WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

ISSUE FOR BIDS/PERMITS

03-28-2025

SSOE, Inc.
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-6222

DRAWING LIST - GENERAL	
GENERAL	
GI-100	COVER SHEET
GI-300	LEVEL 00 + 01 LIFE SAFETY PLANS
DRAWING LIST - ARCHITECTURAL	
ARCHITECTURAL	
AE-000	ARCHITECTURAL SITE PLAN
AE-050	TYPICAL INTERIOR PARTITION DETAILS + TYPES
AD-100	LEVEL 01 DEMOLITION PLAN
AE-100	LEVEL 00 + 01 NEW WORK PLANS
AE-200	LEVEL 01 FURNITURE, FINISH, AND EQUIPMENT PLANS
AE-300	DOOR SCHEDULE AND DETAILS
AE-500	LEVEL 01 REFLECTED CEILING PLANS
AE-800	INTERIOR ELEVATIONS, DETAILS AND CASEWORK
AE-900	SPECIFICATIONS
AE-901	SPECIFICATIONS
AE-902	SPECIFICATIONS
DRAWING LIST - MECHANICAL	
MECHANICAL	
MH-001	MECHANICAL LEGEND & ABBREVIATIONS
MH-002	HVAC SPECIFICATIONS
MH-100	FIRST FLOOR PLAN - HVAC
MH-500	HVAC DETAILS
MH-600	HVAC SCHEDULES
MD-100	HVAC DEMOLITION PLAN LEVEL 1

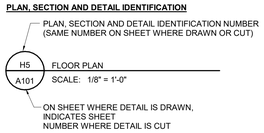
DRAWING LIST - FIRE PROTECTION	
FIRE PROTECTION	
FP-100	FIRE PROTECTION PLANS
DRAWING LIST - ELECTRICAL	
ELECTRICAL	
EE-000	ELECTRICAL LEGEND, SYMBOLS, & NOTES
EE-001	ELECTRICAL SPECIFICATIONS
EE-100	SITE PLAN - ELECTRICAL
ED-100	FIRST FLOOR PLAN - DEMO
EE-101	FIRST FLOOR PLAN - NEW WORK
EE-801	ELECTRICAL SCHEDULES
EE-901	ELECTRICAL DETAILS

REFERENCE SYMBOLS

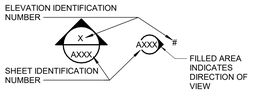
DETAIL IDENTIFICATION

SECTION IDENTIFICATION

PLAN, SECTION AND DETAIL IDENTIFICATION

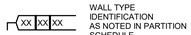


ELEVATION LOCATION IDENTIFICATION



MATERIAL OR WORK DIVISION INDICATION

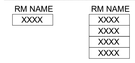
WALL TYPE INDICATION



NORTH INDICATION

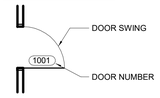
BULLETIN / ADDENDUM IDENTIFICATION

ROOM NAME AND NUMBER INDICATION



NOTE LEADER INDICATION

DOOR NUMBER INDICATION



REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR ADDITIONAL SYMBOLS

VICINITY MAP

SITE MAP

PROFESSIONAL SEALS:

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

SSOE PROJECT #:	023-03991-00
SSOE MANAGER:	J. FALZON

SSOE
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-6222

COVER SHEET

GI-100

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CODE SUMMARY

PROJECT: WAYNE STATE UNIVERSITY MOBILE HEALTH ADMIN RENOVATION
SSOE PROJECT NO: 023-03991-00

SUMMARY OF WORK:
THIS PROJECT CONSISTS OF THE FOLLOWING:

- THE RENOVATION OF THE EXISTING MOBILE HEALTH ADMIN OFFICES
- THE INSTALLATION OF ELECTRICAL CHARGING STATIONS ON THE SITE
- ALL ASSOCIATED, MECHANICAL, AND ELECTRICAL WORK.

EXISTING BUILDING INFORMATION:

EXISTING BUILDING OCCUPANCY: BUSINESS (B) - EXISTING TO REMAIN
NO. OF STORIES: 2 STORIES - EXISTING TO REMAIN
CONSTRUCTION TYPE: II-B - EXISTING TO REMAIN

SECTION 1: APPLICABLE CODES
2015 MICHIGAN BUILDING CODE
2019 DETROIT CITY BUILDING CODE
2015 MICHIGAN REHABILITATION CODE
2019 DETROIT CITY REHABILITATION CODE
2019 DETROIT CITY MECHANICAL CODE
2019 DETROIT CITY PLUMBING CODE
2009 DETROIT ACCESSIBILITY CODE
2010 ADA STANDARDS
2012 DETROIT LIFE SAFETY CODE
2015 DETROIT FIRE CODE
2013 DETROIT FIRE SPRINKLER CODE
2013 DETROIT FIRE ALARM CODE
2021 MICHIGAN PLUMBING CODE
2023 MICHIGAN ELECTRICAL CODE
2021 MICHIGAN MECHANICAL CODE
2015 MICHIGAN ENERGY CODE

SECTION 2: BUILDING INFORMATION *** ALL BUILDING INFORMATION EXISTING TO REMAIN ***

EXISTING TO REMAIN USE GROUP:	B - BUSINESS
ACCESSORY OCCUPANCY:	N/A
INCIDENTAL USE:	N/A
CONSTRUCTION TYPE:	II-B
FIRE PROTECTION:	SPRINKLERED
HEIGHT/AREA LIMITATIONS:	EXISTING TO REMAIN

SECTION 3: OCCUPANT LOAD

USE GROUP	EXISTING AREA	NEW AREA	LOAD FACTOR	OCCUPANT LOAD
B-BUSINESS	LEVEL 0: 3,695	N/A	100 GROSS	37 EXISTING TO REMAIN
B-BUSINESS	LEVEL 1: 22,580	N/A	100 GROSS	226 EXISTING TO REMAIN
TOTAL OCCUPANT LOAD				226 PER EXISTING TO REMAIN OCCUPANCY AND GROSS BUILDING SQUARE FOOTAGE

SECTION 4: MEANS OF EGRESS

(PER 2015 MICHIGAN BUILDING CODE SECTION 1006.2.1 / TABLE 1006.2.1, EGRESS BASED ON OCCUPANT LOAD AND COMMON PATH OF EGRESS TRAVEL DISTANCE.)

OCCUPANCY/SPACE	MAX OCCUPANT LOAD OF SPACE WITH SINGLE EXIT	CALCULATED OCCUPANT LOAD	MAX COMMON PATH OF TRAVEL OL<30
B-BUSINESS	49	226 EXISTING TO REMAIN	100

***MAXIMUM COMMON PATH OF TRAVEL BASED ON SPACES WITH 1 EXIT OR EXIT ACCESS DOORWAY. EXISTING BUILDING HAS 3 EXITS THAT ARE EXISTING TO REMAIN.

TOTAL EXITS REQUIRED: 2 PER 2015 MICHIGAN BUILDING CODE SECTION 1006.2.1
TOTAL EXITS PROVIDED: 3 - EXISTING TO REMAIN

EXIT ACCESS AND TRAVEL DISTANCE:

TRAVEL DISTANCE TO EXITS: 300 FT MAX (TABLE 1017.2 SPRINKLED)
COMMON PATH OF TRAVEL: 100 FT MAX (TABLE 1006.2.1 EGRESS BASED ON OCCUPANT LOAD - MOST RESTRICTIVE)
DEAD END CORRIDOR: 50 FT MAX (SECTION 1020.4)

EXIT CAPACITY: (PER 2015 MICHIGAN BUILDING CODE SECTION 1005)

DOORS: .15 INCHES PER OCCUPANT
CORRIDORS: .15 INCHES PER OCCUPANT
STAIRS: .2 INCHES PER OCCUPANT

ACTUAL PROVIDED FOR DOOR COMPONENT= 33 INCHES CLEAR
ACTUAL PROVIDED FOR CORRIDOR= 60 INCHES CLEAR

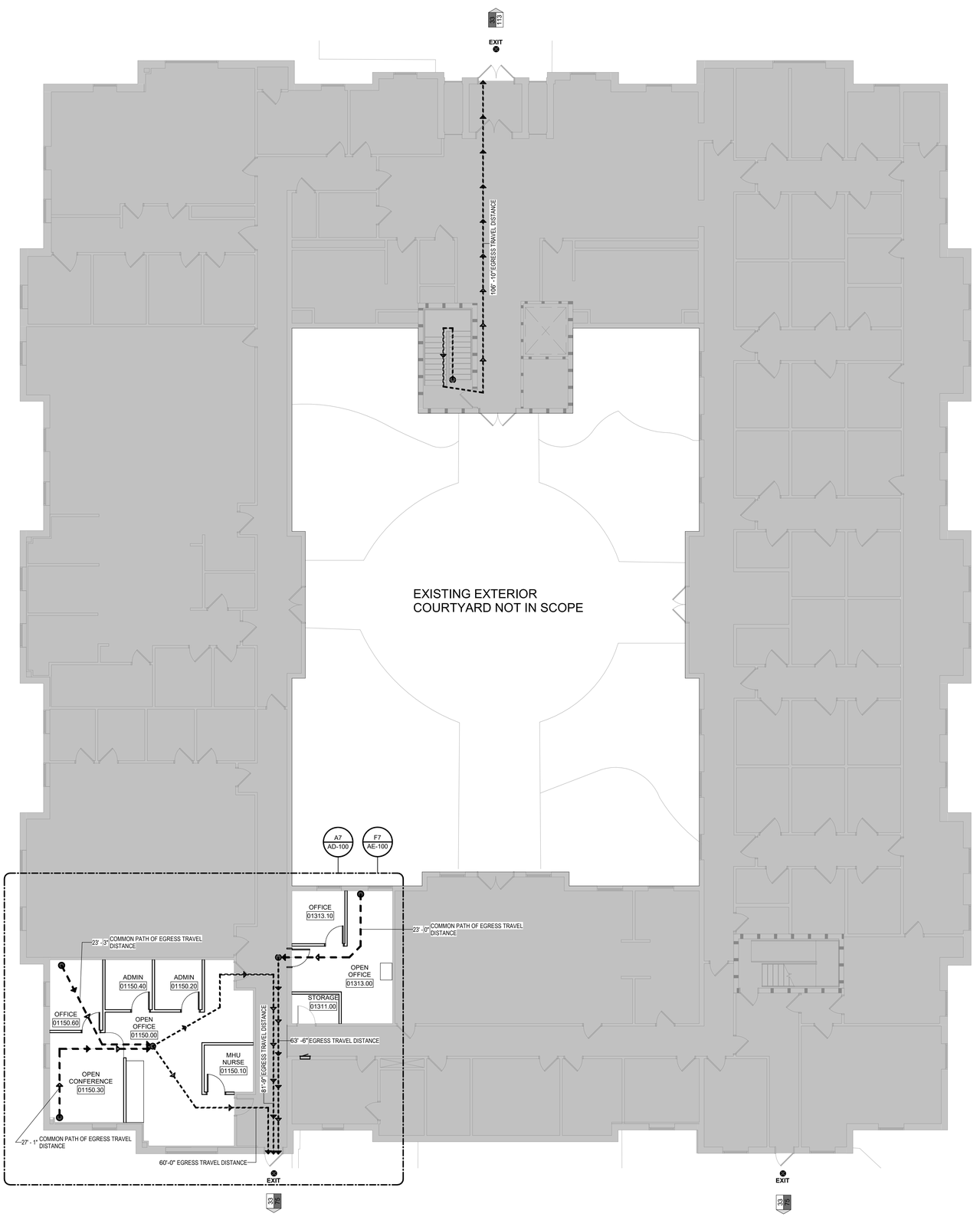
SECTION 5: MISCELLANEOUS PROVISIONS

OCCUPANCY SEPARATION: PER 2015 MICHIGAN BUILDING CODE TABLE 508.4

REQUIRED SEPARATION OF OCCUPANCY (HOURS) = A: 1 HR, E: 1 HR, I-1: 1 HR, I-3: 1 HR, I-4:1 HR, I-2: 2 HR, R:1 HR,, F-2: 1 HR,, S-2: 1 HR, U:1 HR.

FIRE RATED ASSEMBLIES:

EXIT STAIR	1 HR - EXISTING TO REMAIN
ELEVATOR	1 HR - EXISTING TO REMAIN
SHAFTS	0 HR - EXISTING TO REMAIN
FIRE/SMOKE BARRIERS	1 HR - EXISTING TO REMAIN
HAZARDOUS SPACES	N/A (1 HR WHERE INCIDENTAL STORAGE > 100 SF)
CORRIDORS	0 HR REQUIRED (PER 2015 MICHIGAN BUILDING CODE TABLE 1020.1)



A7 / AE-205 LEVEL 00 LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"

E7 / AE-205 LEVEL 01 LIFE SAFETY PLAN
SCALE: 1/8" = 1'-0"

LIFE SAFETY PLAN NOTES

1. THIS PROJECT REQUIRES THAT THE FOLLOWING LIFE SAFETY MEASURES ARE TO BE IMPLEMENTED AND ENFORCED AT ALL CONSTRUCTION AREAS. CONTRACTORS AND THEIR SUBCONTRACTORS ARE TO BE AWARE OF AND FOLLOW THESE REQUIREMENTS.
2. ASSURE THAT EXITS PROVIDE FREE AND UNOBSTRUCTED EGRESS, AND THAT PERSONNEL RECEIVE TRAINING IF ALTERNATIVE EXITS ARE DESIGNATED. BUILDINGS OR AREAS UNDER CONSTRUCTION SHALL MAINTAIN ESCAPE FACILITIES FOR CONSTRUCTION WORKERS AT ALL TIMES. MEANS OF EGRESS IN CONSTRUCTION AREAS ARE TO BE INSPECTED DAILY.
3. MAINTAIN MEANS OF EGRESS ROUTES THROUGHOUT THE PERIODS WHEN THE BUILDING IS OCCUPIED. EGRESS ROUTES ARE TO BE CLEARLY MARKED WITH SIGNS, LIGHTING, AND PROPER FLOOR SURFACES.
4. ASSURE FREE AND UNOBSTRUCTED ACCESS FOR EMERGENCY PERSONNEL AND EMERGENCY RESPONSE FORCES.
5. ASSURE THAT FIRE ALARM DETECTION AND SUPPRESSION SYSTEMS ARE NOT IMPAIRED WITHIN OCCUPIED AREAS OF THE BUILDING. PROVIDE TEMPORARY, EQUIVALENT SYSTEMS WHEN ANY SYSTEM NEEDS TO BE INOPERATIVE DURING CONSTRUCTION. INSPECT AND TEST TEMPORARY SYSTEMS MONTHLY.
6. PROVIDE 1 HOUR RATED TEMPORARY CONSTRUCTION PARTITIONS (UL # U309) THAT ARE AIR AND SMOKE TIGHT. WHERE PART OF EXTERIOR PARTITIONS, PROVIDE MINIMUM R-11 INSULATION.
7. PROHIBIT SMOKING IN, OR ADJACENT TO, ALL CONSTRUCTION AREAS.
8. DEVELOP AND ENFORCE STORAGE, HOUSEKEEPING, AND DEBRIS REMOVAL PRACTICES THAT REDUCE THE FLAMMABLE AND COMBUSTIBLE FIRE LOAD OF THE BUILDING TO THE LOWEST LEVEL REQUIRED FOR DAILY OPERATION.
9. PROVIDE INCREASED HAZARD SURVEILLANCE OF BUILDINGS, GROUNDS AND EQUIPMENT, WITH SPECIAL ATTENTION TO THE EXCAVATIONS, CONSTRUCTION AREAS, CONSTRUCTION STORAGE AND FIELD OFFICES. PROVIDE APPROVED BARRIERS AT ALL HAZARDOUS AREAS.
10. CONDUCT ORGANIZATION-WIDE SAFETY EDUCATION PROGRAMS TO ASSURE AWARENESS OF ANY LIFE SAFETY CODE DEFICIENCIES, CONSTRUCTION HAZARDS, AND THESE REQUIREMENTS.
11. PROVIDE EXHAUST AIR FLOW SUFFICIENT TO MAINTAIN NEGATIVE AIR PRESSURE IN THE CONSTRUCTION ZONES, RELATIVE TO ALL OCCUPIED ADJACENT AREAS.
12. ALL FIRE EXTINGUISHERS AND CABINETS ARE EXISTING TO REMAIN. GENERAL CONTRACTOR TO VERIFY EXISTING LOCATIONS COMPLY WITH APPLICABLE CODE.

LIFE SAFETY PLAN LEGEND

- EXISTING NON-RATED WALL
- 1B — EXISTING 1 HOUR RATED METAL STUDS CONSTRUCTION
- NEW NON-RATED WALL
- AREA OF "NO WORK"

ROOM REFERENCE

ROOM NAME / 101 — ROOM NAME / ROOM NUMBER

EGRESS CAPACITY TAG

999" — EXISTING DOOR WIDTH / MAXIMUM # OF OCCUPANTS ALLOWABLE PER EGRESS SYSTEM WIDTH

DOOR IDENTIFICATION

EXIT — DENOTES DOOR IS EXTERIOR EXIT

LIFE SAFETY PLAN LEGEND

- COMMON PATH OF EGRESS TRAVEL
- EGRESS TRAVEL DISTANCE

ssoe®

PROFESSIONAL SEALS:

STATE OF MICHIGAN — JEFFREY S. FALZON — ARCHITECT — No. 1301047612 — 3-28-2025 — REGISTERED ARCHITECT

CONSULTANTS:

AREA A

LEVEL 0 KEYPLAN

AREA B

AREA OF WORK

LEVEL 1 KEYPLAN

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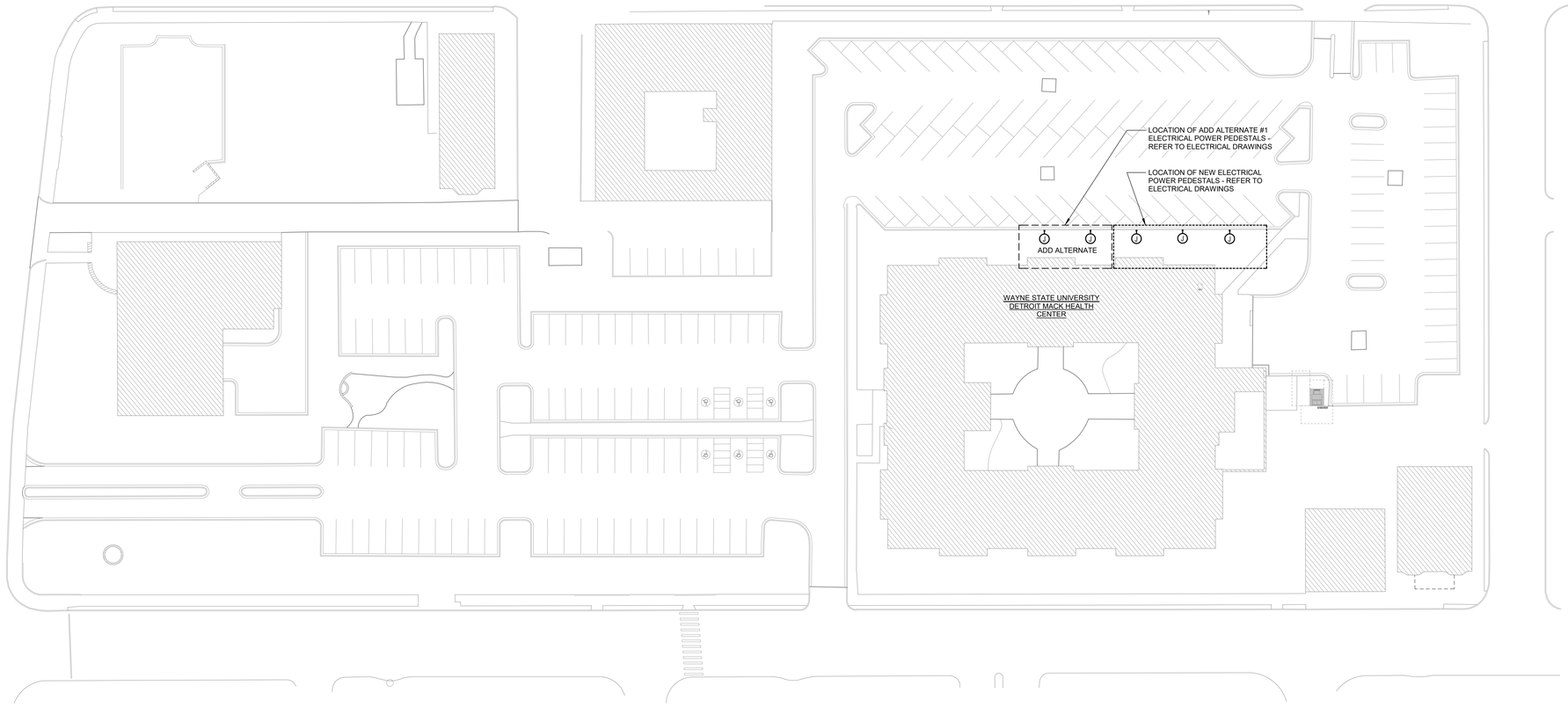
LEVEL 00 + 01 LIFE SAFETY PLANS

GI-300

ARCHITECTURAL SITE PLAN NOTES

1. ARCHITECTURAL SITE PLAN FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS.
2. GENERAL CONTRACTOR TO VERIFY ARCHITECTURAL SITE PLAN DIMENSIONS IN FIELD. IF DISCREPANCIES EXIST BETWEEN DIMENSIONS SHOWN ON PLAN AND THOSE TAKEN IN THE FIELD GENERAL CONTRACTOR TO NOTIFY ARCHITECT BEFORE PROCEEDING.



ARCHITECTURAL SITE PLAN
SCALE: 1" = 30'-0"

ssoe®

PROFESSIONAL SEALS:

STATE OF MICHIGAN
JEFFREY S. FALZON
ARCHITECT
No. 1301047512
3-28-2025
REGISTERED ARCHITECT

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

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SSOE MANAGER: J. FALZON

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T. (248) 643-6222

ARCHITECTURAL SITE PLAN

AE-000

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GENERAL NOTES:
STUD CONSTRUCTION

1. BASIS OF DESIGN: ***STEEL FRAMED PARTITIONS***
DESIGN IS BASED ON GUIDELINES INCLUDED IN PRODUCT TECHNICAL INFORMATION OF THE STEEL MANUFACTURE'S ASSOCIATION LATEST EDITION OF THE SSMA PUBLICATION AND THE FOLLOWING PERFORMANCE CRITERIA:

A. LIMITING HEIGHT CRITERIA:
DEFLECTION OF L/240 AT 5 LBS. PER SQ. FT. CONSTANT AIR-PRESSURE LOADS

B. THICKNESS-STEEL COMPONENTS:

GAUGE	DESIGN THICKNESS
25	0.0188
22	0.0283
20	0.0346
18	0.0451

*LIGHT GAUGE METAL FRAMING MANUFACTURED TO "EQUIVALENT THICKNESS" PARAMETERS ARE ACCEPTABLE PROVIDED THEY DESIGN CRITERIA NOTED ABOVE IS ACCOMMODATED ..

3. MINIMUM GAUGE:
IF LIMITING HEIGHT AS SCHEDULED IN PARTITION DETAILS EXCEEDS PROJECT CONDITIONS OR IF THE SELECTED STEEL STUD MANUFACTURE'S THICKNESS OF STEEL COMPONENTS VARIES FROM THE BASIS OF DESIGN AS SET FORTH ABOVE, PROVIDE MANUFACTURE'S STANDARD THICKNESS (GAUGE) THAT MEETS OR EXCEEDS LIMITING HEIGHT PERFORMANCE CRITERIA FOR STUD DEPTH AND SPACING INDICATED.

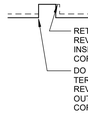
4. DOOR JAMBS
PROVIDE DOUBLE 20 GA. STUDS AT ALL DOOR OPENINGS, EXTEND FROM FLOOR TO STRUCTURE ABOVE. TYPICAL FOR ALL DOORS IN METAL STUD WALLS.

GENERAL NOTES:
GYPSUM WALLBOARD

1. DO NOT INSTALL GYPSUM WALLBOARD IN DIRECT CONTACT WITH THE FLOOR. ALL GWB SHALL BE SHIMMED 1/2" ABOVE FLOOR SLAB WITH NON-POROUS SHIM. PLASTIC NON-POROUS HORSESHOE SHIMS ARE RECOMMENDED; GYPSUM WALLBOARD SHIMS ARE NOT ACCEPTABLE. PROVIDE BACKER ROD & CONTINUOUS ACOUSTICAL OR FIRE RATED SEALANT TOOLED FOR HOURGLASS SHAPE PER MFR'S RECOMMENDATIONS.
2. WHERE GYPSUM WALL BOARD EXTENDS TO THE UNDERSIDE OF STRUCTURE, STOP GYPSUM WALL BOARD 1/2" BELOW LINE OF STRUCTURE AND SEAL AS REQUIRED.
3. TYPICAL AT ALL INTERIOR PARTITIONS, GYPSUM WALLBOARD TO BE 5/8" TYPE "X" UNLESS NOTED OTHERWISE AT PARTITION TYPE MODIFIER OR AS SCHEDULED IN SPECIFICATION.
4. TYPICAL AT ALL EXTERIOR PERIMETER WALLS, INSTALL 5/8" TYPE "X" MOLD AND MOISTURE RESISTANT GYPSUM WALLBOARD.
5. STAGGER JOINTS AT INSTALLATIONS OF MULTIPLE LAYERS OF GYPSUM WALLBOARD.
6. TO GREATEST EXTENT POSSIBLE, ALL HORIZONTAL JOINTS BETWEEN PANELS SHALL BE ABOVE CEILING.

GENERAL NOTES:
GYPSUM WALLBOARD REVEALS

1. STANDARD, WHERE INDICATED IN THESE DOCUMENTS, PROVIDE REVEALS OF TYPE AND SIZE INDICATED AS SPECIFIED.
2. ELEVATIONS MAY NOT SHOW ALL FACES OF COLUMNS OR FACES OF EVERY WALL - G.C. SHALL ASSUME THAT ALL REVEALS WILL RETURN TO INSIDE CORNER UNLESS OTHERWISE NOTED.
3. AT ALL INTERSECTIONS OF VERTICAL AND HORIZONTAL REVEALS, PROVIDE FACTORY FABRICATED INTERSECTIONS AND CORNERS.

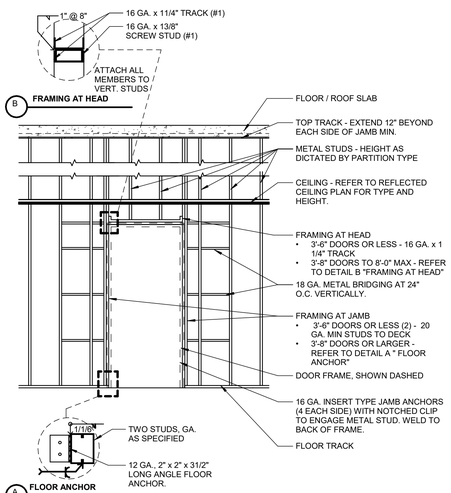


GENERAL NOTES:
NON-RATED & ACOUSTICAL PARTITIONS/ASSEMBLIES

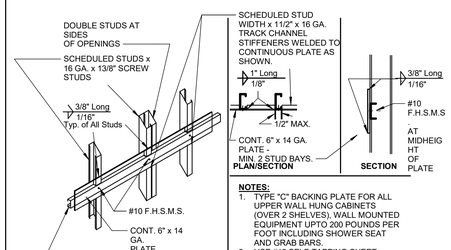
1. ALL INTERIOR PARTITIONS TO EXTEND TO DECK UNLESS NOTED OTHERWISE BY PARTITION TYPE HEAD CONDITION SCHEDULE. SEE PLAN FOR PARTITION IDENTIFICATION.
2. ALL ACOUSTIC PARTITIONS TO EXTEND FROM TOP OF SLAB TO UNDERSIDE OF STRUCTURE. SEAL TOP AND BOTTOM TYPICAL TO THE UNDERSIDE OF METAL DECK OR STEEL BEAM AS REQUIRED TO ACHIEVE ACOUSTIC OR FIRE PROTECTION RATING. SEE DETAILS ON THIS SHEET FOR INSTALL FRAMING AND GYPSUM WALL BOARD TO OFFSET AROUND STRUCTURAL MEMBERS OR OTHER OBSTRUCTIONS TO MAINTAIN ACOUSTICAL OR FIRE RATINGS (IF ACOUSTICAL PARTITION IS ALSO FIRE-RATED).
3. ALL INTERIOR METAL STUD PARTITIONS TO HAVE SOUND BATTS INSULATION UNLESS NOTED OTHERWISE BY PARTITION MODIFIER. AT 3 5/8" STUD CAVITIES, PROVIDE 3 1/2" SOUND BATTS. AT 6" OR 8" STUD CAVITIES PROVIDE 5 1/2" SOUND BATTS.
4. ALL PARTITIONS CONTAINING PLUMBING PIPING SHALL BE THERMALLY INSULATED WITH MINERAL WOOL.
5. THE FOLLOWING LIST OF ROOMS (IF USED) SHALL HAVE THEIR PERIMETER PARTITIONS INSULATED USING MINERAL WOOL: ELECTRICAL ROOMS, MECHANICAL ROOMS, AV EQUIPMENT ROOMS, DATA OR TELECOM ROOMS, SPRINKLER RISER ROOMS AND FIRE PUMP ROOMS.

GENERAL NOTES:
DOOR FRAMING

1. ALL DOOR JAMB STUDS ARE TO EXTEND TO DECK, REGARDLESS OF PARTITION TYPE STUD HEIGHTS AS NOTED BY PARTITION TYPE OR SPECIAL CONDITION.
2. REFER TO DETAIL BELOW FOR STUD GA. AT JAMB AND HEADER STUDS

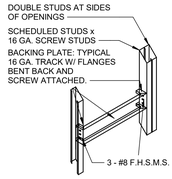


- AS AN OPTION TO THE NESTED 16 GA. x 11/4" TRACK AND 16 GA. x 13/8" SCREW STUD 16 GA. x 11/4" TRACK SHOWN FOR "FRAMING AT HEAD" DETAIL, A 16 GA. RECTANGULAR TUBE OF SAME SIZE AS THE NESTED STUD / TRACK MAY BE USED + 16 GA. x 1 1/4" TRACK.
- BRIDGING TO BE AT 24" O.C. VERTICALLY AT DOORS OVER 36" WIDE AND AT LEAD LINED DOORS; DOORS 36" WIDE AND NARROWER, CAN HAVE BRIDGING AT MID-POINT OF VERTICAL DOOR HEIGHT.



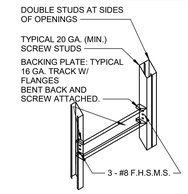
NOTES:
1. TYPE "C" BACKING PLATE FOR ALL UPPER WALL HUNG CABINETS (OVER 2 SHELVES), WALL MOUNTED EQUIPMENT UPTO 200 POUNDS PER FOOT INCLUDING SHOWER SEAT AND GRAB BARS.
2. USE #12 SELF-TAPPING SHEET METAL SCREWS WHEN ATTACHING ITEMS TO BACKING PLATE.
3. WALL STUD FLANGES ARE CONTINUOUS.

TYPE "C" BACKING PLATE



NOTES:
1. TYPE "B" BACKING PLATE FOR UPPER WALL HUNG CABINETS (UP TO 2 SHELVES), BASE CABINETS, FULL HEIGHT CABINETS. FILM VIEWING COUNTERS, WALL HUNG BENCHES, HANDRAILS, GUARDRAILS, AND WALL HUNG EQUIPMENT - MAXIMUM WEIGHT 100 POUNDS
2. VERIFY LENGTH, HEIGHT, LOCATION OF BACKING PLATE AND NUMBER REQUIRED WITH MANUFACTURER OF ITEMS IN NOTE 1
3. USE #12 SELF-TAPPING SHEET METAL SCREWS WHEN ATTACHING ITEMS TO BACKING PLATE.
4. WALL STUD FLANGES ARE CONTINUOUS.

TYPE "B" BACKING PLATE

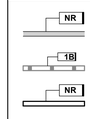


NOTES:
1. TYPE "A" BACKING PLATE FOR MISC. ITEMS; I.E. SURFACE MOUNTED MIRRORS, WASTE RECEPTACLES, TOWEL DISPENSERS, CHAIR RAILS, ETC. MAXIMUM WEIGHT 50 POUNDS
2. VERIFY LENGTH, HEIGHT, LOCATION OF BACKING PLATE AND NUMBER REQUIRED WITH ACCESSORY MANUFACTURER.
3. USE #12 SELF-TAPPING SHEET METAL SCREWS WHEN ATTACHING ITEMS TO BACKING PLATE.
4. WALL STUD FLANGES ARE CONTINUOUS.

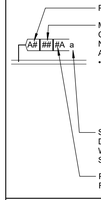
TYPE "A" BACKING PLATE

PARTITION TYPE IDENTIFICATION LEGEND

PARTITION RATING TAG LEGEND - CALLED OUT ON LIFE SAFETY PLANS



PARTITION TYPE TAG LEGEND - CALLED OUT ON FLOOR PLANS & ENLARGED PLANS



ABBREVIATIONS

( )	=	"CORE"
(#)	=	NUMBER OF LAYERS OF GWB
CIP	=	CAST-IN-PLACE CONCRETE
CMU	=	CONCRETE MASONRY UNIT
FC	=	STUD FURRING (TYPE AS SCHEDULED)
GSL	=	GYPSUM SHAFT LINER
GWB	=	GYPSUM WALLBOARD, TYPE AS SCHEDULED
HF	=	HAT-SHAPED METAL FURRING
MS	=	METAL STUD FRAMING
MF	=	METAL STUD FURRING
MSS	=	METAL SHAFTWALL STUD FRAMING
RC	=	RESILIENT CHANNEL
WS	=	WOOD STUD FRAMING
WF	=	WOOD FURRING
ZF	=	METAL Z-FURRING

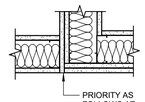
PARTITION TYPE SCHEDULE

METAL STUD PARTITION TYPES
M1 GWB (1) + MS + GWB(1)

LIGHT GAUGE METAL STUD SCHEDULE

NOMINAL	ACTUAL
3	3 5/8"

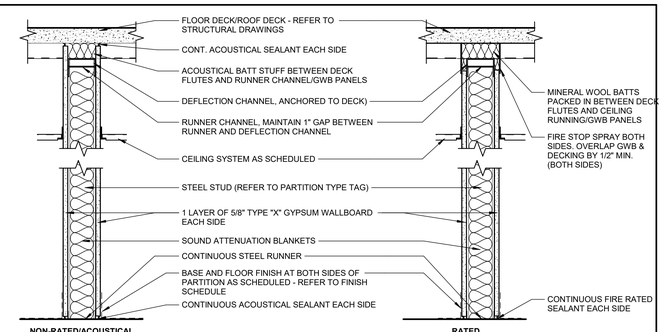
ASSEMBLY PRIORITY LEGEND



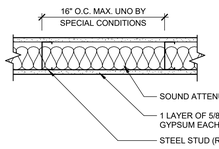
PROVIDE RATED ASSEMBLIES IN ACCORDANCE WITH UL LISTING, MFR. INSTRUCTIONS & APPROVED DETAILS INDICATING HOURS OF FIRE RESISTANCE. REFER TO LIFE SAFETY PLANS, PLANS & ENLARGED PLANS FOR PARTITION TYPES. LOCATIONS & EXTENT OF RATED WALLS.

PRIORITY OF RATED ASSEMBLIES:
- TWO HOUR FIRE & SMOKE WALL PRIORITY 1 - HIGHEST
- TWO HOUR FIRE WALL PRIORITY 2
- TWO HOUR SHAFT WALL PRIORITY 3
- ONE HOUR FIRE & SMOKE WALL PRIORITY 4
- ONE HOUR FIRE WALL PRIORITY 5
- ONE HOUR SHAFT WALL PRIORITY 6
- NON-RATED PRIORITY 7 - LOWEST

M1

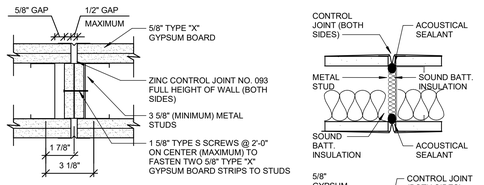


SECTION DETAIL

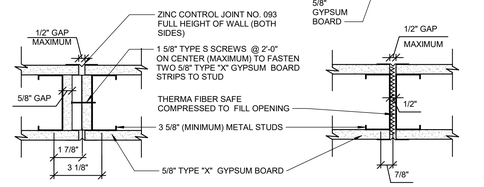


PARTITION TAG	FINISHED WIDTH	STUD SIZE	STC RATING	UL
M1 S NR	4 7/8"	3 5/8"	55	N/A

CONTROL JOINTS IN GYPSUM BOARD WALLS



A TWO HOUR RATED FIRE BARRIERS OR TWO HOUR RATED SMOKE BARRIERS



B ONE HOUR RATED FIRE BARRIERS, ONE HOUR RATED SMOKE BARRIERS AND NON-RATED SMOKE PARTITIONS

NOTES:
1. CONTROL JOINTS SHALL COMPLY WITH THE MOST STRINGENT REQUIREMENTS OF THE MOST CURRENT EDITION OF: GYPSUM ASSOCIATION GA-600 FIRE RESISTANCE DESIGN MANUAL; U.L. FIRE RESISTANCE DIRECTORY; AND USG FIRE-RESISTANT ASSEMBLIES SYSTEMS FOLDER SA100.
2. FOR CONTROL JOINTS IN RATED SHAFTWALL SYSTEMS COMPLY WITH THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE USG CAVITY SHAFTWALL SYSTEMS FOLDER SA926.
3. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS INCLUDING MAXIMUM SPACING OF CONTROL JOINTS.
4. IF VINYL WALL COVERING IS SCHEDULED FOR A WALL WITH A CONTROL JOINT, THE VINYL WALL COVERING SHALL BE NEATLY AND EVENLY RECESSED INTO (AND FOLLOW THE CONTOURS OF) THE METAL CONTROL JOINT.

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PROFESSIONAL SEALS:

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

SSOE PROJECT #: 023-03991-00
SSOE MANAGER: J. FALZON

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1050 Wilshire Drive, Suite 260
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TYPICAL INTERIOR PARTITION DETAILS + TYPES

AE-050

A7 / AD-100 LEVEL 01 DEMOLITION PLAN

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

DEMOLITION LEGEND

- XX — KEYNOTE - SEE KEYNOTE LEGEND
- AREA OF "NO WORK"
- AREA OF DEMOLITION AS DESCRIBED
- CONSTRUCTION TO BE DEMOLISHED (PLAN) [SEE KEYNOTES FOR MORE DETAIL]
- EXISTING CONSTRUCTION

DEMOLITION PLAN KEYNOTES

01 REMOVE EXISTING CEILING SYSTEM, LIGHTING, AND DIFFUSERS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION SCOPE OF WORK. REFER TO ROOM FINISH SCHEDULE.

02 REMOVE EXISTING FLOORING SYSTEM AND BASE. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION SCOPE OF WORK. REFER TO ROOM FINISH SCHEDULE.

03 REMOVE PORTION OF WALL CONSTRUCTION NEEDED FOR INSTALLATION OF NEW DOOR. INCLUDING ANY SURFACE MOUNTED OR CONCEALED EQUIPMENT AND UTILITIES. PATCH AND REPAIR EXISTING CONSTRUCTION AS REQUIRED FOR INSTALLATION OF NEW DOOR.

04 PATCH/PREP WALLS TO RECEIVE NEW FINISH. REFER TO FINISH SCHEDULE.

GENERAL DEMOLITION NOTES

A. FIELD VERIFY EXISTING CONDITIONS, PRIOR TO THE START OF DEMOLITION OPERATIONS. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES WITHIN THE CONSTRUCTION DOCUMENTS OR ANY FIELD CONDITIONS WHICH DIFFER FROM THOSE DESCRIBED WITHIN THE DOCUMENTS.
B. ALL REQUIRED DEMOLITION IS INCLUDED IN THE GENERAL CONTRACT. DEMOLITION CONSISTS OF THE REMOVAL OF ANY EXISTING ELEMENT WHICH INTERFERES WITH THE COMPLETION OF NEW CONSTRUCTION OR TEMPORARY EGRESS MEASURES.
C. DEBRIS RESULTING FROM DEMOLITION SHALL BE REMOVED FROM THE CONSTRUCTION SITE ON A DAILY BASIS AND DISPOSED OF LEGALLY OFF-SITE.
D. ALL SURFACES DISTURBED BY DEMOLITION, CUTTING OR PATCHING SHALL BE LEFT WITH A "CLEAN CUT" TO FACILITATE THE MATCHING OF EXISTING SURFACES WITH ADJACENT NEW CONSTRUCTION.
E. PROTECT EXISTING CONSTRUCTION TO REMAIN FROM DAMAGE DURING DEMOLITION AND/OR NEW CONSTRUCTION OPERATIONS. CONDUCT DEMOLITION OPERATIONS SO AS TO MINIMIZE THE DEVELOPMENT AND SPREAD OF DUST.
F. ANY DAMAGE TO EXISTING CONDITIONS CAUSED BY DEMOLITION AND/OR NEW WORK SHALL BE REPAIRED AS DETAILED, BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
G. THE CONTRACTOR SHALL INSTALL TEMPORARY BARRIERS AS REQUIRED TO PREVENT THE SPREAD OF DUST AND FUMES TO AREAS NOT INCLUDED IN THE WORK. PROVIDE TEMPORARY FILTERS AS REQUIRED TO PREVENT THE SPREAD OF DUST THROUGH THE BUILDING VIA THE RETURN AIR SYSTEM. UPON COMPLETION OF DEMOLITION OPERATIONS, REMOVE BARRIERS AND REPAIR DAMAGE CAUSED BY THEIR INSTALLATION OR PRESENCE TO "LIKE NEW" CONDITION.
H. THE CONTRACTOR SHALL MAINTAIN EMERGENCY EGRESS OF OCCUPANTS OF ADJACENT BUILDINGS AND TENANTS AT ALL TIMES.
I. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND OBTAIN APPROVALS FOR ANY ACTIVITIES WHICH INVOLVE ANY UTILITY INTERRUPTIONS OR EXCESSIVE NOISE. PARTICULARLY WHEN CONDUCTED DURING REGULAR OPERATING HOURS.
J. DIMENSIONS SHOWN ON EXISTING PLANS ARE SHOWN AS A REFERENCE AND SHALL BE CONSIDERED +/- IF EXACT DIMENSIONS ARE REQUIRED, FIELD MEASUREMENTS SHALL BE TAKEN BY THE CONTRACTOR.
K. ANY DUCT WORK SHOWN PASSING THROUGH A NEW OR EXISTING WALL CARRYING A FIRE RATING SHALL BE EQUIPPED WITH APPROPRIATE FIRE RATED DAMPERS AT THE POINT OF INTERSECTION WITH THE WALL.
L. ANY NEW OR EXISTING PIPING CONDUIT OR WIRING PASSING THROUGH A NEW OR EXISTING WALL CARRYING A FIRE RATING SHALL BE SEALED TIGHT EQUAL TO OR EXCEEDING THE WALL RATING WITH A UL APPROVED METHOD.
M. WHERE NEW DOORS ARE SHOWN TO BE INSTALLED IN EXISTING MASONRY WALLS, NEW MASONRY SHALL BE INSTALLED AT EXISTING HEAD AND JAMBS AS REQUIRED FOR NEW DOOR INSTALLATION.
N. ALL PEELING PAINT SHALL BE SCRAPED FROM EXISTING WALLS AND WALLS SHALL BE CLEANED PRIOR TO REPAINTING.
O. WHEN EXISTING PAINTED SURFACES ARE PATCHED IN VISIBLE AREAS, THE ENTIRE SURFACE OR WALL SHALL BE PAINTED TO ACHIEVE A UNIFORM APPEARANCE.
P. ALL HOLES IN MASONRY WALLS, EXISTING OR MADE BY THE REMOVAL OF ANY FIXTURES OR EQUIPMENT, SHALL BE PATCHED WITH MASONRY TO MATCH EXISTING. INSTALL NEW MASONRY FLUSH WITH EXISTING ON BOTH SIDES.
Q. REMOVE ALL WALL BRACKETS, PLASTIC SHIELDS, HOOKS, CLIPS, NAILS, TAPE AND SCREWS ON EXISTING WALLS IN PREPARATION FOR SMOOTH CLEAN SURFACE (TYPICAL AT SPACES WHERE NEW FINISH IS SCHEDULED).
R. ALL DEMOLITION SHALL BE PERFORMED TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH CAN NOT BE PRE-DETERMINED UNTIL DEMOLITION IS STARTED. ALL SUCH DISCOVERIES OF UTILITIES WHICH ARE IN A DIFFERENT LOCATION FROM THAT INDICATED, CHANGE DIRECTION FROM FLOOR-TO-FLOOR, ETC. OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE ARCHITECT BEFORE REMOVAL OR DISTURBANCE.
S. REMOVE ALL WALL MOUNTED ACCESSORIES IN AREAS OF DEMOLITION AND RENOVATION. PATCH/REPAIR WALLS TO MAKE SMOOTH AND PREPARE FOR NEW WALL FINISH. REINSTALL ANY REUSED/RELOCATED WALL ACCESSORIES PER MANUFACTURER'S INSTRUCTIONS.
T. SEE MECHANICAL, AND ELECTRICAL DRAWINGS FOR MORE INFORMATION ON DEMOLITION AND CONSTRUCTION TO REMAIN.
U. AT AREAS WHERE NEW SYSTEMS ARE INSTALLED ABOVE EXISTING ACOUSTICAL LAY-IN CEILINGS, REMOVE THE CEILING TILES AND STORE IN A LOCATION AS DIRECTED BY THE OWNER. REINSTALL THE TILE UPON COMPLETION OF THE SYSTEMS WORK. PROTECT TILES FROM DAMAGE, DIRT OR STAINING. REPLACE ANY TILE WHICH DOES GET DAMAGED, DIRTY OR STAINED WITH NEW TILES MATCHING THE TYPE OF THE ADJACENT EXISTING TILES.
V. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. WHERE GENERAL DEMOLITION NOTES DO NOT AGREE WITH SPECIFICATIONS, REFER DISCREPANCY TO ARCHITECT FOR RESOLUTION.
W. EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. SHOULD THEY DIFFER FROM THOSE SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.
X. AT UNEVEN AREAS AND DEPRESSIONS IN EXISTING CONCRETE FLOOR CONSTRUCTION, PROVIDE CEMENTITIOUS UNDERLAYMENT AS REQUIRED TO PROVIDE SUITABLE BASE CONDITION FOR NEW FINISH(ES) AND NEW CONSTRUCTION.
AA. EXISTING CONSTRUCTION MAY CONTAIN ASBESTOS CONTAMINATED PRODUCTS. MATERIALS THOUGHT TO CONTAIN ASBESTOS MUST BE INSPECTED BY AN EPA CERTIFIED INSPECTOR CAPABLE OF SAMPLING FOR T HE EXISTENCE OF ASBESTOS. WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT OSHA REGULATIONS AND DISPOSED OF IN ACCORDANCE WITH CURRENT EPA REGULATIONS.
BB. EXISTING CONSTRUCTION MAY CONTAIN LEAD CONTAMINATED PRODUCTS. MATERIALS THOUGHT TO CONTAIN LEAD MUST BE INSPECTED BY AN EPA CERTIFIED INSPECTOR CAPABLE OF SAMPLING FOR THE EXISTENCE OF LEAD. WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT OSHA/EPA REGULATIONS AND DISPOSED OF IN ACCORDANCE WITH CURRENT EPA REGULATIONS.
CC. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDING AREAS. ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA.
  A. PROTECT WALLS, CEILINGS, FLOORS AND OTHER FINISH WORK THAT ARE TO REMAIN AND ARE EXPOSED DURING SELECTIVE DEMOLITION OPERATIONS.
  B. COVER AND PROTECT FURNISHINGS AND EQUIPMENT THAT HAVE NOT BEEN REMOVED.
  C. DO NOT BLOCK ANY EXITS DURING CONSTRUCTION OPERATIONS.
DD. ALL EXISTING FURNITURE, EQUIPMENT AND CASEWORK IS TO BE REMOVED AND RETURNED TO OWNER FOR RELOCATION.

