THE SECTION BETWEEN THE TOP OF THE PRECAST CONE AND THE BOTTOM OF THE CASTING SHALL BE CONSTRUCTED OF PRECAST GRADE RINGS, OF TOTAL THICKNESS SO THAT THE MANHOLE CASTING IS PLACED AT THE PROPER FINAL ELEVATION, EXCEPT THAT THE TOTAL THICKNESS SHALL NOT EXCEED TEN INCHES.

MANHOLE STEPS SHALL BE EQUALLY SPACED AT 15 INCHES. THE DISTANCE FROM THE TOP STEP TO THE TOP OF THE MANHOLE CASTING SHALL NOT EXCEED 16 INCHES.

THE CONTRACTOR SHALL CONDUCT A LOW PRESSURE AIR TEST ON ALL SANITARY SEWERS LESS THAN 24 INCHES IN DIAMETER. THE AIR TEST SHALL MEET THE REQUIREMENTS OF ASTM C 924 FOR CONCRETE PIPE AND ASTM F1471 FOR PLASTIC PIPE. IN AREAS WHERE GROUNDWATER IS OVER THE PIPE, THE TEST PRESSURE SHALL BE INCREASED EQUAL TO THE HYDRAULIC PRESSURE EXERTED BY THE WATER OVER THE PIPE, AS DETERMINED BY THE ENGINEER.

BUILDING

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STATE OF MICHIGAN
Alexander Jeremy Temple
License No. 6201063933
PROFESSIONAL ENGINEER

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICE ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

KEY PLAN
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PROJECT TITLE
491/20167.SDW CFP – PHASE 500

CENTER FOR FORENSIC PSYCHIATRY – CREATE KITCHEN
SALINE, MICHIGAN

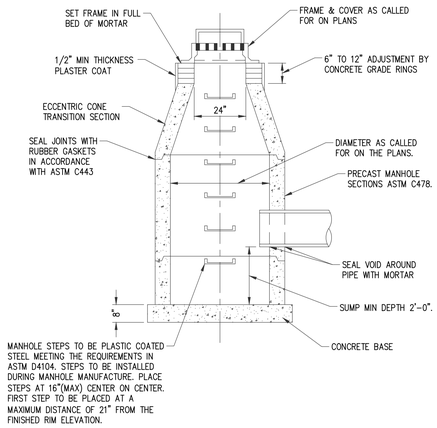
SHEET TITLE
CIVIL NOTES

PROJECT NUMBER
2021094

SHEET NUMBER
C1.02

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
A.J.T.



STANDARD DRAINAGE STRUCTURE WITH 2' SUMP

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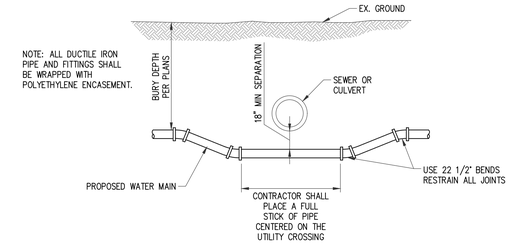

VERTICAL ISOLATION DETAIL

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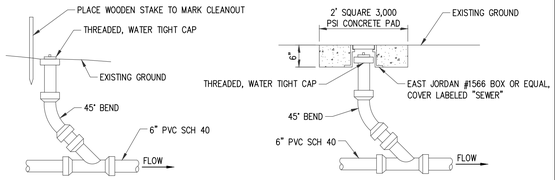
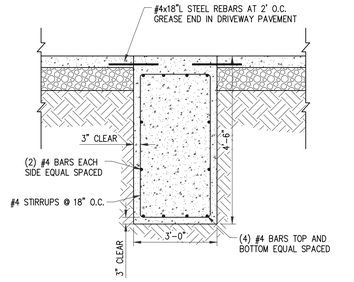


FOR GRASS AREAS

FOR PAVEMENT AREAS

CLEANOUT RISER DETAIL

NOT TO SCALE



FENCE GRADE BEAM SECTION AT DRIVE

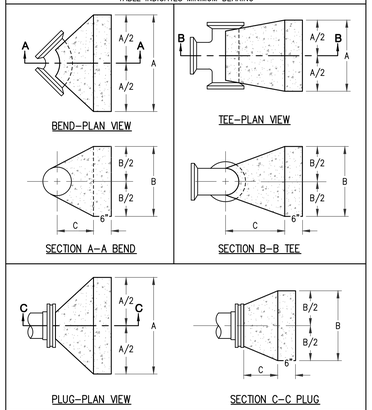
NOT TO SCALE

PLUMBING

These documents are approved for compliance with the STATE OF MICHIGAN PLUMBING CODE subject to field inspection and the conditions of approval.

DIA. OF PIPE OR BRANCH OF TEE	90° BEND			45° BEND			22 1/2° BEND 11 1/4° BEND			PLUGS, HYDRANTS AND TEE		
	A	B	C	A	B	C	A	B	C	A	B	C
6"	2'-0"	2'-0"	0'-9"	2'-0"	1'-0"	0'-9"	2'-0"	1'-0"	0'-9"	2'-0"	2'-0"	1'-0"
8"	3'-0"	2'-0"	1'-0"	2'-6"	2'-0"	1'-3"	2'-0"	1'-0"	1'-0"	3'-0"	2'-0"	1'-9"
12"	4'-0"	3'-0"	1'-6"	3'-0"	3'-0"	1'-6"	2'-0"	2'-0"	1'-6"	4'-0"	3'-0"	2'-0"
16"	6'-0"	4'-0"	1'-6"	4'-0"	4'-0"	1'-6"	3'-0"	3'-0"	1'-6"	5'-0"	4'-0"	2'-0"
24"	8'-0"	6'-0"	2'-0"	5'-0"	5'-0"	2'-0"	4'-0"	4'-0"	2'-0"	8'-0"	6'-0"	2'-6"

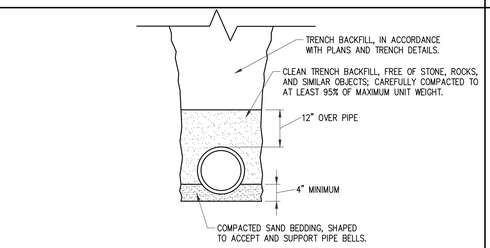
TABLE INDICATES MINIMUM BEARING



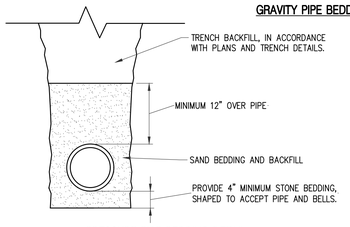
NOTE:
1. USE 2,500 PSI CONCRETE FOR ALL THRUST BLOCKS.
2. POUR AGAINST UNDISTURBED SOIL.
3. KEEP BOLTS, FITTINGS AND JOINTS CLEAR OF CONCRETE.
4. BEARING AREA IS BASED ON 2,000 PSI SOIL CAPACITY.

THRUST BLOCK DETAILS

NOT TO SCALE



GRAVITY PIPE BEDDING DETAIL - SAND BEDDING

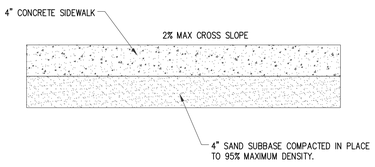


PRESSURE PIPE BEDDING DETAIL

NOTES:
1. SAND SHALL BE MDOT GRANULAR MATERIAL CLASS II.
2. SAND SHALL BE COMPACTED TO 95% OF ITS MAXIMUM UNIT WEIGHT.

PIPE BEDDING DETAIL

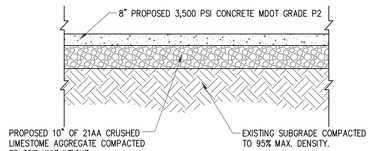
NOT TO SCALE



NOTES:
1. SEAL ALL EXPANSION JOINTS, BUILDING TO SIDEWALK JOINTS, SIDEWALK TO BRICK JOINTS, AND CURB TO BRICK JOINTS WITH SELF LEVELING POLYURETHANE JOINT SEALANT (GRAY) OR EQUAL

SIDEWALK DETAIL

NOT TO SCALE

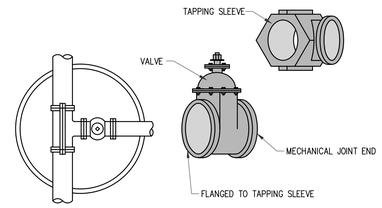


NOTES:
1. SEAL ALL EXPANSION JOINTS WITH 1/2" PREMOLDED FILLER, HELD DOWN 1/2" DOWN.

CONCRETE PAVEMENT CROSS SECTION

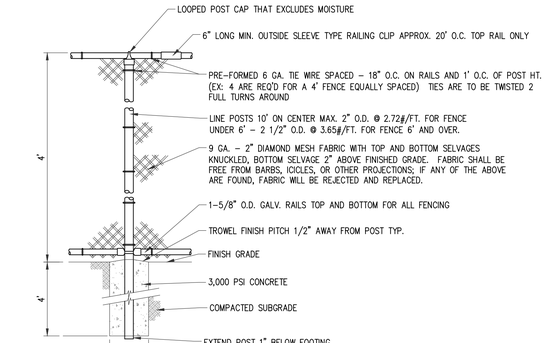
NOT TO SCALE

NOTES:
1. ALL PRESSURE TAPS MUST BE INSTALLED IN A CONCRETE VALVE MANHOLE.
2. CONTRACTOR SHALL LOCATE AND EXPOSE EXISTING WATER MAIN. THE CONTRACTOR WILL PROVIDE ANY FITTINGS NECESSARY TO COMPLETE TRANSITION(S) FROM EXISTING MAIN TO PROPOSED CONSTRUCTION.
3. THE VALVE SHALL HAVE ONE FLANGED END (CONNECTED TO THE SLEEVE) AND ONE MECHANICAL JOINT END (CONNECTED TO THE PIPELINE).
4. THE VALVE SHALL HAVE OVERSIZE SEAT RINGS TO PERMIT ENTRY OF THE TAPPING MACHINE CUTTERS.
5. THE VALVE SHALL MEET ALL REQUIREMENTS OF AWWA C500.
6. THE MINIMUM SIZE MANHOLE SHALL BE 6'-0" INTERNAL DIAMETER.
7. THE TOP OPENING SHALL BE CENTERED ON THE VALVE OPERATING NUT.
8. USE FLAT SLAB FOR COVER WITH 24" OPENING.



PRESSURE TAPPING SLEEVE & VALVE DETAIL

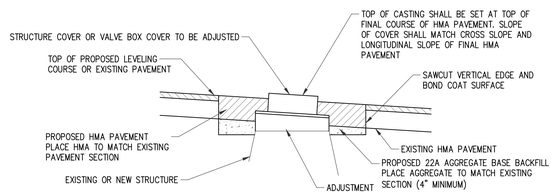
NOT TO SCALE



NOTES:
1. ALL POSTS AND RAILS TO BE SCHEDULE 40 OR APPROVED EQUAL
2. FENCE TO BE VINYL COATED
3. COLOR TO BE AS SELECTED BY OWNER

CHAIN LINK FENCE DETAIL

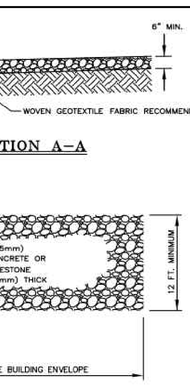
NOT TO SCALE



NOTE:
1. STRUCTURE ADJUST SHALL BE CUT IN A DIAMOND WITH A MINIMUM 2' DISTANCE FROM THE CASTING.
2. CONCRETE BACKFILL WILL NOT BE PERMITTED. ALL COSTS OF BACKFILL (AGGREGATE AND HMA) INCLUDED IN COST OF ADJUSTMENT OR NEW STRUCTURE AND WILL NOT BE PAID FOR SEPARATELY.

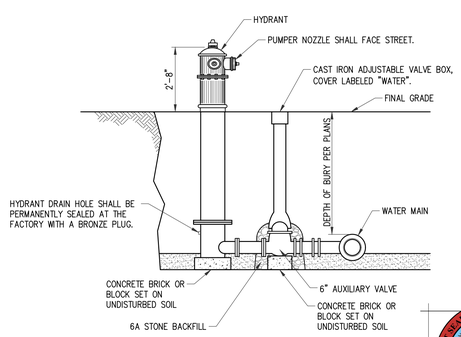
STRUCTURE COVER ADJUST DETAIL - HMA BASE

NOT TO SCALE



CONSTRUCTION ACCESS DRIVE DETAIL

NOT TO SCALE



NOTES:
1. ACCEPTABLE METHODS OF RESTRAINT ARE:
   A. CONCRETE THRUST BLOCK
   B. ANCHORING FITTINGS
   C. APPROVED RESTRAINED JOINT

FIRE HYDRANT DETAIL

NOT TO SCALE

BUILDING

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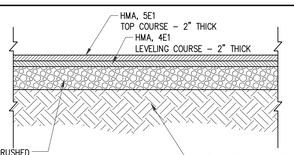
MINIMUM PIPE RESTRAINT SCHEDULE FOR GROUND BURIED PRESSURE PIPES (SEE NOTE 1)

PIPE DIAMETER \ DEFLECTION ANGLE	LENGTH (IN FEET) OF RESTRAINT REQUIRED (SEE NOTE 2)							
	22 1/2°	33 3/4°	45°	56 1/4°	67 1/2°	78 3/4°	90° TEE OR DEAD END
6"	3	6	11	16	23	29	37
8"	4	8	15	22	31	41	50
10"	5	11	18	28	38	49	61
12"	6	13	22	33	45	59	73
14"	7	14	25	37	52	68	84
16"	8	16	28	42	59	77	95
18"	8	18	31	47	66	86	107
20"	9	20	35	53	73	95	118
24"	11	23	40	61	85	111	138
30"	13	29	50	75	105	136	170
36"	15	34	59	88	123	160	199
42"	17	39	67	101	141	184	228
48"	19	43	75	113	157	206	255

NOTES:
1. THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE + WATER HAMMER.) FOR OTHER TEST PROCEDURES, ALL VALUES ARE TO BE INCREASED OR DECREASED PROPORTIONALLY.
2. IN EACH DIRECTION FROM POINT OF DEFLECTION OR TERMINATION EXCEPT FOR A TEE AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE TEE STEM.
3. IF TIE RODS ARE USED, PLACE 2 RODS 5/8 INCH DIAMETER MINIMUM FOR WATER MAIN 6 INCH TO 10 INCH AND 4 RODS 5/8 INCH DIAMETER MINIMUM FOR 12 INCH AND LARGER.

PIPE RESTRAINT SCHEDULE

NOT TO SCALE



HMA APPLICATION CHART

HMA PAVEMENT	THICKNESS	PERFORMANCE GRADE	REMARKS
HMA, 5E1 (TOP)	2"	58-28	TOP COURSE (AWI=220 MIN.)
HMA, 4E1 (LEVELING)	2"	58-28	LEVELING COURSE

HMA PAVEMENT CROSS SECTION

NOT TO SCALE

STATE OF MICHIGAN
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License No. 6201063933
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NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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FILE NO.
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FUNDING CODE
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CONTRACT NO.
Y22003

KEY PLAN
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ROWE PROFESSIONAL SERVICES COMPANY

PROJECT TITLE
491/20167.SDW CFP - PHASE 500
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

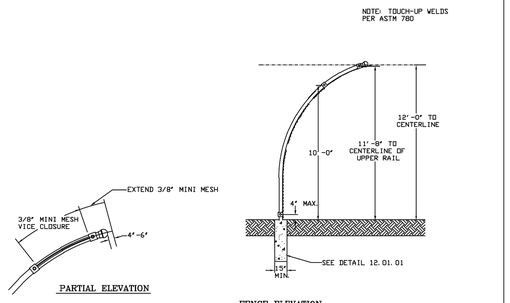
SHEET TITLE
CIVIL DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
C1.03

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
A.J.T.



PARTIAL ELEVATION

FENCE ELEVATION

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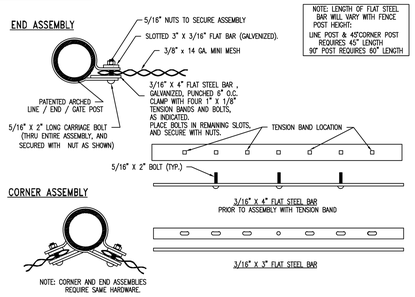
FIRST DEFENCE PATENT NO. 4,673,166	FIRST DEFENCE 3710 Landmark Dr, Suite 100 Columbia S.C. 29204 LeeHatt@FirstDeFence.com (803) 865-2998	PROJECT	DWG NO. 12.00.02	PROJECT NO. MI23
		TITLE POST ELEVATION W/ GRADE TERMINATION	DATE April 12, 2023	

NOTE:
MAY BE VINYL COATED TO MATCH POST / FBRC.

NOTE: LENGTH OF FLAT STEEL BAR WILL VARY WITH FENCE POST HEIGHT:
LINE POST & 45°CORNER POST REQUIRES 45" LENGTH
90° POST REQUIRES 60" LENGTH

END ASSEMBLY



CORNER ASSEMBLY

NOTE: CORNER AND END ASSEMBLIES REQUIRE SAME HARDWARE.

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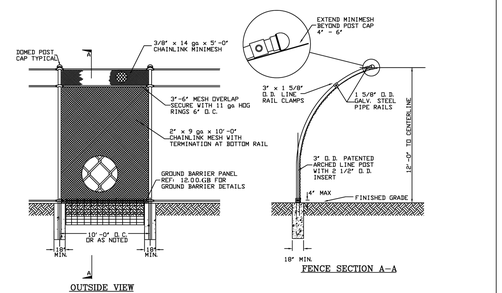
		TITLE STANDARD END / CORNER ASSEMBLY	DATE April 12, 2023	



OUTSIDE VIEW

FENCE SECTION A-A

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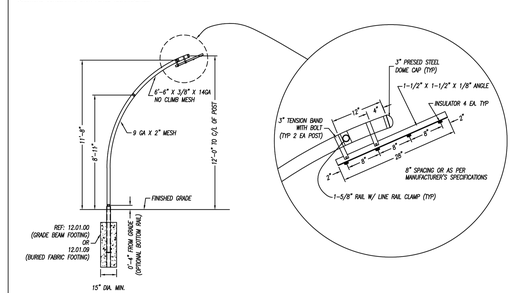
		TITLE 12 ELEVATION W/ GROUND BARRIER	DATE April 12, 2023	

NOTE:
DRAWING IS CONCEPTUAL ONLY, AND IS TO ILLUSTRATE MECHANICAL CONNECTION OF STUN FENCE TO ARCHED POST. CONTACT STUN FENCE MANUFACTURER FOR ANY QUESTIONS CONCERNING STUN FENCE TECHNICALITIES.



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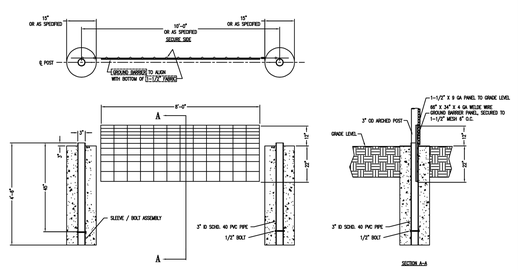
		TITLE STUN FENCE ARM MOUNT	DATE April 12, 2023	



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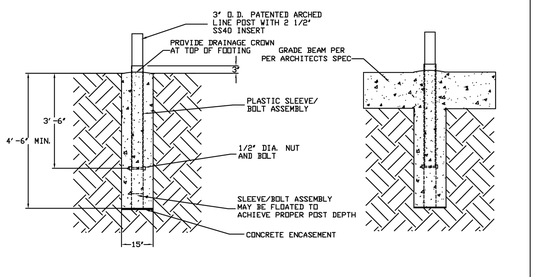
		TITLE BURIED GROUND BARRIER	DATE April 12, 2023	



LEVEL GRADE

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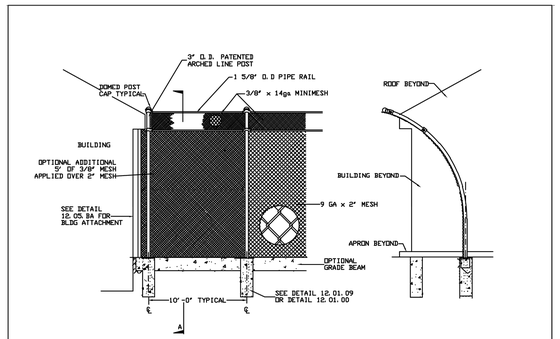
		TITLE FOOTING ELEVATION WITH GRADEBEAM	DATE April 12, 2023	



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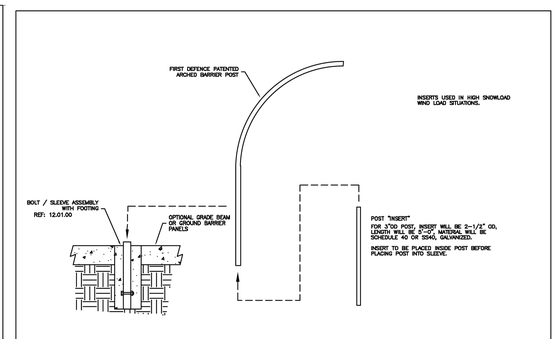
FIRST DEFENCE PATENT NO. 4,673,166	FIRST DEFENCE 3710 Landmark Dr, Suite 100 Columbia S.C. 29204 (803) 865-2998	PROJECT CENTER FOR FORENSIC PSYCHIATRY	DWG NO. 12.05.BE	PROJECT NO. MI23
		TITLE FENCE TERM. AT BUILDING ELEVATION	DATE April 12, 2023	



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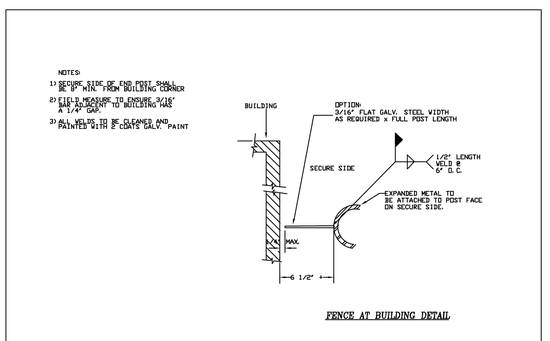
		TITLE INSERT APPLICATION / ASSEMBLY	DATE April 12, 2023	



FENCE AT BUILDING DETAIL

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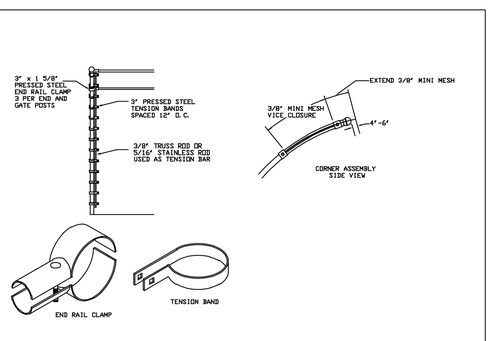
		TITLE TYPICAL FENCE AT BUILDING DETAILS	DATE April 12, 2023	



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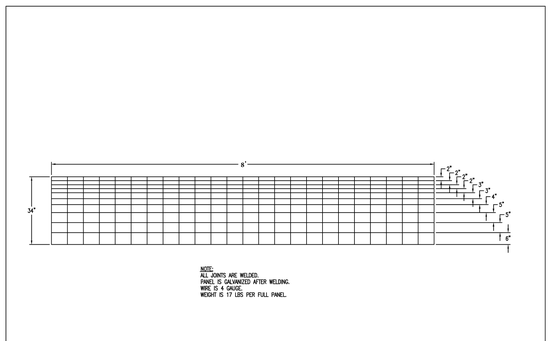
		TITLE TERMINATION POST DETAILS	DATE April 12, 2023	



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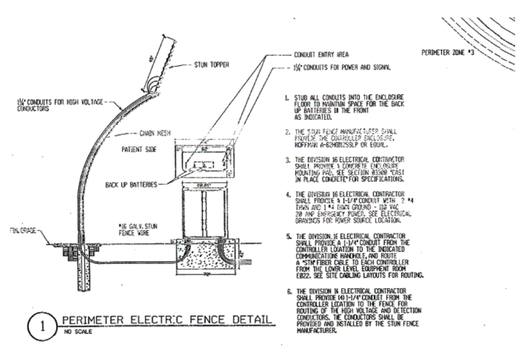
		TITLE GROUND BARRIER PANEL- WELDED	DATE April 12, 2023	



1 PERIMETER ELECTRIC FENCE DETAIL
NO SCALE

PERIMETER ELECTRIC FENCE DETAIL
NOT TO SCALE

BUILDING

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STATE OF MICHIGAN
Alexander Jeremy Temple
License No. 6201063933
PROFESSIONAL ENGINEER

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICE ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

KEY PLAN
NOT TO SCALE

WTAARCH.COM

WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

ROWE PROFESSIONAL SERVICES COMPANY

PROJECT TITLE
491/20167.SDW CFP – PHASE 500
CENTER FOR FORENSIC PSYCHIATRY – CREATE KITCHEN
SALINE, MICHIGAN

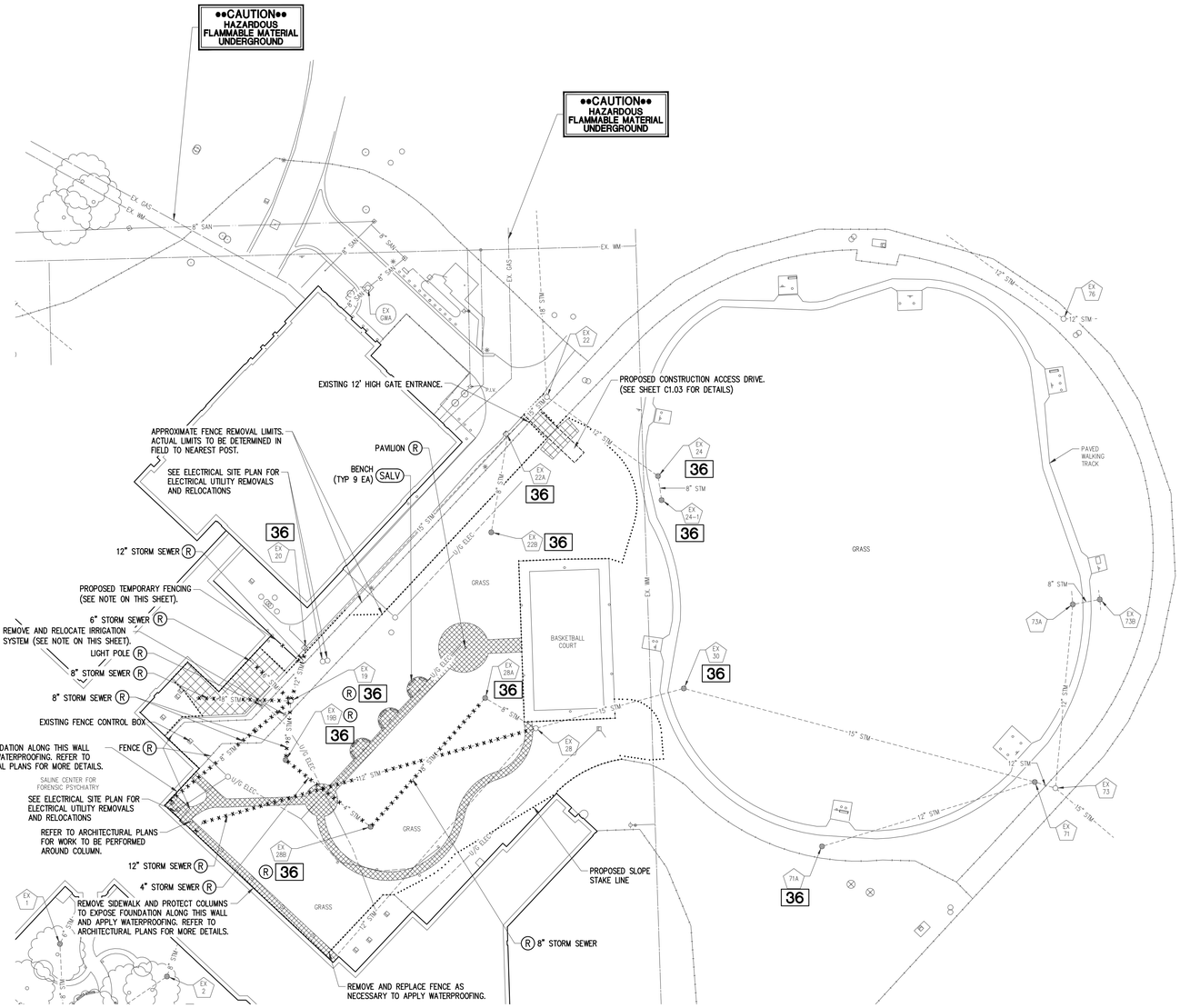
SHEET TITLE
FENCE DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
C1.04

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
A.J.T.



GENERAL CONSTRUCTION NOTES:

1) CONTRACTOR WILL COORDINATE WITH FACILITY STAFF TO DETERMINE THE IRRIGATION SYSTEM LOCATION FOR REMOVALS AND REPLACEMENT AROUND PROPOSED IMPROVEMENTS.

2) CONTRACTOR TO COMPLETE GROUND PENETRATING RADAR WITHIN CONSTRUCTION LIMITS TO DETERMINE THE EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO BEGINNING EXCAVATION.

3) PRIOR TO CONSTRUCTION CONTRACTOR IS TO WORK WITH THE FACILITY TO DETERMINE AN ADEQUATE LAYDOWN AREA AND JOB TRAILER LOCATION.

4) ALL BENCHES ARE TO BE SALVAGED COORDINATE STORAGE LOCATION WITH OWNER.

5) EXISTING ABANDONED CONDUIT ALONG EXPOSED WALL SHALL BE REMOVED TO THE BUILDING FOUNDATION AND SHALL BE SEALED TO BE MADE WATER TIGHT.

TEMPORARY FENCING NOTES:

1) FENCING SHALL BE REMOVED AS NEEDED TO FACILITATE PROPOSED CONSTRUCTION. TEMPORARY 12' FENCING SHALL BE INSTALLED AS SHOWN.
2) CONTRACTOR IS TO INSTALL A NEW FENCE POST ADJACENT TO EXISTING BUILDING CORNER FOR TEMPORARY FENCING CONNECTION IN ACCORDANCE WITH THE FENCE AT BUILDING DETAIL ON SHEET C1.04.
3) UPON COMPLETION OF PROPOSED FENCE AND DISMANTLING OF TEMPORARY FENCING, CONTRACTOR IS TO REMOVE TEMPORARY POST AT BUILDING AND RESTORE TO EXISTING CONDITIONS.
4) ANY DAMAGE TO BUILDING OR SURROUNDING AREA AS PART OF THESE PROCEDURES SHALL BE RESTORED TO PRE CONSTRUCTION CONDITIONS AT THE CONTRACTORS EXPENSE.

EXISTING STRUCTURE INVENTORY

MH# 19
TYPE: STORM
COVER: FLAT GRATE
RIM=839.64'
8.0" PVC S INV.=830.80'
8.0" PVC SW INV.=830.80'
8.0" PVC W INV.=830.48'
6.0" PVC NW INV.=830.80'
12.0" RCP N INV.=830.39'

MH# 19B
TYPE: STORM
COVER: RND INLET
RIM=833.80'
8.0" PVC N INV.=831.14'

MH# 20
TYPE: STORM
COVER:RND INLET
RIM= 835.49'
12' RCP SW INV.=829.70'
15" RCP NE INV.=830.29'

MH# EX 22A
TYPE: STORM
COVER: CURB INLET
RIM= 835.23'
8" S INV.=830.26'
15" SW INV.=829.26'
15" NE INV.=829.37'

MH# 22B
TYPE: STORM
COVER: RND INLET
RIM= 834.16'
8" N INV.=830.49'

MH# 22
TYPE: STORM
COVER: FLATE GRATE
RIM= 836.54'
15" SW INV.=829.16'
12" S INV.=827.89'
18" N INV.=828.81'

MH# 24
TYPE: STORM
COVER: RND INLET
RIM= 832.41'
12" N INV.=828.81'
8.0" S INV.=828.49'

MH# 24-1
TYPE: STORM
COVER: RND INLET
RIM= 830.72'
8.0" N INV.=528.52'

MH# 28
TYPE: STORM
COVER: RND INLET
RIM= 828.97
12" SW INV.=819.10'
8" NW INV.=825.61'
15" NE INV.=820.57'

MH# 28B
TYPE: STORM
COVER: RND INLET
RIM=835.90'
4" PVC NW INV.=831.47'
8" NE INV.=830.62'

MH# 28A
TYPE: STORM
COVER: RND INLET
RIM= 834.18'
8" SE INV.=828.18'
8" SW INV.=828.28'

MH# 30
TYPE: STORM
COVER: RND INLET
RIM=831.07'
15" SW INV.=819.10'
15" SE INV.=820.57'

MH# 71
TYPE: STORM
COVER: RND INLET
RIM=832.02'
15" NW INV.=820.45'
12" SW INV.=820.45'
12" SE INV.=820.91'

MH# 71A
TYPE: STORM
COVER: RND INLET
RIM= 831.36'
12' NE INV.=828.96'

MH# 73
TYPE: STORM
COVER: RND INLET
RIM= 829.27
12" NW INV.=820.45'
12" N INV.=824.28'
15" SE INV.=820.91'

MH# 73A
TYPE: STORM
COVER: RND INLET
RIM= 829.58'
12" S INV.=827.33'
4" N INV.=828.73'
8" E INV.=827.33'

MH# 73B
TYPE: STORM
COVER: RND INLET
RIM= 831.22'
8" W INV.=827.48'
4" N INV.=828.68'
4" S INV.=828.48'

MICHIGAN UNIFIED KEYING SYSTEM
SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	DETAIL	CHARACTERISTICS
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER CLOTH OVER INLET

PLUMBING

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BUILDING

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STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER
Alexander Jeremy Temple
License No. 6201063933

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICE ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE	CONTRACT NO.
171CODHHS7255	Y22003

KEY PLAN
NOT TO SCALE

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

ROWE PROFESSIONAL SERVICES COMPANY

PROJECT TITLE
491/20167.SDW CFP – PHASE 500
CENTER FOR FORENSIC PSYCHIATRY – CREATE KITCHEN
SALINE, MICHIGAN

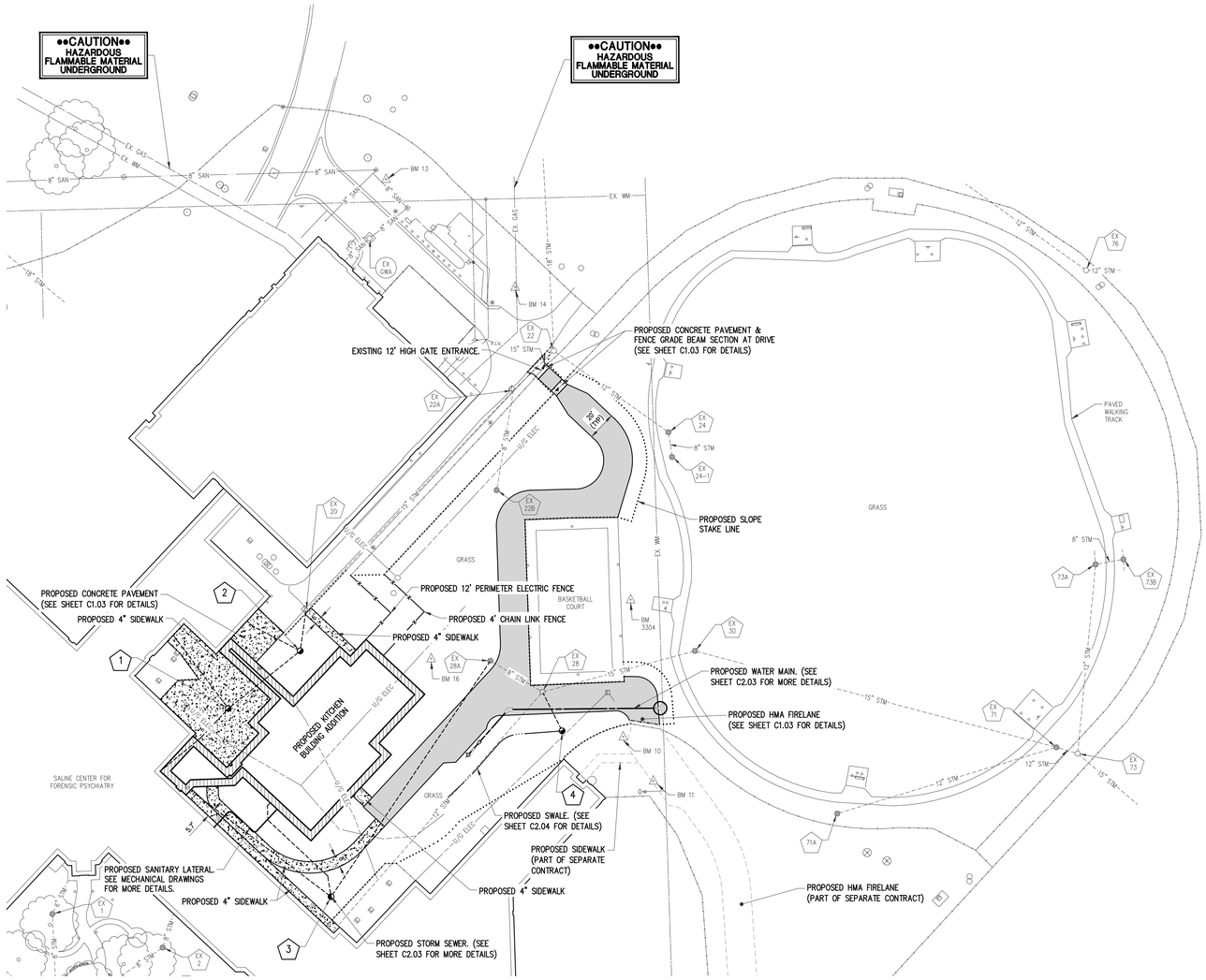
SHEET TITLE
SITE DEMOLITION PLAN

PROJECT NUMBER
2021094
PROJECT DATE
SEPTEMBER 6, 2023
CHECKED BY
A.J.T.
SHEET NUMBER
C2.01

NOTES:

1) PROPOSED PERIMETER ELECTRIC AND CHAIN LINK FENCE IS TO MATCH THE EXISTING FENCE SIZE AND STYLE. ALL FENCING IS TO BE INSTALLED PER MANUFACTURES REQUIREMENT. SEE SHEET C1.04 FOR MORE DETAILS.

2) PERIMETER ELECTRIC FENCE IS TO BE INSTALLED AGAINST PROPOSED BUILDING CORNER AS SHOWN TO ALLOW FOR NO GAP OR MEANS OF PASSAGE. SEE SHEET C1.04 FOR MORE DETAILS.



SITE INFORMATION

PROPERTY ADDRESS:	8303 PLATT ROAD SALINE, MI 48176
PROPERTY OWNER:	CENTER FOR FORENSIC PSYCHIATRY
PROPERTY TAX ID:	S-19-02-200-003
ZONING AND SETBACK REQUIREMENTS:	A-2; INTERIM AGRICULTURE FRONT YARD SETBACK – 50 FT SIDE YARD SETBACK – 30 FT REAR YARD SETBACK – 50 FT
LEGAL DESCRIPTION:	OWNER REQUEST YO 2-7A-1 BEG AT NW COR SEC 2, TH N 88-33-31 E 2488.02 FT, TH N 88-35-59 E 353.45 FT, TH S 01-24-01 W 388.00 FT, TH N 88-35-59 E 245.00 FT, TH N 01-24-01 E 388.00 FT, TH N 88-35-59 E 344.48 FT, TH S 01-30-15 E 1199.51 FT, TH S 88-33-41 W 3429.32 FT, TH N 01-34-54 W 1200.00 FT TO THE POB. PT OF N 1/2 SEC 2, T4S-R6E. 92.31 AC SPLIT ON 06/29/2005 FROM S -19-02-200-001;
TOTAL SITE AREA:	92.31 ACRES
ADJACENT PROPERTIES:	S-19-02-200-002 S-19-02-200-004

BUILDING

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PROFESSIONAL ENGINEER

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KEY PLAN
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WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

ROWE PROFESSIONAL SERVICES COMPANY

PROJECT TITLE
491/20167.SDW CFP – PHASE 500

CENTER FOR FORENSIC PSYCHIATRY – CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
SITE PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
A.J.T.

SHEET NUMBER
C2.02

PLUMBING

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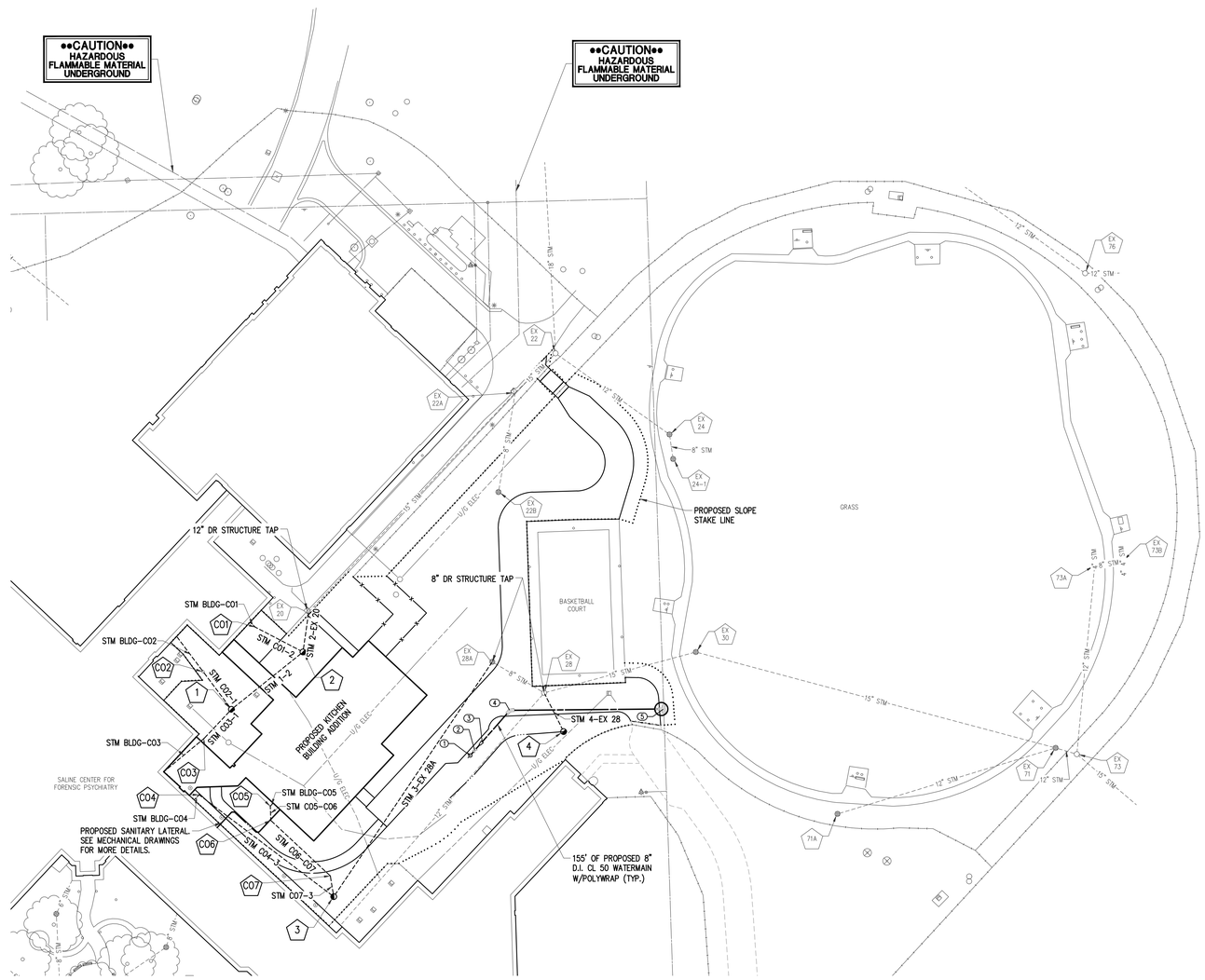
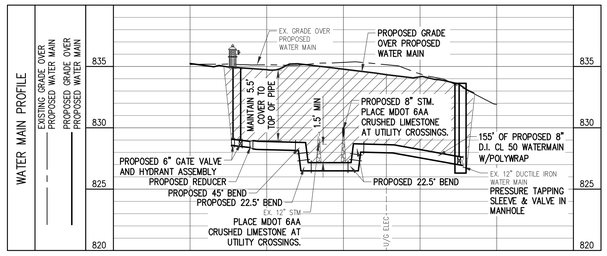


PROPOSED STORM SEWER STRUCTURE TABLE						
STRUCT NO.	DIA.	COVER TYPE	RIM ELEVATION	INVERT	NORTHING	EASTING
EX 28	N/A	N/A	RIM=835.09	12" 827.27 SW (EX) 8" 829.27 SE (PR) 8" 825.61 NW (EX) 15" 819.10 E (EX)	244819.86	13306172.92
EX 20	N/A	N/A	T/C=834.37	12" 830.29 S (PR) 15" 830.29 NE (EX)	244876.50	13306008.16
EX 28A	N/A	N/A	RIM=833.60	8" 828.18 SW (PR) 8" 828.18 SE (EX)	244841.58	13306136.61
1	48"	G	RIM=835.60	12" 831.21 NE (PR) 6" 831.46 SW (PR) 6" 831.46 NW (PR)	244808.30	13305954.08
2	48"	G	RIM=835.63	12" 830.57 N (PR) 12" 830.57 SW (PR) 6" 830.82 NW (PR)	244848.48	13306004.16
3	48"	G	RIM=834.30	8" 830.16 NE (PR) 6" 830.84 NW (PR) 6" 830.65 N (PR)	244677.20	13306025.68
4	24"	G	RIM=833.04	8" 829.57 NW (PR)	244792.70	13306186.54

PROPOSED STORM SEWER PIPE TABLE					
PIPE NUMBER	DIAMETER	TOTAL LENGTH	SLOPE	TRENCH DETAIL A (T.D. A)	TRENCH DETAIL B (T.D. B)
STM 1-2	12"	64'	1.00%	42'	22'
STM 2-EX 20	12"	28'	1.00%	20'	8'
STM 3-EX 28A	8"	198'	1.00%	8'	190'
STM 4-EX 28	8"	30'	1.00%	5'	25'
STM BLDG-C01	6"	5'	1.00%	0'	5'
STM BLDG-C02	12"	31'	1.00%	0'	31'
STM BLDG-C03	6"	37'	1.00%	0'	37'
STM BLDG-C04	6"	5'	1.00%	0'	5'
STM BLDG-C05	6"	3'	1.00%	0'	3'
STM C01-2	6"	38'	1.00%	10'	28'
STM C02-1	6"	33'	1.00%	8'	25'
STM C03-1	6"	28'	1.00%	5'	23'
STM C04-3	6"	118'	1.00%	0'	118'
STM C05-C06	6"	10'	1.00%	7'	3'
STM C06-C07	6"	57'	1.00%	15'	42'
STM C07-3	6"	15'	1.00%	12'	3'

PROPOSED CLEANOUT TABLE		
CLEANOUT	NORTHING	EASTING
C01	244865.88	13305970.76
C02	244834.65	13305934.31
C03	244787.91	13305934.89
C04	244748.56	13305931.40
C05	244740.57	13305981.26
C06	244730.57	13305981.61
C07	244691.72	13306023.27

WATER MAIN FITTING TABLE			
POINT	FITTING TYPE	NORTHING	EASTING
1	HYDRANT ASSEMBLY	244776.00	13306121.18
2	6" GATE VALVE	244779.62	13306124.36
3	8" X 6" REDUCER	244785.58	13306129.58
4	45° BEND	244807.65	13306148.92
5	8" X 12" TAPPING SLEEVE & VALVE IN WELL	244808.58	13306256.48



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SALINE, MICHIGAN

SHEET TITLE
UTILITY PLAN

PROJECT NUMBER
2021094

SHEET NUMBER
C2.03

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
A.J.T.

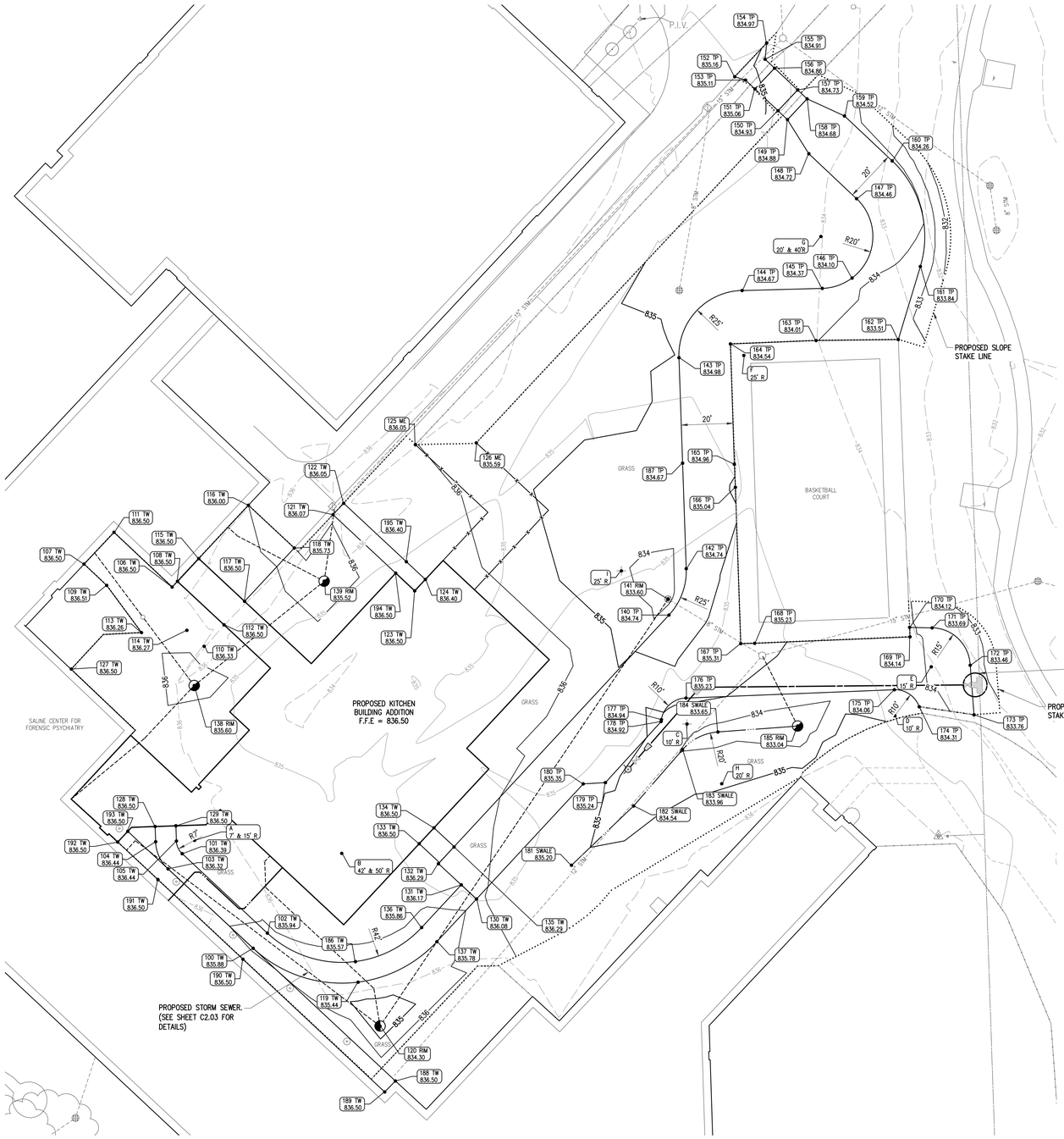
GRADING TABLE				
POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
100	TW=835.88	PC	244707.13	13305976.81
101	TW=836.39	PC	244743.58	13305949.46
102	TW=835.94	PC	244712.98	13305982.26
103	TW=836.32	PC	244737.73	13305944.00
104	TW=836.44	PC	244748.17	13305939.24
105	TW=836.44	PC	244748.45	13305947.24
106	TW=836.50	ME	244846.22	13305945.58
107	TW=836.50	ME	244855.07	13305911.66
108	TW=836.50	ME	244848.42	13305947.63
109	TW=836.51	ME	244846.88	13305920.36
110	TW=836.33		244823.43	13305957.90
111	TW=836.50	ME	244867.31	13305923.18
112	TW=836.50		244831.69	13305965.57
113	TW=836.26	ME	244828.69	13305933.78
114	TW=836.27		244829.58	13305951.26
115	TW=836.50		244857.19	13305955.82
116	TW=836.00	ME	244877.73	13305974.97
117	TW=836.50		244840.72	13305973.48
118	TW=835.73	ME	244861.26	13305992.63
119	TW=835.44		244694.09	13306017.22
120	RIM=834.30		244677.20	13306025.68
121	TW=836.07	ME	244874.11	13306007.56
122	TW=836.05	ME	244878.49	13306011.66
123	TW=836.50		244844.77	13306039.02

GRADING TABLE				
POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
124	TW=836.40		244849.15	13306043.12
125	ME=836.05		244901.07	13306039.28
126	ME=835.59		244901.74	13306062.75
127	TW=836.50	ME	244814.66	13305906.74
128	TW=836.50		244754.02	13305939.04
129	TW=836.50		244754.30	13305947.03
130	TW=836.08	TP	244726.12	13306062.81
131	TW=836.17	TP	244731.57	13306056.95
132	TW=836.29	TP	244739.70	13306048.15
133	TW=836.50		244747.42	13306040.76
134	TW=836.50		244753.52	13306046.44
135	TW=836.29	TP	244746.15	13306054.18
136	TW=835.86	PC	244715.13	13306041.70
137	TW=835.78	PC	244709.69	13306047.56
138	RIM=835.60		244808.30	13305954.08
139	RIM=835.52		244848.48	13306004.16
140	TP=834.74	PC	244835.45	13306136.96
141	RIM=833.60		244841.58	13306136.61
142	TP=834.74	PC	244853.31	13306143.61
143	TP=834.98	PC	244934.55	13306140.81
144	TP=834.67	PC	244960.41	13306165.14
145	TP=834.37	PC	244961.22	13306196.03
146	TP=834.10		244965.22	13306207.51
147	TP=834.46	PC	244995.77	13306209.21

GRADING TABLE				
POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
148	TP=834.72		245013.07	13306190.85
149	TP=834.88		245026.20	13306182.61
150	TP=834.93		245029.63	13306178.98
151	TP=835.06		245038.01	13306170.08
152	TP=835.16	ME	245042.73	13306162.31
153	TP=835.11		245041.43	13306166.45
154	TP=834.97	ME	245055.73	13306174.61
155	TP=834.91		245049.44	13306173.99
156	TP=834.86		245046.02	13306177.62
157	TP=834.73		245037.64	13306186.52
158	TP=834.68		245034.21	13306190.16
159	TP=834.52		245027.63	13306204.57
160	TP=834.26	PC	245010.33	13306222.93
161	TP=833.84	PC	244969.65	13306233.79
162	TP=833.51	ME	244941.53	13306225.30
163	TP=834.01	ME	244941.15	13306193.63
164	TP=834.54	ME	244939.83	13306160.64
165	TP=834.96	ME	244893.52	13306162.14
166	TP=835.04	ME	244884.64	13306162.54
167	TP=835.31	ME	244824.44	13306164.62
168	TP=835.23	ME	244824.56	13306169.98
169	TP=834.14	ME	244827.05	13306229.80
170	TP=834.12	ME	244830.70	13306229.65
171	TP=833.69	PC	244830.52	13306238.32

GRADING TABLE				
POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
172	TP=833.46	PC	244816.12	13306252.98
173	TP=833.76	ME	244797.03	13306254.47
174	TP=834.31	PC & ME	244800.13	13306233.36
175	TP=834.06	PC	244806.70	13306223.79
176	TP=835.23	PC	244803.49	13306143.51
177	TP=834.94	PC	244795.20	13306134.06
178	TP=834.92		244794.45	13306133.93
179	TP=835.24		244770.93	13306112.48
180	TP=835.35		244770.45	13306103.94
181	SWALE=835.20		244739.12	13306099.42
182	SWALE=834.54		244761.94	13306123.34
183	SWALE=833.96		244783.62	13306142.19
184	SWALE=833.65		244790.44	13306155.81
185	RIM=833.04	SWALE	244792.70	13306186.54
186	TW=835.57		244702.01	13306016.20
187	TP=834.67		244893.93	13306142.21
188	TW=836.50		244656.05	13306031.57
189	TW=836.50		244651.83	13306027.45
190	TW=836.50		244702.93	13305972.87
191	TW=836.50		244733.58	13305940.12
192	TW=836.50		244748.04	13305924.64
193	TW=836.50		244752.18	13305928.51
194	TW=836.50		244851.59	13306031.71
195	TW=836.40		244855.97	13306035.80

RADIUS POINTS			
POINT	DESCRIPTION	NORTHING	EASTING
A	7' & 15' R	244748.70	13305954.23
B	42' & 50' R	244743.69	13306010.91
C	10' R	244793.49	13306143.91
D	10' R	244796.70	13306223.97
E	15' R	244815.52	13306238.00
F	25' R	244935.42	13306165.79
G	20' & 40'R	244981.21	13306195.50
H	20' R	244770.50	13306157.28
I	25' R	244852.45	13306118.63



GRADING LEGEND

TP – TOP OF PAVEMENT
TW – TOP OF CONCRETE SIDEWALK
ME – MATCH EXISTING ELEVATION
PC – POINT OF CURVATURE
RIM – MANHOLE RIM

NOTES:
1) CONTRACTOR TO COMPLETE GROUND PENETRATING RADAR WITHIN CONSTRUCTION LIMITS TO DETERMINE THE EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO BEGINNING EXCAVATION.

BUILDING

These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

STATE OF MICHIGAN
Alexander Jeremy Temple
License No. 6201063933
LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICE ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

KEY PLAN
NOT TO SCALE

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

ROWE PROFESSIONAL SERVICES COMPANY

PROJECT TITLE
491/20167.SDW CFP – PHASE 500
CENTER FOR FORENSIC PSYCHIATRY – CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
GRADING PLAN

PROJECT NUMBER
2021094

SHEET NUMBER
C2.04

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
A.J.T.

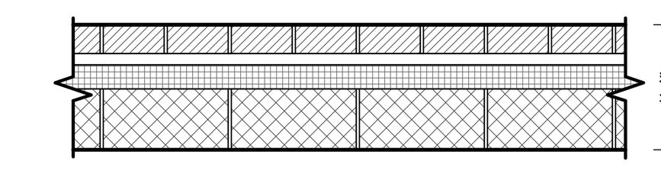
ALTERNATES:

- REFER TO WALL TYPES <1.0> AND <3.0>. IN LIEU OF RIGID INSULATION AND VAPOR BARRIER INDICATED PROVIDE SPRAY INSULATION. MATCH THE REQUIRED R-VALUE AND MUST ALSO ACT AS A VAPOR BARRIER

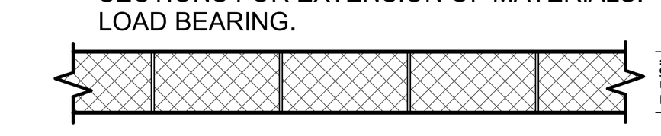
#.# WALL TYPES:

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

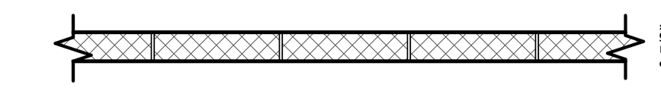
NOTE: REFER TO SHEETS A1.01 FOR RATED WALL LOCATIONS.



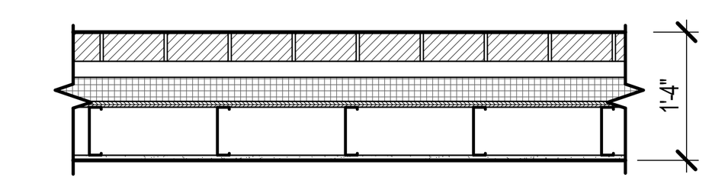
1.0 4" VENEER FACE BRICK / BURNISHED / SPLIT FACE BLOCK (REFER TO ELEVATIONS) w/ 3" RIGID INSUALTION IN AIR SPACE ON BITUMINOUS DAMPPROOFING ON 8" CONCRETE MASONRY UNITS. REFER TO ELEVATIONS AND SECTIONS FOR EXTENSION OF MATERIALS. LOAD BEARING.



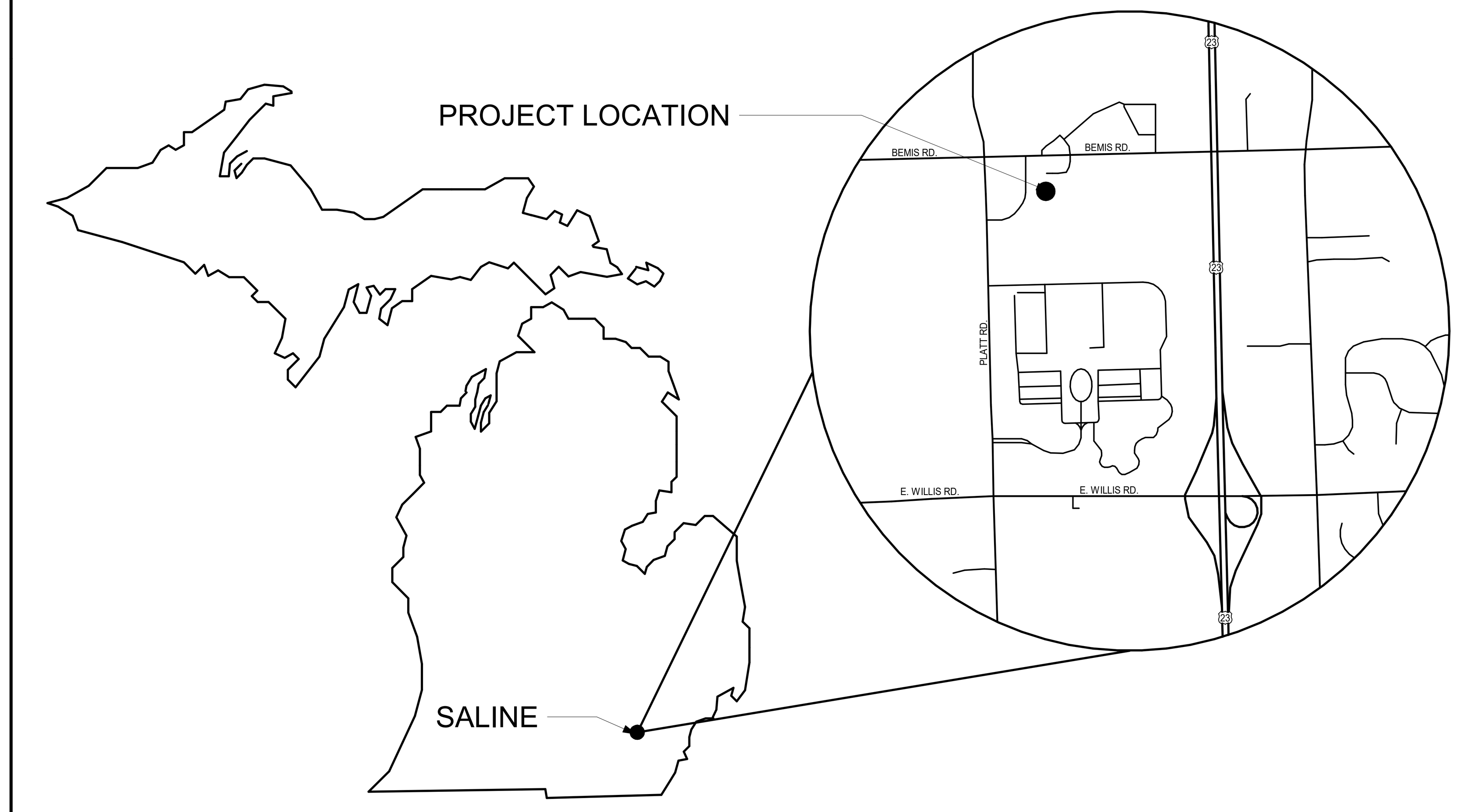
2.0 8" CONCRETE MASONRY UNITS. EXTEND FROM FINISH FLOOR TO UNDERSIDE OF STRUCTURE ABOVE.



2.1 4" CONCRETE MASONRY UNITS. EXTEND FROM FINISH FLOOR TO UNDERSIDE OF STRUCTURE ABOVE.



3.0 4" VENEER FACE BRICK / BURNISHED / SPLIT FACE BLOCK (REFER TO ELEVATIONS) w/ AIR SPACE w/ 3" RIGID INSUALTION ON BITUMINOUS DAMPPROOFING ON 6" METAL STUD FRAMING @ 16" O.C. w/ 5/8" TYPE "X" GYPSUM BOARD. REFER TO ELEVATIONS AND SECTIONS FOR EXTENSION OF MATERIALS. LOAD BEARING.



REGIONAL MAP
12" = 1'-0" NOT TO SCALE

LOCAL MAP
6" =NOT TO SCALE

PROJECT LOCATION

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

LOCATION NUMBER GRID

BRICK MASONRY	GROUT
CONCRETE MASONRY UNIT	GYPSUM BOARD (CEILING/ELEVATION)
BURNISH BLOCK	GYPSUM BOARD (SECTION)
SPLIT FACE BLOCK	BACKER BOARD
BATT INSULATION	PARTICLE BOARD & PLYWOOD
SOUND ATTENUATION BLANKETS/SPRAYED INSUL.	SOLID SURFACE
RIGID INSULATION	CONCRETE
DIMENSIONAL LUMBER	CONCRETE WALK (PLAN)
FINISH LUMBER	GRAVEL OR STONE AS INDICATED
STEEL	COMPACTED SAND FILL
SUSPENDED CEILING TILE	MORTAR NET
TILE ON MORTAR BED	STUD WALL

ARCHITECTURAL MATERIAL LEGEND

ROOM IDENTIFIER:

ROOM NAME
A100A
- OPTIONAL LETTER
- ROOM NUMBER
- FLOOR LEVEL
- UNIT LETTER

DOOR IDENTIFIER:

A100.1
- DOOR NUMBER
- ROOM NUMBER
- FLOOR LEVEL
- UNIT LETTER

KEYED NOTES:

- 28 — MATERIAL KEYNOTE (HEXAGON w/ NUMBER)
- A — PLUMBING OR EQUIPMENT (HEXAGON w/ LETTER)
- 1 — PLAN KEYNOTE (SQUARE w/ NUMBER)
- A — SITE PLAN KEYNOTE (SQUARE w/ LETTER)
- R1 — ROOF PLAN KEYNOTE (SQUARE w/ "R" AND NUMBER)
- 1 — PLAN DEMOLITION KEYNOTE (TRIANGLE w/ NUMBER)
- A — SITE DEMOLITION KEYNOTE (TRIANGLE w/ LETTER)
- TEXT-X — FLOORING/FINISH KEYNOTE (RECTANGLE w/ TEXT)

DEMOLITION IDENTIFIER:

ITEM TO BE REMOVED

ALTERATION CLOUD:

INDICATES A CHANGE TO THE CONSTRUCTION DOCUMENTS VIA ADDENDUM, BULLETIN, AND CHANGE ORDER

MATCH LINE:

MATCH LINE

REFERENCE BUBBLES:

- 1 / A1.01 — LOCATION NUMBER, SHEET NUMBER
- 7 / A7.07 — DETAIL MARK
- 5 / A5.05 — BUILDING SECTION
- 2 / A2.02 — ENLARGED DETAIL OR PLAN

ADDITIONAL IDENTIFIERS:

- F2 — DOOR FRAME TYPE (OVAL w/ "F" AND NUMBER)
- D2 — DOOR TYPE (OVAL w/ "D" AND NUMBER)
- W2 — WINDOW TYPE (OVAL w/ "W" AND NUMBER)
- 2.1 — WALL TYPE (DIAMOND w/ NUMBER)
- # — ADDENDUM IDENTIFIER (RHOMBUS w/ NUMBER)
- # — BULLETIN IDENTIFIER (RHOMBUS w/ NUMBER)
- # — CHANGE ORDER IDENTIFIER (RHOMBUS w/ NUMBER)

INTERIOR ELEVATION IDENTIFIER:

8/A8.08
- SHEET NUMBER
- LOCATION NUMBER

ALTERATION IDENTIFIER:

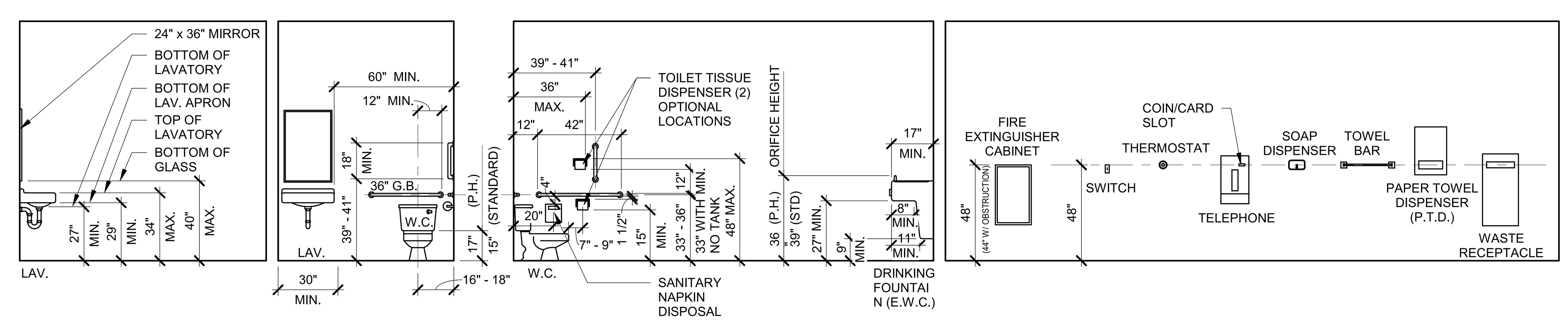
ALTERNATE NO. 2

ARCHITECTURAL SYMBOL LEGEND

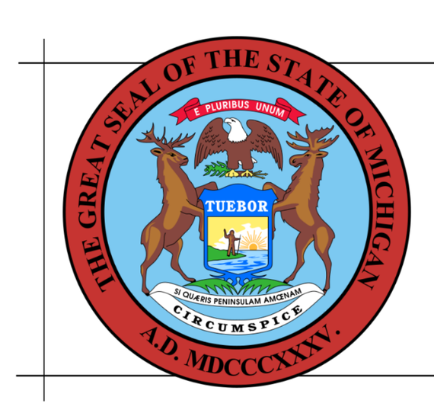
ABBV.	ABBREVIATIONS
A.F.F.	ABOVE FINISHED FLOOR
AC.	ACOUSTIC(AL)
A.C.P.	ACOUSTIC CEILING PANEL
A.C.T.	ACOUSTIC CEILING TILE
A.R.P.	ACRYLIC RESIN PANEL
ADD'L	ADDITIONAL
ADJ.	ADJUSTABLE
ALT.	ALTERNATE
ALUM.	ALUMINUM
ANOD.	ANODIZED
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
BKR. BD.	BACKER BOARD
BR'G	BEARING
BIT.	BITUMINOUS
BLK('G)	BLOCKING
BD.	BOARD
BTM.	BOTTOM
B.O.C.	BOTTOM OF CURB
B.O.F.	BOTTOM OF FOOTING
BRK.	BRICK
BLDG.	BUILDING
CPT.	CARPET
C.B.	CATCH BASIN
CLG.	CEILING
C.M.TILE/CMT	CERAMIC MOSAIC TILE
CT	CERAMIC TILE
CHBD.	CHALKBOARD
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
C.M.U./CMU	CONCRETE MASONRY UNIT
CONT.	CONTINUOUS
C.J.	CONTINUOUS JOINT
C'TOP.	COUNTER TOP
COVR'G	COVERING
DEPT.	DEPARTMENT
DIA.	DIAMETER
D.O.	DOOR OPENING
DBL.	DOUBLE
DN.	DOWN
D.T.	DRAIN TILE
DWG.	DRAWING
D.F.	DRINKING FOUNTAIN
D.H.M.	DETENTION HOLLOW METAL
EA.	EACH
E.W.	EACH WAY
ELEC.	ELECTRIC(AL)
E.H.D.	ELECTRIC HAND DRYER
E.W.C.	ELECTRIC WATER COOLER
EL.	ELEVATION
ELEV.	ELEVATOR
EQ.	EQUAL
E.F.	EXHAUST FAN
EXIST./(E)	EXISTING
EXP.	EXPOSED
EXT.	EXTERIOR
FT.	FEET
F.F.	FINISHED FACE
FIN.	FINISHED
F.O.	FINISHED OPENING
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.R.	FIRE RATED
F.RT.	FIRE RETARDANT
F.R.L./FRL	FIBER REINFORCED LAMINATE
FIXT.	FIXTURE
F.S.F./FSF	FLOCKED SHEET FLOORING
F.T.F./FTF	FLOCKED TILE FLOORING
FLR.	FLOOR
F.D.	FLOOR DRAIN
FTG.	FOOTING
F.R.P./FRP	FIBER REINFORCED POLYESTER
GA.	GAUGE
G. TILE/GT	GLASS TILE
GL.	GLAZING
G.B.	GRAB BAR
GYP. BD.	GYPSUM BOARD
HWD.	HARDWOOD
H.P.	HIGH POINT
H.M./HM	HOLLOW METAL
HORIZ.	HORIZONTAL
H.B.	HOSE BIB
I.DIA./I.D.	INSIDE DIAMETER
I.F.BL.	INSIDE FACE OF BLOCK
I.F.BR.	INSIDE FACE OF BRICK
INSUL.	INSULATE(D)
INT.	INTERIOR
JT.	JOINT
LAM./LAM	LAMINATE(D)
LAV.	LAVATORY (SINK)
L.S.F./LSF	LINOLEUM SHEET FLOORING
L.T.F./LTF	LINOLEUM TILE FLOORING
L.P.	LOW POINT
L.V.T./LVT	LUXURY VINYL TILE
MFR.	MANUFACTURE(R)
M.B.	MARKERBOARD
MAS.	MASONRY
M.O.	MASONRY OPENING
MAT'L	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
M.P./MP	METAL PANEL
M.D.O.T.	MICHIGAN DEPARTMENT OF TRANSPORTATION
MIN.	MINIMUM
MIR.	MIRROR
MISC.	MISCELLANEOUS
NOM.	NOMINAL
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO.	NUMBER
O.C.	ON CENTER
OPP.	OPPOSITE (HAND)
O.S.B.	ORIENTED STRAND BOARD
O.DIA./O.D.	OUTSIDE DIAMETER
O.F.BL.	OUTSIDE FACE OF BLOCK
O.F.BR.	OUTSIDE FACE OF BRICK
O.F.C.	OUTSIDE FACE OF CONCRETE
O.F.M.	OUTSIDE FACE OF MASONRY
O.F.S.	OUTSIDE FACE OF STUDS
PT./P	PAINT(ED)
PR.	PAIR
P.T.D.	PAPER TOWEL DISPENSER
PART. BD.	PARTICLE BOARD
PTN.	PARTITION
P.H.	PHYSICALLY HANDICAPPED
PLAS.	PLASTER
P.LAM./PL	PLASTIC LAMINATE
PLYWD.	PLYWOOD
P.O.N.C.	POINT OF NEW CONNECTION
P.TILE/PT	PORCELAIN TILE
PWR.	POWER
P.CONC.	PRECAST CONCRETE
P.C./PC	POLISHED CONCRETE
Q.TILE/QT	QUARRY TILE
QTZ./QTZ	QUARTZ
RAD.	RADIUS
REFRIG.	REFRIGERATOR
REINF.	REINFORCE(MENT)
REQ'D	REQUIRED
R.W.B./RWB	RESILIENT WALL BASE
R.S.F./RSF	RESILIENT SHEET FLOORING
R.T.F./RTF	RESILIENT TILE FLOORING
R.O.	ROUGH OPENING
S.A.T.	SUSPENDED ACOUSTICAL TILE
SF.GL.	SAFETY GLAZING
S.N.DR.	SANITARY NAPKIN DISPENSER
S.N.DL.	SANITARY NAPKIN DISPOSAL
S.O.	SASH OPENING
SCHED.	SCHEDULE
SNT.	SEALANT
SHT.	SHEET
SIM.	SIMILAR
SM.F.	SMOOTH FACE
SPEC.	SPECIFICATION(S)
SP.F.	SPLIT FACE
SQ.FT.	SQUARE FEET
S.STL./SS	STAINLESS STEEL
STD.	STANDARD
STO./STOR.	STORAGE
STRT.	STRAIGHT
STRUC.	STRUCTURE
SUSP.	SUSPENDED
T.B.	TACKBOARD
TEL.	TELEPHONE
T.V.	TELEVISION
TEMP.	TEMPER(ED)
THK.	THICK
T.P.D.	TOILET PAPER DISPENSER
T.O.M.	TOP OF MASONRY
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UR.	URINAL
V.B.	VAPOR BARRIER
V.I.F.	VERIFY IN FIELD
VERT.	VERTICAL
V.T.R.	VENT THROUGH ROOF
VNL./VNL	VINYL
V.C.T./VCT	VINYL COMPOSITION TILE
W.C.	WATER CLOSET
W.MAT/WOM	WALK-OFF MAT
W.W.F.	WELDED WIRE FABRIC
W.W.M.	WELDED WIRE MESH
W.O.	WINDOW OPENING
w/	WITH
WD.	WOOD

LEGEND OF ABBREVIATIONS

NOTE:
FIXTURES DEPICTED WITHIN THIS SCHEDULE ARE SCHEMATIC ONLY. FOR EXACT FIXTURE TYPES AND QUANTITIES, REFER TO MECHANICAL DRAWINGS AS WELL AS THE SPECIFICATION MANUAL.



MNT HEIGHT DETAIL
25/A0.01 SCALE: 1/4" = 1'-0"



BUILDING

These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM

WTA ARCHITECTS

100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

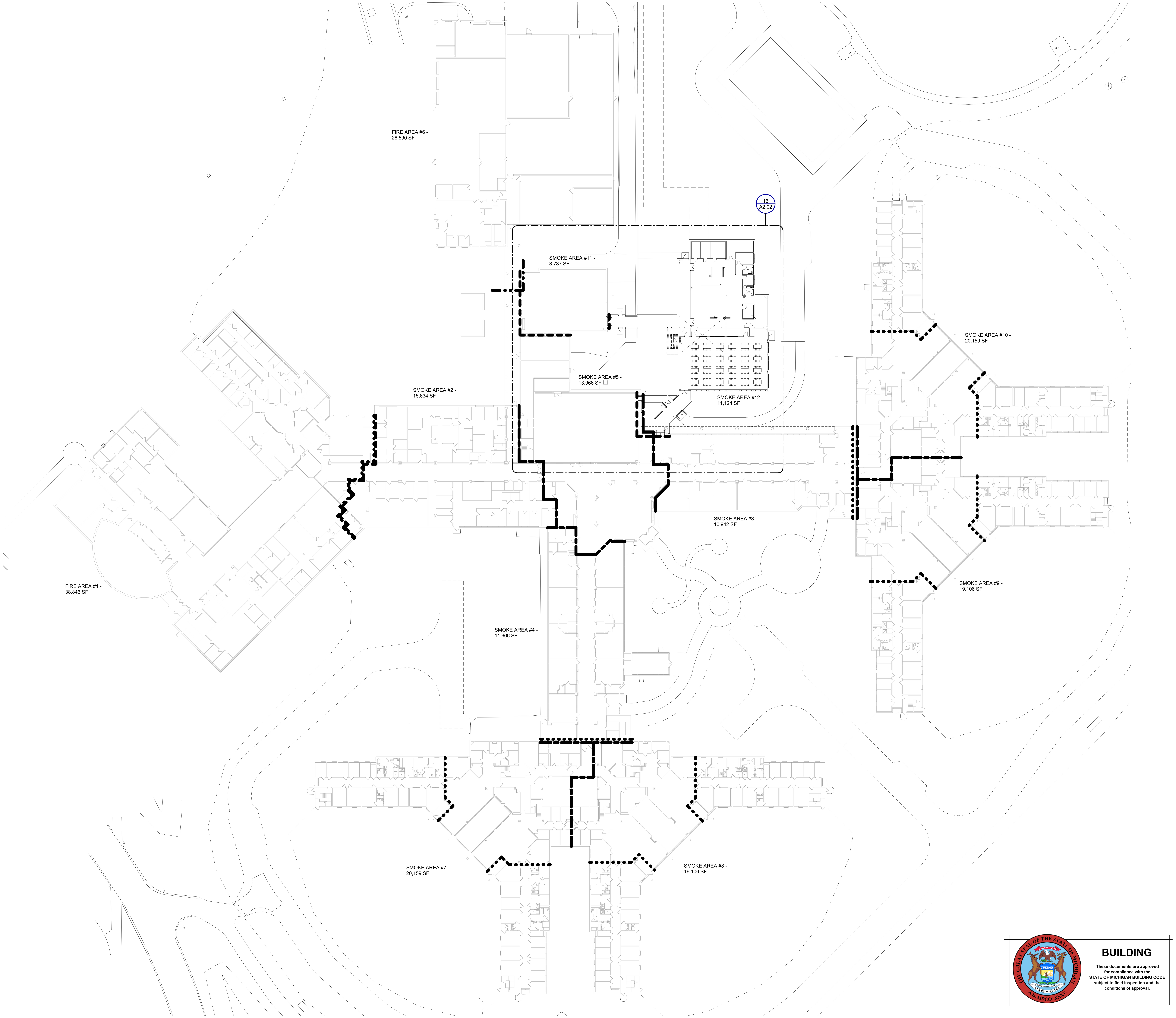
SHEET TITLE
PROJECT INFORMATION

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

SHEET NUMBER
A0.01



TRUE NORTH NORTH

FIRST FLOOR MASTER PLAN
SCALE: 1/32" = 1'-0"

BUILDING

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CODE LEGEND

- 3-HOUR BUILDING SEPARATION
- 2-HOUR BARRIER
- 1-HOUR ENCLOSURE
- 1-HOUR SMOKE BARRIER
- TRAVEL DISTANCE
- 100% SPRINKLED
- DF DRINKING FOUNTAIN
- FE FIRE EXTINGUISHER
- # OCCUPANT LOAD
- # EXIT CAPACITY

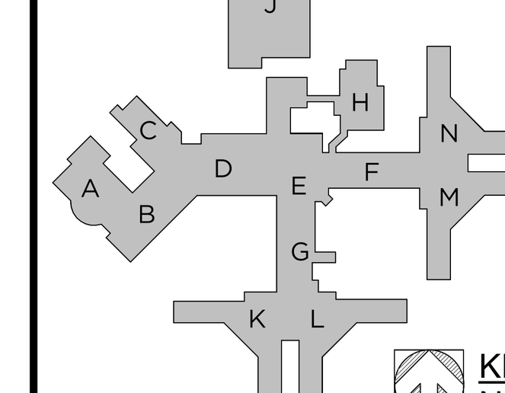
NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003



KEY PLAN
NOT TO SCALE

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WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR MASTER CODE PLAN

PROJECT NUMBER
2021094

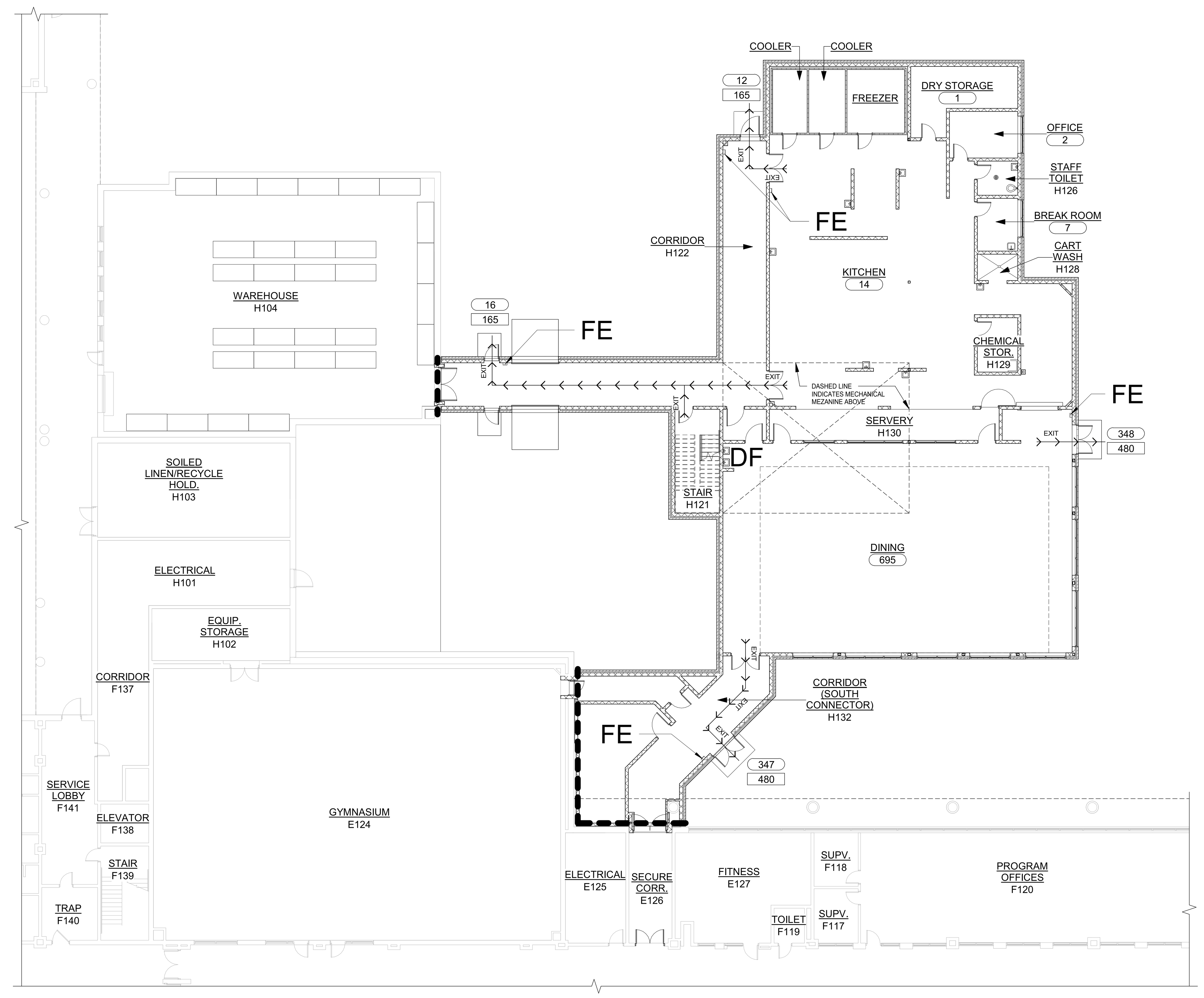
SHEET NUMBER
A2.01

PROJECT DATE
SEPTEMBER 6, 2023

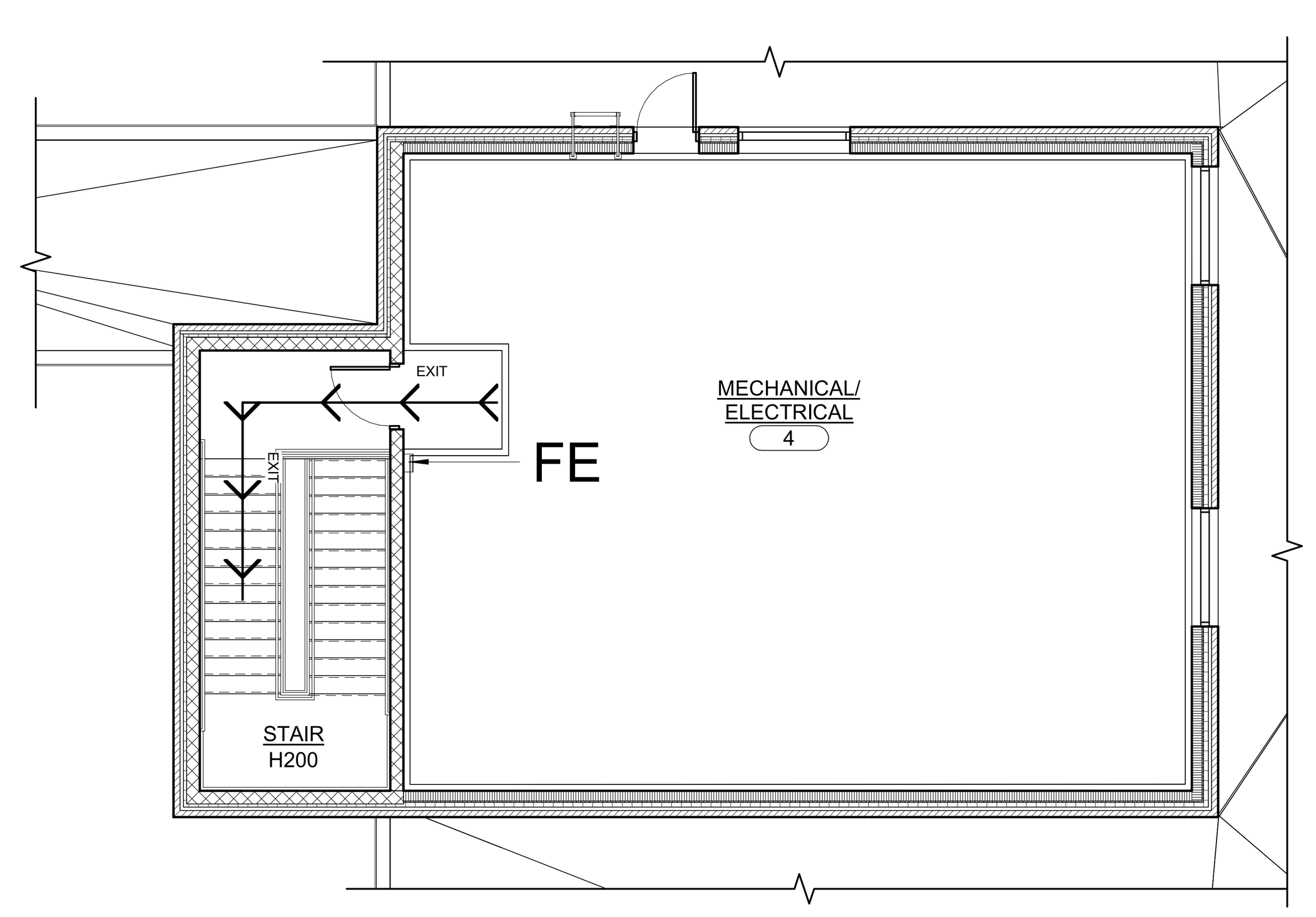
CHECKED BY
C.D.S.

CENTER FOR FORENSIC PSYCHIATRY - BUILDING CODE NOTES

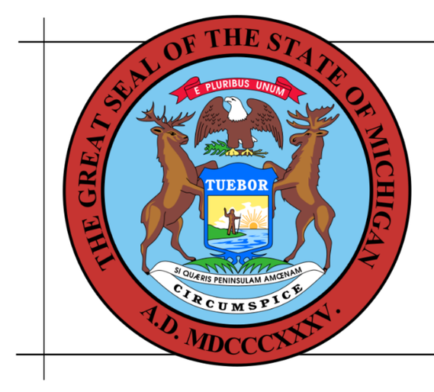
CODE REFERENCE	2012 NFPA 2015 MICHIGAN BUILDING CODE ANSI A117.1 2015 PLUMBING CODE 2015 ELECTRICAL CODE 2015 MECHANICAL CODE			
DESCRIPTION	REFERENCE	EXISTING	NEW ADDITION	REMARKS
OCCUPANCY CLASSIFICATION	MBC 303.3 / 308.4	I-2 CONDITION 1	A-2	ASSEMBLY - DINING FACILITY & ASSOCATED KITCHEN / INSTITUTIONAL - PSYCHIATRIC HOSPITAL
CONSTRUCTION TYPE	MBC 601	IB	IIB	TYPE IIB: RATING FOR BLDG ELEMENTS = 0-HOUR TYPE IB: RATING FOR BLDG ELEMENTS = 2-HOUR EXCEPTION: NONBEAR INT WALLS = 0-HOUR ROOF = 1-HOUR
NONBEARING EXTERIOR WALL SEPARATION	MBC 602	IB:I > 30 FT = 0-HOUR	IIB:A = 0-HOUR	
FEATURES OF FIRE PROTECTION		FULLY SPRINKLED		
BUILDING HEIGHT	MBC 504.4	ALLOWED - 5 STORIES - 180 FT.	ALLOWED - 3 STORIES - 75 FT.	A-2: ACTUAL - 1 STORY - 18 FT.
BUILDING AREA	MBC 506.2	UNLIMITED	ALLOWED - 38,000 S.F.	A-2: ACTUAL - 11,124 S.F.
SEPARATED OCCUPANCIES	MBC 508.4	I-2	A-2	2-HOUR FIRE BARRIER SEPARATION TO COMPLY WITH A-2 REQUIRMENTS
INCIDENTAL USE AREAS	MBC 509	FURNACE ROOM WITH >400,000 BTU PER HOUR INPUT = 1 HOUR OR SPR. BOILER ROOMS >15 PSI OR 10 HORSEPOWER = 1 HOUR OR SPR.		BUILDING FULLY SPRINKLERED
		LAUNDRY ROOM > 100 S.F. = 1-HOUR LABS = 1-HOUR & SPR. PHY PLANT MAINT SHOPS = 1-HOUR	LAUNDRY ROOM > 100 S.F. = 1-HOUR OR SPR.	
FIRE BARRIERS	MBC 707	SEPARATED OCCUPANCIES		CONTINUITY: TOP OF FND OR FLR/CLG ASSEMBLY TO UNDERSIDE OF FLR OR ROOF ABOVE - CONT THRU OUT CONCEALED SPACES
INTERIOR WALL/CEILING FINISHES	MBC TABLE 803.11	INTERIOR EXIT STAIRWAYS - B CORRIDORS - B		
		ROOMS AND ENCLOSED SPACES - B ADMIN - C ≤ 4 OCC. - C	ROOMS AND ENCLOSED SPACES - C	
OCCPANT LOAD	MBC 1004.1.2	STOR/MECH 1:300 S.F. (GROSS) WAREHOUSE 1/500 S.F. (GROSS)		A-2 : TOTAL OCCUPANTS = 718
		INPAT 1:240 S.F. (GROSS SLEEPING 1/120 S.F. (GROSS)	KITCHEN 1:200 S.F. (GROSS) DINING ROOM/SERVING 1:5 S.F. (NET)	
FIRE EXTINGUISHERS	NFPA 10	75' MAXIMUM DISTANCE APART		
COMMON PATH EGRESS TRAVEL	MBC 1006.2.1	75'		THAT PORTION OF THE EXIT ACCESS TRAVEL DISTANCE MEASURED FROM THE MOST REMOTE POINT WITHIN A STORY TO THAT POINT WHERE THE OCCUPANTS HAVE SEPARATE AND DISTINCT ACCESS TO TWO EXITS OR EXIT ACCESS DOOR-WAYS.
NUMBER OF EXITS	MBC 1006.3.1		REQUIRED: (1) KITCHEN (2) DINING	PROVIDED: (2) DINING ROOM (2) KITCHEN
EXIT ACCESS TRAVEL DISTANCE	MBC 1017.2	200 FT.	250 FT.	
CORRIDOR FIRE RESISTANCE	MBC 1020.1	w/ SPRINKLER = 0 HOUR		FULLY SPRINKLERED
MINIMUM CORRIDOR WIDTH	MBC 1020.2	MIN. 44 INCHES		
		MIN. 96 INCHES FOR BED CLEARANCE		
DEAD END CORRIDORS	MBC 1020.4	20 FT.		
ACCESSIBILTY	MBC 1101.2		DESIGNED AND CONSTRUCTED TO BE ACCESSIBLE	
PLUMBING FIXTURES	MPC TABLE 403.1		NO ADDITIONAL STAFF OR PATIENTS ARE BEING ADDED TO THE FACILITY	
ENERGY EFFICIENCY	MEC		ROOF - INSULATION ENTIRELY ABOVE DECK = R-30 CI WALLS - MASS = R-11.4 C.I. SLAB ON GRADE = R-15 FOR 24IN.	



16 A2.02 **FIRST FLOOR CODE PLAN**
SCALE: 1/16" = 1'-0"



28 A2.02 **SECOND FLOOR CODE PLAN**
SCALE: 1/8" = 1'-0"



BUILDING
These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

CODE LEGEND

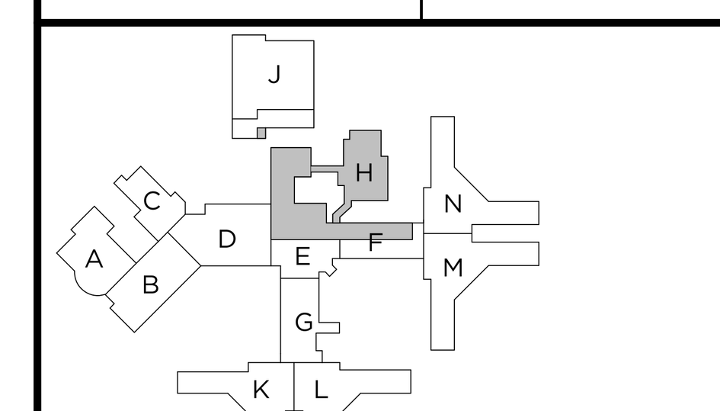
- 3-HOUR BUILDING SEPARATION
- 2-HOUR BARRIER
- 1-HOUR ENCLOSURE
- 1-HOUR SMOKE BARRIER
- TRAVEL DISTANCE
- 100% SPRINKLED
- DF DRINKING FOUNTAIN
- FE FIRE EXTINGUISHER
- # OCCUPANT LOAD
- # EXIT CAPACITY

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A., DIRECTOR

FILE NO. 491/20167.SDW

FUNDING CODE 171CODHHS7255 — CONTRACT NO. Y22003



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100 S Jefferson Ave, Suite 601
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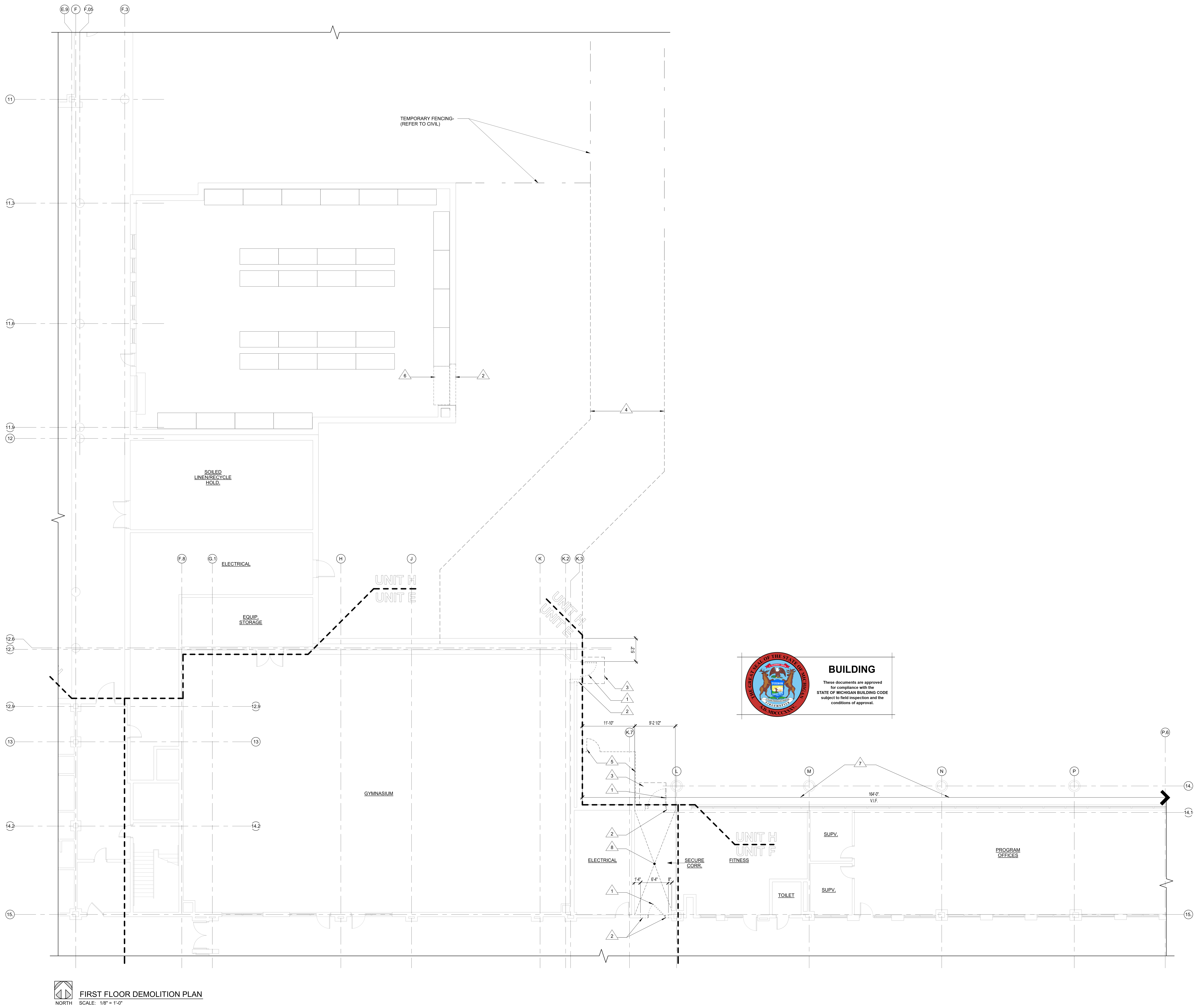
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR PARTIAL CODE PLAN

PROJECT NUMBER 2021094
PROJECT DATE SEPTEMBER 6, 2023
CHECKED BY C.D.S.
SHEET NUMBER A2.02



FIRST FLOOR DEMOLITION PLAN

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

GENERAL DEMOLITION NOTES:

1. THE CONTRACTOR SHALL PROVIDE ALL SHORING, TEMPORARY SUPPORTS, AND BRACING REQUIRED FOR THE SAFE DEMOLITION AND ERECTION OF STRUCTURAL COMPONENTS.
2. ALL BUILDING MATERIAL BEING DEMOLISHED IS TO BE DISPOSED OF BY THE CONTRACTOR, UNLESS NOTED OTHERWISE AND EXCLUDING THOSE ITEMS SALVAGED BY THE OWNER.
3. PROTECT ADJACENT MEMBERS, FINISHES, AND SURFACES FROM DAMAGE DURING DEMOLITION WORK. CONDUCT DEMOLITION TO MINIMIZE INTERFERENCE W/ ADJACENT STRUCTURAL MEMBERS, BUILDING AREAS, AND PUBLIC AND PRIVATE THOROUGHFARES. MAINTAIN PROTECTED EGRESS AND ACCESS AT ALL TIMES.
4. PRIOR TO BEGINNING ANY DEMOLITION WORK PROVIDE TEMPORARY BARRIERS AS REQUIRED TO PREVENT MIGRATION OF DUST AND NOISE INTO ADJACENT AREAS, TO PREVENT UNAUTHORIZED ACCESS INTO THE WORK AREA, AND TO PROTECT THE GENERAL PUBLIC.
5. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION WORK.

.# DEMOLITION KEYNOTES

1 REMOVE EXISTING DOOR, FRAME, AND ALL ASSOCIATED HARDWARE
2 REMOVE A PORTION OF EXISTING WALL CONSTRUCTION FOR NEW OPENING (REFER TO CONSTRUCTION PLAN)
3 REMOVE EXISTING CONCRETE ENTRY SLAB AND FOUNDATION
4 REMOVE EXISTING FENCE, REFER TO CIVIL FOR LOCATION OF TEMPORARY FENCING AND FOR FINAL FENCING LAYOUT - TEMPORY FENCING MUST BE IN PLACE PRIOR TO DEMOLITION OF FENCING BEGINS
5 REMOVE EXISTING FENCE AND GATE
6 REMOVE AND SALVAGE EXISTING SHELVING - RETURN TO OWNER
7 REMOVE EXISTING WATER RESISTANT DAMPROOFING ALONG THE EXTENT OF THE FOUNDATION WALL - REFER TO CIVIL FOR COORDINATION OF SIDE WALK REMOVAL, ENTRY SLAB REMOVAL, AND FENCE MODIFICATIONS - PREP AREA FOR NEW DAMPROOFING (REFER TO CONSTRUCITON PLAN)
8 EXISTING CEILING TO REMAIN - MODIFY AS REQUIRED FOR NEW OPENINGS (REFER TO CONSTRUCTION PLAN).

NO.	REVISION	DATE

STATE OF MICHIGAN
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FILE NO.
491/20167.SDW

FUNDING CODE
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CONTRACT NO.
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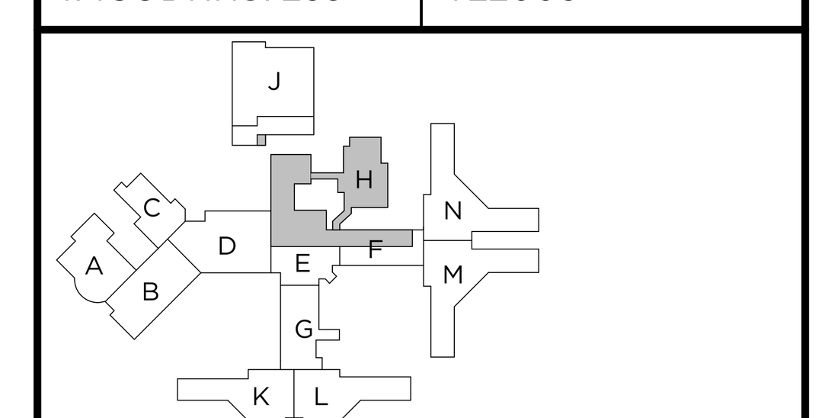

KEY PLAN
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

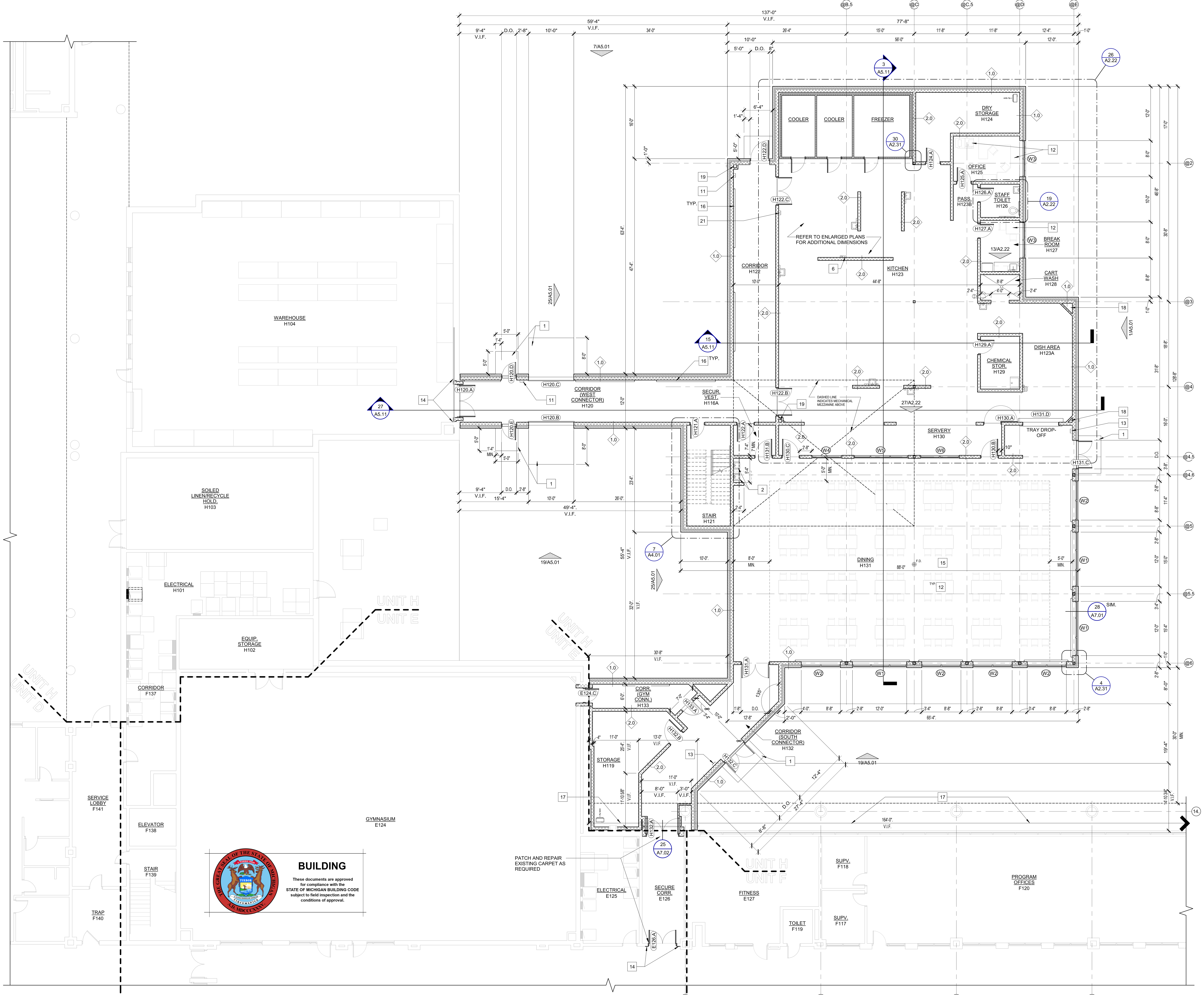
SHEET TITLE
FIRST FLOOR DEMOLITION PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

SHEET NUMBER
A2.11



25
A2.21
FIRST FLOOR CONSTRUCTION PLAN
SCALE: 1/8" = 1'-0"
NORTH

CONSTRUCTION GENERAL NOTES:

1. WALL TYPES ARE INDICATED AS A DIAMOND WITH A NUMBER. REFER TO SHEET A0.01 FOR DESCRIPTION OF WALL TYPES.
2. PLAN DIMENSIONS DO NOT INCLUDE WALL THICKNESS (REFER TO WALL TYPES).
3. DOOR FRAMES ARE TO BE LOCATED 8" FROM THE PERPENDICULAR WALL ON THE HINGE SIDE OF THE DOOR AT MASONRY WALLS, UNLESS NOTED OTHERWISE.
4. PROVIDE BLOCKING AT ALL WALL MOUNTED ITEMS INCLUDING BUT NOT LIMITED TO: PLUMBING ACCESSORIES, KITCHEN EQUIPMENT, ETC.
5. ALL AREAS DAMAGED BY DEMOLITION WORK ARE TO BE PATCHED AND REPAIRED OR REPLACED TO MATCH ADJACENT SURFACES.
6. PATCH AND REPAIR REMAINING WALLS; AT ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DEMOLITION POINTS WITH SIMILAR MATERIALS IN SIZE, COLOR AND TEXTURE.
7. PATCH AND REPAIR ALL EXISTING FLOORS AS REQUIRED WHERE EXISTING WALLS HAVE BEEN REMOVED.
8. FURNITURE OR EQUIPMENT TO BE BUILT AND/ORG INSTALLED BY CONTRACTOR IS SPECIFICALLY NOTED, DIMENSIONED OR DETAILED. ALL OTHER FURNITURE OR EQUIPMENT WILL BE PROVIDED AND INSTALLED BY OWNER.
9. FOR CASEWORK DETAILS - REFER TO "NORTHERN AMERICA ARCHITECTURAL WOODWORK STANDARDS (A.W.S.).
10. CASEWORK DESIGNATION REFERS TO THE WIDTH (W) AND DEPTH (D) OF THE CABINET. REFER TO DIMENSIONS FOR HEIGHT. REFER TO "A.W.S." FOR CABINET NUMBER LOCATED BELOW DIMENSION LINE.

.# CONSTRUCTION KEYNOTES

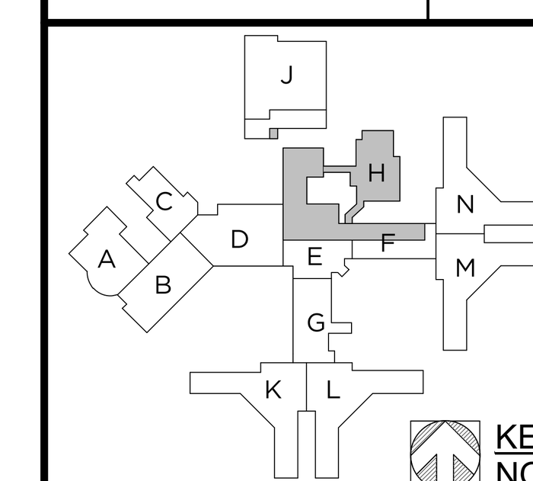
1 CONCRETE ENTRY SLAB (REFER TO STRUCTURAL)
2 PLUMBING FIXTURE (REFER TO MECHANICAL)
4 CASEWORK (REFER TO ELEVATIONS AND DETAILS)
5 STAINLESS STEEL GRAB BARS
6 PAPER TOWEL DISPENSER
7 TOILET PAPER DISPENSER
8 SANITARY NAPKIN RECEPTICLE
9 MIRROR 18" x 36"
10 SOAP DISPENSER
11 RECESSED FIRE EXTINGUISHER CABINET
12 FURNITURE AND EQUIPMENT (BY OWNER)
13 SEMI-RECESSED DETENTION FIRE EXTINGUISHER CABINET
14 PATCH AND REPAIR WALL CONSTRUCTION, WALL BASE, AND FLOORING TO MATCH EXISTING.
15 COORDINATE LOCATION OF FLOOR TILE MOVEMENT JOINTS WITH ARCHITECT, TYPICAL OF TCNA EJ-171
16 FIN TUBE RADIATOR (REFER TO MECHANICAL)
17 PROVIDE NEW WATER COLD FLUID-APPLIED WATERPROOFING ALONG THE EXENT OF THE EXISTING FOUNDATION WALL - REFER TO CIVIL FOR COORDINATION OF NEW SIDEWALK, NEW ENTRY SLAB, AND FENCE MODIFICATIONS - USE CAUTION AS UNDERGROUND LINES ARE LOCATED IN THIS AREA.
18 MECHANICAL CHASE VERIFY SIZE WITH KITCHEN EQUIPMETN MFR. AND MECHANICAL (REFER TO MECHANICAL)
19 MECHANICAL CHASE VERIFY CLEAR WIDTH REQUIRED WITH MECHANICAL (REFER TO MECHANICAL)
20 EYE WASH STATION (REFER TO FOOD SERVICE AND MECHANICAL)
21 SEMI-RECESSED WET CHEMICAL FIRE EXTINGUISHER CABINET

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE	CONTRACT NO.
171CODHHS7255	Y22003



KEY PLAN
NOT TO SCALE

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100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

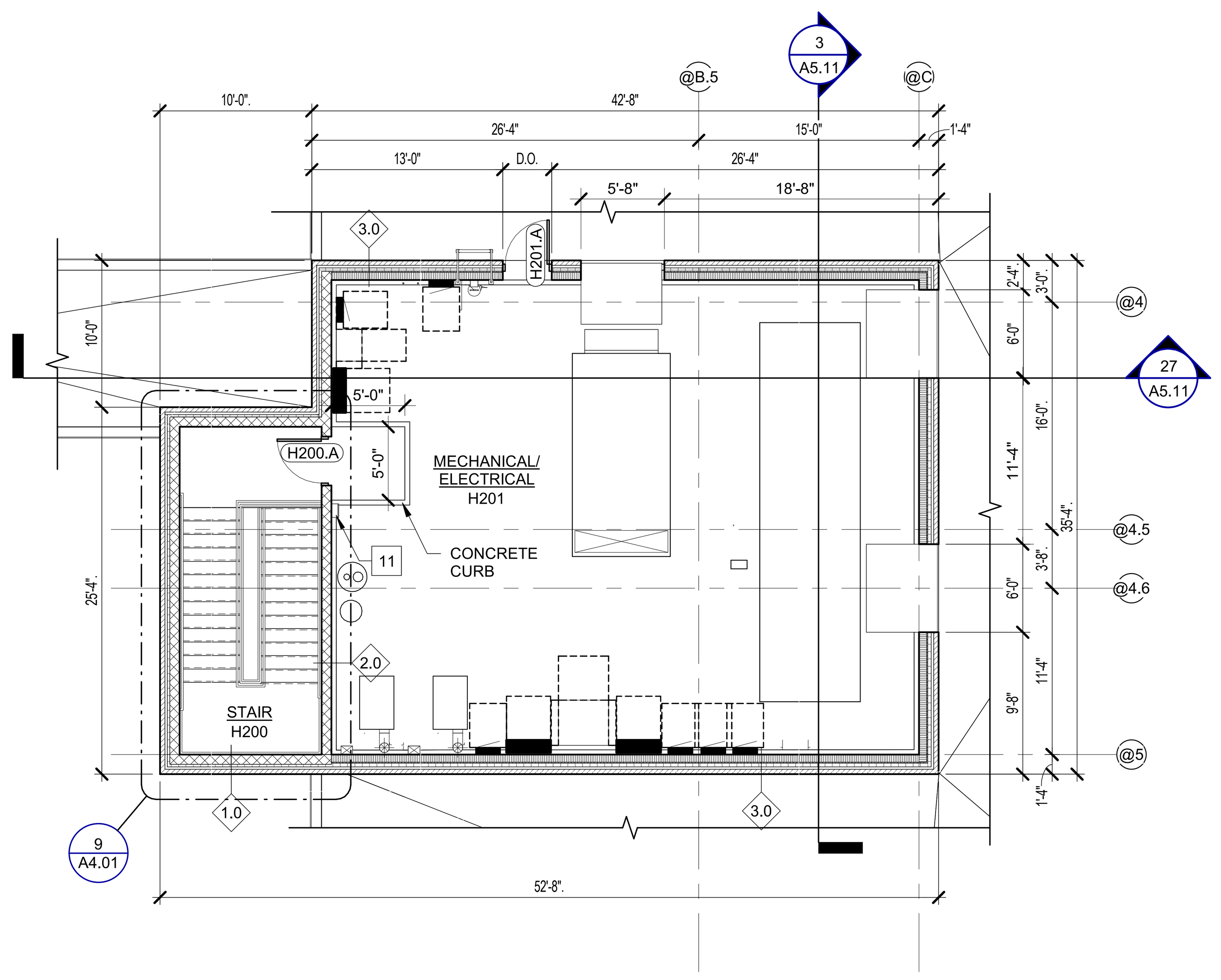
SHEET TITLE
FIRST FLOOR CONSTRUCTION PLAN

PROJECT NUMBER
2021094

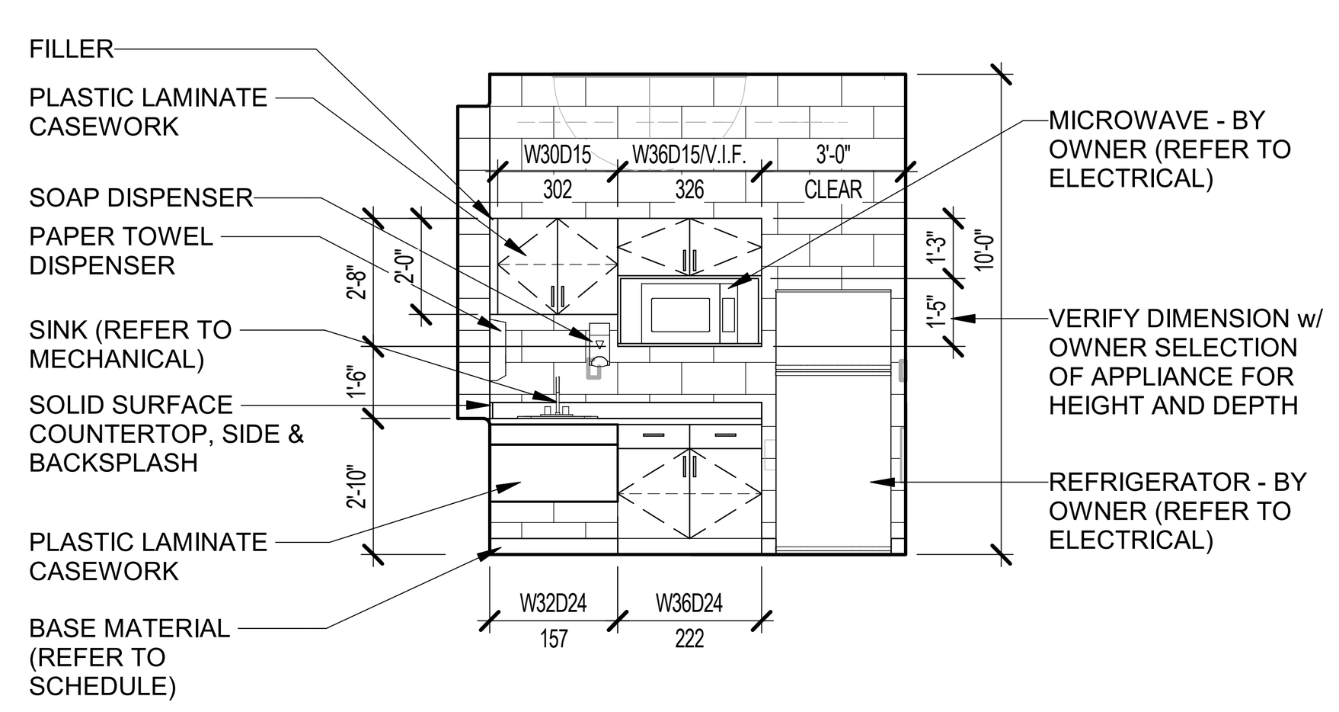
PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

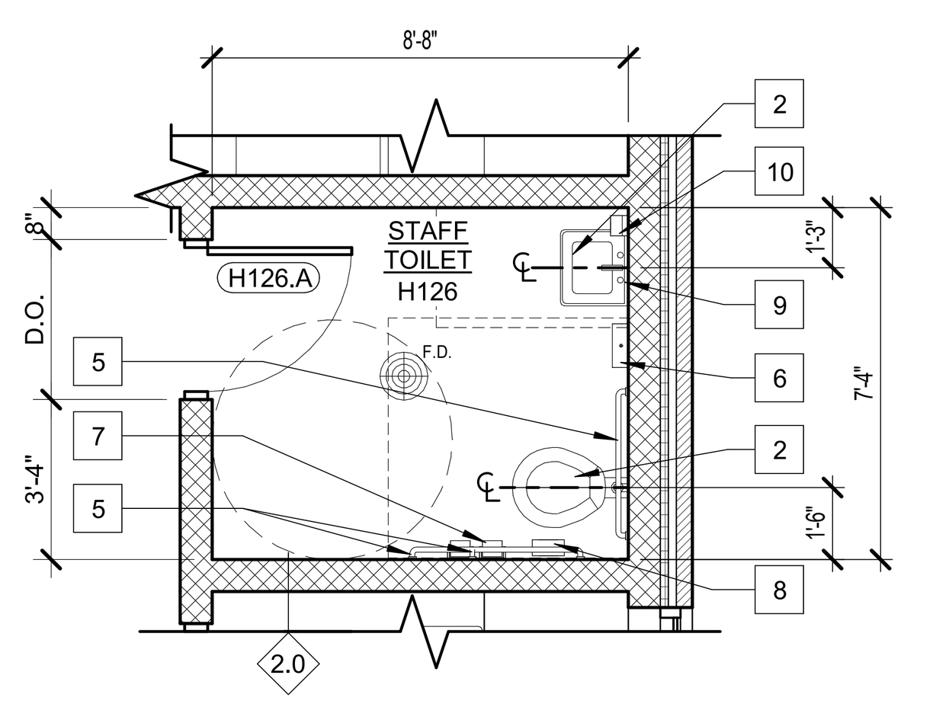
SHEET NUMBER
A2.21



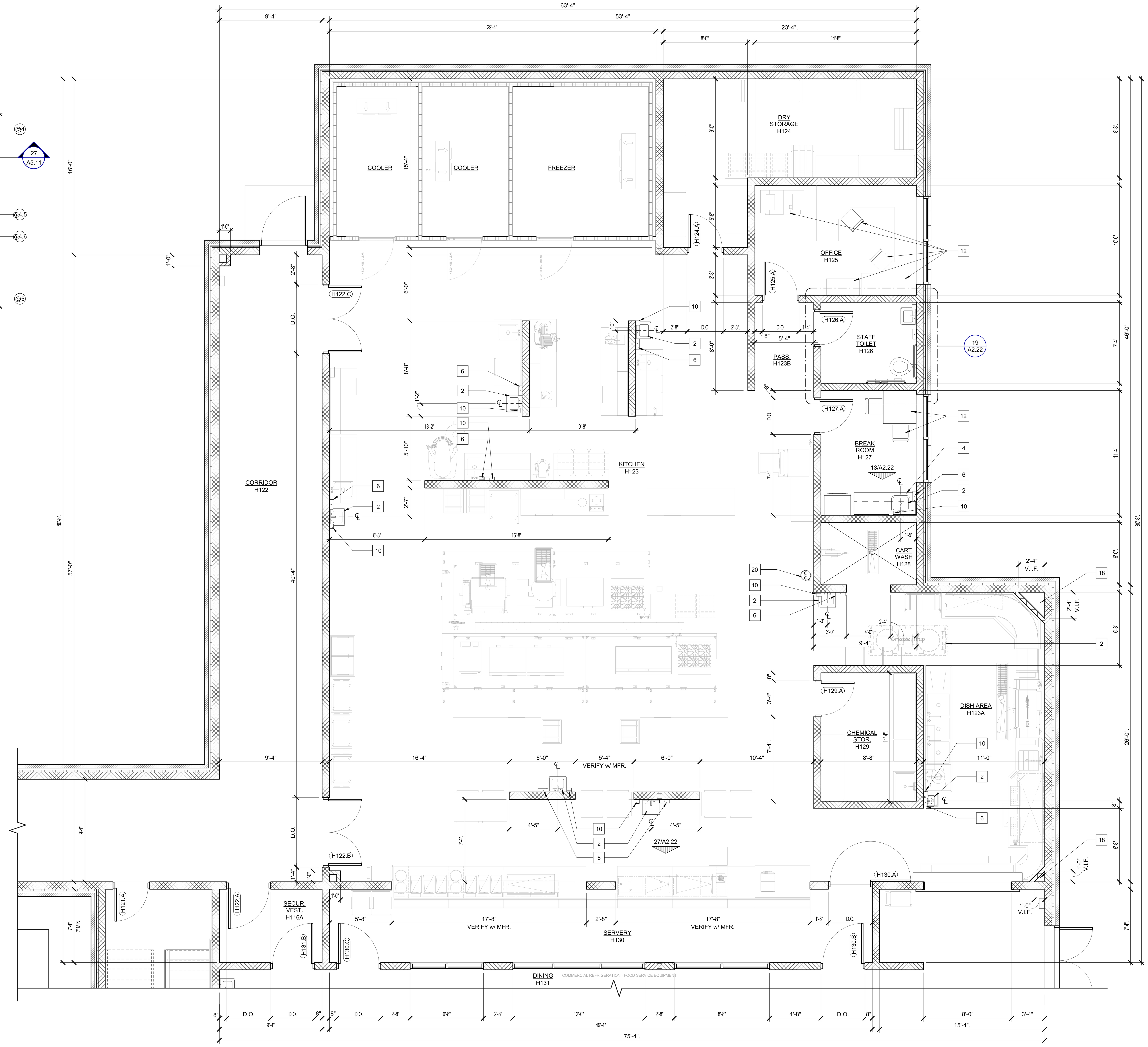
7 A2.22 SECOND FLOOR CONSTRUCTION PLAN
SCALE: 1/8" = 1'-0"



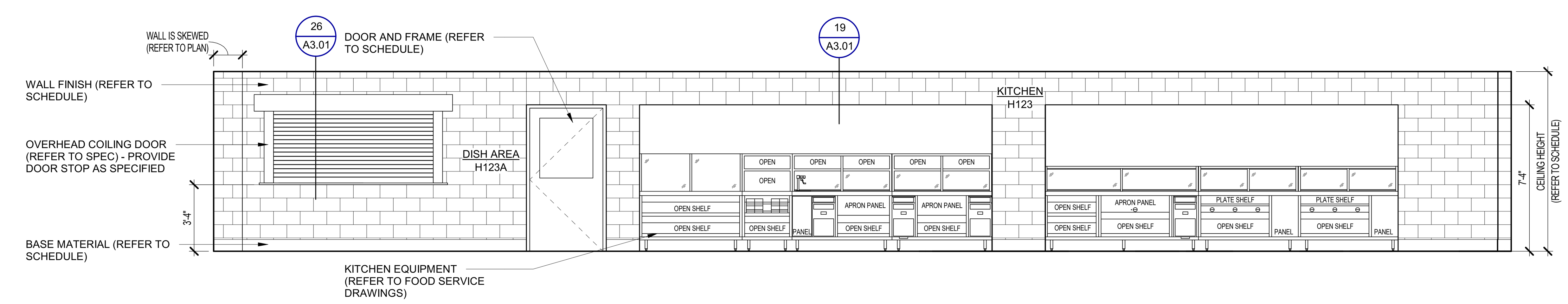
BREAK ROOM ELEVATION
13/A2.22 SCALE: 1/4" = 1'-0"



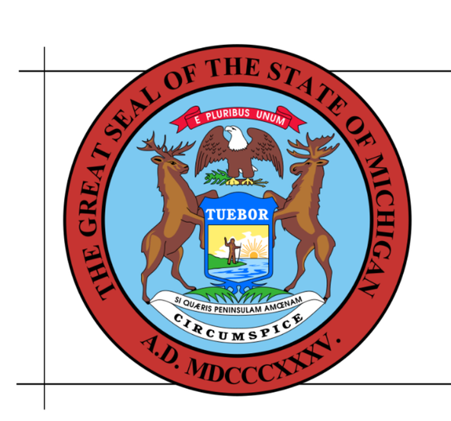
19 A2.22 ENLARGED FLOOR PLAN
SCALE: 1/4" = 1'-0"



26 A2.22 ENLARGED KITCHEN FLOOR PLAN
SCALE: 1/4" = 1'-0"



SERVERY ELEVATION
27/A2.22 SCALE: 1/4" = 1'-0"



BUILDING

These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

CONSTRUCTION GENERAL NOTES:

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.# CONSTRUCTION KEYNOTES

1	CONCRETE ENTRY SLAB (REFER TO STRUCTURAL)
2	PLUMBING FIXTURE (REFER TO MECHANICAL)
4	CASEWORK (REFER TO ELEVATIONS AND DETAILS)
5	STAINLESS STEEL GRAB BARS
6	PAPER TOWEL DISPENSER
7	TOILET PAPER DISPENSER
8	SANITARY NAPKIN RECEPTICLE
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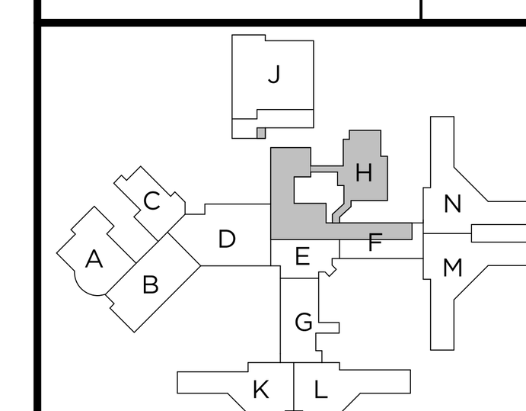

KEY PLAN
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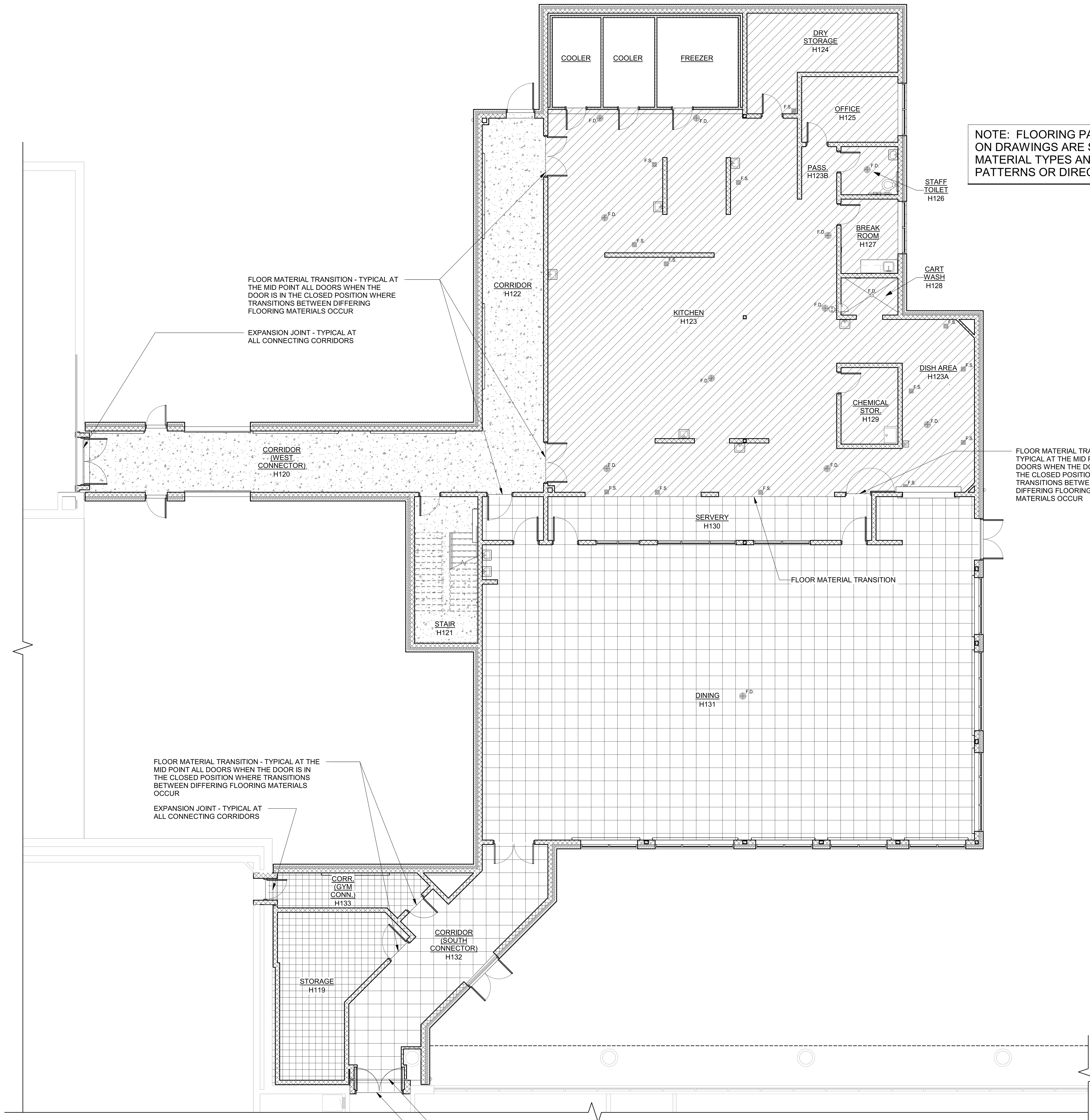
PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

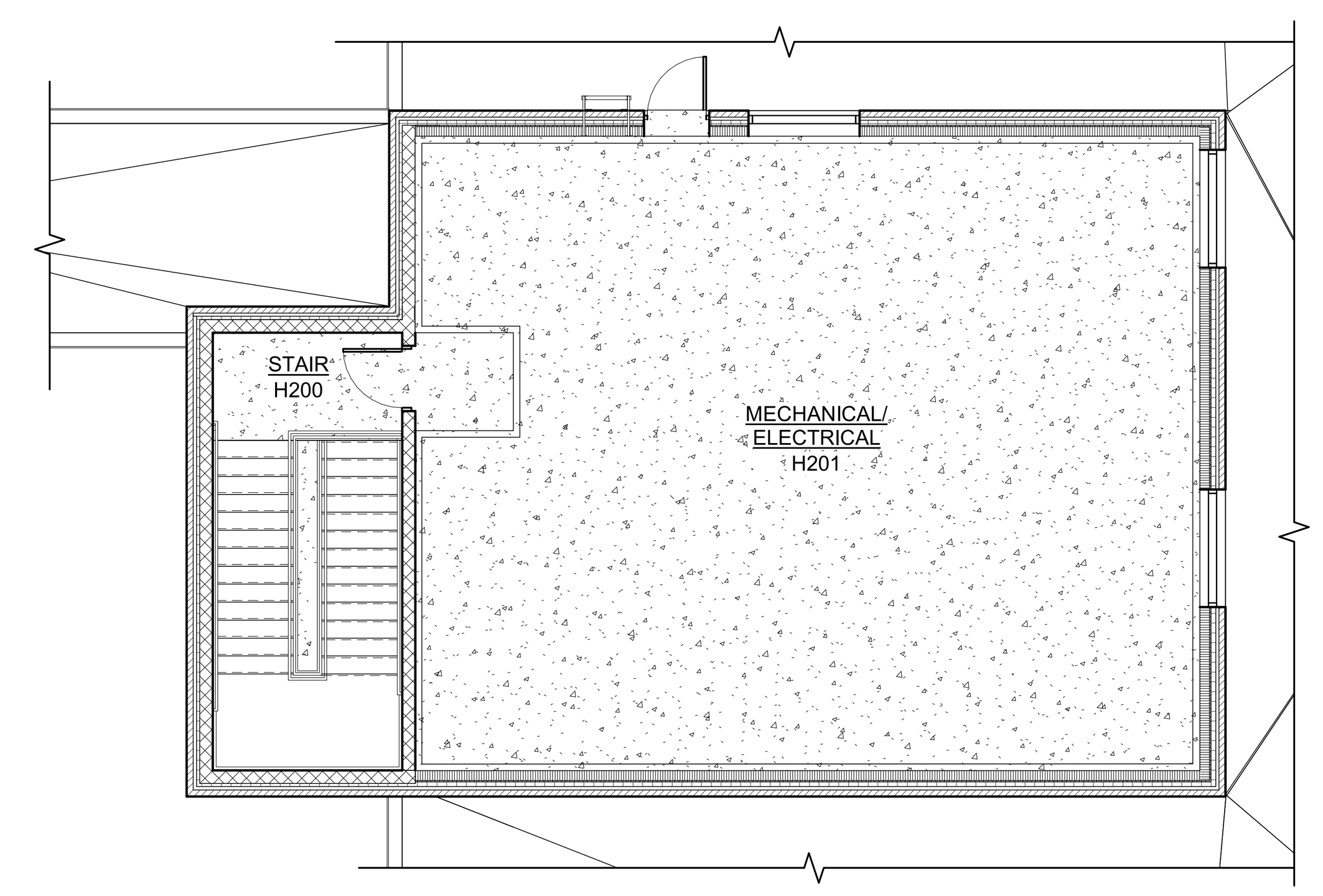
SHEET TITLE
SECOND FLOOR CONST. PLN, ENLARGED PLN, & INTERIOR ELEVATION

PROJECT NUMBER	SHEET NUMBER
2021094	A2.22
PROJECT DATE SEPTEMBER 6, 2023	
CHECKED BY C.D.S.	

