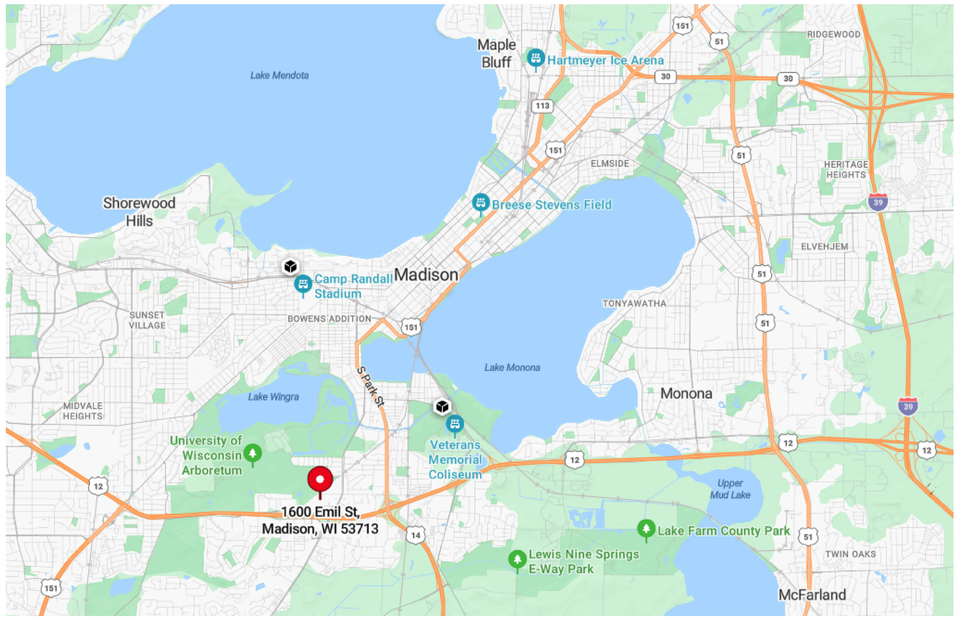
ENGINEERING OPERATIONS FACILITY LOCKER ROOM RENOVATION

CONTRACT #9659 MUNIS #14122

1600 EMIL STREET
MADISON, WI 53713
DATE: JULY 14, 2025

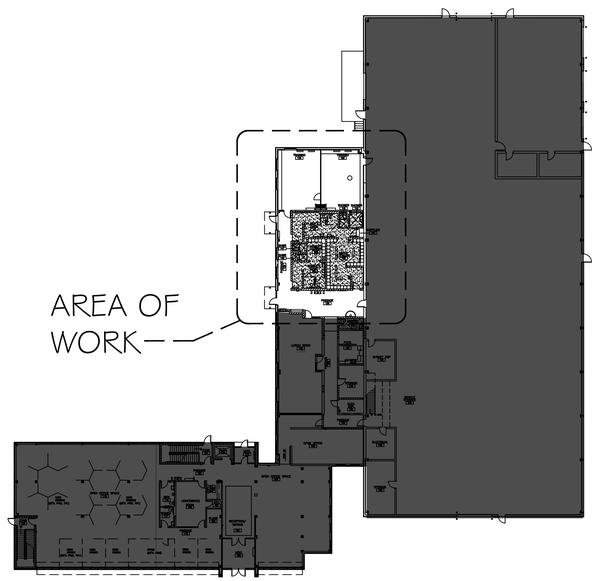


NORTH

PROJECT LOCATION

NORTH

SITE MAP



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ARCHITECTURAL DESIGNED BY:	STRUCTURAL DESIGNED BY:	MEP DESIGNED BY:
WISCONSIN AMY L SCANLON A-11453 MADISON WI ARCHITECT 7/14/25	WISCONSIN JUSTIN P STUCHLIK E-46972-6 MADISON WI PROFESSIONAL ENGINEER	WISCONSIN KAY U SCHINDEL E-41438 FITCHBURG WI PROFESSIONAL ENGINEER 6:37:25 PM07/14/2025
G1.0–AD1.1; A1.2–A6.2	S0.0–S3.0	FA001–EP200

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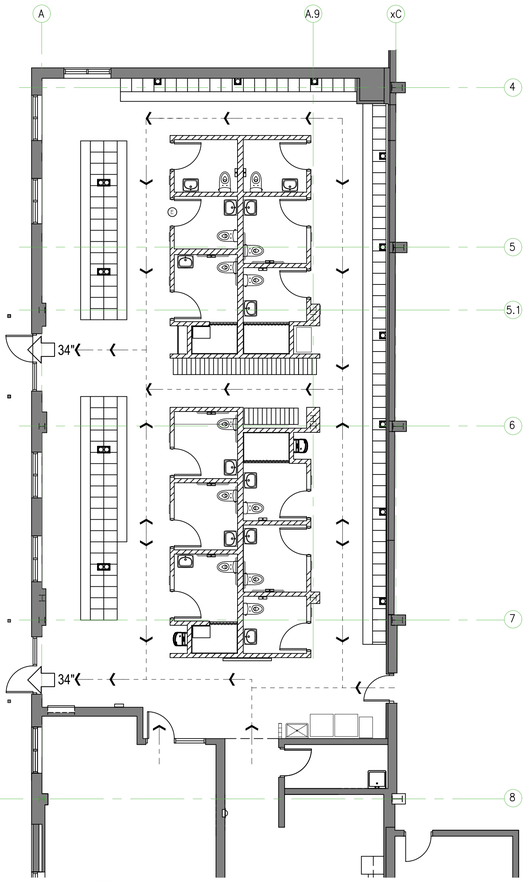
COVER SHEET

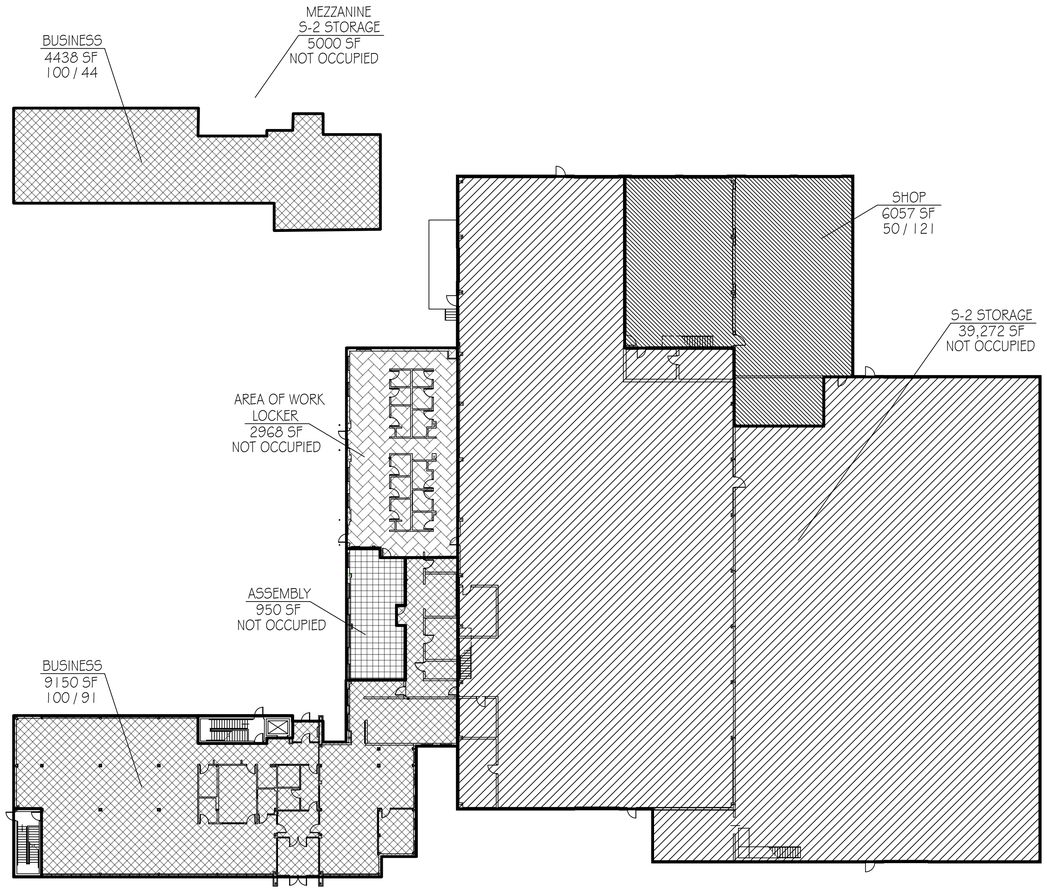
G1.0



NORTH

EGRESS PLAN

NO SCALE



NORTH

BUILDING CODE PLAN

NO SCALE

EGRESS PLAN LEGEND

- EXISTING WALLS
- NEW CMU WALLS
- EXIT PATH
- 34" EXIT CLEAR OPENING

CODE ANALYSIS

APPLICABLE BUILDING CODES:	WISCONSIN SPS361, 362, 366 2015 INTERNATIONAL BUILDING CODE 2015 INTERNATIONAL EXISTING BUILDING CODE
ACCESSIBILITY CODE:	2009 ICC/ANSI: A117.1
FIRE SAFETY CODE:	WISCONSIN SPS 314 2012 NFPA 1 2024 INTERNATIONAL FIRE CODE MADISON GENERAL ORDINANCES, CHAPTER 34
PLUMBING CODE:	WISCONSIN SPS 381 – 387 2015 UNIFORM PLUMBING CODE
ELECTRICAL CODE:	WISCONSIN SPS 316 2017 NEC NFPA 70
MECHANICAL CODE:	WISCONSIN SPS 364 2015 INTERNATIONAL MECHANICAL CODE
ENERGY CODE:	WISCONSIN SPS 363 2015 INTERNATIONAL ENERGY CONSERVATION CODE
OCCUPANCY CLASSIFICATION	B OCCUPANCY INCLUDES OFFICES AND ASSOCIATED WORKSPACES (CONFERENCE ROOM, BREAK ROOM, LOCKER ROOM, RESTROOMS, AND STORAGE) S-2 OCCUPANCY INCLUDES LOW-HAZARD VEHICLE PARKING (OPEN OR ENCLOSED) AND ASSOCIATED SUPPORT SPACES (SHOPS AND STORAGE) – NO WORK
CONSTRUCTION TYPE	IIB
ALTERATION	LEVEL 2 ALTERATION
SPRINKLERED	YES PER NFPA 13
FIRE ALARM	YES
NUMBER OF STORIES	2 TOTAL
BUILDING AREA	2,968 SF (AREA OF ALTERATION) ATTACHED 14,538 SF B OFFICE AREA – NO WORK ATTACHED 50,329 SF S-2 GARAGES (INCLUDES STORAGE MEZZANINES) – NO WORK
TOTAL BUILDING AREA	67,835 SF

TOTAL BUILDING OCCUPANT LOAD	256
OCCUPANT LOAD IN AREA OF ALTERATION	59
CUMULATIVE OCCUPANT LOAD IN AREA OF ALTERATION	78
TOTAL EXITS REQUIRED / PROVIDED FOR BUILDING	3 / 11
EXITS REQUIRED / PROVIDED IN AREA OF ALTERATION	1 / 2
TOTAL EXIT DOOR WIDTH IN BUILDING REQUIRED / PROVIDED	78.6" / 330"
EXIT DOOR WIDTH IN AREA OF ALTERATION REQUIRED / PROVIDED	17.4" / 68"

PLUMBING FIXTURE COUNTS:

THE BUILDING OCCUPANT LOAD IS NOT BEING CHANGED BY THE PROPOSED ALTERATION WORK. THE EXISTING LOCKER ROOM AND RESTROOM SPACES ARE BEING RENOVATED.

PLUMBING FIXTURE COUNTS RELATE TO THE AREA OF ALTERATION AND NOT TO THE ENTIRE BUILDING.

	WATER CLOSET			URINAL	LAVATORY			SHOWER			DF	SINK
	M	W	N	M	M	W	N	M	W	N		
EXISTING	2	2	0	2	2	2	0	2	2	0	2	1
PROPOSED	0	0	12	0	0	0	12	0	0	4	2	1
CODE	2	2	0	0	2	2	0	0	0	0	1	0

ENTIRE BUILDING

	WATER CLOSET			URINAL	LAVATORY			SHOWER			DF	SINK
	M	W	N	M	M	W	N	M	W	N		
EXISTING	2	2	4	3	2	2	4	2	2	0	3	1
PROPOSED	0	0	16	1	0	0	16	0	0	4	4	1
CODE			7	0			5	0	0	0	2	0

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BLDG CODE AND EGRESS

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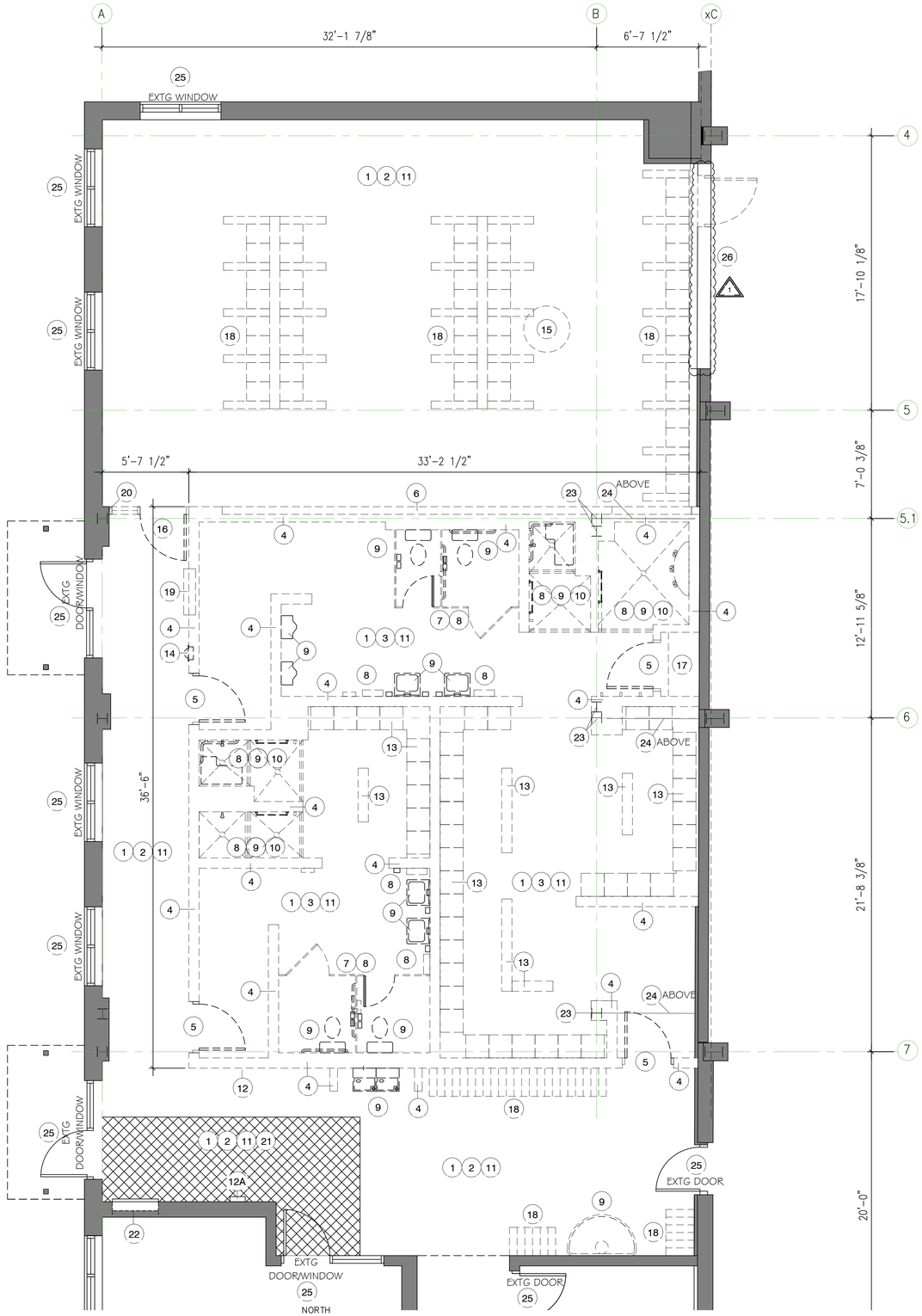

DEMOLITION FLOOR PLAN

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

DEMOLITION KEY NOTES

1. REMOVE CONCRETE FLOOR COMPLETE
2. REMOVE SUSPENDED CEILING SYSTEMS COMPLETE
3. REMOVE GYP CEILING SYSTEM COMPELTE
4. REMOVE MASONRY WALL AND FOOTING/THICKENED SLAB
5. REMOVE DOOR & FRAME
6. REMOVE FRAME PARTITION TO ROOF STRUCTURE COMPLETE
7. REMOVE TOILET PARTITIONS COMPLETE
8. REMOVE TOILET ROOM ACCESSORIES
9. PLUMBING FIXTURES TO BE REMOVED BY PLUMBING TRADE.
10. FLOOR DRAIN TO BE REMOVED BY PLUMBING TRADE.
11. REMOVE VINYL BASE COMPLETE
12. OWNER TO REMOVE TIME CLOCK & RELOCATE PRIOR TO CONSTRUCTION.

12A. TIME CLOCK. PROTECT DURING ENTIRE CONSTRUCTION

13. REMOVE LOCKERS, BENCHES AND GYP SOFFIT SYSTEM COMPLETE. CONTRACTOR TO SALVAGE (12) SHORT LOCKERS FOR REUSE.
14. OWNER TO REMOVE FIRE EXTINGUISHER. CONTRACTOR TO SALVAGE FIRE EXTINGUISHER CABINET FOR REUSE
15. OWNER WILL REMOVE MANHOLE TRAINING STRUCTURE TO BELOW FLOOR & CAP AT EXTERIOR, PRIOR TO CONSTRUCTION.
16. REMOVE DOOR & FRAME AND SIDELIGHT
17. REMOVE SHELVING COMPLETE
18. OWNER TO REMOVE LOCKERS PRIOR TO CONSTRUCTION
19. REMOVE WALL HEATER
20. AFTER DEMO PATCH GYP WALL TO MATCH EXISTING
21. PROTECTED ENTRY AND EXIT PATH. COORDINATE WITH OWNER
22. EXISTING HEATING UNIT TO REMAIN - PROTECT
23. EXISTING COLUMNS TO BE RELOCATED AND MODIFIED - SEE S1.1
24. EXISTING BEAM TO BE REMOVED - SEE S1.1
25. EXISTING DOOR/WINDOWS TO REMAIN. PROTECT DURING ENTIRE CONSTRUCTION.
26. REMOVE EXISTING INFILL, DOOR AND DOOR FRAME, AND OVERHEAD DOOR FRAME.

DEMOLITION LEGEND

- INDICATES ITEM TO BE REMOVED SEE KEY NOTES
- EXISTING WALLS TO REMAIN
- PROTECTED ENTRY AND EXIT PATH COORDINATE WITH OWNER

GENERAL NOTES

1. THIS DEMOLITION PLAN HAS BEEN PREPARED TO ASSIST THE CONTRACTOR IN DETERMINING THE SCOPE OF DEMOLITION WORK TO BE INCLUDED IN THIS PROJECT. IT IS NOT INTENDED TO BE A COMPLETE INDICATION OF ALL DEMOLITION WORK REQUIRED TO COMPLETE THE PROJECT. THE CONTRACTOR SHOULD REVIEW ALL DRAWINGS AND SPECIFICATIONS, INCLUDING DEMOLITION SHOWN FOR OTHER TRADES, AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, IN ORDER TO DETERMINE THE SCOPE OF DEMOLITION WORK.
2. HATCHED AREA IS REQUIRED FOR STAFF ENTRANCE AND EXIT. COORDINATE WITH OWNER THE AVAILABILITY OF THE AREA DURING DEMOLITION AND CONSTRUCTION.
3. PROTECT IN PLACE, ALL FINISHED SURFACES THAT WILL REMAIN, DURING THE ENTIRE CONSTRUCTION PERIOD.
4. INSTALL DUST CONTROL PROTECTION ON ALL OPENINGS AND AT THE CEILING PLENUM TO LIMIT TRANSMISSION OF DUST AND DEBRIS.
5. TURN OFF AHU DURING ANY WORK THAT CREATES DUST. CLEAN DUST FROM WORK AREA BEFORE RUNNING AHU.
6. WHERE ITEMS ARE REMOVED FROM SURFACES THAT REMAIN, FILL ALL HOLES AND PATCH ALL SURFACES TO MATCH SURROUNDING CONSTRUCTION. MATCH MATERIALS AND APPEARANCE.
7. ALL FURNISHINGS AND MOVABLE ITEMS WILL BE REMOVED BY THE OWNER.
8. ALL DEMOLITION ITEMS TO BE PROPERLY RECYCLED OR DISPOSED OF BY THE CONTRACTOR PER APPROVED REUSE AND RECYCLING PLAN.

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DEMO FLOOR

AD1.1

DESIGN CRITERIA

1. STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH IBC 2015 AND SUBSEQUENT REFERENCE STANDARDS.
2. RISK CATEGORY:
3. SUPERIMPOSED DEAD LOADS:
   - ROOF TYPICAL 15 PSF
4. SUPERIMPOSED LIVE LOADS: LIVE LOAD REDUCTION USED AS ALLOWED PER CODE
   - ROOF TYPICAL 20 PSF
5. SNOW:
   - GROUND SNOW 30 PSF
   - SNOW EXPOSURE FACTOR
   - THERMAL FACTOR
   - IMPORTANCE FACTOR
   - FLAT-ROOF SNOW 21 PSF
   - DESIGN SNOW 22 PSF
6. LATERAL LOAD RESISTING SYSTEM IS NOT IMPACTED BY THIS PROJECT.

GENERAL

1. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL AND PROPERTY ON AND AROUND THE JOBSITE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, GUYS, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY INANCES. TEMPORARY BRACING, SHORING, GUYING, ETC. SHALL AVOID EXCESSIVE STRESSES AND HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. THE STRUCTURE SHOULD NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK THAT DEVIATES FROM OR IS PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR THE DESIGN PROFESSIONALS.
3. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND FOR DETERMINING SEQUENCES OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKERS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO: FALSEWORK, FORMWORK, STAGING, BRACING, AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
4. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO BID SUBMITTAL, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
5. STRUCTURAL SUBSTITUTIONS MAY BE ALLOWED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. SUPPLIER SHALL PROVIDE SIGNED AND SEALED DESIGN CALCULATIONS OR SUITABLE PRODUCT LITERATURE FOR THE COMPONENTS. ALL PRODUCT SUBSTITUTIONS SHALL INCLUDE A CODE EVALUATION REPORT SPECIFIC TO THE BUILDING CODE LISTED IN THE DESIGN CRITERIA.
6. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DESIGN.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
8. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH ARCHITECT .
9. TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
10. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR DETAILS, CONDITIONS, PITS, TRENCHES, PADS, DEPRESSIONS, ROOF / FLOOR OPENINGS, TOP OF WALL ELEVATIONS, STAIRS, SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS. FOR THESE NON-STRUCTURAL ELEMENTS SHOWN ON STRUCTURAL DRAWINGS, THEY ARE FOR GENERAL INFORMATION ONLY.
11. COORDINATE FLOOR FINISH INCLUDING, BUT NOT LIMITED TO THE "FLATNESS" AND "LEVELNESS" REQUIREMENTS, WITH THE FLOOR FINISH CONTRACTOR. PROVIDE UNDERLAYMENT / TOPPING WHERE REQUIRED TO PROVIDE A SURFACE ACCEPTABLE FOR INSTALLATION OF FLOOR FINISHES. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
12. NO HOLES, NOTCHES, BLOCK-OUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
13. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, CONTRACTOR SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH FIELD CONDITIONS, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE PROPOSAL SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK.
14. ELEMENTS SUCH AS NON-BEARING PARTITIONS, ETC. ATTACHED TO AND/OR SUPPORTED BY THE STRUCTURE SHALL TAKE INTO ACCOUNT DEFLECTIONS AND OTHER STRUCTURAL MOVEMENTS. THE STRUCTURAL FRAMING WAS DESIGNED TO LIMIT DRIFT AND DEFLECTION OF THE STRUCTURAL SYSTEM TO LESS THAN THE MAXIMUM PERMITTED DEFLECTIONS LISTED IN THE BUILDING CODE. THE CONTRACTOR SHALL COORDINATE THE WORK OF OTHER TRADES TO ACCOMMODATE THESE DEFLECTIONS AND TO ACCOMMODATE CONSTRUCTION TOLERANCES.

SUBMITTALS

1. SUBMITTALS ARE:
   - 1.1. CONCRETE MIX DESIGNS
   - 1.2. MATERIAL PRODUCT DATA FOR STRUCTURAL MATERIALS
   - 1.3. CONCRETE AND MASONRY REINFORCING
   - 1.4. STEEL FABRICATION AND MISCELLANEOUS METALS
2. SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT . EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ARCHITECT SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE DESIGN PROFESSIONALS.
3. SUBMITTALS SHALL BE REVIEWED BY THE DESIGN PROFESSIONALS FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE DESIGN PROFESSIONALS ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.
4. FOR ADDITIONAL INFORMATION ON REQUIRED SUBMITTALS, SEE INDIVIDUAL MATERIAL SECTIONS.

EXISTING CONDITIONS / DEMOLITION

1. EXISTING CONDITIONS:
   - 1.1. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM EXISTING DRAWINGS DATED JULY 1992 BY POTTER LAWSON ARCHITECTS.
   - 1.2. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM FIELD TAKE-OFF BY IMEG AS PERMITTED BY ACCESS RESTRICTIONS DURING DESIGN.
   - 1.3. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO VERIFY EXISTING INFORMATION, DIMENSIONS, AND SIZES AS REQUIRED TO COMPLETE THEIR WORK. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ARCHITECT SO CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT .
2. ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY TO PREVENT DAMAGE TO EXISTING ELEMENTS WHICH ARE TO REMAIN.
3. ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
4. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS OF EXISTING STRUCTURE AND SITES THAT ARE AFFECTED BY NEW WORK BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
5. ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING, "(E)". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS UON. FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.
6. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.
7. SHORING:
   - 1.1. SHORING DRAWINGS AND CALCULATIONS BY OTHERS, AS REQUIRED, ARE NOT INCLUDED IN THIS PACKAGE. SHORING DRAWINGS AND STRUCTURAL CALCULATIONS SHALL BE PROVIDED BY CONTRACTOR FOR REVIEW.
   - 1.2. SHORING OF EXISTING BUILDINGS OR IMPROVEMENTS SHALL BE PROVIDED BEFORE EXISTING SUPPORTING WALLS, SLABS, FOUNDATIONS, PAVEMENT, ETC. ARE CUT, MODIFIED, OR REMOVED.

EARTHWORK

1. FOUNDATION DESIGN IS IN ACCORDANCE WITH THE BUILDING CODE ALLOWABLE BEARING PRESSURES. NO NEW GEOTECHNICAL REPORT HAS BEEN PROVIDED BY THE OWNER FOR THIS PROJECT.
2. A GEOTECHNICAL ENGINEER SHALL BE EMPLOYED TO VERIFY THAT THE PRESUMED ALLOWABLE BEARING PRESSURE WILL BE ACHIEVED PRIOR TO CONSTRUCTION. THAT ENGINEER SHALL DEVELOP AND ENSURE IMPLEMENTATION OF A SITE SUBGRADE PREPARATION PROGRAM AS REQUIRED TO ACHIEVE THE PRESUMED SOIL BEARING PRESSURE. FOOTING AND SLAB-ON-GRADE SUBGRADE PREPARATION SHALL BE IN COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
3. ANY TESTS, INSPECTIONS, FIELD OBSERVATIONS, OR APPROVAL FROM THE GEOTECHNICAL ENGINEER SHALL BE PERFORMED PRIOR TO PLACEMENT OF CONCRETE. ALTERATIONS TO SITE PREPARATION OR GRADING SHALL BE REPORTED TO THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

SHALLOW FOUNDATIONS

1. SHALLOW FOUNDATIONS SHALL HAVE THE FOLLOWING MINIMUM NET ALLOWABLE SERVICE LOAD BEARING PRESSURES:

   SERVICE LOAD BEARING PRESSURES:

   NET ALLOWABLE BEARING PRESSURE 1500 PSF
2. FOUNDATION ELEVATIONS SHOWN INDICATE LOCATIONS WHERE ADEQUATE SOIL BEARING PRESSURE IS ANTICIPATED. IF INADEQUATE BEARING CAPACITY IS ENCOUNTERED, CONTACT STRUCTURAL ENGINEER FOR RESOLUTION. BEARING ELEVATIONS ARE ESTIMATED FROM SOIL BORING DATA INDICATED IN THE GEOTECHNICAL REPORT. DETERMINATION OF FINAL BEARING ELEVATIONS AND FIELD VERIFICATION OF ALLOWABLE BEARING PRESSURE SHALL BE MADE BY AN EXPERIENCED, QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PLACING FOUNDATIONS.
3. FOUNDATIONS SHALL BE PLACED ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL, AND CLEAN AND FREE OF LOOSE DEBRIS AND STANDING WATER AT TIME OF CONCRETE PLACEMENT.
4. WHERE FOUNDATIONS BEAR ON ROCK, FOUNDATIONS SHALL BEAR ON THAT ROCK OR ON LEAN CONCRETE FILL.
5. NEW FOOTING BEARING ELEVATIONS SHALL MATCH ADJACENT EXISTING FOOTING BEARING ELEVATIONS WHERE OCCURRING UON.
6. 7.THE SLOPE BETWEEN THE LOWER EDGES OF ADJACENT FOOTINGS SHALL NOT EXCEED 45 DEGREES WITH THE HORIZONTAL UON IN THE GEOTECHNICAL REPORT. CONTACT STRUCTURAL ENGINEER WHERE ADEQUATE SLOPE IS NOT ACHIEVED.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE UON.
2. CONCRETE MATERIALS SHALL CONFORM TO:

PORTLAND LIMESTONE CEMENT	ASTM C595, TYPE IL
FLY ASH	ASTM C618, TYPE C OR F
SLAG CEMENT	ASTM C989
FINE AND COARSE AGGREGATE	ASTM C33
WATER	POTABLE
AIR-ENTRAINING ADMIXTURE	ASTM C260
WATER REDUCING ADMIXTURE	ASTM C4943.

3. CONCRETE STRENGTHS SHALL CONFORM TO:

LOCATION	f'c AT 28 DAYS (PSI)	MAX PERMITTED W/C	EXPOSURE CLASS
ALL FOUNDATION CONCRETE UON	3000	0.55	F0
SLAB-ON-GRADE UON	3000	0.55	

NOMINAL MAXIMUM AGGREGATE SIZE	REQUIRED AIR CONTENT PER EXPOSURE CATEGORY	
	F1	F2
1"	4.5%	6%

4. AIR ENTRAINMENT:
   1. CONCRETE IN ALL LOCATIONS SHALL BE AIR ENTRAINED WITH THE APPROPRIATE PERCENTAGE AIR CONTENT LISTED IN THE TABLE ABOVE AS APPLICABLE FOR THE INDICATED EXPOSURE CLASS AND NOMINAL MAXIMUM AGGREGATE SIZE IN THE CONCRETE MIX. THE PERMITTED TOLERANCE ON THE REQUIRED AIR CONTENT IS ±1.5%.
   2. AIR ENTRAINMENT SHALL CONFORM TO UL RATING REQUIREMENTS FOR FIRE RESISTANCE.
5. REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE:

CONCRETE ELEMENT	REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE*
ALL CONCRETE UON	1"

   *SMALLER NOMINAL MAXIMUM COARSE AGGREGATE SIZE SHALL BE USED WHERE REQUIRED PER ACI 318.
6. ALL FOUNDATION ELEMENTS SHALL BE CENTERED UNDER WALLS, PIERS, OR COLUMNS UON.
7. "ROUGH JOINTS" ARE JOINTS ROUGHENED TO AN AMPLITUDE OF 1/4" AND FREE AND CLEAN OF LAITANCE. PROVIDE ROUGH JOINTS AT ALL CONSTRUCTION JOINTS UON.
8. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF ALL CONSTRUCTION JOINTS WHERE JOINTS ARE NOT INDICATED ON THE DRAWINGS.
9. JOINTS ABUTTING EXISTING CONCRETE CONSTRUCTION SHALL BE ROUGH JOINTS UON.
10. PROVIDE TEMPLATES TO SET EMBEDDED ITEMS.
11. SLOPE SLABS TO DRAINS. SEE ARCHITECTURAL AND MEP DRAWINGS FOR DRAIN LOCATIONS AND SLOPE REQUIREMENTS. SLAB THICKNESSES SHOWN ON DRAWINGS ARE MINIMUMS.
12. AFTER CONCRETE IS PLACED, IN NO CASE SHALL THE SUPERIMPOSED CONSTRUCTION LOADS BE GREATER THAN SPECIFIED DESIGN LIVE LOADS UNLESS THE WORK IS SHORED.
13. ALL FORMWORK, SHORING, AND RESHORING SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER LICENSED IN THE PROJECT'S JURISDICTION. ALL SUBMISSIONS SHALL BE SIGNED AND SEALED.
14. REINFORCING STEEL SHALL NOT BE DAMAGED WHEN DRILLING CONCRETE.
15. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE TESTING AND INSPECTION AGENCY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S. SUBMIT TEST DATA ON EACH PROPOSED MIX FOR REVIEW IN ACCORDANCE WITH THE APPLICABLE CODE. MIX DESIGNS SUBMITTED WITHOUT THE REQUIRED TEST DATA WILL BE RETURNED WITHOUT REVIEW.
16. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, LOCATIONS, AND DETAILS OF ALL ARCHITECTURAL FEATURES IN THE CONCRETE. SEE ARCHITECTURAL DRAWINGS AND PROJECT SPECIFICATIONS FOR REQUIREMENTS FOR ALL CONCRETE FINISHES.

