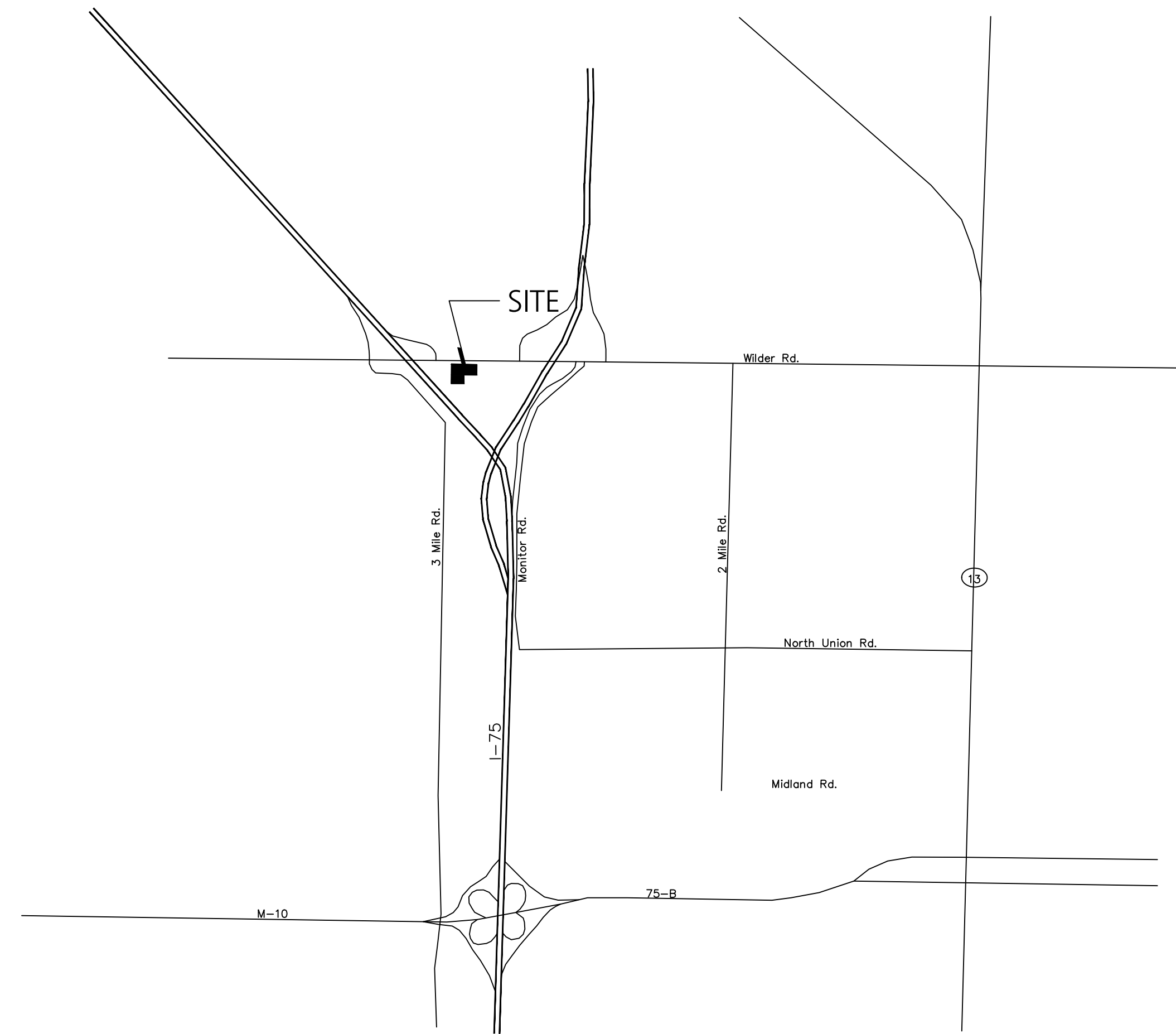


BAY CITY ARMORY RENOVATIONS

Date Issued: 05/17/23

MICHIGAN DEPARTMENT OF MILITARY AND VETERANS AFFAIRS BAY CITY ARMORY

Issued for: BIDS
Bids Due: 06/14/23



LEGAL DESCRIPTION

COM 66.01 FT S ON NW COR OF SEC TH E PARA TO & GO FT S OF N SEC LI 500 FT THE S
1166.60 FT TH NWLY ALG N LI HWY TO W SEC LI TH N 6481.18 FT TO BEG. SEC.13,T14N,R4E
9-11-84

CODES AND STANDARDS

1. CONTRACTOR TO COMPLY WITH LATEST CONSTRUCTION CODE.
2. CONSTRUCTION TO COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS INCLUDING NFPA 20, NFPA 7b, AND NFPA 70e.
3. CONSTRUCTION TO APPLY TO OSHA AND MIOSHA CODES AND STANDARDS.

GENERAL NOTES

1. SANITARY FACILITIES FOR THE USE OF THE CONTRACTOR EMPLOYEES SHALL BE PROVIDED BY THE CONTRACTOR.
2. DIMENSIONS SHOWN WERE DETERMINED BY FIELD MEASUREMENTS. ALL BIDDERS SHALL PROVIDE THEIR OWN MEASUREMENTS AND QUANTITIES, FOR ALL REQUIRED WORK AND SHALL BE RESPONSIBLE FOR THOSE AMOUNTS FOR A COMPLETE JOB WITH NO ADDITIONAL COSTS TO THE STATE AFTER AWARD OF THE CONTRACT.
3. DAMAGE TO PAVEMENT, LAWNS, SHRUBS, TREES, FENCING, BUILDINGS, OR OTHER STRUCTURES OR SITE APPURTENANCES, THAT RESULT FROM THE EXECUTION OF THIS PROJECT, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS/HER EXPENSE.

SHEET INDEX

Cover Sheet	M401 Mechanical Details & Diagrams
EC1.0 Existing Conditions	M501 Mechanical Schedules
C1.0 Soil Erosion and Sedimentation & Demo Plan	M601 Temperature Control Diagrams
C2.0 Layout & Materials, Grading and Utility Plan	E0.0 Electrical Drawing Index, Symbol List, Lighting Fixture Schedule & General Notes
C3.0 Details	E0.4 Site Plan - Electrical Demolition
C3.1 Details	E0.5 Site Plan - Electrical New Work
C3.2 Details	E1.0 Partial Floor Plan - Electrical Demolition
A01 Demolition Plan	E1.1 Partial Floor Plan - Electrical Demolition
A02 Overall Floor Plan	E2.0 Partial Floor Plan - Lighting New Work
A03 Enlarged Floor Plan	E2.1 Partial Floor Plan - Lighting New Work
A04 Schedules & Door Details	E3.0 Partial Floor Plan - Power & Systems New Work
A05 Wall Sections & Interior Elevations	E3.1 Partial Floor Plan - Power & Systems New Work
A06 Reflected Ceiling Plan	E4.0 Electrical Schedules
M001 Mechanical General Information	E4.1 Electrical Schedules
M101 First Floor Underground Plumbing Demolition Plan	E4.2 Electrical Schedules
M102 First Floor Aboveground Plumbing Demolition Plan	E5.0 Miscellaneous Details & Wiring Diagrams
M103 First Floor Mechanical Demolition Plans	E5.1 Miscellaneous Details & Wiring Diagrams
M201 First Floor Underground Plumbing Plans	E5.2 Miscellaneous Details & Wiring Diagrams
M202 First Floor Aboveground Plumbing Plans	EX1 Floor Plan - Emergency Egress Lighting Photometry
M301 First Floor Mechanical Plans	

LOCATION

2510 Wilder Rd, Bay City, MI 48706

OWNER



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

IDENTIFICATION

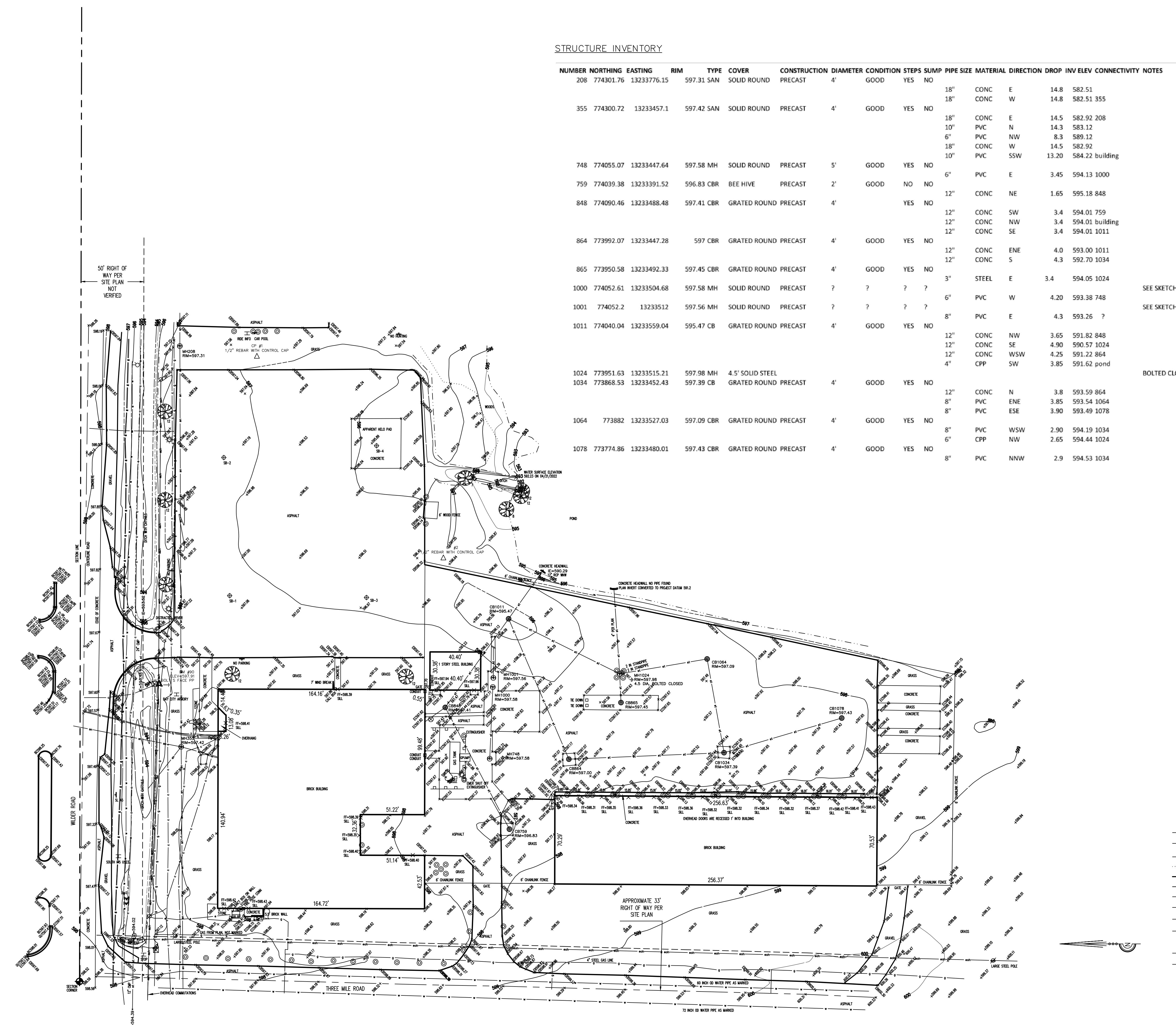
FILE NO: 511/22047.MAA
PROJECT NO. 26A4022031
Maria Alvaro
State of Michigan Project Director
Brian Bushnell
DMVA Design Manager

Professional Service Contractor

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Consultant

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850 N. Crooks Road, Suite 200
Clawson, Michigan 48017
248 - 658 - 7777



STRUCTURE INVENTORY

NUMBER	NORTHING	EASTING	RIM	TYPE	COVER	CONSTRUCTION	DIAMETER	CONDITION	STEPS	SUMP	PIPE SIZE	MATERIAL	DIRECTION	DROP	INV ELEV	CONNECTIVITY	NOTES
208	774301.76	13233776.15	597.31	SAN	SOLID ROUND	PRECAST	4'	GOOD	YES	NO	18"	CONC	E	14.8	582.51		
355	774300.72	13233457.1	597.42	SAN	SOLID ROUND	PRECAST	4'	GOOD	YES	NO	18"	CONC	W	14.8	582.51	355	
748	774055.07	13233447.64	597.58	MH	SOLID ROUND	PRECAST	5'	GOOD	YES	NO	18"	CONC	E	14.5	582.92	208	
759	774039.38	13233391.52	596.83	CBR	BEE HIVE	PRECAST	2'	GOOD	NO	NO	10"	PVC	N	14.3	583.12		
848	774090.46	13233488.48	597.41	CBR	GRADED ROUND	PRECAST	4'		YES	NO	6"	PVC	NW	8.3	589.12		
864	773992.07	13233447.28	597	CBR	GRADED ROUND	PRECAST	4'	GOOD	YES	NO	18"	CONC	W	14.5	582.92		
865	773950.58	13233492.33	597.45	CBR	GRADED ROUND	PRECAST	4'	GOOD	YES	NO	10"	PVC	SSW	13.20	584.22	building	
1000	774052.61	13233504.68	597.58	MH	SOLID ROUND	PRECAST	?	?	?	?	6"	PVC	E	3.45	594.13	1000	SEE SKETCH
1001	774052.2	13233512	597.56	MH	SOLID ROUND	PRECAST	?	?	?	?	12"	CONC	NE	1.65	595.18	848	SEE SKETCH
1011	774040.04	13233559.04	595.47	CB	GRADED ROUND	PRECAST	4'	GOOD	YES	NO	12"	CONC	SW	3.4	594.01	759	
1024	773951.63	13233515.21	597.98	MH	4.5' SOLID STEEL						12"	CONC	NW	3.65	591.82	848	
1034	773868.53	13233452.43	597.39	CB	GRADED ROUND	PRECAST	4'	GOOD	YES	NO	12"	CONC	SE	4.90	590.57	1024	
1064	773882	13233527.03	597.09	CBR	GRADED ROUND	PRECAST	4'	GOOD	YES	NO	12"	CONC	SW	4.25	591.22	864	BOLTED CLOSED
1078	773774.86	13233480.01	597.43	CBR	GRADED ROUND	PRECAST	4'	GOOD	YES	NO	12"	CONC	SW	3.85	591.62	1034	
											8"	PVC	E	4.3	593.26	?	
											8"	PVC	ENE	3.85	593.54	1064	
											8"	PVC	ESE	3.90	593.49	1078	
											8"	PVC	W/SW	2.90	594.19	1034	
											6"	CPP	NW	2.65	594.44	1024	
											8"	PVC	NNW	2.9	594.53	1034	

NOTES
 NUMEROUS VEHICLES AND EQUIPMENT IS PARKED IN THE SOUTH PARKING LOT ALONG THE EAST FENCE AND A NUMBER OF SHIPPING CONTAINERS ARE STAGED ALONG THE NORTH FENCE. WE CANNOT GUARANTEE THAT ALL IMPROVEMENTS UNDER THOSE OBSTRUCTIONS ARE MAPPED.
 THE UTILITIES SHOWN ARE FROM OBSERVED EVIDENCE, WERE MARKED BY OTHERS OR MAPPED FROM PLANS WITHOUT DIMENSIONS. NO GUARANTEE IS GIVEN TO THE EXACT SIZE AND LOCATION. CONTACT LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.
 COULD NOT OPEN MH1024 DUE TO BOLTED CLOSED.
 SEE ATTACHED SKETCH OF MH1000 AND MH1001. THEY MAY CONNECT IN A VAULT-TYPE SITUATION. EAST INVERT CONNECTION IS UNDETERMINED. IT MAY BE INTO THE PIPE FROM 1011 TO 848 WITHOUT A STRUCTURE.

SURVEY NOTES
 HORIZONTAL CONTROL: MICHIGAN STATE PLANE COORDINATES, NAD83, 2011, SOUTH ZONE, GEOID16, INTERNATIONAL FEET.
 VERTICAL DATUM: NAVD88.

CONTROL COORDINATES

No.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	774240.44	13233767.82	597.38	CP
2	774091.97	13233607.29	596.59	CP
90	774318.34	13233507.51	597.91	BM

LEGEND

- ↓ GUY ANCHOR
- ⊗ CLEANOUT
- △ BENCHMARK OR CONTROL POINT
- ⊠ DOWNSPOUT
- ⊞ ELECTRIC METER
- ⊞ TRANSFORMER
- ⊞ FLAG
- ⊞ GAS PUMP
- ⊞ GAS VALVE
- ⊞ HYDRANT
- ⊞ LIGHT POLE
- ⊞ MANHOLE
- ⊞ POST INDICATOR VALVE
- ⊞ POWER POLE
- ⊞ SOIL BORING LOCATION
- ⊞ SECTION CORNER
- ⊞ SIGN - SINGLE POST
- ⊞ SIGN - DOUBLE POST
- ⊞ TELEPHONE PEDESTAL
- ⊞ TREE
- ⊞ ANTENNA
- ⊞ POST
- ⊞ WATER SHUTOFF
- ⊞ CATCH BASIN - ROUND
- ⊞ MISCELLANEOUS
- ⊞ SPOT ELEVATION
- CENTERLINE ROAD
- UNDC GAS LINE, MARKED BY MISSDG
- OVERHEAD WIRES
- EDGE OF WOODS, INDIVIDUAL TREES NOT LOCATED WITHIN PROPERTY OR SECTION LINE
- EASEMENT OR RIGHT OF WAY
- TOP OF BANK
- UNDERGROUND COMMUNICATIONS AS MARKED
- WATER AS FIELD MARKED
- UNDERGROUND ELECTRIC AS FIELD MARKED
- GAUG RAIL
- STORM
- SANITARY
- BUILDING DIMENSION
- DOOR WIDTH

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
EROSION / SEDIMENT CONTROLS			
ES31	CHECK DAM		Used to reduce surface flow velocities within constructed and existing flow corridors.
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S52	CATCH BASIN SEDIMENT GUARD		Use on stormwater inlets, especially at construction sites to prevent sediment from entering sewer.
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic leaves a construction site to minimize sediment tracking

SESC LEGEND	
	RIGHT OF WAY LINE
	LIMIT OF WORK LINE
	FILTER FABRIC FENCE
	CONSTRUCTION ACCESS DRIVE
	INLET PROTECTION-FABRIC DROP
	EXISTING CB/MH
	SOIL BORING
	SOIL TYPE
	CHECK DAM

- SESC NOTES**
- THIS PROJECT MUST BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF MICHIGAN NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT 451 OF 1994, AS AMENDED, THE SOIL EROSION AND SEDIMENT CONTROL ACT.
 - PRIOR TO ANY SITE DISTURBANCE, INCLUDING DEMOLITION, CONTRACTOR SHALL PLACE EROSION CONTROL MEASURES ON ALL EXISTING STORM SEWER STRUCTURES AFFECTED BY WORK IN THIS CONTRACT. SUCH EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE.
 - CONTRACTOR SHALL PLACE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED AND SHOWN ON PLANS.
 - CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL GOVERNING AUTHORITIES.
 - DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES. ANY NECESSARY REPAIRS SHALL BE MADE WITHOUT DELAY.
 - ALL EROSION AND SEDIMENT RESULTING FROM WORK ON SITE SHALL BE CONTAINED ON SITE AND NOT ALLOWED TO COLLECT IN ANY OFF-SITE AREAS OR WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, RIVERS, OR PONDS.
 - CONTRACTOR SHALL PLACE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED AND SHOWN ON PLANS.
 - CONTRACTOR SHALL PLACE INLET FILTER PROTECTION ON ALL STORM STRUCTURES AFFECTED BY THIS PROJECT.
 - ALL TEMPORARY SEDIMENT BASINS USED DURING CONSTRUCTION SHALL BE CLEANED AND ALL SEDIMENT LEGALLY DISPOSED OF PRIOR TO STABILIZATION. REMOVAL OF ALL FINES AND SEDIMENT IS CRITICAL IN AREAS WHERE INFILTRATION PRACTICES SHALL BECOME PERMANENT BEST MANAGEMENT PRACTICE.
 - CONTRACTOR SHALL CLEAN DEBRIS FROM STREETS ON A DAILY BASIS AS NEEDED. STREETS SHALL BE SWEEPED WEEKLY.

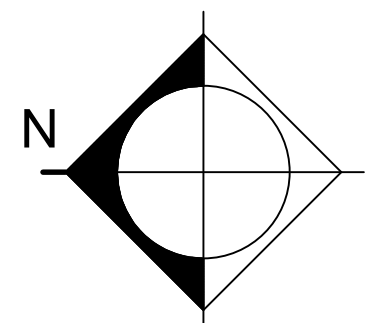
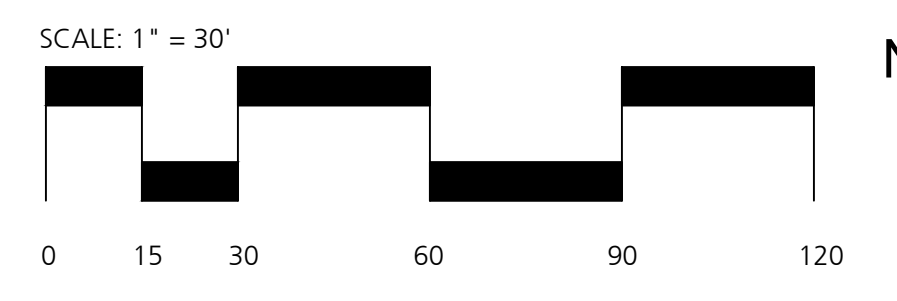
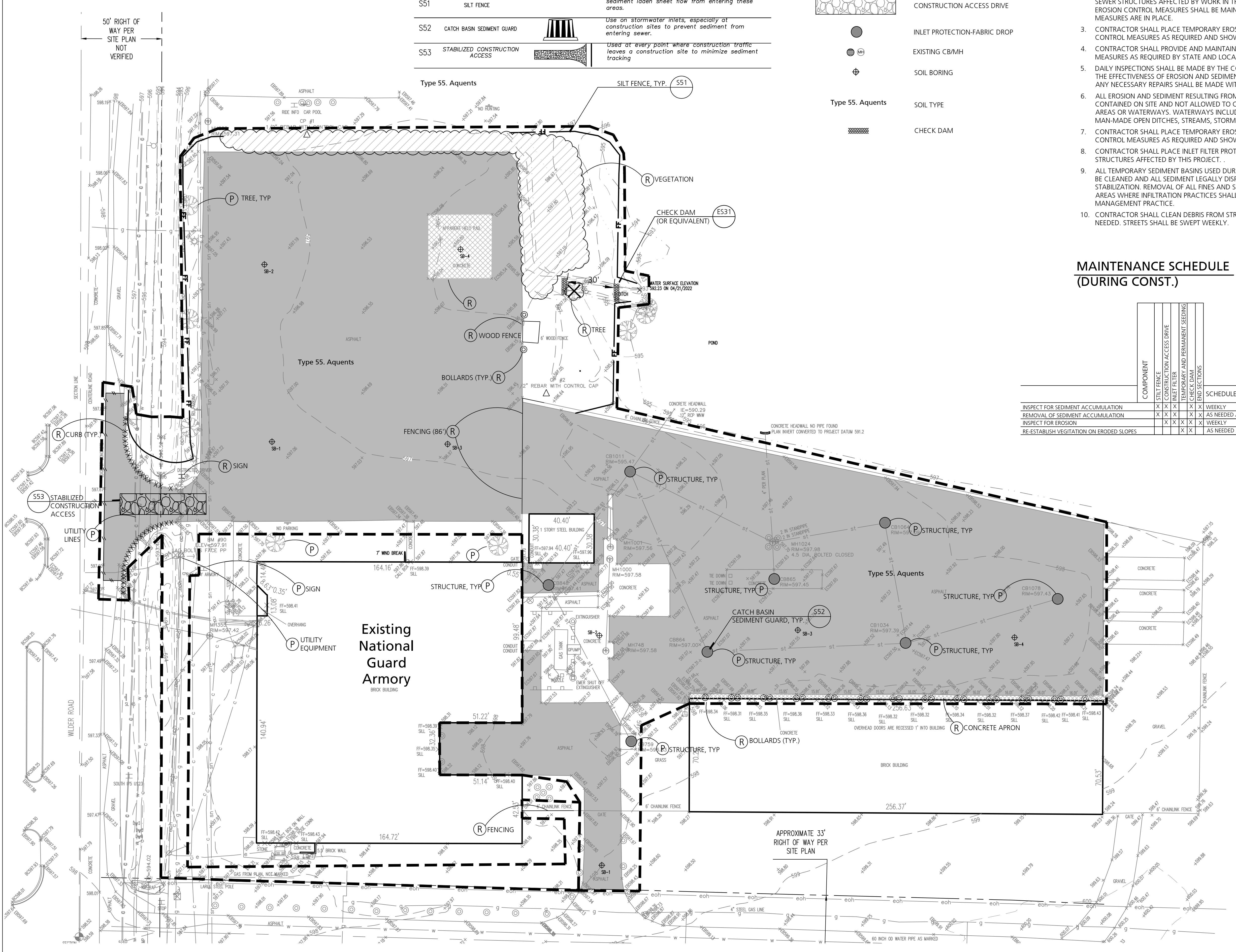
- DEMOLITION NOTES**
- CONTRACTOR SHALL CALL MISS DIG (811) A MINIMUM OF THREE WORKING DAYS PRIOR TO START OF CONSTRUCTION.
 - CONTRACTOR SHALL PERFORM AN UNDERGROUND UTILITY LOCATION SURVEY AND INVESTIGATE EXTENT AND LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR PROTECTION AND RESTORATION OF SAME IF DAMAGED AS A RESULT OF CONTRACTOR'S OPERATIONS.
 - ALL ITEMS NOT INDICATED FOR REMOVAL SHALL REMAIN UNDISTURBED AND PROTECTED. CONTRACTOR SHALL FULLY RESTORE ANY ITEMS/MATERIALS DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
 - ALL CONCRETE PAVEMENT AND CURB REMOVALS SHALL BE TO THE NEAREST JOINT BEYOND INDICATED EXTENT.
 - CONTRACTOR SHALL MAINTAIN CLEAN SAW CUT EDGES FOR PROPOSED WORK TO ABUT. BROKEN EDGES RESULTING FROM CONTRACTOR'S FAILURE TO PROTECT THE EDGE WILL BE SAW CUT BEYOND THE BREAKS AT THE NEAREST JOINT, AT THE CONTRACTOR'S EXPENSE.
 - ALL REMOVALS SHALL BE SAW CUT FULL DEPTH AND COORDINATED WITH LAYOUT / GRADING PLANS.
 - REMOVALS SHALL INCLUDE SUBSOIL/EXISTING BASE MATERIALS TO FULL DEPTH REQUIRED FOR INSTALLATION OF NEW WORK INCLUDING BASE COURSE. ALL EXCAVATIONS SHALL PROVIDE ADEQUATE SOIL SUPPORT THROUGH THE USE OF ADEQUATE CUT SLOPES OR STRUCTURAL SHORING.
 - CONTRACTOR SHALL REPAIR ALL DISTURBED TURF AREAS OUTSIDE OF PROJECT LIMITS DAMAGED DURING CONSTRUCTION.
 - ALL TOPSOIL AND ORGANIC MATERIAL SHALL BE REMOVED FROM UNDER PROPOSED PAVED AREAS.
 - ALL SPOIL MATERIAL, INCLUDING TOPSOIL, TO BE REMOVED OFF SITE AND DISPOSED IN A LEGAL MANNER.
 - DISCHARGE OF WATER, DUST, OR DEBRIS FROM CONCRETE AND ASPHALT WORK TO STORM OR SANITARY SYSTEMS IS PROHIBITED.
 - STORM DRAINS MUST BE PROTECTED FROM DUST AND DEBRIS.
 - ANY WATER USED DURING CONCRETE AND ASPHALT WORK (INCLUDING SWEEPING AND SAWCUTTING) MUST BE CONTAINED AND COLLECTED FOR PROPER DISPOSAL. SUGGESTED CONTROLS INCLUDE WET VACUUM OR ABSORBENTS.

MAINTENANCE SCHEDULE (DURING CONST.)

COMPONENT	SCHEDULE	
	WEEKLY	AS NEEDED AND PRIOR TO TURNOVER
INSPECT FOR SEDIMENT ACCUMULATION	X	X
REMOVAL OF SEDIMENT ACCUMULATION	X	X
INSPECT FOR EROSION	X	X
RE-ESTABLISH VEGETATION ON ERODED SLOPES	X	X

DEMOLITION LEGEND

	RIGHT OF WAY LINE
	LIMIT OF WORK LINE
	SAWCUT
	CURB & GUTTER REMOVAL
	ASPHALT AND BASE REMOVAL
	CONCRETE AND BASE REMOVAL
	REMOVE ITEM
	PROTECT ITEM
	SALVAGE ITEM TO OWNER
	REMOVE TREE
	REMOVE ALL VEGETATION



Beckett & Raeder
Civil, Mechanical, Electrical, Plumbing & Engineering

Department of Military and Veterans Affairs
Bay City Armory - Renovate Armory Demo & SESC

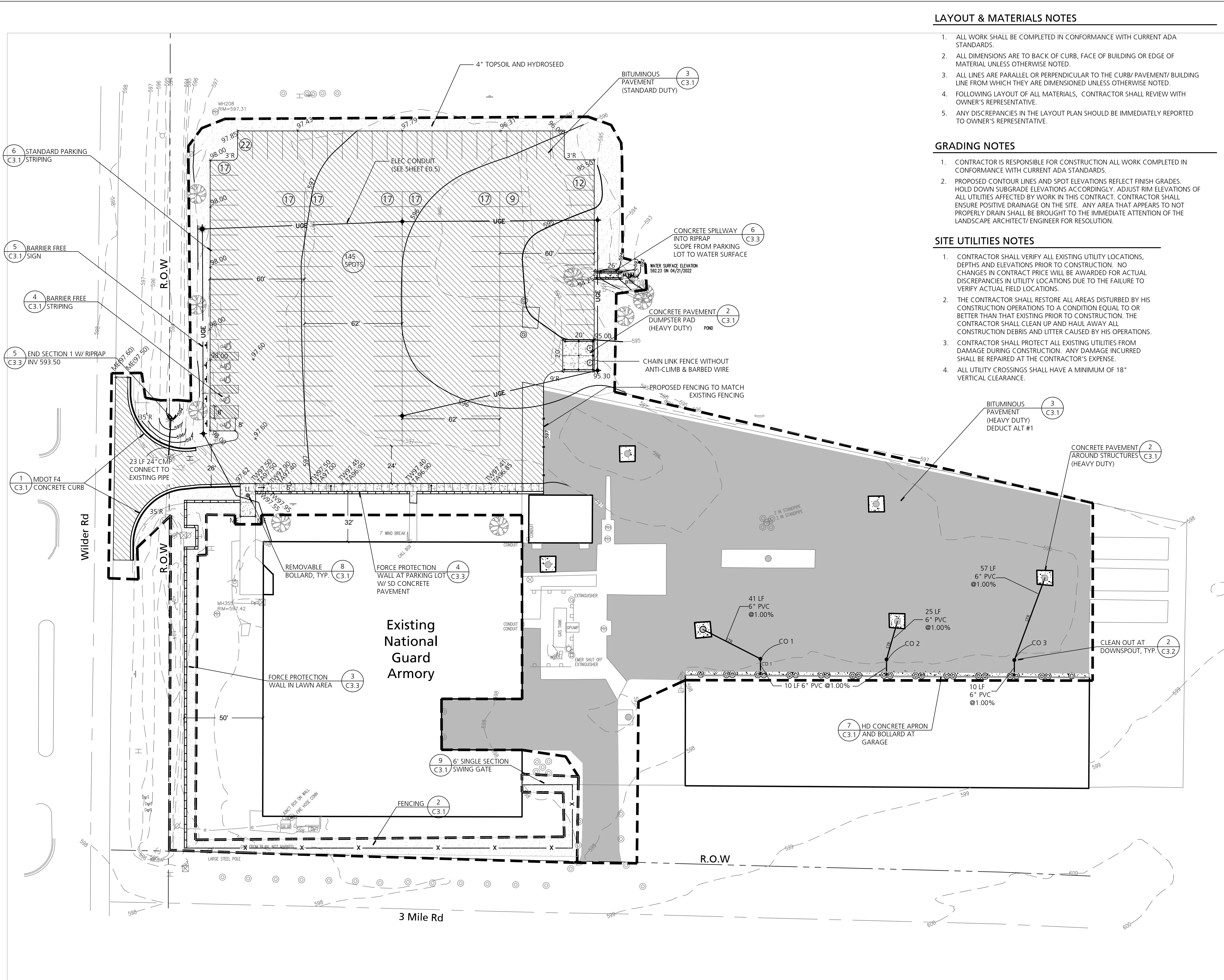
DESIGNED: KE
DRAWN: FT
CHECKED: JB
APPROVED: JB

DATE: MAY 17, 2023

ISSUED FOR: PRELIMINARY CONSTRUCTION FINAL RECORD

IDENTIFICATION NO. 511/22047/MAA PROJECT NO. 268-4022681

SHEET C1.0



LAYOUT & MATERIALS NOTES

1. ALL WORK SHALL BE COMPLETED IN CONFORMANCE WITH CURRENT ADA STANDARDS.
2. ALL DIMENSIONS ARE TO BACK OF CURB, FACE OF BUILDING OR EDGE OF MATERIAL UNLESS OTHERWISE NOTED.
3. ALL LINES ARE PARALLEL OR PERPENDICULAR TO THE CURB/ PAVEMENT/ BUILDING LINE FROM WHICH THEY ARE DIMENSIONED UNLESS OTHERWISE NOTED.
4. FOLLOWING LAYOUT OF ALL MATERIALS, CONTRACTOR SHALL REVIEW WITH OWNER'S REPRESENTATIVE.
5. ANY DISCREPANCIES IN THE LAYOUT PLAN SHOULD BE IMMEDIATELY REPORTED TO OWNER'S REPRESENTATIVE.

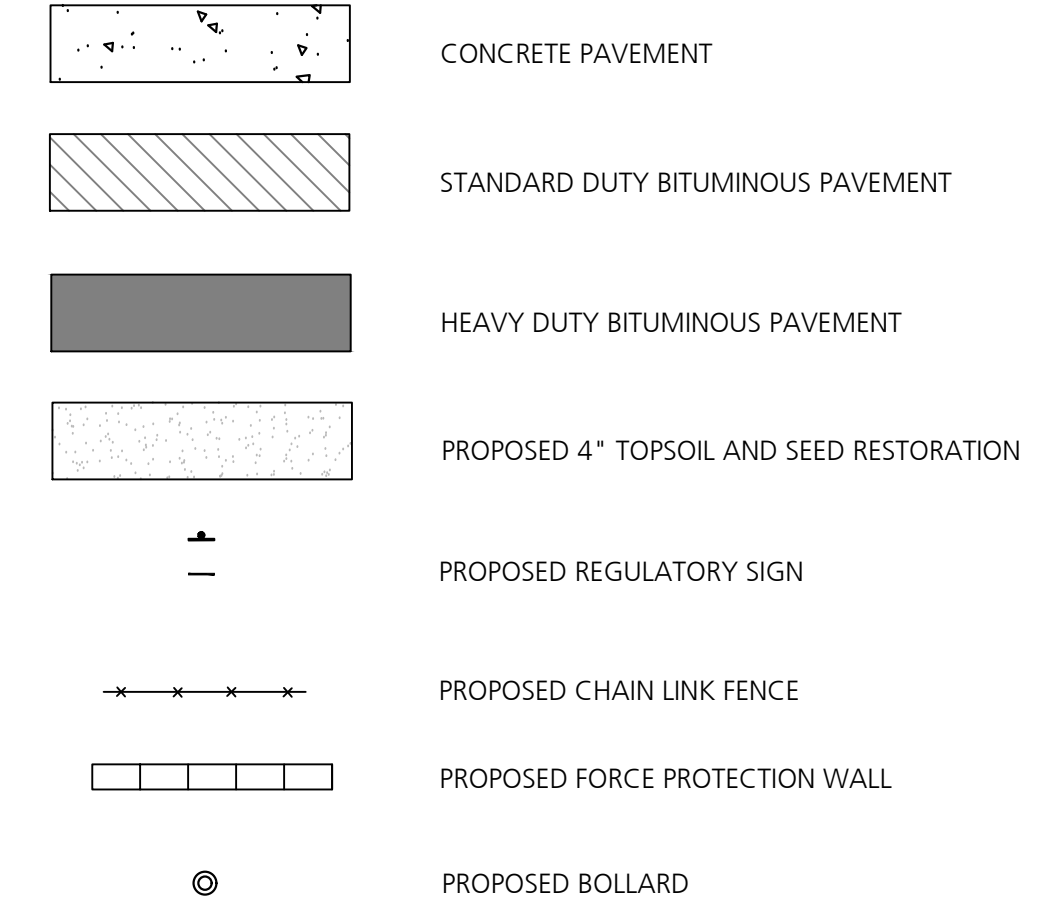
GRADING NOTES

1. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION ALL WORK COMPLETED IN CONFORMANCE WITH CURRENT ADA STANDARDS.
2. PROPOSED CONTOUR LINES AND SPOT ELEVATIONS REFLECT FINISH GRADES. HOLD DOWN SUBGRADE ELEVATIONS ACCORDINGLY. ADJUST RIM ELEVATIONS OF ALL UTILITIES AFFECTED BY WORK IN THIS CONTRACT. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ON THE SITE. ANY AREA THAT APPEARS TO NOT PROPERLY DRAIN SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE LANDSCAPE ARCHITECT/ ENGINEER FOR RESOLUTION.

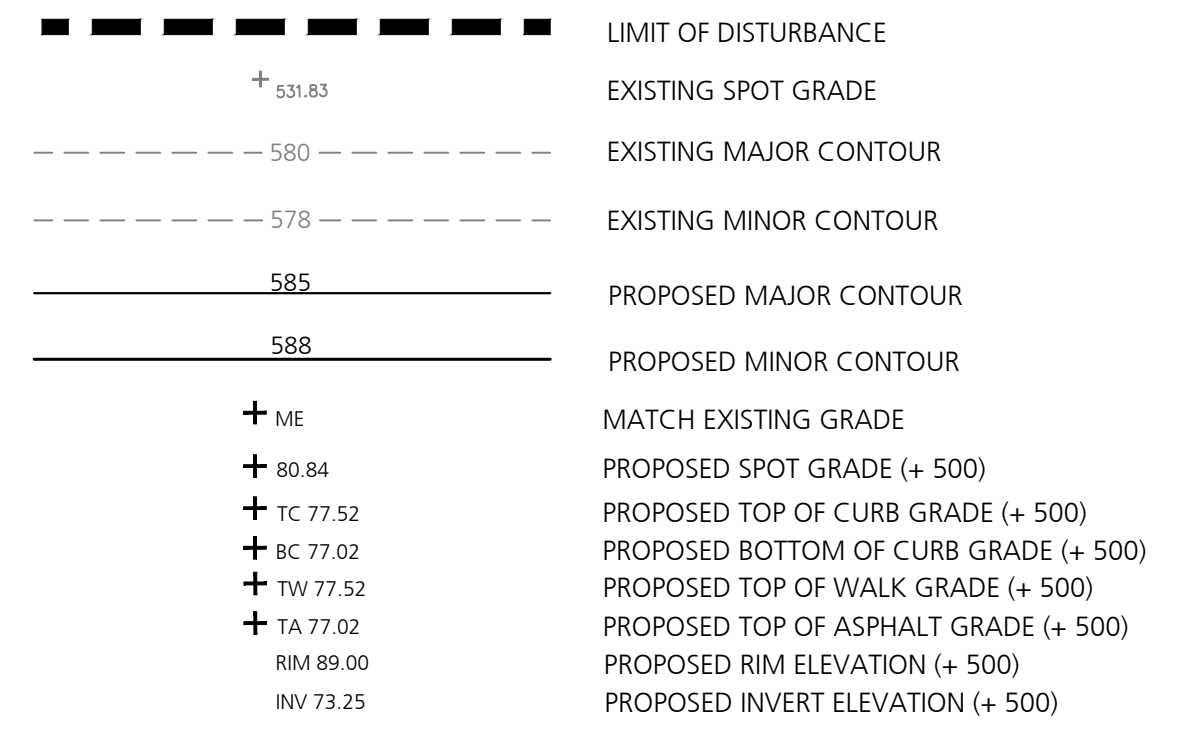
SITE UTILITIES NOTES

1. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS, DEPTHS AND ELEVATIONS PRIOR TO CONSTRUCTION. NO CHANGES IN CONTRACT PRICE WILL BE AWARDED FOR ACTUAL DISCREPANCIES IN UTILITY LOCATIONS DUE TO THE FAILURE TO VERIFY ACTUAL FIELD LOCATIONS.
2. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY HIS CONSTRUCTION OPERATIONS TO A CONDITION EQUAL TO OR BETTER THAN THAT EXISTING PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CLEAN UP AND HAUL AWAY ALL CONSTRUCTION DEBRIS AND LITTER CAUSED BY HIS OPERATIONS.
3. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE INCURRED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. ALL UTILITY CROSSINGS SHALL HAVE A MINIMUM OF 18" VERTICAL CLEARANCE.

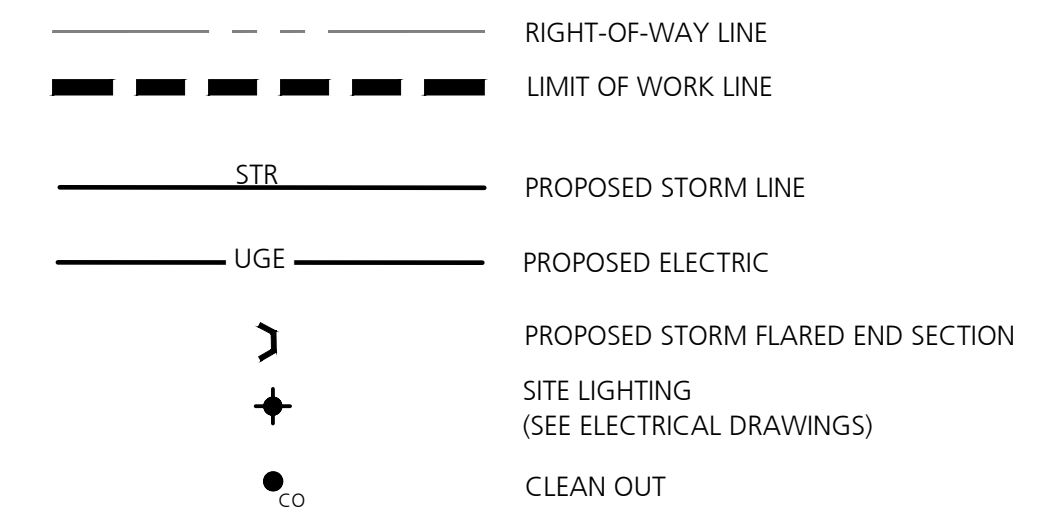
LAYOUT & MATERIALS LEGEND



GRADING LEGEND



SITE UTILITIES PLAN LEGEND



STRUCTURE SCHEDULE

STRUCTURE	RIM	INV
CO 1	597.80	W 6" PVC 595.06 NE 6" PVC 595.06
CO 2	597.80	W 6" PVC 594.90 SE 6" PVC 594.90
CO 3	597.95	W 6" PVC 595.22 SE 6" PVC 595.22
EX CB 864	597.00	SW 6" PVC 594.65 ENE 12" CONC 593.00 S 12" CONC 592.70
EX CB 1034	597.39	WNW 6" PVC 594.65 N 12" CONC 593.59 ENE 8" PVC 593.54 ESE 8" PVC 593.49
EX CB 1078	597.43	WNW 6" PVC 594.65 NNW 8" PVC 594.53

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
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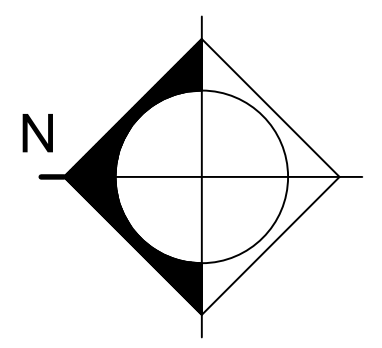
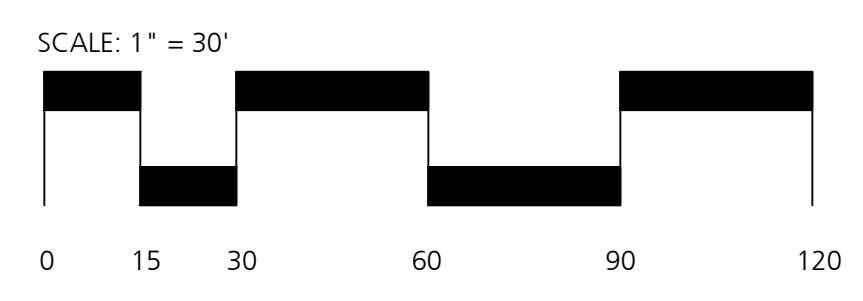
DESIGNED: KE
DRAWN: FT
CHECKED: JB
APPROVED: JB

DATE
MAY 17, 2023

ISSUED FOR
PRELIMINARY
CONSTRUCTION
FINAL RECORD

IDENTIFICATION NO.
FILE NO.
511/22047.MAA
PROJECT NO.
264-402261

SHEET
C2.0



S52 CATCH BASIN SEDIMENT GUARD

FRAME
BOTTOM DRAIN/SLOPE CONTROL ATTACHMENT
6" MINIMUM DEPRESSION
INSTALLATION PROFILE
NON-WOVEN GEOTEXTILE FABRIC FILTER
FILTER POCKETS
1/4" MIN. THICK HIGH DENSITY POLYETHYLENE FRAME
BASE OF FRAME SHAPED AND SIZED TO FIT INLET TOP
FILTER & FRAME PROFILE

STANDARD SYMBOL

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

Adapted from: Silt-Saver, Inc.

S52 CATCH BASIN SEDIMENT GUARD SPECIFICATIONS

When

- On construction sites when incomplete stormwater systems require protection from sediment-laden stormwater.

Why

- To prevent sediment from entering stormwater systems.

Where

- Use on construction sites for unfinished stormwater inlets.

How

- Excavate approximately 4" – 6" below the top of the inlet structure.
- Place the frame onto the inlet structure, ensure the frame covers the structure complete.
- Slide the filter over the frame.
- Fill the filter pockets with gravel or equivalent. The filter pockets should be completely filled to ensure a good seal between the ground and inlet structure.

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

S52 CATCH BASIN SEDIMENT GUARD SPECIFICATIONS

Maintenance

- Filter Replacement or sediment removal from the filter is necessary when the sediment build-up reaches a point of 65% of the total height of the frame or approximately 7" – 9" of the non-woven filter fabric is showing.
- Remove the material by hand or mechanically, paying attention not to damage the frame or filter.
- Brush, sweep, or wash filter and frame and inspect for any damage. Replace filter and/or frame as needed.
- If filter or frame is replaced, remember to refill filter pockets and back-fill as required by site conditions.

Limitations

- Not a permanent sedimentation control method.
- Only suitable for use on structural stormwater outlets.

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

S53 STABILIZED CONSTRUCTION ACCESS

* 50' MINIMUM LENGTH LENGTH OF STABILIZED ROAD
SEDIMENT SUMP
12' MINIMUM WIDTH
EXISTING PAVEMENT
FLOW
PLAN VIEW
50' MINIMUM LENGTH LENGTH OF STABILIZED ROAD
2"-3" ANGULAR AGGREGATE (8" DEPTH)
NON-WOVEN GEOTEXTILE FABRIC
EXISTING GROUND
PROFILE

NOTES:

- Establish stabilized construction entrance prior to the initiation of site construction activities.
- Care should be taken to prevent material movement into adjacent wetlands/waterbodies.
- Care should be taken to maintain existing roadside drainage via culvert installation, with sediment sump placed downflow of culvert.

STANDARD SYMBOL

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

1 Catch Basin Sediment Guard
NO SCALE

2 Stabilized Construction Access
NO SCALE

S53 STABILIZED CONSTRUCTION ACCESS SPECIFICATIONS

When

- Construction traffic is expected to leave a construction site.
- Stabilization of interior construction roads is desired.

Why

- To minimize tracking of sediment onto public roadways and to minimize disturbance of vegetation.

Where

- Stabilized construction entrances shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must be routed over the rock ingress/egress corridor.

How

- Installation, in addition to this specification, shall be in compliance with the MDEQ "Access Road" BMP.
- Stabilized construction access road should be established at the onset of the construction activities and maintained in place for the duration of the construction project.
- Access location should be cleared of woody vegetation, graded and compacted.
- Non-woven geotextile fabric shall be placed over the existing ground prior to placing stone.
- Access size should be a minimum of 50' (30' for single residence lot) in length.
- Access width should be 12' minimum, flared at the existing road to provide a turning radius.
- 2"-3" diameter open graded or washed angular aggregate, shall be placed at least 8" deep over the length and width of the ingress/egress corridor.

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

S53 STABILIZED CONSTRUCTION ACCESS SPECIFICATIONS

Maintenance

- Routinely (daily) inspect after each rain event for track out, soil buildup and signs of failure.
- Stabilized entrances shall be repaired and rock added as necessary.
- Sediment deposited on public rights-of-way shall be removed immediately and returned to the construction site.
- If soils are such that washing of tires is required, it shall be done in a wash rack area, stabilized with stone, immediately prior to the construction access stabilized corridor.

Limitations

- At the project completion, rock access road should be removed and disposed of unless utilized as subgrade for final road.
- Effectiveness maybe limited on heavy clay soils.
- Sediment may be tracked onto roads requiring additional BMPs such as tire washdown and street sweeping.
- Performance enhancers such as corrugated drive-on steel panels, berm near pavement, filter strips, sediment sumps, and other sediment runoff controls.

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

S51 SILT FENCE

SPACING 6' MAX.
ROLL JOINT
2 X 2 FENCE POSTS DRIVEN INTO GROUND 1' MIN.
6" ANCHOR TRENCH
1' MIN.
ROLL JOINTS
SILT FENCE A
SILT FENCE B
FABRIC TO BE WRAPPED AROUND FENCE POST
STEEL OR 2"x2" WOOD POST
GEOTEXTILE FILTER FABRIC FASTENED ON UPHILL SIDE, TOWARDS EARTH DISRUPTION
24" MIN.
UNDISTURBED VEGETATION
12" MIN.
RIDGE OF COMPACTED EARTH ON UPHILL SIDE OF FILTER FABRIC
SHEET FLOW
6"x 6" ANCHOR TRENCH BACKFILLED WITH COMPACTED SOIL
TYPICAL CROSSSECTION

STANDARD SYMBOL

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

S51 SILT FENCE SPECIFICATIONS

When

- A temporary measure for preventing sediment movement.

Why

- Used to prevent sediment suspended in runoff from leaving an earth change area.

Where

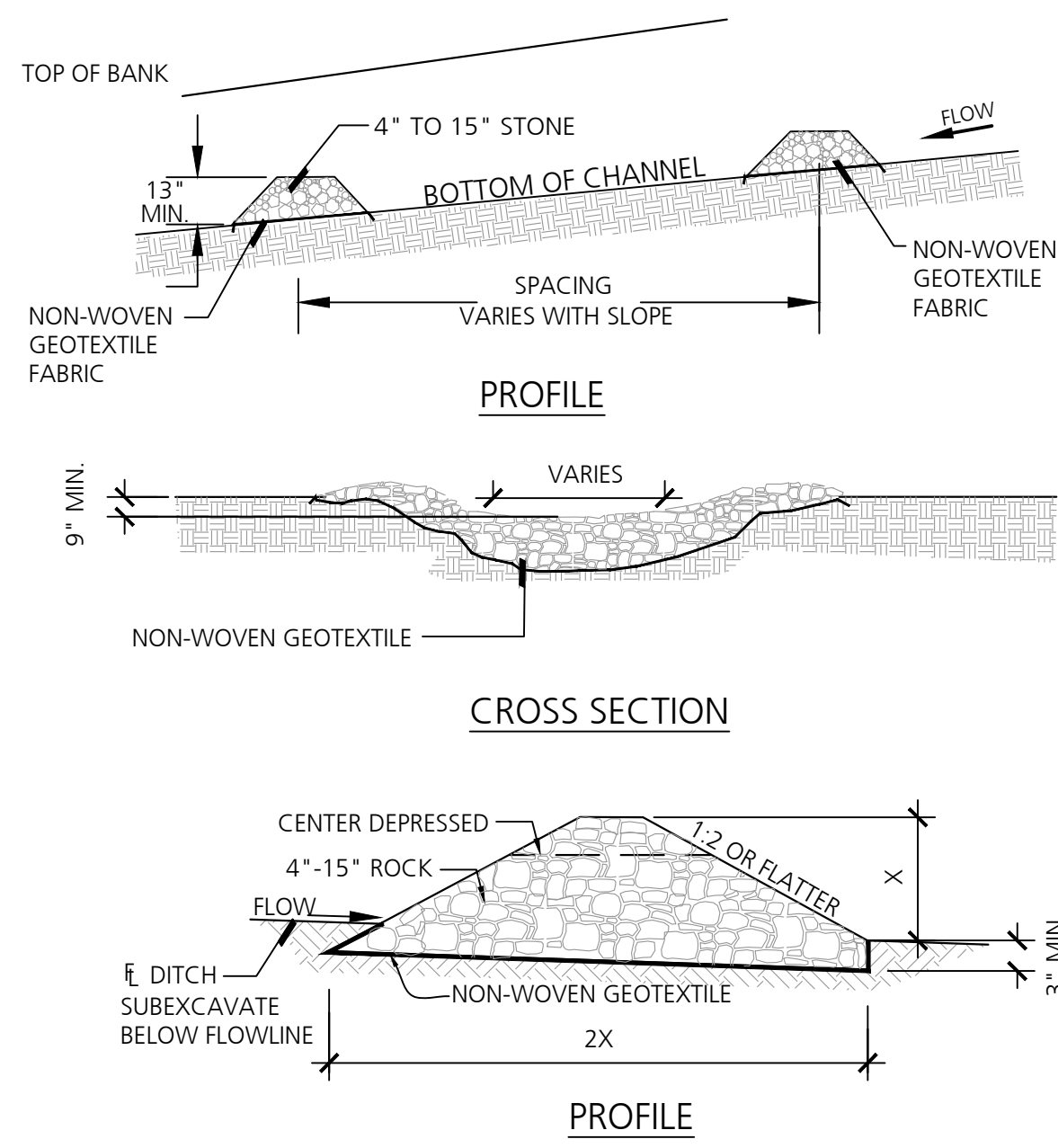
- Use adjacent to critical areas, wetlands, base of slopes and watercourses.

How

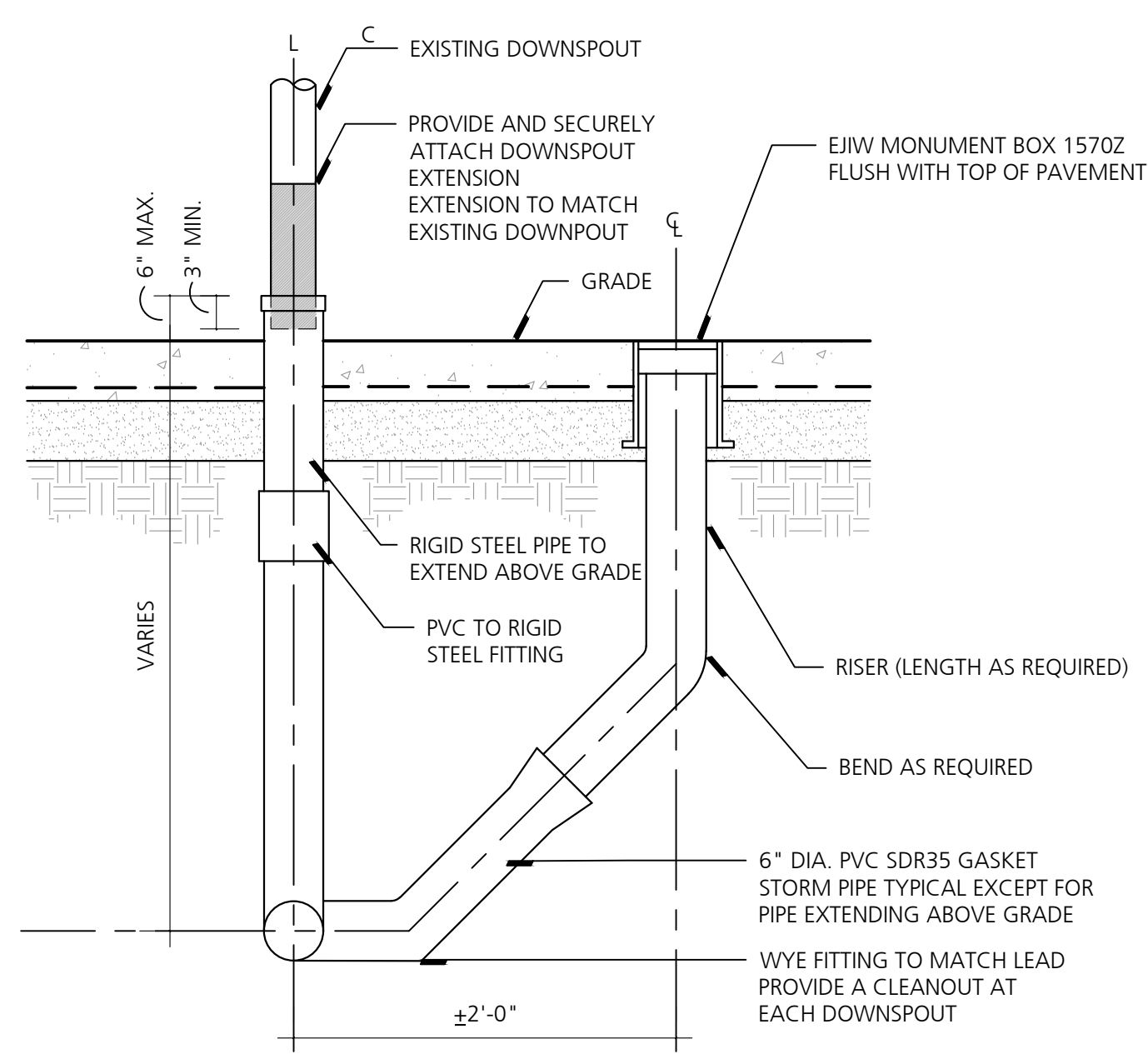
- Silt Fence shall be installed in accordance with this specification, MDEQs "Silt Fence" BMP and manufacturers recommendations.
- Install parallel to a contour.
- Silt fence should accommodate no more than 1/2 acre of drainage per 100' of fence and on slopes less than 1:2 (v:h).
- Dig a 6" trench along the area where the fence is to be installed.
- Place 6" of the silt fence bottom flap into the trench.
- Backfill the trench with soil and compact the soil on both sides. Create a small ridge on the up-slope side of the fence.
- Install wooden stakes 6' apart and drive into the ground a minimum of 12".
- Staple the geotextile fabric to the wooden stakes.
- Join sections of silt fence by wrapping ends together (See drawing).
- Silt Fence Shall have the following properties:
Min Trapezoidal Tear Strength (LBS) (ASTM D 4533): 45

MICHIGAN DEPARTMENT OF MILITARY & VETERANS AFFAIRS

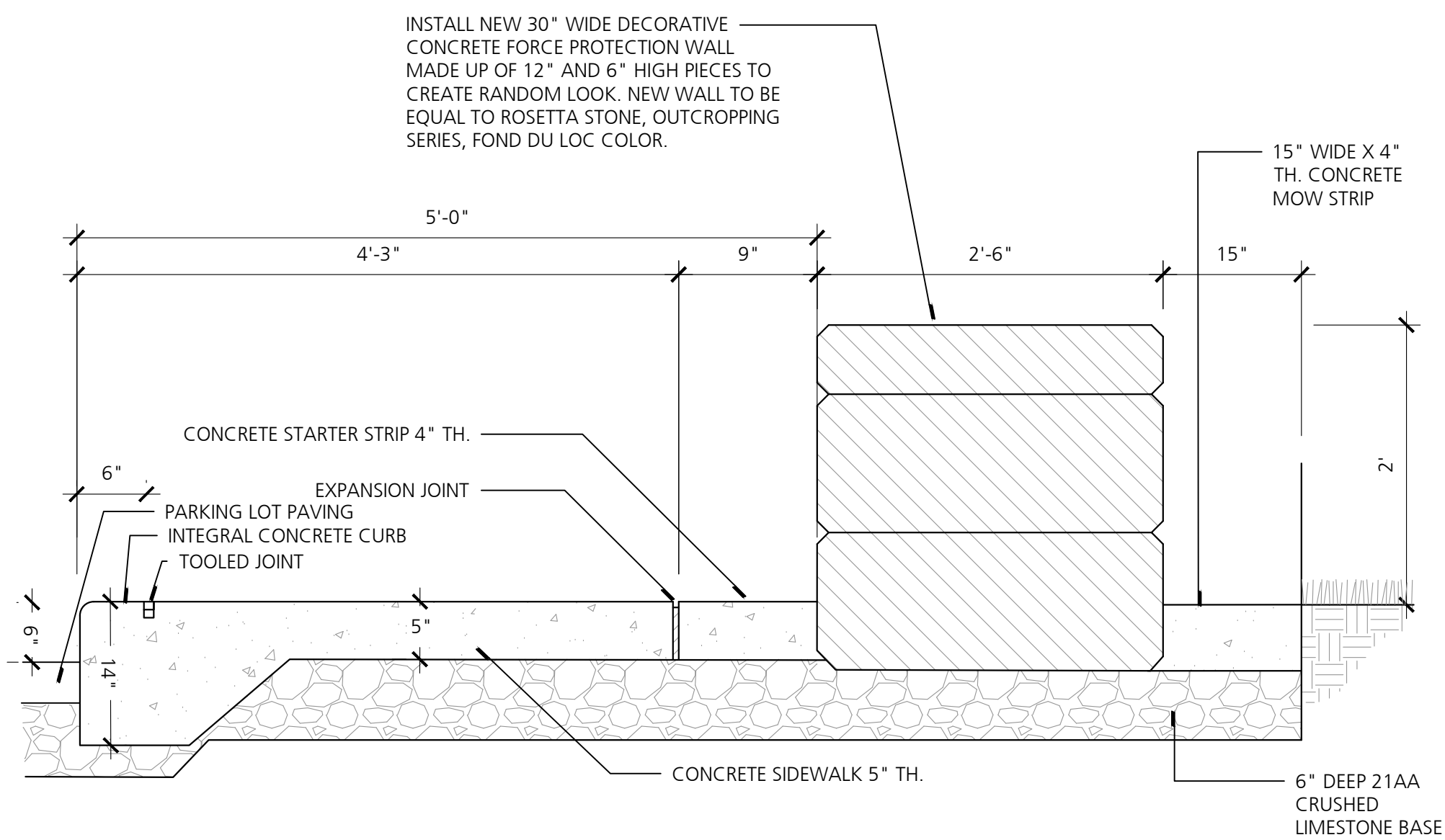
3 Silt Fence
NO SCALE



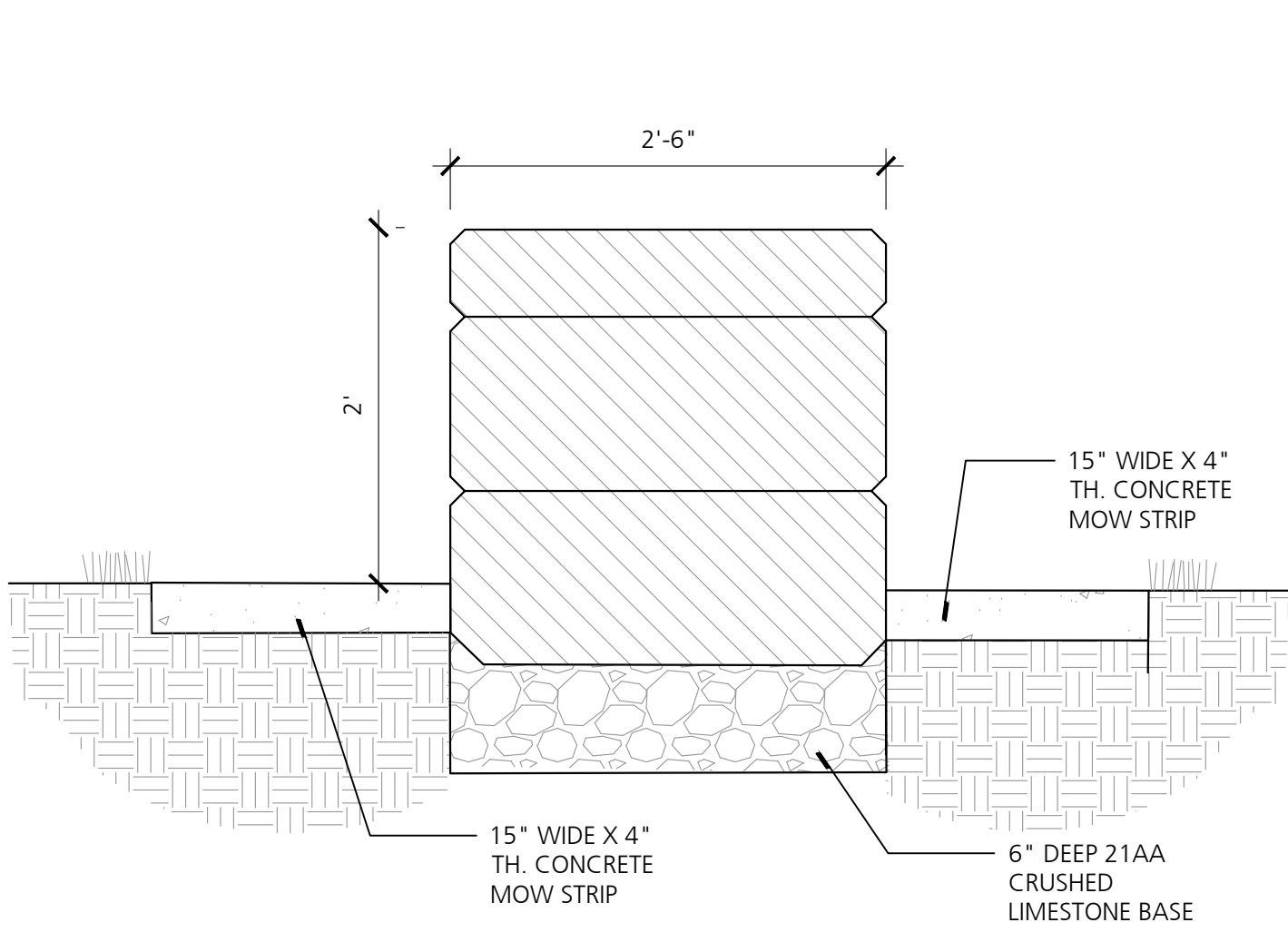
1 Check Dam
NO SCALE



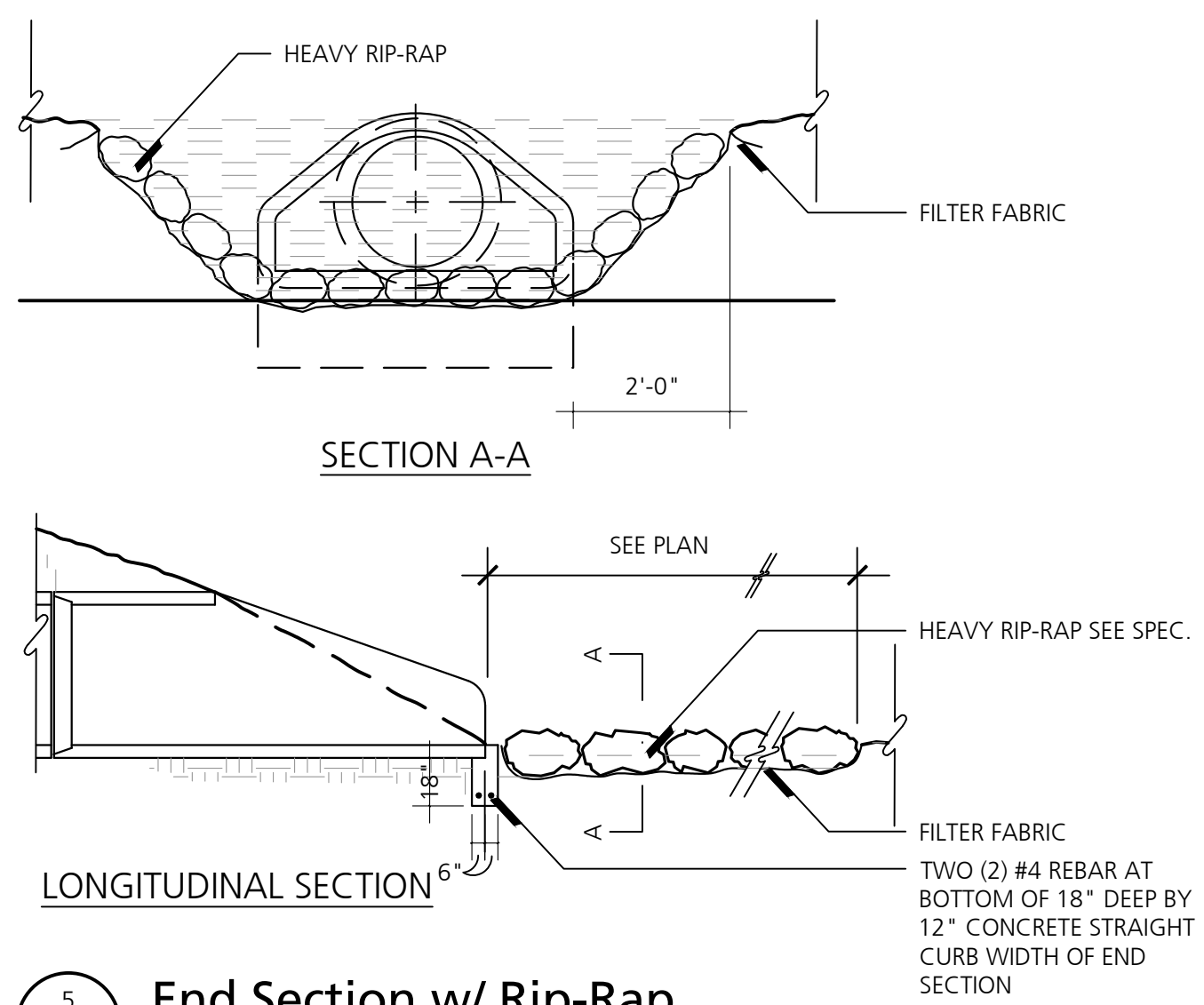
2 Cleanout at Downspout
NO SCALE



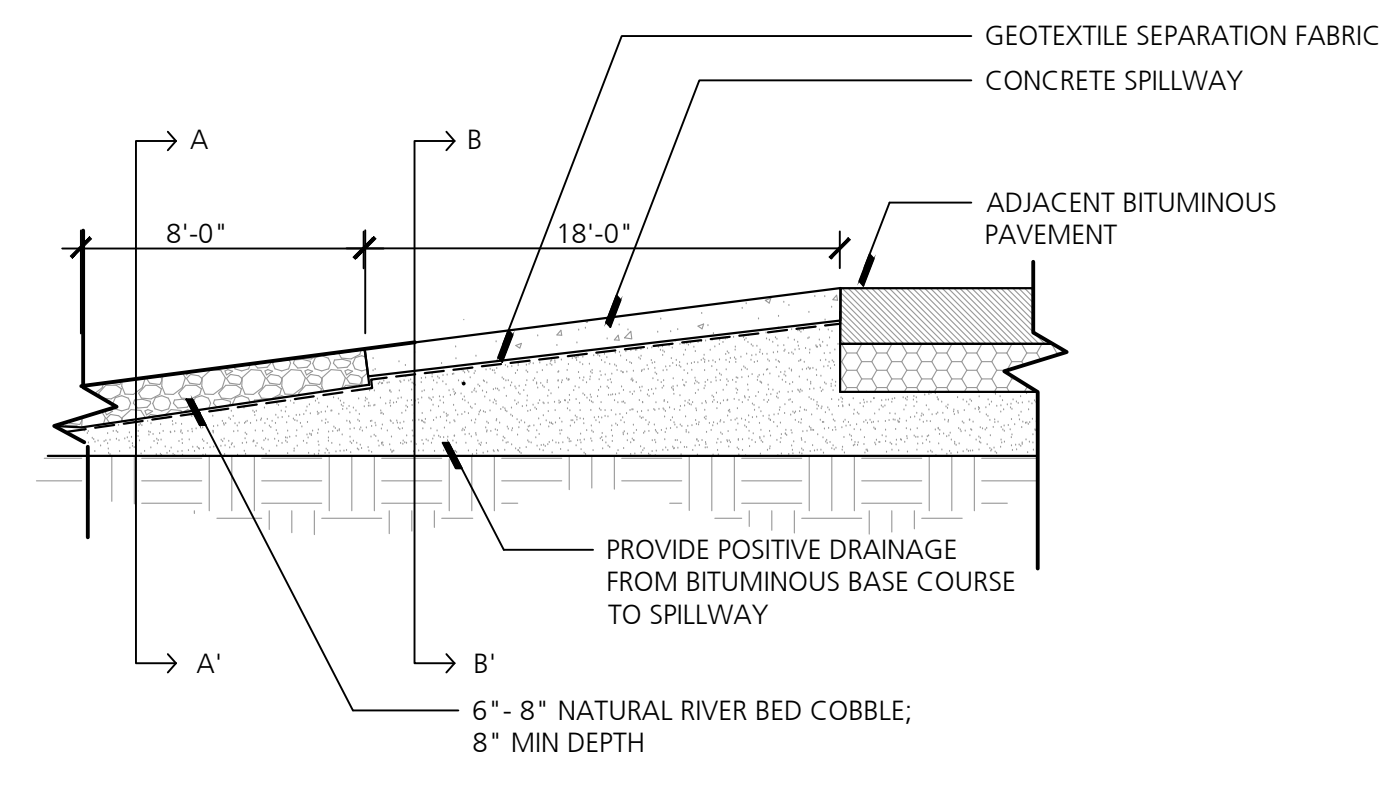
3 Force Protection Wall at Parking Lot
NO SCALE



