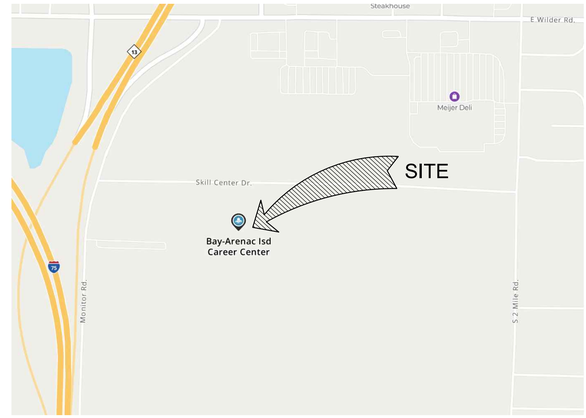
NEW AUTOMOTIVE LIFT PIT FOR:

BAY ARENAC ISD

BAY CITY, MICHIGAN



LOCATION MAP
NO SCALE

ARCHITECTURAL:

TSSF ARCHITECTS, INC.
ARCHITECTS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN
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MECHANICAL/ELECTRICAL

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COVER Title Sheet, Drawing Index, Abbreviations, General Notes

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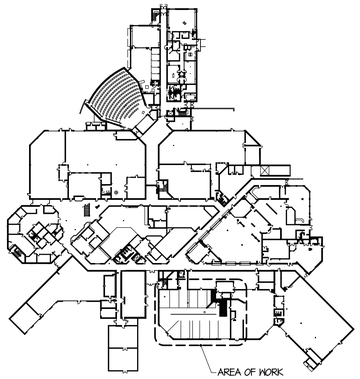
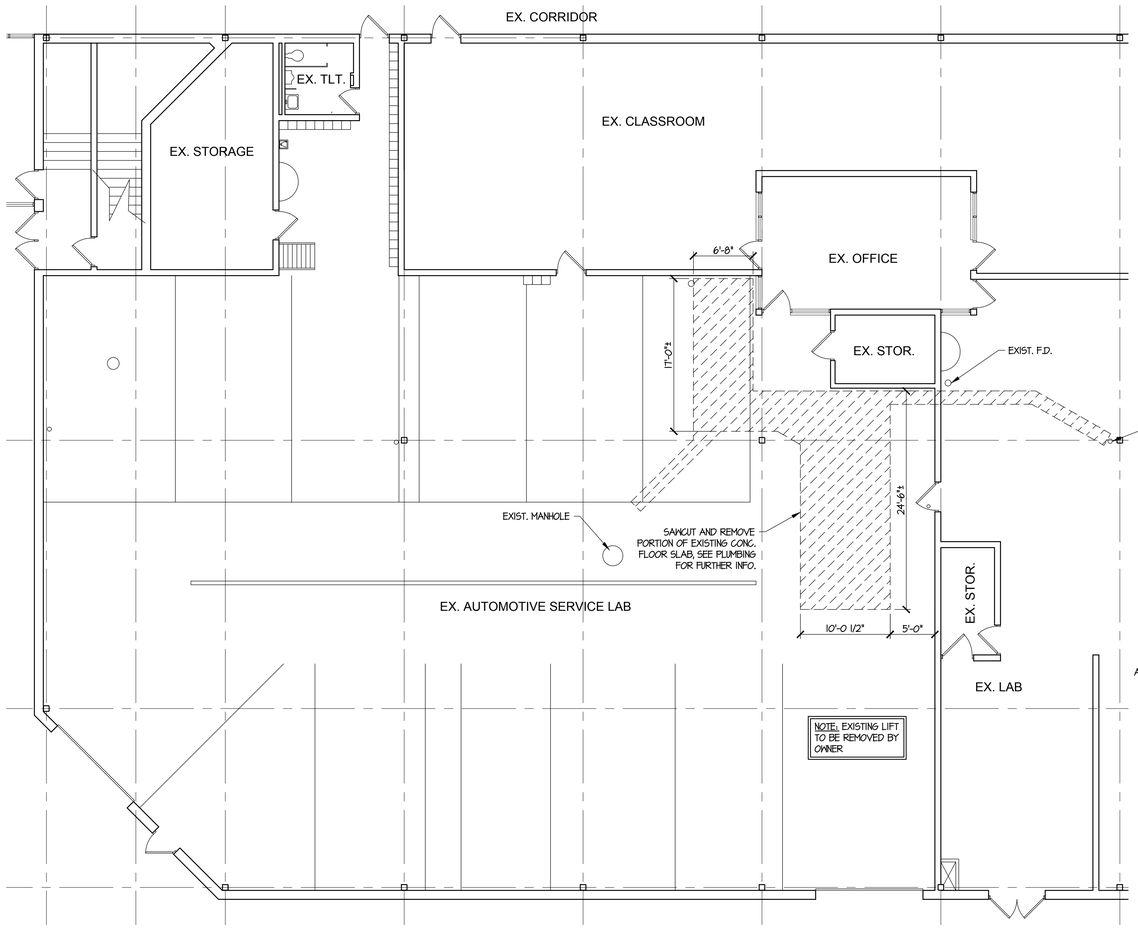
BID SET
DATE: APRIL 21, 2025
PROJECT NO. 2511



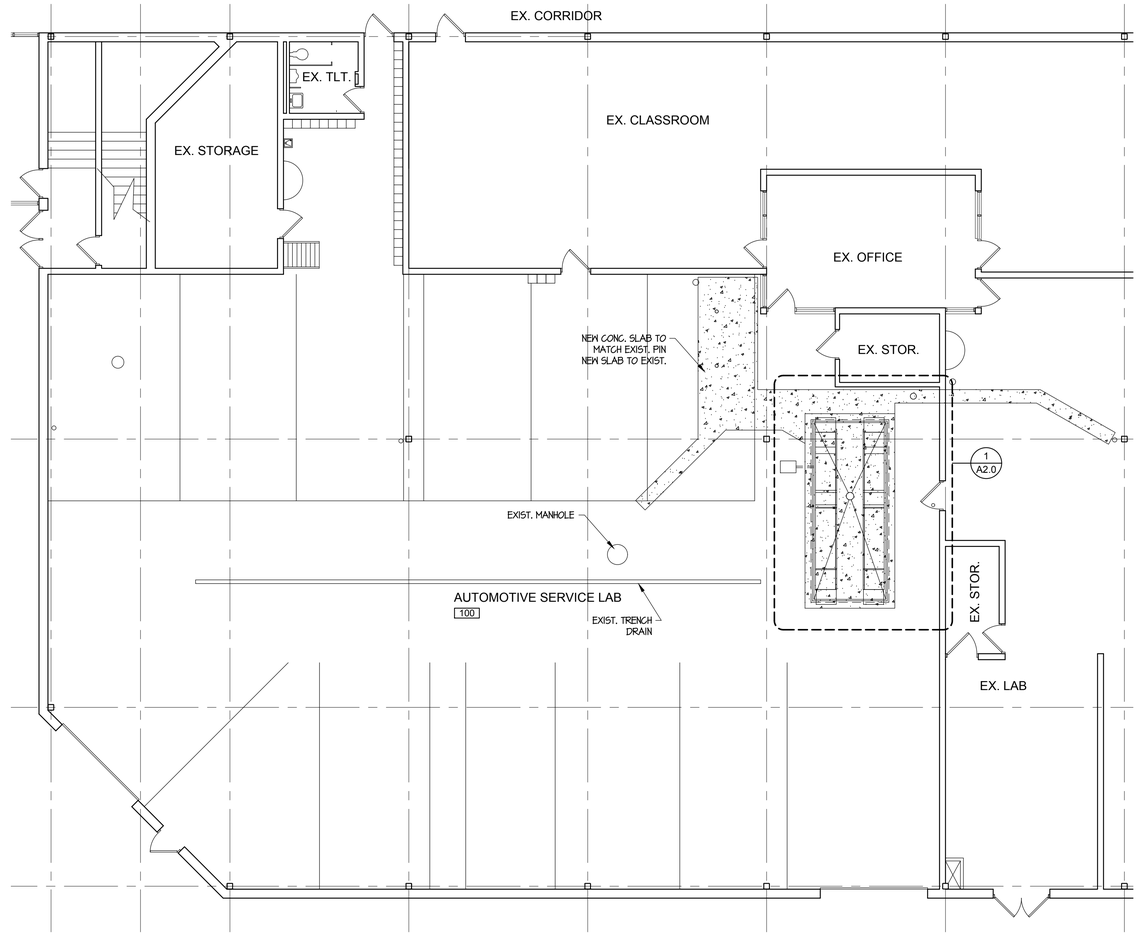
REFERENCE PLAN
NOT TO SCALE

GENERAL NOTES:

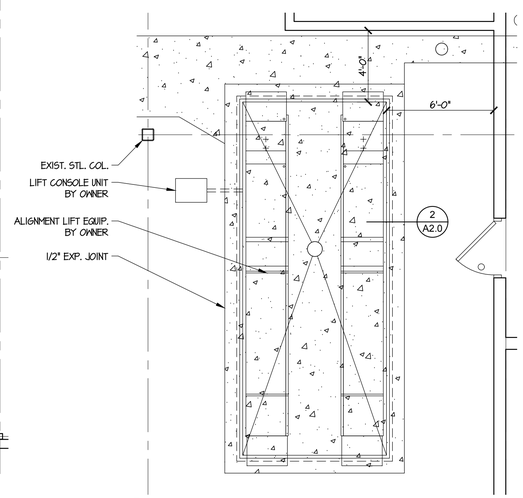
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK.
2. PLAN DIMENSIONS ARE TO FACE OF BASIC WALL MATERIAL (GYPSUM BOARD, PLASTER OR CMU) AND DO NOT INCLUDE THICKNESS OF FINISH MATERIAL (CERAMIC TILE, PANELING, ETC). AT AREAS WHERE GYP. BD. IS ADHERED TO CMU, THE DIMENSION IS TO THE CMU.
3. PROVIDE POLYURETHANE SEALANT AT ALL JUNCTURES OF DISSIMILAR MATERIALS (DOOR FRAMES, COUNTERTOPS, ETC.)
4. ALL CUTTING AND PATCHING IS THE RESPONSIBILITY OF THE TRADE REQUIRING THE WORK.
5. PROVIDE BLOCKING FOR ALL WALL HUNG EQUIPMENT AS REQUIRED. ALL WOOD BLOCKING MUST BE NON-COMBUSTABLE.
6. THE ARCHITECT DOES NOT HAVE CONTROL OR CHARGE OF THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, IS NOT RESPONSIBLE FOR SAFETY PRECAUTIONS AND PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THOSE DOCUMENTS PREPARED BY THE ARCHITECT.
7. ALL CONTRACTORS SHALL VISIT THE SITE AND ACQUAINT THEMSELVES WITH THE CONDITIONS UNDER WHICH THE CONTRACT WILL BE PERFORMED.