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GENERAL NOTES

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STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM STANDARDS AS NOTED BELOW:

WIDE FLANGE AND WT SHAPES	ASTM A992	Fy=50 KSI
CHANNEL SHAPES	ASTM A992	Fy=50 KSI
ANGLE SHAPES	ASTM A572	Fy=50 KSI
PLATES	ASTM A572	Fy= 50 KSI
ANCHOR RODS	ASTM F1554, GR 36	Fy= 36 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A325	Fu= 120 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS FOR HIGH STRENGTH BOLTS	ASTM F436	
WELDING	AWS D1.1, 70KSI FILLER METAL	

3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". SEE DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.
4. ALL BOLTED CONNECTIONS SHALL BE GRADE A325N BEARING TYPE BOLTS UON. ALL BOLTS SHALL BE INSTALLED TO A MINIMUM SNUG TIGHT CONDITION UON.
5. WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE WELD LENGTH IS NOT SPECIFIED, PROVIDE WELD ALONG ENTIRE INTERSECTION OF THE JOINED PARTS. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM WELD SIZE AS SPECIFIED IN AISC 360, TABLE J2.4.
6. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING INDICATED. WELDERS SHALL HAVE BEEN RECENTLY QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS).
7. SPLICING OF STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE, AND CONNECTION TO BE MADE.
8. MATCH EXISTING FINISH ON ALL STRUCTURAL STEEL NOT COVERED WITH CONCRETE, FIREPROOFING, MASONRY, OR AT CONTACT SURFACES AT HIGH STRENGTH BOLTS.
9. .CUTS, HOLES, OPENINGS, ETC. REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OR TORCHING OF HOLES, CUTS, AND OTHER FIELD MODIFICATIONS SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.
10. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC. FOR MISCELLANEOUS STEEL NOT DETAILED SPECIFICALLY ON THE STRUCTURAL DRAWINGS.
11. GROUT FOR BASE AND BEARING PLATES SHALL BE A NON-SHRINK, NON-METALLIC PRODUCT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 7000 PSI. INSTALL GROUT PRIOR TO APPLYING SIGNIFICANT LOADING TO MEMBER.
12. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR REVIEW AND APPROVAL BEFORE FABRICATION.

POST-INSTALLED ANCHORS

1. BASIS OF DESIGN ANCHORS:

INSTALLATION CONDITION	ANCHOR TYPE
EXPANSION ANCHORS INTO CONCRETE	HILTI KWIK BOLT TZ2 (ESR-4266)
SCREW ANCHORS > 1/4"Ø INTO CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)
ADHESIVE ANCHORS INTO CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 AND HIT-Z ROD (ESR-4868)
EXPANSION ANCHORS INTO GROUTED CMU	HILTI KWIK TZ2 (ESR-4561)
SCREW ANCHORS > 1/4"Ø INTO GROUTED CMU	HILTI KWIK HUS-EZ (ESR-3056)
SCREW ANCHORS = 1/4"Ø INTO CONCRETE OR GROUTED CMU	HILTI KWIK-CON II+
ADHESIVE ANCHORS IN GROUTED CMU OR SOLID BRICK	HILTI HIT-HY 270 SYSTEM w/ HAS-E THREADED ROD (ESR-4143)
ADHESIVE ANCHORS INTO HOLLOW CMU, BRICK OR MULTI-WYTHE BRICK WALLS	HILTI HIT-HY 270 SYSTEM w/ HAS-E THREADED ROD AND APPROPRIATE SCREEN TUBE (ESR-4144)
ADHESIVE DOWELING FOR ANCHORING REINFORCING BARS INTO (E) CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 ADHESIVE (ESR-4868) or HILTI SAFE-SET SYSTEM w/ HIT-RE 500 V3 ADHESIVE (ESR-3814)
POWDER-ACTUATED FASTENERS (PAF's) IN CONCRETE	HILTI X-U FASTENERS (ESR-2269)

2. ALTERNATIVE ANCHORS MAY BE USED IF APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION VERIFYING PROPOSED ALTERNATIVE ANCHORS WILL PROVIDE THE SAME OR GREATER LOAD-CARRYING CAPACITY AS THE SPECIFIED ANCHORS. THE CONTRACTOR SHALL SUBMIT EVALUATION REPORTS. EACH ANCHOR CONFIGURATION SHALL BE EVALUATED AND COMPARED TO THE SPECIFIED ANCHOR.
3. CRACKED CONCRETE IS ASSUMED FOR ALL ANCHORAGE DESIGN CONDITIONS UNLESS IT CAN BE DEMONSTRATED THROUGH ENGINEERING ANALYSIS THAT THE CONCRETE REMAINS UNCRACKED DURING THE GOVERNING ULTIMATE LOAD STATE.
4. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
5. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER SHALL RECEIVE DOCUMENTATION VERIFYING ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.
6. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPROVED CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATIONS OTHER THAN THE ACI/CRSI ADHESIVE INSTALLER CERTIFICATION WILL BE DETERMINED BY THE STRUCTURAL ENGINEER.
7. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENGTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED FOR A MINIMUM OF 21 DAYS.
8. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
9. POST-INSTALLED ANCHORS AND DOWELS SHALL BE INSTALLED IN A MANNER THAT DOES NOT DAMAGE REINFORCING STEEL, CONDUIT OR OTHER EMBEDDED ITEMS. REINFORCING STEEL SHALL BE LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. PLATES AND BRACKETS THROUGH WHICH ANCHORS WILL BE INSTALLED SHALL NOT BE FABRICATED UNTIL AFTER REINFORCING STEEL IS LOCATED AND ANCHOR LOCATIONS ARE ADJUSTED. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER TO OBTAIN ALTERNATIVE ANCHOR LAYOUT WHERE ANCHORS MUST BE RELOCATED TO AVOID INTERFERENCE WITH REINFORCING STEEL.
10. ADHESIVE ANCHORING SYSTEMS ARE PERMITTED TO BE USED FOR INSTALLATION OF REINFORCING STEEL INTO EXISTING CONCRETE ONLY WHERE SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS OR WITH APPROVAL FROM THE STRUCTURAL ENGINEER. LOCATIONS WHERE REINFORCING STEEL WAS INCORRECTLY PLACED OR MISSED SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
11. WHERE POST-INSTALLED MECHANICAL ANCHOR EMBEDMENT DEPTHS ARE SPECIFIED, THOSE DEPTHS ARE THE REQUIRED MINIMUM NOMINAL EMBEDMENT DEPTHS. WHERE MECHANICAL ANCHOR EMBEDMENT DEPTHS ARE NOT INDICATED, THE ANCHORS SHALL BE INSTALLED TO THE MAXIMUM EMBEDMENT DEPTH NOTED IN THE MANUFACTURER'S PRODUCT TECHNICAL GUIDE.
12. ADHESIVE ANCHORS SHALL BE INSTALLED WITH A MINIMUM 6" EMBEDMENT DEPTH UON.

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GENERAL NOTES

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GENERAL (2015)

1. THE STRUCTURAL ENGINEER DOES NOT PROVIDE INSPECTIONS OF CONSTRUCTION. STRUCTURAL ENGINEER MAY MAKE PERIODIC OBSERVATIONS OF THE CONSTRUCTION. SUCH OBSERVATIONS SHALL NOT REPLACE REQUIRED INSPECTIONS BY THE GOVERNING AUTHORITIES OR SERVE AS " SPECIAL INSPECTIONS" AS MAY BE REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
2. SEE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR TESTING AND INSPECTION REQUIREMENTS OF NON-STRUCTURAL COMPONENTS.
3. DUTIES OF THE INSPECTION AGENCY PER IBC CHAPTER 17:
   a. SUBMIT A PROPOSED TESTING AND INSPECTION PROGRAM TO THE OWNER, THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF WORK.
   b. PERFORM ALL TESTING AND INSPECTION REQUIRED PER APPROVED TESTING AND INSPECTION PROGRAM.
   c. FURNISH INSPECTION REPORT TO THE BUILDING OFFICIAL, THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR. THE REPORTS SHALL BE COMPLETED AND FURNISHED WITHIN 48 HOURS OF INSPECTED WORK.
   d. SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTION AGENCY'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
4. SPECIAL INSPECTIONS AND TESTS ARE REQUIRED FOR MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN CHAPTER 17 OF THE IBC OR IN STANDARDS REFERENCED BY THE IBC. THESE ITEMS INCLUDE:
   a. POST-INSTALLED ANCHORS – INSPECTION
5. THE FOLLOWING WORK SHALL BE INSPECTED BY THE SPECIAL INSPECTOR UNLESS SPECIFICALLY WAIVED BY THE BUILDING OFFICIAL.

CONCRETE CONSTRUCTION (2015)

VERIFICATION AND TESTING	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
INSPECT REINFORCEMENT AND VERIFY PLACEMENT	-	X	ACI 318: CH 20, 25.2, 25.3, 26.5.1-26.5.3	1908.4
INSPECT ANCHORS CAST IN CONCRETE	-	X	ACI 318: 17.8.2	-
INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:				
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X	-	ACI 318: 17.8.2.4	-
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE	-	X	ACI 318: 17.8.2	-
VERIFY USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	-	ASTM C172, ASTM C31, ACI 318: 26.4.5, 26.12	1908.1
INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	-	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 26.4.7-26.4.9	1908.9
INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	-	X	ACI 318: 26.10.1(b)	-

STRUCTURAL STEEL – INSPECTION TASKS PRIOR TO BOLTING (AS A MINIMUM) (2015)

VERIFICATION AND INSPECTION TASK	QC	QA	AISC 360	RCSC SECTIONS
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	TABLE N5.6-1	2.1, 9.1
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	TABLE N5.6-1	FIG. C-2.1, 9.1
PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	O	O	TABLE N5.6-1	2.3.2, 2.7.2, 9.1
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O	TABLE N5.6-1	4, 8
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O	TABLE N5.6-1	3, 9.1, 9.3
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O	TABLE N5.6-1	7, 9.2
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O	TABLE N5.6-1	2.2, 8, 9.1

STRUCTURAL STEEL – INSPECTION TASKS PRIOR TO BOLTING (AS A MINIMUM) (2015)

VERIFICATION AND INSPECTION TASK	QC	QA	AISC 360	RCSC SECTIONS
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	TABLE N5.6-3	-

STRUCTURAL STEEL – INSPECTION TASKS PRIOR TO WELDING (AS A MINIMUM) (2015)

VERIFICATION AND INSPECTION TASK	QC	QA	AISC 360	AWS D1.1 CLAUSES
WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	P	P	TABLE N5.4-1	6.3
MANUFACTURER CERTIFICATES FOR WELDING CONSUMABLES AVAILABLE	P	P	TABLE N5.4-1	6.2
MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O	TABLE N5.4-1	6.2
WELDER IDENTIFICATION	O	O	TABLE N5.4-1	6.4 (WELDER QUALIFICATION)
CONFIGURATION AND FINISH OF ACCESS HOLES	O	O	TABLE N5.4-1	6.5.2, 5.17 (& SEE AISC 360 SECT. J1.6)
FIT-UP OF FILLET WELDS	O	O	TABLE N5.4-1	
a. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)	O	O	TABLE N5.4-1	5.22.1
b. CLEANLINESS (CONDITION OF STEEL SURFACES)	O	O	TABLE N5.4-1	5.15
c. TACKING (TACK WELD QUALITY AND LOCATION)	O	O	TABLE N5.4-1	5.18
d. CHECK WELDING EQUIPMENT	O	-	TABLE N5.4-1	6.2, 5.11

STRUCTURAL STEEL – INSPECTION TASKS DURING WELDING (AS A MINIMUM) (2015)

VERIFICATION AND INSPECTION TASK	QC	QA	AISC 360	AWS D1.1 CLAUSES
USE OF QUALIFIED WELDERS	O	O	TABLE N5.4-2	6.4
CONTROL AND HANDLING OF WELDING CONSUMABLES	O	O	TABLE N5.4-2	6.2
a. PACKAGING	O	O	TABLE N5.4-2	5.3.1
b. EXPOSURE CONTROL	O	O	TABLE N5.4-2	5.3.2 (FOR SMAW), 5.3.3 (FOR SAW)
NO WELDING OVER CRACKED TACK WELDS	O	O	TABLE N5.4-2	5.18
ENVIRONMENTAL CONDITIONS				
a. WIND SPEED WITHIN LIMITS	O	O	TABLE N5.4-2	5.12.1
b. PRECIPITATION AND TEMPERATURE	O	O	TABLE N5.4-2	5.12.2
WPS FOLLOWED	O	O	TABLE N5.4-2	6.3.3, 6.5.2, 5.5, 5.21
a. SETTINGS ON WELDING EQUIPMENT	O	O	TABLE N5.4-2	
b. TRAVEL SPEED	O	O	TABLE N5.4-2	
c. SELECTED WELDING MATERIALS	O	O	TABLE N5.4-2	
d. SHIELDING GAS TYPE/FLOW RATE	O	O	TABLE N5.4-2	
e. PREHEAT APPLIED	O	O	TABLE N5.4-2	5.6, 5.7
f. INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)	O	O	TABLE N5.4-2	
g. PROPER POSITION (F, V, H, OH)	O	O	TABLE N5.4-2	
WELDING TECHNIQUES	O	O	TABLE N5.4-2	6.5.2, 6.5.3, 5.24
a. INTERPASS AND FINAL CLEANING	O	O	TABLE N5.4-2	5.30.1
b. EACH PASS WITHIN PROFILE LIMITATIONS	O	O	TABLE N5.4-2	
c. EACH PASS MEETS QUALITY REQUIREMENTS	O	O	TABLE N5.4-2	

STRUCTURAL STEEL – INSPECTION TASKS AFTER WELDING (AS A MINIMUM) (2015)

VERIFICATION AND INSPECTION TASK	QC	QA	AISC 360	AWS D1.1 CLAUSES
WELDS CLEANED	O	O	TABLE N5.4-3	5.30.1
SIZE, LENGTH, AND LOCATION OF WELDS	P	P	TABLE N5.4-3	6.5.1
WELDS MEET VISUAL ACCEPTANCE CRITERIA			TABLE N5.4-3	6.5.3
a. CRACK PROHIBITION	P	P	TABLE N5.4-3	TABLE 6.1(1)
b. WELD/BASE-METAL FUSION	P	P	TABLE N5.4-3	TABLE 6.1(2)
c. CRATER CROSS-SECTION	P	P	TABLE N5.4-3	TABLE 6.1(3)
d. WELD PROFILES	P	P	TABLE N5.4-3	TABLE 6.1(4), 5.24
e. WELD SIZE	P	P	TABLE N5.4-3	TABLE 6.1(6)
f. UNDERCUT	P	P	TABLE N5.4-3	TABLE 6.1(7)
g. POROSITY	P	P	TABLE N5.4-3	TABLE 6.1(8)
ARC STRIKES	P	P	TABLE N5.4-3	5.29
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P	TABLE N5.4-3	5.10, 5.31
REPAIR ACTIVITIES	P	P	TABLE N5.4-3	6.5.3, 5.26
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	TABLE N5.4-3	6.5.4, 6.5.5

SOILS (2015)

VERIFICATION AND TESTING	CONTINUOUS	PERIODIC
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	-	X
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	-	X
PERFORM CLASSIFICATIONS AND TESTING OF COMPACTED FILL MATERIAL	-	X
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	-
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	-	X

STRUCTURAL STEEL – INSPECTION TASKS DURING BOLTING (AS A MINIMUM) (2015)

VERIFICATION AND INSPECTION TASK	QC	QA	AISC 360	RCSC SECTIONS
FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	O	O	TABLE N5.6-2	8.1, 9.1
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O	TABLE N5.6-2	8.2, 9.2

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TESTING AND INSPECTION

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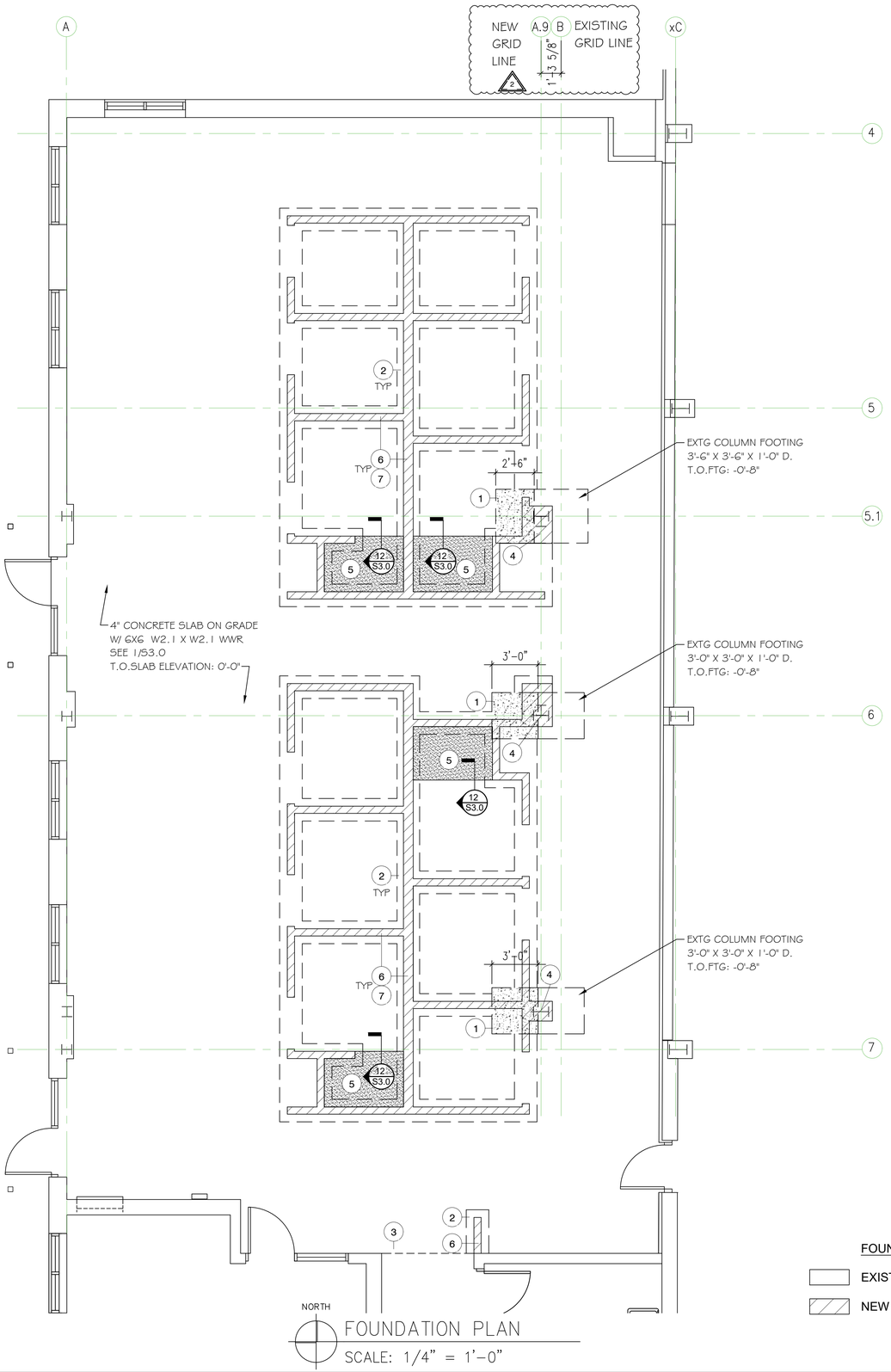

FOUNDATION PLAN

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

FOUNDATION KEY NOTES

1. 12" DEEP FOOTING EXTENSION WITH #5 BAR @ 12" O.C. EACH WAY. DOWEL NEW FOOTING BARS TO THE EXISTING FOOTING WITH 6" EMBED. T.O.FTG: -0'-8" SEE4/S3.0
2. PROVIDE THICKENED SLAB AT ALL NON-STRUCTURAL MASONRY WALLS PER 3/S3.0
3. NEW TO EXISTING SLAB TIE-IN. SEE 2/S3.0
4. SEE 5/S3.0 FOR BASE PLATE DETAILS
5. SLAB DEPRESSION FOR ADA SHOWER PAN. COORDINATE W/ MANUFACTURER DETAILS SEE DETAIL 12/S3.0 FOR BASIS OF DESIGN
6. REINFORCE ALL NON-STRUCTURAL CMU WALLS WITH #5 BAR @ 48" O.C.
7. CONTRACTOR TO COORDINATE VERTICAL WALL REINFORCING TO AVOID PIPING

FOUNDATION LEGEND

- EXISTING WALLS
- NEW CMU WALLS

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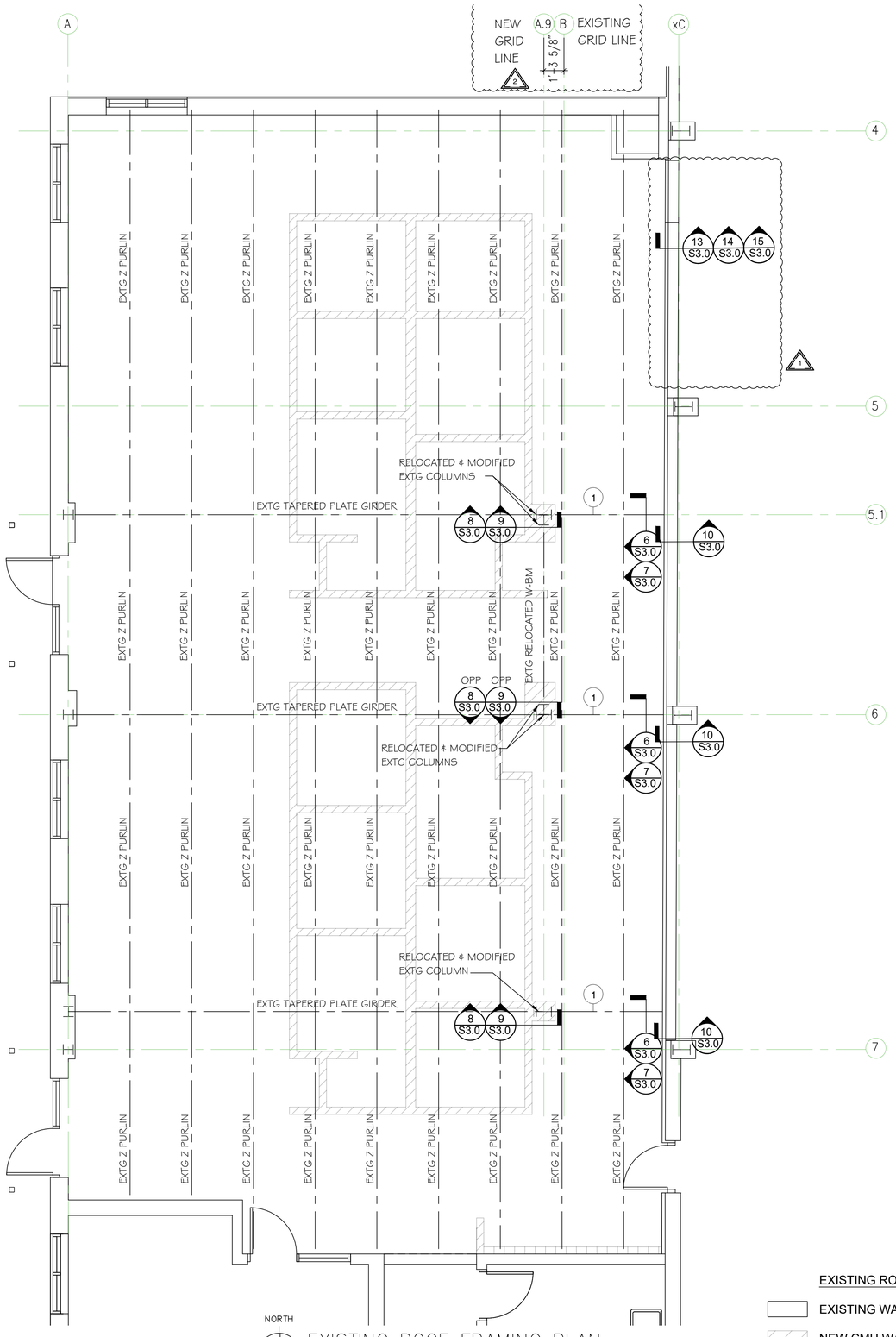
FDN PLAN

S1.0



EXISTING ROOF FRAMING PLAN

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

KEY NOTES

1 REMOVE (E) STEEL BEAM AND REPLACE WITH W8X10

EXISTING ROOF FRAMING LEGEND

EXISTING WALLS

NEW CMU WALLS

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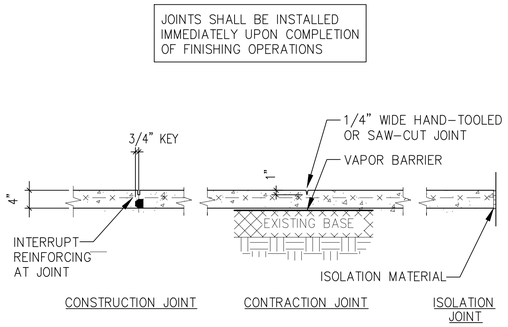
ENG OP FACILITY LOCKER ROOM RENOVATION
1600 EMIL STREET
MADISON, WI 53713

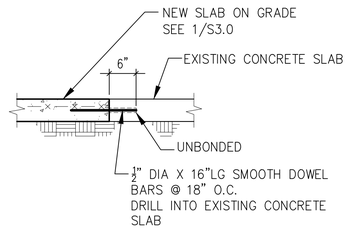
CONTRACT	#9659
MUNIS	#14122
DRWN BY:	LA
DATE	07/14/25
REV1:	08/29/25
REV2:	01/14/26

EXTG ROOF

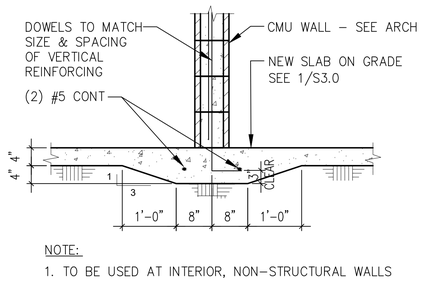
S1.1



1 SLAB ON GRADE CONSTRUCTION
3/4" = 1'-0"

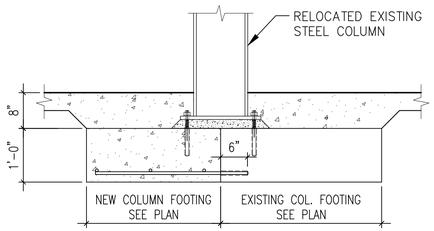


2 NEW TO EXISTING SLAB DETAIL
3/4" = 1'-0"

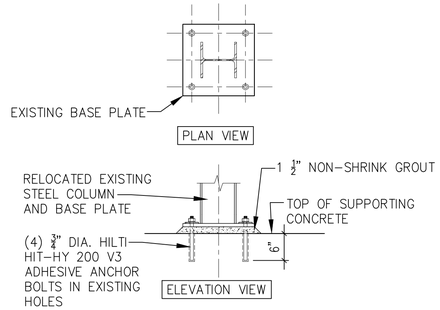


NOTE:
1. TO BE USED AT INTERIOR, NON-STRUCTURAL WALLS

3 NON-STRUCTURAL CMU WALL DETAIL
3/4" = 1'-0"



SPREAD FOOTING SUPPORTING RELOCATED STEEL COLUMN
4 3/4" = 1'-0"



5 RELOCATED COLUMN BASE PLATE
3/4" = 1'-0"

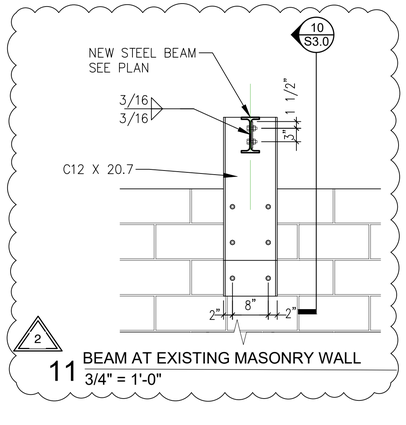
6 PURLIN AT EXISTING BEAM
3/4" = 1'-0"

7 PURLIN AT NEW WIDE FLANGE BEAM
3/4" = 1'-0"

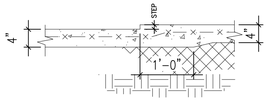
8 EXISTING GIRDER AT EXISTING COLUMN
3/4" = 1'-0"

2 9 EXISTING GIRDER BEARING ON COLUMN
3/4" = 1'-0"

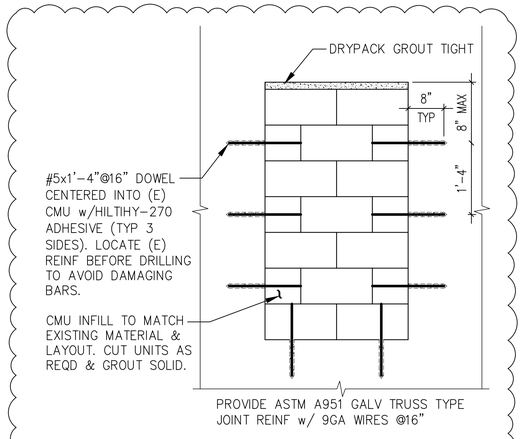
2 10 BEAM AT EXISTING MASONRY WALL
3/4" = 1'-0"



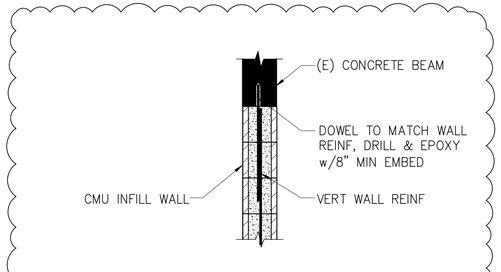
2 11 BEAM AT EXISTING MASONRY WALL
3/4" = 1'-0"



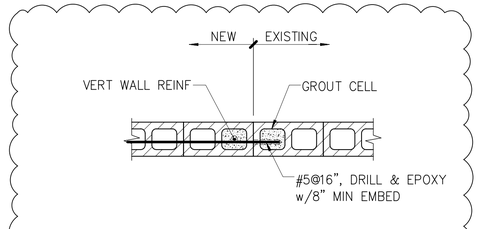
12 SLAB ON GRADE DEPRESSION
3/4" = 1'-0"



1 13 INFILL OF EXISTING CMU WALL OPENING
3/4" = 1'-0"



1 14 CMU INFILL AT EXISTING HEADER
3/4" = 1'-0"



1 15 CMU INFILL AT EXISTING JAMB
3/4" = 1'-0"

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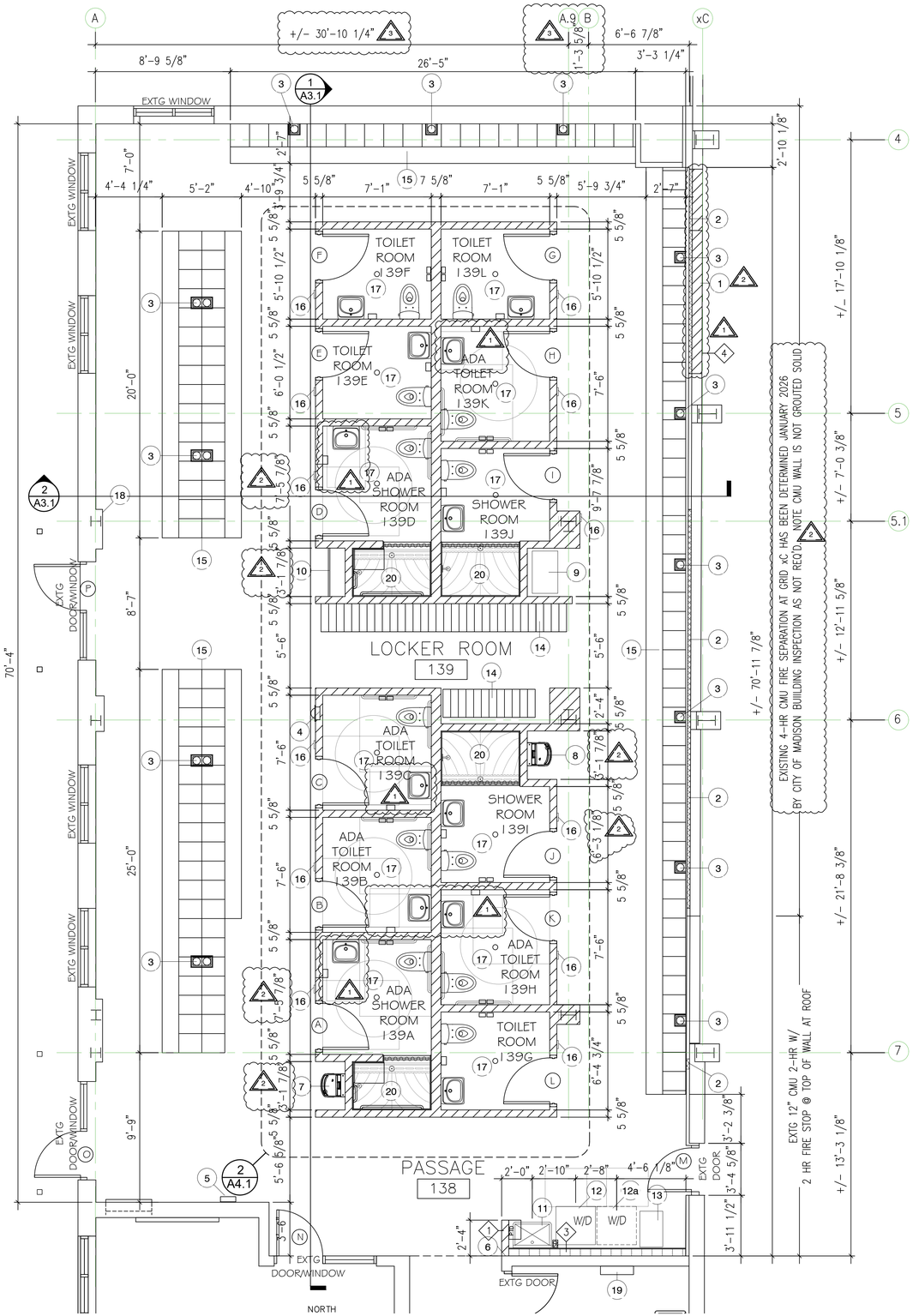
DETAILS

