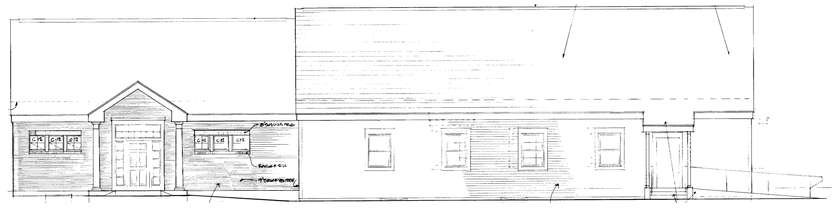
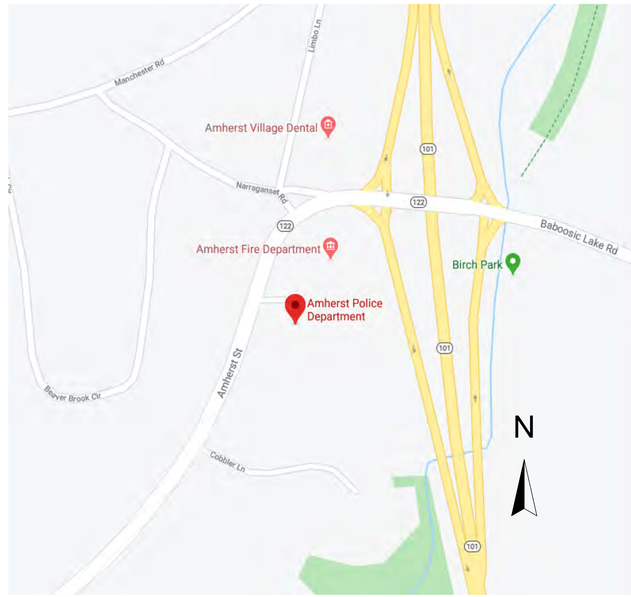
Amherst Police Department

175 Amherst St. ▪ Amherst ▪ New Hampshire ▪ 03031



LOCUS MAP



/Users/admin 1/Desktop/DMPA/TA Kreig/Amherst Police Station - 20190913 - 20170224/Archicad/Amherst Police Station_V23 2020-02-13 CD Bid2.pln Friday, May 22, 2020

DRAWING LIST

CONSTRUCTION DOCUMENTS - BID 2 5/22/2020

ARCHITECTURAL

	Cover Sheet
A001	GENERAL NOTES & CODE
A002	CODE SHEET & SEQUENCING
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AD101	MAIN LEVEL DEMO PLAN
AD102	UPPER LEVEL DEMO PLAN
A100	LOWER LEVEL FLOOR PLAN
A101	MAIN LEVEL FLOOR PLAN
A102	UPPER LEVEL FLOOR PLAN
A103	RCP PLANS
A104	ATTIC PLAN
A201	SOUTH & EAST ELEVATIONS
A401	LOWER LEVEL ENLARGED PLANS
A402	LOWER LEVEL ENLARGED PLANS
A403	MAIN LEVEL ENLARGED PLANS
A404	UPPER LEVEL ENLARGED PLANS
A501	DETAILS
A601	ROOM FINISH SCHEDULE
A602	DOOR & WINDOW SCHEDULE

STRUCTURAL

S-1 Structural Beam & Notes

PLUMBING

P100A Lower Level Sanitary and Vent Piping Plan
P100B Lower Level Domestic Water Piping Plan
P200 Specifications, Legends & Schedules

MECHANICAL

M100A	Lower level HVAC Ductwork Plan
M100B	Lower level HVAC Piping Plan
M101	Main level HVAC Plan
M102A	Upper level HVAC Ductwork Plan
M102B	Upper level HVAC Piping Plan
M200	HVAC Legend, Design conditions & Details
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M400	HVAC Spec, Control Sequence & Vent Calc.
M500	VRF-OUT-1 Piping Diagram
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E2.04	LOWER LEVEL MECHANICAL POWER PLAN
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E2.06	UPPER LEVEL MECHANICAL POWER PLAN
E3.01	ONE-LINE POWER RISER DIAGRAM AND NOTES
E4.01	DETAIL SHEET
FA0.01	FIRE ALARM LEGEND AND DETAILS
FA1.01	LOWER LEVEL FIRE ALARM PLAN
FA1.02	MAIN LEVEL FIRE ALARM PLAN
FA1.03	UPPER LEVEL FIRE ALARM PLAN
FA2.01	FIRE ALARM SPECIFICATION
FAIP1.01	LOWER LEVEL FIRE ALARM IMPAIRMENT PLAN
FAIP1.02	MAIN LEVEL FIRE ALARM IMPAIRMENT PLAN
FAIP1.03	UPPER LEVEL FIRE ALARM IMPAIRMENT PLAN

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Amherst Police Department
175 Amherst St.
Amherst New Hampshire

date: 5/22/2020
proj. no.: 2017-024

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603-625-4548 FAX 603-625-1067

GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR AND REASONABLY INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT.

2. THE CONTRACTOR SHALL REVIEW AND COORDINATE THE SCHEDULING OF ALL CONSTRUCTION PHASING WITH THE OWNER.

3. ALL WORK SHALL CONFORM TO ALL LOCAL BUILDING CODES AND ORDINANCES, AND ALL OTHER AGENCIES HAVING JURISDICTION. THE RULES AND REGULATIONS OF OSHA SHALL BE ADHERED TO FOR THIS PROJECT.

4.THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES FOR BUILDING DEPARTMENT APPROVALS AND PERMITS, CONTROLLED INSPECTIONS, OTHER AGENCY APPROVALS AND PERMITS WHERE REQUIRED, AND FINAL INSPECTION SIGN-OFFS FOR PROJECT COMPLETION. COPIES OF ALL INSPECTION REPORTS TO BE FORWARDED TO THE OWNER AND ARCHITECT.

5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, AND FOR THE COORDINATION OF ALL PORTIONS OF WORK.

6. THE CONTRACTOR SHALL DO ALL CUTTING, FITTING AND PATCHING THAT MAY BE REQUIRED TO MAKE THE VARIOUS PARTS OF THE WORK READY TO RECEIVE OR BE RECEIVED BY THE WORK OF OTHERS OR OUTSIDE VENDORS AS SHOWN UPON REASONABLY IMPLIED BY THE DRAWINGS.

7. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS, MAINTAIN AND PAY ALL COSTS FOR TEMPORARY WATER AND PLUMBING, POWER AND LIGHTING AND HEATING OR VENTILATION AS HE MAY REQUIRE TO PROPERLY CONDUCT THE WORK OF THE CONTRACT. ALL HOISTING CHARGES, IF ANY, SHALL BE INCLUDED IN HIS BID.

8. THE CONTRACTOR SHALL THOROUGHLY VERIFY ALL DIMENSIONS PRIOR TO THE BID SUBMISSION. TO THE EXTENT PRACTICABLE, HE SHALL ALSO VERIFY FIELD CONDITIONS AT THE SITE. ANY AND ALL DISCREPANCIES SHALL BE REPORTED TO THE OWNER PRIOR TO HIS BID SUBMISSION, OTHERWISE THE CONTRACTOR SHALL BEAR ALL COSTS TO COMPLETE THE WORK AS INTENDED ON THE CONTRACT DOCUMENTS.

9. NOT USED

10. THE CONTRACTOR SHALL PATCH TO MATCH OR AS OTHERWISE DIRECTED, ALL AREAS WHICH ARE AFFECTED BY THE DEMOLITION AND/OR NEW CONSTRUCTION.

11. THE CONTRACTOR SHALL BE RESPONSIBLE, AT HIS OWN COSTS, FOR WAREHOUSING OF ALL MATERIALS TO BE INSTALLED UNDER THIS CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING, PROTECTING OWNER FURNISHED ITEMS.

12. THE CONTRACTOR SHALL PROTECT THE BUILDING PREMISES AND ALL OCCUPANTS ON THE PROJECT SITE. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY COVERINGS, BOARDS, TEMPORARY PARTITIONS AND DOORS AS REQUIRED TO PROTECT THE EXISTING WORK AND FINISHES TO REMAIN AT THE JOB SITE AND ALL AREAS OF THE BUILDING AFFECTED BY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES CAUSED BY IMPROPER PROTECTION AND SHALL MAKE ALL NECESSARY REPLACEMENTS OR REPAIRS WITHOUT ANY ADDITIONAL CHARGE TO THE OWNER OR THE PARTY AFFECTED. THE CONTRACTOR SHALL TAKE CARE TO NOT OVERLOAD THE EXISTING FLOOR SLABS BEYOND THERE DESIGN CAPACITY WITH MATERIALS.

13. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK WHICH HE EXPECTS ADDITIONAL COMPENSATION BEYOND THE CONTRACT AMOUNT WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER AND/OR ARCHITECT. FAILURE TO OBTAIN SUCH AUTHORIZATION SHALL INVALIDATE ANY CLAIM FOR EXTRA COMPENSATION.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL APPLICABLE MANUFACTURER'S PRODUCTS GUARANTEES AND/ OR WARRANTIES; AND SHALL SUBMIT COPIES OF EACH TO THE ARCHITECT PRIOR TO PURCHASE OF MATERIALS AND INSTALLATION.

15. THE CONTRACTOR SHALL MAINTAIN CONSTRUCTION PREMISES IN A NEAT AND ORDERLY CONDITION AND SHALL REMOVE TRASH AND DEBRIS AT THE END OF EACH WORKING DAY.

16. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, IN WRITING, AND RECEIVE APPROVAL BEFORE ORDERING OR INSTALLING ITEMS OR MATERIALS WHICH ARE PROPOSED EQUALS. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED WITH BID PROPOSAL WITH ADD OR DEDUCT PRICING FROM THE ITEMS OR SYSTEM SPECIFIED IN THE CONTRACT DOCUMENTS.

17. JUST PRIOR TO THE OWNER'S OCCUPANCY, THE CONTRACTOR SHALL CLEAN ALL SURFACES OF DUST, DEBRIS, LOOSE CONSTRUCTION MATERIAL AND EQUIPMENT AND LEAVE ALL FLOORS VACUUMED CLEAN. REMAINING CONSTRUCTION MATERIAL AND EQUIPMENT, IF ANY, SHALL BE MOVED AND TEMPORARILY SECURED IN AN AREA DIRECTED BY THE OWNER.

18. WINDOWS AND PLUMBING FIXTURES SHALL BE WASHED JUST PRIOR TO OWNER OCCUPANCY.

19. ALL NEW WORK AND CONSTRUCTION OPERATIONS SHALL NOT UNDERMINE THE STRUCTURAL INTEGRITY OF THE BUILDING.

20. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND/OR ARCHITECT FOR ITEMS FURNISHED AND/OR INSTALLED BY OTHERS FOR EXACT LOCATIONS AND PROPER FITTING; AND SCHEDULE THEM FOR WORK.

21. THE CONTRACTOR SHALL SECURE AND LOCK UP THE OWNER'S PREMISES AT THE END OF EACH WORKING DAY AND SHALL NOT PERMIT UNAUTHORIZED PERSONNEL TO CIRCULATE IN THE OWNER'S SPACE.

22. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFE AND UNINTERRUPTED CIRCULATION OF HVAC, ELECTRICAL, PLUMBING, AND FIRE PROTECTION SYSTEMS IN EXISTING AREAS NOT AFFECTED BY CONSTRUCTION.

23. THE CONTRACTOR SHALL PATCH ALL HOLES AND CHASES BOTH ABOVE AND BELOW THE CEILING CREATED BY THE WORK OF ALL TRADES, TO MAKE WATERTIGHT AND FIREPROOF. INSTALLATION, ALTERATION OR REMOVAL OF DUCTS, PIPES, CONDUITS, CEILINGS, ETC., TO MATCH EXISTING SURFACE.

24. THE CONTRACTOR SHALL PROVIDE APPROVED FIRE RATED MINERAL WOOL OR APPROVED EQUAL PACKED SOLID AT SPACE AROUND PIPES, DUCTS, AND CONDUITS PENETRATING FIRE RATED WALLS OR PARTITIONS AND SHALL COMPLY WITH ALL REGULATIONS AS SET BY APPLICABLE SECTIONS OF THE STATE BUILDING CODE AND OTHER CODES HAVING JURISDICTION.

25. FIRESTOPPING SHALL BE AS REQUIRED BY APPLICABLE SECTIONS OF THE STATE BUILDING CODE AND OTHER CODES HAVING JURISDICTION.

26. ALL INTERIOR FINISHES AND BACKING SHALL COMPLY WITH APPLICABLE SECTIONS OF THE STATE BUILDING CODE AND OTHER CODES HAVING JURISDICTION.

27. THE CONTRACTOR SHALL PATCH ALL HOLES AND DEFECTS IN THE FLOOR AND PROVIDE FLASH PATCHING OF ALL FLOORING. THE CONTRACTOR SHALL INSPECT THE FLOORS WITH THE FLOORING INSTALLER AND SHALL MAKE THE NECESSARY REPAIRS PRIOR TO THE ACCEPTANCE OF THE FLOOR SUBSTRATE BY THE FLOORING INSTALLER.

28. THE CONTRACTOR SHALL INSPECT AND MAKE THE NECESSARY CORRECTIVE MEASURES TO INSURE THAT ALL PARTITIONS SHALL ALIGN WITHOUT ANY BREAKS BETWEEN APPROVED BREAK POINTS.

29. THE CONTRACTOR SHALL PROVIDE AND ESTABLISH AN ELEVATION BENCHMARK AT 0'-0" TO BE USED AS A WORK POINT BY ALL TRADES FOR VERTICAL DIMENSIONS.

30. SUPERVISION BY THE CONTRACTOR:
DURING THE ENTIRE PERIOD OF THE PROGRESS OF THE WORK, THE CONTRACTOR SHALL BE REPRESENTED AT THE SITE OF THE WORK BY A QUALIFIED SUPERINTENDENT WHO SHALL BE EMPOWERED TO ACT ON HIS BEHALF, AND WHO SHALL BE RESPONSIBLE FOR:
1. ESTABLISHMENT AND MAINTENANCE OF PROPER AND SAFE WORKING CONDITIONS WITHIN THE STATE OF THE WORK.
2. COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS.
3. LAYOUT AND COMPLETE COORDINATION OF ALL ELEMENTS OF THE WORK INCLUDING MECHANICAL AND ELECTRICAL COORDINATION.
4. CHECKING OF ALL WORK IN PLACE FOR THE PURPOSE OF ASCERTAINING ITS COMPLIANCE WITH THE CONTRACT DOCUMENTS.
5. REMOVAL AND PROPER REPLACEMENT OF ALL INSTALLED WORK WHICH IS NOT IN COMPLIANCE WITH CONTRACT DOCUMENTS.

31. SUBMITTALS
A. CONTRACTOR SHALL SUBMIT SAMPLES AND SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION AND INFORM THE ARCHITECT IN WRITING AT THE TIME OF SUBMISSION OF ANY PROPOSED DEVIATION IN SUBMITTALS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. BY REVIEWING, APPROVING, AND SUBMITTING SHOP DRAWINGS AND SAMPLES PRIOR TO SUBMISSION TO THE ARCHITECT, THE CONTRACTOR REPRESENTS THAT HE HAS DETERMINED AND VERIFIED FIELD MEASUREMENTS, AND THAT EACH SUBMITTAL HAS BEEN CHECKED AND COORDINATED WITH THE REQUIREMENTS OF THE CONTRACT.
B. TIMING
1. PRIOR TO COMMENCING THE WORK THE CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH A SUBMITTAL SCHEDULE FOR ALL ITEMS REQUIRED BY THE CONTRACT DOCUMENTS WHICH IS FULLY COORDINATED WITH THE CONSTRUCTION SCHEDULE TO INSURE A TIMELY REVIEW PROCESS.
2. MAKE SUBMITTALS FAR ENOUGH IN ADVANCE OF SCHEDULE DATES FOR INSTALLATION TO PROVIDE TIME REQUIRED FOR REVIEWS, FOR SECURING NECESSARY APPROVALS, FOR POSSIBLE REVISIONS AND RESUBMITTALS, AND FOR PLACING ORDERS AND SECURING DELIVERY.
C. SAMPLES
1. REJECTED SAMPLES SHALL BE RESUBMITTED AS SOON AS POSSIBLE AND SHALL BE IDENTIFIED AS "RESUBMITTED SAMPLES".

32. REMOVALS, CLEAN-UP, AND PROTECTION
A. REMOVE ALL WASTES, REFUSE, AND DEBRIS ACCUMULATING FROM CONSTRUCTION WORK AND LEGALLY DISPOSE OF INDEPENDENTLY FROM OTHERS IN THE BUILDING.
B. GENERAL CONTRACTOR SHALL ENSURE THAT CONSTRUCTION PREMISES ARE LEFT IN A GENERALLY CLEAN CONDITION AT THE END OF EACH WORKING DAY. ONCE HARDWOOD FLOORING HAS BEEN INSTALLED, ALL FLOORS WILL BE VACUUMED AND TEMPORARILY PROTECTED AGAINST DAMAGE DURING MOVE-IN. PROTECTION FOR WALLS, CORNERS, AND DOOR FRAMES WILL ALSO BE PROVIDED AS REQUIRED.
C. JUST PRIOR TO OWNER OCCUPANCY, CLEAN ALL SURFACES, REMOVE TEMPORARY LABELS, STAINS, AND FOREIGN SUBSTANCES, POLISH TRANSPARENT AND GLOSSY SURFACES, CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION; REPLACE FILTERS OF MECHANICAL EQUIPMENT. REMAINING CONSTRUCTION MATERIAL AND EQUIPMENT, IF ANY, SHALL BE MOVED AND TEMPORARY SECURED IN AN AREA DIRECTED BY OWNER.
D. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AFTER-HOURS WORK AS REQUIRED BY THE OWNER- (I.E. EXCESSIVE NOISE, FUMES, ETC.)
E. CONTRACTOR IS RESPONSIBLE FOR COORDINATING AVAILABILITY OF PARKING FOR WORKERS WITH THE OWNER.
F. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING WORK OF SEPARATE CONTRACTS (I.E. ELECTRICAL, PLUMBING/HVAC CONTRACTORS., ETC).

INTERIOR PARTITION TYPES :

SEE FINISH SCHEDULE FOR INTERIOR WALL FINISHES
SEE WALL SECTIONS AND DETAILS FOR EXTERIOR WALLS AND FLOOR-CEILING CONDITIONS

SEE 400 SERIES DRAWINGS ENLARGED FLOOR PLANS FOR DETAILS REGARDING INFILL AND FURRED WALL CONDITIONS

TYPICAL PARTITION IS NUMBER 1 UNLESS NOTED OTHERWISE

TYPE W1: 7 3/4" MASONRY AND GWB PARTITION - STC 38
5/8", GWB TIGHT TO DECK ON ONE SIDE OF
3 1/2" WOOD STUD FRAMING ON FLAT SIDE @ 16" O.C.
W/ 5 5/8" CMU UP TO STRUCTURAL DECK
SEALANT AT PERIMETER AND PENETRATIONS

TYPE W2: 3 5/8" CMU PARTITION TIGHT TO DECK- STC 32
FILL CORES AND REINFORCED REBAR AT 48" EA. WAY

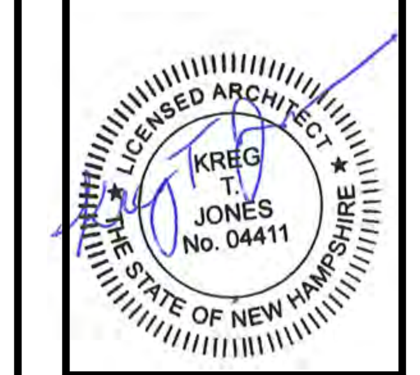
TYPE W3: 7 5/8" CMU PARTITION TIGHT TO DECK STC 42
FILL CORES AND REINFORCED REBAR AT 48" EA. WAY

TYPE W4: 4 3/4" GWB PARTITION - STC 56-59
5/8" GWB EA. SIDE TIGHT TO DECK ON BOTH SIDES OF
3 1/2" WOOD STUD FRAMING @ 16" O.C.
UP TO STRUCTURAL DECK
SEALANT AT PERIMETER AND PENETRATIONS
2 1/2" FIBERGLASS BATT INSULATION FULL HEIGHT IN THE CAVITY.