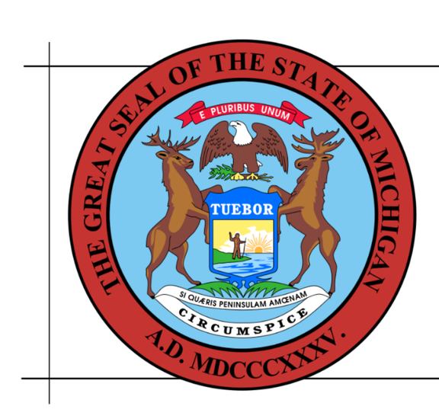


NOTE: FLOORING PATTERNS INDICATED ON DRAWINGS ARE SYMBOLIC OF MATERIAL TYPES AND NOT INSTALLATION PATTERNS OR DIRECTIONS.

26 / A2.23 FIRST FLOOR FLOORING PLAN
SCALE: 1/8" = 1'-0"



17 / A2.23 SECOND FLOOR FLOORING PLAN
SCALE: 1/8" = 1'-0"



BUILDING

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FLOORING LEGEND

- CERAMIC TILE
- SEALED CONCRETE
- RESILIENT SHEET FLOORING
- RESILIENT TILE FLOORING

NO.	REVISION	DATE

STATE OF MICHIGAN
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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

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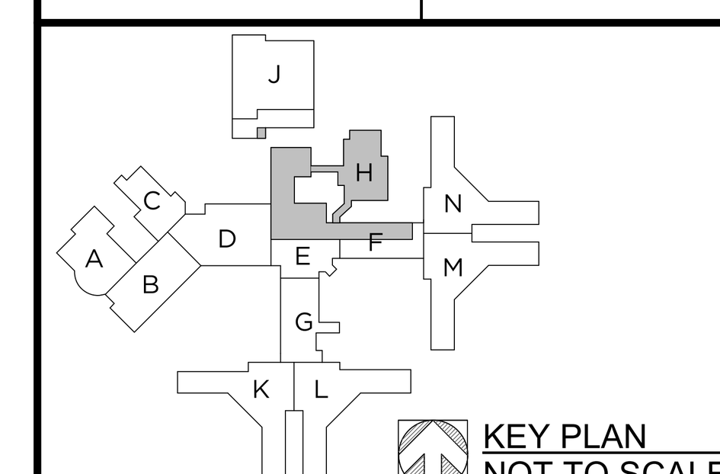

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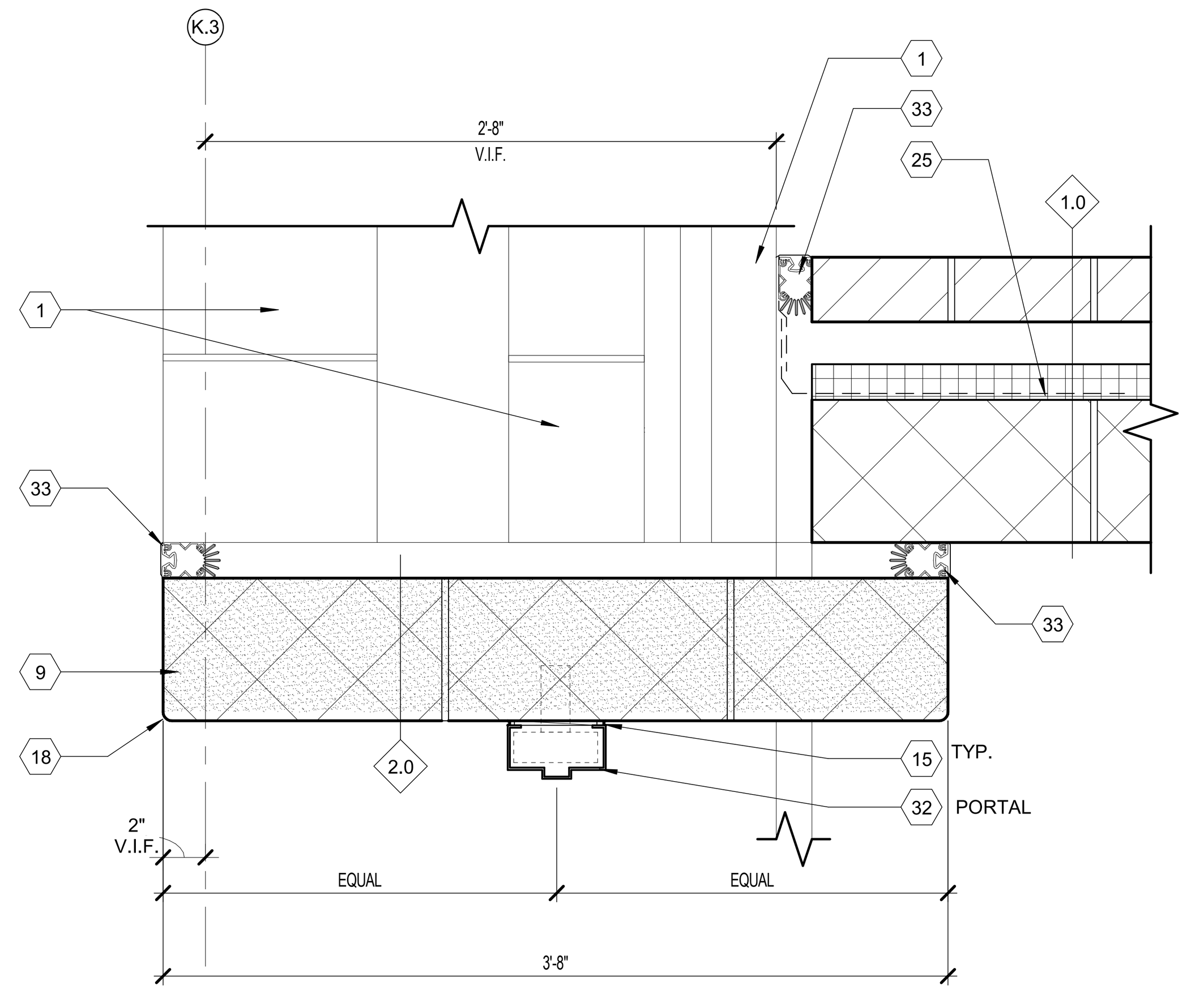
989 752 8107

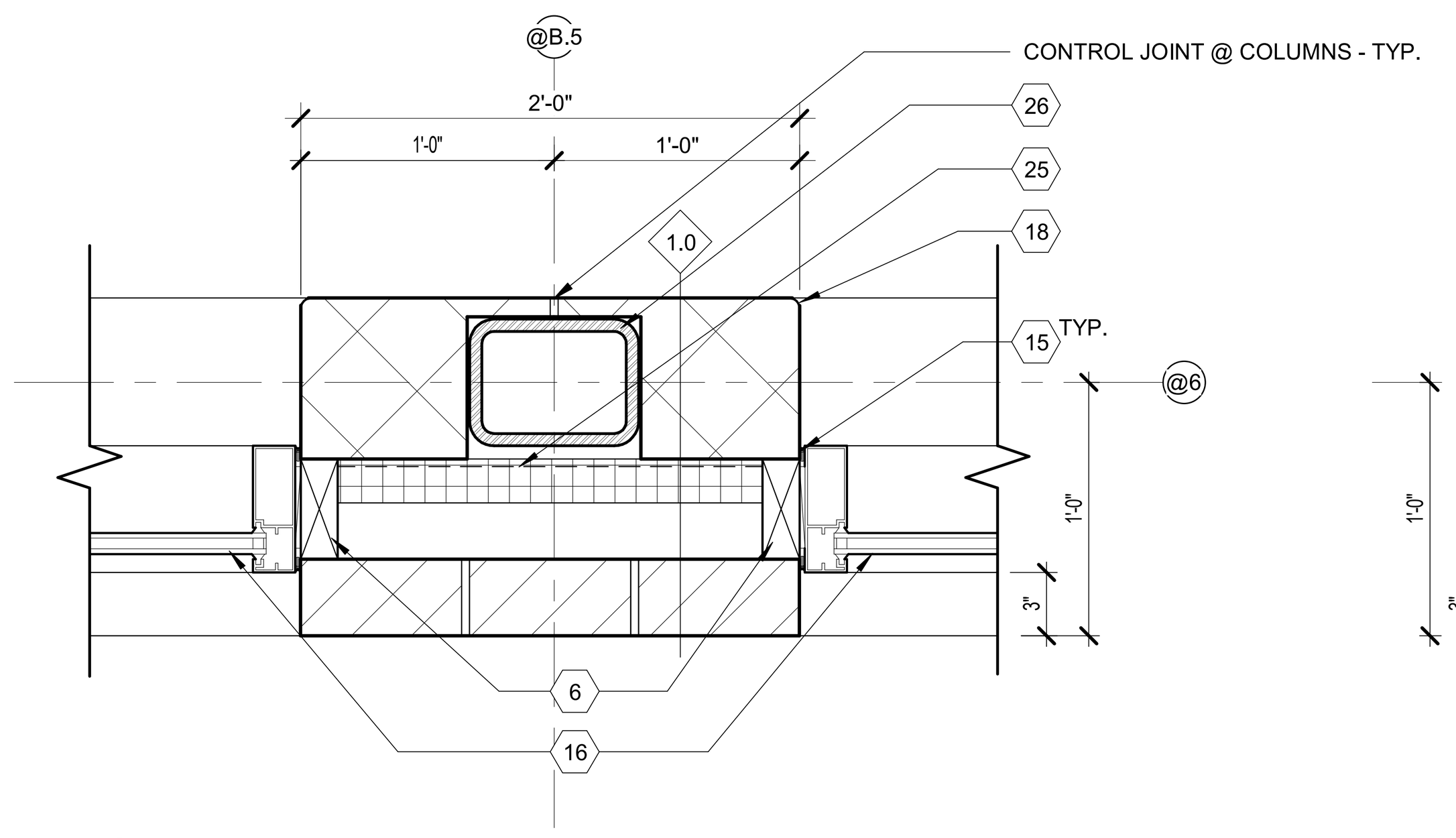
PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST & SECOND FLOOR FLOORING PLANS

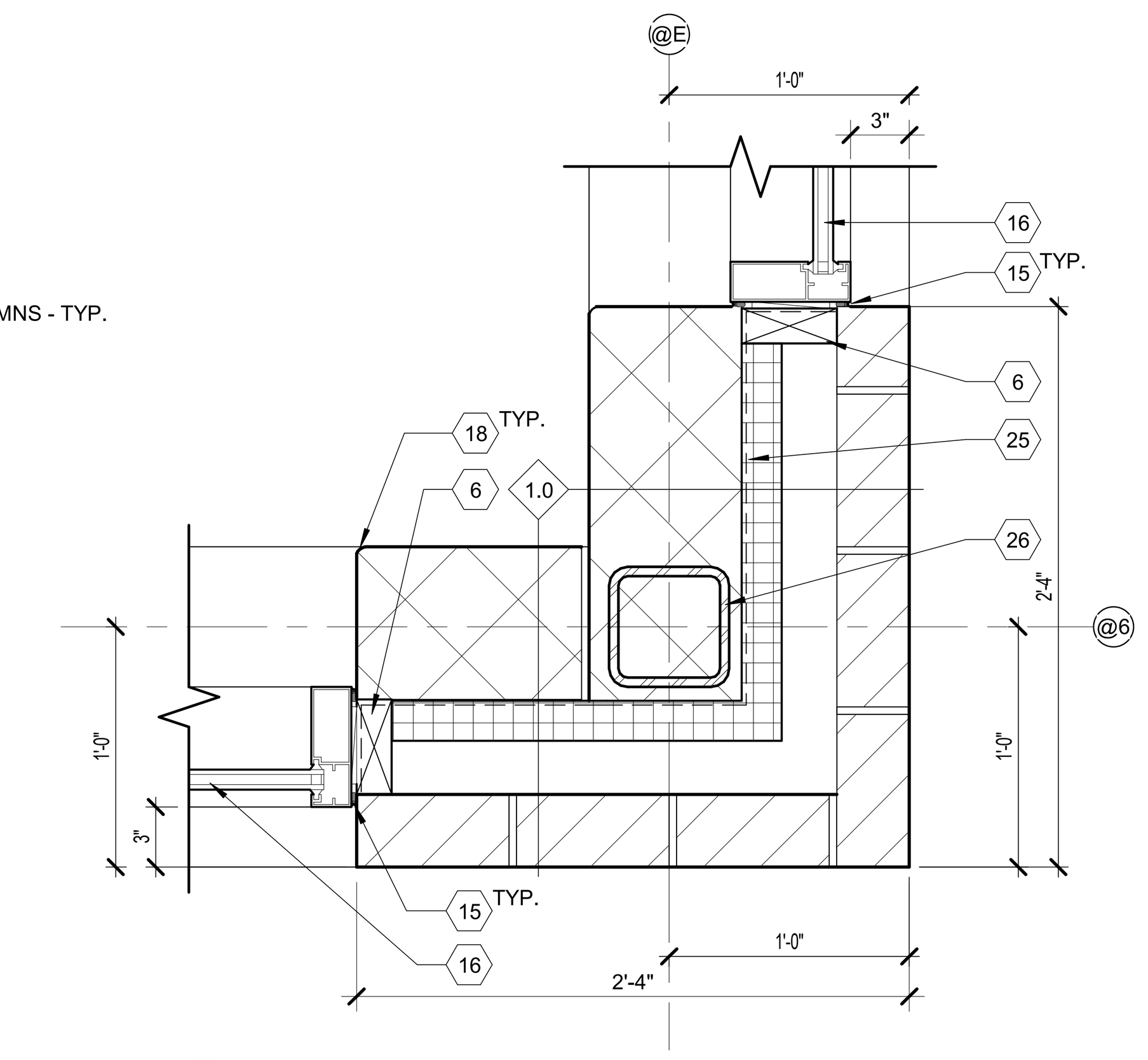
PROJECT NUMBER 2021094
PROJECT DATE SEPTEMBER 6, 2023
CHECKED BY C.D.S.
SHEET NUMBER A2.23



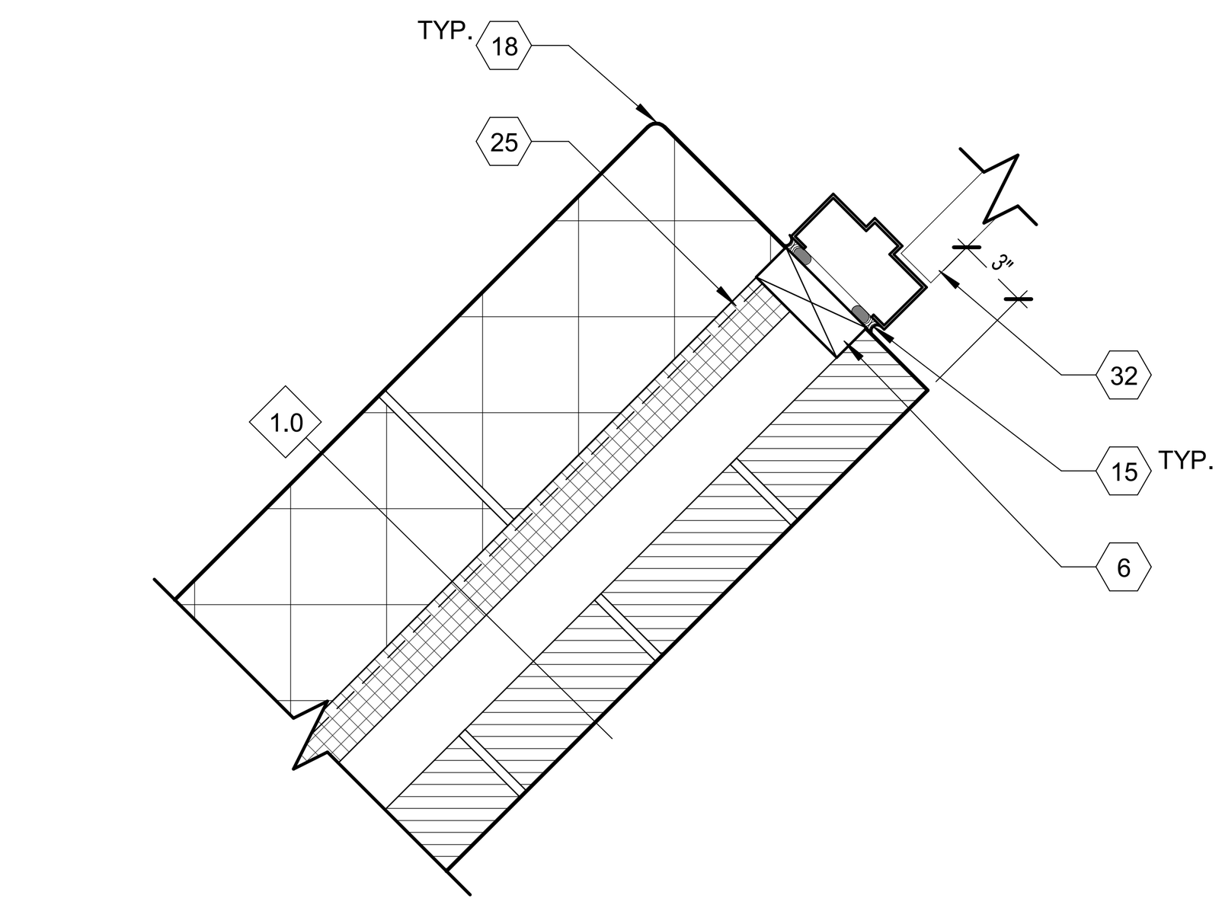
1 A2.31 PORTAL FRAME @ WEST CONNECTOR
SCALE: 1 1/2" = 1'-0"



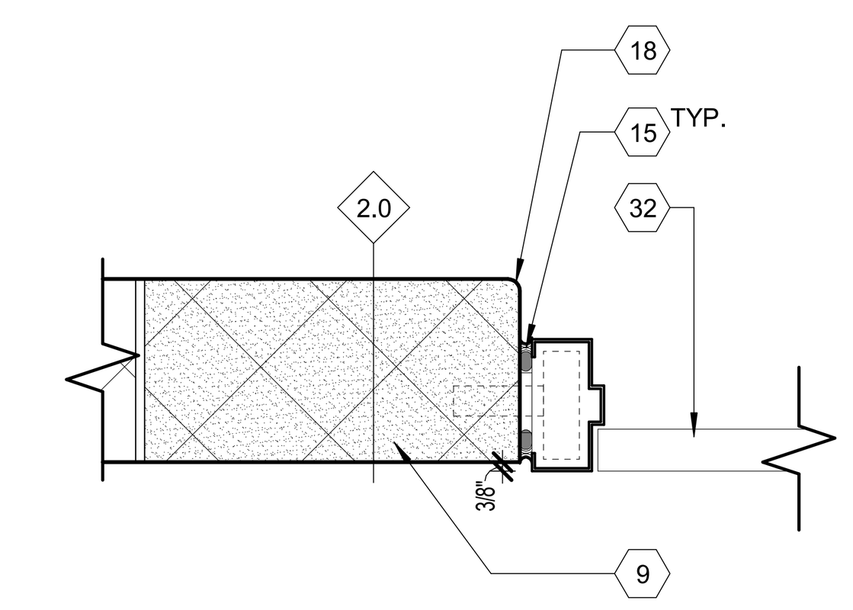
2 A2.31 JAMB DETAIL @ DINING
SCALE: 1 1/2" = 1'-0"



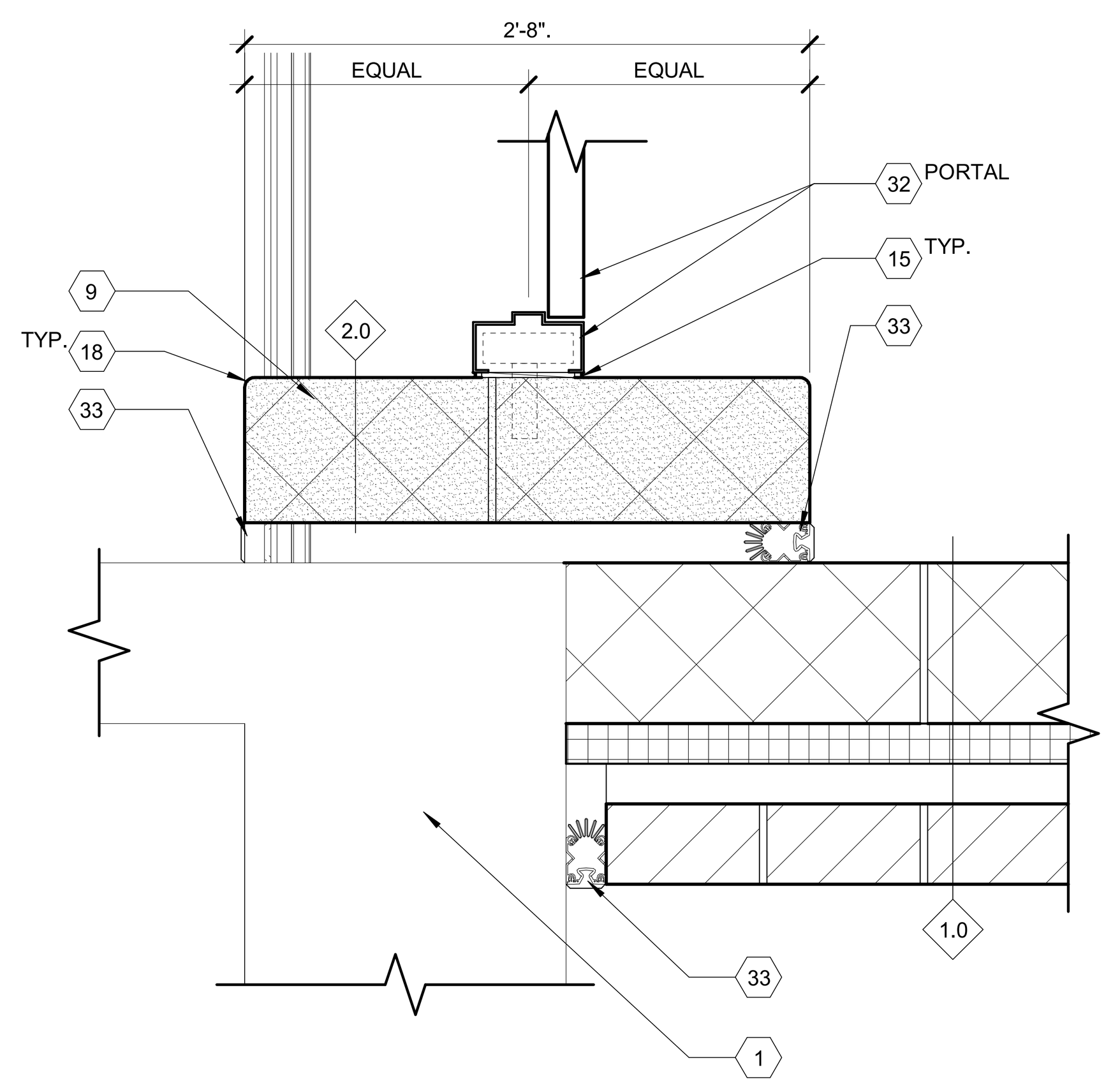
4 A2.31 JAMB DETAIL @ DINING
SCALE: 1 1/2" = 1'-0"



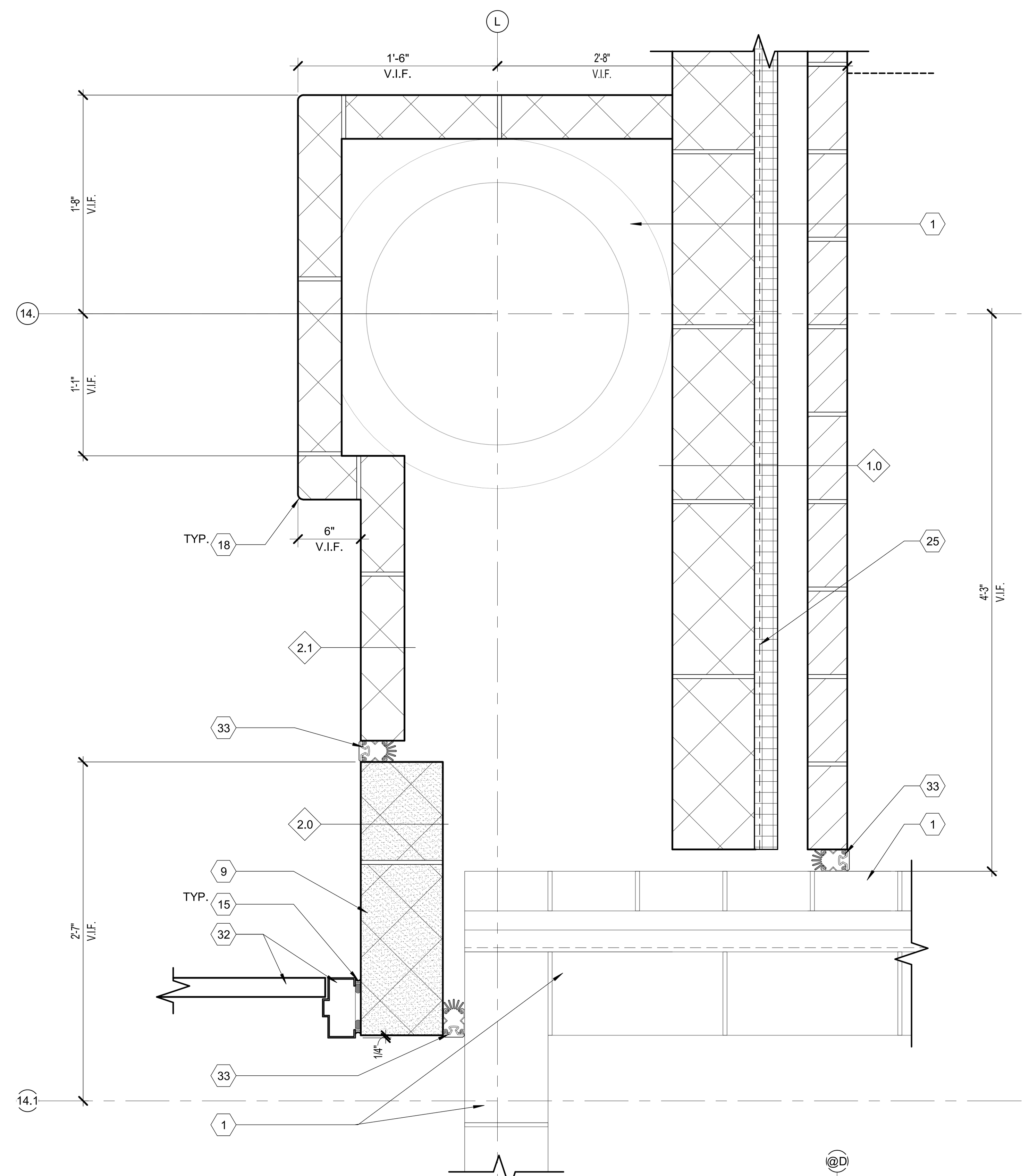
5 A2.31 JAMB DETAIL @ CORRIDOR (SOUTH CONNECTOR)
SCALE: 1 1/2" = 1'-0"



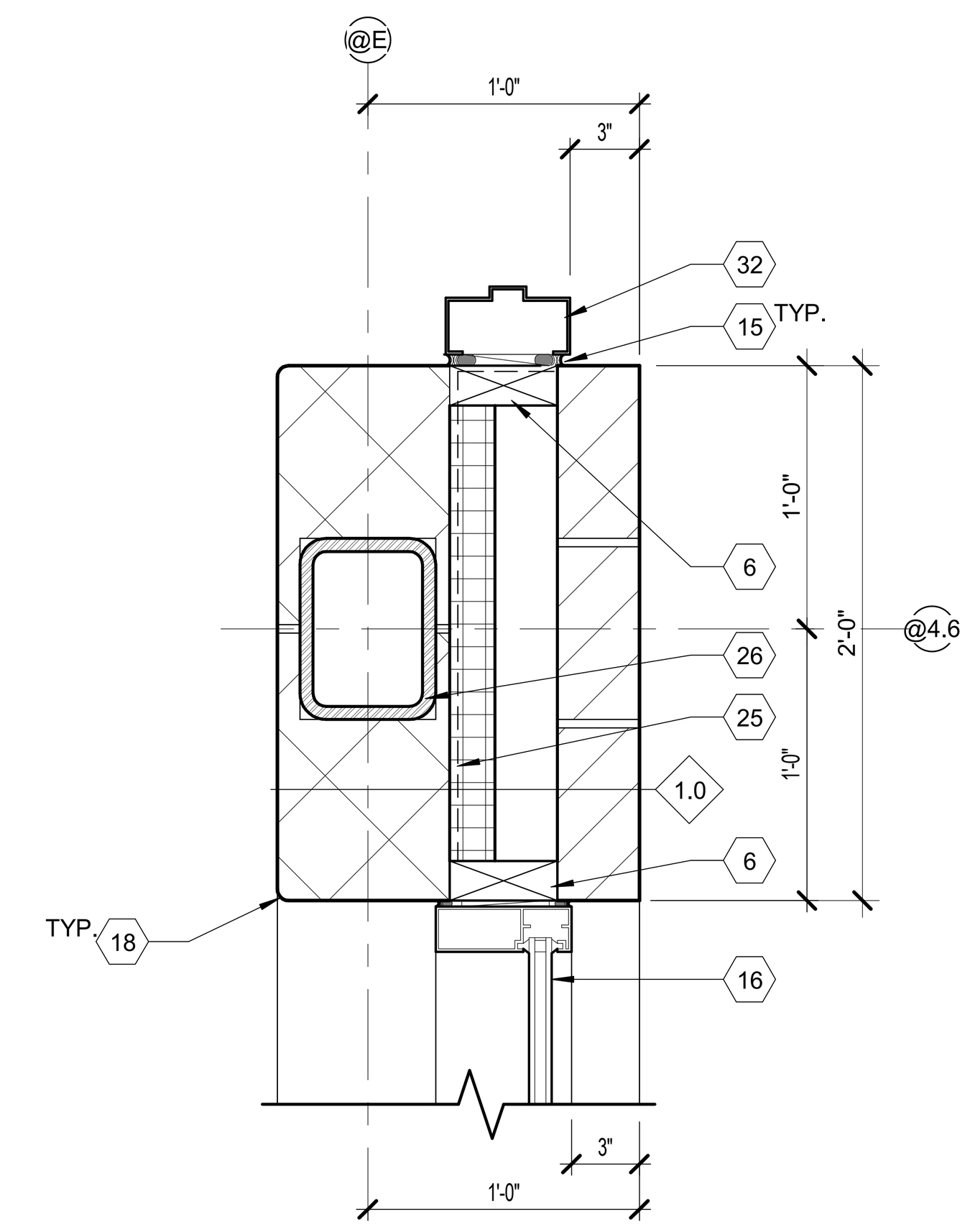
6 A2.31 TYP. HM DR JAMB @ CMU
SCALE: 1 1/2" = 1'-0"



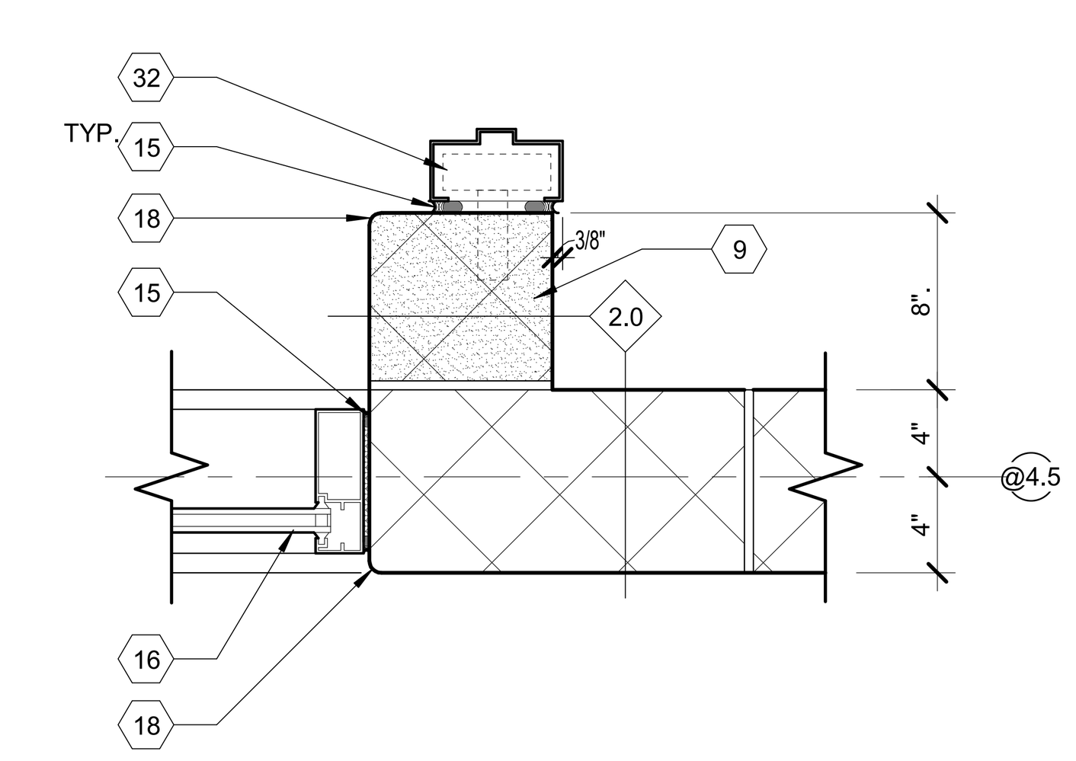
11 A2.31 PORTAL FRAME @ GYM
SCALE: 1 1/2" = 1'-0"



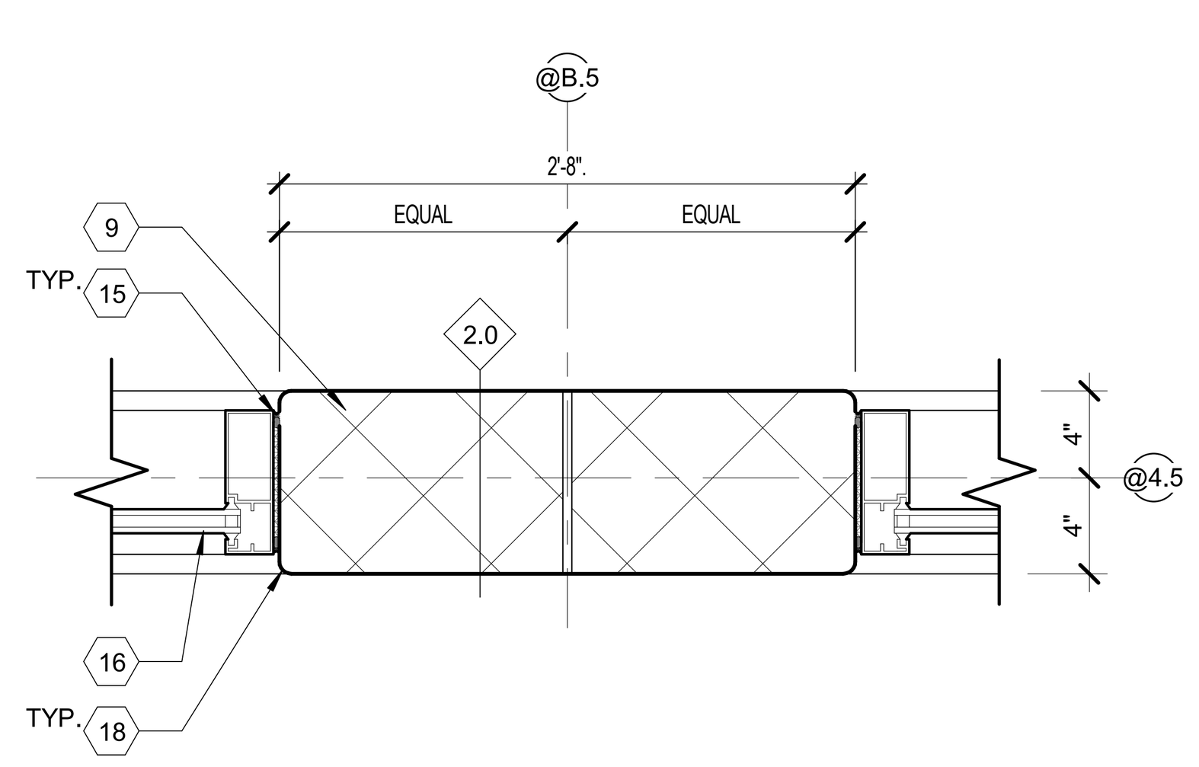
13 A2.31 PORTAL FRAME @ SOUTH CONNECTOR
SCALE: 1 1/2" = 1'-0"



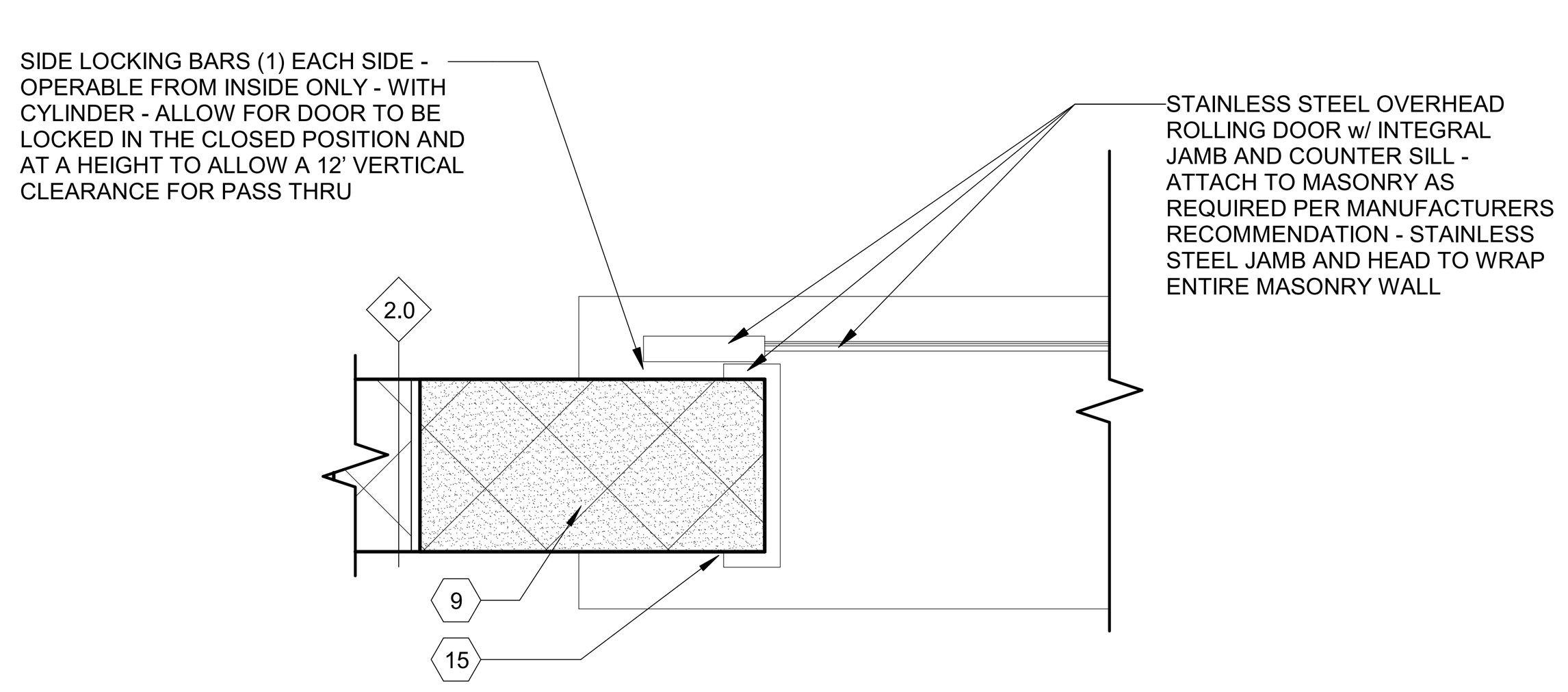
15 A2.31 JAMB DETAIL @ DINING
SCALE: 1 1/2" = 1'-0"



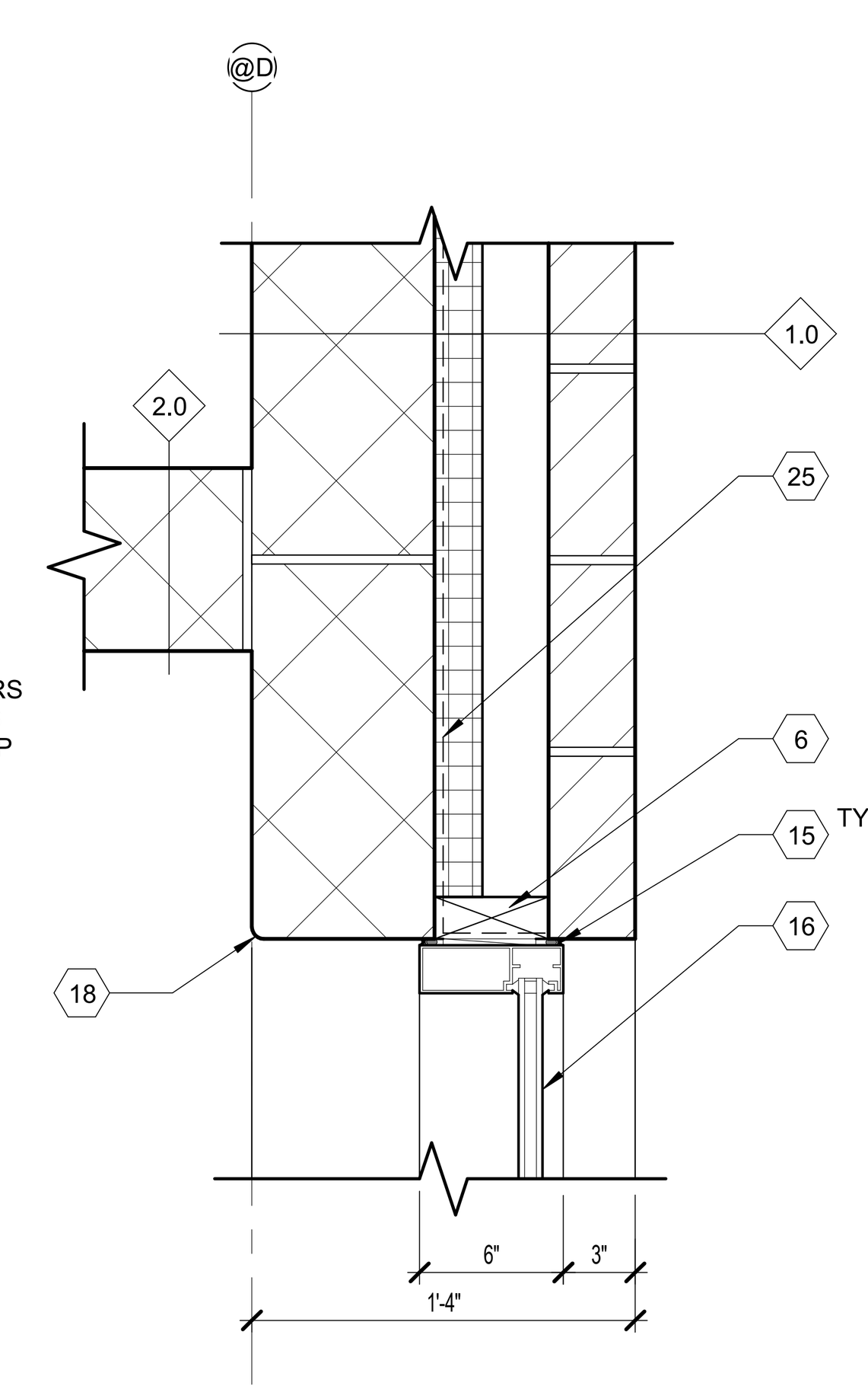
16 A2.31 JAMB DETAIL @ SERVERY
SCALE: 1 1/2" = 1'-0"



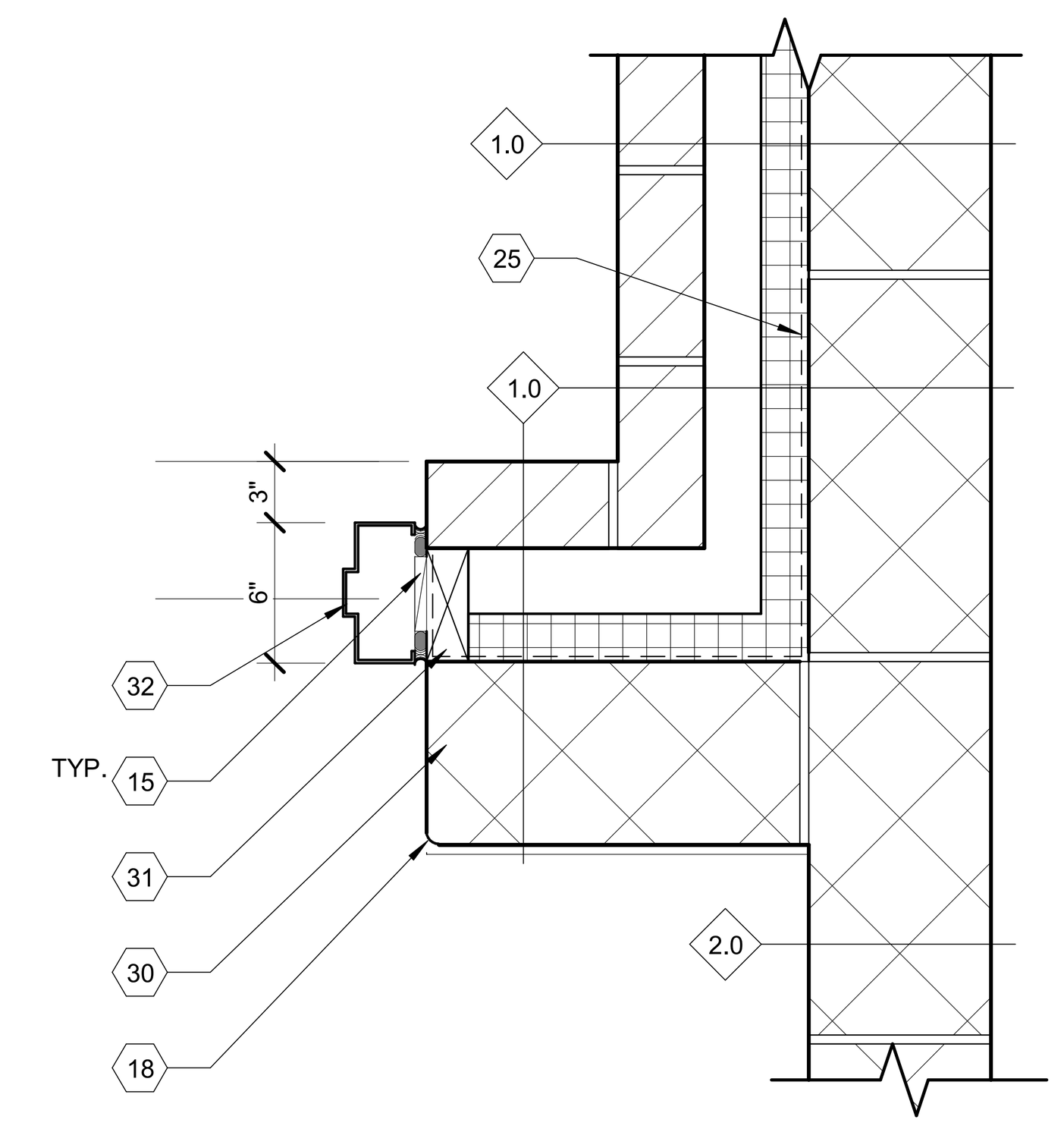
25 A2.31 JAMB DETAIL @ SERVERY
SCALE: 1 1/2" = 1'-0"



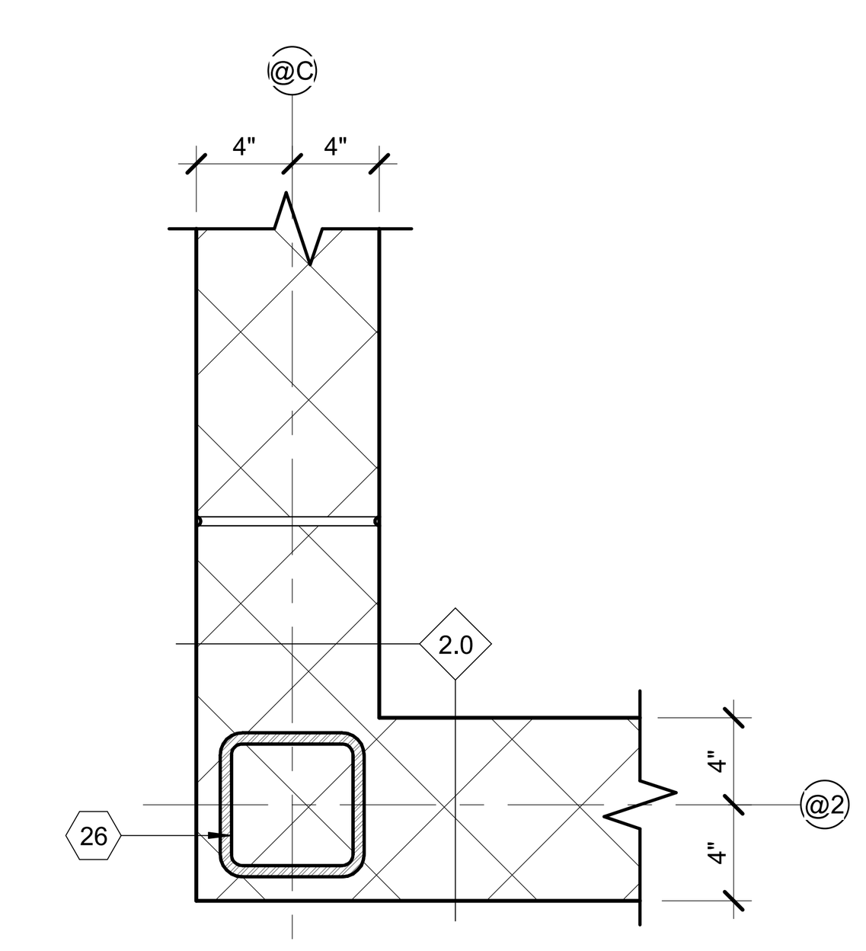
26 A2.31 JAMB DETAIL @ TRAY DROP OFF
SCALE: 1 1/2" = 1'-0"



28 A2.31 JAMB DETAIL @ DINING
SCALE: 1 1/2" = 1'-0"



29 A2.31 JAMB DETAIL @ CORRIDOR
SCALE: 1 1/2" = 1'-0"



30 A2.31 CORNER DETAIL @ DRY STORAGE
SCALE: 1 1/2" = 1'-0"

MATERIAL KEYNOTES

1 EXISTING TO REMAIN
2 FULLY ADHEARED SINGLE PLY MEMBRANE ROOFING
3 3/4" ROOFING BOARD
4 RIDGID ROOF INSULATION R-30
5 METAL DECK (REFER TO STRUCTURAL)
6 2x PRESSURE TREATED WOOD BLOCKING
7 SPRAY INSULATION IN METAL DECK FLUTES TO ALLOW FOR CONTINUOUS INSULATION
8 STEEL LINTEL - EXTERIOR STEEL LINTELS TO BE GALVANIZED - PAINT (REFER TO STRUCTUAL)
9 GROUT SOLID
10 THRU WALL FLASHING
11 MORTAR NET
12 FACE BRICK - MATCH EXISTING
13 8x24 BURNISHED BLOCK ACCENT BAND - MATCH EXISTING
14 8x24 SPLIT FACE BLOCK WAINSCOT - MATCH EXISTING
15 SEALANT OVER BACKER ROD EXTERIOR / CAULK INTERIOR - TYPICAL AT ALL WINDOWS AND DOORS
16 ALUMINIUM WINDOW SYSTEM WITH INSULATED GLAZING
17 BRICK VENT
18 BULLNOSE
19 BOND BREAK
20 4" CONCRETE SLAB ON VAPOR BARRIER (REFER TO STRUCTURAL)
21 PERIMETER INSULATION - EXTEND 2'-0" IN BOTH DIRECTIONS
22 COMPACTED GRANULAR FILL
23 GRADE (REFER TO CIVIL)
24 POURED CONCRETE FOUNDATION WALL (REFER TO STRUCTURAL)
25 BITUMINOUS DAMPPROOFING
26 STEEL COLUMN (REFER TO STRUCTURAL)
27 RIGID INSULATION
28 CONTINUOUS METAL ROOF EDGE - MATCH EXISTING PROFILE - AT CONNECTION POINTS ALSO MATCH EXISTING HEIGHT (V.I.F.)
29 NEW FENCE (REFER TO CIVIL AND ELECTRICAL).
30 CONCRETE MASONRY UNIT
31 COLD FORMED METAL FRAMING
32 DOOR AND FRAME (REFER TO SCHEDULE)
33 2" EXPANSION JOINT / CONTROL JOINT AS REQUIRED - FIRE RATE AS REQUIRED (REFER TO CODE PLAN)
34 LIGHT FIXTURE (REFER TO ELECTRICAL)
35 MECHANICAL ITEM (REFER TO MECHANICAL)
36 POURED CONCRETE FOOTING (REFER TO STRUCTURAL)
37 STEEL ANGLE (REFER TO STRUCTURAL)
38 STEEL TUBE (REFER TO STRUCTURAL)
39 STEEL JOIST (REFER TO STRUCTURAL)
40 STEEL BEAM (REFER TO STRUCTURAL)
41 SUSPENDED CEILING SYSTEM (REFER TO SCHEDULE)
42 LOUVER (REFER TO MECHANICAL)
43 BOND BEAM WITH (2) #5 CONT, GROUT SOLID (REFER TO STRUCTURAL)
44 CMU FOUNDATION WALL (REFER TO STRUCTURAL)
45 ROOF LADDER - ATTACH AND FLASH AS REQUIRED PER MANUFACTURER'S RECOMMENDATIONS (REFER TO REFERENCE ONLY DETAIL)
46 WALL MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
47 CEILING MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
48 PLUMBING FIXTURE AND ACCESSORIES (REFER TO MECHANICAL & STANDARD MOUNTING HEIGHTS CHART)
49 BASE MATERIAL (REFER TO SCHEDULE)
50 CONTROL JOINT

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

BUILDING
These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
PLAN DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
A2.31

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

ROOM FINISH SCHEDULE

ROOM. NO.	ROOM NAME	FLOOR	BASE	NORTH WALL MAT.	NORTH WALL FINISH	EAST WALL MAT.	EAST WALL FINISH	SOUTH WALL MAT.	SOUTH WALL FINISH	WEST WALL MAT.	WEST WALL FINISH	CEILING MAT.	CEILING FINISH	CLG. HEIGHT	REMARKS
E124	GYMNASIUM	EXISTING	EXIST.	EXIST.	EXIST.	EXIST. / C.M.U.	EXIST. / PAINT	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.		O
E126	SECURE CORR.	EXIST. / C. TILE	EXIST. / C. TILE	EXIST. / C.M.U.	PAINT	EXIST.	PAINT	EXIST.	PAINT	EXIST.	PAINT	EXIST.	EXIST.		O
H104	WAREHOUSE	EXISTING	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST.	EXIST. / C.M.U.	EXIST. / PAINT	EXIST.	EXIST.		O
H116A	SECUR. VEST.	C. TILE	C. TILE	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	SAT-1	--	9' - 0"	
H119	STORAGE	RTF	R.W.B.	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	SAT-1	--	9' - 0"	
H120	CORRIDOR (WEST CONNECTOR)	SEALED CONC.	R.W.B.	C.M.U.	PAINT	--	--	C.M.U.	PAINT	C.M.U.	PAINT	SAT-1	--	9' - 0"	L
H121	STAIR	SEALED CONC.	R.W.B.	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	EXP.	PAINT		
H122	CORRIDOR	SEALED CONC.	R.W.B.	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	SAT-1	--	9' - 0"	L
H123	KITCHEN	RSF	RSF COVE	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	SAT-2	--	9' - 0"	N
H123A	DISH AREA	RSF	RSF COVE	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	SAT-2	--	9' - 0"	N
H124	DRY STORAGE	RSF	RSF COVE	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	SAT-2	--	8' - 0"	N
H125	OFFICE	RSF	R.W.B.	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	SAT-1	--	10' - 0"	
H126	STAFF TOILET	RSF	R.W.B.	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	SAT-2	--	8' - 0"	
H127	BREAK ROOM	RSF	R.W.B.	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	SAT-1	--	10' - 0"	
H128	CART WASH	RSF	RSF COVE	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	SAT-2	--	9' - 0"	N
H129	CHEMICAL STOR.	RSF	RSF COVE	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	SAT-2	--	9' - 0"	N
H130	SERVERY	C. TILE	C. TILE.	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	SAT-2	--	9' - 0"	
H131	DINING	C. TILE	C. TILE	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	GYP. BD.	EPOXY PAINT		M
H132	CORRIDOR (SOUTH CONNECTOR)	C. TILE / CPT	C. TILE	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	SAT-1	--	8' - 0"	L
H133	CORR. (GYM CONN.)	RTF	R.W.B.	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	C.M.U.	PAINT	SAT-1	--	9' - 0"	
H200	STAIR	SEALED CONC.	R.W.B.	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	EXP.	EPOXY PAINT		
H201	MECHANICAL/ ELECTRICAL	SEALED CONC.	--	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	C.M.U.	EPOXY PAINT	EXP.	EPOXY PAINT		

DOOR & FRAME SCHEDULE

DOOR NUMBER	ROOM NAME	DOOR PAIR	DOOR WIDTH	DOOR HEIGHT	DOOR THK.	DOOR MAT.	DOOR TYPE	FRAME MAT.	FRAME TYPE	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	FIRE RATING LABEL	FIRE RATING MIN.	REMARKS
E124.C	CORR. (GYM CONN.)		3' - 0"	7' - 0"	1 3/4"	H.M.	D4	H.M.	F2	27/A7.02 SIM.	11/A2.31	30/A7.02 SIM.		90	D, K, S
E126.A	SECURE CORR.	X	3' - 0"	7' - 2"	1 3/4"	H.M.	D2	H.M.	F1	20/A3.01 SIM.	25/A3.01	--		20	B, C, D, G, S
H120.A	CORRIDOR (WEST CONNECTOR)	X	3' - 6"	7' - 0"	1 3/4"	H.M.	D4	H.M.	F2	27/A7.02	1/A2.31	30/A7.02		90	B, C, G, R
H120.B	CORRIDOR (WEST CONNECTOR)		10' - 0"	8' - 0"	1 3/8"	STEEL	D3	STEEL	-	27/A3.01	28/A3.01	--			H
H120.C	CORRIDOR (WEST CONNECTOR)		10' - 0"	8' - 0"	1 3/8"	STEEL	D3	STEEL	-	27/A3.01	28/A3.01	--			H
H120.D	CORRIDOR (WEST CONNECTOR)		3' - 0"	7' - 2"	1 3/4"	ALUM.	D2	ALUM.	F1	21/A3.01	29/A2.31 SIM.	--			C, G, T
H120.E	CORRIDOR (WEST CONNECTOR)		3' - 0"	7' - 2"	1 3/4"	ALUM.	D2	ALUM.	F1	21/A3.01	29/A2.31 SIM.	--			C, G, T
H121.A	STAIR		3' - 0"	7' - 2"	1 3/4"	WD.	D4	H.M.	F1	30/A3.01	6/A2.31	--	B	60	H, R
H122.A	SECUR. VEST.		3' - 8"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			C, F, G, S
H122.B	CORRIDOR	X	3' - 0"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			B, C, G, R
H122.C	CORRIDOR	X	3' - 0"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	30/A3.01	6/A2.31	--			B, C, G, R
H122.D	CORRIDOR		4' - 0"	7' - 2"	1 3/4"	ALUM.	D2	ALUM.	F1	21/A3.01	29/A2.31				C, D, E, G, T
H124.A	DRY STORAGE		3' - 0"	7' - 2"	1 3/4"	H.M.	D1	H.M.	F1	20/A3.01	6/A2.31	--			H
H125.A	OFFICE		3' - 0"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			H, R
H126.A	STAFF TOILET		3' - 0"	7' - 2"	1 3/4"	H.M.	D1	H.M.	F1	20/A3.01	6/A2.31	--			H
H127.A	BREAK ROOM		3' - 0"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			H, R
H129.A	CHEMICAL STOR.		3' - 0"	7' - 2"	1 3/4"	H.M.	D1	H.M.	F1	20/A3.01	6/A2.31	--			H
H130.A	SERVERY		3' - 8"	7' - 2"	1 3/4"	WD.	D1	H.M.	F1	20/A3.01	6/A2.31	--			C, E, G
H130.B	SERVERY		3' - 8"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			B, E, H, S
H130.C	SERVERY		3' - 8"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			B, E, H, S
H131.A	DINING	X	3' - 0"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			B, E, H, S
H131.B	SECUR. VEST.		3' - 8"	7' - 2"	1 3/4"	WD.	D2	H.M.	F1	20/A3.01	6/A2.31	--			E, G, J, P, Q, S
H131.C	DINING	X	3' - 0"	7' - 2"	1 3/4"	D.H.M.	D2	D.H.M.	F1	29/A3.01	5/A2.31	--			C, D, E, G, U
H131.D	DINING		8' - 0"	3' - 4"	1/2"	STEEL	D3	STEEL	-	26/A3.01	26/A2.31	26/A3.01			B, H
H132.A	CORR. (S. CONN.)	X	3' - 6"	7' - 0"	1 3/4"	H.M.	D4	H.M.	F2	27/A7.02	13/A2.31	30/A7.02		90	B, E, H, S
H132.B	STORAGE		3' - 8"	7' - 2"	1 3/4"	H.M.	D1	H.M.	F1	20/A3.01	6/A2.31	--			E, H
H132.C	CORRIDOR (SOUTH CONNECTOR)	X	3' - 0"	7' - 2"	1 3/4"	D.H.M.	D2	D.H.M.	F1	21/A3.01	5/A2.31	--			C, D, E, G, U
H133.A	CORR. (GYM CONN.)		3' - 0"	7' - 2"	1 3/4"	WD.	D4	H.M.	F1	20/A3.01	6/A2.31	--			D, E, K, S
H200.A	STAIR		3' - 0"	7' - 2"	1 3/4"	WD.	D4	H.M.	F1	20/A3.01	6/A2.31	--			H, R
H201.A	MECHANICAL / ELECTRICAL		3' - 0"	7' - 2"	1 3/4"	H.M.	D1	H.M.	F1	22/A3.01	22/A3.01 SIM.	--			H

FINISH MATERIAL SCHEDULE

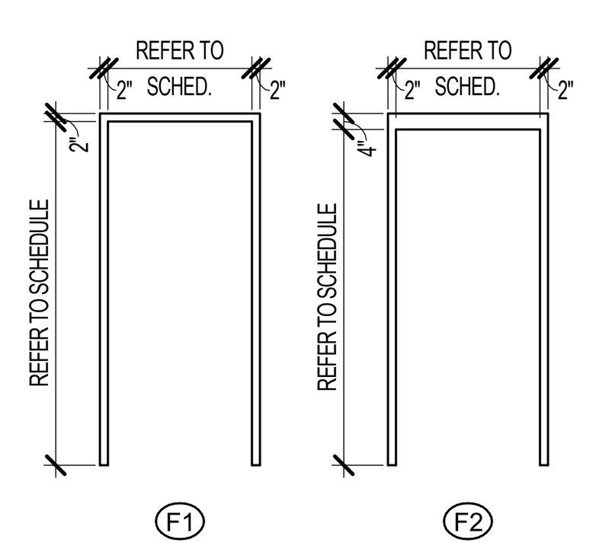
MATERIAL	MANUFACTURER	STYLE	COLOR	SIZE	REMARKS
C. TILE - CERAMIC TILING	STONEPEAK	SIMPLY MODERN	SIMPLY TAN, HONED FINISH	12"X24"	WITH MATCHING SIMPLY MODERN 6"X12" COVE BASE, LATICRETE GROUT COLOR: HEMP 27, 1/3 ASHLAR LAYING PATTERN
CPT - CARPET TILE	TARKETT	ASSERTIVE ACTION RIB	CHROMIUM 26201	24"X24"	GLUE-DOWN, FLEX AIRE CUSHION BACK
PAINT - CEILINGS	SHERWIN-WILLIAMS		SW1004 PURE WHITE		
PAINT - EXTERIOR DOORS & FRAMES	SHERWIN-WILLIAMS		SW1004 PURE WHITE		
PAINT - INTERIOR DOORS & FRAMES	SHERWIN-WILLIAMS		SW1099 KNUBBY WOOL		
PAINT - STAIRS & RAILINGS	SHERWIN-WILLIAMS		SW6215 ROCKY RIVER		
PAINT - WALLS	SHERWIN-WILLIAMS		SW1102 CHENILLE WHITE		
RSF - RESILIENT SHEET VINYL	PROTECT-ALL	CLASSIC	LIGHT GRAY	5 FT. x 8 FT.	WITH MATCHING PROTECT-ALL 6" COVE BASE SYSTEM - ONLY WHERE NOTED.
RTF - RESILIENT TILE FLOORING	TARKETT	iD LATITUDE	HEARTHSTONE	18"X18"	DIRECT GLUE DOWN
RWB - RESILENT WALL BASE	TARKETT	TP RUBBER	CHARCOAL 20	4" COVE	
SAT-1 - SUSPENDED ACOUSTIC TILE	ARMSTRONG	FISSURED	WHITE	24"X24"	
SAT-2 - SUSPENDED ACOUSTIC TILE	ARMSTRONG	KITCHEN ZONE	WHITE	24"X24"	

SCHEDULE GENERAL NOTES:

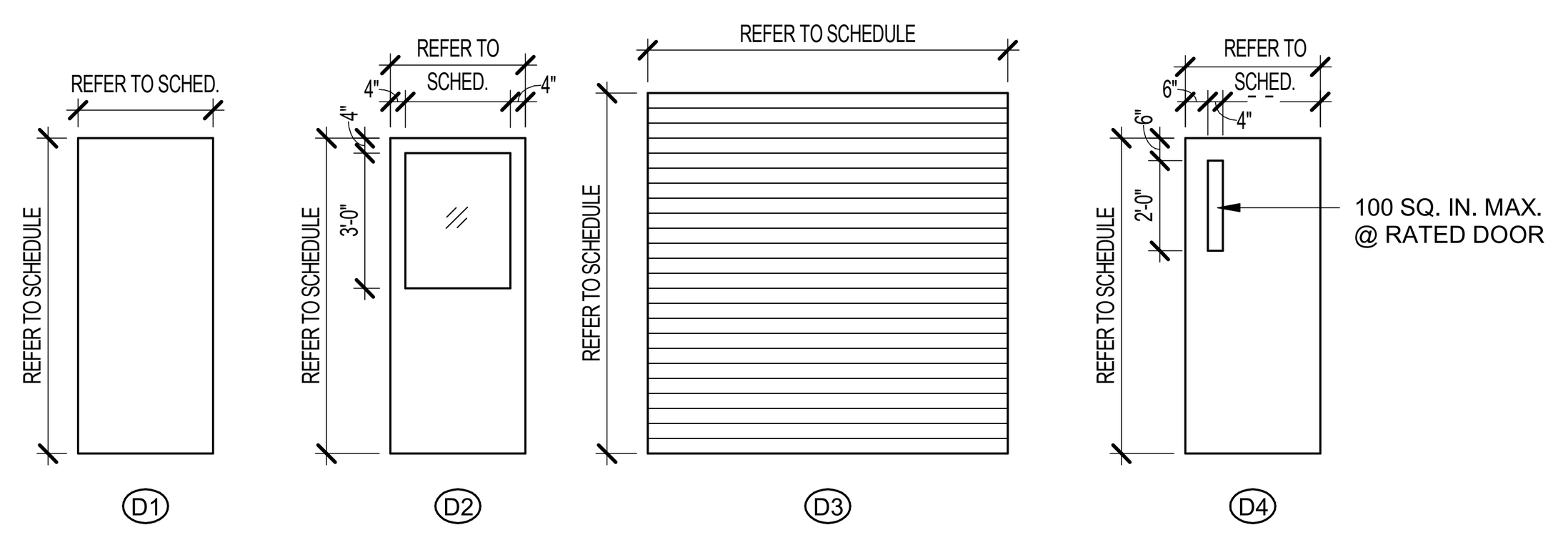
1. FINAL LOCATIONS OF DOOR CARD READERS, DOOR INTERCOMS AND PUSH BUTTONS TO BE FIELD VERIFIED WITH OWNER.
2. REFER TO SHEET A0.01 AND MATERIAL SCHEDULE (THIS SHEET) FOR ABBREVIATIONS.
3. WALL TYPES ARE INDICATED w/ A DIAMOND AND A NUMBER. REFER TO SHEET A0.01 FOR DESCRIPTION OF WALL TYPES.

SCHEDULE OF REMARKS:

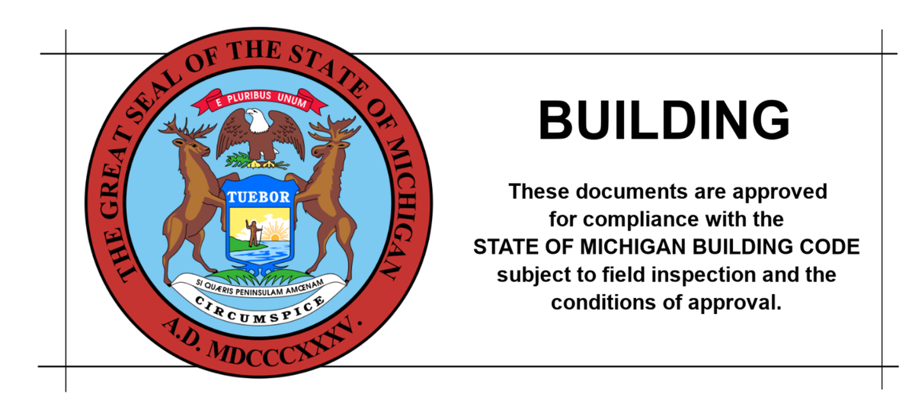
A. PROVIDE DOOR CLOSER.
B. PROVIDE HOLD OPEN w/ CLOSER TIED INTO FIRE ALARM.
C. PROVIDE A CARD READER INSIDE AND OUTSIDE.
D. PROVIDE A DOOR INTERCOM w/ PUSH BUTTON INSIDE AND OUTSIDE.
E. REINFORCED DOOR.
F. PROVIDE A DOOR INTERLOCKS INSIDE AND OUTSIDE.
G. PROVIDE AN ELECTRIC LOCK.
H. PROVIDE A MORTISE LOCK.
I. NOT USED.
J. PROVIDE A CARD READER OUTSIDE.
K. PROVIDE A PUSH BAR ON INSIDE.
L. PROVIDE HOLD-DOWN CLIPS FOR S.A.T. CEILING IN AREA NEAR EXTERIOR DOORS IN QUANTITY AND SPACING REQUIRED TO PREVENT MOVEMENT / UPLIFT OF CEILING TILES.
M. CEILING HEIGHT VARIES (REFER TO CEILING PLAN).
N. RSF FLOORING INCLUDES: Z-BAR COVE CAP, S.S. CORNER GUARDS @ COVE BASE CORNERS, AND S.S. TRANSITIONS STRIPS AT ALL FLOOR MATERIAL TRANSITIONS; BY FLR'G MFR.
O. PATCH AND REPAIR AT DEMOLITION POINTS.
P. PROVIDE AN INTERLOCK INSIDE.
Q. PROVIDED AN INTERCOM w/ PUSH BUTTON INSIDE.
R. DOOR LITE TO BE GL-1 (REFER TO SPECS).
S. DOOR LITE TO BE GL-2 (REFER TO SPECS).
T. DOOR LITE TO BE GL-3 (REFER TO SPECS).
U. DOOR LITE TO BE GL-4 (REFER TO SPECS).

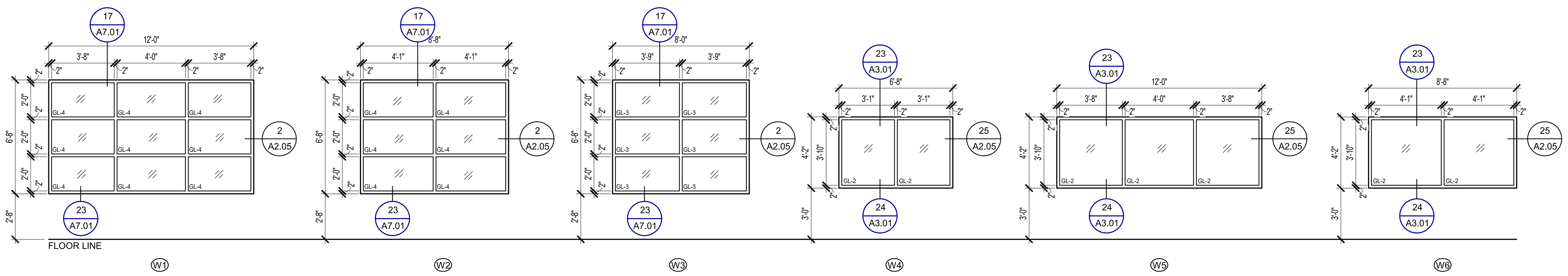


DOOR FRAMES
1/4" = 1'-0"

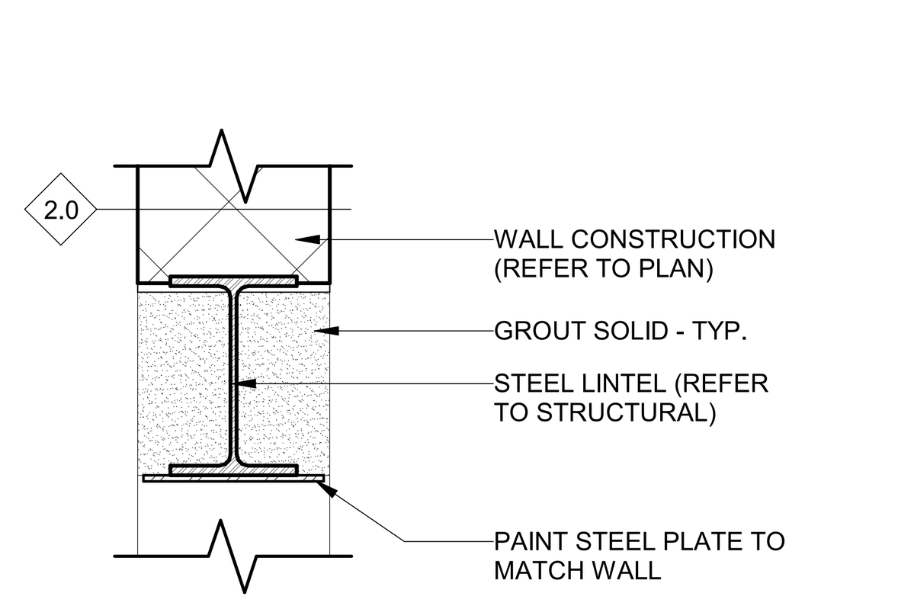


DOOR TYPES
1/4" = 1'-0"

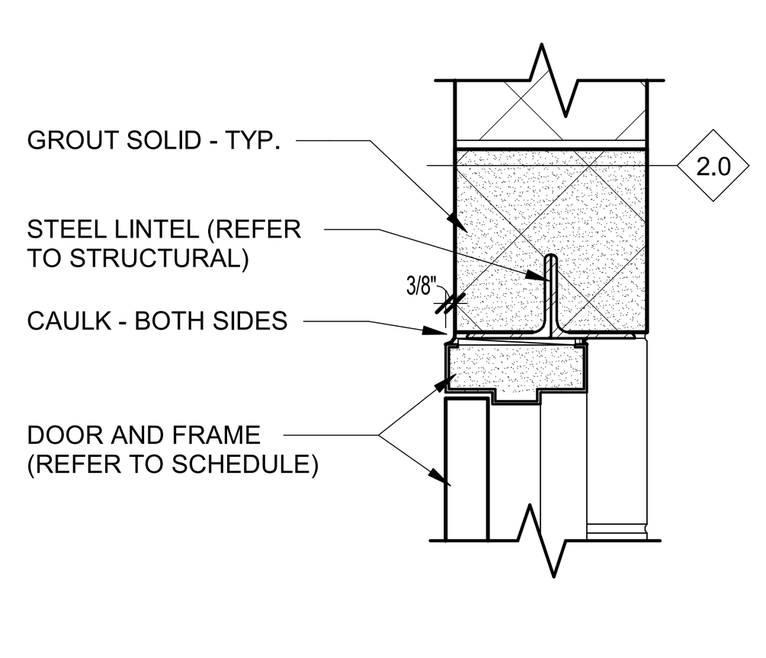




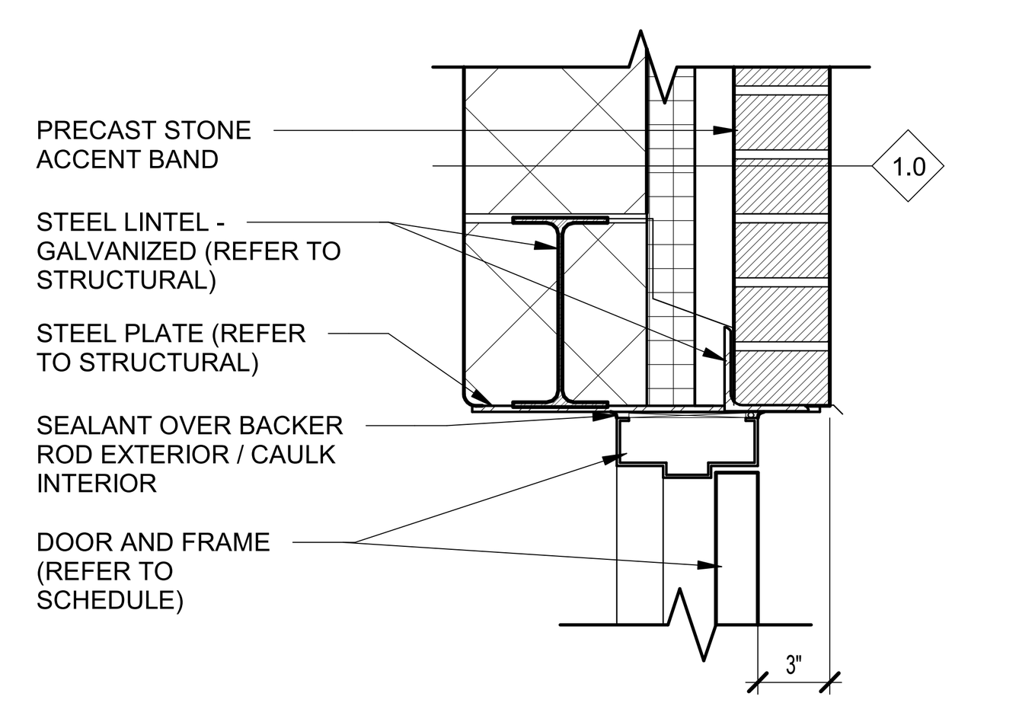
WINDOW TYPES
1/4" = 1'-0"



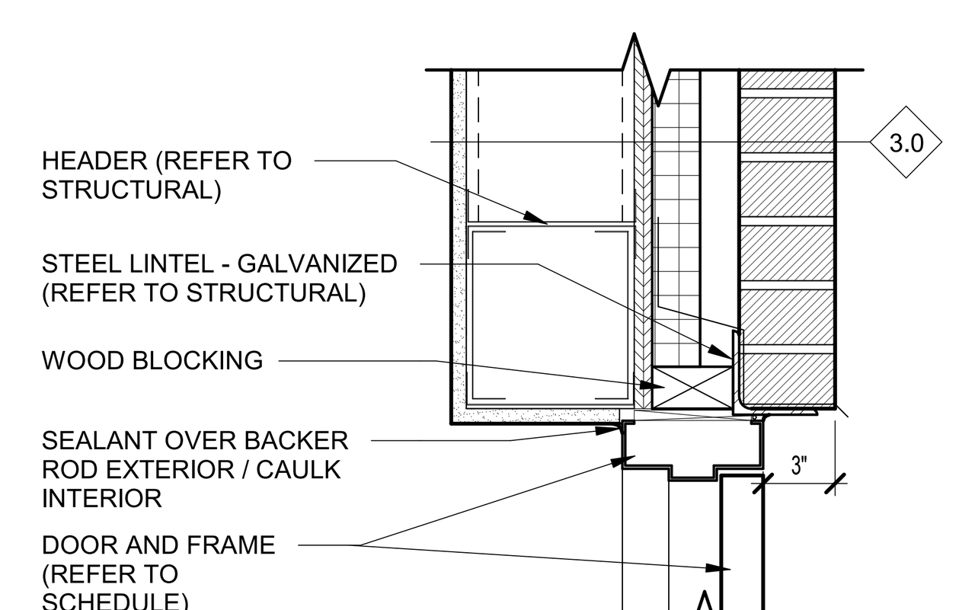
19 A3.01 OPENING HEAD DETAIL @ SERVERY
SCALE: 1 1/2" = 1'-0"



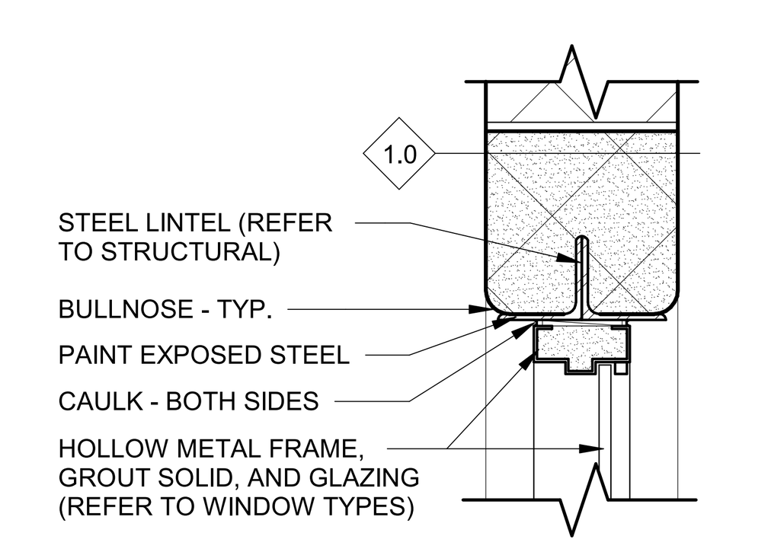
20 A3.01 TYP. INT DOOR HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



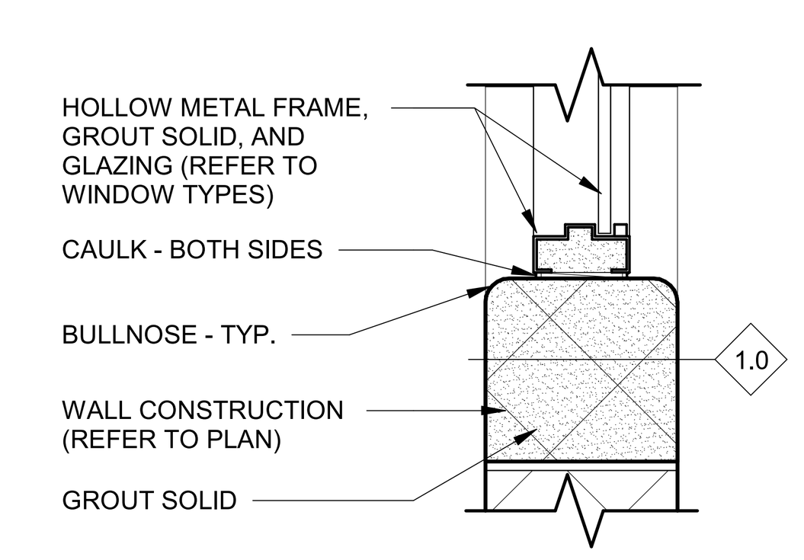
21 A3.01 TYP. EXT DOOR HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



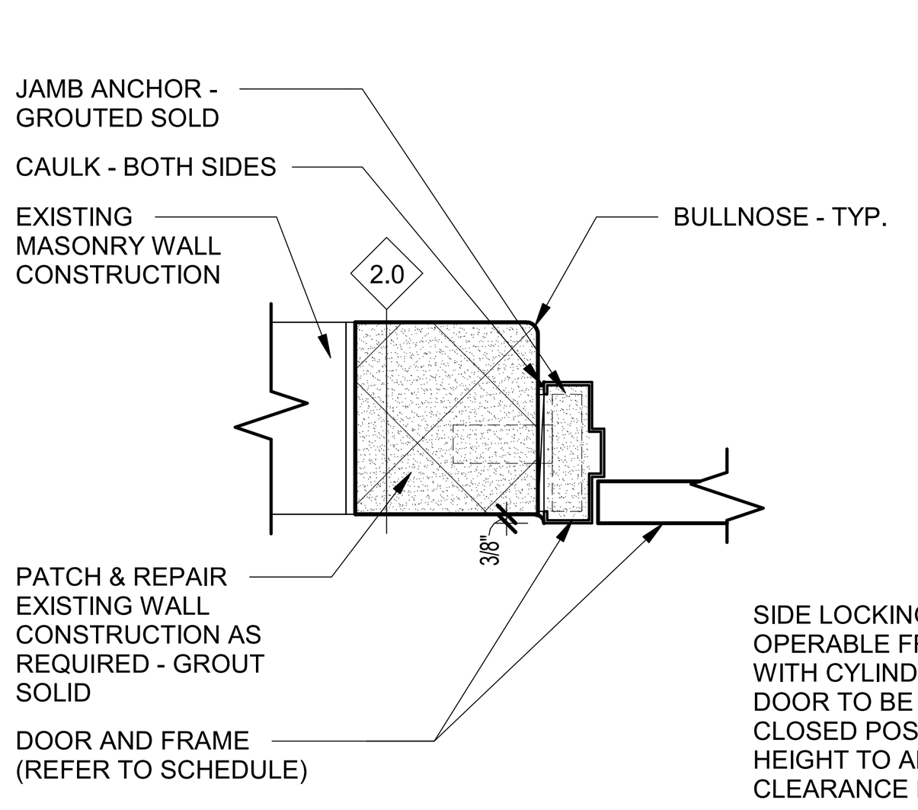
22 A3.01 DOOR HEAD DETAIL @ MECHANICAL / ELECTRICAL
SCALE: 1 1/2" = 1'-0"



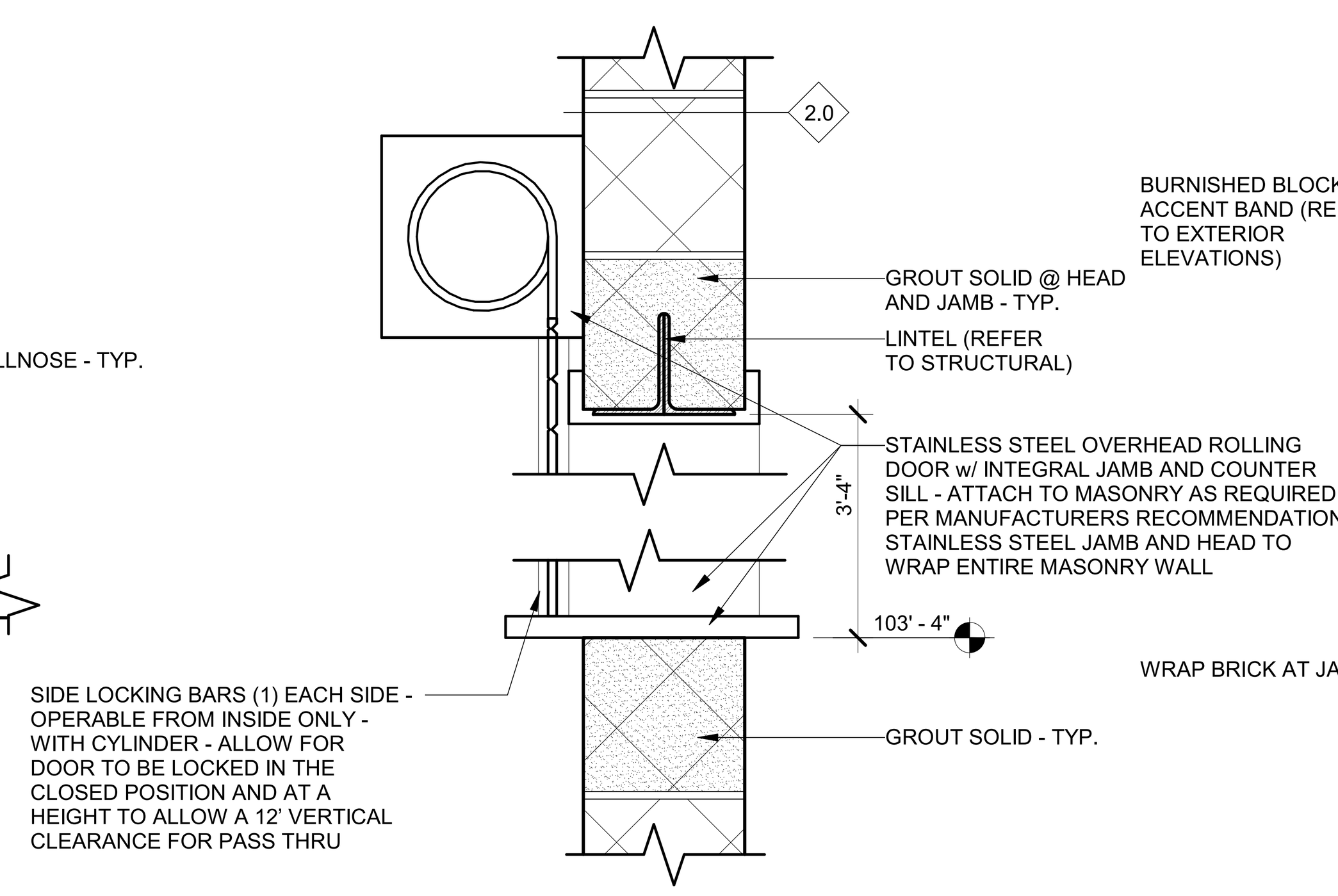
23 A3.01 TYP. WINDOW HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



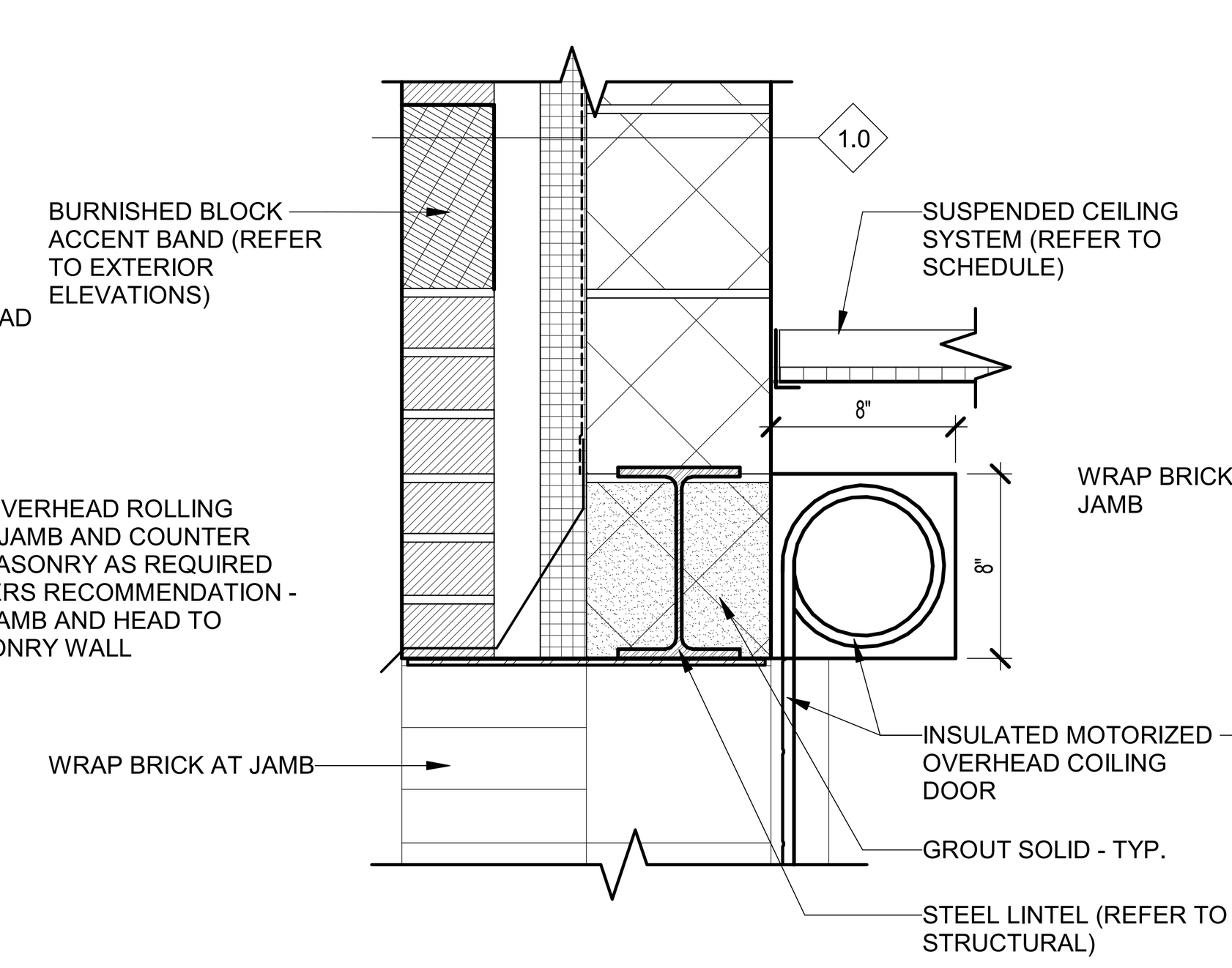
24 A3.01 TYP. WINDOW SILL DETAIL
SCALE: 1 1/2" = 1'-0"



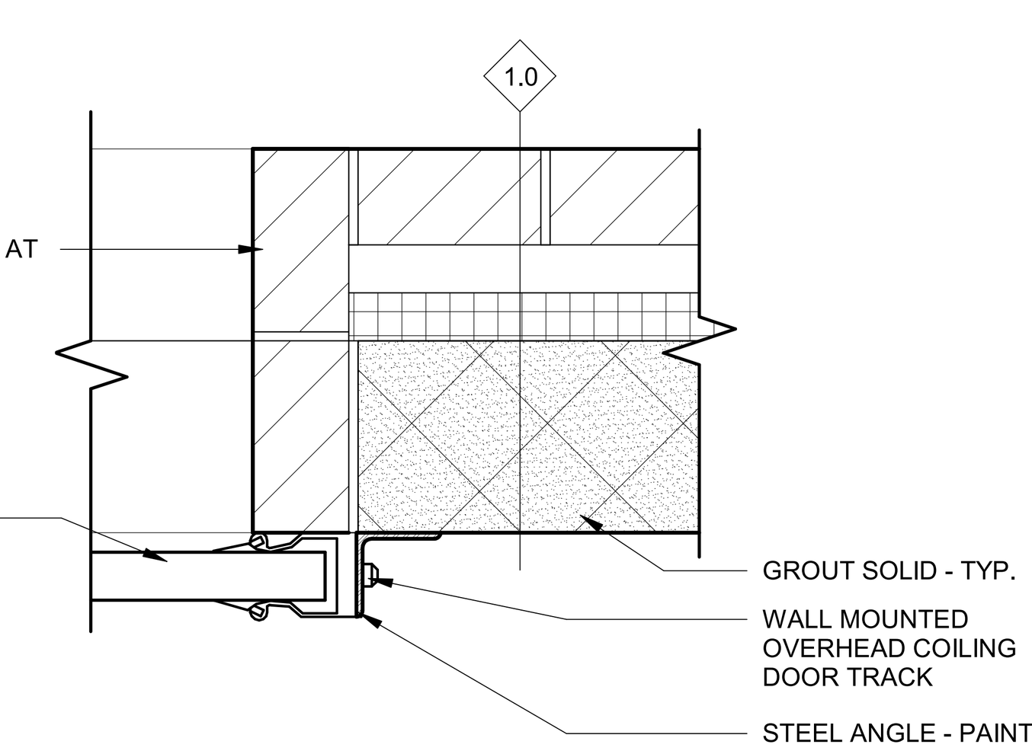
25 A3.01 TYP. INT DOOR JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



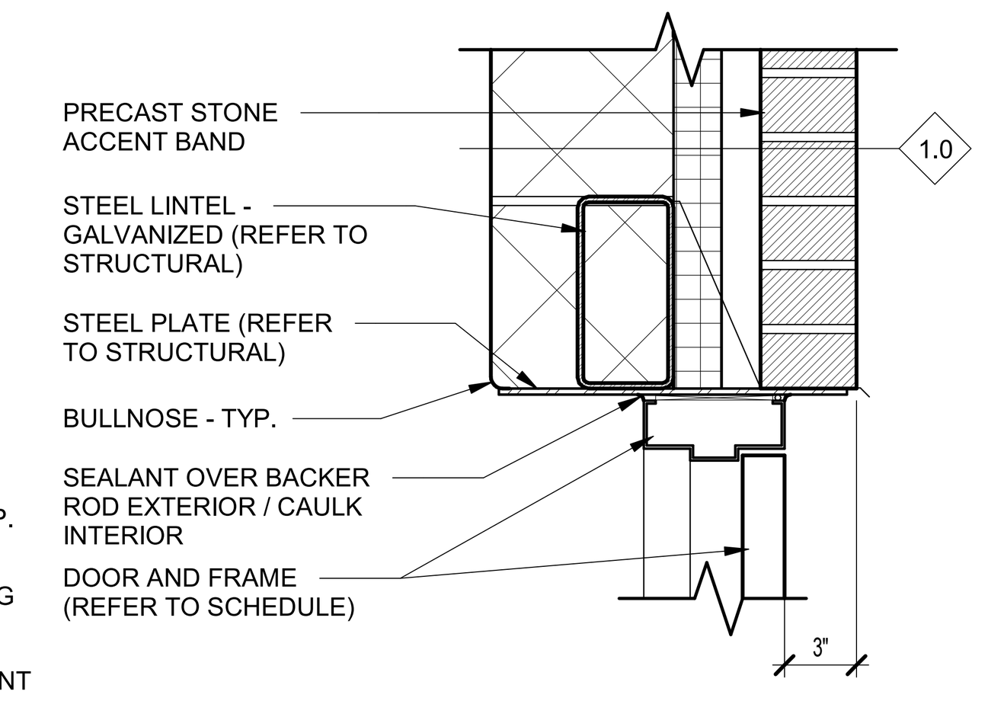
26 A3.01 COILING DOOR HEAD DETAIL @ TRAY DROP OFF
SCALE: 1 1/2" = 1'-0"



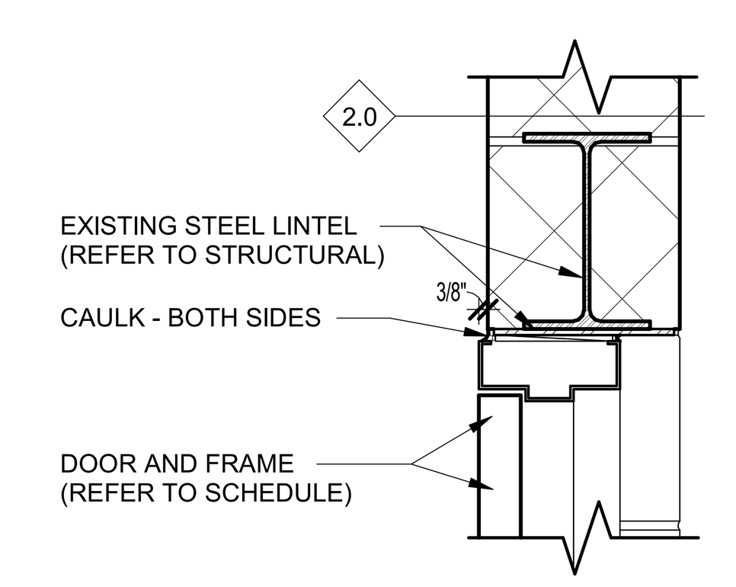
27 A3.01 COILING DOOR HEAD DETAIL @ CORRIDOR (WEST CONNECTOR)
SCALE: 1 1/2" = 1'-0"



28 A3.01 JAMB DETAIL @ CORRIDOR
SCALE: 1 1/2" = 1'-0"



29 A3.01 DOOR HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



30 A3.01 DOOR HEAD DETAIL
SCALE: 1 1/2" = 1'-0"

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO. 491/20167.SDW

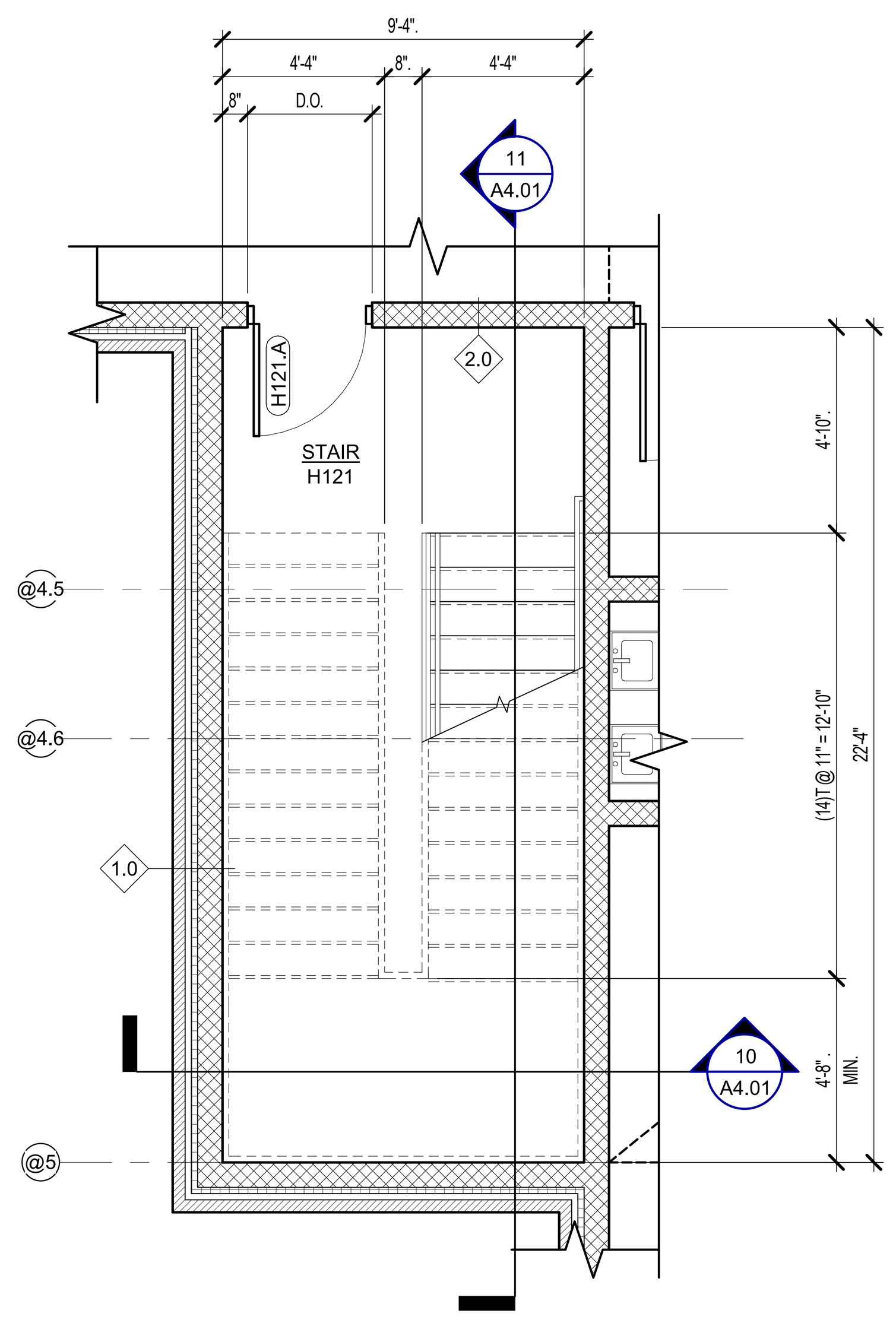
FUNDING CODE 171CODHHS7255 — CONTRACT NO. Y22003

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

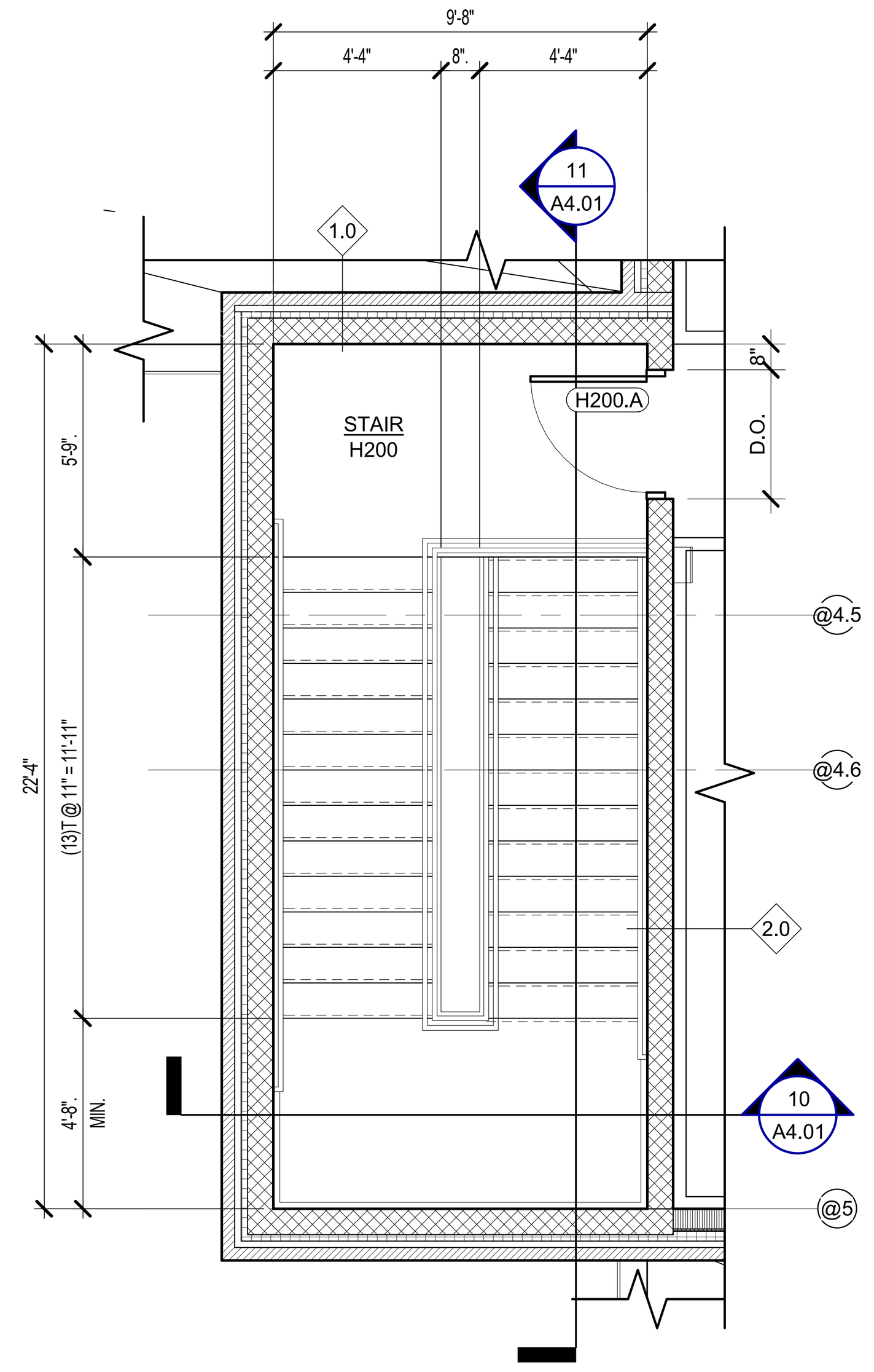
PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ROOM FINISH & DOOR SCHEDS, DOOR & WDW TYPES, AND DOOR DTLS

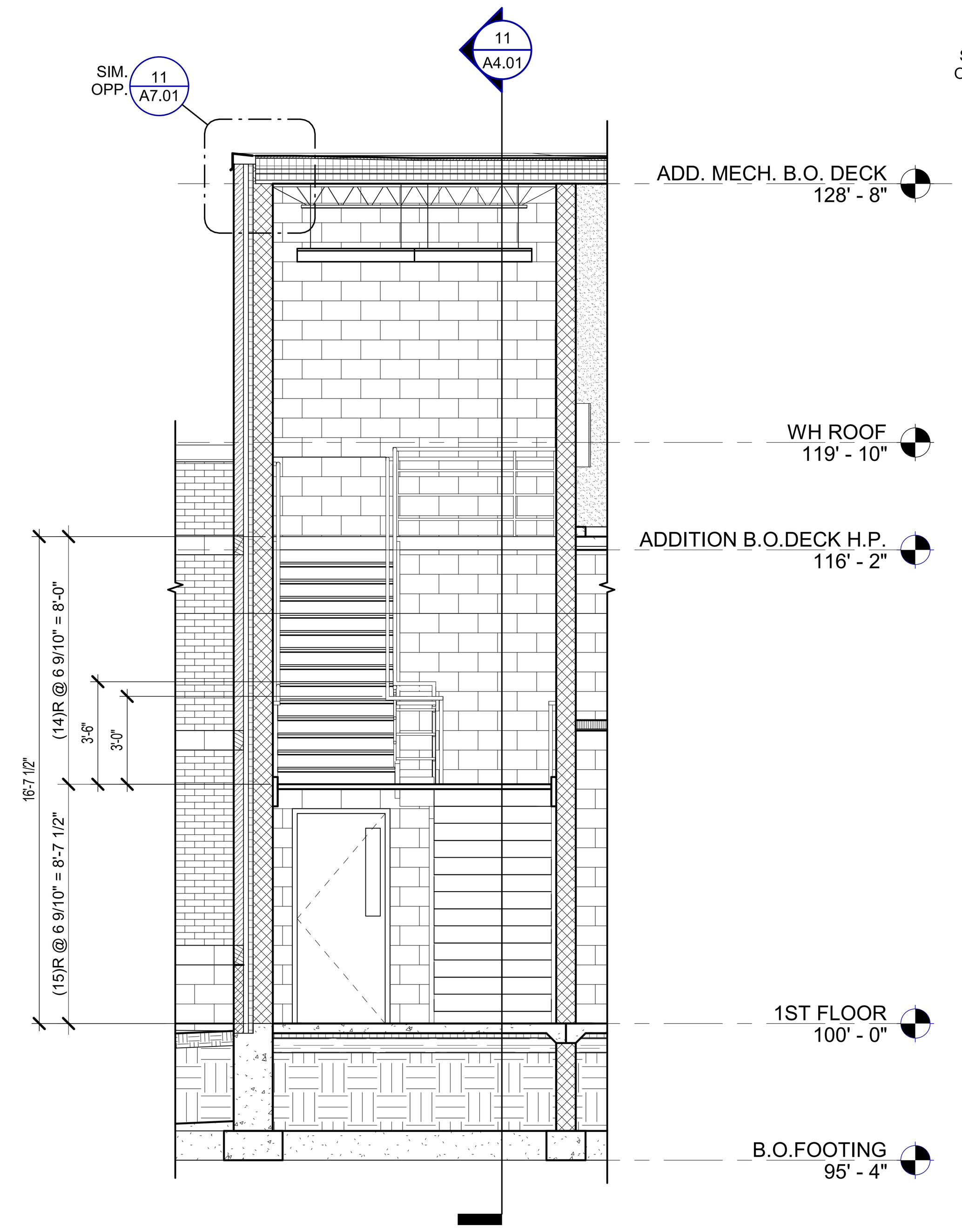
PROJECT NUMBER 2021094
PROJECT DATE SEPTEMBER 6, 2023
CHECKED BY C.D.S.
SHEET NUMBER A3.01



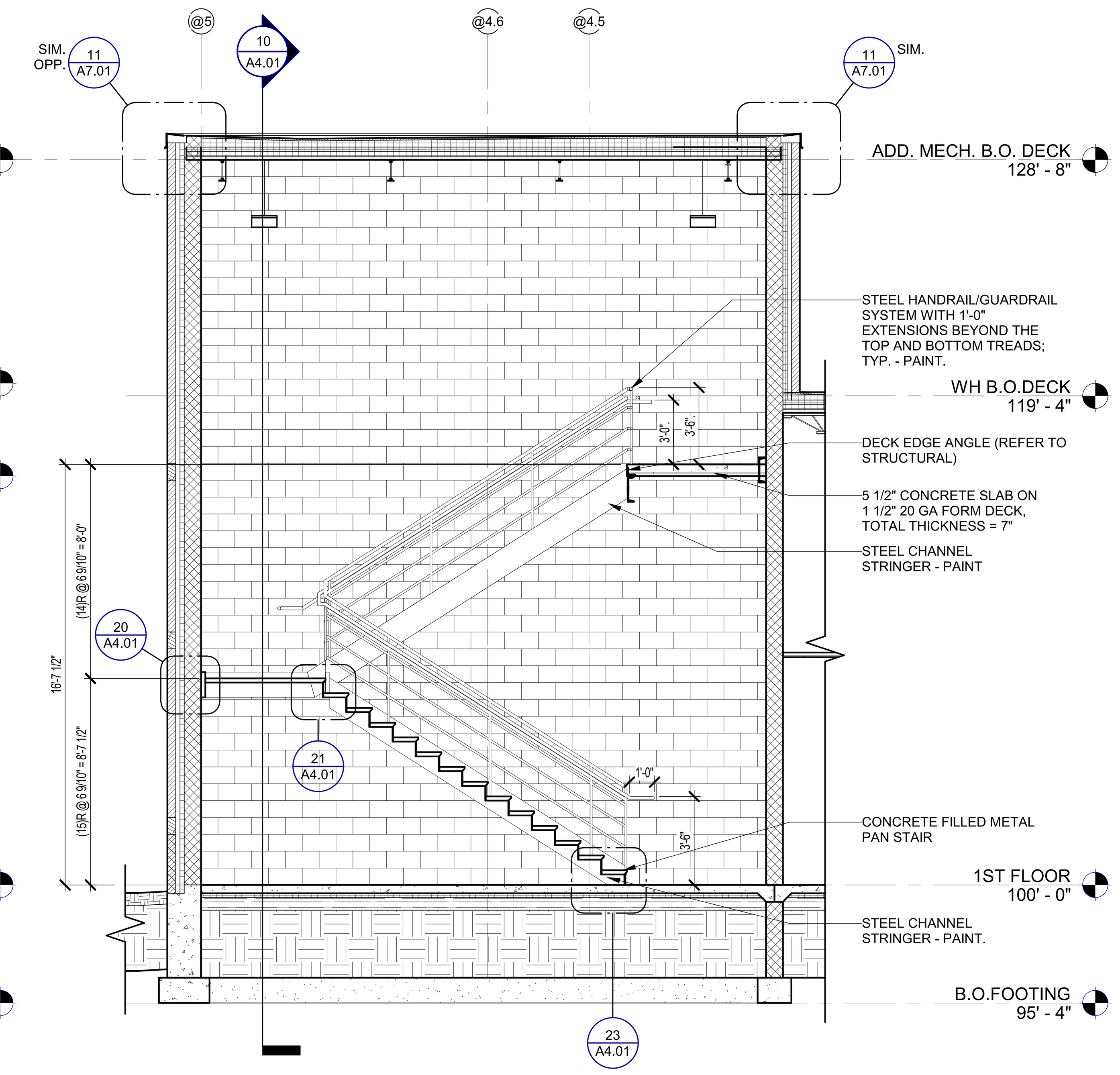
7 / A4.01 FIRST FLOOR STAIR PLAN
SCALE: 1/4" = 1'-0"



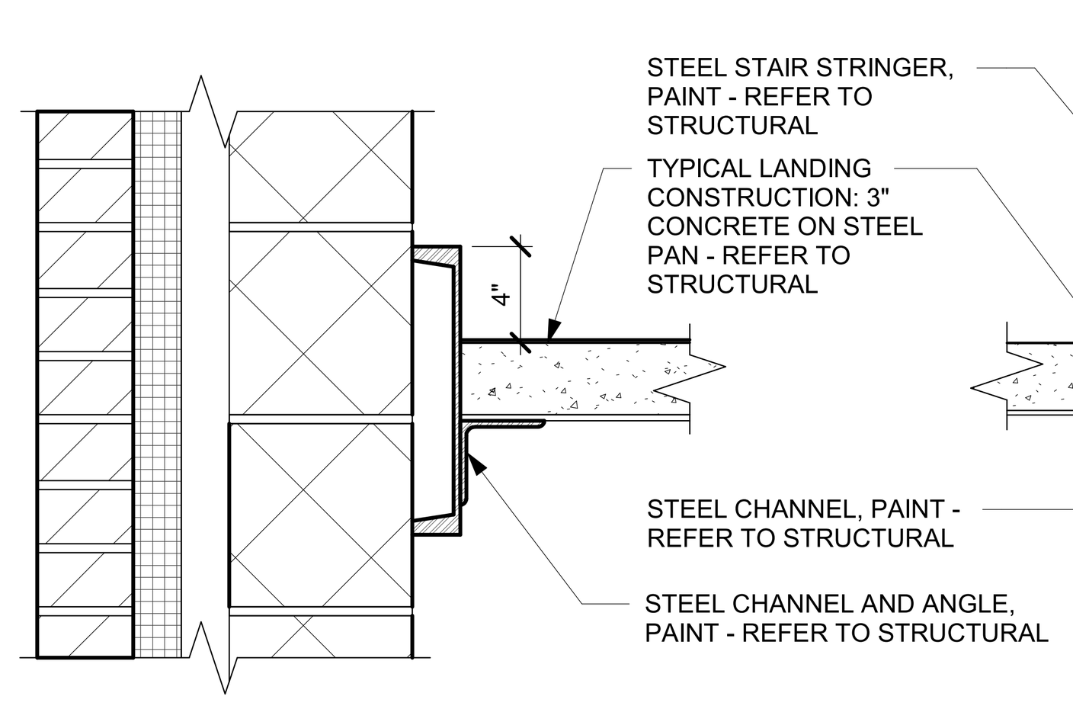
9 / A4.01 SECOND FLOOR STAIR PLAN
SCALE: 1/4" = 1'-0"



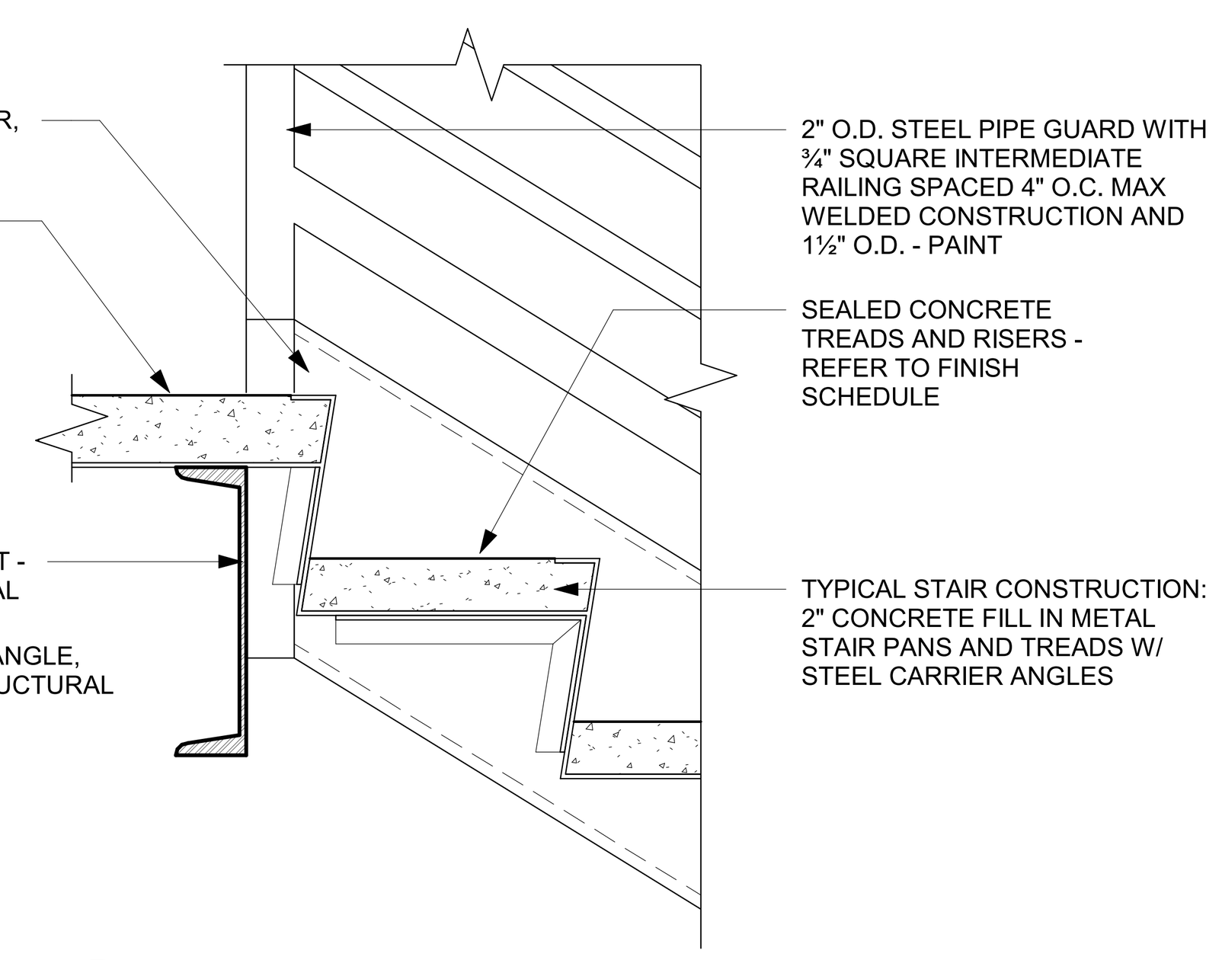
10 / A4.01 STAIR SECTION
SCALE: 1/4" = 1'-0"



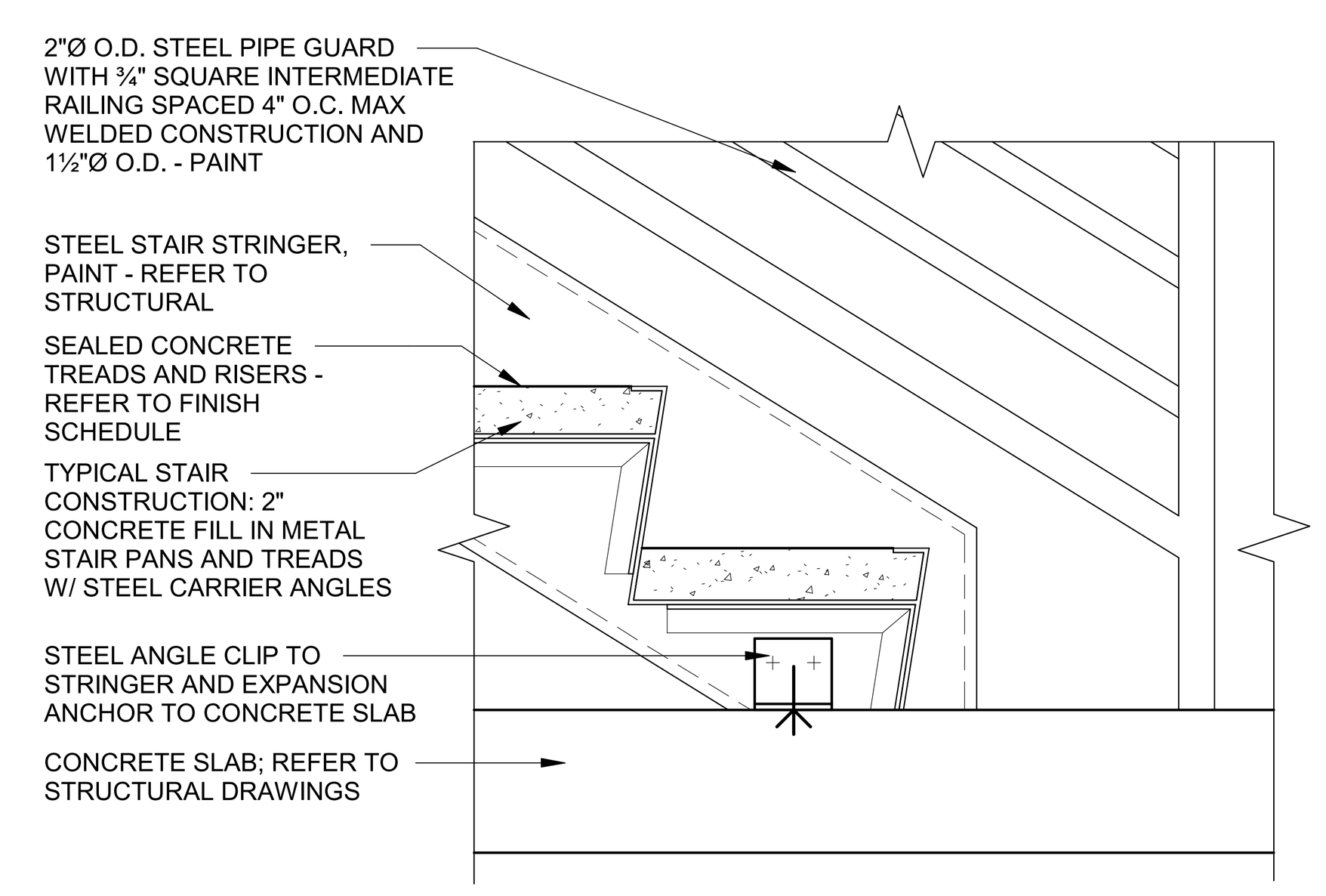
11 / A4.01 STAIR SECTION
SCALE: 1/4" = 1'-0"



20 / A4.01 STAIR DETAIL
SCALE: 1 1/2" = 1'-0"



21 / A4.01 STAIR DETAIL
SCALE: 1 1/2" = 1'-0"



23 / A4.01 STAIR DETAIL
SCALE: 1 1/2" = 1'-0"

BUILDING

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NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

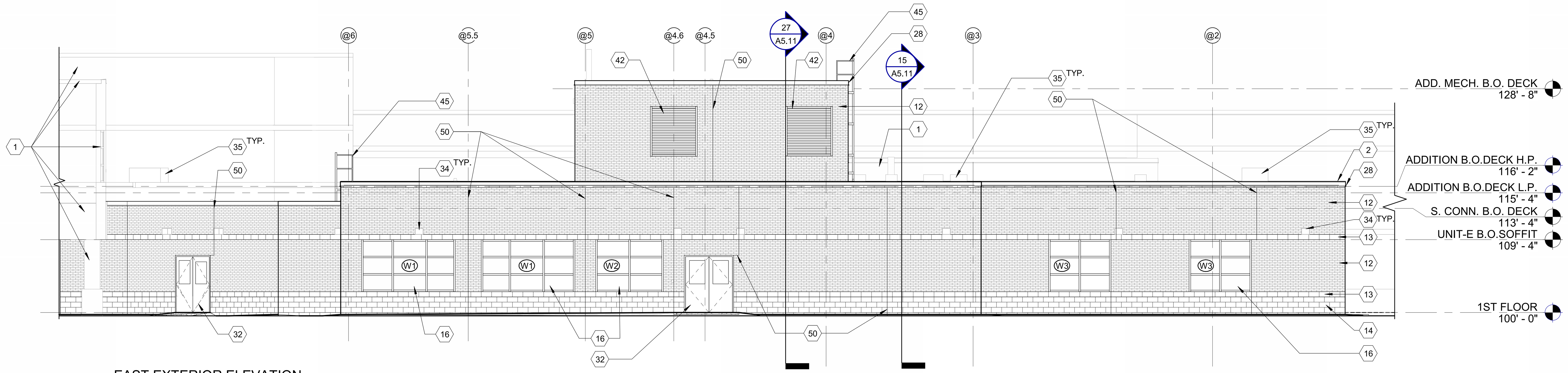
SHEET TITLE
VERTICAL CIRCULATION

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

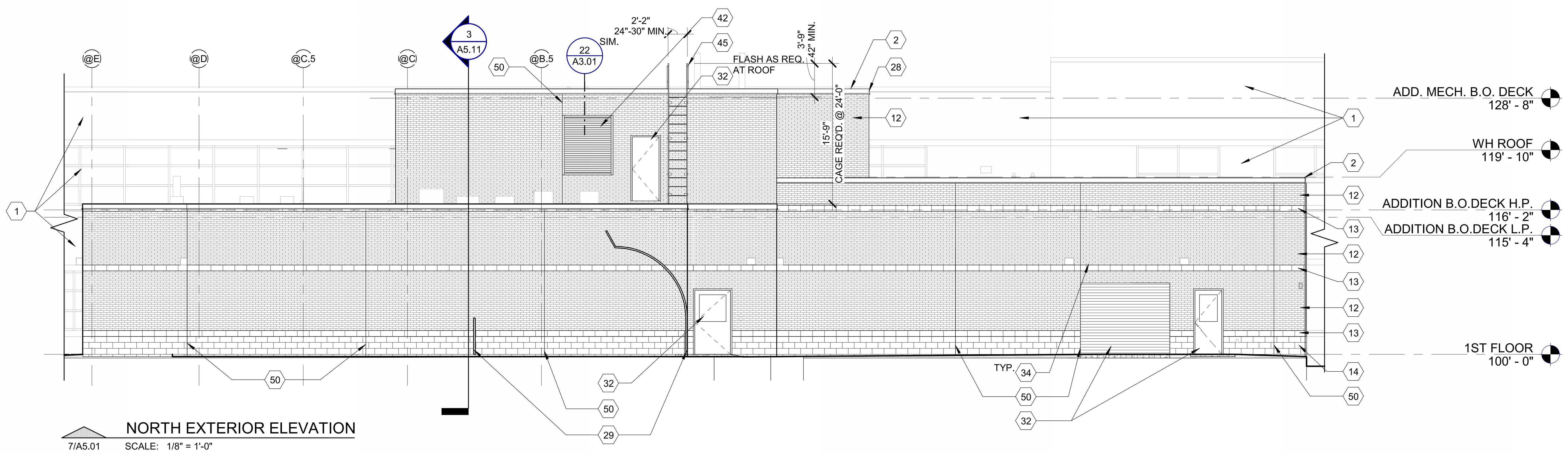
CHECKED BY
C.D.S.

