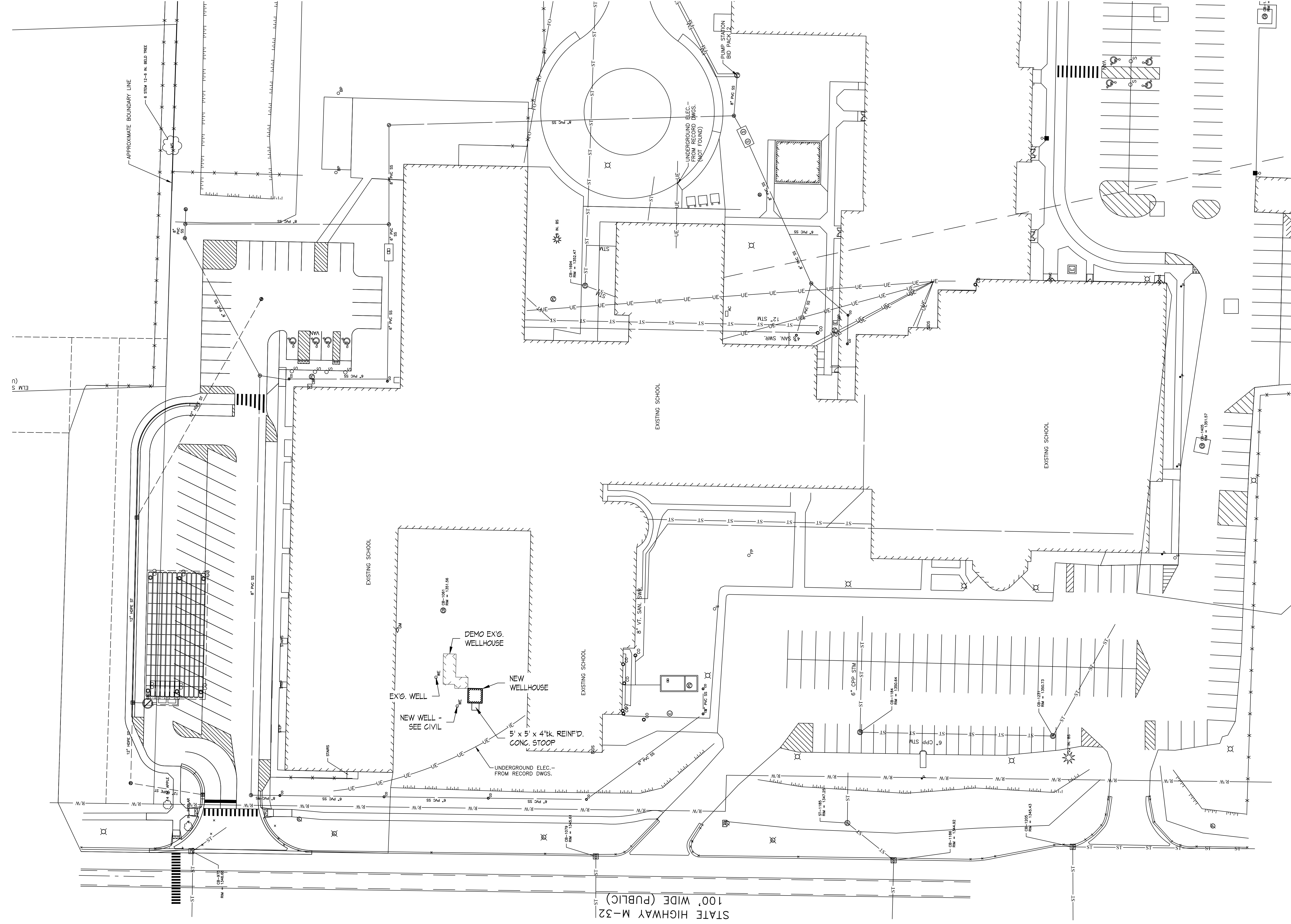


JOHANNESBURG LEWISTON AREA SCHOOLS - 2024 SUMMER PROJECTS

BID PACKAGE NO. 1

JOHANNESBURG BUILDING WATER WELL UPGRADES

10854 M-32 EAST, JOHANNESBURG, MI 49751

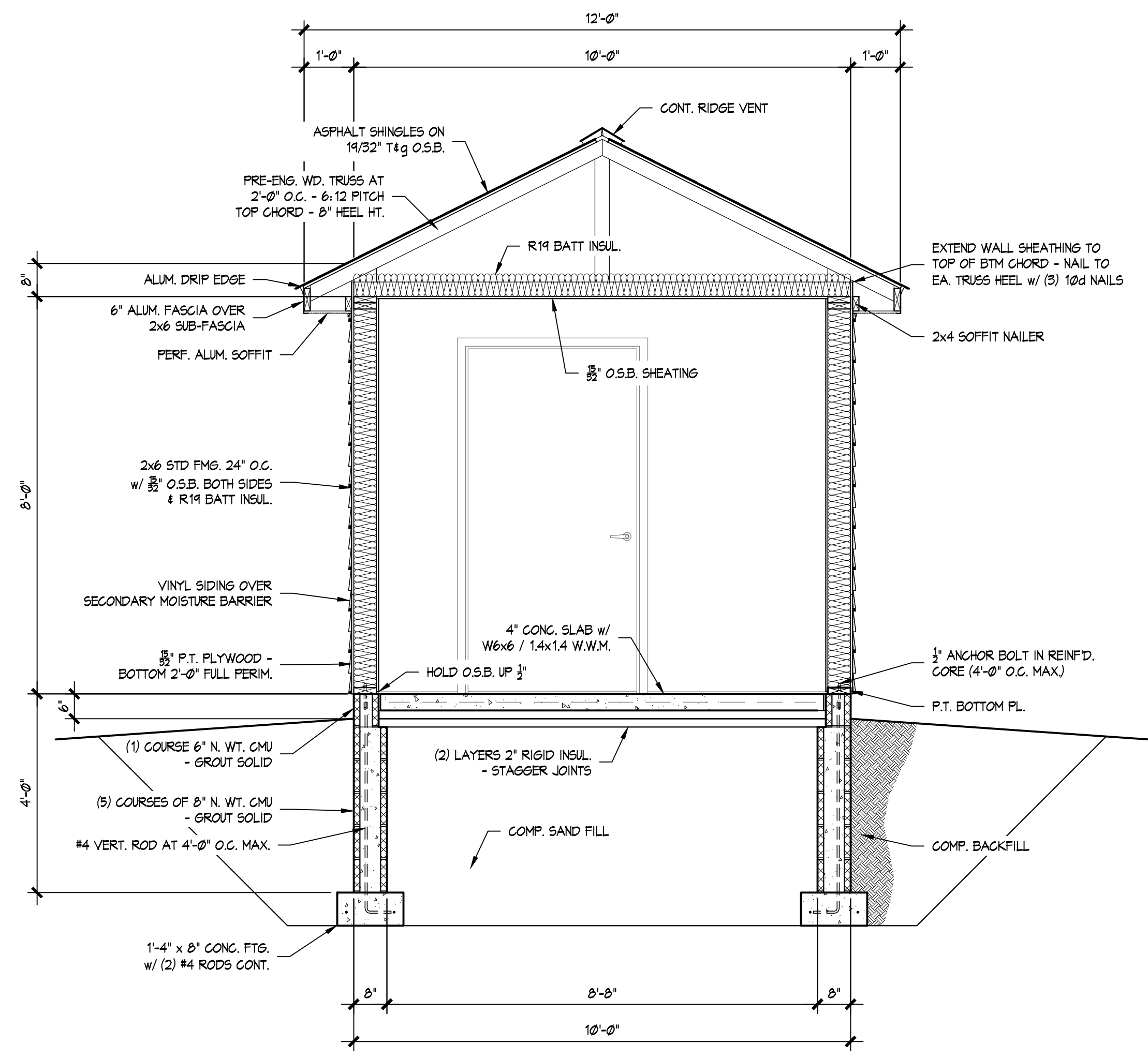


SHEET INDEX	
T	TITLE SHEET, PROJECT INFORMATION / PARTIAL SITE PLAN
C1.0	PROPOSED MECHANICAL PIPING DETAIL
A1.0	WELL HOUSE PLANS, SECTIONS, ELEVATIONS AND DETAILS
ED.1	ELECTRICAL TITLE SHEET
E1.1	ELECTRICAL OVERALL PLAN
E2.1	ELECTRICAL NEW WORK PLAN
M2.1	MECHANICAL PLAN