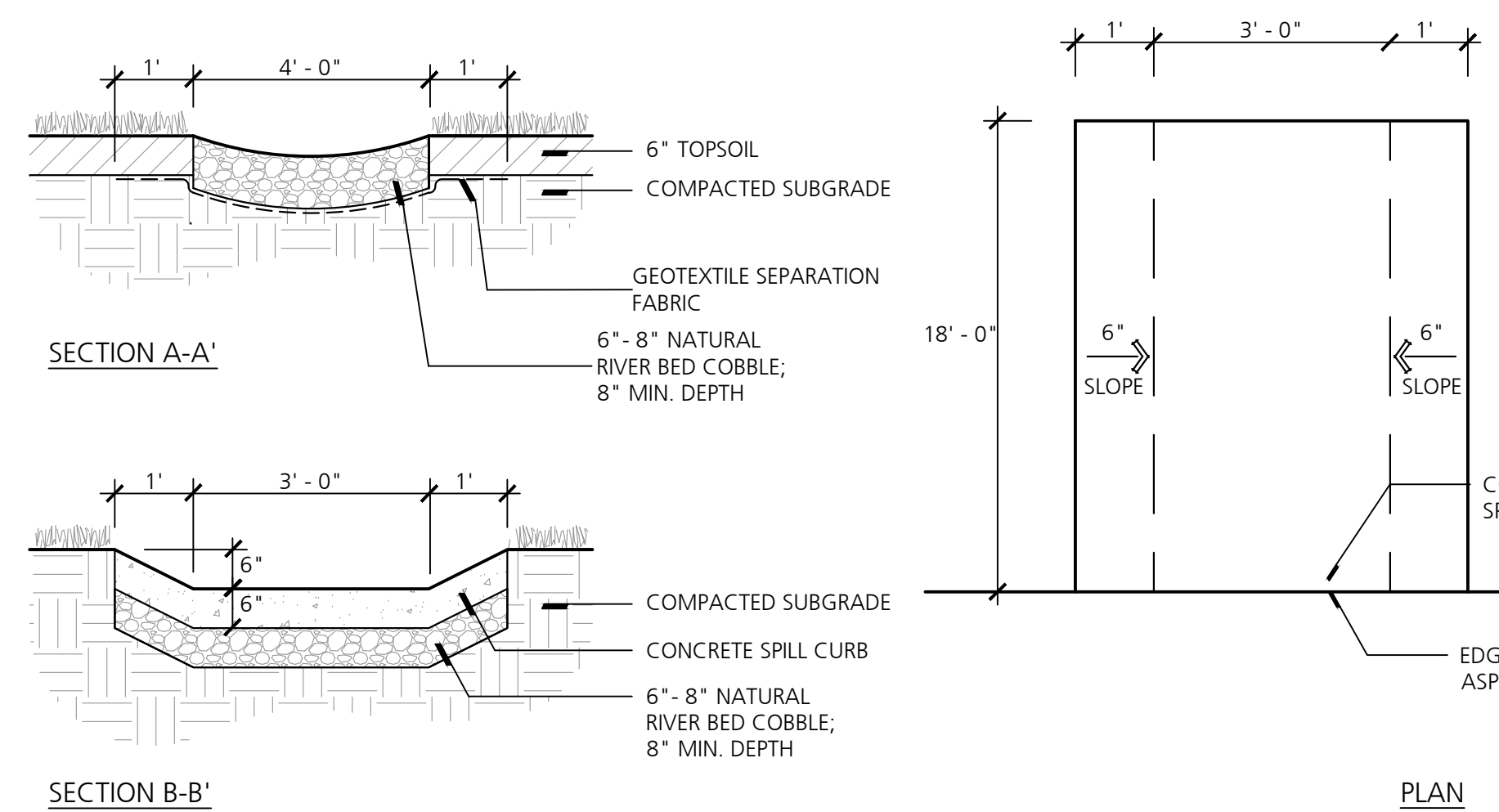
4 Force Protection Wall in Lawn Area
NO SCALE



5 End Section w/ Rip-Rap
NOT TO SCALE

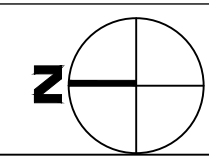
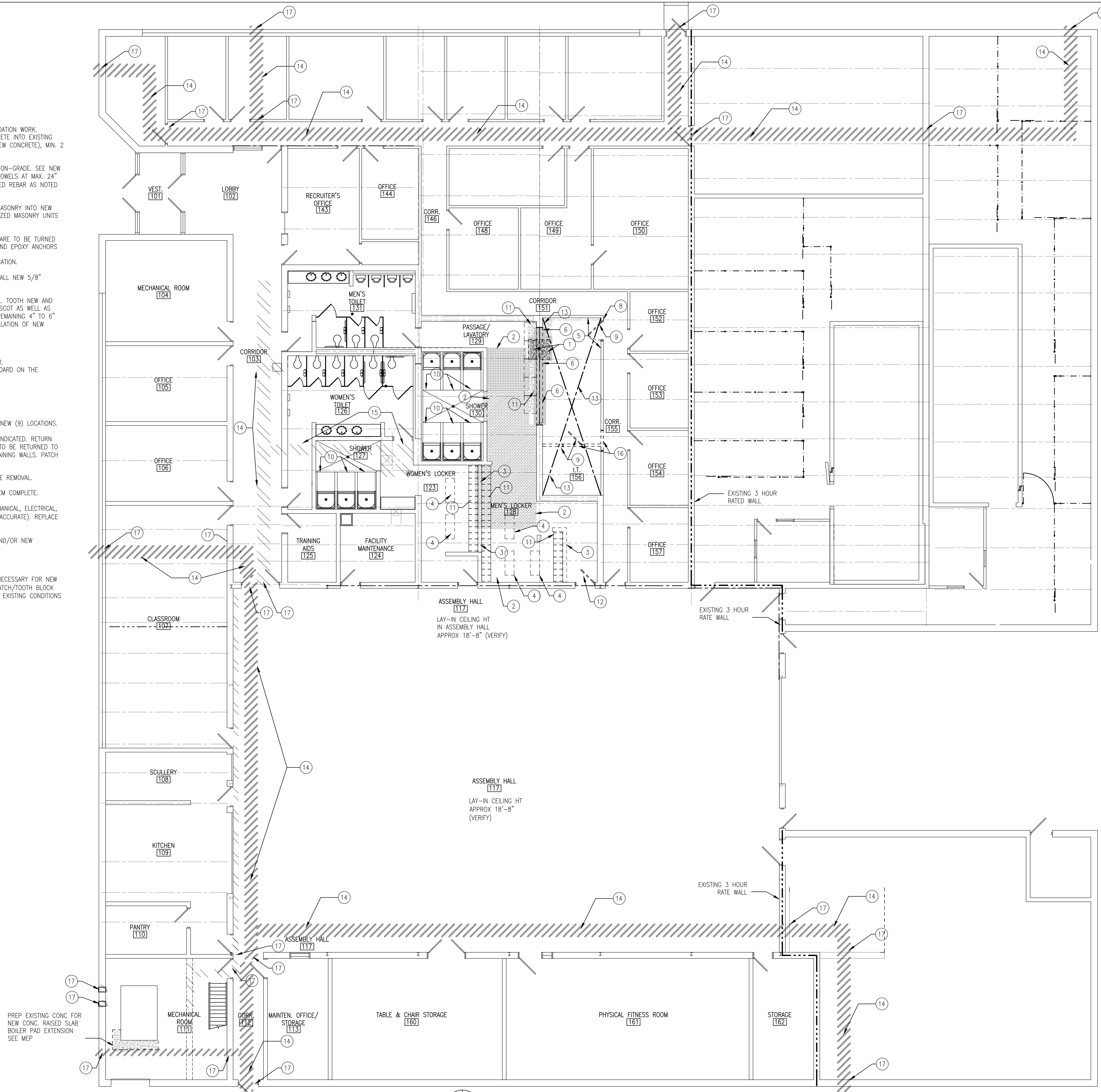


6 Concrete Spillway Into Riprap
NO SCALE

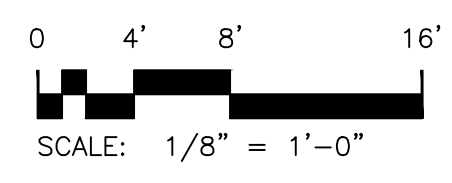


NOTES:

- ① SAWCUT AND REMOVE EXISTING CONCRETE SLAB-ON-GRADE. EXCAVATE FOR NEW FOUNDATION WORK. REPLACE EXISTING WITH NEW SLAB-ON-GRADE TO MATCH EXISTING. DOWEL NEW CONCRETE INTO EXISTING WITH #3 DOWELS AT MAX. 24" O.C. (MIN. 6" INTO EXISTING CONCRETE AND 6" INTO NEW CONCRETE). MIN. 2 PER SIDE. PROVIDE GREASED REBAR AS NOTED ON PLAN, SHEET A03.
- ② SAWCUT AND REMOVE EXISTING CONCRETE SLAB-ON-GRADE. REPLACE WITH NEW SLAB-ON-GRADE. SEE NEW WORK PLAN FOR AREAS WITH DEPRESSED SLAB. THE NEW SLAB TO EXISTING WITH #3 DOWELS AT MAX. 24" O.C. (MIN. 6" INTO EXISTING CONCRETE AND 6" INTO NEW CONCRETE). PROVIDE GREASED REBAR AS NOTED ON PLAN, SHEET A03.
- ③ SAWCUT AND REMOVE EXISTING CONCRETE MASONRY WALL. TOOTH NEW OR SALVAGED MASONRY INTO NEW OPENING EDGE. PATCHED WALL SHALL NOT GIVE A PATCHED APPEARANCE. SALVAGE GLAZED MASONRY UNITS FOR PATCHING BY MEN'S LOCKER ROOM.
- ④ REMOVE BENCH RELOCATE TO NEW LOCATION AS INDICATED. BENCHES NOT RELOCATED ARE TO BE TURNED OVER TO OWNER. PATCH EXISTING CONCRETE FLOOR AT REMOVED BOLT LOCATIONS. GRIND EPOXY ANCHORS BELOW FLOOR FINISH AND PATCH OVER TOP WITH CONCRETE PATCH. REINSTALL BENCHES IN NEW LOCATIONS IN SIMILAR MANNER AS AT THEIR CURRENT LOCATION.
- ⑤ REMOVE EXISTING GYPSUM WALLBOARD ON THE EXISTING I.T. ROOM SIDE OF WALL. INSTALL NEW 5/8" ABUSE-RESISTANT GYPSUM WALLBOARD ON THESE WALLS.
- ⑥ SHORE, SAWCUT AND REMOVE PORTION OF EXISTING CONCRETE MASONRY BEARING WALL. TOOTH NEW AND SALVAGED MASONRY AT EAST SIDE OF OPENING. THIS INCLUDES THE GLAZED CMU WAINSCOT AS WELL AS BLOCKS ABOVE. END OF WALL TO HAVE 6" OR 8" OF GLAZED WAINSCOT BLOCK, THE REMAINING 4" TO 6" MAY BE STANDARD CMU. DRESS WEST SIDE OF OPENING SO AS NOT TO HINDER INSTALLATION OF NEW METAL STUD WALL. NO JAGGED EDGE SHALL BE LEFT SHOWING IN THE I.T. ROOM.
- ⑦ NOT USED.
- ⑧ CUT AND REMOVE PORTION OF EXISTING GYPSUM WALLBOARD PARTITION FOR NEW DOOR. REWORK STUDS AND HEADER AT NEW DOOR OPENING LOCATION. PATCH GYPSUM WALLBOARD ON THE CORRIDOR SIDE FLUSH TO EXISTING GYPSUM BOARD.
- ⑨ REMOVE EXISTING GYPSUM METAL STUD WALL, DOOR AND FRAME. PATCH REMAINING ADJACENT WALLS & FLOOR. GRIND OFF EXISTING FLOOR ANCHORS & PATCH FLOOR TO MATCH FINISHED ADJACENT SURFACE.
- ⑩ REMOVE & REINSTALL EXISTING OUTER SHOWER ROD & CURTAIN. SEE SHEET A03 FOR NEW (9) LOCATIONS.
- ⑪ REMOVE EXISTING LOCKERS & LOCKER COMPONENTS. RELOCATE TO NEW LOCATION AS INDICATED. RETURN ANY UNUSED LOCKERS OR LOCKER COMPONENTS TO OWNER. ALL 24" DEEP LOCKERS TO BE RETURNED TO OWNER. REMOVE EXISTING FASTENERS USED TO MOUNT LOCKERS. PATCH EXISTING REMAINING WALLS. PATCH EXISTING REMAINING FLOOR.
- ⑫ REMOVE EXISTING DOOR AND FRAME. PATCH EXISTING MASONRY DAMAGED DURING FRAME REMOVAL.
- ⑬ REMOVE EXISTING SUSPENDED ACOUSTICAL LAY-IN TILE CEILING AND SUSPENSION SYSTEM COMPLETE.
- ⑭ REMOVE APPROXIMATELY 100 CEILING TILES & 50' SUSPENDED GRID SYSTEM FOR MECHANICAL, ELECTRICAL, & PLUMBING (MEP) WORK. COORDINATE & VERIFY EXACT LOCATIONS (DRAWING IS NOT ACCURATE). REPLACE ACOUSTIC TILES & SUSPENDED GRID WITH NEW TO MATCH EXISTING.
- ⑮ REMOVE PORTION(S) OF EXISTING SUSPENDED GYPSUM BRD CEILING FOR DEMOLITION AND/OR NEW MECHANICAL, ELECTRICAL, PLUMBING. SEE MEP. COORDINATE AS REQUIRED.
- ⑯ GRIND FLOOR ANCHORS & PATCH FLOOR.
- ⑰ CORE DRILL, OR SAWCUT, TO REMOVE EXISTING MASONRY (BRICK AND/OR BLOCK) AS NECESSARY FOR NEW MEP WORK &/OR REMOVAL OF EXISTING MEP (MECHANICAL, ELECTRICAL, PLUMBING). PATCH/TOOTH BLOCK OR BRICK WITH NEW OR SALVAGED MASONRY UNITS & SEAL WEATHERTIGHT. VERIFY ALL EXISTING CONDITIONS PRIOR TO CUTTING OR CORING.



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



SHEET IDENTIFICATION NO. 28A4022034
 DVA NO. 51122047.MAA
 FILE NO. 51122047.MAA

ISSUED FOR 100% Phase 500 CONSTRUCTION
 100% Phase 500 CONSTRUCTION

DATE SEPT. 28, 2022
 MAY 17, 2023

DESIGNED *LB*
 DRAWN *LB*
 CHECKED *BL*
 APPROVED *BL*

Department of Military and Veterans Affairs
 Bay City Armory - Renovate Armory

Straub Parity Yaris
 2020-2021
 2022-2023

B R Beckett & Raeder
 Landscape Architecture
 Planning & Engineering

Beckett & Raeder, Inc.
 355 West William, Suite 101
 Ann Arbor, MI 48103
 734.663.8629 ph
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STATE OF MICHIGAN
 DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
 DESIGN AND CONSTRUCTION DIVISION
 ADAM P. LACH, RA, DIRECTOR

NOTES - HATCH PATTERNS

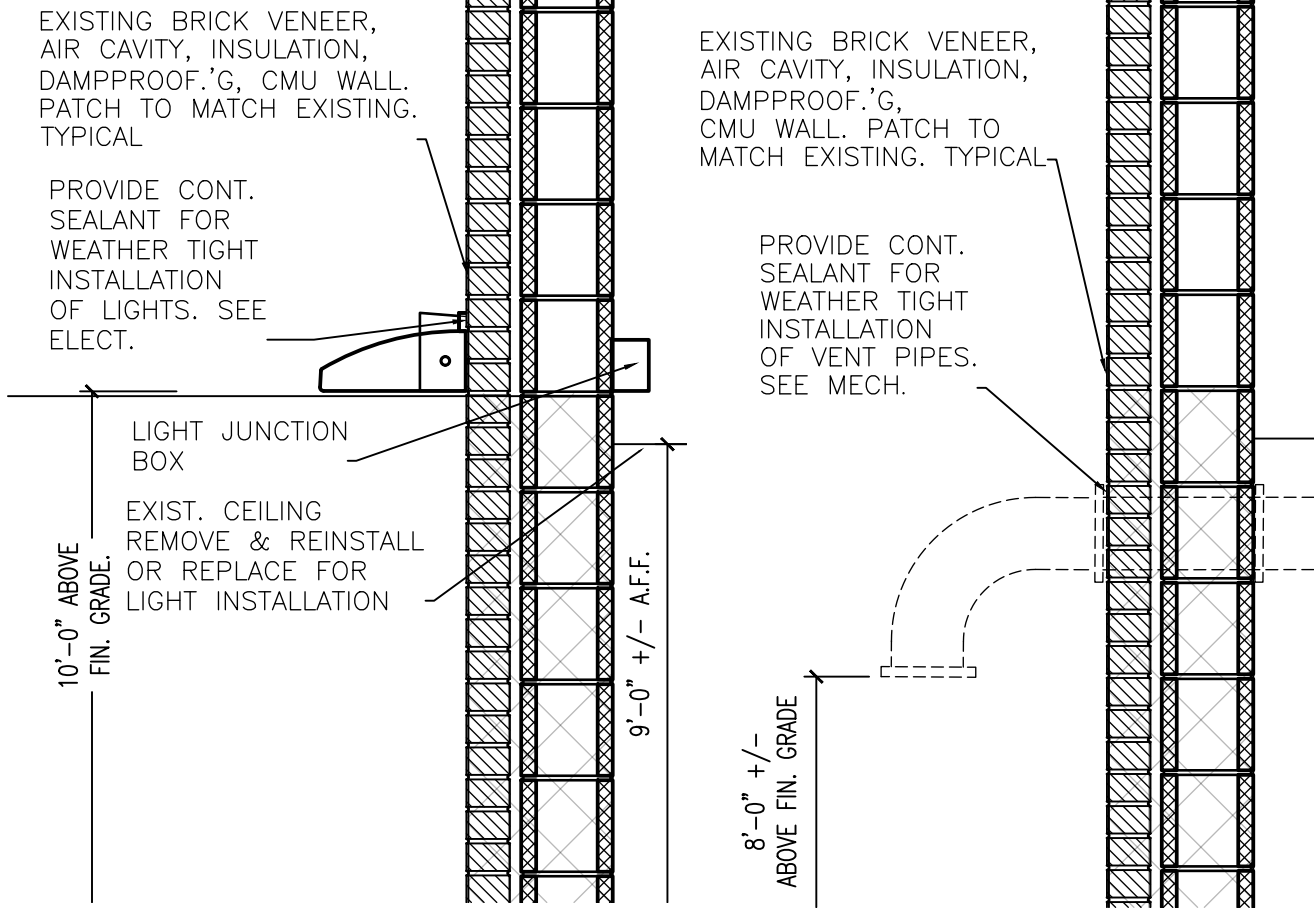
- EXISTING CONCRETE SLAB ON GRADE TO BE SAWCUT AND REMOVED. INSTALL NEW DEPRESSED SLAB ON GRADE WITH SLOPING MUD BED ON TOP FOR CERAMIC MOSAIC TILE FLOORING. MINIMUM 1/2" THICK MUD BED. MAX. 1/4" PER FOOT SLOPE TO DRAIN. PROVIDE NO 3 REBAR @ 16" OC W/GREASED END WHERE EXISTING CONC SLAB MEETS NEW CONC SLAB AS NOTED ON PLAN.
- EXISTING CONCRETE SLAB ON GRADE TO BE SAWCUT AND REMOVED FOR WALL REMOVAL AND FOOTING WORK. INSTALL NEW SLAB ON GRADE MATCHING EXISTING. DOWEL NEW SLAB TO EXISTING. PROVIDE ONE SIDE GREASED 24" LONG NO 3 REBAR @ 16" OC EMBED 8" INTO EXISTING CONC. WHERE NOTED ON PLAN.
- INSTALL NEW CERAMIC MOSAIC TILE FLOORING ON EXISTING CONCRETE SLAB. INSTALL METAL REDUCER ALONG EDGE OF TILED AREA.
- NEW FOOTING FOR NEW COLUMN. TOP OF FOOTING AT 8" BELOW TOP OF FLOOR SLAB.
- NEW CONCRETE MAINTENANCE SLAB IN MECH RM 111. POUR ON TOP EXISTING CLEANED & PREP'D CONCRETE SLAB. DOWEL INTO EXISTING SLAB (HARR. NO 3 @ 18" OC) AND EXISTING MAINTENANCE PAD (VERT. NO 3 BARS @ 12" OC.). COORDINATE SIZING WITH MECHANICAL.

WALLS

- W1** WALL TYPE 1 - REFER TO SECTION 10/A05 FOR DETAILS. WALL TO EXTEND FLOOR TO UNDERSIDE OF DECK. FASTEN TO FLOOR WITH MIN. 3/8" FASTENERS WITH MIN. 1" DIAMETER WASHERS AT 24" O.C.
- W2** WALL TYPE 2 - REFER TO SECTION 11/A05 FOR DETAILS. WALL TO EXTEND FLOOR TO SUSPENDED CEILING GRID, UNLESS NOTED OTHERWISE. FASTEN TO FLOOR WITH MIN. 3/8" FASTENERS WITH MIN. 1" DIAMETER WASHERS AT 24" O.C.
- W3** WALL TYPE 3 - REFER TO SECTION 12/A05 FOR DETAILS. WALL TO EXTEND FLOOR TO SUSPENDED CEILING GRID. FASTEN TO FLOOR WITH MIN. 3/8" FASTENERS WITH MIN. 1" DIAMETER WASHERS AT 24" O.C.

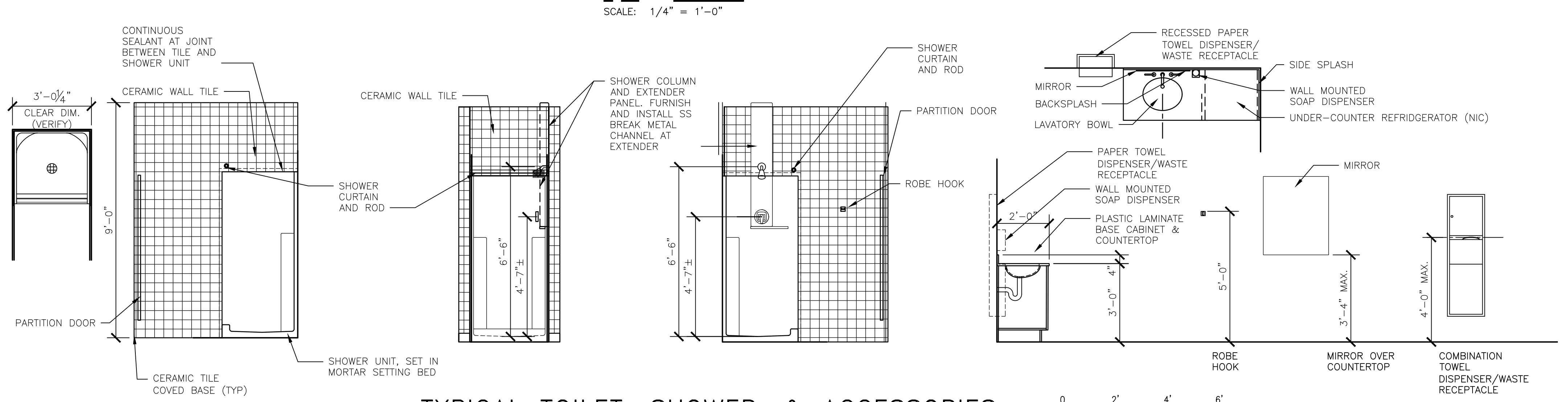
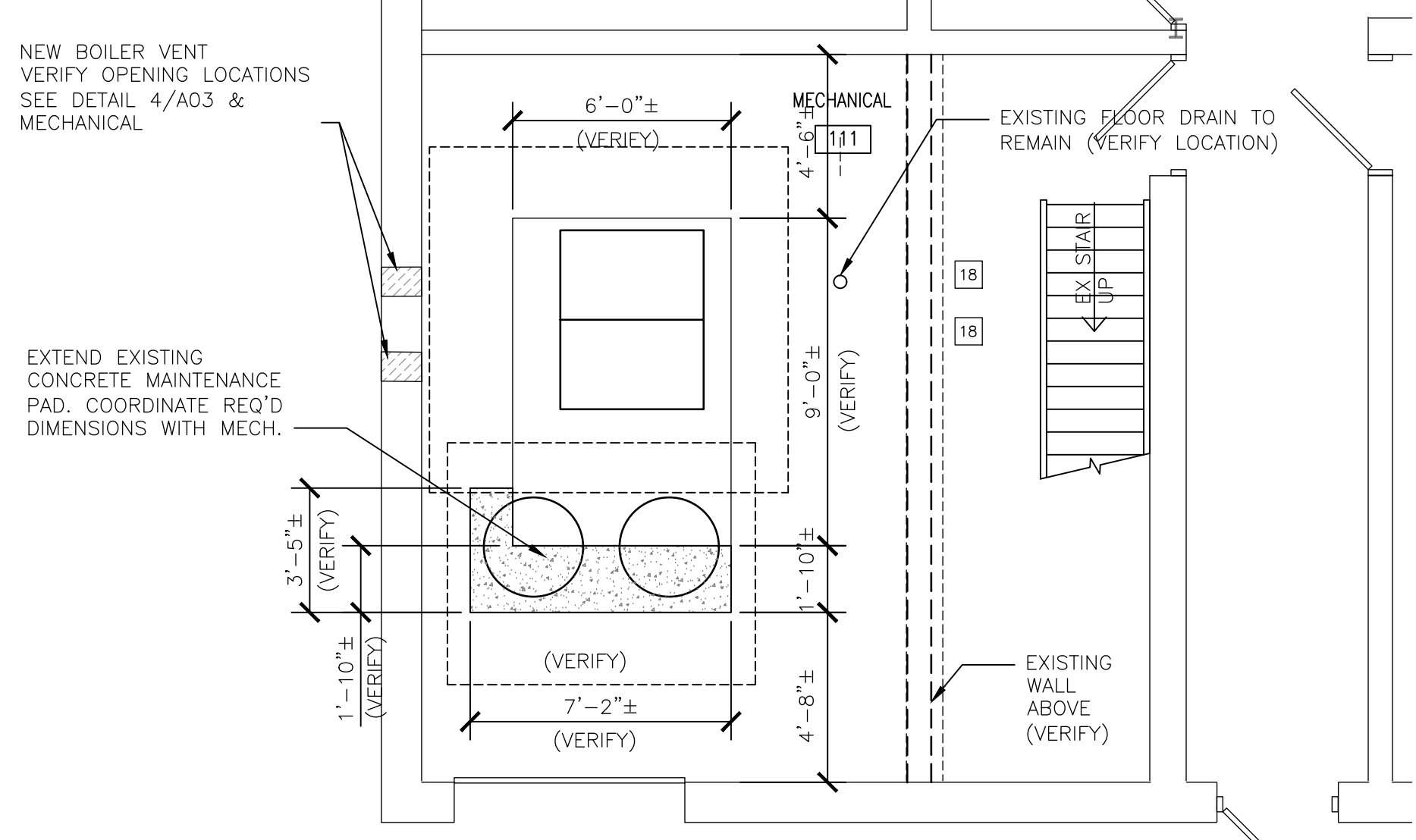
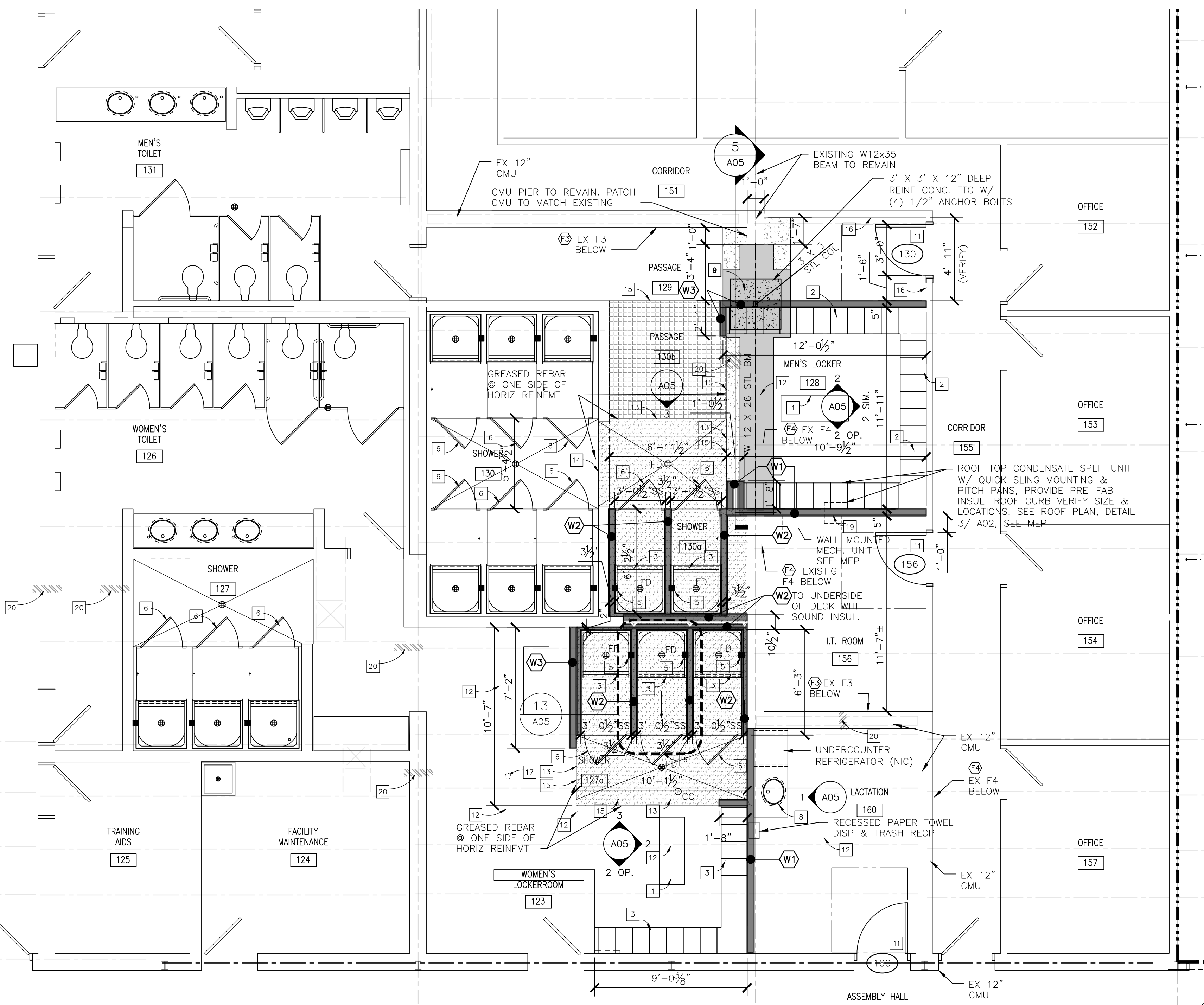
EXISTING FOOTINGS

- F3** EX F3 EXISTING FOOTING BELOW IS 16" WIDE X 12" DEEP (VERIFY)
- F4** EX F4 EXISTING FOOTING BELOW IS 20" WIDE X 12" DEEP (VERIFY)



KEY NOTES

- 1 BENCH. (RELOCATED). REMOVE AND INSTALL EXISTING BENCHES AT NEW LOCATIONS.
- 2 LOCKERS (RELOCATED). REMOVE AND REINSTALL EXISTING LOCKERS AT NEW LOCATIONS. FURNISH AND INSTALL NEW METAL TRIM, CAPS, BASES, ETC. AS NECESSARY FOR CORNERS, ETC. TO COMPLETE INSTALLATION. NEW COMPONENTS TO MATCH MANUFACTURER, COLOR AND DESIGN.
- 3 PRE-MOLDED SINGLE PIECE FIBERGLASS SHOWER UNIT. PROVIDE SOLID GROUT FILL UNDER UNIT FLOOR. PROVIDE SHOWER CURTAIN W/ ROD WALL MOUNTED ABOVE UNIT ALIGNED WITH SHOWER FLOOR CURB.
- 4 NOT USED
- 5 SHOWER CONTROL WALL
- 6 SOLID PLASTIC SHOWER ENCLOSURE COMPONENTS (DOOR AND WALL MOUNTED PANELS).
- 7 RELOCATED CURTAIN ROD TOILET ACCESSORY
- 8 LACTATION ROOM SINK, BASE CABINET, COUNTERTOP, MIRROR, COAT HOOK, SOAP DISPENSER, PAPER TOWEL DISPENSER, & TRASH RECEPTACLE.
- 9 NEW REINFORCED CONCRETE FOUNDATION PAD. STEEL COLUMN W/ BASE PLATE W/ ANCHOR BOLTS. STEEL BEAM TO SUPPORT REMAINING PORTION OF EXISTING 12" CMU LOAD BEARING WALL ABOVE WHICH REMAINS. PATCH CMU WALL TO MATCH EXISTING. SEE STRUCTURAL DETAIL SHEET A05
- 10 NEW DEPRESSED 6" THICK CONCRETE SLAB W/ VAPOR BARRIER OVER COMPACTED GRANULAR FILL.
- 11 NEW HOLLOW METAL DOOR & FRAME
- 12 PATCH EXISTING FLOOR AT REMOVED LOCKERS, BENCHES AND WALL LOCATIONS. INFILL CONCRETE FLOOR SLAB AT REMOVED WALL LOCATIONS. DOWEL NEW SLAB TO EXISTING.
- 13 EDGE OF DEPRESSED FLOOR SLAB FOR CERAMIC MOSAIC TILE FLOORING. FINISH MUD BED FLUSH WITH TOP OF ADJACENT FLOOR SLAB. PROVIDE GREASED REBAR ON ONE SIDE WHERE EXISTING TILED FLOOR SLAB MEETS NEW CONC. SLAB.
- 14 REMOVE EXISTING METAL REDUCER STRIP & POSSIBLY ONE ROW OF EXISTING CERAMIC MOSAIC TILE. INSTALL NEW TILE FLUSH WITH EXISTING AND ALIGN JOINTS WITH EXISTING.
- 15 NEW CERAMIC TILE METAL REDUCER STRIP.
- 16 REMOVE GYPSUM WALL FROM EXISTING WALL AND REPLACE WITH NEW 5/8" ABUSE-RESISTANT GYPSUM WALLBOARD.
- 17 NEW WATER HYDRANT ON ROOF. SEE ROOF PLAN, DET. 4/A02 & MEP. CONTACT ROOFING MANUFACTURER HOLDING WARRANTY FOR WORK ON ROOF SYSTEM. VERIFY LOCATION.
- 18 NEW FLUES THROUGH EXISTING ROOF OPENINGS. SEE MEP. CONTACT ROOFING MANUFACTURER HOLDING WARRANTY FOR REPAIRS & MODIFICATIONS TO ROOF SYSTEM
- 19 NEW COND LINE(S) & POWER SOURCE THROUGH EXISTING ROOF. SEE MEP. CONTACT ROOFING MANUFACTURER HOLDING WARRANTY FOR REPAIRS & MODIFICATIONS TO ROOF SYSTEM. VERIFY SIZE & LOCATION
- 20 CORE, PATCH & SEAL EXIST. CMU WALL FOR NEW MEP WORK. COORDINATE & VERIFY EXACT LOCATION. SEE MEP



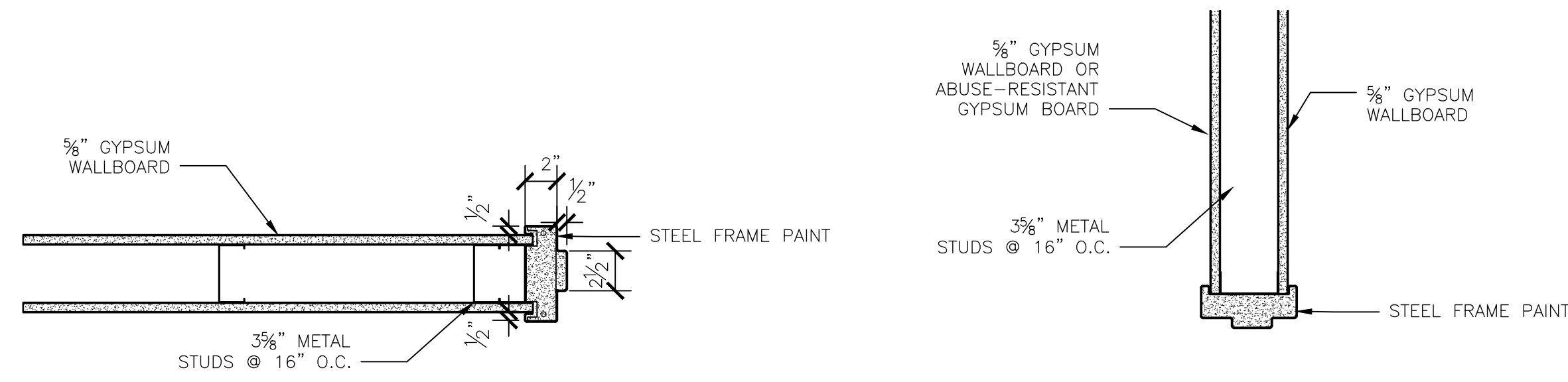
Door Schedule

No.	Door	Frame				Details			Thresh Type	Label	Hdw. Sets	Remarks		
		Size	Thk	Material	Finish	Type	Material	Finish					Head	Jamb
130	3'-0" x 7'-0"	1.3/4"	HOLLOW METAL	PAINT	A	HOLLOW MET.	PAINT	2/A04	1/A04	5/A04	REDUCER	—	1	VERIFY EXIST. M.O. FOR FRAME SIZE
156	3'-0" x 7'-0"	1.3/4"	HOLLOW METAL	PAINT	A	HOLLOW MET.	PAINT	2/A04	1/A04	5/A04	REDUCER	—	2	
160	3'-0" x 7'-0"	1.3/4"	HOLLOW METAL	PAINT	A	HOLLOW MET.	PAINT	4/A04	3/A04		NONE	—	3	

Room Finish Schedule

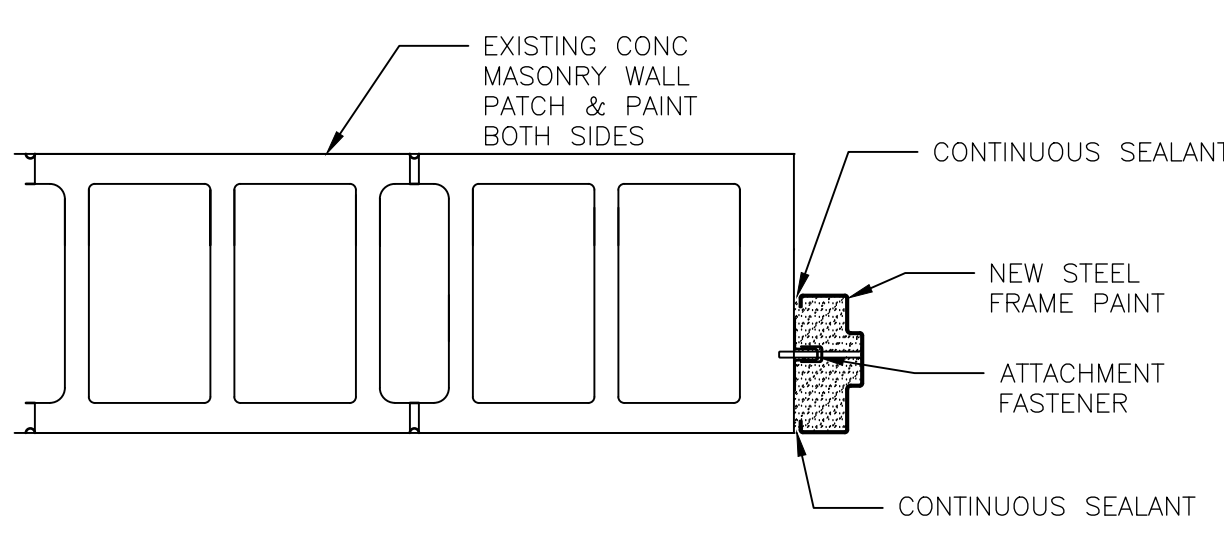
No.	Rm.Name	Floors								Bases						Walls					Ceilings							Remarks
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	NORTH	EAST	SOUTH	WEST	OTHER	1	2	3	4	5	6	7	
103	CORRIDOR	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8'-8"±
104	MECHANICAL ROOM	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13'-4"±
107	CLASSROOM	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8'-8"±
111	MECHANICAL ROOM	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13'-4"±
112	CORRIDOR	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8'-8"±
117	ASSEMBLY HALL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	H, J	H	H, J	H	G (NEW)	—	—	—	—	—	—	—	18'-8"±
123	WOMEN'S LOCKERROOM	1'	—	—	—	—	—	—	—	—	—	—	—	—	—	A, H	C	B	B	—	—	—	—	—	—	—	—	9'-0" (NEW) 13'-4"± (EXISTING)
126	WOMEN'S TOILET	—	—	—	—	—	—	—	—	—	—	—	—	—	—	H	H	H	H	—	—	—	—	—	—	—	—	8'-8"±
127	SHOWERS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	H	H	H	H	—	—	—	—	—	—	—	—	8'-8"±
127A	SHOWERS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	F	F	F	F	—	—	—	—	—	—	—	—	9'-0"
128	MEN'S LOCKERROOM	1	—	—	—	—	—	—	—	—	—	—	—	—	—	C	C	C	C	—	—	—	—	—	—	—	—	9'-0" (NEW) 13'-4"± (EXISTING)
129	PASSAGE	1	—	—	—	—	—	—	—	—	—	—	—	—	—	A, B, C	C	A, C	H	G (NEW)	—	—	—	—	—	—	—	9'-0" (NEW) 13'-4"± (EXISTING)
130A	SHOWERS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	F	F	F	—	—	—	—	—	—	—	—	9'-0"
130B	PASSAGE	1*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	C	F	A, B	—	—	—	—	—	—	—	—	9'-0" (NEW) 13'-4"± (EXISTING)
155	CORRIDOR	—	—	—	—	—	—	—	—	—	—	—	—	—	—	H	H	H	E	G (NEW)	—	—	—	—	—	—	—	8'-8"±
156	I.T. ROOM	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D	D	D	D	G	—	—	—	—	—	—	—	8'-8"
160	LACTATION ROOM	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

- NOTES:
- NEW FINISHES OCCUR ON NEW OR MODIFIED SURFACES. PATCH OR REPAIR FINISH WHERE ABUTS EXISTING SURFACES TO REMAIN.
 - NEW GYPSUM WALLBOARD PARTITION TO HAVE RESILIENT BASE, PATCHED MASONRY WALL TO HAVE BASE MATCHING EXISTING MASONRY WALL. WHERE GLAZED CMU BASE DOES NOT OCCUR, INSTALL NEW RESILIENT BASE.
 - SEE PLAN FOR AREA OF CERAMIC TILE VERSUS AREAS WITH NEW SEALED CONCRETE.
 - WHERE CONDUIT IS SURFACE MOUNTED ON WALL, EXPOSED TO VIEW, AND NOT PREFINISHED (SUCH AS WIREMOLD), PAINT CONDUIT THE SAME COLOR AS THE ADJACENT WALL COLOR.
 - WHERE THE STRUCTURE IS EXPOSED TO VIEW AND IS CALLED TO BE PAINTED, PAINT METAL DECK, JOISTS, DUCTS, CONDUITS, AND PIPING ALL THE SAME COLOR. PREFINISHED ITEMS (SUCH AS LIGHT FIXTURES) ARE NOT TO BE PAINTED.
 - NEW CERAMIC MOSAIC TILES WITHIN THE SAME ROOM AS EXISTING CERAMIC MOSAIC TILE SHALL BE INSTALLED TO CONTINUE THE EXISTING PATTERN. TILE COLOR AND GROUT COLOR SHALL MATCH EXISTING AS CLOSELY AS POSSIBLE.
 - NEW CERAMIC WALL TILE SHALL BE INSTALLED TO ALIGN WITH CERAMIC MOSAIC TILE. CERAMIC WALL TILE INSTALLED ON CEILING SHALL ALIGN WITH WALL TILES.

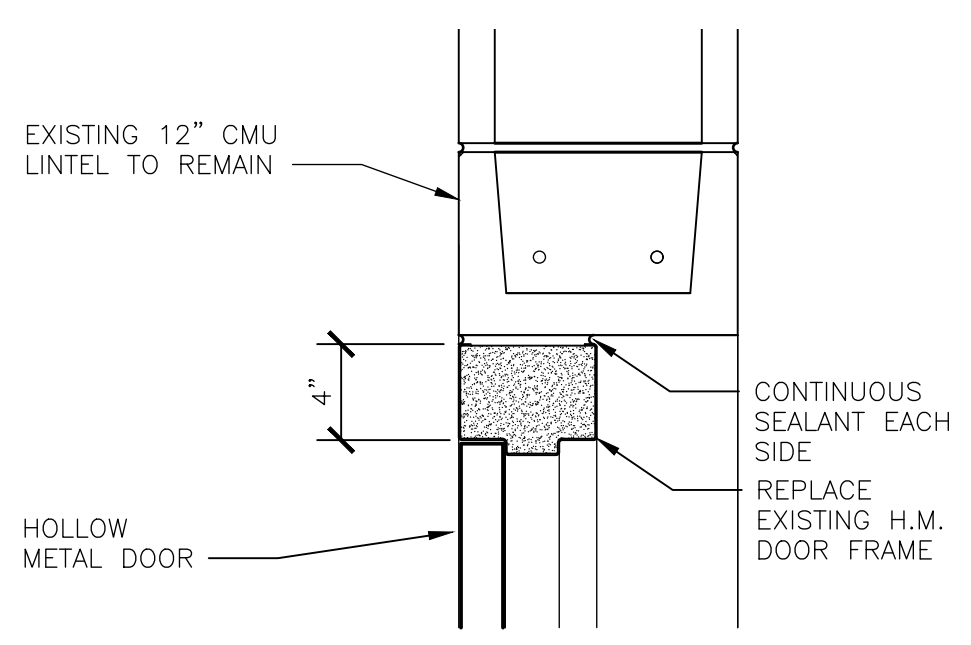


1 DOOR JAMB DETAIL
A04 SCALE: 1-1/2" = 1'-0"

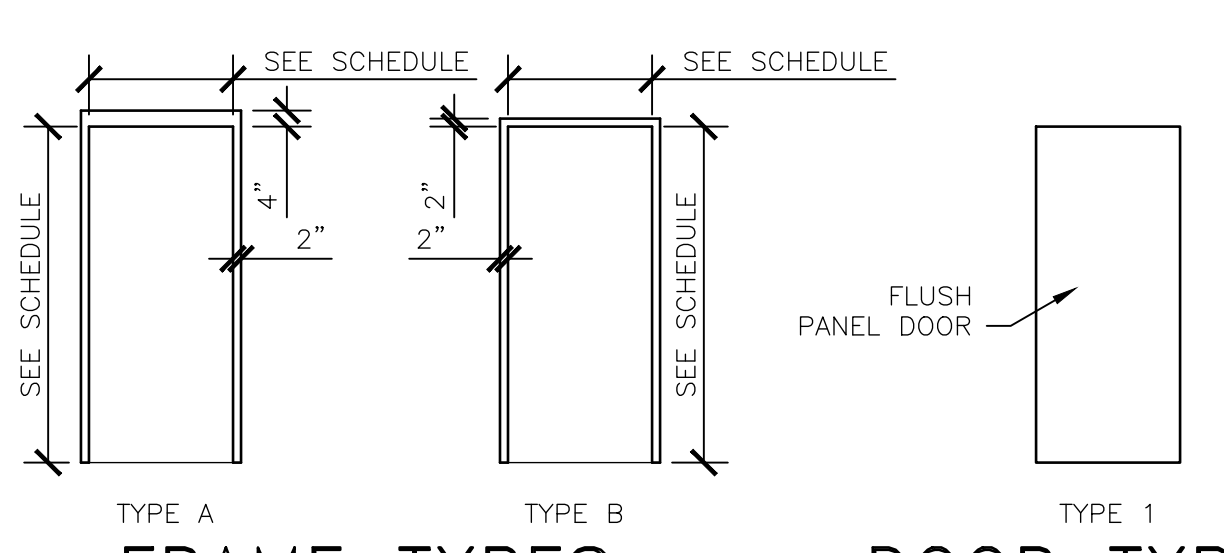
2 DOOR HEAD DETAIL
A04 SCALE: 1-1/2" = 1'-0"



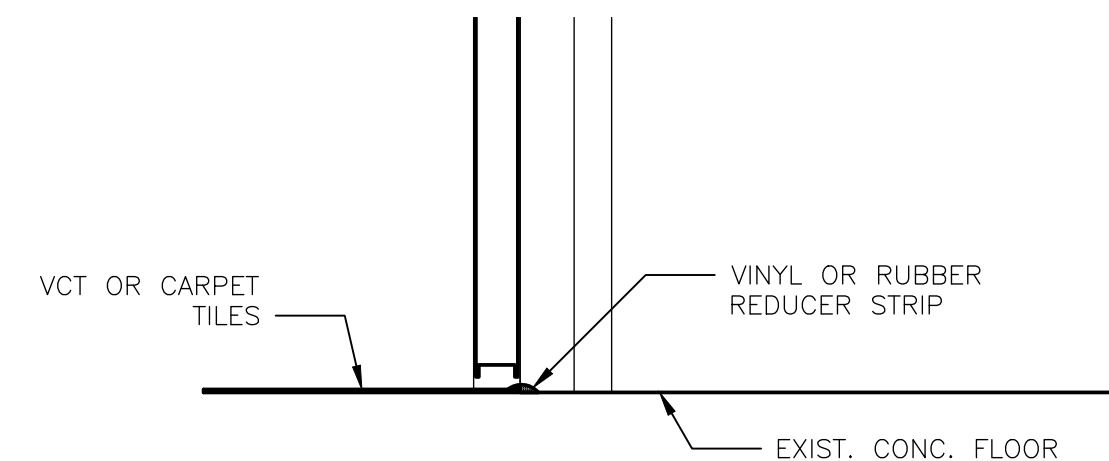
3 DOOR JAMB DETAIL
A04 SCALE: 1-1/2" = 1'-0"



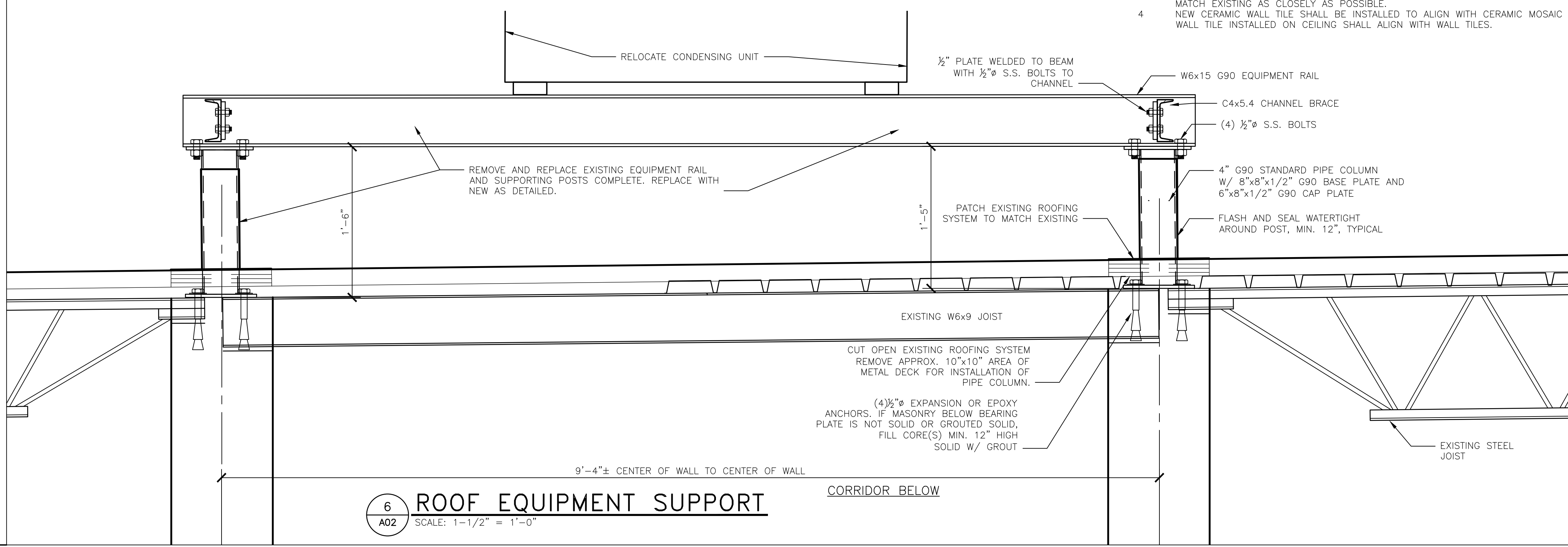
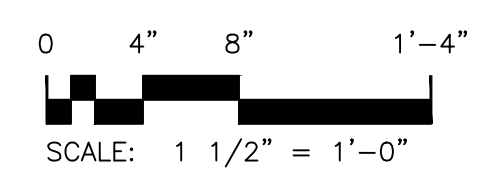
4 DOOR HEAD DETAIL
A04 SCALE: 1-1/2" = 1'-0"



