CSX Transflo Detroit

ISSUE: PERMITS 07/13/2026

OWNER: Crown Enterprises, LLC
12225 Stephens
Warren, MI 48089

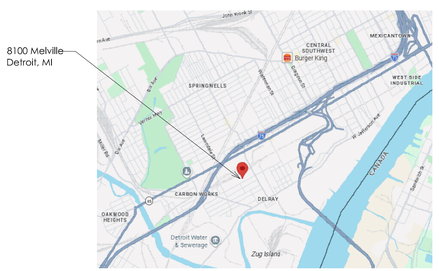
PROJECT LOCATION: CSX Transflo
8100 Melville Street
Detroit, MI 48209

ARCHITECT: FormSurfaces Design Group, LLC
10913 Marcello Lane
Whitmore Lake, MI 48189

MEP ENGINEER: Systems Solution Enginering, LLC
2901 Auburn Road, Ste. 500
Auburn Hills, MI 48326

STRUCTURAL ENGINEER: Conn Engineering Consultants, Inc.
107 N. Bridge
Linden, MI 48451

CIVIL ENGINEER: Ziemnick Foster Engineering, LLC
426 S. Clinton Street
Grand Ledge, MI 48837



Location Map
Scale: Not to Scale
NORTH

DRAWING INDEX

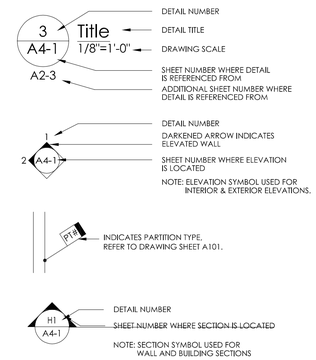
○ Previously Issued
● Issued
☒ Reference Only
KEY ☐ Not Issued

Sheet No.	Sheet Name	03/06/2026 DESIGN DEVELOPMENT	03/06/2026 60% CD	04/30/2026 90% CD	07/13/2026 PERMITS	09/02/2026 REVIEW COMMENTS
GENERAL						
G000	COVER	○	○	○	○	●
G001	GENERAL NOTES		○	○	●	
G100	CODE PLAN			○	○	●
ARCHITECTURAL						
A101	PLANS	○	○	○	○	●
A201	EXTERIOR ELEVATIONS	○	○	○	●	
A501	SCHEDULE AND DETAILS		○	○	●	
A502	INTERIOR ELEVATIONS AND DETAILS		○	○	●	
STRUCTURAL						
S001	GENERAL NOTES		○	○	●	
S101	FOUNDATION PLAN		○	○	●	
S102	SECTIONS AND DETAILS		○	○	●	
MECHANICAL						
M100	LEGENDS, NOTES AND SCHEDULES		○	○	●	
M101	LEGENDS, NOTES AND SCHEDULES		○	○	●	
M102	LEGENDS, NOTES AND SCHEDULES		○	○	●	
MH201	HVAC FLOOR PLAN		○	○	●	
MH202	HVAC ROOF PLAN		○	○		
M300	DETAILS		○	○	●	
M400	SPECIFICATIONS		○	○	●	
ELECTRICAL						
E100	NOTES AND LEGENDS					●
E101	ONE LINE DIAGRAM				●	
E102	LIGHTING SCHEDULES				●	
E103	SCHEDULES				●	
E104	SITE PLAN				●	
EL201	LIGHTING FLOOR PLAN				●	
EL202	LIGHTING EXTERIOR BUILDING PLAN				●	
EP201	POWER FLOOR PLAN				●	
E300	DETAILS				●	
E301	DETAILS				●	
E302	DETAILS				●	
E303	DETAILS				●	
E304	DETAILS				●	
E400	SPECIFICATIONS				●	
PLUMBING						
P100	LEGENDS, NOTES AND SCHEDULES		○	○	●	
P101	FIXTURE MATRIX		○	○	●	
PS200	SANITARY UNDERGROUND PLAN		○	○	●	
PS201	SANITARY FLOOR PLAN		○	○	●	
PS202	SANITARY ROOF PLAN		○	○	●	
PW201	DOMESTIC WATER & GAS FLOOR PLAN		○	○	●	
P300	DETAILS		○	○	●	
P400	SPECIFICATIONS		○	○	●	

DIFFERED SUBMITTALS

PRE-ENGINEERED METAL BUILDING (PEMB)- BY OTHERS

GRAPHIC SYMBOLS



FIRE MARSHAL
Tentative Approval on General Location Only!
Shop Drawings Shall be Submitted for Review of FIRE SUPPRESSION/ DETECTION SYSTEMS

FIRE MARSHAL SUBJECT TO FIELD INSPECTION

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Approved For Permit
Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

4	PERMITS	07/13/2026
5	REVIEW COMMENTS	09/03/2026

CONSULTANTS

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107 n. bridge
linden, mi 48451
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SEAL

STATE OF MICHIGAN
HEATHER SMIGLIANI
ARCHITECT
No. 1301050025
LICENSED ARCHITECT

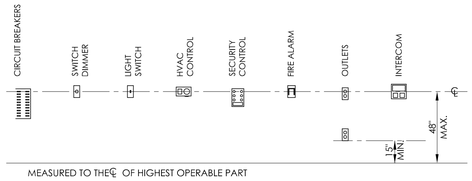
PROJECT
TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO: 20260219
DRAWN BY:	CHECKED BY:
PROJECT MGR:	APPROVED BY:

SHEET TITLE
COVER

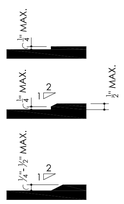
SHEET NUMBER	ISSUE
G-000	

MOUNTING HEIGHTS / ACCESSIBLE STANDARDS

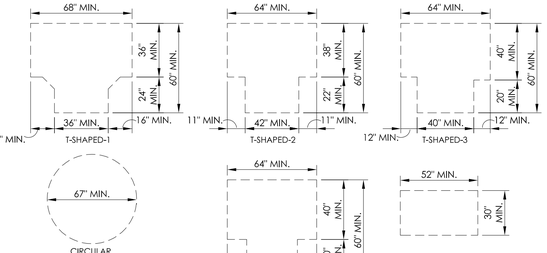


CONVENIENCE CONTROLS AND OUTLETS

NOTE: THRESHOLDS AT DOORWAYS = ½" MAX.

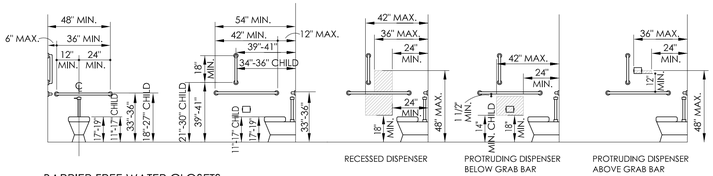


CHANGES IN LEVEL



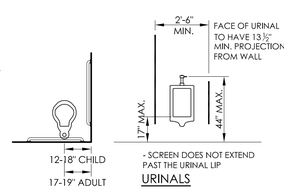
SIZE OF TURNING SPACE

CLEAR FLOOR SPACE

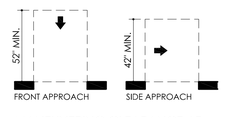


RECESSED DISPENSER | PROTRUDING DISPENSER BELOW GRAB BAR | PROTRUDING DISPENSER ABOVE GRAB BAR

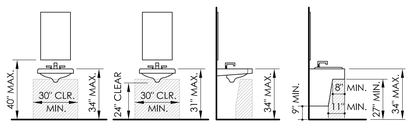
BARRIER FREE WATER CLOSETS



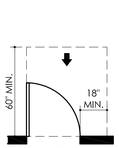
URINALS

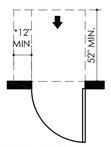


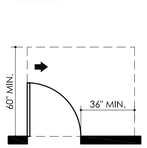
MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS



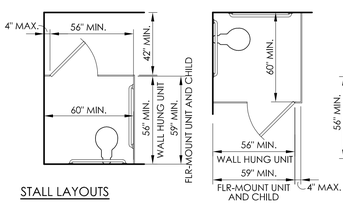
BARRIER FREE LAVATORIES



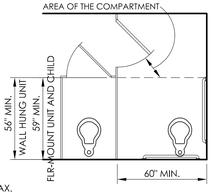


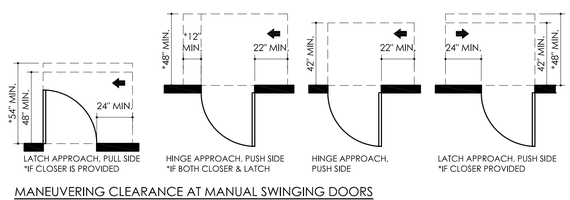




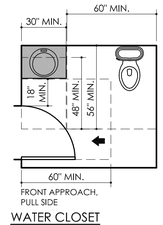


STALL LAYOUTS



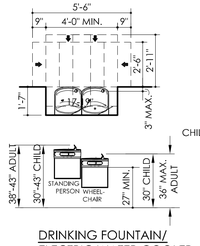


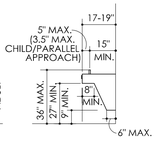
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS



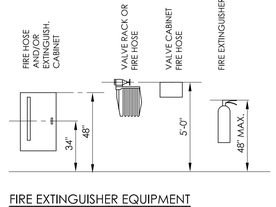


WATER CLOSET

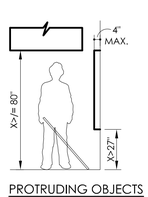




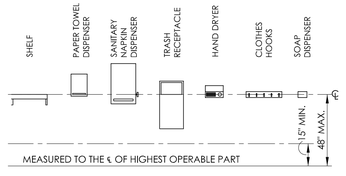
DRINKING FOUNTAIN/ ELECTRIC WATER COOLER



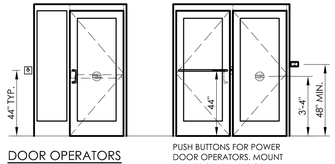
FIRE EXTINGUISHER EQUIPMENT



PROTRUDING OBJECTS

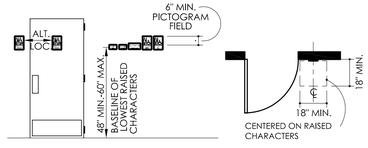


TOILET ROOM ACCESSORIES

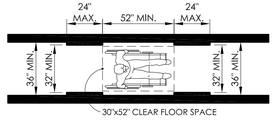


DOOR OPERATORS

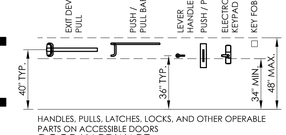
PUSH BUTTONS FOR POWER DOOR OPERATORS, MOUNT 44" ± FROM FIN. FLOOR (34" MIN. - 48" MAX.)



SIGNAGE

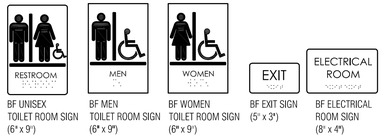


CLEAR WIDTH OF AN ACCESSIBLE ROUTE



HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERABLE PARTS ON ACCESSIBLE DOORS

DOOR HARDWARE



BF UNISEX TOILET ROOM SIGN (6" x 9") | BF MEN TOILET ROOM SIGN (6" x 9") | BF WOMEN TOILET ROOM SIGN (6" x 9") | BF EXIT SIGN (5" x 3") | BF ELECTRICAL ROOM SIGN (8" x 4")

TYPICAL TACTILE WALL SIGNS

GENERAL NOTES

CONSTRUCTION SITE NOTES

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND CONSTRUCTION MEANS AND METHODS IN THE PERFORMANCE OF THE WORK. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKERS AND OTHER PERSONS DURING CONSTRUCTION OPERATIONS.
2. CONTRACTOR TO COMPLY WITH ALL OSHA REGULATIONS, AND ANY OTHER SITE SAFETY REQUIREMENTS OF THE OWNER IN THE PERFORMANCE OF THE WORK. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER AND ALL CONTRACTOR EMPLOYEES SHALL AT ALL TIMES WORK IN COMPLIANCE WITH THE OWNER'S SAFETY REGULATIONS AND ANY GENERAL CONTRACTOR SAFETY REQUIREMENTS.
3. PROVIDE ADEQUATE BRACING AND SHORING FOR CONSTRUCTION EQUIPMENT AND FOR THE BUILDING. PROVIDE SCAFFOLDING, TEMPORARY BARRIERS, AND OTHER TEMPORARY SUPPORTS AS REQUIRED. DO NOT STORE OR STACK CONSTRUCTION MATERIALS ON FLOORS OR ROOFS IN EXCESS OF 80 PERCENT OF THE SPECIFIED DESIGN LIVE LOAD. MINIMIZE DYNAMIC IMPACT TO EXISTING STRUCTURES WHEN PLACING MATERIALS ON FLOORS OR ROOFS.
4. DO NOT OBSTRUCT EXISTING BUILDING DOORS OR EGRESS PATHS DURING THE PERFORMANCE OF THE WORK.
5. CONTRACTOR SHALL CLEAN THE SITE OF CONSTRUCTION DEBRIS TO MAINTAIN A SAFE ENVIRONMENT ON A DAILY BASIS. LEGALLY DISPOSE OF ALL HAZARDOUS MATERIALS.

GENERAL COORDINATION NOTES

1. CONFORM TO ALL OWNER'S GENERAL AND SPECIAL CONDITIONS IN THE PERFORMANCE OF THE WORK OR AS HEREIN SPECIFIED.
2. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE AND ALL APPLICABLE STATE AND LOCAL CODES. ACCESSIBILITY STANDARDS AS WELL AS ANY APPLICABLE OWNER'S CORPORATE STANDARDS. THE LOCAL CODE AUTHORITY HAS THE AUTHORITY TO INTERPRET CODE REQUIREMENTS AND THESE INTERPRETATIONS MAY VARY FROM NORMAL INTERPRETATION AND INFORMATION REPRESENTED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL INFORM THE OWNER'S REPRESENTATIVE OR THE ARCHITECT-ENGINEER OF ANY DISCREPANCIES OR DIFFERENCES AND SHALL PROCEED WITH THE WORK ONLY UPON RECEIVING WRITTEN AUTHORIZATION.
3. THE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE SEAL AND SIGNATURE OF THE RESPONSIBLE REGISTRANT APPEARS ON THE DRAWING, AND PROPER PERMIT FORMS AND RELATED FEES ARE TRANSMITTED BY THE OWNER, OWNER'S AGENT, OR CONTRACTOR TO THE AUTHORITY HAVING JURISDICTION.
4. CONTRACTOR TO OBTAIN ALL REQUIRED CONSTRUCTION PERMIT FORMS, PAY ALL RELATED FEES, AND ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS.
5. BIDDER/CONTRACTOR SHALL VISIT THE SITE, EXAMINE AND VERIFY EXISTING CONDITIONS UNDER WHICH THE WORK SHALL BE CONDUCTED AND ACCOUNT FOR EXISTING FIELD CONDITIONS AND ACTUAL FIELD DIMENSIONS IN ALL BIDS SUBMITTED AND ALL WORK PERFORMED. REPORT ANY DISCREPANCIES IN THE EXISTING CONDITIONS IMMEDIATELY TO THE OWNER'S REPRESENTATIVE OR ARCHITECT/ ENGINEER.
6. CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS, INCLUDING SPECIFICATIONS, OF INTERFACING TRADES AND OTHER RELATED CONTRACTS PRIOR TO BIDDING AND COMMENCEMENT OF WORK TO ENSURE COMPLETE COORDINATION OF FINISHED WORK.
7. EACH SUBCONTRACTOR IS RESPONSIBLE TO COORDINATE AND SCHEDULE THEIR WORK WITH THE GENERAL CONTRACTOR AND ALL OTHER CONTRACTORS WHO'S WORK WILL BE AFFECTED. SPECIFICATIONS ARE APPLICABLE AND BINDING TO ALL CONTRACTORS AND SUBCONTRACTORS. REPORT ALL DISCREPANCIES, PRIOR TO CONSTRUCTION, TO THE OWNER'S REPRESENTATIVE OR ARCHITECT/ ENGINEER FOR REVIEW AND CLARIFICATION.
8. BEFORE AWARD OF CONTRACT, IF THERE ARE QUESTIONS ABOUT INTENT, CLARITY, APPLICATION OF NOTES, OR WORK SHOWN OR SPECIFIED, OR IF CONFLICTING DIRECTIONS ARE FOUND IN THE DOCUMENTS, THE GENERAL CONTRACTOR SHALL REQUEST WRITTEN CLARIFICATION FROM THE OWNER'S REPRESENTATIVE OR ARCHITECT/ENGINEER. ANY CLARIFICATIONS OR INTERPRETATIONS OF THE CONTRACT DOCUMENTS PROVIDED AFTER CONTRACT AWARD SHALL BE AT NO ADDITIONAL COST.
9. CONTRACTOR SHALL NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES. IN THE EVENT OF AN OMISSION OF NECESSARY DIMENSIONS OR INFORMATION, CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OR ARCHITECT/ ENGINEER. FIGURED AND CALCULATED DIMENSIONS TAKES PRECEDENCE OVER SCALED MEASUREMENTS. DETAIL DRAWINGS AND LARGER SCALE DRAWINGS TAKES PRECEDENCE OVER SMALLER SCALE DRAWINGS. ALL PLAN DETAILS AND WALL SECTIONS ARE ASSUMED TO BE TYPICAL CONDITIONS UNLESS DETAILED OR NOTED OTHERWISE.
10. SOME STANDARD SYMBOLS, ABBREVIATIONS AND DETAILS INDICATED IN CONTRACT DOCUMENTS MAY NOT BE APPLICABLE TO THIS SPECIFIC CONTRACT ISSUE.
11. DRAWING DETAILS ARE CONCEPTUAL IN NATURE AND ACTUAL FIELD CONDITIONS MAY VARY SLIGHTLY FROM CONCEPTUAL DEPICTIONS. DETAILS LABELED "TYPICAL DETAILS" ON DRAWINGS APPLY TO SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION.
12. SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER. IF A SUBSTITUTION IS PROPOSED, SUBMIT COMPLETE SPECIFICATION AND PERFORMANCE DETAILS FOR EVALUATION. IF SUBSTITUTIONS ARE APPROVED, NOTIFY ALL OTHER CONTRACTORS AND SUBCONTRACTORS AFFECTED BY THE CHANGE AND FULLY COORDINATE ALL RELATED WORK. ANY COSTS RESULTING FROM THE SUBSTITUTION AND CHANGE IS THE RESPONSIBILITY OF THE CONTRACTOR.
13. COORDINATE AND PERFORM WORK BASED ONLY ON REVIEWED/ CERTIFIED SHOP DRAWINGS. A FIELD CHECK OF EXISTING CONDITIONS, AND INSPECTION OF NEWLY INSTALLED WORK. VERIFY THE LATEST REVISION OF CONTRACT DOCUMENTS, INCLUDING ALL INTERFACING DISCIPLINE DRAWINGS, BEFORE PROCEEDING WITH THE PROCUREMENT, DETAILING, FABRICATION OR INSTALLATION OF THE WORK. ANY SYSTEMS OR EQUIPMENT INSTALLED PRIOR TO REVIEW OF SHOP DRAWINGS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO MANUFACTURER SPECIFICATIONS AND REQUIREMENTS PRIOR TO STARTING THE WORK. VERIFY SIZE, LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT TO BE FURNISHED WITH MANUFACTURER OR SUPPLIERS BEFORE COMMENCEMENT OF CONSTRUCTION. VERIFY SIZE AND LOCATIONS OF ALL OPENINGS AND SUPPORTS WITH ACTUAL EQUIPMENT PURCHASED. REFER TO MANUFACTURERS STANDARD DETAILS FOR INSTALLATION.
15. ALL EQUIPMENT AND SYSTEMS SHALL BE COMPLETE AND OPERATIONAL IN ALL RESPECTS, SECURED IN LOCATION AND PROPERLY ADJUSTED. PROVIDE OPERATIONS AND MAINTENANCE MANUALS FOR THE OWNER AT THE COMPLETION OF THE WORK.
16. FULLY WARRANT ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE, UNLESS OTHERWISE SPECIFIED. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ALL ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD.
17. BEFORE PENETRATING EXISTING CONCRETE OR SOIL SURFACES FOR THE AREA OF WORK, VERIFY LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES BY USE OF "ELECTRONIC" OR SIMILAR NON-INVASIVE DETECTOR DEVICES. IF POTENTIAL INTERFERENCES ARE DISCOVERED, PROPOSE ALTERNATE ROUTING AND ASSOCIATED COSTS TO THE OWNER'S REPRESENTATIVE OR ARCHITECT/ENGINEER FOR APPROVAL BEFORE PROCEEDING.
18. MAINTAIN MINIMUM CLEARANCE REQUIREMENTS OF EQUIPMENT MANUFACTURER'S SPECIFICATIONS OR RECOMMENDATIONS, OWNER STANDARDS, NATIONAL ELECTRICAL CODE (NEC), AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, AND REGULATIONS.
19. MAINTAIN A MINIMUM OF 6'-8" HEADROOM CLEARANCE FOR BULKHEADS, SUPPORTS AND UTILITIES PASSING OVER WALKWAYS, PLATFORMS OR CATWALKS.
20. COMPLY WITH ALL HORIZONTAL AND VERTICAL CLEARANCE DIMENSIONS BETWEEN MILLWORK, FIXTURES, FURNISHINGS AND ADJACENT BUILDING SURFACES TO COMPLY WITH ANSI A117.1 ACCESSIBILITY CODE AND ADA, AMERICANS WITH DISABILITIES ACT.
21. OFFSET STUDS WHERE REQUIRED TO ACHIEVE A FLUSH FINISH WALL SURFACE.
22. INSTALL METAL CORNER GUARDS AT ALL EXPOSED WALL BOARD EDGES. INSTALL CASING BEADS WHEREVER WALLBOARD, PLASTER, ETC. ABUTS A DISSIMILAR FINISH MATERIAL AND PROVIDE SEALANT AS REQUIRED.
23. ALL WOOD TRIM, SPACER, FILLER, ETC. THROUGHOUT JOB SHALL BE FIRE RETARDANT TREATED.
24. CONTACT BETWEEN DISSIMILAR METALS SHALL BE PROTECTED.
25. ABSOLUTELY NO SMOKING OR ALCOHOL CONSUMPTION IS TO BE ALLOWED ON THIS JOB SITE. IT IS THE GENERAL CONTRACTOR RESPONSIBILITY TO INSURE THAT ALL EMPLOYEES, VENDORS, AND SUBCONTRACTORS COMPLY WITH THIS RESTRICTION.
26. ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC OR SHEET METAL UNTIL THE FINAL START UP OF THE HEATING AND COOLING EQUIPMENT.
27. NO WORK MAY TAKE PLACE IN THE ROOM ABOVE, BELOW, OR DIRECTLY ADJACENT TO THE SPACE UNLESS SPECIFICALLY REQUESTED IN WRITING, MIN. OF 24 HRS. IN ADVANCE. COORDINATE WITH ONSITE INSPECTION STAFF & FACILITIES MANAGEMENT DEPT. PROVIDE THROUGH RATED WALL PENETRATION DETAIL. PROVIDE THROUGH DECK PENETRATION DETAIL.

ARCHITECTURAL NOTES

1. ALL FINISH FLOOR ELEVATIONS ARE FOR ARCHITECTURAL PURPOSES ONLY. REFER TO CIVIL AND STRUCTURAL DRAWINGS FOR ACTUAL ELEVATIONS AND RELATIONSHIP TO SITE BENCHMARKS.
2. COORDINATE WITH MECHANICAL CONTRACTOR THE LOCATIONS OF ALL FLOOR DRAINS.
3. TRANSITION OF DIFFERENT FLOORING MATERIALS AT DOORWAYS SHALL OCCUR AT CENTERLINE OF DOORS AND SHALL BE ½" HIGH MAXIMUM.
4. ALL PLAN DIMENSIONS ARE TO FINISHED FACE OF FINISHED WALLS, FACE OF MASONRY, AND CENTERLINE OF COLUMNS, UNLESS NOTED OTHERWISE.
5. PARTITIONS ARE TO EXTEND AND SEAL AGAINST THE BOTTOM OF THE DECK ABOVE UNLESS OTHERWISE NOTED.
6. INSTALL METAL TRIM ON ALL GYPSUM BOARD EDGES ABUTTING OTHER MATERIALS OR STOPS SHORT OF OTHER MATERIALS TO FORM A REVEAL OR RECESS. USE METAL CORNER BEADS ON ALL GYPSUM BOARD EXTERIOR CORNERS.
7. ADD SUFFICIENT BLOCKING IN STUD WALLS TO SUPPORT ALL ITEMS, MILLWORK OR EQUIPMENT SHOWN OR SPECIFIED TO BE ATTACHED TO WALLS. PROVIDE ADDITIONAL STRUCTURAL SUPPORT (PLATES, ANGLES, CHANNELS, ETC.) WITHIN WALLS WHERE WEIGHT OF ATTACHED ITEMS EXCEED WALL CAPACITY. PROVIDE BACKING PLATES OR BLOCKING FOR ANY OWNER FURNISHED OR INSTALLED ITEMS.
8. PAINT ALL WALL SURFACES, DOOR FRAMES, BULKHEADS AND CEILINGS IN ROOMS WHERE INDICATED ON PLANS OR ROOM FINISH SCHEDULE. PAINT BEHIND ALL MOVEABLE ITEMS ADJACENT TO WALLS RECEIVING PAINT AND RELOCATE ITEMS AS NECESSARY.
9. ALL EXTERIOR SURFACES TO HAVE A TEMPORARY OR PERMANENT WEATHER RESISTIVE BARRIER DURING CONSTRUCTION OPERATIONS TO PROTECT THE BUILDING INTERIOR AND WALL SURFACES. EXTERIOR OPENINGS SHALL BE FLASHED IN SUCH A MANNER AS TO MAKE THEM WATERPROOF.
10. THE AREA OF WORK SHALL BE MAINTAINED WEATHER TIGHT AND IN A SECURED CONDITION AT ALL TIMES. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO SECURE THE AREA OF WORK.
11. REFER TO FLOOR AND REFLECTED CEILING PLANS AND MECHANICAL AND ELECTRICAL DRAWINGS FOR SPACE ALLOCATIONS IN ROUTING OF ALL MECHANICAL AND ELECTRICAL WORK INCLUDING DIFFUSERS, REGISTERS, GRILLES, SPRINKLERS, LIGHTS, ETC. THE REFLECTED CEILING PLAN LOCATIONS SHALL BE ADHERED TO UNLESS OTHERWISE NOTED ON DRAWINGS. EXCEPTIONS SHALL REQUIRE SPECIFIC WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE OR ARCHITECT/ ENGINEER. NOTE THAT ELECTRIC LIGHT FIXTURE LOCATIONS AND FIRE SPRINKLER HEADS SHALL TAKE PRECEDENCE OVER OTHER UTILITY ITEMS IN ANY AND ALL LOCATIONS FOR AREAS WITH OR WITHOUT CEILINGS; THE CONTRACTOR SHALL COORDINATE AS REQUIRED, AND IF THERE IS NO APPARENT SOLUTION TO COORDINATION ISSUE, CONTACT THE OWNER'S REPRESENTATIVE OR ARCHITECT-ENGINEER FOR A RESOLUTION.
12. REFER TO STRUCTURAL DRAWINGS FOR SUPPORT STRUCTURE INFORMATION, DETAILS AND DIMENSIONS NOT INDICATED ON THE ARCHITECTURAL DRAWINGS. REPORT ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO THE ARCHITECT/ ENGINEER OR OWNER'S REPRESENTATIVE, PRIOR TO CONSTRUCTION.
13. COORDINATE MECHANICAL AND ELECTRICAL EQUIPMENT CONCRETE PADS AND ROOF CURB LOCATIONS, SIZES, SUPPORTS AND CONSTRUCTION REQUIREMENTS, ONLY WITH REVIEWED AND CERTIFIED SHOP DRAWINGS OF THE RELATED TRADES.
14. REFER TO AND COORDINATE WITH STRUCTURAL DRAWINGS FOR ALL FLOOR AND EXTERIOR WALL PENETRATIONS, INSULATE AND WATERTIGHT SEAL ALL EXTERIOR WALL PENETRATIONS.
15. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS AND THE SPECIFICATIONS FOR WALL, FLOOR AND BUILDING SURFACES PENETRATION AND SEALING REQUIREMENTS. FIRE STOP ALL PENETRATIONS OF FIRE RATED WALL OR FIRE RATED FLOOR OPENINGS PER TESTED UL ASSEMBLIES AND AS REQUIRED BY CODE.
16. PROVIDE WALL AND CEILING ACCESS DOORS OR AS MAY BE REQUIRED BY CODE OR TO PROPERLY SERVICE OR ADJUST ALL VALVES, DAMPERS, CLEAN-OUTS, ELECTRICAL JUNCTION BOXES AND OTHER DEVICES.

DEMOLITION NOTES

1. PLAN AND SCHEDULE CONSTRUCTION AND DEMOLITION ACTIVITIES TO AVOID INTERFERENCE AND TO MINIMIZE DISRUPTION OF THE OWNER'S OPERATIONS.
2. SCHEDULE AND COORDINATE ALL DEMOLITION WORK AND UTILITY SHUT DOWNS AND TIE-INS WITH THE OWNERS REPRESENTATIVE. PROCEED WITH WORK ONLY AFTER RECEIPT OF WRITTEN AUTHORIZATION.
3. DEMOLISHED MATERIALS, UNLESS OTHERWISE DIRECTED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE BEFORE THE END OF EACH WORKDAY. OWNER RETAINED SALVAGED EQUIPMENT SHALL BE PROPERLY PROTECTED FOR REUSE OR CRATED FOR PROTECTION AND DELIVERED TO THE OWNER'S SITE STORAGE. ALL HAZARDOUS MATERIALS SHALL BE PROPERLY DISPOSED OF OFF SITE AND PER ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
4. PERFORM CONSTRUCTION AND SELECTIVE DEMOLITION IN A MANNER TO PREVENT DAMAGE TO ANY EXISTING AND NEW STRUCTURES, UTILITIES AND OTHER PROPERTY.
5. ALL CUTTING AND CHASING OF BUILDING CONSTRUCTION SHALL BE IN A NEAT AND WORKMANLIKE MANNER. NEATLY SAWCUT ALL RECTANGULAR OPENINGS, SET SLEEVES THROUGH OPENINGS, AND FINISH PATCH OR PROVIDE TRIM AROUND OPENINGS. CORE DRILL AND SLEEVE ALL ROUND OPENINGS.
6. REPAIR SURFACES THAT HAVE BEEN DAMAGED BY THE WORK. REPAIR DAMAGE TO MATCH EXISTING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO WEATHER AND FIRE SEALING, INSULATING, PATCHING AND PAINTING TO MATCH.
7. PROVIDE ADEQUATE BRACING AND SHORING BETWEEN AREA OF WORK AND OTHER AREAS OF THE FACILITY.

MISCELLANEOUS SUPPORT RELATED NOTES

1. PROVIDE SUPPLEMENTARY OR MISCELLANEOUS STEEL FOR SUPPORT, SWAY BRACING, CROSS-BRACING, AND ANCHORAGE OF BUILDING SYSTEMS OR UTILITIES, IN ORDER TO MEET SITE SEISMIC AND SYSTEM SPECIFIC INSTALLATION AND OPERATING CONDITIONS.
2. COORDINATE SUPPLEMENTARY OR MISCELLANEOUS STEEL WITH THE PRIMARY STRUCTURAL STEEL WORK. SUPPORT, BRACE, CROSS-BRACE, GUIDE AND ANCHOR AS REQUIRED SO AS TO IMPOSE NO OVER STRESSING OF THE BUILDING STRUCTURE BEYOND STATED LOADS INDICATED ON THE STRUCTURAL DRAWINGS. REQUIRED SO AS TO IMPOSE NO OVER STRESSING OF THE BUILDING STRUCTURE BEYOND STATED LOADS INDICATED ON THE STRUCTURAL DRAWINGS.
3. DO NOT WELD TO, CUT OR DRILL BUILDING STEEL.
4. DO NOT WELD SUPPLEMENTARY OR MISCELLANEOUS STEEL TO BUILDING STEEL WITHOUT PRIOR WRITTEN APPROVAL OF PROPOSED DETAIL BY THE STRUCTURAL ENGINEER. WELDING TO SUPPLEMENTARY STEEL IS PERMITTED.
5. DO NOT HANG SUPPORTS FROM TOP CHORD OF TRUSS. USE ONLY APPROVED BEAM CLAMPS, C-CLAMPS ARE PROHIBITED.

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CL
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NO

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SEAL

STATE OF MICHIGAN
HEATHER SMIGLIANI
ARCHITECT
No. 1301080025
LICENSED ARCHITECT

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO: 20260219
DRAWN BY:	CHECKED BY:
PROJECT MGR:	APPROVED BY:

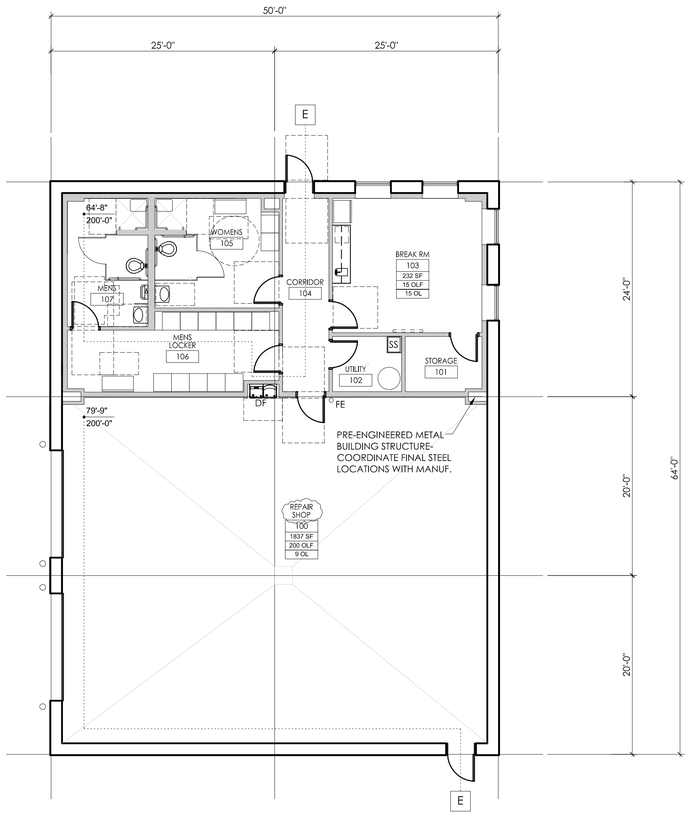
SHEET TITLE

GENERAL NOTES

SHEET NUMBER

G-001

ISSUE



NORTH

1 / G100 FLOOR PLAN
SCALE: 1/8" = 1'-0"

CODE WORKSHEET

Item			Reference
1.	**APPLICABLE CODES**		
	Michigan Building Code		2021
	Michigan Mechanical Code		2021
	National Electrical Code With Michigan Part 8 Amendments- Effective March 12, 2024		2023
	Michigan Plumbing Code		2021
	Michigan Energy Code (ASHRAE 90.1 - 2013 with Amendments)		2021
	International Fire Code with Ammendments		2021
	ANSI A117.1		2017
2.	**Project Description**		
	THIS PROJECT IS A NEW 3,200 SQUARE FOOT BUILDING, TO BE USED AS A REPAIR GARAGE, INCLUDING OPEN AREAS FOR THE PARKING OF SEMI-TRAILERS (PER CODE 50-10-107.38) AND/OR MOTOR VEHICLE SERVICES, MINOR (PER CODE 50-10-106.25), BUT WILL NOT BE OPEN TO THE GENERAL PUBLIC. NO MOTOR VEHICLES WILL BE STORED IN THE BUILDING. THE BUILDING WILL BE A ONE-STORY S-1 OCCUPANCY, WITH AN ACCESSORY BUSINESS USE LOCATED IN DETROIT, MICHIGAN.		
3.	**Occupancy**		
		Provided	
	Use Group Moderate-Hazard Storage(S-1)- Repair Garage	S-1	MBC 311.2
	Accessory Occupancy: Business (B)	B	MBC 508.2
4.	**Construction Classification**		
		Provided	
	Type IIB- Pre-Engineered Metal Building	IIB	MBC 601
	Fire Seperation Distance	>30 ft.	MBC 602
5.	**Allowable Height**		
		Provided	
	Number of Stories Above Grade: Allowable 2 (Non-Sprinklered)	1 story	MBC 504.4
	Allowable Feet Above Grade: 55 ft (Non-Sprinklered)	22'-3"	MBC 504.3
6.	**Allowable Area**		
		Provided	
	Area: Allowable 17,500 sf	3,200 sf	MBC 506.2
7.	**Occupant Load**		
		Provided	
	Total Occupant Load:	24	MBC1004.1.2
8.	**Egress**		
		Provided	
	Accessible means of egress- 1 Required	2	MBC 1009.1.1
9.	**Number of Exits and Exit Access**		
		Provided	
	Ground Floor - 1 Required (S Occupancy Max= 29)	2	MBC 1006.2.1
	Occupant Load 1-500 (Occupancy 29)- 2 Exits	2	MBC 1006.3.3
10.	**Exit Access Travel Distance**		
		Provided	
	Travel Distance to Exit - 200'-0" Max (Non-Sprinklered)	Compliant	MBC 1017.2
	Common Path of Travel (OL<30)- 100'-0" Max (Non-Sprinklered)	Compliant	MBC 1006.2.1
11.	**Fire Protection Systems**		
		Provided	
	Fire Suppression: Non-Sprinklered	No	MBC 903.2.9
	Portable extinguishers: Max travel distance 75 ft	1	MBC 906.3 (1)
	Fire Alarm System	Compliant	MBC 907.2
12.	**Accessibility**		
		Provided	
	Comply with Chapter 11, and Appendix E	Compliant	MBC Ch 11
	Comply with Americans w/ ANSI 117.1	Compliant	ANSI 117.1
13.	**Energy**		
		Provided	
	Climate Zone	5A	
	COMCheck		ASHRAE 90.1

CODE PLAN LEGEND

ROOM NAME
NO.
XXX SF
XXX OLF
XX OL
ROOM AREA (SF)
OCCUPANT LOAD FACTOR
OCCUPANT LOAD

E — EXIT DOOR

EGRESS ROUTE

FE — FIRE EXTINGUISHER

DF — DRINKING FOUNTAIN

SS — SERVICE SINK

EW — EYE WASH

ACTUAL TRAVEL DISTANCE TO EXIT ACCESS
MAX ALLOWED DISTANCE TO EXIT ACCESS

PLUMBING FIXTURE CALCULATIONS

MICHIGAN PLUMBING CODE 2021(TABLE 403.1)

REQUIRED:
a. WATER CLOSETS: 1 WATER CLOSET PER 100 OCCUPANTS
b. LAVATORY: 1 LAVATORY PER 100 OCCUPANTS
c. 1 DRINKING FOUNTAIN PER 1,000 OCCUPANTS
d. 1 SERVICE SINK

PROVIDED:
OCCUPANT LOAD: 24 OCCUPANTS
a. 2 WATER CLOSETS, 1 URINAL
b. 3 LAVATORIES
c. 2 SHOWERS
d. 2 DRINKING FOUNTAINS
e. 1 SERVICE SINK

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SEAL

STATE OF MICHIGAN
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No. 1301050225
LICENSED ARCHITECT

PROJECT

TRANSFLO

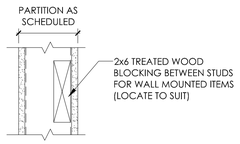
8100 MELVILLE STREET
DETROIT, MI 48209

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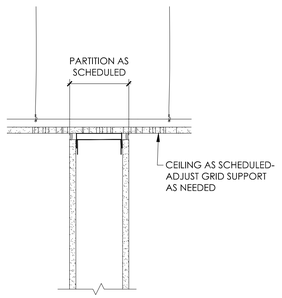
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CODE PLAN

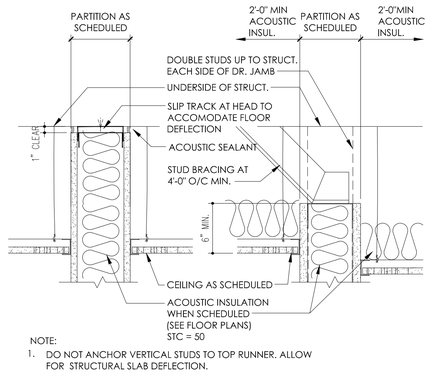
SHEET NUMBER	ISSUE
G-100	



7 A101 WALL MOUNTED ITEMS TYPICAL BLOCKING DETAIL
SCALE: NOT TO SCALE

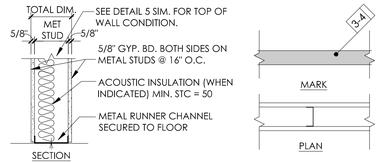


6 A101 NON-RATED PARTITION CONSTRUCTION
SCALE: NOT TO SCALE



NOTE:
1. DO NOT ANCHOR VERTICAL STUDS TO TOP RUNNER. ALLOW FOR STRUCTURAL SLAB DEFLECTION.

5 A101 NON-RATED PARTITION CONSTRUCTION TO DECK
SCALE: NOT TO SCALE



- 9-M — 5/8" MOISTURE RESISTANT TYPE 'X" GYP. BD. BOTH SIDES OF 8" METAL STUDS @ 16" O.C. W/ 5-1/2" ACOUSTIC INSULATION (WHEN INDICATED) TOTAL WALL DIM.= 9-1/4""
- 7-M — 5/8" MOISTURE RESISTANT TYPE 'X" GYP. BD. BATH OR UTILITY ROOM SIDE, TYPE 'X' ON OTHER SIDE, ON 6" METAL STUDS @ 16" O.C. TOTAL WALL DIM.= 7-1/4""
- 7-1 — 5/8" TYPE 'X' ONE SIDE ON 6" METAL STUDS @ 16" O.C. TO DECK W/ 6" FACED BATT INSULATION (WHEN INDICATED) TOTAL WALL DIM.= 6-5/8"
- 7-2 — 5/8" GYP. BD. BOTH SIDES ON 6" METAL STUDS @ 16" O.C. TO DECK W/ 5-1/2" ACOUSTIC INSULATION (WHEN INDICATED) TOTAL WALL DIM.= 7-1/4"
- 5-M — 5/8" MOISTURE RESISTANT TYPE 'X" GYP. BD. BATH OR UTILITY ROOM SIDE, TYPE 'X' ON OTHER SIDE, ON 3 5/8" METAL STUDS @ 16" O.C. TOTAL WALL DIM.= 4-7/8"
- 5-1 — 5/8" GYP. BD. ONE SIDE ON 3 5/8" METAL STUDS @ 16" O.C. TOTAL WALL DIM.= 4-1/4"
- 5-2 — 5/8" GYP. BD. BOTH SIDES ON 3 5/8" METAL STUDS @ 16" O.C. W/ 2-1/2" ACOUSTIC INSULATION (WHEN INDICATED) TOTAL WALL DIM.= 4-7/8"

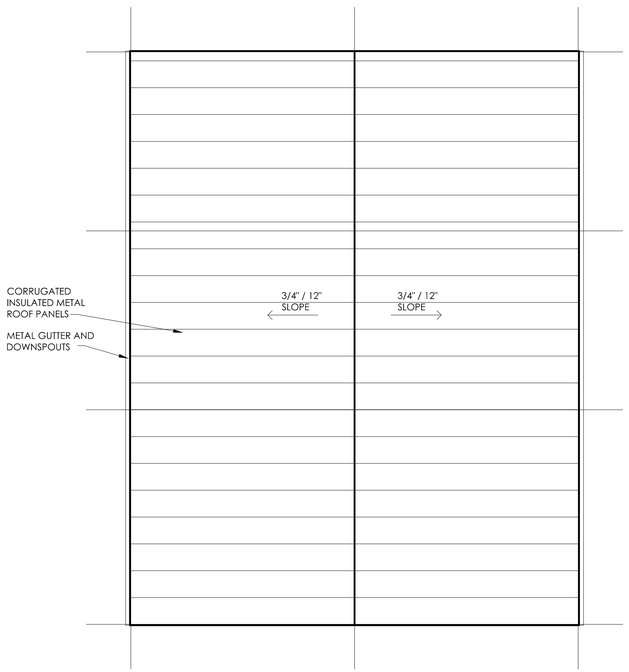
4 A101 STUD WALL PARTITION
SCALE: NOT TO SCALE

REFLECTED CEILING PLAN LEGEND

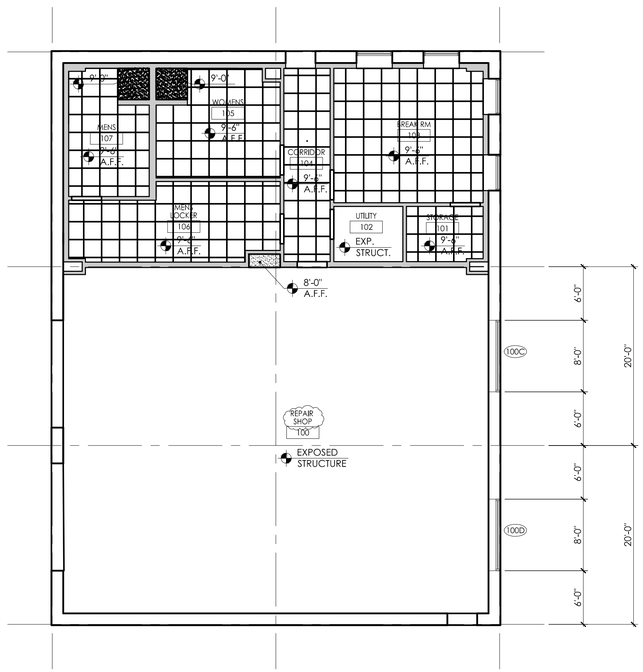
- 2x2 LAY-IN ACOUSTIC CEILING TILES IN SUSPENDED METAL GRID
- 5/8" GYP. BOARD- PAINTED
- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- EXHAUST DUCT- SEE LAB AND MECH
- ELEVATION OF CEILING ABOVE FINISH FLOOR
- 2x4 LED LIGHT- SEE ELECT
- 2x2 LED LIGHT- SEE ELECT
- HIGH BAY LED LIGHT- SEE ELECT
- EXIT LIGHT

FLOOR PLAN LEGEND

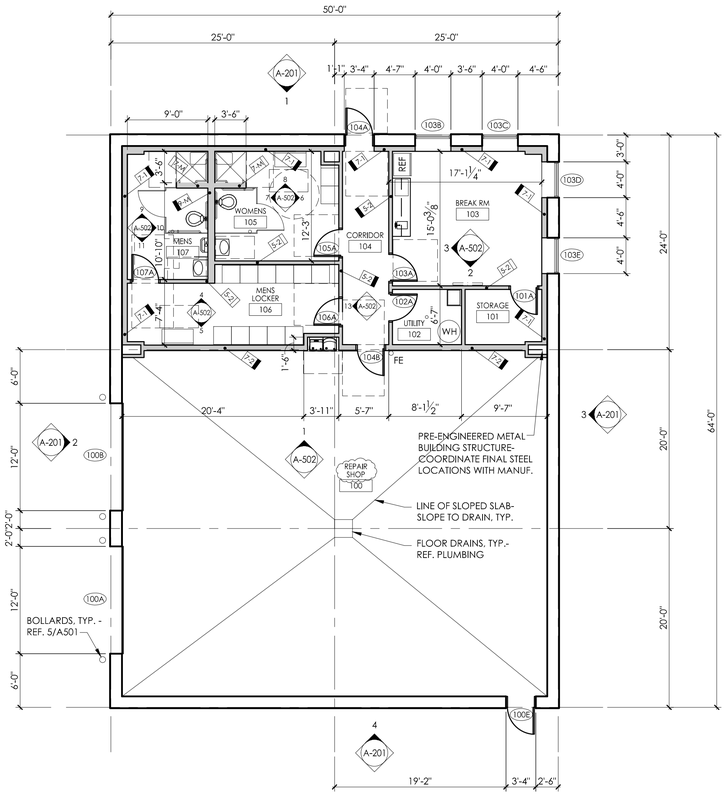
- NEW STUD PARTITION / WALL FURRING AS SCHEDULED. SEE A101 FOR DETAILS.
- XXX — NEW WINDOW. SEE WINDOW SCHEDULE A501.
- XXX — NEW DOOR AND FRAME . SEE DOOR SCHEDULE A501.
- FE — FIRE EXTINGUISHER



NORTH
3 A101 ROOF PLAN
SCALE: 1/8" = 1'-0"



NORTH
2 A101 REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"



NORTH
1 A101 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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4	PERMITS	07/13/2026
5	REVIEW COMMENTS	09/03/2026

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SEAL

STATE OF MICHIGAN — HEATHER SMIGLIANI — ARCHITECT — No. 1301050225 — LICENSED ARCHITECT

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

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PROJECT MGR:	APPROVED BY:

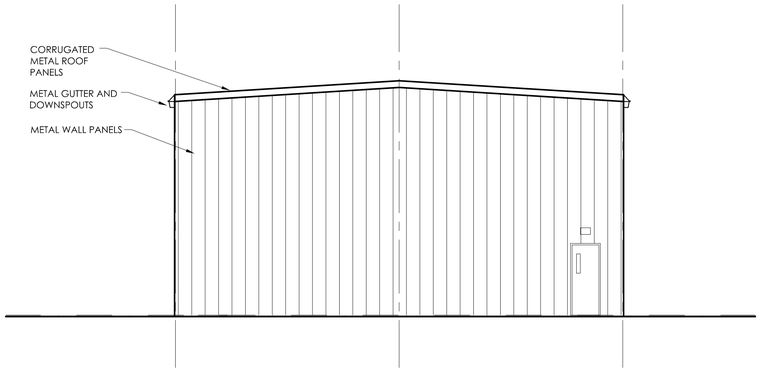
SHEET TITLE

PLANS

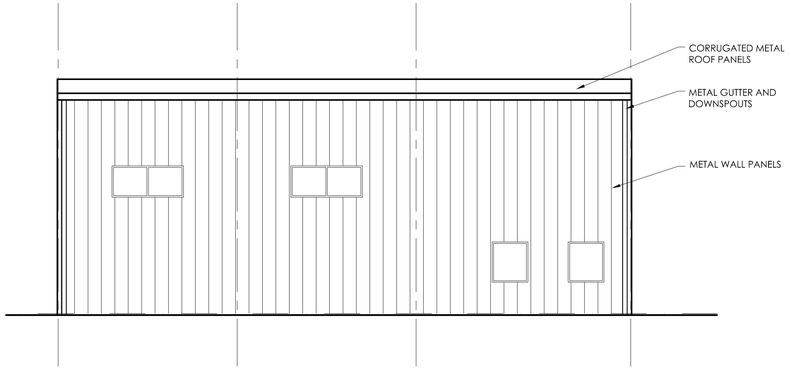
SHEET NUMBER	ISSUE
A-101	

Exterior Finish Legend

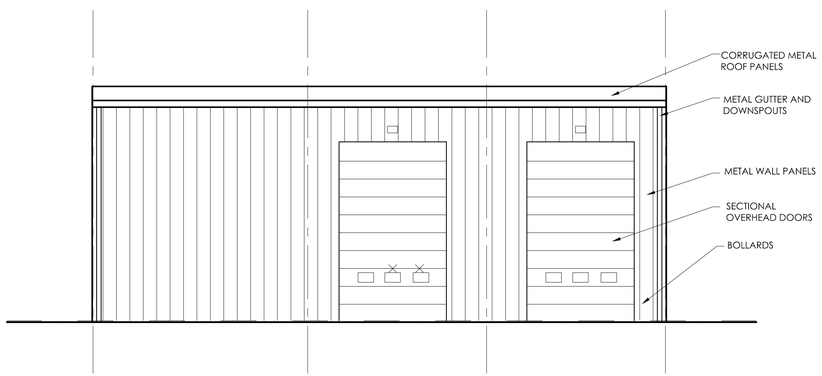
MATERIAL	MANUFACTURER	DESCRIPTION AND COLOR
ROOF		
STANDING SEAM INSULATED METAL ROOF PANELS	BUTLER OR EQUAL	STYLE: INSULATED CORRUGATED METAL ROOF SYSTEM, MR24 WITH TBS INSULATION, MAX U=0.035 COLOR: OLD TOWN GRAY
WALL		
METAL WALL PANELS	BUTLER OR EQUAL	STYLE: CORRUGATED WALL PANEL, BUTLERIB II EX, MAX U=0.050 COLOR: OLD TOWN GRAY



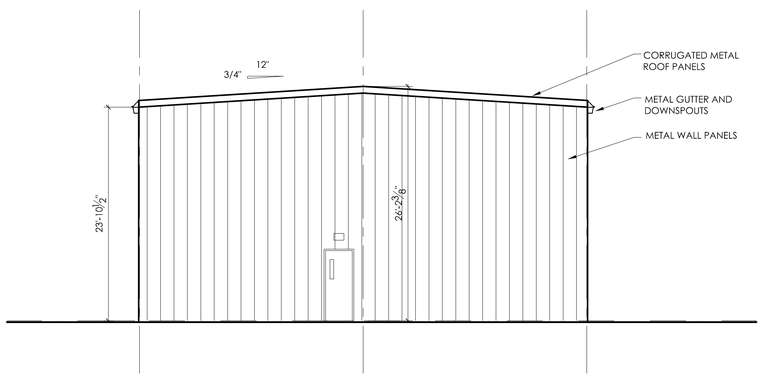
4 A201 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



3 A201 EAST ELEVATION
SCALE: 1/8" = 1'-0"



2 A201 WEST ELEVATION
SCALE: 1/8" = 1'-0"



1 A201 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

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4	PERMITS	07/13/2026

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TRANSFLO

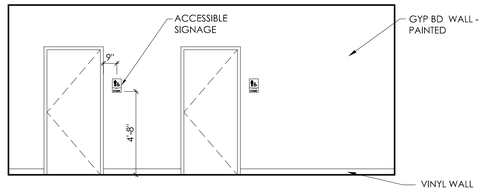
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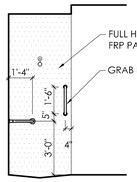
SHEET TITLE

EXTERIOR ELEVATIONS

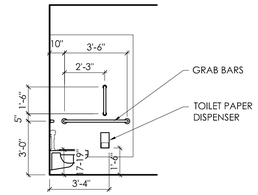
SHEET NUMBER	ISSUE
A-201	



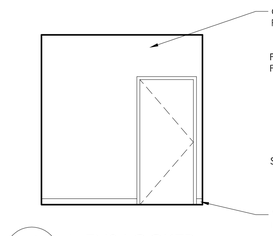
13 / A502 CORRIDOR
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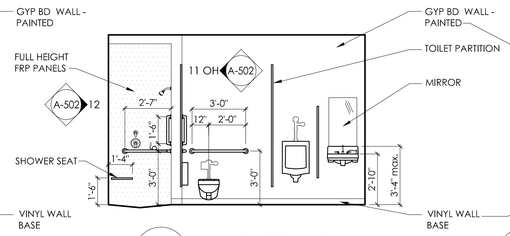
12 / A502 RESTROOM
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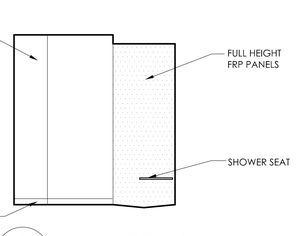
11 / A502 RESTROOM
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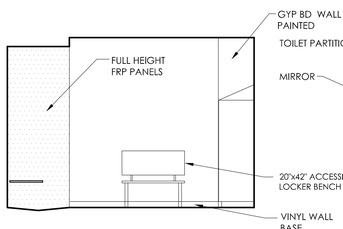
10 / A502 MENS LOCKER
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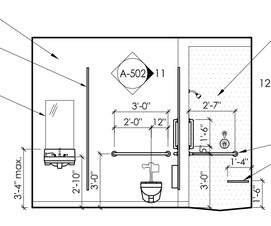
10 / A502 MENS LOCKER
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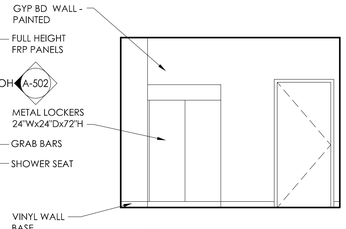
9 / A502 MENS LOCKER
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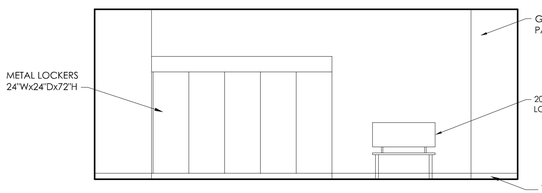
8 / A502 WOMENS LOCKER
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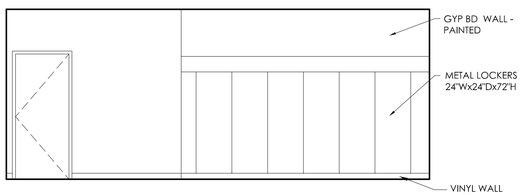
7 / A502 WOMENS LOCKER
Scale: 1/8"=1'-0"



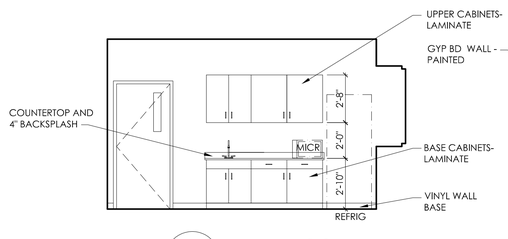
6 / A502 WOMENS LOCKER
Scale: 1/8"=1'-0"



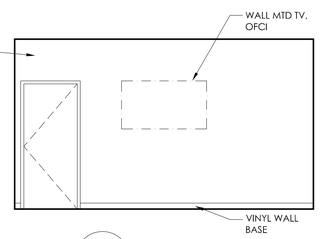
5 / A502 MENS LOCKER
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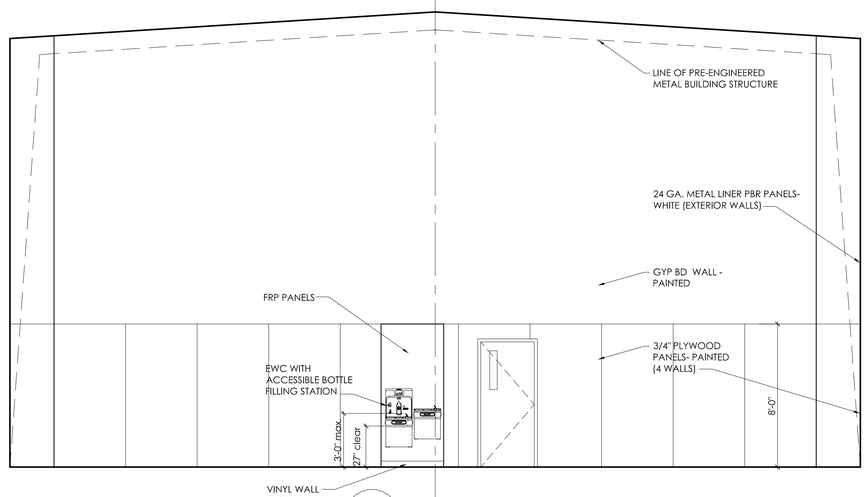
4 / A502 MENS LOCKER
Scale: 1/8"=1'-0"



3 / A502 BREAK ROOM
Scale: 1/8"=1'-0"



2 / A502 BREAK ROOM
Scale: 1/8"=1'-0"



1 / A502 WAREHOUSE
Scale: 1/8"=1'-0"

Room Finish Schedule

ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	FIN.	HGT.	
100	WAREHOUSE	SEALED	VB-1	PNT-1, PNT-2	PNT-1, PNT-2	PNT-1, PNT-2	PNT-1, PNT-2	PNT-3	EXP	PNT-2 ON PLYWOOD FROM FLOOR TO 8'-0", PNT-1 ABOVE
101	STORAGE	SEALED	VB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	9'-6"	
102	UTILITY	SEALED	VB-1	PNT-1	PNT-1	PNT-1	PNT-1	PNT-3	EXP	
103	BREAK ROOM	SEALED	VB-1	PNT-1	PNT-1	PNT-2	PNT-1	ACT-1	9'-6"	
104	CORRIDOR	SEALED	VB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	9'-6"	
105	WOMENS	SEALED	VB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	9'-6"	PT-1 FULL HEIGHT AT (3) SHOWER WALLS
106	MENS LOCKER	SEALED	VB-1	PT-1	PT-1	PT-1	PT-1	ACT-1	9'-6"	
107	MENS	SEALED	VB-1	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	9'-6"	PT-1 FULL HEIGHT AT (3) SHOWER WALLS

Room Finish Remarks

CONTRACTOR IS TO COMPLETE A MOCK UP OF THE WALL AND DOOR FRAME PAINT COLORS FOR THE OWNER AND ARCHITECTS APPROVAL BEFORE PROCEEDING WITH THE PAINT FOR THE ENTIRE PROJECT.
EXPOSED CEILING AREAS (EXP) WILL HAVE NO FINISH.
ALL GYP. BD. PAINTED SW 7064 PASSIVE, UON. ALL HM PAINTED SW7068 GRIZZLE GREY, SEMI GLOSS.