TYPE W5: 4 3/4" GWB PARTITION - STC 56-59
5/8" GWB EA. SIDE (MOISTURE RESISTANT BOARD ON WET WALL SIDE)
TIGHT TO DECK ON BOTH SIDES OF
3 1/2" WOOD STUD FRAMING @ 16" O.C.
UP TO STRUCTURAL DECK
SEALANT AT PERIMETER AND PENETRATIONS
2 1/2" FIBERGLASS BATT INSULATION FULL HEIGHT IN THE CAVITY.

AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020



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GENERAL NOTES & CODE

RevID	ChID	Change Name	Date
01			3/17/20

date: 5/22/20

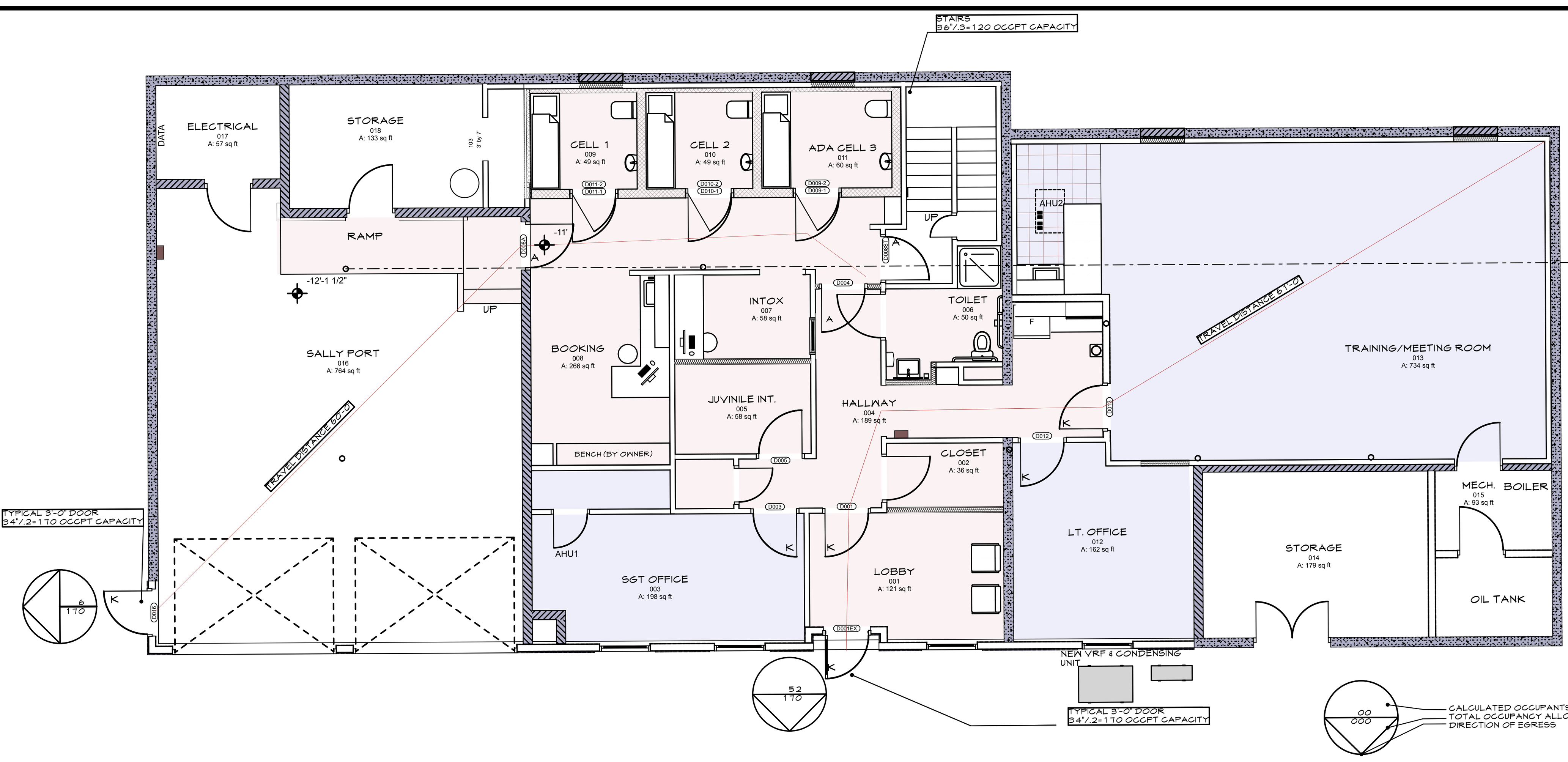
proj. no.: 2017-024

A001

SEQUENCING PLAN :

ALL ELECTRICAL AND HVAC TO BE DONE AT THE TIME OF THE SEQUENCE, TO THE EXTENT POSSIBLE. NOTE THAT ALL HVAC AND ASSOCIATED ELECTRICAL TO BE DONE REGARDLESS OF ALTERNATE TAKEN.

SEQUENCE 1: DEMO ALL LOWER LEVEL AREAS OF WORK.. REMODEL LOWER LEVEL TO THE EXTENT POSSIBLE UNTIL CELL DOORS AND FIXTURES ARE TO BE RELOCATED..

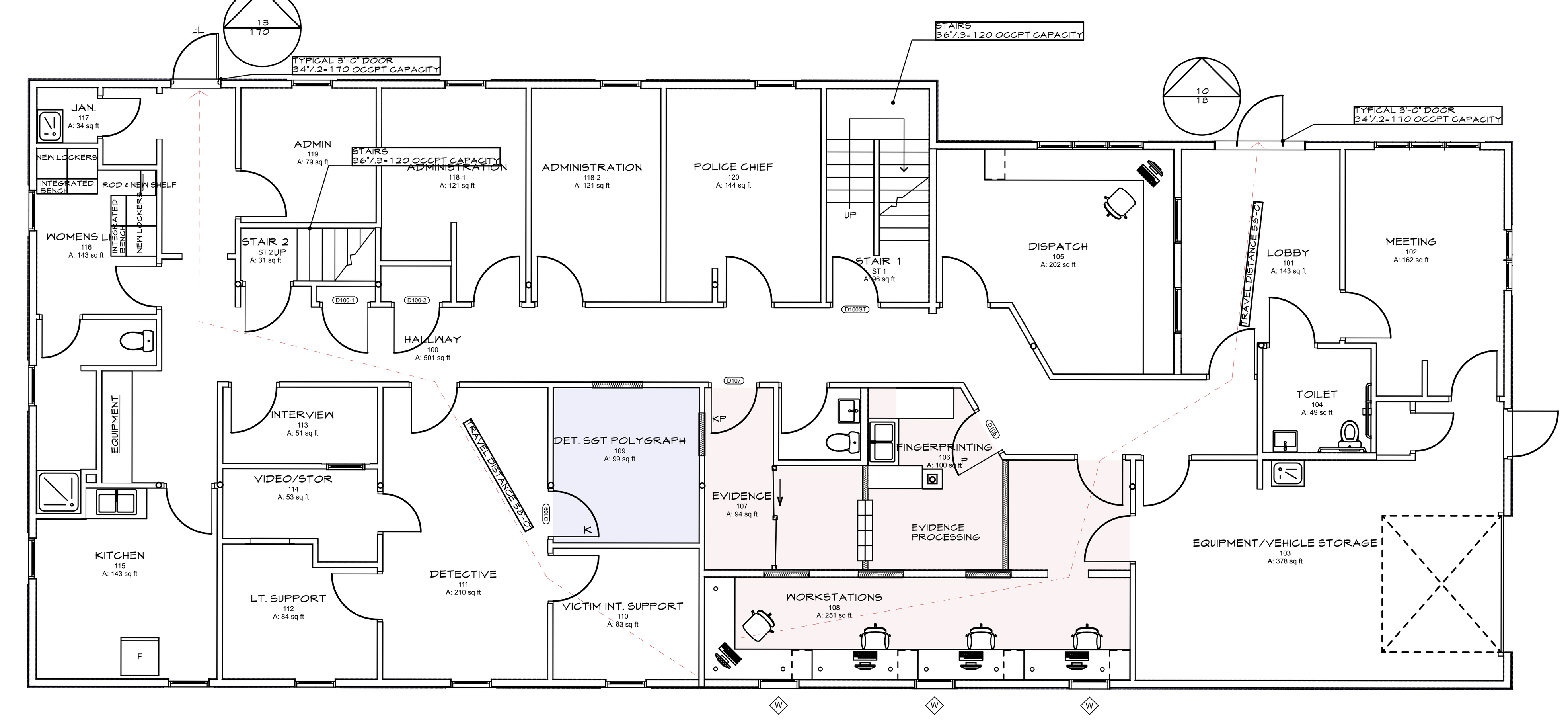


1 Lower Level
SCALE: 1/8" = 1'-0"

SEQUENCE 1B: DEMO CELLS AND RELOCATE DOORS AND PLUMBING FIXTURES.

SEQUENCE 2: REMODEL MAIN LEVEL SGT. OFFICE, EVIDENCE AND WORKSTATIONS.

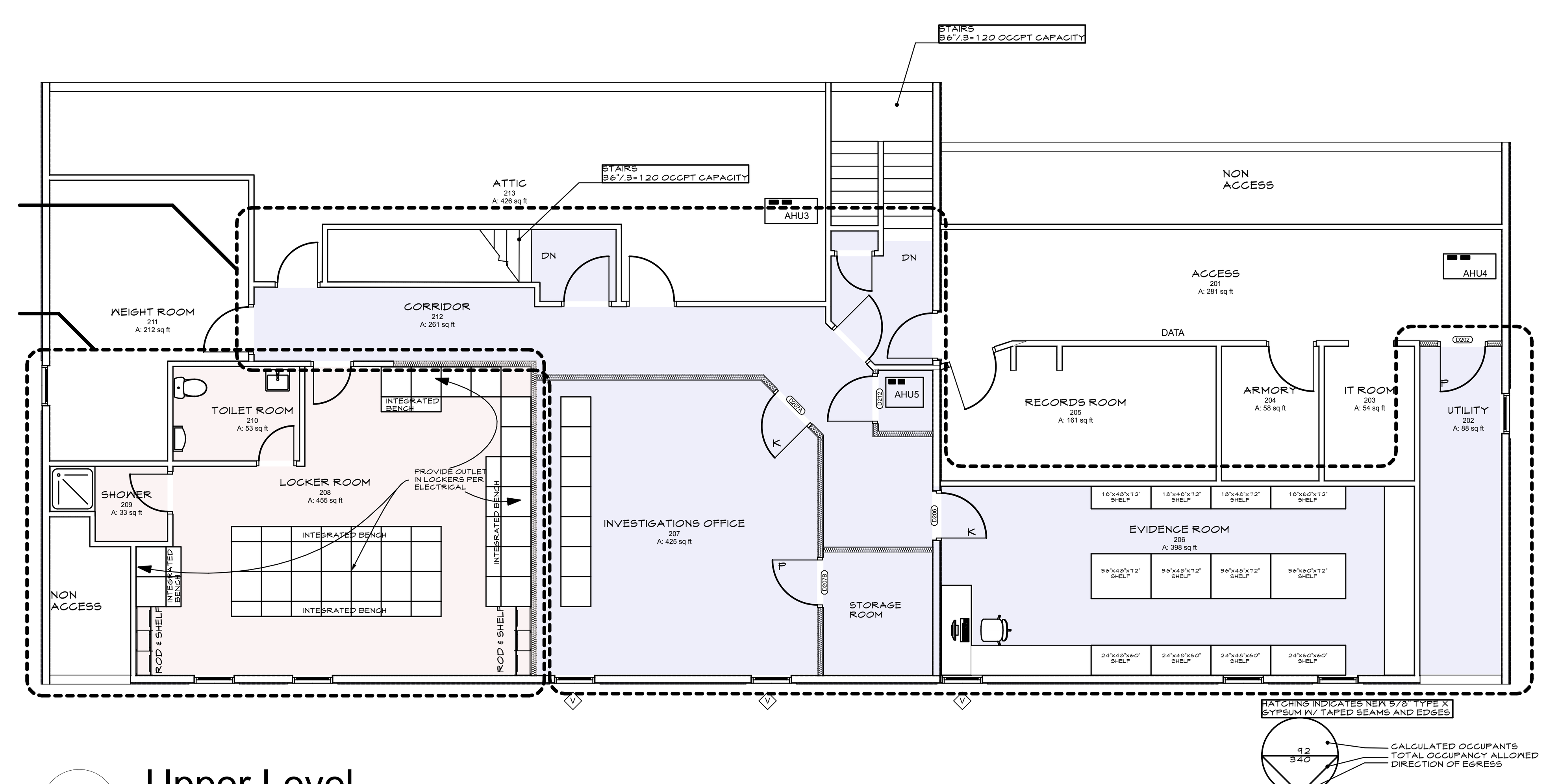
SEQUENCE 2B: ALL REMAINING WORK ON MAIN LEVEL



2 Main Level
SCALE: 1/8" = 1'-0"

SEQUENCE 3A (ALTERNATE 1): INSULATE ATTIC AND REMODEL UPPER LEVEL LOCKER ROOMS. PROVIDE LOCKERS FOR WOMEN'S LOCKER.

SEQUENCE 3B (ALTERNATE 2): COMPLETE BALANCE OF UPPER LEVEL RENOVATIONS



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

CODE REVIEW

Amherst Police Station, 175 Amherst Street, Amherst, NH 03031
CODE REVIEW – March 11, 2020

This project is a renovation and energy retrofit alterations of the existing police station structure and the Lower Level (post ambulatory department currently occupied) will be overall occupied by the police department. Minor alterations consisting of partition walls, plumbing fixture and mechanical systems will be altered on all three levels in certain areas. The building will be occupied during the renovation in phases outlined in the architectural documents. The basis for the project will be the following codes IEBC 2015, International Existing Building Codes, International Building Codes IBC 2015 as adopted by the state of New Hampshire: NFPA -1 2015, and the town of Amherst local ordinances

Section 1 – Design Basis

a) The existing building is 3 levels---open to grade on 3 sides of the building
b) The existing building construction is type 5B unprotected
c) The renovation project is considered a level 2 Alteration (IEBC 2015 section 401, 403 and 404)
d) Existing is open for 100% of its perimeter

Section 2 – Applicable laws, Regulations and Standards

International Building Code 2015 except for egress which is NFPA 101 2015
International Existing Building Code 2015
International Plumbing Code 2015
International Mechanical Code 2015
International Energy Conservation Code 2015
National Electric Code 2015
NFPA 101 Life Safety Code 2015
State Fire Code SAF-C 6000

Section 3 – Building Structure

a) The existing structure is type 5B, the building use is business
b) The overall building height is not altered by this project
c) No change is proposed to the building footprint

Section 4 – Egress System

a) The Lower Level has expanded the functions for additional police services Training Room/Business @ 15 sf / occ.
b) The Lower Level remaining spaces Business @ 100 sf. /occ.
c) The Lower Level doors at 2 egress points are sufficient @ 0.2 inches per person/ 34"x 2 egress
d) Main Level and Upper levels remaining at same occupant counts
e) Stairs to each level remain at the same width @ 0.3 inches per person
f) Exit signs are located at each exit –
g) Battery powered emergency lights, Emergency lights provided at exits

Section 5 – Fire Alarm System

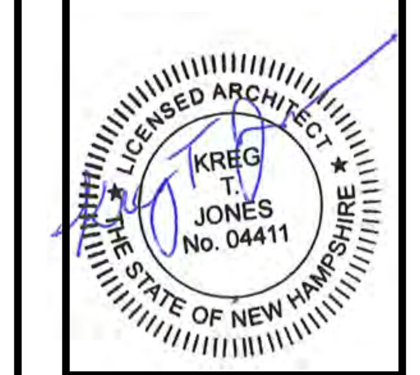
a) The building has an existing fire alarm system, the existing system will remain intact

Section 6 – Automatic Sprinkler System

a) The building has no sprinkler system

AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020



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CODE SHEET & SEQUENCING

RevID	ChID	Change Name	Date
01			3/17/20

date: 5/22/20

proj. no.: 2017-024

A002

D.01	DEMO WALL
D.01A	DEMO WALL FOR NEW OPENING
D.01B	STRIP WALLS BACK TO BARE STUDS TO RECEIVE NEW GYPSUM
D.02	DEMO DOOR
D.02A	DEMO DOOR; FRAME TO REMAIN
D.02B	SALVAGE DOORS FOR LOWER LEVEL
D.03	DEMO WINDOW
D.03A	DEMO WINDOW, PREPARE, PATCH AND PAINT ADJACENT SURFACES
D.04	DEMO PLUMBING FIXTURE
D.05	DEMO CABINETS
D.05A	SALVAGE EXISTING KITCHEN & CABINETS AND MOVE TO TRAINING ROOM
D.05B	DEMO EXISTING KITCHEN & CABINETS AND PREP FOR SALVAGED UNITS
D.06	REMOVE EXISTING POST & PREP FOR NEW BEAM
D.07	DEMO HVAC EQUIPMENT & PADS (SEAL PENETRATIONS AT BUILDING)
D.08	REMOVE SHOWER ENCLOSURE
D.09	CUT SLAB TO PREPARE FOR NEW UNDER-SLAB PLUMBING (SCHEMATIC ONLY)
D.10	REFER TO MECHANICAL DRAWINGS FOR REMOVAL OF AHU-1 AND DUCTWORK

GENERAL DEMOLITION NOTES

A PROTECT ALL FINISHES ADJACENT TO AREAS OF DEMOLITION AND REPAIRS

B EACH CONTRACTOR TO CAREFULLY EXAMINE EXISTING CONDITIONS AT THE TIME OF BID. ALL INCIDENTAL DEMOLITION IS NOT SHOWN.

C REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR WORK IN THOSE TRADES. THE CONTRACTOR IS TO COORDINATE WITH DEMOLITION WORK OF THOSE TRADES.

D DEMOLITION OF WALLS INCLUDES ALL ITEMS ATTACHED TO THE WALL, UNLESS NOTED TO BE SALVAGED. SAW CUT NEW OPENINGS AND REPAIR EXPOSED ENDS OF WALLS PER MASONRY RESTORATION.

E SALVAGE EXISTING DOORS, FRAMES TO REMAIN, UNLESS NOTED OTHERWISE.

F PROTECT EXISTING DOORS SCHEDULED TO REMAIN.

G REMOVE ALL HEATERS AND PIPING NOT TO BE USED IN NEW MECHANICAL SYSTEM. PREPARE WALLS FOR PATCHING AND PENETRATIONS TO BE FILLED.

H SALVAGE REFRIGERATOR FOR REINSTALLATION. RANGE TO BE REMOVED.

I SALVAGE ALL EVIDENCE LOCKERS AND FURNITURE FOR REUSE, EXCEPT LOCKER ROOM LOCKERS.