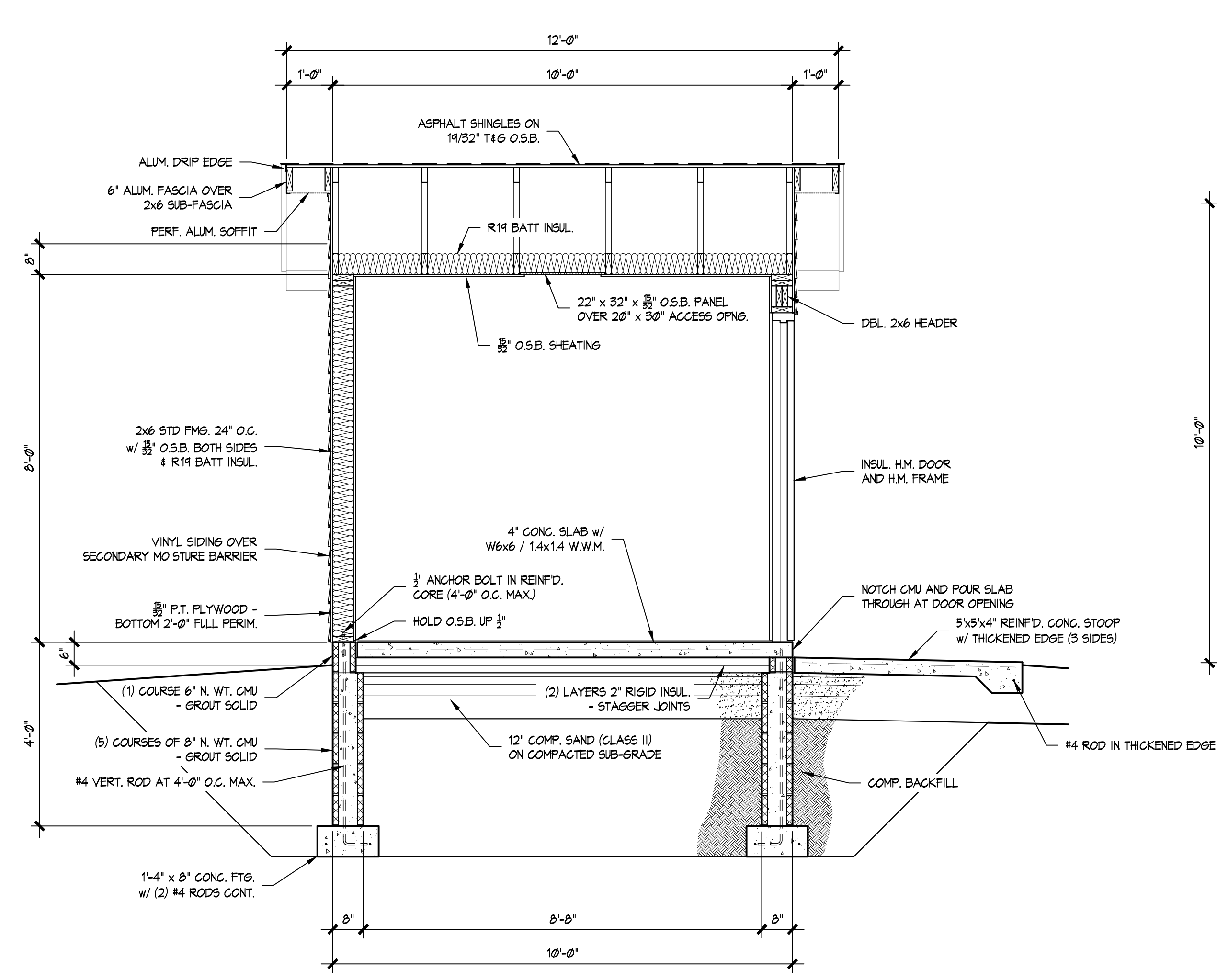
CODE DATA	
USE GROUP:	U
CONSTRUCTION TYPE:	VB
FIRE SUPPRESSION SYSTEM:	NONE

SHEET	DATE	PROJECT NO.	PROJECT TITLE	DRAWING TITLE
	MAY 1, 2024	219-24E.1	JOHANNESBURG LEWISTON AREA SCHOOLS - 2024 SUMMER PROJECTS JOHANNESBURG BUILDING WATER WELL UPGRADE	WELL HOUSE PLANS AND DETAILS
T			JOHANNESBURG, MICHIGAN	

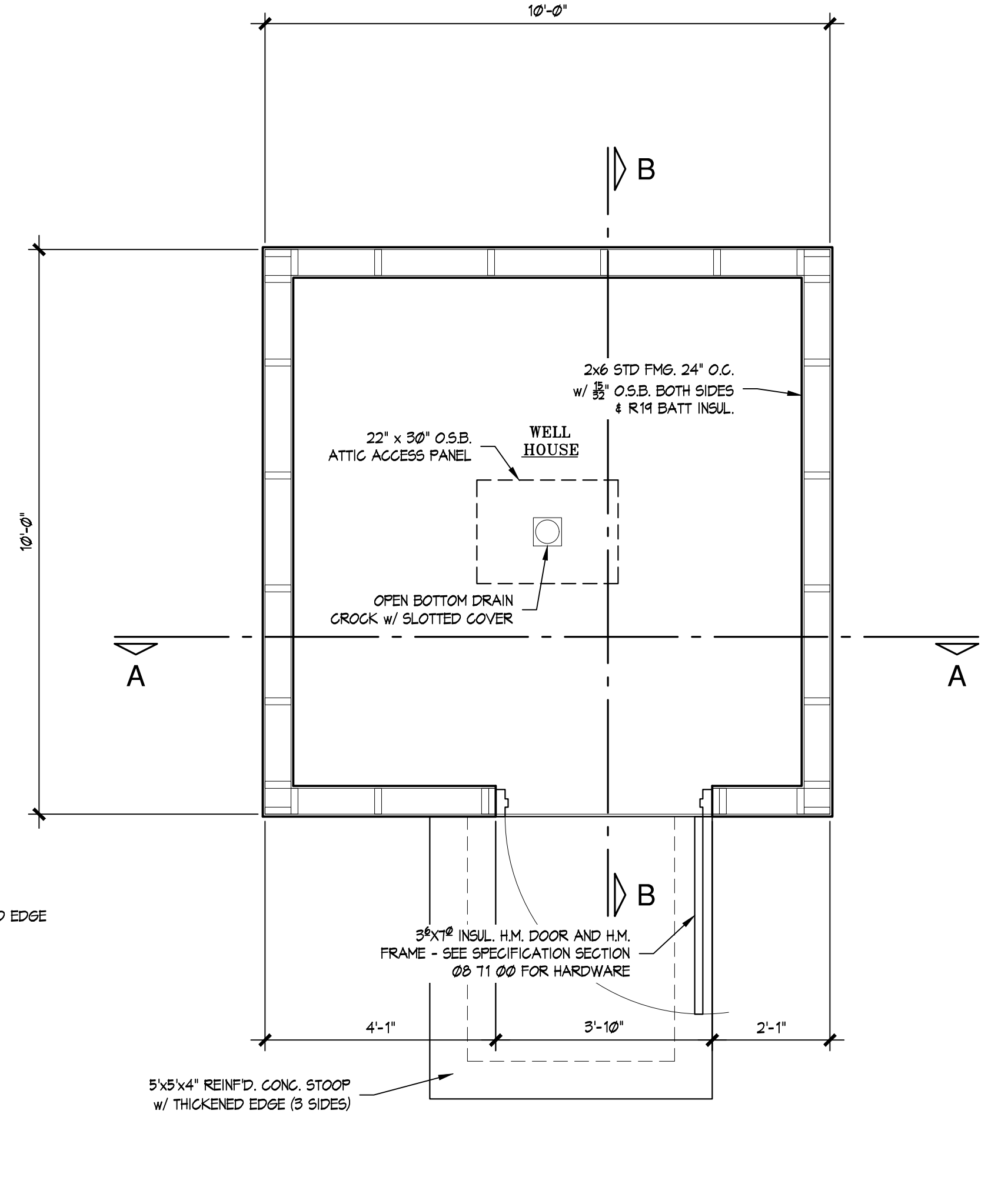
ANTHONY P. ESSON
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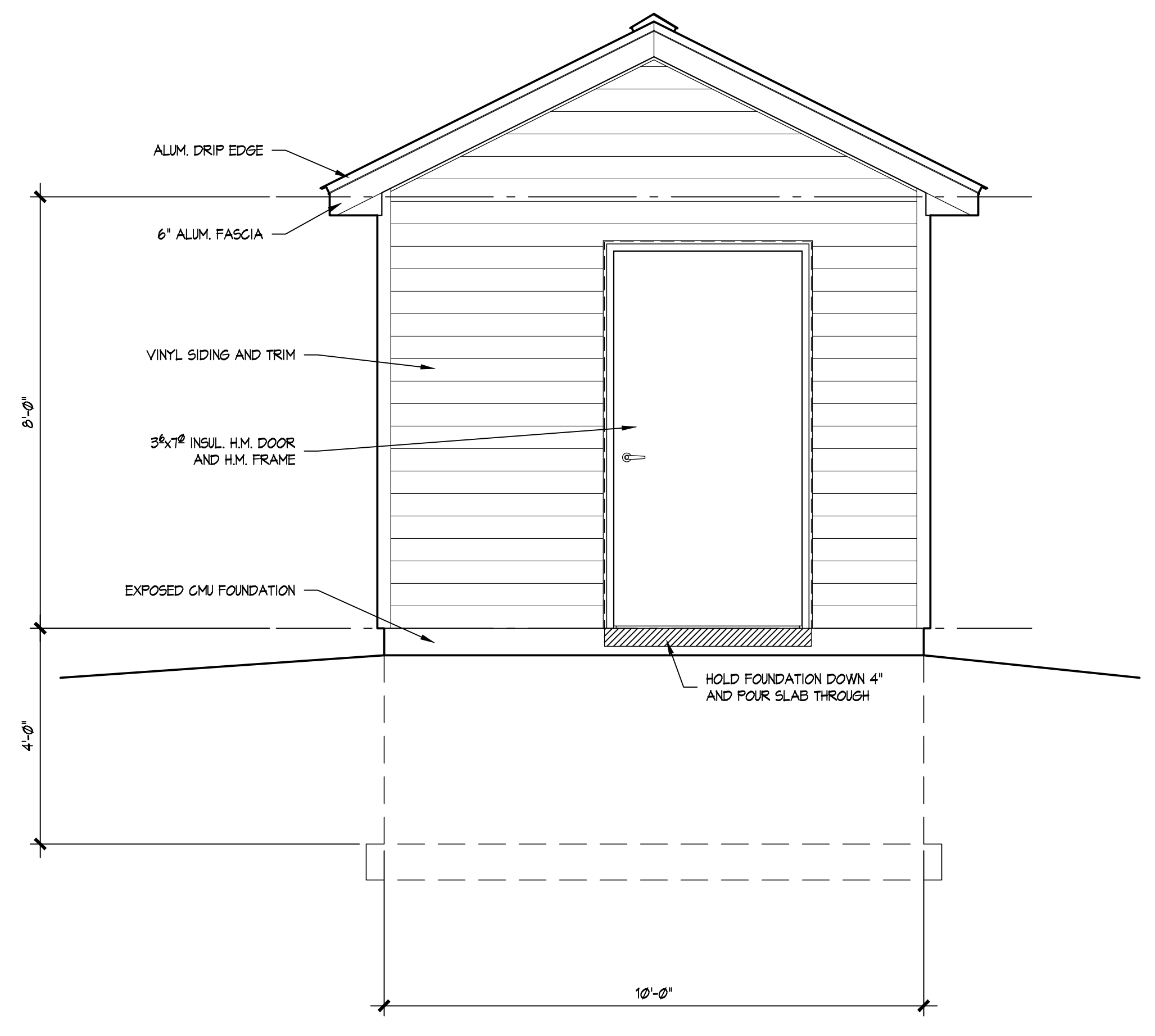
SECTION "A-A"
 SCALE: 1/2" = 1'-0"