S3.0



FLOOR PLAN

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

FLOOR PLAN KEY NOTES

1. INFILL OPENING WITH CMU TO MATCH EXISTING. EXISTING STEEL FRAME WRAP TO REMAIN
2. 1 5/8" METAL STUD FURRING AT 24" O.C. (SHIM TO MATCH EXISTING) W/ 5/8" GYP BD TO MATCH EXISTING. EXTEND 4" MIN ABOVE CEILING.
3. MECHANICAL CHASE (or round duct only?) - VERIFY SIZE WITH MECHANICAL TRADE.
4. RECESSED FIRE EXTINGUISHER CABINET @ <X>" AFF
5. TIME CLOCK BY OWNER
6. CMU DRILL AND EPOXY DOWEL TO EXISTING
7. ELKAY BOTTLE FILLER/DRINKING FOUNTAIN ADA HEIGHT; MODEL EZS8WSLK NON-FILTERED
8. ELKAY BOTTLE FILLER/DRINKING FOUNTAIN STANDING HEIGHT
9. BOOT DRYER - FURNISHED BY OWNER. INSTALLED BY CONTRACTOR; ELEC OUTLET REQ'D.
10. CLOTHES HANGING ROD - SEE ACCESSORY LEGEND ON SHT A4.1
11. UTILITY SINK
12. CONDENSING WASHER/DRYER UNIT BY OWNER
12a. FUTURE COMBO CONDENSING WASHER/DRYER UNIT
13. UTILITY CART BY OWNER
14. JEAN LOCKERS FURNISHED & INSTALLED BY OWNER; (88) TOTAL
15. SPACESAVER LOCKER SYSTEM FURNISHED & INSTALLED UNDER SEPARATE CONTRACT. 84"H X 15"W X 18" D. W/ 8" HIGH SLOPED TOP; (134) W/BENCH DRAWER & WOOD TOP AND (7) ADA WITH EXTERNAL DRAWER - NO BENCH
16. RESTROOM / SHOWER SIGNAGE - SEE 1/A1.2
17. FLOOR DRAIN - SEE PLUMBING PLANS PITCH FLOOR 1/8" / FT TO DRAIN
18. PATCH WALL TO MATCH EXISTING
19. ADDED SUB PANEL - SEE ELECTRICAL PLANS
20. CUSTOM SOLID SURFACE SHOWER BASE WITH TRENCH RECEPTER AND 1/4" THICK ADD-ON THRESHOLD (ADA COMPLIANT) AND 1/4" THICK FULL HEIGHT SHOWER WALL PANELS. BASIS OF DESIGN "INPRO PRISM SOLID SURFACE"

FLOOR PLAN LEGEND

- EXISTING WALLS
- NEW CMU WALLS
- NEW 6" STUD WALL

1 RESTROOM SIGNAGE

1. 6" W. X 9" H. X 1/ 8" NON-GLARE CLEAR ACRYLIC
2. COLOR: BLACK
3. ADA COMPLIANT
4. 1/ 32" RAISED TACTILE LETTERING AND GRAPHICS IN WHITE WITH 5/8 " HELVETICA FONT
5. GRAPHIC TO BE +/- 4" TALL
6. CLEAR BRAILE BEADS UNDER LETTERS TO COMPLY WITH ADA REGULATIONS
7. 1/ 4" RADIUS CORNERS
8. FASTEN TO CMU USING WITH DOUBLE SIDED FOAM MOUNTING TAPE

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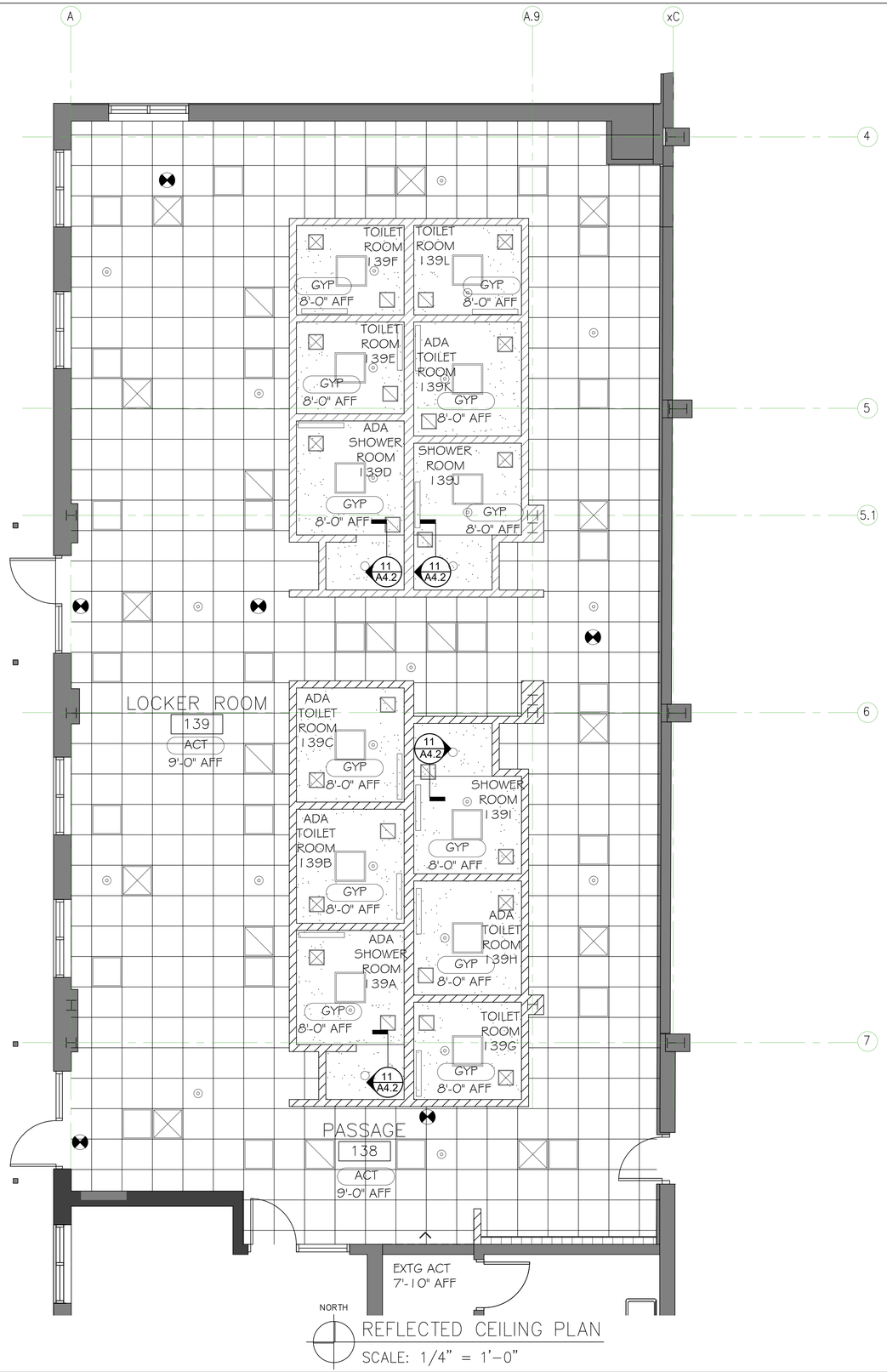
FLOOR PLAN

A1.2



REFLECTED CEILING PLAN

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

GENERAL NOTES

1. CEILING HEIGHTS ARE LISTED NEXT TO APPROPRIATE KEYNOTE. HEIGHT IS GIVEN ABOVE FINISHED FLOOR U.N.O.

2. PERIMETER CEILING TILES SHALL NOT BE LESS THAN 4" – TYP.

3. LOCATE ALL SPRINKLER HEADS, SMOKE DETECTORS, AUDIO SPEAKER AND CEILING MOUNTED EQUIPMENT IN THE CENTER OF CEILING TILE – TYP.

4. REFER TO ARCHITECTURAL DRAWINGS FOR ALL MECHANICAL AND ELECTRICAL DEVICE LOCATIONS AND MOUNTING HEIGHTS. IF NOT CLEARLY SPECIFIED, CONTACT ARCHITECT FOR FURTHER CLARIFICATION. MECHANICAL AND ELECTRICAL DRAWINGS ARE FOR FIXTURE TYPE REFERENCE ONLY.

5. RESTROOM CEILINGS TO BE RESILIENT CHANNEL CEILING FRAMING SYSTEM W/ 3/4" XP GYP BOARD

6. SHOWER CEILINGS TO BE RESILIENT CHANNEL CEILING FRAMING SYSTEM W/ 3/4" XP GYP BOARD & 1/4" SOLID SURFACE

REFLECTED CEILING PLAN SYMBOLS/LEGEND

- 2' X 2' LED FIXTURE
- 2' X 2' SUPPLY
- 2' X 2' RETURN
- 1' X 1' SUPPLY
- 1' X1' RETURN
- VANITY LIGHT - 3'-0"
- CAN LIGHT
- OCCUPANCY SENSOR
- EXIT SIGN
- SMOKE DETECTOR

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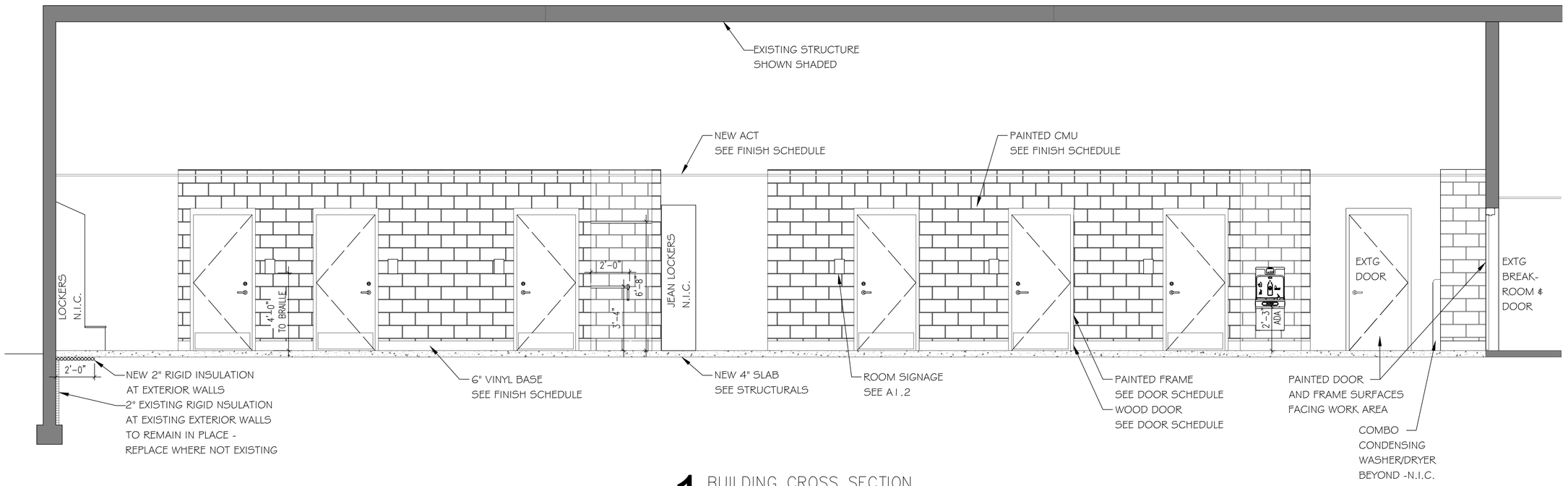
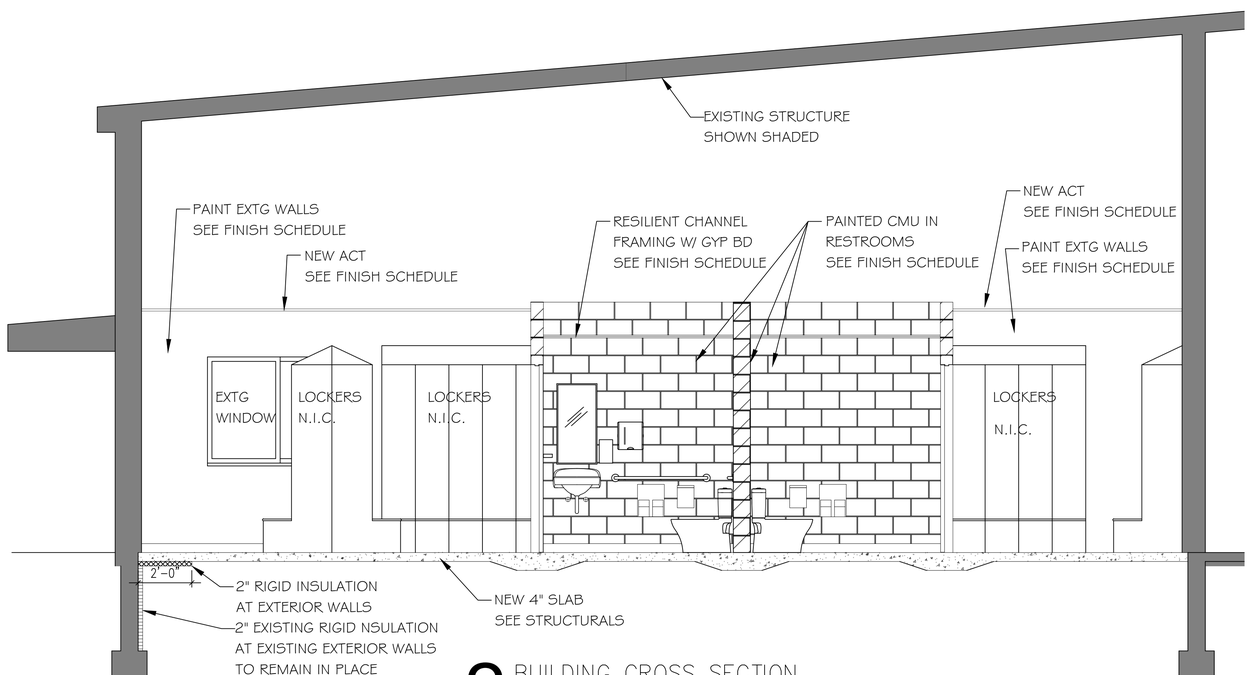
REFLECTED CEILING PLAN

A1.4



1 BUILDING CROSS SECTION
SCALE: 3/8" = 1'-0"



2 BUILDING CROSS SECTION
SCALE: 3/8" = 1'-0"

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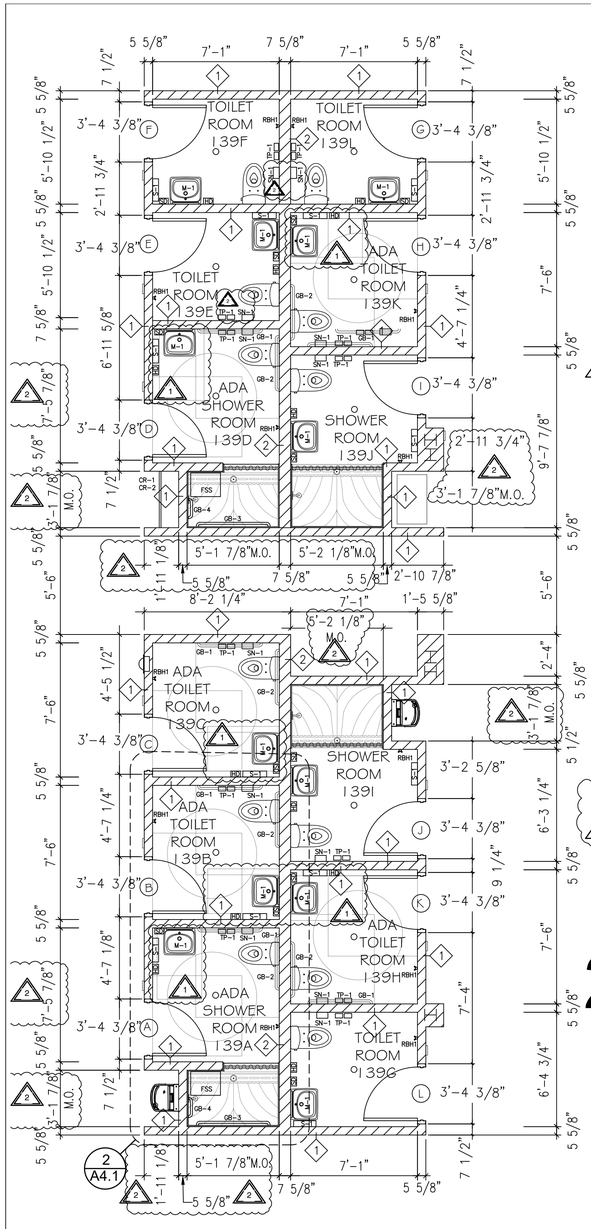
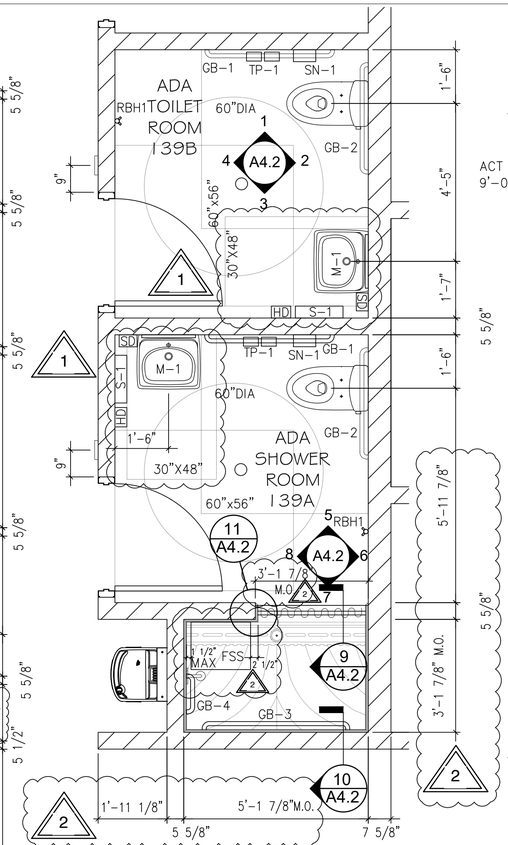
BLDG SECTIONS

A3.1



1 ENLARGED RESTROOMS

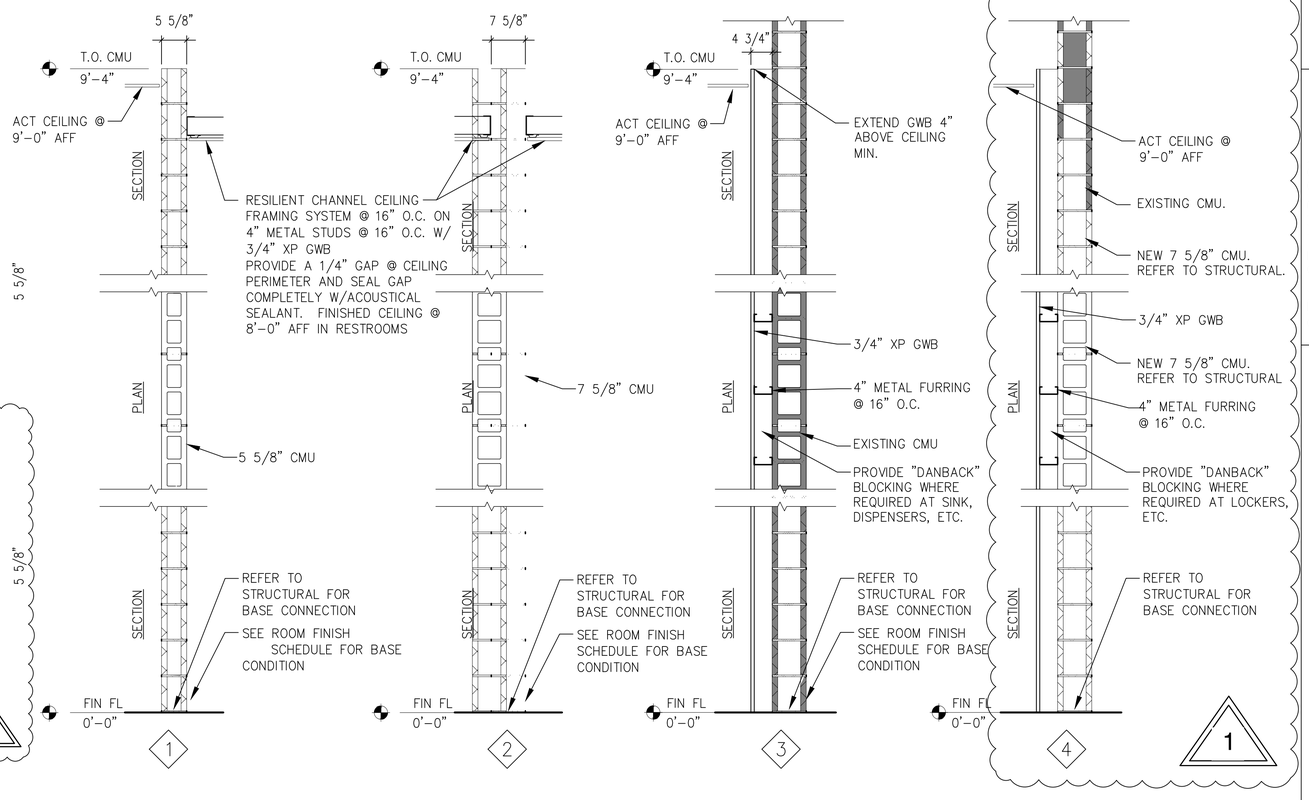
SCALE: 1/4" = 1'-0"



NOTE:
MASONRY ROUGH OPENING SIZE IS SHOWN FOR SHOWERS. MINIMUM FINISHED OPENING MUST BE 36" DOOR AND INTERIOR DIMENSION OF 36"X60" FOR ADA COMPLIANCE. TYP. @ ALL SHOWERS.

2 ENLARGED ADA SHOWER & RESTROOM

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



WALL TYPES

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

FLOOR PLAN LEGEND

NEW CMU WALLS

1 WALL TYPE - SEE DETAILS ON SHT A4.1

ACCESSORY LEGEND

MARK	DESCRIPTION	MANUFACTURER/MODEL	SIZE	MTG HT AFF	NOTES
M-1	MIRROR	BRADLEY 781	18"X36"	40" BTM GLASS	EACH LAV/SINK
SD	SOAP DISPENSER	OWNER FURNISHED - HILLYARD	6.5"x10.5"x3.75"	40" TO SOAP RELEASE	EACH LAV/SINK/UTILITY SINK; O.F.C.I.
PTD	PAPER TOWEL DISPENSER	OWNER FURNISHED - GEORGIA PACIFIC	14.7"X17.3"X9.5"	40" TO OPENING	UTILITY SINK; O.F.C.I.
1 HD	HAND DRYER - S.S. BRUSHED	EXCEL THIN AIR TA-SB	9.25"X14"X4"	46" TO EXHAUST	
TP-1	QUAD TOILET PAPER DISPENSER	OWNER FURNISHED - GEORGIA PACIFIC	12.1"X14.4"X6.9"	16" TO BTM	SIDE OF WC; O.F.C.I.
SN-1	SANITARY NAPKIN DISPOSAL - S.S. SATIN	BOBRICK: B-35139	8"X14.13"X4 1/2"	30" TO TOP	SIDE OF WC
GB-1	GRAB BAR - S.S. - CONCEALED MOUNT	BRADLEY SERIES 812 PEENED FINISH	1 1/2"X42"	34" TOP OF BAR	SIDE OF WC
GB-2	GRAB BAR - S.S. - CONCEALED MOUNT	BRADLEY SERIES 812 PEENED FINISH	1 1/2"X36"	34" TOP OF BAR	BACK OF WC
GB-3	GRAB BAR - S.S. - CONCEALED MOUNT	BRADLEY SERIES 812 PEENED FINISH	1 1/2"X48"	34" TOP OF BAR	SHOWER SIDE
GB-4	GRAB BAR - S.S. - CONCEALED MOUNT	BRADLEY SERIES 812 PEENED FINISH	1 1/2"X12"	34" TOP OF BAR	UNDER SHOWER FIXTURE
1 GB-5	GRAB BAR - S.S. - CONCEALED MOUNT	BRADLEY SERIES 812 PEENED FINISH	1 1/2"X18"	40" BOTTOM OF BAR	VERTICAL, SIDE OF WC
2 FSS	FOLDING SHOWER SEAT	DREAMLINE SHST-02-TN	15 3/8" X 20"	18" TOP OF SEAT	ADA SHOWER
RBH1	ROBE HOOK	HARNEY: BOCA GRANDE CHROME		48" & 60"	ADA & STD ROOMS [(2) PER RM]
S-1	SHELF	VANDAL: AA-VRS-04	16"X1 1/2"X4"	42"	ALL ROOMS
SCR	SHOWER CURTAIN ROD & (2) FLANGES	BRADLEY 9531	1 1/4" X 36"	(CONFIRM W/OWNER)	ADA & STD SHOWER ROOMS
CR-1	CLOTHES ROD W/ (1) FLANGE & (1) BRACKET		1 1/4" X 24"	40"	304 STAINLESS STEEL 14 GA - BRUSHED
CR-2	CLOTHES ROD & (2) FLANGES		1 1/4" X 37"	80"	304 STAINLESS STEEL 14 GA - BRUSHED
---	SHARPS CONTAINER	OWNER FURNISHED - (1) REQ'D		40" TO OPENING	VERIFY LOCATION IN FIELD WITH OWNER

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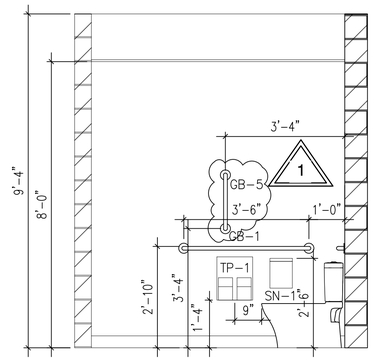
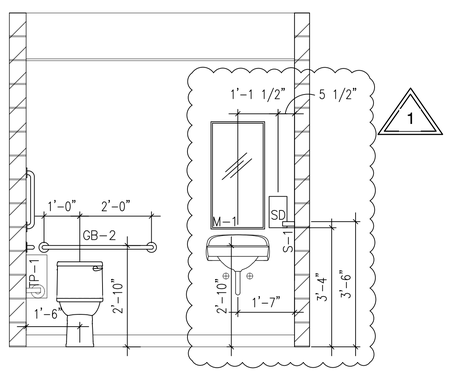
ENLARGED FLOOR PLAN

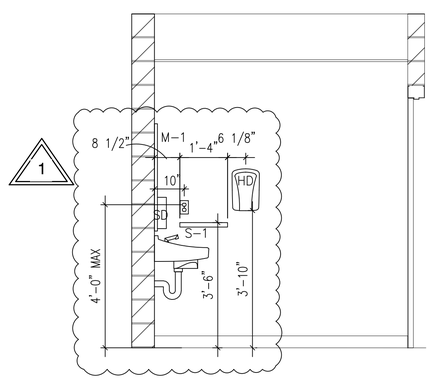
A4.1



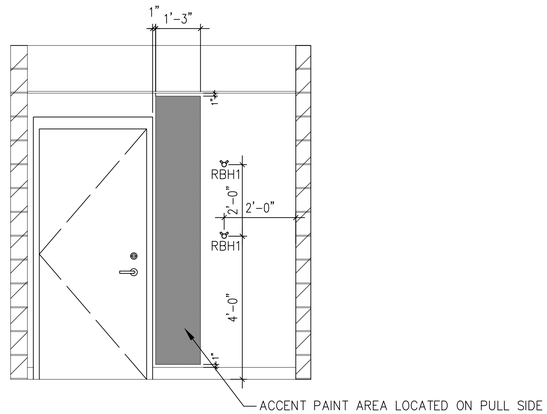
1 ADA TOILET 139B NORTH
1/2" = 1'-0"



2 ADA TOILET 139B EAST
1/2" = 1'-0"

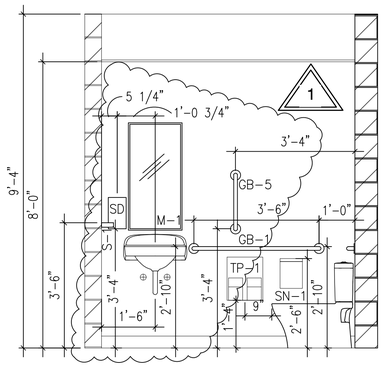


3 ADA TOILET 139B SOUTH
1/2" = 1'-0"

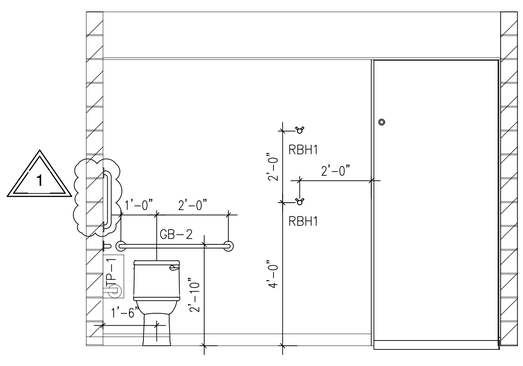


ACCENT PAINT AREA LOCATED ON PULL SIDE OF THE DOOR. COORDINATE COLOR WITH PAINTED GRAPHIC COLORS ON LOCKER ROOM SIDE OF WALL. TYP AT INTERIOR OF ALL RESTROOM AND SHOWER ROOMS.

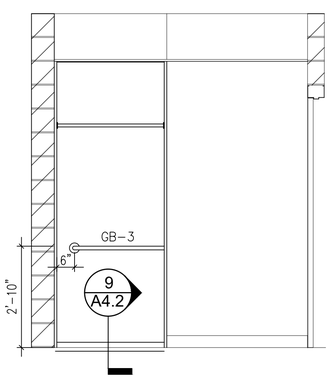
4 ADA TOILET 139B WEST
1/2" = 1'-0"



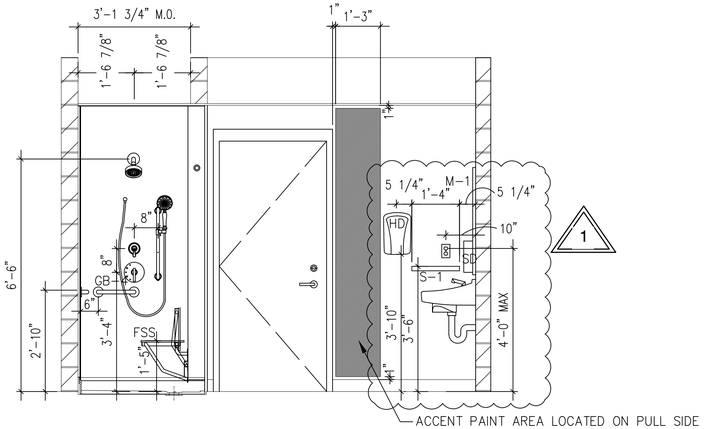
5 ADA SHOWER RM 139A NORTH
1/2" = 1'-0"



6 ADA SHOWER RM 139A EAST
1/2" = 1'-0"

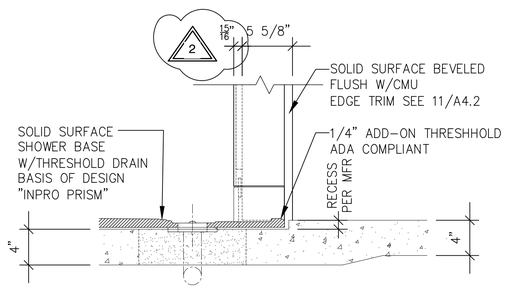


7 ADA SHOWER RM 139A SOUTH
1/2" = 1'-0"

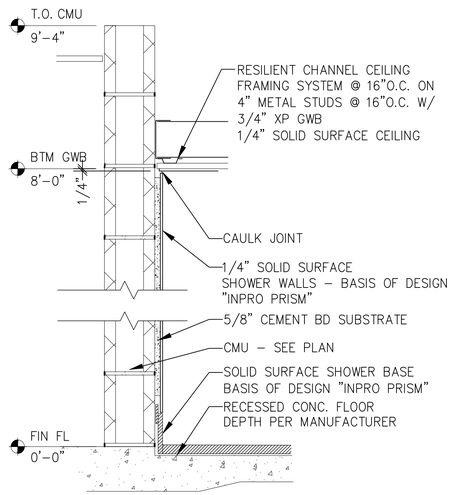


ACCENT PAINT AREA LOCATED ON PULL SIDE OF THE DOOR. COORDINATE COLOR WITH PAINTED GRAPHIC COLORS ON LOCKER ROOM SIDE OF WALL. TYP AT INTERIOR OF ALL RESTROOM AND SHOWER ROOMS.