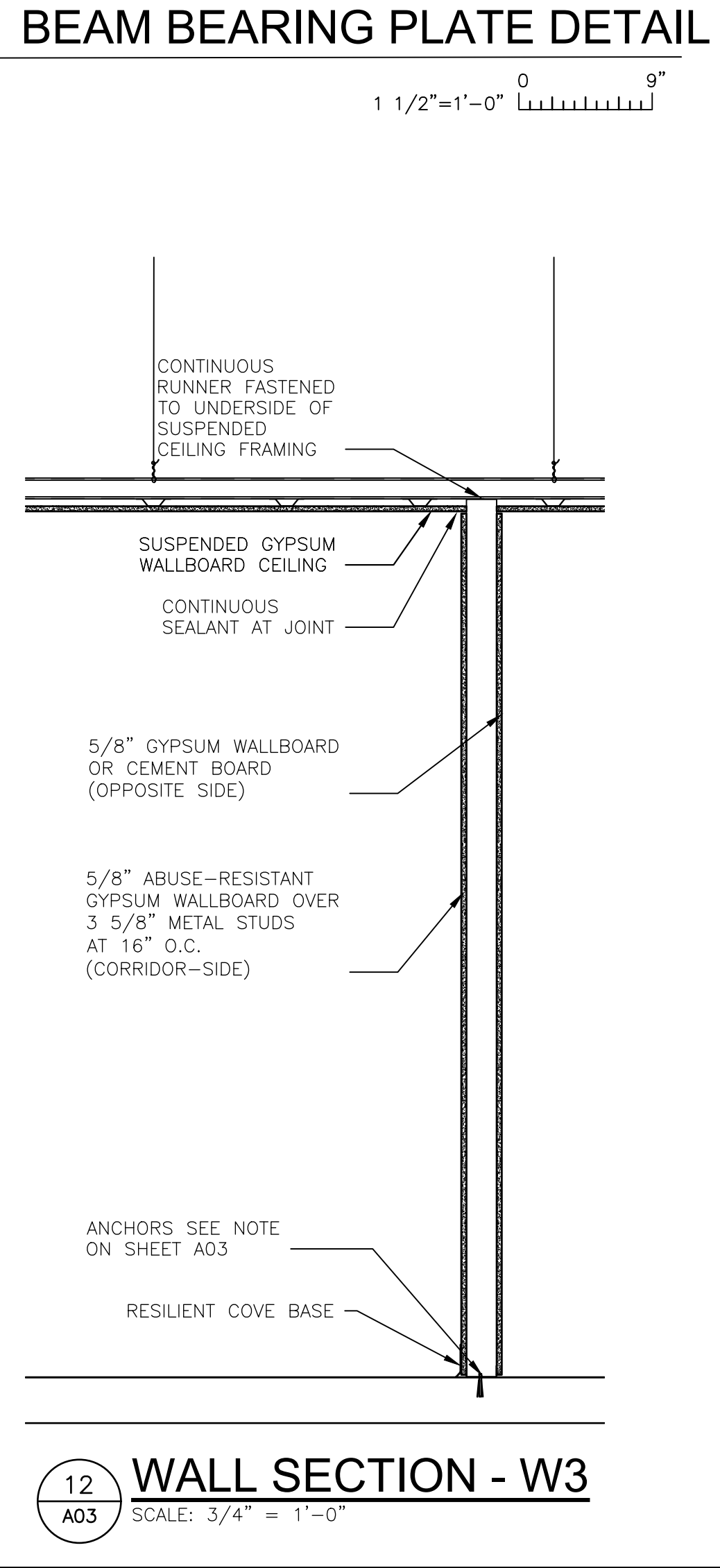
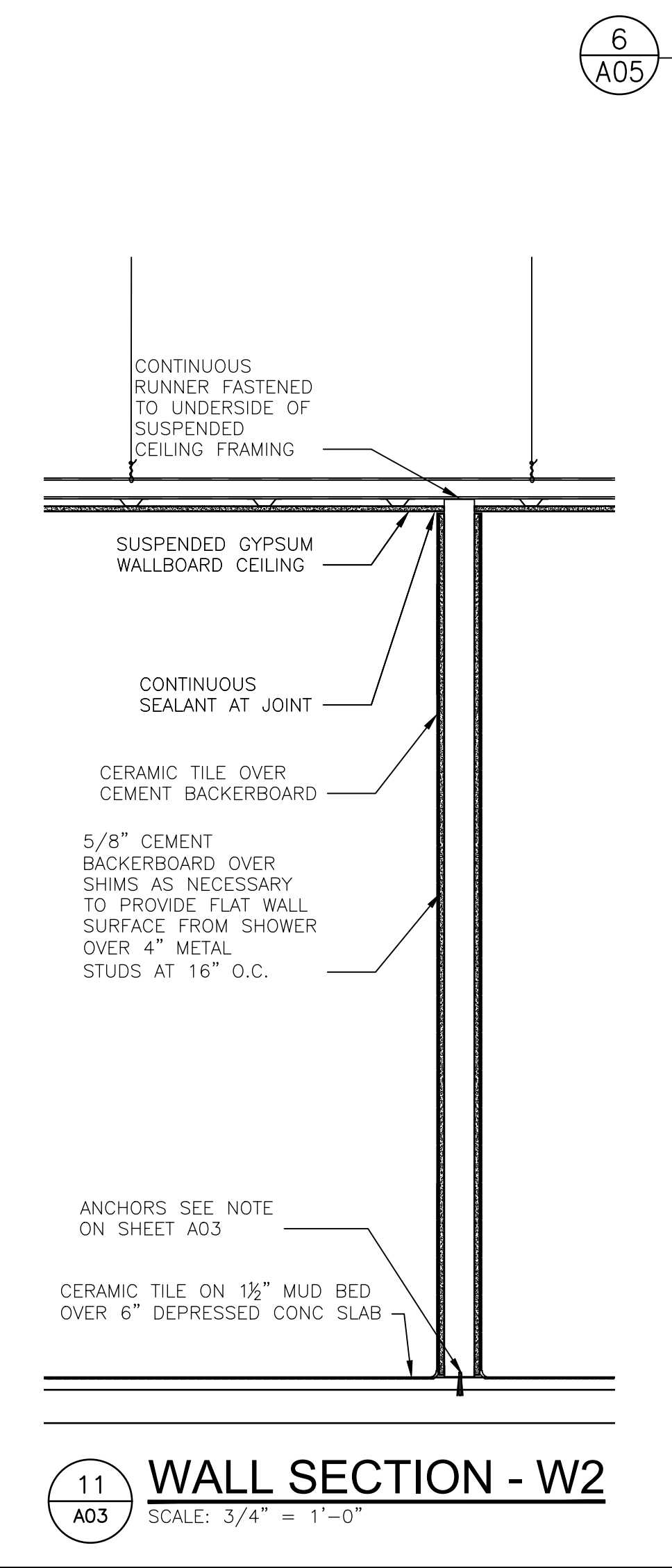
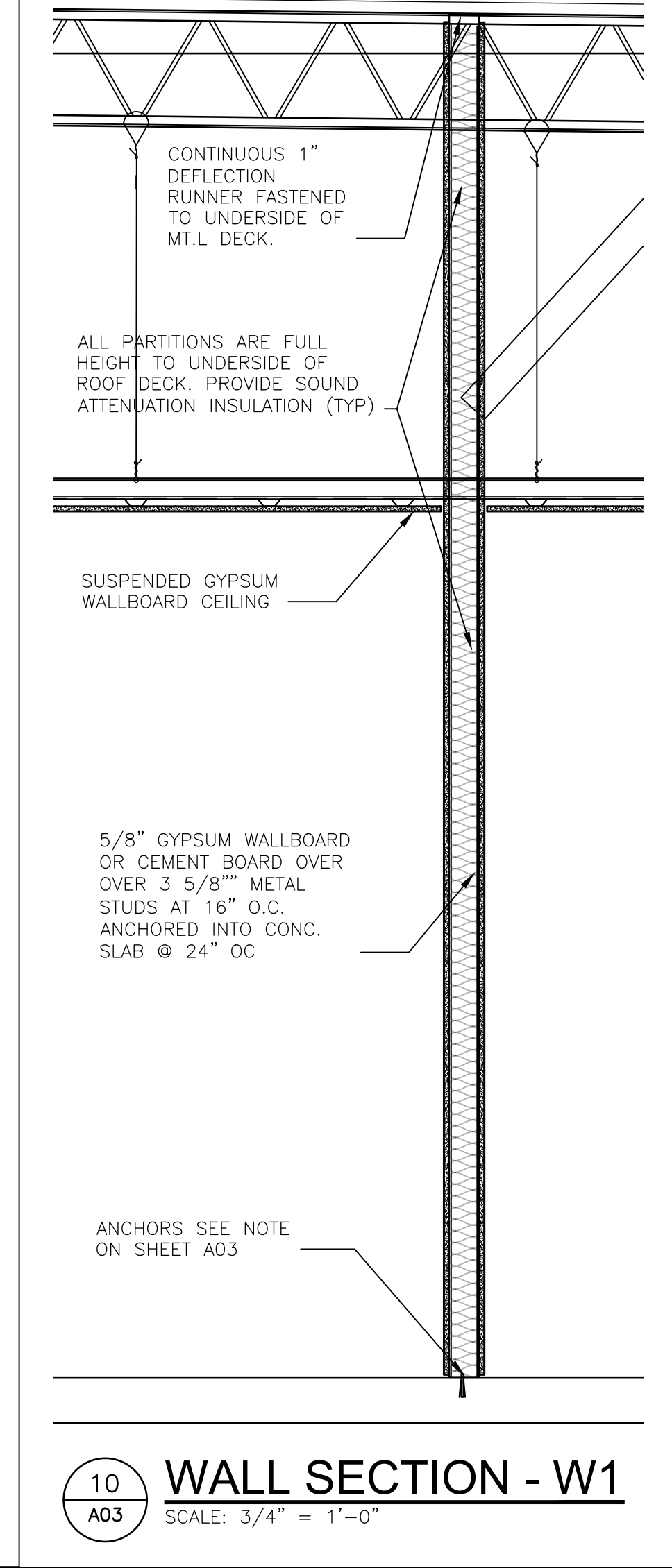
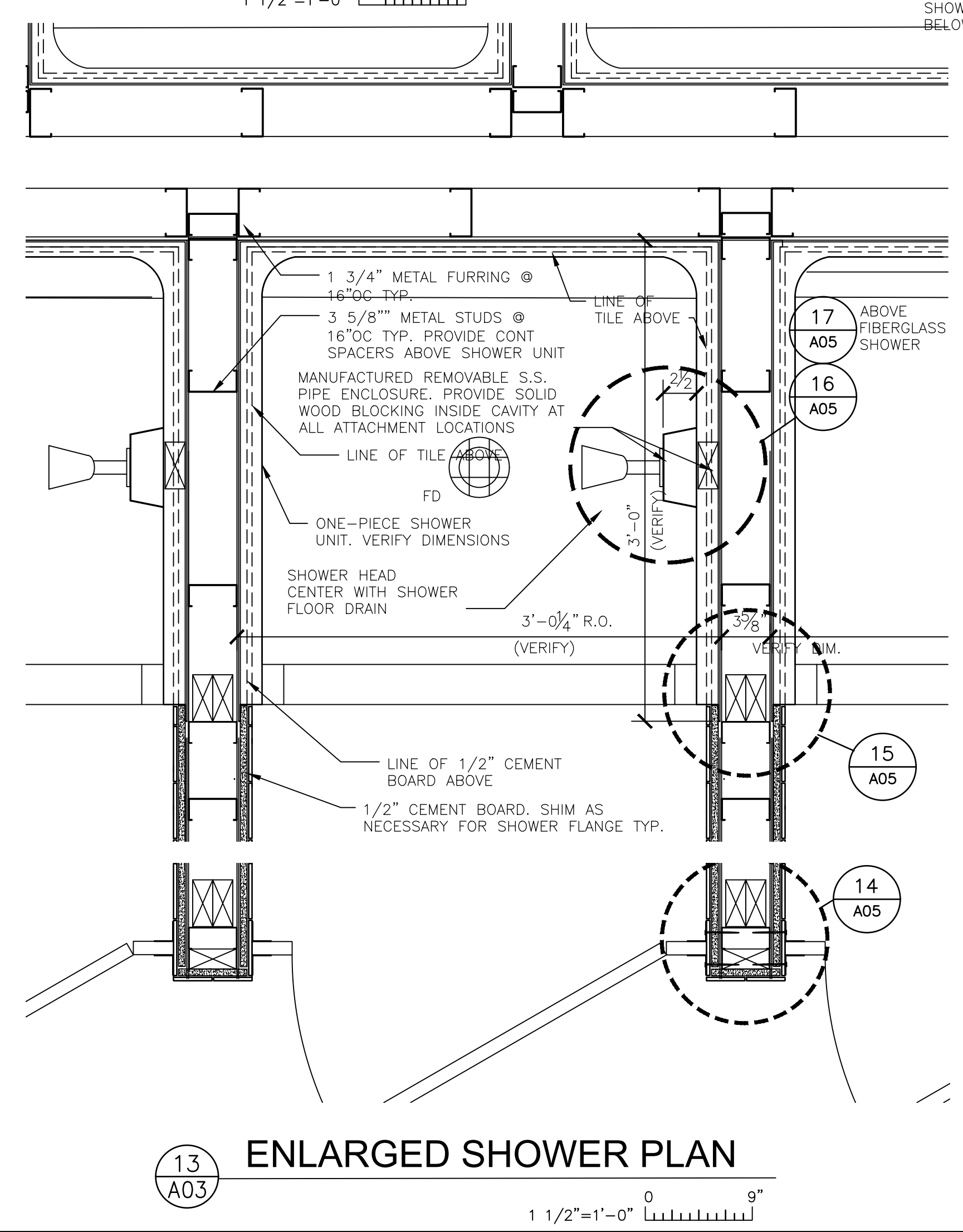
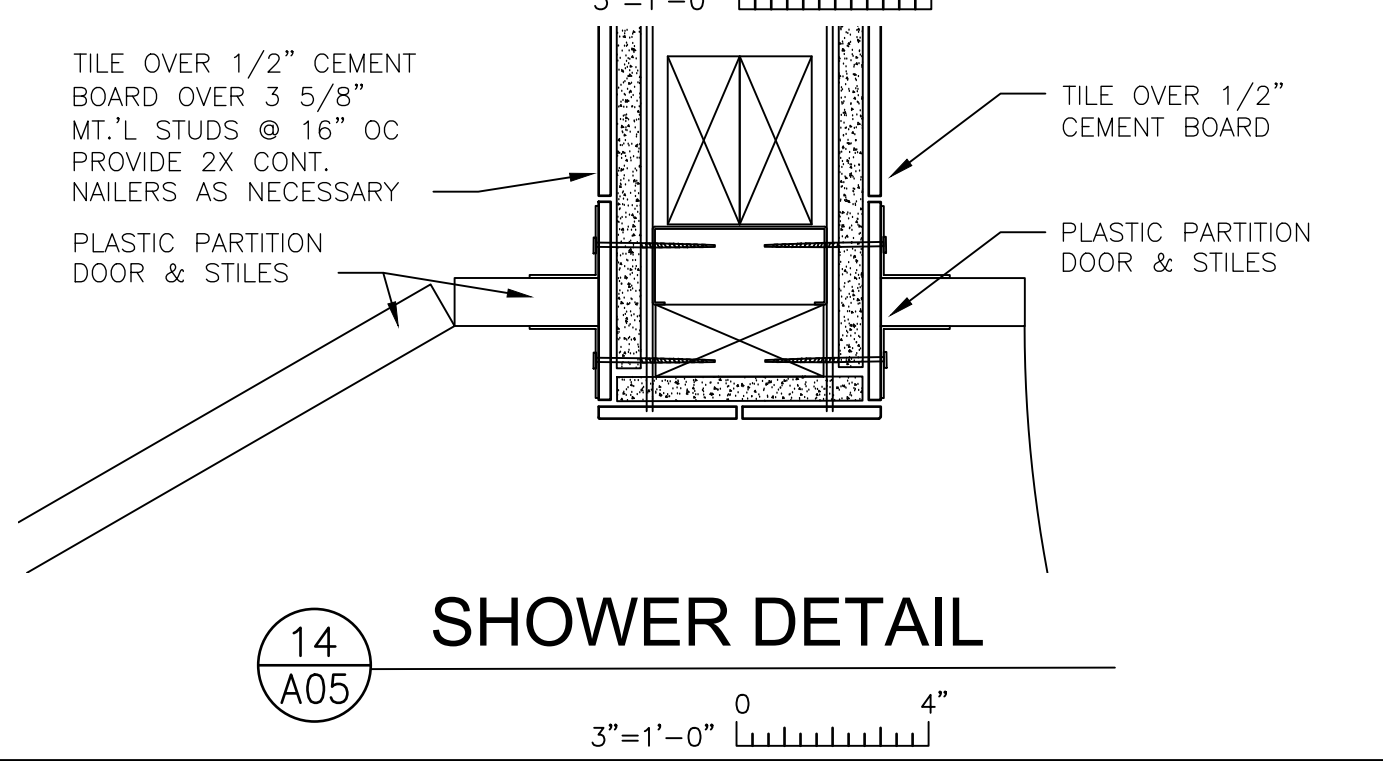
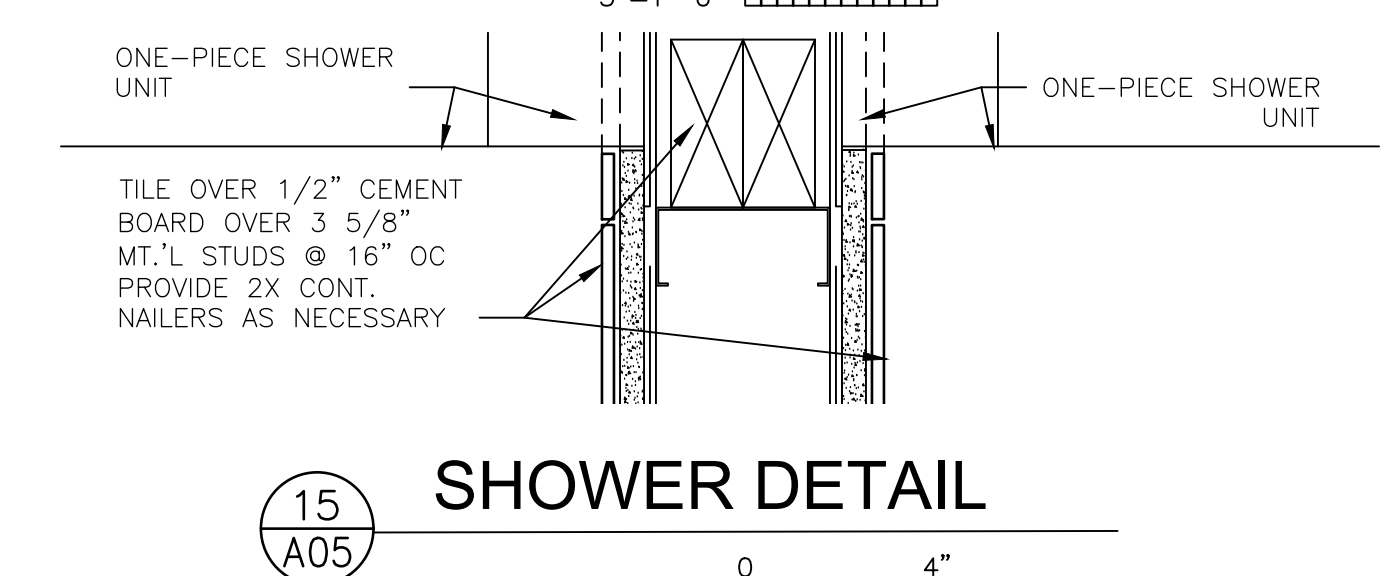
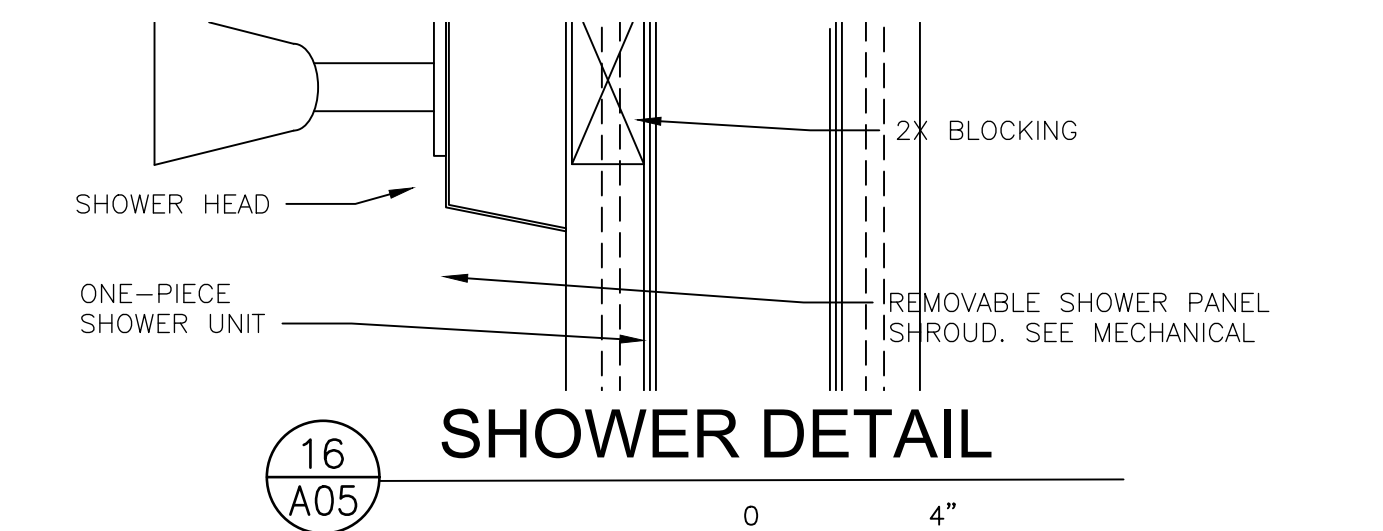
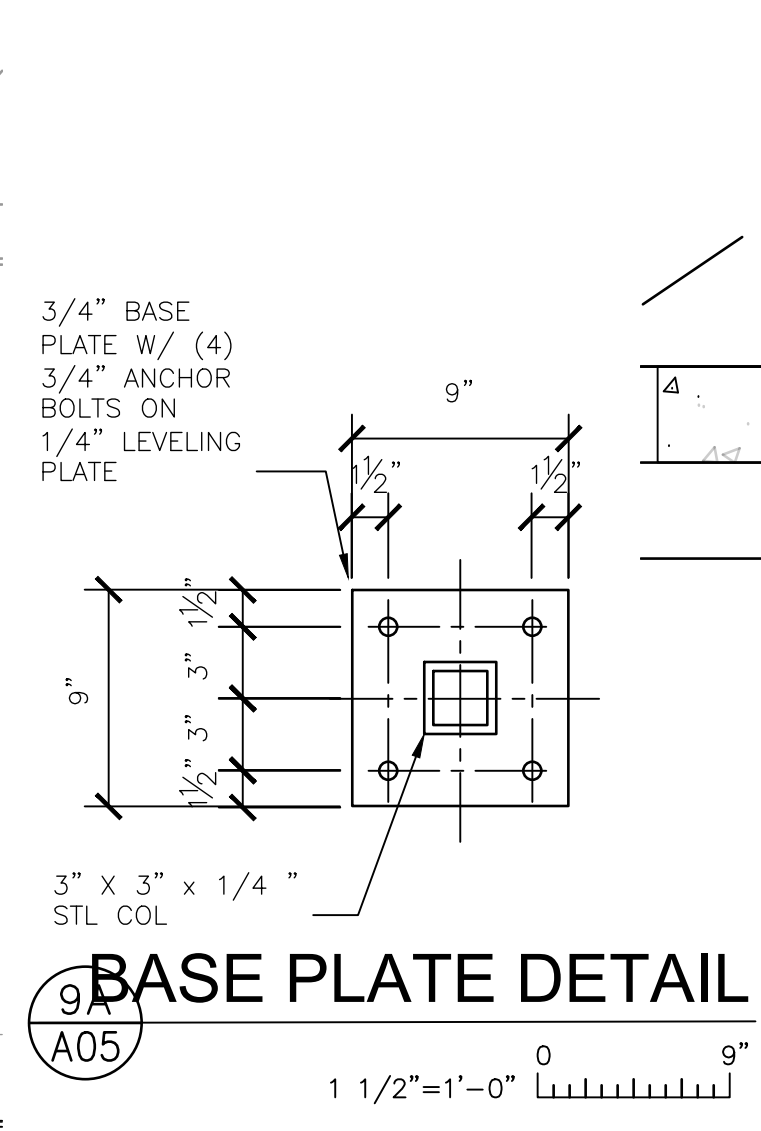
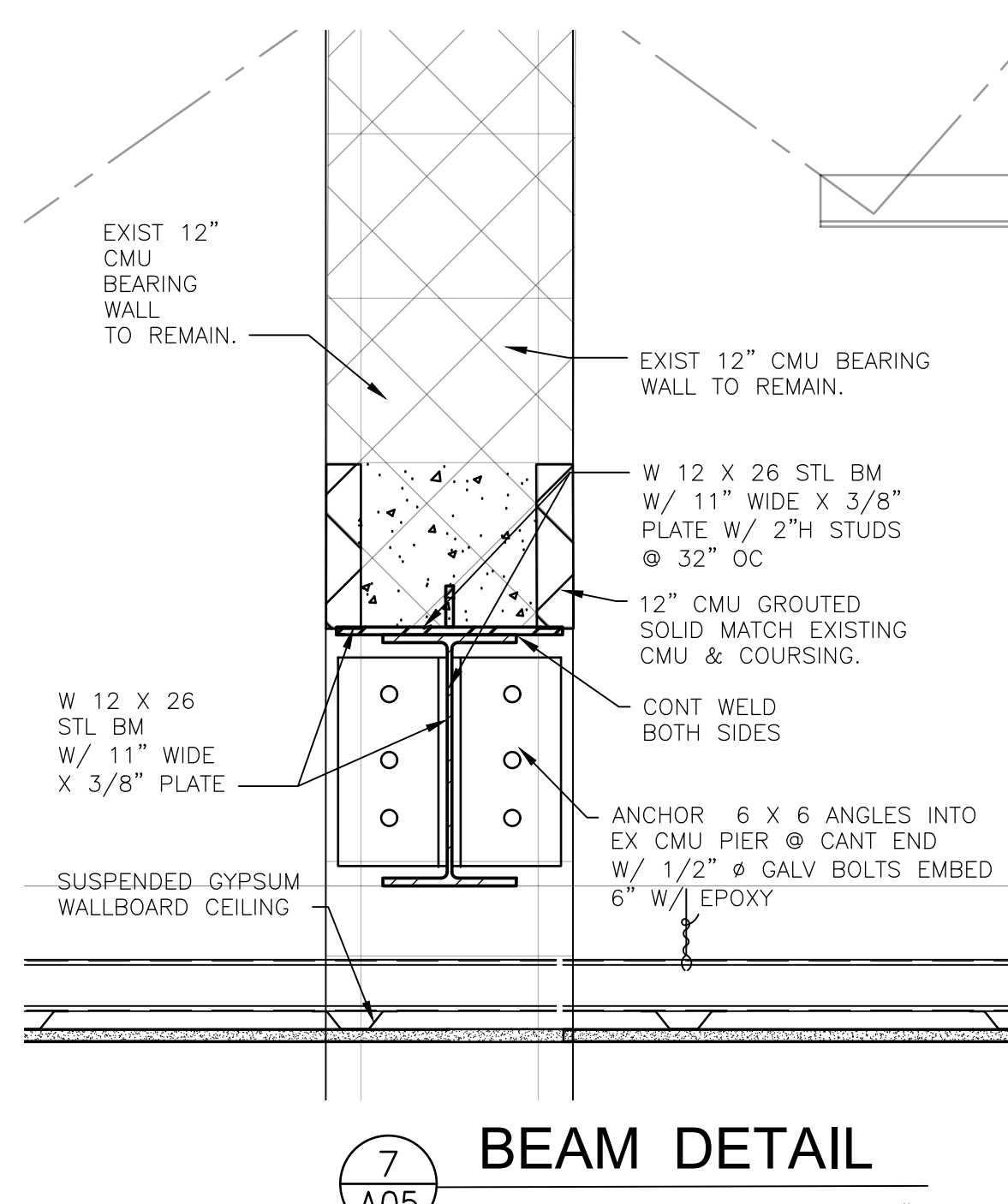
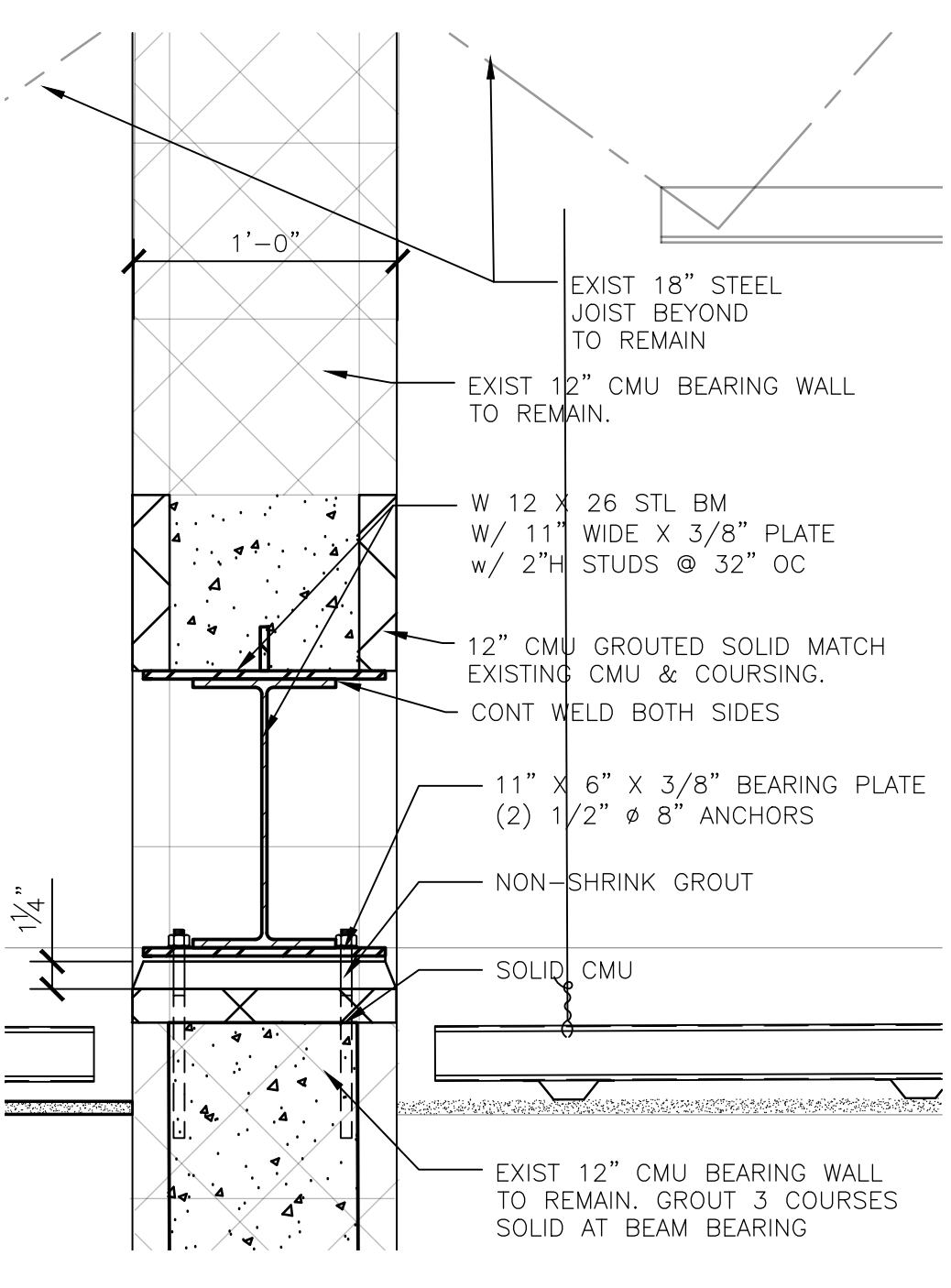
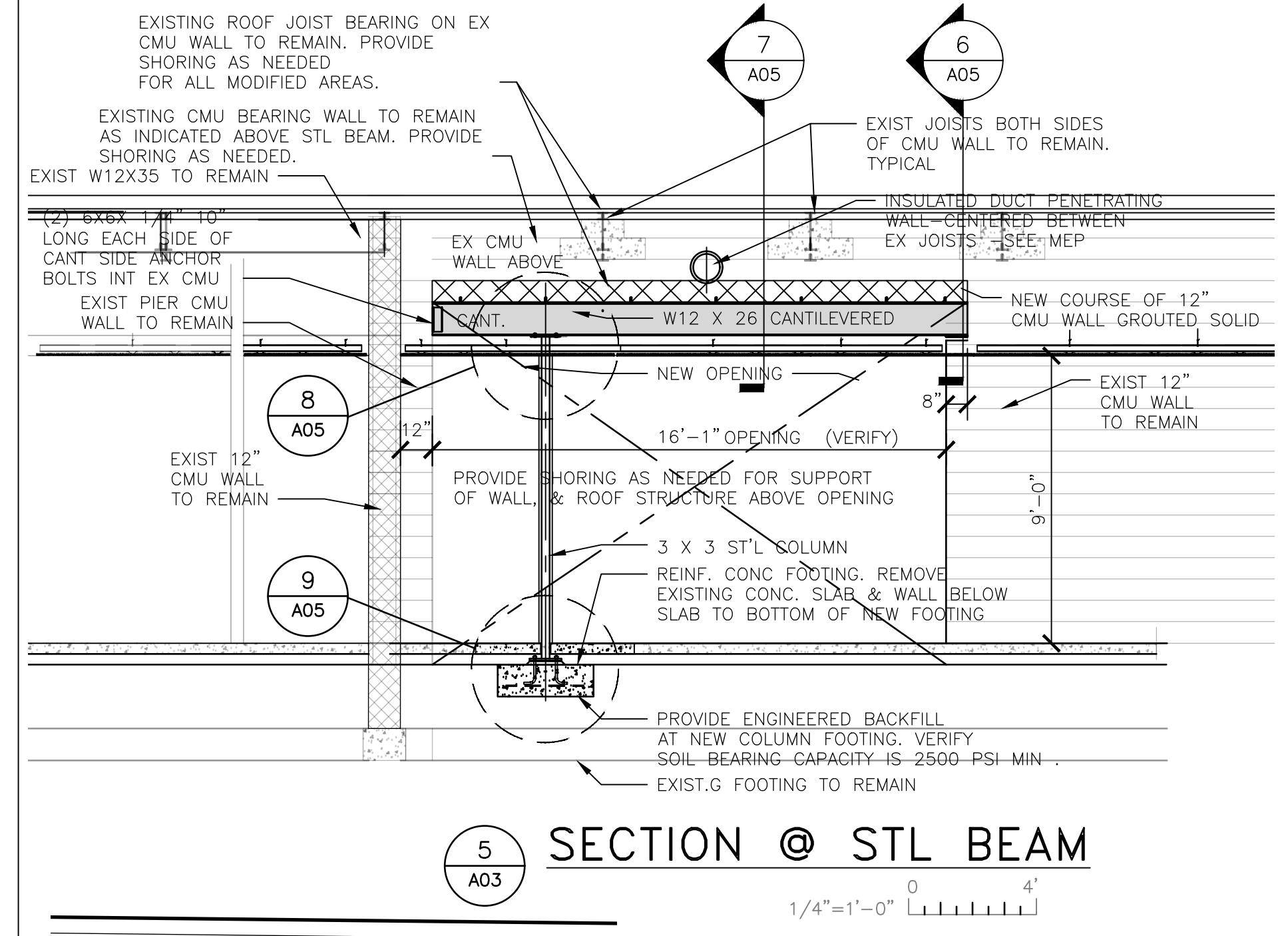
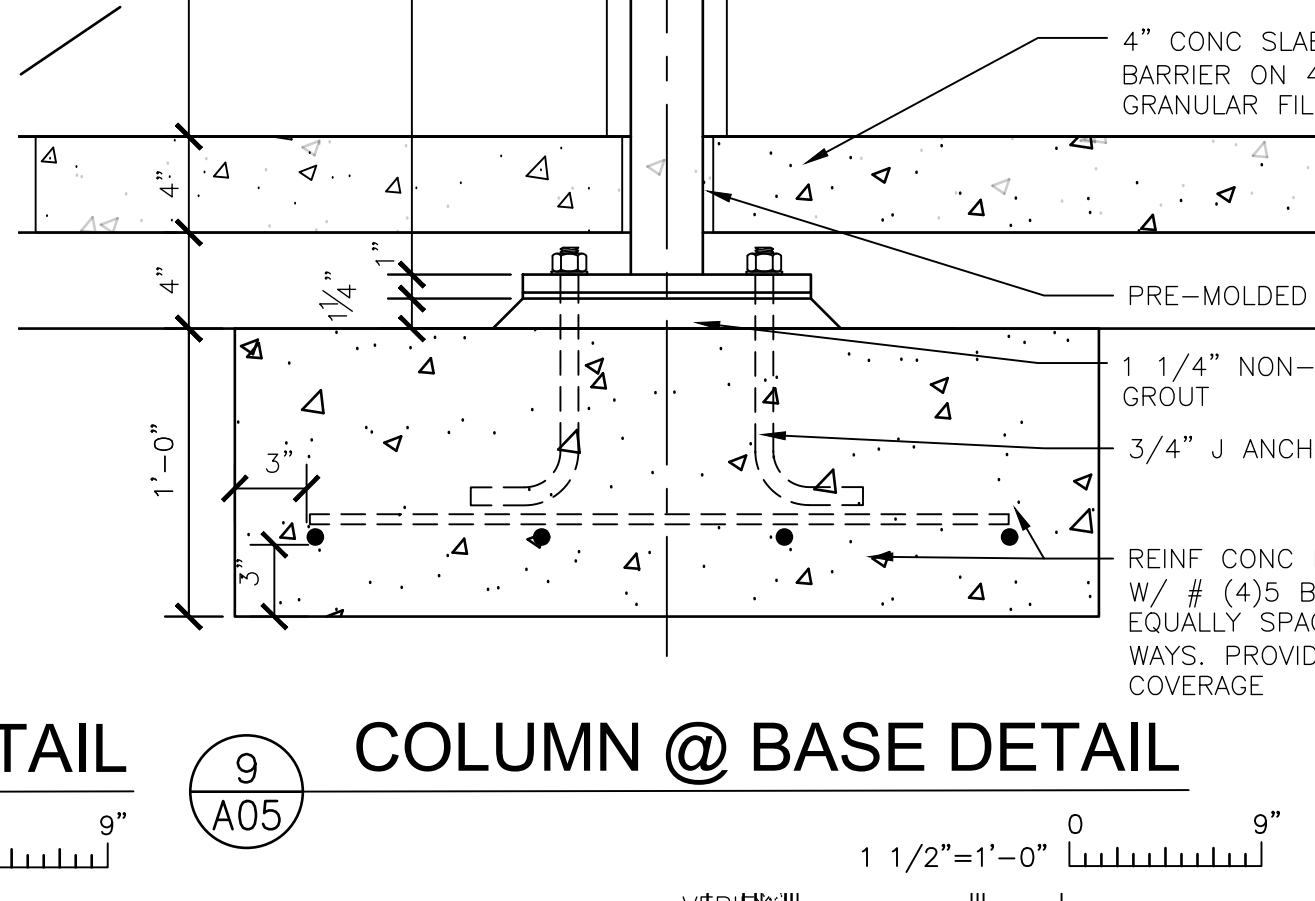
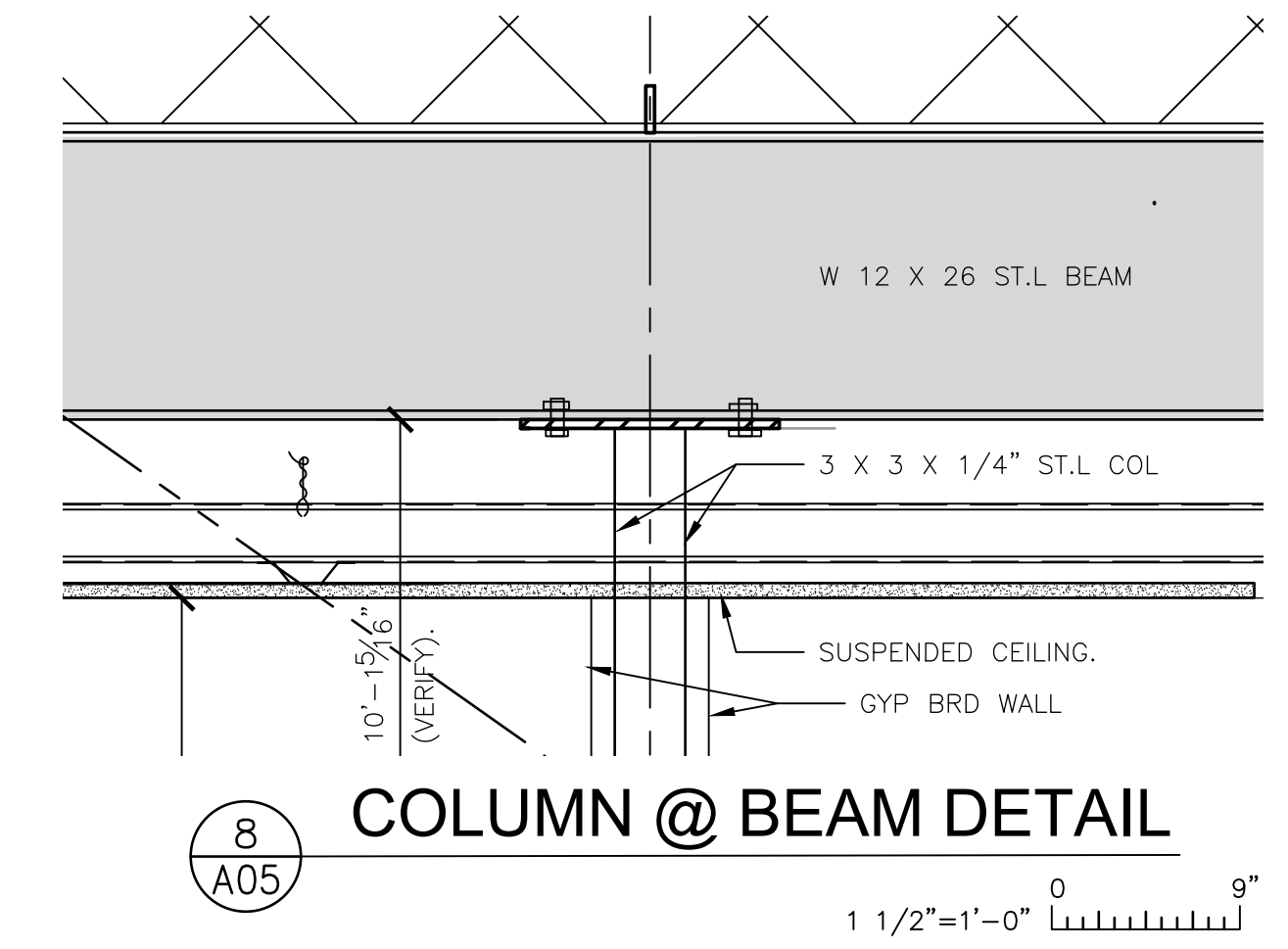
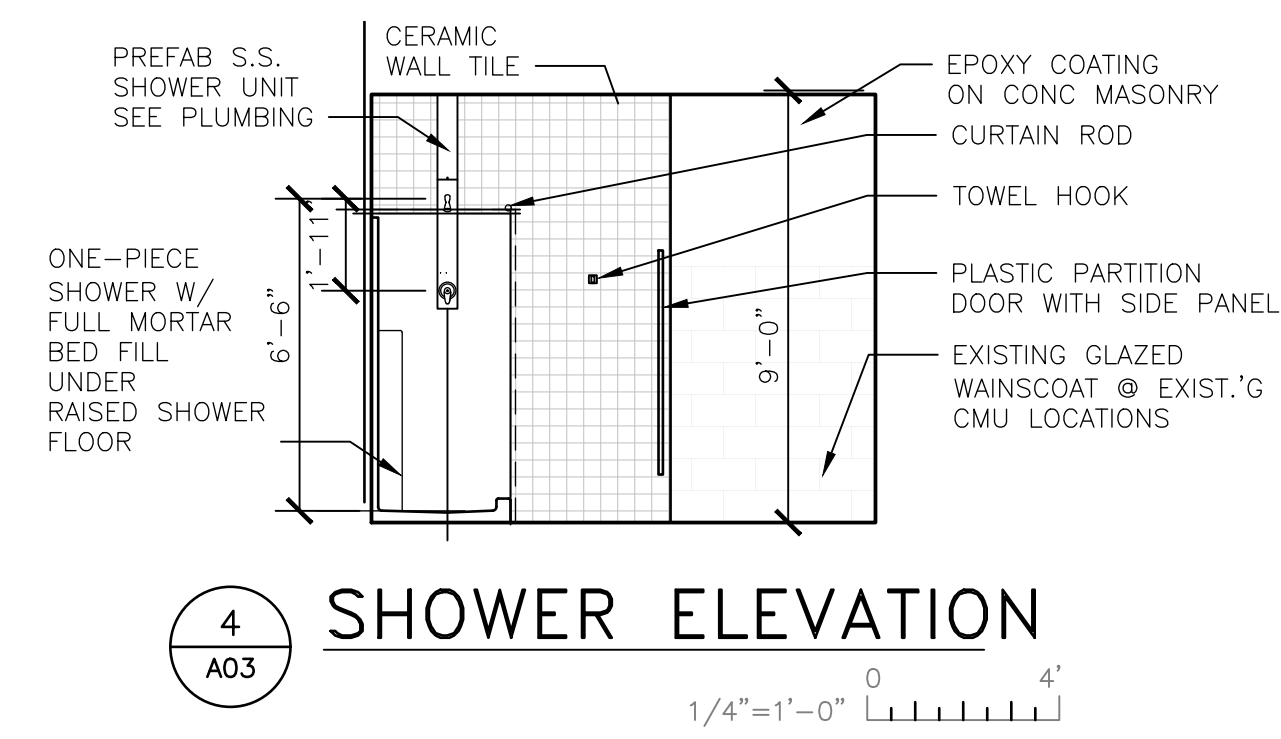
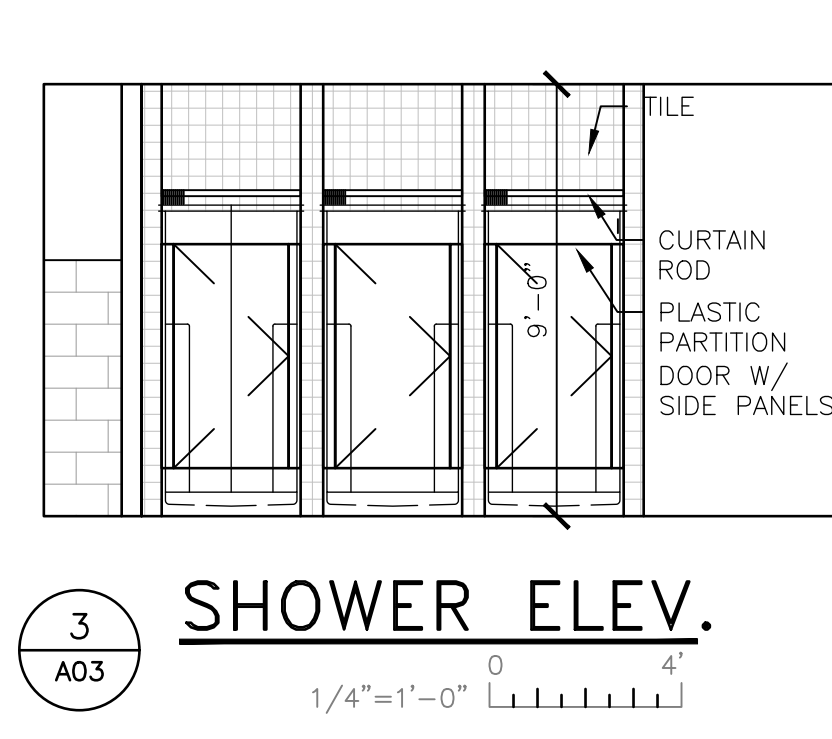
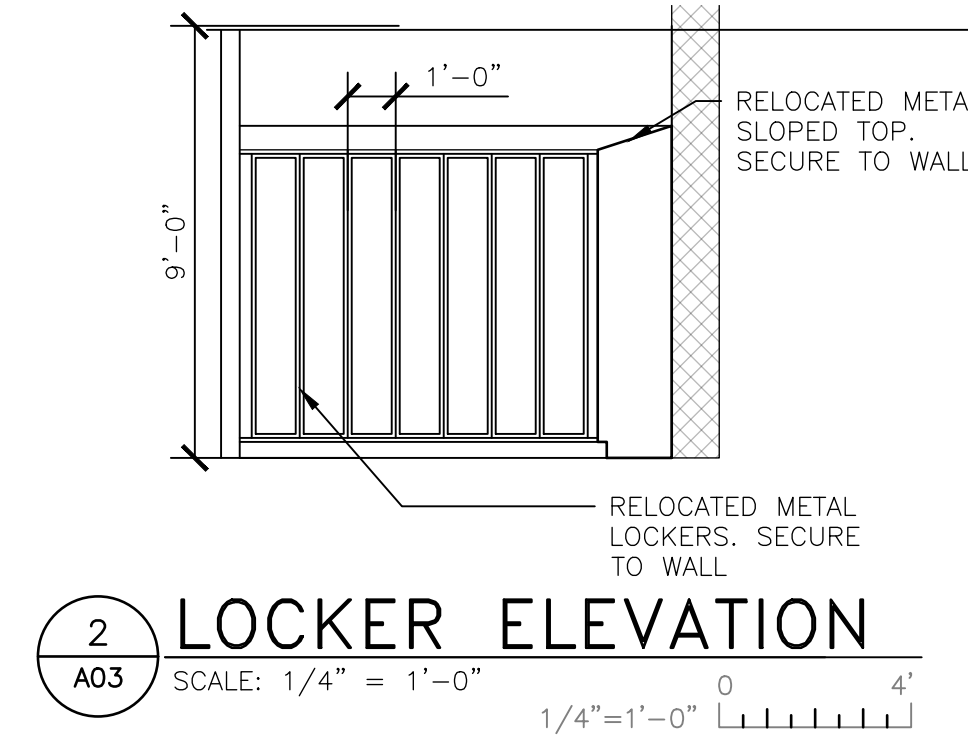
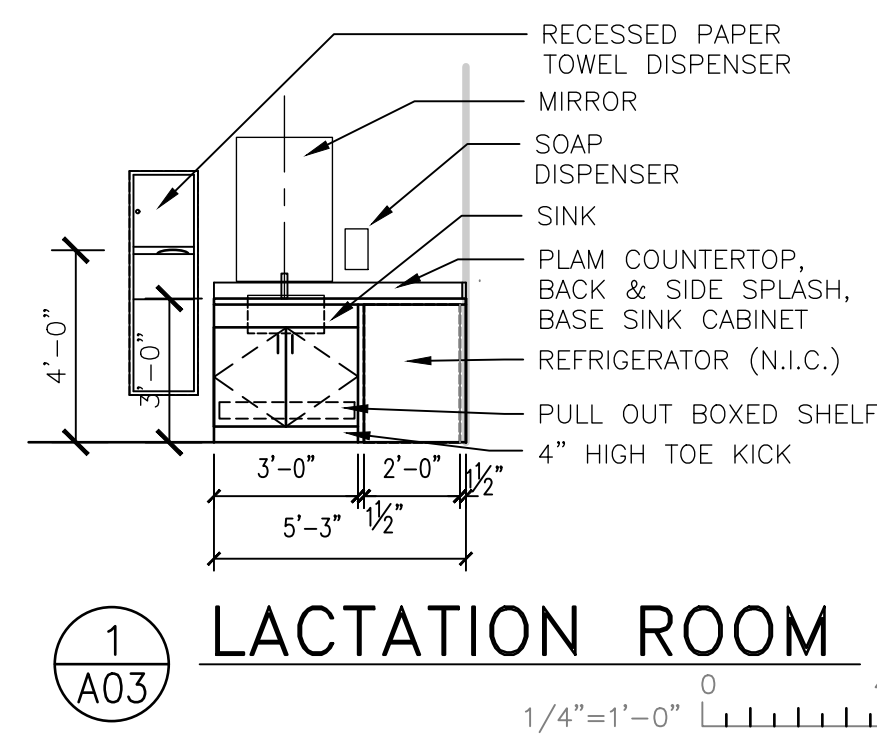
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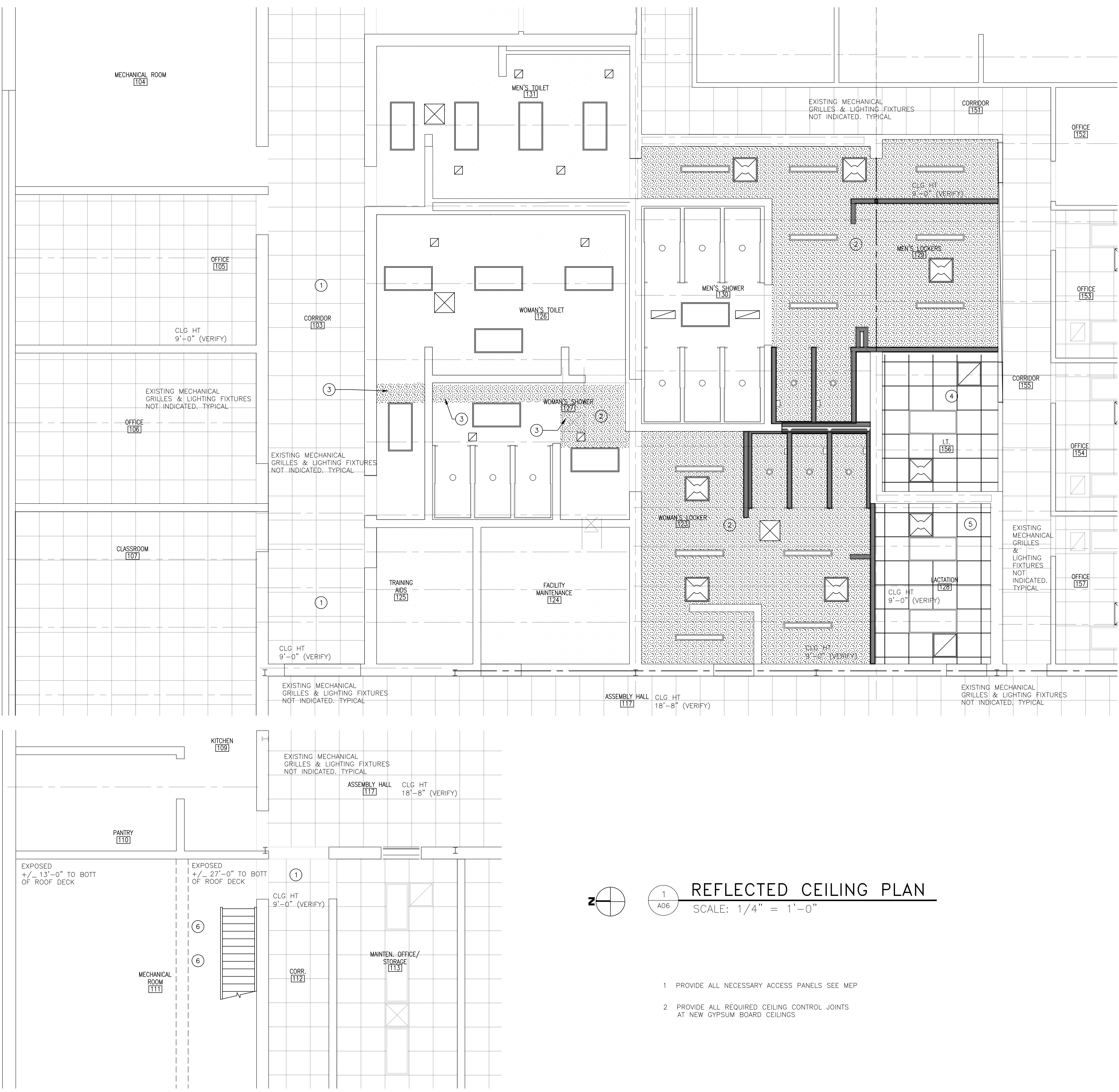


5 DOOR SILL DETAIL
A04 SCALE: 1-1/2" = 1'-0"

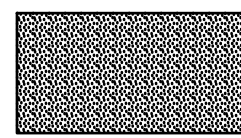
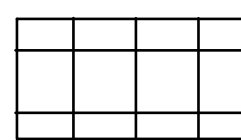

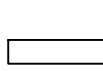


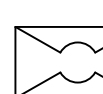
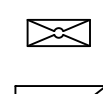
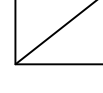



6 ROOF EQUIPMENT SUPPORT
A02 SCALE: 1-1/2" = 1'-0"

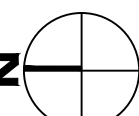




LEGEND

	SUSPENDED GYPSUM WALLBOARD.
	SUSPENDED ACOUSTICAL LAY-IN CEILING
	RECESSED SHOWER LIGHT-SEE ELECTRICAL
	LIGHT-SEE ELECTRICAL
	RECESSED LIGHT-SEE ELECTRICAL
	FIRE EXIT LIGHT-SEE ELECTRICAL
	SUPPLY AIR GRILLE-SEE MECH
	SUPPLY AIR GRILLE-SEE MECH
	RETURN AIR GRILLE-SEE MECH
	EXHAUST AIR-SEE MECH

- NOTES**
- 1 REMOVE & REPLACE APPROXIMATELY 100 CEILING TILES & 50' SUSPENDED GRID SYSTEM FOR MECHANICAL, ELECTRICAL, & PLUMBING (MEP) WORK. COORDINATE & VERIFY EXACT LOCATIONS. REPLACE ACOUSTIC TILES & SUSPENDED GRID WITH NEW TO MATCH EXISTING. INSTALL NEW TILES AFTER WORK IS COMPLETED & INSPECTED. COORDINATE EXACT LOCATION OF TILES TO BE REMOVED W/ MEP.
 - 2 NEW SUSPENDED GYPSUM CEILING. PROVIDE ALL REQUIRED ACCESS PANELS & CONTROL JOINTS. COORDINATE LOCATION W/ MECHANICAL, ELECTRICAL, & PLUMBING (MEP) COMPONENTS.
 - 3 REMOVE EXISTING PLASTER OR GYPSUM CEILING TO ALLOW OPENING TO INSTALL & DEMO MECHANICAL, ELECTRICAL, & PLUMBING (MEP). PROVIDE ALL REQUIRED ACCESS PANELS & CONTROL JOINTS. COORDINATE WITH ARCHITECTURAL & MEP. INSTALL NEW SUSPENDED GYPSUM WALLBOARD CEILING TO BLEND & MATCH EXISTING CEILING. PAINT ENTIRE CEILING.
 - 4 REMOVE EXISTING SUSPENDED LAY-IN ACOUSTICAL TILE CEILING COMPLETELY IN EXISTING I.T. ROOM. INSTALL NEW SUSPENDED LAY-IN ACOUSTICAL TILE CEILING.
 - 5 INSTALL NEW SUSPENDED LAY-IN ACOUSTICAL TILE CEILING.
 - 6 NEW FLUES THROUGH EXISTING ROOF OPENINGS. SEE ROOF PLAN & MECH/PLUMBING. CONTACT ROOFING MANUFACTURER HOLDING WARRANTY FOR REPAIRS TO ROOF SYSTEM.


1 REFLECTED CEILING PLAN
A06 SCALE: 1/4" = 1'-0"

1 PROVIDE ALL NECESSARY ACCESS PANELS SEE MEP
 2 PROVIDE ALL REQUIRED CEILING CONTROL JOINTS AT NEW GYPSUM BOARD CEILINGS

SPECIAL NOTES

THESE KEY NOTES APPLY TO ALL MECHANICAL CONSTRUCTION CONTRACT DOCUMENTS.

CONTRACTORS PRE-BID NOTIFICATION:

THIS CONTRACTOR AND ALL RELATED SUB-CONTRACTORS SHALL VISIT THE SITE AND COMPLETELY UNDERSTAND THE CONDITIONS UNDER WHICH THE WORK MUST BE PERFORMED. IF A DEPARTURE FROM THE DESIGN INTENT OF THE DOCUMENTS IS REQUIRED, DUE TO ACTUAL FIELD CONDITIONS OBSERVED BY THE CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING FOR RESOLUTION BEFORE SUBMITTING A FINAL BID OR ENTERING INTO A CONTRACT FOR CONSTRUCTION. FAILURE TO PROVIDE THE ARCHITECT WITH NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE DESIGN INTENT WITH NO ADDITIONAL COST BEING INCURRED BY THE OWNER.

INSTALLATION COORDINATION

WHEN A CONFLICT BETWEEN INSTALLATION DETAILS, SUCH AS, BUT NOT LIMITED TO PIPING DIAGRAMS, EQUIPMENT DETAILS AND CONNECTIONS, ETC., INDICATED ON THE DRAWINGS AND THE MANUFACTURERS INSTALLATION INSTRUCTIONS PROVIDED WITH REVIEWED SHOP DRAWINGS, THE MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL TAKE PRECEDENT. NO ADDITIONAL COST WILL BE ALLOWED IF THE MANUFACTURERS INSTALLATION INSTRUCTIONS ARE NOT FOLLOWED.

DUCTWORK SHOP DRAWINGS:

THE CONTRACTOR SHALL SUBMIT DETAILED INSTALLATION SHOP DRAWINGS FOR ALL SHEET METAL DUCTWORK WITH ALL NECESSARY COMPONENTS, SECTIONS, DETAILS AND DIMENSIONS TAKEN FROM FIELD MEASUREMENTS AND COORDINATED WITH DRAWINGS FOR ALL CONSTRUCTION TRADES FOR ARCHITECT/ENGINEER REVIEW BEFORE PERFORMING ANY FABRICATION OR INSTALLATION. REFER TO HVAC SPECIFICATIONS. ANY INSTALLATION OF DUCTWORK PRIOR TO THIS REVIEW PROCESS SHALL BE REMOVED AND INSTALLED IN ACCORDANCE WITH ARCHITECT/ENGINEER REVIEW COMMENTS AT THE CONTRACTORS EXPENSE.

SEALING OF DUCTWORK JOINTS:

ALL SUPPLY, RETURN AND EXHAUST DUCT JOINTS SHALL BE SEALED WITH HIGH VELOCITY DUCT SEALANT AS SPECIFIED. REFER TO HVAC SPECIFICATIONS. DUCT TAPE OF ANY KIND SHALL NOT BE USED FOR SEALING DUCT JOINTS.

PIPE AND DUCT SLEEVES:

ALL PIPING AND DUCTWORK PASSING THROUGH FOUNDATIONS, FLOORS, WALLS, PARTITIONS OR ANY OTHER STRUCTURE ELEMENTS SHALL BE PROVIDED WITH APPROPRIATE SLEEVES AS SPECIFIED UNLESS OTHERWISE INDICATED. REFER TO MECHANICAL SPECIFICATIONS. EXTERIOR INSULATION ON PIPING AND DUCTS WHERE SPECIFIED, SHALL BE CONTINUOUS THROUGH ALL SLEEVES.

SPECIAL TEMPERATURE CONTROLS NOTE:

THE CONTROL DIAGRAMS AND SEQUENCE OF CONTROLS SHOWN ON THESE DRAWINGS ARE FOR DESIGN INTENT ONLY AND MUST NOT BE CONSIDERED AS COMPLETE SYSTEM WIRING DIAGRAMS OR FINAL SEQUENCES OF CONTROL. THE MECHANICAL CONTRACTOR MUST PROVIDE COMPLETE SHOP DRAWINGS INDICATING ALL CONTROL WIRING, SYSTEM COMPONENTS, COMPONENT MANUFACTURER AND APPLIED SEQUENCE OF CONTROLS FOR ALL SYSTEMS FOR THE ENGINEERS REVIEW BEFORE PURCHASING ANY EQUIPMENT OR PERFORMING ANY INSTALLATION. ALL CONTROL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS. ALL CONTROLS FOR HVAC EQUIPMENT SHALL BE COORDINATED BETWEEN THE MANUFACTURER AND CONTRACTOR TO ENSURE PROPER OPERATION OF THE EQUIPMENT WITH EXISTING BMS.

**PLUMBING SPECIFICATIONS
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22 05 29	HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT
22 05 48	VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT
22 05 53	IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT
22 07 19	PLUMBING PIPING INSULATION
22 11 16	DOMESTIC WATER PIPING
22 11 19	DOMESTIC WATER PIPING SPECIALTIES
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22 13 19	SANITARY WASTE PIPING SPECIALTIES
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**MECHANICAL SPECIFICATIONS
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23 05 16	EXPANSION FITTINGS AND LOOPS FOR HVAC PIPING
23 05 19	METERS AND GAGES FOR HVAC PIPING
23 05 23	GENERAL DUTY VALVES FOR HVAC PIPING
23 05 29	HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT
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23 09 00	INSTRUMENTATION AND CONTROL FOR HVAC
23 11 23	FACILITY NATURAL GAS PIPING
23 21 13	HYDRONIC PIPING
23 21 23	HYDRONIC PUMPS
23 23 00	REFRIGERANT PIPING
23 31 13	METAL DUCTS
23 33 00	DUCT ACCESSORIES
23 37 13	DIFFUSERS, REGISTERS, AND GRILLES
23 51 00	BREECHINGS, CHIMNEYS, AND STACKS
23 52 16	CONDENSING BOILERS
23 81 26	SPLIT SYSTEM AIR CONDITIONERS

MECHANICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
AFF	ABOVE FINISH FLOOR
AS	AIR SEPARATOR
BFF	BELOW FINISH FLOOR
BLR	BOILER
BMS	BUILDING MANAGEMENT SYSTEM
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALANCING VALVE
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
COND	CONDENSATE
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CW	COLD WATER
DB	DRY BULB
DN	DOWN
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ER	EXHAUST REGISTER
ERU	ENERGY RECOVERY UNIT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
FD	FIRE DAMPER OR FLOOR DRAIN
FC	FAN COIL
FLA	FULL LOAD AMP
FLM	FEET PER MINUTE
FT	FEET
G	GAS
HC	HEATING COIL
HP	HORSEPOWER OR HEAT PUMP
HW	HOT WATER
HWR	HOT WATER HEATING RETURN
HWS	HOT WATER HEATING SUPPLY
HWR	HOT WATER RETURN
IN	INCH
IRH	INFRARED RADIANT HEATER
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAU	MAKE-UP AIR UNIT
MBC	MICHIGAN BUILDING CODE (2015)
MBH	THOUSAND BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
MMC	MICHIGAN MECHANICAL CODE (2015)
MNFR	MANUFACTURER
MOC	MAXIMUM OVERCURRENT PROTECTION
MPC	MICHIGAN PLUMBING CODE (2018)
MV	MIXING VALVE
NFRH	NON-FREEZE ROOF HYDRANT
OA	OUTSIDE AIR
P	PUMP
PH	PHASE
PSI	POUND PER SQUARE INCH
RA	RETURN AIR
RG	RETURN GRILLE
RP	RECIRC PUMP
SA	SUPPLY AIR
SAN	SANITARY
SD	SHOWER DRAIN
SF	SQUARE FEET
SH	SHOWER
SP	STATIC PRESSURE
ST	STORAGE TANK
TCC	TEMPERATURE CONTROLS CONTRACTOR
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
UR	URINAL
V	VOLT OR VENT
VA	VALVE
VB	VARIABLE AIR VOLUME BOX
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
W	WATT OR WASTE
WB	WET BULB
WC	WATER CLOSET OR WATER COLUMN
WCO	WALL CLEANOUT
WH	WATER HEATER

MECHANICAL SYMBOLS

SYMBOL	DESCRIPTION
	PIPE DROP
	PIPE RISE
	ARROW INDICATES DIRECTION OF FLOW
	BALL VALVE
	GATE VALVE
	UNION
	PRESSURE GAUGE W/ SHUTOFF
	STRAINER
	CHECK VALVE
	THERMOMETER W/ SHUTOFF
	AIR VENT
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	SANITARY
	NATURAL GAS
	VENT
	CONDENSATE
	FLOOR CLEANOUT
	VERTICAL CLEANOUT
	FLOOR DRAIN
	VENT THRU ROOF
	HOT WATER HEATING RETURN
	HOT WATER HEATING SUPPLY
	HOT WATER HEATING RETURN SUPPLY
	VOLUME DAMPER IN DUCT
	DUCT DOWN
	CEILING SUPPLY DIFFUSER
	CEILING RETURN GRILLE
	CEILING EXHAUST GRILLE
	DIRECTION OF AIR FLOW
	HORIZONTAL FIRE DAMPER IN FLOOR OR CEILING W/ACCESS DOOR
	VERTICAL FIRE DAMPER IN WALL W/ACCESS DOOR
	VERTICAL FIRE/SMOKE DAMPER IN WALL W/ACCESS DOOR
	HORIZONTAL FIRE/SMOKE DAMPER IN FLOOR OR CEILING W/ACCESS DOOR
	VERTICAL SMOKE DAMPER IN WALL W/ACCESS DOOR
	HORIZONTAL SMOKE DAMPER IN FLOOR OR CEILING W/ACCESS DOOR
	TEMPERATURE SENSOR / THERMOSTAT

MECHANICAL DRAWING INDEX

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M601	TEMPERATURE CONTROL DIAGRAMS

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
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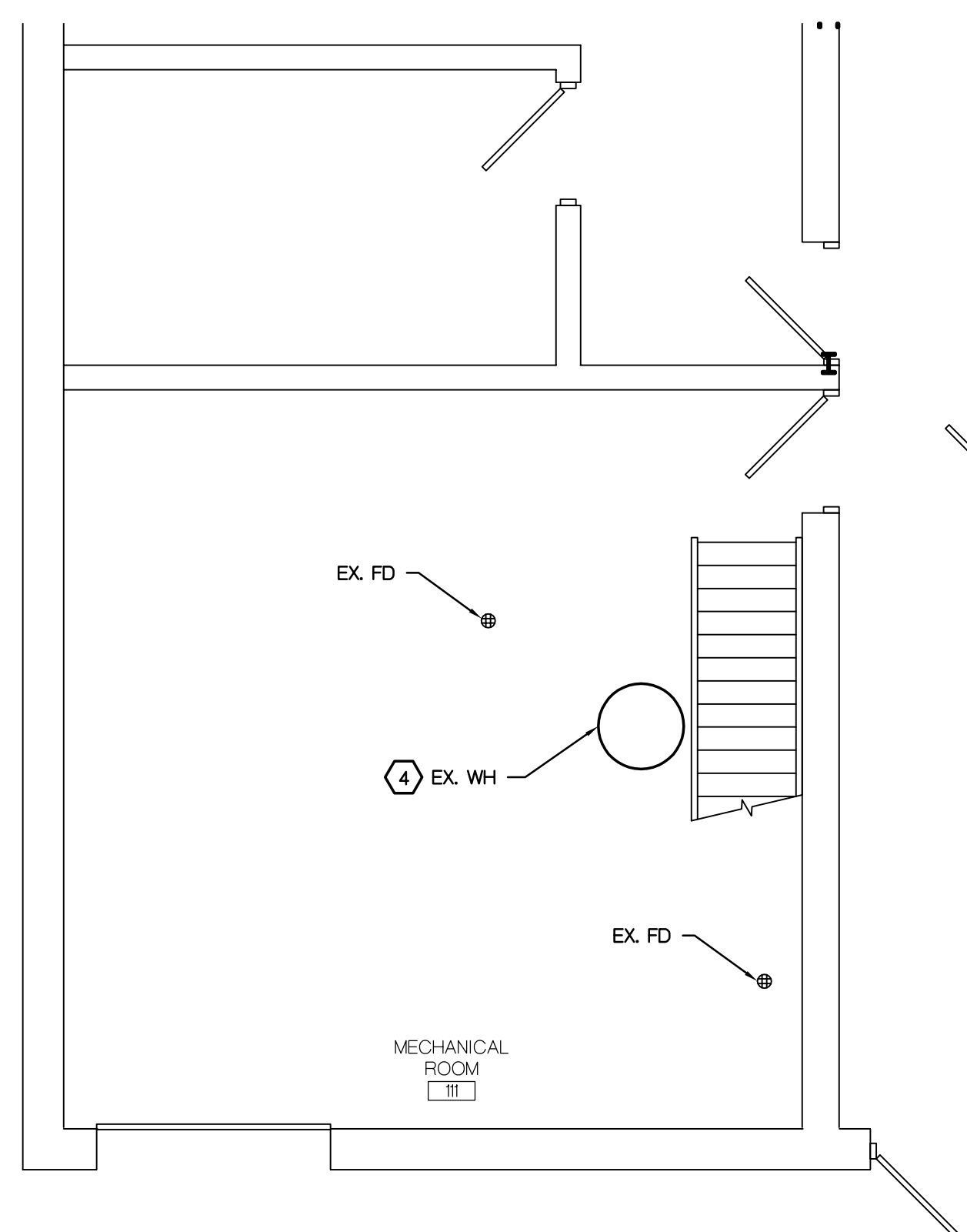
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CHECKED BY
APPROVED BY

DATE
SEP 28, 2022
MAY 17, 2023

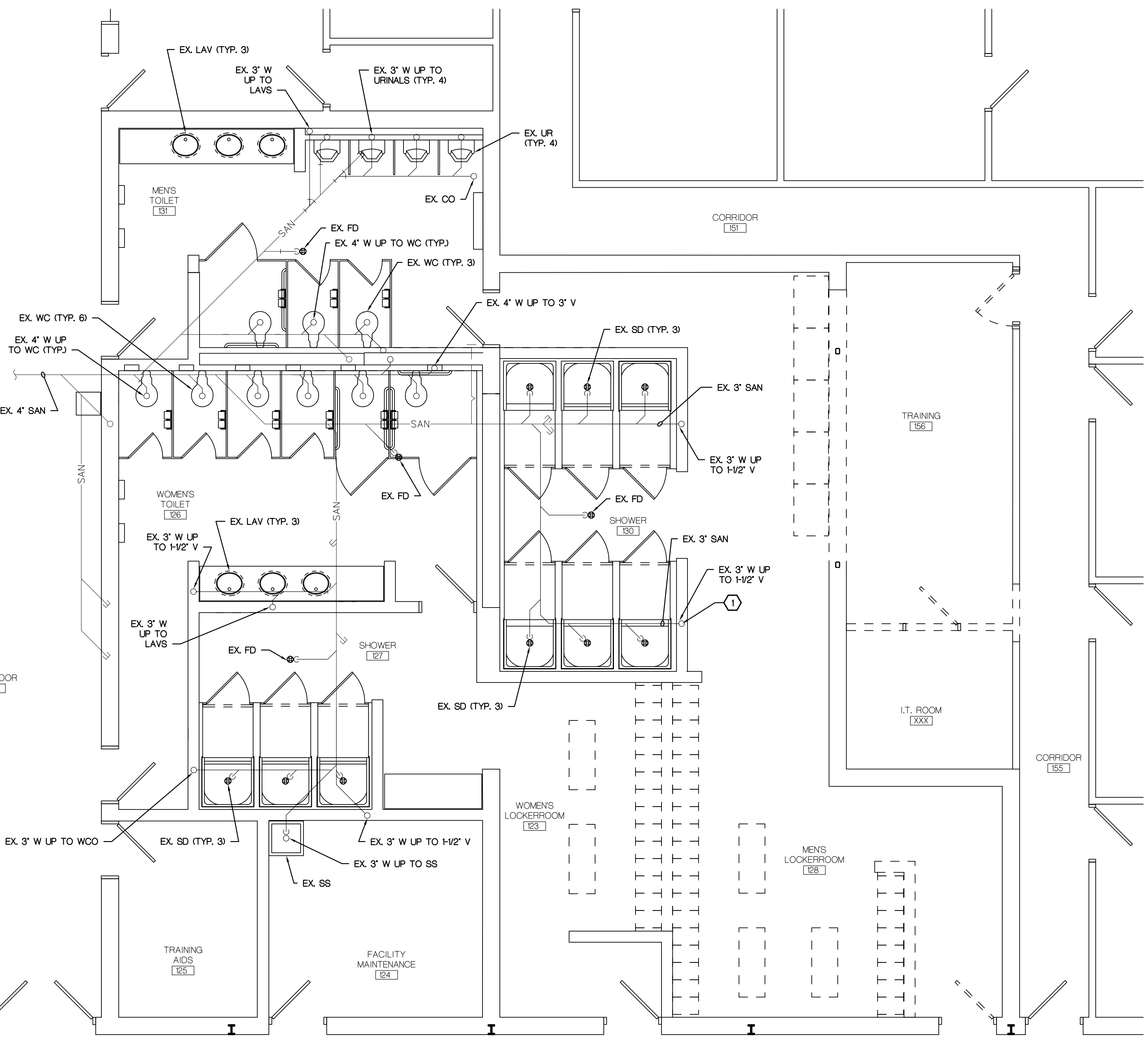
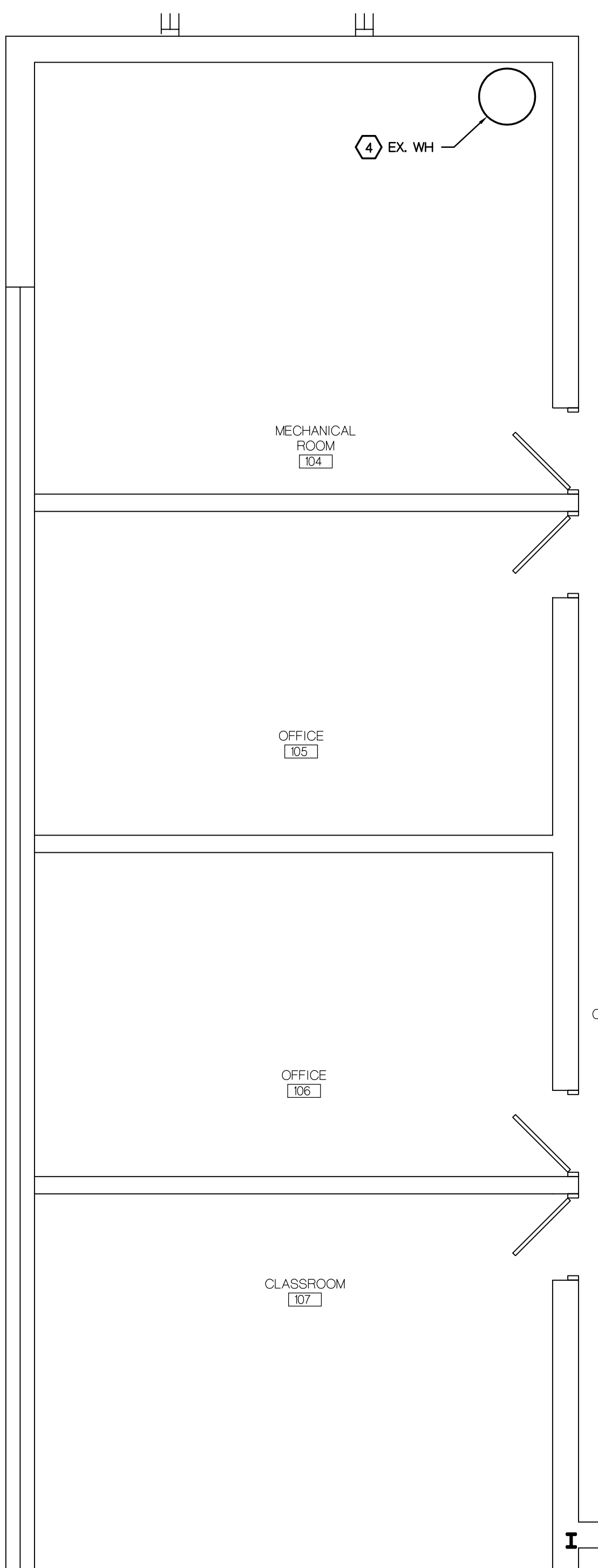
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SHEET
M001





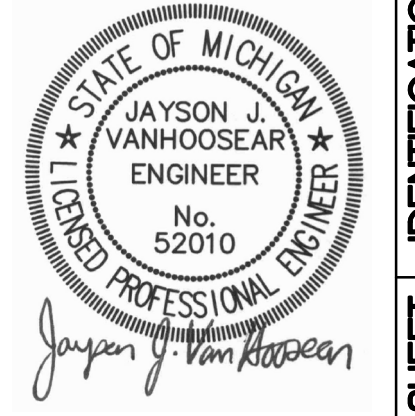
2
M101
FIRST FLOOR PLUMBING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



1
M101
FIRST FLOOR UNDERGROUND PLUMBING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

- GENERAL PLUMBING DEMOLITION NOTES:**
- THIS DRAWING IS DIAGRAMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE M.C. SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE M.C. TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.
 - ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE, COUNTY CODE REGULATIONS, MIOSHA, AND ADA.
 - THE CONTRACTOR SHALL COORDINATE THE EXTENT OF ALL DEMOLITION WORK WITH OTHER TRADES PRIOR TO DEMOLITION.
 - THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND EXISTING PLUMBING FIXTURES TO BE REMOVED. ALL PLUMBING PIPING SERVING EXISTING PLUMBING FIXTURES TO BE REMOVED SHALL BE CARVED IN THE CEILING SPACE OR BELOW FINISHED FLOOR. THE P.C. SHALL FIELD VERIFY THE EXTENT OF DEMOLITION WITH OTHER TRADES.
 - THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING PLUMBING PIPING TO REMAIN TO SERVE NEW PLUMBING FIXTURES. THE P.C. SHALL FIELD VERIFY POINT OF NEW CONNECTIONS OF EXISTING SANITARY AND DOMESTIC WATER PIPING TO SERVE NEW PLUMBING FIXTURES AND EQUIPMENT.

- PLUMBING DEMOLITION KEY NOTES:**
- EXISTING 3" WASTE LINE SHALL BE PREPPED FOR CONNECTION TO NEW 3" SANITARY LINE. P.C. SHALL FIELD VERIFY INVERT AND POINT OF NEW CONNECTION. RE: M201.
 - REMOVE EXISTING WALL CLEANOUT TO FACILITATE INSTALLATION OF NEW SHOWER. EXISTING 1-1/2" VENT UP IN WALL SHALL REMAIN.
 - DISCONNECT EXISTING 1-1/4" CW AND 1-1/4" HW PIPING FROM PIPING IN CEILING SPACE TO PIPE CONNECTIONS AT EXISTING WATER HEATER IN ADJACENT MECHANICAL ROOM. P.C. SHALL CAP EXISTING CW LINE AND SHALL PREP EXISTING HW LINE FOR CONNECTION TO NEW HW PIPING. RE: M202.
 - REMOVE EXISTING WATER HEATER AND ASSOCIATED BRANCH PIPING. COORDINATE DEMOLITION WITH ARCHITECTURAL AND ELECTRICAL.
 - REMOVE EXISTING HOT AND COLD WATER PIPING TO WATER HEATER. CAP COLD WATER PIPING AND PREP HW PIPING FOR NEW CONNECTION. RE: M202.



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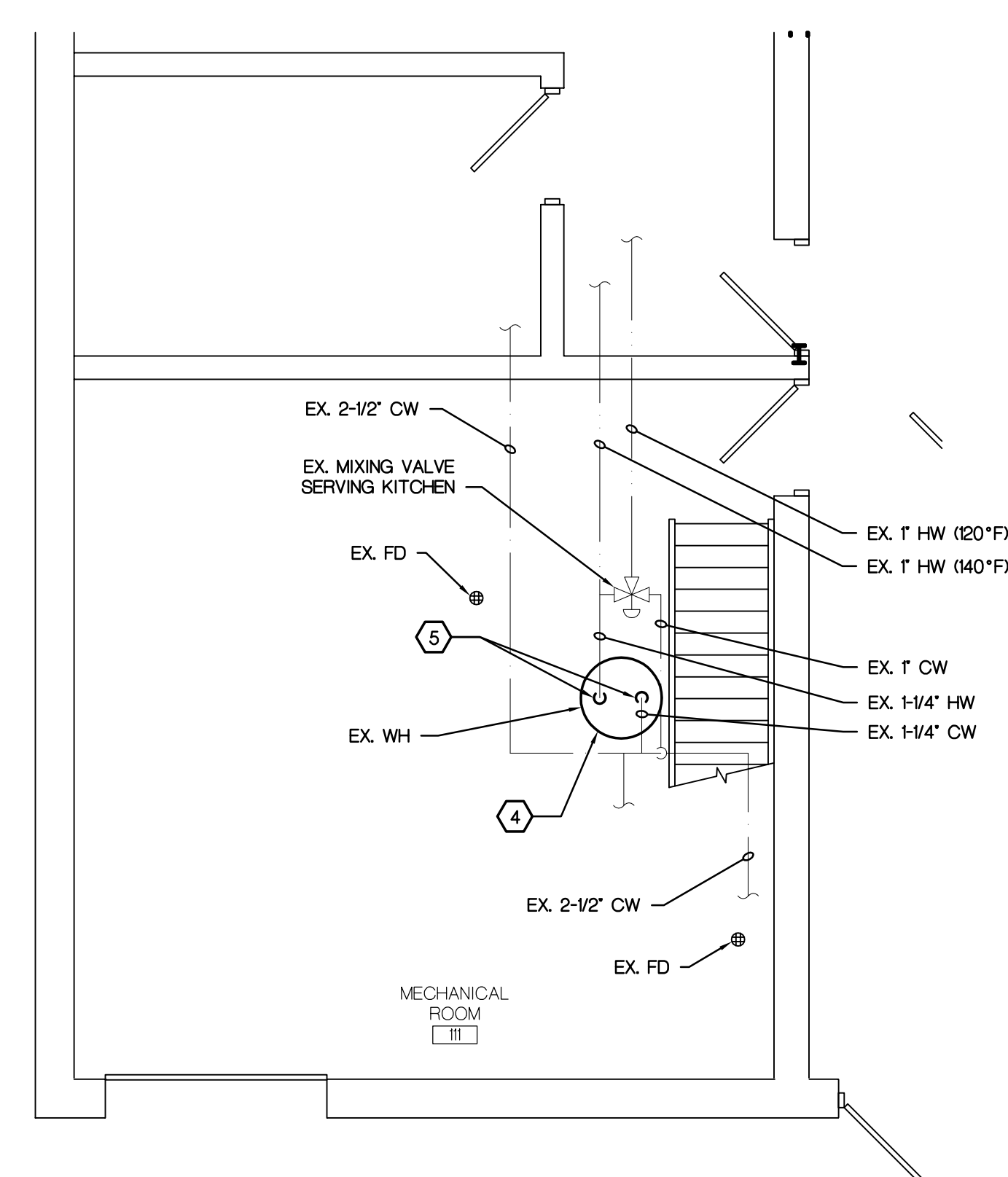
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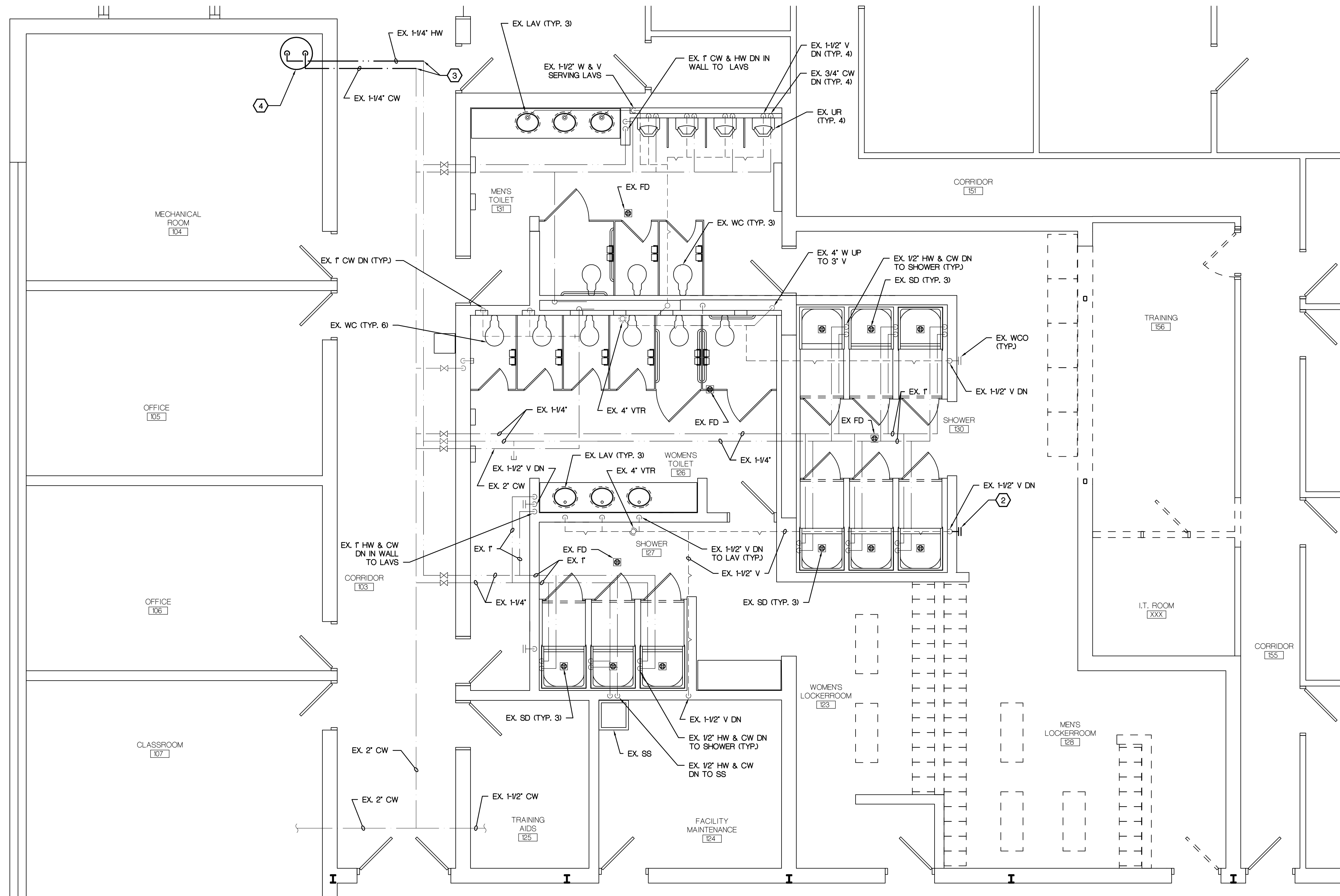
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FILE NO.
59/20271AA
PROJECT NO.
20A-002201

SHEET
M101



2 FIRST FLOOR PLUMBING DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"
 M101



1 FIRST FLOOR ABOVEGROUND PLUMBING DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"
 M102

GENERAL PLUMBING DEMOLITION NOTES:

- THIS DRAWING IS DIAGRAMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE M.C. SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE M.C. TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE, COUNTY CODE REGULATIONS, MIOSHA, AND ADA.
- THE CONTRACTOR SHALL COORDINATE THE EXTENT OF ALL DEMOLITION WORK WITH OTHER TRADES PRIOR TO DEMOLITION.
- THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND EXISTING PLUMBING FIXTURES TO BE REMOVED. ALL PLUMBING PIPING SERVING EXISTING PLUMBING FIXTURES TO BE REMOVED SHALL BE CARVED IN THE CEILING SPACE OR BELOW FINISHED FLOOR. THE P.C. SHALL FIELD VERIFY THE EXTENT OF DEMOLITION WITH OTHER TRADES.
- THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING PLUMBING PIPING TO REMAIN TO SERVE NEW PLUMBING FIXTURES. THE P.C. SHALL FIELD VERIFY POINT OF NEW CONNECTIONS OF EXISTING SANITARY AND DOMESTIC WATER PIPING TO SERVE NEW PLUMBING FIXTURES AND EQUIPMENT.