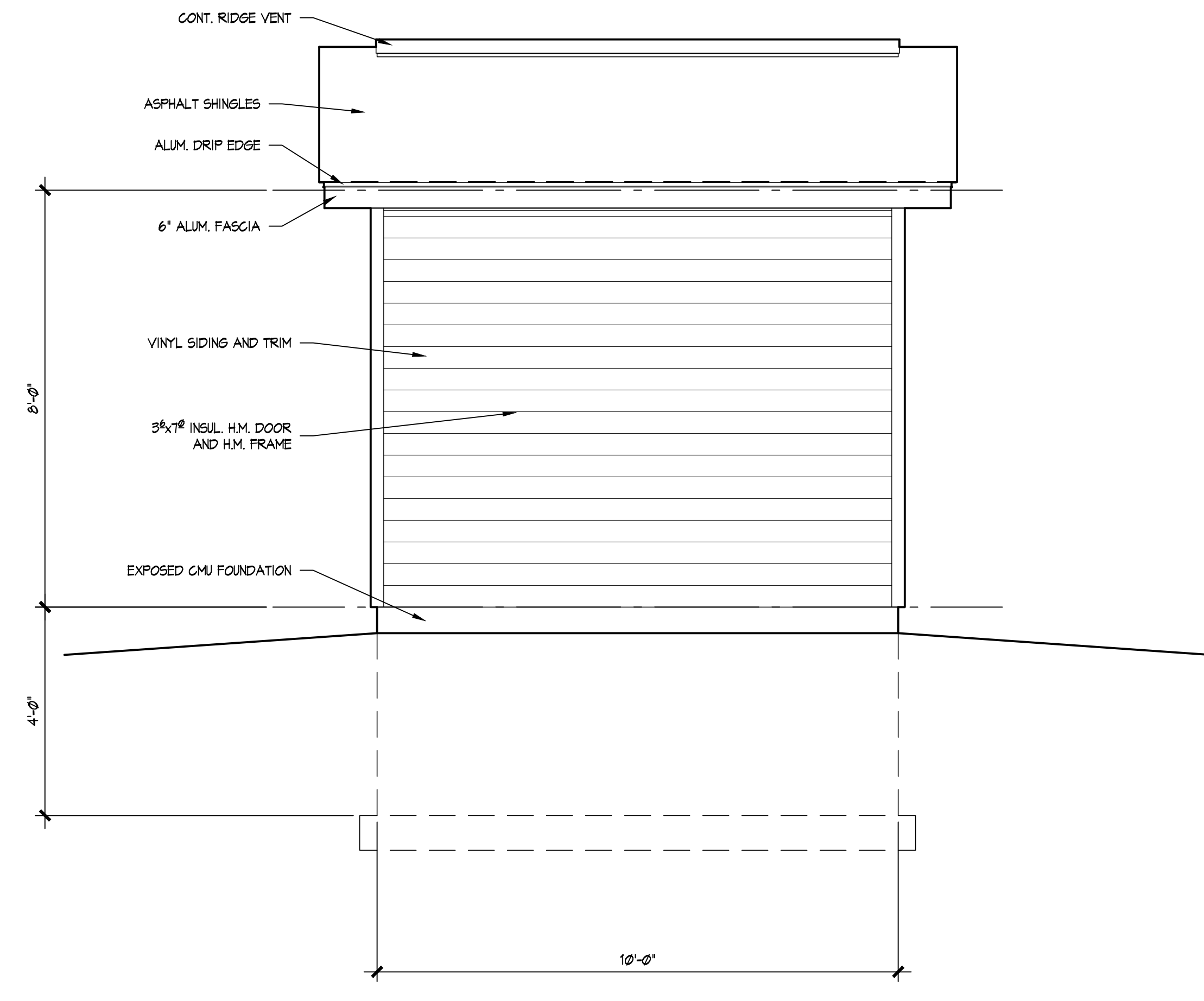
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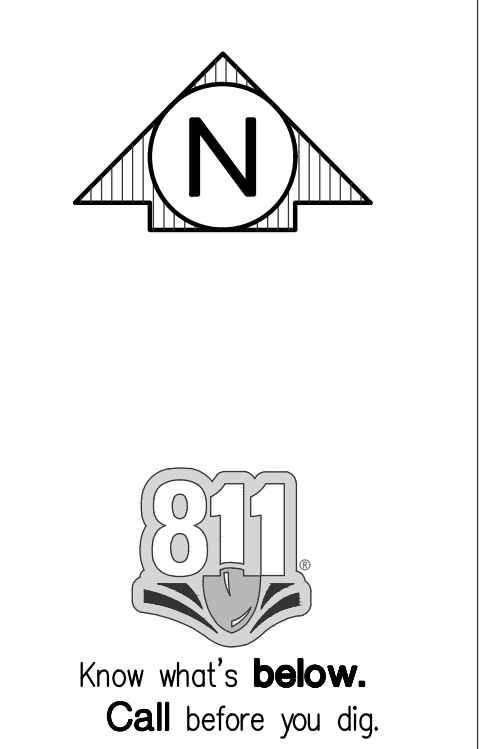
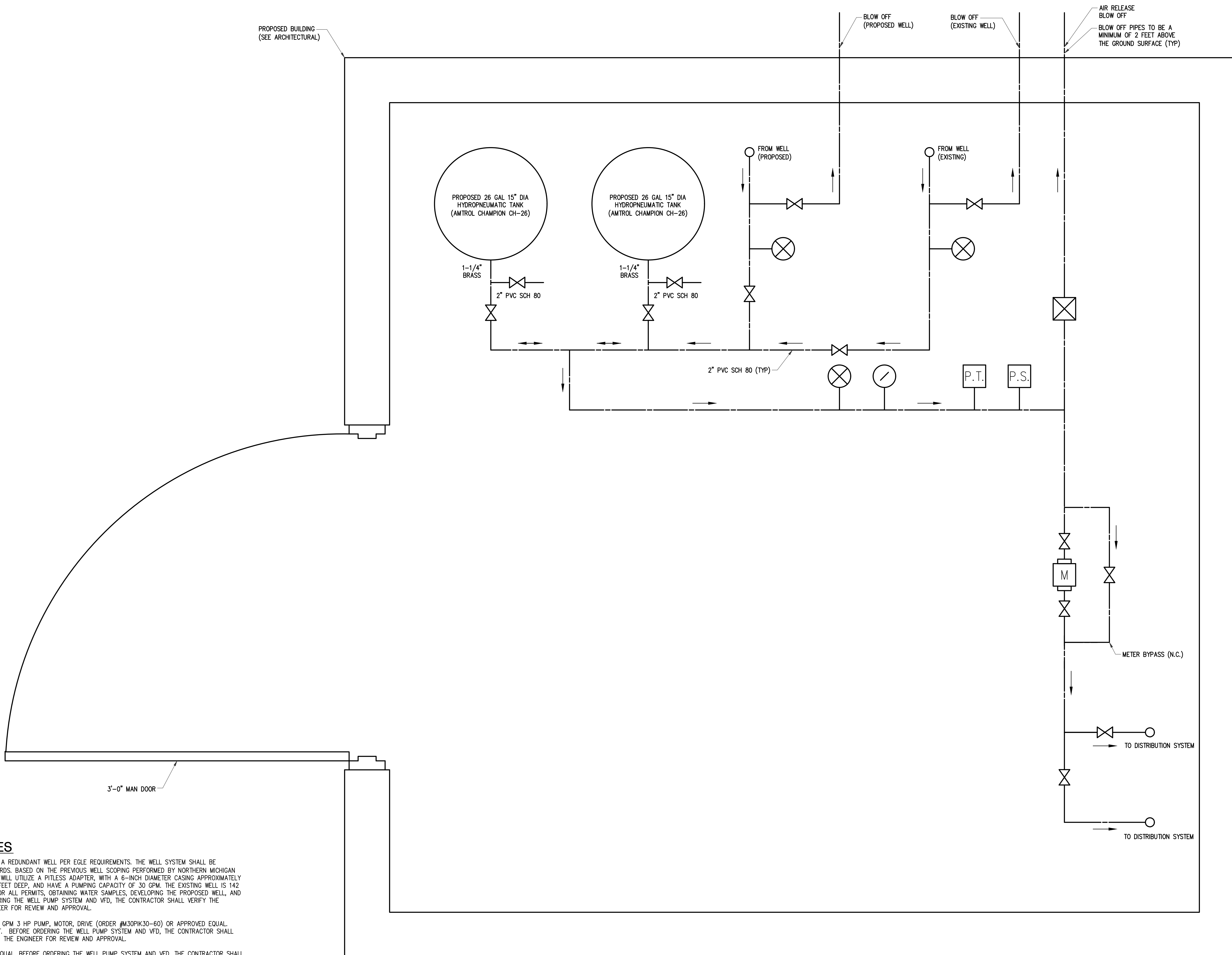
FLOOR PLAN
 SCALE: 1/2" = 1'-0"



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



EAVE ELEVATION - TYP.
 SCALE: 1/2" = 1'-0"



LEGEND

- PRESSURE GAUGE
- SAMPLING TAP
- GATE VALVE
- FLOW METER
- AIR RELEASE VALVE AND DISCHARGE
- PRESSURE TRANSDUCER
- PRESSURE SWITCH
- FLOW DIRECTION

PROPOSED WELL HOUSE LAYOUT
NO SCALE

WELL CONSTRUCTION NOTES

- THE CONTRACTOR WILL BE RESPONSIBLE FOR CONSTRUCTING A REDUNDANT WELL PER EGE REQUIREMENTS. THE WELL SYSTEM SHALL BE CONSTRUCTED TO TYPE II B (NON-TRANSIENT) WELL STANDARDS. BASED ON THE PREVIOUS WELL SCOPING PERFORMED BY NORTHERN MICHIGAN WELL SERVICES IN THE FALL OF 2023, THE PROPOSED WELL WILL UTILIZE A PITLESS ADAPTER WITH A 6-INCH DIAMETER CASING APPROXIMATELY 190 FEET DEEP, A 2-INCH DROP PIPE APPROXIMATELY 160 FEET DEEP, AND HAVE A PUMPING CAPACITY OF 30 GPM. THE EXISTING WELL IS 142 FEET DEEP. THE WELL CONTRACTOR WILL BE RESPONSIBLE FOR ALL PERMITS, OBTAINING WATER SAMPLES, DEVELOPING THE PROPOSED WELL, AND PERFORMING THE REQUIRED WELL PUMP TEST. BEFORE ORDERING THE WELL PUMP SYSTEM AND VFD, THE CONTRACTOR SHALL VERIFY THE SELECTION AND PROVIDE A RECOMMENDATION TO THE ENGINEER FOR REVIEW AND APPROVAL.
- PROPOSED WELL PUMP SYSTEM TO BE PENTEK INTELLIKIT 30 GPM 3 HP PUMP, MOTOR, DRIVE (ORDER #M30PK30-60) OR APPROVED EQUAL. PROPOSED WELL LOCATION TO BE DETERMINED BY ARCHITECT. BEFORE ORDERING THE WELL PUMP SYSTEM AND VFD, THE CONTRACTOR SHALL VERIFY THE SELECTION AND PROVIDE A RECOMMENDATION TO THE ENGINEER FOR REVIEW AND APPROVAL.
- PROPOSED VFD PENTEK INTELLIDRIVE, PD30 OR APPROVED EQUAL. BEFORE ORDERING THE WELL PUMP SYSTEM AND VFD, THE CONTRACTOR SHALL VERIFY THE SELECTION AND PROVIDE A RECOMMENDATION TO THE ENGINEER FOR REVIEW AND APPROVAL.

