LAND DEVELOPMENT
FALL CREEK INTERMEDIATE RENOVATION

12011 OLIO ROAD FISHERS, INDIANA

PROJECT DATA

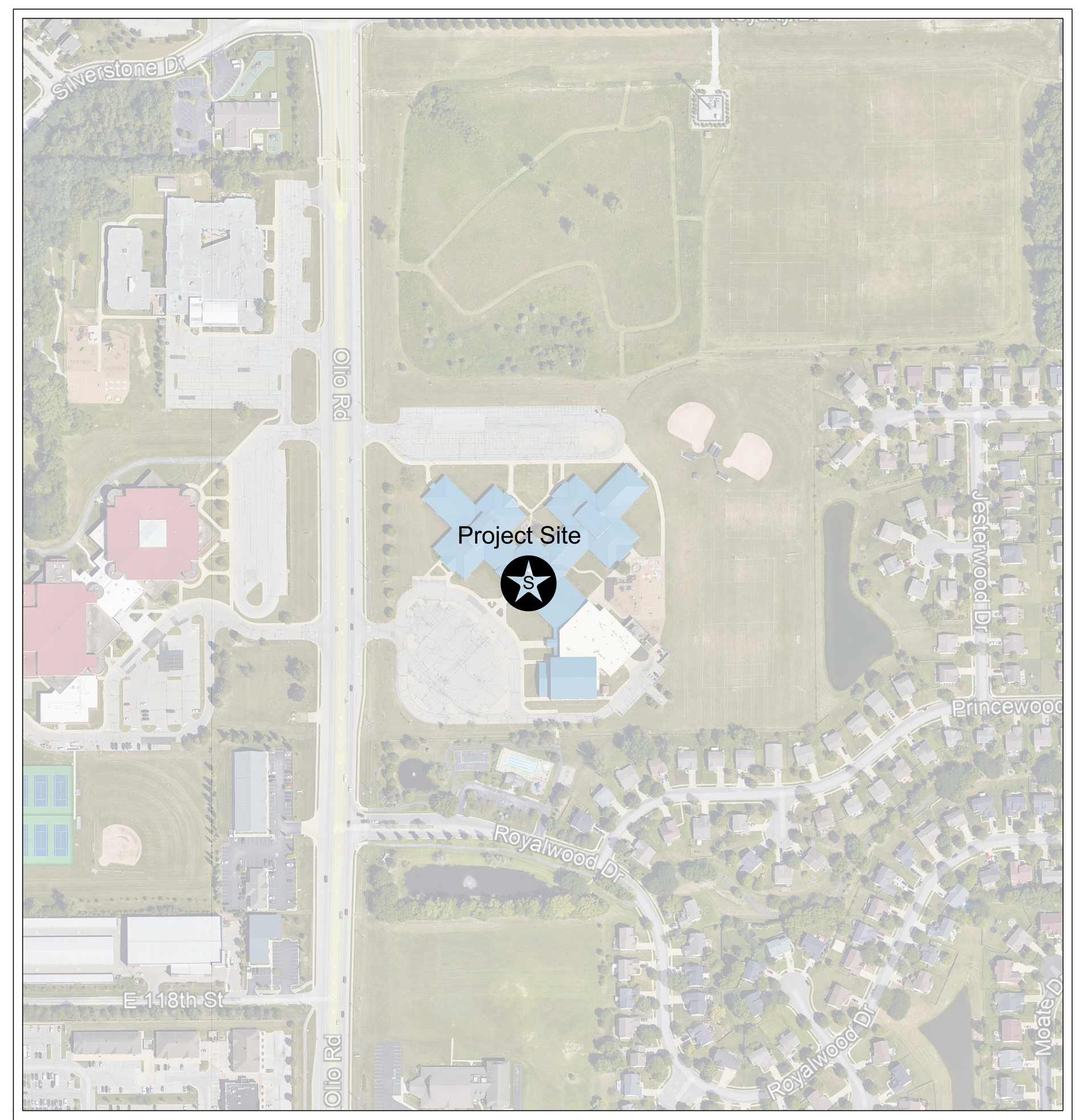
Project Information:

Project Title:	24007L FCI RENOVATION
Address:	12011 OLIO ROAD
City/Town:	Fishers
County:	Hamilton
Civil Township:	Delaware
Quarter:	NE
Section:	36
Township:	18N
Range:	5E
Latitude:	39° 57' 31" N
Longitude:	85° 55' 09" W

Project Description: Maintenance improvements to existing sidewalk at the front entrance.

SHEET INDEX

No.	DESCRIPTION
C100	COVER SHEET
1-6	SURVEY
C102	DEMOLITION PLAN
C202	SITE & GRADING PLAN
C401	SWPPP PLAN (INITIAL / FINAL)

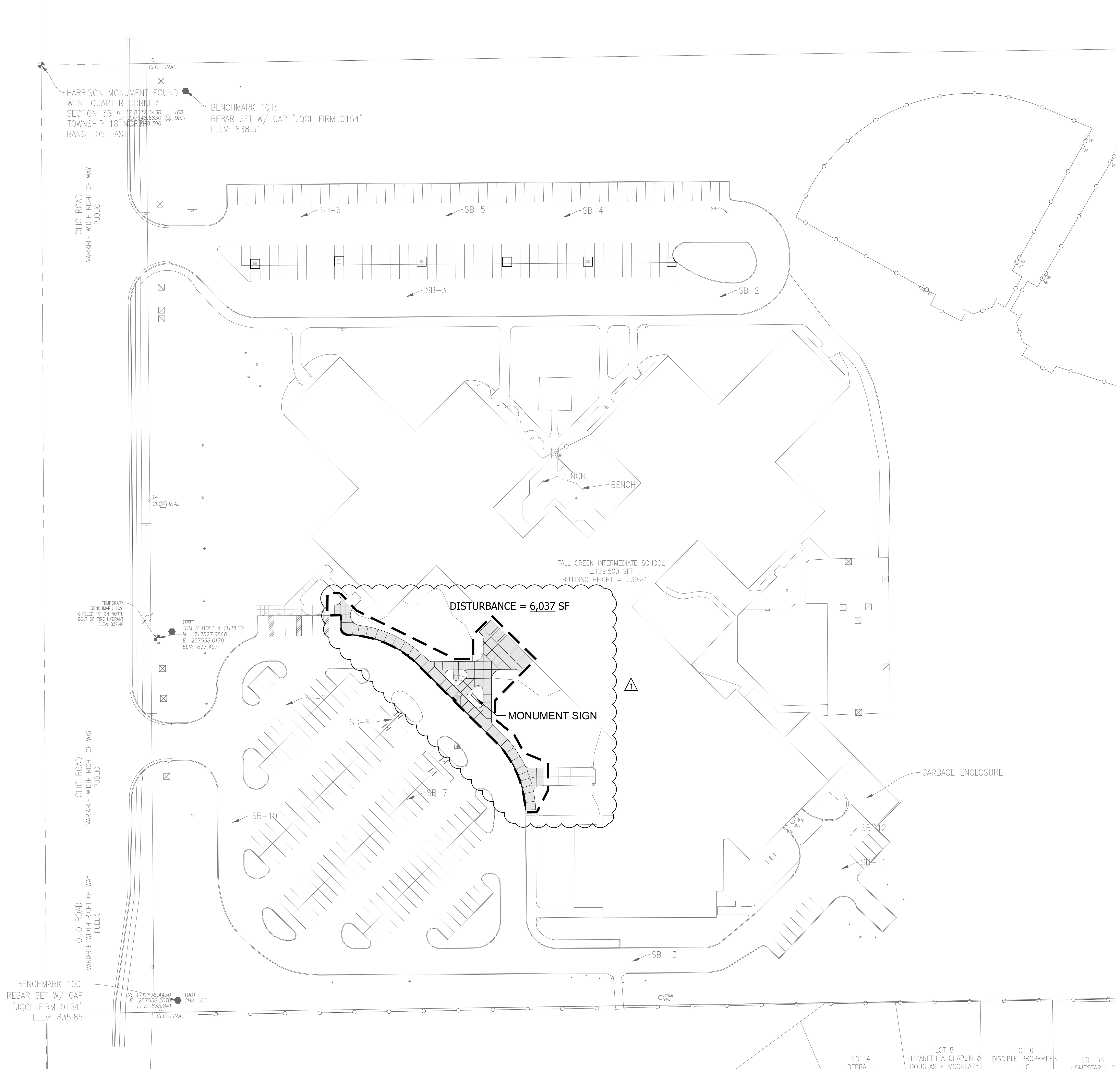


LOCATION MAP

SOILS MAP

PROJECT SOIL SURVEY

YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes



PROJECT MAP
SCALE: 1" = 60'

REVISIONS

MARK	DATE	DESCRIPTION
1	02.06.25	ADDENDUM #2
2		
3		
4		

BENCHMARKS

BENCHMARK 100:
REBAR SET W/ CAP "JQOL FIRM 0154"
ELEV:835.85

TEMPORARY
BENCHMARK 109:
CHISLED "X" ON NORTH BOLT OF FIRE HYDRANT
ELEV:837.40

BENCHMARK 101:
REBAR SET W/ CAP "JQOL FIRM 0154"
ELEV:838.51

FLOOD ZONE STATEMENT

ALL OF THE PARCEL DESCRIBED HEREIN DOES NOT LIE WITHIN THAT SPECIAL FLOOD ZONE "A", BUT LIES WITHIN FLOOD ZONE "X". AS SAID PARCEL PLOTS ON COMMUNITY PANEL NUMBER 18057C0584G (DATED NOVEMBER 19, 2014) OF THE FLOOD INSURANCE RATE MAPS FOR THE TOWN OF FISHERS, INDIANA, THE ACCURACY OF THIS FLOOD HAZARD STATEMENT IS SUBJECT TO MAP SCALE UNCERTAINTY AND TO ANY OTHER UNCERTAINTY IN LOCATION OR ELEVATION ON THE REFERENCED FLOOD INSURANCE RATE MAP.

811 Know what's below. Call before you dig.

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A&F ENGINEERING

kbso CONSULTING

LHB

REVISIONS
1 ADDENDUM #2 02.06.25

01.06.25
HAMILTON SOUTHEASTERN SCHOOLs
23055 - FALL CREEK INTERMEDIATE RENOVATIONS
12011 Olio Rd, Fishers, IN 46037
CONSTRUCTION DOCUMENTS

SET TO BE PRINTED IN COLOR

KAREN K. COLLINS REGISTERED No. 10404538 STATE OF INDIANA PROFESSIONAL ENGINEER

Karen Collins

CONSTRUCTION DOCUMENTS 01.06.25
krM JOB NO. 23055
DRAWN BY A&F

DRAWING NAME
COVER SHEET

DRAWING NO.
C100

DEMOLITION PLAN NOTES

1. EROSION CONTROL SHALL BE IN PLACE PRIOR TO ANY SOIL DISTURBANCE, INCLUDING PAVEMENT REMOVAL.
2. THE CONTRACTOR SHALL HIRE A PRIVATE LOCATER TO VERIFY THE LOCATION AND DEPTH OF UNDERGROUND UTILITIES TO BE PROTECTED, REMOVED, RELOCATED OR ABANDONED PRIOR TO COMMENCING FDR ACTIVITIES. IF CONFLICTS EXIST, NOTIFY THE ENGINEER IMMEDIATELY.
3. THE CONTRACTOR SHALL COORDINATE WORK ASSOCIATED WITH THE REMOVAL, RELOCATION OR ABANDONMENT OF UTILITIES WITH THE UTILITY COMPANY OR ENTITY HAVING OWNERSHIP OF EACH RESPECTIVE UTILITY. COSTS FOR DISCONNECTION, REMOVAL, AND/OR RELOCATION OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS OR AS NECESSARY TO ALLOW FOR EXECUTION OF THE WORK SHALL BE PAID BY THE CONTRACTOR.
4. NO OPEN BURNING SHALL BE PERMITTED ON THE SITE.
5. THE OWNER HAS FIRST SALVAGE RIGHTS ON ALL ITEMS REMOVED. IF OWNER FORFEITS RIGHTS, ALL DEMOLISHED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF-SITE UNLESS OTHERWISE SHOWN.
6. UNLESS SCHEDULED FOR DEMOLITION ON THE DRAWINGS, ALL TREES AND VEGETATION SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE PROJECT. PROTECTIVE MEASURES SHALL INCLUDE INSTALLATION AND MAINTENANCE OF TREE PROTECTION FENCING TO BE LOCATED WHERE SHOWN AND AT THE DRIPLINE OF ALL TREES LOCATED WITHIN CLOSE PROXIMITY OF AREAS WHERE HEAVY EQUIPMENT WILL OPERATE.
7. A CLEAN, STRAIGHT EDGE SHALL BE SAWCUT BETWEEN ALL CONCRETE AND ASPHALT SURFACES SCHEDULED FOR DEMOLITION AND CONCRETE AND ASPHALT SURFACES TO REMAIN IN-PLACE.
8. TERMINAL ENDS OF UNDERGROUND UTILITIES ABANDONED IN-PLACE SHALL BE CUT, CAPPED AND PLUGGED. THE ENDS OF DISCONNECTED UNDERGROUND UTILITIES SHALL BE MARKED FOR FUTURE IDENTIFICATION WITH DETECTABLE LOCATOR TAPE OR A METAL ROD.
9. ALL SIDEWALKS, CURBS, APPARATUSES, ETC., DESIGNATED FOR REMOVAL SHALL BE DEMOLISHED ACCORDING TO SPECIFICATIONS.
10. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE ACCESS FOR PEDESTRIANS AND VEHICLE TRAFFIC. THE CONTRACTOR WILL MAINTAIN ALL UTILITY SERVICES TO ALL BUILDING SECTIONS. IF UTILITY SERVICES MUST BE INTERRUPTED, THE CONTRACTOR SHALL COORDINATE THAT SHUTDOWN TO MINIMIZE IMPACT TO THE BUILDING AND SCHOOL FACILITIES. COORDINATE SHUTDOWN AT LEAST ONE WEEK IN ADVANCE WITH BUSINESS, OWNER'S REPRESENTATIVE AND FACILITY MANAGER.
11. ALL EXISTING ON-SITE UTILITIES SHALL REMAIN UNLESS DESIGNATED FOR REMOVAL, OR UNLESS THEY INTERFERE WITH PROJECT CONSTRUCTION. CONTACT ENGINEER BEFORE REMOVING. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES TO REMAIN.
12. EXISTING MANHOLES, CATCH BASINS, CLEANOUTS, VALVE BOXES, FRAMES COVERS AND GRATES REMAINING IN USE SHALL BE PROTECTED AND ADJUSTED TO FINAL GRADES.
13. FOR ALL UTILITY LINES AND STRUCTURES DESIGNATED TO BE REMOVED, PLACE AND COMPACT STRUCTURAL BACKFILL WITHIN TRENCH/EXCAVATION.
14. SAWCUT INTEGRAL CURB & WALK AT NEAREST CONSTRUCTION JOINT WHEN ADJACENT INTEGRAL CURB & WALK IS TO REMAIN.
15. CONTRACTOR SHALL CUT CONCRETE AT NEAREST CONSTRUCTION JOINT.

PROTECTION NOTES

1. PROTECT ALL LIGHT POLES, UTILITIES, CONCRETE AND CURBS UNLESS SPECIFICALLY DESIGNATED FOR REMOVAL
2. ALL STRIPING SHALL BE REINSTALLED IN THE SAME CONFIGURATION AS IT EXISTS AT THE TIME OF THE SURVEY, EXCEPT WHERE SHOWN ON THE SITE PLAN.

0 20' 40'

SCALE: 1" = 20'

△1

REMOVAL NOTES

▨ ① REMOVE INTEGRAL CURB & SIDEWALK & SIDEWALK AT NEAREST CONSTRUCTION JOINTS
② SAW CUT
③ PROTECT EXISTING UTILITIES DURING CONSTRUCTION
④ PROTECT EXISTING COLUMN

△1

Z:\2024\24007L-KRM ARCHITECTURE, LAND DEVELOPMENT, FALL CREEK INTERMEDIATE RENOVATION\DWGS\C101 EXISTING CONDITIONS.DWG plotted by KAREN COLLINS on 2/5/2025 5:14:48 PM last saved by SOROURKE on 2/5/2025 9:24:49 AM
Xrefs: 24007L BASE TOPO.DWG & X_24X36 TTL BLOCK.DWG

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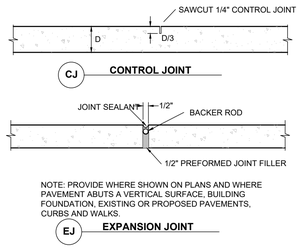
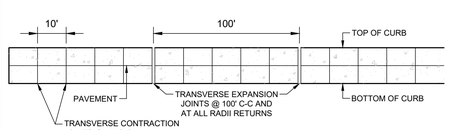
DRAWN BY
A&F

DRAWING NAME
EXISTING CONDITIONS & DEMO PLAN

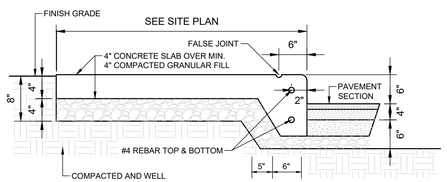
DRAWING NO.
C102



1 CONCRETE JOINT DETAILS
SCALE: NONE

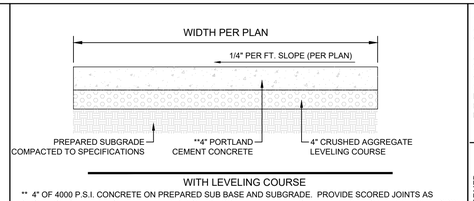


2 CURB JOINT DETAIL
SCALE: NONE



NOTE: EXPANSION JOINTS SHALL BE PLACED EVERY 25' WITH CONTROL JOINTS EVERY 5' IN BETWEEN. THE EXPANSION JOINTS SHALL BE FILLED WITH SEALANT.

3 COMBINED WALK and CURB DETAIL
SCALE: NONE

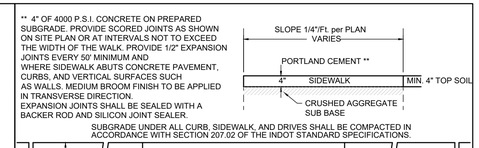


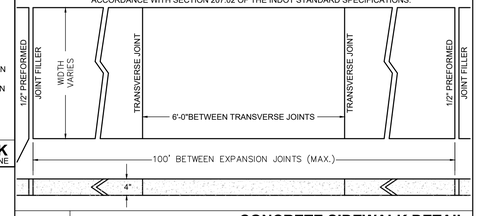
WITH LEVELING COURSE

** 4" OF 4000 P.S.I. CONCRETE ON PREPARED SUB BASE AND SUBGRADE. PROVIDE SCORED JOINTS AS SHOWN ON SITE PLAN OR AT INTERVALS NOT TO EXCEED THE WIDTH OF THE WALK. PROVIDE 1/2" EXPANSION JOINTS EVERY 50' MINIMUM AND WHERE SIDEWALK ABUTTS CONCRETE PAVEMENT, CURBS, AND VERTICAL SURFACES SUCH AS WALLS. MEDIUM BROOM FINISH TO BE APPLIED IN TRANSVERSE DIRECTION. EXPANSION JOINTS SHALL BE SEALED WITH A BACKER ROD AND SILICON JOINT SEALER.

4 CONCRETE WALK
SCALE: NONE

** 4" OF 4000 P.S.I. CONCRETE ON PREPARED SUBGRADE. PROVIDE SCORED JOINTS AS SHOWN ON SITE PLAN OR AT INTERVALS NOT TO EXCEED THE WIDTH OF THE WALK. PROVIDE 1/2" EXPANSION JOINTS EVERY 50' MINIMUM AND WHERE SIDEWALK ABUTS CONCRETE PAVEMENT, CURBS, AND VERTICAL SURFACES SUCH AS WALLS. MEDIUM BROOM FINISH TO BE APPLIED IN TRANSVERSE DIRECTION. EXPANSION JOINTS SHALL BE SEALED WITH A BACKER ROD AND SILICON JOINT SEALER.





5 CONCRETE SIDEWALK DETAIL
SCALE: NONE

GENERAL SITE NOTES

1. CONTRACTOR SHALL ENSURE THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM AGENCIES HAVING JURISDICTION OVER THE WORK PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL OBTAIN AND PAY THE COST OF ALL PERMITS THAT HAVE NOT BEEN SECURED BY THE OWNER.
2. CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION SAFETY STANDARDS AS ISSUED BY THE U.S. DEPARTMENT OF LABOR OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION AS SET FORTH IN FINAL RULE 28, PART 1926, WHERE SUCH REGULATIONS APPLY TO THE WORK.
3. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AND REQUEST FIELD LOCATIONS OF FACILITIES WITHIN THE WORK AREA PRIOR TO COMMENCING EXCAVATION ACTIVITIES. CONTRACTOR SHALL REPORT ANY VARIATIONS FROM THE LOCATIONS SHOWN THAT MAY PRESENT A CONFLICT WITH EXECUTION OF THE WORK TO THE ENGINEER PRIOR TO CONSTRUCTION.
4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.
5. MAINTENANCE OF TRAFFIC SHALL BE PER THE MUTCD. COORDINATE ANY CLOSURES WITH THE SCHOOL.

SITE DEVELOPMENT PLAN NOTES

1. TRANSVERSE EXPANSION JOINTS ARE TO BE PROVIDED IN CONCRETE SIDEWALKS AND COMBINED WALKS/CURBS WHERE SHOWN AND AT INTERVALS NOT TO EXCEED 12 x THE WIDTH OF THE WALK.
2. EXPANSION JOINTS SHALL BE INSTALLED IN CONCRETE PAVEMENTS AND WALKS AT ALL LOCATIONS WHERE PAVEMENTS AND WALKS ABUT A VERTICAL SURFACE SUCH AS A CURB, WALL, COLUMN, ETC.
3. CONTRACTION JOINTS SHALL BE PROVIDED AT EQUAL INTERVALS BETWEEN EXPANSION JOINTS IN CONCRETE WALKS. INSTALL CONTRACTION JOINTS AS SHOWN BUT IN NO CASE AT INTERVALS GREATER THAN 1.5 x THE WIDTH OF THE WALK.

SITE PLAN KEYNOTES

1. CONCRETE SIDEWALK (COMBINED WALK AND CURB ADJACENT TO ASPHALT PAVEMENT)
2. SIDEWALK CURB RAMP WITH DETECTABLE WARNING
3. MONUMENT SIGN (12' L x 5.5'H x 2'D) SEE ARCHITECTURAL PLAN

STRIPING NOTE

ALL STRIPING SHALL BE REPLACED TO MATCH EXISTING CONDITION EXCEPT WHERE SHOWN. ALL EXISTING WHITE AND YELLOW MARKINGS SHALL BE RETAINED. ALL CURBS THAT ARE CURRENTLY PAINTED YELLOW SHALL BE REPAINTED YELLOW PER PROJECT SPECIFICATIONS.

NOTE

ALL CURBS, SIDEWALKS AND POWER POLES SHALL BE POWER WASHED.

EXISTING LINETYPES LEGEND

- D.S. — DOWNSPOUT
- STORM LINE
- SANITARY LINE
- G — GAS LINE
- W — WATER LINE
- C — UNDERGROUND COMM LINE
- E — ELECTRIC LINE
- FO — FIBER OPTIC

UTILITY NOTES

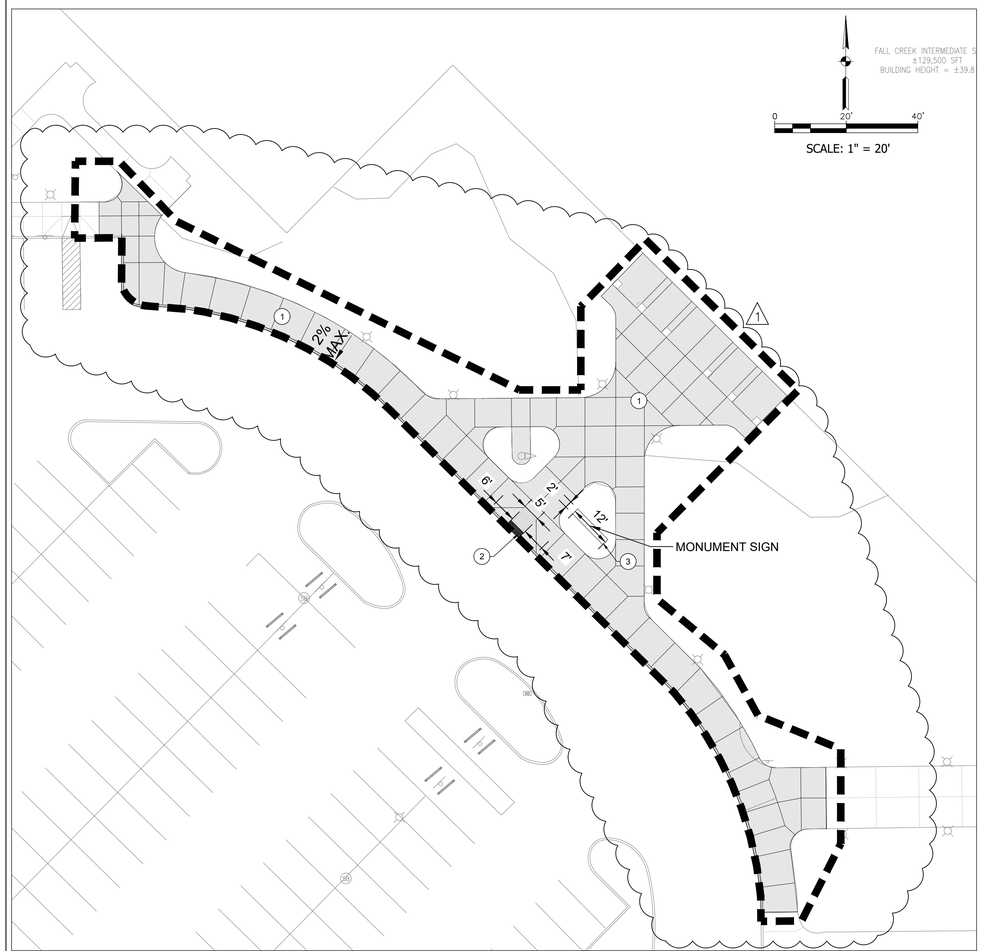
1. WHERE GRADE MODIFICATIONS (CUT OR FILL) ARE SHOWN ADJACENT TO EXISTING VALVE BOX COVERS AND MANHOLE CASTINGS, THE VALVE BOX COVERS AND MANHOLE CASTINGS SHALL BE ADJUSTED FLUSH WITH THE PROPOSED GRADE.
2. PAVEMENTS, WALKS, CURBS AND OTHER SURFACE IMPROVEMENTS REQUIRING REMOVAL FOR INSTALLATION OF UNDERGROUND UTILITIES SHALL BE RESTORED TO THEIR PRESENT CONDITION UNLESS OTHERWISE SHOWN.
3. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS, ETC. WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNER, UTILITY COMPANIES, AND GOVERNING AUTHORITIES. THE CONTRACTOR SHALL INSTALL AS NECESSARY, TEMPORARY SITE LIGHTING, GAS, SANITARY, WATER, STORM, ELECTRIC, TELEPHONE, AND CABLE SERVICES TO SERVICE BUILDING(S) TO REMAIN OPEN.
4. CONTRACTOR TO PROVIDE AND INSTALL CONDUIT FOR SITE LIGHTING PER SITE LIGHTING PLAN (BY OTHERS).
5. CONTRACTOR TO PROVIDE AND INSTALL CONDUIT FOR IRRIGATION PER IRRIGATION PLAN (BY OTHERS).
6. CONTRACTOR WILL BE RESPONSIBLE TO REPAIR, REPLACE, AND/OR RECONNECT ANY EXISTING DRAINAGE TILES NOT SHOWN ON THE PLANS, WHICH CROSS THROUGH EXCAVATED TRENCHES. ANY DRAINAGE TILE ENCOUNTERED IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND A MEASUREMENT TAKEN FROM THE NEAREST MANHOLE OR INLET STRUCTURE TO THE CENTERLINE OF THE TILE.

GRADING NOTES

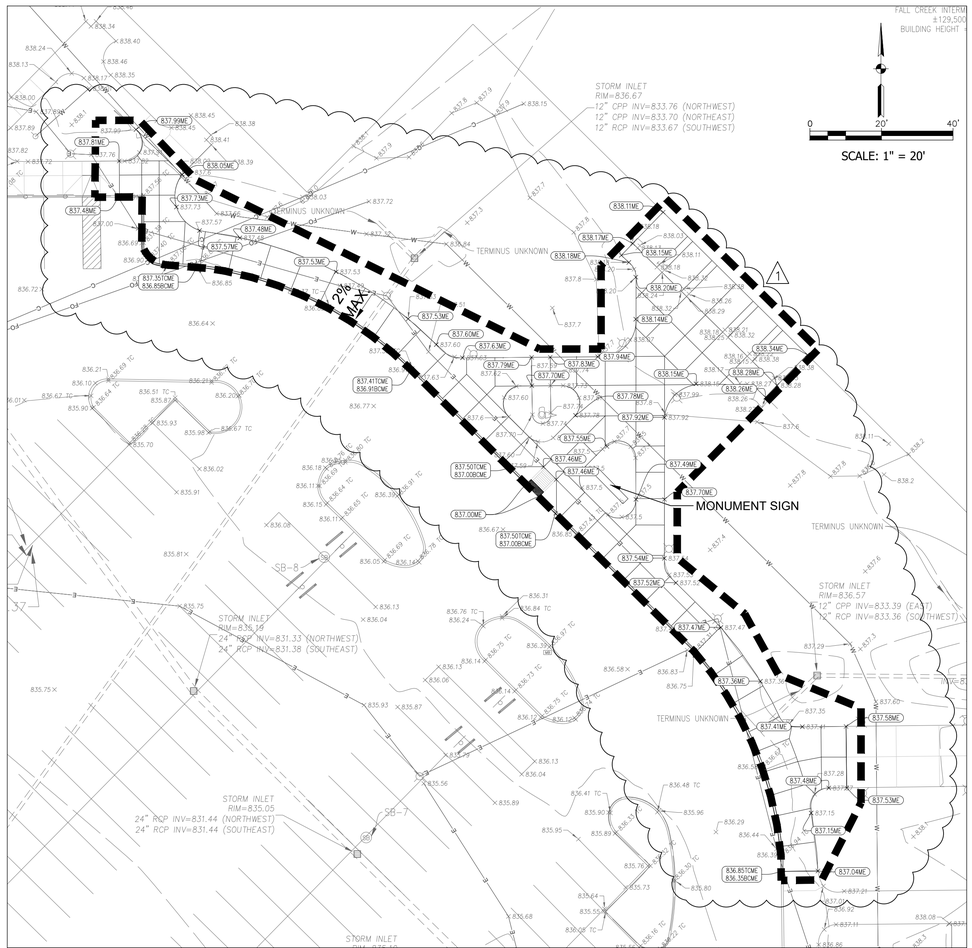
1. TOPSOIL SHALL BE STRIPPED FROM ALL AREAS TO RECEIVE PAVING AND FROM WITHIN THE LIMITS OF PROPOSED BUILDINGS AND STRUCTURES. TOPSOIL SHALL BE STRIPPED TO THE DEPTH SHOWN IN THE GEOTECHNICAL REPORT, OR TO A DEPTH OF 6 INCHES, WHICHEVER IS GREATER.
2. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED OR SODDED UNLESS OTHERWISE SHOWN.
3. FINAL GRADES AT THE PROJECT BOUNDARY SHALL MATCH EXISTING ELEVATIONS UNLESS OTHERWISE SHOWN.