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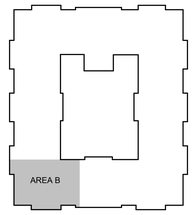
PROFESSIONAL SEALS:

CONSULTANTS:



AREA OF WORK

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
	01-31-2025	OWNER REVIEW
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY

5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

SSOE PROJECT #: 023-03991-00

SSOE MANAGER: J. FALZON

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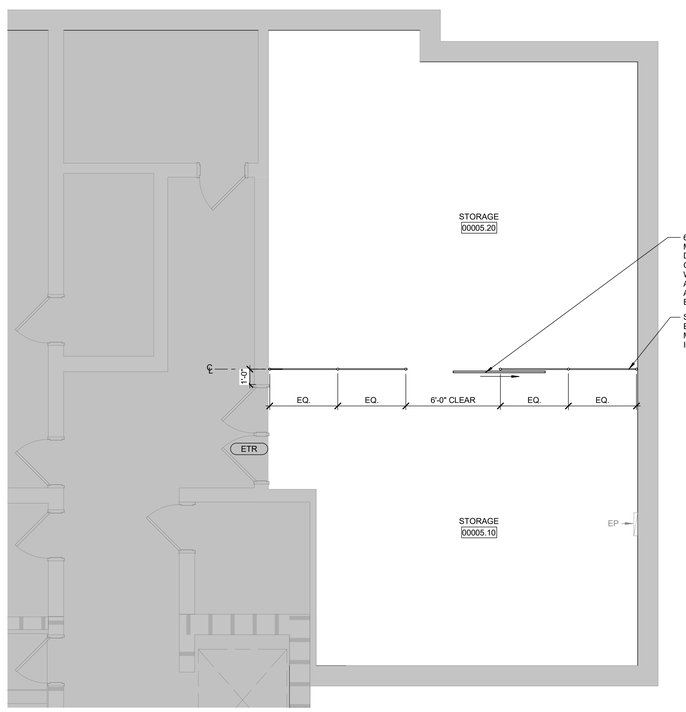
Troy, MI 48084-1526
T. (248) 643-6222

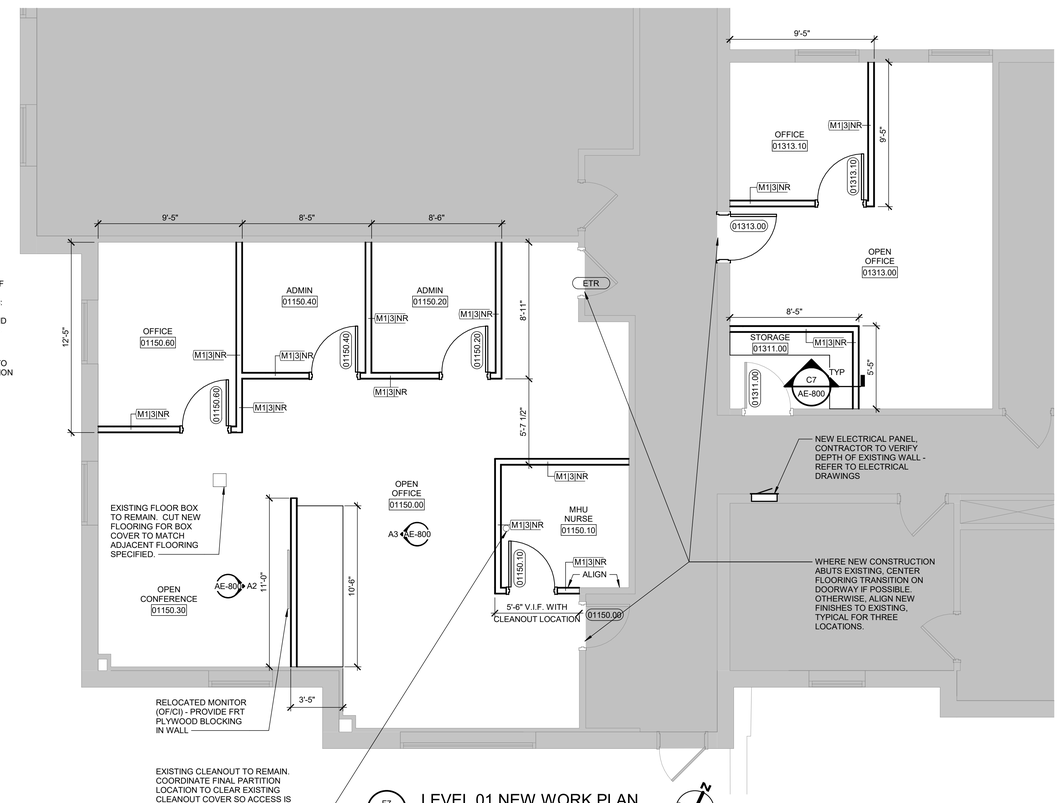
LEVEL 01 DEMOLITION PLAN

AD-100



A7 / AE-100 LEVEL 00 NEW WORK PLAN

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



F7 / AE-100 LEVEL 01 NEW WORK PLAN

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

DRAWING CONVENTIONS LEGEND

- EXISTING CONSTRUCTION
- EXISTING 1 HOUR RATED METAL STUDS CONSTRUCTION
- NEW NON RATED METAL STUDS CONSTRUCTION
- CENTERLINE
- ALIGN — ALIGNMENT REFERENCE
- AREA OF "NO WORK"

GENERAL FLOOR PLAN NOTES

1. THESE DRAWINGS SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ASSOCIATE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.
2. ALL WALLS EXTEND TO UNDERSIDE OF FLOOR/ROOF DECK ABOVE UNLESS NOTED OTHERWISE. (WALLS EXTEND TO BOTTOM OF TRUSS AT LIGHT GAUGE METAL TRUSSES).
3. ALLOW FOR 1/2" DEFLECTION WHERE WALL MEETS STRUCTURE ABOVE. PROVIDE COMPRESSIBLE FILLER BETWEEN TOP OF WALL AND STRUCTURE AT STANDARD WALL CONSTRUCTION AND FIRESAFING AT RATED WALL CONSTRUCTION.
4. FILL FLUTES OF DECK WITH ACOUSTICAL INSULATION AT STANDARD WALL CONSTRUCTION AND FIRE SAFING AT RATED WALL CONSTRUCTION.
5. BRACE INTERIOR PARTITIONS PER ANSI CRITERIA.
6. COORDINATE OPENINGS IN WALLS w/ OTHER TRADES AND SEAL.
7. SEAL ALL PENETRATIONS THROUGH WALL TYP.
8. FEC - FIRE EXTINGUISHER CABINET & EXTINGUISHER.
9. ALL DOORS ARE DIMENSIONED AS SHOWN BELOW UNLESS NOTED OR DIMENSIONED OTHERWISE.
10. ALL EXISTING FLOORS TO RECEIVE VINYL FLOORING OR VCT SHALL BE GROUND OR LEVELED TO ACHIEVE FLATNESS THAT IS REQUIRED BY MANUFACTURER TO MAINTAIN WARRANTY.
11. PROVIDE DRYWALL CONTROL JOINTS AT LOCATIONS INDICATED ON DRAWINGS OR AT A MAXIMUM SPACING OF 30'-0" IN ANY DIRECTION AND AT ALL JAMB STUDS AT ALL OPENINGS. - TYPICAL. INSTALL IN ACCORDANCE WITH ASTM C-840. INSTALL CONTROL JOINTS ALIGNED WITH DOOR JAMBS AND/OR EDGE OF SOFFITS WHEREVER POSSIBLE. ALL GWB CONTROL JOINT LOCATIONS FOR WALLS AND SOFFITS SHALL BE MARKED UP ON SHOP DRAWINGS AND SUBMITTED TO THE ARCHITECT PRIOR TO INSTALLATION.
12. WHERE ADJACENT WALLS HAVE DISSIMILAR NUMBER OF LAYERS OF GWB, INSTALL FINAL LAYERS OF GWB FLUSH.
13. CONTRACTOR TO PROVIDE ALL BLOCKING IN WALLS FOR ALL BUILT-IN CABINETS, COUNTERTOP SUPPORTS, GRAB BARS, ETC
14. IN LOCATIONS WHERE DOORS ARE IN WALL ASSEMBLIES, HAVE FURRED OUT DRYWALL WRAP BACK TO DOOR FRAME.
15. PROVIDE ALL FIRE BLOCKING AS REQUIRED PER OBC.
16. ACCESS DOORS SHALL BE INSTALLED IN WALLS AT ALL EQUIPMENT, VALVE OR OTHER LOCATIONS REQUIRING ACCESS FOR MAINTENANCE WHICH ARE LOCATED BEHIND FINISHED SURFACES. SEE SPECIFICATIONS FOR SPECIFIC REQUIREMENTS AND DIRECTIONS.

GENERAL NOTES

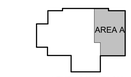
1. DIMENSIONS ARE TO FINISH FACE OF WALL OR CASEWORK UNLESS NOTED OTHERWISE (UNO).
2. FIELD VERIFY PROJECT CONDITIONS PRIOR TO THE START OF, AND AS NEEDED DURING THE COURSE OF CONSTRUCTION, INCLUDING EXISTING SITEWORK CONDITIONS WITH ALL CIVIL DOCUMENTS, IF APPLICABLE. IF DISCREPANCIES OR INCONSISTENCIES IN THE DOCUMENTS ARE DISCOVERED, NOTIFY THE ARCHITECT IMMEDIATELY USING THE DESIGNATED "REQUEST FOR INFORMATION" PROCEDURE. INDICATION(S) FOR RATED WALL CONSTRUCTION AS SHOWN ON REFLECTED CEILING PLAN(S) TAKE PRECEDENCE OVER WALL CONSTRUCTION TYPES NOTED ON FLOOR PLAN DRAWINGS, IN CASE OF CONFLICT BETWEEN THE TWO.
3. KEEP MEANS OF EGRESS OPEN, PROPERLY ILLUMINATED, AND FREE OF OBSTRUCTIONS IN ALL AREAS IMPACTED BY PROJECT CONSTRUCTION.
4. WHERE NEW CONSTRUCTION ABUTS EXISTING CONSTRUCTION DIRECTLY, ALIGN NEW FINISH SURFACES(S) WITH EXISTING.
5. KEEP CONSTRUCTION NOISE TO A MINIMUM, PARTICULARLY DURING DAYTIME OPERATIONAL HOURS.
6. SMOKING AND SMOKELESS USE OF TOBACCO PRODUCTS ARE PROHIBITED ON PROJECT SITE.
7. PATCH AND REPAIR DENTS, CRACKS, HOLES, AND/OR OTHER UNEVEN SURFACE IMPERFECTIONS WHERE EXISTING CONSTRUCTION IS TO REMAIN AND/OR WHERE NEW FINISHES ARE TO BE INSTALLED.
8. VERIFY THE DIMENSIONS, LOCATIONS, ELEVATION AND ARRANGEMENT OF INFRASTRUCTURE ASSOCIATED WITH INSTALL OF EQUIPMENT AND RELATED MECHANICAL AND ELECTRICAL WORK.
9. WHERE DEMOLISHED OPENINGS ARE INFILLED PROVIDE WALL CONSTRUCTION SIMILAR TO ADJACENT PARTITION TYPE. ADJUST ASSEMBLY TO MATCH EXISTING WALL THICKNESS.
10. COORDINATE SCHEDULE OF OVERALL CONSTRUCTION AND DAY-TO-DAY CONSTRUCTION OPERATIONS WITH OWNER'S SCHEDULE REQUIREMENTS.
11. FLOOR PLAN DRAWINGS ARE COMPOSITES OF EXISTING CONSTRUCTION TO REMAIN AND NEW CONSTRUCTION. EXISTING CONSTRUCTION IS SHOWN IN LIGHTER, OUTLINE FORM. NEW CONSTRUCTION IS INDICATED WITH HEAVIER LINE WORK, AND ADDITIONALLY MAY BE IDENTIFIED BY SHADING, NOTE, KEYNOTE, LARGER SCALE DETAIL REFERENCE, OR MATERIAL PATTERN (REFER ALSO TO LEGEND).
12. REFERENCE THE OWNER/CONTRACTOR AGREEMENT, WHICH DEFINES THE CONTRACT DOCUMENTS.
13. THESE DRAWINGS ARE COMPLEMENTARY AND INTERRELATED: WORK OF ANY INDIVIDUAL TRADE IS NOT NECESSARILY CONFINED TO SPECIFIC DOCUMENTS, CHAPTERS OR LOCATIONS.
14. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
15. APPROVED PLANS SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION. THE CONTRACTOR SHALL ALSO MAINTAIN, IN GOOD CONDITION, ONE COMPLETE SET OF DRAWINGS WITH ALL REVISIONS, ADDENDA AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES. THERE ARE TO BE UNDER THE CARE OF THE JOB SUPERINTENDENT.
16. DO NOT SCALE THE DRAWINGS; USE DIMENSIONS ONLY.
17. IT IS THE INTENT OF THE CONTRACT DOCUMENT TO COMPLY WITH ALL GOVERNING CODES AND REGULATIONS IN EFFECT AT THE TIME THE PERMIT IS ISSUED. NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF SUSPECTED DEVIATION.
18. ALL UL AND ASTM STANDARDS NOTED ON THESE DRAWINGS SHALL BE OF THE LATEST REVISION UNLESS NOTED OTHERWISE.
19. EQUIVALENT MATERIALS SUBSTITUTED AS PER "APPROVED EQUAL" NOTE SHALL BE APPROVED BY THE ARCHITECT/ENGINEER OF RECORD BEFORE ACCEPTANCE OF BID BY GENERAL CONTRACTOR. ANY MATERIAL DESIGNATED WITH A BRAND NAME MAY BE SUBSTITUTED WITH IT'S EQUAL IF THE SO CALLED EQUIVALENT IS FIRST APPROVED BY THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL SUPPLY INFORMATION AS REQUESTED TO VERIFY MATERIAL IS EQUAL TO SPECIFIED MATERIAL. SEE SPECIFICATIONS FOR APPROPRIATE PROTOCOLS FOR REVIEW OF SUBSTITUTION REQUESTS.
20. THE DESIGN OF PRE-ENGINEERED SYSTEMS SPECIFIED IN THE CONTRACT DOCUMENTS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, SUPPLIER AND ITS DESIGN ENGINEER LICENSED IN THE PROJECT STATE. SUBMITTAL OF SUCH SYSTEMS TO THE ARCHITECT/ENGINEER OF RECORD SHALL BE REVIEWED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS WITH REGARD TO THE ARRANGEMENT OR SIZES OF MEMBERS SHOWN ON THE CONTRACT DOCUMENTS, AND THE SUPPLIERS INTERPRETATION OF THE DESIGN INFORMATION INCLUDED IN THE CONTRACT DOCUMENTS. SUCH REVIEW BY THE ARCHITECT/ENGINEER OF RECORD SHALL NOT IMPLY ANY RESPONSIBILITY FOR THE ACTUAL DESIGN OF SUCH SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DIMENSIONAL ACCURACY AND CONFORMANCE WITH THE INFORMATION CONTAINED WITHIN THE CONTRACT DOCUMENTS. SEE SPECIFIC SECTIONS OF GENERAL NOTES ABOVE AND THE SPECIFICATIONS FOR APPROPRIATE DESIGN RESPONSIBILITIES OF THE SUPPLIER AND IT'S LICENSED ENGINEER.
21. FIRE ALARM, SPRINKLER SYSTEMS, SHALL BE SUBMITTED AND APPROVED BY THE FIRE MARSHAL'S OFFICE HAVING JURISDICTION PRIOR TO INSTALLATION. FIRE ALARM CONTRACTOR SHALL OBTAIN A FIRE ALARM SYSTEM PERMIT PRIOR TO INSTALLATION. ANY FIRE ALARM RM PLANS INCLUDED IN THIS SET OF PLANS ARE FOR REFERENCE ONLY. NOT FOR PERMIT. FIRE SPRINKLER CONTRACTOR SHALL OBTAIN A FIRE SPRINKLER PERMIT PRIOR TO INSTALLATION. ANY FIRE SPRINKLER PLANS INCLUDED IN THIS SET OF PLANS ARE FOR REFERENCE ONLY. NOT FOR PERMIT.
22. MECHANICAL, PLUMBING AND ELECTRICAL SUBCONTRACTORS SHALL SUBMIT AFFIDAVITS FOR EACH BUILDING PERMIT TO THE BUILDING PERMITS SECTION BEFORE REQUESTING INSPECTIONS. OBTAIN AFFIDAVITS FROM THE BUILDING PERMITS SECTION.
23. IT IS THE INTENT OF THESE DOCUMENTS THAT ALL ITEMS, EQUIPMENT, HARDWARE, CLEARANCES, MOUNTING HEIGHTS, SIGNAGE, SYSTEMS, ETC BE IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL REPORT TO THE ARCHITECT ANY DISCREPANCIES NOTED BETWEEN THE REQUIREMENTS OF THE ACT AND THE DOCUMENTS AND WAIT FOR DIRECTIONS ON THE RESOLUTION OF THE DISCREPANCIES.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE PROJECT SITE, WHILE CONSTRUCTION IS IN PROGRESS AND UNTIL JOB IS COMPLETE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE SAFETY OF THE OCCUPANTS AND WORKERS AT ALL TIMES.

ssoe®

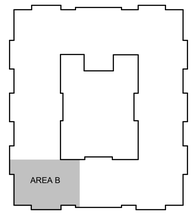
PROFESSIONAL SEALS:

STATE OF MICHIGAN
JEFFREY S. FALZON
ARCHITECT
No. 1301047612
3-28-2025
REGISTERED ARCHITECT

CONSULTANTS:



LEVEL 0 KEYPLAN



AREA OF WORK

LEVEL 1 KEYPLAN

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

SSOE PROJECT #: 023-03991-00

SSOE MANAGER: J. FALZON

ssoe
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-6222

LEVEL 00 + 01 NEW WORK PLANS

AE-100

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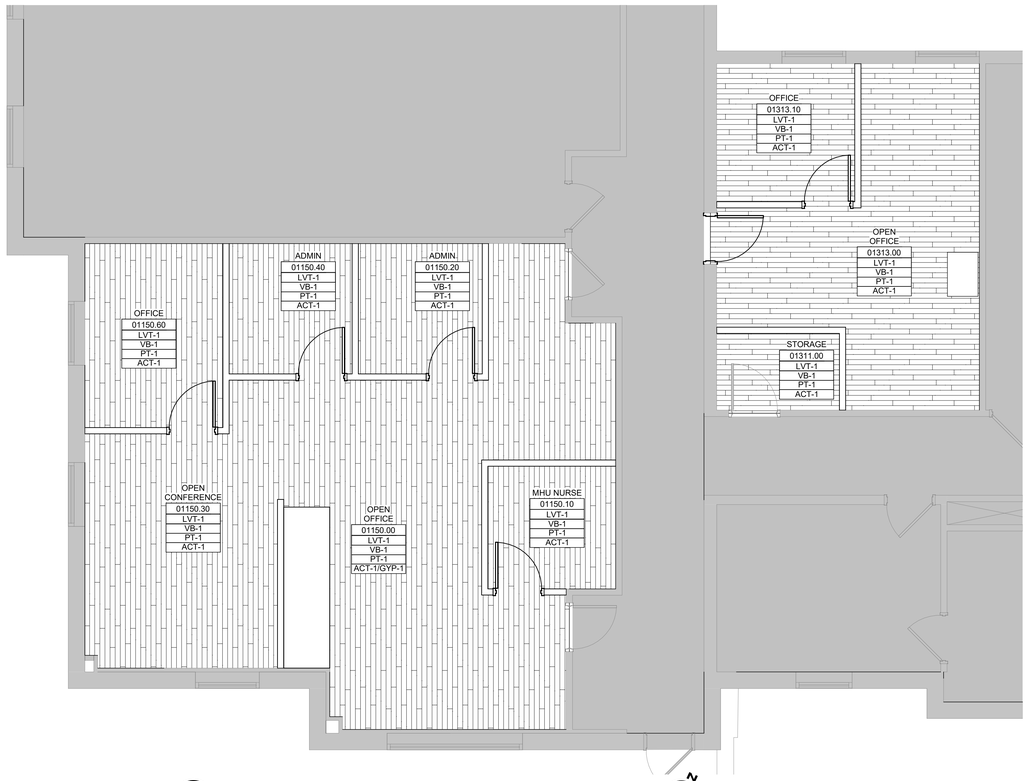
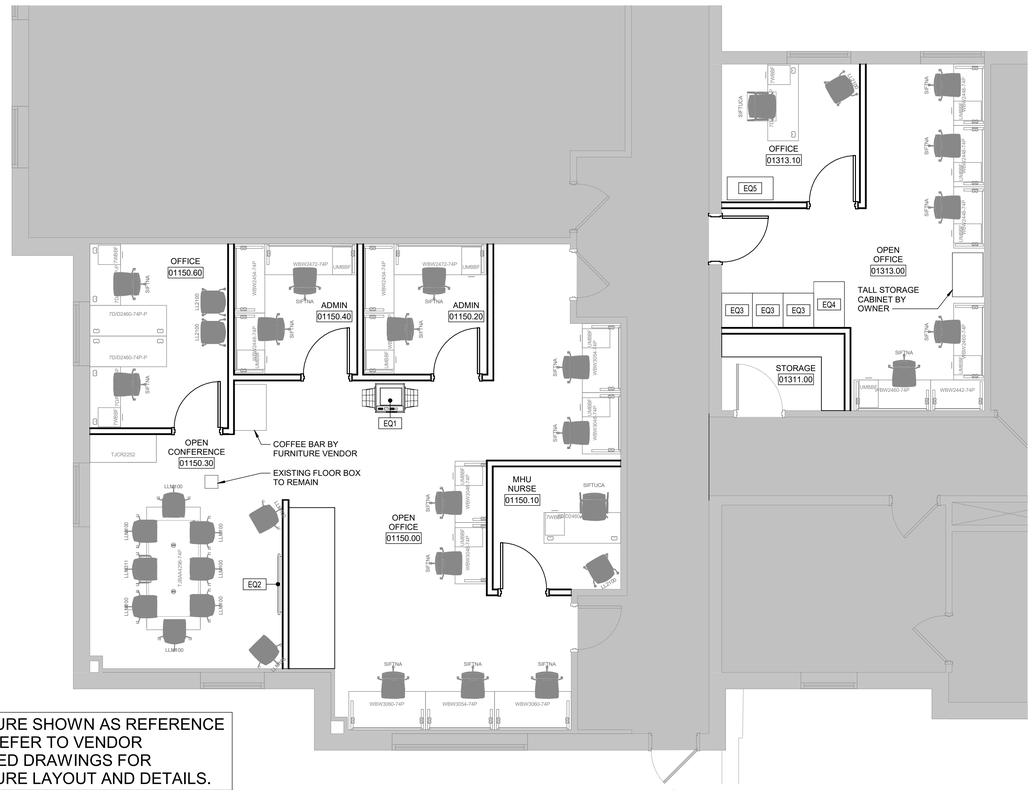


A4 / AE-200

ENLARGED LEVEL 01 FINISH FLOOR PLAN - AREA B

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



FURNITURE SHOWN AS REFERENCE ONLY. REFER TO VENDOR PROVIDED DRAWINGS FOR FURNITURE LAYOUT AND DETAILS.

A7 / AE-200

ENLARGED LEVEL 01 EQUIPMENT PLAN - AREA B

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

SPECIALTY EQUIPMENT SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	SUPPLIED BY	INSTALLED BY	COMMENTS
EQ1	COPIER	N/A	OWNER	OWNER	EXISTING TO BE RELOCATED
EQ2	TELEVISION	N/A	OWNER	OWNER	NEW, BY OWNER
EQ3	REFRIGERATOR	N/A	OWNER	OWNER	EXISTING TO BE RELOCATED
EQ4	REFRIGERATOR	N/A	OWNER	OWNER	EXISTING TO BE RELOCATED
EQ5	PHARMACUTICAL CABINET	N/A	OWNER	OWNER	EXISTING TO BE RELOCATED

ROOM FINISH SCHEDULE

NO	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH				CASEWORK		CEILING	COMMENTS
				NORTH	EAST	SOUTH	WEST	VERTICAL	HORIZONTAL	MATL	
LEVEL 1											
01150.00	OPEN OFFICE	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	PL-1, PL-2	PL-2, PL-3	ACT, GYP	
01150.10	MHU NURSE	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	
01150.20	ADMIN	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	
01150.30	OPEN CONFERENCE	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	
01150.40	ADMIN	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	
01150.60	OFFICE	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	
01311.00	STORAGE	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	
01313.00	OPEN OFFICE	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	
01313.10	OFFICE	LVT-1	VB-1	PT-1	PT-1	PT-1	PT-1	-	-	ACT	

MATERIAL FINISH SCHEDULE

CODE	DESCRIPTION	BASIS OF DESIGN MANUFACTURER	STYLE NAME #	COLOR NAME #	COMMENTS
PT-1	GENERAL PAINT COLOR	SHERWIN WILLIAMS	SW 9586	WHITE SESAME	EGG SHELL
PT-2	SOFFITS	SHERWIN WILLIAMS	SW 9582	WHITE SAND	FLAT FINISH AT GYPSUM BOARD SOFFITS
PT-3	DOOR TRIM	SHERWIN WILLIAMS	SW 9602	STUDIO BEIGE	GLOSS FINISH AT DOOR FRAMES
LVT-1	FLOORING	J+J FLOORING	CLASSICS II V5023 LVT	NOTABLE 1000	NO SUBSTITUTIONS
VB-1	BASE	TARKETT/JOHNSONITE	JOHNSONITE PERCEPTIONS RWDC 34 G 4 1/4 X 120 CONTOUR 4 1/4" PART NUMBER S102233-34-WB0120-RWDCG REF 4407/30068	34 ALMOND	GENERAL CONTRACTOR TO FIELD VERIFY BASE COLOR MATCHES DOOR TRIM PAINT COLOR
PL-1	VERTICAL CASEWORK	FORMICA LAMINATE - COMMERCIAL	6209	PRESTIGE WALNUT	
PL-2	HORIZONTAL CASEWORK	FORMICA LAMINATE - COMMERCIAL	6209	PRESTIGE WALNUT	
ACT	LAY-IN CEILING SYSTEM	ARMSTRONG WORLD INDUSTRIES	STYLE: CALLA 2822TEMP EDGE: SQUARE TEGULAR 15/16" DIMENSIONS: 24" X 24" THICKNESS: 1/14" SHAPE: RECTANGLE GRID: PRELUDE XL 15/16" EXPOSED TEE	TILE COLOR: WHITE, GRID COLOR: BLIZZARD WHITE	
PL-3	COFFEE BAR COUNTERTOP	FORMICA LAMINATE - COMMERCIAL	3522	PERLATO GRANITE	REFER TO SECTION E7/AE-800 FOR LOCAITON

GENERAL FINISH NOTES

GENERAL NOTES:

1. FINISHES SHALL HAVE A CLASS "C" FLAME SPREAD RATING OR BETTER.
2. FINISHES AND MATERIALS SHALL BE AS INDICATED ON THE FINISH PLANS. NO SUBSTITUTIONS WILL BE ACCEPTED WITHOUT PRIOR APPROVAL OF THE ARCHITECT.
3. ELECTRICAL DEVICES AND COVER PLATE COLORS TO MATCH EXISTING.
4. PAINT EXPOSED BUILDING COMPONENTS AT WALLS (INCLUDING BUT NOT LIMITED TO REGISTERS, GRILLES, AND PANELS) TO MATCH ADJACENT WALL COLOR.
5. REFER TO SPECIFICATION FOR LEVEL OF GYPSUM BOARD FINISH, AS APPLICABLE.

FLOOR & BASE:

1. AT ALL TRANSITIONS BETWEEN DIFFERENT FLOOR FINISH MATERIALS, INSTALL SILLS OR THRESHOLDS AND/OR TERMINATE MATERIALS AS INDICATED ON THE TYPICAL TERMINATIONS DETAIL LEGEND.
2. REMOVE CURING COMPOUNDS FROM ALL CONCRETE SLABS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS PRIOR TO THE INSTALLATION OF ANY FLOOR FINISH MATERIALS.
3. MOISTURE TEST ALL NEW AND EXISTING CONCRETE SLABS ON GRADE PRIOR TO INSTALLATION OF ANY FLOOR FINISH MATERIALS. DO NOT INSTALL FINISHES UNLESS THE MOISTURE EMISSION RATE IS ACCEPTABLE TO THE FINISH MANUFACTURER AND MAINTAINS ALL WARRANTIES. PERFORM TESTS AS SPECIFIED. SCHEDULE SLAB POURS AND TESTS TO ALLOW PROPER CURING AND TESTING TIMES WITHOUT DELAYS TO THE OVERALL SCHEDULE.
4. ALL FLOORING TO EXTEND BELOW CASEWORK. TYPICAL.

WALL & CEILING:

1. WALLS SHALL BE PAINTED (PT-1) AND RECEIVE MFR'S RECOMMENDED PRIMER COAT AND TWO (2) COATS MIN. OF LATEX EGGSHELL FINISH, UNO.
2. GRILLES, DIFFUSERS AND ACCESS PANELS SHALL BE PAINTED TO MATCH THE WALL OR CEILING ON WHICH THEY ARE LOCATED UNO.
3. GYPSUM BOARD SOFFITS & CEILINGS SHALL BE PAINTED (PT-2) AND RECEIVE MFR'S RECOMMENDED PRIMER COAT AND TWO (2) COATS MIN. OF LATEX FLAT FINISH, UNO.
4. HOLLOW METAL DOOR FRAMES, STAIR RAILINGS AND STRINGERS SHALL BE PAINTED (PT-3) AND RECEIVE MFR'S RECOMMENDED PRIMER COAT AND TWO (2) COATS MIN OF LATEX SEMI-GLOSS FINISH UNO.

MILLWORK:

1. AT ALL MILLWORK BASE CABINETS, PROVIDE BASE AS SCHEDULE FOR ADJACENT WALLS UNO.

FINISH FLOOR LEGEND

LVT-1

DRAWING CONVENTIONS LEGEND

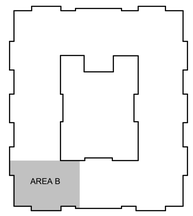
- EXISTING CONSTRUCTION
- EXISTING 1 HOUR RATED METAL STUDS CONSTRUCTION
- NEW NON RATED METAL STUDS CONSTRUCTION
- CENTERLINE
- ALIGN — ALIGNMENT REFERENCE
- AREA OF "NO WORK"

ssoe®

PROFESSIONAL SEALS:

STATE OF MICHIGAN
JEFFREY S. FALZON
ARCHITECT
No. 1301047612
5-28-2025
REGISTERED ARCHITECT

CONSULTANTS:



AREA OF WORK

SUBMITTAL/REVISION SCHEDULE:

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1	03-28-2025	BIDS/PERMITS

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WAYNE STATE UNIVERSITY
5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

SSOE PROJECT #: 023-03991-00
SSOE MANAGER: J. FALZON

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1050 Wilshire Drive, Suite 260
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LEVEL 01 FURNITURE, FINISH, AND EQUIPMENT PLANS

AE-200

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DOOR SCHEDULE

DOOR NUMBER	TO ROOM INFO: NUMBER	TO ROOM INFO: NAME	DOOR & FRAME RATING (IN MINUTES)	NUM OF PANELS	DOOR PANEL(S): PANEL 1 - TYPE	DOOR PANEL(S): P1 WIDTH	DOOR PANEL(S): PANEL HEIGHT	DOOR PANEL(S): PANEL MATERIAL #1	DOOR PANEL(S): PANEL MATERIAL #2	DOOR FRAME: FRAME TYPE	DOOR FRAME: FRAME MATERIAL	DETAILS: HEAD	DETAILS: JAMB	DOOR HARDWARE: SET	DOOR HARDWARE: POWER / ACCESS	COMMENTS
LEVEL 1																
01150.00	01150.00	OPEN OFFICE	N/A	ETR	ETR	ETR	ETR	ETR		ETR	ETR	ETR	ETR	03	YES	CARD READER - REFER TO ELECTRICAL DRAWINGS
01150.10	01150.10	MHU NURSE	N/A	1	G	3'-0"	7'-0"	SCWV		00-HM01	HM	H1	J1	01		
01150.20	01150.20	ADMIN	N/A	1	G	3'-0"	7'-0"	SCWV		00-HM01	HM	H1	J1	01		
01150.40	01150.40	ADMIN	N/A	1	G	3'-0"	7'-0"	SCWV		00-HM01	HM	H1	J1	01		
01150.60	01150.60	OFFICE	N/A	1	G	3'-0"	7'-0"	SCWV		00-HM01	HM	H1	J1	01		
01311.00	01311.00	STORAGE	N/A	1	ETR	3'-0"	7'-0"	ETR		ETR	ETR	ETR	ETR	03	YES	CARD READER - REFER TO ELECTRICAL DRAWINGS
01313.00	01313.00	OPEN OFFICE	N/A	1	F	3'-0"	7'-0"	SCWV		02-HM01	HM	H2	J2	02	YES	CARD READER - REFER TO ELECTRICAL DRAWINGS
01313.10	01313.10	OFFICE	N/A	1	G	3'-0"	7'-0"	SCWV		00-HM01	HM	H1	J1	01		

APPROVED MANUFACTURERS
Hinges: Hager, Ives
Locks: Schlage
Closers: LCN
Electric Strikes: HES
Auxilliary Hardware: Ives, Rockwood, Trimco

SET 01
3 EA HINGES 5BB1 (4.5" x 4.5") 652 IVE
1 EA OFFICE LOCK ND53 x RHO 626 SCH
1 EA WALL STOP WS407 630 IVE

SET 02
3 EA HINGES 5BB1 (4.5" x 4.5") 652 IVE
1 EA STOREROOM LOCK ND80 x RHO 626 SCH
1 EA CLOSER 4040XP 689 LCN
1 EA WALL STOP WS407 630 IVE
1 EA KICK PLATE 8400 10" x 2" LDW 630 IVE
1 EA ELECTRIC STRIKE 1006C 630 HES
1 EA CARD READER BY SECURITY CONTRACTOR
-DOOR NORMALLY CLOSED AND LOCKED. PRESENTING CREDENTIAL WILL OPEN ELECTRIC STRIKE AND ALLOW DOOR TO BE OPENED. DOOR WILL REMAIN CLOSED AND SECURE UPON LOSS OF POWER. FREE EGRESS ALLOWED AT ALL TIMES BY INSIDE LEVER.

SET 03
1 EA ELECTRIC STRIKE 1006C 630 HES
1 EA CARD READER BY SECURITY CONTRACTOR
-REMAINDER OF HARDWARE EXISTING TO REMAIN. SUPPLIER TO VERIFY COMPATABILITY OF NEW HARDWARE WITH EXISTING HARDWARE, AND DOOR AND FRAME PREPS.
-DOOR NORMALLY CLOSED AND LOCKED. PRESENTING CREDENTIAL WILL OPEN ELECTRIC STRIKE AND ALLOW DOOR TO BE OPENED. DOOR WILL REMAIN CLOSED AND SECURE UPON LOSS OF POWER. FREE EGRESS ALLOWED AT ALL TIMES BY INSIDE LEVER.

DOORS & GLAZED OPENINGS NOTES

1. ALL DOOR FRAMES SHALL BE HOLLOW METAL WITH A 2" FACE DIMENSION, EXCEPT AS NOTED AT DOOR SCHEDULE.
2. SEE WINDOW AND DOOR DETAILS FOR ADDITIONAL EXTERIOR HOLLOW METAL ELEVATIONS.
3. ALL FLOORING TRANSITIONS UNDER DOORS SHALL BE IN ACCORDANCE WITH TRANSITION DETAILS ON **AE-300.**
4. THE FLOOR ON BOTH SIDES OF A DOOR SHALL BE LEVEL AND SHALL HAVE THE SAME ELEVATION ON BOTH SIDES OF THE DOOR FOR A DISTANCE ON EACH SIDE AT LEAST EQUAL TO THE WIDTH OF THE WIDEST SINGLE DOOR PANEL (NFPA 101 2012 EDITION 7.2.1.3.1 & 7.2.1.3.2).
5. ALL DOORS WITH SELF-CLOSERS SHALL CONFORM TO ALL APPLICABLE CODES OR HAVE A MAXIMUM FORCE ALLOWABLE OF 5 LBF AND HAVE A MINIMUM SWEEP PERIOD OF 3 SECONDS FROM 70 DEGREES OPEN TO 3" LATCH FROM LATCH TO LEADING DOOR EDGE, WHICHEVER IS MORE STRICT SHALL APPLY. SELF CLOSING DEVICES SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE LIFE SAFETY CODE AND NFPA 80.
6. SWING AND FORCE TO OPEN DOORS SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION LIFE SAFETY CODE, CHAPTER 7.2.1.4.5.
7. DOORS/HARDWARE HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE. LEVER-OPERATED MECHANISMS, PUSH-TYPE MECHANISMS AND U-SHAPED HANDLES ARE ACCEPTABLE DESIGNS.
8. OPENING HEIGHTS AND WIDTHS NOTED ARE NOMINAL ROUGH OPENING WIDTHS. VERIFY IN FIELD ALL DIMENSIONS.
9. G.C. TO PROVIDE TO GLAZING MANUFACTURER, PRODUCT DATA AND CUT SHEETS FOR ALL MATERIALS THAT COME INTO CONTACT WITH GLAZING.
10. AT ALL HOLLOW METAL FRAMES AT MASONRY WALLS, GROUT FRAME SOLID.
11. AT ALL HOLLOW METAL FRAMES INSTALLED IN STUD WALLS THAT HAVE SOUND BATTS, FILL HOLLOW METAL FRAMES WITH SOUND BATTS.

DOOR SCHEDULE ABBREVIATIONS

ALUM	ALUMINUM
CR	CARD READER
ETR	EXISTING TO REMAIN
FF	FACTORY FINISH
HGT	HEIGHT
HM	HOLLOW METAL
•	HM1 = STANDARD DOUBLE-RABBET FRAME
IN	INCH
MAX	MAXIMUM
MIN	MINIMUM
THK	THICK/THICKNESS
PT	PAINT
PR	PAIR
REV	REVISION (SEE SUBMITTAL/REVISION SCHEDULE AT RIGHT SHEET MARGIN)
RO	ROUGH OPENING
SCWV	SOLID CORE WOOD VENEER
SIM	SIMILAR
STN	STAINED

GENERAL NOTES

NOTE 1:
MOUNTING HEIGHTS SHOWN ARE FOR ACCESSORIES AND FIXTURES REQUIRED UNLESS OTHERWISE NOTED OR DIMENSIONED ON DRAWINGS FOR SPECIFIC CONDITIONS.

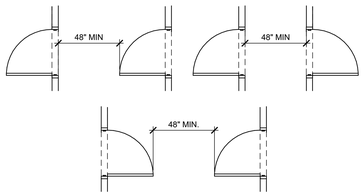
NOTE 2:
THE REFERENCE STANDARDS FOR THESE DETAILS IS THE 2009 INTERNATIONAL CODE COUNCIL A117.1-2009, ACCESSIBLE AND USABLE BUILDING AND FACILITIES, AS REFERENCED BY CHAPTER 11 OF THE INTERNATIONAL CODE COUNCIL MODEL CODES AND THE DEPARTMENT OF JUSTICE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

NOTE 3:
THE BASIS OF DESIGN FOR THESE DETAILS IS BOBRICK. REFER TO THE SPECIFICATION MANUAL FOR OTHER MANUFACTURERS. ADJUST MOUNTING TO MATCH CRITICAL DIMENSIONS AND OPERATION REQUIREMENTS AND REACH RANGES

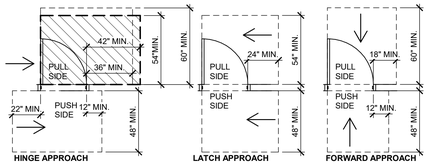
NOTE 4:
DIMENSIONS NOTED AS MINIMUM / MAXIMUM OR CLEAR INDICATE FINISHED DIMENSION AND MUST BE MAINTAINED. ADJUST WALL DIMENSIONS IF NECESSARY TO MAINTAIN REQUIRED CLEARANCES BETWEEN FIXTURES AND FINISHES.

NOTE 5:
OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5 POUND (22.2N) MAXIMUM.

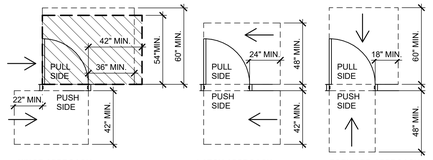
NOTE 6:
PROVIDE BARRIER FREE (BF), AMBULATORY (AM) OR STANDARD (ST) DETAILS AS INDICATED ON FLOOR PLANS. MOUNT ALL ACCESSORIES AS INDICATED BELOW IN EACH TOILET STALL TYPE. PROVIDE MINIMUM (1) SET OF BARRIER FREE (BF) ACCESSORIES FOR EACH BARRIER FREE (BF) FIXTURE.