WELL HOUSE NOTES

- THE EXISTING WELL HOUSE SHALL REMAIN OPERATIONAL UNTIL THE PROPOSED WELL HOUSE AND PIPING IS READY FOR USE. ONCE THE PROPOSED WELL HOUSE IS READY FOR USE, THE CONTRACTOR SHALL SCHEDULE WITH THE OWNER A TIME TO CONNECT THE NEW WELL HOUSE TO THE DOMESTIC WATER DISTRIBUTION SYSTEM. THEN THE EXISTING BUILDING AND PIPING SHALL BE REMOVED AS DETAILED BY ARCHITECTURAL.
- LAYOUT IS BASED UPON PRODUCTS LISTED BY NORTHERN MICHIGAN WELL SERVICES (ESTIMATE #264, DATED 10-17-23).
- LAYOUT IS SHOWN FOR SCHEMATIC PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE FINAL LAYOUT.
- ALL PRODUCTS SHALL BE APPROVED BY NSF INTERNATIONAL FOR USE WITH POTABLE WATER SYSTEMS.
- A MINIMUM PIPING SIZE OF 2" SHALL BE USED FOR ALL MAIN LINE PIPING WITHIN THE WELL HOUSE EXCEPT BRASS CONNECTING TO HYDRO-PNEUMATIC TANKS.
- CONTRACTOR SHALL PROVIDE AN ELECTROMAGNETIC FLOW METER CAPABLE OF DISPLAYING INSTANTANEOUS FLOW RATE AND TOTAL FLOW. METER SHALL BE NSF 61 APPROVED FOR USE IN DRINKING WATER. METER SHALL HAVE AN LCD DISPLAY AND DIGITAL OUTPUT CAPABILITY. METER SHALL BE M5000 SERIES BY BADGER METER OR ENGINEER APPROVED EQUIVALENT.
- HYDRO-PNEUMATIC TANKS SHALL BE AS SHOWN ON PLANS OR APPROVED EQUAL.
- SEE THE ARCHITECTURAL PLANS FOR THE PROPOSED SITE WATER MAIN IMPROVEMENTS.
- SEE ARCHITECTURAL FOR PHASING PLAN.
- THE EXISTING WATER SERVICE IS TO REMAIN IN SERVICE WHILE CONSTRUCTION OCCURS.
- THE CONTRACTOR SHALL PROVIDE A COMPLETE SYSTEM THAT IS CAPABLE OF FULLY AUTOMATIC OPERATION.
- THE CONTRACTOR SHALL PROVIDE COMPLETE OPERATIONS AND MAINTENANCE INFORMATION AND ON-SITE TRAINING FOR THE OWNER.
- ALL PIPING, EXCEPT BLOW-OFF LINES, SHALL BE INSTALLED 3" TO 6" OFF THE FLOOR. BLOW-OFF PIPE HEIGHT MAY BE INCREASED TO ALLOW FOR EXTERIOR HEIGHT REQUIREMENTS.

- PRIOR TO PLACING THE SYSTEM ONLINE, THE SYSTEM SHALL BE PROPERLY PRESSURE TESTED AND DISINFECTED.
- ALL PVC PIPE SHALL BE SCH 80.
- ALL GATE VALVES SHALL BE BRASS.
- ALL PRESSURE GAUGES SHALL BE LOCATED ON TOP OF THE PROPOSED PIPE AND BE CLEARLY VISIBLE AND READABLE FROM THE FRONT OF THE SYSTEM. PRESSURE GAUGES SHALL BE A MINIMUM OF 4" IN DIAMETER AND HAVE A MAXIMUM PRESSURE READING OF 100 PSI.
- ALL SAMPLE TAPS SHALL HAVE BALL VALVES AND BE INSTALLED ON TOP OF THE PROPOSED PIPE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY SERVICE DISRUPTIONS WITH THE OWNER. ALL SERVICE DISRUPTIONS SHALL BE SCHEDULED A MINIMUM OF 72 HOURS IN ADVANCE.
- ALL PIPING SHALL BE FULLY SUPPORTED AT A MINIMUM SPACING OF 6 FEET.
- TANK VESSELS SHALL BE INSTALLED WITH 6" SEPARATION BETWEEN VESSELS TO MINIMIZE THE EQUIPMENT FOOTPRINT.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL APPLICABLE PERMITS.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR HYDRO-PNEUMATIC TANKS, PIPING, FITTINGS, VALVES, VFD, FLOW METER, WELL PUMP, AND ALTERNATING CONTROL PANEL.
- THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING AN OPERATION AND MAINTENANCE MANUAL FOR THE SYSTEM (1 BOUND COPY, 1 ELECTRONIC COPY). THE SYSTEM SHALL INCLUDE THE FOLLOWING ITEMS:
 - NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF CONTRACTORS, SUBCONTRACTORS, AND SUPPLIERS, INCLUDING LOCAL SOURCES OF SUPPLIES OR REPLACEMENTS.
 - CATALOG SHEETS, TECHNICAL BROCHURES, OR OTHER PRODUCT DATA, DESCRIBING THE ITEM. DELETE INAPPROPRIATE INFORMATION.
 - SUPPLEMENT PRODUCT DATA TO SHOW THE RELATION OF COMPONENT PARTS AND CONTROL AND FLOW DIAGRAMS.
 - SUPPLEMENT THE PRODUCT DATA WITH A TYPED NARRATIVE SEQUENCE OF INSTRUCTIONS. SUMMARIZE MANUFACTURER'S INSTRUCTIONS.
 - COPIES OF WARRANTIES AND BONDS, WHERE APPLICABLE.

WELL CONTROL NOTES

- THE CONTRACTOR SHALL PROVIDE A COMPLETE SYSTEM INCLUDING ALL WIRING, SWITCHES, CONTROLLER, ENCLOSURE, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE EXISTING WELL PUMP IS CAPABLE OF BEING OPERATED BY A VFD. IF THE EXISTING WELL IS NOT COMPATIBLE WITH A VFD A NEW WELL PUMP SHALL BE INSTALLED.
- THE PROPOSED VFDs SHALL BE COMPATIBLE WITH EXISTING AND/OR PROPOSED WELL PUMPS. PROPOSED ALTERNATING CONTROL PANEL VOLTAGE, ETC. THE PROPOSED VFDs ARE TO BE LOCATED WITHIN THE PROPOSED WELL HOUSE AND OPERATE THE WELL PUMPS THAT ARE APPROXIMATELY 30 FEET AWAY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING COMPATIBILITY OF ALL EXISTING AND PROPOSED EQUIPMENT.
- THE WELL PUMP VFDs SHALL UTILIZE A PRESSURE TRANSDUCER WITH BACKUP PRESSURE SWITCH. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED COMPONENTS FOR A COMPLETE SYSTEM. THE PRESSURE RANGES SHALL BE ADJUSTED IN THE FIELD TO ALLOW OPERATION OF BOTH WELLS AS NECESSARY.
- CONTRACTOR SHALL PROVIDE AN ALTERNATING CONTROL PANEL CAPABLE OF DISPLAYING WHICH PUMP IS RUNNING, DISPLAYING POWER TO THE UNIT, OPTIONS FOR ALTERNATING PUMPS BASED ON 24 HOUR INTERVALS. ALTERNATING CONTROL PANEL SHALL BE PENTEK INTELLIDRIVE (SKU: P1KVDAL1) OR ENGINEER APPROVED EQUIVALENT. THE NEW WELL PUMP ALTERNATING CONTROL PANEL SHALL BE LOCATED IN THE NEW BUILDING AND NEW CONTROL WIRING SHALL BE INSTALLED CONNECTING BOTH VFDs TO THE ALTERNATING CONTROL PANEL.
- THE CONTRACTOR SHALL EXTEND POWER TO THE ALTERNATING CONTROL PANEL IN ACCORDANCE WITH ELECTRICAL CODE.
- THE CONTRACTOR SHALL PROVIDE COMPLETE SHOP DRAWINGS FOR ALL EQUIPMENT PROPOSED FOR THE INSTALLATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROGRAMMING, TESTING, AND STARTUP SERVICES. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF FOUR HOURS OF TRAINING FOR THE OWNER.
- VFDs TO BE SET TO ENSURE MINIMUM FLOW RATES ARE MAINTAINED TO SUFFICIENTLY COOL THE PUMP AND THE MOTOR PER MANUFACTURER'S RECOMMENDATIONS.

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DRAWING TITLE
PROPOSED MECHANICAL PIPING DETAIL

PROJECT TITLE
JOHANNESBURG LEWISTON AREA SCHOOLS - 2024 SUMMER PROJECTS
JOHANNESBURG BUILDING WATER WELL UPGRADE
JOHANNESBURG, MICHIGAN

SHEET	DATE	PROJECT NO.	219-24E.1
	MAY 1, 2024		
			C1.0

GENERAL ELECTRICAL DEMOLITION NOTES:

- 1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. THE EXTENT OF DEMOLITION WORK SHALL BE AS REQUIRED BY THE NEW WORK.
2. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING SYSTEMS/EQUIPMENT PRIOR TO ISSUING HIS BID. ALL EXISTING PANEL/WIRE/LIGHT SIZES AND ROUTINGS SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED.
3. ALL ELECTRICAL ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING, BUT NOT LIMITED TO, WIRES, CONDUITS, SUPPORTS, FIXTURES, LAMPS, ETC. REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF OFF SITE.
4. ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED, BY THE OWNER OR OWNER'S REPRESENTATIVE, AT LEAST (7) DAYS IN ADVANCE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING OPERATION.
5. WHERE DEMOLITION OF EXISTING SERVICES ARE REQUIRED TO ACCOMMODATE THE PROJECT PHASING/SCHEDULING, AND SERVICES ARE TO BE INTERRUPTED IN AREAS THAT ARE REMAINING OCCUPIED, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES/CONNECTIONS TO THE OCCUPIED AREAS TO MAINTAIN ITS PRESENT OPERATION. IF SYSTEM SHUT DOWNS ARE REQUIRED, THE CONTRACTOR SHALL SCHEDULE WORK TO BE PERFORMED AT UNOCCUPIED HOURS.
6. ALL ITEMS TO BE REMOVED AND/OR RELOCATED SHALL BE REMOVED AND/OR RELOCATED TOGETHER WITH ALL RELATED ITEMS AS REQUIRED BY THE NEW WORK TO BE PERFORMED.
7. CONTRACTOR SHALL COORDINATE ALL REMOVAL AND/OR RELOCATION WITH THE EXTENT OF THE NEW WORK AND WITH ALL OTHER TRADES INVOLVED.