GRADING PLAN LEGEND

LINE TYPE / SYMBOL	DESCRIPTION	LINE TYPE / SYMBOL	DESCRIPTION
772.40 ME	MATCH EXISTING	F.F.E.	FINISHED FLOOR ELEVATION
772.40	PAVEMENT SPOT GRADE	HP	HIGH POINT
772.40 HP	PAVEMENT SPOT GRADE HIGH POINT	LP	LOW POINT
771.20 T.C. 770.70B.C. HP	TOP OF CURB AND BOTTOM OF CURB	601	INTERMEDIATE CONTOUR
771.20 T.C. 770.70 B.C.	TOP OF CURB AND BOTTOM OF CURB HIGH POINT	600	INDEX CONTOUR
771.20T.C. ME 770.70B.C. ME	TOP OF CURB AND BOTTOM OF CURB MATCH EXISTING		GRADE BREAK
1.00%	FLOW DIRECTION w/GRADE		EXISTING INTERMEDIATE CONTOUR
			EXISTING INDEX CONTOUR



CONCRETE SIDEWALK BASE BID - SITE PLAN



CONCRETE SIDEWALK BASE BID - GRADING PLAN

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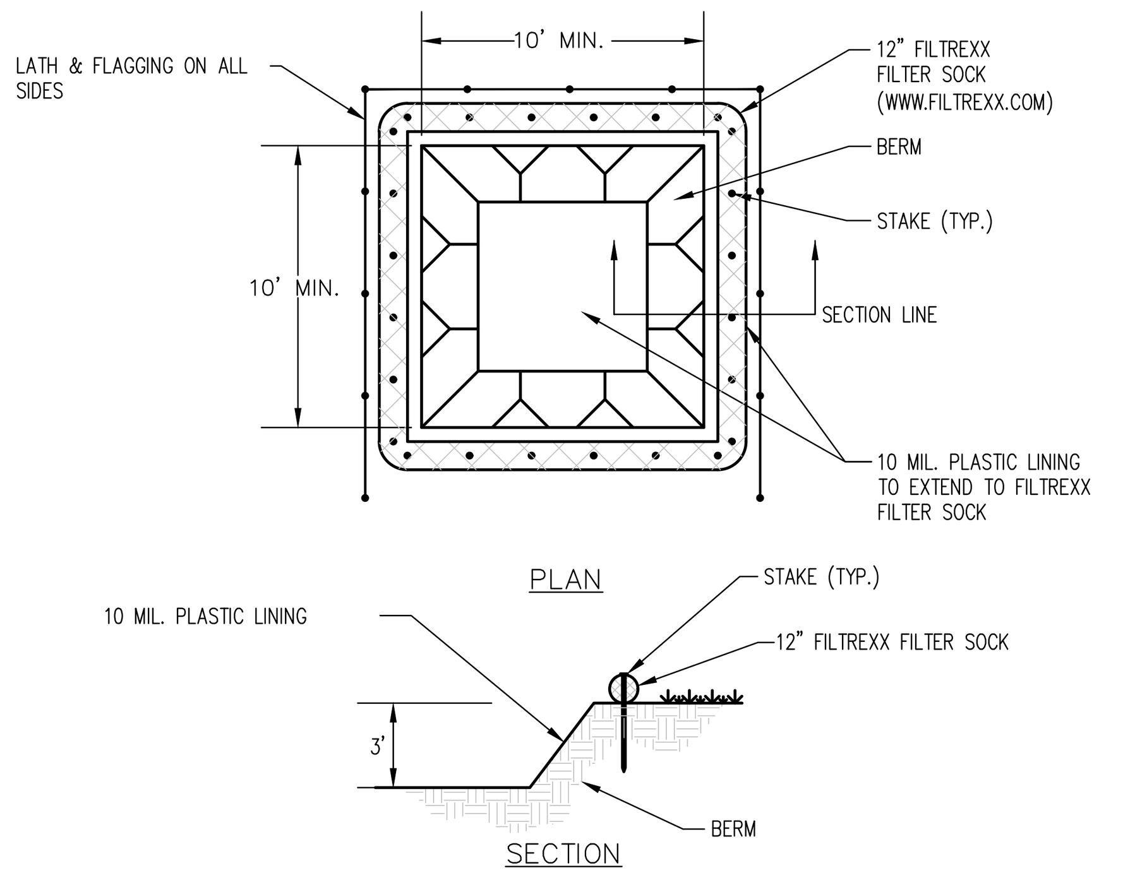
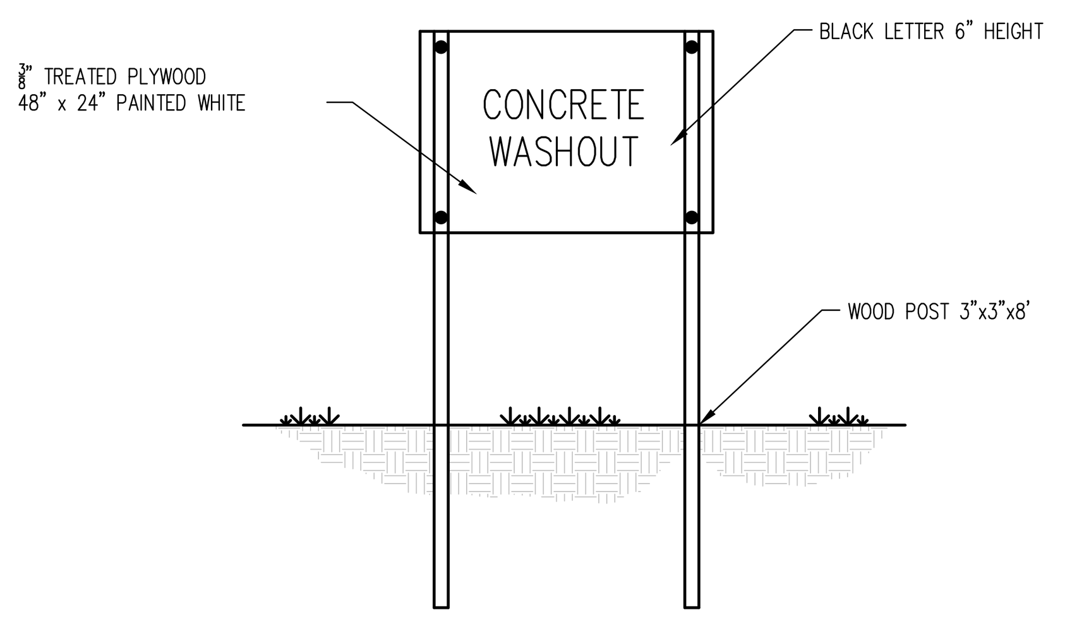
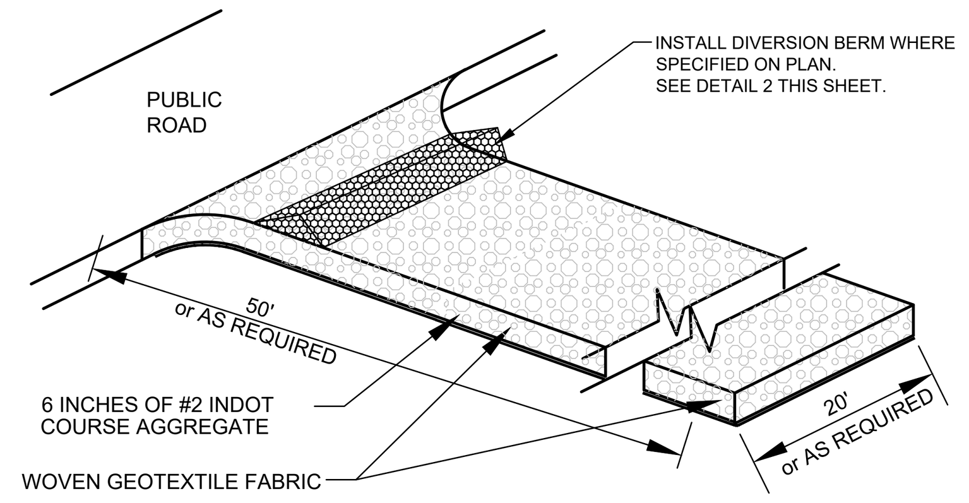


NOTE:
1. WASHOUT LOCATION SHOWN ON EROSION CONTROL PLAN. DRY CONCRETE TO BE REMOVED FROM SITE PERIODICALLY AND DISPOSED OF BY
2. APPROVED METHODS.
3. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30FT. OF THE TEMP. CONCRETE WASHOUT FACILITY.

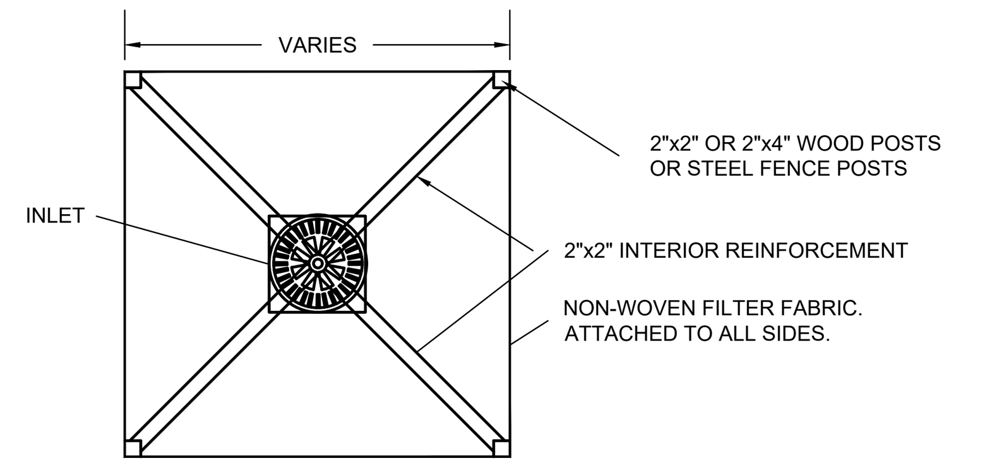


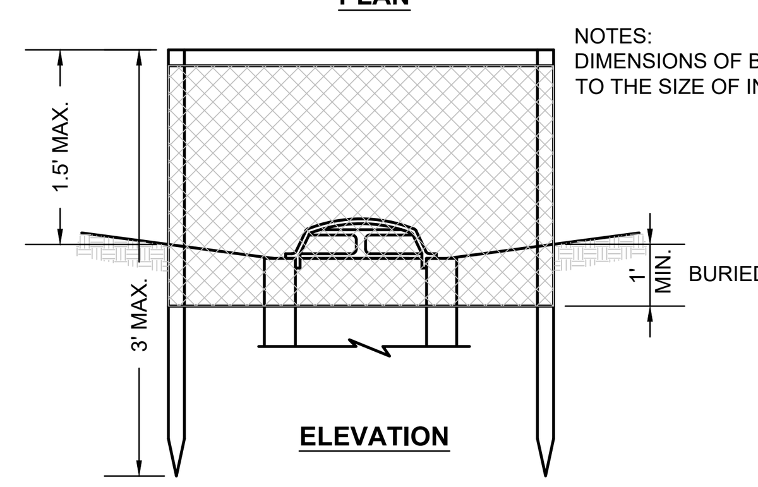
1 CONCRETE WASHOUT
SCALE: NONE



MAINTENANCE REQUIREMENTS
1. INSPECT ENTRANCE PAD AND SEDIMENT DISPOSAL AREA WEEKLY, AFTER STORM EVENTS, AND/OR HEAVY USE.
2. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
3. TOPDRESS WITH CLEAN STONE AS NEEDED.
4. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. FLUSH ONLY IF WATER IS CONVEYED TO A SEDIMENT TRAP OR BASIN.
5. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.

2 TEMPORARY CONSTRUCTION ENTRANCE
SCALE: NONE





NOTES:
DIMENSIONS OF BOX WILL VARY ACCORDING TO THE SIZE OF INLET AND DEPTH OF BASE.

3 FABRIC DROP INLET PROTECTION
SCALE: NONE

TEMPORARY SEEDING DATES	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
WHEET OR RYE												
OATS												
ANNUAL RYEGRASS												

PERMANENT SEEDING DATES	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
NON-IRRIGATED*												
IRRIGATED												
DORMANT SEEDING**												

IRRIGATION NEEDED DURING THIS PERIOD TO CONTROL EROSION AT TIMES OTHER THAN IN THE SHADED AREAS USE MULCH

* LATE SUMMER SEEDING DATES MAY BE EXTENDED 5 DAYS IF MULCH IS APPLIED

** INCREASE SEEDING APPLICATION BY 50%

TEMPORARY SEEDING RATE

TYPE OF SEED	1,000 SF	ACRE	REMARKS
WHEET OR RYE	3.5 LBS.	2 BU.	COVER SEED 1"-1 1/2" DEEP
SPRING OATS	2.3 LBS.	3 BU.	COVER SEED 1" DEEP
ANNUAL RYEGRASS	1 LB.	40 LB.	COVER SEED 1/4" DEEP

PERMANENT SEEDING MIXTURES

SPECIES	SEEDING RATE LBS/ ACRE	SEEDING RATE LBS/ 1,000 SF	SUITABLE pH	SITE SUITABILITY* DROUGHTY	SITE SUITABILITY* WELL DRAINED	SITE SUITABILITY* WET
LEVEL AND SLOPING, OPEN AREAS						
1. TALL FESCUE	35	.8	5.5-8.3	2	1	2
2. TALL FESCUE	25	.6	5.5-8.3		1	
RED CLOVER	5	.12				
3. KENTUCKY BLUEGRASS	15	.4	5.8-7.5	2	1	
CREEPING RED FESCUE	15	.4				
STEEP BANKS AND CUTS						
4. TALL FESCUE	15	.4	5.8-7.5	2	1	2
KENTUCKY BLUEGRASS	25	.6				
5. TALL FESCUE	35	.8	5.5-8.3	2	1	
EMERALD CROWNVETCH**	10	.25				
LAWNS AND HIGH MAINTENANCE AREAS						
6. KENTUCKY BLUEGRASS	40	.9	5.8-7.5	2	1	
CREEPING RED FESCUE	40	.9				
7. PERENNIAL RYEGRASS	170	4.0	5.0-7.5		1	
(TURF TYPE)						
8. TALL FESCUE	170	4.0	5.5-8.3	2	1	2

SEEDED PREPARATION

APPLY LIME TO RAISE THE pH TO THE LEVEL NEEDED FOR SPECIES BEING SEEDED. APPLY 23 POUNDS OF 12-12-12 ANALYSIS FERTILIZER (OR EQUIVALENT) PER 1000 SF (APPROXIMATELY 1000 POUNDS PER ACRE) OR FERTILIZE ACCORDING TO TEST APPLICATION OF 150 LBS. OF AMMONIUM NITRATE ON AREAS LOW IN ORGANIC MATTER AND FERTILITY WILL GREATLY ENHANCE VEGETATIVE GROWTH.

WORK THE FERTILIZER AND LIME INTO THE SOIL TO A DEPTH OF 2-3 INCHES WITH A HARROW, DISK OR RAKE OPERATED ACROSS THE SLOPE AS MUCH AS POSSIBLE.

DO NOT USE PHOSPHOROUS CONTAINING FERTILIZERS (12-12-12) UNLES SOIL TEST SHOW A DEFICIENCY IN PHOSPHOROUS.

SEEDING

SELECT A SEED MIXTURE BASED ON PROJECTED USE OF THE AREA (SEE PERMANENT SEED MIXTURE CHART), WHILE CONSIDERING BEST SEEDING DATES. IF PERMANENT SEEDING IS NOT PERMITTED USE TEMPORARY SEEDING UNTIL PERMANENT SEEDING CAN BE APPLIED. IF TOLERANCES ARE A PROBLEM, SUCH AS SALT TOLERANCE OF SEEDINGS ADJACENT TO STREETS AND HIGHWAYS, SEE SEED TOLERANCE CHART.

4 SEASONAL SOIL PROTECTION CHART
SCALE: NONE

EROSION CONTROL NOTES

1. UNLESS OTHERWISE SHOWN, TEMPORARY CONTROL MEASURES SHALL BE REMOVED UPON SATISFACTORY ESTABLISHMENT OF PERMANENT VEGETATION.
2. SEE SHEET C403 FOR DETAILS REFERENCED ON THIS SHEET.
3. IN ADDITION TO THE MAINTENANCE REQUIREMENTS IDENTIFIED FOR INDIVIDUAL MEASURES, ALL EROSION CONTROL MEASURES INSTALLED UNDER THIS PROJECT SHALL BE INSPECTED WEEKLY TO ENSURE THEY ARE FUNCTIONING PROPERLY. MEASURES FOUND TO BE DEFICIENT SHALL BE REPAIRED OR REPLACED IMMEDIATELY THEREAFTER.
4. THE CONTRACTOR SHALL MAINTAIN A STABLE CONSTRUCTION ENTRANCE AT ALL TIMES AND SHALL MAKE EFFORTS TO MINIMIZE THE ACCUMULATION OF SOIL, MUD AND DEBRIS ON ADJOINING ROADWAYS.
5. SYMBOLS FOR INLET PROTECTION MEASURES AND DITCH CHECKS ARE SHOWN LARGER THAN ACTUAL SIZE.
6. DISTURBED AREAS AND STOCKPILES THAT ARE TO REMAIN IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING.
7. KEEP INLET FILTER FABRIC IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.
6. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE INSPECTOR.
9. PORTABLE TOILETS SHALL BE ANCHORED TO THE GROUND TO PREVENT TIPPING AND SPILLS

PRE-CONSTRUCTION SEQUENCING NOTES

1. INSTALL CONSTRUCTION ENTRANCE, INLET PROTECTION AND CONCRETE WASHOUT AS SHOWN ON THE PLANS.
2. INSTALL PORT-A-LET, AND COVERED CONSTRUCTION DUMPSTER.
3. PERFORM REQUIRED SITE DEMOLITION AND CLEARING.
4. STRIP TOPSOIL AND STORE OFFSITE.
5. MAINTAIN ALL INLET PROTECTION, AND SILT FENCING ON THE SITE PROJECT BY CLEANING OUT EVERY WEEK AND AFTER EVERY RAIN EVENT OF 1/2" OR GREATER DEPTH.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED BY THE INSPECTOR.

THERE SHALL BE NO DIRT, DEBRIS, OR STORAGE OF MATERIAL IN THE STREET

ADJACENT ROADS MUST BE SWEPT DAILY

NOTE: CONTRACTOR SHALL FULLY RESTORE ANY AREAS IMPACTED BY CONSTRUCTION.

MAINTENANCE SEQUENCING NOTES

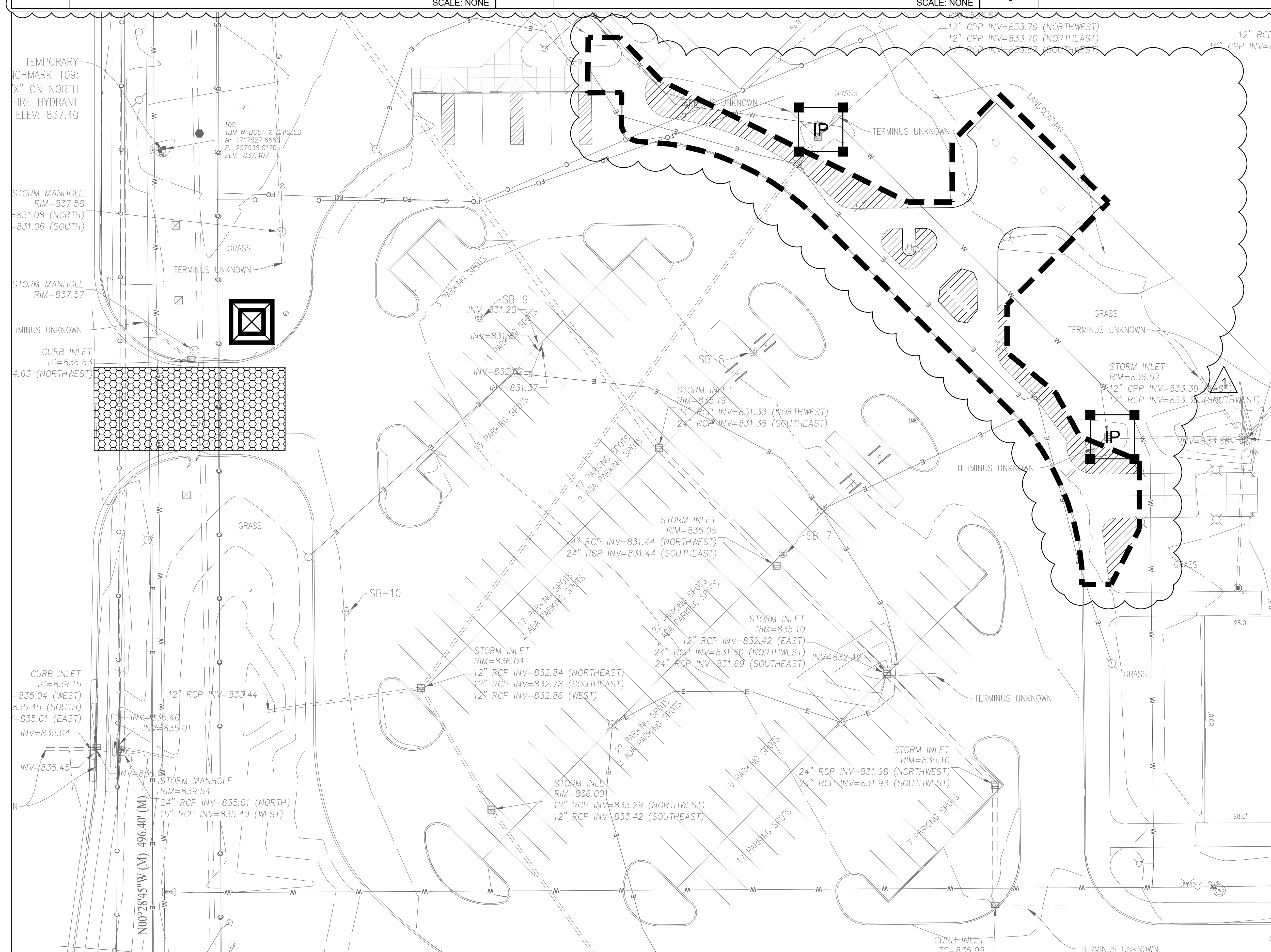
THE CONTRACTOR SHALL ENSURE THE SAFETY OF STUDENTS, STAFF, VISITORS AND PEDESTRIANS AT ALL TIMES. IF NECESSARY, ORANGE SAFETY FENCE & BARRELS SHALL BE EMPLOYED TO KEEP BY STANDARDS AWAY FROM CONSTRUCTION AREAS.

0 30' 60'
SCALE: 1" = 30'

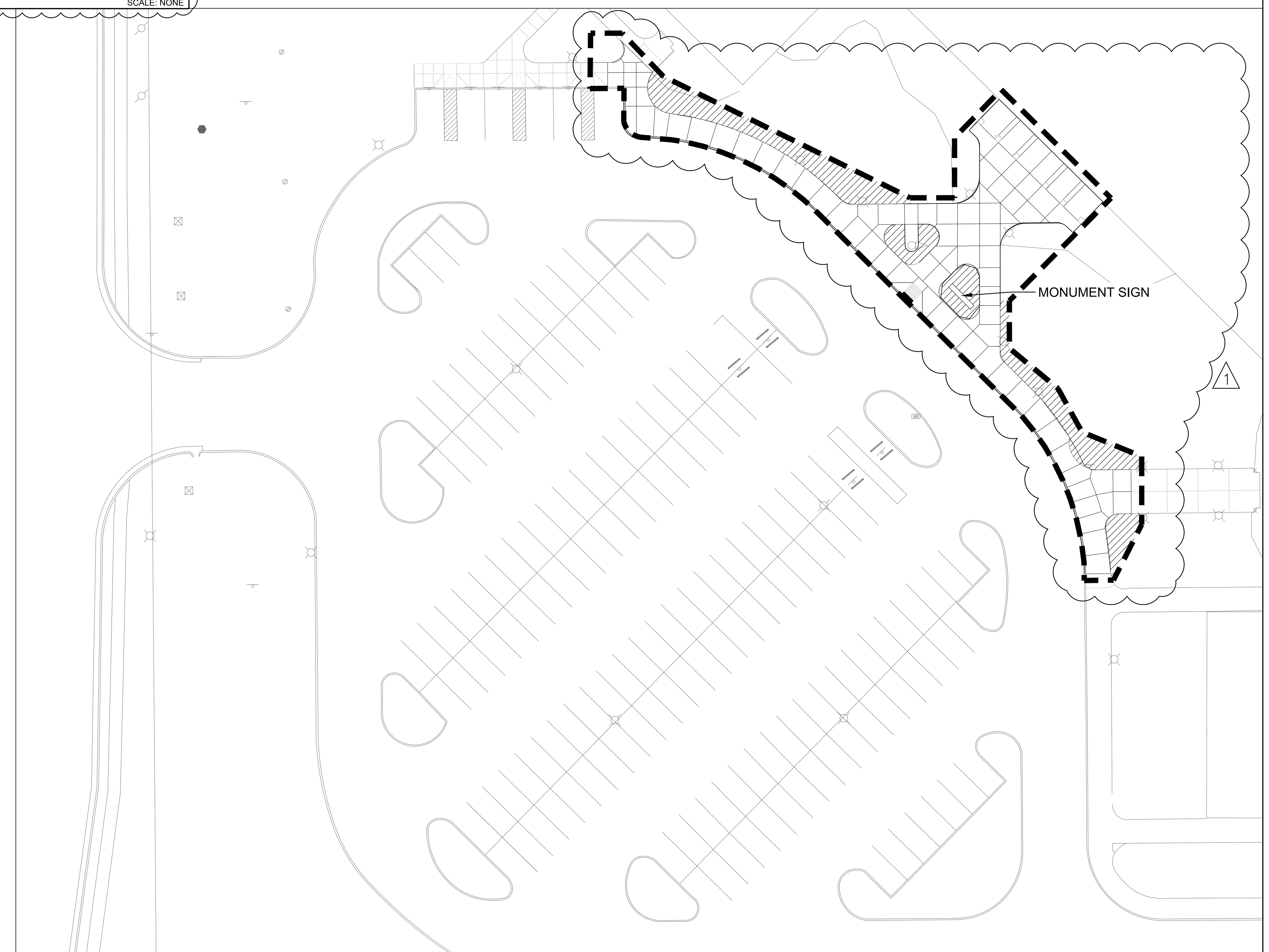
811 Know what's below. Call before you dig.

EROSION CONTROL LEGEND

LINE TYPE / SYMBOL	DESCRIPTION
(crosshatch pattern)	TEMPORARY CONSTRUCTION ENTRANCE 6 INCHES OF 2"-3" COARSE AGGREGATE (20'W x 50'L) Minimum
(diagonal hatch)	APPLY PERMANENT SEED & MULCH TO ALL DISTURBED UNVEGETATED AREAS
IP	TEMPORARY INLET PROTECTION
(symbol)	CONCRETE WASHOUT



SWPPP PLAN (INITIAL / CONSTRUCTION)



SWPPP PLAN (FINAL)

krM Architecture+
A&F ENGINEERING
kbso CONSULTING
Lynch, Harrison & Brumleve, Inc.

REVISIONS
1 ADDENDUM #2 02.06.25

01.06.25
HAMILTON SOUTHEASTERN SCHOOLs
23055 - FALL CREEK INTERMEDIATE RENOVATIONS
12011 Olio Rd, Fishers, IN 46037
CONSTRUCTION DOCUMENTS

SET TO BE PRINTED IN COLOR

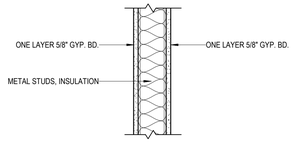
KAREN K. COLLINS REGISTERED No. 10404538 STATE OF INDIANA PROFESSIONAL ENGINEER

Karen Collins

CONSTRUCTION DOCUMENTS 01.06.25
krM JOB NO. 23055
DRAWN BY A&F

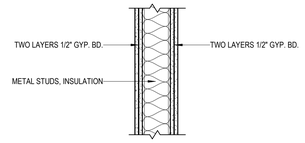
DRAWING NAME
SWPPP PLAN (INITIAL & FINAL)

DRAWING NO.
C401



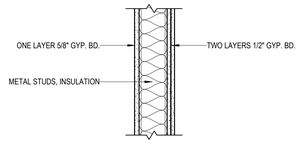
WALL TYPE	STUD WIDTH	PARTITION WIDTH
M1.2	2-1/2"	3 3/4"
M1.3	3-5/8"	4 7/8"
M1.6	6"	7 1/4"

PARTITION TYPE M1



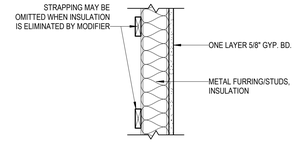
WALL TYPE	STUD WIDTH	PARTITION WIDTH
M2.3	3-5/8"	5 5/8"
M2.6	6"	8"

PARTITION TYPE M2



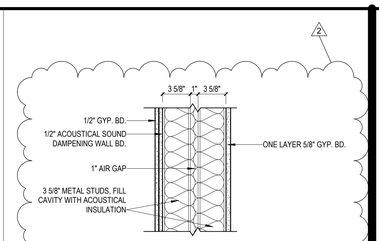
WALL TYPE	STUD SIZE	PARTITION WIDTH
M3.3	3-5/8"	5 1/4"
M3.6	6"	7 5/8"
M3.8	8"	9 5/8"

PARTITION TYPE M3



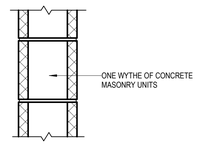
WALL TYPE	STUD SIZE	PARTITION WIDTH
M4.2	2-1/2"	3 1/8"
M4.3	3-5/8"	4 1/4"
M4.6	6"	6 5/8"

PARTITION TYPE M4



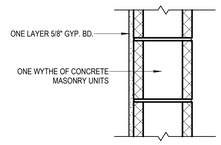
WALL TYPE	STUD WIDTH	PARTITION WIDTH
M5.3	(2) 3-5/8"	9 7/8"

PARTITION TYPE M5



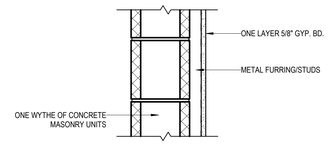
WALL TYPE	WYTHE WIDTH	PARTITION WIDTH
C1.6	5-5/8"	5 5/8"
C1.8	7-5/8"	7 5/8"
C1.10	9-5/8"	9 5/8"
C1.12	11-5/8"	11 5/8"

PARTITION TYPE C1



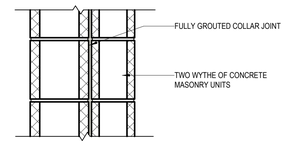
WALL TYPE	WYTHE WIDTH	PARTITION WIDTH
C2.6	7-5/8"	6 1/4"
C2.8	7-5/8"	8 1/4"
C2.10	9-5/8"	10 1/4"

PARTITION TYPE C2



WALL TYPE	WYTHE WIDTH	PARTITION WIDTH
C3.8	7-5/8"	9 3/4"

PARTITION TYPE C3



WALL TYPE	WYTHE WIDTH	PARTITION WIDTH
C4.14	MULTI	1'-1 5/8"

PARTITION TYPE C4

WALL TYPE GENERAL NOTES

A. ALL WALL TYPES TO DECK UNLESS NOTED OTHERWISE

B. WALL TYPES ARE ASSUMED TO BE CONTINUOUS WITHIN THE SAME PLANE OR SURFACE UNTIL ANOTHER TAG IS SHOWN.

C. PROVIDE MOLD AND MOISTURE RESISTANT WALL BOARD IN ALL ROOMS CONTAINING OPERABLE PLUMBING FIXTURES, AND WITHIN 4-0" OF ALL DRINKING FOUNTAINS AND WATER COOLERS UNLESS OTHERWISE NOTED.

D. AT TILED WALLS, PROVIDE CEMENT BACKER BOARD IN LIEU OF GYPSUM BOARD

E. ALL STUD FRAMING AT DOOR JAMBS, HEADERS, AND LINTELS TO BE 16 GA.

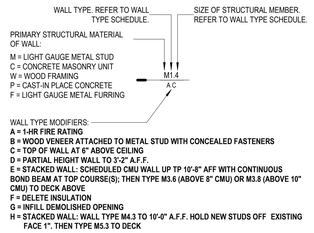
F. ALL EXTERIOR METAL STUD FRAMING IS TO BE 18 GA. UNLESS NOTED OTHERWISE

G. ALL EXTERIOR PERIMETER GYP. BD. TO GO TO DECK AND SEAL.

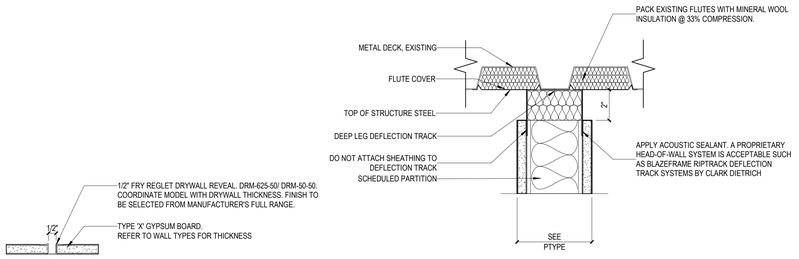
H. PROVIDE ACOUSTICAL SEALANT AND SOUND ATTENUATION COMPONENTS AS SPECIFIED AT ALL WALL, SILL, HEAD, AND ANY PENETRATIONS THAT OCCUR WITHIN TYPE M5.3 WALLS. FILL DECK FLUTES WITH INSULATION / SOUND ATTENUATION.