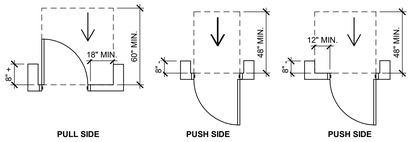
DOOR IN SERIES CLEARANCES



DOOR MANEUVERING CLEARANCES

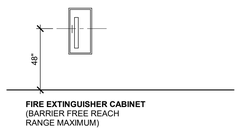


DOOR MANEUVERING CLEARANCES (LATCH ONLY - NO CLOSER)

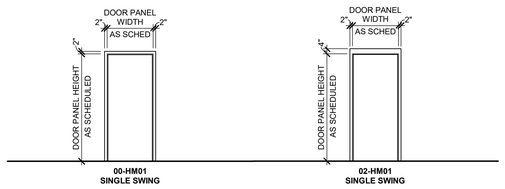


MANEUVERING CLEARANCES AT RECESSED DOORS - ALL FORWARD APPROACH

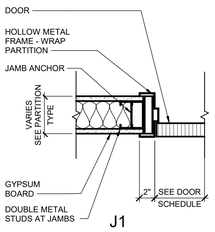
MISCELLANEOUS BARRIER FREE REQUIREMENTS



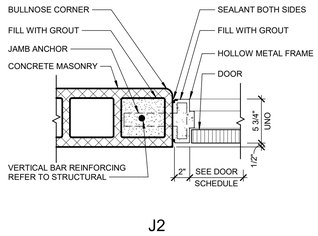
SAFETY AND FIRE PROTECTION ACCESSORIES



HOLLOW METAL FRAME TYPE ELEVATIONS
SCALE: 1/4" = 1'-0"



J1



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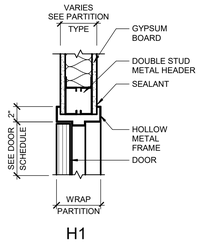

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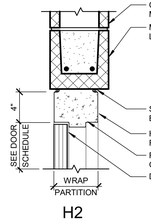

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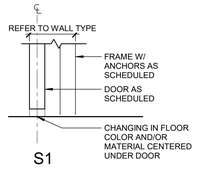

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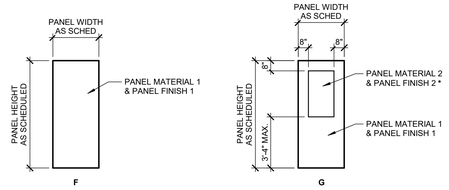
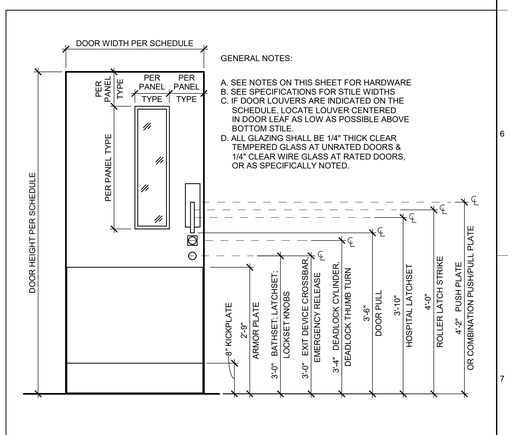


JAMB DETAILS
SCALE: 1 1/2" = 1'-0"

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

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

DOOR PANEL TYPE ELEVATIONS
SCALE: 1/4" = 1'-0"



TYPICAL DOOR HARDWARE MOUNTING HEIGHTS
SCALE: 3/4" = 1'-0"

SSOE

PROFESSIONAL SEALS:

STATE OF MICHIGAN
JEFFREY S. FALZON
ARCHITECT
No. 1301047612
3-28-2025

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

SSOE PROJECT #: 023-03991-00
SSOE MANAGER: J. FALZON

SSOE
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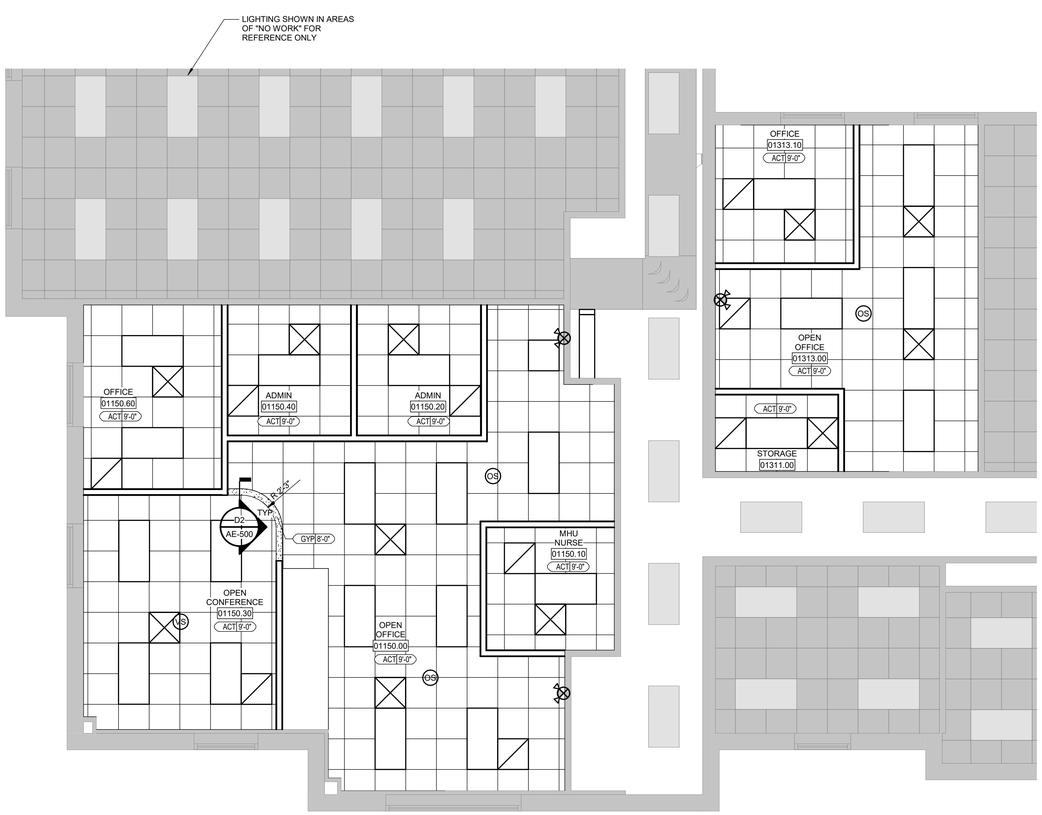
T. (248) 643-6222

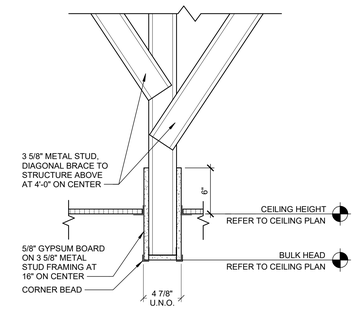
DOOR SCHEDULE AND DETAILS

AE-300



A7 / AE-500 — LEVEL 01 REFLECTED CEILING PLAN - AREA B

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



D2 / TYP. — TYPICAL BULKHEAD DETAIL

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

REFLECTED CEILING PLAN LEGEND

SYMBOL	DESCRIPTION
XX'-XX"	CEILING HEIGHT AFF
	LIGHTING FIXTURE - REFER TO ELECTRICAL DRAWINGS
	EXIT LIGHT - REFER ELECTRICAL DRAWINGS
	2'x2' SUPPLY DIFFUSER - REFER TO MECHANICAL DRAWINGS
	RETURN GRILL - REFER TO MECHANICAL DRAWINGS
OS	OCCUPANCY SENSOR - REFER TO ELECTRICAL DRAWINGS
	2'x4' SUSPENDED ACOUSTICAL TILE CEILING SYSTEM
	5/8" GYPSUM BOARD CEILING ON 3 5/8" METAL STUDS
	AREA OF "NO WORK"

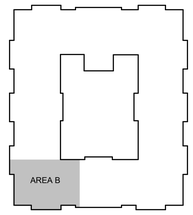
GENERAL REFLECTED CEILING PLAN NOTES

1. ALL CEILINGS ARE 9' - 0" AFF UNO.
2. LAY CEILING GRIDS AS SHOWN ON REFLECTED CEILING PLANS. EACH ROOM GRID IS PLANNED FOR MAXIMUM TILE SIZE AND OPTIMUM LIGHTING LAYOUT.
3. ALL LIGHT FIXTURE, MECHANICAL DIFFUSER LOCATIONS, AND TECHNOLOGY ITEMS ARE DIAGRAMMATIC IN NATURE OR ONLY SHOW TYPICAL ROOM LAYOUTS AND SOME ITEMS MAY NOT BE SHOWN FOR CLARITY. REFER TO THE MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL ITEMS TO BE PROVIDED.
4. COORDINATE FINAL LOCATION OF CEILING MOUNTED EQUIPMENT WITH ALL TRADES.
5. NO DEVICES, DAMPERS, VALVES, PUMPS, ETC ARE TO BE LOCATED ABOVE SPACES WITH GWB CEILINGS. WHERE POSSIBLE, ACCESS TO JUNCTION BOXES FOR LIGHTS IS TO BE THROUGH FIXTURES. ALL DEVICES REQUIRING ACCESS ARE TO BE LOCATED IN ADJACENT SPACES WITH ACCESSIBLE CEILING SYSTEMS.
6. ACCESS DOORS SHALL BE INSTALLED IN GWB & EIFS CEILINGS AT ALL EQUIPMENT, VALVE OR OTHER LOCATIONS REQUIRING ACCESS FOR MAINTENANCE WHICH ARE LOCATED ABOVE FINISHED SURFACES. ACCESS PANEL LOCATIONS SHOWN ARE APPROXIMATES. G.C. IS RESPONSIBLE FOR COORDINATING EXACT LOCATIONS OF ACCESS PANELS WITH THE FINAL LOCATION OF HVAC EQUIPMENT. SEE SPECIFICATIONS FOR SPECIFIC REQUIREMENTS AND DIRECTIONS.
7. REFER TO ELECTRICAL DRAWINGS FOR FULL EXTENT OF EXITING DEVICES, INCLUDING WALL MOUNTED DEVICES.
8. BRACE ALL SUSPENDED CEILINGS FOR SEISMIC RESISTANCE IN ACCORDANCE WITH CODE REQUIREMENTS AND AS DETAILED.
9. ALL CEILING CAVITY AREAS USED AS RETURN AIR PLENUMS SHALL BE CONSTRUCTED WITH FIRE RESISTANT MATERIALS AND SHALL ONLY CONTAIN MATERIALS WHICH HAVE SMOKE DEVELOPED RATINGS NOT GREATER THAN 50 AND FLAME SPREAD RATINGS NOT GREATER THAN 25 AS DETERMINED IN ACCORDANCE WITH ASTM 84.
10. DO NOT USE PVC PIPE IN RETURN AIR PLENUMS.
11. G.C. TO COORDINATE LOCATION OF HUMIDIFIERS WITH PLACEMENT OF EQUIPMENT, DUCTWORK, ELECTRICAL DEVICES AND CASEWORK.
12. AT ALL SOFFITS, PROVIDE RECESSED SPRINKLER HEADS.
13. ALL AREAS ABOVE CEILING SHALL BE FREE OF ACCUMULATIONS OF MUD, DUST, DIRT, CONSTRUCTION DEBRIS, ETC. CLEAN TOP SURFACES OF DUCTWORK, LIGHTS, PIPING, CONDUIT, AND OTHER CONSTRUCTION TO PROVIDE CLEAN SURFACE.
14. AT GWB SOFFITS, INSTALL GYPSUM WALLBOARD CONTROL JOINTS IN ACCORDANCE WITH ASTM C-840. WHERE A CEILING'S LINEAR DIMENSION RUNS IN AN UNINTERRUPTED STRAIGHT PLAN EXCEEDING 30 LINEAR FEET, CONTROL JOINTS SHALL BE INSTALLED 30'-0" ON CENTER MAXIMUM. TOTAL AREA OF GWB CEILING BETWEEN CONTROLS JOINTS SHALL NOT EXCEED 900 S.F. ALL SOFFITS CJ LOCATIONS SHALL MARKED UP ON SHOP DRAWINGS BY CONTRACTOR AND SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

ssoe®

PROFESSIONAL SEALS:

CONSULTANTS:



AREA OF WORK

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

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SSOE MANAGER: J. FALZON

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1050 Wilshire Drive, Suite 260
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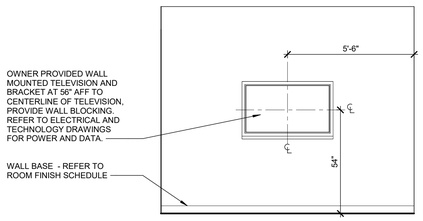
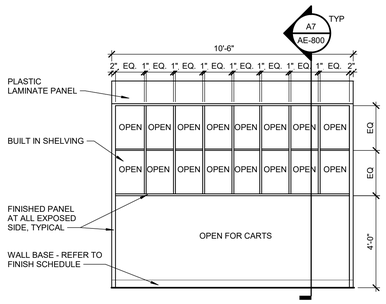
LEVEL 01 REFLECTED CEILING PLANS

AE-500



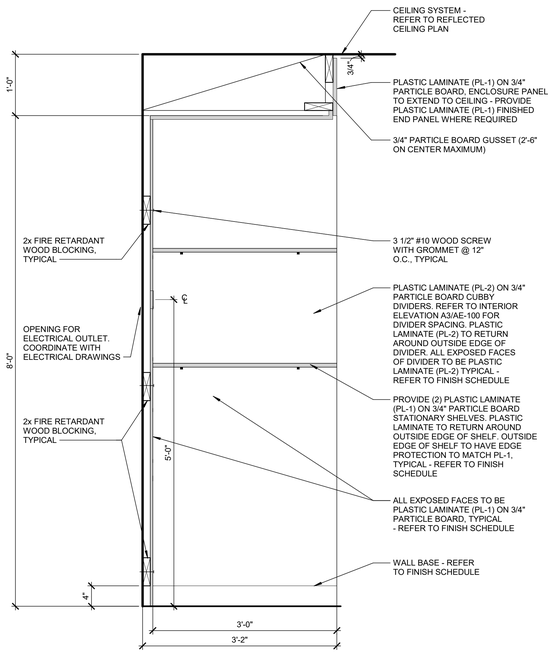
A2 / AE-100 — OPEN CONFERENCE

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



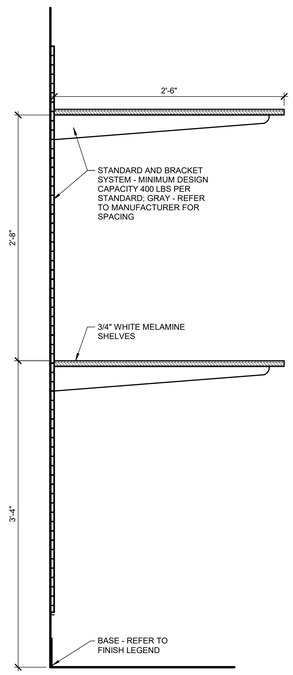
A3 / AE-100 — OFFICE SHELVING

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



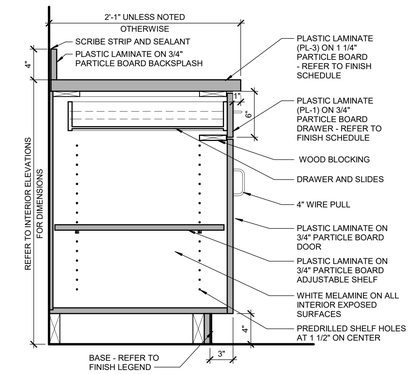
A7 / TYP. — OFFICE SHELVING

SCALE: 1" = 1'-0"



C7 / TYP. — CASEWORK SECTION

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

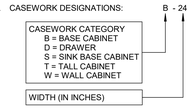


E7 / TYP. — CASEWORK SECTION (B)

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

CASEWORK NOTES

1. CASEWORK DESIGNATIONS:



2. ALL BASE CABINET DEPTHS ARE TO BE 24" AND ALL WALL CABINET DEPTHS ARE TO BE 14" INCHES UNLESS NOTED OTHERWISE ON DRAWINGS

PROFESSIONAL SEALS:

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
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SSOE MANAGER: J. FALZON

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INTERIOR ELEVATIONS, DETAILS AND CASEWORK

AE-800

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY
- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.
  - 2. Demolition and removal of selected site elements.
  - 3. Salvage of existing items to be reused or recycled.

1.2 MATERIALS OWNERSHIP
- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
- A. Engineering Survey: Submit engineering survey of condition of building.
- B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control, and for noise control. Indicate proposed locations and construction of barriers.
- C. Schedule of selective demolition activities with starting and ending dates for each activity.
- D. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.

1.4 CLOSEOUT SUBMITTALS (FOR OWNER REVIEW)
- A. Inventory of items that have been removed and salvaged.

1.5 QUALITY ASSURANCE
- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.6 FIELD CONDITIONS
- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect through the Construction Manager of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Owner through the Construction Manager. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.
- G. Arrange selective demolition schedule so as not to interfere with Owner's/Tenant's operations.

1.7 WARRANTY
- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.
- C. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.

PART 3 - EXECUTION

3.1 EXAMINATION
- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- C. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION
- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS
- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Arrange to shut off utilities with utility companies.
  - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  - 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
    - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
    - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION
- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION
- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  - 4. Maintain fire watch during and for at least 48 hours after flame-cutting operations.
  - 5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - 6. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area designated by Owner.
  - 5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
  - 1. Clean and repair items to functional condition adequate for intended reuse.
  - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  - 3. Protect items from damage during transport and storage.
  - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 CLEANING
- A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 035413 - GYPSUM CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 SUMMARY
- A. Section includes self-leveling, gypsum cement underlayment for application below interior floor coverings.

1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
- A. Product Data: For each type of product.

1.3 QUALITY ASSURANCE
- A. Installer Qualifications: Installer who is approved by manufacturer for application of underlayment products required for this Project.

1.4 FIELD CONDITIONS
- A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.
  - 1. Place gypsum cement underlayments only when ambient temperature and temperature of substrates are between

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
- A. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.

2.2 GYPSUM CEMENT UNDERLAYMENTS
- A. Gypsum Cement Underlayment: Self-leveling, gypsum cement product that can be applied in minimum uniform thickness of 1/8 inch (3 mm) or as recommended by manufacturer for substrate, to match adjacent floor elevations.
  - 1. Cement Binder: Gypsum or blended gypsum cement as defined by ASTM C 219.
  - 2. Compressive Strength: Not less than 4000 psi (27.6 MPa) at 28 days when tested according to ASTM C 472.
  - 3. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer, formulated for use with underlayment when applied to substrate and conditions indicated.
- B. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm); or coarse sand as recommended by underlayment manufacturer.
  - 1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.
- C. Water: Potable and at a temperature of not more than 70 deg F (21 deg C).
- D. Reinforcement: For underlayment applied to wood substrates, provide galvanized metal lath or other corrosion-resistant reinforcement recommended in writing by underlayment manufacturer.
- E. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.
- F. Surface Sealer: Designed to reduce porosity as recommended by manufacturer for type of floor covering to be applied to underlayment.

PART 3 - EXECUTION

3.1 PREPARATION
- A. General: Prepare and clean substrate according to manufacturer's written instructions.
  - 1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.
  - 2. Fill substrate voids to prevent underlayment from leaking.
- B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.
  - 1. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/100 sq. m) in 24 hours.
- C. Wood Substrates: Mechanically fasten loose boards and panels to eliminate substrate movement and squeaks. Sand to remove coatings that might impair underlayment bond and remove sanding dust.
  - 1. Install underlayment reinforcement recommended in writing by manufacturer.
- D. Nonporous Substrates: For ceramic tile, quarry tile, and terrazzo substrates, remove waxes, sealants, and other contaminants that might impair underlayment bond; prepare surfaces according to manufacturer's written instructions.
- E. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

3.2 APPLICATION
- A. General: Mix and apply underlayment components according to manufacturer's written instructions.
  - 1. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.
  - 2. Coordinate application of components to provide optimum adhesion to substrate and between coats.
  - 3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.
- B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. Apply underlayment to produce uniform, level surface.
  - 1. Apply a final layer without aggregate to product surface.
  - 2. Feather edges to match adjacent floor elevations.
- D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during application and curing processes.
- E. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.
- F. Apply surface sealer at rate recommended by manufacturer.
- G. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

END OF SECTION 035413

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY
- A. Section Includes:
  - 1. Wood blocking and nailers.
  - 2. Plywood backing panels.

1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
- A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
- A. Evaluation Reports: For the following, from ICC-ES:
  - 1. Fire-retardant-treated wood.
  - 2. Power-driven fasteners.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
- A. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.

2.2 WOOD PRODUCTS, GENERAL
- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
- B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.3 FIRE-RETARDANT-TREATED MATERIALS
- A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
  - 1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  - 2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
  - 3. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D 5664, and design value adjustment factors shall be calculated according to ASTM D 6841
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.
- C. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
- D. Application: Treat all miscellaneous carpentry unless otherwise indicated.

2.4 MISCELLANEOUS LUMBER
- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  - 1. Blocking.
  - 2. Nailers.
  - 3. Rooftop equipment bases and support curbs.
  - 4. Cants.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

2.5 PLYWOOD BACKING PANELS
- A. Equipment Backing Panels: Plywood, DOC PS 1, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch (19-mm) nominal thickness.

2.6 FASTENERS
- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel.
- B. Screws for Fastening to Metal Framing: ASTM C 1002, length as recommended by screw manufacturer for material being fastened.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL
- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- D. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
  - 2. ICC-ES evaluation report for fastener.

3.2 PROTECTION
- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 064000 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY
- A. Provide interior architectural woodwork complete; as indicated on drawings, as specified, and as required for proper completion of work.

1.2 DEFINITIONS
- A. In addition to cabinetry, countertops, miscellaneous trim, and items indicated on drawings, interior architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

1.3 SUBMITTALS
- A. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
  - 1. Show details full size.
  - 2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
  - 3. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, and other items installed in architectural woodwork.
- B. Samples for verification:
  - 1. Plastic and metal laminates.
  - 2. Solid surface.

1.4 QUALITY ASSURANCE
- A. Fabricator Qualifications: AWI/QCP certified fabricator/installer. Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork.
- C. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

1.5 DELIVERY, STORAGE, AND HANDLING
- A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installed areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.6 PROJECT CONDITIONS
- A. Environmental Limitations: Do not deliver woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg. F and relative humidity between 25 and 55 percent during the remainder of the construction period.
- B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 MATERIALS
- A. General: Provide materials that comply with requirements of AWI's quality standard (Custom-Grade) for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Products: Comply with the following:
  - 1. Hardboard: AHA A135.4
  - 2. Medium-Density Fiberboard: ANSI A208.2, Grade MD.
  - 3. Particleboard: ANSI A208.1, Grade M-2
  - 4. Particleboard: Straw-based particleboard complying with requirements in ANSI A208.1, Grade M-2, except for density.
  - 5. Plywood: Marine grade ply.
  - 6. Melamine: white
- C. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
  - 1. Provide 0.5mm PVC edge banding in case edge, shelf edges, and drawer box edge.
  - 2. Provide 3mm PVC edge banding at drawer front edge and door front edge.
- D. High- Pressure Decorative Laminate: NEMA LD 3, HDPL standard grade as indicated on the Finish Legend.
  - 1. Provide at exposed cabinet exteriors, door/drawer interior materal, exposed surfaces, and finished ends.
  - 2. Any exposed cabinet edge to be clad with laminate. Field verify casework in conjunction with windows, doors, sills, etc. prior to manufacturing.
- E. Laminates and solid surface materials as indicated on the Finish Legend.

2.2 CABINET HARDWARE AND ACCESSORIES
- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division 8 Section "Door Hardware."
- B. Hinges: Blum 120-degree hinge system, press in without plate 73T5580/175H9100; nickel plated.
  - 1. 120° Opening Capacity.
  - 2. Provide one pair per door to 48" in height, one and one-half pair per door over 48" unless noted otherwise.
- C. Wire Pulls: Back mounted, Epco 4-inch wire pull, satin finish, model # MC402-4-SS.
- D. Catches: Magnetic catches, BHMA A156.9, B03141.
- E. Drawer Slides: Accuride Zinc plated, side mount, full extension, soft close, LD model #3832EC; nickel plate.
- F. Door Locks:

CABINET LOCK DOUBLE DOOR	COMPX TIMBERLINE	CB-250 C700LP-15 C700BZ-15 C257SP-19 C101SP-19	250 SERIES DOOR LOCK BODY LOCK PLUG BEZEL STRIKE PLATE (DOOR) STRIKE PLATE (CASE)	SATIN NICKEL
CABINET LOCK SINGLE DOOR	COMPX TIMBERLINE	CB-240 C700LP-15 C700BZ-15 C101SP-19	240 SERIES DOOR LOCK BODY LOCK PLUG BEZEL STRIKE PLATE	SATIN NICKEL
CABINET LOCK DRAWER	COMPX TIMBERLINE	CB-230 C700LP-15 C700BZ-15 C101SP-19	230 SERIES DRAWER LOCK BODY LOCK PLUG BEZEL STRIKE PLATE	SATIN NICKEL

- G. Shelf rest: Hafele shelf pin spoon 5mm x 19mm nickel plated model #282.04.711.
- H. Metal File Supports: Wurth File Holder System KT432ZC-T/EA1058A. Zinc plated aluminum finish.
- I. Grommets for Cable Passage through Countertops: 3-inch OD, molded-plastic grommets and matching plastic caps, color: charcoal.
- J. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with product class requirements in BHMA A156.9.
- K. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.
- I. Exposed Countertop Brackets: Steel brackets L-shaped.
  - 1. Product A & M Hardware, Inc. workstation wall bracket, flush mounted 15" x 21", white.
- M. Countertop cleat: 1.25" x 1.25" x 18" PVC, white.
- N. Shelf brackets:
  - 1. Knape & Vogt: Standard and bracket 182 and 82, black, model #82BP BLK 63 and 182BP BLK 10.5.

2.3 MISCELLANEOUS MATERIALS
- A. Furring, Blocking, Shims, and Hanging Strips:
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Proved toothed-steel or lead expansion sleeves for drilled-in-place anchors.
- C. Adhesives, General: Do not use adhesives that contain urea formaldehyde.
- D. Adhesives and Glues: Type 1 (waterproof).
- E. Adhesive for Bonding Plastic Laminate and Bonding Edges: As recommended by manufacturer of plastic laminate.

2.4 FABRICATION, GENERAL
- A. Interior Woodwork Grade: Unless otherwise indicated, provide Custom-grade interior woodwork complying with referenced quality standards.
- B. Install laminated plastic in single pieces up to the limits of the sheet sizes; small patches will not be accepted.
- C. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
- D. Fabricate woodwork to dimensions, profiles, and details indicated.
- E. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
  - 1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
  - 2. Trail fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowes, screw, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.
- F. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
  - 1. Seal edges of openings in countertops with a coat of varnish.

2.5 PLASTIC-LAMINATE CABINETS
- A. Grade: Custom.
- B. AWI Type of Cabinet Construction: Frameless/Flush Overlay.
- C. AWI Construction Type: Type 1, multiple self-supporting units rigidly jointed together.
- D. AWI Door and Drawer Front Style: Flush overlay.
- E. Reveal: per the drawings.
- F. Adhesive type: Type 1 (waterproof).
- G. Backing: 0.020 minimum material thickness.
- H. Spreader at base: 1/2" from wall.
- I. Door and Drawer Silencers: BHMA A156.16, L03011.
- J. Materials:
  - 1. Door/Drawer Thicknesses
    - a. Back and sides: 1/2"
    - b. Fronts: 3/4"
  - 2. Cabinet Thicknesses
    - a. Bottom: 3/4"
    - b. Sides: 3/4"
    - c. Wall Cabinet Tops: 3/4"
    - d. Sub-Tops: 1/2"
    - e. Backs: 3/8"
  - 3. Shelves: 3/4"
- K. Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High-pressure decorative laminate, Grade BKL.
- L. Integral Bases of cabinets to be individual bases and doweled into cabinet sides.
- M. Filler and scribes to be covered with vertical grade laminate.
- N. Drawer Construction: Fabricate with exposed fronts fastened to sub-front with mounting screws from interior of body.
  - 1. Join sub-fronts, back , and sides, with glued dovetail joints.
  - 2. Drawer box: 5-piece box of 5/8" IPB core melamine.

2.6 SOLID-SURFACING -MATERIAL COUNTERTOPS
- A. Countertop and back end splashes: Solid-Surfacing-Material Thickness: 3 cm slab thickness.
- B. Edge: Eased edge. Provide 1/2 inch radius at all outside edges.
- C. Colors, Patterns, and Finishes as indicated on Finish Legend.
- D. Fabricate tops and component in one piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.

2.7 PLASTIC-LAMINATE COUNTERTOPS
- A. Grade: Custom
- B. High-Pressure Decorative Laminate Grade: HGP.
- C. Grain Direction: Vertical on doors and drawers.
- D. Edge Treatment: 3mm t-edge PVC to match face material. Provide 1/2 inch radius at all outside counter edges.
- E. Core Material: Exterior-grade plywood.
- F. Core Material at Sinks: Exterior-grade plywood.
- G. Backer Sheet: Provide plastic-laminate backer sheet, Grade BKL, on underside of countertop substrate.
- H. Paper Backing: Provide paper backing on underside of countertop substrate.
- I. Back and side splashes to be attached to countertop.

PART 3 - EXECUTION

3.1 PREPARATION
- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION
- A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 of fabrication of type of woodwork involved.
- B. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.
  - 1. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
  - 2. Scribe and cut interior finish carpentry to fit adjoining work.
  - 3. Countersink fasteners, fill surface flush, and sand where face fastening is unavoidable.
  - 4. Install to tolerance of 1/8 inch in 96 inches (3mm in 2438mm) for level and plum. Install adjoining interior finish carpentry with 1/32 inch (0.8-mm) maximum offset.
- C. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- D. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installations of hardware and accessory items as indicated.
  - 1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
  - 2. Maintain veneer sequence matched of cabinets with transparent finish.
  - 3. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c.
- E. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
  - 1. Align adjacent solid-surfacing-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
  - 2. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
  - 3. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c.
  - 4. Caulk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."
- G. Touch up finishing work specified in this Section after installation of woodwork. Fill Nail holes with matching filler where exposed.

3.3 ADJUSTING AND CLEANING
- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semiexposed surfaces.
- D. Protect countertop surfaces during construction with 30-mil protection paper or greater. Tape underside of countertop at a minimum of 48 inches (1200 mm) o.c.

END OF SECTION 064000

SECTION 064214 - WOOD TRIM

PART 1 - GENERAL

1.1 SUMMARY
- A. Section Includes:
  - 1. Wood trim.
  - 2. Wood furring, blocking, shims, and hanging strips for installing wood trim that are not concealed within other construction.
  - 3. Shop finishing wood trim.

1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
- A. Product Data: For each type of product.
  - 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Samples: For each exposed product and for each color and finish specified.

1.3 QUALITY ASSURANCE
- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
  - 1. Shop Certification: AWI's Quality Certification Program accredited participant or WI's Certified Compliance Program licensee.

1.4 FIELD CONDITIONS
- A. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
- A. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.

2.2 WOOD TRIM, GENERAL
- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of wood trim indicated for construction, finishes, installation, and other requirements.
  - 1. Provide inspections of fabrication and installation together with labels and certificates from AWI certification program indicating that woodwork complies with requirements of grades specified.

2.3 WOOD TRIM FOR STAINED FINISH
- A. Wood Species: White oak, sawn/sliced.
- C. Base molding equal to Baird Brothers white oak double ripple baseboard B209, 3/4" x 5-1/2"; paint wood per the finish legend.
  - 1. Outside Corner of trim: Shop prepare using mitered construction. Assemble, sand, and glue in shop if site conditions permit.
  - 2. Bevel edges at each doorway.

2.4 MATERIALS
- A. Materials, General: Provide materials that comply with requirements of referenced quality standard for each quality grade specified unless otherwise indicated.
- B. Wood Moisture Content: **9** percent.
  - 1. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.

2.5 FIRE-RETARDANT-TREATED MATERIALS
- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
  - 1. Use treated materials that comply with requirements of referenced quality standard. Do not use materials that are warped, discolored, or otherwise defective.
  - 2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
  - 3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.

2.6 INSTALLATION MATERIALS
- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, Fire-retardant-treated softwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls.
- C. Installation Adhesive: Product recommended by panel fabricator for each substrate for secure anchorage.

2.7 FABRICATION
- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site.
- C. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items.

2.8 SHOP FINISHING
- A. General: Finish paneling at fabrication shop as specified in this Section. Defer only final touch up, cleaning, and polishing until after installation.
- B. General: Shop finish transparent-finished paneling at fabrication shop as specified in this Section. See Section 099123 "Interior Painting" for field finishing of opaque-finished paneling.
- C. General: Drawings indicate paneling that is required to be shop finished.
- D. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing paneling, as applicable to each unit of work.
  - 1. Backpriming: Apply two coats of sealer or primer, compatible with finish coats, to concealed surfaces of paneling.
- E. Transparent Finish:
  - 1. Grade: Custom.
  - 2. Finish: System - 12, water-based polyurethane.
  - 3. Wash Coat for Closed-Grain Woods: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
  - 4. Staining: per the Finish legend.
  - 5. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
- F. Painted Finish:
  - 1. Colors: As indicated on the Room Finish Legend.
  - 2. Sheen: Semigloss, 46-60 gloss units measured on 60-degree gloss meter per ASTM D 523.

PART 3 - EXECUTION

3.1 INSTALLATION
- A. Before installation, condition paneling to humidity conditions in installation areas.
- B. Grade: Install wood trim to comply with quality standard grade of paneling to be installed.
- C. Install woodwork and trim level, plumb, true in line, and without distortion. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Install with no more than 1/16 inch in 96-inch (1.6 mm in 2400-mm) vertical cup or bow and 1/8 inch in 96-inch (3 mm in 2400-mm) horizontal variation from a true plane.
- D. Scribe and cut paneling to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor paneling to supporting substrate with concealed hardware.
- F. Complete finishing work specified in this Section to extent not completed at shop or before installation of trim. Fill nail holes with matching filler where exposed.

END OF SECTION 064214

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY
- A. Section Includes:
  - 1. Glass-fiber blanket.
  - 2. Mineral-wool blanket.

1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
- A. Product test reports.
- B. Research reports.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
- A. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.

2.2 GLASS-FIBER BLANKET
- A. Glass-Fiber Blanket, Unfaced: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.3 MINERAL-WOOL BLANKETS
- A. Mineral-Wool Blanket, Unfaced:ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.4 ACCESSORIES
- A. Insulation for Miscellaneous Voids:
  - 1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.
- B. Insulation Anchors, Spindles, and Standoffs: As recommended by manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL
- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.2 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION
- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
  - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
  - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
  - 3. Maintain 3-inch (76-mm) clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
  - 4. For metal-framed wall cavities where cavity heights exceed 96 inches (2438 mm), support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
- B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
  - 1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft. (40 kg/cu. m).

END OF SECTION 072100

ssoe®

PROFESSIONAL SEALS:

STATE OF MICHIGAN
JEFFREY S. FALZON
ARCHITECT
No. 1301047612
3-28-2025
LICENSED ARCHITECT

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY

5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
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47201

SSOE PROJECT #: 023-03991-00

SSOE MANAGER: J. FALZON

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SPECIFICATIONS

AE-900

SECTION 081113 - HOLLOW METAL FRAMES
PART 1 - GENERAL
1.1 SUMMARY
A. Section includes:
1. Interior standard steel frames.
1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product.
1.3 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
A. Product test reports.
PART 2 - PRODUCTS
2.1 PERFORMANCE REQUIREMENTS
A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
1. Smoke-Control Assemblies: Provide assemblies with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.
B. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.
2.2 INTERIOR STANDARD STEEL FRAMES
A. Construct hollow-metal frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
B. Heavy-Duty Frames: SDI A250.8, Level 2; SDI A250.4, Level B.
1. Frames:
a. Materials: Uncoated steel sheet, minimum thickness of 0.053 inch (1.3 mm).
b. Construction: Knocked down or Face welded (where indicated)
2. Doors:
a. Type: As indicated in the Door and Frame Schedule.
b. Thickness: 1-3/4 inches (44.5 mm).
c. Face: Uncoated, cold-rolled steel sheet, minimum thickness of 0.053 inch (1.3 mm).
d. Edge Construction: Model 1, Full Flush.
e. Core: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core at manufacturer's discretion.
2.3 FRAME ANCHORS
A. Jamb Anchors:
1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches (610 mm) of frame height above 7 feet (2.1 m).
3. Postinstalled Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.
B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.
C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch (51-mm) height adjustment. Terminate bottom of frames at top of underlayment.
D. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.
1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M; hot-dip galvanized according to ASTM A 153/A 153M, Class B.
2.4 MATERIALS
A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
C. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
D. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
E. Glazing: Comply with requirements in Section 088000 "Glazing."
2.5 FABRICATION
A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
B. Hardware Preparation: Factory prepare hollow-metal frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
1. Reinforce frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with BHMA A156.115 for preparing hollow-metal frames for hardware.
2.6 STEEL FINISHES
A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.
PART 3 - EXECUTION
3.1 PREPARATION
A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
3.2 INSTALLATION
A. Hollow-Metal Frames: Comply with SDI A250.11
1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
b. Install frames with removable stops located on secure side of opening.
2. Fire-Rated Openings: Install frames according to NFPA 80.
3. Floor Anchors: Secure with postinstalled expansion anchors.
a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved.
4. Solidly pack mineral-fiber insulation inside frames.
5. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.
3.3 CLEANING AND TOUCHUP
A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
B. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS
PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes:
1. Solid-core doors with wood-veneer faces.
2. Factory finishing flush wood doors.
3. Factory fitting flush wood doors to frames and factory machining for hardware.
1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of door. Include factory-finishing specifications.
B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
1. Dimensions and locations of blocking.
2. Dimensions and locations of mortises and holes for hardware.
3. Dimensions and locations of cutouts.
4. Undercuts.
5. Requirements for veneer matching.
6. Doors to be factory finished and finish requirements.
7. Fire-protection ratings for fire-rated doors.
C. Samples: For factory-finished doors.
1.3 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
A. Quality Standard Compliance Certificates: AWI Quality Certification or WI Certified Compliance Program certificates.
PART 2 - PRODUCTS
2.1 PERFORMANCE REQUIREMENTS
A. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.
2.2 FLUSH WOOD DOORS, GENERAL
A. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors."
1. Provide AWI Quality Certification or WI Certified Compliance Labels indicating that doors comply with requirements of grades specified.
B. WDMA I.S.1-A Performance Grade:
1. Heavy Duty unless otherwise indicated.
C. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
1. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
2. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
D. Smoke-Control Door Assemblies: Listed and labeled for smoke-control, based on testing according to UL 1784.
E. Structural-Composite-Lumber-Core Doors:
1. Structural Composite Lumber: WDMA I.S.10.
a. Screw Withdrawal, Face: 700 lbf (3100 N).
b. Screw Withdrawal, Edge: 400 lbf (1780 N).
F. Mineral-Core Doors:
1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.
3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.
2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH
A. Interior Solid-Core Doors
1. Grade: Custom (Grade A faces)
2. Species: To match existing facility.
3. Cut: To match existing facility.
4. Match between Veneer Leaves: To match existing facility.
5. Assembly of Veneer Leaves on Door Faces: To match existing facility.
6. Core: Structural composite lumber or mineral core as required for fire rating.
7. Construction: Five or seven plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering. Faces are bonded to core using a hot press.
2.5 FABRICATION
A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
1. Comply with NFPA 80 requirements for fire-rated doors.
B. Factory machine doors for hardware that is not surface applied.
2.6 FACTORY FINISHING
A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.
B. Factory finish doors that are indicated to receive transparent finish.
C. Transparent Finish:
1. Grade: Custom.
2. Finish: To match existing facility.
3. Sheen: To match existing facility.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Hardware: For installation, see Section 087100 "Door Hardware."
B. Manufacturer's written instructions and referenced quality standard, and as indicated.
1. Install fire-rated doors according to NFPA 80.
2. Install smoke- and draft-control doors according to NFPA 105.
C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

END OF SECTION 081416

SECTION 087100 - DOOR HARDWARE
PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes:
1. Mechanical door hardware for the following:
a. Swinging doors.
1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product.
1.3 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
A. Sample warranty.
1.4 CLOSEOUT SUBMITTALS (FOR OWNER REVIEW)
A. Maintenance data.
1.5 QUALITY ASSURANCE
A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers who is available during the course of the Work to consult Construction Manager about door hardware and keying.
1.6 WARRANTY
A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated.
PART 2 - PRODUCTS
2.1 PERFORMANCE REQUIREMENTS
A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
B. Smoke-Control Door Assemblies: Where smoke-control door assemblies are required, provide door hardware that complies with requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
C. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
D. Accessibility Requirements: For door hardware on doors in an accessible route, comply with agency having jurisdiction and as indicated on Drawings.
E. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.
1. Door hardware is scheduled on Drawings.
2. Manufacturers for each component to match existing facility standards.
2.2 LOCK CYLINDERS
A. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.
B. Permanent Cores: Final SFIC to be provide and installed by Owner.
2.3 KEYING
A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide as indicated on Drawings.
B. Keys: Nickel silver or Brass.
1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
a. Notation: "DO NOT DUPLICATE."
2.4 FINISHES
A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
PART 3 - EXECUTION
3.1 INSTALLATION
A. Mounting Heights: Mount door hardware units at heights required to comply with governing regulations.
B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
D. Lock Cylinders: Install construction cores to secure building and areas during construction period.
1. Replace construction cores with permanent cores as directed by Construction Manager.
3.2 ADJUSTING
A. Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

END OF SECTION 087100

SECTION 088000 - GLAZING
PART 1 - GENERAL
1.1 SUMMARY
A. Section includes:
1. Glass for windows and doors.
2. Glazing sealants and accessories.
1.2 COORDINATION
A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.
1.3 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product.
B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches (300 mm) square.
C. Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1.4 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
A. Preconstruction adhesion and compatibility test report.
1.5 QUALITY ASSURANCE
A. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
1.6 PRECONSTRUCTION TESTING
A. Preconstruction Adhesion and Compatibility Testing: Test each glass product, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.
1. Testing is not required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.
1.7 WARRANTY
A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
1. Warranty Period: 10 years from date of Substantial Completion.
B. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.
1. Warranty Period: 10 years from date of Substantial Completion.
PART 2 - PRODUCTS
2.1 PERFORMANCE REQUIREMENTS
A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design glazing.
B. Structural Performance: Glazing shall withstand design loads within limits and under conditions indicated determined according to the International Building Code and ASTM E 1300.
C. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.
D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F (W/sq. m x K).
2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.
E. Sustainable Design Requirements: As indicated on drawings.
2.2 GLASS PRODUCTS, GENERAL
A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. GANA Publications: "Glazing Manual."
2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.
D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than the thickness indicated.
E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.
2.3 GLASS PRODUCTS
A. Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3.
B. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
C. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
D. Pyrolytic-Coated, Low-Maintenance Glass: Clear float glass with a coating on first surface having both photocatalytic and hydrophilic properties that act to loosen dirt and to cause water to sheet evenly over the glass instead of beading.
E. Reflective-Coated Vision Glass: ASTM C 1376.
2.4 INSULATING GLASS
A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.
1. Sealing System: Dual seals.
2. Perimeter Spacer: Manufacturer's standard spacer material and construction.
2.5 GLAZING SEALANTS
A. General:
1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Colors of Exposed Glazing Sealants: As indicated by manufacturer's designations.
B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
C. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 50, Use NT.
D. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.
2.6 GLAZING TAPES
A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.
2.7 MISCELLANEOUS GLAZING MATERIALS
A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
B. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
C. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
D. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.
PART 3 - EXECUTION
3.1 GLAZING, GENERAL
A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).
G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
3.2 TAPE GLAZING
A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
E. Apply heel bead of elastomeric sealant.
F. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
G. Apply cap bead of elastomeric sealant over exposed edge of tape.
3.3 GASKET GLAZING (DRY)
A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
E. Install gaskets so they protrude past face of glazing stops.
3.4 SEALANT GLAZING (WET)
A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.
3.5 CLEANING AND PROTECTION
A. Immediately after installation remove nonpermanent labels and clean surfaces.
B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
C. Remove and replace glass that is damaged during construction period.

END OF SECTION 088000

SECTION 092216 - NON-STRUCTURAL METAL FRAMING
PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes:
1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.
1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product.
1.3 INFORMATIONAL SUBMITTALS (FOR OWNER REVIEW)
A. Product Certificates: For each type of code-compliance certification for studs and tracks.
B. Evaluation reports for firestop tracks, post-installed anchors, and power-actuated fasteners.
1.4 QUALITY ASSURANCE
A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association, the Steel Framing Industry Association, or the Steel Stud Manufacturers Association.
PART 2 - PRODUCTS
2.1 PERFORMANCE REQUIREMENTS
A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.
B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
C. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.
2.2 FRAMING SYSTEMS
A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. Protective Coating: Coating with equivalent corrosion resistance of ASTM A 653/ A 653M, G40 (Z120), hot-dip galvanized unless otherwise indicated.
B. Studs and Tracks: ASTM C 645.
1. Steel Studs and Tracks:
a. Minimum Base-Metal Thickness: 0.0296 inch (0.752 mm).
b. Depth: As indicated on Drawings.
C. Slip-Type Head Joints: Where indicated, provide one of the following:
1. Single Long-Leg Track System: ASTM C 645 top track with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
2. Double-Track System: ASTM C 645 top outer tracks, inside track with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.
3. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
D. Firestop Tracks: Top track manufactured to allow partition heads to expand and contract with movement of structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Minimum Base-Metal Thickness: 0.0296 inch (0.752 mm).
F. Cold-Rolled Channel Bridging: Steel, 0.0538-inch (1.367-mm) minimum base-metal thickness, with minimum 1/2-inch- (13-mm-) wide flanges.
1. Depth: 1-1/2 inches (38 mm)
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches (38 by 38 mm), 0.068-inch- (1.72-mm-) thick, galvanized steel.
G. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
1. Minimum Base-Metal Thickness: 0.0296 inch (0.752 mm)
2. Depth: As indicated on Drawings.
H. Resilient Furring Channels: 1/2-inch- (13-mm-) deep, steel sheet members designed to reduce sound transmission.
1. Configuration: Asymmetrical or hat shaped.
I. Cold-Rolled Furring Channels: 0.053-inch (1.34-mm) uncoated-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges.
1. Depth: As indicated on Drawings.
2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch (0.8 mm).
3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.
J. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches (32 mm), wall attachment flange of 7/8 inch (22 mm), minimum uncoated-metal thickness of 0.0179 inch (0.455 mm), and depth required to fit insulation thickness indicated.
2.3 SUSPENSION SYSTEMS
A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.
B. Hanger Attachments to Concrete:
1. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193 or AC308 as appropriate for the substrate.
a. Uses: Securing hangers to structure.
b. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.
C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch (4.12 mm) in diameter.
D. Flat Hangers: Steel sheet, 1 by 3/16 inch (25 by 5 mm) by length indicated.
E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch (1.367 mm) and minimum 1/2-inch- (13-mm-) wide flanges.
1. Depth: As indicated on Drawings.
F. Furring Channels (Furring Members):
1. Cold-Rolled Channels: 0.0538-inch (1.367-mm) uncoated-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges, 3/4 inch (19 mm) deep.
2. Steel Studs and Tracks: ASTM C 645.
a. Minimum Base-Metal Thickness: 0.0296 inch (0.752 mm)
b. Depth: As indicated on Drawings
3. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch (22 mm) deep.
a. Minimum Base-Metal Thickness: 0.0296 inch (0.752 mm)
4. Resilient Furring Channels: 1/2-inch- (13-mm-) deep members designed to reduce sound transmission.
a. Configuration: Asymmetrical or hat shaped.
2.4 AUXILIARY MATERIALS
A. General: Provide auxiliary materials that comply with referenced installation standards.
1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
B. Isolation Strip at Exterior Walls: Provide one of the following:
1. Asphalt-Saturated Organic Felt: ASTM D 226/D 226M, Type I (No. 15 asphalt felt), nonperforated.
2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch (3.2 mm) thick, in width to suit steel stud size.
PART 3 - EXECUTION
3.1 INSTALLATION, GENERAL
A. Installation Standard: ASTM C 754.
1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
D. Install bracing at terminations in assemblies.
E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.
3.2 INSTALLING FRAMED ASSEMBLIES
A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
C. Install studs so flanges within framing system point in same direction.
D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
a. Install two studs at each jamb unless otherwise indicated.
b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
E. Z-Shaped Furring Members:
1. Erect insulation where indicated, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-shaped furring members spaced 24 inches (610 mm) o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches (305 mm) from corner and cut insulation to fit.
F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

SECTION 092216 - NON-STRUCTURAL METAL FRAMING - CONTINUED

3.3 INSTALLING CEILING SUSPENSION SYSTEMS
A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
C. Suspend hangers from building structure as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.
F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD
PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes:
1. Interior gypsum board.
2. Tile backing panels.
1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product.
PART 2 - PRODUCTS
2.1 PERFORMANCE REQUIREMENTS
A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
C. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.
2.2 GYPSUM BOARD, GENERAL
A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
2.3 INTERIOR GYPSUM BOARD
A. Gypsum Wallboard: ASTM C 1396/C 1396M.
1. Thickness: 5/8 inch (15.9 mm).
2. Long Edges: Tapered
B. Gypsum Board, Type X: ASTM C 1396/C 1396M.
1. Thickness: 5/8 inch (15.9 mm).
2. Long Edges: Tapered.
C. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
1. Thickness: 1/2 inch (12.7 mm).
2. Long Edges: Tapered.
D. Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
1. Core: 1/2 inch (12.7 mm), regular type and 5/8 inch (15.9 mm), Type X.
2. Long Edges: Tapered.
3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
2.4 TILE BACKING PANELS
A. Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with manufacturer's standard edges.
1. Core: 1/2 inch (12.7 mm), regular type and 5/8 inch (15.9 mm), Type X.
2. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
B. Cementitious Backer Units: ANSI A118.9 and ASTM C 1288 or ASTM C 1325, with manufacturer's standard edges.
1. Thickness: 5/8 inch (15.9 mm)
2. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
2.6 TRIM ACCESSORIES
A. Interior Trim: ASTM C 1047.
1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:
a. Cornerbead.
b. Bullnose bead.
c. LC-Bead: J-shaped; exposed long flange receives joint compound.
d. L-Bead: L-shaped; exposed long flange receives joint compound.
e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
f. Expansion (control) joint.
2.7 JOINT TREATMENT MATERIALS
A. General: Comply with ASTM C 475/C 475M.
B. Joint Tape:
1. Interior Gypsum Board: Paper.
2. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
3. Tile Backing Panels: As recommended by panel manufacturer.
C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound
D. Joint Compound for Tile Backing Panels:
1. Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.
2. Cementitious Backer Units: As recommended by backer unit manufacturer.

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PROFESSIONAL SEALS:

STATE OF MICHIGAN
JEFFREY S. FALZON
ARCHITECT
No. 1301047612
3-28-2025
LICENSED ARCHITECT

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
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CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

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SPECIFICATIONS

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2.8 AUXILIARY MATERIALS
A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
C. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.
1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
D. Sound-Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
E. Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
F. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS
A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
B. Comply with ASTM C 840.
C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
D. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
E. Prefill open joints and damaged surface areas.
F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
G. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
1. Level 1: Ceiling plenum areas, concealed areas, and where required for fire-resistance rated assemblies land sound rated assemblies.
2. Level 2: Panels that are substrate for tile.
3. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
4. Level 5: Where indicated on Drawings.
H. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
I. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.
J. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.2 PROTECTION
A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY
A. Section includes acoustical panels and exposed suspension systems for interior ceilings.

1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product.
B. Samples: For each exposed product and for each color and texture specified.
C. For close-out booklet provide Maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame-Spread Index: Class A according to ASTM E 1264.
2. Smoke-Developed Index: 50 or less.
B. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.

2.2 ACOUSTICAL PANELS
A. Product:
1. As indicated in Finish Schedule on drawings.

2.3 METAL SUSPENSION SYSTEM
A. Products:
1. As indicated in Finish Schedule on drawings.
B. Metal Suspension-System Standard: Manufacturer's standard, direct-hung, metal suspension system and accessories according to ASTM C 635/C 635M.
C. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized, G30 (Z90) coating designation; with prefinished metal caps on flanges.
1. Structural Classification: Heavy-duty system.
2. End Condition of Cross Runners: Override (stepped) or butt-edge type.
3. Face Design: Flat, flush.
4. Cap Material: Cold-rolled steel or aluminum.
5. Cap Finish: Painted white.

2.4 ACCESSORIES
A. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
B. Hold-Down Clips: Manufacturer's standard hold-down at vestibules.

2.5 METAL EDGE MOLDINGS AND TRIM
A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

PART 3 - EXECUTION

3.1 PREPARATION
A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated.
B. Layout openings for penetrations centered on the penetrating items.

3.2 INSTALLATION
A. Install acoustical panel ceilings according to ASTM C 635/C 636M and manufacturer's written instructions.
B. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
2. Do not use exposed fasteners, including pop rivets, on moldings and trim.
3. Arrange directionally patterned acoustical panels as follows:
a. As indicated on reflected ceiling plans.
4. Install hold-down clips in areas indicated; space according to panel manufacturer's written instructions unless otherwise indicated.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1. SUMMARY
A. Section Includes:
1. Installation of Vinyl Base.
2. Vinyl molding accessories.

1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product, being provided.
B. Maintenance data for close out booklet.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. Sustainable Design Requirements: Comply with Authorities Having Jurisdiction.