GENERAL ELECTRICAL POWER, AUXILIARY, & LIGHTING NOTES:

- 1. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS (I.E. CONDUIT, WIRE, PULL BOXES, FIXTURES, ETC.) REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.
2. ALL ELECTRICAL SYSTEMS SHALL BE PROVIDED/INSTALLED TO MEET APPLICABLE BUILDING CODES: MICHIGAN BUILDING CODE, MICHIGAN ELECTRICAL CODE, N.E.C., LIFE SAFETY CODE NFPA 101, MICHIGAN ENERGY CODE, ETC.
3. VERIFY REQUIREMENTS OF ALL MECHANICAL/PLUMBING/ARCHITECTURAL EQUIPMENT WITH SHOP DRAWING SUBMITTALS PRIOR TO INSTALLATION. NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN SHOP DRAWINGS AND PLANS.
4. COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL OUTLETS WITH LOCATIONS/HEIGHTS OF COUNTERTOPS, SINKS, FURNITURE, CABINETS, ETC. WITH ARCHITECTURAL ELEVATIONS AND OTHER TRADES.
5. INSTALL ALL MISCELLANEOUS STEEL, STRUT, ETC. REQUIRED TO SUPPORT/HANG EQUIPMENT, CONDUIT, ETC. COORDINATE ATTACHMENTS WITH STRUCTURAL TRADES.
6. COORDINATE THE INSTALLATION OF ALL ELECTRICAL WORK WITH ALL OTHER TRADES. CONTRACTOR SHALL VERIFY ALL MECHANICAL AND ELECTRICAL CLEARANCES PRIOR TO FABRICATION OF ANY NEW WORK. ELECTRICAL EQUIPMENT, WIRING, ETC. SHALL NOT INTERFERE WITH MECHANICAL EQUIPMENT CLEARANCE SPACES.
7. ALL CIRCUITS FOR POWER, LIGHTING, ETC. SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. ALL CIRCUITS SHALL BE CONCEALED IN WALLS, INCLUDING (E) WALLS. SURFACE MOUNTED RACEWAY SHALL NOT BE USED, UNLESS NOTED OTHERWISE, OR UNLESS ABSOLUTELY NECESSARY. APPROVAL FROM ARCHITECT/ENGINEER MUST BE OBTAINED PRIOR TO USING SURFACE MOUNTED CONDUIT.
8. UNLESS OTHERWISE NOTED, EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL NEW PENETRATIONS THROUGH ALL WALLS WITH FIRE CAULK IN ACCORDANCE WITH CURRENT BUILDING CODE REQUIREMENTS.
9. COORDINATE EXACT FIXTURE LOCATIONS WITH ARCHITECTURAL PLANS (REFLECTED CEILING PLANS, BUILDING ELEVATIONS ETC.).
10. ALL EMERGENCY LIGHTS AND EXIT LIGHTS SHALL BE CIRCUITED TO UNSWITCHED/HOT LEG OF THE GENERAL LIGHTING CIRCUIT OF THE AREA SERVED BY THE EMERGENCY/EXIT LIGHTS.
11. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ROUGH-INS (IE BOXES, CONDUIT, ETC.) FOR AUXILIARY ELECTRICAL SYSTEMS (IE, TELECOM, SECURITY, ETC.). COORDINATE REQUIREMENTS WITH AUXILIARY ELECTRICAL SUB-CONTRACTORS PRIOR TO ISSUE OF BID AND VERIFY ALL WORK REQUIRED.

ELECTRICAL ABBREVIATION LIST

Table with columns: ABBREVIATION, DESCRIPTION. Lists symbols and abbreviations for items like AMPS, ABOVE FINISHED FLOOR, AIR HANDLING UNIT, BREAKER, CONDUIT, etc.

ELECTRICAL SYMBOL LIST

Table with columns: SYMBOL, DESCRIPTION. Lists symbols for items like FIXTURE TYPE, RECESSED LIGHT FIXTURE, SURFACE MOUNTED LIGHT FIXTURE, etc.

Table with columns: SYMBOL, DESCRIPTION. Lists symbols for items like SINGLE PHASE MOTOR, THREE PHASE MOTOR, COMBINATION MOTOR STARTER WITH DISCONNECT SWITCH, etc.

Table with columns: SYMBOL, DESCRIPTION. Lists symbols for items like CIRCUIT BREAKER, SWITCH, AUTOMATIC OR MANUAL TRANSFER SWITCH, FUSE, TRANSFORMER, etc.

Lighting Fixture Schedule table with columns: TYPE, DESCRIPTION, MANUFACTURERS, LAMPS, VOLTS/WATTS, REMARKS. Contains detailed fixture specifications and notes.

STANDARD MOUNTING HEIGHTS

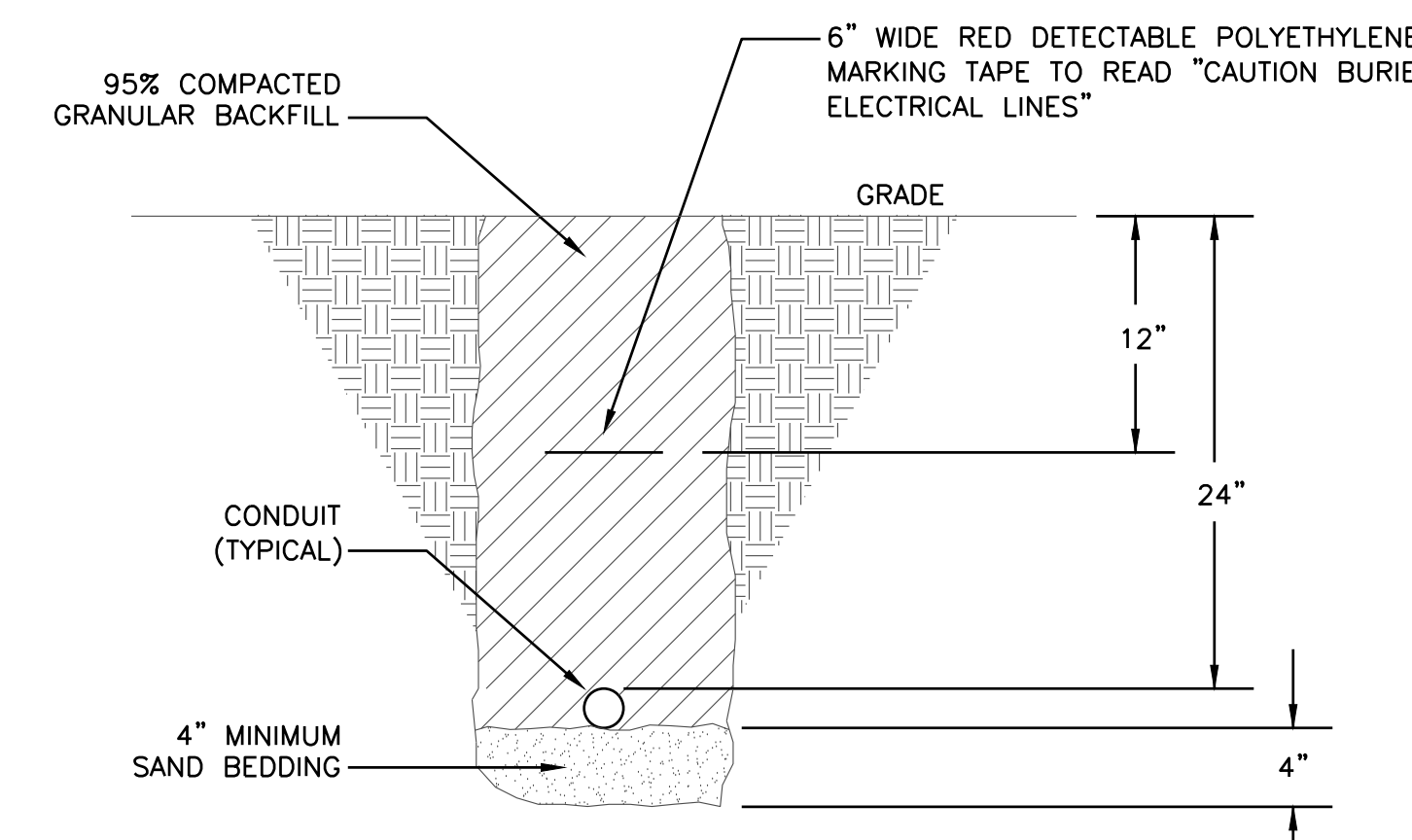
- CONVENIENCE AND SPECIAL PURPOSE RECEPTACLE OUTLETS, TELE/DATA AND COMMUNICATIONS OUTLETS, NOT OTHERWISE SPECIFIED:
• 18" AFF TO THE MIDDLE OF BOX
• 16" AFF TO BOTTOM OF BOX IN CMU WALLS
LIGHT SWITCHES, MOTOR CONTROL DEVICES, AND FIRE ALARM PULL STATIONS, NOT OTHERWISE SPECIFIED:
• 48" AFF TO THE MIDDLE OF BOX
• 48" AFF TO THE TOP OF BOX IN CMU WALLS
T-STATS, TEMP. SENSORS, CO2 SENSORS, NOT OTHERWISE SPECIFIED:
• 48" AFF TO THE MIDDLE OF BOX
• 48" AFF TO THE TOP OF BOX IN CMU WALLS
FIRE ALARM HORNS, SPEAKERS, STROBES, AND COMBINATION DEVICES, NOT OTHERWISE SPECIFIED:
• 96" AFF (TO TOP OF BOX) OR 6" BELOW CEILING, WHICHEVER IS LESS - BUT NO LOWER THAN 80" AFF.
GFI RECEPTABLES IN TOILET ROOMS AND JANITOR CLOSETS, NOT OTHERWISE SPECIFIED:
• 48" AFF TO TOP OF BOX.
LIGHTING AND RECEPTACLE BRANCH CIRCUIT PANELBOARDS AND LIGHTING CONTROLLERS:
• 6'-6" AFF TO TOP OF ENCLOSURE.