Accessory Legend

ACCESSORY	MANUFACTURER	DESCRIPTION AND COLOR
TOILET PARTITIONS	BRADLEY OR EQUAL	STYLE: SENTINEL, FLOOR MOUNTED FINISH: POWDER COATED COLOR: FROM MANUFACTURER STANDARDS
LOCKERS	MARLITE	COLOR: WHITE FINISH: PEBBLED
MIRROR	BRADLEY OR EQUAL	MODEL: 781 FINISH: STAINLESS STEEL
GRAB BARS	BOBRICK OR EQUAL	MODEL: 817 SERIES, 1 1/2" DIAMETER FINISH: STAINLESS STEEL NO.4 SATIN FINISH WITH SAFETY GRIP
PAPER TOWEL DISPENSER	BOBRICK OR EQUAL	MODEL: B-262, SURFACE MOUNTED FINISH: STAINLESS STEEL
SOAP DISPENSER	BRADLEY OR EQUAL	MODEL: 6362-68, LAVATORY MOUNTED FINISH: STAINLESS STEEL
TOIET PAPER DISPENSER	BRADLEY OR EQUAL	MODEL: 5402, SURFACE MOUNTED FINISH: STAINLESS STEEL, SATIN
SANITARY DISPOSAL UNIT	BRADLEY OR EQUAL	MODEL: 4722-15, SURFACE MOUNTED FINISH: STAINLESS STEEL, SATIN

Room Finish Material Legend

MATERIAL	MANUFACTURER	DESCRIPTION AND COLOR
FLOOR		
SEALED	L & M	STYLE: SEAL HARD TOP COAT: ANTI-SLIP COLOR: CLEAR
WALL		
FRP-1	MARLITE	COLOR: GRAY FINISH: PEBBLED
PNT-1	SHERWIN WILLIAMS	LATEX PAINT FIELD COLOR: 7064 PASSIVE INTERIOR FINISH: EGGSHELL
PNT-2	SHERWIN WILLIAMS	LATEX PAINT - ACCENT COLOR: #SW 7068 GRZZLE GRAY INTERIOR FINISH: EGGSHELL
VB-1	ROPPE	STYLE: VINYL COVE BASE SIZE: 4" COLOR: CB-80 (BLACK)
CEILING		
ACT-1	USG	STYLE: RADAR OPEN PLAN #22320 SIZE: 2X2 COLOR: WHITE, GRID: WHITE
PNT-3	SHERWIN WILLIAMS	COLOR: #SW 7006 EXTRA WHITE FINISH: FLAT CEILINGS AND STRUCTURAL STEEL
EXPOSED STRUCTURE		
PNT-4	SHERWIN WILLIAMS	WATERBORNE ACRYLIC FLAT COLOR: #SW 7006 EXTRA WHITE TYPE: DRYFALL
MILLWORK		
LAM-1	FORMICA	STYLE: PLASTIC LAMINATE COUNTERTOP WITH 3mm PVC EDGE AND CABINETS COLOR: DOVE GREY

ALL INTERIOR FINISHES TO COMPLY WITH ADA AND ANSI 117.1. INTERIOR WALL AND CEILING FINISHES TO BE CLASS C OR BETTER, AND FLOOR FINISHES TO BE CLASS II OR BETTER. ALL INTERIOR WALKING SURFACES TO CONFORM WITH THE DYNAMIC COEFFICIENT OF FRICTION (DCOF): DCOF ACUTEST OF 0.42 OR GREATER WHEN WET. CONTRACTOR IS TO COMPLETE A MOCK UP OF THE WALL AND DOOR FRAME PAINT COLORS FOR THE OWNERS APPROVAL BEFORE PROCEEDING WITH THE PAINT FOR THE ENTIRE PROJECT.

Approved For Permit
Approved
Date: 9/21/2026
CITY OF DETROIT Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

CONSULTANTS

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structural engineering
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linden, mi 48451
p. 810.458.4350
www.connengineering.com

SEAL

STATE OF MICHIGAN
HEATHER SMIGLIANI
ARCHITECT
No. 1301050025
LICENSED ARCHITECT

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO: 20260219
DRAWN BY:	CHECKED BY:
PROJECT MGR:	APPROVED BY:

SHEET TITLE

INTERIOR ELEV. AND DETAILS

SHEET NUMBER	ISSUE
A-502	

Door and Window Schedule

DOOR NO.	DOOR SIZE	DOOR TYPE	DOOR MAT	DOOR FINISH	FRAME TYPE	FRAME MAT	FRAME FINISH	DETAILS HEAD	DETAILS JAMB	THRES	HARDWARE	REMARKS
100A	12'-0"x20'-0"x 3/4"	C	STL	PREFIN	3	STL	PREFIN					
100B	12'-0"x20'-0"x 3/4"	C	STL	PREFIN	3	STL	PREFIN					
100C					4	HM	PT					
100D					4	HM	PT					
100E	3'-0"x 7'-0"x 1 3/4"	B	HM	PT	2	HM	PT			1	1	
101A	3'-0"x 7'-0"x 1 3/4"	A	WD	PREFIN	1	HM	PT	2/A501	2/A501		3	6
102A	3'-0"x 7'-0"x 1 3/4"	A	WD	PREFIN	1	HM	PT	2/A501	2/A501		3	6
103A	3'-0"x 7'-0"x 1 3/4"	B	WD	PREFIN	1	HM	PT	2/A501	2/A501		3	6
103B					5	HM	PT					
103C					5	HM	PT					
103D					5	HM	PT					
103E					5	HM	PT					
104A	3'-0"x 7'-0"x 1 3/4"	B	HM	PT	2	HM	PT			1	1	
104B	3'-0"x 7'-0"x 1 3/4"	B	HM	PT	2	HM	PT			1	1	
105A	3'-0"x 7'-0"x 1 3/4"	A	WD	PREFIN	1	HM	PT	2/A501	2/A501		2	6
106A	3'-0"x 7'-0"x 1 3/4"	A	WD	PREFIN	1	HM	PT	2/A501	2/A501		2	6
107A	3'-0"x 7'-0"x 1 3/4"	A	WD	PREFIN	1	HM	PT	2/A501	2/A501		3	6

General Door Information

1. All door sizes scheduled are based on actual frame openings, sizes noted on schedule are clear jamb to jamb frame dimensions and from reference floor line to head frame opening. Dimension tolerances must be considered for flooring materials to actual door dimensions.
2. All hollow metal and wood doors including all fire labeled doors shall have special internal blocking to allow surface mounted closures and other hardware to be connected to the doors without the use of through bolts.
3. All door numbers are the same as the room number noted on plans - if more than one door is indicated at a room, all doors will be numbered for that room. Fire rated doors and frames are listed in minutes. See door schedule.
4. Door undercuts for mechanical requirements require a 5/8" max. clear distance measured from the top of the finished floor material or threshold to the bottom of the door. Standard tolerances of undercutting of doors for thresholds and other floor covering materials are not noted and must be considered in determining the actual overall dimensions of the door. Coordinate with affected trades.
5. Location of doors noted on plans are dimensioned to the face of door jamb unless otherwise noted or detailed. If door location is not dimensioned - face of jamb shall be 4" to the wall.
6. Reinforce all doors and millwork for hardware.
7. All hollow metal door frames must be grouted solid unless specifically noted otherwise. NOTE: coordinate cavities for hardware items.
8. Thickness of doors are 1 3/4" unless noted or detailed.
9. Factory prepare door and frame for installation of card reader or electrical strike as scheduled.

Door Hardware Sets

Set 1- 3 Hinges, Panic Hardware, Rim Cylinder, Mortise Cylinder, (2) FSIC Core, Surface Closer, Kick plate, Floor Stop, Gaskets, Door Sweep and Accessible Threshold

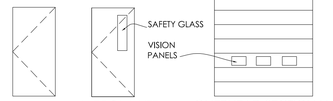
Set 2- 3 Hinges, Passage Set, Surface Closer, Kickplate, Floor Stop, Silencer

Set 3- 3 Hinges, Passage Set, Surface Closer, Floor Stop, Silencer

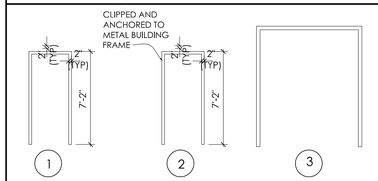
Door Remarks

1. All thresholds to be ADA compliant.
2. All HM doors to be painted: alkyd paint, satin finish.
3. All HM frames to be painted: alkyd paint, satin finish.
4. All exterior doors to be insulated.
5. All exterior and vestibule doors to have closures.
6. Interior Wood Doors to be solid core, wood composite, walunut embossed

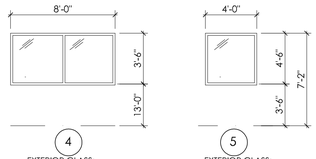
Door Types



Frame Types

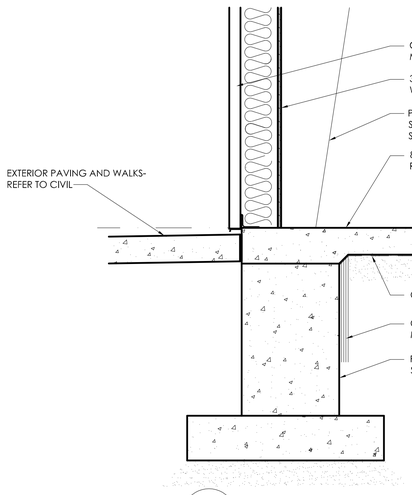


Window Types

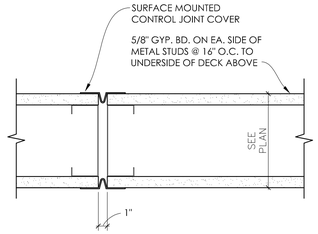


EXTERIOR GLASS: MAX U=0.36, SHGC=0.40

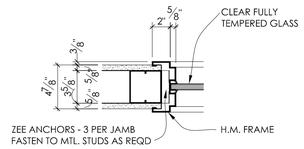
EXTERIOR GLASS: MAX U=0.36, SHGC=0.40



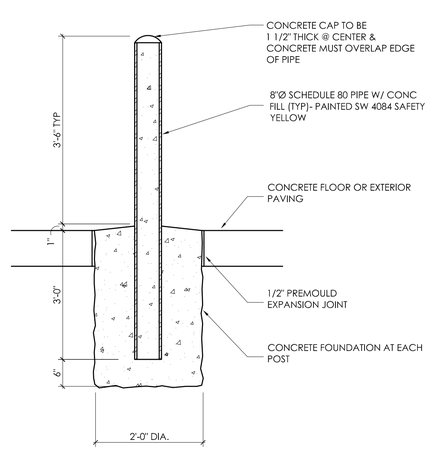
6 A501 Foundation Detail
3/4"=1'-0"



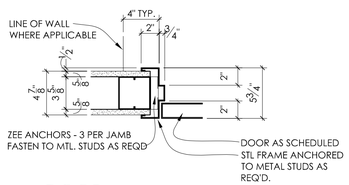
4 A501 Non-Rated Control Joint Detail
1 1/2"=1'-0"



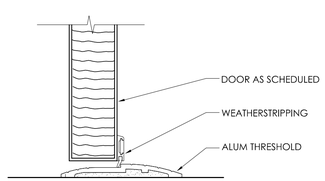
3 A501 WINDOW HEAD/JAMB DETAIL
1 1/2"=1'-0"



5 A501 Pipe Bollard Detail
3/4"=1'-0"



2 A501 DOOR HEAD/JAMB DETAIL
1 1/2"=1'-0"



1 A501 Door Threshold Detail
1 1/2"=1'-0"

Approved For Permit
Approved
Date: 9/21/2026
CITY OF DETROIT
Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL



PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO: 20260219
DRAWN BY:	CHECKED BY:
PROJECT MGR:	APPROVED BY:

SHEET TITLE

SCHEDULE AND DETAILS

SHEET NUMBER	ISSUE
A-501	

STRUCTURAL NOTES:

GENERAL STRUCTURAL NOTES
GOVERNING BUILDING CODE - 2021 MICHIGAN BUILDING CODE

1. THE STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS AND THE STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.

2. THE STRUCTURAL DRAWINGS FORM AN INTEGRAL PART OF THE CONTRACT DOCUMENTS, WHICH INCLUDE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, SITE DRAWINGS AND SPECIFICATIONS. COORDINATE THE STRUCTURAL DRAWINGS WITH THE REQUIREMENTS SHOWN IN THE OTHER COMPONENTS OF THE CONTRACT DOCUMENTS.

3. TYPICAL DETAILS AND OTHER DETAILS APPLY TO CONDITIONS THAT ARE SIMILAR TO THE CONDITIONS DESCRIBED IN THE DETAILS, EVEN IF THEY ARE NOT SPECIFICALLY REFERENCED ON THE PLANS.

4. THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS, SEQUENCES AND PROCEDURES OF CONSTRUCTION.

5. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. DETERMINE ERECTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS IF NECESSARY. RETAIN OWNERSHIP OF SUCH MATERIAL AFTER COMPLETION OF THE PROJECT.

6. CONSTRUCTION SHALL COMPLY FULLY WITH THE APPLICABLE PROVISIONS OF OSHA AND THE LOCAL GOVERNING CODES, LATEST EDITION, AND ALL REQUIREMENTS SPECIFIED IN THE CODES SHALL BE ADHERED TO AS IF THEY WERE CALLED FOR OR SHOWN ON THE DRAWINGS. THIS SHALL NOT BE CONSTRUED TO MEAN THAT REQUIREMENTS SET FORTH ON THE DRAWING MAY BE MODIFIED BECAUSE THEY ARE MORE STRINGENT THAN THE CODE REQUIREMENTS OR BECAUSE THEY ARE NOT SPECIFICALLY REQUIRED BY CODE.

DESIGN LOADS
1. THE STRUCTURE IS DESIGNED FOR THE FOLLOWING LIVE LOADS IN ADDITION TO THE LATERAL LOADS AND SUPERIMPOSED DEAD LOADS AND SELF-WEIGHT OF THE STRUCTURE. WHERE APPLICABLE, THE LIVE LOADS ARE REDUCED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODE. THE SNOW LOADS ON LOWER ROOFS ADJACENT TO HIGH ROOFS OR SLOPED ROOFS ARE INCREASED FOR THE EFFECT OF DRIFTING.

2. BUILDING IS NOT DESIGNED FOR FUTURE VERTICAL OR HORIZONTAL EXPANSION.

LIVE LOAD
1. ROOF SNOW LOAD:
   - 1.1. GROUND SNOW LOAD: 20 PSF
   - 1.2. FLAT ROOF SNOW LOAD (MINIMUM ROOF LOAD): 17 PSF
   - 1.3. SNOW EXPOSURE FACTOR: 1.0
   - 1.4. SNOW LOAD IMPORTANCE FACTOR: 1.0
   - 1.5. THERMAL FACTOR: 1.2
   - 1.6. ADDITIONAL LOADING DUE TO DRIFTING AT CHANGES IN ROOF ELEVATIONS AND ICE AT OVERHANGS PER APPLICABLE CODE.
2. ROOF LIVE LOAD: 20 PSF

WIND LOAD
1. Vult 115 MPH
2. Vasd 90 MPH
3. WIND RISK CATEGORY: II
4. EXPOSURE CATEGORY: D
5. INTERNAL PRESSURE COEFFICIENT 0.18
6. COMPONENTS AND CLADDING PRESSURES:

SEISMIC LOAD
1. SEISMIC RISK CATEGORY II
SEISMIC IMPORTANCE FACTOR: 1.0
- Ss = 0.104
- S1 = 0.046
- SDs = 0.111
- SD1 = 0.074

SITE CLASSIFICATION: D
2. DESIGN CATEGORY: B
3. BASIC SEISMIC FORCE RESISTING SYSTEM: BASIC SFRS: NOT DETAILD FOR SEISMIC
4. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

FOOTINGS AND FOUNDATIONS
1. ALL EXPOSED SUBGRADE FOOTING LEVELS AND SLAB ON GRADE ARE TO BE INSPECTED BY SOIL ENGINEER BEFORE PLACING CONCRETE.

2. THE EXCAVATIONS FOR FOUNDATION WORK SHOULD BE DONE IN A DRY PERIOD AND THE FOUNDATION CONCRETE SHOULD BE PLACED IMMEDIATELY. IF NOT POSSIBLE PLACE A THIN LAYER OF LEAN CONCRETE (MUD MAT) ON THE BASE OF THE EXCAVATION.

3. CONTRACTOR SHALL VERIFY ALL CONDITIONS, INCLUDING UNDERGROUND UTILITIES AND FIELD MEASUREMENTS AT JOB SITE AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE.

4. PROVIDE NECESSARY SHEETING, SHORING, BRACING, ETC. AS REQUIRED DURING EXCAVATIONS TO PROTECT SIDES OF EXCAVATIONS.

5. COMPLY FULLY WITH REQUIREMENTS OF OSHA AND OTHER REGULATORY AGENCIES FOR SAFETY PROVISIONS. TOP OF SPREAD FOOTING ELEVATIONS NOTED ON PLAN ARE MINIMUM ELEVATIONS.

6. SIDES OF FOUNDATIONS SHALL BE FORMED UNLESS CONDITIONS PERMIT EARTH FORMING. FOUNDATIONS POURED AGAINST THE EARTH REQUIRE THE FOLLOWING PRECAUTIONS: SLOPE SIDES OF EXCAVATIONS AS APPROVED BY GEOTECHNICAL ENGINEER AND CLEAN UP SLOUGHING BEFORE AND DURING CONCRETE PLACEMENT.

7. WHERE FOOTING STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL U.N.O.

8. FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND WALLS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THE DRAWINGS.

9. NO FOOTINGS OR SLABS SHALL BE PLACED ON OR AGAINST SUB-GRADE CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER OR FROST ENTER A FOOTING EXCAVATION AFTER SUB-GRADE APPROVAL, THE SUB-GRADE SHALL BE RE-INSPECTED BY THE GEOTECHNICAL ENGINEER / TESTING LABORATORY AFTER REMOVAL OF WATER OR FROST.

10. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUB-GRADE BEFORE AND AFTER PLACING OF CONCRETE UNTIL THE FULL BUILDING ENCLOSURE IS COMPLETED AND HEATED.

11. EXCAVATED MATERIAL SHALL BE LEGALLY DISPOSED OFF THE OWNER'S PROPERTY OR STORED AT THE THE SITE OR USED FOR BACKFILLING OPERATIONS AS REQUIRED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AND PROJECT SPECIFICATION REQUIREMENTS. ANY CONTAMINATED SOIL ENCOUNTERED SHOULD BE HANDLED PER DEQ REQUIREMENTS.

12. CONTRACTOR SHALL FURNISH ALL REQUIRED DE-WATERING EQUIPMENT TO MAINTAIN A DRY EXCAVATION UNTIL BACKFILL IS COMPLETE.

13. WHERE NEW FOOTINGS ARE ADJACENT OR ABUT EXISTING FOUNDATIONS, CAREFULLY HAND EXCAVATE AND DETERMINE BOTTOM OF EXISTING FOUNDATION. IF DIFFERENT THAN ANTICIPATED, ADJUST NEW FOUNDATIONS TO MATCH EXISTING. IN NO CASE SHALL THE NEW FOOTING BE LOWER THAN THE EXISTING WITHOUT PROTECTION AGAINST UNDERMINING SUCH AS UNDERPINNING OR SHORING

14. ALL FOOTINGS SHALL BE DESIGNED IN ACCORDANCE WITH A GEOTECHNICAL EVALUATION PROVIDED BY TESTING ENGINEERS & CONSULTANTS, INC. DATED 07.01.2026, WITH A MAXIMUM NET ALLOWABLE SOIL BEARING PRESSURE OF 2,00 PSF. ALL RECOMMENDATIONS IN THE SOIL INVESTIGATION REPORT SHALL BE FALLOWED.

15. ALL FOUNDATIONS TO BEAR A MINIMUM 42" BELOW GRADE FOR FROST PROTECTION.

BACKFILLING
1. WHERE BACKFILLING IS TO BE PLACED ON BOTH SIDES OF FOUNDATION WALLS, PROVIDE A BALANCED BACKFILL AGAINST FOUNDATION WALLS TO ELIMINATE LATERAL LOAD EFFECTS, OR PROVIDE NECESSARY TEMPORARY LATERAL SUPPORT TO THE TOP OF THE WALL UNTIL PERMANENT SUPPORT IS INSTALLED.

2. BACKFILL MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY, AS DETERMINED BY THE MODIFIED PROCTOR METHOD (ASTM D1557), IN LIFTS NOT EXCEEDING 6".

CAST-IN-PLACE CONCRETE
1. CONCRETE STRUCTURAL FRAMING HAS BEEN DESIGNED BY THE ULTIMATE STRENGTH METHOD PER ACI 318-08 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE".

2. CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE OF BUILDINGS", AND ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND ACI GUIDE 362.1R-12; EXCEPT AS MODIFIED BY STRUCTURAL REQUIREMENTS NOTED ON THE DRAWINGS.

3. CEMENT SHALL CONFORM TO ASTM C150 "SPECIFICATION FOR PORTLAND CEMENT" TYPE I OR III.

4. CONCRETE AGGREGATES SHALL CONFORM TO ASTM C33 "SPECIFICATION FOR CONCRETE AGGREGATES"; AND ASTM C330 "SPECIFICATION FOR LIGHT WEIGHT AGGREGATES FOR STRUCTURAL CONCRETE".

5. REINFORCING SHALL CONFORM TO ASTM A-615, GRADE 60.

6. REINFORCEMENT SHALL BE FABRICATED AND ERECTED ACCORDING TO THE ACI STANDARDS: "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", ACI 315 - CURRENT EDITION AND "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" ACI 315R - CURRENT EDITION.

7. WELDED WIRE FABRIC SHALL BE FURNISHED IN FLAT SHEETS (ROLLS NOT PERMITTED) AND SHALL CONFORM TO ASTM A-185 AND HAVE A MINIMUM SIDE AND END LAP OF 8".

8. WELDING OF REINFORCING STEEL IS PROHIBITED UNLESS SPECIFICALLY DETAILED. WELDING SHALL CONFORM TO AWS D1.4 SPECIFICATION.

9. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH AS FOLLOWS:
   - FOUNDATIONS: 4,000 PSI
   - SLAB-ON-GRADE: 4,000 PSI
   - EXTERIOR CONCRETE: 4,000 PSI

10. EXTERIOR AND INTERIOR CONCRETE SUBJECTED TO FREEZE/THAW CYCLES, SALT, ETC., INCLUDING WALLS, SHALL BE AIR-ENTRAINED 5% +/- 1%.

11. USE OF CALCIUM CHLORIDE, CHLORIDE IONS OR OTHERS SALTS IN CONCRETE ARE NOT PERMITTED.

12. MINIMUM LENGTH OF LAP SPLICES SHALL BE BASED ON ACI 318. LOCATION OF LAP SPLICES SHALL BE AS INDICATED OR SHALL BE IN ACCORDANCE WITH CONSTRUCTION JOINTS LOCATION AND DETAILS OR AS SHOWN ON THE APPROVED REINFORCING STEEL SHOP DRAWINGS.

13. ANCHOR BOLTS AND STEEL EMBEDDED ITEMS (FURNISHED BY STRUCTURAL STEEL CONTRACTOR) SHALL BE SET BY TEMPLATE TO WITHIN A 1/8" TOLERANCE IN ANY PLAN OR VERTICAL DIRECTION IN PIERS, FOOTINGS, AND FOUNDATION WALL WITH MINIMUM EMBEDMENT AND EXACT PROJECTION INDICATED ON THE DRAWINGS, PRIOR TO PLACING CONCRETE.

14. PROVIDE DOWELS INTO FOUNDATION TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT AT ALL COLUMNS AND WALLS, U.N.O.

15. UNLESS OTHERWISE SHOWN OR NOTED, PROVIDE (2) #5 BARS (ONE EACH FACE) AROUND UNFRAMED OPENINGS IN SLABS AND WALLS. PLACE BARS PARALLEL TO SIDES OF OPENINGS AND EXTEND THEM 24" BEYOND CORNERS.

16. CONSTRUCTION JOINTS SHALL BE FURNISHED WITH A FULL LENGTH KEYWAY CENTERED ON MEMBERS. WHERE THE SIZE OF KEY IS NOT SHOWN ON THE DRAWINGS, THE KEY SHALL BE 25% OF THE CROSS SECTION DIMENSION OF THE MEMBER AND MINIMUM 1 1/2" INTO THE FIRST POUR OF CONCRETE. PROVIDE FULL LENGTH WATER-STOP IN CONSTRUCTION JOINTS WHERE WALL IS EXPOSED TO EARTH OR WEATHER.

17. PROVIDE 3/4" X 3/4" CHAMFER STRIP AL ALL EXPOSED CORNERS OF CONCRETE WALLS, INCLUDING EXPOSED CORNERS OF CONCRETE PIERS.

18. REFER TO ARCHITECTURAL DRAWINGS FOR SLAB RECESSES AND FOR FLOOR FINISH MATERIALS.

19. CONCRETE SHALL BE PLACED TO THE CONSTANT TOP OF SLAB ELEVATIONS, WHILE MAINTAINING THE MINIMUM CONCRETE THICKNESS NOTED ON THE DRAWINGS.

20. MINIMUM ELAPSED TIME BETWEEN ADJACENT CONCRETE PLACEMENTS SHALL BE 48 HOURS.

21. CURING OF CONCRETE SURFACES SHALL CONFORM TO ACI 308.1-11 "STANDARD SPECIFICATION FOR CONCRETE CURING" AND ACI 308R-16 "GUIDE TO CURING CONCRETE". REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

22. PRIOR TO PLACING CONCRETE ADJACENT TO EXISTING CONCRETE WITHOUT A CONSTRUCTION JOINT THOROUGHLY CLEAN, DE-GREASE AND MECHANICALLY ROUGHEN EXISTING CONCRETE SURFACES. APPLY EPOXY BONDING AGENT PRIOR TO PLACING FRESH CONCRETE. BONDING AGENT SHALL BE "SIKA ARMATEC 110 EPCHEM BY SIKA CORPORATION OR APPROVED EQUAL. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS FOR SURFACE PREPARATION, MIXING AND APPLICATION.

23. PRIOR TO PLACING CONCRETE TOPPING, THOROUGHLY CLEAN, DE-GREASE AND MECHANICALLY ROUGHEN EXISTING CONCRETE SURFACES. SOAK EXISTING CONCRETE SURFACES FOR MINIMUM 12 HOURS. PLACE A CONCRETE-SLURRY OF CEMENT AND WATER WITHIN 1 HOUR OF TOPPING PLACEMENT.

24. CONCRETE TOPPINGS SHALL BE REINFORCED WITH COLLATED, FIBRILLATED, POLYPROPYLENE FIBROUS REINFORCEMENT.

25. PROVIDE MINIMUM 1" DEEP SAW CUT IN CONCRETE ELEMENTS BEING REMOVED. BREAK REMAINDER ALONG NEAT LINES. PROVIDE AN EPOXY BONDING AGENT ON THE ROUGHENED AND CLEANED SURFACE WHERE NEW CONCRETE IS BEING PLACED ADJACENT TO EXISTING CONSTRUCTION.

26. NON-SHRINK GROUT: GROUT SHALL CONFORM TO ASTM C1107 - CURRENT EDITION. GROUT SHALL BE PREMIXED, NON-SHRINK NON-CATALYZED NATURAL AGGREGATE GROUT, FOR COLUMN LEVELING PLATES WHICH ARE NOT BOLTED DOWN BEFORE COLUMN ERECTION, AND OTHER STRUCTURAL LOAD BEARING APPLICATIONS, AND FOR ITEMS SETS INTO CONCRETE BLOCK-OUTS OR DEPRESSIONS, OR SET INTO CONCRETE TOPPINGS. L&M "CRYSTEX", W.R. MEADOWS "588 GROUT", MASTER BUILDERS "MASTERFLOW 928 GROUT", OR DAYTON-SUPERIOR "HIGH PERFORMANCE". SEVEN-DAY COMPRESSIVE STRENGTH FOR THE SPECIFIED CONSISTENCY SHALL BE AT LEAST, 7,000 PSI PLASTIC, 6,000 PSI FLOWABLE, AND 5,000 PSI FLUID CONSISTENCY.

27. RUNNING SLOPES OF WALKS SHALL NOT EXCEED 4% CROSS SLOPES OF WALKS & RAMPS SHALL NOT EXCEED 1%. SLOPE AT WALK INTERSECTIONS SHALL NOT EXCEED 1% IN EITHER DIRECTION. VERTICAL CHANGE IN LEVEL AT EXPANSION JOINTS. CONSTRUCTION JOINTS & ACCESSIBLE BUILDING ENTRANCES SHALL NOT EXCEED ¼". NOTIFY BUILDER OF UNABLE TO ACHIEVE.

REINFORCING STEEL
1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE' (ACI 318), AND THE 'MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION' BY THE C.R.S.I. AND THE W.C.R.S.I., OR AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.

2. REINFORCING BARS SHALL CONFORM TO THE FOLLOWING, UNLESS NOTED OTHERWISE.

CLASSIFICATION	TYPE
REINFORCING STEEL #7 AND SMALLER:	ASTM A615, 60 KSI
REINFORCING STEEL #8 AND LARGER, REINFORCING STEEL TO BE WELDED & LONGITUDINAL REINFORCING STEEL IN CONCRETE MOMENT FRAME MEMBERS & IN CONCRETE SHEAR WALL BOUNDARY ELEMENTS:	ASTM A706, 60 KSI
1/2 INCH DIAMETER LOW RELAXATION SEVEN WIRE POST-TENSIONING STRAND:	ASTM A416, 270 KSI
WELDED STEEL WIRE FABRIC:	ASTM A185, 70 KSI
SMOOTH DOWELS IN SLAB ON GRADE:	ASTM A36, 36 KSI

3. MECHANICAL COUPLERS: LENTON THREADED COUPLERS BY ERICO, ICC #3967 LARR 24507), XTENDER BY HEADED REINFORCEMENT CORPORATION, ICC #2794 (LARR 25347) OR BAR-LOCK BY DAYTON SUPERIOR CORP, ICC #2495 (LARR 25342). COUPLERS FOR BEAM AND SLAB BARS AT FORMED CONSTRUCTION JOINTS MAY BE LENTON FORM SAVERS BY ERICO, ICC #3967.

4. WELDING OF REINFORCEMENT SHALL BE WITH LOW HYDROGEN E90XX ELECTRODES FOR WELDING ASTM A615 BARS AND E80XX ELECTRODES FOR WELDING ASTM A706 BARS. ALL WELDING SHALL BE IN CONFORMANCE WITH AMERICAN WELDING SOCIETY, AWS-D1.4. ONLY WELDERS SPECIFICALLY CERTIFIED FOR REINFORCING STEEL AND IN ACCORDANCE WITH AWS D1.4 SHALL PERFORM WELDING OF REINFORCING STEEL..

5. DRAWINGS SHOW TYPICAL REINFORCING CONDITIONS. CONTRACTOR SHALL PREPARE DETAILED PLACEMENT DRAWINGS OF ALL CONDITIONS SHOWING QUANTITY, SPACING, SIZE, CLEARANCES, LAPS, INTERSECTIONS AND COVERAGE REQUIRED BY STRUCTURAL DETAILS, APPLICABLE CODE AND TRADE STANDARDS. CONTRACTOR SHALL NOTIFY REINFORCING INSPECTOR OF ANY ADJUSTMENTS FROM TYPICAL CONDITIONS THAT ARE PROPOSED IN PLACEMENT DRAWINGS TO FACILITATE FIELD PLACEMENT OF REINFORCING STEEL AND CONCRETE.

6. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.

7. MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 12 INCHES, OR ONE FULL MESH PLUS TWO INCHES, WHICHEVER IS GREATER.

8. REINFORCING SPLICES SHALL ONLY BE MADE AS INDICATED ON THE DRAWINGS.

9. DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING AS THE VERTICAL REINFORCING, RESPECTIVELY, UNLESS NOTED OTHERWISE.

10. DOWELS BETWEEN SLABS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING AS THE VERTICAL REINFORCING, RESPECTIVELY, UNLESS NOTED OTHERWISE.

11. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.

DEFERRED SUBMITTALS:
1. ANCHOR BOLT PLAN FOR POST INSTALLED ANCHORS

Approved For Permit
Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

CLI

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ISS

No		
1		
2		
3	90% CD	04/20/2026
4	PERMITS	04/30/2026
5	CONSTRUCTION	07/13/2026

CONSULTANTS

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STATE OF MICHIGAN
JASON M. CONN
ENGINEER
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LICENSED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

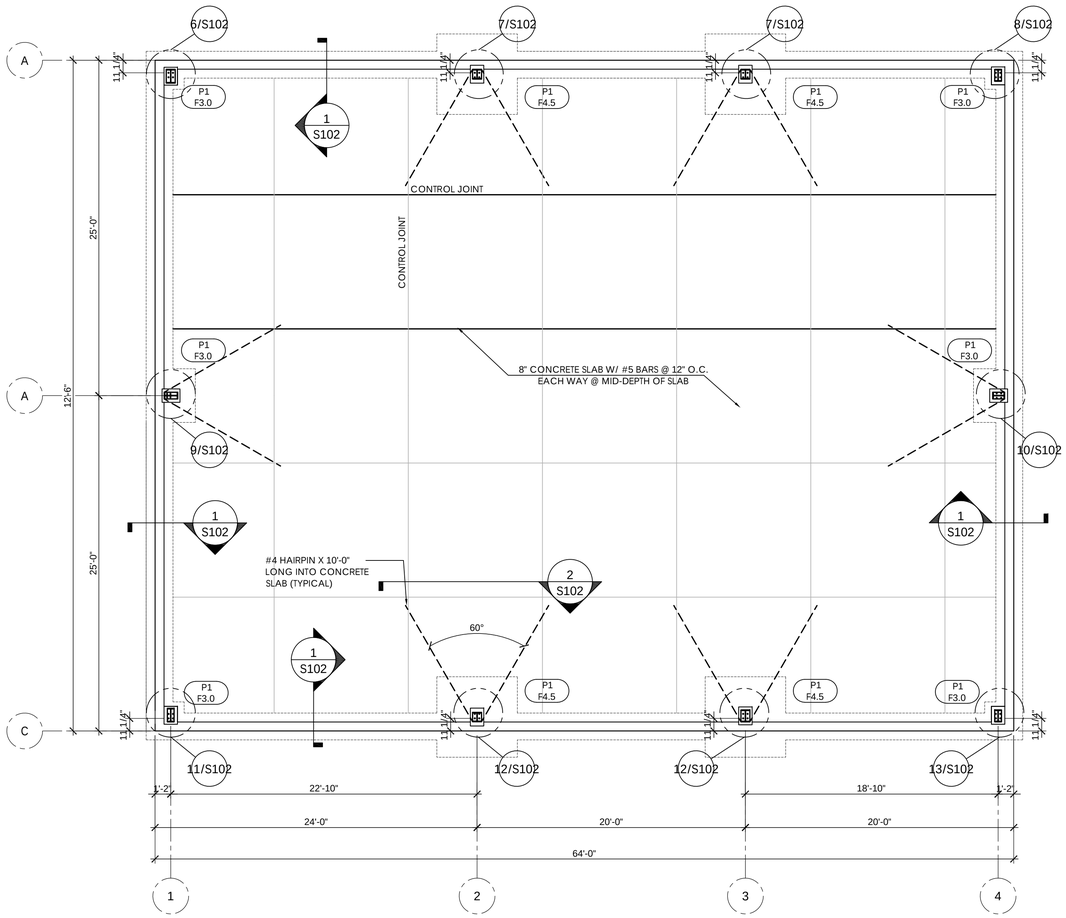
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO: 20260219
DRAWN BY:	CHECKED BY:
PROJECT MGR:	APPROVED BY:

SHEET TITLE

GENERAL NOTES

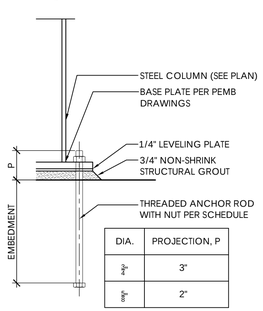
SHEET NUMBER	ISSUE
S-001	



1 FOUNDATION PLAN

Scale: 3/16" = 1'-0"

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
2. SEE SHEET S-001 FOR CONCRETE AND FOUNDATION NOTES.
3. ALL FOOTINGS TO BEAR AT 4'-0" BELOW EXISTING GRADE AND BEAR ON VIRGIN SOIL PER TO ACHIEVE 2,000 PSF SOIL BEARING PRESSURE
4. ALL PIERS TO BE CENTERED UNDER COLUMNS



DIA.	PROJECTION, P
3/4"	3"
5/8"	2"

2 ANCHOR BOLT DETAIL

Scale: NONE

FOOTING SCHEDULE

MARK	FOOTING SIZE	REINFORCING	THICKNESS	NOTES
F4.5	4'-6" x 4'-6"	(4) #5 BARS EA. WAY TOP AND BOTTOM	12"	
F3.0	3'-0" x 3'-0"	(3) #5 BARS EA. WAY TOP AND BOTTOM	12"	
WF2.0	2'-0" WIDE CONTINUOUS	(3) #5 CONTINUOUS BARS	12"	

PIER SCHEDULE

MARK	FOOTING SIZE	REINFORCING	NOTES
P1	1'-4" x 1'-0"	(4) #6 VERTICAL BARS W/ #4 TIES @ 8" O.C. W/ (2) #4 TIES AT TOP OF PIER	

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3	90% CD	04/20/2026
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PROJECT

TRANSFLO

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DRAWN BY:	CHECKED BY:
PROJECT MGR:	APPROVED BY:

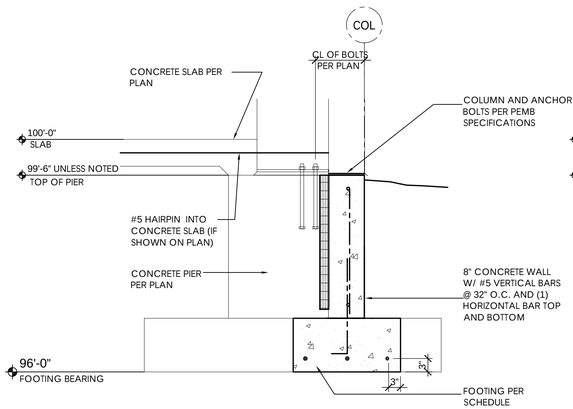
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FOUNDATION PLAN

SHEET NUMBER

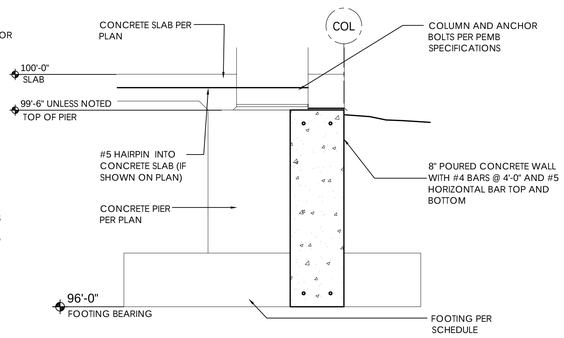
S-101

ISSUE



1 FOOTING DETAIL

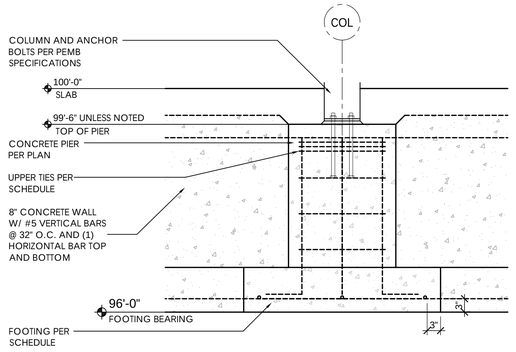
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1A FOOTING DETAIL

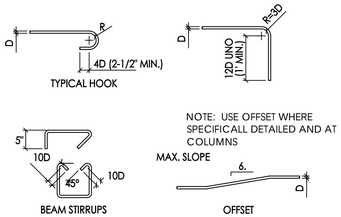
**ALTERNATE DETAIL

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2 FOOTING DETAIL

Scale:3/4" = 1'-0"



3 REINFORCING BAR BENDS

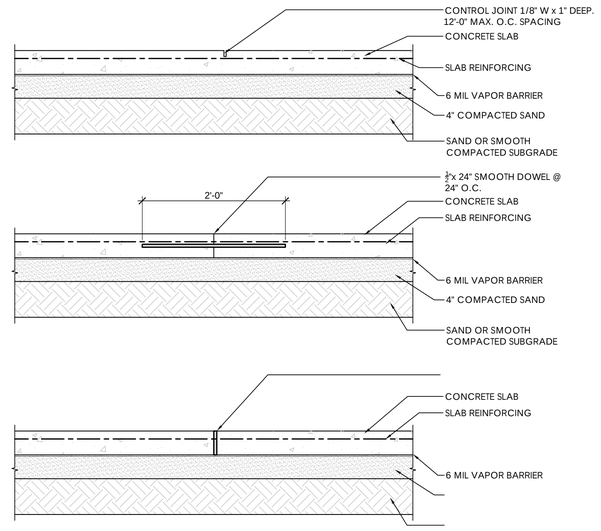
Scale: NONE

BAR SIZE	REBAR LAP LENGTH	
	CASE 1 (EPOXY)	CASE 2 (BARE)
#2	18	12
#3	27	18
#4	36	24
#5	45	30
#6	54	36
#7	63	42
#8	72	48
#9	82	55

1. ALL TABULATED VALUES ARE IN UNITS OF INCHES U.N.O.
2. AT CONTRACTOR'S OPTION MECHANICAL SPLICE COUPLERS PER G.S.N. MAY BE USED IN LIEU OF LAP SPLICES FOR Car 4 BARS AND SMALLER
3. BAR DEVELOPMENT LENGTH, WHERE NOTED ON PLANS OR DETAILS, SHALL BE EQUAL TO TABULATED LAP LENGTH D. SCHEDULED VALUES ARE BASED ON UNCOATED REINF. FOR EPOXY COATED REBAR, MULTIPLY TABULATED VALUES BY 1.5
4. CASE1: BARE STEEL REBAR CASE2: EPOXY COATED BARS

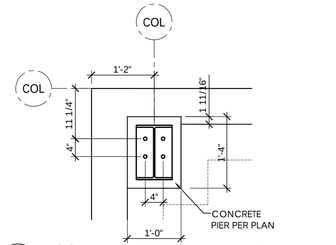
4 REBAR LAP SCHEDULE

Scale: NONE



5 TYPICAL SLAB JOINT DETAILS

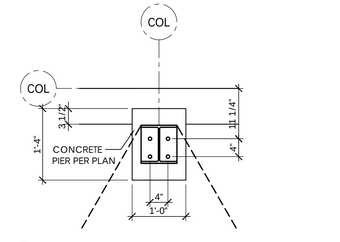
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6 COLUMN ATTACHMENT DETAIL

Scale: 3/4" = 1'-0"

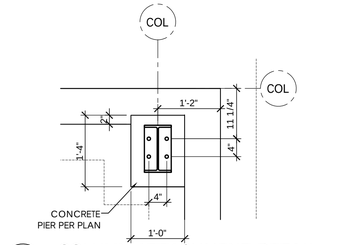
*3/4" Ø ANCHORS
*12" EMBEDMENT
*BEARING = 99'-6"



7 COLUMN ATTACHMENT DETAIL

Scale: 3/4" = 1'-0"

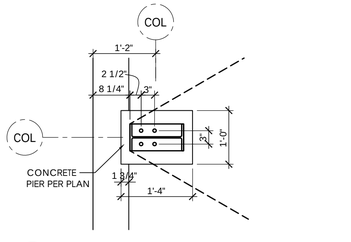
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*12" EMBEDMENT
*BEARING = 99'-6"



8 COLUMN ATTACHMENT DETAIL

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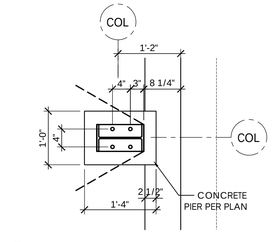
*3/4" Ø ANCHORS
*12" EMBEDMENT
*BEARING = 99'-6"



9 COLUMN ATTACHMENT DETAIL

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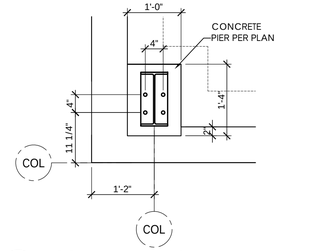
*3/4" Ø ANCHORS
*12" EMBEDMENT
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10 COLUMN ATTACHMENT DETAIL

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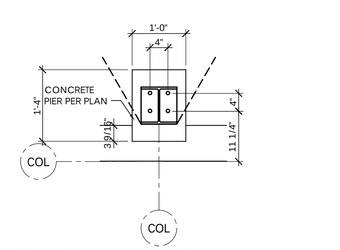
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*12" EMBEDMENT
*BEARING = 99'-6"



11 COLUMN ATTACHMENT DETAIL

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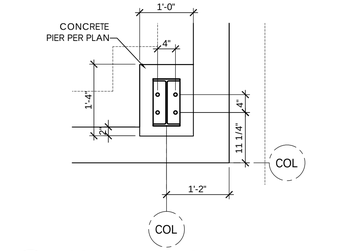
*3/4" Ø ANCHORS
*12" EMBEDMENT
*BEARING = 99'-6"



12 COLUMN ATTACHMENT DETAIL

Scale: 3/4" = 1'-0"

*3/4" Ø ANCHORS
*12" EMBEDMENT
*BEARING = 99'-6"



13 COLUMN ATTACHMENT DETAIL

Scale: 3/4" = 1'-0"

*3/4" Ø ANCHORS
*12" EMBEDMENT
*BEARING = 99'-6"

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Approved
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3	90% CD	04/20/2026
4	PERMITS	04/30/2026
5	CONSTRUCTION	07/13/2026

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SEAL

STATE OF MICHIGAN
JASON M. CONN
ENGINEER
No. 6201051350
LICENSED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO: 20260219
DRAWN BY:	CHECKED BY:
PROJECT MGR:	APPROVED BY:

SHEET TITLE

SECTIONS AND DETAILS

SHEET NUMBER	ISSUE
S-102	

GENERAL NOTES

1. SEE STRUCTURAL DRAWINGS FOR EXACT LOCATIONS AND PARTITIONS.
2. COORDINATE ALL LOCATIONS, SIZES, AND ELEVATIONS OF ALL SLEEVES THROUGH WALLS AND SLABS WITH STRUCTURAL AND (ARCHITECTURAL) DRAWINGS.
3. SEE SPECIFICATION FOR FURTHER DETAIL.
4. ALL WORK AND MATERIALS SHALL CONFORM TO THE CURRENT EDITION OF THE MICHIGAN REFRIGERATION AND MICHIGAN MECHANICAL CODES, ORDINANCES, AND REGULATIONS: STATE HEALTH AND SAFETY REGULATIONS, STATE FIRE MARSHAL, LOCAL FIRE DEPARTMENT AND HEALTH DEPARTMENT AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
5. COORDINATE INSTALLATION OF MECHANICAL WORK SO AS TO AVOID UNNECESSARY JOB DELAYS OR INTERFERENCE WITH ALL OTHER TRADES.
6. OBTAIN ALL FIELD APPROVALS ON MECHANICAL WORK FROM REGULATING AGENCIES WHERE REQUIRED.
7. GUARANTEE ALL LABOR AND MATERIALS FOR ONE YEAR FROM DATE OF COMPLETION.
8. CONTRACTOR SHALL RECORD ON AS-BUILT DRAWINGS ALL SIZES, MATERIAL, ELEVATIONS, AND LOCATIONS OF ALL THE EQUIPMENT AND DUCTWORK THAT DEVIATE FROM THE DESIGN CONTRACT DRAWINGS AND SUBMIT TO THE ENGINEER FOR REVIEW.
9. ALL MODEL NUMBER USED TO BE VERIFIED WITH MANUFACTURER FOR DESIGN INTENT, SHOWN ON DESIGN DOCUMENT.
10. ALL EQUIPMENT, DEVICES, ACCESSORIES, ETC. TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATION.
11. PLUMBER SHALL PROVIDE FULL SIZE CONDENSATE DRAIN FROM AIR CONDITIONING UNITS (WITH DEEP SEAL TRAP AND UNION) AND DISCHARGE TO THE NEAREST APPROVED RECEPTOR.
12. ALL CONTROL WIRING 120 V OR LESS SHALL BE MECHANICAL CONTRACTOR'S RESPONSIBILITY.
13. INSTALLATION OF VENTILATION OR HEAT PRODUCING EQUIPMENT SHALL BE IN ACCORDANCE WITH NFPA PAMPHLET 91, NFPA 211, NFPA 31 AND NFPA 54 AS APPLICABLE.
14. ALL HVAC WORK SHALL BE IN COMPLIANCE WITH NFPA 90A AND 90B, AS APPLICABLE AND IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTION.
15. ALL UNITARY CONTROLLER SHALL INCLUDE LON CARD.
16. ALL ACCESSORIES, SENSORS, DEVICES INCLUDING FLOW SENSOR, PRESSURE SENSOR TEMPERATURE SENSOR, CONTROL VALVES, SWITCHES, TRANSDUCERS, SHALL BE PROVIDED BY THE CONTRACTOR TO ACHIEVE SEQUENCE OF OPERATION FOR HVAC SYSTEM.
17. ELECTRICAL TO BE DESIGN OR BUILD AND COORDINATE WITH ELECTRICAL CONTRACTOR FOR NEW CIRCUIT BREAKER, FUSED DISCONNECT, STARTERS, ETC.
18. PROVIDE SMOKE DETECTOR IN SUPPLY AND MAIN RETURN DUCT. FOR ALL HVAC UNIT CONNECT TO BUILDING FIRE ALARM SYSTEM.
19. ALL MODEL NUMBERS AS SHOWN ARE FOR REFERENCE ONLY, CONTRACTOR IS RESPONSIBLE FOR THE PERFORMANCE AS SHOWN ON SCHEDULE. VERIFY MODEL NUMBER WITH MANUFACTURER.
20. ALL DUCTWORK TO BE INSTALLED PER SMACNA STANDARD & EQUIPMENT MANUFACTURER'S PUBLISHED CONNECTION DETAIL.
21. VERIFY DUCT & PIPE CHASE TO BE ADEQUATE TO INSTALL DUCT & PIPE AS SHOWN INCLUDING INSULATION & SUPPORT.
22. PROVIDE FIRE, SMOKE OR COMBINATION FIRE/SMOKE DAMPER FOR ALL RATED PARTITION WHETHER SHOWN ON PLAN OR NOT. SEE ARCHITECTURAL LIFE SAFETY PLAN. INCLUDING ALL SHAFT PENETRATION WALLS, FLOOR PENETRATION & EXIT CORRIDOR.
23. PROVIDE DUCT SMOKE DETECTORS AND NOTIFICATION DEVICE IN SPACE.