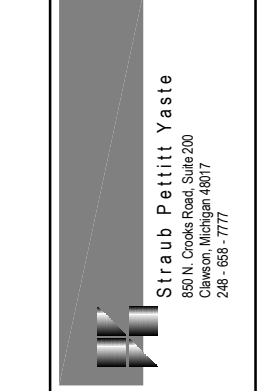
PLUMBING DEMOLITION KEY NOTES:

- EXISTING 3" WASTE LINE SHALL BE PREPPED FOR CONNECTION TO NEW 3" SANITARY LINE. P.C. SHALL FIELD VERIFY INVERT AND POINT OF NEW CONNECTION. RE: M201.
- REMOVE EXISTING WALL CLEANOUT TO FACILITATE INSTALLATION OF NEW SHOWER. EXISTING 1-1/2" VENT UP IN WALL SHALL REMAIN.
- DISCONNECT EXISTING 1-1/4" CW AND 1-1/4" HW PIPING FROM PIPING IN CEILING SPACE TO PIPE CONNECTIONS AT EXISTING WATER HEATER IN ADJACENT MECHANICAL ROOM. P.C. SHALL CAP EXISTING CW LINE AND SHALL PREP EXISTING HW LINE FOR CONNECTION TO NEW HW PIPING. RE: M202.
- REMOVE EXISTING WATER HEATER AND ASSOCIATED BRANCH PIPING. COORDINATE DEMOLITION WITH ARCHITECTURAL AND ELECTRICAL.
- REMOVE EXISTING HOT AND COLD WATER PIPING TO WATER HEATER. CAP COLD WATER PIPING AND PREP HW PIPING FOR NEW CONNECTION. RE: M202.



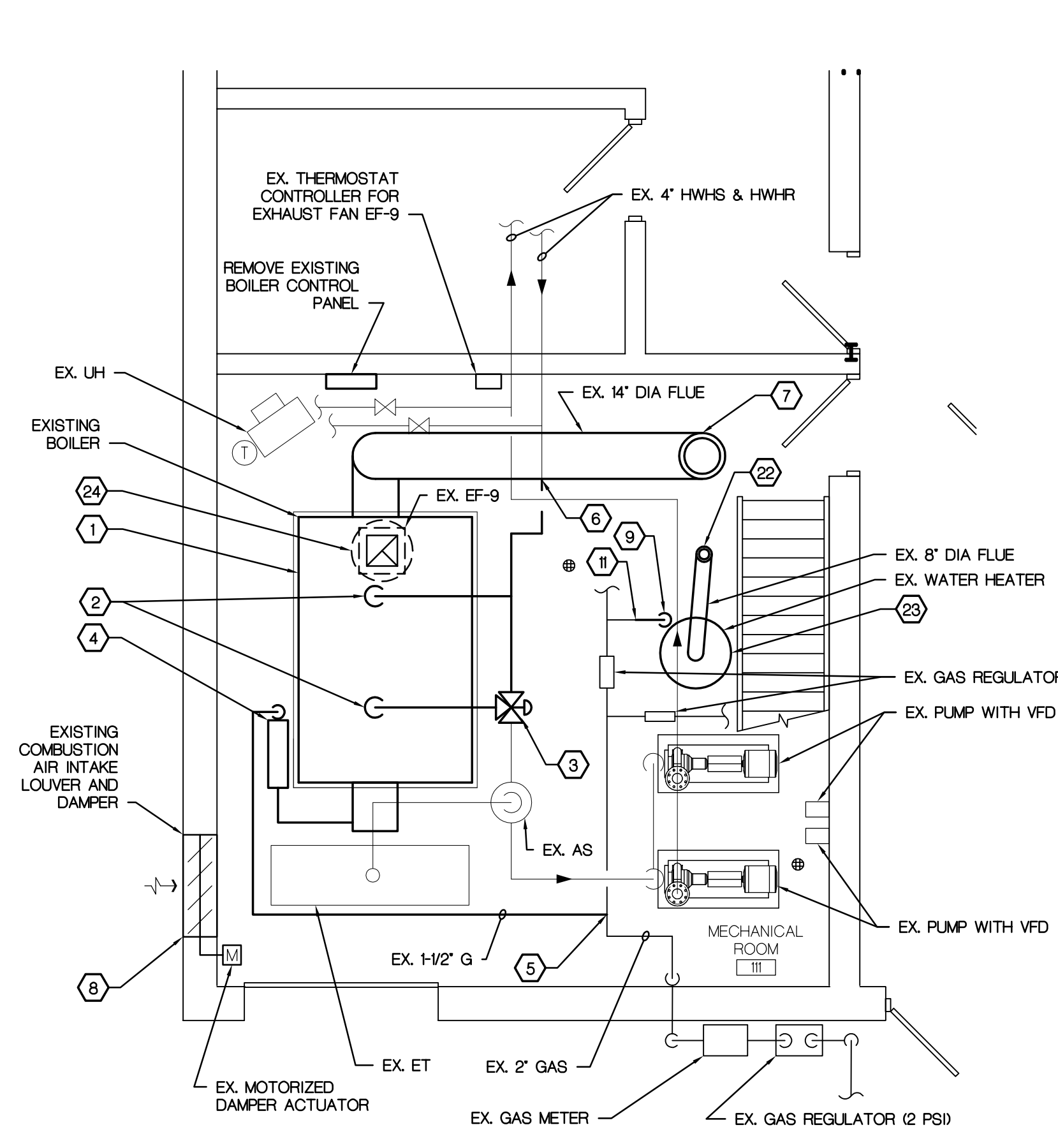
SHEET	M102	IDENTIFICATION NO.	204-002201
		FILE NO.	50120271AA
ISSUED FOR	100% PHASE 500	DATE	SEP 28, 2022
	CONSTRUCTION	DATE	MAY 17, 2023
	FINAL RECORD		
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
JV	JV	KF/JV	KF/JV

Department of Military and Veterans Affairs
 Bay City Armory - Renovate Armory



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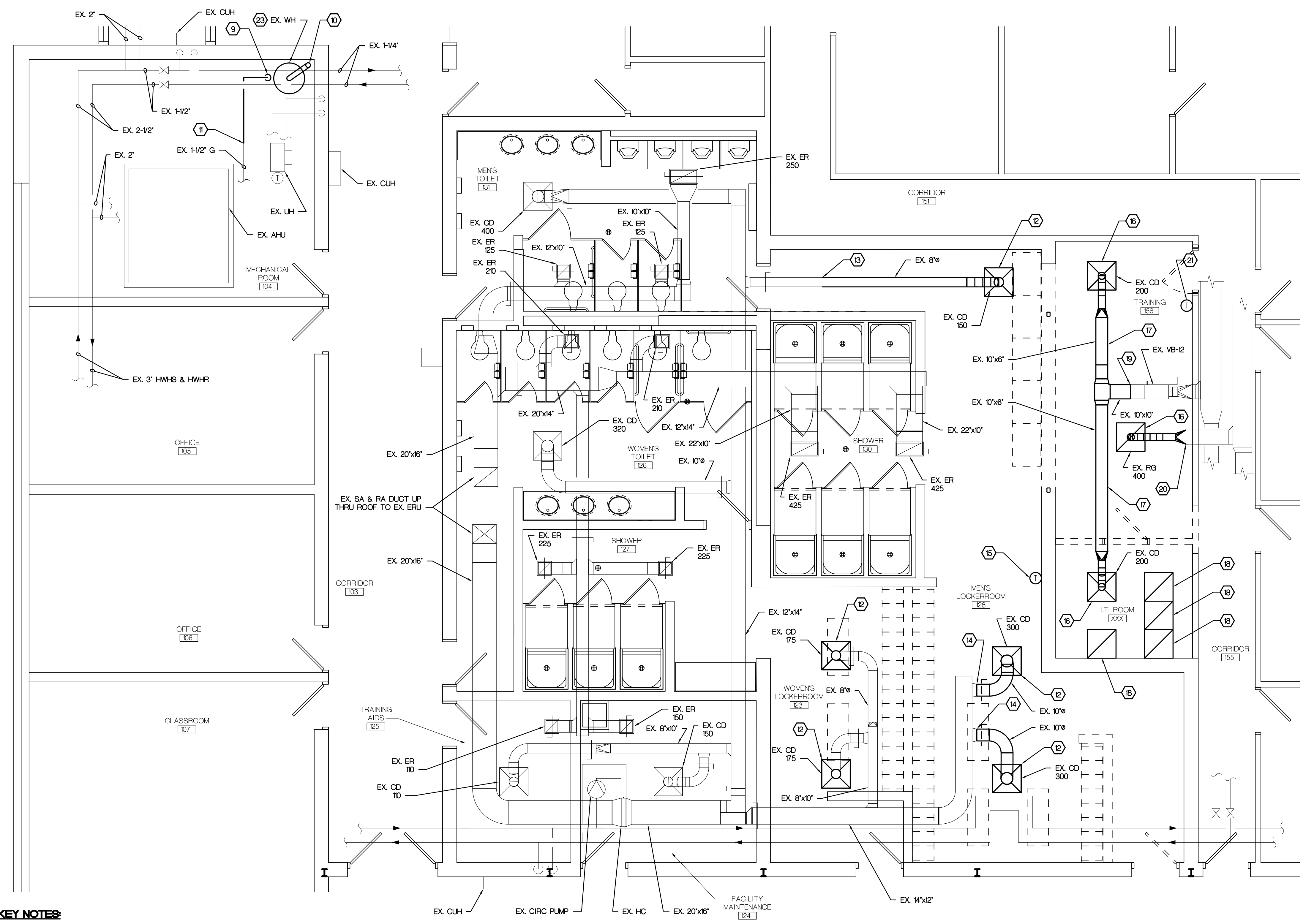
2 FIRST FLOOR MECHANICAL DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"
 M103

GENERAL MECHANICAL DEMOLITION NOTES:

- THIS DRAWING IS DIAGRAMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE M.C. SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE M.C. TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE, COUNTY CODE REGULATIONS, MISHA, AND ADA.
- THE CONTRACTOR SHALL COORDINATE THE EXTENT OF ALL DEMOLITION WORK WITH OTHER TRADES PRIOR TO DEMOLITION.
- THE M.C. SHALL FIELD VERIFY LOCATION OF ALL EXISTING MECHANICAL EQUIPMENT AND ASSOCIATED DUCTWORK, PIPING, LOUVERS, VALVES, CONTROLS, DIFFUSERS, GRILLES, ETC. TO REMAIN AND TO BE REMOVED.
- THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS TO DETERMINE EXTENT OF DEMOLITION FOR EQUIPMENT TO BE REMOVED AND LOCATION OF EXISTING EQUIPMENT TO REMAIN TO FACILITATE NEW MECHANICAL EQUIPMENT, DUCTWORK, PIPING, DIFFUSERS, GRILLES, CONTROLS, ETC.

MECHANICAL DEMOLITION KEY NOTES:

- REMOVE EXISTING BOILER AND ALL ASSOCIATED HOT WATER HEATING PIPING CONNECTIONS, GAS PIPE CONNECTIONS, CONTROLS AND VENTING. COORDINATE DEMOLITION WITH ARCHITECTURAL AND ELECTRICAL.
- REMOVE EXISTING HOT WATER HEATING PIPING BRANCH LINES ROUTED DOWN FROM CEILING SPACE TO BOILER.
- REMOVE EXISTING 3-WAY VALVE IN HOT WATER HEATING PIPING.
- REMOVE EXISTING GAS TRAIN AND ASSEMBLY SERVING BOILER.
- REMOVE EXISTING GAS LINE SERVING BOILER AND CAP PIPE AT MAIN.
- DISCONNECT EXISTING HOT WATER HEATING RETURN PIPING AND PREP PIPING FOR CONNECTION TO NEW PIPING. RE: M301.
- REMOVE EXISTING 14\"/>



1 FIRST FLOOR MECHANICAL DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"
 M103

MECHANICAL DEMOLITION KEY NOTES:

- REMOVE EXISTING BRANCH DUCT TO SUPPLY DIFFUSER AND CAP BRANCH DUCT AT MAIN DUCT.
- REMOVE EXISTING THERMOSTAT SERVING EXISTING ENERGY RECOVERY UNIT ERU-1. SALVAGE EXISTING THERMOSTAT TO RELOCATE ON ADJACENT WALL IN WOMEN'S LOCKER ROOM. RE: M301 FOR NEW LOCATION.
- REMOVE EXISTING CEILING DIFFUSER AND ASSOCIATED BRANCH DUCTWORK.
- REMOVE EXISTING DUCTWORK ABOVE CEILING.
- REMOVE EXISTING RETURN GRILLES IN CEILING.
- DISCONNECT EXISTING DUCTWORK DOWNSTREAM OF EXISTING VAV BOX. PREP DUCTWORK FOR CONNECTION TO NEW DUCTWORK.
- REMOVE EXISTING THERMOSTAT SERVING EXISTING VAV BOX VB-2. SALVAGE EXISTING THERMOSTAT TO RELOCATE ON ADJACENT WALL IN IT ROOM. RE: M301 FOR NEW LOCATION.
- REMOVE EXISTING 8\"/>

SHEET	M103	ISSUED FOR	100% PHASE 600 CONSTRUCTION	DATE	SEP 28, 2022	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
IDENTIFICATION NO.	59120271A	100% PHASE 600	CONSTRUCTION	DATE	MAY 17, 2023	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
PROJECT NO.	284602201	FINAL RECORD							



Jayson J. Vanhoosear



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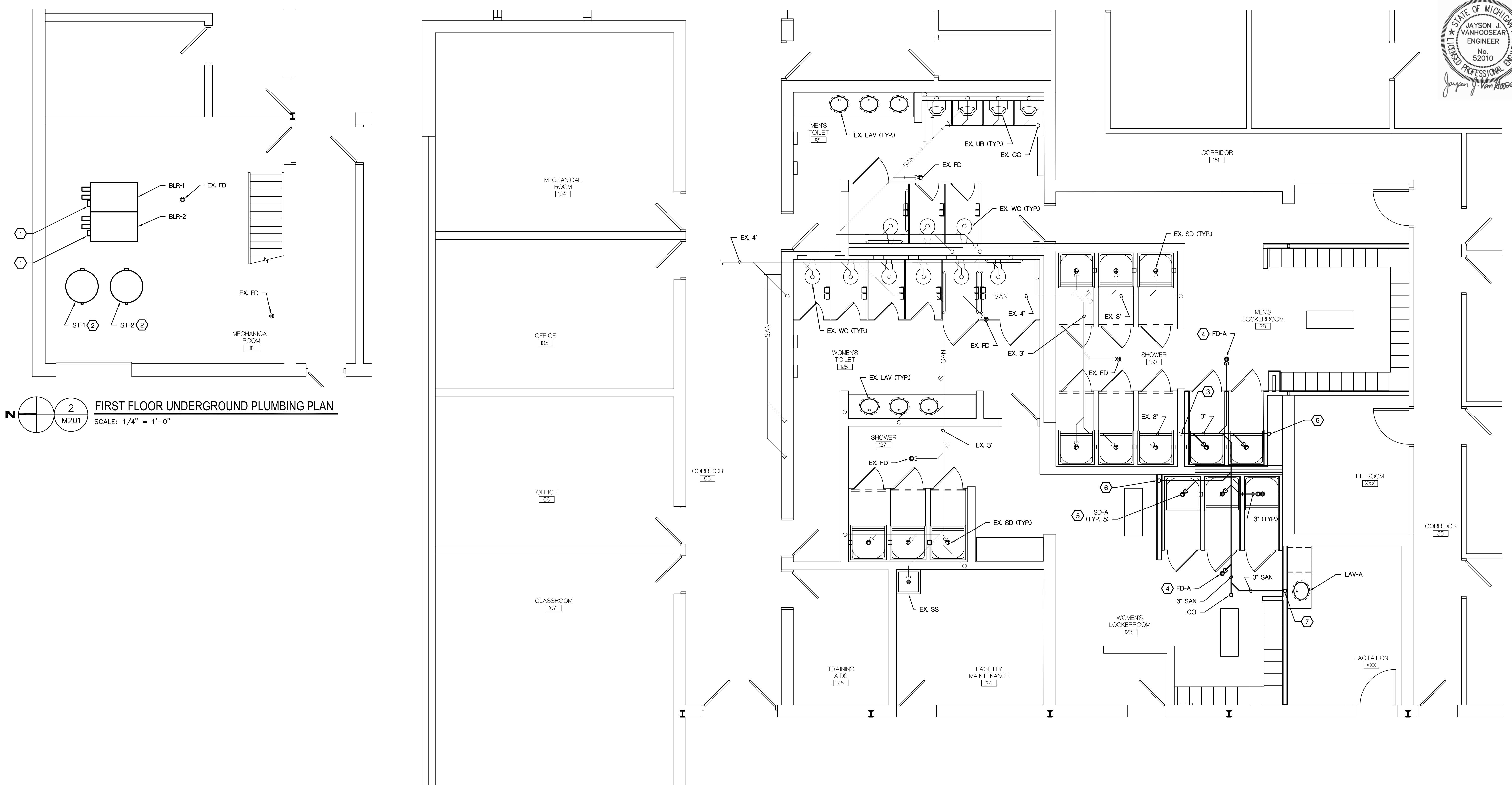
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 CHECKED BY
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DATE
 SEP 28, 2022
 MAY 17, 2023

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 CONSTRUCTION
 FINAL RECORD

SHEET
 M201



2 FIRST FLOOR UNDERGROUND PLUMBING PLAN
 SCALE: 1/4" = 1'-0"

1 FIRST FLOOR UNDERGROUND PLUMBING PLAN
 SCALE: 1/4" = 1'-0"

- GENERAL PLUMBING NOTES:**
- THIS DRAWING IS DIAGRAMATIC & SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE P.C. SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE P.C. TAKING FULL RESPONSIBILITY & LIABILITY FOR ANY SAID DISCREPANCIES.
 - ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE, COUNTY CODE REGULATIONS, MISHA, & ADA AND CURRENT MICHIGAN BUILDING CODE (MBC) AND MICHIGAN PLUMBING CODE (MPC).
 - ALL UNDERGROUND SANITARY PIPING SHALL BE SLOPED AT 1/4" PER FOOT AND ALL ABOVEGROUND SANITARY PIPING SHALL BE SLOPED AT 1/8" PER FOOT.
 - INSTALL ASSE 1070 THERMOSTATIC MIXING VALVES ON ALL SINKS AND LAVATORIES TO LIMIT WATER TEMPERATURE TO 100°F PER CODE.
 - INSTALL ASSE 1016 THERMOSTATIC MIXING VALVES ON ALL SHOWER VALVES TO LIMIT WATER TEMPERATURE TO 120°F PER CODE.
 - P.C. SHALL INSTALL AIR ADMITTANCE VALVE IN LIEU OF VENT PIPING TO SERVE FIXTURES WHERE APPLICABLE (PER 2015 MPC).
 - ALL VENTING SHALL BE INSTALLED PER THE 2015 MPC. ALL DRY VENTS CONNECTING TO A HORIZONTAL DRAIN SHALL CONNECT ABOVE THE CENTERLINE OF THE HORIZONTAL DRAIN PIPE.

- GENERAL PLUMBING NOTES:**
- P.C. SHALL COORDINATE POINT OF NEW CONNECTION TO EXISTING PLUMBING PIPING FOR PLUMBING PIPING SERVING NEW FIXTURES AND EQUIPMENT.
 - THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING DOMESTIC WATER PIPING. NEW DOMESTIC WATER PIPING SERVING NEW FIXTURES SHALL CONNECT TO EXISTING DOMESTIC WATER PIPING. P.C. SHALL FIELD VERIFY POINT OF NEW CONNECTION AND PIPE SIZE OF EXISTING DOMESTIC WATER PIPING.
 - EXISTING SANITARY PIPING SHALL REMAIN. NEW SANITARY PIPING SERVING NEW FIXTURES SHALL CONNECT TO EXISTING SANITARY PIPING. P.C. SHALL FIELD VERIFY POINT OF NEW CONNECTION AND PIPE SIZE OF EXISTING SANITARY PIPING.
 - P.C. SHALL COORDINATE ROUTING OF PLUMBING PIPING IN WALLS WITH OTHER TRADES TO AVOID INTERFERENCES WITH CONDUITS, SWITCHES, LIGHTS, DUCTWORK, REGISTERS, APPLIANCES AND CABINETS.
 - PROVIDE BALANCING VALVES IN HOT WATER RETURN PIPING NEAR THE END OF EACH PIPE RUN AND CONNECT TO THE HOT WATER PIPING IN THE CEILING SPACE OF ABOVE THE CORRIDOR AND/OR SHOWER ROOMS.
 - PROVIDE SHUT-OFF VALVES IN DOMESTIC WATER BRANCH PIPING SERVING PLUMBING FIXTURES. P.C. SHALL LOCATE VALVES IN ACCESSIBLE SPACE AND SHALL COORDINATE WITH OWNER.

- PLUMBING KEY NOTES:**
- ROUTE 1" DRAIN LINE FROM NEUTRALIZATION KIT AND PRESSURE RELIEF VALVE AT BOILER ALONG FLOOR AND TERMINATE OVER FLOOR DRAIN WITH AN AIR GAP.
 - ROUTE 3/4" DRAIN LINE FROM TEMPERATURE AND PRESSURE RELIEF VALVE AT INDIRECT STORAGE TANK ALONG FLOOR AND TERMINATE OVER FLOOR DRAIN WITH AIR GAP.
 - CONNECT NEW 3" SANITARY PIPING TO EXISTING 3" SANITARY. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 3" WASTE UP THRU FLOOR AND CONNECT TO FLOOR DRAIN.
 - ROUTE 3" WASTE UP THRU FLOOR AND CONNECT TO SHOWER DRAIN.
 - ROUTE 3" WASTE UP IN WALL AND CONNECT TO WALL CLEANOUT AND 1-1/2" VENT LINE.
 - ROUTE 3" WASTE UP IN WALL AND CONNECT TO 1-1/2" WASTE AND VENT TO SERVE LAVATORY.
 - CONNECT NEW DOMESTIC COLD WATER PIPING TO EXISTING. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 1" CW, 1" HW AND 3/4" HWR DN AND CONNECT TO INDIRECT STORAGE TANK. REFER TO PIPING DIAGRAM ON M401 FOR CONNECTIONS AND PIPE SIZES.

- PLUMBING KEY NOTES:**
- CONNECT 1-1/4" HW TO EXISTING 1-1/4" HW. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - CAP EXISTING 1-1/4" CW LINE. RE-M02 FOR DEMOLITION.
 - ROUTE 3/4" CONDENSATE DRAIN LINE DOWN IN WALL AND CONNECT TO CONDENSATE P-TRAP IN CABINETS BELOW LAVATORY.
 - ROUTE 1/2" CW, 1/2" HW DN IN WALL AND CONNECT TO LAVATORY.
 - ROUTE 1-1/2" VENT DN IN WALL AND CONNECT TO WASTE PIPING.
 - CONNECT 1-1/2" VENT TO EXISTING VENT. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 1/2" HW & CW PIPING DN ALONG WALL FROM CEILING AND CONNECT TO SHOWER VALVE WITHIN UNIT ENCLOSURE. CONCEAL VERTICAL PIPING FROM SHOWER UNIT TO CEILING WITHIN REMOVABLE SHEET SHROUD.
 - INSTALL SHUT-OFF VALVES IN 1-1/2" HW, 1-1/2" CW AND 3/4" HWR PIPING IN CEILING SPACE ABOVE CORRIDOR ACCESSIBLE FROM BELOW. COORDINATE LOCATION OF VALVES AND POINT OF ACCESS THRU CEILING WITH ARCHITECTURAL.
 - INSTALL SHUT-OFF VALVES IN 1/2" HW AND 1/2" CW PIPING SERVING SHOWERS. LOCATE VALVES WITHIN VERTICAL REMOVABLE SHROUD BELOW CEILING. COORDINATE LOCATION OF VALVES, PIPING AND WALL MOUNTED SHOWER UNIT WITH ARCHITECTURAL. REFER TO SHOWER UNIT DETAIL ON M202.

- PLUMBING KEY NOTES:**
- ROUTE 3/4" CW LINE UP THRU ROOF AND CONNECT TO NFRH. MOUNT TOP OF NFRH AT 36" ABOVE ROOF. RE-CERTIFY ROOF WARRANTY WITH NEW ROOF PENETRATION. COORDINATE FINAL LOCATION AND MOUNTING HEIGHT OF NFRH WITH ARCHITECT AND OWNER. COORDINATE ROOF PENETRATION AND SEALING PIPE PENETRATION WITH ARCHITECT.
 - CONNECT 1/4" DRAIN TUBING TO DRAIN PORT OF VALVE BODY BELOW ROOF OF NFRH AND ROUTE ABOVE CEILING. ROUTE EXPOSED TUBING DOWN WALL FROM CEILING SPACE AND TERMINATE ABOVE SERVICE SINK FOR DISCHARGE.
 - CAP EXISTING 1-1/4" CW LINE TO WATER HEATER THAT WAS REMOVED.
 - CONNECT 1-1/4" HW (40°F) PIPING FROM INDIRECT TANKS TO EXISTING 1-1/4" HW (40°F) PIPING SERVING KITCHEN AND EX. MIXING VALVE. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - CONNECT 3/4" HWR PIPING TO EXISTING 1-1/4" HW (40°F) PIPING. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 2" HW AND 3/4" HWR PIPING FROM CEILING SPACE BELOW LOW ROOF THRU WALL INTO ASSEMBLY HALL AREA. ROUTE EXPOSED PIPING STACKED ALONG INTERIOR WALL ON UNISTRUT AT APPROXIMATELY 11'-8" AFF FROM CORRIDOR R2 TO CORRIDOR R3. PROVIDE REMOVABLE SHEET METAL ENCLOSURE SECURED TO WALL TO CONCEAL PIPES. ENCLOSURE SHALL BE APPROXIMATELY 8" DEEP AND 12" HIGH AND SHALL BE PAINTED TO MATCH ADJACENT WALL. P.C. SHALL COORDINATE FINAL LOCATION OF PIPE ROUTING AND ELEVATION OF PIPING AND ENCLOSURE WITH ARCHITECTURAL.



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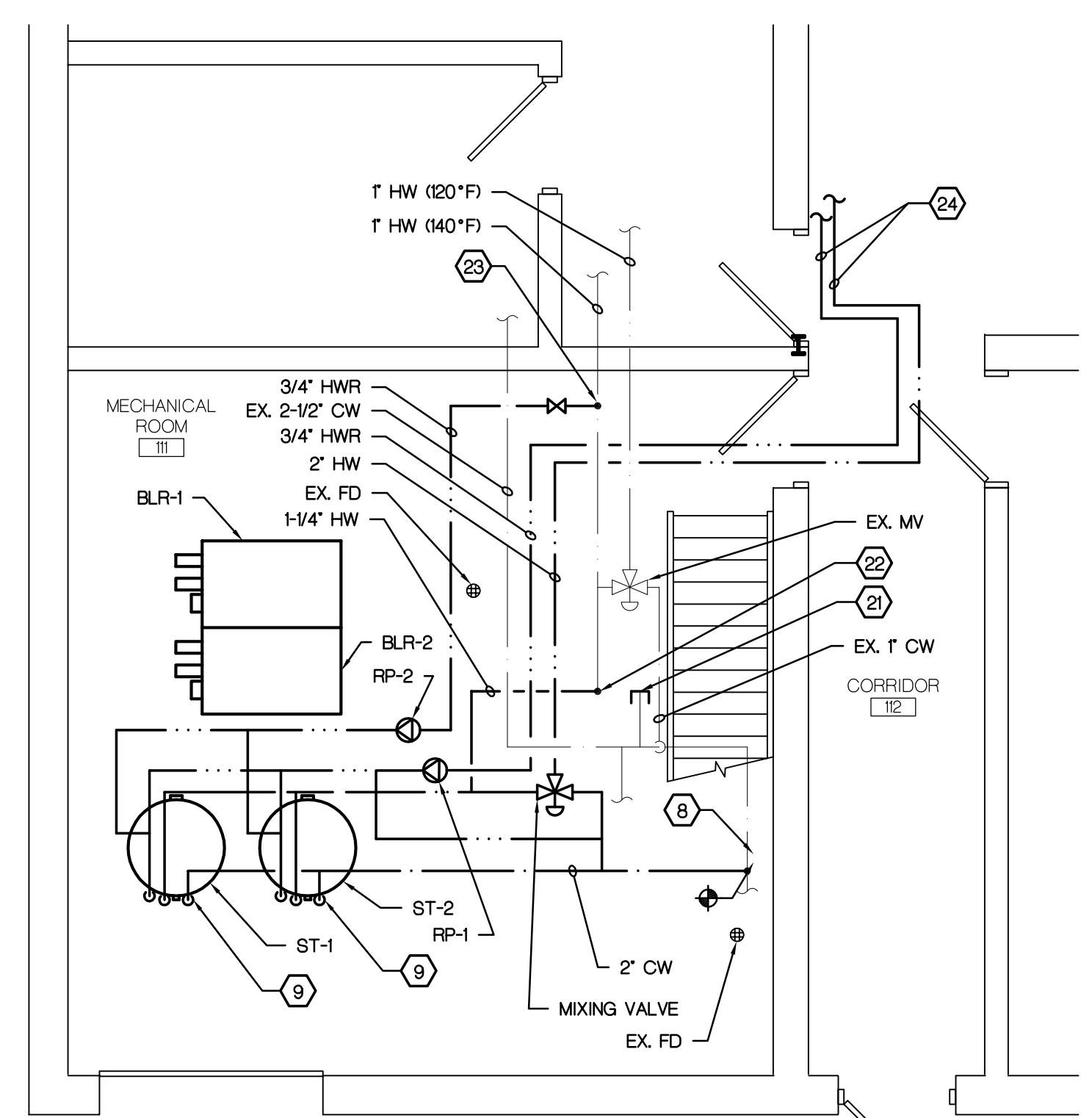
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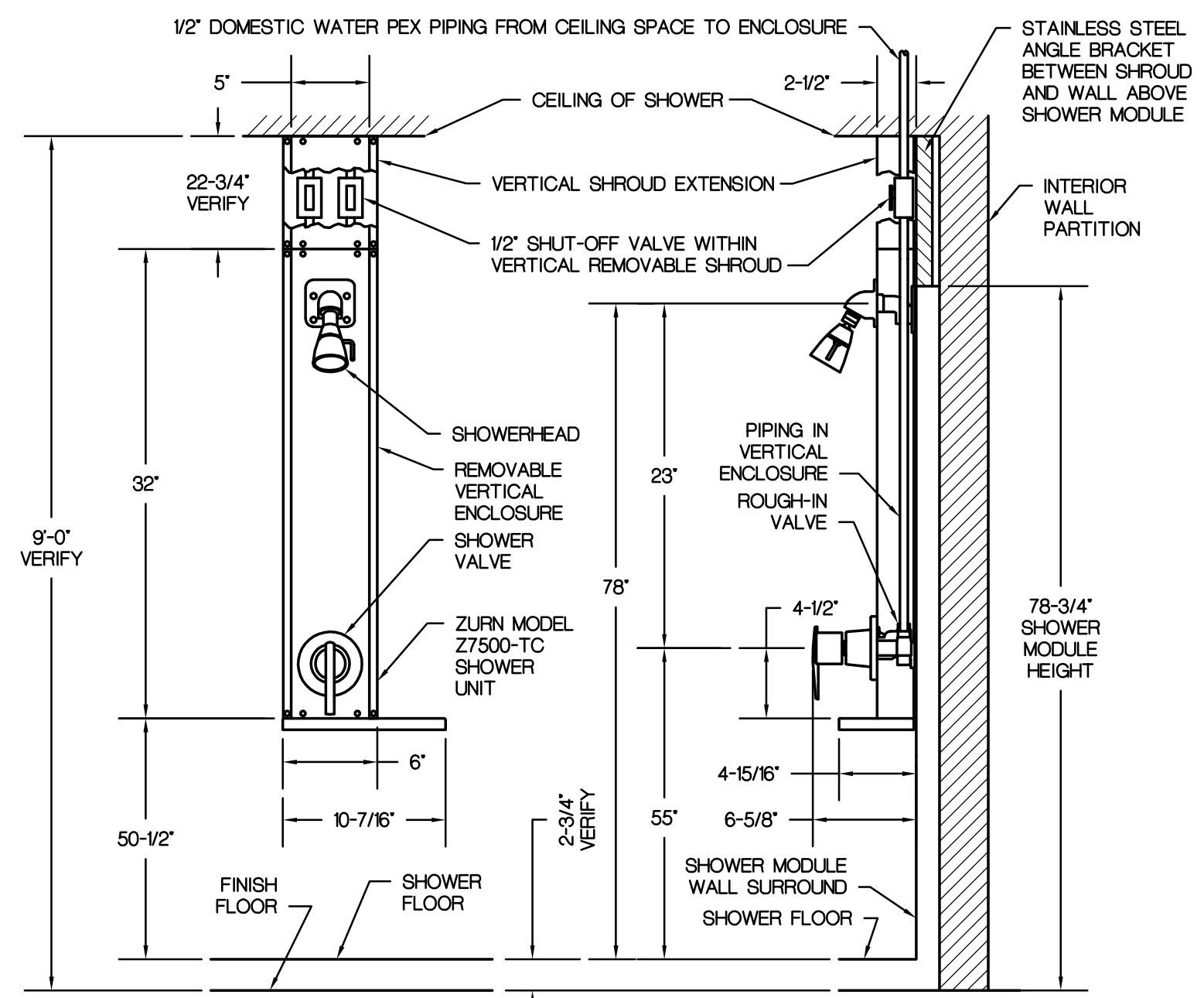
DATE
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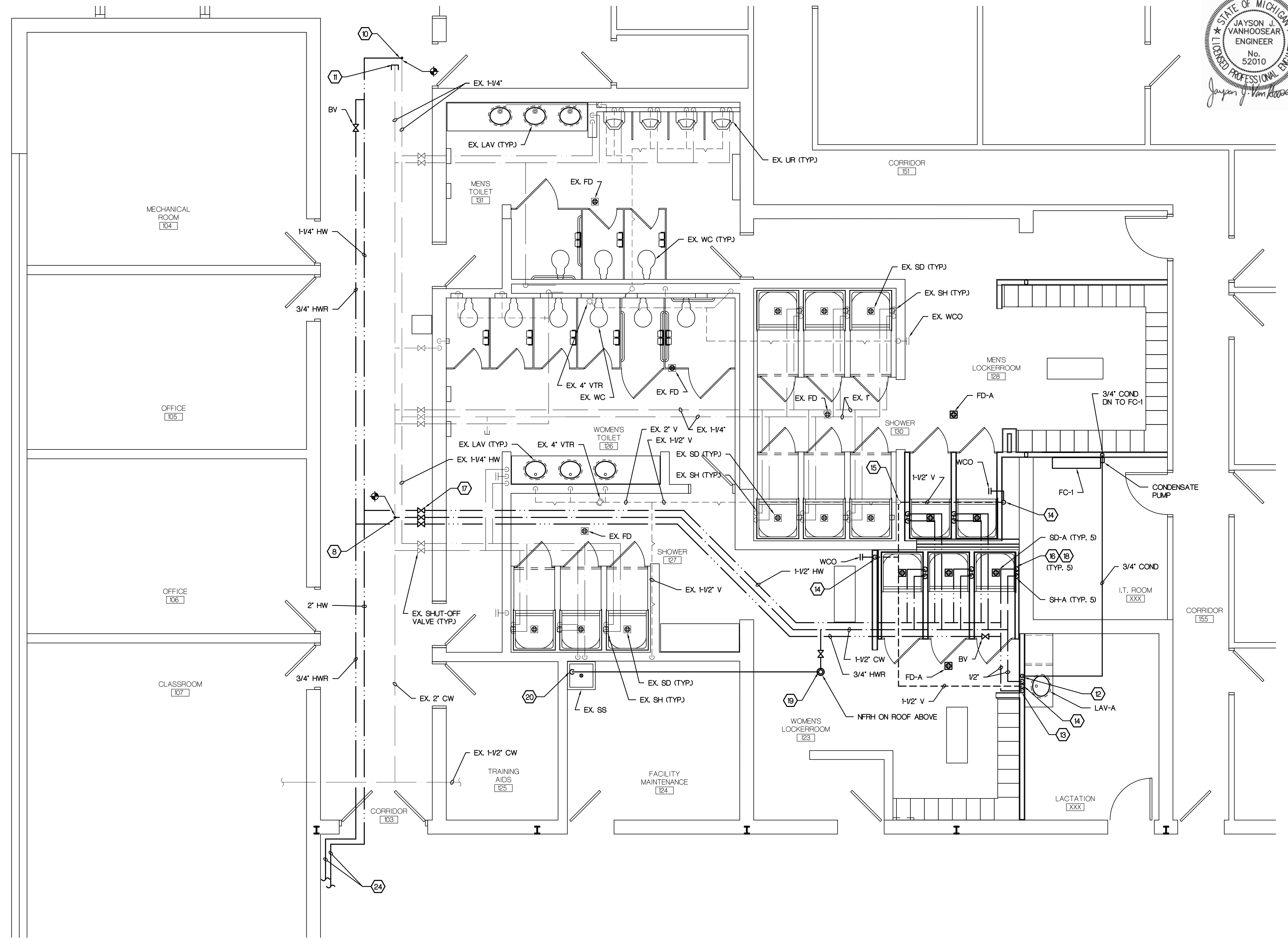


2 FIRST FLOOR ABOVEGROUND PLUMBING PLAN
 SCALE: 1/4" = 1'-0"



SHOWER UNIT INSTALLATION
 COORDINATE FINAL LOCATION AND ELEVATION OF SHOWER UNIT WITH ARCHITECTURAL DRAWINGS. THE LENGTH OF THE REMOVABLE VERTICAL SHROUD EXTENSION ABOVE SHOWER UNIT WILL DEPEND ON CEILING HEIGHT OF SHOWER AREA AND THE MOUNTING HEIGHT OF SHOWER UNIT. FURNISH SHOWER UNIT WITH INTERNAL AND EXTERNAL BRACKETS FOR MOUNTING ENCLOSURE AND SHROUD EXTENSION TO WALL AND CEILING. INSTALL 1/8" GAGE STAINLESS STEEL #4 BRUSHED FINISHED ANGLES (APPROXIMATELY 2'-1/2"X1'-1/2") FROM TOP OF FIBERGLASS SHOWER MODULE TO CEILING TO FILL IN OFFSET BETWEEN SHOWER MODULE AND WALL TILE TO SHOWER UNIT ENCLOSURES. COORDINATE WITH ARCHITECTURAL AND REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR ADDITIONAL INFORMATION. ALTERNATE MANUFACTURER OF SHOWER UNIT SHALL BE APPROVED BY ARCHITECT.

3 WALL SHOWER UNIT DETAIL
 SCALE: NONE



1 FIRST FLOOR ABOVEGROUND PLUMBING PLAN
 SCALE: 1/4" = 1'-0"

- GENERAL PLUMBING NOTES:**
- THIS DRAWING IS DIAGRAMATIC & SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE P.C. SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE P.C. TAKING FULL RESPONSIBILITY & LIABILITY FOR ANY SAID DISCREPANCIES.
 - ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE, COUNTY CODE REGULATIONS, MISHA & ADA AND CURRENT MICHIGAN BUILDING CODE (MBC) AND MICHIGAN PLUMBING CODE (MPC).
 - ALL UNDERGROUND SANITARY PIPING SHALL BE SLOPED AT 1/4" PER FOOT AND ALL ABOVEGROUND SANITARY PIPING SHALL BE SLOPED AT 1/8" PER FOOT.
 - INSTALL ASSE 1070 THERMOSTATIC MIXING VALVES ON ALL SINKS AND LAVATORIES TO LIMIT WATER TEMPERATURE TO 107°F PER CODE.
 - INSTALL ASSE 1016 THERMOSTATIC MIXING VALVES ON ALL SHOWER VALVES TO LIMIT WATER TEMPERATURE TO 120°F PER CODE.
 - P.C. SHALL INSTALL AIR ADMITTANCE VALVE IN LIEU OF VENT PIPING TO SERVE FIXTURES WHERE APPLICABLE (PER 2015 MPC).
 - ALL VENTING SHALL BE INSTALLED PER THE 2015 MPC. ALL DRY VENTS CONNECTING TO A HORIZONTAL DRAIN SHALL CONNECT ABOVE THE CENTERLINE OF THE HORIZONTAL DRAIN PIPE.

- GENERAL PLUMBING NOTES:**
- P.C. SHALL COORDINATE POINT OF NEW CONNECTION TO EXISTING PLUMBING PIPING FOR PLUMBING PIPING SERVING NEW FIXTURES AND EQUIPMENT.
 - THE CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING DOMESTIC WATER PIPING. NEW DOMESTIC WATER PIPING SERVING NEW FIXTURES SHALL CONNECT TO EXISTING DOMESTIC WATER PIPING. P.C. SHALL FIELD VERIFY POINT OF NEW CONNECTION AND PIPE SIZE OF EXISTING DOMESTIC WATER PIPING.
 - EXISTING SANITARY PIPING SHALL REMAIN. NEW SANITARY PIPING SERVING NEW FIXTURES SHALL CONNECT TO EXISTING SANITARY PIPING. P.C. SHALL FIELD VERIFY POINT OF NEW CONNECTION AND PIPE SIZE OF EXISTING SANITARY PIPING.
 - P.C. SHALL COORDINATE ROUTING OF PLUMBING PIPING IN WALLS WITH OTHER TRADES TO AVOID INTERFERENCES WITH CONDUITS, SWITCHES, LIGHTS, DUCTWORK, REGISTERS, APPLIANCES AND CABINETS.
 - PROVIDE BALANCING VALVES IN HOT WATER RETURN PIPING NEAR THE END OF EACH PIPE RUN AND CONNECT TO THE HOT WATER PIPING IN THE CEILING SPACE OF ABOVE THE CORRIDOR AND/OR SHOWER ROOMS.
 - PROVIDE SHUT-OFF VALVES IN DOMESTIC WATER BRANCH PIPING SERVING PLUMBING FIXTURES. P.C. SHALL LOCATE VALVES IN ACCESSIBLE SPACE AND SHALL COORDINATE WITH OWNER.

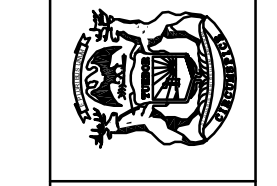
- PLUMBING KEY NOTES:**
- ROUTE 1" DRAIN LINE FROM NEUTRALIZATION KIT AND PRESSURE RELIEF VALVE AT BOILER ALONG FLOOR AND TERMINATE OVER FLOOR DRAIN WITH AN AIR GAP.
 - ROUTE 3/4" DRAIN LINE FROM TEMPERATURE AND PRESSURE RELIEF VALVE AT INDIRECT STORAGE TANK ALONG FLOOR AND TERMINATE OVER FLOOR DRAIN WITH AIR GAP.
 - CONNECT NEW 3" SANITARY PIPING TO EXISTING 3" SANITARY. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 3" WASTE UP THRU FLOOR AND CONNECT TO FLOOR DRAIN.
 - ROUTE 3" WASTE UP THRU FLOOR AND CONNECT TO SHOWER DRAIN.
 - ROUTE 3" WASTE UP IN WALL AND CONNECT TO WALL CLEANOUT AND 1-1/2" VENT LINE.
 - ROUTE 3" WASTE UP IN WALL AND CONNECT TO 1-1/2" WASTE AND VENT TO SERVE LAVATORY.
 - CONNECT NEW DOMESTIC COLD WATER PIPING TO EXISTING. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 1" CW, 1" HW AND 3/4" HWR DN AND CONNECT TO INDIRECT STORAGE TANK. REFER TO PIPING DIAGRAM ON M401 FOR CONNECTIONS AND PIPE SIZES.

- PLUMBING KEY NOTES:**
- CONNECT 1-1/4" HW TO EXISTING 1-1/4" HW. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - CAP EXISTING 1-1/4" CW LINE. RE-M202 FOR DEMOLITION.
 - ROUTE 3/4" CONDENSATE DRAIN LINE DOWN IN WALL AND CONNECT TO CONDENSATE P-TRAP IN CABINETS BELOW LAVATORY.
 - ROUTE 1/2" CW, 1/2" HW DN IN WALL AND CONNECT TO LAVATORY.
 - ROUTE 1-1/2" VENT DN IN WALL AND CONNECT TO WASTE PIPING.
 - CONNECT 1-1/2" VENT TO EXISTING VENT. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 1/2" HW & CW PIPING DN ALONG WALL FROM CEILING AND CONNECT TO SHOWER VALVE WITHIN UNIT ENCLOSURE. CONCEAL VERTICAL PIPING FROM SHOWER UNIT TO CEILING WITHIN REMOVABLE SHROUD.
 - INSTALL SHUT-OFF VALVES IN 1-1/2" HW, 1-1/2" CW AND 3/4" HWR PIPING IN CEILING SPACE ABOVE CORRIDOR ACCESSIBLE FROM BELOW. COORDINATE LOCATION OF VALVES AND POINT OF ACCESS THRU CEILING WITH ARCHITECTURAL.
 - INSTALL SHUT-OFF VALVES IN 1/2" HW AND 1/2" CW PIPING SERVING SHOWERS. LOCATE VALVES WITHIN VERTICAL REMOVABLE SHROUD BELOW CEILING. COORDINATE LOCATION OF VALVES, PIPING AND WALL MOUNTED SHOWER UNIT WITH ARCHITECTURAL. REFER TO SHOWER UNIT DETAIL ON M202.

- PLUMBING KEY NOTES:**
- ROUTE 3/4" CW LINE UP THRU ROOF AND CONNECT TO NFRH. MOUNT TOP OF NFRH AND ROUTE ABOVE CEILING. ROUTE EXPOSED TUBING DOWN WALL FROM CEILING SPACE AND TERMINATE ABOVE SERVICE SINK FOR DISCHARGE.
 - CAP EXISTING 1-1/4" CW LINE TO WATER HEATER THAT WAS REMOVED.
 - CONNECT 1/4" DRAIN TUBING TO DRAIN PORT OF VALVE BODY BELOW ROOF OF NFRH AND ROUTE ABOVE CEILING. ROUTE EXPOSED TUBING DOWN WALL FROM CEILING SPACE AND TERMINATE ABOVE SERVICE SINK FOR DISCHARGE.
 - CAP EXISTING 1-1/4" CW LINE TO WATER HEATER THAT WAS REMOVED.
 - CONNECT 1-1/4" HW (140°F) PIPING FROM INDIRECT TANKS TO EXISTING 1-1/4" HW (140°F) PIPING SERVING KITCHEN AND EX MIXING VALVE. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - CONNECT 3/4" HWR PIPING TO EXISTING 1-1/4" HW (140°F) PIPING. P.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
 - ROUTE 2" HW AND 3/4" HWR PIPING FROM CEILING SPACE BELOW LOW ROOF THRU WALL INTO ASSEMBLY HALL AREA. ROUTE EXPOSED PIPING STACKED ALONG INTERIOR WALL ON UNISTRUT AT APPROXIMATELY 11'-8" AFF FROM CORRIDOR R2 TO CORRIDOR R3. PROVIDE REMOVABLE SHEET METAL ENCLOSURE SECURED TO WALL TO CONCEAL PIPES. ENCLOSURE SHALL BE APPROXIMATELY 8" DEEP AND 12" HIGH AND SHALL BE PAINTED TO MATCH ADJACENT WALL. P.C. SHALL COORDINATE FINAL LOCATION OF PIPE ROUTING AND ELEVATION OF PIPING AND ENCLOSURE WITH ARCHITECTURAL.



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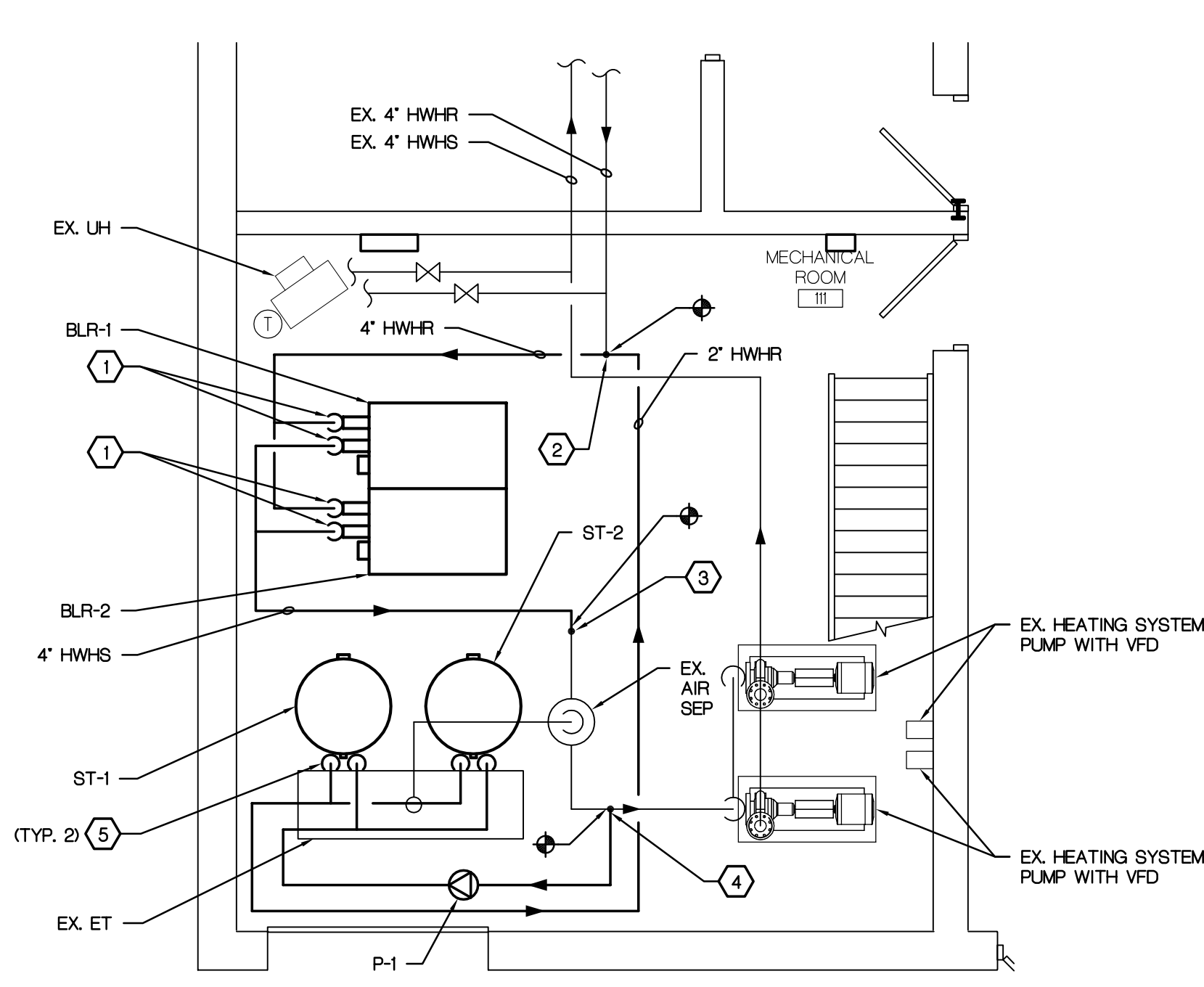
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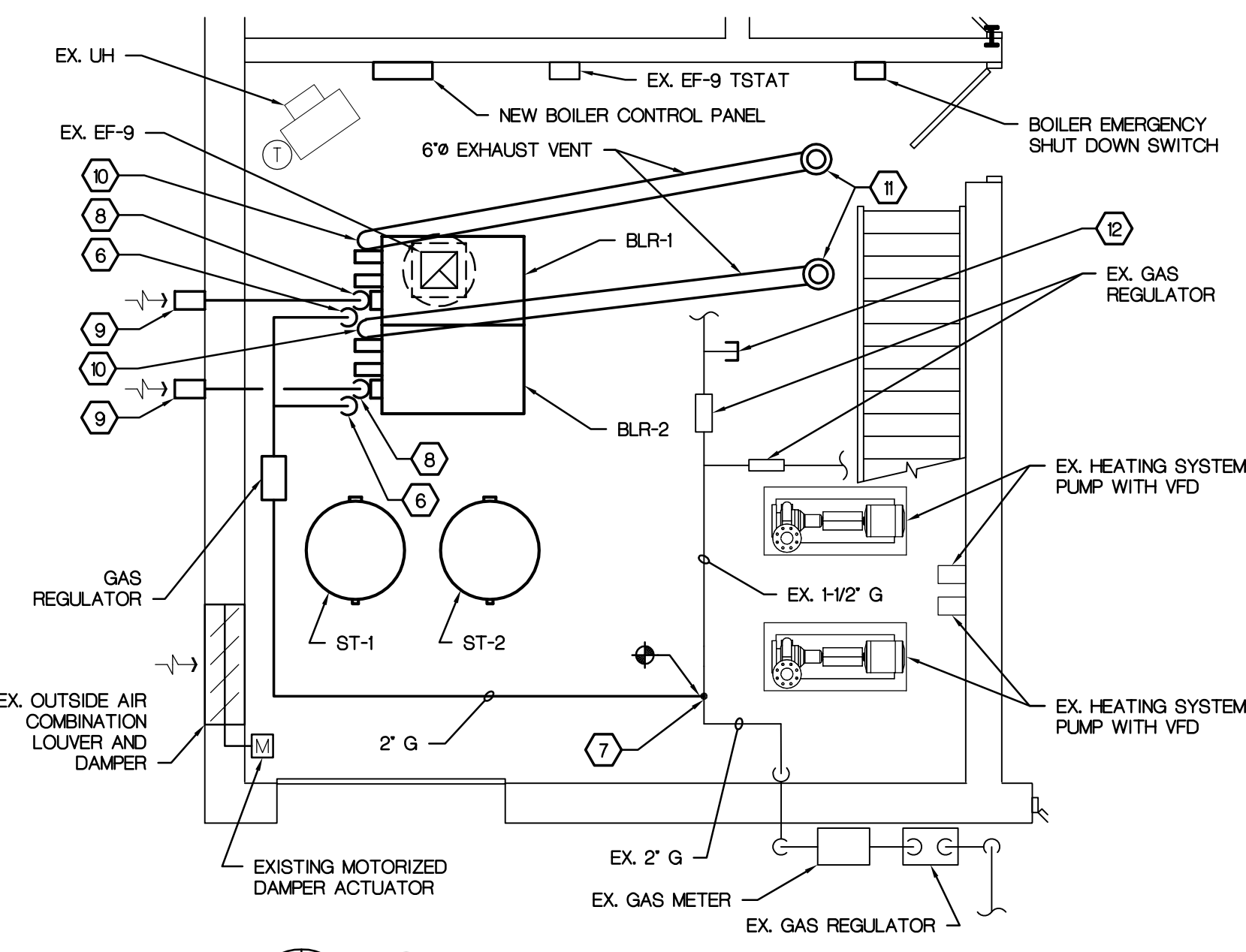
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 313.963.1887

Department of
 Military and Veterans Affairs
 Bay City Armory - Renovate Armory

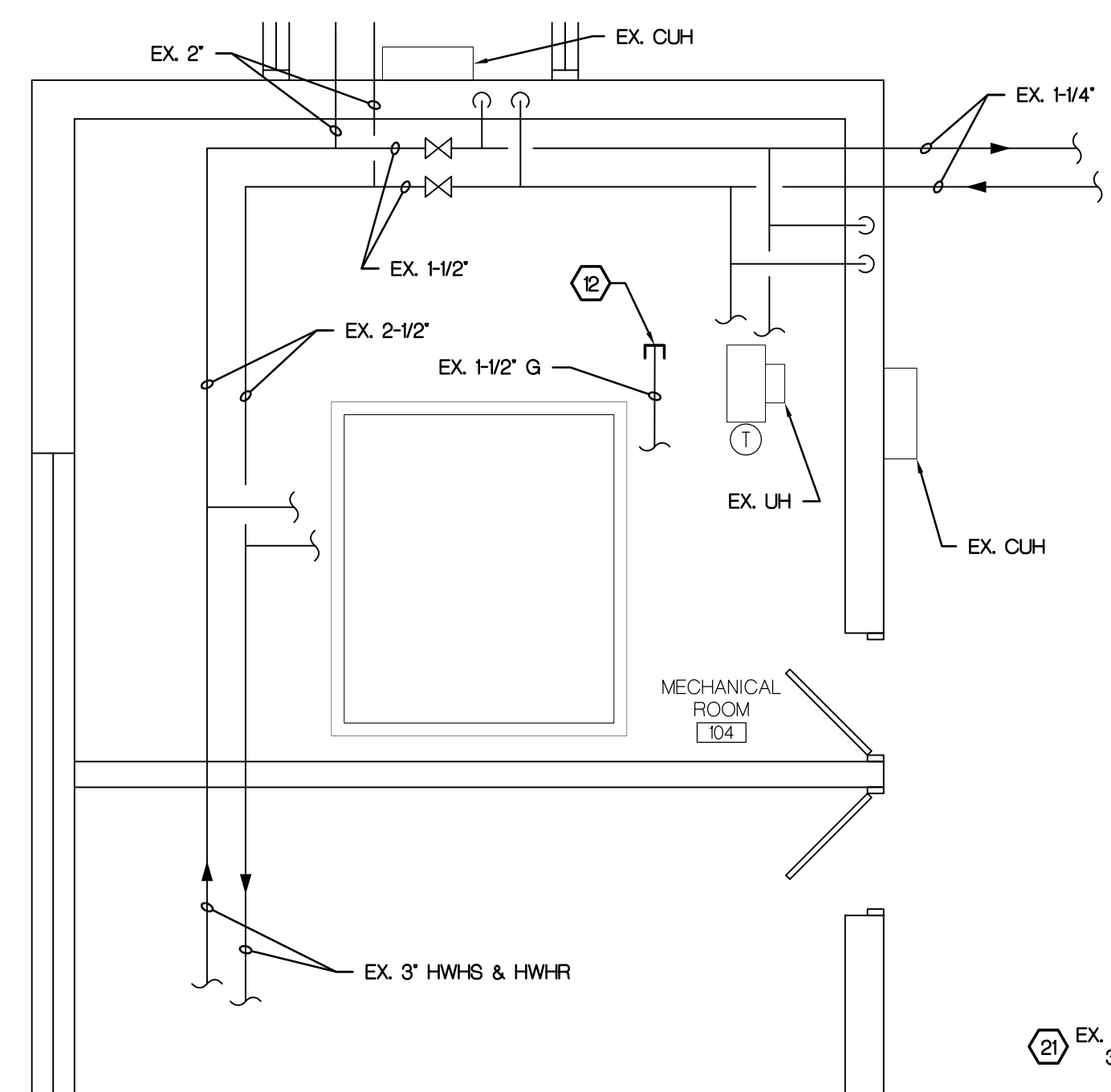
SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE	DESIGNED BY
M301	50/2024/MA	100% PHASE 600 CONSTRUCTION	SEP 28, 2024	DRAWN BY
	PROJECT NO. 20A-002201	FINAL RECORD	MAY 17, 2023	CHECKED BY/JW
				APPROVED BY/JW



2
 M301
 SCALE: 1/4" = 1'-0"



3
 M301
 SCALE: 1/4" = 1'-0"



1
 M301
 SCALE: 1/4" = 1'-0"

GENERAL MECHANICAL NOTES:

- THIS DRAWING IS DIAGRAMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE M.C. SHALL VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE M.C. TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE, COUNTY CODE REGULATIONS, OSHA, AND ADA. 2015 MFC, 2015 MMC AND 2018 MFC.
- DUE TO LIMITED SPACE IT IS CRITICAL THAT THE LOCATION OF ALL PIPING, DUCTWORK AND ACCESSORIES IN CEILING SPACE BE COORDINATED WITH ALL OTHER TRADES IN FIELD. ALL PIPING AND DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE AND/OR AS CLOSE TO CEILING AS POSSIBLE.
- MOUNT ALL THERMOSTATS AND/OR SENSORS AT 48" AFF. ON WALL WHERE INDICATED ON PLANS. INSTALL LOCKABLE COVERS ON ALL EXPOSED THERMOSTATS AND SENSORS PER OWNERS REQUIREMENTS. COORDINATE FINAL LOCATION WITH OWNER AND OTHER TRADES TO AVOID CONFLICTS.
- COORDINATE THE EXACT LOCATION OF ALL CEILING MOUNTED AND WALL MOUNTED GRILLES, REGISTERS, AND DIFFUSERS WITH ARCHITECT'S REFLECTED CEILING PLAN SECTIONS. ELEVATIONS AND ELECTRICAL PLANS TO AVOID INTERFERENCES WITH LIGHTS, SPEAKERS, BULKHEADS, SOFFITS AND OTHER WALL AND CEILING ORNAMENTATION.
- ALL SUPPLY AIR, RETURN AIR AND EXHAUST AIR DUCTS SHOWN W/ 45 OR 90 DEG ELBOWS SHALL HAVE TURNING VANES. IN ELBOWS, DUCTWORK WITH RADIUS ELBOWS DO NOT REQUIRE TURNING VANES. PROVIDE BALANCING DAMPERS IN ALL BRANCH DUCTWORK SERVING DIFFUSERS, REGISTERS & GRILLES FOR BALANCING. VOLUME DAMPERS IN DUCTWORK LOCATED IN NON ACCESSIBLE AREAS ABOVE GYPSUM CEILINGS SHALL HAVE REMOTE CABLE CONTROL OPERATORS EQUIVALENT TO YOUNG REGULATOR MODEL 270-275 OR 270-301 WITH 5020CC DAMPERS FOR BALANCING. ACCESS FOR CABLE OPERATORS SHALL BE LOCATED IN CEILING CAP WITH COVER PLATE RECESSED IN GYPSUM CEILING OR AT FACE OF DIFFUSERS OR GRILLES IN AREAS WITH GYPSUM CEILINGS. COORDINATE FINAL LOCATION OF AND TYPE OF DAMPER ACCESS WITH ARCHITECT.
- REFER TO GRILLES, REGISTER AND DIFFUSER SCHEDULE FOR SIZES OF CEILING MOUNTED DEVICES. IF PLANNING DUCT CONNECTION SIZE LISTED IN SCHEDULE. FLEXIBLE DUCTS ARE ACCEPTABLE TO CEILING DIFFUSERS. MAXIMUM LENGTH OF FLEXIBLE DUCT TO DIFFUSERS SHALL NOT EXCEED 5'-0".

GENERAL MECHANICAL NOTES:

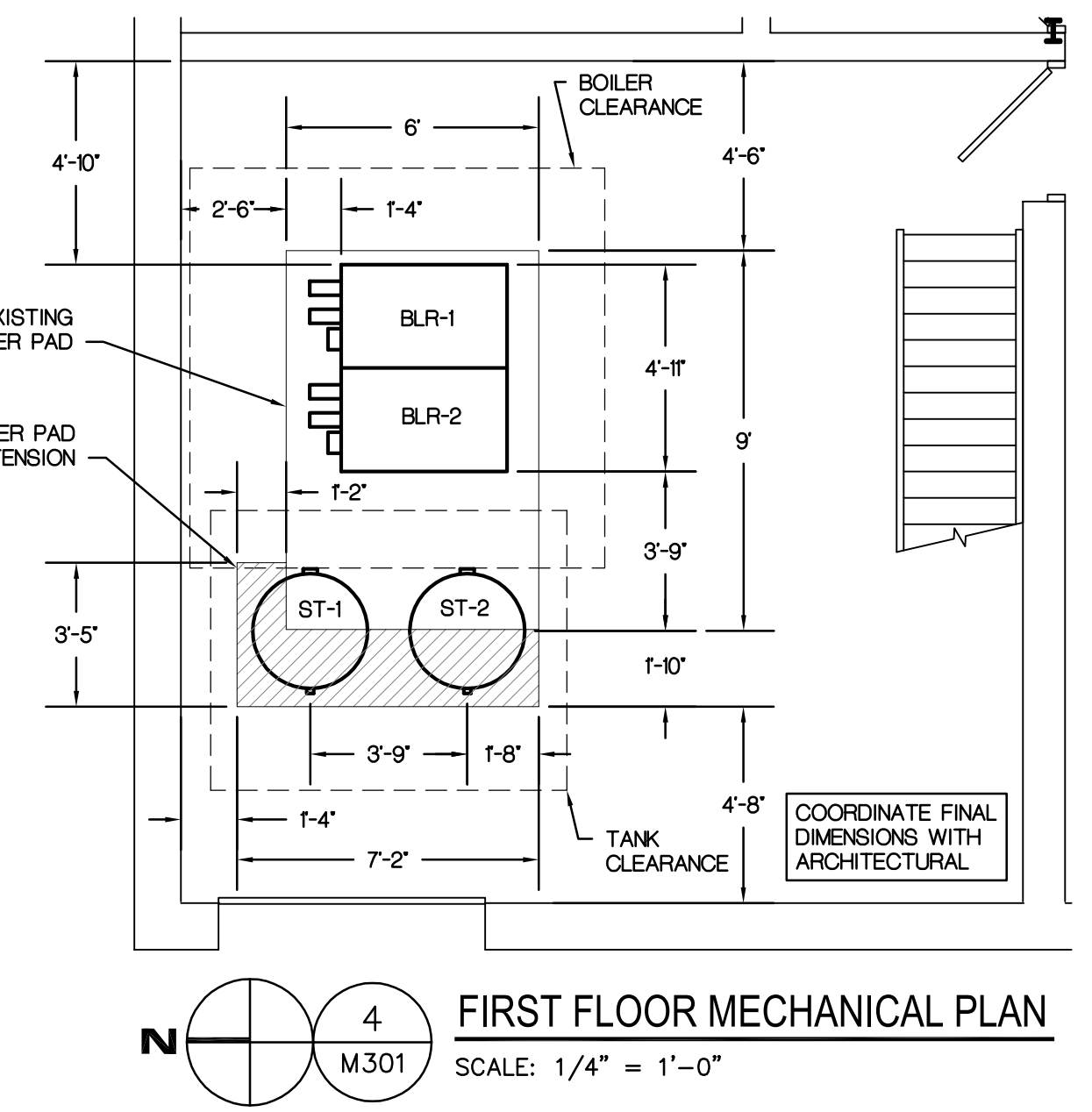
- ALL EXPOSED GRILLES AND DIFFUSERS SHALL HAVE FACTORY FINISH TO MATCH ADJACENT SPACE OR AS INSTRUCTED BY THE ARCHITECT. SUBMIT COLOR SAMPLES FOR SELECTIONS. REFER TO ARCHITECTURAL SPECIFICATIONS FOR PAINTING.
- THE CONTRACTOR SHALL COORDINATE LOCATION OF INDOOR AND ROOF MOUNTED EQUIPMENT WITH OTHER TRADES TO AVOID CONFLICTS WITH LIGHTS, PLUMBING SYSTEM, CONDUITS, PIPING, DUCTWORK, STRUCTURAL STEEL, ETC.
- ALL MATERIAL LOCATED WITHIN A RETURN AIR PLENUM SHALL BE NON-COMBUSTIBLE OR LISTED FOR USE WITHIN A PLENUM AS REQUIRED BY THE 2015 MFC.
- THE CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH OTHER TRADES AS REQUIRED TO FACILITATE THE INSTALLATION OF ALL EQUIPMENT, PIPING, DUCTWORK, GRILLES, ETC. TO AVOID CONFLICT.
- PROVIDE FIRE-STOPPING AT ALL PIPE PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES.
- ALL HEATING HOT WATER SUPPLY AND RETURN PIPING SHALL BE INSULATED WITH 1" PIPE INSULATION. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- NEW BOILERS AND PUMPS SHALL BE INTERLOCKED WITH EXISTING BMS.
- M.C. SHALL PROVIDE ACCESS DOORS IN ALL GYPSUM CEILINGS WHERE REQUIRED TO ACCESS CONCEALED EQUIPMENT, VAV BOXES, COILS, FIRE DAMPERS, VALVES, ETC. AS REQUIRED BY THE MICHIGAN MECHANICAL CODE AND MECHANICAL INSPECTOR. LOCATION OF ACCESS DOORS SHALL BE COORDINATED WITH ARCHITECT. FINISH OF ACCESS DOORS SHALL MATCH ADJACENT MATERIAL OR AS SELECTED BY ARCHITECT.
- M.C. SHALL COORDINATE ALL ROUTING OF DUCTWORK AND PIPING WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS TO AVOID CONFLICTS AND VERIFY CLEARANCES AND CHANGES IN ELEVATIONS PRIOR TO INSTALLATION AND FABRICATION OF SHOP DRAWINGS. M.C. SHALL NOTIFY ANY ISSUES OR DISCREPANCIES WITH ARCHITECT IMMEDIATELY.
- M.C. AND T.C.C. SHALL COORDINATE LOCATION AND INSTALLATION OF ALL CONTROLS WITH OWNER AND INTERLOCK WITH EXISTING BMS.
- ALL NEW AND EXISTING DUCTWORK CONCEALED ABOVE CEILINGS SHALL BE INSULATED PER MECHANICAL SPECIFICATIONS.