2.2 VINYL BASE (VB-1)
A. Owner Provided Material (For Reference and Coordination with GC Installation)
1. As indicated in Finish Schedule on drawings.

2.4 INSTALLATION MATERIALS
A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
B. Adhesives: Water-resistant type by resilient-product manufacturer for resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 PREPARATION
A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
B. Concrete Substrates Accessories: Prepare horizontal surfaces according to ASTM F710.
1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4. Moisture /Relative Humidity Testing: as recommended by manufacturer.
C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
D. Do not install resilient products until materials are the same temperature as space where they are to be installed.
E. Immediately before installation, clean substrates to be covered by resilient products.

3.2 RESILIENT BASE INSTALLATION
A. Comply with manufacturer's written instructions for installing resilient base.
B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
E. Do not stretch resilient base during installation.
F. Preformed Corners: Install preformed corners before installing straight pieces.
G. Job-Formed Corners:
1. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.
a. Miter or cope corners to minimize open joints.

3.3 RESILIENT ACCESSORY INSTALLATION
A. Comply with manufacturer's written instructions for installing resilient accessories.
B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.4 CLEANING AND PROTECTION
A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
B. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 096519 -RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 SUMMARY
A. Installation of Owner Provided Luxury Vinyl Tile

1.2 SUBMITTALS

1.3 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product being provided.

1.4 QUALITY ASSURANCE
Fire-Test-Response Characteristics: Provide products identical to those tested for fire-exposure behavior per test method indicated by a testing and inspecting agency acceptable to authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 65 degF (13 degC) or more than 85 degF (29.4 degC) with a relative humidity between 405 and 60%. Store tiles on flat surfaces.

1.6 PROJECT CONDITIONS
A. Maintain temperatures within range recommended by manufacturer, but not less than 65 degF (13 degC) or more than 85 degF (29.4 degC) with a relative humidity between 405 and 60% in spaces to receive floor tile during the following time periods:
1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.
4. We strongly recommend the permanent HVAC system be fully operating. NOTE: If a system other than the permanent HVAC source is utilized, it must provide proper control of both temperature and humidity to recommended or specific levels for the appropriate time duration as stated above.
B. After post installation period, maintain temperatures within range recommended by manufacturer, but not less than 55 degF (13 degC) or more than 95 deg F (35 degC).
C. Close spaces to traffic during floor covering installation.
D. Close spaces to traffic for 48 hours after floor covering installation.
E. Install resilient products after other finishing operations, including painting, have been completed.

1.7 WARRANTY
A. Warranty: Ten year commercial warranty.

PART 2 - PRODUCTS

2.1 Luxury Vinyl Plank (LVT1)
A. Manufacturer: See Finish Legend on Sheet A1.4
1. ASTM F 1700 Class III Type B vinyl plank.
2. Thickness: 0.098"(3.5 mm).
3. Wear layer thickness: 20 mil
4. Finish: ExoGuard.
5. Edge: Square edge.
6. ASTM F925 Chemical Resistance: Meets requirement.
7. ASTM F 1515 Light fastness: Meets requirement.
8. Slip resistance ASTM D2047; comply with ADA for wet and dry conditions.
9. ASTM E648 Class II.

2.2 Installation Materials
A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturer for applications indicated.
1. Provide trowelable leveling for a smooth level transition between LVT and carpet tile.
B. Provide resilient transition strip at LVT flooring between concrete transition.
C. Provide metal transition strips for transition between LVT and floor tile, see Division 9 section: "Tile" for metal transition strips.
D. Adhesives: Owner Provided, AFC LVT ADHESIVE -258D (For Reference and Coordination with GC Installation.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances, moisture content, and other conditions affecting performance.
1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.
B. Concrete Substrates: Prepare according to ASTM F710.
1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 5 lb of water/1000 sq. ft. in 24 hours.
3. Moisture Testing
a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 5 lb of water/1000 sq. ft. in 24 hours.
b. Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
D. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.
E. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
1. Do not install resilient products until they are same temperature as space where they are to be installed.
F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 TILE INSTALLATION
A. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
1. Lay tiles (as recommended by manufacturer).
B. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
1. Lay tiles (as recommended by manufacturer).
C. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.
D. Extend tiles into toe spaces, door reveals, closets, and similar openings.
E. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.
F. Install tiles on covers for telephone and electrical ducts and similar items in finished floor areas. Maintain overall continuity of color and pattern with pieces of tile installed on covers. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
G. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 CLEANING AND PROTECTION
A. Perform the following operations immediately after completing resilient product installation:
1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.
a. Do not wash surfaces until after time period recommended by manufacturer.
B. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by the manufacturers written instructions.

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes surface preparation and the application of paint systems on the following interior substrates:
1. Steel.
2. Gypsum board.

1.2 ACTION SUBMITTALS (FOR OWNER REVIEW)
A. Product Data: For each type of product indicated.
B. Virtual sample showing corresponding paint code number.

1.3 QUALITY ASSURANCE
A. MPI Standards:
1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

1.4 DELIVERY, STORAGE, AND HANDLING
A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.5 PROJECT CONDITIONS
A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS
A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Sherwin-Williams Company (The).

2.2 PAINT, GENERAL
A. Material Compatibility:
1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
B. Chemical Components of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions; these requirements do not apply to primers or finishes that are applied in a fabrication or finishing shop:
1. Flat Paints and Coatings: VOC content of not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC content of not more than 150 g/L.
3. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
4. Restricted Components: Paints and coatings shall not contain any of the following:
a. Acrolein.
b. Acrylonitrile.
c. Antimony.
d. Benzene.
e. Butyl benzyl phthalate.
f. Cadmium.
g. Di (2-ethylhexyl) phthalate.
h. Di-n-butyl phthalate.
i. Di-n-octyl phthalate.
j. 1,2-dichlorobenzene.
k. Diethyl phthalate.
l. Dimethyl phthalate.
m. Ethylbenzene.
n. Formaldehyde.
o. Hexavalent chromium.
p. Isophorone.
q. Lead.
r. Mercury.
s. Methyl ethyl ketone.
t. Methyl isobutyl ketone.
u. Methylene chloride.
v. Naphthalene.
w. Toluene (methylbenzene).
x. 1,1,1-trichloroethane.
y. Vinyl chloride.
C. Colors: As indicated on the Room Finish Legend.

2.3 PRIMERS/SEALERS
A. Interior Latex Primer/Sealer: MPI #50.
1. VOC Content: E Range of E2.
B. Interior Alkyd Primer/Sealer: MPI #45.
1. VOC Content: E Range of E2.
C. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint systems indicated.

2.4 METAL PRIMERS
A. Rust-Inhibitive Primer (Water Based): MPI #107.
1. Environmental Performance Rating: EPR 2.
B. Waterborne Galvanized-Metal Primer: MPI #134.
1. Environmental Performance Rating: EPR 2.

2.5 LATEX PAINTS
A. Institutional Low-Odor/VOC Latex (Flat): MPI #143 (Gloss Level 1).
1. Environmental Performance Rating: EPR 4.
B. Institutional Low-Odor/VOC Latex (Low Sheen): MPI #144 (Gloss Level 2).
1. Environmental Performance Rating: EPR 4.5.
C. Institutional Low-Odor/VOC Latex (Semigloss): MPI #147 (Gloss Level 5).
1. Environmental Performance Rating: EPR 3.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Gypsum Board: 12 percent.
C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION
A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulates.
1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
D. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
E. Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

3.3 APPLICATION
A. Apply paints according to manufacturer's written instructions.
1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION
A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE
A. Steel Substrates:
1. Institutional Low-Odor/VOC Latex System: MPI INT 5.1S.
a. Prime Coat: Rust-inhibitive primer (water based).
b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
c. Topcoat: Institutional low-odor/VOC interior latex (semigloss).
B. Gypsum Board and Plaster Substrates:
1. Institutional Low-Odor/VOC Latex System: MPI INT 9.2M.
a. Prime Coat: Interior latex primer/sealer.
b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
c. Topcoat: Institutional low-odor/VOC interior latex (flat, low sheen, and semigloss, where indicated).

END OF SECTION 099123

SSOE

PROFESSIONAL SEALS:

STATE OF MICHIGAN
JEFFREY S. FALZON
ARCHITECT
No. 1301047612
3-28-2025
REGISTERED ARCHITECT

CONSULTANTS:

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BID/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVE
DETROIT, MICHIGAN
47201

SSOE PROJECT #: 023-03991-00

SSOE MANAGER: J. FALZON

SSOE
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-6222

SPECIFICATIONS

AE-902

1 2 3 4 5

DESIGN CONDITIONS

SUMMER	-OUTSIDE	94°F DB, 74 MCWB
		77°F DWB
	-INSIDE	75° DB, 50% RH
WINTER	-OUTSIDE	0°F
	-INSIDE	72°F

OUTSIDE DESIGN CONDITIONS ARE BASED ON ASHRAE GUIDE, HANDBOOK OF FUNDAMENTALS, 2006 EDITION. SUMMER CONDITIONS ARE FROM 1% COLUMN. WINTER CONDITIONS ARE FROM 99% COLUMN.

OUTSIDE AIR REQUIREMENTS

ADDITION TO PROJECT

ROOF TOP UNITS ARE DESIGNED TO COMPLY WITH ASHRAE 62.1-2007 IAQ PROCEDURE . IONIZATION UNITS ARE USED TO REDUCE THE CONTAMINANTS LISTED IN APPENDIX B TO BELOW THE MAXIMUM ACCEPTABLE LEVEL. OUTSIDE AIR PROVIDED AT A MINIMUM OF 5 CFM PER PERSON IN EACH SPACE. THIS IS THE MINIMUM 5 CFM PER PERSON ACHIEVED BY USING IONIZATION UNITS.

TYPICAL CLASSROOM UNIT

7.5 CFM/PERSON x 32 PEOPLE = 240 CFM/CLASSROOM

DEMOLITION NOTES

1. THESE DRAWINGS ARE BASED ON EXISTING PLANS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF DEMOLITION AREAS. THE CONTRACTOR SHALL THOROUGHLY INVESTIGATE THE EXISTING CONDITIONS PRIOR TO BID.

2. THE PURPOSE AND INTENT OF DEMOLITION SHEET IS TO SHOW THE CONTRACTOR ITEMS REQUIRED TO BE REMOVED, BUT IS IN NO WAY LIMITED TO THE ITEMS SHOWN. ALL BIDDERS ARE REQUIRED TO MAKE AN ON-SITE VISIT AND INSPECT EXISTING MECHANICAL CONDITIONS BEFORE FINAL BID DATE.

3. ON-SITE INSPECTIONS ARE REQUIRED TO OCCUR PRIOR TO FINAL BID DATE TO DETERMINE ALL EXISTING CONDITIONS AND COORDINATE POWER DOWN TIMES. BIDDING CONTRACTORS ARE REQUIRED TO SURVEY ALL AREAS OF THE BUILDING PRIOR TO BIDDING TO VIEW THE EXISTING CONDITIONS. ANY ADDITIONAL WORK REQUIRED OR CLARIFICATIONS TO THE WORK SHOWN THAT COULD HAVE BEEN REASONABLY VERIFIED BY THE SURVEY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

4. PERFORM ALL CUTTING AND DRILLING REQUIRED. PATCH ALL HOLES, PAINT AND OTHERWISE REPAIR ALL DAMAGES TO THE BUILDING STRUCTURE AND SURFACES WHICH OCCUR AS A RESULT OF THIS PROJECT. REPAIRS SHALL RESTORE THE STRUCTURE TO THE SAME CONDITION EXISTING PRIOR TO BEGINNING WORK.

5. ANY DAMAGE TO EXISTING CONDITIONS CAUSED BY DEMOLITION AND/OR NEW WORK SHALL BE REPAIRED BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.

6. ANY NEW OR EXISTING PIPING PASSING THROUGH A NEW OR EXISTING WALL CARRYING A FIRE RATING SHALL BE SEALED TIGHT TO THE WALL WITH A UL APPROVED METHOD .

7. ALL DEMOLITION SHALL BE PERFORMED TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH CAN NOT BE PREDETERMINED UNTIL DEMOLITION IS STARTED. ALL SUCH DISCOVERIES OF UTILITIES WHICH ARE IN A DIFFERENT LOCATION FROM THAT INDICATED, CHANGE DIRECTION FROM FLOOR-TO-FLOOR, ETC. OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE ARCHITECT BEFORE REMOVAL OR DISTURBANCE.

8. REMOVE, STORE, CLEAN, REINSTALL, RECONNECT, AND MAKE OPERATIONAL EQUIPMENT INDICATED FOR RELOCATION.

9. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING BUILDING SERVICES DURING DEMOLITION INCLUDING ALL TESTING, SERVICE FEES, RENTAL OF TEMPORARY EQUIPMENT OR INSTALLATION AND CONNECTION OF TEMPORARY SERVICES.

10. WHERE WALLS, FLOORS OR CEILINGS ARE CUT, REMOVED OR DAMAGED FOR INVESTIGATING EXISTING CONDITIONS, DEMOLISHING SERVICES, INSTALLING NEW SERVICES, ETC. THE CONTRACTORS SHALL COORDINATE THE PATCHING OF THE WALLS, FLOORS & CEILINGS TO MATCH EXISTING WITH THE BUILDING FINISHES CONTRACTOR AND/OR GENERAL CONTRACTOR.

11. NEW WORK SHOWN IS SUGGESTED ROUTING. CONTRACTOR SHALL FIELD INVESTIGATE EXISTING SERVICES AVAILABLE. BASED ON THE CONTRACTORS DISCOVERIES, THEY MAY SUGGEST ALTERNATE ROUTINGS. THE ENGINEER OF RECORD SHALL MAKE THE FINAL DETERMINATION ON WHETHER THE SERVICES SHALL BE INSTALLED AS SHOWN OR AS SUGGESTED BY THE CONTRACTOR.

12. WHERE PIPE, INSULATION, OR EQUIPMENT TO REMAIN IS DAMAGED OR DISTURBED, REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.

Legend

Symbol	Description
	REVISION NUMBER - SHOWN ON PLANS
	POINT WHERE NEW CONNECTS TO EXISTING
-	NUMBER OF DETAIL ON SHEET
---	NUMBER OF SHEET WHERE DETAIL APPEARS
1	KEYNOTE
Room	CONTINUATION SYMBOL
1	ROOM NAME AND NUMBER
	ITEM TO BE DEMOLISHED
	AREA NOT IN CONTRACT
18"x8"	SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
18"x8"	OVAL DUCT SIZE TAG (WIDTH / HEIGHT)
16"Ø	ROUND DUCT SIZE TAG (DIAMETER)
(E)	EXISTING DUCT TAG
	DUCT BEING DEMOLISHED
S/A	SUPPLY AIR
S-O/A	SUPPLY AIR (100% OUTSIDE AIR)
O/A	OUTSIDE AIR
R/A	RETURN AIR
T/A	TRANSFER AIR
E/A	EXHAUST AIR
L/A	RELIEF AIR
GE/A	GREASE EXHAUST AIR
SE/A	SMOKE EXHAUST AIR
FLUE	EXHAUST GAS FLUE
C/A	COMBUSTION AIR
DROP	RECTANGULAR SUPPLY/OUTSIDE AIR DUCT RISE
DROP	ROUND SUPPLY/OUTSIDE AIR DUCT RISE
DROP	RECTANGULAR RETURN/TRANSFER AIR DUCT RISE
DROP	ROUND RETURN/TRANSFER AIR DUCT RISE
DROP	RECTANGULAR EXHAUST/RELIEF AIR DUCT RISE
DROP	ROUND EXHAUST/RELIEF AIR DUCT RISE
SUPPLY OUTLET	
	RETURN/EXHAUST INLET

A-12x12
150

- SECTORIZING BAFFLE OR BLANKOFF PANEL
- GRILLES, REGISTERS, AND DIFFUSERS TAG
- INLET/OUTLET SIZE
- CFM
- TYPE (SEE SCHEDULE)

Symbol	Description
2"	PIPE SIZE TAG (DIAMETER)
	ABOVE GROUND PIPING
1/8" / 12" SLOPE	PIPE SLOPE TAG
	BELOW GROUND PIPING
INVERT: -10' - 1"	PIPE INVERT ELEVATION TAG
2" (E)	EXISTING PIPE TAG
	PIPING BEING DEMOLISHED
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CD	CONDENSATE DRAINAGE
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
HHWR	HEATING WATER RETURN
HHWS	HEATING WATER SUPPLY
STM	STEAM
CDR	CONDENSATE RETURN

C-6"
150

- LINEAR DIFFUSER
- NECK SIZE
- CFM
- TYPE (SEE SCHEDULE)

Symbol	Description
	MECHANICAL EQUIPMENT
VAV-XX	MECHANICAL EQUIPMENT TAG
	EXISTING MECHANICAL EQUIPMENT
(E)VAV-XX	EXISTING MECHANICAL EQUIPMENT TAG (TYPICAL FOR ALL EXISTING TAGS)
	MECHANICAL EQUIPMENT FOR REFERENCE
VAV-XX	MECHANICAL EQUIPMENT TAG (REFER TO OTHER DISCIPLINE FOR ADDITIONAL INFORMATION)
	MECHANICAL EQUIPMENT FOR DEMO
(D)VAV-XX	DEMO MECHANICAL EQUIPMENT TAG (TYPICAL FOR ALL DEMO TAGS)

CARBON DIOXIDE SENSOR	CO2	TH	TEMPERATURE & HUMIDITY SENSOR
CARBON MONOXIDE SENSOR	CO	TS	TEMPERATURE SENSOR
NITROGEN DIOXIDE SENSOR	NO2	T	THERMOSTAT
HUMIDITY SENSOR	HS	MS	MANUAL SWITCH
HUMIDISTAT	H	S	SENSOR

FIRE DAMPER	F	B	MANUAL BALANCING DAMPER
SMOKE DAMPER	S	D	BACKDRAFT DAMPER
MOTORIZED DAMPER	M	C	COMBINATION FIRE/SMOKE DAMPER

ABBREVIATIONS

&	AND	HTR	HEATER
Ø	ROUND	HW	HOT WATER
A	AIR	HYD	HYDRANT
AB	ABOVE BASE	ID	INDIRECT
ABV	ABOVE	IN	INCH
AC	AIR CONDITIONING	INL	INLET
ACOUS	ACOUSTICAL	INSUL	INSULATION
AD	AREA DRAIN	INT	INTERIOR
ADD	ADDENDUM	INV	INVERT
ADDL	ADDITIONAL	INWG	INCHES WATER GAUGE
AFF	ABOVE FINISHED FLOOR	JT	JOINT
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	LAB	LABORATORY
AG	ABOVE GROUND	LB	POUND
ALT	ALTERNATE	LB/HR	POUNDS PER HOUR
ALUM	ALUMINUM	LAT	LEAVING AIR TEMPERATURE
AP	ACCESS PANEL	LF	LINEAL FOOT
APPROX	APPROXIMATE	LOC	LOCATION
ARCH	ARCHITECT/ARCHITECTURAL	LP	LOW PRESSURE
AV	ACID RESISTANT VENT	LPG	LIQUEFIED PETROLEUM GAS
AW	ACID RESISTANT WASTE	LR	LIQUID REFRIGERANT
AUTO	AUTOMATIC	LVR	LOUVER
BFF	BELOW FINISHED FLOOR	LWT	LEAVING WATER TEMPERATURE
BLDG	BUILDING	M/A	MIXED AIR
BLW	BELOW	MAN	MANUAL
BM	BEAM	MATL	MATERIAL
BO	BY OTHER	MAV	MANUAL AIR VENT
BOT	BOTTOM	MAX	MAXIMUM
BSMT	BASEMENT	MBD	MOTORIZED BYPASS DAMPER
BTU	BRITISH THERMAL UNITS	MBH	ONE THOUSAND BTU PER HOUR
BTUH	BRITISH THERMAL UNITS PER HOUR	MCF	ONE THOUSAND CUBIC FEET
BTWN	BETWEEN	MCW	MAKE-UP COLD WATER
CAP	CAPACITY	MD	MOTORIZED DAMPER
CB	CATCH BASIN	MECH	MECHANICAL
CCW	COUNTER CLOCKWISE	MFR	MANUFACTURER
CFCV	CONSTANT FLOW CONTROL VALVE	MH	MANHOLE
CFM	CUBIC FEET PER MINUTE	MIN	MINIMUM
CHW	CIRCULATING HOT WATER	MISC	MISCELLANEOUS
CI	CAST IRON	MTR	MOTOR
CLG	CEILING	MU/A	MAKE-UP/AIR
CLG	COOLING	N	NECK
CO	CLEAN OUT	NC	NOISE CRITERIA
COL	COLUMN	NC	NORMALLY CLOSED
COMB	COMBINATION	NIC	NOT IN CONTRACT
CONC	CONCRETE	NO	NUMBER
COND	CONDENSATE	NO	NORMALLY OPEN
CONF	CONFERENCE	NOM	NOMINAL
CONN	CONNECT	NTS	NOT TO SCALE
CONST	CONSTRUCTION	O	OXYGEN
CONT	CONTINUE/CONTINUATION	O/A	OUTSIDE AIR
CONTR	CONTRACT/CONTRACTOR	OC	ON CENTER
COORD	COORDINATE	OF	OVERFLOW
CTR	CENTER	OPNG	OPENING
CUFT	CUBIC FEET	PD	PRESSURE DROP
CV	CHECK VALVE	PIV	POST INDICATOR VALVE
CW	COLD WATER	PLBG	PLUMBING
CW	CLOCKWISE	PR	PAIR
D	DEGREE	PREL	PRELIMINARY
DB	DRY BULB	PRESS	PRESSURE
DET	DETAIL	PRIM	PRIMARY
DIA	DIAMETER	PRV	PRESSURE REDUCING VALVE
DIAG	DIAGONAL	PSI	POUNDS PER SQUARE INCH
DISCH	DISCHARGE	PSIG	POUNDS PER SQUARE INCH GAUGE
DIV	DIVISION	PW	POTABLE WATER
DI	DEIONIZED WATER	PWR	POWER
DMPR	DAMPER	R	DUCT RISER
DN	DOWN	R/A	RETURN AIR
DWG	DRAWING	RCP	RADIANT CEILING PANEL
DW	DISTILLED WATER	RD	ROOF DRAIN
EA	EACH	REC	RECESSED
EAT	ENTERING AIR TEMPERATURE	RED	REDUCER
EL	ELBOW	REFR	REFRIGERATION
ELEC	ELECTRICAL	RH	RELATIVE HUMIDITY
ELEV	ELEVATION	REQD	REQUIRED
EP	EXPLOSION PROOF	REV	REVERSE
EQ	EQUAL	RL/A	RELIEF AIR
EQUIP	EQUIPMENT	RM	ROOM
EWC	ELECTRIC WATER COOLER	RPM	REVOLUTIONS PER MINUTE
EWT	ENTERING WATER TEMPERATURE	RSD	ROOF SAFETY DRAIN
E/A	EXHAUST AIR	RW	RAIN WATER
EAH	EXHAUST HOOD	SF	SQUARE FOOT
EXIST	EXISTING	S/A	SUPPLY AIR
EXP	EXPANSION	SAN	SANITARY
EXPJT	EXPANSION JOINT	SCHED	SCHEDULE
EXT	EXTERIOR	SECT	SECTION
F	DEGREES FAHRENHEIT	SF	SQUARE FOOT
FCO	FLOOR CLEAN OUT	SD	SMOKE DAMPER
FD	FLOOR DRAIN	SHT	SHEET
FD	FIRE DAMPER	SIM	SIMILAR
FDV	FIRE DEPARTMENT VALVE	SLV	SLEEVE
FHC	FIRE HOSE CABINET	SM	SURFACE MOUNT
FL	FLOOR	SP	STANDPIPE
FLEX	FLEXIBLE	SP	STATIC PRESSURE
FLG	FLANGE	SPEC	SPECIFICATION
FO	FUEL OIL	SPS	STATIC PRESSURE STATION
FOV	FUEL OIL VENT	SQ	SQUARE
FOR	FUEL OIL RETURN	SR	SUCTION REFRIGERANT
FOS	FUEL OIL SUPPLY	SS	STAINLESS STEEL
FPM	FEET PER MINUTE	STD	STANDARD
FRP	FIBERGLASS REINFORCED PIPE	STM	STEAM
FS	FULL SIZE	STRUCT	STRUCTURAL
FS	FLOOR SINK	SUCT	SUCTION
FT	FOOT/FEET	SUSP	SUSPENDED
FTG	FOOTING	T	THERMOSTAT
FTR	FIN TUBE RADIATION	TCP	TEMPERATURE CONTROL PANEL
FUT	FUTURE	TD	TEMPERATURE DROP
GA	GAGE/GAUGE	TDR	TRENCH DRAIN
GAL	GALLON	TEFC	TOTALLY ENCLOSED FAN COOLED
GALV	GALVANIZED	TEMP	TEMPERATURE
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GEN	GENERATOR	UFD	UNDER FLOOR DUCT
GENL	GENERAL	UG	UNDERGROUND
GPM	GALLONS PER MINUTE	VAC	VACUUM
GR	GRADE	V	VENT
GW	GREASE WASTE	VAV	VARIABLE AIR VOLUME
HB	HOSE BIB	VEL	VELOCITY
HD	HEAD	VENT	VENTILATION
HHWR	HYDRONIC HOT WATER RETURN	VERT	VERTICAL
HHWS	HYDRONIC HOT WATER SUPPLY	VOL	VOLUME
HORZ	HORIZONTAL	VTR	VENT THROUGH ROOF
HP	HORSE POWER	W	WASTE
HP	HIGH PRESSURE	WB	WET BULB
HTG	HEATING	WCO	WALL CLEAN OUT
		WH	WALL HYDRANT

EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT	FP	FIRE PUMP
ACC	AIR COOLED CONDENSER	GI	GREASE INTERCEPTOR
ACCU	AIR COOLING CONDENSING UNIT	GRV	GRAVITY ROOF VENTILATOR
AFMS	AIR FLOW MEASURING STATION	H	HUMIDIFIER
AHU	AIR HANDLING UNIT	HWP	HEATING WATER PUMP
AS	AIR SEPARATOR	HX	HEAT EXCHANGER
B	BOILER	HPU	HEAT PUMP UNIT
CF	CABINET FAN	HRU	HEAT RECOVERY UNIT
CF	CHEMICAL FEEDER	ILC	INLINE CENTRIFUGAL
CFP	CHEMICAL FEEDER PUMP	PF	PROPELLER FAN
CH	CHILLER	PRV	POWER ROOF VENTILATOR
CRU	CONDENSATE RETURN UNIT	PWF	POWER WALL FAN
CT	COOLING TOWER	RE	RETURN/EXHAUST FAN
CUH	CABINET UNIT HEATER	RTU	ROOFTOP UNIT
CWP	CONDENSER WATER PUMP	SA	SHOCK ABSORBER
CHWP	CHILLED WATER PUMP	SAT	SOUND ATTENUATOR
DBP	DOMESTIC WATER BOOSTER PUMP	SEP	SEWAGE EJECTOR PUMP
DC	DUCT MOUNTED COIL	SF	SUPPLY FAN
DCP	DOMESTIC WATER CIRCULATING PUMP	SP	SUMP PUMP
EF	EXHAUST FAN	UH	UNIT HEATER
EDC	ELECTRIC DUCT COIL	US	UTILITY SET
ET	EXPANSION TANK	UV	UNIT VENTILATOR
EWH	ELECTRIC WATER HEATER	WFMS	WATER FLOW MEASURING STATION
FCU	FAN COIL UNIT	WH	WATER HEATER

Mechanical Sheet List

Sheet Number	Sheet Name
MD-100	HVAC DEMOLITION PLAN LEVEL 1
MH-001	MECHANICAL LEGEND & ABBREVIATIONS
MH-002	HVAC SPECIFICATIONS
MH-100	FIRST FLOOR PLAN - HVAC
MH-500	HVAC DETAILS
MH-600	HVAC SCHEDULES

NOTES

1. THE SPECIFICATIONS AND ACCOMPANYING DRAWINGS DESCRIBE APPROVED MANUFACTURERS AND THE SCOPE OF WORK OF THIS PROJECT. ALL LABOR, MATERIAL, EQUIPMENT, MACHINERY, SUPERVISION, MANAGEMENT AND OTHER ITEMS NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF ALL SYSTEMS SHOWN ON DRAWINGS AND/OR SPECIFICATIONS TO BE PROVIDED BY THE CONTRACTOR.

2. ALL WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL MECHANICAL CODE AND BUILDING CODE, NFPA CODES, AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. OBTAIN ALL PERMITS REQUIRED, GIVE ALL LEGAL NOTICES, AND HAVE ALL WORK INSPECTED AS REQUIRED BY LOCAL OR STATE LAW.

3. DRAWINGS SHOULD BE INTERPRETED AS GENERAL LAYOUT AND ARRANGEMENT DRAWINGS. THE DRAWINGS ARE NOT INTENDED TO SHOW AND CANNOT SHOW COMPLETE OR PRECISE MEASUREMENTS AND DETAILS OF THE BUILDING AND INSTALLATION IN EVERY RESPECT, AND THEY DO NOT INCLUDE ALL DETAILS OF MANUFACTURED EQUIPMENT, CONSTRUCTION, PIPING, DUCT WORK, ETC. MEASUREMENT FIGURES WRITTEN UPON THE DRAWING ARE TO BE RELIED UPON AS A DIMENSION FOR INSTALLATION PURPOSES, EXACT LOCATIONS AND MEASUREMENTS ARE TO BE DEFINED IN THE FIELD AND THE CONTRACTOR IS RESPONSIBLE FOR THEIR ACCURACY AND USE IN CONSTRUCTION OF THE WORK. COORDINATE CLOSELY WITH OWNER & OTHER TRADES.

4. TRANSITION RECTANGULAR DUCTWORK ON BOTTOM AND SIDES. MAINTAIN TOP OF DUCTWORK LEVEL AND AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE.

5. FLEXIBLE DUCT RUN OUTS TO CEILING DIFFUSERS SHALL BE FREE OF 90 DEG. TURNS, SAGS AND KINKS AND SHALL BE THE SAME SIZE AS THE DIFFUSER INLET. MAXIMUM LENGTH = 5 FEET.

6. ALL DUCT TRANSITIONS FROM SQUARE TO ROUND ARE TO BE SMOOTH AND TAPERED SQUARE TO ROUND TRANSITIONS. SPIN-IN FITTINGS AT THE END OF CAPPED DUCTS ARE NOT ACCEPTABLE.

7. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSION.

8. USE 45° ENTRY, LOW LOSS TAP/FITTING WITH QUADRANT AND EXTRACTOR IN ALL DUCT TAKE-OFFS. PROVIDE WITH 2" BUILD-OUT FOR LOCKING QUADRANT ON INSULATED DUCT.

9. PROVIDE A MANUAL DAMPER IN ALL RUNOUTS TO EACH DIFFUSER, GRILLE, AND DEDICATED OUTDOOR AIR DUCT RUNOUTS. ADD MANUAL VOLUME DAMPERS AS RECOMMENDED BY T&B INITIAL SURVEY. (OBD AT DIFFUSER NOT ALLOWED)

10. ALL SUPPLY, RETURN, OR EXHAUST DUCT RUNOUTS TO GRILLES AND DIFFUSERS ARE TO BE THE SAME SIZE AS GRILLE NECK UNLESS NOTED OTHERWISE.

11. ALL SLOT DIFFUSERS TO HAVE 2-WAY AIR FLOW PATTERNS & ALL 24"x24" DIFFUSERS TO HAVE 4-WAY AIR FLOW PATTERNS UNLESS INDICATED OTHERWISE ON DRAWINGS.

12. VERIFY LOCATION OF ALL THERMOSTAT AND FAN SWITCH LOCATIONS WITH THE ARCHITECT. MOUNT BOTTOM OF ALL THERMOSTATS 3' 4" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE. SPACES WITH CO2 SENSORS SHALL MOUNT THE CO2 SENSOR ABOVE THE THERMOSTAT.

13. CONDENSATE LINES ARE TO BE TRAPPED AND SLOPED 1/8 " PER FOOT IN HORIZONTAL RUNS, AND TERMINATE ABOVE A DRAIN OR RECEPTOR.

14 .COORDINATE VOLTAGE AND PHASE OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE SUBMITTING SHOP DRAWINGS OR ORDERING EQUIPMENT.

15. COORDINATE LOCATION & PROVIDE ALL ACCESS DOORS OR PANELS FOR VALVES, DAMPERS, OR ANY OTHER EQUIPMENT REQUIRING SERVICE ACCESS.

16. ALL ELECTRICAL DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT ARE TO BE PROVIDED AND INSTALLED BY DIVISION 23. THIS INFORMATION SHALL BE INDICATED ON SHOP DRAWINGS.

17. ON SQUARE & RECTANGULAR DUCTWORK, ALL MITERED ELBOWS AND BULL HEAD TEES ARE TO BE CONSTRUCTED WITH SINGLE-THICKNESS VANES (1.5" VANE SPACING) WITH A FITTING LOSS COEFFICIENT OF 0.11 OR LESS.

18. REFER TO ARCHITECTURAL PLANS AND REFLECTED CEILING PLANS TO COORDINATE ACTUAL LOCATIONS OF MECHANICAL EQUIPMENT WITH LAYOUT OF WALLS, PARTITIONS AND LOCATIONS OF CEILING MOUNTED DEVICES.

19. FOLLOW MANUFACTURER'S RECOMMENDATIONS AND WRITTEN INSTRUCTIONS FOR THE INSTALLATION OF ALL EQUIPMENT, MATERIALS AND ASSEMBLIES INDICATED ON THESE CONTRACT DOCUMENTS. SHOULD CONFLICTS ARISE BETWEEN THESE DOCUMENTS, CODE REQUIREMENTS AND MANUFACTURER'S INSTRUCTIONS, THE MORE STRINGENT REQUIREMENT ARE TO GOVERN.

20. COORDINATE WORK WITH THAT OF ALL OTHER TRADES TO ELIMINATE INTERFERENCE'S. EXAMINE IN ADVANCE THE LOCATION OF ELECTRICAL SYSTEMS, DUCTS, PIPING, STRUCTURES, CONDUITS AND OTHER EQUIPMENT AND COMPONENTS TO BE INSTALLED AND PROPERLY COORDINATE THE INSTALLATION OF MECHANICAL WORK TO AVOID INTERFERENCE'S BEFORE FABRICATING AND INSTALLING WORK. DETERMINE ALL DIMENSIONS BY ACTUAL FIELD CONDITIONS, MEASUREMENTS FROM MANUFACTURER'S CERTIFIED PRINTS AND COORDINATION WITH OTHER TRADES AND TO MODIFY, OFFSET OR OTHERWISE ACCOMMODATE ALL EQUIPMENT TO THE STRUCTURE, UTILITIES AND OTHER EQUIPMENT.

21. SUPPORT AND FASTEN ALL DUCTWORK, EQUIPMENT, ETC. SECURELY IN PLACE. SPACE, SECURE AND ADJUST HANGERS AND DUCTS, WITHOUT DEFLECTION OR SAG. CHAIN, STRAP, PERFORATED STRAP, WIRE HANGERS, OR WOOD PLUGS ARE PROHIBITED.

22. ITEMS SPECIFIED HEREIN BY MANUFACTURER AND MODEL NUMBER ARE TO BE CONSIDERED THE MINIMUM QUALITY ACCEPTABLE FOR THE SPECIFIED APPLICATION AND ESTABLISH A STANDARD OF REQUIRED FUNCTION, DIMENSION, APPEARANCE, SERVICEABILITY, AVAILABILITY OF SPARE PARTS AND QUALITY TO BE MET BY ANY PROPOSED SUBSTITUTION. FOR SUBSTITUTIONS, IT IS TO BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SUFFICIENT INFORMATION TO ESTABLISH "OR EQUAL" STATUS, IN THE DESIGN ENGINEER'S OPINION AND TO COORDINATE INSTALLATION OF THE AVAILABLE SPACE. INCREASED COSTS TO THE PROJECT ASSOCIATED WITH CONTRACTOR SUBSTITUTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

23. MAKE ALL NECESSARY TESTS, TRIAL OPERATIONS, ETC. REQUIRED TO PROVE THAT ALL SYSTEMS ARE IN COMPLETE SERVICEABLE CONDITION AND WILL FUNCTION AS INTENDED. ALL COSTS OF TEST SHALL BE BORNE BY THIS CONTRACTOR. SHOULD TEST REVEAL ANY DEFECTIVE MATERIAL OR WORKMANSHIP, SUCH WORK SHALL BE REPLACED AND TESTS REPEATED. ALL CORRECTIONS SHALL BE MADE USING NEW MATERIALS.

24. FURNISH ALL NECESSARY ASSISTANCE AS DIRECTED BY THE OWNER WHICH MAY BE REQUIRED TO PROPERLY INSTRUCT THE OWNER IN THE OPERATION OF ALL EQUIPMENT. THIS SHALL INCLUDE PERSONAL INSTRUCTION COVERING ROUTINE MAINTENANCE AND OPERATION OF EQUIPMENT.

25. OPERATING AND MAINTENANCE MANUALS FOR ALL EQUIPMENT SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:INCLUDING NECESSARY CUT SHEETS, CHARTS, WRITTEN INSTRUCTIONS, WIRING DIAGRAMS, FINAL AS-BUILT DRAWINGS WITH BALANCED AIR FLOWS INDICATED ETC. THESE MAINTENANCE INSTRUCTIONS SHALL BE BOUND IN SUITABLE HARD BACK RING BIDDERS, PROPERLY INDEXED, AND DELIVERED TO THE OWNER AND ARCHITECT.

26. SUBMIT SHALL COMPLY WITH THE REQUIREMENTS OF SPECIFICATION SECTION 013300. SUBMITTAL'S SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

PRODUCT DATA-
PERFORMANCE DATA AT DESIGN CONDITIONS, PUMP CURVES, FAN CURVES, WEIGHT, MATERIALS OF CONSTRUCTION, GAUGES, OPTIONS AND ACCESSORIES.

SHOP DRAWINGS-
DIMENSIONS, WEIGHT DISTRIBUTION, REQUIRED CLEARANCES, METHOD OF ASSEMBLY, LOCATION SIZES AND UTILITY REQUIREMENTS OF ALL CONNECTIONS.

WIRING DIAGRAMS-
ELECTRICAL POWER REQUIREMENTS AND ASSOCIATED ELECTRICAL LOADS, LADDER DIAGRAMS INDICATING CONTROL LOGIC, DIFFERENTIATE BETWEEN FACTORY AND FIELD WIRING.

27. MAINTAIN AN ACCURATE SET OF RECORD DRAWINGS ON-SITE AT ALL TIMES DURING CONSTRUCTION WHICH SHALL BE AVAILABLE FOR EXAMINATION BY THE OWNER'S REPRESENTATIVE UPON REQUEST. PROVIDE THE OWNER WITH A COMPLETE MARKED-UP SET OF THE CONTRACT DRAWINGS AT PROJECT COMPLETION.

28. CORRECT ANY DEFECTS IN WORKMANSHIP AND/OR MATERIAL WHICH OCCUR DURING THE FIRST YEAR OF OPERATION. CERTIFICATE WILL COMMENCE ON THE DATE OF ACCEPTANCE OF WORK BY OWNER. SUBMIT WRITTEN CERTIFICATE WITH MAINTENANCE DATA. THE CONTRACTOR SHALL PROVIDE A WRITTEN MANUFACTURER'S WARRANTY ON ALL PARTS AND LABOR FOR A PERIOD OF 1 YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. WHERE INDICATED, PROVIDE EXTENDED WARRANTIES FOR PERIODS INDICATED.

29. ALL EQUIPMENT FURNISHED SHALL BE UL APPROVED AND SHALL BE LABELED OR LISTED BY UL.

30. REESTABLISH THE INTEGRITY OF ALL RATED ASSEMBLIES IN WHICH HIS WORK REQUIRES ALTERATION OR MODIFICATION.

31. FRAME AND SEAL ALL DUCT PENETRATIONS THROUGH WALLS AND FLOORS AND ROOF.

32. MATERIAL SHALL BE NEW AND MADE BY AN APPROVED MANUFACTURER. PIPING SHALL BE INSTALLED SO THAT IT CAN BE COMPLETELY DRAINED. EQUIPMENT AND MATERIALS SHALL BE INSTALLED, ERECTED OR APPLIED WITH THE BEST ENGINEERING OR CONSTRUCTION PRACTICE. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE OBSERVED, AS WELL AS ANY SPECIFIC INSTRUCTIONS GIVEN BY THE OWNER. ALL SUBSTANDARD WORK INSTALLED BY THIS CONTRACTOR SHALL BE REPLACED BY THIS CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. IF THIS CONTRACTOR DAMAGES EXISTING WORK, HE SHALL PAY THE COST OF REPLACEMENT OF THE DAMAGED WORK AT NO ADDITIONAL EXPENSE TO THE OWNER.

33. CLEANING AGENTS SHALL BE COMPATIBLE WITH THE SYSTEM BEING CLEANED. PRIOR TO ERECTION, INSPECT AND CLEAN AS REQUIRED TO REMOVE SAND, DIRT AND SCALE. PRIOR TO FLUSHING SYSTEM, CONTROL VALVES, RUPTURE DISCS, ETC. THAT MAY BE DAMAGED BY CLEANING SHALL BE REMOVED AND REPLACED WITH SPOOL PIECES, PLUGS, ETC. REMOVED ITEMS SHALL BE CLEANED SEPARATELY. NEW PIPE SHALL BE VALVED OFF FROM EXISTING, THEN FILLED AS REQUIRED. ALLOW SYSTEM TO BE FILLED COMPLETELY. THEN DRAIN COMPLETELY. CONTRACTOR SHALL INSTALL DRAINS AS REQUIRED TO ENSURE COMPLETE DRAINAGE OF SYSTEM. ALL DAMAGE OR DISCOLORATION OF EQUIPMENT OR THE BUILDING DUE TO FAILURE TO CLEAN UP THOROUGHLY OR FLUSH OUT PIPING PROPERLY SHALL BE CORRECTED WITHOUT ADDITIONAL COST TO THE OWNER. DOMESTIC WATER LINES SHALL BE DISINFECTED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.

34. SHUT-DOWN OF EXISTING SERVICES WHICH AFFECTS THE OPERATION WITHIN THE FACILITY REQUIRED TO ACCOMMODATE CONSTRUCTION ACTIVITIES DESCRIBED HEREIN, SHALL BE SCHEDULED WITH THE OWNER'S REPRESENTATIVE AND APPROVED IN WRITING. ALL SERVICES SHALL REMAIN OPERATIONAL DURING NORMAL BUSINESS HOURS UNLESS SPECIFICALLY APPROVED OTHERWISE.

35. PIPING INSTALLATIONS SHALL BE PER CURRENT MODERN INDUSTRY METHODS. PROVIDE PIPE SLEEVE LARGE ENOUGH FOR PIPE AND INSULATION WHERE PIPE PASSES THROUGH FLOORS OR WALLS. PIPE PASSING THROUGH FIRE WALLS SHALL BE PACKED WITH A LISTED FIRE PENETRATION SYSTEM. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS IN EXPOSED INTERIOR SPACES, EXCEPT WHERE OTHERWISE INDICATED.

36. CONTRACTOR IS RESPONSIBLE FOR ANY CUTTING AND PATCHING REQUIRED WHICH IS INCIDENTAL TO THE INSTALLATION OF HIS WORK. CUT, CHANNEL, CHASE AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES NECESSARY FOR PIPING INSTALLATIONS AFTER COORDINATING w/ OTHER TRADES. PERFORM CUTTING BY SKILLED MECHANICS OF THE TRADES INVOLVED. REPAIR CUT SURFACES USING MATERIALS MATCHING SPECIFIED MATERIALS AND METHODS REQUIRED FOR SURFACE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS ON CONCRETE SLAB OPENINGS.

37. REFER TO ARCHITECTURAL PLANS TO VERIFY RATINGS (FIRE, FIRE/SMOKE, SMOKE) OF ALL WALLS AND FLOORS BEING PENETRATED.

38. COORDINATE ALL VOLTAGES, PHASES AND CAPACITIES WITH ELECTRICAL PLANS

39. THE INSTALLATION OF DUCT MOUNTED SMOKE DETECTORS THAT ARE NOT PART OF A LISTED SMOKE DAMPER OR FIRE SMOKE DAMPER ARE TO BE FURNISHED BY THE FIRE ALARM CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. THESE SHALL BE WIRED TO THE FIE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. TO DETERMINE IF SMOKE DETECTORS ARE REQUIRED, REFER TO THE ELECTRICAL FIRE ALARM PLANS.

THE INSTALLATION OF DUCT MOUNTED SMOKE DETECTORS THAT ARE PART OF A LISTED SMOKE DAMPER OR FIRE SMOKE DAMPER ARE TO BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. THESE SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM VIA ADDRESSABLE INPUT MODULES AND CONNECTED TO THE AUXILIARY CONTACTS FURNISHED WITH THE DAMPER ASSEMBLY. TO DETERMINE IF SMOKE DETECTORS ARE REQUIRED, REFER TO THE ELECTRICAL FIRE ALARM PLANS.

40. ACCESSORIES FOR EQUIPMENT THAT ARE LISTED ON SCHEDULE DRAWINGS ARE TO BE PROVIDED BY THE CONTRACTOR. THE ACCESSORIES ARE TO BE FURNISHED AND INSTALLED AS A COMPLETED OPERATING SYSTEM.

41. PROVIDE DUCT LINER FOR THE FIRST 25' DOWNSTREAM OF EACH AIR HANDLING UNIT AND FIRST 5' DOWNSTREAM OF EACH TERMINAL UNIT (SINGLE DUCT AND FAN POWERED).

42. SEE STRUCTURAL PLANS FOR LENTIL REQUIREMENTS FOR PENETRATIONS THROUGH WALLS.

43. WHERE BMS IS PRESENT OR BEING PROVIDED SPACES SERVED BY DUCTED AND DUCTLESS SPLIT SYSTEMS THAT DON'T HAVE BACNET CONTROLS. SHALL BE PROVIDED WITH OUT WALL MOUNTED BACNET SENSOR TO MONITOR/ALARM TEMPERATURE OF SPACE.

44. SLEEVE AND SLEEVE SEALS ARE REQUIRED FOR MECHANICAL PIPING PENETRATIONS THROUGH EXTERIOR CONCRETE WALLS ABOVE GRADE, EXTERIOR CONCRETE WALLS BELOW GRADE, CONCRETE SLABS ON GRADE, CONCRETE SLABS ABOVE GRADE AND INTERIOR PARTITIONS. REFER TO PROJECT SPECIFICATIONS.

45. CONTRACTOR SHALL PROVIDE 1/4-INCH SCALE PROJECT SPECIFIC COORDINATION DRAWINGS. COORDINATION DRAWINGS AND PLANS AND OTHER DETAILS SHALL BE DRAWN TO SCALE, ON WHICH THE FOLLOWING ITEMS ARE SHOWN AND COORDINATED WITH EACH OTHER, USING INPUT FROM INSTALLERS OF THE ITEMS INVOLVED INCLUDING BUT NOT LIMITED TO: MECHANICAL EQUIPMENT, DUCTWORK, INSULATION, ALL PIPING, ELECTRICAL DISCONNECTS, ETC. COORDINATION DRAWINGS SHALL INCLUDE ALL MANUFACTURERS REQUIRED CLEARANCES AS WELL AS CODE REQUIRED CLEARANCES.

46. WHERE BI-POLAR IONIZATION IS BEING USED, THE CONTRACTOR IS TO PROVIDE AN INDEPENDENT THIRD PARTY INSPECTION OF ALL BI-POLAR IONIZATION UNITS LOCATED IN AIR HANDLING SYSTEMS. THIS INSPECTION TO BE SCHEDULED FOR ONE YEAR AFTER SUBSTANTIAL PROJECT COMPLETION. PROVIDE A COMPLETE REPORT OF FINDINGS TO THE OWNER AND ENGINEER OF RECORD.