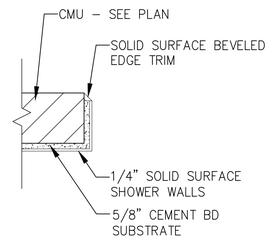
8 ADA SHOWER RM 139A WEST
1/2" = 1'-0"



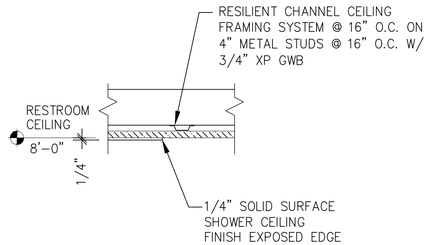
9 ADA SHOWER BASE AT THRESHOLD
1 1/2" = 1'-0"



10 SHOWER WALL PANELS AT CMU
1 1/2" = 1'-0"



11 SHOWER WALL PANELS EDGE FINISH
1 1/2" = 1'-0"



12 SHOWER TO RESTROOM CEILING
1 1/2" = 1'-0"

CITY OF MADISON
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ENGINEERING DIVISION
CITY COUNTY BLDG RM 115
210 MARTIN LUTHER KING JR BLVD
MADISON, WI 53703
PHONE: 608-266-4751

ENG OP FACILITY LOCKER ROOM RENOVATION
1600 EMIL STREET
MADISON, WI 53713

CONTRACT	
#9659	
MUNIS	
#14122	
DRWN BY:	LA
DATE	07/14/25
REV1:	08/29/25
REV2:	12/02/25

RESTROOM ELEVATIONS

A4.2

DOOR SCHEDULE									
DOOR			FRAME			DETAILS		OTHER	
DOOR NUMBER	SIZE	TYPE	MTL	DEPTH	TYPE	HEAD	JAMB	HRDWR GROUP	NOTES
A	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
B	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
C	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
D	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
E	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
F	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
G	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
H	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
I	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
J	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
K	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
L	3'-0" X 7'-0"	A	STL	4 3/4"	1	1/A6.1	2/A6.1	PRIVACY	
M	EXTG	---	---	---	---	---	---	---	PAINT FRAMES & DOOR @INT
N	EXTG	---	---	---	---	---	---	---	PAINT FRAMES & DOOR @INT
O	EXTG	---	---	---	---	---	---	---	PAINT FRAMES & DOOR @INT
P	EXTG	---	---	---	---	---	---	---	PAINT FRAMES & DOOR @INT

GENERAL NOTES

1. NEW DOOR VENEER SPECIES & FINISH COLOR TO MATCH EXISTING BUILDING DOORS.
2. FRAMES ARE WELDED STEEL WITH PAINTED FINISH - SEE FINISH SCHEDULE.
3. PROVIDE ROCK WOOL IN FRAME VOID.
4. PROVIDE 1/8" GAP FROM BOTTOM OF THE DOOR TO FINISH FLOOR TO ACCOMODATE FUTURE NEOPRENE SEAL.
5. PAINT DOOR FRAMES AND METAL DOOR SLABS FACING THE AREA OF WORK. DO NOT PAINT WOOD SLABS. PAINT INFORMATION IN PAINT SPECIFICATION.

HARDWARE GROUP

PRIVACY: THUMBTURN LOCK ON INSIDE WITH EMERGENCY RELEASE ON OUTSIDE AND OCCUPIED/VACANT INDICATOR. NEW DOOR HARDWARE TO MATCH EXISTING HARDWARE IN STYLE AND FINISH.

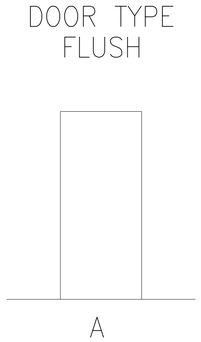
ROOM FINISH SCHEDULE						
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING	NOTES
138	PASSAGE	CONC	VINYL	EXIST; CMU	ACT	D
139	LOCKER ROOM	CONC	VINYL	EXIST; CMU	ACT	D
139A	ADA SHOWER RM	CONC	VINYL	CMU	RCF GYP	A, B, C, D
139B	ADA TOILET RM	CONC	VINYL	CMU	RCF GYP	D
139C	ADA TOILET RM	CONC	VINYL	CMU	RCF GYP	D
139D	ADA SHOWER RM	CONC	VINYL	CMU	RCF GYP	A, B, C, D
139E	TOILET ROOM	CONC	VINYL	CMU	RCF GYP	D
139F	TOILET ROOM	CONC	VINYL	CMU	RCF GYP	D
139G	TOILET ROOM	CONC	VINYL	CMU	RCF GYP	D
139H	ADA TOILET RM	CONC	VINYL	CMU	RCF GYP	D
139I	SHOWER ROOM	CONC	VINYL	CMU	RCF GYP	A, B, C, D
139J	SHOWER ROOM	CONC	VINYL	CMU	RCF GYP	A, B, C, D
139K	ADA TOILET RM	CONC	VINYL	CMU	RCF GYP	D
139L	TOILET ROOM	CONC	VINYL	CMU	RCF GYP	D

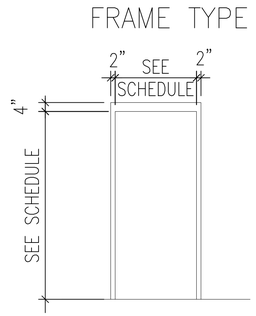
LEGEND

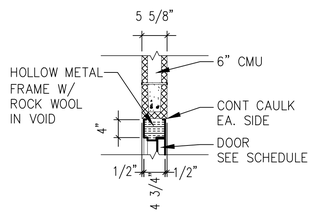
EXIST	EXISTING MATERIALS TO REMAIN – PATCH & PAINT
CONC	SEALED CONCRETE FLOOR W/ SLIP RESISTANT COATING
VINYL	VINYL COVED BASE JOHNSONITE TRADITIONAL 6" HIGH X 1/8" THICK; COLOR: BLACK (40)
CMU	CONCRETE MASONRY UNIT – PAINT
GWB	GYPSUM WALL BOARD – PAINT
ACT	ACOUSTICAL CEILING TILE
RCF GYP	RESILIENT CHANNEL FRAMING W/ GYPSUM BOARD – PAINT

FINISH SCHEDULE NOTES

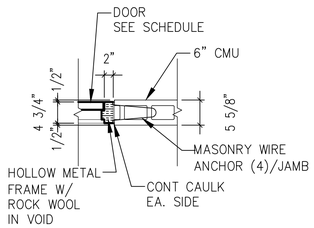
A	SOLID SURFACE SHOWER WALLS
B	SOLID SURFACE CUSTOM SHOWER BASE
C	SHOWER CEILING TO BE SOLID SURFACE ON RESILIENT CHANNEL FRAMING W/(2) LAYERS OF GYP BD
D	SEE REFLECTED CEILING PLAN FOR ADDITIONAL INFO







1 DOOR FRAME HEAD
3/4" = 1'-0"



2 DOOR FRAME JAMB
3/4" = 1'-0"

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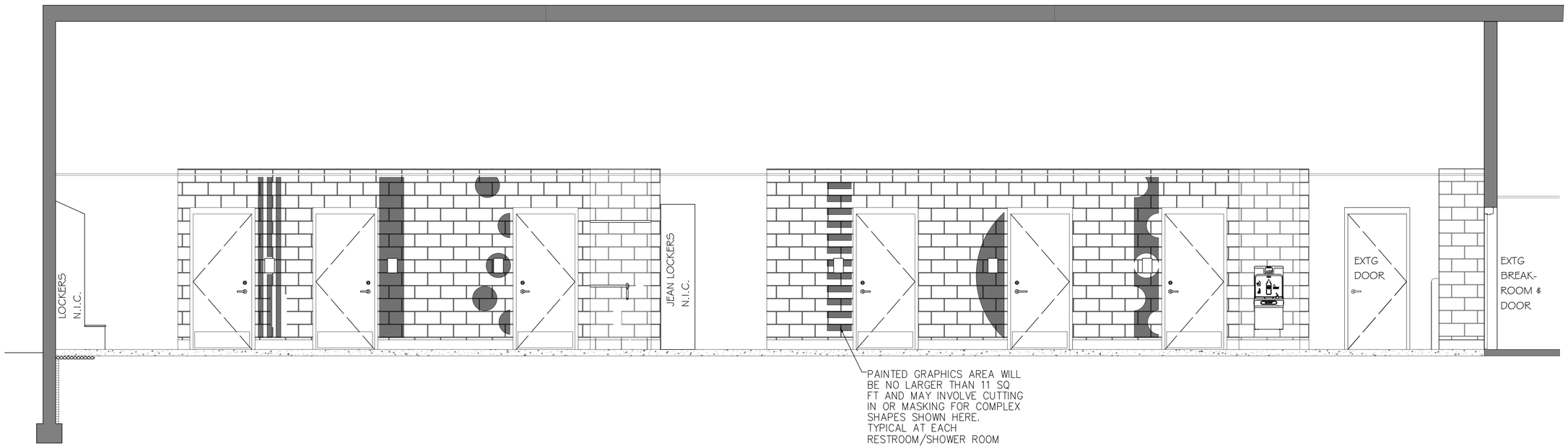
ROOM RENOVATION

ENG OP FACILITY LOCKER ROOM
1600 EMIL STREET
MADISON, WI 53713

CONTRACT	
#9659	
MUNIS	
#14122	
DRWN BY: LA	
DATE	07/14/25
REV:	XX/XX/XX

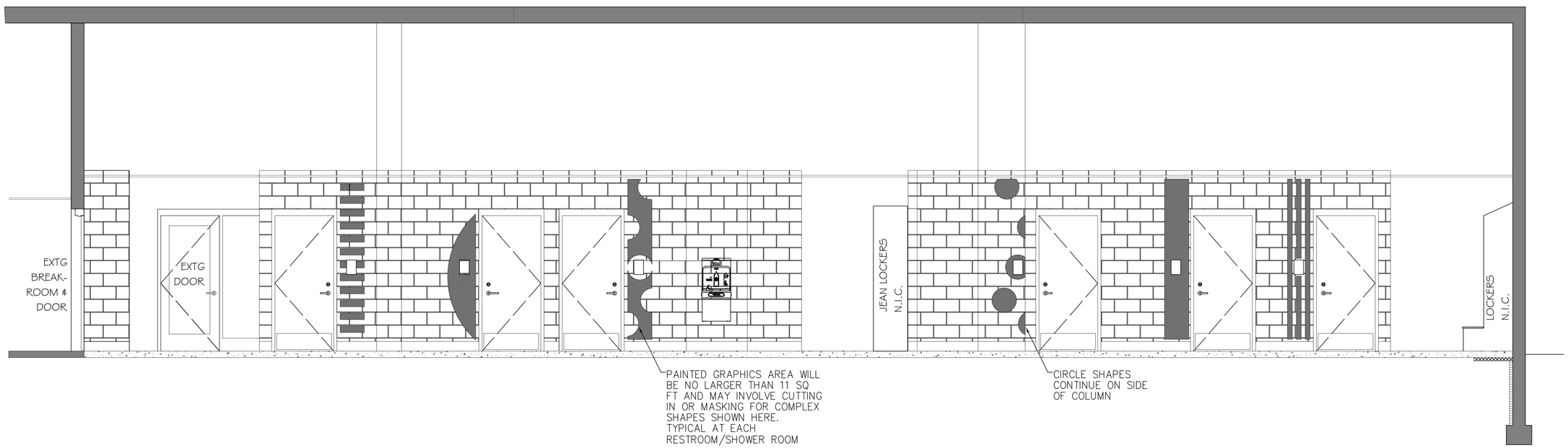
DOOR & FINISH SCHEDULES

A6.1



1 WEST WALL PAINT DESIGN

SCALE: 3/8" = 1'-0"



2 EAST WALL PAINT DESIGN

SCALE: 3/8" = 1'-0"

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ENG OP FACILITY LOCKER ROOM RENOVATION
1600 EMIL STREET
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CONTRACT	
#9659	
MUNIS	
#14122	
DRWN BY: LA	
DATE	07/14/25
REV:	XX/XX/XX

WALL DESIGNS

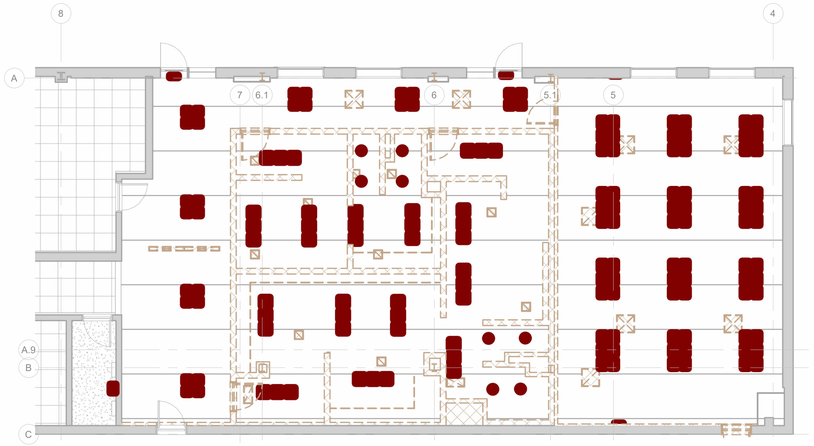
A6.2

Sheetlist Electrical

Sheet Number	Sheet Name
E 001	General Electrical
EL 100	Lighting
EP 100	Power
EP 200	Power Schedules

Electrical Project Scope:

A. Space above ceiling is an Air Handler return plenum. All devices and installations need to be plenum-rated.
B. Demolish all equipment in Locker room area inc. removal of old circuits equipment in janitor's room.
C. Install all new lighting, power and equipment as shown on all trade plans.
D. Provide emergency power from existing emergency panel
   a. Tie into existing FA panel
E. Keep all junction boxes, relays, power packs etc. requiring access outside drywall ceiling area to allow access.



1 ED - Level 1 1/8" = 1'-0"

A. Scope:
   1. Electrical work required for non-electrical sheets and specifications shall be included in electrical work.
   2. All demolition of building elements and equipment shall include demolition of electrical systems. This includes but is not limited to HVAC, plumbing, and other equipment, walls, ceilings, and floor.
   3. Electrical information for equipment to be installed may be available on HVAC, plumbing, door and other schedules and specifications.
   4. Schedules and equipment from other disciplines may or may not be duplicated on electrical sheets. Electrical contractor is responsible for learning the other disciplines' electrical requirements and equipment requiring electricity.
B. Coordination:
   1. Coordinate and co-locate wall mounted receptacles and controls with Technology (AV/Data...)
   2. Verify all furniture, modular furniture, and equipment location and adjust installation as required.
   3. Location of receptacles, switches and other electrical fixtures and devices needs to be coordinated with architectural plans and meet requirements of all trades. Electrical plans only show approximate locations and heights.
   4. Receptacles or other connections supplying power to a device or appliance (i.e. drinking fountain, hand dryer) shall be located so that any of the device's covers designed to conceal power feeds, actually conceal the receptacle or other connection.
C. Demolition:
   1. Demolish all existing lighting fixtures and controls, panels, electrical equipment, and devices that are not scheduled to be re-used. This includes all items not needed for new installation to function. This includes, but is not limited to, emergency, exit, track, architectural and spot lights, switches, sensors, inverters, batteries and control panels. Demolition drawings may not show all existing items.
   2. Remove all unused raceways, boxes, conduit and wiring. Conduit in good condition may be re-used.
   3. Patch wall, ceiling and other surfaces damaged by removal of XTG elements. Use adjacent surface matching cover for electrical boxes that remain.
   4. Protect all to-remain items.
   5. Maintain circuit continuity for all devices outside the construction area.
D. Installation:
   1. Install new raceways, boxes, conduit and wiring as required for new installation.
   2. Use factory colored conduit and labeling as described in Division 26 specifications.
   3. Install conduit and raceways close to structure of the building. Free-air runs will not be acceptable unless noted otherwise.
   4. Contractor shall verify all equipment locations with all other discipline plans, elevations and reviewed shop drawings. Prior to electrical installation, contractor shall adjust receptacles, outlets or connection locations to accommodate furniture and/or equipment.
   5. Conduit shall be in the following minimum size regardless of code requirements:
      a. Home run (panel to first junction box): 1" minimum
      b. Home run to devices and fixtures: 3/4" minimum
   6. Wall Lighting Control Devices: Flush-mount at 42" AFF to center of device unless noted otherwise.
   7. Receptacles: Flush-mount at 18" AFF to center of device unless noted otherwise.
   8. Conceal all conduits in walls, partitions, above ceiling etc. unless noted otherwise. Conduits in unfinished rooms may be exposed.
   9. Boxes located on opposite sides of non-rated walls shall be offset a minimum of 6" horizontally.
   10. Receptacles for electric water coolers shall be concealed behind water cooler.
E. Circuiting:
   1. Plans may suggest wire sizes and types. If code requires larger wire for the application, use whichever is larger (smaller gauge number).
   2. Contractor may suggest changes to panel circuiting.
   3. Common Neutrals may not be used for branch circuits.
   4. Circuits serving emergency and Exit luminaries shall be installed in separate raceway from all other circuits.
F. Conductor sizing:
   1. Only use copper conductors. Aluminum conductor is not acceptable.
   2. Use 90°C Insulation
   3. All conductors:
      a. Minimum size shall be based on NFPA 70 (National Electrical Code).
         • Assume 60°C temperature rating for sizing purposes
      b. If circuit schedule indicates a larger conductor size, use the larger value.
      c. If voltage drop in a branch circuits is over 2%, use larger size than indicated.
      d. All SCCR ratings are minimum requirements for bus bracing and device rating. All equipment shall be fully rated.
G. Lighting Installation:
   1. Locations shown are approximate only. Install as required to coordinate with tile patterns, architectural features, sprinklers, mechanical equipment and other obstacles. Center Fixtures and provide even grid wherever possible. Review deviations from plan with designer prior installation.
   2. Install fixtures at indicated height. Provide required suspension. A noted height typically applies to all fixtures in a space, even if only a single fixture has an indicated height shown. If no height is given, ceiling surface mounting or mounting at bottom of fixture can be assumed. Installation in between trusses or beams also is an option. Consult with engineer before determining mounting height.
   3. Surface wiring raceway in finished areas is only allowed where the structure does not allow installation inside ceiling or wall. Raceway shall be neatly routed and hidden in corners to the greatest extend possible. In finished spaces use surface wire molding instead of conduit. Wiremold shall be factory painted to match wall surface. Where matching factory paint is not available, use field-painting.
   4. Support all lighting fixtures adequately and provide all extra support.
   5. All conduit except at fixture entrance shall be 3/4" or larger. Turns between access boxes should not be more than 270°.
   6. Grid Ceilings:
      a. use flexible metal conduit from a J-box in enough length to allow lifting and 2' lateral move of fixture
      b. Move flexible head sprinklers where required for even layout pattern.
   7. Suspended Strip Light Fixtures: use rigid type hangers every 4' or less. Mount multiple fixtures in a row on a uni-strut structure.
   8. Cord & Plug Fixtures: Mount on hook for easy replacement and install safety wire. Provide plug within reach of fixture
   9. In rooms with obstruction (e.g. equipment, pipes, and ducts in mechanical and electrical rooms) mount the fixtures below obstruction and as high as practical to allow good light distribution without limiting access to obstructing equipment. Consult with designer before installation.
   10. Lightfixture Disconnects:
      a. All light fixtures not controlled by a manual control (line voltage switch or rewind timer) shall receive external means of disconnect.
         • This includes retrofit projects. Disconnects shall be added to XTG locations.
         • Disconnect can be a switch or a twist-plug
         • Provide one means of disconnect per lighting zone or per emergency fixture.
         • Install visibly near light fixture set controlled.
         • In finished areas, install disconnect above accessible ceiling near the zone. When ceiling is not accessible (e.g. drywall), no disconnect is required. Install disconnect near motion sensor or as instructed.

2 General Electrical Notes

Abbreviations Electrical

Key Name	Abbreviation
ATS	Automatic Transfer Switch
BRKR	Breaker
CKT	Circuit
DC	Drop Cord
DISC	Disconnect
DO	Door Operator
EM	Emergency
F	Fused
FLA	Full Load Amps
GFI	Ground Fault Interrupter
GND	Ground
HP	Horse Power
HZ	Hertz
IMC	Intermediate Metallic Conduit
J-BOX	Junction Box
MCA	Minimum Circuit Amapcity
MCC	Motor Control Center
MDP	Main Distribution Panel
MOCP	Minimum Over Current Protection
MTS	Manual Transfer Switch
PH	Phase
PNL	Panel
RGS	Rigid Galvanized Steel Conduit (RMC, GRC)
RMC	Rigid Metal Conduit
S/N	Solid Neutral
SE	Service Entrance
V	Volts
VA	Volt Amps
W	Watt
XFMR	Transformer
XP	Explosion Proof

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison
WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

General Electrical

E 001

Print Date:
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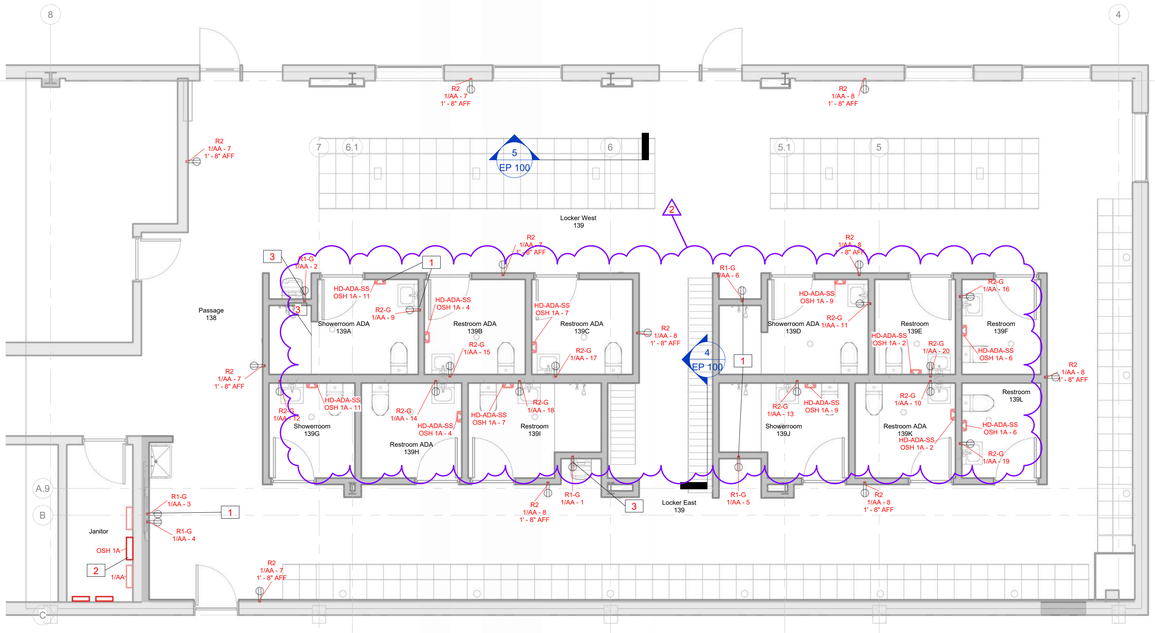
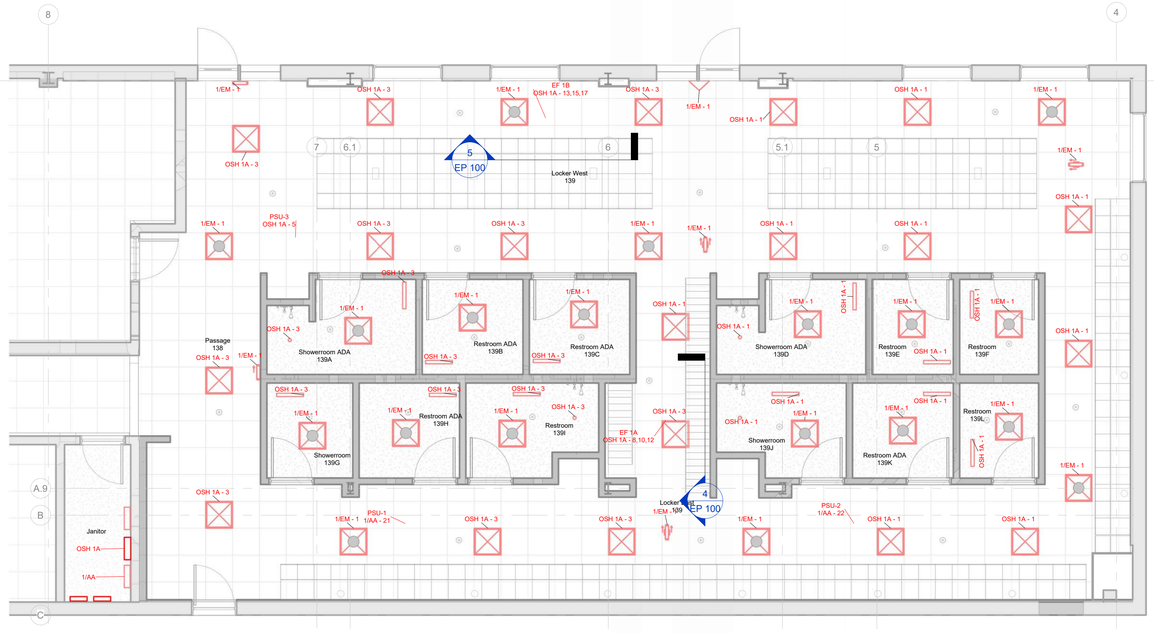
Print in color on 24" x 36"



1 EP - Level 1 3/16" = 1'-0"



2 EP Ceiling - Level 1 3/16" = 1'-0"

3 EP Level 1 - Above Ceiling 3/16" = 1'-0"

4 EP Section - EF 1A 3/16" = 1'-0"

5 EP Section - EF 1B 3/16" = 1'-0"

Keynote Legend

1. Keynotes can apply to multiple similar situations, even if not each element or siutation is tagged.

Key Value	Keynote Text
1	Coordinate Exact location with architectural plans and seek approval by architect. This Note applies to all similar situations in this project.
2	Add 3 spare conduits 1" to penetrate ceiling. Repair ceiling.
3	Coordinate location to ensure receptacle (or other power feed) is concealed by device being fed

General Notes:
A. Coordinate receptacle and hand dryer locations with Architectural design. Height and location on electrical plans are schematic only to provide circuiting information.

2 0 2 4 6 8 10
1/4" = 1'-0" FEET

2 0 2 4 6 8 10 12 14
3/16" = 1'-0" FEET

5 0 5 10 15 20
1/8" = 1'-0" FEET

5 0 5 10 15 20 25 30
3/32" = 1'-0" FEET

5 0 5 10 15 20 25 30 35 40 45
1/16" = 1'-0" FEET

20 0 20 40
1" = 20'-0" FEET

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison
WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description
2	Addendum 3

Project North
TRUE

Power

EP 100

Print Date:
8/27/2025 3:54:42 PM
Print in color on 24" x 36"

Panel: OSH 1A

26 24 00 - Switchboards and Panelboards

Notes:

Main Breaker:	125 A	Location:	Janitor	Supplied From:	OSH 1	System Type:	480V / 3
Main:		Installed:	New Construction	Enclosure:	Type 1	Panel Slots:	42
Mounting:	Surface			AIC:		Wires:	4

Circuit Number	Rating	Wire Size	Load Classification	A		B		C		Load Classification	Wire Size	Rating	Circuit Number
1	15 A	#12	Lighting	1.1 A	8.2 A					Appliance	#10	20 A	2
3	15 A	#12	Lighting			1.2 A	8.2 A			Appliance	#10	20 A	4
5	15 A	#12	Power					2.7 A	8.2 A	Appliance	#10	20 A	6
7	20 A	#10	Appliance	8.2 A	2 A								8,10,12
9	20 A	#10	Appliance			8.2 A	2 A			Motor	#12	15 A	
11	20 A	#10	Appliance					8.2 A	2 A				
13,15,17	15 A	#12	Motor	2 A									14
						2 A							16
								2 A					18
19													20
21													22
23													24
25													26
27													28
29													30
31													32
33													34
35													36
37													38
39													40
41													42
				21.5 A		**21.6 A**		**23.1 A**					
				6 kVA		**6 kVA**		**6.4 kVA**					

Panel: 1/AA

26 24 00 - Switchboards and Panelboards

Notes: Remove old oboslete ciruits

Main Breaker:	100 A	Location:	Janitor	Supplied From:	1/A	System Type:	208V / 3
Main:		Installed:	Existing	Enclosure:	Type 1	Panel Slots:	24
Mounting:	Surface			AIC:		Wires:	4

Circuit Number	Rating	Wire Size	Load Classification	A		B		C		Load Classification	Wire Size	Rating	Circuit Number
1	15 A	#12	Receptacle	6 A	6 A					Receptacle	#12	15 A	2
3	20 A	#10	Receptacle			12.5 A	12.5 A			Receptacle	#10	20 A	4
5	20 A	#6	Receptacle					12.5 A	12.5 A	Receptacle	#6	20 A	6
7	20 A	#10	Receptacle	7.5 A	9 A					Receptacle	#6	20 A	8
9	20 A	#10	Receptacle			0 A	0 A			Receptacle	#10	20 A	10
11	20 A	#10	Receptacle					0 A	0 A	Receptacle	#10	20 A	12
13	20 A	#10	Receptacle	0 A	0 A					Receptacle	#10	20 A	14
15	20 A	#10	Receptacle			0 A	0 A			Receptacle	#10	20 A	16
17	20 A	#10	Receptacle					0 A	0 A	Receptacle	#10	20 A	18
19	20 A	#10	Receptacle	0 A	0 A					Receptacle	#10	20 A	20
21	15 A	#12	Power			1.3 A	1.3 A			Power	#12	15 A	22
23													24
				28.9 A		**27.9 A**		**25 A**					
				3.4 kVA		**3.3 kVA**		**3 kVA**					

Panel: 1/EM

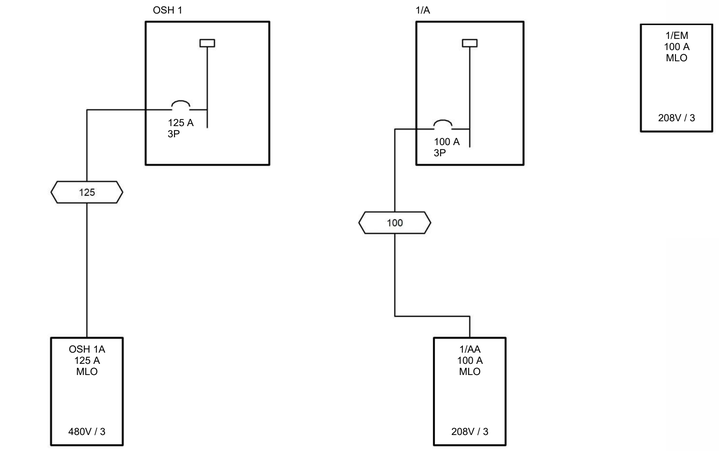
26 24 00 - Switchboards and Panelboards

Notes: Existing ciruits not shown

Main Breaker:	100 A	Location:		Supplied From:		System Type:	208V / 3
Main:		Installed:	Existing	Enclosure:	Type 1	Panel Slots:	30
Mounting:	Surface			AIC:		Wires:	4

Circuit Number	Rating	Wire Size	Load Classification	A		B		C		Load Classification	Wire Size	Rating	Circuit Number
1	15 A	#8	Other; Lighting	2.8 A									2
3													4
5													6
7													8
9													10
11													12
13													14
15													16
17													18
19													20
21													22
23													24
25													26
27													28
29													30
				2.8 A		**0 A**		**0 A**					
				0.3 kVA		**0 kVA**		**0 kVA**					

FEEDER SCHEDULE	
100	1-1/2"C, 3#1, #1N, #8G
125	1-1/2"C, 3-1/0, 1/0N, #6G



1 Electrical System One-Line Diagram

Receptacle Schedule (26 27 00 - Low-Voltage Distribution Equipment)

1. Coordinate Height and location with Architectural Plans
2. Use GFCI receptacle or breaker if required by application. For multiple receptacles on a circuit, a single GFCI device suffices.