METHODS OF NOTATION

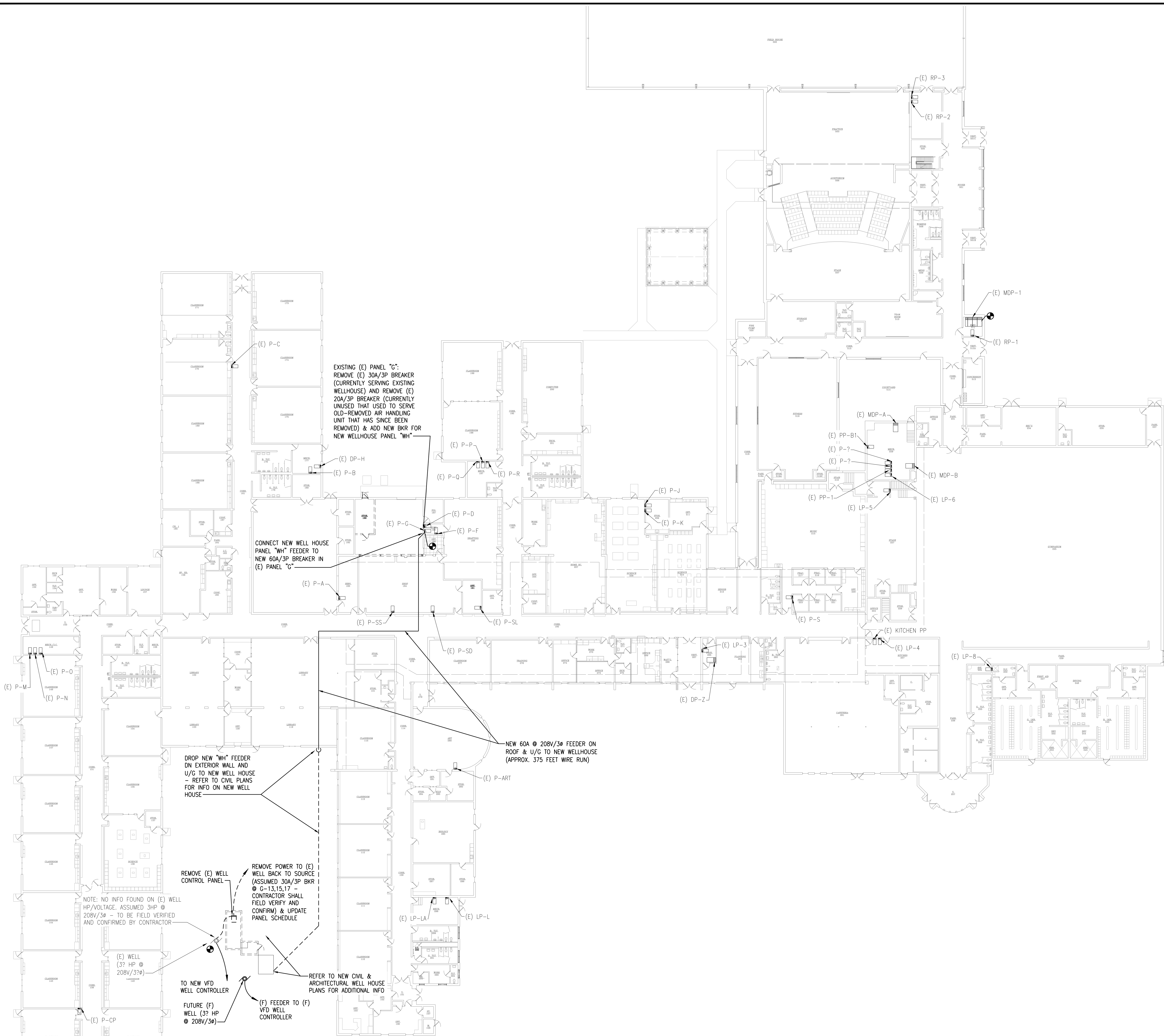
- (FA) LIGHT FIXTURE DESIGNATION (I.E. FIXTURE TYPE "FA" - SEE FIXTURE SCHEDULE)
(E) EQUIPMENT DESIGNATION (I.E. EXHAUST FAN NUMBER 1)
(1) CONSTRUCTION KEYED NOTE NUMBER
(D) DEMOLITION KEYED NOTE NUMBER
--- EXISTING SYSTEM COMPONENT TO BE REMOVED
--- NEW SYSTEM COMPONENT
--- EXISTING SYSTEM COMPONENT TO REMAIN
• POINT OF NEW CONNECTION
A-3 CIRCUIT HOMERUN (BACK TO PANEL "A" - REFER TO PANEL SCHEDULE)

ELECTRICAL DRAWING INDEX

- E0.1 ELECTRICAL TITLE SHEET
E1.1 ELECTRICAL OVERALL PLAN
E2.1 ELECTRICAL NEW WORK PLAN & 1-LINE
M2.1 MECHANICAL PLAN



ELECTRICAL CONDUIT TRENCHING DETAIL
NO SCALE



NORTH
NEW WELLHOUSE - ELECTRICAL OVERALL PLAN
SCALE: 1" = 20'-0"

DRAWING TITLE

ELECTRICAL OVERALL PLAN

PROJECT TITLE

JOHANNESBURG BUILDING WATER WELL UPGRADE

PROJECT NO.

219-24E.1

DATE

MAY 1, 2024
JUNE 20, 2024

SHEET

E1.1

JOHANNESBURG LEWISTON AREA SCHOOL S- 2024 SUMMER PROJECTS
JOHANNESBURG, MICHIGAN

JOHANNESBURG, MICHIGAN

DATE

MAY 1, 2024
JUNE 20, 2024

SHEET

E1.1

PROJECT TITLE

JOHANNESBURG BUILDING WATER WELL UPGRADE

PROJECT NO.

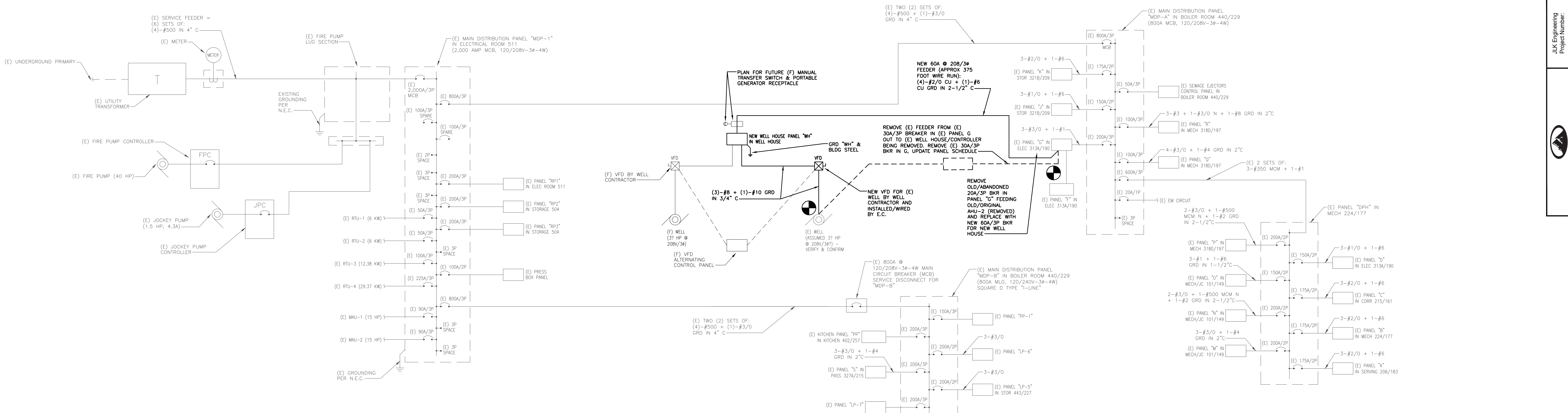
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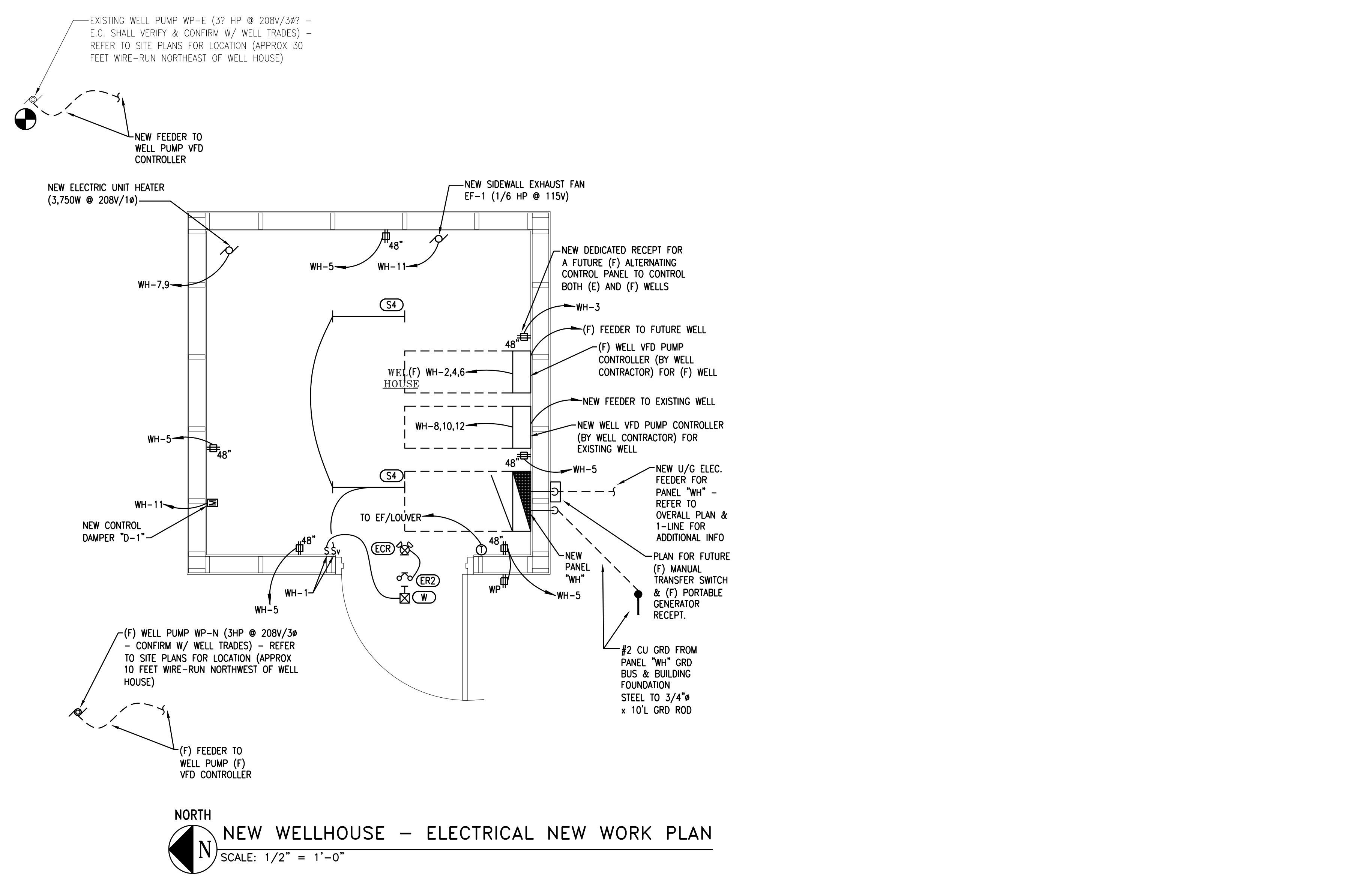
E1.1