GENERAL NOTES

24. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROLS, ETC. TO BE INSTALLED PER MICHIGAN ENERGY CODE.
25. ALL DUCT COVERINGS AND LININGS SHALL NOT FLAME, GLOW, SMOLDER OR SMOKE WHEN TESTED IN ACCORDANCE WITH ASTM C 411 AND THE APPLICABLE PROVISIONS OF SECTION 604.3 OF MECHANICAL CODE.
26. ALL FLEXIBLE DUCT AND CONNECTORS MUST BE TESTED IN ACCORDANCE WITH UL 181. LENGTH NOT TO EXCEED 8'.
27. ALL DUCTS MUST BE SEALED IN ACCORDANCE WITH THE PROVISIONS IN THE MICHIGAN ENERGY CONSERVATION CODE.
28. ALL DUCTWORK SHOULD BE SUPPORTED AT MINIMUM 10' INTERVAL, UNLESS NOTED OTHERWISE IN CONTRACT DOCUMENT.
29. ALL FILTERS SHALL MEET SECTION 605 OF MECHANICAL CODE.
30. ALL DUCT SMOKE DETECTORS MUST BE INSTALLED IN ACCORDANCE WITH NFPA 72 (606.3).
31. TYPE OF REFRIGERANT, QUANTITY, APPLICATION AND USE SHALL COMPLY WITH SECTION 1102.2, 1104.3, TABLE 1103.1 OF MICHIGAN MECHANICAL CODE.
32. ALL FIRE DAMPERS SHALL BE DYNAMIC FIRE DAMPERS.
33. CONTRACTOR IS RESPONSIBLE TO LIST ALL MODIFICATION TO ORIGINAL DOCUMENT DURING SHOP DRAWING PROCESS. IT SHOULD CLEARLY MENTION THE CHANGES BEING MADE TO THE PARTS, OPTIONS, MATERIAL, CAPACITY, ETC. THAT IS DIFFERENT THAN WHAT IS SHOWN ON DOCUMENT. CONTRACTOR WILL REMAIN RESPONSIBLE FOR THE PERFORMANCE, OPERATION, WARRANTY, ALL REQUIRED MODIFICATIONS ETC. FOR THE PRODUCT.
34. CONTRACTOR TO PROVIDE ALL FITTINGS, ELBOWS, OFFSETS FOR PIPING & DUCTWORK TO SUIT SITE CONDITION.
35. PROVIDE INSULATION PER SPECIFICATION FOR ALL PIPING, DUCTWORK FOR HVAC SYSTEM. INSULATION THICKNESS AND R-VALUE SHALL COMPLY WITH MICHIGAN ENERGY CODE.
36. UNLESS NOTED OTHERWISE ALL DUCTWORK @ 1000FPM, DUCTWORK FROM MAIN DUCT TO DIFFUSER SHALL MATCH NECK SIZE.
37. ALL MOTOR STARTERS LOCATION TO BE IDENTIFIED DURING CONSTRUCTION AT SITE BY ENGINEER, UNLESS NOTED OTHERWISE. MAINTAIN 3' CLEARANCE.
38. PROVIDE 4" CONCRETE BASE FOR ALL FLOOR MOUNTED EQUIPMENT WITH MIN. 6" OVERHANG.
39. ALL DUCT SIZES AS SHOWN ARE CLEAR AREA FOR PASSAGE OF AIR.
40. FOR APPROVAL, CONTROL CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS INCLUDING WIRING DIAGRAM, SEQUENCE OF OPERATION FOR ALL EQUIPMENT.
41. PROVIDE FIRE RATED ACCESS PANEL SIZED TO REPLACE WHOLE UNIT.
42. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED WITH ACCESS AND SERVICE SPACE PER MICHIGAN MECHANICAL CODE SECTION 306. MAINTAIN WALL RATINGS.
43. CONTRACTOR NEED TO PROVIDE DUCT FABRICATION SHOP DRAWINGS FOR APPROVAL UNLESS NOTED OTHERWISE.

ADOPTED STATE OF MICHIGAN CODES AT THE TIME OF SUBMITTAL:

COMMERCIAL:

BUILDING: 2021 MICHIGAN BUILDING CODE – EFFECTIVE APRIL 9, 2025
REHAB: 2021 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS – EFFECTIVE APRIL 9, 2025
MECHANICAL: 2021 MICHIGAN MECHANICAL – EFFECTIVE MARCH 12, 2024
ELECTRICAL: 2023 NATION ELECTRICAL CODE W/ MICHIGAN PART 8 AMENDMENTS – EFFECTIVE MARCH 12, 2024
PLUMBING: 2021 MICHIGAN PLUMBING CODE – EFFECTIVE MARCH 12, 2024
ENERGY: 2021 MICHIGAN COMMERCIAL ENERGY CODE – EFFECTIVE APRIL 22, 2025
FUEL GAS: 2021 INTERNATIONAL FUEL GAS CODE
ACCESSIBILITY: 2017 ICC A117.1 ACCESSIBLE AND USEABLE BUILDING AND FACILITIES
FIRE: 2021 INTERNATIONAL FIRE CODE
FIRE SUPPRESSION: 2019 NFPA 13 AND 13R
FIRE ALARM: 2019 NFPA 72

MECHANICAL LEGEND

SYMBOL	ABBR.	DESCRIPTION	SYMBOL	ABBR.	DESCRIPTION
		DUCT	C/C	CC	COOLING COIL
	FC	DUCT FLEXIBLE CONNECTION	H/C	HC	HEATING COIL
		RECTANGULAR TO ROUND DUCT CONVERT.		UP	PIPE ELBOW UP
	SAD	SUPPLY AIR DUCT UP		DN	PIPE ELBOW DOWN
		RETURN AIR DUCT UP	MAV	MAV	MANUAL AIR VENT
		EXHAUST AIR DUCT UP		AD	ACCESS DOOR
		RETURN AIR GRILLE W/ ACOUST. BOOT		A/C	AIR CONDITIONING
	RAG	RETURN AIR GRILLE		AFF	ABOVE FINISHED FLOOR
	ER	EXHAUST AIR REGISTER		AHU	AIR HANDLING UNIT
	EG	EXHAUST AIR GRILLE		DB	DRY BULB TEMPERATURE
	DL	DOOR LOUVER		DDC	DIRECT DIGITAL CONTROL
		RECTANGULAR ELBOW DOWN		DX	DIRECT EXPANSION
		RECTANGULAR ELBOW UP		(E)	EXISTING
		SQUARE ELBOW WITH TURNING VANES		EA	EXHAUST AIR
T	T-STAT	THERMOSTAT		EAT	ENTERING AIR TEMPERATURE
		DIRECTION OF AIR FLOW		EDB	ENTERING DRY BULB TEMPERATURE
	VD	VOLUME DAMPER (MANUALLY ADJUSTED)		ESP	EXTERNAL STATIC PRESSURE (IN. WC.)
B	BDD	BACK DRAFT DAMPER		EWB	ENTERING WET BULB TEMPERATURE
M	MOD	MOTOR OPERATED DAMPER		EWT	ENTERING WATER TEMPERATURE
(N) (E)	FD	FIRE DAMPER(HORIZONTAL DUCT RUN)		FPM	FEET PER MINUTE
(N) (E)	FD	FIRE DAMPER(VERTICAL DUCT RUN)		GC	GENERAL CONTRACTOR
(N) S S (E)	SD	SMOKE DAMPER(HORIZONTAL DUCT RUN)		GLY	GLYCOL
(N) S S (E)	SD	SMOKE DAMPER (VERTICAL DUCT RUN)		GPM	GALLONS PER MINUTE
(N) FS FS (E)	FSD	FIRE/SMOKE DAMPER(HORIZONTAL DUCT RUN)		HP	HORSEPOWER
(N) FS FS (E)	FSD	FIRE/SMOKE DAMPER(VERTICAL DUCT RUN)		HVAC	HEATING, VENTILATING & AIR CONDITIONING
	POC	POINT OF CONNECTION		LAT	LEAVING AIR TEMPERATURE
	P	PUMP		LWT	LEAVING WATER TEMPERATURE
CWS	CWS	COLD WATER SUPPLY		MBH	THOUSAND BTU'S PER HOUR
HWS	HWS	HOT WATER SUPPLY		MCA	MINIMUM CIRCUIT AMPACITY
HWR	HWR	HOT WATER RETURN		NC	NOISE CRITERIA
CTWS	CTWS	COOLING TOWER WATER SUPPLY		OA	OUTSIDE AIR
CTWR	CTWR	COOLING TOWER WATER RETURN		RA	RETURN AIR
HWHS	HWHS	HEATING HOT WATER SUPPLY		RPM	REVOLUTIONS PER MINUTE
HWHR	HWHR	HEATING HOT WATER RETURN		SA	SUPPLY AIR
STM	STM	STEAM SUPPLY LINE		SP	STATIC PRESSURE (IN. WC.)
COND	COND	CONDENSATE LINE		TSP	TOTAL STATIC PRESSURE (IN. WC.)
	U	UNION		TYP	TYPICAL
	BFVA	BUTTERFLY VALVE		UNO	UNLESS NOTED OTHERWISE
	BV	BALL VALVE		ø	PHASE, ROUND
	PRV	PRESSURE REGULATING VALVE		STR	STRAINER
	CVA	CHECK VALVE (SWING)		T	THERMOMETER
OR OR	BAL. V.	BALANCING VALVE			FLEXIBLE INSULATED DUCT
	CV	CONTROL VALVE (2-WAY)		WTR	WATER
	CV	CONTROL VALVE (3-WAY)		ICWS/R	INDUCTION UNIT CHILLED WATER SUPPLY/RETURN
RVA	RVA	RELIEF VALVE		IHWS/R	INDUCTION UNIT HOT WATER SUPPLY/RETURN
	PG	PRESSURE GAUGE WITH GAUGE COCK		DDC	DIRECT DIGITAL CONTROL
		DEMOLITION ITEM		BMS	BUILDING MANAGEMENT SYSTEM OR DDC
				A.F.F	ABOVE FINISHED FLOOR

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

Approved For Permit
Approved
Date: 9/21/2026
CITY OF DETROIT Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL

STATE OF MICHIGAN MICHIGAN MARINE ENGINEER No. 1001018908 REGISTERED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

MECHANICAL LEGENDS, NOTES AND SCHEDULES

SHEET NUMBER	ISSUE
M-100	

DIFFUSERS, GRILLES & REGISTERS

* USE AS SCHEDULED UNLESS NOTED OTHERWISE ON PLANS.

TAG	TYPE	CFM RANGE	NECK (in.)	FACE (in.)	MANUF.	MODEL
A	SUPPLY	0–30	8X6	10X8	TITUS	300RL
B	SUPPLY	0–50	4"ø	12X12	TITUS	TMS
C	SUPPLY	0–200	6"ø	24X24	TITUS	TMS
D	SUPPLY	0–435	10"ø	24X24	TITUS	TMS
E	SUPPLY	0–200	12X4	14X6	TITUS	S300FL
F	RETURN	0–50	–	24X12	TITUS	50F
G	RETURN	0–870	–	24X24	TITUS	50F
H	RETURN	0–200	8X6	10X8	TITUS	350RL

NOTES:

1. COORDINATE DIFFUSER TYPE TO BE USED WITH CEILING LAYOUT.
2. N.C. VALUE 25 OR LESS.
3. PROVIDE ALL DUCT TRANSITION AT THE NECK AS REQUIRED.
4. PROVIDE ACCESS PANEL FOR MANUAL BALANCE DAMPER IN HARD CEILING & WALL.
5. ANY SPECIAL GRILLE/DIFFUSER/REGISTER REQUIRED IS NOTED ON PLAN.
6. COLOR BY ARCHITECT/OWNER.
7. USE REMOTE CABLE FOR AIR BALANCING DIFFUSERS/GRILLS IN HARD CEILING.

GAS FURNACE SCHEDULE:

TAG	MANUF.	SERVES	MODEL NO.	SUPPLY AIR CFM	OUTSIDE AIR CFM	TYPE	TONS	ESP	GAS HEATING MBH		ELECTRICAL			REMARKS
									INPUT	OUTPUT	UNIT AMPS	MOP	VOLT/PHASE	
F–1	CARRIER	BREAK/CORR./MENS/ WOMENS/STORAGE	59TP7A060	1430	280	VERTICAL UP FLOW	3.5	0.4	60	58	13.5	15	120V/1ø	1 2 3 4 5 6 7 8 9

NOTES:

1. PROVIDE STARTER & DISCONNECT.
2. SEVEN DAY PROGRAMMABLE T–STAT.
3. CASED COOLING COIL. BASED ON FURNACE ORIENTATION.
4. HIGH EFFICIENCY SEALED COMBUSTION BURNER.
5. PROVIDE FILTERS AND FILTER BOX.
6. AUX CONDENSATE DRAIN PAN OR FLOW SWITCH IN DRAIN PAN TO SHUT OFF FURNACE IF PAN IS CLOGGED
7. ECM MOTOR.
8. 2 STAGE HEATING.
9. HUMIDIFIER (COORDINATE WATER SUPPLY WITH PLUMBING CONTRACTOR)

OUTDOOR CONDENSING UNIT SCHEDULE:

TAG	INTERLOCK	MODEL	COOLING MBH	CAPACITY (TON)	ELECTRICAL			MANUF. (DESIGN BASIS)	REMARKS
					POWER	MCA	MAX FUSE		
ACCU–1	F–1	26SPA642	42	3.5	230V/1ø	22.7	35	CARRIER	1 2 3 4

NOTES:

1. PROVIDE STARTER & DISCONNECT.
2. PAD.
3. PROVIDE ALL REFRIGERANT PIPING, COMPONENTS, AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. FURNISH AND CHARGE THE SYSTEM WITH THE APPROPRIATE REFRIGERANT IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.
4. PROVIDE REFRIGERANT PIPE INSULATION AND UV PROTECTIVE JACKET FOR OUTDOOR PIPING.

EXHAUST FAN SCHEDULE:

TAG	TYPE	SERVES	CFM	ESP	WATT	FAN RPM	DRIVE TYPE	ELEC. VLT./PH.	MANUFACTURER/ MODEL (DESIGN BASIS)	REMARKS
EF–1	CEILING MOUNTED	WOMENS 105	150	0.25	67	1000	DIRECT	120V 1ø	GREENHECK SP–A200	1 2 3 4 5
EF–2	CEILING MOUNTED	MENS 107	200	0.25	67	1000	DIRECT	120V 1ø	GREENHECK SP–A200	1 2 3 4 5
EF–3	CEILING MOUNTED	MENS LOCKER 106	70	0.25	16.9	870	DIRECT	120V 1ø	GREENHECK SP–A90	1 2 3 4 6

NOTES:

1. PROVIDE STARTER AND DISCONNECT.
2. PROVIDE MOUNTING HARDWARE.
3. VERIFY FAN LOCATION AT SITE.
4. WALL CAP WITH BACKDRAFT DAMPER AND BIRD SCREEN. COORDINATE CAP COLOR AND MODEL WITH ARCHITECT/OWNER.
5. OCCUPANCY SENSOR WITH OVERRIDE SWITCH.
6. TIMMER CONTROL WITH OVERRIDE SWITCH.

GAS FIRED INFRARED HEATER SCHEDULE

TAG	AREA SERVED	MAKE/MODEL	HIGH–FIRE BTU/HR	LOW–FIRE BTU/HR	VOLT/PH	REMARKS
IRH–1	WAREHOUSE	RE–VERBER–RAY HL3–30–125	125,000	82,000	120V/1ø	1 2 3 4 5 6

NOTES:

1. 24 VOLT TWO–STAGE THERMOSTAT.
2. CSA LISTED.
3. FLUE AND COMBUSTION AIR DUCT KIT.
4. ALUMINIZED STEEL RADIANT TUBES.
5. FIELD COORDINATE EXACT HEATER LOCATION AND ANGLE.
6. PROVIDE SHIELD IN LOCATION WHERE APPROPRIATE DISTANCES TO COMBUSTIBLES CAN'T BE MAINTAINED.

ELECTRIC UNIT HEATER:

TAG	SERVES	TYPE	KW	POWER	MANUF.	MODEL	AMPS	REMARKS
EUH–1	ABOVE CEILING SPACE OFFICE AREA (FREEZE PREVENTION)	CEILING MOUNTED	3.3	240V–1ø	MARKEL	5100 SERIES	13.7	1 2 3 4 5

NOTES:

1. BUILT IN STARTER & DISCONNECT.
2. PROVIDE MOUNTING HARDWARE.
3. CONTROLLED BY BUILT IN THERMOSTAT.
4. COLOR BY ARCHITECT/OWNER
5. HORIZONTAL DISCHARGE

ELECTRIC DUCT HEATER SCHEDULE:

1. SCR CONTROLLED.
2. STARTER & DISCONNECT.
3. FLOW SWITCH.
4. FINAL SIZE BASED ON VELOCITY REQUIREMENT.
5. LEAVING AIR TEMPERATURE SENSOR AND THERMOSTAT.

TAG	SERVES	SIZE (INXIN)	CFM	KW	ENTERING AIR TEMP. °F	LEAVING AIR TEMP. °F	POWER	MCA	MOCP	MANUF. (DESIGN BASIS)	MODEL	REMARKS
EDH–1	ERV–1	8X8	200	2	50.9	82.4	120V/1ø	20.84	25	RENEWAIRE	EK–0808002SCCHR–11–1SV–N	1 2 3 4 5

ENERGY RECOVERY VENTILATOR SCHEDULE:

TAG	SERVES	FAN				COOLING CAPACITY @ 95°F AMBIENT								HEATING CAPACITY @ –10°F AMBIENT								MANUF.	MODEL	MCA (A)	MOP (A)	ELECT.	REMARKS
		TYPE	CFM	E.S.P (INH2O)	WATTS	OUTDOOR		INDOOR		SUPPLY		CAPACITY (BTUH)	TOTAL EFFECTIVENESS	OUTDOOR		INDOOR		SUPPLY		CAPACITY (BTUH)	TOTAL EFFECTIVENESS						
						DB	WB	DB	WB	DB	WB			DB	WB	DB	WB	DB	WB								
ERV–1	WAREHOUSE (100)	SUPPLY	200	0.5	58	NA								–10	–10	70	51.3	50.9	39.3	20,727	73.3	RENEWAIRE	EV PREMIUM L	15	15	120V/1ø	1 2 3 4 5 6
		EXHAUST	200	0.5	58																						

NOTES:

1. PROVIDE STARTER & DISCONNECT.
2. INSTALLATION, VIBRATION, ISOLATION & CLEARANCE PER MANUFACTURER'S RECOMMENDATION.
3. PROVIDE TIMER WITH CAPABILITY FOR PROGRAMMABLE SCHEDULE.
4. MERV 8 FILTERS.
5. MOTORIZED DAMPER ON OUTSIDE AIR AND EXHAUST AIR DUCT.
6. FILTER MONITORS.

Approved For Permit
Approved
Date: 9/21/2026
CITY OF DETROIT Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL

STATE OF MICHIGAN — MICHAEL MARIO ENGINEER No. 6201060305 — PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

MECHANICAL LEGENDS, NOTES AND SCHEDULES

SHEET NUMBER

M-101

ISSUE

VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY

100% OUTDOOR AIR SYSTEMS

HELP

RESET/CLEAR PRINT

PROJECT NAME: FSDG Crown Transflo
PROJECT NUMBER: 2647002
DATE: 04.06.26

AIR HANDLING UNIT TAG NUMBER (AHU-1, ETC.)	WAREHOUSE						
RECORD NUMBER > > > >	1	2	3	4	5	6	7
ZONE NUMBER (EG: 1-1, 1-2)	RM-100						
OCCUPANCY CATEGORY NUMBER (SEE TABLE 6-1)	50						
OCCUPANCY CATEGORY	Warehouses	0	0	0	0	0	0
PEOPLE OUTDOOR AIR RATE (CFM/PERSON) (Rp)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AREA OUTDOOR AIR RATE (CFM/SQ. FT.) (Ra)	0.06	0.00	0.00	0.00	0.00	0.00	0.00
ZONE FLOOR AREA (SQ. FT.) (Az)	1840						
NORMAL OCCUPANCY - IF KNOWN (EG. ONE PER OFFICE) (NUMBER OF PEOPLE)							
PEAK OCCUPANCY - IF KNOWN (EG. MEETING IN AN OFFICE) (NUMBER OF PEOPLE)							
IF SPACE IS INTERMITTENT USAGE (EG. CONFERENCE ROOM) (SPACE HEIGHT - FT.)							
CORRECTED OCCUPANCY FOR INTERMITTENT USAGE SPACES (NUMBER OF PEOPLE)	0	0	0	0	0	0	0
CALCULATED OCCUPANCY (NUMBER OF PEOPLE) (Pz)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DEFAULT OCCUPANCY (NUMBER OF PEOPLE) (Pz)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DESIGN OCCUPANCY (CALCULATED, IF KNOWN OR DEFAULT) (NUMBER OF PEOPLE) (Pz)	0	0	0	0	0	0	0
PEOPLE OUTDOOR AIR (CFM) (Rp x Pz)	0	0	0	0	0	0	0
AREA OUTDOOR AIR (CFM) (Ra x Az)	110	0	0	0	0	0	0
BREATHING ZONE OUTDOOR AIRFLOW (CFM) (Vbz)	110	0	0	0	0	0	0
AIR DISTRIB. CONFIG. NUMBER (SEE TABLE 6-2)	3						
ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	0.8	0.0	0.0	0.0	0.0	0.0	0.0
ZONE OUTDOOR AIRFLOW (CFM) (Voz)	138	0	0	0	0	0	0
REQUIRED OUTDOOR AIR INTAKE FLOW = SUM OF ALL ZONES (CFM) (Vot)	138						

VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY

MULTIPLE ZONE SYSTEMS (WITHOUT ZONE LEVEL RECIRCULATION)

HELP

RESET/CLEAR

PROJECT NAME: FSDG Crown Transflo
PROJECT NUMBER: 2647002
DATE: 04.06.26
DESIGN OA TEMP.: -10

AIR HANDLING UNIT TAG NUMBER (AHU-1, ETC.)	F-1						
RECORD NUMBER > > > >	1	2	3	4	5	6	7
ZONE NUMBER (EG: 1-1, 1-2)	STOR	CORR	BREAK				
OCCUPANCY CATEGORY NUMBER (SEE TABLE 6-1)	36	26	34				
OCCUPANCY CATEGORY	Storage	Corridors	Breakrooms	0	0	0	0
PEOPLE OUTDOOR AIR RATE (CFM/PERSON) (Rp)	0.0	0.0	5.0	0.0	0.0	0.0	0.0
AREA OUTDOOR AIR RATE (CFM/SQ. FT.) (Ra)	0.12	0.06	0.12	0.00	0.00	0.00	0.00
ZONE FLOOR AREA (SQ. FT.) (Az)	52	112	250				
NORMAL OCCUPANCY - IF KNOWN (EG. ONE PER OFFICE) (NUMBER OF PEOPLE)							
PEAK OCCUPANCY - IF KNOWN (EG. MEETING IN AN OFFICE) (NUMBER OF PEOPLE)							
IF SPACE IS INTERMITTENT USAGE (EG. CONFERENCE ROOM) (SPACE HEIGHT - FT.)							
CORRECTED OCCUPANCY FOR INTERMITTENT USAGE SPACES (NUMBER OF PEOPLE)	0	0	0	0	0	0	0
CALCULATED OCCUPANCY (NUMBER OF PEOPLE) (Pz)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DEFAULT OCCUPANCY (NUMBER OF PEOPLE) (Pz)	0.0	0.0	12.5	0.0	0.0	0.0	0.0
DESIGN OCCUPANCY (CALCULATED, IF KNOWN OR DEFAULT) (NUMBER OF PEOPLE) (Pz)	0	0	13	0	0	0	0
PEOPLE OUTDOOR AIR (CFM) (Rp x Pz)	0	0	65	0	0	0	0
AREA OUTDOOR AIR (CFM) (Ra x Az)	6	7	30	0	0	0	0
BREATHING ZONE OUTDOOR AIRFLOW (CFM) (Vbz)	6	7	95	0	0	0	0
AIR DISTRIB. CONFIG. NUMBER (SEE TABLE 6-2)	3	3	3				
ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	0.8	0.8	0.8	0.0	0.0	0.0	0.0
ZONE OUTDOOR AIRFLOW (CFM) (Voz)	8	8	119				
DESIGN PRIMARY AIRFLOW TO ZONE (INCL. PRIMARY OA & RA) (CFM) (Vpz)	50	200	870				
MINIMUM VAV AIRFLOW TO ZONE (INCL. PRIMARY OA & RA) (CFM) (Vdz)							
ZONE PRIMARY OUTDOOR AIR FRACTION (Zp)	0.16	0.04	0.14	0.00	0.00	0.00	0.00
NORMAL ZONE OCCUPANCY (EITHER KNOWN OR DEFAULT) (NUMBER OF PEOPLE)	0	0	13	0	0	0	0
SYSTEM POPULATION (SUM OF NORMAL OCCUPANCIES) (Ps)	13						CALC.
ZONE POPULATION (LARGEST TYPICAL OCCUPANCY) (SUM (Pz))	13					FOR OPTIMIZATION, ADD TO KEY "MINIMUM VAV AIRFLOW TO ZONE" (CFM):	0
OCCUPANT DIVERSITY (SYSTEM POPULATION / SUM OF DESIGN POPULATION) (D)	1.00					OA QUANTITY IS OPTIMIZED WHEN REQ'D. OA INTAKE CHANGE IS LESS THAN:	0.0
UNCORRECTED OUTDOOR AIR INTAKE (CFM) (Vou)	108					REQUIRED OA INTAKE FLOW (CFM) (Vot)	115
MAXIMUM ZONE PRIMARY OUTDOOR AIR FRACTION (Zp)	0.156						
DEFAULT SYSTEM VENTILATION EFFICIENCY (Ev)	1.00					AUTO-OPTIMIZE	
SYSTEM PRIMARY AIRFLOW (CFM) (Vps)	1120						
AVERAGE OUTDOOR AIR FRACTION (Xs)	0.10						
DISCHARGE OUTDOOR AIR FRACTION (Zd)	0.16	0.04	0.14	0.00	0.00	0.00	0.00
ZONE VENTILATION EFFICIENCY (Evz)	0.94	1.05	0.96				
CALCULATED SYSTEM VENTILATION EFFICIENCY (APPENDIX A) (Ev) = MINIMUM (Evz)	0.94						
MULTIPLE ZONE RECIRC. SYSTEM REQUIRED OA INTAKE FLOW (CFM) (Vot)	115						

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Date: 9/21/2026
CITY OF DETROIT Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
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SEAL

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PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

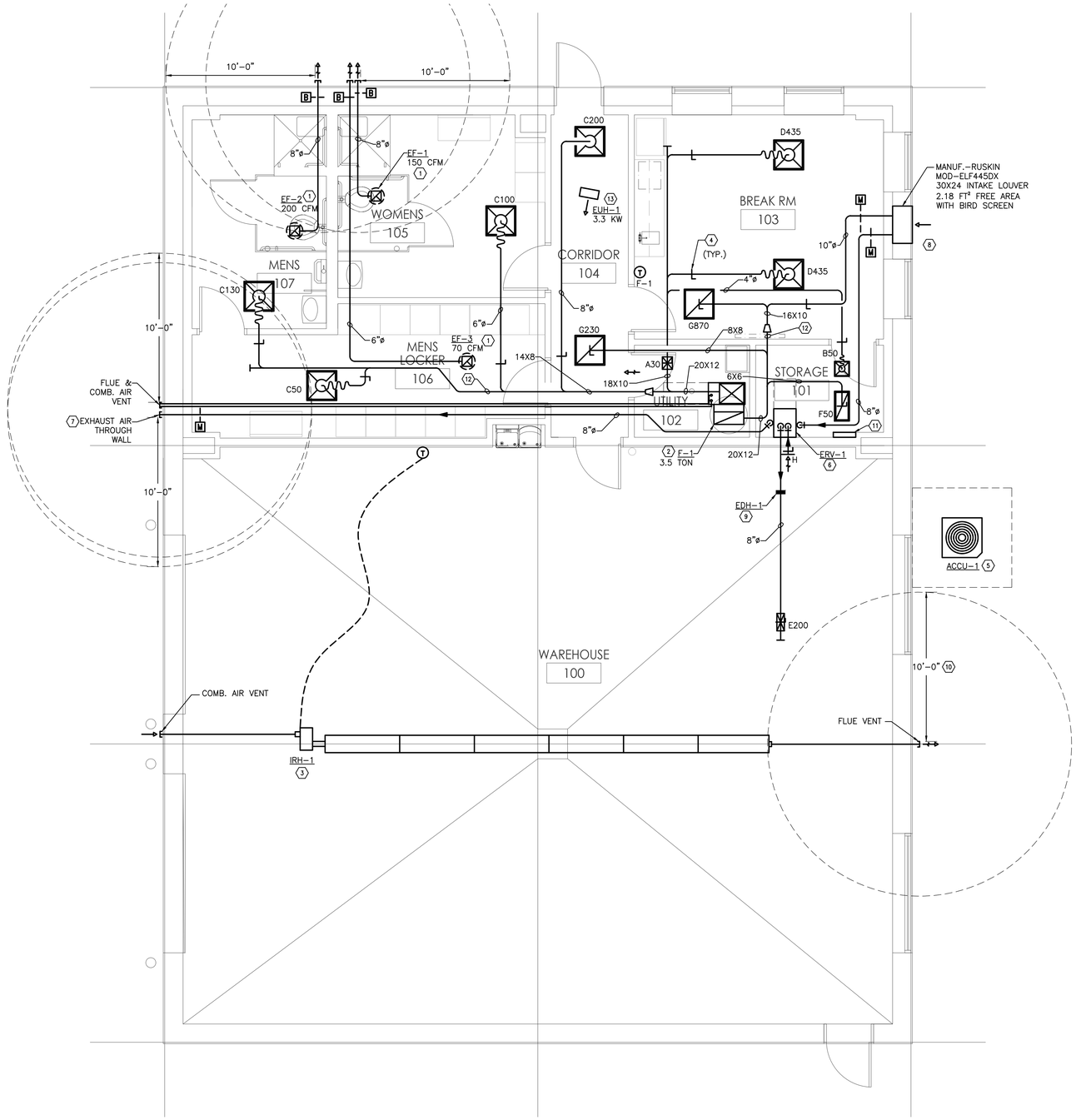
SHEET TITLE

MECHANICAL LEGENDS, NOTES AND SCHEDULES

SHEET NUMBER

M-102

ISSUE



MECHANICAL HVAC FLOOR PLAN

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

GENERAL NOTES:

GN1. ALL DUCT SUPPORT SHALL BE PER SMACNA WITH ADEQUATE SPACE FOR PIPING & CONDUIT ABOVE DUCTWORK.

GN2. SEE M-100 TO M-102 FOR SCHEDULES, NOTES & LEGENDS.

GN3. COORDINATE DUCTWORK WITH PIPING AND STORM DRAIN.

GN4. COORDINATE FINAL THERMOSTAT LOCATION WITH OWNER/ARCHITECT.

KEY DRAWING NOTES:

1. PROVIDE CEILING MOUNTED EXHAUST FAN. SEE SCHEDULE FOR DETAILS. RUN EXHAUST THROUGH WALL. PROVIDE WALL CAP WITH BACKDRAFT DAMPER AND BIRD SCREEN. COORDINATE WALL CAP COLOR AND MODEL WITH ARCHITECT/OWNER.
2. PROVIDE GAS FURNACE AS SHOWN ON PLAN. SEE SCHEDULE FOR DETAIL. PROVIDE WALL MOUNTED PROGRAMMABLE THERMOSTAT. PROVIDE FLUE AND COMBUSTION AIR VENT THROUGH WALL.
3. PROVIDE INFRARED HEATER AS SHOWN ON PLAN. SEE SCHEDULE FOR DETAILS. PROVIDE WALL MOUNTED PROGRAMMABLE THERMOSTAT. PROVIDE FLUE AND COMBUSTION AIR VENT THROUGH WALL.
4. PROVIDE MANUAL BALANCE DAMPER FOR EACH DIFFUSER AND GRILLE.
5. PROVIDE AIR COOLED CONDENSING UNIT FOR THE FURNACE AS SHOWN ON PLAN. SEE SCHEDULE FOR DETAILS.
6. PROVIDE WALL MOUNTED ERV UNIT AS SHOWN ON PLAN. SEE SCHEDULE FOR DETAILS.
7. EXHAUST AIR DUCT FROM ERV UNIT RUN THROUGH WALL. PROVIDE WALL CAP WITH BIRD SCREEN AND MOTORIZED DAMPER. COORDINATE CAP COLOR AND MODEL BY ARCHITECT. MAINTAIN MINIMUM 3'-0" DISTANCE TO OPERABLE OPENINGS.
8. PROVIDE INTAKE AIR LOUVER FOR THE FURNACE AND ERV UNIT. PROVIDE BIRD SCREEN AND INSULATED PLENUM. MAINTAIN MINIMUM 10'-0" DISTANCE FROM ANY EXHAUST/FLUE.
9. PROVIDE ELECTRIC DUCT HEATER. SEE SCHEDULE FOR DETAILS.
10. MAINTAIN MINIMUM 10'-0" DISTANCE FROM ANY OUTSIDE AIR INTAKE.
11. PROVIDE ERV TIMER.
12. PROVIDE INSULATED SUPPLY & RETURN DUCT ABOVE CEILING
13. PROVIDE ELECTRIC UNIT HEATER ABOVE CEILING. SEE SCHEDULE FOR DETAILS.

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STATE OF MICHIGAN
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PROJECT

TRANSFLO

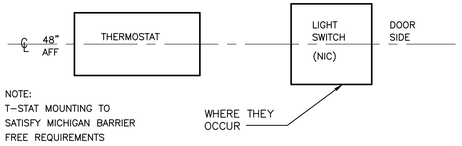
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY:	CHECKED BY:
SSE	M. MASIC
PROJECT MGR:	APPROVED BY:
A. INOV	M. MASIC

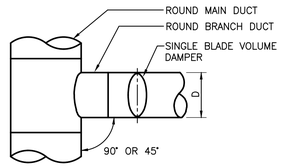
SHEET TITLE

MECHANICAL HVAC FLOOR PLAN

SHEET NUMBER	ISSUE
MH-201	

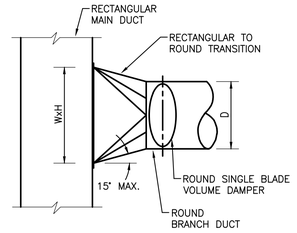


TYPICAL THERMOSTAT MOUNTING DETAIL
SCALE: NONE

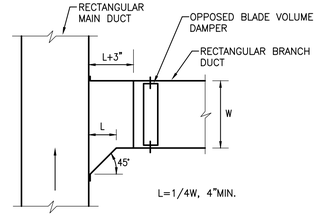


NOTES:
1. ROUND BRANCH FITTINGS MAY BE WELDED PREFABRICATED FITTINGS, FLANGED TAPS, OR SADDLE TAPS.

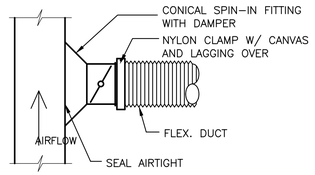
ROUND TO ROUND BRANCH
SCALE: NONE

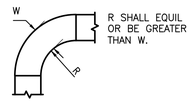


RECTANGULAR TO ROUND BRANCH
SCALE: NONE

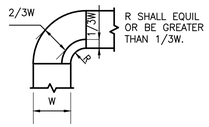


RECTANGULAR TO RECTANGULAR BRANCH
SCALE: NONE

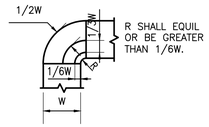




STANDARD RADIUS OR
LONG RADIUS ELBOW



SHORT RADIUS ELBOW
WITH ONE VANE

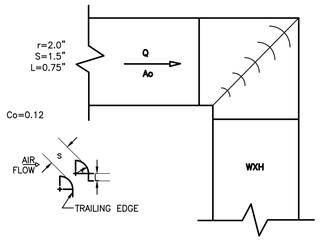


SHORT RADIUS ELBOW
WITH ONE VANE

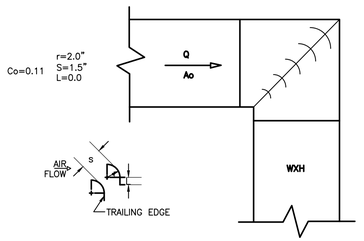
NOTES:
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

DUCTWORK RADIUS ELBOWS
SCALE: NONE

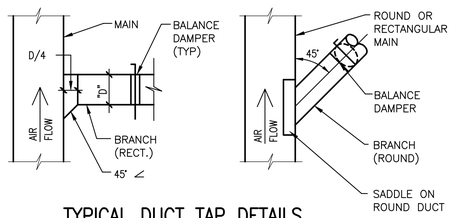
ELBOW, MITERED, 90°, SINGLE-THICKNESS VANES (DESIGN 2)



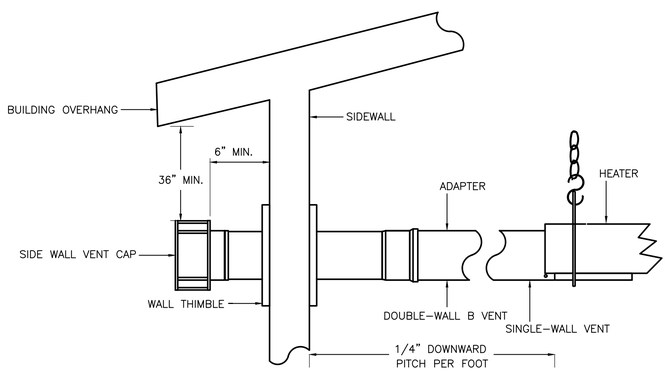
ELBOW, MITERED, 90°, SINGLE-THICKNESS VANES (DESIGN 1)



DUCT DESIGN DETAIL
SCALE: NONE



TYPICAL DUCT TAP DETAILS
SCALE: NONE



SIDEWALL VENTING REQUIRERMENTS
SCALE: NONE

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SEAL



PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

MECHANICAL
DETAILS

SHEET NUMBER	ISSUE
M-300	

MECHANICAL GENERAL

A. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS INCLUDING THE GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS CONSTITUTE MINIMUM REQUIREMENTS. ALL MORE STRINGENT REQUIREMENTS SHALL MODIFY, SUPPLEMENT AND SUPERCEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.

B. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER'S REPRESENTATIVE AND TENANT'S THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.

C. REFER TO ALL GENERAL NOTES ON DRAWING FOR ADDITIONAL REQUIREMENTS.

D. MECHANICAL EQUIPMENT SHALL HAVE DECALS AND TAGS TO INDICATE LIFTING AND RIGGING, SERVICE AREAS AND CAUTION IDENTIFICATION FOR SAFETY TO ASSIST SERVICE PERSONNEL.

E. UNIT NAMEPLATE SHALL BE PROVIDED IN TWO LOCATIONS ON THE EQUIPMENT. AFFIX TO THE EXTERIOR OF THE EQUIPMENT AND TO THE INTERIOR OF THE CONTROL COMPARTMENT ACCESS DOOR.

SHOP DRAWINGS

A. NO APPARATUS OR EQUIPMENT SHALL BE SHIPPED FROM STOCK OR FABRICATED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND STAMPED "REVIEW COMPLETED", "APPROVED" OR "APPROVED AS NOTED".

B. PROVIDE DETAILED SHOP DRAWINGS (SEPIAS) OF ALL SHEET METAL DUCTWORK WITH NECESSARY SECTIONS, DETAILS, DIMENSIONS, ETC. SUBMIT AMCA CERTIFIED PERFORMANCE CURVES FOR EACH FAN INDICATING IT'S OPERATING POINT, EFFICIENCY, STARTING TIME, DATA RELATIVE TO SOUND LEVELS. ALL SHEET METAL SHOP DRAWINGS SHALL BEAR INDEPENDENT BALANCE AGENCY (AABC) APPROVAL STAMP BEFORE SHOP DRAWINGS ARE SUBMITTED TO THE ARCHITECT FOR APPROVAL.

C. SUBMIT FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT, INCLUDING MATERIALS, VALVES, HEATING SPECIALTIES, WIRING DIAGRAMS AND CONTROL DIAGRAMS INCLUDING, BUT NOT LIMITED TO THE ITEMS LISTED BELOW. WHERE ITEMS ARE REFERRED TO BY SYMBOL NUMBERS ON THE DRAWINGS AND SPECIFICATIONS, ALL SUBMITTALS SHALL BEAR THE SAME SYMBOL NUMBERS. ALL DRAWINGS SHALL CONTAIN THE PROJECT NAME AND PROJECT NUMBER. NO LOOSE SHEETS SHALL BE SUBMITTED UNLESS A COVER SHEET IS ATTACHED.

D. PROVIDE THE FOLLOWING EQUIPMENT SHOP DRAWINGS: VALVES, TEMPERATURE AND PRESSURE GAUGES, PACKAGED HVAC EQUIPMENT, EXHAUST FANS, UNIT HEATERS, GRILLES, REGISTERS, INSULATION, VIBRATION ISOLATORS, TEMPERATURE CONTROLS AND THERMOSTATS.

E. APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO CONFORM TO THE DESIGN INTENT OF THE CONTRACT DOCUMENTS. APPROVAL OF SHOP DRAWINGS IS INTENDED TO BE FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS ONLY. ANY INSTALLED EQUIPMENT WHICH REQUIRES WORK BY OTHER TRADES SHALL BE COORDINATED WITH THOSE TRADES. REFER TO OTHER TRADES BID DOCUMENTS.

CODES, PERMITS AND FEES

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

B. RULES OF LOCAL UTILITY COMPANIES SHALL BE COMPLIED WITH.

C. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE RULES AND REGULATIONS SET FORTH IN LOCAL AND STATE CODES. WHERE THE DRAWINGS AND OR SPECIFICATIONS INDICATE MATERIALS OR CONSTRUCTION IN EXCESS OF CODE REQUIREMENTS, THE DRAWINGS ANDOOR SPECIFICATIONS SHALL GOVERN.

BASIC MATERIALS AND METHODS

A. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS AND METHODS LISTED. MENTIONED OR SCHEDULED ON DRAWINGS ANDTOR HEREIN, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY AND REQUIRED FOR THEIR COMPLETION. THE WORK SHALL INCLUDE INSTALLATION, CLEANING AND TESTING OF COMPLETE AND OPERATING HVAC, TEMPERATURE CONTROL, AND OTHER SPECIAL SYSTEMS.

MECHANICAL SPECIFICATIONS

HEATING AND VENTILATING

A. GENERAL

REFER TO SCHEDULES FOR CAPACITIES, ACCESSORIES AND LEVEL OF QUALITY.

B. CONTROLS

UNITS SHALL BE ORDERED AND INSTALLED WITH MANUFACTURED STANDARD CONTROLS. SCOPE OF CONTROLS WORK SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR, CONTROLS CONTRACTOR AND GENERAL CONTRACTOR.

REFER TO SCHEDULES FOR EQUIPMENT REQUIREMENTS.

SYSTEM TESTING AND BALANCING

A. ALL HVAC SYSTEMS SHALL BE TESTED AND BALANCED TO DEMONSTRATE THAT SPECIFIED CAPACITIES AND PROPER CONTROL FUNCTIONING HAS BEEN ATTAINED. FAN SYSTEMS ARE NOT TO BE COMPLETED PRIOR TO RUNNING PERFORMANCE TESTS, AND PRIOR TO TRAINING AND INSTRUCTION OF THE OWNER'S PERSONNEL AND TENANTS IN SYSTEM OPERATION.

B. ENGAGE THE SERVICES OF AN INDEPENDENT CERTIFIED TEST AND BALANCE AGENCY THAT SPECIALIZES IN AND WHOSE BUSINESS IS LIMITED TO THE TESTING AND BALANCING OF AIR CONDITIONING SYSTEMS AND IS NOT AFFILIATED IN ANY WAY WITH MANUFACTURER, SUPPLIER, OR INSTALLATION CONTRACTOR. THE AGENCY SELECTED SHALL BE CERTIFIED BY ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

C. TAKE CHARGE OF AND DIRECT THE PERFORMANCE TESTS AND SUBMIT A COMPLETE REPORT ON SAME TO THE ARCHITECT. REFER TO "PERFORMANCE TESTS" IN THIS SECTION OF THE SPECIFICATIONS.

D. EXAMINE THE AIR HANDLING SYSTEMS TO SEE THAT THEY ARE FREE FROM OBSTRUCTIONS. DETERMINE THAT ALL DAMPERS AND REGISTERS ARE OPEN, THAT MOVING EQUIPMENT IS LUBRICATED, THAT FILTERS ARE FUNCTIONING, AND PERFORM OTHER INSPECTION AND MAINTENANCE ACTIVITIES NECESSARY FOR PROPER OPERATION OF THE SYSTEMS.

E. DEMONSTRATE THAT THE AIR HANDLING EQUIPMENT PERFORMS AS SPECIFIED. ADJUST VARIABLE TYPE PULLEYS AND VOLUME DAMPERS, WHERE NECESSARY TO ACHIEVE DESIGN AIR VALUES.

F. PERFORM THIS WORK IN ACCORDANCE WITH THE PROCEDURES AND STANDARDS DESCRIBED IN THE SMACNA "BALANCING AND ADJUSTMENT MANUAL". REPORTS ARE TO BE MADE ON SMACNA FORMS OR FACSIMILIES THEREOF.

G. TESTING AND BALANCING OF ALL AIR SYSTEMS SHALL BE PERFORMED BY A SINGLE AGENCY IN COMPLETE ACCORDANCE WITH THE AABC "STANDARDS AND INSTRUMENTATION'S FORM NUMBER 81266 VOLUME NUMBER 1" AS PUBLISHED BY AABC, INCLUDING ALL CURRENT REVISIONS THERETO OR BY NATIONAL ENVIRONMENT AL BALANCING BUREAU (NEBB) OR NCI.

PERFORMANCE TESTS

A. A PERFORMANCE TEST SHALL BE RUN ON ALL MECHANICAL SYSTEMS IN THE PRESENCE OF THE ARCHITECT OR THE OWNER'S REPRESENTATIVE, THE OWNER'S OPERATIONS PERSONNEL, AND UNDER THE DIRECTION OF THE TESTING AND BALANCING TRADE. THE DURATION OF THE TEST SHALL BE A MINIMUM OF 8 HOURS OF CONTINUOUS SUCCESSFUL OPERATION (WITH NO DOWN TIME) IN WEATHER SUCH THAT A REASONABLE LOAD IS PLACED ON THE EQUIPMENT, AIR TEMPERATURES, VOLTAGES, AMPERAGES RPM'S, ETC., SHALL ALL BE TAKEN AND RECORDED HOURLY. AT THIS TIME, ANY ADJUSTMENTS TO AIRFLOW, ETC. SHALL BE MADE.

B. WHERE THE TIME OF YEAR PRECLUDES WEATHER TESTING OF EITHER SYSTEM, THEN SYSTEM OPERATION SHALL BE SIMULATED TO FACILITATE TESTING AT REQUIRED AIR TEMPERATURES, RESULTS RECORDED AND ANY ADJUSTMENTS SHALL BE PERFORMED AT THIS TIME.

SHEET METAL

A. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL AS INDICATED ON THE DRAWINGS OR AS DIRECTED HEREIN. ALL SHEET METAL WORK SHALL BE IN ACCORDANCE WITH LATEST EDITIONS OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE" MANUALS, NFPA 90A AND 96, AND THE LATEST EDITION OF THE ASHRAE GUIDE AND DATA BOOKS. ALL DUCTWORK SIZES INDICATED ON THE PLANS ARE THE INTERNAL DIMENSIONS.

B. ALL DUCTWORK SHALL BE SEALED AIR TIGHT AND SHALL NOT ALLOW MORE THAN 10M AIR LEAKAGE THROUGHOUT THE ENTIRE SYSTEM.

C. SHEET METAL DUCTWORK SHALL BE SMOOTH INSIDE AND TRUE TO SIZE.

D. DUCTWORK FITTINGS SHALL BE PER SMACNA STANDARDS. RADIUS TURNS ON SUPPLY AIR DUCTS SHALL BE 1 1 2 TIMES THE DUCT WIDTH, MINIMUM. WHERE SPACE OR CLEARANCES REQUIRES THE USE OF MITERED TURNS, PROVIDE HIGH PERFORMANCE DOUBLE THICKNESS TURNING VANES EQUAL TO AEROMDYNE "HEP".

E. PROVIDE FACTORY MANUFACTURED TEST HOLE UNITS IN DUCTWORK WHERE REQUIRED TO FACILITATE AIR BALANCE.

F. DUCT CONSTRUCTION AND SUPPORT DESIGN SHALL BE PER SMACNA. MINIMUM DUCT DESIGN IS PRESSURE CLASS 2" WG. ALL DUCTWORK FROM THE AIR HANDLING UNIT FAN AND OR STAND-ALONE FAN (EXHAUST) TO A MAIN DUCT DAMPER (CONTROL) SHALL BE DESIGNED FOR THE MAXIMUM TOTAL FAN OUTPUT PRESSURE. (THIS IS TO PREVENT DUCT FAILURE IN CASE WHERE A MAIN DUCT DAMPER CLOSES BY DESIGN OR MALFUNCTION). ALL OTHER DUCTWORK SHALL BE DESIGNED FOR THE MAXIMUM SYSTEM EXTERNAL FAN OUTPUT PRESSURE.

G. ALL RECTANGULAR DUCTWORK SHALL BE IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS WITH REGARD TO DUCT GAGE THICKNESS, REINFORCEMENT SPACING, BRACING, HANGERS, AND SUPPORTS, ALL LONGITUDINAL SEAMS SHALL BE MADE WITH A PITTSBURGH LOCK (TYPE L-1). TRANSVERSE JOINTS SHALL BE MADE WITH A POCKET LOCK (TYPE T-17) FOR DUCTWORK UP TO 3" WG.

H. CONTRACTOR SHALL USE DEGREASER, CLEAN AND PREP ALL EXPOSED DUCTWORK TO HAVE PAINT APPLIED. COORDINATE WITH ARCHITECTURAL TRADES.

I. AT EACH POINT OF CONNECTION OF DUCTWORK TO FANS, PROVIDE A FLEXIBLE CONNECTION EQUAL TO VENTFABRICS, INC. "VENTGLAS L.A.", NOT LESS THAN 6" IN LENGTH AND MADE OF HEAVY GRADE FABRIC DOUBLE COATED WITH NEOPRENE AND PROVIDED WITH A SUITABLE FRAME AT EACH END, ARRANGED FOR BOLTING TO THE INLET OR OUTLET OF FAN AND DUCTWORK, RESPECTIVELY.

J. FLEXIBLE CONNECTORS ON DUCTWORK TO AIR HANDLING EQUIPMENT SHALL HAVE A MAXIMUM FLAMELSMOKE DEVELOPED RATING NOT TO EXCEED 25N50.

K. PROVIDE VOLUME DAMPERS IN THE DUCT SYSTEMS WHERE SHOWN ON PLANS AND WHERE REQUIRED TO INSURE PROPER SYSTEM BALANCING.

L. PROVIDE FACTORY FABRICATED VOLUME DAMPERS IN ALL SUPPLY AND EXHAUST BRANCH DUCTS AND OTHERS WHERE INDICATED ON DRAWINGS. VOLUME DAMPERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE SMACNA STANDARDS.

M. MANUAL VOLUME DAMPERS SHALL BE MADE OF GALVANIZED STEEL 18 GAUGE OR HEAVIER. DAMPERS FOR DUCTWORK UP TO 12 INCHES DEEP SHALL BE ONE BLADE CARRIED ON A 3V8 INCH SQUARE STEEL ROD MOUNTED IN THE SIDE OF DUCT WITHOUT FRAME AND FITTED WITH A LOCKING TYPE QUADRANT. SINGLE BLADE HAND DAMPERS UP TO 12 INCHES WIDTH MAY BE USED. DAMPERS FOR DUCTS OF GREATER DEPTH SHALL BE MULTI-BLADE TYPE, MAXIMUM BLADE WIDTH 12 INCHES UP TO 30 INCHES BLADE LENGTH, 8 INCHES MAXIMUM WIDTH OVER 30 INCHES LENGTH. BLADES SHALL BE MOUNTED IN FRAME AND INTERCONNECTED FOR OPERATION FROM ONE LOCKING TYPE HAND QUADRANT.

FLEXIBLE AIR DUCTWORK

A. INSULATED FLEXIBLE AIR DUCTS SHALL BE U.L. 181 LISTED WITH TRILAMINATE OF ALUMINUM FOIL, FIBERGLASS AND POLYESTER INNER LINER ON GALVANIZED STEEL HELIX WITH R-5.0 RATING. FIBERGLASS INSULATION SHALL HAVE 25R50 FLAMENSMOKE FIRE RETARDANT VAPOR BARRIER JACKET.

B. ALL CONNECTIONS TO DIFFUSERS ARE TO BE MADE WITH ADJUSTABLE CLAMPS AND TIGHTENED AIRTIGHT.

C. MANUFACTURERS: CLEVAFLEX OR FLEXMASTER TYPE 5.

DUCTWORK CONSTRUCTION

A. LOW PRESSURE DUCTWORK:

LONGITUDINAL JOINTS SHALL BE PITTSBURGH TYPE AND SHALL BE SEALED WITH MINNESOTA MINING & MANUFACTURING COMPANY'S (3M) EC-800 OR AS APPROVED SEALING COMPOUND AS SHOWN ON DRAWING.