MECHANICAL KEY NOTES:

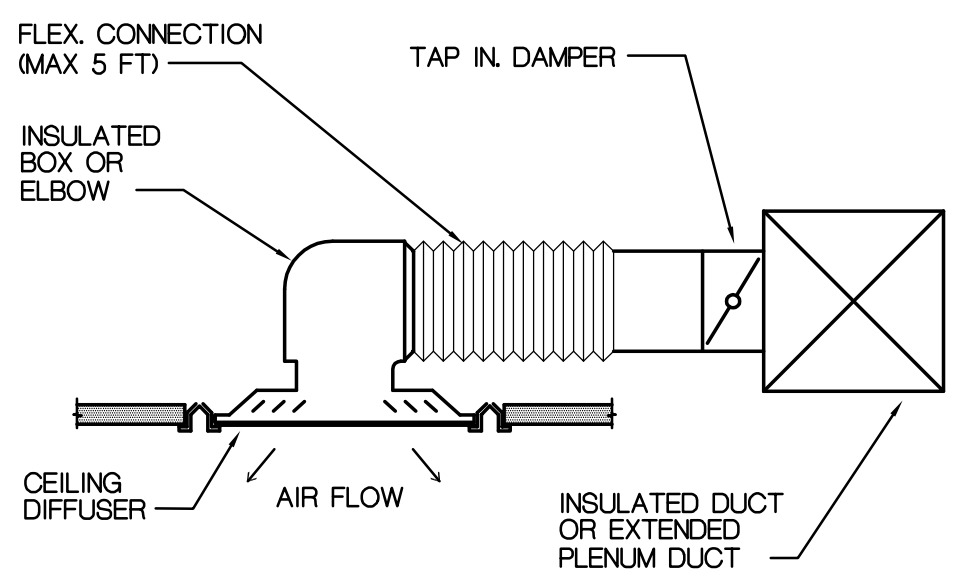
- ROUTE 4" HWHS & HWHR PIPING DOWN TO BOILER. REFER TO PIPING DIAGRAM ON M401 FOR CONNECTIONS AND PIPE SIZES. INSTALL PER MANUFACTURERS INSTALLATION REQUIREMENTS.
- CONNECT NEW 4" HWHR & 2" HWHR PIPING TO EXISTING PIPING IN BOILER ROOM. M.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
- CONNECT NEW 4" HWHS PIPING TO EXISTING PIPING IN BOILER ROOM. M.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
- CONNECT NEW 2" HWHS PIPING TO EXISTING PIPING IN BOILER ROOM. M.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
- ROUTE 2" HWHS & HWHR PIPING DOWN TO INDIRECT-FIRED DOMESTIC HOT WATER STORAGE TANK. REFER TO PIPING DIAGRAM ON M401 FOR CONNECTIONS AND PIPE SIZES. INSTALL PER MANUFACTURERS INSTALLATION REQUIREMENTS.
- ROUTE 2" GAS PIPE DOWN TO BOILER AND INSTALL PER MANUFACTURERS INSTALLATION REQUIREMENTS.
- CONNECT NEW 3" GAS PIPE TO EXISTING 3" GAS PIPING IN BOILER ROOM. M.C. SHALL FIELD VERIFY LOCATION OF EXISTING PIPING AND POINT OF NEW CONNECTION.
- ROUTE 6" COMBUSTION AIR INTAKE DOWN TO BOILER AND INSTALL PER MANUFACTURERS INSTALLATION REQUIREMENTS.
- ROUTE 6" DIA. COMBUSTION AIR PIPE UP THRU EXTERIOR WALL AND CONNECT TO GOOSENECK TERMINATION ABOVE GRADE PER MANUFACTURERS INSTALLATION REQUIREMENTS. REFER TO DETAIL ON M401.
- ROUTE 6" EXHAUST VENT DOWN TO BOILER AND INSTALL PER MANUFACTURERS INSTALLATION REQUIREMENTS.

MECHANICAL KEY NOTES:

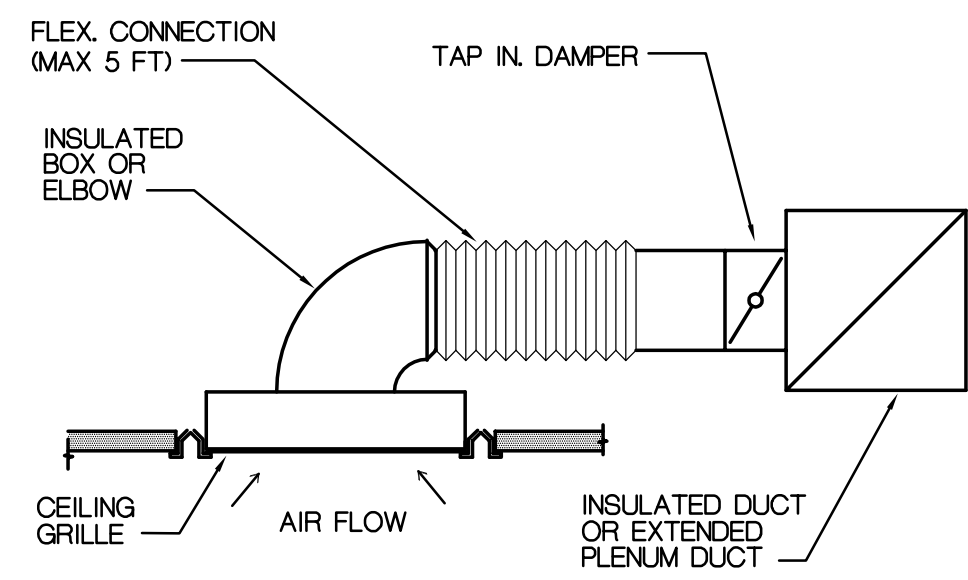
- ROUTE 6" DIA. EXHAUST VENT PIPE UP THRU ROOF THRU EXISTING ROOF PENETRATION AND CONNECT TO STACK CAP TERMINATION ABOVE ROOF PER MANUFACTURERS INSTALLATION REQUIREMENTS. REFER TO DETAIL ON M401.
- CAP EXISTING 1/2" GAS PIPING. REFER TO M03 FOR DEMOLITION.
- CONNECT NEW 8" SUPPLY DUCT TO EXISTING SUPPLY DUCT.
- CONNECT NEW 14"x12" SUPPLY DUCT TO EXISTING SUPPLY DUCT.
- CONNECT NEW 8" EXHAUST DUCT TO EXISTING EXHAUST DUCT.
- CONNECT NEW 10"x10" RETURN DUCT TO EXISTING RETURN DUCT.
- CONNECT NEW 10"x10" SUPPLY DUCT TO EXISTING SUPPLY DUCT AT EX. VAV BOX.
- RELOCATE EX. THERMOSTAT SERVING EX. ERU. REFER TO M03 FOR DEMOLITION.
- RELOCATE EX. THERMOSTAT SERVING EX. VB-12. REFER TO M03 FOR DEMOLITION.
- RELOCATE EXISTING CEILING DIFFUSER AND CONNECT TO NEW BRANCH DUCTWORK. EXTEND BRANCH DUCTWORK TO CEILING DIFFUSER INSTALLED IN NEW GYPSUM CEILING. BALANCE AIRFLOW TO CFM SHOWN. REFER TO M03 FOR DEMOLITION OF EXISTING DUCTWORK AND DIFFUSERS.
- EXISTING CEILING DIFFUSER OR EXHAUST REGISTER TO REMAIN. BALANCE AIRFLOW OF DIFFUSER OR REGISTER TO CFM SHOWN SERVED BY EXISTING ERU-1 ON ROOF.
- ROUTE REFRIGERANT PIPING FROM WALL MOUNTED FAN COIL FC-1 UP IN WALL AND THRU ROOF AND CONNECT TO AIR-COOLED CONDENSING UNIT CU-1 ON ROOF.



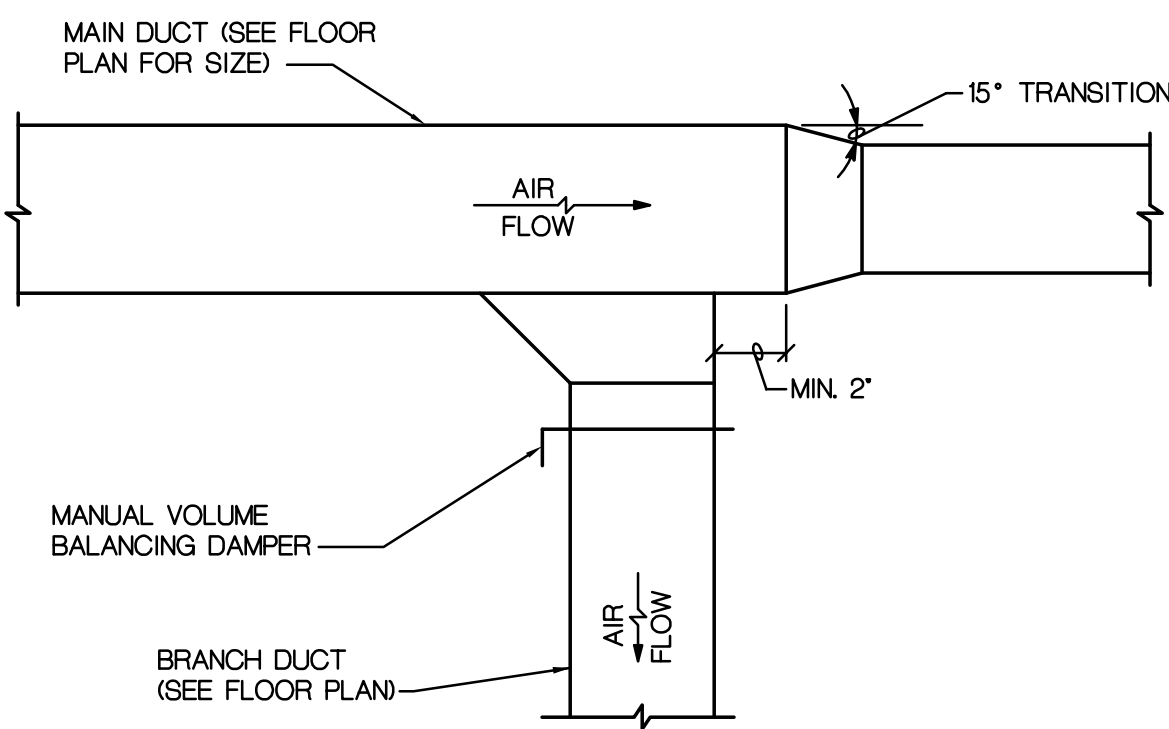
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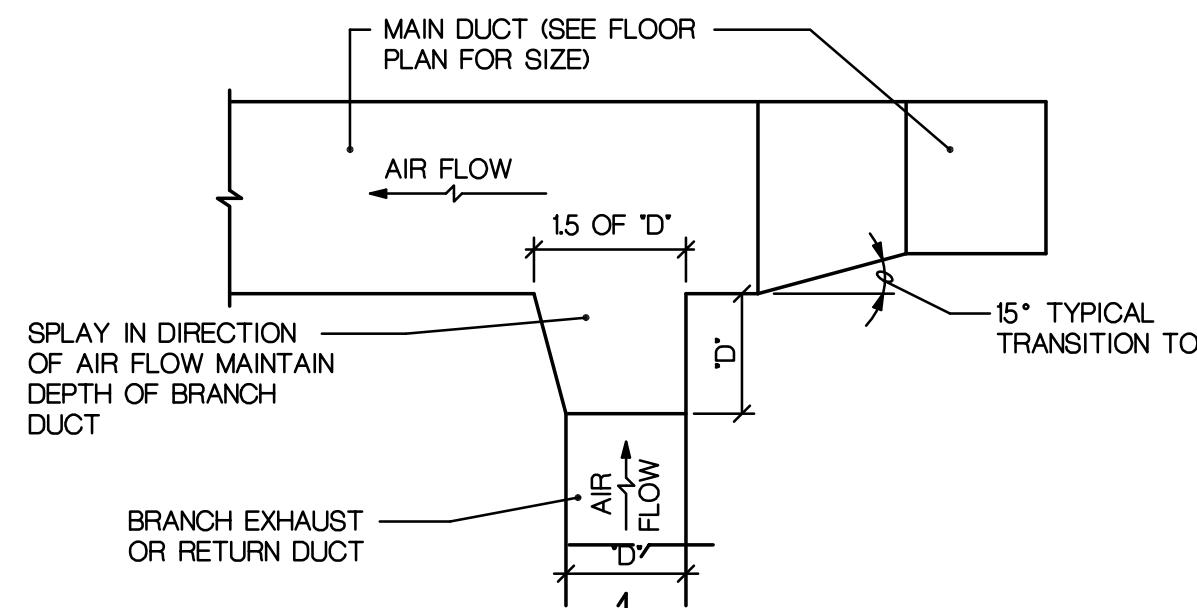
SUPPLY AIR CEILING DIFFUSER DETAIL
NO SCALE



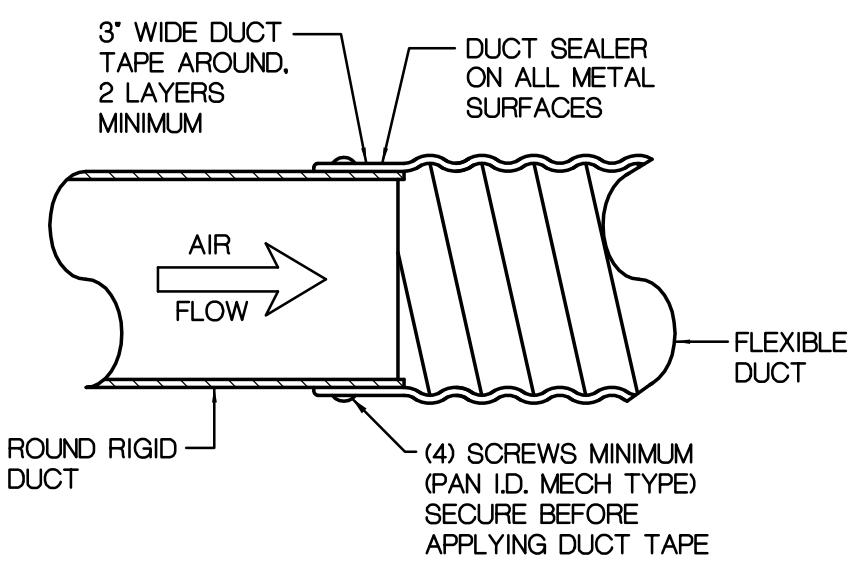
RETURN AIR GRILLE DETAIL
NO SCALE



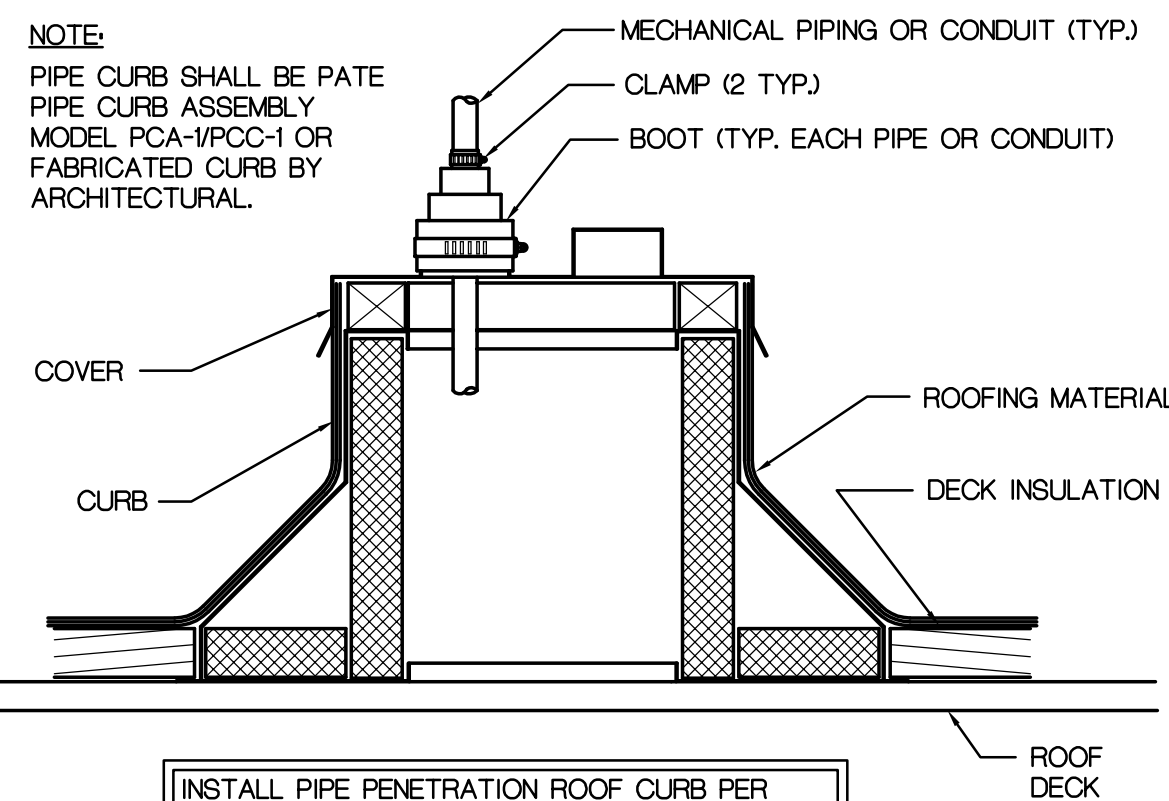
TYPICAL SUPPLY DUCT CONNECTION
NO SCALE



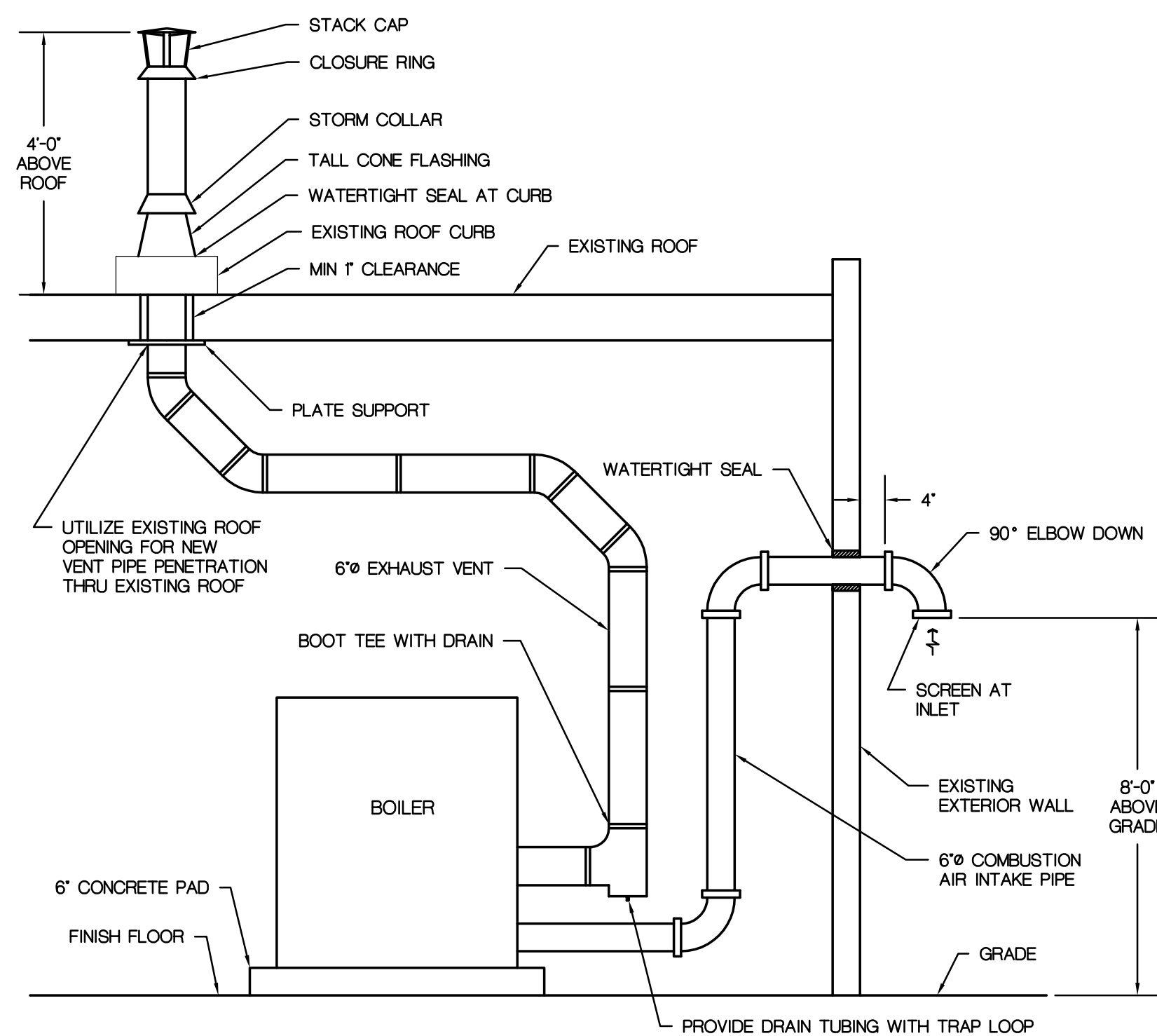
TYPICAL RETURN OR EXHAUST AIR DUCT CONNECTION
NO SCALE



ROUND TO FLEXIBLE DUCT DETAIL
NO SCALE

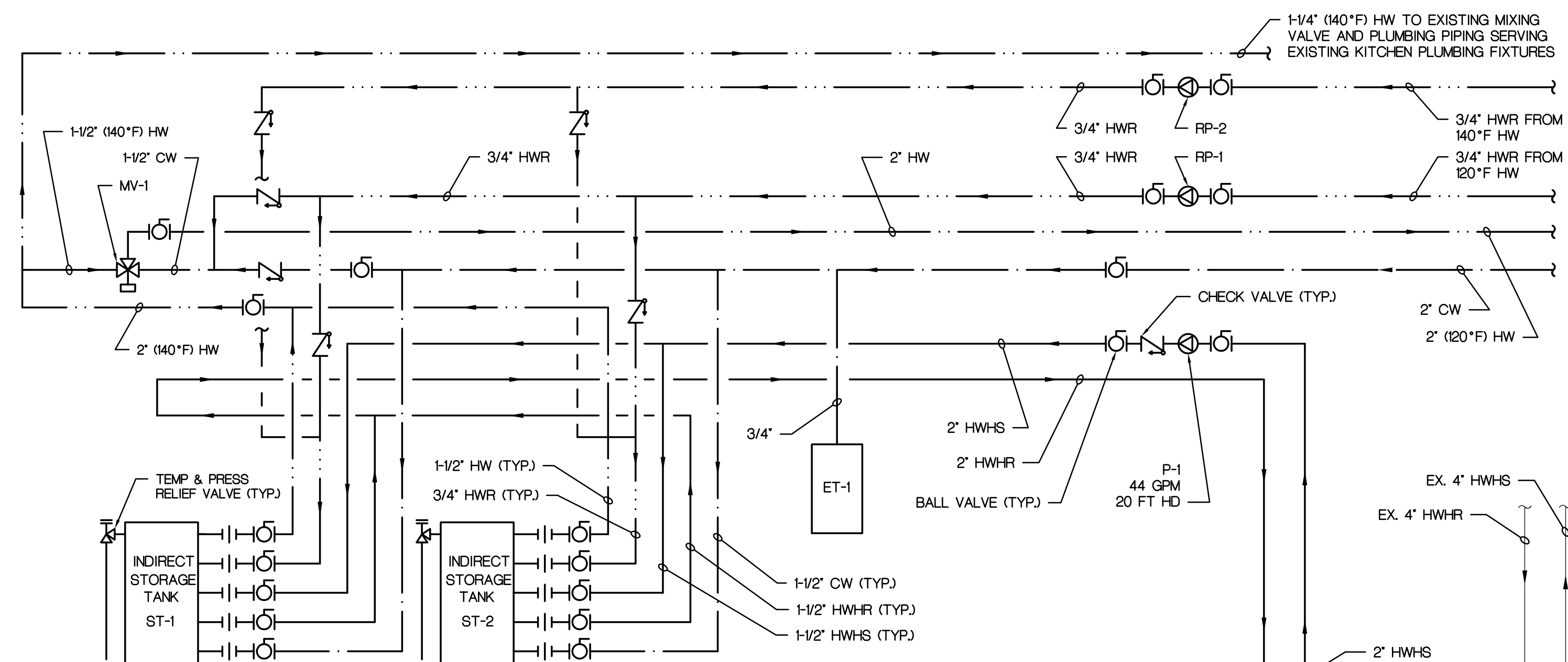


PIPE CURB DETAIL - VERTICAL
NO SCALE



NOTE: EXHAUST VENT PIPING SHALL BE DOUBLE WALL, CERAMIC INSULATED AL29-4C VENT PIPING SIMILAR TO METAL-FAB CORR/GUARD FCS VENTING. COMBUSTION AIR INTAKE PIPING SHALL BE SCHEDULE 40 CPVC, ABS OR POLYPROPYLENE. VENT PIPING AND COMBUSTION AIR PIPING SHALL BE INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND PER THE BOILER MANUFACTURERS REQUIREMENTS.

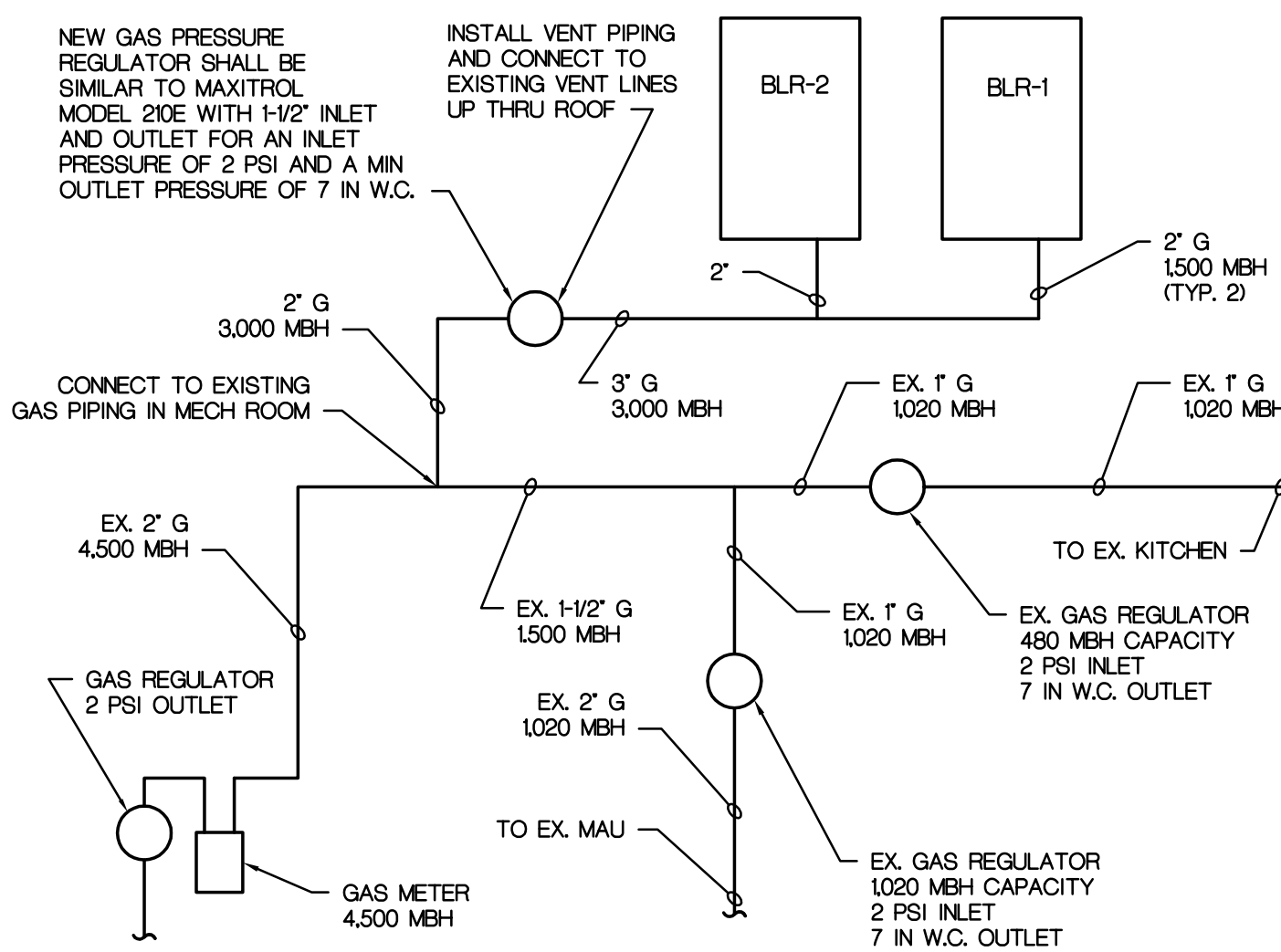
BOILER COMBUSTION AIR INTAKE/VENT DETAIL
NO SCALE



MV-1 ASSE 1017 MASTER MIXING VALVE LAWLER MODEL 804, UNIT 86308 WITH INTEGRAL SHUT-OFF VALVE AND THERMOMETER ON TEMPERED WATER OUTLET, 0.5 GPM MINIMUM FLOW, 2 PSI PRESSURE DROP AT 28 GPM, 140°F HW INLET AND 120°F HW OUTLET. INSTALL MIXING VALVE PER MANUFACTURERS INSTALLATION INSTRUCTIONS.

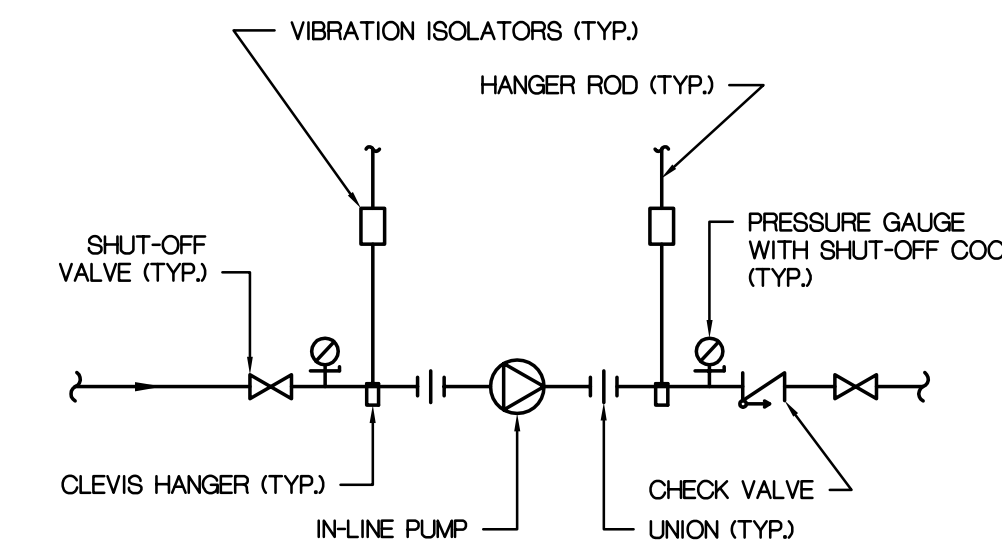
NOTE: DISCHARGE CONDENSATE NEUTRALIZATION KITS, PRESSURE RELIEF VALVES, AND TEMPERATURE AND PRESSURE RELIEF VALVES TO NEAREST FLOOR DRAIN WITH AIR GAP FOR INDIRECT WASTE.

HOT WATER HEATING AND DOMESTIC HOT WATER PIPING DIAGRAM
NO SCALE



NOTE: GAS PIPING IS SIZED USING SCHEDULE 40 STEEL PIPE PER TABLES 402.4(2) AND 402.4(5) OF THE 2015 IFGC. REFER TO GAS LOAD SCHEDULE ON M501 FOR ADDITIONAL INFORMATION.

NATURAL GAS PIPING DIAGRAM
NO SCALE



IN-LINE CIRCULATING PUMP DETAIL
NO SCALE



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

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Planning & Engineering

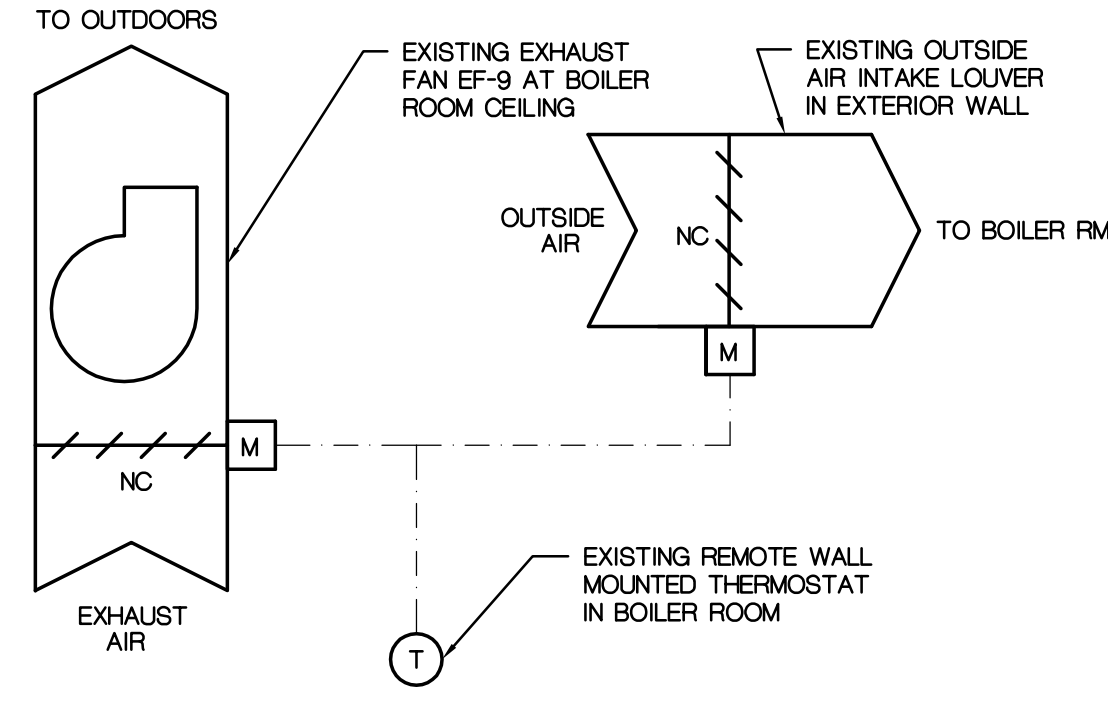
STATE OF MICHIGAN
18116
MAY 17, 2023
JAYSON J. VANHOUSEAR
ENGINEER

DESIGNED BY: []
DRAWN BY: []
DATE: SEP 28, 2022
CHECKED: KF/LJ
APPROVED: KF/LJ

ISSUED FOR: []
100% PHASE 500 []
CONSTRUCTION []
FINAL RECORD []

IDENTIFICATION NO.: []
FILE NO.: 5012027MA
PROJECT NO.: 204-002201

SHEET: M401

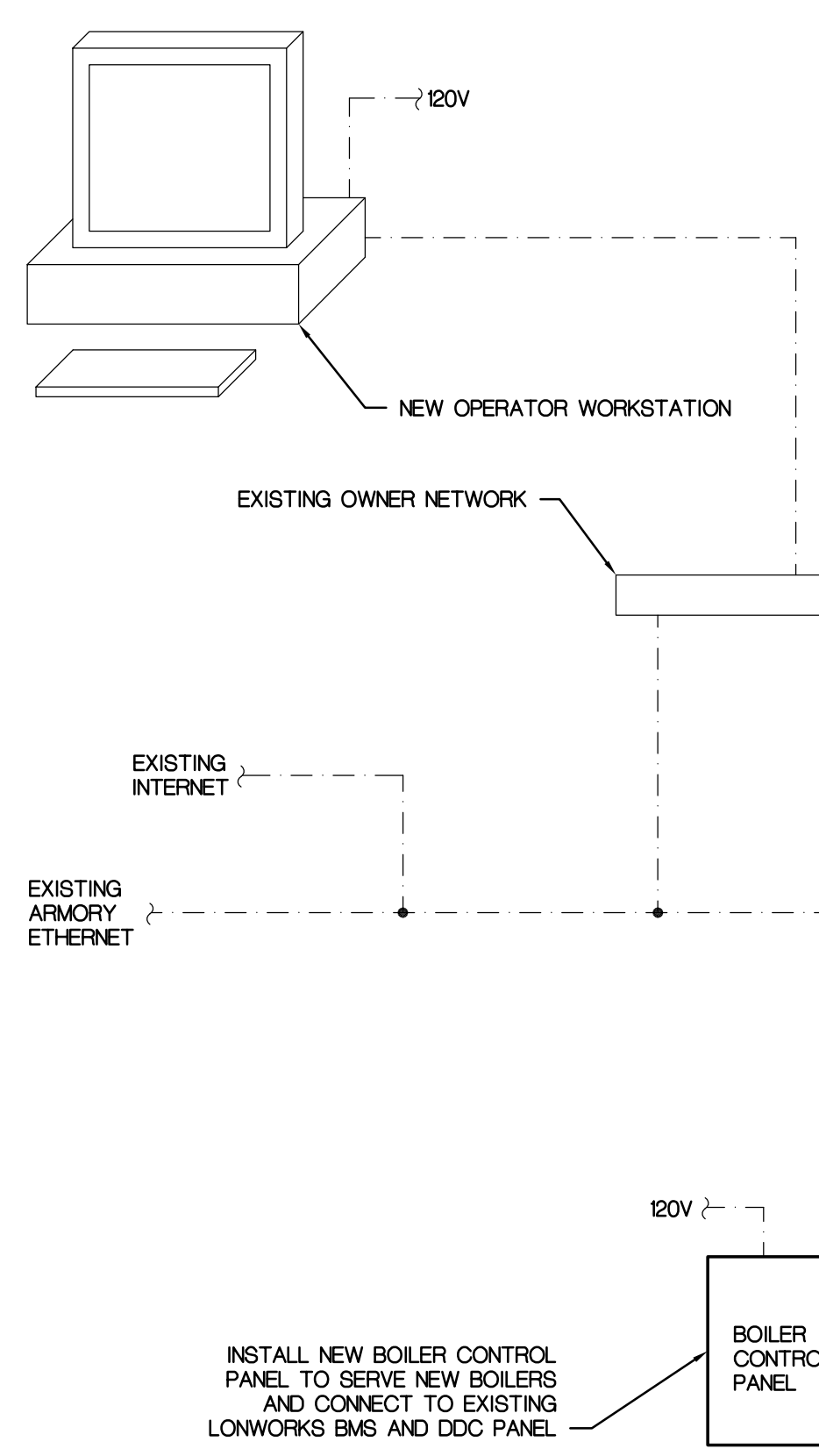


SEQUENCE OF CONTROL FOR EXHAUST FAN

- GENERAL**
1. THE MOTORIZED DAMPERS SERVING THE EXISTING EXHAUST FAN AND OUTSIDE AIR INTAKE LOUVER SHALL BE INTERLOCKED WITH THE EXISTING SPACE THERMOSTAT.
 2. THE EXISTING EXHAUST FAN EF-9 SHALL BE STARTED WHEN THE THERMOSTAT SPACE TEMPERATURE SETPOINT REACHES 80°F (ADJUSTABLE).
 3. WHEN THE THERMOSTAT STARTS THE EXHAUST FAN, THE THERMOSTAT WILL ALSO ACTIVATE THE MOTORIZED DAMPER IN THE EXISTING OUTSIDE AIR INTAKE LOUVER TO OPEN THE DAMPER FROM FULLY CLOSED TO FULLY OPEN TO PROVIDE MAKE-UP AIR FOR THE EXISTING EXHAUST FAN EF-9.
 4. THE EXISTING EXHAUST FAN EF-9 SHALL BE STOPPED WHEN THERMOSTAT SPACE TEMPERATURE SETPOINT DROPS BELOW 80°F (ADJUSTABLE).
 5. WHEN THE THERMOSTAT STOPS THE EXHAUST FAN, THE THERMOSTAT WILL ALSO ACTIVATE THE MOTORIZED DAMPER IN THE EXISTING OUTSIDE AIR INTAKE LOUVER TO CLOSE THE DAMPER FROM FULLY OPEN TO FULLY CLOSED TO PREVENT OUTSIDE AIR FROM ENTERING THE BOILER ROOM.

EXISTING BOILER ROOM EXHAUST FAN AND LOUVER CONTROL DIAGRAM

NO SCALE



EXISTING DDC SYSTEM ARCHITECTURE RISER DIAGRAM

NO SCALE

SEQUENCE OF CONTROL FOR HOT WATER HEATING SYSTEM

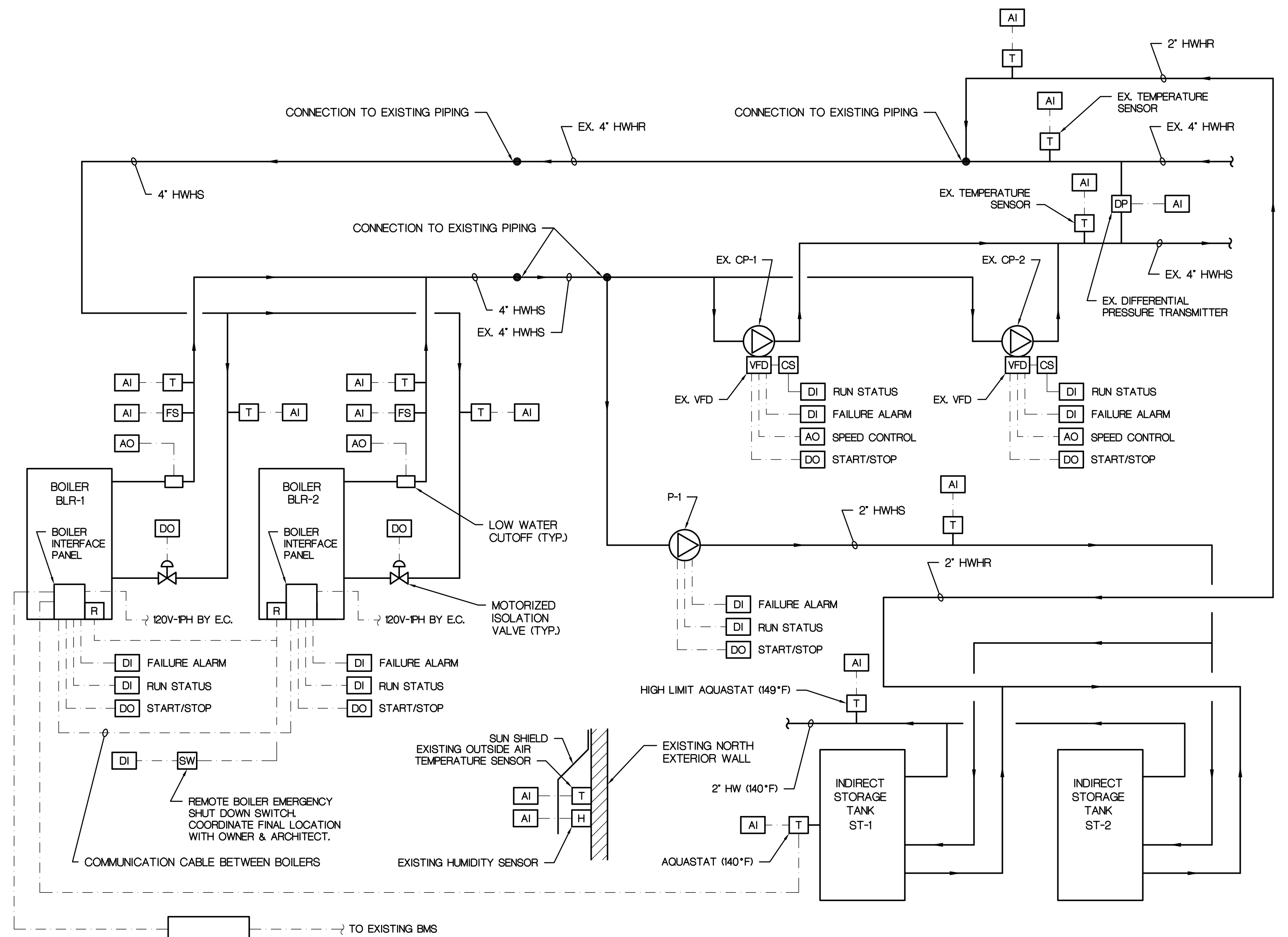
- GENERAL**
1. THE EXISTING DDC SYSTEM SHALL BE UTILIZED TO CONTROL THE EXISTING HOT WATER HEATING SYSTEM CIRCULATION PUMPS CP-1 & CP-2 AS WELL AS THE NEW BOILERS BLR-1 & BLR-2 AND THE NEW DOMESTIC WATER CIRCULATION PUMP P-1 SERVING THE INDIRECT-FIRED DOMESTIC WATER STORAGE TANKS. THE TEMPERATURE CONTROLS CONTRACTOR SHALL COORDINATE INSTALLATION AND OPERATION OF NEW BOILERS AND PUMPS WITH EXISTING PUMPS AND THE TEMPERATURE CONTROLS SYSTEM FOR PROPER OPERATION.
 2. THE HOT WATER HEATING SYSTEM SHALL BE ENABLED FOR CONTINUOUS OPERATION WHEN BUILDING IS OCCUPIED. WHEN OUTDOOR AIR TEMPERATURE IS BELOW 60°F (ADJUSTABLE), AND DURING BUILDING UNOCCUPIED HOURS AS NEEDED, THE HOT WATER HEATING SYSTEM SHALL ALSO SERVE EXISTING TERMINAL UNITS WITH TEMPERING COILS FOR REHEAT DURING THE COOLING SEASON. THE HOT WATER HEATING SYSTEM SHALL ALSO SERVE INDIRECT-FIRED DOMESTIC HOT WATER STORAGE TANKS TO PROVIDE DOMESTIC HOT WATER TO PLUMBING FIXTURES AT ALL TIMES DURING HEATING AND COOLING SEASONS.
 3. THE EXISTING VARIABLE FREQUENCY HOT WATER HEATING CIRCULATION PUMPS CP-1 & CP-2 SHALL HAVE START/STOP CAPABILITY FROM THE DDC SYSTEM. ONE PUMP SHALL BE ACTIVATED BY THE DDC TO OPERATE CONTINUOUSLY WHILE THE OTHER PUMP SERVES AS A STANDBY PUMP.
 4. THE EXISTING DDC SYSTEM SHALL ALTERNATE PUMP OPERATION FOR EXISTING CP-1 & CP-2 BASED ON RUNTIME HOURS. THE OPERATOR SHALL SET THE DURATION OF THE RUNTIME FOR EACH PUMP.
 5. THE EXISTING DDC SYSTEM SHALL MONITOR THE OPERATING STATUS OF CP-1 & CP-2. UPON PUMP START FAILURE, THE DDC SYSTEM SHALL ACTIVATE A FAILURE ALARM AND AUTOMATICALLY START THE STANDBY PUMP.
 6. THE EXISTING DDC COMMON FAILURE ALARM FOR PUMPS CP-1 & CP-2 SHALL BE MONITORED BY THE DDC SYSTEM THRU AVAILABLE CONTACTS AT EACH RESPECTIVE PUMP VARIABLE FREQUENCY DRIVE (VFD).
 7. THE EXISTING DDC SYSTEM SHALL MODULATE THE VFD OF CIRCULATION PUMPS CP-1 & CP-2 TO MAINTAIN LOOP DIFFERENTIAL PRESSURE SETPOINT (ADJUSTABLE), WHICH SHALL BE DETERMINED BY SYSTEM BALANCE.
 8. A NEW BOILER CONTROL PANEL CONNECTED TO THE EXISTING DDC SYSTEM SHALL MODULATE THE BOILERS TO MAINTAIN HOT WATER SUPPLY TEMPERATURE SETPOINTS PER THE O.A. RESET SCHEDULE. THE TEMPERATURE SETPOINTS FOR THE RESET SCHEDULE SHALL BE ADJUSTABLE.
 9. THE BOILER LOCAL CONTROLS SHALL INCLUDE AN OPERATOR LIMIT WITH SETPOINT OF 200°F AND A MANUAL-RESET HI-LIMIT SAFETY WITH SETPOINT OF 220°F.
 10. THE EXISTING DDC SYSTEM SHALL MONITOR THE BOILER RUN STATUS AND COMMON ALARM FOR EACH BOILER.
 11. THE EXISTING DDC SYSTEM SHALL MONITOR THE BOILER HOT WATER HEATING SUPPLY AND RETURN TEMPERATURES AS WELL AS THE HOT WATER HEATING SUPPLY AND RETURN LOOP TEMPERATURES FOR DIAGNOSTIC PURPOSES.
 12. WHEN THE REMOTE BOILER EMERGENCY SHUTDOWN SWITCH IS SUPPRESSED, THE BURNER CONTROLS FOR EACH BOILER SHALL BE DE-ENERGIZED THRU A HARDWIRED INTERLOCK. THE DDC SYSTEM SHALL MONITOR THE SWITCH CIRCUIT AND ACTIVATE AN ALARM WHEN THE REMOTE BOILER EMERGENCY SHUTDOWN CONDITION OCCURS.

HOT WATER HEATING SYSTEM CONTROLS

- GENERAL**
1. THE TEMPERATURE CONTROLS CONTRACTOR (TCC) SHALL COORDINATE ALL WIRING AND TERMINATIONS WITH THE BOILER SUPPLIER AND CONNECT TO EXISTING DDC SYSTEM THROUGH A NEW BOILER CONTROL PANEL.
 2. THE TCC SHALL PROVIDE BOILER EMERGENCY SHUTDOWN COMPONENTS AND WIRING. THE TCC SHALL FIELD VERIFY BOILER INTERFACE REQUIREMENTS.
 3. THE DDC PANELS AND BOILER SEQUENCING PANEL ASSOCIATED WITH HOT WATER HEATING SYSTEM SHALL BE CONNECTED TO AN EMERGENCY POWER SUPPLY. THE TCC SHALL COORDINATE INSTALLATION REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
 4. THE TCC SHALL FIELD VERIFY BOILER INTERFACE REQUIREMENTS FOR BOILER RUN STATUS AND BOILER FAULT WITH THE EXISTING DDC SYSTEM. THE BOILER INTERFACE PANEL SHALL HAVE LOCAL INDICATION LIGHTS AND SHALL BE CONNECTED TO THE EXISTING BMS AND NEW BOILER CONTROL PANEL USING LONWORKS PROTOCOL.

EXISTING DDC SYSTEM ARCHITECTURE

- GENERAL**
1. THE EXISTING DDC SYSTEM ARCHITECTURE SHALL BE UTILIZED TO CONTROL THE EXISTING MECHANICAL EQUIPMENT AND THE EXISTING HOT WATER HEATING SYSTEM CIRCULATION PUMPS CP-1 & CP-2 AS WELL AS THE NEW BOILERS BLR-1 & BLR-2 AND NEW DOMESTIC WATER HEATING PUMP P-1 SERVING THE NEW INDIRECT-FIRED DOMESTIC WATER STORAGE TANKS. REFER TO HOT WATER HEATING AND DOMESTIC HOT WATER PIPING DIAGRAM ON M401. THE TEMPERATURE CONTROLS CONTRACTOR (TCC) SHALL COORDINATE INSTALLATION AND OPERATION OF NEW BOILERS AND PUMPS WITH EXISTING PUMPS AND TEMPERATURE CONTROLS SYSTEM FOR PROPER OPERATION. THE EXISTING BUILDING MANAGEMENT SYSTEM IS BASED ON LONWORKS SMART CONTROLS.
- NOTES:**
1. REFER TO SPECIFICATIONS AND TEMPERATURE CONTROL SYSTEM DETAILS FOR ALL REQUIRED DDC POINTS.
 2. THE EXISTING BUILDING DDC NETWORK SHALL BE CONNECTED TO THE STATE OF MICHIGAN ETHERNET. THE TCC SHALL PROVIDE A NEW WORKSTATION, NEW DDC PANEL, UTILIZE EXISTING DDC PANELS, OR OTHER INTERFACE COMPONENTS COMPATIBLE FOR THIS CONNECTION. THE OWNER SHALL PROVIDE COORDINATION AND IP ADDRESS TO ACCESS EXISTING SYSTEM.
 3. THE TCC SHALL DETERMINE DDC PANEL QUANTITY BASED ON POINT DENSITIES AND AVAILABLE MOUNTING SPACE. THE TCC SHALL COORDINATE THE LOCATION OF NEW DDC PANELS AND CONTROLS WITH OWNER, ELECTRICAL CONTRACTOR, AND OTHER TRADES.
 4. THE TCC SHALL PROVIDE REQUIRED POWER SUPPLIES FROM DEDICATED AND/OR SPARE CIRCUITS IDENTIFIED ON ELECTRICAL PANEL SCHEDULES. COORDINATE POWER REQUIREMENTS FOR ALL EQUIPMENT AND PANELS WITH ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS FOR PANEL SCHEDULES AND PANEL LOCATIONS.
 5. ALL 24V TRANSFORMERS REQUIRED FOR EXISTING TERMINAL UNITS & NEW AND EXISTING DDC CONTROLLERS SHALL BE LOCATED IN MECHANICAL OR ELECTRICAL ROOMS. THE TCC SHALL COORDINATE LOCATIONS WITH OTHER TRADES. THE MAXIMUM TRANSFORMER SIZE SHALL BE 100 VA AND ENCLOSURES SHALL BE PROVIDED FOR ALL TRANSFORMERS.
 6. AN EXISTING LAPTOP PORTABLE PROGRAMMING TOOL SHALL BE USED TO CONNECT TO THE NEW AND EXISTING DDC PANELS FOR THE PURPOSE OF DIAGNOSTICS, ADJUSTING SETPOINTS AND MONITORING THE SYSTEM.
 7. THE TCC SHALL COORDINATE THE CONNECTION TO THE STATE OF MICHIGAN ETHERNET AND INTERNET WITH THE OWNERS INFORMATION TECHNOLOGY PERSONNEL.



HOT WATER HEATING SYSTEM TEMPERATURE CONTROL POINT DIAGRAM

NO SCALE

HOT WATER HEATING SYSTEM EQUIPMENT POINT LIST

POINT	DO	DI	AO	AI	REMARKS
BOILERS	2	4			START / STOP / STATUS
EXISTING PUMPS	2	4			START / STOP / STATUS
HEATING PUMP	1	2			START / STOP / STATUS
EXISTING PUMP VFDs			2		MODULATE PUMP SPEED
BOILER ISOLATION VALVE	2				
EMERGENCY SHUTDOWN		1			
TEMPERATURE SENSOR				8	
AQUASTAT				2	
FLOW SENSOR				2	
DIFFERENTIAL PRESSURE				1	
LOW WATER CUTOFF			2		
O.A. & HUMIDITY SENSORS				2	
TOTAL POINTS	11	11	4	15	

NOTE:
THE TCC SHALL COORDINATE ALL POINTS FOR NEW AND EXISTING EQUIPMENT WITH EXISTING DDC SYSTEM AND PANELS.

TEMPERATURE CONTROLS SYMBOLS

AI	ANALOG INPUT SIGNAL TO DDC/BMS
AO	ANALOG OUTPUT SIGNAL TO DDC/BMS
DI	DIGITAL INPUT SIGNAL TO DDC/BMS
DO	DIGITAL OUTPUT SIGNAL TO DDC/BMS
CS	CURRENT SENSOR
DP	DIFFERENTIAL PRESSURE TRANSMITTER
FS	FLOW SWITCH
M	DAMPER MOTOR
R	ELECTRIC RELAY
SW	EMERGENCY SHUT DOWN SWITCH
T	TEMPERATURE SENSOR

HOT WATER HEATING RESET SCHEDULE

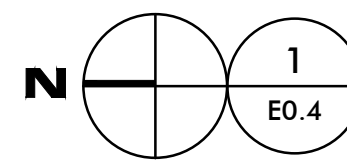
O.A. TEMP.	HWHS TEMP	HWHR TEMP
≤ 0°F	70°F	150°F
0°F - 15°F	85°F	145°F
16°F - 29°F	100°F	140°F
30°F - 44°F	115°F	135°F
45°F - 54°F	130°F	130°F
≥ 55°F	145°F	125°F

SETPOINTS FOR FOR HOT WATER HEATING SUPPLY TEMPERATURE AND OUTSIDE AIR TEMPERATURE SHALL BE ADJUSTABLE. A MINIMUM SUPPLY TEMPERATURE OF 150°F SHALL BE DELIVERED TO SERVE REHEAT COILS AND INDIRECT DOMESTIC WATER STORAGE TANKS. COORDINATE FINAL SETPOINTS WITH OWNER.

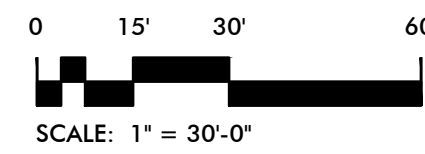
SEQUENCE OF CONTROL FOR DOMESTIC HOT WATER SYSTEM

- GENERAL**
1. THE DOMESTIC HOT WATER CIRCULATION PUMP P-1 AND BOILER SHALL BE ACTIVATED BY THE OPERATING AQUASTAT IN THE INDIRECT STORAGE TANK. THE AQUASTAT SHALL BE INSTALLED IN THE TANK CONNECTED LAST TO THE HOT WATER HEATING SUPPLY PIPING.
 2. THE AQUASTAT TEMPERATURE SHALL BE SET AT 140°F (ADJUSTABLE) TO PROVIDE DOMESTIC HOT WATER. UPON A DROP IN TEMPERATURE BELOW THE SETPOINT TEMPERATURE OF THE AQUASTAT, THE CIRCULATION PUMP P-1 AND BOILER SHALL BE ACTIVATED.
 3. A HIGH LIMIT AQUASTAT SET AT 149°F (ADJUSTABLE) SHALL BE INSTALLED IN THE DOMESTIC HOT WATER SUPPLY PIPING DOWNSTREAM OF THE INDIRECT STORAGE TANKS. UPON A RISE OF TEMPERATURE ABOVE THE SETPOINT TEMPERATURE OF THE HIGH LIMIT AQUASTAT, THE CIRCULATION PUMP P-1 SHALL BE SHUT OFF.
 4. A NEW BOILER CONTROL PANEL CONNECTED TO THE EXISTING DDC SYSTEM SHALL BE UTILIZED TO CONTROL THE BOILERS AND DOMESTIC WATER HEATING PUMP P-1 SERVING THE INDIRECT-FIRED DOMESTIC WATER STORAGE TANKS AS INDICATED IN THE HOT WATER HEATING SYSTEM SEQUENCE OF OPERATION.
 5. REFER TO HOT WATER HEATING AND DOMESTIC HOT WATER PIPING DIAGRAM ON M401 AS WELL AS EQUIPMENT SCHEDULES ON M501 FOR ADDITIONAL INFORMATION ON THE DOMESTIC HOT WATER PIPING SYSTEM INCLUDING MIXING VALVES AND HOT WATER RETURN CIRCULATING PUMPS.

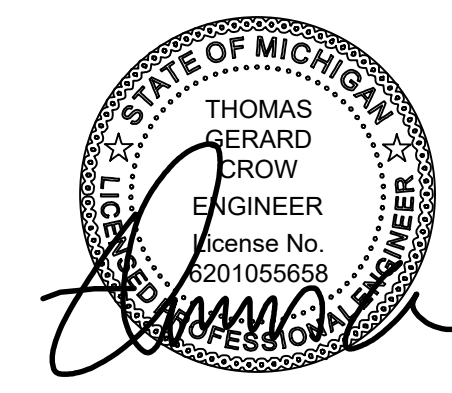




SITE PLAN - ELECTRICAL DEMOLITION
SCALE: 1" = 30'-0"



- SITE PLAN GENERAL NOTES:**
- REFER TO ARCHITECTURAL SITE PLAN FOR ADDITIONAL INFORMATION REGARDING PROPOSED WALKWAYS, PATIOS AND OTHER RENOVATION WORK ASSOCIATED WITH THE PROJECT.
 - COORDINATE WORK WITH OTHER TRADES. COORDINATE LOCATIONS OF UNDERGROUND UTILITIES AND OTHER OBSTRUCTIONS WITH CIVIL TRADES. CALL "MISS DIG" TO MARK UTILITIES BEFORE START OF WORK.
- DEMOLITION KEY NOTES**
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING POLE MOUNTED SITE LIGHTING FIXTURE. REMOVE EXISTING POLE AND FIXTURE AND DISPOSE IN A LEGAL MANNER AT A LOCAL RECYCLING CENTER. EXISTING CONCRETE BASE AND BRANCH CIRCUIT CONDUIT SERVING POLE MOUNTED FIXTURE TO REMAIN FOR RE-USE TO SERVE NEW LIGHT POLE TO BE INSTALLED AT THE EXISTING LOCATION. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT WIRING COMPLETE TO SOURCE. REFER TO NEW WORK PLAN ON SHEET E0.5 FOR NEW WORK.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING WALL MOUNTED LIGHT FIXTURE AT THIS LOCATION. DISPOSE OF THE FIXTURE IN A LEGAL MANNER AT A LOCAL RECYCLING CENTER. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT CONDUIT AND WIRING SERVING FIXTURE BACK TO EXISTING JUNCTION BOX INSIDE BUILDING FOR RE-USE TO SERVE NEW BUILDING MOUNTED SITE LIGHTING TO BE INSTALLED IN THE GENERAL AREA. REMOVE EXISTING BACKBOX AT FIXTURE LOCATION AND PROVIDE WALL REPAIR AT EXISTING BOX LOCATION. COORDINATE WALL REPAIR AND WATER PROOFING OF EXISTING BOX LOCATION WITH ARCHITECTURAL / GENERAL TRADES IN FIELD PRIOR TO START OF CONSTRUCTION. ELECTRICAL CONTRACTOR SHALL CARRY AN ALLOWANCE TO COVER THE COST OF THE WALL REPAIR, AS COORDINATED WITH THE ARCHITECTURAL TRADES.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING WALL MOUNTED FLOOD LIGHT FIXTURE AND ASSOCIATED SURFACE MOUNTED SUPPORT CONDUIT AT THIS LOCATION. DISPOSE OF THE FIXTURE IN A LEGAL MANNER AT A LOCAL RECYCLING CENTER. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT CONDUIT AND WIRING SERVING FIXTURE BACK TO EXISTING JUNCTION BOX INSIDE BUILDING FOR RE-USE TO SERVE NEW BUILDING MOUNTED SITE LIGHTING TO BE INSTALLED IN THE GENERAL AREA. REMOVE EXISTING BACKBOX AT FIXTURE LOCATION AND PROVIDE WALL REPAIR AT EXISTING BOX LOCATION, AS WELL AS AT EXISTING ANCHOR SUPPORT LOCATIONS PREVIOUSLY SUPPORTING THE SURFACE MOUNTED CONDUIT. COORDINATE WALL REPAIR AND WATER PROOFING OF EXISTING BOX LOCATION WITH ARCHITECTURAL / GENERAL TRADES IN FIELD PRIOR TO START OF CONSTRUCTION. ELECTRICAL CONTRACTOR SHALL CARRY AN ALLOWANCE TO COVER THE COST OF THE WALL REPAIR, AS COORDINATED WITH THE ARCHITECTURAL TRADES.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING WALL MOUNTED LIGHT FIXTURE AT THIS LOCATION. DISPOSE OF THE FIXTURE IN A LEGAL MANNER AT A LOCAL RECYCLING CENTER. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT CONDUIT AND WIRING SERVING FIXTURE BACK TO EXISTING JUNCTION BOX INSIDE BUILDING FOR RE-USE TO SERVE NEW BUILDING MOUNTED SITE LIGHTING TO BE INSTALLED IN THE SAME LOCATION, BUT AT A HIGHER MOUNTING ELEVATION. REMOVE EXISTING BACKBOX AT FIXTURE LOCATION AND PROVIDE WALL REPAIR AT EXISTING BOX LOCATION. COORDINATE WALL REPAIR AND WATER PROOFING OF EXISTING BOX LOCATION WITH ARCHITECTURAL / GENERAL TRADES IN FIELD PRIOR TO START OF CONSTRUCTION. ELECTRICAL CONTRACTOR SHALL CARRY AN ALLOWANCE TO COVER THE COST OF THE WALL REPAIR, AS COORDINATED WITH THE ARCHITECTURAL TRADES.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING SURFACE MOUNTED ADJUSTABLE FLOOD LIGHT FIXTURE MOUNTED ON ROOF AND SERVING FLAG POLE LIGHTING. DISPOSE OF THE FIXTURE IN A LEGAL MANNER AT A LOCAL RECYCLING CENTER. EXISTING BRANCH CIRCUIT CONDUIT AND WIRING TO REMAIN TO SERVE NEW FLOOD LIGHTING FIXTURE TO BE INSTALLED IN THE SAME LOCATION. COORDINATE EXACT DETAILS ASSOCIATED WITH THE EXISTING BRANCH CIRCUIT CONDUIT AND WIRING SERVING THE FIXTURE IN THE FIELD PRIOR TO START OF CONSTRUCTION AND PRIOR TO START OF ANY DEMOLITION WORK. PROVIDE MODIFICATIONS AS REQUIRED TO SUPPORT THE POWER / BRANCH CIRCUIT CONNECTION REQUIREMENTS OF THE NEW LIGHT FIXTURE TO BE INSTALLED AT THIS LOCATION TO SERVE THE FLAG POLE LIGHTING.