I. ALL STEEL STUDS ARE TO BE BRACED ACCORDING TO MANUFACTURER LIMIT HEIGHT (L/240) FOR EACH PARTICULAR ASSEMBLY TYPE.

J. SEE BELOW FOR WALL TYPE TAG EXPLANATION:



A = 1-HR FIRE RATING
B = WOOD VENEER ATTACHED TO METAL STUD WITH CONCEALED FASTENERS
C = TOP OF WALL AT 6" ABOVE CEILING
D = PARTIAL HEIGHT WALL TO 3'-2" A.F.F.
E = STACKED WALL: SCHEDULED CMU WALL UP TP 10'-8" AFF WITH CONTINUOUS BOND BEAM AT TOP COURSE(S); THEN TYPE M3.6 (ABOVE 8" CMU) OR M3.8 (ABOVE 10" CMU) TO DECK ABOVE
F = DELETE INSULATION
G = INFILL DEMOLISHED OPENING
H = STACKED WALL: WALL TYPE M4.3 TO 10'-0" A.F.F. HOLD NEW STUDS OFF EXISTING FACE 1". THEN TYPE M5.3 TO DECK

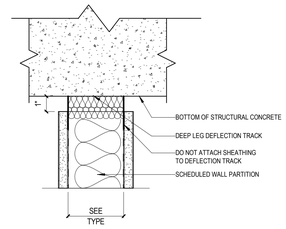


TYP. GYPSUM BOARD REVEAL

SCALE: 3" = 1'-0"

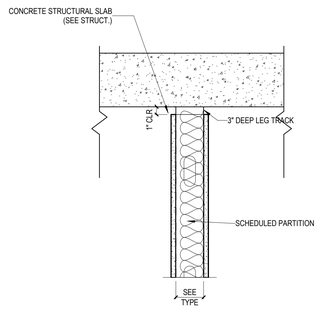
ACOUSTIC TERMINATION AT METAL DECK

SCALE: 3" = 1'-0"

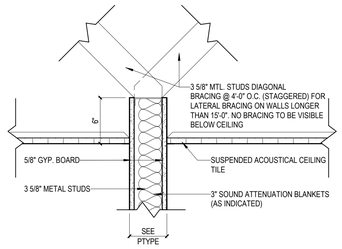


ACOUSTIC TERMINATION AT CONCRETE

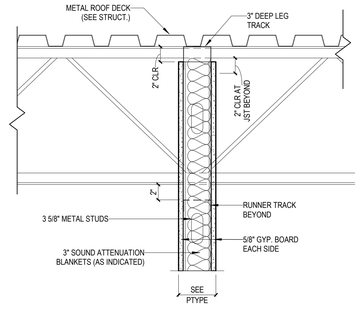
SCALE: 3" = 1'-0"



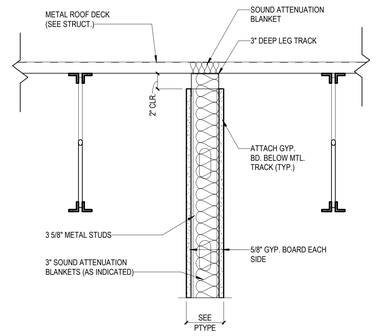
METAL STUD PARTITION AT CONCRETE



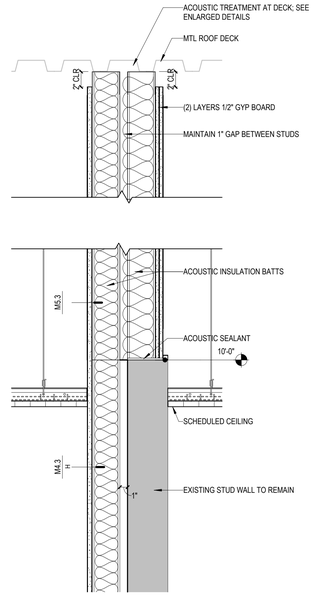
METAL STUD PARTITION EXTEND ABOVE CEILING



METAL STUD PARTITION AT METAL ROOF DECK PERPENDICULAR TO STEEL JOISTS



METAL STUD PARTITION AT METAL ROOF DECK PARALLEL TO STEEL JOISTS



MUSIC/ BAND ACOUSTIC WALL RETROFIT

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

METAL STUD PARTITION AT CONCRETE

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

TERMINATION DETAILS

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

krM Architecture+

kbsd CONSULTING

HB Lynch, Harrison & Brumleve, Inc.

REVISIONS

2	02/06/2025	ADDENDUM 2

01.06.25
HAMILTON SOUTHEASTERN SCHOOLS

23055 - FALL CREEK INTERMEDIATE RENOVATIONS

12011 Olio Rd, Fishers, IN 46037

CONSTRUCTION DOCUMENTS

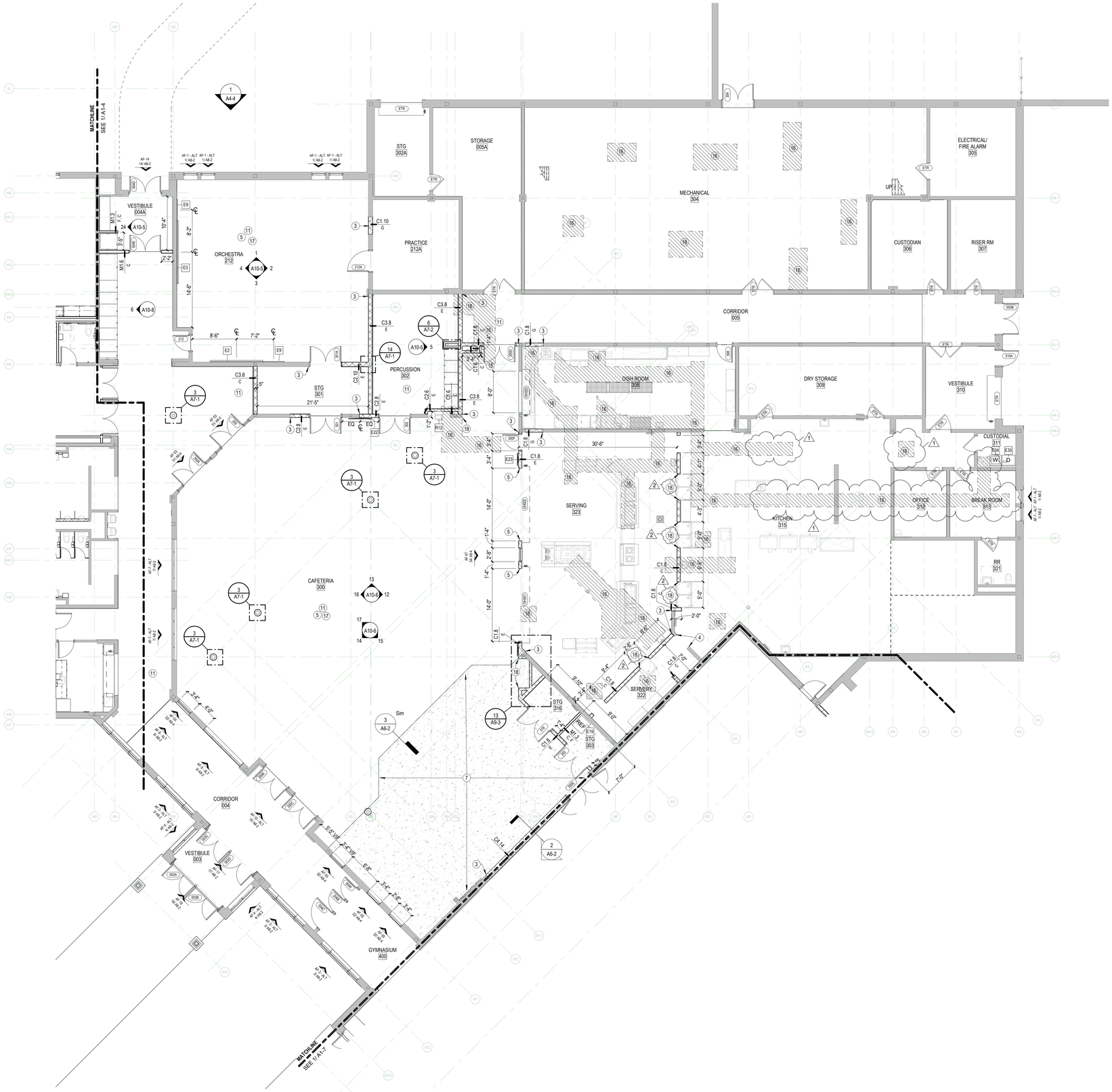
SET TO BE PRINTED IN COLOR

HAROLD D. WILLIAMS REGISTERED No. 10600161 STATE OF INDIANA ARCHITECT

CONSTRUCTION DOCUMENTS
01.06.25
krM JOB NO.
23055
DRAWN BY
krM

DRAWING NAME
WALL TYPES

DRAWING NO.
A0-1



1 FIRST FLOOR PLAN

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

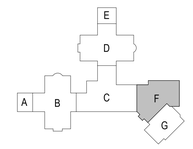
PLAN NOTES - FLOOR PLAN

1. ALIGN FINISH FACES
2. INSTALL SALVAGED LOCKERS AND RE-COAT FINISH ON ALL LOCKERS INSIDE AND OUT, BASES, TOPS, FILLERS, AND END PANELS WITH HIGH PERFORMANCE COATING. INSTALL NEW SLOPING TOPS, BASE, LOCKER HARDWARE AND NUMBER PLATES. COORDINATE NUMBER PLATE LOCATIONS WITH OWNER.REFER TO 09 96 00 FOR COATING REQUIREMENTS.
3. ALIGN FINISH FACES. TOOTH IN MASONRY
4. PATCH ANY DAMAGE TO EXISTING MASONRY. BULLNOSE CORNERS.
5. 04 20 00: BULLNOSE ALL EXPOSED CMU CORNERS IN ALL AREAS OF BUILDING UNLESS NOTED OTHERWISE
6. EXTEND EXISTING PARTITION TO DECK AND ACOUSTICALLY SEAL
7. 03 30 00: NEW SLAB ON GRADE.
8. EXISTING BLEACHERS TO REMAIN. PROTECT DURING CONSTRUCTION.
9. 09 96 00: PAINT ALL EXISTING LOCKERS INSIDE AND OUT, BASE, TOPS, FILLERS, AND END PANELS USING HIGH PERFORMANCE COATING. INSTALL NEW LOCKER HARDWARE.
10. 11 66 23: ATHLETIC WALL PADDING. REFER TO ELEVATIONS & FINISH SCHEDULES.
11. IN ALL AREAS WHERE DEMO OCCURRED, PATCH, SKIM COAT, AND REFINISH WALL. WALL PATCH TO BE DEPENDENT ON WALL TYPE. GYPSUM BOARD IS TO BE A LEVEL 5 FINISH UNO. WHERE NEW DRYWALL MEETS ETR, BLEND LEVEL 5 FINISH INTO EXISTING SUCH THAT THE FINISHED SURFACES ARE NOT NOTICEABLY DIFFERENT. ARCHITECT TO APPROVE MOCKUP OF FINISH BLEND FOR REPLICATION.
12. LINE OF EXISTING BLEACHERS WHEN EXTENDED.
13. ETR INTERIOR WINDOW. PROTECT DURING CONSTRUCTION. 09 91 23: PAINT FRAME COLOR BY ARCHITECT
14. REFER TO PATTERN PLAN FOR MORE INFORMATION.
15. ROUND COLUMN BENCH - REFER TO DETAIL
16. PATCH SLAB DUE TO DEMOLITION. REFER TO STRUCTURAL DRAWINGS.
17. WHERE CEILING HEIGHT CHANGE OCCURRED. EXTEND WALL ASSEMBLY TO 6" ABOVE CEILING UNO. GYP. BD. TO BE A LEVEL 5 FINISH.
18. DO NOT BULLNOSE
19. NEW CONCRETE SLAB TOPPING. REFER TO DETAILS

EQUIPMENT SCHEDULE

TAG	ACCESSORY NOTES	FURNISHED BY	INSTALLED BY
E1	8'-0" x 4'-0" WHITEBOARD	CONTRACTOR	CONTRACTOR
E2	10'-0" x 4'-0" WHITEBOARD	CONTRACTOR	CONTRACTOR
E3	12'-0" x 4'-0" WHITEBOARD	CONTRACTOR	CONTRACTOR
E4	FULL WALL BACK PAINTED GLASS MARKERBOARD	CONTRACTOR	CONTRACTOR
E5	1'-10"W x 3'-6"H TACKABLE PANEL DP-1.	CONTRACTOR	CONTRACTOR
E6	3'-0"W x 3'-6"H TACKABLE PANEL DP-1	CONTRACTOR	CONTRACTOR
E7	9'-0"W x 4'-0"H TACKABLE PANEL DP-1	CONTRACTOR	CONTRACTOR
E8	4'-0"H TACKABLE PANEL DP-1. WIDTH VARIES. REFER TO ELEVATION	CONTRACTOR	CONTRACTOR
E9	4'-0" x 4'-0" TACK BOARD	CONTRACTOR	CONTRACTOR
E10	CEILING MOUNTED PROJECTOR	OWNER	OWNER
E11	14'-0"W AUTOMATIC PROJECTION SCREEN. CEILING RECESSED UNO. COORDINATE INTALLATION WITH SCHOOL AV COMPANY	CONTRACTOR	CONTRACTOR
E12	12'-0"W MANUAL PROJECTION SCREEN. CEILING MOUNT	CONTRACTOR	CONTRACTOR
E13	8'-0"W MANUAL PROJECTION SCREEN. CEILING MOUNT	CONTRACTOR	CONTRACTOR
E14	REMOVED IN ADDENDUM 3		
E15	POPCORN MACHINE	OWNER	OWNER
E16	WARM PASS THROUGH	OWNER	OWNER
E17	MICROWAVE	OWNER	OWNER
E18	VENDING MACHINE	OWNER	OWNER
E19	REFRIGERATOR	OWNER	OWNER
E20	MINI FRIDGE	OWNER	OWNER
E21	DRINK COOLER	OWNER	OWNER
E22	TV	OWNER	CONTRACTOR
E23	DIGITAL MENU BOARD	CONTRACTOR	CONTRACTOR
E24	EYEWASH STATION. REFER TO MEP.	ETR	ETR
E25	PRINTER/ COPIER	OWNER	OWNER
E26	EXISTING SHREDDER	OWNER	CONTRACTOR
E27	FIRE EXTINGUISHER	ETR	ETR
E28	EXISTING LAMINATOR	OWNER	OWNER
E29	DIE CUT MACHINE	OWNER	OWNER
E30	EXISTING SAFE	OWNER	OWNER
E31	EXISTING GLOWFORGE	OWNER	OWNER
E32	3D PRINTER	OWNER	OWNER
E33	EXISTING ROLL STORAGE	OWNER	OWNER
E34	WASHER	OWNER	OWNER
E35	DRYER	OWNER	OWNER

KEY PLAN



krM Architecture+

kbsd CONSULTING

Lynch, Harrison & Brumleve, Inc.

REVISIONS

1	01/30/2025	ADDENDUM 1
2	02/06/2025	ADDENDUM 2

HAMILTON SOUTHEASTERN SCHOOLS
01.06.25

23055 - FALL CREEK INTERMEDIATE RENOVATIONS

12011 Olio Rd. Fishers, IN 46037

CONSTRUCTION DOCUMENTS

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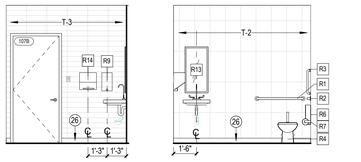
DONALD D. WILLIAMS
REGISTERED
No. 10600161
STATE OF INDIANA
ARCHITECT

CONSTRUCTION DOCUMENTS
01.06.25
krM JOB NO.
23055
DRAWN BY
Cg

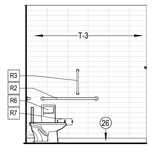
DRAWING NAME
ARCHITECTURAL FLOOR PLAN - AREA F

DRAWING NO.
A1-6

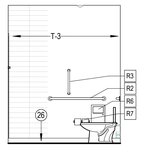


28 NURSE RR 107B NORTH
SCALE: 1/4" = 1'-0"

27 NURSE RR 107B EAST
SCALE: 1/4" = 1'-0"



26 NURSE RR 107B SOUTH
SCALE: 1/4" = 1'-0"



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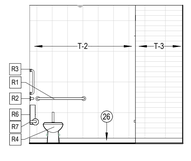
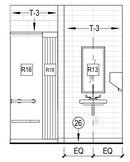
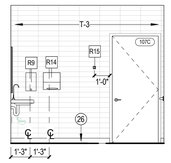
SCALE: 1/4" = 1'-0"



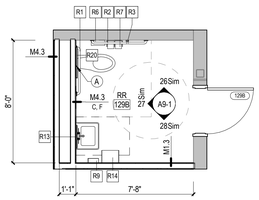
24 NURSE RR 107C SOUTH
SCALE: 1/4" = 1'-0"



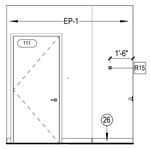
23 NURSE RR 107C WEST
SCALE: 1/4" = 1'-0"



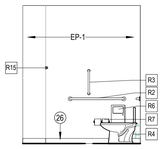
22 NURSE RR 107C NORTH
SCALE: 1/4" = 1'-0"



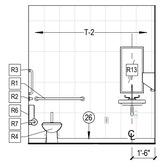
16 ENLARGED PLAN - RR 127B
SCALE: 1/4" = 1'-0"



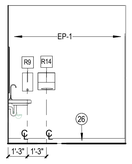
17 TYP. FACULTY RR SOUTH
SCALE: 1/4" = 1'-0"



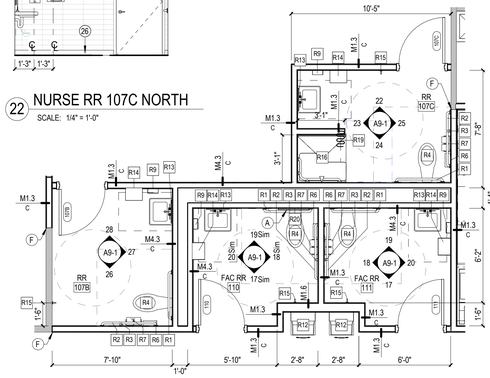
18 TYP. FACULTY RR WEST
SCALE: 1/4" = 1'-0"



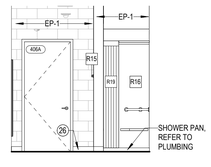
19 TYP. FACULTY RR NORTH
SCALE: 1/4" = 1'-0"



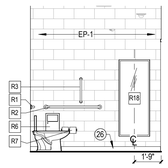
20 TYP. FACULTY RR EAST
SCALE: 1/4" = 1'-0"



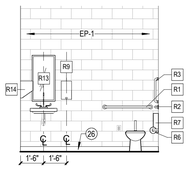
21 ENLARGED PLAN - FRONT OFFICE RESTROOMS
SCALE: 1/4" = 1'-0"



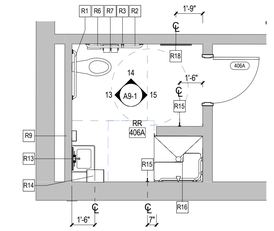
15 COACHES RR EAST
SCALE: 1/4" = 1'-0"



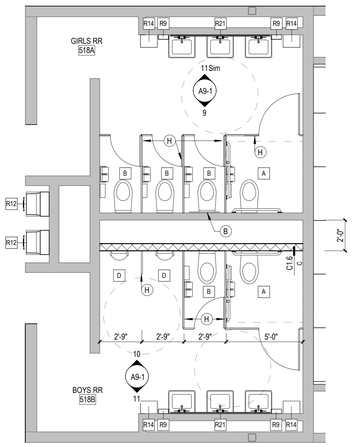
14 COACHES RR NORTH
SCALE: 1/4" = 1'-0"



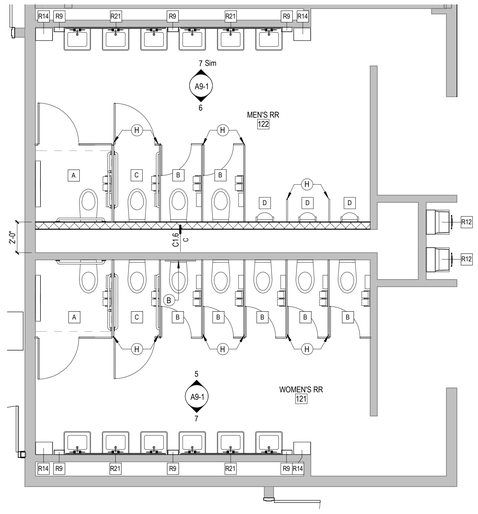
13 COACHES RR WEST
SCALE: 1/4" = 1'-0"



12 ENLARGED PLAN - TYP COACHES RR
SCALE: 1/4" = 1'-0"



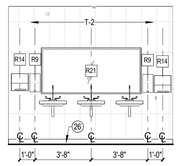
8 ENLARGED PLAN - TYP. AREA B & D RESTROOMS
SCALE: 1/4" = 1'-0"



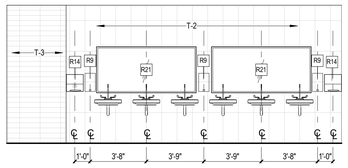
4 ENLARGED PLAN - AREA C RESTROOMS
SCALE: 1/4" = 1'-0"

9 TYP GIRLS WW AREA B & D
SCALE: 1/4" = 1'-0"

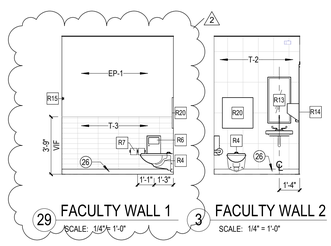
10 TYP BOYS WW AREA B & D
SCALE: 1/4" = 1'-0"



11 TYP SINK WALL AREA B & D
SCALE: 1/4" = 1'-0"

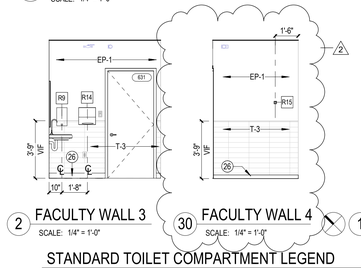


7 TYP 121 & 122 SINK WALL
SCALE: 1/4" = 1'-0"



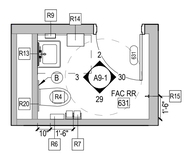
29 FACULTY WALL 1
SCALE: 1/4" = 1'-0"

3 FACULTY WALL 2
SCALE: 1/4" = 1'-0"

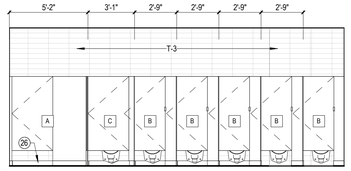


2 FACULTY WALL 3
SCALE: 1/4" = 1'-0"

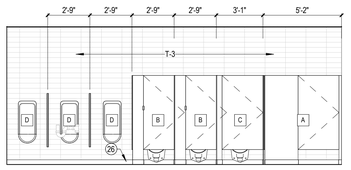
30 FACULTY WALL 4
SCALE: 1/4" = 1'-0"



1 ENLARGED PLAN - FACULTY RR - AREAS B & D
SCALE: 1/4" = 1'-0"

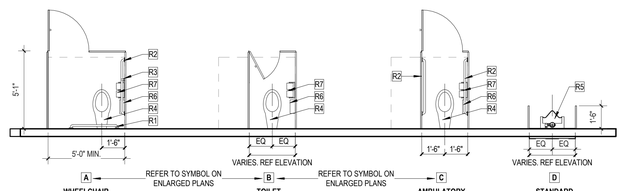


5 WOMENS RR 121 WW WALL
SCALE: 1/4" = 1'-0"



6 MENS RR 122 WW WALL
SCALE: 1/4" = 1'-0"

STANDARD TOILET COMPARTMENT LEGEND



A WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT
*R6 AT WOMEN'S RESTROOMS ONLY

REFER TO SYMBOL ON ENLARGED PLANS

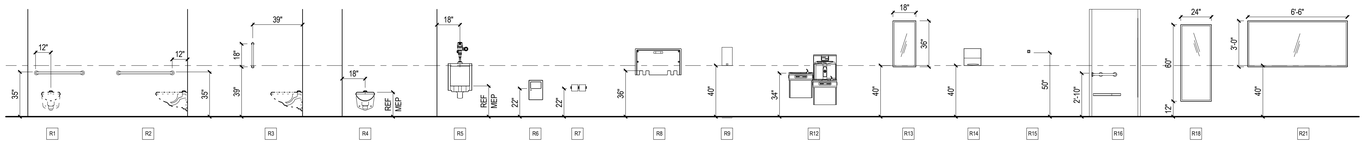
B TOILET COMPARTMENT
*R6 AT WOMEN'S RESTROOMS ONLY

REFER TO SYMBOL ON ENLARGED PLANS

C AMBULATORY TOILET COMPARTMENT
*R6 AT WOMEN'S RESTROOMS ONLY

D STANDARD URINAL

MOUNTING HEIGHT LEGEND



EQUIPMENT SCHEDULE

TAG	ACCESSORY NOTES	FURNISHED BY	INSTALLED BY
E1	8'-0" x 4'-0" WHITEBOARD	CONTRACTOR	CONTRACTOR
E2	10'-0" x 4'-0" WHITEBOARD	CONTRACTOR	CONTRACTOR
E3	12'-0" x 4'-0" WHITEBOARD	CONTRACTOR	CONTRACTOR
E4	FULL WALL BACK PAINTED GLASS MARKERBOARD	CONTRACTOR	CONTRACTOR
E5	1'-10"W x 3'-6"H TACKABLE PANEL DP-1	CONTRACTOR	CONTRACTOR
E6	3'-0"W x 3'-6"H TACKABLE PANEL DP-1	CONTRACTOR	CONTRACTOR
E7	9'-0"W x 4'-0"H TACKABLE PANEL DP-1	CONTRACTOR	CONTRACTOR
E8	4'-0"H TACKABLE PANEL DP-1. WIDTH VARIES. REFER TO ELEVATION	CONTRACTOR	CONTRACTOR
E9	4'-0" x 4'-0" TACK BOARD	CONTRACTOR	CONTRACTOR
E10	CEILING MOUNTED PROJECTOR	OWNER	OWNER
E11	14'-0"W AUTOMATIC PROJECTION SCREEN. CEILING RECESSED UNO. COORDINATE INTALLATION WITH SCHOOL AV COMPANY	CONTRACTOR	CONTRACTOR
E12	12'-0"W MANUAL PROJECTION SCREEN. CEILING MOUNT	CONTRACTOR	CONTRACTOR
E13	8'-0"W MANUAL PROJECTION SCREEN. CEILING MOUNT	CONTRACTOR	CONTRACTOR
E14	REMOVED IN ADDENDUM 3		
E15	POPCORN MACHINE	OWNER	OWNER
E16	WARM PASS THROUGH	OWNER	OWNER
E17	MICROWAVE	OWNER	OWNER
E18	VENDING MACHINE	OWNER	OWNER
E19	REFRIGERATOR	OWNER	OWNER
E20	MINI FRIDGE	OWNER	OWNER
E21	DRINK COOLER	OWNER	OWNER
E22	TV	OWNER	CONTRACTOR
E23	DIGITAL MENU BOARD	CONTRACTOR	CONTRACTOR
E24	EYEWASH STATION. REFER TO MEP.	ETR	ETR
E25	PRINTER/ COPIER	OWNER	OWNER
E26	EXISTING SHREDDER	OWNER	CONTRACTOR
E27	FIRE EXTINGUISHER	ETR	ETR
E28	EXISTING LAMINATOR	OWNER	OWNER
E29	DIE CUT MACHINE	OWNER	OWNER
E30	EXISTING SAFE	OWNER	OWNER
E31	EXISTING GLOWFORGE	OWNER	OWNER
E32	3D PRINTER	OWNER	OWNER
E33	EXISTING ROLL STORAGE	OWNER	OWNER
E34	WASHER	OWNER	OWNER
E35	DRYER	OWNER	OWNER

RESTROOM EQUIPMENT

TYPE MARK	ACCESSORY NOTES	PURCHASED BY	INSTALLED BY
R1	BACK WALL GRAB BAR	CONTRACTOR	CONTRACTOR
R2	SIDE WALL GRAB BAR	CONTRACTOR	CONTRACTOR
R3	SIDE WALL VERTICAL GRAB BAR	CONTRACTOR	CONTRACTOR
R4	TOILET, REF. PLMB.	CONTRACTOR	CONTRACTOR
R5	URINAL, REF. PLMB.	CONTRACTOR	CONTRACTOR
R6	SANITARY NAPKIN DISPOSAL	CONTRACTOR	CONTRACTOR
R7	TOILET PAPER DISPENSER	OWNER	CONTRACTOR
R8	CHANGING STATION	CONTRACTOR	CONTRACTOR
R9	SOAP DISPENSER	OWNER	CONTRACTOR
R12	SALVAGED WATER FOUNTAIN	N/A	CONTRACTOR
R13	MIRROR 24 x 36	CONTRACTOR	CONTRACTOR
R14	PAPER TOWEL DISPENSER	OWNER	CONTRACTOR
R15	ROBE HOOK	CONTRACTOR	CONTRACTOR
R16	ADA-COMPLIANT SHOWER SEAT AND GRAB BARS	CONTRACTOR	CONTRACTOR
R18	MIRROR 24 x 60	CONTRACTOR	CONTRACTOR
R19	SHOWER CURTAIN AND ROD	CONTRACTOR	CONTRACTOR
R20	ACCESS PANEL, REF. PLMB.	CONTRACTOR	CONTRACTOR
R21	MIRROR 78 x 36	CONTRACTOR	CONTRACTOR

GENERAL NOTES - ENLARGED PLANS

A. SEE SHEET A9-1 FOR TYPICAL ADA MOUNTING HEIGHTS FOR ACCESSORIES.
B. CONTRACTOR TO PROVIDE BLOCKING IN WALLS FOR ALL TOILET ROOM ACCESSORIES AND PARTITIONS FOR OWNER AND CONTRACTOR SUPPLIED ITEMS.
C. COORDINATE FLOOR DRAIN LOCATIONS WITH MEP.
D. CENTER ALL TILE PATTERNS, LEAVING EQUAL SIZE TILES ON EACH END OF PARTITION. SEE SPECIFICATIONS.
E. C.F.C.I. = CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.
F. O.F.C.I. = OWNER FURNISHED, CONTRACTOR INSTALLED.
G. O.F.O.I. = OWNER FURNISHED, OWNER INSTALLED.
H. G.C. AND ALL SUB-CONTRACTORS PERFORMING WORK IN AND NEAR THE RESTROOMS SHALL CONFIRM THEIR WORK EFFORTS, MAINTAIN ALL CLEARANCES NOTED, AND COORDINATE CLEARANCES REQUIRED WITH ALL OTHER TRADES.
I. FIXTURES SHALL NOT OVERLAP INTO AREAS OF OTHER FIXTURE'S CLEARANCES.
J. SINK CLEARANCE SHALL BE 2'-6"W. x 4'-0"D., ALLOWING CLEARANCE AREA TO EXTEND UNDER THE SINK BY 8".
K. TOILET CLEARANCE AREA REQUIRED SHALL BE 5'-0"w. x 5'-6"D. THE TOILET MAY OVERLAP THIS CLEARANCE AREA.
L. SHOWER CLEARANCE AREA REQUIRED SHALL BE 3'-0" D x 4'-0" W.
M. 60" TURNING RADIUS SHALL BE PROVIDED WITHIN THE RESTROOM. THE TURNING RADIUS MAY OVERLAP THE FIXTURE'S CLEARANCE AREA, BUT MAY NOT OVERLAP THE ACTUAL FIXTURES.

ENLARGED PLAN NOTES

A CENTER NEW ACCESS PANEL ABOVE WATER CLOSET
B PAINT EXISTING ACCESS PANEL.
C ALIGN FINISH FACES. TOOTH IN MASONRY
D PROVIDE 4" DIAMETER GROMMET. COORDINATE FINAL LOCATION WITH OWNER PRIOR TO CUTTING.
F ALIGN FINISH FACE.
H HDPE PARTITION / SCREEN. REFER TO SPECS.

ELEVATION NOTES - INTERIOR

1 FINISHED END.
2 PROVIDE CONCEALED BRACKETS AT 36" O.C. MAX
3 PROVIDE PEGBOARD BACK PANEL INSIDE CABINET
4 WALL MOUNTED COAT ROD W/ "O" FLANGE. REFER TO SPECS.
5 BACKSPLASH TO BE FULL HEIGHT.
6 PAINT EXISTING ALUMINUM STOREFRONT SYSTEM TO MATCH NEW ALUMINUM FRAMES WITH HIGH PERFORMANCE COATING. REFER TO SPECIFICATIONS
7 CASEWORKS DOORS TO HAVE FRAMED TEMPERED GLASS FRONTS
8 COUNTERTOP SURFACE TO HAVE WATERFALL EDGE.
9 TRASH CABINET WITH THROUGH COUNTER CIRCULAR 5" WASTE CHUTE.
10 1-1/2"H x 3"L LIP WITHIN FRONT EDGE OF COUNTER.
11 BASE CASEWORK TO BE INSET ALONG THE COUNTER.
12 WALL GRAPHIC BY OTHERS. WALL TO RECEIVE PRIME ONLY. COORDINATE WITH ARCHITECT.
13 CUT ALUMINUM LETTERS. 1/2" DEPTH. 12" H ARIAL NARROW.
14 ROUTED WALL PANEL. REFER TO DETAIL. VECTOR IMAGE TO BE PROVIDED BY ARCHITECT.
15 EXISTING STAINED GLASS TO BE RELOCATED. REFER TO DETAILS.
16 ALL EXPOSED EDGES TO UTILIZE MANUFACTURER'S SUPPLIED CORNER MOLDING TRIM.
17 EXISTING LOCKERS TO BE ELECTROSTATICALLY PAINTED, INTERIOR & EXTERIOR.
18 ACCENT PAINT COLOR VARIES BY ROOM. REFER TO FINISH PLANS.
19 ROUGH OPENING FOR BOOK RETURN UNIT. KINGSLEY MODEL #43-8105 OR APPROVED EQUAL.
20 COORDINATE WITH ALL WALL MOUNTED ITEMS PRIOR TO CONSTRUCTION.
21 EXISTING MEP EQUIPMENT TO REMAIN.
22 ALIGN FINISHED EDGES.
23 ALIGN NEW REVEALS TO EXISTING REVEALS.
24 EXISTING TO REMAIN ATHLETIC SCOREBOARD.
25 ATHLETIC WALL PAD. INSTALL TO CENTER FROM BASKETBALL COURT.
26 BASE AS SCHEDULED
27 EXISTING ATHLETIC EQUIPMENT.
28 ALTERNATE: TRANSLUCENT SANDWICH PANEL.
29 PAINT EXISTING ALUM FRAME P-2.
30 DRYWALL CONTROL JOINT.
31 1/2" REVEAL. REFER TO TYPICAL DETAIL ON A0-1
32 1/2" POST MOUNTED ALUMINUM PLATE SIGNAGE. 6" H ARIAL NARROW WATER JET LETTERING
33 PROVIDE TILE TERMINATION TRIM @ OUTSIDE CORNER, TTP. REFER TO DETAIL.
34 PROVIDE LOW PROFILE COUNTERTOP SUPPORT BRACKETS @ 36" O.C.
35 EXPOSED DECK & MECH. EQUP TO BE PAINTED WHITE, P-7. EXISTING STEEL STRUCTURE TO BE PAINTED BLACK, P-2.
37 CUT ALUMINUM LETTERS. 1/2" DEPTH. 24" H ARIAL.
38 CUT ALUMINUM LETTERS. 1/2" DEPTH. 12" H ARIAL NARROW BOLD.
39 DP-3 TO BE SEAMED WITH MANUFACTURER PLASTIC BISCUITS.
40 FULL DEPTH SUPPORT GABLE FROM FINISHED FLOOR TO CASEWORK.
41 MITER CORNER, DP-3, TO CONCEAL FINISHED PLYWOOD BACKING AND WALL CLEAT.
42 WHERE DRYWALL MEETS CMU, INSTALL METAL "F" TRIM. FRY REGLET DRMF-625-50 OR EQUAL.
43 ALUMINUM MILLWORK REVEAL BASE. REFER TO DETAIL.
44 PROVIDE 4" DIAMETER GROMMET. COORDINATE FINAL LOCATION WITH OWNER PRIOR TO CUTTING.
45 DIFFUSER LOCK TO MATCH PAINT COLOR OF ADJACENT WALL
46 PROVIDE SCHLUTER QUADEC, ANODIZED ALUMINUM TRIM.
47 ALUMINUM END CLOSURE AT JAMB AND HEAD. COLOR TO MATCH ADJACENT PAINT
48 POST MOUNTED ACRYLIC SIGNAGE BY OTHERS. PROVIDE BLOCKING. COORDINATE WITH ARCHITECT.
49 1/2" DEPTH CUT ALUMINUM GEAR GRAPHIC. POST MOUNTED. INCLUDE COST TO PROVIDE (20) 10" DIAMETER GEARS. FINAL DESIGN TO BE PROVIDED BY ARCHITECT
50 CASEWORK UNIT TO BE LOCKABLE, KEY ALIKE. FOR UNITS WITH MULTIPLE DOORS AND/ OR DRAWERS, EACH CASEWORK COMPONENT IS TO INCLUDE A LOCK

krM Architecture+
kbsd CONSULTING
HB Lynch, Harrison & Brumleve, Inc.