D C B A

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PROFESSIONAL SEALS:

STATE OF MICHIGAN ALEXANDER COSTAKIS License No. 6201311419 LICENSED PROFESSIONAL ENGINEER 03/25/2025

CONSULTANTS:

KEYPLAN

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-25	BIDS/PERMITS

☐ APPROVED FOR CONSTRUCTION
■ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

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JHA PROJECT #:

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MECHANICAL LEGEND & ABBREVIATIONS

MH-001

DESCRIPTION
THESE PLANS ARE SCHEMATIC IN NATURE AND ARE INTENDED TO ESTABLISH SIZE, GENERAL ROUTING, LOCATION, PERFORMANCE, AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. ALL WORK SHALL BE FULLY COORDINATED WITH OTHER TRADES TO INSURE THE INSTALLATION OF A COMPLETE, OPERATING SYSTEM THAT FITS IN THE SPACE ALLOTTED. PROVIDE ALL LABOR, EQUIPMENT, APPURTENANCES, AND MATERIALS NECESSARY AND PERFORM ALL OPERATIONS REQUIRED FOR THE INSTALLATION OF COMPLETE, FUNCTIONAL MECHANICAL SYSTEMS AS OUTLINED ON THE DRAWINGS AND DESCRIBED IN THESE SPECIFICATIONS.

THIS PROJECT IS A FIT-UP OF AN EXISTING BASE BUILDING SHELL MECHANICAL SYSTEM. THE APPROXIMATE CONDITIONS OF THE BASE BUILDING DESIGN ARE REFLECTED IN THESE DRAWINGS. HOWEVER SOME UNDOCUMENTED WORK MAY HAVE BEEN PERFORMED (ADDED OR REMOVED) THE CONDITIONS OF WHICH ARE NOT INDICATED ON THESE DRAWINGS. NOTIFY BUILDING OWNER/MANAGER OF ANY WORK SHOWN AS EXISTING WHICH IS NOT AND INCLUDE MISSING WORK. INSTALL STOCK EQUIPMENT WHEREINDICATED. RELOCATE EXISTING EQUIPMENT AS REQUIRED. FINAL WORK SHALL REFLECT LAYOUT SHOWN AS DRAWINGS.

INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH APPLICABLE CODES, SMACNA, MANUFACTURER'S RECOMMENDATIONS AND THESE DOCUMENTS. SHOULD CONFLICTS ARISE, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

ANY DAMAGE TO EXISTING STRUCTURE OR FINISHES RESULTING FROM THE INSTALLATION OF ANY EQUIPMENT SPECIFIED UNDER THIS DIVISION SHALL BE REPAIRED TO MATCH SURROUNDING AREAS. COORDINATE ALL CUTTING AND PATCHING WITH OTHER TRADES.

CLEAN ALL EQUIPMENT AND TOUCH UP ANY MARS OR SCRATCHES BEFORE BENEFICIAL OCCUPANCY.

WHERE EXISTING EQUIPMENT IS TO BE RE-USED, CONTRACTOR SHALL CHECK THE EQUIPMENT FOR PROPER OPERATION PRIOR TO BEGINNING RELATED WORK. ANY NONFUNCTIONING EQUIPMENT SHALL BE REPORTED TO THE OWNER. THIS EQUIPMENT WILL BE REPLACED OR REPAIRED BY THE OWNER AT THE OWNER'S EXPENSE. ANY EQUIPMENT NOT REPORTED WILL BE ASSUMED TO BE IN WORKING ORDER AND MUST BE FULLY FUNCTIONAL WHEN RE-INSTALLED, OTHERWISE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING OR REPLACING SAID ITEMS WITH NO ADDITIONAL COST TO THE OWNER. COORDINATE ELECTRICAL CHARACTERISTICS AND CONFIRM AS BUILT INFORMATION DOCUMENTED. ANY CHANGES SHALL BE COORDINATED BETWEEN TRADES, AND VERIFICATION OF CHARACTERISTICS WILL BE CONDUCTED PRIOR TO COMMENCEMENT OF WORK.

PROVIDE FOR EACH NEW PIECE OF MECHANICAL EQUIPMENT A PERMANENT LABEL (METAL, BAKELITE, PLASTIC, OR EQUIVALENT) WITH THE EQUIPMENT NAME/TAG/MARK PERMANENTLY AFFIXED TO UNIT, LOCATED ADJACENT TO NAMEPLATE OR ADJACENT TO ACCESS DOOR IF NAMEPLATE IS MOUNTED WITHIN UNIT.

ALL PIPING SYSTEMS SHALL BE PROVIDED IDENTIFICATION LABELS INSTALLED EVERY 20 FT FOR EACH PIPE AND AT LEAST ONCE WITHIN EACH ROOM.

ALL MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT THOSE EXISTING ITEMS INDICATED TO BE RE-USED. ANY EQUIPMENT OR DEVICES TO BE RE-USED SHALL BE THOROUGHLY CLEANED AND SERVICED TO GOOD WORKING CONDITION. ALL NEW EQUIPMENT SHALL BEAR THE LABEL OF THE APPROPRIATE TESTING AGENCY (UL, ETL, FM, CSA, AGA, ASTM, AMCA, POI, CISPI, ETC.). PROVIDE ONE (1) YEAR PARTS AND LABOR WARRANTY ON ALL NEW EQUIPMENT, SYSTEMS AND COMPONENTS, INCLUDING WORKMANSHIP.

THE PRODUCTS OF PARTICULAR MANUFACTURERS HAVE BEEN USED AS THE BASIS OF DESIGN. ANY MODIFICATIONS REQUIRED TO THE MECHANICAL SYSTEM, ELECTRICAL SYSTEM, BUILDING STRUCTURE OR FINISHES DUE TO THE USE OF EQUIPMENT OTHER THAN THE BASIS OF DESIGN SHALL BE APPROVED BY THE DESIGNER AND COORDINATED WITH ALL TRADES AND PERFORMED WITHOUT ADDITIONAL COST TO THE CONTRACT.

EQUIPMENT
MECHANICAL EQUIPMENT SHALL BE AS INDICATED IN THE EQUIPMENT SCHEDULE. COORDINATE WITH ELECTRICAL BEFORE ORDERING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. EQUIPMENT WITH MOTORS SHALL BE PROVIDED WITH BUILT-IN STARTERS AND FUSED DISCONNECT SWITCHES, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.

AIR DISTRIBUTION DEVICES SHALL MATCH EXISTING DEVICE TYPES. COORDINATE MOUNTING FRAMES TO MATCH THE SURFACE IN WHICH THE DEVICES ARE INSTALLED. COORDINATE FINISH AND COLOR WITH THE ARCHITECT (FINISH TO BE OFF- WHITE BAKED ENAMEL UNLESS OTHERWISE NOTED). ALL 2' x 2' LAY-IN DIFFUSERS SHALL HAVE 4-WAY ADJUSTABLE THROW, UNLESS OTHERWISE NOTED). DEVICES SHALL BE AS MANUFACTURED BY PRICE OR APPROVED EQUIVALENT BY CARNES, J&J REGISTER, KRUEGER, METAL-AIRE, OR TITUS.

VARIABLE AIR VOLUME UNITS
THE UNITS SHALL BE MINIMUM 22 GAUGE GALVANIZED STEEL, WITH INTERIOR SURFACE OF CASING ACOUSTICALLY AND THERMALLY LINED. THE LINER SHALL BE (1/2 INCH, 1.75 LB/FT3) WITH MINIMUM R VALUE = 3.846.

PRIMARY AIR FLOW VALVE HALL BE CYLINDRICAL FLOW CONTROL DEVICE WITH ELECTRIC ACTUATOR. MAXIMUM LEAKAGE RATE SHALL BE 1% AT 4 INCHES W.G. MOTORS SHALL BE PERMANENTLY LUBRICATED, DIRECT DRIVE, PERMANENT SPLIT CAPACITOR DRIVE, WITH OVERLOAD PROTECTION PROVIDED.

SLIP AND DRIVE OUTLET CONNECTION. UL LISTED. CONTROL OUTLET AND ACCESS TO BE FIELD VERIFIED FOR CLEARANCE REQUIREMENTS.

DUCTWORK AND ACCESSORIES
ALL NEW SUPPLY AND RETURN AIR DUCTWORK SHALL BE G90 GALVANIZED SHEET STEEL, FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA PRESSURE RATING CLASSIFICATION AND CODE. SIZE INDICATED ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS AVAILABLE FOR AIR FLOW (ADD LINER THICKNESS FOR SHEET METAL SIZES).

LOW PRESSURE DUCTWORK IS THAT PORTION OF DUCT SYSTEM DOWNSTREAM OF THE TERMINAL UNIT DISCHARGES, AND SHALL BE SMACNA PRESSURE CLASS 2" W.G. DUCTWORK MAY BE RECTANGULAR OR ROUND EQUIVALENT. ALL JOINTS SHALL BE MECHANICALLY FASTENED AND SEATED, ALL SEAMS SHALL BE SEALED. SEALANTS SHALL BE WATER BASED ONLY. FIBERGLASS DUCT BOARD IS PROHIBITED. MEDIUM PRESSURE DUCTWORK IS THAT PORTION OF THE DUCT SYSTEM DOWNSTREAM OF AIR HANDLING UNITS AND UP TO THE TERMINAL UNIT INLETS, AND SHALL BE SMACNA PRESSURE CLASS 6" W.G. MEDIUM PRESSURE DUCTWORK CONSTRUCTION SHALL BE SPIRAL LOCK SEAM (ROUND OR OVAL) OR CASKETED MECHANICAL FASTENED (RECTANGULAR). SUCTION AND DISCHARGE OF ALL EXHAUST SYSTEMS SHALL BE 2" W.G. SMACNA PRESSURE CLASS.

FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTIONS TO AIR DISTRIBUTIONS DEVICES. FLEXIBLE DUCT SHALL BE UL 181 CLASS 1 AIR DUCT, RATED FOR APPLICABLE DUCT SYSTEM PRESSURE CLASSIFICATION SERVICE, WITH TEAR RESISTANT, REINFORCED INNER LAYER, SPRING STEEL WIRE HELIX, MINIMUM 1 1/2" INSULATION, OUTER VAPOR BARRIER AND FIRE RETARDANT OUTER JACKET.

FLEXIBLE DUCT CONNECTIONS TO LOW PRESSURE TRUNK DUCT SHALL BE MADE WITH SPIN-IN CONNECTIONS AND ADJUSTABLE, LOCKING MANUAL DAMPER. PROVIDE SQUARE TO ROUND ADAPTERS OR BOOTS TO CONNECT TO TERMINAL UNITS, AIR DISTRIBUTION DEVICES, DUCT TAPS, AND SPIN-IN FITTINGS SHALL BE SECURED WITH METAL CLAMPS, PER SMACNA. PROVIDE METAL CLAMPS FOR BOTH THE INNER LAYER AND THE OUTER VAPOR LAYER. DUCT CONNECTIONS TO MEDIUM PRESSURE TRUNK DUCT SHALL BE MADE WITH CONICAL BELLMOUTH OR LATERAL FITTINGS.

ALL SUPPLY AIR BRANCH TAKE-OFFS FROM LOW PRESSURE TRUNK DUCTS SHALL BE MADE WITH 45 DEGREE COLLAR AND SHALL HAVE BALANCING DAMPERS WITH LOCKING QUADRANT HANDLE IN BRANCH DUCT. AIR EXTRACTORS OR ELBOWS WITH SPLITTER DAMPERS MAY BE USED AS ALTERNATE BRANCH TAKE-OFF METHOD.

ALL ELBOWS SHALL BE SMOOTH RADIUS WITH CENTER LINE RADIUS EQUAL TO 1.5 DUCT WIDTH OR MITERED WITH DOUBLE THICKNESS TURNING VANES WITH A FITTING LOSS COEFFICIENT OF 0.11 OR LESS. IF EXISTING CONDITIONS PREVENT A SMOOTH RADIUS ELBOW ON ROUND DUCT, AN ELBOW WITH A CENTER LINE RADIUS EQUAL TO 1.0 DIAMETER SHALL BE ALLOWED.

AIR DISTRIBUTION DEVICES
AIR DISTRIBUTION DEVICES SHALL BE AS SCHEDULED ON THE DRAWINGS.

MISCELLANEOUS EQUIPMENT HVAC CONTROLS
ENERGY MANAGEMENT SYSTEM CONTROLS CONTRACTOR SHALL BE APPROVED BY THE BUILDING OWNER.

THE BASE BUILDING DIRECT DIGITAL CONTROL SYSTEM GRAPHICS SHALL BE UPDATED TO REFLECT THE NEW PLAN AND EQUIPMENT LAYOUT. THE EXISTING CARRIER CONTROLS NETWORK SHALL BE UPDATED TO THE iVUE 6.5 FIRMWARE.

NEW THERMOSTATS & OTHER CONTROLS VISIBLE IN OCCUPIED SPACES SHALL MATCH COLOR AND STYLE WITH BASE BUILDING STANDARDS.

ALL NEW VAV'S SHALL MATCH BUILDING STANDARDS. NEW TERMINAL UNITS SHALL HAVE DDC CONTROLS MATCHING DDC EXISTING CONTROLS.

EQUIPMENT
MECHANICAL EQUIPMENT SHALL BE AS INDICATED IN THE EQUIPMENT SCHEDULE OR APPROVED EQUIVALENT, AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. COORDINATE WITH ELECTRICAL, BEFORE ORDERING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. COORDINATE QUANTITY, SIZE, AND TYPE OF CONNECTION(S) AND OVERCURRENT PROTECTION. AND DISCONNECT(S), AND STARTER (S) REQUIREMENTS. DO NOT MOUNT DISCONNECT SWITCHES OVER UNIT NAMEPLATES. ALL ELECTRICAL WORK SHALL BE DONE IN CONFORMANCE WITH THESE SPECIFICATIONS, THE NATIONAL ELECTRIC CODE, AND LOCAL CODES. WHERE CONFLICTING REQUIREMENTS MAY OCCUR, THE MORE STRINGENT SHALL GOVERN.

SUPPORT ALL DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE. DO NOT SUPPORT FROM OTHER DUCTWORK, PIPING, CONDUIT, ETC. SUPPORT ALL DUCTWORK WITH HANGERS AND SUPPORTS PER SMACNA & DETAILS IN THESE DOCUMENTS. SUPPORT ALL PIPING WITH HANGERS, SUPPORTS, ANCHORS AND GUIDES PER ANSI CODE FOR PRESSURE PIPING, ANS B31.1 WITH ADDENDA 31.1 OA-69. SIZING AND SPACING OF HANGERS SHALL BE PER THESE STANDARDS, UNLESS OTHERWISE NOTED. "C" CLAMPS SHALL NOT BE USED UNLESS TACK WELDED OR STRAPPED TO STRUCTURAL STEEL MEMBERS.

INSULATION SHALL BE CONTINUOUS AT ALL WALL AND FLOOR PENETRATIONS (EXCEPT AT FIRE DAMPERS) AND AT HANGER SUPPORTS. HANGER SUPPORT FOR INSULATED PIPING SHALL BE OUTSIDE INSULATION. PROVIDE INSULATION INSERTS AND SLEEVES AT HANGERS. INSULATION VAPOR BARRIER SHALL BE SEALED AT ALL JOINTS AND SEEMS, AND AT PENETRATIONS BY APPURTENANCES (DAMPER RODS, VALVE STEMS, ETC.) REPAIR INSULATION AT EXISTING DUCTWORK WHICH HAS BEEN REWORKED. TEARS AND PUNCTURES OF VAPOR BARRIER SHALL BE REPAIRED AND SEALED. ALL PIPING AND DUCTWORK PRESSURE TESTING SHALL BE PERFORMED BEFORE INSULATION IS APPLIED.

RELOCATE ANY EXISTING EQUIPMENT AND LOCATE NEW EQUIPMENT AWAY FROM WALLS TO STRUCTURE AND RATED WALLS AS NECESSARY TO PROVIDE REQUIRED CLEARANCES FOR PROPER OPERATION, MAINTENANCE AND INSPECTION. INSTALL ALL NEW DUCTWORK AS HIGH AS POSSIBLE, TIGHT TO STRUCTURE ABOVE. TRANSITION DUCTWORK FLAT ON TOP TO MAINTAIN MAXIMUM BOTTOM DUCT ELEVATION. INSTALL ALL PIPING ABOVE CEILING AS HIGH AS POSSIBLE, WITH SLOPED PIPING AS HIGH AS SLOPE WILL ALLOW. RAISE ANY EXISTING DUCTWORK AND PIPING AS REQUIRED TO AVOID CONFLICT WITH NEW CEILING FEATURES AND NEW LIGHT FIXTURES, FIELD VERIFY HEIGHT OF EXISTING MECHANICAL WORK.

FLEXIBLE DUCT RUNOUTS TO DIFFUSERS SHALL BE SIZED TO MATCH THE DEVICE NECK, UNLESS OTHERWISE NOTED. MAXIMUM LOW PRESSURE FLEX. DUCT LENGTH IS 5'-0", UNLESS A LONGER RUN IS SHOWN ON THE PLANS. PROVIDE ROUND GAL. STEEL DUCT RUNOUTS TO MAINTAIN MAXIMUM 5'-0" FLEX LENGTH. FLEXIBLE DUCT RUNOUTS TO DIFFUSERS SHALL BE ADEQUATELY SUPPORTED AND INSTALLED FREE OF KINKS AND SAGS. FLEX DUCT CONNECTIONS TO LOW PRESSURE TRUNK DUCT SHALL BE MADE WITH LOW-LOSS 45 DEGREE ENTRY FITTINGS, NEW TAPS/CONNECTIONS SHALL NOT BE MADE WITHIN 5 FT. OF ANY TERMINAL UNIT OUTLET OR WITHIN 2.5 FT. ON CENTERS. PROVIDE SQUARE TO ROUND ADAPTERS, OR BOOTS TO CONNECT TO AIR DEVICE NECK WHERE REQUIRED.

FLEXIBLE DUCT RUNOUTS TO TERMINAL UNIT INLETS SHALL BE SIZED TO MATCH THE BOX INLET, UNLESS OTHERWISE NOTED. CONNECTIONS TO TERMINAL UNITS SHALL BE A MINIMUM OF 1 FT. AND A MAXIMUM OF 1'-6". OF STRAIGHT FLEX DUCT. FLEX DUCT CONNECTIONS TO TERMINAL DEVICES SHALL BE USED FOR VIBRATION ISOLATION AND ALIGNMENT OF SLIGHT OFFSETS ONLY. FLEX DUCT CONNECTIONS SHALL NOT BE USED FOR OFFSETS OF MORE THAN HALF THE DUCT DIAMETER, FOR ELBOWS, OR FOR RUNOUTS LONGER THAN 18 IN. PROVIDE ROUND STEEL DUCT RUNOUTS WITH ELBOWS, OFFSETS, AND FITTINGS AS REQUIRED TO MAINTAIN THESE FLEX DUCT CONDITIONS AT UNIT INLETS. FLEX DUCT CONNECTIONS TO MEDIUM PRESSURE TRUNK DUCT SHALL BE MADE WITH CONICAL BELLMOUTH FITTINGS.

ALL RUNOUTS SHALL HAVE INTEGRAL BALANCING DAMPERS WITH A LOCKING HANDLE AND BUILD- OUT TO KEEP THE HANDLE OUTSIDE OF THE DUCT INSULATION.

MOUNT NEW THERMOSTATS/SENSORS AFTER VERIFYING WITH THE ARCHITECT/INTERIOR DESIGNER THAT THE LOCATIONS INDICATED ON DRAWINGS ARE ACCEPTABLE TO THEM AND CONFIRMING WITH ALL OTHER TRADES THAT THE LOCATION IS NOT IN CONFLICT WITH THEIR MATERIALS, EQUIPMENT, ETC.. THERMOSTAT MOUNTING HEIGHTS SHALL BE PER ADA REQUIREMENTS UNLESS NOTED OTHERWISE ON DRAWINGS FOR DIFFERENT WALL MOUNTING HEIGHTS OR CEILING MOUNTING. MOUNT THERMOSTATS AT 54" AFF. FOR FULL (SIDE) WHEELCHAIR ACCESS LOCATIONS AND AT 48" AFF. FOR FRONT FACING ACCESS ONLY. LOCATE THERMOSTATS ABOVE LIGHT SWITCHES WHERE SHOWN IN THE IMMEDIATE VICINITY OF SWITCHES. DO NOT LOCATE THERMOSTATS IN THE SAME WALL STUD SPACE AS DIMMERS AND RHEOSTATS. VERIFY EXACT LOCATION OF THERMOSTATS WITH ARCHITECT (REFER TO ARCHITECTURAL FLOOR PLANS AND FURNITURE PLANS AND ELECTRICAL LIGHTING PLANS FOR COORDINATION). PROVIDE WIRELESS THERMOSTATS ON COLUMNS.

TEST AND BALANCE
TEST AND BALANCE OF AIR AND WATER SYSTEMS SHALL BE PERFORMED BY NEBB CERTIFIED FIRM THAT IS APPROVED BY THE BUILDING OWNER. PROVIDE A COMPLETE TEST AND BALANCE REPORT UPON PROJECT COMPLETION. REPORT SHALL BE PROVIDED TO LANDLORD AND ENGINEER PRIOR TO TENANT OCCUPYING THE SPACE. ADJUST DRIVES AS REQUIRED. REPORT CONDITION AND OPERATION OF ALL CONTROLS AND CONTROLLED DEVICES.

TEST ALL EQUIPMENT CONTROLS FOR PROPER RESPONSE TO ALL APPLICABLE OPERATION SEQUENCES: COOLING, HEATING, ECONOMIZER, AND VENTILATION/EXHAUST CYCLES; NORMAL, AFTER HOURS, NIGHT SETBACK, MORNING WARM-UP/COOL-DOWN, AND EMERGENCY MODES.

BALANCE ALL SYSTEM COMPONENTS TO WITHIN 10% OF DESIGN QUANTITIES INDICATED. MEASURE AND RECORD ENTERING, LEAVING, AND OPERATING CHARACTERISTICS AT ALL EQUIPMENT FOR COMPARISON WITH DESIGN CAPACITIES SCHEDULED. MEASUREMENTS / RECORDINGS MAY INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: ENTERING AND LEAVING TEMPERATURES, PRESSURES, VELOCITIES, AND FLOW RATES FOR ALL FLUIDS (AIR, WATER, REFRIGERANT, ETC.); ALL ELECTRICAL OPERATING CHARACTERISTICS (VOLTAGE, AMPS, WATTS); UNIT MODEL NUMBERS, COMPONENT SIZES, AND OPERATING SPEEDS (BOTH MOTOR AND DRIVEN EQUIPMENT RPM'S). WHEN BALANCING AIRFLOW ON VAV SYSTEMS, THE TAB CONTRACTOR SHALL SIMULATE SYSTEM DIVERSITY IN A MANNER THAT DOES NOT EXCEED THE COOLING COILS SCHEDULED AIRFLOW.

WHERE INITIAL MEASUREMENTS INDICATE EQUIPMENT TO BE OPERATING AT CONDITIONS SIGNIFICANTLY DIFFERENT FROM SCHEDULED CAPACITIES (GREATER THAN +/- 10%), MEASURE ALL ENTERING, LEAVING, AND OPERATING CONDITIONS FOR DIAGNOSTIC PURPOSES; NOTE ANY DISCREPANCIES BETWEEN DESIGN REQUIREMENTS AND INSTALLED CONDITIONS; AND REPORT SAME TO THE ARCHITECT/ENGINEER IN WRITING.

RECALIBRATING CONTROLS IN AREAS ASSOCIATED WITH THIS WORK TO INSURE PROPER OPERATION. ADJUST COOLING SET POINTS TO 72 DEGREES F AND HEATING SET POINTS TO 68 DEGREES F.

BALANCE ALL NEW AND EXISTING AIR HANDLING EQUIPMENT (TERMINAL AIR UNITS, FANS, FAN COIL UNITS, AIR UNITS, ETC.) SERVING TENANT SPACE UNDER THIS CONTRACT. BALANCE TO THE TOTAL OF THE AIR QUANTITIES FOR THE UNIT/ZONE AS INDICATED ON THE BASE BUILDING DESIGN DRAWINGS (COPIES ON FILE WITH THE LANDLORD).

BALANCE AIR DISTRIBUTION DEVICES (DIFFUSERS, REGISTERS AND GRILLES) TO THE AIR QUANTITIES INDICATED ON THE DRAWINGS. BALANCE ALL NEW AND EXISTING CEILING DIFFUSERS AND REBALANCE ALL EXISTING PERIMETER SLOT DIFFUSERS. BALANCE ALL WATER SYSTEMS.

INSTALLATION
REMOVE ALL INACTIVE EXISTING DUCTWORK AND PIPING WITHIN THE SCOPE OF THIS WORK WHICH IS NOT REUSED. DUCT CONNECTIONS TO EXISTING DIFFUSERS NOT REUSED ARE TO BE REMOVED. WORK NOT SHOWN AS NEW OR EXISTING ON THESE DOCUMENTS SHALL BE REMOVED. CONNECTION POINTS FROM DUCTWORK REMOVED TO EXISTING DUCTWORK TO REMAIN SHALL BE CAPPED WITH A SHEET METAL PATCH, SEALED AIR TIGHT WITH DUCT SEALANT, AND RE-INSULATED TO MATCH EXISTING LINER OR INSULATION ON EXISTING DUCTWORK TO REMAIN. CONNECTION POINTS FROM PIPING REMOVED TO EXISTING PIPING TO REMAIN SHALL BE CAPPED AND SEALED WATER/GAS TIGHT, AND RE-INSULATED TO MATCH EXISTING INSULATION ON EXISTING PIPING TO REMAIN.

PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALLS TO STRUCTURE TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEM. ACCESS PANELS SHALL MAINTAIN THE FIRE RATING OF THE WALL OR CEILING WHERE REQUIRED. SEE ARCHITECTURAL DRAWINGS.

EQUIPMENT MOUNTED ABOVE CEILING SHALL BE SUSPENDED FROM STRUCTURE ABOVE WITH ALL-THREAD HANGER RODS, SIZING PER EQUIPMENT WEIGHT REQUIREMENTS. PROVIDE COMBINATION SPRING/NEOPRENE VIBRATION ISOLATORS FOR EQUIPMENT WITH MOVING PARTS (FANS, COMPRESSORS, ETC.). LOCATE EQUIPMENT TO PROVIDE ADEQUATE SPACE FROM STRUCTURE, WALL ABOVE CEILING, AND CEILING FEATURES TO ALLOW MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEM. PROVIDE AUXILIARY DRAIN PAN BENEATH ENTIRE UNIT FOR WATER STORING EQUIPMENT (WATER HEATERS) AND EQUIPMENT WITH COOLING COILS). ALL PIPING AND EQUIPMENT SHALL BE ISOLATED SO AS NOT TO TRANSMIT VIBRATION TO THE BUILDING CONSTRUCTION.

ALL NEW PIPING CONNECTING TO BASE BUILDING SYSTEMS MUST BE CHEMICALLY CLEANED AND PASSIVATED PRIOR TO UTILIZATION OF THE BASE BUILDING SYSTEM. THE CLEANING AND PASSIVATION OF THE PIPING SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE UTILIZING CHEMICALS RECOMMENDED BY THE BUILDINGS CHEMICAL TREATMENT COMPANY.

PIPING MUST BE PRESSURE TESTED UTILIZING TREATED WATER. PRESSURE TEST SHALL BE PERFORMED AT ONE AND HALF TIMES (150%) THE WORKING PRESSURE FOR A PERIOD OF FOUR (4) HOURS.

PROVIDE ALL ISOLATION VALVES & APPURTENANCES NECESSARY FOR ISOLATING EQUIPMENT FOR SERVICE, ISOLATING NEW PIPING FROM

PIPING AND ACCESSORIES
PIPING SYSTEMS CIRCULATING HEATING HOT WATER SHALL UTILIZE ASTM B-88, TYPE K OR L HARD- DRAWN COPPER PIPE WITH WROUGHT COPPER OR CAST BRONZE FITTINGS; SOLDER SHALL BE HIGH TENSILE STRENGTH SILVER SOLDER (LEAD-FREE) PIPING SYSTEM PRESSURE RATING SHALL MEET OR EXCEED A WORKING PRESSURE OF 300 PSIG AT 150°F. SYSTEMS SHALL BE DESIGNED TO MAINTAIN A VELOCITY OF 3 TO 5 FEET PER SECOND AND ASSURE THAT THERE IS CONTINUOUS FLOW TO ALL PORTIONS OF THE SYSTEM, INCLUDING STANDBY UNITS, OR AT A MINIMUM OF FOUR (4) HOURS EACH DAY.

ALL PIPING SYSTEMS MUST BE PROVIDED WITH IDENTIFICATION LABELS INSTALLED EVERY 20 FEET ON EACH PIPE AND AT LEAST ONCE WITHIN EACH ROOM. IF SUITE ACCESS IS RESTRICTED, EMERGENCY ISOLATION VALVES FOR ALL WATER MUST BE IN COMMON AREA OR MECHANICAL ROOM IN ADDITION TO SERVICE ISOLATION VALVES INSIDE SUITE.

ALL ROTATING EQUIPMENT AND PIPING WITHIN 25 FEET OF PUMPS MUST BE SUPPORTED WITH VIBRATION ISOLATION DEVICES HAVING A MINIMUM STATIC DEFLECTION OF 1 INCH.

FLOOR TO FLOOR PENETRATIONS & ANY FIRE RATED WALL PENETRATIONS SHALL BE PROVIDED WITH A UL LISTED FIRESTOP PENETRATION SYSTEM.

THERMAL INSULATION
ALL MECHANICAL EQUIPMENT AND MATERIALS (DUCTWORK, PIPING, VALVES,ETC.) WITH COLD (BELOW 65 DEGREES) OR WARM (ABOVE 90 DEGREES) SURFACES SHALL BE INSULATED. ALL EXTERNAL INSULATION SHALL HAVE A CONTINUOUS VAPOR BARRIER. THE USE OF STAPLES FOR FASTENING INSULATION IS PROHIBITED. ALL INSULATION PRODUCTS SHALL BE PLENUM RATED WITH A MAXIMUM FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50.

LINE ALL NEW SUPPLY AND RETURN AIR DUCTS AS INDICATED ON DRAWINGS AND/OR AS DESCRIBED BELOW. DUCT LINER SHALL BE 1" THICK, 1 LB./CU.FT. DENSITY FIBERGLASS WITH BLACK, FIRE RETARDANT, NEOPRENE COATING ON SURFACE EXPOSED TO THE AIRSTREAM. ALL RETURN AND SUPPLY AIR DUCTWORK SHALL BE LINED FROM AIR HANDLING EQUIPMENT (FCU, FAN, ETC.) DISCHARGES THROUGH THE FIRST HORIZONTAL ELBOW OR THROUGH THE FIRST TWELVE (12) FEET, WHICHEVER IS GREATER. TERMINAL UNITS (VAV) SHALL HAVE DUCT LINER FOR THE FIRST 5' DOWNSTREAM OF THE TERMINAL UNIT. ALL NEW LOW PRESSURE SUPPLY AIR DUCTWORK SERVING CONFERENCE TYPE AREAS (TRAINING, SEMINAR, ETC. ROOMS) SHALL BE LINED. DIMENSIONS INDICATED ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS AVAILABLE FOR AIRFLOW (ADD LINER THICKNESS FOR SHEETMETAL SIZES).

ALL NEW UNLINED SUPPLY AND RETURN AIR DUCTWORK SHALL BE INSULATED. ALL EXISTING LINED OR INSULATED DUCTWORK TO REMAIN WHICH HAS BEEN REWORKED SHALL HAVE LINER OR INSULATION REPLACED OR REPAIRED. DAMAGED INSULATION ON EXISTING DUCTWORK SHALL BE REPAIRED. INSULATION SHALL BE 1 1/2" THICK, 1 PCF FIBERGLASS DUCT WRAP INSULATION WITH REINFORCED FOIL VAPOR BARRIER AND FOIL FACED TAPE SEALS. REPAIR ALL HOLES IN VAPOR BARRIER

SSOE®

PROFESSIONAL SEALS:

STATE OF MICHIGAN
ALEXANDER KOSTAKIS
LICENSED
6201311419
PROFESSIONAL ENGINEER
03/25/2025

CONSULTANTS:

KEYPLAN

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-25	BIDS/PERMITS

☐ APPROVED FOR CONSTRUCTION
■ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

DETROIT MACK
HEALTH CENTER

DETROIT, MI

SSOE/SW PROJECT #: 023-03991-00

SSOE/SW MANAGER:

SSOE
1501 Main Street, Suite 730
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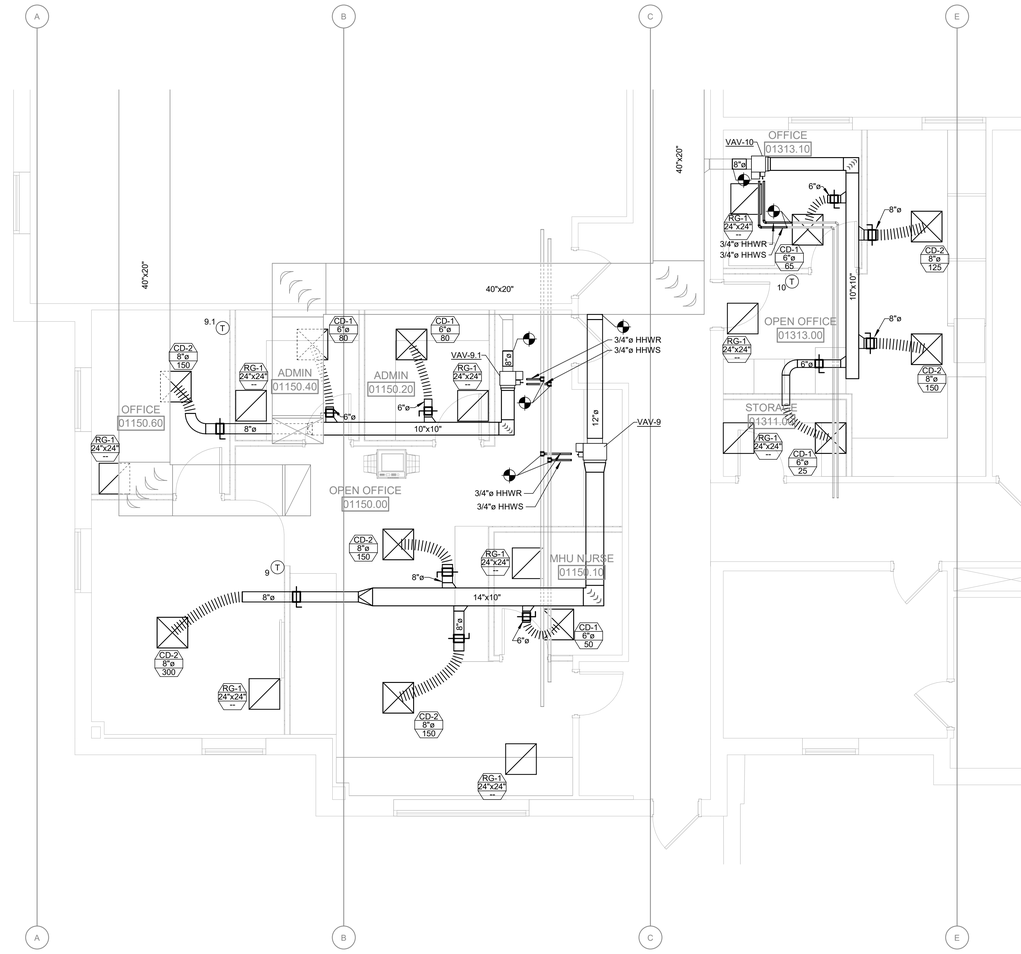
T: (803) 765-0320

HVAC SPECIFICATIONS

MH-002



FIRST FLOOR PLAN - HVAC

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

PROFESSIONAL SEALS:

STATE OF MICHIGAN
ALEXANDER KOSTAKIS
License No. 6201311419
LICENSED PROFESSIONAL ENGINEER

03/25/2025

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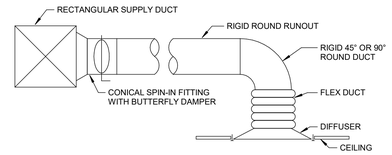
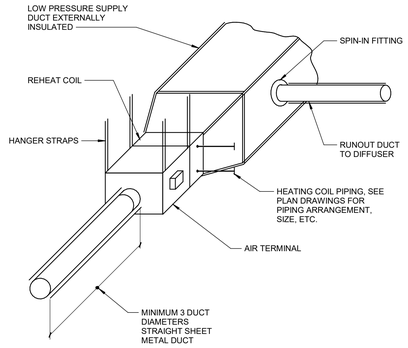
FIRST FLOOR PLAN - HVAC

MH-100



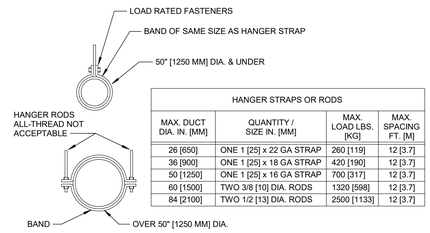
4 DETAIL - TYPICAL DIFFUSER RUN-OUT

SCALE: NOT TO SCALE



7 VARIABLE VOLUME TERMINAL DETAIL

SCALE: NOT TO SCALE



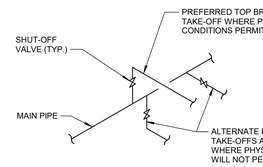
HANGER STRAPS OR RODS			
MAX. DUCT DIA. IN. [MM]	QUANTITY / SIZE IN. [MM]	MAX. LOAD LBS. [KG]	MAX. SPACING FT. [M]
26 [650]	ONE 1 [25] x 22 GA STRAP	260 [119]	12 [3.7]
36 [900]	ONE 1 [25] x 18 GA STRAP	420 [190]	12 [3.7]
50 [1250]	ONE 1 [25] x 16 GA STRAP	700 [317]	12 [3.7]
60 [1500]	TWO 3/8 [10] DIA. RODS	1320 [598]	12 [3.7]
84 [2100]	TWO 1/2 [13] DIA. RODS	2500 [1133]	12 [3.7]

NOTE:

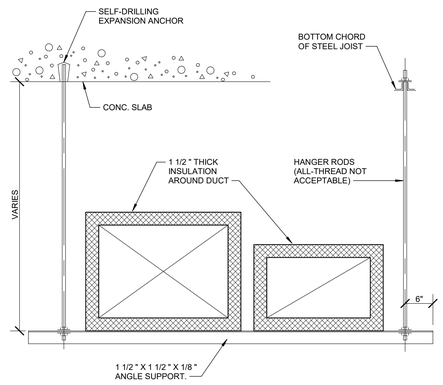
1. TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

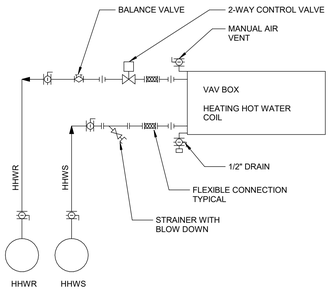
3 ROUND DUCT HANGER DETAIL

SCALE: NOT TO SCALE



NOTE: THIS APPLIES TO PRESSURIZED FLUID SYSTEMS ONLY.



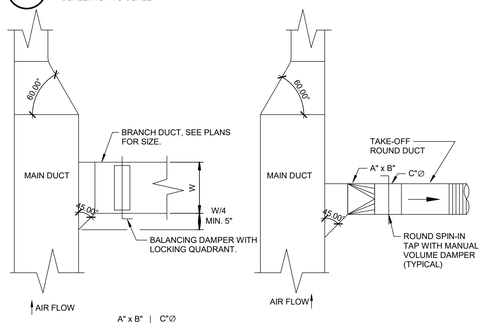


8 VAV BOX HOT WATER PIPING DETAIL

SCALE: NOT TO SCALE

6 FLUID PIPING BRANCH TAKE-OFF

SCALE: NOT TO SCALE



A" x B"	C"Ø
12x8	10
12x10	12
16x10	14
22x10	16

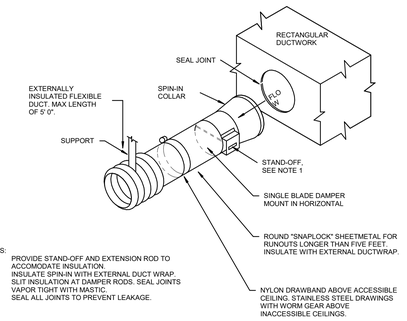
NOTE:
USE 45° BRANCH FITTING WHEN MAIN SUPPLY DUCT DEPTH IS EQUAL TO OR SMALLER THAN TAKE-OFF ROUND DUCT SIZE.

5 DETAIL - TYPICAL DUCT TAKEOFF

SCALE: NOT TO SCALE

2 DUCT TRAPEZE HANGER DETAIL

SCALE: NOT TO SCALE



NOTES:
1. PROVIDE STAND-OFF AND EXTENSION ROD TO ACCOMODATE INSULATION.
2. INSULATE SPIN-IN WITH EXTERNAL DUCT WRAP. SLIT INSULATION AT DAMPER RODS. SEAL JOINTS VAPOR TIGHT WITH MASTIC.
3. SEAL ALL JOINTS TO PREVENT LEAKAGE.

1 LOW PRESSURE ROUND BRANCH DUCT CONNECTOR

SCALE: NOT TO SCALE

SSOE

PROFESSIONAL SEALS:

STATE OF MICHIGAN ALEXANDER COSTAKIS License No. 6201311419 REGISTERED PROFESSIONAL ENGINEER

03/25/2025

CONSULTANTS:

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1501 Main Street, Suite 730
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HVAC DETAILS

MH-500

DIFFUSERS, GRILLES AND REGISTERS

MARK	FLOW RANGE (CFM)	NECK SIZE	FACE FLOW PATTERN	OVERALL DIMENSIONS (IN)	MANUFACTURER & MODEL	REMARKS
CD-1	0 - 125	6" DIA.	SQUARE	24" x 24"	PRICE SCD	LAY-IN INSTALLATION, STEEL CONSTRUCTION, THREE CONE DESIGN WITH WHITE POWDER COAT FINISH
CD-2	125 - 300	8" DIA.	SQUARE	24" x 24"	PRICE SCD	LAY-IN INSTALLATION, STEEL CONSTRUCTION, THREE CONE DESIGN WITH WHITE POWDER COAT FINISH
RG-1	0 - 2000	22" X 22"	SQUARE	23-3/4" x 23-3/4"	PRICE 80	1/2"x1/2"x1/2" EGG CRATE RETURN GRILLE FOR LAY-IN INSTALLATION

ALL DIFFUSERS, REGISTERS OR GRILLS SCHEDULED MAY NOT BE INCLUDED IN PROJECT SCOPE. CONTRACTOR TO DETERMINE APPLICABLE PRODUCTS IN SCOPE FROM PLAN DRAWINGS. CONTRACTOR TO COORDINATE FINISH WITH ARCHITECT'S FINISH SCHEDULE FOR SURFACE TO BE MOUNTED ON.

VARIABLE AIR VOLUME (VAV) UNIT SCHEDULE

MARK	MANUFACTURER/ MODEL NO.	UNIT TYPE	AIRFLOW				HYDRONIC REHEAT COIL					REMARKS
			REGULATOR SET CFM	MINIMUM CFM	INLET DIA. (IN.)	HEATING CFM	REHEAT CAPACITY (MBH)	FLOW (GPM)	EWT (°F)	LAT (°F)	HEATING LOAD (MBH)	
VAV-9	PRICE SDV	VAV	650	190	10	250	11.0	1.1	180.0	90.0	6.3	1,2,3,4
VAV-9.1	PRICE SDV	VAV	300	100	8	120	5.3	0.5	180.0	90.0	3.0	1,2,3,4
VAV-10	PRICE SDV	VAV	400	100	8	150	6.6	0.7	180.0	90.0	3.8	1,2,3,4

REMARKS:

1 PROVIDE HOT WATER HEATING COIL.
2 PROVIDE DDC ELECTRONIC CONTROLS.
3 REFER TO DRAWINGS FOR VAV ARRANGEMENT; VERIFY IN FIELD LEFT- OR RIGHT-HAND ACCESS.

PROFESSIONAL SEALS:

STATE OF MICHIGAN
ALEXANDER COSTAKIS
License No.
6201311419
PROFESSIONAL ENGINEER
03/25/2025

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SSOE/SW MANAGER:

SSOE
1501 Main Street, Suite 730
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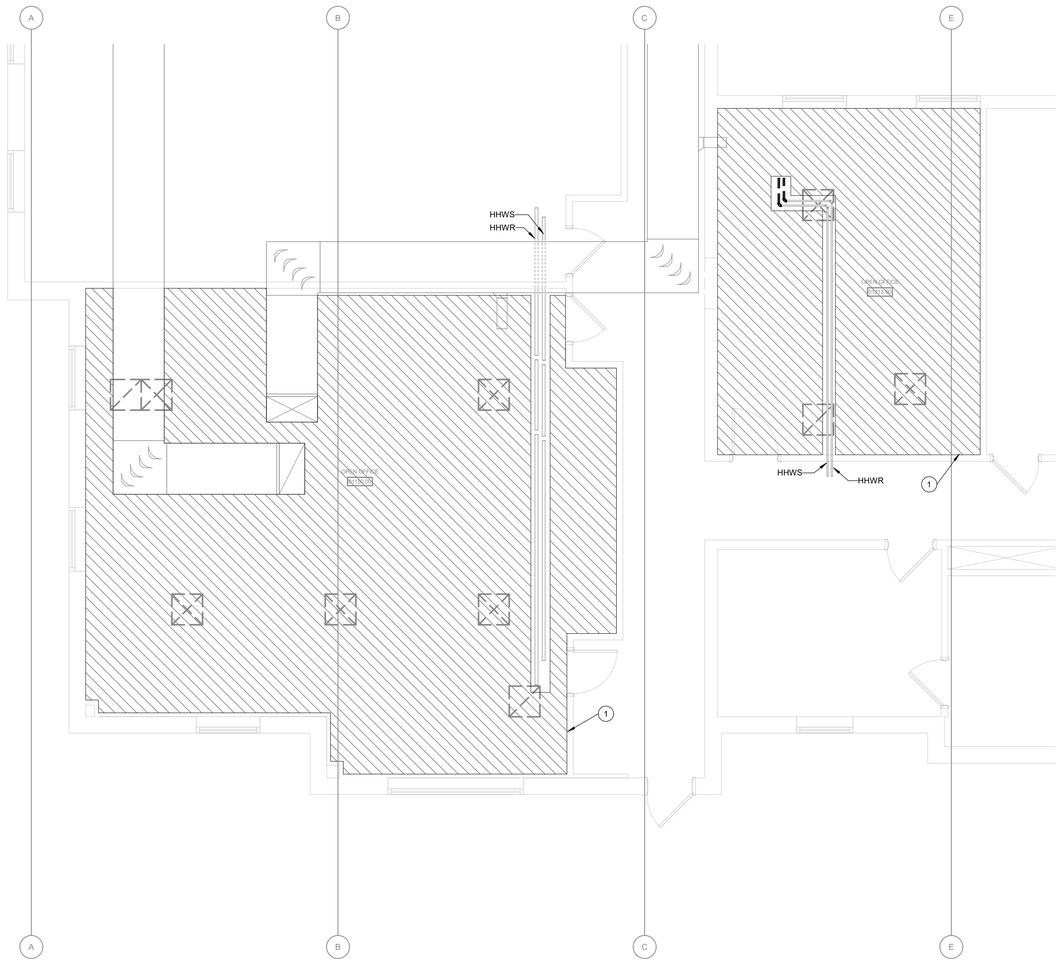
HVAC SCHEDULES

MH-600

KEY NOTES:

1. DEMOLISH ALL DIFFUSERS, VAV BOXES, DUCTWORK DOWNSTREAM OF VAV BOX, AND CONTROLS IN SHADED AREA AND PREPARE EXISTING DUCT AND PIPING FOR ATTACHMENT TO NEW WORK.