SHEET NUMBER
A4.01



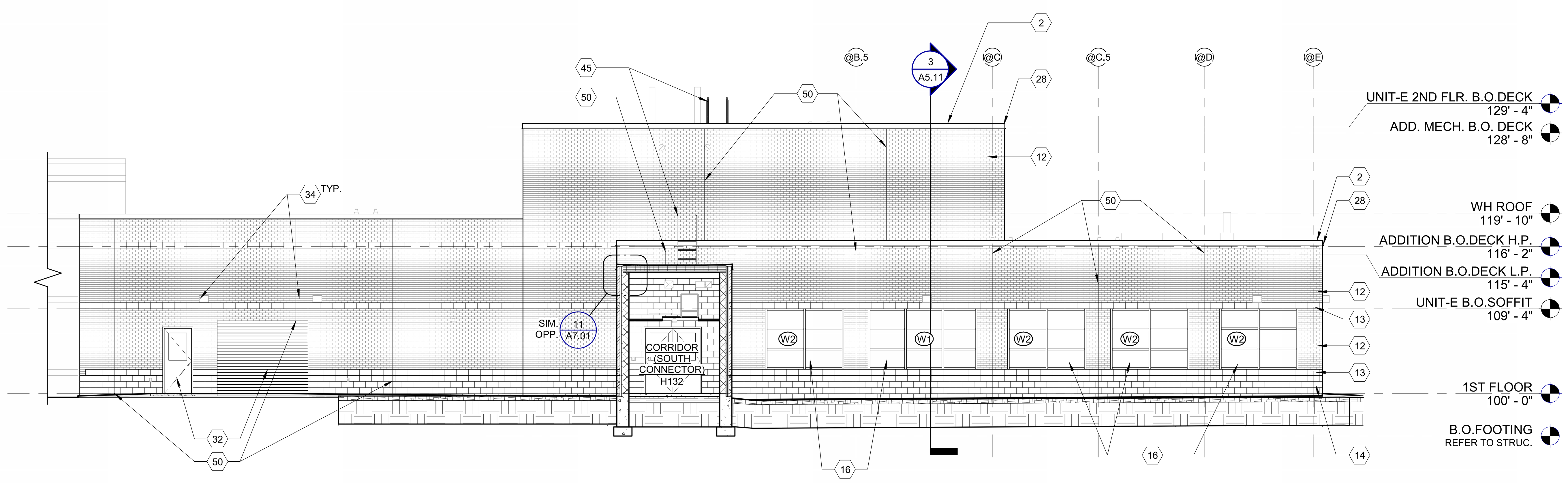
EAST EXTERIOR ELEVATION

1/A5.01 SCALE: 1/8" = 1'-0"



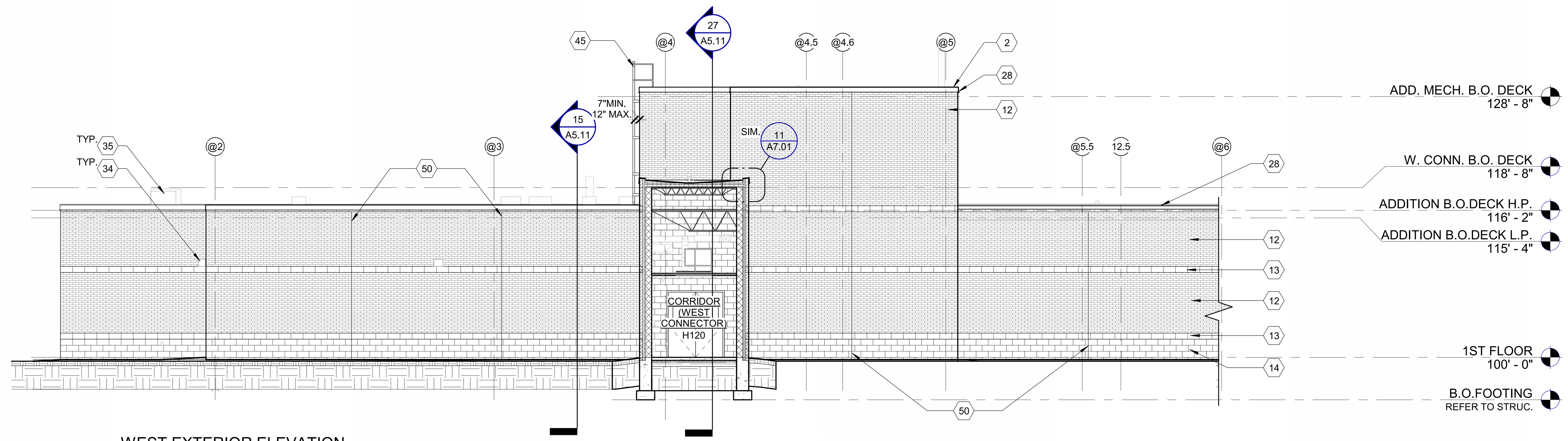
NORTH EXTERIOR ELEVATION

7/A5.01 SCALE: 1/8" = 1'-0"



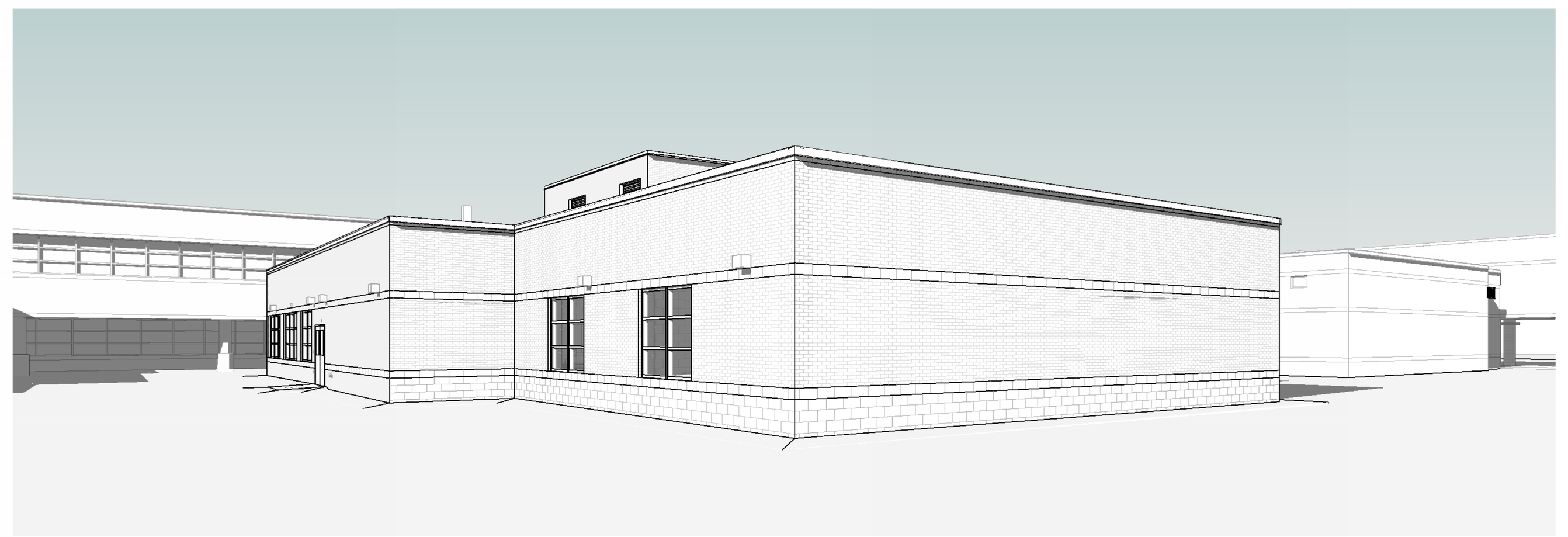
SOUTH EXTERIOR ELEVATION

19/A5.01 SCALE: 1/8" = 1'-0"



WEST EXTERIOR ELEVATION

25/A5.01 SCALE: 1/8" = 1'-0"



PERSPECTIVE VIEW - NORTHEAST ELEVATION

PERSPECTIVE VIEW - SOUTHEAST VIEW

BUILDING

These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

MATERIAL KEYNOTES

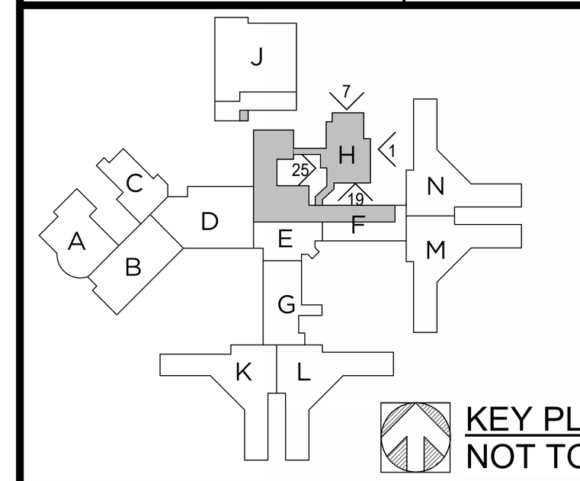
1 EXISTING TO REMAIN
2 FULLY ADHEARED SINGLE PLY MEMBRANE ROOFING
3 3/4" ROOFING BOARD
4 RIDGID ROOF INSULATION R-30
5 METAL DECK (REFER TO STRUCTURAL)
6 2x PRESSURE TREATED WOOD BLOCKING
7 SPRAY INSULATION IN METAL DECK FLUTES TO ALLOW FOR CONTINUOUS INSULATION
8 STEEL LINTEL - EXTERIOR STEEL LINTELS TO BE GALVANIZED - PAINT (REFER TO STRUCTUAL)
9 GROUT SOLID
10 THRU WALL FLASHING
11 MORTAR NET
12 FACE BRICK - MATCH EXISTING
13 8x24 BURNISHED BLOCK ACCENT BAND - MATCH EXISTING
14 8x24 SPLIT FACE BLOCK WAINSCOT - MATCH EXISTING
15 SEALANT OVER BACKER ROD EXTERIOR / CAULK INTERIOR - TYPICAL AT ALL WINDOWS AND DOORS
16 ALUMINIUM WINDOW SYSTEM WITH INSULATED GLAZING
17 BRICK VENT
18 BULLNOSE
19 BOND BREAK
20 4" CONCRETE SLAB ON VAPOR BARRIER (REFER TO STRUCTURAL)
21 PERIMETER INSULATION - EXTEND 2'-0" IN BOTH DIRECTIONS
22 COMPACTED GRANULAR FILL
23 GRADE (REFER TO CIVIL)
24 POURED CONCRETE FOUNDATION WALL (REFER TO STRUCTURAL)
25 BITUMINOUS DAMPPROOFING
26 STEEL COLUMN (REFER TO STRUCTURAL)
27 RIGID INSULATION
28 CONTINUOUS METAL ROOF EDGE - MATCH EXISTING PROFILE - AT CONNECTION POINTS ALSO MATCH EXISTING HEIGHT (V.I.F.)
29 NEW FENCE (REFER TO CIVIL AND ELECTRICAL).
30 CONCRETE MASONRY UNIT
31 COLD FORMED METAL FRAMING
32 DOOR AND FRAME (REFER TO SCHEDULE)
33 2" EXPANSION JOINT / CONTROL JOINT AS REQUIRED - FIRE RATE AS REQUIRED (REFER TO CODE PLAN)
34 LIGHT FIXTURE (REFER TO ELECTRICAL)
35 MECHANICAL ITEM (REFER TO MECHANICAL)
36 POURED CONCRETE FOOTING (REFER TO STRUCTURAL)
37 STEEL ANGLE (REFER TO STRUCTURAL)
38 STEEL TUBE (REFER TO STRUCTURAL)
39 STEEL JOIST (REFER TO STRUCTURAL)
40 STEEL BEAM (REFER TO STRUCTURAL)
41 SUSPENDED CEILING SYSTEM (REFER TO SCHEDULE)
42 LOUVER (REFER TO MECHANICAL)
43 BOND BEAM WITH (2) #5 CONT, GROUT SOLID (REFER TO STRUCTURAL)
44 CMU FOUNDATION WALL (REFER TO STRUCTURAL)
45 ROOF LADDER - ATTACH AND FLASH AS REQUIRED PER MANUFACTURER'S RECOMMENDATIONS (REFER TO REFERENCE ONLY DETAIL)
46 WALL MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
47 CEILING MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
48 PLUMBING FIXTURE AND ACCESSORIES (REFER TO MECHANICAL & STANDARD MOUNTING HEIGHTS CHART)
49 BASE MATERIAL (REFER TO SCHEDULE)
50 CONTROL JOINT

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE: 171CODHHS7255
CONTRACT NO.: Y22003



KEY PLAN
NOT TO SCALE

WTAARCH.COM

WTA ARCHITECTS

100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE

491/20167.SDW - PHASE 500:

CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN

SALINE, MICHIGAN

SHEET TITLE

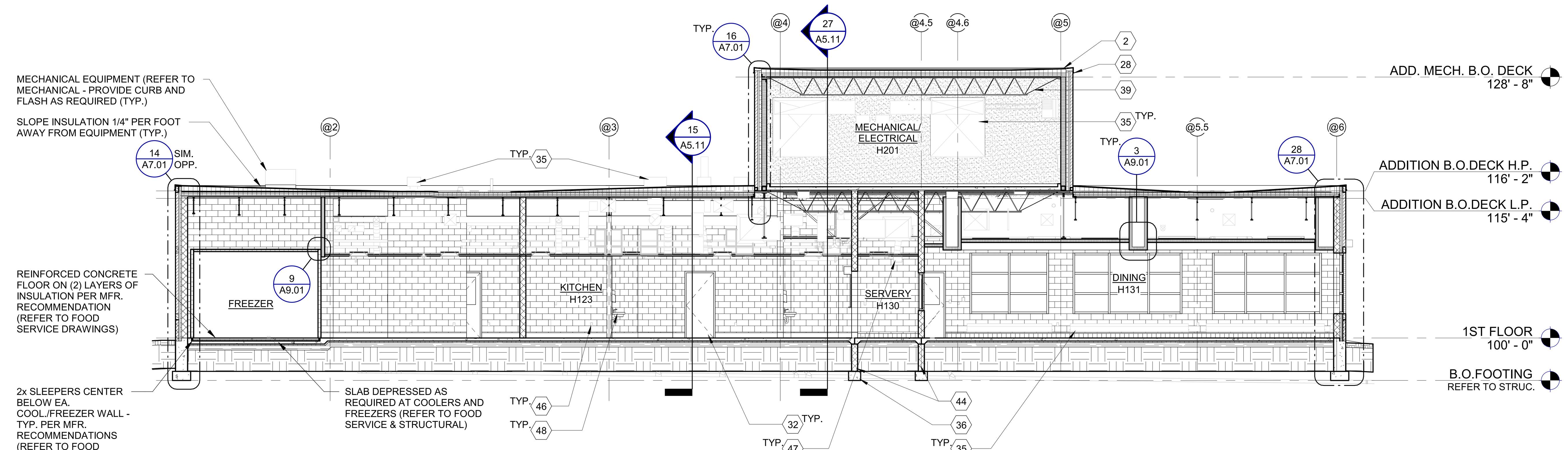
EXTERIOR ELEVATIONS

PROJECT NUMBER: 2021094

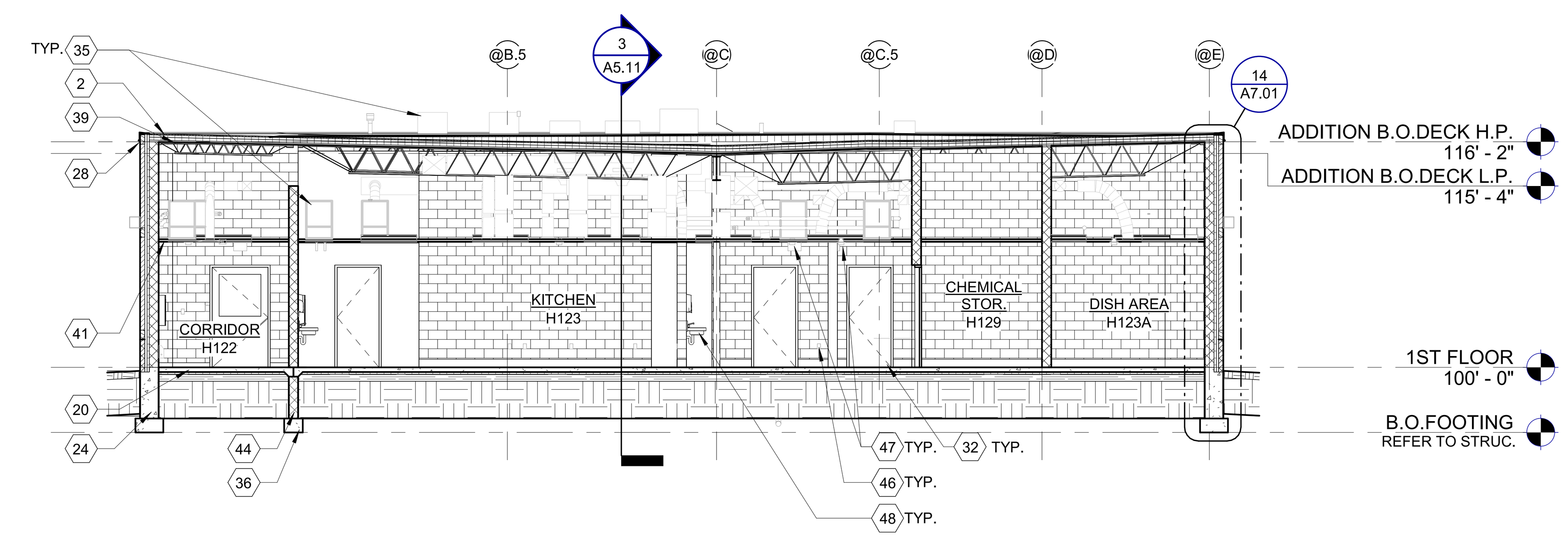
PROJECT DATE: SEPTEMBER 6, 2023

CHECKED BY: C.D.S.

SHEET NUMBER: A5.01



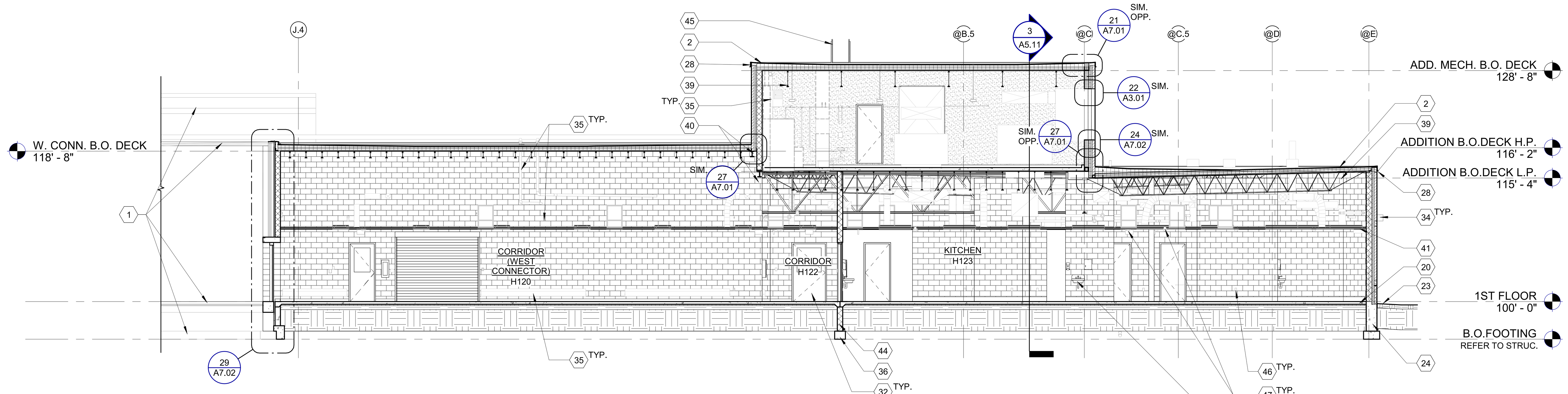
3 A5.11 **BUILDING SECTION - NORTH/SOUTH**
SCALE: 1/8" = 1'-0"



15 A5.11 **BUILDING SECTION - EAST/WEST**
SCALE: 1/8" = 1'-0"

BUILDING

These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.



27 A5.11 **BUILDING SECTION - WEST CONNECTOR**
SCALE: 1/8" = 1'-0"

MATERIAL KEYNOTES

1 EXISTING TO REMAIN
2 FULLY ADHEARED SINGLE PLY MEMBRANE ROOFING
3 3/4" ROOFING BOARD
4 RIDGID ROOF INSULATION R-30
5 METAL DECK (REFER TO STRUCTURAL)
6 2x PRESSURE TREATED WOOD BLOCKING
7 SPRAY INSULATION IN METAL DECK FLUTES TO ALLOW FOR CONTINUOUS INSULATION
8 STEEL LINTEL - EXTERIOR STEEL LINTELS TO BE GALVANIZED - PAINT (REFER TO STRUCTUAL)
9 GROUT SOLID
10 THRU WALL FLASHING
11 MORTAR NET
12 FACE BRICK - MATCH EXISTING
13 8x24 BURNISHED BLOCK ACCENT BAND - MATCH EXISTING
14 8x24 SPLIT FACE BLOCK WAINSCOT - MATCH EXISTING
15 SEALANT OVER BACKER ROD EXTERIOR / CAULK INTERIOR - TYPICAL AT ALL WINDOWS AND DOORS
16 ALUMINIUM WINDOW SYSTEM WITH INSULATED GLAZING
17 BRICK VENT
18 BULLNOSE
19 BOND BREAK
20 4" CONCRETE SLAB ON VAPOR BARRIER (REFER TO STRUCTURAL)
21 PERIMETER INSULATION - EXTEND 2'-0" IN BOTH DIRECTIONS
22 COMPACTED GRANULAR FILL
23 GRADE (REFER TO CIVIL)
24 POURED CONCRETE FOUNDATION WALL (REFER TO STRUCTURAL)
25 BITUMINOUS DAMPPROOFING
26 STEEL COLUMN (REFER TO STRUCTURAL)
27 RIGID INSULATION
28 CONTINUOUS METAL ROOF EDGE - MATCH EXISTING PROFILE - AT CONNECTION POINTS ALSO MATCH EXISTING HEIGHT (V.I.F.)
29 NEW FENCE (REFER TO CIVIL AND ELECTRICAL).
30 CONCRETE MASONRY UNIT
31 COLD FORMED METAL FRAMING
32 DOOR AND FRAME (REFER TO SCHEDULE)
33 2" EXPANSION JOINT / CONTROL JOINT AS REQUIRED - FIRE RATE AS REQUIRED (REFER TO CODE PLAN)
34 LIGHT FIXTURE (REFER TO ELECTRICAL)
35 MECHANICAL ITEM (REFER TO MECHANICAL)
36 POURED CONCRETE FOOTING (REFER TO STRUCTURAL)
37 STEEL ANGLE (REFER TO STRUCTURAL)
38 STEEL TUBE (REFER TO STRUCTURAL)
39 STEEL JOIST (REFER TO STRUCTURAL)
40 STEEL BEAM (REFER TO STRUCTURAL)
41 SUSPENDED CEILING SYSTEM (REFER TO SCHEDULE)
42 LOUVER (REFER TO MECHANICAL)
43 BOND BEAM WITH (2) #5 CONT, GROUT SOLID (REFER TO STRUCTURAL)
44 CMU FOUNDATION WALL (REFER TO STRUCTURAL)
45 ROOF LADDER - ATTACH AND FLASH AS REQUIRED PER MANUFACTURER'S RECOMMENDATIONS (REFER TO REFERENCE ONLY DETAIL)
46 WALL MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
47 CEILING MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
48 PLUMBING FIXTURE AND ACCESSORIES (REFER TO MECHANICAL & STANDARD MOUNTING HEIGHTS CHART)
49 BASE MATERIAL (REFER TO SCHEDULE)
50 CONTROL JOINT

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

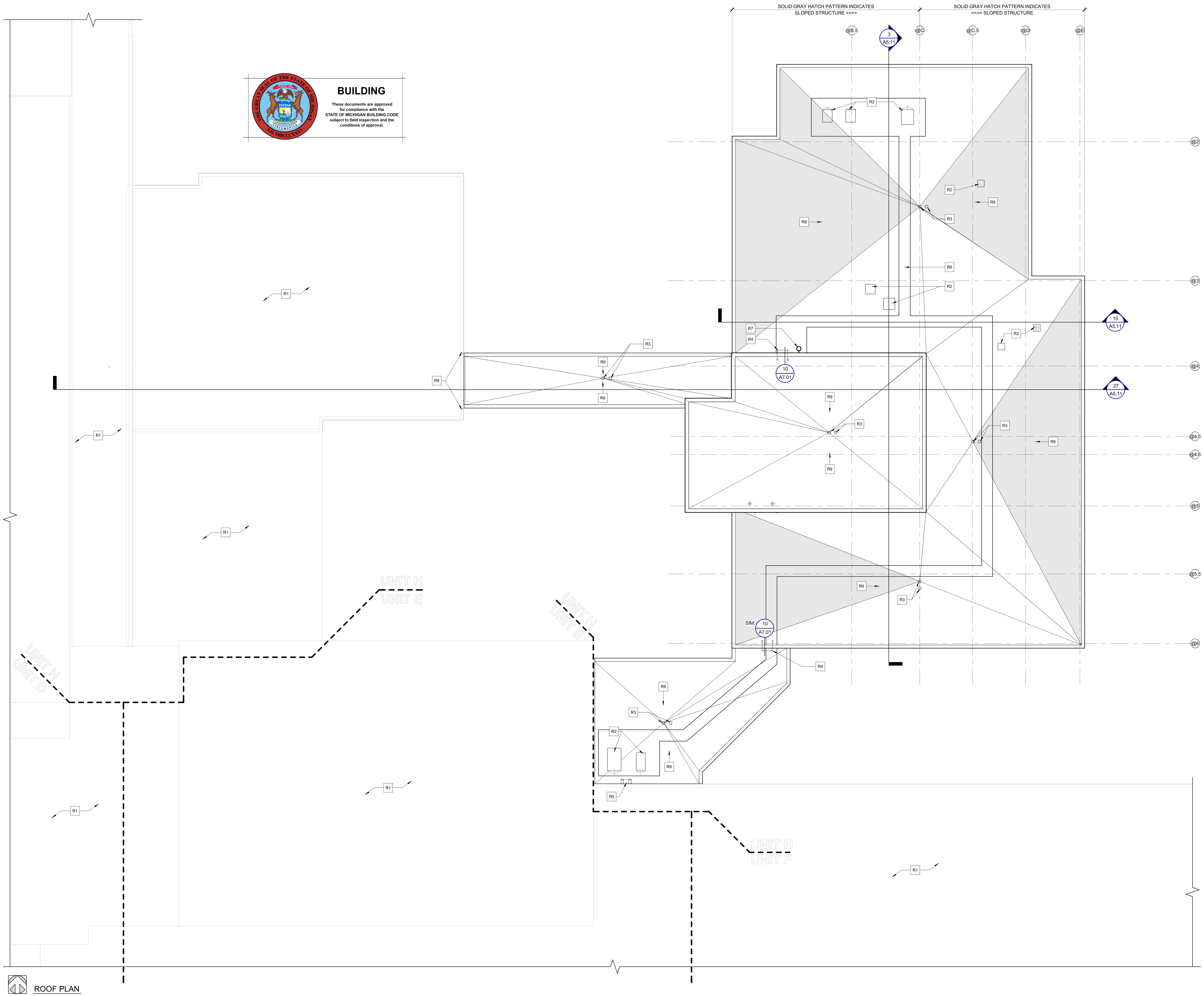
SHEET TITLE
BUILDING SECTIONS

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

SHEET NUMBER
A5.11



ROOF PLAN
NORTH SCALE: 1/8" = 1'-0"

ROOF PLAN GENERAL NOTES:

1. PROVIDE FLASHING PER MANUFACTURER'S RECOMMENDATIONS AT WALLS, ROOF PENETRATIONS (MECHANICAL AND ELECTRICAL), ROOF EDGES, ETC.
2. MECHANICAL AND ELECTRICAL EQUIPMENT SHOWN REFERENCE ONLY. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF ALL MECHANICAL AND ELECTRICAL EQUIPMENT, ROOF PENETRATIONS, VENTS THROUGH THE ROOF, ETC.
3. ALL ROOFING WORK, INCLUDING MEMBRANE ROOF FLASHING, ETC. SHALL BE PERFORMED BY ONE ROOFING CONTRACTOR TO LIMIT WARRANTY RESPONSIBILITY. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.
4. ALL EXISTING ROOF WARRANTIES MUST BE MAINTAINED AT CONNECTION POINTS.

R# ROOF PLAN KEYNOTE

- R1 EXISTING TO REMAIN.
- R2 MECHANICAL EQUIPMENT (REFER TO MECHANICAL) - PROVIDE CURB AND FLASHING AS REQUIRED PER MANUFACTURERS RECOMMENDATIONS
- R3 ROOF DRAIN w/ OVERFLOW (REFER TO MECHANICAL).
- R4 ROOF LADDER - ATTACH AND FLASH AS REQUIRED - REFER TO DETAIL FOR REFERENCE
- R5 MECHANICAL EQUIPMENT (REFER TO MECHANICAL).
- R6 PROVIDE ROOF WALKING PADS - AS SHOWN TO ALL EQUIPMENT REQUIRING ROUTINE MAINTENANCE - VERIFY LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
- R7 LIGHT FIXTURE (REFER TO MECHANICAL)
- R8 PATCH & REPAIR EXISTING ROOF AND FASCIA AT NEW ROOF CONNECTION - FLASH AS REQUIRED
- R9 SLOPE 1/4" PER FOOT TOWARD ROOF DRAIN - HATCHED AREAS INDICATED SLOPED STRUCUTRE - REMAINING AREAS UTILIZE SLOPED INSULATION (REFER TO BUILDING SECTIONS & STRUCTURAL).

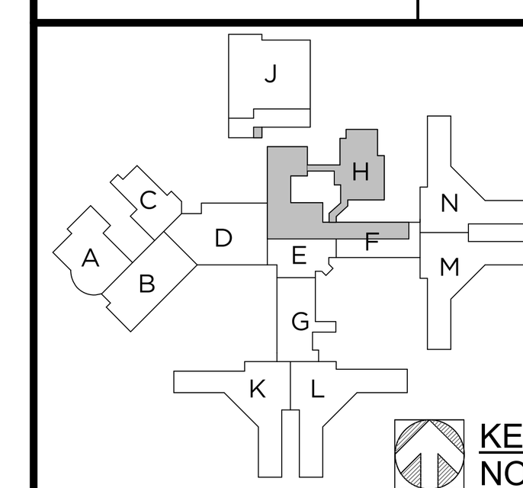
NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003



KEY PLAN
NOT TO SCALE

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

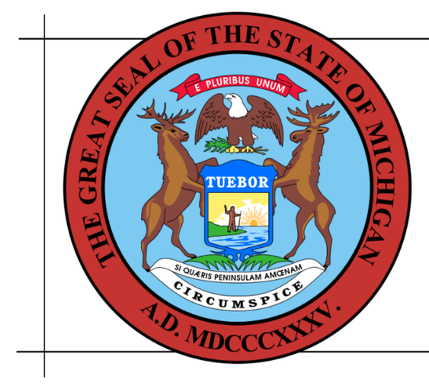
SHEET TITLE
ROOF PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

SHEET NUMBER
A6.01

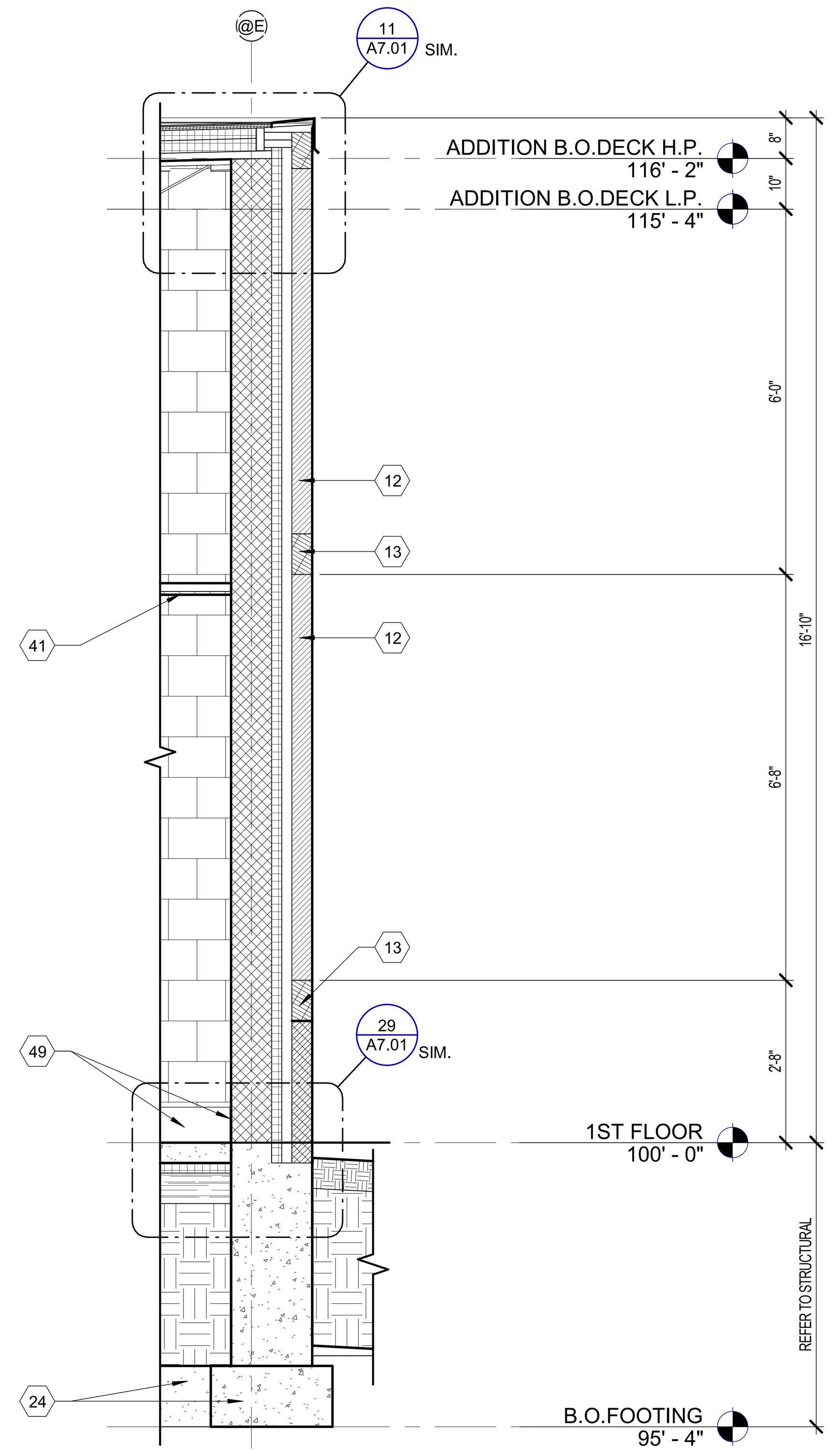


BUILDING

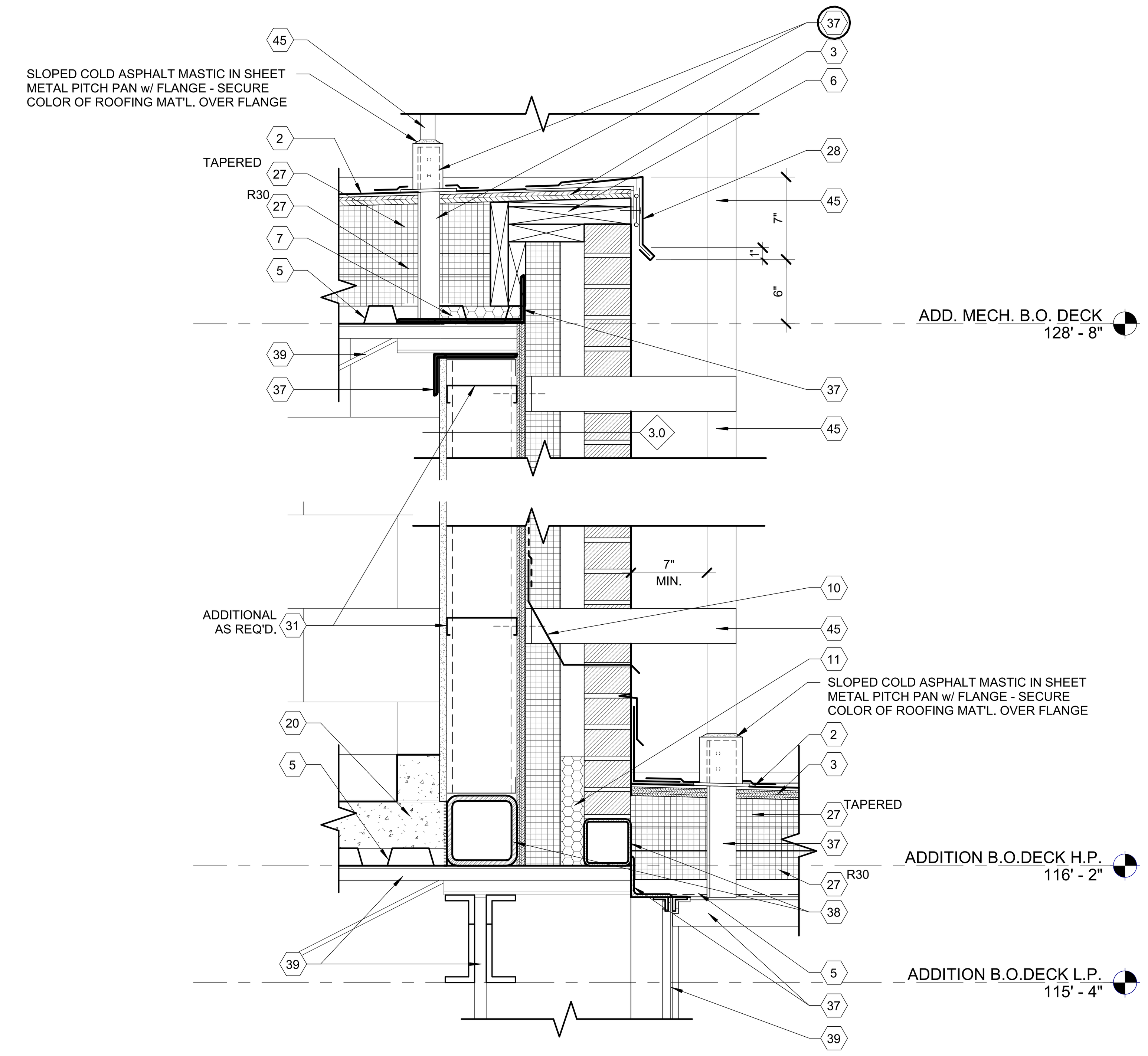
These documents are approved for compliance with the STATE OF MICHIGAN BUILDING CODE subject to field inspection and the conditions of approval.

NOTE: WALL TYPES ARE INDICATED w/ A DIAMOND AND A NUMBER - REFER TO A0.01 FOR DESCRIPTION OF WALL TYPES

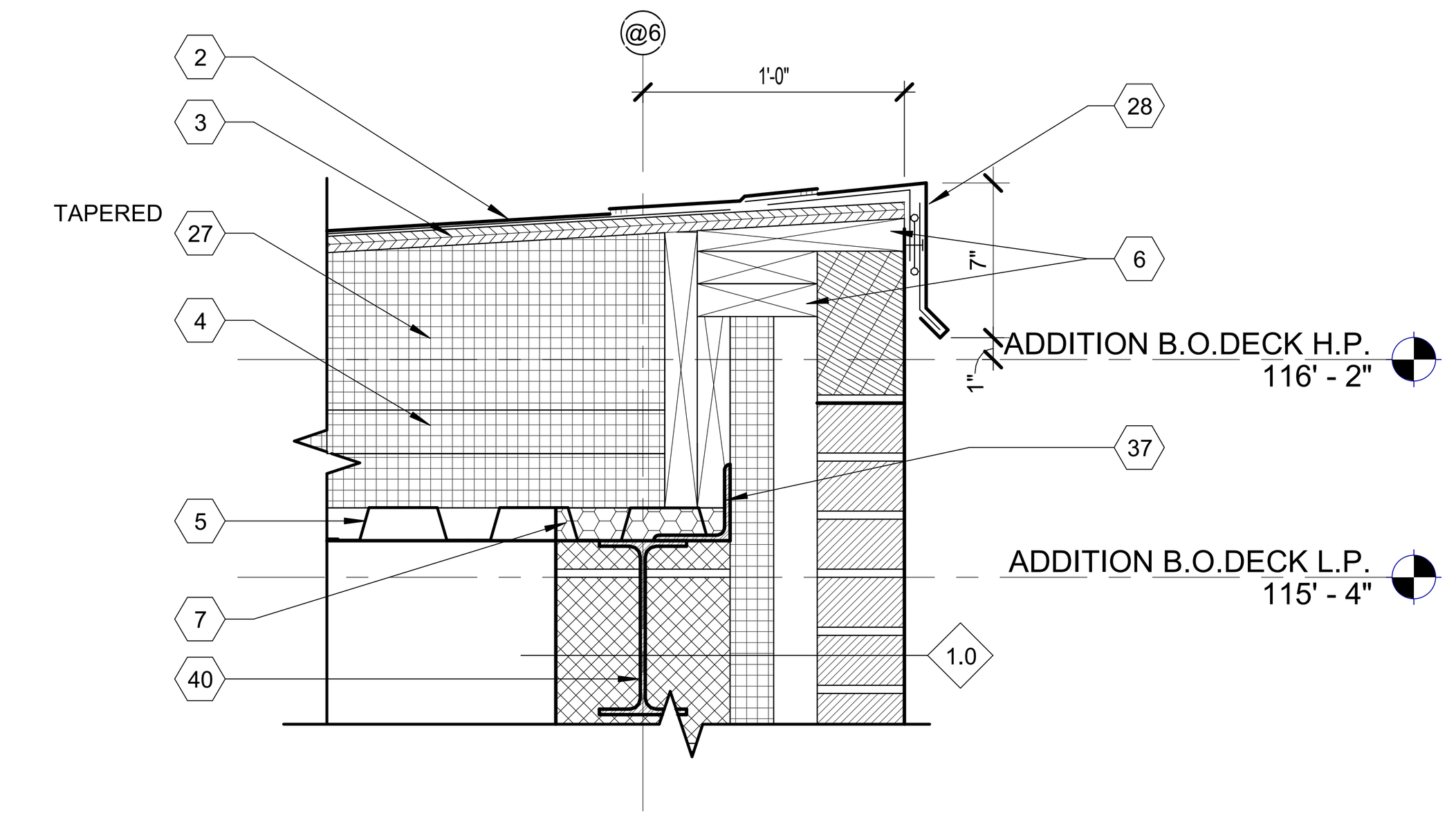
NOTE: ALL EXISTING ROOF WARRANTIES MUST BE MAINTAINED AT CONNECTION POINTS



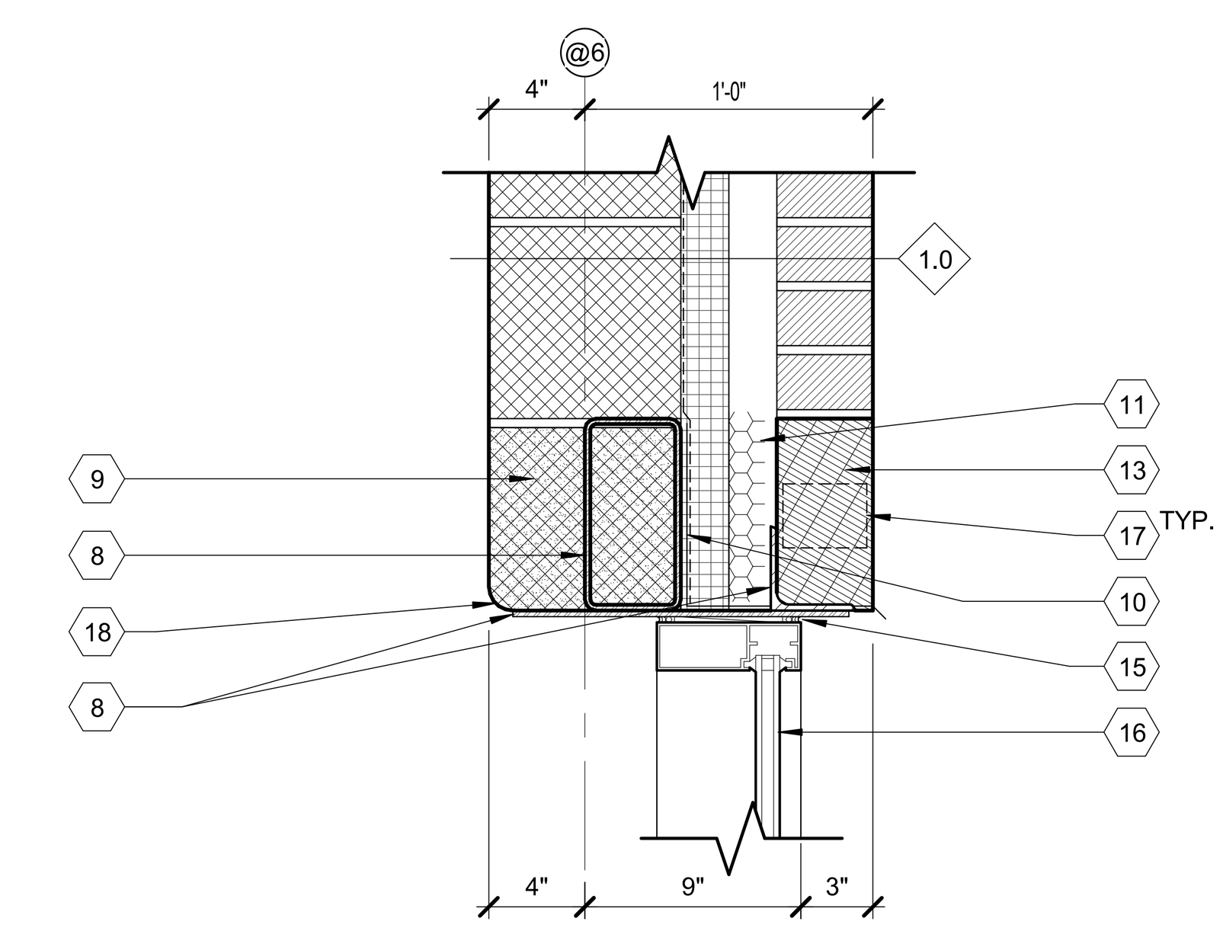
14 A7.01 WALL SECTION
SCALE: 1/2" = 1'-0"



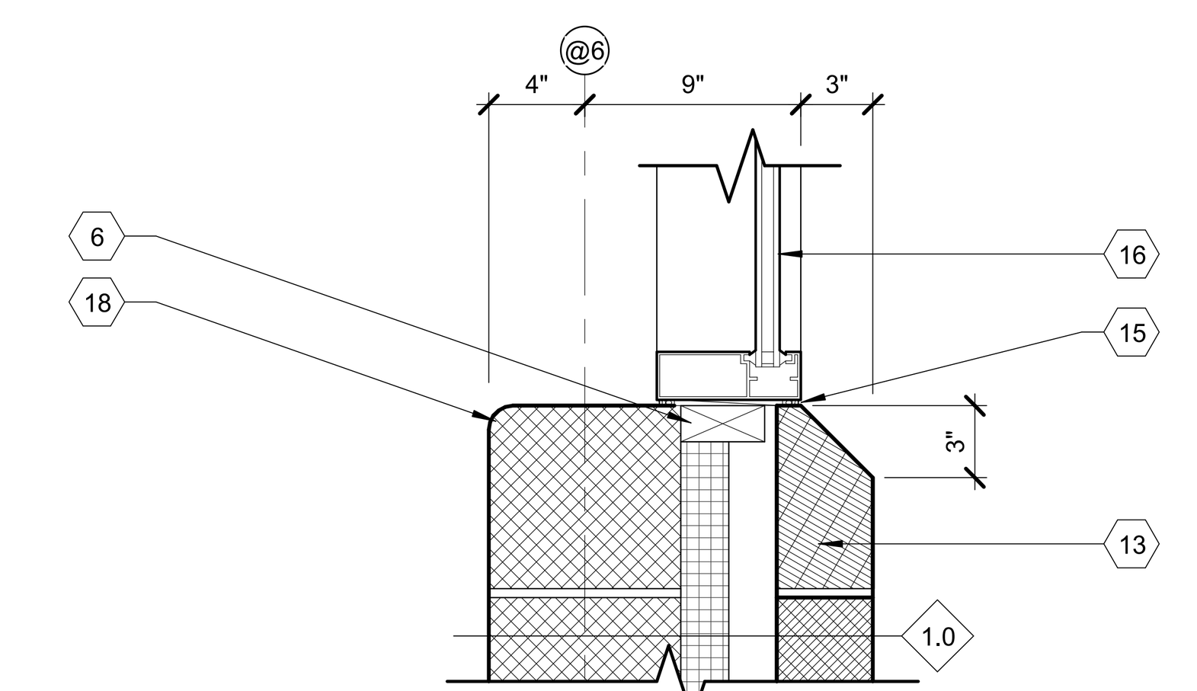
10 A7.01 ROOF LADDER DETAIL
SCALE: 1 1/2" = 1'-0"



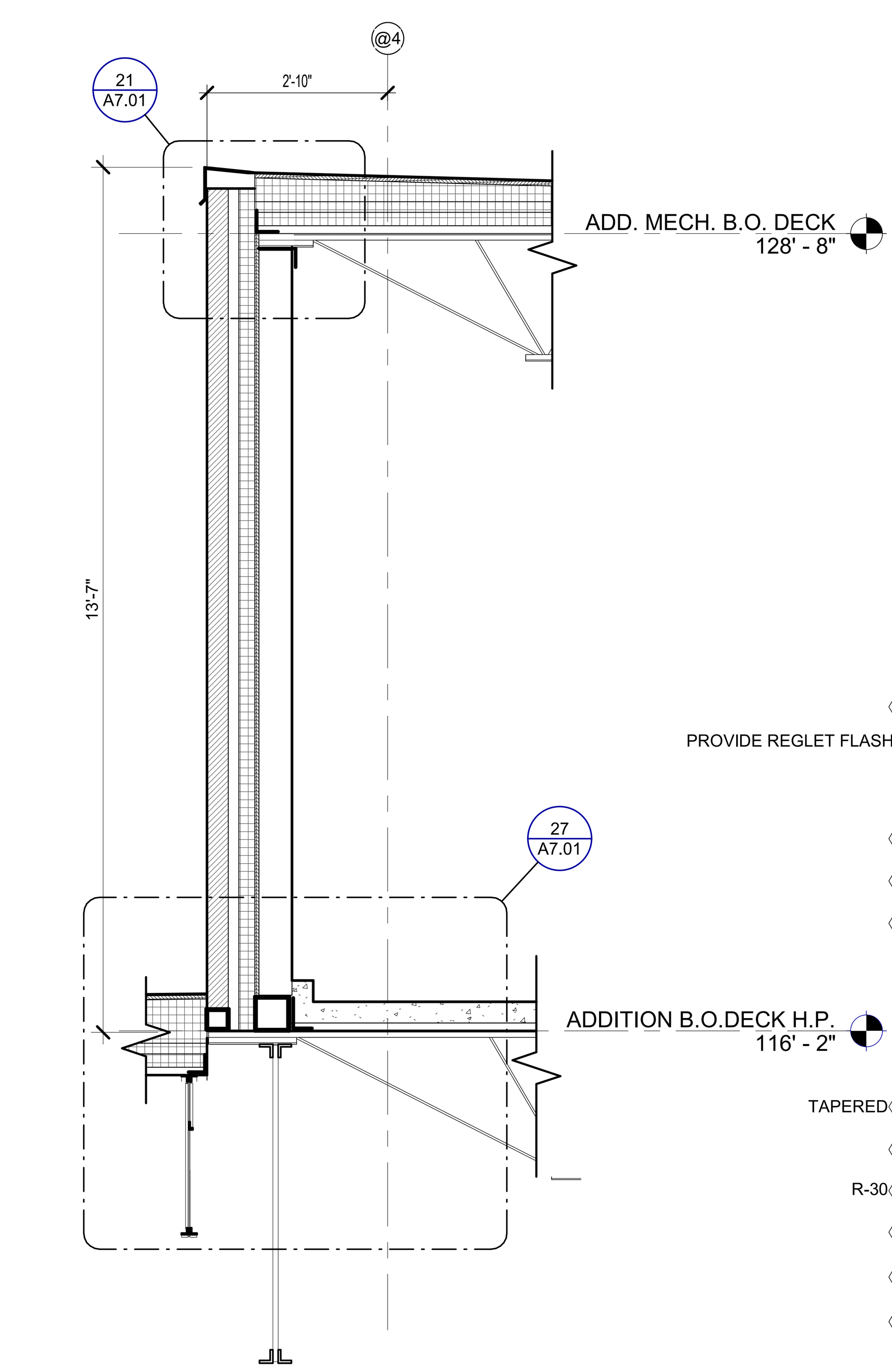
11 A7.01 ROOF DETAIL
SCALE: 1 1/2" = 1'-0"



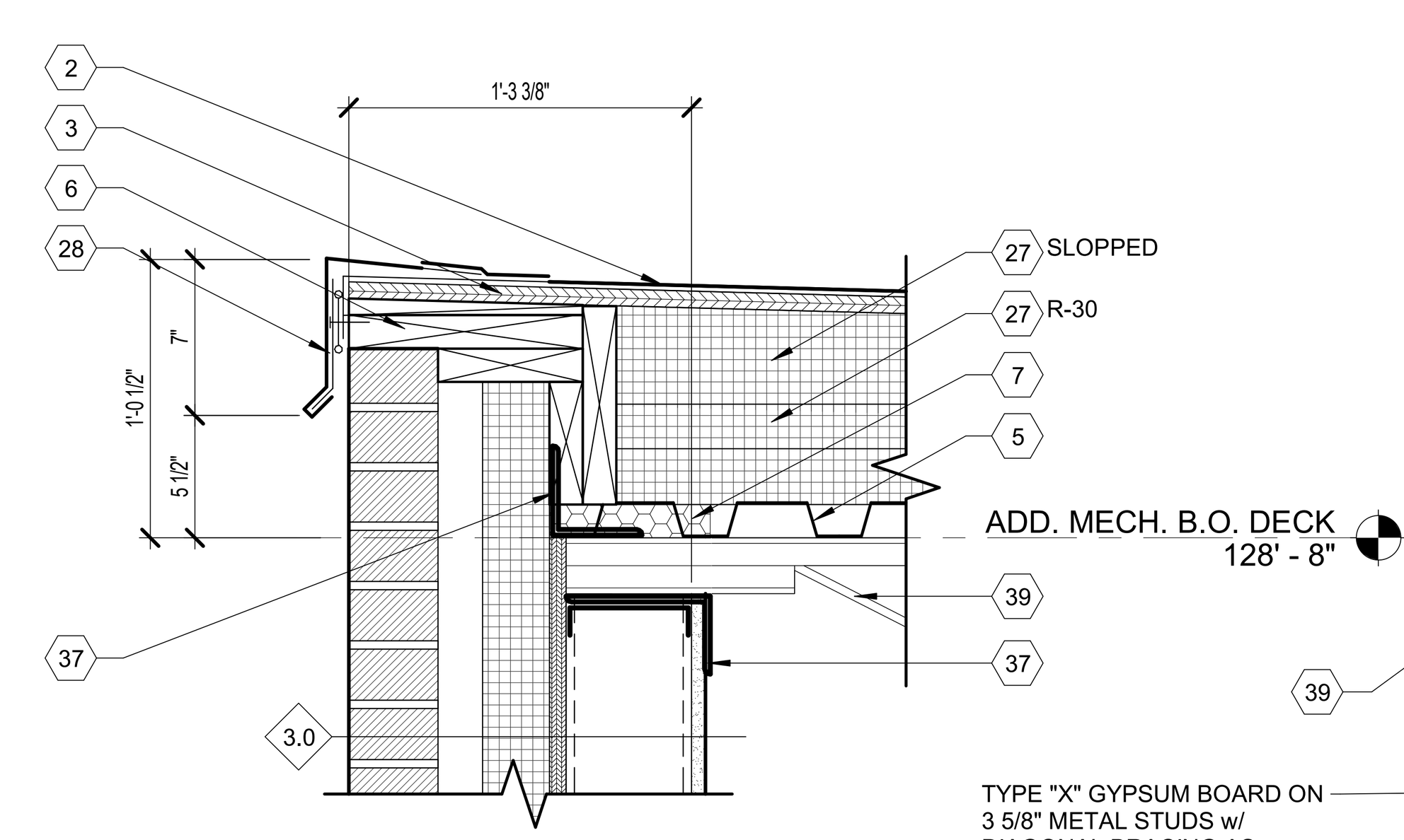
17 A7.01 WINDOW HEAD
SCALE: 1 1/2" = 1'-0"



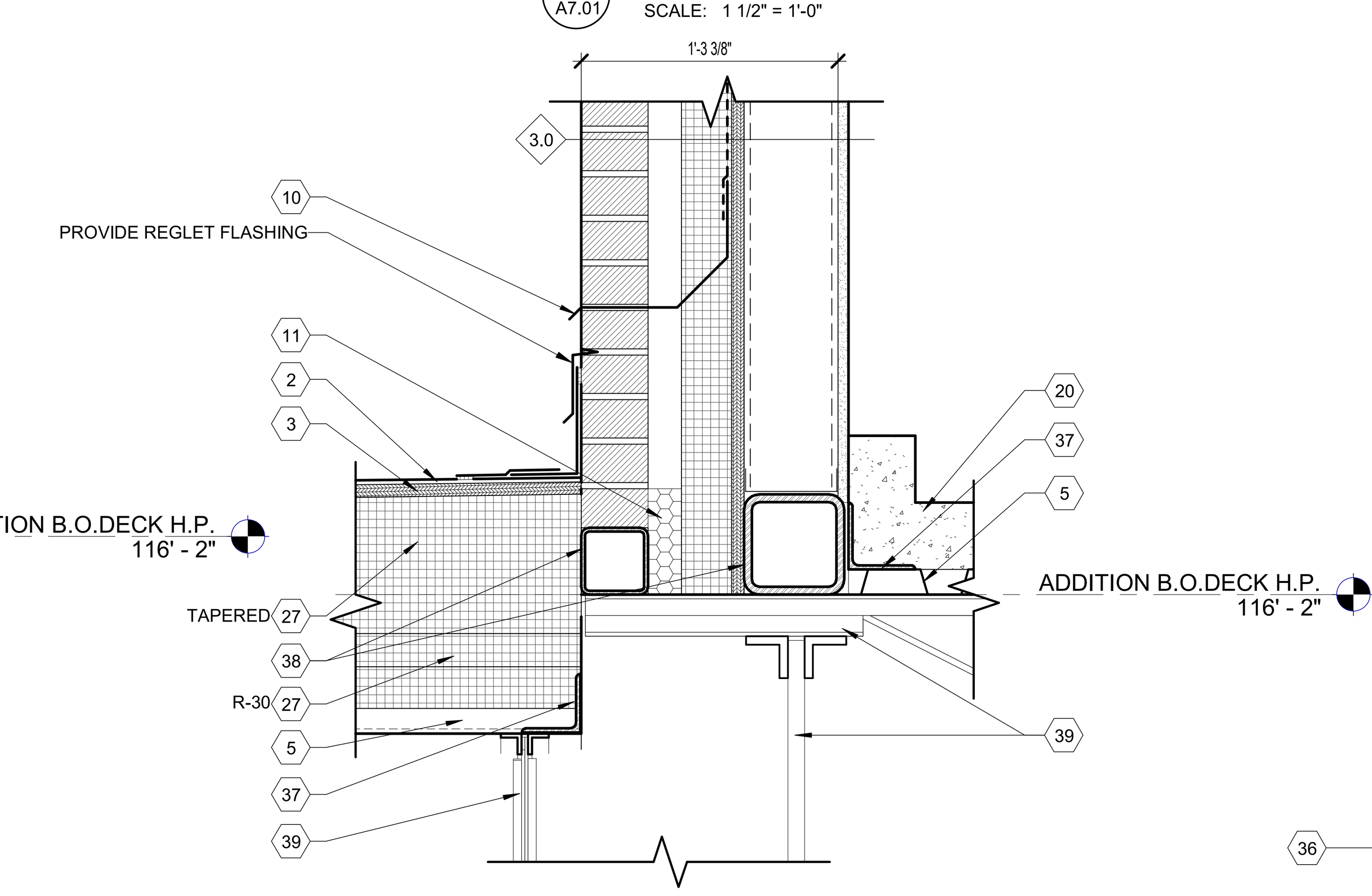
23 A7.01 WINDOW SILL
SCALE: 1 1/2" = 1'-0"



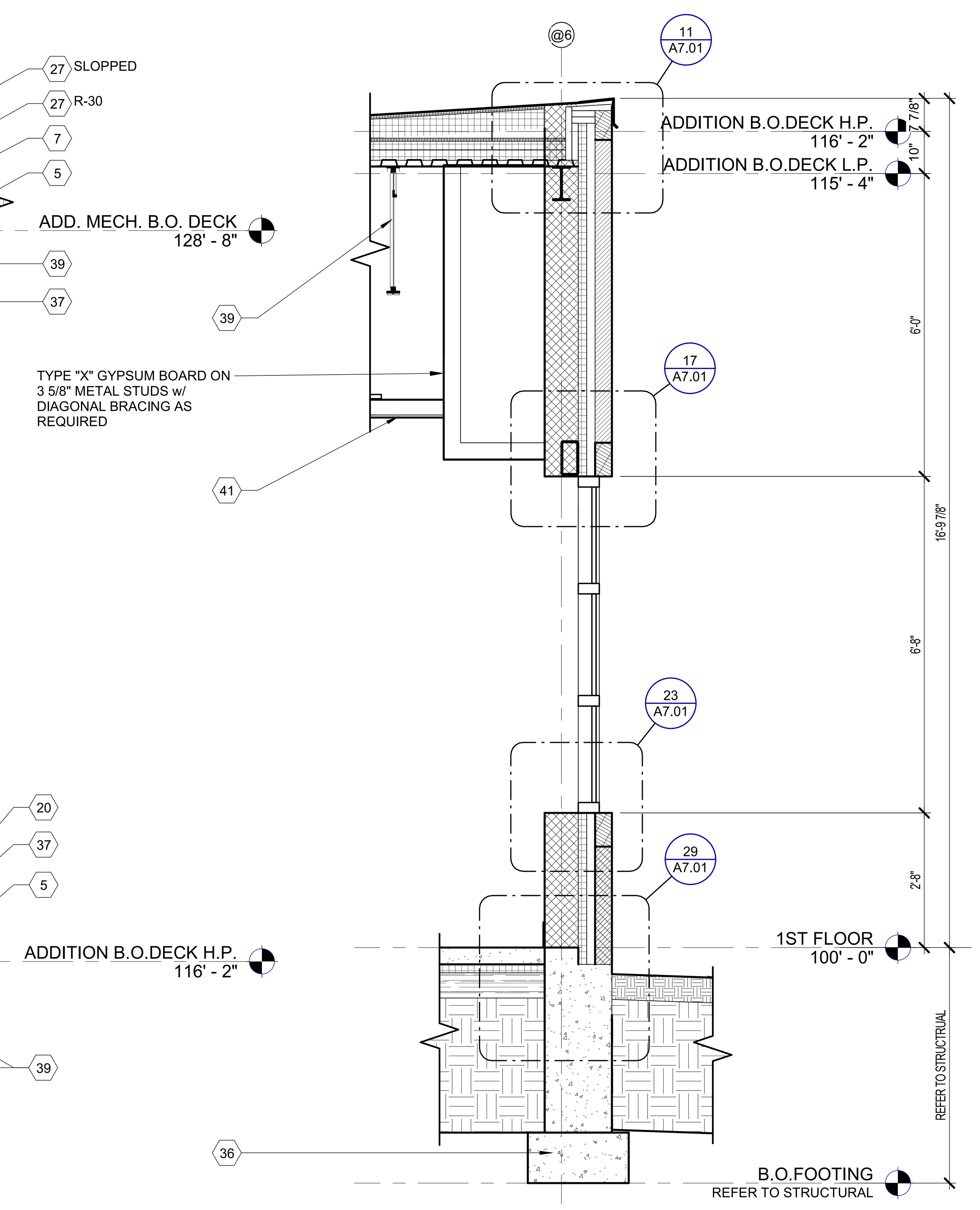
16 A7.01 WALL SECTION
SCALE: 1/2" = 1'-0"



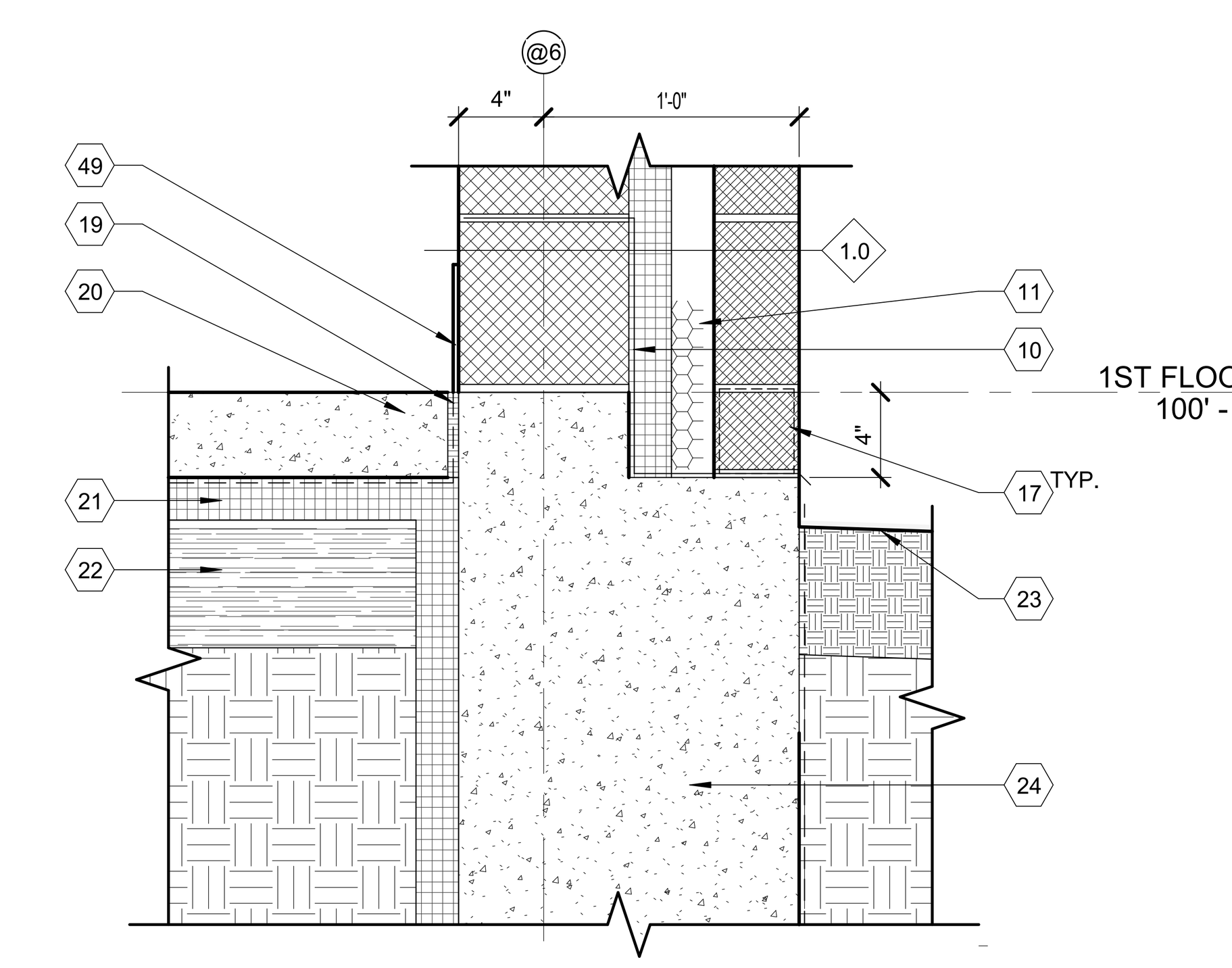
21 A7.01 ROOF DETAIL
SCALE: 1 1/2" = 1'-0"



27 A7.01 SILL DETAIL
SCALE: 1 1/2" = 1'-0"



28 A7.01 WALL SECTION
SCALE: 1/2" = 1'-0"



29 A7.01 DETAIL @ GRADE
SCALE: 1 1/2" = 1'-0"

MATERIAL KEYNOTES

1 EXISTING TO REMAIN
2 FULLY ADHERED SINGLE PLY MEMBRANE ROOFING
3 3/4" ROOFING BOARD
4 RIDGID ROOF INSULATION R-30
5 METAL DECK (REFER TO STRUCTURAL)
6 2x PRESSURE TREATED WOOD BLOCKING
7 SPRAY INSULATION IN METAL DECK FLUTES TO ALLOW FOR CONTINUOUS INSULATION
8 STEEL LINTEL - EXTERIOR STEEL LINTELS TO BE GALVANIZED - PAINT (REFER TO STRUCTURAL)
9 GROUT SOLID
10 THRU WALL FLASHING
11 MORTAR NET
12 FACE BRICK - MATCH EXISTING
13 8x24 BURNISHED BLOCK ACCENT BAND - MATCH EXISTING
14 8x24 SPLIT FACE BLOCK WAINSCOT - MATCH EXISTING
15 SEALANT OVER BACKER ROD EXTERIOR / CAULK INTERIOR - TYPICAL AT ALL WINDOWS AND DOORS
16 ALUMINIUM WINDOW SYSTEM WITH INSULATED GLAZING
17 BRICK VENT
18 BULLNOSE
19 BOND BREAK
20 4" CONCRETE SLAB ON VAPOR BARRIER (REFER TO STRUCTURAL)
21 PERIMETER INSULATION - EXTEND 2'-0" IN BOTH DIRECTIONS
22 COMPACTED GRANULAR FILL
23 GRADE (REFER TO CIVIL)
24 POURED CONCRETE FOUNDATION WALL (REFER TO STRUCTURAL)
25 BITUMINOUS DAMPPROOFING
26 STEEL COLUMN (REFER TO STRUCTURAL)
27 RIGID INSULATION
28 CONTINUOUS METAL ROOF EDGE - MATCH EXISTING PROFILE - AT CONNECTION POINTS ALSO MATCH EXISTING HEIGHT (V.I.F.)
29 NEW FENCE (REFER TO CIVIL AND ELECTRICAL).
30 CONCRETE MASONRY UNIT
31 COLD FORMED METAL FRAMING
32 DOOR AND FRAME (REFER TO SCHEDULE)
33 2" EXPANSION JOINT / CONTROL JOINT AS REQUIRED - FIRE RATE AS REQUIRED (REFER TO CODE PLAN)
34 LIGHT FIXTURE (REFER TO ELECTRICAL)
35 MECHANICAL ITEM (REFER TO MECHANICAL)
36 POURED CONCRETE FOOTING (REFER TO STRUCTURAL)
37 STEEL ANGLE (REFER TO STRUCTURAL)
38 STEEL TUBE (REFER TO STRUCTURAL)
39 STEEL JOIST (REFER TO STRUCTURAL)
40 STEEL BEAM (REFER TO STRUCTURAL)
41 SUSPENDED CEILING SYSTEM (REFER TO SCHEDULE)
42 LOUVER (REFER TO MECHANICAL)
43 BOND BEAM WITH (2) #5 CONT, GROUT SOLID (REFER TO STRUCTURAL)
44 CMU FOUNDATION WALL (REFER TO STRUCTURAL)
45 ROOF LADDER - ATTACH AND FLASH AS REQUIRED PER MANUFACTURER'S RECOMMENDATIONS (REFER TO REFERENCE ONLY DETAIL)
46 WALL MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
47 CEILING MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
48 PLUMBING FIXTURE AND ACCESSORIES (REFER TO MECHANICAL & STANDARD MOUNTING HEIGHTS CHART)
49 BASE MATERIAL (REFER TO SCHEDULE)
50 CONTROL JOINT

NO.	REVISION	DATE

STATE OF MICHIGAN
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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM

WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
WALL SECTIONS & DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
A7.01

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

NOTE: WALL TYPES ARE INDICATED w/ A DIAMOND AND A NUMBER - REFER TO A0.01 FOR DESCRIPTION OF WALL TYPES

NOTE: ALL EXISTING ROOF WARRANTIES MUST BE MAINTAINED AT CONNECTION POINTS

MATERIAL KEYNOTES

1 EXISTING TO REMAIN
2 FULLY ADHEARED SINGLE PLY MEMBRANE ROOFING
3 3/4" ROOFING BOARD
4 RIDGID ROOF INSULATION R-30
5 METAL DECK (REFER TO STRUCTURAL)
6 2x PRESSURE TREATED WOOD BLOCKING
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8 STEEL LINTEL - EXTERIOR STEEL LINTELS TO BE GALVANIZED - PAINT (REFER TO STRUCTURAL)
9 GROUT SOLID
10 THRU WALL FLASHING
11 MORTAR NET
12 FACE BRICK - MATCH EXISTING
13 8x24 BURNISHED BLOCK ACCENT BAND - MATCH EXISTING
14 8x24 SPLIT FACE BLOCK WAINSCOT - MATCH EXISTING
15 SEALANT OVER BACKER ROD EXTERIOR / CAULK INTERIOR - TYPICAL AT ALL WINDOWS AND DOORS
16 ALUMINIUM WINDOW SYSTEM WITH INSULATED GLAZING
17 BRICK VENT
18 BULLNOSE
19 BOND BREAK
20 4" CONCRETE SLAB ON VAPOR BARRIER (REFER TO STRUCTURAL)
21 PERIMETER INSULATION - EXTEND 2'-0" IN BOTH DIRECTIONS
22 COMPACTED GRANULAR FILL
23 GRADE (REFER TO CIVIL)
24 POURED CONCRETE FOUNDATION WALL (REFER TO STRUCTURAL)
25 BITUMINOUS DAMPPROOFING
26 STEEL COLUMN (REFER TO STRUCTURAL)
27 RIGID INSULATION
28 CONTINUOUS METAL ROOF EDGE - MATCH EXISTING PROFILE - AT CONNECTION POINTS ALSO MATCH EXISTING HEIGHT (V.I.F.)
29 NEW FENCE (REFER TO CIVIL AND ELECTRICAL).
30 CONCRETE MASONRY UNIT
31 COLD FORMED METAL FRAMING
32 DOOR AND FRAME (REFER TO SCHEDULE)
33 2" EXPANSION JOINT / CONTROL JOINT AS REQUIRED - FIRE RATE AS REQUIRED (REFER TO CODE PLAN)
34 LIGHT FIXTURE (REFER TO ELECTRICAL)
35 MECHANICAL ITEM (REFER TO MECHANICAL)
36 POURED CONCRETE FOOTING (REFER TO STRUCTURAL)
37 STEEL ANGLE (REFER TO STRUCTURAL)
38 STEEL TUBE (REFER TO STRUCTURAL)
39 STEEL JOIST (REFER TO STRUCTURAL)
40 STEEL BEAM (REFER TO STRUCTURAL)
41 SUSPENDED CEILING SYSTEM (REFER TO SCHEDULE)
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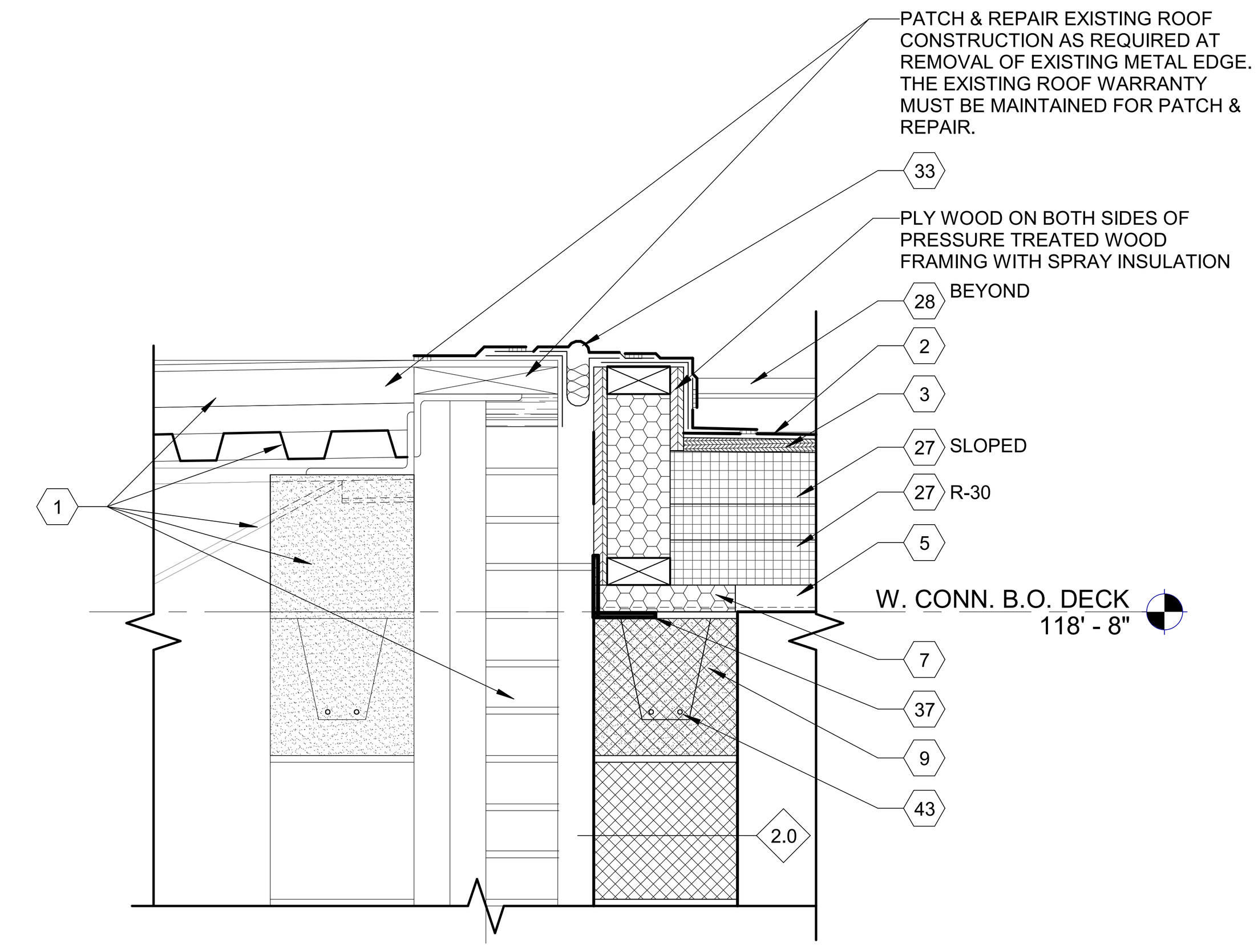
47 CEILING MOUNTED ELECTRICAL ITEM (REFER TO ELECTRICAL)
48 PLUMBING FIXTURE AND ACCESSORIES (REFER TO MECHANICAL & STANDARD MOUNTING HEIGHTS CHART)
49 BASE MATERIAL (REFER TO SCHEDULE)
50 CONTROL JOINT



18 A7.02 ROOF DETAIL
SCALE: 1 1/2" = 1'-0"

BUILDING

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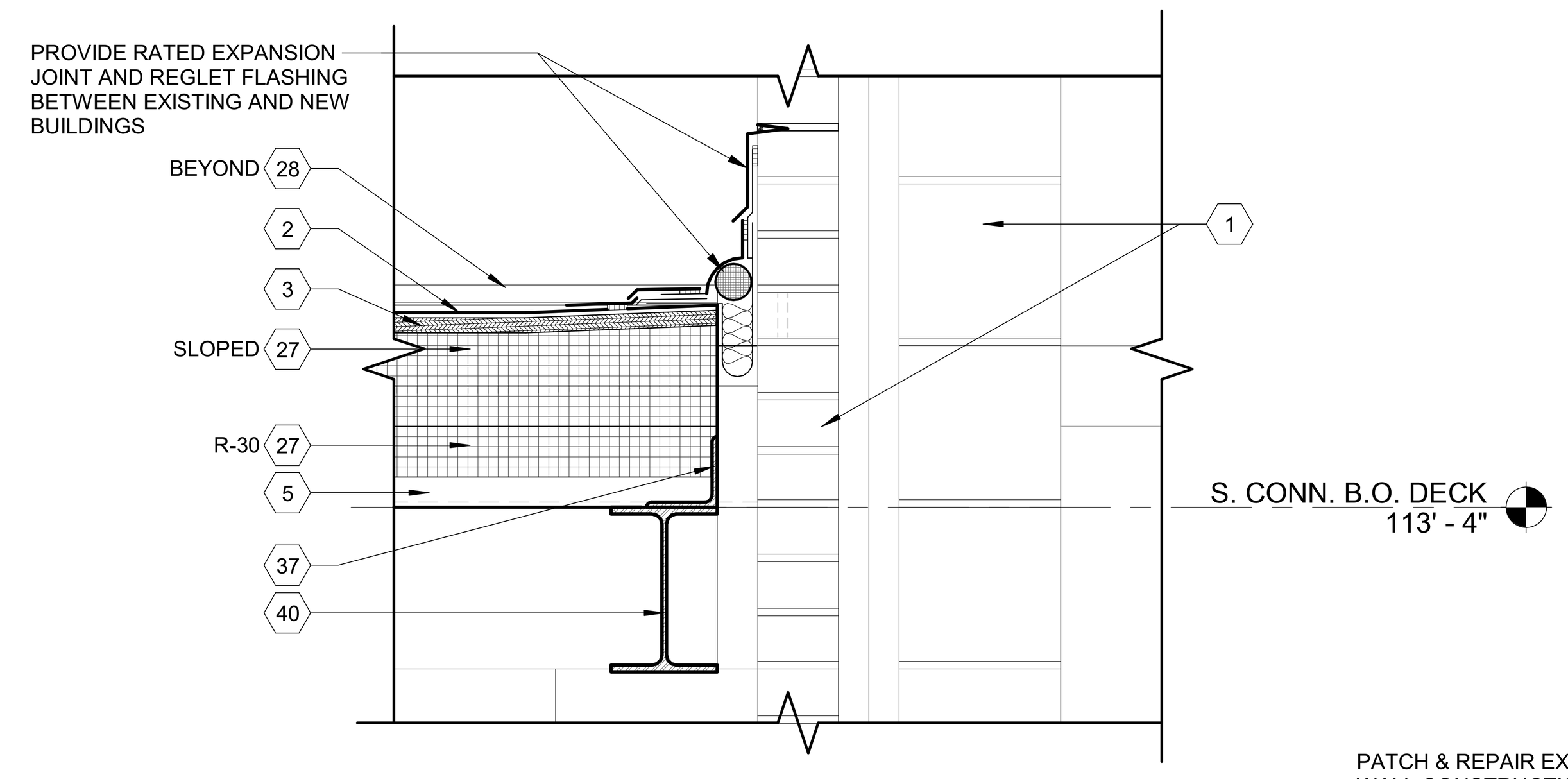

21 A7.02 ROOF DETAIL
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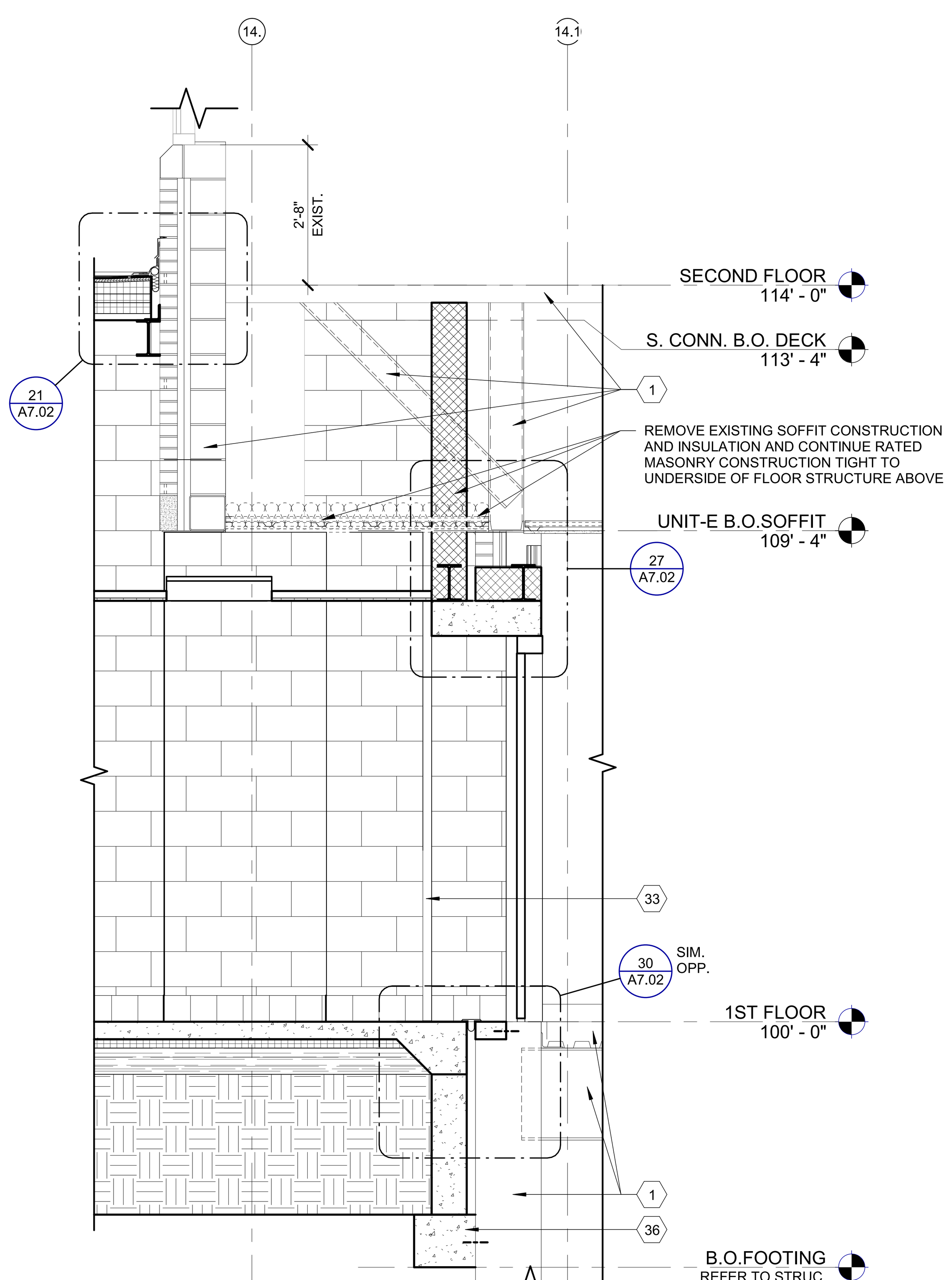
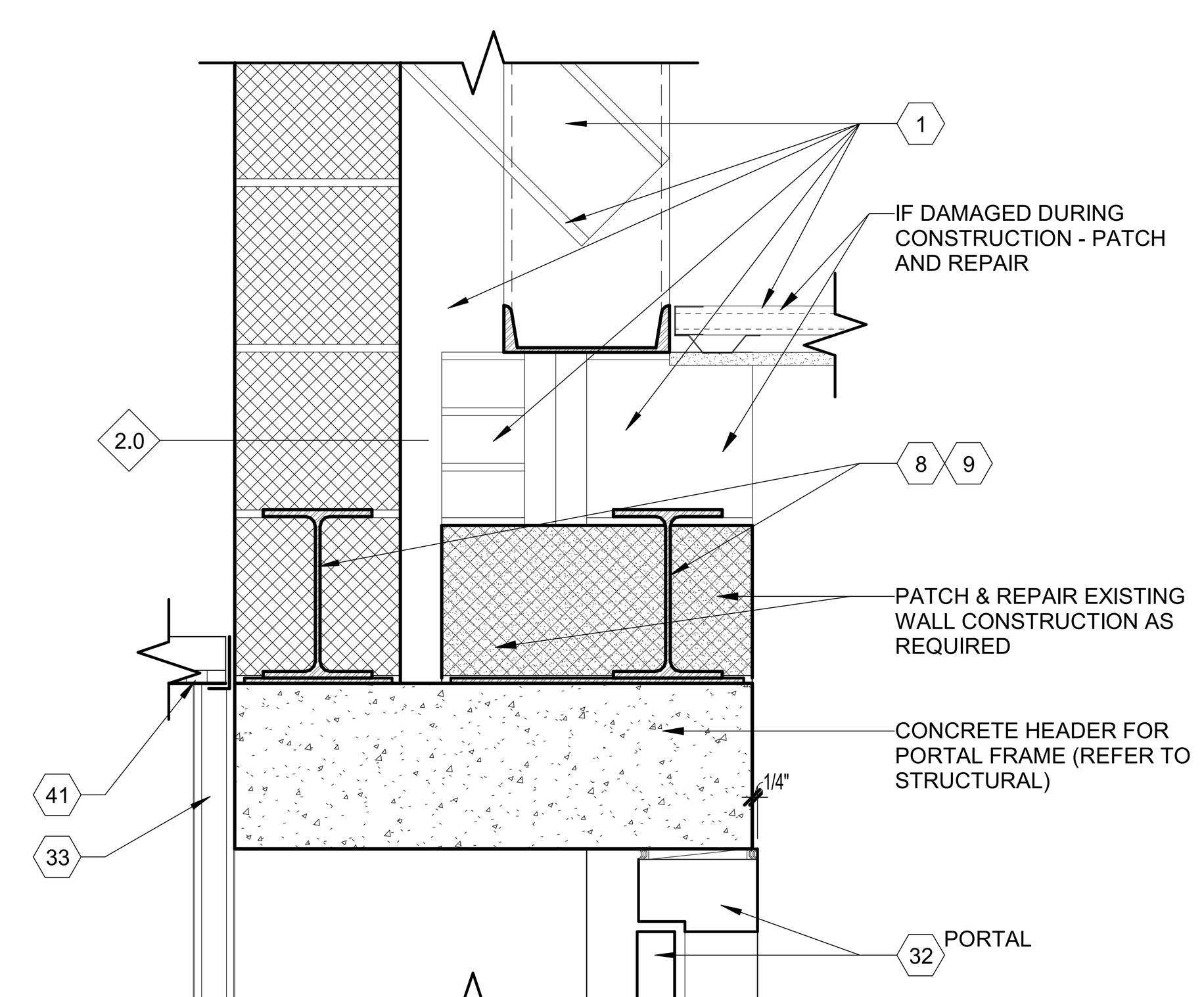
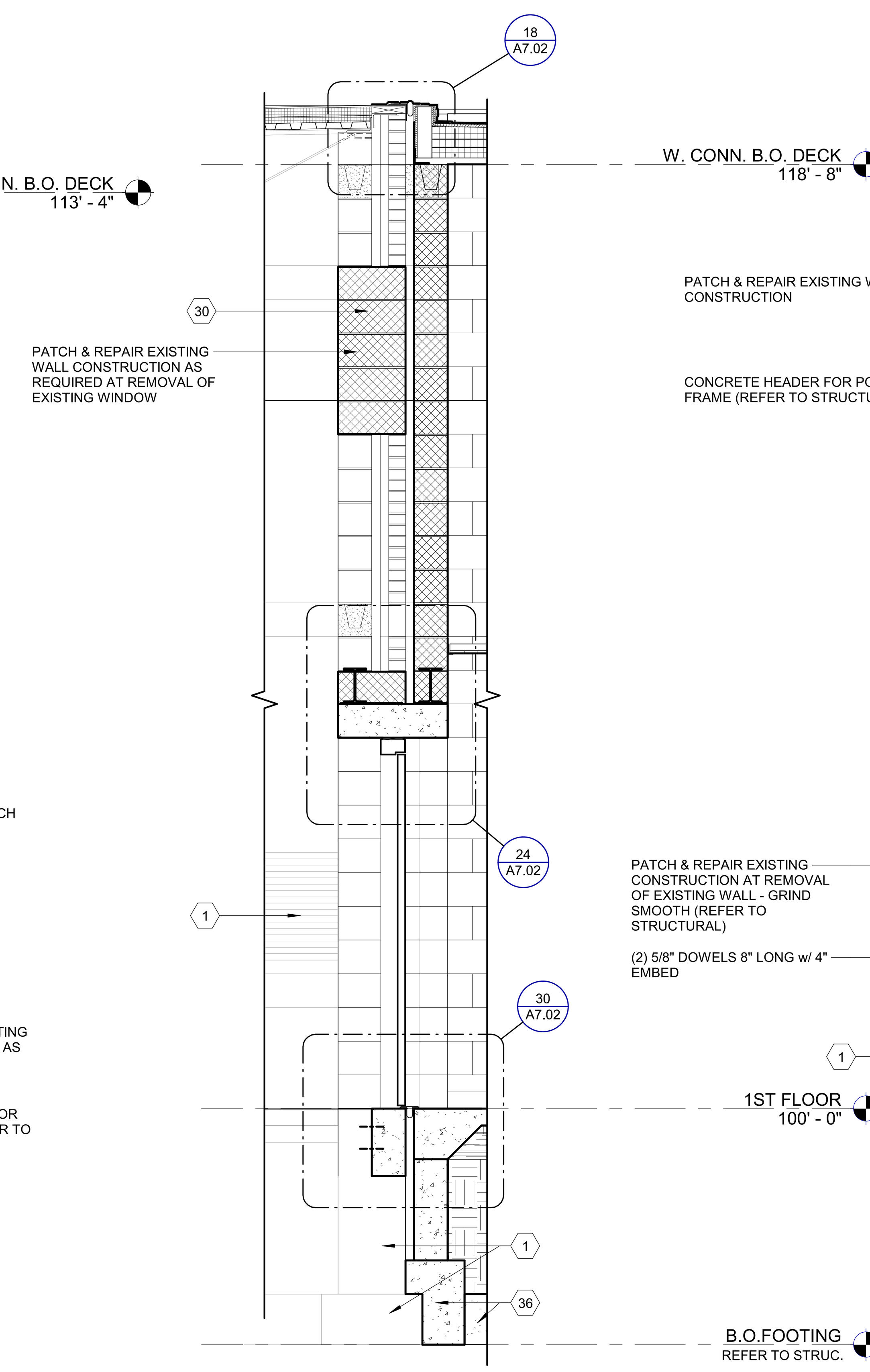


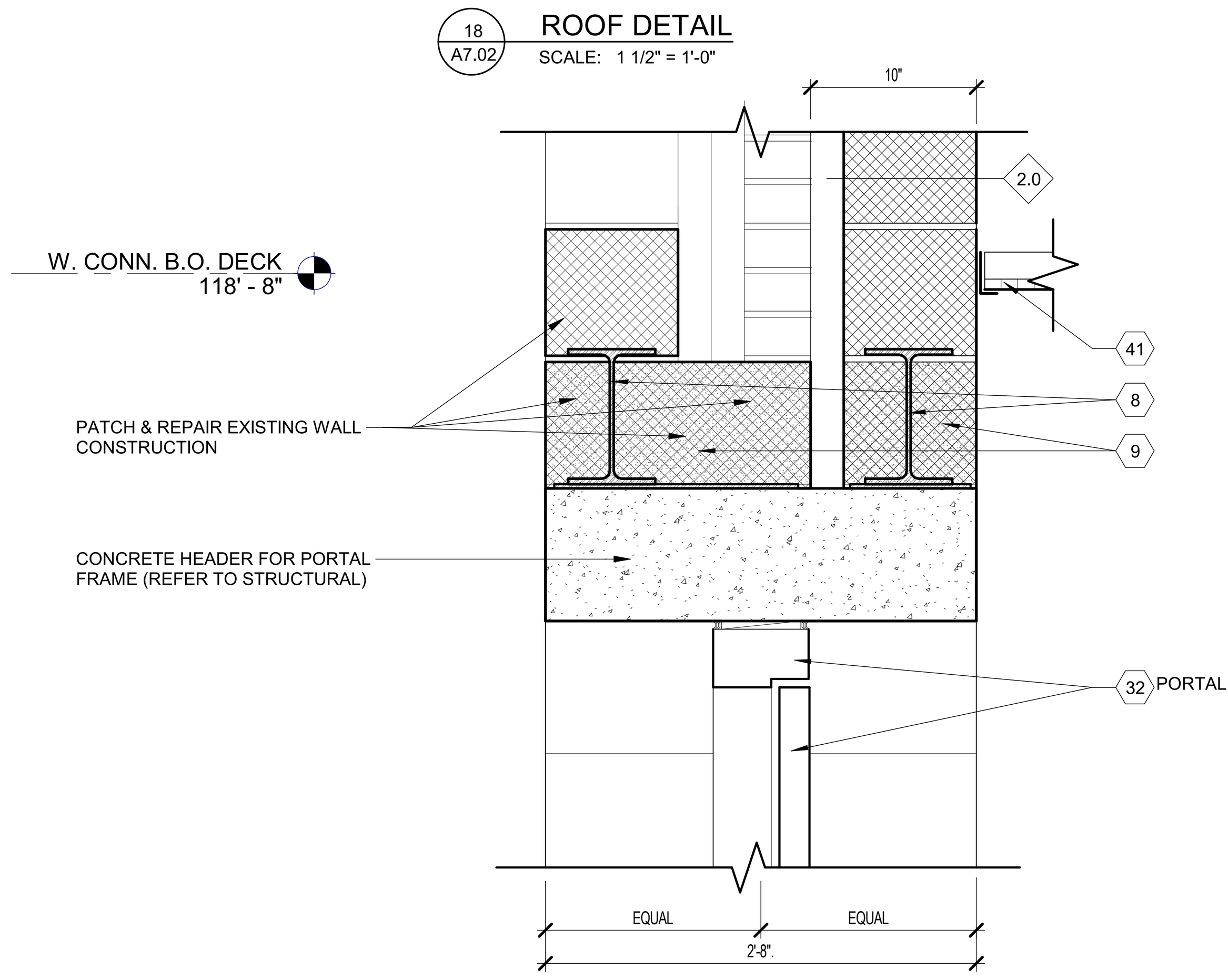
25 A7.02 WALL SECTION SOUTH CONNECTOR
SCALE: 1/2" = 1'-0"



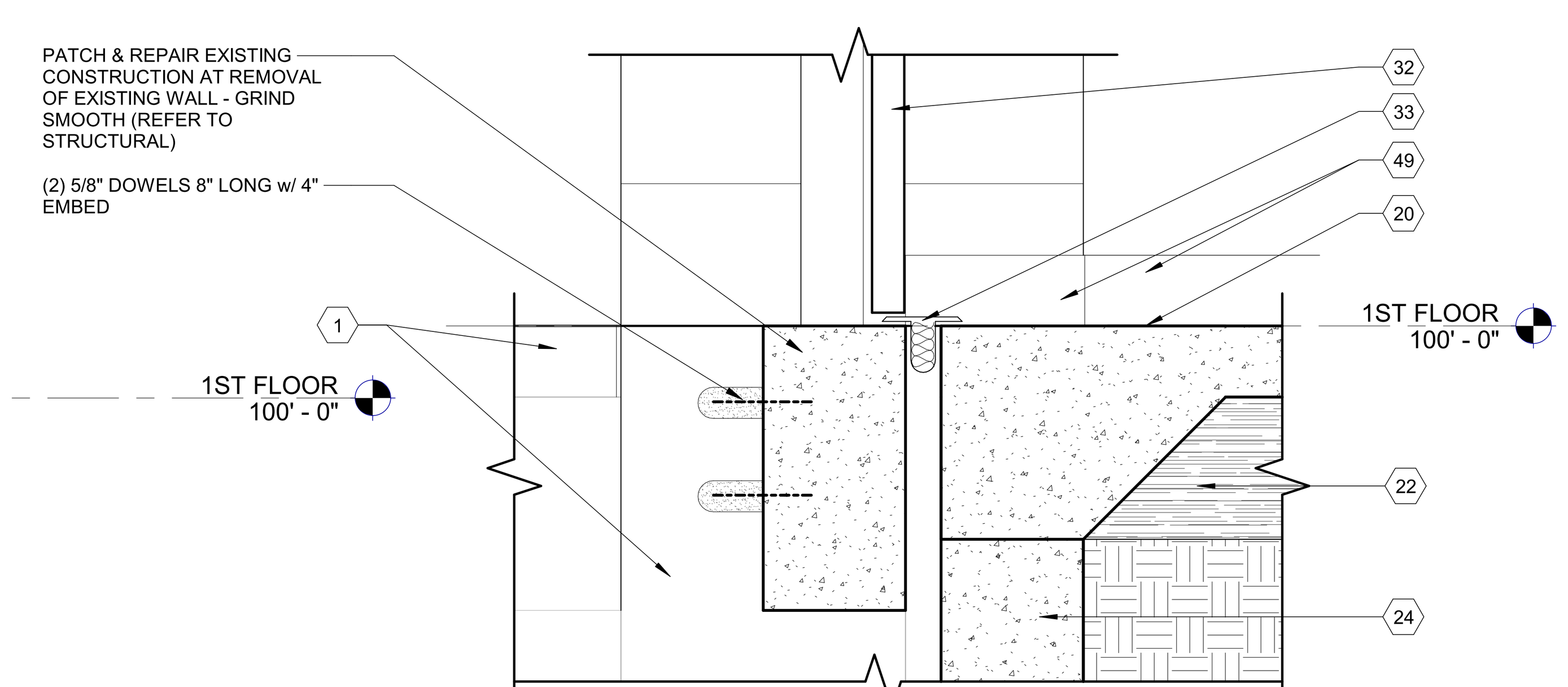
27 A7.02 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



29 A7.02 WALL SECTION WEST CONNECTOR
SCALE: 1/2" = 1'-0"



24 A7.02 HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



30 A7.02 SILL DETAIL
SCALE: 1 1/2" = 1'-0"

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM

WTA ARCHITECTS

100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

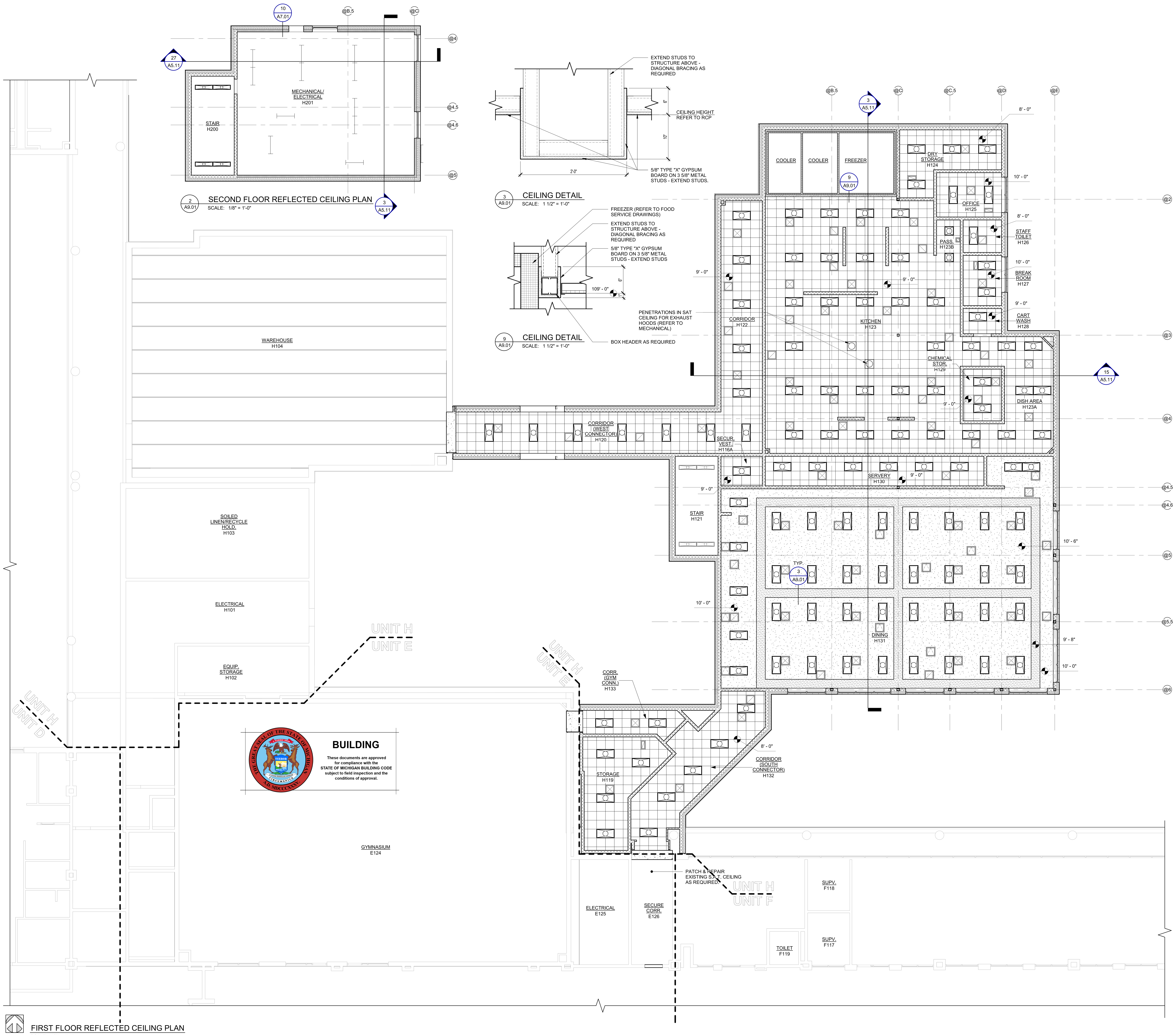
SHEET TITLE
WALL SECTIONS & DETAILS

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

SHEET NUMBER
A7.02



REFLECTED CEILING LEGEND:

- LIGHT FIXTURES (REFER TO ELECTRICAL)
- SUPPLY AIR GRILLE (REFER TO MECHANICAL)
- RETURN AIR GRILLE / EXHAUST FAN (REFER TO MECHANICAL)
- CEILING ACCESS PANEL - COORDINATE LOCATIONS WHERE CEILING ACCESS IS REQUIRED

GENERAL CEILING NOTES:

1. COORDINATE INSTALLATION OF SUSPENDED CEILING SYSTEM WITH MECHANICAL AND ELECTRICAL SYSTEMS.
2. POSITION LIGHT FIXTURES IN CENTER OF CEILING TILES UNLESS NOTED OR DIMENSIONED OTHERWISE.
3. REFERENCE SPECIFICATIONS FOR SUSPENDED CEILING SYSTEM DESCRIPTION AND LOCATION REQUIREMENTS.
4. ELECTRICAL FIXTURES ARE SHOWN FOR LOCATION REFERENCE ONLY, REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DETAILS.
5. FIRE DEVICES AND EXIT LIGHTING NOT INDICATED ON ARCHITECTURAL DRAWINGS, REFER TO ELECTRICAL DRAWINGS FOR LOCATION, DETAILS, AND SPECIFICATIONS.
6. PROVIDE S.A.T. HOLD DOWN CLIPS AT EXTERIOR DOORS.

NO.	REVISION	DATE

STATE OF MICHIGAN
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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
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FILE NO.
491/20167.SDW

FUNDING CODE
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CONTRACT NO.
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KEY PLAN
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WTA ARCHITECTS

100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

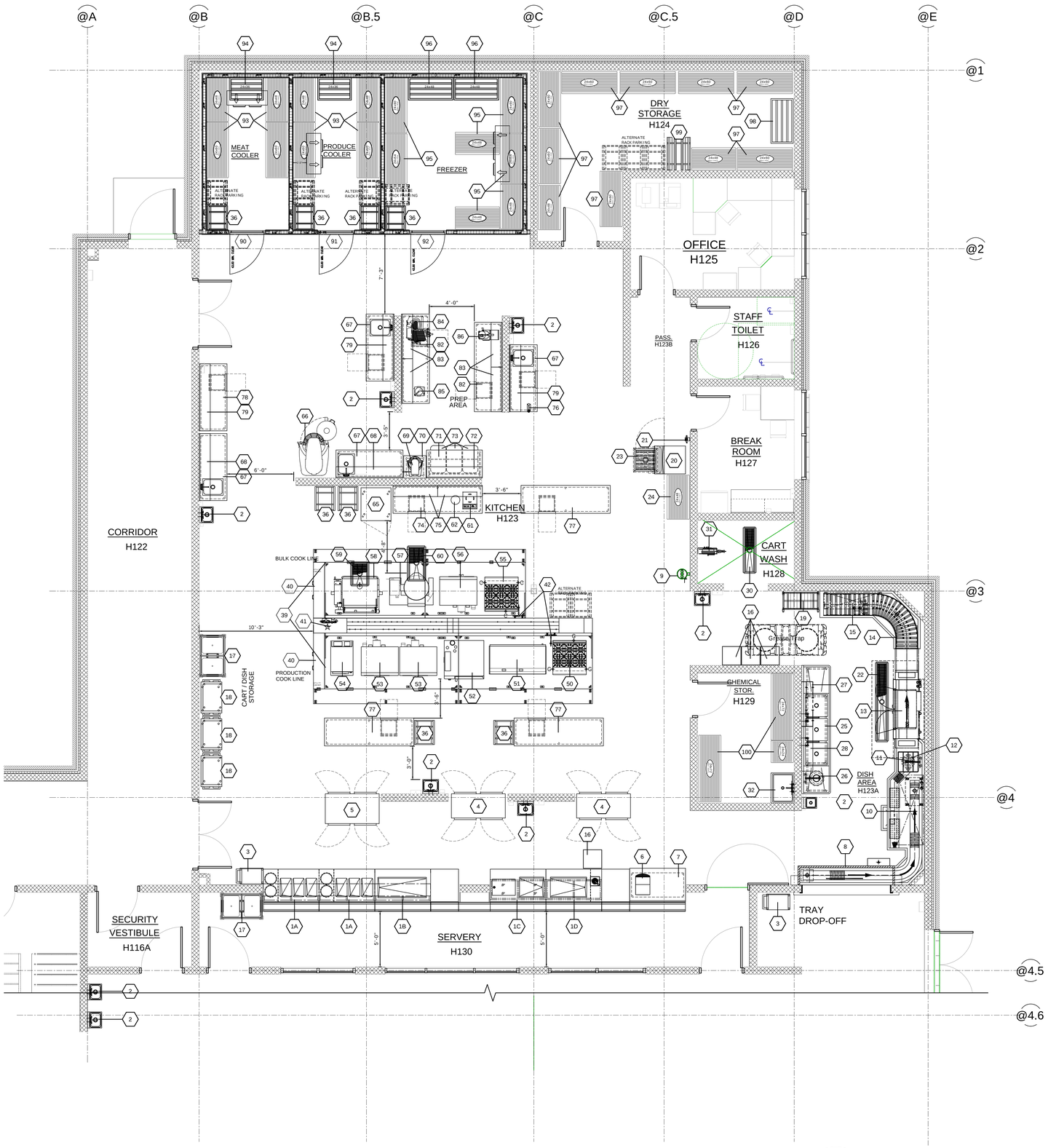
SHEET TITLE
FIRST & SECOND FLOOR REFLECTED CEILING PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
C.D.S.

SHEET NUMBER
A9.01



EQUIPMENT SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	EQUIPMENT REMARKS
1A	2	SERVING LINE - HOT FOOD	
1B	1	SERVING LINE - HOT/COLD FOOD COMBO	
1C	1	SERVING LINE - COLD FOOD	
1D	1	SERVING LINE - COLD FOOD	
2	9	HAND SINK, WALL MOUNT	
3	2	CART, UTILITY	
4	2	DISPLAY CASE, REFRIGERATED	
5	1	CABINET, HEATED, PASS-THRU	
6	1	COFFEE MAKER, DISPENSER	
7	1	TABLE, WORK	
8	1	SOILED DISHTABLE TRAY CONVEYOR	
9	1	EYE WASH STATION	
10	1	DISHTABLE, ACCESSORY	
11	1	PRE-RINSE FAUCET, WALL MOUNT	
12	1	DISPOSER, GARBAGE	
13	1	WAREWASHER, RACK CONVEYOR	
14	1	CLEAN DISH ROLLER TABLE	
15	1	SHELF, WALL MOUNT	
16	3	DOLLY, DISHRACK	
17	2	DISPENSER, SELF-LEVELING TRAY	
18	3	CART, DISH & TRAY	
19	1	RACK, DOME DRYING	
20	1	ICE MAKER W/ BIN	
21	1	FILTER SYSTEM, ICEMAKER	
22	1	FLOOR TROUGH	
23	1	FLOOR TROUGH	
24	1	SHELVING UNIT	
25	1	SINK, SCULLERY, 3 COMPARTMENTS	
26	1	DISPOSER, GARBAGE	
27	1	POT RACK, WALL MOUNT	
28	1	SHELF, WALL MOUNT	
29	-	SPARE NUMBER	
30	1	FLOOR TROUGH	
31	1	HOSE REEL WITH SPRAY	
32	1	SINK, MOP W/SERVICE FAUCET	
33	-	SPARE NUMBER	
34	-	SPARE NUMBER	
35	-	SPARE NUMBER	
36	8	RACK, PAN	
37	-	SPARE NUMBER	
38	-	SPARE NUMBER	
39	2	VENTILATION SYSTEM	
40	2	FIRE SUPPRESSION SYSTEM	
41	1	UDS SYSTEM	
42	2	FAUCET, POT FILLER, WALL MOUNT	
43	-	SPARE NUMBER	
44	-	SPARE NUMBER	
45	-	SPARE NUMBER	
46	-	SPARE NUMBER	
47	-	SPARE NUMBER	
48	-	SPARE NUMBER	
49	-	SPARE NUMBER	
50	1	RANGE, HEAVY DUTY, GAS	
51	1	GRIDDLE, GAS W/STAND	
52	1	OVEN-STEAMER, COMBINATION, GAS	
53	2	DOUBLE OVEN, CONVECTION, GAS	
54	1	STEAMER, PRESSURELESS	
55	1	RANGE, HEAVY DUTY, GAS	
56	1	DOUBLE OVEN, CONVECTION, GAS	
57	1	KETTLE, STEAM JACKETED, GAS, TILT	
58	1	TILT SKILLET, GAS	
59	1	FLOOR TROUGH	
60	1	FLOOR TROUGH	
61	1	INDUCTION CHARGER	
62	lot	THERMAL PELLET BASE	
63	-	SPARE NUMBER	
64	-	SPARE NUMBER	
65	1	CHILLER/FREEZER, BLAST	
66	1	MIXER, FLOOR	
67	4	TABLE, WORK W/SINK	
68	2	SHELF, WALL MOUNT	
69	1	MIXER, COUNTER	
70	1	STAND, EQUIPMENT	
71	1	TABLE, WORK	
72	1	SHELF, WALL MOUNT	
73	3	INGREDIENT BIN	
74	1	TABLE, WORK W/DRAWER ASSEMBLY	
75	1	SHELF, WALL MOUNT	
76	1	CAN OPENER	
77	3	TABLE, WORK W/DRAWER ASSEMBLY	
78	1	TABLE, WORK W/DRAWER ASSEMBLY	
79	3	SHELF, WALL MOUNT	
80	-	SPARE NUMBER	
81	-	SPARE NUMBER	
82	2	TABLE, WORK W/DRAWER ASSEMBLY	
83	4	SHELF, WALL MOUNT	
84	1	SLICER	
85	1	FOOD PROCESSOR	
86	1	FOOD PROCESSOR	
87	-	SPARE NUMBER	
90	1	WALK-IN MEAT COOLER	
91	1	WALK-IN PRODUCE COOLER	
92	1	WALK-IN FREEZER	
93	8	COOLER SHELVING UNIT	
94	2	COOLER DUNNAGE RACK	
95	7	FREEZER SHELVING UNIT	
96	2	FREEZER DUNNAGE RACK	
97	9	DRY STORAGE SHELVING UNIT	
98	1	DRY STORAGE DUNNAGE RACK	
99	1	CAN RACK	
100	3	CHEMICAL STORAGE SHELVING UNIT	

BUILDING

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NOT FOR CONSTRUCTION
PRELIMINARY

NO.	REVISION	DATE

STATE OF MICHIGAN
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KEY PLAN
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WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

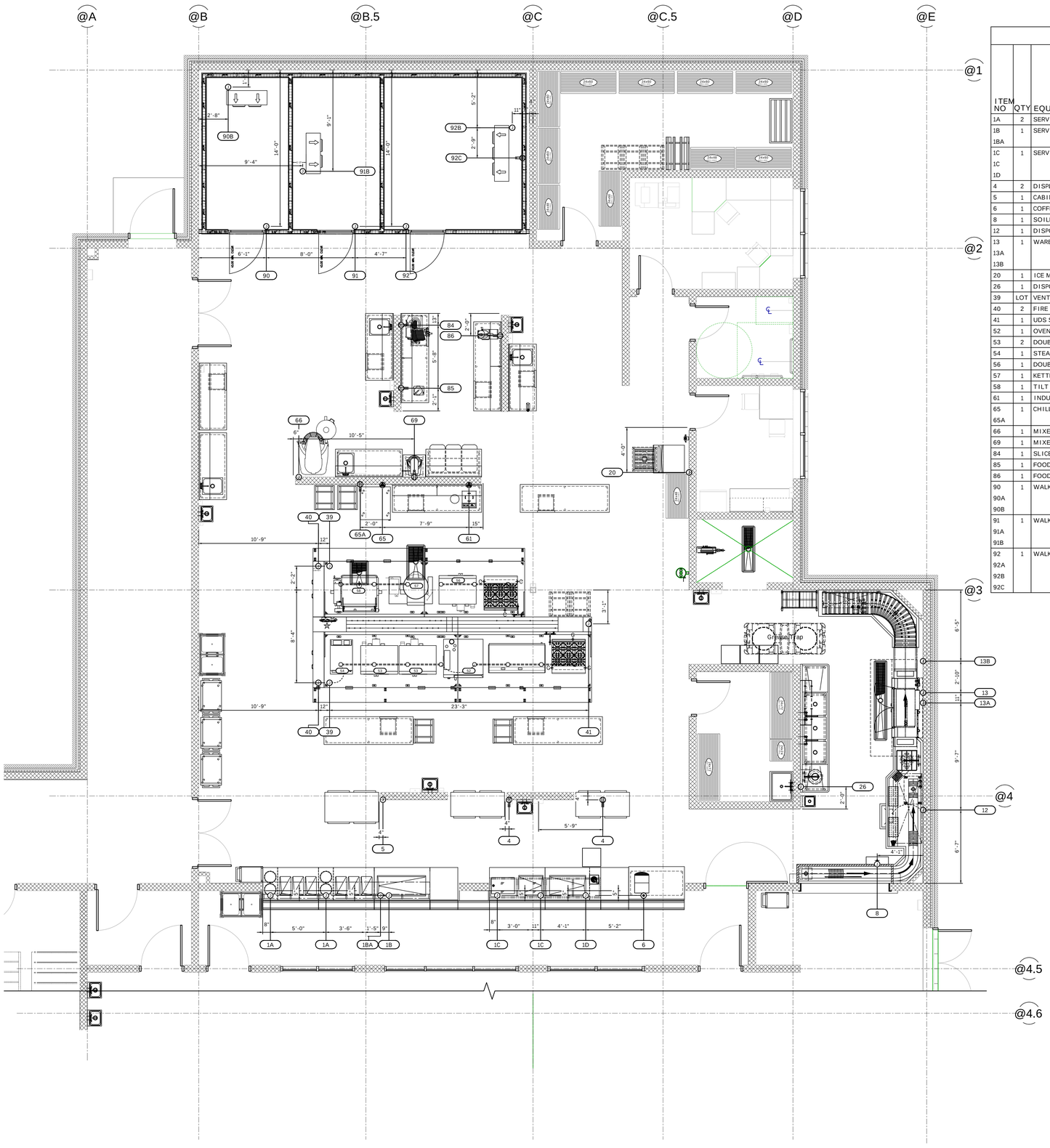
STAFFORD-SMITH, Inc.
COMMERCIAL REFRIGERATION - FOOD SERVICE EQUIPMENT
3414 S. BURDICK/KALAMAZOO, MICHIGAN 49001
PH: (269) 343-1240

PROJECT TITLE
491/20167.SDW CFP - CREATE KITCHEN BID AND CONSTRUCTION:
CENTER FOR FORENSIC PSYCHIATRY

SALINE, MICHIGAN

SHEET TITLE
KITCHEN EQUIPMENT PLAN

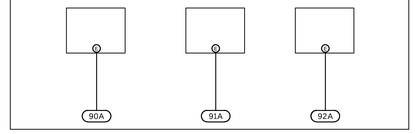
PROJECT NUMBER	SHEET NUMBER
2021094	FS2.01
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: T.M.M.	



ELECTRICAL SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	AMPS	KW	HP	VOLTS	PHASE	CYCLE	DIRECT	PLUG	NEMA	ELECTRICAL AFF (IN)	ELEC REMARKS
1A	2	SERVING LINE - HOT FOOD	15.9	3.3		208	1	60	X			SU	'STUB UP' UTILITIES
1B	1	SERVING LINE - HOT/COLD FOOD COMBO	15.9	3.3		208	1	60	X			SU	'STUB UP' UTILITIES
1BA			3.5			115	1	60	X			SU	'STUB UP' UTILITIES
1C	1	SERVING LINE - COLD FOOD	3.5			115	1	60	X			SU	'STUB UP' UTILITIES
1C			3.5			115	1	60	X			SU	'STUB UP' UTILITIES
1D			3.5			115	1	60	X			SU	'STUB UP' UTILITIES
4	2	DISPLAY CASE, REFRIGERATED	10.6		0.5	115	1	60		X	5-20P	86	STUB UP OR BRING DOWN FROM ABOVE FOR UNIT AWAY FROM WALL
5	1	CABINET, HEATED, PASS-THRU	15.5	1.6		115/208	1	60	X			86	
6	1	COFFEE MAKER, DISPENSER	12.0	1.44		120	1	60		X	5-15P	SU	
8	1	SOILED DISHTABLE TRAY CONVEYOR	15.0			208	1	60	X			60	
12	1	DISPOSER, GARBAGE	6.0		3.0	208	3	60	X			12	E.C. TO INTERWIRE TO CONTROL PANEL
13	1	WAREWASHER, RACK CONVEYOR	44.9	25.0		480	3	60	X			63.75	FOR MOTORS, CONTROLS & TANK HEAT
13A			40.1	30.0		480	3	60	X			63.75	FOR BOOSTER HEATER
13B			15.7			480	3	60	X			60	FOR BLOWER DRYER
20	1	ICE MAKER W/ BIN	11.9			115	1	60	X			72	
26	1	DISPOSER, GARBAGE	3.3		2.0	208	3	60	X			12	E.C. TO INTERWIRE TO CONTROL PANEL
39	LOT	VENTILATION SYSTEM	15.0			115	1	60	X			DFA	SERVICE TO LIGHTS & TEMP SENSORS
40	2	FIRE SUPPRESSION SYSTEM	20.0			120	1	60	X			DFA	20 AMP; 24-HR DEDICATED CIRCUIT
41	1	UDS SYSTEM	50.0	14.4		120/208	3	60	X			DFA	UDS SERVES ALL EQUIPMENT UNDER HOODS
52	1	OVEN-STEAMER, COMBINATION, GAS	9.6	2.2		208/240	1	60		X	6-50P	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
53	2	DOUBLE OVEN, CONVECTION, GAS	(2)7.7		(2)1/2	120	1	60		X	5-15P	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
54	1	STEAMER, PRESSURELESS	2.0	0.3		120	1	60	X			*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
56	1	DOUBLE OVEN, CONVECTION, GAS	(2)7.7		(2)1/2	120	1	60		X	5-15P	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
57	1	KETTLE, STEAM JACKETED, GAS, TILT	5.0			115	1	60	X			*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
58	1	TILT SKILLET, GAS	5.0			115	1	60	X			*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
61	1	INDUCTION CHARGER	20.0	6.7		208	3	60		X	L15-20P	48	
65	1	CHILLER/FREEZER, BLAST	10.0		3.0	208	3	60		X	L15-20P	12	MAIN SERVICE TO UNIT
65A			2.0			120	1	60		X	5-15P	12	SERVICE FOR CONDENSATE EVAPORATOR
66	1	MIXER, FLOOR	12.0		3.0	200-240	3	50	X			54	CORD & PLUG NOT PROVIDED; L15-20P RECEPTACLE & PLUG CAN BE USED
69	1	MIXER, COUNTER	9.0		0.5	120	1	60		X	5-15P	36	
84	1	SLICER, FOOD	5.6		0.5	120	1	60		X	5-15P	45	
85	1	FOOD PROCESSOR	8.0		0.75	120	1	60		X	5-15P	45	
86	1	FOOD PROCESSOR	10.0		1.0	120	1	60		X	5-15P	45	
90	1	WALK-IN MEAT COOLER	15.0			120	1	60	X			DFA	SERVICE TO LIGHTS, ALARMS & HEATERS
90A			7.4		0.75	208-230	1	60	X			SU	SERVICE TO MEAT COOLER CONDENSING UNIT
90B			1.6			115	1	60	X			DFA	SERVICE TO MEAT COOLER EVAPORATOR COIL
91	1	WALK-IN PRODUCE COOLER	15.0			120	1	60	X			DFA	SERVICE TO LIGHTS, ALARMS & HEATERS
91A			7.0		0.75	208-230	1	60	X			SU	SERVICE TO PRODUCE COOLER CONDENSING UNIT
91B			1.6			115	1	60	X			DFA	SERVICE TO PRODUCE COOLER EVAPORATOR COIL
92	1	WALK-IN FREEZER	15.0			120	1	60	X			DFA	SERVICE TO LIGHTS, ALARMS & HEATERS
92A			21.4		3.0	208-230	1	60	X			SU	SERVICE TO FREEZER CONDENSING UNIT
92B			14.3			208-230	1	60	X			DFA	SERVICE TO FREEZER EVAPORATOR COIL
92C			15.0			120	1	60		X	5-15P	84	15 AMP CIRCUIT FOR DRAIN LINE HEAT TAPE

WALK-IN COOLER & FREEZER CONDENSING UNITS
ARE SHOWN OUT OF LOCATION.
VERIFY EXACT LOCATION WITH ARCHITECT & G.C.



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PRELIMINARY

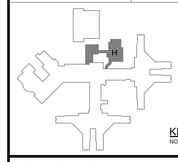
NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003



KEY PLAN
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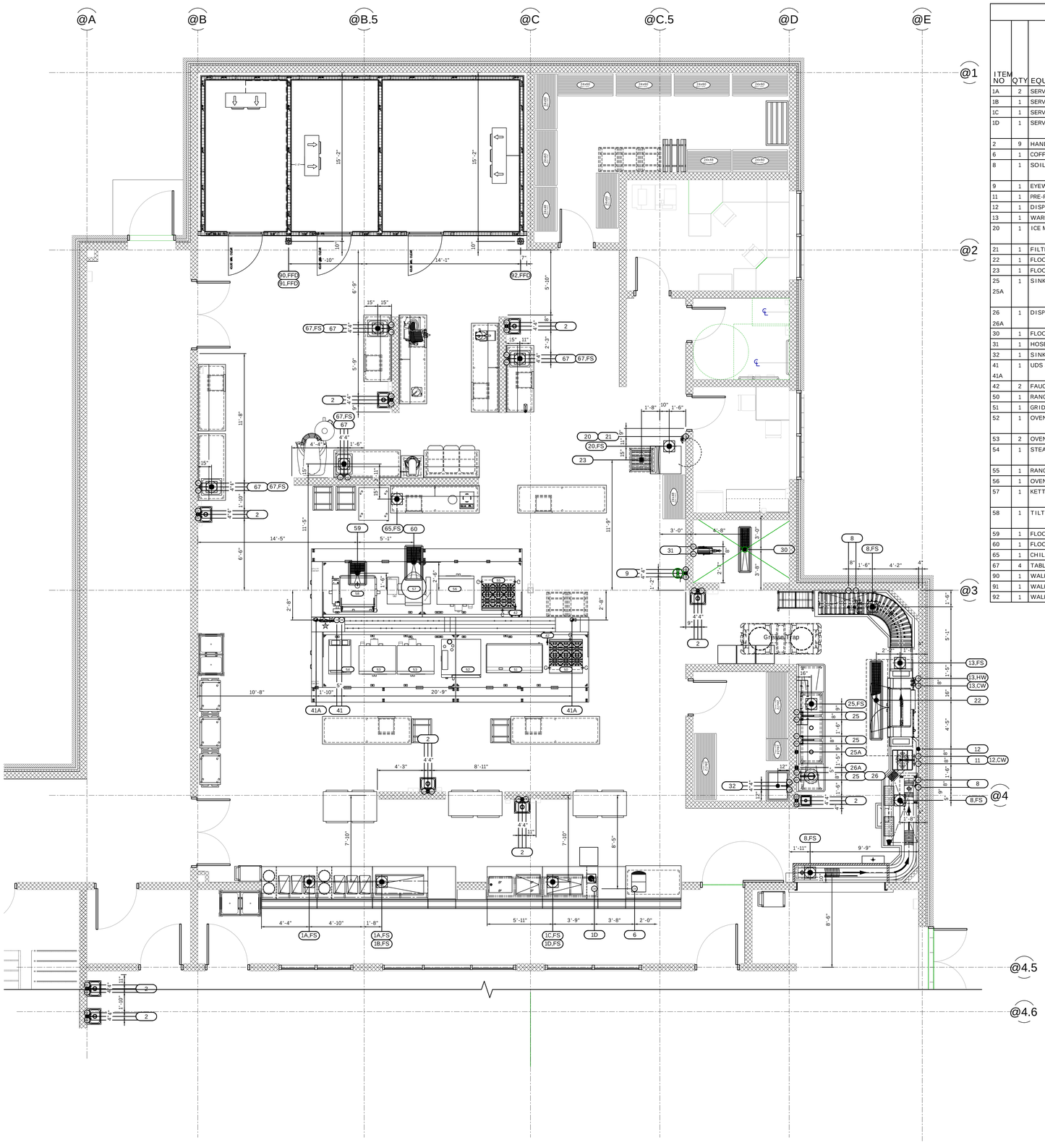
989 752 8107

STAFFORD-SMITH, Inc.
COMMERCIAL REFRIGERATION - FOOD SERVICE EQUIPMENT
3414 S. BURDICK,KALAMAZOO, MICHIGAN 49001
PH - (269) 343-1240

PROJECT TITLE
491/20167.SDW CFP - CREATE KITCHEN BID AND CONSTRUCTION:
CENTER FOR FORENSIC PSYCHIATRY
SALINE, MICHIGAN

SHEET TITLE
KITCHEN ELECTRICAL PLAN

PROJECT NUMBER	SHEET NUMBER
2021094	FS2.02
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: T.M.M.	



PLUMBING SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	COLD WATER SIZE (IN)	COLD WATER AFF (IN)	HOT WATER SIZE (IN)	HOT WATER AFF (IN)	DIRECT DRAIN SIZE (IN)	DIRECT DRAIN AFF (IN)	INDIRECT DRAIN	GAS SIZE (IN)	MBTUH	GAS AFF (IN)	PLUMBING REMARKS
1A	2	SERVING LINE - HOT FOOD							FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
1B	1	SERVING LINE - HOT/COLD FOOD COMBO							FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
1C	1	SERVING LINE - COLD FOOD							FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
1D	1	SERVING LINE - COLD FOOD	0.5	SU					FS				STUB UP COLD WATER FOR WATER FILLER M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
2	9	HAND SINK, WALL MOUNT	0.5	18	0.5	18	1.5	20					
6	1	COFFEE MAKER, DISPENSER	0.375	SU									
8	1	SOILED DISHTABLE TRAY CONVEYOR	(2)0.5	16	(2)0.5	16							
									1.5,FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
9	1	EYEWASH STATION	0.5	24	0.5	24	1.25	24					
11	1	PRE-RINSE FAUCET, WALL MOUNT	0.75	14	0.5	14							BRANCH CW FROM PRE-RINSE TO DISPOSER
12	1	DISPOSER, GARBAGE	0.5	*			3	8					BRANCH CW FROM PRE-RINSE TO DISPOSER
13	1	WAREWASHER, RACK CONVEYOR	0.5	8	0.5	8			2.0,FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
20	1	ICE MAKER W/ BIN	0.375	*									BRANCH CW FROM ITEM 21, FILTER TO ICE MAKER
									0.75,FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
21	1	FILTER SYSTEM, ICEMAKER	0.375	60									BRANCH CW FROM ITEM 21, FILTER TO ICE MAKER
22	1	FLOOR TROUGH					4.0	SU					
23	1	FLOOR TROUGH					4.0	SU					
25	1	SINK, SCULLERY, 3 COMPARTMENTS	(3)0.75	14	(3)0.75	14							H&C WATER TO FAUCETS & PRE-RINSE UNIT
25A							2.0	12					M.T. TO EXTEND WASH SINK DRAIN DIRECT TO GREASE TRAP
									2.0,FS				M.T. TO EXTEND RINSE & SANITIZE SINK DRAINS TO FLOOR SINK
26	1	DISPOSER, GARBAGE	0.5	*									BRANCH CW FROM PRE-RINSE UNIT TO DISPOSER
26A							2.0	8					
30	1	FLOOR TROUGH					4.0	SU					
31	1	HOSE REEL WITH SPRAY	0.5	42	0.5	42							STUB OUT TO MIXING VALVE & RUN UP TO HOSE REEL UNIT
32	1	SINK, MOP	0.5	36	0.5	36	2.0	SU					
41	1	UDS SYSTEM	0.75	DFA	0.75	DFA							UDS SERVES EQUIPMENT UNDER HOODS
41A										2.0	2350	DFA	2" GAS LOOP SYSTEM
42	2	FAUCET, POT FILLER, WALL MOUNT	0.5	*	0.5	*							UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
50	1	RANGE, HEAVY DUTY, GAS								1.25	260	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
51	1	GRIDDLE, GAS W/STAND								0.75	135	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
52	1	OVEN-STEAMER, COMBINATION, GAS								0.75	303.5	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
									2.0,FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
53	2	OVEN, CONVECTION, GAS								0.75	100	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
54	1	STEAMER, PRESSURELESS	(2)0.375 (1-FILTERED & 1-NON FILTERED)							0.75	144	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
									1.5,FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
55	1	RANGE, HEAVY DUTY, GAS								1.25	260	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
56	1	OVEN, CONVECTION, GAS								0.75	100	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
57	1	KETTLE, STEAM JACKETED, GAS, TILT	0.5	*	0.5	*							UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
										0.5	100	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
58	1	TILT SKILLET, GAS	0.5	*	0.5	*							UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
										0.5	144	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
59	1	FLOOR TROUGH					4.0	SU					
60	1	FLOOR TROUGH					4.0	SU					
65	1	CHILLER/FREEZER, BLAST							0.75,FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
67	4	TABLE, WORK W/SINK	0.5	14	0.5	14			1.5,FS				M.T. TO EXTEND DRAINS TO NEAREST FLOOR SINK
90	1	WALK-IN MEAT COOLER							FFD				M.T. TO EXTEND EVAPORATOR COIL DRAIN TO FUNNEL TYPE FLOOR DRAIN
91	1	WALK-IN PRODUCE COOLER							FFD				M.T. TO EXTEND EVAPORATOR COIL DRAIN TO FUNNEL TYPE FLOOR DRAIN
92	1	WALK-IN FREEZER							FFD				M.T. TO EXTEND EVAPORATOR COIL DRAIN TO FUNNEL TYPE FLOOR DRAIN

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DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

KEY PLAN
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STAFFORD-SMITH, Inc.
COMMERCIAL REFRIGERATION - FOOD SERVICE EQUIPMENT
3414 S. BURDICK,KALAMAZOO, MICHIGAN 49001
PH - (269) 343-1240

PROJECT TITLE
491/20167.SDW CFP - CREATE KITCHEN BID AND CONSTRUCTION:
CENTER FOR FORENSIC PSYCHIATRY

SALINE, MICHIGAN

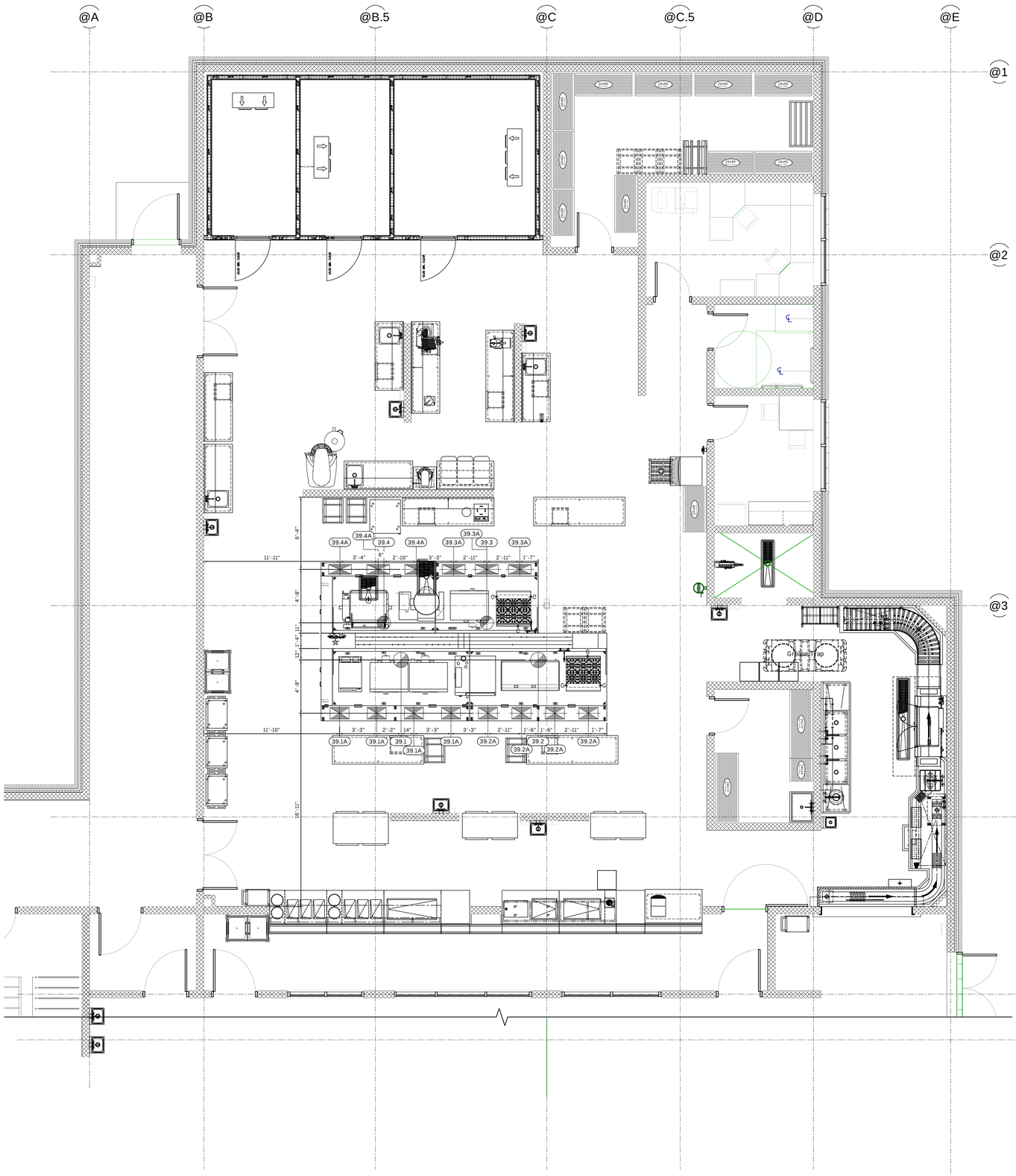
SHEET TITLE
KITCHEN PLUMBING PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
T.M.M.