Type Mark	Description	Voltage	Current	Count
R1-G	Simplex GFCI	120 V	20 A	6
R2	Duplex	120 V	20 A	11
R2-G	Duplex GFCI	120 V	20 A	12

Power Supplies Units (PSU)

1. Refer to other trade construction documents for devices requiring PSU
2. PSU input voltage determined by panel connected to

Mark	Apparent Power Output	Voltage	Remark	Panel	Circuit Number
PSU-1	100 VA	120 V	Faucet	1/AA	21
PSU-2	100 VA	120 V	Faucet	1/AA	22
PSU-3	500 VA	277 V	BAS (HVAC)	OSH 1A	5

Electric Hand Dryers (10 28 00 – Restroom and Shower Room Accessories)

2

1. Coordinate Mounting Height with Architectural Plans
2. Voltage selected based on circuited connected to

Type Mark	Type Comments	Description	Manufacturer	URL	Model	Type Image	Apparent Power	Estimated Count
HD-ADA-SS	Hand Dryer Electric	Electric Hand Dryer	Excel Dryer	www.exceldryer.com	TA-SB		1,135 VA	12

Disconnects (26 28 00 - Low-Voltage Circuit Protection Devices)

1. Mark indicates decie served
2. Locate as shown or near device. Adjust for clearance, code and other requirements.
3. Select fuses based on actual load

Mark	Description	Space Number	Space Name
FDC-EF 1B	Fused Disconnect	139	Locker West
FDC-EF 1A	Fused Disconnect	139	Locker East

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison
WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description
2	Addendum 3

Power Schedules

EP 200

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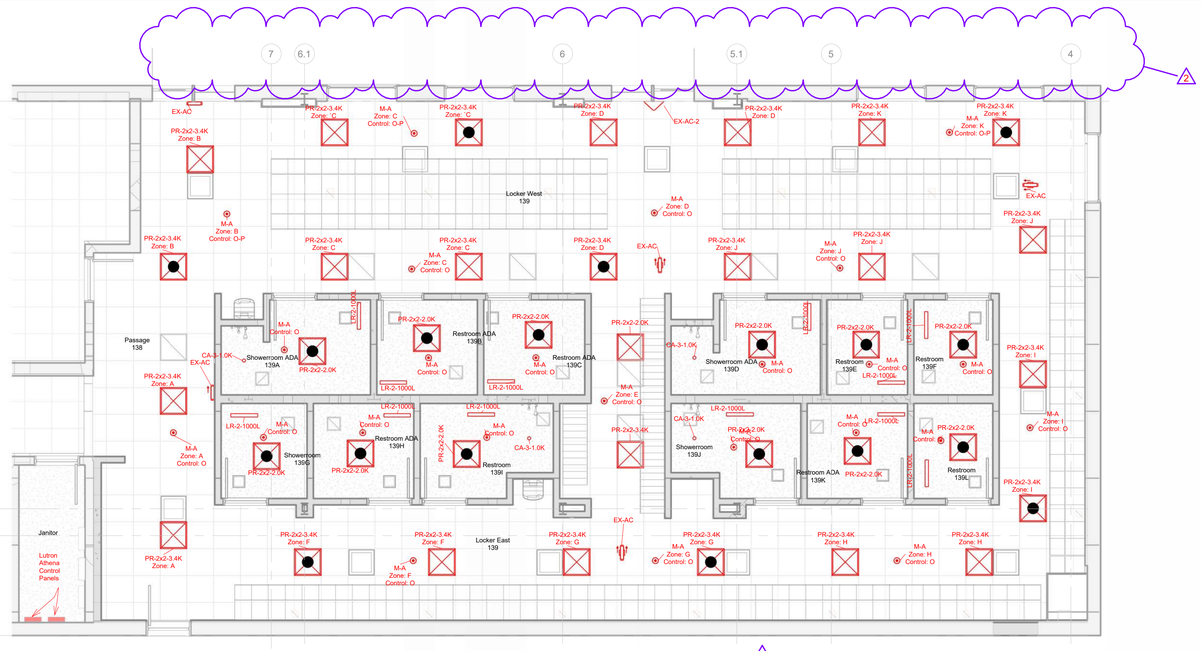
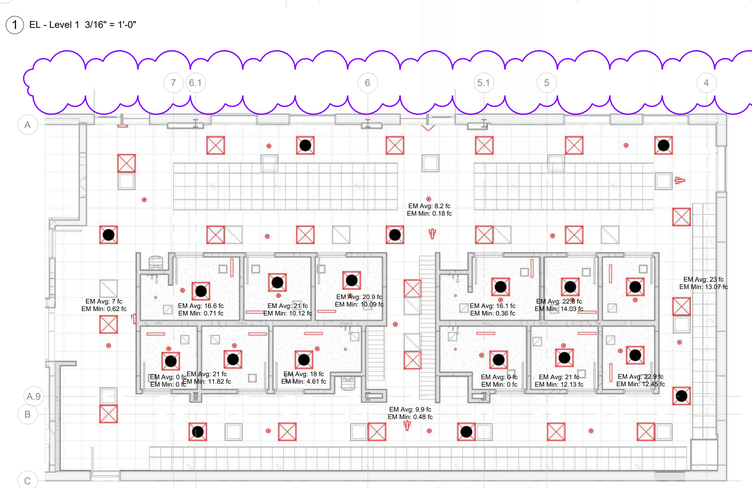
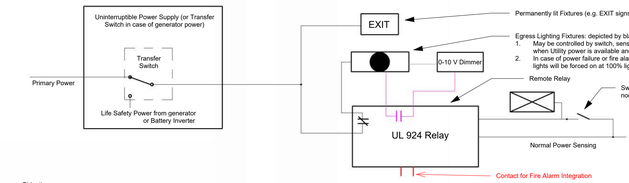


1 EL - Level 1 3/16" = 1'-0"



2 EL Egress - Level 1 1/8" = 1'-0"



Objective:
1. Emergency light fixtures (indicated by a black dot) and Exit signs will be powered by the Uninterruptible AC Power Supply (UPS) or generator. Review plans for detail.
2. When normal power is present and fire alarm is OFF, lighting will be controlled by lighting control system. Local switches, timers, dimmers and sensors control on/off and dimming.
3. When normal power is not present, the emergency fixtures and exit signs will be powered by the battery for over 90 minutes. These fixtures will be forced on at 100% (no dimming)
4. When fire alarm is active, all emergency light fixtures will be forced on at 100% (no dimming).
5. Contractor shall verify availability of contacts in fire alarm panel and add relay(s) if required.
6. Wiring shall meet NEC 700.10 requirements. This includes, but is not limited to:
   a. Separate emergency raceway. Raceway shall be marked.
   b. Any junctions shall be labeled "Warning - 2 power sources" or as required by code
   c. Label indicates panel, circuit, and voltage
7. Conduit for emergency lighting shall be color-coded as specified in Division 26
8. When accessible installation of UL 924 relay is not possible (e.g. drywall, exterior), install the relay in near-by accessible location. Verify location with engineer.
   a. Drywall Ceiling: if no easily accessible location is available, Install relay above grid ceiling in adjacent area
   b. Outdoor fixtures: Install relay inside above a grid ceiling or other accessible location
9. Fixtures with built-in sensor shall be re-wired for UL 924 relay to bypass sensor (e.g. exterior fixture with included photocell)
10. Contractor is responsible for wiring from uninterruptible power supply and fire alarm panel to the zones.
11. Re-wire fixture internals if fixture has integrated sensor or other lighting control.
12. Retrofit of XTG fixtures: Re-arrange wiring and existing control to allow emergency fixture operation like for new fixtures. Note that schedules that show number of relays required only account for relays of NEW fixtures.

Testing:
1. Test by applying emergency power and normal power. Turn off local switch and set local dimmer to lowest dimming level.
   a. If no local switch is available, disconnect the appropriate wire to simulate light being turned off.
   b. If no local dimmer is available and dimming by sensor is scheduled, program sensor to dim to low level.
2. Disconnect normal sensing power and verify emergency light turns on to 100%
3. Re-instate normal power and activate fire alarm and verify emergency light turns on to 100%

3 Lighting Control with UPS

Lighting Control:
A. Provide Lutron Athena system compatible with the office lighting control
   1. Coordinate with Lutron representative Todd Klimke tk@engineeredrepinc.com
   2. Install DIN-Rail panels in Janitor closet
   3. Use wired sensors
B. Zoning:
   1. Each restroom shall be one zone
   2. Locker room zoning and sensor layout shall be designed by Lutron
      a. adapt electrical circuiting shown on EP sheet as required.
      b. Assure good coverage in all areas. Avoid blind corners.
      c. Sensors shown on plans are suggestions to indicate a design intent.
C. Emergency Lighting:
   1. Provide intended emergency lighting control:
      a. emergency lighting power is provided by a 120V panel
      b. Normal lighting is provided by 277V panel
      c. Emergency lighting shall be forced on at 100% when Fire Alarm is activated, and/or when normal power is disrupted.
D. Owner-provided work:
   1. Owner provides Athena processor as part of lighting project in the office building outside of this contract scope.
   2. Owner will wire from Athena processor to the panels in this project.
      a. This contractor shall terminate wires in new control panels.

IECC 2015 Lighting Levels and Lighting Power Densities

Space Number	Space Name	Area	IECC Space Type	Workplane Height	Min. Required Avgerage Illumination	Actual Average Illumination	Illumination Goal	Max. Allowed Power Density IECC 2015	Actual Power Density	Actual Lighting Power Density compared to Code	Allowed Lighting Load	Actual Lighting Load	Space Lighting Load Contributing to Total Building Lighting Load
138	Passage	408 ft²	Locker	2' - 6"	20 fc	25.8 fc	129%	0.75 W/ft²	0.23 W/ft²	30%	306 VA	92 VA	0.03 VA/ft²
139	Locker East	692 ft²	Restroom - otherwise	2' - 6"	20 fc	38.7 fc	194%	0.98 W/ft²	0.3 W/ft²	31%	679 VA	207 VA	0.06 VA/ft²
139	Locker West	930 ft²	Locker	2' - 6"	20 fc	30.8 fc	154%	0.75 W/ft²	0.31 W/ft²	42%	697 VA	290 VA	0.09 VA/ft²
139	Locker East	692 ft²	Locker	2' - 6"	20 fc	31.5 fc	158%	0.75 W/ft²	0.3 W/ft²	40%	519 VA	207 VA	0.06 VA/ft²
139A	Showeroom ADA	71 ft²	Restroom - otherwise	2' - 6"	20 fc	32.1 fc	160%	0.98 W/ft²	0.52 W/ft²	53%	70 VA	37 VA	0.01 VA/ft²
139B	Restroom ADA	53 ft²	Restroom - otherwise	2' - 6"	20 fc	32.5 fc	163%	0.98 W/ft²	0.52 W/ft²	53%	52 VA	28 VA	0.01 VA/ft²
139C	Restroom ADA	53 ft²	Restroom - otherwise	2' - 6"	20 fc	32.5 fc	163%	0.98 W/ft²	0.52 W/ft²	53%	52 VA	28 VA	0.01 VA/ft²
139D	Showeroom ADA	71 ft²	Restroom - otherwise	2' - 6"	20 fc	30.9 fc	155%	0.98 W/ft²	0.52 W/ft²	53%	69 VA	37 VA	0.01 VA/ft²
139E	Restroom	43 ft²	Restroom - otherwise	2' - 6"	20 fc	36 fc	180%	0.98 W/ft²	0.65 W/ft²	66%	42 VA	28 VA	0.01 VA/ft²
139G	Showeroom	45 ft²	Restroom - otherwise	2' - 6"	20 fc	35.7 fc	178%	0.98 W/ft²	0.61 W/ft²	63%	44 VA	28 VA	0.01 VA/ft²
139H	Restroom ADA	53 ft²	Restroom - otherwise	2' - 6"	20 fc	32.5 fc	162%	0.98 W/ft²	0.52 W/ft²	53%	52 VA	28 VA	0.01 VA/ft²
139I	Restroom	63 ft²	Restroom - otherwise	2' - 6"	20 fc	39.4 fc	197%	0.98 W/ft²	0.58 W/ft²	59%	62 VA	37 VA	0.01 VA/ft²
139J	Showeroom	61 ft²	Restroom - otherwise	2' - 6"	20 fc	39.4 fc	197%	0.98 W/ft²	0.6 W/ft²	61%	60 VA	37 VA	0.01 VA/ft²
139K	Restroom ADA	53 ft²	Restroom - otherwise	2' - 6"	20 fc	32.2 fc	161%	0.98 W/ft²	0.52 W/ft²	53%	52 VA	28 VA	0.01 VA/ft²
139L	Restroom	42 ft²	Restroom - otherwise	2' - 6"	20 fc	38.9 fc	194%	0.98 W/ft²	0.67 W/ft²	68%	41 VA	28 VA	0.01 VA/ft²
		3,331 ft²									2,798 VA	1,138 VA	0.34 VA/ft²

Emergency Lighting Load

Type Mark	Count	Real Power	Estimated UL 924 Relays required
EX-AC	5	5 VA	0
EX-AC-2	1	4 VA	0
PR-2x2-2.0K	12	168 VA	12
PR-2x2-3.4K	7	161 VA	7
		338 VA	19

Lighting Fixture Schedule (26 50 00 - Lighting)

1. For plenum application, select fixture model with apropopriate plenum rating
2. For applications with insulation contact, select fixture model withh apropopriate IC rating
3. Use Wide-range voltage drivers where available. Where not available, select the driver voltage based on circuit voltage.

Type Mark	Description	Length	Width	Height	Diameter	Type Image	Est. Count	Model	URL	Real Power	Luminous Flux	Color Temperature	Efficacy	Lumen Maintenance	Environmental Rating	Unified Glare Rating (highest value)	Type Remark
CA-3-1.0K	Can Light 3" 80° Beam			3 1/2"	3"		4	Zaniboni LU2NC-09-40-MOD80CRI-8-S-WS-Z0-R0-W	www.zanibonilighting.com	9 W	979 lm	4000 K	109 lm/W	L80 @ 55K hours	Wet Location, IP 65		For grid ceiling, provide B0 housing, for plenum and IC locations use F0
EX-AC	Exit Sign, Standard, no Battery		1'-1 3/4"	9"			5	Chloride CLX-A-GW	www.signify.com	1 W					Damp Location		Select # of faces, stem, and mounting as required for location
EX-AC-2	Exit Sign Triangular, 2-Face, no Battery		1'-6 1/2"	7 1/2"			1	Big Beam TRXL-AC/LED-2-G-W	www.bigbeam.com	3.6 W							Select Voltage version based on circuit connected to
LR-2-1000L	Linear Recessed	2'-0"	3"	4"			12	Pinnacle EV3D-HE-40VHO-U-FSD-1-0-W	www.pinnacle-ltg.com	13.8 W	2,000 lm	4000 K	145 lm/W	L70 @ 121K hours	Damp Location		Select mounting options and wiring options as required. Review plans for emergency fixture and control options. Use RC-option for drywall.
PR-2x2-2.0K	Panel Recessed	2'-0"	2'-0"	3"			13	Lithonia SPX-2x2-2000LM-80CRI-40K-BFR-LUGR-MIN1-ZT-MVOLT-WH	www.acuitybrands.com	14 W	2,111 lm	4000 K	151 lm/W	L90 @ 50K hours	IPX5; NSF Splash Zone	16.1	
PR-2x2-3.4K	Panel Recessed	2'-0"	2'-0"	3"			25	Lithonia SPX-2x2-3400LM-80CRI-40K-BFR-LUGR-MIN1-ZT-MVOLT-WH	www.acuitybrands.com	23 W	3,438 lm	4000 K	149 lm/W	L90 @ 50K hours	IPX5; NSF Splash Zone	17.8	
							60										

Lighting Control Programming Guide

Programming Scheme	Trigger ON	Trigger Off	Time Delay to Dim-Down	Time to Off (or lowest dimming state)	Lowest Dimming Range	Photocell Setting	Note
O-D	Occupancy	NA	15 min	10 min	1V / 10%	NA	Fixture is dim (e.g. 10%) when space is not occupied.
O-D-P	Occupancy	NA	15 min	10 min	1V / 10%	Auto-Setpoint to match artificial lighting levels	Fixture is dim (e.g. 10%) when space is no occupied. Fixture turns off when daylight is sufficient.
O	Occupancy / Switch	Occupancy / Switch	15 min	10 min	0%/Off	NA	Fixture is off when space is not occupied.User can turn off or dim lights (if dimmer / switch scheduled)
O-P	Occupancy / Switch	Occupancy / Switch	15 min	10 min	0%/Off	Auto-Setpoint to match artificial lighting levels	Fixture is off when space is not occupied.User can turn off or dim lights (if dimmer / switch scheduled). Fixture dims down or turns off when daylight is sufficient.

Lighting Device Schedule

Type Mark	Description	Est. Count	Model	URL	Environmental Rating	Type Remark	Specification
M-A	Motion Sensor for Athena Control	24	Sensorswitch Selected by Lutron	www.lutron.com		Exact layout performed by Lutron for optimized coverage	26 09 43 - Network Lighting Controls

2 0 2 4 6 8 10 — 1/4" = 1'-0" FEET
2 0 2 4 6 8 10 12 14 — 3/16" = 1'-0" FEET
5 0 5 10 15 20 — 1/8" = 1'-0" FEET
5 0 5 10 15 20 25 30 — 3/32" = 1'-0" FEET
5 0 5 10 15 20 25 30 35 40 45 — 1/16" = 1'-0" FEET
20 0 20 40 — 1" = 20'-0" FEET

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description
1	Addendum 1
2	Addendum 3

Project North
TRUE

Lighting

EL 100

Print Date:
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Sheetlist Mechanical

Sheet Number	Sheet Name
M 001	General Mechanical
M 100	Loads and Zoning
M 110	HVAC Layout
M 120	3D from NW
M 130	3D from SE
M 200	Details and Control Sequences
M 300	Schedules

- Air Vent
- Silent Check Valve
- Swing Check Valve
- Flow Meter
- Pressure Gauge; adjustible Display
- Thermometer; adjustible Display
- Relief Valve
- Y-Strainer with drain valve and cap
- 1/4" P/T Plug
- Union or Flange
- 2-Wav Control Valve
- 3-Way Control Valve
- Ball Valve
- Capped Drain Valve
- Pressure Reducing Valve
- Temperature Well for BAS
- Control Point Analog In
- Control Point Analog Out
- Control Point Analog Out w/ Feedback
- Control Point Digital In
- Control Point Digital Out
- Control Point Digital Out w/ Feedback
- Multi Data Control Point w/ various Input and Output (i.e. Modbus, BACNet)

General Requirements:

A. Duct Pressure Class:
   1. If no pressure class is given, use these guidelines:
      a. Duct potentially restricted by control damper (from fan to control damper): constructed to withstand +/- 4 in-wg pressure.
      b. Duct open to atmosphere or rooms (from a control damper to a diffuser/grille or from fan to atmosphere with no control damper): constructed to withstand +/- 2 in-wg pressure.
   2. Design per SMACNA duct construction guideline.
   3. Relief doors shall be placed to protect duct from higher pressure. Size relief doors assuming all control dampers are closed and fans run at 100% speed.
   4. Some sections may be labeled to be built to higher pressure class. This typically applies to section between control damper and fan or device with fan.

B. HVAC Insulation:
   1. Pipe insulation may not be shown to keep plans concise. All pipes and devices shall be insulated to meet current code and Section "23 07 00 - HVAC Insulation"
   2. Duct insulation may not be shown to keep plans concise. Typically insulation is required:
      a. On exhaust duct path from exterior up to a control damper or exhaust fan
      b. On intake duct path from exterior up to an AHU or other device that conditions air.
      c. On supply path where conditioned air ducts pass through plenums, or spaces not served by that duct.
      d. Unless noted otherwise, no insulation is needed on duct within space served.

C. Duct and Pipe Accessories:
   1. Sometimes pipe and duct accessories, such as valves, strainers, de-aerators, dampers etc. are shown and tagged. In some cases these are not shown (or not even scheduled). Sometimes only some location may show those devices. Such accessories shall be included and inferred from the typical details and control sequences. All such items required for the function shall be included. Contractor shall review all details, control sequences, specifications and other data to learn all equipment required.

Project Notes:

A. Locker Room Exhaust System
   1. Locker room is exhausted through the actual metal locker cabinets
   2. Install duct into locker plenum per locker manufacturer guidance
      a. Plans show drops. Distribute them evenly.
      b. Seal connection to locker to prevent air leakage from the room
   3. Locker room exhaust air will be make-up air for bathrooms. Transfer per SPS 364.0403 (5) (1) 3.

B. Space above ceiling is an Air Handler return plenum.

C. Insulate all VAV supply duct per specifications. Exhaust duct only needs to be insulated where shown (Exhaust louver up to control damper)

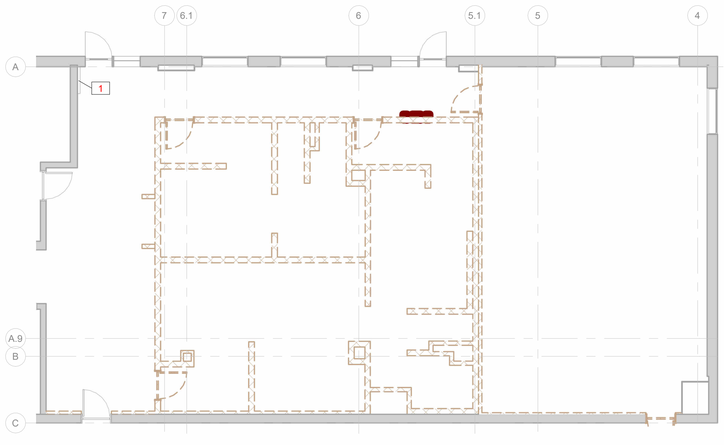
D. Connect all new systems to existing systems.

Keynote Legend

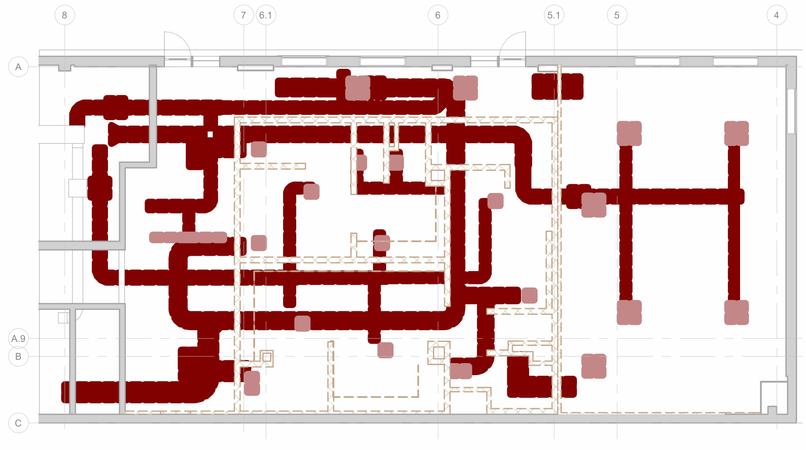
1. Keynotes can apply to multiple similar situations, een if not each element or siutation is tagged.

Key Value	Keynote Text
1	Re-use XTG heater. Add to Zone VAV 1-14

1 General Mechanical Notes



2 MD - Level 1 1/8" = 1'-0"



3 MD Ceiling - Level 1 1/8" = 1'-0"

2 0 2 4 6 8 10
1/4" = 1'-0" FEET

2 0 2 4 6 8 10 12 14
3/16" = 1'-0" FEET

5 0 5 10 15 20
1/8" = 1'-0" FEET

5 0 5 10 15 20 25 30
3/32" = 1'-0" FEET

5 0 5 10 15 20 25 30 35 40 45
1/16" = 1'-0" FEET

20 0 20 40
1" = 20'-0" FEET

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Revisions

No.	Description

Project North

TRUE

General Mechanical

M 001

Print Date:
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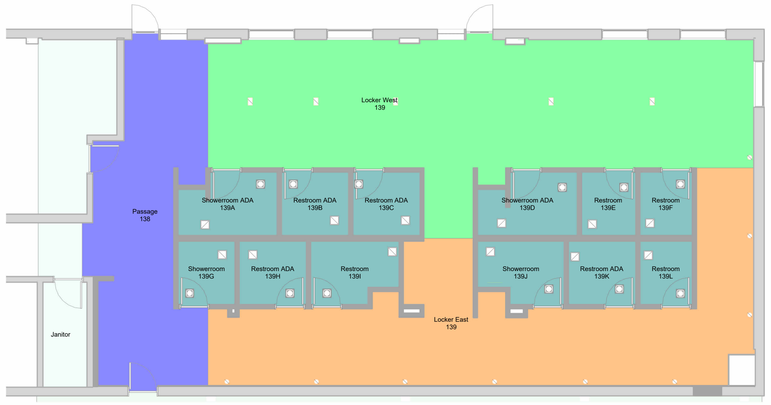
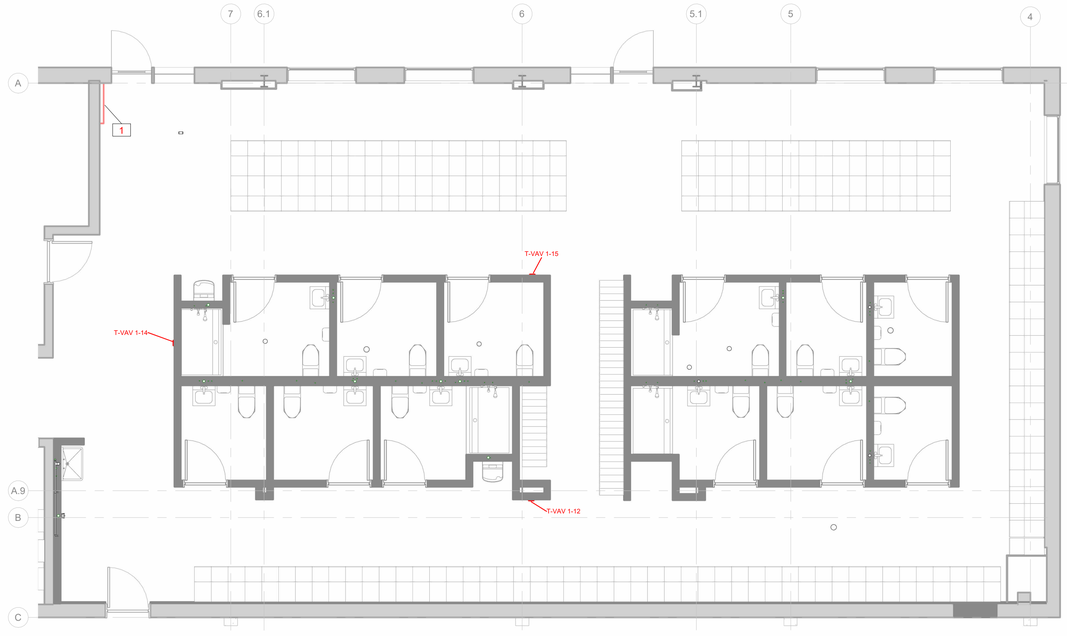


1 M - Level 1 HVAC Zones 1/8" = 1'-0"

HVAC Zones

- EF 1B
- Garage
- VAV 1-12
- VAV 1-14
- VAV 1-15
- XTG Office



2 M - Level 1 - Floor Level 3/16" = 1'-0"

Thermostats and Zone Control Features (23 09 00 - Instrumentation and Control for HVAC)

1. Select Thermostat and zone control sequence to include the selected features.

Mark	Space Number	Space Name	Zone Control and Thermostat/Sensor Options							Remark
			Occupant Adjustible	Motion Sensor	CO2 Sensor	OAT Disable	OHD Sensor	Window Sensor	Tamper-proof	
T-VAV 1-14	138	Passage	No	Yes	No	No	No	No	No	Sensor also used to control Exhaust System
T-VAV 1-12	139	Locker East	No	Yes	No	No	No	No	No	Sensor also used to control Exhaust System
T-VAV 1-15	139	Locker West	No	Yes	No	No	No	No	No	Sensor also used to control Exhaust System

Keynote Legend

1. Keynotes can apply to multiple similar situations, even if not each element or siutation is tagged.

Key Value	Keynote Text
1	Re-use XTG heater. Add to Zone VAV 1-14

Calculated Space HVAC Loads

Number	Name	Area (ft²)	Condition Type	Zone	Cooling Temperature Setpoint	Heating Temperature Setpoint	Space Type (determines internal Loads)	Construction Type (determines external Loads)	Assumed Internal Loads																Calculated Loads					
									People Loads				Lighting Loads						Electrical Lods						Cooling				Heating	
									Occupancy Unit	Number of People	Area per Person (SF)	People Per 1000 ft² (Calculated)	Heat Gain Per Person				Base Lighting Load On	Specified Loads - User Defined		Actual Loads - Read From Light Fixtures In Space		Base Power Load On	Specified - User Defined			Actual Load - Read From Electrical Connectors On Electrical Fixtures In Space		**Calculated Cooling Load (Btu/h)**	Calculated Cooling Load (Btu/h-ft²)	Cooling ft²/ton	Space Latent Cooling Load (Btu/h)	Space Sensible Cooling Load (Btu/h)	**Calculated Heating Load (Btu/h)**	Calculated Heating Load per area (Btu/h-ft²)
													Heat Load Values	Sensible (Btu/h)	Latent (Btu/h)	Total (Btu/h)		Lighting Load Units	Specified Lighting Load (W)	Specified Lighting Load (W/ft²)	Lighting Load (W)		Power Load Units	Power Load (W)	Power Load (W/ft²)	Actual Power Load (W)	Actual Power Load (W/ft²)						
138	Passage	408	Heated and cooled	VAV 1-14	75 °F	70 °F	00 Corridor	<Building>	By Space Type	0	0	0	By Space Type	250	200	450	By Space Type	Power Density	245	0.6	92	0.23	By Space Type	Power Density	4	0.01	5010	12.29	4,889	12	1,001 ft²	0	4,889	7,216	18
139	Locker West	930	Heated and cooled	VAV 1-15	75 °F	70 °F	00 Locker	<Building>	By Space Type	4.6	200	5	By Space Type	250	200	450	By Space Type	Power Density	651	0.7	290	0.31	By Space Type	Power Density	93	0.1	2400	2.58	20,718	22	539 ft²	930	19,788	29,105	31
139	Locker East	692	Heated and cooled	VAV 1-12	75 °F	70 °F	00 Locker	<Building>	By Space Type	3.5	200	5	By Space Type	250	200	450	By Space Type	Power Density	485	0.7	207	0.30	By Space Type	Power Density	69	0.1	3060	4.42	17,058	25	487 ft²	692	16,366	17,861	26
139A	Showerroom ADA	71	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.4	200	5	By Space Type	250	200	450	By Space Type	Power Density	50	0.7	37	0.52	By Space Type	Power Density	7	0.1	0	0.00	546	8	1,565 ft²	71	475	211	3
139B	Restroom ADA	53	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.3	200	5	By Space Type	250	200	450	By Space Type	Power Density	37	0.7	28	0.52	By Space Type	Power Density	5	0.1	0	0.00	407	8	1,564 ft²	53	354	158	3
139C	Restroom ADA	53	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.3	200	5	By Space Type	250	200	450	By Space Type	Power Density	37	0.7	28	0.52	By Space Type	Power Density	5	0.1	0	0.00	407	8	1,564 ft²	53	354	158	3
139D	Showerroom ADA	71	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.4	200	5	By Space Type	250	200	450	By Space Type	Power Density	50	0.7	37	0.52	By Space Type	Power Density	7	0.1	0	0.00	801	11	1,061 ft²	71	730	1,328	19
139E	Restroom	43	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.2	200	5	By Space Type	250	200	450	By Space Type	Power Density	30	0.7	28	0.65	By Space Type	Power Density	4	0.1	0	0.00	330	8	1,557 ft²	43	287	129	3
139F	Restroom	42	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.2	200	5	By Space Type	250	200	450	By Space Type	Power Density	29	0.7	28	0.67	By Space Type	Power Density	4	0.1	0	0.00	321	8	1,556 ft²	42	279	125	3
139G	Showerroom	45	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.2	200	5	By Space Type	250	200	450	By Space Type	Power Density	32	0.7	28	0.61	By Space Type	Power Density	5	0.1	0	0.00	395	9	1,378 ft²	45	349	302	7
139H	Restroom ADA	53	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.3	200	5	By Space Type	250	200	450	By Space Type	Power Density	37	0.7	28	0.52	By Space Type	Power Density	5	0.1	0	0.00	407	8	1,564 ft²	53	354	158	3
139I	Restroom	63	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.3	200	5	By Space Type	250	200	450	By Space Type	Power Density	44	0.7	37	0.58	By Space Type	Power Density	6	0.1	0	0.00	485	8	1,566 ft²	63	422	187	3
139J	Showerroom	61	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.3	200	5	By Space Type	250	200	450	By Space Type	Power Density	43	0.7	37	0.60	By Space Type	Power Density	6	0.1	0	0.00	860	14	858 ft²	61	798	1,731	28
139K	Restroom ADA	53	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.3	200	5	By Space Type	250	200	450	By Space Type	Power Density	37	0.7	28	0.52	By Space Type	Power Density	5	0.1	0	0.00	408	8	1,564 ft²	53	354	158	3
139L	Restroom	42	Heated and cooled	EF 1B	75 °F	70 °F	00 Locker	<Building>	By Space Type	0.2	200	5	By Space Type	250	200	450	By Space Type	Power Density	29	0.7	28	0.67	By Space Type	Power Density	4	0.1	0	0.00	321	8	1,556 ft²	42	279	125	3
157	Garage (not in project)	763	Unconditioned	Garage	100 °F	55 °F	<Building>	<Building>	By Space Type	0	0	0	By Space Type	275	275	550	By Space Type	Power Density	610	0.8	0	0.00	By Space Type	Power Density	763	1	0	0.00	Not Computed	Not Computed		0		Not Computed	Not Computed
A1	Adiabatic (not in project)	143	Unconditioned	XTG Office	75 °F	70 °F	<Building>	<Building>	By Space Type	0	0	0	By Space Type	275	275	550	By Space Type	Power Density	115	0.8	0	0.00	By Space Type	Power Density	143	1	0	0.00	Not Computed	Not Computed		0		Not Computed	Not Computed
A2	Adiabatic (not in project)	29	Unconditioned	XTG Office	75 °F	70 °F	<Building>	<Building>	By Space Type	0	0	0	By Space Type	275	275	550	By Space Type	Power Density	24	0.8	0	0.00	By Space Type	Power Density	29	1	0	0.00	Not Computed	Not Computed		0		Not Computed	Not Computed
																												48,353			2,273	46,080	58,952	