TRANSVERSE JOINTS SHALL BE STANDING "S" SLIP TYPE FOR HORIZONTAL JOINTS UP TO AND INCLUDING 40" WIDTH, AND REINFORCED BAR SLIP (CLEAT) JOINT FOR 41" TO 84" WIDTH; AND 1-1/2" ANGLE REINFORCED SLIP TYPE JOINT FOR DUCTS OVER 84".

DRIVE SLIP TYPE FOR VERTICAL JOINTS.

ALL DUCTS WIDER THAN 48" SHALL BE PROVIDED WITH 1-1.2" x 1-1O2" x 1T8" ANGLE IRON STIFFENERS ON ALL SIDES ON MAXIMUM OF 48" CENTER.

B. HANGERS FOR DUCTWORK:

ALL SHEET METAL DUCTWORK SHALL BE SECURELY SUPPORTED ON APPROVED HANGERS OR SADDLES AS REQUIRED.

RECTANGULAR HORIZONTAL DUCTWORK SHALL BE SUPPORTED BY ROUND STEEL RODS, THREADED AT BOTH ENDS AND BOLTED THROUGH THE SUPPORTING STEEL ACROSS THE DUCT.

SUPPORTING STEEL SHALL BE AS FOLLOWS:

DUCT SIZE
(MAXIMUM DIMENSION) SUPPORT STEEL SPACING

UP TO 26" 2" X 3 1'" STRAP 8'-0"
27" TO 48" (INCLUSIVE) L 1-1'2" X 1-12" X 158" 8'-0"
49" TO 59" (INCLUSIVE) L 2" X 2" X 118"
OVER 60" L 2-1C2" X 2-1L2" X 3216" 5'-0"

ALL DUCTWORK AND PIPING INSIDE THE BUILDING SHALL BE SUSPENDED FROM THE TOP CHORD OF BAR JOIST AT PANEL POINTS ONLY. DO NOT CONNECT TO THE ROOF DECK. DUCTWORK AND PIPES LOCATED ON THE ROOF ARE TO BE MOUNTED ON "PATE" EQUIPMENT OR PIPE SUPPORTS. EQUIPMENT CURBS SHALL BE TYPE ES-1 OR ES-5 FOR INSULATED ROOFS. CONTRACTOR HAS THE OPTION TO USE "MIRO INDUSTRIES" EQUIPMENT OR PIPE SUPPORTS.

ALL SHARP ENDS AND EDGES SHALL BE GROUND DOWN SMOOTH OR COVERED TO PREVENT INJURY TO PERSONNEL.

HANGER RODS, ANGLES AND STRAPS SHALL BE ATTACHED TO BEAM CLAMPS, CONCRETE INSERTS, AND APPROVED ANCHORS. ALL SUCH DEVICES SHALL BE UNDERWRITER'S LABORATORIES APPROVED. INSERTS AND ANCHORS SHALL BE SET IN COOPERATION WITH ALL TRADES INVOLVED.

C-CLAMPS SHALL NOT BE USED FOR ATTACHING HANGERS.

INSULATION - GENERAL

A. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION OF THERMAL INSULATION ON ALL HOT AND COLD SURFACES WHICH REQUIRE INSULATION FOR HEAT OR COLD CONSERVATION, COMFORT OF OCCUPANTS, EFFICIENCY OR EASE OF OPERATION OR TO PREVENT CONDENSATION OR DRIPPING. THE INSULATION SHALL BE COMPLETE AND EFFECTIVE THROUGHOUT THE BUILDING.

INSULATION - MATERIALS

A. ALL INSULATION MATERIALS SHALL BE CLASS A BY UNDERWRITER'S LABORATORIES. STANDARD FIBERGLASS INSULATION SHALL BE MINIMUM 5 LB. DENSITY AND SHALL HAVE UL RATING NOT EXCEEDING 25 FLAME SPREAD, 35 FUEL CONTRIBUTED AND 50 SMOKE DEVELOPED. ACCESSORIES SUCH AS ADHESIVE, MASTICS, CEMENTS AND CLOTH FOR FITTINGS SHALL BE PERMANENTLY FIRE AND SMOKE RESISTANT. CHEMICALS USED FOR TREATING PAPER IN JACKET LAMINATES SHALL BE UNAFFECTED BY WATER OR HUMIDITY.

B. MANUFACTURERS: CERTAIN TEED SAINT GOBAIN, OWENS CORNING, JOHNS-MANSVILLE, ARMSTRONG CORK COMPANY.

DUCT INSULATION

A. ALL CONCEALED SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED PER MICHIGAN ENERGY CODE 2021.

ENSURE INSULATION IS CONTINUOUS THROUGH INSIDE WALLS, PACK AROUND DUCTS WITH FIRE PROOF SELF-SUPPORTING INSULATION MATERIAL, PROPERLY SEALED.

FINISH INSULATION NEATLY AT HANGERS, SUPPORTS AND OTHER PROTRUSIONS.

LOCATE COVER SEAMS IN LEAST VISIBLE LOCATIONS.

B. ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE INSULATED ACCORDING TO THE MICHIGAN ENERGY CODE 2021. GENERAL REQUIREMENTS FOR INSULATION SHALL BE R-12 FOR SUPPLY AND RETURN DUCTS IN AN UNCONDITIONED SPACE OR R-12 OUTSIDE THE BUILDING, R-12 INSULATION INSTALLED BETWEEN SUPPLY AND RETURN DUCTS AND BUILDING EXTERIOR WHEN DUCTS ARE PART OF THE BUILDING ASSEMBLY.

GRILLES, REGISTERS AND CEILING DIFFUSERS

A. REFER TO SCHEDULE ON DRAWINGS FOR CAPACITIES, SIZES AND TYPES.

B. GRILLES AND REGISTERS PERFORMANCE SHALL BE BASED ON TESTS CONDUCTED IN ACCORDANCE WITH ADC STANDARDS 1062 A2, "AIR DIFFUSING EQUIPMENT TEST CODE" AND ASHRAE STANDARD 3368 "METHOD OF TESTING FOR RATING THE ACOUSTIC PERFORMANCE OF AIR CONTROL AND TERMINAL DEVICES AND SIMILAR EQUIPMENT."

C. GRILLES, REGISTERS AND DIFFUSERS SHALL BE MANUFACTURED BY PRICE, TITUS, CARNES, OR KRUEGER. PROVIDE DAMPERS AT EACH DIFFUSER AND REGISTER. PROVIDE OPTIONS PER SCHEDULE ON DRAWINGS.

EXHAUST AIR FANS

A. FANS SHALL BE AS SCHEDULED WITH ACCESSORIES ON DRAWINGS. FANS SHALL BEAR AMCA SEAL FOR RATED SOUND AND AIR PERFORMANCE. ALL UNITS TO BE VANDAL-PROOF AND COVERS TO BE BOLTED SECURE.

AFTER THE VISUAL INSPECTION, ALL FANS SHALL BE TESTED AT FULL SYSTEM STATIC PRESSURES BY OPERATING THE SYSTEM FANS.

ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE TESTING AND BALANCING TRADES.

ALL REPAIRS MUST BE DONE IN A MANNER SATISFACTORY TO THE ENGINEERS FIELD REPRESENTATIVE.

B. THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION OF THE DUCT SYSTEMS TO FUNCTION SATISFACTORILY AGAINST THE SPECIFIED SYSTEM TOTAL STATIC PRESSURE. DEFECTS DUE TO IMPROPER MATERIALS, WORKMANSHIP, AND LEAKS SHALL BE CORRECTED WITHOUT ADDITIONAL COST TO THE OWNER. OTHER WORK AFFECTED AS A RESULT OF THE ABOVE MENTIONED DEFECTS SHALL ALSO BE MADE GOOD WITHOUT COST TO THE OWNER. THE ENTIRE SYSTEM SHALL BE LEFT IN PROPER OPERATING CONDITION, ACCEPTABLE TO THE ENGINEER'S FIELD REPRESENTATIVE. OIL CANNING OF DUCTS WILL NOT BE ACCEPTABLE.

WIRING

A. ALL WIRING SHALL COMPLY WITH LOCAL AND NATIONAL ELECTRIC CODES AND THE MANUFACTURER'S PUBLISHED INSTALLATION MANUAL.

B. PROVIDE LAMINATED COLOR CODED WIRING DIAGRAM TO MATCH FACTORY INSTALLED WIRING AND BE PROVIDED IN BOTH POINT TO POINT AND LADDER DIAGRAM FORMAT AND AFFIXED TO THE INTERIOR OF THE CONTROL COMPARTMENT ACCESS DOOR.

THERMOSTATS

A. IN GENERAL, ALL THERMOSTATS, INCLUDING SENSORS, ETC. SHALL BE PROVIDED BY THE HVAC EQUIPMENT MANUFACTURER PROVIDED.

B. MECHANICAL TRADES SHALL FURNISH AND INSTALL ALL REQUIRED AUTOMATIC TEMPERATURE CONTROLS, INCLUDING WIRING, TRANSFORMERS, 7-DAY PROGRAMMABLE THERMOSTATS FOR PROPER OPERATION OF THE HVAC SYSTEM. WIRING SHALL BE IN ACCORDANCE WITH N.E.C. STANDARDS. COORDINATE WITH CONTROLS AND ELECTRICAL CONTRACTORS.

Approved For Permit
Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL

STATE OF MICHIGAN
MICHIGAN MASTER ENGINEER No. 6201060000
REGISTERED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

MECHANICAL SPECIFICATIONS

SHEET NUMBER	ISSUE
M-400	

ELECTRICAL LIGHTING LEGEND

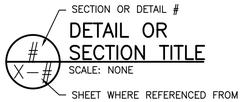
	2'x4' LIGHTING FIXTURE
	1'x4' LIGHTING FIXTURE
	2'x2' LIGHTING FIXTURE
	1'x2' LIGHTING FIXTURE
	2'x4' LIGHTING FIXTURE (EMERGENCY LIGHT)
	1'x4' LIGHTING FIXTURE (EMERGENCY LIGHT)
	2'x2' LIGHTING FIXTURE (EMERGENCY LIGHT)
	1'x8' INDUSTRIAL OR STRIP FIXTURE
	1'x4' INDUSTRIAL OR STRIP FIXTURE
	WALL MOUNT FOR STRIP FIXTURE
	ROUND SHAPE LIGHT FIXTURE
	ROUND SHAPE LIGHT EMERGENCY/NIGHT LIGHT FIXTURE
	WALLWASHER FIXTURE
	WALL MOUNTED FIXTURE
X	FIXTURE TYPE IDENTIFIER
	BATTERY OPERATED EMERGENCY LIGHT UNIT
	REMOTE HEAD – EMERGENCY LIGHT UNIT
	EXIT LIGHT – CEILING MOUNTED
	EXIT LIGHT – WALL MOUNTED
S_X	LIGHTING SWITCH (X DENOTES TYPE OF SWITCH)
S_3	THREE WAY LIGHTING SWITCH
S_4	FOUR WAY LIGHTING SWITCH
S_D	DIMMER LIGHTING SWITCH

ELECTRICAL POWER LEGEND

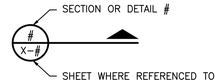
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE – CEILING MOUNTED
	SPLIT WIRED CONTROLLED DUPLEX RECEPTACLE
	COMPLETELY CONTROLLED DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
	SPLIT WIRED CONTROLLED DOUBLE DUPLEX RECEPTACLE
	COMPLETELY CONTROLLED DOUBLE DUPLEX RECEPTACLE
	GFCI RECEPTACLE
	SINGLE RECEPTACLE
	SPECIAL RECEPTACLE
S_X	SWITCH (X DENOTES TYPE OF SWITCH)
	PUSHBUTTON OR SELECTOR CONTROL SWITCH
	SPECIAL POWER CONNECTION TO EQUIPMENT
J	JUNCTION BOX
	3 PHASE MOTOR
	SINGLE PHASE MOTOR
	NON–FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	COMBINATION MOTOR STARTER
T	TRANSFORMER
	TELEPHONE RECEPTACLE
	DATA RECEPTACLE
	TELEPHONE/DATA RECEPTACLE
	RECESSED LIGHTING/RECEPTACLE PANEL (20"x4")
	RECESSED LIGHTING/RECEPTACLE PANEL – EXISTING (20"x4")
	SURFACE LIGHTING/RECEPTACLE PANEL (20"x4")
	SURFACE LIGHTING/RECEPTACLE PANEL (20"x4") – EXISTING
	MAIN DISTRIBUTION PANEL (38"x12")
CP	CONTROL PANEL
FACP	FIRE ALARM CONTROL PANEL
	SEVEN DAY CONTROLLER
C	LIGHTING CONTACTOR
M	METER
	CONDUIT UP
	CONDUIT DOWN
	LINE BREAK SYMBOL
	WIRE RUN
B–1	HOME RUN TO PANEL – CIRCUIT NO. NOTED
	EXISTING CONSTRUCTION
	EXISTING CONSTRUCTION TO BE REMOVED (DEMOLITION)
	NEW CONSTRUCTION
	AUTOMATIC RECEPTACLE CONTROL PER ENERGY CODE
	CABLE OUTLET
CO	CARBON MONOXIDE DETECTOR

SYMBOLS LEGEND

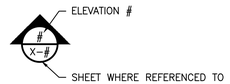
SECTION OR DETAIL TITLE



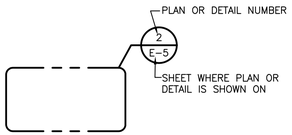
SECTION CUT



ELEVATION DESIGNATOR



LARGE SCALE PLAN OR DETAIL



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

PROVIDE TEMPORARY POWER AND LIGHTING DURING CONSTRUCTION.

ADOPTED STATE OF MICHIGAN CODES AT THE TIME OF SUBMITTAL:

COMMERCIAL:

BUILDING: 2021 MICHIGAN BUILDING CODE – EFFECTIVE APRIL 9, 2025
ELECTRICAL: 2023 NATION ELECTRICAL CODE W/ M2023 MCL PART 8 RULES, SECTION R408.30801
ENERGY CODE: 2021 MICHIGAN COMMERCIAL ENERGY CODE – EFFECTIVE APRIL 22, 2025

NOTICE

THE MICHIGAN ELECTRICAL CODE 250.52(A)(3) REQUIRES THAT REINFORCING RODS OR BARS LOCATED IN CONCRETE BE BONDED TO THE ELECTRICAL SYSTEM. AN ELECTRICAL PERMIT MUST BE SECURED AND AN ELECTRICAL INSPECTION BE APPROVED PRIOR TO PLACEMENT OF CONCRETE.

FAILURE TO DO SO MAY RESULT IN THE REQUIREMENT TO DISMANTLE PORTIONS OF THE FOUNDATION OR FOOTING.

GENERAL ELECTRICAL NOTES:

1. ALL NECESSARY NEW ELECTRICAL EQUIPMENT REQUIRED FOR THE WORK PROPOSED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS NOTED OTHERWISE AS BEING PROVIDED BY THE TENANT.
2. THE CONTRACTOR SHALL COMPLY WITH, AND ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS ORDINANCES AND REGULATIONS.
3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND CERTIFICATES OF INSPECTIONS FOR ALL WORK.
4. ALL CONDUIT USED SHALL BE ELECTRICAL METALLIC TUBING (EMT) TYPICALLY EXCEPT AREAS ON BUILDINGS EXTERIOR WHICH SHALL BE RIGID GALVANIZED STEEL CONDUIT ONLY AND SHALL BE CONNECTED TO CAST, GASKETED OUTLET OR DEVICE BOXES ONLY. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 OR SCHEDULE 80 PER SPECIFICATIONS UNLESS OTHERWISE NOTED ON DRAWINGS. USE OF MC CABLES INSTEAD OF CONDUIT IS PERMITTED NEC ARTICLE 330.
5. ALL WIRE SHALL BE SOLID COPPER, #12AWG MINIMUM, TYPE THHN/XHHW INSULATION RATED 75 DEGREES C, 600 VOLTS UNLESS NOTED OTHERWISE ON THE PLANS. WIRE SIZES LARGER THAN #12AWG SHALL BE STRANDED COPPER.
6. LOCATION OF ELECTRICAL EQUIPMENT IS DIAGRAMMATIC AND SHOWS THE DESIGN INTENT ONLY. CONTRACTOR SHALL COORDINATE WITH THE PLANS OF ALL OTHER DISCIPLINES AND THEIR INSTALLERS FOR THE EXACT LOCATIONS OF ALL EQUIPMENT. PULL BOXES OR JUNCTION BOXES, THOUGH NOT SHOWN ON THE PLANS, SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
7. ALL ITEMS INCIDENTAL TO AND/OR REQUIRED TO COMPLETE THE INSTALLATION SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
8. ALL ELECTRICAL EQUIPMENT, INCLUDING CONDUIT AND WIRING SHALL BE NEW AND UNUSED UNLESS NOTED OTHERWISE.
9. RECESSED FIXTURES SHALL MAINTAIN A 3" MINIMUM CLEARANCE TO ADJACENT COMBUSTIBLE MATERIALS UNLESS LABELED AS 'IC RATED'.
10. ALL CONDUITS SHALL BE CONCEALED IN CEILING, FLOORS OR WALLS UNLESS NOTED OTHERWISE OR AS DIRECTED BY THE ENGINEER OR OWNER.
11. CONDUITS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND/OR CEILING WHEREVER POSSIBLE. ROUTE NO CONDUITS DIRECTLY BENEATH AND PARALLEL TO MECHANICAL PIPING.
12. SINGLE PHASE LIGHTING AND RECEPTACLE HOMERUNS TO POWER AND LIGHTING PANELS SHALL TYPICALLY CONSIST OF 1/2"C, 2#12, #12GND. UNLESS NOTED OTHERWISE. HOME RUNS THAT EXCEED 70 FEET IN LENGTH SHALL BE #10. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED.
13. ALL CIRCUIT RUNS SHALL BE IDENTIFIED WITHIN EACH JUNCTION BOX WITH THE PROPER CIRCUIT NUMBER/DESCRIPTION OF EACH CIRCUIT ENTERING THE BOX. LABEL BOXES AND CONDUITS WITH PANDUIT CORP. 'INSTA–CODE' PIPE MARKERS OR AN ENGINEER APPROVED EQUIVALENT PRODUCT.
14. PROVIDE CIRCUIT I.D. ON THE INSIDE OF ALL RECEPTACLES, CONSISTENT WITH EXISTING METHODS.
15. COORDINATE WITH ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF LIGHTS, SWITCHES, RECEPTACLES, AND WIRING DEVICES.
16. THE CONTRACTOR SHALL RECORD ON AS–BUILT DRAWINGS ALL SIZES, MATERIAL, ELEVATIONS AND/OR LOCATIONS OF ALL ELECTRICAL EQUIPMENT THAT DEVIATE FROM THESE DESIGN CONTRACT DRAWINGS.
17. BOND RACEWAYS AND THE FRAMES AND ENCLOSURES OF MOTORS, BREAKERS, SWITCHES, AND OTHER ELECTRICAL EQUIPMENT TO THE BUILDING GROUNDING SYSTEM. INSTALL AN INSULATED EQUIPMENT GROUND CONDUCTOR IN EACH RACEWAY OR CONDUIT. SIZE EQUIPMENT GROUND CONDUCTOR IN ACCORDANCE WITH NEC ARTICLE 250.
18. SEAL AROUND CONDUIT PENETRATIONS THROUGH INTERIOR WALLS AND FLOORS SEPARATING AREAS TO RESTORE ORIGINAL FIRE RATING; USE A UL CLASSIFIED FIRE SEALANT. SEAL PENETRATIONS THROUGH ROOF AND EXTERIOR WALLS TO MAKE WATERPROOF. REQUEST INSPECTION OF FIRE SEALS BY ELECTRICAL INSPECTOR FROM AUTHORITY HAVING JURISDICTION BEFORE AND AFTER PLACEMENT OF FIRE SEAL MATERIALS.
19. PROVIDE POWER TO ALL MOTORIZED DAMPERS.
20. REPAIR AREAS DAMAGED DURING CONSTRUCTION TO MATCH ADJACENT AREAS WITH RESPECT TO BOTH COLOR AND FINISH.
21. PROVIDE A PULL STRING IN ALL DATA OUTLET CONDUITS OF NYLON, BRAIDED POLYESTER OR PROPYLENE (100# TEST), INSTALLED WITH 12" SLACK AT EACH END OF THE CONDUIT RUN.
22. IDENTIFY NEW BRANCH CIRCUITS AT THE PANEL AND AT THE LOAD OUTLET, RECEPTACLE AND SWITCH. IDENTIFY THE PURPOSE OF INDIVIDUAL CIRCUIT BREAKERS, SAFETY SWITCHES AND MOTOR STARTERS BY MEANS OF NAMEPLATES AS INDICATED.
23. PROVIDE AND MAINTAIN A CLEAR WORKING SPACE ABOUT ELECTRIC EQUIPMENT SWITCHBOARDS, PANELBOARDS, ETC.) IN ACCORDANCE WITH NEC ARTICLES 110.26 AND 110.34.
24. PROVIDE CIRCUIT BREAKERS AND FUSES WITH UL LISTED INTERRUPTING RATING (RMS SYMMETRICAL AMPERES) GREATER THAN THE AVAILABLE FAULT CURRENT SHOWN ON THE ELECTRICAL ONE–LINE DIAGRAM OR EQUAL RATING AS ELECTRICAL PANEL.
25. ARRANGE CONNECTIONS FOR SINGLE PHASE CIRCUITS TO ACHIEVE THREE PHASE LOAD BALANCE WITHIN 20% OF THE AVERAGE PHASE LOAD CURRENT. UNGROUNDED CONDUCTORS USING A COMMON NEUTRAL MUST ORIGINATE FROM DIFFERENT PHASES.
26. ALL WIRING SHALL BE IN ELECTRICAL METALLIC TUBING (EMT) UNLESS PLENUM RATED PER N.E.C. MC TYPE CONDUIT/WIRING SYSTEM (WITH GALV. OR ALUM. ARMOR) MAY BE USED ABOVE CEILING AREAS PER N.E.C. FOR CONNECTION TO LIGHT FIXTURES (MAX. LENGTH = 6'–0"), AND VERTICALLY IN WALLS FOR RECEPTACLE BRANCH CIRCUIT WIRING. HOME RUNS SHALL BE EMT CONDUIT & WIRE.
27. ALL CIRCUITS SHALL INCLUDE GROUND WIRES.
28. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ELECTRICAL POWER CONNECTIONS TO ALL OWNER FURNISHED SYSTEMS FURNITURE.
29. NEC: ALL WORK SHALL BE INSTALLED PER THE LATEST EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.
30. EXCEPT WHERE SHOWN OTHERWISE, INSTALL EQUIPMENT AND DEVICES AT THE FOLLOWING HEIGHTS:
    1. RECEPTACLES (WALL): 18" A.F.F. TO CENTER
    2. RECEPTACLES (ABOVE COUNTER): 44" A.F.F. TO CENTER
    3. RECEPTACLES (UNFINISHED AREA): 48" A.F.F. TO TOP
    4. SURFACE RACEWAY RECEPTACLE STRIPS: 42" A.F.F. TO BOTTOM
    5. LIGHT SWITCHES: 48" A.F.F. TO TOP
    6. TELEPHONE OUTLETS (WALL PHONE): 54" A.F.F. TO CENTER
    7. TELEPHONE/DATA OUTLETS: 18" A.F.F. TO CENTER
    8. CLOCK OUTLETS: 88" A.F.F. TO CENTER
    9. FIRE ALARM PULL STATIONS: 48" A.F.F. TO TOP
    10. FIRE ALARM HORN/STROBES: 80" A.F.F. TO BOTTOM OR 6" BELOW CEILING (WHICHEVER IS LOWER)
    11. CARD READERS: 48" A.F.F. TO CARD SLOT (BY TENANT)
    12. SECURITY SYSTEM CONTROLS: 48" A.F.F. TO TOP
    13. THERMOSTATS/HVAC CONTROLS: 48" A.F.F. TO TOP
    14. ELECTRICAL PANELS: 72" A.F.F. TO TOP
    15. SAFETY SWITCHES/MOTOR STARTERS: 72" A.F.F. TO TOP (EXCEPT TOP OF HANDLE SHALL NOT EXCEED 78" A.F.F.)
    16. MOTOR CONTROL PUSHBUTTONS: 60" A.F.F. TO CENTER
31. ALL GROUNDING ELECTRODES THAT ARE PRESENT AT EACH BUILDING OR STRUCTURE MUST BE BONDED TOGETHER TO FORM THE GROUNDING SYSTEM PER 250.50:
    a. METAL UNDERGROUND WATER PIPE (INTERIOR METAL WATER PIPING LOCATED MORE THAN 5 FEET FROM THE POINT OF ENTRANCE TO THE BUILDING SHALL BE NOT USED AS A PART OF GROUNDING ELECTRODE SYSTEM)). NEC 250.52(A)(1)
    b. METAL FRAME OF THE BUILDING OR STRUCTURE (WHERE EFFECTIVELY GROUNDED) NEC 250.52(A)(2)
    c. CONCRETE ENCASED ELECTRODE (ENCASED AT LEAST 2" OF CONCRETE) NEC 250.52(A)(3)
    d. GROUND RING NEC 250.52(A)(4)
    e. GROUND ROD NEC 250.52(A)(5)

    WHERE NONE OF THESE GROUNDING ELECTRODE EXIST, ONE OR MORE OF THE GROUNDING ELECTRODES SPECIFIED IN 250.52(A)(4) THROUGH (A)(8) SHALL BE INSTALLED AND USED.
32. INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC SERVICE ENTRANCE CONDUIT. BOND TO GROUND BUS USING CONDUCTOR THAT IS SIZED BASED ON NEC TABLE 250–66 USING THE UNGROUNDED SERVICE CONDUCTOR SIZE.
33. INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC FEEDER CONDUIT. BOND TO GROUND BUS USING CONDUCTOR THAT IS SIZED BASED ON NEC TABLE 250–122 USING THE FEEDER CIRCUIT OVERCURRENT DEVICE SIZE OR THE SEPARATELY DERIVED SYSTEM OVERCURRENT DEVICE SIZE.
34. BOND HOT AND COLD WATER PIPING SYSTEMS.
35. ALL JUNCTION BOXES IN FIRE RATED WALLS SHALL BE PROTECTED BY 3M FIRE BARRIER MOLDABLE PUTTY PADS MPP+ OR APPROVED EQUAL UL LISTED PRODUCT.
36. COORDINATE ALL CONSTRUCTION WORK WITH ARCHITECTURAL PHASING.
37. NO DIAGONAL CONDUIT RUNS WILL BE ALLOWED. ALL CONDUIT RUNS SHALL BE PARALLEL TO BUILDING STRUCTURAL STEEL.
38. PROVIDE AND CONNECT ALL CONTROL WIRING REQUIRED FOR THE PROPER OPERATION OF THE MECHANICAL SYSTEMS, EXCEPT WHERE SPECIFICALLY SHOWN OTHERWISE ON THE DRAWINGS OR SPECIFIED. REFER TO MECHANICAL DRAWING CONTROL DIAGRAMS AND MECHANICAL EQUIPMENT SHOP DRAWINGS.
39. ALL TRANSFORMERS 75KVA AND LARGER SHALL BE FLOOR MOUNTED UNLESS OTHERWISE NOTED. ALL TRANSFORMERS 45KVA AND SMALLER SHALL BE CEILING MOUNTED UNLESS OTHERWISE NOTED. MOUNT TRANSFORMERS AND ALL ASSOCIATED ELECTRICAL EQUIPMENT SECURELY TO WALLS, COLUMNS, TRUSSES, AND SUPPORTING STEEL. PROVIDE ALL NECESSARY SPACERS, BRACKETS, STRUCTURAL PIECES, INSERTS, ANCHORS, AND BOLTS FOR THIS PURPOSE. PROVIDE SUPPORTS FOR TRUSS MOUNTED AND WALL MOUNTED TRANSFORMERS. ANCHOR ALL SELF–SUPPORTING EQUIPMENT SECURELY TO FLOORS AND TO SUPPORTING STEEL WHERE SUCH SUPPORTS ARE INDICATED OR REQUIRED. MOUNT TRANSFORMERS ON VIBRATION ISOLATION PADS TO REDUCE NOISE.
40. PROVIDE SPARE 120V, 20A CIRCUIT IN STORAGE FOR FUTURE USE. COIL WIRE AND LEAVE COIL IN JUNCTION BOX AT CEILING SPACE.

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Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
Permit Number: BLD2026-00154
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4	City Revision #1	09/08/2026

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SEAL

STATE OF MICHIGAN — ARCHIVAS MARIO BENGIMENE — No. 6501060606 — REGISTERED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

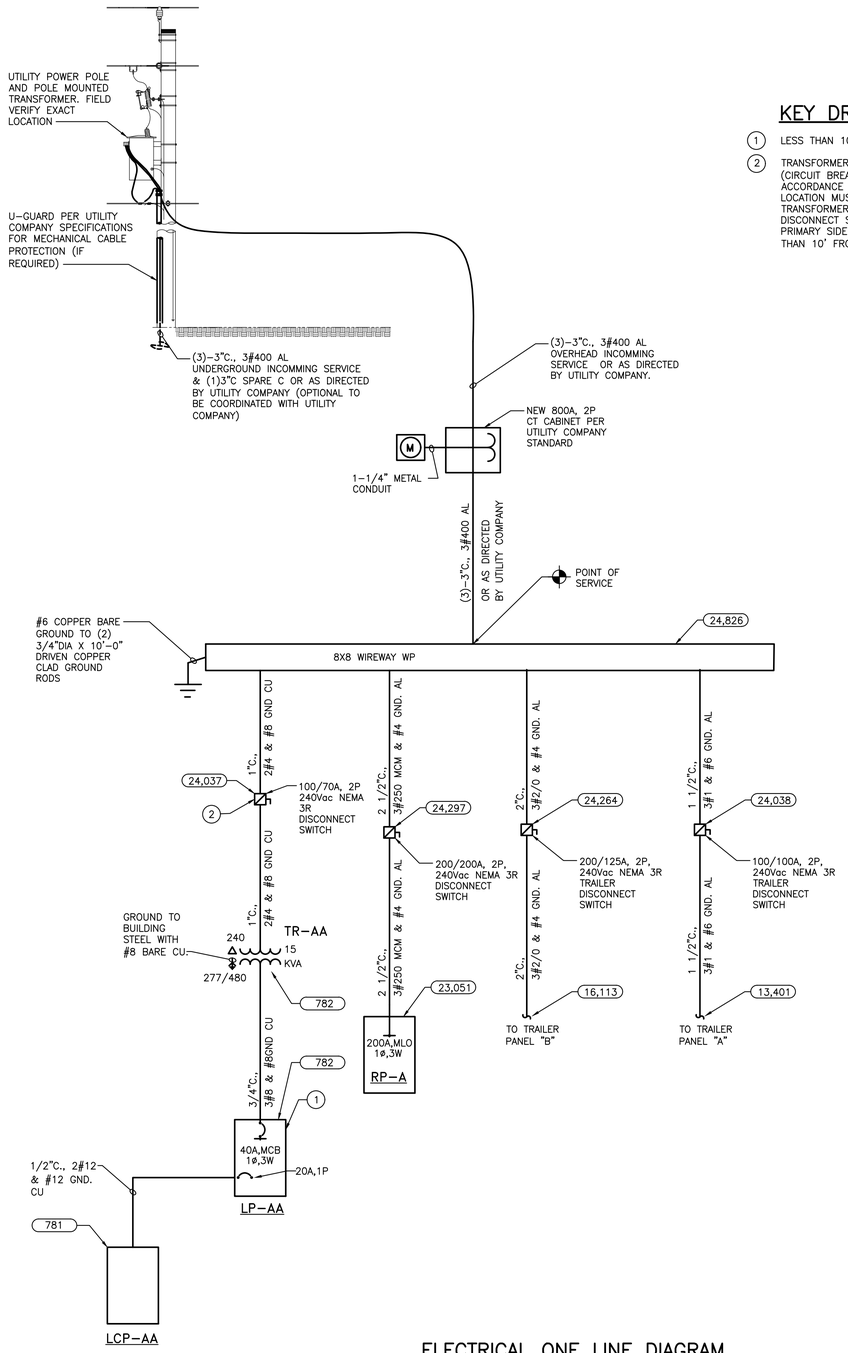
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO: 2647002	FSDG PROJECT NO: 20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

ELECTRICAL NOTES AND LEGENDS

SHEET NUMBER	ISSUE
E-100	



ELECTRICAL ONE LINE DIAGRAM

SCALE: NONE

KEY DRAWING NOTES:

1. LESS THAN 10' AWAY FROM TRANSFORMER.
2. TRANSFORMER DISCONNECTING MEANS (CIRCUIT BREAKER) MUST BE LOCKABLE IN ACCORDANCE WITH NEC 110.25 AND THE LOCATION MUST BE FIELD MARKED ON THE TRANSFORMER. OTHERWISE PROVIDE DISCONNECT SWITCH ON TRANSFORMER PRIMARY SIDE VISIBLE AND LOCATED LESS THAN 10' FROM TRANSFORMER.

ELECTRICAL NOTES:

1. SEE LEGEND, NOTES AND FLOOR PLANS.
2. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE LATEST N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.
3. (XXX) AVAILABLE 3ø FAULT CURRENT (RMS, SYM. AMPS).
4. ALL EQUIPMENT IS SUBJECT TO UTILITY COMPANY SERVICES APPROVAL.
5. UTILITY COMPANY SERVICE REPRESENTATIVE WILL DESIGNATE LOCATION OF PRIMARY CABLES AND CONDUITS.
6. SEE LATEST UTILITY COMPANY SERVICE SERVICE GUIDELINES AND DETAILS FOR INSTALLATION DETAILS AND EQUIPMENT REQUIREMENTS.
7. METER BOX SHALL BE SUPPLIED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. SEE UTILITY COMPANY SERVICE GUIDELINES AND DETAILS.
8. CONTACT UTILITY COMPANY SERVICE REPRESENTATIVE TO VERIFY ALL EQUIPMENT REQUIREMENTS.
9. ALL EQUIPMENT, FUSES AND CABLES MUST BE APPROVED BY UTILITY COMPANY SERVICE BEFORE ORDERING.
10. DO NOT ORDER OR INSTALL ANY EQUIPMENT WITHOUT UTILITY COMPANY SERVICE PLANNER APPROVAL.
11. ALL ELECTRICAL DISTRIBUTION, PANELS, ETC. SHALL BE PROVIDED WITH NAME PLATES, SYSTEM IDENTIFICATION DECALS, A.I.C. IDENTIFICATION DECALS AND FLASH PRODTECION DECALS FOR PROPER IDENTIFICATION. PANEL AND DISTRIBUTION NAMEPLATES SHALL BE ENGRAVED.
12. PHASE ROTATION SHALL BE A,B,C CLOCKWISE. PHASE ORIENTATION IN ELECTRICAL EQUIPMENT SHALL BE MAINTAINED AS FOLLOWS:

    A,B,C – LEFT TO RIGHT
    A,B,C – FRONT TO BACK
    A,B,C – TOP TO BOTTOM

13. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL GROUNDING AND BONDING AS REQUIRED BY THE N.E.C. BOND ALL CONCRETE ENCASED ELECTRODES OF THE NEW BUILDING PORTION TO THE GROUNDING ELECTRODE SYSTEM. SEE GROUNDING DETAIL. COORDINATE WITH INSTALLER TO PROVIDE ELECTRODES WHICH REMAIN ACCESSIBLE AFTER POUR FOR BONDING.
14. VERIFY FEEDER BREAKER SIZES WITH APPROVED MECHANICAL SUBMITTALS PRIOR TO SUBMITTING DISTRIBUTION EQUIPMENT.

ALUMINUM FEEDERS:

1. INSTALL ALUMINUM FEEDERS PER MANUFACTURER RECOMMENDATIONS. ALUMINUM FEEDERS AND BRANCH WIRING IS ONLY ALLOWED ON CIRCUIT 100A AND LARGER. UNLESS OTHERWISE NOTED.
2. UL-LISTED AA-8000 SERIES CONDUCTORS, XLPE INSULATION, AND COMPACT-STRANDED CONDUCTORS SHALL BE USED.
3. ALL TERMINAL LUGS SHALL BE RATED FOR ALUMINUM AND COPPER CONDUCTORS.
4. COPPER AND ALUMINUM CONDUCTOR SHALL NOT MAKE CONTACT WITH EACH OTHER IN DEVICE UNLESS DEVICE IS UL LISTED AND IDENTIFIED FOR THIS PURPOSE.
5. ALUMINUM CANNOT BE USED TO DIRECTLY TERMINATE TO MOTORS DUE TO THE CURRENT UL LISTING LIMITATION ON MOTORS. RUNNING ALUMINUM TO THE DISCONNECTING MEANS AND RUNN COPPER WIRING TO THE MOTOR.

NOTE:
ALL SHORT CIRCUIT CALCULATIONS ARE DONE FOR FULLY RATED EQUIPMENT. SERIES RATED EQUIPMENT IS APPROVED FOR USE WHEN FULLY COMPLIES WITH NEC 240.86 SERIES RATING ARTICLE.

PROJECT NAME	:	XXX
FAULT NAME	:	XXX
SYSTEM	:	XXX
AVAIL. FAULT CURRENT L-L-L (AMPS)	:	XXX
VOLTAGE L-L (VOLTS)	:	XXX
CALCULATION PERFORMED ON	:	XXX

NOTE:
PROVIDE AVAILABLE FAULT CURRENT LABELS PER NEC 110.24. SEE SAMPLE ABOVE.

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SEAL

STATE OF MICHIGAN MICHAS MASIC ENGINEER No. 6001060868 PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

ELECTRICAL ONE LINE DIAGRAM

SHEET NUMBER: E-101

ISSUE

LIGHTING FIXTURE SCHEDULE:

1. WHERE A SINGLE MANUFACTURER IS INDICATED FOR A LIGHTING FIXTURE, NO SUBSTITUTIONS WILL BE ALLOWED. WHERE "OR APPROVED EQUAL" IS INDICATED, EQUIVALENT FIXTURE BY OTHER MANUFACTURES WITH SAME PERFORMANCE WILL BE CONSIDERED.

2. COORDINATE FIXTURE TRIM WITH CEILING TYPE.

TYPE	DESCRIPTION	WATTAGE	VOLTAGE
FA	THE JHBL IS CONSTRUCTED TO WITHSTAND MOISTURE, DUST, AND CHEMICAL CONTACT. RUGGED DIE–CAST ALUMINUM HOUSING AND CORROSION RESISTANCE. WIRE GUARD ATTACHMENT POINTS ARE PRECAST IN OPTICAL HOUSING. SUPER DURABLE TGIC THERMOSET POWDER COAT FINISH PROVIDES 1500 HOURS SALT/FOG RATING. HIGH–EFFICIENCY LEDS PROVIDES 35,000 LUMENS AT 4000K CCT, 80 CRI, 268.8 WATTS. WET LOCATION LISTED. EMBEDDED HIGH MOUNT 360° MOTION SENSOR, WET LOCATION, HIGH/LOW OPERATION (2–LEVEL). LITHONIA LIGHTING CATALOG #JHBL–35000LM–ACL–ND–MVOLT–GZ10–40K–80CRI–MSE62L3VWL OR APPROVED EQUAL.	268.8W	120–277V
FB	2'x4' LED VOLUMETRIC RECESSED LIGHTING FIXTURE, COUPLED WITH HIGH–EFFICIENCY DRIVER, 4000 LUMENS, CURVED, RIBBED, 82CRI, 4000K. LITHONIA LIGHTING CATALOG #2BLT4–40L–ADPT–MVOLT–GZ10–LP840 OR APPROVED EQUAL.	32.1W	120–277V
FC	2'x2' LED VOLUMETRIC RECESSED LIGHTING FIXTURE, COUPLED WITH HIGH–EFFICIENCY DRIVER, 4000 LUMENS, CURVED, RIBBED, 82CRI, 4000K. LITHONIA LIGHTING CATALOG #2BLT2–40L–ADPT–MVOLT–GZ10–LP840 OR APPROVED EQUAL.	31W	120–277V
FD	LOW–PROFILE Z STRIP LED WITH STANDARD DIFFUSE SNAP ON/SNAP OFF LENS ELIMINATES PIXELS, IMPROVES UNIFORMITY AND MINIMIZES GLARE. L/LENS OPTION AVAILABLE. PAINT OPTIONS INCLUDE HIGH–GLOSS, BAKED WHITE ENAMEL FINISHED. LITHONIA LIGHTING CAT. #ZL1N–L48–5000LM–FST–MVOLT–40K–80CRI SERIES OR APPROVED EQUAL	34W	120–277V
OA	CLASSIC ARCHITECTURAL WALL SCONCE LED LAMP. SINGLE PIECE DIE–CAST ALUMINUM HOUSING. CLASS 2 ELECTRONIC DRIVER HAS A POWER FACTOR> 90%, THD<20%. PROVIDED WITH EMERGENCY BATTERY BACKUP AND PHOTOELECTRIC CELL. FINISH BY ARCHITECT. LITHONIA LIGHTING CATALOG #WST–LED–P2–50K–VW–MVOLT–PE–E20WC OR APPROVED EQUAL.	25W	120–277V
OB1	LED FLOODLIGHT FIXTURE WITH UP TO 23,000 LUMENS. AVAILABLE WITH FIVE UNIQUE MOUNTINGS, THE RSXF IS SPECIFICALLY DESIGNED TO PROVIDE ONE–FOR–ONE SOLUTIONS FOR REPLACING EXISTING METAL HALIDE OR HIGH PRESSURE SODIUM LIGHTING. RUGGED DIE–CAST ALUMINUM MAIN BODY, 5000K. FINISHED BY ARCHITECT. WALL MOUNTED. LITHONIA LIGHTING CATALOG #RSXF1–P3–50K–WFL–MVOLT–PE–SF OR APPROVED EQUAL.	109W	120–277V
OB2	LED FLOODLIGHT FIXTURE WITH UP TO 23,000 LUMENS. AVAILABLE WITH FIVE UNIQUE MOUNTINGS, THE RSXF IS SPECIFICALLY DESIGNED TO PROVIDE ONE–FOR–ONE SOLUTIONS FOR REPLACING EXISTING METAL HALIDE OR HIGH PRESSURE SODIUM LIGHTING. RUGGED DIE–CAST ALUMINUM MAIN BODY, 5000K.FINISHED BY ARCHITECT. YOKE MOUNTED, SEE MANUFACTURER INSTALLATION INSTRUCTIONS. LITHONIA LIGHTING CATALOG #RSXF1–P5–50K–WFL–MVOLT–YKC62–PE–SF OR APPROVED EQUAL.	164W	120–277V
EM	CONTEMPORARY COMMERCIAL DESIGN LED EMERGENCY LIGHTING UNIT. HOUSING IS STANDARD WHITE THERMOPLASTIC WITH A COMPACT AND LOW–PROFILE CONTEMPORARY DESIGN. ELM2L FEATURES TWO, HIGH PERFORMANCE LEDS WITH ACRYLIC LENS RATED AT 1.2 WATTS EACH AND DELIVERING A TOTAL OF 220 LUMENS IN A LINEAR PATTERN. TYPICAL LED LAMP LIFE IS 10 YEARS. LITHONIA LIGHTING CATALOG #ELM2L OR APPROVED EQUAL.	4.8W	120–277V
EX	EXIT SIGN, RED LETTERS, L.E.D. LIGHT SOURCE, DIRECTIONAL CHEVRON ARROWS AS REQUIRED, MATTE BLACK BRUSHED ALUMINUM FACE. LITHONIA LIGHTING CATALOG #LQM–S–3–R–120/277 OR APPROVED EQUAL.	3W	120–277V
EXM	COMBO EXIT AND EMERGENCY LED LIGHTING UNIT, TWIN LED LAMP HEADS OPERATE IN EMERGENCY (DC INPUT) MODE WITH 12 SERIES–PARALLEL WHITE LEDS IN EACH HEAD. PROVIDES REDUNDANT LIGHT SOURCES TO ENSURE EMERGENCY LIGHTING PERFORMANCE. THE TYPICAL LIFE OF THE EXIT LED LAMP IS 10 YEARS. CURRENT–LIMITING CHARGER MAXIMIZES BATTERY LIFE AND MINIMIZES ENERGY CONSUMPTION. 120V. LITHONIA LIGHTING CATALOG #LHQM–LED–B–R OR APPROVED EQUAL.	3W	120–277V

ALL LIGHTING FIXTURE SHALL BE PROVIDED WITH 0–10V DIMMING OR COMPATIBLE DIMMING RELAY.

EMERGENCY LIGHTING FIXTURES "EM/BL"

1. ALL EMERGENCY LIGHTING FIXTURES ARE SHOWN HALF SHADED ON FLOOR PLAN. ALL EMERGENCY LIGHTING FIXTURES SHALL BE SUPPLIED WITH FACTORY INSTALLED EMERGENCY DRIVER (EM/BL) TO PROVIDE MIN. 1,100 LUMENS FOR 90 MIN. COMPATIBLE WITH LIGHTING FIXTURES SHOWN ON THE FLOOR PLAN.

IF FACTORY INSTALLED DRIVER IS NOT AVAILABLE PROVIDE COMPATIBLE EMERGENCY DRIVER BY BODINE OR APPROVED EQUAL WITH REMOTE TEST SWITCH AND CHARGING INDICATOR TO PROVIDE MIN. 1,100 LUMENS FOR 90 MIN.

OCCUPANCY SENSOR AND SWITCHES SCHEDULE:

SYMBOL	MANUF.	MODEL NO.	COLOR	MIN. LIGHT LEVEL SETTING (N/A)	TIME DELAY SETTING (N/A)	VOLTAGE LEVEL 120/277V	POWER PACK N/A	MOUNTED	REMARKS
S	LEVITON	1222–2	AS DIRECTED BY ARCHITECT				NO	WALL	LINE VOLTAGE TOGGLE SWITCH
S_3	LEVITON	1223–2	AS DIRECTED BY ARCHITECT				NO	WALL	LINE VOLTAGE 3 WAY TOGGLE SWITCH
S_D	LEVITON	DECORA DSL06	AS DIRECTED BY ARCHITECT	N/A	N/A		NO	WALL	LINE VOLTAGE DIMMER SWITCH, ARCHITECTURAL PRESET SLIDE DIMMER COMPATIBLE WITH LAMPS AS INDICATED ON DRAWINGS. 300W
S_K	LEVITON	1221–2WL	AS DIRECTED BY ARCHITECT				NO	WALL	LINE VOLTAGE TOGGLE LOCKING KEY SWITCH
S_P	LEVITON	1221–PLR	AS DIRECTED BY ARCHITECT	N/A	N/A		NO	WALL	LINE VOLTAGE PILOT LIGHT SWITCH
S_{20}	ACUITY	WSXA PDT XX	AS DIRECTED BY ARCHITECT	30Fc	20 min.	120/277V	NO	WALL	NO CONTROL PANEL NEEDED. 0–800W, ONE LIGHTING LEVEL
S_{30}	ACUITY	WSXA PDT 2P XX	AS DIRECTED BY ARCHITECT	30Fc	20 min.	120/277V	NO	WALL	NO CONTROL PANEL NEEDED. 0–800W, DUAL LIGHTING LEVEL
S_{WD}	ACUITY	nWSXA PDF LV DX	AS DIRECTED BY ARCHITECT	–	20 min.	LOW VOLTAGE	NO	WALL	DIMMABLE AUTOMATIC WALL SWITCH, 10–500W, UP TO 300W, 10% TO 100% DIMMING
S_{TS}	ACUITY	PTS 60	AS DIRECTED BY ARCHITECT	–	20 min.	120/277V	NO	WALL	DIGITAL TIME SWITCH, 0–800W, LINE VOLTAGE
S_{NP1}	ACUITY	nPODMA XX NOTE 9	AS DIRECTED BY ARCHITECT	–	–	LOW VOLTAGE	YES	WALL	WORKING WITH PANEL OR STANDALONE LOW VOLTAGE SWITCH. SEE FLOOR PLANS FOR DIMMING OPTION.
S_{NP2}	ACUITY	nPODMA 2P XX NOTE 9	AS DIRECTED BY ARCHITECT	–	–	LOW VOLTAGE	YES	WALL	WORKING WITH PANEL OR STANDALONE LOW VOLTAGE SWITCH. SEE FLOOR PLANS FOR DIMMING OPTION.
S_{NP4}	ACUITY	nPODMA 4P XX NOTE 9	AS DIRECTED BY ARCHITECT	–	–	LOW VOLTAGE	YES	WALL	WORKING WITH PANEL OR STANDALONE LOW VOLTAGE SWITCH. SEE FLOOR PLANS FOR DIMMING OPTION.
S_{NPT}	ACUITY	nPOD TOUCH	AS DIRECTED BY ARCHITECT	–	–	LOW VOLTAGE	YES	WALL	WORKING WITH PANEL OR STANDALONE LOW VOLTAGE CONTROLLER
(O)	ACUITY	CM OR nCM	AS DIRECTED BY ARCHITECT	–	20 min.	LOW VOLTAGE	YES	CEILING	LOW VOLTAGE CEILING DUAL TECHNOLOGY (PIR/MICROPHONICS) SENSOR
$(O)_D$	ACUITY	CM OR nCM	AS DIRECTED BY ARCHITECT	–	20 min.	LOW VOLTAGE	YES	CEILING	CEILING SENSOR WITH PHOTOCELL AND DIMMING FOR DAYLIGHT CONTROL. WILL BE USED CLOSE TO WINDOWS.
CX 100	ACUITY	WV PDT 16	AS DIRECTED BY ARCHITECT	20Fc	20 min.	24VDC	YES	CEILING/WALL	NO PANEL, LOW VOLTAGE CEILING DUAL TECHNOLOGY (PIR/MICROPHONICS) SENSOR
(PP)	ACUITY	nPP16	N/A	–	–	120/277V	N/A	SEE FLOOR PLANS	DUAL VOLTAGE RELAY PACK, 120/277V, 15VDC, 16A LOAD
$(PP)_D$	ACUITY	nPP16 D EFP *NOTE 10	N/A	–	–	120/277V	N/A	SEE FLOOR PLANS	DUAL VOLTAGE RELAY PACK WITH 0–10V DIMMING OUTPUT OR COMPATIBLE 120/277V, 15VDC, 16A, 1/2HP LOAD
$(EP)_D$	ACUITY	nPP16 D ER EFP *NOTE 10	N/A	–	–	120/277V	N/A	SEE FLOOR PLANS	DUAL VOLTAGE EMERGENCY RELAY PACK WITH 0–10V DIMMING OUTPUT OR COMPATIBLE 120/277V, 15VDC, 16A, 1/2HP LOAD
$(PP)_{DX}$	ACUITY	nPP PCD XX *NOTE 10	N/A	–	–	120/277V	N/A	SEE FLOOR PLANS	DUAL VOLTAGE EMERGENCY RELAY PACK WITH 2 WIRE, MAGNETIC LOW VOLTAGE AND ELECTRONIC LOW VOLTAGE DIMMING OUTPUT 120/277V, 15VDC, 12A, 1/2HP LOAD
$(PP)_{ARC}$	ACUITY	nPP20 PL	N/A	–	–	120/277V	N/A	SEE FLOOR PLANS	STANDARD POWER PACK FOR AUTOMATIC RECEPTACLE CONTROL

nLIGHT NETWORKED DIGITAL LIGHTING CONTROL SYSTEM SHALL BE USING SENSORS STARTING WITH nXXX AS MENTIONED ABOVE.

DESIGN BASED ON ACUITY SENSORS.

1. DEVICE FINISHES SHALL BE AS DETERMINED BY ARCHITECT.
2. IF ONE OF THE "OTHER ACCEPTABLE PRODUCT" SENSORS ARE USED, CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS NEEDED TO COMPLETELY COVER THE SPACE SERVED. QUANTITIES ON DRAWINGS ARE BASED ON THE COVERAGE OF THE BASIS–OF–DESIGN SENSORS. EXACT LOCATIONS OF ALL SENSORS SHALL BE AS RECOMMENDED BY MANUFACTURER.
3. ALL OCCUPANCY/VACANCY SENSOR TIME DELAYS SHALL BE 20 MINUTES, UNLESS NOTED OTHERWISE.
4. PROVIDE ALL LOW–VOLTAGE WIRING NEEDED FOR A FULLY OPERATIONAL SYSTEM (CAT 5E, 0–10V VIOLET–AND–GRAY, ANY OTHER MANUFACTURER–RECOMMENDED CABLING, PLENUM–RATED WHERE IN AIR HANDLING SPACES, IN DEDICATED CONDUIT SYSTEM WHERE NOT ABOVE ACCESSIBLE CEILINGS, IN DEDICATED SLEEVES WHERE PENETRATING PARTITIONS).
5. FOR CAT5E "PLUG–AND–PLAY" SYSTEMS, AT LEAST ONE WALL SWITCH IN EACH ROOM SHALL HAVE AN OPEN CAT5E PORT (SO THAT THERE IS AN EASILY ACCESSIBLE OPEN PORT).
6. PROVIDE ALL PROGRAMMING NEEDED TO SET UP SENSORS, POWER PACKS AND LOW–VOLTAGE SWITCHES.
7. ALL MANUAL CONTROL MOUNTING HEIGHTS SHALL BE 48" AFF TO THE TOP. LOAD CONTROLLERS SHALL BE LOCATED ABOVE THE NEAREST ACCESSIBLE CEILING (PLENUM–RATED WHERE IN AIR HANDLING SPACES).
8. PROVIDE LOAD CONTROLLERS IN QUANTITIES NEEDED TO SERVE THE NUMBER OF ZONES INDICATED ON THE DRAWINGS. ROOMS MAY SHARE LOAD CONTROLLERS IF THERE ARE SUFFICIENT OUTPUTS AND IF ROOMS CAN STILL OPERATE INDEPENDENTLY OF ONE ANOTHER. LOAD CONTROLLERS SHALL BE THE DIMMING TYPE WITH 0–10V WIRING IN ROOMS WHERE SWITCHES ARE THE DIMMING TYPE OR WHERE PHOTOSENSORS ARE PRESENT. OTHERWISE USE DIFFERENT DIMMING RELAYS COMPATIBLE WITH LIGHTING FIXTURES.
9. SEE FLOOR PLANS FOR DIMMING OPTIONS.
10. PROVIDE DIMMING POWER PACK COMPATIBLE WITH LIGHTING FIXTURES PROVIDED. VERIFY LIGHTING FIXTURE IS COMPATIBLE WITH DIMMING SYSTEM BEFORE INSTALLATION.
11. AN OCCUPANCY SENSOR SHALL TURN ON LIGHTING WHEN IT DETECTS MOVEMENT WITHIN ITS RANGE.
12. ALL LIGHTING CONTROLS ARE SHOWN DIAGRAMMATICALLY. PROVIDE FULLY ENGINEERED SHOP DRAWINGS PER LATEST ADOPTED MICHIGAN ENERGY CODE DONE BY LIGHTING CONTROL DISTRIBUTOR/SUPPLIER FOR APPROVAL BEFORE PURCHASING AND INSTALLATION OF LIGHTING CONTROLS.