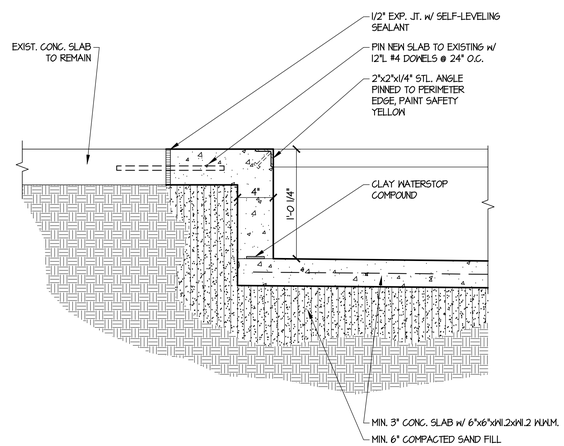
PARTIAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



PARTIAL FLOOR PLAN
SCALE: 1/8" = 1'-0"



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



2/A2.0 PIT DETAIL
SCALE: 1 1/2" = 1'-0"

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

NEW AUTOMOTIVE LIFT PIT FOR:
BAY AREANAC ISD
BAY CITY, MICHIGAN

NO.	DATE

DRAWN BY **C.M.B.**
DATE **04/21/25**
APPROVED

SHEET NO.
A2.0

PROJECT NO.
2511

KTS ENGINEERING GROUP
CONSULTING ENGINEER
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PLUMBING NOTES & SPECIFICATIONS

1. PLUMBING PLANS ARE DIAGRAMMATIC IN NATURE. INTENDED TO INDICATE DESIGN INTENT ONLY. THE PLUMBING CONTRACTOR IS EXCLUSIVELY RESPONSIBLE TO COORDINATE SPECIFIC LOCATIONS OF ITEMS AND ADJUST AS REQUIRED TO ACCOMMODATE CODE REQUIREMENTS, EXISTING CONDITIONS, BUILDING STRUCTURE, SPRINKLER PIPING (IF ANY), LIGHTS, HVAC, ELECTRICAL WORK, AND THE WORK OF ALL OTHER TRADES. DIMENSIONS SHALL BE FIELD-VERIFIED AND COORDINATED PRIOR TO PROCUREMENT OR FABRICATION. FIELD MODIFICATIONS (SUCH AS OFFSETS IN PIPING) NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST.
2. ALL OF THE PLUMBING INFORMATION IS PRESENTED ON A REFERENCED BACKGROUND FLOOR PLAN. IN CASE OF CONFLICT BETWEEN BACKGROUND PLAN AND ARCHITECTURAL FLOOR PLAN, ARCHITECTURAL FLOOR PLAN SHALL GOVERN.
3. THE PLUMBING CONTRACTOR SHALL PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS OR METHODS MENTIONED, LISTED OR SCHEDULED ON THE DRAWINGS AND IN THESE SPECIFICATIONS, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND ALL INCIDENTALS NECESSARY REQUIRED FOR THE COMPLETION AND OPERATION OF ALL PLUMBING SYSTEMS.
4. THE ENGINEER WILL NOT HAVE CONTROL OR CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES AND IS NOT RESPONSIBLE FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THOSE DOCUMENTS PREPARED BY THE ENGINEER.
5. IF BIDDING CONTRACTOR WOULD LIKE TO SUBSTITUTE ANY SPECIFIED PLUMBING DEVICES, VALVES, FIXTURES, EQUIPMENT, PIPING, INSULATION, HANGERS, ETC., THEY MUST PROVIDE SUBMITTAL TYPE DRAWINGS TO THE ENGINEER A MINIMUM OF 7 DAYS PRIOR TO BIDDING THE PROJECT. IF THESE APPROVAL DRAWINGS ARE NOT SUBMITTED AND ACCEPTED, THE SPECIFIED EQUIPMENT MUST BE USED - NO EXCEPTIONS.
6. THE INSTALLATION SHALL BE MADE SO THAT ALL COMPONENT PARTS FUNCTION TOGETHER AS A WORKABLE SYSTEM; IT SHALL BE COMPLETE WITH ALL ACCESSORIES NECESSARY FOR PROPER OPERATION. WHEN THE INSTALLATION IS COMPLETE, ALL EQUIPMENT SHALL BE OPERATIVE AND IN PROPER ADJUSTMENT. ALL WORK SHALL BE EXECUTED IN CONFORMITY WITH THE BEST PRACTICE SO AS TO CONTRIBUTE TO EFFICIENCY OF OPERATION, MINIMUM MAINTENANCE, ACCESSIBILITY AND SIGHTLINESS.
7. TO ACCOMPLISH THESE RESULTS, THE PLUMBING CONTRACTOR SHALL CONSULT THE ARCHITECT'S FIELD LAYOUTS OF THE CONTRACTORS FOR THESE TRADES AND THEIR SHOP DRAWINGS. HE/SHE SHALL COORDINATE THEIR WORK ACCORDINGLY.
8. DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN AND EXTENT OF THE WORK AND ARE PARTLY DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR ROUGHING-IN MEASUREMENTS OR TO SERVE AS SHOP DRAWINGS. THE ARCHITECTURAL DRAWINGS AND DETAILS SHALL BE EXAMINED FOR EXACT LOCATION OF FIXTURES AND EQUIPMENT. WHERE THEY ARE NOT DEFINITELY LOCATED, THIS INFORMATION SHALL BE OBTAINED FROM THE ENGINEER.
9. REFER THE TO THE ARCHITECTURAL PLANS FOR ALL BUILDING SECTIONS, INTERIOR, AND EXTERIOR ELEVATIONS. PLUMBING EQUIPMENT AND INSTALLATION METHODS SHOWN ON ARCHITECTURAL SECTIONS/DETAILS ARE CONSIDERED PART OF THE PLUMBING DOCUMENTS.
10. MINOR ITEMS AND ACCESSORIES OR DEVICES REASONABLY INFERABLE AS NECESSARY TO THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR OR SUB-CONTRACTOR FOR SUCH SYSTEM WHETHER OR NOT THEY ARE SPECIFICALLY CALLED FOR BY THE SPECIFICATIONS OR DRAWINGS.
11. WHERE WORK OF THE CONTRACTOR CONNECTS TO THAT OF ANOTHER TRADE, OR TO PIPING OR EQUIPMENT IN PLACE, THE CONTRACTOR SHALL TAKE SUCH MEASUREMENTS IN THE FIELD AS MAY BE NECESSARY TO MAKE HIS WORK COME TRUE OR LINE UP WITH THAT WORK.
12. THE PLUMBING CONTRACTOR SHALL FURNISH TO THE ARCHITECTURAL TRADES CONTRACTOR INFORMATION SUCH AS SIZE AND LOCATION CONCERNING ALL FRAMED OPENINGS AND EQUIPMENT BASES REQUIRED.
13. ALL CONSTRUCTION SHALL BE DONE IN COMPLIANCE WITH CURRENT CODES, INCLUDING BUT NOT LIMITED TO:
    A. MICHIGAN BUILDING CODE
    B. MICHIGAN PLUMBING CODE
    C. MICHIGAN MECHANICAL & ENERGY CODE
    D. NATIONAL ELEC. CODE
    E. APPLICABLE NFPA CODES (INCLUDING LIFE SAFETY CODE - IF/AS APPLICABLE)
    F. STATE OF MICHIGAN PUBLIC HEALTH CODES - IF/AS APPLICABLE
    G. MICHIGAN BARRIER FREE CODES
    H. OSHA REQUIREMENTS
    ALL CODES SHALL BE THE STATE OF MI LATEST ADOPTED EDITIONS AT THE TIME OF PLAN REVIEW
14. PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH THE PLUMBING CODE AS LOCALLY ADOPTED, LOCAL REGULATIONS AND OTHER CODES OR REGULATIONS HAVING LEGAL JURISDICTION IN THE AREA. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND CERTIFICATES OF INSPECTIONS AS MAY BE REQUIRED. PROVIDE FINAL CERTIFICATES OF INSPECTION TO THE GC UPON COMPLETION.
15. ANY CHANGES IN THE WORK TO SECURE CERTIFICATES SHALL BE MADE BY THIS CONTRACTOR AT HIS OWN EXPENSE. IN THE EVENT PLANS AND SPECIFICATIONS CONFLICT WITH ANY RULES, REGULATIONS OR CODES APPLYING, SAID RULES, REGULATIONS AND CODES SHALL GOVERN THE CONTRACTOR.
16. RULES OF THE LOCAL UTILITY COMPANIES SHALL BE COMPLIED WITH. PLUMBING CONTRACTOR SHALL VERIFY LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTACT ENGINEER IMMEDIATELY IF CONFLICTS ARISE.
17. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE CONTRACTOR MUST SELECT ONE OF THE SPECIFIED MANUFACTURERS FOR EACH PIECE OF EQUIPMENT AND, WHERE ONLY ONE MANUFACTURER IS SPECIFIED, THAT MAKE MUST BE USED. THESE ITEMS MAY NOT BE CHANGED EXCEPT BY PERMISSION OF THE ENGINEER.
18. CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, ENGINEER SHALL BE NOTIFIED BEFORE PROCEEDING WITH INSTALLATION.
19. IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES FOR PROPER EXECUTION OF THE WORK.
20. FURNISH TO THE GC, FOR THE OWNER, TWO BOUND OPERATION MANUALS CONSISTING OF THE FOLLOWING:
    A. ONE COPY OF SHOP DRAWINGS OF EACH PIECE OF EQUIPMENT.
    B. INSTALLATION, OPERATING AND TROUBLESHOOTING MANUALS.
    C. PARTS LIST.
    D. USB FLASH DRIVE WITH ALL OF THE ABOVE IN PDF FORMAT.
21. THE CONTRACTOR SHALL FURNISH A COMPETENT INSTRUCTOR TO ADVISE THE OWNER IN SERVICING, OPERATING, ETC., OF MAIN PIECES OF EQUIPMENT.
22. CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED BY HIM OR SUB-CONTRACTORS TO BE FREE FROM DEFECT IN MATERIAL OR WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK, AND HE SHALL REPAIR OR REPLACE AT NO ADDITIONAL COST TO THE OWNER ANY MATERIAL OR EQUIPMENT DEVELOPING DEFECTS AND SHALL ALSO MAKE GOOD ANY DAMAGE CAUSED BY SUCH DEFECTS OR THE CORRECTION OF DEFECTS. THIS REQUIREMENT SHALL BE BINDING EVEN THOUGH IT WILL EXCEED PRODUCT GUARANTEES NORMALLY FURNISHED BY SOME MANUFACTURERS.
23. CONTRACTOR SHALL SUBMIT HIS OWN AND EACH EQUIPMENT MANUFACTURER'S WRITTEN CERTIFICATES, WARRANTING THAT EACH ITEM OR EQUIPMENT FURNISHED COMPLIES WITH ALL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. NOTE THAT GUARANTEE SHALL RUN FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK, NOT FROM THE DATE OF INSTALLATION OF A DEVICE OR PIECE OF EQUIPMENT.
24. ALL WORK AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST STANDARDS PRESCRIBED BY LOCAL AND/OR STATE CODES AND/OR ORDINANCES INCLUDING THE LATEST RULES OF THE NFPA, AND AMERICAN STANDARDS ASSOCIATION, AND WITH ANY PREVAILING RULES AND REGULATIONS PERTAINING TO ADEQUATE PROTECTION AND/OR GUARDING OF ANY HAZARDOUS LOCATIONS.
25. ALL EQUIPMENT SHALL BE INSTALLED TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. IN ALL CASES WHERE THE MANUFACTURERS OF ARTICLES USED IN THIS CONTRACT FURNISH DIRECTIONS COVERING POINTS NOT SHOWN ON THE DRAWINGS OR HEREIN SPECIFIED, SUCH DIRECTIONS SHALL BE FOLLOWED.
26. UNTIL FINAL ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL PROTECT ALL MATERIALS.
27. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE EQUAL IN QUALITY AND CAPACITY TO THAT SPECIFIED AND HARMONIOUS IN DESIGN AS DETERMINED BY THE ENGINEER.
28. PLUMBING WORK SHALL BE CAREFULLY EXECUTED BY SKILLED MECHANICS WELL VERSED IN THEIR PARTICULAR TRADES. IT SHALL ALSO HAVE A CLEAN, NEAT, WELL ARRANGED AND FINISHED APPEARANCE TO THE COMPLETE SATISFACTION OF THE OWNER AND THE ARCHITECT/ENGINEER.
29. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS WHICH WILL AFFECT THE WORK HE IS TO PERFORM. THE SUBMISSION OF A PROPOSAL BY THIS CONTRACTOR SHALL BE CONCLUSIVE EVIDENCE THAT THIS CONTRACTOR HAS VISITED THE SITE AND HAS GIVEN PROPER CONSIDERATION AND EVALUATION OF THESE CONDITIONS IN THE PREPARATION OF HIS PROPOSAL. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE IN HIS BEHALF FOR EXTRA EXPENSE INCURRED DUE TO FAILURE OF NEGLECT ON HIS PART TO MAKE THIS VISIT AND EXAMINATION.
30. PROVIDE SHOP DRAWINGS FOR APPROVAL FOR PLUMBING FIXTURES, PIPING, PLUMBING EQUIPMENT, ETC. SHOP DRAWINGS ARE TO BE THOROUGHLY CHECKED (AND NOTED SO ON FRONT COVER) BY THE CONTRACTOR PRIOR TO SUBMITTING THEM TO THE ENGINEER. REVIEW BY THE ENGINEER SHALL NOT BE CONSTRUED AS A COMPLETE CHECK, BUT ONLY THAT THE GENERAL METHOD OF CONSTRUCTION AND DETAILING IS SATISFACTORY. REVIEW SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS WHICH MAY EXIST. IF THE CONTRACTOR IS APPROVED TO USE A MANUFACTURER OTHER THAN THE ONE SPECIFIED BY THE ENGINEER, IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE SUBSTITUTED EQUIPMENT WILL PHYSICALLY FIT IN THE SPACE PROVIDED FOR THE EQUIPMENT AND MAINTAIN THE SERVICE CLEARANCE REQUIREMENTS SET FORTH BY THE MANUFACTURER. SHOP DRAWING CHECKING BY THE ENGINEER IS A "COURTESY" CHECK ONLY. SHOP DRAWINGS ARE TO BE ELECTRONICALLY SUBMITTED IN PDF FORMAT ONLY.
31. ALL PLUMBING EQUIPMENT PROVIDED SHALL MEET THE REQUIREMENTS OF ASHRAE 2019 EDITION, SECTION 90.1 (ENERGY REQUIREMENTS).
32. PLUMBING FIXTURES SHALL BE AS NOTED ON THE PLUMBING FIXTURE SPECIFICATION SCHEDULE.
33. COORDINATE EXACT FLOOR DRAIN LOCATIONS WITH ARCHITECTURAL DRAWINGS. SET FLOOR DRAINS BELOW FINISHED FLOOR AS REQUIRED FOR ARCHITECTURALLY SPECIFIED SLOPE. FLOOR DRAIN TYPE SHALL BE ADJUSTABLE HEIGHT TYPE.
34. SURFACES OF ALL FLOOR DRAINS, CLEANOUTS, AND OTHER EQUIPMENT SHALL BE CLEANED AND LEFT IN BRAND NEW CONDITION. FLOOR DRAINS SHALL BE SEALED DURING CONSTRUCTION TO PREVENT DEBRIS FROM ENTERING THE SANITARY SYSTEM.
35. FLOOR CLEANOUT COVERS SHALL BE FLUSH WITH GRADE OR SLAB. COVERS SHALL BE BRONZE TOP WITH SCORED SURFACES AND LABELED "CO".
36. CHARACTER OF PIPING WORK SHALL BE AS FOLLOWS:
    A. ALL PIPING SHALL BE INSTALLED SO AS TO PERMIT COMPLETE DRAINAGE.
    B. ALL PIPING SHALL BE INSTALLED SO AS TO BE FREE FROM POCKETS CAUSED BY SAGGING. SPECIAL CARE SHALL BE TAKEN TO ENSURE UNHINDERED EXPANSION AND CONTRACTION OF PIPING. EXPANSION AND CONTRACTION OF PIPING SHALL BE PROVIDED FOR IN A SATISFACTORY, APPROVED AND SAFE MANNER BY MEANS OF LOOPS OR OFFSETS OR SWING CONNECTIONS, WHERE MECHANICAL EXPANSION JOINTS ARE NOT SPECIFICALLY CALLED FOR. CORRUGATED COPPER PIPE SLEEVES SHALL BE USED AT ALL CONSTRUCTION EXPANSION JOINTS.
    C. RISER AND VERTICAL PIPES ARE TO BE RUN PLUMB, STRAIGHT AND TRUE AND HAVE NO UNNECESSARY OFFSETS. NO PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO INTERFERE WITH NECESSARY HEADROOM OR WITH DOORS OR WINDOWS.
    D. PIPING SUSPENDED FROM CEILING OR BENEATH FLOOR SLABS SHALL BE KEPT AS CLOSE TO CONSTRUCTION AS POSSIBLE, CONSISTENT WITH THE INSTALLATION AND PITCH REQUIREMENTS.
    E. ALL THREADED PIPE JOINTS SHALL BE MADE TIGHT, STEEL TO STEEL, USING AN APPROVED THREAD PASTE, TO BE APPLIED ON MALE THREADS ONLY. REAM OUT ALL THREADED PIPE ENDS, TURN ON END AND RATTLE BEFORE INSTALLING. CLEAN AND SWAB OUT ALL PIPING BEFORE INSTALLING.
37. IF DISSIMILAR METALS ARE TO BE JOINED, APPROVED DIELECTRIC UNIONS SHALL BE UTILIZED.
38. DO NOT SUPPORT CEILINGS, OTHER BUILDING STRUCTURES, OR CONDUITS FROM DUCTWORK, PIPES OR CONDUIT. DO NOT ALLOW DUCTS, PIPES OR CONDUITS TO DIRECTLY TOUCH BUILDING WALLS, FLOORS, OR STRUCTURE AT ANY LOCATION.
39. SANITARY AND WASTE LINES SHALL PITCH DOWN NOT LESS THAN 1/8" PER FOOT IN THE DIRECTION OF FLOW AND SHALL BE PROVIDED WITH ACCESSIBLE CLEANOUTS AT ALL TURNS AND EVERY 100' ON STRAIGHT RUNS. PROVIDE VENTS AS SHOWN ON THE DRAWING OR REQUIRED BY THE PLUMBING CODE. VENTS EXTENDING THROUGH THE ROOF SHALL BE PVC, MINIMUM 3".
40. SOIL, VENT AND DRAIN PIPING SHALL BE RUN AS DIRECT AS POSSIBLE. MAKE ALL CONNECTIONS TO FLOOR DRAINS, FIXTURES, ETC. WITH TRAPS, PROVIDING CLEANOUT WITH FITTED THREADED PLUGS.
41. ALL PIPING SHALL BE THOROUGHLY CLEANED AND SWABBED OUT BEFORE INSTALLATION IN SUCH A MANNER THAT ALL DEBRIS, CONSTRUCTION DIRT AND FOREIGN PARTICLES SHALL BE ENTIRELY REMOVED FROM THE PIPING.
42. ALL SYSTEMS SHALL BE THOROUGHLY CLEANED AND TESTED AS REQUIRED.
43. ALL OPENINGS IN CONSTRUCTION, THROUGH WHICH ANY AND ALL PLUMBING PIPING PASS SHALL BE SEALED UP AIR TIGHT AFTER INSTALLATION OF ALL PIPING. PENETRATIONS OF FLOOR/CEILING ASSEMBLIES REQUIRED TO HAVE A FIRE-RESISTANCE RATING SHALL BE PROTECTED IN ACCORDANCE WITH THE MICHIGAN BUILDING CODE, LATEST ADOPTED EDITION.
44. FAILURE TO DETECT INFERIOR WORK, OR WORK NOT IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE CODES SHALL NOT BE CONSTRUED AS ACCEPTANCE OF SUCH WORK.
45. THE PLUMBING CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS AND RUBBISH ACCUMULATING AS A RESULT OF THE PLUMBING INSTALLATION. REMOVE WEEKLY. UPON COMPLETION OF THE WORK HE/SHE SHALL LEAVE ALL AREAS CLEAN, INCLUDING BUT NOT LIMITED TO THE PLUMBING ROOM AND THE PLUMBING EQUIPMENT IN THAT SAID ROOM.
46. ALL CUTTING AND PATCHING IS THE RESPONSIBILITY OF THE TRADE REQUIRING THE WORK, WITH THE EXCEPTION OF ANY REQUIRED ROOF WORK, WHICH WILL BE THE RESPONSIBILITY OF THE ROOFING CONTRACTOR.
47. ALL REQUIRED INSURANCE SHALL BE CARRIED BY THE CONTRACTOR FOR THE PROTECTION AGAINST PUBLIC LIABILITY OR PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