FIRST FLOOR PLAN - HVAC DEMO

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

PROFESSIONAL SEALS:

STATE OF MICHIGAN
ALEXANDER COSTAKIS
License No. 6201311419
PROFESSIONAL ENGINEER

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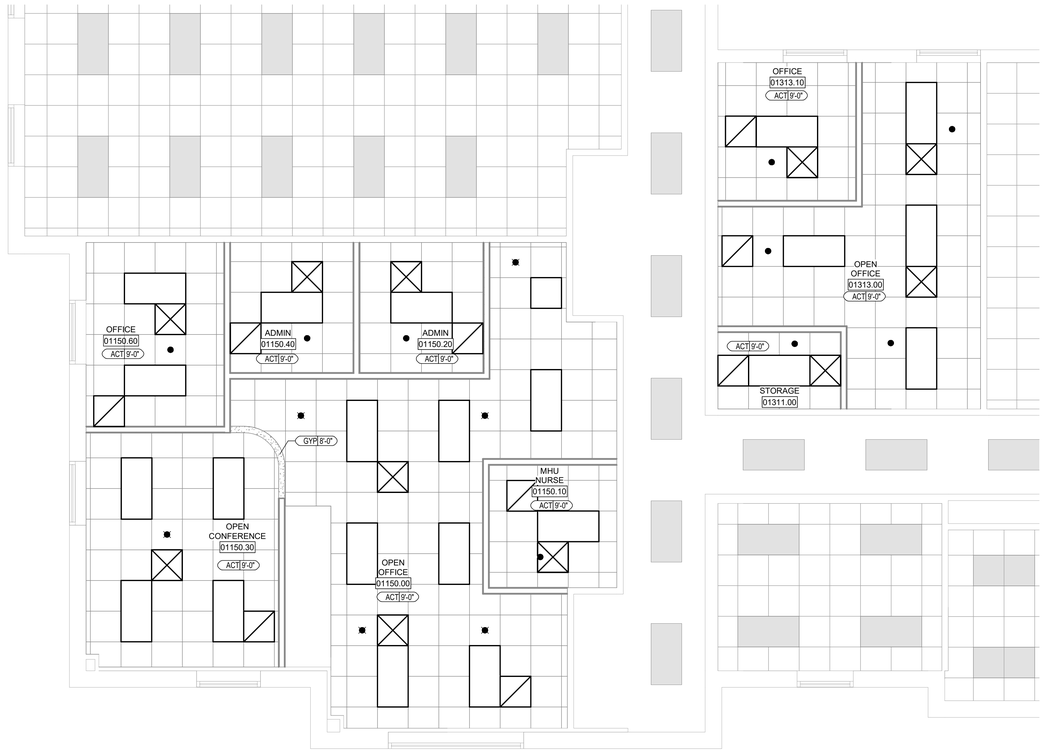
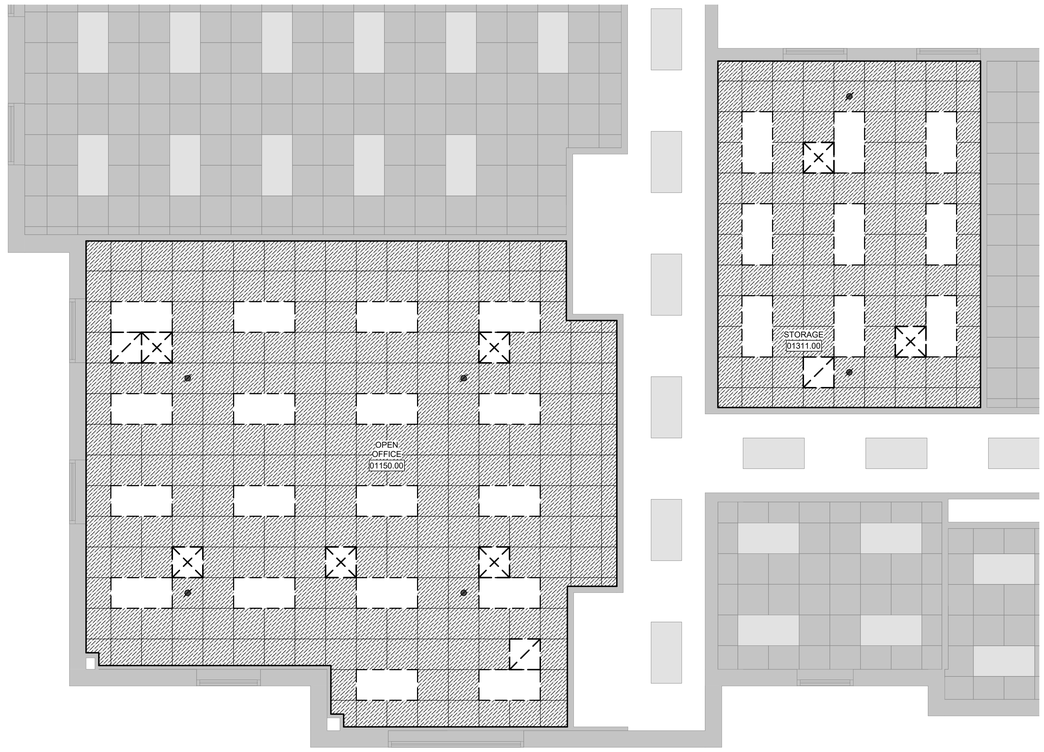
HVAC DEMOLITION PLAN LEVEL 1

MD-100



B4 / FP-100 — FIRE PROTECTION PLAN - NEW WORK

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



B7 / FP-100 — FIRE PROTECTION DEMOLITION PLAN

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

GENERAL FIRE PROTECTION DESIGN NOTES

1. FIRE PROTECTION CONTRACTOR SHALL FURNISH MATERIAL AND EQUIPMENT AS REQUIRED FOR A COMPLAINT SPRINKLER PROTECTION THROUGHOUT THE AREA OF NEW WORK IN ACCORDANCE WITH NFPA-13 (2016), 2015 MICHIGAN BUILDING CODE AND 2015 CITY OF DETROIT FIRE CODE.
2. SCOPE OF FIRE PROTECTION WORK SHALL INCLUDE THE ADD AND RELOCATE OF SPRINKLER HEADS IN THE RENOVATED SPACE WITHIN AREAS OF WORK IN COMPLIANCE WITH BUILDING / FIRE CODES, AND NFPA STANDARDS. SPRINKLER LAYOUT REPRESENTS THE INTENT OF THE SCOPE OF WORK. CONTRACTOR IS RESPONSIBLE TO MODIFY AS NEEDED BASED ON COORDINATION WITH CEILING MOUNTED FIXTURES WHILE COMPLYING WITH NFPA-13.
3. FIRE SPRINKLER SYSTEM SHALL BE DESIGNED BASED ON LIGHT HAZARD OCCUPANCY WITH THE EXCEPTION OF THE STORAGE ROOM TO BE ORDINARY HAZARD GROUP 1.
4. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE TO SUBMIT A COMPLETE SET OF SHOP DRAWINGS, HYDRAULIC CALCULATIONS AND MATERIAL SUBMITTALS PRIOR TO PIPE FABRICATION AND INSTALLATION.
5. FIRE PROTECTION CONTRACTOR SHALL BASE THE HYDRAULIC CALCULATIONS ON A HYDRANT FLOW TEST WITHIN 12 MONTHS OF THE SHOP DRAWINGS SUBMITTALS. THE HYDRAULIC CALCULATIONS SHALL INCLUDE A MINIMUM OF 10% SAFETY MARGIN.
6. FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY EXISTING CONDITIONS AND COORDINATE WITH OTHER TRADES FOR PIPE ROUTING AND SPRINKLER HEADS LOCATION IN CEILING
7. FIRE SPRINKLER PIPE SHALL BE CARBON STEEL. SCHEDULE 10 FOR ROLL GROOVED PIPE AND SCHEDULE 40 FOR THREADED PIPE. ALL PIPE 2" AND SMALLER SHALL BE SCHEDULE 40 PIPE. ALL MATERIAL SHALL BE UL LISTED AND/OR FM APPROVED. PIPE HANGER MATERIAL AND METHODS OF ATTACHMENT TO STRUCTURE SHALL BE IN COMPLIANCE WITH NFPA #13.
8. FIRE SPRINKLER HEADS SHALL BE OF THE QUICK RESPONSE TYPE. SPRINKLER HEADS SHALL BE LOCATED IN THE CENTER OF CEILING TILE.
9. ANY REMOVED SPRINKLER HEAD SHALL NOT BE RE-INSTALLED.
10. FIRE SPRINKLER CONTRACTOR SHALL PERFORM ALL APPLICABLE SYSTEM ACCEPTANCE TESTS IN ACCORDANCE WITH CHAPTER 25 OF NFPA 13, 2016 EDITION.

● SEMI-RECESSED QUICK RESPONSE STANDARD COVERAGE PENDENT HEAD, ORDINARY TEMPERATURE RATING, CHROME PLATED, MIN K=5.6.

● SEMI-RECESSED QUICK RESPONSE EXTENDED COVERAGE PENDENT HEAD, ORDINARY TEMPERATURE RATING, CHROME PLATED, MIN K=5.6.

⊘ EXISTING EXTENDED COVERAGE PENDENT HEAD TO BE DEMOLISHED.

GENERAL FIRE PROTECTION DEMO NOTES

1. FIRE PROTECTION CONTRACTOR SHALL VISIT THE SITE AND GET FAMILIARIZED WITH THE LOCATION AND PIPE SIZE OF EXISTING FIRE SPRINKLER SYSTEM. ALL THE NECESSARY RE-ROUTING, RELOCATING AND ADD/OR REMOVAL OF EXISTING PIPING, SPRINKLER HEADS SHALL BE INCLUDED IN THE SCOPE OF WORK.
2. REFER TO ARCHITECTURAL DEMOLITION PLANS FOR MORE INFORMATION ON THE EXTENT OF DEMOLITION.
3. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE TO COORDINATE THE SPRINKLER SYSTEM DEMOLITION WORK WITH OTHER TRADES.
4. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH OWNER FOR DRAINING AND TAKING THE SYSTEM OUT OF SERVICE DURING DEMOLITION. AT NO TIME, THE SYSTEM IS ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT. SYSTEM MUST BE PUT BACK TO SERVICE AT THE END OF EACH DAILY WORK SHIFT.
5. FIRE SPRINKLER CONTRACTOR SHALL NOT RE-INSTALL ANY REMOVED SPRINKLER HEADS, PIPE OR PIPE FITTINGS. FOR NEW WORK, ALL SYSTEM COMPONENTS MUST BE NEW.

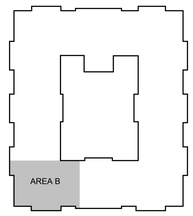
ssoe®

PROFESSIONAL SEALS:

STATE OF MICHIGAN — MUHAMMED I. RAMMAL — ENGINEER — NO. 6201042551 — PROFESSIONAL ENGINEER

03/28/2025

CONSULTANTS:



SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-28-2025	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY

5454 CASS AVE
DETROIT, MI
48202

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

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DETROIT, MICHIGAN
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FIRE PROTECTION PLANS

FP-100

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LIGHTING SYMBOL LEGEND

(NOT ALL SYMBOLS USED)

XXX	LIGHT FIXTURE TYPE, REFER TO LIGHT FIXTURE SCHEDULE
	SURFACE OR PENDANT LIGHT FIXTURE, CHEVRON INDICATED WALL WASH AIMING, SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	RECESSED LIGHT FIXTURE, CHEVRON INDICATED WALL WASH AIMING, HALF-SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	SURFACE OR PENDANT LIGHT FIXTURE, HALF-SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	RECESSED LIGHT FIXTURE, HALF-SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	RECESSED ARCHITECTURAL LIGHT FIXTURE, HALF-SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	SURFACE OR CHAIN HUNG STRIP LIGHT FIXTURE, HALF-SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE, HALF-SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE, HALF-SHADING INDICATES EMERGENCY EGRESS LIGHT FIXTURE
	TRACK MOUNTED LIGHT FIXTURE
	EXIT SIGN, PROVIDE ARROWS/CHEVRONS AS INDICATED ON PLANS, SHADED AREA INDICATES FACE, FOOT ON SYMBOL INDICATES WALL MOUNTED, LIGHT HEADS INDICATE COMBINATION EXIT/BATTERY POWERED EMERGENCY LIGHTING UNIT
	BATTERY POWERED EMERGENCY LIGHTING UNIT, LIGHT HEADS ON SIDES OF UNIT INDICATES CEILING MOUNTED
$Xa	SINGLE POLE SWITCH - 20A, 125/277V UON, -'a' INDICATES WHICH FIXTURES/DEVICES ARE CONTROLLED VIA SWITCH -'X' DENOTES TYPE: BLANK - SINGLE POLE 2 - DOUBLE POLE 3 - THREE WAY 4 - FOUR WAY D - DIMMER K - KEY OPERATED I - ILLUMINATED (ILLUMINATED IN 'OFF' POSITION) P - WITH PILOT LIGHT (LIGHT ON IN 'ON' POSITION) T - TIME SWITCH L - LOW VOLTAGE C - MOMENTARY CONTACT O - WALL BOX OCCUPANCY SENSOR - PASSIVE INFRARED V - WALL BOX VACANCY SENSOR - PASSIVE INFRARED
OS Xa, VS Xa, OS Xa, VS Xa	OCCUPANCY/VACANCY SENSOR, FOOT ON SYMBOL INDICATES WALL MOUNTED, -'a' INDICATES WHICH FIXTURES ARE CONTROLLED VIA SENSOR -'X' DENOTES TYPE: A - 180° DUAL TECHNOLOGY OCCUPANCY SENSOR B - 360° DUAL TECHNOLOGY OCCUPANCY SENSOR C - 180° PASSIVE INFRARED OCCUPANCY SENSOR D - 360° ULTRASONIC OCCUPANCY SENSOR
DS a, DS a	DAYLIGHT SENSOR, FOOT ON SYMBOL INDICATES WALL MOUNTED, -'a' INDICATES WHICH FIXTURES ARE CONTROLLED VIA SENSOR
C	LIGHTING CONTACTOR, SIZE AS INDICATED ON DRAWINGS/DETAIL
ELTD, GTD	EMERGENCY LOAD/GENERATOR TRANSFER DEVICE
TC	TIME CLOCK

DATA SYMBOL SCHEDULE

(NOT ALL SYMBOLS USED)

SYMBOL	DESCRIPTION
W	WALL MOUNT TELEPHONE OUTLET, FLUSH MOUNT, MH=5'-0" AFF UNO
#	DATA OUTLET, FLUSH MOUNTED, # = QUANTITY, MH=1'-4" AFF UNO
#	DATA OUTLET(S), CEILING MOUNTED, # = QUANTITY, MH=3'-6" AFF UNO
#	DATA OUTLET, FLOOR BOX, # = QUANTITY
#	DATA OUTLET, SURFACE MOUNTED, # = QUANTITY, MH=1'-4" AFF UNO
TV	CABLE TELEVISION OUTLET, FLUSH MOUNTED, MH=7'-0" AFF UNO
WAP	WIRELESS ACCESS POINT, CEILING MOUNTED

SECURITY & ACCESS CONTROL SYMBOL SCHEDULE

(NOT ALL SYMBOLS USED)

SYMBOL	DESCRIPTION
CR	CARD READER, MH=4'-0" AFF UNO

FIRE ALARM SYMBOL SCHEDULE

(NOT ALL SYMBOLS USED)

SYMBOL	DESCRIPTION
C	FIRE ALARM HORN WITH STROBE, MH=6'-8" AFF UNO, C = CEILING MOUNTED

POWER SYMBOL LEGEND

(NOT ALL SYMBOLS USED)

	SIMPLEX RECEPTACLE - NEMA 5-20R, HORIZONTAL LINE INDICATES MOUNTED AFC UON, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	DUPLEX RECEPTACLE - NEMA 5-20R, HORIZONTAL LINE INDICATES MOUNTED AFC UON, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	DUPLEX RECEPTACLE - NEMA 5-20R, GROUND FAULT INTERRUPTING, HORIZONTAL LINE INDICATES MOUNTED AFC UON, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	DUPLEX RECEPTACLE - NEMA 5-20R, TAMPER-RESISTANT, HORIZONTAL LINE INDICATES MOUNTED AFC UON, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	SPLIT-WIRED DUPLEX RECEPTACLE - NEMA 5-20R, HORIZONTAL LINE INDICATES MOUNTED AFC UON, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	COMBINATION DUPLEX RECEPTACLE (NEMA 5-20R)/USB (TYPE A, 2.0), TWO CHARGING USB PORTS, HORIZONTAL LINE INDICATES MOUNTED AFC UON, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	QUADPLEX RECEPTACLE - NEMA 5-20R, HORIZONTAL LINE INDICATES MOUNTED AFC UON, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER (ALL OTHER NEMA 5-20R QUAD RECEPTACLE SYMBOLS FOLLOW SAME STACKED DUPLEX PATTERN)
	SPECIAL RECEPTACLE -'X' DENOTES TYPE: A - (NEMA L5-30R) 125V, 30A, SINGLE PHASE, TWIST-LOCK RECEPTACLE 2 POLE, 3 WIRE B - (NEMA L6-20R) 250V, 20A, SINGLE PHASE, TWIST-LOCK RECEPTACLE 2 POLE, 3 WIRE C - (NEMA L6-30R) 250V, 30A, SINGLE PHASE, TWIST-LOCK RECEPTACLE, 2 POLE, 3 WIRE D - (NEMA L15-20R) 250V, 20A, THREE PHASE, TWIST-LOCK RECEPTACLE 3 POLE, 4 WIRE E - (NEMA L15-30R) 250V, 30A, THREE PHASE, TWIST-LOCK RECEPTACLE, 3 POLE, 4 WIRE F - (NEMA L21-30R) 208Y/120V, 30A, THREE PHASE, TWIST-LOCK RECEPTACLE 4 POLE, 5 WIRE G - (NEMA 14-30R) 125/ 250V SINGLE PHASE RECEPTACLE 3 POLE, 4 WIRE H - (NEMA 14-50R) 125/ 250V SINGLE PHASE RECEPTACLE 3 POLE, 4 WIRE
	CEILING MOUNTED SIMPLEX RECEPTACLE - NEMA 5-20R, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	CEILING MOUNTED DUPLEX RECEPTACLE - NEMA 5-20R, SHADING INDICATES CIRCUITED TO GENERATOR/UPS POWER
	CEILING MOUNTED SPECIAL RECEPTACLE -'X' DENOTES TYPE: REFER TO WALL MOUNTED SPECIAL RECEPTACLE TYPES ABOVE
	MULTI-OUTLET SURFACE RACEWAY
FBX, PTX	FLOOR BOX (FB) AND POKE THRU (PT). 'X' IN SYMBOL DENOTES TYPE. SEE FLOOR BOX AND POKE THRU SCHEDULE FOR ADDITIONAL INFORMATION.
	SINGLE POINT ELECTRICAL CONNECTION OR AS INDICATED IN CIRCUITING/EQUIPMENT SCHEDULE
J, J, J	JUNCTION BOX, LEG INDICATES WALL/EQUIPMENT MOUNTING IS REQUIRED, SQUARE INDICATES FLOOR MOUNTED
SM	MANUAL MOTOR STARTER/DISCONNECT SWITCH WITH THERMAL OVERLOAD PROTECTION
	ENCLOSED DISCONNECT SWITCH, SHADING INDICATES SWITCH IS FUSIBLE
	ENCLOSED CIRCUIT BREAKER
	COMBINATION MAGNETIC MOTOR CONTROLLER/STARTER, SHADING INDICATES STARTER IS FUSIBLE
	MAGNETIC MOTOR CONTROLLER
VFD	VARIABLE FREQUENCY DRIVE (FURNISHED BY OTHERS)
	PUSHBUTTON STATION
	MOTOR
	AUTOMATIC OR MANUAL TRANSFER SWITCH.
	UTILITY METER
T	TRANSFORMER, DASHED LINE INDICATES NEC WORKING SPACE.
	DISTRIBUTION PANELBOARD. SOLID FILL INDICATES 480V LINE TO LINE, NO FILL INDICATES 208V OR 240V LINE TO LINE. DASHED LINE INDICATES NEC WORKING SPACE.
	SURFACE MOUNTED PANELBOARD. SOLID FILL INDICATES 480V LINE TO LINE, NO FILL INDICATES 208V OR 240V LINE TO LINE. INSTALL DOOR HINGE ON THE SIDE SHOWN ON SYMBOL. DASHED LINE INDICATES NEC WORKING SPACE. HALF-TONE LINE INDICATES WALL.
	FLUSH/RECESSED MOUNTED PANELBOARD. SOLID FILL INDICATES 480V LINE TO LINE, NO FILL INDICATES 208V OR 240V LINE TO LINE. INSTALL DOOR HINGE ON THE SIDE SHOWN ON SYMBOL. DASHED LINE INDICATES NEC WORKING SPACE. HALF-TONE LINE INDICATES WALL.
	MULTI-SECTION SWITCHBOARD OR MOTOR CONTROL CENTER. DASHED LINE INDICATES NEC WORKING SPACE.
CP	CONTROL PANEL/CONTROL POWER PANEL (FURNISHED BY OTHERS)
PS	POWER SUPPLY
GA	GENERATOR ANNUNCIATOR
BMS	BUILDING MANAGEMENT SYSTEM PANEL (FURNISHED BY OTHERS)
FACP	FIRE ALARM CONTROL PANEL (FURNISHED BY OTHERS)
FAA	FIRE ALARM ANNUNCIATOR (FURNISHED BY OTHERS)
FNAC	FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT PANEL (FURNISHED BY OTHERS)
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
RP1-1,3,5	INDICATES CIRCUITS TO PANEL 'RP1' INDICATES PANEL DESIGNATION AND '1,3,5' INDICATED POLE POSITION(S)
X#Y, X#YG ,Z"C	'X' INDICATES QUANTITY AND 'Y' INDICATES SIZE OF CONDUCTORS, Z INDICATES CONDUIT SIZE
RP1	PANEL TAG, i.e. CIRCUITS WITHIN AREA WHERE TAG IS LOCATED ON PLAN ARE CIRCUITED TO PANEL 'RP1' UON
WSHP-2 MECH	MECHANICAL EQUIPMENT CONNECTION TAG. DESIGNATION ON TOP INDICATES EQUIPMENT IDENTIFIER AND DESIGNATION ON BOTTOM INDICATES ASSOCIATED EQUIPMENT CONNECTION SCHEDULE AS FOLLOWS: MECH = MECHANICAL, KTCH = KITCHEN, PUMP = PUMP, HEAT = HEATER, FAN = FAN. REFER TO ELECTRICAL SCHEDULES SHEETS FOR ADDITIONAL INFORMATION.

ELECTRICAL GENERAL NOTES

1. PRIOR TO BID, THE CONTRACTOR SHALL VISIT SITE TO SURVEY EXISTING CONDITIONS AFFECTING WORK. INCLUDE NECESSARY MATERIALS AND LABOR TO ACCOMPLISH THE ELECTRICAL WORK, INCLUDING RELOCATION OF EXISTING EQUIPMENT TO ALLOW FOR NEW CONSTRUCTION. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AND RESOLVED PRIOR TO BID. WORK SHALL BE COORDINATED WITH ALL OTHER TRADES.
2. THESE DRAWINGS ARE A PART OF A COMPLETE SET OF ARCHITECTURAL/ENGINEERING DRAWINGS. DRAWINGS SHOWING ELECTRICAL WORK ARE DIAGRAMATIC. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR GUIDANCE AND COORDINATION WITH DIMENSIONS, CEILINGS, DOOR SWINGS, ELEVATIONS, CASEWORK, FINISHES, STRUCTURAL CONCRETE, FRAMING, DUCTWORK, AND PIPING.
3. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH THE NEC AND LOCAL ORDINANCES INCLUDING ALL REQUIREMENTS OF APPLICABLE CODES. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
4. ALL SYMBOLS SHOWN ON THESE LEGENDS MAY NOT BE USED.
5. PROVIDE EXPANSION JOINT FITTINGS ON ALL CONDUITS THAT CROSS EXPANSION JOINTS OR CONDUITS THAT PENETRATE WALLS WITH SEISMIC BRACING. SEE ARCHITECTURAL DRAWINGS.
6. ALL FLUSH MOUNTED PANELS SHALL HAVE (4) 1" EMPTY CONDUITS STUBBED OUT ABOVE ACCESSIBLE CEILING FOR FUTURE CIRCUITS.
7. VERIFY LOCATION OF ALL FLOOR OUTLETS WITH ARCHITECT PRIOR TO ROUGH-IN.
8. ALL WALL OUTLETS NOT PROVIDED WITH A DEVICE BY THIS CONTRACTOR SHALL BE PROVIDED WITH BLANK WALL PLATES.
9. MULTI-WIRE BRANCH CIRCUITS ARE PROHIBITED UNLESS SPECIFICALLY NOTED OTHERWISE.
10. FINAL EQUIPMENT CONNECTIONS - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS REQUIRED TO MAKE FINAL CONNECTIONS TO ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR AND/OR EQUIPMENT FURNISHED BY OTHERS. VERIFY ALL REQUIREMENTS, CONDUCTOR SIZE, OVERCURRENT PROTECTION, PHASE, VOLTAGE, ETC., INDICATED ON DRAWINGS WILL SATISFY EQUIPMENT SUPPLIER REQUIREMENTS PRIOR TO ROUGH-IN. PROVIDE FUSED DISCONNECT IF REQUIRED BY MANUFACTURER.
11. REFER TO "TYPICAL MOUNTING AND ALIGNMENT CRITERIA" DETAIL FOR OUTLET DEVICE MOUNTING HEIGHT AND LOCATIONS.
12. TYPE "ENT" ELECTRICAL NON-METALLIC TUBING SHALL NOT USED.
13. PROVIDE ACCESS PANELS IN GYPBOARD CEILINGS WHERE ACCESS TO JUNCTION BOXES IS REQUIRED.
14. PROVIDE A MINIMUM OF (1) 3/4"C. WITH PULLSTRING AND NYLON END BUSHING STUBBED TO ABOVE ACCESSIBLE CEILING FOR ALL WALL MOUNTED AUXILIARY DEVICES, JUNCTION BOXES INCLUDING, BUT NOT LIMITED TO CARD READERS, PUSH PLATES, ETC, UON.
15. ALL 120V RECEPTACLE OUTLETS WITHIN 6FT OF A WATER SOURCE SHALL BE GFCI PROTECTED.
16. VERIFY ALL DOOR SWINGS W/ ARCHITECT PRIOR TO ROUGH-IN OF WALL MOUNTED LIGHTING CONTROLS, ACCESS CONTROLS, DOOR OPERATORS, ETC.
17. PROVIDE ADDITIONAL STEEL SUPPORTS FOR MOTOR CONTROLLERS, FIXTURES, RACEWAYS, CABINETS, BOXES, AND THE LIKE WHERE THE BUILDING, EQUIPMENT, OR STRUCTURE IS NOT SUITABLE FOR MOUNTING DIRECTLY THEREON.
18. "PROVIDE" USED IN SPECIFICATIONS AND DRAWINGS SHALL MEAN "TO FURNISH, INSTALL, CONNECT, AND PLACE IN SERVICE COMPLETELY IN SPECIFIED OR APPROVED MANNER THE ITEM DESCRIBED."
19. ELECTRICAL WORK EMBEDDED IN CONCRETE OR OTHERWISE PERMANENTLY CONCEALED SHALL NOT BE COVERED UNTIL INSPECTED BY THE OWNER'S REPRESENTATIVE.
20. ALL PENETRATIONS THROUGH FIRE RESISTANT WALLS AND OTHER SUCH RATED ASSEMBLIES SHALL BE FIRESTOPPED TO MAINTAIN ITS RATING.
21. DIVISION 22 AND 23 EQUIPMENT CIRCUITING, DISCONNECT, AND OVERCURRENT PROTECTION CHARACTERISTICS ARE BASED ON THE BASIS OF DESIGN EQUIPMENT SPECIFICATION. CONTRACTOR SHALL BEAR ALL COSTS OF ELECTRICAL CHANGES RESULTING FROM PROVIDING EQUIPMENT FROM AN ALTERNATE MANUFACTURER.

ELECTRICAL DEMOLITION LEGEND

TAG	SYMBOLOGY	DESCRIPTION
(EX)		EXISTING DEVICE TO REMAIN.
(ED)		EXISTING DEVICE TO BE DEMOLISHED.
(ER)		EXISTING DEVICE TO BE RELOCATED.
(EL)		EXISTING DEVICE SHOWN IN NEW LOCATION TO BE REINSTALLED.
(EN)		EXISTING DEVICE TO BE REPLACED WITH NEW DEVICE IN SAME LOCATION.

ELECTRICAL DEMOLITION NOTES

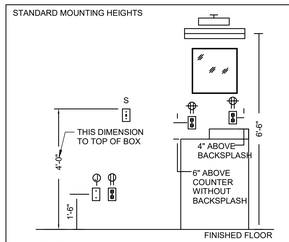
1. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRICAL WORK NECESSARY TO PROVIDE THE INTENDED ARRANGEMENT OF WALLS AND CEILINGS, AND SHALL RECONNECT ALL CIRCUITS INTERRUPTED BY THIS DEMOLITION WHERE THOSE CIRCUITS ARE UTILIZED BEYOND THE DEMOLITION, WHETHER SUCH CIRCUITS ARE INDICATED OR NOT.
2. WHERE AN ELECTRICAL DEVICE THAT IS TO BE REMOVED IS AN 'END OF LINE' OR A SINGLE DEVICE, THE CONDUCTORS SHALL BE DISCONNECTED AT THE NEXT UPSTREAM DEVICE TO REMAIN OR AT ITS RELATED PANELBOARD. ALL NON-FUNCTIONAL CONDUCTORS INCLUDING POWER AND TELECOMMUNICATION CABLES SHALL BE REMOVED.
3. DEMOLITION: ACCURACY OF ORIGINAL PLANS HAS NOT BEEN VERIFIED. THE CONTRACTORS SHALL MAINTAIN CIRCUIT CONTINUITY OF ALL EXISTING FIXTURES AND DEVICES THAT ARE TO REMAIN.
4. EXISTING CIRCUITS, IF INDICATED, ARE DIAGRAMMATIC ONLY. VERIFY EXACT CONDUIT LOCATION AND ROUTING OF EXISTING CONDUIT RUNS AND NUMBER OF CONDUCTORS. AND PROVIDE ADDITIONAL CONDUITS / CONDUCTORS AS NECESSARY TO ACCOMPLISH THE DESIGN INTENT.
5. CIRCUIT BREAKERS ADDED TO THE EXISTING PANELBOARDS SHALL MATCH THE EXISTING BREAKER TYPE, MANUFACTURER, AND AIC RATING. PROVIDE NEW TYPE WRITTEN, UPDATED DIRECTORIES IN THE EXISTING PANELBOARDS TO REFLECT CHANGES MADE BY THIS RENOVATION.
6. ALL ADDITIONS TO SYSTEMS SHALL MATCH THE MANUFACTURER'S EXISTING SYSTEMS PRESENTLY INSTALLED IN THE FACILITY UNLESS OTHERWISE NOTED.
7. EXISTING SYSTEMS SHALL REMAIN UNLESS NOTED FOR REMOVAL OR RELOCATION. ALL SYSTEMS SHALL BE CHECKED TO ENSURE THEY ARE IN PROPER WORKING ORDER BEFORE ANY DEMOLITION IS STARTED. SYSTEMS NOT FOUND TO BE IN SATISFACTORY WORKING CONDITION SHALL BE REPORTED TO THE OWNER IN WRITING PRIOR TO THE START OF ANY DEMOLITION WORK. ALL SYSTEMS SHALL BE CHECKED TO ENSURE THAT THEY ARE WORKING PROPERLY AFTER THE DEMOLITION WORK IS FINISHED AND AFTER THE NEW ELECTRICAL INSTALLATION IS COMPLETE.
8. DEMOLITION, WHERE INDICATED ON PLAN, IS BASED ON EXISTING DRAWINGS AND LIMITED FIELD INVESTIGATION OF EXISTING CONDITIONS. SELECT DEMOLITION MAY BE REQUIRED FOR NEW CONSTRUCTION AND MAY NOT BE DELINEATED ON THIS DRAWING. CAREFULLY COORDINATE DEMOLITION WITH NEW CONSTRUCTION PLANS OF ALL DISCIPLINES TO VERIFY ACTUAL EXTENT OF DEMOLITION. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND FULLY UNDERSTAND THE EXTENT OF DEMOLITION WORK.
9. 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.
10. QUANTITY AND LOCATION OF EXISTING DEVICES SHOWN ON PLANS ARE APPROXIMATE. FIELD VERIFY DEVICES AND LOCATIONS.
11. ITEMS SHOWN HEAVY LINE WEIGHT DASHED LINES, HATCHED AND/OR NOTED SHALL BE DEMOLISHED AND ALL ASSOCIATED DEVICES, CONDUIT, AND WIRING SHALL BE REMOVED BACK TO THE NEAREST ACTIVE JUNCTION BOX OR SOURCE UNLESS NOTED OTHERWISE. SEE DEMOLITION LEGEND FOR ADDITIONAL INFORMATION.
12. ALL EXISTING EQUIPMENT MAY NOT BE INDICATED. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. EXISTING ITEMS NOT SHOWN HATCHED SHALL REMAIN IN OPERATION. REVISE THE EXISTING CIRCUITRY TO MAINTAIN OPERATION OF ITEMS TO REMAIN.
13. MAINTAIN ELECTRICAL SERVICE TO ALL LIGHTING FIXTURES, DEVICES, AND EQUIPMENT THAT ARE OUTSIDE AREA OF RENOVATION. EXTEND CONDUIT AND WIRE AS REQUIRED WHERE DEMOLITION WORK AFFECTS ELECTRICAL SERVICE TO DOWNSTREAM LOADS THAT ARE TO REMAIN.
14. RECYCLE OR DISPOSE OF ALL MATERIALS OFF SITE AND INCLUDE ALL ASSOCIATED COSTS IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING LEED REQUIREMENTS, TCLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.
15. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS 'SPARE' AND PLACE IN THE "OFF" POSITION.
16. VERIFY ALL UNDERGROUND AND IN SLAB UTILITY LOCATIONS PRIOR TO SAW-CUTTING OR PENETRATING ANY FLOOR SLAB.
17. OFFER OWNERS REPRESENTATIVE FIRST RIGHT OF REFUSAL OF ALL EQUIPMENT REMOVED FROM SITE.
18. PROVIDE CODE-COMPLIANT SUPPORT TO EXISTING-TO-REMAIN UNSUPPORTED CONDUITS AND BOXES WHERE CEILINGS ARE TO BE REMOVED. RE-ROUTE BRANCH CIRCUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.

ELECTRICAL ABBREVIATIONS

ABBREVIATION	DESCRIPTION
(ED)	EXISTING TO BE DEMOLISHED
(EL)	EXISTING DEVICE SHOWN IN NEW LOCATION TO BE REINSTALLED
(EN)	EXISTING TO BE REPLACED WITH NEW
(ER)	EXISTING TO BE RELOCATED
(EX)	EXISTING TO REMAIN
A, AMP	AMPERES
AF	AMP FRAME - CIRCUIT BREAKER; AMP FUSE - FUSED SWITCH
AFC, AC	ABOVE FINISHED CABINET/COUNTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFI	ARC FAULT INTERRUPTER
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ALSI	ARC FLASH ENERGY REDUCTION, LONG TIME, SHORT TIME, INSTANTANEOUS
ALSIG	ARC FLASH ENERGY REDUCTION, LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND FAULT
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
BKR, CB	CIRCUIT BREAKER
C	CONDUIT
CM	COFFEE MAKER
CPT	CONTROL POWER TRANSFORMER
CR	CRITICAL / CRITICAL BRANCH EMERGENCY
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
DIV	DIVISION
DW	DISHWASHER
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EG	EQUIPMENT GROUND
EM	EMERGENCY
EO	ELECTRICALLY OPERATED
EPO	EMERGENCY POWER OFF
EQ	EQUIPMENT BRANCH EMERGENCY
EWC	ELECTRIC WATER COOLER
FLA	FULL LOAD AMPS
FWE	FURNISHED WITH EQUIPMENT
G, GND	GROUND
GD	GARBAGE DISPOSAL
GDS	GENERATOR DOCKING STATION
GFI, GFCI	GROUND FAULT INTERRUPTER
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT
H	HORIZONTAL, HORIZONTALLY MOUNTED
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
IAW	IN ACCORDANCE WITH
IG	ISOLATED GROUND
IM	ICE MACHINE
KV	KILOVOLT
KVA	KILOVOLT-AMPERES
KWH	KILOWATT-HOURS
LS	LIFE SAFETY BRANCH EMERGENCY
LSI	LONG TIME, SHORT TIME, INSTANTANEOUS
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND FAULT
LTS	LIGHTS
MCA	MAXIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MECHANICAL CONTROL PANEL
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MRS	MOTOR RATED SWITCH
MW	MEGAWATT
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT - FIXTURE CONTROLLED AT BRANCH CIRCUIT BREAKER ONLY
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
P	POLE
PH	PHASE
PNL	PANEL
PT	POTENTIAL TRANSFORMER
RECEPT, RCPT	RECEPTACLE
REF	REFRIGERATOR
SPD	SURGE PROTECTION DEVICE
SWBD	SWITCHBOARD
TR	TAMPER-RESISTANT
TYP	TYPICAL
UNO,UON	UNLESS NOTED OTHERWISE
UPS	UNINTERUPTABLE POWER SUPPLY
V	VOLTS
VA	VOLT-AMPERES
VB	VIEWBOX
W	WATTS, WIRE
WP	WEATHERPROOF WHILE IN USE COVER
XFMR	TRANSFORMER
XP, EP	EXPLOSION PROOF

ELECTRICAL INDEX OF DRAWINGS

STANDARD MOUNTING HEIGHTS



NOTES:

1. MOUNTING HEIGHTS SHOWN ARE FROM FINISHED FLOOR TO CENTERLINE OF DEVICE/OUTLET/FIXTURE, UNLESS OTHERWISE NOTED.
2. MOUNTING HEIGHTS, WHERE INDICATED, ON FLOOR PLANS, SHALL TAKE PRECEDENCE OVER THESE MOUNTING HEIGHTS. LOCATIONS OF OUTLETS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL TAKE PRECEDENCE OVER THESE MOUNTING HEIGHTS. FIELD LOCATE OUTLETS WITH ARCHITECT DURING ROUGH-IN.
3. INSTALL OUTLETS THAT ARE IN CLOSE PROXIMITY ON THE SAME CENTERLINE. OUTLETS THAT ARE WITHIN 2'-0" HORIZONTALLY AND WITHIN 1'-0" VERTICALLY SHALL BE INSTALLED ON THE SAME HORIZONTAL CENTERLINE LOCATED HALF WAY BETWEEN THE HEIGHTS SHOWN. OUTLETS THAT ARE MORE THAN 1'-0" APART VERTICALLY SHALL BE INSTALLED ON THE SAME VERTICAL CENTERLINE.
4. MAXIMUM MOUNTING HEIGHT FOR SWITCHES ABOVE A COUNTER TOP 20" DEEP OR LESS IS 48" AFF TO TOP OF BOX. SWITCHES MOUNTED ABOVE COUNTER TOPS DEEPER THAN 20" SHALL BE INSTALLED AT NO MORE THAN 44" ABOVE FINISHED FLOOR TO TOP OF BOX. NOTIFY ARCHITECT WHERE COUNTERTOP PROHIBITS SWITCH INSTALLTION.

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PROFESSIONAL SEALS:

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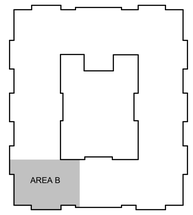
LICENSED PROFESSIONAL ENGINEER
03/25/25

CONSULTANTS:



AREA OF WORK

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-25-25	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
400 MACK AVE
DETROIT, MI
48201

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

DETROIT MACK HEALTH CENTER

DETROIT, MI

SSOE PROJECT #: 023-03991-00

SSOE MANAGER: J. FALZON

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ELECTRICAL LEGEND, SYMBOLS, & NOTES

EE-000

ELECTRICAL GENERAL REQUIREMENT:

A. SCOPE OF WORK: ALL MATERIAL SHALL BE NEW UNLESS OTHERWISE INDICATED. FURNISH ALL LABOR, EQUIPMENT, TECHNICAL SUPERVISION, AND INCIDENTAL SERVICES REQUIRED TO COMPLETE, TEST AND LEAVE READY FOR OPERATION THE ELECTRICAL SYSTEMS AS SPECIFIED AND AS INDICATED ON DRAWINGS.

B. ORDINANCES AND CODES: PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL ORDINANCES AND REGULATIONS, THE RULES AND REGULATIONS OF NFPA, NECA, AND UL UNLESS OTHERWISE INDICATED.

C. UNLESS OTHERWISE INDICATED, ALL REQUIRED PERMITS, LICENSES, INSPECTIONS, APPROVALS AND FEES FOR ELECTRICAL WORK SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR. ALL WORK SHALL CONFORM TO ALL APPLICABLE CODES, RULES AND REGULATIONS.

D. THE DRAWINGS SHOW THE LOCATION AND GENERAL ARRANGEMENT OF EQUIPMENT, ELECTRICAL SYSTEMS AND RELATED ITEMS. THEY SHALL BE FOLLOWED AS CLOSELY AS ELEMENTS OF NEW CONSTRUCTION WILL PERMIT.

E. EXAMINE THE DRAWINGS OF OTHER TRADES AND VERIFY THE CONDITIONS GOVERNING THE WORK ON THE JOB SITE. ARRANGE WORK ACCORDINGLY, PROVIDING LABOR AND MATERIALS AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.

F. COORDINATE ARRANGEMENT, MOUNTING AND SUPPORT OF ELECTRICAL EQUIPMENT WITH OTHER TRADES.

G. VISIT THE SITE, EXAMINE AND VERIFY THE CONDITIONS UNDER WHICH THE WORK MUST BE CONDUCTED BEFORE SUBMITTING PROPOSAL THE SUBMISSION OF A PROPOSAL IMPLIES THAT THE CONTRACTOR HAS VISITED THE SITE AND UNDERSTANDS THE CONDITIONS UNDER WHICH THE WORK MUST BE CONDUCTED. NO ADDITIONAL CHARGES WILL BE ALLOWED BECAUSE OF FAILURE TO MAKE THIS EXAMINATION OR TO INCLUDE ALL MATERIALS AND LABOR TO COMPLETE THE WORK.

H. BIDS SHALL BE BASED UPON MANUFACTURED EQUIPMENT SPECIFIED. VOLUNTARY ALTERNATES MAY BE SUBMITTED FOR CONSIDERATION, WITH LISTED ADDITION OR DEDUCTION TO THE BID.

I. WARRANTY: CONTRACTOR SHALL WARRANTY THAT THE ELECTRICAL INSTALLATION IS FREE FROM DEFECTS AND AGREES TO REPLACE OR REPAIR, TO THE OWNER'S SATISFACTION, ANY PART OF THIS ELECTRICAL INSTALLATION WHICH BECOMES DEFECTIVE WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION FOLLOWING FINAL ACCEPTANCE, PROVIDED THAT SUCH FAILURE IS DUE TO DEFECTS IN THE EQUIPMENT, MATERIAL WORKMANSHIP OR FAILURE TO FOLLOW THE CONTRACT DOCUMENTS.

J. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TEMPORARY SERVICES INCLUDING EQUIPMENT AND INSTALLATION REQUIRED TO MAINTAIN OPERATION AS A RESULT OF ANY EQUIPMENT FAILURE OR DEFECT DURING WARRANTY PERIOD.

K. FILE WITH THE OWNER ANY AND ALL WARRANTIES FROM THE EQUIPMENT MANUFACTURERS INCLUDING THE OPERATING CONDITIONS AND PERFORMANCE CAPACITIES THEY ARE BASED ON.

L. IN GENERAL DEMOLITION WORK IS INDICATED ON THE DRAWINGS. HOWEVER, THE CONTRACTOR SHALL VISIT THE JOB SITE TO DETERMINE THE FULL EXTENT AND CHARACTER OF THIS WORK.

M. UNLESS SPECIFICALLY NOTED TO THE CONTRARY, REMOVED MATERIALS SHALL NOT BE REUSED IN THE WORK. SALVAGED MATERIALS THAT ARE TO BE REUSED SHALL BE STORED SAFE AGAINST DAMAGE AND TURNED OVER TO THE APPROPRIATE TRADE FOR REUSE. SALVAGED MATERIALS OF VALUE THAT ARE NOT TO BE REUSED SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS SUCH OWNERSHIP IS WAIVED. ITEMS ON WHICH THE OWNER WAIVES OWNERSHIP SHALL BECOME THE PROPERTY OF THE CONTRACTOR, WHO SHALL REMOVE AND LEGALLY DISPOSE OF SAME, AWAY FROM THE PREMISES.

N. CONSULT WITH THE OWNER'S REPRESENTATIVE AS TO THE METHODS OF CARRYING ON THE WORK SO AS NOT TO INTERFERE WITH THE OWNER'S OPERATION ANY MORE THAN ABSOLUTELY NECESSARY. ACCORDINGLY, ALL SERVICE LINES SHALL BE KEPT IN OPERATION AS LONG AS POSSIBLE AND THE SERVICES SHALL ONLY BE INTERRUPTED AT SUCH TIME AS WILL BE DESIGNATED BY THE OWNER'S REPRESENTATIVE.

O. ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE PERFORMED BY THE CONTRACTOR THROUGH APPROVED, QUALIFIED SUBCONTRACTORS. CONTRACTOR SHALL INCLUDE FULL COST OF SAME IN BID.

P. PROVIDE ALL EXCAVATION, TRENCHING, TUNNELING, DEWATERING AND BACKFILLING REQUIRED FOR THE ELECTRICAL WORK. COORDINATE THE WORK WITH OTHER EXCAVATING AND BACKFILLING IN THE SAME AREA.

Q. INSPECT THE INSTALLATION OF ALL EQUIPMENT PER THE MANUFACTURER'S RECOMMENDATION AND APPLICABLE CODES.

R. PROVIDE UL APPROVED FIRE-STOPPING SYSTEM FOR ALL PENETRATIONS PASSING THROUGH FIRE RATED ASSEMBLES.

S. COMPLY WITH NECA 1.

T. PROVIDE COMPLETE OPERATION AND MAINTENANCE INSTRUCTIONAL MANUALS COVERING ALL ELECTRICAL EQUIPMENT HEREIN SPECIFIED, TOGETHER WITH PARTS LISTS.

U. CONTRACTOR SHALL SUBMIT TO THE ARCHITECT/ENGINEER, RECORD DRAWINGS ON ELECTRONIC MEDIA OR BLACK LINE REPRODUCTIONS WHICH HAVE BEEN NEATLY MARKED TO REPRESENT AS-BUILT CONDITIONS FOR ALL NEW ELECTRICAL WORK.

V. SUBMIT FOR APPROVAL SHOP DRAWINGS FOR ALL ELECTRICAL SYSTEMS OR EQUIPMENT BUT NOT LIMITED TO THE ITEMS LISTED BELOW:
   1. PANELBOARDS
   2. WIRING DEVICES
   3. LIGHTING FIXTURES
   4. LIGHTING CONTROL SYSTEMS AND DEVICES

W. PROVIDE AND INSTALL ARC-FLASH HAZARD LABELS ON ELECTRICAL EQUIPMENT AND ENCLOSURES DEFINED BY NFPA 70. LABELS SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 70.