Grand total: 18

Design Space Flows

Number	Name	Area (ft²)	Volume (ft³)	Condition Type	AHU Zone	Zone	Flow based on Load															Ventilation and Exhaust Requirements																		Comment
							Cooling							Heating								Ventilation								Exhaust											
																														Toilet		Shower				Garage				
							Calculated Cooling Load (Btu/h)	Calculated Latent Cooling Load (Btu/h)	Calculated Cooling Load (Btu/h)	Cooling Temperature Setpoint (°F)	Cooling Supply Air Temperatures (°F)	Supply Airflow (cfm)	Adjustment Factor	**Design Cooling Flow (cfm)**	Calculated Heating Load (Btu/h)	Heating Temperature Setpoint	Heating Air Temperature	Heating Load not met by VAV (Btu/h)	Adjustment Factor Heating	**Design Heating Supply Flow (cfm)**	Ventilation Classification	Occupants per 1,000 ft²	Occupants (roundup)	OA per person (CFM)	OA Area-based (cfm/ft²)	**OA Rate (cfm)**	Min. ACH	**Min VAV Flow (cfm)**	EA Area-based (cfm/ft²)	Minimum EA Area-based (cfm/ft²)	EA per Fixture (cfm)	# of Fixtures	EA per Shower (cfm)	# of Showers	EA accumulated (cfm)	Addl. EA (cfm)	**EA Total (cfm)**	**EA Garage Min. (cfm)**	**EA Garage excluding Min. (cfm)**	Comment
139A	Showerroom ADA	71	1,296	Heated and cooled	AHU 1	EF 1B	546	71	475	75 °F			100%		211	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139B	Restroom ADA	53	966	Heated and cooled	AHU 1	EF 1B	407	53	354	75 °F			100%		158	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139C	Restroom ADA	53	966	Heated and cooled	AHU 1	EF 1B	407	53	354	75 °F			100%		158	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139D	Showerroom ADA	71	1,289	Heated and cooled	AHU 1	EF 1B	801	71	730	75 °F			100%		1,328	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139E	Restroom	43	778	Heated and cooled	AHU 1	EF 1B	330	43	287	75 °F			100%		129	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139F	Restroom	42	757	Heated and cooled	AHU 1	EF 1B	321	42	279	75 °F			100%		125	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139G	Showerroom	45	853	Heated and cooled	AHU 1	EF 1B	395	45	349	75 °F			100%		302	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139H	Restroom ADA	53	1,000	Heated and cooled	AHU 1	EF 1B	407	53	354	75 °F			100%		158	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139I	Restroom	63	1,191	Heated and cooled	AHU 1	EF 1B	485	63	422	75 °F			100%		187	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139J	Showerroom	61	1,155	Heated and cooled	AHU 1	EF 1B	860	61	798	75 °F			100%		1,731	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139K	Restroom ADA	53	1,000	Heated and cooled	AHU 1	EF 1B	408	53	354	75 °F			100%		158	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
139L	Restroom	42	784	Heated and cooled	AHU 1	EF 1B	321	42	279	75 °F			100%		125	70 °F		0	150%		Utility and Public / Toilet Rooms SPS 364	0	0	7.5	0	0	0	0	0	0	75	1	50	0	75	0	75	0	0	
EF 1B: 12							5,688					0		0	4,770					0																900			
139	Locker East	692	13,368	Heated and cooled	AHU 1	VAV 1-12	17,058	692	16,366	75 °F	55 °F	758	120%	909	17,861	70 °F	95 °F	0	120%	794	Utility and Public / Locker / Dressing SPS 364	0	0	7.5	0	0	0	0	0.5	0	75	0	50	0	346	-346	0	0	0	Exhausted through toilets/showers per SPS 364.0403 (5) 3.
VAV 1-12: 1							17,058					758		909	17,861					794																0			
138	Passage	408	7,473	Heated and cooled	AHU 1	VAV 1-14	4,889	0	4,889	75 °F	55 °F	226	120%	272	7,216	70 °F	95 °F	1,500	130%	275	Public / Corridor Office IMC	0	0	0	0.06	24	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAV 1-14: 1							4,889					226		272	7,216					275																0			
139	Locker West	930	16,084	Heated and cooled	AHU 1	VAV 1-15	20,718	930	19,788	75 °F	55 °F	916	120%	1,099	29,105	70 °F	95 °F	0	130%	1,401	Utility and Public / Locker / Dressing SPS 364	0	0	7.5	0	0	0	0	0.5	0	75	0	50	0	465	-465	0	0	0	Exhausted through toilets/showers per SPS 364.0403 (5) 3.
VAV 1-15: 1							20,718					916		1,099	29,105					1,401																0			
AHU 1: 15							48,353					1,900		2,280	58,952					2,470																900			

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison
WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

Loads and Zoning

M 100

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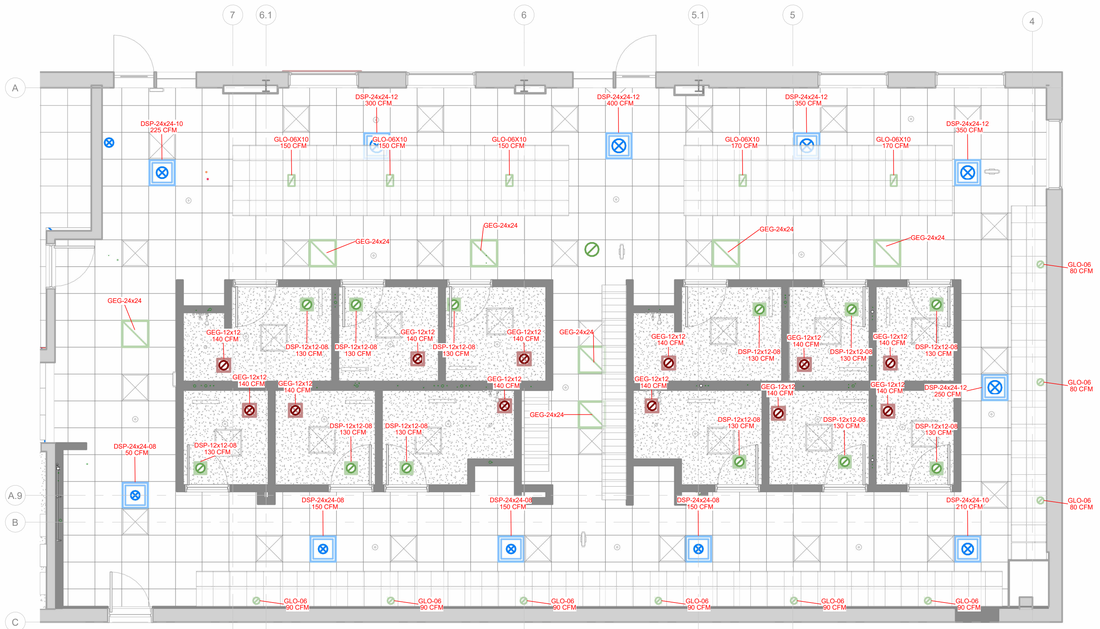
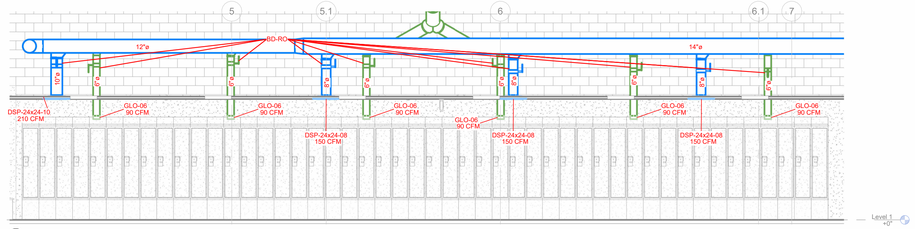
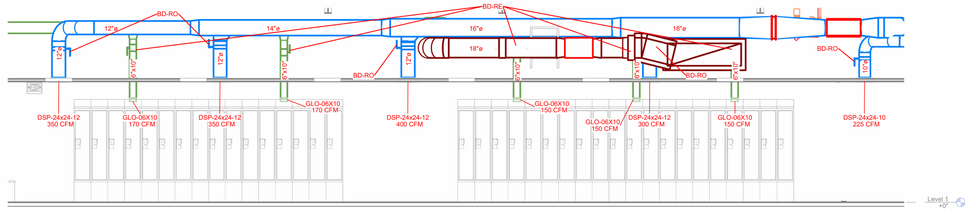
7/14/2025 8:57:59 AM
Print in color on 24" x 36"



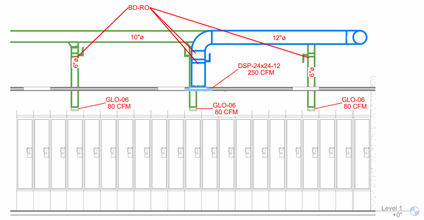
1 M Ceiling - Level 1 3/16" = 1'-0"



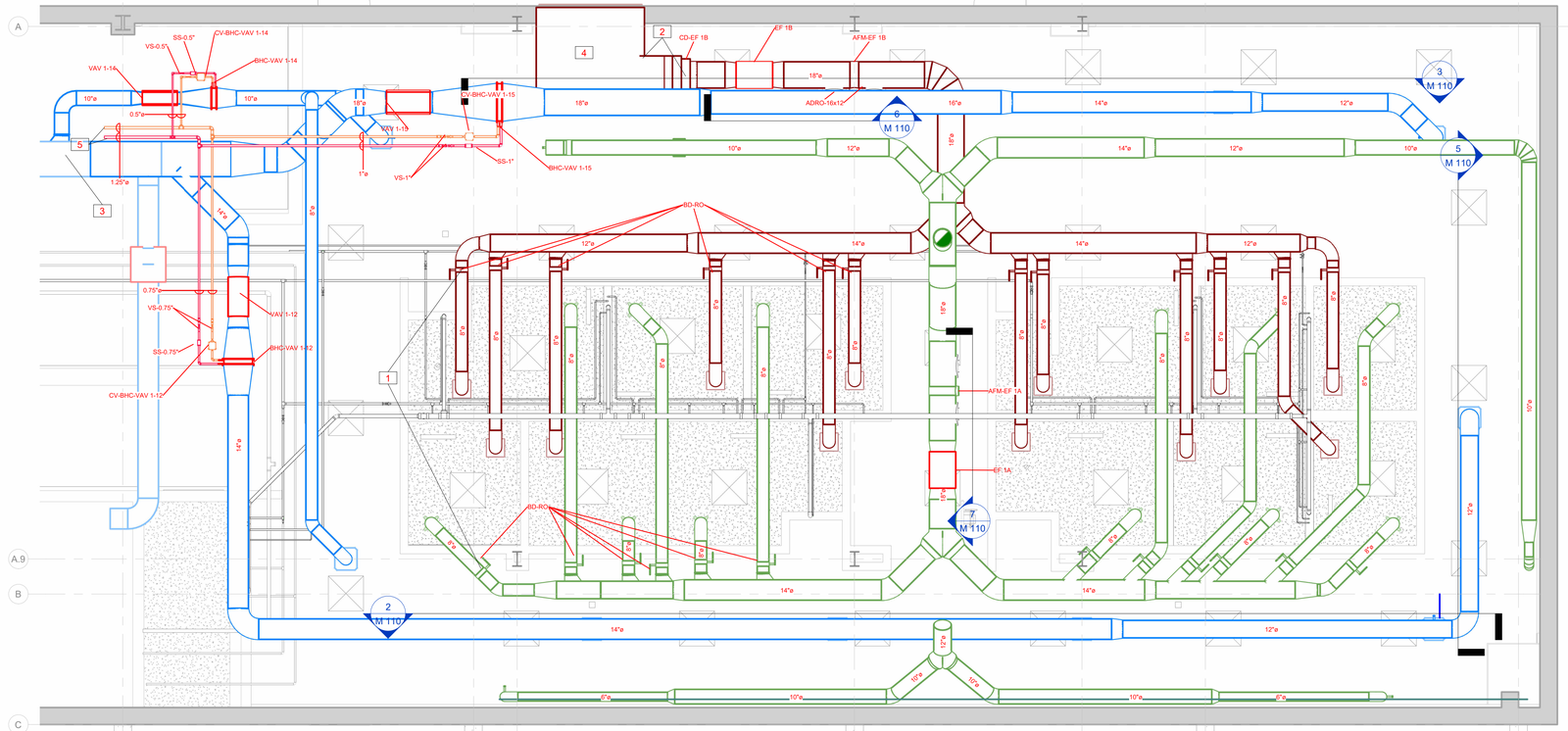
2 M Section - Locker East facing East 3/16" = 1'-0"



3 M Section - Locker West facing East 3/16" = 1'-0"



5 M Section - Locker North facing North 3/16" = 1'-0"



4 M - Level 1 - Above Ceiling 1/4" = 1'-0"

2 0 2 4 6 8 10
1/4" = 1'-0" FEET

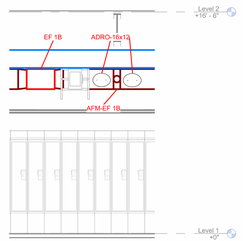
2 0 2 4 6 8 10 12 14
3/16" = 1'-0" FEET

5 0 5 10 15 20
1/8" = 1'-0" FEET

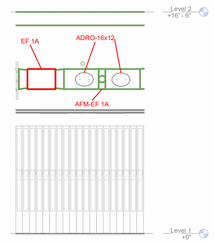
5 0 5 10 15 20 25 30
3/32" = 1'-0" FEET

5 0 5 10 15 20 25 30 35 40 45
1/16" = 1'-0" FEET

20 0 20 40
1" = 20'-0" FEET



6 M Section - EF 1B 3/16" = 1'-0"



7 M Section - EF 1A 3/16" = 1'-0"

Keynote Legend

1. Keynotes can apply to multiple similar situations, even if not each element or siutation is tagged.

Key Value	Keynote Text
1	Install accessible outside drywall ceiling.
2	Insulate up to AHU/Fan/Control Damper.
3	Connect VAV ducting into existing supply duct.
4	Connect duct into existing exhaust louver. Re-use or create plenum. Insulate up to control damper.
5	Connect to existing pipes along with in-wall heater (by door).

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Engineering

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1600 Emil St., Madison WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

Project North
TRUE

HVAC Layout

M 110

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7/14/2025 8:58:05 AM
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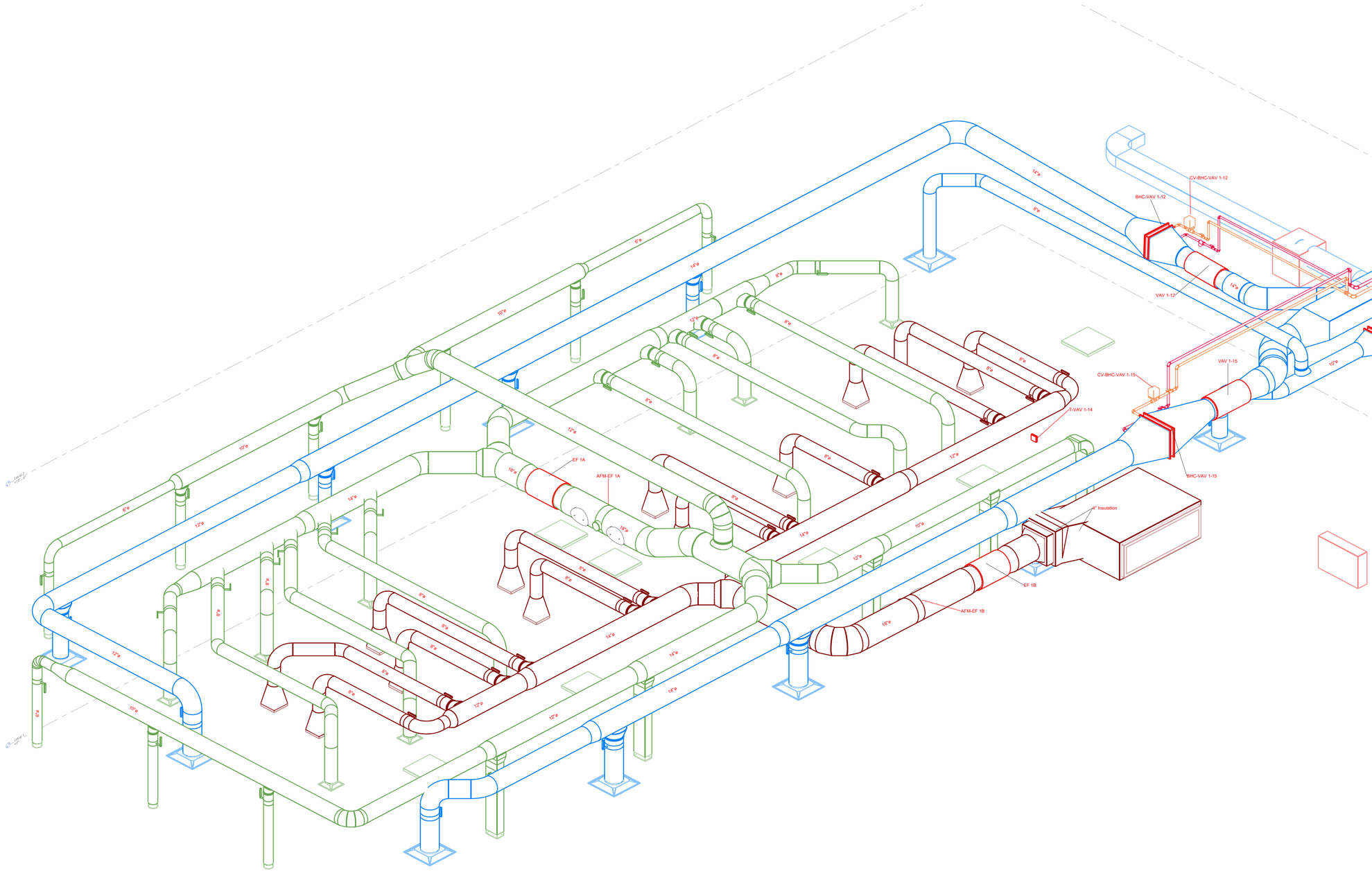

1 M 3D - from North West

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison
WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

3D from NW

M 120

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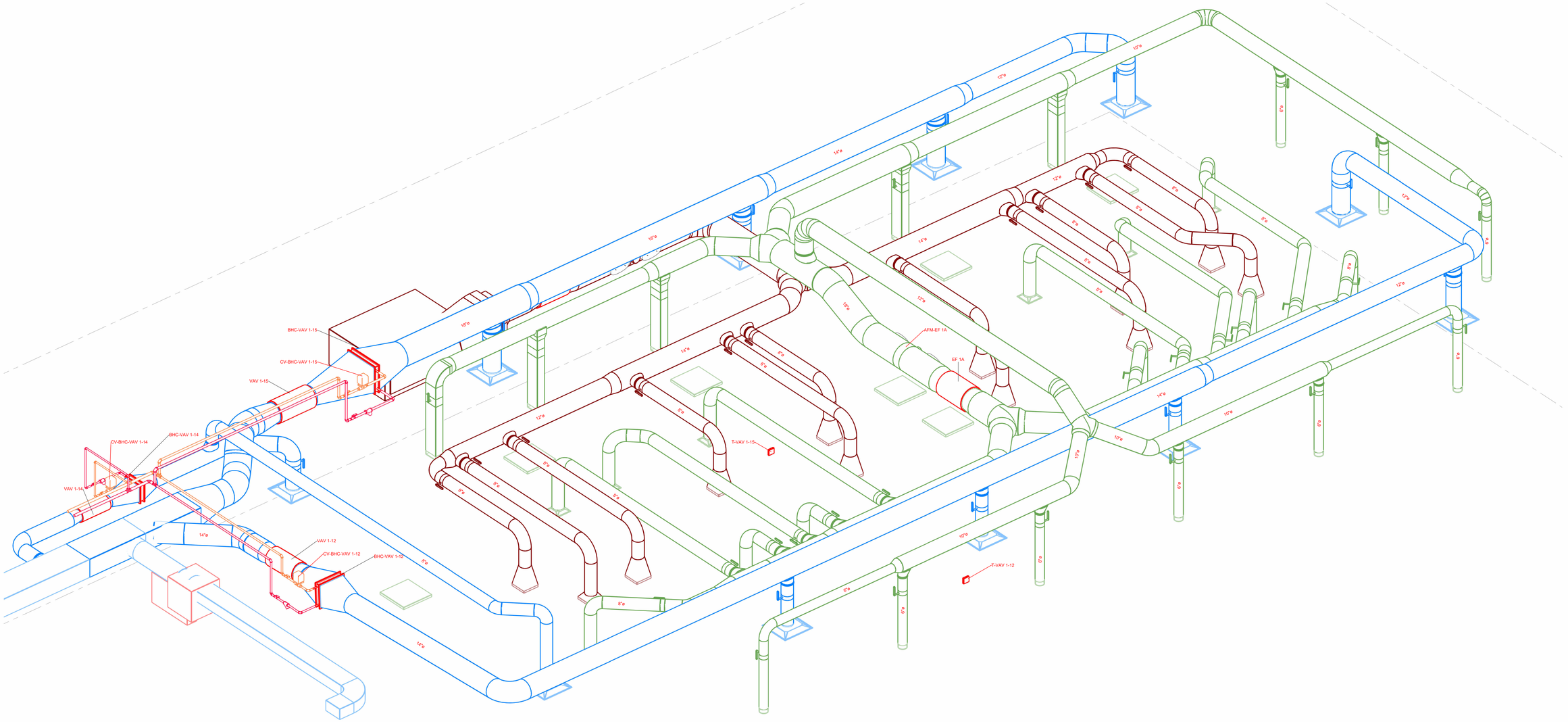
7/14/2025 8:58:10 AM
Print in color on 24" x 36"



1 M 3D - from South East

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison
WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

3D from SE

M 130

Print Date:
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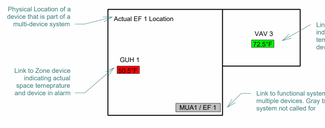
Refer to Specification 23 09 00 - Instrumentation and Control for HVAC

Floorplan in BAS



A. Locate Links to central equipment at actual location on floorplan. Combine concurrently operating equipment in one link. For example a MUA and associated Exhaust fans, or an AHU and associated ERV. If associated Devices are physically far apart, provide label where the actual device is located.
B. Locate links to zones at location of zone.
C. Links to terminal devices / zones shall display space temperature.
D. Change link color based on status:
   1. Commanded off: Gray
   2. Commanded on: Green
   3. Fault detected: Red

Override

A. Allow operator to override set (e.g. space temperature setpoint) and derived values (e.g. calendar based occupied mode)
B. An obvious choice shall allow to limit time frame of override. This will help to try out adjustments for trouble-shooting without forgetting re-setting them.
C. Some setpoints shall be adjustable by programmer only. Those setpoints shall be visible to operators

Motor Control

Operation:
A. Enable when the associated device (i.e. fan, pump) is called for

VFD Motor Control
A. Speed:
   1. Operate at Speed required to meet the applicable setpoint.
   2. Display control signal speed 0% (device min. speed) -100%
   3. Set minimum speed (0% reference) at VFD based on manufacturer requirement to ensure proper motor operation and cooling. Typically 15Hz is the lower limit but needs to be verified by device manufacturer.
B. Alarm:
   1. VFD or inverter derives estimated tourque and load at the given speed and compares to actual values.
   2. If discrepancies indicate a problem, create an alarm signal.
C. Bypass:
   1. Bypass operation will be manually activated on site (not by BAS)
   2. When bypass is activated, user screen will indicate bypass operation.
D. Drive Data:
   1. All data (via Lon, BACNet etc.) will be displayed for user analysis.
   2. Data displayed depend on manufacturer but typically include actual current, voltage, frequency, tourque, fault codes, kW etc.
E. ECM:
   1. ECM and their controllers typically are proprietary to a device. Selection typically is specified by specifying the type of equipment. Control similar to VFD above. Include all the control and monitor options that are possible with the specified device.

Constant Speed Motor Control
A. Read and display motor current.
B. Generate alarm when current is below 0.5 A or above 5 A

Outside Air Temperature Sensor

A. Local OAT readings can be inaccurate due to limitations of locations. If sun shines on or near sensor location readings are inaccurate. Sensors also can fail and since OAT determines many operations loss of signal or inaccuracy could be disastrous. Therefore redundancy is required.
B. Locate local OAT sensor on northwall away from possible sunshine or heat sources or exhausts
C. Display local and remote (weatherstation) OAT at main building site.
D. Operate based on remote OAT (primary). If remote OAT is unavailable use local OAT (secondary).
   1. OAT shown at the device shall be whatever is the used OAT.
   2. The currently used OAT shall be highlighted.
E. Alarm shall be generated if both OAT readings differ by more set temperature differential.

Space Thermostat Controls

Temperature Deadbands and Schedules
A. A schedule shall establish occupied and unoccupied timesand setpoints in to be determined areas.
B. Heating-only or Cooling-only zones:
   1. Maintain setpoint by modulating or staging devices
C. Heating and Cooling Zones:
   1. Space temperature drifts in a dead-band and space temperature shall not exceed setpoints.

Occupied Setpoint Heating 71°F Cooling 75°F
Unoccupied Setpoints Heating: 69°F Cooling: 80°F

Occupant-adjustable Thermostat (where scheduled)
A. User can enter a setpoint within predefined temperature limits.
B. Space will maintain temperature with this setpoint and deadbands established for occupied and standby times
C. Display and log occupant setting

Upper Limit: 73°F
Lower Limit: 71°F

Motion Sensor Control and Standby (where scheduled)
A. During scheduled unoccupied times: no change - unoccupied setpoint will be met.
B. During scheduled occupied times: based on detected occupancy or vacancy the standby or occupied setpoints will be used
   a. Determination of Standby mode
      1. During scheduled occupied times motion sensors determine if space is actually occupied by people or vacated.
      2. Motion sensor has an internal delay (time to keep contact closed after no motion detected) of typically 30 seconds. BAS will use additional delay timers to enter into standby and back into occupied mode.
      3. Sufficient number and type of sensors shall be installed to detect movement in typically occupied areas. Sensors shall be shielded from detecting motion in adjacent areas (for example hallways).
   b. Setpoint in Standby mode
      1. Typically deadbands are widened by 2°F and ventilation reduced to levels below ability to meter flow (not actual zero).
      2. Minimum flow in zone will be 0 cfm.
C. Display and log motion sensor status and mode

Standby Setpoint Heating 70°F Cooling 76°F
Enter Standby after no motion detected for 10 min.
Leave Standby mode after motion detection for 5 min.

Window Sensor (where scheduled)
A. All operable windows in a space have a sensor indicating if they are open
B. When windows in zone are open for a specific time, enter Window-Open mode
   1. Disable all cooling, ventilation
   2. Enable heating to only maintain a freeze protection temperature.
C. Display and log sensor status and mode

Time of window open before entering Window-Open mode: 5 min.
Freeze protection temperature: 45°F

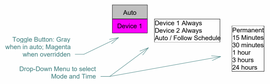
CO2 Sensor (where scheduled)
A. Modulate ventilation rates to keep CO2 level below set threshhold.
B. For VAV systems modulate flowrate to up to maximum cooling flow rate.
C. Displayand log CO2 value

Maximum CO2 level: 800 ppm

Outdoor Temperature Heat Disable (where scheduled)
A. When OAT is above a specific temperature, disable heating in this zone.
B. Display and log mode

Disable Heating when OAT is above 45°F

Lead/Lag Setting



A. Lead/Lag Operation:
   1. Switch Lead device every 1st Tuesday of the Month at 9 am. This provides enough response time to resolve any problems
B. Override:
   1. Allow permanent or timed override

Typical Value

A. For each adjustable value provide a typical value for reference.
B. Adjust values after commissioning to reflect real-world system requirements.
C. Example:

Enable boiler when OAT is below 50°F (typical 50°F)

Control Valves

A. Electronic PICV shall include flowmeter and display flowrate. Flow setpoint will be set by controller. Read and display actual flow.
B. Valves without flowmeter shall be controlled by actuator setpoint.
C. Display actual actuator position for either valve type.
D. Control sequences will assume one type of valve. Adjust specific control sequences if a different than expected type of valve is used. Refer to design engineer for specifics.

1 M Standard Control

Standard Duct Fittings

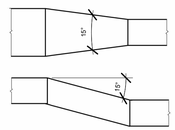
Duct Fittings shown are examples of Design Intent. The examples shown may not cover all actual Options on this Project. Combinations of the Details and Adjustments may be required and require approval by Engineer. Pressuredrop Reduction is required within the frame of available Fittings. Always use Fitting with available Lowest Pressuredrop whether shown on plans or not. Plans may not show the the fitting in the greatest detail.

Duct Type Changes

Plans may show round ducts that may not physically fit within obstructed areas. Contractor shall upon approval by engineer use oval duct to avoid obstructions. If oval duct is not possible, rectangualr duct may be used upon approval by engineer. For equivalent sizing refer to ASHRAE Fundamentals 2017 chapter 21. Round up to next available size. Contractor shall assume cost for these changes.
Duct Type Symbols:
Round: 8" ø
Oval: 12"x6"
Rectangular: 12"x6"

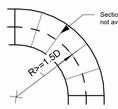
Transition and Offsets for all Ducts

If, despite good Coordination, 15° Fitting is not possible, larger angles may be allowed upon approval by Engineer. Ductsize Increase may be required.



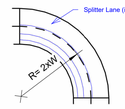
Elbow for Round and Oval Duct

Elbows shall be die-stamped in the sizes available (up to 14"). For larger Elbows use 5-Gore fitting (4-Gore for 60°, 3Gore for 30°). R/D shall be 1.5 or larger where available.

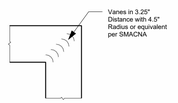


Elbow for Rectangular Duct

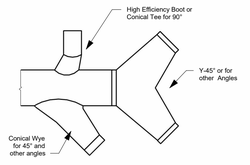
Smooth Elbow: use whenever possible
Where R/W <= 0.5, use 3 Splitter Lanes designed per SMACNA requirement.



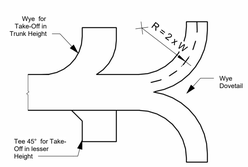
Mitered Elbow: use only when Rounded Elbow is impossible to use.



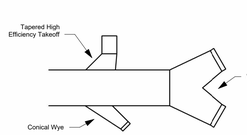
Round-Round (Oval-Oval)



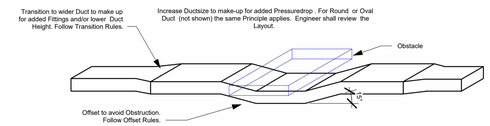
Rectangular-Rectangular



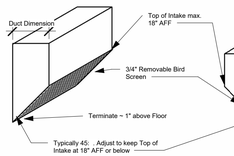
Rectangular-Round



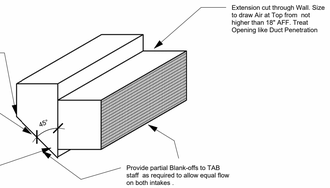
Obstruction Avoidance



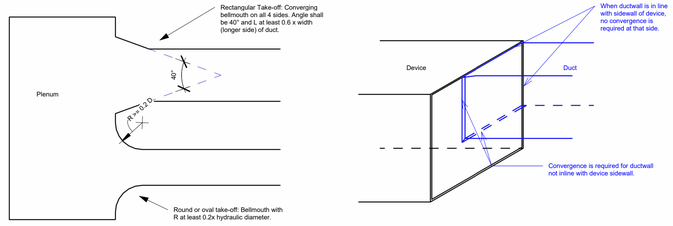
Floor Air Intake Single Side



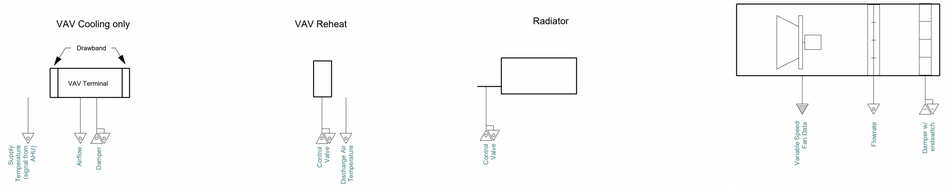
Floor Air Intake Dual Side



Plenums and Device Discharge/Intake



2 General Duct Details

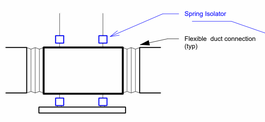


A. Overview:
   1. Fan A exhausts air from the locker cabinets and transfers that air to the bathrooms
   2. Fan B exhausts air from the bathrooms to the outside.
      a. Fan B exhaust rate is slightly higher to ensure negative pressure in bathrooms
   3. Both fans stop or run at the same time
B. Operation:
   1. Exhaust system shall run when:
      a. Any of the motion sensors detects motion (plus 20 minute delay)
      b. AHU for VAV system is scheduled to run
   2. VAV system interlock:
      a. AHU shall operate whenever this exhaust system is running (even if activated only by motion sensor)
      b. VAV terminals in the locker room space shall run at the set minimum flow
C. Flowrates:
   1. Operate system at minimum flow when exhaust is activated by motion sensor only
   2. Operate system at maximum flow when exhaust is activated by scheduled AHU operation
D. Programmer Setpoints:
   1. Maximum Flow Fan A: 1560 cfm
      a. Minimum Flow: 811 cfm
   2. Maximum Flow Fan B: 1680 cfm
      a. Minimum Flow: 900 cfm

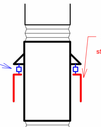
3 Locker Room and Bathroom Exhaust System

4 Duct Connection to Locker

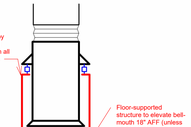
Inline Fan - Horizontal



Inline Fan - Vertical



Bellmouth Inlet Fan - Vertical



A. Install fan-manufacturer bell-mouth where fan is shown to draw air from space.
B. Install fan-manufacturer provided spring isolators and flex duct connector to prevent transmission of vibrations.
C. Provide support to structure.
   1. For vertical fans drawing air from floor, provide a floor-mounted steel structure that allows free air entry

5 Fan Installation

VAV Cooling only

A. Operation:
   1. Modulate Damper to maintain flow setpoint
   2. When no flow (0 cfm) is required, close damper up to point of no measurable flow. This will keep damper slightly open and allows immeasurable airflow.
B. Flowrates:
   1. When zone is in cooling mode, modulate flow between minimum and maximum flow setting to achieve cooling setpoint.
      a. When zone is in occupied mode, minimum flow shall be ventilation flow
      b. When zone is in unoccupied or standby mode, minimum flow shall be 0 cfm
   2. When zone is in heating mode or deadband, control flow to minimum flow
C. History:
   1. Damper Command and Feedback
   2. Airflow
D. Alarms:
   1. Damper command and feedback deviate by more than 15 %
E. Operator Setpoints:
   1. Cooling Maximum Flow: cfm
   2. Ventilation Flow cfm

VAV Reheat

A. Applicability:
   1. when plans show a reheat coil downstream of VAV terminal
B. Valve Operation:
   1. Modulate valve to maintain DAT setpoint
C. Operation when heat is called:
   1. Discharge air at 80°F and increase flow up to maximum heating flowrate
   2. As call for heat continues, gradually increase DAT setpoint to Heating DAT.
   3. As call for heat recedes, reduce heat output reversing above sequence.
D. History:
   1. Valve Command and Feedback
   2. DAT
E. Alarms:
   1. Valve command and feedback deviate by more than 15 %
F. Operator Setpoints:
   1. Heating Maximum Flow: cfm
   2. Heating DAT: °F