PLUMBING DEMOLITION NOTES:

1. REMOVE EXISTING EQUIPMENT THAT IS NOT BEING UTILIZED FOR RENOVATIONS. THIS INCLUDES ANY/ALL PLUMBING EQUIPMENT ON SITE INCLUDING ABANDONED EQUIPMENT. REMOVE EQUIPMENT, WATER HEATERS, STORAGE TANKS, PLUMBING FIXTURES, PIPING, INSULATION, HANGERS, METERS, VALVES, CONTROLS, PUMPS, WALL SLEEVES, FLOOR DRAINS, ETC. REMOVE ALL BACK TO THE POINT OF CONCEALMENT. REMOVE FROM SITE AND DISPOSE OF IN A LEGAL MANNER. (PROOF OF LEGAL DISPOSAL IS REQUIRED AND SHALL BE PROVIDED TO CM OR GC FOR ALL HAZARDOUS MATERIALS)
2. CAP ALL DEMOED PIPING AT POINTS OF CONCEALMENT TO PREVENT LIQUIDS REMAINING IN CONCEALED SPACES TO DRIP DOWN ONTO NEW SURFACES.
3. UTILIZE SPRAY FOAM TO SEAL ANY OPENINGS LEFT AT SITE TO PREVENT RODENTS/INSECTS FROM ENTERING FACILITY THROUGH DEMOED PENETRATIONS.
4. USE CARE DURING DEMOLITION PHASE TO AVOID DAMAGE TO ANY GLAZED BLOCK, TILE, VINYL SIDING, BRICK VENEERED WALLS, CEILING TILES, ETC. DAMAGE TO BE REPAIRED BY THE CONTRACTOR THAT CREATES THE DAMAGE. REPAIR MUST BE BY QUALIFIED WORKMAN FOR DAMAGE DONE. (TILE DAMAGE REPAIRED BY TILE CONTRACTOR, ETC.)
5. DEMOLITION WORK IS ONLY GENERALLY SHOWN ON THE DRAWINGS IF AT ALL. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT TO DETERMINE THE EXTENT OF THE DEMOLITION WORK REQUIRED AND INCLUDE IT IN HIS/HER BID. IT IS THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO VERIFY EXISTING SYSTEMS/EQUIPMENT THAT WILL NOT BE UTILIZED FOR NEW WORK AND REMOVE ACCORDINGLY - DO NOT ABANDON - REMOVE UNUSED ITEMS. CONFIRM ALL DEMOLITION QUANTITIES PRIOR TO BIDDING.
6. OWNER RESERVES FIRST RIGHT TO ALL ITEMS THEY WISH TO SALVAGE. DISCUSS WITH OWNER/GC PRIOR TO STARTING DEMOLITION AND TAKE EXTRA CARE REMOVING THOSE ITEMS THAT OWNER WISHES TO SALVAGE.

PLUMBING SYMBOL SCHEDULE

AFF	ABOVE FINISHED FLOOR	WC-1	FIXTURE TAG
AFG	ABOVE FINISHED GRADE	—CW—	COLD WATER PIPING
BFF	BELOW FINISHED FLOOR	—XCW—	EXISTING COLD WATER PIPING
BFG	BELOW FINISHED GRADE	—HW—	HOT WATER PIPING
CO	CLEANOUT	—XHW—	EXISTING HOT WATER PIPING
ETR	EXISTING TO REMAIN	—HWR—	HOT WATER RECIRCULATING PIPING
EWF	ELECTRIC WATER FOUNTAIN	—XHWR—	EXISTING HOT WATER RECIRCULATING PIPING
EWS	EYE WASH STATION	—SAN—	SANITARY PIPING
FCO	FLOOR CLEANOUT	—XSAN—	EXISTING SANITARY PIPING
FD	FLOOR DRAIN	—V—	VENT PIPING
FS	FLOOR SINK	—XV—	EXISTING VENT PIPING
FUT	FUTURE	—ST—	STORM PIPING
GR	GRADE	—XST—	EXISTING STORM PIPING
HB	HOSE BIBB	—COND—	CONDENSATE PIPING
H.O.	HUB OUTLET	—OW—	OILY WASTE PIPING
IE	INVERT ELEVATION		POINT OF NEW CONNECTION
MAN	MANUAL		ELBOW UP
MPC	MICHIGAN PLUMBING CODE		ELBOW DOWN
OS	OIL SEPARATOR		CAP
PONC	POINT OF NEW CONNECTION		TEE UP
RC	RAIN CONDUCTOR		TEE UP
RI	ROUGH-IN		DIRECTION OF FLOW
RS	ROOF SUMP		
S	SINK		
SH	SHOWER		
SD	SHOWER DRAIN		
SP	SUMP PUMP		
SS	SERVICE SINK		
TYP	TYPICAL		
UNO	UNLESS NOTED OTHERWISE		
UR	URINAL		
V	VENT		
VIF	VERIFY IN FIELD		
VTR	VENT THRU ROOF		
WAF	WASH FOUNTAIN		
WC	WATER CLOSET		
WCO	WALL CLEANOUT		
WH	WALL HYDRANT		
X	EXISTING (PREFIX)		