PANEL: (E) G		225A MLO	BUSING SIZE: 225A	FED FROM: (E) MDP-A	
# OF POLES: 30	VOLTS: 208/3P/3W	NEUTRAL BUS: 225A	MOUNTING: SURFACE		
PHASE: 3	GROUND BUS: YES	TVSS: NO	AIC RMS AMPS: 14,000		
HERTZ: 60	ISOLATED GROUND: NO	REMARKS: THIS IS AN EXISTING (E) PANEL LOCATED IN EXISTING ELEC CLOSET 190 NEAR WOOD SHOP			
LOCATION: (E) ELEC ROOM 313A/190					
CIRCUIT	BREAKER	DESCRIPTION	A	B	C
1	(E) 15	(E) SHAKER IN WOOD SHOP	1450	1450	1450
3	-	-	-	-	-
5	-	-	-	-	-
7	-	NEW SPACE - REMOVE OLD 20A/3P BKR (OLD AHU-2)	0	0	0
9	-	NEW SPACE - REMOVE OLD 20A/3P BKR (OLD AHU-2)	0	0	0
11	-	NEW SPACE - REMOVE OLD 20A/3P BKR (OLD AHU-2)	0	0	0
13	(E) 45	(E) SPARE	0	0	0
15	-	-	-	-	-
17	-	-	-	-	-
19	(E) 100	TO (E) SUB PANEL F	9600	9600	9600
21	-	-	-	-	-
23	-	-	-	-	-
25	(E) 20	(E) DUST COLLECTOR SHAKER	1560	1560	1560
27	-	-	-	-	-
29	-	(E) SPACE	0	0	0
2	(E) 20	(E) SPARE	0	0	0
4	-	-	-	-	-
6	-	-	-	-	-
8	(E) 20	(E) SPARE	0	0	0
10	-	-	-	-	-
12	-	-	-	-	-
14	NEW 60	NEW 60A/3P BKR TO FEED NEW WELL HOUSE PANEL "WH"	4700	4700	4700
16	-	-	-	-	-
18	-	-	-	-	-
20	-	NEW SPACE-REMOVE 30A/3P BKR (OLD WELLHOUSE)	0	0	0
22	-	NEW SPACE-REMOVE 30A/3P BKR (OLD WELLHOUSE)	0	0	0
24	-	NEW SPACE-REMOVE 30A/3P BKR (OLD WELLHOUSE)	0	0	0
26	(E) 60	(E) DUST COLLECTOR	5400	5400	5400
28	-	-	-	-	-
30	-	-	-	-	-
KVA: 67			CONNECTED AMPS: 160.1	PHASE WATTS: 22,710	22,710
DEMAND KVA: 63			DEMAND AMPS: 152.1	22,710	21,150

NEW WELLHOUSE - ELECTRICAL 1-LINE DIAGRAM
 NO SCALE

PANEL: WH		60A MCB	BUSING SIZE: 100A	FED FROM: (E) PANEL G	
# OF POLES: 30	VOLTS: 120-208/3PHW	NEUTRAL BUS: 100A	MOUNTING: SURFACE		
PHASE: 3	GROUND BUS: YES	TVSS: NO	AIC RMS AMPS: 14,000		
HERTZ: 60	ISOLATED GROUND: NO	REMARKS: ELECTRICAL ROOM 190 NEAR SHOP			
LOCATION: NEW WELLHOUSE					
CIRCUIT	BREAKER	DESCRIPTION	A	B	C
1	20	LIGHTING FOR WELL HOUSE	116.2		
3	20	RECEPT FOR VFD ALTERNATING CONTROL PANEL		180	
5	20	RECEPTS - NEW WELL HOUSE			1080
7	30	ELEC UNIT HEATER (3.75 KW @ 208/1P)	1875	1875	
9	-	-	-	-	-
11	20	EXHAUST FAN (1/6 HP & 4A @ 115V) & INTAKE DAMPER	0	0	480
13	-	-	-	-	-
15	-	-	-	-	-
17	-	-	-	-	-
19	-	-	-	-	-
21	-	-	-	-	-
23	-	-	-	-	-
25	-	-	-	-	-
27	-	-	-	-	-
29	-	-	-	-	-
2	(F) 20	FUTURE (F) WELL PUMP WP-N (37 HP & 11 FLA @ 208V/3P)	1380		
4	-	-	-	1380	
6	-	-	-		1380
8	20	(E) WELL PUMP WP-E (ASSUMED 37 HP & 11 FLA @ 208V/3)	1380		
10	-	-	-	1380	
12	-	-	-		1380
14	-	-	-	0	0
16	-	-	-	0	0
18	-	-	-	0	0
20	-	-	-	0	0
22	-	-	-	0	0
24	-	-	-	0	0
26	-	-	-	0	0
28	-	-	-	0	0
30	-	-	-	0	0
KVA: 14			CONNECTED AMPS: 38.5	PHASE WATTS: 4,751	4,815
DEMAND KVA: 14			DEMAND AMPS: 38.5	4,751	4,300



NEW WELLHOUSE - ELECTRICAL NEW WORK PLAN
 SCALE: 1/2" = 1'-0"

GENERAL MECHANICAL DEMOLITION NOTES:

- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. THE EXTENT OF DEMOLITION WORK SHALL BE AS REQUIRED BY THE NEW WORK.
- THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING SYSTEMS/EQUIPMENT PRIOR TO ISSUING THEIR BID. ALL EXISTING PIPE/DUCT SIZES AND ROUTINGS/LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
- ALL MECHANICAL ITEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING, BUT NOT LIMITED TO, HANGERS, SUPPORTS, CONTROLS, ETC. REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF OFF-SITE. CAP ALL OPEN ENDED PIPING AND DUCTWORK.
- ANY INTERRUPTION OF EXISTING SERVICES AND/OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED, BY THE OWNER OR OWNER'S REPRESENTATIVE, AT LEAST (7) DAYS IN ADVANCE SO AS NOT TO INTERFERE WITH THE PRESENT BUILDING OPERATION.
- WHERE DEMOLITION OF EXISTING SERVICES ARE REQUIRED TO ACCOMMODATE THE PROJECT PHASING/SCHEDULING, AND SERVICES ARE TO BE INTERRUPTED IN AREAS THAT ARE REMAINING OCCUPIED, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES AND/OR CONNECTIONS TO THE OCCUPIED AREAS TO MAINTAIN ITS PRESENT OPERATION. IF SYSTEM SHUT DOWNS ARE REQUIRED, THE CONTRACTOR SHALL SCHEDULE WORK TO BE PERFORMED AT UNOCCUPIED HOURS.
- ALL ITEMS TO BE REMOVED AND/OR RELOCATED SHALL BE REMOVED AND/OR RELOCATED TOGETHER WITH ALL RELATED ITEMS AS REQUIRED BY THE NEW WORK TO BE PERFORMED.
- COORDINATE ALL REMOVAL AND/OR RELOCATION WITH THE EXTENT OF THE NEW WORK AND WITH ALL OTHER TRADES INVOLVED.

GENERAL MECHANICAL NOTES:

- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL SCOPE OF WORK. CONTRACTOR SHALL PROVIDE ALL MECHANICAL SYSTEMS AND ASSOCIATED EQUIPMENT COMPLETE AND INCLUDE ALL NECESSARY OFFSETS, FITTINGS, AND OTHER COMPONENTS REQUIRED DUE TO INTERFERENCES, SPACE CONSTRAINTS, CODES, ETC.
- MECHANICAL SYSTEMS SHALL BE INSTALLED PER MICHIGAN MECHANICAL CODE, MICHIGAN PLUMBING CODE, INTERNATIONAL FUEL GAS CODE, APPLICABLE NFPA BUILDING CODES (I.E. 101, 90A, ETC.), AND APPLICABLE BUILDING CODES (I.E. MICHIGAN BUILDING CODE, ETC.).
- VERIFY REQUIREMENTS OF ALL EQUIPMENT WITH SHOP DRAWING SUBMITTALS PRIOR TO INSTALLATION. NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN SHOP DRAWINGS AND PLANS.
- COORDINATE THE INSTALLATION OF MECHANICAL WORK WITH ALL OTHER TRADES. VERIFY ALL MECHANICAL, PLUMBING AND ELECTRICAL CLEARANCES PRIOR TO THE FABRICATION OF ANY WORK, DUCTWORK, PIPING, ETC. SHALL NOT BE LOCATED DIRECTLY OVER ELECTRICAL PANELS/EQUIPMENT, OR INTERFERE WITH MECHANICAL/ ELECTRICAL EQUIPMENT CLEARANCES.
- PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL, HANGERS, ETC., FOR THE PROPER INSTALLATION OF ALL MECHANICAL SYSTEMS. DUCTWORK OR PIPING SHALL NOT BE SUPPORTED FROM/BY EQUIPMENT OR EQUIPMENT CONNECTIONS.
- COORDINATE ALL FLOOR, WALL, AND ROOF PENETRATIONS, EQUIPMENT PADS, LOUVERS, ETC. WITH ARCHITECTURAL/STRUCTURAL TRADES PRIOR TO ROUGH-IN. UNLESS NOTED OTHERWISE, EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, CORING, PATCHING ASSOCIATED WITH THEIR WORK. CUTTING, CORING, PATCHING WORK SHALL BE PERFORMED BY A QUALIFIED SUB-CRONTACTOR AND MATCH EXISTING OR NEW FINISHES.