Radiator

A. Applicability:
   1. when plans show a radiator in space served by VAV
B. Valve Operation:
   1. Modulate valve to meet space heating setpoint
C. Operation when a VAV reheat coil is present:
   1. Operate radiator primarily. Only use VAV reheat if radiator alone is not capable of maintaining heating setpoint
D. History:
   1. Valve Command and Feedback
   2. Return temperature
E. Alarms:
   1. Valve command and feedback deviate by more than 15 %

6 VAV Zone

A. **Overview:**
   1. Fan will provide the set airflow when called for
B. **Operation:**
   1. When unit is off, damper is closed and fan is off
   2. When airflow is called for:
      a. Damper interlock:
         • Open damper
         • Once damper is proven open, start up fan
      b. In constant volume systems, start fan at a set minimum speed to stabilize the control loop
   3. Shutdown:
      a. Turn off fan
      b. Close damper after fan is off
   4. If no damper is scheduled, omit damper interlock
C. **History:**
   1. Fan Speed
   2. Airflow
   3. Damper position
D. **Alarm:**
   1. Damper not opening
   2. No airflow
E. **Programmer Setpoint:**
   1. Minimum Fanspeed: 70% (about 10% below typical speed)
   2. Flow: 3000 cfm (or from other control sequence)

7 Fan w/ Flowstation and Control Damper

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

Details and Control Sequences

M 200

Print Date:
7/14/2025 8:58:17 AM
Print in color on 24" x 36"

Diffusers, Registers and Grilles (23 37 00 - Air Outlets and Inlets)

Type Mark	Description	Neck Size	Manufacturer	URL	Model	Type Image	Est. Count	Type Remark
DSP-12x12-08	Diffuser, Square Plaque, Steel	8"ø	Price Industries	www.priceindustries.com	SPD		12	
DSP-24x24-08	Diffuser, Square Plaque, Steel	8"ø	Price Industries	www.priceindustries.com	SPD		4	
DSP-24x24-10	Diffuser, Square Plaque, Steel	10"ø	Price Industries	www.priceindustries.com	SPD		2	
DSP-24x24-12	Diffuser, Square Plaque, Steel	12"ø	Price Industries	www.priceindustries.com	SPD		5	
GEG-12x12	Grille, Egg Crate, Angled Core, Aluminum	12"x12"	Price Industries	www.priceindustries.com	85		12	Provide integrated plenum with round inlet and installation frame as required
GEG-24x24	Grille, Egg Crate, Angled Core, Aluminum	24"x24"	Price Industries	www.priceindustries.com	85		7	Provide integrated plenum with round inlet and installation frame as required
GLO-06	Exhaust from Locker	6"ø					9	Integrate into Locker Plenum
GLO-06X10	Exhaust from Locker	6"x10"					5	Integrate into Locker Plenum

Balancing Dampers (23 31 00 - HVAC Duct and Casings)

Type Mark	Description	Width	Height	Est. Count	Specification
BD-RO	Balancing Damper - Round	6"	6"	9	23 31 00 - HVAC Duct and Casings
BD-RE	Balancing Damper - Rectangular	6"	10"	5	23 31 00 - HVAC Duct and Casings
BD-RO	Balancing Damper - Round	8"	8"	27	23 31 00 - HVAC Duct and Casings
BD-RO	Balancing Damper - Round	10"	10"	2	23 31 00 - HVAC Duct and Casings
BD-RO	Balancing Damper - Round	12"	12"	5	23 31 00 - HVAC Duct and Casings

Control Dampers (23 31 00 - HVAC Duct And Casings)

Mark	System Name	Description	Width	Height
CD-EF 1B	EF 1B	Rectangular Control Damper - Insulated	18"	18"

Booster Heating Coils (23 82 00 - Convection Heating and Cooling Units)

		Construction					Air					Liquid							
Mark	Description	Width (Length)	Height	Depth	Pipe Size	Weight	Airflow	External Static Pressure	EAT	LAT	Heat Output	Flowrate Liquid	Fluid	Pressuredrop Liquid	EWT	LWT	Special Features	Type Remark	Specific Remark
BHC-VAV 1-12	Hot Water Coil	19.5"	16.5"	3"	1/2"	31 lbm	800 CFM	0.15 in-wg	60 °F	97 °F	31,700 Btu/h	2.2 GPM	Water	3.5 ftH2O	140 °F	110 °F	12fin; 2-row		
BHC-VAV 1-14	Hot Water Coil	13.5"	12"	3"	1/2"	20 lbm	275 CFM	0.09 in-wg	60 °F	96 °F	10,600 Btu/h	0.7 GPM	Water	0.3 ftH2O	140 °F	110 °F	12fin; 2-row		
BHC-VAV 1-15	Hot Water Coil	25.5"	19.5"	3"	3/4"	36 lbm	1,400 CFM	0.17 in-wg	60 °F	95 °F	52,200 Btu/h	3.2 GPM	Water	2.7 ftH2O	140 °F	110 °F	12fin; 2-row		

VAV Terminals (23 36 00 - Air Terminal Units)

Mark	Manufacturer	Model	Size	Description	System Name	Insulated	Design Pressuredrop	Weight	Actual Terminal Flow (HIDE)	Cooling Flow	Heating Flow	Minimum Flow	Type Remark	Specific Remark
VAV 1-12	Accutrol	AVT4000-12	12" Round	VAV Airvalve	VAV 1-14	Yes	0.107 in-wg	16 lb	910 CFM	910 CFM	800 CFM	400 CFM		Elevated min. flow due to exhaust fan operation
VAV 1-14	Accutrol	AVT4000-08	8" Round	VAV Airvalve	VAV 1-14	Yes	0.11 in-wg	12 lb	275 CFM	325 CFM	325 CFM	100 CFM		Elevated min. flow due to exhaust fan operation
VAV 1-15	Accutrol	AVT4000-14	14" Round	VAV Airvalve	VAV 1-14	Yes	0.112 in-wg	20 lb	1,400 CFM	1,100 CFM	1,400 CFM	400 CFM		Elevated min. flow due to exhaust fan operation

Air Flow Meters (23 09 00 - Instrumentation And Control For HVAC)

Mark	Description	System	Width	Height	Enclosure	Type Remark	Specific Remark
AFM-EF 1A	Air Flow Meter - Round	EF 1A	18"	18"			
AFM-EF 1B	Air Flow Meter - Round	EF 1B	18"	18"			

Access Doors (23 31 00 - HVAC Duct And Casings)

Type Mark	Description	Width	Height	Est. Count
ADRO-16x12	Oval Access Door for Round/Oval Ducts	16"	12"	4

Fans (23 34 00 - HVAC Fans)

							Fan								Motor								
Mark	System Name	Description	Space Name	Space Number	Manufacturer	URL	Model	Model Adder	Airflow	Static Pressure	Fan Type	Design Fan RPM	Brake Horsepower	FEI	Motor Type	Horsepower	Voltage	Poles	Apparent Power	Panel	Circuit Number	Weight	Type Remark	Specific Remark
EF 1A	EF 1A	Axial Fan (Mixed Flow)	Locker East	139	Greenheck	www.greenheck.com	QEID-12-100		1560 CFM	0.75 in-wg	Direct Drive Mixed Flow	1648	0.39 hp	1.65	ECM	1 hp	480 V	3	1,673 VA	OSH 1A	8,10,12	139 lbm		
EF 1B	EF 1B	Axial Fan (Mixed Flow)	Locker West	139	Greenheck	www.greenheck.com	QEID-12-100		1680 CFM	0.75 in-wg	Direct Drive Mixed Flow	1711	0.39 hp	1.62	ECM	1 hp	480 V	3	1,673 VA	OSH 1A	13,15,17	139 lbm		

Isolation Valves (23 20 00 - HVAC Piping and Pumps)

Type Mark	Description	Size	Est. Count
VS-0.5"	Ball Valve Soldered	1/2"	2
VS-0.75"	Ball Valve Soldered	3/4"	2
VS-1"	Ball Valve Soldered	1"	2

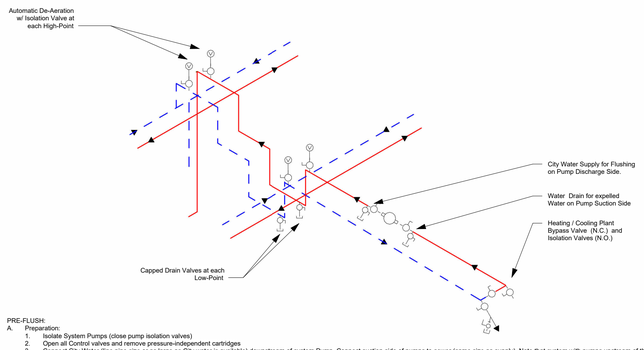
Control Valves (23 09 00 - Instrumentation and Control for HVAC)

Mark	Description	Flow	Failure Mode	Type Remark	Specific Remark
CV-BHC-VAV 1-12	Control Valve - Pressure Independent	2.2 GPM	Last Position		
CV-BHC-VAV 1-14	Control Valve - Pressure Independent	0.7 GPM	Last Position		
CV-BHC-VAV 1-15	Control Valve - Pressure Independent	3.2 GPM	Last Position		

Pipe Accesories (23 20 00 - HVAC Piping and Pumps)

Type Mark	Description	Size	Count
SS-0.5"	Strainer Y - Soldered	0.5"	1
SS-0.75"	Strainer Y - Soldered	0.75"	2
SS-1"	Strainer Y - Soldered	1"	1

Pipe Flushing



PRE-FLUSH:
A. Preparation:
1. Isolate System Pumps (close pump isolation valves)
2. Open all Control valves and remove pressure-independent cartridges
3. Connect City Water (line pipe size or as large as City water is available) downstream of system Pump. Connect suction side of pumps to sewer (same size as supply). Note that system with pumps upstream of the plant (chiller or boiler) still connect the same way seen from the pumps (city water on discharge side and drain on suction side).
4. Isolate and bypass plant (close isolation valves, open bypass valve).
5. Close all coil and terminal device isolation valves; open plant bypass valves.
6. Close de-aerator isolation valves.

B. System Flushing:
1. Open all drain valves in supply line. Close each valve after 10 minutes of high rate of clear discharge.
2. Open all coil and terminal supply (inlet) isolation valves and respective flush or strainer flush valves. Keep return (outlet) isolation valves closed. Before opening isolation valves ensure the design strainers are installed. Close each flush valve after 10 minutes of high rate of clear discharge. Remove, clean, and re-insert each strainer.
3. Open all drain valves in return line
a. Open one coil or terminal return (outlet) isolation valve. Close after the nearest flush valve in return line discharged clear water for 10 minutes. If the devices are small enough to restrict overall flow, open multiple zones for flushing while keeping flow in each device high enough to flush out dirt.
b. Continue with additional valves until all zones are clear.
c. Open all zone isolation valves and close return line drain valves after 10 minutes of clear discharge. Start closing drain valves at far end of system and move towards system pumps.

C. Plant Flushing:
1. Close the plant bypass valve.
2. Ensure the design strainer is installed in each boiler or chiller's return line.
3. Open the return (inlet) isolation valve and the drain valve or strainer flushvalve. Close each flush valve after 10 minutes of high rate of clear discharge. Remove, clean, and re-insert each strainer.
4. Open each chiller's or boiler's supply (outlet) isolation valve.
5. Open nearest flush valve and close after 10 minutes of high rate of clear discharge.

D. Ensure all sections were properly flushed. Engineer may add flushing requirements and procedures.

CLEANING:
A. Preparation:
1. Open all isolation valves, operate all pumps and add cleaner per manufacturer instructions
B. For cold systems clean for 96 hours (4 days)
C. For hot systems circulate at 160°F for 24 hours
D. Amend procedures to more stringent if cleaning product manufacturer recommends differently.

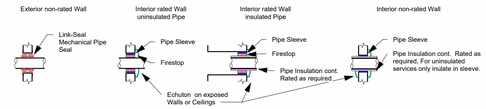
POST-FLUSH:
A. Flush after Cleaning applying same procedure as for Pre-Flush.

WATER SYSTEMS:
A. De-aerate entire system.
B. Add corrosion inhibitor chemicals in bypass feeder and operate pumps with all isolation valves open (design operation) with bypass feeder in bypass mode. Frequently adjust chemicals in feeder to meet required concentration and pH levels.
C. After 1 week close bypass-feeder bypass valves.

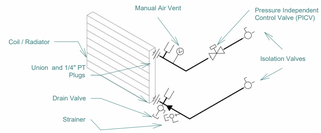
GLYCOL SYSTEMS:
A. After Post-flush, drain all water.
B. Estimate remaining water and add equal amount of pure glycol.
C. Close of all but one zone. Add pre-mixed glycol of the design concentration. Until system is filled and pumps can operate.
D. Operate pumps to mix all fluid. Measure glycol concentration. If glycol concentration is below design, add pure glycol.
E. Open and de-aerate one zone after another. Re-measure glycol concentration frequently and add pure glycol if required. Note the zones may contain some residual water that could dilute glycol.
F. De-aerate entire system.
G. Operate system with all zones open and adjust glycol concentration if required. Allow glycol concentration to be 5% design concentration (no dilution required). Completely fill fillstation with pre-mixed glycol.

1 Piping Details and Flushing

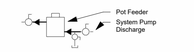
Pipe Penetrations



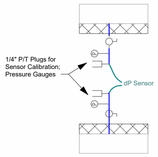
Terminal Unit / Coil



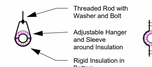
Pot Feeder



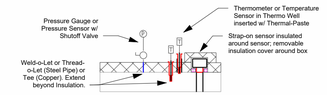
Pressure Differential Sensor and P/T Plug



Pipe Hangers and Riser Clamps

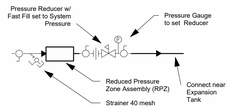


Gauge in Pipes

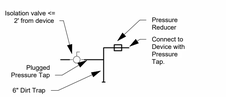


Pump Piping

RPZ



Gas Piping



Designed by:
City of Madison
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City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

Schedules

M 300

Print Date:
7/14/2025 8:58:20 AM
Print in color on 24" x 36"

Sheetlist Plumbing

Sheet Number	Sheet Name
P 001	General Plumbing
P 100	Plumbing Layout
P 110	3D Sanitary and Vent
P 115	3D Sanitary and Vent
P 120	3D Water
P 125	3D Water
P 200	Schedules

Plumbing Project Scope:
A. Demolish all plumbing in the scope area
   1. Re-use 4" underground pipe required for new plumbing
B. Install all new plumbing
   1. Connect to existing services
C. Space above ceiling is an Air Handler return plenum

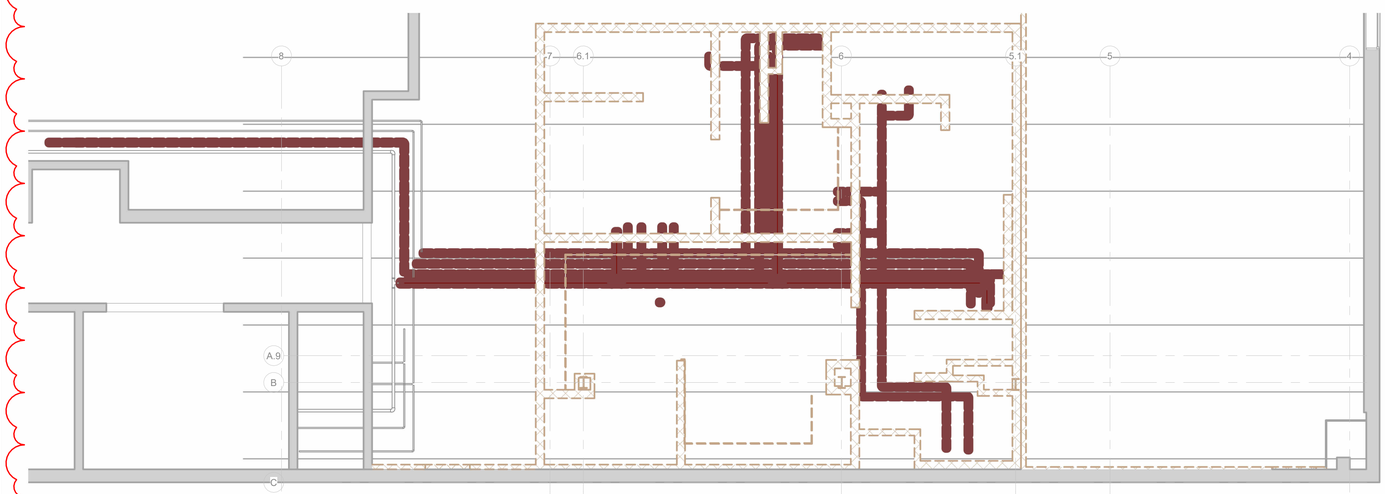
A. Codes:
   1. Contractor shall meet all applicable codes and standards
   2. Applicable codes include, but may not be limited to Wisconsin SPS 380 - 387
   3. Meet all standards related to potable water safety and environmental protection
B. Coordination:
   1. Coordinate with structural construction. Pipes, especially sanitary and vent, shall have priority.
   2. Structural elements and other obstacles may require layout modification. Contractor shall review all trades' plans and discuss with all trades before ordering and installing piping. Special attention is required for pipes and elements requiring sloped installation.
   3. Refer to architectural plans for exact location, and height of fixtures. ADA and other requirements may require deviation from Plumbing plans.
   4. Coordinate all roof penetrations with all relevant trades including, but not limited to, roofer, mechanical, roof equipment installer.
   5. Coordinate exact location of floor drains with all related trades including, but not limited to, HVAC contractor and equipment installers.
C. Design Intent
   1. Plans will show proposed layout, slopes, fittings and sizes. Information is diagrammatic and may not reflect specific fittings and other elements accurately. Deviations may include, but are not limited to, actual radii, type of fitting, pipe location, and other properties.
   2. Contractor is responsible for code-compliant installation meeting the design intent.
   3. Contractor may propose deviations that meet code and design intent.
   4. Unless noted otherwise, all drain pipe 2"and smaller shall be installed at 1/4"/ft and all 3" and larger shall be installed at 1/8"/ft.
   5. Invert elevations and existing pipe sizes are may not be accurate. Verify in field before starting work.
   6. Provide all insulation per specifications and code requirements
D. Demolition:
   1. Demolition plans are schematic and will generally show systems and equipment to be removed.
   2. Contractor shall demolish all pipes, parts, insulation, and equipment not needed for new systems. Remove pipe back to next branch that is to remain. install caps or plugs on openings. Avoid dead-legs.
      a. Pipe in CMU may be abandoned in place
   3. Where fixtures are removed, also remove all associated rough-in piping.
   4. Patch existing roofs, walls, and floors disturbed by this work.
E. Installation:
   1. Contractor shall install to meet all codes, achieve design intent and ensure other trades' work related to plumbing is not hindered by Plumbing work.
   2. Install all interior horizontal storm, waste, and vent piping as high as possible. All horizontal piping at ceilings shall be installed within joist space unless noted otherwise.
   3. Traps at sinks and lavatories shall be installed straight back to the wall. All piping offsets shall be within the wall.
   4. Locate all vent terminals at least 10' from any outside air intakes or operable windows or doors.
   5. All valves, shock arrestors or other maintainable equipment shall be installed accessible. Provide access panels.
   6. Provide Reduced Pressure Backflow prevention devices where required.
F. Retrofit/ Remodel:
   1. Connect new plumbing systems into existing services.
   2. Connection points are shown diagrammatically only. Contractor has to design detail of connection. Existing connection points may not have been accessible during design and the exact location may differ from design plans.
G. Cleanouts:
   1. Contractor shall provide all required cleanouts, even if not shown.
   2. Install cleanouts at base of all roof conductors and waste stacks.
   3. Install where easily accessible. Coordinate locations with all equipment, cabinets etc.

Pipe Service Types:
Hot Domestic Water:
Hot Return:
Cold Domestic Water:
Sanitary:
Vent:

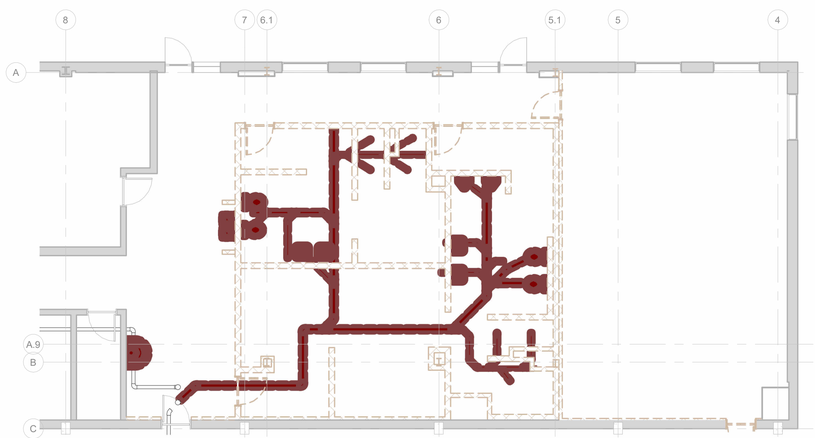
1 General Plumbing Notes

Water Calculation Worksheet (based on SBD-6479)		
Information Required to Size Water Service and Distribution:		
1	Demand of building in WSFU:	164.75
1.a.	Demand converted to GPM per table SPS 382.40-3:	60
2	Elevation from main to building control valve ft:	7
3	Size of water meter inches:	2
4	Developed Length (1.5 x Length) from main to building control valve ft:	75
5	Low Pressure at Main psi:	**68**
Calculate Water Service Pressure Loss		
6	Low Pressure at Main psi (from #5 above):	68
7	Service Diameter inches:	8
	Piping Material:	Steel Sch 40
	Pressure Loss per 100 ft:	1
	Developped Length (1.5 x Length) ft:	75
	Pressure Loss due to friction psi:	0.75
	Subtotal:	**67.3**
8	Pressure Lossdue to Elevation psi:	3.0
9	Available Pressure After Building Control valve psi:	**64.2**
Calculate Pressure available for Uniform Loss ("A")		
B	Available Pressure after Building Control valve psi (from #9 above):	64.2
C	Pressure Loss of Water Meter psi:	5.5
	Subtotal psi:	**58.7**
D	Pressure at Controllig Fixture:	20
	Controllig fixture is:	Shower
	Subtotal psi:	**38.7**
E	Difference in Elevation between Building Control valve and controling fixture ft:	5
	Pressure psi:	2.2
	Subtotal psi:	**36.5**
F	Pressure Loss due to Water treatment devices for controlling fixture:	Softener
	WSFU downstream of treamtent device:	44.5
	GPM:	26
	Pressure Drop psi:	15
	Subtotal psi:	**21.5**
G	Pressure Loss through Water Heater	
	WSFU:	44.5
	GPM:	26
	PressureDrop psi:	2
	Subtotal psi:	**19.5**
H	Developed Length (1.5 x Length) from Building Control valve to controlling fixture ft:	500
	Divide by H:	0.0391
	Multiply by 100 "A":	**3.91**
	Water Distribution Material:	Copper

2 P - Water Calculation Worksheet



3 PD Ceiling - Level 1 3/16" = 1'-0"



4 PD - Level 1 - Below Grade 1/8" = 1'-0"

1/4" = 1'-0" 2 0 2 4 6 8 10 FEET
3/16" = 1'-0" 2 0 2 4 6 8 10 12 14 FEET
1/8" = 1'-0" 5 0 5 10 15 20 FEET
3/32" = 1'-0" 5 0 5 10 15 20 25 30 FEET
1/16" = 1'-0" 5 0 5 10 15 20 25 30 35 40 45 FEET
1" = 20'-0" 20 0 20 40 FEET

1

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Client:
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Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description
1	Addendum 1

Project North
TRUE

General Plumbing

P 001

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8/5/2025 2:27:07 PM
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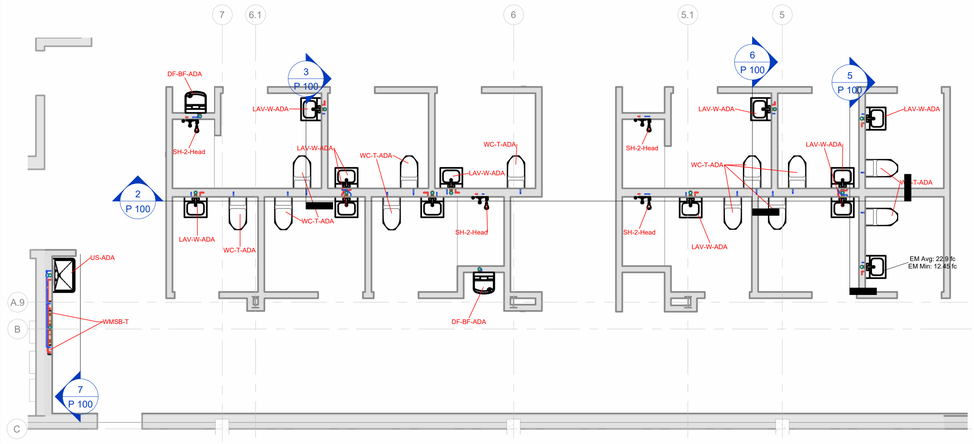
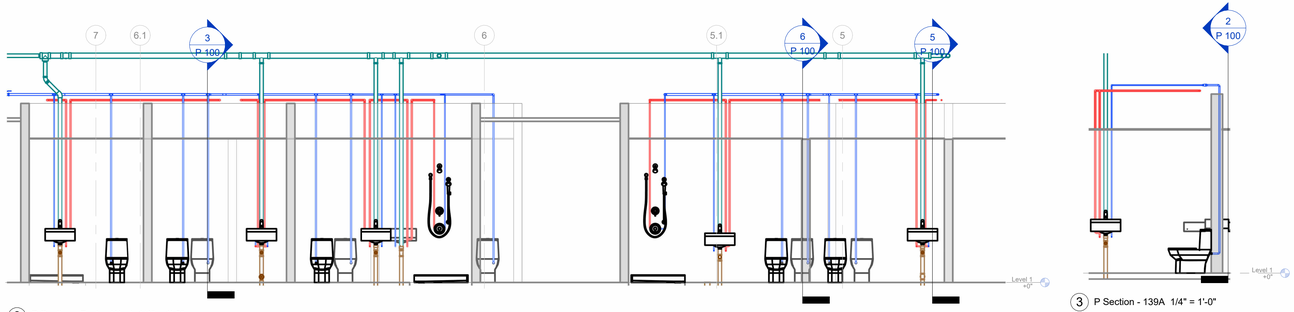
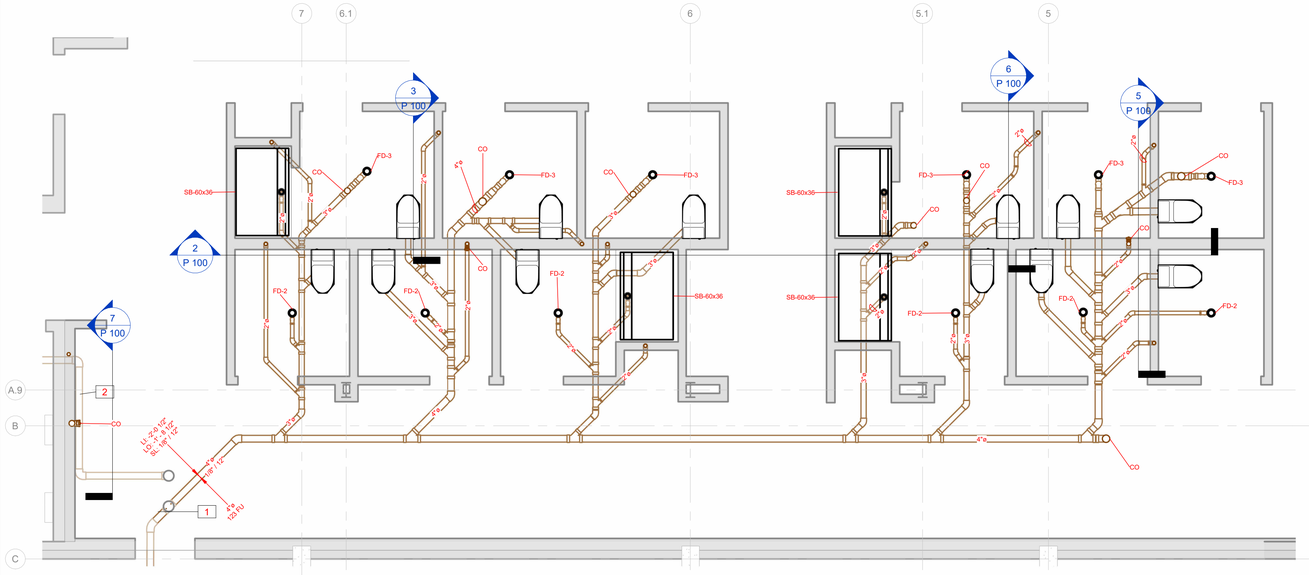


1 P Level - Fixtures 3/16" = 1'-0"

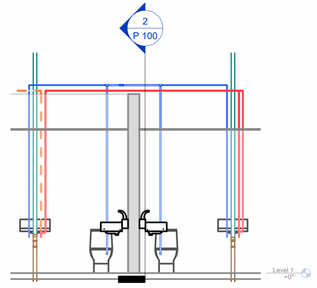


2 P Section - Facing West 1/4" = 1'-0"

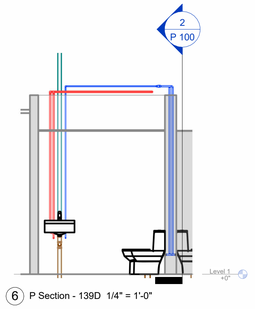
3 P Section - 139A 1/4" = 1'-0"



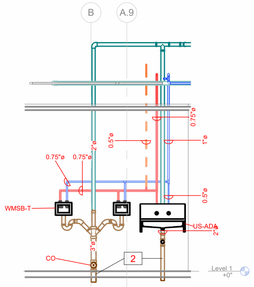
4 P - Level 1 - Piping Underground 1/4" = 1'-0"



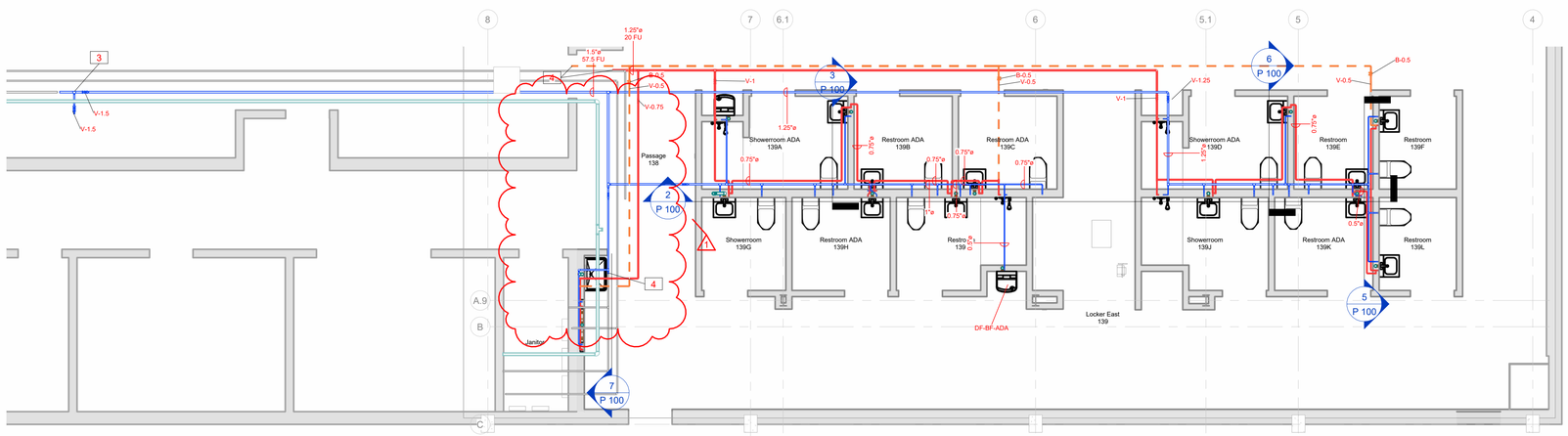
5 P Section - facing North 1/4" = 1'-0"



6 P Section - 139D 1/4" = 1'-0"



7 P Section - South Wall 1/4" = 1'-0"



8 P Level - Piping Above Ground 3/16" = 1'-0"

Keynote Legend

1. Keynotes can apply to multiple similar situations, even if not each element or siutation is tagged.

Key Value	Keynote Text
1	New 4" piping from this point on. Tie into existing Pipe coming from garage.
2	Tie sanitary pipes into existing under ground sanitary pipe. The actual layout of existing pipe may differ from shwon.
3	Repalce old 1.25" pipe with new pipe up to the point existing pipe is 1.5"
4	Tie cold, hot, and return pipe into existing services. The actual layout of existing pipe may differ from shwon.