EMERGENCY LIGHTING INVERTERS:

(1) SEE FLOOR PLANS FOR LOCATIONS AND QUANTITIES
(2) COORDINATE SIZE AND COMPATIBILITY WITH LIGHTING FIXTURES

SYMBOL	ITEM	MANUFACTURER/MODEL (DESIGN BASIS)	DESCRIPTION	REMARKS
ELI–400	EMERGENCY BACKUP LIGHTING INVERTER	BODINE ELI–S–400 MAX. OUTPUT 400W	UPON FAILURE OF NORMAL POWER, THE INVERTER BEGINS PROVIDING EMERGENCY POWER TO THE CONNECTED 100% LIGHTING LOAD FOR A MINIMUM OF 90 MINUTES. THE INVERTER SHALL ALLOW THE CONNECTED FIXTURE(S) TO BE ON, OFF, SWITCHED OR DIMMED WITHOUT AFFECTING EMERGENCY OPERATION. SEE MANUFACTURER WIRING DIAGRAMS. PROVIDE SENSING WIRE AND REMOTE TEST SWITCH.	(1)(2)

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

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Permit Number: BLD2026-00154
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SEAL

STATE OF MICHIGAN — ARCHIVAR MARIO ENGINEER No. 6201072605 — PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

ELECTRICAL LIGHTING SCHEDULES

SHEET NUMBER E-102

ISSUE

PANEL DESIGNATION: RP–A (NEW)

TYPE: **NEMA 1** SERVICE: **120/240V., 1ø, 3W** ENCLOSURE: **SURFACE MOUNTED**

LOCATION: **STORAGE #101** MAIN: **200A. M.L.O.** RATING: **42,000 A.I.C.**

#	BKR	CIRCUIT DESCRIPTION			I	VA		VA	I			CIRCUIT DESCRIPTION	BKR	#
1	20A-1P	GFI RECEPTACLE-RM.#105			D	800	L1	127	M			EF-1, F-2, EF-3	20A-1P	2
3	20A-1P	GFI RECEPTACLE-RM.#106			D	800	L2	150	M			(3)MD-1	20A-1P	4
5	20A-1P	GFI RECEPTACLE-EWC-1			D	800	L1	200	M			IRH-1	20A-1P	6
7	20A-1P	GFI RECEP.-WAREHOUSE#100			D	600	L2	1,440	M			ERV-1	15A-1P	8
9	20A-2P	OVERHEAD DOOR OH-1			G	1,040	L1	1,620	M			F-1	15A-1P	10
11		XXX			G	1,040	L2	2,000	M			EDH-1	25A-1P	12
13	20A-2P	OVERHEAD DOOR OH-2			G	1,040	L1	550	M			WH-1 IGNITION, CP-1	20A-1P	14
15		XXX			G	1,040	L2	2,180	M			ACCU-1	35A-2P	16
17	20A-1P	GFI RECEP.-WAREHOUSE#100			D	600	L1	2,180	M			XXX		18
19	20A-1P	REC.-TELEBACKBOARD #101			D	800	L2	1,000	D			GFI RECEPT-RM.#105-107	20A-1P	20
21	20A-1P	GFI RECEP.-RM.#101,102,104			D	600	L1	1,650	M			EUH-1	20A-2P	22
23	20A-1P	RECEPTACLE-RM.#103			D	800	L2	1,650	M			XXX		24
25	20A-1P	GFI RECEP-REF. RM.#103			D	800	L1		G			SPARE	20A-1P	26
27	20A-1P	GFI RECEPTACLE-RM.#103			D	1,000	L2		G			SPARE	20A-1P	28
29	20A-1P	GFI RECEPTACLE-RM.#103			D	1,000	L1		G			SPARE	20A-1P	30
31	20A-1P	GFI RECEPTACLE-RM.#103			D	1,000	L2		G			SPARE	20A-1P	32
33	20A-1P	GFI RECEPT.-GD RM.#103			D	696	L1		G			SPARE	20A-1P	34
35	20A-1P	GFI RECEPTACLE-OUTDOOR			D	600	L2		G			SPARE	20A-1P	36
37	20A-1P	GFI RECEPTACLE-OUTDOOR			D	600	L1		G					38
39	20A-1P	SPARE			G		L2		G					40
41	20A-1P	SPARE			G		L1		G					42

CONNECTED LOAD: 30.40 KVA
DEMAND LOAD: 30.25 KVA DEMAND AMP: 126.02 AMP

FED FROM: SEE ONE LINE DIAGRAM
FEEDER SIZE: SEE ONE LINE DIAGRAM

PANEL DESIGNATION: LP–AA (NEW)

TYPE: **NEMA 1** SERVICE: **277/480V., 1ø, 3W** ENCLOSURE: **SURFACE MOUNTED**

LOCATION: **WAREHOUSE #100** MAIN: **40A. M.C.B.** RATING: **10,000 A.I.C.**

#	BKR	CIRCUIT DESCRIPTION			I	VA		VA	I			CIRCUIT DESCRIPTION	BKR	#	
1	20A-2P	LIGHTING-SITE			C	2,472	L1	1,080	C			LTG-RM.#101-107,OUTDOOR	20A-1P	2	
3		XXX			C	2,472	L2	1,614	C			LIGHTING-WAREHOUSE #100	20A-1P	4	
5	20A-1P	SPARE			G		L1	1,968	C			LIGHTING-EXTERIOR BUILD.	20A-1P	6	
7	20A-1P	SPARE			G		L2	500	C			SIGNAGE	20A-1P	8	
9	20A-1P	SPARE			G		L1		G			SPARE	20A-1P	10	
11	20A-1P	SPARE			G		L2		G			SPARE	20A-1P	12	
13					G		L1		G			SPARE	20A-1P	14	
15					G		L2		G					16	
17					G		L1		G					18	
19					G		L2		G					20	
21					G		L1		G					22	
23					G		L2	500	G			LTG CONTROL PANEL LCP-AA	20A-1P	24	*

CONNECTED LOAD: 10.59 KVA
DEMAND LOAD: 13.11 KVA DEMAND AMP: 15.77 AMP

FED FROM: SEE ONE LINE DIAGRAM
FEEDER SIZE: SEE ONE LINE DIAGRAM

* – PROVIDE LOCK–IN CIRCUIT BREAKER

LIGHTING CONTROL PANEL: LCP–AA

MOUNTING: **SURFACE**
LOCATION: **WAREHOUSE #100**

POWER SUPPLY: **277V**
NUMBER OF RELAY: **12**
ENCLOSURE: **NEMA 1**

MANUFACTURER: **ACUITY**
TYPE: **nLIGHT**
LIGHTING PANEL: **LP–AA**

CIRC. NO.	LIGHTING LOAD [W]	LOAD CONTROLLED	SWITCH/ DIMMED	SWITCH/ DIMMED	LOAD CONTROLLED	LIGHTING LOAD [W]	CIRC. NO.
1	AA–2	LIGHTING–OUTDOOR	TC/PHOTO	TC/PHOTO	LIGHTING–SIGNAGE	AA–8	7
2	AA–4	LIGHTING–WAREHOUSE #100	LV SWITCH	–	SPARE	–	8
3	AA–6	LIGHTING–EXTERIOR BUILDING	TC/PHOTO	–	SPARE	–	9
4	AA–1,3	LIGHTING–SITE	TC/PHOTO	–	SPARE	–	10
5				–	SPARE	–	11
6	–	SPARE	–	–	–	–	12

120/240V 1PH, 4W					
LOAD SUMMARY					
WIREWAY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	DEMAND AMPS	CONN AMPS
GENERAL LOAD (MISC)	18.1	1.00	18.1	75.3	75.3
RECEPTACLES	17.8	0.78	13.9	57.9	74.2
LIGHTING	11.7	1.25	14.6	60.9	48.7
MOTORS/MECH	37.1	1.00	37.1	154.8	154.8
KITCHEN	0.0	0.65	0.0	0.0	0.0
TOTAL	84.7		83.7	348.8	352.9

NOTE:
ALL SHORT CIRCUIT CALCULATIONS ARE DONE FOR FULLY RATED EQUIPMENT. SERIES RATED EQUIPMENT IS APPROVED FOR USE WHEN FULLY COMPLIES WITH NEC 240.86 SERIES RATING ARTICLE.

Approved For Permit
Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
Permit Number: BLD2026-00154
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SEAL

ARSHINAH MASIC ENGINEER No. 6101053093 STATE OF MICHIGAN REGISTERED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

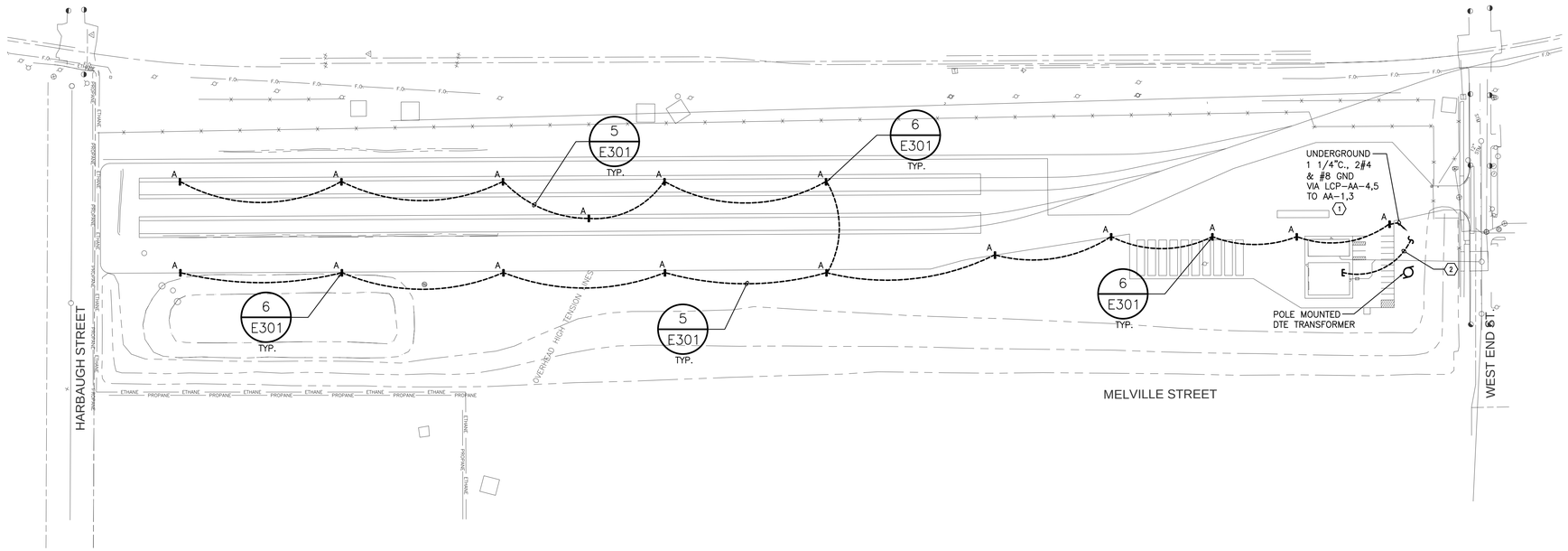
SHEET TITLE

ELECTRICAL SCHEDULES

SHEET NUMBER

E-103

ISSUE



NORTH

ELECTRICAL SITE PLAN

SCALE: 1"=100'

LIGHTING FIXTURE SCHEDULE:

1. WHERE A SINGLE MANUFACTURER IS INDICATED FOR A LIGHTING FIXTURE, NO SUBSTITUTIONS WILL BE ALLOWED. WHERE "OR APPROVED EQUAL" IS INDICATED, EQUIVALENT FIXTURE BY OTHER MANUFACTURES WITH SAME PERFORMANCE WILL BE CONSIDERED.

2. COORDINATE FIXTURE TRIM WITH CEILING TYPE.

TYPE	DESCRIPTION	WATTAGE	VOLTAGE
A	THE GALLEON™ II LED AREA & SITE LUMINAIRE SETS THE STANDARD FOR HIGH PERFORMANCE OUTDOOR SPECIFICATION LIGHTING WITH DIE-CAST ALUMINUM HOUSING, HIGH-EFFICIENCY INJECTION-MOLDED ACCULED OPTICS TECHNOLOGY ARMS ARE FACTORY INSTALLED, ENABLING CLOSED-HOUSING INSTALLATION REMOVABLE POWER TRAY ASSEMBLY INCLUDES DRIVERS, SURGE MODULES AND CONTROL MODULES FOR EASE OF MAINTENANCE AND SERVICEABILITY 6 STANDARD FINISHES USE SUPER DURABLE TGIC POLYESTER POWDER COAT PAINT. MCGRAW-EDISON LIGHTING CATALOG #GALN-SA5-D-750-H-T4W-BZ OR APPROVED EQUAL.	309W	347-480V

SEQUENCE OF OPERATION EXTERIOR LIGHTING CONTROLS:

PROVIDE AND INSTALL LIGHTING PER ASHRAE 90.1-2013

9.4.1.4 EXTERIOR LIGHTING CONTROL. LIGHTING FOR EXTERIOR APPLICATIONS NOT EXEMPTED IN SECTION 9.1 SHALL MEET THE FOLLOWING REQUIREMENTS:

a. LIGHTING SHALL BE CONTROLLED BY A DEVICE THAT AUTOMATICALLY TURNS OFF THE LIGHTING WHEN SUFFICIENT DAYLIGHT IS AVAILABLE.

b. ALL BUILDING FAÇADE AND LANDSCAPE LIGHTING SHALL BE AUTOMATICALLY SHUT OFF BETWEEN MIDNIGHT OR BUSINESS CLOSING, WHICHEVER IS LATER, AND 6 A.M. OR BUSINESS OPENING, WHICHEVER COMES FIRST, OR BETWEEN TIMES ESTABLISHED BY THE AUTHORITY HAVING JURISDICTION.

c. LIGHTING NOT SPECIFIED IN SECTION 9.4.1.4(B) AND LIGHTING FOR SIGNAGE SHALL BE CONTROLLED BY A DEVICE THAT AUTOMATICALLY REDUCES THE CONNECTED LIGHTING POWER BY AT LEAST 30% FOR AT LEAST ONE OF THE FOLLOWING CONDITIONS:

1. FROM 12 MIDNIGHT OR WITHIN ONE (1) HOUR OF THE END OF BUSINESS OPERATIONS, WHICHEVER IS LATER, UNTIL 6 c.m. OR BUSINESS OPENING, WHICHEVER IS EARLIER

2. DURING ANY PERIOD WHEN NO ACTIVITY HAS BEEN DETECTED FOR A TIME OF NO LONGER THAN 15 MINUTES ALL TIME SWITCHES SHALL BE CAPABLE OF RETAINING PROGRAMMING AND THE TIME SETTING DURING LOSS OF POWER FOR A PERIOD OF AT LEAST TEN HOURS.

EXCEPTIONS:

1. LIGHTING FOR COVERED VEHICLE ENTRANCES OR EXITS FROM BUILDINGS OR PARKING STRUCTURES WHERE REQUIRED FOR SAFETY, SECURITY, OR EYE ADAPTATION

2. LIGHTING THAT IS INTEGRAL TO SIGNAGE AND INSTALLED IN THE SIGNAGE BY THE MANUFACTURER

EXTERIOR LIGHTING CONTROLS:

PROVIDE AND INSTALL LIGHTING PER ASHRAE 90.1-2013

9.4.1.4 EXTERIOR LIGHTING CONTROL. LIGHTING FOR EXTERIOR APPLICATIONS NOT EXEMPTED IN SECTION 9.1 SHALL MEET THE FOLLOWING REQUIREMENTS:
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EXCEPTIONS:
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2. LIGHTING THAT IS INTEGRAL TO SIGNAGE AND INSTALLED IN THE SIGNAGE BY THE MANUFACTURER

ELECTRICAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. GROUNDING SHALL BE ACCORDING TO N.E.C. ARTICLE 250.
2. CONDUIT SHALL BE HOT-DIPPED GALVANIZED STEEL CONDUITS FOR EXTERIOR OR RIGID PVC FOR UNDERGROUND CONDUITS, SCHEDULE 40, UL LISTED FOR DIRECT BURIAL UNDERGROUND.
3. WIRE SHALL BE SINGLE CONDUCTOR, STRANDED ANNEALED COPPER INSULATED FOR 600 VOLTS, TYPE XHHW OR THHN/THWN, MINIMUM SIZE NO. 12 AWG.
4. GROUND WIRES SHALL BE RUN IN ALL CONDUITS.
5. CONDUIT AND WIRE ROUTING, ALONG WITH SIZING AND DERATING SHALL BE BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
6. SEE BUILDING LIGHTING PLANS FOR ALL BUILDING MOUNTED LIGHTING FIXTURES.
7. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.
8. ALL CONDUIT PENETRATION IN BUILDING EXTERIOR WALLS SHALL BE WATER TIGHT.
9. DATA CONDUIT SHALL HAVE MIN. 36" BENDING RADIUS.

KEY DRAWING NOTES:

1. SITE LIGHTING SHALL BE CONTROLLED VIA LIGHTING CONTROL PANEL AND PHOTO EYE.
2. EMPTY (2)2" PVC CONDUIT TO INCOMING TELEPHONE/DATA SERVICE LOCATION. PROVIDE PULL STRING. FIELD VERIFY EXACT LOCATION

NOTE:

1. ALL EXTERIOR LIGHTING FIXTURES SHALL BE PROVIDED WITH OCCUPANCY SENSOR TO COMPLY WITH LATEST ADOPTED ENERGY CODE.

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PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

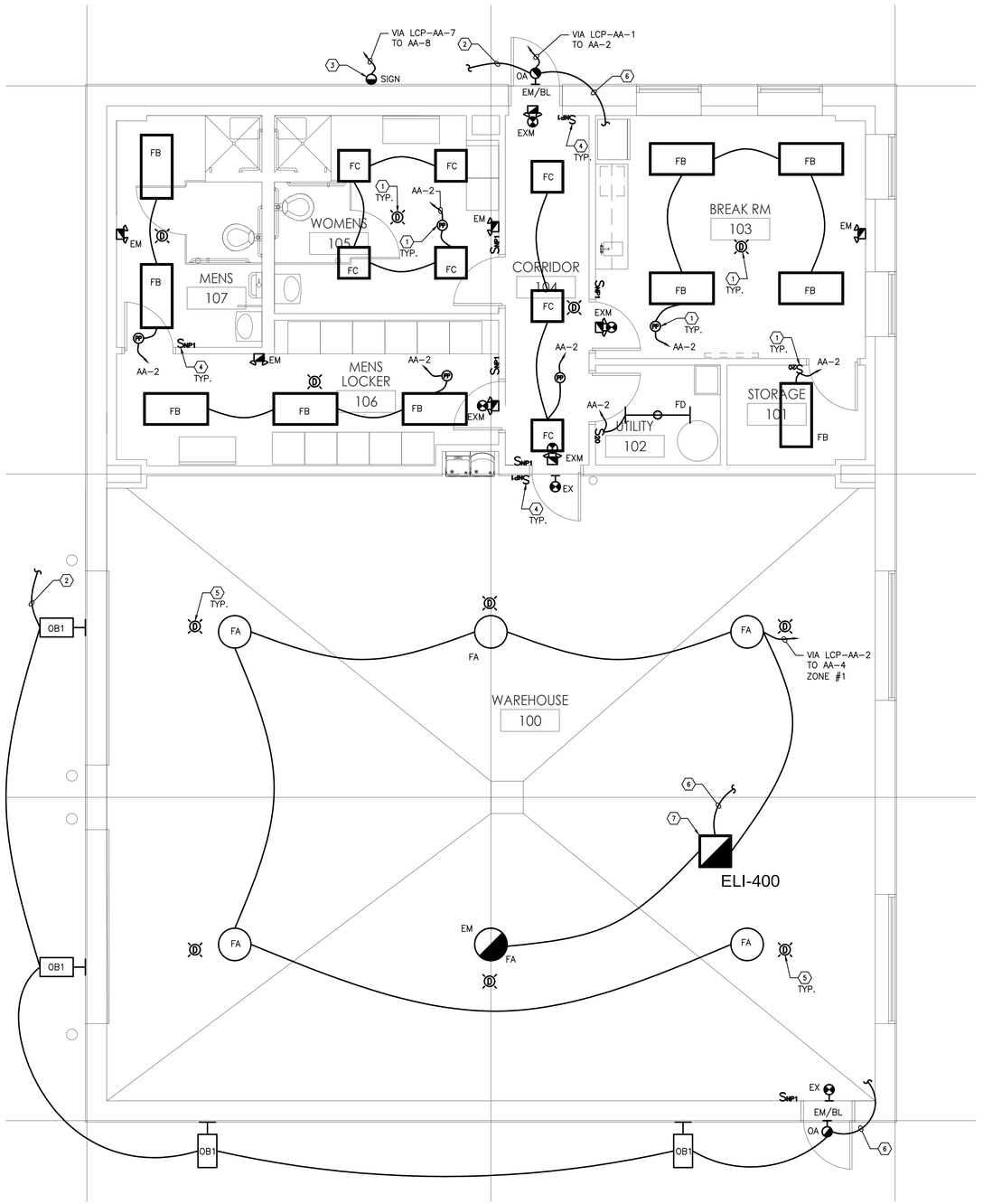
SHEET TITLE

ELECTRICAL SITE PLAN

SHEET NUMBER

E-104

ISSUE



ELECTRICAL LIGHTING FLOOR PLAN

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

NORTH

GENERAL DRAWING NOTES:

GN1. SEE LEGEND AND LIGHTING FIXTURE SCHEDULE.

GN2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OWNER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.

GN3. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WITH REQUIRE SERVICE ACCESS.

GN4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

GN5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

GN6. BOX DEPTH: COORDINATE WALL BOX DEPTH WITH OTHER TRADES FOR PROPER PLACEMENT DUE TO WALL COVERING THICKNESS.

GN7. INSTALL NO FIXTURE FINISHED TRIMS, REFLECTORS, LAMPS, ETC. BEFORE ALL GYPSUM BOARD INSTALLATIONS HAVE BEEN COMPLETED AND PAINTED AND ALL OTHER CONSTRUCTION WORK THAT GENERATES DUST OR AIRBORN DEBRIS HAS BEEN COMPLETED. ANY FIXTURES REQUIRING FINAL CLEANING SHALL BE CLEANED USING ONLY THE FIXTURE MANUFACTURER'S RECOMMENDED METHOD(S).

GN8. FIXTURES DAMAGED BY INSTALLATION PRIOR TO THE SIGNIFICANT COMPLETION OF OTHER WORK IN THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE.

GN9. PROVIDE AND INSTALL CONDUITS, JUNCTION BOXES AND ALL DEVICES CONCEALED IN WALLS OR ABOVE CEILINGS FOR ALL FINISHED AREAS. ALL DEVICES INSTALLED IN UNFINISHED AREAS AND MECHANICAL/ELECTRICAL ROOMS SHALL BE SURFACE MOUNTED.

GN10. ALL PENETRATION THROUGH ALL WALLS SHALL BE SEALED WITH HILTI FIRE STOP.

GN11. PROVIDE AND INSTALL FIRE STOP MATERIAL FOR ALL SLEEVES PASSING THROUGH FLOORS AND FIRE RATED WALLS. PACK SLEEVES WITH FIRE STOP MATERIAL AFTER CABLES ARE INSTALLED. COORDINATE AND VERIFY WITH ARCHITECTURAL DRAWINGS.

GN12. COORDINATE THE EXACT LOCATION OF ALL CEILING MOUNTED DEVICES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN.

GN13. SEE POWER PLANS FOR PANELBOARD LOCATIONS AND SCHEDULES.

GN14. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.

GN15. DO NOT INSTALL WALL SWITCHES BEHIND DOOR OR OBSTRUCTED BY FURNITURE. VERIFY AND COORDINATE WITH DOOR SWING BEFORE INSTALLATION. IT IS CONTRACTOR RESPONSIBILITY TO RELOCATE ANY WALL SWITCHES OBSTRUCTED BY DOOR BEFORE FINAL PUNCH LIST.

GN16. ALL WIRING INSTALLED IN OPEN CEILING AREAS OR OTHERWISE VISIBLE FROM ANY POINT ON FLOOR (POWER WIRING, CONTROL WIRING, LOW VOLTAGE WIRING ETC.) SHALL BE INSTALLED IN CONDUITS.

GN17. WIRE: ALL 20 AMP 277V,1PH CIRCUITS ARE 1/2"C, 2#12 & #12G WITH DEDICATED NEUTRAL. HOMERUNS OVER 150 FEET ARE #10 AWG. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED ONLY IN AREA WHERE IS NOT VISIBLE (DRYWALL OR CEILING TILES).

GN18. ALL EMERGENCY LIGHTING FIXTURES ARE SHOWN HALF SHADED ON FLOOR PLAN. ALL EMERGENCY LIGHTING FIXTURES SHALL BE SUPPLIED WITH FACTORY INSTALLED EMERGENCY BATTERY TO PROVIDE MIN. 1,100 LUMENS FOR 90 MIN. COMPATIBLE WITH LIGHTING FIXTURES SHOWN ON THE FLOOR PLAN. IF FACTORY INSTALLED BATTERY IS NOT AVAILABLE PROVIDE COMPATIBLE EMERGENCY BATTERY BY BODINE OR APPROVED EQUAL WITH REMOTE TEST SWITCH AND CHARGING INDICATOR.

GN19. CONNECT EMERGENCY LIGHTING FIXTURES TO UN-SWITCHED LIGHTING CIRCUIT IN THAT AREA AHEAD OF LOCAL SWITCHING. SEE FLOOR PLAN.

GN20. ALL WIRING IS NOT SHOWN ON FLOOR PLAN. SEE DETAILS AND MANUFACTURER INSTALLATION REQUIREMENTS. WIRE TO CIRCUIT NUMBER AS SHOWN.

GN21. LOW VOLTAGE OCCUPANCY SENSORS WIRING IS NOT SHOWN ON FLOOR PLANS. SEE MANUFACTURERS WIRING DETAILS. USE WIRING SIZE PER THAT TABLE AS REQUIRED.

GN22. ALL LIGHTING CONTROLS ARE SHOWN DIAGRAMMATICALLY. PROVIDE FULLY ENGINEERED SHOP DRAWINGS PER LATEST ADOPTED MICHIGAN ENERGY CODE DONE BY LIGHTING CONTROL DISTRIBUTOR/SUPPLIER FOR APPROVAL BEFORE PURCHASING AND INSTALLATION OF LIGHTING CONTROLS.

KEY DRAWING NOTES:

1. SEE OCCUPANCY SENSORS AND SWITCHES SCHEDULE.
2. SEE SAME SHEET FOR CONTINUATION.
3. PROVIDE AND INSTALL POWER CONNECTION FOR OWNER PROVIDED SIGNAGE. SIGNAGE SHALL BE CONTROLLED VIA LIGHTING CONTROL PANEL AND PHOTO EYE. COORDINATE AND VERIFY EXACT LOCATION WITH ARCHITECTURAL.
4. PUSH BUTTON WALL POD.
5. HIGH BAY OCCUPANCY SENSOR.
6. UNSWITCHED SENSING WIRE. SEE MANUFACTURER INSTRUCTIONS AND DETAILS.
7. EMERGENCY LIGHTING INVERTER. SEE SCHEDULE AND DETAILS.

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Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
Permit Number: BLD2026-00154
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SEAL

STATE OF MICHIGAN
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No. 6501080965
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PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

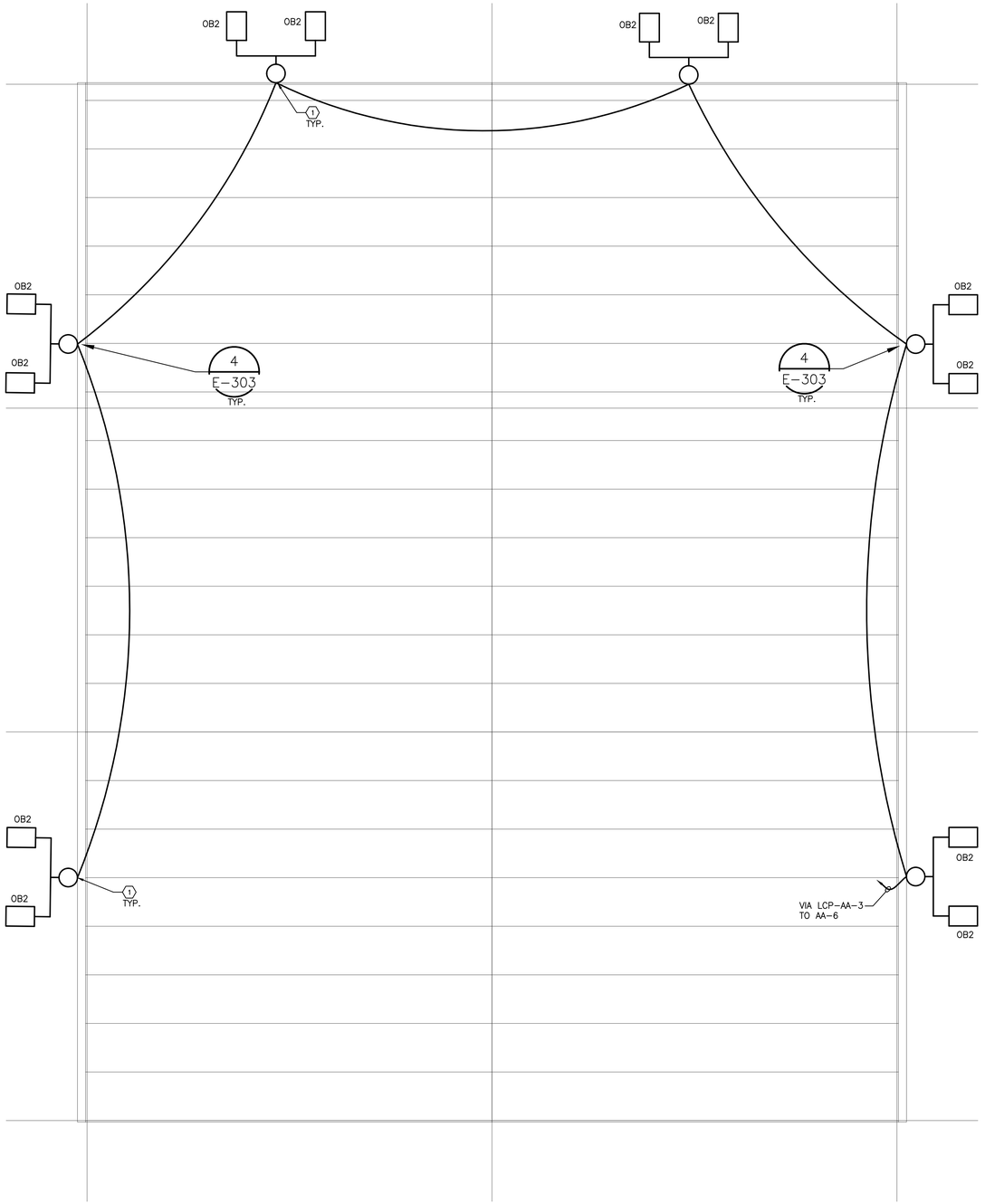
SHEET TITLE

ELECTRICAL LIGHTING FLOOR PLAN

SHEET NUMBER

EL-201

ISSUE



ELECTRICAL LIGHTING EXTERIOR BUILDING PLAN
SCALE: 1/4"=1'-0"

NORTH

GENERAL DRAWING NOTES:

GN1. SEE LEGEND AND LIGHTING FIXTURE SCHEDULE.

GN2. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OWNER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.

GN3. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WITH REQUIRE SERVICE ACCESS.

GN4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

GN5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

GN6. INSTALL NO FIXTURE FINISHED TRIMS, REFLECTORS, LAMPS, ETC. BEFORE ALL GYPSUM BOARD INSTALLATIONS HAVE BEEN COMPLETED AND PAINTED AND ALL OTHER CONSTRUCTION WORK THAT GENERATES DUST OR AIRBORN DEBRIS HAS BEEN COMPLETED. ANY FIXTURES REQUIRING FINAL CLEANING SHALL BE CLEANED USING ONLY THE FIXTURE MANUFACTURER'S RECOMMENDED METHOD(S).

GN7. FIXTURES DAMAGED BY INSTALLATION PRIOR TO THE SIGNIFICANT COMPLETION OF OTHER WORK IN THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE.

GN8. ALL PENETRATION THROUGH ALL WALLS SHALL BE SEALED WITH HILTI FIRE STOP.

GN9. PROVIDE AND INSTALL FIRE STOP MATERIAL FOR ALL SLEEVES PASSING THROUGH FLOORS AND FIRE RATED WALLS. PACK SLEEVES WITH FIRE STOP MATERIAL AFTER CABLES ARE INSTALLED. COORDINATE AND VERIFY WITH ARCHITECTURAL DRAWINGS.

GN10. SEE POWER PLANS FOR PANELBOARD LOCATIONS AND SCHEDULES.

GN11. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.

GN12. WIRE: ALL 20 AMP 277V,1PH CIRCUITS ARE 1/2"C, 2#12 & #12G WITH DEDICATED NEUTRAL. HOMERUNS OVER 150 FEET ARE #10 AWG. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED ONLY IN AREA WHERE IS NOT VISIBLE (DRYWALL OR CEILING TILES).

GN13. ALL WIRING IS NOT SHOWN ON FLOOR PLAN. SEE DETAILS AND MANUFACTURER INSTALLATION REQUIREMENTS. WIRE TO CIRCUIT NUMBER AS SHOWN.

KEY DRAWING NOTES:

1. YOKE MOUNTED LIGHTING FIXTURES ON WALL. SEE DETAIL. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT.

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SEAL



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2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

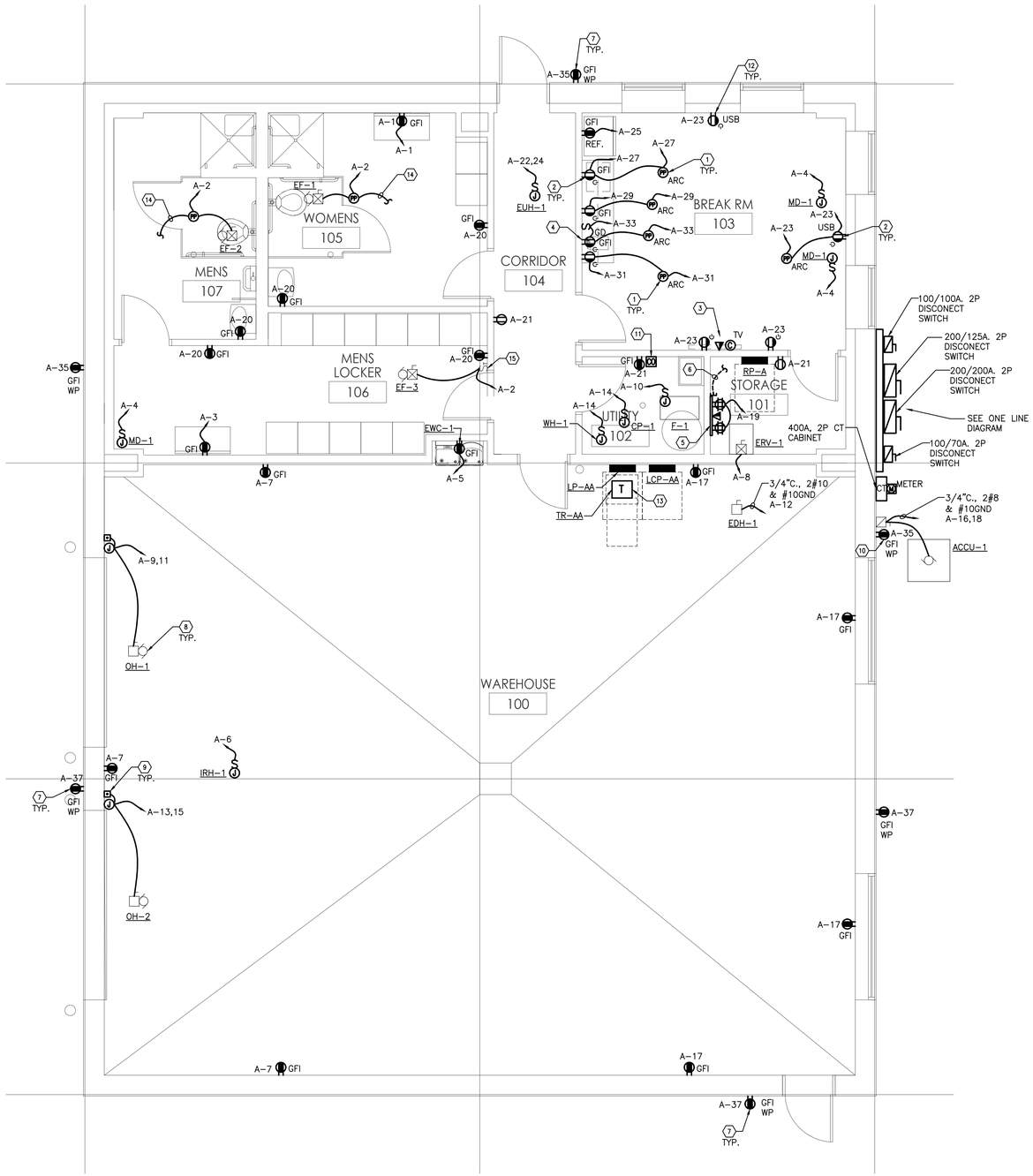
SHEET TITLE

ELECTRICAL LIGHTING EXTERIOR BUILDING PLAN

SHEET NUMBER

EL-202

ISSUE



ELECTRICAL POWER FLOOR PLAN

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

GENERAL DRAWING NOTES:

GN1. BOX DEPTH: COORDINATE WALL BOX DEPTH WITH OTHER TRADES FOR PROPER PLACEMENT DUE TO WALL COVERING THICKNESS

GN2. WIRE: ALL 20 AMP 120V,1PH AND 208V,1PH CIRCUITS ARE 1/2"C, 2#12 & #12G WITH DEDICATED NEUTRAL. HOMERUNS OVER 70 FEET ARE #10 AWG. USE OF MC CABLES PER NEC ARTICLE 330 IS PERMITTED ONLY IN AREA WHERE IS NOT VISIBLE (DRYWALL OR CEILING TILES).

GN3. CONDUIT ROUTING: CONCEAL CONDUITS IN WALLS, FLOORS OR ABOVE CEILINGS FOR NEW FINISHED AREAS.

GN4. PANEL SCHEDULES: PROVIDE NEATLY TYPED PANEL DIRECTORIES FOR ALL PANELBOARDS. DESIGNATE LOAD SERVED BY EACH CIRCUIT. REQUIRED INFORMATION SHALL BE COMPLETED FOR EACH CIRCUIT IN PANEL.

GN5. ELECTRICAL CONTRACTOR SHALL COORDINATE AND VERIFY WITH THE EQUIPMENT EXACT LOCATION OF ALL ELECTRICAL AND DATA OUTLETS INDICATED TO BE MOUNTED ON INDIVIDUAL PIECES OF EQUIPMENT. MATCH AND MATE EQUIPMENT PLUG.

GN6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION AND HEIGHT OF ALL OUTLETS W/ ARCHITECTURAL ELEVATION DRAWINGS AND TECHNOLOGY DRAWINGS PRIOR TO PROCEEDING WITH WORK. NOTIFY ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH WORK.

GN7. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. PROVIDE 3P BREAKER IF SHARING NEUTRAL. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.

GN8. SEE LEGEND AND PANELBOARD SCHEDULES.

GN9. AT THE END OF THE CONSTRUCTION BALANCE ALL PANEL PHASES AND RECIRCUIT THEM IN PANELS IF PHASE BALANCE IS MORE THAN 20%.

GN10. COORDINATE MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL TRADES. REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.

GN11. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS.

GN12. ALL PENETRATION THROUGH ALL WALLS SHALL BE SEALED WITH HILTI FIRE STOP.

GN13. PROVIDE AND INSTALL FIRE STOP MATERIAL FOR ALL SLEEVES PASSING THROUGH FLOORS AND FIRE RATED WALLS. PACK SLEEVES WITH FIRE STOP MATERIAL AFTER CABLES ARE INSTALLED. COORDINATE AND VERIFY WALLS AND FLOOR RATINGS WITH ARCHITECTURAL DRAWINGS.

GN14. REFER TO ARCHITECTURAL ELEVATIONS AND TECHNOLOGY DRAWINGS PRIOR TO ROUGHING-IN OUTLETS, CEILING MOUNTED DEVICES ETC. COORDINATE ALL MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL AND TECHNOLOGY DRAWINGS. COORDINATE THE MOUNTING HEIGHTS OF OUTLETS ABOVE COUNTER TOP, SINKS, ETC. WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.

GN15. PROVIDE AND INSTALL CONDUITS, JUNCTION BOXES AND ALL DEVICES RECESSED IN NEW BLOCK WALLS IN ALL FINISHED AREAS. ALL DEVICES INSTALLED IN UNFINISHED AREAS AND MECHANICAL/ELECTRICAL ROOMS SHALL BE SURFACE MOUNTED.

GN16. NEC: ALL WORK SHALL BE INSTALLED PER THE CURRENT ADOPTED EDITION OF THE N.E.C. AND ALL STATE AND LOCAL CODES HAVING JURISDICTION.

GN17. ALL WIRING INSTALLED IN OPEN CEILING AREAS OR OTHERWISE VISIBLE FROM ANY POINT ON FLOOR (POWER WIRING) SHALL BE INSTALLED IN CONDUITS. PAINT CONDUITS TO MATCH WALL/CEILING COLOR.

GN18. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OWNER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.

GN19. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WITH REQUIRE SERVICE ACCESS.

GN20. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

GN21. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

KEY DRAWING NOTES:

1. AUTOMATIC RECEPTACLE CONTROL ("ARC") PLUG LOAD CONTROL POWER PACK. SEE DETAILS AND MANUFACTURER INSTRUCTIONS.
2. SPLIT WIRED CONTROLLED DUPLEX RECEPTACLE WITH AUTOMATIC CONTROL. SEE DETAILS.
3. POWER AND DATA RECEPTACLE FOR WALL MOUNTED TELEVISION. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER AND ARCHITECT.
4. UNDERCOUNTER MOUNTED RECEPTACLE.
5. 3/4" X 4'-0 W X 4'-0 H FIRE RETARDANT TELEPHONE BACKBOARD BY ELECTRICAL TRADE.
6. EMPTY (2)2" PVC CONDUIT TO INCOMING TELEPHONE/DATA SERVICE LOCATION. PROVIDE PULL STRING. FIELD VERIFY EXACT LOCATION.
7. OUTDOOR GFI RECEPTACLE IN WEATHERPROOF BOX.
8. PROVIDE ELECTRICAL CONNECTION TO OVERHEAD DOOR. VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH DOOR MANUFACTURER PRIOR TO ROUGH IN. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS.
9. OVERHEAD DOOR PUSH BUTTON. COORDINATE EXACT LOCATION WITH DOOR MANUFACTURER AND OWNER.
10. WALL MOUNTED GFI RECEPTACLE IN WEATHERPROOF BOX. IT SHALL BE MAX. 25' AWAY FROM THE MECHANICAL UNIT.
11. STAND ALONE CARBON MONOXIDE DETECTOR.
12. RECEPTACLE PROVIDED WITH USB CHARGER.
13. HUNG MOUNTED TRANSFORMER.
14. LOW VOLTAGE WIRING CONNECT TO LIGHTING OCCUPANCY SENSOR.
15. EXHAUST FAN TIMER BY OTHERS, WIRED BY TECHNICIAN.

Approved For Permit
Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
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CONSULTANTS

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SEAL

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MICHAEL MASIC
ENGINEER
No. 6501060268
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PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

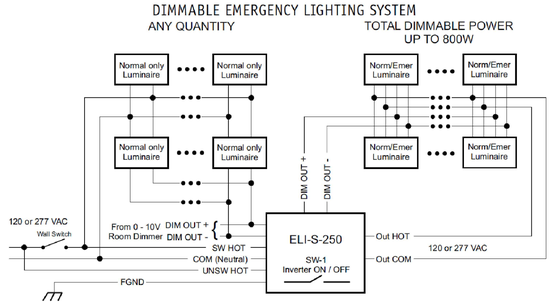
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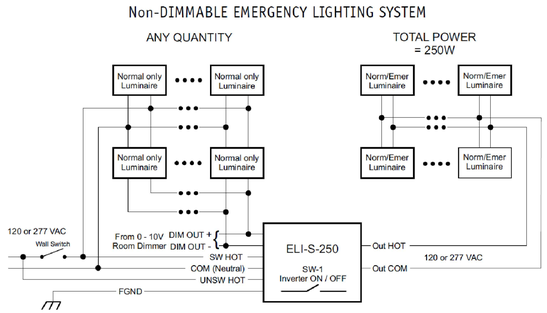
ELECTRICAL POWER FLOOR PLAN

SHEET NUMBER

EP-201

ISSUE

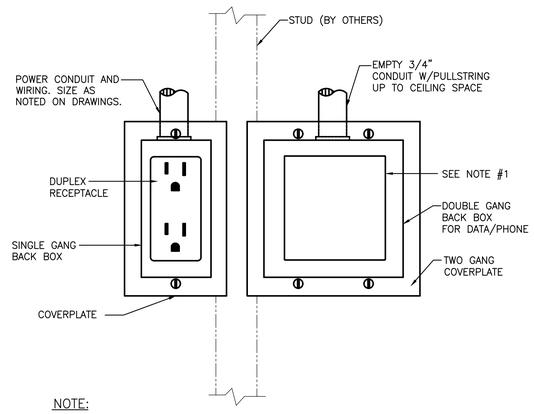




NOTES

1. REFER TO FLOOR PLANS FOR LOCATIONS AND QUANTITIES.
2. VERIFY ALL WIRING WITH MANUFACTURER INSTALLATION MANUALS AND WIRING BEFORE INSTALLATION.
3. DIAGRAM IS BASED ON EQUIPMENT MANUFACTURED BY BODINE.

8 EL — EMERGENCY LIGHTING INVERTER WIRING DIAGRAM
SCALE: NONE

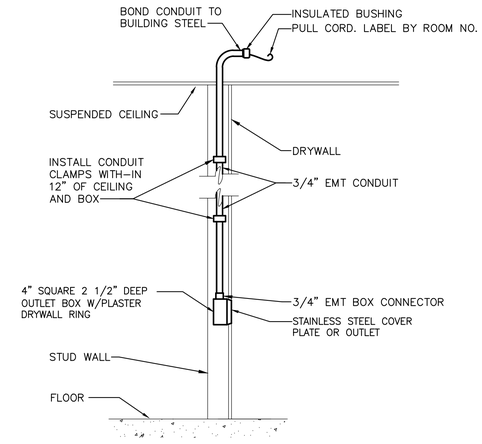


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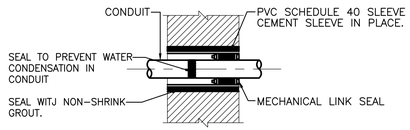
1. MOUNTING PLATES & JACKS SUPPLIED & INSTALLED BY COMMUNICATIONS CONTRACTOR. ELECTRICAL CONTRACTOR TO SUPPLY COVER PLATE.

SYMBOLS ON PLAN

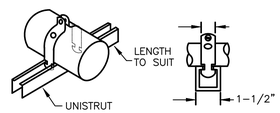
6 EP — POWER & COMMUNICATIONS DUPLEX OUTLETS DETAIL
SCALE: NONE



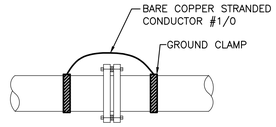
7 EP — BOX DETAIL TELEPHONE /DATA OUTLET
SCALE: NONE



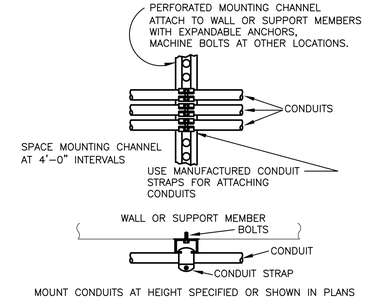
1 ALL — EXTERIOR WALL CONDUIT SLEEVE DETAIL
SCALE: NONE



2 ALL — CONDUIT SUPPORT DETAIL
SCALE: N.T.S.

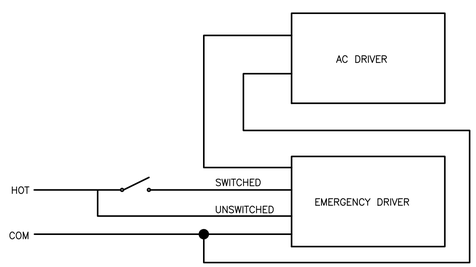


3 ALL — PIPING FLANGE GROUNDING BOND
SCALE: NONE



MOUNT CONDUITS AT HEIGHT SPECIFIED OR SHOWN IN PLANS
USE FOR SURFACE MOUNT CONDUITS.

4 ALL — CONDUIT MOUNTING DETAIL
SCALE: N.T.S.



5 EL — EMERGENCY DRIVER LIGHTING FIXTURE DETAIL
SCALE: NONE

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STATE OF ARKANSAS — ARKANSAS MARINE ENGINEER — No. 0107160008 — PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

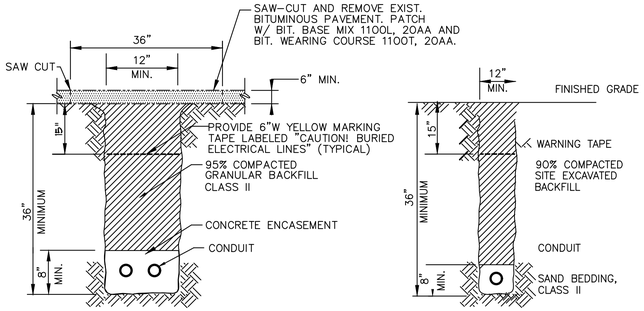
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ELECTRICAL DETAILS

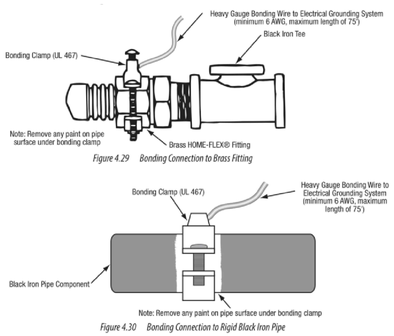
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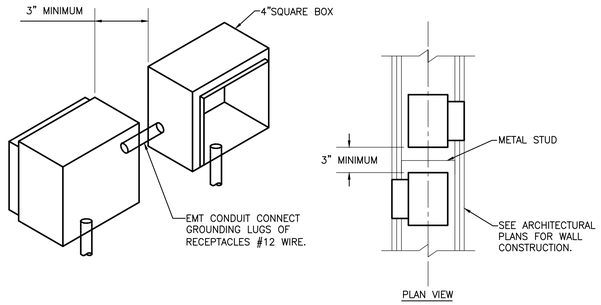
ISSUE



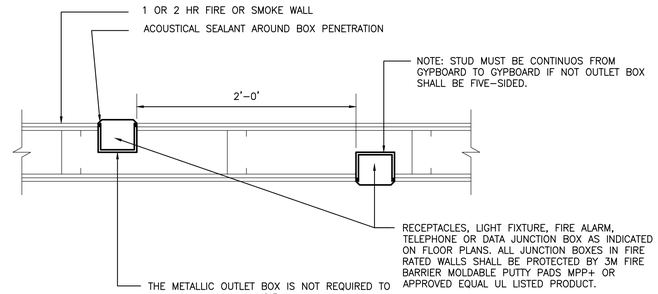
5 E104 CONDUIT TRENCH DETAIL
SCALE: NONE



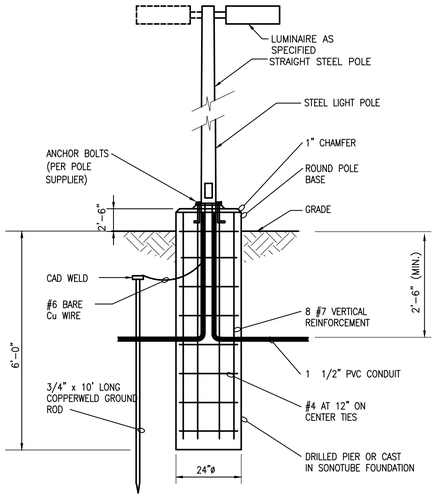
3 EP GAS CSST GROUNDING DETAIL
SCALE: NONE



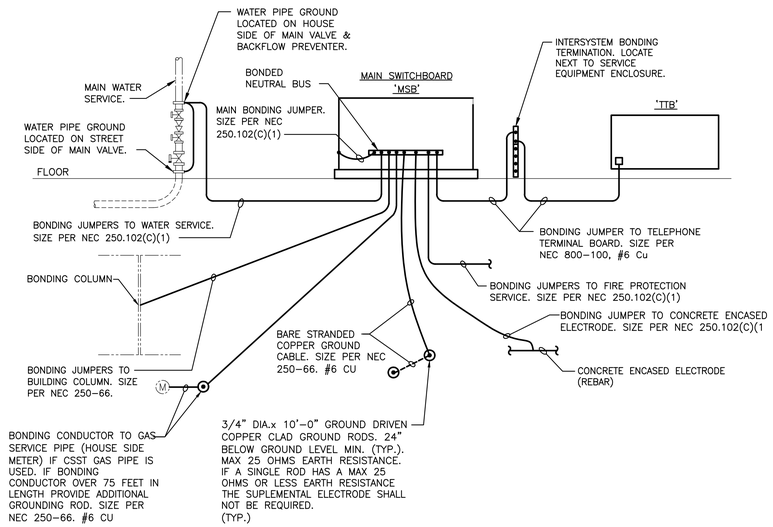
1 ALL BACK TO BACK ELECTRICAL OUTLETS FOR NON-RATED PARTITIONS
SCALE: NO SCALE



2 ALL ADJACENT ELECTRICAL BOXES IN FIRE RATED WALLS
SCALE: NO SCALE
(FOR 1 OR 2-HOUR RATED PARTITIONS)



6 E104 LIGHT POLE BASE DETAIL
SCALE: NONE



4 EP SYSTEM GROUNDING DETAIL
SCALE: NONE

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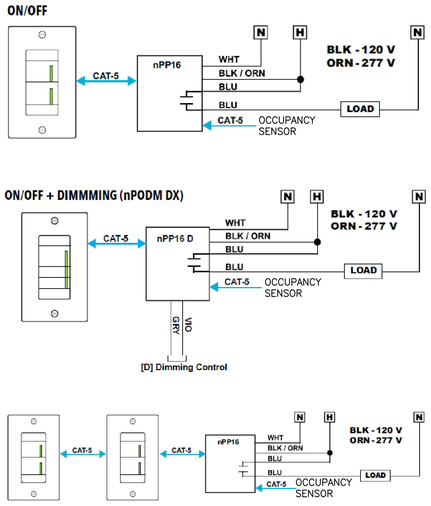
PROJECT
TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
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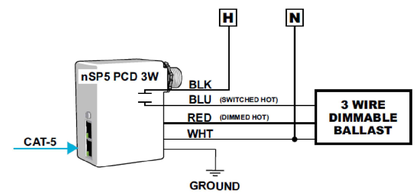
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-301

ISSUE

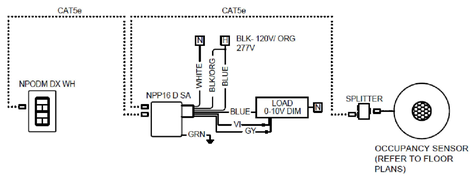


7 EL TYPICAL WALLPOD WIRING DIAGRAM
SCALE: NONE



NOTES
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2. VERIFY ALL WIRING WITH MANUFACTURER INSTALLATION MANUALS AND WIRING BEFORE INSTALLATION.
3. DIAGRAM IS BASED ON EQUIPMENT MANUFACTURED BY ACUITY nSP5 SERIES

8 EL LIGHTING RELAY PACK WIRING DIAGRAM 2 OR 3 WIRE DIMMING
SCALE: NONE



4 EL TYPICAL SINGLE ZONE CONTROL LIGHTING CONTROL WIRING DIAGRAM
SCALE: NONE

Diagram for non-dimming units

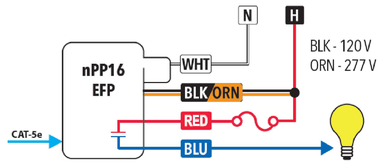
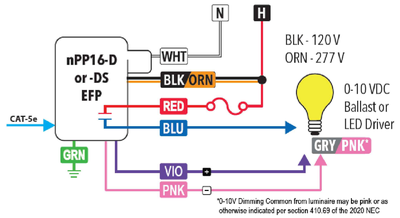
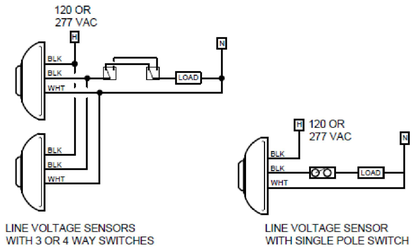


Diagram for units with a dimming option (-D or -DS suffix)

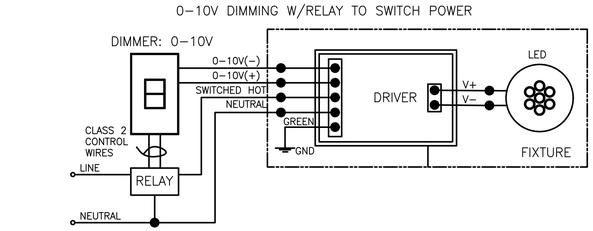


NOTES
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3. DIAGRAM IS BASED ON EQUIPMENT MANUFACTURED BY ACUITY nPP16 SERIES

5 EL LIGHTING RELAY PACK WIRING DIAGRAM
SCALE: NONE

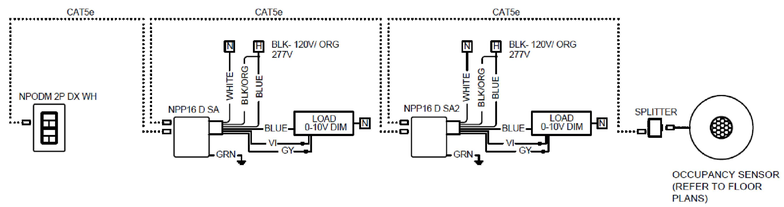


6 EL TYPICAL LINE VOLTAGE SENSORS WITH LOCAL CONTROL WIRING DIAGRAM
SCALE: NONE



1 EL 0–10V DIMMING DIAGRAM WALL MOUNTED DIMMER/OCCUPANSY SENSOR
SCALE: NONE

2 EL TYPICAL WALL SENSOR/WALL SWITCH WIRING DETAILS
SCALE: NONE



3 EL TYPICAL MULTI ZONE CONTROL LIGHTING CONTROL WIRING DIAGRAM
SCALE: NONE

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STATE OF MICHIGAN MICHIGAN MASTER ENGINEER No. 6201053006 REGISTERED PROFESSIONAL ENGINEER

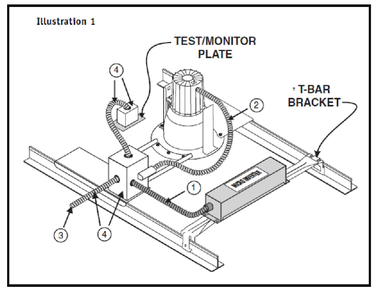
PROJECT
TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

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DRAWN BY:	CHECKED BY:
SSE	M. MASIC
PROJECT MGR:	APPROVED BY:
A. INOV	M. MASIC

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-302

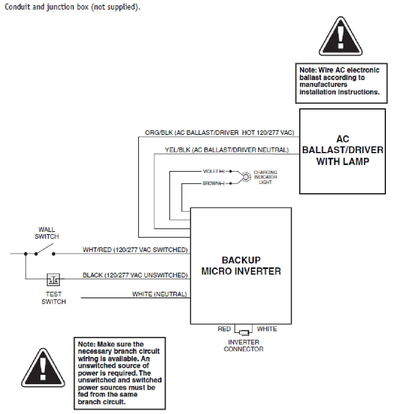
ISSUE



† The T-BAR mounting bracket assembly is sold separately and is available from the factory as an accessory kit (T-BAR-MB). Call your local distributor or the factory for complete information.