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

Beckett & Raeder, Inc.
2025 Auburn, MI 48310
734.663.2622 ph
734.665.0739 fx

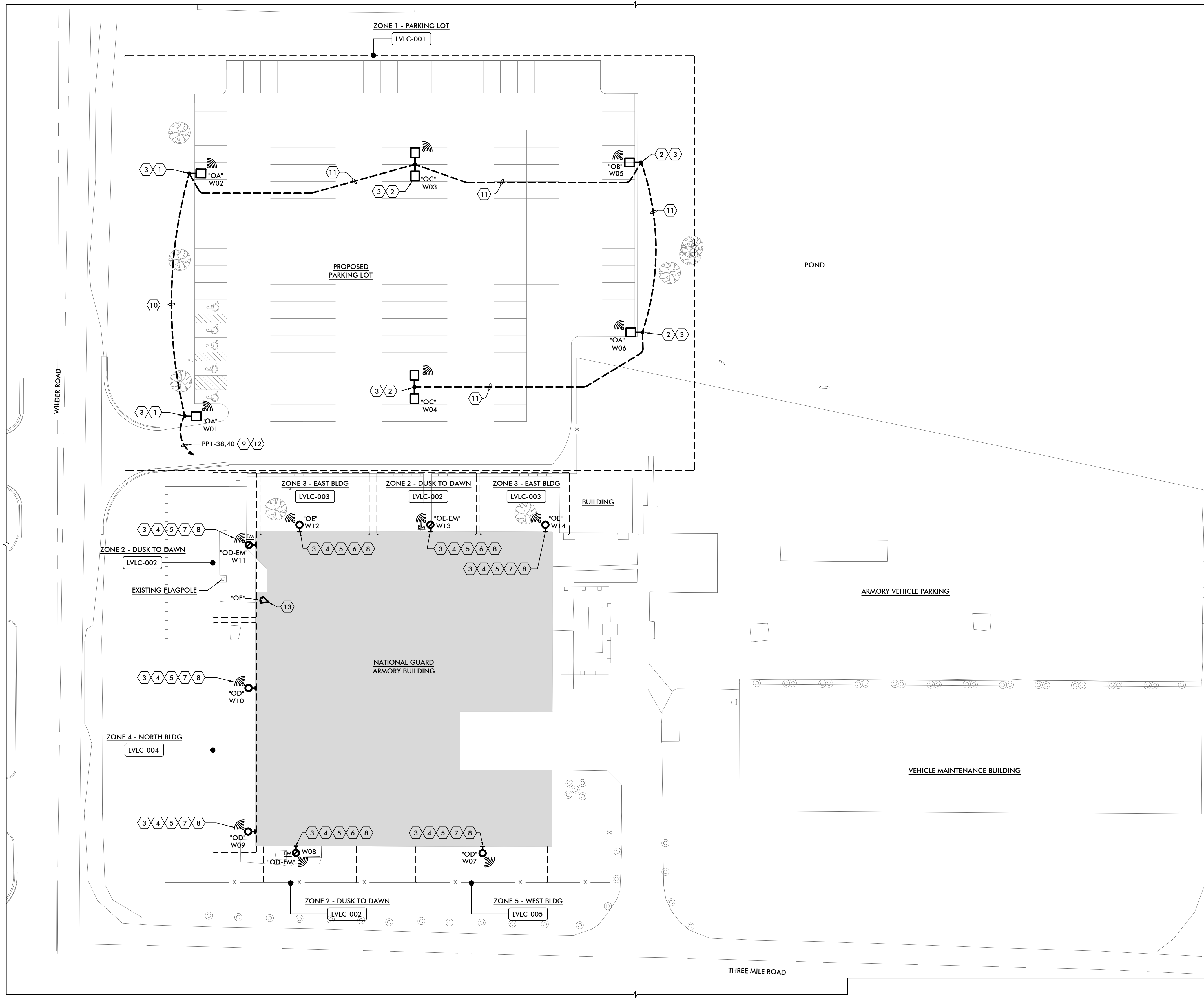
Beckett & Raeder
Landscape Architecture
Planning & Engineering

Department of Military and Veterans Affairs
Bay City Armory - Renovate Armory

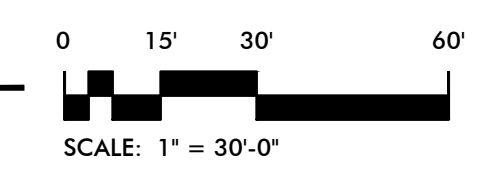
ISSUED FOR	DATE	DESIGNED TOC
100% PHASE 500 CONSTRUCTION	SEP 28, 2022	DRAWN CAD
FINAL RECORD	MAY 17, 2023	CHECKED TOC
		APPROVED JB

IDENTIFICATION NO. 26A4022031
FILE NO. 5/12/2023/MAA
PROJECT NO. 26A4022031

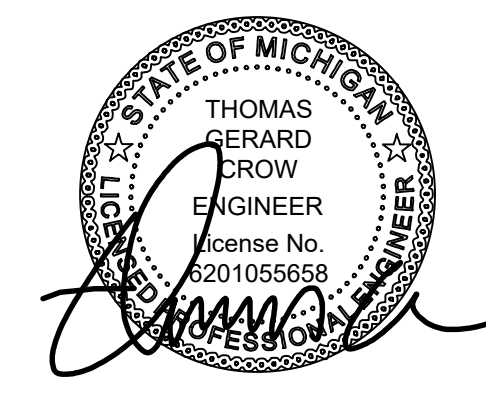
SHEET **E0.4**



SITE PLAN - ELECTRICAL NEW WORK
 SCALE: 1" = 30'-0"



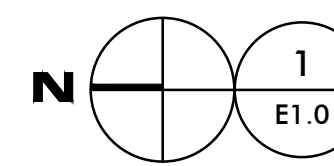
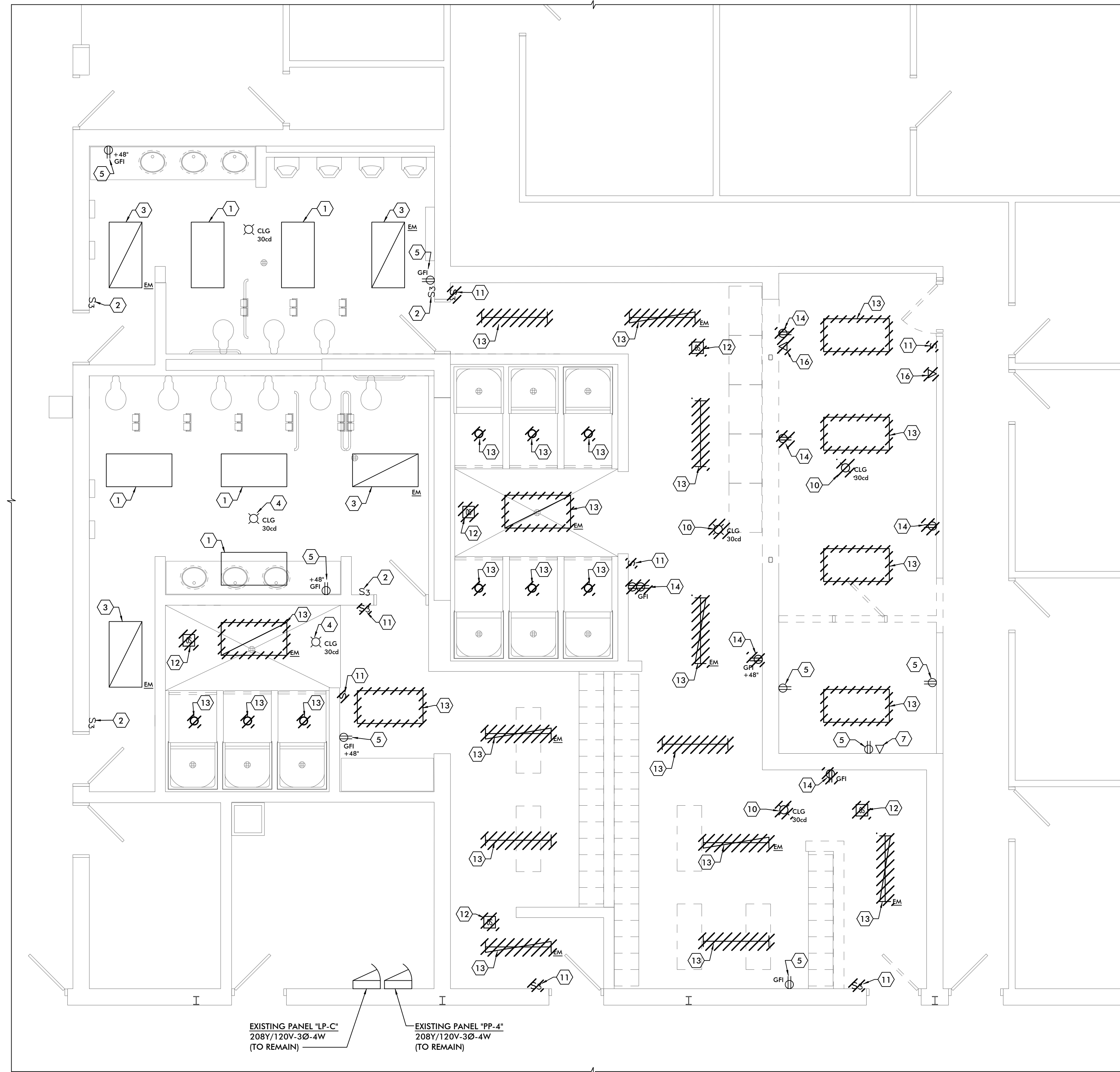
- SITE PLAN GENERAL NOTES:**
- REFER TO ARCHITECTURAL SITE PLAN FOR ADDITIONAL INFORMATION REGARDING PROPOSED WALKWAYS, PATIOS AND OTHER RENOVATION WORK ASSOCIATED WITH THE PROJECT.
 - COORDINATE WORK WITH OTHER TRADES. COORDINATE LOCATIONS OF UNDERGROUND UTILITIES AND OTHER OBSTRUCTIONS WITH CIVIL TRADES. CALL "MISS DIG" TO MARK UTILITIES BEFORE START OF WORK.
- ELECTRICAL KEY NOTES**
- NEW POLE MOUNTED SITE LIGHTING FIXTURE MOUNTED ON EXISTING CONCRETE BASE. ELECTRICAL CONTRACTOR SHALL PROVIDE BOLT CIRCLE AND AFTER AS REQUIRED TO ALLOW THE EXISTING ANCHOR BOLTS TO BE UTILIZED TO SERVE THE NEW BOLT PATTERN OF THE NEW POLE. EXISTING BRANCH CIRCUIT CONDUIT TO BE UTILIZED TO SERVE NEW FIXTURE AT THIS LOCATION. ELECTRICAL CONTRACTOR SHALL INCLUDE A SEPARATE LINE ITEM ALLOWANCE IN THEIR BID FORM TO DEMOLISH THE EXISTING CONCRETE BASE AND REPLACE WITH A NEW CONCRETE BASE WHERE IT IS FOUND THAT THE EXISTING BASE IS NOT IN SOUND CONDITION, OR IF THERE ARE STRUCTURAL ISSUES THAT WOULD PREVENT THE RE-USE OF THE EXISTING CONCRETE BASE. THE ELECTRICAL CONTRACTOR LINE ITEM ALLOWANCE SHOULD BE PROVIDED AS A UNIT COST FOR EACH CONCRETE BASE REPLACEMENT, AND SHALL INCLUDE ALL MATERIAL AND LABOR COSTS FOR THE DEMOLITION OF THE EXISTING CONCRETE BASE AND THE INSTALLATION OF THE NEW CONCRETE BASE AS INDICATED ON THE TYPICAL POLE BASE DETAIL ON SHEET E5.0.
 - NEW POLE MOUNTED SITE LIGHTING FIXTURE TO BE MOUNTED ON A CONCRETE BASE. REFER TO TYPICAL POLE BASE DETAIL ON SHEET E5.0.
 - POLE MOUNTED (OR WALL MOUNTED AS INDICATED) SITE LIGHTING FIXTURES TO HAVE IN-FIXTURE WIRELESS CONTROL MODULE FOR TIME CLOCK SCHEDULE ON/OFF CONTROL AND DIMMING BASED ON TIME OF DAY, FOR COMPLIANCE WITH THE ENERGY CODE, AS DESCRIBED IN THE LIGHTING FIXTURE SCHEDULE. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION REGARDING THE WIRELESS CONTROL MODULE FUNCTION. REFER TO WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE ON SHEET E5.2 FOR ADDITIONAL INFORMATION REGARDING THE PROGRAMMING AND CONTROL OF THE FIXTURES. NOTE THAT THE "WXX" DESIGNATION (i.e. W10) INDICATES THE WIRELESS IDENTIFICATION FOR THE FIXTURE, FOR THE PURPOSES OF PROGRAMMING THE FUNCTION OF THE FIXTURE THROUGH THE WIRELESS LIGHTING CONTROL SYSTEM.
 - WALL MOUNT FIXTURE AT 10'-0" ABOVE FINISHED GRADE, MEASURED TO BOTTOM OF FIXTURE. COORDINATE EXACT LOCATION WITH ARCHITECTURAL ELEVATIONS AND ADJUST AS NECESSARY TO AVOID CONFLICT WITH ARCHITECTURAL FEATURES OR WALL MOUNTED ELEMENTS. VERIFY IN FIELD EXACT MOUNTING LOCATION PRIOR TO ROUGH-IN OF ANY BOXES, RACEWAYS, ETC. NOTE THAT EXACT ELEVATION ABOVE FINISHED GRADE MAY VARY DUE TO THE GRADE CONDITIONS. THE ELEVATION OF THE FIXTURES SHALL BE UNIFORM AND ALIGNED AS SHOWN ON THE ARCHITECTURAL ELEVATIONS.
 - REFER TO FIXTURE TYPE 'OD' MOUNTING DETAIL ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - REPLACE EXISTING WALL MOUNTED LIGHT FIXTURE THIS AREA WITH NEW FIXTURES INDICATED. NEW FIXTURES TO BE INSTALLED AT A HIGHER ELEVATION THAN THE EXISTING FIXTURE REMOVED BY DEMOLITION WORK. ELECTRICAL CONTRACTOR PROVIDE WALL REPAIR OF THE EXISTING FIXTURE LOCATION AND NEW WATER-TIGHT WALL PENETRATION TO SERVE THE NEW FIXTURE. EXISTING CONDUIT PREVIOUSLY SERVING FIXTURE IN THIS AREA TO BE RECONFIGURED TO SERVE THE NEW FIXTURE INDICATED FROM AN ALWAYS ENERGIZED 120 VOLT BRANCH CIRCUIT AS NOTED. EXISTING TIME CLOCK PREVIOUSLY SERVING EXTERIOR BUILDING LIGHTING FIXTURES SHALL BE REMOVED FROM THE CONTROL CIRCUIT THAT THE NEW FIXTURE IS CONSTANTLY ENERGIZED FOR OPERATION VIA THE FIXTURE WIRELESS CONTROL MODULE. NOTE THAT THE EXISTING LIGHT FIXTURE TO BE REMOVED AND REPLACED IS AN HID "WALL PACK" TYPE LIGHT FIXTURE WHICH HAD A HIGHER TOTAL CONNECTED LOAD THAN THE NEW LED LIGHT FIXTURE INDICATED TO REPLACE THE EXISTING FIXTURE. ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING IN THE FIELD TO IDENTIFY THE EXISTING PANEL AND BRANCH CIRCUIT NUMBER SERVING THE EXISTING FIXTURE TO BE REPLACED. PROVIDE NEW BRANCH CIRCUIT CONDUIT AND WIRING AS INDICATED ON THE NEW WORK LIGHTING PLAN ON SHEET E2.0.
 - NEW WALL MOUNTED LIGHT FIXTURE MOUNTED AT A LOCATION NOT PREVIOUSLY SERVED BY BUILDING MOUNTED SITE LIGHTING, TO PROVIDE SECURITY LIGHTING AROUND BUILDING PERIMETER. PROVIDE NEW BRANCH CIRCUIT CONDUIT AND WIRING AS INDICATED ON THE NEW WORK LIGHTING PLAN ON SHEET E2.0.
 - REFER TO FLOOR PLAN - LIGHTING ON SHEET E2.0 FOR CIRCUITING AND CONTROL OF WALL MOUNTED LIGHT FIXTURES ON EXISTING BUILDING.
 - NEW 2 #6 + 1 #6 GRD IN EXISTING 1" CONDUIT ROUTED UNDERGROUND TO PANEL NOTED, CIRCUIT NUMBER AS INDICATED. NOTE THAT EXISTING CONDUIT HOMERUN LOCATION IS APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD PRIOR TO START OF CONSTRUCTION. THE BASIS OF DESIGN IS FOR THE EXISTING CONDUIT TO BE RE-USED TO SERVE THE NEW LIGHTING, BUT FOR THE BRANCH CIRCUIT TO BE REVISED TO A 208-VOLT CIRCUIT, AND THE BRANCH CIRCUIT WIRING TO BE REPLACED WITH NEW CONDUCTORS TO INCREASE THE CONDUCTOR SIZE TO ACCOUNT FOR VOLTAGE DROP AND THE INCREASED LOAD ON THE CIRCUIT WITH THE ADDED SITE LIGHTING FIXTURES. ELECTRICAL CONTRACTOR SHALL PROVIDE STA-KON CONNECTORS ON CONDUCTOR ENDS FOR TERMINATION AT THE CIRCUIT BREAKERS IN LIGHTING PANEL NOTED. CONDUCTOR SIZES INDICATED SHALL BE MAINTAINED FOR THE ENTIRE CIRCUIT LENGTH. THE OVERSIZED CONDUCTORS ARE BASED ON THE WORST CASE DISTANCE TO HAVE A VOLTAGE DROP OF LESS THAN 3%. THE ELECTRICAL CONTRACTOR MAY ADJUST THE CONDUCTOR SIZES WHERE IT CAN BE DEMONSTRATED THAT A SMALLER CONDUCTOR SIZE WILL MEET THE MAXIMUM VOLTAGE DROP CRITERIA OF 3%. NOTE THAT WITHIN THE BUILDING THE EXISTING CONDUIT WILL NEED TO BE RECONFIGURED TO ALLOW FOR THE BRANCH CIRCUIT TO TERMINATE DIRECTLY AT THE PANEL IN LIEU OF THE TIME CLOCK, WHICH WAS REMOVED BY DEMOLITION WORK AND WILL NO LONGER BE REQUIRED TO SERVE THE NEW SITE LIGHTING FIXTURES. THE NEW SITE LIGHTING FIXTURES UTILIZE WIRELESS CONTROL MODULES AND REQUIRE CONSTANT ON POWER FOR FIXTURE OPERATION.
 - NEW UNDERGROUND 2 #6 + 1 #6 GRD IN EXISTING 1" CONDUIT. NOTE THAT EXISTING CONDUIT LOCATION BETWEEN POLE MOUNTED LIGHT FIXTURES IS APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD PRIOR TO START OF CONSTRUCTION. THE BASIS OF DESIGN IS FOR THE EXISTING CONDUIT AND BRANCH CIRCUIT TO BE RE-USED TO SERVE THE NEW LIGHTING, BUT FOR THE BRANCH CIRCUIT WIRING TO BE REPLACED WITH NEW CONDUCTORS TO INCREASE THE CONDUCTOR SIZE TO ACCOUNT FOR VOLTAGE DROP AND THE INCREASED LOAD ON THE CIRCUIT WITH THE ADDED SITE LIGHTING FIXTURES. THE OVERSIZED CONDUCTORS ARE BASED ON THE WORST CASE DISTANCE AS REQUIRED TO HAVE A VOLTAGE DROP OF LESS THAN 3%. THE ELECTRICAL CONTRACTOR MAY ADJUST THE CONDUCTOR SIZES WHERE IT CAN BE DEMONSTRATED THAT A SMALLER CONDUCTOR SIZE WILL MEET THE MAXIMUM VOLTAGE DROP CRITERIA OF 3%.
 - NEW UNDERGROUND 2 #6 + 1 #6 GRD - 1" CONDUIT. NOTE THAT THE OVERSIZED CONDUCTORS ARE BASED ON THE WORST CASE DISTANCE AS REQUIRED TO HAVE A VOLTAGE DROP OF LESS THAN 3%. THE ELECTRICAL CONTRACTOR MAY ADJUST THE CONDUCTOR SIZES WHERE IT CAN BE DEMONSTRATED THAT A SMALLER CONDUCTOR SIZE WILL MEET THE MAXIMUM VOLTAGE DROP CRITERIA OF 3%.
 - ELECTRICAL CONTRACTOR SHALL REMOVE TWO (2) EXISTING SPARE 20A-1P CIRCUIT BREAKERS IN THE PANEL NOTED AND INSTALL A NEW 20A-2P CIRCUIT BREAKER IN THE SPACE MADE AVAILABLE BY THE REMOVAL OF THE NOTED CIRCUIT BREAKERS TO SERVE THE NEW BRANCH CIRCUIT INDICATED TO THE NEW SITE LIGHTING FIXTURES. REFER TO PANEL SCHEDULES ON THE E4.0 SERIES DRAWINGS FOR ADDITIONAL INFORMATION.
 - NEW SURFACE MOUNTED ADJUSTABLE FLOOD LIGHT FIXTURE MOUNTED IN SAME LOCATION ON ROOF AS EXISTING FIXTURE REMOVED BY DEMOLITION WORK TO SERVE EXISTING FLAG POLE LIGHTING. CIRCUIT NEW LIGHT FIXTURE TO EXISTING BRANCH CIRCUIT AND ASSOCIATED CONTROLS PREVIOUSLY SERVING THE EXISTING FIXTURE REMOVED BY DEMOLITION WORK. COORDINATE EXACT DETAILS ASSOCIATED WITH THE EXISTING BRANCH CIRCUIT CONDUIT AND WIRING SERVING THE FIXTURE IN THE FIELD PRIOR TO START OF CONSTRUCTION. PROVIDE MODIFICATIONS AS REQUIRED TO SUPPORT THE POWER / BRANCH CIRCUIT CONNECTION REQUIREMENTS OF THE NEW LIGHT FIXTURE TO BE INSTALLED AT THIS LOCATION TO SERVE THE FLAG POLE LIGHTING. ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING IN THE FIELD TO IDENTIFY THE EXISTING PANEL AND BRANCH CIRCUIT NUMBER AS WELL AS THE EXISTING TIME CLOCK THAT SERVES THE EXISTING LIGHTING CONTROL TO THE FIXTURE. REFLECT THE PANEL, BRANCH CIRCUIT NUMBER AND TIME CLOCK LOCATION ON THE AS-BUILT RECORD DRAWINGS.



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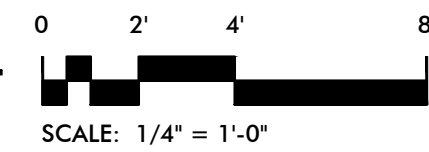
ISSUED FOR	DATE	DESIGNED TOC
100% PHASE 600	SEP 28, 2022	DRAWN CAD
CONSTRUCTION	MAY 17, 2023	CHECKED TOC
FINAL RECORD		APPROVED JB

IDENTIFICATION NO. _____
 FILE NO. 5/12/2023/MAA
 PROJECT NO. 20A022031
 SHEET E0.5



PARTIAL FLOOR PLAN - ELECTRICAL DEMOLITION

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



CONTRACTORS PRE-BID NOTIFICATION:

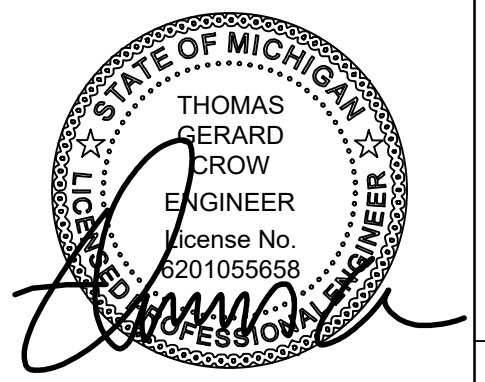
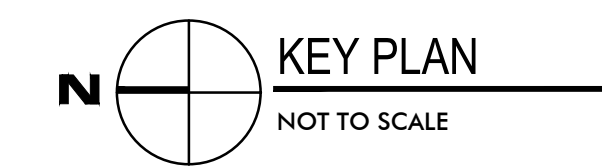
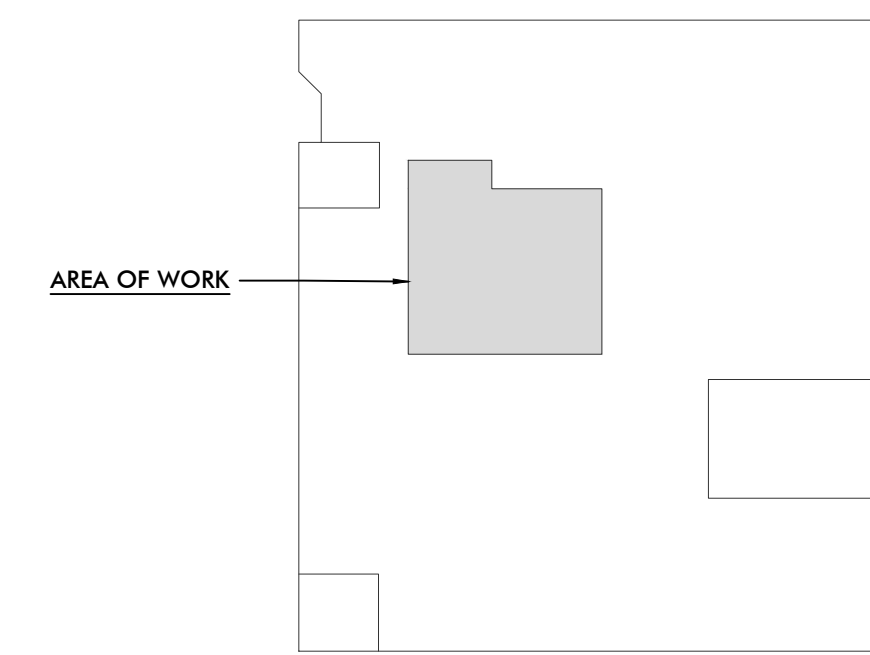
ALL EXISTING ITEMS INDICATED IN THE CONTRACT DRAWINGS HAVE BEEN TAKEN FROM THE OWNER'S LIMITED RECORD DRAWINGS AND SUBSTANTIAL FIELD OBSERVATIONS AND VERIFICATION. THIS CONTRACTOR AND ALL RELATED SUB-CONTRACTORS SHALL VISIT THE SITE AND COMPLETELY UNDERSTAND THE CONDITIONS UNDER WHICH THE WORK MUST BE PERFORMED. IF A DEPARTURE FROM THE DESIGN INTENT OF THE DOCUMENTS IS REQUIRED DUE TO THE ACTUAL FIELD CONDITIONS OBSERVED BY THE CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING FOR RESOLUTION PRIOR TO SUBMITTING FINAL BID OR ENTERING INTO A CONTRACT FOR CONSTRUCTION. FAILURE TO PROVIDE THE ARCHITECT WITH NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE DESIGN INTENT WITH NO ADDITIONAL COST BEING INCURRED BY THE OWNER.

ELECTRICAL GENERAL NOTES

- ALL DEVICES INDICATED WITH SOLID LIGHT LINES ARE EXISTING DEVICES TO REMAIN.
- ALL DEVICES AND FIXTURES INDICATED WITH SOLID DARK CROSS-HATCHED LINES ARE EXISTING TO BE REMOVED OR RELOCATED BY THIS ELECTRICAL CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL PROVIDE DEMOLITION OF ELECTRICAL DEVICES, CONDUIT, WIRING, FIXTURES, EQUIPMENT, ETC. AS REQUIRED TO ACCOMMODATE ARCHITECTURAL, MECHANICAL AND ELECTRICAL REVISIONS. ELECTRICAL DEMOLITION SHEET PROVIDES A GENERAL GUIDELINE AS TO THE SCOPE OF THE WORK. HOWEVER, ALL DEMOLITION REQUIREMENTS MAY NOT BE INDICATED. PROVIDE DEMOLITION AS REQUIRED TO ACCOMMODATE PROJECT REVISIONS.
- COORDINATE DEMOLITION REQUIREMENTS WITH THE WORK OF OTHER TRADES.
- PRIOR TO START OF CONSTRUCTION, AND PRIOR TO ANY DEMOLITION WORK THE ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING TO IDENTIFY ALL EXISTING BRANCH CIRCUITS SERVING THE RENOVATION AREA, AND TO IDENTIFY THE AVAILABLE BRANCH CIRCUITS THAT MAY BE RE-USED AS PART OF THE PROPOSED RENOVATION, AS WELL AS CIRCUITS THAT SERVE EXISTING LIGHTING FIXTURES OR DEVICES OUTSIDE OF THE WORK AREA THAT ARE TO REMAIN AND BE MAINTAINED.

DEMOLITION KEY NOTES

- EXISTING CEILING MOUNTED LIGHT FIXTURE TO REMAIN.
- EXISTING LIGHT SWITCH TO REMAIN.
- EXISTING EMERGENCY LIGHTING FIXTURE TO REMAIN.
- EXISTING FIRE ALARM SYSTEM NOTIFICATION APPLIANCE TO REMAIN.
- EXISTING DUPLEX RECEPTACLE TO REMAIN.
- EXISTING DOUBLE DUPLEX RECEPTACLE TO REMAIN.
- EXISTING TELEPHONE / DATA OUTLET TO REMAIN.
- EXISTING TIME CLOCK TO REMAIN.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING TIME CLOCK SERVING PARKING LOT LIGHTING. REFER TO SITE PLAN - ELECTRICAL DEMOLITION FOR ADDITIONAL INFORMATION.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT, REMOVE AND RELOCATE EXISTING FIRE ALARM SYSTEM NOTIFICATION APPLIANCE. DISCONNECT AND REMOVE EXISTING FIRE ALARM SYSTEM NOTIFICATION APPLIANCE WIRING AS DIRECTED BY THE EXISTING FIRE ALARM SYSTEM MANUFACTURE. REFER TO NEW WORK PLAN ON SHEET E3.0 FOR NEW LOCATION OF RELOCATED DEVICE AND ADDITIONAL INFORMATION.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING SWITCHING CONTROL COMPLETE.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING CEILING MOUNTED OCCUPANCY SENSOR. DISCONNECT AND REMOVE EXISTING POWER PACK AND ASSOCIATED CONTROL WIRING COMPLETE.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING CEILING MOUNTED LIGHT FIXTURE. EXISTING BRANCH CIRCUIT CONDUIT AND WIRING TO BE REMOVED TO NEAREST JUNCTION BOX FOR RE-USE TO SERVE NEW LIGHTING TO BE INSTALLED IN THE AREA. REFER TO GENERAL NOTE #5 FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH CIRCUIT TRACING REQUIRED TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING DUPLEX RECEPTACLE (OR DOUBLE DUPLEX RECEPTACLE WHERE INDICATED). DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRING TO NEAREST JUNCTION BOX IN AREA TO ALLOW THE EXISTING CIRCUIT TO BE RE-USED TO SERVE NEW POWER RECEPTACLES IN AREA. REFER TO GENERAL NOTE #5 FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH CIRCUIT TRACING REQUIRED TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT POWER CONNECTION TO EXISTING MECHANICAL EQUIPMENT TO BE REMOVED BY MECHANICAL TRADES. DISCONNECT, REMOVE AND SALVAGE EXISTING DISCONNECT SWITCH, WHERE APPLICABLE. FOR OWNER: IF OWNER DOES NOT WANT DISCONNECT SWITCH TO BE SALVAGED, DISPOSE OF DISCONNECT SWITCH IN A LEGAL MANNER AT A LOCAL RECYCLE CENTER. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT COMPLETE TO SOURCE AND LABEL EXISTING CIRCUIT AS "SPARE". REFER TO NEW WORK PLANS FOR AREAS WHERE THE EXISTING CIRCUIT MADE AVAILABLE AS SPARE MAY BE RE-USED TO SERVE NEW EQUIPMENT. REFER TO GENERAL NOTE #5 FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH CIRCUIT TRACING REQUIRED TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING LOW VOLTAGE TELEPHONE OR TELEPHONE/ DATA OUTLET. DISCONNECT AND REMOVE EXISTING CONDUIT AND LOW VOLTAGE WIRING COMPLETE TO SOURCE.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING BOILER EMERGENCY SHUTDOWN PUSHBUTTON AND ASSOCIATED CONTROL WIRING COMPLETE. EXISTING BACKBOX AND CONDUIT TO REMAIN AND BE RECONFIGURED TO FACILITATE INSTALLATION OF NEW EMERGENCY SHUTDOWN PUSHBUTTON SYSTEM ASSOCIATED WITH NEW BOILERS TO BE INSTALLED IN MECHANICAL ROOM. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.
- ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING 120-VOLT CONNECTION TO EXISTING BOILER CONTROL PANEL TO BE REMOVED BY MECHANICAL TRADES. EXISTING BRANCH CIRCUIT TO REMAIN TO SERVE NEW BOILER CONTROL PANEL TO BE INSTALLED AS PART OF THE NEW WORK. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION. COORDINATE ALL WORK WITH THE MECHANICAL CONTRACTOR IN THE FIELD PRIOR TO START OF CONSTRUCTION AND PRIOR TO START OF ANY DEMOLITION WORK.



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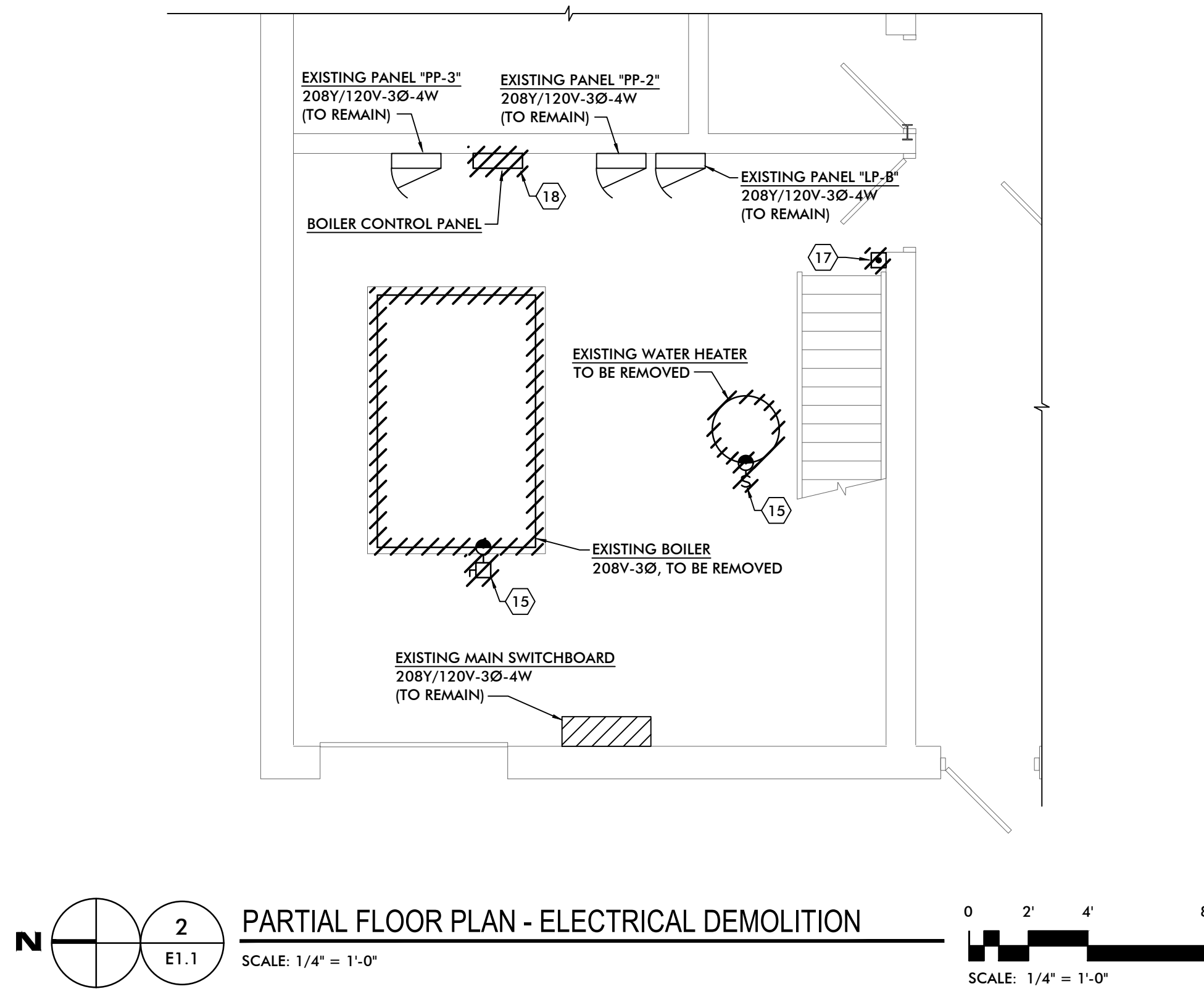
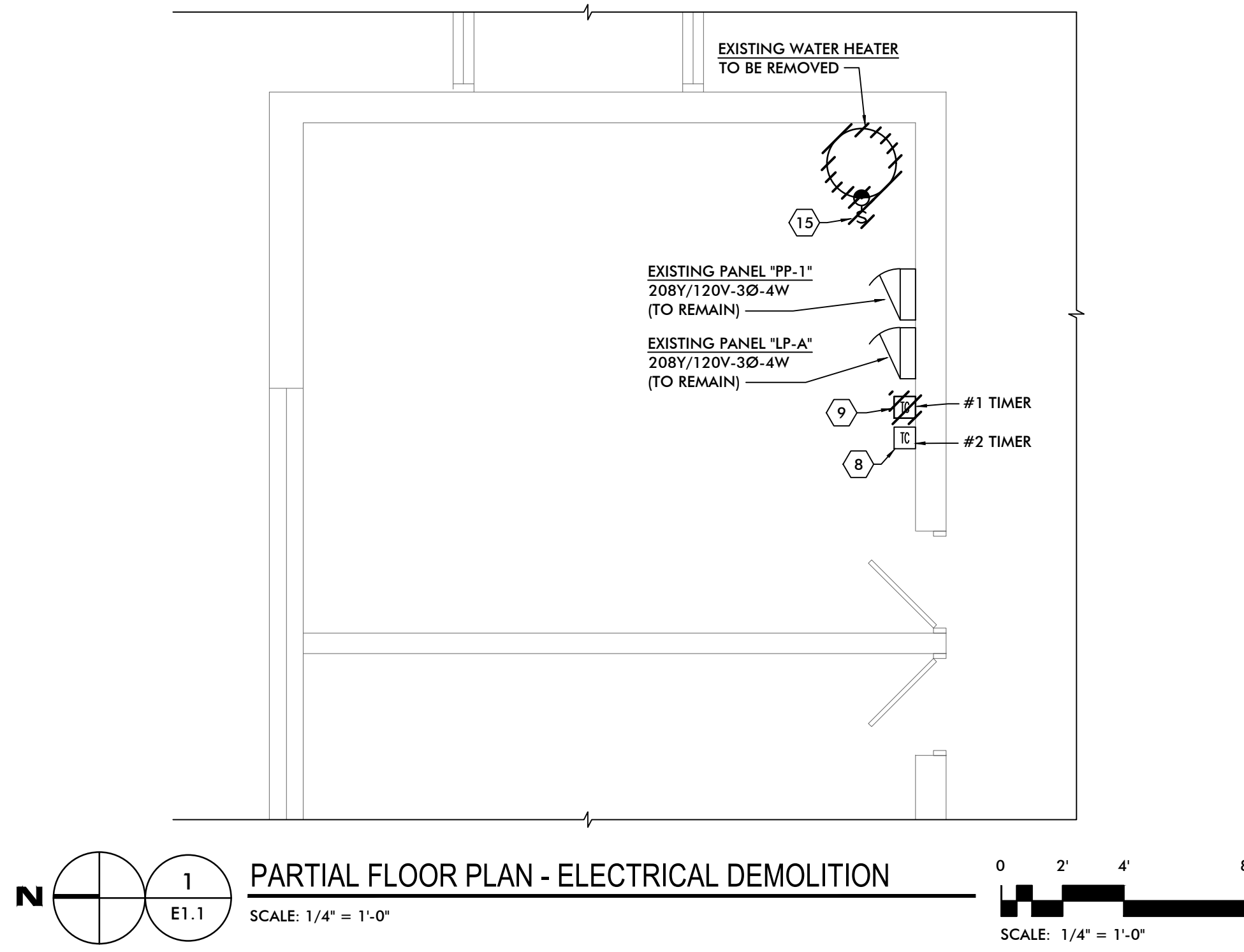
SHEET	E1.0	IDENTIFICATION NO.	FILE NO.	ISSUED FOR	DATE	DESIGNED TOC
		5/1/2024/MAA	5/1/2024/MAA	100% PHASE 500 CONSTRUCTION	SEP 28, 2022	DRAWN CAD
			PROJECT NO.	FINAL RECORD	MAY 17, 2023	CHECKED TOC
			20A022031			APPROVED JB

Department of
Military and Veterans Affairs
Bay City Armory - Renovate Armory



Beckett & Raeder, Inc.
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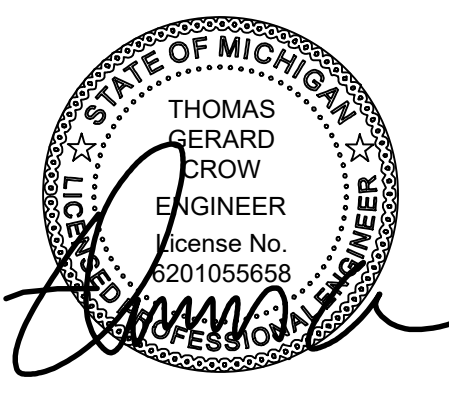
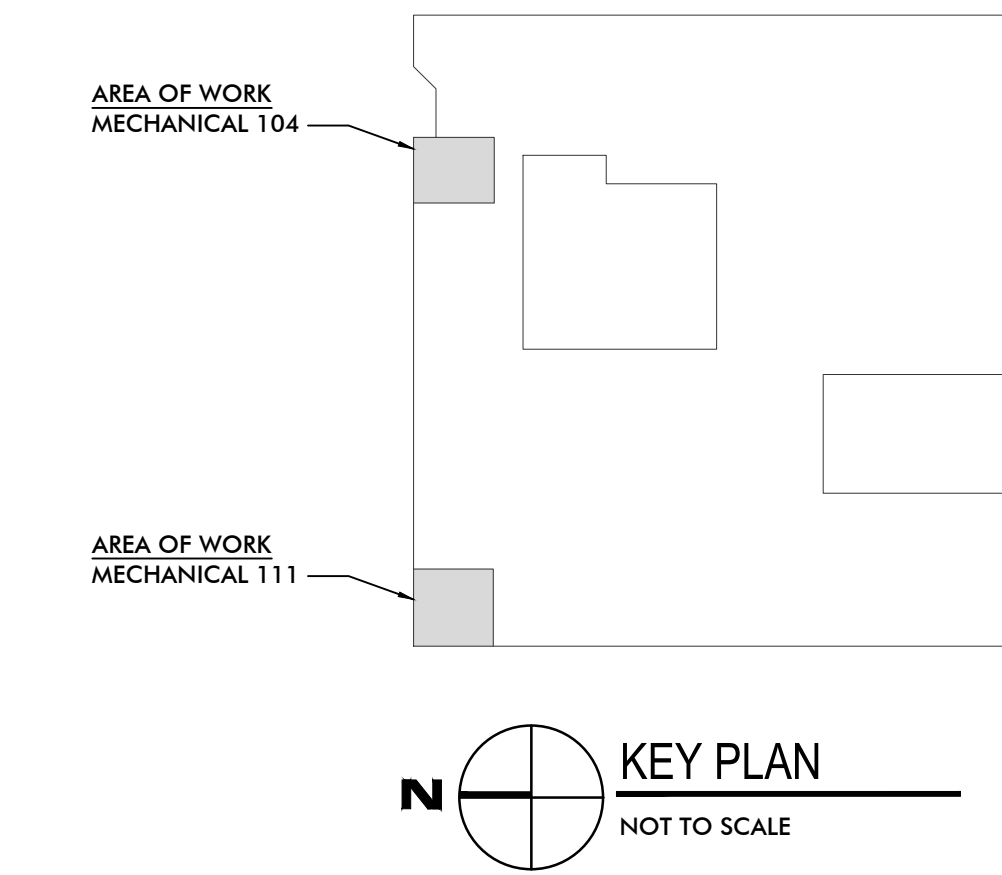
STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, P.A. DIRECTOR



CONTRACTORS PRE-BID NOTIFICATION:
 ALL EXISTING ITEMS INDICATED IN THE CONTRACT DRAWINGS HAVE BEEN TAKEN FROM THE OWNER'S LIMITED RECORD DRAWINGS AND SUBSTANTIAL FIELD OBSERVATIONS AND VERIFICATION. THIS CONTRACTOR AND ALL RELATED SUB-CONTRACTORS SHALL VISIT THE SITE AND COMPLETELY UNDERSTAND THE CONDITIONS UNDER WHICH THE WORK MUST BE PERFORMED. IF A DEPARTURE FROM THE DESIGN INTENT OF THE DOCUMENTS IS REQUIRED DUE TO THE ACTUAL FIELD CONDITIONS OBSERVED BY THE CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING FOR RESOLUTION PRIOR TO SUBMITTING FINAL BID OR ENTERING INTO A CONTRACT FOR CONSTRUCTION. FAILURE TO PROVIDE THE ARCHITECT WITH NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE DESIGN INTENT WITH NO ADDITIONAL COST BEING INCURRED BY THE OWNER.

- ELECTRICAL GENERAL NOTES**
- ALL DEVICES INDICATED WITH SOLID LIGHT LINES ARE EXISTING DEVICES TO REMAIN.
 - ALL DEVICES AND FIXTURES INDICATED WITH SOLID DARK CROSS-HATCHED LINES ARE EXISTING TO BE REMOVED OR RELOCATED BY THIS ELECTRICAL CONTRACTOR.
 - ELECTRICAL CONTRACTOR SHALL PROVIDE DEMOLITION OF ELECTRICAL DEVICES, CONDUIT, WIRING, FIXTURES, EQUIPMENT, ETC. AS REQUIRED TO ACCOMMODATE ARCHITECTURAL, MECHANICAL AND ELECTRICAL REVISIONS. ELECTRICAL DEMOLITION SHEET PROVIDES A GENERAL GUIDELINE AS TO THE SCOPE OF THE WORK. HOWEVER, ALL DEMOLITION REQUIREMENTS MAY NOT BE INDICATED. PROVIDE DEMOLITION AS REQUIRED TO ACCOMMODATE PROJECT REVISIONS.
 - COORDINATE DEMOLITION REQUIREMENTS WITH THE WORK OF OTHER TRADES.
 - PRIOR TO START OF CONSTRUCTION, AND PRIOR TO ANY DEMOLITION WORK THE ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING TO IDENTIFY ALL EXISTING BRANCH CIRCUITS SERVING THE RENOVATION AREA, AND TO IDENTIFY THE AVAILABLE BRANCH CIRCUITS THAT MAY BE RE-USED AS PART OF THE PROPOSED RENOVATION, AS WELL AS CIRCUITS THAT SERVE EXISTING LIGHTING FIXTURES OR DEVICES OUTSIDE OF THE WORK AREA THAT ARE TO REMAIN AND BE MAINTAINED.

- DEMOLITION KEY NOTES**
- EXISTING CEILING MOUNTED LIGHT FIXTURE TO REMAIN.
 - EXISTING LIGHT SWITCH TO REMAIN.
 - EXISTING EMERGENCY LIGHTING FIXTURE TO REMAIN.
 - EXISTING FIRE ALARM SYSTEM NOTIFICATION APPLIANCE TO REMAIN.
 - EXISTING DUPLEX RECEPTACLE TO REMAIN.
 - EXISTING DOUBLE DUPLEX RECEPTACLE TO REMAIN.
 - EXISTING TELEPHONE / DATA OUTLET TO REMAIN.
 - EXISTING TIME CLOCK TO REMAIN.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING TIME CLOCK SERVING PARKING LOT LIGHTING. REFER TO SITE PLAN - ELECTRICAL DEMOLITION FOR ADDITIONAL INFORMATION. NOTE: DEMOLITION OF THE TIME CLOCK IS BASED UPON THE TIME CLOCK AND ASSOCIATED CONTROLLED CIRCUIT ONLY SERVING THE POLE MOUNTED PARKING LOT LIGHTING. IF IT IS FOUND AS PART OF THE CIRCUIT TRACING REQUIRED TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR, AS DESCRIBED IN GENERAL NOTE #5, THAT THE EXISTING TIME CLOCK ALSO SERVES OTHER EXISTING SITE LIGHTING FIXTURES, INCLUDING BUILDING MOUNTED LIGHTING THAT IS TO REMAIN, OR THE FLAG POLE FLOOD LIGHTING FIXTURE, THEN THE TIME CLOCK SHALL BE MAINTAINED AND REMAIN IN PLACE, WITH THE ASSOCIATED BRANCH CIRCUIT CONDUIT AND WIRING SERVING THE TIME CLOCK FUNCTION, AS WELL AS THE ASSOCIATED BRANCH CIRCUIT CONDUIT AND WIRING SERVING THE EXISTING LIGHTING TO REMAIN OR BE REPLACED WITH NEW IN THE CASE OF THE FLAG POLE FLOOD LIGHTING FIXTURE. REFLECT FINAL CONDITION ON AS-BUILT RECORD DRAWINGS.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT, REMOVE AND RELOCATE EXISTING FIRE ALARM SYSTEM NOTIFICATION APPLIANCE. DISCONNECT AND REMOVE EXISTING FIRE ALARM SYSTEM NOTIFICATION APPLIANCE WIRING AS DIRECTED BY THE EXISTING FIRE ALARM SYSTEM MANUFACTURER. REFER TO NEW WORK PLAN ON SHEET E3.0 FOR NEW LOCATION OF RELOCATED DEVICE AND ADDITIONAL INFORMATION.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING SWITCHING CONTROL COMPLETE.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING CEILING MOUNTED OCCUPANCY SENSOR. DISCONNECT AND REMOVE EXISTING POWER PACK AND ASSOCIATED CONTROL WIRING COMPLETE.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING CEILING MOUNTED LIGHT FIXTURE. EXISTING BRANCH CIRCUIT CONDUIT AND WIRING TO BE REMOVED TO NEAREST JUNCTION BOX FOR RE-USE TO SERVE NEW LIGHTING TO BE INSTALLED IN THE AREA. REFER TO GENERAL NOTE #5 FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH CIRCUIT TRACING REQUIRED TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING DUPLEX RECEPTACLE (OR DOUBLE DUPLEX RECEPTACLE WHERE INDICATED). DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRING TO NEAREST JUNCTION BOX IN AREA TO ALLOW THE EXISTING CIRCUIT TO BE RE-USED TO SERVE NEW POWER RECEPTACLES IN AREA. REFER TO GENERAL NOTE #5 FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH CIRCUIT TRACING REQUIRED TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT POWER CONNECTION TO EXISTING MECHANICAL EQUIPMENT TO BE REMOVED BY MECHANICAL TRADES. DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH. DISPOSE OF DISCONNECT SWITCH IN A LEGAL MANNER AT A LOCAL RECYCLE CENTER. DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT COMPLETE TO SOURCE AND LABEL EXISTING CIRCUIT AS "SPARE". REFER TO NEW WORK PLANS FOR AREAS WHERE THE EXISTING CIRCUIT MADE AVAILABLE AS SPARE MAY BE RE-USED TO SERVE NEW EQUIPMENT. REFER TO GENERAL NOTE #5 FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH CIRCUIT TRACING REQUIRED TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR AS PART OF THEIR SCOPE OF WORK.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING LOW VOLTAGE TELEPHONE OR TELEPHONE/ DATA OUTLET. DISCONNECT AND REMOVE EXISTING CONDUIT AND LOW VOLTAGE WIRING COMPLETE TO SOURCE.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING BOILER EMERGENCY SHUTDOWN PUSHBUTTON AND ASSOCIATED CONTROL WIRING COMPLETE. EXISTING BACKBOX AND CONDUIT TO REMAIN AND BE RECONFIGURED TO FACILITATE INSTALLATION OF NEW EMERGENCY SHUTDOWN PUSHBUTTON SYSTEM ASSOCIATED WITH NEW BOILERS TO BE INSTALLED IN MECHANICAL ROOM. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.
 - ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING 120-VOLT CONNECTION TO EXISTING BOILER CONTROL PANEL TO BE REMOVED BY MECHANICAL TRADES. EXISTING BRANCH CIRCUIT TO REMAIN TO SERVE NEW BOILER CONTROL PANEL TO BE INSTALLED AS PART OF THE NEW WORK. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION. COORDINATE ALL WORK WITH THE MECHANICAL CONTRACTOR IN THE FIELD PRIOR TO START OF CONSTRUCTION AND PRIOR TO START OF ANY DEMOLITION WORK.

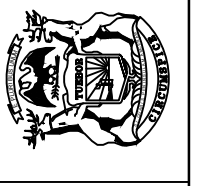


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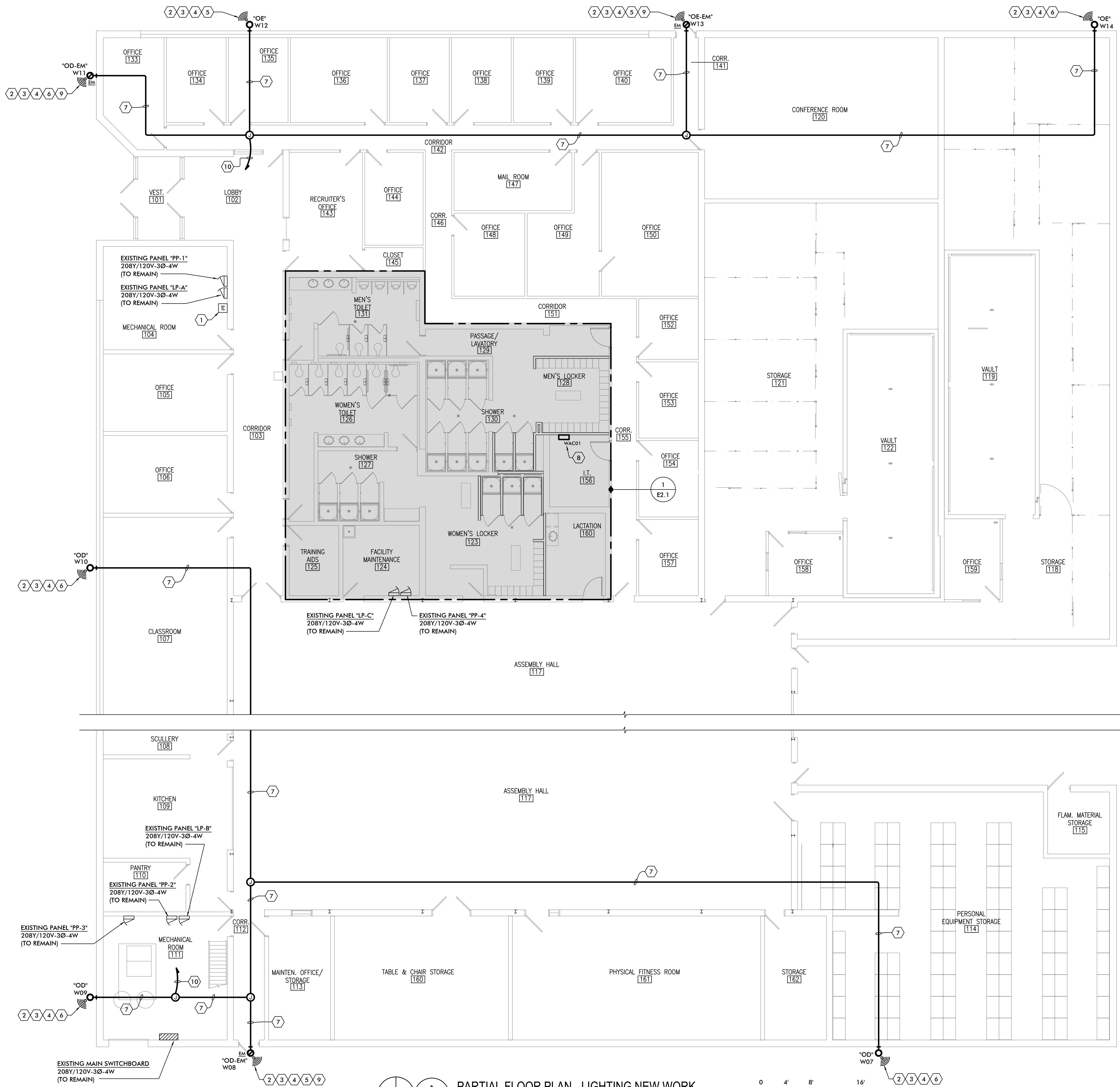
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Department of Military and Veterans Affairs
 Bay City Armory - Renovate Armory

Beckett & Raeder, Inc.
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- ELECTRICAL GENERAL NOTES**
1. ALL JUNCTION BOXES SERVING BRANCH CIRCUIT WIRING SHALL BE LABELED WITH CIRCUITS SERVED. USE BROTHER P-TOUCH LABEL OR EQUAL ON BOX COVER.
 2. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL CEILING MOUNTED LIGHT FIXTURES AND OTHER CEILING MOUNTED DEVICES.
 3. ALL DEVICES INDICATED WITH SOLID DARK LINES ARE NEW DEVICES TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR AS PART OF THIS SCOPE OF WORK.
 4. SECURITY SYSTEM, ACCESS CONTROL SYSTEM, VIDEO SURVEILLANCE SYSTEM, INTERCOM SYSTEM AND SOUND SYSTEM ARE OWNER FURNISHED, INSTALLED BY THE OWNER'S RESPECTIVE CONTRACTOR FOR EACH SYSTEM. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE OWNER FURNISHED SYSTEMS WITH THE OWNER'S CONTRACTOR IN THE FIELD PRIOR TO START OF CONSTRUCTION AND SHALL PROVIDE ALL REQUIRED 120-VOLT BRANCH CIRCUITS, EMPTY RACEWAYS AND OTHER ELECTRICAL COMPONENTS NECESSARY TO SUPPORT THE INSTALLATION OF THE OWNER FURNISHED SYSTEMS.
 5. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL BRANCH CIRCUITS TO HAVE A MAXIMUM VOLTAGE DROP FROM THE CIRCUIT BREAKER PANEL SERVING THE LOAD TO THE LAST LOAD ON THE CIRCUIT OF NO MORE THAN 3%. ALL 120 VOLT, 20 AMPERE BRANCH CIRCUITS OVER 100 FEET IN LENGTH SHALL BE SERVED WITH #10 CONDUCTORS; ALL 120 VOLT, 20 AMPERE BRANCH CIRCUITS OVER 200 FEET IN LENGTH SHALL BE SERVED WITH #8 CONDUCTORS; AND ALL 120 VOLT, 20 AMPERE BRANCH CIRCUITS OVER 300 FEET IN LENGTH SHALL BE SERVED WITH #6 CONDUCTORS. THE OVER-SIZING OF THE CONDUCTORS SHALL INCLUDE OVER-SIZING OF THE EQUIPMENT GROUND CONDUCTOR IN ACCORDANCE WITH N.E.C. ARTICLE 250. ELECTRICAL CONTRACTOR SHALL PROVIDE STA-CON CONNECTORS ON THE ENDS OF CONDUCTORS WHERE NECESSARY TO FACILITATE TERMINATION OF THE CONDUCTORS AT THE WIRING DEVICES (i.e. DUPLEX RECEPTACLES, SWITCHES, ETC) AND THE CIRCUIT BREAKERS.

- LIGHTING KEY NOTES**
1. EXISTING TIME CLOCK TO REMAIN.
 2. WALL MOUNTED EXTERIOR LIGHTING FIXTURES TO HAVE IN-FIXTURE WIRELESS CONTROL MODULE FOR TIME CLOCK SCHEDULE ON/OFF CONTROL AND DIMMING BASED ON TIME OF DAY. FOR COMPLIANCE WITH THE ENERGY CODE, AS DESCRIBED IN THE LIGHTING FIXTURE SCHEDULE. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION REGARDING THE WIRELESS CONTROL MODULE FUNCTION. REFER TO WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE ON SHEET ES.2 FOR ADDITIONAL INFORMATION REGARDING THE PROGRAMMING AND CONTROL OF THE FIXTURES. NOTE THAT THE "WXX" DESIGNATION (i.e. W10) INDICATES THE WIRELESS IDENTIFICATION FOR THE FIXTURE. FOR THE PURPOSES OF PROGRAMMING THE FUNCTION OF THE FIXTURE THROUGH THE WIRELESS LIGHTING CONTROL SYSTEM. REFER TO NEW WORK SITE PLAN ON SHEET ES.5 FOR EXTERIOR SITE LIGHTING ZONES AND THE CORRESPONDING ZONES REFLECTED ON THE NOTED WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE ON SHEET ES.2.
 3. WALL MOUNT FIXTURE AT 10'-0" ABOVE FINISHED GRADE, MEASURED TO BOTTOM OF FIXTURE. COORDINATE EXACT LOCATION WITH ARCHITECTURAL ELEVATIONS AND ADJUST AS NECESSARY TO AVOID CONFLICT WITH ARCHITECTURAL FEATURES OR WALL MOUNTED ELEMENTS. VERIFY IN FIELD EXACT MOUNTING LOCATION PRIOR TO ROUGH-IN OF ANY BOXES, RACEWAYS, ETC. NOTE THAT EXACT ELEVATION ABOVE FINISHED GRADE MAY VARY DUE TO THE GRADE CONDITIONS. THE ELEVATION OF THE FIXTURES SHALL BE UNIFORM AND ALIGNED AS SHOWN ON THE ARCHITECTURAL ELEVATIONS.
 4. REFER TO FIXTURE TYPE "OD" MOUNTING DETAIL ON SHEET ES.0 FOR ADDITIONAL INFORMATION.
 5. REPLACE EXISTING WALL MOUNTED LIGHT FIXTURE IN THIS AREA WITH NEW FIXTURES INDICATED. NEW FIXTURE IS TO BE INSTALLED AT A HIGHER ELEVATION THAN THE EXISTING FIXTURE REMOVED BY DEMOLITION WORK. ELECTRICAL CONTRACTOR PROVIDE WALL REPAIR OF THE EXISTING FIXTURE LOCATION AND NEW WATER TIGHT WALL PENETRATION TO SERVE THE NEW FIXTURE. EXISTING CONDUIT PREVIOUSLY SERVING FIXTURE IN THIS AREA TO BE RECONFIGURED TO SERVE THE NEW FIXTURE INDICATED FROM AN ALWAYS ENERGIZED 120 VOLT BRANCH CIRCUIT AS NOTED. EXISTING TIME CLOCK PREVIOUSLY SERVING EXTERIOR BUILDING LIGHTING FIXTURES SHALL BE REMOVED FROM THE CONTROL CIRCUIT SO THAT THE NEW FIXTURE IS CONSTANTLY ENERGIZED FOR OPERATION VIA THE IN-FIXTURE WIRELESS CONTROL MODULE. NOTE THAT THE EXISTING LIGHT FIXTURE TO BE REMOVED AND REPLACED IS AN HID "WALL PACK" TYPE LIGHT FIXTURE WHICH HAD A HIGHER TOTAL CONNECTED LOAD THAN THE NEW LED LIGHT FIXTURE INDICATED TO REPLACE THE EXISTING FIXTURE. ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING IN THE FIELD TO IDENTIFY THE EXISTING PANEL AND BRANCH CIRCUIT NUMBER SERVING THE EXISTING FIXTURE TO BE REPLACED. PROVIDE NEW BRANCH CIRCUIT CONDUIT AND WIRING AS INDICATED.
 6. NEW WALL MOUNTED LIGHT FIXTURE MOUNTED AT A LOCATION NOT PREVIOUSLY SERVED BY BUILDING MOUNTED SITE LIGHTING. TO PROVIDE SECURITY LIGHTING AROUND BUILDING PERIMETER. PROVIDE NEW BRANCH CIRCUIT CONDUIT AND WIRING AS INDICATED.
 7. NEW 2 #10 + 1 #10 GRD - 3/4" C. ROUTED CONCEALED IN BUILDING INTERIOR, ABOVE ACCESSIBLE CEILING SPACE, HIGH IN THE STRUCTURAL ROOF JOIST SPACE, OR WITHIN WALL CONSTRUCTION TO SERVE NEW LIGHTING FIXTURES INDICATED. ALL CONDUIT SHALL BE INSTALLED WITHIN THE BUILDING ENVELOPE AND CONCEALED.
 8. LIGHTING CONTROL SYSTEM WIRELESS AREA CONTROLLER, MOUNTED ABOVE ACCESSIBLE CEILING SPACE, HIGH ON WALL MOUNT TO STUD WALL TO ENSURE WIRELESS SIGNAL INTEGRITY. COORDINATE EXACT LOCATION OF AREA CONTROLLER WITH THE LIGHTING CONTROL SYSTEM MANUFACTURE BASED ON THEIR INSTALLATION DRAWINGS. NOTE THAT THE AREA CONTROLLER IS POWERED FROM A POWER OVER ETHERNET CONNECTION. PROVIDE CAT-5E CABLE FROM THE WIRELESS AREA CONTROLLER TO THE POE INJECTOR AS DIRECTED BY THE WIRELESS LIGHTING CONTROL SYSTEM MANUFACTURE. COORDINATE WITH THE LIGHTING CONTROLS MANUFACTURE IF A SEPARATE POWER-OVER-ETHERNET SWITCH WILL BE PROVIDED IN A CENTRAL CLOSET LOCATION TO POWER MULTIPLE AREA CONTROLLERS AND/OR DEVICES, OR IF STANDALONE 120-VOLT POE INJECTORS WILL BE PROVIDED AT EACH AREA CONTROLLER. REFER TO PARTIAL LIGHTING NEW WORK FLOOR PLAN ON SHEET E2.1 FOR ADDITIONAL INFORMATION.
 9. EMERGENCY FIXTURE WITH INTERNAL BATTERY BACKUP. FIXTURE SHALL OPERATE IN THE NORMAL CONDITION AS A SWITCHED/DIMMED FIXTURE FROM THE "WAVELINK" WIRELESS LIGHTING CONTROL SYSTEM. UPON LOSS OF NORMAL POWER, THE FIXTURE SHALL ENERGIZE TO THE LUMEN OUTPUT AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE, REGARDLESS OF THE SWITCHED OR DIMMED STATE CONTROLLED BY THE LIGHTING CONTROL SYSTEM. REFER TO THE MANUFACTURERS WIRING DIAGRAMS FOR EXACT WIRING OF THE INTERNAL BATTERY BACKUP WHEN CONTROLLED BY THE WIRELESS LIGHTING CONTROL SYSTEM.
 10. CIRCUIT TO EXISTING 120-VOLT BRANCH CIRCUIT PREVIOUSLY SERVING EXISTING EXTERIOR BUILDING MOUNTED SITE LIGHTING FIXTURES REMOVED BY DEMOLITION WORK. ELECTRICAL CONTRACTOR SHALL REVISE THE EXISTING BRANCH CIRCUIT TO PROVIDE A CONSTANT ON, UNCONTROLLED POWER TO THE NEW LIGHT FIXTURES TO ALLOW FOR THE OPERATION OF THE IN-FIXTURE WIRELESS CONTROL MODULES IN THE NEW FIXTURES. ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING PRIOR TO THE START OF CONSTRUCTION TO IDENTIFY THE EXISTING PANEL AND BRANCH CIRCUIT SERVING THE EXISTING LIGHTING FIXTURES, AND SHALL REFLECT THE EXISTING BRANCH CIRCUIT UTILIZED TO SERVE THE NEW FIXTURES ON THE AS-BUILT RECORD DRAWINGS. REFER TO DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION. NOTE THAT THE EXISTING LIGHTING FIXTURES REMOVED BY DEMOLITION WORK UTILIZED HID LAMPS, AND HAD A HIGHER WATTAGE THAN THE NEW SOLID-STATE (aka LED) LIGHTING FIXTURES INDICATED TO BE INSTALLED ON THE PROJECT. THE NET LOAD ON THE EXISTING CIRCUITS WILL BE LESS THAN OR EQUAL TO THE LOADING ON THE CIRCUIT PRIOR TO THE START OF THE PROJECT DUE TO THE LOWER WATTAGE OF THE NEW FIXTURES.

PARTIAL FLOOR PLAN - LIGHTING NEW WORK
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'
 SCALE: 1/8" = 1'-0"

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 i
 Architecture
 Planning & Engineering

DESIGNED TOC
 DRAWN CAD
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ISSUED FOR
 100% PHASE 600
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 FINAL RECORD

DATE
 SEP 28, 2022
 MAY 17, 2023

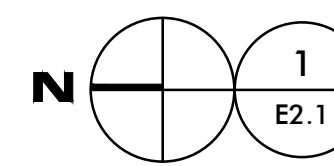
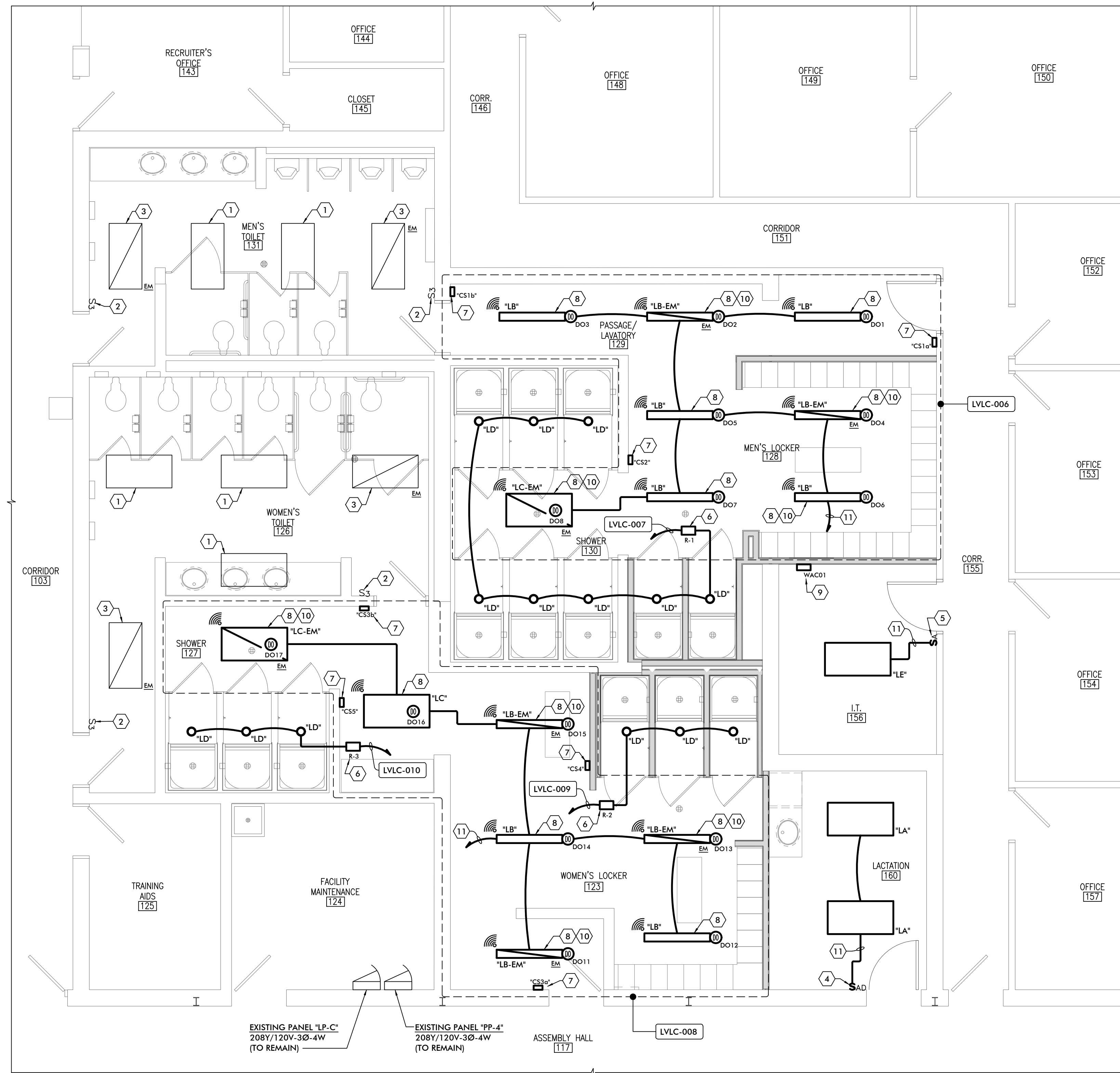
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THOMAS GERARD BROWN
 ENGINEER
 LICENSE NO. 3201055858
 EXPIRES 05/31/2025

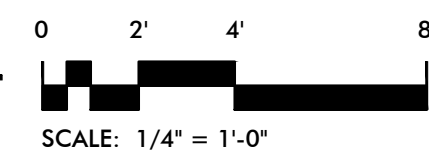
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SHEET
 E2.0



PARTIAL FLOOR PLAN - LIGHTING NEW WORK

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



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

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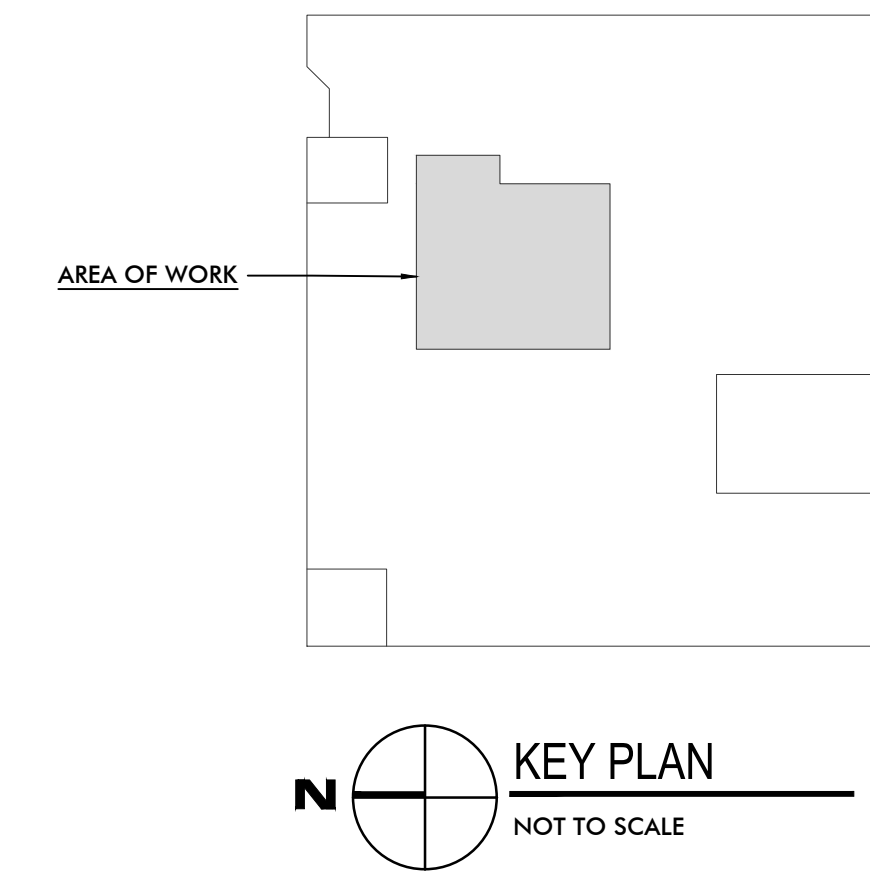
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ELECTRICAL GENERAL NOTES

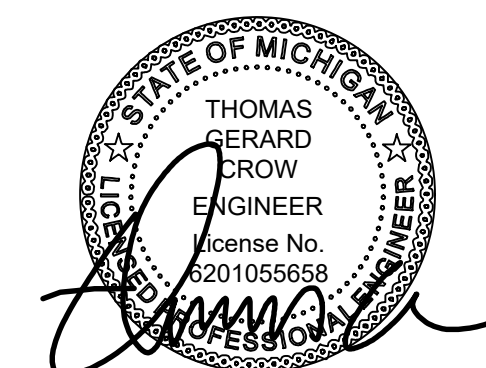
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LIGHTING KEY NOTES

- EXISTING CEILING MOUNTED LIGHT FIXTURE TO REMAIN.
- EXISTING LIGHT SWITCH TO REMAIN.
- EXISTING EMERGENCY LIGHTING FIXTURE TO REMAIN.
- NEW WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR WITH INTEGRAL 0-10V DIMMING CONTROL AND DAYLIGHT HARVESTING PHOTOCELL. SENSOR TO BE GREENGATE CONTROLS OSW-D-010-XX, WHERE THE "XX" DENOTES THE FINISH, TO BE SELECTED BY ARCHITECT, OR APPROVED EQUAL BY WATSTOPPER, TOUCHER OR HUBBELL CONTROL SOLUTIONS. SENSOR TO BE CONFIGURED FOR PARTIAL AUTO-ON, WITH A SETTING OF PARTIAL AUTO-ON TO 50% DIMMED STATE, FOR COMPLIANCE WITH THE ENERGY CODE.
- NEW WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR. SENSOR TO BE GREENGATE CONTROLS ONW-D-1001-MV-XX, WHERE "XX" DENOTES THE FINISH, TO BE SELECTED BY ARCHITECT, OR APPROVED EQUAL BY WATSTOPPER OR HUBBELL CONTROL SOLUTIONS.
- WIRELESS LIGHTING CONTROL SYSTEM DIMMING SWITCHPACK WITH RELAY AND 0-10VDC DIMMING MOUNTED IN ACCESSIBLE CEILING SPACE TO PROVIDE LOW VOLTAGE LIGHTING CONTROL AND DIMMING OF THE GROUP OF FIXTURES INDICATED. WIRELESS SWITCHPACK SHALL HAVE A LOAD RATING OF 16 AMPERES, AND SINKS 120mA 0-10V DIMMING CONTROL PER CHANNEL, AND SHALL BE POWERED FROM THE SAME BRANCH CIRCUIT THAT SUPPLIES THE CONTROLLED LIGHTING FIXTURES. REFER TO TYPICAL WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE ON SHEET ES.2 FOR BRANCH CIRCUIT NUMBER SERVING SWITCHPACK FIXTURES AND ADDITIONAL INFORMATION. THE SYSTEM MANUFACTURE SHALL BE RESPONSIBLE FOR PREPARING SHOP DRAWINGS / INSTALLATION DRAWINGS SHOWING THE COMPLETE SYSTEM AND ALL DEVICES ON THE NETWORK, THE LOCATIONS WHERE INTERCONNECTING CABLING MAY BE REQUIRED AND THE LOCATIONS OF ADDITIONAL EQUIPMENT AND OTHER DEVICES REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. THE DEVICES INDICATED ON THE DRAWINGS ARE LIMITED TO THE SWITCHPACKS, WIRELESS AREA CONTROLLERS, CONTROL STATIONS, OCCUPANCY SENSORS AND DAYLIGHT SENSORS. NOTE THAT THE PHOTO-SENSOR CONNECTION MAY BE IMPLEMENTED DIFFERENTLY THAN SHOWN, AND A SWITCHPACK MAY BE ELIMINATED AND THE DAYLIGHT SENSOR MAY PROVIDE BOTH THE SENSING FUNCTION AND THE SWITCHING / DIMMING FUNCTION. COORDINATE EXACT DETAILS WITH THE MANUFACTURE.
- WIRELESS LIGHTING CONTROL SYSTEM WALL MOUNTED CONTROL STATION. CONTROL STATION TO CONNECT WIRELESS TO THE ASSOCIATED WIRELESS SWITCHPACK FOR CONTROL OF THE LIGHTING LOADS AS NOTED IN THE WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE ON SHEET ES.2. NOTE THAT THE WALLSTATION REQUIRES 120-VOLT FOR OPERATION AND SHALL BE CIRCUITED TO THE SAME 120-VOLT BRANCH CIRCUIT THAT SERVES THE CLOSEST SWITCHPACK ASSOCIATED WITH THE WALLSTATION. REFER TO WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE ON SHEET ES.2 FOR SWITCHPACKS CONTROLLED BY THE CONTROL STATION, FUNCTIONALITY TO BE INCLUDED IN STATION (i.e. SWITCHED ONLY, DIMMING, ETC), AND THE STYLE OF CONTROL STATION TO BE PROVIDED. SEE KEY NOTE #6 ABOVE FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH THE SYSTEM.
- LIGHTING FIXTURE WITH COOPER LIGHTING SOLUTIONS "WAVELINK" SYSTEM IN-FIXTURE PASSIVE INFRARED OCCUPANCY AND DAYLIGHT SENSOR AND WIRELESS RADIO FOR WIRELESS CONNECTIVITY. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION REGARDING THE IN-FIXTURE CONTROL SYSTEM. REFER TO WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE ON SHEET ES.2 FOR ZONING, GROUPING OF CONTROLS AND ADDITIONAL INFORMATION.
- LIGHTING CONTROL SYSTEM WIRELESS AREA CONTROLLER, MOUNTED ABOVE ACCESSIBLE CEILING SPACE, HIGH ON WALL MOUNT TO STUD WALL TO ENSURE WIRELESS SIGNAL INTEGRITY. COORDINATE EXACT LOCATION OF AREA CONTROLLER WITH THE LIGHTING CONTROL SYSTEM MANUFACTURE BASED ON THEIR INSTALLATION DRAWINGS. NOTE THAT THE AREA CONTROLLER IS POWERED FROM A POWER OVER ETHERNET CONNECTION. PROVIDE CAT-5E CABLE FROM THE WIRELESS AREA CONTROLLER TO THE POE INJECTOR AS DIRECTED BY THE WIRELESS LIGHTING CONTROL SYSTEM MANUFACTURE. COORDINATE WITH THE LIGHTING CONTROLS MANUFACTURE IF A SEPARATE POWER-OVER-ETHERNET SWITCH WILL BE PROVIDED IN A CENTRAL CLOSET LOCATION TO POWER MULTIPLE AREA CONTROLLERS AND/OR DEVICES, OR IF STANDALONE 120-VOLT POE INJECTORS WILL BE PROVIDED AT EACH AREA CONTROLLER. BASIS OF DESIGN IS FOR A POE NETWORK SWITCH TO POWER THE AREA CONTROLLER AND THE TRELLIX CORE SYSTEM, AS WELL AS INTERFACING WITH THE OWNER'S BUILDING MANAGEMENT SYSTEM.
- EMERGENCY FIXTURE WITH INTERNAL BATTERY BACKUP. FIXTURE SHALL OPERATE IN THE NORMAL CONDITION AS A SWITCHED/DIMMED FIXTURE FROM THE "WAVELINK" WIRELESS LIGHTING CONTROL SYSTEM. UPON LOSS OF NORMAL POWER, THE FIXTURE SHALL ENERGIZE TO THE LUMEN OUTPUT AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE, REGARDLESS OF THE SWITCHED OR DIMMED STATE CONTROLLED BY THE LIGHTING CONTROL SYSTEM. REFER TO THE MANUFACTURERS WIRING DIAGRAMS FOR EXACT WIRING OF THE INTERNAL BATTERY BACKUP WHEN CONTROLLED BY THE WIRELESS LIGHTING CONTROL SYSTEM.
- CIRCUIT TO EXISTING 120-VOLT BRANCH CIRCUIT PREVIOUSLY SERVING EXISTING LIGHTING FIXTURES IN AREA REMOVED BY DEMOLITION WORK. ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING PRIOR TO THE START OF CONSTRUCTION TO IDENTIFY THE EXISTING PANEL AND BRANCH CIRCUIT SERVING THE EXISTING LIGHTING FIXTURES, AND SHALL REFLECT THE EXISTING BRANCH CIRCUIT UTILIZED TO SERVE THE NEW FIXTURES ON THE AS-BUILT RECORD DRAWINGS. REFER TO DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION. NOTE THAT THE EXISTING LIGHTING FIXTURES REMOVED BY DEMOLITION WORK UTILIZED FLUORESCENT LAMPS, AND HAD A HIGHER WATTAGE THAN THE NEW SOLID-STATE (SMD LED) LIGHTING FIXTURES INDICATED TO BE INSTALLED ON THE PROJECT. THE NET LOAD ON THE EXISTING CIRCUITS WILL BE LESS THAN THE LOADING ON THE CIRCUIT PRIOR TO THE START OF THE PROJECT DUE TO THE LOWER WATTAGE OF THE NEW FIXTURES, WITH AN APPROXIMATE NET REDUCTION OF 30% ON THE BRANCH CIRCUIT. DUE TO THE LACK OF RECORD DRAWING INFORMATION FOR THE EXISTING BRANCH CIRCUITS, AND CONFUSION IN THE EXISTING PANEL SCHEDULES FOR THE PANELS THAT APPEAR TO SERVE THE AREA (PANELS "P-1" AND "P-4") IT IS NOT POSSIBLE TO DETERMINE THE EXACT EXISTING CIRCUITS THAT SERVE THE AREA BASED SOLELY ON FIELD INVESTIGATION DURING DESIGN, THEREFORE THE NOTED CIRCUIT TRACING IS REQUIRED TO BE PART OF THE CONTRACTORS INITIAL SCOPE OF WORK PRIOR TO START OF ANY DEMOLITION WORK.