MECHANICAL SYMBOL LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PIPE ELBOW UP		RECTANGULAR TAKE-OFF (SINGLE LINE)
	PIPE ELBOW DOWN		RECTANGULAR TAKE-OFF (DOUBLE LINE)
	DIRECTION OF FLOW		ROUND TAKE-OFF (SINGLE LINE)
	UNION		ROUND TAKE-OFF (DOUBLE LINE)
	CONCENTRIC REDUCER		SPIN-IN FITTING (WITH VOLUME DAMPER)
	ECCENTRIC REDUCER		RECTANGULAR ELBOW (WITH TURNING VANES)
	PIPE CAP OR PLUG		RADIUS RECTANGULAR ELBOW
	ISOLATION VALVE		RADIUS ROUND ELBOW
	FLOOR DRAIN (PLAN VIEW)		DUCT UP (SINGLE LINE)
	FLOOR DRAIN (ELEVATION)		DUCT DOWN (SINGLE LINE)
	CLEAN OUT (N FLOOR)		CONCENTRIC TRANSITION (SINGLE LINE)
	CLEAN OUT (N LINE)		ECCENTRIC TRANSITION (SINGLE LINE)
	BACKFLOW PREVENTER		CROSS SECTION OF SUPPLY AIR DUCT
	THERMOSTAT		CROSS SECTION OF EXHAUST/RETURN AIR DUCT
	DOMESTIC COLD WATER PIPING		RETURN OR EXHAUST CEILING GRILLE
	SANITARY WASTE PIPING		SUPPLY AIR GRILLE - SIDEWALL MOUNTED
	STORM SEWER PIPING		RETURN AIR GRILLE - SIDEWALL MOUNTED
	SANITARY VENT PIPING		MOTORIZED DAMPER
	GAS PIPING (NATURAL GAS OR PROPANE)		

MECHANICAL ABBREVIATION LIST

ABBREVIATION	DESCRIPTION
AF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CONT	CONTINUATION OR CONTINUED
CONTR	CONTRACTOR
COORD	COORDINATE
CW	DOMESTIC COLD WATER
DB	DRY BULB TEMPERATURE
DEG	DEGREES
DN	DOWN
DW&V	DRAINAGE WASTE & VENT
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
E.C.	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EG	EXHAUST GRILLE OR REGISTER
ELEC	ELECTRICAL
ELEV	ELEVATION
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
(F)	FUTURE
FA	FRESH AIR
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FLR	FLOOR
FPM	FEET PER MINUTE
FT	FEET
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HR	HOUR
HTG	HEATING
I.E.	INVERT ELEVATION
IN	INCHES
ISP	INTERNAL STATIC PRESSURE
IW	INDIRECT WASTE
KVA	KILO-VOLT-AMPERE
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LRA	LOCKED ROTOR AMPS
MA	MIXED AIR
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
M.C.	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NOM	NOMINAL
NPCW	NON POTABLE WATER
OA	OUTSIDE AIR
P.C.	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PRI	PRIOR TO ROUGH-IN
PSIA	POUNDS PER SQUARE INCH (ABSOLUTE)
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RA	RETURN AIR
RAG	RETURN AIR GRILLE OR REGISTER
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SP	STATIC PRESSURE
SqFt	SQUARE FOOT/SQUARE FEET
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
U/G	UNDERGROUND (BELOW GRADE)
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
V	VENT
VD	VOLUME DAMPER
VTR	VENT THRU ROOF
W	WASTE
WG	WATER GAUGE

UNIT I.D.	SYSTEM SERVED	AIRFLOW RATE (CFM)	TYPE	FREE AREA SQ.FT.	FACE VELOCITY (FPM)	PRESSURE DROP (IN.WC.)	OVERALL			CONSTRUCTION	COLOR	MODEL NO.	REMARKS
							WIDTH (INCHES)	HEIGHT (INCHES)	DEPTH (INCHES)				
L-1	OUTDOOR AIR INTAKE	750	INTAKE	1.78	421	0.02	24	24	4	EXTRUDED ALUMINUM	NOTE 2	ESD-403	SEE NOTES

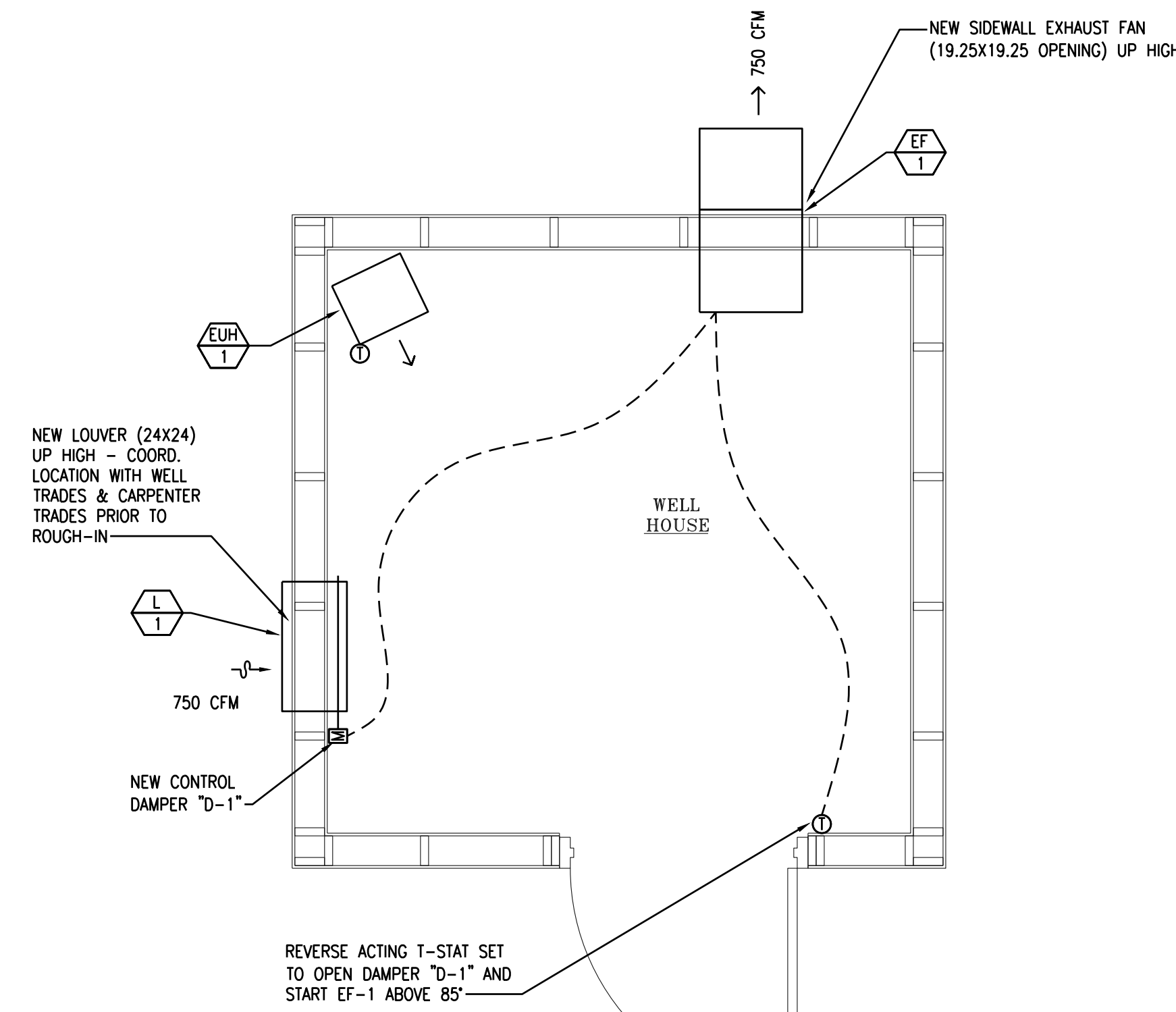
- NOTES:
- MODEL NUMBERS ARE GREENHECK UNLESS NOTED OTHERWISE.
 - LOUVERS SHALL HAVE A ACRYLIC COATING WITH 50% KYNAR OR HYLAR IN ITS RESIN SYSTEM WITH A 5 YEAR ADHESION WARRANTY AND 5 YEAR CHALKING/FADING WARRANTY. COORDINATE COLOR WITH ARCHITECT PRIOR TO ORDERING. PROVIDE COLOR CHART WITH SHOP DRAWING SUBMITTAL.
 - PROVIDE WITH THE FOLLOWING OPTIONS: EXTENDED SILL, ALUMINUM BIRDSCREEN.
 - PROVIDE LOUVER WITH AUTOMATIC DAMPER "D-1" WITH ELECTRIC ACTUATOR. DAMPER SHALL BE CONNECTED TO THE 24"x24" PLENUM AND SHALL BE A GREENHECK VCD-23 LOW LEAK DAMPER (OR EQUAL) WITH GALVANIZED STEEL FRAME, GALVANIZED STEEL AIRFOIL BLADES, VINYL BLADE SEALS, STEEL AXLES, SYNTHETIC BEARINGS. DAMPER ACTUATOR SHALL BE A 120V, SPRING FAIL CLOSED/POWER OPEN, TWO POSITION ACTUATOR LOCATED EXTERNALLY (BY BELIMO, SIEMENS, OR INVENSYS).
 - WIRE TO OPEN DAMPER UPON START OF EF-1 AND CLOSE THE DAMPER UPON STOP OF EF-1.

UNIT I.D.	TYPE	AIRFLOW CFM	E.S.P. IN. W.C.	RPM	MOTOR				ELECTRICAL	CURB HEIGHT (N)	WEIGHT LBS	MODEL NO.	REMARKS	
					BHP	HP	RPM	DRIVE						
EF-1	SIDEWALL PROPELLER	750	0.15	1,555	0.05	1/6	1,550	DIRECT	115	1	N/A	20	SE1-12-432	SEE NOTES

- NOTES:
- MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED.
 - PROVIDE FAN WITH FOLLOWING OPTIONS/ACCESSORIES: GRAVITY OPERATED DAMPER (WD-320-PB-14x14), WALL HOUSING (W/ OSHA GUARD), NEMA-1 SWITCH TOGGLE (MOUNTED AND WIRED), ALUMINUM PROPELLER, GALVANIZED WEATHER HOOD (45 DEGREE WITH BIRDSCREEN), SOLID STATE SPEED CONTROL-5WSSC (SHIPPED LOOSE), WIRING PIGTAIL/INTERNAL/9' FLEX, CLOSURE ANGLES, PSC MOTOR.
 - INSTALL REVERSE ACTING T-STAT (W/ FAN/AUTO/OFF) TO START/STOP FAN.

UNIT I.D.	CAPACITY MBH	CAPACITY KW	FAN		ELECTRICAL			WEIGHT LBS	MODEL NO.	REMARKS
			TYPE	AIRFLOW CFM	VOLTS	PHASE	MAX AMPS			
EUH-1	12.8	3.75	PROPELLER	275	208	1	18	32	5600 SERIES	SEE NOTES 14"W X 13"D X 14"H

- NOTES:
- MODEL NUMBERS ARE MARKEL UNLESS OTHERWISE NOTED. INDEECO AND O-MARK MAY BE BID AS EQUALS.
 - PROVIDE WALL MOUNTING BRACKET.
 - PROVIDE FAN GAIRD.
 - PROVIDE BUILT-IN LINE VOLTAGE T-STAT.
 - PROVIDE OPTIONAL FIELD INSTALLED DISCONNECT SWITCH.



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DRAWING TITLE
MECHANICAL PLAN

PROJECT TITLE
JOHANNESBURG LEWISTON AREA SCHOOL S- 2024 SUMMER PROJECTS
JOHANNESBURG BUILDING WATER WELL UPGRADE
JOHANNESBURG, MICHIGAN

PROJECT NO.
219-24E.1

DATE
MAY 1, 2024

SHEET
M2.1