PLUMBING FIXTURE SPECIFICATIONS

TAG	FIXTURE		FAUCETS, FITTINGS, AND ACCESSORIES	
FIXTURE TYPE	BASIS OF DESIGN	DESCRIPTION	BASIS OF DESIGN	DESCRIPTION
FD-1 FLOOR DRAIN	SIOUX CHIEF 832-36PNR	DRAINS SHALL BE BOTTOM HUB CONNECTIONS FOR GROUND FLOOR APPLICATIONS. FLOOR DRAIN SHALL ALLOW ADJUSTMENT BEFORE AND AFTER THE CONCRETE POUR. STRAINER SHALL MEET APPLICABLE LOAD REQUIREMENTS FOR INTENDED USE. DRAINS SHALL BE 6" DIA. TOP WITH NICKEL BRONZE ALLOY ADJUSTABLE STRAINER. DESIGNED IN ACCORDANCE WITH ASME A112.6.3-2001. ACCEPTABLE: SIOUX CHIEF, ZURN, WADE, J.R. SMITH, OR JOSAM. SIZE PER CONNECTED PIPE AS SHOWN ON PLANS.	SIOUX CHIEF 835 SERIES "TRAPSHIELD"	BARRIER-TYPE TRAP PROTECTION DEVICE TO MINIMIZE EVAPORATION FROM TRAP SEALS IN INFREQUENTLY USED FLOOR DRAINS. DEVICE SHALL REMAIN NORMALLY CLOSED WHEN NOT IN USE, AND OPEN EASILY TO ALLOW FREE FLOW OF WATER INTO THE DRAIN. SEALING MEMBER/GASKET SHALL PROVIDE TWO POINTS OF CONTACT TO ENSURE A POSITIVE SEAL. DEVICE SHALL BE EASY TO INSTALL AND REMOVE FOR INSPECTION OR REPLACEMENT. DESIGNED IN ACCORDANCE WITH ASSE 1072. ACCEPTABLE: SIOUX CHIEF, ZURN, J.R. SMITH, OR SURESEAL.
OS-1 OIL SEPARATOR	STRIEM OS-50	HIGH EFFICIENCY OIL/WATER SEPARATOR SHALL BE LIFETIME GUARANTEED AND MADE IN THE USA. SEPARATOR SHALL BE CERTIFIED TO IAPMO IGC 325 AND CARRY A UPC LISTING. SEPARATOR SHALL BE CONSTRUCTED OF POLYETHYLENE. SEPARATOR SHALL BE MANUFACTURED FOR ABOVE- OR BELOW-GRADE INSTALLATION. FIELD-ADJUSTABLE RISER SYSTEM IS AVAILABLE AS AN OPTION TO BRING MANHOLE COVER TO GRADE. SEPARATOR FLOW RATE SHALL BE 50 GPM. SEPARATOR LIQUID HOLDING CAPACITY SHALL BE 57 GALLONS AND OIL CAPACITY SHALL BE 14.25 GALLONS. SOLIDS CAPACITY SHALL BE 7 GALLONS. COVER SHALL PROVIDE WATER/GAS-TIGHTSEAL AND HAVE A MAXIMUM 2,000 LBS. LOAD CAPACITY.	STRIEM	PROVIDE WITH RISER AS REQUIRED TO MAKE COVER FLUSH WITH FINISHED FLOOR.

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

INTERIOR RENOVATIONS TO:
BAY ARENAC ISD AUTOMOTIVE LIFT
BAY CITY, MICHIGAN

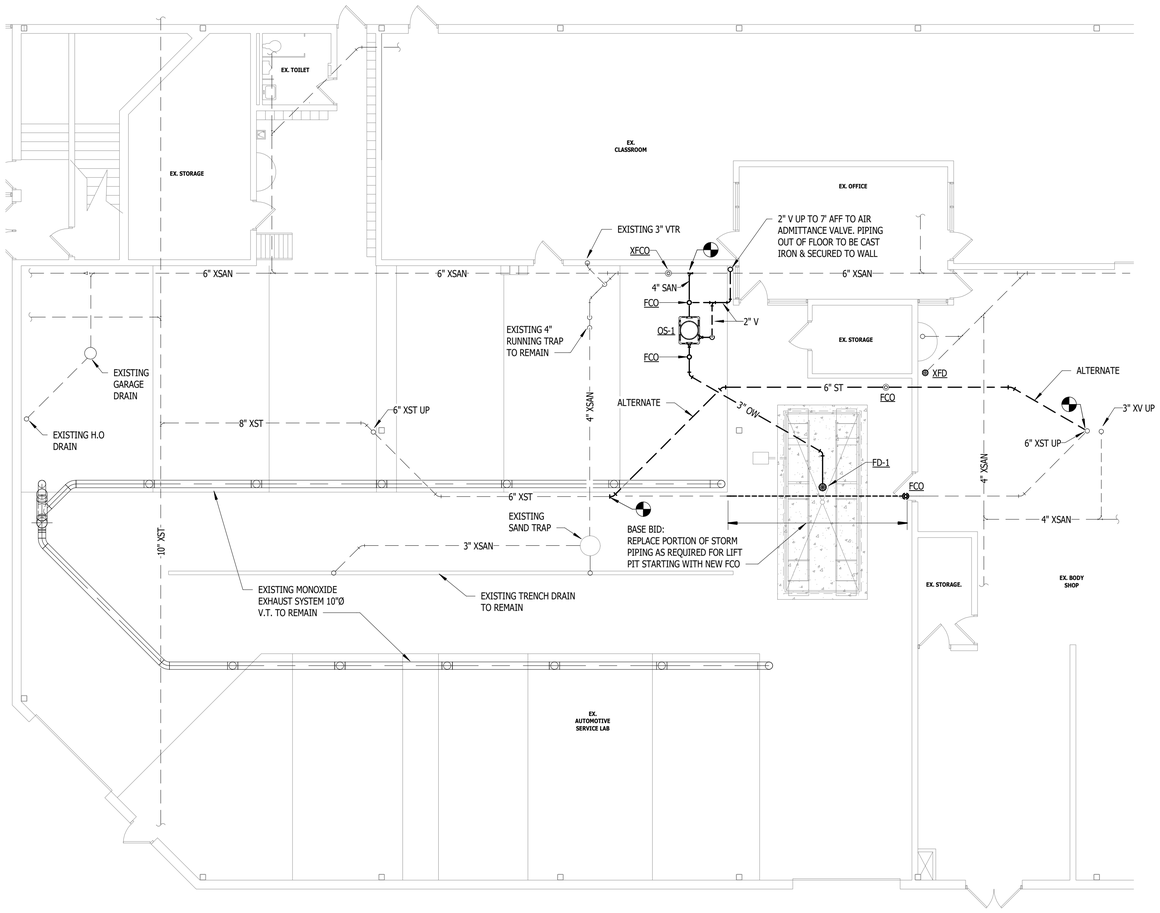
NO.	DATE

DRAWN BY CJK
DATE 05/16/2025
APPROVED SSC

SHEET NO.
P0.1

PROJECT NO.
2511

KTS ENGINEERING GROUP
CONSULTING ENGINEER
491 E. WRIGHT AVE. SHEPHERD, MI 48883
(PH) 989-567-1100 info@KTSEngineeringGroup.com

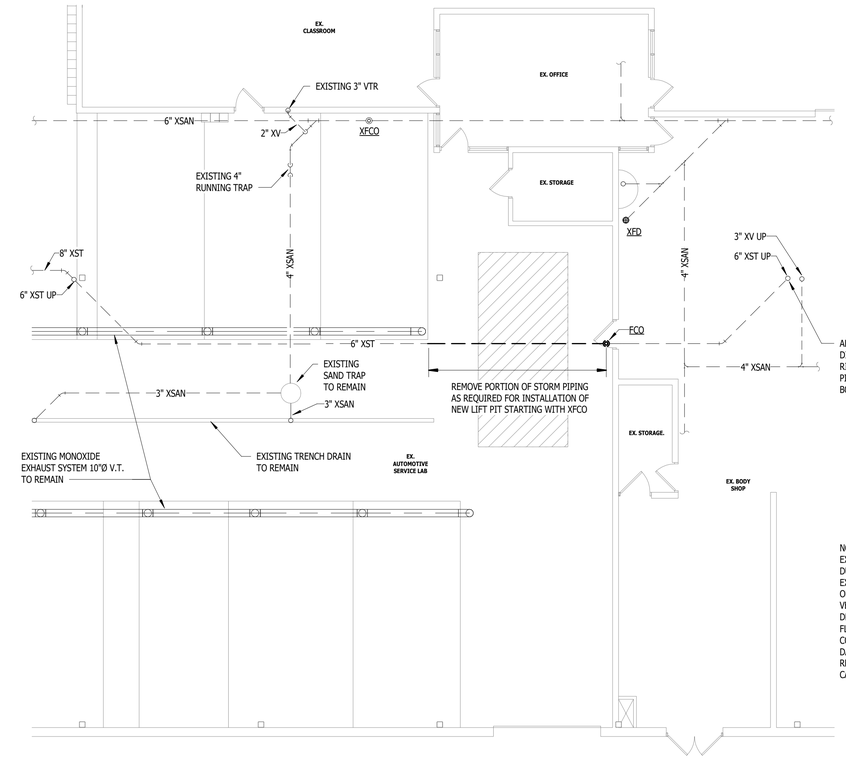


PARTIAL FLOOR PLAN - PLUMBING UNDERGROUND
1/8" = 1'-0"

NOTE:
VERIFY DEPTH OF EXISTING RAIN CONDUCTOR PIPE AT NEW LIFT LOCATION INCLUDING DEPTH AT NEW POINT OF CONNECTION INDICATED IN ALTERNATE. NOTIFY ENGINEER OF FINDINGS. DO NOT PROCEED WITH WORK UNTIL DIRECTED BY ENGINEER.

BASE BID: IF PIPING IS BELOW DEPTH OF NEW LIFT, REMOVE AND REPLACE PORTION OF PIPING AT LOCATION OF NEW LIFT PIT.

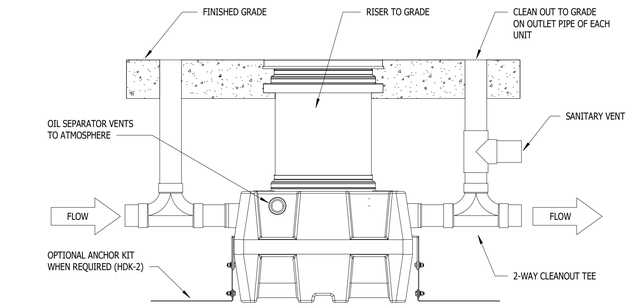
ALTERNATE: IF PIPING DEPTH IS NOT BELOW CONCRETE OF NEW LIFT PIT, REPLACE PORTION OF RAIN CONDUCTOR FROM RISER IN BODY SHOP TO ROUTE AROUND THE NORTH SIDE OF PIT AND RECONNECT TO EXISTING RAIN CONDUCTOR PIPE WEST OF THE PIT AS SHOWN.



ALTERNATE:
DISCONNECT EXISTING RC RISER FROM UNDERFLOOR PIPING. ABANDON PIPING IN BODY SHOP UNDERFLOOR.

NOTE:
EXISTING UNDERFLOOR PIPING AND DUCTS SHOWN ARE BASED ON EXISTING DRAWINGS AND FIELD OBSERVATIONS. CONTRACTOR TO VERIFY LOCATIONS, SIZES, AND DEPTHS IN FIELD AS REQUIRED FOR FLOOR CUTTING, DEMOLITION, AND CONNECTION TO NEW WORK. ANY DAMAGE TO EXISTING SYSTEMS TO BE REPAIRED BY THE CONTRACTOR CAUSING THE DAMAGE.

PARTIAL FLOOR PLAN - PLUMBING UNDERGROUND DEMOLITON
1/8" = 1'-0"



1/P1.1 OIL SEPARATOR DETAIL
NOT TO SCALE

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GENERAL ELECTRICAL NOTES & SPECIFICATIONS:

1. EXECUTE THE WORK REQUIRED IN A MANNER EVIDENCED AS THE "BEST TRADE PRACTICES" CONTRIBUTING TO EFFICIENCY OF OPERATION, MINIMUM MAINTENANCE, ACCESSIBILITY AND AESTHETICS OF THE INSTALLATION.