SHEET NUMBER
FS2.03



VENTILATION SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	HVAC EXHAUST DUCT SIZE (IN)	HVAC EXHAUST CFM	HVAC EXHAUST SPWG	HVAC MAKE-UP DUCT SIZE (IN)	HVAC MAKE-UP CFM	HVAC MAKE-UP SPWG	HVAC AFF (IN)	HVAC REMARKS
39.1	1	VENTILATION SYSTEM	16"DIA	2350	-0.764				DFA @ 113"-AFF	
39.1A						(4)12" X 20"	637(EA)	0.217	DFA @ 113"-AFF	
39.2			16"DIA	2750	-1.046				DFA @ 113"-AFF	
39.2A						(4)12" X 20"	637(EA)	0.217	DFA @ 113"-AFF	
39.3			14"DIA	1800	-0.666				DFA @ 113"-AFF	
39.3A						(3)10" X 24"	566(EA)	0.174	DFA @ 113"-AFF	
39.4			14"DIA	1800	-0.666				DFA @ 113"-AFF	
39.4A						(3)10" X 24"	633(EA)	0.215	DFA @ 113"-AFF	

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KEY PLAN
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100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
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STAFFORD-SMITH, Inc.
COMMERCIAL REFRIGERATION - FOOD SERVICE EQUIPMENT
3414 S. BURDICKKALAMAZOO, MICHIGAN 49001
PH: (269) 343-1250

PROJECT TITLE
491/20167.SDW CFP - CREATE KITCHEN BID AND CONSTRUCTION:
CENTER FOR FORENSIC PSYCHIATRY

SALINE, MICHIGAN

SHEET TITLE
KITCHEN VENTILATION PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

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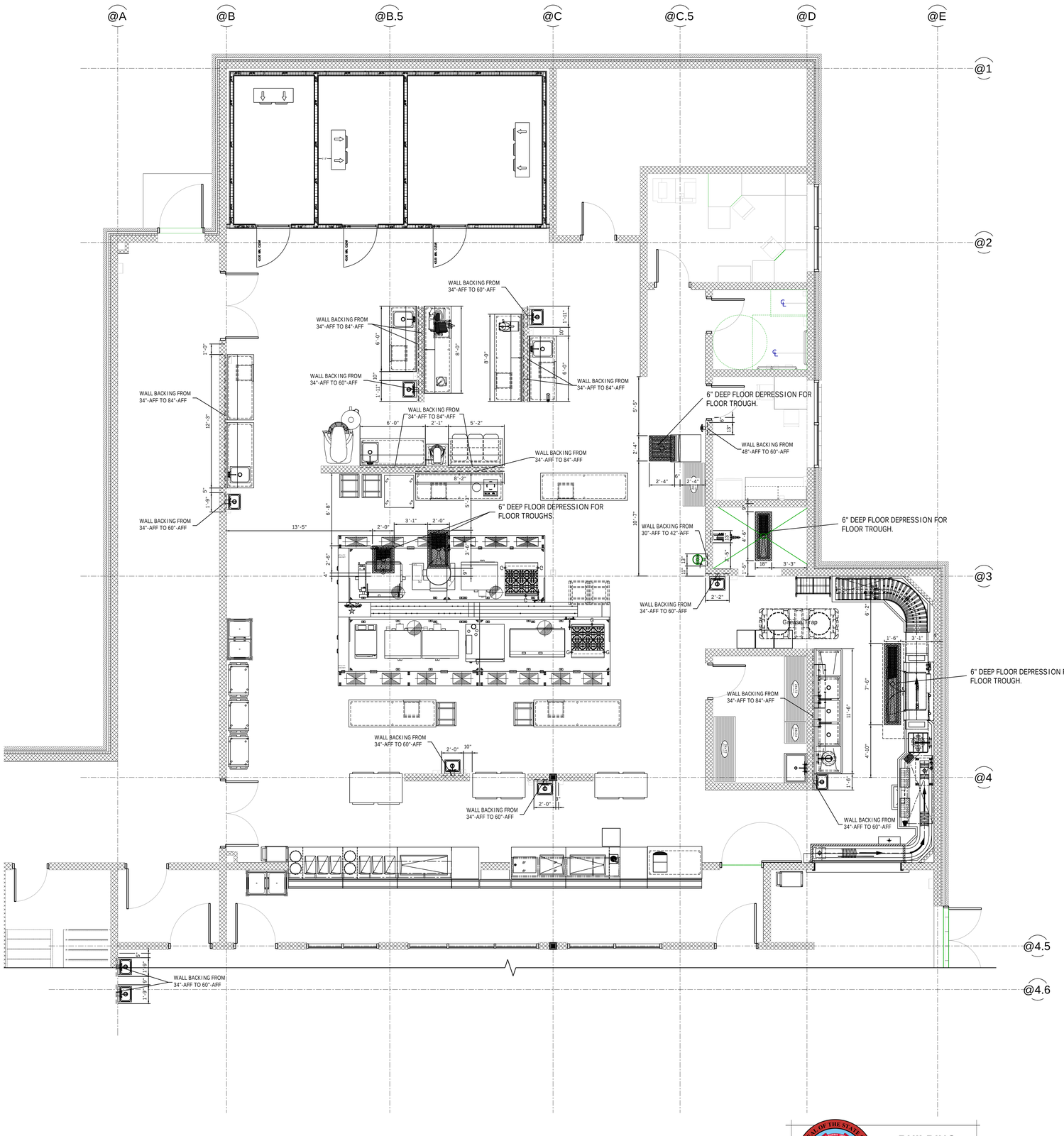
T.M.M.

SHEET NUMBER
FS2.04



BUILDING

These documents are approved for compliance with the **STATE OF MICHIGAN BUILDING CODE** subject to field inspection and the conditions of approval.

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DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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KEY PLAN
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STAFFORD-SMITH, Inc.
COMMERCIAL REFRIGERATION - FOOD SERVICE EQUIPMENT
3414 S. BURDICK,KALAMAZOO, MICHIGAN 49001
PH - (269) 343-2240

PROJECT TITLE
491/20167.SDW CFP - CREATE KITCHEN BID AND CONSTRUCTION:
CENTER FOR FORENSIC PSYCHIATRY
SALINE, MICHIGAN

SHEET TITLE
SPECIAL CONDITIONS PLAN

PROJECT NUMBER	SHEET NUMBER
2021094	FS2.05
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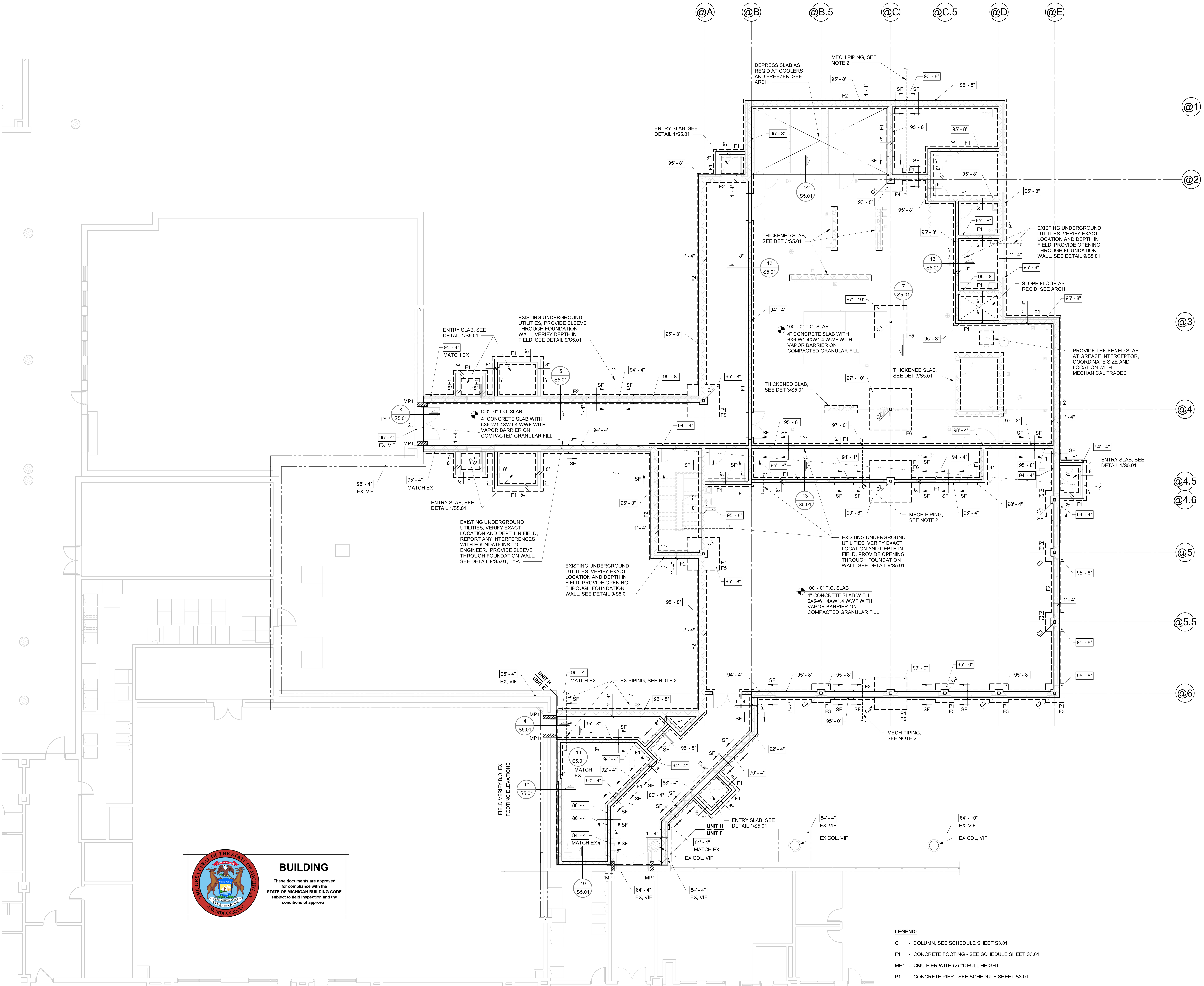

NORTH

FOUNDATION PLAN

1/8" = 1'-0"

BOTTOM OF FOOTING ELEVATION = 95'-8" (UNO)

LEGEND:

C1 - COLUMN, SEE SCHEDULE SHEET S3.01

F1 - CONCRETE FOOTING - SEE SCHEDULE SHEET S3.01.

MP1 - CMU PIER WITH (2) #6 FULL HEIGHT

P1 - CONCRETE PIER - SEE SCHEDULE SHEET S3.01

SF - STEP FOOTING - SEE DETAIL 2/S5.01.

NOTES:

1. SEE SHEET S3.01 FOR GENERAL NOTES
2. PROVIDE PIPE SLEEVE AT PIPE PENETRATIONS THROUGH FOUNDATION WALL. COORDINATE SIZE AND LOCATION WITH MECHANICAL TRADES, TYP. SEE DETAIL 11/S5.01 FOR PIPE SLEEVES THROUGH CONCRETE FOUNDATION WALLS.

NO.	REVISION	DATE

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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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KEY PLAN
NOT TO SCALE

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WTA ARCHITECTS

100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

MACMILLAN ASSOCIATES
CONSULTING ENGINEERS

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FOUNDATION PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

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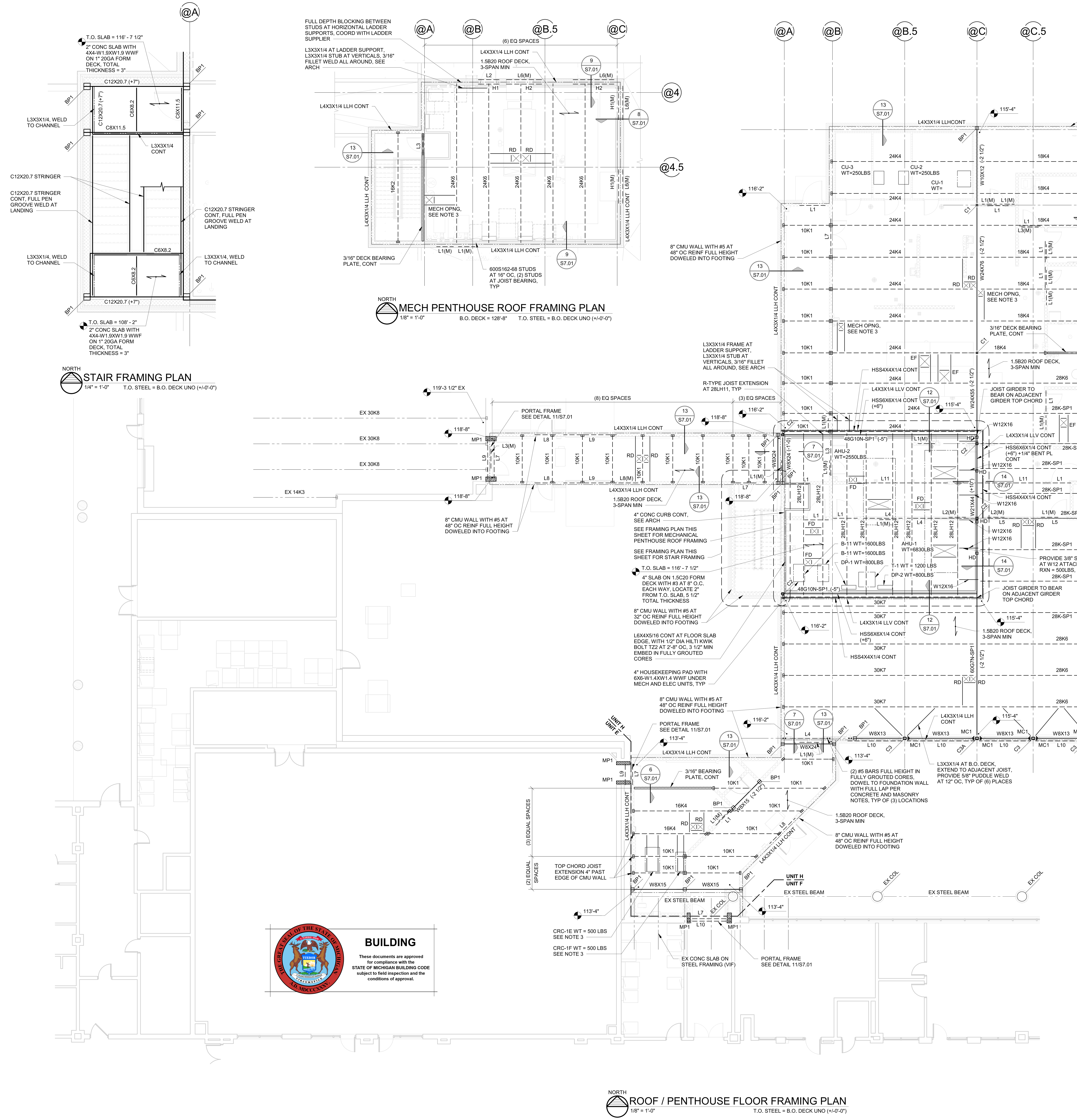

LEGEND:

- BP1 - BEARING PLATE, SEE DETAIL 1/S7.01
- C1 - COLUMN, SEE SCHEDULE SHEET S3.01
- EF - EXHAUST FAN - PROVIDE ROOF FRAME AT OPENING - SEE DETAIL 5/S7.01, COORDINATE SIZE AND LOCATION WITH MECHANICAL TRADES.
- H1 - LIGHT GAGE HEADER, SEE SCHEDULE SHEET S3.01
- HD - SIMPSON S/HDU4 HOLDOWN AT WALL END STUDS AND AT OPENING SUPPORT AS SH OWN ON PLAN, SEE DETAIL
- L1 - STEEL LINTEL, SEE SCHEDULE SHEET S3.01. (M) INDICATES MECHANICAL LINTEL, COORDINATE LOCATION AND OPENING SIZE WITH MECHANICAL TRADES
- MC1 - MOMENT CONNECTION, SEE DETAIL 15/S7.01
- MP1 - MASONRY PIER
- RD, FD - ROOF AND FLOOR DRAIN, SEE DETAIL 5/S7.01, COORDINATE SIZE AND LOCATION WITH MECHANICAL TRADES
- 18K-SP1 - SPECIAL JOIST DESIGNATION, SEE LOAD DIAGRAMS SHEET S3.01
- 0'-0" - BOTTOM OF ROOF DECK ELEVATION

NOTES:

1. SEE SHEET S3.01 FOR GENERAL NOTES
2. ALL 8" CMU WALLS REINFORCED WITH #4 AT 48" OC, UNO.
3. PROVIDE FRAMING UNDER MECHANICAL UNIT CURBS PER DETAIL 5/S7.01, COORDINATE SIZE AND LOCATION WITH MECHANICAL, TYP.
4. JOIST GIRDERS TO BEAR DIRECTLY ON COLUMN UNO.

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FILE NO. 491/20167.SDW

FUNDING CODE 171CODHHS7255 | CONTRACT NO. Y22003

KEY PLAN
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100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

MACMILLAN ASSOCIATES CONSULTING ENGINEERS

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ROOF FRAMING PLAN

PROJECT NUMBER 2021094
PROJECT DATE SEPTEMBER 6, 2023
CHECKED BY JAG
SHEET NUMBER S2.02

GENERAL

1. VERIFY DIMENSIONS BEFORE COMMENCING WORK. REPORT DISCREPANCIES TO THE ARCHITECT.
2. VERIFY OPENINGS IN THE FRAMING PLANS WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
3. ALL WORK SHALL CONFORM TO MICHIGAN BUILDING CODE 2015.
4. DESIGN LOADS
   A. DESIGNED IN ACCORDANCE WITH MICHIGAN BUILDING CODE 2015.
   B. ROOF SNOW LOAD: GROUND SNOW LOAD PG = 20 PSF
      FLAT ROOF SNOW LOAD, PF = 20 PSF
      SNOW EXPOSURE FACTOR, CE = 1.0
      SNOW LOAD IMPORTANCE FACTOR, I = 1.1
      THERMAL FACTOR, CT = 1.0
      DRIFTED SNOW LOAD, SEE DIAGRAM THIS SHEET
   C. FLOOR LIVE LOADS:
      STAIR 100 PSF
      CORRIDOR, KITCHEN 100 PSF
      MECHANICAL ROOMS 125 PSF
   D. WIND LOADS: BASIC WIND SPEED, VULT = 120 MPH
      VASD = 93 MPH
      WIND EXPOSURE C
      INTERNAL PRESSURE COEFFICIENT, GC PI = +/-0.18
      WALL COMPONENTS & CLADDING:

EFFECTIVE WIND AREA (FT2)	POSITIVE PRESSURE (PSF)	NEGATIVE PRESSURE (PSF)
-END ZONE		
10	33	-44
20	32	-41
50	30	-38
100	29	-35
-INTERIOR ZONE		
10	33	-36
20	32	-35
50	30	-33
100	29	-31

   E. EARTHQUAKE DESIGN DATA:
      SEISMIC RISK CATEGORY, III
      SEISMIC IMPORTANCE FACTOR, I = 1.25
      SPECTRAL RESPONSE COEFFICIENTS: SDS = 0.104, SD1 = .08
      SITE CLASS D
      BASIC SEISMIC - FORCE - RESISTING SYSTEM: SHEAR WALL, MOMENT FRAME
      SEISMIC DESIGN CATEGORY, B
5. SPECIAL INSPECTIONS:
   A. SPECIAL INSPECTIONS SHALL BE IN ACCORDANCE WITH THE MICHIGAN BUILDING CODE 2015 SECTION 1700.
   B. THE FOLLOWING TYPES OF WORK REQUIRE SPECIAL INSPECTIONS: (REFER TO THE BUILDING CODE AND SPECIFICATIONS FOR DETAILED INSPECTION REQUIREMENTS).
      1. PREPARED FILL.
      2. CONCRETE CONSTRUCTION.
      3. STEEL CONSTRUCTION.
      4. MASONRY CONSTRUCTION.
      5. SPRAYED FIRERESISTIVE MATERIALS.

FOUNDATION NOTES

1. FOUNDATIONS ARE DESIGNED BASED ON SOIL BEARING OF 2000 PSF. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATION NOTED, ENLARGE OR LOWER FOOTINGS AT THE DIRECTION OF THE ARCHITECT/ENGINEER.
2. PLACE STRUCTURAL BACKFILL MEETING OR EXCEEDING MDOT CLASS II IN LAYERS NOT EXCEEDING 9" LOOSE THICKNESS. COMPACT EACH LAYER TO AT LEAST 95% OF THE MAXIMUM DENSITY PER ASTM D-1557. COMPACTING BY FLOODING IS NOT PERMITTED.
3. CENTER FOOTINGS UNDER WALL LOCATION AND COLUMNS UNLESS NOTED.
4. EARTH FORMS ARE NOT PERMITTED UNLESS SPECIFICALLY NOTED.
5. DISTURBANCE OF THE FOUNDATION BEARING SOILS SHALL BE AVOIDED.
6. EXISTING FOUNDATIONS OR FLOOR SLAB ENCOUNTERED DURING SITE GRADINGS AND EXCAVATION SHALL BE REMOVED TO A DEPTH OF TWO (2) FEET BELOW NEW CONSTRUCTION. REPLACE WITH STRUCTURAL BACKFILL.
7. PROVIDE BOND BREAK MATERIAL BETWEEN ALL GRADE SLABS AND VERTICAL SURFACES.
8. BACKFILL AND EXCAVATION PER SPECIFICATIONS.
9. FOLLOWING DEMOLITION OF STRUCTURES AND STRIPPING OF TOPSOIL, PREPARE SOILS IN ACCORDANCE WITH SOILS REPORT BY SME DATED FEBRUARY 9, 2022.

CONCRETE NOTES

1. ACI BUILDING CODE (318-14); MANUAL OF STANDARD PRACTICE FOR DETAILING (315) FOR THE MIXING, FABRICATION AND PLACEMENT OF CONCRETE, REINFORCING STEEL, AND ACCESSORIES.
2. CONCRETE STRENGTH - STANDARD WEIGHT CONCRETE:
   FOOTINGS, WALLS, PIERS: F'C = 3000 MINIMUM PSI
   CONCRETE SLABS ON GRADE: F'C = 3500 MINIMUM PSI
   EXTERIOR CONCRETE SLABS EXPOSED TO DE-ICING: F'C = 4500 MINIMUM PSI
3. REINFORCING - BARS: ASTM A-615 GRADE 60
   WELDED WIRE FABRIC: ASTM A-1064
4. CONCRETE SLABS ON GRADE REINFORCING: 6X6 - W1.4XW1.4 WWF UNLESS NOTED. LOCATED IN THE UPPER 1/3 OF SLAB THICKNESS.
5. PROVIDE SAWCUT CONTROL JOINTS AT APPROXIMATELY 20' ON CENTER EACH WAY IN SLABS ON GRADE, SEE DETAILS. LOCATE JOINTS UNDER PARTITIONS WHENEVER POSSIBLE. CONSTRUCTION JOINTS AT CONTRACTOR'S OPTION.
6. DEPRESS SLABS AS REQUIRED FOR FLOOR FINISHES, SEE ARCHITECT.
7. SLOPE FLOORS AS REQUIRED TO FLOOR DRAINS, SEE ARCHITECT.
8. FORM ALL CONCRETE.
10. EXPOSED EDGES OF CONCRETE BEAMS, COLUMNS, ETC. SHALL BE CHAMFERED ¾".
11. PROVIDE CORNER BARS FOR ALL CONTIGUOUS CORNERS.
12. WATER/CEMENT RATIO LIMITS:
    F'C = 3000 PSI 0.68 NON-AIR ENTRAINED, 0.50 AIR ENTRAINED
    F'C = 3500 PSI 0.62 NON-AIR ENTRAINED, 0.50 AIR-ENTRAINED
    F'C = 4500 PSI 0.4 AIR-ENTRAINED
13. SLUMP LIMITS:
    3" FOR FOUNDATIONS, 4" FOR SLABS AND WALLS
14. PROVIDE AIR ENTRAINED CONCRETE FOR EXTERIOR EXPOSURES.
15. CONTRACTOR TO SUBMIT SIZE AND LAYOUT OF CONCRETE WALL SLEEVES, OPENINGS, ETC. FOR REVIEW PRIOR TO CONCRETE PLACEMENT.
16. REINFORCING LAP LENGTH: 45 BAR DIAMETERS (36 IF STAGGERED) FOR BARS UP TO #5, 60 BAR DIAMETERS (48 IF STAGGERED) FOR BARS LARGER THAN #5.

MASONRY NOTES

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 530 SPECIFICATIONS.
2. MORTAR: AS SPECIFIED.
3. GROUT: ASTM C476, F'C=2000 PSI, TESTED PER ASTM C1019.
4. REINFORCING BARS SHALL BE ASTM A-615, GRADE 60, LAP MINIMUM 40 BAR DIAMETERS FOR #5 BARS AND SMALLER, LAP MINIMUM 60 BAR DIAMETERS FOR BARS LARGER THAN #5 UNLESS NOTED OTHERWISE.
5. HORIZONTAL WALL REINFORCING: PER ASTM A-82, 9 GA, HOT DIPPED GALVANIZED PER ASTM A-153 (1.5 OZ PER SF.), LADDER TYPE, EQUAL TO DUR-A-WAL. BED JOINTS AT 16" O.C. AND AT 1ST AND 2ND BED JOINTS AT BOTTOM OF WALL, TOP OF WALL, ABOVE LINTELS AND BELOW SILLS. REINFORCING CONTINUOUS EXCEPT AT VERTICAL CONTROL JOINTS. SIDE RODS LAPPED A MINIMUM OF 6" AT SPLICES. PROVIDE PREFABRICATED CORNERS AND TEES.
6. CONCRETE MASONRY UNITS: ASTM C-90, GRADE N, TWO CORE TYPE FOR REINFORCED MASONRY. DESIGN BASED ON F'M = 2000 PSI.
7. VERTICAL WALL REINFORCING: 1 - #5 EACH SIDE OF MASONRY OPENINGS, CONTROL JOINTS AND AS SHOWN, IN GROUT FILLED BLOCK CORES.
8. VERTICAL BAR REINFORCING: PLACE ACCURATELY AND MECHANICALLY HOLD IN POSITION WHILE GROUTING. GROUTING SHALL BE DONE IN LIFTS NOT EXCEEDING 4'-0" AND MECHANICALLY CONSOLIDATED IN PLACE; CONSOLIDATION BY RODDING NOT ACCEPTABLE.
9. PROVIDE COMPLETELY GROUTED UNITS:
   A. UNDER PRECAST FLOOR PLANK BEARING
   B. UNDER CAST-IN-PLACE CONCRETE FLOOR BEARING
   C. UNDER PRECAST ARCHITECTURAL CONCRETE PANEL BEARING
   D. UNDER BRICK VENEER BEARING
   E. UNDER ANY CHANGE OF WALL THICKNESS, I.E.: 8" ON TOP OF 12"
   F. UNDER STEEL JOIST OR BEAM BEARING.
10. PROVIDE LINTELS FOR OPENINGS IN MASONRY WALLS OVER 8" WIDE. SEE SCHEDULE(S).
11. RUNNING BOND MASONRY SHALL BE BUILT INTEGRALLY AT WALL CORNERS UNLESS INDICATED OTHERWISE.
12. BLOCK CONTROL JOINTS SHALL BE "MICHIGAN" TYPE UNLESS NOTED OTHERWISE. HORIZONTAL REINFORCING SHALL BE DISCONTINUOUS AT CONTROL JOINTS.
13. TEMPORARY WALL BRACING IS THE CONTRACTORS RESPONSIBILITY. CONFORM TO APPLICABLE CODES AND STANDARDS.
14. CONTRACTOR SHALL KEEP THE AIR SPACE CAVITY BETWEEN THE CONCRETE MASONRY AND VENEER COMPLETELY CLEAR OF MORTAR AND DEBRIS.

STRUCTURAL STEEL

1. STRUCTURAL STEEL: FABRICATED AND ERECTED PER THE AISC MANUAL OF STEEL CONSTRUCTION.
   W-BEAMS: ASTM A-992 GR. 50.
   HSS: ASTM A-500 GRADE B.
   STEEL PIPE: ASTM A53, TYPE E, GRADE B.
   ALL OTHER SHAPES: ASTM A-36.
2. ANCHOR RODS: 36 KSI, ASTM F-1554.
3. WELDS: TO BE 70 KSI LOW HYDROGEN FILLER METAL PLACED BY WELDERS CERTIFIED IN WELD AND POSITION BY AWS D1.1, STRUCTURAL WELDING CODE. ALL WELDS SHALL BE APPLIED TO SURFACES FREE OF GREASE, PAINT, DIRT, OR OTHER HARMFUL MATERIAL.
4. BOLTED CONNECTIONS: 3/4" DIAMETER A-325 BOLTS WITH HEAVY HEX NUTS UNLESS NOTED. DESIGNED FOR BEARING CONNECTIONS, TIGHTENED TO **SNUG TIGHT** CRITERIA UNLESS NOTED OTHERWISE.
5. STEEL PRIMER: RUST INHIBITING ALKYD INDUSTRIAL PRIMER, SSPC 6, 1.5 MIL MINIMUM THICKNESS EXCEPT STEEL WHICH WILL RECEIVE SPRAYED-ON FIRE PROOFING.
6. BEAM CONNECTIONS SHALL BE DESIGNED TO SUPPORT ONE-HALF THE TOTAL UNIFORM LOAD CAPACITY PER AISC. WHEREVER POSSIBLE, EXTEND CONNECTIONS FULL DEPTH OF BEAM.
7. SHEAR TAB CONNECTIONS TO STEEL BEAMS ARE NOT ACCEPTABLE UNLESS BEAMS OF EQUAL DEPTHS ARE FASTENED ON OPPOSITE SIDES OF THE STEEL BEAM.
8. BEAM BEARING PLATES ARE TO BE LOCATED ON CENTER OF WALL UNLESS NOTED OTHERWISE. BEAR BEAM FULL LENGTH OF BEARING PLATES.
9. WHERE BEAMS BEAR ON COLUMNS, BEAMS BEAR ON BEAMS, BEAMS HANG FROM BEAMS, OR COLUMNS BEAR ON BEAMS, STIFFENER PLATES MINIMUM 1/4" THICK.
10. TEMPORARY BRACING IS TO BE MAINTAINED UNTIL PERMANENT CONNECTIONS ARE COMPLETED, APPROVED, AND SUPPORTED SLABS ARE CAST AND CURED.
11. INSTALL BRICK SUPPORT SHELF MEMBERS AFTER ALL SUPPORTED CONCRETE FLOOR SLABS AND ROOF DECK WITH ROOFING IS IN PLACE.
12. BEAMS AND GIRDERS HAVE BEEN DESIGNED WITHOUT SHORING REQUIRED. INSTALLATION OF SHORING IS PERMITTED AT CONTRACTOR'S OPTION. ANTICIPATED BEAM DEFLECTION UNDER WET CONCRETE LOAD IS SPAN/360, 3/4" MAX.
13. DO NOT ALLOW LOADS ON SLAB UNTIL CONCRETE HAS ATTAINED A MINIMUM OF 75% OF THE 28-DAY SPECIFIED STRENGTH.

STEEL JOISTS

1. OPEN WEB STEEL JOIST: DESIGN, FABRICATE AND ERECT PER STEEL JOIST INSTITUTE (SJI) SPECIFICATIONS.
2. ITEMS SUPPORTED BY JOISTS SHALL BE ATTACHED AT PANEL POINTS WHERE POSSIBLE. SEE JOIST REINFORCEMENT DETAIL FOR NON-PANEL POINT LOADING.
3. WELDING OF SUPPORTS TO JOISTS WILL NOT BE PERMITTED UNLESS SPECIFICALLY NOTED.
4. NO STRUCTURAL MEMBER INCLUDING OPEN WEB STEEL JOIST SHALL BE CUT OR MODIFIED WITHOUT PRIOR WRITTEN APPROVAL OF THE JOIST MANUFACTURER AND THE ARCHITECT/ENGINEER.
5. BRIDGING: SIZED NOT LESS THAN MINIMUM REQUIREMENT OF SJI.
6. SPECIAL LOADING CONDITIONS ARE SHOWN ON THE DRAWINGS AND SHALL BE USED IN THE DESIGN OF THE STEEL JOIST AS INDICATED ON THE PLANS.
7. PROVIDE UPLIFT BRIDGING PER SJI. STEEL JOISTS SHALL BE DESIGNED FOR A NET UPLIFT PRESSURE OF 7 PSF.
8. JOIST GIRDERS TO BE DESIGNED FOR L/600 DEFLECTION UNLESS NOTED OTHERWISE.

METAL DECK

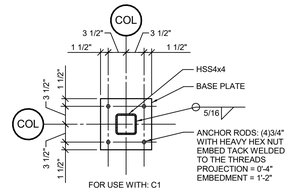
1. ROOF DECK: 1½", 20 GAUGE, WIDE RIB, MINIMUM 3 SPANS. DESIGNED AND FABRICATED PER STEEL DECK INSTITUTE SPECIFICATIONS (SDI). WELD TO SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS 12" SPACING. FASTEN SIDE LAPS WITH #10 SCREWS AT 3'-0" MAXIMUM.
2. FORM DECK: 1.0C20: S MIN = .167 IN3/FT, I MIN = .088 IN4/FT GALVANIZED.
   1.5C20: S MIN = .224 IN3/FT, I MIN = .197 IN4/FT GALVANIZED.
   CAPABLE OF SUPPORTING WET CONCRETE LOAD WITHOUT SHORING.
   WELD TO STEEL PER MANUFACTURER'S RECOMMENDATIONS.
3. DECK FINISH: AS SPECIFIED.
4. ROOF DECK OPENINGS LARGER THAN 12" SHALL BE REINFORCED WITH A STEEL ROOF FRAME. SEE ROOF FRAME DETAIL ON DRAWINGS.

LIGHT GAGE METAL FRAMING

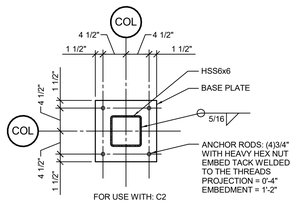
1. ALL STUDS SHALL BE FORMED FROM HOT-DIPPED GALVANIZED STEEL, G-60 COATING, CORRESPONDING TO THE REQUIREMENTS OF ASTM A653, STRUCTURAL QUALITY, GRADE 33, WITH A MINIMUM YIELD OF 33 KSI. MEMBERS DESIGNED PER AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". MEMBER DESIGNATIONS IN ACCORDANCE WITH THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) I.E. 600-S-162-33.
2. MEMBER SIZES INDICATED ON THE DRAWINGS AND CAPABLE OF SUPPORTING THE AS INDICATED IN GENERAL NOTE "GENERAL 1.D" FOR WALL COMPONENTS AND CLADDINGS PRESSURES.
3. MAX. ALLOWABLE DEFLECTION: L/600: BRICK VENEER SUPPORT.
   L/240: OTHER
4. CONTRACTOR TO BE RESPONSIBLE FOR FINAL DESIGN OF LIGHT GAGE FRAMING MEMBERS, CONNECTIONS AND COMPONENTS. SHOP DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MICHIGAN AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW.

PLYWOOD SHEATHING

1. PLYWOOD FOR WALLS SHALL BE 1/2" THICK APA RATED SHEATHING. (24/16)
2. ROOF SHEATHING FASTENED WITH #8 SCREWS AT 6" O.C. AT PANEL EDGES AND INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE.
3. PANELS SHALL BE LAID IN A STAGGERED PATTERN, CONTINUOUS OVER TWO SPANS.



FOR USE WITH: C1



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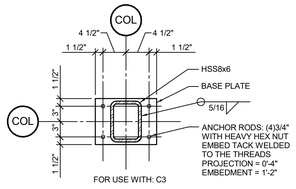
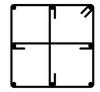
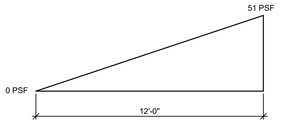


FOR USE WITH: C3

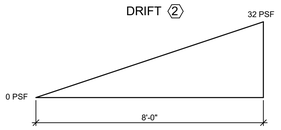
ANCHOR ROD LAYOUTS


FOR USE WITH: P1

VERTICAL REINFORCEMENT LAYOUT

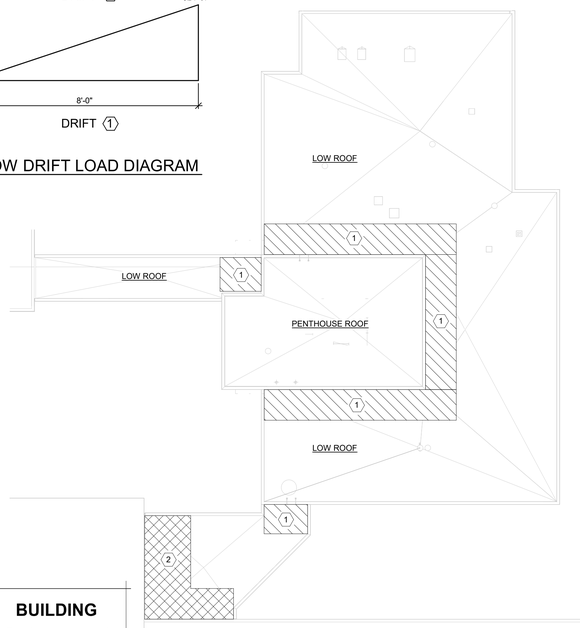


DRIFT ②

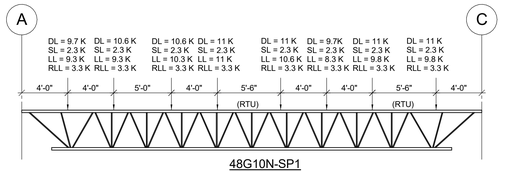


DRIFT ①

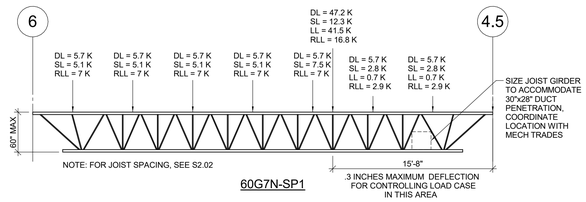
SNOW DRIFT LOAD DIAGRAM



SNOW DRIFTING DIAGRAM - PLAN

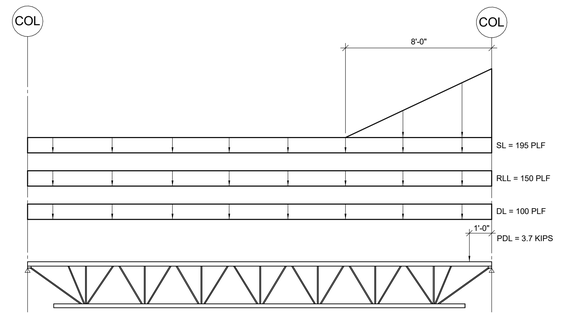


48G10N-SP1



NOTE: FOR JOIST SPACING, SEE S2.02

60G7N-SP1



28K-SP1

NOTES:
1. ALL LOADS ARE UNFACTORED.
2. DESIGN JOIST FOR WORST CASE LOAD COMBINATIONS.
3. DEAD LOADS DO NOT INCLUDE JOIST SELF-WEIGHT.
4. VERIFY ALL DIMENSIONS.
5. COORDINATE SIZE AND LOCATION OF MECHANICAL RTU WITH MECHANICAL CONTRACTOR.
6. SL = SNOW LOAD
   DL = DEAD LOAD
   RLL = ROOF LIVE LOAD
   PDL = CONCENTRATED DEAD LOAD
   WD = DRIFTED SNOW LOAD
7. MECHANICAL UNIT WEIGHTS HAVE BEEN INCLUDED IN DL DESIGNATIONS UNO.
8. JOIST WEB CONFIGURATION BY JOIST MANUFACTURER.

SPECIAL JOIST DIAGRAM

FOOTING SCHEDULE

Fy=60 KSI
f'c=3000 PSI

MARK	SIZE	DEPTH	REINFORCING	DESCRIPTION
F1	1' - 8" x CONT	1' - 0"	(2) #5 CONT	-
F2	2' - 0" x CONT	1' - 0"	(2) #5 CONT	-
F3	4' - 0" x 4' - 0"	1' - 0"	(5) #5 EACH WAY	-
F4	5' - 0" x 5' - 0"	1' - 0"	(6) #5 EACH WAY	-
F5	7' - 0" x 7' - 0"	1' - 6"	(8) #5 EACH WAY	-
F6	9' - 0" x 9' - 0"	1' - 6"	(10) #6 EW, T&B	-

PIER SCHEDULE

Fy=60ksi
f'c=3000 psi

MARK	SIZE	VERT REINF	TIES	REMARKS
P1	20"x20"	(8) #6	#3 AT 12"OC	-

SEE VERTICAL REINFORCEMENT LAYOUT THIS SHEET
TOP OF PIER = 99'-4" (UNO)

COLUMN SCHEDULE

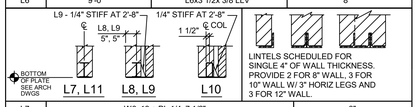
W SECTIONS: Fy=50KSI
HSS SECTIONS: Fy=46ksi

MARK	SIZE	BASE PL	CAP PL	REMARKS
C1	HSS4x4x1/4	3/4"x10"x10"	1/2"	-
C2	HSS6x6x1/2	1 1/8"x12"x12"	1 1/4"x8"x1'-1"	-
C3	HSS8x6x5/8	3/4"x10"x12"	1/2"	-
C3A	HSS8x6x5/8	3/4"x10"x12"	1 1/4"x8"x1'-1"	-

STEEL LINTEL SCHEDULE

Fy=36 KSI

MARK	CLEAR SPAN	SIZE	BEARING EACH END
L1	4'-0"	L3 1/2x2 1/2x1/4 SLV	4"
L2	5'-0"	L3 1/2x3x1/4 SLV	6"
L3	6'-0"	L3 1/2x3 1/2x1/4	6"
L4	7'-0"	L4x3 1/2x1/4 LLV	6"
L5	8'-0"	L5x3 1/2x1/4 LLV	8"
L6	9'-0"	L6x3 1/2x 3/8 LLV	8"
L7	W8x18 + PL 1/4x7 1/2"		8"
L8	W8x13 + PL 1/4x1'-3 1/2"		8"
L9	W8x24 + PL 1/4x1'-3 1/2"		8"
L10	HSS8x3x1/2 + PL 1/4x1'-3 1/2"		DETAIL 15/S7.01, BP1 AT CMU WALL
L11	W8x21 + PL 1/4x7 1/2		8"



NOTE: 1. GROUT BELOW BEAM BEARING PER DETAIL 1/S7.01.

2. BEARING LENGTH IS OVER CMU OR COMPOSITE BRICK/BLOCK. DO NOT BEAR ON BRICK VENEER.

3. ANCHOR MASONRY TO BEAMS WITH 9 GA WIRE TIES EACH SIDE AT 2'-8" O.C.

4. PROVIDE STEEL LINTELS AT ALL MASONRY WALL OPENINGS, INCLUDING MECHANICAL AND ELECTRICAL GREATER THAN 8" WIDE. SEE LINTEL SCHEDULE.

HEADER SCHEDULE

MARK	SIZE	MIN BEARING
H1	(2) 600S162-68	(2) STUDS
H2	(2) 800S300-97	(2) STUDS

NOTE: PROVIDE (2) FULL HEIGHT STUDS ON EITHER SIDE OF BEARING STUDS

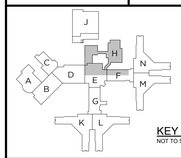
NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003



KEY PLAN
NOT TO SCALE

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

MACMILLAN ASSOCIATES CONSULTING ENGINEERS
714 EAST MIDLAND STREET • BAY CITY, MICHIGAN 48706
(989) 894-4100 F (989) 894-9930 WWW.MACMILLANASSOCIATES.COM

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
NOTES AND SCHEDULES

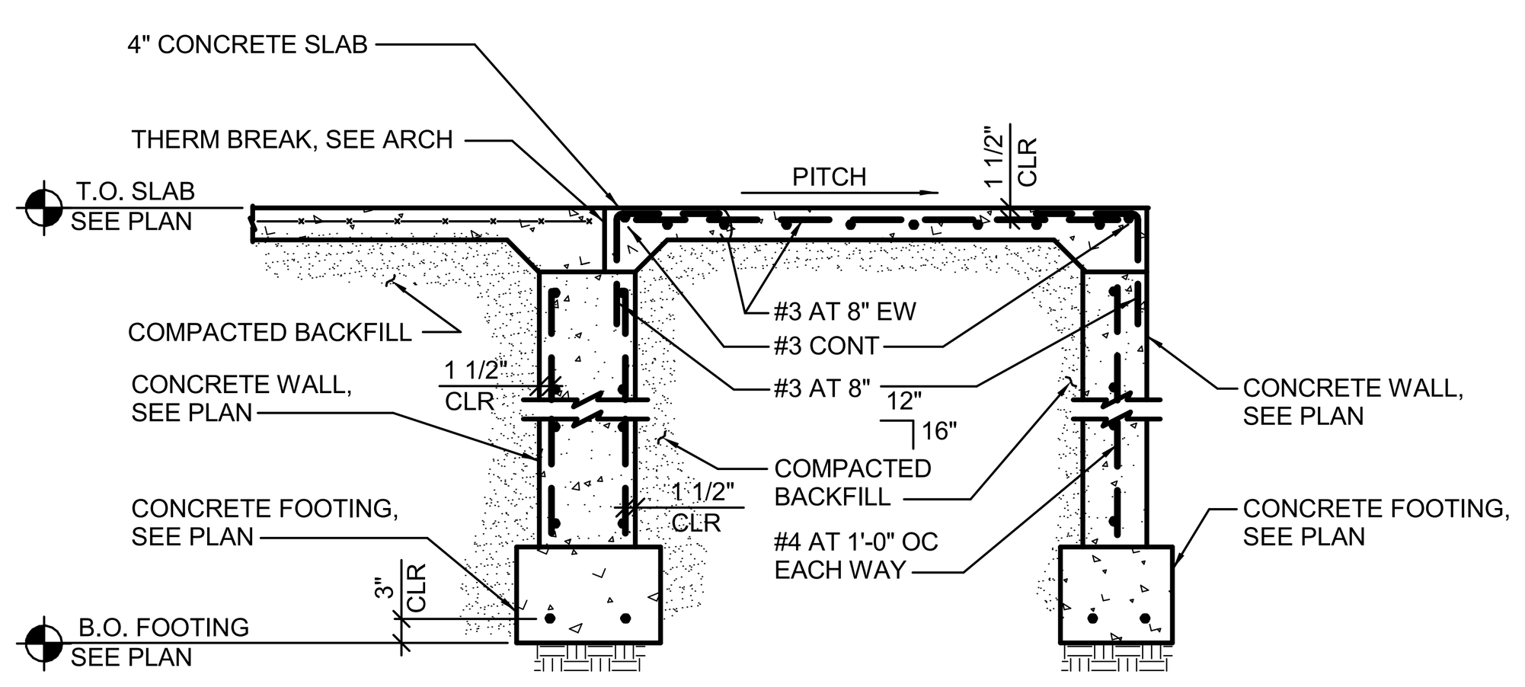
PROJECT NUMBER
2021094

SHEET NUMBER
S3.01

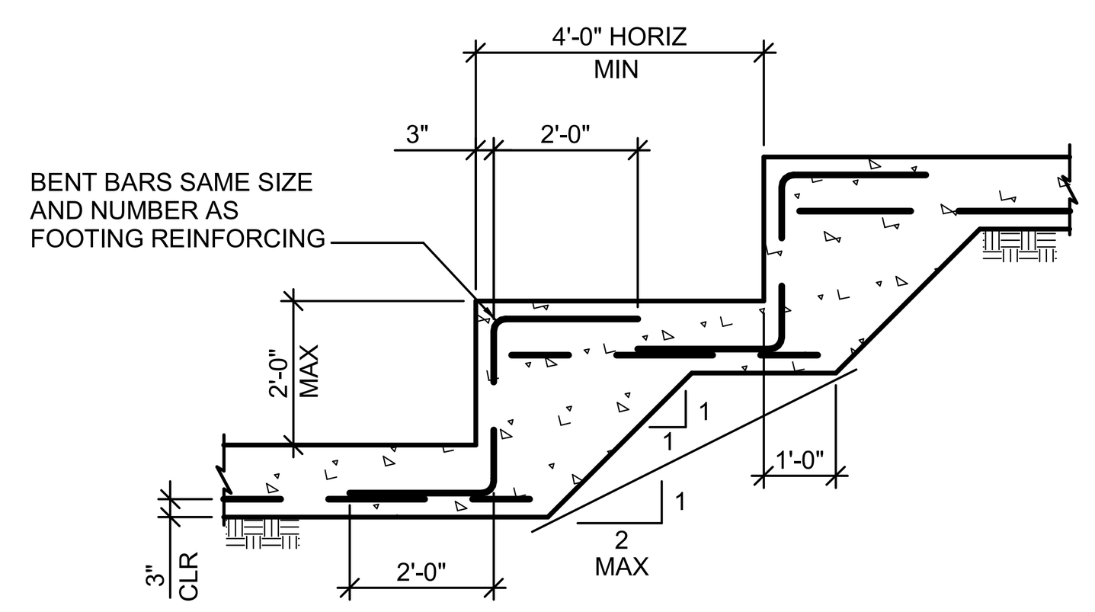
PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
JAG

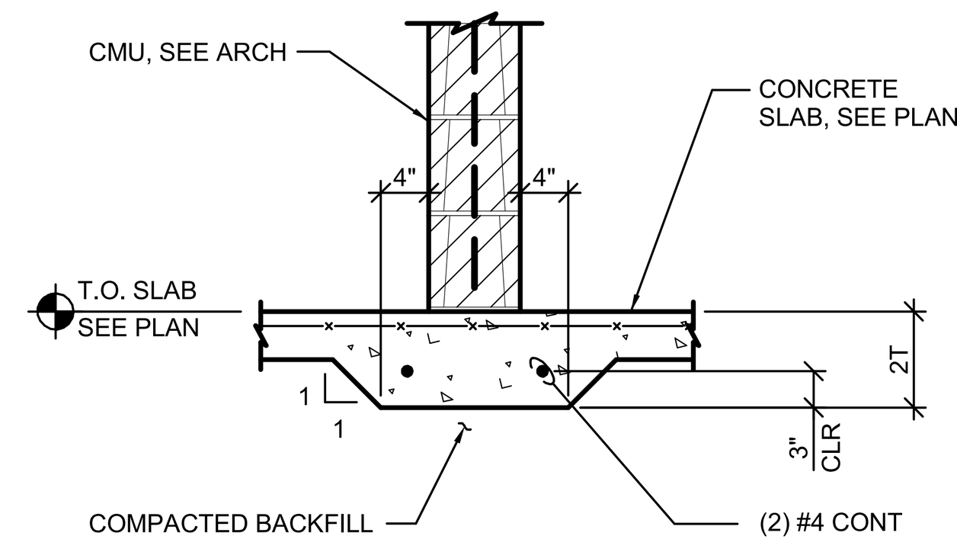
BUILDING
These documents are approved for compliance with the **STATE OF MICHIGAN BUILDING CODE** subject to field inspection and the conditions of approval.



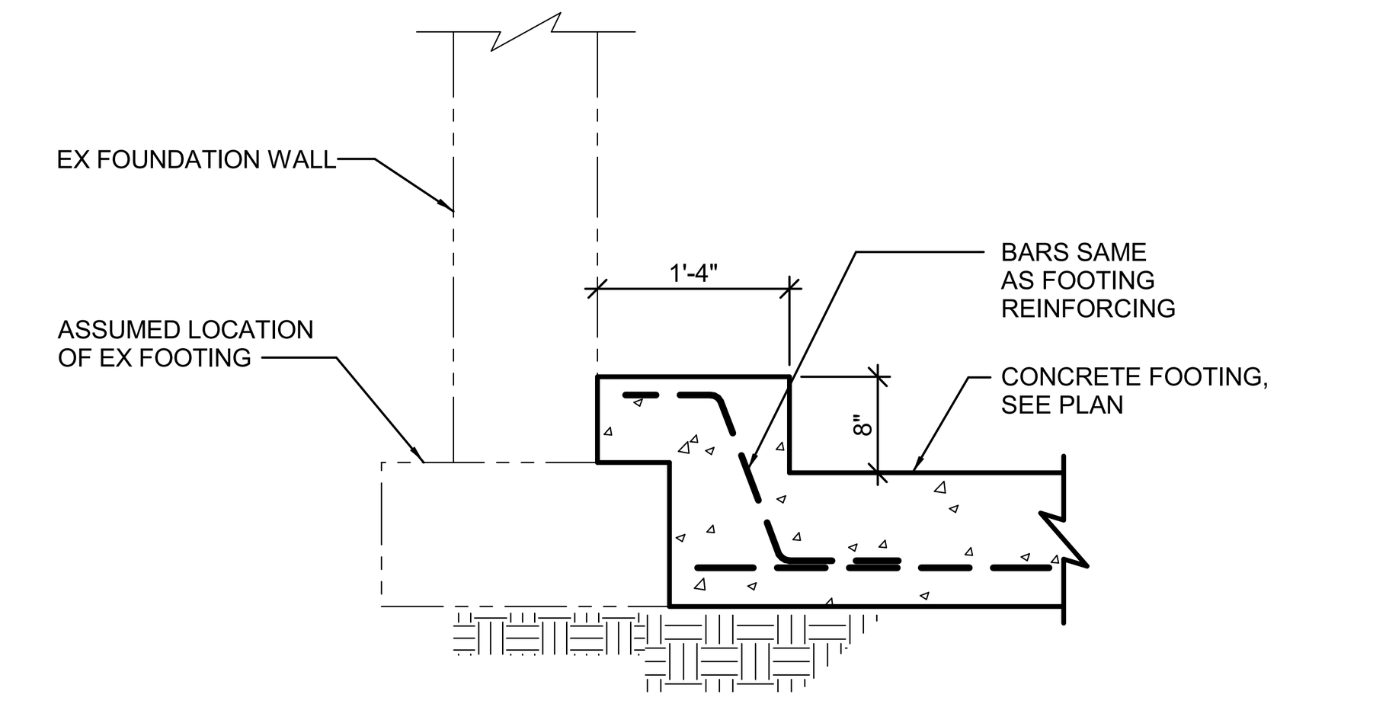
1 ENTRY SLAB
S5.01 1/2" = 1'-0"



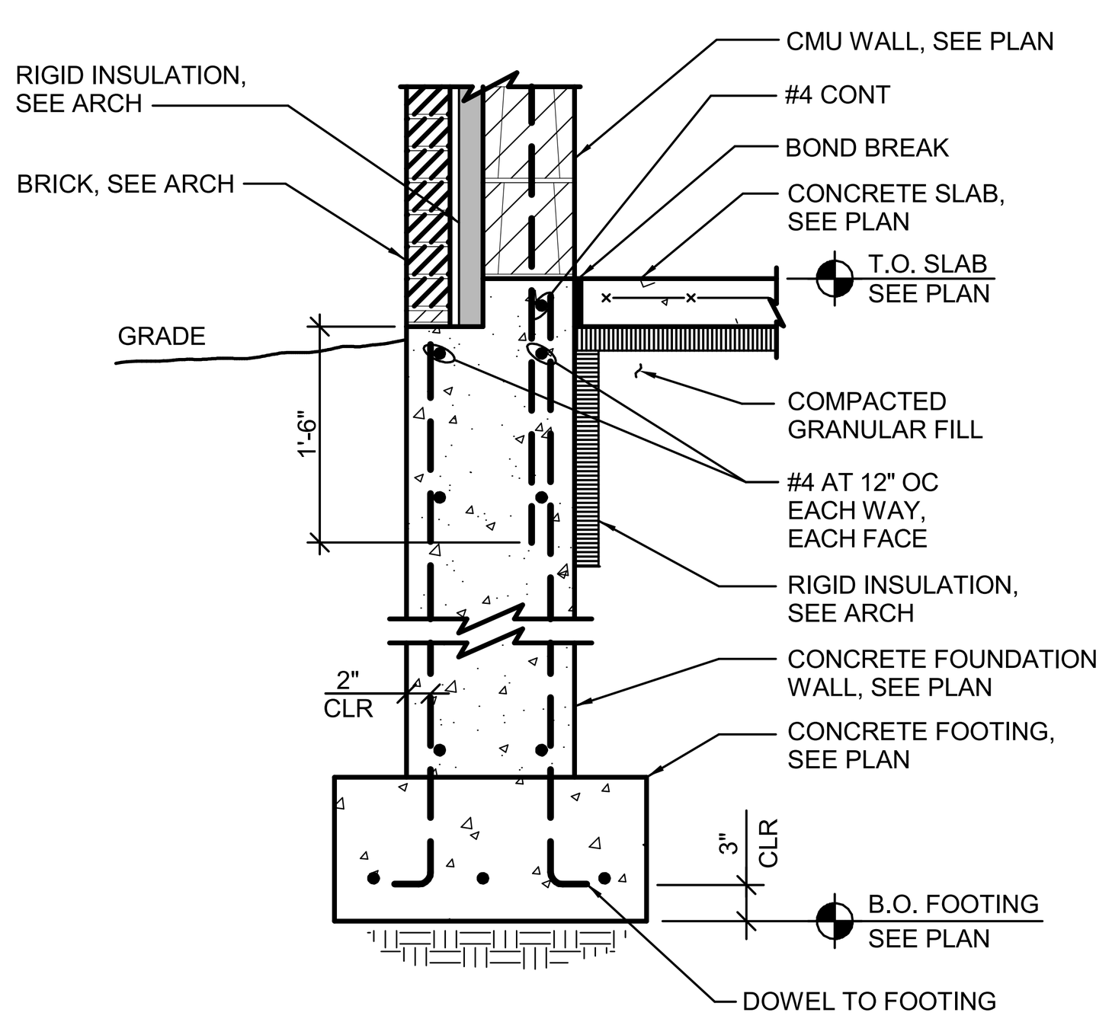
2 STEP FOOTING
S5.01 3/8" = 1'-0"



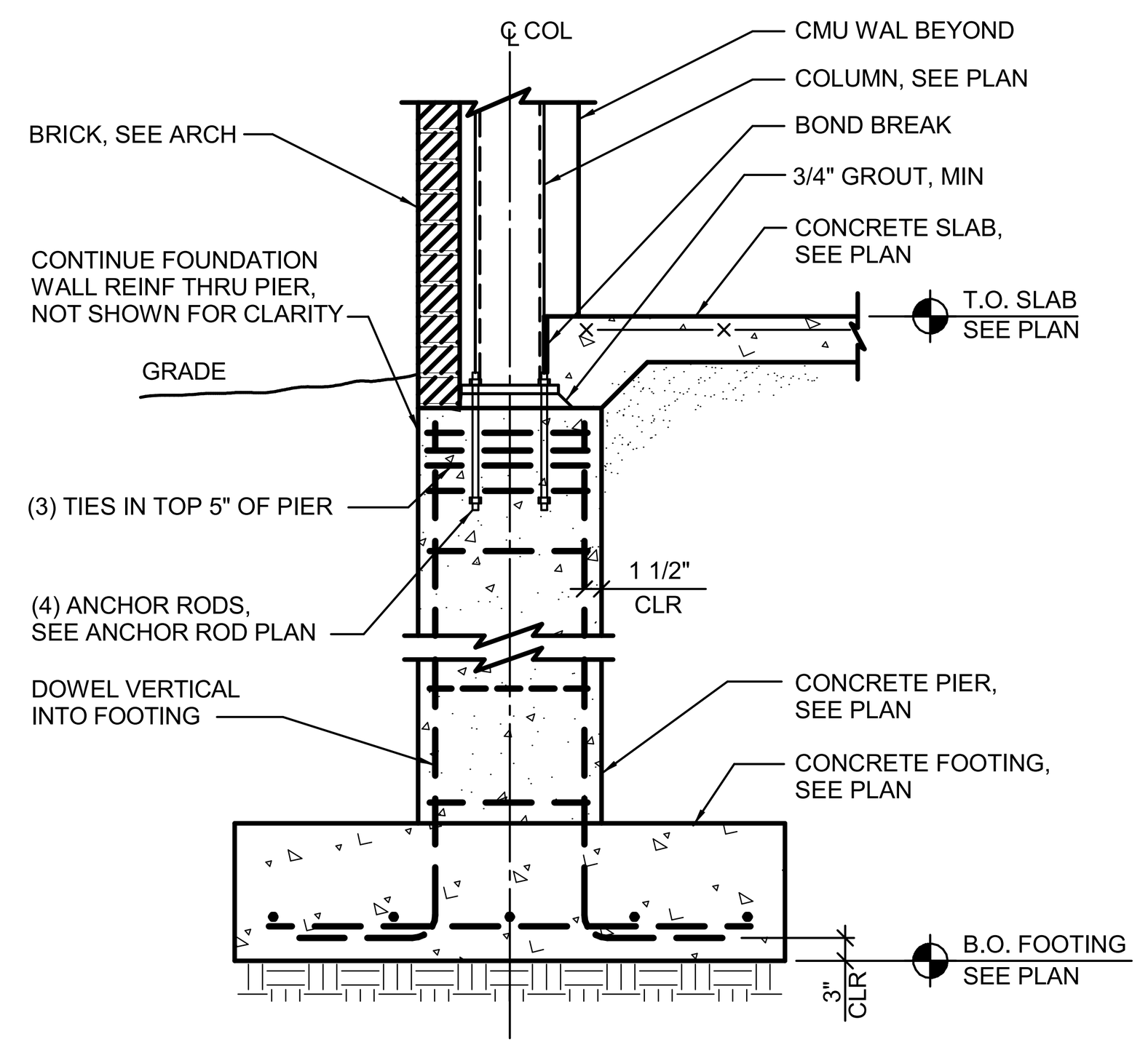
3 THICKENED SLAB
S5.01 3/4" = 1'-0"



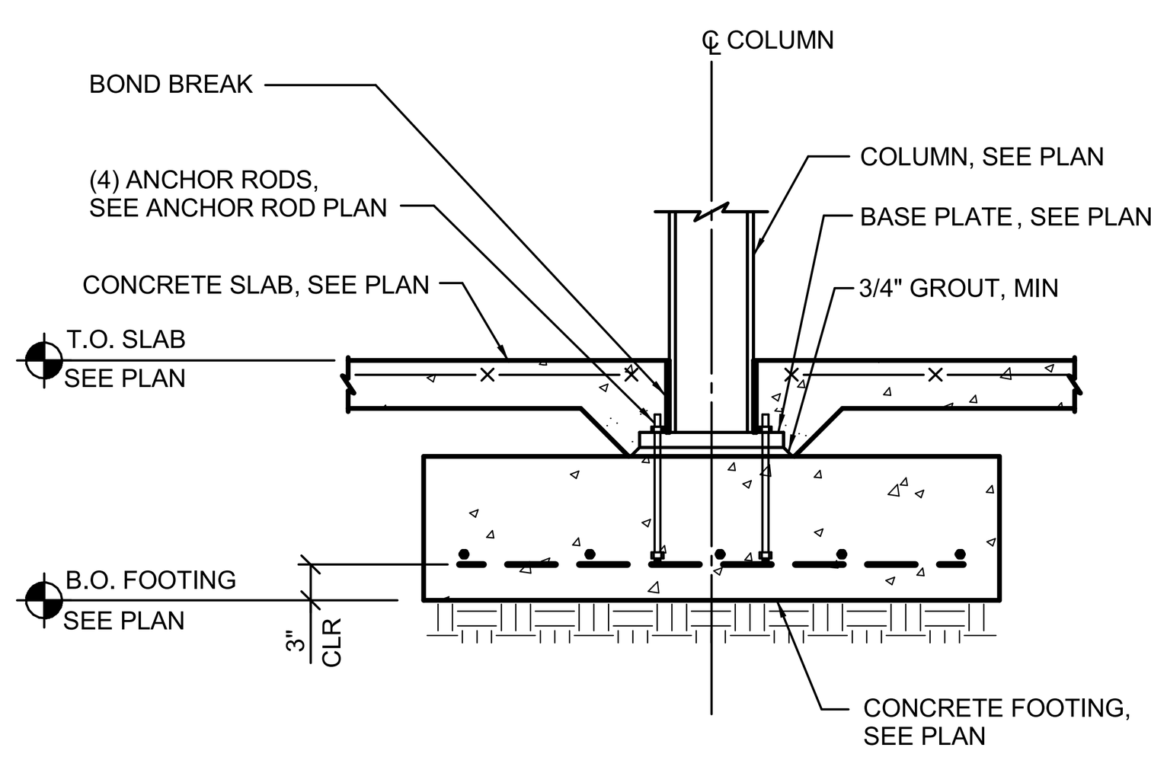
4 NEW FOOTING AT EXISTING
S5.01 3/4" = 1'-0"



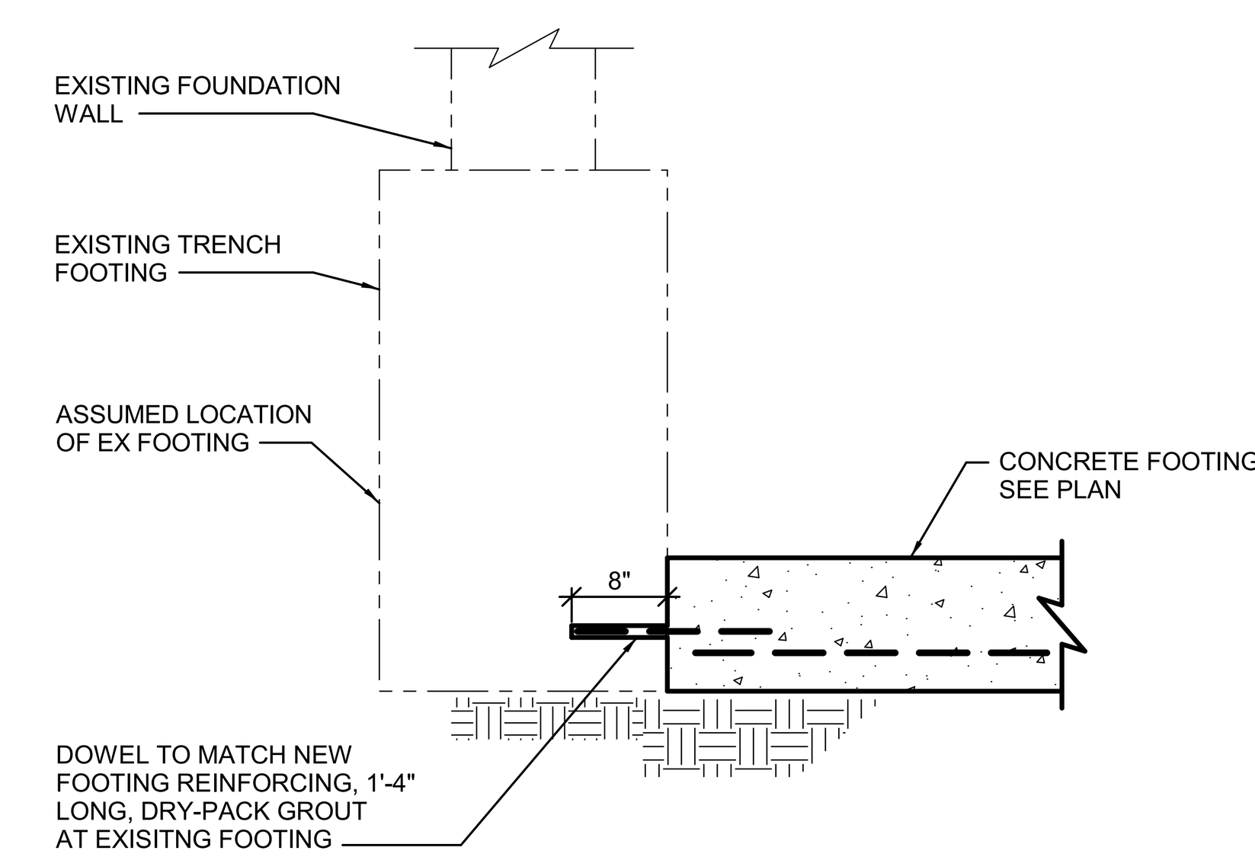
5 EXTERIOR WALL FOOTING
S5.01 3/4" = 1'-0"



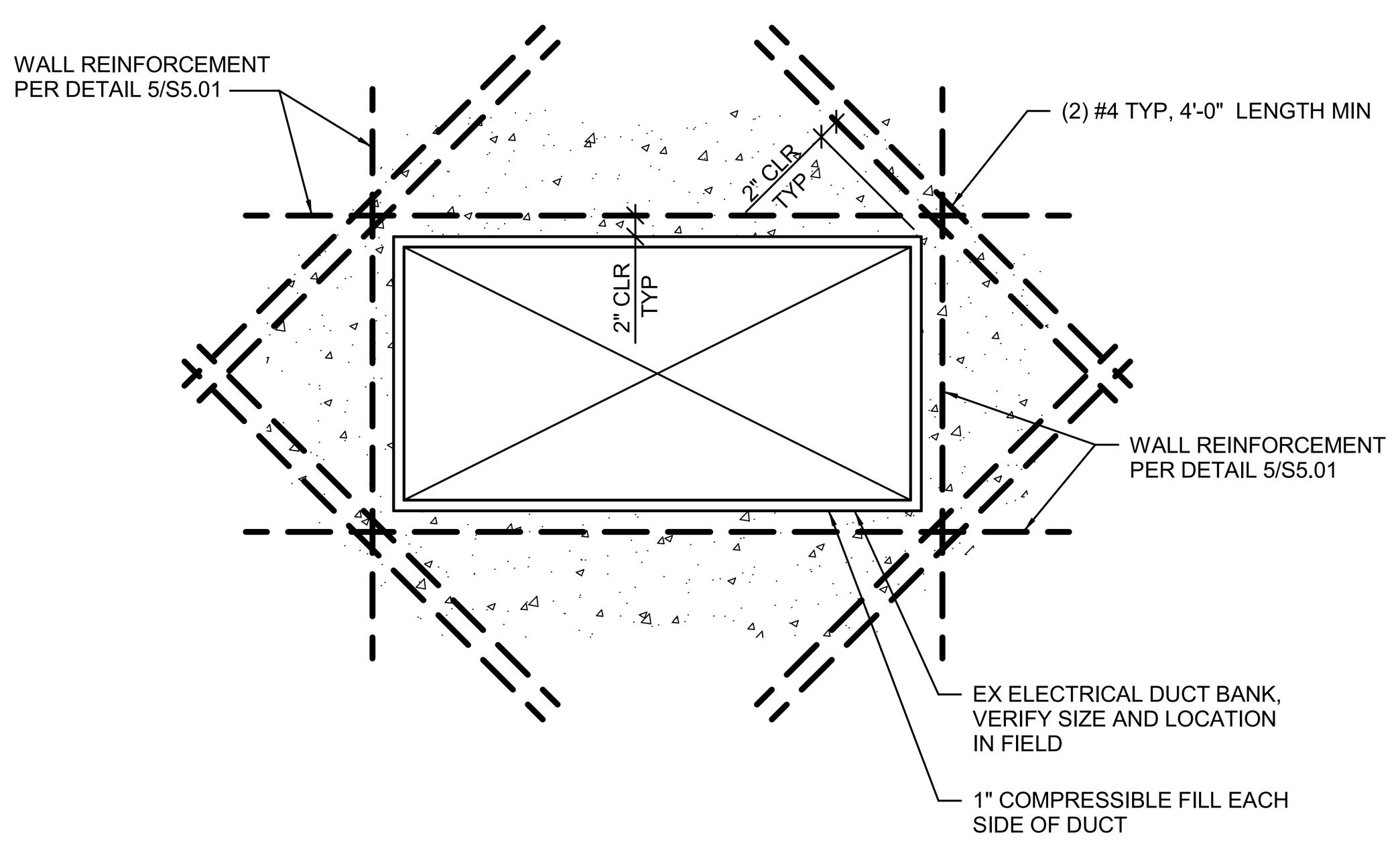
6 COLUMN FOOTING WITH PIER
S5.01 3/4" = 1'-0"



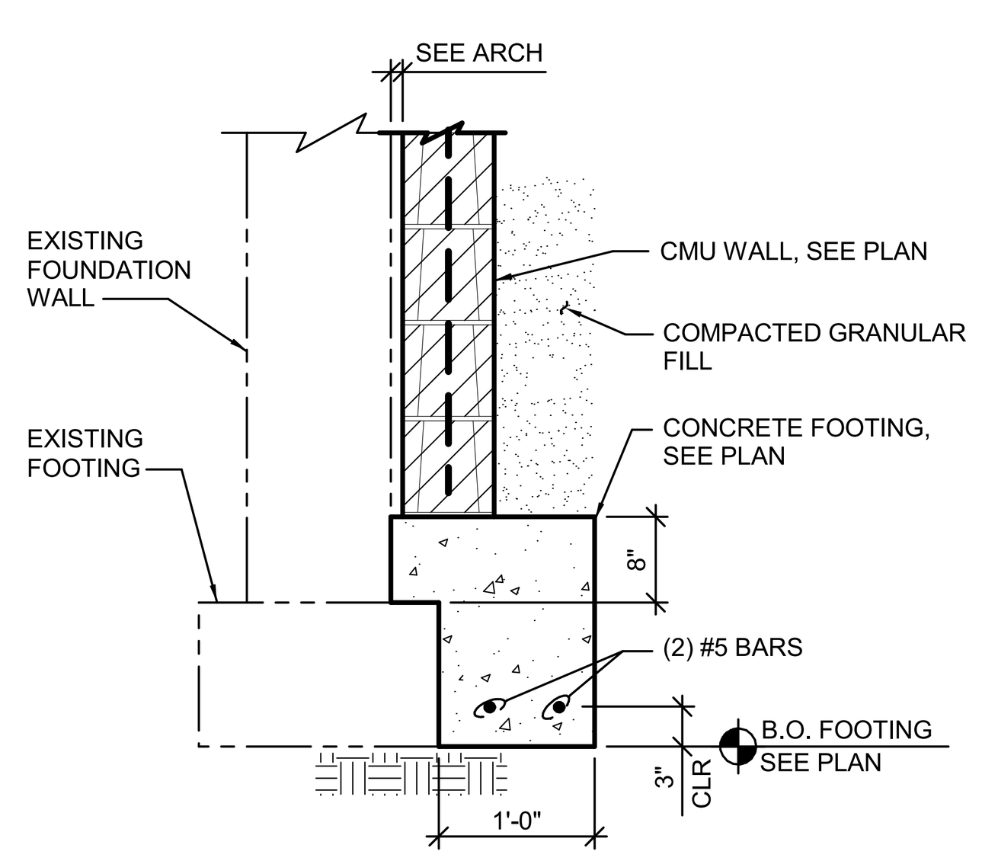
7 INTERIOR COLUMN FOOTING
S5.01 3/4" = 1'-0"



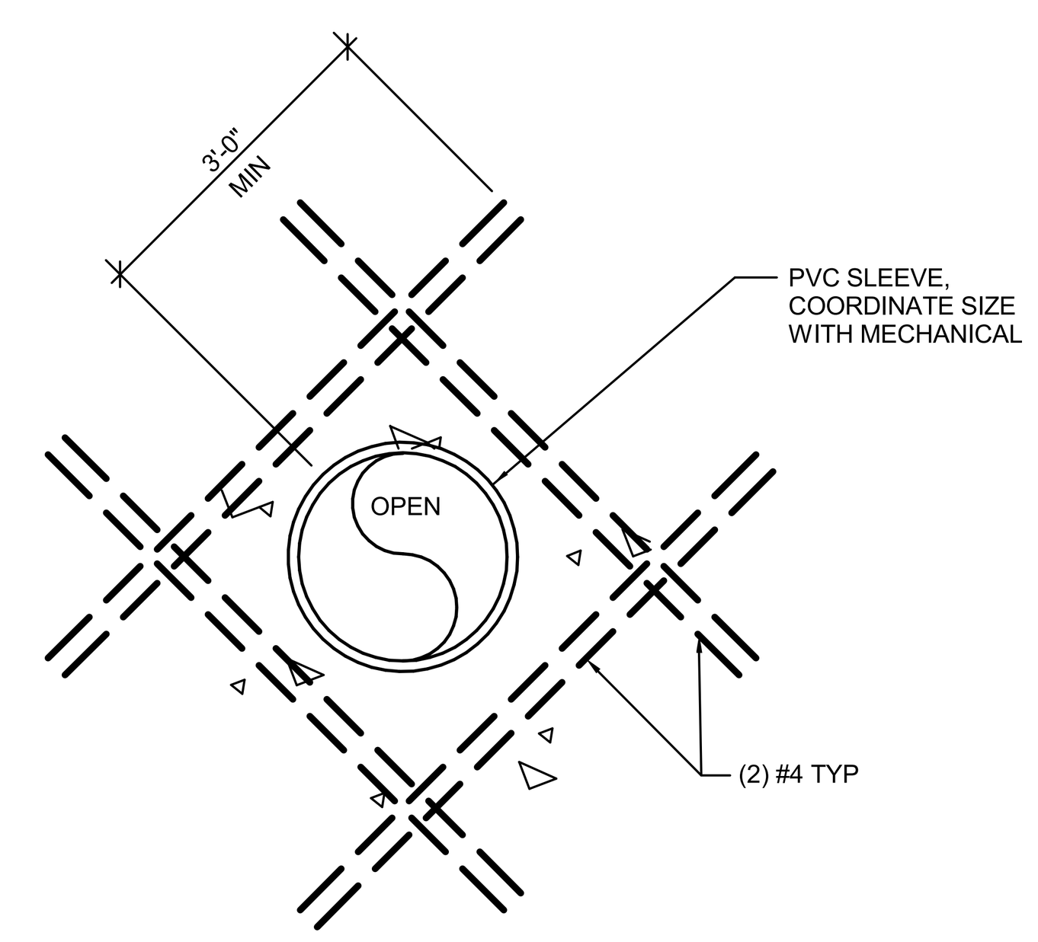
8 NEW FOOTING AT EXISTING
S5.01 3/4" = 1'-0"



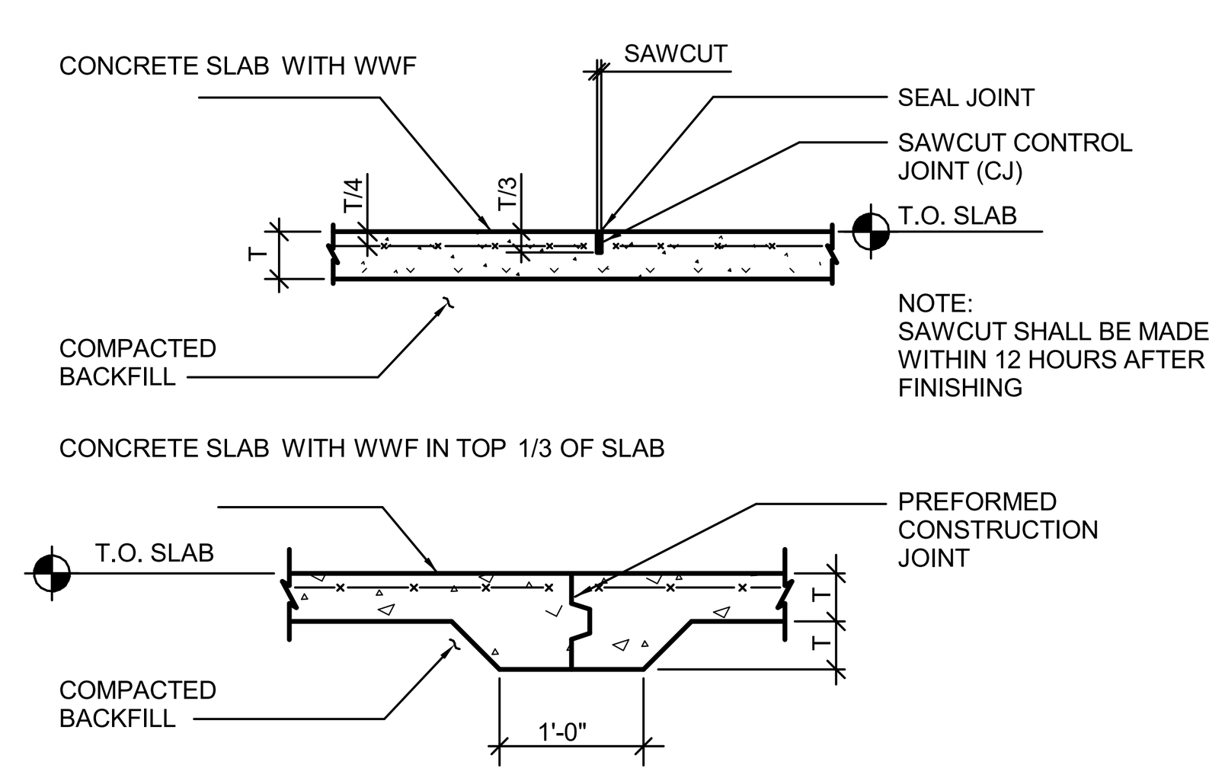
9 WALL REINFORCING AT EXISTING DUCT BANK
S5.01 3/4" = 1'-0"



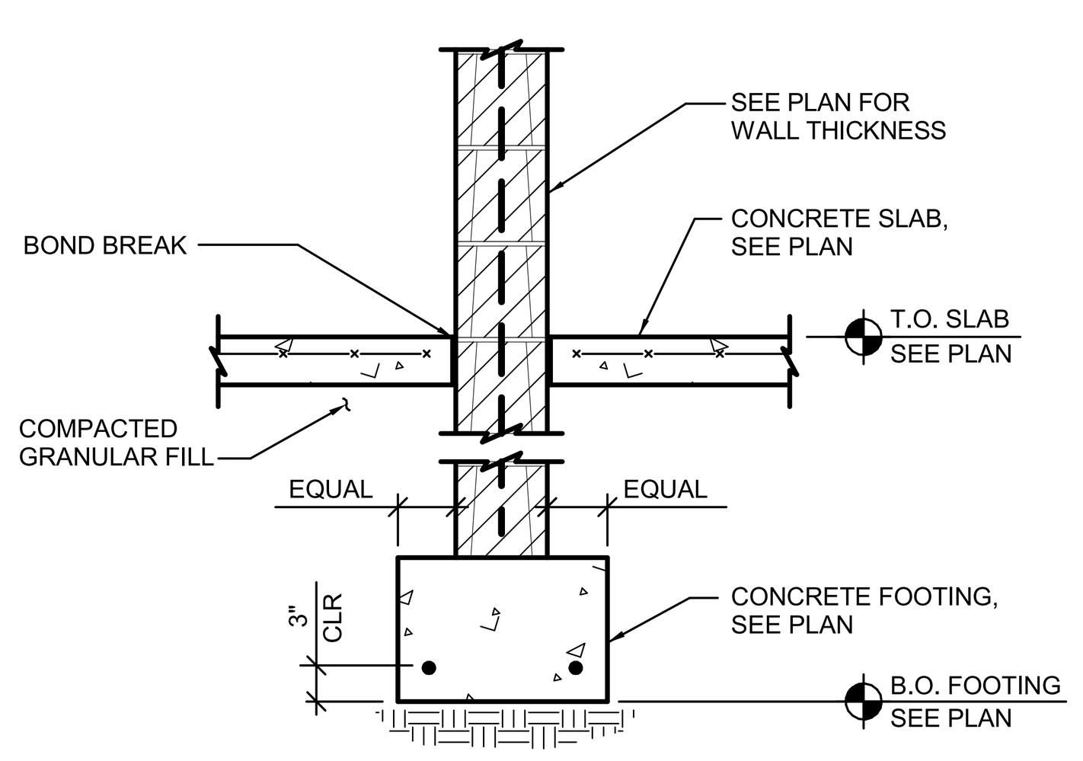
10 FOOTING AT EXISTING
S5.01 3/4" = 1'-0"



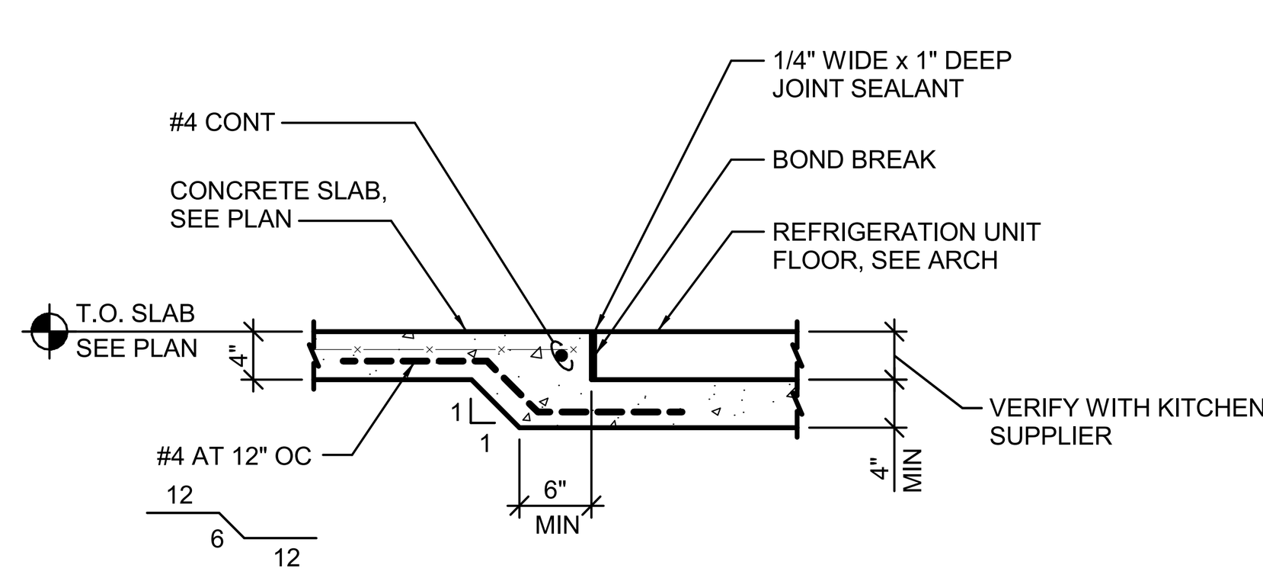
11 WALL OPENING REINFORCEMENT
S5.01 3/4" = 1'-0"



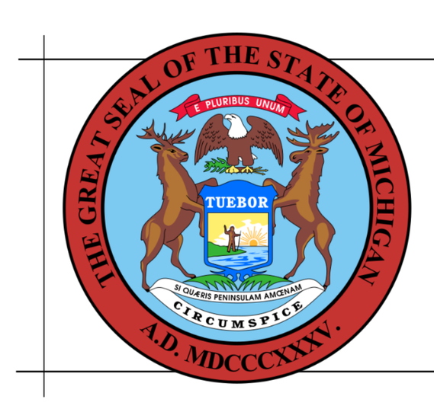
12 CONTROL/CONSTRUCTION JOINTS
S5.01 3/4" = 1'-0"



13 INTERIOR WALL FOOTING
S5.01 3/4" = 1'-0"



14 FLOOR SLAB EDGE DETAIL
S5.01 3/4" = 1'-0"



BUILDING

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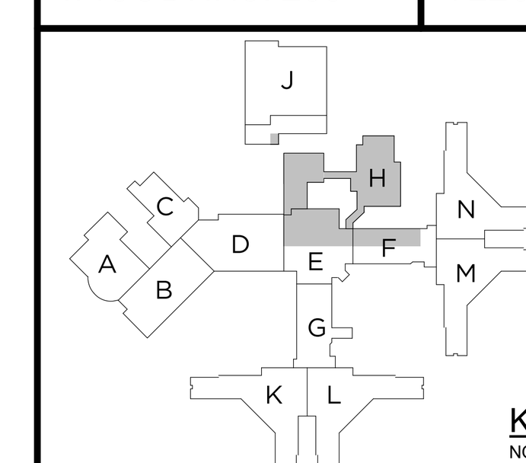
NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003



KEY PLAN
NOT TO SCALE

WTAARCH.COM

WTA ARCHITECTS

100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

MACMILLAN ASSOCIATES
CONSULTING ENGINEERS

PROJECT TITLE
491/20167.SDW - PHASE 500:

CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN

SALINE, MICHIGAN

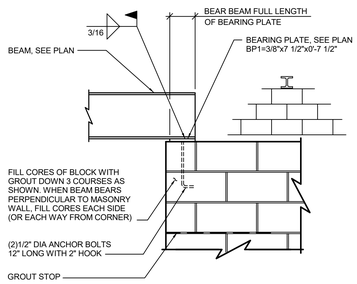
SHEET TITLE
FOUNDATION DETAILS

PROJECT NUMBER
2021094

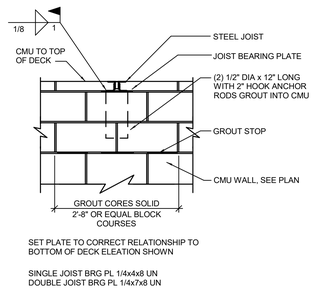
PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
JAG

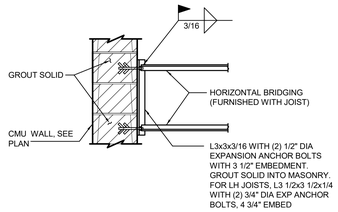
SHEET NUMBER
S5.01



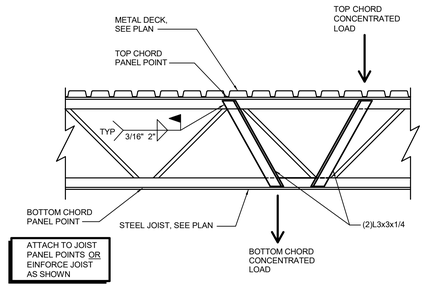
1 S7.01 BEAM BEARING
3/4" = 1'-0"



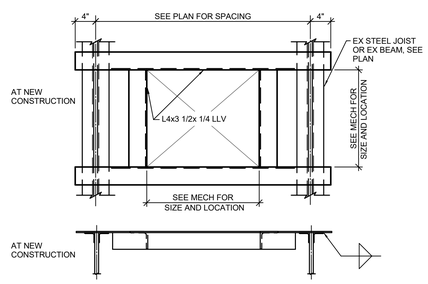
2 S7.01 "K" JOIST END BEARING
3/4" = 1'-0"



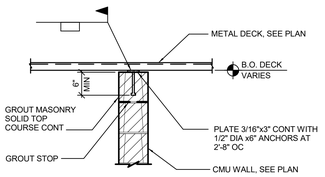
3 S7.01 "K" AND "LH" BRIDGING ANCHOR
3/4" = 1'-0"



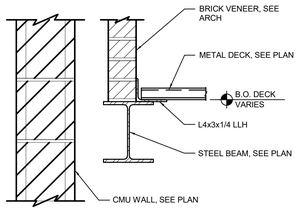
4 S7.01 STEEL JOIST REINFORCEMENT AT NON-PANEL POINT CONCENTRATED LOADS
3/4" = 1'-0"



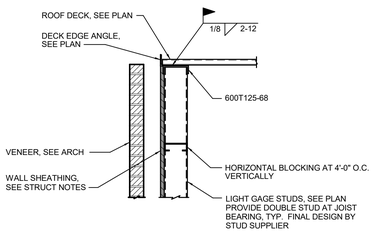
5 S7.01 ROOF OPENING FRAME
1" = 1'-0"



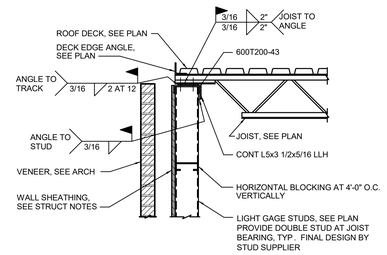
6 S7.01 DECK BEARING
3/4" = 1'-0"



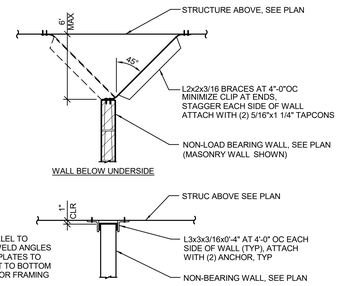
7 S7.01 LOW ROOF DECK SUPPORT
1 1/2" = 1'-0"



8 S7.01 DECK EDGE AT LIGHT GAGE
3/4" = 1'-0"



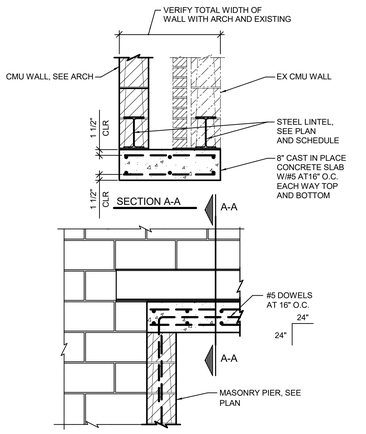
9 S7.01 JOIST BEARING DETAIL
3/4" = 1'-0"



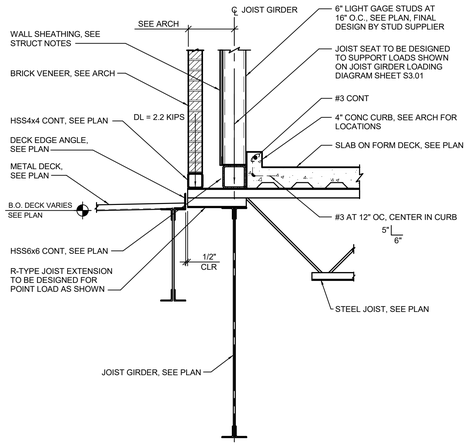
NOTE: WHERE PARALLEL TO METAL ROOF DECK WELD ANGLES TO 3/16" EXTENSION PLATES TO PERMIT ATTACHMENT TO BOTTOM OF DECK FLUTES AS OR FRAMING REQUIRED

NOTES:
1. SEE ARCH FOR TOP OF WALL INFILL REQUIREMENTS.
2. BRACING NOT REQUIRED 4 FEET FROM INTEGRAL WALL INTERSECTIONS OR CORNERS.
3. ANCHORS SHALL BE #10 TEK SCREWS WHERE FASTENING TO METAL OR 3/16"x1 1/4" TAPCONS WHERE FASTENING TO CONCRETE OR MASONRY. PREDRILL ANGLE METAL.
4. EXTERIOR CLADDING SHALL HAVE FLEXIBLE CONNECTIONS TO ALLOW FOR 3/4" DEFLECTION.
5. LIGHT FRAMED ALTERNATES SHALL BE DESIGNED BY THE FABRICATOR AND APPROVED PRIOR TO FABRICATION.

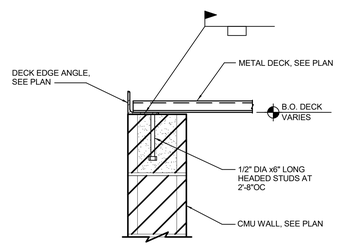
10 S7.01 TYPICAL NON-BEARING WALL BRACING
3/4" = 1'-0"



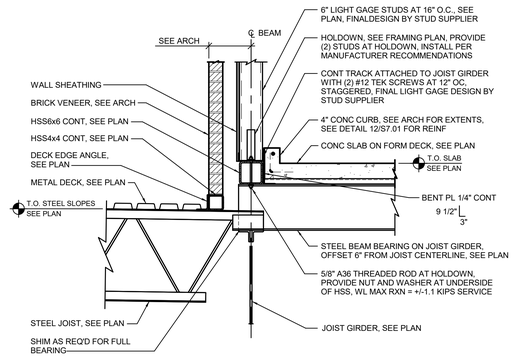
11 S7.01 PORTAL FRAME
3/4" = 1'-0"



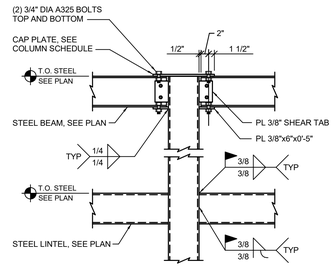
12 S7.01 BRICK SUPPORT AT LOW ROOF
3/4" = 1'-0"



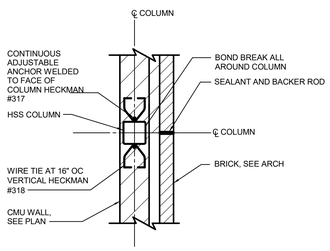
13 S7.01 DECK SUPPORT ANGLE
1 1/2" = 1'-0"



14 S7.01 BRICK VENEER SUPPORT
3/4" = 1'-0"



15 S7.01 MC1 - MOMENT CONNECTION
3/4" = 1'-0"



16 S7.01 TYPICAL COLUMN MASONRY ANCHOR
3/4" = 1'-0"

BUILDING

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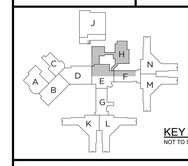
NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A. DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003



KEY PLAN
NOT TO SCALE

WTAARCH.COM
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MACMILLAN ASSOCIATES
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71 EAST MIDLAND STREET • BAY CITY, MICHIGAN 48706
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ROOF FRAMING DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
S7.01

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
JAG

MECHANICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION
A	COMPRESSED AIR
A(___#)	COMPRESSED AIR (SPECIFIC PSIG)
AAV	AUTOMATIC AIR VENT
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSER UNIT
AD	ACCESS DOOR
AD	AREA DRAIN
AE	AIR EXTRACTOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AMP	AMPERE
APD	AIR PRESSURE DROP
AR	ARGON
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR-CONDITIONING ENGINEERS
ASR	AUTOMATIC SPRINKLER RISER
ATD	AIR TRANSFER DUCT
AUX	AUXILIARY
AV	ACID VENT
AVTR	ACID VENT THROUGH ROOF
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BCU	BLOWER COIL UNIT
BDD	BACK DRAFT DAMPER
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BVC	BEVERAGE CONDUIT
BWV	BACKWATER VALVE
C	COMMON
CAP	CAPACITY
CAV	CONSTANT AIR VOLUME
CB	CATCH BASIN
CC	COOLING COIL
CD	COLD DECK
CD	CONDENSATE DRAIN
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHW	CHILLED WATER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	COOLING
CNDS	CONDENSATE
CNDS (__#)	CONDENSATE (SPECIFIC PSIG)
CO	CLEAN OUT
CO2	CARBON DIOXIDE
CONT	CONTINUATION OR CONTINUED
CONTR	CONTRACTOR
CONV	CONVECTOR
COP	COEFFICIENT OF PERFORMANCE
CP	CIRCULATING PUMP
CRU	CONDENSATE RETURN UNIT
CSS	CLINICAL SERVICE SINK
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CW	DOMESTIC COLD WATER
CWF	DOMESTIC COLD WATER - FILTERED
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D&T	DRIP AND TRAP
DA	DISCHARGE AIR
DAT	DISCHARGE AIR TEMPERATURE
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DMPR	DAMPER
D/N	DAY/NIGHT
DN	DOWN
DNZ	DOWNSPOUT NOZZLE
DS	DUCT SILENCER
DT	DRAIN TILE
DTC	DRAIN TILE CONNECTION
DWH	DOMESTIC WATER HEATER
DWG	DRAWING
(E)	EXISTING
E	EXHAUST GRILLE OR REGISTER
EA	EACH
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	EXPANSION COMPENSATOR
ECUH	ELECTRIC CABINET UNIT HEATER
EDB	ENTERING DRY BULB
EER	ENERGY EFFICIENCY RATIO
EES	EMERGENCY EYE WASH / SHOWER
EEW	EMERGENCY EYE WASH
EF	EXHAUST FAN
EFF	EFFICIENCY
EHC	ELECTRIC HEATING COIL
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMS	ENERGY MANAGEMENT SYSTEM
ERL	ENERGY RECOVERY LOOP
ERLR	ENERGY RECOVERY LOOP RETURN
ERLS	ENERGY RECOVERY LOOP SUPPLY
ERU	ENERGY RECOVERY UNIT
ESH	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EWB	ENTERING WET BULB
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FIRE PROTECTION
°F	DEGREES FAHRENHEIT
F&B	FACE AND BYPASS
F&T	FLOAT AND THERMOSTATIC
FA	FACE AREA
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FLA	FULL LOAD AMPS
FLR	FLOOR
FM	FLOW METER
FMS	FLOW MEASURING STATION
FPM	FEET PER MINUTE
FP	FIRE PUMP
FPTU	FAN POWERED (AIR) TERMINAL UNIT
FS	FLOOR SINK
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR
FT	FEET
FTR	FINNED TUBE RADIATION
FV	FACE VELOCITY
G	NATURAL GAS
GA	GAUGE
GAL	GALLON
GRH	GRAVITY RELIEF HOOD
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSAN	GREASE SANITARY WASTE
H	HYDROGEN
HB	HOSE BIBB
HC	HEATING COIL
HD	HOT DECK
HEPA	HIGH EFFICIENCY PARTICULATE ARRESTANCE
HL	HIGH LIMIT
HOA	HAND/OFF/AUTO
HP	HEAT PUMP
HP	HORSEPOWER
HPCW	HIGH PRESSURE DOMESTIC COLD WATER
HPHW	HIGH PRESSURE DOMESTIC HOT WATER
HPHWR	HIGH PRESSURE DOMESTIC HOT WATER RETURN
HPL	HEAT PUMP LOOP
HPLR	HEAT PUMP LOOP RETURN
HPLS	HEAT PUMP LOOP SUPPLY
HR	HOUR
HTG	HEATING
HV	HEATING VENTILATING
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HWH	HOT WATER HEATING
HWHR	HOT WATER HEATING RETURN
HWHS	HOT WATER HEATING SUPPLY
HW	DOMESTIC HOT WATER
HW(__)	DOMESTIC HOT WATER (SPECIFIC TEMP °F)
HWR	DOMESTIC HOT WATER RETURN
HX	HEAT EXCHANGER
HZ	HERTZ
IAQ	INDOOR AIR QUALITY
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IH	INTAKE HOOD
IN	INCHES
IR	INFRARED HEATER
IW	INDIRECT WASTE
JC	JANITOR'S CLOSET
JP	JOCKEY PUMP
KA	THOUSAND AMP
KW	KILOWATT
KWH	KILOWATT-HOUR
LAT	LEAVING AIR TEMPERATURE
LAB	LABORATORY
LAV	LAVATORY
LBS	POUNDS
LDB	LEAVING DRY BULB
LL	LOW LIMIT
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MEDICAL COMPRESSED AIR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIL	1/1000th INCH
MIN	MINIMUM
MISC	MISCELLANEOUS
MMBH	MILLION BRITISH THERMAL UNITS PER HOUR
MOP	MAXIMUM OVERCURRENT PROTECTION
M/S	MOTOR STARTER
MTD	MOUNTED
MTR	MOTOR
MV	MANUAL AIR VENT
MVAC	MEDICAL VACUUM
N	NITROGEN
N2O	NITROUS OXIDE
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NCTC	NORMALLY CLOSED TIMED CLOSED
NCTO	NORMALLY CLOSED TIMED OPEN
NFPA	NATIONAL FIRE PROTECTION AGENCY
NOTC	NORMALLY OPEN TIMED CLOSED
NOTO	NORMALLY OPEN TIMED OPEN
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NPCW	NON POTABLE COLD WATER
O	OXYGEN
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OB	OUTLET BOX
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER/CENTER TO CENTER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OL	OVERLOAD
ORC	OVERFLOW RAIN CONDUCTOR
ORD	OVERFLOW ROOF DRAIN
OS&Y	OUTSIDE SCREW AND YOKE
OV	OUTLET VELOCITY
OWS	OPERATOR WORKSTATION
PACU	PACKAGED AIR CONDITIONING UNIT
PBD	PARALLEL BLADE DAMPER
PC	PUMPED CONDENSATE
PCW	PROCESS COOLING WATER
PCWR	PROCESS COOLING WATER RETURN
PCWS	PROCESS COOLING WATER SUPPLY
PD	PRESSURE DROP (FEET OF WATER)
PH	PERIMETER HEAT
PHR	PERIMETER HEAT RETURN
PHS	PERIMETER HEAT SUPPLY
PNL	PANEL
PPM	PARTS PER MILLION
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSAN	PUMPED SANITARY
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
PSIG	POUNDS PER SQUARE INCH - GAUGE
PST	PUMPED STORM
PW	PURIFIED WATER
PWR	PURIFIED WATER RETURN
PWS	PURIFIED WATER SUPPLY
(R)	RELOCATED
R	RETURN GRILLE OR REGISTER
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RC	RAIN CONDUCTOR
RCP	RADIANT CEILING PANEL
RD	ROOF DRAIN
REQD	REQUIRED
REF	ROOF EXHAUST FAN
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID
RLFA	RELIEF AIR
RPM	REVOLUTIONS PER MINUTE
RPDA	REDUCED PRESSURE BACKFLOW DETECTION ASSY
RPZA	REDUCED PRESSURE BACKFLOW ASSY
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
S	SUPPLY AIR DIFFUSER OR GRILLE
SA	SOUND ATTENUATOR
SA	SUPPLY AIR
SAN	SANITARY WASTE
SAT	SUPPLY AIR TEMPERATURE
SCCA	SHORT CIRCUIT CURRENT RATING
SECT	SECTION
SF	SUPPLY FAN
SH	SHOWER
SK	SINK
SMR	SNOW MELT RETURN
SMS	SNOW MELT SUPPLY
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPKLR	SPRINKLER
SQFT	SQUARE FOOT/SQUARE FEET
S/S	START/STOP
SS	SERVICE SINK
ST	STORM
STD	STANDARD
STK	STACK
STM	STEAM
STM(__#)	STEAM (SPECIFIC PSIG)
S/W	SUMMER/WINTER
SW	SWITCH
T	TRANSFER GRILLE
TC	TEMPERATURE CONTROL
TC	TEMPERING COIL
TCP	TEMPERATURE CONTROL PANEL
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TEMP	TEMPORARY
TH	TERMINAL HEATING
THA	TOTAL HEAT ABSORBED
THR	TERMINAL HEATING RETURN
THR	TOTAL HEAT REJECTED
THS	TERMINAL HEATING SUPPLY
TPD	TEPID WATER
TSP	TOTAL STATIC PRESSURE
TU	(AIR) TERMINAL UNIT
TV	TURNING VANES
TW	TEMPERED WATER
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORY
UON	UNLESS OTHERWISE NOTED
UR	URINAL
UV	UNIT VENTILATOR
V	VALVE
V	VENT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER (MANUALLY ADJUSTABLE)
VOL	VOLUME
VFC	VARIABLE FREQUENCY CONTROLLER
VTR	VENT THROUGH ROOF
VTU	VENTURI TERMINAL UNIT
VUV	VERTICAL UNIT VENTILATOR
W	WASTE
W&V	WASTE AND VENT
WAGD	WASTE ANESTHETIC GAS DISPOSAL
WB	WET BULB
WC	WATER CLOSET
WC	WATER COLUMN
WG	WATER GAUGE
WH	WALL HYDRANT
WMSD	WASHING MACHINE SUPPLY AND DRAIN BOX
WPD	WATER PRESSURE DROP
WT	WEIGHT
XFMR	TRANSFORMER
ZVB	ZONE VALVE BOX

TEMPERATURE CONTROL - PARTIAL SYMBOLS LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CO2	CARBON DIOXIDE SENSOR	OS	OCCUPANCY SENSOR
CO	CARBON MONOXIDE SENSOR	PT	PRESSURE TRANSMITTER
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	SP	STATIC PRESSURE SENSOR OR PROBE
FM	FLOW METER		VALVE - 2 WAY CONTROL VALVE
	GUARD FOR STAT OR SENSOR		VALVE - 3 WAY CONTROL VALVE
H	HUMIDISTAT OR HUMIDITY SENSOR (AS DEFINED ON TC DRAWINGS)	T	THERMOSTAT OR TEMPERATURE SENSOR (AS DEFINED ON TC DRAWINGS)

NOTE: LIST OF ADDITIONAL SYMBOLS & ABBREVIATIONS ASSOCIATED WITH TEMPERATURE CONTROLS ARE IDENTIFIED ON TC DRAWINGS.

MECHANICAL SYMBOL LIST

PIPING SYMBOLS

SYMBOL	DESCRIPTION
AV	AIR VENT - AUTOMATIC
MV	AIR VENT - MANUAL
BFP	BACKFLOW PREVENTER
	CATCH BASIN
	CIRCULATING PUMP
CO	CLEAN OUT - IN FLOOR
CO	CLEAN OUT - FLANGE
	DIRECTION OF FLOW
	DIRECTION OF PITCH - DOWN
	FINNED TUBE RADIATION
	FIRE PROTECTION - SIAMESE CONNECTION - FREE STANDING
	FIRE PROTECTION - SIAMESE CONNECTION - WALL MOUNTED
	FIRE PROTECTION - SPRINKLER HEAD, CONCEALED
	FIRE PROTECTION - SPRINKLER HEAD, PENDANT
	FIRE PROTECTION - SPRINKLER HEAD, UPRIGHT
	FIRE PROTECTION - SPRINKLER HEAD, SIDEWALL
	FLOOR DRAIN
	FLOOR DRAIN - ELEVATION
	FLOOR DRAIN - FUNNEL
	FLOOR DRAIN - FUNNEL, ELEVATION
	FLOW MEASURING DEVICE (FOR TEST AND BALANCING)
FS	FLOW SWITCH
FM	FLOW METER
HB	HOSE BIBB
MH	MANHOLE
	OPEN SITE DRAIN
	PIPE - ANCHOR
	PIPE - CAP OR PLUG
	PIPE - ELBOW DOWN
	PIPE - ELBOW UP
	PIPE - EXPANSION JOINT OR COMPENSATOR
	PIPE - FLANGE
	PIPE - HOSE AND BRAID FLEXIBLE CONNECTION
	PIPE - RUBBER FLEXIBLE CONNECTION
	PIPE - GUIDE
	PIPE - TEE DOWN
	PIPE - TEE UP
	PIPE - UNION
P/T	PRESSURE AND TEMPERATURE TEST PLUG
	PRESSURE GAUGE AND COCK
	REDUCER - CONCENTRIC
	REDUCER - ECCENTRIC
	ROOF/OVERFLOW DRAIN
	STEAM TRAP - FLOAT AND THERMOSTATIC
	STRAINER
	STRAINER WITH VALVE AND BLOW-OFF
	THERMOMETER
	TRAP
	VALVE - ANGLE
	VALVE - BALL
0.5	VALVE - BALANCE (i.e. BALANCE VALVE TO 0.5 GPM)
0.5	VALVE - COMBINATION BALANCE & FLOW MEASURING (i.e. BALANCE VALVE TO 0.5 GPM)
	VALVE - BUTTERFLY
	VALVE - CHECK
	VALVE - SPRING CHECK
	VALVE - GAS (MANUAL)
	VALVE - GLOBE
	VALVE - ISOLATION
	VALVE - NEEDLE
	VALVE - OS&Y
	VALVE - PLUG
	VALVE - PRESSURE REGULATING
	VALVE - PRESSURE REDUCING
	VALVE - PRESSURE RELIEF
	VALVE - PRESSURE & TEMPERATURE RELIEF
VTR	VENT THROUGH ROOF
WH	WALL HYDRANT

DOUBLE LINE PIPING SYMBOLS

SYMBOL	DESCRIPTION
	FLANGE
	FLEX CONNECTION
	STRAINER - BASKET
	STRAINER - Y TYPE
	VALVE - 2 WAY CONTROL
	VALVE - 3 WAY CONTROL
	VALVE - BUTTERFLY
	VALVE - CHECK
	VALVE - DETECTOR CHECK
	VALVE - OS&Y HORIZONTAL STEM
	VALVE - OS&Y VERTICAL STEM

DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
TU-101	AIR TERMINAL UNIT
TU-101	AIR TERMINAL UNIT WITH HEATING COIL
VTU-101	VENTURI AIR TERMINAL UNIT
VTU-101	VENTURI AIR TERMINAL UNIT WITH HEATING COIL
	DAMPER - HORIZONTAL FIRE (EXISTING, NEW)
	DAMPER - HORIZONTAL FIRE / SMOKE (EXISTING, NEW)
	DAMPER - SMOKE (EXISTING, NEW)
	DAMPER - VERTICAL FIRE (EXISTING, NEW)
	DAMPER - VERTICAL FIRE / SMOKE (EXISTING, NEW)
BDD	DAMPER - BACK DRAFT
M	DAMPER - MOTORIZED
	DAMPER - VOLUME (MANUALLY ADJUSTABLE)
	DIFFUSER - BLANK OFF
	DIFFUSER - LINEAR SLOT
	DIFFUSER - SQUARE OR RECTANGULAR
	DUCT CROSS SECTION - SUPPLY
	DUCT CROSS SECTION - RETURN
	DUCT CROSS SECTION - EXHAUST
	DUCT - FLEXIBLE CONNECTION
	DUCT - FLEXIBLE DUCT
	DUCT TAKE-OFF - ROUND CONICAL
	DUCT TAKE-OFF - RECTANGULAR WITH SHOE TAP
	ELBOW - RECTANGULAR WITH TURNING VANES
	ELBOW - RECTANGULAR/ ROUND SMOOTH RADIUS
	ELBOW DOWN - RECTANGULAR
	ELBOW DOWN - ROUND
	ELBOW UP - RECTANGULAR
	ELBOW UP - ROUND
	FAN - AXIAL
	FAN - CENTRIFUGAL (ELEVATION)
	HEATING COIL
	INCLINED DROP IN DIRECTION OF AIRFLOW
	INCLINED RISE IN DIRECTION OF AIRFLOW
	INTAKE OR RELIEF HOOD
	REGISTER - RETURN OR EXHAUST
	REGISTER - RETURN WITH BOOT
	REGISTER - TRANSFER GRILLE
	ROOF EXHAUST FAN
	TRANSITION - CONCENTRIC
	TRANSITION - ECCENTRIC
	UNIT HEATER - HORIZONTAL THROW
	UNIT HEATER - VERTICAL THROW

DOUBLE LINE DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
	DUCT TAKE-OFF - RECTANGULAR WITH SHOE TAP
	DUCT TAKE-OFF - ROUND CONICAL
	ELBOW - RECTANGULAR WITH TURNING VANES
	ELBOW - RECTANGULAR SHORT RADIUS WITH SPLITTER VANES
	ELBOW - ROUND
	ELBOW - RECTANGULAR SMOOTH RADIUS
	ELBOW DOWN - RECTANGULAR
	ELBOW DOWN - ROUND
	ELBOW UP - RECTANGULAR
	ELBOW UP - ROUND
	HEATING COIL
	INCLINED DROP IN DIRECTION OF AIRFLOW
	INCLINED RISE IN DIRECTION OF AIRFLOW
	TRANSITION - CONCENTRIC
	TRANSITION -ECCENTRIC

PLUMBING

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MECHANICAL DRAWING INDEX

STANDARD METHODS OF NOTATION

S-1 / 10a / 350-4 — SUPPLY DIFFUSER WITH SCHEDULE TAG "1", 10" DIAMETER NECK SIZE, 350 CFM TYPICAL FOR 4

R-1 / 22x22 / 640 — RETURN REGISTER WITH SCHEDULE TAG "1", 22"x 22" NECK SIZE, 640 CFM TYPICAL FOR 2, EXHAUST REGISTER E DESIGNATION SIMILAR.

TU-101 — AIR TERMINAL UNIT WITH HEATING COIL NO. 101 WITH SERVICE CLEARANCE SHOWN

VTU-101 — VENTURI AIR TERMINAL WITH HEATING COIL NO. 101 WITH SERVICE CLEARANCE SHOWN

(2)WC-1 — PLUMBING FIXTURE UNIT IDENTIFICATION TAG, WATER CLOSET TYPE "1", TYPICAL FOR 2

8 — PIPE DIAMETER NOTATION, ALL SIZES IN INCHES

8a — DUCT SIZE NOTATION, ALL SIZES IN INCHES

22x10 / 18x14e — OVAL DUCT, RECTANGULAR DUCT

1 — CONSTRUCTION KEY NOTE (NUMBER) OR DEMOLITION KEY NOTE (LETTER)

EF-1 — EQUIPMENT DESIGNATION, (i.e. EXHAUST FAN NUMBER 1)

HW-1 — PIPING RISER DESIGNATION, (i.e. HOT WATER RISER NUMBER 1)

NEW SYSTEM COMPONENT

EXISTING SYSTEM COMPONENT TO REMAIN

POINT OF NEW CONNECTION SYMBOL

1 / M5.1 — SECTION OR PLAN NUMBER; SHEET WHERE SECTION IS DRAWN

AREA OF ENLARGEMENT

1 / M5.1 — PLAN NUMBER; SHEET WHERE ENLARGED PLAN IS DRAWN

1 / M5.1 — SECTION OR PLAN NUMBER

SECTION OR ENLARGED PLAN
SCALE: 1/8" = 1' - 0"

SHEET WHERE SECTION IS CUT OR ENLARGED PLAN IS REFERENCED

SHEET M1.0 / SHEET M1.1 — MATCHLINE

HEAVY LINE WEIGHT INDICATES NEW WORK

LIGHT LINE WEIGHT INDICATES EXISTING EQUIPMENT OR REFERENCED INFORMATION

GRAY LINE INDICATES BACKGROUND INFORMATION

DASHED LINES INDICATE PIPING ROUTED BELOW SLAB OR GRADE

HATCH MARKS INDICATE EQUIPMENT OR MATERIALS TO BE DISCONNECTED AND REMOVED.

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.

MECHANICAL

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STATE OF MICHIGAN
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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
MECHANICAL STANDARDS AND DRAWING INDEX

PROJECT NUMBER
2021094

SHEET NUMBER
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SEPTEMBER 6, 2023

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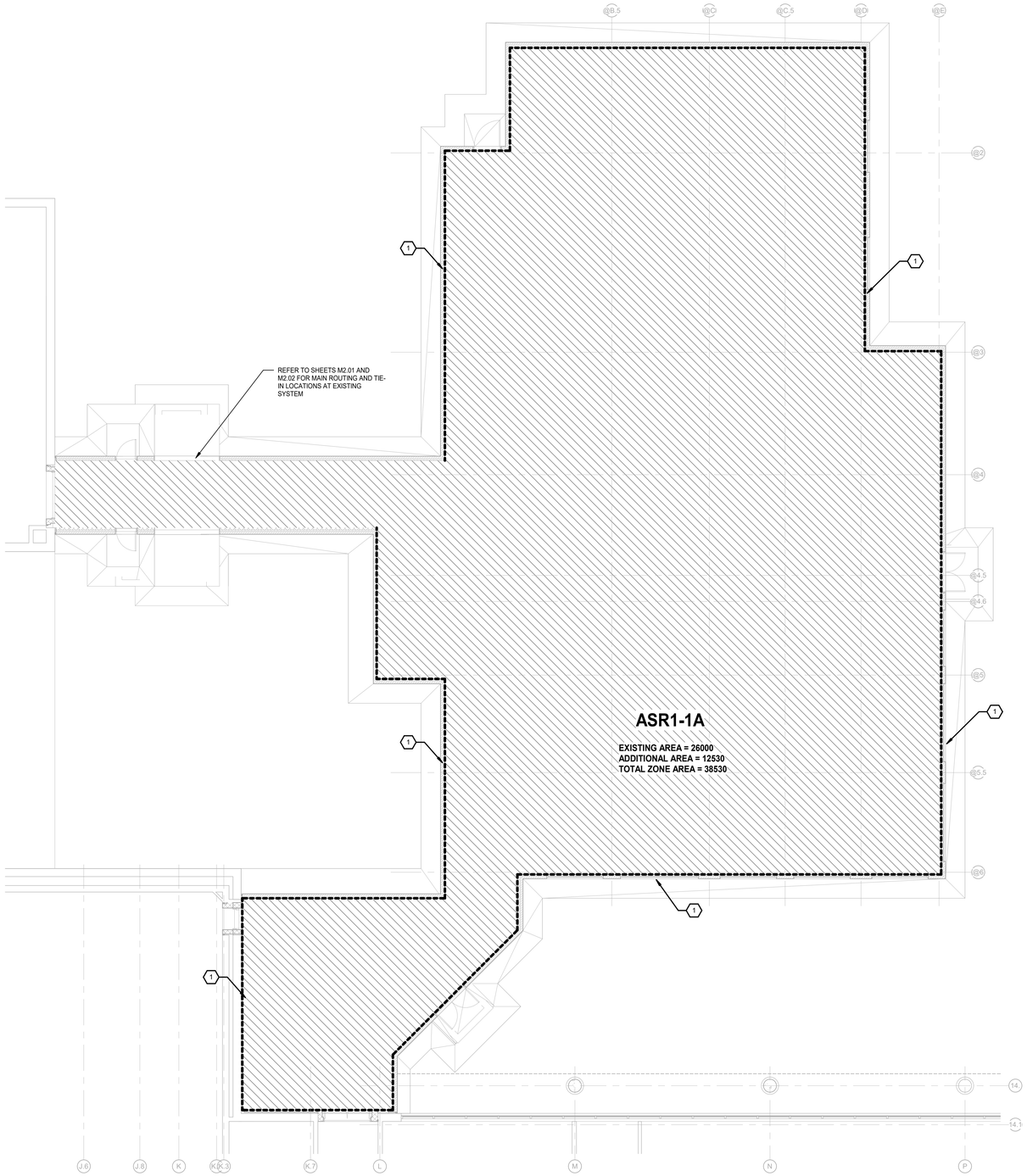
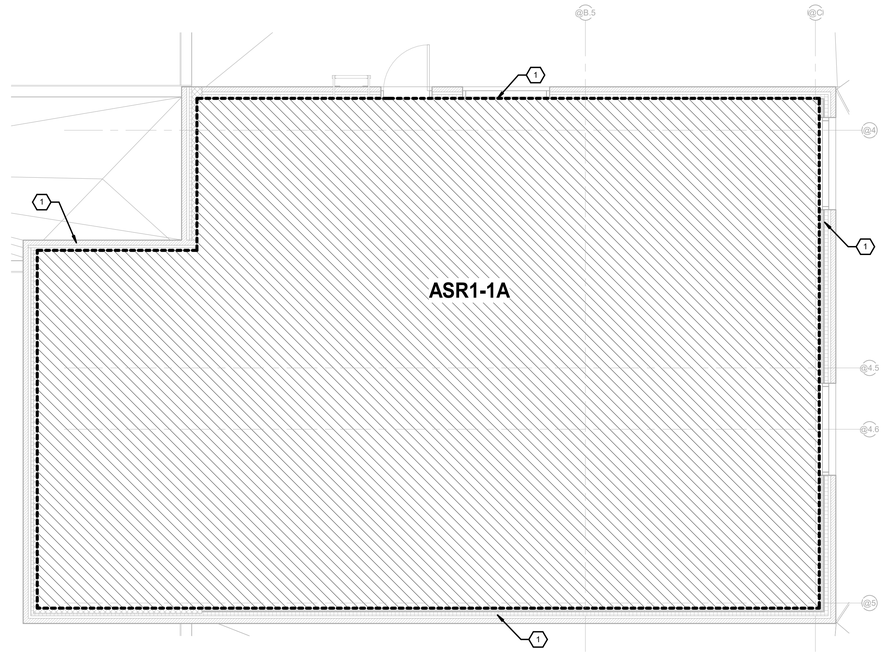
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



FIRST FLOOR FIRE PROTECTION ZONING PLAN
SCALE: 1/8" = 1'-0"



PENTHOUSE FIRE PROTECTION ZONING PLAN
SCALE: 1/4" = 1'-0"

FIRE PROTECTION GENERAL NOTES:

1 THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.

2 INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.

3 NO SPRINKLER PIPING SHALL BE ROUTED THROUGH ELECTRICAL EQUIPMENT ROOMS, TELECOMMUNICATION EQUIPMENT ROOMS, ELEVATOR EQUIPMENT ROOMS OR SIMILAR ROOMS. ONLY SPRINKLER PIPING SERVING SPRINKLERS HEADS IN THOSE ROOMS SHALL BE ALLOWED.

4 PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.

5 MINIMUM RUN-OUT PIPE SIZE TO SPRINKLER HEADS SHALL BE 1".

6 PROVIDE AN AUTOMATIC WET PIPE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13 <<<LIGHT HAZARD>>> CLASSIFICATION. HYDRAULIC CALCULATIONS SHALL BE BASED ON DENSITY OF <<<0.10>>> GPM/SQ FT. OVER THE MOST REMOTE <<<1500>>> SQ. FT.

7 ACCORDING TO THE MOST RECENT FLOW TEST INFORMATION, THE STATIC PRESSURE AVAILABLE AT THE CITY WATER MAIN AT THE STREET IS <<<XX>>> PSIG. RESIDUAL PRESSURE WITH <<<XXX>>> GPM FLOWING IS <<<XX>>> PSIG. CONTRACTOR SHALL MAKE HIS OWN PRESSURE AND FLOW TEST PRIOR TO SYSTEM DESIGN.

8 FIRE PROTECTION WATER SERVICE ENTRANCE PIPING SHALL BE BURIED WITH DEPTH OF COVER OVER TOP OF PIPE OF AT LEAST <<<72">>>, OR WITH TOP OF PIPE AT LEAST 12" BELOW LEVEL OF MAXIMUM FROST PENETRATION, OR AS REQUIRED BY AUTHORITIES HAVING JURISDICTION, WHICHEVER IS DEEPEST.

CONSTRUCTION KEY NOTES:

1 PROVIDE FULLY FUNCTIONING SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA13, OWNERS INSURING AGENCY AND AUTHORITY HAVING JURISDICTION IN AREA INDICATED.

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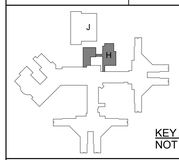

KEY PLAN
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRE PROTECTION ZONING PLAN

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PLUMBING

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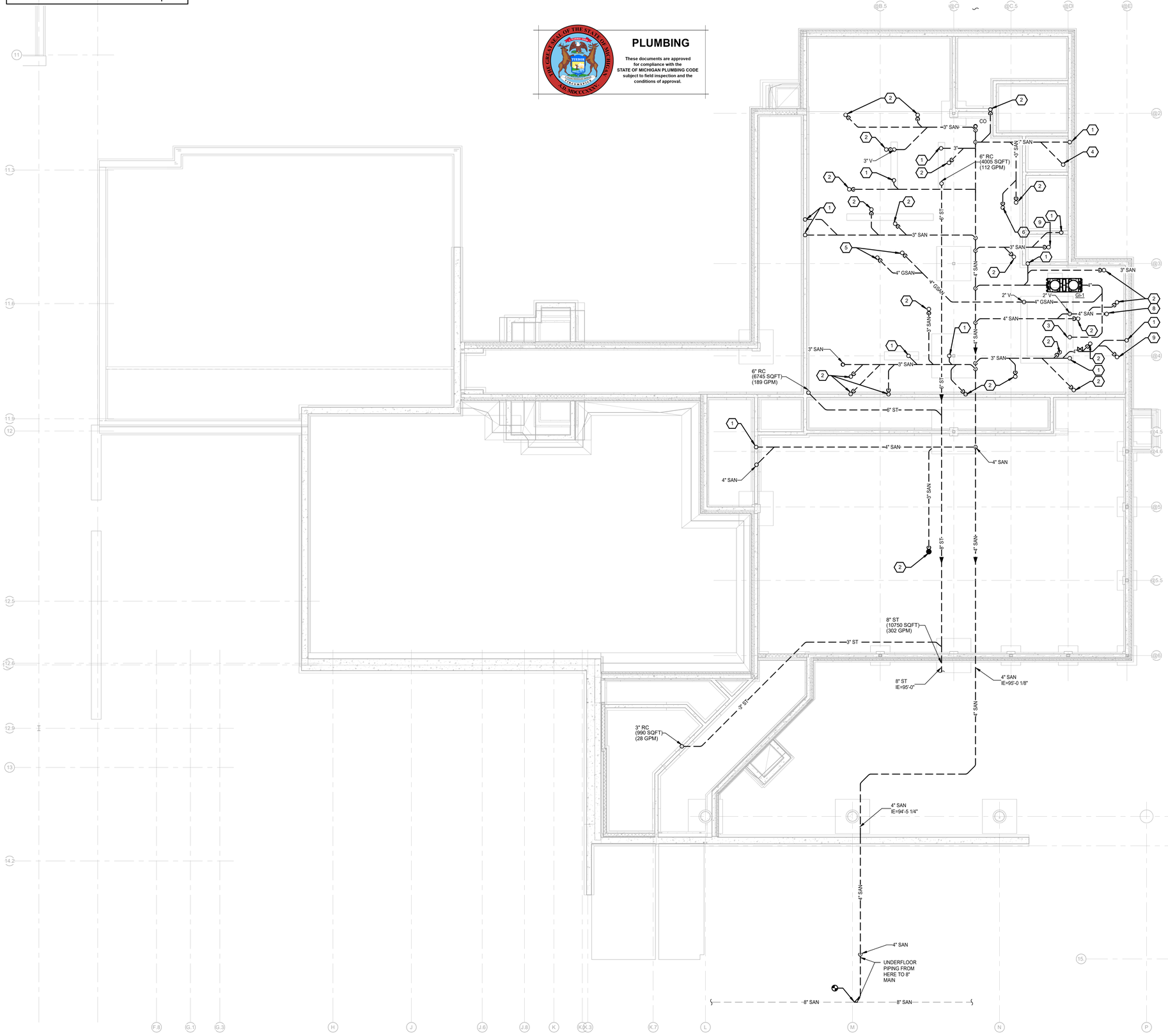

UNDERGROUND PLUMBING PLAN
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES:

1 THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.

2 INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.

3 PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.

4 COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

5 PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

6 REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.

7 HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS OTHERWISE NOTED.

8 PLUMBING VENT PIPING THROUGH ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF PARAPET.

9 PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.

10 MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".

CONSTRUCTION KEY NOTES:

1 3 SAN TO LAV/SINK.

2 3 SAN TO FLOOR DRAIN/SINK.

3 3 GSAN TO SINK.

4 4 SAN TO WC.

5 4 GSAN TO FLOOR TROUGH.

6 3 SAN TO FLOOR TROUGH.

7 1/2 CW TO DRAIN COOLER.

8 4 SAN TO FLOOR TROUGH.

9 4 SAN TO FLOOR DRAIN/SINK.

10 ROUTE IN CEILING SPACE OF GYM. ROUTE ALONG SIDE NEW MECHANICAL PIPING. COORIDINATE FINAL ROUTING WITH MECHANICAL TRADES.

11 PIPING IN THIS AREA ROUTED WITHIN SECOND FLOOR CEILING SPACE.

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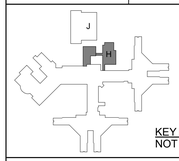

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M2.00

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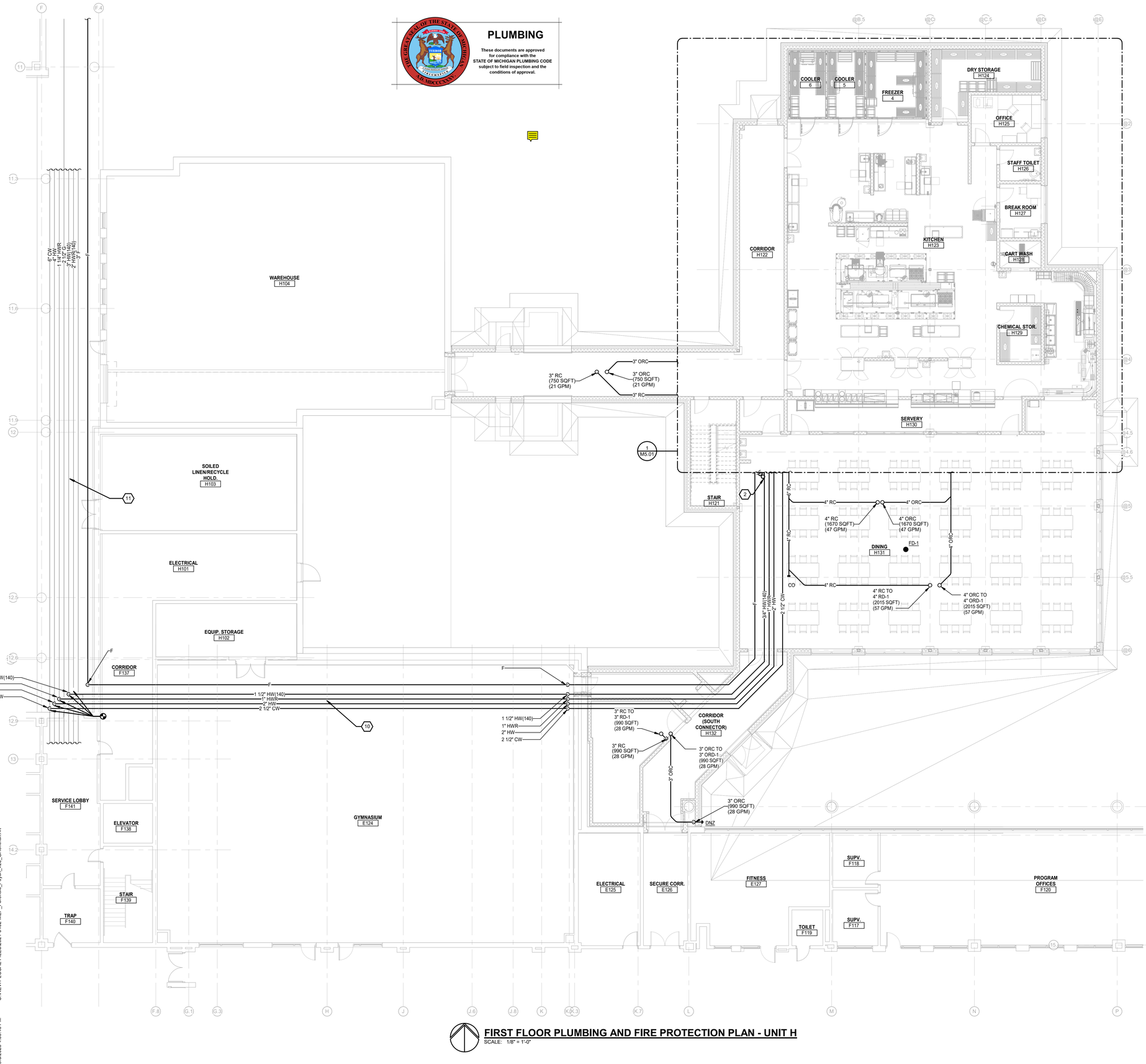

FIRST FLOOR PLUMBING AND FIRE PROTECTION PLAN - UNIT H

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

FIRE PROTECTION GENERAL NOTES:

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7 ACCORDING TO THE MOST RECENT FLOW TEST INFORMATION, THE STATIC PRESSURE AVAILABLE AT THE CITY WATER MAIN AT THE STREET IS <<<XX>>> PSIG. RESIDUAL PRESSURE WITH <<<XXX>>> GPM FLOWING IS <<<XX>>> PSIG. CONTRACTOR SHALL MAKE HIS OWN PRESSURE AND FLOW TEST PRIOR TO SYSTEM DESIGN.

8 FIRE PROTECTION WATER SERVICE ENTRANCE PIPING SHALL BE BURIED WITH DEPTH OF COVER OVER TOP OF PIPE OF AT LEAST <<<72">>>, OR WITH TOP OF PIPE AT LEAST 12" BELOW LEVEL OF MAXIMUM FROST PENETRATION, OR AS REQUIRED BY AUTHORITIES HAVING JURISDICTION, WHICHEVER IS DEEPEST.

PLUMBING GENERAL NOTES:

1 THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.

2 INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.

3 PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.

4 COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

5 PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

6 REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.

7 HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS OTHERWISE NOTED.

8 PLUMBING VENT PIPING THROUGH ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF PARAPET.

9 PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.

10 MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".

CONSTRUCTION KEY NOTES:

1 3 SAN TO LAV/SINK.

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3 3 GSAN TO SINK.

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10 ROUTE IN CEILING SPACE OF GYM. ROUTE ALONG SIDE NEW MECHANICAL PIPING. COORDINATE FINAL ROUTING WITH MECHANICAL TRADES.