REVISIONS

2	02/06/2025	ADDENDUM 2

01.06.25
HAMILTON SOUTHEASTERN SCHOOLS
12011 Olio Rd, Fishers, IN 46037
CONSTRUCTION DOCUMENTS
SET TO BE PRINTED IN COLOR

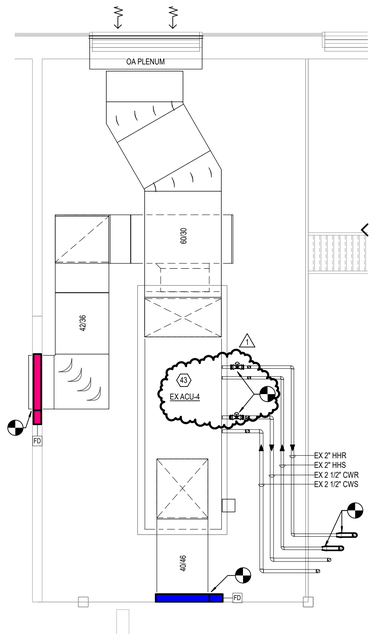
23055 - FALL CREEK INTERMEDIATE RENOVATIONS

WINFIELD D. WILLIAMS REGISTERED No. 10600161 STATE OF INDIANA ARCHITECT

CONSTRUCTION DOCUMENTS 01.06.25
krM JOB NO. 23055
DRAWN BY krM

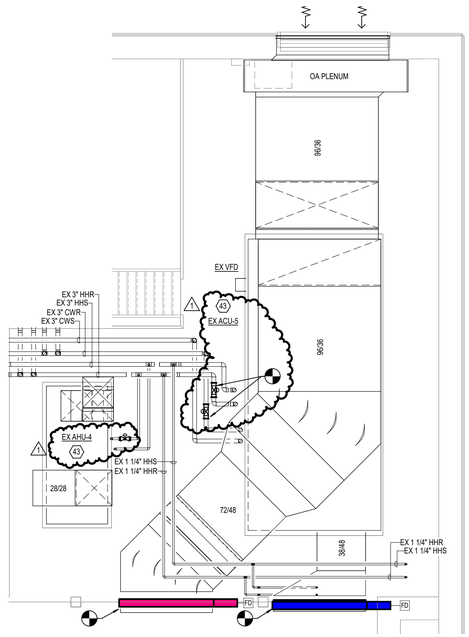
DRAWING NAME
ENLARGED FLOOR PLANS / RESTROOM PLANS

DRAWING NO.
A9-1



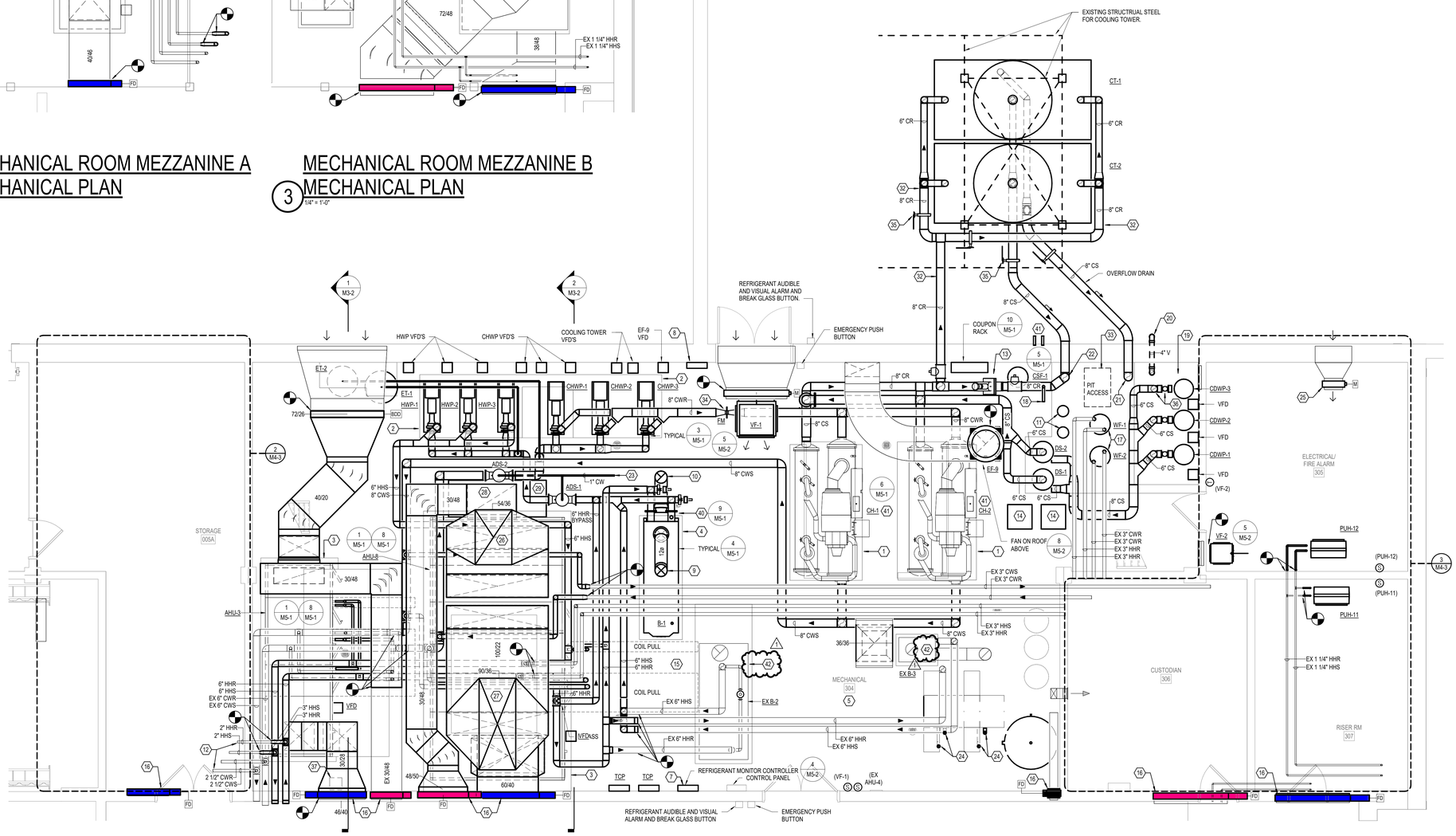
MECHANICAL ROOM MEZZANINE A MECHANICAL PLAN

2 1/4" = 1'-0"



MECHANICAL ROOM MEZZANINE B MECHANICAL PLAN

3 1/4" = 1'-0"



N

ENLARGED - MECHANICAL ROOM PLAN

1 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET M-000 FOR GENERAL MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS.
B REFER TO DRAWING M-500 SERIES FOR MECHANICAL DETAILS.
C REFER TO DRAWING M-600 SERIES FOR MECHANICAL SCHEDULES.

SHEET KEYNOTES

1 EXTEND EXISTING 4" CONCRETE PAD AS REQURED TO ACCOMODATE NEW CHILLER.
2 EXTEND EXISTING 4" CONCRETE PAD AS REQUIRED TO ACCOMODATE NEW PUMPS.
3 EXTEND EXISTING 4" CONCRETE PAD AS REQUIRED TO ACCOMODATE NEW AIR HANDLING UNIT.
4 NEW 4" CONCRETE HOUSE KEEPING PAD FOR BOILER.
5 ALL NEW EQUIPMENT IN THIS ROOM MUST BE BROUGHT INTO BUIDLING THROUGH DOUBLE DOORS IN COOLING TOWER YARD OR ADJACENT CORRIDOR.
6 AIR HANDLING UNIT MUST BE BROUGHT THROUGH OUTSIDE AIR LOUVER IN SECTIONS.
7 PROVIDE AND INSTALL NEW REFRIGERANT MONITORING SYSTEM SIMILAR TO AGS MERLINGUARD CONTROLLER. AGSRTFT SERIES MONITOR, AGSAAB ALARM, AND BMS TIE-IN FOR PRE-ALARM AND HIGH-ALARM RELAYS.
8 COOLING TOWER CONTROL PANEL SHALL BE LOCATED INSIDE MECHANICAL ROOM.
9 12" DIAMETER INTAKE FOR BOILER UP THROUGH ROOF. CONFIRM SIZE REQUIRED WITH BOILER MANUFACTURER. TERMINATE WITH MANUFACTURER APPROVED INTAKE TERMINATION KIT.
10 12" DIAMETER DOUBLE WALL STAINLESS STEEL FLUE FOR BOILER UP THROUGH ROOF. CONFIRM SIZE REQUIRED WITH BOILER MANUFACTURER. TERMINATE WITH MANUFACTURER APPROVED TERMINATION KIT.
11 LAKOS SOLIDS RECOVERY VESSEL, MODEL SRV-816.
12 PIPING TO AHU ON MEZZANINE.
13 COOLING TOWER BYPASS VALVE.
14 COOLING TOWER CHEMICAL INJECTION STORAGE TANKS.
15 PATCH EXISTING HOLES THROUGH ROOF FROM REMOVAL OF BOILER INTAKES/FLUES TO MATCH CURRENT ROOF STRUCTURE.
16 NEW FIRE DAMPER IN DUCTWORK.
17 WATER FILTER MOUNTED ON FLOOR FOR CHILLED AND HEATING WATER SYSTEMS. CHILLED WATER SYSTEM FILTER LIKE HARMSCO HURRICANE FILTER MODEL HC/170-50 WITH 50 MICRON, MIN. 170 SQ. FT. PLEATED MEDIA FILTER. MAX 6.0 PSI P.D., FLOW THRU FILTER TO BE 134 GPM. HEATING WATER SYSTEM FILTER LIKE HARMSCO HURRICANE FILTER MODEL HC/90-50 WITH 50 MICRON, MIN. 90 SQ. FT. PLEATED MEDIA FILTER. MAX 6.0 PSI P.D. FLOW THRU FITLER TO BE 68 GPM.
18 2" SOFT COLD WATER MAKE-UP FOR COOLING TOWERS. SEE PLUMBING DRAWINGS FOR PIPING CONTINUATION.
19 CLEAN AND EPOXY PAINT CONDENSER WATER SUMP PIT. PIT IS APPROXIMATELY 11'-0" L x 10'-0" W x 11'-0" D.
20 NEW LOCATION OF 4" SUMP VENT. TERMANTE OUTSIDE WITH ELBOW DOWN AND WIRE MESH SCREEN.
21 ROUTE NEW OVERFLOW DRAIN DOWN IN PIT WHERE OLD VENT PIPE WAS LOCATED. EXPAND EXISTING HOLE IN PIT LID AS REQUIRED FOR LARGER PIPE.
22 ROUTE NEW CONDENSER WATER PIPE DOWN IN PIT AS REQUIRED.
23 1" SOFT COLD WATER MAKE-UP. SEE PLUMBING DRAWINGS FOR PIPING CONTINUATION.
24 3" PVC WATER HEATER FLUE AND INTAKE UP THROUGH ROOF. VERIFY ALL FLUE AND INTAKE REQUIREMENTS WITH WATER HEATER MANUFACTURER. TERMINATE INTAKE WITH GOOSENECK AT 3'-0" ABOVE ROOF. TERMINATE FLUE WITH MANUFACTURER APPROVED FLUE VENT CAP AS REQUIRED.
25 PROVIDE AND INSTALL NEW MOTORIZED DAMPER TO BE INTERLOCKED WITH THE OPERATION OF VF-2.
26 EXHAUST AIR DUCT UP THROUGH ROOF TO GRAVITY HOOD.
27 SUPPLYR AIR DUCT UP THROUGH ROOF TO GRAVITY HOOD.
28 RETURN AIR DUCT DOWN TO RETURN AIR PLENUM OFF BACK OF UNIT.
29 RETURN AIR PLENUM AS REQUIRED.
30 ROUTE 1-1/2" CONDENSATE DRAIN FOR FLOOR DRAIN.
31 ROUTE 2" CONDENSATE DRAIN LINE TO FLOOR DRAIN.
32 SUPPORT CONDENSER WATER PIPING FROM COOLING TOWER SUPPORT STEEL.
33 PROVIDE AND INSTALL NEW SUMP PIT ACCESS DOOR. DOOR SHALL BE POLYMER CORROSION RESISTANT AND WALKABLE.
34 FLOW METER. ALLOW FOR UPSTREAM AND DOWNSTREAM STRAIGHT PIPE LENGTH REQUIRED BY FLOW METER MANUFACTURER.
35 BUTTERFLY VALVE, TYPICAL.
36 DISCHARGE ISOLATION VALVE, CHECK VALVE AND PRESSURE GAUGE ON VERTICAL TURBINE PUMP, TYPICAL.
37 LOW VOLTAGE CONTROLS TRANSFORMER FOR AHU-3 ONLY. THIS TRANFORMER TO BE ON EMERGENCY POWER.
38 LOW VOLTAGE CONTROLS TRANSFORMER FOR AHU-4 ONLY. THIS TRANFORMER TO BE ON EMERGENCY POWER.
39 LOW VOLTAGE CONTROLS TRANSFORMER FOR AHU-5 ONLY. THIS TRANFORMER TO BE ON EMERGENCY POWER.
40 ROUTE BOILER CONDENSATE DRAIN TO APPROVED MANUFACTURER NEUTRALIZATION KIT. TERMINATE AT FLOOR DRAIN AS REQUIRED.
41 ROUTE ALL REFRIGERANT RELIEF VALVES FROM A SINGLE CHILLER TO A COMMON RELIEF VENT MAIN AND ROUTE TO THE OUTSIDE AS REQUIRED. VERIFY ALL QUANTITES, SIZES AND LOCATIONS WITH CHILLER MANUFACTURER. TERMINATE RELIEF VALVES A MINIMUM OF 20'-0" FROM ALL INTAKES AND DOORS AT A MINIMUM OF 15'-0" ABOVE ROOF.
42 REPLACE EXISTING BOILER CONTROLS
43 REPLACE EXISTING AIR HANDLING UNIT CONTROLS WITH NEW CONTROLS. INCLUDING TEMPERATURE CONTROL VALVES.

1

REVISIONS

1	02.05.25	ADDENDUM #2

01.06.2025
HAMILTON SOUTHEASTERN SCHOOL CORPORATION

23055 - FALL CREEK INTERMEDIATE RENOVATIONS

12011 Olio Rd, Fishers, IN 46037

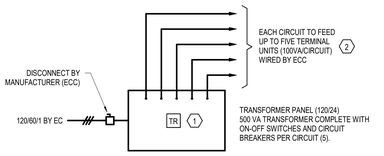
CONSTRUCTION DOCUMENTS

ANDREW P. STIENE REGISTERED PE11409737 STATE OF INDIANA PROFESSIONAL ENGINEER
01-06-2025
Job# 23113

CONSTRUCTION DOCUMENTS
01.06.2025
krM JOB NO.
23055
DRAWN BY
CME

DRAWING NAME
ENLARGED MECHANICAL PLANS

DRAWING NO.
M4-3

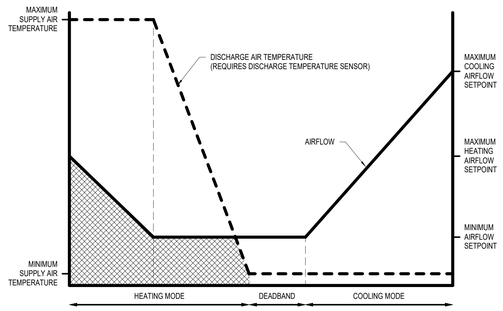


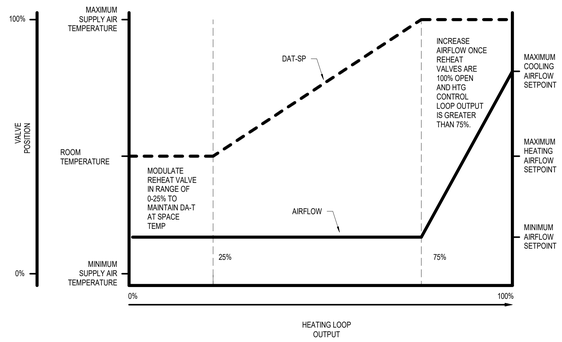
PLAN NOTES:

1. TRANSFORMER PANELS TO BE LOCATED IN ELECTRICAL, STOREAGE AND MECHANICAL ROOMS AS SHOWN ON PLANS.
   A. LOW VOLTAGE WIRING SHALL NOT EXCEED 150' FROM TRANSFORMER TO CONTROLLER.
   B. MOUNTING AND 24V FIELD WIRING BY ECC; POWER WIRING BY EC
   C. PROVIDE FUNCTIONAL DEVICES PSH500A OR EQUAL
   D. PROVIDE QUANTITY REQUIRED TO SERVE TERMINAL UNITS THAT DO NOT HAVE A DEDICATED PANEL; ALLOW FOR 30% SPARE CAPACITY FOR ANY FUTURE MODIFICATIONS TO FLOOR PLAN.

2. 24 VOLT WIRING TO TERMINAL UNITS TO MEET ALL LOCAL, STATE AND NATIONAL CODES AND STANDARDS IN ADDITION TO PROJECT SPECIFICATIONS.

3 TERMINAL BOX POWER SUPPLY CONTROL SCHEMATIC
NOT TO SCALE





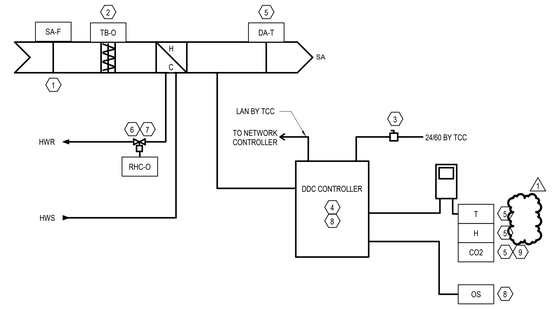
4 TERMINAL BOX DUAL MAXIMUM CONTROL DIAGRAM
NO SCALE

DDC POINT SCHEDULE - HOT WATER TERMINAL BOX							
CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
AI	DA-T	DISCHARGE AIR TEMPERATURE	DEG F	Yes	No	Yes	
AI	TB-O	TB DAMPER OUTPUT	% OUTPUT	Yes	No	Yes	
AI	T	SPACE TEMP	DEG F	Yes	No	Yes	
AI	H	SPACE HUMIDITY	% RH	Yes	No	Yes	
AI	CO2	SPACE CARBON DIOXIDE	PPM	Yes	No	Yes	
AI	SA-F	SUPPLY AIRFLOW	CFM	Yes	No	Yes	
AI	OS	SPACE OCCUPANCY SENSOR		Yes	No	Yes	
AO	RHC-O	RE-HEAT COIL VALVE OUTPUT	% OPEN	Yes	No	Yes	

THERMOSTAT / TEMPERATURE SENSOR SCHEDULE

PROVIDE NON-READABLE THERMOSTAT / TEMPERATURE SENSORS.

1. **CLASSROOMS, OFFICES AND CONFERENCE ROOMS = ADJUSTABLE WITH +/- ADJUSTER. CAN BE DISABLED BY BMS.**
2. **NO DISPLAY ON ANY THERMOSTAT OR SENSOR.**
3. **CORRIDORS, COMMON AREAS, AND BATHROOMS SHOULD BE BLANK PLATE SENSOR ONLY.**



PLAN NOTES:

1. FLOW SENSOR INTEGRAL WITH TERMINAL BOX.
2. TERMINAL BOX ACTUATOR FURNISHED BY TCC; INSTALLED BY TERMINAL BOX SUPPLIER. COMMISSIONED BY CXA.
3. TERMINAL BOX DISCONNECT PROVIDED BY TERMINAL BOX MANUFACTURER.
4. DDC CONTROLLER FURNISHED BY TCC; INSTALLED BY BOX SUPPLIER. COMMISSIONED BY CXA
5. FURNISHED, INSTALLED, AND WIRED BY TCC. COMMISSIONED BY CXA.
6. FURNISHED BY TCC AND INSTALLED BY MC.
7. FAIL IN LAST POSITION.
8. OCCUPANCY SENSOR RELAYS ARE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. WIRING FROM THE OCCUPANCY SENSOR RELAY TO THE TERMINAL UNIT CONTROLLER IS FURNISHED AND INSTALLED BY TCC. COMMISSIONED BY CXA.
9. REFER TO PLANS FOR LOCATIONS AND QUANTITIES.

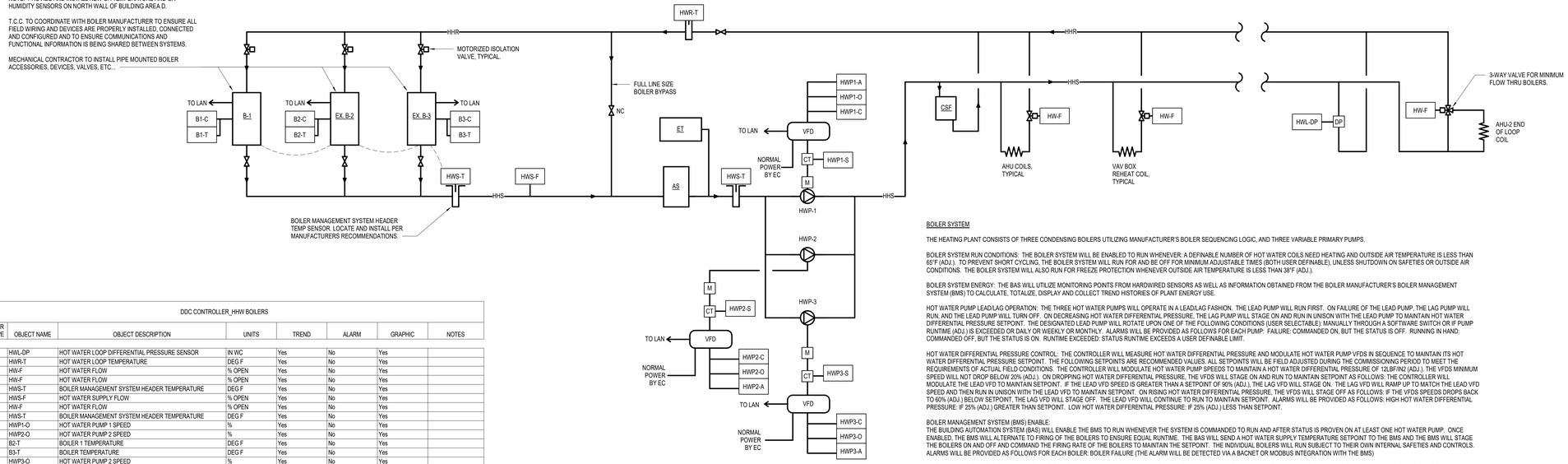
SEQUENCE OF OPERATION - VAV BOXES:

1. THE VARIABLE AIR VOLUME (VAV) TERMINAL UNIT IS CONTROLLED INDEPENDENT OF SYSTEM PRESSURE FLUCTUATIONS AND CHANGES IN SPACE TEMPERATURE BY MODULATING SUPPLY AIR VOLUME FROM SCHEDULED MINIMUM TO SCHEDULE MAXIMUM AIRFLOW VALUES WHILE MODULATING RE-HEAT VALVE TO MAINTAIN SPACE TEMPERATURE.
2. WHEN THE ZONE STATE IS COOLING, THE COOLING LOOP OUTPUT SHALL MODULATE FROM SCHEDULED MINIMUM TO SCHEDULED MAXIMUM AIRFLOWS.
3. WHEN THE ZONE STATE IS DEADBAND, THE AIRFLOW SETPOINT SHALL BE AT MINIMUM SCHEDULED AIRFLOW WITH HEATING COIL DISABLED.
4. WHEN THE ZONE STATE IS HEATING, THE HEATING LOOP SHALL MAINTAIN SPACE TEMPERATURE AS FOLLOWS:
   A. STAGE 1: FOR AN OUTPUT OF 0-50%, THE HEATING LOOP SHALL MODULATE THE TERMINAL UNIT REHEAT CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE AT THE SCHEDULED MINIMUM AIRFLOW NOT EXCEEDING 90°F (ADJ) DISCHARGE AIR TEMPERATURE.
   B. STAGE 2: IF ADDITIONAL HEAT IS REQUIRED; FOR AN OUTPUT OF 51-100%, THE HEATING LOOP SHALL MODULATE THE AIRFLOW FROM SCHEDULED MINIMUM TO SCHEDULED HEATING MAX WHILE NOT EXCEEDING 90°F (ADJ) DISCHARGE AIR TEMPERATURE.
5. ANYTIME THE CO2 LEVEL EXCEEDS 800 PPM (ADJ) AS SENSED BY THE SPACE CO2 SENSOR, THE TERMINAL BOX DAMPER SHALL MODULATE TO INCREASE THE SUPPLY AIR VOLUME FROM ITS SCHEDULED MINIMUM FLOW TO THE SCHEDULED MAXIMUM COOLING FLOW TO LOWER PPM BACK TO 600 PPM (ADJ). REHEAT COIL VALVE MODULATES TO MAINTAIN SPACE TEMPERATURE. INITIATE AN ALARM TO THE BAS IN THE EVENT C02 EXCEEDS 900 PPM (ADJ) FOR LONGER THAN 15 MINUTES.
6. WHEN THE ASSOCIATED AHU SUPPLY FAN IS DE-ENERGIZED, EACH TERMINAL UNIT AND HEATING COIL CONTROL VALVE SHALL BE INDEXED TO THE FULLY CLOSED POSITION.
7. TEMPERATURE CONTROL BASED ON TIME SCHEDULE AND/OR OCCUPANCY SENSORS AS FOLLOWS:
   A. OCCUPIED MODE (ROOM OCCUPANCY SENSED OR OPERATOR SCHEDULE)
      HEATING SETPOINT = 70°F (ADJ)
      COOLING SETPOINT = 75°F (ADJ)
      TERMINAL BOX AIR DAMPER CONTROLS TO AIRFLOW SETPOINT
   B. STANDBY MODE (BUILDING OCCUPANCY SCHEDULE ON, ROOM OCCUPANCY NOT SENSED FOR 30 MINUTES)
      HEATING SETPOINT = 67 °F (ADJ)
      COOLING SETPOINT = 78 °F (ADJ)
      TERMINAL BOX AIR DAMPER REMAINS FULLY CLOSED UNTIL THE SPACE TEMPERATURE SURPASSES THE STANDBY HEATING OR COOLING SETPOINT. THE DAMPER IS THEN OPENED TO MINIMUM POSITION UNTIL THE ASSOCIATED STANDBY SETPOINT IS SATISFIED.
   C. UNOCCUPIED MODE (BUILDING OCCUPANCY SCHEDULE OFF)
      HEATING SETPOINT = 60°F (ADJ)
      COOLING SETPOINT = 80°F (ADJ)
      TERMINAL BOX AIRFLOW DAMPER FULLY CLOSED UNTIL UNOCCUPIED SETPOINTS ARE REACHED, THEN CONTROL TO STANDBY SETPOINTS.

SEQUENCE OF OPERATION - CAV BOXES:

1. THE CONSTANT AIR VOLUME (CAV) TERMINAL UNIT IS CONTROLLED INDEPENDENT OF SYSTEM PRESSURE FLUCTUATIONS AND CHANGES IN SPACE TEMPERATURE BY MAINTAINING A CONSTANT AIRFLOW AND MODULATING RE-HEAT VALVE TO MAINTAIN SPACE TEMPERATURE.
2. REFER TO VAV SEQUENCE FOR TEMPERATURE SETBACK SEQUENCES.

2 TERMINAL BOX CONTROL SCHEMATIC
NOT TO SCALE



DDC CONTROLLER_HHW BOILERS							
CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
AI-	HWL-DP	HOT WATER LOOP DIFFERENTIAL PRESSURE SENSOR	IN WC	Yes	No	Yes	
AI-	HWR-T	HOT WATER LOOP TEMPERATURE	DEG F	Yes	No	Yes	
AI-	HW-F	HOT WATER FLOW	% OPEN	Yes	No	Yes	
AI-	HW-F	HOT WATER FLOW	% OPEN	Yes	No	Yes	
AI-	HWS-T	BOILER MANAGEMENT SYSTEM HEADER TEMPERATURE	DEG F	Yes	No	Yes	
AI-	HWS-F	HOT WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
AI-	HW-F	HOT WATER FLOW	% OPEN	Yes	No	Yes	
AI-	HWS-T	BOILER MANAGEMENT SYSTEM HEADER TEMPERATURE	DEG F	Yes	No	Yes	
AO-	HWP1-O	HOT WATER PUMP 1 SPEED	%	Yes	No	Yes	
AO-	HWP2-O	HOT WATER PUMP 2 SPEED	%	Yes	No	Yes	
AO-	B2-T	BOILER 1 TEMPERATURE	DEG F	Yes	No	Yes	
AO-	B3-T	BOILER TEMPERATURE	DEG F	Yes	No	Yes	
AO-	HWP3-O	HOT WATER PUMP 2 SPEED	%	Yes	No	Yes	
AO-	B1-T	BOILER 1 TEMPERATURE	DEG F	Yes	No	Yes	
BI-	HWP1-S	HOT WATER PUMP 1 STATUS	OFF/ON	Yes	No	Yes	
BI-	HWP1-A	HOT WATER PUMP 1 ALARM		No	Yes	Yes	ALARM
BI-	HWP2-S	HOT WATER PUMP 2 STATUS	OFF/ON	Yes	No	Yes	
BI-	HWP2-A	HOT WATER PUMP 2 ALARM		No	Yes	Yes	ALARM
BI-	HWP3-S	HOT WATER PUMP 2 STATUS	OFF/ON	Yes	No	Yes	
BI-	HWP3-A	HOT WATER PUMP 2 ALARM		No	Yes	Yes	ALARM
BO-	HWP1-C	HOT WATER PUMP 1 COMMAND	START/STOP	Yes	No	Yes	
BO-	HWP2-C	HOT WATER PUMP 2 COMMAND	START/STOP	Yes	No	Yes	
BO-	B2-C	BOILER 1 COMMAND	START/STOP	Yes	No	Yes	
BO-	B3-C	BOILER 2 COMMAND	START/STOP	Yes	No	Yes	
BO-	HWP3-C	HOT WATER PUMP 2 COMMAND	START/STOP	Yes	No	Yes	
BO-	B1-C	BOILER 1 COMMAND	START/STOP	Yes	No	Yes	

BOILER SYSTEM

THE HEATING PLANT CONSISTS OF THREE CONDENSING BOILERS UTILIZING MANUFACTURER'S BOILER SEQUENCING LOGIC, AND THREE VARIABLE PRIMARY PUMPS.

BOILER SYSTEM RUN CONDITIONS: THE BOILER SYSTEM WILL BE ENABLED TO RUN WHENEVER: A DEFINABLE NUMBER OF HOT WATER COILS NEED HEATING AND OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.). TO PREVENT SHORT CYCLING, THE BOILER SYSTEM WILL RUN FOR AND BE OFF FOR MINIMUM ADJUSTABLE TIMES (BOTH USER DEFINABLE), UNLESS SHUTDOWN ON SAFETIES OR OUTSIDE AIR CONDITIONS. THE BOILER SYSTEM WILL ALSO RUN FOR FREEZE PROTECTION WHENEVER OUTSIDE AIR TEMPERATURE IS LESS THAN 38°F (ADJ.).