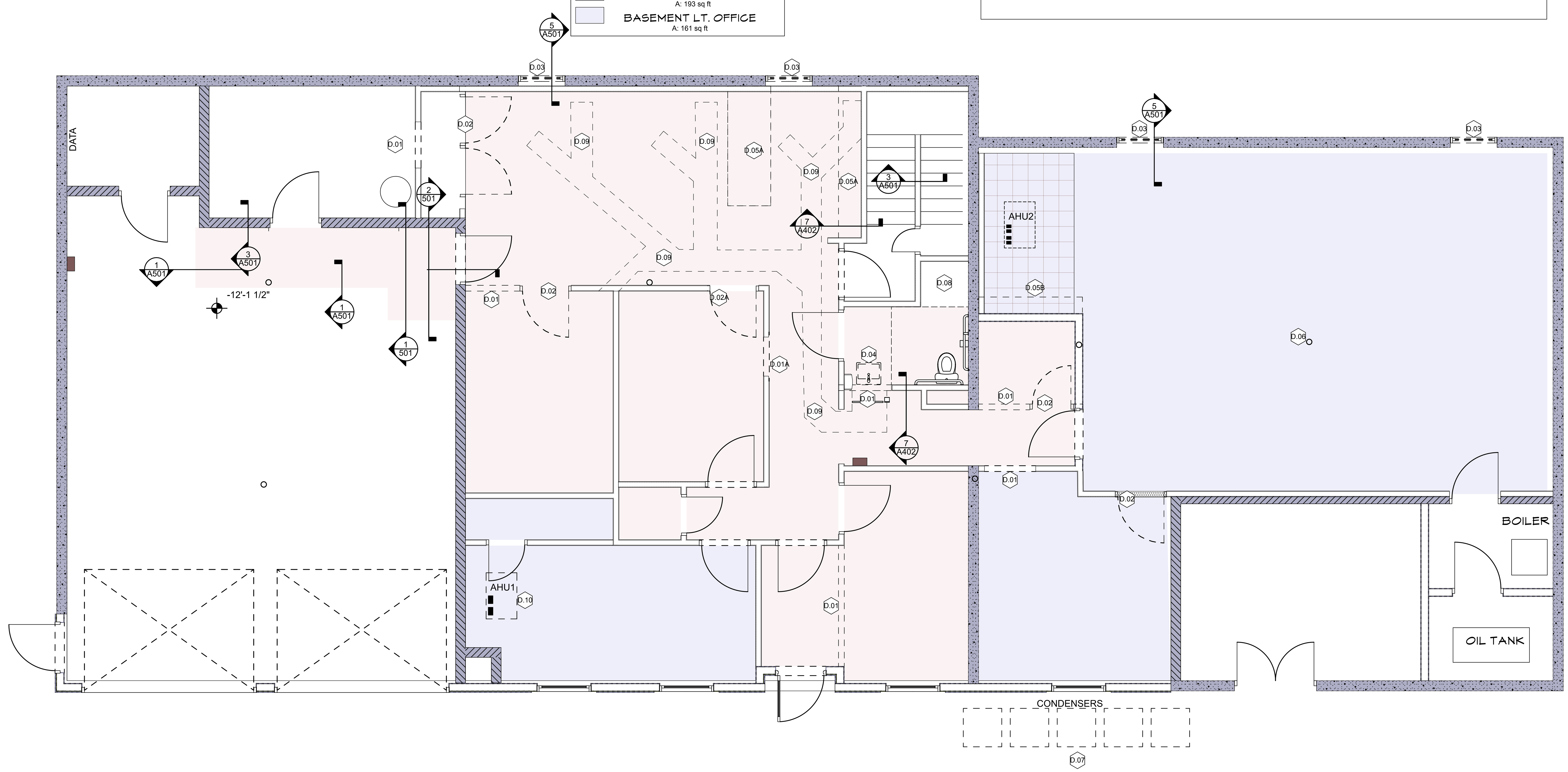
J SALVAGE ALL ELECTRICAL UNLESS NOTED OTHERWISE ON ELECTRICAL PLANS

K REMOVE CEILINGS IN AREAS OF HEAVY CONSTRUCTION. SALVAGE FOR REINSTALLATION IN OTHER AREAS RESERVING EXTRA TILES FOR USE IN EXISTING LOCATIONS. REFER TO SCHEDULE FOR OTHER LOCATIONS. SALVAGE 30 TILES (MIN.) FOR USE IN OTHER LOCATIONS.

L REMOVE EXISTING FLOORING DOWN TO CONCRETE OR BARE FLOORING TO PREPARE FOR NEW FLOORING WHERE NEW FLOORING IS SPECIFIED. REFER TO SCHEDULE FOR ALL LOCATIONS.

BASEMENT
A: 3,773 sq ft

	BASEMENT FULL REMODEL A: 1,091 sq ft
	BASEMENT TRAINING ROOM A: 731 sq ft
	BASEMENT SGT OFFICE A: 193 sq ft
	BASEMENT LT. OFFICE A: 161 sq ft



1 Demolition Basement Floor Plan
SCALE: 1/4" = 1'-0"

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AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

KREG T. JONES No. 04411
LICENSED ARCHITECT STATE OF NEW HAMPSHIRE

DENNIS MIRES P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

LOWER LEVEL
DEMO PLAN

date: 5/22/20
proj. no.: 2017-024

AD100

D.01	DEMO WALL
D.01A	PREP WALL FOR NEW OPENING
D.01B	STRIP WALLS BACK TO BARE STUDS TO RECEIVE NEW GYPSUM
D.02	DEMO DOOR
D.02A	DEMO DOOR; FRAME TO REMAIN
D.02B	SALVAGE DOORS FOR LOWER LEVEL
D.03	DEMO WINDOW
D.03A	DEMO WINDOW, PREPARE, PATCH AND PAINT ADJACENT SURFACES
D.04	DEMO PLUMBING FIXTURE
D.05	DEMO CABINETS & CAP PLUMBING
D.05A	SALVAGE EXISTING KITCHEN & CABINETS AND MOVE TO TRAINING ROOM
D.05B	DEMO EXISTING KITCHEN & CABINETS AND PREP FOR SALVAGED UNITS
D.06	REMOVE EXISTING POST & PREP FOR NEW BEAM
D.07	DEMO HVAC EQUIPMENT
D.08	SALVAGE EVIDENCE LOCKERS & PREP FOR NEW DOORWAY
D.09	DEMO COUNTER & CABINETS
D.10	SALVAGE LOCKERS FOR REUSE IN LOWER LEVEL BOOKING

FIRST FLOOR
A: 3,793 sq ft

FIRST FLOOR OFFICE REMODEL
A: 99 sq ft

FIRST FLOOR EVIDENCE REMODEL
A: 466 sq ft

GENERAL DEMOLITION NOTES

A PROTECT ALL FINISHES ADJACENT TO AREAS OF DEMOLITION AND REPAIRS

B EACH CONTRACTOR TO CAREFULLY EXAMINE EXISTING CONDITIONS AT THE TIME OF BID. ALL INCIDENTAL DEMOLITION IS NOT SHOWN.

C REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR WORK IN THOSE TRADES. THE CONTRACTOR IS TO COORDINATE WITH DEMOLITION WORK OF THOSE TRADES.

D DEMOLITION OF WALLS INCLUDES ALL ITEMS ATTACHED TO THE WALL, UNLESS NOTED TO BE SALVAGED. SAW CUT NEW OPENINGS AND REPAIR EXPOSED ENDS OF WALLS PER MASONRY RESTORATION.

E SALVAGE EXISTING DOORS, FRAMES TO REMAIN, UNLESS NOTED OTHERWISE.

F PROTECT EXISTING DOORS SCHEDULED TO REMAIN.

G REMOVE ALL HEATERS AND PIPING NOT TO BE USED IN NEW MECHANICAL SYSTEM. PREPARE WALLS FOR PATCHING AND PENETRATIONS TO BE FILLED.

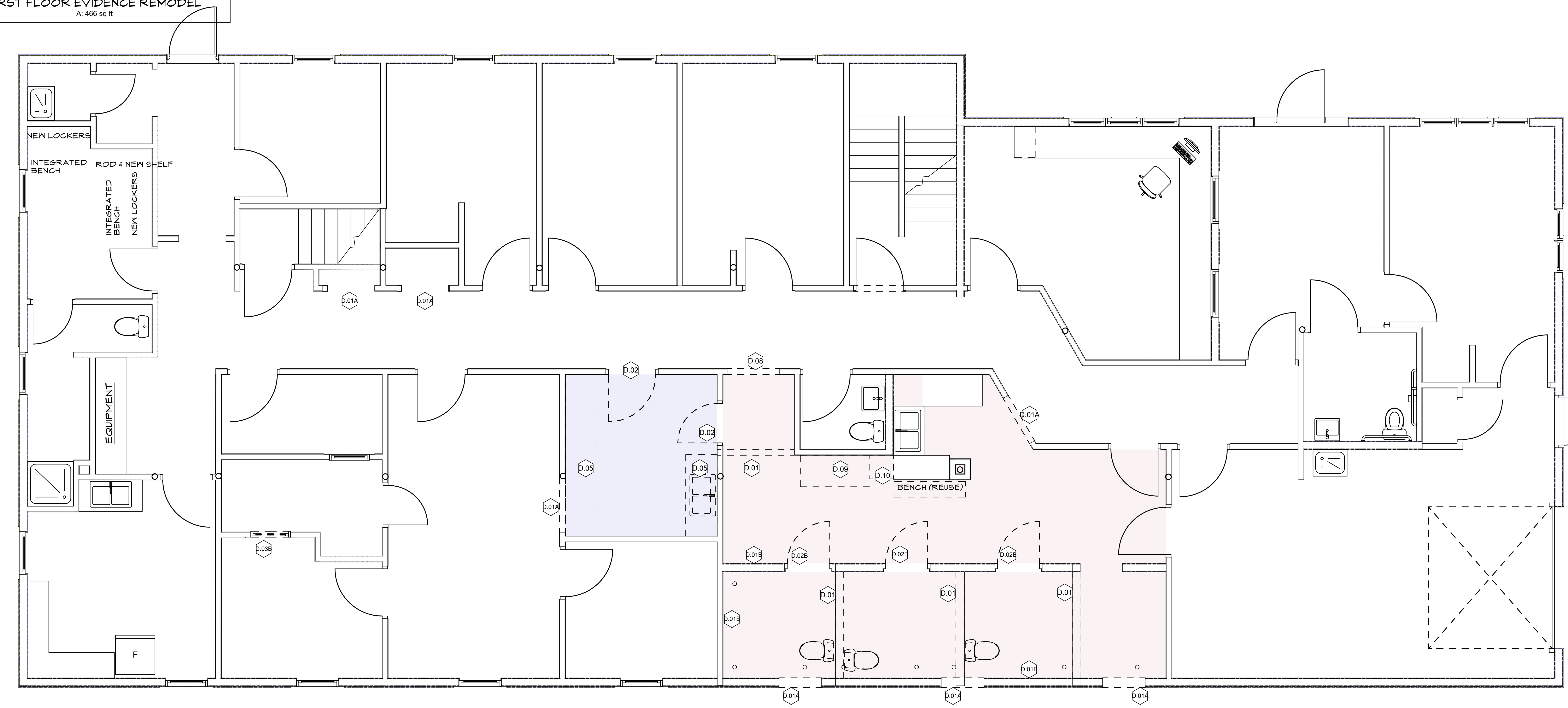
H SALVAGE REFRIGERATOR FOR REINSTALLATION. RANGE TO BE REMOVED.

I SALVAGE ALL EVIDENCE LOCKERS AND FURNITURE FOR REUSE, EXCEPT LOCKER ROOM LOCKERS.

J SALVAGE ALL ELECTRICAL UNLESS NOTED OTHERWISE ON ELECTRICAL PLANS

K REMOVE CEILINGS IN AREAS OF HEAVY CONSTRUCTION. SALVAGE FOR REINSTALLATION IN OTHER AREAS RESERVING EXTRA TILES FOR USE IN EXISTING LOCATIONS. REFER TO SCHEDULE FOR OTHER LOCATIONS. SALVAGE 30 TILES (MIN.) FOR USE IN OTHER LOCATIONS.

L REMOVE EXISTING FLOORING DOWN TO CONCRETE OR BARE FLOORING TO PREPARE FOR NEW FLOORING WHERE NEW FLOORING IS SPECIFIED. REFER TO SCHEDULE FOR ALL LOCATIONS.



1 Demolition First Floor Plan
SCALE: 1/4" = 1'-0"

0 2' 4' 8'

AMHERST POLICE DEPARTMENT
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Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

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697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

MAIN LEVEL
DEMO PLAN

date: 5/22/20
proj. no.: 2017-024

AD101

GENERAL DEMOLITION NOTES

A PROTECT ALL FINISHES ADJACENT TO AREAS OF DEMOLITION AND REPAIRS

B EACH CONTRACTOR TO CAREFULLY EXAMINE EXISTING CONDITIONS AT THE TIME OF BID. ALL INCIDENTAL DEMOLITION IS NOT SHOWN.

C REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR WORK IN THOSE TRADES. THE CONTRACTOR IS TO COORDINATE WITH DEMOLITION WORK OF THOSE TRADES.

D DEMOLITION OF WALLS INCLUDES ALL ITEMS ATTACHED TO THE WALL, UNLESS NOTED TO BE SALVAGED. SAW CUT NEW OPENINGS AND REPAIR EXPOSED ENDS OF WALLS PER MASONRY RESTORATION.

E SALVAGE EXISTING DOORS, FRAMES TO REMAIN, UNLESS NOTED OTHERWISE.

F PROTECT EXISTING DOORS SCHEDULED TO REMAIN.

G REMOVE ALL HEATERS AND PIPING NOT TO BE USED IN NEW MECHANICAL SYSTEM. PREPARE WALLS FOR PATCHING AND PENETRATIONS TO BE FILLED.

H SALVAGE REFRIGERATOR FOR REINSTALLATION. RANGE TO BE REMOVED.

I SALVAGE ALL EVIDENCE LOCKERS AND FURNITURE FOR REUSE, EXCEPT LOCKER ROOM LOCKERS.

J SALVAGE ALL ELECTRICAL UNLESS NOTED OTHERWISE ON ELECTRICAL PLANS

K REMOVE CEILINGS IN AREAS OF HEAVY CONSTRUCTION. SALVAGE FOR REINSTALLATION IN OTHER AREAS RESERVING EXTRA TILES FOR USE IN EXISTING LOCATIONS. REFER TO SCHEDULE FOR OTHER LOCATIONS. SALVAGE 30 TILES (MIN.) FOR USE IN OTHER LOCATIONS.

L REMOVE EXISTING FLOORING DOWN TO CONCRETE OR BARE FLOORING TO PREPARE FOR NEW FLOORING WHERE NEW FLOORING IS SPECIFIED. REFER TO SCHEDULE FOR ALL LOCATIONS.

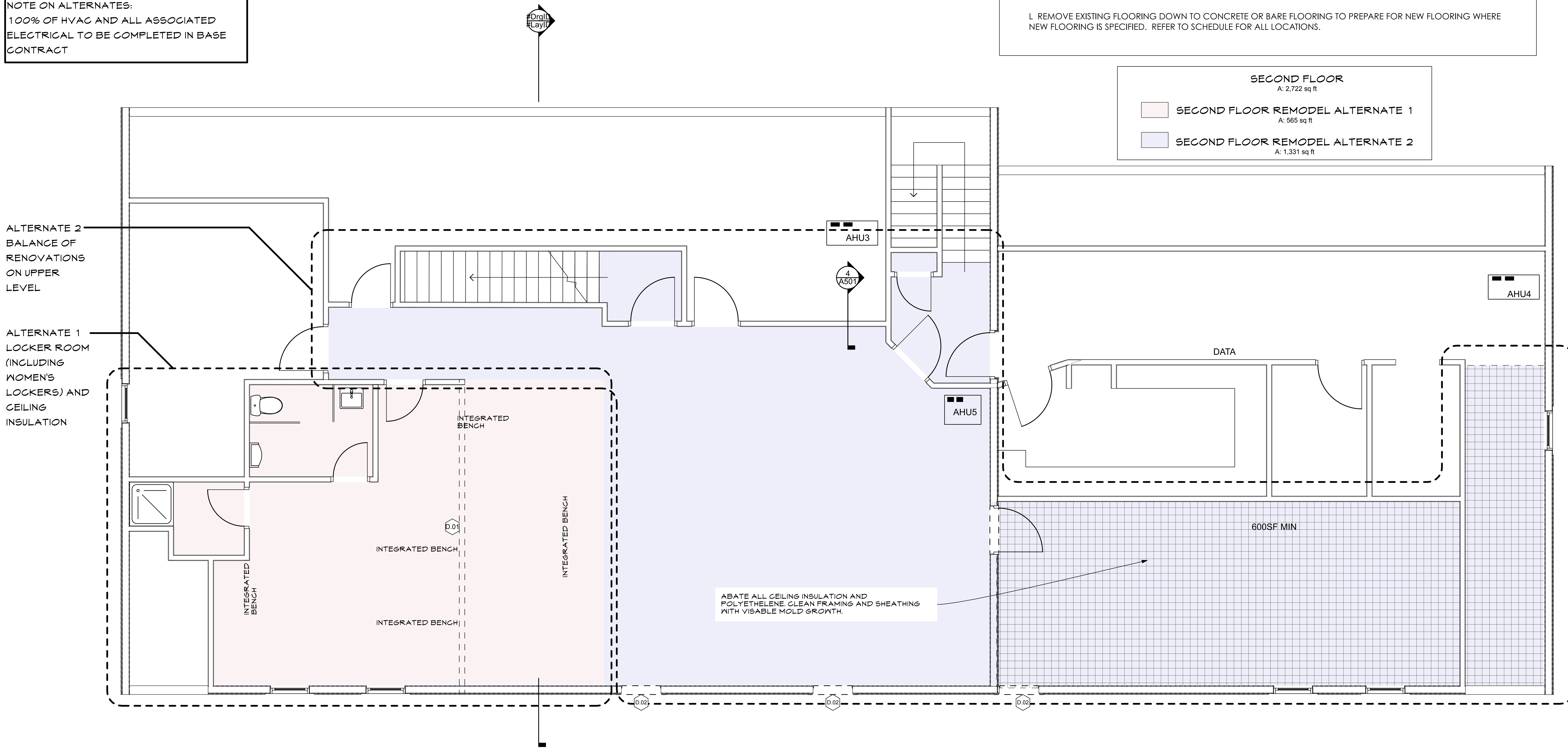
D.01	DEMO WALL
D.02	DEMO WALL LOCATION TO RECEIVE NEW WINDOW

NOTE ON ALTERNATES:
100% OF HVAC AND ALL ASSOCIATED ELECTRICAL TO BE COMPLETED IN BASE CONTRACT

SECOND FLOOR
A: 2,722 sq ft

SECOND FLOOR REMODEL ALTERNATE 1
A: 565 sq ft

SECOND FLOOR REMODEL ALTERNATE 2
A: 1,331 sq ft



1 Demolition Second Floor Plan
SCALE: 1/4" = 1'-0"

0 2' 4' 8'

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AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

LICENSED ARCHITECT KREG T. JONES No. 04411 THE STATE OF NEW HAMPSHIRE

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
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UPPER LEVEL
DEMO PLAN