LIGHTING CONTROL DEVICES

A. INSTALL LIGHTING CONTROL DEVICES AS INDICATED ON PLAN. INSTALL AT ACCESSIBLE LOCATIONS.

B. COORDINATE OCCUPANCY/VACANCY SENSOR LOCATIONS, COVERAGE AND REQUIRED QUANTITIES WITH MANUFACTURER'S RECOMMENDATIONS. COVERAGE AREAS INDICATED ON THE DRAWINGS ARE FOR MINOR MOTION (6 TO 8 INCHES OF HAND MOVEMENT). PROVIDE ADDITIONAL OCCUPANCY SENSORS AND CONTROL UNITS AS REQUIRED TO ACHIEVE COMPLETE MINOR MOTION COVERAGE OF THE SPACE INDICATED.

C. OCCUPANCY/VACANCY SENSOR ADJUSTMENTS: WHEN REQUESTED WITHIN 12 MONTHS OF DATE OF SUBSTANTIAL COMPLETION, PROVIDE ON-SITE ASSISTANCE IN ADJUSTING SENSORS TO SUIT ACTUAL OCCUPIED CONDITIONS PROVIDE UP TO TWO VISITS TO SITE OUTSIDE NORMAL OCCUPANCY HOURS FOR THIS PURPOSE.

D. OCCUPANCY/VACANCY SENSOR:
   1. LEVITON PER SCHEDULE ON EE-801, OR ENGINEER APPROVED EQUAL.

E. OCCUPANCY/VACANCY SENSOR CONTROL UNITS:
   1. DESCRIPTION: TRANSFORMER AND RELAY COMBINED IN SINGLE UNIT TO PROVIDE 24DC POWER TO SENSORS AND PROVIDE 20A CONTACT(S) FOR CONTROL OF LIGHTING LOADS AT 120 OR 277V. CONTROL UNIT INPUT POWER SHALL BE FROM UNSWITCHED LEG OF LIGHTING CIRCUIT IT IS CONTROLLING.
      a. CONTROL UNITS SHALL BE PROVIDED AS REQUIRED TO POWER CEILING MOUNTED OCCUPANCY SENSORS, CONTROL LIGHTING LOADS AND PROVIDE A MINIMUM OF ONE AUXILIARY CONTACT.
      b. OCCUPANCY SENSOR CONTROL UNITS SHALL MOUNT EXTERNAL TO 4-INCH SQ JUNCTION BOX IN THE CEILING SPACE. ALL WIRING BETWEEN CONTROL UNIT AND OCCUPANCY SENSOR SHALL BE PLENUM RATED.
      c. LOCATE CONTROL UNIT IN ACCESSIBLE LOCATION IN GYP-BOARD CEILINGS, ADJACENT TO RETURN AIR GRILLES, OR PROVIDE ACCESS PANEL
      d. ADDITIONAL AUXILIARY RELAY MODULES SHALL BE PROVIDED AS REQUIRED TO PROVIDE CONTROL OF ALL LIGHTING CIRCUITS AND ADDITIONAL AUXILIARY CONTACTS AS REQUIRED.
      e. IT IS ACCEPTABLE TO PROVIDE CONTROLS AND AUXILIARY CONTACTS AS REQUIRED INTEGRAL TO NEW CEILING SENSOR, PROVIDED ALL REQUIRED CONTACTS ARE PROVIDED.
      f. MAXIMUM OF 3 SENSORS PER POWER PACK. VERIFY EXACT QUANTITIES REQUIRED WITH MANUFACTURER.

IDENTIFICATION

A. COMPLY WITH ANSI A13.1, ANSI C2, NFPA 70, AND 29 CFR 1910.145.

B. COORDINATE IDENTIFICATION NAMES, ABBREVIATIONS, COLORS, AND OTHER FEATURES WITH REQUIREMENTS IN THE CONTRACT DOCUMENTS, SHOP DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND THE OPERATION AND MAINTENANCE MANUAL AND WITH THOSE REQUIRED BY CODES, STANDARDS, AND 29 CFR 1910.145. USE CONSISTENT DESIGNATIONS THROUGHOUT PROJECT.

C. COORDINATE INSTALLATION OF IDENTIFYING DEVICES WITH COMPLETION OF COVERING AND PAINTING OF SURFACES WHERE DEVICES ARE TO BE APPLIED, WITH LOCATION OF ACCESS PANELS AND DOORS.

D. INSTALL IDENTIFYING DEVICES BEFORE INSTALLING ACOUSTICAL CEILINGS AND SIMILAR CONCEALMENT.

E. INSTALL ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABELS THAT ARE PUNCHED OR DRILLED FOR SCREW MOUNTING WITH SELF TAPPING STAINLESS STEEL SCREW. LABELS SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND. MINIMUM LETTER HEIGHT SHALL BE 3/8 INCH (10 MM). LABELS SHALL BE INSTALLED ON ALL ELECTRICAL EQUIPMENT AFFECTED BY PROJECT.
   1. PANELBOARD AND TRANSFORMER NAMEPLATES IDENTIFY SOURCE FED FROM, VOLTAGE, SIZE, NAME.
   2. ENCLOSED CONTROLLERS, CIRCUIT BREAKERS, DISCONNECT SWITCHES IDENTIFY SOURCE AND LOAD SERVED.

F. WIRING DEVICES: USE ADHESIVE LABEL WITH BLACK, RED FOR EMERGENCY, FILM LETTERING ON FACE OF WALL PLATE AND DURABLE WIRE MARKERS OR TAGS INSIDE OUTLET BOXES. LABELS SHALL BE CLEAR POLYESTER WITH BLACK LETTER, RED LETTER FOR EMERGENCY, FONT SIZE OF 7. IDENTIFY PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED.

G. USE THE COLORS USED BELOW FOR UNGROUNDED SERVICE, FEEDER, AND BRANCH-CIRCUIT CONDUCTORS.
   1. COLOR SHALL BE FACTORY APPLIED OR, FOR SIZES LARGER THAN NO. 10 AWG IF AUTHORITIES HAVING JURISDICTION PERMIT, FIELD APPLIED.
   2. COLORS FOR 208/120-V CIRCUITS
      a. PHASE A BLACK
      b. PHASE B: RED
      c. PHASE C: BLUE
      d. NEUTRAL: WHITE
   3. COLORS FOR 480/277-V CIRCUITS:
      a. PHASE A: BROWN
      b. PHASE B: ORANGE
      c. PHASE C: YELLOW
      d. NEUTRAL: GRAY
   4. FIELD-APPLIED, COLOR-CODING CONDUCTOR TAPE APPLY IN HALF-LAPPED TURNS FOR A MINIMUM DISTANCE OF 6 INCHES FROM TERMINAL POINTS AND IN BOXES WHERE SPLICES OR TAPS ARE MADE. APPLY LAST TWO TURNS OF TAPE WITH NO TENSION TO PREVENT POSSIBLE UNWINDING. LOCATE BANDS TO AVOID OBSCURING FACTORY CABLE MARKINGS.

H. WARNING LABELS FOR INDOOR CABINETS, BOXES, AND ENCLOSURES FOR POWER AND LIGHTING: COMPLY WITH 29 CFR 1910.145 AND APPLY SELF-ADHESIVE WARNING LABELS. IDENTIFY SYSTEM VOLTAGE WITH BLACK LETTERS ON AN ORANGE BACKGROUND. APPLY TO EXTERIOR OF DOOR, COVER, OR OTHER ACCESS.

I. USE OWNER STANDARDS WHEN THEY EXIST. OTHERWISE, ACCESSIBLE RACEWAYS AND CABLES OF AUXILIARY SYSTEMS IDENTIFY THE FOLLOWING SYSTEMS WITH COLOR-CODED, SELF-ADHESIVE VINYL TAPE APPLIED IN BANDS OR PAINTED RACEWAY
   1. FIRE ALARM SYSTEM: RED.
   2. SECURITY SYSTEM: BLUE AND YELLOW.
   3. TELECOMMUNICATION SYSTEM: GREEN AND YELLOW.
   4. CONTROL WIRING: GREEN AND RED.

WIRING DEVICES

A. STRAIGHT-BLADE-TYPE RECEPTACLES: HEAVY DUTY SPECIFICATION GRADE. COMPLY WITH NEMA ID 1, NEMA ID 6, DSCC W-C-596G, AND UL 498. CONFIGURATION 5-20R DUPLEX RECEPTACLE HUBBELL HBL5362X OR EQUAL BY PASS & SEYMOUR OR COOPER.

B. GFI RECEPTACLES: STRAIGHT BLADE FEED-THROUGH TYPE, GENERAL DUTY GRADE, WITH INTEGRAL NEMA WD 6, CONFIGURATION 5-20R DUPLEX RECEPTACLE; COMPLYING WITH UL 498 AND UL 943. DESIGN UNITS FOR INSTALLATION IN A 2-3/4-INCH- (70-MM-) DEEP OUTLET BOX WITHOUT AN ADAPTER. HUBBELL GF20XL OR EQUAL BY PASS & SEYMOUR OR COOPER.

C. LED LAMP DIMMER SWITCHES: LEVITON OR EQUAL, COMPATIBLE WITH LED DIMMING DRIVER SPECIFIED.

D. DIMMERS:
   1. CONTROL: FOUR PRE-SET PUSHBUTTONS; SINGLE-POLE OR THREE-WAY SWITCHING TO SUIT CONNECTIONS.
   2. INSTALL WALL DIMMERS TO ACHIEVE FULL RATING SPECIFIED AND INDICATED AFTER DERATNG FOR GANGING ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS
   3. INSTALL UNSHARED NEUTRAL CONDUCTORS ON LINE AND LOAD SIDE OF DIMMERS ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS.

E. WALL PLATES:
   1. PROVIDE STAINLESS STEEL WALL PLATES IN FINISHED AREAS.
   2. PROVIDE GALVANIZED STEEL WALL PLATES IN UNFINISHED AREAS.
   3. PROVIDE WEATHERPROOF WHILE-IN-USE COVERPLATES FOR WET LOCATIONS.

F. WIRING DEVICE/WALL PLATE COLOR AS SELECTED BY ARCHITECT UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70.

G. CONNECT WIRING DEVICE GROUNDING TERMINAL TO OUTLET BOX WITH BONDING JUMPER. USE OF QUICK GROUND STRAP OR SCREW IS NOT ACCEPTABLE.

GROUNDING AND BONDING

A. EQUIPMENT GROUNDING: COMPLY WITH NFPA 70, ARTICLE 250, FOR TYPES, SIZES, AND QUANTITIES OF EQUIPMENT GROUNDING CONDUCTORS, UNLESS SPECIFIC TYPES, LARGER SIZES, OR MORE CONDUCTORS THAN REQUIRED BY NFPA 70 ARE INDICATED.

B. PROVIDE EQUIPMENT GROUNDING CONDUCTORS IN EACH RACEWAY.

CONDUCTORS AND CABLES

A. CONDUCTOR MATERIAL: COPPER COMPLYING WITH NEMA WC: 70; STRANDED CONDUCTOR.

B. CONDUCTOR INSULATION TYPES: TYPE THHN-THWN, COMPLYING WITH NEMA WC 70.

C. CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.

D. USE CONDUCTOR NOT SMALLER THAN 12 AWG FOR POWER AND LIGHTING CIRCUITS. UNLESS INDICATED OTHERWISE, ALL 20A BRANCH CIRCUITS SHALL BE 2#12, 1#12G, 3/4"C.

E. USE CONDUCTOR NOT SMALLER THAN #14 AWG FOR CONTROL CIRCUITS PROVIDED BY ELECTRICAL CONTRACTOR.

F. SUPPORT COMMUNICATION CABLES ABOVE ACCESSIBLE CEILING, USING SPRING METAL CLIPS OR PLASTIC CABLE TIES TO SUPPORT CABLES FROM STRUCTURE DO NOT REST CABLE ON CEILING PANELS.

G. USE "STA-KON" CONNECTORS TO TERMINATE STRANDED CONDUCTORS #10 AWG AND SMALLER TO SCREW TERMINALS.

H. CONDUCTOR AND INSULATION APPLICATIONS:
   1. FEEDERS: TYPE THHN-THWN, SINGLE CONDUCTORS IN RACEWAY
   2. BRANCH CIRCUITS, INCLUDING IN CRAWLSPACES: TYPE THHN-THWN, SINGLE CONDUCTORS IN RACEWAY. PROVIDE A DEDICATED NEUTRAL FOR EACH CIRCUIT.
   3. CLASS I CONTROL CIRCUITS TYPE THHN -THWN IN RACEWAY
   4. CLASS II CONTROL CIRCUITS: POWER LIMITED CABLE

RACEWAYS AND BOXES

A. MINIMUM RACEWAY SIZE 3/4-INCH TRADE SIZE.

B. INSTALL CONDUIT IN ACCORDANCE WITH NECA "NATIONAL ELECTRICAL INSTALLATION STANDARDS".

C. ROUTE CONDUITS IN FINISHED AREAS WITH EXPOSED CEILINGS AT UNDERSIDE OF STRUCTURAL DECK OR AS HIGH AS POSSIBLE. WHERE STEEL METAL DECK ON STEEL JOIST CONSTRUCTION, ROUTE CONDUITS ABOVE JOISTS. DO NOT SECURE CONDUIT TO BOTTOM OF JOISTS.

D. RACEWAY APPLICATIONS REFER TO RACEWAY APPLICATIONS SCHEDULE ON SHEET EE-801.

E. FITTINGS FOR EMT: STEEL COMPRESSION TYPE.

PANELBOARDS

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY SQUARE D, EATON, ABB, OR SIEMENS.

B. COORDINATE LAYOUT AND INSTALLATION OF PANELBOARDS AND COMPONENTS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM, INCLUDING ELECTRICAL AND OTHER TYPES OF EQUIPMENT, RACEWAYS, PIPING, AND ENCUMBRANCES TO NFPA 70 DEDICATED AND WORKSPACE CLEARANCE REQUIREMENTS.

C. PHASE AND GROUND BUSES SHALL BE HARD-DRAWN COPPER, 98 PERCENT CONDUCTIVITY.

D. SHORT-CIRCUIT RATING: FULLY RATED TO INTERRUPT SYMMETRICAL SHORT-CIRCUIT CURRENT AVAILABLE AT TERMINALS.

E. INSTALL PANELBOARDS AND ACCESSORIES ACCORDING TO NEMA PB 1.1.

F. MOUNT TOP OF TRIM 74 INCHES (18130 MM) ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED.

G. STUB FOUR 1-INCH (27-GRC) EMPTY CONDUITS FROM RECESSED PANELBOARD INTO ACCESSIBLE CEILING SPACE OR SPACE DESIGNATED TO BE CEILING SPACE IN THE FUTURE. STUB FOUR 1-INCH (27-GRC) EMPTY CONDUITS INTO RAISED FLOOR SPACE OR BELOW SLAB NOT ON GRADE.

H. CREATE A DIRECTORY TO INDICATE INSTALLED CIRCUIT LOADS AFTER BALANCING PANELBOARD LOADS OR CREATED BY RETROFITTING. OBTAIN APPROVAL BEFORE INSTALLING. CREATE A TYPED DIRECTORY; HANDWRITTEN DIRECTORIES ARE NOT ACCEPTABLE. COORDINATE FINAL DIRECTORY ROOM NAMES AND NUMBERS WITH OWNER.

I. LOAD BALANCING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, MEASURE LOAD BALANCING AND MAKE CIRCUIT CHANGES.

J. ON COMPLETION OF INSTALLATION, INSPECT INTERIOR AND EXTERIOR OF PANELBOARDS. REMOVE PAINT SPLATTERS AND OTHER SPOTS. VACUUM DIRT AND DEBRIS; DO NOT USE COMPRESSED AIR TO ASSIST IN CLEANING. REPAIR EXPOSED SURFACES TO MATCH ORIGINAL FINISH.

K. LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS
   1. BRANCH OVERCURRENT PROTECTIVE DEVICES: BOLT-ON CIRCUIT BREAKERS, REPLACEABLE WITHOUT DISTURBING ADJACENT UNITS.

L. ENCLOSURES: MOUNTING AS NOTED ON PANEL SCHEDULES.
   1. NEMA PB 1, RATED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.
      a. INDOOR DRY LOCATIONS NEMA 250, TYPE 1.
      b. OUTDOOR LOCATIONS NEMA 250, TYPE 3R.
      c. OTHER WET OR DAMP INDOOR LOCATIONS: NEMA 250, TYPE 4.
   2. CABINET FRONT: FLUSH OR SURFACE CABINET AS NOTED ON THE DRAWINGS, WITH FRONT WITH CONCEALED TRIM CLAMPS, PIANO TYPE HINGED DEAD FRONT COVER, HINGED DOOR, AND FLUSH LOCK ALL KEYED ALIKE
   3. DIRECTORY CARD WITH TRANSPARENT PROTECTIVE COVER, MOUNTED IN METAL FRAME INSIDE PANELBOARD DOOR.

LIGHTING

A. PROVIDE LIGHTING FIXTURES AS INDICATED ON DRAWINGS.

B. INSTALL DRIVERS, AND SPECIFIED ACCESSORIES AT FACTORY. FOR FIXTURES CONTAINING LAMPS, INSTALL ON PROJECT SITE AFTER FIXTURE INSTALLATION.

C. FIXTURES SET LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALLS. INSTALL LAMPS IN EACH FIXTURE WHERE REQUIRED.

D. SUPPORT LUMINARIES INDEPENDENT OF CEILING FRAMING. SUPPORT RECESSED GRID LUMINARIES FROM TWO OPPOSITE CORNERS DIRECTLY TO STRUCTURE. WIRE OR ROD SHALL HAVE BREAKING STRENGTH OF THE WEIGHT OF FIXTURE AT A SAFETY FACTOR OF 3.

E. INSTALL RECESSED LUMINARIES TO PERMIT REMOVAL FROM BELOW.

F. INSTALL RECESSED LUMINARIES USING ACCESSORIES AND FIRE STOPPING MATERIALS TO MEET REGULATORY REQUIREMENTS FOR FIRE RATING.

G. INSTALL SURFACE MOUNTED LUMINARIES AND EXIT SIGNS PLUMB AND ADJUST TO ALIGN WITH BUILDING LINES AND WITH EACH OTHER. SECURE TO PROHIBIT MOVEMENT.

H. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A AND UL 4868.

I. MAKE WIRING CONNECTIONS TO BRANCH CIRCUIT USING BUILDING WIRE WITH INSULATION SUITABLE FOR TEMPERATURE CONDITIONS WITHIN LUMINAIRE

J. BOND PRODUCTS AND METAL ACCESSORIES TO BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.

K. CONNECT LUMINARIES TO BRANCH CIRCUIT OUTLET BOXES PROVIDED UNDER RACEWAYS AND BOXES SECTION USING 1/2" FLEXIBLE CONDUIT OF NO MORE THAN 6'-0" IN LENGTH.

L. CLEAN ELECTRICAL PARTS TO REMOVE CONDUCTIVE AND DELETERIOUS MATERIALS.

M. REMOVE DIRT AND DEBRIS FROM ENCLOSURES AND LENSES.

N. CLEAN PHOTOMETRIC CONTROL SURFACES AS RECOMMENDED BY MANUFACTURER.

O. CLEAN FINISHES AND TOUCH UP DAMAGE.

P. EACH LED LUMINAIRE TYPE SHALL BE BINNED WITHIN A THREE-STEP MACADAM ELLIPSE TO ENSURE COLOR CONSISTENCY AMONG LUMINAIRES AND CONTAIN INTERNAL DRIVER UNLESS NOTED OTHERWISE.

Q. EXIT SIGNS: COMPLY WITH UL 924; FOR SIGN COLORS AND LETTERING SIZE, COMPLY WITH AUTHORITIES HAVING JURISDICTION.
   1. PROVIDE EXIT SIGNS WIN LIGHT-EMITTING DIODES, 70,000 HOURS MINIMUM OF RATED LAMP LIFE
   2. SELF-POWERED EXIT SIGNS (BATTERY TYPE): INTEGRAL AUTOMATIC CHARGER IN A SELF-CONTAINED POWER PACK.
   3. BATTERY: SEALED, MAINTENANCE-FREE NICKEL-CADMIUM TYPE WITH SPECIAL WARRANTY.
   4. CHARGER: FULLY AUTOMATIC, SOLID-STATE TYPE WITH SEALED TRANSFER RELAY.
   5. OPERATION: RELAY AUTOMATICALLY ENERGIZES LAMP FROM BATTERY WHEN CIRCUIT VOLTAGE DROPS TO 80 PERCENT OF NOMINAL VOLTAGE OR BELOW. WHEN NORMAL VOLTAGE IS RESTORED, RELAY DISCONNECTS LAMPS FROM BATTERY, AND BATTERY IS AUTOMATICALLY RECHARGED AND FLOATED ON CHARGER.

FIRE ALARM

A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE COMPONENTS COMPATIBLE WITH EXISTING EDWARDS iO SERIES SYSTEM. MODIFICATIONS TO THE EXISTING FIRE ALARM SYSTEM SHALL BE COORDINATED WITH AND PROVIDED BY THE EXISTING FIRE ALARM SYSTEM SERVICE COMPANY. CONTACT REDGUARD FIRE & SECURITY AT 800-251-5136 FOR MODIFICATIONS.

B. PERFORMANCE REQUIREMENTS:
   1. DESIGN AND INSTALLATION OF NEW DEVICES ONTO AN EXISTING FIRE ALARM SYSTEM. THE COMPLETE FUNCTIONAL SYSTEM SHALL MEET THE REQUIREMENTS OF THIS SPECIFICATION, APPLICABLE CODES, AND AUTHORITIES HAVING JURISDICTION (AHJ) REQUIREMENTS.
   2. COMPLY WITH NFPA 72.
   3. PROVIDE DEVICE LOCATIONS AND RATINGS AS REQUIRED TO MEET THE REQUIREMENTS OF THE AHJ AND ALL APPLICABLE CODES.
   4. FIRE ALARM SYSTEM VENDOR SHALL PROVIDE SOUND PRESSURE LEVEL CALCULATIONS DEMONSTRATING COMPLIANCE WITH NFPA 72 AND ESTABLISH QUANTITIES AND TAP SETTINGS OF AUDIBLE DEVICES.
   5. NO ADDITIONAL CHARGE FOR FIRE ALARM DEVICES WILL BE ALLOWED UNLESS SPACE DEFINITION, USE OR CONSTRUCTION IS SUBSTANTIALLY REVISED.

C. NOTIFICATION APPLIANCES: EQUIPPED FOR MOUNTING AS INDICATED AND WITH SCREW TERMINALS FOR SYSTEM CONNECTIONS
   1. COMBINATION DEVICES FACTORY-INTEGRATED AUDIBLE AND VISIBLE DEVICES IN A SINGLE-MOUNTING ASSEMBLY.
   2. HORNS SHALL PRODUCE A SOUND-PRESSURE LEVEL OF 90 DBA, MEASURED 10 FEET (3 M) FROM THE HORN.
   3. VISIBLE ALARM DEVICES XENON STROBE LIGHTS USED UNDER UL 1971, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS MOUNTED ON AN ALUMINUM FACEPLATE. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1-INCH- (25-MM-) HIGH LETTERS ON THE LENS.
      a. RATED LIGHT OUTPUT: 15, 30, 60, 75, 110, 135, 185 CANDELA AS REQUIRED TO MEET NFPA 72 REQUIREMENTS.
         a.a. STROBE LEADS: FACTORY CONNECTED TO SCREW TERMINALS.
   4. AUDIBLE ALARM-INDICATING DEVICES INSTALL AT 96” AFF OR 6 INCHES (150 MM) BELOW THE CEILING, WHICHEVER IS LESS. INSTALL BELLS AND HORNS ON FLUSH-MOUNTED BACK BOXES WITH THE DEVICE-OPERATING MECHANISM CONCEALED BEHIND A GRILLE.
   5. VISIBLE ALARM-INDICATING DEVICES: INSTALL AT 96" AFF OR 6 INCHES (150 MM) BELOW THE CEILING, WHICHEVER IS LESS.

D. WIRE AND CABLE WIRE AND CABLE FOR FIRE ALARM SYSTEMS SHALL BE UL LISTED AND LABELED AS COMPLYING WITH NFPA 70, ARTICLE 760.
   1. SIGNALING LINE CIRCUITS: TWISTED, SHIELDED PAIR, SIZE AS RECOMMENDED BY SYSTEM MANUFACTURER.
   2. NON-POWER-LIMITED CIRCUITS: SOLID-COPPER CONDUCTORS WITH 600-V RATED, 75 DEG C, COLOR-CODED INSULATION. LOW-VOLTAGE CIRCUITS: NO. 16 AWG, MINIMUM. LINE-VOLTAGE CIRCUITS: NO. 12 AWG MINIMUM.
   3. INSTALL WIRING ACCORDING TO NECA 1 AND TIA/EIA 568-A
   4. FIRE ALARM CIRCUITS AND EQUIPMENT CONTROL WIRING ASSOCIATED WITH THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN A DEDICATED RACEWAY SYSTEM IN AREAS OF EXPOSED CONSTRUCTION.

E. SUBMIT FIRE ALARM DRAWINGS AND DOCUMENTATION TO THE AUTHORITIES HAVING JURISDICTION AND THE ARCHITECT/ENGINEER.

F. INSTALLER QUALIFICATIONS: PERSONNEL CERTIFIED BY NICET AS FIRE ALARM LEVEL II

G. INTERRUPTION OF EXISTING FIRE ALARM SERVICE: DO NOT INTERRUPT FIRE ALARM SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY GUARD SERVICE ACCORDING TO REQUIREMENTS INDICATED. NOTIFY ARCHITECT, OWNER OR CONSTRUCTION MANAGER NO FEWER THAN SEVEN DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF FIRE ALARM SERVICE DO NOT PROCEED WITH INTERRUPTION OF FIRE ALARM SERVICE WITHOUT OWNER'S WRITTEN PERMISSION.

H. EXISTING FIRE ALARM EQUIPMENT: MAINTAIN FULLY OPERATIONAL UNTIL NEW EQUIPMENT HAS BEEN TESTED AND ACCEPTED. AS NEW EQUIPMENT IS INSTALLED, LABEL IT "NOT IN SERVICE" UNTIL IT IS ACCEPTED. REMOVE LABELS FROM NEW EQUIPMENT WHEN PUT INTO SERVICE AND LABEL EXISTING FIRE ALARM EQUIPMENT "NOT IN SERVICE" UNTIL REMOVED FROM THE BUILDING.

I. EQUIPMENT REMOVAL AFTER ACCEPTANCE OF THE NEW FIRE ALARM SYSTEM, REMOVE EXISTING DISCONNECTED FIRE ALARM EQUIPMENT.

J. FIRE ALARM SYSTEM AND COMPONENTS SHALL OPERATE AS AN EXTENSION OF AN EXISTING SYSTEM. ALL NEW DEVICES SHALL BE SUITABLE AND LISTED WITH EXISTING FIRE ALARM CONTROL PANEL.

K. CONNECTING TO EXISTING EQUIPMENT: VERIFY THAT EXISTING FIRE ALARM SYSTEM IS OPERATIONAL BEFORE MAKING CHANGES OR CONNECTIONS.

L. PERFORM BATTERY CALCULATIONS AND PROVIDE NECESSARY EQUIPMENT WHERE EXISTING BATTERIES WILL NOT SUPPORT ADDITION OF NEW DEVICES INDICATED ON DRAWINGS.

M. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT EST, AND ADJUST FIELD-ASSEMBLED COMPONENTS AND EQUIPMENT INSTALLATION, INCLUDING CONNECTIONS, AND TO ASSIST IN FIELD TESTING. REPORT RESULTS IN WRITING.

N. TEST AND INSPECTION RECORDS: PREPARE ACCORDING TO NFPA 72, INCLUDING DEMONSTRATION OF SEQUENCES OF OPERATION BY USING THE MATRIX-STYLE FORM IN APPENDIX A IN NFPA 7.

O. CERTIFY FIRE ALARM SYSTEM UPON COMPLETION OF INSTALLATION AND TESTING.

TELECOMMUNICATIONS

A. ALL INSTALLATIONS, EQUIPMENT AND MATERIALS SHALL BE PROVIDED IN COMPLIANCE WITH THE CURRENT LAWS AND REGULATIONS OF STATE COUNTY AND CITY FIRE MARSHALLS, BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BIOS), NEC, THE INTERNATIONAL BUILDING CODE (IBC), COMMUNICATIONS STANDARDS PUBLISHED BY TIA/EIA, AND ALL OTHER APPLICABLE CODES.

B. THE CONTRACTOR SHALL INSURE THAT THE MANUFACTURER PULL TENSIONS AND MINIMUM BENDING RADIUS OF THE CABLES BEING INSTALLED ARE NOT EXCEEDED AT ANY TIME DURING INSTALLATION.

C. 3/4” CONDUIT SHALL BE RUN TO THE ACCESSIBLE CEILING SPACE, FOR DEVICES WITH MORE THAN 3 CABLES, UTILIZE (1) 1" CONDUIT.

D. ALL BENDS WILL BE LONG, SWEEPING BENDS WITH A RADIUS NOT LESS THAN:
   1. SIX TIMES THE INTERNAL DIAMETER OF CONDUITS 2 INCHES OR SMALLER.
   2. TEN TIES THE INTERNAL DIAMETER OF CONDUITS LARGER THAN 2 INCHES.

E. ENSURE THAT THE HORIZONTAL CABLE BEND RADIUS IS NO LESS THAN FOUR (4) TIMES THE CABLE DIAMETER.

F. THE AMOUNT OF UNTWISTING MUST NOT EXCEED 13mm (0.5 INCHES) FOR ALL CAT5E CABLES.

G. ENSURE THAT THERE IS A MINIMUM OF 10' OF SLACK AT THE IDF.

H. ENSURE THAT THERE IS A MINIMUM OF 12' OF SLACK AT THE WORK AREA OUTLET.

I. IDENTIFY CABLES AT EACH END WITH PERMANENT ALPHANUMERIC LABELS PER OWNER STANDARDS.

J. WHERE CABLE TRAY IS NOT ACCESSIBLE, SUPPORT NEW CABLING SYSTEM USING J-HOOKS.

K. TELECOMMUNICATIONS JACKS SHALL MEET OWNER'S STANDARDS.

L. COLOR CODING SHALL MEET OWNER'S STANDARDS.

M. ALL ELECTRONICS HARDWARE WILL BE DESIGNED AND PROVIDED BY THE OWNER.

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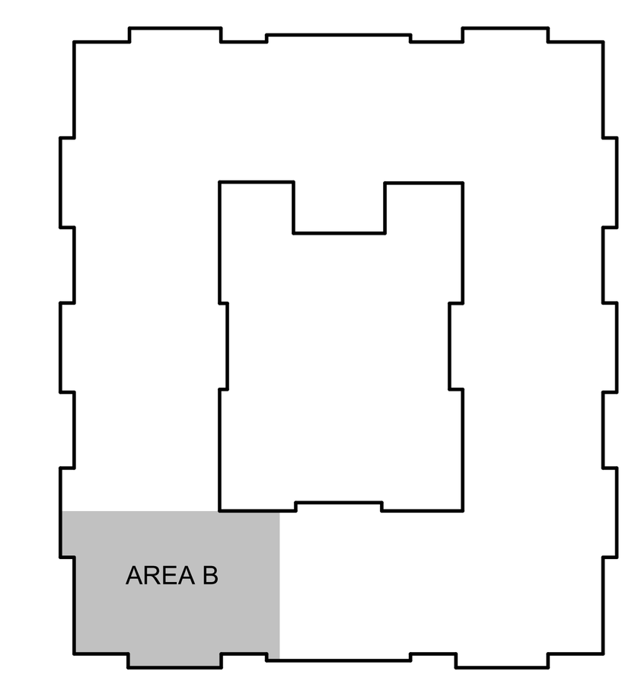
PROFESSIONAL SEALS:

03/25/25

CONSULTANTS:



AREA OF WORK

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-25-25	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
400 MACK AVE
DETROIT, MI
48201

CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

DETROIT MACK HEALTH CENTER

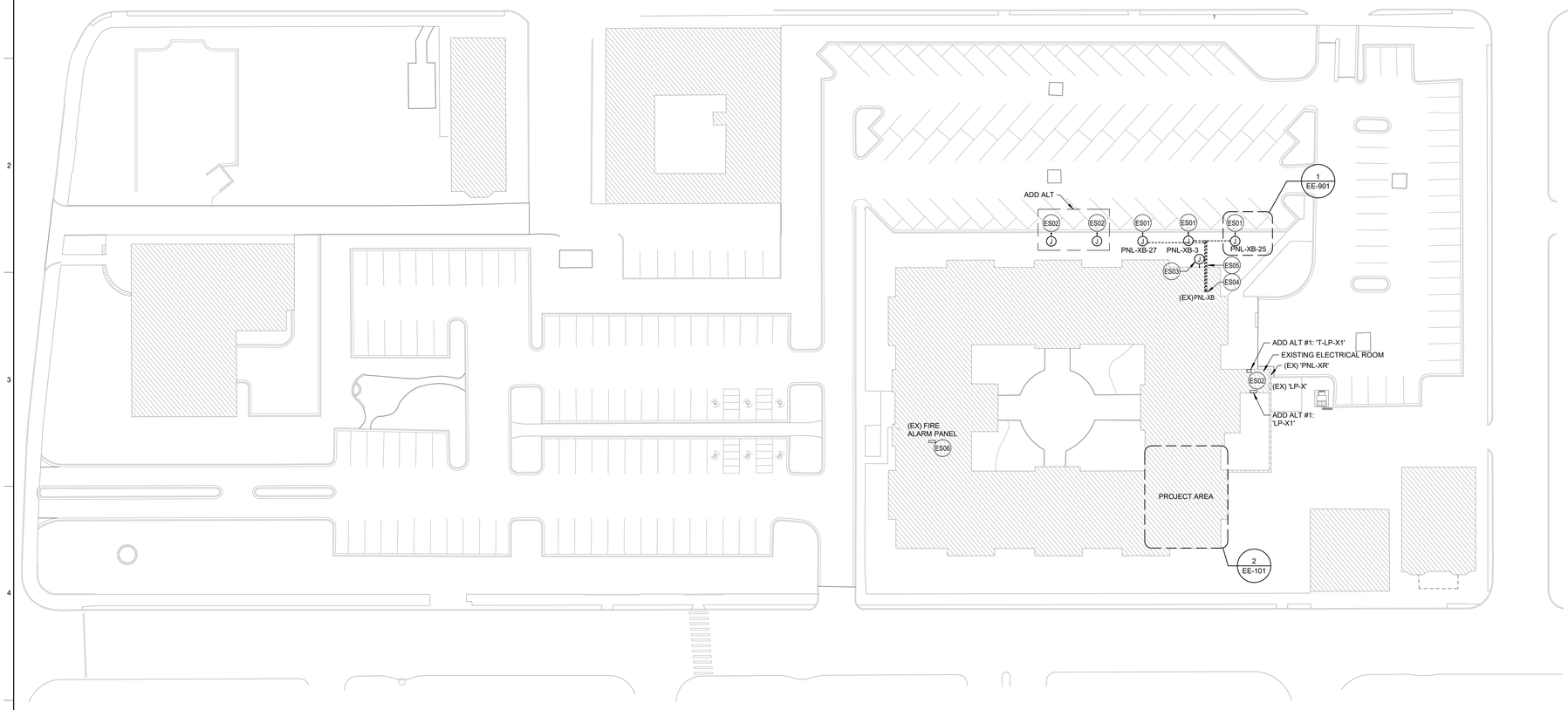
DETROIT, MI

SSOE PROJECT #: 023-03991-00
SSOE MANAGER: J. FALZON

ssoe
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-6222

ELECTRICAL SPECIFICATIONS

EE-001



SITE PLAN - ELECTRICAL

SCALE: 1" = 30'-0"

GENERAL NOTES - SITE POWER

A. COORDINATE WITH LOCAL UTILITY FOR ALL SITE SERVICE REQUIREMENTS AND EXISTING UNDERGROUND UTILITIES.

B. ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE PERFORMED BY THE CONTRACTOR THROUGH APPROVED, QUALIFIED SUBCONTRACTORS. CONTRACTOR SHALL INCLUDE FULL COST OF SAME IN BID.

PLAN NOTES

ES01 POWER PEDESTAL BASIS OF DESIGN TO BE PEDOC 1P24-C-V-G. FURNISH AND INSTALL (1) SIMPLEX WEATHER RESISTANT RECEPTACLE, NEMA L5-30R, WITH WEATHERPROOF WHILE-IN-USE COVER. WIRING SHALL BE 2#10, 1#10G, IN 3/4"C.

ES02 ADD ALTERNATE 1: INSTALL NEW 60A/480V/3P BREAKER IN EXISTING 'LP-X' TO FEED NEW XFMR 'T-PNL-XR1'. NEW XFMR 'T-PNL-XR1' TO BE 30KVA 480V-208Y/120V (SCHNEIDER ELECTRIC EE30T3H OR APPROVED EQUIVALENT) TO FEED NEW PANEL 'PNL-XR1'. NEW PANEL 'PNL-XR1' TO BE 100A, 208Y/120V, 3PH, 4W, 42-POLE PANELBOARD WITH 100A/3P MAIN CIRCUIT BREAKER, (5) 30A/1P GFCI BREAKERS, (16) 20A/1P SPARES, AND (21) 1P SPACES. NEW PANEL TO SERVE 5 POWER PEDESTALS (AS SPECIFIED IN KEYED NOTE ES01). LOCATE NEW PANEL AND TRANSFORMER IN EXISTING ELECTRICAL ROOM. VERIFY FINAL EQUIPMENT LOCATIONS WITH WAYNE STATE PRIOR TO INSTALLATION. PROVIDE 30-DAY METERING OF PANEL 'PNL-XR' PER NEC 220-87(1) TO ENSURE ELECTRICAL CAPACITY PRIOR TO COMMENCING WORK. NOTIFY ENGINEER IF MEASURED MAXIMUM DEMAND LOAD EXCEEDS 36 KW.

ES03 REMOVE EXISTING RECEPTACLE, JUNCTION BOXES, CONDUIT, AND WIRING SERVING EXISTING MOBILE VAN CHARGER BACK TO SOURCE. REPAIR ALL SURFACES TO MATCH EXISTING.

ES04 PROVIDE 30-DAY METERING OF PANEL PER NEC 220-87(1) TO ENSURE ELECTRICAL CAPACITY PRIOR TO COMMENCING WORK. NOTIFY ENGINEER IF MEASURED MAXIMUM DEMAND LOAD EXCEEDS 20.5KW.

ES05 EXIT EXISTING BUILDING AT 48" ABOVE GRADE AND ROUTE CONDUITS BELOW GRADE TO PEDESTALS. REFER TO RACEWAY APPLICATION SCHEDULE ON SHEET EE-801.

ES06 EXISTING FIRE ALARM PANEL LOCATION ON FIRST FLOOR, OUTSIDE EXISTING STORAGE ROOM. PANEL IS LOCATED APPROXIMATELY 175' FROM PROJECT AREA.

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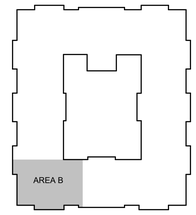
PROFESSIONAL SEALS:

STATE OF MICHIGAN
ERIC CAO
License No.
6201314200
LICENSED PROFESSIONAL ENGINEER
03/25/25

CONSULTANTS:



AREA OF WORK

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WAYNE STATE

WAYNE STATE UNIVERSITY

400 MACK AVE
DETROIT, MI
48201

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

DETROIT MACK
HEALTH CENTER

DETROIT, MI

SSOE PROJECT #: 023-03991-00

SSOE MANAGER: J. FALZON

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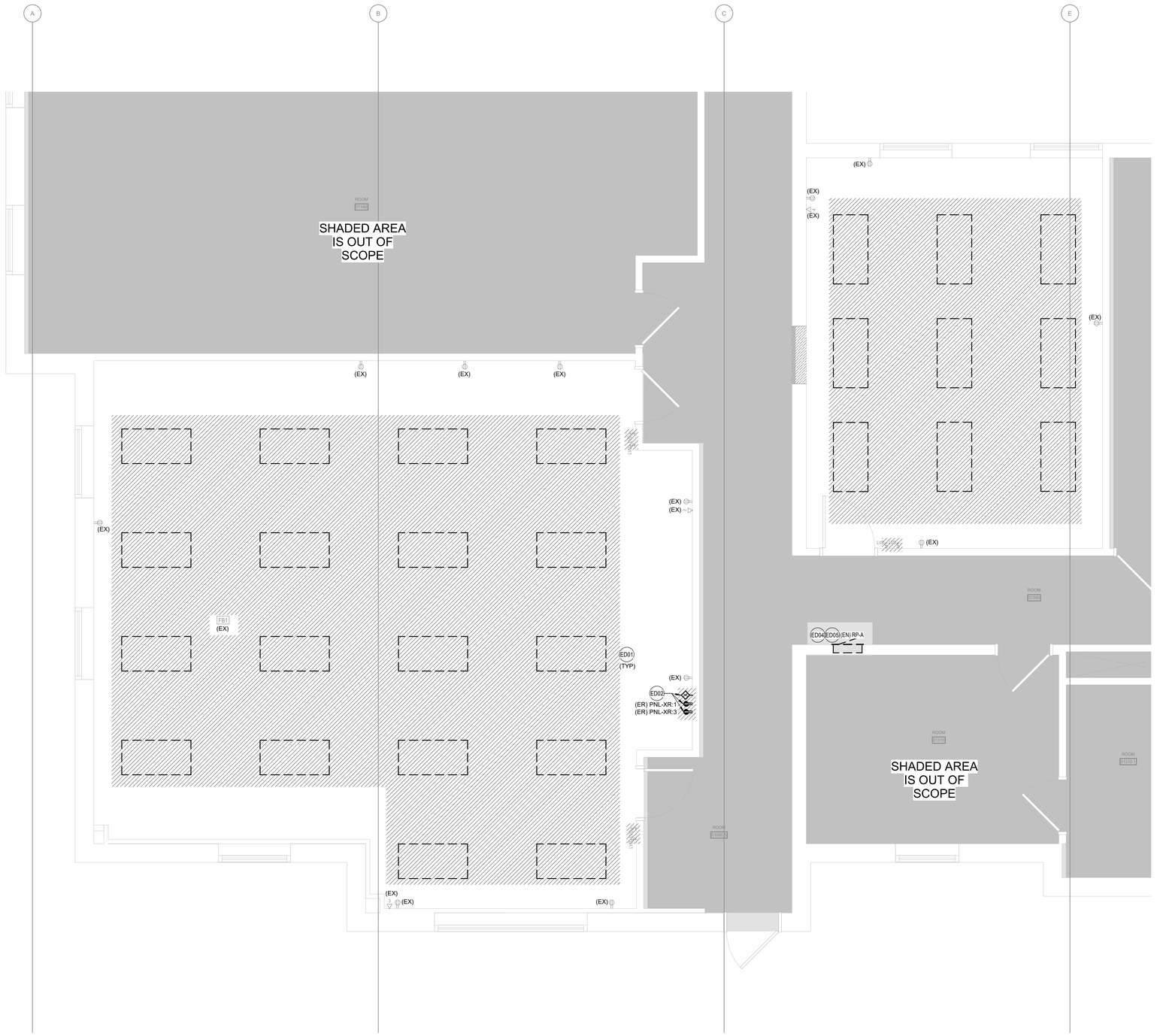
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-6222

SITE PLAN - ELECTRICAL

EE-100



GENERAL NOTES - DEMOLITION

A. DEMOLITION, WHERE INDICATED ON PLAN, IS BASED ON EXISTING DRAWINGS AND LIMITED FIELD INVESTIGATION OF EXISTING CONDITIONS. SELECT DEMOLITION MAY BE REQUIRED FOR NEW CONSTRUCTION AND MAY NOT BE DELINEATED ON THIS DRAWING. CAREFULLY COORDINATE DEMOLITION WITH NEW CONSTRUCTION PLANS OF ALL DISCIPLINES TO VERIFY ACTUAL EXTENT OF DEMOLITION. VISIT THE SITE PRIOR TO SUBMISSION OF BID TO EXAMINE THE EXISTING CONDITIONS AND FULLY UNDERSTAND THE EXTENT OF DEMOLITION WORK.

B. 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.

C. QUANTITY AND LOCATION OF EXISTING DEVICES SHOWN ON PLANS ARE APPROXIMATE. FIELD VERIFY DEVICES AND LOCATIONS.

D. ITEMS SHOWN HEAVY LINE WEIGHT DASHED LINES, HATCHED AND/OR NOTED SHALL BE DEMOLISHED AND ALL ASSOCIATED DEVICES, CONDUIT, AND WIRING SHALL BE REMOVED BACK TO THE NEAREST ACTIVE JUNCTION BOX OR SOURCE UNLESS NOTED OTHERWISE. SEE DEMOLITION LEGEND FOR ADDITIONAL INFORMATION.

E. ALL EXISTING EQUIPMENT MAY NOT BE INDICATED. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. EXISTING ITEMS NOT SHOWN HATCHED SHALL REMAIN IN OPERATION. REVISE THE EXISTING CIRCUITRY TO MAINTAIN OPERATION OF ITEMS TO REMAIN.

F. 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.

G. COORDINATE WITH NEW WORK PLANS, ONE LINE DIAGRAMS AND RISER DIAGRAMS FOR EXTENT OF DEMOLITION WORK.

H. CIRCUITING SHOWN IS BASED ON CASUAL FIELD OBSERVATIONS AND/OR AS-BUILT DRAWINGS. CONTRACTOR SHALL FIELD VERIFY CIRCUITING.

I. 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.

J. RECYCLE OR DISPOSE OF ALL MATERIALS OFF SITE AND INCLUDE ALL ASSOCIATED COSTS IN BID. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING LEED REQUIREMENTS, TCLP TESTING, PROPER DISPOSAL AND/OR RECYCLING OF FLUORESCENT LAMPS.

K. PROVIDE BLANK COVER PLATES WHERE DEVICES ARE REMOVED BUT EXISTING WALLS/CEILINGS REMAIN INTACT.

L. RING OUT AND TAG ALL CIRCUITS AFFECTED BY THIS ALTERATION AT BOTH ENDS. MARK ALL UNUSED CIRCUIT BREAKERS "SPARE" AND PLACE IN THE "OFF" POSITION.

M. VERIFY ALL UNDERGROUND AND IN SLAB UTILITY LOCATIONS PRIOR TO SAW-CUTTING OR PENETRATING ANY FLOOR SLAB.

N. OFFER OWNERS REPRESENTATIVE FIRST RIGHT OF REFUSAL OF ALL EQUIPMENT REMOVED FROM SPACE.

O. PROVIDE CODE-COMPLIANT SUPPORT TO EXISTING-TO-REMAIN UNSUPPORTED CONDUITS AND BOXES WHERE CEILINGS ARE TO BE REMOVED. RE-ROUTE BRANCH CIRCUITS AND RELOCATE JUNCTION BOXES AS REQUIRED TO FACILITATE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS IN CEILING SPACES.

PLAN NOTES

ED01 DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURE AND CONTROLS. REMOVE CONDUIT AND WIRING BACK TO LAST JUNCTION BOX. REMOVE ALL RACEWAYS THAT WILL NOT BE REUSED FOR THE NEW INSTALLATION. MAINTAIN POWER TO ANY LIGHTING NOT IDENTIFIED TO BE REMOVED.

ED02 REMOVE RECEPTACLES, WIRING, AND CONDUIT SERVING REFRIGERATORS BACK TO ACCESSIBLE CEILING SPACE, AND PREPARE FOR EXTENSION TO RELOCATED REFRIGERATOR LOCATIONS INDICATED ON NEW WORK PLAN.