BOILER SYSTEM ENERGY: THE BAS WILL UTILIZE MONITORING POINTS FROM HARDWIRED SENSORS AS WELL AS INFORMATION OBTAINED FROM THE BOILER MANUFACTURER'S BOILER MANAGEMENT SYSTEM (BMS) TO CALCULATE, TOTALIZE, DISPLAY AND COLLECT TREND HISTORIES OF PLANT ENERGY USE.

HOT WATER PUMP LEAD/LAG OPERATION: THE THREE HOT WATER PUMPS WILL OPERATE IN A LEAD/LAG FASHION. THE LEAD PUMP WILL RUN FIRST. ON FAILURE OF THE LEAD PUMP, THE LAG PUMP WILL RUN, AND THE LEAD PUMP WILL TURN OFF. ON DECREASING HOT WATER DIFFERENTIAL PRESSURE, THE LAG PUMP WILL STAGE ON AND RUN IN UNISON WITH THE LEAD PUMP TO MAINTAIN HOT WATER DIFFERENTIAL PRESSURE SETPOINT. THE DESIGNATED LEAD PUMP WILL ROTATE UPON ONE OF THE FOLLOWING CONDITIONS (USER SELECTABLE): MANUALLY THROUGH A SOFTWARE SWITCH OR IF PUMP RUNTIME (ADJ.) IS EXCEEDED OR DAILY OR WEEKLY OR MONTHLY. ALARMS WILL BE PROVIDED AS FOLLOWS FOR EACH PUMP: FAILURE: COMMANDED ON, BUT THE STATUS IS OFF. RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON. RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

HOT WATER DIFFERENTIAL PRESSURE CONTROL: THE CONTROLLER WILL MEASURE HOT WATER DIFFERENTIAL PRESSURE AND MODULATE HOT WATER PUMP VFDS IN SEQUENCE TO MAINTAIN ITS HOT WATER DIFFERENTIAL PRESSURE SETPOINT. THE FOLLOWING SETPOINTS ARE RECOMMENDED VALUES. ALL SETPOINTS WILL BE FIELD ADJUSTED DURING THE COMMISSIONING PERIOD TO MEET THE REQUIREMENTS OF ACTUAL FIELD CONDITIONS. THE CONTROLLER WILL MODULATE HOT WATER PUMP SPEEDS TO MAINTAIN A HOT WATER DIFFERENTIAL PRESSURE OF 12LBF/IN2 (ADJ.). THE VFDS MINIMUM SPEED WILL NOT DROP BELOW 20% (ADJ.). ON DROPPING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS WILL STAGE ON AND RUN TO MAINTAIN SETPOINT AS FOLLOWS: THE CONTROLLER WILL MODULATE THE LEAD VFD TO MAINTAIN SETPOINT. IF THE LEAD VFD SPEED IS GREATER THAN A SETPOINT OF 90% (ADJ.), THE LAG VFD WILL STAGE ON. THE LAG VFD WILL RAMP UP TO MATCH THE LEAD VFD SPEED AND THEN RUN IN UNISON WITH THE LEAD VFD TO MAINTAIN SETPOINT. ON RISING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS WILL STAGE OFF AS FOLLOWS: IF THE VFDS SPEEDS DROPS BACK TO 60% (ADJ.) BELOW SETPOINT, THE LAG VFD WILL STAGE OFF. THE LEAD VFD WILL CONTINUE TO RUN TO MAINTAIN SETPOINT. ALARMS WILL BE PROVIDED AS FOLLOWS: HIGH HOT WATER DIFFERENTIAL PRESSURE: IF 25% (ADJ.) GREATER THAN SETPOINT. LOW HOT WATER DIFFERENTIAL PRESSURE: IF 25% (ADJ.) LESS THAN SETPOINT.

BOILER MANAGEMENT SYSTEM (BMS) ENABLE:
THE BUILDING AUTOMATION SYSTEM (BAS) WILL ENABLE THE BMS TO RUN WHENEVER THE SYSTEM IS COMMANDED TO RUN AND AFTER STATUS IS PROVEN ON AT LEAST ONE HOT WATER PUMP. ONCE ENABLED, THE BMS WILL ALTERNATE TO FIRING OF THE BOILERS TO ENSURE EQUAL RUNTIME. THE BAS WILL SEND A HOT WATER SUPPLY TEMPERATURE SETPOINT TO THE BMS AND THE BMS WILL STAGE THE BOILERS ON AND OFF AND COMMAND THE FIRING RATE OF THE BOILERS TO MAINTAIN THE SETPOINT. THE INDIVIDUAL BOILERS WILL RUN SUBJECT TO THEIR OWN INTERNAL SAFETIES AND CONTROLS. ALARMS WILL BE PROVIDED AS FOLLOWS FOR EACH BOILER: BOILER FAILURE (THE ALARM WILL BE DETECTED VIA A BACNET OR MODBUS INTEGRATION WITH THE BMS)

HOT WATER SUPPLY TEMPERATURE SETPOINT RESET: THE HOT WATER SUPPLY TEMPERATURE SETPOINT WILL RESET USING A TRIM AND RESPOND ALGORITHM BASED ON HEATING REQUIREMENTS. AS THE FACILITY'S HOT WATER VALVES OPEN BEYOND A USER DEFINABLE THRESHOLD (90% OPEN, TYP.), THE SETPOINT WILL RESET TO A HIGHER VALUE (ADJ.). ONCE THE HOT WATER COILS ARE SATISFIED (VALVES CLOSING) THEN THE SETPOINT WILL GRADUALLY LOWER OVER TIME TO REDUCE HEATING ENERGY USE. THE SETPOINT WILL INITIALLY BE SET AT 120°F (ADJ.). AS CALLS FOR HEATING INCREASE THE SETPOINT WILL GRADUALLY BE INCREASED TO A MAXIMUM OF 160°F (ADJ). WHEN THERE ARE NO CALLS FOR HEATING, THE SETPOINT WILL BE GRADUALLY BE DECREASED TO A MINIMUM OF 90°F (ADJ.). THE CONTROLLER WILL ADJUST THE SETPOINT EVERY 5 MINUTES (ADJ.) AND WILL NOT ADJUST THE SETPOINT BY MORE THAN 2°F (ADJ.) AT ANY 5 MINUTE PERIOD.

PRIMARY HOT WATER TEMPERATURE MONITORING: THE FOLLOWING TEMPERATURES WILL BE MONITORED: PRIMARY HOT WATER SUPPLY. PRIMARY HOT WATER RETURN. ALARMS WILL BE PROVIDED AS FOLLOWS: HIGH PRIMARY HOT WATER SUPPLY TEMP: IF GREATER THAN 200°F (ADJ.). LOW PRIMARY HOT WATER SUPPLY TEMP: IF LESS THAN 100°F (ADJ.).

BMS INTEGRATION: IN ADDITION TO THE POINTS LISTED BELOW, THE BAS WILL INTEGRATE TO THE BMS TO PROVIDE ADDITIONAL INFORMATION FOR THE OPERATOR. THIS CONTRACTOR WILL COORDINATE THE POINTS TO PROVIDED WITH THE OWNER. AT A MINIMUM THE FOLLOWING POINTS WILL BE PROVIDED PER BOILER: BOILER ALARM. BOILER FIRING RATE. BOILER RUNTIME HOURS. BOILER FIRING STATUS.

MOTORIZED BOILER ISOLATION VALVES ARE INTERLOCKED WITH BOILER MANUFACTURERS INTERNAL CONTROLS SEQUENCE.

1 HEATING HOT WATER FLOW / CONTROL DIAGRAM
NOT TO SCALE

krM Architecture+

RDC

kbsd CONSULTING

REVISIONS

1	02.05.25	ADDENDUM #2

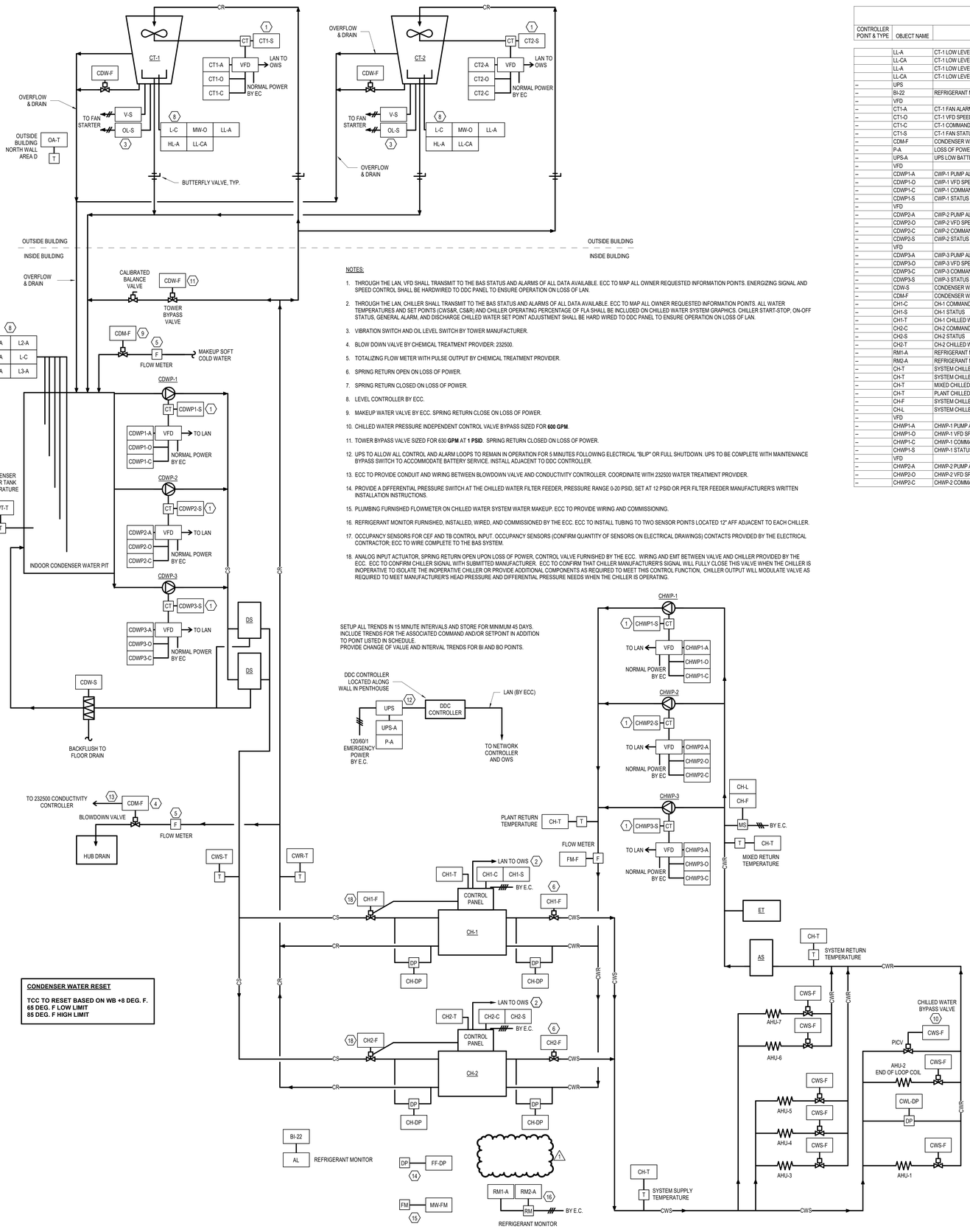
01.06.2025
HAMILTON SOUTHEASTERN SCHOOL CORPORATION
23055 - FALL CREEK INTERMEDIATE RENOVATIONS
12011 Olio Rd. Fishers, IN 46037
CONSTRUCTION DOCUMENTS

ANDREW P. STRINGER REGISTERED PE11400737 STATE OF INDIANA PROFESSIONAL ENGINEER
01-06-2025
Job# 23113

CONSTRUCTION DOCUMENTS
01.06.2025
krM JOB NO.
23055
DRAWN BY
CME

DRAWING NAME
TEMPERATURE CONTROL/FLOW DIAGRAMS

DRAWING NO.
M9-1



NOTES:

1. THROUGH THE LAN, VFD SHALL TRANSMIT TO THE BAS STATUS AND ALARMS OF ALL DATA AVAILABLE. ECC TO MAP ALL OWNER REQUESTED INFORMATION POINTS. ENERGIZING SIGNAL AND SPEED CONTROL SHALL BE HARDWIRED TO DDC PANEL TO ENSURE OPERATION ON LOSS OF LAN.
2. THROUGH THE LAN, CHILLER SHALL TRANSMIT TO THE BAS STATUS AND ALARMS OF ALL DATA AVAILABLE. ECC TO MAP ALL OWNER REQUESTED INFORMATION POINTS. ALL WATER TEMPERATURES AND SET POINTS (CWSSR, CSSR) AND CHILLER OPERATING PERCENTAGE OF FLA SHALL BE INCLUDED ON CHILLED WATER SYSTEM GRAPHICS. CHILLER START-STOP, ON-OFF STATUS, GENERAL ALARM, AND DISCHARGE CHILLED WATER SET POINT ADJUSTMENT SHALL BE HARD WIRED TO DDC PANEL TO ENSURE OPERATION ON LOSS OF LAN.
3. VIBRATION SWITCH AND OIL LEVEL SWITCH BY TOWER MANUFACTURER.
4. BLOW DOWN VALVE BY CHEMICAL TREATMENT PROVIDER: 232500.
5. TOTALIZING FLOW METER WITH PULSE OUTPUT BY CHEMICAL TREATMENT PROVIDER.
6. SPRING RETURN OPEN ON LOSS OF POWER.
7. SPRING RETURN CLOSED ON LOSS OF POWER.
8. LEVEL CONTROLLER BY ECC.
9. MAKEUP WATER VALVE BY ECC. SPRING RETURN CLOSE ON LOSS OF POWER.
10. CHILLED WATER PRESSURE INDEPENDENT CONTROL VALVE BYPASS SIZED FOR **600 GPM**.
11. TOWER BYPASS VALVE SIZED FOR 630 **GPM** AT 1 **PSID**. SPRING RETURN CLOSED ON LOSS OF POWER.
12. UPS TO ALLOW ALL CONTROL AND ALARM LOOPS TO REMAIN IN OPERATION FOR 5 MINUTES FOLLOWING ELECTRICAL "BLIP" OR FULL SHUTDOWN. UPS TO BE COMPLETE WITH MAINTENANCE BYPASS SWITCH TO ACCOMMODATE BATTERY SERVICE. INSTALL ADJACENT TO DDC CONTROLLER.
13. ECC TO PROVIDE CONDUIT AND WIRING BETWEEN BLOWDOWN VALVE AND CONDUCTIVITY CONTROLLER. COORDINATE WITH 232500 WATER TREATMENT PROVIDER.
14. PROVIDE A DIFFERENTIAL PRESSURE SWITCH AT THE CHILLED WATER FILTER FEEDER, PRESSURE RANGE 0-20 PSID, SET AT 12 PSID OR PER FILTER FEEDER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
15. PLUMBING FURNISHED FLOWMETER ON CHILLED WATER SYSTEM WATER MAKEUP. ECC TO PROVIDE WIRING AND COMMISSIONING.
16. REFRIGERANT MONITOR FURNISHED, INSTALLED, WIRED, AND COMMISSIONED BY THE ECC. ECC TO INSTALL TUBING TO TWO SENSOR POINTS LOCATED 12" AFF ADJACENT TO EACH CHILLER.
17. OCCUPANCY SENSORS FOR CEF AND TB CONTROL INPUT. OCCUPANCY SENSORS (CONFIRM QUANTITY OF SENSORS ON ELECTRICAL DRAWINGS) CONTACTS PROVIDED BY THE ELECTRICAL CONTRACTOR; ECC TO WIRE COMPLETE TO THE BAS SYSTEM.
18. ANALOG INPUT ACTUATOR, SPRING RETURN OPEN UPON LOSS OF POWER, CONTROL VALVE FURNISHED BY THE ECC. WIRING AND EMT BETWEEN VALVE AND CHILLER PROVIDED BY THE ECC. ECC TO CONFIRM CHILLER SIGNAL WITH SUBMITTED MANUFACTURER. ECC TO CONFIRM THAT CHILLER MANUFACTURER'S SIGNAL WILL FULLY CLOSE THIS VALVE WHEN THE CHILLER IS INOPERATIVE TO ISOLATE THE INOPERATIVE CHILLER OR PROVIDE ADDITIONAL COMPONENTS AS REQUIRED TO MEET THIS CONTROL FUNCTION. CHILLER OUTPUT WILL MODULATE VALVE AS REQUIRED TO MEET MANUFACTURER'S HEAD PRESSURE AND DIFFERENTIAL PRESSURE NEEDS WHEN THE CHILLER IS OPERATING.

SEQUENCE OF OPERATION:

1. ALL SETPOINTS TO BE ADJUSTABLE. SETPOINTS TO BE EXPOSED ON GRAPHIC DISPLAY OR HIDDEN BASED ON OWNER REQUEST.

2. **ENABLE:** THE CHILLED WATER SYSTEM SHALL BE OPERATIONAL WHENEVER THE OUTDOOR AIR TEMPERATURE IS GREATER THAN **48°F (ADJ.)**, THE CHILLERS SHALL OPERATE FROM THEIR OWN CONTROL SEQUENCES AFTER BMS ENABLES THEM. BAS SHALL COMMUNICATE DIRECTLY WITH CONTROLS MOUNTED ON AND PROVIDED WITH CHILLER MANUFACTURER.

3. **DISABLE:** THE CHILLED WATER SYSTEM SHALL SHUT DOWN WHENEVER THE OUTDOOR AIR TEMPERATURE FALLS BELOW **44°F (ADJ.)**. THE CHILLED WATER SYSTEM SHALL BE SHUT DOWN WHENEVER THE OAT IS BELOW **58°F (ADJ.)** AND THE CALCULATED PLANT TONNAGE FALLS BELOW **40 TONS (ADJ.)** FOR A PERIOD OF **20 MINUTES (ADJ.)**.

4. **CHILLERS:**
A. CHILLERS ARE MANUALLY INDEXED FOR AUTOMATIC OPERATION THROUGH INTEGRAL ON-OFF SWITCHES.
B. CHILLERS SHALL ALTERNATE IN THE LEAD POSITION EVERY **750 HOURS (ADJ.)**. FAILURE OF A CHILLER TO START WHEN COMMANDED BY THE BAS SHALL START THE NEXT CHILLER IN THE SERIES.
C. THE SYSTEM CHILLED WATER SETPOINTS SHALL BE **44°F (ADJ.)**.
D. CALCULATE SYSTEM TONNAGE REQUIRED BY THE LOADS WITH THE SYSTEM CHILLED WATER SUPPLY SETPOINT, SYSTEM RETURN TEMPERATURE (ACTUAL), AND SYSTEM CHILLED WATER FLOW AS INPUTS. CALCULATE PLANT TONNAGE WITH THE SYSTEM CHILLED WATER SUPPLY SETPOINT, PLANT RETURN TEMPERATURE (ACTUAL), AND SYSTEM CHILLED WATER FLOW AS INPUTS.
E. MEASURE SUPPLY TEMPERATURE FOR 15 MINUTES (ADJ.) BEFORE STAGING ON NEXT CHILLER TO MAINTAIN SETPOINT.
i. THE CHILLED WATER SETPOINT OF THE LEAD CHILLER IS RAISED **2°F (ADJ.)** TO ALLOW THE LAG CHILLER TO COME ONLINE.
ii. THE LAG CHILLER'S CHILLED WATER AND CONDENSER WATER ISOLATION VALVES SHALL OPEN. THE CHILLED WATER ISOLATION VALVE SHALL OPEN AT A RATE SLOW ENOUGH SUCH THAT NO SHUTDOWN OF ANY OPERATING CHILLER OCCURS DUE TO LOW FLOW (ECC SHALL COORDINATE WITH CHILLER MANUFACTURER AND TEST AND BALANCE CONTRACTOR TO DETERMINE THIS VALUE).
iii. WHEN FLOW THROUGH THE LAG CHILLER IS PROVED VIA THE CHILLER'S INTERNAL SAFETIES, THE CHILLER SHALL BE ENERGIZED TO PRODUCE CHILLED WATER AT THE SYSTEM SETPOINT.
iv. THE LEAD CHILLER'S CHILLED WATER SETPOINT SHALL RETURN TO THE SYSTEM CHILLED WATER SET POINT AFTER THE LAG CHILLER HAS BEEN OPERATIONAL FOR **5 MINUTES (ADJ.)**.
F. REVERSE SEQUENCE WITH DEADBAND ON TIMER WHEN STAGING OFF CHILLER.

5. **COOLING TOWERS:**
A. T.A.B. SHALL SET THE TOWER BYPASS BALANCE VALVE SO THAT THE BYPASS LINE HAS AN EQUAL PRESSURE DROP AS THE PATCH THROUGH THE TOWERS. THIS WILL MEAN THAT UPON STARTUP SOME WATER FLOW WILL BE VISIBLE FROM THE TOWER SPRAY NOZZLES. THE INTENT IS TO PREVENT REVERSE FLOW THROUGH THE NOZZLES AND PREVENT AIR ENTRAINMENT IN THE TOWER SUPPLY PIPING.

UPON STARTUP - THE TOWER BYPASS MOTORIZED VALVE SHALL BE OPEN. AS THE TEMPERATURE AT CWS-T BEGINS TO RISE ABOVE THE BYPASS SETPOINT, THE MOTORIZED VALVE SHALL BEGIN TO CLOSE. T.C.C. SHALL NOTE THAT THERE WILL BE A LARGE LAG TIME BETWEEN THE CONTROL VALVE ADJUSTMENT AND THE RESULTING WATER TEMPERATURE CHANGE FROM THE SUMP. T.C.C. SHALL TUNE THE LOOP AND SELECT THE APPROPRIATE CONTROL STRATEGY TO ACHIEVE STABLE CONTROL (I.E. PID VS TRIM AND RESPOND). T.C.C. SHALL ENSURE THAT BYPASS SETPOINT IS ALWAYS BELOW THE CWS SETPOINT BUT ABOVE THE CHILLER MINIMUM CONDENSER WATER TEMPERATURE LIMIT (INITIAL SETPOINT: 62F ADJ).

ONCE THE TEMPERATURE HAS RISEN TO THE CWS SETPOINT, THE TOWERS CONTROL SEQUENCE (DESCRIBED ELSEWHERE) SHALL BEGIN TO CONTROL CWS TEMPERATURE. REVERSE SEQUENCE IN THE OPPOSITE DIRECTION.

B. PROVIDE A MINIMUM FAN OFF TIME OF **5 MINUTES (ADJ.)** BEFORE THAT FAN IS ENABLED TO START AGAIN.
C. COOLING TOWERS SHALL ALTERNATE IN THE LEAD POSITION EVERY **750 HOURS (ADJ.)**. FAILURE OF A COOLING TOWER FAN SHALL AUTOMATICALLY START THE NEXT TOWER IN THE SEQUENCE AND GENERATE AN ALARM AT THE BAS.
D. MAINTAIN CONDENSER WATER TEMPERATURE BY MODULATING THE TOWER FAN SPEED FROM **18 TO 60 HZ (ADJ.)**. PROGRAM OUT FREQUENCIES AS APPROPRIATE FOR VIBRATION FREE FAN OPERATION. WHEN MULTIPLE TOWERS ARE OPERATIONAL, TOWER FANS SPEED SHALL MODULATE TOGETHER. IF THE FAN IS AT MINIMUM SPEED AND CONDENSER WATER TEMPERATURE FALLS BELOW SETPOINT BY **1°F (ADJ.)** FOR A PERIOD OF **2 MINUTES (ADJ.)**, SHUT THE TOWER FAN OFF. MAINTAIN FAN OFF FOR A MINIMUM OF **2 MINUTES (ADJ.)** FOR EVERY FAN ON/OFF CYCLE. IF CONDENSER WATER TEMPERATURE CONTINUES TO FALL WITH THE FAN OFF MODULATE THE TOWER BYPASS VALVE TO MAINTAIN SETPOINT. SIGNAL AN ALARM IF THE CONDENSER WATER TEMPERATURE DROPS BELOW **60°F (ADJ.)** FOR A PERIOD OF **1 MINUTE (ADJ.)**.
E. ANYTIME THE LEVEL CONTROLLER CALLS FOR MAKEUP WATER, THE CONDENSER WATER MAKEUP VALVE SHALL OPEN.
F. ANYTIME ALL THE CONDENSER WATER PUMPS ARE DISABLED, THE COOLING TOWERS SHALL BE DISABLED.
G. STAGE 0: BOTH FANS OFF.
STAGE 1: TURN ON FAN ON ONE TOWER AT MINIMUM SPEED.
STAGE 2: TURN ON FAN ON SECOND TOWER AT MINIMUM SPEED.
STAGE 3: SET POINT NEEDS TO ADJUST FAN SPEEDS TO MAINTAIN SETPOINT TEMPERATURE.
H. INCLUDE APPROPRIATE DEADBAND, DON'T SHUTDOWN FOR 10 MINUTES.

6. **CHILLED WATER PUMPS:**
A. WHENEVER A CHILLER IS ENABLED A CHILLED WATER PUMP SHALL START IN SEQUENCE.
B. CHILLED WATER PUMPS SHALL OPERATE IN A LEAD-LAG-LAG ARRANGEMENT.
C. CHILLED WATER PUMPS SHALL ROTATE AS THE LEAD PUMP EVERY **750 HOURS (ADJ.)**. FAILURE OF THE LEAD PUMP SHALL AUTOMATICALLY START THE NEXT PUMP IN THE OPERATING SEQUENCE.
D. THE LAG PUMP SHALL STAGE ON TO ACHIEVE DPT SETPOINT.
E. WHEN MULTIPLE PUMPS ARE OPERATING, PUMPS SHALL RUN AT THE SAME SPEED AND MODULATE FROM **6 TO 60 HZ (ADJ.)** TO MAINTAIN THE REQUIRED DIFFERENTIAL PRESSURE OF **16 PSI (ADJ.)**, (FINAL SETPOINT DETERMINED BY TAB) 90% THROUGH THE CHILLED WATER PIPING SYSTEM. WHEN CHILLED WATER BYPASS VALVE IS CLOSED, RESET DIFFERENTIAL PRESSURE SETPOINT BETWEEN 1 AND 16 PSID (ADJ.) TO MAINTAIN MOST OPEN CHILLED WATER VALVE POSITION BETWEEN 93% AND 97% OPEN (ADJ.) LOOP OUTPUT. USING TRIM AND RESPOND LOGIC SETPOINT RESET SHALL BE +/- 2 PSID (ADJ.) AT 10 MINUTE (ADJ.) INTERVALS TO ALLOW TIME FOR PUMP SPEED AND COOLING VALVE CONTROL LOOPS TO ADJUST.

7. **CONDENSER WATER PUMPS:**
A. WHENEVER A CHILLER STARTS A CONDENSER WATER PUMP SHALL START. THE LEAD CONDENSER WATER PUMP SHALL ROTATE IN SEQUENCE WITH THE CHILLERS. FAILURE OF LEAD PUMP SHALL START THE NEXT PUMP IN THE SEQUENCE.
B. CONDENSER WATER PUMP VFD SPEED REQUIRED TO DELIVER DESIGN CONDENSER WATER FLOW RATE SHALL BE DETERMINED DURING SYSTEM BALANCING.
C. WHENEVER THE TANK LOW LEVEL CRITICAL ALARM IS ENABLED, ALL CONDENSER PUMPS SHALL BE DISABLED.
D. WHEN A SECOND CONDENSER WATER PUMP IS CALLED TO RUN, THE NEW PUMP SHALL START AND MATCH VFD OF PREVIOUSLY RUNNING PUMP. THE RUNNING PUMP MAY NEED TO REDUCE SPEED GRADUALLY AS STARTING PUMP RAMPS UP TO MEET SPEED OF RUNNING PUMP. SLOWLY CRACK OPEN THE CONDENSER SUPPLY ISOLATION VALVE TO CHILLER. MONITOR DP ACROSS EACH CHILLER TO BE AT NOMINAL DP WITHOUT DROPPING BELOW MINIMUM FLOW. MODULATE PUMP SPEED TO MAINTAIN THE APPROXIMATE DPT VALUE FOR THE PREVIOUSLY RUNNING CHILLER TO PREVENT LOW FLOW ALARMS.

8. **SAFETIES:**
A. REFRIGERANT MONITOR ACTIVATION SHALL SOUND LOCAL ALARM HORN (INTEGRAL TO THE REFRIGERANT MONITOR) AT **500 PPM (ADJ.)** FIRST STAGE ALARM DETECTED AND ACTIVATE CEF TO FULL SPEED. SIGNAL A PRIORITY ALARM AT THE OWS.
B. CHILLERS SHALL BE ORDERLY DISABLED AT **100 PPM (EIGHT HOUR TWO EXPOSURE LIMIT R-134a) (ADJ.)** HIGH ALARM DETECTED AT THE REFRIGERANT MONITOR WHILE CEF CONTINUES TO OPERATE AT FULL SPEED. SIGNAL A PRIORITY ALARM AT THE OWS.
C. SIGNAL AN ALARM AT THE OWS IF THE BUILDING OUTDOOR AIR TEMPERATURE READING IS MORE THAT **5°F (ADJ.)** DIFFERENT THAN THE GLOBAL OUTDOOR AIR TEMPERATURE. IF EITHER SIGNAL IS LOST OR BECOMES UNRELIABLE UTILIZE THE SENSOR READING CLOSEST TO THE FIVE MINUTE OLD AVERAGE OF THE TWO SENSORS UNTIL THE SENSORS ARE WITHIN 5°F OF EACH OTHER AGAIN.
D. SIGNAL AN ALARM AT THE OWS IF THE MAKEUP WATER FLOWMETER READING IS MORE THAN **1 GALLON (ADJ.) IN A 24 HOUR (ADJ.)** PERIOD. COORDINATE WITH PLUMBING FLOWMETER SUBMITTAL FOR SIGNAL TYPE, ETC.
E. IF THE SUMP HIGH LEVEL LIMIT IS MET FOR THREE CONTINUOUS SECONDS (ADJ.) THEN OPEN THE BLOWDOWN VALVE UNTIL THE HIGH LEVEL LIMIT READS "NOT MET" FOR TEN CONTINUOUS SECONDS (ADJ.) AND SIGNAL AN ALARM.