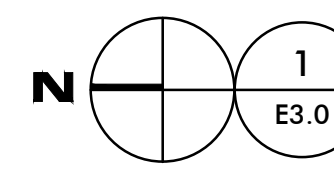
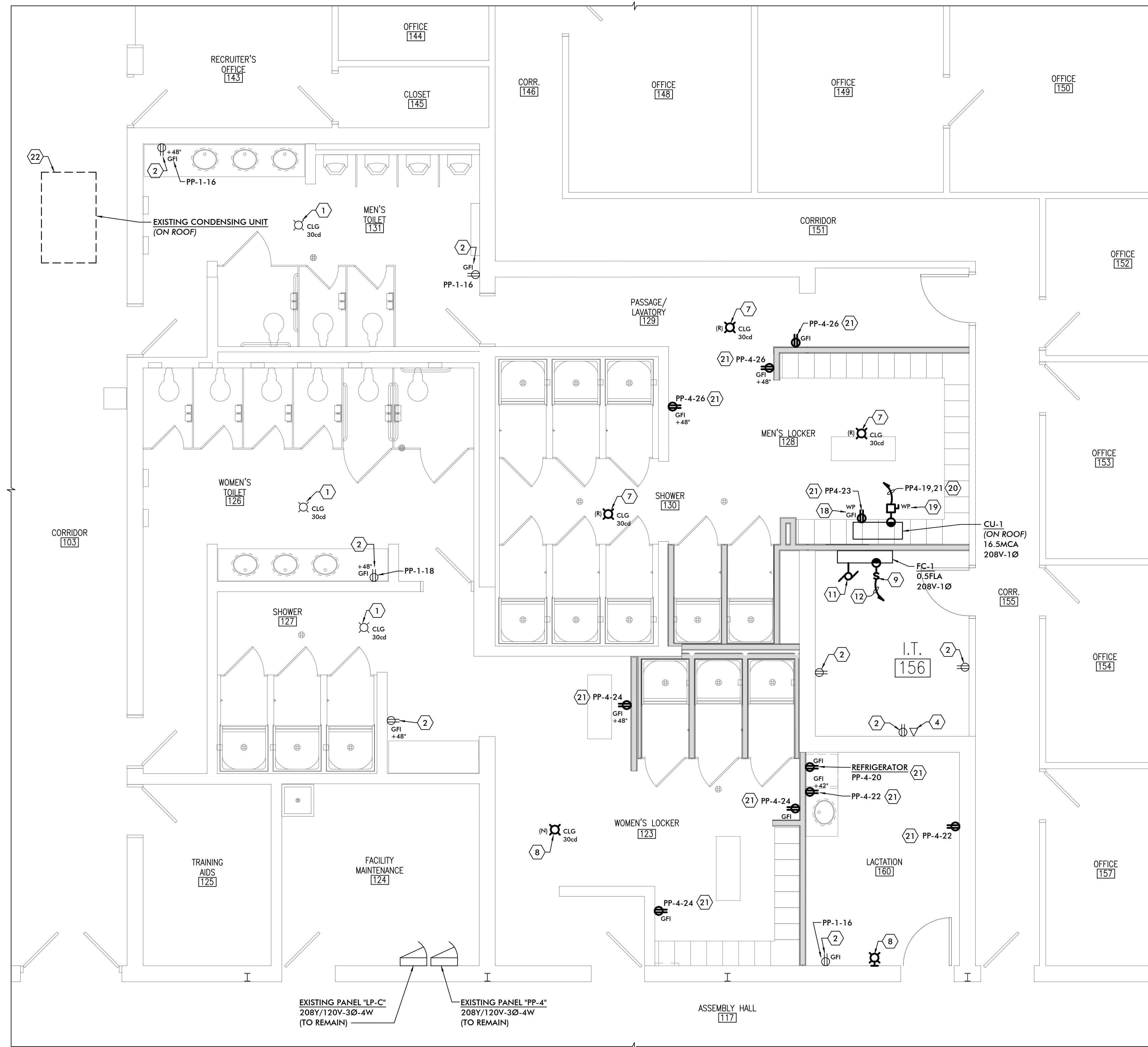


KEY PLAN
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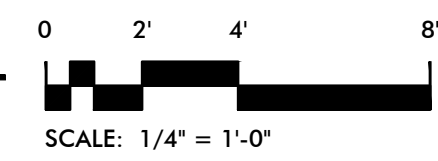
SEALED & SIGNED 05/12/2023; SEAL APPLIES ONLY TO THE ELECTRICAL DOCUMENTS PREPARED BY TAC ASSOCIATES, LLC

DESIGNED TOC	DATE	ISSUED FOR	IDENTIFICATION NO.
DESIGNED TOC	SEP 28, 2022	100% PHASE 600	FILE NO. 5/12/2023/MAA
DRAWN CAD	MAY 17, 2023	CONSTRUCTION	PROJECT NO. 26A4022631
CHECKED TOC		FINAL RECORD	
APPROVED JB			



PARTIAL FLOOR PLAN - POWER & SYSTEMS NEW WORK

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



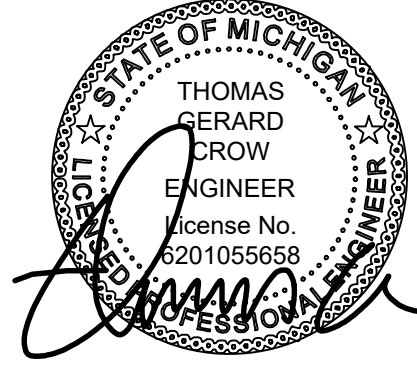
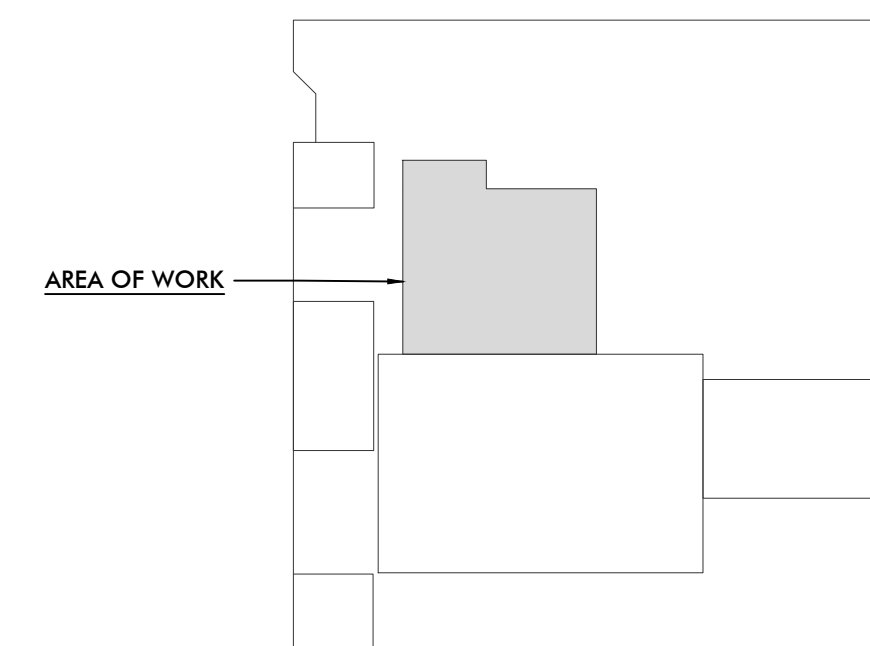
SCALE: 1/4" = 1'-0"

ELECTRICAL GENERAL NOTES

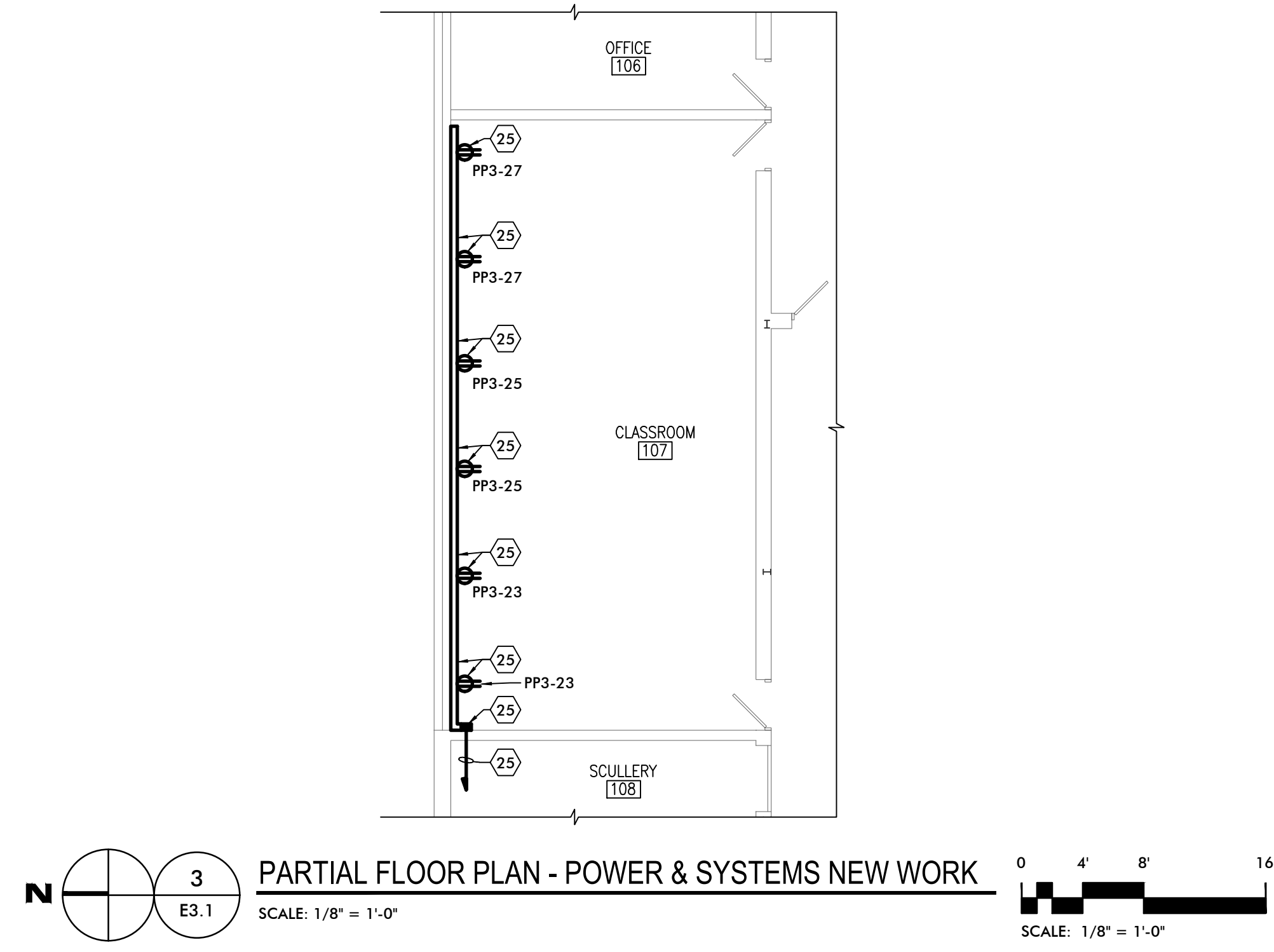
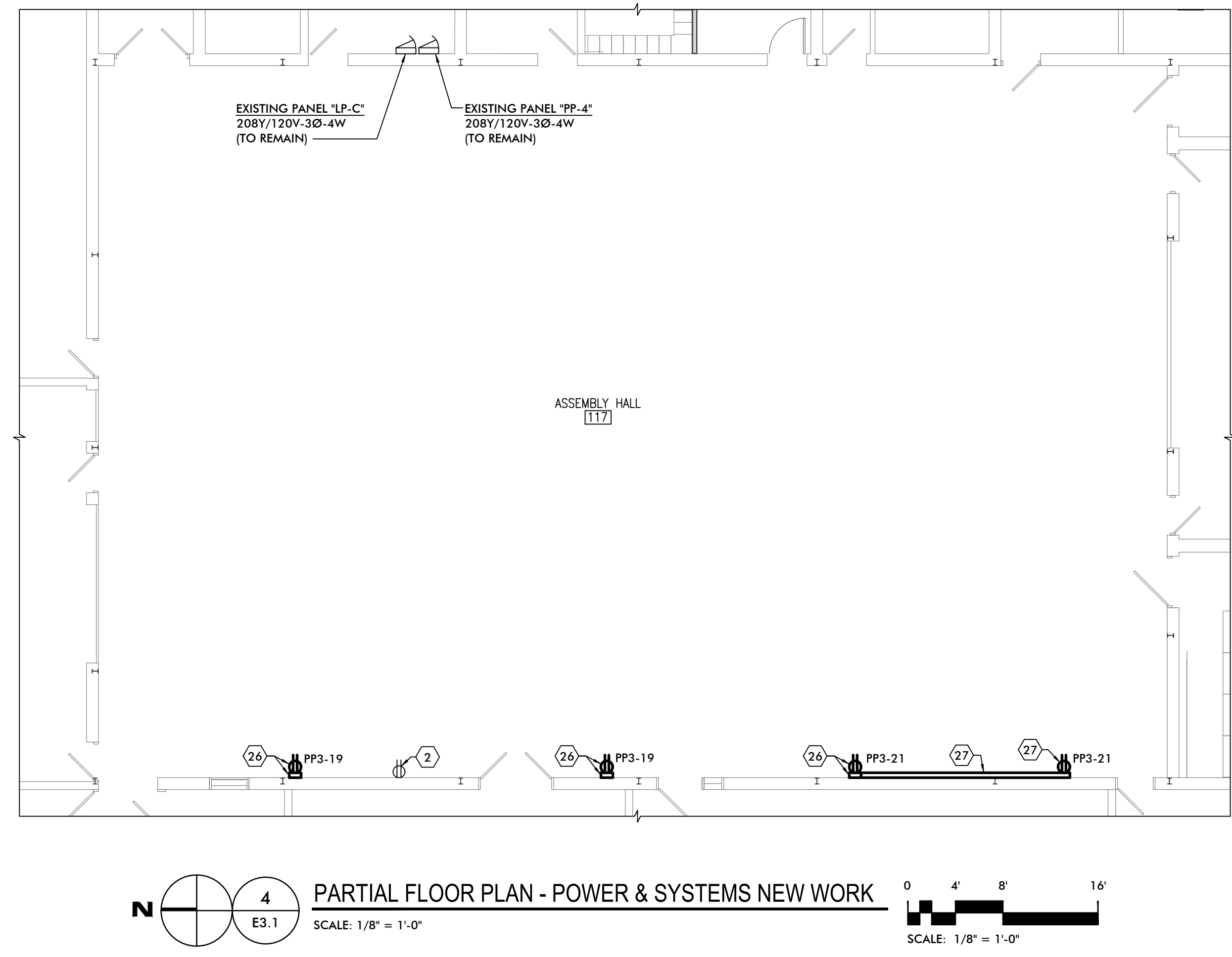
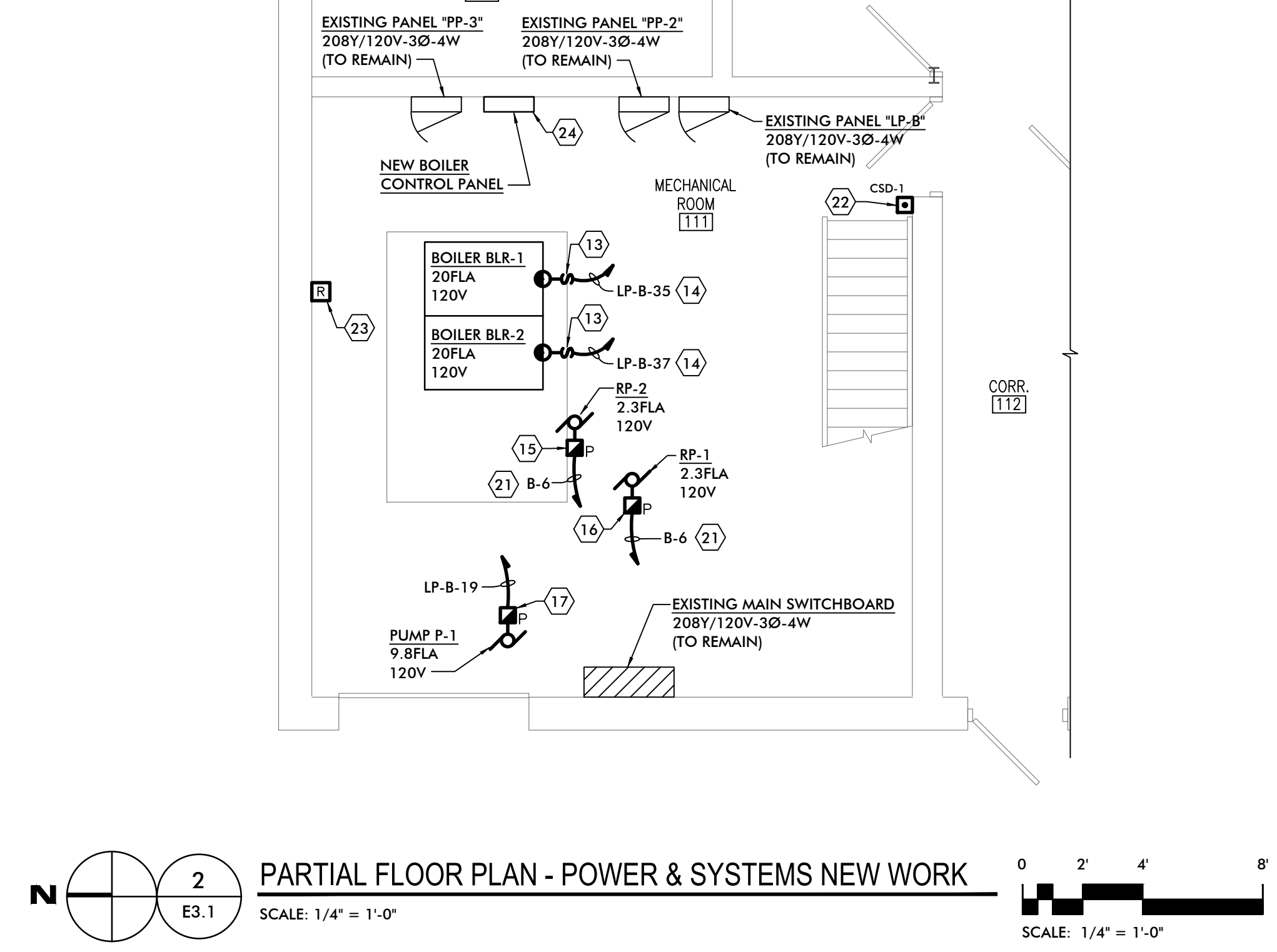
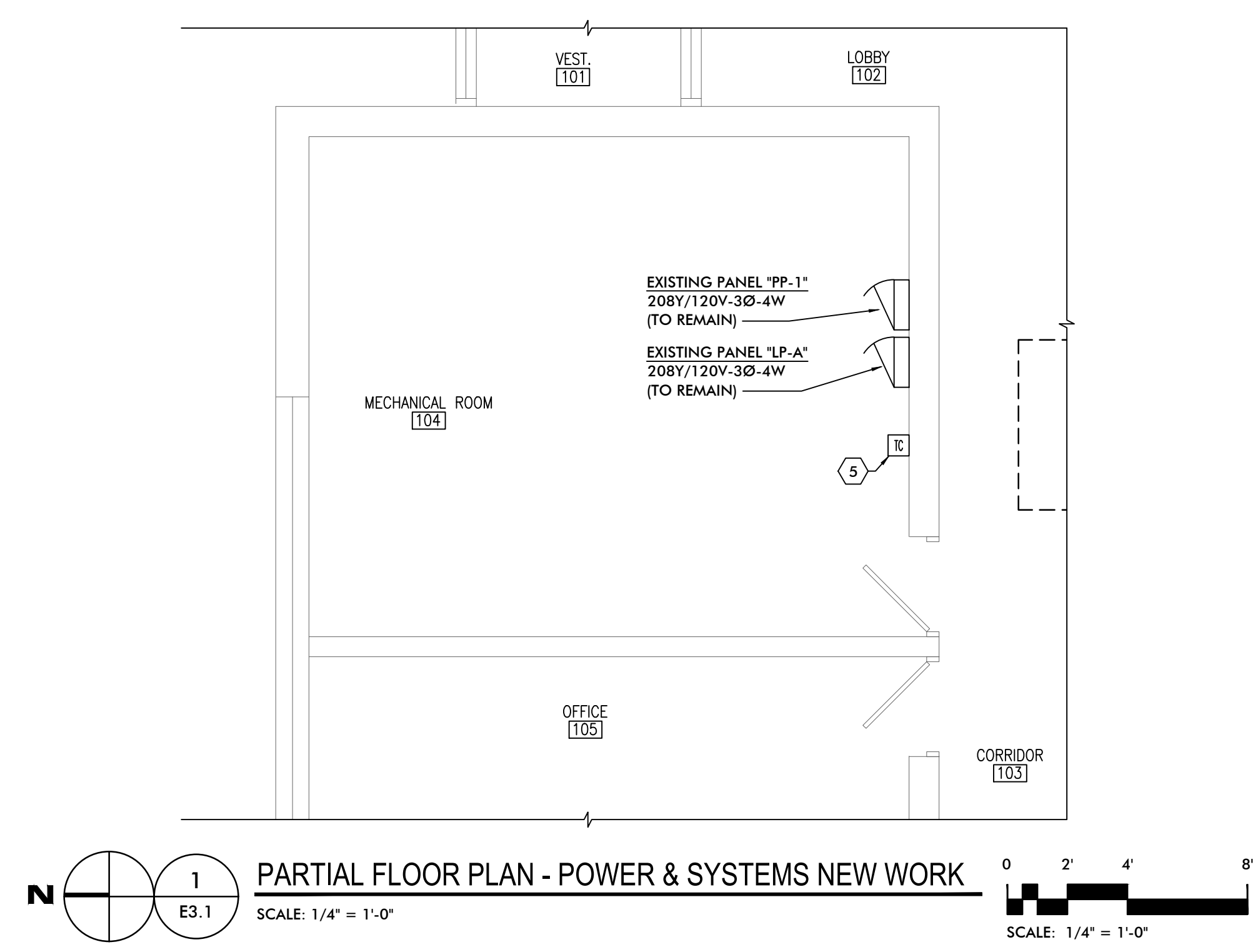
- ALL JUNCTION BOXES SERVING BRANCH CIRCUIT WIRING SHALL BE LABELED WITH CIRCUITS SERVED. USE BROTHER P-TOUCH LABEL OR EQUAL ON BOX COVER.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL CEILING MOUNTED LIGHT FIXTURES AND OTHER CEILING MOUNTED DEVICES.
- ALL DEVICES INDICATED WITH SOLID DARK LINES ARE NEW DEVICES TO BE INSTALLED BY THE ELECTRICAL CONTRACTOR AS PART OF THIS SCOPE OF WORK.
- SECURITY SYSTEM, ACCESS CONTROL SYSTEM, VIDEO SURVEILLANCE SYSTEM, INTERCOM SYSTEM AND SOUND SYSTEM ARE OWNER FURNISHED, INSTALLED BY THE OWNER'S RESPECTIVE CONTRACTOR FOR EACH SYSTEM. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE OWNER FURNISHED SYSTEMS WITH THE OWNER'S CONTRACTOR IN THE FIELD PRIOR TO START OF CONSTRUCTION AND SHALL PROVIDE ALL REQUIRED 120-VOLT BRANCH CIRCUITS, EMPTY RACEWAYS AND OTHER ELECTRICAL COMPONENTS NECESSARY TO SUPPORT THE INSTALLATION OF THE OWNER FURNISHED SYSTEMS.
- PRIOR TO START OF CONSTRUCTION, AND PRIOR TO ANY DEMOLITION WORK THE ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING TO IDENTIFY ALL EXISTING BRANCH CIRCUITS SERVING THE RENOVATION AREA, AND TO IDENTIFY THE AVAILABLE BRANCH CIRCUITS THAT MAY BE RE-USED AS PART OF THE PROPOSED RENOVATION, AS WELL AS CIRCUITS THAT SERVE EXISTING LIGHTING FIXTURES OR DEVICES OUTSIDE OF THE WORK AREA THAT ARE TO REMAIN AND BE MAINTAINED.
- CIRCUIT NUMBER DOES NOT INDICATE ACTUAL POLE POSITION USED BUT RATHER LOADS INTENDED TO BE GROUPED TOGETHER. ELECTRICAL CONTRACTOR SHALL CIRCUIT LOADS INTENDED TO BE GROUPED TOGETHER TO AN EXISTING SPARE 20A (OR 15A WHERE INDICATED IN THE PANEL SCHEDULE) BRANCH CIRCUIT IN THE PANEL NOTED, OR EXISTING CIRCUIT MADE AVAILABLE BY DEMOLITION WORK IN THE RENOVATION AREA. UPDATE PANEL TYPED CIRCUIT DIRECTORY TO REFLECT REVISED LOAD SERVED BY THE BRANCH CIRCUIT. REFER TO GENERAL NOTE #5 FOR CIRCUIT TRACING TO BE PERFORMED PRIOR TO START OF CONSTRUCTION. ONLY THOSE CIRCUITS IDENTIFIED AS BEING "SPARE" AFTER THE COMPLETION OF THE DEMOLITION WORK SHALL BE IDENTIFIED AS AVAILABLE CIRCUITS FOR RE-USE. NOTIFY THE ENGINEER IF THE TOTAL QUANTITY OF "SPARE" CIRCUITS MADE AVAILABLE BY THE DEMOLITION WORK DO NOT MATCH THE QUANTITY OF CIRCUITS INDICATED ON THE FLOOR PLAN FOR RE-USE. ELECTRICAL CONTRACTOR SHALL REFLECT ANY MODIFICATIONS FROM THE CIRCUIT NUMBER INDICATED WHERE A DIFFERENT CIRCUIT IS SELECTED IN THE FIELD ON THE AS-BUILT RECORD DRAWINGS. ELECTRICAL CONTRACTOR SHALL UPDATE THE PANEL TYPED CIRCUIT DIRECTORY TO REFLECT NEW LOAD ADDED TO THE EXISTING PANEL.
- THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL BRANCH CIRCUITS TO HAVE A MAXIMUM VOLTAGE DROP FROM THE CIRCUIT BREAKER PANEL SERVING THE LOAD TO THE LAST LOAD ON THE CIRCUIT OF NO MORE THAN 3%. ALL 120 VOLT, 20 AMPERE BRANCH CIRCUITS OVER 100 FEET IN LENGTH SHALL BE SERVED WITH #10 CONDUCTORS; ALL 120 VOLT, 20 AMPERE BRANCH CIRCUITS OVER 200 FEET IN LENGTH SHALL BE SERVED WITH #8 CONDUCTORS; AND ALL 120 VOLT, 20 AMPERE BRANCH CIRCUITS OVER 300 FEET IN LENGTH SHALL BE SERVED WITH #6 CONDUCTORS. THE OVER-SIZING OF THE CONDUCTORS SHALL INCLUDE OVER-SIZING OF THE EQUIPMENT GROUND CONDUCTOR IN ACCORDANCE WITH N.E.C. ARTICLE 250. ELECTRICAL CONTRACTOR SHALL PROVIDE STA-CON CONNECTORS ON THE ENDS OF CONDUCTORS WHERE NECESSARY TO FACILITATE TERMINATION OF THE CONDUCTORS AT THE WIRING DEVICES (i.e. DUPLEX RECEPTACLES, SWITCHES, ETC) AND THE CIRCUIT BREAKERS.

CONTRACTORS PRE-BID NOTIFICATION:
 ALL EXISTING ITEMS INDICATED IN THE CONTRACT DRAWINGS HAVE BEEN TAKEN FROM THE OWNER'S LIMITED RECORD DRAWINGS AND SUBSTANTIAL FIELD OBSERVATIONS AND VERIFICATION. THIS CONTRACTOR AND ALL RELATED SUB-CONTRACTORS SHALL VISIT THE SITE AND COMPLETELY UNDERSTAND THE CONDITIONS UNDER WHICH THE WORK MUST BE PERFORMED. IF A DEPARTURE FROM THE DESIGN INTENT OF THE DOCUMENTS IS REQUIRED DUE TO THE ACTUAL FIELD CONDITIONS OBSERVED BY THE CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING FOR RESOLUTION PRIOR TO SUBMITTING FINAL BID OR ENTERING INTO A CONTRACT FOR CONSTRUCTION. FAILURE TO PROVIDE THE ARCHITECT WITH NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE DESIGN INTENT WITH NO ADDITIONAL COST BEING INCURRED BY THE OWNER.

- POWER & SYSTEMS KEY NOTES**
- EXISTING FIRE ALARM SYSTEM NOTIFICATION APPLIANCE TO REMAIN.
 - EXISTING DUPLEX RECEPTACLE TO REMAIN.
 - EXISTING DOUBLE DUPLEX RECEPTACLE TO REMAIN.
 - EXISTING TELEPHONE / DATA OUTLET TO REMAIN.
 - EXISTING TIME CLOCK TO REMAIN.
 - NEW LOCATION OF RELOCATED FIRE ALARM SYSTEM NOTIFICATION APPLIANCE.
 - NEW LOCATION OF RELOCATED FIRE ALARM SYSTEM NOTIFICATION APPLIANCE. NOTIFICATION APPLIANCE TO BE CIRCUITED TO THE EXISTING NOTIFICATION APPLIANCE CIRCUIT (N.A.C.) PANEL OR FIRE ALARM CONTROL PANEL SERVING THE AREA, AS DIRECTED BY THE EXISTING FIRE ALARM SYSTEM MANUFACTURER. ACTING AS A SUB-CONTRACTOR TO THIS ELECTRICAL CONTRACTOR. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. NOTE THAT THE EXISTING FIRE ALARM SYSTEM IS MANUFACTURED BY SIMPLEX GRINNELL.
 - NEW FIRE ALARM SYSTEM NOTIFICATION APPLIANCE. NOTIFICATION APPLIANCE TO BE CIRCUITED TO THE EXISTING NOTIFICATION APPLIANCE CIRCUIT (N.A.C.) PANEL OR FIRE ALARM CONTROL PANEL SERVING THE AREA. REFER TO KEY NOTE #7 FOR ADDITIONAL FIRE ALARM SYSTEM REQUIREMENTS.
 - NEW 20A-2P MOTOR-RATED, TOGGLE-TYPE DISCONNECT SWITCH FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR TO SERVE MECHANICAL EQUIPMENT INDICATED. PRIOR TO INSTALLATION THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT MOUNTING LOCATION OF THE DISCONNECT SWITCH WITH THE ARCHITECT AND MECHANICAL CONTRACTOR, IN AN ACCESSIBLE LOCATION ADJACENT TO THE UNIT, CONCEALED FROM DIRECT VIEW IN THE PUBLIC SPACES. PROVIDE ALL MISCELLANEOUS SUPPORTS REQUIRED FOR MOUNTING OF THE DISCONNECT SWITCH.
 - NEW 20A-1P NON-FUSED DISCONNECT SWITCH (MOTOR-RATED TOGGLE SWITCH) FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AT EQUIPMENT INDICATED. COORDINATE EXACT MOUNTING LOCATION OF DISCONNECT SWITCH AND WIRING CONNECTION TO EQUIPMENT WITH THE EQUIPMENT MANUFACTURER'S INSTALLATION DRAWINGS AND WIRING DIAGRAMS. NOTE THAT THE EQUIPMENT MAY BE CORD AND PLUG CONNECTED. WHERE THE EQUIPMENT IS CORD AND PLUG CONNECTED, REVISE THE DISCONNECT TO BE A WALL MOUNTED DUPLEX RECEPTACLE, COORDINATE EXACT MOUNTING ELEVATION OF DUPLEX RECEPTACLE IN FIELD BASED ON THE FINAL MOUNTING OF THE EQUIPMENT.
 - NEW WALL MOUNTED CONDENSATE PUMP FURNISHED BY MECHANICAL TRADES WITH WALL MOUNTED FAN COIL UNIT, WIRED BY ELECTRICAL CONTRACTOR TO FAN COIL UNIT. REFER TO MANUFACTURER'S APPROVED WIRING DIAGRAMS FOR EXACT SYSTEM WIRING.
 - NEW 2 #12 + 1 #12 GRD - 3/4" C. TO CONTROL PANEL TERMINALS AT EXTERIOR HEAT PUMP OR CONDENSING UNIT ON ROOF. COORDINATE EXACT LOCATION OF HEAT PUMP OR CONDENSING UNIT SERVING THE FAN COIL UNIT WITH MECHANICAL CONTRACTOR IN FIELD PRIOR TO START OF CONSTRUCTION AND PRIOR TO ROUGH-IN OF ANY BOXES, RACEWAYS, ETC. REFER TO MANUFACTURER'S APPROVED WIRING DIAGRAMS FOR EXACT SYSTEM WIRING.
 - NEW 30A-1P NON-FUSED DISCONNECT SWITCH FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AT EQUIPMENT INDICATED. COORDINATE EXACT MOUNTING LOCATION IN FIELD WITH MECHANICAL TRADES PRIOR TO START OF CONSTRUCTION AND PRIOR TO ROUGH-IN OF ANY BOXES, RACEWAYS, ETC.
 - NEW 2 #10 + 1 #10 GRD - 3/4" C. TO 25A-1P HACR CIRCUIT BREAKER IN PANEL NOTED, CIRCUIT NUMBER AS INDICATED. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT RECOMMENDED CIRCUIT BREAKER TRIP SETTING WITH MECHANICAL CONTRACTOR IN FIELD PRIOR TO ORDERING OF NEW CIRCUIT BREAKER. SIZE INDICATED IS BASED UPON THE DESIGN CRITERIA PROVIDED BY THE MANUFACTURER; HOWEVER THE FINAL SETTING SHOULD BE BASED UPON THE ACTUAL UNIT NAMEPLATE DATA OF THE EQUIPMENT TO BE INSTALLED IN THE FIELD, WHICH MAY RESULT IN THE SIZE OF THE OVERCURRENT PROTECTIVE DEVICE POSSIBLY INCREASING OR DECREASING IN SIZE. REFER TO PANEL SCHEDULES ON THE E4.X SERIES DRAWINGS FOR ADDITIONAL INFORMATION REGARDING MODIFICATIONS THAT MAY BE REQUIRED TO THE PANEL TO SUPPORT THE INSTALLATION OF THE NEW CIRCUIT BREAKER NOTED.
 - NEW MANUAL MOTOR STARTER FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO TYPICAL SINGLE PHASE TIMER CONTROLLED CIRCULATING HOT WATER PUMP CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - NEW MANUAL MOTOR STARTER FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO TYPICAL SINGLE PHASE CIRCULATING HOT WATER PUMP WITH TIMER KIT CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - NEW MANUAL MOTOR STARTER FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO TYPICAL BUILDING MANAGEMENT SYSTEM (BMS) CONTROLLED SINGLE PHASE PUMP CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - NEW WEATHER-PROOF / GFCI DUPLEX RECEPTACLE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, AND MOUNTED ON MECHANICAL EQUIPMENT INDICATED. COORDINATE EXACT MOUNTING LOCATION AND INSTALLATION DETAILS IN FIELD WITH THE MECHANICAL TRADES BASED UPON THE EQUIPMENT CONFIGURATION AND FIELD CONDITIONS. ELECTRICAL CONTRACTOR SHALL PROVIDE A "WR" LABELED WEATHER-RESISTANT GFCI DUPLEX RECEPTACLE, IN ADDITION TO A WEATHER-PROOF COVER TO COMPLY WITH THE 2017 N.E.C.
 - NEW 30A-2P WEATHER-PROOF, NEMA 3R NON-FUSED DISCONNECT SWITCH FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AT EQUIPMENT INDICATED. COORDINATE EXACT MOUNTING ON EQUIPMENT WITH MECHANICAL TRADES IN FIELD. PROVIDE SUPPLEMENTAL UNISTRUT SUPPORTS AS REQUIRED TO SUPPORT DISCONNECT SWITCH.
 - NEW 2 #12 + 1 #12 GRD - 3/4" C. TO 20A-2P HACR CIRCUIT BREAKER IN PANEL NOTED, CIRCUIT NUMBER AS INDICATED. REFER TO PANEL SCHEDULES ON THE E4.0 SERIES DRAWINGS FOR ADDITIONAL INFORMATION REGARDING MODIFICATIONS THAT MAY BE REQUIRED TO THE PANEL TO SUPPORT THE INSTALLATION OF THE NEW CIRCUIT BREAKER NOTED.
 - CIRCUIT NUMBER DOES NOT INDICATE ACTUAL POLE POSITION USED BUT RATHER LOADS INTENDED TO BE GROUPED TOGETHER. REFER TO GENERAL NOTE #6 FOR ADDITIONAL INFORMATION.
 - ELECTRICAL CONTRACTOR SHALL REMOVE AND RECONNECT EXISTING BRANCH CIRCUIT CONDUIT AND WIRING CONNECTION TO ROOF MOUNTED CONDENSING UNIT TO ALLOW FOR THE INSTALLATION OF NEW STRUCTURAL SUPPORTS AT THE EXISTING CONDENSING UNIT. REFER TO ARCHITECTURAL ROOF PLAN FOR ADDITIONAL INFORMATION REGARDING THE LOCATION OF THE EXISTING ROOF MOUNTED CONDENSING UNIT AND ASSOCIATED SCOPE OF MODIFICATIONS REQUIRED TO REMOVE THE EXISTING STRUCTURAL SUPPORTS AND INSTALL THE NEW STRUCTURAL SUPPORTS.



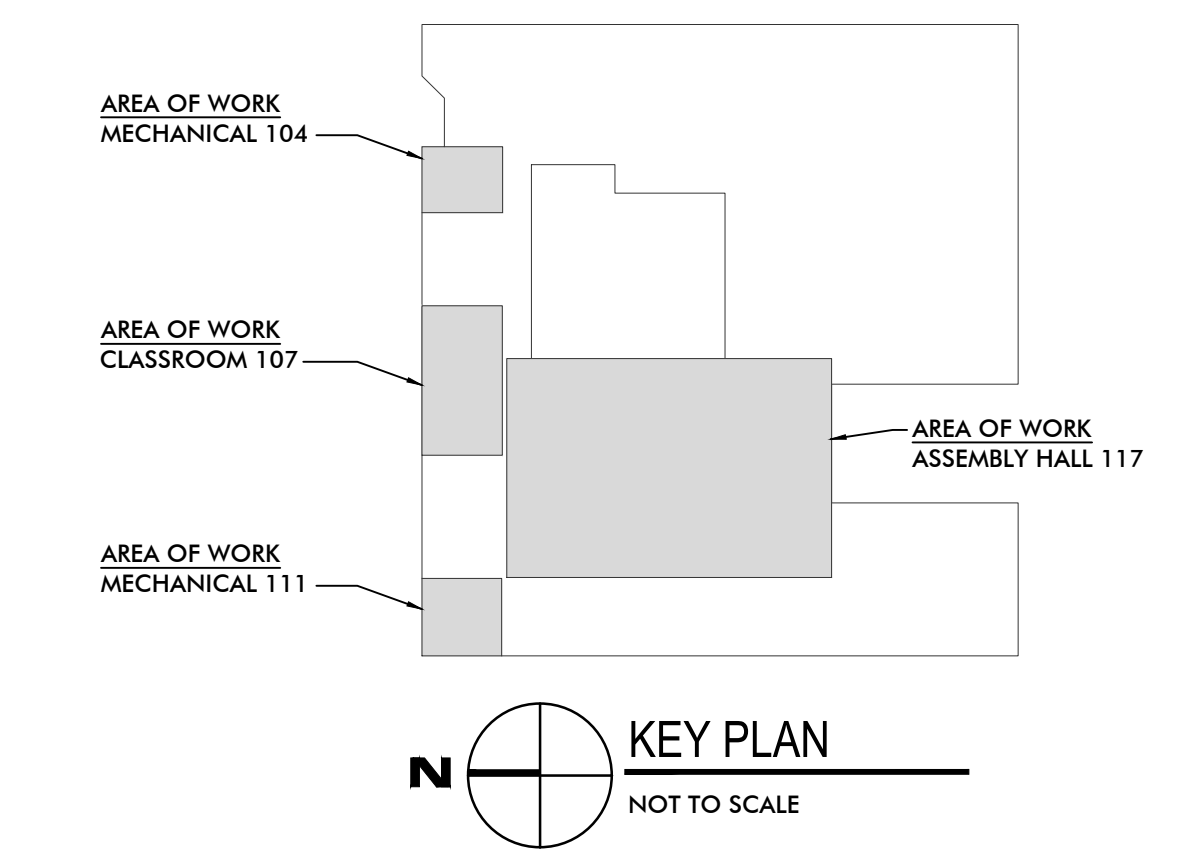
SEALED & SIGNED 05/12/2023, SEAL APPLIES ONLY TO THE ELECTRICAL DOCUMENTS PREPARED BY TAC ASSOCIATES, LLC



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ELECTRICAL GENERAL NOTES
 1. REFER TO SHEET E3.0 FOR ELECTRICAL GENERAL NOTES.

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 - NEW 2 #12 - 1 #12 GRD - 3/4"C TO CONTROL PANEL TERMINALS AT EXTERIOR HEAT PUMP OR CONDENSING UNIT ON ROOF. COORDINATE EXACT LOCATION OF HEAT PUMP OR CONDENSING UNIT SERVING THE FAN COIL UNIT WITH MECHANICAL CONTRACTOR IN FIELD PRIOR TO START OF CONSTRUCTION AND PRIOR TO ROUGH-IN OF ANY BOXES, RACEWAYS, ETC. REFER TO MANUFACTURER'S APPROVED WIRING DIAGRAMS FOR EXACT SYSTEM WIRING.
 - NEW 30A-1P NON-FUSED DISCONNECT SWITCH FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AT EQUIPMENT INDICATED. COORDINATE EXACT MOUNTING LOCATION IN FIELD WITH MECHANICAL TRADES PRIOR TO START OF CONSTRUCTION AND PRIOR TO ROUGH-IN OF ANY BOXES, RACEWAYS, ETC.
 - NEW 2 #10 - 1 #10 GRD - 3/4"C TO 25A-1P HACR CIRCUIT BREAKER IN PANEL NOTED. CIRCUIT NUMBER AS INDICATED. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT RECOMMENDED CIRCUIT BREAKER TRIP SETTING WITH MECHANICAL CONTRACTOR IN FIELD PRIOR TO ORDERING OF NEW CIRCUIT BREAKER. SIZE INDICATED IS BASED UPON THE DESIGN CRITERIA PROVIDED BY THE MANUFACTURE. HOWEVER THE FINAL SETTING SHOULD BE BASED UPON THE ACTUAL UNIT NAMEPLATE DATA OF THE EQUIPMENT TO BE INSTALLED IN THE FIELD, WHICH MAY RESULT IN THE SIZE OF THE OVERCURRENT PROTECTIVE DEVICE POSSIBLY INCREASING OR DECREASING IN SIZE. REFER TO PANEL SCHEDULES ON THE E4.X SERIES DRAWINGS FOR ADDITIONAL INFORMATION REGARDING MODIFICATIONS THAT MAY BE REQUIRED TO THE PANEL TO SUPPORT THE INSTALLATION OF THE NEW CIRCUIT BREAKER NOTED.
 - NEW MANUAL MOTOR STARTER FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO TYPICAL SINGLE PHASE TIMER CONTROLLED CIRCULATING HOT WATER PUMP CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - NEW MANUAL MOTOR STARTER FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO TYPICAL SINGLE PHASE CIRCULATING HOT WATER PUMP WITH TIMER KIT CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - NEW MANUAL MOTOR STARTER FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. REFER TO TYPICAL BUILDING MANAGEMENT SYSTEM (BMS) CONTROLLED SINGLE PHASE PUMP CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - NEW WEATHER-PROOF / GFCI DUPLEX RECEPTACLE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, AND MOUNTED ON MECHANICAL EQUIPMENT INDICATED. COORDINATE EXACT MOUNTING LOCATION AND INSTALLATION DETAILS IN FIELD WITH THE MECHANICAL TRADES BASED UPON THE EQUIPMENT CONFIGURATION AND FIELD CONDITIONS. ELECTRICAL CONTRACTOR SHALL PROVIDE A "WR" LABELED WEATHER-RESISTANT GFCI DUPLEX RECEPTACLE, IN ADDITION TO A WEATHER-PROOF COVER TO COMPLY WITH THE 2017 N.E.C.
 - NEW 30A-2P WEATHER-PROOF, NEMA 3R NON-FUSED DISCONNECT SWITCH FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AT EQUIPMENT INDICATED. COORDINATE EXACT MOUNTING ON EQUIPMENT WITH MECHANICAL TRADES IN FIELD. PROVIDE SUPPLEMENTAL UNISTRUT SUPPORTS AS REQUIRED TO SUPPORT DISCONNECT SWITCH.
 - NEW 2 #12 - 1 #12 GRD - 3/4"C TO 20A-2P HACR CIRCUIT BREAKER IN PANEL NOTED. CIRCUIT NUMBER AS INDICATED. REFER TO PANEL SCHEDULES ON THE E4.X SERIES DRAWINGS FOR ADDITIONAL INFORMATION REGARDING MODIFICATIONS THAT MAY BE REQUIRED TO THE PANEL TO SUPPORT THE INSTALLATION OF THE NEW CIRCUIT BREAKER NOTED.
 - CIRCUIT NUMBER DOES NOT INDICATE ACTUAL POLE POSITION USED BUT RATHER LOADS INTENDED TO BE GROUPED TOGETHER. REFER TO GENERAL NOTE #6 FOR ADDITIONAL INFORMATION.
 - NEW BOILER EMERGENCY POWER OFF (EPO) PUSHBUTTON FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AT DOOR INDICATED. MOUNTED AT 48" ABOVE FINISHED FLOOR. PROVIDE NAMEPLATE ON "EPO" THAT READS: "BOILER EMERGENCY POWER OFF". INSTALLATION OF THE NEW "EPO" SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ASME CHAPTER 45-12-09. COORDINATE ALL WORK IN FIELD WITH MECHANICAL CONTRACTOR PRIOR TO START OF CONSTRUCTION. REFER TO BOILER EMERGENCY POWER OFF (EPO) PUSHBUTTON CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION. RE-USE EXISTING CONDUIT AND BOX PREVIOUSLY SERVING EPO REMOVED BY DEMOLITION WORK.
 - NEW BOILER EMERGENCY POWER OFF SYSTEM CONTROL RELAY. REFER TO BOILER EMERGENCY POWER OFF (EPO) PUSHBUTTON CONTROL WIRING DIAGRAM ON SHEET E5.0 FOR ADDITIONAL INFORMATION.
 - CIRCUIT NEW BOILER CONTROL PANEL TO EXISTING 120-VOLT BRANCH CIRCUIT PREVIOUSLY SERVING EXISTING BOILER CONTROL PANEL AT THIS LOCATION REMOVED BY DEMOLITION WORK. COORDINATE ALL DETAILS WITH MECHANICAL CONTRACTOR IN FIELD PRIOR TO START OF CONSTRUCTION.
 - NEW WIREMOLD 3000 SERIES TWO-PIECE STEEL SURFACE MOUNTED RACEWAY ALONG WALL AS INDICATED, WITH DUPLEX RECEPTACLES AS NOTED. PROVIDE BASE, COVER, DUPLEX RECEPTACLE BRACKETS, COVER PLATES, CORNER COUPLINGS, 90-DEGREE FLAT ELBOW, CONDUIT CONNECTOR AND ALL ACCESSORIES FOR A COMPLETE SYSTEM. ROUTE RACEWAY BELOW WINDOW ALONG WALL AT AN ELEVATION COORDINATED WITH THE ARCHITECT AND THE OWNER'S CONSTRUCTION REPRESENTATIVE PRIOR TO START OF CONSTRUCTION AND PRIOR TO ROUGH-IN OF ANY BOXES, RACEWAYS, ETC. ROUTE RACEWAY TO INTERIOR WALL INDICATED, TURN UP INTERIOR WALL TO ABOVE ACCESSIBLE CEILING SPACE. PROVIDE CONDUIT CONNECTOR ON END OF RACEWAY ABOVE ACCESSIBLE CEILING SPACE TO TRANSITION TO 3/4" CONDUIT FOR ROUTING BRANCH CIRCUIT POWER WIRING TO SERVE RECEPTACLES. ROUTE CONDUIT CONCEALED ABOVE ACCESSIBLE CEILING SPACE TO PANEL NOTED. COORDINATE PAINTING OF RACEWAY TO BLEND WITH SURROUNDING WALL SURFACE WITH ARCHITECTURAL TRADES. RACEWAY TO BE WIREMOLD G3000 SERIES, IN GRAY FINISH.
 - NEW DUPLEX RECEPTACLE SURFACE MOUNTED IN WIREMOLD V5748 DEVICE BOX WITH WIREMOLD V5000 SERIES SURFACE METAL RACEWAY ROUTED VERTICALLY TO JOIST SPACE OF ASSEMBLY HALL. PROVIDE WIREMOLD 5782A CONDUIT CONNECTOR AT JOIST SPACE TO TRANSITION TO 3/4" CONDUIT. ROUTE BRANCH CIRCUIT CONDUIT AND WIRING HIGH IN JOIST SPACE TO PANEL NOTED. COORDINATE PAINTING OF RACEWAY TO BLEND WITH SURROUNDING WALL SURFACE WITH ARCHITECTURAL TRADES.
 - NEW DUPLEX NEW DUPLEX RECEPTACLE SURFACE MOUNTED IN WIREMOLD V5748 DEVICE BOX WITH WIREMOLD V5000 SERIES SURFACE METAL RACEWAY ROUTED HORIZONTALLY AT 18" A.F.F. TO NEW SURFACE MOUNTED DUPLEX RECEPTACLE ON WALL AS INDICATED. COORDINATE PAINTING OF RACEWAY TO BLEND WITH SURROUNDING WALL SURFACE WITH ARCHITECTURAL TRADES.



STATE OF MICHIGAN
 THOMAS GERARD BROW
 ENGINEER
 008198 No.
 201055858
 20A022601

SEALED & SIGNED 05/12/2023. SEAL APPLIES ONLY TO THE ELECTRICAL DOCUMENTS PREPARED BY TAC ASSOCIATES, LLC

STATE OF MICHIGAN
 DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
 STATE FACILITIES ADMINISTRATION
 DESIGN AND CONSTRUCTION DIVISION
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 Landscape Architecture
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 Bay City Armory - Renovate Armory

DESIGNED TOC	DATE	ISSUED FOR
DESIGNED TOC	SEP 28, 2022	100% PHASE 600
DRAWN CAD	MAY 17, 2023	CONSTRUCTION
CHECKED TOC		FINAL RECORD
APPROVED JB		

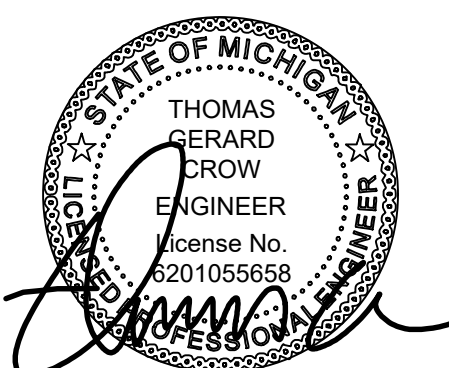
IDENTIFICATION NO. _____
 FILE NO. 5/1/2007/MAA
 PROJECT NO. 20A022601
 SHEET E3.1

EXISTING PANEL SCHEDULE												
TYPE	DESCRIPTION	CB	VA	#	ØA	ØB	ØC	#	VA	CB	DESCRIPTION	TYPE
D	Existing Receptacle - Storage Room - SEE NOTE - 2	20/1	900	1	2400			2	1500	20/1	Existing Receptacle - Workout Room - SEE NOTE - 2	D
D	Existing Receptacle - Workout Room - SEE NOTE - 2	20/1	360	3		1860		4	1500	20/1	Existing Receptacle - Workout Room - SEE NOTE - 2	D
D	Existing Receptacle - Workout Room - SEE NOTE - 2	20/1	360	5			1860	6	1500	20/1	Existing Receptacle - Workout Room - SEE NOTE - 2	D
M	Existing Circ Pump - SEE NOTE - 2	20/1	528	7	2028			8	1500	20/1	Existing Receptacle - Workout Room - SEE NOTE - 2	D
O	Existing Duct Detectors Mezzanine - SEE NOTE - 2	20/1	50	9		3172		10	3122			M
D	Existing Receptacle - Workout Room - SEE NOTE - 2	20/1	500	11			3622	12	3122	45/3	EXISTING RTU-1 (WEST MEZZANINE ROOF) - NOTE - 2	M
C	SPARE	20/1		13	3122			14	3122			M
C	SPARE	20/1		15				16		20/1	SPARE	C
C	SPARE	20/1		17				18		20/1	SPARE	C
D	NEW (2) DUPLEX - ASSEMBLY HALL - SEE NOTE - 3	20/1	360	19	360			20		20/1	SPARE	C
D	NEW (2) DUPLEX - ASSEMBLY HALL - SEE NOTE - 3	20/1	360	21		960		22	600	20/1	Existing Lighting - Workout Room - SEE NOTE - 2	L
D	NEW (2) DUPLEX - CLASSROOM 107 - SEE NOTE - 3	20/1	360	23			960	24	600	20/1	Existing Lighting - Workout Room - SEE NOTE - 2	L
D	NEW (2) DUPLEX - CLASSROOM 107 - SEE NOTE - 3	20/1	360	25	760			26	400	20/1	Existing Lighting - Storage Room - SEE NOTE - 2	L
D	NEW (2) DUPLEX - CLASSROOM 107 - SEE NOTE - 3	20/1	360	27		360		28		20/1	SPARE	C
C	SPARE	20/1		29				30		20/1	SPARE	C
C	SPARE	20/1		31				32		20/1	SPARE	C
C	SPARE	20/1		33				34		20/1	SPARE	C
C	SPARE	20/1		35				36		20/1	SPARE	C
C	SPARE	20/1		37				38		20/1	SPARE	C
D	SPARE	20/1		39				40		20/1	SPARE	C
O	EXISTING FIRE ALARM NAC PANEL - SEE NOTE - 2	20/1	600	41			600	42		20/1	SPARE	C
					8670	6352	7042					
PANELBOARD INFORMATION					ØA	ØB	ØC	NEC ARTICLE 220 DEMAND CALCULATIONS				
DESIGNATION: PP-3					72.19	52.89	58.64	CONTINUOUS LOAD (C): _____				
VOLTAGE: 208Y/120					AMPS PER PHASE			KITCHEN LOAD (K): _____				
PHASE-WIRE: 3Ø-4W					PANEL LOCATION			RECEPT BASE LOAD (D): 9920				
BUS AMPACITY: 225A					REMARKS			RECEPT DEMAND LOAD (D): _____				
MAIN TYPE: MLO								LIGHTING LOAD (L): 1600				
MINIMUM A.I.C.: _____								ELECTRIC HEAT LOAD (H): _____				
NEUTRAL SIZE: 100%								MECHANICAL LOAD (M): 9894				
MOUNTING: SURFACE								OTHER LOAD (O): 650				
TOTAL POLES: 42								CONNECTED 3Ø LOAD (kVA): 22.06				
ENGINEER: TGC								CONNECTED 3Ø LOAD (AMPS): 61.25				
DATE: 7/22/22								DEMAND 3Ø LOAD (kVA): 22.06				
								DEMAND 3Ø LOAD (AMPS): 61.25				

- NOTES:
- ALL EXISTING LOADS INDICATED IN THE ABOVE PANEL SCHEDULE ARE ESTIMATED BASED UPON THE LIMITED ACCURATE AS-BUILT INFORMATION, PANEL SCHEDULES AND CIRCUIT NUMBERS AT DEVICES.
 - ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING OF ALL EXISTING BRANCH CIRCUITS PRIOR TO START OF CONSTRUCTION TO VERIFY EXISTING LOAD SERVED. ELECTRICAL CONTRACTOR SHALL UPDATE THE PANEL TYPED CIRCUIT DIRECTORY BASED ON THE CIRCUIT TRACING; REFLECT CIRCUIT DIRECTORY CHANGES ON AS-BUILT RECORD DRAWINGS. NOTIFY ENGINEER IF EXISTING BRANCH CIRCUITS NOTED TO BE RE-USED, AND ANTICIPATED TO BE MADE AVAILABLE BY DEMOLITION WORK, ARE FOUND TO SERVE EXISTING LOADS THAT ARE TO REMAIN AS A RESULT OF THE CIRCUIT TRACING.
 - FOR SELECT EXISTING LOADS, THE POLE POSITION INDICATED MAY NOT REPRESENT THE ACTUAL POLE POSITION USED BUT RATHER THAT AN EXISTING BRANCH CIRCUIT IS TO BE REUSED. SEE NOTE-2.
 - ELECTRICAL CONTRACTOR SHALL VERIFY RECOMMENDED OVER-CURRENT PROTECTIVE DEVICE SETTING WITH MECHANICAL AND/OR PLUMBING CONTRACTOR BASED ON THE MECHANICAL AND/OR PLUMBING EQUIPMENT SHOP DRAWINGS. ADJUST OVER-CURRENT PROTECTIVE DEVICE SETTING AND ASSOCIATED CONDUCTOR SIZES WHERE THE INSTALLED EQUIPMENT RECOMMENDED OVER-CURRENT PROTECTIVE DEVICE SETTING DIFFERS FROM THE SETTING INDICATED. NOTE THAT THE SETTING INDICATED IS BASED ON THE INFORMATION PROVIDED BY THE MECHANICAL ENGINEER DURING THE DESIGN PHASE OF THE PROJECT.

EXISTING PANEL SCHEDULE													
TYPE	DESCRIPTION	CB	VA	#	ØA	ØB	ØC	#	VA	CB	DESCRIPTION	TYPE	
L	Existing Kitchen Lights - SEE NOTE - 2	20/1	800	1	1600			2	800	20/1	Existing Lights - SEE NOTE - 2	L	
O	Existing Refrigerator - SEE NOTE - 2	20/1	1100	3		1100		4		20/1	SPARE - SEE NOTE - 2	C	
O	Existing Ice Machine - SEE NOTE - 2	20/1	1500	5			2052	6	552	15/1	NEW RP-1, RP-2 (2.3FLA, 120V ea.) - SEE NOTES 4 & 5	M	
K	Existing Disposal - SEE NOTE - 2	30/3	2102	7	5202			8	3100	35/3	Existing Dishwasher - SEE NOTE - 2	K	
K			2102	9		5202		10	3100			K	
K			2102	11			5202	12	3100			K	
K	Existing Water Booster Heater - SEE NOTE - 2	60/3	5000	13	7000			14	2000	25/3	Existing Sink Heater - SEE NOTE - 2	M	
K			5000	15		7000		16	2000			M	
K			5000	17			7000	18	2000			M	
M	NEW PUMP P-1 (9.8FLA, 120V) - SEE NOTES 4 & 5	15/1	1176	19	2676			20	1500	20/1	Existing Mixer - SEE NOTE - 2	K	
K	Existing Coffee Maker - SEE NOTE - 2	20/1	1800	21		2400		22	600	20/1	Existing Lights - Workout Room - SEE NOTE - 2	L	
SPACE					23			600	24	600	20/1	Existing Lights - Storage - SEE NOTE - 2	L
M	Existing Stove Exhaust Hood - SEE NOTE - 2	20/1	670	25	1270			26	600	20/1	Existing Lights - Storage - SEE NOTE - 2	L	
O	Existing Freezer - SEE NOTE - 2	20/1	1100	27		1820		28	720	20/1	Existing Receptacles - SEE NOTE - 2	D	
M	Existing Dishwasher Exhaust Hood - SEE NOTE - 2	20/1	670	29			670	30		20/1	SPARE - SEE NOTE - 2	C	
D	Existing Receptacles - SEE NOTE - 2	20/1	720	31	1440			32	720	20/1	Existing Receptacles - SEE NOTE - 2	D	
D	Existing Receptacles - SEE NOTE - 2	20/1	720	33		1440		34	720	20/1	Existing Receptacles - SEE NOTE - 2	D	
M	NEW BOILER BLR-1 (20FLA, 120V) - SEE NOTES 4 & 5	25/1	2400	35			2700	36	300	20/1	NEW BOILER EPO RELAY / SHUTDOWN - SEE NOTE - 5	M	
M	NEW BOILER BLR-2 (20FLA, 120V) - SEE NOTES 4 & 5	25/1	2400	37	12735			38	10335			C	
D	Existing Booster Transformer - 220V - SEE NOTE - 2	60/2	4160	39		16351		40	12191	100/3	Existing Panel PP-2 - SEE NOTE - 2	C	
D			4160	41			14531	42	10371			C	
					31923	35313	32755						
PANELBOARD INFORMATION					ØA	ØB	ØC	NEC ARTICLE 220 DEMAND CALCULATIONS					
DESIGNATION: LP-B					265.82	294.05	272.75	CONTINUOUS LOAD (C): 32897					
VOLTAGE: 208Y/120					AMPS PER PHASE			KITCHEN LOAD (K): 33906					
PHASE-WIRE: 3Ø-4W					PANEL LOCATION			RECEPT BASE LOAD (D): 10000					
BUS AMPACITY: 400A					Boiler Room			RECEPT DEMAND LOAD (D): 960					
MAIN TYPE: MLO								LIGHTING LOAD (L): 3400					
MINIMUM A.I.C.: _____								ELECTRIC HEAT LOAD (H): _____					
NEUTRAL SIZE: 100%								MECHANICAL LOAD (M): 14168					
MOUNTING: SURFACE								OTHER LOAD (O): 3700					
TOTAL POLES: 42								CONNECTED 3Ø LOAD (kVA): 99.99					
ENGINEER: TGC								CONNECTED 3Ø LOAD (AMPS): 277.56					
DATE: 7/22/22								DEMAND 3Ø LOAD (kVA): 99.03					
								DEMAND 3Ø LOAD (AMPS): 274.89					

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 - ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING OF ALL EXISTING BRANCH CIRCUITS PRIOR TO START OF CONSTRUCTION TO VERIFY EXISTING LOAD SERVED. ELECTRICAL CONTRACTOR SHALL UPDATE THE PANEL TYPED CIRCUIT DIRECTORY BASED ON THE CIRCUIT TRACING; REFLECT CIRCUIT DIRECTORY CHANGES ON AS-BUILT RECORD DRAWINGS. NOTIFY ENGINEER IF EXISTING BRANCH CIRCUITS NOTED TO BE RE-USED, AND ANTICIPATED TO BE MADE AVAILABLE BY DEMOLITION WORK, ARE FOUND TO SERVE EXISTING LOADS THAT ARE TO REMAIN AS A RESULT OF THE CIRCUIT TRACING.
 - FOR SELECT EXISTING LOADS, THE POLE POSITION INDICATED MAY NOT REPRESENT THE ACTUAL POLE POSITION USED BUT RATHER THAT AN EXISTING BRANCH CIRCUIT IS TO BE REUSED. SEE NOTE-2.
 - ELECTRICAL CONTRACTOR SHALL VERIFY RECOMMENDED OVER-CURRENT PROTECTIVE DEVICE SETTING WITH MECHANICAL AND/OR PLUMBING CONTRACTOR BASED ON THE MECHANICAL AND/OR PLUMBING EQUIPMENT SHOP DRAWINGS. ADJUST OVER-CURRENT PROTECTIVE DEVICE SETTING AND ASSOCIATED CONDUCTOR SIZES WHERE THE INSTALLED EQUIPMENT RECOMMENDED OVER-CURRENT PROTECTIVE DEVICE SETTING DIFFERS FROM THE SETTING INDICATED. NOTE THAT THE SETTING INDICATED IS BASED ON THE INFORMATION PROVIDED BY THE MECHANICAL ENGINEER DURING THE DESIGN PHASE OF THE PROJECT.
 - ELECTRICAL CONTRACTOR SHALL INSTALL NEW CIRCUIT BREAKER INDICATED IN EXISTING SPACE OF EXISTING PANEL, OR SPACE MADE AVAILABLE BY DEMOLITION WORK IN THE RENOVATION AREA, AND REMOVAL OF THE EXISTING CIRCUIT BREAKER FOR REPLACEMENT WITH THE CIRCUIT BREAKER INDICATED. NEW CIRCUIT BREAKER TO BE U.L. LISTED FOR USE IN THE EXISTING PANEL, AND SHALL BE MANUFACTURED BY THE SAME MANUFACTURE AS THE EXISTING PANEL, AND HAVE AN A.I.C. RATING EQUAL TO THAT OF THE EXISTING CIRCUIT BREAKERS IN THE PANEL. UPDATE PANEL TYPED CIRCUIT DIRECTORY TO REFLECT NEW LOAD ADDED.