ED04 PRIOR TO PANEL DEMOLITION, CONFIRM UPSTREAM BREAKER IS RATED AT LEAST 225A AND VERIFY FEEDER IS IN GOOD CONDITION AND SIZED TO CARRY 225A. NOTIFY ENGINEER OF RECORD WHERE RATING DIFFERS.

ED05 EC TO 30-DAY METER PANEL PER NEC 220-87(1) TO ENSURE ELECTRICAL CAPACITY PRIOR TO COMMENCING WORK. NOTIFY ENGINEER IF MEASURED MAXIMUM DEMAND LOAD EXCEEDS 14.7KW.

FIRST FLOOR PLAN OVERALL - ELECTRICAL DEMOLITION

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

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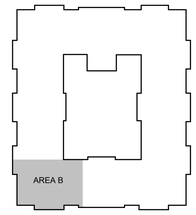
PROFESSIONAL SEALS:

STATE OF MICHIGAN
ERIC CAO
License No.
6201314200
LICENSED PROFESSIONAL ENGINEER
03/25/25

CONSULTANTS:



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CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
400 MACK AVE
DETROIT, MI
48201

CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

DETROIT MACK HEALTH CENTER

DETROIT, MI

SSOE PROJECT #: 023-03991-00
SSOE MANAGER: J. FALZON

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1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-6222

FIRST FLOOR PLAN - DEMO

ED-100

LIGHTING FIXTURE SCHEDULE												
TYPE	MFR	MODEL	CCT	LAMP	LUMENS	MOUNTING	VOLTAGE TYPE	WATTS	Mounting Height	ALT. MANUF. #1	ALT. MANUF. #2	DESCRIPTION	NOTES
RT2	DAY-BRITE - FLUXPANEL SERIES GEN 2	2FPZ38L835-2-ADS-UNV-DM	3500 K	LED	3800 lm	RECESSED	UNV	23 W	9'-0"	LITHONIA - CPX	METALUX - FPX	2'x2' RECESSED EDGE LIT LED FLAT PANEL, DIE FORMED GALVANIZED STEEL HOUSING AND EXTRUDE ALUMINUM FRAME FULLY ILLUMINOUS FROSTED WHITE ACRYLIC PANEL. LUMINAIRE COMPLETE WITH INTEGRAL 0-10V DIMMING DRIVER.	
RT4	DAYBRITE - FLUXPANEL SERIES	2FPZ38L835-4-ADS-UNV-DM	3500 K	LED	3800 lm	RECESSED	UNV	23 W	9'-0"	LITHONIA - CPX	METALUX - FPX	2'x4' RECESSED EDGE LIT LED FLAT PANEL, DIE FORMED GALVANIZED STEEL HOUSING AND EXTRUDE ALUMINUM FRAME FULLY ILLUMINOUS FROSTED WHITE ACRYLIC PANEL. LUMINAIRE COMPLETE WITH INTEGRAL 0-10V DIMMING DRIVER.	
RT4EM	DAYBRITE - FLUXPANEL SERIES	2FPZ38L835-4-ADS-UNV-DM-BSL10LST	3500 K	LED	3800 lm	RECESSED	UNV	23 W	9'-0"	LITHONIA - CPX	METALUX - FPX	2'x4' RECESSED EDGE LIT LED FLAT PANEL, DIE FORMED GALVANIZED STEEL HOUSING AND EXTRUDE ALUMINUM FRAME FULLY ILLUMINOUS FROSTED WHITE ACRYLIC PANEL. LUMINAIRE COMPLETE WITH INTEGRAL 0-10V DIMMING DRIVER. BODINE 10W BATTERY PACK WITH EM TEST SWITCH.	
X2	MULE LIGHTING - CEU SERIES	CEU3RW	3000 K	RED	124 lm	SURFACE	UNV	1 W	7'-6"	LITHONIA - ECC	ISOLITE - CMB	DUAL HEAD SURFACE MOUNTED LED LAMP EMERGENCY BATTERY UNIT AND EXIT SIGN COMBO. INJECTION MOLDED THERMOPLASTIC HOUSING. MAINTENANCE FREE NICAD BATTERY PROVIDES 90 MIN. OF ILLUMINATION.	

GENERAL NOTES - LIGHTING

A. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES UNLESS NOTED OTHERWISE.

B. REFER TO THE LUMINAIRE SCHEDULE LOCATED ON THE ELECTRICAL GENERAL INFORMATION DRAWING.

C. ELECTRICAL DEVICES INDICATED ON THIS PLAN SHALL BE NEW UNLESS NOTED OTHERWISE.

D. LIGHT SWITCHES SHALL BE GROUPED UNDER ONE COMMON FACEPLATE WHERE MORE THAN ONE LIGHT SWITCH IS INDICATED TO BE INSTALLED AT THE SAME LOCATION.

E. LIGHTING BRANCH CIRCUIT WIRING ASSOCIATED WITH NEW LIGHTING SHALL BE 2#12, 1#12GND IN 3/4"C UNLESS NOTED OTHERWISE.

F. EXISTING EQUIPMENT/DEVICES NOT SPECIFICALLY INDICATED TO BE DEMOLISHED SHALL REMAIN OPERATIONAL. REVISE EXISTING CIRCUITING TO MAINTAIN OPERATION TO SUCH EQUIPMENT/DEVICES AS REQUIRED.

G. REUSE THE EXISTING BRANCH CIRCUIT CONDUIT AND WIRING ASSOCIATED WITH THE LIGHTING FIXTURES REMOVED DURING DEMOLITION TO REFEED NEW LIGHTING FIXTURES UNLESS NOTED OTHERWISE. REWORK THE EXISTING CIRCUIT TO PROVIDE LIGHTING CONTROL AS INDICATED ON THIS DRAWING, UNLESS NOTED OTHERWISE.

H. EXISTING LIGHTING INDICATED AS TO REMAIN AND LOCATED IN AREAS WHERE THE CEILING IS BEING MODIFIED SHALL BE TEMPORARILY SUPPORTED AND REINSTALLED UPON COMPLETION OF CEILING REVISIONS. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ARCHITECTURAL TRADE.

I. NIGHT LIGHT AND EXIT SIGNS SHALL BE UNCONTROLLED AND CONNECTED AHEAD OF THE LOCAL LIGHTING CONTROLS.

J. CONDUITS INSTALLED IN FINISHED AREAS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.

GENERAL NOTES - LUMINAIRE SCHEDULE

A. MANUFACTURER CATALOG NUMBERS ARE SHOWN FOR GENERAL DESCRIPTIVE PURPOSES AND TO ESTABLISH STANDARD OF QUALITY ONLY. CONTRACTOR SHALL PROVIDE LUMINAIRES COMPLETE WITH ALL OPTIONS AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION. ALL PRODUCTS SHALL BE UL LISTED.

B. PROVIDE PROPER REFLECTOR ASSEMBLY SPECIFIED AND AS RECOMMENDED BY LUMINAIRE MANUFACTURER.

C. EXIT LIGHTS SHALL BE PROVIDED WITH COLOR OF LETTERS REQUIRED BY LOCAL CODE AUTHORITY. FURNISH WITH CHEVRON DIRECTIONAL INDICATORS AS INDICATED AND REQUIRED.

D. VERIFY CONSTRUCTION OF CEILINGS BEING INSTALLED AND PROVIDE THE LUMINAIRES SPECIFIED IN APPROPRIATE CONFIGURATION WITH ALL HARDWARE AND ACCESSORIES REQUIRED FOR COMPATIBLE INSTALLATION.

E. PROVIDE DEVICES FOR SECURING LAY-IN TYPE LUMINAIRES TO CEILING GRID TO COMPLY WITH ARTICLE 410 OF THE NATIONAL ELECTRICAL CODE.

F. BATTERY EMERGENCY UNITS SHALL BE U.L. 924 LISTED AND PRODUCE 90 MINUTES MINIMUM ILLUMINATION.

GENERAL NOTES - POWER

A. REFER TO ARCHITECTURAL FLOOR PLAN AND ELEVATIONS FOR EXACT LOCATION OF DEVICES WHERE INDICATED.

B. RECEPTACLE OUTLETS SHALL BE RATED 20A U.O.N..

C. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE U.O.N..

D. PROVIDE GFCI PROTECTION WHERE REQUIRED BY THE NEC WHETHER INDICATED OR NOT.

E. BRANCH CIRCUIT JUNCTION BOXES SHALL BE LABELED WITH THE CIRCUITS ENCLOSED.

F. SINGLE PHASE 20A BRANCH CIRCUIT WIRING SHALL BE 2#12, 1#12GND IN 3/4"C UNLESS NOTED OTHERWISE.

G. EXISTING EQUIPMENT/DEVICES NOT SPECIFICALLY INDICATED TO BE DEMOLISHED SHALL REMAIN OPERATIONAL. REVISE EXISTING CIRCUITING TO MAINTAIN OPERATION TO SUCH EQUIPMENT/DEVICES AS REQUIRED.

H. CONDUITS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.

I. ELECTRICAL EQUIPMENT MOUNTED ON THE FLOOR SHALL BE MOUNTED ON A 4" CONCRETE HOUSEKEEPING PAD.

GENERAL NOTES - DATA FIRE SECURITY

A. THE CONTRACTOR SHALL INSTALL ALL CABLE IN A PROFESSIONAL MANNER. CARE MUST BE GIVEN IN THE ROUTING OF THE CABLE SO AS TO PROVIDE CLEARANCE TO ALLOW THE SERVICING OF OTHER ELECTRICAL CONDUITS, EQUIPMENT, LIGHTS, ETC.

B. CONTRACTOR SHALL USE THE SSOE DOCUMENTS AS A BASIS OF DESIGN / BID SET TO GENERATE THE SEALED SHOP DRAWINGS THAT WILL BE SUBMITTED TO THE AHJ FOR REVIEW AND PERMIT. CONTRACTOR IS RESPONSIBLE FOR ALL FEES, PERMITS, AND LICENSES ASSOCIATED TO THE INSTALLATION AND COMPLETION OF A FULLY FUNCTIONING FIRE ALARM SYSTEM THAT IS APPROVED BY THE AHJ AND OWNER.

C. MINIMUM CONDUIT SIZE ALLOWED SHALL BE 3/4" UNLESS NOTED OTHERWISE. WIRE SIZE SHALL BE INCREASED AS REQUIRED TO PREVENT A VOLTAGE DROP EXCEEDING 18". CONDUIT SIZE SHALL BE INCREASED AS REQUIRED TO MEET NEC REQUIREMENTS.

D. VERTICALLY ALIGN DEVICES INSTALLED ON WALL WITH OTHER EQUIPMENT (THERMOSTATS, LIGHT SWITCHES, CARD READERS, MANUAL PULL STATIONS, ETC.) WHERE APPLICABLE. MAINTAIN PROPER MOUNTING HEIGHT AND LOCATION OF DEVICES TO MEET CODE.

E. CONTRACTOR TO PROVIDE AND INSTALL J-HOOKS TO SUPPORT DATA AND SECURITY CABLING IN CEILING SPACES WHERE CABLE TRAY IS NOT PRESENT. SPACING SHALL NOT EXCEED 5' - 0" ON CENTER. INSTALL J-HOOKS AS HIGH AS POSSIBLE ON UNDERSIDE OF FLOOR DECKING ABOVE.

F. ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, LOCAL AND STATE REQUIREMENTS.

G. VENDOR TO PROVIDE DETAILED SUBMITTAL DRAWINGS, CUTSHEETS, CALCULATIONS, ETC.

PLAN NOTES

EL01 CONNECT NEW LIGHT FIXTURES TO EXISTING CIRCUITS LEFT OVER FROM DEMOLITION. PROVIDE RED LINE MARKUPS OF AS-BUILT INSTALLATION WITH CIRCUITS.

EP03 NEW WIRELESS ACCESS POINT. PROVIDE DOUBLE GANG JUNCTION BOX, 1-1/4" CONDUIT WITH PULL STRING, IN THE DIRECTION OF EXISTING CABLE TRAY OR IT CLOSET. COORDINATE WITH WAYNE STATE I.T. FOR FINAL CONNECTION REQUIREMENTS PRIOR TO ROUGH IN.

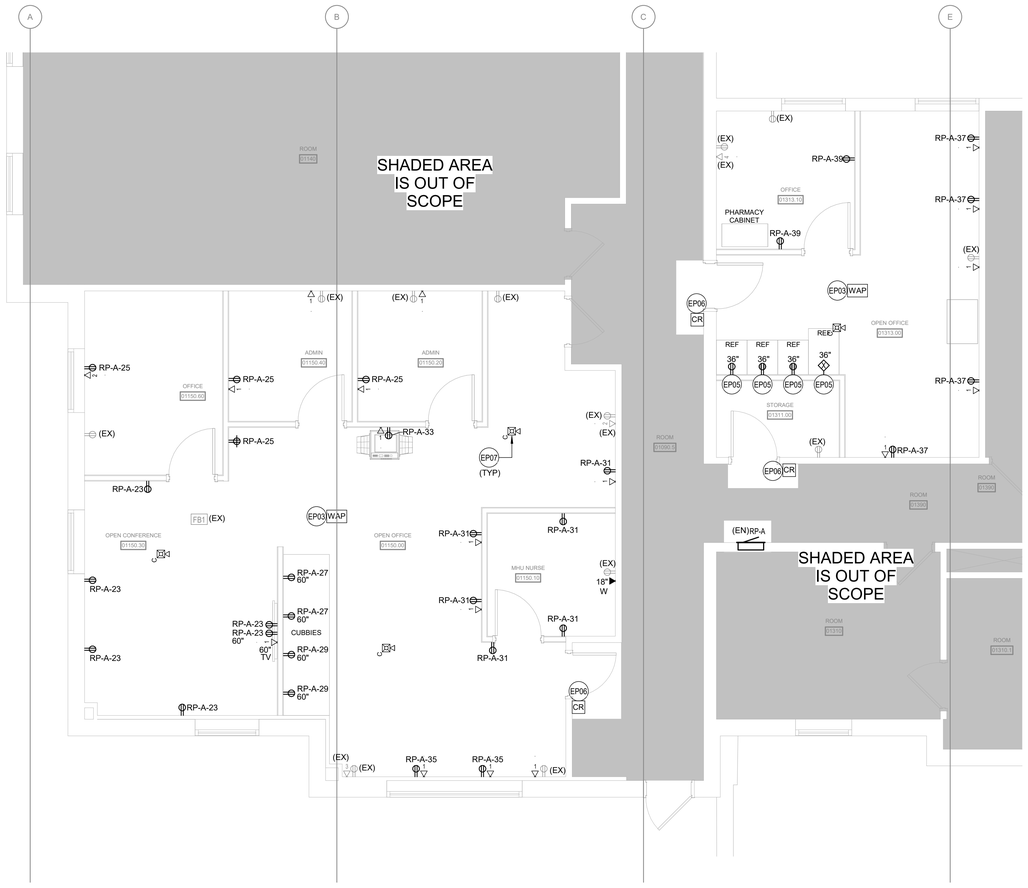
EP05 CONNECT NEW REFRIGERATOR RECEPTACLES TO EXISTING CIRCUITS LEFT OVER FROM DEMOLITION. NEW RECEPTACLE NEMA CONFIGURATION TO MATCH EXISTING. PROVIDE RED LINE MARKUPS OF AS-BUILT INSTALLATION WITH CIRCUITS.

EP06 NEW CARD READER. PROVIDE DOUBLE GANG JUNCTION BOX, 1-1/4" CONDUIT WITH PULL STRING, IN THE DIRECTION OF EXISTING SECURITY ACCESS PANEL. COORDINATE WITH WAYNE STATE I.T. FOR CONNECTION REQUIREMENTS AND POWER REQUIREMENTS PRIOR TO ROUGH IN.

EP07 CONNECT NEW FIRE ALARM NOTIFICATION APPLIANCE TO EXISTING EDWARDS IO SERIES FIRE ALARM SYSTEM. APPLIANCE AND INSTALLATION MEANS AND METHODS TO MATCH EXISTING IN BUILDING. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

FIRST FLOOR PLAN - LIGHTING

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



FIRST FLOOR PLAN - POWER

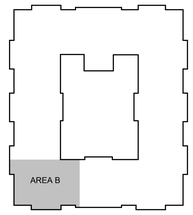
SCALE: 1/4" = 1'-0"

SSOE

PROFESSIONAL SEALS:

STATE OF MICHIGAN
ERIC CAO
License No. 6201314200
LICENSED PROFESSIONAL ENGINEER
03/25/25

CONSULTANTS:



SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-25-25	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
400 MACK AVE
DETROIT, MI
48201

CLIENT PROJECT #: 592-402968

JHA PROJECT #:

PROJECT INFORMATION:

DETROIT MACK HEALTH CENTER

DETROIT, MI

SSOE PROJECT #: 023-03991-00

SSOE MANAGER: J. FALZON

SSOE
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-8222

FIRST FLOOR PLAN - NEW WORK

EE-101

RACEWAY APPLICATION SCHEDULE

		RACEWAY	BUSWAY	ALUMINUM RIGID CONDUIT	ELECTRICAL METALLIC TUBING (EMT)	SURFACE RACEWAY	ELECTRICAL NONMETALLIC TUBING (ENT)	FLEXIBLE METAL CONDUIT (FMC)	LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT (LFNC)	RIGID METAL CONDUIT (RMC)	RIGID NONMETALLIC CONDUIT (RNC) TYPE EPC-40	RIGID NONMETALLIC CONDUIT (RNC) TYPE EPC-80	RIGID NONMETALLIC CONDUIT (RNC) SCHEDULE 40	RIGID NONMETALLIC CONDUIT (RNC) SCHEDULE 80	KEYED NOTES
OUTDOOR	EXPOSED							x			x					
	CONCEALED (ABOVE GROUND)							x			x					
	UNDERGROUND										x	x	x	x	x	EQUIPMENT INCLUDING: TRANSFORMERS, HYDRAULIC, PNEUMATIC, ELECTRIC, SOLENOID, MOTOR DRIVEN EQUIPMENT
	CONNECTED TO VIBRATING EQUIPMENT								x							PNEUMATIC, ELECTRIC SOLENOID, MOTOR DRIVEN EQUIPMENT
INDOOR	EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE - UNFINISHED SPACES			x												
	EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE - UNFINISHED SPACES				x											
	EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE - UNFINISHED SPACES							x			x					(RIGID STEEL CONDUIT UP TO 10'-0" AFF.) (RIGID STEEL CONDUIT UP TO 20'-0" AFF. FOR CORRIDORS USED FOR TRAFFIC OF MECHANIZED CARTS AND PALLET HANDLING UNITS MECHANICAL ROOMS
	CONCEALED IN CEILINGS, INTERIOR WALL AND PARTITIONS		x		x											NOT TO EXCEED 6'-0" IN ACCESSIBLE CEILING SPACE
	CONNECTED TO VIBRATING EQUIPMENT							x		x						EQUIPMENT INCLUDING: TRANSFORMERS, HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, MOTOR DRIVEN EQUIPMENT USE LFNC IN DAMP/WET AREAS
	DAMP AND WET LOCATIONS								x			x				
	BELOW SLAB ON GRADE												x	x		PROVIDE RIGID STEEL ELBOWS WHERE CONDUIT PENETRATES SLAB. CONDUIT INSTALLED 6" BELOW BOTTOM OF SLAB
	EMBEDDED IN CONCRETE ABOVE GRADE											x	x	x		
	OPTICAL FIBER OR COMMUNICATIONS CABLE IN SPACES USED FOR ENVIRONMENTAL AIR			x							x					
	CONCEALED GENERAL PURPOSE DISTRIBUTION OF OPTICAL FIBER OR COMMUNICATION CABLE			x			x			x	x					
SPECIAL APPLICATIONS	MRI		x													
	NATATORIUMS/FOUNTAINS			x												USE COMPRESSION FITTINGS

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. REFER TO "CONDUCTORS AND CABLES" SPECIFICATION FOR APPLICATION LIMITATIONS OF AC/MC CABLE

CIRCUIT LENGTH TABLE. 120V 1PH

(NOTES 7,8,9)

OVERCURRENT DEVICE RATING	MAX. CIRCUIT LOAD (AMPS)	CIRCUIT SIZE 20A	30A	40A	50A	70A	
20A	4	215'	360'	555'	880'	-	ONE WAY CIRCUIT LENGTH
	8	105'	180'	275'	440'	700'	
	12	70'	120'	185'	295'	465'	
	16	50'	90'	140'	220'	350'	
30A	24	-	60'	90'	145'	230'	
40A	32	-	-	70'	110'	175'	
50A	40	-	-	-	85'	140'	
60A	48	-	-	-	-	115'	

CIRCUIT LENGTH TABLE. 208V 1PH

(NOTES 7,8,9)

OVERCURRENT DEVICE RATING	MAX. CIRCUIT LOAD (AMPS)	CIRCUIT SIZE 20A	30A	40A	50A	70A	
20A	4	375'	625'	965'	-	-	ONE WAY CIRCUIT LENGTH
	8	185'	310'	480'	765'	-	
	12	125'	205'	320'	510'	810'	
	16	90'	155'	240'	380'	605'	
30A	24	-	100'	160'	255'	405'	
40A	32	-	-	120'	190'	300'	
50A	40	-	-	-	150'	240'	
60A	48	-	-	-	-	200'	

CIRCUIT LENGTH TABLE. 208V 3PH

(NOTES 7,8,9)

OVERCURRENT DEVICE RATING	MAX. CIRCUIT LOAD (AMPS)	CIRCUIT SIZE 20A	30A	40A	50A	70A	
20A	4	435'	720'	1115'	-	-	ONE WAY CIRCUIT LENGTH
	8	215'	360'	555'	880'	-	
	12	145'	240'	370'	590'	935'	
	16	105'	180'	275'	440'	700'	
30A	24	-	120'	185'	295'	465'	
40A	32	-	-	135'	220'	350'	
50A	40	-	-	-	175'	275'	
60A	48	-	-	-	-	230'	

TRANSFORMER CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE TYPE (NOTE 6)

KVA	PRIMARY CIRCUIT (480V) FLA	SWITCH/FUSE OR CIRCUIT BREAKER SIZE	PRIMARY FEEDER	SECONDARY CIRCUIT (208Y/120V) FLA	SWITCH/FUSE OR CIRCUIT BREAKER SIZE	GROUNDING ELECTRODE CONDUCTOR/ SUPPLY SIDE BONDING JUMPER	SECONDARY FEEDER [PROVIDE SUPPLY SIDE BONDING JUMPER FOR SECONDARY FEEDER PER LOW VOLTAGE DISTRIBUTION TRANSFORMER WIRING DETAIL IN LIEU OF EQUIPMENT GROUND]
9	10.8	30/20A	20A, 3W	25.0	30/30A	#8	30A, 4W
15	18.1	30/30A	30A, 3W	41.7	60/60A	#8	70A, 4W
30	36.1	60/60A	60A, 3W	83.3	100/100A	#6	125A, 4W
45	54.2	100/90A	100A, 3W	125.0	200/150A	#6	150A, 4W
75	90.3	200/150A	150A, 3W	208.3	400/250A	#2	250A, 4W

COPPER FEEDER & BRANCH CIRCUIT SIZING SCHEDULE

(NOTES 1,2,10,11,12)

OVERCURRENT DEVICE RATING	SETS PER PHASE	AWG OR KCMIL PHASE & NEUTRAL	AWG OR KCMIL EG	CONDUIT SIZE 3 WIRE (3W) (3PH)	CONDUIT SIZE 4 WIRE (4W) (3PH & 1N)
20A	1	12	12	3/4"	3/4"
30A	1	10	10	3/4"	3/4"
40A	1	8	10	3/4"	3/4"
50A	1	6	10	3/4"	1"
60A	1	4	10	1"	1-1/4"
70A	1	4	8	1"	1-1/4"
100A	1	2	8	1-1/4"	1-1/4"
110A	1	2	6	1-1/4"	1-1/4"
125A	1	1	6	1-1/4"	1-1/2"
150A	1	1/0	6	1-1/2"	1-1/2"
175A	1	2/0	6	1-1/2"	2"
200A	1	3/0	6	2"	2"
225A	1	4/0	4	2"	3"
250A	1	250	4	2"	3"
300A	1	350	4	3"	3"
400A	1	500	2	3"	3"
450A	2	4/0	2	2"	3"
500A	2	250	2	2"	3"
600A	2	350	1	3"	3"
800A	2	500	1/0	3"	3"
1000A	3	500	2/0	3"	3"
1200A	3	600	3/0	3"	4"
1600A	4	600	4/0	3"	4"
2000A	5	600	250	3"	4"

SHEET NOTES

1. AMPACITIES BASED ON THHN/THWN, 90° , 600V., INSULATED, COPPER. WIRE APPLIED AT 60° TERMINATIONS FOR CIRCUITS RATED 110A AND DOWN AND APPLIED AT 75° TERMINTATIONS FOR CIRCUITS RATED ABOVE 110A PER NEC 110.14(C)(1).
2. BASED ON WIRE OUTSIDE DIAMETERS AND NON-RIGID METALLIC CONDUIT INSIDE DIAMETERS AS PROVIDED IN THE NEC. REFER TO NEC FOR CONDUIT TYPES MORE RESTRICTIVE THAN NON-RIGID METALLIC. CONDUCTOR AND CONDUIT SIZES INDICATED ARE MINIMUM REQUIREMENTS. FOLLOW NEC REQUIREMENTS FOR DERATING AND PROVIDE LARGER CONDUCTORS AND CONDUIT WHERE APPLICABLE.
3. BASED ON MOTOR FULL LOAD AMPERES AS PROVIDED BY THE NEC.
4. BASED ON MOTOR RUNNING OVERLOAD PROTECTION PROVIDED BY THERMAL OVERLOAD RELAYS.
5. MOTOR STARTING TYPE BASED ON 3 PHASE, FULL VOLTAGE NON-REVERSING EXCEPT FOR MOTORS SIZED 75HP OR GREATER WHICH ARE BASED ON 3 PHASE, PART WINDING REDUCED VOLTAGE STARTING.
6. TRANSFORMER CIRCUITS BASED ON 480V-208Y/120V, 3 PHASE, 4 WIRE, DRY TYPE. REFER TO CIRCUIT SIZING SCHEDULES ON THIS SHEET FOR PRIMARY/SECONDARY PHASE/NEUTRAL/SUPPLY SIDE BONDING JUMPER CONDUCTOR REQUIREMENTS ASSOCIATED WITH CIRCUIT SIZES NOTED IN THIS TABLE UON.
7. CIRCUIT MAXIMUM DISTANCE IS BASED ON NEC CHAPTER 9, TABLE 8 CONDUCTOR PROPERTIES FOR COATED COPPER AT 75 DEGREES CELSIUS. REFER TO NEXT LARGER OVERCURRENT DEVICE RATING IN THIS TABLE FOR OVERCURRENT DEVICES WITH RATINGS NOT INDICATED.
8. MAXIMUM CIRCUIT LOAD FOR DISTANCE IS BASED ON NEC 220-10.
9. REFER TO CIRCUIT SIZING SCHEDULE ON THIS SHEET FOR UPSIZING CONDUIT AND WIRING. E.G. SHALL BE INCREASED IN SIZE PROPORTIONATELY PER THE NEC. ONLY CONDUCTORS AND CONDUIT SHALL BE INCREASED IN SIZE. OVERCURRENT PROTECTION DEVICE SHALL REMAIN AS SPECIFIED.
10. CONDUCTORS SHALL BE STRANDED. COPPER CONDUCTORS ARE REQUIRED.
11. WHERE OVERCURRENT DEVICE REQUIRED IS NOT LISTED IN TABLE, USE CONDUIT AND WIRE REQUIREMENTS LISTED FOR NEXT LARGER LISTED OVERCURRENT DEVICE.
12. TABLE IS NOT APPLICABLE FOR SERVICE ENTRANCE FEEDERS. REFER TO ELECTRICAL PLANS AND DIAGRAMS FOR SERVICE ENTRANCE FEEDER REQUIREMENTS.
13. REFER TO CIRCUIT SIZING SCHEDULE ON THIS SHEET FOR CONDUIT AND WIRING REQUIREMENTS ASSOCIATED WITH CIRCUIT SIZES NOTED IN THIS TABLE.

GENERAL NOTES - PANEL SCHEDULES

A. PROVIDE TYPE WRITTEN CIRCUIT DIRECTORIES IN ALL ELECTRICAL PANELS AND NAMEPLATES ON SWITCHBOARDS PER THE SPECIFICATIONS.

B. PROVIDE ARC FLASH CALCULATIONS AND LABELS FOR ALL SWITCHBOARDS, PANELBOARDS, MOTOR CONTROLLERS, AND CONTROL PANELS PER SECTION 110.16 OF THE NEC. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

C. NEW WORK IN EXISTING PANELS IS NOTED IN BOLD TEXT.

Branch Panel: PNL-XB

Location: I.T. ROOM
Supply From: EXISTING
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208Y/120V
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 AMPS SYMMETRICAL
Mains Type: MCB
Mains Rating: 100 A

Notes:
EXISTING PANEL, GE A SERIES

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	GENERAL OUTLET	20 A	1	500			1	20 A	GENERAL OUTLET	2
3	**MOBILE VAN CHARGER #1	30 A	1		1800	500	1	20 A	GENERAL OUTLET	4
5	GENERAL OUTLET	20 A	1			500	1	20 A	GENERAL OUTLET	6
7	GENERAL OUTLET	20 A	1	500	720		1	20 A	GENERAL OUTLET	8
9	SPACE	--	1		--	500	1	20 A	GENERAL OUTLET	10
11	GENERAL OUTLET	20 A	1			500	1	20 A	GENERAL OUTLET	12
13	GENERAL OUTLET	20 A	1	500	500		1	20 A	GENERAL OUTLET	14
15	SPACE	--	1		--	500	1	20 A	GENERAL OUTLET	16
17	GENERAL OUTLET	20 A	1			500	1	20 A	GENERAL OUTLET	18
19	COMPUTER RM PLUG	20 A	1	500	500		1	20 A	GENERAL OUTLET	20
21	SPACE	--	1		--	500	1	20 A	GENERAL OUTLET	22
23	GENERAL OUTLET	20 A	1			500	1	30 A	TWIST LOCK RECEPTACLES	24
25	**MOBILE VAN CHARGER #2	30 A	1	1800	1000		1	30 A	TWIST LOCK RECEPTACLES	26
27	**MOBILE VAN CHARGER #3	30 A	1		1800	1000	1	30 A	TWIST LOCK RECEPTACLES	28
29	GENERAL OUTLET	20 A	1			500	1	30 A	TWIST LOCK RECEPTACLES	30
31	COMPUTER RM PLUG	20 A	1	500	500		2	20 A	EXISTING LOAD	32
33	SPACE	--	1		--	500				34
35	SPARE	20 A	1			0	2	20 A	SPARE	36
37	SPARE	20 A	1	0	0					38
39	EXISTING LOAD	30 A	2		1200	1200	2	30 A	EXISTING LOAD	40
41						1200	1200				42
				Total Load:	8020 VA	9500 VA	8400 VA			
				Total Amps:	67 A	80 A	70 A			

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	5400 VA	100.00%	5400 VA		
Spare	20520 VA	100.00%	20520 VA	**Total Conn. Load:**	25920 VA
				Total Est. Demand:	25920 VA
				Total Conn.:	72 A
				Total Est. Demand:	72 A

Notes:
** GFCI CIRCUIT BREAKER

Branch Panel: RP-A

Location: ROOM 01390
Supply From: EXISTING
Mounting: RECESSED
Enclosure: NEMA 1

Volts: 208Y/120V
Phases: 3
Wires: 4

A.I.C. Rating: 22,000 AMPS SYMMETRICAL
Mains Type: MCB
Mains Rating: 225 A

Notes:
NEW PANEL

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	*OUTLETS RM 136 SE WALL	20 A	1	500	1000		1	20 A	*DISPOSAL RM 130	2
3	*OUTLETS RM 136 SW WALL	20 A	1		500	500	1	20 A	*COUNTER OUTLET RM 130	4
5	*HORIZON SYSTEM FURNITURE EAST	20 A	1			360	1000	1	20 A	*VENDING MACHINE	6
7	*HORIZON SYSTEM FURNITURE EAST	20 A	1	360	1000			1	20 A	*MICROWAVE RM 130	8
9	*HORIZON SYSTEM FURNITURE WEST	20 A	1		360	500		1	20 A	*OUTLETS RM 130	10
11	*HORIZON SYSTEM FURNITURE WEST	20 A	1			360	500	1	20 A	*COUNTER TOP OUTLETS RM 130	12
13	*OUTLETS SOUTH HALL	20 A	1	500	500			1	20 A	*BELOW COUNTER RM 130	14
15	*OUTLET CONFERENCE RM 135	20 A	1		500	500		1	20 A	*OUTLETS KITCHEN RM 130	16
17	*POWER SUPPLY COURTYARD EW DOORS	20 A	1			500	500	1	20 A	*OUTLETS RM 130	18
19	*OUTLETS 137	20 A	1	500	500			1	20 A	*GENERAL OUTLETS	20
21	*HORIZON SYSTEM FURNITURE WEST	20 A	1		360	500		1	20 A	*OUTLETS RM 130 N WALL	22
23	MOBILE HEALTH OPEN CONF. 1150 RECPT.	20 A	1			1100	360	1	20 A	*HORIZON EAST WORK STATIONS	24
25	MOBILE HEALTH OFFICE 1150 RECEPT.	20 A	1	720	500			1	20 A	*HORIZON OFFICE OUTLETS	26
27	MOBILE HEALTH 1150 CUBBIES	20 A	1		1200	1000		1	20 A	*VENDING MACHINE	28
29	MOBILE HEALTH 1150 CUBBIES	20 A	1			1200	1000	1	20 A	*REFRIGERATOR	30
31	MOBILE HEALTH 1150 NURSE RECEPT.	20 A	1	1080	0			1	20 A	SPARE	32
33	MOBILE HEALTH 1150 PRINTER	20 A	1		1200	0		1	20 A	SPARE	34
35	MOBILE HEALTH 1150 DESK RECEPT.	20 A	1			360	0	1	20 A	SPARE	36
37	MOBILE HEALTH OPEN OFFICE 1313 RECPT.	20 A	1	720	--			1	--	SPACE	38
39	MOBILE HEALTH OFFICE 1313 RECPT.	20 A	1		360	--		1	--	SPACE	40
41	SPARE	20 A	1			0	--	1	--	SPACE	42
				Total Load:	7880 VA	7480 VA	7240 VA				
				Total Amps:	66 A	63 A	60 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Spare	14660 VA	100.00%	14660 VA		
Receptacle	7940 VA	100.00%	7940 VA	**Total Conn. Load:**	22600 VA
				Total Est. Demand:	22600 VA
				Total Conn.:	63 A
				Total Est. Demand:	63 A

Notes:
* EXISTING CIRCUIT RECONNECTED TO NEW PANEL

LIGHTING CONTROL LEGEND

SYMBOL	DESCRIPTION	PUSHBUTTON CONFIGURATION	BOD MANUFACTURER	BOD MODEL #	SPECIAL REQUIREMENTS
$^{LD}	LOW VOLTAGE SWITCH, FOUR PUSHBUTTONS	ON / △ / ▽ / OFF	LEVITON	PLVSW-4LW	ON = ALL LIGHTS ON, DIMS TO 100% RAISE = RAISE LIGHT LEVELS WITH PRESS AND HOLD OR MULTIPLE PRESS DIM DOWN = LOWER LIGHT LEVELS WITH PRESS AND HOLD OR MULTIPLE PRESS OFF = ALL LIGHTS OFF
$^{LVD}	LOW VOLTAGE SWITCH, VACANCY SENSOR, DIMMING		LEVITON	ODDMT-MDW	SWITCH SERVES PRIVATE AND OPEN OFFICES
$^{LV}	LOW VOLTAGE SWITCH, VACANCY SENSOR		LEVITON	ODSMT-MDW	SWITCH SERVES STORAGE ROOM
VS / OS	LOW VOLTAGE CEILING VACANCY OR OCCUPANCY SENSOR		LEVITON	ACY20-DMW	

NOTES:

1. SMART SENSORS USED FOR OPEN OFFICE AREAS. LIGHTING LOAD WILL BE WIRED TO ONE OF THE SENSORS, AND THE OTHERS WILL WIRELESSLY PAIR TOGETHER. SWITCHES AT EACH ENTRY POINT TO BE RAN IN PARALLEL BACK TO THE PRIMARY SENSOR.

LIGHTING LOAD JUSTIFICAITON

OFFICE 1150:
DEMOLISHED LOAD ON CIRCUIT:
(18) 2X4 FIXTURES @135VA/FIXTURE = 2430VA
NEW LOAD ON CIRCUIT: 428VA
NET DECREASE IN LOAD ON CIRCUIT.

OFFICE 1311:
DEMOLISHED LOAD ON CIRCUIT:
(9) 2X4 FIXTURES @135VA/FIXTURE = 1215VA
NEW LOAD ON CIRCUIT: 150VA
NET DECREASE IN LOAD ON CIRCUIT.

LIGHTING CONTROL SCHEDULE

ROOM TYPE	CONTROL: SWITCH TYPE	CONTROL: SWITCH CONTROLS	AUTOMATIC ON/OFF CONTROL: TYPE	AUTOMATIC ON/OFF CONTROL: SENSOR	AUTOMATIC ON/OFF CONTROL: TURN LIGHTNG ON TO %	BI-LEVEL CONTROL	DAYLIGHT: SIDE LIGHT	DAYLIGHT: TOP LIGHT	DAYLIGHT: MAINTAIN FC LEVEL	FULL OFF: TIME	EMERGENCY LIGHTING CONTROL	COMMENTS
PRIVATE OFFICES	LOW VOLTAGE	ON/OFF/DIM	MOTION SENSOR	MANUAL ON/ AUTO OFF	50%	CONTINUOUS 0-10V	N/A	N/A	-	30 MIN	N/A	
OPEN OFFICE	LOW VOLTAGE	ON/OFF/DIM	MOTION SENSOR	AUTO ON/ AUTO OFF	50%	CONTINUOUS 0-10V	N/A	N/A	-	30 MIN	N/A	
OPEN CONFERENCE	LOW VOLTAGE	ON/OFF/DIM	MOTION SENSOR	MANUAL ON/ AUTO OFF	50%	CONTINUOUS 0-10V	N/A	N/A	-	30 MIN	N/A	
STORAGE	LOW VOLTAGE	ON/OFF	MOTION SENSOR	MANUAL ON/ AUTO OFF	100%	CONTINUOUS 0-10V	N/A	N/A	-	30 MIN	N/A	

NOTES:

1. LIGHTING CONTROLS HAVE BEEN DESIGNED TO MEET THE REQUIRMENTS IN THE 2015 MICHIGAN ENERGY CODE.
2. DAYLIGHT HARVESTING (WHERE APPLICABLE AT SIDE LIGHTING LOCATIONS)SHALL CONSIST OF TWO DIMMING CONTROL ZONES; A PRIMARY ZONE AND A SECONDARY ZONEAT SIDELIGHT WINDOW LOCATIONS. THE PRIMARY ZONE OF DIMMING CONTROL SHALL BE ONE WINDOW HEAD HEIGHT INTO THE SPACE AND SHALL INCLUDE A TWO FOOT AREA ON EITHER SIDE OF THE SIDELIGHT WINDOWS. THE SECONDARY ZONE OF DIMMING CONTROL SHALL BE ONE ADDITIONAL WINDOW HEAD HEIGHT BEYOND THE PRIMARY ZONE.
3. LIGHTING CONTROLS SHALL BE WIRED, WIRELESS OR A COMBINATION OF BOTH, AS INDICATED IN THE ABOVE SCHEDULE. APPROVED MANUFACTURER SHALL SUBMIT LAYOUTS WITH DEVICES, TYPE, AND LOCATIONS SHOWN ON PLANS TO ENGINEER/LIGHTING DESIGNER FOR CONFIRMATION OF COVERAGE.
4. UNLESS OTHERWISE NOTED, PHOTOCELLS CONTROLLING DIMMING/DAYLIGHT HARVESTING SHALL BE CLOSED LOOP SENSORS.

ssoe®

PROFESSIONAL SEALS:

STATE OF MICHIGAN
ERIC CAO
License No. 6201314200
LICENSED PROFESSIONAL ENGINEER
03/25/25

CONSULTANTS:

AREA B

AREA OF WORK

SUBMITTAL/REVISION SCHEDULE:

NO.	DATE	DESCRIPTION
1	03-25-25	BIDS/PERMITS

■ APPROVED FOR CONSTRUCTION
□ NOT APPROVED FOR CONSTRUCTION

CLIENT INFORMATION:

WAYNE STATE

WAYNE STATE UNIVERSITY
400 MACK AVE
DETROIT, MI
48201

CLIENT PROJECT #: 592-402968
JHA PROJECT #:

PROJECT INFORMATION:

DETROIT MACK HEALTH CENTER

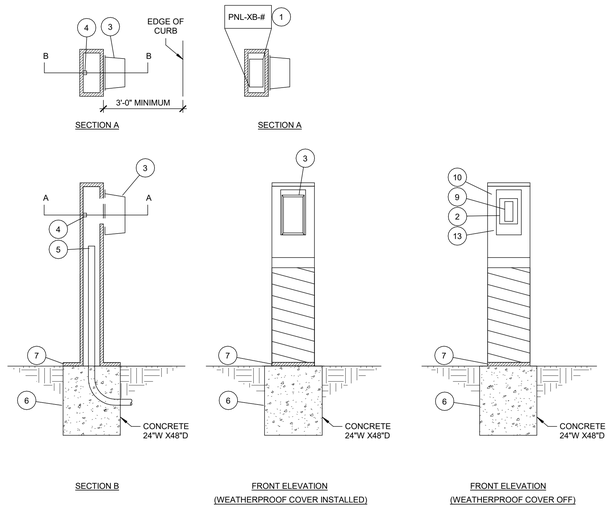
DETROIT, MI

SSOE PROJECT #: 023-03991-00
SSOE MANAGER: J. FALZON

ssoe
1050 Wilshire Drive, Suite 260
Troy, MI 48084-1526
T. (248) 643-8222

ELECTRICAL SCHEDULES

EE-801

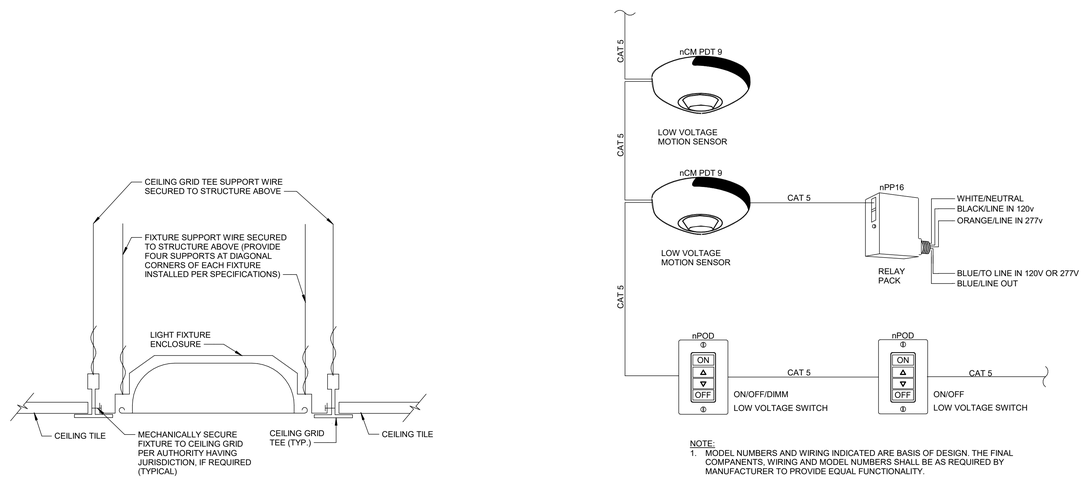


KEYED NOTES:

1. CONTRACTOR IS TO STAMP CORRECT CIRCUIT NUMBER DIRECTLY ON THE TOP OF EACH RECEPTACLE PEDESTAL WITH 1/2" LETTERS.
2. OUTLINE OF RECTANGULAR HOLE IN THE STEEL TUBE FOR SIMPLEX GFCI CONVENIENCE RECEPTACLE.
3. WEATHERPROOF WHILE IN USE OUTLET COVER WITH STAINLESS STEEL LOCKING MECHANISM FLUSH IN HINGED COVER EQUAL TO INTERMATIC #WP1010MC WITH SINGLE GFCI BASE CONFIGURATION. PAINT COVER TO MATCH STEEL TUBE.
4. WELD 1/4" STEEL NUT ONTO THE INSIDE FACE OF THE STEEL TUBE OPPOSITE THE CONVENIENCE RECEPTACLES FOR ATTACHING SYSTEM GROUND WIRING.
5. STUB UNDERGROUND CONDUITS 2" ABOVE FINISHED GRADE INSIDE STEEL TUBE.
6. CLASS 'A' CONCRETE (3000 PSI).
7. TWO 3"x6"x3/16" STEEL PLATES (ONE EACH SIDE) WELDED TO THE BASE OF THE STEEL TUBE.
8. 1" WASHED RIVER ROCK.
9. OUTLINE OF SIMPLEX GFCI CONVENIENCE RECEPTACLE FORM.
10. OUTLINE OF WEATHERPROOF COVER.

1 EE-901 POWER PEDESTAL

SCALE: NOT TO SCALE



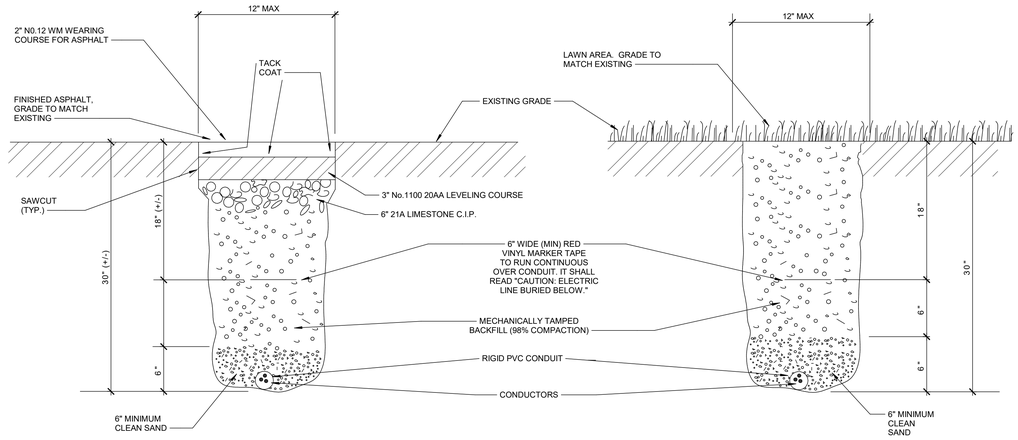
NOTE:
1. MODEL NUMBERS AND WIRING INDICATED ARE BASIS OF DESIGN. THE FINAL COMPANENTS, WIRING AND MODEL NUMBERS SHALL BE AS REQUIRED BY MANUFACTURER TO PROVIDE EQUAL FUNCTIONALITY.

2 EE-901 DIGITAL LOW VOLTAGE SWITCHING - ON/OFF WITH MULTIPLE MOTION SENSORS

SCALE: NOT TO SCALE

3 EE-901 RECESSED GRID TROFFER LIGHT FIXTURE INSTALLATION

SCALE: NOT TO SCALE



4 EE-901 TRENCH DETAIL

SCALE: NOT TO SCALE

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STATE OF MICHIGAN
ERIC CAO
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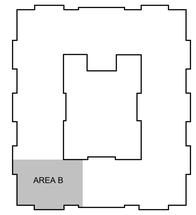
LICENSED PROFESSIONAL ENGINEER
03/25/25

CONSULTANTS:



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