Backup Micro Inverter — No Shading – Equipment supplied by others

① – Flexible conduit (supplied) to connect ballast wires.
② – Existing conduit to run existing wires to Lamp holder.
③ – AC line in.
④ – Conduit and junction box (not supplied).

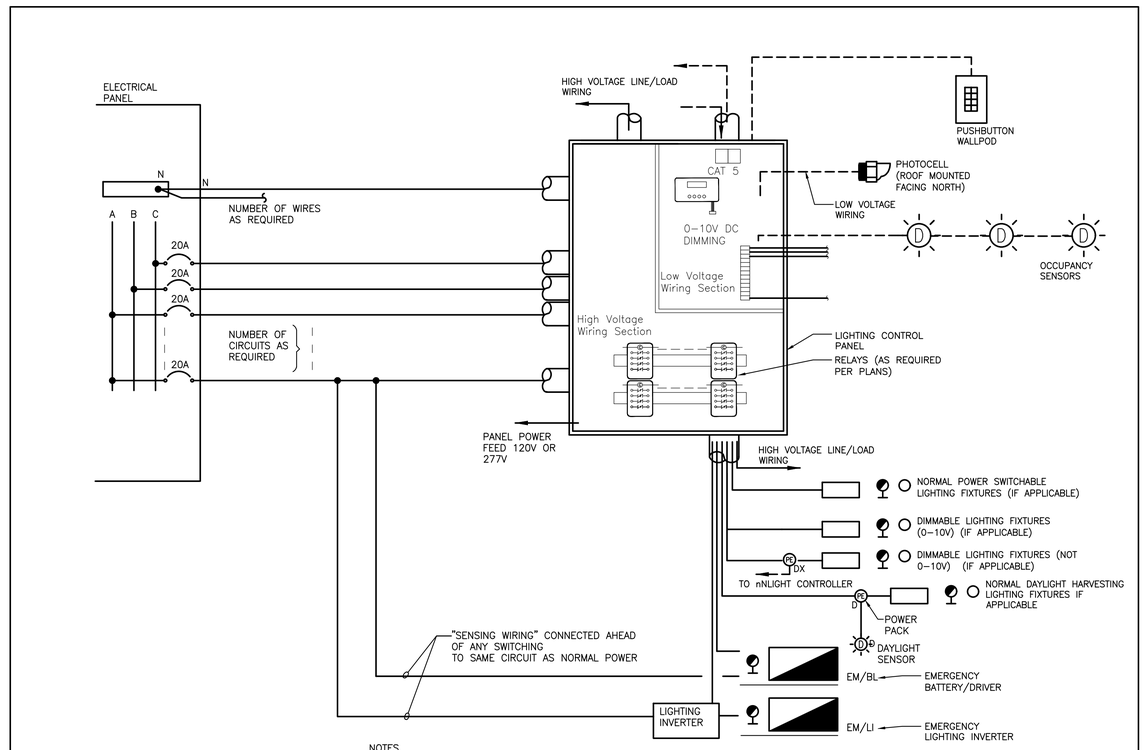


NOTES

1. REFER TO FLOOR PLANS FOR LOCATIONS AND QUANTITIES.
2. VERIFY ALL WIRING WITH MANUFACTURER INSTALLATION MANUALS AND WIRING BEFORE INSTALLATION.
3. DIAGRAM IS BASED ON EQUIPMENT MANUFACTURED BY BODINE.

3 EL EMERGENCY LIGHTING BACKUP MICRO INVERTER WIRING DIAGRAM

SCALE: NONE

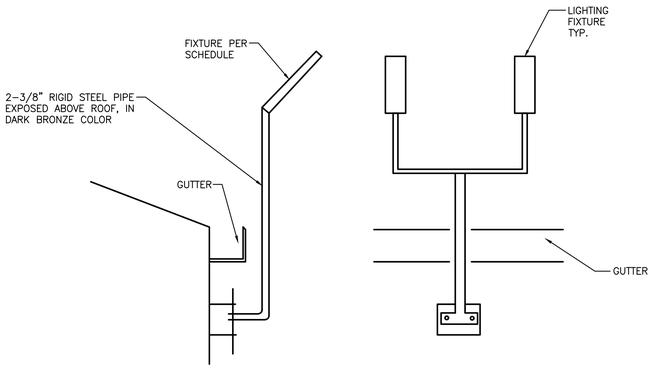


NOTES

1. INCLUDE 0–10V WIRING TO RELAY PANEL FOR DIMMING.
2. REFER TO FLOOR PLANS FOR LOCATIONS AND QUANTITIES. VERIFY LOCATION(S) WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION.
3. VERIFY ALL WIRING WITH MANUFACTURER INSTALLATION MANUALS AND WIRING BEFORE INSTALLATION.
4. DIAGRAM IS BASED ON EQUIPMENT MANUFACTURED BY ACUITY CONTROLS
5. PROVIDE DIMMING POWER PACKS COMPATIBLE WITH LIGHTING FIXTURES PROVIDED. VERIFY LIGHTING FIXTURE IS COMPATIBLE WITH DIMMING SYSTEM BEFORE INSTALLATION. PROVIDE ALL CONTROL WIRING AS REQUIRED.

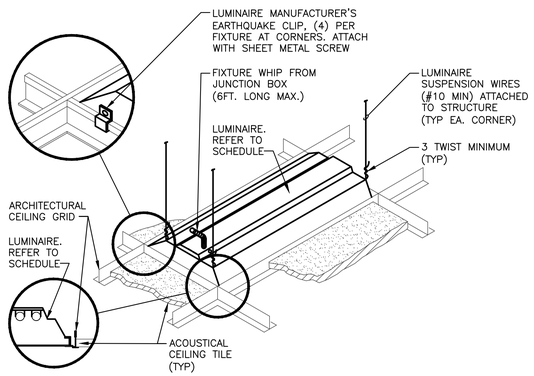
1 EL nLIGHT LIGHTING CONTROL PANEL DIAGRAM WITH EMERGENCY BALLAST/INVERTER

SCALE: NONE



4 EL–202 EXTERIOR LIGHTING DETAIL

SCALE: NO SCALE



2 EL LUMINAIRE MOUNTING–LAY–IN–CEILING

SCALE: NONE

Approved For Permit
Approved
Date: 9/21/2026
CITY OF DETROIT
Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL

STATE OF MICHIGAN — MICHAEL MARIO INVIERNO — No. 6501060005 — REGISTERED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

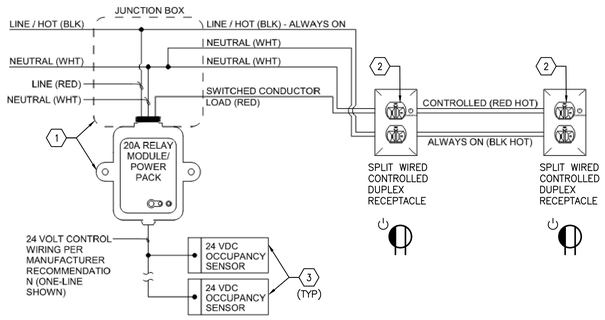
SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-303

ISSUE



NOTE: MAXIMUM NUMBER OF SENSORS PER POWER PACK MAY VARY BETWEEN MANUFACTURERS.

GENERAL NOTES FOR DETAIL #3:

GN1. LABEL EACH RECEPTACLE TO INDICATE WHICH PLUG IS "SENSOR CONTROLLED". ANY RECEPTACLES THAT ARE CONTROLLED BY AN AUTOMATIC CONTROL DEVICE MUST BE MARKED ON THE CONTROLLED RECEPTACLE OUTLET WHERE VISIBLE AFTER INSTALLATION AS STATED IN NFPA 70 ARTICLE 406.3(E).

GN2. THE TIME DELAY FOR AUTOMATIC SHUTOFF OF THE CONTROLLED RECEPTACLES SHALL BE LONGER THAN THE TIME DELAY FOR AUTOMATIC SHUTOFF OF THE SPACE LIGHTING, BUT SHALL NOT EXCEED THE APPLICABLE ASHRAE 90.1 TIME LIMITS (MAX. 20MIN.) COORDINATE TIME DELAY SETTING WITH THE LIGHTING DESIGN. WHERE THE TIME DELAY FOR THE LIGHTING SYSTEM MEETS OR EXCEEDS THE TIME LIMIT FOR CONTROLLED RECEPTACLES PER LIGHTING EXCEPTIONS, SET THE CONTROLLED RECEPTACLE TIME DELAY AT THE APPLICABLE ASHRAE 90.1 TIME LIMIT.

GN3. GROUND CONDUCTOR IS OMITTED FROM DIAGRAMS FOR SIMPLICITY.

GN4. WHERE RECEPTACLES ON A GIVEN YOKE IS SPLIT–WIRED, REMOVE THE TABS/JUMPERS BETWEEN RECEPTACLES AND CIRCUIT INDIVIDUALLY.

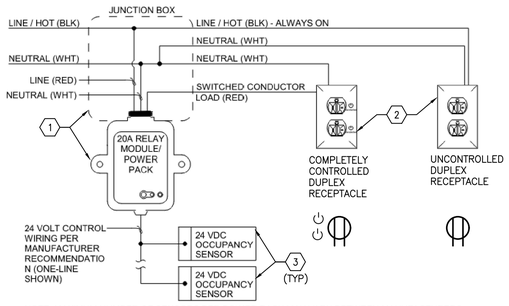
GN5. AUTOMATIC RECEPTACLE CONTROL. THE FOLLOWING SHALL BE AUTOMATICALLY CONTROLLED:
a. AT LEAST 50% OF ALL 125 V, 15 AND 20 AMP RECEPTACLES IN ALL PRIVATE OFFICES, CONFERENCE ROOMS, ROOMS USED PRIMARILY FOR PRINTING AND/OR COPYING FUNCTIONS, BREAK ROOMS, CLASSROOMS, AND INDIVIDUAL WORKSTATIONS.
b. AT LEAST 25% OF BRANCH CIRCUIT FEEDERS INSTALLED FOR MODULAR FURNITURE NOT SHOWN ON THE CONSTRUCTION DOCUMENTS.

KEY NOTES FOR DETAIL:

1. CONTROLLER AND JUNCTION BOX SHALL BE INSTALLED ABOVE CEILING.
2. WHERE SPLIT–WIRED RECEPTABLES ARE SHOWN, THE FOLLOWING OUTLETS SHALL BE CONTROLLED:
   – DUPLEX: TOP RECEPTACLE ON YOKE; REMOVE YOKE JUMPERS.
   – QUADLEX: LEFT YOKE RECEPTACLES.
3. CONTRACTOR SHALL DESIGN AND INSTALL OCCUPANCY SENSOR SYSTEM TO AVOID DEAD ZONES IN COVERAGE. COVERAGE SHALL INCLUDE THE FOOTPRINT OF THE FURNITURE AS SHOWN ON THE CONSTRUCTION DOCUMENTS PLUS 5'–0" IN ALL DIRECTIONS (OR TO THE WALL, WHICHEVER IS SHORTER). ADDITIONAL POWER PACKS MAY BE REQUIRED. OCCUPANCY SENSOR LOCATIONS SHALL BE COORDINATED WITH OTHER CEILING DEVICES.

3 EP SPLIT WIRED DUPLEX RECEPTACLE CONTROL

SCALE: NONE



NOTE: MAXIMUM NUMBER OF SENSORS PER POWER PACK MAY VARY BETWEEN MANUFACTURERS.

GENERAL NOTES FOR DETAIL #2:

GN1. LABEL EACH RECEPTACLE TO INDICATE WHICH PLUG IS "SENSOR CONTROLLED". ANY RECEPTACLES THAT ARE CONTROLLED BY AN AUTOMATIC CONTROL DEVICE MUST BE MARKED ON THE CONTROLLED RECEPTACLE OUTLET WHERE VISIBLE AFTER INSTALLATION AS STATED IN NFPA 70 ARTICLE 406.3(F).

GN2. THE TIME DELAY FOR AUTOMATIC SHUTOFF OF THE CONTROLLED RECEPTACLES SHALL BE LONGER THAN THE TIME DELAY FOR AUTOMATIC SHUTOFF OF THE SPACE LIGHTING, BUT SHALL NOT EXCEED THE APPLICABLE ASHRAE 90.1 TIME LIMITS (MAX. 20MIN.) COORDINATE TIME DELAY SETTING WITH THE LIGHTING DESIGN. WHERE THE TIME DELAY FOR THE LIGHTING SYSTEM MEETS OR EXCEEDS THE TIME LIMIT FOR CONTROLLED RECEPTACLES PER LIGHTING EXCEPTIONS, SET THE CONTROLLED RECEPTACLE TIME DELAY AT THE APPLICABLE ASHRAE 90.1 TIME LIMIT.

GN3. GROUND CONDUCTOR IS OMITTED FROM DIAGRAMS FOR SIMPLICITY.

GN4. WHERE RECEPTACLES ON A GIVEN YOKE IS SPLIT–WIRED, REMOVE THE TABS/JUMPERS BETWEEN RECEPTACLES AND CIRCUIT INDIVIDUALLY.

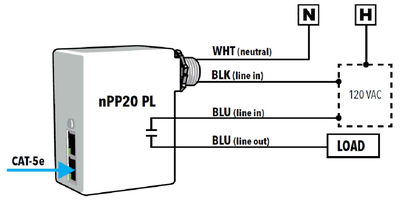
GN5. AUTOMATIC RECEPTACLE CONTROL. THE FOLLOWING SHALL BE AUTOMATICALLY CONTROLLED:
a. AT LEAST 50% OF ALL 125 V, 15 AND 20 AMP RECEPTACLES IN ALL PRIVATE OFFICES, CONFERENCE ROOMS, ROOMS USED PRIMARILY FOR PRINTING AND/OR COPYING FUNCTIONS, BREAK ROOMS, CLASSROOMS, AND INDIVIDUAL WORKSTATIONS.
b. AT LEAST 25% OF BRANCH CIRCUIT FEEDERS INSTALLED FOR MODULAR FURNITURE NOT SHOWN ON THE CONSTRUCTION DOCUMENTS.

KEY NOTES FOR DETAIL:

1. CONTROLLER AND JUNCTION BOX SHALL BE INSTALLED ABOVE CEILING.
2. EITHER SPLIT CONTROLLED RECEPTACLES SHALL BE PROVIDED WITH THE TOP RECEPTACLE CONTROLLED, OR A CONTROLLED RECEPTACLE SHALL BE LOCATED WITHIN 12 INCHES (304.8MM) OF EACH UNCONTROLLED RECEPTACLE.
3. CONTRACTOR SHALL DESIGN AND INSTALL OCCUPANCY SENSOR SYSTEM TO AVOID DEAD ZONES IN COVERAGE. COVERAGE SHALL INCLUDE THE FOOTPRINT OF THE FURNITURE AS SHOWN ON THE CONSTRUCTION DOCUMENTS PLUS 5'–0" IN ALL DIRECTIONS (OR TO THE WALL, WHICHEVER IS SHORTER). ADDITIONAL POWER PACKS MAY BE REQUIRED. OCCUPANCY SENSOR LOCATIONS SHALL BE COORDINATED WITH OTHER CEILING DEVICES.

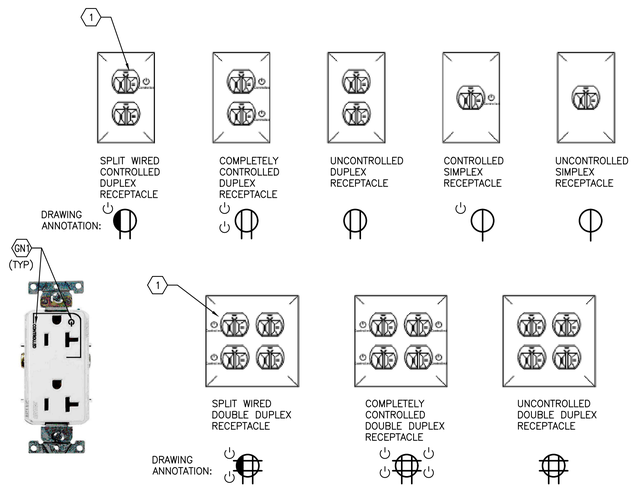
2 EP FULL RECEPTACLE CONTROL

SCALE: NONE



4 EP PLUG LOAD CONTROLS

SCALE: NONE



GENERAL NOTES FOR DETAIL #1:

GN1. LABEL EACH RECEPTACLE TO INDICATE WHICH PLUG IS "SENSOR CONTROLLED". ANY RECEPTACLES THAT ARE CONTROLLED BY AN AUTOMATIC CONTROL DEVICE MUST BE MARKED ON THE CONTROLLED RECEPTACLE OUTLET WHERE VISIBLE AFTER INSTALLATION AS STATED IN NFPA 70 ARTICLE 406.3(F).

GN2. THE TIME DELAY FOR AUTOMATIC SHUTOFF OF THE CONTROLLED RECEPTACLES SHALL BE LONGER THAN THE TIME DELAY FOR AUTOMATIC SHUTOFF OF THE SPACE LIGHTING, BUT SHALL NOT EXCEED THE APPLICABLE ASHRAE 90.1 TIME LIMITS (MAX. 20MIN.) COORDINATE TIME DELAY SETTING WITH THE LIGHTING DESIGN. WHERE THE TIME DELAY FOR THE LIGHTING SYSTEM MEETS OR EXCEEDS THE TIME LIMIT FOR CONTROLLED RECEPTACLES PER LIGHTING EXCEPTIONS, SET THE CONTROLLED RECEPTACLE TIME DELAY AT THE APPLICABLE ASHRAE 90.1 TIME LIMIT.

GN3. GROUND CONDUCTOR IS OMITTED FROM DIAGRAMS FOR SIMPLICITY.

GN4. WHERE RECEPTACLES ON A GIVEN YOKE IS SPLIT–WIRED, REMOVE THE TABS/JUMPERS BETWEEN RECEPTACLES AND CIRCUIT INDIVIDUALLY.

GN5. AUTOMATIC RECEPTACLE CONTROL. THE FOLLOWING SHALL BE AUTOMATICALLY CONTROLLED:
a. AT LEAST 50% OF ALL 125 V, 15 AND 20 AMP RECEPTACLES IN ALL PRIVATE OFFICES, CONFERENCE ROOMS, ROOMS USED PRIMARILY FOR PRINTING AND/OR COPYING FUNCTIONS, BREAK ROOMS, CLASSROOMS, AND INDIVIDUAL WORKSTATIONS.
b. AT LEAST 25% OF BRANCH CIRCUIT FEEDERS INSTALLED FOR MODULAR FURNITURE NOT SHOWN ON THE CONSTRUCTION DOCUMENTS.

KEY NOTES FOR DETAIL:

1. WHERE SPLIT–WIRED RECEPTABLES ARE SHOWN, THE FOLLOWING OUTLETS SHALL BE CONTROLLED:
   – DUPLEX: TOP RECEPTACLE ON YOKE; REMOVE YOKE JUMPERS.
   – QUADLEX: LEFT YOKE RECEPTACLES.

1 EP RECEPTACLE CONTROL SCHEMES

SCALE: NONE

Approved For Permit
Approved
Date: 9/21/2026
CITY OF DETROIT
Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL



PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-304

ISSUE

ELECTRICAL SPECIFICATIONS

16000 – GENERAL ELECTRICAL REQUIREMENTS

A. The contract form, the general conditions, the supplementary general conditions, the special conditions, the instructions to bidders shall form an integral part of this section of the specifications.

16010 – WORK INCLUDED

A. Electrical contractor shall provide all items, articles, materials, operations or methods mentioned, listed, or scheduled on drawings or in these specifications including all labor, materials, equipment, and incidentals necessarily required for the complete and proper operation of all systems installed under this contract.

B. The installation of all products, systems, components shall be made so that all parts function together as a workable system, complete with all accessories necessary for proper operation. When installation is complete, all equipment shall be operative and in proper adjustment.

C. All work shall be performed in conformity with the acceptable trade practices so as to contribute to efficiency of operations, minimum maintenance, maximum accessibility and sightliness.

D. To accomplish these results, the electrical contractor shall consult the architect and engineer's plans covering the various other trades work, the field layouts of the contractors for these other trades, and their approved shop drawing. Coordinate the installation of electrical equipment with the work of other trades to avoid interferences and to insure proper operation and proper clearance about installed equipment.

E. Contractor shall examine the site prior to submittal of bids to familiarize himself with field conditions which may impact his conformance to the contract documents work to be performed. Submittal of bids attest to this contractor's knowledge of site conditions and his ability to perform his work as called for in these contract documents. This contractor shall assume full and complete responsibility for conclusions drawn from site examination. Requests for additional fees to complete required electrical work due to lack of knowledge of existing field conditions will not be accepted.

F. Where active electric or other services are encountered during the performance of this contract, the electrical contractor shall protect, brace, and support them as required to maintain their proper operation. Do not prevent, interrupt, or disturb operation of existing services that are to remain. Relocate existing services as required, with owner's approval.

G. These specifications and accompanying drawings are intended to describe and provide for finished work. They are intended to be cooperative, and what is called for by either shall be as binding as if called for by both. The Contractor shall understand that the work herein described shall be complete in every detail.

H. The Drawings are not intended to be scaled for rough–in measurements nor to serve as shop drawings. Field measurements necessary for ordering materials and fitting the installation to the building construction and arrangement shall be taken by the Contractor. Electrical Contractor shall check latest Architectural drawings and locate light switches where door swings are different from electrical drawings.

I. Where job conditions require reasonable changes in equipment locations and arrangement, such changes shall be made without extra cost to the Owner, if requested before work is installed.

J. Electrical Contractor shall cooperate with all other Contractors and Subcontractors performing work on this project as necessary to achieve a complete, neatly fitted installation for each condition. To that end, Contractor shall consult the Drawings and Specifications for all trades involved to determine nature and extent of work specified in other Sections which adjoins or attaches to his work. Cost of repairs of alterations of work in place made necessary by failure to observe said requirements shall be paid for by Contractor so failing. (See also Articles above and provisions of GENERAL CONDITIONS concerning jurisdictions.)

K. Electrical Contractor shall confer with other Contractors and Subcontractors at the site to coordinate his work with theirs in view of job conditions to the extent that interferences may be eliminated and that maximum head room and clearance may be obtained. In the event that interferences develop, the Owner's Engineer's decision will be final as to which trade shall relocate its work, and no additional compensation will be allowed for the moving of conduit or equipment to clear such interferences.

L. Where bulky equipment cannot be delivered or installed without unduly delaying concrete or masonry work, Contractor shall arrange for leaving openings in floors, walls or roofs, as necessary for installation. He also shall arrange for the subsequent closing of the openings. Arrangements for and closures of the openings shall be subject to Owner's representative's approval and all costs therefore shall be paid by Contractor requiring such provisions.

M. Electrical Contractor shall "build in" his work and shall be responsible for holding his work in place while concrete is being poured and while walls are being laid. He shall have competent men available at all times to see that his work is well in advance of the Mason Contractor and that his work is coordinated with other trades.

N. Any and all cutting of the building made necessary by the improper location of this work, or by the failure to build such work into the structure, shall be done at the expense of the Electrical Contractor.

O. No cutting or burning of holes through beams or other structural members shall be done without the specific permission of the Architect and the Owner's Engineer.

P. All openings in walls, ceilings, or floors made by the Electrical Contractor shall be neatly patched by him to comply with the rating of the wall, after other work is done. At the discretion of the Architect, cutting and patching of work in place shall be done by the Contractor whose work is impaired, but the cost of such work shall be paid by the Electrical Contractor.

Q. All measurements necessary for the proper installation of materials or apparatus shall be taken in the field. The Contractor will be held responsible for the correct fit of work installed.

R. Electrical Contractor will be held responsible for all damage to the work installed by others that may be caused by his work or by anyone employed by him. Patching and replacing of damaged work will be done by the trade whose work was damaged and as directed by the Owner's representative, but the cost of same shall be paid by the Electrical Contractor.

S. Electrical Contractor shall expedite his work in order to conform to the dates outlined in the General Contractor's progress schedule and where necessary shall work overtime at his own expense so that all work may be completed within the time originally outlined. See TIME OF COMPLETION AND GENERAL CONDITIONS for additional scheduling requirements.

T. Responsibility for care and protection of electrical work rests with the Electrical Contractor until it has been tested and accepted. After delivery, before and after installation, protect equipment and materials against theft, injury or damage from all causes.

U. For extra electrical work which may be proposed, this Contractor shall furnish to the Engineer an itemized breakdown of the estimated cost of materials and labor required to complete said work. The Electrical Contractor shall proceed only after receiving a written order from the Engineer establishing the agreed price and describing the work to be done.

V. All electrical circuits shall be tested as soon as conductors are installed, and final tests shall be made in presence of Owner's Engineers when all work is complete. If required circuits are not properly controlled and insulated, Electrical Contractor shall make necessary changes and repairs at no expense to the Owner. All electric motors shall be checked for proper rotation and phasing.

W. Electrical contractor shall provide 3" high concrete housekeeping pad for mounting of all free–standing electrical equipment, I.E. distribution panels, motor control centers, transformers, etc.

16030 – RULES, CODES, AND STANDARDS

A. All work shall be performed in strict conformance with all applicable rules, codes and regulations of local, state, and federal government, and other authorities having lawful jurisdiction.

B. All electrical work and equipment shall conform to the following regulations and codes:

1. The National Electrical Code, latest adopted edition.
2. All Michigan State code amendments

C. All installed equipment shall bear the UL seal of approval for its intended purpose.

D. Where jurisdictional rules require the assistance of workers of the electrical trade, in the handling of equipment furnished by others or in the work of other trades, this Contractor shall provide such required assistance.

E. Where the requirements of these contract documents are in conflict with the codes and regulations of governing agencies, the most stringent shall apply.

16040 – EQUIPMENT SUBSTITUTIONS

A. Where the Contractor proposes to use an item of equipment other than that specified or detailed on the drawings, which requires any redesign of the structure, partitions, foundations, piping, wiring or any other part of the mechanical, electrical or architectural layouts, all such redesign and all new drawings and detailing required thereof shall be prepared by the Contractor at his own expense and only with approval of the Architects/Engineer. The contractor shall also pay any additional costs of the work resulting from the redesign.

B. Where such approved deviation requires a different quantity and arrangement of ductwork, piping, wiring conduit, and equipment from that specified or indicated on the drawings, the Contractor shall furnish and install any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring, conduit, etc., and any other additional equipment required by the system, at no additional cost to the Owner.

C. The name or make of any article, device, material, form of construction, fixture, etc., named in this specification, or on drawings whether or not the words, "or Owner approved equal" are used shall be known as a "standard".

D. Where two or more standards are named together, bidder shall base his proposal upon any of the standards and shall list this standard in the space provided on his proposal form. If the bidder fails to name a selected standard, it shall be assumed he is consenting to have the Owner make a selection.

E. Bidders may submit for consideration, substitutions for the standards specified, provided:

1. Name the substitute bid on, and the addition or deductions they will make to or from their bid, provided such substitute is approved by the Owner's Engineer.
2. Complete specifications and descriptions of the substitutes bid upon shall be furnished to the Owner's Engineer prior to the award of the Contract.

F. If the bidder names no substitute, the standards specified shall be used. No substitutes will be allowed after the award of the Contract, except with the approval of the Owner's Engineer.

G. In all cases where the choice of more than one make or style of article or material is specified, the final selection of the make or style rests with the Owner. Where the Contractor will require an adjustment in his bid due to such selection by Owner, he shall be required to state in his bid the make or style of the article or material specified upon which his bid is based, and the amount to be added or deducted from his bid if other styles or materials specified are selected by owner. In the absence of such statement in the bid form, the Owner may select any make or style without incurring any price change.

16050 – MINOR DEVIATIONS

A. Dimensions and ratings of equipment herein specified or indicated on the Drawings are intended to establish the desired outlines and characteristics of such equipment. Minor deviations will be permitted to allow manufacturers specified to bid on their nearest stock equipment.

B. Manufacturers catalog or model number mentioned in the Specifications or indicated on the Drawings are intended to be used as guides and shall not be interpreted as taking precedence over specific ratings or duties called for or shown, which modify stipulations in such catalogs. In all cases, the manufacturer shall verify the duties specified with the particular characteristics of the equipment he intends to offer for approval, and shall offer only items which comply with Specification requirements.

16060 – SHOP DRAWINGS

A. Complete shop drawings for all electrical manufactured items shall be submitted to the owner's representative for approval before fabrication of the items. Shop drawings shall indicate name of project and name of Contractor.

B. Contractor shall thoroughly check all shop drawings with regards to measurements, sizes of equipment, materials and details to satisfy himself that they conform with the intent of Engineer's drawings and specifications. Drawings found to be inaccurate or otherwise in error are to be returned to the Subcontractors for correction before submitting same to the Engineers.

C. The checking and approving of shop drawings by the Engineers shall be construed as assisting, but not relieving, the Contractor from the responsibility for errors and/or omissions which may exist thereon. Where errors or omissions are discovered at a later date, they must accordingly be made good by the Contractor at no additional cost to owner.

D. It is the responsibility of the Contractor to submit shop drawings which are in conformance with the design drawings. This Contractor shall coordinate equipment specified or called for under Division 15 sections as to required supply voltages (i.e., motors). Where conflict arises at later date due to inconsistencies in electrical/mechanical drawings concerning the installation of equipment covered by approved shop drawings, it shall be the responsibility of this Contractor to provide all necessary equipment, materials, and labor to supply the necessary electrical service for proper operation of supplied equipment at no additional cost to Owner.

16080 – PACKAGE EQUIPMENT

A. "Package Equipment" shall be defined as Mechanical, Architectural, Civil, or other Trades equipment and which is specified in other Divisions of this Specification and which shall be furnished and installed complete with all associated electrical components by those trades.

B. Package Equipment shall include control wiring, control device, fused switch type or circuit breaker disconnecting device, starters, control transformers with secondaries as specified by this Division, interlocks, relays, conduit, wire, terminal blocks, wiring and device identification, etc., for integral as well as remotely located devices to leave ready for operation except for a single incoming power service.

C. Any special work to be provided under this Division of the Specifications outside the definition of package equipment shall be noted on the Contract Drawings accompanying these Specifications or in the Package Equipment listed hereinafter.

D. Package Equipment as specified herein shall include but not be limited to the following:

1. Mechanical equipment
2. Security equipment

16110 – CONDUIT

A. All conduit shall conform to the following regulatory requirements:

1. Rigid steel conduit ANSI C80.1
2. Intermediate metal conduit ANSI C80.6
3. Electrical metallic tubing ANSI C80.3
4. Rigid nonmetallic conduit NEMA TC2, Schedule 40

B. Minimum conduit size shall be 1/2".

C. Conduit Uses Shall Be As Follows:

1. Outdoor exposed: Use rigid galvanized steel conduit or intermediate metal conduit.
2. Indoor office or finished area: use electrical metallic tubing. Flexible metallic tubing may be used in ceiling spaces for lighting fixture final connection (maximum 6' length). EMT, MC cable may be used – 15' max. length – use EMT for home runs to room area.
3. Indoor work areas: Use rigid galvanized steel conduit.
4. Conduit in slab or below floor slab: use rigid nonmetallic conduit.
5. Final connections to vibrating equipment shall be made using flexible steel conduit (maximum 3 ft. length), use liquid – tight flexible metal ("sealtite") or non metallic conduit in wet or damp locations.
6. All home runs shall be in conduit. No flexible conduit of any type allowed for home runs.

D. Indoors Wiring Methods As Follows:

1. Connection to vibrating equipment (including transformers and hydraulic, pneumatic, electric solenoid or motor driven equipment): Flexible metal conduit, except in wet or damp locations use liquid tight flexible metal conduit.
2. Use MC cable and Electrical Non–metallic Tubing (ENT) in applications allowed by NFPA 70.
3. Damp or Wet Locations: PVC conduit.
4. Exposed: Rigid metallic conduit to 8'–0" A.F.F., EMT above 8'–0" A.F.F.
5. Concealed: Electrical metallic tubing.
6. Boxes and Enclosures: NEMA 250, Type 1, except in damp or wet locations use NEMA 250, Type 4, cast aluminum.
7. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.
8. Conceal conduit and electrical metallic tubing, unless otherwise indicated, within finished walls, ceilings, and floors.

E. Use raceway fittings compatible with raceway and suitable for use and location. Use threaded rigid steel conduit fittings, unless otherwise indicated. For EMT use set screw type, steel only.

F. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.

G. Join raceways with fittings designed and approved for the purpose and make joints right. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight. Use insulating bushings to protect conductors.

H. Install pull wires in empty raceways. Use No. 14 AWG zinc–coated steel or monofilament plastic line having not less than 200–lb (90–kg) tensile strength. Leave not less than 24 inches of slack pull wire at each end of the conduit.

I. Stub–up Connections: Extend conductors to equipment with rigid steel conduit; flexible metal conduit may be used 6 inches above the floor (Maximum 6' length).

J. Bond all conduit installations per N.E.C., install separate grounding conductor in all PVC and flexible metal conduit runs.

K. Where conduits are run below grade, electrical contractor shall place a detectable warning tape above the entire length of the conduit run. Tape shall be run at 6" below finish grade. Detectable warning tape shall be acid – and alkali – resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6" (150mm) wide, 4 mils (0.1mm) thick, continuously inscribed with a description of utility with metallic core encased with a protective jacket for corrosion protection, detectable by a metal detector when tape is buried up to 30 inches (750mm) deep, colored as follows:

RED – Electric
YELLOW – Gas, oil, steam, and dangerous materials
ORANGE – Telephone and other communications

M. Acceptable manufacturers of conduit and conduit fittings shall be as follows:

1. Steel Conduit, Rigid and Intermediate:

   Allied
   Midwest
   Republic
   Triangle

2. Steel Conduit, Electrical Metal Tubing:

   Allied
   Midwest
   Republic
   Triangle

3. Flexible Metal Conduit, Liquid Tight:

   Electri–Flex
   Sealtite–Anaconda

4. Flexible Metal Conduit:
   Acme
   American Metal Moulding
   Triangle

5. Conduit Fittings – Conduit Manufacturers listed for conduits heretofore are acceptable for fittings, in addition to the following:

   For EMT use set screw type – Steel Only
   Crouse–Hinds
   Hubbell
   O.Z./Gedney/Electric Co.
   Thomas & Betts

   Conduit and Outlet Boxes:
6. Arrow–Hart
   Bryant
   Crouse–Hinds
   Hubbell
   Thomas & Betts
   Appleton

N. Size of Bends: Bends of rigid conduit shall be made so that the conduit will not be damaged and the internal diameter of the conduit will not be effectively reduced. The radius of the curve of the inner edge of any field bend shall not be less than shown in Table below:

Conduit Size Inches	Radius of Conduit Bends Inches
3/4"	5
1	6
1 1/4"	8
1 1/2"	10
2	12
2 1/2"	15
3 1/2"	18
4"	24

O. Number of Bends: A run of conduit shall not contain more than the equivalent of four quarter bends (360 degree total).

16120 – WIRE AND CABLE

A. Building wire and cable shall be minimum No. 12 AWG copper conductor for power and lighting circuits, control circuits minimum No. 14 AWG.

B. Use wire rated 600v insulation type for use as follows:

1. Power and lighting – THHN/THWN
2. Control – THHN/THWN
3. Control Panels – THHN/THWN/MTW

C. Acceptable Manufacturers, building wire and cable:

1. Okonite
2. Pirelli
3. Rome
4. Triangle

D. Acceptable Manufacturers, Wire Label:

1. Brady
2. Westline

E. Acceptable Manufacturer, Tape:

1. 3–M

F. Acceptable Manufacturers, Lug and Wire Connectors:

1. Buchanen
2. Burndy
3. O.Z./Gedney Electric Co.
4. Thomas & Betts

G. Connectors and Splices: Wiring connectors of size, ampacity rating, material, and type and class for application and for service indicated

H. Twisted–Pair Plenum: 7–strand, tinned–copper conductors (size per plan drawings); Teflon insulation; overall aluminum/polyester shield and No. 22 AWG tinned–copper drain wire; Teflon jacket; suitable for use in air–handling spaces.

I. Install wires and cables according to the NECA's "Standard of Installation".

J. Wiring at Outlets: Install with at least 12 inches of slack conductor at each outlet.

K. Where multiple conductors are installed in common conduit they shall be installed in a single pull. Use cable pulling lubricants as necessary and do not exceed manufacturer's pulling tension to avoid damage to insulation.

L. Control wiring:
All control wiring shall be red
All wires from other power sources shall be yellow
All DC wiring shall be blue

O. Run separate grounding conductor with all circuits.

16150 – SAFETY DISCONNECT SWITCHES

A. Provide and install all required fusible or non–fusible disconnect switches shown on the drawings. All switches shall be heavy duty type in a NEMA 1 enclosure when mounted indoors, or a NEMA 3R enclosure, when mounted outdoors. Switches shall be quick–make, quick–break with a mechanical dual cover interlock.

B. Acceptable Manufacturers of Safety Disconnect Switches Shall Be as Follows:

1. Square D
2. Siemens – I.T.E.

16170 – MOTORS

A. All motors shall be provided by other trades unless otherwise noted.

16210 – PANELBOARDS

A. Panelboards shall conform to the latest NEMA, UL and NEC standards and the following ratings and data.

B. Shall be dead front type with surface mounted galvanized steel cabinet, prime coated, with an internal assembly of circuit breakers. Trims shall have hinged and locked doors with glass or heavy plastic covered circuit directories to also indicate voltage, phase, and capacity as indicated on drawing. All locks shall be keyed alike. Boxes shall be galvanized, and front assembly shall be painted with a prime and finish coat of manufacturer's standard finish. Panels shall have main lugs or main circuit breaker as indicated on drawings.

C. Circuit breakers shall be molded plastic case type, AC rated, bolt on, quick–make, quick–break, with trip free common operating handle, position indication, and common trip for 2 and 3 pole circuit breakers from thermal–magnetic trip device. Trip ratings and number of poles shall be as indicated on the drawings

D. Panelboards shall be UL listed. Main bus bars shall extend the full height of the enclosure being provided regardless of branch circuit positions being called for on the schedules.

E. Panelboard directories shall designate the lighting fixtures, etc. controlled by each branch circuit in the panel. The required information shall be neatly typewritten on directories in each panel circuit.

F. Acceptable manufacturers of panelboards are as follows:

1. Square D
2. Siemens – I.T.E.
3. GE

16400 – DRY TYPE TRANSFORMERS

A. Dry Type Transformers: ANSI/NEMA ST 20; factory–assembled, air cooled dry type transformers; ratings as shown on the Drawings.

B. Insulation system and average winding temperature rise for rated KVA as follows:

Rating Class Rise (degree C)
1–15 185 80 [115]
16–500 220 80 [115] (150)

C. Mounting: Transformers 75 KVA and less shall be suitable for wall, floor, or trapeze mounting; transformers larger than 75 KVA shall be suitable for floor or trapeze mounting.

D. Winding Taps, Transformers 15 KVA and Larger: ANSI/NEMA ST 20.

E. Enclosure: ANSI/NEMA ST 20; Type 1. Provide lifting eyes or brackets.

F. Ground core and coil assembly to enclosure by means of a visible flexible copper grounding strap.

G. Nameplate: Include transformer connection data and overload capacity based on rated allowable temperature rise.

H. Acceptable manufacturers of dry type transformers will be as follows:

1. Square D
2. Heavy–Duty

I. Install transformer on 3" high concrete housekeeping pad. Coordinate housekeeping pad installation with architectural trades.

Approved For Permit
Approved
Date: 9/21/2026
City of Detroit – Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL

STATE OF MICHIGAN – MICHAEL MASIC – ENGINEER – No. 6001198268 – PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

ELECTRICAL SPECIFICATIONS

SHEET NUMBER	ISSUE
E-400	

PLUMBING PIPE AND FITTING SPECIFICATIONS

A. SOIL, WASTE, VENTS, STORM AND CONDENSATE DRAINS:

1. IN BUILDING BELOW GRADE, USE PVC SANITARY PIPING. PIPE AND FITTINGS SHALL BEAR NSF SEAL OF APPROVAL.
2. IN BUILDING ABOVE GRADE, USE HUBLESS CAST-IRON SOIL PIPE AND FITTINGS. USE PVC ONLY IN NON PLENUM APPLICATIONS AND IF APPROVED BY OWNER AND SOUND ISOLATED IN CHASES.

INSTALL SOIL AND WASTE DRAINAGE AND VENT PIPING AT THE FOLLOWING MINIMUM SLOPES, UNLESS OTHERWISE INDICATED:

1. BUILDING SANITARY DRAIN: 2 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING 2-1/2" AND SMALLER; 1 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING 3"-6" ; 0.5 PERCENT FOR 8" AND LARGER
2. HORIZONTAL SANITARY DRAINAGE PIPING: 2 PERCENT DOWNWARD IN DIRECTION OF FLOW.
3. VENT PIPING: 1 PERCENT DOWN TOWARD VERTICAL FIXTURE VENT OR TOWARD VENT STACK.

INSTALL STORM DRAINAGE PIPING AT THE FOLLOWING MINIMUM SLOPES, UNLESS OTHERWISE INDICATED:

1. BUILDING STORM DRAIN: 1 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 3 (DN 80) AND SMALLER; 1 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 4 (DN 100) AND LARGER.
2. HORIZONTAL STORM-DRAINAGE PIPING: 2 PERCENT DOWNWARD IN DIRECTION OF FLOW.

B. DOMESTIC WATER PIPING (ABOVE GRADE):

1. HOT, COLD AND HOT WATER RETURN;
   a) TYPE "L" HARD COPPER TUBE CONFORMING TO ASTM B88 AND BEAR MADE IN USA LABEL. FITTINGS: WROUGHT COPPER, SOLDER-SWEAT TYPE CONFORMING TO ANSI B16.21&22. USE DIELECTRIC ADAPTERS WHERE COPPER TUBE CONNECTS TO FERROUS PIPE. JOINING: SOLDER CONNECTION, COMPLYING WITH COPPER DEVELOPMENT ASSOCIATION, INC; COPPER TUBE HANDBOOK, TABLE 11. 95-5 Sb LEAD-FREE SOLDER OR SILFOS.
   b) APPROVED ALTERNATE CPVC PIPING FOR MAIN WATER LINES. INSTALL PER MANUFACTURER RECOMMENDATIONS AND ALL APPLICABLE CODES.
   c) APPROVED ALTERNATE PEX TUBING AND FITTINGS FOR BRANCHES. INSTALL PER MANUFACTURER RECOMMENDATIONS AND ALL APPLICABLE CODES.

C. NATURAL GAS PIPING:

1. IN BUILDING, ABOVE AND BELOW GRADE; ASTM A-120 OR A-53 SCHEDULE 40 BLACK STEEL THREADED PIPE 2" AND LESS WITH BLACK MALLEABLE IRON SCREWED FITTINGS CONFORMING TO ANSI-B16.3. PROVIDE 5 MIL POLYETHYLENE WRAP WHEN APPLIED BELOW GRADE. 2½"AND LARGER SHALL BE WELDED. GAS PIPING BELOW GRADE ENCASED IN VENTED CONDUIT PER IGFC 404.14.
2. OUTSIDE BUILDING, BELOW GRADE: USE HDPE GAS PIPE WITH BUTT FUSION JOINTS CONFORMING TO ASTM 3408 WITH SDR OF 13.0, RATED FOR GAS SERVICE.
3. ALL NATURAL GAS PIPE UP IN SHAFT AND ABOVE HARD CEILING SHOULD BE WELDED STEEL.
4. PAINT GAS PIPING. EXPOSED PIPING SHALL BE IDENTIFIED BY A YELLOW LABEL MARKED "GAS" IN BLACK LETTERS. THE MARKING SHALL BE SPACED AT INTERVALS NOT EXCEEDING 5 FEET (1524 MM). THE MARKING SHALL NOT BE REQUIRED ON PIPE LOCATED IN THE SAME ROOM AS THE APPLIANCE SERVED.
5. APPROVED ALTERNATE ARC RESISTANT CORRUGATED, STAINLESS-STEEL TUBING (BLACK JACKET). COMPLY WITH IFGC 403.5.5 AND ANSI/IAS LC 1 CSA 6.26. INSTALL PER MANUFACTURER RECOMMENDATIONS AND ALL APPLICABLE CODES.
6. CSST (YELLOW JACKET) THAT IS NOT LISTED WITH ARC-RESISTANT JACKET OR COATING SYSTEM IN ACCORDANCE WITH ANSI LC 1/CSA 6.26 IS NOT APPROVED FOR USE WITHOUT WRITTEN BUILDING OWNER APPROVAL. IF APPROVED INSTALL PER MANUFACTURER RECOMMENDATIONS AND ALL APPLICABLE CODES.

SEE PLUMBING FIXTURE MATRIX FOR ALL PLUMBING FIXTURE SCHEDULES

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	SAN	V	T	CW	HW	REMARKS
WC-1	WATER CLOSET	3"	2"	3"	1/2"	-	WALL MOUNTED; WALL DISCHARGE; FLUSH VALVE; ADA
UR-1	URINAL	2"	1 1/2"	INT	3/4"	-	WALL MOUNT, PROVIDE MX-1 MIXING VALVE
L-1	LAVATORY	1 1/2"	1 1/4"	1 1/2"	1/2"	1/2"	PROVIDE MX-1 MIXING VALVE
S-1	BREAKROOM SINK	1 1/2"	1 1/4"	1 1/2"	1/2"	1/2"	PROVIDE MX-1 MIXING VALVE
SS-1	SERVICE SINK	3"	2"	3"	3/4"	3/4"	PROVIDE MX-1 MIXING VALVE
SH-1	BATHROOM SHOWER	3"	2"	3"	1/2"	1/2"	PROVIDE MX-1 MIXING VALVE
FD-1	FLOOR DRAIN	3"	-	3"	-	-	SEE SHEET P-101 FOR SPECIFICATIONS
WCO	WALL CLEANOUT	FULL SIZE, SEE PLANS					ZURN Z-1445 CLEANOUT TEE ZURN CO2530-SS7 ROUND ACCESS COVER
FCO	FLOOR CLEANOUT	FULL SIZE, SEE PLANS					ZURN Z1400-NH-5BZ1 ADJUSTABLE FLOOR CLEANOUT

PLUMBING EQUIPMENT SCHEDULE

TAG	EQUIPMENT	SIZE	RECO. AT 90°F GPH	NAT. GAS INPUT MBH	ELEC.	REMARKS
WH-1	WATER HEATER	48 GAL	62	60	120V 1ø	BRADFORD WHITE LIGHT DUTY POWER DIRECT VENT COMMERCIAL GAS WATER HEATER MODEL LG2PDV50H603N; W/DRAIN PAN
MX-1	3/4" MIXING VALVE	0.25-4 GPM	-	-	-	LEONARD MOD. 170A-LF-BP WATER MIXING VALVE
BFP-1	BACKFLOW PREVENTER	2"	-	-	-	SEE SHEET P-101 FOR SPECIFICATIONS
EWC-1	COOLER ELECTRIC WATER	1/2"CW	-	-	120V 1ø	SEE SHEET P-101 FOR SPECIFICATIONS
CB-1	CATCH BASIN	24"X24"	-	-	-	ZURN MODEL Z887-24-DGF-(2)EXT-E4-HD-Y; 4" INLET/OUTLET
GD-1	GARBAGE DISPOSER	1/2 HP	-	-	120V 1ø	INSINKERATOR LIGHT DUTY MODEL LC-50-11 60 Hz, 1725 RPM, 5.8 AMPERE
OIL-1	OIL INTERCEPTOR	300 GAL	-	-	-	ZURN GREEN TURTLE OMC 300; SIZE 300 GAL; 4" INLET/OUTLET CAPACITY:103 GAL OF SOLIDS & 156 GAL OF OIL, W/TRAFFIC COVER
CP-1	RE CIRCULATED PUMP	2 GPM	-	-	115V 1ø	TACO IN-LINE CIRCULATOR PUMP 101-028 SERIES MODEL IL006-ST4; 4' HEAD; 1/40 HP; 3250 RPM
ET-1	EXPANSION TANK	-	-	-	-	AMTROL THERMAL EXPANSION TANK MODEL ST-5

TRAP PRIMER INFORMATION:

PROVIDE PRECISION PLUMBING PRODUCTS MODEL P2-500 AUTOMATIC TRAP PRIMER VALVE (OR APPROVED EQUAL).

-½"CW NPT INLET/OUTLET
-ADJUSTABLE TO LINE PRESSURE
-FOR EVERY 20 FEET OF FLOOR DRAIN TRAP MAKE-UP WATER LINE THE PRIMER MUST BE AT MINIMUM 12" ELEVATION FROM THE FINISH FLOOR.
-OPERATING RANGE 35 TO 75 PSIG
-MACHINED FROM CORROSION RESISTANT BRASS
-PISTON OPERATED
-ADJUSTABLE PRESSURE
-INCLUDES INTEGRAL VACUUM BREAKER PORTS

INSTALL ON COLD FRESH WATER LINES 1½" OR LESS.

PROVIDE ALTERNATE PRICE FOR:
PROVIDE AND INSTALL TRAP SEAL INSERT FOR EACH FLOOR DRAIN BY JOSAM, ZURN OR APPROVED EQUAL.

NEW GAS LOAD (ESTIMATE)

TAG	SERVICE	CUBIC FEET /HOUR
F-1	BREAK/CORR./MENS/ WOMENS/STORAGE	60
IRH-1	WAREHOUSE	125
WH-1	FLOOR	60
	SUB TOTAL:	245
	+10% SAFETY FACTOR:	24.5
	TOTAL CUBIC FEET/HOUR:	269.5
	EQUIVALENT PIPE LENGTH:	±126'-0"

1. SYSTEM SIZED FOR 0.6 SPECIFIC GRAVITY GAS AND DELIVERY OF 0.25 PSI WITH A PRESSURE DROP OF 0.5 INCH WATER COLUMN.
2. SYSTEM DESIGN AND INSTALLATION IS FOR NATURAL GAS.
3. MBH RATING FOR EQUIPMENT IS DETERMINED BY THE MANUFACTURER.
4. CONTRACTOR SHOULD PROVIDE PRESSURE REGULATOR FOR EACH EQUIPMENT. VENT REGULATOR FOR INDOOR EQUIPMENT INDIVIDUALLY FROM REGULATOR TO OUTSIDE THE BUILDING. COORDINATE WITH HVAC CONTRACTOR.