RevID	ChID	Change Name	Date
01			3/17/20

date: 5/22/20

proj. no.: 2017-024

AD102

KEYNOTES—BASEMENT FLOOR PLAN

#	NOTE
01	NEW RAMP/RAILING & STAIR/PLATFORM
02	PROVIDE NEW THRESHOLD
03	INFILL & INSULATE WALL
04	CMU INFILL WINDOW INSULATE AND PATCH WALL
05	OIL TANK AND BOILER TO REMAIN
06	NEW CLEAR SPAN BEAM (OMIT CENTER POST) W/ WELDED PLATE BRACKET BOLTED TO FOUNDATION WALLS (REFER TO STRUCTURAL)
07A	INSTALL RELOCATED PENINSULA CABINETS AND GRANITE COUNTERTOP
07B	INSTALL RELOCATED SINK BASE, 9" BASE AND COORDINATING UPPER CABINETS - PROVIDE CONTRASTING GRANITE COUNTERTOP 25"X3'-4" AT SINK
07C	PROVIDE END PANEL
08	MICROWAVE AND UPPER CABINETS FROM DEMO PLAN - CAP PLUMBING AND REPAIR FLOOR TO RECEIVE FLOORING
09	NEW ROD & SHELF
10	NEW WALL & FIXTURES - REPAIR FLOOR TO RECEIVE NEW FLOORING - REFER TO PLUMBING DRAWINGS
11	NEW SHOWER ENCLOSURE
12	DOOR REMOVED - FRAME TO REMAIN
13	NEW WINDOW 2'-6"X3'-6"
14	DECK MOUNTED SWIVEL EYE WASH
15	LOCKERS RELOCATED (FROM MAIN LEVEL BOOKING)
16	REPLACE DOOR HARDWARE ONLY
17	REPLACE DOOR & HARDWARE
18	REPLACE DOOR HARDWARE & CLOSER
19	NEW VRF & CONDENSING UNIT (PROVIDE NEW CONCRETE PAD MOUNT & ATTACHMENT)
20	INSTALL NEW HANDRAILS
21	RE-INSTALLTOILETS FROM EXISTING CELLS (SINKS ARE NEW)
22	NEW 3' X 7' OPENING
23	NEW WALL AND DOOR
24	EXISTING REFRIDGERATOR & WATER COOLER TO BE REUSED
25	CELL DOORS RELOCATED FROM EXISTING LOCATION ON MAIN LEVEL
26	LVT FLOORING IN KITCHEN
27	PROVIDE NEW WALL MOUNTED DETENTION BED BY KRYPTOMAX (KM-WMB) (MATTRESS BY OWNER)
28	NEW LOUVERS AT EXISTING WALL, G.C. TO FURNISH OPENINGS AND COORDINATE WITH MECH. DRAWINGS FOR SIZES, ARCHITECT TO SELECT COLOR
29	RELOCATE DOOR & FRAME (REVERSE SWING) W/ NEW HARDWARE. INFILL WALL AT OLD LOCATION

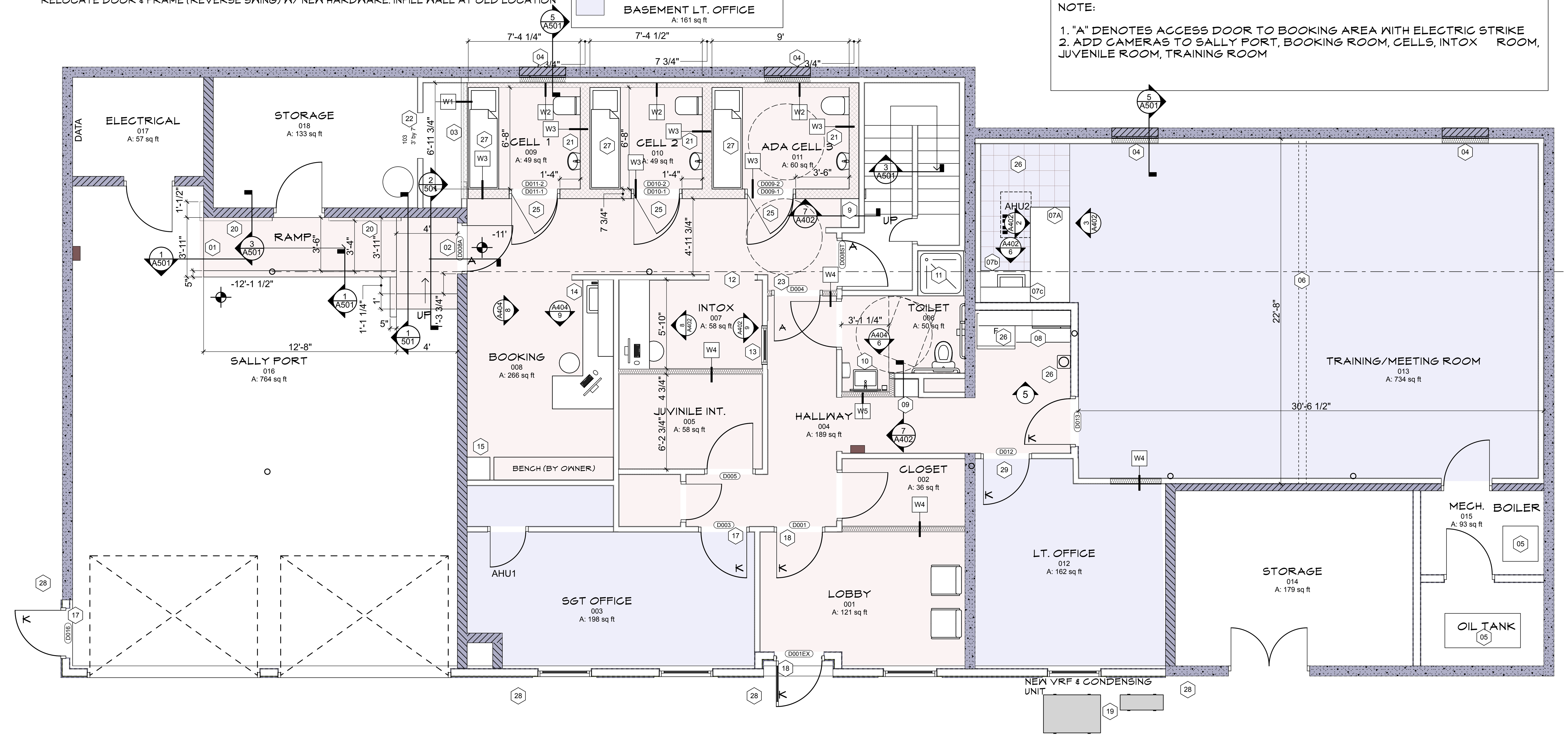
4" OVAL (FE) FIRE EXTINGUISHER

BASEMENT
A: 3,773 sq ft

BASEMENT FULL REMODEL	A: 1,091 sq ft
BASEMENT TRAINING ROOM	A: 731 sq ft
BASEMENT SGT OFFICE	A: 193 sq ft
BASEMENT LT. OFFICE	A: 161 sq ft

NOTE:

1. "A" DENOTES ACCESS DOOR TO BOOKING AREA WITH ELECTRIC STRIKE
2. ADD CAMERAS TO SALLY PORT, BOOKING ROOM, CELLS, INTOX ROOM, JUVENILE ROOM, TRAINING ROOM



1 LOWER LEVEL FLOOR PLAN
SCALE: 1/4" = 1'-0"

AMHERST POLICE DEPARTMENT
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CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

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LOWER LEVEL FLOOR PLAN

date: 5/22/20

proj. no.: 2017-024

A100

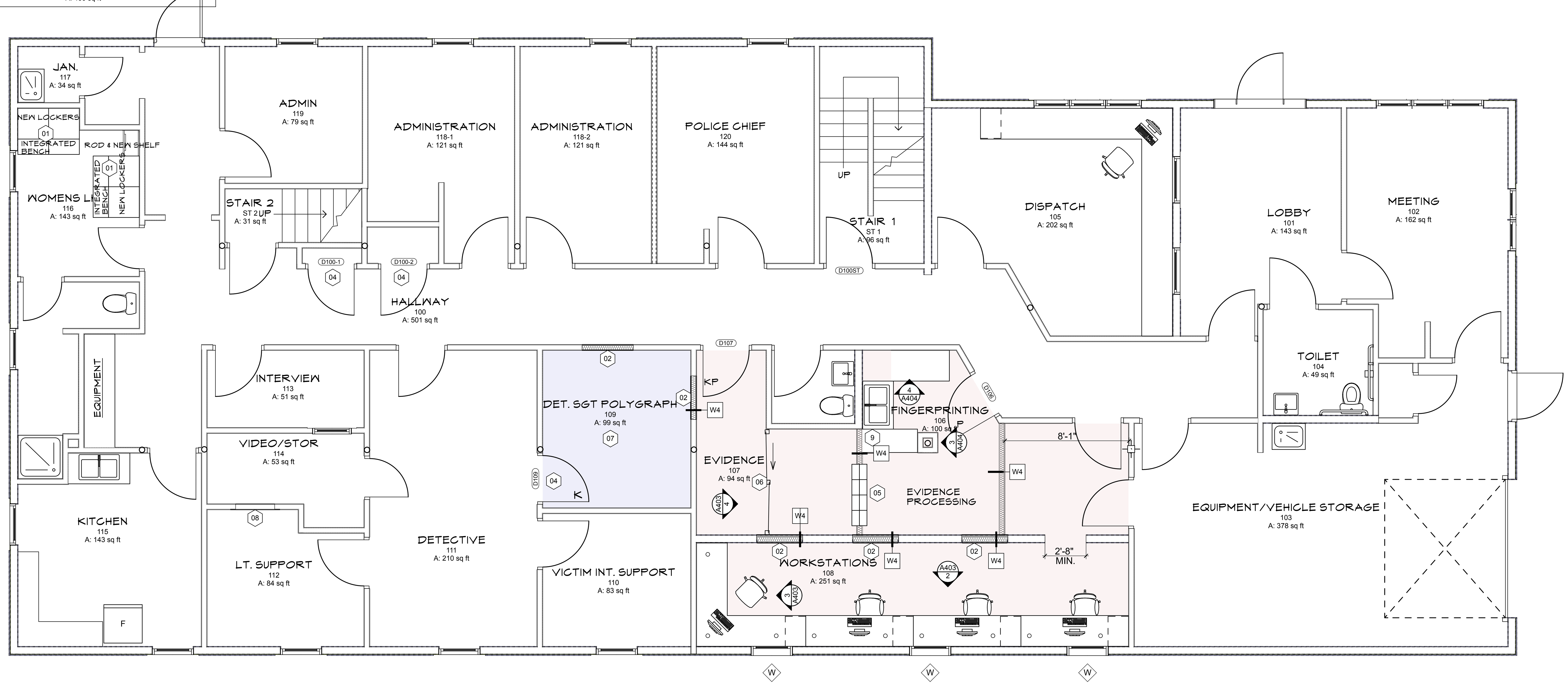
KEYNOTES—FIRST FLOOR PLAN

#	NOTE
01	NEW LOCKERS (4)
02	REMOVE & INFILL DOOR
03	NOT USED
04	NEW DOOR
05	NEW LOCATION FOR EVIDENCE LOCKER
06	8' SECURITY GATE/FENCE (ULINE H-8306 SLIDING DOOR & COORD. PANEL/POSTS
07	REPLACE CARPET, WALL BASE & TRANSITION AT CARPET
08	REMOVE & INFILL WINDOW PATCH & PAINT ENTIRE WALL
09	CUT COUNTER AND RE-SUPPORT ON NEW WALL (PROVIDE BACKSPLASH)

FIRST FLOOR
A: 3,793 sq ft

FIRST FLOOR OFFICE REMODEL
A: 99 sq ft

FIRST FLOOR EVIDENCE REMODEL
A: 466 sq ft



1 MAIN LEVEL FLOOR PLAN
SCALE: 1/4" = 1'-0"

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CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

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MAIN LEVEL FLOOR PLAN

date: 5/22/20

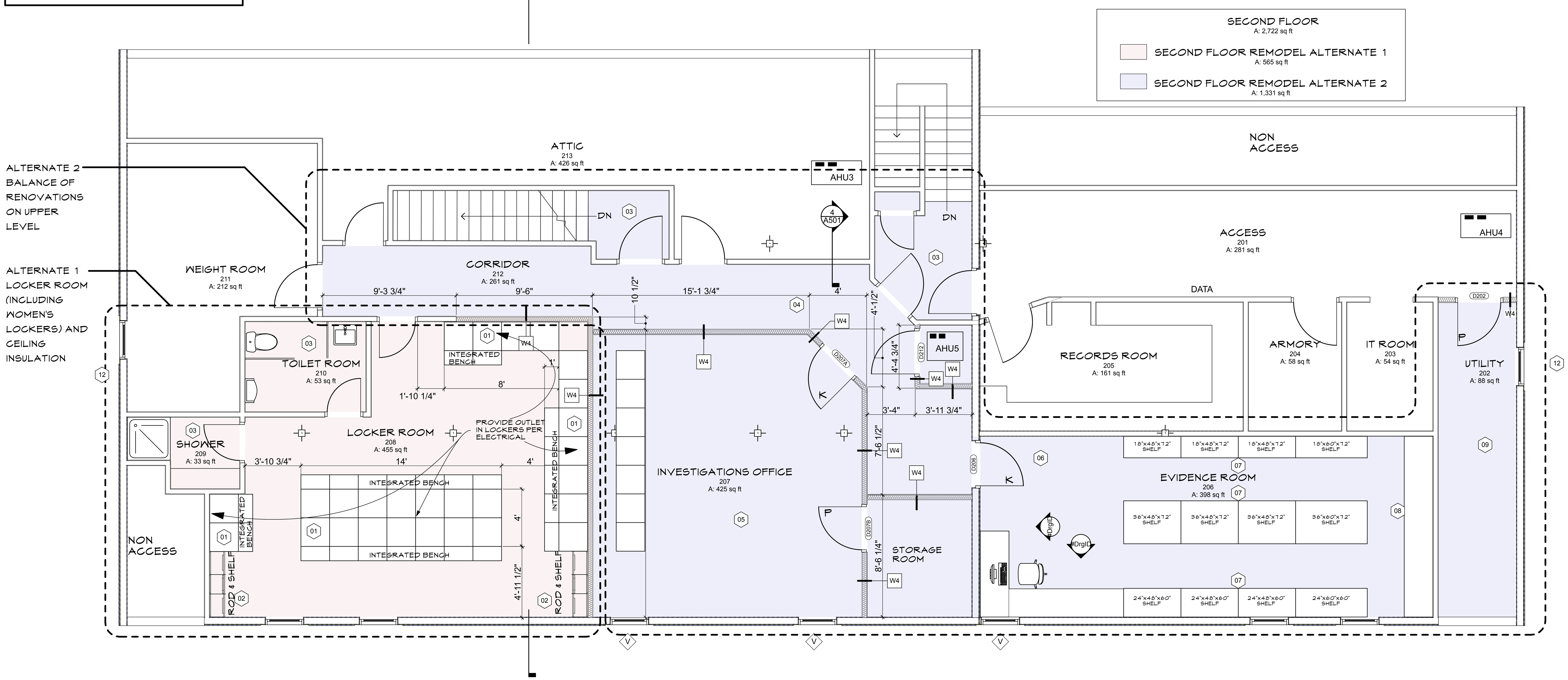
proj. no.: 2017-024

A101

KEYNOTES—UPPER FLOOR PLAN

#	NOTE
01	PROVIDE NEW 27 LOCKER SYSTEM, NEW FLOORING & PAINT COMPLETE. LOCKERS TO HAVE PLUG-INS FOR LIGHT AND PHONE CHARGING
02	COATS
03	NEW FLOORING & BASE
04	PROVIDE NEW SHEETROCK ON WALLS AND CEILING, NEW FLOORING OVER UNDERLAYMENT & PAINT COMPLETE.
05	PROVIDE NEW SHEETROCK ON WALLS AND ACT CEILING, NEW FLOORING OVER UNDERLAYMENT & PAINT COMPLETE.
06	PROVIDE NEW SHEETROCK ON WALLS AND ANGLED CEILING, NEW FLOORING OVER UNDERLAYMENT & PAINT COMPLETE.
07	NEW WIRE RACK 3-SHELF STORAGE (TYP.)
08	NEW 12" ROD & 14" SHELF
09	PROVIDE NEW SHEETROCK ON WALLS AND CEILING, NEW FLOORING PAINT COMPLETE.
10	SEAL RAFTER BAYS @ CONNECTION TO WALL WITH 3" URETHANE (MAINTAIN AIRFLOW TO VENTED SOFFIT)
11	SEE DETAIL 4/A501
12	NEW LOUVERS AT EXISTING WALL, G.C. TO FURNISH OPENINGS AND COORDINATE WITH MECH. DRAWINGS FOR SIZES, ARCHITECT TO SELECT COLOR

NOTE ON ALTERNATES:
100% OF HVAC AND ALL ASSOCIATED ELECTRICAL TO BE COMPLETED IN BASE CONTRACT



1 UPPER LEVEL FLOOR PLAN
SCALE: 1/4" = 1'-0"

AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

LICENSED ARCHITECT KREG T. JONES No. 04411 STATE OF NEW HAMPSHIRE

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UPPER LEVEL FLOOR PLAN

date: 5/22/20
proj. no.: 2017-024

A102

CEILING LEGEND

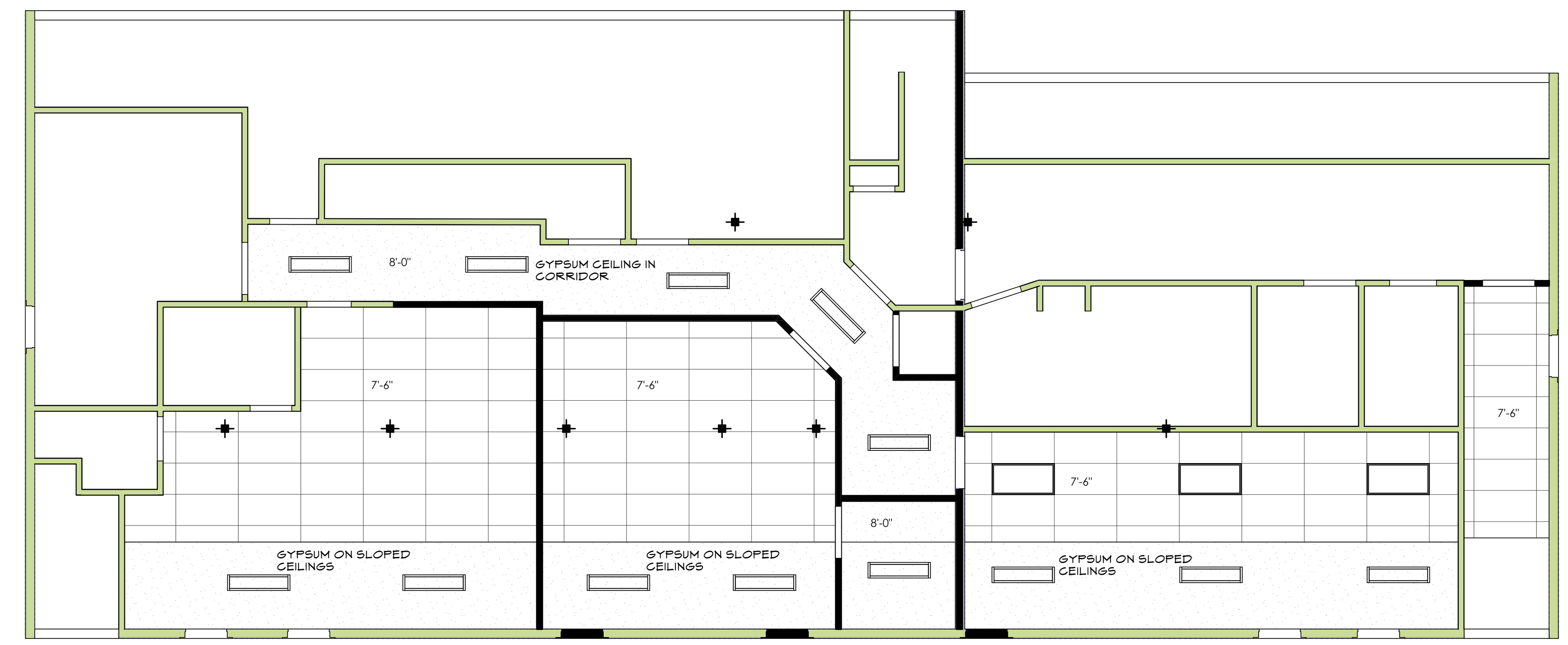
2X4 CEILING TILE	
2X2 CEILING TILE	
X'-X"	CEILING HEIGHT
2x4 LIGHTING.	
2x2 LIGHTING.	
GYPSUM WALLBOARD CEILING OR SOFFIT.	
SURFACE MOUNTED LIGHT FIXTURE	
SUSPENDED LIGHT FIXTURE	
PENDANT LIGHT FIXTURE	
RECESSED DOWNLIGHT.	
CEILING MOUNT EXIT SIGN.	
SD	SMOKE DETECTOR.
S	CEILING MOUNTED SPEAKER.
WALL MOUNTED LIGHT FIXTURE (SCONCE).	