2. MECHANICAL AND ELECTRICAL PLANS ARE DIAGRAMMATIC IN NATURE, INTENDED TO INDICATE DESIGN INTENT ONLY. CONTRACTOR IS RESPONSIBLE TO COORDINATE SPECIFIC LOCATIONS OF ITEMS AND ADJUST AS REQUIRED TO ACCOMMODATE CODE REQUIREMENTS, MANUFACTURER'S INSTALLATION REQUIREMENTS, AND THE WORK OF OTHER TRADES.

3. MECHANICAL AND ELECTRICAL INFORMATION IS PRESENTED ON AN X-REFERENCED BACKGROUND PLAN. IN CASE OF CONFLICT BETWEEN BACKGROUND PLAN AND ARCHITECTURAL FLOOR PLAN, ARCHITECTURAL FLOOR PLAN SHALL GOVERN.

4. RUN ALL PIPING, CONDUIT, ETC. CONCEALED IN WALLS WHENEVER POSSIBLE AND AVOID EXPOSED INSTALLATION UNLESS SPECIFICALLY REQUIRED (TYPICAL UNLESS NOTED OTHERWISE ON DRAWINGS). IN ANY LOCATIONS WHERE CONCEALMENT IS NOT POSSIBLE, CONTACT ENGINEER PRIOR TO INSTALLATION FOR PERMISSION FROM ENGINEER.

5. THE ENGINEER WILL NOT HAVE CONTROL OR CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES. ENGINEER IS NOT RESPONSIBLE FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK; AND WILL NOT BE RESPONSIBLE FOR CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THOSE DOCUMENTS PREPARED BY THE ENGINEER.

6. ALL CONSTRUCTION SHALL BE DONE IN COMPLIANCE WITH CURRENT CODES, INCLUDING: MICHIGAN BUILDING CODE, MICHIGAN PLUMBING CODE, MICHIGAN MECHANICAL CODE, NATIONAL ELECTRICAL CODE (NEC), MICHIGAN BUILDING REHABILITATION CODE (WHEN APPLICABLE), NFPA CODES, LIFE SAFETY CODE (WHEN APPLICABLE), AMERICANS WITH DISABILITIES ACT (ADA), MICHIGAN BARRIER FREE CODES, MICHIGAN ENERGY CODE, MICHIGAN DEPARTMENT OF PUBLIC HEALTH CODES (WHEN APPLICABLE), AND ALL OTHER LOCAL, STATE, AND FEDERAL APPLICABLE CODES. THE CONTRACTOR SHALL UTILIZE THE LATEST ADOPTED EDITIONS OF ALL CODES.

7. IF BIDDING CONTRACTOR WOULD LIKE TO SUBSTITUTE ANY SPECIFIED ELECTRICAL DEVICES, LIGHT FIXTURES, CONTROLLERS, PANELS, DISCONNECTS, VFD'S, ELEC. GEAR, ETC., THEY MUST PROVIDE SUBMITTAL TYPE DRAWINGS TO THE ENGINEER A MINIMUM OF 7 DAYS PRIOR TO BIDDING THE PROJECT. IF THESE APPROVAL DRAWINGS ARE NOT SUBMITTED AND APPROVED, THE SPECIFIED EQUIPMENT MUST BE USED - NO EXCEPTIONS.

8. EQUIPMENT AND MATERIALS SHALL BE UL APPROVED AND SPECIFICATION GRADE.

9. ELECTRICAL CONTRACTORS SHALL SECURE PERMITS AND INSPECTIONS REQUIRED BY STATE AND LOCAL LAWS AND ORDINANCES AND PAY ALL FEES AND EXPENSES IN CONNECTION THEREWITH AS A PART OF THEIR WORK UNDER THIS CONTRACT.

10. UPON COMPLETION OF WORK, FURNISH OWNER CERTIFICATES OF FINAL INSPECTION AND APPROVAL FROM AUTHORITIES HAVING JURISDICTION.

11. ALL CONDUCTORS SHALL BEAR IDENTIFICATION AS TO SIZE AND TYPE OF INSULATION AND SHALL BE EQUIPPED WITH WIRE MARKERS INDICATING THE CIRCUIT NUMBER, WIRE NUMBER AND/OR PHASE LETTER.

12. IDENTIFY ELECTRICAL EQUIPMENT WITH THE NAME OF THE EQUIPMENT, THE EQUIPMENT CONTROLLED, OR THE SYSTEM INVOLVED. DISCONNECT SWITCHES AND MOTOR STARTERS SHALL HAVE NAMEPLATES TO INDICATE THE EQUIPMENT THEY CONTROL. ALL ELECTRICAL EQUIPMENT POWER PANELS SHALL HAVE NAMEPLATES DESIGNATING THEIR NAMES AND VOLTAGE RATING, SUCH AS LP-A, 120/208 VOLT, 3 PHASE, 4 WIRE. NAMEPLATES SHALL BE ENGRAVED THREE-LAYER PLASTIC, BLACK LETTERS ON WHITE BACKGROUND FOR NORMAL POWER AND WHITE LETTERS ON RED BACKGROUND FOR EMERGENCY/STANDBY POWER PANELS AND ASSOCIATED EQUIPMENT. NO HANDWRITTEN OR PRINTED LABELING WILL BE ACCEPTED AS FINAL RECORD UPON PROJECT COMPLETION. NAMEPLATES SHALL BE A MINIMUM OF 1" X 3", OR AS NOTED ON NAMEPLATE SCHEDULE IF THERE IS ONE ON DRAWINGS. AS A TEXT SIZE MINIMUM:

    A. SWITCHBOARD OR PANELBOARD MAINS: 1" HIGH

    B. SWITCHBOARD OR PANELBOARD BRANCHES: ½" HIGH

    C. STARTERS/DISCONNECTS: ½" HIGH

    D. MANUAL MOTOR STARTERS: ¼" HIGH

13. PANEL SCHEDULES SHALL BE TYPEWRITTEN AND INSTALLED FOR EVERY PANEL, BE IT NEW OR EXISTING. FOR EXISTING PANELS, CIRCUITRY SHALL BE VERIFIED PRIOR TO UPDATING PANEL SCHEDULE. HANDWRITTEN SCHEDULES, AND/OR CROSSED OFF EXISTING SCHEDULES ARE NOT ACCEPTABLE.

14. ALL WORK AND MATERIALS SHALL BE GUARANTEED IN WRITING FOR (1) YEAR FROM PROJECT COMPLETION UNLESS A FURTHER GUARANTEE IS NOTED ELSEWHERE.

15. ALL SWITCHES, RECEPTACLES, SMALL MANUAL MOTOR STARTERS, OR TOGGLE SWITCHES SHALL HAVE THE CIRCUIT NUMBER IDENTIFIED ON THE DEVICE COVER PLATE USING CLEAR ADHESIVE TAPE LABELS WITH ¼" HIGH PRINTED BLOCK CHARACTERS IN BLACK. NO HANDWRITTEN LABELS WILL BE ACCEPTED AS FINAL RECORD.

16. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH CONDITIONS OF WHICH WILL AFFECT THE WORK HE IS TO PERFORM. THE SUBMISSION OF A PROPOSAL BY THIS CONTRACTOR SHALL BE CONCLUSIVE EVIDENCE THAT THIS CONTRACTOR HAS VISITED THE SITE AND HAS GIVEN PROPER CONSIDERATION AND EVALUATION OF THESE CONDITIONS IN THE PREPARATION OF HIS PROPOSAL. NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE ON HIS BEHALF FOR EXTRA EXPENSE INCURRED DUE TO FAILURE OR NEGLECT ON HIS PART TO MAKE THIS VISIT AND EXAMINATION.

17. WHERE ACTIVE SEWERS, GAS, ELECTRIC, OR OTHER SERVICES ARE ENCOUNTERED DURING THE PERFORMANCE OF THIS CONTRACT, THE CONTRACTOR SHALL PROTECT, BRACE AND SUPPORT THEM AS REQUIRED. DO NOT PREVENT, INTERRUPT OR DISTURB OPERATION OF EXISTING SERVICES THAT ARE TO REMAIN. RELOCATE EXISTING SERVICES IF/AS REQUIRED.

18. THE CONTRACTOR SHALL CHECK THE UTILITY COMPANIES AND MUNICIPAL AGENCIES FOR EXACT LOCATIONS OF SERVICES WHICH THEY MAY EXPECT TO ENCOUNTER.

19. IN GENERAL, MOUNTING HEIGHTS ABOVE FINISHED FLOOR TO THE CENTERLINE OF BOXES AND EQUIPMENT SHALL BE AS PER AMERICANS WITH DISABILITIES ACT, AND MICHIGAN BARRIER FREE CODES.

20. WORK SHALL BE PERFORMED BY SKILLED MECHANICS WELL VERSED IN THEIR PARTICULAR TRADES.

21. RESPONSIBILITY FOR CARE AND PROTECTION OF ELECTRICAL WORK RESTS WITH THE CONTRACTOR UNTIL IS HAS BEEN TESTED AND ACCEPTED.

22. CONTRACTOR IS TO CHECK DOOR SWINGS WITH ARCHITECTURAL PLANS AND MOUNT LIGHT SWITCHES, CONTROLS, ETC., ACCORDINGLY. VERIFY WITH LATEST ARCHITECTURAL DRAWINGS.

23. ELECTRICAL EQUIPMENT SHALL BE SQUARE D, SIEMENS, EATON, G.E. OR MATCH EXISTING.

24. DISCONNECT SWITCHES SHALL BE NEMA HEAVY DUTY, FUSIBLE OR NON-FUSIBLE AS NOTED ON PLANS, WITH A NEMA 3R ENCLOSURE WHEN MOUNTED OUTDOORS.

25. THE NEUTRAL CONDUCTOR OF THE WIRING SYSTEM TOGETHER WITH THE CONDUIT SYSTEM AND SERVICE EQUIPMENT SHALL BE GROUNDED AND SIZED PER NEC ARTICLE 250 – SEE DETAIL ON DRAWINGS ALSO.

26. HOLES THROUGH WALLS OR PARTITIONS REQUIRED FOR ELECTRICAL WORK SHALL BE NEATLY CUT TO SIZE. CONDUITS PENATRATING OUTSIDE WALLS SHALL BE SEALED ACCORDINGLY, UNDERGROUND CONDUITS SHALL HAVE LINK SEALS. PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE FIRE-STOPPED BY APPROVED METHODS AND MATERIALS. NO BEAMS OR OTHER STRUCTURAL MEMBERS SHALL BE DRILLED, BURNED, OR CUT.

27. LOCATIONS OF WIRING DEVICES SUCH AS LIGHT SWITCHES, DUPLEX RECEPTACLES, THERMOSTATS, ETC., SHALL BE COORDINATED WITH OTHER TRADES.

28. IN GENERAL, ALL MOTORS ARE FURNISHED AND INSTALLED UNDER THE MECHANICAL SECTION OF THE SPECIFICATIONS. ALL STARTERS, FUSED SWITCHES, SAFETY SWITCHES, INCLUDING ALL POWER WIRING SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR.

29. OUTLET BOXES IN THE SAME WALL BUT SERVING DIFFERENT ROOMS SHALL BE AT LEAST 4" APART TO MINIMIZE NOISE TRANSMISSION. WHEN LOCATED ON FIRE WALLS, THEY SHALL BE 24" APART.

30. LIGHTING AND CONTROL WIRING SHALL BE TESTED FOR SHORTS AND OPENS AND SHALL BE GIVEN A COMPLETE OPERATIONAL TEST.

31. THE CONTRACTOR SHALL TEST ALL CIRCUITS AS SOON AS CONDUCTORS ARE INSTALLED AND MAKE FINAL TESTS WHEN ALL WORK IS COMPLETE. IF CIRCUITS ARE NOT PROPERLY CONTROLLED AND INSULATED AT TIME OF EACH FINAL TEST, THE NECESSARY REPAIRS AND TESTS SHALL BE MADE AT THE CONTRACTORS EXPENSE.

32. ELECTRICAL EQUIPMENT SHALL MEET INSTALLATION STANDARDS PROVIDED IN NEC ARTICLE 110. COORDINATE LOCATIONS OF M.E.P. ITEMS WITH CONTRACTORS PRIOR TO CONSTRUCTION TO ASSURE THAT CLEARANCES ARE MET. LACK OF COORDINATION BETWEEN CONTRACTORS WILL NOT RESULT IN EXTRA MONIES AWARDED FOR RELOCATION OF M.E.P. ITEMS.