GENERAL PLUMBING NOTES

1. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL PLUMBING FIXTURES.
2. COORDINATE ALL LOCATION, SIZE AND ELEVATIONS OF ALL SLEEVES THROUGH WALLS AND SLABS WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.
3. PROVIDE SHUT OFF VALVE TO ALL FIXTURES, SILL COCK, APPLIANCES OR MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE.
4. VERIFY DEPTHS, SIZES, LOCATIONS, ETC., OF EXISTING UTILITIES IN THE FIELD INCLUDING POINTS OF CONNECTIONS BEFORE STARTING WORK.
5. ALL WORK AND MATERIALS WILL CONFORM TO THE LATEST EDITION OF THE INTERNATIONAL PLUMBING AND BUILDING CODES AND ALL OTHER AUTHORITIES HAVING JURISDICTION. DESIGN TO COMPLY WITH THE LATEST ADOPTED MICHIGAN PLUMBING CODE.
6. COORDINATE INSTALLATION OF PLUMBING WORK SO AS TO AVOID UNNECESSARY JOB DELAYS OR INTERFERENCE WITH ALL OTHER TRADES.
7. OBTAIN ALL FIELD APPROVALS ON PLUMBING WORK FROM REGULATING AGENCIES WHERE REQUIRED. CONTRACTOR TO PAY ALL RELATED FEES.
8. ALL VALVES CONCEALED IN CEILING OR WALLS SHALL BE PROVIDED WITH 12"x12" ACCESS PANELS.
9. WATER SUPPLY AND DRAIN LINES UNDER LAVATORIES AND SINK SHALL BE INSULATED AND JACKETED WITH ADA APPROVED PROCESS. CONTRACTOR TO VERIFY AND REMOVE ALL SHARP OR ABRASIVE SURFACES UNDER SINKS AND LAVATORIES.
10. ALL OPENINGS FOR PIPING THROUGH FIRE-RATED ENCLOSURES SHALL BE CAULKED AS REQUIRED BY CODE TO MAINTAIN FIRE RATING. INCLUDING OPENINGS IN EXISTING BUILDING.
11. PLUMBING CONTRACTOR SHALL PROVIDE FULL SIZE CONDENSATE DRAIN FROM ALL AIR CONDITIONING EQUIPMENT (WITH DEEP SEAL TRAP AND UNION) AND DISCHARGE TO THE NEAREST APPROVED RECEPTOR, COORDINATE FOR TRAP HEIGHT.
12. HOT AND COLD WATER PIPE INSULATION SHALL HAVE A SMOKE/FLAME SPREAD RATINGS OF 25/50 AS DEFINED BY NFPA.
13. FAUCETS AND PLUMBING FIXTURES SHALL BE OF THE WATER CONSERVATION TYPE AND COMPLY WITH THE STATE APPLIANCE ENERGY STANDARDS.
14. RUN ALL SANITARY PIPING AT 1% MINIMUM SLOPE.
15. ALL HORIZONTAL PIPING LINES EXTENDED AND CONNECTED TO EQUIPMENT ARE TO BE RUN AT HIGHEST POSSIBLE ELEVATION AND NOT LESS THAN 6" ABOVE FINISHED FLOOR, TO ALLOW CLEARANCE FOR CLEANING. PIPING IS TO BE CONCEALED WHEREVER IS POSSIBLE.
16. PLUMBING CONTRACTOR SHALL PROVIDE, ALL PIPING MATERIALS, INCLUDING VALVES, PRESSURE REGULATORS, TRAPS, STRAINERS ETC., FROM ROUGH IN LOCATION TO EQUIPMENT AND MAKE FINAL CONNECTION. SUPPLY LINES TO EACH INDIVIDUAL PIECE OF EQUIPMENT SHALL BE PROVIDED WITH PERMANENT NAME TAGS IDENTIFYING SAME.
17. GUARANTEE ALL LABOR AND MATERIALS ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
18. CONTRACTOR SHALL RECORD ON AS-BUILT DRAWINGS ALL SIZES, MATERIALS, ELEVATIONS, AND LOCATIONS OF ALL PIPES THAT DEVIATE FROM THE DESIGN CONTRACT DRAWINGS AND SUBMIT TO THE ENGINEER FOR REVIEW.
19. REFER TO ARCHITECTURAL DRAWINGS AND COORDINATE WITH OWNER FOR PHASING LIMITATIONS ON SEQUENCE OF CONSTRUCTION, IF ANY.
20. ALL CORES REQUIRED THROUGH CONCRETE FLOOR SHALL BE CORED. JACK-HAMMERING WILL NOT BE ALLOWED.
21. PATCH & REPAIR ALL DAMAGED FINISHES RESULTING FROM WORK WITHIN EXISTING BUILDING.
22. CONTRACTOR TO PROVIDE POINT OF USE MIXING VALVE FOR ALL LAVATORIES & HAND SINKS..
23. ALL PLUMBING WORK TO BE PERMITTED, INSPECTED AND TESTED PRIOR TO COVERING (BY WALL, PARTITION, HARD CEILING ETC.). CONTRACTOR TO COORDINATE WITH INSPECTORS.
24. ALL EXPOSED PIPING TO BE PARALLEL TO BUILDING BEAMS.
25. CONTRACTOR IS RESPONSIBLE TO LIST ALL MODIFICATION TO ORIGINAL DOCUMENT DURING SHOP DRAWING PROCESS. IT SHOULD CLEARLY MENTION THE CHANGES BEING MADE TO THE PARTS, OPTIONS, MATERIAL, CAPACITY, ETC. THAT IS DIFFERENT THAN WHAT IS SHOWN ON DOCUMENT. CONTRACTOR WILL REMAIN RESPONSIBLE FOR THE PERFORMANCE, OPERATION, WARRANTY, ETC. FOR THE PRODUCT.
26. PROVIDE BALANCING VALVE IN ALL MAIN BRANCH LINE IN DOMESTIC HOT WATER RETURN LOOPS.
27. INSULATE ALL METAL DOMESTIC COLD WATER PIPES, METAL STORM DRAIN HORIZONTAL PIPING AND METAL CONDENSATE DRAIN PIPES WITH CLOSED-CELL ELASTOMERIC MATERIAL.
28. RUN ALL UNDERGROUND SANITARY AND STORM PIPING 2-1/2" OR LESS AT 1/4" PER FOOT MINIMUM PITCH UNLESS NOTED OTHERWISE. SANITARY PIPING LESS 3" OR LARGER SHALL BE PITCHED AT 1/8" PER FOOT MINIMUM, UNLESS NOTED OTHERWISE.

ADOPTED STATE OF MICHIGAN CODES AT THE TIME OF SUBMITTAL:

COMMERCIAL:

BUILDING: 2021 MICHIGAN BUILDING CODE – EFFECTIVE APRIL 9, 2025
REHAB: 2021 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS – EFFECTIVE APRIL 9, 2025
MECHANICAL: 2021 MICHIGAN MECHANICAL – EFFECTIVE MARCH 12, 2024
ELECTRICAL: 2023 NATION ELECTRICAL CODE W/ MICHIGAN PART 8 AMENDMENTS – EFFECTIVE MARCH 12, 2024
PLUMBING: 2021 MICHIGAN PLUMBING CODE – EFFECTIVE MARCH 12, 2024
ENERGY: 2021 MICHIGAN COMMERCIAL ENERGY CODE – EFFECTIVE APRIL 22, 2025
FUEL GAS: 2021 INTERNATIONAL FUEL GAS CODE
ACCESSIBILITY: 2017 ICC A117.1 ACCESSIBLE AND USEABLE BUILDING AND FACILITIES
FIRE: 2021 INTERNATIONAL FIRE CODE
FIRE SUPPRESSION: 2019 NFPA 13 AND 13R
FIRE ALARM: 2019 NFPA 72

PLUMBING LEGEND

SYMBOL	ABBR.	DESCRIPTION
— —SAN— —	SAN/S	SANITARY BELOW F.F. OR GROUND
——SAN——	SAN/S	SANITARY ABOVE F.F. OR GROUND
— —GRI— —	GRI/SAN	SANITARY TO GREASE INTERCEPTOR
— — ST — —	ST/STORM	STORM DRAIN BELOW F.F. OR GROUND
—— ST ——	ST/STORM	STORM DRAIN ABOVE F.F. OR GROUND
	CW	COLD WATER SUPPLY
	HW	HOT WATER SUPPLY
	HWR	HOT WATER RETURN
——GAS——	GAS	NAURAL GAS PIPE
	V	SANITARY VENT ABOVE F.F.
	V	SANITARY VENT BELOW F.F.
		RISE IN PIPE
		DROP IN PIPE
		TEE UP
		TEE DOWN
		DIRECTION OF FLOW
		DIRECTION OF SLOPE DOWN
	U	UNION (DIELECTRIC IF CALLED FOR)
		BALL VALVE
	CV	CHECK VALVE
		PRESSURE REDUCING VALVE
		BALLANCE VALVE
	BV	BALANCING VALVE
	COTG	CLEANOUT TO GRADE
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
	FD	FLOOR DRAIN
	POC	POINT OF CONNECTION
M		GAS OR WATER METER
	W/	WITH
	A.F.F.	ABOVE FINISHED FLOOR
	F.F.	FINISHED FLOOR
	GRD.	GRADE
	(E)	EXISTING
	INT.	INTEGRAL
	DN	DOWN
	ARCH.	ARCHITECT
	VA	VALVE
	ABV	ABOVE
	BEL	BELOW
	SHT	SHEET
	I.E.	INVERT ELEVATION
	CONN.	CONNECTION
	U.N.O.	UNLESS NOTED OTHERWISE
	V.T.R.	VENT THOUGH ROOF
	B.G.	BELOW GRADE
	TYP.	TYPICAL
	NC	NORMALLY CLOSED
P		PRESSURE REGULATOR

NOTE : SOME SYMBOLS & ABBREVIATIONS SHOWN MAY NOT APPLY TO PROJECT

Approved For Permit
Approved
Date: 9/21/2026
CITY OF DETROIT Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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SEAL

MICHIGAN MARC ENGINEER No. 6501060606 STATE OF MICHIGAN REGISTERED PROFESSIONAL ENGINEER

PROJECT

TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

PLUMBING LEGENDS, NOTES AND SCHEDULES

SHEET NUMBER P-100

ISSUE

Plumbing Fixture Schedule

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Tag	Item	Make	Model Name & Description	Fixture Material	Flow	WSFU's C	WSFU's H	DFU's	Minimum Pipe Connection Sizes W	V	CW	HW	Notes/ & Accessories
WC- 1 ADA	Water Closet Wall Mtd Hydro-Powered Battery Sensor Flush Valve	Zurn	Z.WC.S.HYD system consisting of Z5615 wall mounted vitreous china 1.28 gpf water closet with ZER6000AV-HET-HYD hydro-powered dual action of the ceramic disc, gear-driven cartridge flush valve, and Z5955SS-EL elongated, open front white toilet seat with stainless steel check hinges.	Vitreous China	1.28 gpf	10			4"	2"	1"	-	Mount at 17" rim height Provide Zurn Z1201 series closet carrier, 500 lb. capacity
UR-1	Urinal Exposed Hydro-Powered Battery Sensor Flush Valve	Zurn	Z.UR1.S.HYD wall mount with reduced splash back urinal hydro-powered ZER6003AV-ULF-HYD sensor 0.125 gpf with the dual action of the ceramic disc cartridge, motor gear-driven operation flush valve, True mechanical override button and strainer.	Vitreous China	0.125 gpf	5			2"	2"	3/4"		True mechanical override button, no hard wiring or battery replacement needed Top spud Provide Z1222 urinal carrier
LAV-1	Lavatory Wall Mount Battery Sensor Faucet ADA	Zurn	Z.L6.S lavatory system includes vitreous china 20" x 18" white wall hung lavatory, ZG6915-XL-TMV-1 hydropowered gear-driven battery operated solid brass faucet, Z8743-PC grid drain; Z8700B-PC p-trap, Z8804-XL-LK-PC stop lavatory supply kit and ASSE 1070 thermostatic mixing valve.	Vitreous China	0.5	1.5	1.5		1 1/2"	2"	1/2"	1/2"	Provide Z1231-EZ Lav carrier with uprights
S-1	Single Bowl Drop-in Sink	Elkay	LR2522PD Lustertone finish single bowl top mount sink stainless steel single bowl sink with rear drain, side & bottom sound deadening pads OD 25" Left to Right by 22" Front to Back..... Bowl ID 21" x 15 3/4" x 8 1/8" Minimum cabinet size 30" wide	18 Gauge Type 304 Stainless Steel		1	1		1 1/2"	1 1/2"	1/2"	1/2"	Sink ASME A112.19.3/CSA B45.4, and BUY AMERICAN ACT compliant. Jones Stephens P38007 20 gauge 1 1/4" p-trap, S10301 angle stops, S04-021 chrome plated supplies. Includes LKPD1 perfect edgeless drain with strainer
S-1 FAUCET	Single Handle Gooseneck Faucet	Elkay	LK6000CR single lever gooseneck with pull out spray and ceramic disc valve, ADA compliant	Chrome	2.2 gpm	1	1		1 1/2"	1 1/2"	1/2"	1/2"	NSF 61 & 372 compliant
SH-1 ADA	One Piece ADA Shower	Comfort Designs	XST3838TRCOL AcrylX alcove one-piece shower in with white trench drain on front threshold, L -shaped & vertical grab bar, handheld spray, and slip-resistant, textured floor, 30 year warranty, 3/4" profile height. White 12" x 24" subway tile look. Designed for on-slab installation, 1-2" skirt, 1/2" COL exterior threshold ID: 36" W x 36" D x 76 3/4 H OD: 38 1/2" W x 36" D x 78 3/4" H	Fiberglass Reinforced Cast Acrylic					2"	2"			ADA Complaint, ASTM F-462 Provide curtain rod, curtain, large soap dish, brass drain Select Left Hand Seat (RH Valve) or Right Hand Seat (LH Valve) as needed
SH-1 ADA	ADA Shower Valve In Wall	Leonard	7600-515PG-30-D2L-H06 thermostatic shower valve with stops handheld shower, 30" guide rail, 69" hose, inline vacuum breaker, diverter valve and showerhead	Chrome	1.5	1	1		2"	2"	1/2"	1/2"	Thermostatic
SS-1	Mop Sink 24" x 24"	Zurn	Z1996.09.215.A.04.07 white mop service basin with Z843M1-RC faucet, dome strainer, hose with bracket, mop hanger, stainless steel wall guards and stainless steel rim guards.	High-density composite	5	2.5	2.5		3"	2"	1/2"	1/2"	Wall guards to be installed on all adjacent walls Faucet to have adjustable swivel inlets & vacuum breaker
EWC-1	ADA Dual Level Water Cooler with Bottle Filler and 10,000 Filter	Elkay	LZS8WSBPRO ADA compliant wall mount bi-level bottle filling station with ultra high capacity 10,000 gallon Cyst, Particulate, Chlorine, Taste and Odor, plus Microplastics Reduction filter, electronic pushbar activation and Flexi-Guard ® safety bubbler. Hands free bottle filling unit shall include electronic sensor with auto 20-second shut-off timer, display count, LED filter status indicator, automatic filter status reset and top filter access for quick filter changes. Chilling Capacity of 8.0 GPH of 50° F drinking water, based on 80° F inlet water and 90° F ambient, per ASHRAE 18 testing.. ADA Compliant	Black with Stainless Steel Alcove	1.1 gpm	0.5			1 1/2"	2"	1/2"		Certified to NSF/ ANSI standards 42, 53, 61, 372 & 401 for the reduction of Total PFAS, Lead, Class 1 Particulates, Cysts, Chorine Taste & Odor Provide Zurn Z1225-BL Wall Carrier and Jones Stephens S10330 1/4 turn stop, P38094 17 gauge p-trap. Electrical outlet by others, 5 year compressor warranty

Drainage Specialties Schedule

Tag	Item	Make	Model Name & Description	Fixture Material	Drainage Fixture Units	Outlet Sizes Available	Pipe Connection Sizes W	V	CW	HW	Notes/ Accessories
FD-1	Finished Area Round Floor Drain	Zurn	ZN415-6BZ1 cast iron floor drain with 6" round nickel bronze top with vertical post pour adjustment, tilt correction shims and rough-in cover and ASSE 1072 trap seal	Nickel Bronze top, cast iron body		2", 3", 4", 6"	As shown on plans				Provide SureSeal ASSE 1072 trap seal

Backflow Prevention Schedule (This list is not all inclusive, verify with authority having jurisdiction)

Tag	Item	Make	Model Name & Description	Protection	Standard	Applications	Sizes	Notes & Accessories
BFP-1	Reduced Pressure Backflow Preventer	Zurn / Wilkins	Model 375XLS and 375ASTFSC reduced pressure backflow preventer with strainer, maximum pressure 175 psi and maximum temperature of 180 degrees fahrenheit	Highest hazard Back pressure Back siphonage	ASSE 1013	Water Service, Boilers, Hospital Lab Equipment, Processing Tanks, Ice Machines with self cleaning systems	1/2" to 10"	Provide with factory Strainer & Air Gap Use 475V series for space savings on 2 1/2 to 10" devices 375XLS: 180 degrees maximum 375AST 140 degrees max

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STATE OF MICHIGAN MICHAEL MASIC ENGINEER No. 6001080068 PROFESSIONAL ENGINEER

PROJECT

TRANSFLO

8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

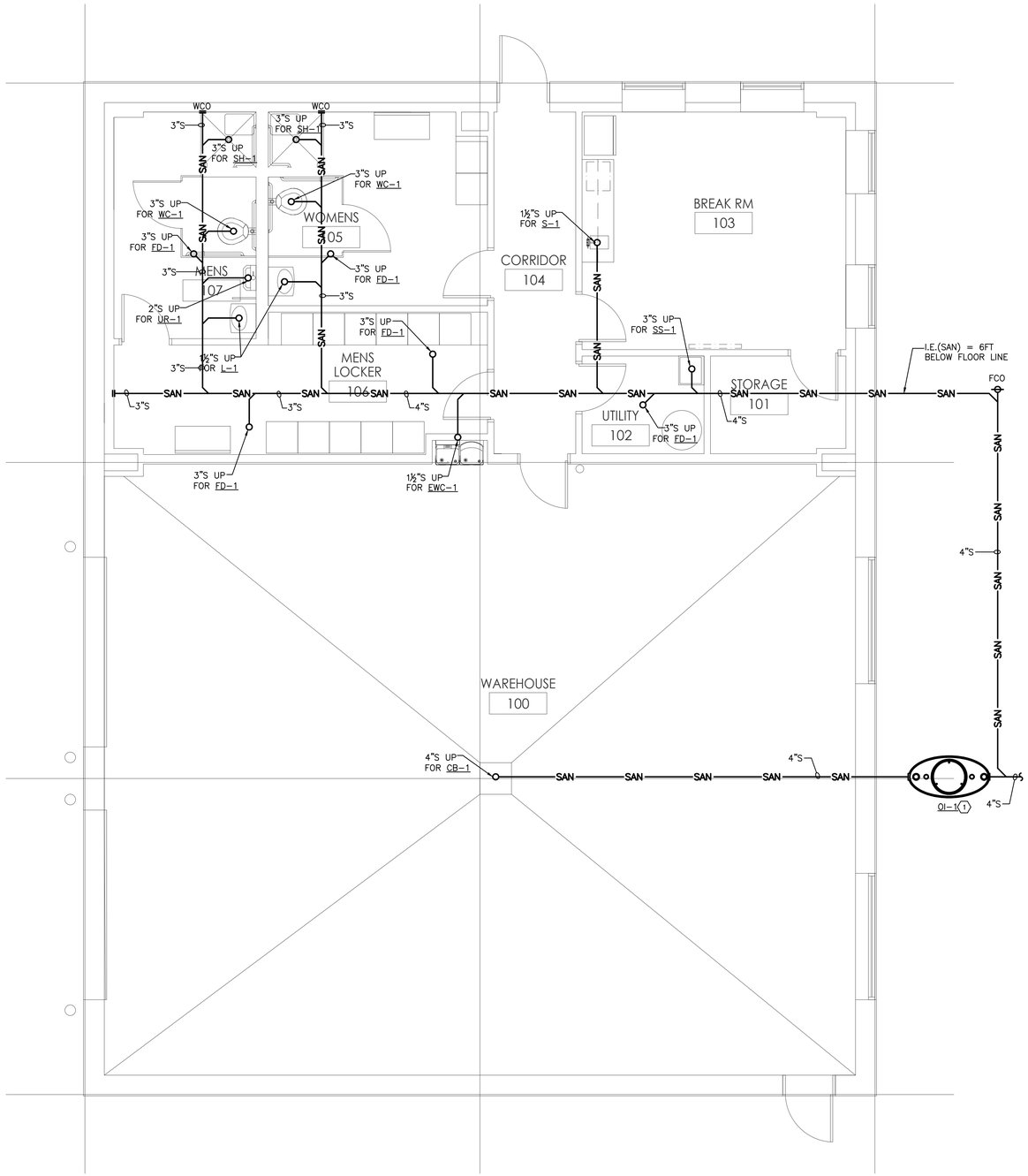
SHEET TITLE

PLUMBING FIXTURE MATRIX

SHEET NUMBER

P-101

ISSUE



PLUMBING SANITARY UNDERGROUND PLAN

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

NORTH

GENERAL NOTES:

GN1. ROUTING OF UNDER FLOOR PIPING TO BE CAREFULLY COORDINATED WITH STRUCTURAL DRAWINGS FOUNDATION PLAN.

GN2. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.

GN3. MAXIMUM DISTANCE BETWEEN FLOOR CLEANOUTS SHALL NOT EXCEED 50'-0". MAINTAIN 18" CLEARANCE AROUND CLEANOUT AS DICTATED BY CODE.

GN4. ALL PIPING INSTALLED IN CEILING SPACE SHALL BE COORDINATED WITH DUCTWORK AND ALL OTHER TRADES AS REQUIRED.

GN5. PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR A.D.A. PLUMBING FIXTURE AND STANDARD MOUNTING HEIGHTS.

GN6. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.

GN7. DO NOT INSTALL PLUMBING VENTS WITHIN 10'-0" OF ANY ROOF TOP UNITS OR FRESH AIR UNITS/INTAKE. COORDINATE WITH MECHANICAL CONTRACTOR.

GN8. ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS TO BE SEALED "AIR TIGHT" WITH APPROVED SEALANT APPLIED ALL AROUND PENETRATION.

GN9. ALL PIPING SHALL BE COORDINATED WITH CEILING AND HIDDEN AS MUCH AS POSSIBLE.

KEY DRAWING NOTES:

(1) PROVIDE EXTERIOR OIL INTERCEPTOR FOR WAREHOUSE AREA. SEE SCHEDULE FOR DETAILS.

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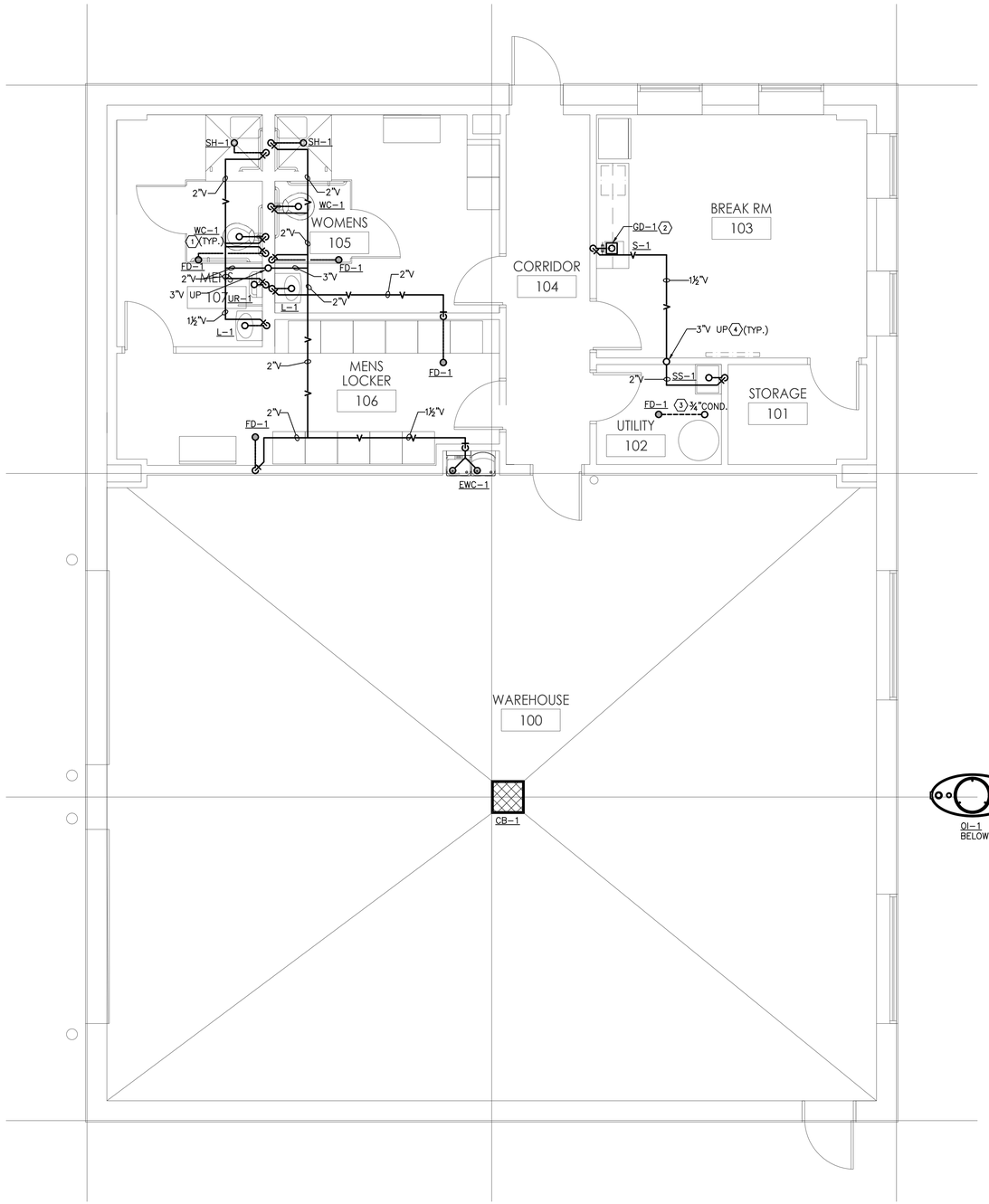
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DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

PLUMBING SANITARY UNDERGROUND PLAN

SHEET NUMBER ISSUE

PS-200



PLUMBING SANITARY FLOOR PLAN

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

NORTH

GENERAL NOTES:

GN1. ROUTING OF UNDER FLOOR PIPING TO BE CAREFULLY COORDINATED WITH STRUCTURAL DRAWINGS FOUNDATION PLAN.

GN2. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.

GN3. MAXIMUM DISTANCE BETWEEN FLOOR CLEANOUTS SHALL NOT EXCEED 50'-0". MAINTAIN 18" CLEARANCE AROUND CLEANOUT AS DICTATED BY CODE.

GN4. ALL PIPING INSTALLED IN CEILING SPACE SHALL BE COORDINATED WITH DUCTWORK AND ALL OTHER TRADES AS REQUIRED.

GN5. PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR A.D.A. PLUMBING FIXTURE AND STANDARD MOUNTING HEIGHTS.

GN6. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.

GN7. DO NOT INSTALL PLUMBING VENTS WITHIN 10'-0" OF ANY ROOF TOP UNITS OR FRESH AIR UNITS/INTAKE. COORDINATE WITH MECHANICAL CONTRACTOR.

GN8. ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS TO BE SEALED "AIR TIGHT" WITH APPROVED SEALANT APPLIED ALL AROUND PENETRATION.

GN9. ALL PIPING SHALL BE COORDINATED WITH CEILING AND HIDDEN AS MUCH AS POSSIBLE.

KEY DRAWING NOTES:

(1) PROVIDE NEW SANITARY AND VENT CONNECTIONS FOR NEW PLUMBING FIXTURES.

(2) PROVIDE GARBAGE DISPOSER FOR BREAK ROOM SINK. SEE SCHEDULE FOR DETAIL.

(3) PROVIDE CONDENSATE DRAIN FOR HVAC UNIT. RUN CONDENSATE DRAIN TO CONNECT NEAREST FLOOR DRAIN AS INDIRECT.

(4) VENT UP THROUGH WALL AND PASSES OUT THROUGH ROOF. COORDINATE EXACT LOCATION WITH WALLS IN SPACE ABOVE.

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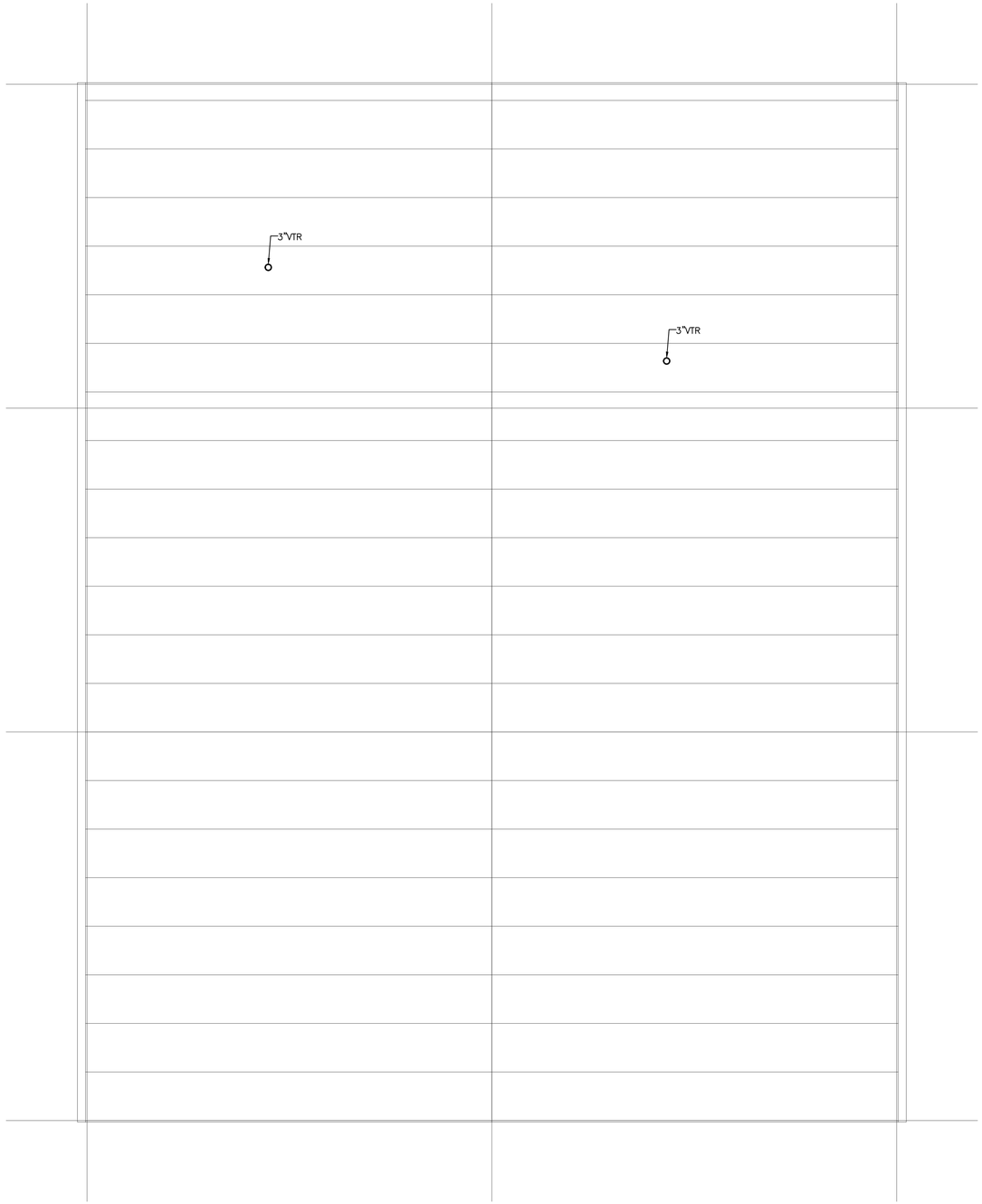
8100 MELVILLE STREET
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PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY:	CHECKED BY:
SSE	M. MASIC
PROJECT MGR:	APPROVED BY:
A. INOV	M. MASIC

SHEET TITLE

PLUMBING SANITARY FLOOR PLAN

SHEET NUMBER	ISSUE
PS-201	



GENERAL NOTES:

GN1. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.

GN2. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.

GN3. DO NOT INSTALL PLUMBING VENTS WITHIN 10'-0" OF ANY ROOF TOP UNITS OR FRESH AIR UNITS/INTAKE. COORDINATE WITH MECHANICAL CONTRACTOR.

GN4. GENERAL CONTRACTOR IS RESPONSIBLE FOR TESTING OF SANITARY AND VENTING.

PLUMING SANITARY FLOOR PLAN

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

NORTH

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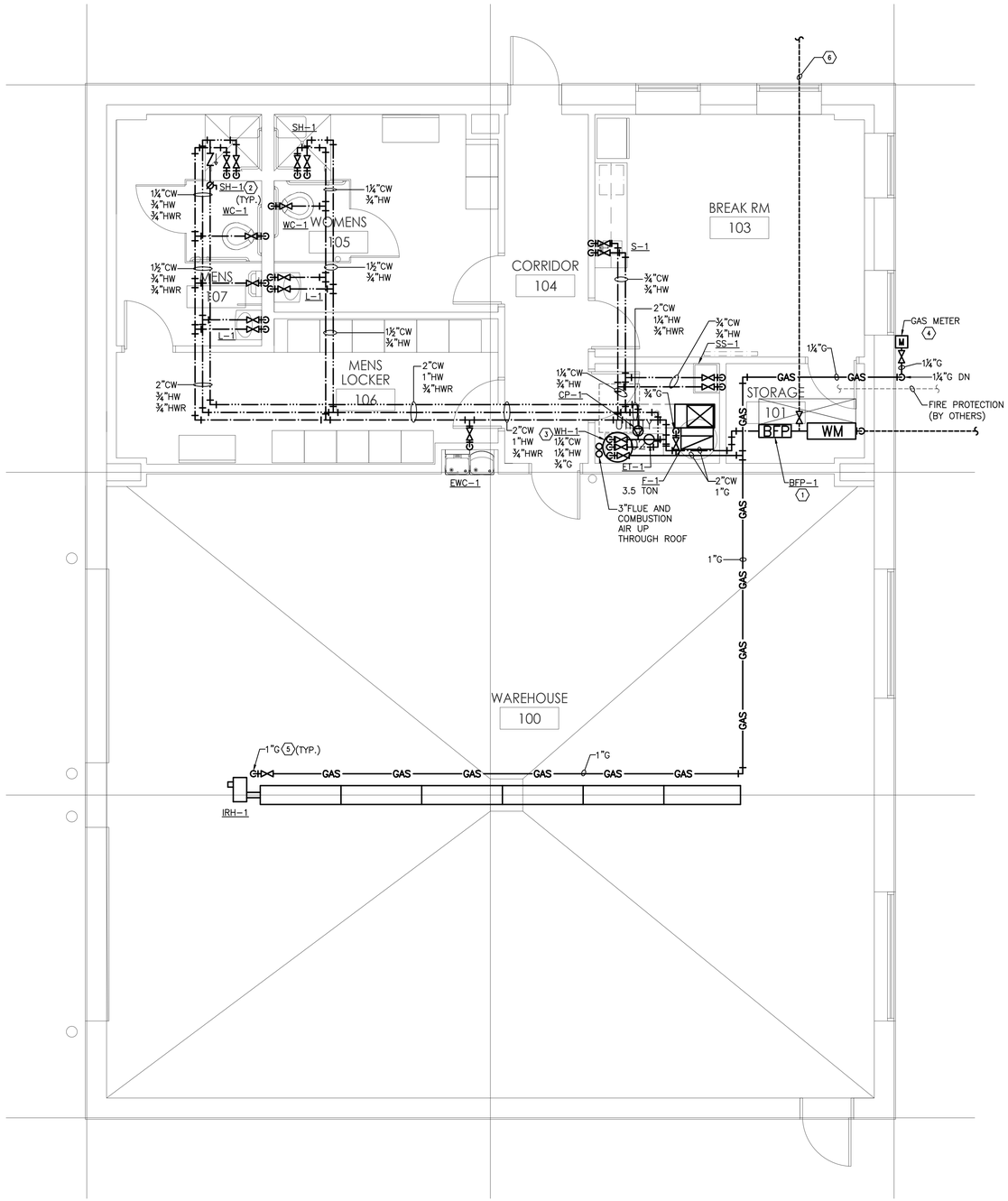
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2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

PLUMBING SANITARY ROOF PLAN

SHEET NUMBER	ISSUE
PS-202	



PLUMBING DOMESTIC WATER AND GAS FLOOR PLAN

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

NORTH

GENERAL NOTES:

GN1. ROUTING OF UNDER FLOOR PIPING TO BE CAREFULLY COORDINATED WITH STRUCTURAL DRAWINGS FOUNDATION PLAN.

GN2. ALL INFORMATION PROVIDED ON PLUMBING SCHEDULE SHEETS APPLIES.

GN3. ALL PIPING INSTALLED IN CEILING SPACE SHALL BE COORDINATED WITH DUCTWORK AND ALL OTHER TRADES AS REQUIRED.

GN4. PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR A.D.A. PLUMBING FIXTURE AND STANDARD MOUNTING HEIGHTS.

GN5. AT ALL DISSIMILAR METAL CONNECTIONS PROVIDE AND INSTALL DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.

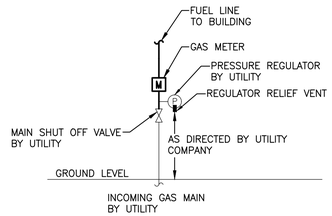
GN6. ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS TO BE SEALED "AIR TIGHT" WITH APPROVED SEALANT APPLIED ALL AROUND PENETRATION.

GN7. ALL PIPING SHALL BE COORDINATED WITH CEILING AND HIDDEN AS MUCH AS POSSIBLE.

GN8. ALL FIXTURES SHALL BE PROVIDED WITH DEDICATED SHUT-OFF VALVES WHETHER SHOWN OR NOT ON PLAN, UNLESS NOTED OTHERWISE.

KEY DRAWING NOTES:

1. PROVIDE NEW WATER METER WITH BACKFLOW PREVENTER FOR NEW COLD WATER MAIN. SEE SIZE ON PLAN. SEE SCHEDULE FOR DETAIL.
2. PROVIDE NEW COLD WATER AND HOT WATER CONNECTION FOR NEW PLUMBING FIXTURES.
3. PROVIDE NEW GAS WATER HEATER FOR NEW PLUMBING FIXTURES. SEE SIZE ON PLAN. SEE SCHEDULE FOR DETAILS.
4. PROVIDE NEW GAS METER WITH MAIN SHUT-OFF VALVE FOR NEW GAS MAIN. SEE SIZE ON PLAN.
5. PROVIDE GAS CONNECTION FOR NEW HVAC UNITS. SEE SIZE ON PLAN.
6. RUN 1" UNDERGROUND COLD WATER BELOW FROST LEVEL TO TRAILER MODULAR BUILDING ON SITE APPROXIMATELY 70 FEET AWAY.



NOTES:

1. INSTALL GAS METERING EQUIPMENT PER UTILITY GAS COMPANY GUIDELINES.
2. KEEP GAS METERING EQUIPMENT MINIMUM 10 FEET FROM ANY FRESH AIR INTAKE.
3. KEEP GAS METERING EQUIPMENT MINIMUM 3 FEET FROM SOURCES OF IGNITION.
4. KEEP GAS METERING EQUIPMENT MINIMUM 2 FEET FROM A STANDARD ELECTRIC METER.
5. KEEP GAS METERING EQUIPMENT MINIMUM 3 FEET FROM ANY OPERABLE WINDOW

GAS METER SCHEMATIC DIAGRAM

SCALE: NONE

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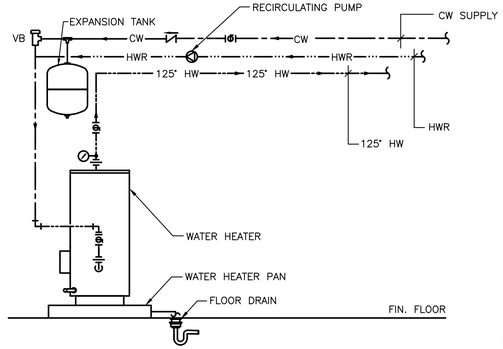
PROJECT NO:	FSDG PROJECT NO:
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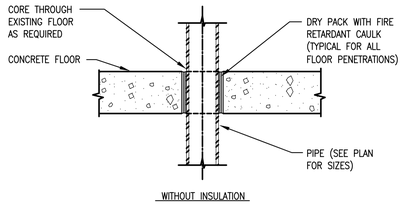
PLUMBING DOMESTIC WATER AND GAS FLOOR PLAN

SHEET NUMBER: PW-201

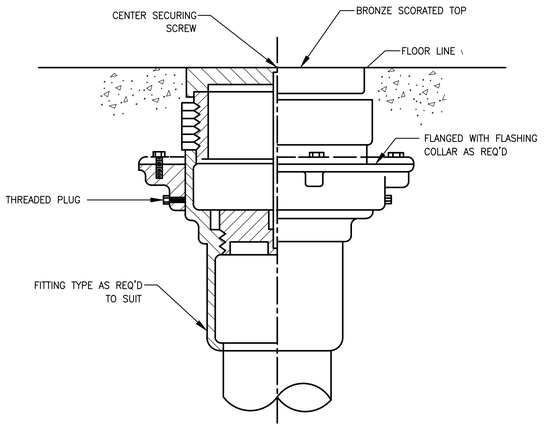
ISSUE



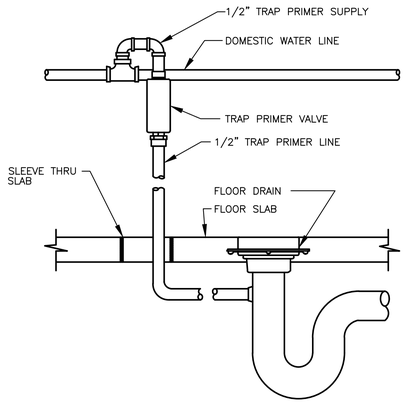
WATER HEATER DETAIL
SCALE: NONE



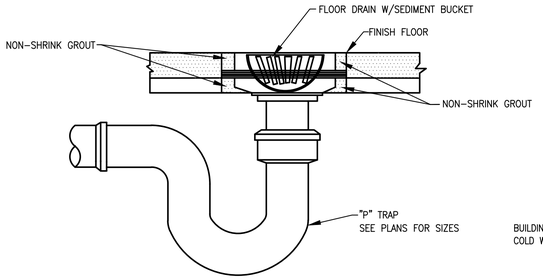
TYPICAL PIPE SLEEVE THRU FLOOR
SCALE: NONE



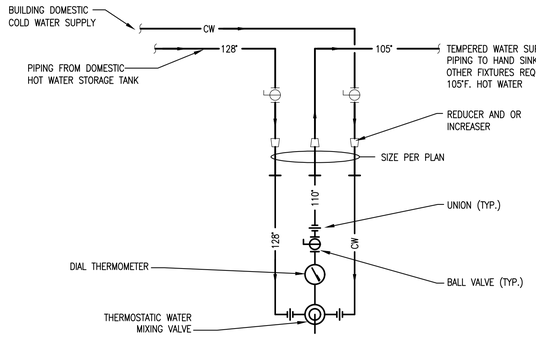
FLOOR CLEANOUT
SCALE: NONE



TRAP SEAL PRIMER DETAIL
SCALE: NONE

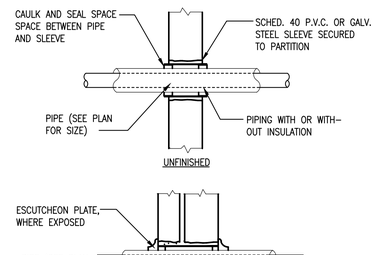


FLOOR DRAIN
SCALE: NOT TO SCALE



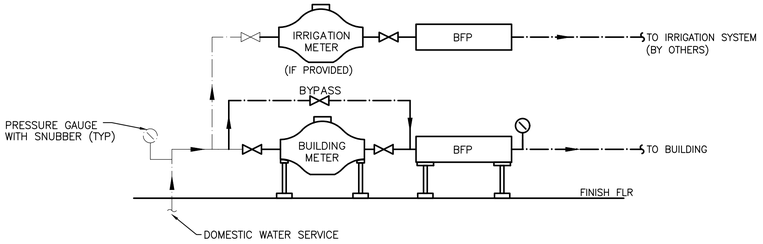
THERMOSTATIC MIXING VALVE (MX-1)
FOR ALL ADA HANDWASH SINK AND LAVATORIES

WATER MIXING VALVE DETAIL
SCALE: NONE



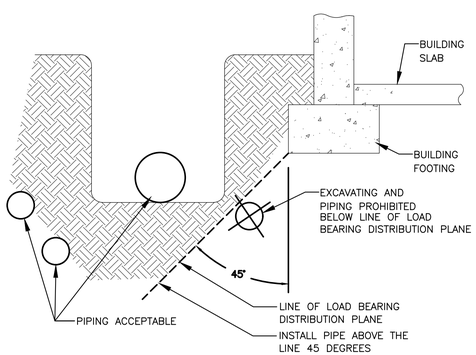
NOTES:
1. TYP. FOR MASONRY, CONCRETE OR PLASTER WALLS.
2. TYP. FOR NON-INSULATED PIPE AND CONDUIT.
2. CAULK AND SEAL SPACE BETWEEN PIPE AND SLEEVE WITH FIRE RETARDANT CAULK TO MATCH WALL FIRE RATING.

TYPICAL PIPE PENETRATION THRU WALL
SCALE: NONE



WATER METER DIAGRAM
SCALE: NONE

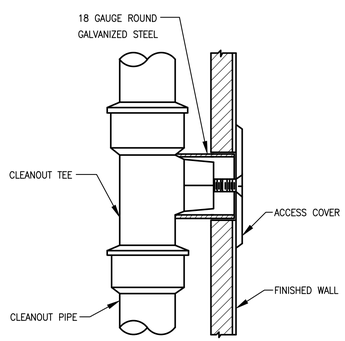
*DIAGRAM AS SHOWN REPRESENTS ONLY SCHEMATIC CONNECTION. CONTRACTOR TO PROVIDE ALL VALVES, FITTINGS AND ACCESSORIES FOR PROPER OPERATION. SEE FLOOR PLAN FOR SIZES.



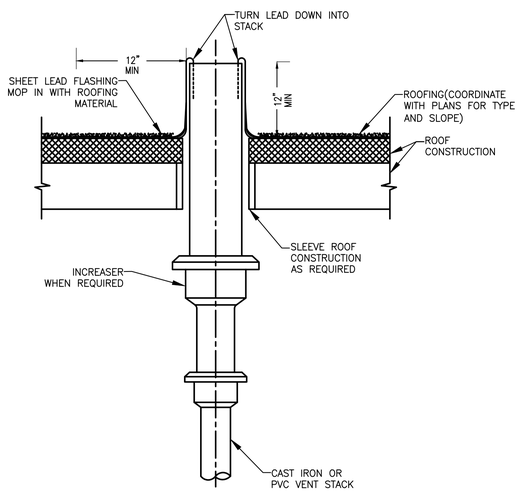
TYPICAL UNDERGROUND PIPING DETAIL
SCALE: NONE

UNDERGROUND PIPING DETAIL GENERAL NOTES:

1. TRENCHING INSTALLED PARALLEL TO FOOTINGS AND WALLS SHALL NOT EXTEND INTO THE BEARING PLANE OF A FOOTING OR WALL.
2. THE UPPER BOUNDARY OF THE BEARING PLANE IS A LINE THAT EXTENDS DOWNWARD, AT AN ANGLE OF 45 DEGREES FROM HORIZONTAL, FROM THE OUTSIDE BOTTOM EDGE OF THE FOOTING OR WALL.
3. FILED VERIFY DEPTH OF THE WALLS AND FOOTINGS BEFORE ANY EXCAVATION.
4. NONPOTABLE WATER COLLECTION AND DISTRIBUTION PIPING SHOULD BE SEPARATED FROM THE BUILDING SEWER AND POTABLE WATER PIPING UNDERGROUND BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH.
5. PIPING SHALL BE SUPPORTED TO ENSURE ALIGNMENT AND PREVENT SAGGING, AND ALLOW MOVEMENT ASSOCIATED WITH THE EXPANSION AND CONTRACTION OF THE PIPING SYSTEM.
6. PIPING IN THE GROUND SHALL BE LAID ON A FIRM BED FOR ITS ENTIRE LENGTH, EXCEPT WHERE SUPPORT IS OTHERWISE PROVIDED.
7. HANGERS AND ANCHORS SHALL BE OF SUFFICIENT STRENGTH TO MAINTAIN THEIR PROPORTIONAL SHARE OF THE WEIGHT OF PIPE AND CONTENTS AND OF SUFFICIENT WIDTH TO PREVENT DISTORTION TO THE PIPE. HANGERS AND STRAPPING SHALL BE OF APPROVED MATERIAL THAT WILL NOT PROMOTE GALVANIC ACTION. RIGID SUPPORT SWAY BRACING SHALL BE PROVIDED AT CHANGES IN DIRECTION GREATER THAN 45 DEGREES (0.79 RAD) FOR PIPE SIZES 4 INCHES (102 MM) AND LARGER.
8. PIPING SHALL BE SUPPORTED AT DISTANCES NOT TO EXCEED THOSE INDICATED IN PLUMBING CODE.



WALL CLEANOUT DETAIL
SCALE: NONE



VENT THROUGH ROOF DETAIL
SCALE: NONE

Approved For Permit
Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

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PROJECT

TRANSFLO

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DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY: SSE	CHECKED BY: M. MASIC
PROJECT MGR: A. INOV	APPROVED BY: M. MASIC

SHEET TITLE

PLUMBING DETAILS

SHEET NUMBER

P-300

ISSUE

PLUMBING GENERAL

A. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS INCLUDING THE GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS CONSTITUTE MINIMUM REQUIREMENTS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERCEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.

B. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.

C. MAKE ALL CONNECTIONS TO EXISTING SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN CONTRACT SUM.

D. COORDINATE EXACT LOCATION OF NEW CONSTRUCTION TO AVOID ANY INTERFERENCE BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT AND STRUCTURAL CONSTRUCTION.

E. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.

F. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE PLUMBING CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE PLUMBING CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.

G. SHOP DRAWINGS

NO APPARATUS OR EQUIPMENT SHALL BE SHIPPED FROM STOCK OR FABRICATED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND STAMPED "REVIEW COMPLETED ", "APPROVED" OR "NOT APPROVED".

SUBMIT FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT AND SYSTEM LAYOUT (PIPING) INCLUDING MATERIALS, VALVES, PLUMBING SPECIALTIES, PIPE HANGERS, WIRING DIAGRAMS AND CONTROL DIAGRAMS INCLUDING, BUT NOT LIMITED TO THE ITEMS LISTED BELOW. WHERE ITEMS ARE REFERRED TO BY SYMBOL NUMBERS ON THE DRAWINGS AND SPECIFICATIONS, ALL SUBMITTALS SHALL BEAR THE SAME SYMBOL NUMBERS. ALL DRAWINGS SHALL CONTAIN THE PROJECT NAME, AND PROJECT NUMBER. NO LOOSE SHEETS SHALL BE SUBMITTED UNLESS A COVER SHEET IS ATTACHED.

PROVIDE THE FOLLOWING EQUIPMENT SHOP DRAWINGS:

VALVES, TEMPERATURE AND PRESSURE GAUGES, PUMPS AND CONTROLS, WATER HEATERS, MIXING VALVES, PLUMBING FIXTURES, PROPRESS COPPER FITTINGS, PLUMBING SPECIALTIES, PIPE INSULATION, VIBRATION ISOLATORS, CAST IRON SANITARY AND VENT PIPE, WATER CONDITIONING PRODUCTS, RELATED PRV'S AND UNDERGROUND GAS PIPING.

APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO CONFORM TO THE DESIGN INTENT OF THE CONTRACT DOCUMENTS. APPROVAL OF SHOP DRAWINGS IS INTENDED TO BE FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS ONLY. ANY INSTALLED EQUIPMENT WHICH REQUIRES WORK BY OTHER TRADES, SHALL BE COORDINATED WITH THOSE TRADES. REFER TO OTHER TRADES BID DOCUMENTS.

H. CODES, PERMITS AND FEES

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

RULES OF LOCAL UTILITY COMPANIES SHALL ALSO BE COMPLIED WITH. BEFORE SUBMITTING HIS BID, THE PLUMBING CONTRACTOR SHALL VERIFY WITH EACH UTILITY COMPANY SUPPLYING SERVICE TO THIS PROJECT, THAT ALL SPECIALTY VALVES AND METERS REQUIRED WILL BE PROVIDED. THE PLUMBING CONTRACTOR SHALL INCLUDE THESE COSTS IN HIS BID. (NO ADDITIONAL PAYMENTS WILL BE MADE FOR INSTALLATION OF SUCH ITEMS, EXCEPT IN CASES WHERE THE REQUIREMENTS OF THE UTILITIES COMPANIES MAY CHANGE AFTER THE BID HAS BEEN SUBMITTED.)

ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE RULES AND REGULATIONS SET FORTH IN LOCAL AND STATE CODES. (THE CONTRACTOR SHALL PREPARE ANY DETAILED DRAWINGS OR DIAGRAMS WHICH MAY BE REQUIRED BY THE GOVERNING AUTHORITIES.) WHERE THE DRAWINGS ANDAOR SPECIFICATIONS INDICATE MATERIALS OR CONSTRUCTION IN EXCESS OF CODE REQUIREMENTS, THE DRAWINGS AND OR SPECIFICATIONS SHALL GOVERN.

I. ACCESS DOORS

ACCESS DOORS SHALL BE PROVIDED TO MAKE ALL SHUT OFF VALVES, BALANCING VALVES OR THERMOSTATIC WATER MIXING VALVES LOCATED ABOVE HARD CEILINGS ACCESSIBLE FOR CLEANING, SERVICE AND MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED BY PLUMBING TRADES AND INSTALLED BY ARCHITECTURAL TRADES. PLUMBING TRADES SHALL INCLUDE THE FULL COST OF THE WORK TO BE DONE BY OTHERS. TIMELY DELIVERY TO THE ARCHITECTURAL TRADES IS ESSENTIAL, SO AS NOT TO INTERRUPT THE SEQUENCE OF CONSTRUCTION. WHERE VALVES OR OTHER PLUMBING DEVICES ARE WITHIN EASY REACH OF THE OPERATOR, PROVIDE 12" X 12" ACCESS DOOR. WHERE OPERATOR MUST PASS THROUGH OPENING TO REACH THE DEVICE, PROVIDE 24" X 24" ACCESS DOOR.