NOTES:

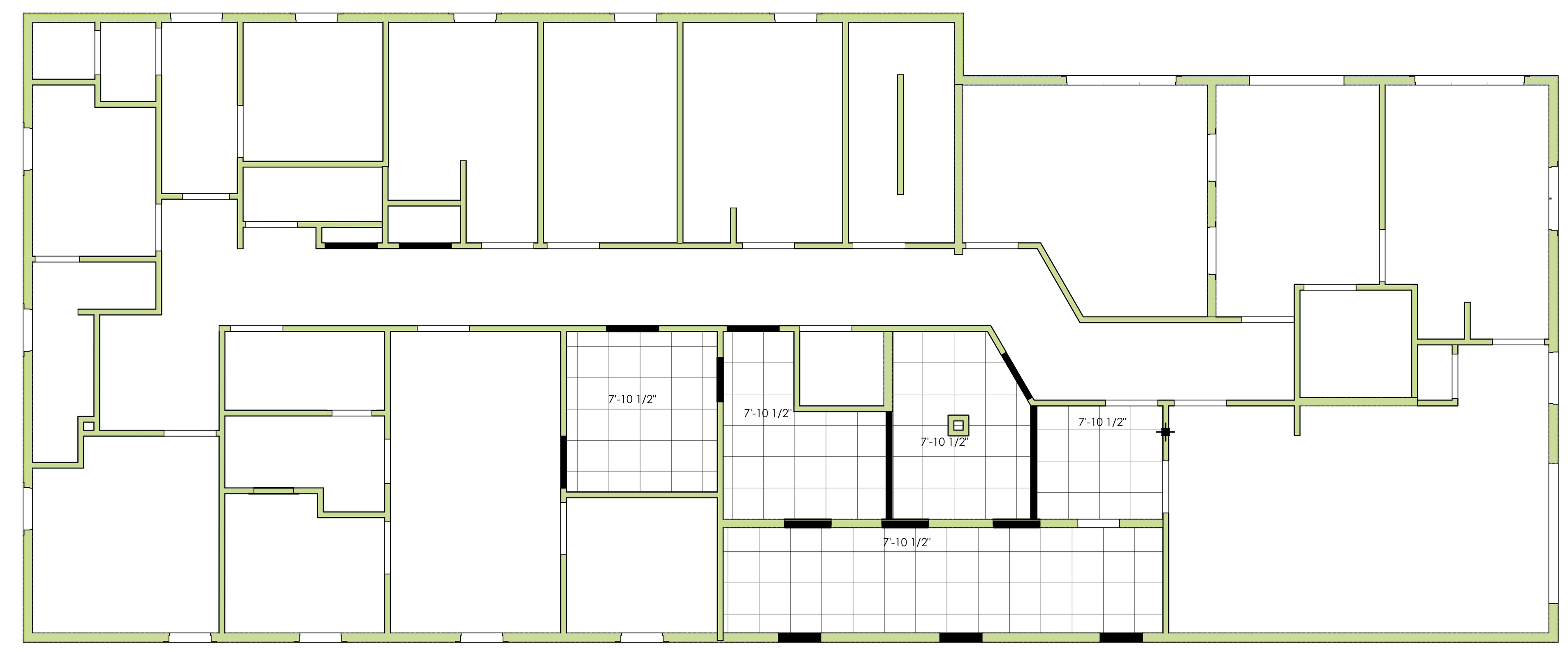
1) TYPICAL 2'X2' ACOUSTICAL CEILING PANELS TO BE ARMSTRONG 1912 "ULTIMA" BEVELED TEGULAR W/ SUPRAFINE 9/16" EXPOSED TEE GRID. COLOR OF GRID AND PANELS TO BE WHITE. 2'X4' ACOUSTICAL CEILING PANELS TO BE ARMSTRONG 1915 "ULTIMA" BEVELED TEGULAR W/ SUPRAFINE 9/16" EXPOSED TEE GRID.

2) LIGHTING AND MECHANICAL SYMBOLS ARE SHOWN FOR LAYOUT PURPOSES ONLY. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR FIXTURE, EQUIPMENT, LOCATIONS & SPECIFICATIONS.

3) COORDINATE ALL CEILING TYPES AND HEIGHTS WITH REFLECTED CEILING PLANS.



3 Upper Level Reflected Ceiling Plan
SCALE: 1/8" = 1'-0"
0 4' 8' 16'



2 Main Level Reflected Ceiling Plan
SCALE: 1/8" = 1'-0"
0 4' 8' 16'

1 Lower Level Reflected Ceiling Plan
SCALE: 1/8" = 1'-0"
0 4' 8' 16'

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AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

LICENSED ARCHITECT
KREG T. JONES
No. 04411
THE STATE OF NEW HAMPSHIRE

DENNIS MIRES, P.A.
THE ARCHITECTS
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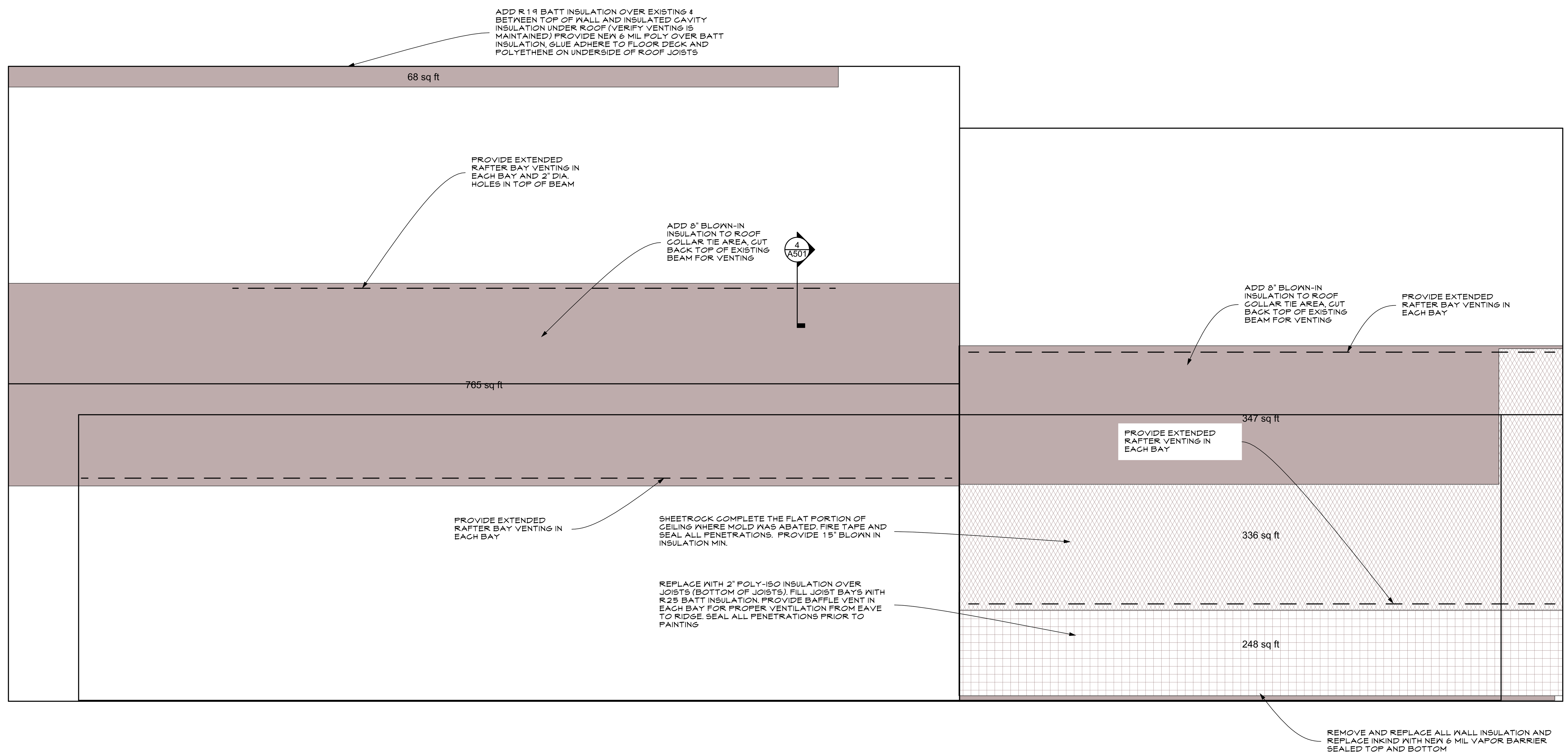
RCP PLANS

RevID	ChID	Change Name	Date
01			3/17/20

date: 5/22/20
proj. no.: 2017-024

A103



1 Existing Roof Plan
SCALE: 1/4" = 1'-0"

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AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

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697 Union Street, Manchester NH
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ATTIC PLAN

date: 5/22/20
proj. no.: 2017-024

A104

SOUTH ELEVATION

NORTHEAST ELEVATION

NORTHWEST ELEVATION

SOUTHWEST ELEVATION

AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

LICENSED ARCHITECT KREG T. JONES No. 04411 STATE OF NEW HAMPSHIRE

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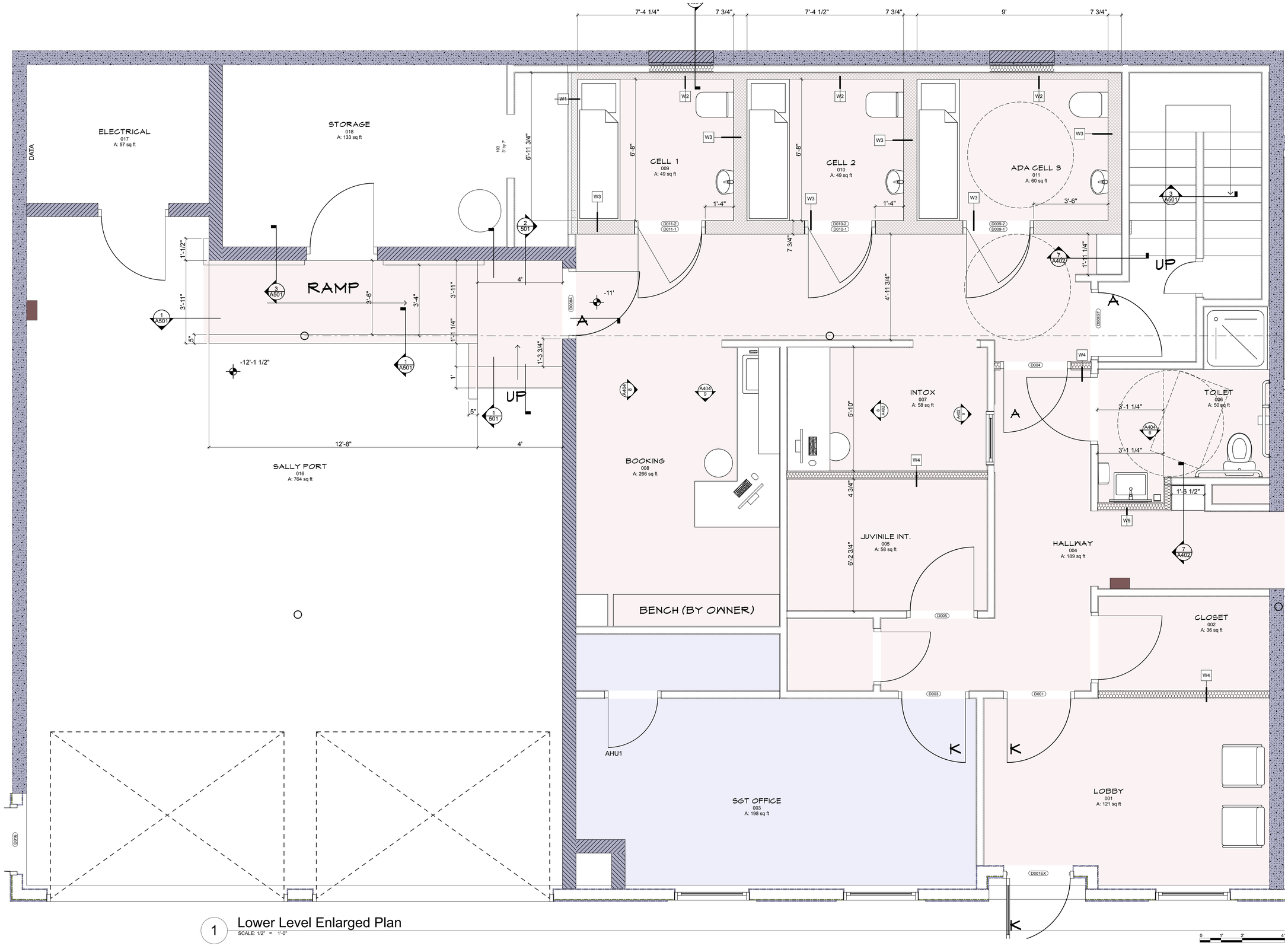
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

SOUTH & EAST ELEVATIONS

date: 5/22/20

proj. no.: 2017-024

A201



1 Lower Level Enlarged Plan

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

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AMHERST POLICE DEPARTMENT
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CONSTRUCTION
DOCUMENTS - BID 2
5/22/2020

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THE ARCHITECTS
697 Union Street, Manchester NH
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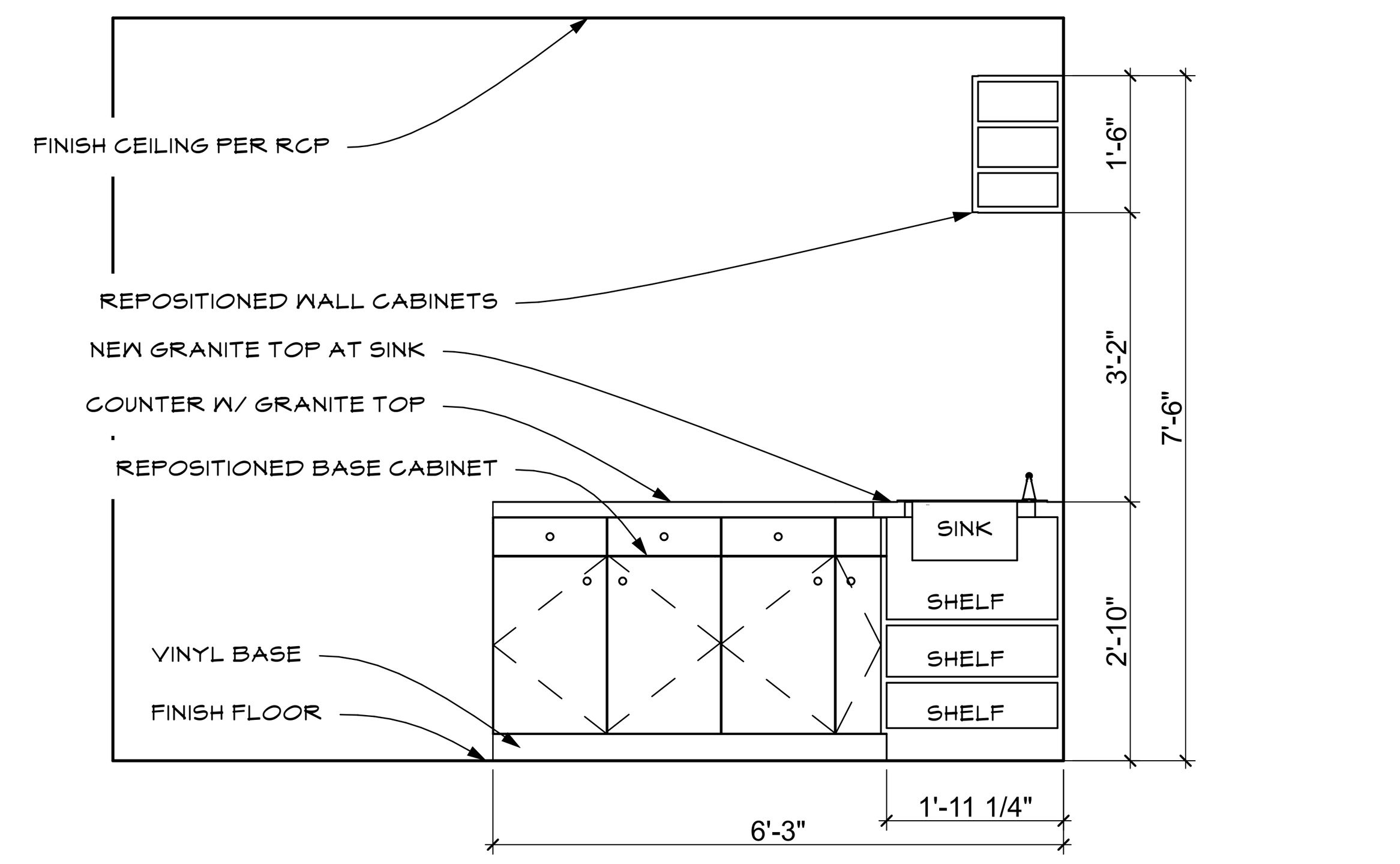
LOWER LEVEL
ENLARGED
PLANS