11 PIPING IN THIS AREA ROUTED WITHIN SECOND FLOOR CEILING SPACE.

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FILE NO.
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR PLUMBING AND FIRE PROTECTION PLAN - UNIT H

PROJECT NUMBER
2021094

SHEET NUMBER
M2.01

PROJECT DATE
SEPTEMBER 6, 2023

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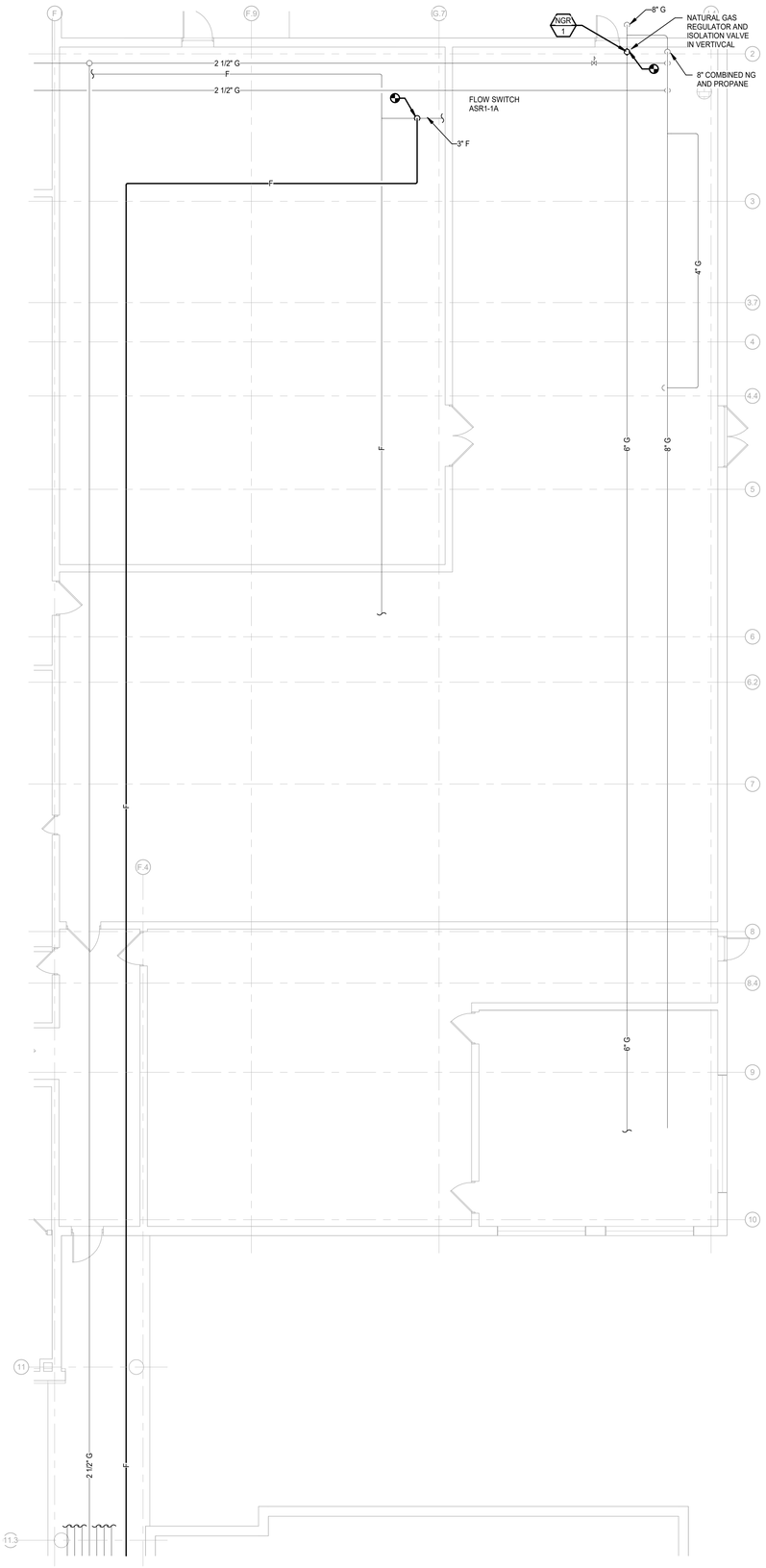

FIRST FLOOR PLUMBING AND FIRE PROTECTION PLAN - UNIT J
SCALE: 1/8" = 1'-0"

FIRE PROTECTION GENERAL NOTES:

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3 NO SPRINKLER PIPING SHALL BE ROUTED THROUGH ELECTRICAL EQUIPMENT ROOMS, TELECOMMUNICATION EQUIPMENT ROOMS, ELEVATOR EQUIPMENT ROOMS OR SIMILAR ROOMS. ONLY SPRINKLER PIPING SERVING SPRINKLERS HEADS IN THOSE ROOMS SHALL BE ALLOWED.

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MECHANICAL

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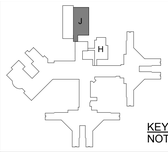

KEY PLAN
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SHEET TITLE
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PBA Project No.: 2021-0402

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M2.02

PROJECT DATE
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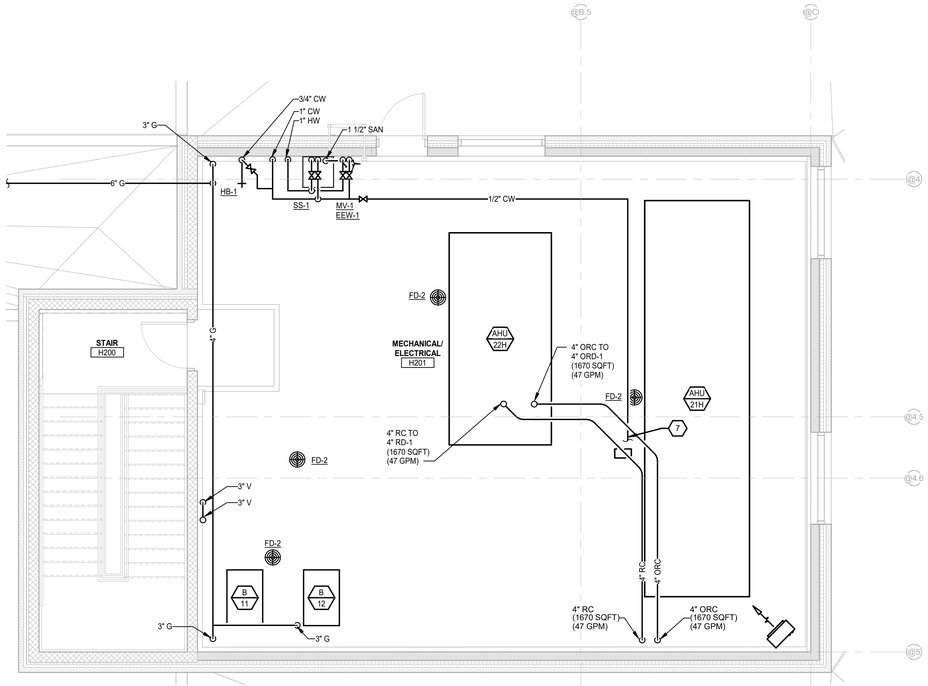

PENTHOUSE PLUMBING PLAN
SCALE: 1/4" = 1'-0"

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PLUMBING
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MECHANICAL
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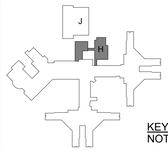

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PROJECT TITLE
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CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
PENTHOUSE PLUMBIN PLAN

Peter Basso Associates Inc
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PBA Project No. 2021-0402

PROJECT NUMBER
2021094

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M2.03

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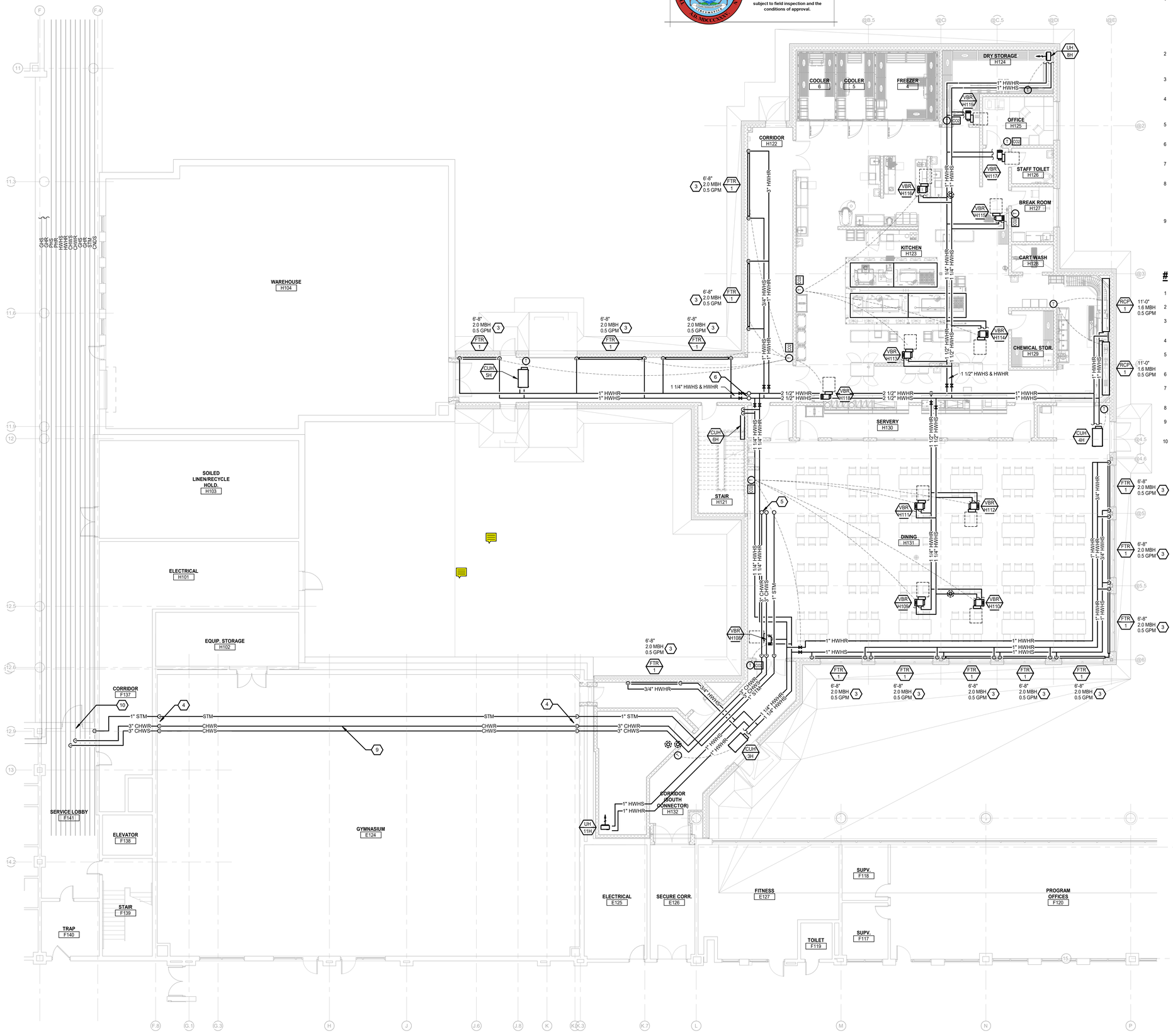

HVAC PIPING GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING AND DUCTWORK SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. SUBMIT PROPOSED METHODS OF ANCHORING AND GUIDING PIPING SYSTEMS TO STRUCTURAL ENGINEER FOR APPROVAL.
7. COORDINATE LOCATION OF DUCT-MOUNTED HYDRONIC DEVICES WITH SHEET METAL TRADES.
8. BRANCH PIPING SERVING TERMINAL UNIT HEATING COILS OR RADIANT CEILING PANELS SHALL BE 3/4" UNLESS OTHERWISE NOTED. BRANCH PIPING SERVING MORE THAN ONE TERMINAL UNIT HEATING COIL SHALL BE 1" UNLESS OTHERWISE NOTED. BRANCH PIPING SERVING HOT WATER UNIT HEATERS AND CABINET UNIT HEATERS SHALL BE 1" UNLESS OTHERWISE NOTED.
9. REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

1. EMERGENCY BOILER SHUT OFF
2. GLYCOL FILL STATION
3. LENGTHS SHOWN ARE ACTIVE ELEMENT LENGTH. CONTRACTOR TO SUPPLY FULL LENGTH COVER.
4. ROUTE CHWS, CHWR, AND STEAM UP TO CEILING SPACE AND ROUTE THRUOGH JOIST SPACE.
5. 3" CHWS, 3" CHWR, 1" STEAM UP TO PENTHOUSE. REFER TO SHEET M3.03 FOR CONTINUATION.
6. 3" HWHS AND HWHR UP TO PENTHOUSE. REFER TO SHEET M3.03 FOR CONTINUATION.
7. 3" CHWS, 3" CHWR, 1" STEAM DOWN TO FIRST FLOOR. REFER TO SHEET M3.01 FOR CONTINUATION.
8. 3" HWHS AND HWHR DOWN TO FIRST FLOOR. REFER TO SHEET M3.01 FOR CONTINUATION.
9. ROUTE MECHANICAL PIPING IN CEILING SPACE OF GYM. COORDINATE FINAL ROUTING WITH MECHANICAL TRADES.
10. EXISTING LINES THAT NEW MECHANICAL PIPING WILL TIE INTO ARE LOCATED ON SECOND FLOOR.

FIRST FLOOR HVAC PIPING PLAN - UNIT H

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

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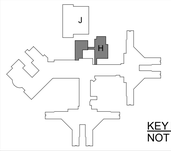

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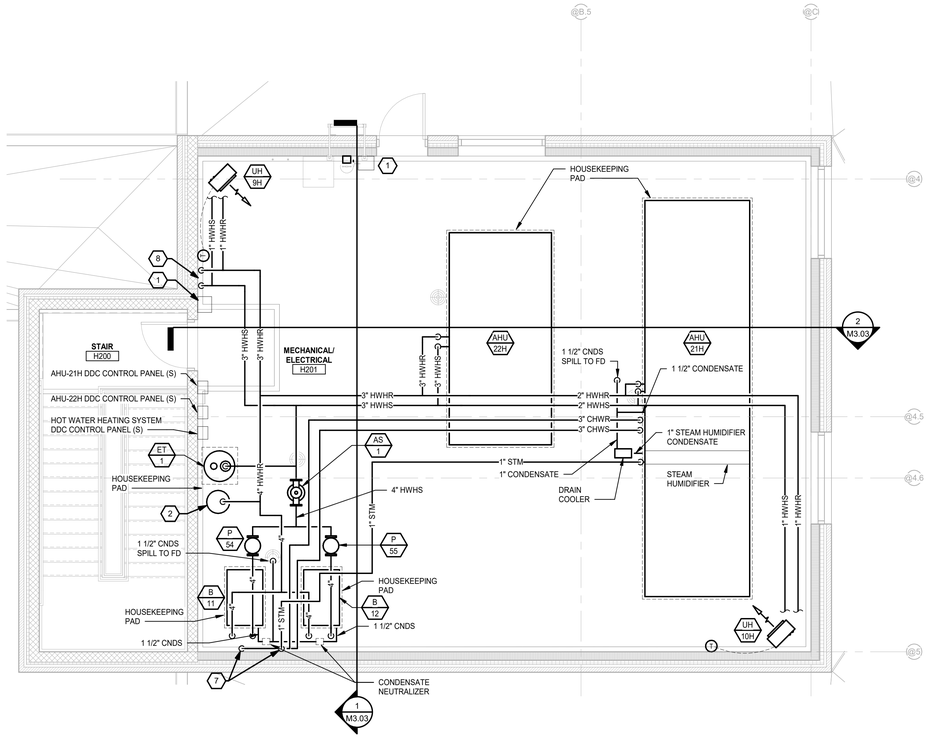
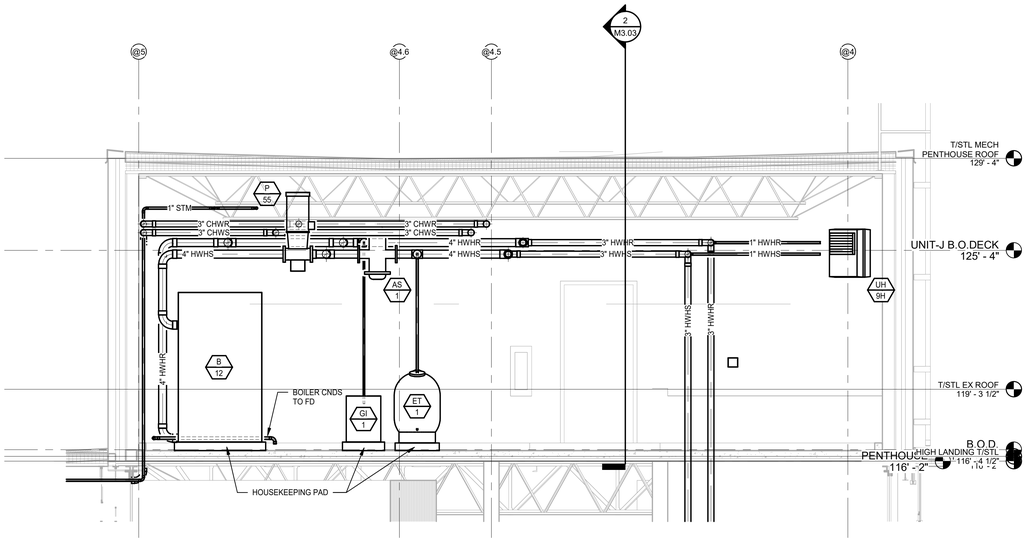


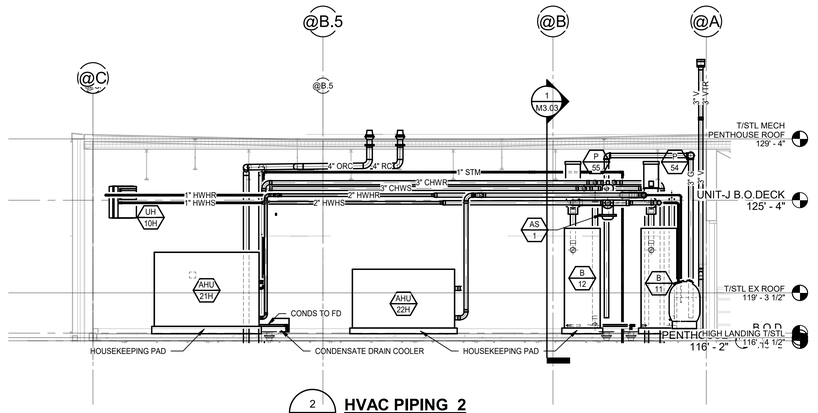
PENTHOUSE HVAC PIPING PLAN

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



1 M3.03 **HVAC PIPING 1**

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



2 M3.03 **HVAC PIPING 2**

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

HVAC PIPING GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, SHEET METAL, OTHER PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING AND DUCTWORK SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. SUBMIT PROPOSED METHODS OF ANCHORING AND GUIDING PIPING SYSTEMS TO STRUCTURAL ENGINEER FOR APPROVAL.
7. COORDINATE LOCATION OF DUCT-MOUNTED HYDRONIC DEVICES WITH SHEET METAL TRADES.
8. BRANCH PIPING SERVING TERMINAL UNIT HEATING COILS OR RADIANT CEILING PANELS SHALL BE 3/4" UNLESS OTHERWISE NOTED. BRANCH PIPING SERVING MORE THAN ONE TERMINAL UNIT HEATING COIL SHALL BE 1" UNLESS OTHERWISE NOTED. BRANCH PIPING SERVING HOT WATER UNIT HEATERS AND CABINET UNIT HEATERS SHALL BE 1" UNLESS OTHERWISE NOTED.
9. REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

1. EMERGENCY BOILER SHUT OFF
2. GLYCOL FILL STATION
3. LENGTHS SHOWN ARE ACTIVE ELEMENT LENGTH. CONTRACTOR TO SUPPLY FULL LENGTH COVER.
4. ROUTE CHWS, CHWR, AND STEAM UP TO CEILING SPACE AND ROUTE THRUOGH JOIST SPACE.
5. 3" CHWS, 3" CHWR, 1" STEAM UP TO PENTHOUSE. REFER TO SHEET M3.03 FOR CONTINUATION.
6. 3" HWHS AND HWHR UP TO PENTHOUSE. REFER TO SHEET M3.03 FOR CONTINUATION.
7. 3" CHWS, 3" CHWR, 1" STEAM DOWN TO FIRST FLOOR. REFER TO SHEET M3.01 FOR CONTINUATION.
8. 3" HWHS AND HWHR DOWN TO FIRST FLOOR. REFER TO SHEET M3.01 FOR CONTINUATION.
9. ROUTE MECHANICAL PIPING IN CEILING SPACE OF GYM. COORDINATE FINAL ROUTING WITH MECHANICAL TRADES.
10. EXISTING LINES THAT NEW MECHANICAL PIPING WILL TIE INTO ARE LOCATED ON SECOND FLOOR.

MECHANICAL

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FILE NO.
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KEY PLAN
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PROJECT TITLE

491/20167.SDW - PHASE 500:

CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN

SALINE, MICHIGAN

SHEET TITLE

PENTHOUSE HVAC PIPING PLAN

PROJECT NUMBER
2021094

SHEET NUMBER
M3.03

PROJECT DATE
SEPTEMBER 6, 2023

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WEK

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PBA Project No.: 2021-0402

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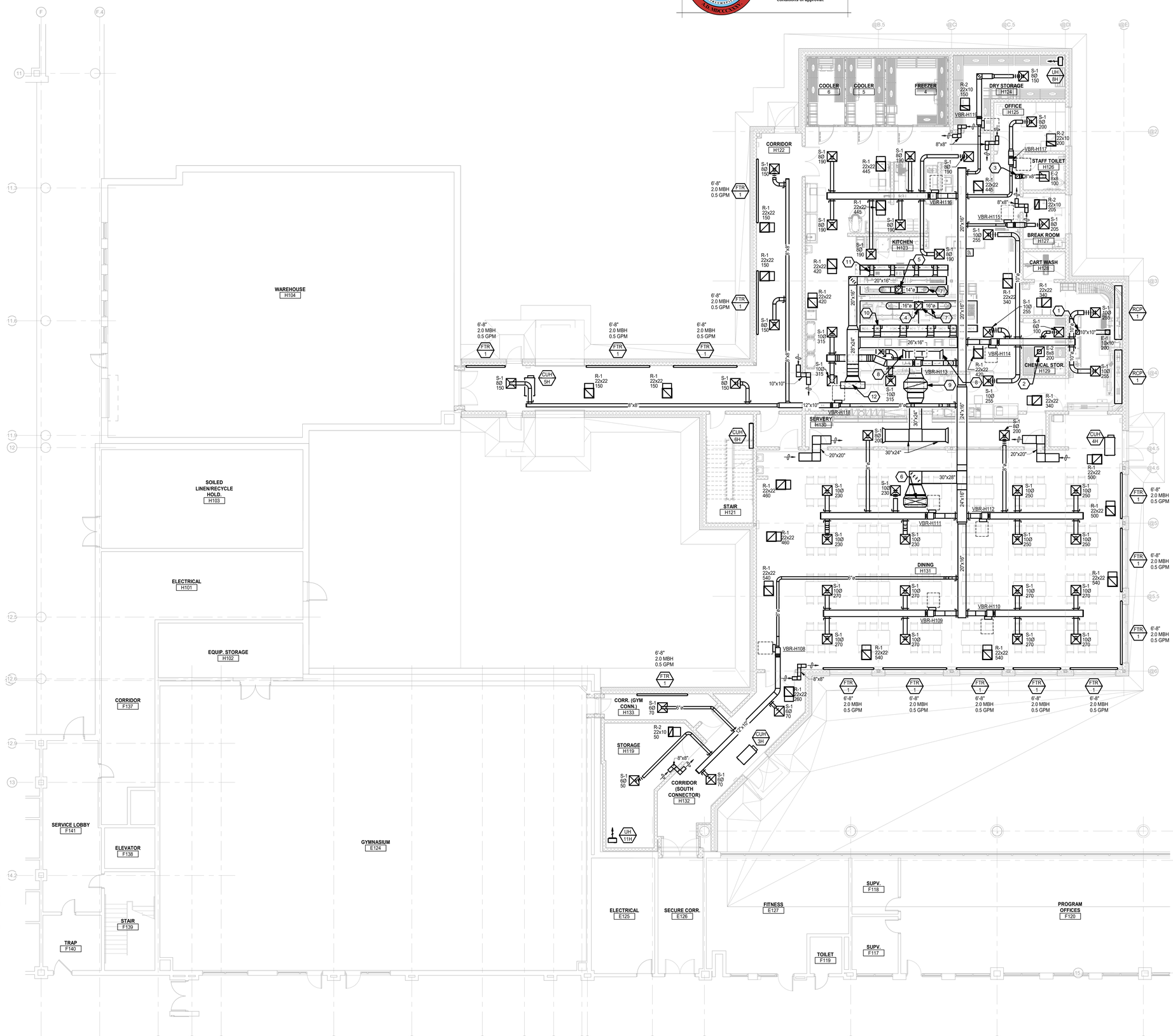

FIRST FLOOR SHEET METAL PLAN - UNIT H

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

SHEET METAL GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
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4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.
7. REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

1. 10x10 EXHAUST DUCT UP TO EF-8H
2. 10x10 EXHAUST DUCT UP TO EF-7H
3. 10x10 EXHAUST DUCT UP TO EF-6H
4. 20x20 DUCT UP TO EF-10H
5. 18x18 EXHAUST UP TO EF-9H
6. 58x16 UP TO AHU-21H. REFER TO SHEET M4.03 FOR CONTINUATION.
7. REFER TO DUCT SYSTEM APPLICATION SCHEDULE FOR DUCT TYPE.
8. 30"x30" RETURN DUCT WITH BELLMOUTH AT END.
9. 16"x58" RETURN AIR DUCT UP TO AHU-21H. REFER TO SHEET M4.03 FOR CONTINUATION.
10. 16"x16" MAKEUP AIR TO EXHAUST HOODS. (TYP. x 4)
11. 10"x12" MAKEUP AIR TO EXHAUST HOODS. (TYP. x 4)
12. 60"X16" UP TO AHU-22H. REFER TO SHEET M4.03 FOR CONTINUATION.
13. RECOMMENDED LOCATION FOR PIPE PORTAL.
14. 60"x16" SUPPLY AIR DUCT DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.
15. 58"x16" RETURN AIR DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.
16. 58"x16" SUPPLY AIR DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.
17. EVACUATE SYSTEM. RELOCATE EXISTING CONDENSING UNITS TO LOCATION SHOWN. PROVIDE NEW REFRIGERANT LINES. RECHARGE AND RECOMMISION UNITS.

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR SHEET METAL PLAN - UNIT H

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PROJECT NUMBER
2021094

SHEET NUMBER
M4.01

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SEPTEMBER 6, 2023

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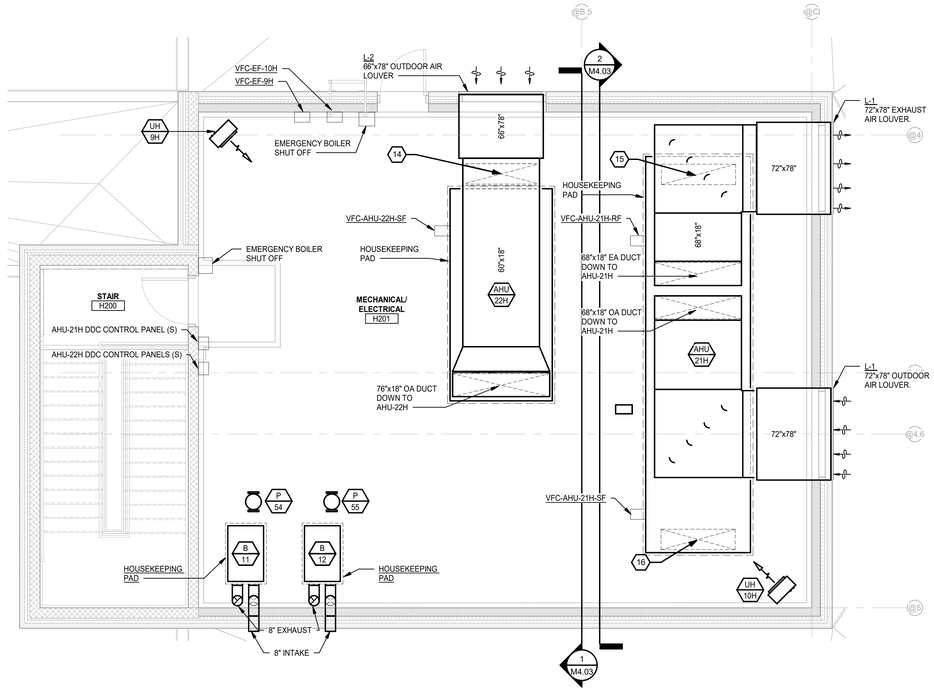

PENTHOUSE SHEET METAL PLAN
SCALE: 1/4" = 1'-0"

SHEET METAL GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
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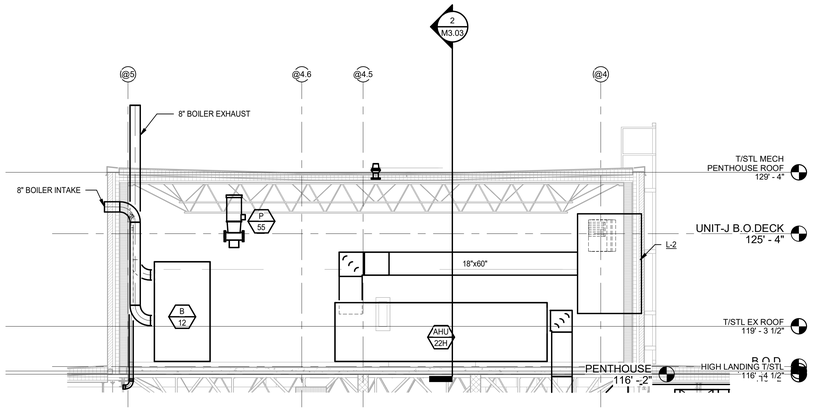
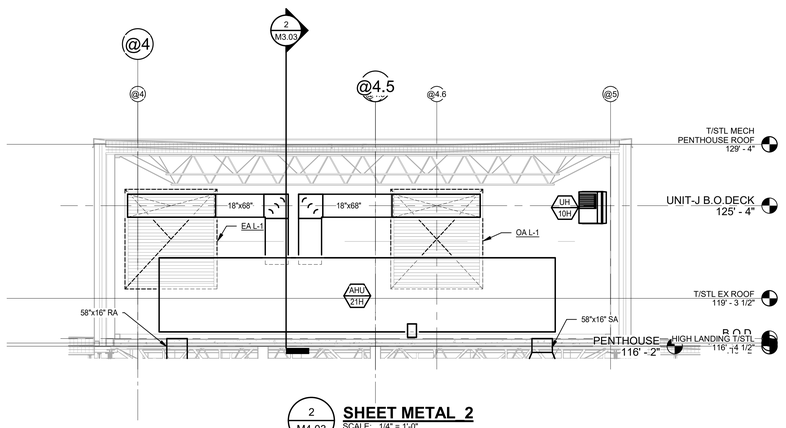
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.
7. REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

1. 10x10 EXHAUST DUCT UP TO EF-8H
2. 10x10 EXHAUST DUCT UP TO EF-7H
3. 10x10 EXHAUST DUCT UP TO EF-6H
4. 20x20 DUCT UP TO EF-10H
5. 18x18 EXHAUST UP TO EF-9H
6. 58x16 UP TO AHU-21H. REFER TO SHEET M4.03 FOR CONTINUATION.
7. REFER TO DUCT SYSTEM APPLICATION SCHEDULE FOR DUCT TYPE.
8. 30"x30" RETURN DUCT WITH BELLMOUTH AT END.
9. 16"x58" RETURN AIR DUCT UP TO AHU-21H. REFER TO SHEET M4.03 FOR CONTINUATION.
10. 16"x16" MAKEUP AIR TO EXHAUST HOODS. (TYP. x 4)
11. 10"x12" MAKEUP AIR TO EXHAUST HOODS. (TYP. x 4)
12. 60"X16" UP TO AHU-22H. REFER TO SHEET M4.03 FOR CONTINUATION.
13. RECOMMENDED LOCATION FOR PIPE PORTAL.
14. 60"x16" SUPPLY AIR DUCT DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.
15. 58"x16" RETURN AIR DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.
16. 58"x16" SUPPLY AIR DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.
17. EVACUATE SYSTEM. RELOCATE EXISTING CONDENSING UNITS TO LOCATION SHOWN. PROVIDE NEW REFRIGERANT LINES. RECHARGE AND RECOMMISION UNITS.



1 M4.03 SHEET METAL 1
SCALE: 1/4" = 1'-0"



2 M4.03 SHEET METAL 2
SCALE: 1/4" = 1'-0"

MECHANICAL

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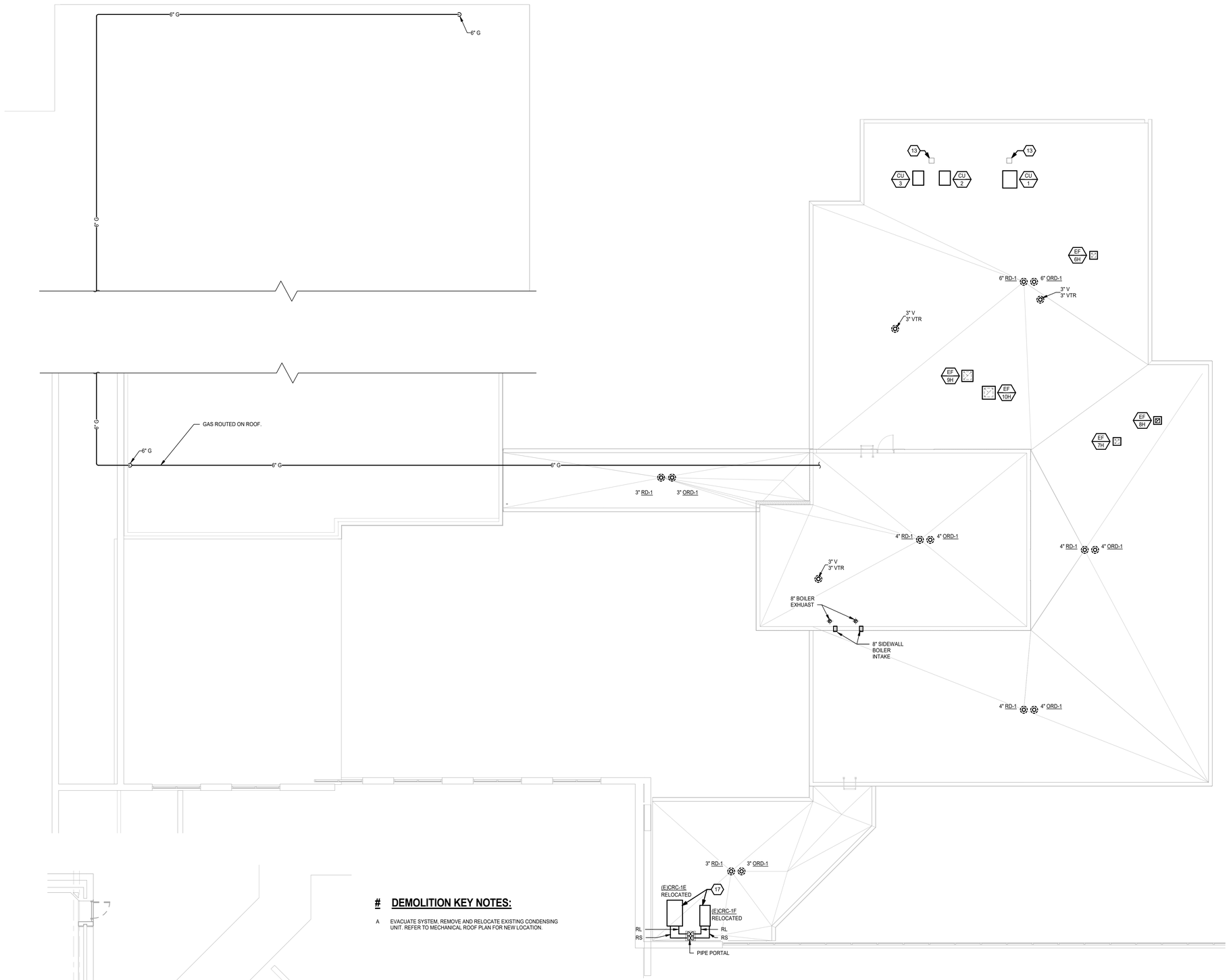
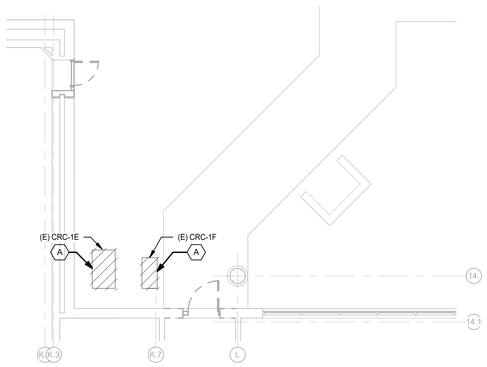


MECHANICAL ROOF PLAN
SCALE: 1/8" = 1'-0"



DEMOLITION KEY NOTES:

A EVACUATE SYSTEM. REMOVE AND RELOCATE EXISTING CONDENSING UNIT. REFER TO MECHANICAL ROOF PLAN FOR NEW LOCATION.

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

PLUMBING GENERAL NOTES:

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3 PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.

4 COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

5 PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

6 REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.

7 HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS OTHERWISE NOTED.

8 PLUMBING VENT PIPING THROUGH ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF PARAPET.

9 PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.

10 MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".

SHEET METAL GENERAL NOTES:

1 THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.

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2 10x10 EXHAUST DUCT UP TO EF-7H

3 10x10 EXHAUST DUCT UP TO EF-6H

4 20x20 DUCT UP TO EF-10H

5 18x18 EXHAUST UP TO EF-9H

6 58x16 UP TO AHU-21H. REFER TO SHEET M4.03 FOR CONTINUATION.

7 REFER TO DUCT SYSTEM APPLICATION SCHEDULE FOR DUCT TYPE.

8 30"x30" RETURN DUCT WITH BELLMOUTH AT END.

9 16"x58" RETURN AIR DUCT UP TO AHU-21H. REFER TO SHEET M4.03 FOR CONTINUATION.

10 16"x16" MAKEUP AIR TO EXHAUST HOODS. (TYP. x 4)

11 10"x12" MAKEUP AIR TO EXHAUST HOODS. (TYP. x 4)

12 60"X16" UP TO AHU-22H. REFER TO SHEET M4.03 FOR CONTINUATION.

13 RECOMMENDED LOCATION FOR PIPE PORTAL.

14 60"x16" SUPPLY AIR DUCT DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.

15 58"x16" RETURN AIR DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.

16 58"x16" SUPPLY AIR DOWN TO FIRST FLOOR. REFER TO SHEET M4.01 FOR CONTINUATION.

17 EVACUATE SYSTEM. RELOCATE EXISTING CONDENSING UNITS TO LOCATION SHOWN. PROVIDE NEW REFRIGERANT LINES. RECHARGE AND RECOMMISION UNITS.

PLUMBING
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MECHANICAL
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2021094	M4.04
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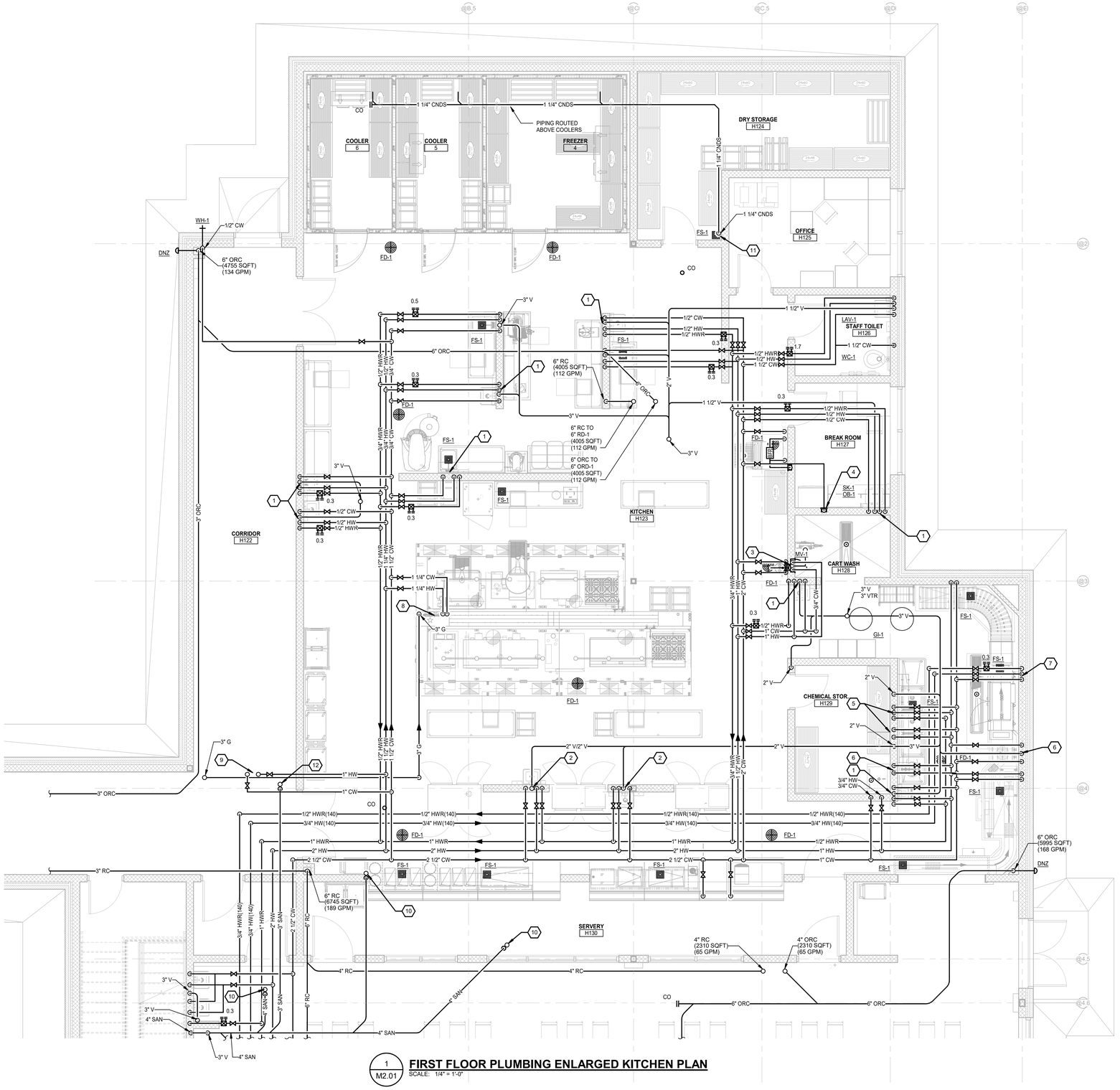

1 M2.01 **FIRST FLOOR PLUMBING ENLARGED KITCHEN PLAN**
SCALE: 1/4" = 1'-0"

PLUMBING GENERAL NOTES:

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6 REFER TO ARCHITECTURAL PLANS FOR DIMENSIONED LOCATIONS OF PLUMBING FIXTURES.

7 HOT AND COLD WATER PIPING RUN-OUTS TO LAVATORIES AND SINKS SHALL BE 1/2" UNLESS OTHERWISE NOTED.

8 PLUMBING VENT PIPING THROUGH ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE LOCATION AND A MINIMUM OF 18" CLEAR FROM THE INSIDE FACE OF PARAPET.

9 PROVIDE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.

10 MINIMUM UNDERGROUND PIPE SIZE SHALL BE 3".

CONSTRUCTION KEY NOTES:

1 3 SAN, 2 V, 1/2 CW, 1/2 HW, AND 1/2 HWR TO SINK.

2 3 SAN, 1 1/2 V, 1/2 CW, 1/2 HW TO SINK.

3 3/4 CW AND 3/4 HW THROUGHT CODE REQUIRED BACKFLOW PREVENTER AND CONNECT TO HOSE REAL MIXING VALVE.

4 1/2 CW TO OULETBOX FOR ICE MAKER.

5 3/4 CW, 3/4 HW TO 3 COMPARTMENT SINK. ROUTE 3 GSAN FROM WASH COMPARTMENT. ROUTE IW FROM RINSE AND SANITIZE COMPARTMENT AND TERMINATE AT CODE REQUIRED DISTANCE ABOVE FLOOR SINK.

6 3/4 CW, 3/4 HW TO PRE-SPRAY AND FOOD GRINDER.

7 1/2 CW, 1/2 HW(140), AND 1/2 HWR(140) THROUGH CODE REQUIRED BACKFLOW PREVENTER. ROUTE 1/2 CW, 1/2 HW(140) FROM BACKFLOW PREVENTER TO DISHMACHINE. ROUTE IW FROM BACKFLOW PREVENTER AND DISHMACHINE AND TERMINATE AT CODE REQUIRED DISTANCE ABOVE FLOOR SINK.

8 3/4 CW, 3/4 HW, 1/2 HWR, AND 3 GAS TO UTILITY DISTRIBUTIONS SYSTEM.

9 1 CW AND 1 HW TO PENTHOUSE ABOVE.

10 4 SAN TO FLOOR DRAIN/SINK.

11 TERMINATE CONDENSATE AT CODE REQUIRED DISTANCE ABOVE FLOOR DRAIN/SINK.

12 3 SAN FOR FLOOR DRIAN/SINK.

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

PLUMBING
These documents are approved for compliance with the STATE OF MICHIGAN PLUMBING CODE subject to field inspection and the conditions of approval.

FILE NO. 491/20167.SDW

FUNDING CODE 171CODHHS7255

CONTRACT NO. Y22003

KEY PLAN
NOT TO SCALE

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
PLUMBING ENLARGED PLAN

MECHANICAL
These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

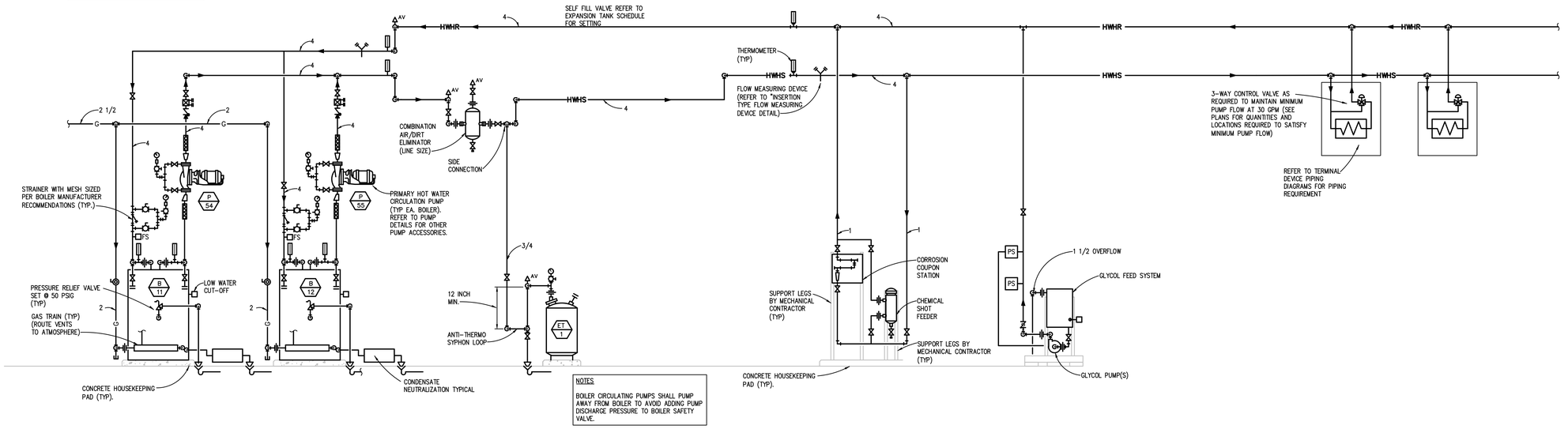
Peter Basso Associates Inc
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-5666
Fax: 248-879-0007
www.PeterBassoAssociates.com
PBA Project No: 2021-0402

PROJECT NUMBER 2021094
SHEET NUMBER M5.01
PROJECT DATE SEPTEMBER 6, 2023
CHECKED BY WEK

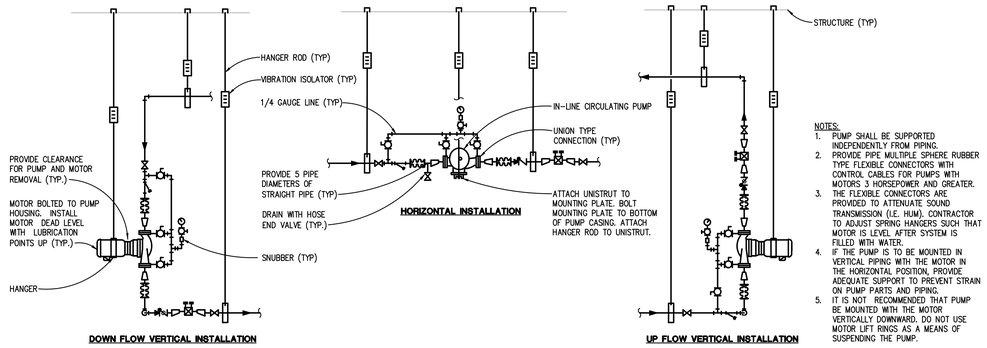
9/5/2023 4:36:57 PM C:\REVIT LOCAL FILES\2021-0402-MEP_Forensic_Psych_v23_GHeinrich.rvt

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"

ALL BRANCH PIPING CONNECTIONS TO MAINS SHALL BE FROM SIDE OR BOTTOM OF PIPE

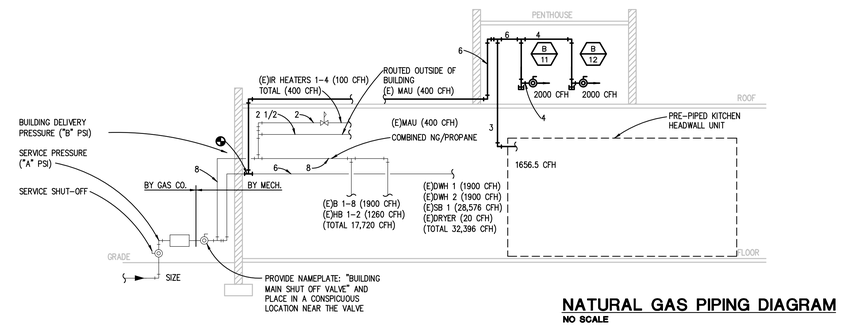


BOILER PIPING DIAGRAM
NO SCALE



NOTES:
1. PUMP SHALL BE SUPPORTED INDEPENDENTLY FROM PIPING.
2. PROVIDE PIPE MULTIPLE SPHERE RUBBER TYPE FLEXIBLE CONNECTORS WITH CONTROL CABLES FOR PUMPS WITH MOTORS 3 HORSEPOWER AND GREATER.
3. THE FLEXIBLE CONNECTORS ARE PROVIDED TO ATTENUATE SOUND TRANSMISSION (I.E. HUM). CONTRACTOR TO ADJUST SPRING HANGERS SUCH THAT MOTOR IS LEVEL AFTER SYSTEM IS FILLED WITH WATER.
4. IF THE PUMP IS TO BE MOUNTED IN VERTICAL PIPING WITH THE MOTOR IN THE HORIZONTAL POSITION, PROVIDE ADEQUATE SUPPORT TO PREVENT STRAIN ON PUMP PARTS AND PIPING.
5. IT IS NOT RECOMMENDED THAT PUMP BE MOUNTED WITH THE MOTOR VERTICALLY DOWNWARD. DO NOT USE MOTOR LIFT RINGS AS A MEANS OF SUSPENDING THE PUMP.

IN-LINE CLOSE COUPLED (BELL AND GOSSETT SERIES 80 AND 90) TYPE CIRCULATING PUMP PIPING DIAGRAM
NO SCALE



NATURAL GAS PIPING DIAGRAM
NO SCALE

MECHANICAL

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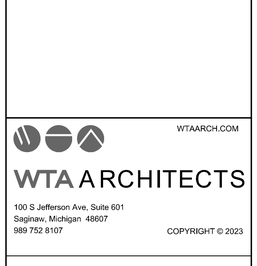

KEY PLAN
NO SCALE

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

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WTA ARCHITECTS
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Saginaw, Michigan 48607
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SHEET TITLE
MECHANICAL DETAILS

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www.PeterBassoAssociates.com
PBA Project No.: 2021-0402

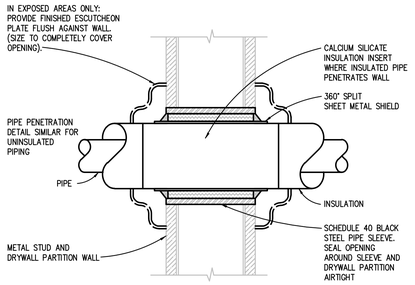
PROJECT NUMBER
2021094

PROJECT DATE
AUGUST 23, 2023

CHECKED BY
WEK

SHEET NUMBER
M6.01

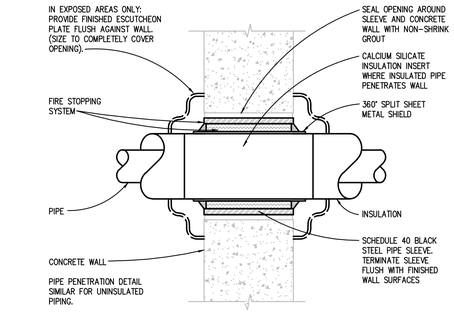
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



DETAIL INDICATES THE INSTALLATION REQUIREMENTS FOR A FIRE RATED ASSEMBLY. FOR A NON-FIRE RATED ASSEMBLY PACK SLEEVED OPENING WITH INSULATION MATERIAL AND CAULK WITH NON-HARDENING SEALANT.

FIRE RATED AND NON-FIRE RATED METAL STUD AND DRYWALL PARTITION WALL PIPE PENETRATION DETAIL

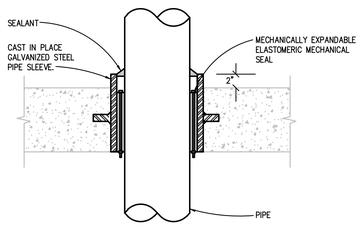
NO SCALE



DETAIL INDICATES THE INSTALLATION REQUIREMENTS FOR A FIRE RATED ASSEMBLY. FOR A NON-FIRE RATED ASSEMBLY PACK SLEEVED OPENING WITH INSULATION MATERIAL AND CAULK WITH NON-HARDENING SEALANT.

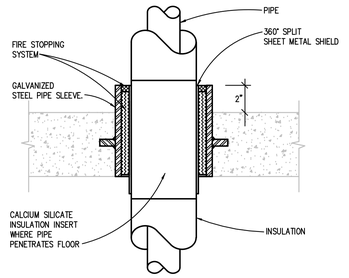
FIRE RATED AND NON-FIRE RATED POURED CONCRETE OR BLOCK WALL PIPE PENETRATION DETAIL

NO SCALE



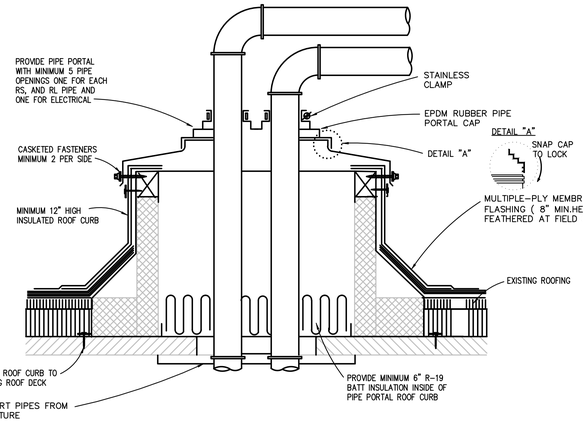
NEW SLAB ON GRADE FLOOR PIPE PENETRATION DETAIL

NO SCALE



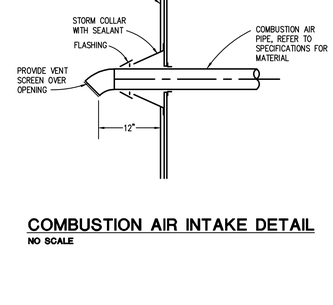
NEW FLOOR PIPE PENETRATION DETAIL

NO SCALE



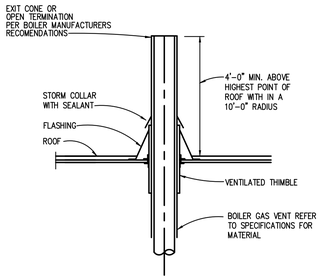
CONDENSING UNIT PIPE PORTAL DETAIL

NO SCALE



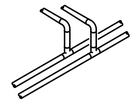
COMBUSTION AIR INTAKE DETAIL

NO SCALE



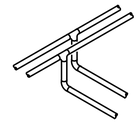
FLUE THRU ROOF DETAIL

NO SCALE



BRANCH CONNECTION OFF TOP

APPLIES TO THE FOLLOWING SYSTEMS:
DOMESTIC WATER
NATURAL GAS



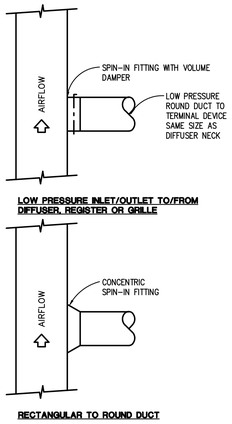
BRANCH CONNECTION OFF BOTTOM

APPLIES TO THE FOLLOWING SYSTEMS:
HOT WATER HEATING

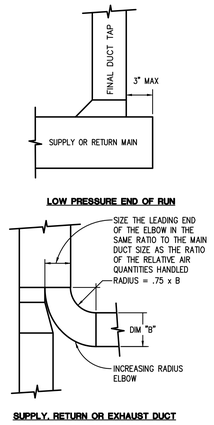
NOTE: BOTTOM AS INDICATED OR SIDE CONNECTION IS ACCEPTABLE. CONNECTION ABOVE CENTERLINE OF MAINS IS NOT ACCEPTABLE.

TYPICAL BRANCH TAKE-OFF CONNECTION PIPING DETAIL

NO SCALE



LOW PRESSURE INLET/OUTLET TO/FROM DIFFUSER, REGISTER OR GRILLE

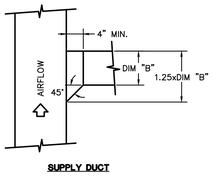


LOW PRESSURE END OF RUN

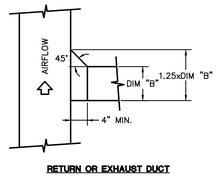
RECTANGULAR TO ROUND DUCT

SUPPLY, RETURN OR EXHAUST DUCT

FOR USE WHEN A BRANCH TAKE-OFF IS TO HANDLE MORE THAN 25% OF THE AIR HANDLED BY THE MAIN DUCT



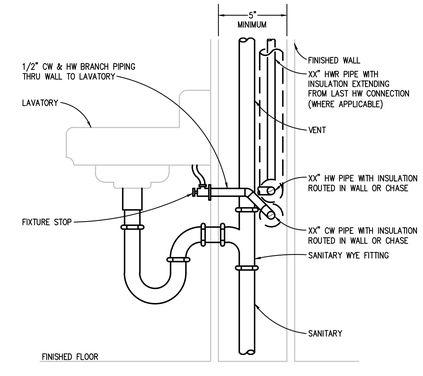
SUPPLY DUCT



RETURN OR EXHAUST DUCT

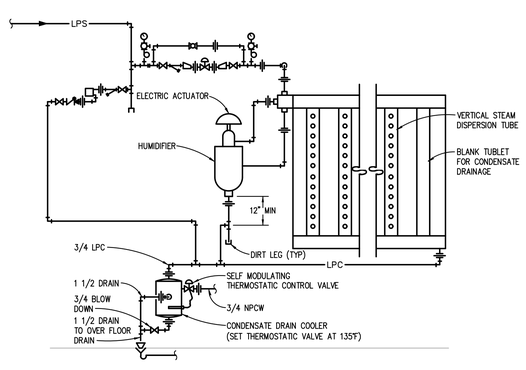
RECTANGULAR DUCT BRANCH TAKE-OFF DETAILS

NO SCALE



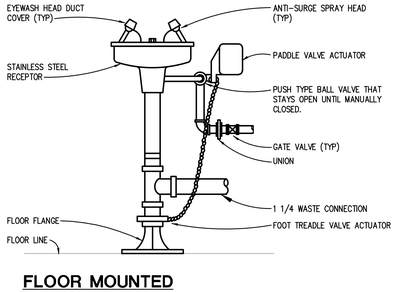
TYPICAL LAVATORY DETAIL

NO SCALE



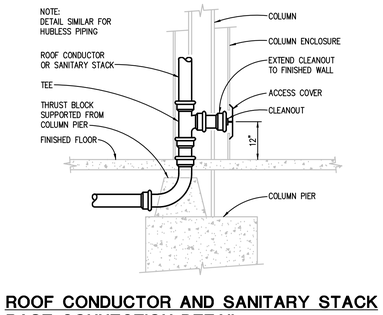
VERTICAL STEAM DISPERSION TUBE HUMIDIFIER PANEL PIPING DIAGRAM

NO SCALE



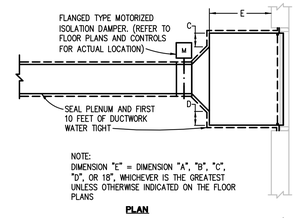
FLOOR MOUNTED EMERGENCY EYEWASH PIPING DIAGRAM

NO SCALE



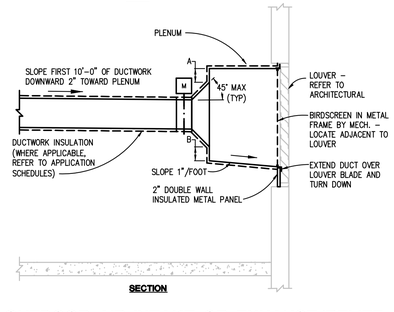
ROOF CONDUCTOR AND SANITARY STACK BASE CONNECTION DETAIL

NO SCALE



NOTE:
DIMENSION "E" = DIMENSION "A", "B", "C", "D", OR 18", WHICHEVER IS THE GREATEST UNLESS OTHERWISE INDICATED ON THE FLOOR PLANS

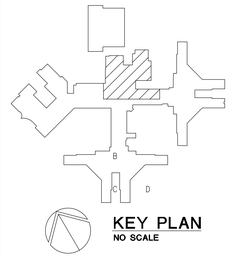
PLAN



SECTION

OUTDOOR AIR INTAKE OR EXHAUST/RELIEF PLENUM DETAIL

NO SCALE



KEY PLAN
NO SCALE

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
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PBA Project No. 2021-0402

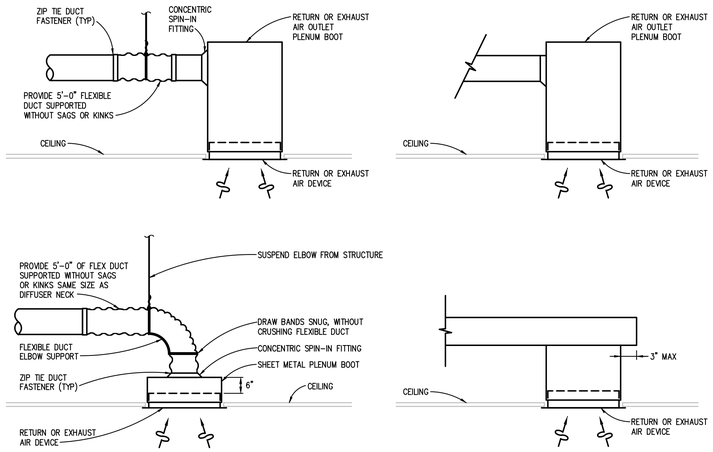
PROJECT NUMBER
2021094

PROJECT DATE
AUGUST 23, 2023

CHECKED BY
WEK

SHEET NUMBER
M6.02

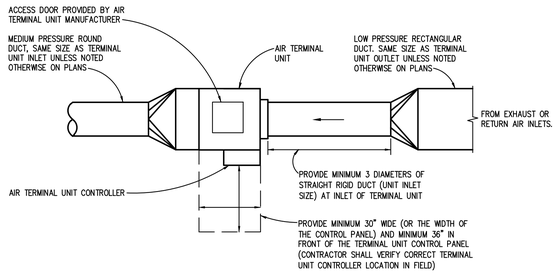
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



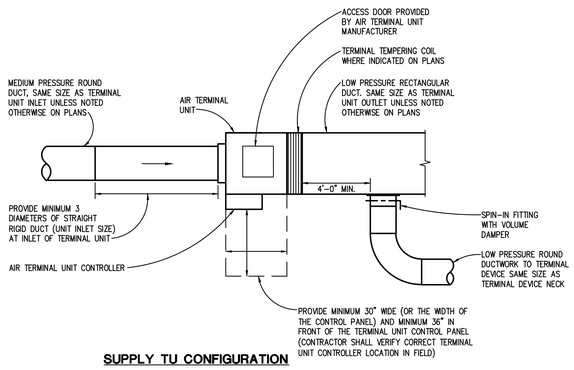
RETURN OR EXHAUST AIR DEVICE INSTALLATION DETAIL

NO SCALE

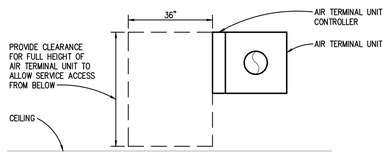
NOTE: PAINT INTERIOR SURFACE OF PLENUM BOX FLAT BLACK.



EXHAUST TU CONFIGURATION



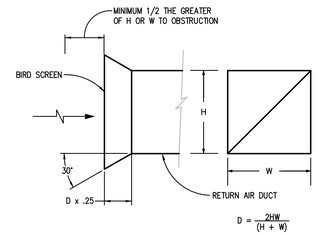
SUPPLY TU CONFIGURATION



TERMINAL UNIT SECTION

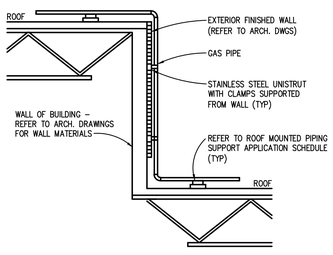
AIR TERMINAL UNIT (TU) DETAIL

NO SCALE



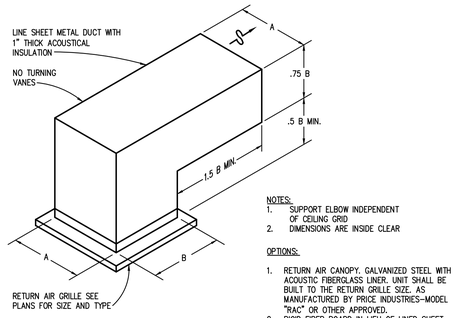
BELLMOUTH DETAIL

NO SCALE



GAS PIPE MOUNTING DETAIL

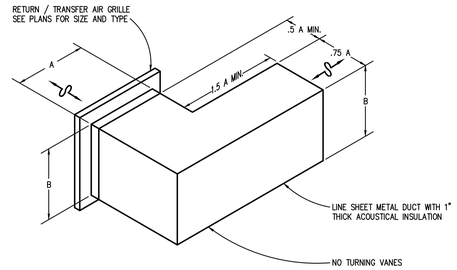
NO SCALE



NOTES:
1. SUPPORT ELBOW INDEPENDENT OF CEILING GRID
2. DIMENSIONS ARE INSIDE CLEAR

OPTIONS:
1. RETURN AIR CANOPY, GALVANIZED STEEL WITH ACOUSTIC FIBERGLASS LINER, UNIT SHALL BE BUILT TO THE RETURN GRILLE SIZE. AS MANUFACTURED BY PRICE INDUSTRIES-MODEL "RAC" OR OTHER APPROVED.
2. RIGID FIBER BOARD IN LIEU OF LINED SHEET METAL DUCT.

CEILING GRILLE TO/FROM PLENUM



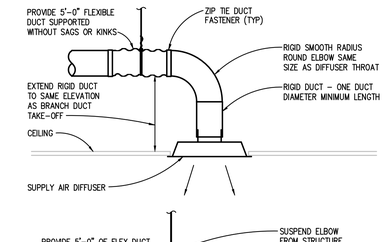
NOTE: DIMENSIONS ARE INSIDE CLEAR.

OPTION: RIGID FIBER BOARD IN LIEU OF LINED SHEET METAL DUCT.

PLENUM TO / FROM WALL GRILLE

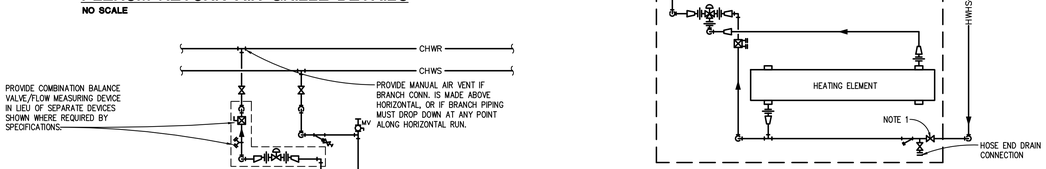
PLENUM RETURN AIR GRILLE DETAILS

NO SCALE



ROUND NECK SUPPLY AIR DIFFUSER DETAIL

NO SCALE

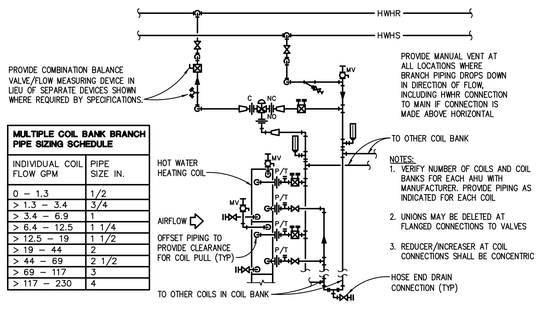


NOTES:
1. VERIFY NUMBER OF COILS AND COIL BANKS FOR EACH AHU WITH MANUFACTURER. PROVIDE PIPING AS INDICATED FOR EACH COIL
2. UNIONS MAY BE DELETED AT FLANGED CONNECTIONS TO VALVES
3. PROVIDE REDUCER/INCREASER AT COIL CONNECTION

MULTIPLE COIL BANK BRANCH PIPE SIZING SCHEDULE	
INDIVIDUAL COIL FLOW GPM	PIPE SIZE IN.
0 – 1.3	1/2
1.4 – 3.4	3/4
3.5 – 6.9	1
7 – 12.5	1 1/4
12.6 – 19	1 1/2
20 – 44	2
45 – 69	2 1/2
70 – 117	3
118 – 230	4

AHU CHILLED WATER COOLING COIL WITH TWO-WAY CONTROL VALVE PIPING DIAGRAM

NO SCALE

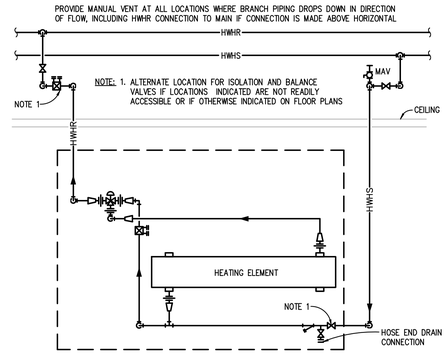


NOTES:
1. VERIFY NUMBER OF COILS AND COIL BANKS FOR EACH AHU WITH MANUFACTURER. PROVIDE PIPING AS INDICATED FOR EACH COIL
2. UNIONS MAY BE DELETED AT FLANGED CONNECTIONS TO VALVES
3. REDUCER/INCREASER AT COIL CONNECTIONS SHALL BE CONCENTRIC

MULTIPLE COIL BANK BRANCH PIPE SIZING SCHEDULE	
INDIVIDUAL COIL FLOW GPM	PIPE SIZE IN.
0 – 1.3	1/2
> 1.3 – 3.4	3/4
> 3.4 – 6.9	1
> 6.4 – 12.5	1 1/4
> 12.5 – 19	1 1/2
> 19 – 44	2
> 44 – 69	2 1/2
> 69 – 117	3
> 117 – 230	4

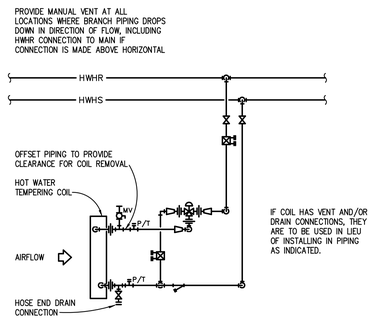
AHU HOT WATER HEATING COIL PIPING DIAGRAM

NO SCALE



DOWNFEED CONV. OR CUH WITH THREE WAY CONTROL VALVE PIPING DIAGRAM

NO SCALE



HOT WATER TEMPERING COIL WITH THREE-WAY CONTROL VALVE PIPING DIAGRAM

NO SCALE

MECHANICAL

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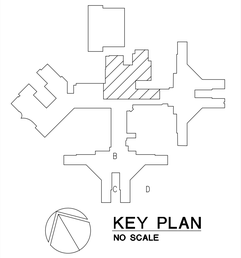

KEY PLAN

NO SCALE

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM
WTA ARCHITECTS
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Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
MECHANICAL DETAILS

Peter Basso Associates Inc
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PBA Project No.: 2021-0402

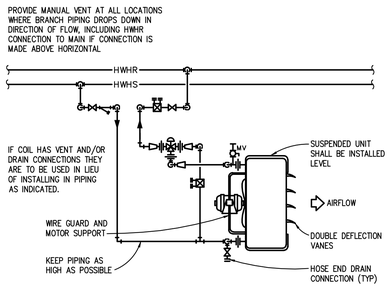
PROJECT NUMBER
2021094

SHEET NUMBER
M6.03

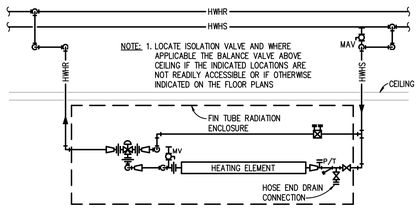
PROJECT DATE
AUGUST 23, 2023

CHECKED BY
WEK

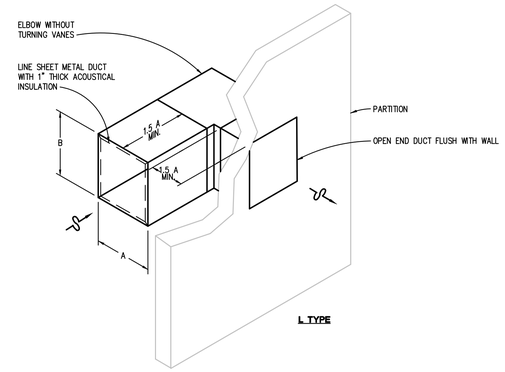
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



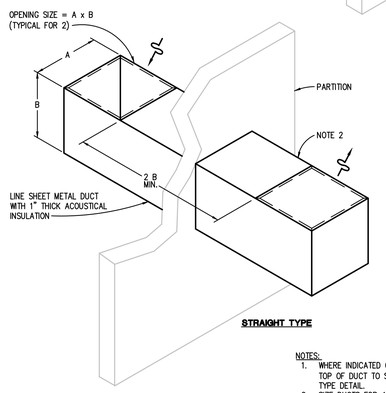
HOT WATER UNIT HEATER WITH THREE-WAY CONTROL VALVE PIPING DIAGRAM
NO SCALE



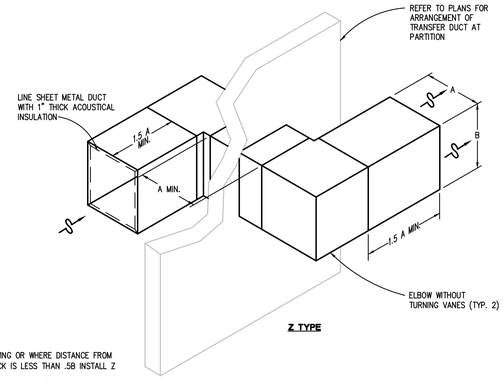
FIN TUBE RADIATION WITH THREE-WAY CONTROL VALVE PIPING DIAGRAM
NO SCALE



L TYPE



STRAIGHT TYPE

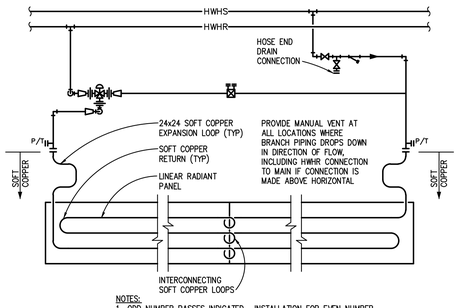


Z TYPE

NOTES:
1. WHERE INDICATED ON DRAWING OR WHERE DISTANCE FROM TOP OF DUCT TO SLAB/DECK IS LESS THAN .5B INSTALL Z TYPE DETAIL.
2. SIZE DUCTS FOR 400 FPM MAX BASED ON CLEAR INSIDE DIMENSIONS AND 100% OF THE SUPPLY AIR TO THE SPACE UNLESS OTHERWISE NOTED.
3. ROTATE DETAILS 90° WHERE VERTICAL INSTALLATION IS INDICATED.
4. DIMENSIONS ARE INSIDE CLEAR.

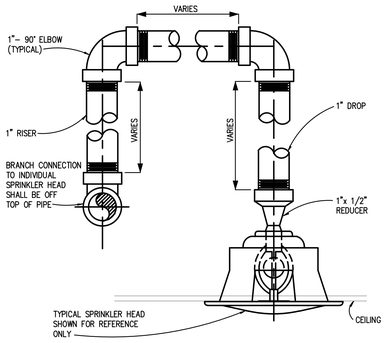
OPTIONS:
1. RIGID FIBER BOARD MAY BE USED IN LIEU OF LINED SHEET METAL DUCT.

AIR TRANSFER DUCT DETAILS
NO SCALE

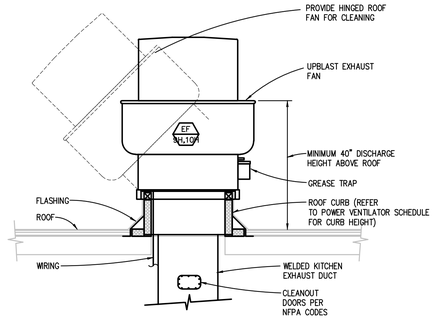


NOTES:
1. ODD NUMBER PASSES INDICATED. INSTALLATION FOR EVEN NUMBER PASSES SIMILAR EXCEPT RUNOUT CONNECTIONS MADE AT SAME END.
2. REFER TO FLOOR PLANS FOR ZONING.

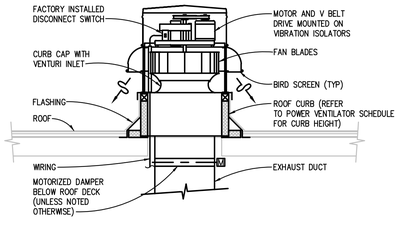
END FEED LINEAR RADIANT CEILING PANEL WITH THREE-WAY CONTROL VALVE PIPING DIAGRAM
NO SCALE



TYPICAL SPRINKLER PIPING DETAIL
NO SCALE



ROOF MOUNTED UPBLAST KITCHEN EXHAUST FAN DETAIL
NO SCALE



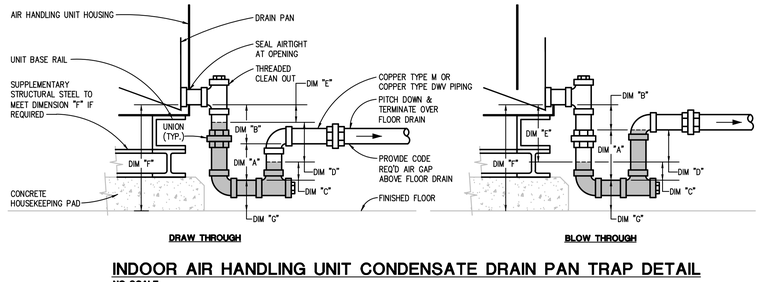
ROOF MOUNTED POWER VENTILATOR EXHAUST FAN DETAIL
NO SCALE

TRAP DIMENSION TABLE

TYPE OF SYSTEM	S.P. AT DRAIN PAN (IN.) (NOTE A)	DIMENSION "A" (INCHES) MIN.	DIMENSION "B" (INCHES)	DIMENSION "C" (INCHES) (TRAP SEAL)	DIMENSION "D" (INCHES)	DIMENSION "E" (INCHES)	DIMENSION "F" (INCHES) DRAIN PIPE SIZE (INCHES) 1 1/2	2	2 1/2, 3	4
DRAW THROUGH	-5.1 TO -6	5.0	5.0	2	6	2	13.0	14.0	15.0	16.0
	-4.1 TO -5	4.5	4.5	2	5	2	12.0	13.0	14.0	15.0
	-3.1 TO -4	4.0	4.0	2	4	2	11.0	12.0	13.0	14.0
	-2.1 TO -3	3.5	3.5	2	3	2	10.0	11.0	12.0	13.0
	UP TO -2	3.0	3.0	2	2	2	9.0	10.0	11.0	12.0
BLOW THROUGH	UP TO +2	4.0	2.0	2	2	4	9.0	10.0	11.0	12.0
	+2.1 TO +3	5.0	2.0	2	3	5	10.0	11.0	12.0	13.0
	+3.1 TO +4	6.0	2.0	2	4	6	11.0	12.0	13.0	14.0
	+4.1 TO +5	7.0	2.0	2	5	7	12.0	13.0	14.0	15.0
	+5.1 TO +6	8.0	2.0	2	6	8	13.0	14.0	15.0	16.0

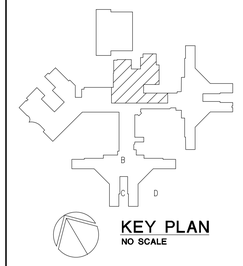
NOTES: A. REFER TO AIR HANDLING UNIT SCHEDULE FOR (-) OR (+) STATIC PRESSURE AT DRAIN PAN.

B. DIMENSION "G" IS MIN: 3" FOR UP TO 1 1/2" DRAIN PIPE
4" FOR 2" DRAIN PIPE
5" FOR 2 1/2" OR 3" DRAIN PIPE
6" FOR 4" DRAIN PIPE



DRAW THROUGH BLOW THROUGH

INDOOR AIR HANDLING UNIT CONDENSATE DRAIN PAN TRAP DETAIL
NO SCALE



KEY PLAN
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CONTRACT NO.
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CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
MECHANICAL DETAILS

MECHANICAL
These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

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PBA Project No: 2021-0402

PROJECT NUMBER
2021094

PROJECT DATE
AUGUST 23, 2023

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SHEET NUMBER
M6.04

PLUMBING PIPING & VALVE APPLICATION SCHEDULE

	MATERIAL																PRESSURE CONNECTIONS												GRAVITY DWV CONNECTIONS					ISOLATION VALVES					
PIPE SIZE (INCHES)	SOFT COPPER TYPE K	HARD COPPER TYPE L	HARD COPPER TYPE M	CARBON STEEL (SCHED. 40)	CARBON STEEL (STD.)	GALV. STEEL (SCHED. 40)	STAINLESS STEEL (SCHED. 10)	PEX	PE PIPE	PE SHEATHED CARBON STEEL PIPE	CSST	NO-HUB CISP	PVC TYPE DWV	PP DRAINAGE PIPE	COPPER TYPE DWV	DUCTILE IRON PIPE	SOLDERED	BRAZED	WELDED	THREADED	FLANGED	GROOVED	INSERT & CRIMP	FUSION	PRESSURE-SEAL	MECHANICALLY-FORMED TEE	MECHANICAL JOINT	PUSH-ON-JOINT	SOLVENT WELDED	SOLDERED	FUSION	CISP HUBLESS	HEAVY-DUTY HUBLESS	BALL	AGA BALL	GENERAL SERVICE BUTTERFLY	LUBRICATED PLUG	GATE	KEYED NOTES
ABOVEGROUND DOMESTIC WATER (POTABLE AND NON-POTABLE) ON DISTRIBUTION SIDE OF METER - MIN. WORKING PRESS. & TEMP.: 125 PSIG AT 200 DEG F																																							
UP TO 4		X															X	X			X													X		X			A
4 AND LARGER							X																													X			A
UNDERGROUND DOMESTIC WATER (POTABLE AND NON-POTABLE) ON DISTRIBUTION SIDE OF METER - MIN. WORKING PRESS. & TEMP.: 125 PSIG AT 150 DEG F																																							
UP TO 1-1/2	X																																						B
ABOVEGROUND SANITARY WASTE & VENT - MIN. WORKING PRESS.: 10-FOOT HEAD OF WATER																																							
1-1/2 TO 15												X																				X							
ABOVEGROUND PUMPED SANITARY WASTE - MIN. WORKING PRESS.: 125 PSIG																																							
UP TO 2		X															X	X																X					
ABOVEGROUND INDIRECT SANITARY WASTE - MIN. WORKING PRESS.: 10-FOOT HEAD OF WATER																																							
UP TO 8			X												X															X									
ABOVEGROUND PUMPED INDIRECT SANITARY WASTE - MIN. WORKING PRESS.: 125 PSIG																																							
UP TO 2		X															X	X																X					
UNDERGROUND SANITARY WASTE & VENT - MIN. WORKING PRESS.: 10-FOOT HEAD OF WATER																																							
3 TO 12												X																					X						
3 TO 12													X																X										
ABOVEGROUND COLD CONDENSATE DRAIN - MIN. WORKING PRESSURE: 10 FT. HEAD OF WATER																																							
ALL SIZES			X												X		X	X																					
ABOVEGROUND PUMPED COLD CONDENSATE DRAIN - MIN. WORKING PRESSURE: 125 PSIG																																							
UP TO 2			X														X	X																X					
2-1/2 TO 4			X															X																		X			
ABOVEGROUND STORM DRAINAGE - MIN. WORKING PRESS.: 10-FOOT HEAD OF WATER																																							
2												X																				X							
3 TO 15												X																				X							
UNDERGROUND STORM DRAINAGE - MIN. WORKING PRESS.: 10-FOOT HEAD OF WATER																																							
3 TO 12												X																					X						
3 TO 12													X																X										
15												X																					X						
ABOVEGROUND FUEL GAS - MIN. WORKING PRESS.: 100 PSIG																																							
UP TO 2				X															X	X															X				E
2-1/2 TO 3				X															X		X														X				E

GENERAL NOTES

1. 'X' INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A PIPING SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. DISSIMILAR-METAL PIPING JOINTS: CONSTRUCT JOINTS USING DIELECTRIC FITTINGS COMPATIBLE WITH BOTH PIPING MATERIALS.
   a. NPS 2 AND SMALLER: USE DIELECTRIC NIPPLE/WATERWAY.
   b. NPS 2-1/2 AND LARGER: USE DIELECTRIC FLANGE KITS.
3. USE UNIONS OR FLANGES AT VALVE AND EQUIPMENT CONNECTIONS.
4. PLUMBING EQUIPMENT DRAINS, VENTS, SAFETY VALVE PIPING, BLOWDOWN PIPING AND THE LIKE SHALL BE SAME PIPING MATERIAL AS ASSOCIATED PIPING SYSTEM.

KEYED NOTES

A. FLANGED FITTINGS, JOINTS, AND COUPLINGS, IF INDICATED AS AN ACCEPTABLE SELECTION, MAY BE USED IN ACCESSIBLE LOCATIONS ONLY FOR THIS PIPING SYSTEM. ACCESSIBLE LOCATIONS ARE DEFINED AS EXPOSED CONSTRUCTION OR ABOVE LAY-IN CEILINGS.
B. JOINTS ARE NOT PERMITTED ON UNDERGROUND WATER PIPING.
C. USE CAST IRON DRAINAGE PATTERN (DURHAM) FITTINGS.
D. INSTALL IN CONTAINMENT JACKET, REFER TO SPECIFICATIONS.
E. VALVES, UNIONS, AND FLANGED JOINTS MAY BE USED IN ACCESSIBLE LOCATIONS ONLY, EXCLUDING CEILINGS USED AS AIR PLENUMS. ACCESSIBLE LOCATIONS ARE DEFINED AS EXPOSED CONSTRUCTION OR ABOVE LAY-IN CEILINGS. USE ONLY STEEL WELDED FITTINGS AND WELDED JOINTS IN CEILING USED AS AIR PLENUMS.
F. NO JOINTS ALLOWED UNDERGROUND.

PIPE PRESSURE REQUIREMENT SCHEDULE

PIPE SYSTEM	MINIMUM DESIGN PRESSURE	MINIMUM DESIGN TEMPERATURE (DEG. F)	WORKING PRESSURE	TEST PRESSURE	TEST FLUID	TEST TIME	ALLOWABLE LEAKAGE
CHILLED WATER	125 PSIG	200	<70 PSIG	150 PSIG	WATER	2 HOURS	NONE
HEATING HOT WATER	125 PSIG	200	<70 PSIG	150 PSIG	WATER	2 HOURS	NONE
LOW PRESSURE STEAM	125 PSIG	350	<15 PSIG	150 PSIG	WATER	2 HOURS	NONE
STEAM CONDENSATE	125 PSIG	250	<90 PSIG	150 PSIG	WATER	2 HOURS	NONE

ALL TESTS MUST BE WITNESSED AND SIGNED BY CMU. IF NOT, TEST WILL NEED TO BE REDONE AT CONTRACTOR'S EXPENSE.

THERMOSTATIC MIXING VALVE SCHEDULE

UNIT IDENTIFICATION	MINIMUM FLOW GPM	MAXIMUM FLOW GPM	PRESSURE DROP AT MAXIMUM FLOW PSIG	MODEL NUMBER	KEYED NOTES
MV-1	2	5	15	S19-2000	

GENERAL NOTES:
1. MODEL NUMBERS ARE BRADLEY UNLESS OTHERWISE NOTED.

ABOVEGROUND HVAC PIPING & VALVE APPLICATION SCHEDULE

	MATERIAL							CONNECTION								ISOLATION VALVES				
PIPE SIZE (INCHES)	SOFT COPPER TYPE K	HARD COPPER TYPE L	HARD COPPER TYPE M	CARBON STEEL (SCHED. 40)	CARBON STEEL (SCHED. 80)	CARBON STEEL (STD.)	COPPER TYPE DWV	SOLDERED	BRAZED	WELDED	THREADED	FLANGED	GROOVED	PRESSURE SEAL	MECHANICALLY FORMED TEE	BALL	GENERAL SERVICE BUTTERFLY	HI-PERF BUTTERFLY	GATE	KEYED NOTES
CHILLED WATER SUPPLY & RETURN - MIN. WORKING PRESS. & TEMP.: 125 PSIG AT 200 DEG F																				
UP TO 2				X							X					X				
UP TO 2		X						X	X							X				
2-1/2 TO 4				X						X		X					X			
2-1/2 TO 4		X							X								X			
6 TO 8				X						X		X					X			
6 TO 8		X							X								X			
HEATING HOT WATER SUPPLY & RETURN - MIN. WORKING PRESS. & TEMP.: 125 PSIG AT 200 DEG F																				
UP TO 2				X							X					X				
UP TO 2		X						X	X							X				
2-1/2 TO 4				X						X		X					X			
2-1/2 TO 4		X							X								X			
6 TO 8				X						X		X					X			
6 TO 8		X							X								X			
LOW PRESSURE STEAM - MAX. 15 PSIG STEAM WORKING PRESSURE																				
UP TO 2-1/2				X							X					X				C
3 TO 4				X						X		X						X		
6 TO 8				X						X		X						X		
10				X						X		X						X		
HIGH PRESSURE STEAM - MAX. 125 PSIG STEAM WORKING PRESSURE																				
UP TO 2-1/2				X							X					X				C
3 TO 4				X						X		X						X		
6 TO 8				X						X		X						X		
STEAM CONDENSATE - MIN. WORKING PRESS. & TEMP.: 125 PSIG AT 250 DEG F																				
UP TO 2					X						X					X				B
2-1/2 TO 4					X					X		X						X		
6 TO 8					X					X		X						X		

GENERAL NOTES

1. 'X' INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A PIPING SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. DISSIMILAR-METAL PIPING JOINTS: CONSTRUCT JOINTS USING DIELECTRIC FITTINGS COMPATIBLE WITH BOTH PIPING MATERIALS. IF A BRONZE VALVE CONNECTS THE DISSIMILAR METALS NO FURTHER DIELECTRIC ISOLATION IS REQUIRED.
   a. NPS 2 AND SMALLER: USE BRASS COUPLING, NIPPLE, OR UNION.
   b. NPS 2-1/2 AND LARGER: USE DIELECTRIC FLANGE KITS.
3. USE UNIONS OR FLANGES AT VALVE AND EQUIPMENT CONNECTIONS.
4. HVAC EQUIPMENT DRAINS, VENTS, SAFETY VALVE PIPING, BLOWDOWN PIPING AND THE LIKE SHALL BE SAME PIPING MATERIAL AS ASSOCIATED PIPING SYSTEM.

KEYED NOTES

A. NOT USED.
B. BALL VALVE WITH 250 PSIG STEAM TRIM.
C. BALL VALVE WITH 150 PSIG STEAM TRIM.

SCHEDULES GENERAL NOTES:

TYPICAL FOR ALL SCHEDULE SHEETS:

1. REFER TO ELECTRICAL STANDARD SCHEDULES, ONE LINE DIAGRAM AND PANEL SCHEDULES FOR ADDITIONAL ELECTRICAL INFORMATION
2. PROVIDE THE FOLLOWING FACTORY-WIRED ELECTRICAL OPTIONS/ACCESSORIES WHERE INDICATED IN SCHEDULE:
   A – NON-FUSED DISCONNECT SWITCH
   B – UNIT SHALL BE SINGLE POINT ELECTRICAL CONNECTION WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS
   C – SERVICE RECEPTACLE
   D – FUSED DISCONNECT SWITCH
   E – COMBINATION STARTER
   F – UNIT SHALL HAVE (2) SINGLE POINT CONNECTIONS WITH FACTORY INSTALLED DISCONNECTING MEANS AND ALL REQUIRED STARTERS AND CONTROLS. (1) CONNECTION SHALL BE FOR CONDENSING SECTION AND (1) CONNECTION SHALL BE FOR THE REMAINDER OF THE UNIT.
3. FOR MODULATION/CONTROL TYPE COLUMN, "VFC" INDICATES VARIABLE FREQUENCY CONTROLLERS, "AUTO" INDICATES AUTOMATIC OPERATION (CONTROLLED BY TEMPERATURE CONTROLS OR SELF CONTAINED CONTROLS), "MANUAL" INDICATES HAND OPERATION.
4. IF VARIABLE FREQUENCY CONTROLLERS ARE INDICATED TO BE PROVIDED AND ARE NOT INSTALLED INTEGRAL TO THE UNIT, VARIABLE FREQUENCY CONTROLLERS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR (UNLESS OTHERWISE NOTED) AND INSTALLED BY THE ELECTRICAL CONTRACTOR INCLUDING THE LINE SIDE AND LOAD SIDE WIRING TO THE MOTOR AND INCLUDING MISCELLANEOUS STEEL REQUIRED FOR THE SUPPORT AND MOUNTING OF THE VFC. REFER TO FLOOR PLANS FOR LOCATION.
5. WHERE EQUIPMENT IS INDICATED TO HAVE A SINGLE POINT ELECTRICAL CONNECTION, THAT EQUIPMENT SHALL COME COMPLETE WITH FACTORY INSTALLED STARTERS, MOTOR OVERLOAD PROTECTION, CONTACTORS, FUSING AND ALL NECESSARY INTERNAL WIRING AND CONTROLS. PROVIDE A FACTORY MOUNTED UNIT DISCONNECTING MEANS WHERE THE ELECTRICAL CONTRACTOR SHALL MAKE SINGLE POINT CONNECTION. INSTALL PACKAGED EQUIPMENT SUCH THAT THE ELECTRICAL CONNECTION AND CONTROLS ARE ACCESSIBLE AND HAVE CLEARANCES MEETING THE NATIONAL ELECTRICAL CODE.
6. WHERE PACKAGED EQUIPMENT IS PROVIDED, NAMEPLATE MUST INDICATE MAXIMUM OVERCURRENT PROTECTION BY HACR RATED CIRCUIT BREAKERS OR FUSES. IF FUSE PROTECTION ONLY IS INDICATED, PROVIDE A FUSIBLE DISCONNECT AND FUSES WITH THE UNIT.
7. WHERE EQUIPMENT IS DESIGNATED BY MANUFACTURER AND MODEL NUMBER, THIS IS THE BASIS OF DESIGN. IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT BY OTHER SPECIFIED MANUFACTURERS OR PROPOSED ALTERNATE EQUIPMENT BY THE BASIS OF DESIGN MANUFACTURER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS TO ELECTRICAL REQUIREMENTS, STRUCTURAL LOADING, OR ARCHITECTURAL APPURTENANCES AND SHALL INCLUDE THE COST OF SUCH REVISIONS IN HIS BID.
8. WHERE EQUIPMENT IS SCHEDULED TO INCLUDE A SERVICE RECEPTACLE, PROVIDE A FACTORY MOUNTED SERVICE RECEPTACLE WITH APPROPRIATE FUSES AND TRANSFORMERS CONNECTED ON THE LINE SIDE OF THE UNIT DISCONNECT. PROVIDE A NAMEPLATE ON THE DISCONNECT SWITCH INDICATING THE PRESENCE OF LIVE POWER TO THE SERVICE RECEPTACLE WHEN THE UNIT DISCONNECT IS IN THE OFF POSITION.
9. SIZE ALL EQUIPMENT FEEDERS BASED ON THE LISTED MOP (MAXIMUM OVERCURRENT PROTECTION). REFER TO THE FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE ON THE ELECTRICAL STANDARD SCHEDULES SHEET.

PLUMBING CONNECTION SCHEDULE

UNIT IDENTIFICATION	CW INCHES	HW INCHES	SAN INCHES	VENT INCHES	KEYED NOTES
UR-1	–	–	2	1 1/2	
WC-1	1 1/2	–	4	2	
LAV-1	1/2	1/2	1 1/2	1 1/2	
SK-1	3/4	3/4	1 1/2	1 1/2	
SS-1	3/4	3/4	3	–	
EWC-1	1/2	–	1 1/2	1 1/2	
FD-1	–	–	3	–	
FS-1	–	–	3	–	

GENERAL NOTES:
1. INDIVIDUAL WATER LINE BRANCHES, WASTE LINES, VENTS, AND TRAPS FOR CONNECTION TO INDIVIDUAL FIXTURES, FIXTURE FITTINGS, AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE OR AS INDICATED ON DRAWINGS, WHICHEVER IS GREATER.

ROOF MOUNTED PIPING SUPPORT APPLICATION SCHEDULE

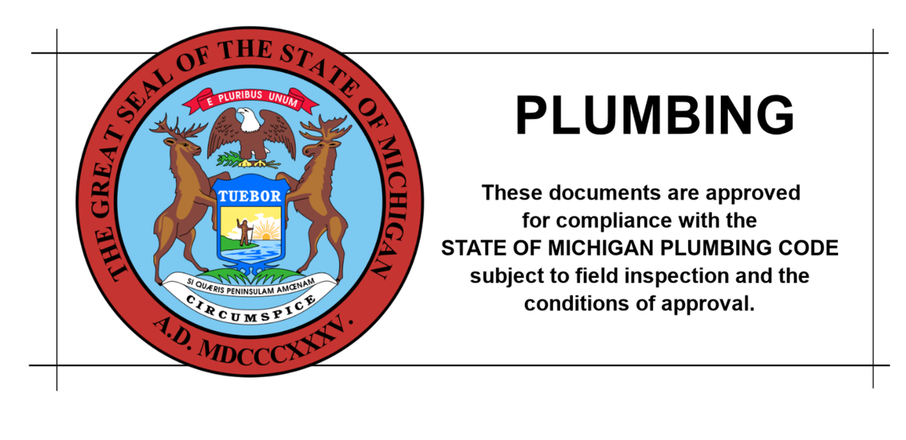
	SUPPORT TYPE								SHIELD TYPE			
PIPE TYPE & SIZE	LOW FIXED-HEIGHT SINGLE-BASE STAND	LOW ADJUSTABLE-HEIGHT SINGLE-BASE STAND	HIGH ADJUSTABLE-HEIGHT SINGLE-BASE STAND	LOW FIXED HEIGHT SINGLE-BASE ROLLER STAND	LOW ADJUSTABLE-HEIGHT SINGLE-BASE ROLLER STAND	HIGH MULTIPLE-BASE PIPE STAND	CUSTOM MULTIPLE BASE PIPE STAND	CURB-MOUNTING PIPE STAND	MSS TYPE 39 PROTECTION SADDLE	MSS TYPE 40 INSULATION PROTECTION SHIELD	THERMAL-HANGER SHIELD	KEYED NOTES
SINGLE PIPES												
NATURAL GAS NPS 5 AND SMALLER				X	X			X				
NATURAL GAS NPS 6 AND NPS 8					X			X				

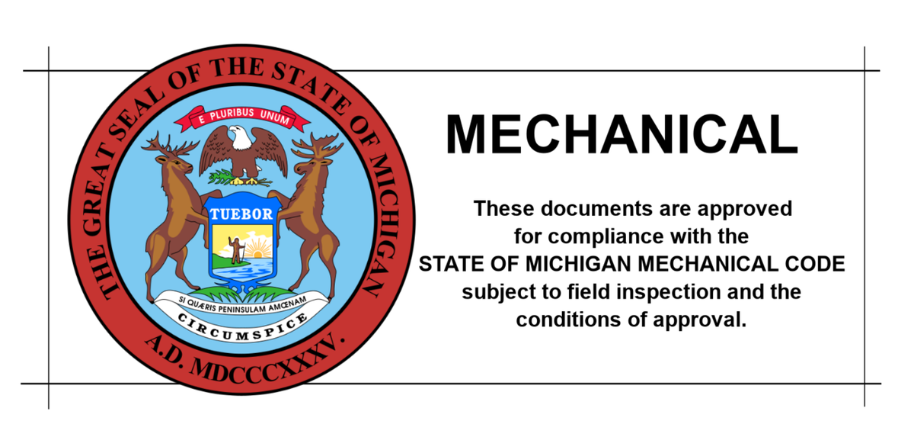
GENERAL NOTES

1. "X" INDICATES APPROVED HANGER OR SUPPORT ELEMENTS. IF MORE THAN ONE HANGER OR SUPPORT ELEMENT IS INDICATED, SELECTION FROM APPROVED ELEMENTS IS CONTRACTOR'S OPTION.
2. REFER TO HANGER AND SUPPORT SECTION FOR APPROVED MANUFACTURERS.
3. SUPPORT ELEMENTS IN CONTACT WITH BARE COPPER PIPE SHALL BE COPPER PLATED, PLASTIC OR PLASTIC COATED, FELT LINED, OR USE MANUFACTURED COPPER TUBE ISOLATORS

KEYED NOTES

A. TYPE 40 SHIELD MAY BE USED ON INSULATED PIPE SIZED NPS 2 AND SMALLER.
B. CONSULT WITH SUPPORT MANUFACTURER FOR CUSTOM SUPPORT REQUIREMENTS.
C. USE THERMAL HANGER SHIELD FOR INSULATED RING.
D. TYPE 39 PROTECTION SADDLE MAY BE USED IF INSULATION WITHOUT VAPOR BARRIER IS INDICATED. FILL INTERIOR VOIDS WITH INSULATION MATCHING ADJOINING INSULATION.





DUCT SYSTEM APPLICATION SCHEDULE

	DUCT MATERIAL																	
AIR SYSTEMS	G90 GALV. SHEET METAL	DOUBLE-WALL LINED G90 GALV. SHEET METAL (SOLID INNER WALL)	DOUBLE-WALL LINED G90 GALV. SHEET METAL (PERF. INNER WALL)	G90 GALV. SHEET METAL WITH 1-INCH LINING	GALVANNEALED SHEET METAL	ALUMINUM	TYPE 304 STAINLESS STEEL	TYPE 316 STAINLESS STEEL	PVC COATED GALV. SHEET METAL (4X1)	PVC COATED GALV. SHEET METAL (1X4)	PVC COATED GALV. SHEET METAL (4X4)	16 GA. CARBON STEEL	ZERO-CLEARANCE PREFABRICATED RANGE HOOD EXHAUST DUCT	FABRIC	DESIGN PRESSURE CLASS (INCHES WG)	SEAL CLASS	MAX. ALLOWABLE LEAKAGE RATE (PERCENT)	KEYED NOTES
SUPPLY AIR WITHOUT TERMINAL UNITS	X														+2	A	5	
SUPPLY AIR UPSTREAM OF TERMINAL UNITS	X														+6	A	5	
SUPPLY AIR DOWNSTREAM OF TERMINAL UNITS	X														+2	A	5	
RETURN AIR WITHOUT TERMINAL UNITS	X														–2	A	5	
RETURN AIR UPSTREAM OF TERMINAL UNITS	X														–2	A	5	
RETURN AIR DOWNSTREAM OF TERMINAL UNITS	X														–6	A	5	
EXHAUST AIR WITHOUT TERMINAL UNITS	X														–2	A	5	
EXHAUST AIR UPSTREAM OF TERMINAL UNITS	X														–2	A	5	
EXHAUST AIR DOWNSTREAM OF TERMINAL UNITS	X														–6	A	5	
KITCHEN EXHAUST (TYPE I HOOD)												X	X		N/A	N/A	N/A	C, D
DISHWASHER EXHAUST						X									–2	N/A	N/A	C
AIR TRANSFER DUCT				X											+2	A	5	
RELIEF AIR DOWNSTREAM OF FANS	X														+6	A	5	
OUTSIDE AIR AND MIXED AIR DUCT	X														–6	A	5	
OUTSIDE AIR, RELIEF AIR AND EXHAUST AIR PLENUMS ADJACENT TO EXTERIOR LOUVERS		X													+/-6	A	5	

GENERAL NOTES

1. 'X' INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A DUCT SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. 4 X 1 PVC-COATED GALVANIZED STEEL: FACTORY-APPLIED PVC COATINGS SHALL BE 4 MILS (0.10 MM) THICK ON EXTERIOR SHEET METAL SURFACES OF DUCTS AND FITTINGS EXPOSED TO CORROSIVE CONDITIONS AND MINIMUM 1 MIL (0.025 MM) THICK ON INTERIOR SURFACES.
3. 1 X 4 (4 X 1 REVERSE COATED) PVC-COATED GALVANIZED STEEL: FACTORY-APPLIED PVC COATINGS SHALL BE 4 MILS (0.10 MM) THICK ON INTERIOR SHEET METAL SURFACES OF DUCTS AND FITTINGS EXPOSED TO CORROSIVE CONDITIONS AND MINIMUM 1 MIL (0.025 MM) THICK ON EXTERIOR SURFACES.
4. 4 X 4 PVC-COATED GALVANIZED STEEL: FACTORY-APPLIED PVC COATINGS SHALL BE 4 MILS (0.10 MM) THICK ON SHEET METAL SURFACES OF DUCTS AND FITTINGS EXPOSED TO CORROSIVE CONDITIONS AND 4 MILS (0.10 MM) THICK ON OPPOSITE SURFACES.

KEYED NOTES

A. SCREWS, DAMPERS, OR PROJECTIONS OF ANY TYPE ON INTERIOR OF DUCT SURFACE ARE PROHIBITED.
B. DUCT SHALL BE LINED WITHIN 25 FEET UPSTREAM OF FANS.
C. ALL WELDED CONSTRUCTION.
D. PROVIDE ZERO CLEARANCE KITCHEN GREASE DUCT, REFER TO SPECIFICATIONS

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
MECHANICAL SCHEDULES

PROJECT NUMBER 2021094

PROJECT DATE AUGUST 23, 2023

CHECKED BY WEK

SHEET NUMBER M7.01

ABOVEGROUND HVAC PIPE & ACCESSORY INSULATION APPLICATION SCHEDULE

	INSULATION MATERIAL & THICKNESS (INCHES)							FIELD–APPLIED JACKET MATERIAL						
	FLEXIBLE ELASTOMERIC	FIBERGLASS	MINERAL WOOL	POLYISOCYANURATE	PHENOLIC	CELLULAR GLASS	CALCIUM SILICATE	ALUMINUM	STAINLESS STEEL	PVC	SELF–ADHESIVE (FOR OUTDOOR APPLICATIONS)	PVDC (INDOOR)	PVDC (OUTDOOR)	KEYED NOTES
INDOOR PIPE SYSTEM AND SIZE (INCHES)														
CHILLED WATER & BRINE BELOW 40 DEG F:														
NPS 6 AND SMALLER		1						X		X				A
NPS 8 AND LARGER		1.5						X		X				A
CHILLED WATER & BRINE 40 DEG F to 60 DEG F:	1	1						X		X				A
HEATING HOT WATER SUPPLY & RETURN 200 DEG F AND LOWER														
NPS 1–1/4 AND SMALLER		1.5						X		X				A
NPS 1–1/2 AND LARGER		2						X		X				A
LOW PRESS. STEAM, CONDENSATE & PUMPED CONDENSATE:														
NPS 1–1/4 AND SMALLER		2.5	2.5				3	X						A
NPS 1–1/2 AND LARGER		3	3				3	X						A
MED. & HIGH PRESS. STEAM, CONDENSATE & PUMPED CONDENSATE:														
NPS 3/4 AND SMALLER		3	3				5	X						A
NPS 1 TO 1–1/4		4	4				5	X						A
NPS 1–1/2 AND LARGER		4.5	4.5				5	X						A
REFRIGERANT SUCTION & HOT GAS (RIGID COPPER)														
NPS 6 AND SMALLER	1	1						X		X				
NPS 8 AND LARGER	1.5	1.5						X		X				
REFRIGERANT SUCTION & HOT GAS (SOFT COPPER)	1							X		X				

UNLESS OTHERWISE INDICATED OR SCHEDULED, THE FOLLOWING DO NOT REQUIRE INSULATION:
DIRECT BURIED COOLING SYSTEM PIPING
PIPING THAT CONVEYS FLUIDS HAVING DESIGN OPERATING TEMPERATURE RANGE BETWEEN 60 DEG F. AND 105 DEG F., INCLUSIVE.

GENERAL NOTES

1. 'X' OR THICKNESS IN INCHES INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. INSULATE PIPING WITHIN AIR HANDLING EQUIPMENT THE SAME AS INDOOR PIPING. PROVIDE ALUMINUM OR STAINLESS STEEL JACKET.
3. FOR PIPING NPS 1–1/4 AND SMALLER WITHIN PARTITIONS IN CONDITIONED SPACES INSULATION MAY BE REDUCED BY ONE–INCH THICKNESS, BUT NOT TO LESS THAN ONE–INCH THICKNESS.
4. FOR PIPING NPS 1 AND SMALLER, INSULATION IS NOT REQUIRED FOR STRAINERS, CONTROL VALVES, AND BALANCING VALVES.

KEYED NOTES

A. PROVIDE FIELD APPLIED JACKET FOR PIPING EXPOSED IN EQUIPMENT ROOMS, STORAGE ROOMS, JANITORS CLOSETS, RECEIVING ROOMS, TEST AREAS, CIRCULATION AREAS AND SUCH AREAS SUBJECT TO DAMAGE WITHIN 10 FEET (3 METERS) OF FINISHED FLOOR.
B. PROVIDE MANUFACTURER'S RECOMMENDED PROTECTIVE COATING FOR FLEXIBLE ELASTOMERIC THERMAL INSULATION.
C. STEAM AND CONDENSATE PIPING JACKET SHALL BE STUCCO EMBOSSED.
D. PIPING WITHIN ENERGY RECOVERY UNITS SHALL BE TYPE 304 STAINLESS STEEL, SMOOTH; 0.010 INCH THICK. SEAMS AND JOINTS CAULKED WITH CHEMICALLY RESISTANT SEALER.

DUCT SYSTEM INSULATION APPLICATION SCHEDULE

	INSULATION MATERIAL & THICKNESS (INCHES)							FIELD APPLIED JACKET MATERIAL		
	FIBERGLASS BLANKET 0.75 LB/CU FT	FIBERGLASS BLANKET 1.0 LB/CU FT	FIBERGLASS BOARD 2.25 LB/CU FT	FIBERGLASS BOARD 6.0 LB/CU FT	FLEXIBLE ELASTOMERIC	ASTM E2336 2–HOUR FIRE RATED BLANKET	2–HOUR FIRE RATED BLANKET	ALUMINUM	SELF–ADHESIVE (FOR OUTDOOR APPLICATIONS)	KEYED NOTES
DUCT SYSTEMS LOCATED INDOORS										
SUPPLY AIR, EXCEPT AS NOTED BELOW		1.5								A, E
RECTANGULAR SUPPLY AIR IN MECHANICAL ROOMS			1.5							
ROUND & FLAT OVAL SUPPLY AIR IN MECHANICAL ROOMS		1.5								
RECTANGULAR RETURN AIR IN MECHANICAL EQUIPMENT ROOMS			1.5							
ROUND RETURN AIR IN MECHANICAL ROOMS		1.5								
OUTSIDE AIR AND MIXED AIR, EXCEPT AS NOTED BELOW		1.5								
RECTANGULAR OUTSIDE AIR AND MIXED AIR IN MECHANICAL ROOMS			1.5							
ROUND OUTSIDE AIR AND MIXED AIR IN MECHANICAL ROOMS		1.5								
EXHAUST AND RELIEF AIR BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR, EXCEPT AS NOTED BELOW		1.5								
RECTANGULAR EXHAUST AND RELIEF AIR BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR, IN MECHANICAL ROOMS			1.5							
ROUND & FLAT OVAL EXHAUST AND RELIEF AIR BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR, IN MECHANICAL ROOMS		1.5								
DUCT SYSTEMS LOCATED IN ATTICS, CRAWL SPACES, OR PARKING GARAGES HAVING NATURAL OR MECHANICAL VENTILATION										
RECTANGULAR DUCTS AND AIR PLENUMS, ALL TYPES	3			2						
ROUND & FLAT OVAL SUPPLY AIR	3									
ROUND & FLAT OVAL RETURN & EXHAUST AIR	3									

PLENUMS, DUCTS, AND DUCT ACCESSORIES NOT REQUIRING INSULATION:
FIBROUS–GLASS DUCTS
DOUBLE–WALL METAL DUCTS WITH INSULATION OF SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE AND ASHRAE/IESNA 90.1 – 2013
METAL DUCTS WITH DUCT LINER OF SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE AND ASHRAE/IESNA 90.1 – 2013
FABRIC SUPPLY DUCTS
FACTORY–INSULATED FLEXIBLE DUCTS
FACTORY–INSULATED PLENUMS AND CASINGS
FLEXIBLE CONNECTORS
VIBRATION–CONTROL DEVICES
FACTORY–INSULATED ACCESS PANELS AND DOORS

GENERAL NOTES

1. 'X' OR THICKNESS IN INCHES INDICATE ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A DUCT SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. REFER TO METAL DUCT SECTION OF SPECIFICATIONS FOR DUCT LINING AND DOUBLE–WALL INSULATED DUCT.
3. REFER TO HVAC CASINGS SECTION OF SPECIFICATIONS FOR DOUBLE–WALL INSULATED PLENUMS.

KEYED NOTES

A. INCLUDE INSULATION AROUND DUCT MOUNTED COILS AND AIR TERMINAL UNIT COILS.
B. NUMBER OF LAYERS AND TOTAL INSULATION THICKNESS AS RECOMMENDED BY SELECTED MANUFACTURER.
C. DOES NOT APPLY TO PREFABRICATED, ZERO–CLEARANCE GREASE DUCT.
D. PROVIDE MANUFACTURER'S RECOMMENDED PROTECTIVE COATING FOR FLEXIBLE ELASTOMERIC THERMAL DUCT INSULATION.
E. EXPOSED SUPPLY DUCTWORK LOCATED IN CONDITIONED SPACE SERVED BY THAT SYSTEM IS NOT REQUIRED TO BE INSULATED.

HORIZONTAL PIPING AND SUPPORT APPLICATION SCHEDULE

	HANGER OR SUPPORT TYPE						SHIELD TYPE			
METAL PIPE TYPE & SIZE	MSS TYPE 1 CLEVIS HANGER	MSS TYPE 10 SWIVEL RING BAND HANGER	MSS TYPE 41 DOUBLE ROD PIPE ROLLER	MSS TYPE 43 SINGLE ROD ROLLER HANGER	MSS TYPE 44 PIPE ROLLER & STAND	MSS TYPE 46 ADJUSTABLE PIPE ROLL STAND	MSS TYPE 39 PROTECTION SADDLE	MSS TYPE 40 INSULATION PROTECTION SHIELD	THERMAL–HANGER SHIELD	KEYED NOTES
UNINSULATED SINGLE PIPE										
UP TO 2 INCH	X	X								
2–1/2 INCH TO 4 INCH	X	X								
6 INCH TO 8 INCH	X									
10 INCH	X									
12 INCH			X							
14 INCH AND LARGER			X							
INSULATED SINGLE COLD PIPES										
UP TO 2 INCH	X	X						X	X	A
2–1/2 INCH TO 4 INCH	X								X	
6 INCH TO 8 INCH	X								X	
10 INCH	X								X	
12 INCH	X								X	
14 INCH AND LARGER	X								X	
INSULATED SINGLE HOT PIPES										
UP TO 2 INCH	X	X						X	X	A, C
2–1/2 INCH TO 4 INCH			X	X	X	X	X		X	B, C
6 INCH TO 8 INCH			X	X	X	X	X		X	B, C
10 INCH			X	X	X	X	X		X	B, C
12 INCH			X		X	X	X		X	B, C
14 INCH AND LARGER			X				X		X	B, C

GENERAL NOTES

1. "X" INDICATES APPROVED HANGER OR SUPPORT ELEMENTS. IF MORE THAN ONE HANGER OR SUPPORT ELEMENT IS INDICATED, SELECTION FROM APPROVED ELEMENTS IS CONTRACTOR'S OPTION.
2. REFER TO HANGER AND SUPPORT SECTION FOR APPROVED MANUFACTURERS.
3. HANGERS AND SUPPORTS USED FOR FIRE PROTECTION SERVICES SHALL BE UL LISTED OR FMG APPROVED.
4. HANGER ELEMENTS IN CONTACT WITH BARE COPPER PIPE SHALL BE COPPER PLATED, PLASTIC COATED, FELT LINED, OR USE MANUFACTURED COPPER TUBE ISOLATORS.
5. REFER TO INDIVIDUAL PIPING SPECIFICATION SECTIONS FOR HANGER SPACING.
6. MULTIPLE PARALLEL COLD PIPES MAY BE TRAPEZE SUPPORTED FROM BELOW USING U–BOLTS OR STRUT CLAMPS AND THERMAL HANGER SHIELDS. REFER TO KEYED NOTE A.
7. MULTIPLE PARALLEL COLD PIPES MAY BE TRAPEZE SUPPORTED FROM ABOVE USING STANDARD HANGER ELEMENTS INDICATED FOR SINGLE COLD PIPES.
8. MULTIPLE PARALLEL HOT PIPES MAY BE TRAPEZE SUPPORTED FROM BELOW USING ROLLER ELEMENTS AND THERMAL HANGER SHIELD OR INSULATION PROTECTION SADDLE. REFER TO KEYED NOTES B AND C.
9. MULTIPLE PARALLEL HOT PIPES MAY BE TRAPEZE SUPPORTED FROM ABOVE USING STANDARD ROLLER HANGERS INDICATED AND THERMAL HANGER SHIELD OR INSULATION PROTECTION SADDLE. REFER TO KEY NOTES B AND C.
10. REFER TO INDIVIDUAL PIPING SPECIFICATION SECTIONS FOR ADDITIONAL SYSTEM SPECIFIC HANGER APPLICATIONS.

KEYED NOTES

A. USE THERMAL HANGER SHIELD ON TRAPEZE SUPPORTED INSULATED PIPE TO PREVENT CRUSHING OF INSULATION.
B. USE THERMAL HANGER SHIELD DESIGNED FOR USE ON ROLLER SUPPORTS FOR INSULATED HOT PIPE .
C. USE TYPE 39 PROTECTION SADDLES IF INSULATION WITHOUT VAPOR BARRIER IS INDICATED. FILL INTERIOR VOIDS WITH INSULATION MATCHING ADJOINING INSULATION.

ABOVEGROUND PLUMBING PIPE & ACCESSORY INSULATION APPLICATION SCHEDULE

	INSULATION MATERIAL & THICKNESS (INCHES)							FIELD–APPLIED JACKET MATERIAL						
	FLEXIBLE ELASTOMERIC	FIBERGLASS	MINERAL WOOL	POLYISOCYANURATE	PHENOLIC	CELLULAR GLASS	CALCIUM SILICATE	ALUMINUM	STAINLESS STEEL	PVC	SELF–ADHESIVE (FOR OUTDOOR APPLICATIONS)	PVDC (INDOOR)	PVDC (OUTDOOR)	KEYED NOTES
INDOOR PIPE SYSTEM AND SIZE (INCHES)														
DOMESTIC COLD WATER	1	1						X		X				A
DOMESTIC HOT WATER SUPPLY & RETURN 140 DEG F AND LESS:														
NPS 1–1/4 AND SMALLER	1	1						X		X				A
NPS 1–1/2 AND LARGER	1.5	1.5						X		X				A
STORM WATER & OVERFLOW	1	1						X		X				A
ROOF DRAIN AND OVERFLOW DRAIN BODIES	1	1												
CONDENSATE AND EQUIPMENT DRAIN PIPING BELOW 60 DEG F	0.75	1												
FLOOR DRAINS, TRAPS AND SANITARY DRAIN PIPING WITHIN 10 FEET OF DRAIN RECEIVING CONDENSATE AND EQUIPMENT DRAIN WATER BELOW 60 DEG F	0.75	1						X		X				A
OUTDOOR (ABOVEGROUND) AND TUNNEL PIPE SYSTEM AND SIZE (INCHES)														
DOMESTIC COLD WATER	2	2						X		X	X			B
DOMESTIC HOT WATER SUPPLY & RETURN	2	2						X		X	X			B
SANITARY WHERE HEAT TRACING IS INSTALLED		2						X		X	X			B
STORM WATER AND OVERFLOW WHERE HEAT TRACING IS INSTALLED		2						X		X	X			B

UNLESS OTHERWISE INDICATED OR SCHEDULED, DO NOT INSULATE THE FOLLOWING:
FIRE SUPPRESSION PIPING
UNDERGROUND PIPING
LABORATORY GAS AND VACUUM PIPING
MEDICAL GAS AND VACUUM PIPING
FUEL GAS PIPING
FUEL OIL PIPING

GENERAL NOTES

1. 'X' OR THICKNESS IN INCHES INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. INSULATE PIPING WITHIN AIR HANDLING EQUIPMENT THE SAME AS INDOOR PIPING. PROVIDE ALUMINUM OR STAINLESS STEEL JACKET.

KEYED NOTES

A. PROVIDE FIELD APPLIED JACKET FOR PIPING EXPOSED IN EQUIPMENT ROOMS, STORAGE ROOMS, JANITORS CLOSETS, RECEIVING ROOMS, TEST AREAS, CIRCULATION AREAS AND SUCH AREAS SUBJECT TO DAMAGE, WITHIN 10 FEET (3 METERS) OF FINISHED FLOOR.
B. PROVIDE MANUFACTURER'S RECOMMENDED PROTECTIVE COATING FOR FLEXIBLE ELASTOMERIC THERMAL INSULATION.

ABOVEGROUND HVAC PIPING & VALVE APPLICATION SCHEDULE

	MATERIAL						CONNECTION							ISOLATION VALVES			
PIPE SIZE (INCHES)	SOFT COPPER TYPE K	HARD COPPER TYPE L	HARD COPPER TYPE M	CARBON STEEL (SCHED. 40)	CARBON STEEL (SCHED. 80)	CARBON STEEL (STD.)	COPPER TYPE DWV	SOLDERED	BRAZED	WELDED	THREADED	FLANGED	GROOVED	PRESSURE SEAL	MECHANICALLY FORMED TEE	BALL	GENERAL SERVICE BUTTERFLY	HI–PERF BUTTERFLY	GATE	KEYED NOTES
CHILLED WATER SUPPLY & RETURN - MIN. WORKING PRESS. & TEMP.: 125 PSIG AT 200 DEG F																				
UP TO 2				X							X					X				
UP TO 2		X						X	X						X	X				
2–1/2 TO 4				X						X		X	X				X			A
2–1/2 TO 4		X							X				X	X	X		X			A
HEATING HOT WATER SUPPLY & RETURN - MIN. WORKING PRESS. & TEMP.: 125 PSIG AT 200 DEG F																				
UP TO 2				X							X					X				
UP TO 2		X						X	X						X	X				
2–1/2 TO 4				X						X		X	X				X			A
2–1/2 TO 4		X							X				X	X	X		X			A
LOW PRESSURE STEAM - MAX. 15 PSIG STEAM WORKING PRESSURE																				
UP TO 2–1/2				X							X					X				C
3 TO 4				X						X		X						X		A

GENERAL NOTES

1. 'X' INDICATES ACCEPTABLE SELECTION. IF MORE THAN ONE SELECTION IS INDICATED FOR A PIPING SYSTEM, CONTRACTOR MAY SELECT FROM THOSE INDICATED SELECTIONS.
2. DISSIMILAR–METAL PIPING JOINTS: CONSTRUCT JOINTS USING DIELECTRIC FITTINGS COMPATIBLE WITH BOTH PIPING MATERIALS. IF A BRONZE VALVE CONNECTS THE DISSIMILAR METALS NO FURTHER DIELECTRIC ISOLATION IS REQUIRED.
   a. NPS 2 AND SMALLER: USE BRASS COUPLING, NIPPLE, OR UNION.
   b. NPS 2–1/2 AND LARGER: USE DIELECTRIC FLANGE KITS.
3. USE UNIONS OR FLANGES AT VALVE AND EQUIPMENT CONNECTIONS.
4. HVAC EQUIPMENT DRAINS, VENTS, SAFETY VALVE PIPING, BLOWDOWN PIPING AND THE LIKE SHALL BE SAME PIPING MATERIAL AS ASSOCIATED PIPING SYSTEM.
5. GROOVED END VALVES MAY BE USED WITH GROOVED PIPING.

KEYED NOTES

A. GROOVED AND FLANGED FITTINGS, JOINTS, AND COUPLINGS, IF INDICATED AS AN ACCEPTABLE SELECTION, MAY BE USED IN ACCESSIBLE LOCATIONS FOR THIS PIPING SYSTEM ONLY. ACCESSIBLE LOCATIONS ARE DEFINED AS EXPOSED CONSTRUCTION OR ABOVE LAY–IN CEILINGS.
B. BALL VALVE WITH 250 PSIG STEAM TRIM.
C. BALL VALVE WITH 150 PSIG STEAM TRIM.

PLUMBING

These documents are approved for compliance with the STATE OF MICHIGAN PLUMBING CODE subject to field inspection and the conditions of approval.

MECHANICAL

These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
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AUGUST 23, 2023

CHECKED BY
WEK

AIR HANDLING UNIT SUPPLY AIR FAN SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	E.S.P. IN. W.G.	T.S.P. IN. W.G.	MINIMUM WHEEL DIAMETER INCHES	RPM	FAN CLASS	MOTOR				MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
									BHP	HP	RPM	DRIVE TYPE		VOLTS	PHASE	SCCR KA (NOTE 5)	OPTIONS/ ACCESSORIES		
RF-1	AHU-21H	CENTRIFUGAL	10,000	1.0	1.19	22.25	2403	2	5.12	7.5	1750	DIRECT	VFD	460	3			CAH021GDGC	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
3. DESIGN MINIMUM OUTSIDE AIRFLOW CFM (VENTILATION) LISTED IS BASED ON THE ESTIMATED MAXIMUM OCCUPANT LOAD. REFER TO TEMPERATURE CONTROL DRAWINGS FOR OUTSIDE AIR CONTROL SEQUENCE.
4. REFER TO AIR HANDLING UNIT FILTER SCHEDULE FOR AIR PRESSURE DROP TO BE USED FOR TOTAL STATIC PRESSURE CALCULATIONS.
5. CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

KEYED NOTES:
1. PROVIDE BUNGY CORD MAINTENANCE LED LIGHT 235" LONG, WITH MAGNETIC BASE AND FLEXIBLE CORD
2. PROVIDE TWO BLANK OFF SHEETS FOR SUPPLY FAN

MODULAR AIR HANDLING UNIT COMPONENT SCHEDULE

UNIT IDENTIFICATION	POSITION NUMBER 1	POSITION NUMBER 2	POSITION NUMBER 3	POSITION NUMBER 4	POSITION NUMBER 5	POSITION NUMBER 6	POSITION NUMBER 7	POSITION NUMBER 8	POSITION NUMBER 9	KEYED NOTES
AHU-21H	PLENUM	ACCESS	RF-1	ECONOMIZER	AF-1	HC-1	CC-1	ACCESS	SF-1	1
AHU-22H	PLENUM	AF-2	HC-2	ACCESS	SF-2	---	---	---	---	1

GENERAL NOTES:
1. MODULES SELECTED BASED ON DAIKIN INDOOR MODULAR CLIMATE CHANGER AIR HANDLING UNIT.
2. POSITION NUMBERS ARE INDICATED IN THE DIRECTION OF AIRFLOW FROM RETURN AIR INLET TO SUPPLY AIR DISCHARGE.

KEYED NOTES:
1. AHU TO BE SHIPPED IN SECTIONS AND THEN BROKEN DOWN TO FIT THROUGH EXISTING DOORWAYS. CONTRACTOR TO REASSEMBLE AHU IN ROOM UNDER DIRECTION FROM MANUFACTURER
2. AHU IS IS PRE=PURCHASED AND ASSIGNED TO THE CONTRACTOR FOR DELIVERY AND INSTALLATION

MODULAR AIR HANDLING UNIT DIMENSIONS

UNIT IDENTIFICATION	MAXIMUM UNIT LENGTH	MAXIMUM UNIT WIDTH	MAXIMUM UNIT HEIGHT	MAXIMUM UNIT WEIGHT POUNDS	MANUFACTURER LEAD TIME	MANUFACTURER	KEYED NOTES
AHU-21H	310"	90"	58"	5504	---	DAIKIN	1
AHU-22H	166"	80"	52"	2877	---	DAIKIN	1

GENERAL NOTES:
1. FOR REFERENCE ONLY

KEYED NOTES:
1. AHU TO BE SHIPPED IN SECTIONS AND THEN BROKEN DOWN TO FIT THROUGH DOORWAYS. CONTRACTOR TO REASSEMBLE AHU IN ROOM UNDER DIRECTION FROM MANUFACTURER

AIR HANDLING UNIT FILTER SCHEDULE

UNIT I.D.	SYSTEM SERVED	TYPE	AIRFLOW CFM	AIR PRESS. DROP		EFFICIENCIES	FILTER MEDIA					HOUSING			MODEL NO.	KEYED NOTES
				INITIAL IN. W.G.	DIRTY IN. W.G.	MERV	QUAN.	WIDTH IN.	HEIGHT IN.	DEPTH IN.	MIN. MEDIA FACE AREA SQ. FT.	ACCESS TYPE	WIDTH IN.	HEIGHT IN.		
AF-1	AHU-21H	PLEATED	10,000	0.22	1.0	8	3/3	24/24	24/20	2	20	SIDE	18	48	CAH021GDGC	
AF-1	AHU-21H	VARICEL SH CARTRIDGE	10,000	0.53	1.5	13	3/3	24/24	24/20	12	20	SIDE	18	48	CAH021GDGC	
AF-2	AHU-22H	PLEATED	8700	0.08	1.0	8	3/6/3	24/20/12	24/24/24	2/2/2	12/20/6	SIDE	26	42	CAH018GDGM	

GENERAL NOTES:
1. MODEL NUMBERS ARE FARR UNLESS OTHERWISE NOTED.
2. PROVIDE 25% TO 30% EFFICIENT 2 INCH THROW AWAY PREFILTERS
3. MERV DESIGNATES THE "MINIMUM EFFICIENCY REPORTING VALUE" AS EVALUATED UNDER ASHRAE STANDARD 52.2 1999.
4. AIR HANDLING UNIT TOTAL STATIC PRESSURE FOR VARIABLE AIR VOLUME SYSTEMS IS BASED ON THE FILTER DIRTY AIR PRESSURE DROP AND AVERAGE/MIDLIFE FILTER AIR PRESSURE DROP FOR CONSTANT VOLUME SYSTEMS UNLESS NOTED OTHERWISE.

KEYED NOTES:
1. PROVIDE THREE SETS OF EACH TYPE OF FILTER

AIR HANDLING UNIT SUPPLY AIR FAN SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	OUTSIDE AIR FLOW CFM	E.S.P. IN. W.G.	T.S.P. IN. W.G.	MINIMUM WHEEL DIAMETER INCHES	RPM	FAN CLASS	MOTOR				MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
										BHP	HP	RPM	DRIVE TYPE		VOLTS	PHASE	SCCR KA (NOTE 5)	OPTIONS/ ACCESSORIES		
SF-1	AHU-21H	CENTRIFUGAL	10,000	3000	2.0	4.89	24.5	1796	2	11.29	15.0	1750	DIRECT	VFD	460	3			CAH021GDGC	
SF-2	AHU-22H	CENTRIFUGAL	8700	8700	1.5	3.51	18.25	3650	2	7.9	10	3500	DIRECT	VFD	460	3				

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
3. DESIGN MINIMUM OUTSIDE AIRFLOW CFM (VENTILATION) LISTED IS BASED ON THE ESTIMATED MAXIMUM OCCUPANT LOAD. REFER TO TEMPERATURE CONTROL DRAWINGS FOR OUTSIDE AIR CONTROL SEQUENCE.
4. REFER TO AIR HANDLING UNIT FILTER SCHEDULE FOR AIR PRESSURE DROP TO BE USED FOR TOTAL STATIC PRESSURE CALCULATIONS.
5. CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

KEYED NOTES:
1. PROVIDE BUNGY CORD MAINTENANCE LED LIGHT 235" LONG, WITH MAGNETIC BASE AND FLEXIBLE CORD
2. PROVIDE TWO BLANK OFF SHEETS FOR SUPPLY FAN

CHILLED WATER COOLING COIL SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	MAXIMUM NUMBER ROWS	MAXIMUM FIN DENSITY FINS/INCH	TOTAL CAPACITY MBH	AIR						MINIMUM FACE AREA SQ. FT.	WATER					CONTROL VALVE W.P.D. FT. HEAD	MODEL NUMBER	KEYED NOTES
					AIRFLOW CFM	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	MAXIMUM A.P.D. IN. W.G.		FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD			
CC-1	AHU-21H	6	9	388.6	10000	79.7	65.9	53.9	53.0	0.69	20.1	63.7	W	44.0	56.2	16.0	15	5WL0906B	#

GENERAL NOTES:
1. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
2. COIL SELECTIONS BASED ON .00025 FOULING FACTOR.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

HOT WATER HEATING COIL SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	MAXIMUM NUMBER ROWS	MAXIMUM FIN DENSITY FINS/INCH	CAPACITY MBH	AIR				MINIMUM FACE AREA SQ. FT.	WATER					CONTROL VALVE W.P.D. FT. HD.	MODEL NUMBER	KEYED NOTES
					AIRFLOW CFM	E.D.B. °F	L.D.B. °F	MAXIMUM A.P.D. IN. W.G.		FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD			
HC-1	AHU-21H	2	10	305.5	10000	43.0	70.9	0.30	15.1	19.7	PG35	130	99	2.00	15	5WH1002B	
HC-2	AHU-22H	2	10	804.5	8700	-10.0	82.0	0.33	16.0	42.2	PG35	130	94	8.6	15	5WH1002C	

GENERAL NOTES:
1. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
2. COIL SELECTION BASED ON .00025 FOULING FACTOR.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

AIR TERMINAL TYPE

DUCT CONNECTIONS		DISCHARGE SOUND POWER/RADIATED SOUND POWER – dB						DIMENSIONS		MODEL NUMBER	KEYED NOTES
INLET SIZE INCHES	OUTLET SIZE INCHES	125 Hz	250 Hz	500 Hz	1000 Hz	2000 HZ	4000 HZ	LENGTH INCHES	HEIGHT INCHES		
6ø	12x8	73/66	69/63	62/52	56/42	53/40	49/36			ESV	1
8ø	12x10	72/68	70/59	66/53	63/47	57/46	53/46			ESV	2
10ø	14x12-1/2	78/71	70/61	65/56	61/50	58/47	53/45			ESV	3
12ø	16x15	76/72	73/63	69/59	65/53	61/48	57/46			ESV	4
16ø	24x18	78/70	73/63	70/58	68/53	64/52	59/50			ESV	5
24x16	38x18	83/74	81/69	76/63	74/54	73/48	68/41			ESV	6

GENERAL NOTES:
1. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.
2. MAXIMUM SOUND POWER LEVEL BASED ON 2" PRESSURE DROP ACROSS UNIT WITH NO ALLOWANCE FOR EXTERNAL ATTENUATION.