DDC CONTROLLER_COOLING TOWER

CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
	LL-A	CT-1 LOW LEVEL ALARM		No	Yes	Yes	ALARM
	LL-CA	CT-1 LOW LEVEL CRITICAL ALARM		No	Yes	Yes	ALARM
	LL-A	CT-1 LOW LEVEL ALARM		No	Yes	Yes	ALARM
	LL-CA	CT-1 LOW LEVEL CRITICAL ALARM		No	Yes	Yes	ALARM
--	UPS			Yes	Yes	Yes	
--	BI-22	REFRIGERANT MONITOR ALARM		No	Yes	Yes	
--	VFD			Yes	Yes	Yes	
--	CT1-A	CT-1 FAN ALARM		No	Yes	Yes	ALARM
--	CT1-O	CT-1 VFD SPEED	%	Yes	No	Yes	
--	CT1-C	CT-1 COMMAND	START/STOP	Yes	No	Yes	
--	CT1-S	CT-1 FAN STATUS	OFF/ON	Yes	No	Yes	
--	CDM-F	CONDENSER WATER MAKEUP VALVE	% OPEN	Yes	Yes	Yes	
--	P-A	LOSS OF POWER ALARM		Yes	Yes	Yes	
--	UPS-A	UPS LOW BATTERY ALARM		Yes	Yes	Yes	
--	VFD			Yes	Yes	Yes	
--	CDWP1-A	CWP-1 PUMP ALARM		No	Yes	Yes	ALARM
--	CDWP1-O	CWP-1 VFD SPEED	%	Yes	No	Yes	
--	CDWP1-C	CWP-1 COMMAND	START/STOP	Yes	No	Yes	
--	CDWP1-S	CWP-1 STATUS	OFF/ON	Yes	No	Yes	
--	VFD			Yes	Yes	Yes	
--	CDWP2-A	CWP-2 PUMP ALARM		No	Yes	Yes	ALARM
--	CDWP2-O	CWP-2 VFD SPEED	%	Yes	No	Yes	
--	CDWP2-C	CWP-2 COMMAND	START/STOP	Yes	No	Yes	
--	CDWP2-S	CWP-2 STATUS	OFF/ON	Yes	No	Yes	
--	VFD			Yes	Yes	Yes	
--	CDWP3-A	CWP-3 PUMP ALARM		No	Yes	Yes	ALARM
--	CDWP3-O	CWP-3 VFD SPEED	%	Yes	No	Yes	
--	CDWP3-C	CWP-3 COMMAND	START/STOP	Yes	No	Yes	
--	CDWP3-S	CWP-3 STATUS	OFF/ON	Yes	No	Yes	
--	CDW-S	CONDENSER WATER FILTER STATUS	OFF/ON	Yes	No	Yes	
--	CDM-F	CONDENSER WATER MAKEUP VALVE	% OPEN	Yes	Yes	Yes	
--	CH1-C	CH-1 COMMAND	START/STOP	Yes	No	Yes	
--	CH1-S	CH-1 STATUS	OFF/ON	Yes	No	Yes	
--	CH1-T	CH-1 CHILLED WATER TEMPERATURE CONTROL POINT	START/STOP	Yes	No	Yes	
--	CH2-C	CH-2 COMMAND	START/STOP	Yes	No	Yes	
--	CH2-S	CH-2 STATUS	OFF/ON	Yes	No	Yes	
--	CH2-T	CH-2 CHILLED WATER TEMPERATURE CONTROL POINT	START/STOP	Yes	No	Yes	
--	RM1-A	REFRIGERANT MONITOR FIRST STAGE ALARM		Yes	Yes	Yes	
--	RM2-A	REFRIGERANT MONITOR HIGH ALARM, CHILLER SHUTDOWN		Yes	Yes	Yes	
--	CH-T	SYSTEM CHILLED WATER SUPPLY TEMPERATURE	DEG F	Yes	Yes	Yes	
--	CH-T	SYSTEM CHILLED WATER RETURN TEMPERATURE	DEG F	Yes	Yes	Yes	
--	CH-T	MIXED CHILLED WATER RETURN TEMPERATURE	DEG F	Yes	Yes	Yes	
--	CH-T	PLANT CHILLED WATER RETURN TEMPERATURE	DEG F	Yes	Yes	Yes	
--	CH-F	SYSTEM CHILLED WATER FLOW RATE	GPM	Yes	Yes	Yes	
--	CH-L	SYSTEM CHILLED WATER LOAD (CALCULATED)		Yes	Yes	Yes	
--	VFD			Yes	Yes	Yes	
--	CHWP1-A	CHWP-1 PUMP ALARM		No	Yes	Yes	ALARM
--	CHWP1-O	CHWP-1 VFD SPEED	%	Yes	No	Yes	
--	CHWP1-C	CHWP-1 COMMAND	START/STOP	Yes	No	Yes	
--	CHWP1-S	CHWP-1 STATUS	OFF/ON	Yes	No	Yes	
--	VFD			Yes	Yes	Yes	
--	CHWP2-A	CHWP-2 PUMP ALARM		No	Yes	Yes	ALARM
--	CHWP2-O	CHWP-2 VFD SPEED	%	Yes	No	Yes	
--	CHWP2-C	CHWP-2 COMMAND	START/STOP	Yes	No	Yes	

DDC CONTROLLER_COOLING TOWER

CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
--	CHWP2-S	CHWP-2 STATUS	OFF/ON	Yes	No	Yes	
--	VFD			Yes	Yes	Yes	
--	CHWP3-A	CHWP-3 PUMP ALARM		No	Yes	Yes	ALARM
--	CHWP3-O	CHWP-3 VFD SPEED	%	Yes	No	Yes	
--	CHWP3-C	CHWP-3 COMMAND	START/STOP	Yes	No	Yes	
--	CHWP3-S	CHWP-3 STATUS	OFF/ON	Yes	No	Yes	
--	VFD			Yes	Yes	Yes	
--	CT2-A	CT-1 FAN ALARM		No	Yes	Yes	ALARM
--	CT2-O	CT-1 VFD SPEED	%	Yes	No	Yes	
--	CT2-C	CT-1 COMMAND	START/STOP	Yes	No	Yes	
--	CT2-S	CT-1 FAN STATUS	OFF/ON	Yes	No	Yes	
--	FM-F	PLANT CHILLED WATER FLOW METER	GPM	Yes	Yes	Yes	ALARM
AI-	CH-DP	CH-1 EVAPORATOR DIFFERENTIAL PRESSURE	IN WC	Yes	No	Yes	
AI-	CH-DP	CH-1 EVAPORATOR DIFFERENTIAL PRESSURE	IN WC	Yes	No	Yes	
AI-	CH-DP	CH-2 EVAPORATOR DIFFERENTIAL PRESSURE	IN WC	Yes	No	Yes	
AI-	CH-DP	CH-2 EVAPORATOR DIFFERENTIAL PRESSURE	IN WC	Yes	No	Yes	
AI-	FF-DP	FILTER FEEDER DIFFERENTIAL PRESSURE SWITCH	IN WC	Yes	No	Yes	
AI-	MW-FM	MAKEUP WATER FLOWMETER	IN WC	Yes	No	Yes	
AI-	CWL-DP	SYSTEM CHILLED WATER DIFFERENTIAL PRESSURE	IN WC	Yes	No	Yes	
AO-	CDW-F	CT-1 DRAIN VALVE A	% OPEN	Yes	No	Yes	
AO-	V-S	VIBRATION SWITCH	OFF/ON	Yes	No	Yes	
AO-	OL-S	OIL LEVEL SWITCH	OFF/ON	Yes	No	Yes	
AO-	L-C	LEVEL CONTROLLER		Yes	No	Yes	
AO-	MW-O	CT-1 MAKEUP WATER LEVEL		Yes	No	Yes	
AO-	HL-A	CT-1 HIGH LEVEL ALARM		No	Yes	Yes	ALARM
AO-	OA-T	OUTDOOR AIR TEMP	DEG F	Yes	No	Yes	
AO-	CDW-F	COOLING TOWER BYPASS VALVE	% OPEN	Yes	No	Yes	
AO-	L-C	LEVEL CONTROLLER		Yes	No	Yes	
AO-	CWT-T	CONDENSER WATER TANK TEMPERATURE	DEG F	Yes	No	Yes	
AO-	CWS-T	CONDENSER WATER SUPPLY TEMPERATURE	DEG F	Yes	No	Yes	
AO-	CWR-T	CONDENSER WATER RETURN TEMPERATURE	DEG F	Yes	No	Yes	
AO-	CH1-F	CH-1 CONDENSER ISOLATION VALVE	% OPEN	Yes	No	Yes	
AO-	CH1-F	CH-1 EVAPORATOR ISOLATION VALVE	% OPEN	Yes	No	Yes	
AO-	CH2-F	CH-2 CONDENSER ISOLATION VALVE	% OPEN	Yes	No	Yes	
AO-	CH2-F	CH-2 EVAPORATOR ISOLATION VALVE	% OPEN	Yes	No	Yes	
AO-	CWS-F	CHILLED WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
AO-	CWS-F	CHILLED WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
AO-	CWS-F	CHILLED WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
AO-	CWS-F	CHILLED WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
AO-	CWS-F	CHILLED WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
AO-	CWS-F	CHILLED WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
AO-	CDW-F	CT-1 DRAIN VALVE A	% OPEN	Yes	No	Yes	
AO-	V-S	VIBRATION SWITCH	OFF/ON	Yes	No	Yes	
AO-	OL-S	OIL LEVEL SWITCH	OFF/ON	Yes	No	Yes	
AO-	L-C	LEVEL CONTROLLER		Yes	No	Yes	
AO-	MW-O	CT-1 MAKEUP WATER LEVEL		Yes	No	Yes	
AO-	HL-A	CT-1 HIGH LEVEL ALARM		No	Yes	Yes	ALARM
AO-	CWS-F	CHILLED WATER SUPPLY FLOW	% OPEN	Yes	No	Yes	
DI-	L5-A	INDOOR CONDENSER WATER TANK LEVEL 5 ALARM		No	Yes	Yes	ALARM
DI-	L3-A	INDOOR CONDENSER WATER TANK LEVEL 3 ALARM		No	Yes	Yes	ALARM
DI-	L1-A	INDOOR CONDENSER WATER TANK LEVEL 1 ALARM		No	Yes	Yes	ALARM
DI-	L2-A	INDOOR CONDENSER WATER TANK LEVEL 2 ALARM		No	Yes	Yes	ALARM
DI-	L4-A	INDOOR CONDENSER WATER TANK LEVEL 4 ALARM		No	Yes	Yes	ALARM

1 CHILLED WATER SYSTEM TEMPERATURE CONTROL SCHEMATIC

NO SCALE

REVISIONS

1	02.05.25	ADDENDUM #2

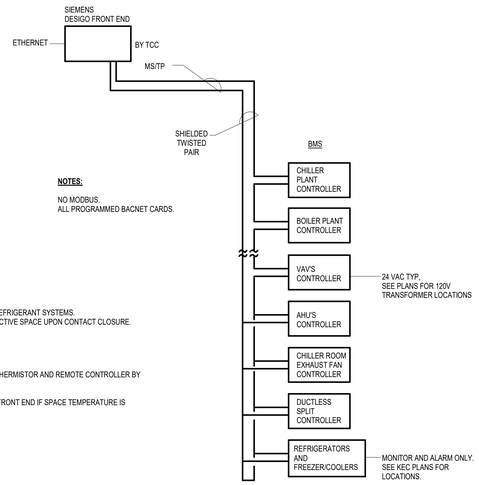
HAMILTON SOUTHEASTERN SCHOOL CORPORATION
01.06.2025
23055 - FALL CREEK INTERMEDIATE RENOVATIONS
12011 Olio Rd, Fishers, IN 46037
CONSTRUCTION DOCUMENTS

ANDREW P. STINEC
REGISTERED
PE11400737
STATE OF
INDIANA
PROFESSIONAL ENGINEER
01-06-2025
Job# 23113

CONSTRUCTION DOCUMENTS
01.06.2025
krM JOB NO.
23055
DRAWN BY
CME

DRAWING NAME
TEMPERATURE CONTROL/FLOW DIAGRAMS

DRAWING NO.
M9-2



NOTES:

NO MODBUS.
ALL PROGRAMMED BACNET CARDS.

KITCHEN FREEZER AND COOLER:

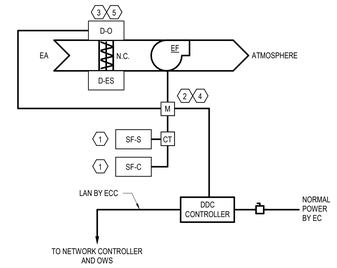
A. PROVIDE WIRING FROM BMS TO CONTACT TO BOTH FREEZER AND COOLER REFRIGERANT SYSTEMS.
B. BROADCAST ALARM AT FRONT END INDICATING LOSS OF COOLING AT RESPECTIVE SPACE UPON CONTACT CLOSURE.

DRY STORAGE CONTROLS:

A. CONDITIONED WITH PACKAGED SPLIT DX HEAT PUMP HAVING INTEGRAL R/A THERMISTOR AND REMOTE CONTROLLER BY MANUFACTURER.
B. SET TO MAINTAIN SPACE TEMPERATURE AT 70 DEG. F.
C. PROVIDE WALL MOUNTED DDC TEMPERATURE SENSOR. PROVIDE ALARM AT FRONT END IF SPACE TEMPERATURE IS MORE THAN 5 DEG. F ABOVE SETPOINT.

5 BAS SYSTEM ARCHITECTURE

NOT TO SCALE



SCHEMATIC NOTES:

1. UNLESS NOTED OTHERWISE, WIRE BAS FAN STATUS AND FAN ENABLE/DISABLE TO THE NEAREST DDC SYSTEM PANEL.
2. TCC TO PROVIDE CURRENT SENSOR AND CONTROL LOGIC FOR FAN FAULT DETERMINATION.
3. MOTORIZED FAN INLET ISOLATION DAMPER AND ACUATOR FURNISHED BY THE FAN MANUFACTURER AND OPERATED BY THE FAN. TCC TO WIRE DAMPER TO CONTROLLER.
4. ELECTRO-COMMUTATED MOTOR WITH INTEGRAL SPEED CONTROLLER FURNISHED BY THE FAN MANUFACTURER. FAN SPEED IS MANUALLY SET BY TAB ADJUSTMENT OF THE ECM CONTROLLER.
5. COMMISSIONING BY CXA.

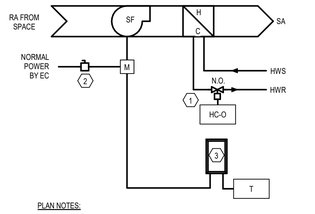
SEQUENCE OF OPERATION:

1. NORMAL OPERATION:
a. ALL SETPOINTS TO BE ADJUSTABLE.
b. SETPOINTS AND OPERATION TO BE VISIBLE ON BUILDING MANAGEMENT SYSTEM.
c. ENABLE: FAN ISOLATION DAMPER OPENS FROM INTEGRAL CONTROLLER ON FAN, UPON PROVEN SIGNAL DAMPER IS OPEN EXHAUST FAN IS STARTED FROM COMMAND OF BMS **OR WITH AHU SEQUENCE.**
d. DISABLE: FAN IS COMMANDED OFF FROM BMS AND DAMPER CLOSES. DISABLING THE FAN CLOSES THE ISOLATION DAMPER.
e. TAB TO MANUALLY BALANCE EXHAUST FAN WITH INTEGRAL SPEED CONTROLLER.

DDC CONTROLLER_EF_ECM							
CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
BI	SF-S	SUPPLY FAN STATUS	OFF/ON	Yes	No	Yes	
BI-	D-ES	EXHAUST AIR DAMPER END SWITCH	N/A	Yes	Yes	Yes	ALARM
BO	D-O	EXHAUST AIR DAMPER OUTPUT	% OPEN	Yes	No	Yes	
BO	SF-C	SUPPLY FAN COMMAND	START/STOP	Yes	Yes	Yes	

3 EXHAUST FAN (SINGLE PHASE EC MOTOR) CONTROL SCHEMATIC

NOT TO SCALE



PLAN NOTES:

1. FURNISHED BY TCC; INSTALLED BY MC.
2. DISCONNECT PROVIDED AND INSTALLED BY EC.
3. LINE VOLTAGE THERMOSTAT PROVIDED BY UNIT HEATER MANUFACTURER AND INSTALLED BY EC.

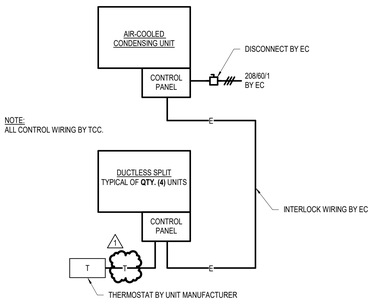
SEQUENCE OF OPERATION:

1. SPACE THERMOSTAT CYCLES UNIT FAN AND HEATING HOT WATER CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE TO 60°F (ADJ.).
2. HOT WATER CONTROL VALVE FULLY CLOSES WHEN FAN IS NOT OPERATIVE.
3. VALVES SHALL FAIL OPEN.
4. ABOVE 60 DEG. F. (ADJ.) AMBIENT TEMPERATURE, ALL CUH'S SHALL BE LOCKED OUT.

DDC POINT SCHEDULE - HOT WATER UNIT HEATER							
CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
AI-1	T	SPACE TEMP	DEG F	Yes	No	Yes	
AO-1	HC-O	HEATING COIL VALVE OUTPUT	% OPEN	Yes	No	Yes	

2 HOT WATER UNIT HEATER CONTROL SCHEMATIC

NO SCALE



NOTE:
ALL CONTROL WIRING BY TCC.

SEQUENCE OF OPERATION:

1. THROUGH INTEGRAL CONTROLS, UNIT CYCLES AS REQUIRED TO MAINTAIN SPACE TEMPERATURE OF **70°F (ADJ.)**.
2. ALARM AT BMS WHEN SPACE TEMPERATURE RISES ABOVE **78°F (ADJ.)**.

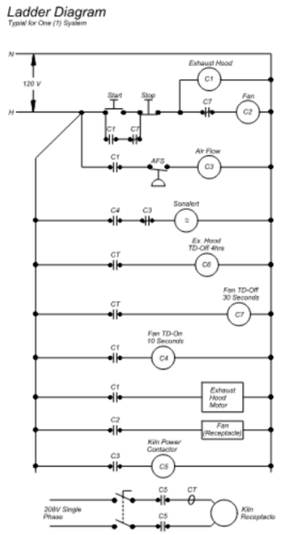
DDC CONTROLLER_DUCTLESS SPLIT							
CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
--	T	THERMOSTAT	DEG F	Yes	No	Yes	

1 DUCTLESS SPLIT SYSTEM CONTROL SCHEMATIC

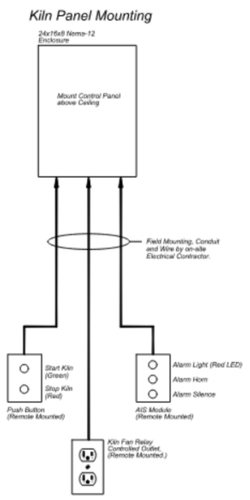
NOT TO SCALE

Ladder Diagram

Typical for One (1) System



Kiln Panel Mounting



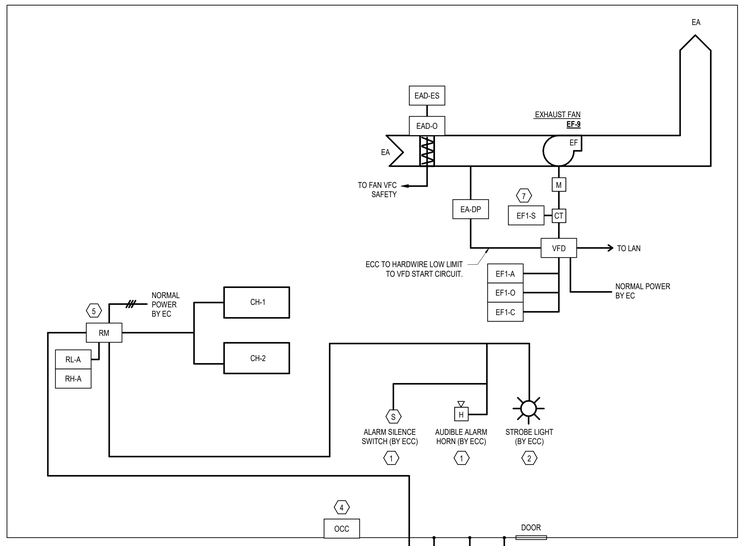
Kiln Sequence of Operation

1. *All work and control components provided and installed by TCC unless specified elsewhere.*
2. *The Kiln receptacle non-fused disconnect switch is to be in the "On" position unless the Kiln is intentionally disabled for Maintenance.*
3. *When the start button of a momentary "start/stop" switch is pressed the exhaust hood fan and the kiln fan are energized. At the same time an "on" delay relay is energized. The "on" delay relay and a sail switch or pressure differential switch shall be used to prove air flow. A current sensor is not acceptable for this application.*
4. *If positive air flow is not proven sonalert will activate. The "on" delay relay will provide a 10 second delay in the sonalert circuit to keep it from sounding on system startup.*
5. *If positive air flow is proven a power contactor will activate to allow power to flow to the kiln receptacle.*
6. *A current sensor shall monitor one leg of the kiln power feed down stream of the kiln power contactor. The current sensor shall activate time delay "off" relays for the exhaust hood fan and the kiln fan. The kiln exhaust hood and kiln fan shall run the entire time the kiln is in operation.*
7. *After the kiln has completed its run, the exhaust fan shall remain on for a minimum of 4 hours. The kiln fan shall remain on for a minimum of 30 seconds.*
8. *At the end of the run, the exhaust hood run time, the exhaust hood and the kiln power contactor shall be de-energized.*
9. *Provide all the above components as applicable in a control panel mounted in the kiln area.*

6 KILN CONTROL SCHEMATIC

NOT TO SCALE

DDC CONTROLLER_CHILLER_ROOM							
CONTROLLER POINT & TYPE	OBJECT NAME	OBJECT DESCRIPTION	UNITS	TREND	ALARM	GRAPHIC	NOTES
--	RM	REFRIGERANT MONITOR		Yes	No	Yes	
--	RM			Yes	Yes	Yes	
--	RA			Yes	Yes	Yes	
--	BGA			Yes	Yes	Yes	
--	RA			Yes	Yes	Yes	
--	BGA1			Yes	Yes	Yes	
--	BGA2			Yes	Yes	Yes	
--	OCC	SPACE OCCUPANCY SENSOR		Yes	No	Yes	
--	VFD			Yes	Yes	Yes	
--	EF1-A	EXHAUST FAN ALARM		No	Yes	Yes	ALARM
--	EF1-O	EXHAUST FAN VFD SPEED	%	Yes	No	Yes	
--	EF1-C	EXHAUST FAN COMMAND	START/STOP	Yes	No	Yes	
--	EF1-S	EXHAUST FAN STATUS	OFF/ON	Yes	No	Yes	
--	RL-A	REFRIGERANT LOW ALARM		No	Yes	Yes	ALARM
--	RH-A	REFRIGERANT HIGH ALARM		Yes	No	Yes	
AI-	EA-DP	EXHAUST FAN DIFFERENTIAL PRESSURE SWITCH	IN WC	Yes	No	Yes	4-20 mA = 0-2.5 IN WC
BI-	EAD-ES	EXHAUST AIR ISOLATION DAMPER END SWITCH		Yes	No	Yes	ALARM
BO-	EAD-O	EXHAUST AIR ISOLATION DAMPER OUTPUT	% OPEN	Yes	No	Yes	



RM	REFRIGERANT MONITOR (BY TCC - INSTALLED AND WIRED BY TCC) (2 SENSING POINTS - 15" ABOVE FLOOR ADJ TO CH-1 AND CH-2.)
RA	REFRIGERANT REMOTE ALARM PANEL WITH 4"Ø RED PILOT LIGHT TO ACTIVATE ON ALARM.
BGA	BREAK GLASS ALARM.

PLAN NOTES:

1. AUDIBLE ALARM TO BE LOCATED ON WALL NEAR DOOR. SILENCE SWITCH TO BE LOCATED ON WALL NEAR DOOR.
2. STROBE LIGHT TO BE CEILING MOUNTED NEAR DOOR AND SHALL STAY IN ALARM MODE UNTIL ALARM CONDITION IS CLEARED.
3. DDC POINTS TO BE WIRED TO CHILLED WATER DDC CONTROLLER.
4. OCCUPANCY SENSOR(S) FURNISHED AND INSTALLED BY TCC. REFER TO PLANS FOR LOCATION(S).
5. REFRIGERANT MONITOR TO DETECT R-134a (CH-1,2). REFRIGERANT TO BE CONFIRMED WITH MANUFACTURER.
6. TYP. OF TWO (2) LOCATIONS.
7. VFD PLAN INTEGRATION.

SEQUENCE OF OPERATION:

1. ON DETECTION OF OCCUPANCY, EXHAUST FAN EF-9 IS ENERGIZED TO RUN AT MINIMUM FLOW (2,000 CFM).
2. EXHAUST FAN CONTINUES TO RUN FOR A MINIMUM OF 30 MINUTES (ADJ.) AFTER DETECTION OF OCCUPANCY. IF AFTER 30 MINUTES, NO OCCUPANCY IS DETECTED EXHAUST FAN SHUTS DOWN.
3. IN THE EVENT THE REFRIGERANT MONITOR GOES INTO ALARM, THE FOLLOWING SHALL OCCUR:
   2 LEVELS OF ALARM TO BE UTILIZED I.E.
   LOW ALARM - 50% OF ALLOWABLE VOLUME
   * ENERGIZE BOTH REMOTE ALARM AND LOCAL ALARM.
   * EXHAUST FAN EF-9 INCREASES TO EXHAUST MAXIMUM FLOW (4,000 CFM).
   HIGH ALARM - 100% OF ALLOWABLE VOLUME
   * CHILLERS ARE SHUTDOWN.
   * EF-9 CONTINUES TO OPERATE AT MAXIMUM FLOW.
4. TWO BREAK GLASS TYPE ALARM SWITCHES SHALL BE LOCATED OUTSIDE THE CHILLER ROOM ADJACENT TO THE ALARM LIGHT.
   * BGA1 SHALL FUNCTION TO SHUT DOWN THE FOLLOWING EMERGENCY:
   - CHILLERS CH-1 & CH-2.
   * BGA2 EXHAUST FAN EF-9 IS ENERGIZED TO RUN AT MAXIMUM FLOW (4000 CFM).

4 CHILLER ROOM VENTILATION FAN CONTROL SCHEMATIC

NOT TO SCALE

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REVISIONS

1	02.05.25	ADDENDUM #2

01.06.2025
HAMILTON SOUTHEASTERN SCHOOL CORPORATION

23055 - FALL CREEK INTERMEDIATE RENOVATIONS

12011 Olio Rd. Fishers, IN 46037

CONSTRUCTION DOCUMENTS

ANDREW P. STINEC
REGISTERED
PE11409737
STATE OF
INDIANA
PROFESSIONAL ENGINEER

01-06-2025
Job# 23113

CONSTRUCTION DOCUMENTS
01.06.2025
krM JOB NO.
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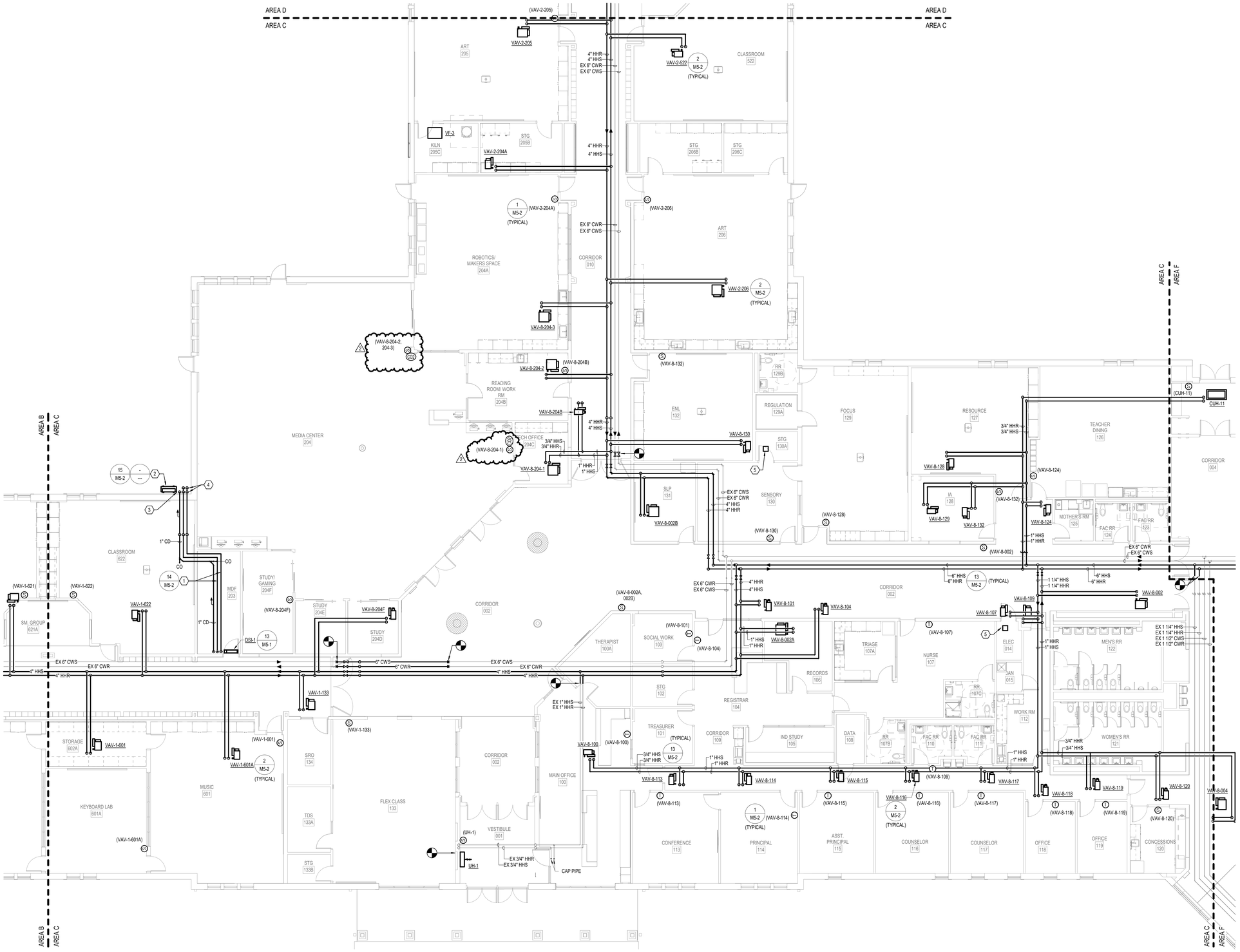
DRAWING NAME
TEMPERATURE CONTROL DIAGRAMS

DRAWING NO.
M9-3



N

1 FIRST FLOOR MECHANICAL PIPING PLAN - AREA C

1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET M-000 FOR GENERAL MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS.

B REFER TO DRAWING M-500 SERIES FOR MECHANICAL DETAILS.

C REFER TO DRAWING M-600 SERIES FOR MECHANICAL SCHEDULES.

D ALL PIPING RUNOUTS TO TERMINAL UNITS SHALL BE 3/4" UNLESS NOTED OTHERWISE.

SHEET KEYNOTES

1 REFRIGERANT LINE SET, SIZE AND QUANTITIES PER MANUFACTURERS RECOMMENDATIONS.

2 MOUNT OUTDOOR DUCTLESS SPLIT CONDENSER ON BUILDING WALL, BOTTOM AT APPROXIMATELY 7'-0" ABOVE GRADE WITH APPROVED WALL BRACKET SUPPORTS PER MANUFACTURERS RECOMMENDATIONS.

3 ROUTE 1" CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE IN ROOM. ROUTE DRAIN LINE DOWN WALL AND TERMINATE OUTSIDE BUILDING AT APPROXIMATELY 1'-0" ABOVE GRADE.

4 ROUTE REFRIGERANT LINES ABOVE CEILING IN CLASSROOM AND DOWN WALL ON OUTSIDE OF BUILDING AND CONNECT TO OUTDOOR UNIT AS REQUIRED. ALL OUTDOOR REFRIGERANT LINES SHALL BE INSULATED AND HAVE ALUMINUM JACKET.

5 TYPICAL, PROVIDE AS MANY LOW VOLTAGE TRANSFORMERS AS REQUIRED ABOVE CEILING. COORDINATE 120V POWER WITH ELECTRICAL. GENERAL LOCATION SHOWN FOR REFRENCE, LOCATE AS REQUIRED. SEE DETAIL #5 ON SHEET M9-1.

REVISIONS

1	01.28.25	ADDENDUM #1
2	02.05.25	ADDENDUM #2

HAMILTON SOUTHEASTERN SCHOOL CORPORATION

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01.06.2025

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01-06-2025
Job# 23113

CONSTRUCTION DOCUMENTS
01.06.2025

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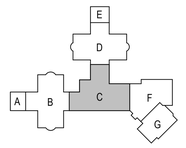
23055

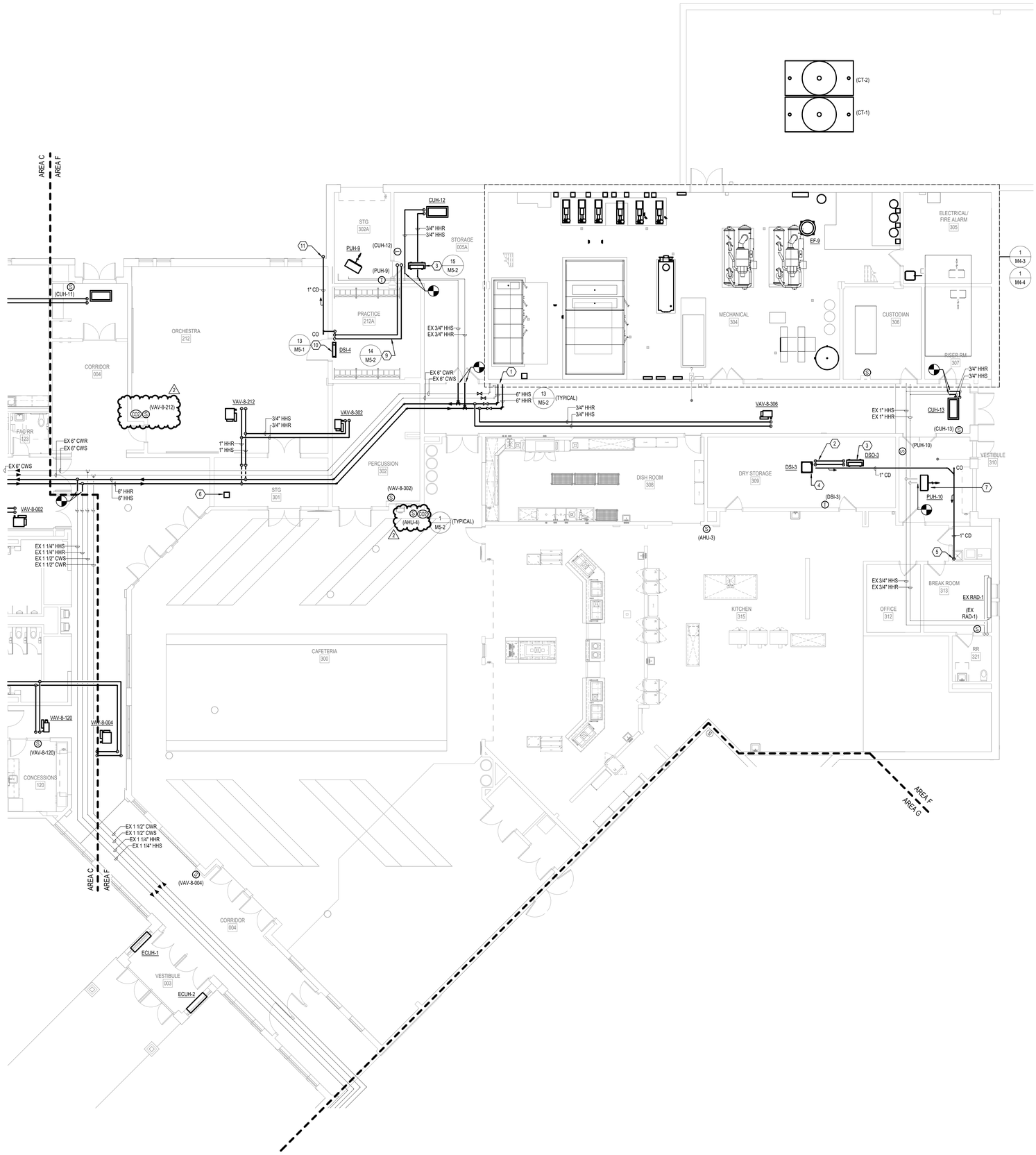
DRAWN BY
CME

KEY PLAN



DRAWING NAME
FIRST FLOOR MECHANICAL PIPING PLAN - AREA C

DRAWING NO.
MP1-3



N

1 FIRST FLOOR MECHANICAL PIPING PLAN - AREA F

1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET M-000 FOR GENERAL MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS.