SEALED & SIGNED 05/12/2023. SEAL APPLIES ONLY TO THE ELECTRICAL DOCUMENTS PREPARED BY TAC ASSOCIATES, LLC

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Department of
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 Bay City Armory - Renovate Armory

DESIGNED: TGC	DATE: SEP 28, 2022	ISSUED FOR: 100% PHASE 600 CONSTRUCTION	IDENTIFICATION NO. FILE NO. 5/12/2007/MAA PROJECT NO. 20A022031
DRAWN: CAD	DATE: MAY 17, 2023	CHECKED: TGC	
APPROVED: JB		FINAL RECORD	

SHEET **E4.0**

EXISTING PANEL SCHEDULE												
TYPE	DESCRIPTION	CB	VA	#	ØA	ØB	ØC	#	VA	CB	DESCRIPTION	TYPE
M			3038	1	3975			2	937			M
M	Existing AH-2 - SEE NOTE - 2	45/3	3038	3		3975		4	937	20/3	Existing RF-2 - SEE NOTE - 2	M
M			3038	5			3975	6	937			M
M			1321	7	1321			8				M
M	Existing MA-1 - SEE NOTE - 2	20/3	1321	9		1321		10		20/3	Existing Boiler (DEMO) - SEE NOTE - 2 - LABEL AS "SPARE"	M
M			1321	11			1321	12				M
M			3038	13	3038			14				M
M	Existing CP-1 - SEE NOTE - 2	45/3	3038	15		3038		16		45/3	Existing CP-2 - SEE NOTE - 2 (Standby Pump - Only CP-1 or CP-2 run, not both)	M
M			3038	17			3038	18				M
M			937	19	1201			20	264	15/1	Existing Exhaust Fan Boiler - SEE NOTE - 2	M
M	Existing EF-5 - SEE NOTE - 2	20/3	937	21		1337		22	400	20/1	Existing Lights - SEE NOTE - 2	L
M			937	23			1337	24	400	20/1	Existing Lights - SEE NOTE - 2	L
L	Existing Lights - SEE NOTE - 2	20/1	400	25	800			26	400	20/1	Existing Lights - SEE NOTE - 2	L
M	Existing CP-4 - SEE NOTE - 2	30/1	1920	27		2520		28	600	20/1	Existing UH-12, 13, CH-1, 2, 3 - SEE NOTE - 2	M
M	Existing Temperature Control Panel - SEE NOTE - 2	20/1	300	29			700	30	400	20/1	Existing CH-13, 14 - SEE NOTE - 2	M
			10335		12191		10371					
			ØA		ØB		ØC					
			86.06		101.51		86.36					
PANELBOARD INFORMATION			AMPS PER PHASE			CONTINUOUS LOAD (C):						
DESIGNATION: PP-2			PANEL LOCATION			KITCHEN LOAD (K):						
VOLTAGE: 208Y/120			Boiler Room			RECEPT BASE LOAD (D):						
PHASE-WIRE: 3Ø-4W						RECEPT DEMAND LOAD (D):						
BUS AMPACITY: 225A						LIGHTING LOAD (L):			1600			
MAIN TYPE: MLO						ELECTRIC HEAT LOAD (H):						
MINIMUM A.I.C.:						MECHANICAL LOAD (M):			31297			
NEUTRAL SIZE: 100%						OTHER LOAD (O):						
MOUNTING: SURFACE						CONNECTED 3Ø LOAD (kVA):			32.90			
TOTAL POLES: 30						CONNECTED 3Ø LOAD (AMPS):			91.32			
ENGINEER: TGC						DEMAND 3Ø LOAD (kVA):			32.90			
DATE: 7/22/22						DEMAND 3Ø LOAD (AMPS):			91.32			

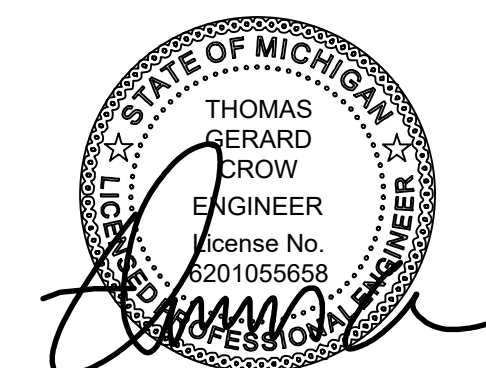
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EXISTING PANEL SCHEDULE												
TYPE	DESCRIPTION	CB	VA	#	ØA	ØB	ØC	#	VA	CB	DESCRIPTION	TYPE
D	Existing West Wall Outlets - SEE NOTE - 2	20/1	540	1	2340			2	1800	20/1	Existing Receptacles Rm 114 / Rm 120 S. Wall - NOTE - 2	D
K	Existing EF-4 (Top) / Existing Microwave - Room 120 - NOTE - 2	20/1	1750	3		3350		4	1600	20/1	Existing Lighting / Existing Recept Rm 120 E. Wall - NOTE - 2	L
L	Existing Vault North Lights - SEE NOTE - 2	20/1	600	5			1320	6	720	20/1	Existing Receptacles Rm 114 - SEE NOTE - 2	D
O	Existing Duct Detector Rm 114 - SEE NOTE - 2	20/1	50	7	950			8	900	20/1	Existing Lights Room 119, 118 - SEE NOTE - 2	L
M	Existing UH-6, 7, 8 - SEE NOTE - 2	20/1	300	9		1476		10	1176	20/1	Existing Pump CP-3 - SEE NOTE - 2	M
L	Existing Lights Room 117 - SEE NOTE - 2	20/1	700	11			1420	12	720	20/1	Existing Receptacles Rm 119 - SEE NOTE - 2	D
M	Existing EF-6, 7, 8 - SEE NOTE - 2	20/1	400	13	700			14	300	20/1	Existing UH-3, 9, 10 - SEE NOTE - 2	M
D	Existing Load - SEE NOTE - 2	20/1	600	15		1200		16	600	20/1	Existing Vault Lighting - SEE NOTE - 2	L
L	Existing Lights Vault Room North - SEE NOTE - 2	20/1	800	17			1520	18	720	20/1	Existing Receptacles Room 121 - SEE NOTE - 2	D
L	Existing Lights Room 120 - SEE NOTE - 2	20/1	600	19	1500			20	900	20/1	Existing Gym - SEE NOTE - 2	D
M	Existing Gas Pump - SEE NOTE - 2	20/2	1040	21		2240		22	1200	20/1	Existing Lights GYM - SEE NOTE - 2	L
M			1040	23			1340	24	300	20/1	Existing Tank Overfill Alarms - SEE NOTE - 2	M
M	Existing Diesel Pump - SEE NOTE - 2	20/2	1040	25	3120			26	2080			D
M			1040	27		3120		28	2080	70/3	Existing MVSB Panel - SEE NOTE - 2	D
D	Existing Outside Plug S.E. - SEE NOTE - 2	20/1	180	29			2260	30	2080			D
			8610		11386		7860					
			ØA		ØB		ØC					
			71.69		94.81		65.45					
PANELBOARD INFORMATION			AMPS PER PHASE			CONTINUOUS LOAD (C):						
DESIGNATION: LP-C			PANEL LOCATION			KITCHEN LOAD (K):			1750			
VOLTAGE: 208Y/120			Storage off Assembly Hall			RECEPT BASE LOAD (D):			10000			
PHASE-WIRE: 3Ø-4W						RECEPT DEMAND LOAD (D):			1210			
BUS AMPACITY: 100A						LIGHTING LOAD (L):			7000			
MAIN TYPE: MLO						ELECTRIC HEAT LOAD (H):						
MINIMUM A.I.C.:						MECHANICAL LOAD (M):			6636			
NEUTRAL SIZE: 100%						OTHER LOAD (O):			50			
MOUNTING: SURFACE						CONNECTED 3Ø LOAD (kVA):			27.86			
TOTAL POLES: 30						CONNECTED 3Ø LOAD (AMPS):			77.32			
ENGINEER: TGC						DEMAND 3Ø LOAD (kVA):			26.65			
DATE: 7/22/22						DEMAND 3Ø LOAD (AMPS):			73.96			

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EXISTING PANEL SCHEDULE												
TYPE	DESCRIPTION	CB	VA	#	ØA	ØB	ØC	#	VA	CB	DESCRIPTION	TYPE
M			6124	1	9246			2	3122			L
M	EXISTING ERU-1 - SEE NOTE - 2	70/3	6124	3		9246		4	3122	45/3	EXISTING RTU-2 - SEE NOTE - 2	L
M			6124	5			9246	6	3122			L
C	SPARE	20/1		7	528			8	528	20/1	Existing CP-2 - SEE NOTE - 2	M
M			2340	9		4680		10	2340	50/2	EXISTING PP6 OFFICE RM 159 - SEE NOTE - 2	L
M	EXISTING PP5 OFFICE RM 158 - SEE NOTE - 2	50/2	2340	11			4680	12	2340			L
C	SPARE	20/1		13	160			14	160	20/1	Existing Exhaust Fan Vault Office - SEE NOTE - 2	L
C	SPARE	20/1		15				16		20/1	SPARE	C
C	SPARE	20/1		17				18		20/1	SPARE	C
M			1716	19	2076			20	360	20/1	NEW REFRIGERATOR - LACTATION ROOM - SEE NOTE -3	C
M	NEW CU-1 (16.5MCA, 208V-1PH) - SEE NOTES 4 & 5	20/2	1716	21		2076		22	360	20/1	New GFI Duplex + (1) Duplex - Lactation Room - NOTE - 3	D
D	NEW WP/GFI @ CU-1 ON ROOF - SEE NOTE - 3	20/1	180	23			720	24	540	20/1	New (3) GFI Duplex - Women's Locker Room - NOTE - 3	D
C	SPARE	20/1		25	540			26	540	20/1	New (3) GFI Duplex - Men's Locker Room - NOTE - 3	D
C	SPARE	20/1		27				28		20/1	SPARE	C
C	SPARE	20/1		29				30		20/1	SPARE	C
C	SPARE	20/1		31				32		20/1	SPARE	C
C	SPARE	20/1		33				34		20/1	SPARE	C
C	SPARE	20/1		35				36		20/1	SPARE	C
C	SPARE	20/1		37				38		20/1	SPARE	C
C	SPARE	20/1		39				40		20/1	SPARE	C
C	SPARE	20/1		41				42		20/1	SPARE	C
			12550		16002		14646					
			ØA		ØB		ØC					
			104.50		133.25		121.96					
PANELBOARD INFORMATION			AMPS PER PHASE			CONTINUOUS LOAD (C):						
DESIGNATION: PP-4			PANEL LOCATION			KITCHEN LOAD (K):						
VOLTAGE: 208Y/120			Storage off Assembly Hall			RECEPT BASE LOAD (D):			1620			
PHASE-WIRE: 3Ø-4W						RECEPT DEMAND LOAD (D):						
BUS AMPACITY: 225A						LIGHTING LOAD (L):			14206			
MAIN TYPE: MLO						ELECTRIC HEAT LOAD (H):						
MINIMUM A.I.C.:						MECHANICAL LOAD (M):			27012			
NEUTRAL SIZE: 100%						OTHER LOAD (O):			360			
MOUNTING: SURFACE						CONNECTED 3Ø LOAD (kVA):			43.20			
TOTAL POLES: 42						CONNECTED 3Ø LOAD (AMPS):			119.91			
ENGINEER: TGC						DEMAND 3Ø LOAD (kVA):			43.20			
DATE: 7/22/22						DEMAND 3Ø LOAD (AMPS):			119.91			

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STATE OF MICHIGAN
 DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
 STATE FACILITIES ADMINISTRATION
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 Architecture
 Planning & Engineering

Department of
 Military and Veterans Affairs
 Bay City Army - Renovate Armory

ISSUED FOR: 100% PHASE 600 CONSTRUCTION FINAL RECORD
 DATE: SEP 28, 2022
 DESIGNED TOC: DRAWN CAD
 CHECKED TOC: APPROVED JB

IDENTIFICATION NO.:
 FILE NO.: 5/1/2007/MAA
 PROJECT NO.: 20A002001

SHEET: E4.1

SEALED & SIGNED 05/12/2023; SEAL APPLIES ONLY TO THE ELECTRICAL DOCUMENTS PREPARED BY TAC ASSOCIATES, LLC

EXISTING PANEL SCHEDULE													
TYPE	DESCRIPTION	CB	VA	#	ØA	ØB	ØC	#	VA	CB	DESCRIPTION	TYPE	
L	Existing Office Lights - SEE NOTE - 2	20/1	600	1	1200			2	600	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing Load - SEE NOTE - 2	20/1	900	3		1700		4	800	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing North Vault Lights - SEE NOTE - 2	20/1	600	5			1200	6	600	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing South Vault Lights - SEE NOTE - 2	20/1	600	7	1400			8	800	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing Load - SEE NOTE - 2	20/1	900	9		1620		10	720	20/1	Existing Women's Bathroom/Shower #2 Timer - NOTE - 2	D	
L	Existing Load - SEE NOTE - 2	20/1	800	11			1700	12	900	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing Load - SEE NOTE - 2	20/1	500	13	1100			14	600	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing Load - SEE NOTE - 2	20/1	600	15		1200		16	600	20/1	Existing South Vault Lights - SEE NOTE - 2	D	
L	Existing North Vault Lights - SEE NOTE - 2	20/1	600	17			1140	18	540	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing Conference Room Lights - SEE NOTE - 2	20/1	400	19	1120			20	720	20/1	Existing Load - SEE NOTE - 2	D	
L	Existing Office Lights - SEE NOTE - 2	20/1	400	21		1300		22	900	20/1	Existing Receptacles RM 106, 107 - SEE NOTE - 2	D	
L	Existing Lighting Rm 101 through 106 - SEE NOTE - 2	20/1	900	23			1620	24	720	20/1	Existing Receptacles RM 107 - SEE NOTE - 2	D	
L	Existing Classroom Lights RM 107 - SEE NOTE - 2	20/1	400	25	1480			26	1080	20/1	Existing Receptacles RM 154, 117 - SEE NOTE - 2	D	
D	Existing Toilet Room Recept - SEE NOTE - 2	20/1	360	27		1440		28	1080	20/1	Existing Receptacles RM 124, 125 - SEE NOTE - 2	D	
D	Existing Toilet Room Recept - SEE NOTE - 2	20/1	360	29			760	30	400	20/1	Existing Men's Locker Room Lighting - SEE NOTE - 2	D	
L	Existing North Entrance Lights - SEE NOTE - 2	20/1	200	31	560			32	360	20/1	Existing Receptacles Mech. Room - SEE NOTE - 2	D	
D	Existing RCAS (Ded) Recept - Room 147 - SEE NOTE - 2	20/1	1200	33		2400		34	1200	20/1	Existing RCAS (Ded) Recept - Room 104 - SEE NOTE - 2	D	
D	Existing RCAS (Ded) Recept - Room 136 - SEE NOTE - 2	20/1	1200	35			1200	36		20/1	Existing P-Lot Lights (DEMO) #1 Timer - SEE NOTE - 2	C	
D	Existing Storage Building - SEE NOTE - 2	30/2	2000	37	12681			38	10681			C	
D	Existing Storage Building - SEE NOTE - 2	30/2	2000	39		13301		40	11301	70/3	Existing Panel PP-1	C	
D	Existing Receptacles Rm 156 - SEE NOTE - 2	20/1	360	41			9271	42	8911			C	

PANELBOARD INFORMATION		AMPS PER PHASE			PANEL LOCATION		NEC ARTICLE 220 DEMAND CALCULATIONS	
DESIGNATION:	LP-A	162.72	191.19	140.65	Mechanical Room		CONTINUOUS LOAD (C):	30893
VOLTAGE:	208Y/120						KITCHEN LOAD (K):	
PHASE-WIRE:	3Ø-4W						RECEPT BASE LOAD (D):	10000
BUS AMPACITY:	225A						RECEPT DEMAND LOAD (D):	5050
MAIN TYPE:	MLO						LIGHTING LOAD (L):	8400
MINIMUM A.I.C.:							ELECTRIC HEAT LOAD (H):	
NEUTRAL SIZE:	100%						MECHANICAL LOAD (M):	
MOUNTING:	SURFACE				REMARKS		OTHER LOAD (O):	
TOTAL POLES:	42						CONNECTED 3Ø LOAD (kVA):	59.39
							CONNECTED 3Ø LOAD (AMPS):	164.86
ENGINEER:	TGC						DEMAND 3Ø LOAD (kVA):	54.34
DATE:	7/22/22						DEMAND 3Ø LOAD (AMPS):	150.85

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Existing Electric Service Sizing Calculations			
Load Description	Load (VA)	Sizing Factor	Sizing Load (VA)
Lighting	38,138	1.25	47,673
Receptacles (non-continuous)	62,380	100% first 10,000VA, 50% thereafter	36,190
Mechanical	139,808	1.00	139,808
Electric Heat	0	1.25	0
Largest Motor (AH-1 Motor)		25% Additional Load per NEC 220.50 and 430.24	2,279
Kitchen Equipment	35,656	Per Table 220.56 of NEC - Demand Factors for kitchens - Other than Dwelling Units - with 6 units of equipment, use a demand factor of 65%	23,176
Other Power Loads	13,220	1.00	13,220
TOTAL (VA)	289,202		262,346
at 208v three phase (Amperes)	803	Amperes	728
<p>As Demonstrated above, the existing 800 Ampere Service Laterals and 800 Ampere Main Distribution Panel has sufficient Capacity to support the proposed added load on the existing service. Note that the metered peak demand is actually significantly lower, with the peak demand load being 188 Ampere.</p>			
<p>Service Calculations Based Upon the Following:</p> <p>NEC Article 230.42</p> <p>Lighting: Per NEC 220.12 AND Table 220.12; NEC 220.42; and calculated at 125% as continuous load</p> <p>Fixed Electric Heating: per NEC 220.51 and calculated at 125% as continuous load per NEC 424.3(B)</p> <p>Receptacles: Per NEC 220.44</p> <p>Mechanical / Motors: Per NEC 220.50, 430.24 - 430.26, 430.62, Table 430.250 and NEC 440.6, based upon the equipment served.</p> <p>Elevators / Intermittent Duty Motors: Per NEC 430.22 and Table 430.22(E).</p> <p>Noncoincident Loads: Per NEC 220.60 Where Electric Heating is the Largest Load when compared to Air Conditioning.</p> <p>Commercial Kitchen Equipment: Per NEC 220.56 and Table 220.56</p>			

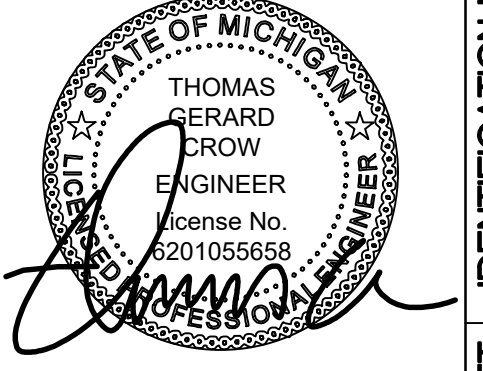
EXISTING PANEL SCHEDULE													
TYPE	DESCRIPTION	CB	VA	#	ØA	ØB	ØC	#	VA	CB	DESCRIPTION	TYPE	
M				3038	1	3975		2	937			M	
M	Existing AH-1 - SEE NOTE - 2	30/3	3038	3		3975		4	937	20/3	Existing RF-1 - SEE NOTE - 2	M	
M			3038	5			3975	6	937			M	
M	Existing CH 4,5,6,11 - SEE NOTE - 2	20/1	400	7	400			8		20/1	SPARE	C	
M	Existing EF-3 - SEE NOTE - 2	20/1	100	9		700		10	600	20/1	Existing EF-1, 2 & Women's RR Lights - SEE NOTE - 2	L	
M	Existing CP-3 - SEE NOTE - 2	20/1	1176	11			1276	12	100	20/1	Existing UH-11 - SEE NOTE - 2	M	
O	Existing Mens Hand Dryer - SEE NOTE - 2	20/1	1500	13	1900			14	400	20/1	Existing Lighting Men's Locker Room - SEE NOTE - 2	L	
O	Existing Mens Hand Dryer - SEE NOTE - 2	20/1	1500	15		2220		16	720	20/1	Existing Mens Locker Room Receptacles - SEE NOTE - 2	D	
O	Existing Womens Hand Dryer - SEE NOTE - 2	20/1	1500	17			2220	18	720	20/1	Existing Womens Locker Room Receptacles - SEE NOTE - 2	D	
O	Existing Womens Hand Dryer - SEE NOTE - 2	20/1	1500	19	3120			20	1620	20/1	Existing Office Recp 153, 154, 157 - SEE NOTE - 2	D	
O	Existing Womens Hand Dryer - SEE NOTE - 2	20/1	1500	21		2580		22	1080	20/1	Existing Vault Office Recept - SEE NOTE - 2	D	
C	SPARE	20/1		23			360	24	360	20/1	Existing Vault Security Circuit - SEE NOTE - 2	O	
C	SPARE	20/1		25	100			26	100	20/1	Existing Load - SEE NOTE - 2	D	
M	Existing Heat Trace on Roof - SEE NOTE - 2	20/1	100	27		100		28		20/1	SPARE	C	
M	Existing Controls - SEE NOTE - 2	15/1	300	29			480	30	180	20/1	Existing North Vault Recept - SEE NOTE - 2	D	
D	Existing Office 132-133 - SEE NOTE - 2	20/1	720	31	720			32		20/1	SPARE	C	
D	Existing Office 150-152 - SEE NOTE - 2	20/1	720	33		900		34	180	20/1	Existing South Vault Recept - SEE NOTE - 2	D	
C	SPARE	20/1		35				36		20/1	SPARE	C	
C	SPARE	20/1		37	466			38	466	20/2	NEW SITE LIGHTING - PARKING LOT - SEE NOTE - 5	L	
D	Existing Vault Receptacle Outer Wall - SEE NOTE - 2	20/1	360	39		826		40	466			L	
O	Existing Fire Alarm Control Panel - SEE NOTE - 2	20/1	600	41			600	42		20/1	SPARE	C	

PANELBOARD INFORMATION		AMPS PER PHASE			PANEL LOCATION		NEC ARTICLE 220 DEMAND CALCULATIONS	
DESIGNATION:	PP-1	88.94	94.10	74.20	Mechanical Room		CONTINUOUS LOAD (C):	
VOLTAGE:	208Y/120						KITCHEN LOAD (K):	
PHASE-WIRE:	3Ø-4W						RECEPT BASE LOAD (D):	6400
BUS AMPACITY:	225A						RECEPT DEMAND LOAD (D):	
MAIN TYPE:	MLO						LIGHTING LOAD (L):	1932
MINIMUM A.I.C.:							ELECTRIC HEAT LOAD (H):	
NEUTRAL SIZE:	100%						MECHANICAL LOAD (M):	14101
MOUNTING:	SURFACE				REMARKS		OTHER LOAD (O):	8460
TOTAL POLES:	42						CONNECTED 3Ø LOAD (kVA):	30.89
							CONNECTED 3Ø LOAD (AMPS):	85.75
ENGINEER:	TGC						DEMAND 3Ø LOAD (kVA):	30.89
DATE:	7/22/22						DEMAND 3Ø LOAD (AMPS):	85.75

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EXISTING MAIN DISTRIBUTION PANEL SCHEDULE "MDP"							
VOLTAGE: 208Y/120		MOUNTING: FLOOR					
MAINS: M.L.O.		MINIMUM A.I.C.:					
BUS SIZE: 800A		TVSS:					
NEUTRAL: 100%							
LOCATION:			REMARKS:				
CIRCUIT #	SWITCH & FUSE		LOAD DESCRIPTION	kVA		FLA	
	SWITCH	FUSE		CONN.	DEMAND	CONN.	DEMAND
1	400A/3P	400A	EXISTING PANEL "LP-B" (& "PP-2")	100.0	99.0	277.6	274.9
2	200A/3P	125A	EXISTING ACCU-1	36.7	36.7	101.9	101.9
3	200A/3P	200A	EXISTING PANEL "LP-A" (& "PP-1")	59.4	54.3	164.9	150.8
4	100A/3P	100A	EXISTING PANEL "LP-C"	27.9	26.6	77.3	74.0
5	100A/3P	100A	EXISTING PANEL "PP-3"	22.1	22.1	61.2	61.2
6	200A/3P	200A	EXISTING PANEL "PP-4"	43.2	43.2	119.9	119.9
TOTALS:				289.2	282.0	802.8	782.7

- NOTES:
- REFER TO ELECTRIC SERVICE LOAD CALCULATION SCHEDULE FOR CONNECTED AND DEMAND LOAD DATA. THE DEMAND LOAD DATA DOES NOT FULLY CAPTURE THE CUMMULATIVE DEMAND LOAD FOR THE SERVICE.



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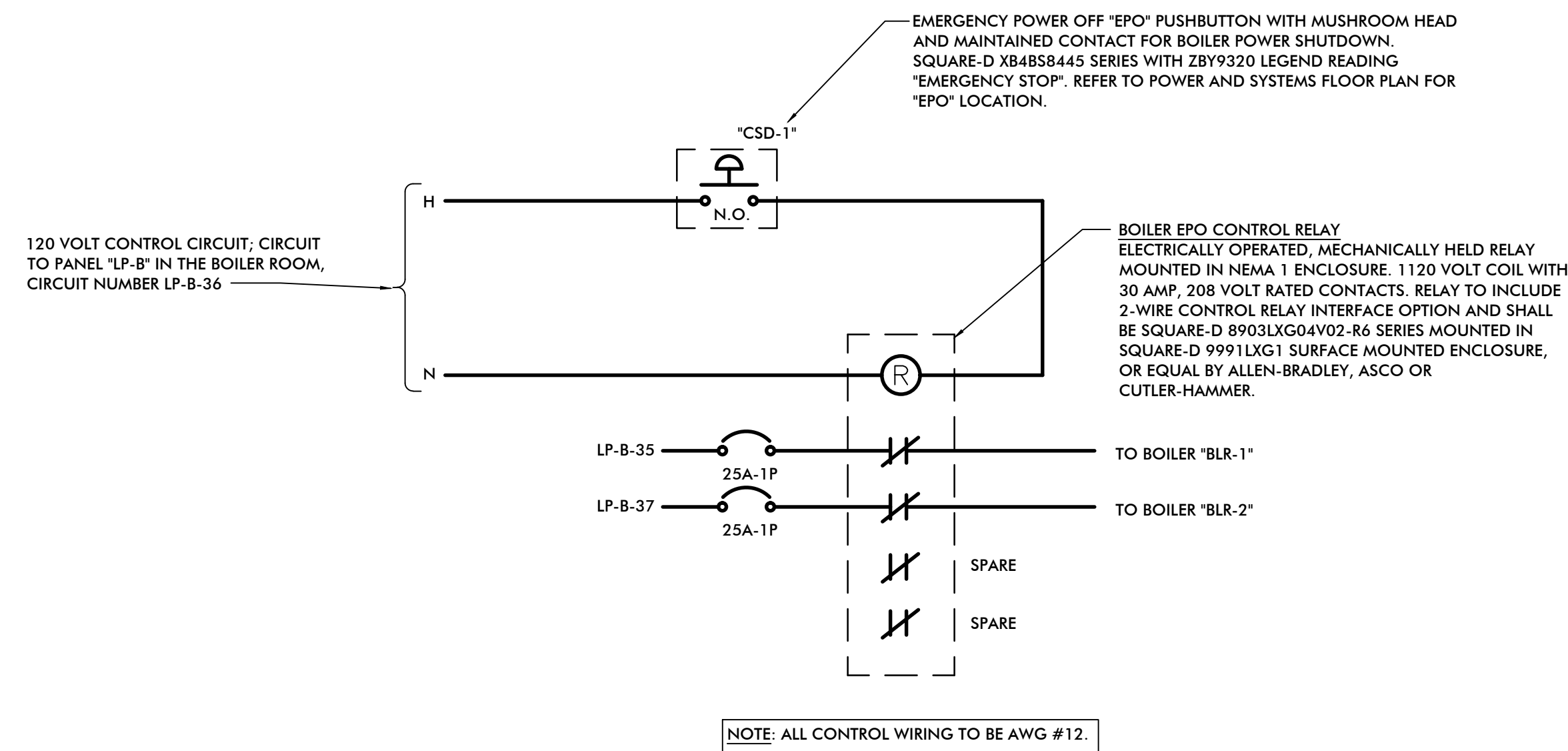
Department of Military and Veterans Affairs
 Bay City Army - Renovate Army

DESIGNED: TGC
 DRAWN: CAD
 CHECKED: TGC
 APPROVED: JB

DATE: SEP 28, 2022
 100% PHASE 600 CONSTRUCTION
 MAY 17, 2023
 FINAL RECORD

IDENTIFICATION NO.
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 PROJECT NO. 20A002201

SHEET E4.2



BOILER EMERGENCY POWER OFF ("EPO") PUSHBUTTON CONTROL WIRING DIAGRAM

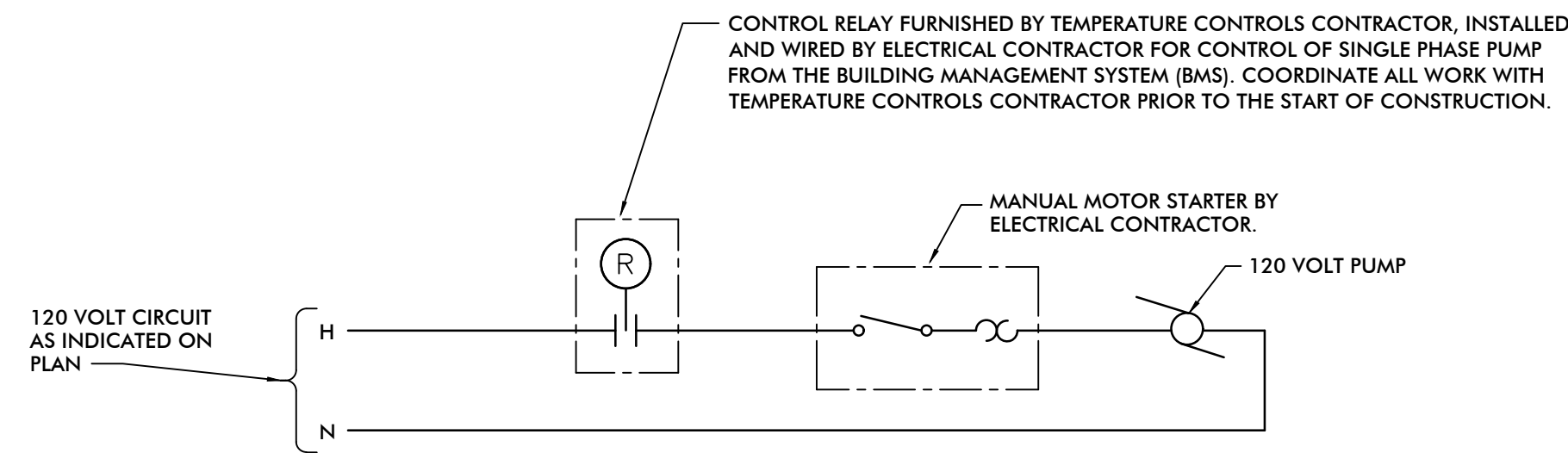
NO SCALE

BOILER EMERGENCY POWER OFF ("EPO") SEQUENCE OF OPERATION

UNDER NORMAL OPERATING CONDITIONS THE 120 VOLT POWER TO THE BOILERS IS PROVIDED THROUGH THE NORMALLY CLOSED CONTACTS IN THE EPO CONTROL RELAY.

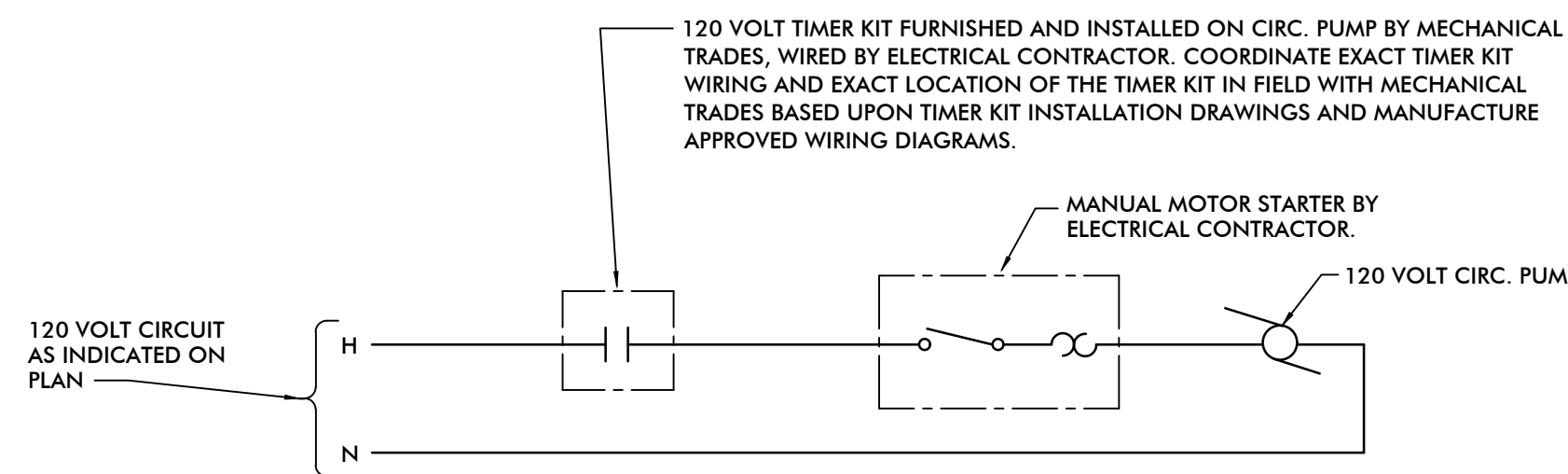
UPON ACTIVATION OF THE MUSHROOM HEAD EMERGENCY POWER OFF ("EPO") PUSHBUTTON AT THE BOILER ROOM DOOR, 120 VOLT CONTROL POWER SHALL BE APPLIED TO THE EPO CONTROL RELAY, CHANGING THE STATE OF THE RELAY CONTACTS TO OPEN, AND DE-ENERGIZING THE 120 VOLT POWER TO THE BOILERS, AND SHUTTING THE BOILERS DOWN IN ACCORDANCE WITH ASME 45-09-12.

WHEN THE EMERGENCY CONDITION IS CLEARED, THE EPO PUSHBUTTON IS PULLED OUT TO THE NORMAL OPERATING POSITION, WITH THE 120 VOLT POWER REMOVED FROM THE EPO CONTROL RELAY, AND THE RELAY CONTACTS RETURNING TO THEIR NORMALLY CLOSED POSITION, ENERGIZING POWER TO THE BOILERS.



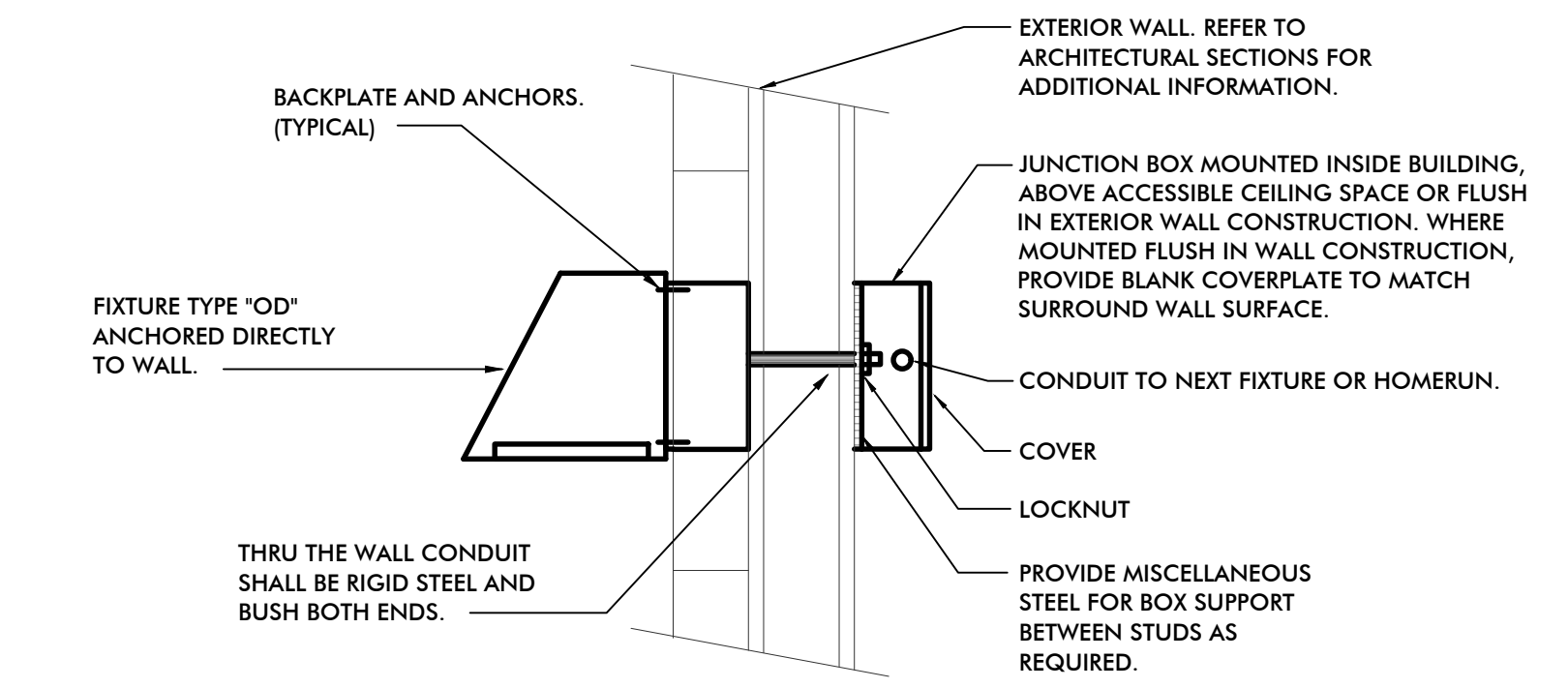
TYPICAL BUILDING MANAGEMENT SYSTEM (BMS) CONTROLLED SINGLE PHASE PUMP CONTROL WIRING DIAGRAM

NO SCALE



TYPICAL TIMER CONTROLLED SINGLE PHASE CIRCULATING HOT WATER PUMP CONTROL WIRING DIAGRAM

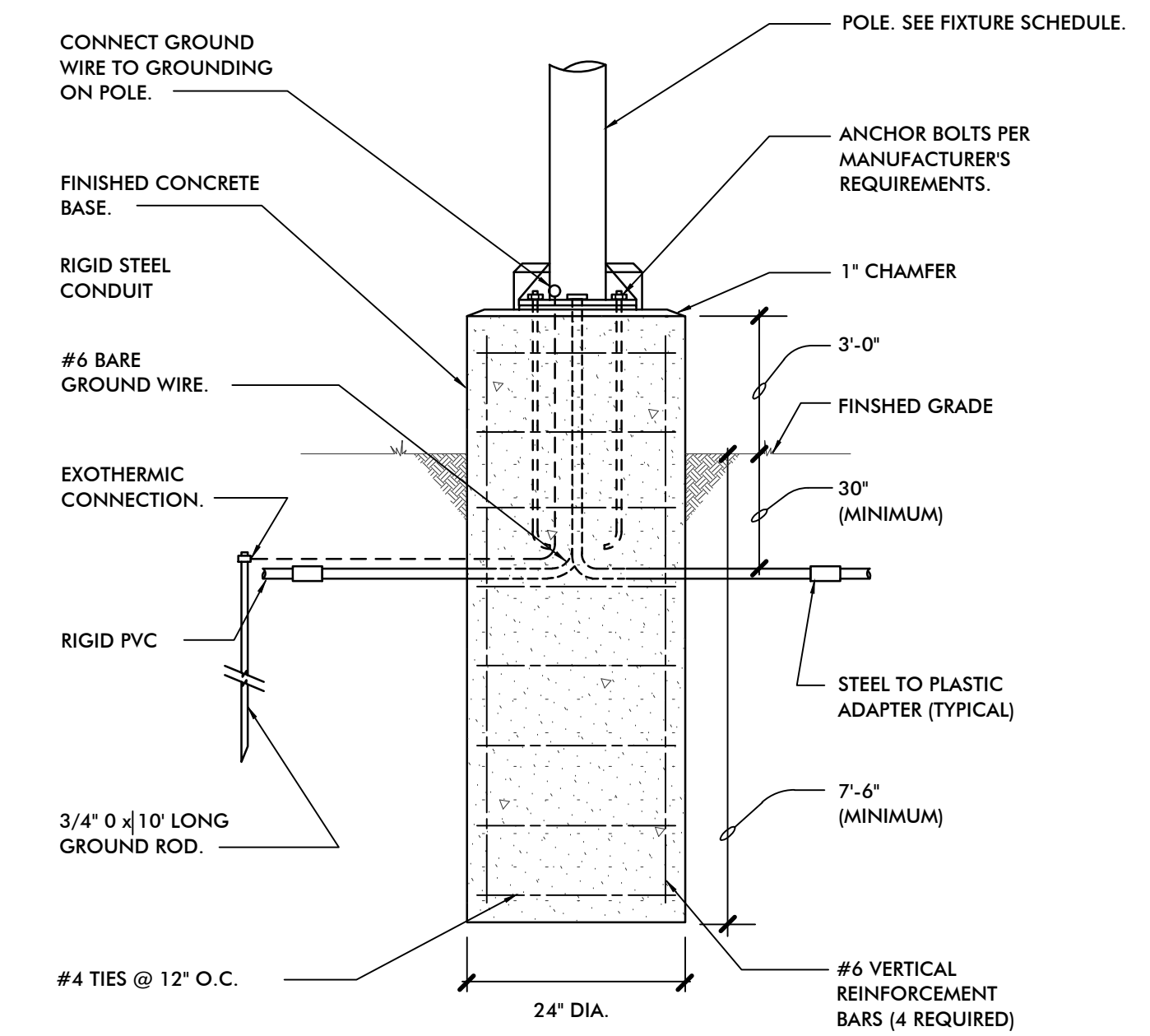
NO SCALE



FIXTURE TYPE "OD" MOUNTING DETAIL (SECTION)

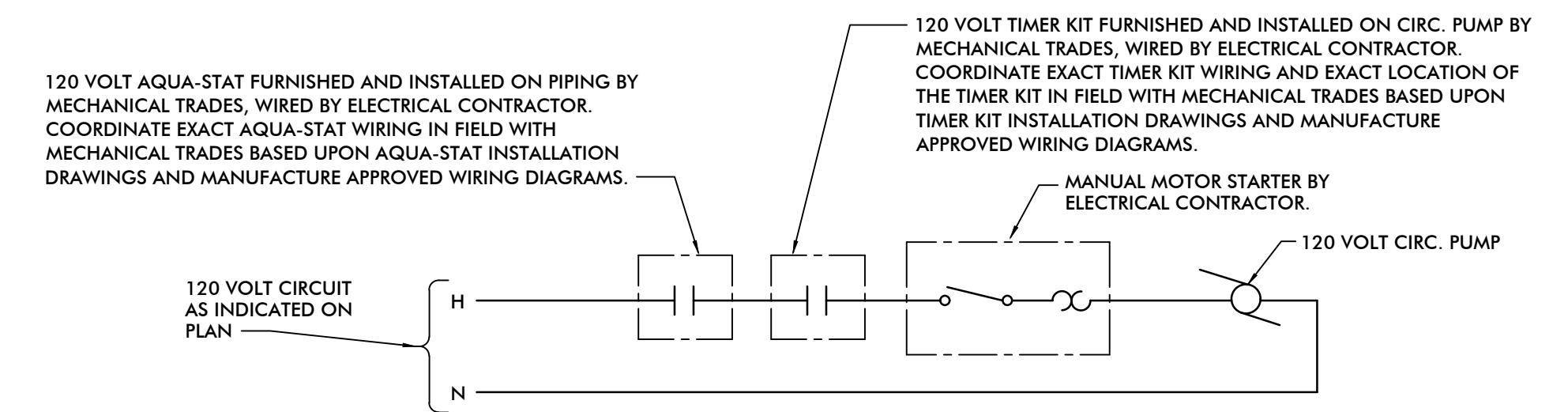
NO SCALE (DETAIL TYPICAL FOR FIXTURE TYPES "OD", "OD-EM", "OE" AND "OE-EM")

NOTE: FIXTURE SHAPE CONVEYED IN THE ABOVE DETAIL IS INTENDED TO REPRESENT THE GENERAL SHAPE OF THE LIGHT FIXTURE, HOWEVER THE DETAIL IS NOT INTENDED TO BE AN EXACT GRAPHICAL REPRESENTATION OF THE SPECIFIED FIXTURE. REFER TO THE LIGHTING FIXTURE SCHEDULE AND ASSOCIATED CUT SHEET FOR AN EXACT DESCRIPTION AND REPRESENTATION OF THE SPECIFIED FIXTURE.



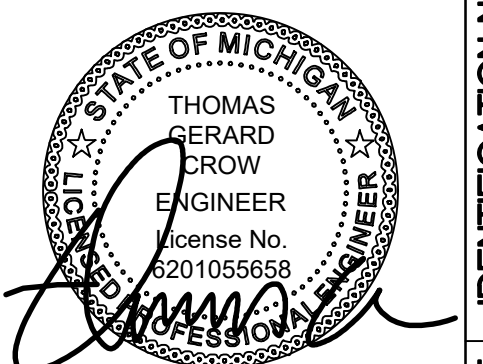
BASE DETAIL "A"

NO SCALE

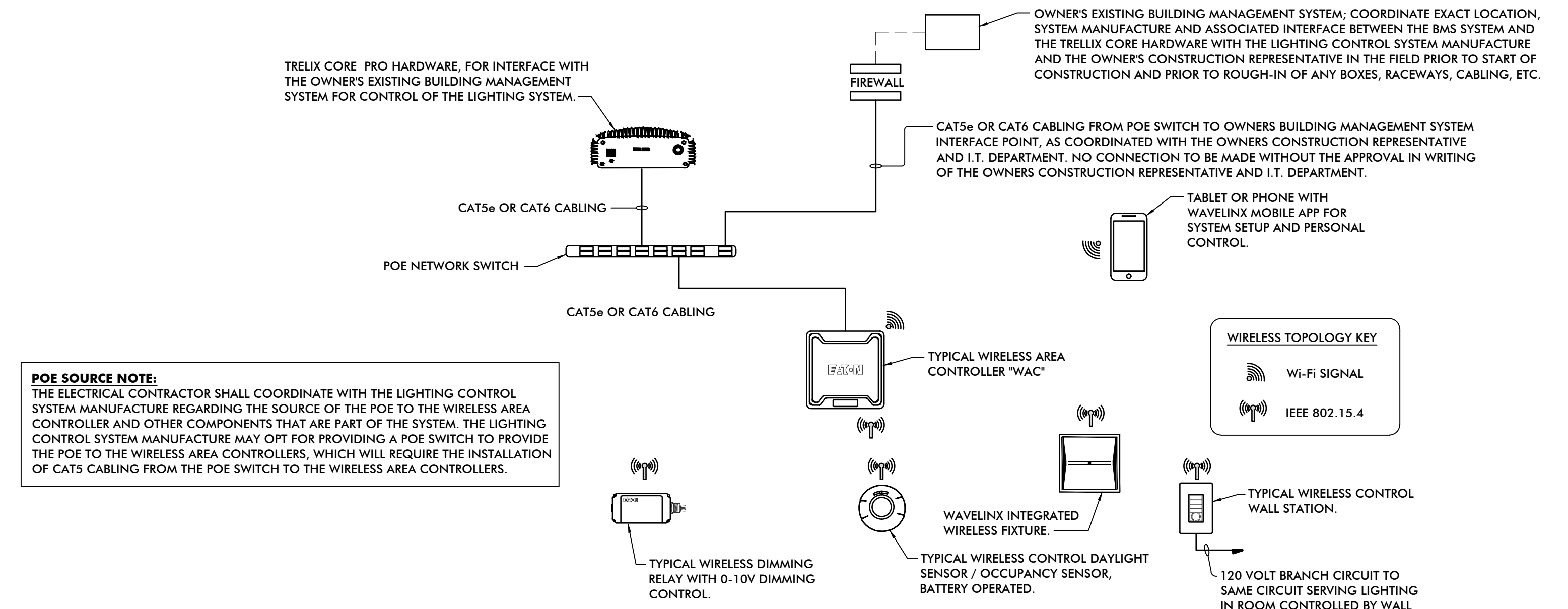


TYPICAL SINGLE PHASE CIRCULATING HOT WATER PUMP WITH TIMER KIT CONTROL WIRING DIAGRAM

NO SCALE



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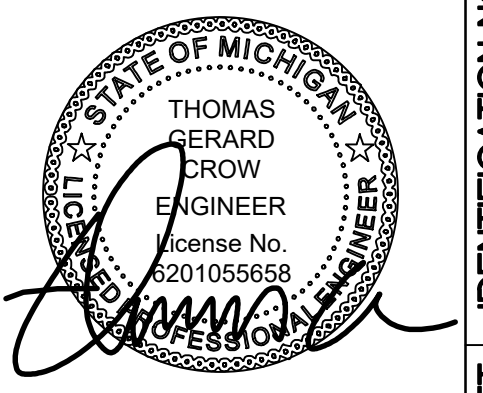


WIRELESS LIGHTING CONTROL SYSTEM - GENERAL SYSTEM TOPOLOGY DIAGRAM

NO SCALE

WIRING DIAGRAM SHOWN IS BASED ON A WIRELESS LIGHTING CONTROL SYSTEM MANUFACTURED BY EATON; THE EATON "WAVELINK" SYSTEM. SYSTEMS FROM "EQUAL" MANUFACTURES WILL BE CONSIDERED; HOWEVER ALL SYSTEMS TO BE CONSIDERED MUST BE SUBMITTED PRIOR TO BIDDING FOR PRE-APPROVAL WHILE THE PROJECT IS BIDDING.

WIRELESS LIGHTING CONTROL SYSTEM GENERAL NOTES:	
<p>GENERAL REQUIREMENTS</p> <ol style="list-style-type: none"> The general system topology diagram is diagrammatic only, and intended to convey the general configuration of the lighting control system components used on the project and the method in which the system is interconnected, programmed and operates. Refer to the manufacturer's approved shop / installation drawings for exact system installation and locations where interconnecting wiring may be required. Refer to wireless lighting control system schedule on this sheet for additional information. Electrical contractor shall provide and install 1" conduit sleeves between fire rated walls to accommodate routing of the low voltage cabling that may be required in order to support the system installation. The intent of the project is that the system is completely wireless; however, the lighting control system manufacturer shall be responsible for directing the contractor where interconnecting wiring and cabling may be required. Provide fire proofing at all penetrations of fire rated walls, floors and ceilings to maintain the fire rating of the surface penetrated. <p>COORDINATION REQUIREMENTS</p> <ol style="list-style-type: none"> Preview meeting: conducted on-site or during design meeting with lighting control system manufacturers or designated representative prior to commencing work as part of the manufacturer's standard practice and startup services. Manufacturer to review with the installer: <ol style="list-style-type: none"> Installation of lighting area controller and supervisory controller and locations Lighting control network wiring Network IT requirements Low voltage wiring requirements Lighting control integration requirements Lighting control system integration network wiring and connectivity Installer responsibilities Startup and training schedule and actions <p>CLOSEOUT SUBMITTALS</p> <ol style="list-style-type: none"> Sustainable design closeout documentation. Wireless lighting control system manufacturer to provide an operation and maintenance manual that details the start-up procedure being performed including a process to follow, details on tests performed and an area that documents any test results. <p>APPROVALS</p> <ol style="list-style-type: none"> 10-working days prior approval before bid date is required for alternate proposals. Complete catalog data, specifications and technical information on alternate equipment must be furnished to the architect and owner at least 30 business days in advance of the submission of approved construction documents. For wired alternatives, manufacturer shall provide wiring diagrams and architectural details of interconnecting wiring for power signal and control. Contractor shall provide a labor cost (add or deduction) to install the wired alternative to the lighting control system. <p>COMMISSIONING</p> <ol style="list-style-type: none"> Provide factory-certified field service engineer to a site visit to ensure proper system installation and operation. Qualifications for factory-certified field service engineer: <ol style="list-style-type: none"> Certified by the equipment manufacturer on the system installed. Conclude commissioning with or make a follow-up visit to: <ol style="list-style-type: none"> Verify system control operation area by area. Obtain sign-off on system functions. User to be trained on system operation. <p>MAINTENANCE MATERIAL SUBMITTALS</p> <ol style="list-style-type: none"> The manufacturer shall make available to the End-User a method of ordering new equipment for expansions, replacements and spare parts through established distributor channels. The manufacturer shall make new replacement parts available for minimum of 5 years from date of manufacture. The manufacturer shall make directly available to the owner additional software apps that may be desired for a minimum of 10 years from the system's date of purchase. <p>LIGHTING CONTROL APPLICATIONS</p> <ol style="list-style-type: none"> Minimum lighting control performance required, unless local energy code is more stringent. Occupancy/vacancy requirements - provide an occupancy/vacancy sensor with manual on/ automatic off or automatic on/ automatic off functionality in all spaces. Manual on vacancy sensors should be used for any enclosed space with a manual on switch that does not require hands free operation. Spaces with multiple occupants or where line of sight might be obscured ceiling or corner mount sensors and manual wallstations would be required. Automatic on of lighting via occupancy sensor cannot exceed 50% of lighting. Systems that do that allow the user to select occupancy or vacancy mode shall not be acceptable. Daylight zones - primary sidelit or toplit areas within an enclosed space shall be controlled separately and automatically by individual integrated daylight sensors. Adjustments to the daylight zones must be provided by a simple to use, intuitive mobile application. Provide smooth and continuous daylight dimming for areas marked on drawings. Daylighting control system may be designed to dim electric light to the lowest light level and off. Provide the ability to adjust the high-end and low-end trim of the dimmers to ensure the lighting automatically provides energy saving even when daylighting calls for full illumination. Provide the ability for the dimmers and the relays to function separately. Systems where the 0-10v dimmers and relays are tied together reduce design capabilities and shall not be acceptable. 	<p>CYBERSECURITY</p> <ol style="list-style-type: none"> The network connectable products within the Wireless Lighting Control system must be UL2900-1 listed to the Standard for Software Cybersecurity for Network-Connectable Products. Wireless Lighting Control Systems that fail to meet this requirement will not be accepted. <p>INSTALLATION</p> <ol style="list-style-type: none"> The control system shall be installed and fully wired as shown on the plans by the installing contractor. The contractor shall complete all electrical connections to all control circuits. Install the work of this Section in accordance with manufacturer's printed instructions unless otherwise indicated. Provide written or computer-generated documentation on the commissioning of the system including room by room description including: <ol style="list-style-type: none"> Sensor parameters, time delays, sensitivities and daylighting setpoints. Sequence of operation, (e.g. manual ON, Auto OFF, Etc.) Load parameters (e.g. blink warning, etc.). <p>PRODUCT SUPPORT AND SERVICE</p> <ol style="list-style-type: none"> Factory telephone support shall be available at no cost to the owner. Factory assistance shall consist of solving programming or application questions concerning the control equipment. <p>FACTORY COMMISSIONING</p> <ol style="list-style-type: none"> Upon completion of the installation, the system shall be commissioned by the manufacturer's factory authorized representative who will verify a complete fully-functional system. The electrical contractor shall provide both the manufacturer and the electrical engineer with twenty-one (21) working days written notice of the system startup and adjustment date. Upon completion of the system commissioning the factory-authorized technician shall provide the proper training to the owner's personnel on the adjustment and maintenance of the system. Qualifications for factory certified field service engineer: <ol style="list-style-type: none"> Certified by the equipment manufacturer on the system installed. Make first visit upon completion of installation of WaveLink Connected Lighting system: <ol style="list-style-type: none"> Verify locations of Wireless Area Controllers Verify implementation of Construction Group process Identify connected devices and program using WaveLink Mobile and Automatic Code Commissioning. Verify that system operation control based on defined Sequence of Operations (SOC). Obtain sign-off on system functions. <p>CLOSEOUT ACTIVITIES</p> <ol style="list-style-type: none"> Training Visit Lighting control system manufacturer to provide one (1) day additional on-site system training to site personnel. This shall be a part of the second visit by field service to the site. A separate third visit will require an additional charge. During this visit, the manufacturer's Field Service Engineer will perform tasks, at the request of the facility representative or Commissioning Agent, such as to demonstrate wall control functions, explain or describe occupancy and/or daylight sensor functionality.



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DESIGNED: TOC
DRAWN: CAD
CHECKED: TOC
APPROVED: JB

ISSUED FOR
100% PHASE 000
CONSTRUCTION
FINAL RECORD

IDENTIFICATION NO.
FILE NO.
5/12/2023/MAA
PROJECT NO.
20A022031

DATE
SEP 28, 2023
MAY 17, 2023

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5.1

WIRELESS LIGHTING CONTROL SYSTEM SCHEDULE

CIRCUIT TAG	ROOM CONTROLLER TAG	SWITCHPACK CONTROL FUNCTION (EATON WSP-MV-010 SERIES)	BRANCH CIRCUIT No. (See Note - d)	LIGHTING LOAD DESCRIPTION	CONTROL STATION - SEE NOTE - 4			ASTRO TIME CLOCK CONTROL		OCCUPANCY SENSOR CONTROL / OUTDOOR CONTROL MODULE				DAYLIGHT HARVESTING CONTROL			REMARKS
					STATION No.	ZONE No.	DIMMER	YES / NO	ON / OFF SET POINT	"ON" CONTROL	"OFF" CONTROL	TIME DELAY	SENSOR No.	"ON" SETPOINT	"OFF" SETPOINT	SENSOR No.	
L VLC-001	-	IN-FIXTURE MODULE WOLC-7P-10A	SEE FLOOR PLAN	PARKING AND DRIVE - ZONE 1	-	-	-	YES	DUSK TO DAWN 11PM DIM 30%	"ON" AT DUSK 11PM DIM 30%	5AM - FULL ON "OFF" AT DAWN	N/A	W01 Thru W06	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-002	-	IN-FIXTURE MODULE WOLC-7P-10A	SEE FLOOR PLAN	BUILDING MTD LIGHTS - ENTRY DOORS - ZONE 2	-	-	-	YES	DUSK TO DAWN 11PM DIM 50%	"ON" AT DUSK 11PM DIM 50%	5AM - FULL ON "OFF" AT DAWN	N/A	W08, W11, W13	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-003	-	IN-FIXTURE MODULE WOLC-7P-10A	SEE FLOOR PLAN	BUILDING MTD LIGHTS - EAST SIDE - ZONE 3	-	-	-	YES	DUSK TO 11PM	"ON" AT DUSK	"OFF" AT 11PM	N/A	W12 & W14	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-004	-	IN-FIXTURE MODULE WOLC-7P-10A	SEE FLOOR PLAN	BUILDING MTD LIGHTS - NORTH SIDE - ZONE 4	-	-	-	YES	DUSK TO 11PM	"ON" AT DUSK	"OFF" AT 11PM	N/A	W09 & W10	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-005	-	IN-FIXTURE MODULE WOLC-7P-10A	SEE FLOOR PLAN	BUILDING MTD LIGHTS - WEST SIDE - ZONE 5	-	-	-	YES	DUSK TO 11PM	"ON" AT DUSK	"OFF" AT 11PM	N/A	W07	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-006		IN-FIXTURE SENSOR / RADIO WAVELINK "WAA" OPTION	SEE FLOOR PLAN	MENS LOCKER ROOM & SHOWER AREA	"CS1a", "CS1b"	1	YES	YES	MIDNIGHT SWEEP - OFF	AUTO-ON	AUTO-OFF (SWITCHED OFF)	20-MINUTES	"DO1" Thru "DO8"	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-007	R-1	SPST SWITCH WITH 0-10V DIMMING	SEE NOTE - 6	MEN'S LOCKER ROOM SHOWER DOWN LIGHTS	"CS2"	1	YES	YES	MIDNIGHT SWEEP - OFF	MANUAL ON	AUTO-OFF (SWITCHED OFF)	20-MINUTES	"DO1" Thru "DO8"	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-008		IN-FIXTURE SENSOR / RADIO WAVELINK "WAA" OPTION	SEE FLOOR PLAN	WOMENS LOCKER ROOM & SHOWER AREA	"CS3a", "CS3b"	1	YES	YES	MIDNIGHT SWEEP - OFF	AUTO-ON	AUTO-OFF (SWITCHED OFF)	20-MINUTES	"DO11" Thru "DO17"	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-009	R-2	SPST SWITCH WITH 0-10V DIMMING	SEE NOTE - 6	WOMENS SHOWER DOWN LIGHTS - SOUTH	CS4"	1	YES	YES	MIDNIGHT SWEEP - OFF	MANUAL ON	AUTO-OFF (SWITCHED OFF)	20-MINUTES	"DO11" Thru "DO17"	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.
L VLC-010	R-3	SPST SWITCH WITH 0-10V DIMMING	SEE NOTE - 6	WOMENS SHOWER DOWN LIGHTS - NORTH	"CS5"	1	YES	YES	MIDNIGHT SWEEP - OFF	MANUAL ON	AUTO-OFF (SWITCHED OFF)	20-MINUTES	"DO11" Thru "DO17"	-	-	-	EXACT TIME CLOCK SETTING TO BE VERIFIED WITH OWNER'S CONSTRUCTION REPRESENTATIVE.

NOTES:

- THE LIGHTING CONTROL SYSTEM MANUFACTURE SHALL BE RESPONSIBLE FOR THE SELECTION OF THE EXACT SWITCHPACK AND ADDITIONAL COMPONENTS REQUIRED FOR ALL "SWITCHPACKS" / RELAYS INDICATED IN THE ABOVE SCHEDULE. THE RELAY TYPE INDICATED IN THE SCHEDULE ABOVE PROVIDES ONLY THE GENERIC GENERAL TYPE OF RELAY, AND IS NOT INTENDED TO CONVEY THE EXACT SPECIFIC TYPE OR MODEL NUMBER REQUIRED.
- REFER TO WIRELESS LIGHTING CONTROL SYSTEM - GENERAL SYSTEM TOPOLOGY DIAGRAM ON SHEET ES.1 FOR ADDITIONAL INFORMATION REGARDING THE GENERAL CONFIGURATION OF THE SYSTEM AND THE ASSOCIATED COMPONENTS THAT COMPRISE THE SYSTEM. THE SYSTEM MANUFACTURE SHALL BE RESPONSIBLE FOR PREPARING SYSTEM WIRING DIAGRAMS SPECIFIC TO THIS PROJECT FOR THE ELECTRICAL CONTRACTOR'S USE FOR THE SYSTEM INSTALLATION. THE NOTED WIRING DIAGRAM SHALL BE SUBMITTED DURING THE SHOP DRAWING PHASE OF THE PROJECT FOR REVIEW. THE MANUFACTURES GENERIC WIRING DIAGRAMS ARE NOT INCLUDED SINCE THESE DIAGRAMS DO NOT PROVIDE ANY CLARIFICATION OF HOW THIS SPECIFIC SYSTEM WILL BE INSTALLED. THE BIDDING CONTRACTOR SHALL CONTACT THE LOCAL MANUFACTURES REPRESENTATIVES TO GAIN A COMPLETE UNDERSTANDING OF HOW THE SYSTEM OPERATES AND HOW THE SYSTEM IS INSTALLED PRIOR TO SUBMITTING HIS/HER BID.
- LIGHT FIXTURES CONTROLLED BY THIS SWITCHPACK RELAY (OR IN-FIXTURE CONTROLS) SHALL NOT BE CAPABLE OF BEING TURNED OFF. WHEN THE CONTROL STATION PUSHBUTTON SERVING THIS RELAY IS DEPRESSED TO THE "OFF" POSITION THE FIXTURES CONTROLLED BY THIS ROOM CONTROLLER SHALL DIM DOWN TO A DIMMED LEVEL OF 10%, TO ALLOW THE FIXTURES TO REMAIN ILLUMINATED AT A DIMMED LEVEL TO PROVIDE A LOW LEVEL OF NIGHT LIGHTING IN THE AREA. UPON DESPRESSING THE "ON" PUSHBUTTON, THE SWITCHPACK RELAY (OR IN-FIXTURE CONTROLS) SHALL BE ENERGIZED TO THE FULL ILLUMINATION LEVEL FOR THE FIXTURES, OR TO THE PRE-SET SCENE DIMMED STATE, WHICHEVER IS APPLICABLE FOR THE GIVEN CONTROL STATION. WHILE THE SWITCHPACK (OR IN-FIXTURE CONTROLS) IS CALLED TO BE "ON" THE FIXTURE SHALL OPERATE AS NORMAL, INCLUDING DIMMING CONTROL BASED ON THE OPERATION OF THE DIMMING PUSHBUTTONS ON THE CONTROL STATION AND THE DAYLIGHT HARVESTING CONTROLS; HOWEVER, THE SWITCHPACK (OR IN-FIXTURE CONTROLS) SHALL HAVE A PROGRAMMED MINIMUM DIMMED STATE LEVEL OF 10%, AND THE FIXTURE SHALL NOT BE CAPABLE OF BEING DIMMED ANY LOWER THAN THIS PRESET THRESHOLD.
- REFER TO WIRELESS LIGHTING CONTROL STATION SCHEDULE THIS SHEET FOR PROGRAMMING AND ASSIGNING OF THE LIGHTING ZONES INDICATED TO THE RESPECTIVE CONTROL STATION SCENES AND/OR CONTROL BUTTONS.
- REFER TO LIGHTING FLOOR PLANS FOR BRANCH CIRCUIT SERVING LIGHTING FIXTURES WITH IN-FIXTURE SENSORS AND WIRELESS RADIO. CIRCUIT NUMBER INDICATED IS THE BRANCH CIRCUIT SHOWN ON THE FLOOR PLANS TO SERVE THE FIXTURES WITH IN-FIXTURE SENSORS, BUT WILL ALSO SERVE THE ROOM CONTROLLER POWER FOR ALTERNATE MANUFACTURES LIGHTING CONTROL SYSTEMS WHICH REQUIRE A ROOM CONTROLLER TO BE PART OF THE WIRELESS CONTROL SYSTEM. THE BASIS OF DESIGN SYSTEM DOESNT REQUIRE A ROOM CONTROLLER, BUT THIS DETAIL IS NOTED IN THE EVENT ONE OF THE ALTERNATE MANUFACTURE SYSTEMS IS UTILIZED.
- CIRCUIT NUMBER DOES NOT INDICATE ACTUAL POLE POSITION USED BUT RATHER LOADS INTENDED TO BE GROUPED TOGETHER. ELECTRICAL CONTRACTOR SHALL CIRCUIT LOADS INTENDED TO BE GROUPED TOGETHER TO AN EXISTING SPARE 20A-1P CIRCUIT BREAKER MADE AVAILABLE BY DEMOLITION WORK IN THE EXISTING PANEL INDICATED. ELECTRICAL CONTRACTOR SHALL PERFORM CIRCUIT TRACING PRIOR TO START OF CONSTRUCTION TO IDENTIFY THE EXACT PANEL AND BRANCH CIRCUIT NUMBER MADE AVAILABLE BY THE DEMOLITION WORK AND USED TO SERVE THE NEW LOADS INDICATED. THE ELECTRICAL CONTRACTOR SHALL REFLECT THE EXISTING BRANCH CIRCUIT NUMBER ON THE AS-BUILT RECORD DRAWINGS, AND SHALL UPDATE THE PANEL TYPED CIRCUIT DIRECTORY TO REFLECT THE NEW LOAD SERVED.

WIRELESS LIGHTING CONTROL STATION SCHEDULE


STATION No.	CONTROL STATION MODEL NUMBER - SEE NOTE 1 (EATON WaveLink SERIES)	SCENE / BUTTON 1		SCENE / BUTTON 2		SCENE 3		SCENE 4		RAISE / LOWER BUTTON		REMARKS
		ZONES	DIM STATE	ZONES	DIM STATE	ZONES	DIM STATE	ZONES	DIM STATE	YES/NO	ZONES	
CS1a, CS1b	W2L-RL-X	1	"FULL LIGHTS"	1	"OFF"	-	-	-	-	YES	1	VERIFY EXACT PROGRAMMING OF SCENES WITH THE OWNERS CONSTRUCTION REPRESENTATIVE.
CS2	W2L-RL-X	1	"SHOWER LIGHTS"	1	"OFF"	-	-	-	-	YES	1	VERIFY EXACT PROGRAMMING OF SCENES WITH THE OWNERS CONSTRUCTION REPRESENTATIVE.
CS3a, CS3b	W2L-RL-X	1	"FULL LIGHTS"	1	"OFF"	-	-	-	-	YES	1	VERIFY EXACT PROGRAMMING OF SCENES WITH THE OWNERS CONSTRUCTION REPRESENTATIVE.
CS4	W2L-RL-X	1	"SHOWER LIGHTS"	1	"OFF"	-	-	-	-	YES	1	VERIFY EXACT PROGRAMMING OF SCENES WITH THE OWNERS CONSTRUCTION REPRESENTATIVE.
CS5	W2L-RL-X	1	"SHOWER LIGHTS"	1	"OFF"	-	-	-	-	YES	1	VERIFY EXACT PROGRAMMING OF SCENES WITH THE OWNERS CONSTRUCTION REPRESENTATIVE.

NOTES:

- CONTROL STATION FINISH TO BE SELECTED BY ARCHITECT. FINISH OPTION IS DENOTED BY THE "-X" IN THE SCHEDULE ABOVE.



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 APPROVED: JB

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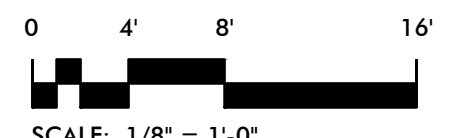
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 PROJECT NO. 20A022031

SHEET
 52

Emergency Egress Lighting Photometry Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
East Ext Egress Landing_Planor	Illuminance	Fc	2.06	2.6	1.7	1.21
Mens Lockers - Showers_Floor	Illuminance	Fc	2.54	4.7	0.4	6.35
North Ext Egress Landing_Planor	Illuminance	Fc	1.48	4.4	0.3	4.93
West Ext Egress Landing_Planor	Illuminance	Fc	2.75	5.0	1.7	1.62
Womens Lockers and Showers_Floor	Illuminance	Fc	3.43	5.4	0.8	4.29



1
EX1
PARTIAL FLOOR PLAN - EMERGENCY EGRESS LIGHTING PHOTOMETRY
SCALE: 1/8" = 1'-0"



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101111 State Road, East 200
Livonia, MI 48150

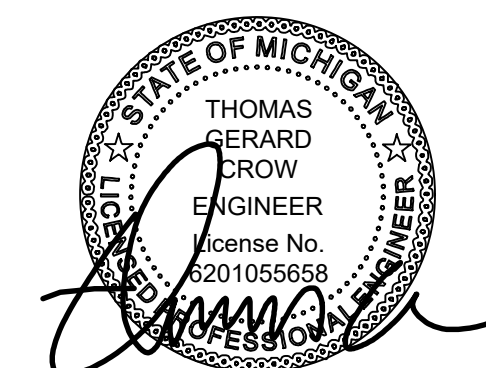
Department of
Military and Veterans Affairs
Bay City Armory - Renovate Armory

DESIGNED: TOC
DRAWN: CAD
CHECKED: TOC
APPROVED: JB

DATE
SEP 28, 2022
MAY 17, 2023

ISSUED FOR
100% PHASE 500
CONSTRUCTION
FINAL RECORD

IDENTIFICATION NO.
FILE NO.
PROJECT NO.



SEAL & SIGNED 05/12/2023, SEAL
APPLIES ONLY TO THE ELECTRICAL
DOCUMENTS PREPARED BY TAC
ASSOCIATES, LLC