KEYED NOTES:
1. BASED ON 350 CFM
2. BASED ON 650 CFM
3. BASED ON 900 CFM
4. BASED ON 1500 CFM
5. BASED ON 2500 CFM
6. BASED ON 5300 CFM

AIR TERMINAL UNIT WITH HOT WATER COIL SCHEDULE

UNIT IDENTIFICATION	INLET SIZE	AREA SERVED	UNIT SERVED FROM	AIR FLOW					CAPACITY MBH	NUMBER ROWS	HEATING COIL (NOTE 3)								KEYED NOTES
				COOLING MAX CFM	COOLING MIN. CFM	HEATING MIN. CFM	HEATING MAX CFM	MAXIMUM A.P.D. W/COIL IN. W.G.			AIR		WATER						
											E.D.B °F	L.D.B. °F	FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD	CONTROL VALVE W.P.D. FT. HEAD	CONTROL VALVE TYPE	
VBR-H108	6	H132,H119, H133	AHU-21H	260	80	80	260	0.11	5.0	2	55.0	90.0	0.5	PG35	130	100	0.29	15	3-WAY	
VBR-H109	12	DINING H131	AHU-21H	1080	325	325	1080	0.16	20.6	2	55.0	90.0	1.2	PG35	130	100	1.41	15	3-WAY	
VBR-H110	12	DINING H131	AHU-21H	1080	325	325	1080	0.16	20.6	2	55.0	90.0	1.2	PG35	130	100	1.41	15	3-WAY	
VBR-H111	12	DINING H131/ SERVERY H130	AHU-21H	1280	325	325	1280	0.22	24.4	2	55.0	90.0	1.5	PG35	130	100	2.77	15	3-WAY	
VBR-H112	12	DINING H131/ SERVERY H130	AHU-21H	1280	325	325	1280	0.22	24.4	2	55.0	90.0	1.5	PG35	130	100	2.77	15	3-WAY	
VBR-H113	12	KITCHEN H123	AHU-21H	1260	325	325	1260	0.21	24.0	2	55.0	90.0	1.4	PG35	130	100	2.63	15	3-WAY	
VBR-H114	12	KITCHEN H123	AHU-21H	1375	325	325	1375	0.22	24.3	2	55.0	90.0	1.5	PG35	130	100	2.74	15	3-WAY	
VBR-H115	6	BREAK ROOM H127	AHU-21H	205	80	80	205	0.08	4.0	2	55.0	90.0	0.5	PG35	130	100	0.11	15	3-WAY	
VBR-H116	12	KITCHEN H123	AHU-21H	1330	325	325	1330	0.30	25.3	2	55.0	90.0	1.5	PG35	130	100	1.78	15	3-WAY	
VBR-H117	6	OFFICE H125	AHU-21H	200	80	80	200	0.07	3.9	2	55.0	90.0	0.5	PG35	130	100	0.10	15	3-WAY	
VBR-H118	8	CORRIDOR H122	AHU-21H	600	145	145	600	0.34	11.5	2	55.0	90.0	0.7	PG35	130	100	4.95	15	3-WAY	
VBR-H119	6	STORAGE H124	AHU-21H	150	80	80	150	0.03	3.1	1	55.0	90.0	0.5	PG35	130	100	0.05	15	3-WAY	

GENERAL NOTES:
1. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.
2. MAXIMUM PRESSURE DROP SCHEDULED SHALL BE THE MAXIMUM ALLOWABLE STATIC PRESSURE FOR BOX AND COIL. AT THE MAXIMUM CFM.
3. HEATING COIL SELECTION BASED ON HEATING MAXIMUM AIR FLOW.
4. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

KITCHEN EXHAUST DUCT REQUIREMENT SCHEDULE

EXHAUST SYSTEM	MINIMUM DESIGN PRESSURE	MINIMUM DESIGN TEMPERATURE (DEG. F)	WORKING PRESSURE	TEST PRESSURE	LIGHT TEST	TEST TIME	ALLOWABLE LEAKAGE
GREASE DUCT	20 PSIG	>200	-5" PSIG	20 PSIG	TEST ALL JOINTS PER NFPA 96	2 HOURS	NONE

NOTES:
1. CONTRACTOR TO TEST ALL JOIST PER NPFA 96
2. CAP END OF GREASE DUCTS AND TEST WITCH COMPRESSED AIR, REDO JOIST THAT DO NOT PASS, HOLD TEST FOR MINIMUM 2 HOURS

PUMP SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	LOCATION	TYPE	COUPLING TYPE	WATERFLOW GPM	FLUID TYPE	COLDEST SYSTEM OPERATING TEMP. °F FOR PUMP SELECTION	PUMP HEAD FT.	OVERLOAD GPM	MINIMUM EFFICIENCY %	MOTOR			MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
											BHP	HP	RPM		VOLTS	PHASE	SCCR KA (NOTE 4)	OPTIONS/ ACCESSORIES		
P-54	HWH	PENTHOUSE	IN-LINE	CLOSE	140	PG35	70 °F	20	NON-OVERLOADING	74.3	0.85	1	1800	AUTO	480	3	5	--	E-90-3AAB	
P-55	HWH	PENTHOUSE	IN-LINE	CLOSE	140	PG35	70 °F	20	NON-OVERLOADING	74.3	0.85	1	1800	AUTO	480	3	5	--	E-90-3AAB	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBER ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.
4. CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

KEYED NOTES:
1. PUMPS SIZED FOR CURRENT CONNECTED LOAD, PIPING SIZE FOR WEST BUILDING FUTURE CONNECTED LOAD

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A. DIRECTOR

FILE NO.
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
MECHANICAL SCHEDULES

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PROJECT NUMBER
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CHECKED BY
WEK

SHEET NUMBER
M7.03

POWER VENTILATOR SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	T.S.P. IN. W.G.	TIP SPEED FPM	FAN RPM	MOTOR				CURB HEIGHT INCHES	MODULATION/ CONTROL TYPE	ELECTRICAL				MAXIMUM SOUND POWER LEVELS												MODEL NUMBER	KEYED NOTES
							BHP	HP	RPM	DRIVE TYPE			VOLTS	PHASE	SCCR KA	OPTIONS/ ACCESSORIES	UNIT DISCHARGE Lw BY OCTAVE BAND								UNIT INLET Lw BY OCTAVE BAND									
																	63 HZ (DB)	125 HZ (DB)	250 HZ (DB)	500 HZ (DB)	1000 HZ (DB)	2000 HZ (DB)	4000 HZ (DB)	8000 HZ (DB)	63 HZ (DB)	125 HZ (DB)	250 HZ (DB)	500 HZ (DB)	1000 HZ (DB)	2000 HZ (DB)	4000 HZ (DB)	8000 HZ (DB)		
EF-6H	TOILET H126	CENTRIFUGAL	100	0.25	3161	1486	0.01	1/10	1725	DIRECT	18	AUTO	120	1	5	B	---	---	---	---	---	---	---	---	57	61	58	48	47	48	39	32	G-060-VG	
EF-7H	CHEMICAL STORAGE H129	CENTRIFUGAL	200	0.5	3669	1725	0.03	1/15	1725	DIRECT	18	AUTO	120	1	5	B	---	---	---	---	---	---	---	---	68	71	69	54	49	47	43	38	G-070-VG	
EF-8H	DISHWASHER HOOD	CENTRIFUGAL	200	0.5	3669	1725	0.03	1/15	1725	DIRECT	18	AUTO	120	1	5	B	---	---	---	---	---	---	---	---	68	71	69	54	49	47	43	38	G-070-VG	
EF-9H	KITCHEN HOOD	CENTRIFUGAL	3600	1.0	6693	1538	1.39	2	1725	DIRECT	18	AUTO	208	1	5	B	---	---	---	---	---	---	---	---	78	85	86	84	78	74	71	68	CUE-160-VG	
EF-10H	KITCHEN HOOD	CENTRIFUGAL	5100	1.5	7299	1304	2.53	3	1360	DIRECT	18	AUTO	208	3	5	B	---	---	---	---	---	---	---	---	93	81	88	74	70	69	67	62	CUE-200-VG	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED.

STEAM HUMIDIFIER SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	AHU DISTRIBUTION TUBE BANK								MODULATION/ CONTROL TYPE	REMARKS
		QUANTITY REQUIRED	TYPE	MODEL LBS/HR	AHU AIR TEMPERATURE °F	AHU WIDTH INCHES	AHU HEIGHT INCHES	MAXIMUM ABSORPTION DISTANCE INCHES	MODEL		
H-1	AHU-21H	1	INSULATED MULTIPLE TUBES	62.8	88.9	78	48	26"	DRISTEEM	AUTO	

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE DRISTEEM UNLESS OTHERWISE NOTED.
3. PROVIDE STEAM DISTRIBUTION ASSEMBLY TO AHU MANUFACTURE FOR MOUNTING IN AHU HUMIDIFIER SECTION.

GAS FIRED CONDENSING BOILER SCHEDULE

UNIT IDENTIFICATION	TURNDOWN	FUEL		AGA INPUT MBH	AGA OUTPUT MBH	MINIMUM EFFICIENCY (%)	DIMENSIONS			WATER				UNIT CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
		TYPE	MAXIMUM ALLOWABLE OUTPUT AT MINIMUM FIRING RATE (MBH)				DEPTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)	E.W.T. °F	L.W.T. °F	FLOW GPM	MAXIMUM W.P.D. FT. HD.		VOLTS	PHASE	FLA	OPTIONS/ ACCESSORIES		
B-11	20:1	NAT GAS	100	2000	1800	90	43.6	28	78	90	130	140	7	AUTO	120	1	16	B	BMK2000	
B-12	20:1	NAT GAS	100	2000	1800	90	43.6	28	78	90	130	140	7	AUTO	120	1	16	B	BMK2000	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE AERCO UNLESS OTHERWISE NOTED.
3. PROVIDE BOILER WITH CONDENSATE NEUTRALIZATION TANK ASSEMBLY.
4. MINIMUM PRESSURE RATING OF 125 PSIG.

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

UNIT IDENTIFICATION	TYPE	FACE SIZE	NECK SIZE	FRAME TYPE	ACCESSORY	CONSTRUCTION	FINISH	MODEL NUMBER	KEYED NOTES
S-1	DIFFUSER	24x24	SEE PLANS	LAY-IN	NONE	STEEL	WHITE	SQD	
R-1	GRILLE	24x24	SEE PLANS	LAY-IN	NONE	ALUMINUM	WHITE	80	
R-2	GRILLE	24x12	SEE PLANS	LAY-IN	NONE	ALUMINUM	WHITE	80	
E-1	GRILLE	12x12	SEE PLAN	LAY-IN	NONE	ALUMINUM	WHITE	80	
E-2	GRILLE	24x24	SEE PLAN	LAY-IN	NONE	ALUMINUM	WHITE	80	
L-1	LOUVER	72x78	SEE PLAN	FLANGED	NONE	ALUMINUM	MILL	ESD-635	1
L-2	LOUVER	66x78	SEE PLAN	FLANGED	NONE	ALUMINUM	MILL	ESD-635	1

GENERAL NOTES:
1. MODEL NUMBERS ARE PRICE UNLESS OTHERWISE NOTED.

KEYED NOTES:
1. MODEL NUMBERS ARE GREENHECK.

HOT WATER CABINET UNIT HEATER SCHEDULE

UNIT IDENTIFICATION	CAPACITY MBH	AIR			FAN		WATER					CONTROL VALVE W.P.D. FT. HEAD	DIMENSIONS		RECESS DEPTH INCHES	FILTER		MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
		AIRFLOW CFM	E.D.B. °F	L.D.B. °F	HP	RPM	FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD		LENGTH INCHES	HEIGHT INCHES	DEPTH INCHES	TYPE	AREA SQ. FT.		VOLTS	PHASE	SCCR KA	OPTIONS/ ACCESSORIES		
CUH-3H	19.0	860	60	80.4	1/10	1050	2.8	PG35	130	100	1.5	15	61	44	9.5	9	WASHABLE	3.5	AUTO	120	1	5	B	RC-1200-08	
CUH-4H	19.0	860	60	80.4	1/10	1050	2.8	PG35	130	100	1.5	15	61	44	9.5	9	WASHABLE	3.5	AUTO	120	1	5	B	RC-1200-08	
CUH-5H	30.4	1040	60	86.9	1/10	1050	4.4	PG35	130	100	1.5	15	66	49	9.5	9	WASHABLE	3.5	AUTO	120	1	5	B	RC-1200-10	1
CUH-6H	28.2	845	60	90.8	1/10	1050	4.1	PG35	130	100	1.5	15	61	44	9.5	0	WASHABLE	3.5	AUTO	120	1	5	B	WI-1110-08	1

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE STERLING UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

KEYED NOTES:
1. HIGH CAPACITY COIL

HOT WATER PROPELLER FAN UNIT HEATER SCHEDULE

UNIT IDENTIFICATION	CAPACITY MBH	AIRFLOW CFM	LEAVING AIR TEMPERATURE °F	FAN		WATER					CONTROL VALVE W.P.D. FT. HEAD	MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
				HP	RPM	FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD			VOLTS	PHASE	SCCR KA	OPTIONS/ ACCESSORIES		
UH-8H	12.7	750	104	1/20	1000	1.8	PG35	130	100	0.12	15	AUTO	120	1	---	B	HS-48	
UH-9H	53.0	1800	103	1/12	1000	3.9	PG35	130	100	0.36	15	AUTO	120	1	---	B	HS-108	
UH-10H	53.0	1800	103	1/12	1000	3.9	PG35	130	100	0.36	15	AUTO	120	1	---	B	HS-108	
UH-11H	12.7	750	104	1/20	1000	1.8	PG35	130	100	0.12	15	AUTO	120	1	---	B	HS-48	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE STERLING UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

HOT WATER FINNED TUBE RADIATION SCHEDULE

UNIT IDENTIFICATION	CAPACITY BTUH/ LINEAR FT.	ENTERING AIR TEMP °F	FLUID TYPE	WATER TEMP.		ENCLOSURE			ELEMENT				CONTROL VALVE W.P.D. FT. HEAD	MODEL NUMBER	KEYED NOTES
				E.W.T. °F	AVERAGE °F	TYPE	LENGTH INCHES	HEIGHT INCHES	TUBE DIAMETER INCHES	WIDTH INCHES	HEIGHT INCHES	NUMBER OF TIERS			
FTR-1	300	65	W	130	110	SLOPE TOP (JVB-S-LT)	SEE PLAN	14	0.75	4.25	3.63	1	15	C3/4-433-14B	

GENERAL NOTES:
1. MODEL NUMBERS ARE STERLING UNLESS OTHERWISE NOTED.
2. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

HOT WATER RADIANT CEILING PANEL SCHEDULE

UNIT IDENTIFICATION	CAPACITY BTUH/ LINEAR FT.	FLUID TYPE	WATER TEMP		DIMENSIONS		FINISH	CONSTRUCTION	CONTROL VALVE W.P.D. FT. HEAD	MODEL NUMBER	KEYED NOTES
			E.W.T. °F	L.W.T. °F	LENGTH INCHES	WIDTH INCHES					
RCP-1	142	PG35	130	100	SEE PLANS	12	WHITE	STEEL	15	RC-4	

GENERAL NOTES:
1. MODEL NUMBERS ARE RUNTAL UNLESS OTHERWISE NOTED.
2. EXTRUDED ARCHITECTURAL SPACE MASTERY SERIES MEF-2 FLUTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

VARIABLE FREQUENCY CONTROLLER SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	LOCATION	RATED HORSEPOWER	OPERATING HORSEPOWER	REMARKS
VFC-AHU-21H-SF	SF-1	SEE DRAWINGS	15	11.3	PRIMARY
VFC-AHU-21H-RF	RF-1	SEE DRAWINGS	7.5	5.1	PRIMARY
VFC-AHU-22H-SF	SF-2	SEE DRAWINGS	10	7.9	PRIMARY
VFC-EF-9H	EF-9H	SEE DRAWINGS	2	1.4	PRIMARY
VFC-EF-10H	EF-10H	SEE DRAWINGS	3	2.5	BACKUP

NOTE:
1. REFER TO SPECIFICATIONS FOR APPROVED MANUFACTURERS.
2. REFER TO ELECTRICAL WIRING DIAGRAM FOR CONNECTION REQUIREMENTS.

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
MECHANICAL SCHEDULES

PROJECT NUMBER
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SHEET NUMBER
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AUGUST 23, 2023

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TEMPERATURE CONTROL - SYMBOLS LIST

MECHANICAL

These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

SCHEMATIC SYMBOLS

SYMBOL	DESCRIPTION
	AIR FLOW CONTROLLER
	AQUASTAT, STRAP ON BULB
CO2	CARBON DIOXIDE SENSOR – WALL MOUNTED
CO2	CARBON DIOXIDE SENSOR – DUCT MOUNTED
CO	CARBON MONOXIDE SENSOR – WALL MOUNTED
CO	CARBON MONOXIDE SENSOR – DUCT MOUNTED
CS	CURRENT SWITCH
CT	CURRENT TRANSMITTER
	DAMPER – INLET VANES
	DAMPER – OPPOSED BLADE
	DAMPER – PARALLEL BLADE
M	DAMPER MOTOR
M	DAMPER MOTOR W/ POSITIVE POSITIONER
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DPS	DIFFERENTIAL PRESSURE SWITCH
EP	ELECTRIC–PNEUMATIC RELAY
EPT	ELECTRIC TO PNEUMETIC TRANSDUCER
CM	FIRE ALARM SYSTEM, ADDRESSABLE CONTROL MODULE
IM	FIRE ALARM SYSTEM, ADDRESSABLE INTERFACE MODULE
FMS	FLOW MEASURING STATION
FM	FLOW METER
FS	FLOW SWITCH
FZ	FREEZESTAT
F	GAUGE – FLOW
P	GAUGE – PRESSURE
T	GAUGE – TEMPERATURE
	GUARD FOR STAT OR SENSOR
	HUMIDIFIER
H	HUMIDISTAT OR HUMIDITY SENSOR (AS DEFINED ON TC DRAWINGS)
H	HUMIDITY SENSOR, DUCT MOUNTED
LVL	LEVEL SWITCH OR TRANSMITTER
LS	LIMIT SWITCH
	LINE – ELECTRIC
	LINE – PNEUMATIC
M	MAIN CONTROL AIR SUPPLY
M/S	MOTOR STARTER
OS	OCCUPANCY SENSOR
R	PILOT LIGHT OR BEACON R – RED LENS A – AMBER LENS B – BLUE LENS G – GREEN LENS
PE	PNEUMATIC–ELECTRIC SWITCH
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
R	RELAY, ELECTRIC
S N	SELECTOR SWITCH, (N=NUMBER OF POSITIONS)
AI	SIGNAL – DDC/EMS, ANALOG INPUT
AO	SIGNAL – DDC/EMS, ANALOG OUTPUT
DI	SIGNAL – DDC/EMS, DIGITAL INPUT
DO	SIGNAL – DDC/EMS, DIGITAL OUTPUT
AI	SIGNAL – PACKAGED EQUIPMENT, ANALOG INPUT
AO	SIGNAL – PACKAGED EQUIPMENT, ANALOG OUTPUT
DI	SIGNAL – PACKAGED EQUIPMENT, DIGITAL INPUT
DO	SIGNAL – PACKAGED EQUIPMENT, DIGITAL OUTPUT

SCHEMATIC SYMBOLS (CONT.)

SYMBOL	DESCRIPTION
DD	SMOKE DETECTOR – DUCT MOUNTED
SD	SMOKE DETECTOR – SPACE MOUNTED
S/S	START/STOP RELAY
SPT	STATIC PRESSURE TRANSMITTER
SP	STATIC PRESSURE SENSOR OR PROBE
SW	SWITCH
T	TEMPERATURE SENSOR – RIGID ELEMENT IN WELL
T	TEMPERATURE SENSOR – STRAP ON BULB
T	TEMPERATURE SENSOR – DUCT MOUNTED AVG ELEMENT
T	TEMPERATURE SENSOR – DUCT MOUNTED RIGID ELEMENT
T	THERMOSTAT OR TEMPERATURE SENSOR (AS DEFINED ON TC DRAWINGS)
T N	THERMOSTAT FOR NIGHT SETBACK
XF	TRANSFORMER
	VALVE – 2 WAY CONTROL VALVE
	VALVE – 3 WAY CONTROL VALVE
M	VALVE – 2 WAY CONTROL W/ POSITIONER
M	VALVE – 3 WAY CONTROL W/ POSITIONER
VSD	VARIABLE SPEED DRIVE
VS	VELOCITY SENSOR
VIB	VIBRATION SWITCH
V	VOLTAGE SENSOR

WIRING SYMBOLS

SYMBOL	DESCRIPTION
	AUDIBLE DEVICE (AS DEFINED ON TC DRAWINGS)
M/S	COIL – MOTOR STARTER CONTACTOR
R	COIL – RELAY
TDR	COIL – TIME DELAY RELAY
VSD	COIL – VARIABLE SPEED DRIVE CONTACTOR
	COIL – EP OR SOLENOID VALVE
	CONTACT – INSTANT OPERATING, NO
	CONTACT – INSTANT OPERATING, NC
	CONTACT – TIMED AFTER COIL IS ENERGIZED, NOTC
	CONTACT – TIMED AFTER COIL IS ENERGIZED, NCTO
	CONTACT – TIMED AFTER COIL IS DE–ENERGIZED, NOTO
	CONTACT – TIMED AFTER COIL IS DE–ENERGIZED, NCTC
	GROUND
	MOTOR, SINGLE PHASE
R	PILOT LIGHT OR BEACON R – RED LENS A – AMBER LENS B – BLUE LENS G – GREEN LENS
B	PILOT LIGHT, WITH PUSH–TO–TEST
	PUSH BUTTON – MOMENTARY CONTACT, NO
	PUSH BUTTON – MOMENTARY CONTACT, NC
	PUSH BUTTON – MOMENTARY CONTACT, NO & NC
	PUSH BUTTON – MOMENTARY, NO (MUSHROOM HEAD)
	PUSH BUTTON – MOMENTARY, NC (MUSHROOM HEAD)

WIRING SYMBOLS (CONT.)

SYMBOL	DESCRIPTION
1 2	SWITCH – 2 POSITION SELECTOR
H O A	SWITCH – 3 POSITION SELECTOR HAND/OFF/AUTO
	SWITCH – FLOW (AIR, WATER, ETC.), NO
	SWITCH – LIMIT, NO
	SWITCH – LIMIT, NO, HELD CLOSED
	SWITCH – LIMIT, NC
	SWITCH – LIMIT, NC, HELD OPEN
	SWITCH – LIQUID LEVEL, NO
	SWITCH – LIQUID LEVEL, NC
	SWITCH – MANUAL SPST, NO
	SWITCH – MANUAL DPDT, NO
	SWITCH – MANUAL SPST, NC
	SWITCH – MANUAL DPDT, NC
	SWITCH – MANUAL SPDT
	SWITCH – MANUAL DPDT
	SWITCH – PRESSURE & VACUUM, NO
	SWITCH – PRESSURE & VACUUM, NC
	SWITCH – TEMPERATURE ACTUATED, NO
	SWITCH – TEMPERATURE ACTUATED, NC
	THERMAL OVERLOAD, SINGLE PHASE
OL'S	THERMAL OVERLOAD CONTACTS – 3 PHASE
	TRANSFORMER
	WIRE TERMINATION AT DEVICE
	WIRE TO WIRE TERMINATION
	WIRING NOT CONNECTED

WIRING TERMS

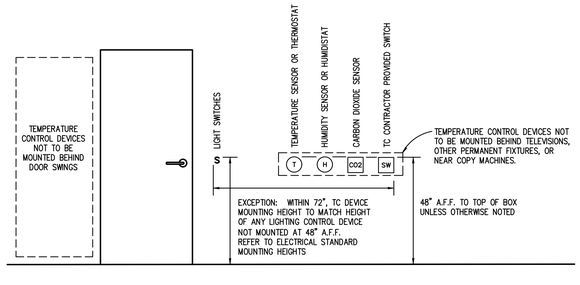
ABBREVIATION	DESCRIPTION
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DPDT	DOUBLE POLE DOUBLE THROW
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
NOTO	NORMALLY OPEN TIMED OPEN
NOTC	NORMALLY OPEN TIMED CLOSED
NCTO	NORMALLY CLOSED TIMED OPEN
NCTC	NORMALLY CLOSED TIMED CLOSED

PNEUMATIC CONTROL SYMBOLS (ADDITIONAL)

SYMBOL	DESCRIPTION
LA	LOAD ANALYZER
LR	LOW PRESSURE SELECTOR RELAY
	MANUAL GRADUAL POSITION SWITCH
PS	PNEUMATIC SWITCH
RR	RATIO RELAY
RC	RECEIVER CONTROLLER
	SWITCHED CONTROL AIR SUPPLY

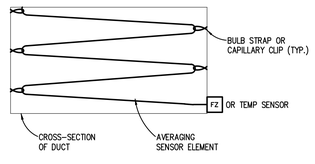
NOTE: ALL SYMBOLS & ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.

NOTE: REFER TO MECHANICAL STANDARDS ON DRAWING M0.1 FOR ADDITIONAL SYMBOLS & ABBREVIATIONS THAT MAY BE USED ON TEMPERATURE CONTROL DRAWINGS.



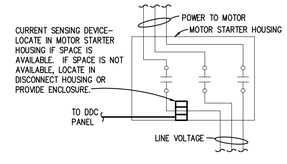
TC DEVICE STANDARD MOUNTING HEIGHTS DETAIL

NO SCALE



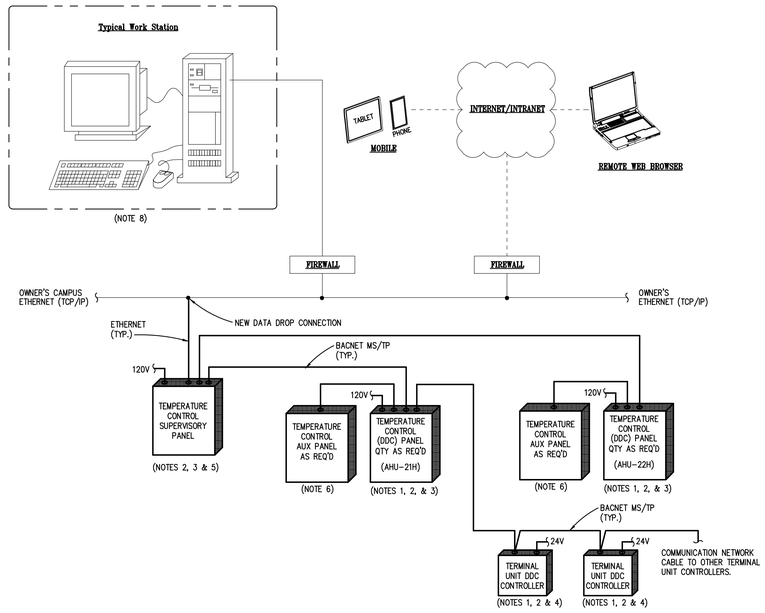
AVERAGING ELEMENT INSTALLATION DETAIL

NO SCALE



CURRENT SWITCH INSTALLATION DETAIL

NO SCALE



DDC SYSTEM ARCHITECTURE

NO SCALE (JOHNSON CONTROL SYSTEM)

NOTES:

1. REFER TO TEMPERATURE CONTROL SCHEMATICS FOR THE REQUIRED POINTS ASSOCIATED FOR EACH SYSTEM.
2. TC CONTRACTOR SHALL DETERMINE DDC PANEL QUANTITY BASED ON POINT DENSITIES AND AVAILABLE MOUNTING SPACE. UNLESS SPECIFICALLY NOTED IN DESIGN DRAWINGS, TC CONTRACTOR SHALL LOCATE DDC PANELS AND COORDINATE WITH OTHER TRADES.
3. TC CONTRACTOR SHALL PROVIDE REQUIRED POWER SUPPLIES FROM SPARE CIRCUITS WHERE IDENTIFIED ON ELECTRICAL PANEL SCHEDULES. COORDINATE WITH ELEC CONTRACTOR. REFER TO ELECTRICAL DWGS FOR PANEL LOCATIONS.
4. 24V TRANSFORMERS REQUIRED FOR TERMINAL UNIT DDC CONTROLLERS SHALL BE LOCATED IN MECHANICAL OR ELECTRICAL ROOMS – COORDINATE LOCATIONS. MAXIMUM TRANSFORMER SIZE SHALL BE 100VA. PROVIDE ENCLOSURE(S) FOR TRANSFORMERS.
5. BUILDING DDC NETWORK SHALL BE CONNECTED TO THE ETHERNET, TC CONTRACTOR SHALL PROVIDE DDC PANEL OR OTHER INTERFACE COMPONENT COMPATIBLE FOR THIS CONNECTION. COORDINATE ETHERNET CONNECTION AND I/P ADDRESS WITH OWNER'S INFORMATION TECHNOLOGY PERSONNEL.
6. AUXILIARY PANEL FOR GAUGES, TRANSMITTERS, RELAYS, POWER TRANSFORMERS, ETC.
7. TC CONTRACTOR SHALL CONNECT ALL NEW TERMINAL UNIT CONTROLLERS TO NEW CAMPUS BMS NETWORK VIA IT ASSOCIATED AHU CONTROL PANEL..
8. PROVIDE COMPLETE GRAPHICS FOR THE NEW HVAC SYSTEMS.

TEMPERATURE CONTROL GENERAL NOTES

1. THESE GENERAL NOTES SHALL BE APPLICABLE FOR ALL TC DRAWINGS.
2. "PROVIDE" IS DEFINED AS "FURNISH AND INSTALL".
3. TC CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.
4. THE PORTIONS OF CONTROL DIAGRAMS AND WIRING DIAGRAMS DRAWN IN HEAVY LINE WEIGHT INDICATE NETWORK. THE PORTIONS DRAWNS IN LIGHT LINE WEIGHT INDICATE EXISTING.
5. ALL CONTROL SCHEMATICS AND WIRING DIAGRAMS ARE FOR THE CLARIFICATION OF EQUIPMENT INTERLOCKING FUNCTIONS AND THE INTERFACE OF VARIOUS CONTRACTORS'S WORK AND SHALL NOT BE MISTAKEN AS SHOP DRAWINGS FOR ACTUAL INSTALLATION.
6. TC CONTRACTOR SHALL PROVIDE DDC CONTROLLERS AS REQUIRED TO MEET INTENT OF DESIGN DOCUMENTS. REFER TO THE PLANS FOR THE DDC FUNCTIONS THAT APPLY TO EACH MECHANICAL SYSTEM.
7. ALL TC PROVIDED COMPONENTS, AND ALL TC CONTRACTOR INSTALLED WIRING AND SHALL BE LABELED PER SPECIFICATIONS.
8. ALL WIRING AND SYSTEM CONTROL VOLTAGES SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATION AND THE ELECTRICAL SPECIFICATIONS.
9. DESIGNATES DEVICE TO BE MOUNTED IN T.C. PANEL.
10. DUCT SMOKE DETECTORS SHALL BE FURNISHED, INSTALLED AND WIRED TO THE FIRE ALARM SYSTEM BY THE ELECTRICAL TC CONTRACTOR SHALL PROVIDE DUCT SMOKE DETECTOR WIRING INTERLOCK TO MOTOR STARTERS OR VSD'S.
11. ALL DDC AND CONTROL INTERLOCK WIRING SHALL BE BY TC CONTRACTOR UNLESS OTHERWISE NOTED. TC CONTRACTOR SHALL COORDINATE WITH VSD AND MOTOR STARTER SUPPLIERS TO DETERMINE EXACT WIRING REQUIREMENTS AND TERMINATION POINTS.
12. ALL DDC AND CONTROL INTERLOCK WIRING BETWEEN COMPONENTS SHALL BE INSTALLED WITHOUT INTERMEDIATE STOPS. WIRE SPLICING AT INTERMEDIATE TERMINAL STRIPS IS NOT ACCEPTABLE.
13. ALL ELECTRICAL WIRING AND RACEWAY SYSTEMS SHALL COMPLY WITH ELECTRICAL SPECIFICATION REQUIREMENTS. TWO SEPERATE ELECTRICAL RACEWAY SYSTEMS SHALL BE PROVIDED: ONE FOR A.C. WIRING AND THE OTHER FOR D.C. WIRING.
14. TC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER SUPPLIES REQUIRED FOR TC SYSTEM UNLESS OTHERWISE NOTED. REFER TO ELECTRICAL PANEL SCHEDULES FOR SPARE CIRCUITS OR CIRCUITS DEDICATED TO TEMPERATURE CONTROLS. COORDINATE CIRCUIT USE WITH ELECTRICAL CONTRACTOR.
15. TC CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL FIELD MOUNTED COMPONENTS.
16. THERMOSTATS AND SPACE TEMPERATURE SENSORS SHALL BE MOUNTED 4'–0" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
17. TC CONTRACTOR SHALL PROVIDE AUXILIARY PANELS FOR REQUIRED PANEL MOUNTED EQUIPMENT SUCH AS RELAYS, TRANSDUCERS, CONTROL TRANSFORMERS, ETC. AUXILIARY PANELS SHALL BE LOCATED NEXT TO ASSOCIATED DDC PANEL.

    REMOTELY MOUNTED FIELD DEVICES SUCH AS RELAYS, CONTROL TRANSFORMERS, ETC., SHALL BE HOUSE IN AN ENCLOSURE PROVIDED BY THE TC CONTRACTOR.
18.
19. CONTROL TRANSFORMERS WHEN REQUIRED SHALL BE SIZED FOR 150% OF ACTUAL LOAD.
20. FREEZE–STATS SHALL BE MOUNTED ON UPSTREAM FACE OF COOLING COILS.
21. CURRENT SWITCHES USED FOR OPERATIONAL STATUS SHALL HAVE CURRENT THRESHOLD SETPOINT ADJUSTED TO INDICATE BELT OR DRIVE FAILURE.
22. ALL CONTROL VALVES, CONTROL DAMPERS AND ASSOCIATED CONTROL ACTUATORS IDENTIFIED ON TC DRAWINGS SHALL BE FURNISHED BY TC CONTRACTOR UNLESS OTHERWISE NOTED. DAMPER SIZE AND LOCATIONS ARE INDICATED ON MECHANICAL FLOOR PLAN DRAWINGS.
23. ALL CONTROL VALVES AND DAMPERS FURNISHED BY THE TC CONTRACTOR SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. ALL PIPE PENETRATIONS AND BASIC FITTINGS REQUIRED FOR SENSOR INSTALLATIONS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
24. DAMPER ACTUATORS SHALL BE INSTALLED BY TC CONTRACTOR.
25. ALL INSTRUMENTATION TUBING REQUIRED FOR DPS, DPT AND SPT COMPONENT INSTALLATIONS SHALL BE PROVIDED BY TC CONTRACTOR.
26. TC CONTRACTOR SHALL FIELD MOUNT ALL REQUIRED PACKAGED CONTROL COMPONENTS FURNISHED BY EQUIPMENT SUPPLIERS WHERE INDICATED. ALL REQUIRED 24V PACKAGED CONTROL FIELD WIRING AND 120V FAN INTERLOCK WIRING SHALL BE PROVIDED BY TC CONTRACTOR UNLESS NOTED OTHERWISE. TC CONTRACTOR SHALL COORDINATE SPECIFIC SYSTEM WIRING REQUIREMENTS WITH PACKAGED EQUIPMENT SUPPLIERS.
27. ROOM TEMPERATURE SENSORS ARE IDENTIFIED IN GENERAL LOCATIONS TEMPERATURE CONTROL CONTRACTOR SHALL VERIFY FINAL LOCATION IN FIELD PRIOR TO INSTALLATION.

REFER TO SHEET M801 FOR T.C. (TEMPERATURE CONTROL) GENERAL NOTES.

NO.	REVISION	DATE
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CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
TEMPERATURE CONTROL STANDARDS AND GENERAL NOTES

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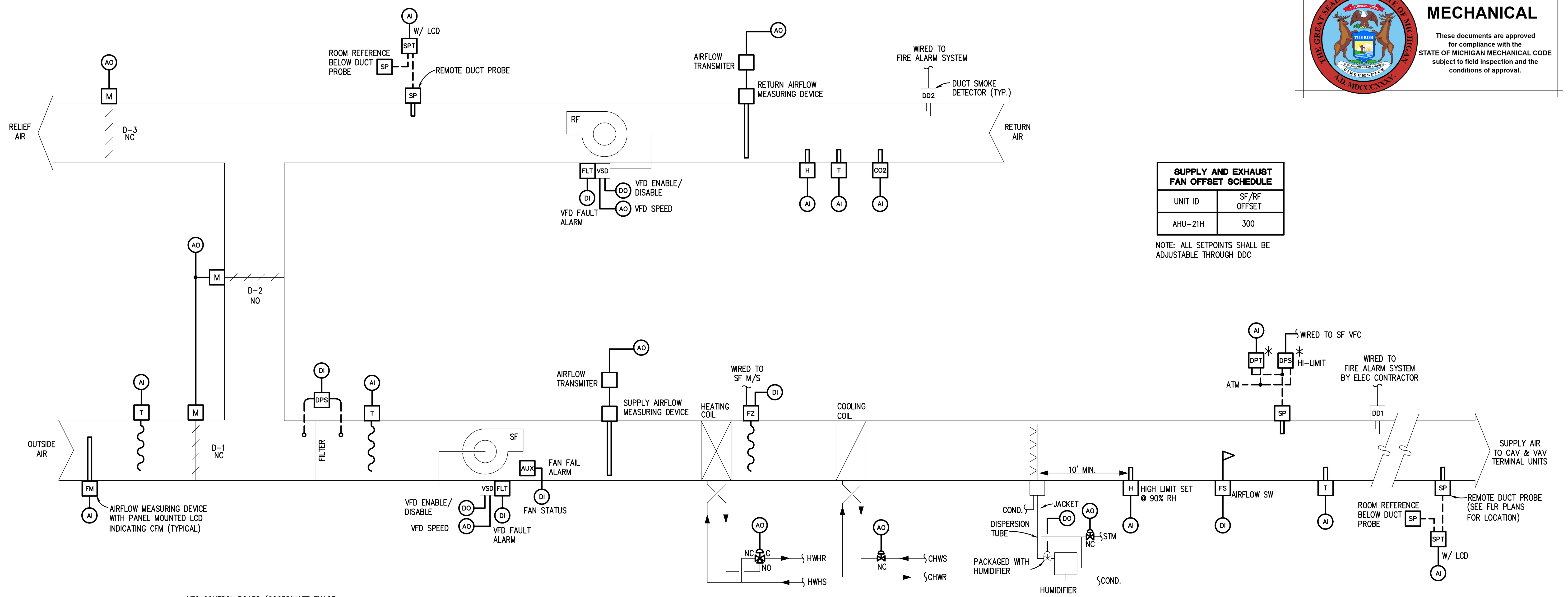

SUPPLY AND EXHAUST FAN OFFSET SCHEDULE	
UNIT ID	SF/RF OFFSET
AHU-21H	300

NOTE: ALL SETPOINTS SHALL BE ADJUSTABLE THROUGH DDC

MECHANICAL
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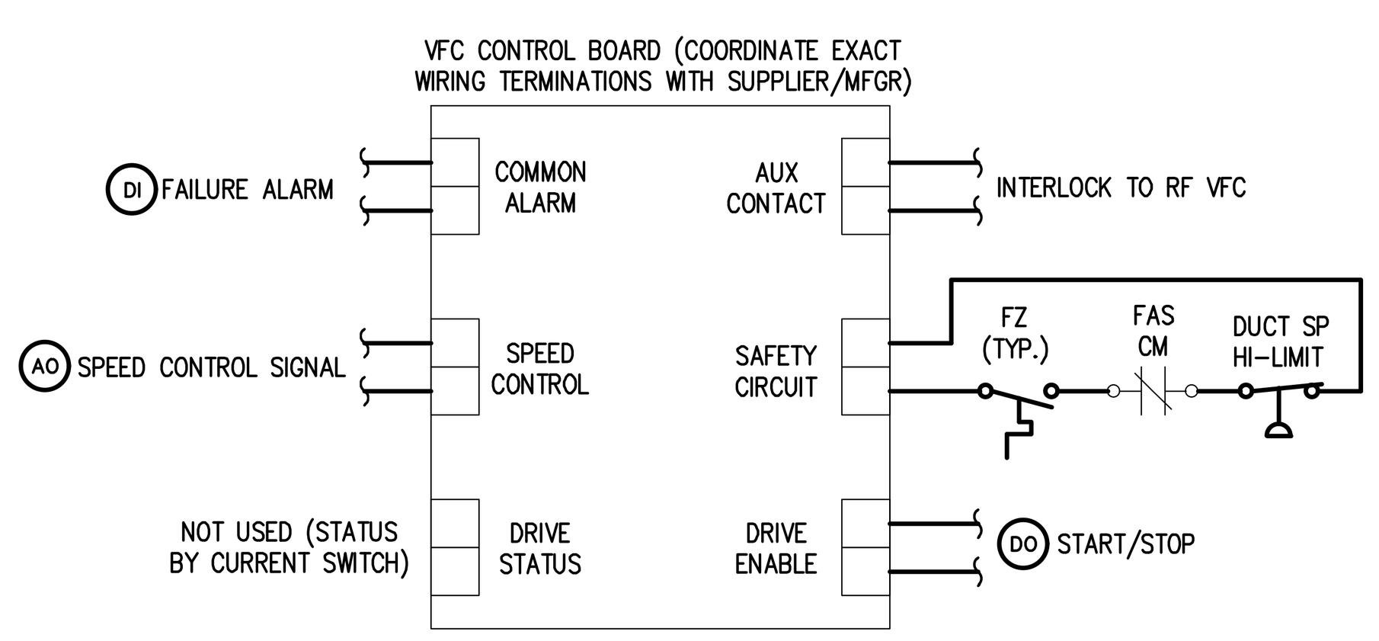
AIR HANDLING UNIT AHU-21H CONTROL SCHEMATIC

NO SCALE SERVES DINNING ROOM AND KITCHEN

NOTES:

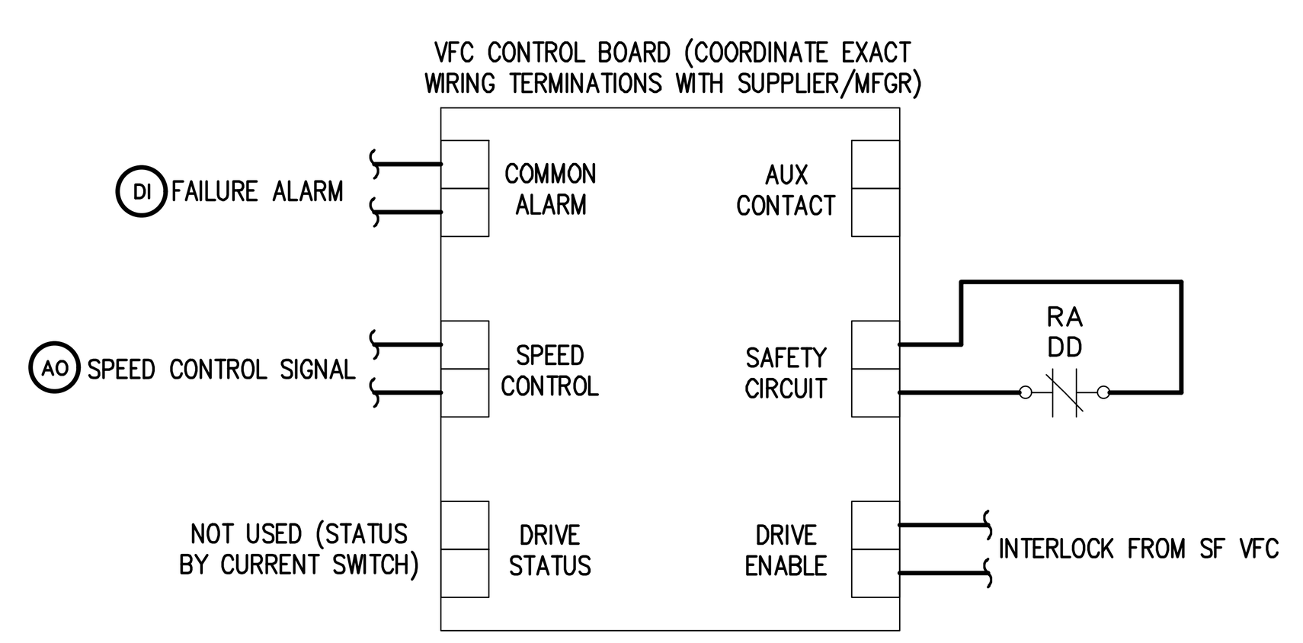
1. DAMPERS SHALL BE FURNISHED AND FACTORY INSTALLED BY AHU MANUFACTURER. TC CONTRACTOR SHALL PROVIDE DAMPER ACTUATORS.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE ALARM SYSTEM COMPONENTS AND WIRING FROM FIRE ALARM PANEL TO CONTROL MODULE. TC CONTRACTOR SHALL PROVIDE WIRING FROM CONTROL MODULE TO VFC SAFETY CIRCUIT.
3. COORDINATE EXACT CONTROL, WIRING, AND INTERFACE REQUIREMENTS WITH EQUIPMENT SUPPLIER. REQUIREMENTS MAY VARY DEPENDING ON MANUFACTURER.



AHU-21H SF VFC WIRING

NOTE:

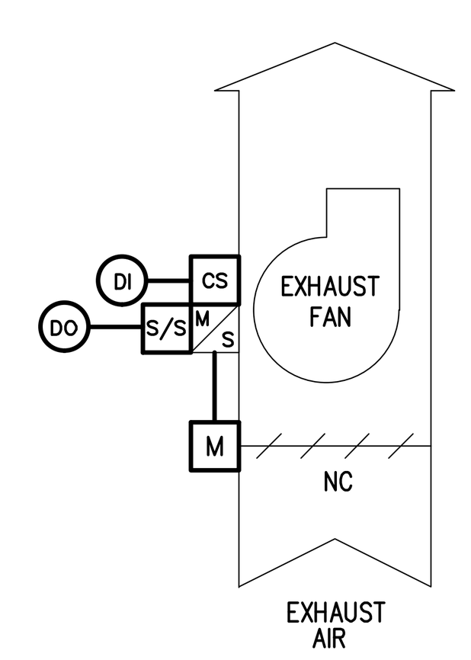
1. WIRING DETAIL IDENTIFIES INTENT AND DOES NOT INDICATE ACTUAL WIRING REQUIREMENTS. CONSULT WITH VFC SUPPLIER FOR THE ACTUAL WIRING REQUIREMENTS.



AHU-21H RF VFC WIRING

NOTE:

1. WIRING DETAIL IDENTIFIES INTENT AND DOES NOT INDICATE ACTUAL WIRING REQUIREMENTS. CONSULT WITH VFC SUPPLIER FOR THE ACTUAL WIRING REQUIREMENTS.



TYPICAL EXHAUST FAN CONTROL

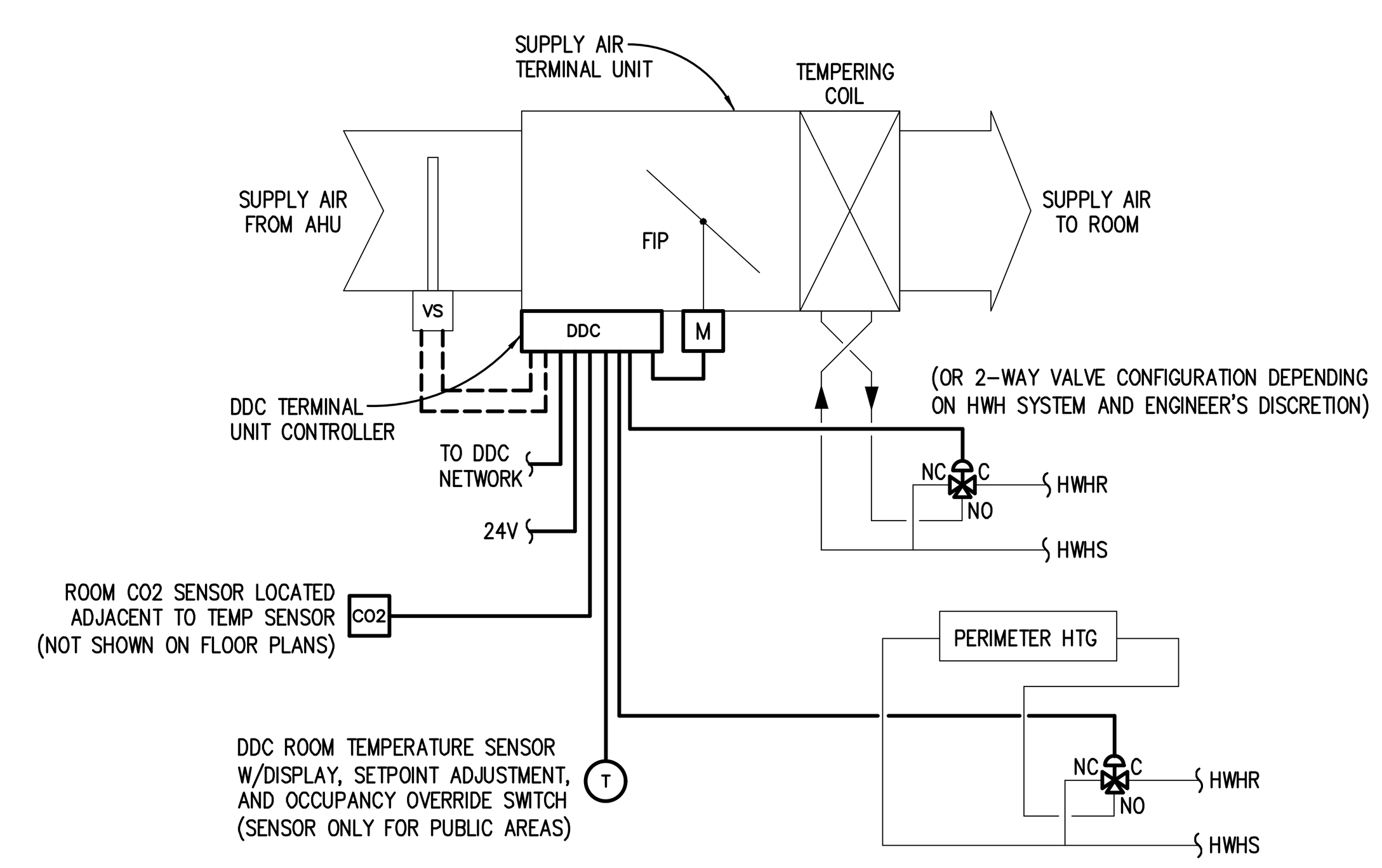
TYPICAL STAFF TOILET EF-6H, CHEMICAL STORAGE EF-7H AND DISH WASH AREA EF-8H.

NOTES:

1. REFER TO FLOOR PLANS FOR QUANTITIES AND LOCATIONS..

SEQUENCE OF OPERATION

1. EXHAUST FAN SHALL BE STARTED AND STOPPED BY DDC BASED ON TIME SCHEDULE. WIRING INTERLOCK SHALL OPEN DAMPERS.
2. DDC SHALL MONITOR EF RUN STATUS THRU CURRENT SWITCH. ABNORMAL STATUS CONDITION SHALL ACTIVATE ALARM.



AIR TERMINAL UNIT WITH PERIMETER HTG CONTROL

NOTES:

1. REFER TO PIPING & SHEET METAL PLANS FOR LOCATIONS AND QUANTITY OF UNITS AND LOCATIONS OF ROOM TEMP SENSORS.
2. WHERE INDICATED ON FLOOR PLANS, SPACE TEMPERATURE SHALL BE REFERENCED TO MULTIPLE AIR TERMINAL UNIT CONTROLLERS VIA DDC NETWORK.
3. PERIMETER HEATING CONTROL VALVE SHALL BE CONTROLLED FROM THE ASSOCIATED TERMINAL UNIT CONTROLLER AS SHOWN ON HVAC PIPING PLANS.
4. TC CONTRACTOR SHALL PROVIDE 24V POWER SUPPLY TO TERMINAL UNIT CONTROLLER.
5. TERMINAL UNIT MANUFACTURER SHALL PROVIDE DAMPER AND TC CONTRACTOR SHALL PROVIDE DAMPER ACTUATOR.
6. TERMINAL UNIT MANUFACTURER SHALL PROVIDE VELOCITY SENSOR FOR SYSTEM CONTROL. TC CONTRACTOR SHALL COORDINATE WITH TAB CONTRACTOR TO DETERMINE DAMPER CONTROL SETTINGS TO ACHIEVE SCHEDULED MINIMUM AND MAXIMUM CFMs.
7. TC CONTRACTOR SHALL FURNISH CONTROL VALVES FOR HEATING ELEMENTS PER THE MECHANICAL DETAILS. SELECT CONTROL VALVES TO ACHIEVE THE SCHEDULED FLOW RATES.

SEQUENCE OF OPERATION

AIR TERMINAL UNIT WITH PERIMETER HEATING:

NOTE: ALL SETPOINTS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS). APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS.

1. ALL TU'S ASSOCIATED WITH A SINGLE SPACE TEMP SENSOR SHALL CONTROL IN UNISON.
2. SUPPLY AIR TERMINAL UNIT'S (TU) VAV MINIMUM AND MAXIMUM AIRFLOW SETTINGS SHALL BE AS INDICATED ON THE MECHANICAL SCHEDULES. WHERE MINIMUM AND MAXIMUM AIRFLOW SETTINGS ARE THE SAME, THE TU CONTROLLER SHALL PERFORM CONSTANT AIR VOLUME CONTROL.
3. IN ALL MODES OF HEATING, TU DISCHARGE AIR TEMP SENSOR SHALL PROVIDE HIGH LIMIT SETPOINT CONTROL AT 90°F DAT.
4. WHEN ROOM TEMPERATURE RISES ABOVE THE SETPOINT, THE SUPPLY AIR TERMINAL UNIT CONTROLLER SHALL KEEP THE TEMPERING COIL VALVE AND PERIMETER HEATING CONTROL VALVE CLOSED AND SHALL MODULATE THE SUPPLY AIRFLOW BETWEEN ITS MINIMUM AND MAXIMUM SETTING TO MAINTAIN ROOM TEMPERATURE.
5. WHEN OA TEMP IS 60 DEG F OR BELOW AND ROOM TEMPERATURE FALLS BELOW SETPOINT, THE SUPPLY TERMINAL UNIT CONTROLLER SHALL KEEP THE SUPPLY AIRFLOW AT ITS MINIMUM SETTING AND SHALL FIRST MODULATE THE PERIMETER HEATING CONTROL VALVE FOLLOWED BY TEMPERING COIL CONTROL VALVE (WHEN PERIMETER HEATING CONTROL VALVE IS FULL OPEN) TO MAINTAIN THE ROOM TEMPERATURE SETPOINT.
6. WHEN OA TEMP IS ABOVE 60 DEG F AND ROOM TEMPERATURE FALLS BELOW SETPOINT, THE SUPPLY TERMINAL UNIT CONTROLLER SHALL KEEP THE SUPPLY AIRFLOW AT ITS MINIMUM SETTING AND SHALL MODULATE THE TEMPERING COIL CONTROL VALVE TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. PERIMETER HEATING CONTROL VALVE SHALL REMAIN CLOSED.
7. THE SUPPLY AIR TERMINAL UNIT'S MINIMUM AND MAXIMUM VOLUME AIRFLOW SETTINGS SHALL BE AS INDICATED ON THE SHEET METAL FLOOR PLANS
8. WHEN SPACE CARBON DIOXIDE LEVEL RISES ABOVE 1100 PPM SETPOINT, THE SUPPLY AIR TU CONTROLLER SHALL OVERRIDE TEMPERATURE CONTROL AND MODULATE DAMPER OPEN TO INCREASE SUPPLY AIRFLOW UNTIL CO2 SETPOINT IS SATISFIED. THE TEMPERING COIL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMP SETPOINT. [NOTE: THERE IS NOT A REQUIREMENT TO INCREASE OUTSIDE AIRFLOW AT RELATED RTU IF CO2 LEVEL IS ABOVE SETPOINT WHEN TU DAMPER IS AT MAX POSITION].
9. WHEN SPACE CARBON DIOXIDE LEVEL FALLS BELOW 800 PPM SETPOINT AFTER BEING IN VENTILATION OVERRIDE MODE, THE TU DAMPER SHALL BE MODULATED CLOSED TOWARDS MINIMUM POSITION. THE TEMPERING COIL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMP SETPOINT.
10. SPACE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS:
    - HEATING UNOCCUPIED SETPOINT = 62°F
    - HEATING TEMPORARY UNOCCUPIED SETPOINT = 68°F
    - HEATING OCCUPIED SETPOINT = 70°F
    - COOLING OCCUPIED SETPOINT = 75°F
    - COOLING TEMPORARY UNOCCUPIED SETPOINT = 77°F
    - COOLING UNOCCUPIED SETPOINT = 80°F
11. DURING BUILDING UNOCCUPANCY, RELATED AHU (RTU OR ERU) SHALL CYCLE AS REQUIRED TO MAINTAIN BUILDING SETBACK AND SETUP TEMP SETPOINTS.
12. WHEN RESPECTIVE AHU (RTU OR ERU) IS DEACTIVATED; THE AIR TERMINAL UNIT DAMPER SHALL REMAIN IN MINIMUM POSITION AND THE TEMPERING COIL VALVE SHALL REMAIN CLOSED. THE PERIMETER HEATING VALVE SHALL BE MODULATED TO MAINTAIN HEATING UNOCCUPIED SETPOINT.
13. THE DDC TERMINAL UNIT CONTROLLER SHALL RE-CALIBRATE THE AIRFLOW SENSOR ONCE A WEEK MINIMUM. THE RE-CALIBRATION PROCESS SHALL BE STAGGERED AMONGST THE TERMINAL UNITS SO THE DUCT STATIC PRESSURE DOES NOT EXCEED LIMITS.
14. CONTROL SIGNALS FOR AIR TERMINAL UNIT DAMPER ACTUATOR AND HEATING CONTROL OUTPUT(S) SHALL BE DISPLAYED WITH SYSTEM GRAPHICS.

SEQUENCE OF OPERATION

AIR HANDLING UNIT AHU-21H CONTROL:

NOTE: ALL SETPOINTS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS). APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS. ALL FAN MOTOR CONTROL SWITCHES SHALL BE IN "AUTO" POSITION.

1. SUPPLY SHALL HAVE START/STOP CAPABILITY FROM THE DDC SYSTEM. AHU SHALL OPERATE BASED ON TIME SCHEDULED OCCUPIED MODE COMPENSATED BY OPTIMUM START PROGRAM AND UNOCCUPIED CYCLE MODE. OPTIMUM START PROGRAM SHALL DETERMINE REQUIRED LEAD TIME TO ACHIEVE DESIRED SPACE TEMP AT BUILDING OCCUPANCY (BASED ON TRENDED DATA).
2. RETURN FAN SHALL BE ACTIVATED WITH SUPPLY FAN DURING OCCUPIED MODE.
3. EACH SF AND RF STATUS SHALL BE MONITORED BY DDC THRU RESPECTIVE FAN AUX. CONTACT SWITCH. ABNORMAL STATUS CONDITION SHALL ACTIVATE ALARM.
4. VFC COMMON FAILURE ALARM FOR EACH FAN OR FAN WALL SYSTEM SHALL BE MONITORED BY DDC THRU FAULT STATUS AT RESPECTIVE FAN VFC.
5. WHEN AHU IS ACTIVATED DURING OCCUPIED MODE; OUTSIDE & RETURN AIR (MIXED AIR) DAMPERS SHALL BE ALLOWED TO MODULATE AS DESCRIBED. WHEN AHU IS DEACTIVATED OR OPERATING IN UNOCCUPIED CYCLE MODE OR MORNING WARM-UP MODE, DAMPERS SHALL REMAIN IN NORMAL POSITIONS (FULL CLOSED TO OA).
6. DURING THE OCCUPIED PERIOD, THE OUTSIDE AIR FLOW MEASURING DEVICE THROUGH DDC SHALL MODULATE THE OUTSIDE AIR DAMPER (D-1) AND RECIRCULATION DAMPER (D-2) TO MAINTAIN A MINIMUM OUTSIDE AIR FLOW VOLUME RANGE BETWEEN OA MINIMUM AND OA MINIMUM MAXIMUM BASED ON DEMAND VENTILATION RESET CONTROL. THE DEMAND VENTILATION CONTROL THROUGH DDC SHALL MONITOR THE AHU'S RESPECTIVE RETURN AIR CO2 SENSOR, IF ALL THE ASSOCIATED AHU'S RETURN CO2 SENSOR IS READING 800 PPM OR BELOW, THE AHU'S OA MINIMUM SHALL BE MAINTAINED. IF THE ASSOCIATED AHU'S RETURN CO2 SENSOR IS READING ABOVE 800 PPM, THE AHU'S OUTSIDE AIR DAMPER SHALL BE MODULATED TOWARD THE OA MINIMUM MAXIMUM POSITION TO PREVENT CO2 LEVELS FROM RISING ABOVE 1,100 PPM. IF THE RETURN CO2 LEVEL RISES ABOVE 1,100 PPMP, THE ASSOCIATED AHU'S OUTSIDE AIR DAMPERS SHALL BE CONTROLLED TO THE MINIMUM MAXIMUM POSITION. ALL SETPOINTS SHALL BE ADJUSTABLE THROUGH THE DDC SYSTEM.
7. WHEN DISCHARGE AIR TEMP IS BELOW HEATING SETPOINT, DDC SHALL KEEP MIXED AIR DAMPERS AT MINIMUM OA POSITION AND MODULATE HEATING COIL VALVE TO ACHIEVE DISCHARGE AIR SETPOINT.
8. DURING MORNING WARM-UP OR UNOCCUPIED MODE HEATING CYCLE, DAT SETPOINT SHALL BE 95°F UNTIL BUILDING OCCUPANCY TIME OR WHEN SPACE TEMPERATURE SETPOINT IS REACHED.
9. WHEN SPACE TEMP IS ABOVE COOLING SETPOINT AND OUTDOOR AIR TEMPERATURE IS GREATER THAN 70°F, DDC SHALL KEEP MIXED AIR DAMPERS AT MINIMUM OA POSITION AND THE COOLING COIL CONTROL VALVE SHALL BE MODULATED TO MAINTAIN DISCHARGE AIR TEMP SETPOINT.
10. WHEN DISCAHRGE TEMP IS ABOVE COOLING SETPOINT AND OUTDOOR AIR TEMPERATURE IS LESS THAN 70°F, DDC SHALL MODULATE MIXED AIR DAMPERS ABOVE MINIMUM OA POSITION TO MAINTAIN SPACE TEMP SETPOINT.
11. DDC SHALL MODULATE HEATING COIL VALVE CONTROL TO MAINTAIN DISCHARGE AIR TEMP SETPOINT BASED ON THE FOLLOWING OUTDOOR AIR TEMP RESET SCHEDULE:

OAT	DAT
≤ 25°F	60°F
≥ 55°F	55°F

12. SF VFC SHALL BE MODULATED BY DDC TO MAINTAIN REMOTE SYSTEM SUPPLY AIR STATIC PRESSURE SETPOINT OF .75" W.G. (TO BE ADJUSTED BY THE AIR BALANCE CONTRACTOR). (REFER TO PLANS FOR LOCATION OF REMOTE STATIC PRESSURE SENSOR).
13. DISCHARGE STATIC PRESSURE HIGH LIMIT AT ERU WITH SETPOINT OF 5.0" W.G. SHALL PROVIDE OVERRIDE CONTROL OF SUPPLY FAN SPEED AND HIGH LIMIT SWITCH WITH SETPOINT OF 5.5" W.G. SHALL PROVIDE HARDWIRED SAFETY. DDC SHALL ACTIVATE ALARM IF OPERATING IN OVERRIDE CONDITION.
14. RF VFC SHALL BE MODULATED TO MAINTAIN A CFM DIFFERENTIAL SETPOINT BETWEEN SUPPLY AIRFLOW AND EXHAUST AIRFLOW. REFER TO CFM OFFSET SCHEDULES THIS SHEET FOR SUPPLY AND EXHAUST AIRFLOW DIFFERENTIAL.
15. FREEZESTAT(S) SHALL DEACTIVATE SF & INTERLOCKED EF WHEN TEMPERATURE IS 35°F OR BELOW. DDC SHALL MONITOR FREEZESTAT STATUS AND ACTIVATE ALARM IF CONDITION OCCURS.
16. DUCT SMOKE DETECTOR(S) SHALL DEACTIVATE SF & EF WHEN PRODUCTS OF COMBUSTION ARE DETECTED.
17. IF AHU IS DEACTIVATED, OUTDOOR AIR DAMPER SHALL CLOSE, CHILLED WATER COOLING COIL VALVE SHALL REMAIN CLOSED AND HEATING COIL VALVE SHALL BE MODULATED TO MAINTAIN A LOW LIMIT PLENUM TEMPERATURE SETPOINT OF 50°F (BASED ON READING AT NEAREST TEMP SENSOR).

REFER TO SHEET M801 FOR T.C. (TEMPERATURE CONTROL) GENERAL NOTES.

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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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PROJECT TITLE
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CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
TEMPERATURE CONTROLS

PROJECT NUMBER 2021094
PROJECT DATE AUGUST 23, 2023
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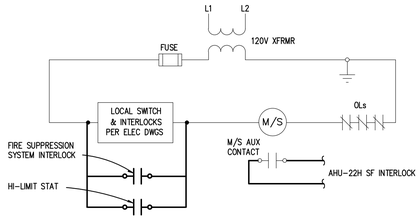
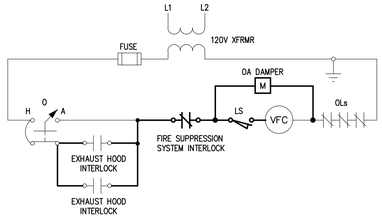
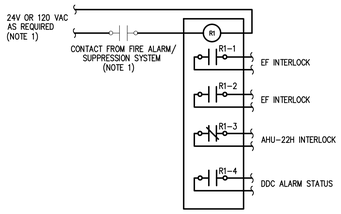


KITCHEN HOOD EF M/S WIRING



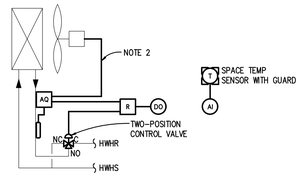
AHU-22H SF M/S WIRING



KEF'S AND AHU-22H CONTROL

NOTE:

1. FIRE SUPPRESSION SYSTEM IS NEW. COORDINATE VOLTAGE REQUIREMENTS, WIRING, ETC. WITH FIRE SUPPRESSION SYSTEM MANUFACTURER.



HWH UH & CUH CONTROL - NEW WORK

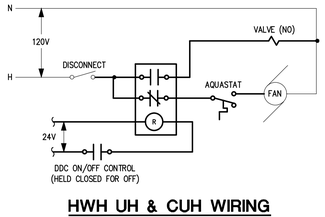
TYPICAL.

NOTES:

1. REFER TO FLOOR PLANS FOR QUANTITY AND LOCATION OF UNITS.
2. AQUASTAT SHALL BE WIRED IN SERIES WITH FAN CONTROL WIRING CIRCUIT.

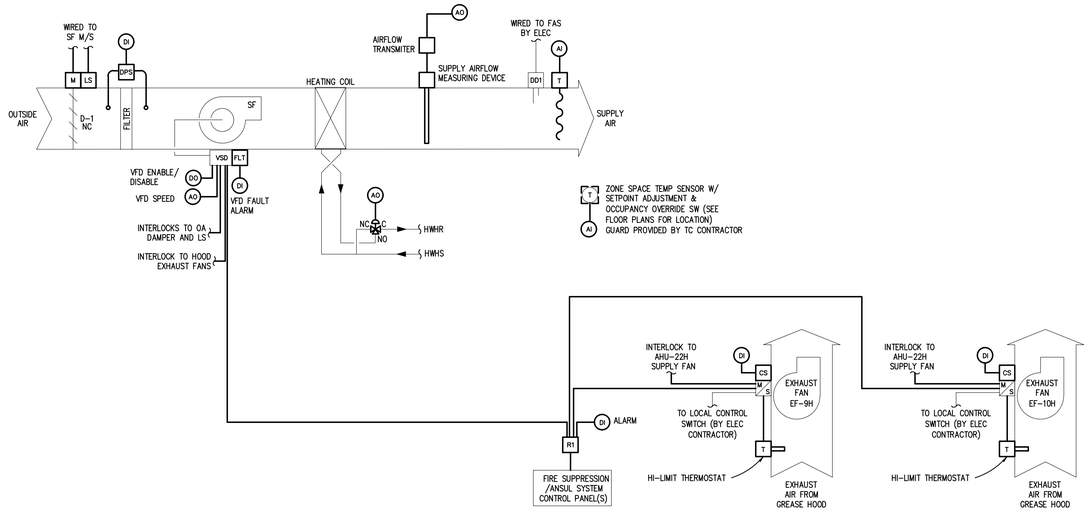
SEQUENCE OF OPERATION:

DDC SHALL ENABLE/DISABLE FAN CIRCUIT AND OPEN/CLOSE HEATING VALVE AS REQUIRED TO MAINTAIN SPACE TEMP SETPOINT OF 68°F DURING BLDG OCCUPANCY AND 55 °F DURING BLDG UNOCCUPANCY. FAN SHALL ACTIVATE UPON PROOF OF HWHR FLOW BY AQ.



HWH UH & CUH WIRING

TYPICAL



KITCHEN EXHAUST HOODS (EF-9H & EF-10H) AND MAKE-UP AIR UNIT (AHU-22H) CONTROL

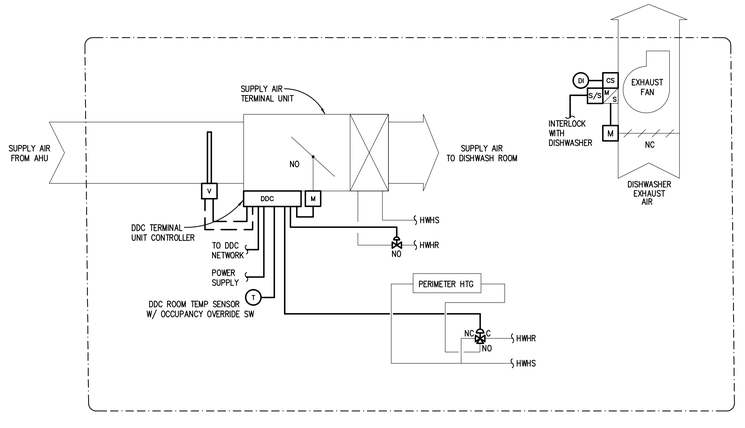
NOTES:

1. COORDINATE WIRING WITH EQUIPMENT SUPPLIERS.

SEQUENCE OF OPERATION

KITCHEN EXHAUST HOOD AND MAKE-UP AIR UNIT CONTROL):

1. AHU-22H/EF-9H/EF-10H SHALL BE CAPABLE OF BEING CONTROLLED INDIVIDUALLY.
2. EF-9H AND EF-10H SHALL BE STARTED AND STOPPED MANUALLY BY ITS ON/OFF SWITCH LOCATED NEAR THE KITCHEN EXHAUST HOOD.
3. WITH THE SUPPLY FAN VFC HAND/OFF/AUTO SWITCH AND EXHAUST MOTOR STARTER HAND/OFF/AUTO SWITCH(S) IN THE "AUTO" POSITION, THE SUPPLY FAN SHALL BE INTERLOCKED WITH THE KITCHEN HOOD EXHAUST FANS. WHENEVER THE KITCHEN HOOD EXHAUST FAN IS ENERGIZED, THE MAKE UP AIR UNIT SHALL BE ENERGIZED. WHENEVER THE KITCHEN HOOD EXHAUST FAN IS DE-ENERGIZED, THE MAKE UP AIR UNIT SHALL BE DE-ENERGIZED.
4. WHEN THE CONTROL CIRCUIT OF THE SUPPLY FAN IS ENERGIZED TO START, ITS OUTSIDE AIR DAMPER SHALL FULLY OPEN FIRST. AFTER THE DAMPER IS FULLY OPEN, THE OUTSIDE AIR DAMPER LIMIT SWITCH SHALL COMPLETE THE CONTROL CIRCUITS TO START THE SUPPLY FAN.
5. PROOF OF FLOW STATUS FOR THE SUPPLY FAN AND EXHAUST SHALL BE PROVEN TO THE DDC SYSTEM BY MEANS OF THE FAN MOTOR CURRENT SWITCH.
6. THE SUPPLY FAN VARIABLE FREQUENCY CONTROLLER SHALL BE MODULATED BASED ASSOCIATED KITCHEN HOOD EXHAUST FAN OPERATION. WHEN AN ASSOCIATED KITCHEN HOOD EXHAUST FAN IS ENERGIZED AS SENSED BY DDC THRU THE FAN MOTOR CURRENT SWITCH THE SUPPLY FAN VFC SHALL BE MODULATED TO THE EF CFM RATE.
7. THE DISCHARGE AIR TEMPERATURE SENSOR THROUGH DDC SHALL MODULATE THE UNITS HOT WATER HEATING (GLYCOL) COIL CONTROL VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT. THE DISCHARGE AIR SET POINT SHALL BE RESET BY THE SPACE TEMPERATURE BETWEEN 55 DEGREES F AND 95 DEGREES F TO MAINTAIN SPACE TEMPERATURE SET POINT OF 68 DEGREES F (ADJUSTABLE).
8. THE FILTER DIFFERENTIAL PRESSURE SWITCH SHALL ISSUE A DIRTY FILTER ALARM IF IT'S SET POINT IS REACHED.
9. IF THE LOW LIMIT SET POINT (40 DEGREES F ADJUSTABLE) OF THE DISCHARGE AIR SENSOR IS REACHED FOR MORE THAT 1 MINUTE (ADJUSTABLE) THROUGH DDC, THE SUPPLY AND EXHAUST FAN SHALL BE DE_ENERGIZED AND AN ALARM SHALL BE SENT THROUGH THE DDC SYSTEM.
10. WHEN THE SUPPLY FAN IS DE-ENERGIZED, THE OUTSIDE AIR DAMPER (D-1) SHALL CLOSE.
11. WHEN FIRE SUPPRESSION SYSTEM IS ACTIVATED, THE MAU SUPPLY FAN WILL BE DE-ACTIVATED AND THE KITCHEN HOOD EXHAUST FAN SHALL BE ACTIVATED REGARDLESS OF LOCAL CONTROL SWITCH POSITION. THIS CONDITION WILL ACTIVATE A DDC SYSTEM ALARM.
12. KITCHEN HOOD EXHAUST FAN MAY ALSO BE ACTIVATED BY HI-LIMIT THERMOSTAT REGARDLESS OF LOCAL CONTROL SWITCH POSITION, IF HEAT IS DETECTED UNDER THE KITCHEN HOOD.



DISHWASH AREA TERMINAL UNIT CONTROL WITH PERIMETER HEAT CONTROL DIAGRAM

NOTES:

1. REFER TO SHEET METAL PLANS FOR LOCATIONS AND QUANTITY OF UNITS. REFER TO HVAC PIPING PLANS FOR LOCATIONS OF ROOM TEMP SENSORS.

SEQUENCE OF OPERATION

AIR TERMINAL UNIT WITH PERIMETER HEATING – DISH WASH AREA:

NOTE: ALL SETPOINTS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS). APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS.

1. ALL TU'S ASSOCIATED WITH A SINGLE SPACE TEMP SENSOR SHALL CONTROL IN UNISON.
2. SUPPLY AIR TERMINAL UNIT'S (TU) VAV MINIMUM AND MAXIMUM AIRFLOW SETTINGS SHALL BE AS INDICATED ON THE MECHANICAL SCHEDULES. WHERE MINIMUM AND MAXIMUM AIRFLOW SETTINGS ARE THE SAME, THE TU CONTROLLER SHALL PERFORM CONSTANT AIR VOLUME CONTROL.
3. IN ALL MODES OF HEATING, TU DISCHARGE AIR TEMP SENSOR SHALL PROVIDE HIGH LIMIT SETPOINT CONTROL AT 90°F DAT.
4. WHEN ROOM TEMPERATURE RISES ABOVE THE SETPOINT, THE SUPPLY AIR TERMINAL UNIT CONTROLLER SHALL KEEP THE TEMPERING COIL VALVE AND PERIMETER HEATING CONTROL VALVE CLOSED AND SHALL MODULATE THE SUPPLY AIRFLOW BETWEEN ITS MINIMUM AND MAXIMUM SETTING TO MAINTAIN ROOM TEMPERATURE.
5. WHEN OA TEMP IS 60 DEG F OR BELOW AND ROOM TEMPERATURE FALLS BELOW SETPOINT, THE SUPPLY TERMINAL UNIT CONTROLLER SHALL KEEP THE SUPPLY AIRFLOW AT ITS MINIMUM SETTING AND SHALL FIRST MODULATE THE PERIMETER HEATING CONTROL VALVE FOLLOWED BY TEMPERING COIL CONTROL VALVE (WHEN PERIMETER HEATING CONTROL VALVE IS FULL OPEN) TO MAINTAIN THE ROOM TEMPERATURE SETPOINT.
6. WHEN OA TEMP IS ABOVE 60 DEG F AND ROOM TEMPERATURE FALLS BELOW SETPOINT, THE SUPPLY TERMINAL UNIT CONTROLLER SHALL KEEP THE SUPPLY AIRFLOW AT ITS MINIMUM SETTING AND SHALL MODULATE THE TEMPERING COIL CONTROL VALVE TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. PERIMETER HEATING CONTROL VALVE SHALL REMAIN CLOSED.
7. WHENEVER THE DISH WASH EXHAUST FAN IS ENERGIZED THE VAV TERMINAL UNITS AIR FLOW SHALL INCREASE TO MAKE UP EXHAUST AIR 100 CFM LESS THE EXHAST AIR FLOW (ADJUSTABLE).
8. THE SUPPLY AIR TERMINAL UNIT'S MINIMUM AND MAXIMUM VOLUME AIRFLOW SETTINGS SHALL BE AS INDICATED ON THE SHEET METAL FLOOR PLANS
9. WHEN SPACE CARBON DIOXIDE LEVEL RISES ABOVE 1100 PPM SETPOINT, THE SUPPLY AIR TU CONTROLLER SHALL OVERRIDE TEMPERATURE CONTROL AND MODULATE DAMPER OPEN TO INCREASE SUPPLY AIRFLOW UNTIL CO2 SETPOINT IS SATISFIED. THE TEMPERING COIL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMP SETPOINT. [NOTE: THERE IS NOT A REQUIREMENT TO INCREASE OUTSIDE AIRFLOW AT RELATED RTU IF CO2 LEVEL IS ABOVE SETPOINT WHEN TU DAMPER IS AT MAX POSITION].
10. WHEN SPACE CARBON DIOXIDE LEVEL FALLS BELOW 800 PPM SETPOINT AFTER BEING IN VENTILATION OVERRIDE MODE, THE TU DAMPER SHALL BE MODULATED CLOSED TOWARDS MINIMUM POSITION. THE TEMPERING COIL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMP SETPOINT.
11. SPACE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS:
    - HEATING UNOCCUPIED SETPOINT = 62°F
    - HEATING TEMPORARY UNOCCUPIED SETPOINT = 68°F
    - HEATING OCCUPIED SETPOINT = 70°F
    - COOLING OCCUPIED SETPOINT = 75°F
    - COOLING TEMPORARY UNOCCUPIED SETPOINT = 77°F
    - COOLING UNOCCUPIED SETPOINT = 80°F
12. DURING BUILDING UNOCCUPANCY, RELATED AHU (RTU OR ERU) SHALL CYCLE AS REQUIRED TO MAINTAIN BUILDING SETBACK AND SETUP TEMP SETPOINTS.
13. WHEN RESPECTIVE AHU (RTU OR ERU) IS DEACTIVATED; THE AIR TERMINAL UNIT DAMPER SHALL REMAIN IN MINIMUM POSITION AND THE TEMPERING COIL VALVE SHALL REMAIN CLOSED. THE PERIMETER HEATING VALVE SHALL BE MODULATED TO MAINTAIN HEATING UNOCCUPIED SETPOINT.
14. THE DDC TERMINAL UNIT CONTROLLER SHALL RE-CALIBRATE THE AIRFLOW SENSOR ONCE A WEEK MINIMUM. THE RE-CALIBRATION PROCESS SHALL BE STAGGERED AMONGST THE TERMINAL UNITS SO THE DUCT STATIC PRESSURE DOES NOT EXCEED LIMITS.
15. CONTROL SIGNALS FOR AIR TERMINAL UNIT DAMPER ACTUATOR AND HEATING CONTROL OUTPUT(S) SHALL BE DISPLAYED WITH SYSTEM GRAPHICS.

REFER TO SHEET M801 FOR T.C. (TEMPERATURE CONTROL) GENERAL NOTES.

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SHEET TITLE
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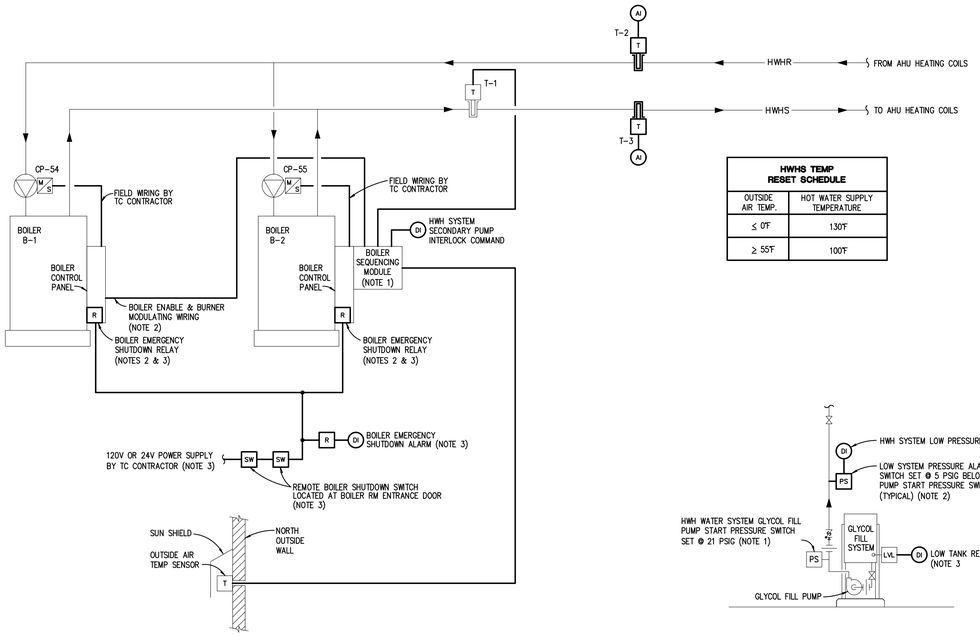
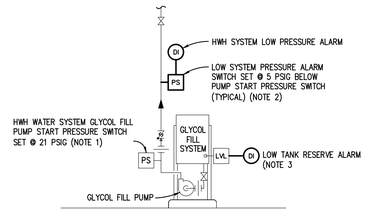


HWHS TEMP RESET SCHEDULE	
OUTSIDE AIR TEMP.	HOT WATER SUPPLY TEMPERATURE
≤ 0°F	130°F
≥ 55°F	100°F

HOT WATER HEATING SYSTEM CONTROL

NOTES:

1. BOILER SEQUENCING PANEL SHALL BE FURNISHED BY THE BOILER SUPPLIER AND INSTALLED AND WIRED BY THE TC CONTRACTOR. NOTE: SEQUENCING PANEL MAY BE INCLUDED WITHIN ON OF THE BOILER CONTROL PANELS, COORDINATE WITH BOILER SUPPLIER. IF A REMOTE SEQUENCING PANEL IS PROVIDE, THE TC CONTRACTOR SHALL PROVIDE 120V POWER SUPPLY FROM NEAREST AVAILABLE POWER PANEL SPARE CIRCUIT.
2. COORDINATE ALL WIRING AND TERMINATIONS WITH BOILER SUPPLIER.
3. TC CONTRACTOR SHALL PROVIDE BOILER EMERGENCY AND DOMESTIC HW NATURAL GAS SHUTDOWN COMPONENTS AND WIRING. REFER TO REMOTE BOILER SHUTDOWN WIRING DIAGRAM.



GLYCOL FILL STATION MONITORING

GLYCOL FILL STATION SERVES HWH SYSTEM

NOTES:

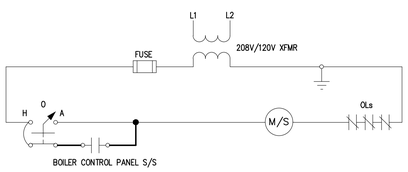
1. PUMP CONTROL PRESSURE SWITCH AND ASSOCIATED CONTROL WIRING ARE PROVIDED WITH GLYCOL FILL STATION.
2. PRESSURE SWITCH FOR ALARM MONITORING SHALL BE FURNISHED BY TC CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.
3. DRY CONTACTS FOR REMOTE MONITORING OF LOW TANK RESERVE ALARM PROVIDED WITH GLYCOL FILL STATION.

SEQUENCE OF OPERATION

PENTHOUSE HOT WATER HEATING SYSTEM:

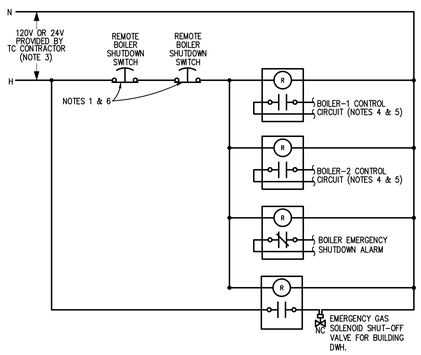
NOTE: ALL SETPOINTS, RESET SCHEDULE SETPOINTS, DEADBANDS, AND TIME INTERVALS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS). ALL MOTOR CONTROL SWITCHES SHALL BE IN "AUTO" POSITION.

1. HOT WATER HEATING SYSTEM SHALL BE ACTIVATED BY BOILER SEQUENCING PANEL WHEN OUTDOOR AIR TEMPERATURE IS BELOW 55°F.
2. THE BOILER SEQUENCING PANEL SHALL ACTIVATE OR DEACTIVATE BOILERS AND CONTROL BOILER MODULATION AS REQUIRED TO MAINTAIN HWH SUPPLY TEMP (T-1) SETPOINT BASED ON OUTSIDE AIR RESET SCHEDULE.
3. THE BOILER SEQUENCING PANEL SHALL INCLUDE OPERATOR SELECTABLE BOILER LEAD/LAG OPERATION OR FIRST ON/FIRST OFF OPERATION.
4. WHENEVER A BOILER CIRCUIT IS ACTIVATED, ITS ASSOCIATED PRIMARY CIRC PUMP SHALL BE ACTIVATED BY FACTORY WIRED PUMP RELAY.
5. WHENEVER A BOILER IS DEACTIVATED, ITS ASSOCIATED PRIMARY CIRC PUMP SHALL CONTINUE TO RUN BASED ON BOILER CONTROLLER TIME DELAY RELAY TO DISSIPATE HEAT FROM THE DEACTIVATED BOILER.
6. IF REMOTE CONTROL IS LOST, LOCAL BURNER MODULATING CONTROL AT EACH BOILER SHALL BE SET TO MAINTAIN 130°F LEAVING WATER TEMPERATURE.
7. EACH BOILER SAFETY CONTROLS SHALL INCLUDE AN AUTO-RESET HI-LIMIT (BOILER OPERATOR) WITH SETPOINT OF 195°F AND A MANUAL-RESET HI-LIMIT WITH SETPOINT OF 215°F.
8. DDC SYSTEM SHALL MONITOR SYSTEM TEMPERATURE T-2 THRU T-3 FOR SYSTEM DIAGNOSTICS.
9. WHEN ONE OF THE REMOTE BOILER SYSTEM SHUTDOWN SWITCHES IS PUSHED, BURNER CONTROLS FOR ALL BOILERS SHALL BE DE-ENERGIZED THRU HARDWIRE INTERLOCK. DDC SHALL MONITOR SWITCH CIRCUIT AND ACTIVATE LOCAL ALARM INDICATION LIGHT WHEN REMOTE BOILER SYSTEM SHUTDOWN CONDITION OCCURS.



TYPICAL BOILER CP M/S WIRING

INTERLOCKED TO RESPECTIVE BOILER

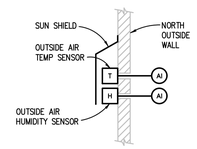


REMOTE BOILER EMERGENCY SHUTDOWN WIRING

SEQUENCE OF OPERATION

SEQUENCE OF OPERATION:

1. UNDER NORMAL OPERATING CONDITIONS THE CIRCUIT SHALL BE ENERGIZED AND THE CUT-OUT RELAYS' NORMALLY OPEN (NO) CONTACTS SHALL BE CLOSED TO ENERGIZE BOILER CONTROL CIRCUITS AND OPEN THE DOMESTIC HW SYSTEMS NATURAL GAS SOLENOID VALVES. WHEN A SWITCH IS PUSHED (LATCHED) THE CUT-OUT RELAY CONTACTS SHALL INTERRUPT BOILERS' CONTROL CIRCUITS AND CLOSE THE DOMESTIC HW SYSTEM SOLENOID VALVE. THE SWITCH MUST BE MANUALLY RELEASED TO ALLOW NORMAL OPERATION.
2. DDC SHALL ACTIVATE EMERGENCY SHUTDOWN ALARM IN DDC SYSTEM WHEN A REMOTE SWITCH HAS BEEN PUSHED.



OA SENSOR INSTALLATION DETAIL

NO SCALE

NOTES:

1. TC CONTRACTOR HAS THE OPTION OF USING EXISTING OA TEMP AND HUMIDITY SENSORS AS AVAILABLE FOR BUILDING.
2. CALCULATE OA ENTHALPY OR DEW POINT TEMPERATURE AS REQUIRED PER SEQUENCE OF OPERATION REQUIREMENTS.
3. BROADCAST OUTSIDE AIR TEMPERATURE, HUMIDITY, AND CALCULATED OA ENTHALPY OR DEWPOINT TEMPERATURE, AS REQUIRED, THROUGH BAS COMMUNICATION NETWORK TO CONTROLLERS REQUIRING INFORMATION FOR DDC PROGRAMMING LOGIC.

MECHANICAL

These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

REFER TO SHEET M801 FOR T.C. (TEMPERATURE CONTROL) GENERAL NOTES.

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A. DIRECTOR

FILE NO.
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
TEMPERATURE CONTROLS

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PBA Project No: 2021-0402

PROJECT NUMBER	SHEET NUMBER
2021094	M8.04
PROJECT DATE: AUGUST 23, 2023	
CHECKED BY: WEK	

ELECTRICAL SYMBOL LIST

(NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT.)

SYMBOL	DESCRIPTION
FX (NL)	FIXTURE TYPE (NL INDICATES NIGHT LIGHT)
	LIGHTING FIXTURE
	DIRECT/INDIRECT LIGHTING FIXTURE
/ /	EMERGENCY LIGHTING FIXTURE
	LIGHTING FIXTURE
/	WALL MOUNTED LIGHTING FIXTURE
/	LIGHTING FIXTURE
/	RECESSED OR SURFACE MOUNTED DIRECTIONAL LIGHTING FIXTURE
	PENDANT LIGHTING FIXTURE
	WALL SCONCE
	LIGHTING TRACK
	TRACK LIGHTING FIXTURE
	POLE MOUNTED LIGHTING FIXTURE
	POLE MOUNTED LIGHTING FIXTURE - POST TOP
	BOLLARD LIGHTING FIXTURE
	EMERGENCY LIGHTING UNIT
	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)
	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS (SHADED AREA INDICATES FACE)
	EXIT LIGHTING FIXTURE - WALL MOUNTED
	EXIT/EMERGENCY LIGHTING COMBO
ALCR	AUTOMATIC LOAD CONTROL RELAY
BCELTS	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
LC	LIGHTING CONTROL DEVICE - REFER TO LIGHTING CONTROL SCHEDULE
XX	ROOM CONTROL DESIGNATION - REFER TO LIGHTING CONTROL SCHEDULE
S	SINGLE POLE TOGGLE SWITCH
S_2	TWO POLE TOGGLE SWITCH
S_3	3 WAY TOGGLE SWITCH
S_4	4 WAY TOGGLE SWITCH
K	KEY OPERATED SWITCH
K_3	3 WAY KEY OPERATED SWITCH
K_4	4 WAY KEY OPERATED SWITCH
D	DIMMER SWITCH
D_O	DIMMER OCCUPANCY SENSOR SWITCH
D_L	LOW VOLTAGE DIMMER SWITCH
D_3	3 WAY DIMMER SWITCH
S_P	PILOT SWITCH

SYMBOL	DESCRIPTION
TWC	TWO-WAY COMMUNICATION SYSTEM CALL STATION
TWCD	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER
TWCA	TWO-WAY COMMUNICATION SYSTEM ANNUNCIATOR & COMMUNICATION PANEL
TWCP	TWO-WAY COMMUNICATION SYSTEM POWER SUPPLY WITH BATTERY BACK-UP
TWCDP	TWO-WAY COMMUNICATION SYSTEM AUTO DIALER POWER SUPPLY WITH BATTERY BACK-UP
RGP	REMOTE GENERATOR ANNUNCIATOR PANEL
ATS	AUTOMATIC TRANSFER SWITCH
UPS	UNINTERRUPTIBLE POWER SUPPLY
CSX	LOW VOLTAGE CONTROL STATION "X" INDICATES TYPE
/ "X"	SINGLE / DUPLEX RECEPTACLE OUTLET "X" INDICATES TYPE
/	SINGLE / DUPLEX RECEPTACLE OUTLET CONTROLLED BY AUTOMATIC CONTROL DEVICE / SYSTEM
	QUAD RECEPTACLE OUTLET
	ABOVE COUNTER DUPLEX RECEPTACLE (SIMILAR FOR TAMPER RESISTANT, QUADS, EMERGENCY AND GFCI RECEPTACLES)
	DUPLEX RECEPTACLE-GROUND FAULT CIRCUIT INTERRUPTER
	DEAD FRONT-GROUND FAULT CIRCUIT INTERRUPTER
	DUPLEX EMERGENCY RECEPTACLE OUTLET
	DUPLEX TAMPER RESISTANT RECEPTACLE OUTLET
	QUAD TAMPER RESISTANT RECEPTACLE OUTLET
	ABOVE COUNTER TAMPER RESISTANT RECEPTACLE OUTLET
	DUPLEX UPS RECEPTACLE
	DUPLEX RECEPTACLE WITH 2 USB PORTS OUTLET
	USB 4 PORT CHARGING STATION
/	CEILING MOUNTED DUPLEX / QUAD RECEPTACLE
	POWER POLE
/	WALL / CEILING MOUNTED SPECIAL RECEPTACLE - REFER TO ELECTRICAL STANDARD SCHEDULES
	MULTI-OUTLET SURFACE RACEWAY
"X"	MULTI-SERVICE DROP SEE ELECTRICAL DETAILS AND DIAGRAMS SHEET "X" INDICATES TYPE
PTX	POKE-THROUGH ASSEMBLY "X" INDICATES TYPE
FBX	FLOOR SERVICE FITTING "X" INDICATES TYPE
AFX	ACCESS FLOOR SERVICE FITTING "X" INDICATES TYPE
RX	CORD REEL "X" INDICATES TYPE
	DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
	3-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
	4-WAY DUAL SWITCHING FOR INNER/OUTER LAMPS OF FLUORESCENT LIGHT FIXTURES
ST	DIGITAL TIME SWITCH
SI	ILLUMINATED TOGGLE SWITCH FOR CONTROL OF LIGHTING ON CRITICAL POWER-ILLUMINATED WHEN SWITCH IS IN "OFF" POSITION
SL	LOW VOLTAGE SWITCH
SO	OCCUPANCY SENSOR
S_{O2}	OCCUPANCY SENSOR - REFER TO ELECTRICAL STANDARD SCHEDULE
OS X	OCCUPANCY SENSOR - REFER TO ELECTRICAL STANDARD SCHEDULES - "X" INDICATES TYPE

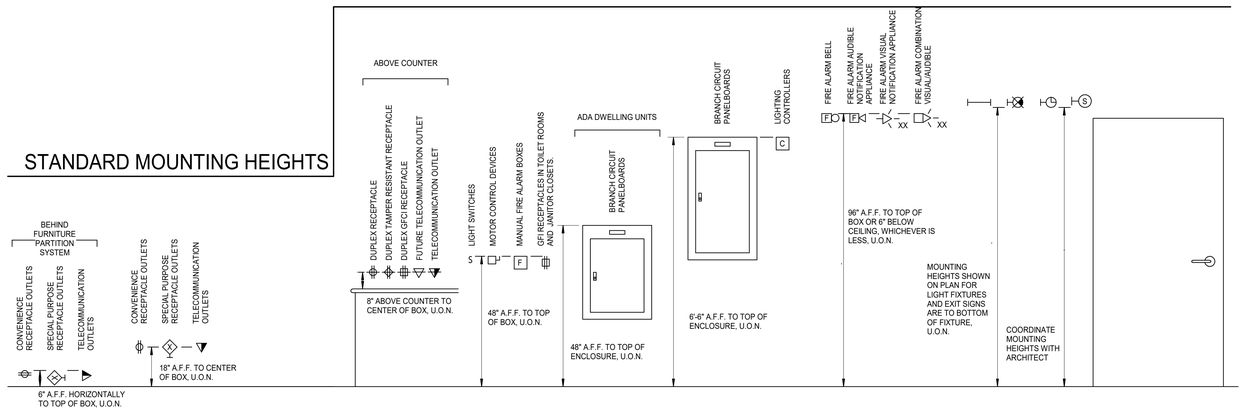
SYMBOL	DESCRIPTION
CP	CONTROL PANEL
	MOTOR
VFC	VARIABLE FREQUENCY CONTROLLER
	MANUAL CONTROLLER
	MAGNETIC CONTROLLER
	COMBINATION MAGNETIC CONTROLLER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
CB	ENCLOSED CIRCUIT BREAKER
	PUSH BUTTON STATION
J	JUNCTION BOX
	HARD WIRE POWER CONNECTION
	GROUND ROD
	GROUND CONNECTION
HH	HANDHOLE
X	CONDUIT SLEEVE WITH BUSHINGS LENGTH AS REQUIRED "X" INDICATES CONDUIT SIZE
	CONDUIT UP
	CONDUIT DOWN
	EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET
	EMPTY BOX FOR FUTURE TELECOMMUNICATION OUTLET MOUNTED 8" ABOVE COUNTERTOP
	EMPTY BOX FOR FUTURE CEILING MOUNTED TELECOMMUNICATION OUTLET
X	TELECOMMUNICATION OUTLET "X" INDICATES TYPE
X	TELECOMMUNICATION OUTLET MOUNTED 8" ABOVE COUNTERTOP "X" INDICATES TYPE
X	TELECOMMUNICATION CEILING MOUNTED OUTLET "X" INDICATES TYPE
	TELECOMMUNICATION BACKBOARD
TGB	TELECOMMUNICATION GROUNDING BUS BAR
TMGB	TELECOMMUNICATION MAIN GROUNDING BUS BAR
IC	INTERCOM OUTLET
S	SPEAKER
S	SPEAKER - WALL MOUNTED
MIC	MICROPHONE
VC	VOLUME CONTROL
B	SIGNALING BELL
	SINGLE FACE CLOCK - CEILING MOUNTED
	SINGLE FACE CLOCK - WALL MOUNTED
	DOUBLE FACE CLOCK - CEILING MOUNTED
S	DOUBLE FACE COMBINATION CLOCK/SPEAKER CEILING MOUNTED
	DOUBLE FACE CLOCK - WALL MOUNTED
S	DOUBLE FACE COMBINATION CLOCK/SPEAKER WALL MOUNTED
1/2	TIME CLOCK
C	CONTACTOR
P	PHOTOCELL
TT	TWIST TIMER

REFER TO ELECTRICAL STANDARD SCHEDULES

SYMBOL	DESCRIPTION
	SECURITY CAMERA
MD	MOTION DETECTOR
K	SECURITY KEY SWITCH
DC	DOOR CONTACT
KP	KEY PAD
CR	ACCESS CONTROL STATION
DB	DURESS PUSH BUTTON STATION
DE	DELAYED EGRESS
REX	REQUEST TO EXIT STATION
PP	AUTOMATIC DOOR PUSH PAD OPERATOR
DO	DOOR OPERATOR
DA	DOOR ACTUATOR
AC	ACCESS CONTROL STATION
ACCP	ACCESS CONTROL CONTROL PANEL
ACPS	ACCESS CONTROL POWER SUPPLY
	CIRCUIT BREAKER
	DRAWOUT CIRCUIT BREAKER MANUALLY/ OPERATED
	DRAWOUT CIRCUIT BREAKER ELECTRICALLY/ OPERATED
	SWITCH
	AUTOMATIC OR MANUAL TRANSFER SWITCH
	FUSE
	TRANSFORMER
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	LIGHTNING ARRESTOR
X	PANELBOARD "X" INDICATES PANELBOARD NAME
	GROUND
	STRESS CONE TERMINATION
K	SECURITY KEY INTERLOCK
G	ENGINE GENERATOR
M	UTILITY METER
EMU	ELECTRONIC METERING UNIT
A	AMMETER
V	VOLTMETER
AS	AMMETER SWITCH
VS	VOLTMETER SWITCH
SPD	SURGE PROTECTIVE DEVICE
CR	CONTROL RELAY
TDR	TIME DELAY RELAY
	THERMAL OVERLOAD RELAY
	NORMALLY OPEN CONTACTS
	NORMALLY CLOSED CONTACTS
	N.O. PUSH BUTTON SINGLE CIRCUIT
	N.C. PUSH BUTTON SINGLE CIRCUIT
O X-X	CABLE VAULT "X-X" INDICATES TYPE

SYMBOL	DESCRIPTION
F	MANUAL FIRE ALARM BOX
SD	SMOKE DETECTOR
DD	DUCT SMOKE DETECTOR
CO	CARBON MONOXIDE DETECTOR
RT	REMOTE TEST STATION (FOR DUCT DETECTOR)
TD	THERMAL DETECTOR
BD	PROJECTED BEAM DETECTOR
F	FIRE ALARM BELL
F	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE
XX	FIRE ALARM VISUAL NOTIFICATION APPLIANCE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
XX	FIRE ALARM COMBINATION VISUAL/ AUDIBLE "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
F XX	FIRE ALARM COMBINATION VISUAL/ AUDIBLE NOTIFICATION APPLIANCE - CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
XX	FIRE ALARM VISUAL NOTIFICATION APPLIANCE CEILING MOUNTED "XX" INDICATES CANDELA RATING IF NO RATING SHOWN, APPLIANCE IS 15cd
F	FIRE ALARM AUDIBLE NOTIFICATION APPLIANCE - CEILING MOUNTED
F	FIREFIGHTERS PHONE JACK
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANNUNCIATOR PANEL
NAC	NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
IM	ADDRESSABLE MONITORING MODULE
CM	ADDRESSABLE CONTROL MODULE
TS	TAMPER SWITCH
FS	FLOW SWITCH
DR	MAGNETIC DOOR RELEASE
	BRANCH CIRCUIT PANEL BOARD
	LOAD CENTER
	MOTOR CONTROL CENTER
T	TRANSFORMER
	DISTRIBUTION PANEL
GB	GROUND BUS
PB	PLUG IN BUSWAY
FB	FEEDER BUSWAY

STANDARD MOUNTING HEIGHTS

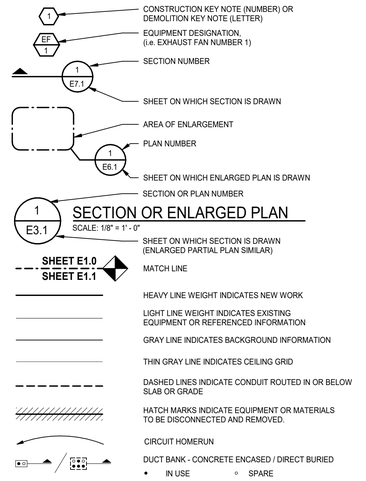


ELECTRICAL DRAWING INDEX

ELECTRICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERES	JB	JUNCTION BOX	P	POLE
AER	ARC ENERGY REDUCTION			PB	PUSHBUTTON STATION
AF	AMPERES FRAME (BREAKER RATING)	KA	THOUSAND AMP	PH	PHASE
AFCI	ARC FAULT CIRCUIT INTERRUPTER	KV	KILOVOLT	PT	POTENTIAL TRANSFORMER
A.F.F.	ABOVE FINISH FLOOR	KVA	KILOVOLT - AMPERES	PDP	POWER DISTRIBUTION PANEL
AIC	AMPS INTERRUPTING CAPACITY	KW	KILOWATT		
AL	AUDIENCE LEFT	KWH	KILOWATT - HOURS	RECEPT.	RECEPTACLE
ALCR	AUTOMATIC LOAD CONTROL RELAY			RDP	RECEPTACLE DISTRIBUTION PANEL
AR	AUDIENCE RIGHT	LA	LIGHTING ARRESTOR	RP	RECEPTACLE PANEL
AT	AMPERES TRIP (BREAKER SETTING)	LP	LIGHTING PANEL	RSC	RIGID STEEL CONDUIT
ATS	AUTOMATIC TRANSFER SWITCH	LDP	LIGHTING DISTRIBUTION PANEL		
AUX	AUXILIARY			SCCR	SHORT CIRCUIT CURRENT RATING
		MAX	MAXIMUM	SCHED	SCHEDULE
BCELTS	BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH	MCA	MINIMUM CIRCUIT AMPACITY	SPD	SURGE PROTECTION DEVICE
		MCB	MAIN CIRCUIT BREAKER	SW	SWITCH
BKR	BREAKER	MCC	MOTOR CONTROL CENTER	SWBD	SWITCHBOARD
BPS	BOLTED PRESSURE SWITCH	MDP	MAIN DISTRIBUTION PANEL	SWGR	SWITCHGEAR
		MECH	MECHANICAL		
C	CONDUIT	MIN	MINIMUM	TB	TERMINAL BOX
CB	CIRCUIT BREAKER	MISC.	MISCELLANEOUS	TELECOM	TELECOMMUNICATIONS
CKT	CIRCUIT	MLO	MAIN LUGS ONLY	TR	TAMPER RESISTANT
CT	CURRENT TRANSFORMER	MOP	MAXIMUM OVERCURRENT PROTECTION	TTP	TELEPHONE TERMINAL BACKBOARD
		MTD	MOUNTED	TYP	TYPICAL
DEMO	DEMOLITION	MTG	MOUNTING		
DIM.	DIMENSION	MTR	MOTOR	U.O.N.	UNLESS OTHERWISE NOTED
DISC	DISCONNECT			US	UPSTAGE
DP	DISTRIBUTION PANEL	N	NEUTRAL		
DS	DOWNSTAGE	NC	NORMALLY CLOSED	V	VOLTS
DWG	DRAWING	NEC	NATIONAL ELECTRICAL CODE		
		NF	NON-FUSIBLE	W	WIRE OR WATTS
EBU	EMERGENCY BATTERY UNIT	NIC	NOT IN CONTRACT	WG	WIRE GUARD
EC	ELECTRICAL CONTRACTOR	NL	NIGHT LIGHT	WP	WEATHERPROOF
ELEC	ELECTRICAL	NO	NORMALLY OPEN	WR	WEATHER RESISTANT
EM/ EMERG	EMERGENCY	NTS	NOT TO SCALE		
EMT	ELECTRICAL METALLIC TUBING			XFMR	TRANSFORMER
EO	ELECTRICALLY OPERATED	OC	ON CENTER	XP	EXPLOSION PROOF
EPO	EMERGENCY POWER OFF	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED		
EWC	ELECTRIC WATER COOLER			(E)	EXISTING
EXIST	EXISTING	OFOI	OWNER FURNISHED, OWNER INSTALLED	(R)	RELOCATED
FA	FIRE ALARM				
FLA	FULL LOAD AMPS				
FLR	FLOOR				
FOH	FRONT OF HOUSE				
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR				
FU	FUSE				
G/GRD/EG	GROUND				
GFCI	GROUND FAULT CIRCUIT INTERRUPTER				
GFP	GROUND FAULT PROTECTION				
HOA	HAND-OFF-AUTO				
HP	HORSEPOWER				
HV	HIGH VOLTAGE				
HZ	HERTZ				
IG	ISOLATED GROUND				

STANDARD METHODS OF NOTATION



ELECTRICAL

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PBA Project No.: 2021-0402

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ELECTRICAL STANDARDS AND DRAWING INDEX

PROJECT NUMBER	SHEET NUMBER
2021094	E0.01
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: TLC	

DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE

TRANSFORMER KVA	PRIMARY (480V) OVERCURRENT PROTECTION	SECONDARY (208Y/120 VOLT) OVERCURRENT PROTECTION	CONDUCTOR SIZE (AWG OR KCMIL) PHASE & NEUTRAL COPPER	SUPPLY SIDE BONDING JUMPER COPPER	CONDUIT (4W + SSBJ) COPPER	GROUNDING ELECTRODE CONDUCTOR COPPER	KEYED NOTES
9	20A	30A	10	8	3/4"	8	
15	25A	60A	6	8	1"	8	1
30	45A	100A	3	8	1 1/4"	8	1
45	70A	175A	2/0	4	2"	4	
75	125A	300A/225A	350 / 4/0	2	3"	2	2
112 1/2	175A	400A	600	1/0	3 1/2"	1/0	
150	225A	600A	2-350	2-2	2-3"	2/0	
225	350A	800A	2-600	2-1/0	2-3 1/2"	3/0	
300	500A	1200A	3-600	3-1/0	3-3 1/2"	3/0	
500	800A	1600A	4-600	4-1/0	4-3 1/2"	3/0	

GENERAL NOTES:
1. TRANSFORMERS AND FEEDERS ARE BASED ON 480 VOLT, 3 PHASE, 3 WIRE PRIMARY AND 208Y/120 VOLT, 3 PHASE, 4 WIRE, SECONDARY.
2. ALUMINUM CONDUCTORS ARE PERMITTED ONLY IF INCLUDED IN FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE.
3. PRIMARY OVERCURRENT PROTECTION IS SIZED AT 125% OF TRANSFORMER FULL LOAD CURRENT. PROVIDE PRIMARY OVERCURRENT DEVICE SELECTION TO ALLOW TRANSFORMER IN-RUSH CURRENT AND PROTECT BASED ON THE ANSI DAMAGE CURVE. IF MANUFACTURER REQUIRES PRIMARY OVERCURRENT GREATER THAN 125% (NOT TO EXCEED 250%) THEN PRIMARY FEEDER SHALL BE INCREASED ACCORDINGLY.
4. SECONDARY CONDUCTOR BASED ON TEN FOOT MAXIMUM LENGTH (NEC 240.21(C)(2)). IF CONDUCTORS ARE LONGER THAN TEN FOOT, REQUIREMENTS IN NEC 240.21(C)(6) MUST BE MET. IN NO CASE SHALL CONDUCTORS BE LONGER THAN TWENTY-FIVE FEET.

KEYED NOTES:
1. CONDUCTORS ARE BASED ON 90°C, 600V. INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C.
2. THE SMALLER SIZE IS TO BE USED TO FEED 225A PANELBOARDS.

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS

BRANCH CIRCUIT RATING (A)	WIRE SIZE (AWG)	MAXIMUM BRANCH CIRCUIT LENGTH (IN FEET) 120V	208V	240V	277V	480V
20A	12	83	143	165	191	331
20A	10	128	222	256	295	511
20A	8	201	348	402	464	804
20A	6	313	542	625	721	1250
30A	10	85	148	170	197	341
30A	8	134	232	268	309	536
30A	6	208	361	417	481	833
30A	4	313	542	625	721	1250

GENERAL NOTES:
1. THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD POWER FACTOR OF 0.85 PER NEC CHAPTER 9, TABLE 9.
2. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
3. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 9 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.
4. LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 64% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH ASHRAE 90.1 AND THE NEC. FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

MOTOR CIRCUIT SIZING SCHEDULE (480V, 3 PHASE)

MOTOR HP	SWITCH/FUSE	CIRCUIT BREAKER	STARTER SIZE/TYPE	MOTOR DISCONNECT (NOTE 3)
1/2	30/3A	15A	1	30A
3/4	30/3A	15A	1	30A
1	30/6A	15A	1	30A
1 1/2	30/6A	15A	1	30A
2	30/6A	15A	1	30A
3	30/10A	15A	1	30A
5	30/15A	15A	1	30A
7 1/2	30/20A	20A	1	30A
10	30/20A	25A	1	30A
15	30/30A	40A	2	30A
20	60/40A	60A	2	60A
25	60/50A	70A	2	60A
30	60/60A	80A	3	60A
40	100/80A	90A	3	100A
50	100/100A	100A	3	100A
60	200/125A	125A	4	200A
75	200/150A	150A	4	200A
100	200/200A	200A	4	200A
125	200/200A	225A	5	200A
150	400/250A	250A	5	400A
200	400/350A	350A	5	400A

GENERAL NOTES:
1. BASED ON MOTOR FULL LOAD AMPERES AS PROVIDED BY THE N.E.C.
2. BASED ON MOTOR RUNNING OVERLOAD PROTECTIONS PROVIDED BY THERMAL OVERLOAD RELAYS.
3. WHERE THE STARTER IS LOCATED REMOTE FROM THE MOTOR, PROVIDE DISCONNECT LOCATED AT THE MOTOR, SIZE AS INDICATED.

SPECIAL RECEPTACLES

TYPE	DESCRIPTION
Type 4	250V, 20A, THREE PHASE, LOCKING RECEPTACLE, 3 POLE, 4 WIRE (NEMA L15-20R)
Type 8	125/250V SINGLE PHASE RECEPTACLE, 3 POLE, 4 WIRE (NEMA 14-20R)

NOTE: SOME SYMBOLS AND ABBREVIATIONS SHOWN MAY NOT APPLY TO THIS PROJECT

RACEWAY / CONDUCTOR / CABLE APPLICATION SCHEDULE

	WIRE: COPPER, TYPE THHN/THWN-2	WIRE: COPPER, TYPE XHHW-2	RACEWAY: ELECTRICAL METALLIC TUBING (EMT)	RACEWAY: RIGID STEEL CONDUIT (RSC)	RACEWAY: HIGH DENSITY POLYETHYLENE (HDPE) SCHEDULE 40	RACEWAY: FLEXIBLE METAL CONDUIT (FMC)	RACEWAY: LIQUID TIGHT FLEXIBLE METAL CONDUIT (LFMC)	CABLE/CORD: METAL CLAD TYPE CABLE WITH INSULATED GROUND WIRE (TYPE MC)	CABLE/CORD: TWO HOUR RATED MC POWER CABLE (KEYED NOTE 3)	CABLE/CORD: VFC CABLE
FEEDERS - INTERIOR										
CONCEALED, ACCESSIBLE CEILINGS	X		X							
CONCEALED, INACCESSIBLE CEILINGS	X		X							
CONCEALED IN GYPSUM BOARD PARTITION WALLS	X		X							
EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X			X						
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X		X							
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X		X							
EXPOSED, FINISHED SPACES	X									
BELOW SLAB ON GRADE	X			X						
DAMP AND WET LOCATIONS	X			X						
BRANCH CIRCUITS - EXTERIOR										
EXPOSED, SURFACE MOUNTED TO STRUCTURE		X		X						
EXPOSED, WITH FREESTANDING SUPPORT		X		X						
CONCEALED IN RETAINING WALL OR SIMILAR ELEMENT		X		X						
BELOW PARKING LOTS AND ROADWAYS		X		X	X					
BELOW GREEN SPACE		X								
WITHIN 5' OF FOUNDATION WALL		X		X						
ROOFTOPS (WHEN APPROVED BY ENGINEER)		X		X						
BRANCH CIRCUITS - INTERIOR										
CONCEALED, ACCESSIBLE CEILINGS	X		X					X		
CONCEALED, INACCESSIBLE CEILINGS	X		X							
CONCEALED IN GYPSUM BOARD PARTITION WALLS	X		X			X		X		
CONCEALED IN CMU WALLS	X		X							
EXPOSED, BELOW 10' AFF AND SUBJECT TO DAMAGE	X			X						
EXPOSED, BELOW 10' AFF AND NOT SUBJECT TO DAMAGE	X		X							
EXPOSED, ABOVE 10' AFF UNFINISHED SPACES	X		X							
EXPOSED, FINISHED SPACES	X									
BELOW SLAB ON GRADE	X									
EMBEDDED IN ELEVATED CONCRETE SLAB	X									
DAMP AND WET LOCATIONS	X			X			X			
SPECIAL APPLICATIONS										
CONNECTION BETWEEN VFC AND MOTORS (KEYED NOTE 1)										X
CLASS 1 CONTROL CIRCUITS	X		X	X						
CLASS 2 CONTROL CIRCUITS	X		X	X						
CLASS 3 CONTROL CIRCUITS	X		X	X						
EMERGENCY FEEDERS UNDER NEC 700.10(D) (KEYED NOTE 2)		X	X	X	X				X	
CONNECTIONS TO TRANSFORMERS, MOTORS AND VIBRATING EQUIPMENT		X					X			

GENERAL NOTES:
1. TRANSITION FROM PVC/HDPE AND PROVIDE RIGID STEEL OR RTRC SWEEPS WHERE CONDUITS PENETRATE WALLS, CONCRETE SLABS, CONCRETE BASES, AND ASPHALT.
2. REFER TO SPECIFICATIONS FOR RESTRICTIONS ON MC/AC CABLE INSTALLATION.
3. EMT SHALL NOT BE USED ON THE EXTERIOR OF A BUILDING OR IN AREAS SUBJECT TO DAMAGE BELOW 10' AFF.
4. INSTALL SURFACE RACEWAYS ONLY WHERE SHOWN ON DRAWINGS.

KEYED NOTES:
1. NON-ARMORED CABLE SHALL BE INSTALLED IN RACEWAY. ARMORED CABLE SHALL BE INSTALLED IN TRAY OR FREE-AIR AS APPLICABLE.
2. EMERGENCY FEEDERS IN OCCUPANCIES THAT ARE UNDER 700.10(D) SHALL HAVE A TWO HOUR RATING. RATING SHALL BE OBTAINED BY ROUTING CONDUIT AND BUILDING WIRE IN SPRINKLERED SPACE, IN A TWO HOUR SHAFT, OUTSIDE OF THE BUILDING, IN A LISTED TWO HOUR RATED RACEWAY, OR UNDER A MINIMUM OF 2" OF CONCRETE; OR BY USING A LISTED TWO-HOUR RATED CABLE ASSEMBLY.
3. SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS BASED ON UL TESTING AND RATING.

FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE

OVERCURRENT DEVICE RATING (AMPERES)	COPPER CONDUCTORS: WIRE SIZE (AWG OR KCMIL) PHASE & NEUTRAL	GROUND	CONDUIT SIZE: SINGLE PHASE 2 WIRE+G (1PH, 1N, 1G)	SINGLE PHASE 3 WIRE+G (2PH, 1N, 1G)	THREE PHASE 3 WIRE+G (3PH, 1G)	THREE PHASE & NEUTRAL 4 WIRE+G (3PH, 1N, 1G)	KEYED NOTES
15-20	12	12	3/4"	3/4"	3/4"	3/4"	
25-30	10	10	3/4"	3/4"	3/4"	3/4"	
35-40	8	10	3/4"	3/4"	3/4"	3/4"	
45-50	8 (6)	10	3/4"	3/4"	3/4"	3/4"	1
60	6 (4)	10	3/4" (1")	3/4" (1")	3/4" (1")	1" (1 1/4")	1
70	4	8	1"	1 1/4"	1 1/4"	1 1/4"	
80	4 (3)	8	1"	1 1/4"	1 1/4"	1 1/4"	1
90-100	3 (2)	8	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1
110	2 (1)	6	-	1 1/4"	1 1/4"	1 1/4" (1 1/2")	1
125	1 (1/0)	6	-	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/2"	1
150	1/0	6	-	1 1/2"	1 1/2"	1 1/2"	
175	2/0	6	-	2"	2"	2"	
200	3/0	6	-	2"	2"	2 1/2"	
225	4/0	4	-	2"	2"	2 1/2"	
250	250	4	-	2 1/2"	2 1/2"	2 1/2"	
300	350	4	-	2 1/2"	2 1/2"	3"	
350	500	3	-	3"	3"	3"	
400	500	3	-	3"	3"	3"	
450	2-4/0	2-2	-	2-2"	2-2"	2-2 1/2"	
500	2-250	2-2	-	2-2 1/2"	2-2 1/2"	2-2 1/2"	
600	2-350	2-1	-	2-2 1/2"	2-2 1/2"	2-3"	
700	2-500	2-1/0	-	2-3"	2-3"	2-3"	
800	2-500	2-1/0	-	2-3"	2-3"	2-3 1/2"	
1000	3-400	3-2/0	-	3-3"	3-3"	3-3"	
1200	3-600	3-3/0	-	3-3 1/2"	3-3 1/2"	3-3 1/2"	
1600	4-600	4-4/0	-	4-3 1/2"	4-3 1/2"	4-3 1/2"	
2000	5-600	5-250	-	5-3 1/2"	5-3 1/2"	5-3 1/2"	

GENERAL NOTES:
1. CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.
2. CONTRACTOR MAY COMBINE 20A CIRCUITS AS NOTED IN SPECIFICATION.
3. CONDUCTORS ARE BASED ON THHN/THWN UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.
4. CONDUIT SIZES ARE VALID FOR EMT OR RGS. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHER TYPES OF CONDUIT.
5. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE REQUIRED WIRE SIZES TO ACCOMMODATE MECHANICAL EQUIPMENT LUG SIZES.
6. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.
7. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.
8. SPLICE FROM ALUMINUM TO COPPER PRIOR TO ENTERING EQUIPMENT LISTED FOR USE WITH COPPER CONDUCTORS ONLY OR USE COPPER CONDUCTORS FOR THE ENTIRE LENGTH OF FEEDER.
9. N/A = NOT ACCEPTABLE

KEYED NOTES:
1. CONDUCTORS ARE BASED ON 90°C, 600V. INSULATED WIRE APPLIED AT 75°C FOR TERMINATION RATED 60/75°C OR 75°C. FOR TERMINATION RATED AT 60°C, USE CONDUCTORS AND CONDUIT SIZES INDICATED IN PARENTHESES.

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NO.	REVISION	DATE

STATE OF MICHIGAN
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DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
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CONTRACT NO.
Y22003

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ELECTRICAL STANDARD SCHEDULES

PROJECT NUMBER
2021094

SHEET NUMBER
E0.02

PROJECT DATE
SEPTEMBER 6, 2023

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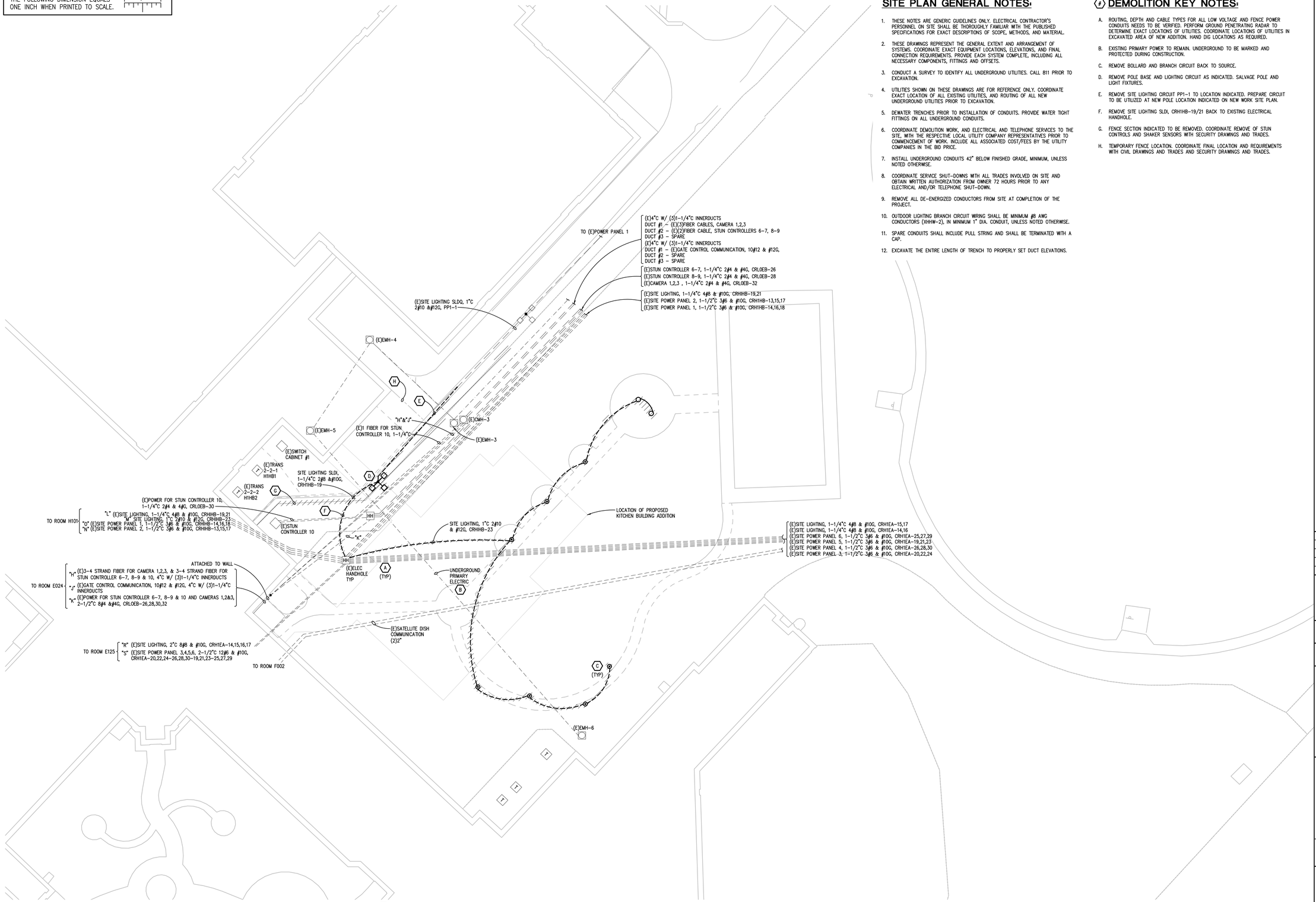

ELECTRICAL DEMOLITION SITE PLAN
SCALE: 1" = 20'

SITE PLAN GENERAL NOTES:

1. THESE NOTES ARE GENERIC GUIDELINES ONLY. ELECTRICAL CONTRACTOR'S PERSONNEL ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE PUBLISHED SPECIFICATIONS FOR EXACT DESCRIPTIONS OF SCOPE, METHODS, AND MATERIAL.
2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
3. CONDUCT A SURVEY TO IDENTIFY ALL UNDERGROUND UTILITIES. CALL 811 PRIOR TO EXCAVATION.
4. UTILITIES SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE EXACT LOCATION OF ALL EXISTING UTILITIES, AND ROUTING OF ALL NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
5. DEWATER TRENCHES PRIOR TO INSTALLATION OF CONDUITS. PROVIDE WATER TIGHT FITTINGS ON ALL UNDERGROUND CONDUITS.
6. COORDINATE DEMOLITION WORK, AND ELECTRICAL AND TELEPHONE SERVICES TO THE SITE, WITH THE RESPECTIVE LOCAL UTILITY COMPANY REPRESENTATIVES PRIOR TO COMMENCEMENT OF WORK. INCLUDE ALL ASSOCIATED COST/FEES BY THE UTILITY COMPANIES IN THE BID PRICE.
7. INSTALL UNDERGROUND CONDUITS 42" BELOW FINISHED GRADE, MINIMUM, UNLESS NOTED OTHERWISE.
8. COORDINATE SERVICE SHUT-DOWNS WITH ALL TRADES INVOLVED ON SITE AND OBTAIN WRITTEN AUTHORIZATION FROM OWNER 72 HOURS PRIOR TO ANY ELECTRICAL AND/OR TELEPHONE SHUT-DOWN.
9. REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
10. OUTDOOR LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIMUM #8 AWG CONDUCTORS (XHHW-2), IN MINIMUM 1" DIA. CONDUIT, UNLESS NOTED OTHERWISE.
11. SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
12. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

(#) DEMOLITION KEY NOTES:

A. ROUTING, DEPTH AND CABLE TYPES FOR ALL LOW VOLTAGE AND FENCE POWER CONDUITS NEEDS TO BE VERIFIED. PERFORM GROUND PENETRATING RADAR TO DETERMINE EXACT LOCATIONS OF UTILITIES. COORDINATE LOCATIONS OF UTILITIES IN EXCAVATED AREA OF NEW ADDITION. HAND DIG LOCATIONS AS REQUIRED.

B. EXISTING PRIMARY POWER TO REMAIN. UNDERGROUND TO BE MARKED AND PROTECTED DURING CONSTRUCTION.

C. REMOVE BOLLARD AND BRANCH CIRCUIT BACK TO SOURCE.

D. REMOVE POLE BASE AND LIGHTING CIRCUIT AS INDICATED. SALVAGE POLE AND LIGHT FIXTURES.

E. REMOVE SITE LIGHTING CIRCUIT PP1-1 TO LOCATION INDICATED. PREPARE CIRCUIT TO BE UTILIZED AT NEW POLE LOCATION INDICATED ON NEW WORK SITE PLAN.

F. REMOVE SITE LIGHTING SLDI, CRH1HB-19/21 BACK TO EXISTING ELECTRICAL HANDHOLE.

G. FENCE SECTION INDICATED TO BE REMOVED. COORDINATE REMOVE OF STUN CONTROLS AND SHAKER SENSORS WITH SECURITY DRAWINGS AND TRADES.

H. TEMPORARY FENCE LOCATION. COORDINATE FINAL LOCATION AND REQUIREMENTS WITH CIVIL DRAWINGS AND TRADES AND SECURITY DRAWINGS AND TRADES.

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ELECTRICAL DEMOLITION SITE PLAN

PROJECT NUMBER
2021094

SHEET NUMBER
E0.03

PROJECT DATE
AUGUST 23, 2023

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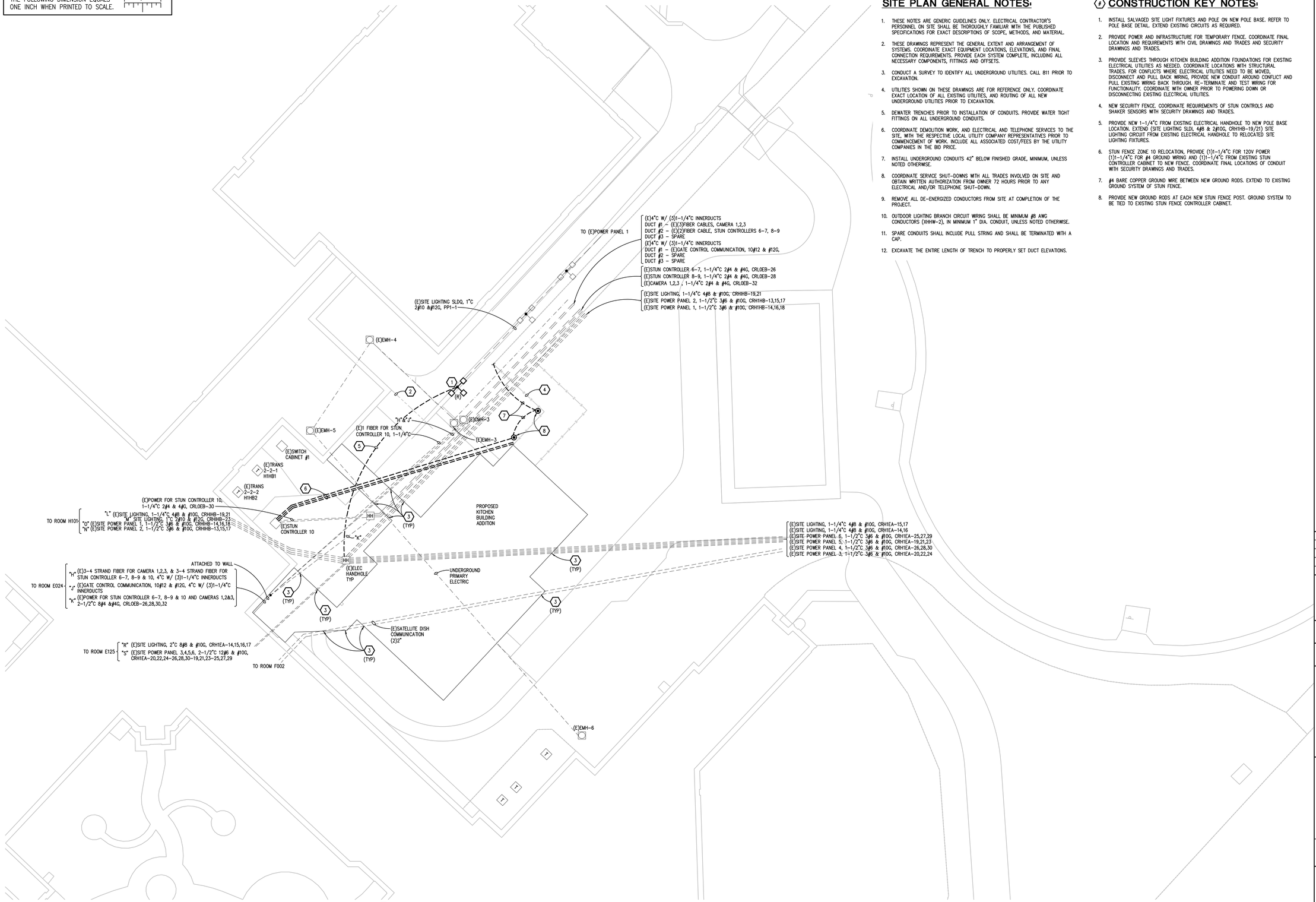

ELECTRICAL NEW WORK SITE PLAN
SCALE: 1" = 20'

SITE PLAN GENERAL NOTES:

1. THESE NOTES ARE GENERIC GUIDELINES ONLY. ELECTRICAL CONTRACTOR'S PERSONNEL ON SITE SHALL BE THOROUGHLY FAMILIAR WITH THE PUBLISHED SPECIFICATIONS FOR EXACT DESCRIPTIONS OF SCOPE, METHODS, AND MATERIAL.
2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
3. CONDUCT A SURVEY TO IDENTIFY ALL UNDERGROUND UTILITIES. CALL 811 PRIOR TO EXCAVATION.
4. UTILITIES SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE EXACT LOCATION OF ALL EXISTING UTILITIES, AND ROUTING OF ALL NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
5. DEWATER TRENCHES PRIOR TO INSTALLATION OF CONDUITS. PROVIDE WATER TIGHT FITTINGS ON ALL UNDERGROUND CONDUITS.
6. COORDINATE DEMOLITION WORK, AND ELECTRICAL AND TELEPHONE SERVICES TO THE SITE, WITH THE RESPECTIVE LOCAL UTILITY COMPANY REPRESENTATIVES PRIOR TO COMMENCEMENT OF WORK. INCLUDE ALL ASSOCIATED COST/FEES BY THE UTILITY COMPANIES IN THE BID PRICE.
7. INSTALL UNDERGROUND CONDUITS 42" BELOW FINISHED GRADE, MINIMUM, UNLESS NOTED OTHERWISE.
8. COORDINATE SERVICE SHUT-DOWNS WITH ALL TRADES INVOLVED ON SITE AND OBTAIN WRITTEN AUTHORIZATION FROM OWNER 72 HOURS PRIOR TO ANY ELECTRICAL AND/OR TELEPHONE SHUT-DOWN.
9. REMOVE ALL DE-ENERGIZED CONDUCTORS FROM SITE AT COMPLETION OF THE PROJECT.
10. OUTDOOR LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIMUM #8 AWG CONDUCTORS (XHHW-2), IN MINIMUM 1" DIA. CONDUIT, UNLESS NOTED OTHERWISE.
11. SPARE CONDUITS SHALL INCLUDE PULL STRING AND SHALL BE TERMINATED WITH A CAP.
12. EXCAVATE THE ENTIRE LENGTH OF TRENCH TO PROPERLY SET DUCT ELEVATIONS.

(#) CONSTRUCTION KEY NOTES:

1. INSTALL SALVAGED SITE LIGHT FIXTURES AND POLE ON NEW POLE BASE. REFER TO POLE BASE DETAIL. EXTEND EXISTING CIRCUITS AS REQUIRED.
2. PROVIDE POWER AND INFRASTRUCTURE FOR TEMPORARY FENCE. COORDINATE FINAL LOCATION AND REQUIREMENTS WITH CIVIL DRAWINGS AND TRADES AND SECURITY DRAWINGS AND TRADES.
3. PROVIDE SLEEVES THROUGH KITCHEN BUILDING ADDITION FOUNDATIONS FOR EXISTING ELECTRICAL UTILITIES AS NEEDED. COORDINATE LOCATIONS WITH STRUCTURAL TRADES. FOR CONFLICTS WHERE ELECTRICAL UTILITIES NEED TO BE MOVED, DISCONNECT AND PULL BACK WIRING, PROVIDE NEW CONDUIT AROUND CONFLICT AND PULL EXISTING WIRING BACK THROUGH. RE-TERMINATE AND TEST WIRING FOR FUNCTIONALITY. COORDINATE WITH OWNER PRIOR TO POWERING DOWN OR DISCONNECTING EXISTING ELECTRICAL UTILITIES.
4. NEW SECURITY FENCE. COORDINATE REQUIREMENTS OF STUN CONTROLS AND SHAKER SENSORS WITH SECURITY DRAWINGS AND TRADES.
5. PROVIDE NEW 1-1/4"C FROM EXISTING ELECTRICAL HANDHOLE TO NEW POLE BASE LOCATION. EXTEND (SITE LIGHTING SLDI, 4#8 & 2#10G, CRH1HB-19/21) SITE LIGHTING CIRCUIT FROM EXISTING ELECTRICAL HANDHOLE TO RELOCATED SITE LIGHTING FIXTURES.
6. STUN FENCE ZONE 10 RELOCATION, PROVIDE (1)1-1/4"C FOR 120V POWER (1)1-1/4"C FOR #4 GROUND WIRING AND (1)1-1/4"C FROM EXISTING STUN CONTROLLER CABINET TO NEW FENCE. COORDINATE FINAL LOCATIONS OF CONDUIT WITH SECURITY DRAWINGS AND TRADES.
7. #4 BARE COPPER GROUND WIRE BETWEEN NEW GROUND RODS. EXTEND TO EXISTING GROUND SYSTEM OF STUN FENCE.
8. PROVIDE NEW GROUND RODS AT EACH NEW STUN FENCE POST. GROUND SYSTEM TO BE TIED TO EXISTING STUN FENCE CONTROLLER CABINET.

NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ELECTRICAL NEW WORK SITE PLAN

PROJECT NUMBER
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SHEET NUMBER
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PROJECT DATE
AUGUST 23, 2023

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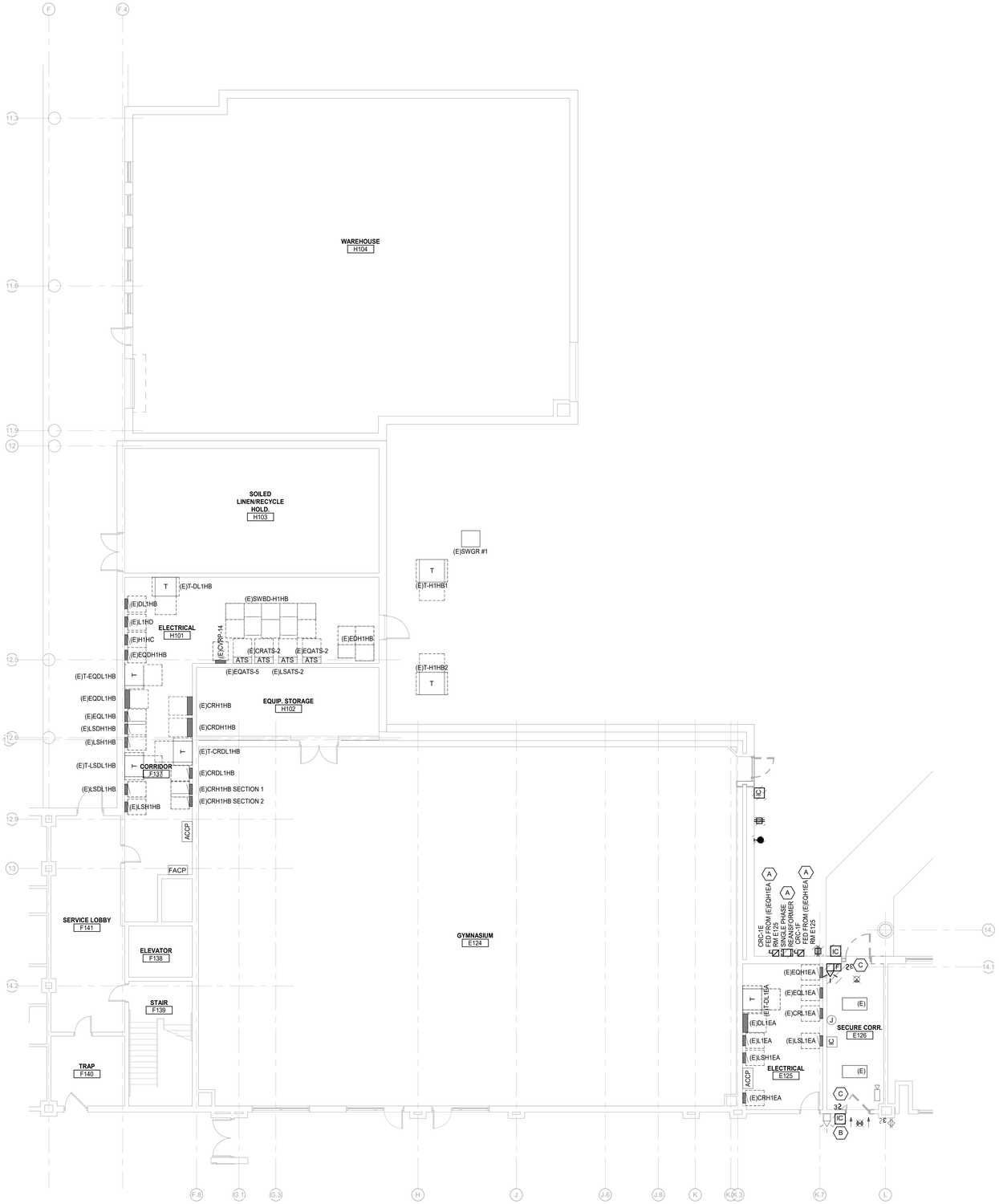

ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES:

1. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND THE EXTENT OF DEMOLITION WORK.
2. EXAMINE THE DRAWINGS OF OTHER TRADES AND BE FAMILIAR WITH THE DEMOLITION REQUIRED BY OTHER TRADES. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES, WHETHER OR NOT SPECIFICALLY INDICATED.
3. REMOVE EQUIPMENT OR MATERIALS AS INDICATED ON PLAN WITH CROSS HATCHING. DEMOLITION SHALL INCLUDE, BUT NOT BE LIMITED TO, THOSE COMPONENTS SHOWN.
4. COORDINATE WITH NEW WORK PLANS, ONE LINE DIAGRAMS AND RISER DIAGRAMS FOR EXTENT OF DEMOLITION WORK
5. PROVIDE PROPER SUPPORT FOR EXISTING TO REMAIN CONDUITS AND BOXES WHERE EXISTING SUPPORT IS TO BE REMOVED. RE-ROUTE BRANCH CIRCUIT CONDUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.
6. REMOVE ALL CONDUIT AND WIRE BACK TO THE SOURCE OR NEAREST UPSTREAM DEVICE REMAINING IN SERVICE.
7. MAINTAIN ELECTRICAL SERVICE TO ALL LIGHTING FIXTURES, DEVICES AND EQUIPMENT THAT ARE TO REMAIN. EXTEND CONDUIT AND WIRE AS REQUIRED WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM LOADS THAT ARE TO REMAIN.
8. DISPOSE OF ALL MATERIALS OFF SITE AND INCLUDE ALL COSTS FOR DISPOSAL IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING TCLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.
9. PROVIDE BLANK COVER PLATES WHERE SWITCHES AND DEVICES ARE REMOVED BUT EXISTING WALLS REMAIN INTACT.
10. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS "SPARE".
11. PROVIDE UPDATED TYPED-IN DIRECTORIES FOR ALL PANELS AFFECTED BY THIS ALTERATION.
12. VERIFY ALL UNDERGROUND AND IN SLAB UTILITY LOCATIONS PRIOR TO SAW-CUTTING OR PENETRATING ANY FLOOR SLAB.
13. COORDINATE ANY SHUT DOWN OF EXISTING SERVICES AND EQUIPMENT THAT ARE REMAINING IN USE WITH THE OWNER'S REPRESENTATIVE. WHERE EXISTING BUILDING SERVICE IS REQUIRED TO BE SHUT DOWN, INCLUDE ALL ASSOCIATED OVERTIME COSTS TO PERFORM THIS WORK DURING WEEKENDS AND EVENINGS INCLUDE ALL COSTS FOR PROVIDING TEMPORARY POWER WHERE SHUT DOWNS MUST OCCUR FOR PERIODS LONGER THAN THESE HOURS. COORDINATE ELECTRICAL SHUT DOWNS WITH THE OWNER 72 HOURS PRIOR TO SHUT DOWN.

DEMOLITION KEY NOTES:

- A SALVAGE FOR RELOCATION. EXISTING BRANCH CIRCUIT TO REMAIN.
- B SALVAGE FOR RELOCATION. REMOVE CONTROL WIRING UP TO CEILING SPACE.
- C SALVAGE FOR RELOCATION. EXISTING LIGHTING BRANCH CIRCUIT TO REMAIN.

NO.	REVISION	DATE

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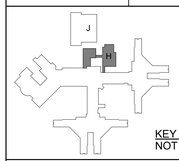

KEY PLAN
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR ELECTRICAL DEMOLITION PLAN

PROJECT NUMBER
2021094

SHEET NUMBER
ED1.01

PROJECT DATE
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PBA Project No.: 2021-0402

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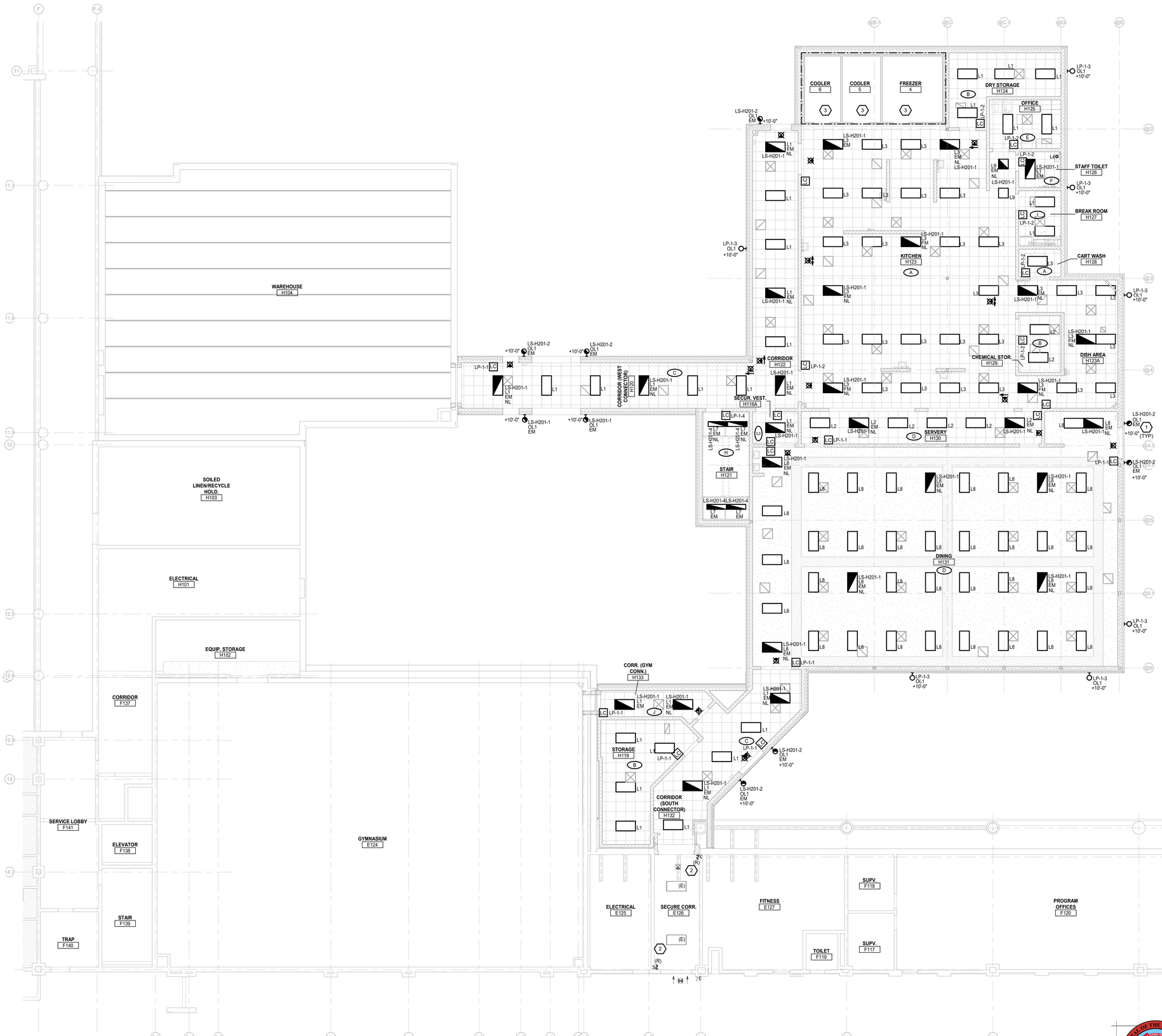

FIRST FLOOR LIGHTING PLAN - UNIT H

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

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
7. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
8. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
9. REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED FIRE ALARM CONTROL MODULES, DUCT SMOKE DETECTORS, AND MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.
10. REFER TO LIGHTING CONTROL SCHEDULE FOR ROOM CONTROL AND EMERGENCY LIGHTING CIRCUIT CONTROL REQUIREMENTS. DESIGNATION FOR ROOM IS INDICATED AS A LETTERED OVAL SYMBOL.
11. ALL FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH EXISTING SIMPLEX GRINNEL 4120 FIRE ALARM SYSTEM. PROVIDE NECESSARY COMPONENTS, MODULES, ETC. AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. RE-TEST AND CERTIFY EXISTING FIRE ALARM SYSTEM AT COMPLETION OF PROJECT.
12. PROVIDE TAMPER RESISTANT COVER PLATE KENALL WPP SERIES OR EQUAL WHERE PATIENTS WILL HAVE ACCESS TO DEVICES.
13. REFER TO SECURITY/TELECOMMUNICATION DRAWINGS FOR FINAL DEVICE LOCATIONS AND RACEWAY REQUIREMENTS. COORDINATE WITH SECURITY REQUIREMENTS WITH INSTALLING TRADES.
14. COORDINATE ELECTRICAL REQUIREMENTS DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH KITCHEN EQUIPMENT DRAWINGS, SHOP DRAWINGS AND KITCHEN EQUIPMENT INSTALLER.

CONSTRUCTION KEY NOTES:

1. EXTERIOR LIGHTING TO BE CONTROLLED VIA LIGHTING CONTACTOR IN H201. REFER TO DETAIL FOR CIRCUITING.
2. INSTALL SALVAGED SWITCH IN EXISTING BLOCK WALL. EXTEND EXISTING BRANCH CIRCUIT.
3. COOLER AND FREEZER LIGHTING PROVIDED BY ENCLOSURE PACKAGE. REFER TO ENLARGED PLAN FOR CIRCUITING INFORMATION.

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A. DIRECTOR

FILE NO.
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FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

KEY PLAN
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR LIGHTING PLAN - UNIT H

PROJECT NUMBER
2021094

SHEET NUMBER
E2.01

PROJECT DATE
SEPTEMBER 6, 2023

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ELECTRICAL
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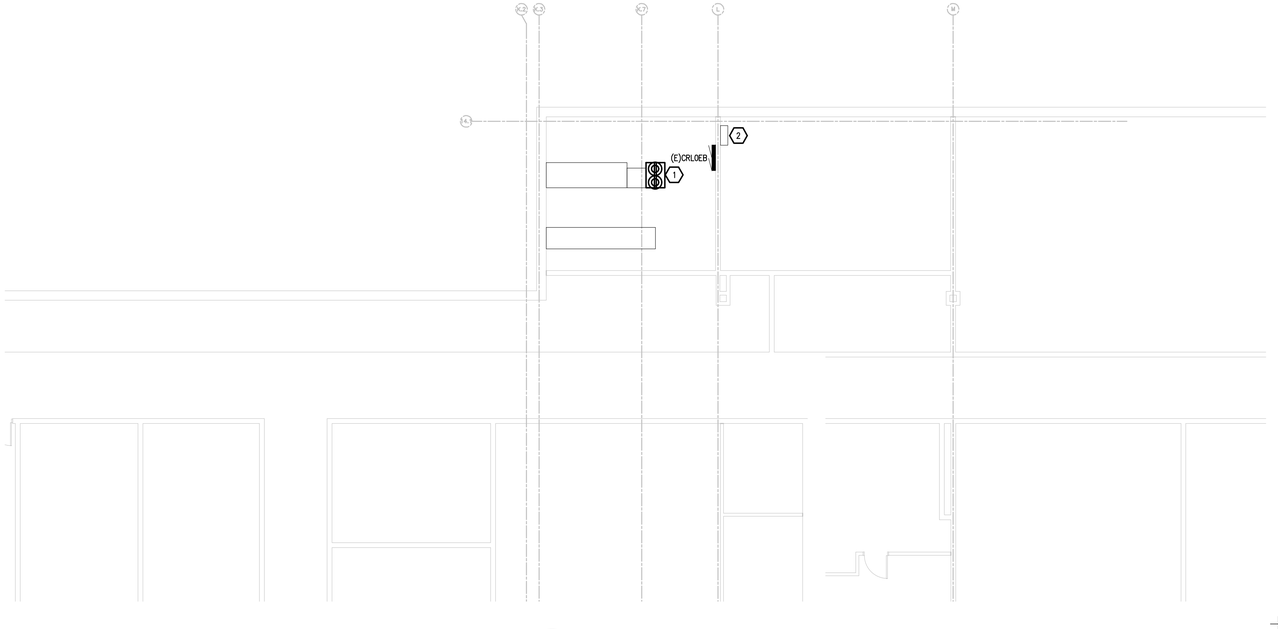
14. COORDINATE ELECTRICAL REQUIREMENTS DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH KITCHEN EQUIPMENT DRAWINGS, SHOP DRAWINGS AND KITCHEN EQUIPMENT INSTALLER.

(#) CONSTRUCTION KEY NOTES:

1. PROVIDE (2) 120V 20A DEDICATED BRANCH CIRCUITS FROM SPARE CIRCUIT BREAKERS IN (E)CRLOEB FOR NEW IT RACK IN SECURITY ELECTRONICS E024.
2. EXISTING LINE VOLTAGE MASTER CLOCK HEAD-END. EXTEND CIRCUITING TO NEW CLOCKS AS REQUIRED.



BASEMENT FLOOR POWER PLAN - UNIT H

SCALE: 1" = 20'

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NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
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FILE NO.
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
BASEMENT FLOOR POWER PLAN - UNIT H

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PBA Project No. 2021-0402

PROJECT NUMBER
2021094

PROJECT DATE
AUGUST 23, 2023

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SHEET NUMBER
E3.00

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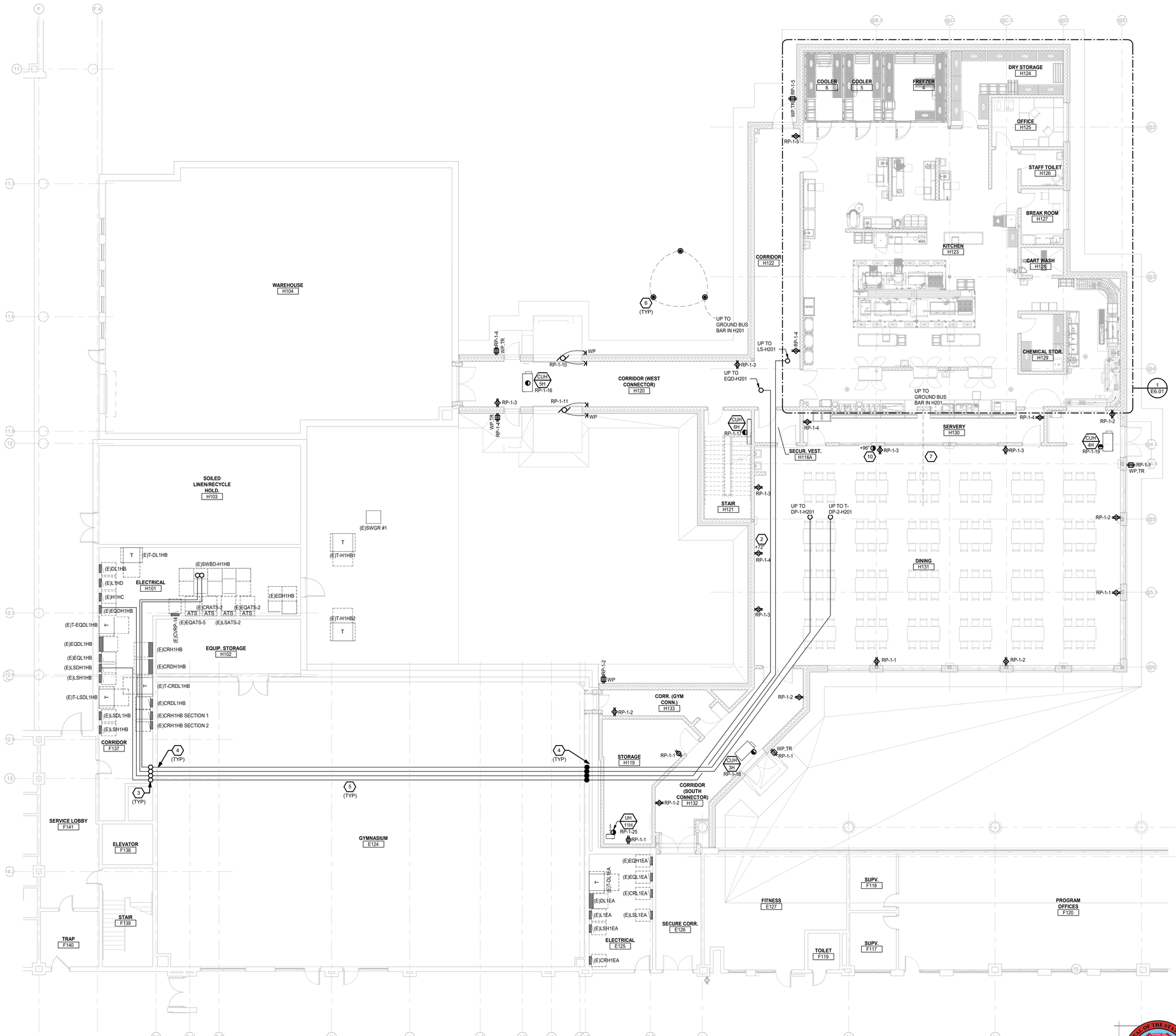

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CONSTRUCTION KEY NOTES:

1. INSTALL SALVAGED EQUIPMENT ON NEW ROOF. EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED.
2. COORDINATE FINAL LOCATION OF TV WITH ARCHITECTURAL DRAWINGS AND TRADES PRIOR TO ROUGH IN.
3. UP TO SECOND FLOOR ELECTRICAL ROOM E203. CORE EXISTING FLOOR.
4. CORE EXISTING WALL.
5. ROUTE IN CEILING SPACE OF GYM. ROUTE ALONG SIDE NEW MECHANICAL PIPING. COORDINATE FINAL ROUTING WITH MECHANICAL TRADES.
6. COORDINATE GROUND ROD PLACEMENT WITH EXISTING UTILITIES PRIOR TO DRIVING THEM IN.
7. 20'-0" #4/0 BARE COPPER CONDUCTOR FOR CONCRETE-ENCASED ELECTRODE IN FOUNDATION ENCASED BY AT LEASET 2" OF CONCRETE.
8. PROVIDE LIGHTNING PROTECTION FOR WHOLE BUILDING ADDITION. LIGHTNING PROTECTION SYSTEM SHALL BE UL LISTED MASTER LABEL. REFER TO SPECIFICATIONS FOR SYSTEM REQUIREMENTS.
9. TIE INTO THE EXISTING LIGHTNING PROTECTION ON EXISTING BUILDING AS REQUIRED.
10. LINE VOLTAGE CLOCK STANDARD ELECTRIC TIME FARADAY 2364 OR OTHER CLOCK COMPATABLE WITH EXISTING SYSTEM. EXTEND WIRING FROM EXISTING CLOCK HEAD END SYSTEM AS REQUIRED.

FIRST FLOOR POWER PLAN - UNIT H

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

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DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

KEY PLAN
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100 S Jefferson Ave, Suite 601
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR POWER PLAN - UNIT H

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PBA Project No.: 2021-0402

PROJECT NUMBER
2021094

SHEET NUMBER
E3.01

PROJECT DATE
SEPTEMBER 6, 2023

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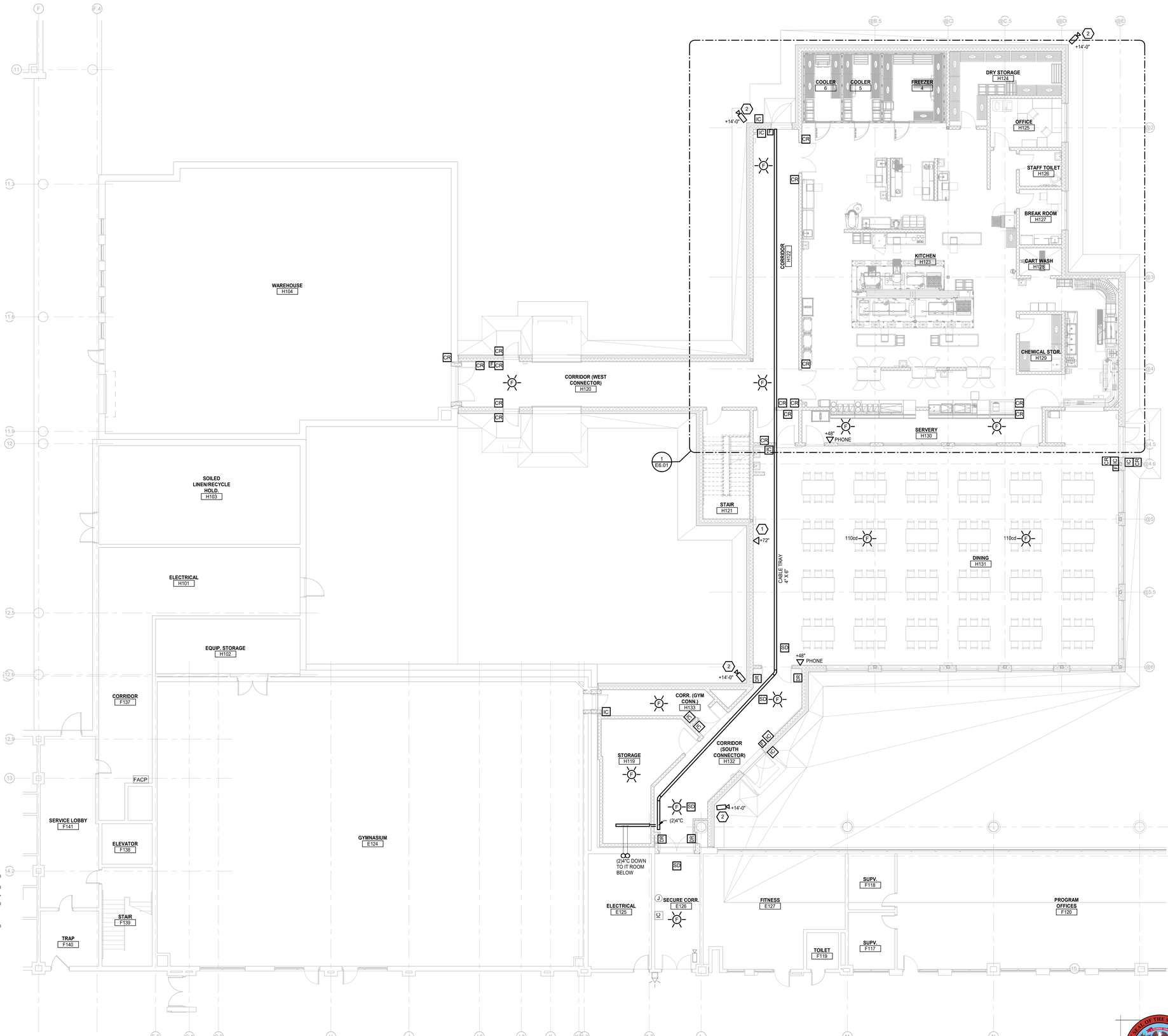

FIRST FLOOR AUXILIARY SYSTEMS PLAN - UNIT H

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CONSTRUCTION KEY NOTES:

1. COORDINATE FINAL LOCATION OF TV WITH ARCHITECTURAL DRAWINGS AND TRADES PRIOR TO ROUGH IN.
2. PROVIDE SINGLE GANG JUNCTION BOX AT 14'-0" ADJACENT TO EXTERIOR MOUNTED CAMERA. PROVIDE SEAL TIGHT CONDUIT AND ASSOCIATED FITTINGS/SEALS FROM EXTERIOR BOX TO CAMERA HOUSING. COORDINATE FINAL MOUNTING LOCATION WITH CAMERA INSTALLER AND DRAWINGS. PROVIDE 1-1/4" CONDUIT FROM SINGLE GANG JUNCTION BOX TO CABLE TRAY.

NO.	REVISION	DATE

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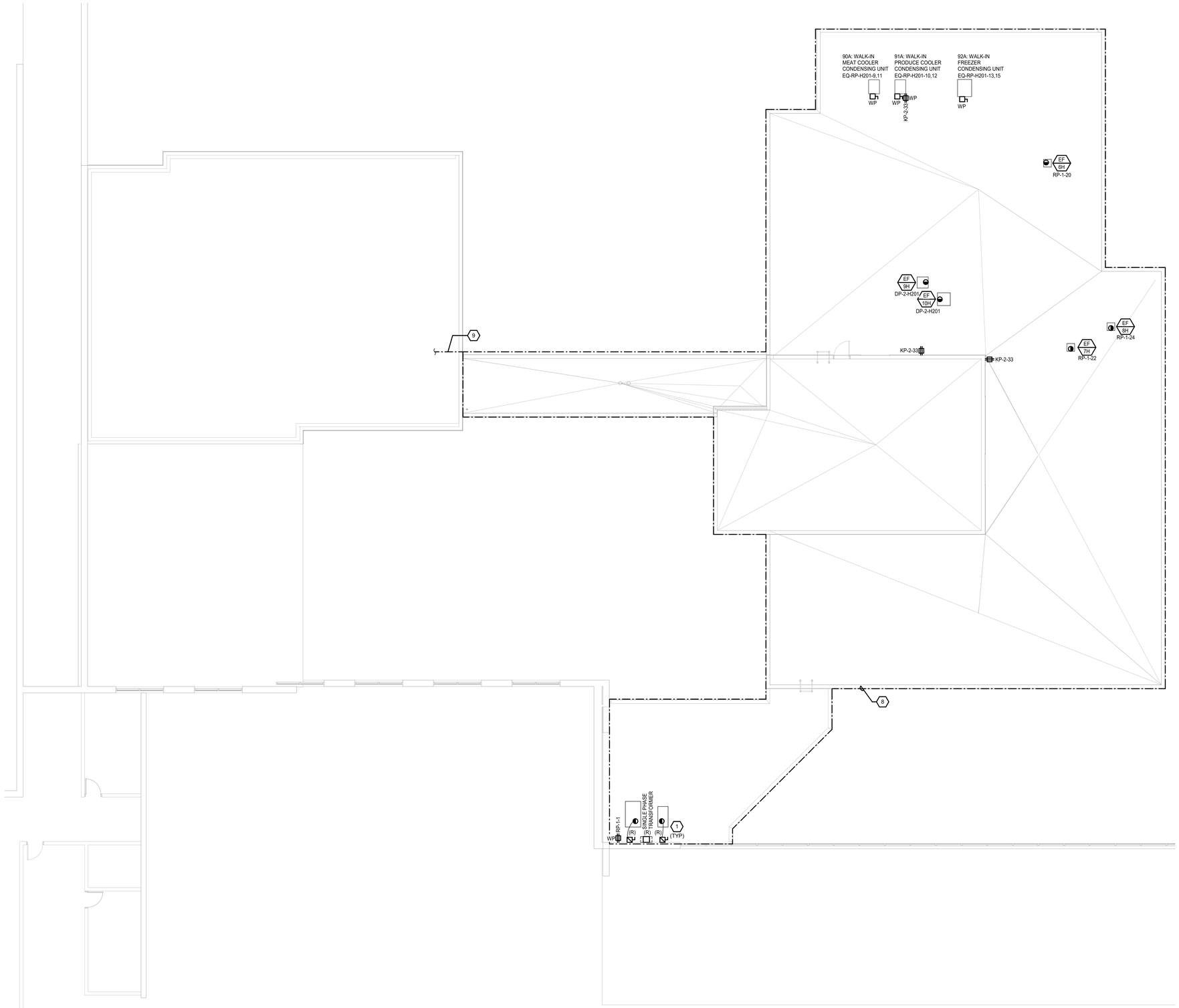

ELECTRICAL ROOF PLAN
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CONSTRUCTION KEY NOTES:

1 INSTALL SALVAGED EQUIPMENT ON NEW ROOF. EXTEND EXISTING BRANCH CIRCUITS AS REQUIRED.

2 COORDINATE FINAL LOCATION OF TV WITH ARCHITECTURAL DRAWINGS AND TRADES PRIOR TO ROUGH IN.

3 UP TO SECOND FLOOR ELECTRICAL ROOM E203. CORE EXISTING FLOOR.

4 CORE EXISTING WALL.

5 ROUTE IN CEILING SPACE OF GYM. ROUTE ALONG SIDE NEW MECHANICAL PIPING. COORIDINATE FINAL ROUTING WITH MECHANICAL TRADES.

6 COORDINATE GROUND ROD PLACEMENT WITH EXISTING UTILITIES PRIOR TO DRIVING THEM IN.

7 20'-0" #4/0 BARE COPPER CONDUCTOR FOR CONCRETE-ENCASED ELECTRODE IN FOUNDATION ENCASED BY AT LEASET 2" OF CONCRETE.

8 PROVIDE LIGHTNING PROTECTION FOR WHOLE BUILDING ADDITION. LIGHTNING PROTECTION SYSTEM SHALL BE UL LISTED MASTER LABEL. REFER TO SPECIFICATIONS FOR SYSTEM REQUIREMENTS.

9 TIE INTO THE EXISTING LIGHTNING PROTECTION ON EXISTING BUILDING AS REQUIRED.

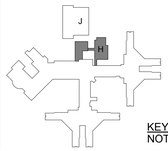
10 LINE VOLTAGE CLOCK STANDARD ELECTRIC TIME FARADAY 2364 OR OTHER CLOCK COMPATABLE WITH EXISTING SYSTEM. EXTEND WIRING FROM EXISTING CLOCK HEAD END SYSTEM AS REQUIRED.

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE	CONTRACT NO.
171CODHHS7255	Y22003



KEY PLAN
NOT TO SCALE

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ELECTRICAL ROOF PLAN

PROJECT NUMBER	SHEET NUMBER
2021094	E4.04
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: TLC	

THE GREAT SEAL OF THE STATE OF MICHIGAN 1835

ELECTRICAL

These documents are approved for compliance with the STATE OF MICHIGAN ELECTRICAL CODE subject to field inspection and the conditions of approval.

Peter Basso Associates Inc
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PBA Project No.: 2021-0402

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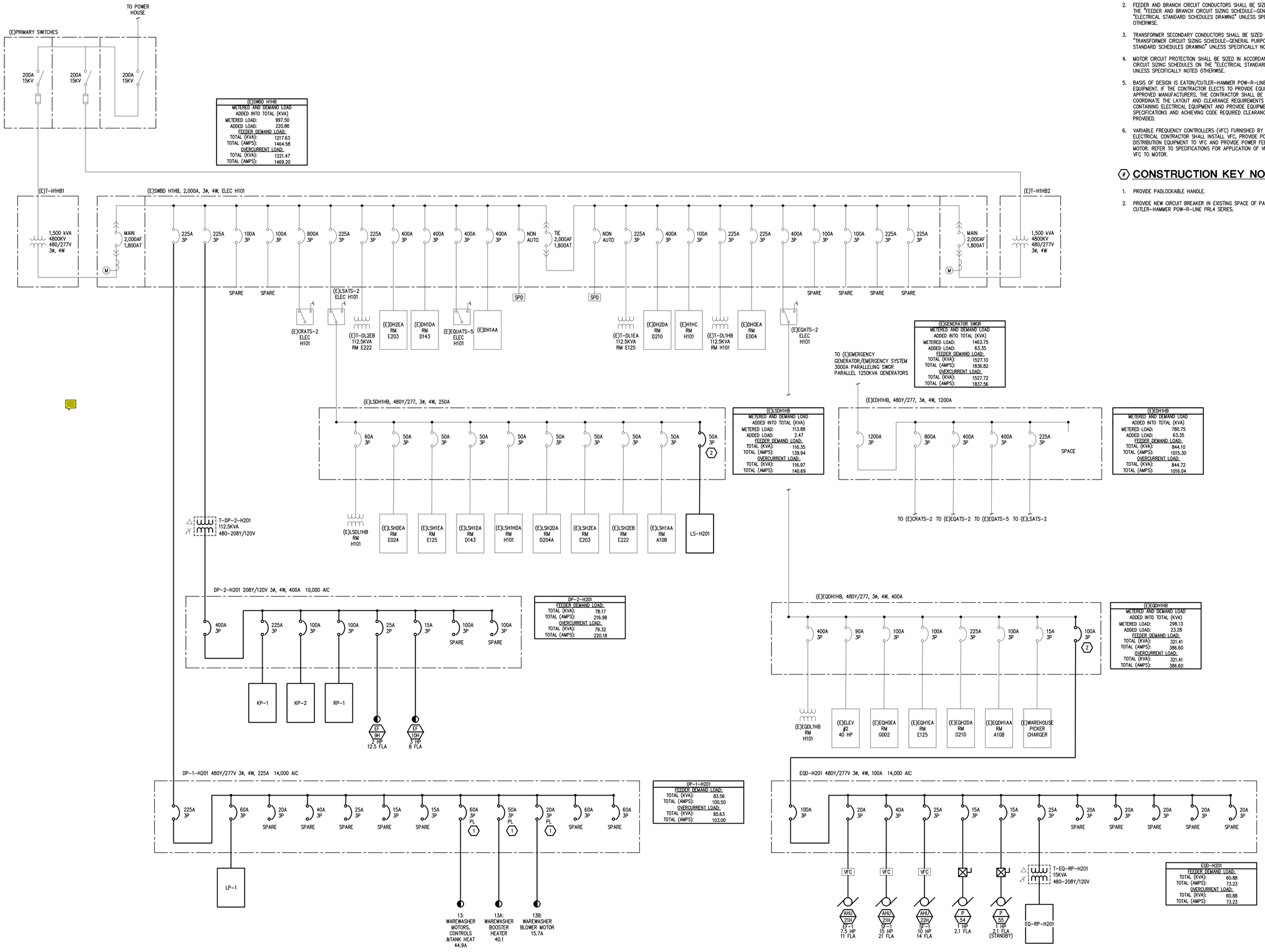
DIAGRAM GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE-GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
3. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "TRANSFORMER CIRCUIT SIZING SCHEDULE-GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
4. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH THE MOTOR CIRCUIT SIZING SCHEDULES ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
5. BASIS OF DESIGN IS EATON/CUTLER-HAMMER POW-R-LINE DISTRIBUTION EQUIPMENT. IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT FROM OTHER APPROVED MANUFACTURERS, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE LAYOUT AND CLEARANCE REQUIREMENTS IN ALL SPACES CONTAINING ELECTRICAL EQUIPMENT AND PROVIDE EQUIPMENT MEETING THE SPECIFICATIONS AND ACHIEVING CODE REQUIRED CLEARANCES WITHIN THE SPACE PROVIDED.
6. VARIABLE FREQUENCY CONTROLLERS (VFC) FURNISHED BY MECHANICAL TRADES. ELECTRICAL CONTRACTOR SHALL INSTALL VFC, PROVIDE POWER FEEDER FROM DISTRIBUTION EQUIPMENT TO VFC AND PROVIDE POWER FEEDER FROM VFC TO MOTOR. REFER TO SPECIFICATIONS FOR APPLICATION OF VFC POWER CABLE FROM VFC TO MOTOR.

(#) CONSTRUCTION KEY NOTES:

1. PROVIDE PADLOCKABLE HANDLE.
2. PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE OF PANEL. EXISTING PANEL IS CUTLER-HAMMER POW-R-LINE PRL4 SERIES.



ONE-LINE DIAGRAM - SWITCHBOARD H1HB

NO SCALE

ELECTRICAL

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NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A., DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM
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989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ONE LINE DIAGRAM - NEW WORK

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PBA Project No.: 2021-0402

PROJECT NUMBER
2021094

PROJECT DATE
AUGUST 23, 2023

CHECKED BY
TLC

SHEET NUMBER
E5.01

PANELBOARD KP-1

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	A		B		C		CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	K	86: FOOD PROCESSOR		20	1200	960					20		85: FOOD PROCESSOR	K	2
3	K	84: SLICER		20			672	180			20		69: MIXER, COUNTER	K	4
5									1439	1199					6
7	K	66: MIXER, FLOOR		20	1439	1199					20	GFCI	65: CHILLER/FREEZER, BLAST	K	8
9							1439	1199							10
11									2233	4798					12
13	K	61: INDUCTION CHARGER	GFCI	20	2233	4798					50		41: UDS SYSTEM	K	14
15							2233	4798							16
17	K	40: FIRE SUPPRESSION...		20					1500	1500	20		40: FIRE SUPPRESSION...	K	18
19	K	39: HOOD		20	1500	1500					20		39: HOOD	K	20
21							396	1428			20		20: ICE MAKER/BIN	K	22
23	K	26. DISPOSER, GARBAGE		15					396	720					24
25					396	720					15		12: DISPOSER, GARBAGE	K	26
27	K	6: COFFEE MAKER		20			1440	720							28
29	K	5: CABINET, HEATED PASS-THRU	GFCI	20					1612	1272	20	GFCI	4: DISPLAY, CASE REFRIGERATED	K	30
31					1612	1272					20	GFCI	4: DISPLAY, CASE REFRIGERATED	K	32
33	K	65A: CHILLER/FREEZER, BLAST, EVAP	GFCI	20			240	1800			20	GFCI	41: UDS SYSTEM FUEL/SHUNT...	K	34
35									1799	420	20	GFCI	1D: SERVING LINE - COLD FOOD	K	36
37	K	8: SOILED DISHTABLE TRAY CONVEYOR		20	1799	420					20	GFCI	1C: SERVING LINE - COLD FOOD	K	38
39							1799	420			20	GFCI	1C: SERVING LINE - COLD FOOD	K	40
41	--	SPARE	--	20					0	0	20	--	SPARE	--	42
					21049		18765		18889						
					ØA		ØB		ØC						

PANELBOARD INFORMATION		BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OVERCURRENT...	NOTES
VOLTAGE:	208Y/120V	CONTINUOUS LOAD (C):	0	100%	0	125% 0	
BUS AMPACITY:	225A	ELECTRIC HEAT (E)	0	100%	0	125% 0	
MAIN TYPE:	MLO	NON-CONTINUOUS LOAD (NC):	0	100%	0	100% 0	
MINIMUM A.I.C.:	10,000	KITCHEN LOAD (K):	58702.19	65.00%	38156.42	100% 38156.42	
MOUNTING:	SURFACE	RECEPT BASE LOAD (R):	0	100%	0	100% 0	
		RECEPT DEMAND LOAD (R):	0	50%	0	100% 0	
		LIGHTING LOAD (L):	0	100%	0	125% 0	
		ADDITIONAL TRACK LIGHTING...				100% 0	
PANELBOARD LOCATION		MOTORS, HIGHEST LOAD (M):	0	125 %	0	100% 0	
		MOTORS, REMAINING	0	100 %	0	100 % 0	
		NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED...		TOTAL (kVA):	38.16		
				TOTAL...	105.91	TOTAL... 105.91	

PANELBOARD KP-2

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	A		B		C		CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	--	SPARE	--	20	0	0					20	--	SPARE	--	2
3	--	SPARE	--	20			0	0			20	--	SPARE	--	4
5	--	SPARE	--	20					0	0	20	--	SPARE	--	6
7	--	SPARE	--	20	0	0					20	--	SPARE	--	8
9	R	RECEPTS; H123,H125		20			1080	0			20	--	SPARE	--	10
11	R	RECEPTS; H124,H125,H126,H127		20					1080	1260	20		RECEPTS;H123,H127	R	12
13	R	RECEPTS; H123,H129		20	900	900					20		RECEPTS;H123	R	14
15	R	RECEPTS;H123,H124		20			720	1272			20		KITCHEN COUNTERTOP	K	16
17	C	REFRIGERATOR;H112	GFCI	20					1200	1500	20		COFFEE;H112	NC	18
19	NC	MICROWAVE;H112		20	1500	1200					20		GARBAGE DISPOSAL;H112	NC	20
21	--	SPARE	--	20			0	0			20	--	SPARE	--	22
23	--	SPARE	--	20					0	0	20	--	SPARE	--	24
25	--	SPARE	--	20	0	1654					20	GFCI	1B:SERVING LINE - HOT/COLD FOOD COMBO	K	26
27	K	1BA: SERVING LINE - H/C FOOD...	GFCI	20			420	1654							28
29	K	1A:SERVING LINE - HOT FOOD	GFCI	20					1654	1654	20	GFCI	1A:SERVING LINE - HOT FOOD	K	30
31					1654	1654									32
33	R	ROOF,MECH/ELEC ROOM RECEPTS		20			1080	0			20	--	SPARE	--	34
35	--	SPARE	--	20					0	0	20	--	SPARE	--	36
37	--	SPARE	--	20	0	0					20	--	SPARE	--	38
39	--	SPARE	--	20			0	0			20	--	SPARE	--	40
41	--	SPARE	--	20					0	0	20	--	SPARE	--	42
					9461		6226		8347						
					ØA		ØB		ØC						

PANELBOARD INFORMATION		BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OVERCURRENT...	NOTES
VOLTAGE:	208Y/120V	CONTINUOUS LOAD (C):	1200	100%	1200	125% 1500	
BUS AMPACITY:	100A	ELECTRIC HEAT (E)	0	100%	0	125% 0	
MAIN TYPE:	MLO	NON-CONTINUOUS LOAD (NC):	4200	100%	4200	100% 4200	
MINIMUM A.I.C.:	10,000	KITCHEN LOAD (K):	11613.6	70.00%	8129.52	100% 8129.52	
MOUNTING:	SURFACE	RECEPT BASE LOAD (R):	7020	100%	7020	100% 7020	
		RECEPT DEMAND LOAD (R):	0	50%	0	100% 0	
		LIGHTING LOAD (L):	0	100%	0	125% 0	
		ADDITIONAL TRACK LIGHTING...				100% 0	
PANELBOARD LOCATION		MOTORS, HIGHEST LOAD (M):	0	125 %	0	100% 0	
		MOTORS, REMAINING	0	100 %	0	100 % 0	
		NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED...		TOTAL (kVA):	20.55		
				TOTAL...	57.04	TOTAL... 57.97	

PANELBOARD RP-1

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	A		B		C		CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	R	RECEPTS; H119,H131,EXT, ROOF		20	1260	1260					20		RECEPTS; H131,H132,H133,EXT	R	2
3	R	RECEPTS; H131,H120		20			1080	1080			20		RECEPTS; H107,H130,H131,EXT	R	4
5	R	RECEPTS; H122,EXT		20					360	0	20	--	SPARE	--	6
7	--	SPARE	--	20	0	0					20	--	SPARE	--	8
9	--	SPARE	--	20			0	600			20		NORTH OVERHEAD DOOR;H120	M	10
11	M	SOUTH OVERHEAD DOOR; H120		20					600	1000	20		FIRE ALARM NAC; H201	C	12
13	M	UH-8H; H124		15	528	528					15		UH-9H; H201	M	14
15	M	UH-10H; H201		15			528	528			15		CUH-5H; H120	M	16
17	M	CUH-6H; H121		15					528	528	15		CUH-3H; H132	M	18
19	M	CUH-4H; H131		15	528	528					15		EF-8H: ROOF	M	20
21	C	TEMPERATURE CONTROL PANEL		20			1200	528			15		EF-7H: ROOF	M	22
23	C	TEMPERATURE CONTROL PANEL		20					1200	528	15		EF-8H: ROOF	M	24
25	M	CUH-11H; H119		15	528	0					20	--	SPARE	--	26
27	--	SPARE	--	20			0	0			20	--	SPARE	--	28
29	--	SPARE	--	20					0	0	20	--	SPARE	--	30
31	--	SPARE	--	20	0	0					20	--	SPARE	--	32
33	--	SPARE	--	20			0	0			20	--	SPARE	--	34
35	--	SPARE	--	20					0	0	20	--	SPARE	--	36
37	--	SPARE	--	20	0	0					20	--	SPARE	--	38
39	--	SPARE	--	20			0	0			20	--	SPARE	--	40
41	--	SPARE	--	20					0	0	20	--	SPARE	--	42
					5160		5544		4744						
					ØA		ØB		ØC						

PANELBOARD INFORMATION		BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OVERCURRENT...	NOTES
VOLTAGE:	208Y/120V	CONTINUOUS LOAD (C):	3400	100%	3400	125% 4250	
BUS AMPACITY:	100A	ELECTRIC HEAT (E)	0	100%	0	125% 0	
MAIN TYPE:	MLO	NON-CONTINUOUS LOAD (NC):	0	100%	0	100% 0	
MINIMUM A.I.C.:	10,000	KITCHEN LOAD (K):	0		0	100% 0	
MOUNTING:	SURFACE	RECEPT BASE LOAD (R):	5040	100%	5040	100% 5040	
		RECEPT DEMAND LOAD (R):	0	50%	0	100% 0	
		LIGHTING LOAD (L):	0	100%	0	125% 0	
		ADDITIONAL TRACK LIGHTING...				100% 0	
PANELBOARD LOCATION		MOTORS, HIGHEST LOAD (M):	600	125 %	750	100% 750	
		MOTORS, REMAINING	6408	100 %	6408	100 % 6408	
		NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED...		TOTAL (kVA):	15.6		
				TOTAL...	43.30	TOTAL... 45.66	

PANELBOARD LS-H201

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	A		B		C		CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	L	LIGHTING EM LIGHTS		20	1924	280					20		EXTERIOR BUILDING MOUNTED...	L	2
3	--	SPARE	--	20			0	368			20		LIGHTING STAIR H121	L	4
5	--	SPARE	--	20					0	0	20	--	SPARE	--	6
7	--	SPARE	--	20	0	0					20	--	SPARE	--	8
9	--	SPARE	--	20			0	0			20	--	SPARE	--	10
11	--	SPARE	--	20					0	0	20	--	SPARE	--	12
13	--	SPARE	--	20	0	0					20	--	SPARE	--	14
15	--	SPARE	--	20			0	0			20	--	SPARE	--	16
17	--	SPARE	--	20					0	0	20	--	SPARE	--	18
19	--	SPARE	--	20	0	0					20	--	SPARE	--	20
21	--	SPARE	--	20			0	0			20	--	SPARE	--	22
23	--	SPARE	--	20					0	0	20	--	SPARE	--	24
25	--	SPARE	--	20	0	0					20	--	SPARE	--	26
27	--	SPARE	--	20			0	0			20	--	SPARE	--	28
29	--	SPARE	--	20					0	0	20	--	SPARE	--	30
31	--	SPARE	--	20	0	0					20	--	SPARE	--	32
33	--	SPARE	--	20			0	0			20	--	SPARE	--	34
35	--	SPARE	--	20					0	0	20	--	SPARE	--	36
37	--	SPARE	--	20	0	0					20	--	SPARE	--	38
39	--	SPARE	--	20			0	0			20	--	SPARE	--	40
41	--	SPARE	--	20					0	0	20	--	SPARE	--	42
					2204		368		0						
					ØA		ØB		ØC						

PANELBOARD INFORMATION		BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OVERCURRENT...	NOTES
VOLTAGE:	480Y/277V	CONTINUOUS LOAD (C):	0	100%	0	125% 0	
BUS AMPACITY:	60A	ELECTRIC HEAT (E)	0	100%	0	125% 0	
MAIN TYPE:	MLO	NON-CONTINUOUS LOAD (NC):	0	100%	0	100% 0	
MINIMUM A.I.C.:		KITCHEN LOAD (K):	0		0	100% 0	
MOUNTING:	SURFACE	RECEPT BASE LOAD (R):	0	100%	0	100% 0	
		RECEPT DEMAND LOAD (R):	0	50%	0	100% 0	
		LIGHTING LOAD (L):	2571.6	100%	2571.6	125% 3214.5	
		ADDITIONAL TRACK LIGHTING...				100% 0	
PANELBOARD LOCATION		MOTORS, HIGHEST LOAD (M):	0	125 %	0	100% 0	
		MOTORS, REMAINING	0	100 %	0	100 % 0	
		NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED...		TOTAL (kVA):	2.57		
				TOTAL...	3.09	TOTAL... 3.87	

PANELBOARD LP-1

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	A		B		C		CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	L	LIGHTING UNIT H,PENTHOUSE		20	3386	3814					20		LIGHTING THE KITCHEN AREA	L	2
3	L	EXTERIOR BUILDING MOUNTED...		20			640	368			20		LIGHTING STAIR H121	L	4
5	--	SPARE	--	20					0	0	20	--	SPARE	--	6
7	--	SPARE	--	20	0	0					20	--	SPARE	--	8
9	--	SPARE	--	20			0	0			20	--	SPARE	--	10
11	--	SPARE	--	20					0	0	20	--	SPARE	--	12
13	--	SPARE	--	20	0	0					20	--	SPARE	--	14
15	--	SPARE	--	20			0	0			20	--	SPARE	--	16
17	--	SPARE	--	20					0	0	20	--	SPARE	--	18
19	--	SPARE	--	20	0	0					20	--	SPARE	--	20
21	--	SPARE	--	20			0	0			20	--	SPARE	--	22
23	--	SPARE	--	20					0	0	20	--	SPARE	--	24
25	--	SPARE	--	20	0	0					20	--	SPARE	--	26
27	--	SPARE	--	20			0	0			20	--	SPARE	--	28
29	--	SPARE	--	20					0	0	20	--	SPARE	--	30
31	--	SPARE	--	20	0	0					20	--	SPARE	--	32
33	--	SPARE	--	20			0	0			20	--	SPARE	--	34
35	--	SPARE	--	20					0	0	20	--	SPARE	--	36
37	--	SPARE	--	20	0	0					20	--	SPARE	--	38
39	--	SPARE	--	20			0	0			20	--	SPARE	--	40
41	--	SPARE	--	20					0	0	20	--	SPARE	--	42
					7200		1008		0						
					ØA		ØB		ØC						

PANELBOARD INFORMATION		BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OVERCURRENT...	NOTES
VOLTAGE:	480Y/277V	CONTINUOUS LOAD (C):	0	100%	0	125% 0	
BUS AMPACITY:	60A	ELECTRIC HEAT (E)	0	100%	0	125% 0	
MAIN TYPE:	MLO	NON-CONTINUOUS LOAD (NC):	0	100%	0	100% 0	
MINIMUM A.I.C.:	14,000	KITCHEN LOAD (K):	0		0	100% 0	
MOUNTING:	SURFACE	RECEPT BASE LOAD (R):	0	100%	0	100% 0	
		RECEPT DEMAND LOAD (R):	0	50%	0	100% 0	
		LIGHTING LOAD (L):	8207.76	100%	8207.76	125% 10259.7	
		ADDITIONAL TRACK LIGHTING...				100% 0	
PANELBOARD LOCATION		MOTORS, HIGHEST LOAD (M):	0	125 %	0	100% 0	
		MOTORS, REMAINING	0	100 %	0	100 % 0	
		NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED...		TOTAL (kVA):	8.21		
				TOTAL...	9.87	TOTAL... 12.34	

PANELBOARD EQ-RP-H201

#	LOAD TYPE	DESCRIPTION	CB TYPE	CB	A		B		C		CB	CB TYPE	DESCRIPTION	LOAD TYPE	#
1	K	90: WALK-IN MEAT COOLER		20	1200	1200					20		91: WALK-IN PRODUCE COOLER	K	2
3	K	92: WALK-IN FREEZER		20			1200	192			15		90B: WALK-IN MEAT COOLER EVAP	K	4
5	K	91B: WALK-IN PRODUCE COOLER...		15					192	1487	20		92A: WALK-IN FREEZER EVAP	K	6
7	K	92C: DRAIN LINE HEATER TAPE	GFPE	20	1800	1487									8
9	K	90A: WALK-IN MEAT COOLER CONDENSING UNIT		15			770	728			15		91A: WALK-IN PRODUCE COOLER CONDENSING UNIT	K	10
11									770	728					12
13	K	92A: WALK-IN FREEZER CONDENSING UNIT		30	2226	1920					20		B-11: H201	M	14
15							2226	1920			20		B-12: H201	M	16
17	NC	AHU-21H LIGHTS		20					1200	1200	20		AHU-22H LIGHTS	NC	18
19	R	RECEPTS.; H201		20	360	0					20	--	SPARE	--	20
21	--	SPARE	--	20			0	0			20	--	SPARE	--	22
23	--	SPARE	--	20					0	0	20	--	SPARE	--	24
25	--	SPARE	--	20	0	0					20	--	SPARE	--	26
27	--	SPARE	--	20			0	0			20	--	SPARE	--	28
29	--	SPARE	--	20					0	0	20	--	SPARE	--	30
31	--	SPARE	--	20	0	0					20	--	SPARE	--	32
33	--	SPARE	--	20			0	0			20	--	SPARE	--	34
35	--	SPARE	--	20					0	0	20	--	SPARE	--	36
37	--	SPARE	--	20	0	0					20	--	SPARE	--	38
39	--	SPARE	--	20			0	0			20	--	SPARE	--	40
41	--	SPARE	--	20					0	0	20	--	SPARE	--	42
					10193		7035		5577						
					ØA		ØB		ØC						

PANELBOARD INFORMATION		BRANCH CIRCUIT CONNECTED LOAD		DEMAND FACTOR	CALCULATED LOAD	FEEDER AND OVERCURRENT...	NOTES
VOLTAGE:	208Y/120V	CONTINUOUS LOAD (C):	0	100%	0	125% 0	
BUS AMPACITY:	60A	ELECTRIC HEAT (E)	0	100%	0	125% 0	
MAIN TYPE:	60A MCB	NON-CONTINUOUS LOAD (NC):	2400	100%	2400	100% 2400	
MINIMUM A.I.C.:	10,000	KITCHEN LOAD (K):	16204.8	65.00%	10533.12	100% 10533.12	
MOUNTING:	SURFACE	RECEPT BASE LOAD (R):	360	100%	360	100% 360	
		RECEPT DEMAND LOAD (R):	0	50%	0	100% 0	
		LIGHTING LOAD (L):	0	100%	0	125% 0	
		ADDITIONAL TRACK LIGHTING...				100% 0	
PANELBOARD LOCATION		MOTORS, REMAINING	1920	100 %	1920	100% 2400	
		NOTE: DEMAND AND SIZING INFORMATION IS CALCULATED...		TOTAL (kVA):	17.61		
				TOTAL...	48.89	TOTAL... 48.89	

NO.	REVISION	DATE

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DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE	CONTRACT NO.
171CODHHS7255	Y22003

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
PANEL SCHEDULES

PROJECT NUMBER	SHEET NUMBER
2021094	E5.02
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: Checker	

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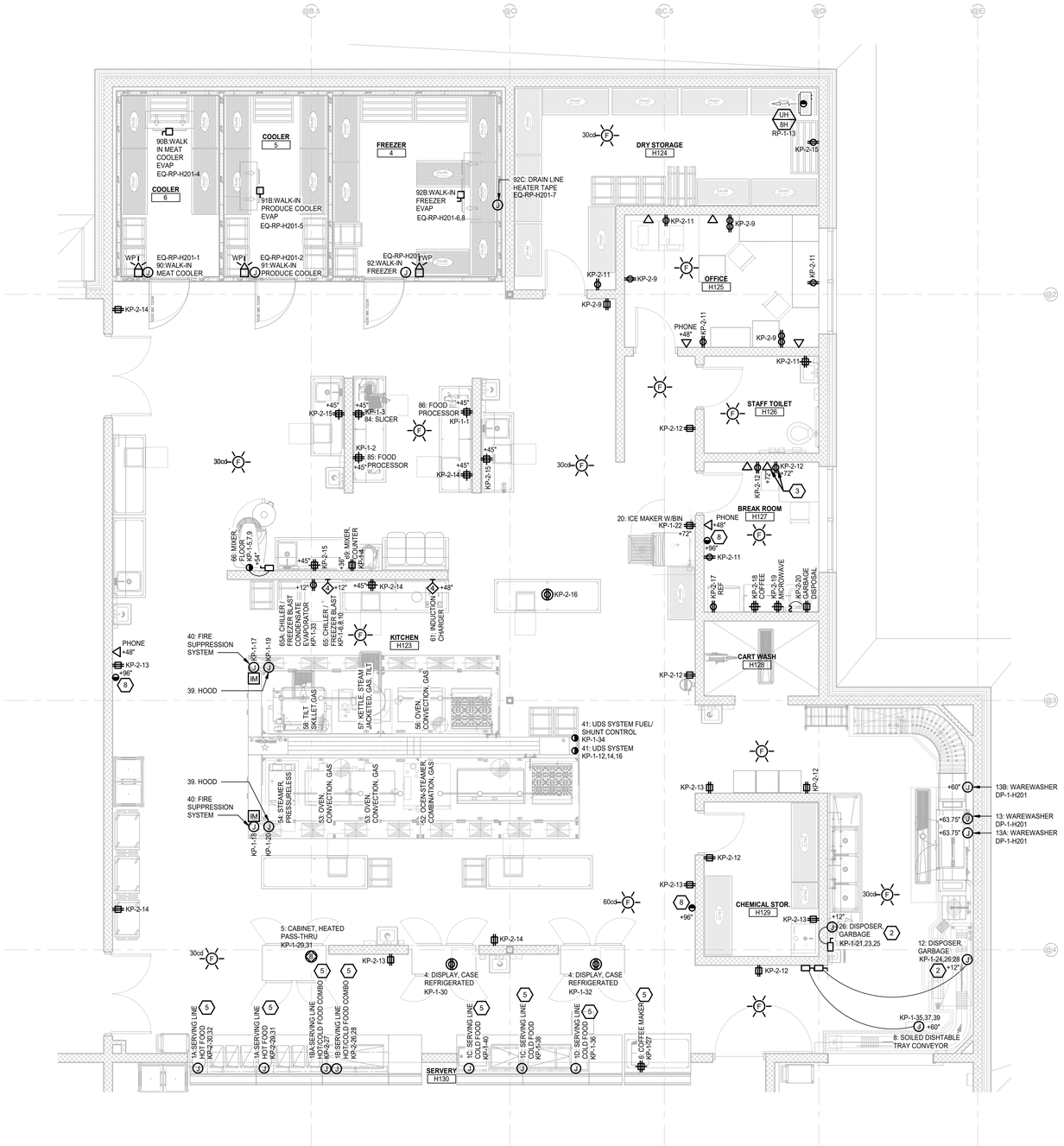
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



1 E3.01 **FIRST FLOOR ELECTRICAL ENLARGED KITCHEN PLAN**
SCALE: 1/4" = 1'-0"

ELECTRICAL GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
4. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
5. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
6. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.
7. COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.
8. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.
9. REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED FIRE ALARM CONTROL MODULES, DUCT SMOKE DETECTORS, AND MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.
10. REFER TO LIGHTING CONTROL SCHEDULE FOR ROOM CONTROL AND EMERGENCY LIGHTING CIRCUIT CONTROL REQUIREMENTS. DESIGNATION FOR ROOM IS INDICATED AS A LETTERED OVAL SYMBOL.
11. ALL FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH EXISTING SIMPLEX GRINNEL 4120 FIRE ALARM SYSTEM. PROVIDE NECESSARY COMPONENTS, MODULES, ETC. AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. RE-TEST AND CERTIFY EXISTING FIRE ALARM SYSTEM AT COMPLETION OF PROJECT.
12. PROVIDE TAMPER RESISTANT COVER PLATE KENALL WPP SERIES OR EQUAL WHERE PATIENTS WILL HAVE ACCESS TO DEVICES.
13. REFER TO SECURITY/TELECOMMUNICATION DRAWINGS FOR FINAL DEVICE LOCATIONS AND RACEWAY REQUIREMENTS. COORDINATE WITH SECURITY REQUIREMENTS WITH INSTALLING TRADES.
14. COORDINATE ELECTRICAL REQUIREMENTS DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH KITCHEN EQUIPMENT DRAWINGS, SHOP DRAWINGS AND KITCHEN EQUIPMENT INSTALLER.

CONSTRUCTION KEY NOTES:

1. PROVIDE TOGGLE SWITCH LOCK GUARD FOR BOILER DISCONNECT LOCKING MEANS.
2. PROVIDE INTERWIRE TO CONTROL PANEL. COORDINATE WITH FOOD SERVICE INSTALLER AND INSTALLATION INSTRUCTIONS.
3. COORDINATE FINAL LOCATION OF TV WITH ARCHITECTURAL DRAWINGS AND TRADES PRIOR TO ROUGH IN.
4. INSTALL BOTTOM OF LIGHT FIXTURE AT 8'-0" AFF.
5. ROUTE BRANCH CIRCUIT IN FLOOR AND STUB UP TO FINAL LOCATION. COORDINATE FINAL LOCATION WITH FOOD SERVICE DRAWINGS AND TRADES.
6. MATCH ON-OFF TIMES WITH EXISTING SITE LIGHTING. COORDINATE EXACT TIMES WITH OWNER. CONNECT PHOTO CELL CONTROL TO EXISTING MAIN BUILDING PHOTO CELL WIRING/CONTROL.
7. 4" HOUSEKEEPING PAD.
8. LINE VOLTAGE CLOCK STANDARD ELECTRIC TIME FARADAY 2364 OR OTHER CLOCK COMPATABLE WITH EXISTING SYSTEM. EXTEND WIRING FROM EXISTING CLOCK HEAD END SYSTEM AS REQUIRED.

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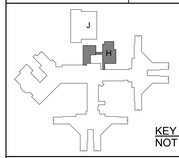

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PROJECT TITLE
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SHEET TITLE
ELECTRICAL ENLARGED PLAN

PROJECT NUMBER
2021094

SHEET NUMBER
E6.01

PROJECT DATE
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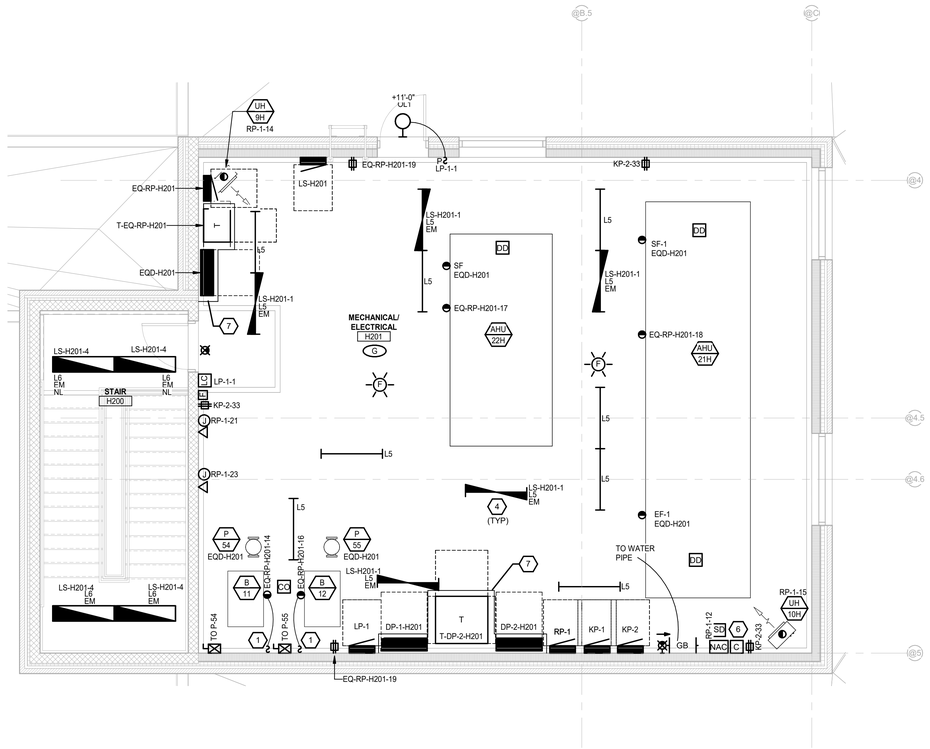

PENTHOUSE ELECTRICAL ENLARGED PLAN

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

ELECTRICAL GENERAL NOTES:

1 THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.

2 INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.

3 COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

4 PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

5 TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

6 MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

7 COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.

8 REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.

9 REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED FIRE ALARM CONTROL MODULES, DUCT SMOKE DETECTORS, AND MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.

10 REFER TO LIGHTING CONTROL SCHEDULE FOR ROOM CONTROL AND EMERGENCY LIGHTING CIRCUIT CONTROL REQUIREMENTS. DESIGNATION FOR ROOM IS INDICATED AS A LETTERED OVAL SYMBOL.

11 ALL FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH EXISTING SIMPLEX GRINNEL 4120 FIRE ALARM SYSTEM. PROVIDE NECESSARY COMPONENTS, MODULES, ETC. AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. RE-TEST AND CERTIFY EXISTING FIRE ALARM SYSTEM AT COMPLETION OF PROJECT.

12 PROVIDE TAMPER RESISTANT COVER PLATE KENALL WPP SERIES OR EQUAL WHERE PATIENTS WILL HAVE ACCESS TO DEVICES.

13 REFER TO SECURITY/TELECOMMUNICATION DRAWINGS FOR FINAL DEVICE LOCATIONS AND RACEWAY REQUIREMENTS. COORDINATE WITH SECURITY REQUIREMENTS WITH INSTALLING TRADES.

14 COORDINATE ELECTRICAL REQUIREMENTS DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH KITCHEN EQUIPMENT DRAWINGS, SHOP DRAWINGS AND KITCHEN EQUIPMENT INSTALLER.

CONSTRUCTION KEY NOTES:

1 PROVIDE TOGGLE SWITCH LOCK GUARD FOR BOILER DISCONNECT LOCKING MEANS.

2 PROVIDE INTERWIRE TO CONTROL PANEL. COORDINATE WITH FOOD SERVICE INSTALLER AND INSTALLATION INSTRUCTIONS.

3 COORDINATE FINAL LOCATION OF TV WITH ARCHITECTURAL DRAWINGS AND TRADES PRIOR TO ROUGH IN.

4 INSTALL BOTTOM OF LIGHT FIXTURE AT 8'-0" AFF.

5 ROUTE BRANCH CIRCUIT IN FLOOR AND STUB UP TO FINAL LOCATION. COORDINATE FINAL LOCATION WITH FOOD SERVICE DRAWINGS AND TRADES.

6 MATCH ON-OFF TIMES WITH EXISTING SITE LIGHTING. COORDINATE EXACT TIMES WITH OWNER. CONNECT PHOTO CELL CONTROL TO EXISTING MAIN BUILDING PHOTO CELL WIRING/CONTROL.

7 4" HOUSEKEEPING PAD.

8 LINE VOLTAGE CLOCK STANDARD ELECTRIC TIME FARADAY 2364 OR OTHER CLOCK COMPATABLE WITH EXISTING SYSTEM. EXTEND WIRING FROM EXISTING CLOCK HEAD END SYSTEM AS REQUIRED.

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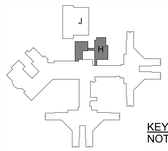

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SHEET TITLE
ELECTRICAL ENLARGED PLAN

PROJECT NUMBER
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SHEET NUMBER
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PROJECT DATE
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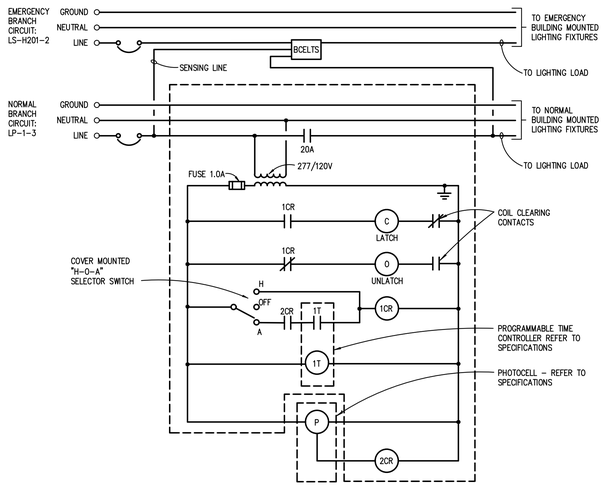
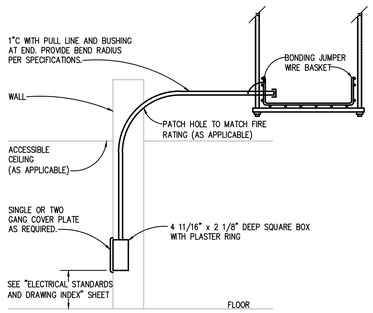


LIGHTING CONTACTOR WITH TIME CLOCK CONTROL AND BCELTS WIRING DIAGRAM

NO SCALE

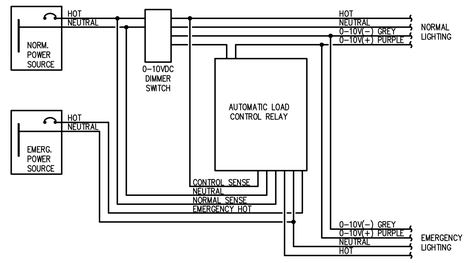


TELECOMMUNICATION OUTLET DETAIL

NO SCALE

NOTES:

1. IF CEILING IN ROOM IS NOT ACCESSIBLE, ROUTE CONDUIT THROUGH NEAREST ACCESSIBLE CEILING TO CABLE/WIRE BASKET TRAY.

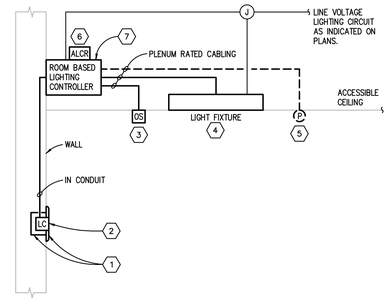


AUTOMATIC LOAD CONTROL RELAY FOR 0-10V DIMMING

NO SCALE

NOTES:

1. BASIS OF DESIGN IS LVS CONTROLS EPC-2-D. REFER TO SPECIFICATIONS FOR APPROVED MANUFACTURERS. ADJUST WIRING AS NECESSARY FOR OTHER APPROVED MANUFACTURERS.
2. PROVIDE ONE AUTOMATIC LOAD CONTROL RELAY PER SWITCHING CIRCUIT.



ROOM BASED LIGHTING CONTROL SYSTEM DIAGRAM WIRED - LOW VOLTAGE

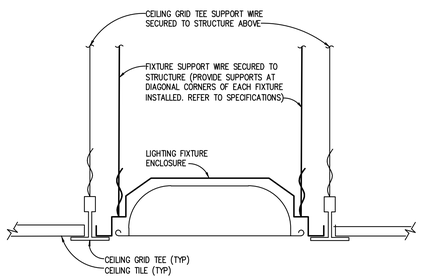
NO SCALE

GENERAL NOTES:

1. REFER TO SPECIFICATIONS FOR ACCEPTED MANUFACTURERS.
2. PROVIDE QUANTITY OF ROOM BASED LIGHTING CONTROLLERS AS REQUIRED TO MEET FUNCTIONALITY INDICATED ON PLAN.
3. REFER TO MANUFACTURER'S INSTALLATION GUIDE FOR EXACT WIRING METHOD. WIRING METHOD AND CONFIGURATION TO BE PER MANUFACTURER'S RECOMMENDATIONS.
4. LOCATE SENSORS IN CENTER OF A FULL CEILING TILE, WHERE APPLICABLE.
5. MOUNTING LOCATION OF SENSORS PER MANUFACTURER'S RECOMMENDATION.
6. REFER TO INTERIOR LIGHTING CONTROL SCHEDULE FOR SYSTEM CONFIGURATIONS SETTINGS. SENSOR ADJUSTMENT: BEFORE MAKING ADJUSTMENTS, MAKE SURE ROOM FURNITURE IS INSTALLED, LIGHTING CIRCUITS ARE TURNED ON, AND THE HVAC SYSTEMS ARE IN THE ON POSITION. VAV SYSTEMS SHOULD BE SET TO THEIR HIGHEST AIRFLOW.

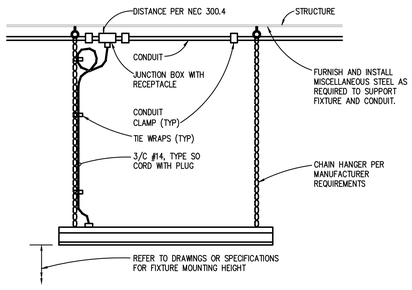
(#) KEYED NOTES:

1. GANG LIGHTING CONTROL DEVICES IN COMMON GANGED BOX. PROVIDE SAME SIZE GANG COVER PLATE FROM THE SAME MANUFACTURER AS THE LIGHTING CONTROL DEVICE AS REQUIRED.
2. LIGHTING CONTROL DEVICE(SWITCH). REFER TO LIGHTING CONTROL DEVICE BUTTON LAYOUT DETAIL FOR ENGRAVING REQUIREMENTS AND PLANS FOR LOCATIONS.
3. CEILING MOUNTED SENSOR. MANUFACTURE TO PROVIDE LAYOUT AND QUANTITIES FOR FULL COVERAGE OF SPACE.
4. REFER TO LIGHTING FIXTURE SCHEDULE. REFER TO PLANS FOR LAYOUT AND QUANTITIES.
5. CEILING MOUNTED PHOTOCELL (AS REQUIRED). REFER TO PLANS FOR PRIMARY AND SECONDARY ZONE CONTROL.
6. PROVIDE ONE AUTOMATIC LOAD CONTROL RELAY PER SWITCHING CIRCUIT WHERE EMERGENCY LIGHTING FROM A GENERATOR OR LIGHTING INVERTER IS INDICATED ON PLANS. REFER TO AUTOMATIC LIGHTING RELAY CONTROL DETAIL.
7. ROOM BASED LIGHTING CONTROLLER TO BE LOCATED IN ACCESSIBLE CEILING ADJACENT TO DOOR DIRECTLY ABOVE LIGHTING CONTROL DEVICE. IF ACCESSIBLE CEILING SPACE IS NOT ACCESSIBLE, AN ACCESS HATCH SHALL BE PROVIDED.



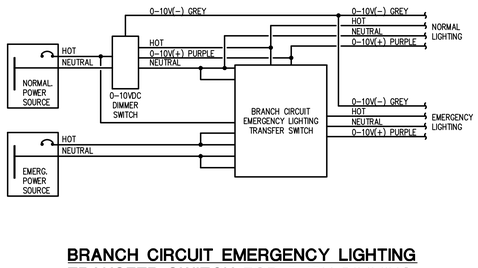
RECESSED LIGHTING FIXTURE INSTALLATION DETAIL

NO SCALE



TYPICAL MOUNTING DETAIL FOR CHAIN HUNG LIGHTING FIXTURES

NO SCALE

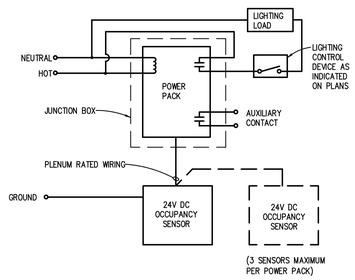


BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH FOR 0-10V DIMMING

NO SCALE

NOTES:

1. BASIS OF DESIGN IS LVS CONTROLS EPC-D-F-ATS. REFER TO SPECIFICATIONS FOR APPROVED MANUFACTURERS. ADJUST WIRING AS NECESSARY FOR OTHER APPROVED MANUFACTURERS.
2. PROVIDE ONE BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH PER SWITCHING CIRCUIT.

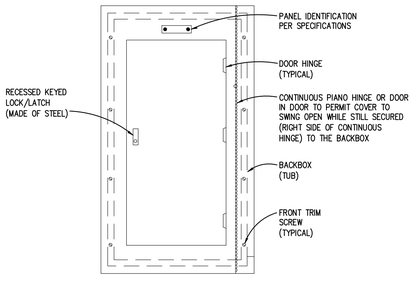


OCCUPANCY SENSOR WIRING DIAGRAM

NO SCALE

NOTES:

1. REFER TO SPECIFICATIONS FOR ACCEPTED MANUFACTURERS.
2. PROVIDE POWER PACKS AND SLAVE PACKS AS REQUIRED FOR SWITCHING AS INDICATED ON PLAN. REVISE DETAIL AS REQUIRED BY MANUFACTURER.
3. MOUNTING LOCATION PER MANUFACTURER'S RECOMMENDATION.
4. ADJUST SENSITIVITY LEVELS PER THE OWNER REQUIREMENTS.
5. PROVIDE FACTORY SUPPORT FOR AIMING/ADJUSTING OF SENSORS.
6. PLACE CEILING MOUNTED OCCUPANCY SENSORS IN CENTER OF A FULL CEILING TILE, WHERE APPLICABLE.
7. SENSOR ADJUSTMENT: BEFORE MAKING ADJUSTMENTS, MAKE SURE ROOM FURNITURE IS INSTALLED, LIGHTING CIRCUITS ARE TURNED ON, AND THE HVAC SYSTEMS ARE IN THE ON POSITION. VAV SYSTEMS SHOULD BE SET TO THEIR HIGHEST AIRFLOW. SET THE LOGIC CONFIGURATION DIP SWITCHES TO "EITHER". EITHER REQUIRES MOTION DETECTION BY ONLY ONE TECHNOLOGY. SET THE TIME DELAY PER OWNERS DIRECTION.



PANELBOARD FRONT COVER DETAIL

NO SCALE

INTERIOR LIGHTING CONTROL SCHEDULE

PLAN REFERENCE	ROOM TYPE	LOCAL CONTROL			CONTROL ON / OFF	SENSOR TYPE	TURN ON LIGHTING TO %	BI-LEVEL CONTROL	DAYLIGHT			NO DETECTION PARTIAL OFF (NOTE 10)		NO DETECTION FULL OFF (MIN)	TIME-CLOCK SCHEDULE	RECEPTACLE CONTROL	EMERGENCY LIGHTING CIRCUIT CONTROL	CONTACT FOR HVAC CONTROL	NOTES
		SWITCH TYPE	SWITCH CONTROL	SCENE CONTROL					SIDE LIGHT	TOP LIGHT	MAINTAIN FC LEVEL	REDUCE TO (%)	AT(MIN)						
A	FOOD PREPARATION AREA	LOW VOLTAGE	ON-OFF-DIM	NA	MANUAL ON / MANUAL OFF	DUAL TECHNOLOGY	FULL 100%	CONTINUOUS DIM	NA	NA	NA	NA	NA	NA	NA	NA	ALCR	NA	
B	STORAGE ROOM (>50 SQFT AND ≤ 1000 SQFT)	LINE VOLTAGE	ON-OFF	NA	MANUAL ON / SENSOR OFF	DUAL TECHNOLOGY	FULL 100%	NA	NA	NA	NA	NA	NA	20	NA	NA	ALCR	YES	
C	CORRIDOR (IN A HOSPITAL)	LINE VOLTAGE	ON-OFF (KEYED)	NA	SENSOR ON / SENSOR OFF	ULTRASONIC	FULL 100%	NA	NA	NA	NA	NA	NA	20	NA	NA	ALCR	NA	NEW CORRIDOR SHALL BE CONTROLLED SIMILARLY TO EXISTING CORRIDORS
D	DINING AREA (IN CAFETERIA OR FAST FOOD DINING)	LOW VOLTAGE	ON-OFF-DIM	NA	MANUAL ON / SENSOR OFF	DUAL TECHNOLOGY	FULL 100%	CONTINUOUS DIM	YES	NA		NA	NA	20	NA	NA	ALCR	YES	
E	OFFICE (ENCLOSED AND ≤ 250 SQFT)	LOW VOLTAGE	ON-OFF-DIM	NA	MANUAL ON / SENSOR OFF	DUAL TECHNOLOGY	FULL 100%	CONTINUOUS DIM	NA	NA	NA	NA	NA	20	NA	NA	NA	YES	
F	RESTROOM (ALL OTHER RESTROOMS)	LINE VOLTAGE	ON-OFF	NA	SENSOR ON / SENSOR OFF	ULTRASONIC	FULL 100%	NA	NA	NA	NA	NA	NA	20	NA	NA	ALCR	NA	
G	ELECTRICAL/MECHANICAL ROOM	LINE VOLTAGE	ON-OFF	NA	MANUAL ON / MANUAL OFF	NA	FULL 100%	NA	NA	NA	NA	NA	NA	NA	NA	NA	ALCR	NA	
H	STAIRWELL	LINE VOLTAGE	ON-OFF (KEYED)	NA	SENSOR ON / SENSOR OFF	ULTRASONIC	FULL 100%	NA	NA	NA	NA	NA	NA	20	NA	NA	BCELTS	NA	
I	LOUNGE/BREAKROOM (ALL OTHER LOUNGES/BREAKROOMS)	LOW VOLTAGE	ON-OFF-DIM	NA	MANUAL ON / SENSOR OFF	DUAL TECHNOLOGY	FULL 100%	CONTINUOUS DIM	NA	NA	NA	NA	NA	20	NA	NA	NA	NA	
J	CORRIDOR (IN A HOSPITAL)	LINE VOLTAGE	ON-OFF (KEYED)	NA	SENSOR ON / SENSOR OFF	ULTRASONIC	FULL 100%	NA	NA	NA	NA	NA	NA	20	NA	NA	BCELTS	NA	NEW CORRIDOR SHALL BE CONTROLLED SIMILARLY TO EXISTING CORRIDORS

NOTE:
1. REFER TO PLANS FOR LOCATION OF LOCAL CONTROL.
2. REFER TO PLANS FOR SCENE CONTROL.
3. REFER TO PLANS FOR PRIMARY AND SECONDARY DAYLIGHT ZONES.
4. PROVIDE EMERGENCY LIGHTING CIRCUIT CONTROL (BCELTS OR ALCR) PER SWITCHING CIRCUIT AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE FLOOR PLAN INDICATING SENSOR AND EQUIPMENT LOCATIONS OF CHOSEN CONTROL SYSTEM.
6. REFER TO LUMINAIRE SCHEDULE FOR FIXTURE CHARACTERISTICS.
7. LIGHTING SENSOR SHALL HAVE CONTACT FOR HVAC CONTROL WHEN A "YES" SELECTION IS MADE IN THE HVAC CONTROL COLUMN.
8. REFER TO TEMPERATURE CONTROL DRAWINGS AND DIAGRAMS FOR ADDITIONAL SENSOR REQUIREMENTS.
9. PROVIDE WIRING CONTROL DIAGRAM FOR APPLICABLE CONTROL SYSTEM(S).
10. PERCENTAGE LIGHT OUTPUT REDUCTION IS FOR ALL FIXTURES WITHIN THE DESIGNATED ROOM UNLESS OTHERWISE NOTED.

NA = NOT APPLICABLE

ELECTRICAL

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NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
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CONTRACT NO.
Y22003

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ELECTRICAL DETAILS AND DIAGRAMS

PROJECT NUMBER
2021094

PROJECT DATE
AUGUST 23, 2023

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TLC

SHEET NUMBER
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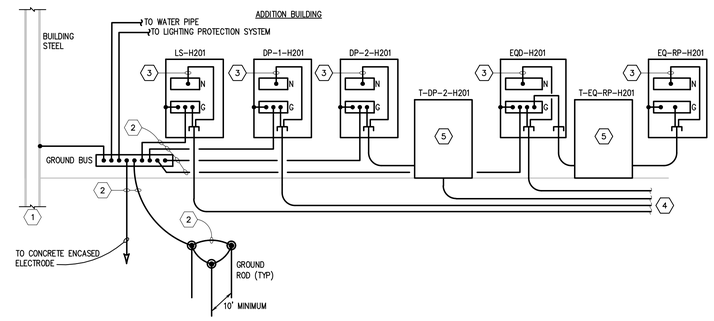
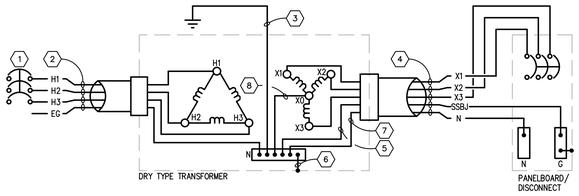


BUILDING GROUNDING

NO SCALE

(#) KEYED NOTES:

1. METAL IN-GROUND SUPPORT STRUCTURE IN DIRECT CONTACT WITH EARTH VERTICALLY FOR A MINIMUM OF 10'FT, WHERE AVAILABLE.
2. GROUNDING ELECTRODE CONDUCTOR, #4/0 COPPER.
3. GROUNDED CONDUCTOR (NEUTRAL), SEE ONE LINE DIAGRAM.
4. PHASE CONDUCTORS, GROUNDED CONDUCTOR (NEUTRAL), AND EQUIPMENT GROUNDING CONDUCTOR IN CONDUIT TO MAIN BUILDING. SEE ONE LINE DIAGRAM.
5. REFER TO DRY TYPE DISTRIBUTION TRANSFORMER GROUNDING ARRANGEMENT.

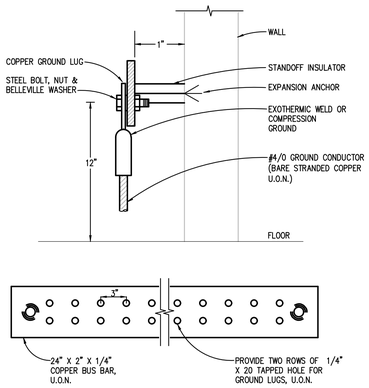


DRY TYPE DISTRIBUTION TRANSFORMER GROUNDING ARRANGEMENT

NO SCALE

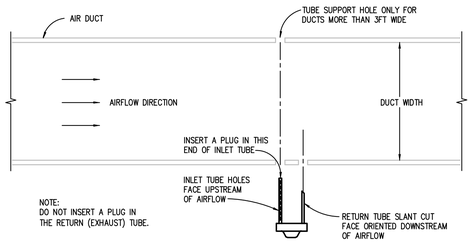
(#) KEYED NOTES:

1. 480V, 3ø PRIMARY CIRCUIT BREAKER BASED ON DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
2. PRIMARY FEEDER BASED ON FEEDER AND BRANCH CIRCUIT SIZING TABLE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
3. GROUNDING ELECTRODE CONDUCTOR TO NEAREST GROUNDING ELECTRODE (i.e. BUILDING STEEL, METAL WATER PIPE, GROUND RING, OR GROUND BUS). SEE DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING FOR SIZE UNLESS OTHERWISE NOTED.
4. 208Y/120V, 3ø, 4W SECONDARY FEEDER BASED ON DRY TYPE DISTRIBUTION TRANSFORMER CIRCUIT SIZING SCHEDULE ON ELECTRICAL STANDARD SCHEDULE DRAWING UNLESS OTHERWISE NOTED.
5. SUPPLY SIDE BONDING JUMPER.
6. SYSTEM BONDING JUMPER.
7. GROUNDED CONDUCTOR (NEUTRAL).
8. NEUTRAL CONDUCTOR PROVIDED WITH EQUIPMENT.



ELECTRICAL GROUND BUS DETAIL

NO SCALE

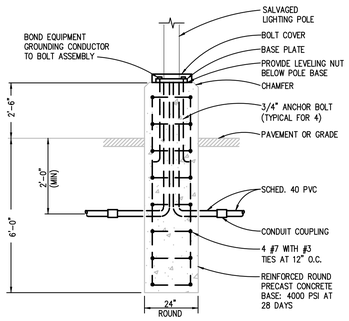


DUCT TYPE DETECTOR INSTALLATION

NO SCALE

NOTES:

1. PROVIDE SAMPLING TUBE LENGTH AS REQUIRED FOR WIDTH OF DUCT.



LIGHTING POLE BASE DETAIL

NO SCALE

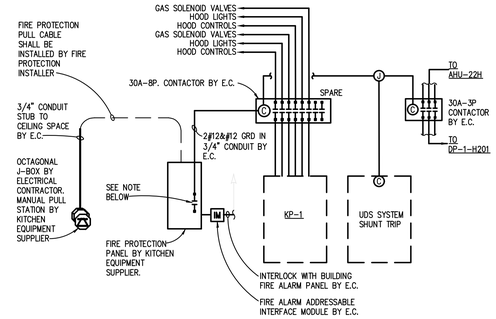
NOTE:

1. PROVIDE PRECAST CONCRETE BASE AS MANUFACTURED BY NORTHERN CONCRETE PIPE, INC. OR APPROVED EQUAL.
2. CONCRETE REINFORCEMENTS SHALL BE BARE, ZINC GALVANIZED, OR ELECTRICALLY CONDUCTIVE COATED STEEL. BOND ALL CONCRETE REINFORCEMENTS AND ANCHOR BOLTS TOGETHER SO THAT SYSTEM IS ELECTRICALLY CONTINUOUS.

		SYSTEM OUTPUTS																				
		ANNUNCIATION							NOTIFICATION								FIRE SAFETY					
		IDENTIFY ALARM AT FACP	IDENTIFY ALARM AT REMOTE ANNUNCIATOR(S)	ANNUNCIATE SUPERVISORY SIGNAL AT FACP	ANNUNCIATE SUPERVISORY SIGNAL AT REMOTE ANNUNCIATOR(S)	ANNUNCIATE TROUBLE SIGNAL AT FACP	ANNUNCIATE TROUBLE SIGNAL AT REMOTE ANNUNCIATOR(S)	ACTUATE ALARM SEQUENCE ON EXISTING FACP	OPERATE ALARM NOTIFICATION APPLIANCES CONTINUOUSLY	ACTIVATE VOICE/ALARM COMMUNICATION SYSTEM	TRANSMIT ALARM SIGNAL TO REMOTE ALARM RECEIVING STATION	TRANSMIT SUPERVISORY SIGNAL TO REMOTE ALARM RECEIVING STATION	TRANSMIT TROUBLE SIGNAL TO REMOTE ALARM RECEIVING STATION	TRANSMIT ALARM SIGNAL TO BUILDING AUTOMATION SYSTEM	TRANSMIT TROUBLE SIGNAL TO BUILDING AUTOMATION SYSTEM	RECORD EVENTS IN THE SYSTEM MEMORY	UNLOCK ELECTRIC DOOR LOCKS IN DESIGNATED EGRESS PATHS	DISABLE SOUND MASKING, PAGING, OR AUDIO SYSTEMS	RELEASE FIRE AND SMOKE DOORS	TURN ON EGRESS LIGHTING TO FULL BRIGHTNESS	SWITCH HVAC EQUIPMENT CONTROLS TO FIRE ALARM MODE	CLOSE SMOKE DAMPERS IN AIR DUCT SYSTEM SERVING ZONE WHERE ALARM WAS INITIATED
SYSTEM INPUT — INITIATION	MANUAL FIRE BOX OPERATION	●	●					●	●	●	●			●			●	●	●	●		
	DUCT DETECTOR OPERATION	●	●					●	●	●	●			●			●	●	●	●	●	●
SYSTEM INPUT — EXTERNAL SYSTEM INPUT	EXISTING FACP FIRE ALARM CONDITION	●	●					●	●	●	●			●		●	●	●	●	●		
	EXISTING FACP TROUBLE CONDITION					●	●					●			●	●						
	ALARM SIGNAL FROM SUPPRESSION SYSTEM	●	●					●	●	●	●			●		●	●	●	●	●		
	SUPERVISORY SIGNAL FROM SUPPRESSION SYSTEM			●	●							●				●						
	TROUBLE SIGNAL FROM SUPPRESSION SYSTEM					●	●						●		●	●						
	FIRE EXTINGUISHING SYSTEM OPERATION	●	●					●	●	●	●			●		●	●	●	●	●		
SYSTEM INPUT — STATUS	OPEN CIRCUIT, SHORT CIRCUIT, OR GROUND FAULT ON INITIATING DEVICE, SIGNALING LINE, OR NOTIFICATION APPLIANCE CIRCUIT.					●	●						●		●	●						
	OPENING, TAMPERING, OR REMOVAL OF ALARM-INITIATING DEVICES					●	●						●		●	●						
	OPENING, TAMPERING, OR REMOVAL OF SUPERVISORY SIGNAL INITIATING DEVICES					●	●						●		●	●						

FIRE ALARM MATRIX

NO SCALE

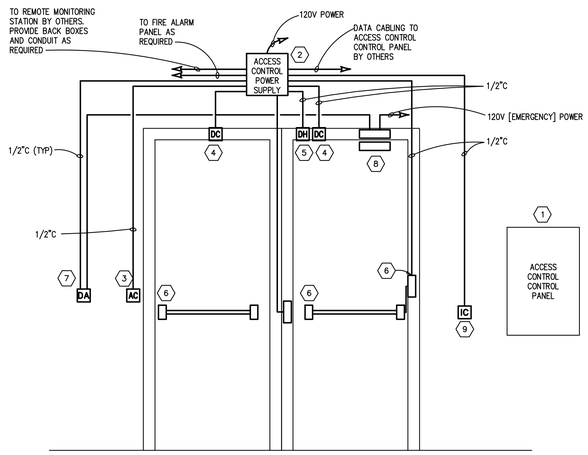


KITCHEN FIRE PROTECTION WIRING DETAIL

NO SCALE

NOTE:

ELECTRICAL CONTRACTOR SHALL FIELD VERIFY VOLTAGE, AND TYPE (NORM. OPEN/CLOSED) CONTACT IN FIRE PROTECTION PANEL, AND PROVIDE CONTACTOR TO OPERATE ACCORDINGLY. EXHAUST FAN SHALL TURN ON UPON ACTIVATION OF ANSUL SYSTEM.



DOOR HARDWARE DOUBLE DOOR CONNECTION DIAGRAM

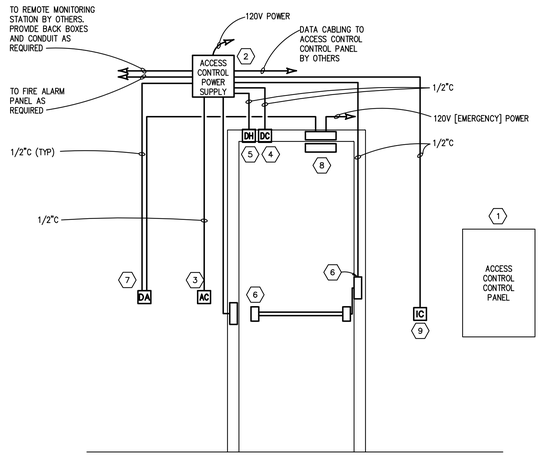
NO SCALE

GENERAL NOTES:

1. REFER TO ELECTRICAL FLOOR PLANS FOR DOOR LOCATIONS.
2. PROVIDE BACK BOXES, CONDUIT, 120 VOLT WIRING AND TERMINATIONS AS REQUIRED BY MANUFACTURER. COORDINATE EXACT REQUIREMENTS AND SCOPE OF WORK WITH OWNER AND ACCESS CONTROL CONTRACTOR
3. SOME DEVICES INDICATED MAY NOT APPLY. REFER TO DOOR HARDWARE AND DOOR SCHEDULE. COORDINATE ALL WORK WITH HARDWARE CONTRACTOR.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE INTERCONNECTION WITH FIRE ALARM PANEL TO RELEASE DOORS (I.E. ELECTROMAGNETIC LOCKS) UPON AN ALARM CONDITION, AS REQUIRED.

(#) KEYED NOTES:

1. ACCESS CONTROL CONTROL PANEL, BY OTHERS.
2. ACCESS CONTROL POWER SUPPLY, BY OTHERS.
3. ACCESS CONTROL STATION, BY OTHERS. (EXAMPLE DEVICES: CARD READER, KEYPAD, REQUEST TO EXIT PUSH PAD, MOTION DETECTOR, ETC)
4. DOOR MONITOR CONTACT SWITCH, BY OTHERS.
5. DOOR HOLDER, BY OTHERS. ELECTROMAGNETIC SWITCH MOUNTED ON/IN DOOR AND FRAME. [FOR DELAYED OPERATION] IN LIEU OF ELECTRIC STRIKE.
6. ELECTRIC STRIKE, PANIC HARDWARE, POWER TRANSFER, BY OTHERS.
7. DOOR OPERATOR ACTUATOR, BY OTHERS.
8. DOOR OPERATOR, BY OTHERS. (EXAMPLE DEVICES: PUSH PAD, TOUCHLESS, ETC)
9. INTERCOM STATION, BY OTHERS.



DOOR HARDWARE SINGLE DOOR CONNECTION DIAGRAM

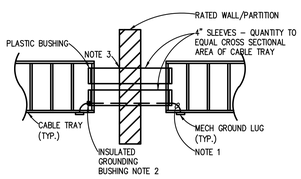
NO SCALE

GENERAL NOTES:

1. REFER TO ELECTRICAL FLOOR PLANS FOR DOOR LOCATIONS.
2. PROVIDE BACK BOXES, CONDUIT, 120 VOLT WIRING AND TERMINATIONS AS REQUIRED BY MANUFACTURER. COORDINATE EXACT REQUIREMENTS AND SCOPE OF WORK WITH OWNER AND ACCESS CONTROL CONTRACTOR
3. SOME DEVICES INDICATED MAY NOT APPLY. REFER TO DOOR HARDWARE AND DOOR SCHEDULE. COORDINATE ALL WORK WITH HARDWARE CONTRACTOR.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE INTERCONNECTION WITH FIRE ALARM PANEL TO RELEASE DOORS (I.E. ELECTROMAGNETIC LOCKS) UPON AN ALARM CONDITION, AS REQUIRED.

(#) KEYED NOTES:

1. ACCESS CONTROL CONTROL PANEL, BY OTHERS.
2. ACCESS CONTROL POWER SUPPLY, BY OTHERS.
3. ACCESS CONTROL STATION, BY OTHERS. (EXAMPLE DEVICES: CARD READER, KEYPAD, REQUEST TO EXIT PUSH PAD, MOTION DETECTOR, ETC)
4. DOOR MONITOR CONTACT SWITCH, BY OTHERS.
5. DOOR HOLDER, BY OTHERS. ELECTROMAGNETIC SWITCH MOUNTED ON/IN DOOR AND FRAME. [FOR DELAYED OPERATION] IN LIEU OF ELECTRIC STRIKE.
6. ELECTRIC STRIKE, PANIC HARDWARE, POWER TRANSFER, BY OTHERS.
7. DOOR OPERATOR ACTUATOR, BY OTHERS.
8. DOOR OPERATOR, BY OTHERS. (EXAMPLE DEVICES: PUSH PAD, TOUCHLESS, ETC)
9. INTERCOM STATION, BY OTHERS.



CABLE TRAY TO CONDUIT TRANSITION THROUGH RATED WALL

NO SCALE

NOTES:

1. BOND TRAY TO CONDUIT WITH A #6 AWG COPPER GREEN INSULATED GROUND WIRE.
2. PROVIDE GROUNDING BUSHINGS ON CONDUIT SLEEVES AND BOND SLEEVES WITH #6 AWG COPPER GREEN INSULATED GROUND WIRE.
3. PROVIDE FIRE-STOPPING IN AND AROUND ALL CONDUITS MAINTAIN FIRE RATING OF PARTITION AND TO MAKE PENETRATION AIR TIGHT.

ELECTRICAL

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NO.	REVISION	DATE
1	OWNER REVIEW	08/02/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A, DIRECTOR

FILE NO.
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FUNDING CODE
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ELECTRICAL DETAILS AND DIAGRAMS

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PBA Project No: 2021-0402

PROJECT NUMBER
2021094

SHEET NUMBER
E7.01

PROJECT DATE
AUGUST 23, 2023

CHECKED BY
TLC

COMMUNICATION EQUIPMENT SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	PART NO.
A	TECHNOLOGY CABINET. MATCH EXISTING SIZE AND TYPE. WITH LOUVERED DOORS.C2 FRAME 40 RACK UNITS. EQUIP WITH CABLE LACING BARS. EQUIP WITH TOP TO CABINET AND ADJUSTABLE CABINET FEET	HAMMOND	C2 FRAME C2RR197031BK1 W/CDF-1970LBK1 DOORS
B	POWER STRIP, RACK MOUNT	HAMMOND	15853H6B1
C	SINGLE RACK UNIT PATCH CORD ORGANIZER (PCO-1) WITH HINGED COVER.	HUBBELL	HS13C
D	PATCH PANEL-24 PORT, EQUIPPED WITH 8-PIN MODULAR JACKS TO MATCH THE CABLE COLOR AND CABLE TYPE BEING TERMINATED. PROVIDE ONE MODULAR JACK FOR EACH CABLE BEING TERMINATED. SEE SPEC AND DRAWINGS FOR COLORS. EQUIP WITH REAR CABLE ORGANIZER	HUBBELL	PANEL: HPJ24 ORGANIZER: ECMBR3

AUDIO EQUIPMENT SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	PART NO.
WA	AUDIO AMPLIFIER	QSC	SPA OR ISA SERIES
WB	AUDIO LINE LEVEL DISTRIBUTION AMPLIFIER 1 IN, 2-OUT	RDL LABS	ST-DA3
WC	VOLUME CONTROL	ATLAS	AT35

SPEAKER SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	PART NO.
S1	PAGING SYSTEM SPEAKER FOR DROP CEILING INSTALLATION. EQUIP WITH WHITE GRILL AND MULTI TAPS. PROVIDE T-BAR AND BACKBOX	ATLAS IED	SD72WV
S2	PAGING SYSTEM SPEAKER. RECESSED IN DRYWALL CEILING. PROVIDE AND INSTALL BACKBOX INTO THE CEILING PRIOR TO DRYWALL. WIRE TO SPEAKERS PRIOR TO DRYWALL CEILING BEING INSTALLED.	ATLAS IED	SD72WV

CAMERA EQUIPMENT SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	PART NO.	DROP CEILING	BUILDING EXTERIOR	BUILDING EXTERIOR CORNER
CA	MULTI-HEAD CAMERA, EXTERIOR, 270 DEGREES CORNER MOUNT	BOSCH	NDM-7703		SBP-317HMW, SBP-390WMW2 SBP-300NBW	SBP-300KMW1 SBP-300NBW
CB	EXTERIOR 4K CAMERAS. ARM MOUNT ON WALL	BOSCH	NDE-8504-R			
CC	INDOOR AND OUTDOOR 360 FISHEYE SINGLE IMAGER 12 MEGAPIXEL	BOSCH	NDS-5704-F360LE	SHD-1600FPW	SBP-167HMW, SBP-300WMW1 SBP-300NBW	SBP-300KMW1 SBP-300NBW
CD	INDOOR SHORT DISTANCE CAMERA. 2MP. DROP OR HARD CEILING	BOSCH	NDE-4502-A	SHD-1408FPW		
CE	INDOOR 5 MP DROP OR HARD CEILING OR WALL	BOSCH	NDE-5503-A	SHD-1408FPW		
CF	BOSCH NVR FOR CAMERA STORAGE AND PROCESSING	BOSCH	SEE SPECS			
CG	ETHERNET SWITCH FOR CAMERA SYSTEM	CISCO	9200 SERIES			

COMMUNICATION SYMBOL LEGEND

SYMBOL	DESCRIPTION
1	THIS SYMBOL WITH A NUMBER INSIDE REFERS TO KEYNOTES. REFER TO NOTES ON THE SHEET OR WITHIN THE DETAIL FOR ADDITIONAL INFORMATION
A	EQUIPMENT SCHEDULE. THIS SYMBOL WITH LETTERS INSIDE REFERS EQUIPMENT SCHEDULES, SEE DETAILS AND EQUIPMENT SCHEDULES ON TC101, TC301, TC501 AND TC701.
1	CABLE SCHEDULE. THIS SYMBOL WITH NUMBERS INSIDE REFERS EQUIPMENT SCHEDULES, SEE DETAILS AND EQUIPMENT SCHEDULES ON TC101, TC301, TC501 AND TC701.
X XXXX	DATA COMMUNICATIONS OUTLET CONNECTIVITY CODE. X IS A 1 THRU 99. SEE TC1XX SHEETS FOR SPECIFIC REQUIREMENTS. XXXX NOTES THAT THE CABLE IS FOR A SPECIFIC USE
12:08 12:08	TWO SIDED DIGITAL CLOCK. SEE CONNECTIVITY CODE FOR CLOCK TYPE.
12:08	SINGLE SIDED DIGITAL CLOCK. SEE CONNECTIVITY CODE FOR CLOCK TYPE.
	NEW STUN FENCE. INSTALL NEW STUN FENCE WIRING AND DEVICES
FENCE	NEW SHAKER WIRE ON FENCE. INSTALL NEW SHAKER WIRE ON THE FENCE
	TEMPORARY FEED OF STUN FENCE FROM STUN FENCE CABINET TO EXISTING FENCE
	EXISTING SHAKER WIRE AND STUN FENCE. REMOVE FROM FENCE

AUDIO VIDEO SYMBOL LEGEND

SYMBOL	DESCRIPTION
X XXXX	AUDIO/VIDEO COMMUNICATIONS OUTLET. REFER TO THE ASSOCIATED AV SYSTEM DETAIL FOR REQUIREMENTS. ZZ REFERS TO HEIGHT OF OUTLET. 18" UNLESS OTHER WISE NOTED.
SEE TC3XX/X	AV SYSTEM DETAIL. REFER TO THIS SHEET AND DETAIL NUMBER FOR THE REQUIREMENTS OF THE AUDIO/VIDEO SYSTEM IN THIS ROOM
S ZZ X	SPEAKERS. SEE SPEAKER SCHEDULE ON TC301."X" REFERS TO SPEAKER TYPE. "ZZ" REFERS TO SPEAKER ZONE IF THIS IS A PAGING SPEAKER.

SECURITY SYMBOL LEGEND

SYMBOL	DESCRIPTION
XX	ACCESS CONTROL SYMBOL. "XX" IS LETTERS. SEE DETAILS ON TC5XX SHEETS FOR EQUIPMENT, CABLING AND RACEWAY DETAILS.
XX	ACCESS CONTROL SYMBOL FOR EXISTING DEVICES. "XX" IS LETTERS. SEE DETAILS ON TC5XX SHEETS. LEAVE DEVICES AND CONNECT TO NEW SYSTEM OR LEAVE AS CONNECTED TO EXISTING SYSTEM. SEE NOTES AND DETAILS
XXX	DOOR NUMBER
SEC.PNL	SECURITY PANEL. PROVIDE PANEL AND CONNECT AS SHOWN ON FLOORPLANS AND IN THE SPECIFICATIONS.
C	SECURITY CAMERA. PROVIDE AND INSTALL A NEW SECURITY CAMERA. SEE DETAILS ON TC5XX SHEETS.
C	SECURITY CAMERA WITH 180 DEGREE VIEWNG. PROVIDE AND INSTALL A NEW SECURITY CAMERA. SEE DETAILS ON TC5XX SHEETS.
C	SECURITY CAMERA WITH 360 DEGREE VIEWNG, SINGLE-IMAGER. PROVIDE AND INSTALL A NEW SECURITY CAMERA. SEE DETAILS ON TC5XX SHEETS.
C C C C	SECURITY CAMERA WITH 270 OR 360 DEGREE VIEWING, MULTI-IMAGER. PROVIDE AND INSTALL A NEW SECURITY CAMERA. SEE DETAILS ON TC5XX SHEETS.
C	SECURITY CAMERA. PTZ. SEE SPECIFICATIONS FOR CAMERA REQUIREMENTS AND MOUNTING.

CABLE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	PART NO.
1	CAT-6 UTP CABLES. BLUE IN COLOR. SEE CONNECTIVITY CODES	MOHAWK	M58281
2	CAT-6 UTP CABLES. GREEN IN COLOR. SEE CONNECTIVITY CODES	MOHAWK	M58286
3	CAT-6 UTP CABLES. YELLOW IN COLOR. SEE CONNECTIVITY CODES	MOHAWK	M58283
4	CAT-6 CABLE UNDERGROUND RATED	MOHAWK	M57622
5	SHAKER FENCE CABLING	ISC	CONTRACTOR
6	STUN FENCE FEEDER WIRE FROM ENERGIZER TO FENCE	CONTRACTOR	CONTRACTOR
7	STUN FENCE CABLING ON FENCE	CONTRACTOR	CONTRACTOR

ACCESS CONTROL EQUIPMENT SCHEDULE

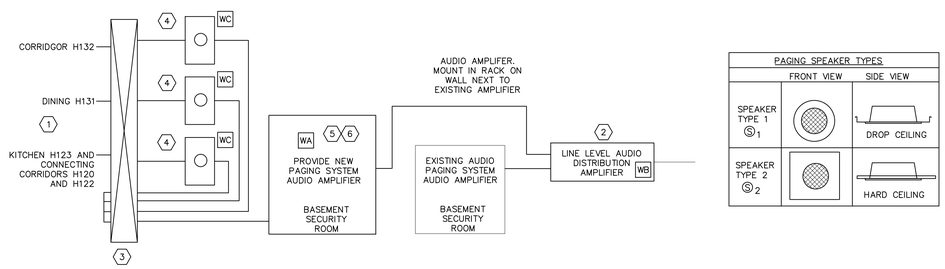
MARK	DESCRIPTION	MANUFACTURER	PART NO.
XA	INTERCOM AT DOOR-INTERIOR	HARDING	ICE-320-217-000
XB	INTERCOM AT DOOR-EXTERIOR	HARDING	ICE-320-227-000
XC	PLC WITH ETHERNET INTERFACE PROCESSOR	ALLEN BRADLEY	1769-L37ERM
XD	POINT I/O ETHERNET ETHERNET ADAPTER	ALLEN BRADLEY	1769-AENTR
XE	POINT I/O OUTPUT MODULE	ALLEN BRADLEY	1769-OB32
XF	POINT I/O INPUT MODULE	ALLEN BRADLEY	1769-IQ32
XG	POWER SUPPLY	EMERSON	SVL-1024100
XH	DIN RAIL MOUNTED TERMINAL STRIPS. PROVIDE AS REQUIRED FOR CABLE TYPE AND CONNECTIVITY. MOUNT IN CABINET. PROVIDE SUPPORTS AND PLASTIC FINGER DUCT FOR ROUTING CABLE	CONTRACTOR	CONTRACTOR
XJ	INTERCOM BOARD FOR CONNECTION OF AUDIO ON INTERCOMS	HARDING	QCB-120-1
XK	INTERCOM BOARD FOR CONNECTION OF PUSH BUTTON ON INTERCOMS	HARDING	QCB-120-1
XL	ETHERNET SWITCH FOR ACCESS CONTROL SYSTEM	CONTRACTOR	CONTRACTOR
XM	INTERCOM CONTROLLER IP ATTACHED	HARDING	DCC-S100-3030-S100-00IP

ACCESS CONTROL EQUIPMENT SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	PART NO.
CA	ACCESS CONTROL SYSTEM, SOFTWARE AND ASSOCIATED/REQUIRED SERVERS	STANLEY	GATEKEEPER
CB	CARD READER SERIAL TO IP DEVICE. SERVES UP TO 16 CARD READERS	MOXA	5650-16
CC	CARD READER. COMPATIBLE WITH STANLEY SYSTEM.	HID	5352AGN00
CD			
CE			
CF			
CG			
CH			

ABBREVIATIONS

ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
2G	TWO-GANG BOX - PROVIDED BY EC	NIC	NOT IN CONTRACT
AC	ABOVE COUNTER - INSTALL BACKBOX SAME HEIGHT AS OTHER ELECTRICAL OUTLETS ABOVE THE COUNTER.	PBO	PROVIDED BY OTHERS
AFF	ABOVE FINISHED FLOOR	PCO-1	PATCH CORD ORGANIZER - 1 UNIT HIGH
AFG	ABOVE FINISHED GROUND	PCO-2	PATCH CORD ORGANIZER - 2 UNITS HIGH
AWG	AMERICAN WIRE GAUGE	PET	PROTECTED ENTRANCE TERMINAL
EMT	EMT TYPE CONDUIT	QTY	QUANTITY
EC	ELECTRICAL CONTRACTOR		



NOTES:
1. THE SITE CURRENTLY HAS AN EXISTING PAGING AUDIO SYSTEM. THIS SYSTEM SHALL BE EXPANDED TO SUPPORT NEW ZONES AND SPEAKERS IN THE KITCHEN AREA.
2. PROVIDE AN AUDIO SPLITTER AND SPLIT THE EXISTING SIGNAL PRIOR TO CONNECTION TO EXISTING AMPLIFIER
3. THE PAGING/BELL SYSTEM SHALL BE MOUNTED IN A CABINET IN THE COMM ROOM IN THE BASEMENT
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CABLES ASSOCIATED WITH THE CONNECTIVITY OF THE PAGING SYSTEM. ALL NEW CABLES SHALL BE PLENUM RATED
5. CONTRACTOR SHALL LABEL EACH PAGING SYSTEM SPEAKER CABLE. THE LABEL SHALL BE "ZONE XXX" WHERE XXX DESIGNATES THE EXTENSION THAT THE CABLE IS CONNECTED TO. CABLES SHALL BE LABELED AT EACH TERMINATION POINT & AT EACH INTERCONNECTION POINT.
6. PROVIDE INTERCONNECTION CABLES AS REQUIRED FOR ZONES AND POWER DISTRIBUTION TO THE SPEAKERS. CONTRACTOR SHALL VERIFY CONFIGURATION WITH ENGINEER PRIOR TO INSTALLATION.
7. INSTALL VOLUME CONTROLS FOR AUDIO LEVEL CONTROL OF ALL THREE ZONES BEING ADDED

KEYED NOTES:
1. INSTALL CABLES FROM SPEAKERS TO THE BASEMENT SECURITY ROOM. PROVIDE ONE CABLE FOR EACH ZONE AS DEPICTED.
2. PROVIDE AND INSTALL AN AUDIO SPLITTER FOR THE SYSTEM. SPLIT EXISTING SIGNAL.
3. INSTALL TERMINAL STRIPS FOR WIRE TERMINATION. LABEL EACH WIRE AND EACH ZONE AT THE TERMINAL STRIPS,
4. INSTALL A VOLUME CONTROL IN A SINGLE-GANG BACKBOX ON THE WALL. LABEL FOR THE ZONE IT CONNECTS TO.
5. TEST SYSTEM. LISTEN AND SET AUDIO LEVEL IN EACH ZONE.
6. PROVIDE AN AMPLIFIER THAT DRIVES ALL SPEAKERS. WITH ADEQUATE AUDIO LEVEL.

1 / TC101 AUDIO PAGING SYSTEM EXPANSION DETAIL

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

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989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

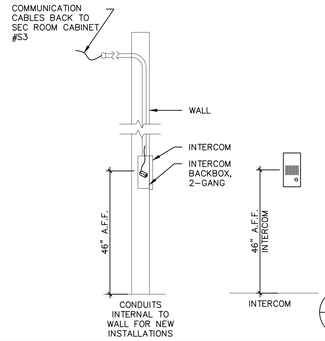
SHEET TITLE
CABLING LEGENDS, SCHEDULES & DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
TC101

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
BWE



IC

PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	INTERCOM-INTERIOR	HARDING	ICE-320-217-000
1	INTERCOM-EXTERIOR	HARDING	ICE-320-227-000
LOT	PLENUM RATED CABLE.		

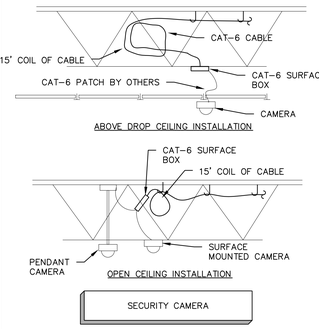
CONNECTIVITY CODE

INSTALLATION NOTES:

1. PROVIDE A SURFACE MOUNT BOX TO THE BACKBOX AT THE INTERCOM LOCATION.
2. SEE FLOORPLAN FOR INSTALLATION LOCATION.
3. TERMINATE THE CABLE TO THE INTERCOM AND AT TERMINAL STRIP IN THE SEC ROOM IN BASEMENT.
4. ROUTE INTERCOM CABLES TO CABINET #S3 IN SEC COMM ROOM IN BASEMENT

INTERCOM

10 CONNECTIVITY CODE
TC102



SECURITY CAMERA

5

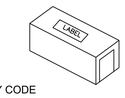
PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	SURFACE BOX	HUBBELL	HSB10W
1	CAT-6 CABLES-GREEN	MOHAWK	M58286
1	CAT-6 JACK	HUBBELL	HXJ6GN

CONNECTIVITY CODE

INSTALLATION NOTES:

1. PROVIDE A SURFACE MOUNT BOX TO THE BUILDING STRUCTURE NEAR THE SECURITY CAMERA LOCATION.
2. SEE FLOORPLAN FOR LOCATION.
3. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR TYPE

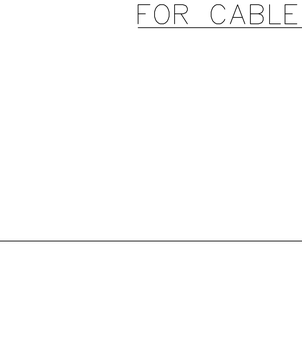


5 CONNECTIVITY CODE
TC102

INSTALLATION NOTES:

1. REFER TO THESE NOTES FOR ALL CONNECTIVITY CODES. FOR SPECIALIZED NOTES SEE THE ACTUAL CONNECTIVITY CODE.
2. ROUTE ALL USER CABLES FROM THE RACK OR CABINET, THROUGH THE CABLE TRAY IF SO PROVIDED. IF NO CABLE TRAY IS SHOWN INSTALL CABLES THROUGH "J" HOOKS. PROVIDE ALL "J" HOOKS.
3. CABLES SHALL BE SUPPORTED NO LESS THAN EVERY 5 FEET.
4. PROVIDE A SMALL LOOP OF CABLE ABOVE THE CEILING PRIOR TO INSTALLING THE CABLE INTO THE USER CONDUIT OR RACEWAY.
5. ROUTE THE CABLE THROUGH THE CONDUIT OR RACEWAY AND TO THE WALLBOX, FLOORBOX OR SURFACE MOUNT BOX. PROVIDE ENOUGH EXTRA CABLE FOR TERMINATION AND MAINTENANCE.
6. TERMINATE ALL CABLES WITH THE CORRECT CONNECTORS.
7. ALL CONNECTORS SHALL BE INSERTED INTO THE KEYSTONE PLATES AND THEN THE KEYSTONE PLATES SHALL BE INSTALLED INTO THE FACEPLATES.
8. INSTALL FACEPLATES TO THE BOXES OR DIRECTLY TO THE WALL OR FURNITURE IN THE CASE OF SURFACE MOUNT BOXES.
9. EACH CABLE SHALL HAVE A LASER-PRINTED, SELF-LAMINATING WRAP-AROUND LABEL AT EACH END. SEE DETAILS ON TC101
10. OUTLETS SHALL BE AT 18" AFF UNLESS NOTED ON THE CONNECTIVITY CODE OR PLAN DRAWINGS.
11. LABEL EACH FACEPLATE WITH A LASER-PRINTED LABEL THAT IS INSTALLED BEHIND THE CLEAR PLASTIC LABEL STRIP. WHERE NO LABEL STRIP IS PROVIDED, THE CONTRACTOR SHALL INSTALL A LASER PRINTED ADHESIVE LABEL. WHERE SPECIFICALLY NOTED, THE CONTRACTOR SHALL INSTALL ENGRAVED LAMACOID LABELS.
12. AFTER INSTALLATION, ALL CABLES SHALL BE TESTED. SEE SPECIFICATIONS FOR TESTING REQUIREMENTS.
13. FOR AUDIO AND VIDEO CONNECTIONS, THE CONTRACTOR SHALL ROUTE SIGNALS ACROSS THE CABLES FOR TESTING.
14. PROVIDE FLEXIBLE CONDUIT FROM THE WALLBOX OR FLOORBOX TO THE FURNITURE RACEWAY WHERE CABLES ARE INSTALLED IN FURNITURE.

N CONNECTIVITY CODE
MOHAWK NOTE
TC102



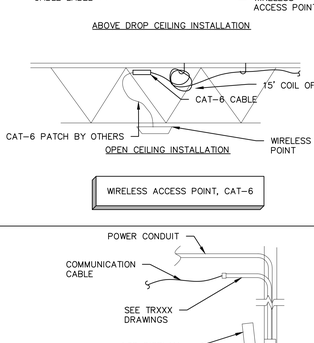
10

PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	CAT-6 CABLE	MOHAWK	M58281
1	TELEPHONE PLATE	HUBBELL	SP6F

CONNECTIVITY CODE

11 CONNECTIVITY CODE
TC102



6

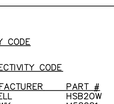
PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	SURFACE BOX	HUBBELL	HSB10W
1	CAT-6 CABLES-GREEN	MOHAWK	M58286
1	CAT-6 JACK	HUBBELL	HXJ6GN

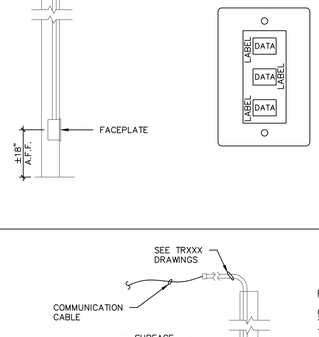
CONNECTIVITY CODE

INSTALLATION NOTES:

1. PROVIDE A SURFACE MOUNT BOX TO THE BACKBOX AT THE SECURITY CAMERA LOCATION.
2. SEE FLOORPLAN FOR INSTALLATION LOCATION. SEE TR RACEWAY DRAWINGS FOR HEIGHT OF CAMERA AND CABLING.



6 CONNECTIVITY CODE
TC102



1

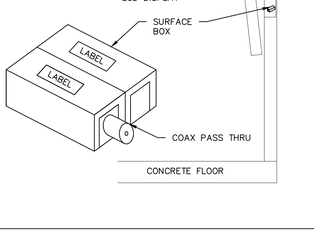
PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	GFI PLATE-STAINLESS	HUBBELL	SS26
1	CAT-6 CABLE	MOHAWK	M58281
1	CAT-6 JACK	HUBBELL	HXJ60W
1	ONE HOLE GFI PLATE	HUBBELL	NS611GY

CONNECTIVITY CODE

INSTALLATION NOTES:
1. USE ONLY SECURITY SCREWS WITH THESE PLATES.
2. WHERE NOTED THE CABLES SHALL BE INSTALLED THRU SURFACE RACEWAY.
3. LABEL THE FACEPLATE WITH A LASER PRINTED LABEL

1 CONNECTIVITY CODE
TC102



7

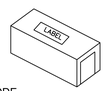
PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	SURFACE BOX	HUBBELL	HSB10W
1	CAT-6 CABLES-GREEN	MOHAWK	M58286
1	CAT-6 JACK	HUBBELL	HXJ6GN

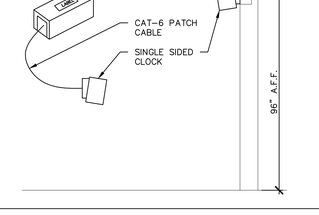
CONNECTIVITY CODE

INSTALLATION NOTES:

1. PROVIDE A SURFACE MOUNT BOX TO THE BACKBOX AT THE SECURITY CAMERA LOCATION.
2. SEE FLOORPLAN FOR INSTALLATION LOCATION. SEE TR RACEWAY DRAWINGS FOR HEIGHT OF CAMERA AND CABLING.



7 CONNECTIVITY CODE
TC102



2

PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	GFI PLATE-STAINLESS	HUBBELL	SS26
2	CAT-6 CABLE	MOHAWK	M58281
2	CAT-6 JACK	HUBBELL	HXJ60W
1	TWO HOLE GFI PLATE	HUBBELL	ISF2GY

CONNECTIVITY CODE

INSTALLATION NOTES:
1. USE ONLY SECURITY SCREWS WITH THESE PLATES.
2. WHERE NOTED THE CABLES SHALL BE INSTALLED THRU SURFACE RACEWAY.
3. LABEL THE FACEPLATE WITH A LASER PRINTED LABEL

2 CONNECTIVITY CODE
TC102

ALL CONDUITS FOR SECURITY AND DATA CABLING ROUTE FOR CABLE TRAY

WIRELESS ACCESS POINT, CAT-6

8

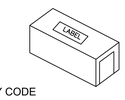
PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	SURFACE BOX	HUBBELL	HSB10W
1	CAT-6 CABLES-YELLOW	MOHAWK	M58283
1	CAT-6 JACK	HUBBELL	HXJ6Y

CONNECTIVITY CODE

INSTALLATION NOTES:

1. PROVIDE A SURFACE MOUNT BOX TO THE BUILDING STRUCTURE NEAR THE ACCESS POINT LOCATION.
2. SEE FLOORPLAN FOR LOCATION.
3. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR TYPE
4. INSTALL A LASER PRINTED CABLE LABEL ON THE CEILING WHERE THE CABLE TERMINATES. THIS WILL ALLOW THE FUTURE USER TO FIND THE CABLE TO EVENTUALLY INSTALL WIRELESS ACCESS POINT.



8 CONNECTIVITY CODE
TC102

3

PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	GFI PLATE-STAINLESS	HUBBELL	SS26
3	CAT-6 CABLE	MOHAWK	M58281
3	CAT-6 JACK	HUBBELL	HXJ60W
1	TWO HOLE GFI PLATE	HUBBELL	ISF3GY

CONNECTIVITY CODE

INSTALLATION NOTES:
1. USE ONLY SECURITY SCREWS WITH THESE PLATES.
2. WHERE NOTED THE CABLES SHALL BE INSTALLED THRU SURFACE RACEWAY.
3. LABEL THE FACEPLATE WITH A LASER PRINTED LABEL

3 CONNECTIVITY CODE
TC102

9 RACEWAY CODE

PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	SURFACE BOX	HUBBELL	HSB20W
1	CAT-6 CABLES	MOHAWK	M58281
1	CAT-6 JACK	HUBBELL	HXJ60W
1	RG-6 COAX	SEE SPECS	SEE SPECS
1	F-PASS THRU	CONTRACTOR	CONTRACTOR

CONNECTIVITY CODE

INSTALLATION NOTES:

1. LABEL CABLE AND SURFACE BOX WITH CABLE NUMBER
2. COIL DATA CABLE AND MOUNT SURFACE MOUNT BOX TO SIDE OF THE IN-WALL BACKBOX.

9 CONNECTIVITY CODE
TC102

4

PARTS

QTY	DESCRIPTION	MANUFACTURER	PART #
1	SURFACE BOX	BY ELECTRICAL	
1	CAT-6 CABLE-ORANGE	MOHAWK	M58290
1	CAT-6 JACK-ORANGE	HUBBELL	HXJ6P
1	IP CLOCK	SAPLING	SBP-31S-254-0G

CONNECTIVITY CODE

NOTES:
1. IF NO CONDUIT EXISTS, FISH WALL.
2. INSTALL IN BACKBOX OR ABOVE CEILING.
3. WHERE NOTED LARGE CLOCK ON FLOOR PLANS USE SAPLING #SBP-31S-404-0G W/COVER #SDG-CLR-COVER-40

4 CONNECTIVITY CODE
TC102

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
CABLING CONNECTIVITY CODES

PROJECT NUMBER
2021094

SHEET NUMBER
TC102

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
BWE

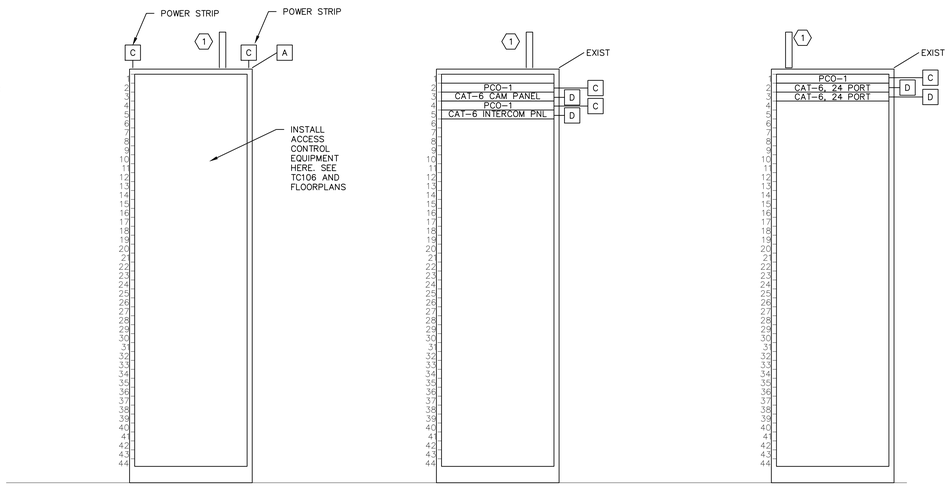
GENERAL NOTES:

1. CABINETS SHALL BE INSTALLED DIRECTLY BESIDE EACH OTHER & MECHANICALLY TO EACH OTHER.
2. CABINETS SHALL BE SECURED TO THE FLOOR WITH ANCHORS. WALL MOUNTED CABINETS SHALL BE MOUNTED TO WALL SO TOP OF RACK IS NO HIGHER THAN 7' AFF.
3. ALL USER DATA CABLES SHALL ROUTE IN THE CEILING & THEN ROUTE DOWN VERTICAL CABLE LADDER TO THE RACK. AT THE RACK/CABINET, PROVIDE A "DRIP LOOP" FOR ALL THE CABLES DRIP LOOP SHALL BE A MINIMUM OF ONE FOOT.
4. CONNECT ALL NEW CABINETS AND CABLE LADDER TO THE GROUND BAR AS DESCRIBED IN THE GROUNDING DETAIL DETAIL & THE GROUNDING SPECIFICATIONS.

KEYED NOTES:

(1) CONTRACTOR SHALL INSTALL 12" CABLE LADDER VERTICALLY FROM TOP OF CABINET OR RACK TO THE CEILING AREA FOR ROUTING USER CABLES TO THE PANELS.

INSTALL THE RACK WHERE SHOWN ON THE FLOORPLAN. VERIFY MATCHING PART NUMBERS TO EXISTING RACK PRIOR TO ORDERING. EQUIP THE RACK WITH ADJUSTABLE FEET



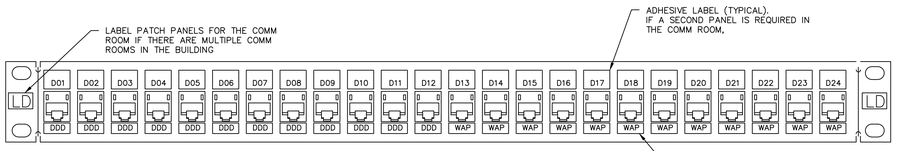
BASEMENT SECURITY ROOM
NEW RACK #S9

SEC ROOM
BASEMENT
EXISTING CAMERA RACK #3

COMM ROOM MDF
BASEMENT
EXISTING RACK #2

CONTRACTOR SHALL VERIFY EXISTING RACK LAYOUTS AND ADJUST ACCORDINGLY

1 / TC103 MDF ROOM AND SEC ROOM-BASEMENT RACK LAYOUT



NOTES:
1. INSTALL A LABEL TO EACH PATCH PANEL DETAILING THE COMM ROOM NUMBER AND PATCH PANEL NUMBER. LABEL EACH PANEL THAT IS FED FROM THAT COMM ROOM CONSECUTIVELY FROM 01-999
2. ALL LABELS ADDED TO THE PANEL SHALL BE LASER PRINTED AND CUT TO FIT. ALL NUMBERS SHALL EXACTLY ALIGN WITH THE LOCATION ON THE PATCH PANEL.
3. THE CABLES SHALL BE TERMINATED ON THE PATCH PANEL IN NUMERICAL ORDER. NO EXCEPTIONS.
4. ADD LABELS FOR CAMERA NUMBERS OR WAP NUMBERS DEPENDING UPON PATCH PANEL. SEE RACK LAYOUTS TO DETERMINE IF CAMERA AND WAP CABLES WILL BE ON SEPARATE OR SHARED PATCHPANELS
5. LABEL ALL PATCH PANEL PORTS EVEN IF NO CABLE IS INSTALLED
6. FILL IN EACH PATCH PANEL WITH CAT-6 MODULAR JACK EVEN IF NO CABLE IS INSTALLED TO THE JACK.

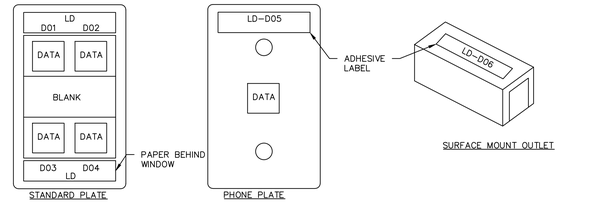
DATA CABLE LABELING A-Y-CC

LD = COMM ROOM DESIGNATION. ONLY USE THIS IF THERE ARE MULTIPLE COMM ROOMS IN THE BUILDING
DXX = DATA CABLE. 01-999. NUMBER PATCH PANELS IN EACH COMM ROOM AND THEN NUMBER CABLE AT PLATE CORRESPONDINGLY

DDD = CAMERA NUMBER. MEET WITH OWNER AND SECURITY CONTRACTOR TO OBTAIN THIS NUMBER

WAP = WAP NUMBER. MEET WITH OWNER TO OBTAIN THIS NUMBER

5 / TC103 CAMERA OR WIRELESS PANEL LABELING



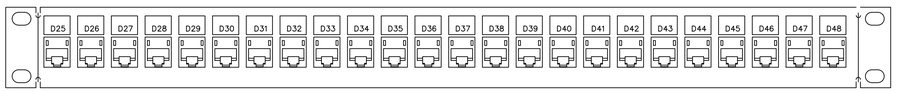
STANDARD PLATE

PHONE PLATE

DATA CABLE LABEL:
LD = COMM ROOM DESIGNATION. ONLY USE THIS IF THERE ARE MULTIPLE COMM ROOMS IN EACH BUILDING
DXX = DATA CABLE. 01-999. NUMBER PATCH PANELS IN EACH COMM ROOM AND THEN NUMBER CABLE AT PLATE CORRESPONDINGLY

NOTES:
1. INSTALL A PAPER LABEL BEHIND THE PLASTIC WINDOW IN STANDARD PLATES THAT ARE EQUIPPED WITH THE WINDOWS.
2. PROVIDE ADHESIVE LABELS ON WALL PHONE PLATES & SURFACE MOUNT OUTLETS & PLATES WITHOUT LABELING WINDOWS.