B REFER TO DRAWING M-500 SERIES FOR MECHANICAL DETAILS.

C REFER TO DRAWING M-600 SERIES FOR MECHANICAL SCHEDULES.

D ALL PIPING RUNOUTS TO TERMINAL UNITS SHALL BE 3/4" UNLESS NOTED OTHERWISE.

SHEET KEYNOTES

1 SEE ENLARGED PLAN ON SHEET M4.3 FOR CONTINUATION OF PIPING.

2 REFRIGERANT LINE SET UP TO OUTDOOR UNIT ON ROOF, SIZE AND QUANTITIES PER MANUFACTURERS RECOMMENDATIONS.

3 OUTDOOR UNIT FOR DUCTLESS SPLIT LOCATED ON ROOF ABOVE.

4 4-WAY CEILING CASSETT UNIT MOUNTED IN CEILING.

5 <varies>

6 TYPICAL, PROVIDE AS MANY LOW VOLTAGE TRANSFORMERS AS REQUIRED ABOVE CEILING. COORDINATE 120V POWER WITH ELECTRICAL. GENERAL LOCATION SHOWN FOR REFRENCE, LOCATE AS REQUIRED. SEE DETAIL #3 ON SHEET M5-1.

7 UNDER ALTERNATE BID, DO NOT INSTALL NEW PUH-10, THERMOSTAT AND NEW PIPING CONNECTIONS.

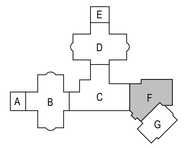
8 MOUNT OUTDOOR DUCTLESS SPLIT CONDENSER ON BUILDING WALL, BOTTOM AT APPROXIMATELY 6'-0" ABOVE GRADE WITH APPROVED WALL BRACKET SUPPORTS PER MANUFACTURERS RECOMMENDATIONS.

9 REFRIGERANT LINE SET TO OUTDOOR UNIT. SIZE AND QUANTITIES PER MANUFACTURERS RECOMMENDATIONS.

10 WALL MOUNTED SPLIT SYSTEM LOCATED CENTERED ABOVE DOOR AND BELOW CEILING.

11 ROUTE 1" CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE IN ROOM. ROUTE DRAIN LINE DOWN WALL AND TERMINATE OUTSIDE BUILDING AT APPROXIMATELY 1'-0" ABOVE GRADE.

KEY PLAN



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1	01.29.25	ADDENDUM #1
2	02.05.25	ADDENDUM #2

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01.06.2025

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12011 Olio Rd, Fishers, IN 46037

CONSTRUCTION DOCUMENTS

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01-06-2025
Job# 23113

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01.06.2025

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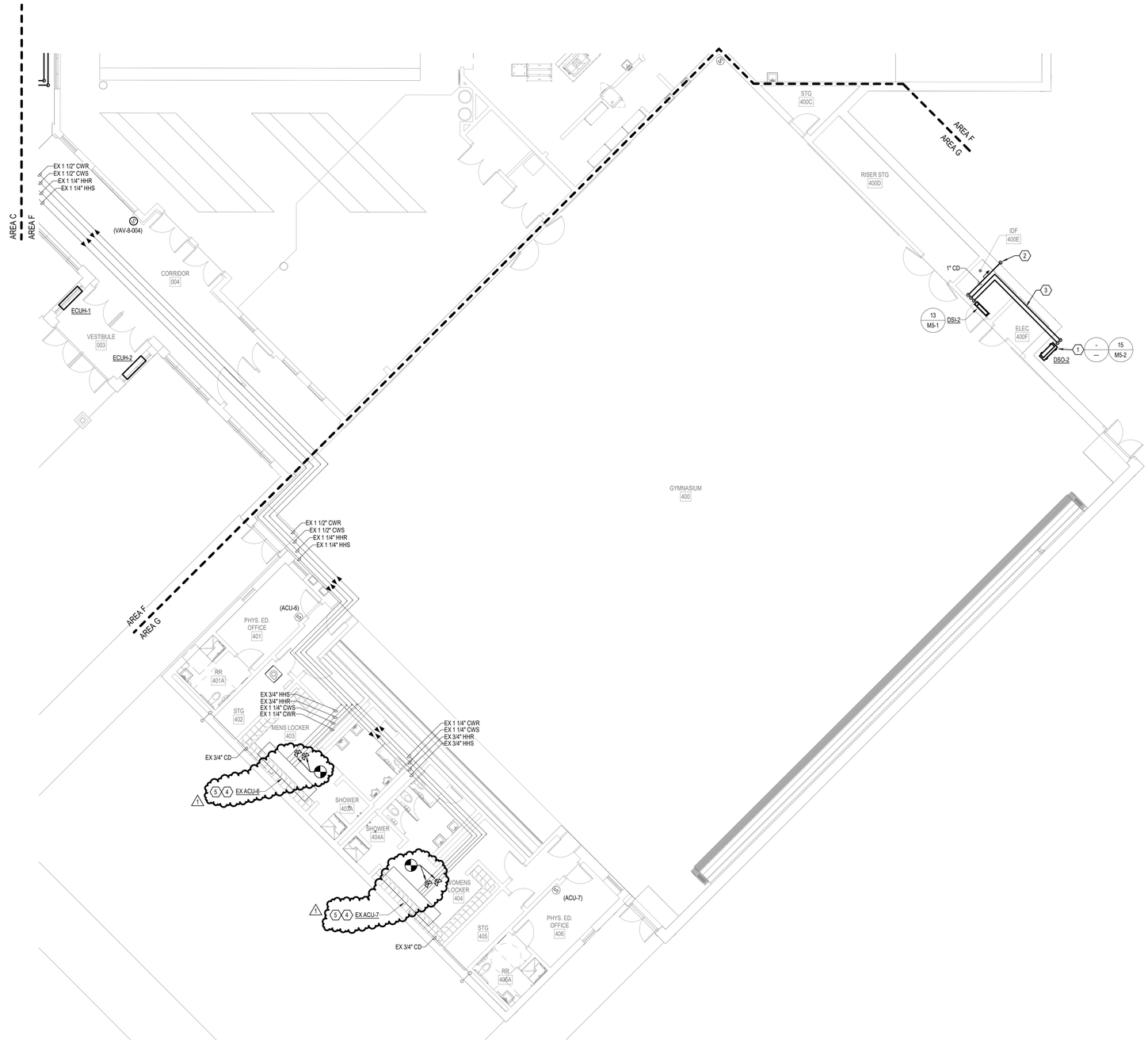
DRAWING NAME
FIRST FLOOR MECHANICAL PIPING PLAN - AREA F

DRAWING NO.
MP1-5



N

1 FIRST FLOOR MECHANICAL PIPING PLAN - AREA G

1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET M-000 FOR GENERAL MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS.

B REFER TO DRAWING M-500 SERIES FOR MECHANICAL DETAILS.

C REFER TO DRAWING M-600 SERIES FOR MECHANICAL SCHEDULES.

D ALL PIPING RUNOUTS TO TERMINAL UNITS SHALL BE 3/4" UNLESS NOTED OTHERWISE.

SHEET KEYNOTES

1 OUTDOOR UNIT FOR DUCTLESS SPLIT LOCATED ON WALL BOTTOM OF UNIT AT 10'-0" ABOVE GRADE WITH MANUFACTURER APPROVED WALL BRACKET.

2 ROUTE 1" CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE IN ROOM. ROUTE DRAIN LINE DOWN WALL AND TERMINATE OUTSIDE BUILDING AT APPROXIMATELY 1'-0" ABOVE GRADE.

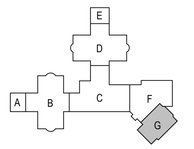
3 REFRIGERANT LINE SET TO OUTDOOR UNIT. SIZE AND QUANTITIES PER MANUFACTURERS RECOMMENDATIONS.

4 EXISTING AIR HANDLING UNIT SHALL REMAIN.

5 REPLACE EXISTING AIR HANDLING UNIT CONTROLS WITH NEW CONTROLS, INCLUDING TEMPERATURE CONTROL VALVES.

1

KEY PLAN



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1	02.05.25	ADDENDUM #2

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12011 Olio Rd. Fishers, IN 46037
CONSTRUCTION DOCUMENTS

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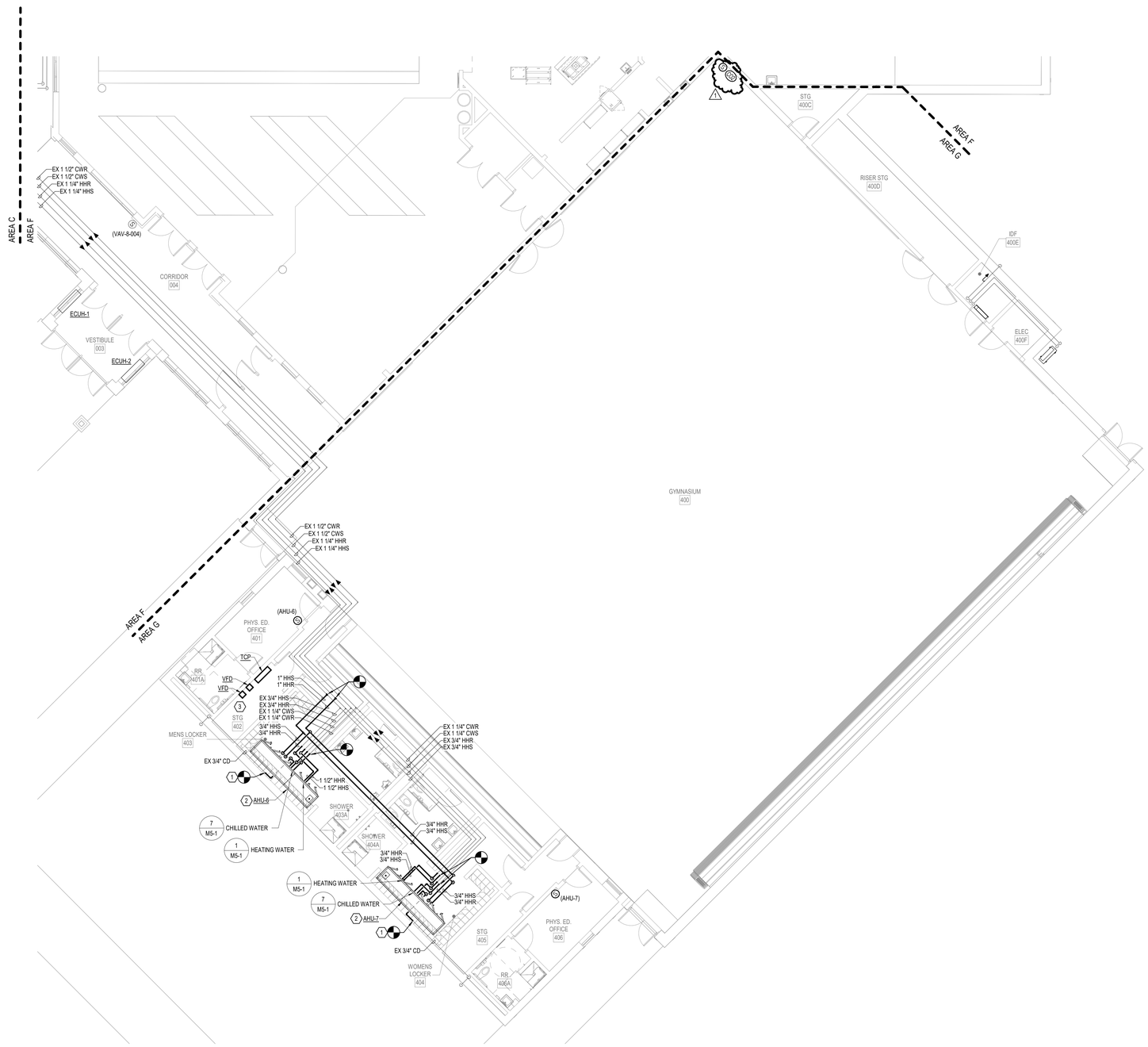
DRAWING NAME
FIRST FLOOR MECHANICAL PIPING PLAN - AREA G

DRAWING NO.
MP1-6



N

1 FIRST FLOOR MECHANICAL PIPING PLAN - AREA G - ALTERNATE

1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET M-000 FOR GENERAL MECHANICAL NOTES, SYMBOLS AND ABBREVIATIONS.
B REFER TO DRAWING M-500 SERIES FOR MECHANICAL DETAILS.
C REFER TO DRAWING M-600 SERIES FOR MECHANICAL SCHEDULES.
D ALL PIPING RUNOUTS TO TERMINAL UNITS SHALL BE 3/4" UNLESS NOTED OTHERWISE.

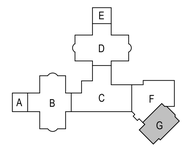
ALTERNATE NOTES

A REFER TO CONSTRUCTION MANAGERS FRONT END BID TAB FOR MORE ALTERNATE INFORMATION.
B ALL OTHER WORK IN THIS AREA IS PART OF THE BASE BID. SEE BASE BID DRAWINGS.

SHEET KEYNOTES

1 CONNECT NEW 3/4" CONDENSATE DRAIN FROM AHU TO EXISTING CONDENSATE DRAIN LINE.
2 INSTALL NEW AIR HANDLING UNIT ABOVE CEILING ON EXISTING STRUCTURAL SUPPORTS. ADD EXISTING SUPPORTS AS REQUIRED TO ACCOMODATE NEW UNIT.
3 LOCATE NEW AIR HANDLING UNITS VFDS AND TEMPERATURE CONTROL PANEL IN STORAGE ROOM ON WALL.

KEY PLAN



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1	02.05.25	ADDENDUM #2

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DRAWING NAME
FIRST FLOOR MECHANICAL PIPING PLAN - AREA G - ALTERNATE

DRAWING NO.
MP1-6A

ABBREVIATIONS AND TERMS

ø	DIAMETER, PHASE
°F	DEGREES FAHRENHEIT
A	COMPRESSED AIR
AD	AREA DRAIN, ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AGA	AMERICAN GAS ASSOCIATION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACID PROOF, ACCESS PANEL
APPROX.	APPROXIMATELY
ARCH	ARCHITECT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUTO	AUTOMATIC
AVG	AVERAGE
AVS	ACID VENT STACK
AW	ACID WASTE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BF	BARRIER FREE
BFC	BELOW FINISHED CEILING
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOP	BOTTOM OF PIPING
BSMT	BASEMENT
BT	BATHTUB
BTM	BOTTOM
BtuH	BRITISH THERMAL UNIT PER HOUR
CA	COMPRESSED AIR
CB	CATCH BASIN
CD	CONDENSATE DRAIN
CO	CARBON DIOXIDE
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CP	CIRCULATOR PUMP
CPVC	CHLORINATED POLYVINYL CHLORIDE
CW	COLD WATER
DBP	DOMESTIC BOOSTER PUMP
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DF	DRINKING FOUNTAIN
DH	DRENCH HOSE
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DW	DISTILLED WATER
DWG	DRAWING
DWV	DRAIN, WASTE & VENT
EA	EACH
EC	ELECTRICAL CONTRACTOR
ECO	EXTERIOR CLEANOUT
EFF	EFFICIENCY
EL	ELEVATION
ES	EMERGENCY SHOWER
EEW	EMERGENCY EYEWASH
EWC	ELECTRIC WATER COOLER
EX	EXISTING
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN, FIRE DAMPER
FDC	FIRE DEPARTMENT CONNECTION
FH	FUME HOOD
FHC	FIRE HOSE CABINET
FLR	FLOOR
FM	FACTORY MUTUAL
FPM	FEET PER MINUTE
FSC	FIRE SUPPRESSION CONTRACTOR
FT	FOOT, FEET
FTG	FOOTING
G	NATURAL GAS
GA	GAGE OR GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GT	GREASE TRAP
GW	GREASE WASTE
HB	HOSE BIBB
HD	HEAD (FT.)
Hg	MERCURY
HO	HUB OUTLET
HP	HORSEPOWER, HEAT PUMP
HR	HOUR(S)
HW	HOT WATER
HWR	HOT WATER RETURN
HX	HEAT EXCHANGER
HYD	WALL HYDRANT
Hz	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH, INCHES
INT	INTERIOR
INV	INVERT
IPS	INTERNATIONAL PIPE STANDARD
IW	INDIRECT WASTE
KEC	KITCHEN EQUIPMENT CONTRACTOR
kW	KILOWATT
LAB	LABORATORY
L	LAVATORY
LBS	POUNDS
LF	LINEAR FEET
LP	LIQUID PETROLEUM
MAX	MAXIMUM
MB	MOP BASIN
MBH	THOUSAND Btu PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NITROGEN
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NFC	NATIONAL FIRE CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NITROUS OXIDE
NOM	NOMINAL
NP	NON-POTABLE WATER
NTS	NOT TO SCALE
O	OXYGEN
OD	OUTSIDE DIAMETER
OF/CI	OWNER FURNISHED/CONTRACTOR INSTALLED
OSD	OPEN SITE DRAIN
OW	OIL WASTE
OZ	OUNCE
P	PUMP
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
PE	POLYETHYLENE
PH	PHASE
PIV	POST INDICATOR VALVE
PP	POLYPROPYLENE
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
PW	PURE WATER
RM	ROOM
RPBP	REQUIRED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
SAN	SANITARY
SF	SQUARE FOOT
SG	SPECIAL GAS
SH	SHOWER
SK	SINK
SPEC	SPECIFICATION
SS	SERVICE SINK, STAINLESS STEEL
STD	STANDARD
T	TURRET
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TET	THERMAL EXPANSION TANK
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TS	TAMPER SWITCH
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
UR	URINAL
V	VOLTS, VENT
VAC	VACUUM
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WASTE, WATT
WB	WASHER BOX
WC	WATER COLUMN, WATER CLOSET
WCO	WALL CLEANOUT
WSB	WATER SUPPLY BOX
YD	YARD DRAIN

PIPE FITTING REPLACEMENT SCOPE OF WORK

A. THE PLUMBING CONTRACTOR SHALL INCLUDE IN HIS BID, ALL MATERIAL AND LABOR TO REPLACE EXISTING GROOVED MECHANICAL FITTINGS WITH NEW PRESS CONNECT FITTINGS FOR PIPE SIZES 2" AND LARGER. PRESS CONNECT FITTINGS TO BE MANUFACTURERED BY VIEGA.
B. 3" AND 4" FITTINGS: (ELBOWS, TEES, COUPLINGS)
  a. VIEGA PRESS FITTINGS (3" AND 4") WILL PRESS DIRECTLY OVER ROLL GROOVES.
  b. REMOVE EXISTING GROOVED FITTING, CLEAN PIPE, INSPECT FOR DAMAGE, INSPECT NEW PRESS CONNECT FITTING, INSTALL FITTING, MARK PIPE, MAKE PRESS.
C. 2" AND 2-1/2" FITTINGS: (ELBOWS, TEES, COUPLINGS)
  a. REMOVE EXISTING GROOVED FITTING, CUT-OFF GROOVED ENDS, CLEAN ENDS, CLEAN PIPE, INSPECT FOR DAMAGE, INSPECT NEW PRESS CONNECT FITTING, INSTALL FITTING, MARK PIPE, MAKE PRESS.
D. INCLUDE THE FOLLOWING AMOUNT OF FITTINGS IN THE BASE BID:
  a. 2" - ELBOWS: 24, TEES: 12
  b. 2-1/2" - ELBOWS: 13, TEES: 6
  c. 3" - ELBOWS: 33, TEES: 18
  d. 4" - ELBOWS: 16, TEES: 6
  e. 6"- ELBOWS: 1, TEES: 0
E. INLCUDE AND ALLOWANCE FOR THE COST TO PROVIDE AND INSTALL ELBOWS, TEES, AND COUPLINGS OF EACH SIZE.
F. INCLUDE AN ALLOWANCE FOR THE COST TO PROVIDE AND INSTALL NEW DOMESTIC WATER WALL HYDRANTS OF THE SAME TYPE AND MANUFACTURER AS CURRENTLY INSTALLED.

VALVE REPLACEMENT SCOPE OF WORK

A. THE PLUMBING CONTRACTOR SHALL INCLUDE IN HIS BID, ALL MATERIAL AND LABOR TO REPLACE EXISTING VALVES (BUTTERFLY AND BALL) WITH NEW PRESS CONNECT BALL VALVES. PRESS CONNECT BALL VALVES TO BE MANUFACTURERED BY VIEGA.
B. 2" THROUGH 4" VALVES:
  a. REMOVE EXISTING VALVE, CUT-OFF GROOVED ENDS, CLEAN ENDS, CLEAN PIPE, INSPECT FOR DAMAGE, INSPECT NEW PRESS CONNECT BALL VALVE, INSTALL BALL VALVE, MARK PIPE, MAKE PRESS.
  b. AN ADDITIONAL COUPLING WILL BE REQUIRED AT EACH VALVE.
C. 1/2" THROUGH 1-1/2" VALVES:
  a. REMOVE EXISTING VALVE, CLEAN ENDS, CLEAN PIPE, INSPECT FOR DAMAGE, INSPECT NEW PRESS CONNECT BALL VALVE, INSTALL BALL VALVE, MARK PIPE, MAKE PRESS.
  b. AN ADDITIONAL COUPLING WILL BE REQUIRED AT EACH VALVE.
D. INCLUDE THE FOLLOWING AMOUNT OF VALVES IN THE BASE BID:
  a. 1/2" - 0
  b. 3/4" - 85
  c. 1" - 11
  d. 1-1/4" - 0
  e. 1-1/2" - 9
  f. 2" - 12
  g. 2-1/2" - 6
  h. 3" - 7
  i. 4" - 3
E. INCLUDE AND ALLOWANCE FOR THE COST TO PROVIDE AND INSTALL VALVES OF EACH SIZE.

PIPING IDENTITY SYMBOLS

	FLOW DIRECTION ARROW, PITCH DIRECTION ARROW
	PIPE RISE
	PIPE DROP
	PIPE CAP
	PIPE CONTINUES (REFERENCE ELSEWHERE)
	PIPE GUIDE
	PIPE ANCHOR
	EXPANSION LOOP
	UNION, FLANGED UNION
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	PLUG VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	REDUCED PRESSURE BACKFLOW PREVENTER
	DOUBLE CHECK BACKFLOW PREVENTER
M	DOUBLE DETECTOR CHECK VALVE ASSEMBLY
	ANGLE VALVE
	RELIEF VALVE
	VALVE WITH OUTSIDE STEM & YOKE
S	SOLENOID VALVE
F	FLOW SWITCH
P	PRESSURE SWITCH
T	AQUASTAT
	BALANCE VALVE
	STRAINER
	STRAINER WITH CAPPED BLOWDOWN
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	VACUUM BREAKER
	TEMPERATURE/PRESSURE TAP
	THERMOMETER
	PRESSURE GAUGE
	AIR FILTER/DRYER
	INLINE PUMP
WHA-A	WATER HAMMER ARRESTER WITH SCHEDULE TYPE
FD	P-TRAP AND RISER
2"FD-1	FLOOR DRAIN WITH SIZE & SCHEDULE TYPE
CO	END OF PIPE CLEANOUT
FCO	FLOOR CLEANOUT
WCO	WALL CLEANOUT
ECO	EXTERIOR CLEANOUT OR RODDING HOLE
HB-1 HYD-1	HOSE BIBB, WALL HYDRANT WITH SCHEDULE TYPE
M	WATER METER
G	GAS METER
4"RD	ROOF DRAIN, OVERFLOW DRAIN WITH SIZE
	POST INDICATOR VALVE
	FIRE DEPARTMENT CONNECTION
TS	VALVE TAMPER SWITCH
	UPRIGHT SPRINKLER HEAD
	PENDANT SPRINKLER HEAD
	DRY PENDANT SPRINKLER HEAD
	CONCEALED SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD

PIPING LINE SYMBOLS

STORM DRAIN	ST
CONDENSATE DRAIN	CD
SANITARY WASTE (W)	W
GREASE WASTE	GW
SANITARY FORCED MAIN	FM
SANITARY VENT (V)	V
ACID WASTE	AW
ACID VENT	AV
DRAIN	D
INDIRECT WASTE	IW
PUMP DISCHARGE	PD
DOMESTIC COLD WATER (CW)	
DOMESTIC HOT WATER SUPPLY (HW)	
DOMESTIC HOT WATER RETURN (HWR)	
140°F HOT WATER	140°F
140°F HOT WATER RETURN	140°F
NON-POTABLE WATER	NPW
CONDITIONED SOFT WATER	CSW
CHLORINATED WATER	CL
DISTILLED WATER	DI
DEIONIZED WATER	DE
FIRE SUPPRESSION	F
NATURAL GAS (WC OR PSIG)	G
GAS VENT	GV
LIQUID PETROLEUM	LP
MEDICAL COMPRESSED AIR (WC OR PSIG)	MA
MEDICAL VACUUM	MV
OXYGEN	0
NITROGEN	N
NITROUS OXIDE	N0
CARBON DIOXIDE	CO_2
WET VACUUM CLEANING	WVC
DRY VACUUM CLEANING	DVC
COMPRESSED AIR (WC OR PSIG)	A
TEMPERED WATER SUPPLY	TW
RADON	R
OIL WASTE	OW

LINETYPE DESIGNATORS

	THIN CONTINUOUS LINETYPE INDICATE EXISTING ITEMS TO REMAIN.
	INTERMEDIATE DASHED LINETYPE INDICATE EXISTING ITEMS TO BE REMOVED.
	INTERMEDIATE OR WIDE CONTINUOUS LINETYPE INDICATE NEW ITEMS.
	THIN HALFTONE LINETYPE INDICATE ITEMS BY OTHER DISCIPLINE.
	INDICATES POINT OF NEW CONNECTION TO EXISTING EQUIPMENT, PIPING OR MATERIALS.
	INDICATES POINT OF DISCONNECTION TO EXISTING EQUIPMENT, PIPING OR MATERIALS.

PLUMBING NOTES

A. ALL WORK ON THE PLUMBING DRAWINGS IS NEW AND BY THIS CONTRACTOR UNLESS OTHERWISE INDICATED.
B. THE PLUMBING CONTRACTOR SHALL INCLUDE IN HIS BID ALLOWANCES, FEES, AND COSTS TO COMPLETE THIS PROJECT.
C. THE PLUMBING CONTRACTOR SHALL FURNISH ALL REQUIRED LABOR AND PROVIDE ALL MATERIAL, EQUIPMENT INCLUDING ALL CONTRACTOR'S SERVICES NECESSARY TO COMPLETE INSTALLATION OF THE REQUIRED SYSTEMS IN FULL CONFORMITY WITH APPLICABLE CODES AND ORDINANCES. THE FINISHED INSTALLATION SHALL BE FUNCTIONAL AND COMPLETE IN EVERY DETAIL INCLUDING ANY AND ALL SUCH ITEMS FOR COMPLETE AND OPERATIONAL SYSTEMS.
D. ALL PLUMBING SYSTEMS TO BE INSTALLED TO MEET THE REQUIREMENTS OF THE INDIANA PLUMBING CODE (2006 INTERNATIONAL PLUMBING CODE WITH THE LATEST INDIANA AMENDMENTS).
E. ALL SOIL, WASTE, VENT, AND STORM PIPING SHALL BE INSTALLED AT THE FOLLOWING MINIMUM SLOPE:1/8" (1%) PER FOOT GRADE FOR PIPE SIZES 3" AND LARGER. 1/4" (2%) PER FOOT GRADE FOR PIPE SIZES 21/2" AND SMALLER.
F. CUTTING AND PATCHING, AND CORE DRILLING FOR PLUMBING WORK SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR.
G. PIPING AND/OR EQUIPMENT SHALL NOT BE SUPPORTED FROM STRUCTURAL MEMBERS WITHOUT PRIOR REVIEW AND APPROVAL FROM THE STRUCTURAL ENGINEER.
H. ALL DOMESTIC WATER PIPING SHALL BE INSULATED. REFER TO INSULATION SCHEDULE IN SPECIFICATIONS.
I. ALL PLUMBING FIXTURES AND EQUIPMENT SHALL CONFORM TO ALL APPLICABLE ENERGY CONSERVATION CODES.
J. ALL PIPING, VALVES, AND ACCESSORIES SERVING EQUIPMENT SHALL CONFORM TO ALL APPLICABLE ENERGY CONSERVATION CODES.
K. ANCILLARY SYSTEMS NOT ASSOCIATED WITH EQUIPMENT SHALL NOT BE INSTALLED SO AS TO INHIBIT SERVICING AND/OR REMOVAL OF SAID EQUIPMENT.
L. STERILIZE DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH STATE AND LOCAL CODES, AND BASE BUILDING SPECIFICATIONS.
M. PRIOR TO THE INSTALLATION, FABRICATION, REMOVAL, OR RELOCATION OF ANY WORK, THE CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE ACTUAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND SHALL FULLY COORDINATE ALL WORK WITH THE ARCHITECTURAL PLANS, BUILDING STRUCTURE, AND WORK OF ALL OTHER TRADES. CONTRACTOR SHALL VERIFY EXISTING INVERTS PRIOR TO CONSTRUCTION.
N. FOUNDATION AND FOOTINGS SHALL NOT BE DISTURBED WITHOUT OBTAINING PERMISSION FROM THE ARCHITECT AND/OR STRUCTURAL ENGINEER. PROPER UNDERPINNING METHODS SHALL BE USED TO PROTECT AFFECTED FOUNDATION COMPONENTS.
O. PROVIDE PIPE ESCUTCHEONS AT EXPOSED PIPE PENETRATIONS AT ALL FINISHED WALLS AND CEILINGS.
P. PROVIDE SLEEVES FOR ALL PIPING THAT PENETRATES FULL HEIGHT WALLS.
Q. PROVIDE A CHECK VALVE ON HOT AND COLD WATER BRANCH LINES SERVING ALL MOP SINKS.
R. PROVIDE WATER HAMMER ARRESTERS PRIOR TO QUICK-CLOSING VALVES (ie: ELECTRIC, PNEUMATIC, SPRING LOADED VALVES OR DEVICES, QUICK HAND CLOSURE VALVES OR FIXTURE TRIM). SIZE ARRESTERS PER SCHEDULE ON DRAWINGS AND PDI-WH 201 CERTIFIED STANDARD.
S. INSULATE ALL PLASTIC PIPING IN RETURN AIR PLENUMS TO MAINTAIN 25/50 FIRE SMOKE RATING AND AS DIRECTED IN SPECIFICATIONS. INSULATION MATERIAL SHALL BE 1/2" CLOSED CELL ELASTOMERIC, UNLESS OTHERWISE INDICATED IN PART 3 OF SPECIFICATION SECTION 220700.
T. COORDINATE VENT PENETRATIONS WITH MECHANICAL ROOF TOP EQUIPMENT, REFER TO "H" SERIES DRAWINGS. OFFSET VENTS AS REQUIRED TO MAINTAIN MINIMUM 10'-0" SEPARATION FROM AIR INTAKES.
U. PROVIDE "LEAD-FREE", "NO-LEAD", AND/OR "LOW-LEAD" PLUMBING FITTINGS COMPLIANT WITH THE FEDERAL LAW IN EFFECT ON JANUARY 4, 2014 - MAXIMUM 0.25% LEAD CONTENT.
V. TELECOMMUNICATIONS ROOMS: (MDF AND IDF) DO NOT ROUTE ANY SYSTEMS OVER EQUIPMENT OR ELECTRICAL COMPONENTS. DO NOT HINDER SERVICE ACCESS.
W. ELECTRICAL EQUIPMENT ROOMS: DO NOT ROUTE ANY SYSTEMS OVER ELECTRICAL EQUIPMENT OR ELECTRICAL COMPONENTS. DO NOT HINDER SERVICE ACCESS.
X. DO NOT ROUTE ANY SYSTEMS ABOVE ELECTRICAL EQUIPMENT OR ELECTRICAL COMPONENTS.

NOTATION DESIGNATORS

GENERAL NOTES:	NOTES THAT APPLY EQUALLY TO ALL DISCIPLINES WITHIN THE DRAWING SET.
GENERAL PLUMBING NOTES:	NOTES THAT APPLY EQUALLY TO ALL SHEETS WITHIN THE DISCIPLINE.
GENERAL SHEET NOTES:	NOTES THAT APPLY ONLY TO THE SPECIFIC SHEET ON WHICH THEY APPEAR.
SHEET KEYNOTES:	NOTES THAT APPLY ONLY TO THE SPECIFIC SHEET ON WHICH THEY APPEAR AND USE A KEYNOTE INDICATOR TO IDENTIFY ITEMS.