33. CHECK FINAL LOCATIONS OF LIGHT FIXTURES AND CEILING ELECTRICAL ITEMS WITH GRILLES AND REGISTERS, CAMERAS, FANS, SPRINKLER HEADS, ETC. COORDINATE WITH RESPECTIVE CONTRACTORS PRIOR TO INSTALLATION. NO MONIES WILL BE AWARDED TO CONTRACTORS HAVING TO RELOCATE ITEMS DUE TO LACK OF COORDINATION BETWEEN CONTRACTORS. MECHANICAL AND ELECTRICAL PLANS SHOW SCHEMATIC LOCATIONS ONLY – REFERENCE ARCHITECTURAL REFLECTIVE CEILING PLANS.

34. ANY DISCREPANCIES BETWEEN ARCHITECTURAL DRAWINGS AND ELECTRICAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION.

35. CONTRACTOR SHALL MAINTAIN AND KEEP AN UP-TO-DATE SET OF DRAWINGS REFLECTING "AS BUILT" CONDITIONS OF THEIR WORK. CONTRACTOR SHALL INDICATE EXACT DIMENSIONS AND ELEVATIONS FOR ALL UNDERGROUND AND/OR CONCEALED WORK. UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL DELIVER TO THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR THE AS-BUILT DRAWINGS. AS BUILT DRAWINGS MUST BE IN THE POSSESSION OF THE C.M. OR G.C. PRIOR TO FINAL PAYMENT TO THE E.C.

36. THE WIRING METHOD(S) USED SHALL BE SUITABLE FOR THE INSTALLATION AND USE IN CONFORMITY WITH THE PROVISIONS PROVIDED BY THE NEC, LISTED OR LABELED EQUIPMENT SHALL BE USED OR INSTALLED IN ACCORDANCE WITH ANY INSTRUCTIONS INCLUDED IN THE LISTING OR LABELING. REFER TO NEC, SECTION 110.3(A) AND (B).

37. THE MAIN SERVICE DISCONNECTS SHALL BE IDENTIFIED AS THE MAIN SERVICE DISCONNECTION MEANS PER NEC 2023, ARTICLE 230.70(B).

38. CONTRACTOR SHALL CHECK ELECTRICAL FLOOR PLANS FOR "ISLAND" TYPE ELECTRICAL OUTLETS AND INSTALL UNDER-FLOOR CONDUITS AND WIRING ACCORDINGLY. SEE PLANS.

39. ARC-FLASH HAZARD WARNING SHALL BE PROVIDED AT ALL ELECTRICAL PANELS PER NEC 2023, SECTION 110.16

40. FIRST CLASS WORKABLE SYSTEMS SHALL BE PROVIDED BY THE CONTRACTOR. IF, IN THE OPINION OF THE CONTRACTOR, CHANGES IN THE DRAWINGS OR SPECIFICATIONS ARE REQUIRED TO PRODUCE FIRST-CLASS WORKABLE SYSTEMS, CONTRACTOR SHALL REQUEST AN INTERPRETATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK. IT THE CONTRACTOR FAILS TO MAKE SUCH A REQUEST, NO EXCUSE WILL THEREAFTER BE ENTERTAINED FOR FAILURE TO PROVIDE FIRST-CLASS WORKABLE SYSTEMS. ENGINEER HAS THE FINAL SAY AS TO WHAT IS CONSIDERED "FIRST CLASS WORKABLE SYSTEMS".

41. SHOP DRAWINGS ARE TO BE THOROUGHLY CHECKED (AND NOTED SO ON FRONT COVER) BY THE CONTRACTOR PRIOR TO SUBMITTING THEM TO THE ARCHITECT/ENGINEER. REVIEW BY THE ENGINEER, SHALL NOT BE CONSTRUED AS A COMPLETE CHECK, BUT ONLY THAT THE GENERAL METHOD OF CONSTRUCTION AND DETAILING IS SATISFACTORY. REVIEW SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS WHICH MAY EXIST. SHOP DRAWINGS ARE TO BE SUBMITTED VIA INTERNET IN PDF FORM. NO HARD COPIES WILL BE ACCEPTED. IF E.C. DOES NOT REVIEW DRAWINGS AND NOTES SAME ON FRONT COVER PRIOR TO SUBMITTAL TO ARCHITECT/ENGINEER, THEY WILL BE REJECTED.

42. ELECTRICAL CONTRACTOR IS TO REFER TO THE TEMPERATURE CONTROL SECTION OF THE SPECIFICATIONS AND THE MECHANICAL EQUIPMENT SCHEDULE FOR DEFINITION OF WHICH TRADES ARE RESPONSIBLE FOR HVAC INTERLOCKS AND OPERATIONAL SWITCHES.

43. ALL ROOF EQUIPMENT THAT HAS POWER TO IT MUST BE PROVIDED WITH A DUPLEX RECEPTACLE (WP AND GFI) WITHIN 25 FEET OF THE UNIT. MOUNT RECEPTACLES ON HOUSING, CIRCUIT WITH NEARBY RECEPTACLES BELOW, AND NOT WITH ROOF UNIT PER NEC NOTE: ROOF RECEPTACLES MAY OR MAY NOT BE SHOWN ON PLANS

44. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO CHECK THE RELATED MECHANICAL/KITCHEN/ REFRIGERATION/ELEVATOR/ETC. DRAWINGS TO SEE WHAT DISCONNECT SWITCHES/STARTERS/RELAYS/ETC. ARE PACKAGED IN BY THE SPECIFIC EQUIPMENT SUPPLIERS. IF NONE ARE SPECIFICALLY NOTED THE E.C. IS RESPONSIBLE TO PROVIDE AND INSTALL AS REQUIRED FOR SEQUENCES OF OPERATION. E.C. IS TO REVIEW MECHANICAL/KITCHEN/REFRIGERATION/ELEVATOR/ETC. SEQUENCES OF OPERATION, FOUND IN SECTIONS OF THE DRAWINGS AND SPECIFICATIONS OTHER THAN THE ELECTRICAL SECTIONS FOR SAID SEQUENCES. DISCONNECT SWITCHES/STARTERS/RELAYS/ETC. MAY OR MAY NOT BE SHOWN ON THE ELECTRICAL DRAWINGS.

45. MANUALS: PER MICHIGAN ENERGY CODES (SPECIFICALLY ASHRAE 90.1 STANDARDS), CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:

    A. SUBMITTAL DATA FOR ALL ELECTRICAL EQUIPMENT CLEARLY STATING EQUIPMENT RATING, EXACTLY WHAT MODELS, ACCESSORIES, OPTIONS ARE INSTALLED.

    B. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.

    C. NAMES AND ADDRESSES AND PHONE NUMBERS/EMAIL ADDRESSES FOR AT LEAST ONE QUALIFIED SERVICE AGENCY FOR EACH PIECE OF EQUIPMENT. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE.

46. WIRING TO BE MINIMUM #12 (FOR RUNS OVER 100 FEET, MINIMUM #10).

47. ALL EQUIPMENT INSTALLED AS PART OF THIS PROJECT SHALL BE NEW, REFURBISHED EQUIPMENT MAY BE USED WHERE NEC ALLOWS.

48. CONTRACTOR IS RESPONSIBLE TO PERFORM THE SHORT CIRCUIT STUDY FOR THE PROJECT AND THAT ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED TO MEET THOSE REQUIREMENTS.

49. ALL ABOVE GROUND WIRING TO BE INSTALLED IN EMT (THINWALL CONDUIT) UNLESS ROMEX IS EXPLICITLY ALLOWED.

50. OCCUPANCY AND TOGGLE SWITCHES AS WELL AS RECEPTACLES SHALL BE SPECIFICATION GRADE, COLOR TO BE CHOSEN BY ARCHITECT DURING SHOP DRAWING STAGE.

51. DEVICE PLATES FOR SWITCHES, RECEPTACLES, TELEPHONE, COMPUTER, ETC., SHALL BE AS MANUFACTURED PASS AND SEYMOUR, HUBBELL, OR BRYANT. THEY SHALL BE 0.040 " THICK BRUSHED STAINLESS STEEL UNLESS NOTED OTHERWISE. FOR EXISTING PROJECTS, COVER PLATES SHALL MATCH OTHERS IN THE AREA UNLESS NOTED OTHERWISE.

52. ALL BUSSING AND WIRING TO BE COPPER. NO ALUMINUM IS ALLOWED ON THIS PROJECT.

53. ALL NEW ELECTRICAL DEVICES AND ASSOCIATED OUTLET BOXES SHALL BE FLUSH MOUNTED UNLESS NOTED OTHERWISE. ALL CONDUIT AND WIRING SHALL BE CONCEALED. SURFACE RACEWAY AND ASSOCIATED BOXES SHALL ONLY BE PERMITTED WHERE NOTED AND SHALL BE DISCUSSED WITH C.M. OR G.C. PRIOR TO INSTALLATION.

54. CONNECT ALL EMERGENCY AND EXIT BATTERY PACKS TO NEARBY LIGHTING CIRCUITS, AHEAD OF SWITCHES PER NeC SO EMERGENCY/EXIT LIGHTS OPERATE ON LOSS OF POWER.

55. ELECTRICAL CONTRACTOR SHALL "RING OUT" ALL CIRCUITS IN EXISTING PANELBOARDS AFFECTED BY THE WORK OF THIS PROJECT AND PROVIDE UPDATED TYPED PANELBOARD DIRECTORIES. PROVIDE BLANK COVERS WHERE BREAKERS HAVE BEEN REMOVED.