RevID	ChID	Change Name	Date
01			3/17/20

date: 5/22/20

proj. no.: 2017-024

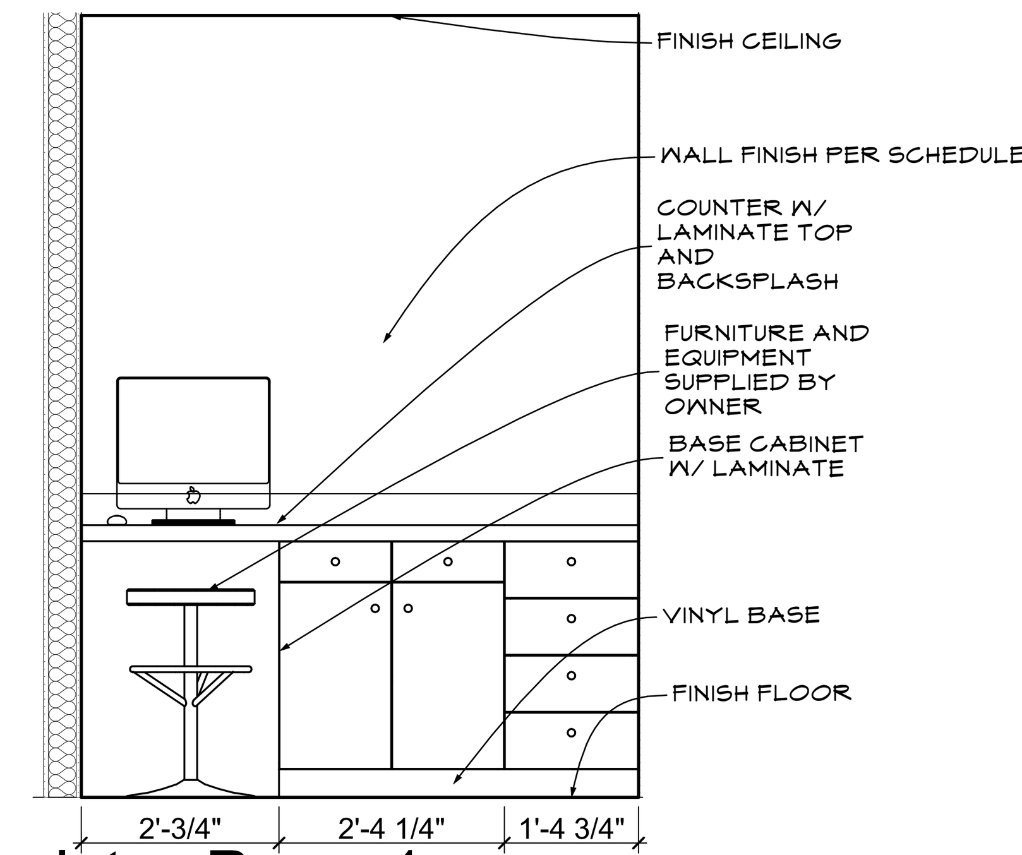
A401



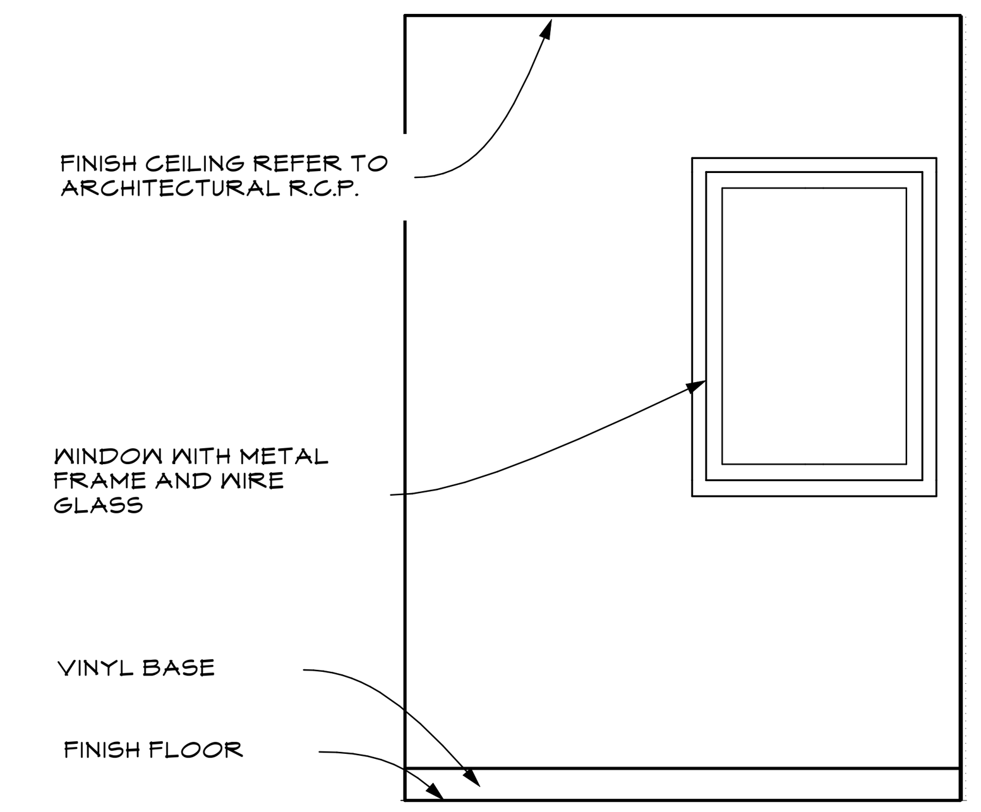
2 Kitchen Peninsula Elevation
SCALE: 1/2" = 1'-0"

4 EXISTING KITCHEN INSTALLATION
SCALE: 1:6.94

5 EXISTING PENINSULA INSTALLATION
SCALE: 1:7.14

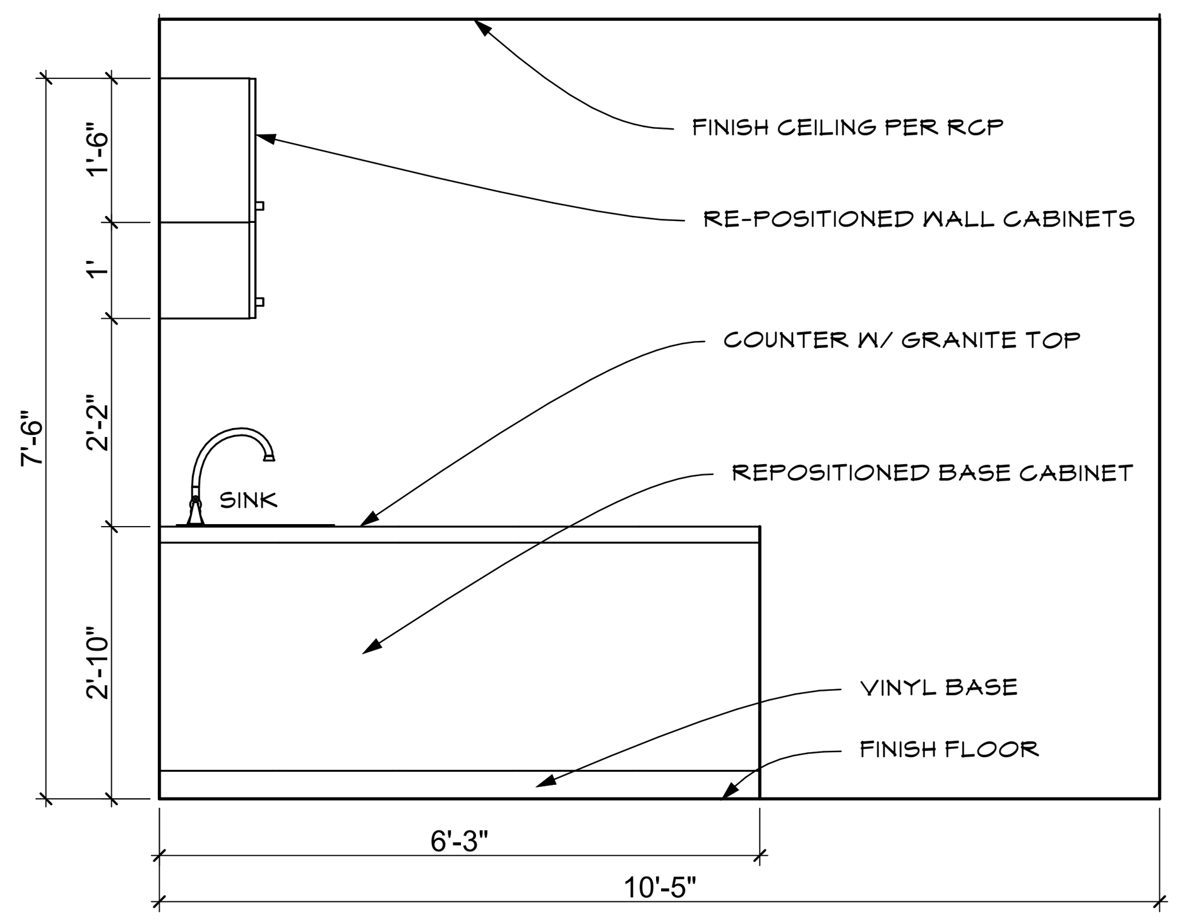


8 Intox Room 1
SCALE: 1/2" = 1'-0"

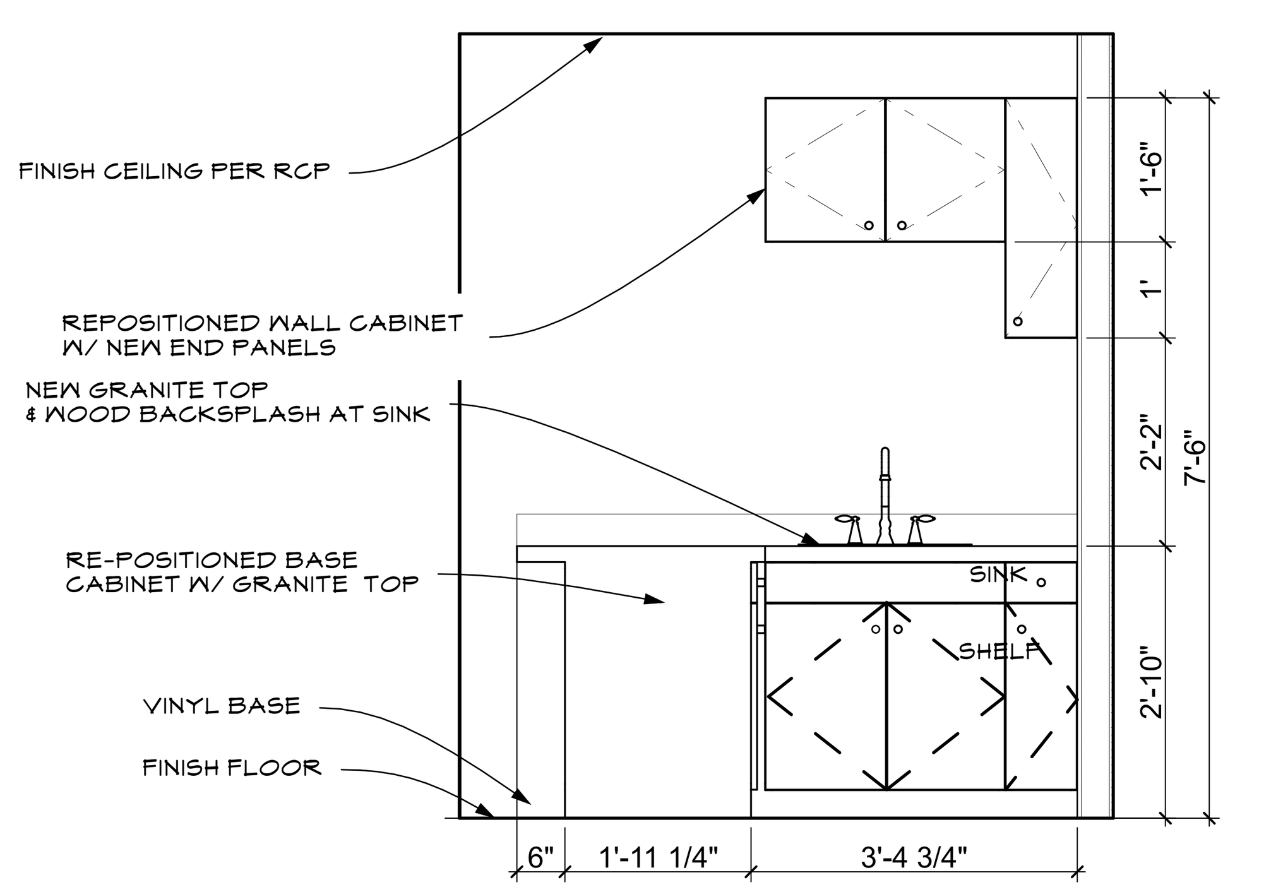


9 Intox Room 2
SCALE: 1/2" = 1'-0"

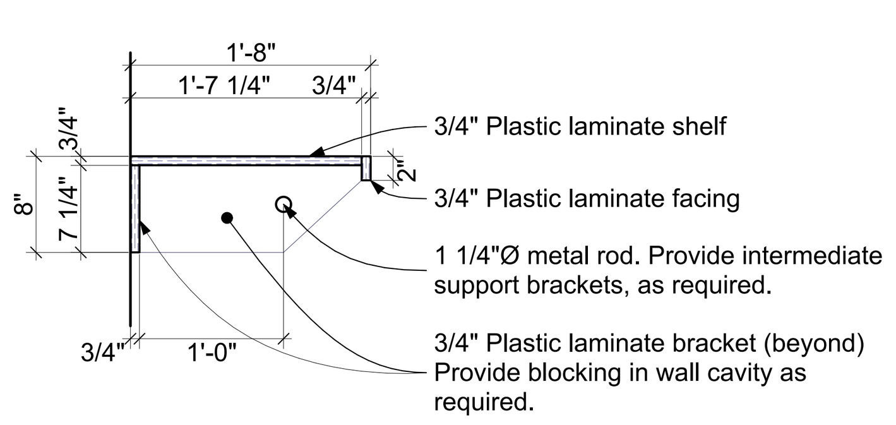
NOTE: 1. The existing base cabinetry on A402 that is to be salvaged and relocated will be reconfigured in the Training Room. Some cabinets are also used in the kitchenette 5/A404.



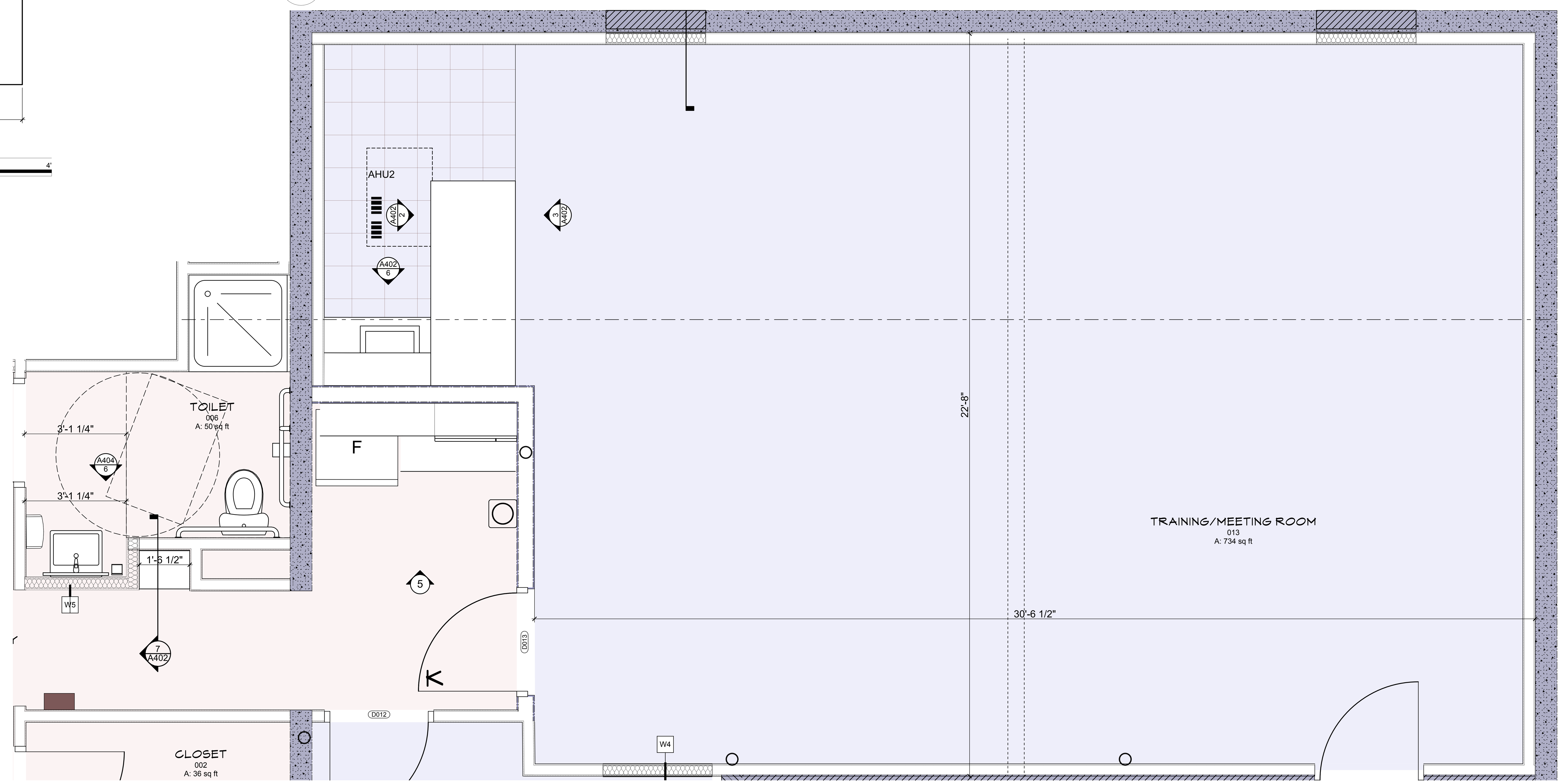
3 Kitchen Elevation
SCALE: 1/2" = 1'-0"



6 Kitchen Sink Elevation
SCALE: 1/2" = 1'-0"



7 Typical Closet Shelf & Rod
SCALE: 3/4" = 1'-0"



1 Lower Level Enlarged Plan
SCALE: 1/2" = 1'-0"

AMHERST POLICE DEPARTMENT
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Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

LICENSED ARCHITECT KREG T. JONES No. 04411 STATE OF NEW HAMPSHIRE

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697 Union Street, Manchester NH
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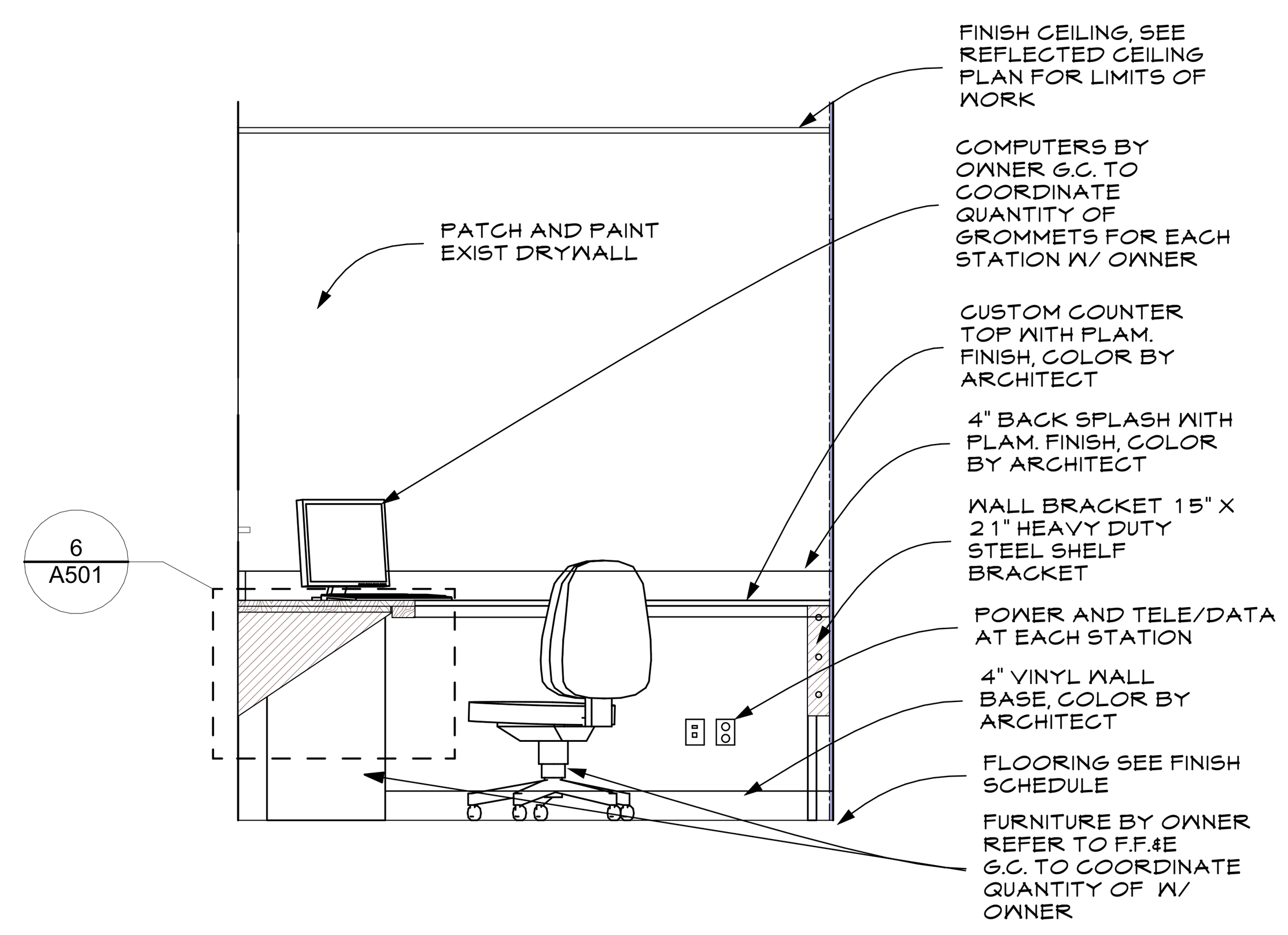
LOWER LEVEL ENLARGED PLANS