2 0 2 4 6 8 10 — 1/4" = 1'-0" FEET
2 0 2 4 6 8 10 12 14 — 3/16" = 1'-0" FEET
5 0 5 10 15 20 — 1/8" = 1'-0" FEET
5 0 5 10 15 20 25 30 — 3/32" = 1'-0" FEET
5 0 5 10 15 20 25 30 35 40 45 — 1/16" = 1'-0" FEET
20 0 20 40 — 1" = 20'-0" FEET

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Engineering

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Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description
1	Addendum 1

Project North
TRUE

Plumbing Layout

P 100

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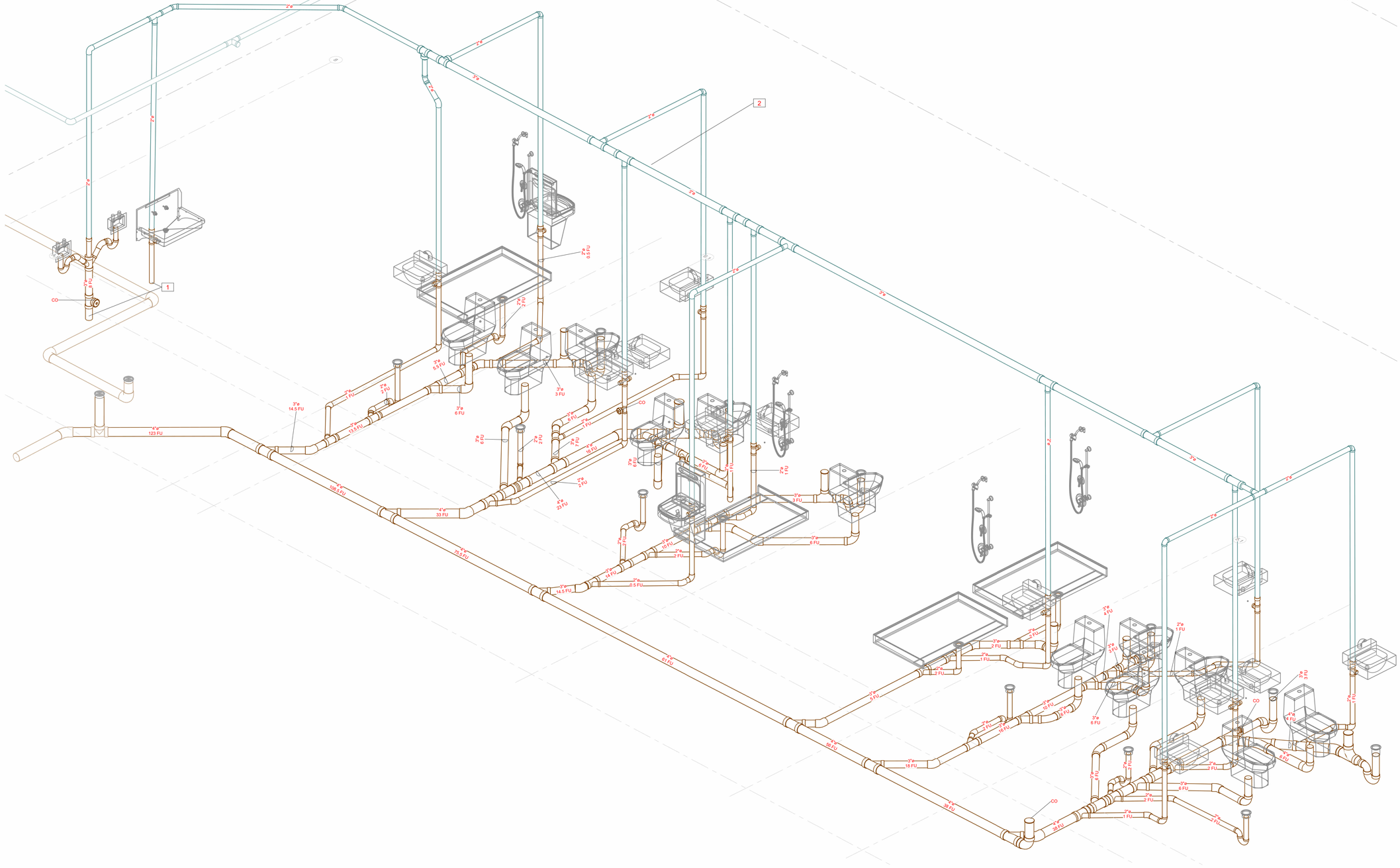
1
2
CO
4"ø 123 FU
3"ø 14.5 FU
4"ø 108.5 FU
4"ø 33 FU
4"ø 78.5 FU
3"ø 14.5 FU
4"ø 61 FU
4"ø 98 FU
3"ø 18 FU
4"ø 39 FU
4"ø 38 FU
3"ø 13.5 FU
3"ø 6.5 FU
3"ø 6 FU
3"ø 3 FU
3"ø 10 FU
3"ø 6 FU
3"ø 4 FU
3"ø 3 FU
3"ø 6 FU
3"ø 10 FU
3"ø 6 FU
2"ø 0.5 FU
2"ø 1 FU
2"ø 2 FU
2"ø 2 FU
2"ø 2 FU
2"ø 2 FU
2"ø 1 FU
2"ø 1 FU
2"ø 2 FU
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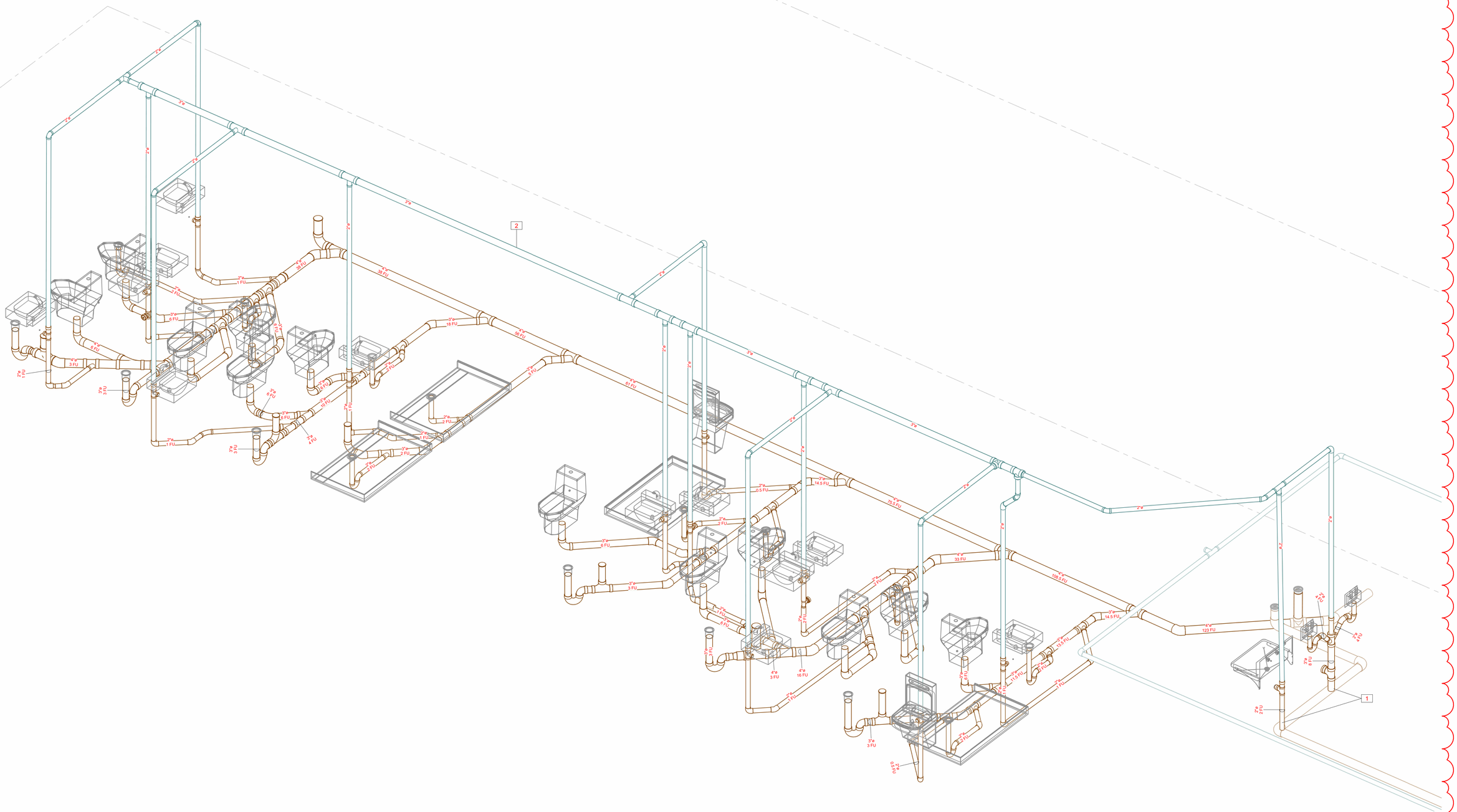
2"ø 2



1 P 3D - Isometric Sanitary and Vent from SE

Keynote Legend

1. Keynotes can apply to multiple similar situations, even if not each element or siutation is tagged.

Key Value	Keynote Text
1	Tie sanitary pipes into existing under ground sanitary pipe. The actual layout of existing pipe may differ from shwon.
2	Tie 3" vent header into existing 3" vent roof penetration. Exact location of existing vent penetration is not knwon.

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Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description
1	Addendum 1

3D Sanitary and Vent

P 115

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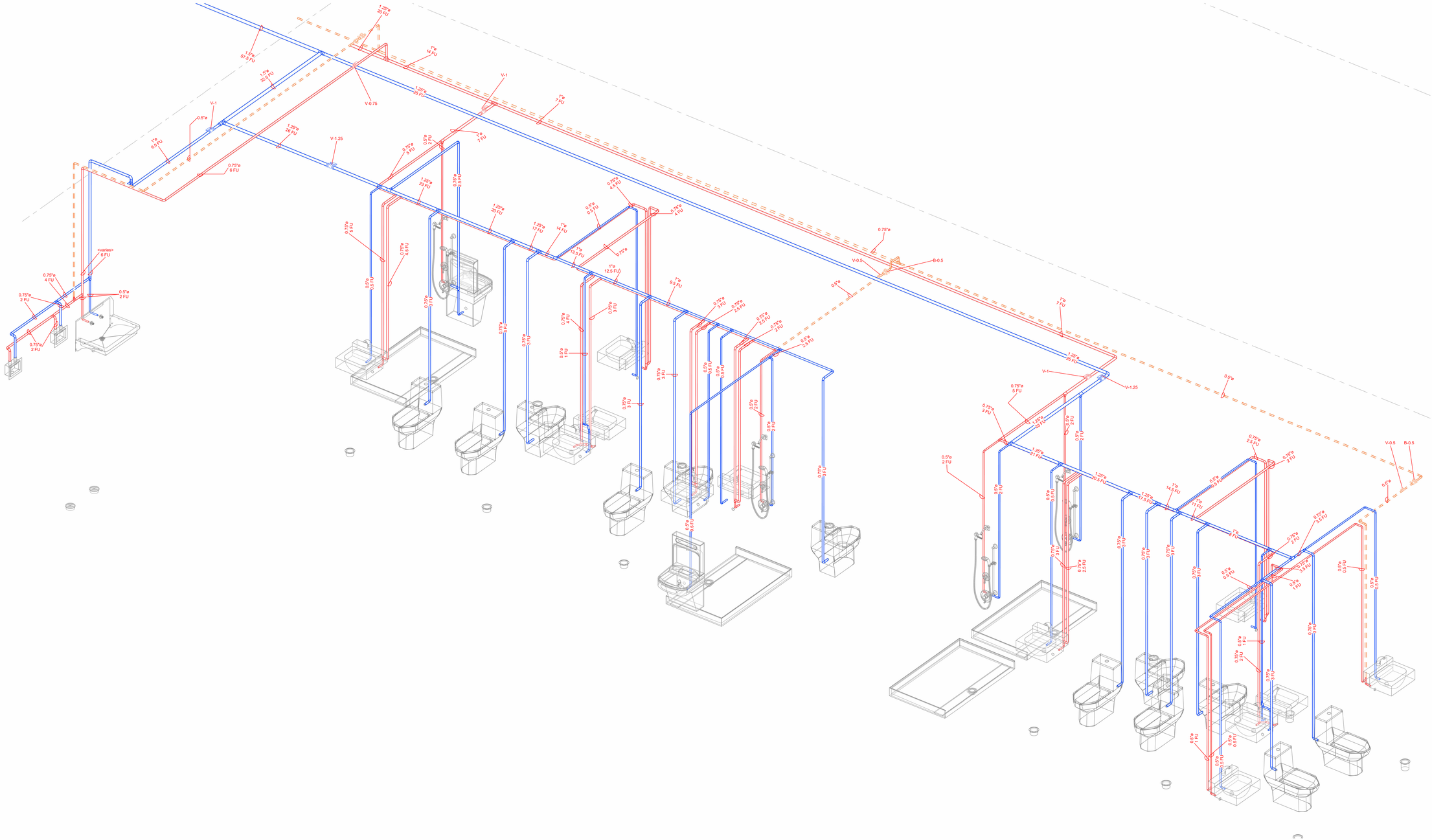

1 P 3D - Water from NW

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Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description
1	Addendum 1

3D Water

P 120

Print Date:
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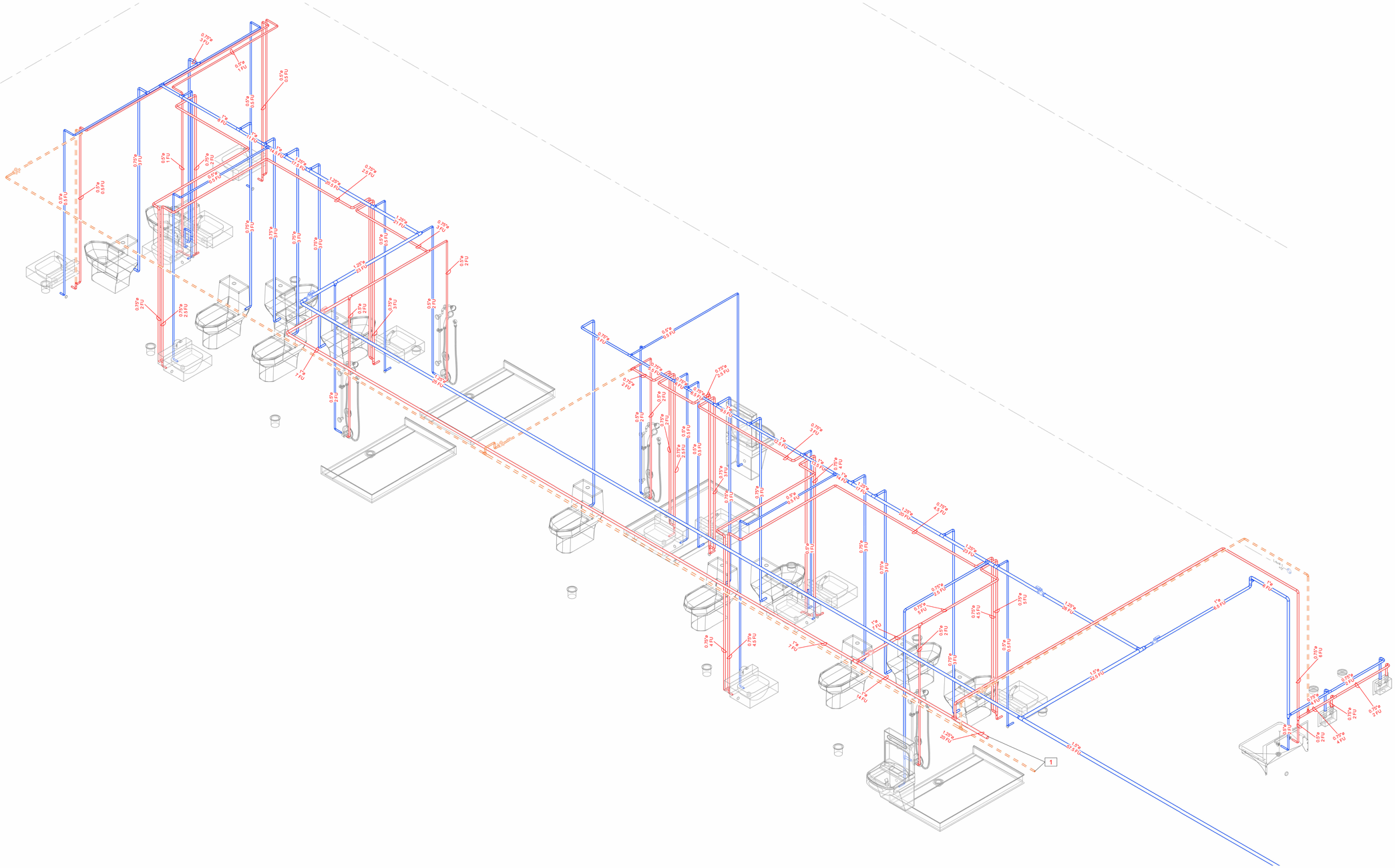

1 P 3D - Water from SE

Keynote Legend

1. Keynotes can apply to multiple similar situations, even if not each element or siutation is tagged.

Key Value	Keynote Text
1	Tie cold, hot, and return pipe into existing services. The actual layout of existing pipe may differ from shwon.

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Revisions

No.	Description
1	Addendum 1

3D Water

P 125

Print Date:
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WC Schedule (22 40 00 - Plumbing Fixtures)

1. Select lever to be on non-wall side of tank.

Type Mark	Description	ADA Compliant	CWFU	WFU	Pressure Required	Manufacturer	URL	Model	Type Image	Type Remark	Estimated Count
WC-T-ADA	Tank Toilet, Two-Piece, Skirtet	Yes	3	6	20 psi	American Standard	www.americanstandard-us.com	Aspirations 252AA899 w/Tank - White		Seat 5901.100SS - White	12

Lavatory Schedule (22 40 00 - Plumbing Fixtures)

1. Refer to Architectural Plans for exact mounting Height.
2. Provide Power supply for Faucet. Coordinate with Electrical Contractor.

								Lavatory				Faucet					
Type Mark	Description	ADA Compliant	CWFU	HWFU	TWFU	WFU	Pressure Required	Manufacturer	URL	Model	Image	Manufacturer	Model	URL	Image	Type Remark	Estimated Count
LAV-W-ADA	Lavatory, Vitreous White, Single Hole	Yes	0.5	0.5	1	1	20 psi	American Standard	www.americanstandard-us.com	Lucerne 0356		Chicago Faucets	116.122.AB.1T	www.chicagofaucets.com		Install in 34 inch height or as required for ADA compliance	12

Drinking Fountains Schedule (22 40 00 - Plumbing Fixtures)

1. Refer to Architectural Plans for exact mounting Height.
2. Provide power - coordinate with electrical contractor

											Electrical				
Type Mark	Description	ADA Compliant	CWFU	TWFU	WFU	Pressure Required	Manufacturer	URL	Model	Type Image	Voltage	Apparent Power	Full Load Amps	Type Remark	Estimated Count
DF-BF-ADA	Bottle Filling Station & Cooler Non-Filtered Refrigerated	Yes	0.5	0.5	0.5	20 psi	Elkay	www.elkay.com	EZSTL8WSLK		115 V	411 VA	6 A		2

Utility Sink Schedule (22 11 00 - Facility Water Distribution)

1. Refer to Architectural Plans for exact mounting Height.

Type Mark	Description	ADA Compliant	CWFU	HWFU	TWFU	WFU	Pressure Required	Manufacturer	URL	Model	Type Image	Type Remark	Estimated Count
US-ADA	Utility Sink, Stainless Steel, Manual Faucet	Yes	2	2	3	2	20 psi	Columbia	www.columbiasinks.com	5A1F		Mount in 35 inch height or as required to meet ADA requirements	1

Washing Machine Supply Box Schedule (22 40 00 - Plumbing Fixtures)

1. Refer to Architectural Plans for exact mounting Height.

Type Mark	Description	CWFU	HWFU	TWFU	WFU	Pressure Required	Manufacturer	URL	Model	Type Image	Type Remark	Estimated Count
WMSB-T	Reversible Metal Washing Machine Box with water hammer arestors	2	2	3	4	20 psi	Oatey	www.oatey.com	38 Series		Select appropriate model for top or bottom feed and type of pipe. Select or modify model for the requried mounting method and/or fire rating	2

Shower Base Schedule (22 40 00 - Plumbing Fixtures)

1. Refer to Architectural Plans for final dimensions

Type Mark	Description	ADA Compliant	WFU	Manufacturer	URL	Model	Nominal Width	Nominal Depth	Type Image	Type Remark	Estimated Count
SB-60x36	Solid Surface Shower Base with Trench Drain and integraded water channels	Yes	2	Inpro	www.inprocorp.com	Prism	5'-0"	3'-0"		Sizes are nominal. Adjust size to fit architectural requirements. Custom product may be required. Refer to Architectural details	4

Shower Schedule (22 40 00 - Plumbing Fixtures)

1. Refer to Architectural Plans for exact mounting Height.

Type Mark	Description	ADA Compliant	CWFU	HWFU	TWFU	Pressure Required	Manufacturer	URL	Model	Type Image	Type Remark	Estimated Count
SH-2-Head	Shower system w/ showerhead and handheld shower, transfer valve and pressure-balancing valve	Yes	2	2	3	45 psi	Moen	www.moencommercial.com	8342EP15			4

Floor Drain Schedule (22 40 00 - Plumbing Fixtures)

1. Models listed indicate the design intent and aesthetics. Some floor construction types require different models. Those shall be of equal aesthetics and level of quality.

Type Mark	Description	Manufacturer	URL	Model	Image	Size	WFU	Type Remark
FD-2	Floor Drain w/ Nickel-Bronze strainer	Zurn	www.zurn.com	FD2210		2"	2	Model is an example for Concrete floor. Provide equivalent model for other type of floor
FD-3	Floor Drain w/ Nickel-Bronze strainer	Zurn	www.zurn.com	FD2210		3"	3	Model is an example for Concrete floor. Provide equivalent model for other type of floor

Plumbing Valves (22 11 00 - Facility Water Distribution)

Type Mark	Size	Description	Estimated Count
V-0.5	0.5"	Plumbing Valve	3
V-0.75	0.75"	Plumbing Valve	1
V-1	1"	Plumbing Valve	3
V-1.5	1.5"	Plumbing Valve	2
V-1.25	1.25"	Plumbing Valve	2

Balancers (22 11 00 - Facility Water Distribution)

1. Set to 100°F unless noted otherwise

Type Mark	Size	Description	Estimated Count
B-0.5	0.5"	Thermostatic Balancing Valve	1
B-0.5	0.5"	Thermostatic Balancing Valve	1
B-0.5	0.5"	Thermostatic Balancing Valve	1

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Revisions

No.	Description
1	Addendum 1

Schedules

P 200

Print Date:
8/5/2025 2:27:31 PM
Print in color on 24" x 36"

Sheetlist Fire Alarm

Sheet Number	Sheet Name
FA 001	Fire Alarm

1 FA - Level 1 3/16" = 1'-0"

Fire Alarm Type

- Existing Alarm (to remain)
- Heat, Smoke, Annunciation

Fire Alarm per NFPA 72 (28 46 00 - Fire Detection and Alarm)

Level	Number	Name	Fire Alarm Type
Level 1		Janitor	Existing Alarm (to remain)
Level 1	138	Passage	Heat, Smoke, Annunciation
Level 1	139	Locker West	Heat, Smoke, Annunciation
Level 1	139	Locker East	Heat, Smoke, Annunciation
Level 1	139A	Showerroom ADA	Heat, Smoke, Annunciation
Level 1	139B	Restroom ADA	Heat, Smoke, Annunciation
Level 1	139C	Restroom ADA	Heat, Smoke, Annunciation
Level 1	139D	Showerroom ADA	Heat, Smoke, Annunciation
Level 1	139E	Restroom	Heat, Smoke, Annunciation
Level 1	139F	Restroom	Heat, Smoke, Annunciation
Level 1	139G	Showerroom	Heat, Smoke, Annunciation
Level 1	139H	Restroom ADA	Heat, Smoke, Annunciation
Level 1	139I	Restroom	Heat, Smoke, Annunciation
Level 1	139J	Showerroom	Heat, Smoke, Annunciation
Level 1	139K	Restroom ADA	Heat, Smoke, Annunciation
Level 1	139L	Restroom	Heat, Smoke, Annunciation
Level 1	157	Garage (not in project)	Existing Alarm (to remain)
Level 1	A1	Adiabatic (not in project)	Existing Alarm (to remain)
Level 1	A2	Adiabatic (not in project)	Existing Alarm (to remain)

A. Scope:
   1. Provide complete Fire Alarm system with necessary equipment, apparatuses, controls, completely coordinated with other disciplines
   2. Contractor shall provide all required detailed design and shall meet all permitting requirements. These plans are diagrammatic and schematic only.
   3. Work shall be in accordance with AHJ, local codes, ordinances and including, but not limited to IBC 907, NFPA 70, 72, and 90A.
   4. See HVAC plans for smoke damper locations
B. Coordination:
   1. Minimize interruption of service to areas outside the work area.
   2. Ensure complaint fire protection in existing buildings at all time.
   3. Review electrical sheets for conduit requirements.
   4. Coordinate with fire Sprinkler contractor and incorporate their
C. Demolition:
   1. Where Fire Alarm devices are removed, all associated conduit and wring shall be removed unless needed for new installation.
   2. All boxes that remain in place shall receive a cover plate.
D. Installation:
   1. Flush-mount all pull stations 42" AFF to center of device unless noted otherwise.
   2. Flush-mount notification devices 90" AFF to top of device or 6" below Ceiling (whichever is lower) unless noted otherwise.
E. Retrofit installation:
   1. Demolish all to-be replaced systems including detectors, panels, and annunciators.
   2. Unless noted otherwise, install new system in same location as old system.
   3. Add any additional devices required by AHJ even if the old system did not require them.

2 General Fire Alarm Notes

Fire Alarm (FA) Project Scope
A. Demolish existing FA Elements in work area
B. Install new FA system
   1. Obtain AHJ approval and meet all AHJ requirements
   2. Tie new system into existing system
      a. Existing FA panel is located in main entrance area
C. Space above ceiling is an Air Handler return plenum.

2 0 2 4 6 8 10
1/4" = 1'-0" FEET

2 0 2 4 6 8 10 12 14
3/16" = 1'-0" FEET

5 0 5 10 15 20
1/8" = 1'-0" FEET

5 0 5 10 15 20 25 30
3/32" = 1'-0" FEET

5 0 5 10 15 20 25 30 35 40 45
1/16" = 1'-0" FEET

20 0 20 40
1" = 20'-0" FEET

Designed by:
City of Madison
Facilities Management
City-County Building, Room 115
210 Martin Luther King Jr. Boulevard
Madison, WI 53703

Client:
Engineering

Location:
1600 Emil St., Madison WI 53711

Contract: 9659
Project: 14122

Engineering Operations Facility Locker Room Renovation (Bid)

Revisions

No.	Description

Project North

TRUE

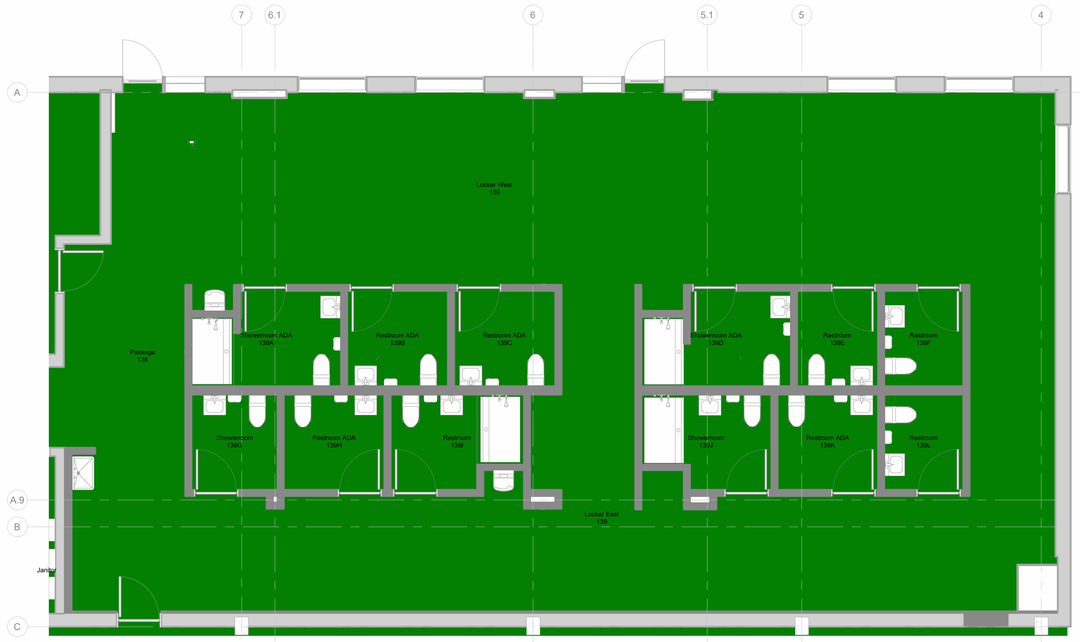
Fire Alarm

FA 001

Print Date:
7/14/2025 8:57:29 AM
Print in color on 24" x 36"

Sheetlist Fire Suppression

Sheet Number	Sheet Name
FX 001	Fire Suppression



1 FX - Hazard Classification - Level 1 3/16" = 1'-0"

Hazard Classifications

- Light Hazard - Office

Hazard Classifications per NFPA 13 (21 10 00 - Water-Based Fire-Suppression Systems)

Level	Number	Name	Area	Hazard Description	Hazard Classification	Comment	Sprinkler System Type
Wet - Existing (to remain)							
Level 1		Janitor	58 ft²	Light Hazard - Office	Light Hazard		Wet - Existing (to remain)
Level 1	157	Garage (not in project)	763 ft²	Light Hazard - Office	Light Hazard		Wet - Existing (to remain)
Level 1	A1	Adiabatic (not in project)	143 ft²	Light Hazard - Office	Light Hazard		Wet - Existing (to remain)
Level 1	A2	Adiabatic (not in project)	29 ft²	Light Hazard - Office	Light Hazard		Wet - Existing (to remain)
			993 ft²				
Wet - New							
Level 1	138	Passage	408 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139	Locker West	930 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139	Locker East	692 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139A	Showerroom ADA	71 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139B	Restroom ADA	53 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139C	Restroom ADA	53 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139D	Showerroom ADA	71 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139E	Restroom	43 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139F	Restroom	42 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139G	Showerroom	45 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139H	Restroom ADA	53 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139I	Restroom	63 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139J	Showerroom	61 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139K	Restroom ADA	53 ft²	Light Hazard - Office	Light Hazard		Wet - New
Level 1	139L	Restroom	42 ft²	Light Hazard - Office	Light Hazard		Wet - New
			2,681 ft²				

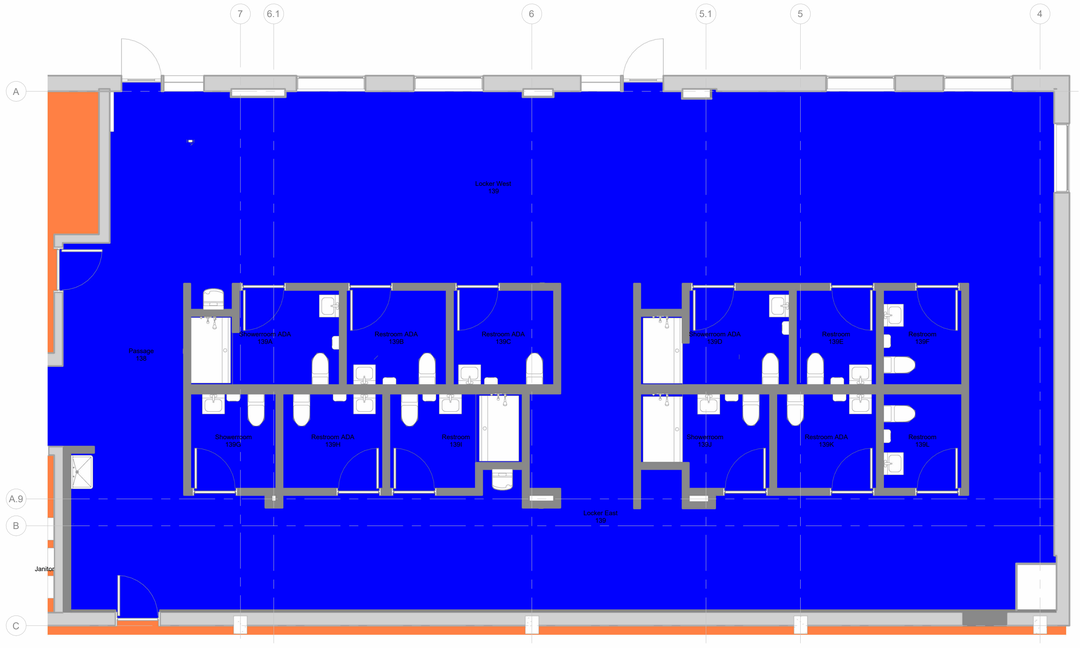
General Fire Suppression Notes

A. Scope:
   1. Plans will show areas in scope, type of fire suppression, and specific considerations.
   2. Contractor is responsible for meeting all other project requirements and requirements by AHJ and all applicable NFPA
   3. Include all areas requiring fire suppression. Contractor shall familiarize themselves with existing conditions and new equipment installed as part of this project. Fire suppression will be required under and/or above including, but not limited to:
      a. Ducts, equipment
      b. Mezzanines
      c. Walkways
      d. Overhead Doors
B. Installation:
   1. Unless noted otherwise, install piping in open areas close to building structure and avoid free-air installation
   2. Coordinate with other trades. Generally the fire sprinkler piping has lower routing priority than ducts, and other pipes (especially sloped pipes).
C. Retrofit Installation:
   1. Demolish all to-be replaced systems including pipes, fittings, and apparatus.
   2. Unless noted otherwise, install new system in same location as old system.
   3. Add any additional devices required by AHJ even if the old system did not require them.

3 General Fire Suppression Notes

Fire Suppression Project Scope

A. Demolish existing fire suppression in work area
B. Install new FA system
   1. Obtain AHJ approval and meet all AHJ requirements
   2. Tie new system into existing system
C. Space above ceiling is an Air Handler return plenum.



2 FX - Sprinkler Types - Level 1 Copy 1 3/16" = 1'-0"

Sprinkler Type

- Wet - Existing (to remain)
- Wet - New

2 0 2 4 6 8 10
1/4" = 1'-0" FEET

2 0 2 4 6 8 10 12 14
3/16" = 1'-0" FEET

5 0 5 10 15 20
1/8" = 1'-0" FEET

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