END OF ELECTRICAL NOTES/SPECIFICATIONS

ABBREVIATIONS

"	INCHES
#	NUMBER
'	FEET
1P	1 POLE (2P, 3P, 4P, ETC.)
@	AT
A	AMPERE
A.F.F.	ABOVE FINISHED FLOOR
ACLG	ABOVE CEILING
ACT	ABOVE COUNTER
ADO	AUTOMATIC DOOR OPENER
AF	AMP FRAME
AFCI	ARC FAULT COMBINATION CIRCUIT INTERRUPTER
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
AMPL	AMPLIFIER
ANNUN	ANNUNCIATOR
APPROX	APPROXIMATELY
AQ-STAT	AQUA-STAT
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMP SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
B.F.	BOTTLE FILLER
B.M.S.	BUILDING MANAGEMENT SYSTEM
BATT	BATTERY
BLDG	BUILDING
C.	CONDUIT
CAB	CABINET
CAT	CATALOG
CAT6	CATEGORY 6 CABLING
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CL	CONNECTED LOAD
COF	COFFEE MAKER
COMB	COMBINATION
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUATION, CONTINUOUS
CONTR	CONTRACTOR
CP	CIRCULATING PUMP
CT	CURRENT TRANSOFORMER
CTR	CENTER
CU	COPPER
DCP	DOMESTIC WATER CIRCULATING PUMP
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DL	DEMAND LOAD
DN	DOWN
DPR	DAMPER
DS	DISCONNECT SWITCH
DWG	DRAWING
E.C.	ELECTRICAL CONTRACTOR
E.T.R.	EXISTING TO REMAIN
ELEC	ELECTRICAL
ELEV	ELEVATOR
ELU	EMERGENCY LIGHTING UNIT
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EP	ELECTRIC PNEUMATIC
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPLOSION PROOF
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FABP	FIRE ALARM BOOSTER SUPPLY PANEL
FACP	FIRE ALARM CONTROL PANEL
FASP	FIRE ALARM SLAVE PANEL
FCU	FAN COIL UNIT
FIXT	FIXTURE
FLR	FLOOR
FU	FUSE
FUDS	FUSED DISCONNECT SWITCH
G.C.	GENERAL CONTRACTOR
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
GRS	GALVANIZED RIGID STEEL (CONDUIT)
GYP	GYPSUM BOARD
H.V.A.C.	HEATING, VENTILATING & AIR CONDITIONING
HOA	HAND-OFF-AUTO SWITCH
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HT	HEIGHT
HTR	HEATER
HV	HIGH VOLTAGE
I/W	INTERLOCK WITH
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IR	INFRARED
J-BOX	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT- AMPERE RECTIVE
KW	KILOWATT
KWC	KILOWATT CONNECTED
KWD	KILOWATT DEMAND
KWH	KILOWATT HOUR
LOC	LOCATE OR LOCATION
LP	LIGHTNING PEOTECTION
LT	LIGHT
LTG	LIGHTING
LTNG	LIGHTNING
LV	LOW VOLTAGE
M.C.	MECHANICAL CONTRACTOR
M.E.P.	MECHANICAL ELECTRICAL PLUMBING
M/C	MOMENTARY CONTACT
MAGS	MAGNETIC STARTER
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MAIN CIRCUIT BREAKER
MDC	MAIN DISRIBUTION CENTER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MFS	MAIN FUSED DISCONNECT SWITCH
MH	MANHOLE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MMS	MANUAL MOTOR STARTER
MOA	MULTIOUTLET ASSEMBLY
MSBD	MAIN SWITCHBOARD
MSP	MOTOR STARTER PANELBOARD
MT	MOUNT
MT.C	EMPTY CONDUIT
MTR	MOTOR, MOTORIZED
MTS	MANUAL TRANSFER SWITCH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELEC MFGR'S ASSOCIATION
NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NPF	NORMAL POWER FACTOR
NTS	NOT TO SCALE
OH	OVERHEAD
OL	OVERLOADS
P	PLATE
PA	PUBLIC ADDRESS
PB	PULL BOX OR PUSHBUTTON
PE	PNEUMATIC ELECTRIC
PED	PEDESTAL
PF	POWER FACTOR
PH	PHASE
PIV	POST INDICATING VALVE
PNL	PANEL
PP	POWER POLE
PR	PAIR
PRI	PRIMARY
PROJ	PROJECTION
PRV	POWER ROOF VENTILATOR
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE (CONDUIT)
PWR	POWER
QUAN	QUANTITY
RCPT	RECEPTACLE
REQD	REQUIRED
REX	REMOVE EXISTING
RM	ROOM
RSC	RIGID STEEL CONDUIT
RTU	ROOF TOP UNIT
S/N	SOLID NEUTRAL
S/S	STOP/START PUSHBUTTONS
SC	SURFACE CONDUIT
SEC	SECONDARY
SHT	SHEET
SIM	SIMILAR
SP	SPARE
SPEC	SPECIFICATION
SPKR	SPEAKER
SR	SURFACE RACEWAY
SS	STAINLESS STEEL
SSW	SELECTOR SWITCH
STA	STATION
STD	STANDARD
SURF	SURFACE MOUNTED
SW	SWITCH
SWBD	SWITCHBOARD
SWL	SWITCH WITH LIGHTS
SYM	SYMMETRICAL
SYS	SYSTEM
T-STAT	THERMOSTAT
TEL	TELEPHONE
TEL/DATA	TELEPHONE/DATA
TERM	TERMINAL
TL	TWIST LOCK
TR	TAMPER RESISTANT
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TVTC	TELEVISION TERMINAL CABINET
TYP	TYPICAL
UC	UNDER COUNTER
UCR	UNDER COUNTER REFRIGERATOR
UE	UNDERGROUND ELECTRICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UT	UNDERGROUND TELEPHONE
UTIL	UTILITY
UV	UNIT VENTILATOR
V	VOLT
VA	VOLT-AMPERES
VDT	VIDEO DISPLAY TERMINAL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WATT
W.G.	WIRE GUARD
W/	WITH
W/O	WITHOUT
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER
XFR	TRANSFER
℄	CENTER LINE
∠	ANGLE
▲	DELTA

PHASE LINE TYPES

NEW

EXISTING

DEMOLISHED

ELECTRICAL FIXTURE LEGEND

DUPLEX RECEPTACLE AT 18" AFF

DISCONNECT SWITCH, NON-FUSED, HEAVY DUTY, HP-RATED - ASSUME 30 AMP SWITCH UNO ON ONE LINE DIAGRAM OR FLOOR PLANS.

JUNCTION BOX

DISTRIBUTION LEGEND

RECEPTACLE PANELBOARD (208Y/120V, 3Ø, 4W), REFER TO PANEL SCHEDULES FOR MORE INFORMATION.

LIGHTING PANELBOARD (480Y/277V, 3Ø, 4W), REFER TO PANEL SCHEDULES FOR MORE INFORMATION..

T-

TRANSFORMER

LOW VOLTAGE:

DATA CABLING TO BE HANDLED BY OWNERS VENDER, E.C. SHALL PROVIDE ALL CONDUITS, BACK BOXES AND PULL WIRE PER DRAWINGS.

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW , MICHIGAN

NEW AUTOMOTIVE LIFT PIT FOR:
BAY AREANAC ISD
BAY CITY, MICHIGAN

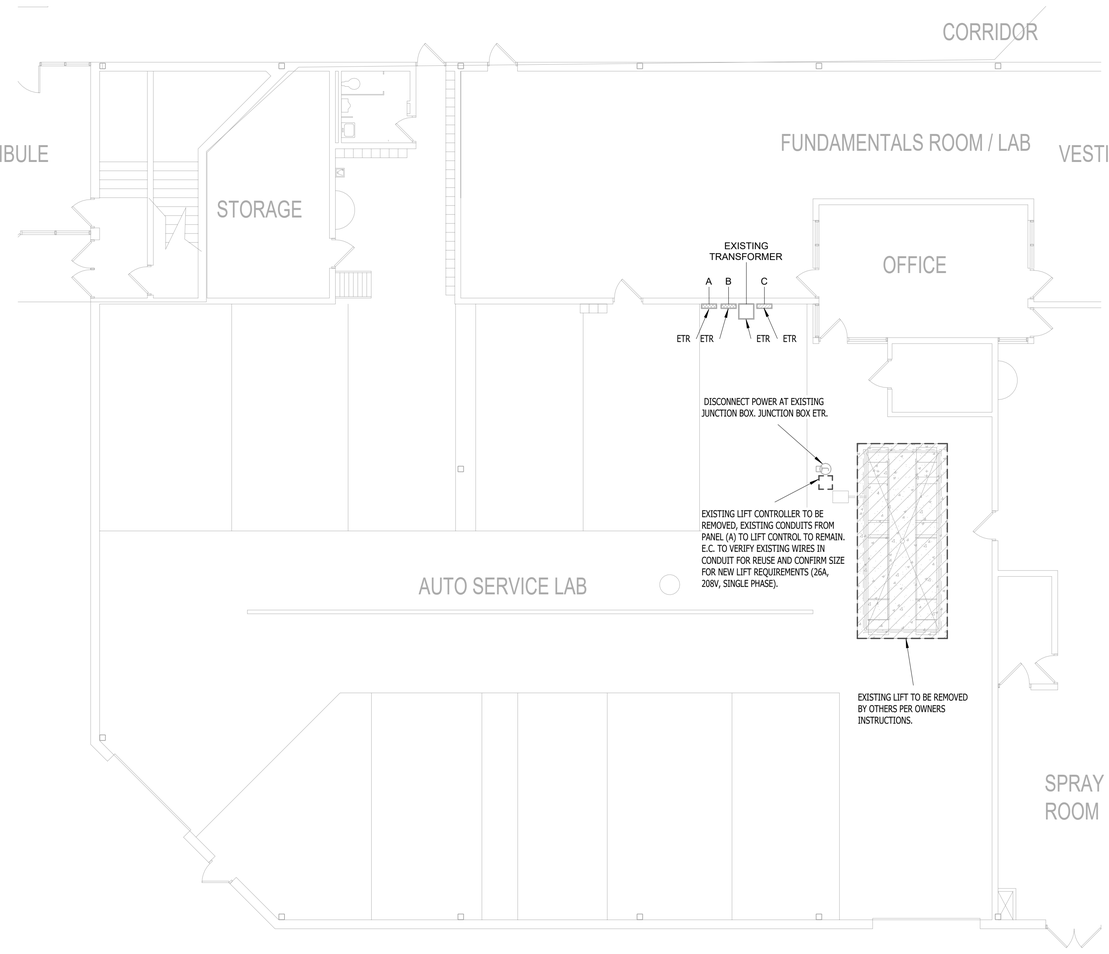
NO.	DATE

DRAWN BY J.W.A.
DATE 05/16/2025
APPROVED KTS

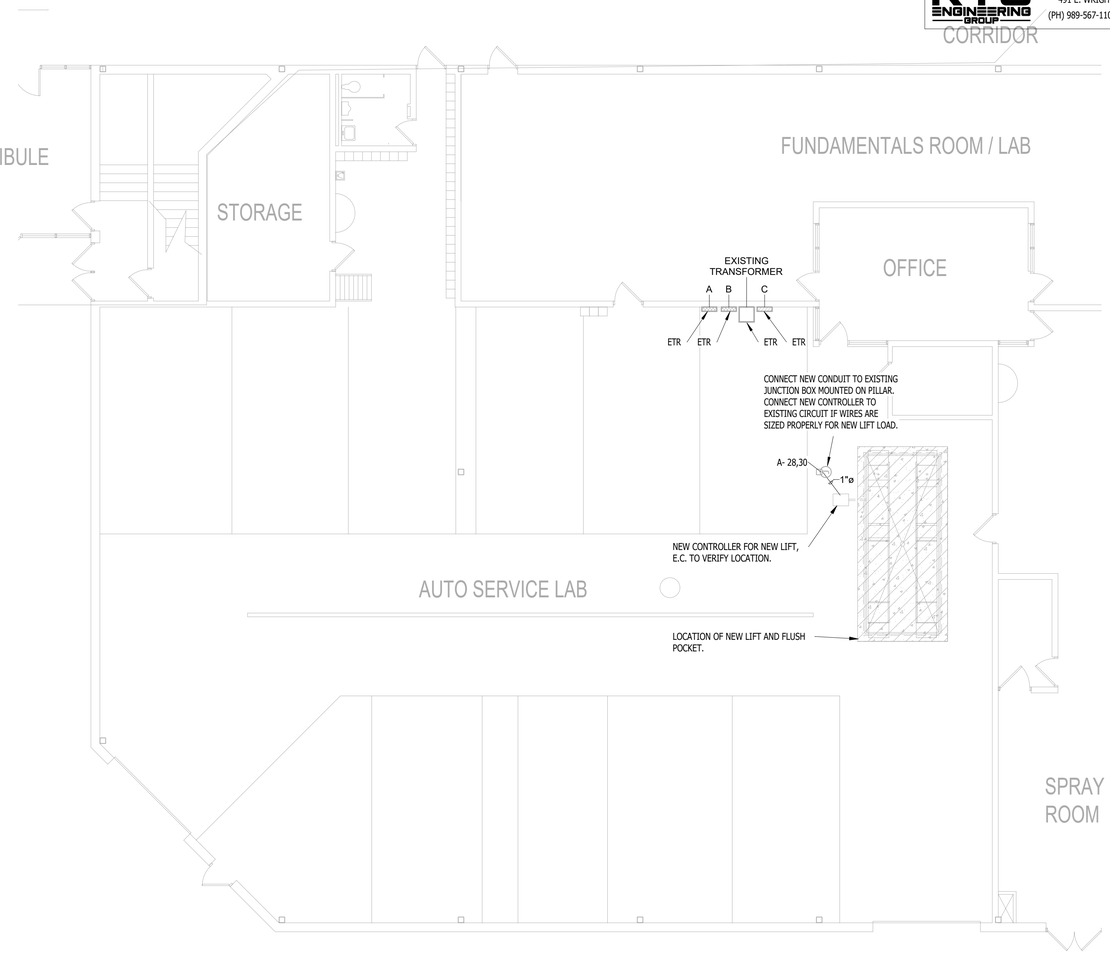
SHEET NO.
E0.0

PROJECT NO.
2511

KTS ENGINEERING GROUP
CONSULTING ENGINEER
491 E. WRIGHT AVE. SHEPHERD, MI 48883
(PH) 989-567-1100 info@KTSEngineeringGroup.com



DEMOLITION POWER PLAN
1/8" = 1'-0"



POWER PLAN
1/8" = 1'-0"

ELECTRICAL SCOPE OF WORK

E.C. TO DISCONNECT POWER TO EXISTING LIFT, LIFT IS TO BE REMOVED BY OTHER. AFTER LIFT REMOVAL, FLOOR CUTS AND DEMOLITION BY G.C. WILL BE REQUIRED FOR NEW "FLUSH MOUNT LIFT RACK" TO ACCOMMODATE FLOOR POCKET. FLOOR CUTS AND DEMOLITION BY E.C. WILL BE REQUIRED FOR NEW UNDERFLOOR CONDUITS FROM LIFT TO NEW CONTROLLER LOCATION AND POWER CONDUITS FROM EXISTING JUNCTION BOX TO NEW CONTROLLER. THE EXISTING WIRES IN CONDUITS FOR THE LIFT WILL NEED TO BE CONFIRMED AS SIZED PROPERLY FOR THE NEW MAXIMUM LOAD (26A, 208V, SINGLE PHASE) OF THE NEW LIFT. EXISTING CB IN PANEL A WILL NEED TO BE REPLACED WITH A 2-POLE 35A CB FOR THE POWER REQUIREMENTS OF THE NEW LIFT.