REFERENCE SYMBOLS

SECTION INDICATOR:	REFERENCE SECTION LOCATION THROUGH AN AREA FOR ADDITIONAL INFORMATION.	KEYNOTE INDICATOR:	REFERENCE SHEET KEYNOTE LOCATION FOR ADDITIONAL INFORMATION.
DETAIL INDICATOR:	REFERENCE DETAIL LOCATION FOR ADDITIONAL INFORMATION.	DRAWING BLOCK TITLE INDICATOR:	REFERENCE DRAWING MODULE LOCATION FOR ADDITIONAL INFORMATION.
MATCH LINE INDICATOR:	REFERENCE SHEET LOCATION FOR ADDITIONAL INFORMATION.	REVISION INDICATOR:	REFERENCE TITLE BLOCK LOCATION FOR ADDITIONAL INFORMATION.
EQUIPMENT INDICATOR:	REFERENCE SCHEDULE LOCATION FOR ADDITIONAL INFORMATION.		

GENERAL NOTES

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE, AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS. THE SAME ARE MADE A PART OF THESE CONTRACT DOCUMENTS AS IF REPEATED HEREIN.
B. CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND DRAWINGS, AND BOTH ARE INTENDED TO BE COMPLEMENTARY. ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
C. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT, AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
D. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMATICALLY AND IN SOME CASES, ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APPURTENANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.
E. THE ENGINEERING DRAWINGS ARE OF EQUAL IMPORTANCE WITH THE ARCHITECTURAL DRAWINGS IN DEFINING THE WORK OF THE CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF ENGINEERING WORK. SHOULD THERE BE A DISCREPANCY BETWEEN THE ARCHITECTURAL DRAWINGS AND THE ENGINEERING DRAWINGS THAT WOULD CAUSE AN AWKWARD OR IMPROPER INSTALLATION, THE DISCREPANCY SHALL BE BROUGHT TO THE ARCHITECTS/ENGINEERS ATTENTION FOR CLARIFICATION PRIOR TO INSTALLATION OF SAID WORK. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE AND AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT/ENGINEER.
F. DO NOT SCALE THE DRAWINGS. THE DRAWINGS ARE NOT NECESSARILY TO SCALE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE PRIOR TO THE START OF CONSTRUCTION. IF DISCREPANCIES ARE FOUND, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION BEFORE COMMENCING THE WORK. EXPLICIT DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALE.
G. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
H. ANY DETAILS, SYSTEMS AND/OR MATERIALS WHICH ARE PROPOSED TO BE CHANGED MUST FIRST BE REVIEWED BY THE OWNER AND ARCHITECT/ENGINEER PRIOR TO THE PREPARATION OF SHOP DRAWINGS.
I. ALL CONFLICTS, WHICH MAY PREVENT THE COMPLETION OF WORK AS INTENDED, SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION. THE CONTRACTOR SHALL NOT PROCEED WITH ANY RELATED WORK UNTIL ALL CONFLICTS ARE RESOLVED AND THE CLARIFYING INFORMATION IS ISSUED TO THE CONTRACTOR BY THE ARCHITECT.
J. PROVIDE NFPA APPROVED FIRE STOPPING WHERE PIPES PENETRATE FIRE RATED FLOORS AND WALLS.
K. FIELD VERIFICATION: CONTRACTOR SHALL INSPECT AND VERIFY ALL EXISTING FIELD CONDITIONS, CLEARANCES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF EXISTING CONDITIONS. SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT ARCHITECT/ENGINEER BEFORE PROCEEDING WITH ANY WORK.
1
L. CONTRACTOR SHALL LOCATE EXISTING STORM, WASTE, AND VENT PIPING UNDER SLAB PRIOR TO CUTTING CONCRETE FLOOR SLAB.

FIRE PROTECTION NOTES

A. ALL FIRE PROTECTION WORK ON THE DRAWINGS IS NEW AND BY THIS CONTRACTOR UNLESS OTHERWISE INDICATED.
B. THE FIRE PROTECTION CONTRACTOR SHALL FURNISH ALL REQUIRED LABOR AND PROVIDE ALL MATERIAL, EQUIPMENT INCLUDING ALL CONTRACTOR'S SERVICES NECESSARY TO COMPLETE THE INSTALLATION OF THE REQUIRED SYSTEMS IN FULL CONFORMITY WITH APPLICABLE CODES AND ORDINANCES. THE FINISHED INSTALLATION SHALL BE FUNCTIONAL AND COMPLETE IN EVERY DETAIL INCLUDING ANY AND ALL SUCH ITEMS FOR COMPLETE AND OPERATIONAL SYSTEMS.
C. FIRE PROTECTION SYSTEM FOR BUILDING SHALL BE DESIGNED FOR LIGHT HAZARD, 0.10 GPM PER SQUARE FOOT OVER 1,500 SQUARE FEET. MECHANICAL, STORAGE AND LAB AREAS SHALL BE DESIGNED FOR ORDINARY HAZARD, 0.15 GPM PER SQUARE FOOT OVER 1,500 SQUARE FEET.
D. SPRINKLER SYSTEM SHALL BE HYDRAULLICALLY CALCULATED, FULLY SUPERVISED AND INSTALLED ACCORDING TO NFPA 13.
E. THE FIRE PROTECTION CONTRACTOR SHALL OBTAIN FLOW TEST DATA BY MEANS OF A FLOW TEST PRIOR TO DESIGN HYDRAULIC CALCULATION OF SPRINKLER SYSTEM.
F. CUTTING AND PATCHING, AND CORE DRILLING FOR FIRE PROTECTION WORK SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR.
G. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION, LAYOUT, CODE COMPLIANCE AND DESIGN.
H. PROVIDE UPRIGHT HEADS IN UNFINISHED SPACES (I.E.: THOSE WITH EXPOSED STRUCTURE), RECESSED PENDENT HEADS IN FINISHED SPACES (I.E.: THOSE WITH LAY-IN OR HARD CEILINGS), SIDEWALL HEADS WHERE IMPRACTICAL TO INSTALL PENDENT OR UPRIGHT TYPE, OR AS INDICATED OTHERWISE ON THE DRAWINGS.
I. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION OF CEILING MOUNTED ITEMS.
J. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE TO ATTEND ALL BUILDING WALK-THRU'S (AFTER BUILDING IS OCCUPIED AND PRIOR TO THE END OF THE 1 YEAR WARRANTY PERIOD) BY THE BUILDING FIRE MARSHAL AND IS RESPONSIBLE FOR MAKING ANY MODIFICATIONS TO THE SYSTEM REQUIRED AS A RESULT OF THIS BUILDING INSPECTION.
K. ELECTRICAL EQUIPMENT ROOMS: DO NOT ROUTE ANY SYSTEMS OVER ELECTRICAL EQUIPMENT OR ELECTRICAL COMPONENTS. DO NOT HINDER SERVICE ACCESS.
L. DO NOT ROUTE ANY SYSTEMS ABOVE ELECTRICAL EQUIPMENT OR ELECTRICAL COMPONENTS.
M. INSTALL SPRINKLER HEADS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HEADS SHALL BE INSTALLED TO SATISFY ALL CODE REQUIREMENTS FOR HEAD SPACING.
N. CENTER SPRINKLER HEADS IN GRID OR LAY-IN CEILINGS IN BOTH DIRECTIONS.
O. COORDINATE LOCATIONS OF SPRINKLER HEADS WITH CEILING GRID, DIFFUSERS, LIGHT FIXTURES, AND OTHER OBSTRUCTIONS. PROVIDE ADDITIONAL SPRINKLER HEADS WHICH MAY BE REQUIRED FOR THE COORDINATED CEILING PATTERN AND OR CENTERING, EVEN THOUGH IT MAY EXCEED THE MINIMUM CODE REQUIREMENTS. SHOW ACTUAL SPRINKLER HEAD LOCATIONS IN THE SUBMITTAL AND CLOSEOUT SUBMITTAL.
P. PROVIDE SPRINKLER HEAD GUARDS ON ALL HEADS WHERE THEY MAY BE EXPOSED OR SUBJECT TO DAMAGE.
Q. PROTECT FINISHES AGAINST SCRATCHES, DENTS AND DISCOLORATION. DEFECTIVE ITEMS WILL NOT BE ACCEPTED.
R. ONLY NEW SPRINKLERS SHALL BE INSTALLED. WHEN SPRINKLER HEAD HAS BEEN REMOVED FROM THE PIPING FOR ANY REASON, IT SHALL NOT BE REINSTALLED. INSTALL A NEW SPRINKLER HEAD THAT MATCHES THE SPECIFICATIONS OF THER SPIRNKLER HEADS IN THE SAME COMPARTMENT.
S. PROVIDE ORDINARY TEMPERATURE SPRINKLER HEADS, EXCEPT WHERE HIGHER TEMPERATURE HEADS ARE REQUIRED. SPRINKLER HEADS SHALL BE COLOR CODED.
T. SPRINKLER HEADS LOCATED IN ELECTRICAL SWITCHGEAR ROOMS SHALL BE 212 DEG. F.

DEMOLITION NOTES

A. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
B. CONTRACTOR SHALL COORDINATE SHUT DOWN OF ANY PLUMBING SYSTEM WITH THE OWNER AND ANY AUTHORITY HAVING JURISDICTION.
C. CONTRACTOR SHALL PROVIDE TEMPORARY CAPS FOR ALL SERVICES AS REQUIRED SO EXISTING SYSTEMS WILL REMAIN OPERATIONAL.
D. CONTRACTORS SHALL PROTECT ALL EXISTING OWNER FACILITIES DURING CONSTRUCTION. ANY FACILITIES DAMAGED OR DISCONNECTED BY CONTRACTOR OPERATIONS SHALL BE FULLY RESTORED TO PREVIOUS OPERATING AND APPEARANCE CONDITION.
E. CONTRACTOR SHALL REPAIR OR REPLACE PIPE INSULATION DAMAGED DURING DEMOLITION OR RENOVATION WORK TO MATCH ORIGINAL CONDITION.
F. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE TRADE TO CUT AND PATCH FINISHED AREAS AS REQUIRED, UNLESS OTHERWISE NOTED ON DOCUMENTS.
G. CONTRACTOR SHALL REMOVE AND REPLACE CEILINGS, LIGHT FIXTURES, ETC. IN EXISTING BUILDING AS REQUIRED TO PERFORM DEMOLITION AND RENOVATION WORK. AFTER WORK IS COMPLETE, DAMAGED ITEMS SHALL BE REPAIRED TO ORIGINAL CONDITION OR REPLACED.
H. CONTRACTOR SHALL REMOVE ALL PIPING, VALVES, ETC. MADE OBSOLETE AS A RESULT OF NEW CONSTRUCTION AND/OR RENOVATION.
I. CONTRACTOR SHALL THOROUGHLY REVIEW ALL DRAWINGS PRIOR TO ANY DEMOLITION WORK. ANY DEVICES REMOVED ACCIDENTALLY WILL BE REPLACED AT NO ADDITIONAL COST TO OWNER.
J. DISPOSAL OF DEMOLISHED MATERIALS SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

NOT ALL NOTES, DESIGNATORS, SYMBOLS OR ABBREVIATIONS MAY APPLY TO THIS PROJECT

krM
Architecture+

kbso
CONSULTING

REVISIONS

1	02.05.25	ADDENDUM #2

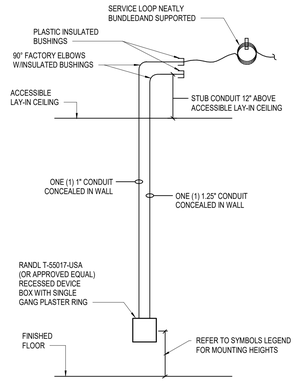
01.06.2025
HAMILTON SOUTHEASTERN SCHOOL CORPORATION
23055 - FALL CREEK INTERMEDIATE RENOVATIONS
12011 Olio Rd, Fishers, IN 46037
CONSTRUCTION DOCUMENTS

ANDREW P. STEINER
PE11400737
01-06-2025
Job# 23113

CONSTRUCTION DOCUMENTS
01.06.2025
krM JOB NO.
23055
DRAWN BY
MP/SE

DRAWING NAME
SYMBOLS AND ABBREVIATIONS

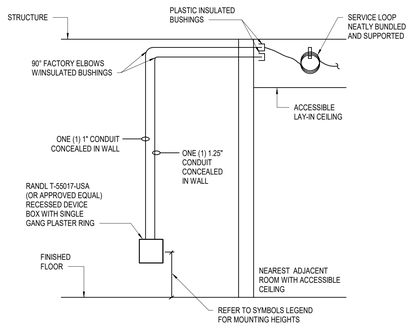
DRAWING NO.
P000



ROUGH-IN NOTES:

1. PROVIDE PULL STRINGS IN ALL CONDUITS. PULL STRINGS SHALL BE INSTALLED IN EMPTY AND FULL CONDUITS.
2. MOUNTING HEIGHTS TO BE INSTALLED ABOVE COUNTERS OR IN CASEWORK SHALL BE COORDINATED WITH THE ARCHITECT AND GENERAL CONTRACTOR IN THE FIELD PRIOR TO ROUGH-IN.
3. ALL CONDUITS AND FITTINGS SHALL BE EMT.

1-GANG TELECOMMUNICATIONS OUTLET ROUGH-IN DETAIL WITH ACCESSIBLE LAY-IN CEILING



ROUGH-IN NOTES:

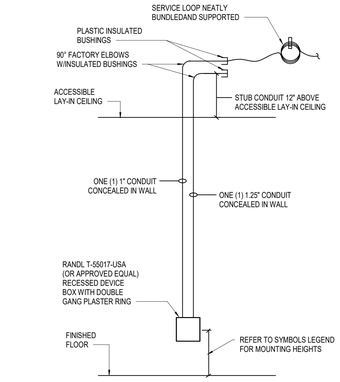
1. PROVIDE PULL STRINGS IN ALL CONDUITS. PULL STRINGS SHALL BE INSTALLED IN EMPTY AND FULL CONDUITS.
2. MOUNTING HEIGHTS TO BE INSTALLED ABOVE COUNTERS OR IN CASEWORK SHALL BE COORDINATED WITH THE ARCHITECT AND GENERAL CONTRACTOR IN THE FIELD PRIOR TO ROUGH-IN.
3. ALL CONDUITS AND FITTINGS SHALL BE EMT.

1-GANG TELECOMMUNICATIONS OUTLET ROUGH-IN DETAIL WITH FINISHED CEILING

SINGLE GANG ROUGH-INS SHALL BE INSTALLED FOR TELECOMMUNICATIONS OUTLETS WITH FOUR (4) DATA CABLES OR LESS AND AT LOCATIONS INDICATED IN DRAWINGS UNLESS NOTED OTHERWISE

NEW WALL CONSTRUCTION 1-GANG DATA/VIDEO ROUGH-IN DETAILS

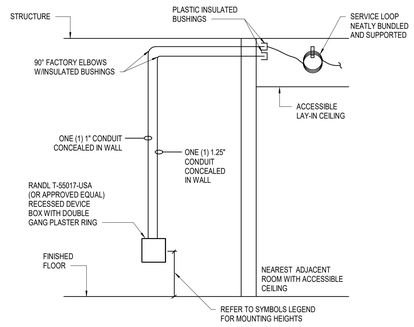
1 NOT TO SCALE



ROUGH-IN NOTES:

1. PROVIDE PULL STRINGS IN ALL CONDUITS. PULL STRINGS SHALL BE INSTALLED IN EMPTY AND FULL CONDUITS.
2. MOUNTING HEIGHTS TO BE INSTALLED ABOVE COUNTERS OR IN CASEWORK SHALL BE COORDINATED WITH THE ARCHITECT AND GENERAL CONTRACTOR IN THE FIELD PRIOR TO ROUGH-IN.
3. ALL CONDUITS AND FITTINGS SHALL BE EMT.

2-GANG TELECOMMUNICATIONS OUTLET ROUGH-IN DETAIL WITH ACCESSIBLE LAY-IN CEILING



ROUGH-IN NOTES:

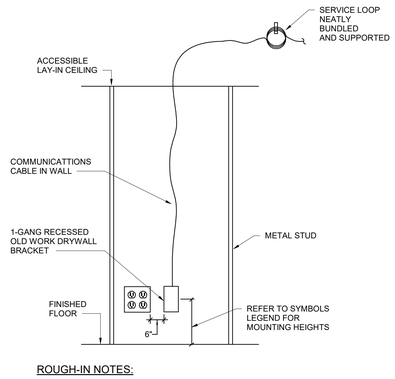
1. PROVIDE PULL STRINGS IN ALL CONDUITS. PULL STRINGS SHALL BE INSTALLED IN EMPTY AND FULL CONDUITS.
2. MOUNTING HEIGHTS TO BE INSTALLED ABOVE COUNTERS OR IN CASEWORK SHALL BE COORDINATED WITH THE ARCHITECT AND GENERAL CONTRACTOR IN THE FIELD PRIOR TO ROUGH-IN.
3. ALL CONDUITS AND FITTINGS SHALL BE EMT.

2-GANG TELECOMMUNICATIONS OUTLET ROUGH-IN DETAIL WITH FINISHED CEILING

SINGLE GANG ROUGH-INS SHALL BE INSTALLED FOR TELECOMMUNICATIONS OUTLETS WITH FOUR (4) DATA CABLES OR LESS AND AT LOCATIONS INDICATED IN DRAWINGS UNLESS NOTED OTHERWISE

NEW WALL CONSTRUCTION 2-GANG DATA/VIDEO ROUGH-IN DETAILS

2 NOT TO SCALE



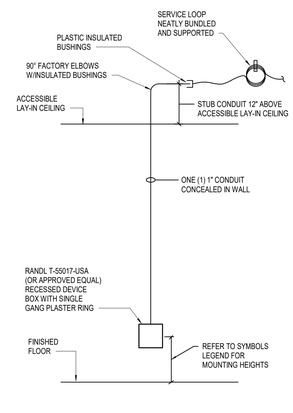
ROUGH-IN NOTES:

1. RECEPTACLES ARE SHOWN FOR COORDINATION ONLY. REFER TO ELECTRICAL DRAWINGS FOR QUANTITY, CIRCUITING, MOUNTING, AND ADDITIONAL REQUIREMENTS.
2. PROVIDE PULL STRINGS IN ALL CONDUITS. PULL STRINGS SHALL BE INSTALLED IN EMPTY AND FULL CONDUITS.
3. MOUNTING HEIGHTS TO BE INSTALLED ABOVE COUNTERS OR IN CASEWORK SHALL BE COORDINATED WITH THE ARCHITECT AND GENERAL CONTRACTOR IN THE FIELD PRIOR TO ROUGH-IN.

1-GANG TELECOMMUNICATIONS OUTLET ROUGH-IN DETAIL WITH ACCESSIBLE LAY-IN CEILING

EXISTING WALL RECESSED ROUGH-IN DETAIL

3 NOT TO SCALE



ROUGH-IN NOTES:

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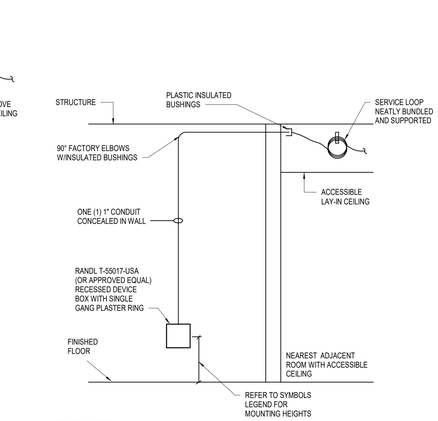
3. ALL CONDUITS AND FITTINGS SHALL BE EMT.

1-GANG TELECOMMUNICATIONS SYSTEMS OUTLET ROUGH-IN DETAIL WITH ACCESSIBLE LAY-IN CEILING



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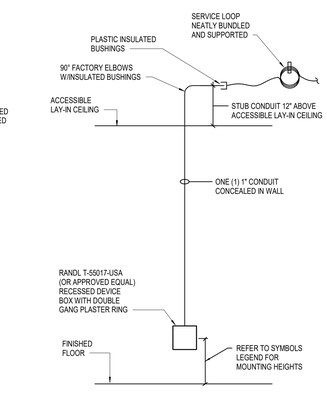
3. ALL CONDUITS AND FITTINGS SHALL BE EMT.

1-GANG TELECOMMUNICATIONS SYSTEMS OUTLET ROUGH-IN DETAIL WITH FINISHED CEILING

NEW WALL CONSTRUCTION 1-GANG SYSTEMS ROUGH-IN DETAILS

4 NOT TO SCALE



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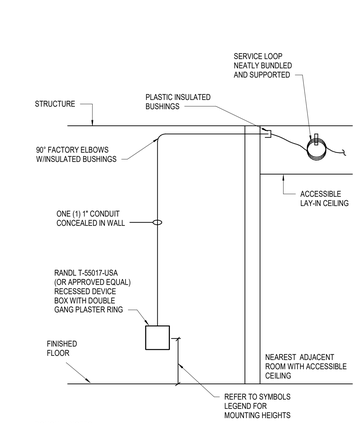
2-GANG TELECOMMUNICATIONS SYSTEMS OUTLET ROUGH-IN DETAIL WITH ACCESSIBLE LAY-IN CEILING



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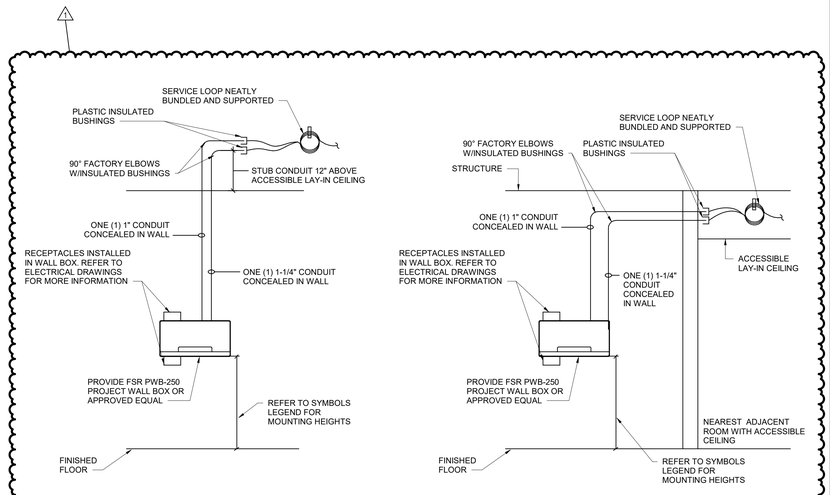
3. ALL CONDUITS AND FITTINGS SHALL BE EMT.

2-GANG TELECOMMUNICATIONS SYSTEMS OUTLET ROUGH-IN DETAIL WITH FINISHED CEILING

NEW WALL CONSTRUCTION 2-GANG SYSTEMS ROUGH-IN DETAILS

5 NOT TO SCALE



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VIDEO OUTPUT WALLBOX ROUGH-IN DETAIL WITH EXPOSED OR FINISHED CEILING

ROUGH-IN NOTES:

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VIDEO OUTPUT WALLBOX ROUGH-IN DETAIL WITH EXPOSED OR FINISHED CEILING

NEW WALL CONSTRUCTION VIDEO OUTLET ROUGH-IN DETAILS

6 NOT TO SCALE

krM Architecture+

RDG

kbsd CONSULTING

REVISIONS

1	02.05.25	ADDENDUM #2

01.06.2025
HAMILTON SOUTHEASTERN SCHOOL CORPORATION

23055 - FALL CREEK INTERMEDIATE RENOVATIONS

12011 Olio Rd. Fishers, IN 46037

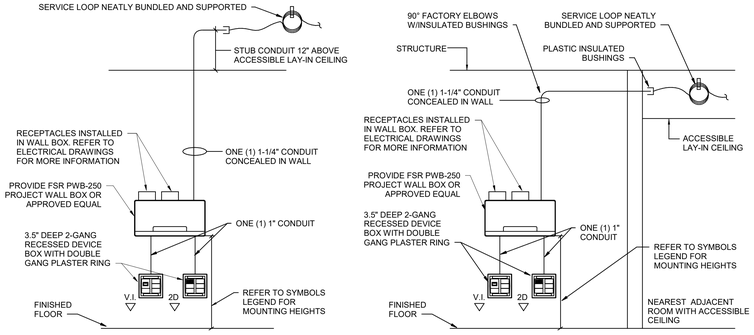
CONSTRUCTION DOCUMENTS

STEVEN BOGENSCHUTZ, JR. REGISTERED No. PE11800777 STATE OF INDIANA PROFESSIONAL ENGINEER 01.06.2025

CONSTRUCTION DOCUMENTS 01.06.2025
krM JOB NO. 23055
DRAWN BY EAG

DRAWING NAME
TECHNOLOGY DETAILS

DRAWING NO.
T5-1



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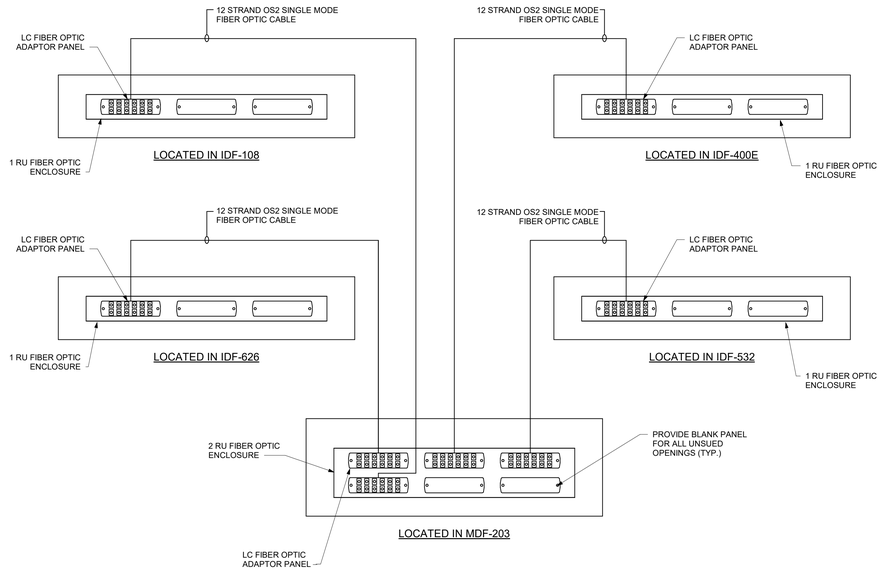
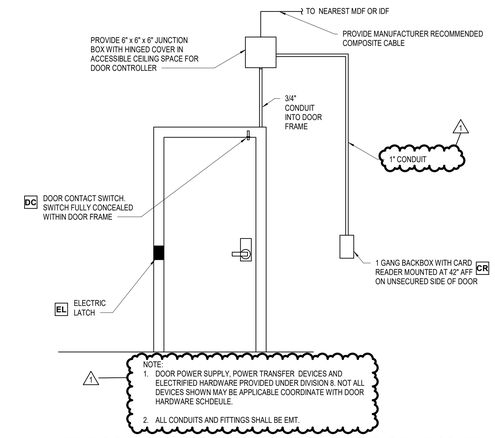
VIDEO OUTPUT WALLBOX ROUGH-IN DETAIL WITH EXPOSED OR FINISHED CEILING

GENERAL CONDUIT NOTE:
CONDUITS SHALL BE MAINTAINED UNTIL ACCESSIBLE CEILING SPACE. THERE SHALL BE NO FREE-AIR CABLING IN EXPOSED CEILING AREAS

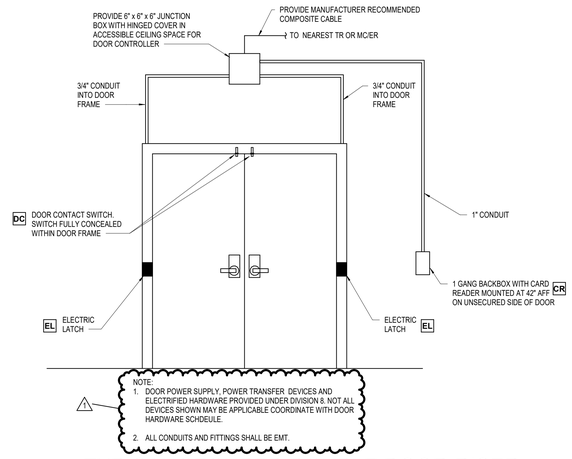
1 NEW WALL CONSTRUCTION VIDEO OUTLET WITH DATA & V.I. ROUGH-IN DETAILS
NOT TO SCALE



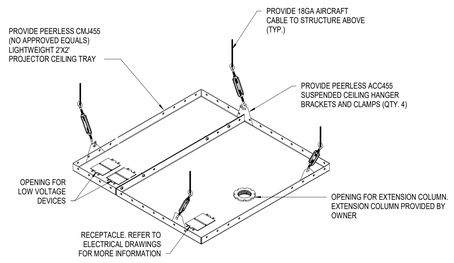
2 FIBER OPTIC RISER DIAGRAM
NOT TO SCALE



3 TYPICAL SECURED SINGLE DOOR RISER
NOT TO SCALE



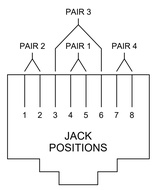
4 TYPICAL SECURED DOUBLE DOOR RISER
NOT TO SCALE



GENERAL NOTES:

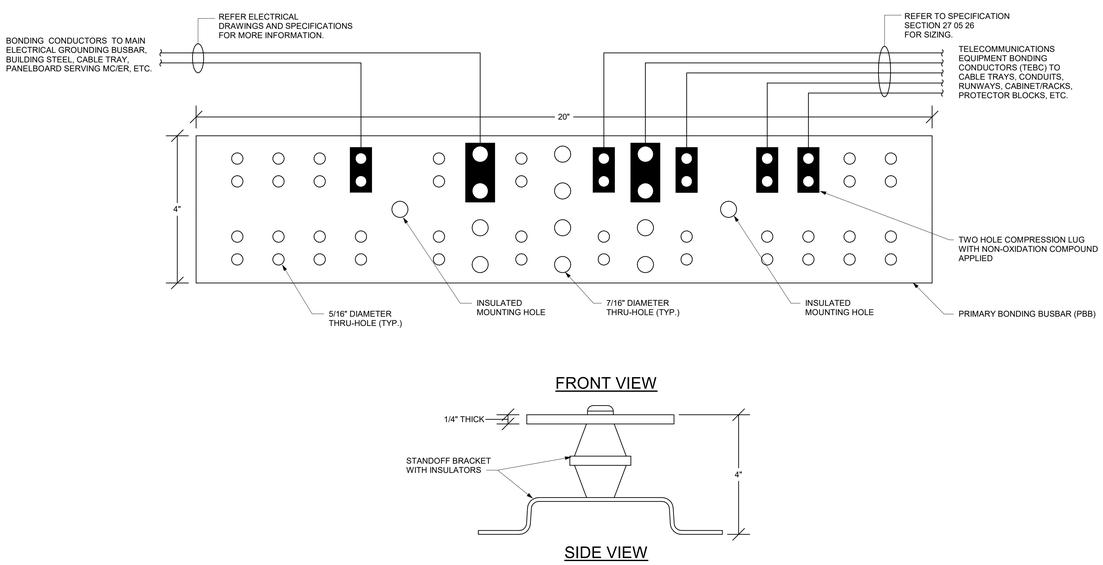
1. COORDINATE EXACT LOCATION OF CELING PAN WITH THE OWNER AND AV CONTRACTOR PRIOR TO INSTALLATION.
2. VIDEO PROJECTOR SHALL BE PROVIDED BY OWNER.

5 CEILING MOUNTED PROJECTOR PAN DETAIL
NOT TO SCALE

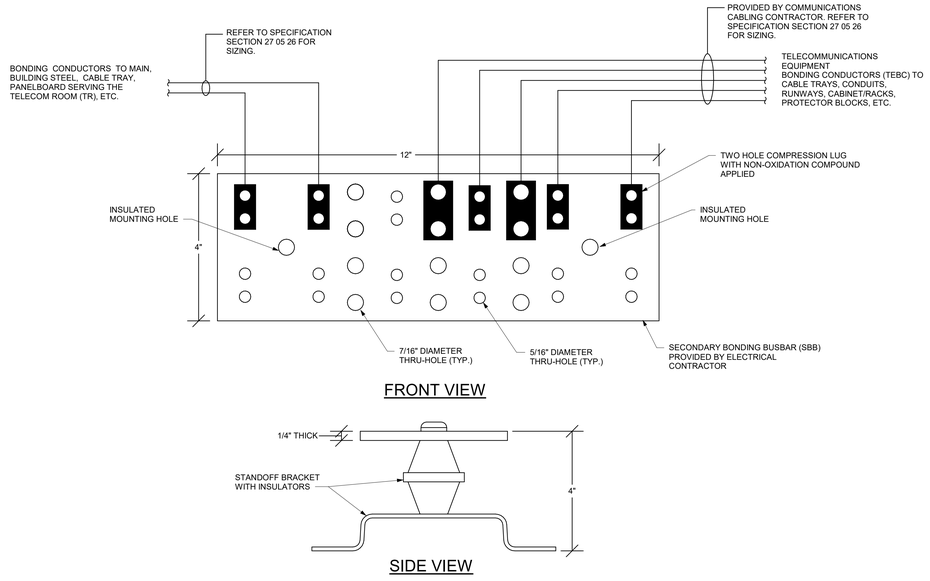


WIRE DIAGRAM FOR T568B	
RJ45 PIN #	**WIRE COLOR**
1	WHITE/ORANGE
2	ORANGE
3	WHITE/GREEN
4	BLUE
5	WHITE/BLUE
6	GREEN
7	WHITE/BROWN
8	BROWN

6 T568B JACK WIRING DETAIL
NOT TO SCALE



7 PRIMARY BONDING BUSBAR (PBB) GROUNDING DETAIL
NOT TO SCALE



8 SECONDARY BONDING BUSBAR (SBB) GROUNDING DETAIL
NOT TO SCALE

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1	02.05.25	ADDENDUM #2

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