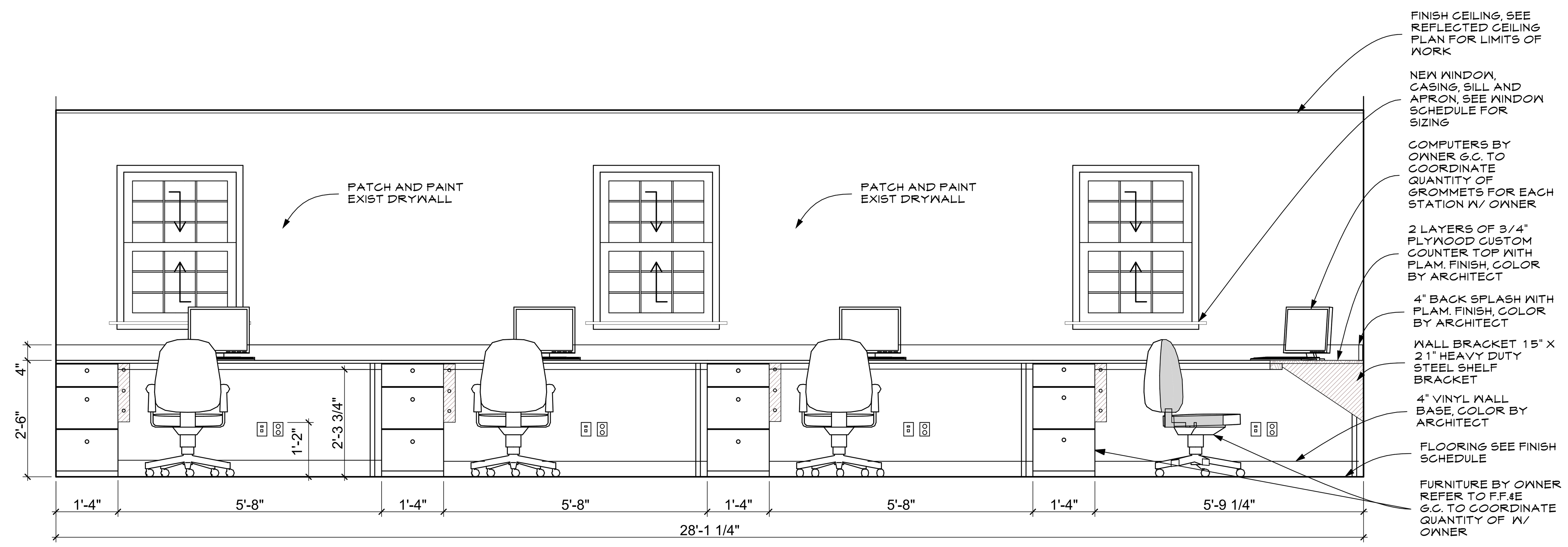
RevID	ChID	Change Name	Date
01			3/17/20

date: 5/22/20
proj. no.: 2017-024

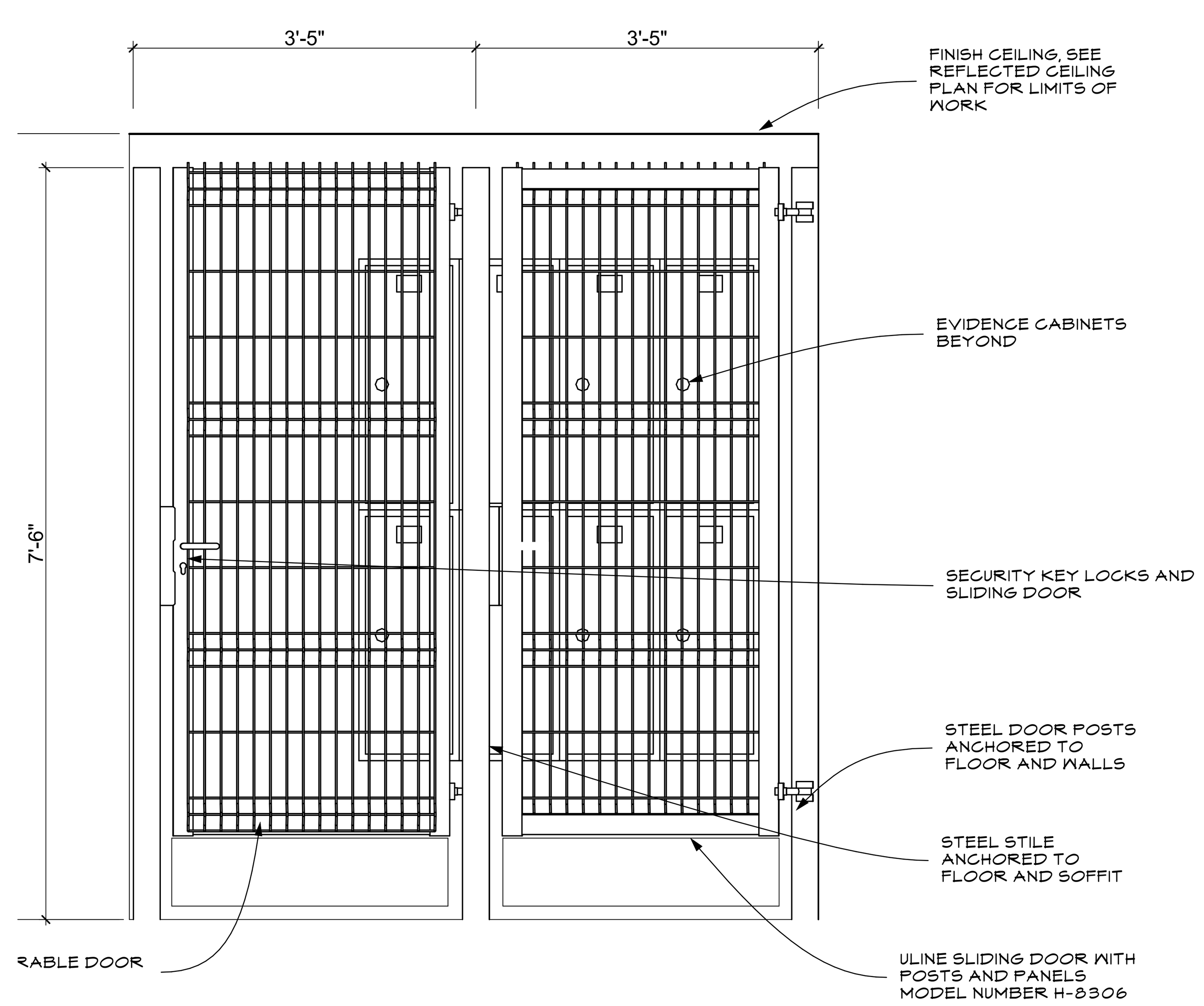
A402



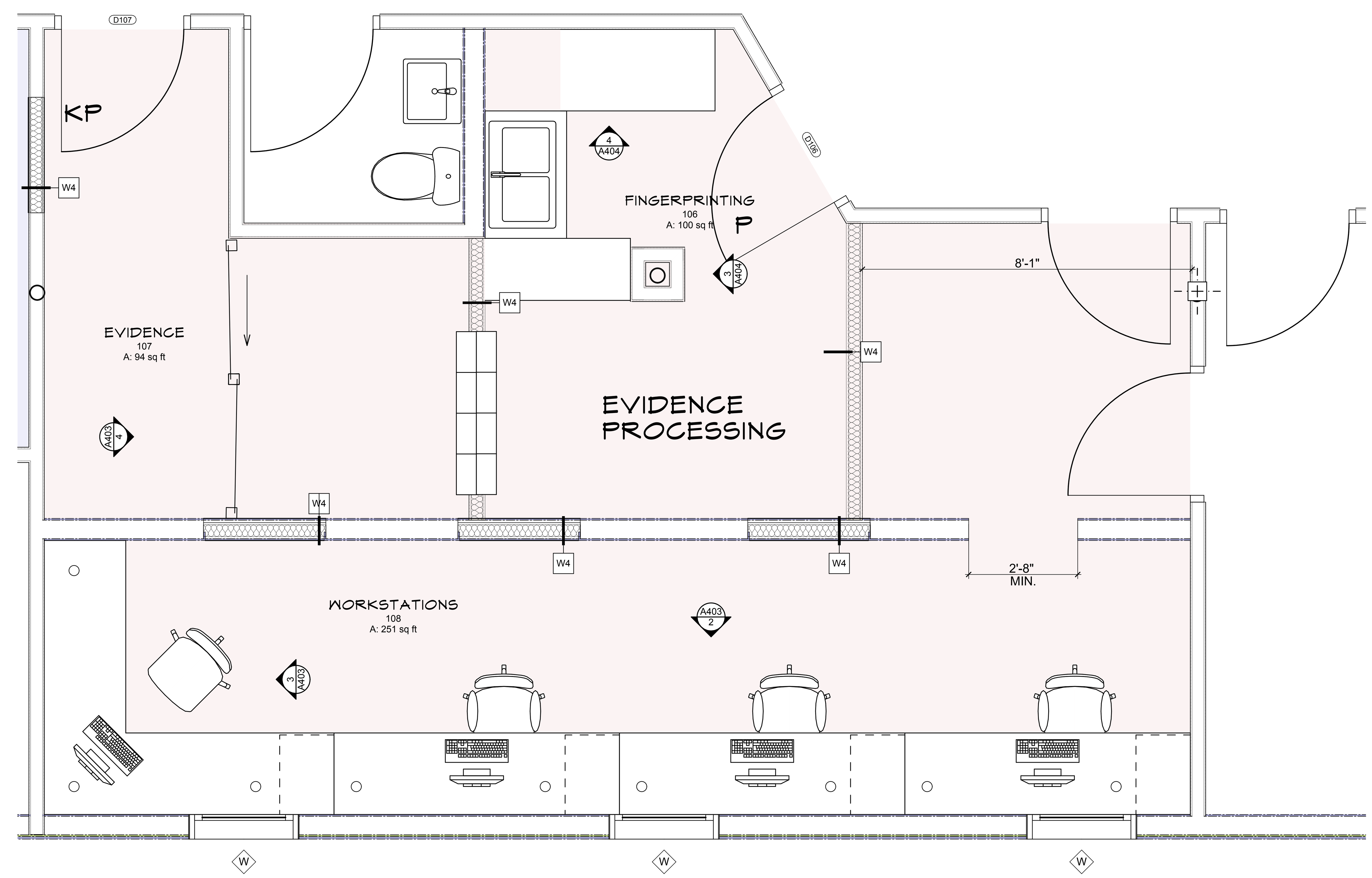
3 WORKSTATIONS
SCALE: 1/2" = 1'-0"



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



4 Evidence Room Cage Door
SCALE: 3/4" = 1'-0"



1 Main Level Enlarged Plan
SCALE: 1/2" = 1'-0"

/Users/admin 1/Desktop/DMPATA Kreg/Amherst Police Station - 2019013 : 2017024/Archicad/Amherst Police Station_V23 2020-02-13 CD Bid2.pln Friday, May 22, 2020

AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

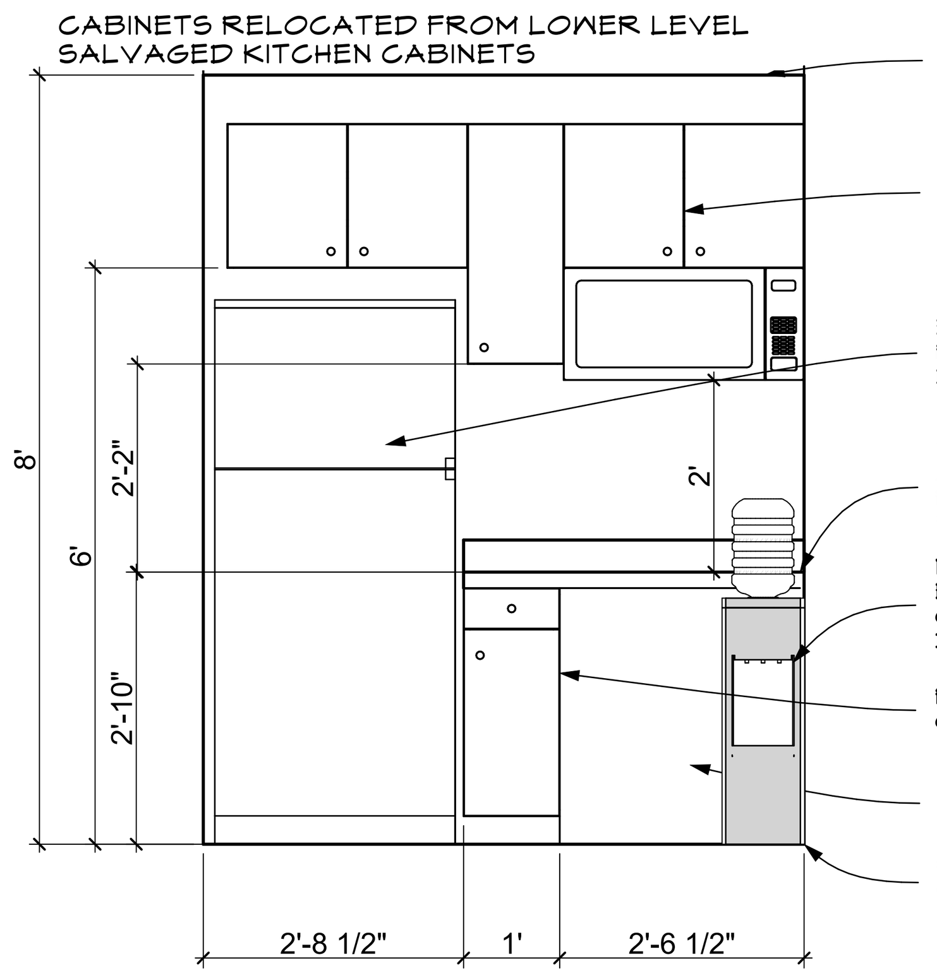
LICENSED ARCHITECT
KREG T. JONES
No. 04411
STATE OF NEW HAMPSHIRE