TSSF ARCHITECTS, INC.
ARCHITECTS INTERIORS PLANNERS
122 N. WASHINGTON AVENUE SAGINAW, MICHIGAN

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PROJECT NO.
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KTS ENGINEERING GROUP
CONSULTING ENGINEER
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BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS

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

NOTES:
1. THE ABOVE TABLE VALUES ARE BASED ON COPPER CONDUCTORS, IN STEEL CONDUIT, WITH A LOAD FACTOR OF .85 PER NEC CHAPTER 9, TABLE 9.
2. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
3. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 9 CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT.
4. LIMITS FOR CONDUCTOR LENGTHS SHOWN ARE BASED ON A MAXIMUM BRANCH CIRCUIT LOADING OF 64% OF THE BRANCH BREAKER RATING AND A MAXIMUM OF 3% VOLTAGE DROP TO COMPLY WITH ASHRAE 90.1 AND THE NEC. FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING, THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE - GENERAL PURPOSE

OVERCURRENT DEVICE RATING (AMPERES)	COPPER CONDUCTORS						ALUMINUM CONDUCTORS				
	WIRE SIZE (AWG OR KCMIL)		CONDUIT SIZE				WIRE SIZE (AWG OR KCMIL)		CONDUIT SIZE		
	PHASE & NEUTRAL	GROUND	SINGLE PHASE 2 WIRE+G (1PH,1IN,1G)	SINGLE PHASE 3 WIRE+G (2PH,1IN,1G)	THREE PHASE 3 WIRE+G (3PH,1G)	THREE PHASE & NEUTRAL 4 WIRE+G (3PH,1IN,1G)	PHASE & NEUTRAL	GROUND	SINGLE PHASE 3 WIRE+G (2PH,1IN,1G)	THREE PHASE 3 WIRE+G (3PH,1G)	THREE PHASE & NEUTRAL 4 WIRE+G (3PH,1IN,1G)
15-20	12	12	3/4"	3/4"	3/4"	3/4"	NOT ACCEPTABLE				
25-30	10	10	3/4"	3/4"	3/4"	3/4"					
35-40	8	10	3/4"	3/4"	3/4"	3/4"					
45-50	8 (6)	10	3/4"	3/4"	3/4"	3/4"					
60	6 (4)	10	3/4"(1)	3/4"(1)	3/4"(1)	3/4"(1)					
70	4	8	1"	1 1/4"	1 1/4"	1 1/4"					
80	4 (3)	8	1"	1 1/4"	1 1/4"	1 1/4"					
90-100	3 (2)	8	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1	6	1 1/2"	1 1/4"	1 1/2"
110	2 (1)	6	-	1 1/4"	1 1/4"	1 1/4" (1 1/2")	1/0	4	-	1 1/2"	2"
125	1 (1/0)	6	-	1 1/4" (1 1/2")	1 1/4" (1 1/2")	1 1/2"	2/0	4	-	1 1/2"	2"
150	1/0	6	-	1 1/2"	1 1/2"	1 1/2"	3/0	4	-	2"	2 1/2"
175	2/0	6	-	2"	2"	2"	4/0	4	-	2"	2 1/2"
200	3/0	6	-	2"	2"	2 1/2"	250	4	-	2"	3"
225	4/0	4	-	2"	2"	2 1/2"	300	2	-	2 1/2"	3"
250	250	4	-	2 1/2"	2 1/2"	2 1/2"	350	2	-	2 1/2"	3"
300	350	4	-	2 1/2"	2 1/2"	3"	500	2	-	3"	3 1/2"
350	500	3	-	3"	3"	3"	2-4/0	2-1/0	-	2-2"	2-2"
400	500	3	-	3"	3"	3"	2-250	2-1/0	-	2-2"	2- 2 1/2"
450	2-4/0	2-2	-	2-2"	2-2"	2- 2 1/2"	2-300	2-1/0	-	2- 2 1/2"	2-3"
500	2-250	2-2	-	2- 2 1/2"	2- 2 1/2"	2- 2 1/2"	2-350	2-1/0	-	2- 2 1/2"	2-3"
600	2-350	2-1	-	2- 2 1/2"	2- 2 1/2"	2-3"	2-500	2-2/0	-	2-3"	2-3 1/2"
700	2-500	2-1/0	-	2-3"	2-3"	2-3"	2-600	2-3/0	-	2-3"	2-3 1/2"
800	3-500	2-1/0	-	2-3"	2-3"	2-3 1/2"	3-400	3-3/0	-	3-3"	3-3 1/2"
1000	3-400	3-2/0	-	3-3"	3-3"	3-3"	3-600	3-4/0	-	3-3 1/2"	3-3 1/2"
1200	3-600	3-3/0	-	3-3 1/2"	3-3 1/2"	3-3 1/2"	4-500	4-250	-	4-3"	4-3 1/2"
1600	4-600	4-4/0	-	4-3 1/2"	4-3 1/2"	4-3 1/2"	5-600	5-350	-	5-3 1/2"	5-4"
2000	5-600	5-250	-	5-3 1/2"	5-3 1/2"	5-3 1/2"	6-600	6-400	-	6-3 1/2"	6-4"

NOTES:
1. CONTRACTOR TO SIZE FEEDERS AND BRANCH CIRCUITS BASED ON THIS SCHEDULE AND OVER CURRENT DEVICE SIZE, UNLESS NOTED OTHERWISE.
2. CONDUCTORS ARE BASED ON THHN/THWN UP TO AND INCLUDING #4/0. LARGER THAN #4/0 ARE BASED ON TYPE XHHW.
3. CONDUCTORS ARE BASED ON 90°C, 600V. INSULATED COPPER WIRE APPLIED AT 75° FOR TERMINATION RATED 60/75°C OR 75°C. FOR TERMINATION RATED 60°C, USE CONDUCTORS AND CONDUIT SIZED INDICATED IN PARENTHESES.
4. CONDUIT SIZES ARE VALID FOR EMT OR RGS. CONDUIT SIZES SHALL BE ADJUSTED AS REQUIRED FOR OTHERS TYPES OF CONDUIT.
5. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE REQUIRED WIRE SIZES TO ACCOMMODATE MECHANICAL EQUIPMENT LUG SIZES.
6. SIZE OF DISCONNECT SWITCH LOCATED AT EQUIPMENT SHALL BE SIZED BASED UPON OVERCURRENT PROTECTION OF THAT DEVICE.
7. OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLING DIFFERENT SIZE/QUANTITY OF CONDUCTORS TO OBTAIN AN EQUIVALENT AMPACITY.
8. SPLICE FROM ALUMINUM TO COPPER PRIOR TO ENTERING EQUIPMENT LISTED FOR USE WITH COPPER CONDUCTORS ONLY OR USE COPPER CONDUCTORS FOR THE ENTIRE LENGTH OF FEEDER.

Branch Panel: A

Location:
Supply From: B
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MLO
Mains Rating: 225 A

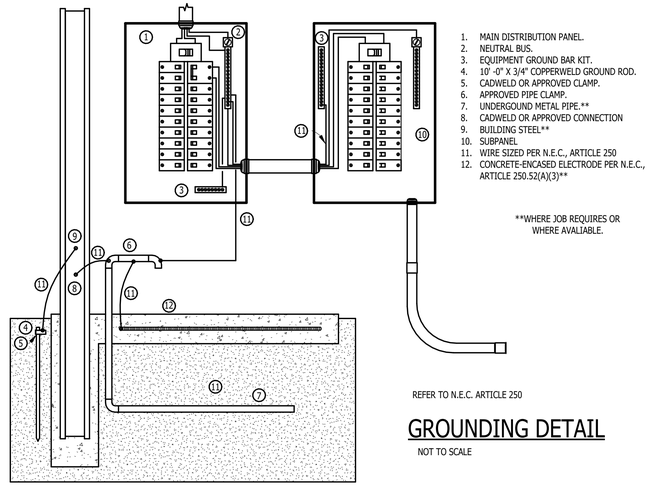
Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	EXISTING CIRCUIT (ETR)	20 A	1	900 VA	900 VA					1	20 A	EXISTING CIRCUIT (ETR)	2
3	EXISTING CIRCUIT (ETR)	20 A	1			900 VA	900 VA			1	20 A	EXISTING CIRCUIT (ETR)	4
5	EXISTING CIRCUIT (ETR)	20 A	1					900 VA	900 VA	1	20 A	EXISTING CIRCUIT (ETR)	6
7	EXISTING CIRCUIT (ETR)	20 A	1	900 VA	900 VA					1	20 A	EXISTING CIRCUIT (ETR)	8
9	EXISTING CIRCUIT (ETR)	20 A	1			900 VA	900 VA			1	20 A	EXISTING CIRCUIT (ETR)	10
11	EXISTING CIRCUIT (ETR)	20 A	1					900 VA	900 VA	1	20 A	EXISTING CIRCUIT (ETR)	12
13	EXISTING CIRCUIT (ETR)	20 A	1	900 VA	900 VA					1	20 A	EXISTING CIRCUIT (ETR)	14
15	EXISTING CIRCUIT (ETR)	20 A	2			1450...	1450...			2	20 A	EXISTING CIRCUIT (ETR)	16
17								1450...	1450...				18
19	EXISTING CIRCUIT (ETR)	20 A	2	1450...	1450...					2	20 A	EXISTING CIRCUIT (ETR)	20
21						1450...	1450...						22
23	EXISTING CIRCUIT (ETR)	20 A	2					1450...	1450...	2	20 A	EXISTING CIRCUIT (ETR)	24
25				1450...	1450...								26
27	EXISTING CIRCUIT (ETR)	20 A	2			1450...	2704...			2	35 A	DRIVE-ON LIFT - REMOVE OLD CB AND REPLACE WITH 2-P 35A CB	28
29								1450...	2704...				30
31	EXISTING CIRCUIT (ETR)	20 A	1	900 VA	900 VA					1	20 A	EXISTING CIRCUIT (ETR)	32
33	EXISTING CIRCUIT (ETR)	20 A	1			900 VA	900 VA			1	20 A	EXISTING CIRCUIT (ETR)	34
35	EXISTING CIRCUIT (ETR)	20 A	2					1450...	1450...	2	20 A	EXISTING CIRCUIT (ETR)	36
37				1450...	1450...								38
39	EXISTING CIRCUIT (ETR)	20 A	2			1450...	--			1	--	SPACE	40
41								1450...	--	1	--	SPACE	42
		Total Load:		15900 VA		16804 VA		17904 VA					
		Total Amps:		133 A		141 A		150 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	29000 VA	100.00%	29000 VA		
Receptacle	21608 VA	73.14%	15804 VA	**Total Conn. Load:**	50608 VA
				Total Est. Demand:	44804 VA
				Total Conn.:	140 A
				Total Est. Demand:	124 A

Notes:



1. MAIN DISTRIBUTION PANEL.
2. NEUTRAL BUS.
3. EQUIPMENT GROUND BAR KIT.
4. 10' -0" X 3/4" COPPERWELD GROUND ROD.
5. CADWELD OR APPROVED CLAMP.
6. APPROVED PIPE CLAMP.
7. UNDERGOUND METAL PIPE.**
8. CADWELD OR APPROVED CONNECTION
9. BUILDING STEEL**
10. SUBPANEL
11. WIRE SIZED PER N.E.C., ARTICLE 250
12. CONCRETE-ENCASED ELECTRODE PER N.E.C., ARTICLE 250.52(A)(3)**

**WHERE JOB REQUIRES OR WHERE AVALIABLE.

REFER TO N.E.C. ARTICLE 250

GROUNDING DETAIL

NOT TO SCALE

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