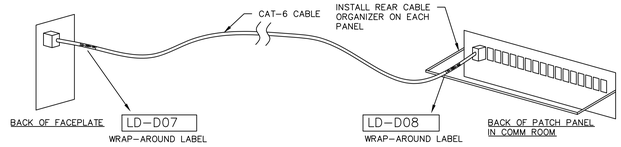
2 / TC103 TYPICAL FACEPLATE LABELING



NOTES:
1. INSTALL A LABEL TO EACH PATCH PANEL DETAILING THE COMM ROOM NUMBER AND PATCH PANEL NUMBER. LABEL EACH PANEL THAT IS FED FROM THAT COMM ROOM CONSECUTIVELY FROM 01-999
2. ALL LABELS ADDED TO THE PANEL SHALL BE LASER PRINTED AND CUT TO FIT. ALL NUMBERS SHALL EXACTLY ALIGN WITH THE LOCATION ON THE PATCH PANEL.
3. THE CONTRACTOR SHALL INSTALL A LABEL FOR EACH PORT.
4. INDIVIDUAL CABLES AT A SINGLE FACEPLATE SHALL BE LABELED IN SEQUENCE AS PER THE PATCH PANEL.
5. THE CABLES SHALL BE TERMINATED ON THE PATCH PANEL IN NUMERICAL ORDER. NO EXCEPTIONS.
5. LABEL ALL PATCH PANEL PORTS EVEN IF NO CABLE IS INSTALLED
6. FILL IN EACH PATCH PANEL WITH CAT-6 MODULAR JACK EVEN IF NO CABLE IS INSTALLED TO THE JACK.

DATA CABLE LABEL:
LD = COMM ROOM DESIGNATION. ONLY USE THIS IF THERE ARE MULTIPLE COMM ROOMS IN THE BUILDING
DXX = DATA CABLE. 01-999. NUMBER PATCH PANELS IN EACH COMM ROOM AND THEN NUMBER CABLE AT PLATE CORRESPONDINGLY

6 / TC103 CAT-6 DATA PANEL LABELING

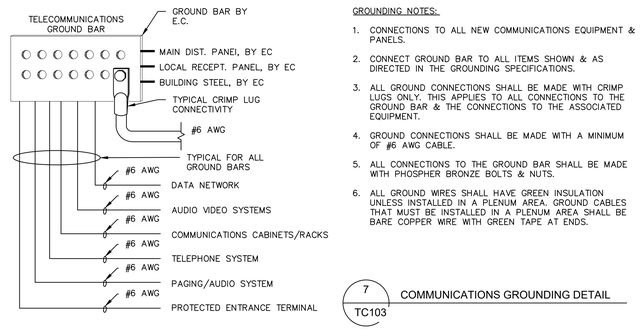


NOTES:

1. INSTALL A WRAP-AROUND LABEL AT EACH END OF EACH CABLE.
2. WRAP-AROUND LABELS SHALL BE LASER-PRINTED AND SHALL BE SELF-LAMINATING.

DATA CABLE LABEL:
LD = COMM ROOM DESIGNATION. ONLY USE THIS IF THERE ARE MULTIPLE COMM ROOMS IN EACH BUILDING
DXX = DATA CABLE. 01-999. NUMBER PATCH PANELS IN EACH COMM ROOM AND THEN NUMBER CABLE AT PLATE CORRESPONDINGLY

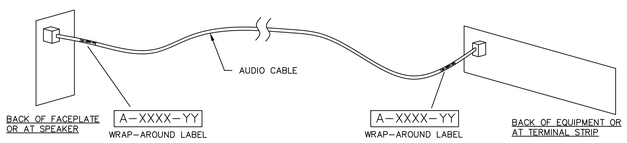
3 / TC103 TYPICAL CABLE LABELING AT FACEPLATE & PATCH PANEL



GROUNDING NOTES:

1. CONNECTIONS TO ALL NEW COMMUNICATIONS EQUIPMENT & PANELS.
2. CONNECT GROUND BAR TO ALL ITEMS SHOWN & AS DIRECTED IN THE GROUNDING SPECIFICATIONS.
3. ALL GROUND CONNECTIONS SHALL BE MADE WITH CRIMP LUGS ONLY. THIS APPLIES TO ALL CONNECTIONS TO THE GROUND BAR & THE CONNECTIONS TO THE ASSOCIATED EQUIPMENT.
4. GROUND CONNECTIONS SHALL BE MADE WITH A MINIMUM OF #6 AWG CABLE.
5. ALL CONNECTIONS TO THE GROUND BAR SHALL BE MADE WITH PHOSPHER BRONZE BOLTS & NUTS.
6. ALL GROUND WIRES SHALL HAVE GREEN INSULATION UNLESS INSTALLED IN A PLENUM AREA. GROUND CABLES THAT MUST BE INSTALLED IN A PLENUM AREA SHALL BE BARE COPPER WIRE WITH GREEN TAPE AT ENDS.

7 / TC103 COMMUNICATIONS GROUNDING DETAIL



GENERAL NOTES:

1. INSTALL A WRAP-AROUND LABEL AT EACH END OF EACH CABLE.
2. WRAP-AROUND LABELS SHALL BE LASER-PRINTED AND SHALL BE SELF-LAMINATING.

A = AUDIO/VIDEO CABINET
XXXX = SPK FOR SPEAKER LINE
XXXX = LINE FOR LINE LEVEL
XXXX = MIC FOR MICROPHONE
XXXX = CTRL FOR CONTROL LINE
YY = AUDIO ZONE FOR SPEAKER
YY = FACEPLATE NUMBER FOR LINE AND MIC

4 / TC103 TYPICAL CABLE LABELING FOR AUDIO CABLES

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ADAM LACH, RA, DIRECTOR

FILE NO.
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CONTRACT NO.
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
CABLING RACK LAYOUTS & DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
TC103

PROJECT DATE
SEPTEMBER 6, 2023

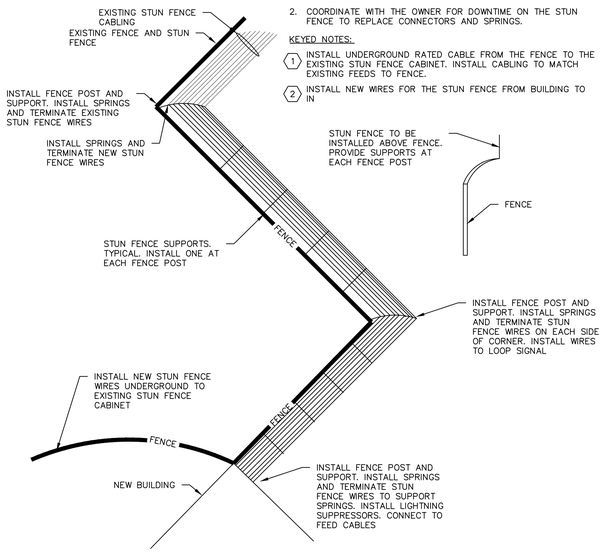
CHECKED BY
BWE

GENERAL NOTES:

1. INSTALL NEW SPRINGS AND CONNECTORS FOR THE STUN FENCE WIRING AT EACH JUNCTION POINT OR CHANGE IN DIRECTION OF FENCE. SEE SITE PLAN FOR LOCATIONS.
2. COORDINATE WITH THE OWNER FOR DOWNTIME ON THE STUN FENCE TO REPLACE CONNECTORS AND SPRINGS.

KEYED NOTES:

1. INSTALL UNDERGROUND RATED CABLE FROM THE FENCE TO THE EXISTING STUN FENCE CABINET. INSTALL CABLING TO MATCH EXISTING FEEDS TO FENCE.
2. INSTALL NEW WIRES FOR THE STUN FENCE FROM BUILDING TO IN



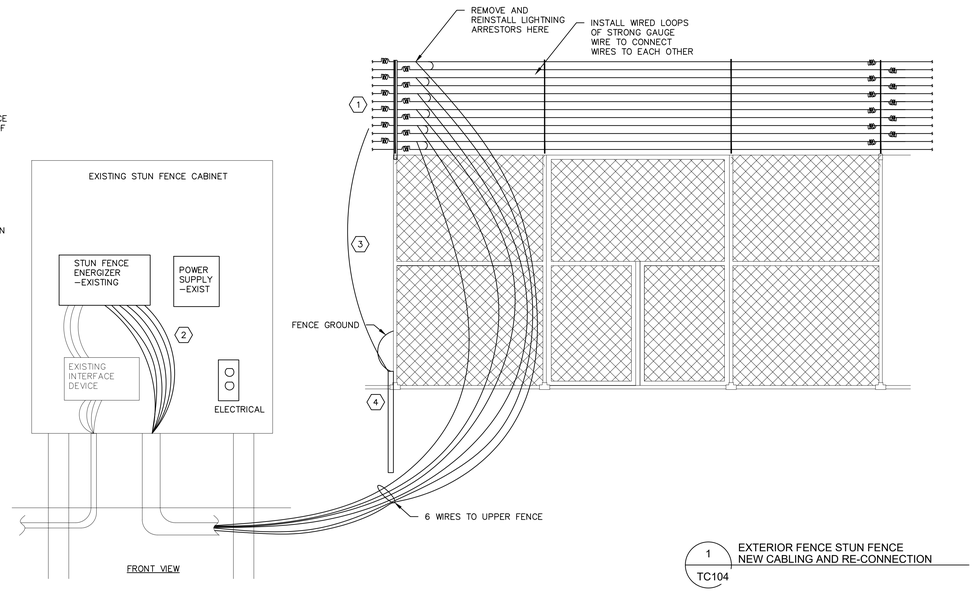
6 OUTSIDE FENCE
NEW STUN FENCE NOTES
TC104

GENERAL NOTES:

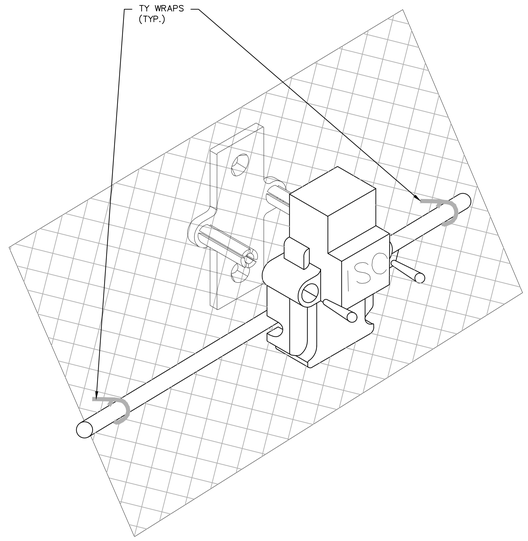
1. INSTALL NEW SPRINGS AND CONNECTORS FOR THE STUN FENCE WIRING AT EACH JUNCTION POINT OR CHANGE IN DIRECTION OF FENCE. SEE SITE PLAN FOR LOCATIONS.
2. COORDINATE WITH THE OWNER FOR DOWNTIME ON THE STUN FENCE TO REPLACE CONNECTORS AND SPRINGS.

KEYED NOTES:

1. CONNECT FEED CABLES TO LIGHTNING ARRESTORS. CONNECT LIGHTNING ARRESTORS TO FENCE AND THE GROUND BAR AT THE FENCE.
2. INSTALL NEW FEED CABLES FROM EXISTING ENERGIZER IN STUN FENCE CABINET
3. CONNECT LIGHTNING ARRESTORS TO GROUND BAR AT FENCE.
4. INSTALL GROUND ROD AT FENCE 10' LONG. CONNECT TO LIGHTNING ARRESTORS AND FENCE ITSELF.



1 EXTERIOR FENCE STUN FENCE
NEW CABLING AND RE-CONNECTION
TC104



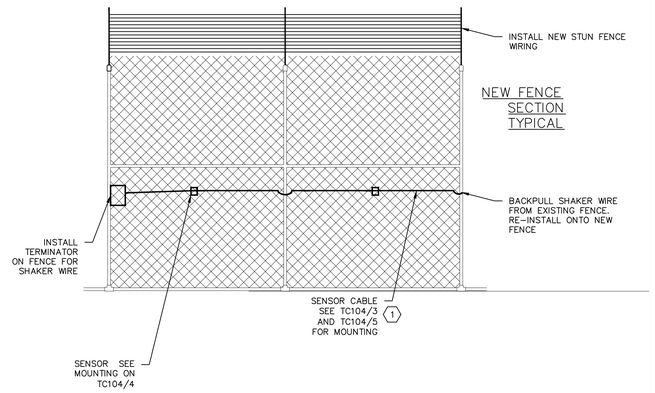
4 OUTSIDE FENCE
TYPICAL ISC SENSOR MOUNTING DETAIL
TC104

GENERAL NOTES:

1. THE SHAKER WIRE IS EXISTING ON THE EXISTING FENCE. BACKPULL THE SHAKER WIRE AND COIL DURING CONSTRUCTION.
2. RE-INSTALL THE SHAKER ON THE NEW FENCE.
3. REINSTALL TERMINATING BOX AND CONNECT
4. TEST FENCE AND CONFIRM IT WORKS.

KEYED NOTES:

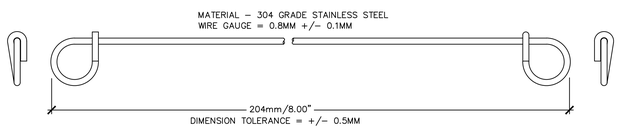
1. INSTALL EXISTING SHAKER WIRE ON NEW FENCE. CONNECT AS SHOW IN DETAILS ON THIS SHEET.



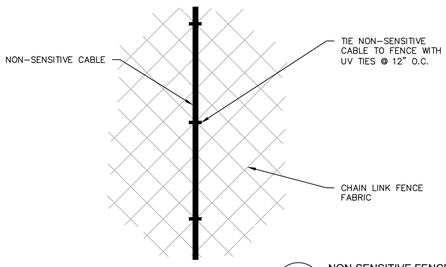
2 OUTSIDE FENCE
TYPICAL SENSOR CABLE DETAIL
TC104

NOTE:

1. TIE SENSOR COIL TO THE FENCE AND OTHER WIRES.



5 STAINLESS STEEL (SST)
WIRE TIE DETAIL
TC104



3 NON-SENSITIVE FENCE MOUNTING
CABLE DETAIL
TC104

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FILE NO.
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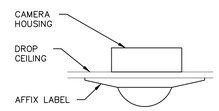
PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

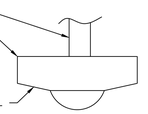
SHEET TITLE
FENCE DETECTION DETAILS

PROJECT NUMBER	SHEET NUMBER
2021094	TC104
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: BWE	

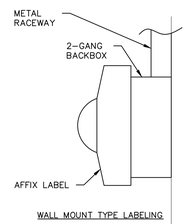
NOTES:
1. INSTALL A SELF-ADHESIVE, LASER PRINTER LABEL TO THE CAMERA THAT IS VISIBLE FROM BELOW THE DROP CEILING.
2. LABEL SHALL BE OF STRONG ADHESIVE TO ATTACH TO CAMERA HOUSING. LABEL SHALL MATCH THE CAMERA NUMBER IN THE SOFTWARE.
3. DEMONSTRATE TO THE DESIGNER THE LABEL AND WHERE THE LABEL WILL BE AFFIXED TO EACH CAMERA PRIOR TO INSTALLATION. AFFIX A LABEL TO EACH CAMERA



DROP CEILING LABELING



PENDANT TYPE LABELING



WALL MOUNT TYPE LABELING

XX-DDD

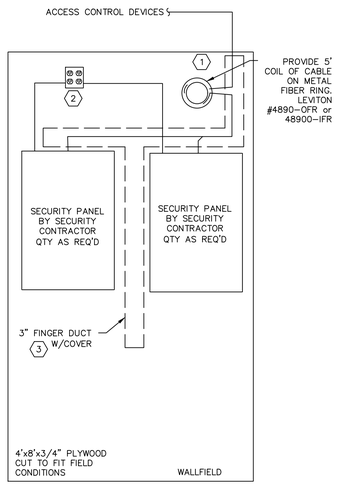
ADHESIVE CAMERA LABEL

XX = BUILDING NAME
DDD = CAMERA NUMBER

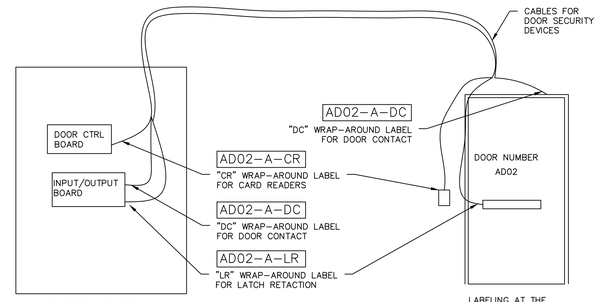
1 / TC105 CAMERA LABELING
VISIBLE PORTION OF THE BUILDING

SECURITY PANEL WALLFIELD NOTES:
1. PLYWOOD SHALL BE INSTALLED ON THE WALL BEHIND THE PANELS AND RACEWAYS.
2. PLYWOOD SHALL BE FIREPROOF. A/C GRADE. C SIDE TO THE WALL.
3. INSTALL "FINGER-DUCT" TYPE RACEWAY OR D-RINGS TO ROUTE THE CABLES FROM THE CEILING TO THE PANELS.
4. MOUNT THE PANELS SO THAT THE TOP OF THE PANELS IS ABOUT 6' AFF.
5. CONNECT SECURITY PANELS TO A GROUND BAR. PROVIDE GROUND BAR ON THE WALLFIELD.

KEYED NOTES:
1. PROVIDE 5' OF CABLE PRIOR TO TERMINATION IN THE SECURITY PANEL. PROVIDE ON A FIBER OPTIC METAL RING. INSTALL ABOVE THE PANELS. PROVIDE ONE FOR EACH PANEL. GROUP PANEL CABLES ONTO PANEL SPECIFIC RING.
2. EXTEND 120V POWER TO THE POWER SUPPLIES IN THE PANELS. HARDWIRE ALL CONNECTIONS. PROVIDE CONDUIT AND WIRING FROM CLOSEST CIRCUIT.
3. PROVIDE SUPPORT FOR THE CABLES WITH "FINGER-DUCT" OR OTHER RACEWAY.



4 / TC105 TYPICAL SECURITY WALLFIELD
NO SCALE



ENLARGED VIEW OF TYPICAL SECURITY PANEL

LABELING AT THE DOOR OR REMOTE END

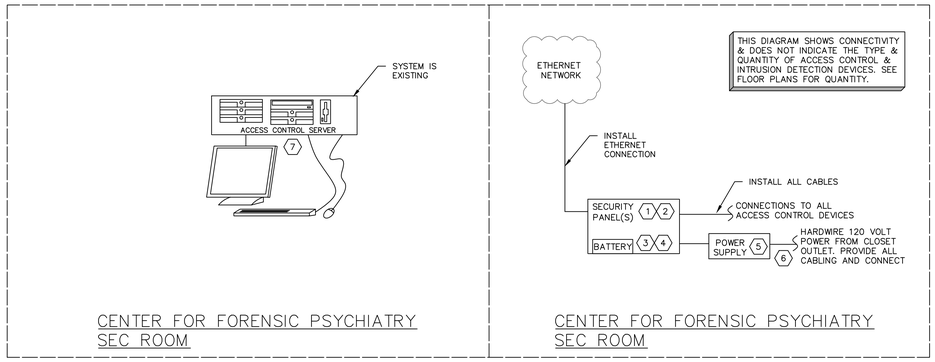
AD02 = DOOR NUMBER AS SHOWN ON DRAWINGS
A = COMM ROOM WHERE PANEL RESIDES
LR = TWO LETTER DESIGNATION FOR DEVICE THAT THE CABLE CONNECTS TO.

NOTES:
1. INSTALL A WRAP-AROUND LABEL AT EACH END OF EACH CABLE.
2. WRAP-AROUND LABELS SHALL BE LASER-PRINTED AND BE SELF-LAMINATING.
3. AT THE PANEL THE CABLE SHALL BE LABELED AS IT CONNECTS TO THE PANEL. LABEL INDIVIDUAL SHEATHED CABLES IN A MULTI-SERVICE CABLE.
4. AT THE DOOR INSTALL THE LABEL AT THE DEVICE WHERE IT IS CONNECTED.

2 / TC105 TYPICAL ACCESS CONTROL CABLE LABELING

KEYED NOTES:
1. ACCESS CONTROL PANELS SHALL BE LOCATED WHERE SHOWN ON THE DRAWINGS. CONNECT ALL DEVICES TO THESE PANELS. ALSO PROVIDE CABLING TO CONNECT THE PANELS TO THE ETHERNET SWITCHES IN THE RACKS.
2. WHERE MORE THAN ONE PANEL IS AT THE SAME LOCATION, THE CONTRACTOR CAN CONNECT ONE PANEL TO THE ETHERNET NETWORK AND CONNECT THE OTHER PANELS TO THE ETHERNET CONNECTED PANEL.
3. THERE WILL BE PANELS IN ONE OR MORE COMMUNICATIONS ROOMS. SEE THE FLOORPLANS FOR SUGGESTED PANEL LOCATIONS. INSTALL PANELS AS NOTED AND AS REQUIRED FOR COMPLETE CONNECTIVITY. CONNECT TO THE DATA NETWORK AND OTHER ACCESS CONTROL PANELS.
4. INSTALL BATTERY BACKUP TO EACH PANEL TO SUPPORT DURING A SHORT POWER OUTAGE. SEE SPECIFICATIONS FOR BATTERY BACKUP REQUIREMENTS.
5. THE CONTRACTOR SHALL PROVIDE A POWER SUPPLY IN THE COMMUNICATIONS ROOM TO POWER ALL THE DOOR HARDWARE.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING THE PANELS TO 120 VOLT POWER. CONNECT WITH A HARDWIRED CONNECTION. PROVIDE CABLING AND CONDUIT/BOXES FOR CONNECTIVITY
7. PROVIDE A NEW SERVER AND MONITOR/KEYBOARD/MOUSE. PROVIDE A SHELF AND MOUNTING FOR THE MONITOR AND KEYBOARD IN THE RACK/CABINET IN THE COMM ROOM.
8. PROVIDE AND INSTALL THE PHOTO BADGING DEVICES INCLUDING THE CARD PRINTER AND CAMERA.

CONNECTIVITY NOTES:
1. PROVIDE THE QUANTITY OF EACH ITEM AS SHOWN ON THE DRAWINGS.
2. THE COMMUNICATIONS CONTRACTOR SHALL WORK WITH THE OWNER TO CONFIGURE THE SYSTEM TO MEET THE OWNERS REQUIREMENTS.
3. CABLES FOR CONNECTION FROM THE ACCESS CONTROL PANELS SHALL BE PLENUM RATED.
4. CONTRACTOR SHALL PROVIDE ALL CABLING FOR CONNECTION OF NEW SECURITY DEVICES. THE CABLES SHALL BE THE SAME COLOR. COORDINATE CABLE COLOR WITH OTHER CONTRACTORS SO THAT THE SECURITY CABLES ARE A UNIQUE COLOR.
5. ALL CABLES SHALL BE LABELED AT EACH END. LABEL THEM WITH THE DOOR NUMBER AND THEN FOR THE DEVICE TO WHICH THEY CONNECT. IN EXAMPLE: P124-DC.
6. THE CONTRACTOR SHALL INCLUDE SUFFICIENT TIME INTO THE PROJECT TO CUSTOM CONFIGURE THE ACCESS CONTROL SYSTEM TO INTERFACE AND CONTROL EACH SYSTEM SHOWN ON THE DIAGRAM AND DESCRIBED IN THE SPECIFICATIONS.
7. PROVIDE THE QUANTITY OF BADGES/FOBS/MOBILE CREDENTIALS AS NOTED. PRINT ALL PROXIMITY CARDS AS PER THE OWNERS DIRECTION.



3 / TC105 ACCESS CONTROL DIAGRAM

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
ACCESS CONTROL DETAILS

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

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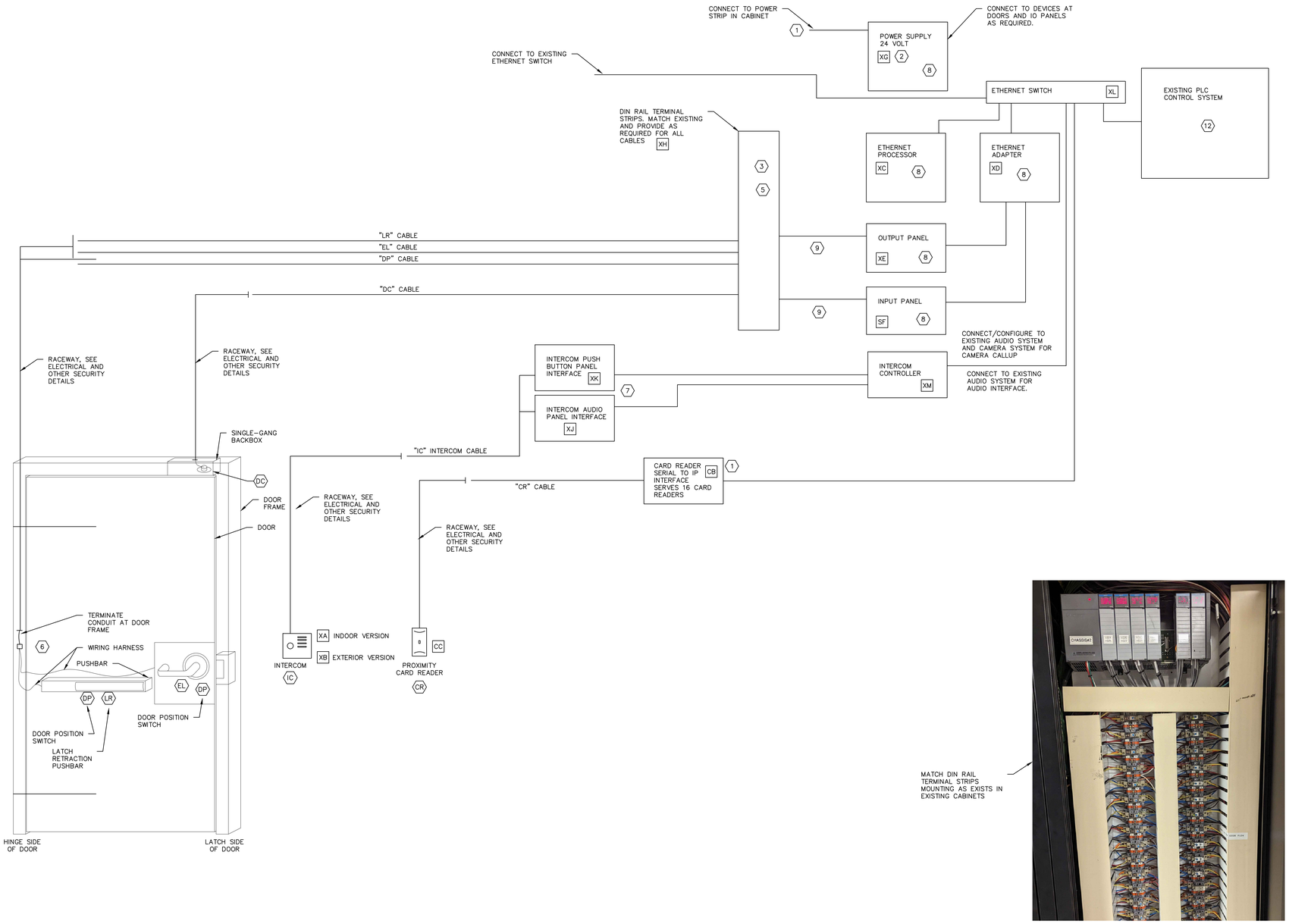
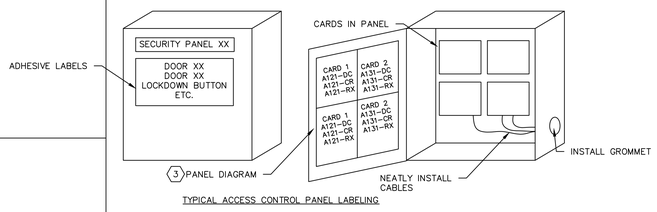
TC105





TYPICAL ACCESS CONTROL PANEL LABELING

ACCESS CONTROL READER DETAILS

CR	CARD READER – INSTALL TO THE BACKBOX OR IN THE DOOR FRAME. COORDINATE IN FIELD PRIOR TO ORDERING. WIRE TO SECURITY SYSTEM

ACCESS CONTROL LOCK DETAILS

EL	ELECTRIFIED LATCH – DEVICE IS IN THE DOOR, PROVIDED BY DOOR CONTRACTOR. WIRE THROUGH THE DOOR, THROUGH THE HINGE AND TO THE SECURITY PANEL
LR	LATCH RETRACTION DEVICE – THIS DEVICE IS AN ELECTRONIC PUSHBAR ON THE SECURE SIDE OF THE DOOR. WIRE FROM THIS DEVICE, THROUGH THE DOOR HINGETO THE POWER SUPPLY IN THE COMMUNICATIONS ROOM. PROVIDE POWER SUPPLY

ACCESS CONTROL AT DOOR DETAILS

RX	REQUEST TO EXIT IN LOCK – THIS IS A SWITCH THAT IS PROVIDED WITH THE DOOR LOCKING DEVICE. WIRE TO SECURITY PANEL TO SHUNT DOOR CONTACT WHEN EXITING BLDG.
DC	DOOR CONTACT – MOUNT ABOVE THE DOOR. WIRE TO SECURITY SYSTEM/INTRUSION DETECTION SYSTEM TO TRIGGER AN ALARM
DP	DOOR POSITION SWITCH: PROVIDED AS PART OF THE DOOR HARDWARE. IDENTIFIES THE POSITION OF A DOOR LOCK OR DOOR LATCH. WIRE BACK TO SECURITY SYSTEM.

INTERCOM / ASST. OPENER DETAILS

IC	INTERCOM – INSTALL TO THE BOX OR SURFACE MOUNT TO THE WALL. WIRE TO THE SECURITY SYSTEM VIA CABLES

KEYED ACCESS CONTROL NOTES:

1. INSTALL SERIAL TO IP DEVICE IN PLC CABINETS. CONNECT TO CARD READERSA ND ETHERNET SWITCH
2. PROVIDE A POWER SUPPLY TO SUPPORT THE SECURITY PANELS AND ALL END USER DEVICES SUCH AS LOCKS, STROBES, REQUEST TO EXIT DEVICES, ALARMS ETC.
3. AFFIX A CUSTOM SHEET OF PAPER INSIDE THE PANEL DOOR THAT SHOWS WHAT DOORS OR DEVICES ARE CONNECTED TO EACH PANEL. LAMINATE OR INSTALL IN A PLASTIC SLEEVE.
4. CUT HOLE IN PANEL TO SUPPORT CABLE INSTALLATION. INSTALL A NYLON OR PLASTIC GROMMET IN THE PANEL.
5. CONNECT ALL CABLES AND DEVICES TO THE CONTROLLERS/BOARDS WITHIN THE PANEL THAT IS REQUIRED FOR CONNECTIVITY AND SYSTEM OPERATION. PROVIDE A COIL OF 5' OF CABLE ABOVE THE PANEL ON THE WALL.
6. FOR AN EL OR LR DEVICE THE DOOR HARDWARE SUPPLIER WILL PROVIDE A WIRING HARNESS FROM THE LOCK THROUGH THE HINGE AND INTO THE DOOR FRAME. SECURITY CONTRACTOR TO WIRE FROM PANEL OR POWER SUPPLY TO THE WIRING HARNESS.
7. MEET WITH THE OWNER TO DETERMINE WHICH INTERCOMS SHALL CALL UP WHICH CAMERAS. INTEGRATE BOTH SYSTEMS. PROVIDE ALL SOFTWARE AND CONFIGURATION REQUIRED.
8. PROVIDE THE QUANTITY AND CONNECTIVITY OF THESE DEVICES AS REQUIRED OF ALL DEVICES SHOWN ON THE FLOORPLANS. CONNECT TO THE EXISTING ACCESS CONTROL SYSTEM (WONDERWARE OR LATEST VERSION) TO THESE NEW DEVICES TO MAKE THE SYSTEM WORK AS ONE SYSTEM. ANY UPDATES TO THE MAIN EXISTING SYSTEM ARE OUTSIDE THE SCOPE OF THIS PROJECT.
9. PROVIDE INTERCONNECTIONS AND QUANTITY AS REQUIRED FOR SYSTEM CONNECTIVITY
10. PROVIDE CONNECTIVITY FROM THE ACCESS CONTROL SYSTEM PANEL TO THE PLC SYSTEM TO TRIGGER DOORS TO BE CONTROLLED. PROVIDE EQUIPMENT AND SOFTWARE TO INTEGRATE OWNERS EXISTING ID CARDS AND CARD READERS INTO THE NEW SPACE
11. MOUNT ACCESS CONTROL PANEL ON THE WALL OF THE BASEMENT SECURITY ROOM. ROUTE CABLING TO PLC CABINET AND CARD READERS FOR CONNECTIVITY AND INTEGRATION
12. INTEGRATE ALL NEW EQUIPMENT AND DOORS AND CONTROLS TO THE EXISTING SYSTEM TO PROVIDE A SINGLE, COHESIVE INTERFACE AND DATABASE FOR THE EXISTING SYSTEM.

GENERAL NOTES:

1. SEE OTHER DETAILS FOR RACEWAY REQUIREMENTS FOR ALL CABLING AND DEVICES. REFER TO THE PLAN DRAWINGS FOR THE SPECIFIC FIELD DEVICE AND WHERE IT IS TO BE INSTALLED.
2. ALL SECURITY DEVICES SHALL BE WIRED DIRECTLY BACK TO THE SECURITY SYSTEM (ACCESS CONTROL) PANELS OR PLC PANELS. LOCATE PANELS ON THE WALLS OF COMMUNICATIONS ROOMS OR AS SHOWN ON THE FLOOR PLANS. SEE OTHER DETAILS FOR MOUNTING AND RACEWAY REQUIREMENTS FOR CABLING.
3. PROVIDE ALL SECURITY CABLES AND ALL SECURITY PANELS REQUIRED FOR CONNECTIVITY OF THE SYSTEM. SHALL BE PLENUM RATED IN PLENUM AREAS.
4. LABEL THE OUTSIDE OF THE PANEL FOR THE DOORS AND DEVICES THAT ARE CONNECTED INSIDE THE PANEL. PROVIDE A PANEL DIAGRAM INSIDE THE PANEL THAT SHOWS THE CARDS AND WHAT IS CONNECTED TO EACH PORT ON THE CARDS.
5. THE PLC BASED SYSTEM FOR ACCESS CONTROL IS STANLEY GATEKEEPER SYSTEM. EXPAND THIS EXISTING SYSTEM TO SUPPORT THE NEW DOORS AND CARD READERS. PROVIDE AND APPLY ANY ADDITIONAL LICENSING REQUIRED.

1 TC106 DOOR HARDWARE & SECURITY EQUIPMENT CONNECTIVITY REQUIREMENTS

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
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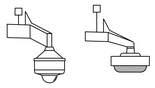
PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
SECURITY ACCESS CONTROL DETAILS

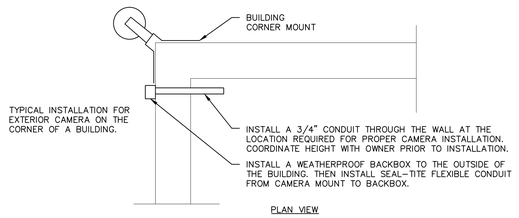
PROJECT NUMBER	SHEET NUMBER
2021094	TC106
PROJECT DATE: SEPTEMBER 6, 2023	
CHECKED BY: BWE	

EXTERIOR CORNER MOUNT

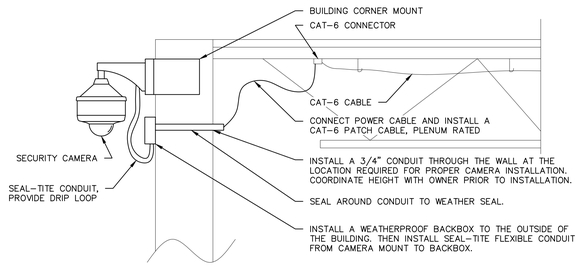


CORNER WALL MOUNT ON ONE-LINE DIAGRAM

NOTES:
1. INSTALL A CORNER MOUNT AT HEIGHT APPROVED BY OWNER.
2. INSTALL PATCH CABLE FROM CAT-6 CONNECTOR TO CAMERA. SHALL BE PLENUM RATED.
3. ALL CAMERAS SHALL BE INSTALLED WITH SECURE SCREWS.



PLAN VIEW

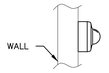


ELEVATION

6 / TC107 — EXTERIOR CORNER, WALL MOUNT CAMERA INSTALLATION

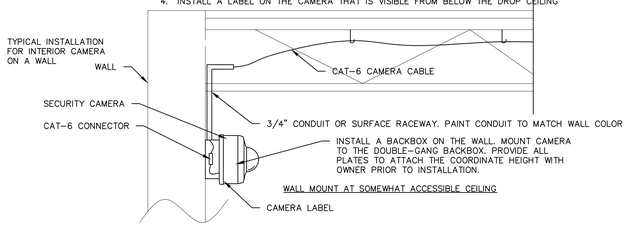
NOT TO SCALE

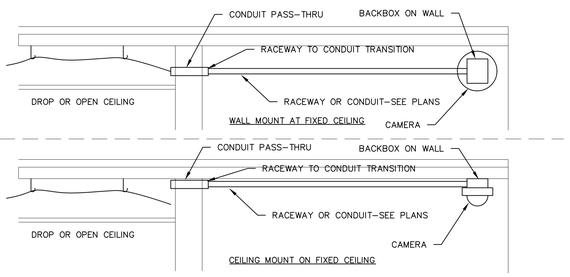
WALL/CEILING MOUNT – FIXED CEILING



WALL/CEILING MOUNT ON ONE-LINE DIAGRAM

NOTES
1. INSTALL CAMERAS ON THE WALL. PROVIDE THE RACEWAY AND BACKBOX.
2. SEE SPECS AND DRAWINGS FOR INFORMATION ABOUT WHO INSTALLS CAT-6 CABLE FROM COMM ROOM TO CAMERA LOCATION
3. SECURITY CONTRACTOR SHALL INSTALL THE PATCH CABLE FROM CAT-6 CONNECTOR TO CAMERA. SHALL BE PLENUM RATED.
4. INSTALL A LABEL ON THE CAMERA THAT IS VISIBLE FROM BELOW THE DROP CEILING





4 / TC107 — TYPICAL INTERIOR WALL/CEILING MOUNT CAMERA INSTALLATION

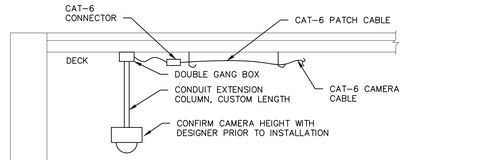
NOT TO SCALE

PENDANT MOUNT IN OPEN CEILING

PENDANT MOUNT ON ONE-LINE DIAGRAM

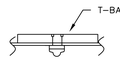
TYPICAL INSTALLATION FOR INTERIOR CAMERA IN AN OPEN CEILING PENDANT MOUNT

NOTES
1. INSTALL CAMERA IN A PENDANT MOUNT SUPPORTED BY CONDUIT TO THE DECK OR STRUCTURE.
2. INSTALL THE PATCH CABLE FROM CAT-6 CONNECTOR TO CAMERA. SHALL BE PLENUM RATED.
3. INSTALL A LABEL ON THE CAMERA THAT IS VISIBLE FROM BELOW.

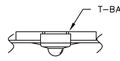


1 / TC107 — TYPICAL OPEN-CEILING (PENDANT) CAMERA INSTALLATION

DROP OR FIXED CEILING



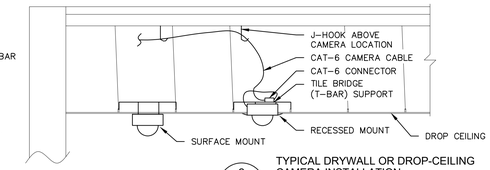
CEILING SURFACE MOUNT ON ONE-LINE DIAGRAM



CEILING RECESSED MOUNT ON ONE-LINE DIAGRAM

TYPICAL INSTALLATION FOR INTERIOR CAMERA IN A DROP CEILING OR FIXED CEILING.

NOTES
1. INSTALL CAMERAS RECESSED IN DROP CEILING OR DRYWALL CEILING. PROVIDE THE CORRECT MOUNT.
2. SEE SPECS & DRAWINGS FOR INFORMATION ABOUT WHO INSTALLS CAT-6 CABLE FROM COMM ROOM TO CAMERA LOCATION.
3. SECURITY CONTRACTOR SHALL INSTALL THE PATCH CABLE FROM CAT-6 CONNECTOR TO CAMERA. SHALL BE PLENUM RATED.
4. INSTALL A LABEL ON THE CAMERA THAT IS VISIBLE FROM BELOW THE DROP CEILING.



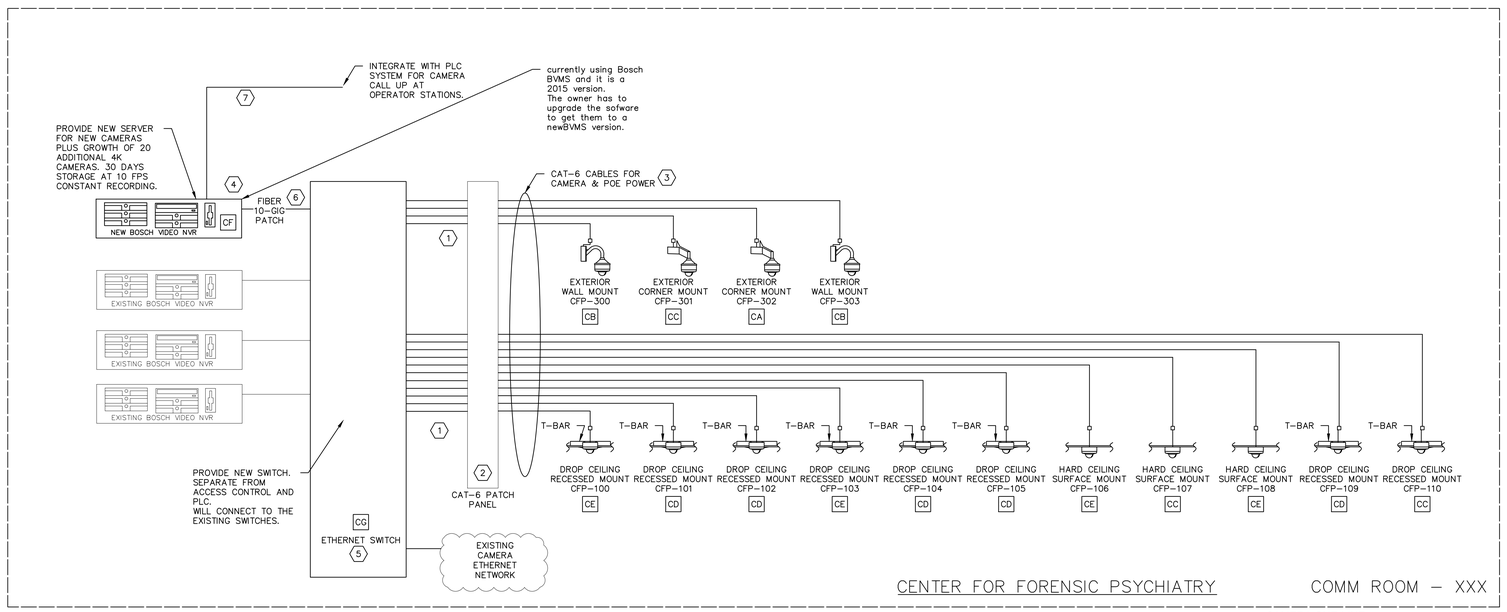
2 / TC107 — TYPICAL DRYWALL OR DROP-CEILING CAMERA INSTALLATION

GENERAL VIDEO SECURITY NOTES:

1. CONTRACTOR SHALL PROVIDE ALL PATCH CABLES AT THE CAMERA AND AT THE COMM ROOM. MATCH COLOR OF CAMERA CABLE. 12" LONG AT SWITCH. 10' AT THE CAMERA
2. THE CAMERA CABLES SHALL TRANSPORT ALL VIDEO SIGNALS & CONTROL SIGNALS & POWER SIGNALS.
3. CONTRACTOR SHALL PROVIDE THE CORRECT CAMERA MOUNT BASED ON CAMERA LOCATION AND STRUCTURE AVAILABLE. PROVIDE RECESSED CAMERA MOUNTS IN DROP CEILINGS. REVIEW PLANS AND SITE PRIOR TO ORDERING.
4. CAMERAS IN DROP CEILINGS SHALL BE RECESSED MOUNT. PROVIDE BACKPLATE OR T-BAR FOR SUPPORT FROM GRID, NOT JUST THE TILE.
5. CONTRACTOR SHALL MEET WITH THE OWNER AND DETAIL ALL THE CAPABILITIES OF THE SYSTEM. THE CONFIGURATION OF THE RECORDER AND CAMERAS SHALL BE BASED ON THESE MEETINGS WITH THE OWNER. TAKE NOTES DURING THE MEETINGS. SUBMIT WITH AS-BUILTS
6. WHERE THE CAMERA IS NOT INSTALLED INTO A DROP CEILING THE CONTRACTOR SHALL PROVIDE A MOUNT AND HOUSING. PROVIDE WEATHERPROOF MOUNTS ON EXTERIOR CAMERAS.
7. EXTERIOR CAMERAS SHALL BE RATED FOR OUTDOOR INSTALLATION AND SHALL PROVIDE THEIR OWN HEAT.
8. CONTRACTOR SHALL PROVIDE THE CORRECT LENS TO EACH CAMERA BASED ON THE INSTALLED LOCATION AND THE OWNERS REQUIREMENTS FOR THE FIELD OF VIEW. WORK WITH THE OWNER DURING INSTALLATION.
9. ALL CAMERAS SHALL CONNECT TO THE IP NETWORK SWITCH IN THE COMMUNICATIONS ROOM. CONTRACTOR SHALL WORK WITH THE OWNER ON CONFIGURATION OF THE ETHERNET SWITCH.
7. CONTRACTOR SHALL MEET WITH THE OWNER AND DETAIL ALL THE CAPABILITIES OF THE SYSTEM. THE CONFIGURATION OF THE RECORDER AND CAMERAS SHALL BE BASED ON THESE MEETINGS WITH THE OWNER. TAKE NOTES DURING THE MEETINGS. SUBMIT WITH AS-BUILTS
8. PROVIDE A NEW NETWORK VIDEO RECORDER TO SUPPORT THESE NEW CAMERAS. EXISTING NVR UTILIZE THE BOSCH VIDEO SECURITY SYSTEM.
9. INTEGRATE THE EXISTING CAMERAS WITH THE ACCESS CONTROL SYSTEM SO THAT AN INTERCOM CALL BRINGS UP THE CORRESPONDING CAMERA AT THE CENTRAL CONTROL STATION.
10. NETWORK VIDEO SECURITY RECORDED SHALL STORE VIDEO FOR 30 DAYS. CONNECT TO THE NETWORK AND CONFIGURE ALL CAMERAS ON THE SERVER. NAME AS PER THE OWNERS STANDARDS.
11. INSTALL NVR IN THE BASMENT SECURITY ROOM.

KEYED VIDEO SECURITYNOTES:

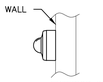
1. PROVIDE ALL PATCH CABLES REQUIRED FOR CONNECTION OF ALL CAMERAS AT THE CAMERA AND AT THE NETWORK SWITCH. ALL PATCH CABLES SHALL BE MATCH CABLE COLOR
2. LABEL THE CAT-6 PATCH PANEL WITH THE CAMERA NUMBER THE CABLE CONNECTS TO. SHALL BE LASER PRINTED. SEE SPECS
3. SEE SPECIFICATIONS AND BID SCOPES TO DETERMINE WHICH CONTRACTOR IS TO INSTALL AND TERMINATE THE CAT-6 CABLES USED FOR SECURITY CAMERAS.
4. THE SERVER WILL BE LOCATED IN THE BASEMENT SECURITY ROOM. CONTRACTOR SHALL LOAD ALL SOFTWARE REQUIRED TO RECORD AND MANAGE ALL NEW CAMERAS. PROVIDE THE QUANTITY OF SERVERS AND STORAGE AS REQUIRED TO RECORD AND VIEW ALL CAMERAS AS PER THE SPECIFICATIONS
5. THE SECURITY CONTRACTOR SHALL MEET WITH THE OWNER TO CONFIRM ALL NETWORK SPECIFICATION REQUIREMENTS FOR A VLAN OR OTHER QUALITY OF SERVICE SETTINGS FOR THE CAMERA SYSTEM. PROVIDE AND INSTALL ETHERNET SWITCH
6. PROVIDE AN SFP MODULE FOR 10 GIGABIT CONNECTIVITY VIA FIBER CABLE INTO THE ETHERNET SWITCH
7. CONFIGURE THE EXISTING CAMERA SYSTEM TO SUPPORT CAMERA CALL UP THRU CONNECTION TO THE AUDIO INTERCOM SYSTEM. PROVIDE ALL EQUIPMENT AND CONFIGURATION REQUIRED. WHEN AN INTERCOM IS PUSHED THE CAMERA ASSOCIATED WITH THAT CAMERA SHALL POP-UP ON THE OPERATOR CONSOLE.



5 / TC107 — CAMERA ONE-LINE CONNECTIVITY

NOT TO SCALE

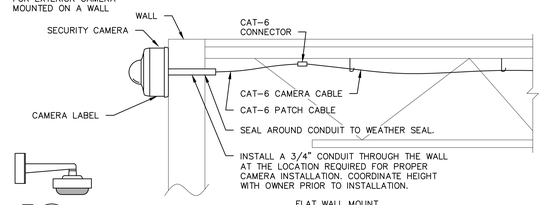
EXTERIOR WALL MOUNT



EXTERIOR WALL MOUNT ON ONE-LINE DIAGRAM

TYPICAL INSTALLATION FOR EXTERIOR CAMERA MOUNTED ON A WALL

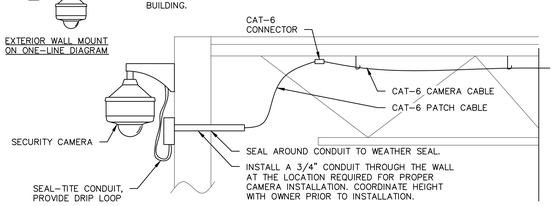
NOTES
1. INSTALL CAMERAS TO THE EXTERIOR WALL. VERIFY HEIGHT WITH OWNER. INSTALL CONDUIT.
2. SEE SPECS & DRAWINGS FOR INFORMATION ABOUT WHO INSTALLS CAT-6 CABLE FROM COMM ROOM TO CAMERA LOCATION.
3. SECURITY CONTRACTOR SHALL INSTALL THE PATCH CABLE FROM CAT-6 CONNECTOR TO CAMERA. SHALL BE PLENUM RATED.
4. WHERE THE CAMERA LOOKS OUT FROM THE BUILDING INSTALL THE FLAT WALL MOUNT. WHERE THE CAMERA IS SHOWN LOOKING ALONG THE BUILDING THE CONTRACTOR SHALL INSTALL THE PENDANT WALL MOUNT.



FLAT WALL MOUNT

USE THIS MOUNT WHEN THE CAMERA IS LOOKING STRAIGHT OUT FROM THE BUILDING.

EXTERIOR WALL MOUNT ON ONE-LINE DIAGRAM



PENDANT WALL MOUNT

USE THIS MOUNT WHEN THE CAMERA IS AIMED TO PROVIDE AN IMAGE ALONG THE EXTERIOR WALL.

3 / TC107 — EXTERIOR WALL MOUNT CAMERA DETAILS

NOT TO SCALE

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

Commtech Design
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ROCKFORD, MICHIGAN 49341
WWW.COMMTECHDESIGN.COM

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

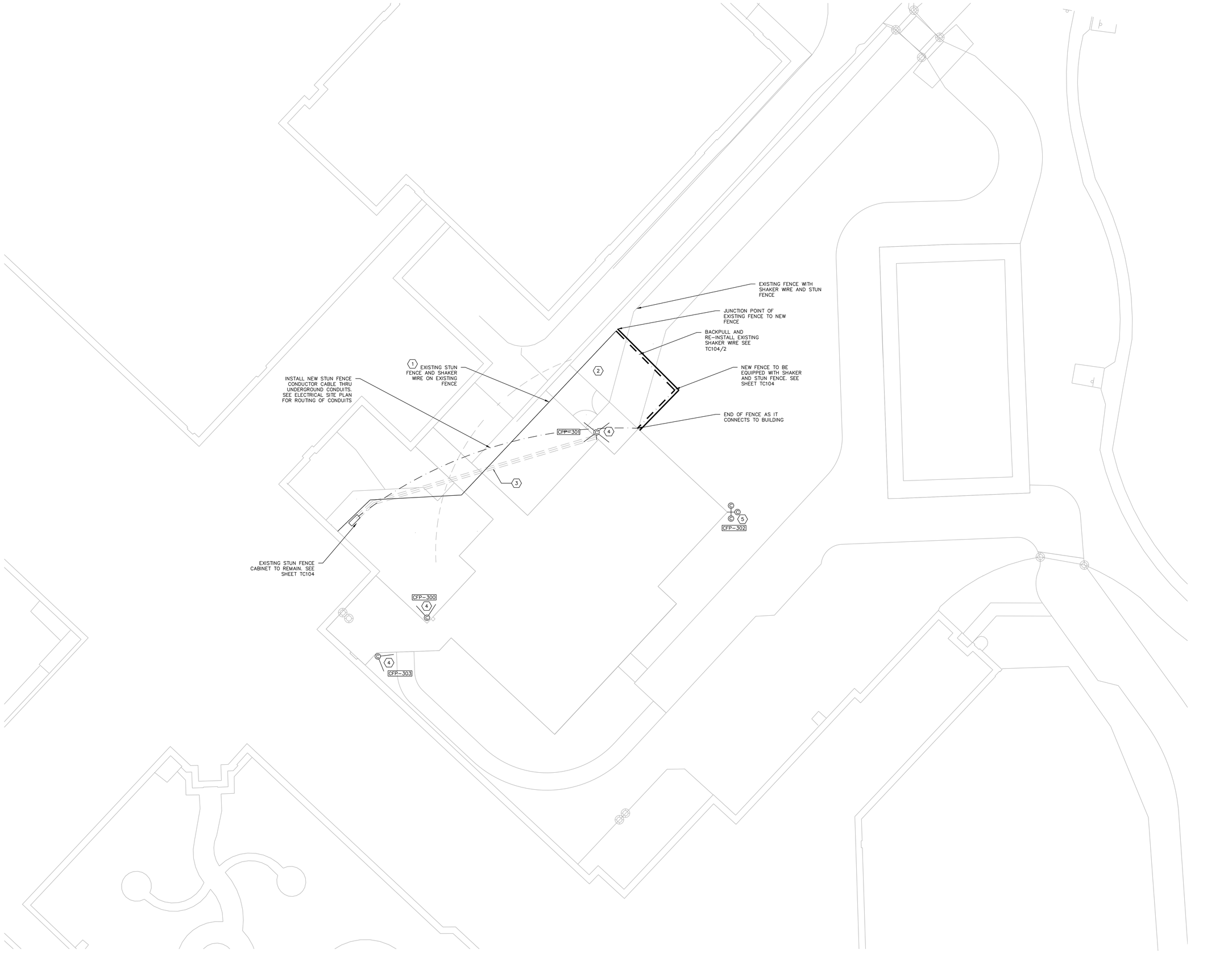
SHEET TITLE
VIDEO SECURITY SYSTEM DETAILS

PROJECT NUMBER
2021094

SHEET NUMBER
TC107

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
BWE



GENERAL TECH NOTES

1. SECURITY CONTRACTOR SHALL INSTALL ANY CONDUITS & PASS-THRU'S REQUIRED FOR ROUTING CABLES AROUND THE BUILDING IN ADDITION TO THOSE SHOWN.
2. CONTRACTOR SHALL COMPLETE A WALK-THRU PRIOR TO CONSTRUCTION & SHALL VERIFY ALL RACEWAYS & PATHWAYS.
3. ALL CABLES SHALL BE SUPPORTED ABOVE THE DROP CEILING BY J-HOOKS. HOOKS SHALL BE LOCATED NO LESS THAN EVERY 5 FEET.
4. WHERE A CAMERA IS MARKED AS SURFACE MOUNTED ON THE ONE-LINE, THAT CAMERA MAY BE MOUNTED TO THE CEILING OR WALL. PROVIDE A BACKBOX & RACEWAY.

KEYED TECH NOTES

1. BACKPULL EXISTING SHAKER WIRE TO JUNCTION POINT OF NEW AN EXISTING FENCE. DURING CONSTRUCTION, CONFIGURE THE SHAKER WIRE SYSTEM TO END AN NEW/EXISTING FENCE JUNCTIONLOCATION.
2. REMOVE THE EXISTING STUN FENCE FROM TOP OF EXISTING FENCE.
3. ROUTE NEW STUN FENCE WIRES THRU UNDERGROUND CONDUITS THAT ARE SHOWN ON ELECTRICAL SITE PLAN.
4. MOUNT CAMERA AT 12' AFG
5. MOUNT CAMERA AT 15' AFG
6. TEMPORARILY INSTALL CABLES FROM STUN FENCE CABINET TO EXISTING FENCE TO MAINTAIN STUN FENCE DURING CONSTRUCTION. INSTALL FLEXIBLE CONDUIT AND ATTACH TO THE BUILDING. INSTALL HIGH ENOUGH TO AVOID VEHICLES AND NEW CONSTRUCTION

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
TECHNOLOGY SITE PLAN

PROJECT NUMBER
2021094

SHEET NUMBER
TC200

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
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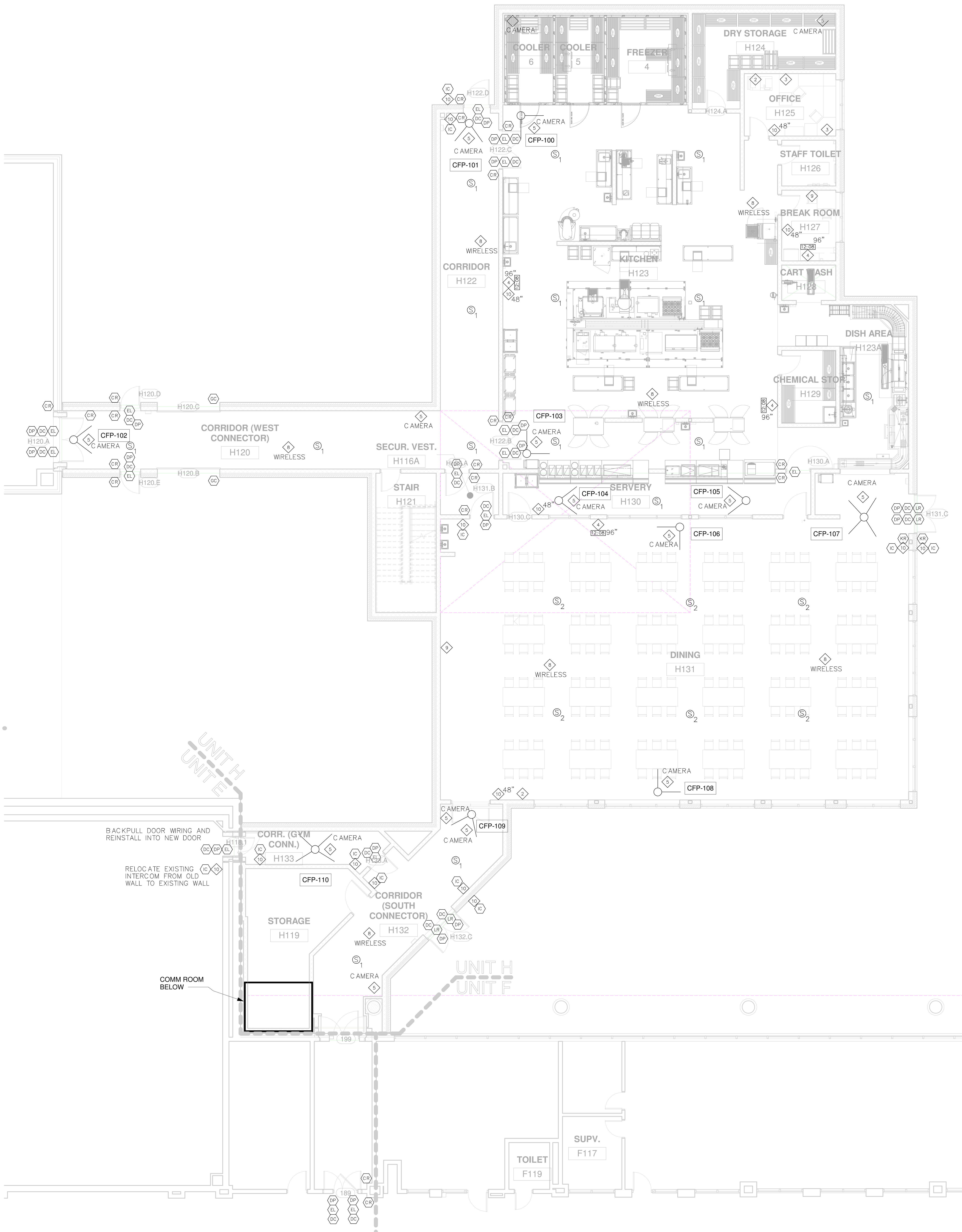

GENERAL TECH NOTES

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2. CONTRACTOR SHALL COMPLETE A WALK-THRU PRIOR TO CONSTRUCTION & SHALL VERIFY ALL RACEWAYS & PATHWAYS.
3. ALL CABLES SHALL BE SUPPORTED ABOVE THE DROP CEILING BY J-HOOKS. HOOKS SHALL BE LOCATED NO LESS THAN EVERY 5 FEET.
4. WHERE A CAMERA IS MARKED AS SURFACE MOUNTED ON THE ONE-LINE, THAT CAMERA MAY BE MOUNTED TO THE CEILING OR WALL. PROVIDE A BACKBOX & RACEWAY.

KEYED TECH NOTES

1. BACKPULL EXISTING SHAKER WIRE TO JUNCTION POINT OF NEW AN EXISTING FENCE. DURING CONSTRUCTION, CONFIGURE THE SHAKER WIRE SYSTEM TO END AN NEW/EXISTING FENCE JUNCTIONLOCATION.
2. REMOVE THE EXISTING STUN FENCE FROM TOP OF EXISTING FENCE.
3. ROUTE NEW STUN FENCE WIRES THRU UNDERGROUND CONDUITS THAT ARE SHOWN ON ELECTRICAL SITE PLAN.
4. MOUNT CAMERA AT 12' AFG
5. MOUNT CAMERA AT 15' AFG
6. TEMPORARILY INSTALL CABLES FROM STUN FENCE CABINET TO EXISTING FENCE TO MAINTAIN STUN FENCE DURING CONSTRUCTION. INSTALL FLEXIBLE CONDUIT AND ATTACH TO THE BUILDING. INSTALL HIGH ENOUGH TO AVOID VEHICLES AND NEW CONSTRUCTION

NO.	REVISION	DATE

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

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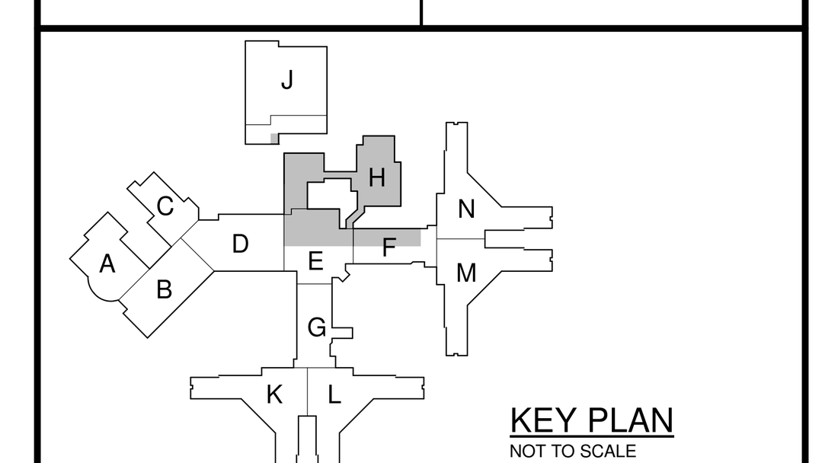
171CODHHS7255	Y22003



WTAARCH.COM

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Saginaw, Michigan 48607
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
FIRST FLOOR TECHNOLOGY PLAN

PROJECT NUMBER	SHEET NUMBER
2021094	TC201
PROJECT DATE: SEPTEMBER 6, 2023	
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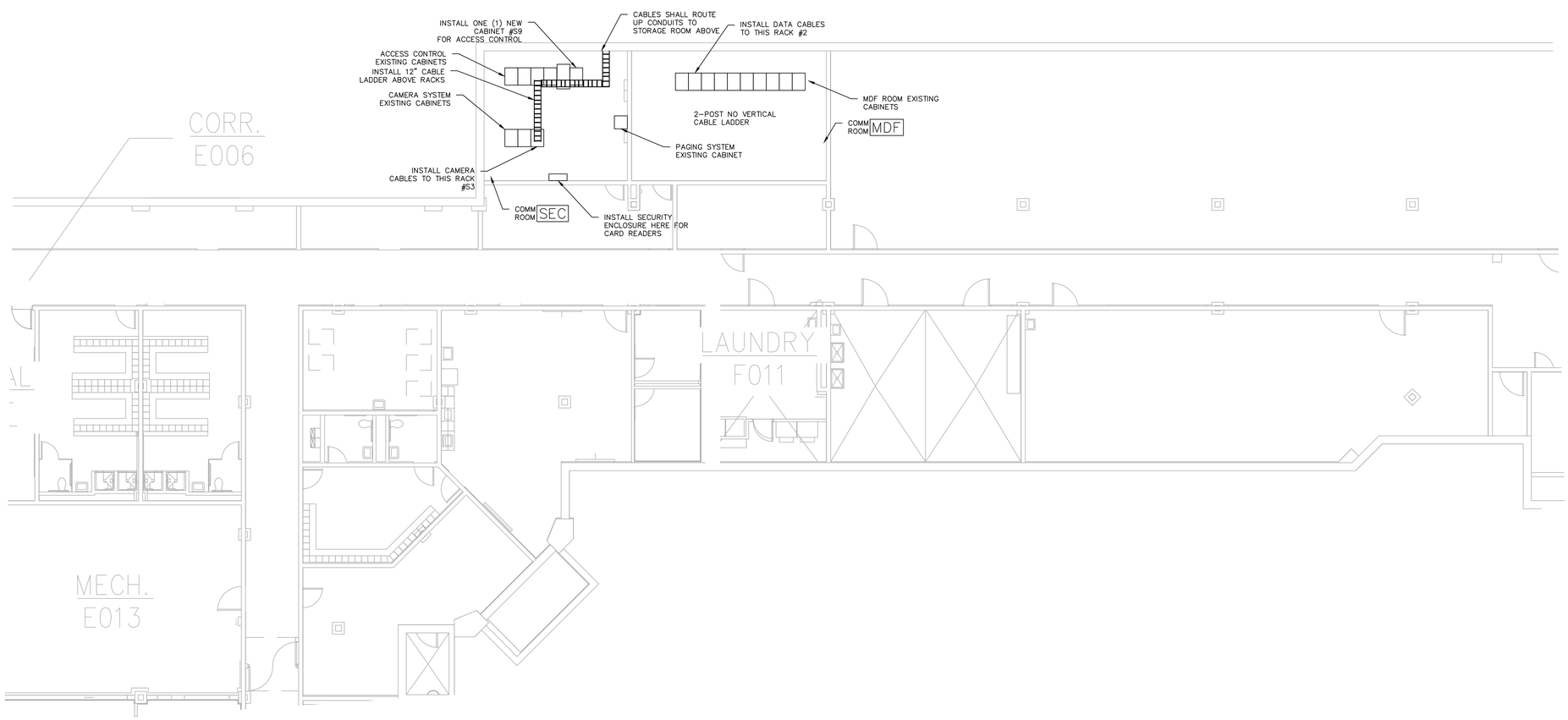

N

1 TC201A BASEMENT TECHNOLOGY PLAN AREA 100

1"=1/16'-0" 0 1"

GENERAL TECH NOTES

1. SECURITY CONTRACTOR SHALL INSTALL ANY CONDUITS & PASS-THRU'S REQUIRED FOR ROUTING CABLES AROUND THE BUILDING IN ADDITION TO THOSE SHOWN.
2. CONTRACTOR SHALL COMPLETE A WALK-THRU PRIOR TO CONSTRUCTION & SHALL VERIFY ALL RACEWAYS & PATHWAYS.
3. ALL CABLES SHALL BE SUPPORTED ABOVE THE DROP CEILING BY J-HOOKS. HOOKS SHALL BE LOCATED NO LESS THAN EVERY 5 FEET.
4. WHERE A CAMERA IS MARKED AS SURFACE MOUNTED ON THE ONE-LINE, THAT CAMERA MAY BE MOUNTED TO THE CEILING OR WALL. PROVIDE A BACKBOX & RACEWAY.

KEYED TECH NOTES

1. BACKPULL EXISTING SHAKER WIRE TO JUNCTION POINT OF NEW AN EXISTING FENCE. DURING CONSTRUCTION, CONFIGURE THE SHAKER WIRE SYSTEM TO END AN NEW/EXISTING FENCE JUNCTIONLOCATION.
2. REMOVE THE EXISTING STUN FENCE FROM TOP OF EXISTING FENCE.
3. ROUTE NEW STUN FENCE WIRES THRU UNDERGROUND CONDUITS THAT ARE SHOWN ON ELECTRICAL SITE PLAN.
4. MOUNT CAMERA AT 12' AFG
5. MOUNT CAMERA AT 15' AFG
6. TEMPORARILY INSTALL CABLES FROM STUN FENCE CABINET TO EXISTING FENCE TO MAINTAIN STUN FENCE DURING CONSTRUCTION. INSTALL FLEXIBLE CONDUIT AND ATTACH TO THE BUILDING. INSTALL HIGH ENOUGH TO AVOID VEHICLES AND NEW CONSTRUCTION

NO.	REVISION	DATE

STATE OF MICHIGAN
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
BASEMENT TECHNOLOGY PLAN AREA 100

PROJECT NUMBER
2021094

SHEET NUMBER
TC201A

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
BWE

Department of Licensing and Regulatory Affairs

1st Floor Ottawa Building
611 W. Ottawa Street
Lansing, MI 48933

Final Report - Approved

Application Number: PR2023BCC-002591

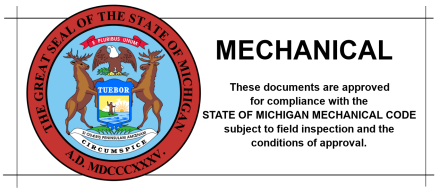
Report Date: 03/29/2024
Description : New one-story with a penthouse addition to existing structure for commercial kitchen and dining space. Addition totals 11,124 square feet and includes plumbing, HVAC, electrical, food service equipment, communications and IT, and associated site work for new construction.
Address : 8303 PLATT RD, SALINE, MI, 48176
Record Type : Bureau of Construction Codes Plan Review Application
Document Filename : PR2023BCC-002591 - Response_03-19-24.pdf

Reviewer Contact Information:

Reviewer Name	Reviewer Email	Reviewer Phone
Daniel Morris	MorrisD9@michigan.gov	517-927-9734

General Comments

Markups for this Approved Document or Plan



WTA ARCHITECTS

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WTAARCH.COM

November 16, 2022

Daniel Morris
Bureau of Construction Codes
517-927-9734
Morrisd9@michigan.gov

RE: PR2023BCC-002591 – Center For Forensic Psychiatry

Dear Mr. Daniel Morris

Please see below for our response to your review comment.

Review Comment:
Describe how the make-up air system is interlocked with the hood exhaust. Hvac-21h needs to be interlocked with the hood or the amount of make up air needs to be available all the time. Mmc 508.1.2 an air table for the kitchen showing what equipment is supplying make up air for exhaust systems, the amount of kitchen ventilation being provided for the space and population density, kitchen exhaust and kitchen positive or negative design .

Response to Comment:
Our Makeup Air Unit (AHU-22H) serving the Kitchen Exhaust Hoods (EF-9H and EF-10H) are interlocked. The kitchen hoods are to be manually turned On/Off, and the Makeup Air will be interlocked with both of these fans, to be enabled when either Exhaust Fan is turned on. See M8.03 Temperature Controls, '*Kitchen Exhaust Hoods (EF-9H & EF-10H) and Make-Up Air Unit (AHU-22H) Control*' Sequence Lines 2, 3, and 6 for more information.

Mechanical Schedules included with this submission, providing the Makeup Air (AHU-22H, using SF-2) at 8700 CFM. This is sized for the total combined rate of Exhaust Hoods, EF-9H at 3600 CFM and EF-10H at 5100 CFM, which is balanced according to 508.1.2 and is available on M7.03 and M7.04.

VFD controls are to be installed so that the Makeup air rate matches the specific fan that is enabled, per Sequence of Operation Line 6.

WIGEN
TINCKNELL
ASSOCIATES
ARCHITECTS

SPACE SOLVED.

Department of Licensing and Regulatory Affairs

1st Floor Ottawa Building
611 W. Ottawa Street
Lansing, MI 48933

Final Report - Approved

Application Number: PR2023BCC-002591

Report Date: 03/29/2024
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Address : 8303 PLATT RD, SALINE, MI, 48176
Record Type : Bureau of Construction Codes Plan Review Application
Document Filename : FS2.02.pdf

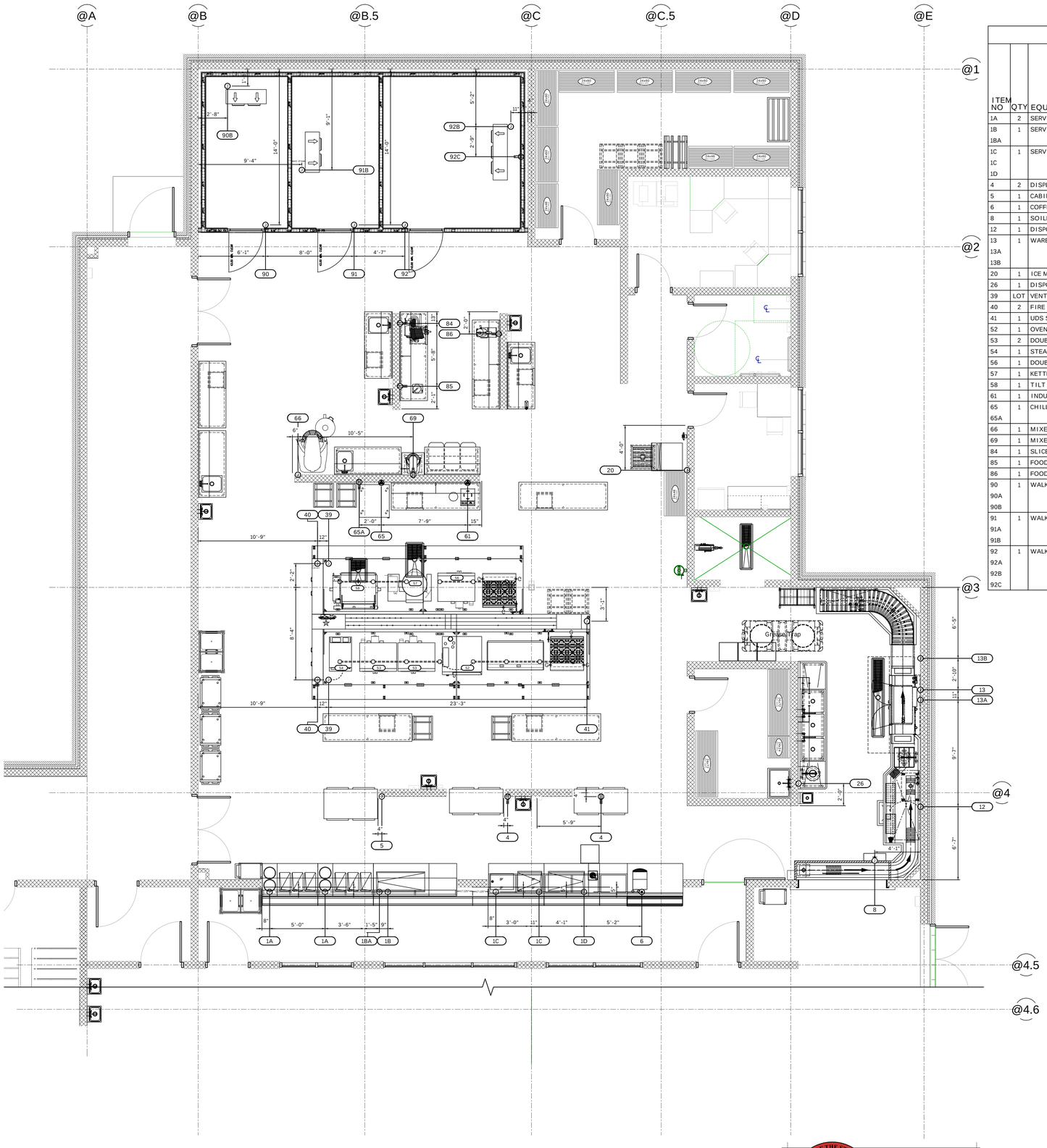
Reviewer Contact Information:

Reviewer Name	Reviewer Email	Reviewer Phone
Daniel Morris	MorrisD9@michigan.gov	517-927-9734

General Comments

Markups for this Approved Document or Plan

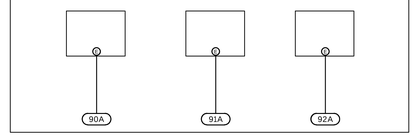
Comment ID	Page Ref	Reviewer : Department	Review Comments
27	FS2.02	Daniel Morris : Mechanical	MMC, Section 304.11 - Guards. Guards shall be provided where various components that require service and roof hatch openings are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof, or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of components that require service. The top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard.



ELECTRICAL SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	AMPS	KW	HP	VOLTS	PHASE	CYCLE	DIRECT	PLUG	NEMA	ELECTRICAL AFF (IN)	ELEC REMARKS
1A	2	SERVING LINE - HOT FOOD	15.9	3.3		208	1	60	X			SU	'STUB UP' UTILITIES
1B	1	SERVING LINE - HOT/COLD FOOD COMBO	15.9	3.3		208	1	60	X			SU	'STUB UP' UTILITIES
1BA			3.5			115	1	60	X			SU	'STUB UP' UTILITIES
1C	1	SERVING LINE - COLD FOOD	3.5			115	1	60	X			SU	'STUB UP' UTILITIES
1C			3.5			115	1	60	X			SU	'STUB UP' UTILITIES
1D			3.5			115	1	60	X			SU	'STUB UP' UTILITIES
4	2	DISPLAY CASE, REFRIGERATED	10.6		0.5	115	1	60		X	5-20P	86	STUB UP OR BRING DOWN FROM ABOVE FOR UNIT AWAY FROM WALL
5	1	CABINET, HEATED, PASS-THRU	15.5	1.6		115/208	1	60	X			86	
6	1	COFFEE MAKER, DISPENSER	12.0	1.44		120	1	60		X	5-15P	SU	
8	1	SOILED DISHTABLE TRAY CONVEYOR	15.0			208	1	60	X			60	
12	1	DISPOSER, GARBAGE	6.0		3.0	208	3	60	X			12	E.C. TO INTERWIRE TO CONTROL PANEL
13	1	WAREWASHER, RACK CONVEYOR	44.9	25.0		480	3	60	X			63.75	FOR MOTORS, CONTROLS & TANK HEAT
13A			40.1	30.0		480	3	60	X			63.75	FOR BOOSTER HEATER
13B			15.7			480	3	60	X			60	FOR BLOWER DRYER
20	1	ICE MAKER W/ BIN	11.9			115	1	60	X			72	
26	1	DISPOSER, GARBAGE	3.3		2.0	208	3	60	X			12	E.C. TO INTERWIRE TO CONTROL PANEL
39	LOT	VENTILATION SYSTEM	15.0			115	1	60	X			DFA	SERVICE TO LIGHTS & TEMP SENSORS
40	2	FIRE SUPPRESSION SYSTEM	20.0			120	1	60	X			DFA	20 AMP; 24-HR DEDICATED CIRCUIT
41	1	UDS SYSTEM	50.0	14.4		120/208	3	60	X			DFA	UDS SERVES ALL EQUIPMENT UNDER HOODS
52	1	OVEN-STEAMER, COMBINATION, GAS	9.6	2.2		208/240	1	60		X	6-50P	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
53	2	DOUBLE OVEN, CONVECTION, GAS	(2)7.7		(2)1/2	120	1	60		X	5-15P	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
54	1	STEAMER, PRESSURELESS	2.0	0.3		120	1	60	X			*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
56	1	DOUBLE OVEN, CONVECTION, GAS	(2)7.7		(2)1/2	120	1	60		X	5-15P	*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
57	1	KETTLE, STEAM JACKETED, GAS, TILT	5.0			115	1	60	X			*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
58	1	TILT SKILLET, GAS	5.0			115	1	60	X			*	UTILITY SERVICE FROM ITEM 41, UDS SYSTEM
61	1	INDUCTION CHARGER	20.0	6.7		208	3	60		X	L15-20P	48	
65	1	CHILLER/FREEZER, BLAST	10.0		3.0	208	3	60		X	L15-20P	12	MAIN SERVICE TO UNIT
65A			2.0			120	1	60		X	5-15P	12	SERVICE FOR CONDENSATE EVAPORATOR
66	1	MIXER, FLOOR	12.0		3.0	200-240	3	50	X			54	CORD & PLUG NOT PROVIDED; L15-20P RECEPTACLE & PLUG CAN BE USED
69	1	MIXER, COUNTER	9.0		0.5	120	1	60		X	5-15P	36	
84	1	SLICER, FOOD	5.6		0.5	120	1	60		X	5-15P	45	
85	1	FOOD PROCESSOR	8.0		0.75	120	1	60		X	5-15P	45	
86	1	FOOD PROCESSOR	10.0		1.0	120	1	60		X	5-15P	45	
90	1	WALK-IN MEAT COOLER	15.0			120	1	60	X			DFA	SERVICE TO LIGHTS, ALARMS & HEATERS
90A			7.4		0.75	208-230	1	60	X			SU	SERVICE TO MEAT COOLER CONDENSING UNIT
90B			1.6			115	1	60	X			DFA	SERVICE TO MEAT COOLER EVAPORATOR COIL
91	1	WALK-IN PRODUCE COOLER	15.0			120	1	60	X			DFA	SERVICE TO LIGHTS, ALARMS & HEATERS
91A			7.0		0.75	208-230	1	60	X			SU	SERVICE TO PRODUCE COOLER CONDENSING UNIT
91B			1.6			115	1	60	X			DFA	SERVICE TO PRODUCE COOLER EVAPORATOR COIL
92	1	WALK-IN FREEZER	15.0			120	1	60	X			DFA	SERVICE TO LIGHTS, ALARMS & HEATERS
92A			21.4		3.0	208-230	1	60	X			SU	SERVICE TO FREEZER CONDENSING UNIT
92B			14.3			208-230	1	60	X			DFA	SERVICE TO FREEZER EVAPORATOR COIL
92C			15.0			120	1	60		X	5-15P	84	15 AMP CIRCUIT FOR DRAIN LINE HEAT TAPE

WALK-IN COOLER & FREEZER CONDENSING UNITS
ARE SHOWN OUT OF LOCATION.
VERIFY EXACT LOCATION WITH ARCHITECT & G.C.



MECHANICAL

These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

NO.	REVISION	DATE
A3	ADDENDUM NO. 3	09/28/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, RA, DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

KEY PLAN
NOT TO SCALE

WTAARCH.COM
WTA ARCHITECTS
100 S Jefferson Ave, Suite 601
Saginaw, Michigan 48607
989 752 8107

STAFFORD-SMITH, Inc.
COMMERCIAL REFRIGERATION - FOOD SERVICE EQUIPMENT
3414 S. BURDICK,KALAMAZOO, MICHIGAN 49001
PH. (269) 343-2540

PROJECT TITLE
491/20167.SDW CFP - CREATE KITCHEN BID AND CONSTRUCTION:
CENTER FOR FORENSIC PSYCHIATRY
SALINE, MICHIGAN

SHEET TITLE
KITCHEN ELECTRICAL PLAN

PROJECT NUMBER
2021094

PROJECT DATE
SEPTEMBER 6, 2023

CHECKED BY
T.M.M.

SHEET NUMBER
FS2.02

Department of Licensing and Regulatory Affairs

1st Floor Ottawa Building
611 W. Ottawa Street
Lansing, MI 48933

Final Report - Approved

Application Number: PR2023BCC-002591

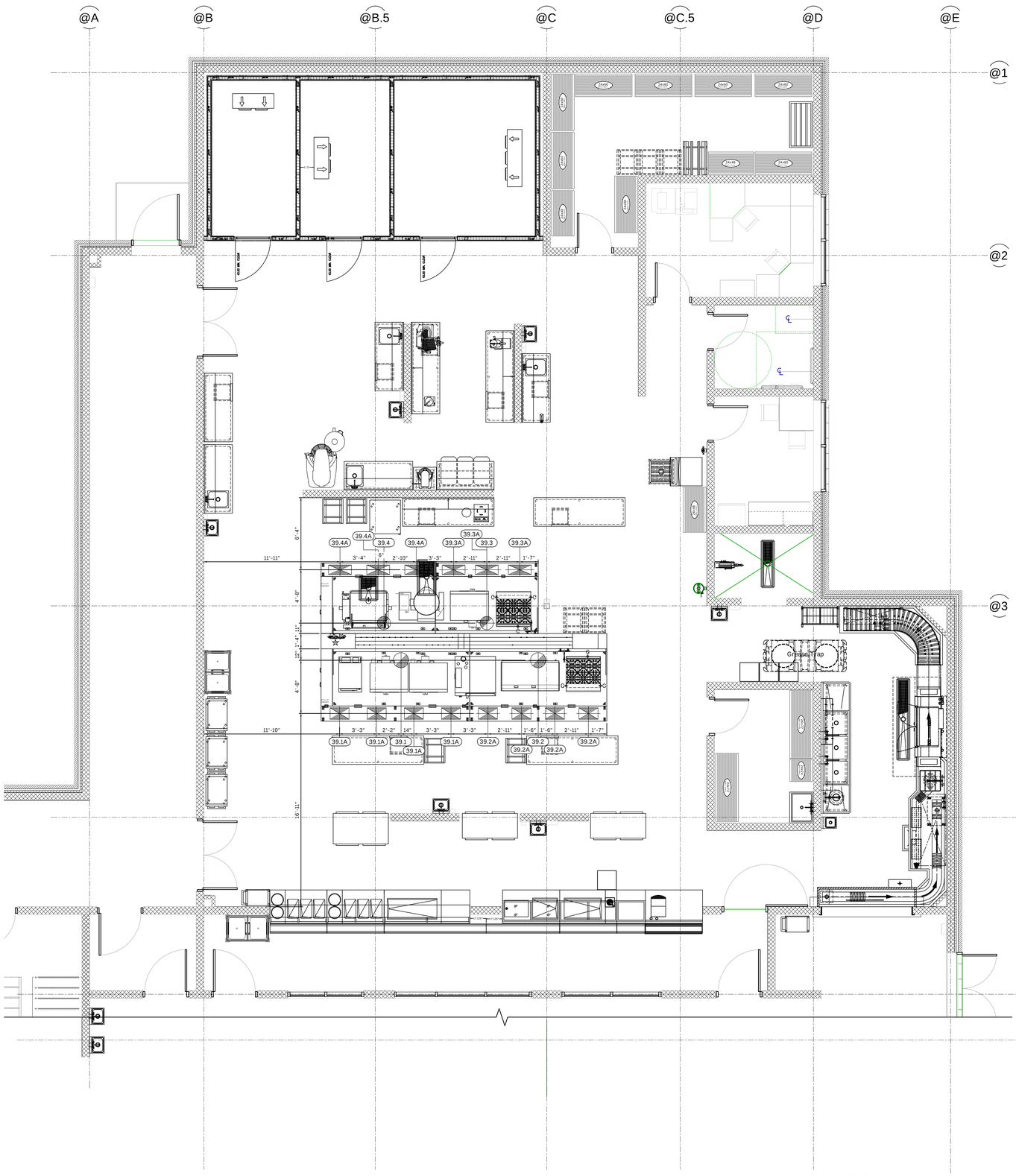
Report Date: 03/29/2024
Description : New one-story with a penthouse addition to existing structure for commercial kitchen and dining space. Addition totals 11,124 square feet and includes plumbing, HVAC, electrical, food service equipment, communications and IT, and associated site work for new construction.
Address : 8303 PLATT RD, SALINE, MI, 48176
Record Type : Bureau of Construction Codes Plan Review Application
Document Filename : FS2.04.pdf

Reviewer Contact Information:

Reviewer Name	Reviewer Email	Reviewer Phone
Daniel Morris	MorrisD9@michigan.gov	517-927-9734

General Comments

Markups for this Approved Document or Plan



VENTILATION SCHEDULE									
ITEM NO	QTY	EQUIPMENT CATEGORY	HVAC EXHAUST DUCT SIZE (IN)	HVAC EXHAUST CFM	HVAC EXHAUST SPWG	HVAC MAKE-UP DUCT SIZE (IN)	HVAC MAKE-UP CFM	HVAC MAKE-UP SPWG	HVAC AFF (IN)	HVAC REMARKS
39.1	1	VENTILATION SYSTEM	16"DIA	2350	-0.764				DFA @ 113"-AFF	
39.1A						(4)12" X 20"	637(EA)	0.217	DFA @ 113"-AFF	
39.2			16"DIA	2750	-1.046				DFA @ 113"-AFF	
39.2A						(4)12" X 20"	637(EA)	0.217	DFA @ 113"-AFF	
39.3			14"DIA	1800	-0.666				DFA @ 113"-AFF	
39.3A						(3)10" X 24"	566(EA)	0.174	DFA @ 113"-AFF	
39.4			14"DIA	1800	-0.666				DFA @ 113"-AFF	
39.4A						(3)10" X 24"	633(EA)	0.215	DFA @ 113"-AFF	

MECHANICAL

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STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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ADAM LACH, RA, DIRECTOR

FILE NO.
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171C0DHHS7255

CONTRACT NO.
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SALINE, MICHIGAN

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KITCHEN VENTILATION PLAN

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PROJECT DATE
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CHECKED BY
T.M.M.

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Record Type : Bureau of Construction Codes Plan Review Application
Document Filename : M7.03 MECHANICAL SCHEDULES.pdf

Reviewer Contact Information:

Reviewer Name	Reviewer Email	Reviewer Phone
Daniel Morris	MorrisD9@michigan.gov	517-927-9734

General Comments

Markups for this Approved Document or Plan

AIR HANDLING UNIT SUPPLY AIR FAN SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	E.S.P. IN. W.G.	T.S.P. IN. W.G.	MINIMUM WHEEL DIAMETER INCHES	RPM	FAN CLASS	MOTOR				MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
									BHP	HP	RPM	DRIVE TYPE		VOLTS	PHASE	SCCR KA (NOTE 5)	OPTIONS/ ACCESSORIES		
RF-1	AHU-21H	CENTRIFUGAL	10,000	1.0	1.19	22.25	2403	2	5.12	7.5	1750	DIRECT	VFD	460	3			CAH021GDGC	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
3. DESIGN MINIMUM OUTSIDE AIRFLOW CFM (VENTILATION) LISTED IS BASED ON THE ESTIMATED MAXIMUM OCCUPANT LOAD. REFER TO TEMPERATURE CONTROL DRAWINGS FOR OUTSIDE AIR CONTROL SEQUENCE.
4. REFER TO AIR HANDLING UNIT FILTER SCHEDULE FOR AIR PRESSURE DROP TO BE USED FOR TOTAL STATIC PRESSURE CALCULATIONS.
5. CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

KEYED NOTES:
1. PROVIDE BUNGY CORD MAINTENANCE LED LIGHT 235" LONG, WITH MAGNETIC BASE AND FLEXIBLE CORD
2. PROVIDE TWO BLANK OFF SHEETS FOR SUPPLY FAN

MODULAR AIR HANDLING UNIT COMPONENT SCHEDULE

UNIT IDENTIFICATION	POSITION NUMBER 1	POSITION NUMBER 2	POSITION NUMBER 3	POSITION NUMBER 4	POSITION NUMBER 5	POSITION NUMBER 6	POSITION NUMBER 7	POSITION NUMBER 8	POSITION NUMBER 9	KEYED NOTES
AHU-21H	PLENUM	ACCESS	RF-1	ECONOMIZER	AF-1	HC-1	CC-1	ACCESS	SF-1	1
AHU-22H	PLENUM	AF-2	HC-2	ACCESS	SF-2	---	---	---	---	1

GENERAL NOTES:
1. MODULES SELECTED BASED ON DAIKIN INDOOR MODULAR CLIMATE CHANGER AIR HANDLING UNIT.
2. POSITION NUMBERS ARE INDICATED IN THE DIRECTION OF AIRFLOW FROM RETURN AIR INLET TO SUPPLY AIR DISCHARGE.

KEYED NOTES:
1. AHU TO BE SHIPPED IN SECTIONS AND THEN BROKEN DOWN TO FIT THROUGH EXISTING DOORWAYS. CONTRACTOR TO REASSEMBLE AHU IN ROOM UNDER DIRECTION FROM MANUFACTURER
2. AHU IS IS PRE=PURCHASED AND ASSIGNED TO THE CONTRACTOR FOR DELIVERY AND INSTALLATION

MODULAR AIR HANDLING UNIT DIMENSIONS

UNIT IDENTIFICATION	MAXIMUM UNIT LENGTH	MAXIMUM UNIT WIDTH	MAXIMUM UNIT HEIGHT	MAXIMUM UNIT WEIGHT POUNDS	MANUFACTURER LEAD TIME	MANUFACTURER	KEYED NOTES
AHU-21H	310"	90"	58"	5504	---	DAIKIN	1
AHU-22H	166"	80"	52"	2877	---	DAIKIN	1

GENERAL NOTES:
1. FOR REFERENCE ONLY

KEYED NOTES:
1. AHU TO BE SHIPPED IN SECTIONS AND THEN BROKEN DOWN TO FIT THROUGH DOORWAYS. CONTRACTOR TO REASSEMBLE AHU IN ROOM UNDER DIRECTION FROM MANUFACTURER

AIR HANDLING UNIT FILTER SCHEDULE

UNIT I.D.	SYSTEM SERVED	TYPE	AIRFLOW CFM	AIR PRESS. DROP		EFFICIENCIES	FILTER MEDIA					HOUSING			MODEL NO.	KEYED NOTES
				INITIAL IN. W.G.	DIRTY IN. W.G.	MERV	QUAN.	WIDTH IN.	HEIGHT IN.	DEPTH IN.	MIN. MEDIA FACE AREA SQ. FT.	ACCESS TYPE	WIDTH IN.	HEIGHT IN.		
AF-1	AHU-21H	PLEATED	10,000	0.22	1.0	8	3/3	24/24	24/20	2	20	SIDE	18	48	CAH021GDGC	
AF-1	AHU-21H	VARICEL SH CARTRIDGE	10,000	0.53	1.5	13	3/3	24/24	24/20	12	20	SIDE	18	48	CAH021GDGC	
AF-2	AHU-22H	PLEATED	8700	0.08	1.0	8	3/6/3	24/20/12	24/24/24	2/2/2	12/20/6	SIDE	26	42	CAH018GDGM	

GENERAL NOTES:
1. MODEL NUMBERS ARE FARR UNLESS OTHERWISE NOTED.
2. PROVIDE 25% TO 30% EFFICIENT 2 INCH THROW AWAY PREFILTERS
3. MERV DESIGNATES THE "MINIMUM EFFICIENCY REPORTING VALUE" AS EVALUATED UNDER ASHRAE STANDARD 52.2 1999.
4. AIR HANDLING UNIT TOTAL STATIC PRESSURE FOR VARIABLE AIR VOLUME SYSTEMS IS BASED ON THE FILTER DIRTY AIR PRESSURE DROP AND AVERAGE/MIDLIFE FILTER AIR PRESSURE DROP FOR CONSTANT VOLUME SYSTEMS UNLESS NOTED OTHERWISE.

KEYED NOTES:
1. PROVIDE THREE SETS OF EACH TYPE OF FILTER

THE GREAT SEAL OF THE STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

MECHANICAL

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AIR HANDLING UNIT SUPPLY AIR FAN SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	OUTSIDE AIR FLOW CFM	E.S.P. IN. W.G.	T.S.P. IN. W.G.	MINIMUM WHEEL DIAMETER INCHES	RPM	FAN CLASS	MOTOR				MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
										BHP	HP	RPM	DRIVE TYPE		VOLTS	PHASE	SCCR KA (NOTE 5)	OPTIONS/ ACCESSORIES		
SF-1	AHU-21H	CENTRIFUGAL	10,000	3000	2.0	4.89	24.5	1796	2	11.29	15.0	1750	DIRECT	VFD	460	3			CAH021GDGC	
SF-2	AHU-22H	CENTRIFUGAL	8700	8700	1.5	3.51	18.25	3650	2	7.9	10	3500	DIRECT	VFD	460	3				

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
3. DESIGN MINIMUM OUTSIDE AIRFLOW CFM (VENTILATION) LISTED IS BASED ON THE ESTIMATED MAXIMUM OCCUPANT LOAD. REFER TO TEMPERATURE CONTROL DRAWINGS FOR OUTSIDE AIR CONTROL SEQUENCE.
4. REFER TO AIR HANDLING UNIT FILTER SCHEDULE FOR AIR PRESSURE DROP TO BE USED FOR TOTAL STATIC PRESSURE CALCULATIONS.
5. CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

KEYED NOTES:
1. PROVIDE BUNGY CORD MAINTENANCE LED LIGHT 235" LONG, WITH MAGNETIC BASE AND FLEXIBLE CORD
2. PROVIDE TWO BLANK OFF SHEETS FOR SUPPLY FAN

CHILLED WATER COOLING COIL SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	MAXIMUM NUMBER ROWS	MAXIMUM FIN DENSITY FINS/INCH	TOTAL CAPACITY MBH	AIR						MINIMUM FACE AREA SQ. FT.	WATER						CONTROL VALVE W.P.D. FT. HEAD	MODEL NUMBER	KEYED NOTES
					AIRFLOW CFM	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	MAXIMUM A.P.D. IN. W.G.		FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD				
CC-1	AHU-21H	6	9	388.6	10000	79.7	65.9	53.9	53.0	0.69	20.1	63.7	W	44.0	56.2	16.0		15	5WL0906B	#

GENERAL NOTES:
1. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
2. COIL SELECTIONS BASED ON .00025 FOULING FACTOR.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

HOT WATER HEATING COIL SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	MAXIMUM NUMBER ROWS	MAXIMUM FIN DENSITY FINS/INCH	CAPACITY MBH	AIR				MINIMUM FACE AREA SQ. FT.	WATER					CONTROL VALVE W.P.D. FT. HD.	MODEL NUMBER	KEYED NOTES
					AIRFLOW CFM	E.D.B. °F	L.D.B. °F	MAXIMUM A.P.D. IN. W.G.		FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD			
HC-1	AHU-21H	2	10	305.5	10000	43.0	70.9	0.30	15.1	19.7	PG35	130	99	2.00	15	5WH1002B	
HC-2	AHU-22H	2	10	804.5	8700	-10.0	82.0	0.33	16.0	42.2	PG35	130	94	8.6	15	5WH1002C	

GENERAL NOTES:
1. MODEL NUMBERS ARE DAIKIN UNLESS OTHERWISE NOTED.
2. COIL SELECTION BASED ON .00025 FOULING FACTOR.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

AIR TERMINAL TYPE

DUCT CONNECTIONS		DISCHARGE SOUND POWER/RADIATED SOUND POWER – dB						DIMENSIONS		MODEL NUMBER	KEYED NOTES
INLET SIZE INCHES	OUTLET SIZE INCHES	125 Hz	250 Hz	500 Hz	1000 Hz	2000 HZ	4000 HZ	LENGTH INCHES	HEIGHT INCHES		
6ø	12x8	73/66	69/63	62/52	56/42	53/40	49/36			ESV	1
8ø	12x10	72/68	70/59	66/53	63/47	57/46	53/46			ESV	2
10ø	14x12-1/2	78/71	70/61	65/56	61/50	58/47	53/45			ESV	3
12ø	16x15	76/72	73/63	69/59	65/53	61/48	57/46			ESV	4
16ø	24x18	78/70	73/63	70/58	68/53	64/52	59/50			ESV	5
24x16	38x18	83/74	81/69	76/63	74/54	73/48	68/41			ESV	6

GENERAL NOTES:
1. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.
2. MAXIMUM SOUND POWER LEVEL BASED ON 2" PRESSURE DROP ACROSS UNIT WITH NO ALLOWANCE FOR EXTERNAL ATTENUATION.

KEYED NOTES:
1. BASED ON 350 CFM
2. BASED ON 650 CFM
3. BASED ON 900 CFM
4. BASED ON 1500 CFM
5. BASED ON 2500 CFM
6. BASED ON 5300 CFM

AIR TERMINAL UNIT WITH HOT WATER COIL SCHEDULE

UNIT IDENTIFICATION	INLET SIZE	AREA SERVED	UNIT SERVED FROM	AIR FLOW					CAPACITY MBH	NUMBER ROWS	HEATING COIL (NOTE 3)								KEYED NOTES
				COOLING MAX CFM	COOLING MIN. CFM	HEATING MIN. CFM	HEATING MAX CFM	MAXIMUM A.P.D. W/COIL IN. W.G.			AIR		WATER						
											E.D.B °F	L.D.B °F	FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD	CONTROL VALVE W.P.D. FT. HEAD	CONTROL VALVE TYPE	
VBR-H108	6	H132,H119, H133	AHU-21H	260	80	80	260	0.11	5.0	2	55.0	90.0	0.5	PG35	130	100	0.29	15	3-WAY	
VBR-H109	12	DINING H131	AHU-21H	1080	325	325	1080	0.16	20.6	2	55.0	90.0	1.2	PG35	130	100	1.41	15	3-WAY	
VBR-H110	12	DINING H131	AHU-21H	1080	325	325	1080	0.16	20.6	2	55.0	90.0	1.2	PG35	130	100	1.41	15	3-WAY	
VBR-H111	12	DINING H131/ SERVERY H130	AHU-21H	1280	325	325	1280	0.22	24.4	2	55.0	90.0	1.5	PG35	130	100	2.77	15	3-WAY	
VBR-H112	12	DINING H131/ SERVERY H130	AHU-21H	1280	325	325	1280	0.22	24.4	2	55.0	90.0	1.5	PG35	130	100	2.77	15	3-WAY	
VBR-H113	12	KITCHEN H123	AHU-21H	1260	325	325	1260	0.21	24.0	2	55.0	90.0	1.4	PG35	130	100	2.63	15	3-WAY	
VBR-H114	12	KITCHEN H123	AHU-21H	1375	325	325	1375	0.22	24.3	2	55.0	90.0	1.5	PG35	130	100	2.74	15	3-WAY	
VBR-H115	6	BREAK ROOM H127	AHU-21H	205	80	80	205	0.08	4.0	2	55.0	90.0	0.5	PG35	130	100	0.11	15	3-WAY	
VBR-H116	12	KITCHEN H123	AHU-21H	1330	325	325	1330	0.30	25.3	2	55.0	90.0	1.5	PG35	130	100	1.78	15	3-WAY	
VBR-H117	6	OFFICE H125	AHU-21H	200	80	80	200	0.07	3.9	2	55.0	90.0	0.5	PG35	130	100	0.10	15	3-WAY	
VBR-H118	8	CORRIDOR H122	AHU-21H	600	145	145	600	0.34	11.5	2	55.0	90.0	0.7	PG35	130	100	4.95	15	3-WAY	
VBR-H119	6	STORAGE H124	AHU-21H	150	80	80	150	0.03	3.1	1	55.0	90.0	0.5	PG35	130	100	0.05	15	3-WAY	

GENERAL NOTES:
1. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.
2. MAXIMUM PRESSURE DROP SCHEDULED SHALL BE THE MAXIMUM ALLOWABLE STATIC PRESSURE FOR BOX AND COIL AT THE MAXIMUM CFM.
3. HEATING COIL SELECTION BASED ON HEATING MAXIMUM AIR FLOW.
4. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

KITCHEN EXHAUST DUCT REQUIREMENT SCHEDULE

EXHAUST SYSTEM	MINIMUM DESIGN PRESSURE	MINIMUM DESIGN TEMPERATURE (DEG. F)	WORKING PRESSURE	TEST PRESSURE	LIGHT TEST	TEST TIME	ALLOWABLE LEAKAGE
GREASE DUCT	20 PSIG	>200	-5" PSIG	20 PSIG	TEST ALL JOINTS PER NFPA 96	2 HOURS	NONE

NOTES:
1. CONTRACTOR TO TEST ALL JOIST PER NPFA 96
2. CAP END OF GREASE DUCTS AND TEST WITCH COMPRESSED AIR, REDO JOIST THAT DO NOT PASS, HOLD TEST FOR MINIMUM 2 HOURS

PUMP SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	LOCATION	TYPE	COUPLING TYPE	WATERFLOW GPM	FLUID TYPE	COLDEST SYSTEM OPERATING TEMP. °F FOR PUMP SELECTION	PUMP HEAD FT.	OVERLOAD GPM	MINIMUM EFFICIENCY %	MOTOR			MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
											BHP	HP	RPM		VOLTS	PHASE	SCCR KA (NOTE 4)	OPTIONS/ ACCESSORIES		
P-54	HWH	PENTHOUSE	IN-LINE	CLOSE	140	PG35	70 °F	69	NON-OVERLOADING	77.4	3.97	5	3600	AUTO	480	3	5	--	E-90-2AAC	
P-55	HWH	PENTHOUSE	IN-LINE	CLOSE	140	PG35	70 °F	69	NON-OVERLOADING	77.4	3.97	5	3600	AUTO	480	3	5	--	E-90-2AAC	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBER ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.
4. CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

KEYED NOTES:
1. PUMPS SIZED FOR CURRENT CONNECTED LOAD, PIPING SIZE FOR WEST BUILDING FUTURE CONNECTED LOAD

NO.	REVISION	DATE
2	BULLETIN #1	01/19/2024
1	STATE REVIEW SET	12/20/23

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM LACH, R.A., DIRECTOR

FILE NO.
491/20167.SDW

FUNDING CODE
171CODHHS7255

CONTRACT NO.
Y22003

WTAARCH.COM

WTA ARCHITECTS

100 S Jefferson Ave, Suite 601
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PROJECT TITLE
491/20167.SDW - PHASE 500:
CENTER FOR FORENSIC PSYCHIATRY - CREATE KITCHEN
SALINE, MICHIGAN

SHEET TITLE
MECHANICAL SCHEDULES

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PBA Project No.: 2021-0402

PROJECT NUMBER
2021094

PROJECT DATE
AUGUST 23, 2023

CHECKED BY
WEK

SHEET NUMBER
M7.03

Department of Licensing and Regulatory Affairs

1st Floor Ottawa Building
611 W. Ottawa Street
Lansing, MI 48933

Final Report - Approved

Application Number: PR2023BCC-002591

Report Date: 03/29/2024
Description : New one-story with a penthouse addition to existing structure for commercial kitchen and dining space. Addition totals 11,124 square feet and includes plumbing, HVAC, electrical, food service equipment, communications and IT, and associated site work for new construction.
Address : 8303 PLATT RD, SALINE, MI, 48176
Record Type : Bureau of Construction Codes Plan Review Application
Document Filename : M7.04 MECHANICAL SCHEDULES.pdf

Reviewer Contact Information:

Reviewer Name	Reviewer Email	Reviewer Phone
Daniel Morris	MorrisD9@michigan.gov	517-927-9734

General Comments

Markups for this Approved Document or Plan

POWER VENTILATOR SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	TYPE	AIRFLOW CFM	T.S.P. IN. W.G.	TIP SPEED FPM	FAN RPM	MOTOR				CURB HEIGHT INCHES	MODULATION/ CONTROL TYPE	ELECTRICAL				MAXIMUM SOUND POWER LEVELS												MODEL NUMBER	KEYED NOTES
							BHP	HP	RPM	DRIVE TYPE			VOLTS	PHASE	SCCR KA	OPTIONS/ ACCESSORIES	UNIT DISCHARGE Lw BY OCTAVE BAND								UNIT INLET Lw BY OCTAVE BAND									
																	63 HZ (DB)	125 HZ (DB)	250 HZ (DB)	500 HZ (DB)	1000 HZ (DB)	2000 HZ (DB)	4000 HZ (DB)	8000 HZ (DB)	63 HZ (DB)	125 HZ (DB)	250 HZ (DB)	500 HZ (DB)	1000 HZ (DB)	2000 HZ (DB)	4000 HZ (DB)	8000 HZ (DB)		
EF-6H	TOILET H126	CENTRIFUGAL	100	0.25	3161	1486	0.01	1/10	1725	DIRECT	18	AUTO	120	1	5	B	---	---	---	---	---	---	---	---	57	61	58	48	47	48	39	32	G-060-VG	
EF-7H	CHEMICAL STORAGE H129	CENTRIFUGAL	200	0.5	3669	1725	0.03	1/15	1725	DIRECT	18	AUTO	120	1	5	B	---	---	---	---	---	---	---	---	68	71	69	54	49	47	43	38	G-070-VG	
EF-8H	DISHWASHER HOOD	CENTRIFUGAL	200	0.5	3669	1725	0.03	1/15	1725	DIRECT	18	AUTO	120	1	5	B	---	---	---	---	---	---	---	---	68	71	69	54	49	47	43	38	G-070-VG	
EF-9H	KITCHEN HOOD	CENTRIFUGAL	3600	1.0	6693	1538	1.39	2	1725	DIRECT	18	AUTO	208	1	5	B	---	---	---	---	---	---	---	---	78	85	86	84	78	74	71	68	CUE-160-VG	
EF-10H	KITCHEN HOOD	CENTRIFUGAL	5100	1.5	7299	1304	2.53	3	1360	DIRECT	18	AUTO	208	3	5	B	---	---	---	---	---	---	---	---	93	81	88	74	70	69	67	62	CUE-200-VG	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED.

STEAM HUMIDIFIER SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	AHU DISTRIBUTION TUBE BANK								MODULATION/ CONTROL TYPE	REMARKS
		QUANTITY REQUIRED	TYPE	MODEL LBS/HR	AHU AIR TEMPERATURE °F	AHU WIDTH INCHES	AHU HEIGHT INCHES	MAXIMUM ABSORPTION DISTANCE INCHES	MODEL		
H-1	AHU-21H	1	INSULATED MULTIPLE TUBES	62.8	88.9	78	48	26"	DRISTEEM	AUTO	

NOTE:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE DRISTEEM UNLESS OTHERWISE NOTED.
3. PROVIDE STEAM DISTRIBUTION ASSEMBLY TO AHU MANUFACTURE FOR MOUNTING IN AHU HUMIDIFIER SECTION.

GAS FIRED CONDENSING BOILER SCHEDULE

UNIT IDENTIFICATION	TURNDOWN	FUEL		AGA INPUT MBH	AGA OUTPUT MBH	MINIMUM EFFICIENCY (%)	DIMENSIONS			WATER				UNIT CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
		TYPE	MAXIMUM ALLOWABLE OUTPUT AT MINIMUM FIRING RATE (MBH)				DEPTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)	E.W.T. °F	L.W.T. °F	FLOW GPM	MAXIMUM W.P.D. FT. HD.		VOLTS	PHASE	FLA	OPTIONS/ ACCESSORIES		
B-11	20:1	NAT GAS	100	2000	1800	90	43.6	28	78	90	130	140	7	AUTO	120	1	16	B	BMK2000	
B-12	20:1	NAT GAS	100	2000	1800	90	43.6	28	78	90	130	140	7	AUTO	120	1	16	B	BMK2000	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE AERCO UNLESS OTHERWISE NOTED.
3. PROVIDE BOILER WITH CONDENSATE NEUTRALIZATION TANK ASSEMBLY.
4. MINIMUM PRESSURE RATING OF 125 PSIG.

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

UNIT IDENTIFICATION	TYPE	FACE SIZE	NECK SIZE	FRAME TYPE	ACCESSORY	CONSTRUCTION	FINISH	MODEL NUMBER	KEYED NOTES
S-1	DIFFUSER	24x24	SEE PLANS	LAY-IN	NONE	STEEL	WHITE	SQD	
R-1	GRILLE	24x24	SEE PLANS	LAY-IN	NONE	ALUMINUM	WHITE	80	
R-2	GRILLE	24x12	SEE PLANS	LAY-IN	NONE	ALUMINUM	WHITE	80	
E-1	GRILLE	12x12	SEE PLAN	LAY-IN	NONE	ALUMINUM	WHITE	80	
E-2	GRILLE	24x24	SEE PLAN	LAY-IN	NONE	ALUMINUM	WHITE	80	
L-1	LOUVER	72x78	SEE PLAN	FLANGED	NONE	ALUMINUM	MILL	ESD-635	1
L-2	LOUVER	66x78	SEE PLAN	FLANGED	NONE	ALUMINUM	MILL	ESD-635	1

GENERAL NOTES:
1. MODEL NUMBERS ARE PRICE UNLESS OTHERWISE NOTED.

KEYED NOTES:
1. MODEL NUMBERS ARE GREENHECK.

HOT WATER CABINET UNIT HEATER SCHEDULE

UNIT IDENTIFICATION	CAPACITY MBH	AIR			FAN		WATER					CONTROL VALVE W.P.D. FT. HEAD	DIMENSIONS			RECESS DEPTH INCHES	FILTER		MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
		AIRFLOW CFM	E.D.B. °F	L.D.B. °F	HP	RPM	FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD		LENGTH INCHES	HEIGHT INCHES	DEPTH INCHES		TYPE	AREA SQ. FT.		VOLTS	PHASE	SCCR KA	OPTIONS/ ACCESSORIES		
CUH-3H	19.0	860	60	80.4	1/10	1050	2.8	PG35	130	100	1.5	15	61	44	9.5	9	WASHABLE	3.5	AUTO	120	1	5	B	RC-1200-08	
CUH-4H	19.0	860	60	80.4	1/10	1050	2.8	PG35	130	100	1.5	15	61	44	9.5	9	WASHABLE	3.5	AUTO	120	1	5	B	RC-1200-08	
CUH-5H	30.4	1040	60	86.9	1/10	1050	4.4	PG35	130	100	1.5	15	66	49	9.5	9	WASHABLE	3.5	AUTO	120	1	5	B	RC-1200-10	1
CUH-6H	28.2	845	60	90.8	1/10	1050	4.1	PG35	130	100	1.5	15	61	44	9.5	0	WASHABLE	3.5	AUTO	120	1	5	B	W-1110-08	1

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE STERLING UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

KEYED NOTES:
1. HIGH CAPACITY COIL

HOT WATER PROPELLER FAN UNIT HEATER SCHEDULE

UNIT IDENTIFICATION	CAPACITY MBH	AIRFLOW CFM	LEAVING AIR TEMPERATURE °F	FAN		WATER					CONTROL VALVE W.P.D. FT. HEAD	MODULATION/ CONTROL TYPE	ELECTRICAL				MODEL NUMBER	KEYED NOTES
				HP	RPM	FLOW GPM	FLUID TYPE	E.W.T. °F	L.W.T. °F	MAXIMUM W.P.D. FT. HEAD			VOLTS	PHASE	SCCR KA	OPTIONS/ ACCESSORIES		
UH-8H	12.7	750	104	1/20	1000	1.8	PG35	130	100	0.12	15	AUTO	120	1	---	B	HS-48	
UH-9H	53.0	1800	103	1/12	1000	3.9	PG35	130	100	0.36	15	AUTO	120	1	---	B	HS-108	
UH-10H	53.0	1800	103	1/12	1000	3.9	PG35	130	100	0.36	15	AUTO	120	1	---	B	HS-108	
UH-11H	12.7	750	104	1/20	1000	1.8	PG35	130	100	0.12	15	AUTO	120	1	---	B	HS-48	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE STERLING UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

EXPANSION TANK SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	ESTIMATED TOTAL SYSTEM VOLUME GALLON	TYPE	OPERATING PRESSURE		OPERATING TEMPERATURE		TANK VOLUME GALLON	ACCEPTANCE VOLUME GALLON	DIMENSIONS		MODEL NUMBER	REMARKS
				MINIMUM PSIG	MAXIMUM PSIG	MINIMUM °F	MAXIMUM °F			DIAMETER INCHES	HEIGHT INCHES		
ET-1	HWHS	200	BLADDER	16	35	40	140	10	7.43	12	24	B35	

NOTE:
1. MODEL NUMBERS ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.
2. COLD FILL PRESSURE = 12PSI

GLYCOL MAKEUP UNIT SCHEDULE

UNIT IDENTIFICATION	FLUID TYPE	TANK VOLUME GAL.	FILL PRESSURE PSI	ELECTRICAL		MODEL NUMBER	KEYED NOTES
				VOLTS	PHASE		
GMU-1	PG35	18	15	115	1	GMP SERIES GMP-18	

GENERAL NOTES:
1. MODEL NUMBERS ARE WESSELS UNLESS OTHERWISE NOTED.
2. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

AIR & DIRT SEPARATOR SCHEDULE

INLET/OUTLET PIPE SIZE (INCHES)	MAX SYSTEM FLOW (GPM)	MAX PRESSURE DROP CLEAN (FT HD)	OPERATING WEIGHT (LBS)	TYPE	MODEL NUMBER
2	35	0.70	66	STANDARD VELOCITY / AIR & DIRT	VDT 200 FA
2 1/2	57	0.75	75	STANDARD VELOCITY / AIR & DIRT	VDT 250 FA
3	100	5.0	178	HIGH VELOCITY / AIR & DIRT	VHT 300 FA
4	220	6.0	186	HIGH VELOCITY / AIR & DIRT	VHT 400 FA
6	650	8.0	336	HIGH VELOCITY / AIR & DIRT	VHT 600 FA
8	1400	9.0	590	HIGH VELOCITY / AIR & DIRT	VHT 800 FA
10	2400	10.0	986	HIGH VELOCITY / AIR & DIRT	VHT 1000 FA
12	3500	12.0	1518	HIGH VELOCITY / AIR & DIRT	VHT 1200 FA

NOTE:
1. MODEL NUMBERS ARE SPIROTHERM UNLESS OTHERWISE NOTED.
2. SEPARATOR FLANGE CONNECTION MUST BE A MINIMUM OF THE PIPE DIAMETER SIZE OF WHICH THE SEPARATOR IS INSTALLED.

HOT WATER FINNED TUBE RADIATION SCHEDULE

UNIT IDENTIFICATION	CAPACITY BTUH/ LINEAR FT.	ENTERING AIR TEMP °F	FLUID TYPE	WATER TEMP.		ENCLOSURE			ELEMENT				CONTROL VALVE W.P.D. FT. HEAD	MODEL NUMBER	KEYED NOTES
				E.W.T. °F	AVERAGE °F	TYPE	LENGTH INCHES	HEIGHT INCHES	TUBE DIAMETER INCHES	WIDTH INCHES	HEIGHT INCHES	NUMBER OF TIERS			
FTR-1	300	65	W	130	110	SLOPE TOP (JVB-S-LT)	SEE PLAN	14	0.75	4.25	3.63	1	15	C3/4-433-14B	

GENERAL NOTES:
1. MODEL NUMBERS ARE STERLING UNLESS OTHERWISE NOTED.
2. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

HOT WATER RADIANT CEILING PANEL SCHEDULE

UNIT IDENTIFICATION	CAPACITY BTUH/ LINEAR FT.	FLUID TYPE	WATER TEMP		DIMENSIONS		FINISH	CONSTRUCTION	CONTROL VALVE W.P.D. FT. HEAD	MODEL NUMBER	KEYED NOTES
			E.W.T. °F	L.W.T. °F	LENGTH INCHES	WIDTH INCHES					
RCP-1	142	PG35	130	100	SEE PLANS	12	WHITE	STEEL	15	RC-4	

GENERAL NOTES:
1. MODEL NUMBERS ARE RUNTAL UNLESS OTHERWISE NOTED.
2. EXTRUDED ARCHITECTURAL SPACE MASTERY SERIES HEF-2 FLUTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

VARIABLE FREQUENCY CONTROLLER SCHEDULE

UNIT IDENTIFICATION	SYSTEM SERVED	LOCATION	RATED HORSEPOWER	OPERATING HORSEPOWER	REMARKS
VFC-AHU-21H-SF	SF-1	SEE DRAWINGS	15	11.3	PRIMARY
VFC-AHU-21H-RF	RF-1	SEE DRAWINGS	7.5	5.1	PRIMARY
VFC-AHU-22H-SF	SF-2	SEE DRAWINGS	10	7.9	PRIMARY
VFC-EF-9H	EF-9H	SEE DRAWINGS	2	1.4	PRIMARY
VFC-EF-10H	EF-10H	SEE DRAWINGS	3	2.5	BACKUP

NOTE:
1. REFER TO SPECIFICATIONS FOR APPROVED MANUFACTURERS.
2. REFER TO ELECTRICAL WIRING DIAGRAM FOR CONNECTION REQUIREMENTS.

MECHANICAL

These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

NO.	REVISION	DATE
1	ADDENDUM #3	09/20/23
	STATE RESUBMITTAL SET	

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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PBA Project No.: 2021-0402

PROJECT NUMBER
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CHECKED BY
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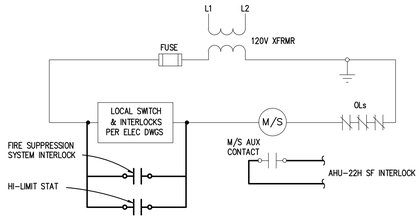
Reviewer Contact Information:

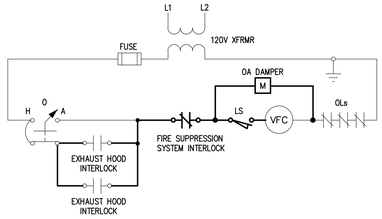
Reviewer Name	Reviewer Email	Reviewer Phone
Daniel Morris	MorrisD9@michigan.gov	517-927-9734

General Comments

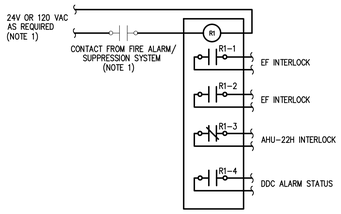
Markups for this Approved Document or Plan



KITCHEN HOOD EF M/S WIRING



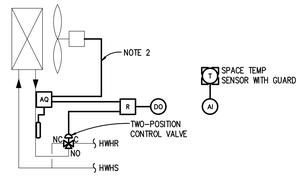
AHU-22H SF M/S WIRING



KEF'S AND AHU-22H CONTROL

NOTE:

1. FIRE SUPPRESSION SYSTEM IS NEW. COORDINATE VOLTAGE REQUIREMENTS, WIRING, ETC. WITH FIRE SUPPRESSION SYSTEM MANUFACTURER.



HWH UH & CUH CONTROL - NEW WORK

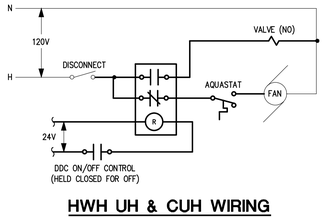
TYPICAL.

NOTES:

1. REFER TO FLOOR PLANS FOR QUANTITY AND LOCATION OF UNITS.
2. AQUASTAT SHALL BE WIRED IN SERIES WITH FAN CONTROL WIRING CIRCUIT.

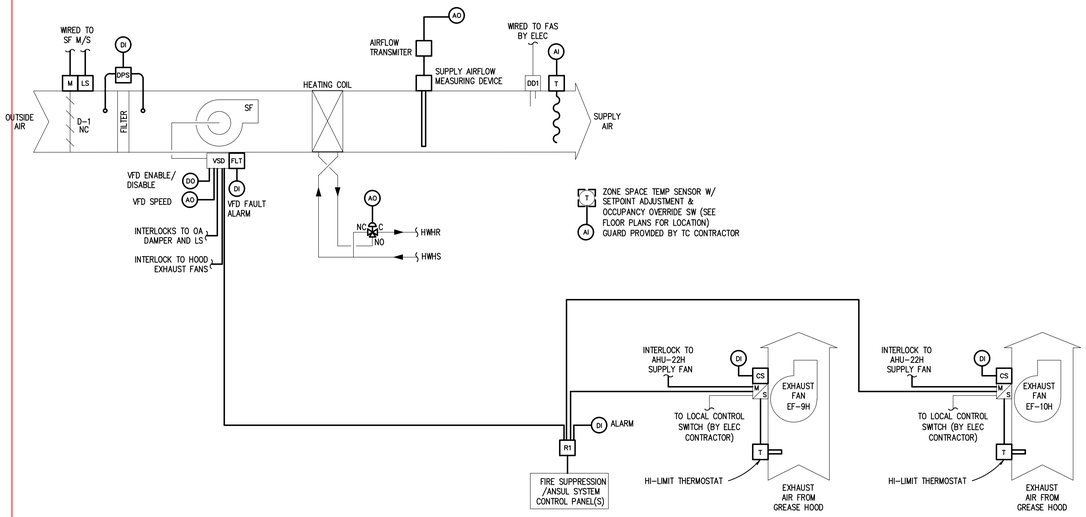
SEQUENCE OF OPERATION:

DDC SHALL ENABLE/DISABLE FAN CIRCUIT AND OPEN/CLOSE HEATING VALVE AS REQUIRED TO MAINTAIN SPACE TEMP SETPOINT OF 68°F DURING BLDG OCCUPANCY AND 55 °F DURING BLDG UNOCCUPANCY. FAN SHALL ACTIVATE UPON PROOF OF HWHR FLOW BY AQ.



HWH UH & CUH WIRING

TYPICAL



KITCHEN EXHAUST HOODS (EF-9H & EF-10H) AND MAKE-UP AIR UNIT (AHU-22H) CONTROL

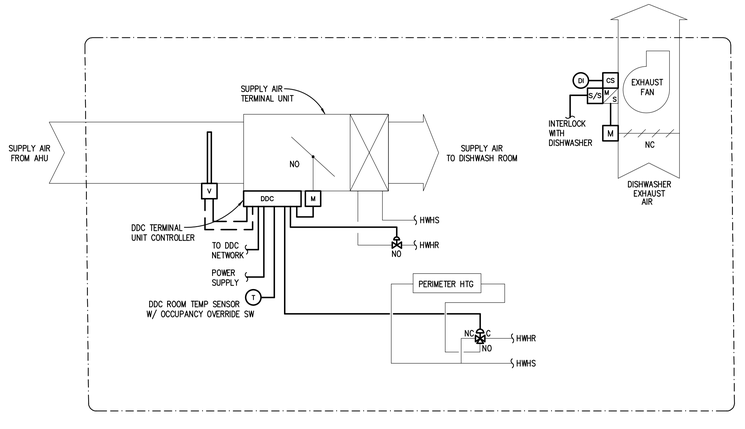
NOTES:

1. COORDINATE WIRING WITH EQUIPMENT SUPPLIERS.

SEQUENCE OF OPERATION

KITCHEN EXHAUST HOOD AND MAKE-UP AIR UNIT CONTROL):

1. AHU-22H/EF-9H/EF-10H SHALL BE CAPABLE OF BEING CONTROLLED INDIVIDUALLY.
2. EF-9H AND EF-10H SHALL BE STARTED AND STOPPED MANUALLY BY ITS ON/OFF SWITCH LOCATED NEAR THE KITCHEN EXHAUST HOOD.
3. WITH THE SUPPLY FAN VFC HAND/OFF/AUTO SWITCH AND EXHAUST MOTOR STARTER HAND/OFF/AUTO SWITCH(S) IN THE "AUTO" POSITION, THE SUPPLY FAN SHALL BE INTERLOCKED WITH THE KITCHEN HOOD EXHAUST FANS. WHENEVER THE KITCHEN HOOD EXHAUST FAN IS ENERGIZED, THE MAKE UP AIR UNIT SHALL BE ENERGIZED. WHENEVER THE KITCHEN HOOD EXHAUST FAN IS DE-ENERGIZED, THE MAKE UP AIR UNIT SHALL BE DE-ENERGIZED.
4. WHEN THE CONTROL CIRCUIT OF THE SUPPLY FAN IS ENERGIZED TO START, ITS OUTSIDE AIR DAMPER SHALL FULLY OPEN FIRST. AFTER THE DAMPER IS FULLY OPEN, THE OUTSIDE AIR DAMPER LIMIT SWITCH SHALL COMPLETE THE CONTROL CIRCUITS TO START THE SUPPLY FAN.
5. PROOF OF FLOW STATUS FOR THE SUPPLY FAN AND EXHAUST SHALL BE PROVEN TO THE DDC SYSTEM BY MEANS OF THE FAN MOTOR CURRENT SWITCH.
6. THE SUPPLY FAN VARIABLE FREQUENCY CONTROLLER SHALL BE MODULATED BASED ASSOCIATED KITCHEN HOOD EXHAUST FAN OPERATION. WHEN AN ASSOCIATED KITCHEN HOOD EXHAUST FAN IS ENERGIZED AS SENSED BY DDC THRU THE FAN MOTOR CURRENT SWITCH THE SUPPLY FAN VFC SHALL BE MODULATED TO THE EF CFM RATE.
7. THE DISCHARGE AIR TEMPERATURE SENSOR THROUGH DDC SHALL MODULATE THE UNITS HOT WATER HEATING (GLYCOL) COIL CONTROL VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT. THE DISCHARGE AIR SET POINT SHALL BE RESET BY THE SPACE TEMPERATURE BETWEEN 55 DEGREES F AND 95 DEGREES F TO MAINTAIN SPACE TEMPERATURE SET POINT OF 68 DEGREES F (ADJUSTABLE).
8. THE FILTER DIFFERENTIAL PRESSURE SWITCH SHALL ISSUE A DIRTY FILTER ALARM IF IT'S SET POINT IS REACHED.
9. IF THE LOW LIMIT SET POINT (40 DEGREES F ADJUSTABLE) OF THE DISCHARGE AIR SENSOR IS REACHED FOR MORE THAT 1 MINUTE (ADJUSTABLE) THROUGH DDC, THE SUPPLY AND EXHAUST FAN SHALL BE DE_ENERGIZED AND AN ALARM SHALL BE SENT THROUGH THE DDC SYSTEM.
10. WHEN THE SUPPLY FAN IS DE-ENERGIZED, THE OUTSIDE AIR DAMPER (D-1) SHALL CLOSE.
11. WHEN FIRE SUPPRESSION SYSTEM IS ACTIVATED, THE MAU SUPPLY FAN WILL BE DE-ACTIVATED AND THE KITCHEN HOOD EXHAUST FAN SHALL BE ACTIVATED REGARDLESS OF LOCAL CONTROL SWITCH POSITION. THIS CONDITION WILL ACTIVATE A DDC SYSTEM ALARM.
12. KITCHEN HOOD EXHAUST FAN MAY ALSO BE ACTIVATED BY HI-LIMIT THERMOSTAT REGARDLESS OF LOCAL CONTROL SWITCH POSITION, IF HEAT IS DETECTED UNDER THE KITCHEN HOOD.



DISHWASH AREA TERMINAL UNIT CONTROL WITH PERIMETER HEAT CONTROL DIAGRAM

NOTES:

1. REFER TO SHEET METAL PLANS FOR LOCATIONS AND QUANTITY OF UNITS. REFER TO HVAC PIPING PLANS FOR LOCATIONS OF ROOM TEMP SENSORS.

SEQUENCE OF OPERATION

AIR TERMINAL UNIT WITH PERIMETER HEATING – DISH WASH AREA:

NOTE: ALL SETPOINTS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS). APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS.

1. ALL TU'S ASSOCIATED WITH A SINGLE SPACE TEMP SENSOR SHALL CONTROL IN UNISON.
2. SUPPLY AIR TERMINAL UNIT'S (TU) VAV MINIMUM AND MAXIMUM AIRFLOW SETTINGS SHALL BE AS INDICATED ON THE MECHANICAL SCHEDULES. WHERE MINIMUM AND MAXIMUM AIRFLOW SETTINGS ARE THE SAME, THE TU CONTROLLER SHALL PERFORM CONSTANT AIR VOLUME CONTROL.
3. IN ALL MODES OF HEATING, TU DISCHARGE AIR TEMP SENSOR SHALL PROVIDE HIGH LIMIT SETPOINT CONTROL AT 90°F DAT.
4. WHEN ROOM TEMPERATURE RISES ABOVE THE SETPOINT, THE SUPPLY AIR TERMINAL UNIT CONTROLLER SHALL KEEP THE TEMPERING COIL VALVE AND PERIMETER HEATING CONTROL VALVE CLOSED AND SHALL MODULATE THE SUPPLY AIRFLOW BETWEEN ITS MINIMUM AND MAXIMUM SETTING TO MAINTAIN ROOM TEMPERATURE.
5. WHEN OA TEMP IS 60 DEG F OR BELOW AND ROOM TEMPERATURE FALLS BELOW SETPOINT, THE SUPPLY TERMINAL UNIT CONTROLLER SHALL KEEP THE SUPPLY AIRFLOW AT ITS MINIMUM SETTING AND SHALL FIRST MODULATE THE PERIMETER HEATING CONTROL VALVE FOLLOWED BY TEMPERING COIL CONTROL VALVE (WHEN PERIMETER HEATING CONTROL VALVE IS FULL OPEN) TO MAINTAIN THE ROOM TEMPERATURE SETPOINT.
6. WHEN OA TEMP IS ABOVE 60 DEG F AND ROOM TEMPERATURE FALLS BELOW SETPOINT, THE SUPPLY TERMINAL UNIT CONTROLLER SHALL KEEP THE SUPPLY AIRFLOW AT ITS MINIMUM SETTING AND SHALL MODULATE THE TEMPERING COIL CONTROL VALVE TO MAINTAIN THE ROOM TEMPERATURE SETPOINT. PERIMETER HEATING CONTROL VALVE SHALL REMAIN CLOSED.
7. WHENEVER THE DISH WASH EXHAUST FAN IS ENERGIZED THE VAV TERMINAL UNITS AIR FLOW SHALL INCREASE TO MAKE UP EXHAUST AIR 100 CFM LESS THE EXHAST AIR FLOW (ADJUSTABLE).
8. THE SUPPLY AIR TERMINAL UNIT'S MINIMUM AND MAXIMUM VOLUME AIRFLOW SETTINGS SHALL BE AS INDICATED ON THE SHEET METAL FLOOR PLANS
9. WHEN SPACE CARBON DIOXIDE LEVEL RISES ABOVE 1100 PPM SETPOINT, THE SUPPLY AIR TU CONTROLLER SHALL OVERRIDE TEMPERATURE CONTROL AND MODULATE DAMPER OPEN TO INCREASE SUPPLY AIRFLOW UNTIL CO2 SETPOINT IS SATISFIED. THE TEMPERING COIL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMP SETPOINT. [NOTE: THERE IS NOT A REQUIREMENT TO INCREASE OUTSIDE AIRFLOW AT RELATED RTU IF CO2 LEVEL IS ABOVE SETPOINT WHEN TU DAMPER IS AT MAX POSITION.]
10. WHEN SPACE CARBON DIOXIDE LEVEL FALLS BELOW 800 PPM SETPOINT AFTER BEING IN VENTILATION OVERRIDE MODE, THE TU DAMPER SHALL BE MODULATED CLOSED TOWARDS MINIMUM POSITION. THE TEMPERING COIL VALVE SHALL BE MODULATED TO MAINTAIN SPACE TEMP SETPOINT.
11. SPACE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS:
    - HEATING UNOCCUPIED SETPOINT = 62°F
    - HEATING TEMPORARY UNOCCUPIED SETPOINT = 68°F
    - HEATING OCCUPIED SETPOINT = 70°F
    - COOLING OCCUPIED SETPOINT = 75°F
    - COOLING TEMPORARY UNOCCUPIED SETPOINT = 77°F
    - COOLING UNOCCUPIED SETPOINT = 80°F
12. DURING BUILDING UNOCCUPANCY, RELATED AHU (RTU OR ERU) SHALL CYCLE AS REQUIRED TO MAINTAIN BUILDING SETBACK AND SETUP TEMP SETPOINTS.
13. WHEN RESPECTIVE AHU (RTU OR ERU) IS DEACTIVATED; THE AIR TERMINAL UNIT DAMPER SHALL REMAIN IN MINIMUM POSITION AND THE TEMPERING COIL VALVE SHALL REMAIN CLOSED. THE PERIMETER HEATING VALVE SHALL BE MODULATED TO MAINTAIN HEATING UNOCCUPIED SETPOINT.
14. THE DDC TERMINAL UNIT CONTROLLER SHALL RE-CALIBRATE THE AIRFLOW SENSOR ONCE A WEEK MINIMUM. THE RE-CALIBRATION PROCESS SHALL BE STAGGERED AMONGST THE TERMINAL UNITS SO THE DUCT STATIC PRESSURE DOES NOT EXCEED LIMITS.
15. CONTROL SIGNALS FOR AIR TERMINAL UNIT DAMPER ACTUATOR AND HEATING CONTROL OUTPUT(S) SHALL BE DISPLAYED WITH SYSTEM GRAPHICS.

REFER TO SHEET M801 FOR T.C. (TEMPERATURE CONTROL) GENERAL NOTES.

MECHANICAL

These documents are approved for compliance with the STATE OF MICHIGAN MECHANICAL CODE subject to field inspection and the conditions of approval.

NO.	REVISION	DATE
1	STATE REVIEW SET	12/20/23

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FACILITIES AND BUSINESS SERVICES ADMINISTRATION
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ADAM LACH, R.A. DIRECTOR

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SHEET TITLE
TEMPERATURE CONTROLS

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