ACCESS DOORS FOR NON-FIRE RATED CONSTRUCTION: UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR SPECIFIED, PROVIDE HINGED FLUSH TYPE STEEL FRAMED ACCESS DOORS WITH CONCEALED HINGES, SCREWDRIVER-OPERATED FLUSH LOCK, FACTORY-APPLIED RUST-INHIBITIVE PRIMER PAINT FINISH AND FLANGE OR CASING HEAD TRIM AS REQUIRED TO SUIT WALL OR CEILING CONSTRUCTION. FOR MASONRY CONSTRUCTION, USE MILCOR STYLE M STANDARD, OR APPROVED EQUIVALENT. FOR GYPSUM BOARD OR OTHER DRYWALL CONSTRUCTION USE MILCOR STYLE DW, OR APPROVED EQUIVALENT. FOR ACOUSTICAL TILE CEILINGS, USE RECESS PANEL TYPE, SUCH AS MILCOR STYLE AT, OR APPROVED EQUIVALENT.

FIRE RATED ACCESS DOORS: WHEN ACCESS DOORS ARE LOCATED IN FIRE RATED WALLS OR CEILINGS, THEY MUST BEAR THE UNDERWRITERS' LABORATORIES, INC. LABEL WITH TIME DESIGN RATING EQUAL TO OR EXCEEDING THAT OF THE WALL OR CEILING.

LOCATION: ALL ACCESS DOOR LOCATIONS MUST BE APPROVED BY THE ARCHITECT.

APPROVED MANUFACTURES SHALL BE: MILCOR, MEADOWCRAFT, KARP ASSOCIATES.

PLUMBING SPECIFICATIONS

BASIC MATERIALS AND METHODS:

A. PROVIDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS AND METHODS LISTED, MENTIONED OR SCHEDULED ON DRAWINGS ANDIOR HEREIN, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY AND REQUIRED FOR THEIR COMPLETION. THE WORK SHALL INCLUDE INSTALLATION, CLEANING AND TESTING OF COMPLETE AND OPERATING, PLUMBING-PIPING, TEMPERATURE CONTROL AND OTHER SPECIAL SYSTEMS.

B. GRAVITY-FLOW SANITARY AND RELATED VENT (ABOVE GROUND)

PIPING SHALL BE NO-HUB SERVICE WEIGHT CAST IRON PIPE.

JOINTS SHALL BE STAINLESS STEEL SHIELD AND RUBBER SLEEVE.

CONNECTIONS TO UNDERGROUND SYSTEM SHALL BE MADE WITH PUSH-ON JOINTS, WHERE AVAILABLE.

C. GRAVITY FLOW SANITARY AND RELATED VENT (BELOW GROUND)

BELOW GROUND SOIL AND WASTE PIPING SHALL BE STANDARD WEIGHT HUB AND SPIGOT CAST IRON SOIL PIPE, TAR COATED INSIDE AND OUTSIDE OR PVC DWV.

JOINTS SHALL BE NEOPRENE COMPRESSION GASKET.

TRANSITIONS FROM CAST IRON SOIL PIPE TO ANOTHER PIPE MATERIAL SHALL BE MADE WITH JOINT ADAPTERS, APPLICABLE FOR SUCH INSTALLATION PER MANUFACTURERS INSTRUCTIONS.

D. DOMESTIC WATER PIPING (ABOVE GROUND)

PIPING SHALL BE TYPE "K" OR "L" HARD DRAWN SEAMLESS COPPER TUBE. MUELLER "STREAMLINE" OR EQUAL.

TUBING JOINTS SHALL BE SOLDER TYPE, WITH 95-5 TIN-ANTIMONY SOLDER, OR SILVABRITE 100, OR "VIEGA" PROPRESS SOLDERLESS PRESS CONNECTION USING "RIDGID" POWER TOOLS AND SPECIFIC TOOL JAWS TO COMPLETE THE CONNECTION.

FITTINGS SHALL BE WROUGHT COPPER SOLDER JOINT, OR SOLDERLESS PRESS TYPE WITH "SMART CONNECT" FEATURE AND EPDM SEALING ELEMENT RATED FOR THIS APPLICATION WITH NSF APPROVAL STAMP ON FITTINGS.

BALL VALVES SHALL BE 600 PSIG WOG, BRONZE BODY, FULL PORT, 2 PIECE CONSTRUCTION WITH BLOW-OUT PROOF STEM.

CHECK VALVES SHALL BE 400 PSIG WOG, BRONZE BODY.

DIELECTRIC COUPLINGS SIMILAR TO EPCO SHALL BE USED AT JOINTS OF DISSIMILAR METALS.

PROVIDE ALL NECESSARY SPECIALTY TRANSITION FITTING WHERE A CHANGE IN MATERIAL OCCURS (COPPER CPVC) COPPER SWEAT, INCLUDING ALL NECESSARY BUSHINGS.

E. DOMESTIC WATER PIPING (BELOW GROUND)

DISTRIBUTION TUBING SHALL BE EITHER TYPE "L" SOFT COPPER OR PEX MATERIAL AS APPROVED IN THE CURRENT MICHIGAN PLUMBING CODE. THERE SHALL BE NO JOINTS BELOW OR LOCATED IN THE CONCRETE FLOOR SLAB. TUBING SHALL BE INSTALLED IN CONTINUOUS LENGTHS FROM THE POINTS OF SLAB PENETRATION SHOWN ON PLANS.

TRANSITION FITTINGS SHALL BE USED TO CONNECT DISSIMILAR MATERIALS, SUCH AS, COPPER TO PEX. PEX FITTING JOINING MAY BE DONE BY EITHER OF TWO METHODS; ASTM F-1807 BRASS BARBED FITTINGS AND COPPER PRESS BANDS OR STAINLESS STEEL SLEEVE AND BRONZE BARBED FITTINGS, SIMILAR TO "VIEGA NORTH AMERICA".

F. NATURAL GAS PIPING (ABOVE GROUND)

INSTALLATION SHALL BE IN ACCORDANCE WITH THE METHODS AS DESCRIBED IN THE INTERNATIONAL FUEL GAS CODE NFPA 58 AND THEIR RELATED SECTIONS.

GAS PIPING MATERIAL SHALL COMPLY WITH ONE OF THE STANDARDS LISTED IN THE INTERNATIONAL FUEL GAS CODE.

CORROSION PROTECTION, PROTECTIVE COATING AND WRAPPING SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL FUEL GAS CODE AND NFPA 58.

VALVES SHALL NOT BE LOCATED IN ANY AIR PLENUM. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS, OR RUNNING THREADS. PROVIDE SHUT-OFF COCKS ON ALL BRANCH PIPING TO REGULATORS AND EQUIPMENT.

COORDINATE WITH LOCAL AUTHORITIES FOR OTHER REQUIREMENTS.

G. NATURAL GAS PIPING (UNDERGROUND)

INSTALLATION SHALL BE IN ACCORDANCE WITH THE METHODS AS DESCRIBED IN THE INTERNATIONAL FUEL GAS CODE, NFPA 58 AND THEIR RELATED SECTIONS.

GAS PIPING MATERIAL SHALL BE IN ACCORDANCE WITH THE SECTIONS RELATED TO PLASTIC PIPE, TUBING AND FITTINGS. PLASTIC PIPE SHALL BE LABELED FOR "GAS" WITH "ASTM D 2513" MARKINGS FOR OUTSIDE UNDERGROUND ONLY.

GAS PIPING JOINING SHALL BE IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS. PLASTIC PIPE, TUBING AND FITTINGS SHALL BE JOINED PER MANUFACTURERS RECOMMENDATIONS. HEAT FUSION JOINTS SHALL BE MADE IN ACCORDANCE WITH QUALIFIED PROCEDURES. HEAT FUSION FITTINGS SHALL BE MARKED "ASTM D 2513". PLASTIC PIPING JOINTS AND FITTINGS FOR LIQUIFIED PETROLEUM GAS PIPING SYSTEMS IN ACCORDANCE WITH NFPA 58.

NO CORROSION PROTECTION REQUIRED FOR PLASTIC PIPE. CONTRACTOR SHALL PROVIDE AND INSTALL A TRACER WIRE ON ALL UNDERGROUND GAS PIPING.

NO VALVES SHALL BE ALLOWED IN UNDERGROUND DISTRIBUTION PIPING.

H. PIPE HANGERS AND SUPPORTS

THE PLUMBING CONTRACTOR SHALL PROVIDE PIPE HANGERS AND SUPPORTS AS REQUIRED. APPROVED MANUFACTURERS SHALL BE: GRINNELL, CARPENTER-PATTERSON, FEE-MASON OR MICHIGAN HANGER CO.

GENERALLY ALL SUPPORT COMPONENTS SHALL CONFORM TO MANUFACTURERS' STANDARDIZATION SOCIETY SPECIFICATION SP-69.

HANGERS SHALL ADEQUATELY SUPPORT THE PIPING SYSTEM. THEY SHALL BE LOCATED NEAR OR AT CHANGES IN PIPING DIRECTION, WITHIN 1"-0" OF EVERY FITTING AND CONCENTRATED LOAD. THEY SHALL PROVIDE VERTICAL ADJUSTMENT TO MAINTAIN PITCH REQUIRED FOR PROPER DRAINAGE ANDIOR VENTING. THEY SHALL ALLOW FOR EXPANSION AND CONTRACTION OF THE PIPING. HANGERS SHALL BE FASTENED TO BUILDING STEEL MEMBERS WHEREVER PRACTICAL AND HUNG FROM TRUSS OR JOIST PANEL POINTS ONLY.

I. JOINING OF PIPE

THREADED JOINTS SHALL HAVE AMERICAN NATIONAL STANDARD TAPER PIPE THREADS. REAM PIPE ENDS AND REMOVE BURRS AFTER THREADING. MAKE UP JOINTS USING ON APPROVED COMPOUND APPLIED TO THE MALE THREADS ONLY.

SOLDER JOINTS: TUBING OR PIPE SHALL BE CUT SQUARE AND BURRS REMOVED. BOTH INSIDE OF FITTINGS AND OUTSIDE OF TUBING OR PIPE SHALL BE WELL CLEANED WITH STEEL WOOL BEFORE SWEATING. CARE SHALL BE TAKEN TO PREVENT ANNEALING OF FITTINGS AND HARD DRAWN TUBING WHEN MAKING CONNECTIONS. JOINTS SHALL BE MADE WITH 95 5 TIN-ANTIMONY SOLDER.

J. WELDING OF PIPE

SURFACE OF ALL PARTS TO BE WELDED SHALL BE THOROUGHLY CLEANED AND SHALL BE FREE FROM ALL PAINT, OIL, RUST OR SCALE BEFORE BEING WELDED.

FLANGES SHALL BE WELDED TO PIPE BY MEANS OF WELDING NECK FLANGES. BLIND FLANGES SHALL BE MADE WITH WELDING NECK FLANGES AND BLIND FLANGES. CAPS ON SMALLER LINES SHALL BE SCREWED ON FOR EASY REMOVAL.

WELDING SHALL BE DONE IN ACCORDANCE WITH THE WELDING PROCEDURES OF THE NATIONAL CERTIFIED PIPE WELDING BUREAU OR OTHER APPROVED PROCEDURE CONFORMING TO THE REQUIREMENTS OF THE A.S.M.E. BOILER AND PRESSURE VESSEL CODE OR THE A.S.A. CODE FOR THE PRESSURE PIPING. NO WELDER SHALL BE EMPLOYED ON THE WORK THAT HAS NOT FULLY QUALIFIED UNDER THE ABOVE-SPECIFIED PROCEDURE AND SO CERTIFIED BY A MEMBER OF A LOCAL CHAPTER OF THE NATIONAL CERTIFIED PIPE WELDING BUREAU OR SIMILAR LOCALLY RECOGNIZED TESTING AUTHORITY.

ALL FITTINGS SHALL BE SEAMLESS STEEL WELDING TYPE OF WEIGHT REQUIRED FOR THE SERVICE OR AS HEREIN SPECIFIED.

TURNS IN PIPING SHALL BE MADE WITH LONG RADIUS ELBOWS.

BRANCH TAKE-OFFS SHALL BE MADE WITH FACTORY MADE STRAIGHT OR REDUCING TEES, OR WELDOLETS OF BUTT, SOCKET OR THREADED TYPE SIMILAR THOSE MANUFACTURED BY BONNEY FORGE. WELDOLETS SHALL PROVIDE 100R PIPE STRENGTH FOR ALL SIZES, WEIGHTS AND SCHEDULES.

MITERING, NOTCHING OR DIRECT WELDING OF PIPE TO THE MAIN TO FORM TEES AND ELBOWS OR OTHER SIMILAR TYPE CONSTRUCTION WILL NOT BE PERMITTED.

VALVES AND EQUIPMENT SHALL NOT BE WELDED INTO THE PIPING SYSTEM. SCREWED TYPE UNIONS OR COMPANION FLANGES SHALL BE USED TO ALLOW FOR REMOVAL WITHOUT CUTTING OF PIPE.

PROVIDE A FIRE RESISTANT MAT OR BLANKET TO PROTECT THE STRUCTURE AND ADEQUATE FIRE PROTECTION EQUIPMENT AT ALL LOCATIONS WHERE WELDING IS DONE.

K. CHARACTER OF PIPE WORK

PIPING SHALL BE LOCATED OR OFFSET AS REQUIRED TO CLEAR OTHER TRADES WORK, TO AVOID INTERFERENCE WITH OTHER PIPING HAVING PRECEDENCE, TO CONCEAL THEM MORE READILY OR TO ALLOW FOR MAXIMUM HEADROOM. PIPING AND CONDUIT IN FINISHED AREAS SHALL BE CONCEALED (WHEREVER POSSIBLE).

ALL CUT ENDS SHALL HAVE BURRS REMOVED AND ENDS REAMED.

INTERIOR OF ALL SERVICE PIPING SUCH AS WATER, AIR, ETC. SHALL BE CLEANED FREE OF DIRT AND IMPURITIES BEFORE PIPES ARE PUT IN PLACE. PIPING SHALL BE FLUSHED CLEAN AT COMPLETION.

NO PIPING SHALL BE RUN ABOVE ANY ELECTRICAL DEVICE, PANEL, SWITCHGEAR, ETC. PIPING SHALL BE OFFSET TO CONFORM TO THIS REQUIREMENT WHETHER INDICATED ON THE DRAWINGS OR NOT.

ALL PIPING SHALL BE PROPERLY PITCHED FOR DRAINING AND VENTING AS REQUIRED.

UNDERGROUND LINES SHALL BE LAID ON SOLID EARTH WITH PIPE EVENLY SUPPORTED THROUGHOUT LENGTH OF PIPE.

CAP ALL OPENINGS WITH SUITABLE PLUGS OR CAPS DURING CONSTRUCTION.

KEEP HOT AND COLD LINES AT LEAST SIX (6) INCHES APART.

EACH TRADE IS WARNED TO MAKE CERTAIN THAT ALL PIPING, FITTINGS, VALVES, THREADS AND JOINTS ARE FREE FROM DEFECTS AND ARE TIGHTLY FITTED. WHERE LEAKS OCCUR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING DEFECTIVE PORTIONS OF THE SYSTEM, AS WELL AS REPAIRING DAMAGES TO FINISH PORTIONS OF THE BUILDING OR ITS CONTENTS AT NO EXTRA COST.

L. VALVES

VALVES SHALL BE AS MANUFACTURED BY NIBCO, OR APOLLOSCONBRACO.

AS FAR AS POSSIBLE, VALVES SHALL BE BY ONE MANUFACTURER.

VALVES SHALL BE DESIGNED FOR EACH SPECIFIC PRESSURE, TEMPERATURE AND APPLICATION.

FLANGED VALVES SHALL HAVE FLANGE DRILLING TO SUIT JOINING PIPE FLANGES.

ALL BALL VALVES SHALL BE TWO-PIECE, FULL PORT DESIGN WITH CHROME PLATED OR STAINLESS STEEL BALL AND BRONZE BODY.

DO NOT USE GATE VALVES FOR THROTTLING FLOW.

PROVIDE CHECK VALVES WHERE NECESSARY IN THE SYSTEM TO PREVENT BACKFLOW.

ALL MAINS, BRANCH MAINS AND BRANCHES SHALL BE VALVED SO AS TO PROVIDE MEANS OF SHUTTING DOWN THE COMPLETE SYSTEM OR SO THAT BRANCH LINES OR BRANCH MAINS MAY BE SHUT DOWN WITHOUT REQUIRING SHUTDOWN OF MAIN. (THESE VALVES SHALL BE INSTALLED WHETHER SHOWN ON DRAWINGS OR NOT.)

PROVIDE BALL VALVES FOR SHUTTING OFF EACH GROUP OF FIXTURES OR EQUIPMENT TO PERMIT REPAIRS WITHOUT INTERFERING WITH THE REMAINDER OF THE SYSTEM.

PROVIDE VACUUM BREAKERS AND ANTI-SIPHON FITTINGS ON WATER PIPING SYSTEMS BEFORE ALL REQUIRED EQUIPMENT CONNECTIONS, ALL HOSE END SPIGOTS AND HOSE CONNECTIONS, ETC. INSTALL BACKFLOW DEVICE ON ALL WATER LINES TO EQUIPMENT WHERE LOCAL CODE REQUIRES THE INSTALLATION IN STRICT ACCORDANCE WITH LOCAL CODES AND OR AUTHORITIES HAVING JURISDICTION.

CONTRACTOR SHALL COMPLETELY TAG AND LABEL ALL VALVES AND PROVIDE A COMPLETE VALVE CHART INDICATING LOCATION, FUNCTION AND EQUIPMENT SERVED.

M. INSULATION - GENERAL

THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION OF THERMAL INSULATION ON ALL HOT AND COLD SURFACES WHICH REQUIRE INSULATION FOR HEAT OR COLD CONSERVATION, COMFORT OF OCCUPANTS, EFFICIENCY OR EASE OF OPERATION OR TO PREVENT CONDENSATION OR DRIPPING. THE INSULATION SHALL BE COMPLETE AND EFFECTIVE THROUGHOUT THE BUILDING.

ALL INSULATION MATERIALS SHALL BE CLASS A BY UNDERWRITER'S LABORATORIES. STANDARD PIPING FIBERGLASS INSULATION SHALL BE MINIMUM 5 LB. DENSITY AND SHALL HAVE U.L. RATING NOT EXCEEDING 25 FLAME SPREAD, 35 FUEL CONTRIBUTED AND 50 SMOKE DEVELOPED. ACCESSORIES SUCH AS ADHESIVE, MASTICS, CEMENTS, AND CLOTH FOR FITTINGS SHALL BE PERMANENTLY FIRE AND SMOKE RESISTANT. CHEMICALS USED FOR TREATING PAPER IN JACKET LAMINATES SHALL BE UNAFFECTED BY WATER OR HUMIDITY.

APPROVED MANUFACTURERS: CERTAIN TEEDJSAINT GOBAIN, OWENS CORNING, JOHNS-MANSVILLE OR ARMSTRONG CORK COMPANY.

THERMAL INSULATION SHALL BE APPLIED TO THE FOLLOWING PIPING:

1. DOMESTIC WATER PIPING AND RELATED VALVES.

INSULATE FITTINGS AND VALVES. DO NOT INSULATE FLEXIBLE CONNECTIONS AND EXPANSION JOINTS. TERMINATE INSULATION NEATLY WITH PLASTIC MATERIAL TROWELLED ON BEVEL.

INSULATION SHALL BE APPLIED TO PIPE LINES AND EQUIPMENT ONLY AFTER THEY HAVE BEEN INSPECTED, TESTED, CLEANED AND DRIED BY THE CONTRACTOR AND SO APPROVED BY THE OWNER'S FIELD REPRESENTATIVE. INSULATION SHALL BE DRY BEFORE AND DURING APPLICATION. FINISHING SHALL BE DONE AT OPERATING CONDITIONS.

THE INSULATION ON PIPING SHALL BE NEATLY AND TIGHTLY APPLIED WITH UNBROKEN LENGTHS AND WITH THE ENDS OF THE SECTIONS FIRMLY BUTTED TOGETHER.

THE INSULATION ON PIPING SHALL BE EXTENDED THROUGH ALL SLEEVES IN ORDER TO PRODUCE A CONTINUOUS APPLICATION. INSULATE ALL PIPING PASSING THROUGH SLEEVES.

ALL DOMESTIC WATER MAINS AND BRANCHES TO RECEIVE 1" THICK FIBERGLASS INSULATION. ALL IN-WALL DOMESTIC WATER PIPING TO RECEIVE 112" THICK FIBERGLASS INSULATION WITH PVC COVERS.

N. EXCAVATION AND BACKFILL

DO ALL EXCAVATING AND BACKFILLING REQUIRED FOR ALL UNDERGROUND WORK AND EQUIPMENT PROVIDED UNDER THIS CONTRACT. AFTER PIPE IS INSTALLED, TESTED AND INSPECTED, BACKFILL TRENCHES TO GRADE OR UNDERSIDE OF FLOOR SLABS. BACKFILL UNDER BUILDINGS SHALL BE CLEAN SAND. BACKFILL FOR OTHER LOCATIONS MAY BE EXCAVATED DIRT, IF APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE. APPLY BACKFILL IN LAYERS NOT OVER 8 INCHES THICK, THEN COMPACTED. COMPACT ALL BACKFILL TO AT LEAST 95T OR MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.

WALLS OF TRENCHES SHALL NOT BE CAVED IN FOR BACKFILLING. WHERE EARTH IS UNSTABLE, PROVIDE SHORING AND SHEET PILING, AS MAY BE NECESSARY TO SUPPORT THE BANKS AND PREVENT MOVEMENT OF EARTH INTO THE TRENCH. NO TRENCH SHALL BE EXCAVATED BELOW THE SAFE ANGLE OF REPOSE FOR THE SOIL ADJACENT TO ANY FOOTING, AS DETERMINED BY THE ARCHITECT, NOR SHALL ANY TRENCHING BE DONE IN SUCH A MANNER AS TO ENDANGER THE STABILITY OF ANY WORK IN PLACE.

REMOVE WATER, WHICH MAY ACCUMULATE OR BE FOUND IN THE TRENCH EXCAVATIONS AND KEEP ALL TRENCHES CLEAR OF WATER DURING THE LAYING OF SEWERS AND PIPING.

WHENEVER THE BOTTOM OF THE TRENCH IS SOFT, THE EXCAVATIONS SHALL BE CARRIED TO AT LEAST 8 INCHES BELOW THE BOTTOM OF THE PIPE AND REFILLED WITH GRAVEL OR CRUSHED STONE. GRAVEL FILL USED FOR THIS PURPOSE SHALL BE THE SAME SIZE AND QUALITY AS USED FOR COARSE AGGREGATE FOR CONCRETE.

ALL EXCAVATED MATERIAL IN EXCESS OF THE QUANTITY REQUIRED FOR BACKFILLNG SHALL BE HAULED AWAY FROM THE PREMISES OR DISPOSED OF BY DUMPING IN THE AREAS DESIGNATED BY THE ARCHITECT.

PIPING INSTALLED ON BACKFILL SHALL BE PLACED ON A GRILLAGE OF CONCRETE. PIPING SHALL NOT BE BURIED IN ASHES, CINDERS, OR STONE.

O. MATERIALS TESTS

PERFORM ALL TESTS REQUIRED BY STATE, CITY, COUNTY ANDEOR OTHER AGENCIES HAVING JURISDICTION, AND AS INDICATED HEREIN.

PROVIDE ALL MATERIALS, EQUIPMENT, WATER, COMPRESSED AIR, ETC. AND LABOR REQUIRED FOR THE TESTS.

PIPING UNDER HYDROSTATIC PRESSURE TEST SHALL NOT LOSE MORE THAN 2 PSI FOR A PERIOD OF 5 HOURS UNDER TEST PRESSURE. EXAMINE PIPING FOR LEAKAGE.

PIPING UNDER AIR PRESSURE TEST SHALL NOT LOSE MORE THAN 2F OF TEST PRESSURE FOR A PERIOD OF 1 HOUR. TEST SHALL BE PERFORMED WITH AMBIENT TEMPERATURE APPROXIMATELY CONSTANT.

TESTS SHALL BE AS REQUIRED BY AGENCIES HAVING JURISDICTION. WHERE NO TESTING REQUIREMENTS EXIST, OR WHERE SUCH REQUIREMENTS ARE LESS STRINGENT THAN THOSE LISTED BELOW, TESTS SHALL BE AS LISTED BELOW. VALVE OFF OR REMOVE ALL GAUGES, EQUIPMENT, ETC., WHICH MAY BE DAMAGED BY TESTS.

1. DOMESTIC WATER PIPING, COMPRESSED AIR PIPING SHALL BE TESTED AT 150-PSI HYDROSTATIC PRESSURE.

2. RAIN CONDUCTORS SHALL BE TESTED AT MINIMUM 5-PSI AIR PRESSURE OR HYDROSTATIC.

3. SANITARY PIPING SHALL BE TESTED AT MINIMUM 5-PSI AIR PRESSURE OR HYDROSTATIC.

P. PERFORMANCE TESTS

THE PLUMBING SYSTEM SHALL BE TESTED AND BALANCED TO DEMONSTRATE THAT SPECIFIED CAPACITIES AND PROPER CONTROL FUNCTIONING HAS BEEN ATTAINED. ALL TESTING AND BALANCING IS TO BE COMPLETED PRIOR TO RUNNING PERFORMANCE TESTS, AND PRIOR TO TRAINING AND INSTRUCTION OF THE OWNER'S PERSONNEL IN SYSTEM OPERATION.

Q. DISINFECTION OF POTABLE WATER SYSTEM

PLUMBING CONTRACTOR SHALL REVIEW APPLICABLE STATE AND LOCAL CODE REQUIREMENTS FOR CLEANING PROCEDURES ON DRINKING WATER SYSTEMS.

PLUMBING CONTRACTOR SHALL PURGE ALL POTABLE WATER SYSTEM OF DELETERIOUS MATER AND DISINFECT PRIOR TO UTILIZATION AS PRESCRIBED BY THE LOCAL HEALTH AUTHORITY OR WATER PURVEYOR HAVING JURISDICTION. IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURE DESCRIBED IN EITHER AWWA C651 OR AWWA C652.

Approved For Permit
Approved
Date: 9/21/2026
City of Detroit Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
Approved
Reviewed for Code Compliance

CONSULTANTS

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10913 Marcello Lane
Whitmore Lake, MI 48189
www.fsdgllc.com

SYSTEMS SOLUTION ENGINEERING
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Phone/Fax 248.247.1193
www.sse-mep.com
sse@sse-mep.com
2647002

conn engineering consultants, inc.
commercial•industrial•institutional•residential
structural engineering
107 n. bridge
linden, mi 48451
p. 810.458.4350
www.connengineering.com

SEAL

MICHIGAN MASIC ENGINEER No. 6501035809 STATE OF MICHIGAN PROFESSIONAL ENGINEER

PROJECT

TRANSFLO
8100 MELVILLE STREET
DETROIT, MI 48209

PROJECT NO:	FSDG PROJECT NO:
2647002	20260219
DRAWN BY:	CHECKED BY:
SSE	M. MASIC
PROJECT MGR:	APPROVED BY:
A. INOV	M. MASIC

SHEET TITLE

PLUMBING SPECIFICATIONS

SHEET NUMBER	ISSUE
P-400	

COMcheck Software Version 4.1.5.5

Envelope Compliance Certificat



Project Information

Energy Code:	90.1 (2013) Standard
Project Title:	CSX Transflo
Location:	Detroit, Michigan
Climate Zone:	5a
Project Type:	Addition
Vertical Glazing / Wall Area:	2%
Performance Sim. Specs:	EnergyPlus 8.1.0.009 (EPW: USA_MI_Detroit.Metro.AP.725370_TMY3.epw)

Construction Site:
8100 Melville Street
Detroit, MI 48209

Owner/Agent:

Designer/Contractor:

Building Area	Floor Area
1-Automotive Facility : Nonresidential	3200

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Floor 1: Slab-On-Grade:Unheated, Vertical 2 ft., [Bldg. Use 1 - Automotive Facility] (b)	229	---	15.0	0.520	0.520
Roof 1: Metal Building, Standing Seam, Liner System with Thermal Blocks (c), [Bldg. Use 1 - Automotive Facility]	3215	13.0	19.0	0.049	0.037
NORTH					
Exterior Wall 4: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Automotive Facility]	1240	13.0	19.0	0.040	0.050
Door 1: Insulated Metal, Swinging, [Bldg. Use 1 - Automotive Facility]	24	---	---	0.370	0.500
EAST					
Exterior Wall 2: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Automotive Facility]	1542	13.0	19.0	0.040	0.050
Window 1: Metal Frame:Fixed, Perf. Type: Energy code default, Single Pane, Clear , SHGC 0.82, VT 0.76, [Bldg. Use 1 - Automotive Facility]	28	---	---	1.250	0.420
Window 2: Metal Frame:Fixed, Perf. Type: Energy code default, Single Pane, Clear , SHGC 0.82, VT 0.76, [Bldg. Use 1 - Automotive Facility]	28	---	---	1.250	0.420
Window 3: Metal Frame:Fixed, Perf. Type: Energy code default, Single Pane, Clear , SHGC 0.82, VT 0.76, [Bldg. Use 1 - Automotive Facility]	18	---	---	1.250	0.420
Window 4: Metal Frame:Fixed, Perf. Type: Energy code default, Single Pane, Clear , SHGC 0.82, VT 0.76, [Bldg. Use 1 - Automotive Facility]	18	---	---	1.250	0.420
SOUTH					
Exterior Wall 1: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Automotive Facility]	1240	13.0	19.0	0.040	0.050
Door 2: Insulated Metal, Swinging, [Bldg. Use 1 - Automotive Facility]	24	---	---	0.370	0.500
WEST					
Exterior Wall 3: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Automotive Facility]	1542	13.0	19.0	0.040	0.050
Door 3: Insulated Metal, Non-Swinging, [Bldg. Use 1 - Automotive Facility]	240	---	---	0.310	0.500

Assembly	Gross Area or Perimeter	Cavity R-Value	Con R-Val
Door 4: Insulated Metal, Non-Swinging, [Bldg. Use 1 - Automotive Facility]	240	---	---

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.
(c) Thermal spacer block with minimum R-3.5 must be installed above the purlin/batt, and the roof deck secu



Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2013) Standard requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

COM*check* Software Version 4.1.5.5

Inspection Checklist

Energy Code: 90.1 (2013) Standard

Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck requirement, the user certifies that a code requirement will be met and how that is doc is being claimed. Where compliance is itemized in a separate table, a reference to that



Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 5.4.3.1.1, 5.7 [PR1][1]	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6][2]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.5.4.2.3 [PR7][2]	In buildings > 2,500 ft2, any enclosed spaces directly under a roof with ceiling heights > 15 ft. and used as an office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse), gymnasium, fitness/exercise area, playing area, gymnasium seating area, convention exhibit/event space, courtroom, automotive service, fire station engine room, manufacturing corridor/transition and bay areas, retail, library reading and stack areas, distribution/sorting area, transportation baggage and seating areas, or workshop, the following requirements apply: The daylight zone under skylights is >= half the floor area and (a) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40 or (b) the minimum skylight effective aperture >= 1 percent. The skylights have a measured haze value > 90 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)



Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies	
4.2.4 [FO1][2]	Installed below-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-____	R-____	☐Complies ☐Does Not ☐Not Observ ☐Not Applica	
4.2.4 [FO3][2]	Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-____ ☐ Unheated ☐ Heated	R-____ ☐ Unheated ☐ Heated	☐Complies ☐Does Not ☐Not Observ ☐Not Applica	
5.8.1.2 [FO4][2]	Slab edge insulation installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.5.3.5 [FO5][2]	Slab edge insulation depth/length.	____ ft	____ ft	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.8.1.7 [FO6][1]	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.8.1.7.3 [FO7][1]	Insulation in contact with the ground has <=0.3% water absorption rate per ASTM C272.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
6.4.4.1.5 [FO11][3]	Bottom surface of floor structures incorporating radiant heating insulated to >=R-3.5.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)



Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies	
5.4.3.2 [FR1][3]	Factory-built and site-assembled fenestration and doors are labeled or certified as meeting air leakage requirements.			☐Complies ☐Does Not ☐Not Observ ☐Not Applica	
5.4.3.4 [FR4][3]	Vestibules are installed where building entrances separate conditioned space from the exterior, and meet exterior envelope requirements. Doors have self-closing devices, and are >=7 ft apart (>= 16 ft apart for adjoinging floor area >= 40000 sq.ft.). Vestibule floor area <=7 50 sq.ft. or 2 percent of the adjoining conditioned floor area.			☐Complies ☐Does Not ☐Not Observ ☐Not Applica	
5.5.4.3a [FR8][1]	Vertical fenestration U-Factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.5.4.3b [FR9][1]	Skylight fenestration U-Factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.5.4.4.1 [FR10][1]	Vertical fenestration SHGC value.	SHGC:____	SHGC:____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.5.4.4.2 [FR11][1]	Skylight SHGC value.	SHGC:____	SHGC:____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.8.2.1, 5.8.2.3, 5.8.2.4, 5.8.2.5 [FR12][2]	Fenestration products rated (U-factor, SHGC, and VT) in accordance with NFRC or energy code defaults are used.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.8.2.2 [FR13][1]	Fenestration and door products are labeled, or a signed and dated certificate listing the U-factor, SHGC, VT, and air leakage rate has been provided by the manufacturer.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.5.3.6 [FR14][2]	U-factor of opaque doors associated with the building thermal envelope meets requirements.	U-____ ☐ Swinging ☐ Nonswinging	U-____ ☐ Swinging ☐ Nonswinging	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.4.3.1 [FR15][1]	Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semiheated spaces in climate zones 1-6.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)



1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Commen
8.4.2 [EL10][2]	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:



1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)



Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies	
4.2.4 [IN2][1]	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For some ceiling systems, verification may need to occur during Framing Inspection.	R-____ ☐ Above deck ☐ Metal ☐ Attic	R-____ ☐ Above deck ☐ Metal ☐ Attic	☐Complies ☐Does Not ☐Not Observ ☐Not Applica	
5.8.1.2, 5.8.1.3 [IN3][1]	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
4.2.4 [IN6][1]	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-____ ☐ Mass ☐ Metal ☐ Steel ☐ Wood	R-____ ☐ Mass ☐ Metal ☐ Steel ☐ Wood	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.8.1.2 [IN7][1]	Above-grade wall insulation installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
4.2.4 [IN8][2]	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	R-____ ☐ Mass ☐ Steel ☐ Wood	R-____ ☐ Mass ☐ Steel ☐ Wood	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
5.8.1.1 [IN10][2]	Building envelope insulation is labeled with R-value or insulation certificate has been provided listing R-value and other relevant data.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.8.1.9 [IN18][2]	Building envelope insulation extends over the full area of the component at the proposed rated R or U value.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.8.1.4 [IN11][2]	Eaves are baffled to deflect air to above the insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.8.1.5 [IN12][2]	Insulation is installed in substantial contact with the inside surface separating conditioned space from unconditional space.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.8.1.6 [IN13][2]	Recessed equipment installed in building envelope assemblies does not compress the adjacent insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
5.8.1.7.1 [IN15][2]	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies
5.8.1.7.2 [IN16][2]	Foundation vents do not interfere with insulation.			☐Complies ☐Does Not ☐Not Observ ☐Not Applica
5.8.1.8 [IN17][3]	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.			☐Complies ☐Does Not ☐Not Observ ☐Not Applica



Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Commen
5.4.3.3 [FI1][1]	Weatherseals installed on all loading dock cargo doors in Climate Zones 4-8.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	



Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)


Approved For Permit
Approved
Date:
9/21/2026
CITY OF DETROIT
Buildings, Safety Engineering & Environmental Department
Permit Number:
BLD2026-00154
Approved
Reviewed for Code Compliance

COMcheck Software Version COMcheckW

Interior Lighting Compliance C



Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	TRANSFLO
Project Type:	New Construction

Construction Site:
8100 MELVILLE STREET
DETROIT, Michigan 48209

Owner/Agent:

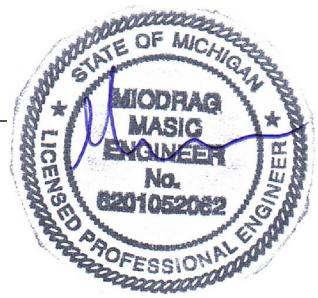
Designer/Contractor:
MIKE MASIC
SSE
2901 AUBURN ROAD, SUITE #500
AUBURN HILLS, Michigan 48326

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-CORRIDOR #104 (Common Space Types:Corridor/Transition <8 ft wide)	112	0.41	46
2-STORAGE #101 (Common Space Types:Storage >=50 - <=1000 sq.ft.)	52	0.43	22
3-BREAK RM #103 (Common Space Types:Lounge/Breakroom)	250	0.59	148
4-UTILITY #102 (Common Space Types:Storage <50 sq.ft.)	48	0.51	24
5-WAREHOUSE #100 (Common Space Types:Workshop)	1840	1.26	2318
6-MENS #107 (Common Space Types:Restrooms)	128	0.63	81
7-MEN LOCKER #106 (Common Space Types:Locker Room)	187	0.52	97
8-WOMENS #105 (Common Space Types:Restrooms)	167	0.63	105
		Total Allowed Watts =	2842

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-CORRIDOR #104 (Common Space Types:Corridor/Transition <8 ft wide) LED: FC: LED: Other:	1	3	31	93
2-STORAGE #101 (Common Space Types:Storage >=50 - <=1000 sq.ft.) LED: FB: LED: Other:	1	1	32	32
3-BREAK RM #103 (Common Space Types:Lounge/Breakroom) LED: FB: LED: Other:	1	4	32	128
4-UTILITY #102 (Common Space Types:Storage <50 sq.ft.) LED: FD: LED: Other:	1	1	34	34
5-WAREHOUSE #100 (Common Space Types:Workshop) LED: FA: LED: Other:	1	6	269	1613
6-MENS #107 (Common Space Types:Restrooms) LED: FB: LED: Other:	1	2	32	64
7-MEN LOCKER #106 (Common Space Types:Locker Room) LED: FB: LED: Other:	1	3	32	96



A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture
8-WOMENS #105 (Common Space Types:Restrooms)	
LED: FC: LED: Other:	1
Tota	

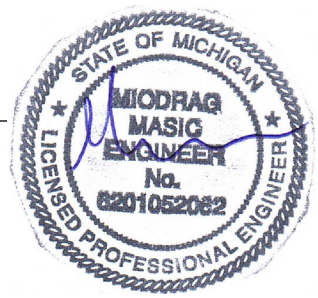


Interior Lighting PASSES: Design 23% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 90.1 (2019) Standard requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Mike Masic	MIKE MASIC	2026/09/07
Name - Title	Signature	Date



COMcheck Software Version COMcheckW

Exterior Lighting Compliance C



Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	TRANSFLO
Project Type:	New Construction
Exterior Lighting Zone	3 (Other (LZ3))

Construction Site:
8100 MELVILLE STREET
DETROIT, Michigan 48209

Owner/Agent:

Designer/Contractor:
MIKE MASIC
SSE
2901 AUBURN ROAD, SUITE #500
AUBURN HILLS, Michigan 48326

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
OUTDOOR (Parking area)	400013 ft2	0.06	Yes	24001
			Total Tradable Watts (a) =	24001
			Total Allowed Watts =	24001
			Total Allowed Supplemental Watts (b) =	500

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

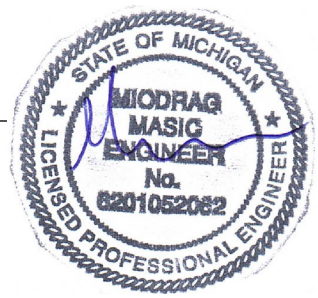
A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
OUTDOOR (Parking area, 400013 ft2): Tradable Wattage				
LED: OA: LED: Other:	1	2	25	50
LED: OB1: LED: Other:	1	4	109	436
LED: OB2: LED: Other:	1	12	164	1968
LED: A: LED: Other:	1	32	309	9888
			Total Tradable Proposed Watts =	12342

Exterior Lighting PASSES: Design 50% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2019) Standard requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Mike Masic	MIKE MASIC	2026/09/07
Name - Title	Signature	Date



COM*check* Software Version COMcheckW

Inspection Checklist

Energy Code: 90.1 (2019) Standard

Requirements: 100.0% were addressed directly in the COM*check* software

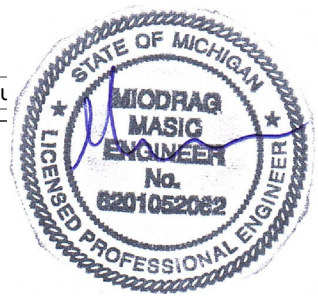
Text in the "Comments/Assumptions" column is provided by the user in the COMcheck requirement, the user certifies that a code requirement will be met and how that is doc is being claimed. Where compliance is itemized in a separate table, a reference to that



Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6][2]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	
4.2.2, 9.4.3, 9.7 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
9.7 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

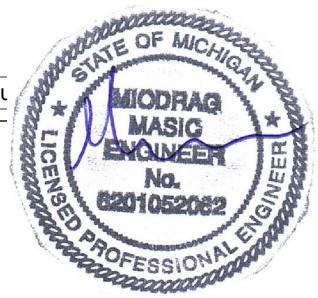
1	High Impact (Tier 1)	2	Mediu		w Impact (Tier 3)





Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comment
8.4.2 [EL10][2]	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	
8.4.3 [EL11][2]	New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	
9.4.1.1 [EL1][2]	Automatic control requirements prescribed in Table 9.6.1, for the appropriate space type, are installed. Mandatory lighting controls (labeled as 'REQ') and optional choice controls (labeled as 'ADD1' and 'ADD2') are implemented.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
9.4.1.1 [EL2][2]	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
9.4.1.1f [EL13][1]	Daylight areas under skylights and roof monitors that have more than 150 W combined input power for general lighting are controlled by photocontrols.	☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
9.4.1.4 [EL3][2]	Automatic lighting controls for exterior lighting installed.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
9.4.1.4d [EL21][2]	Outdoor parking area luminaires >= 78W and <= 24 ft height controlled to reduce wattage by 50% when area unoccupied over 15 minutes. Controlled power limited to <= 1500W.	☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
9.4.1.3 [EL4][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
9.6.2 [EL8][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

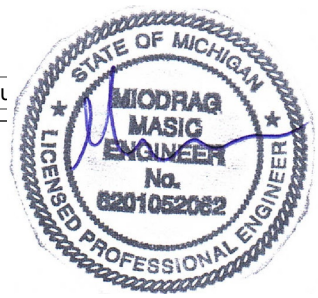


1	High Impact (Tier 1)	2	Mediu	w Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Commen
8.7.1 [FI16][3]	Furnished as-built drawings for electric power systems within 30 days of system acceptance.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
8.7.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
9.2.2.3 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
9.4.2 [FI19][1]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Exterior Lighting fixture schedule for values.*
9.4.4 [FI20][1]	At least 75% of all permanently installed lighting fixtures in dwelling units have >= 55 lm/W efficacy or a >= 45 lm/W total luminaire efficacy.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.



Additional Comments/Assumptions:



COMcheck Software Version COMcheckW

Mechanical Compliance Certific



Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	TRANSFLO
Location:	Detroit, Michigan
Climate Zone:	5a
Project Type:	New Construction

Construction Site:
8100 MELVILLE STREET
DETROIT, Michigan 48209

Owner/Agent:

Designer/Contractor:
MIKE MASIC
SSE
2901 AUBURN ROAD, SUITE #500
AUBURN HILLS, Michigan 48326

Mechanical Systems List

Quantity **System Type & Description**

1 ERV-1 (Single Zone):
Heating: 1 each - Other, Electric, Capacity = 20 kBtu/h
No minimum efficiency requirement applies
Fan System: ERV-1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 2 Exhaust, Constant Volume, 200 CFM, 0.1 motor nameplate hp, 0.00 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW
FAN 1 Supply, Constant Volume, 200 CFM, 0.1 motor nameplate hp, 0.00 fan energy index , fan exception: Single fan < 1 HP or < 0.89 kW

1 EDH-1 (Single Zone):
Heating: 1 each - Other, Electric, Capacity = 6 kBtu/h
No minimum efficiency requirement applies

1 EUH-1 (Unknown w/ PerimeterSystem):
Heating: 1 each - Unit Heater, Electric, Capacity = 11 kBtu/h
No minimum efficiency requirement applies

1 IRH-1 (Single Zone w/ PerimeterSystem):
Heating: 1 each - Radiant Heater, Gas, Capacity = 125 kBtu/h
No minimum efficiency requirement applies

1 F-1 & ACCU-1 (Single Zone):
Heating: 1 each - Duct Furnace, Gas, Capacity = 60 kBtu/h
Proposed Efficiency = 97.00% Ec, Required Efficiency: 80.00 % Ec
Cooling: 1 each - Split System, Capacity = 42 kBtu/h, Air-Cooled Condenser
Proposed Efficiency = 16.50 SEER2, Required Efficiency = 13.40 SEER2
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00
Fan System: F-1 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes

Fans:
FAN 3 Supply, Constant Volume, 1430 CFM, 0.8 motor nameplate hp, 0.00 fan energy index , fan exception: Fan array <= 5 total HP or <= 4.1 kW

1 WH-1:
Gas Storage Water Heater, Capacity: 48 gallons, Input Rating: 60 kBtu/h w/ Circulation Pump
No minimum efficiency requirement applies



Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consiste
specifications, and other calculations submitted with this permit application. The proposed mechar
designed to meet the 90.1 (2019) Standard requirements in COM*check* Version COMcheckWeb anc
mandatory requirements listed in the Inspection Checklist.

Aleks Inov
Name - Title

a.Inov
Signature





COM*check* Software Version COMcheckW

Inspection Checklist

Energy Code: 90.1 (2019) Standard

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Approved
Date: 9/21/2026
Buildings, Safety Engineering & Environmental Department
Permit Number: BLD2026-00154
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Reviewed for Code Compliance

Requirements: 100.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck requirement, the user certifies that a code requirement will be met and how that is doc is being claimed. Where compliance is itemized in a separate table, a reference to that

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 6.4.4.2.1, 6.7.2 [PR2][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
4.2.2, 7.7.1, 10.4.2 [PR3][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6][2]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	
4.2.5.2 [PR5][1]	Commissioning shall be performed as stated in Sections 5.9.2, 6.9.2, 7.9.2, 8.9.2, 9.9.2, 10.9.2, 11.2(d), and G1.2.1(c). Commissioning must utilize ASHRAE/IES Standard 202 or other generally accepted engineering standards acceptable to the building official. FPT and verification requirements for commissioning are as stated in Section 4.2.5.1. Commissioning shall document compliance of the building systems, controls, and building envelope with required provisions of this standard. Commissioning requirements shall be incorporated into the construction documents.	☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Buildings, additions, or alterations with less than 10,000 ft2 of conditioned space and combined heating, cooling, and service water heating equipment totaling less than 960,000 Btu/h in capacity.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impa	w Impact (Tier 3)

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Section # & Req.ID	Footing / Foundation Inspection	Complies?	Commen
6.4.3.7 [FO9][3]	Freeze protection and snow/ice melting system sensors for future connection to controls.	☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement dc

Additional Comments/Assumptions:





Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Commen
7.4.4.1 [PL2][3]	Temperature controls installed on service water heating systems (<=120ºF to maximum temperature for intended use).	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
7.4.4.2 [PL3][1]	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.



Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impa	w Impact (Tier 3)





Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies	
6.4.1.4, 6.4.1.5 [ME1][2]	HVAC equipment efficiency verified. Non-NAECA HVAC equipment labeled as meeting 90.1.	Efficiency:____	Efficiency:____	☑Complies ☐Does Not ☐Not Observ ☐Not Applica	
6.4.3.4.1 [ME3][3]	Stair and elevator shaft vents have motorized dampers that automatically close.			☐Complies ☐Does Not ☐Not Observ ☑Not Applica	
6.4.3.4.2, 6.4.3.4.3 [ME4][3]	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.4.5 [ME39][3]	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
6.4.3.4.4 [ME5][3]	Ventilation fans >0.75 hp have automatic controls to shut off fan when not required.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.8 [ME6][1]	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Systems with a design outdoor airflow less than 1200 cfm.
6.5.3.2.1 [ME40][2]	DX cooling systems >= 75 kBtu/h (>= 65 kBtu/h effective 1/2016) and chilled-water and evaporative cooling fan motor hp >= ¼ designed to vary supply fan airflow as a function of load and comply with operational requirements.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values.*
6.4.4.1.1 [ME7][3]	Insulation exposed to weather protected from damage. Insulation outside of the conditioned space and associated with cooling systems is vapor retardant.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.1.2 [ME8][2]	HVAC ducts and plenums insulated per Table 6.8.2. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	R-____	R-____	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.4.1.3 [ME9][2]	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	____ in.	____ in.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impa	w Impact (Tier 3)



Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies	
6.4.4.1.4 [ME41][3]	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.			☑Complies ☐Does Not ☐Not Observ ☐Not Applica	
6.4.4.2.1 [ME10][2]	Ducts and plenums having pressure class ratings are Seal Class A construction.			☑Complies ☐Does Not ☐Not Observ ☐Not Applica	
6.8.1-15, 6.8.1-16 [ME110][2]	Electrically operated DX-DOAS units meet requirements per Tables 6.8.1-15 or 6.8.1-16.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
6.4.4.2.2 [ME11][3]	Ductwork operating >3 in. water column requires air leakage testing.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.2.3 [ME19][3]	Dehumidification controls provided to prevent reheating, recooling, mixing of hot and cold airstreams or concurrent heating and cooling of the same airstream.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Use of a desiccant systems.
6.5.2.4.1 [ME68][3]	Humidifiers with airstream mounted preheating jackets have preheat auto-shutoff value set to activate when humidification is not required.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
6.5.2.4.2 [ME69][3]	Humidification system dispersion tube hot surfaces in the airstreams of ducts or air-handling units insulated >= R-0.5.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
6.5.2.5 [ME70][3]	Preheat coils controlled to stop heat output whenever mechanical cooling, including economizer operation, is active.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.2.6 [ME106][3]	Units that provide ventilation air to multiple zones and operate in conjunction with zone heating and cooling systems are prevented from using heating or heat recovery to warm supply air above 60°F when representative building loads or outdoor air temperature indicate that most zones demand cooling.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
6.5.3.6 [ME72][2]	Motors for fans >= 1/12 hp and < 1 hp are electronically-commutated motors or have a minimum motor efficiency of 70%. These motors are also speed adjustable for either balancing or remote control.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

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Buildings, Safety Engineering & Environmental Department
CITY OF DETROIT
Permit Number: BLD2026-00154
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Reviewed for Code Compliance

1	High Impact (Tier 1)	2	Medium Impa	w Impact (Tier 3)

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ENGINEER
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Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies	
6.5.3.4 [ME108][2]	Parallel-flow fan-powered VAV air terminals have automatic controls to a) turn off the terminal fan except when space heating is required or if required for ventilation; b) turn on the terminal fan as the first stage of heating before the heating coil is activated; and c) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or reverse the terminal damper logic and provide heating from the central air handler through primary air.			☐Complies ☐Does Not ☐Not Observ ☑Not Applica	
6.5.3.7 [ME109][2]	Required minimum outdoor air rate is the larger of minimum outdoor air rate or minimum exhaust air rate required by Standard 62.1, Standard 170, or applicable codes or accreditation standards. Outdoor air ventilation systems shall comply with one of the following: a) design minimum system outdoor air provided < 135% of the required minimum outdoor air rate, b) dampers, ductwork, and controls allow the system to supply <= the required minimum outdoor air rate with a single set-point adjustment., or c) system includes exhaust air energy recovery complying with Section 6.5.6.1.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.3.3 [ME42][3]	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply. *See the Mechanical Systems list for values.*
6.5.4.2 [ME25][3]	HVAC pumping systems with >= 3 control values designed for variable fluid flow (see section details).			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
7.5.3 [ME78][2]	Gas-fired water-heating equipment installed in new buildings: where a singular piece of water-heating equipment >= 1,000 kBtu/h serves the entire building, thermal efficiency must be >= 90 Et. Where multiple pieces of water-heating equipment serve the building with combined rating is >= 1,000 kBtu/h, the combined input-capacity-weighted-average thermal efficiency , thermal efficiency must be >= 90 Et. Exclude input rating of equipment in individual dwelling units and equipment <= 100 kBtu/h.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

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STATE OF MICHIGAN
ALEKSANDAR INOV
ENGINEER
No. 6201062051
LICENSED PROFESSIONAL ENGINEER

Section # & Req.ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies	
6.5.7.1 [ME100][2]	Conditioned supply air to space with mechanical exhaust <= the greater of criteria of supply flow, required ventilation rate, exhaust flow minu the available transffer air (see section details).			☐Complies ☐Does Not ☐Not Observ ☑Not Applica	
6.5.7.2.1 [ME32][2]	Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume.			☐Complies ☐Does Not ☐Not Observ ☑Not Applicable	
6.5.7.2.4 [ME49][3]	Approved field test used to evaluate design air flow rates and demonstrate proper capture and containment of kitchen exhaust systems.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
6.5.8.1 [ME34][2]	Unenclosed spaces that are heated use only radiant heat.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.5.9 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h – 15% >240 kBtu/h – 10%			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
7.4.2 [ME36][2]	Service water heating equipment meets efficiency requirements.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	
6.4.3.9 [ME63][2]	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.			☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
6.5.10 [ME73][3]	Doors separating conditioned space from the outdoors have controls that disable/reset heating and cooling system when open.			☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.



Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impa	w Impact (Tier 3)



Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comment
8.4.2 [EL10][2]	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	
8.4.3 [EL11][2]	New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	
10.4.1 [EL9][2]	Electric motors meet requirements where applicable.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.



Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impa	w Impact (Tier 3)



Section # & Req.ID	Final Inspection	Complies?	Comment
6.4.3.1.2 [FI3][3]	Thermostatic controls have a 5 °F deadband.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.2 [FI20][3]	Temperature controls have setpoint overlap restrictions.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.3.1 [FI21][3]	HVAC systems equipped with at least one automatic shutdown control.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.3.2 [FI22][3]	Setback controls allow automatic restart and temporary operation as required for maintenance.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.4.3.6 [FI6][3]	When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited. Humidity control prohibits the use of fossil fuel or electricity to produce RH > 30% in the warmest zone humidified and RH < 60% in the coldest zone dehumidified.	☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Zones served by desiccant systems.
6.7.2.1 [FI7][3]	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.2 [FI8][3]	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
6.7.2.3 [FI9][1]	An air and/or hydronic system balancing report is provided for HVAC systems serving zones >5,000 ft2 of conditioned area.	☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.
7.4.4.3 [FI11][3]	Public lavatory faucet water temperature <=110°F.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
7.4.4.4 [FI12][3]	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank.	☑Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
10.4.3 [FI24][2]	Elevators are designed with the proper lighting, ventilation power, and standby mode.	☐Complies ☐Does Not ☐Not Observable ☑Not Applicable	**Exception:** Requirement does not apply.

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Additional Comments/Assumptions:

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1	High Impact (Tier 1)	2	Medium Impa	w Impact (Tier 3)

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