DENNIS MIRES P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

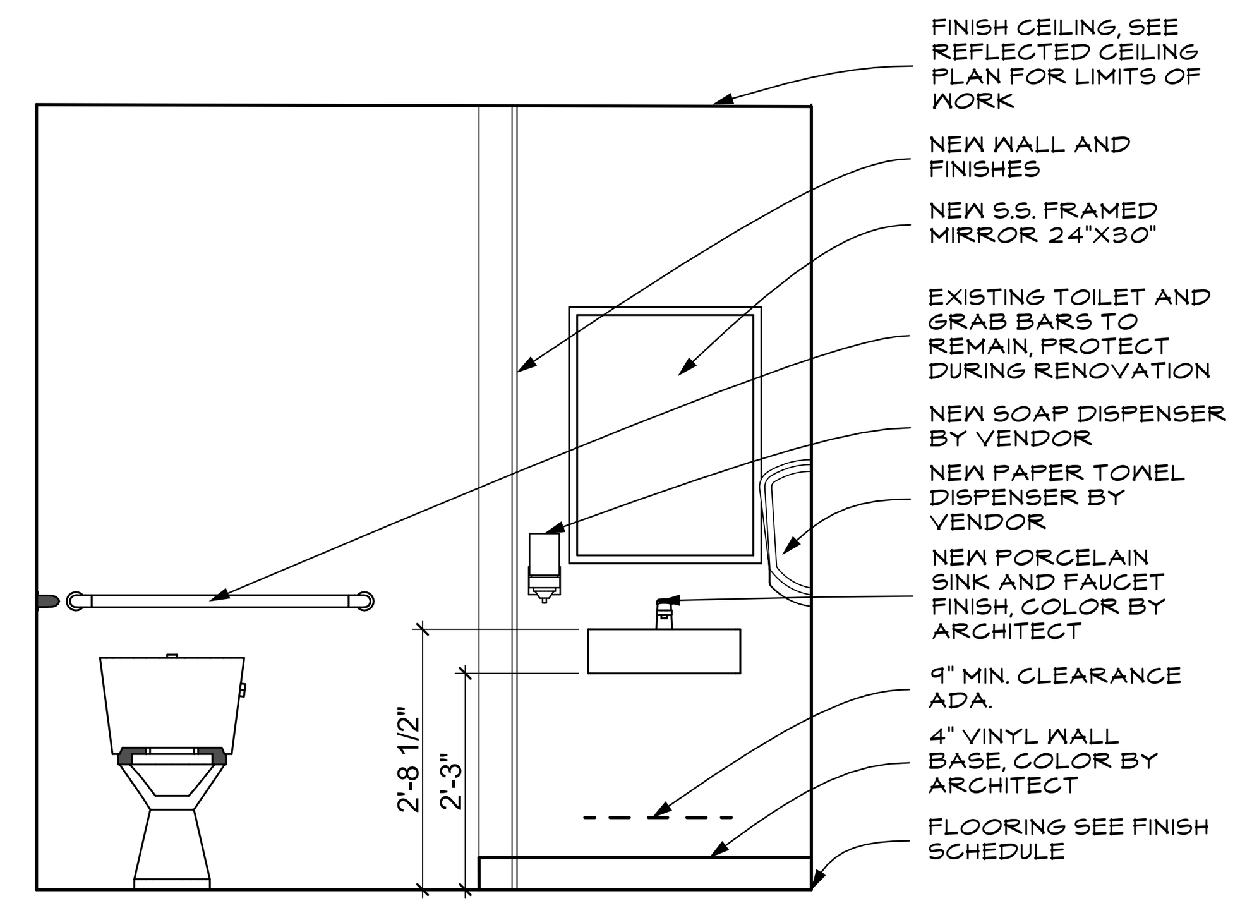
MAIN LEVEL ENLARGED PLANS

date: 5/22/20
proj. no.: 2017-024

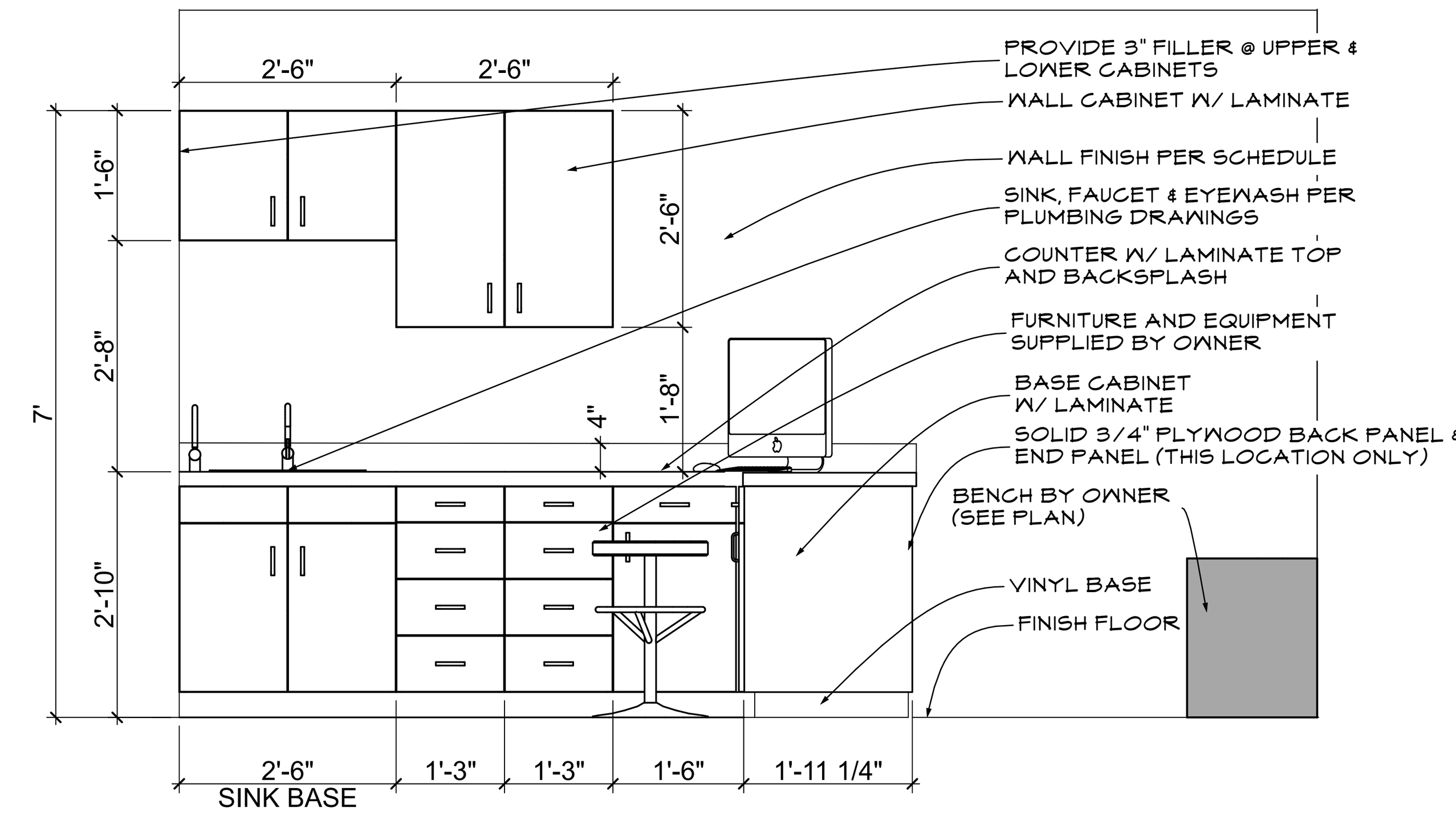
A403



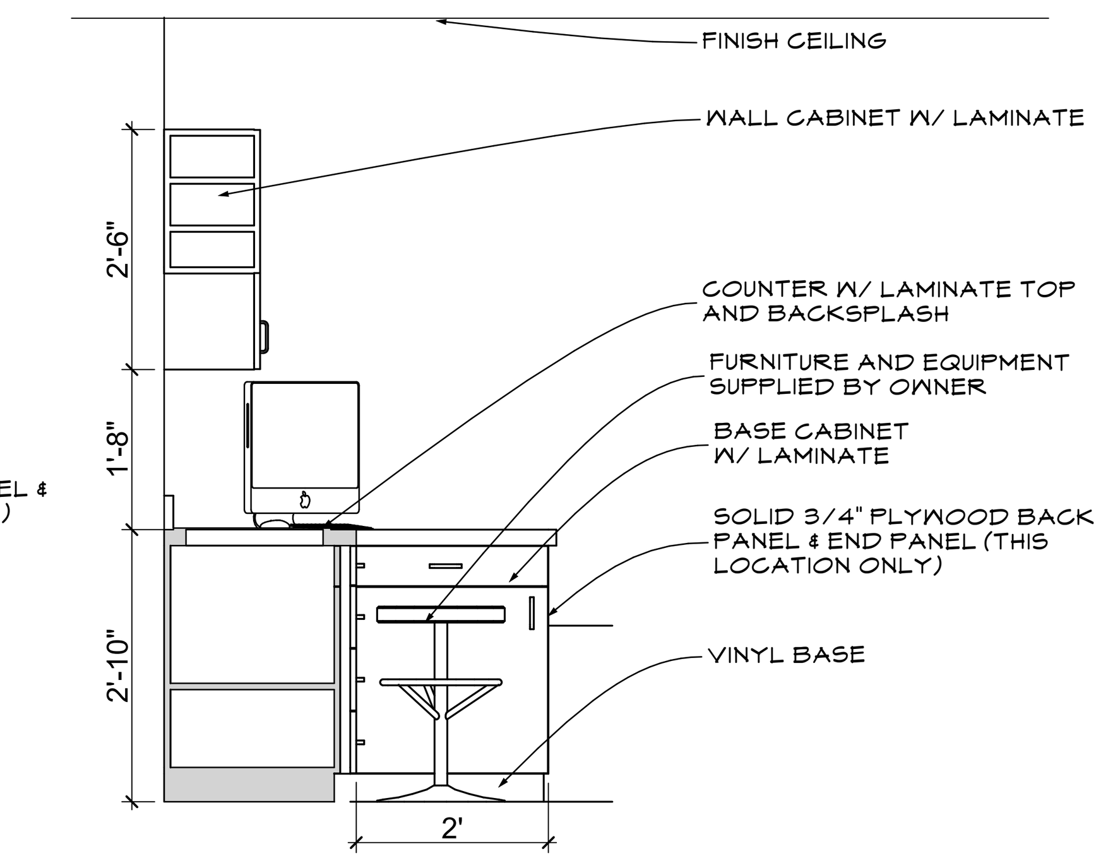
5 **Relocated Kitchenette**
SCALE: 1/2" = 1'-0"



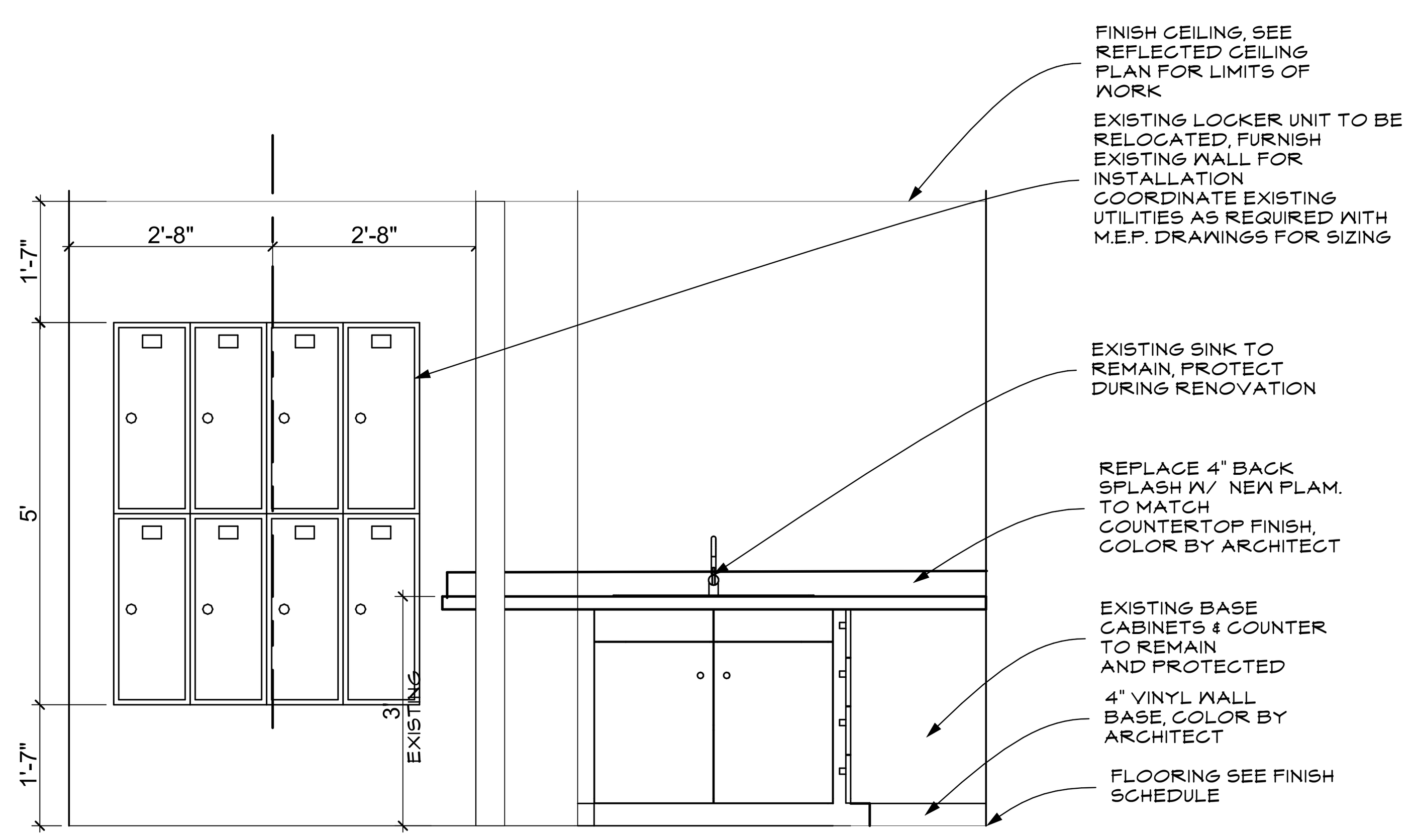
6 **Toilet 006**
SCALE: 1/2" = 1'-0"



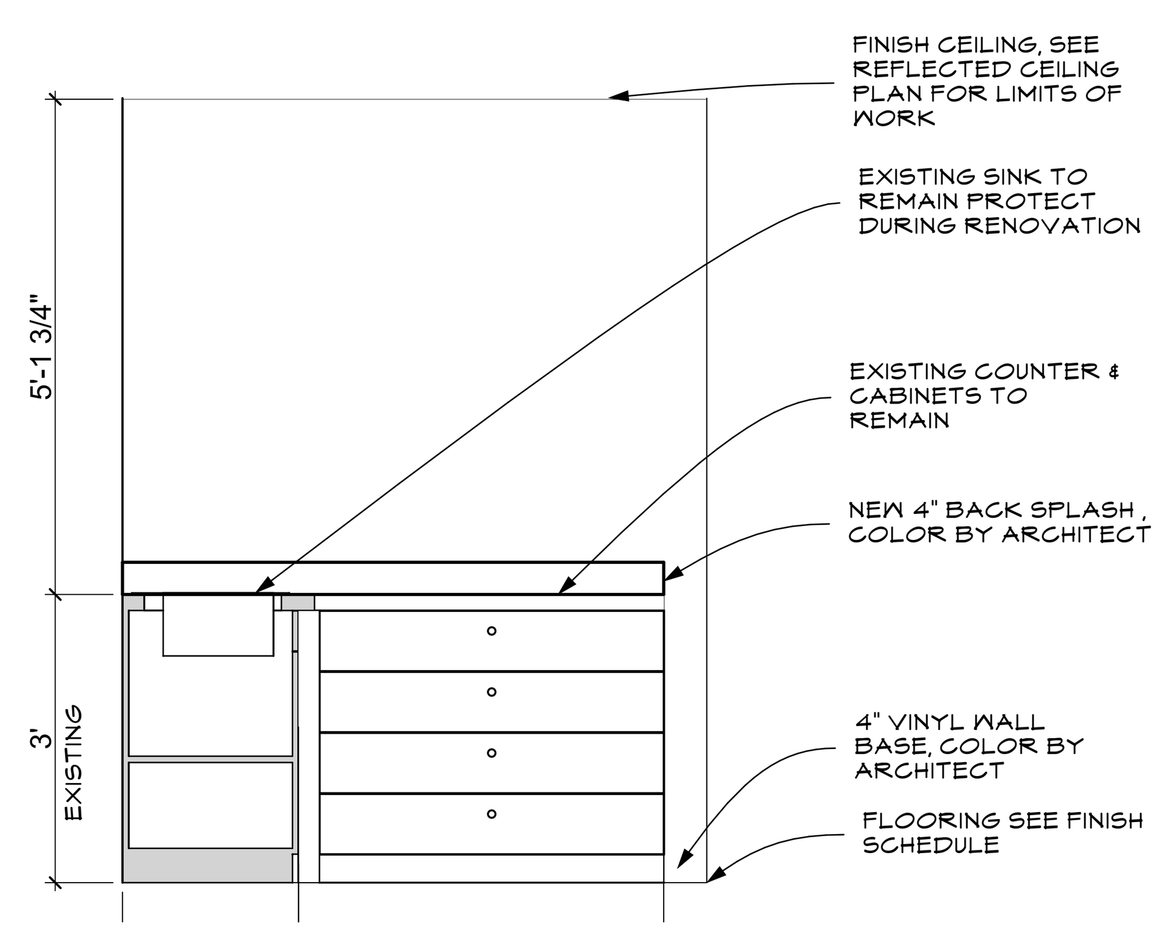
8 **Booking Room**
SCALE: 1/2" = 1'-0"



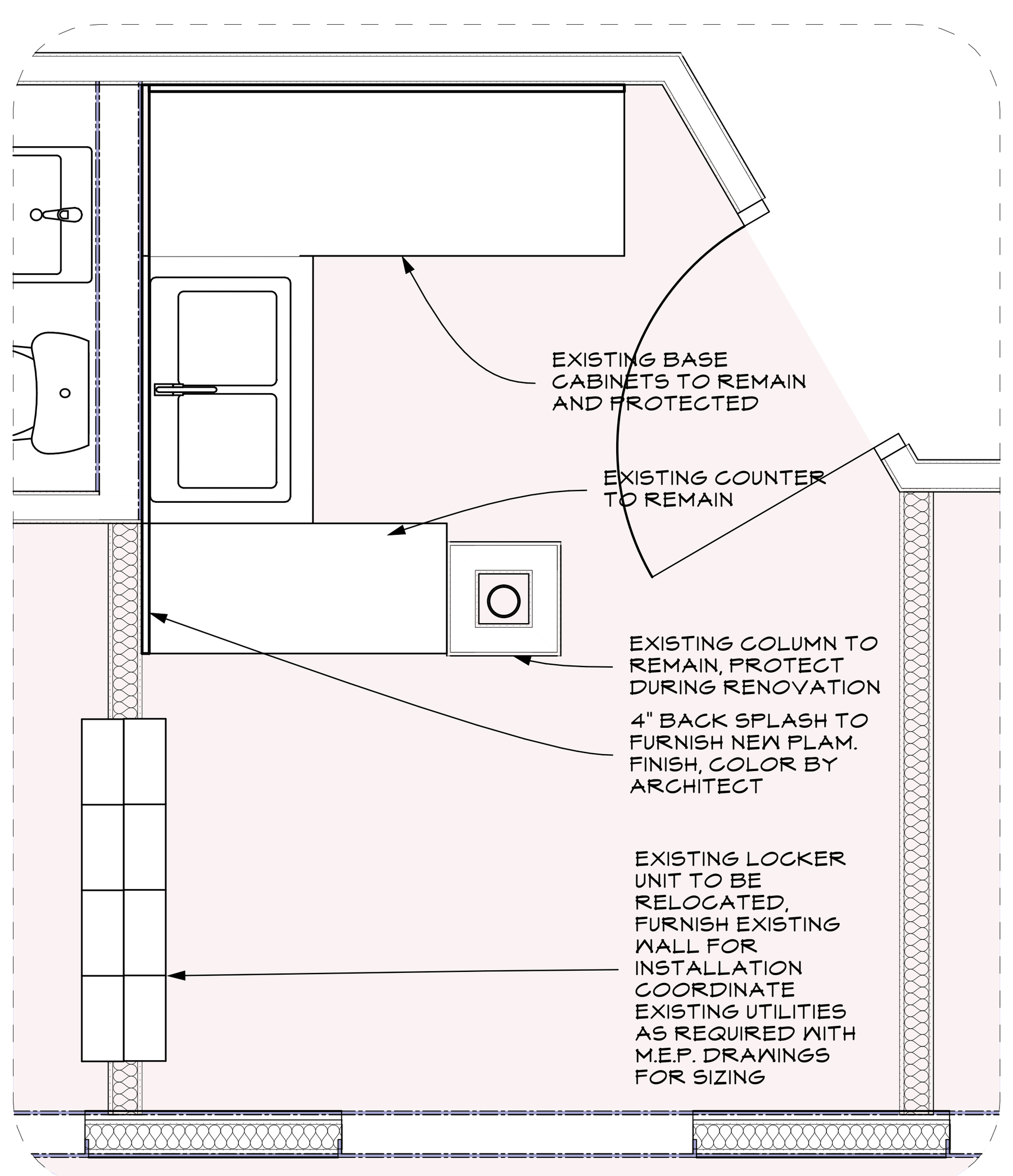
9 **Booking Cabinet**
SCALE: 1/2" = 1'-0"



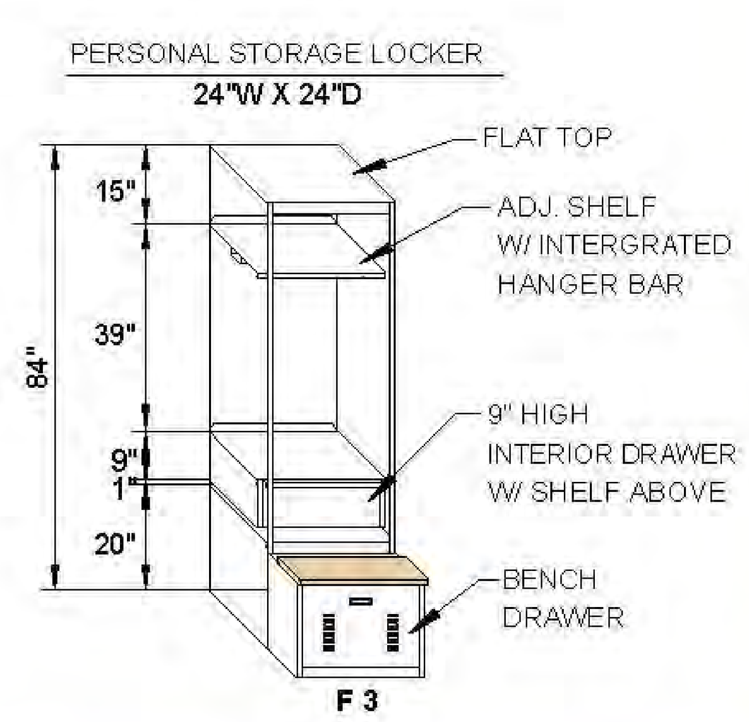
3 **Evidence Processing Elevation 1**
SCALE: 1/2" = 1'-0"



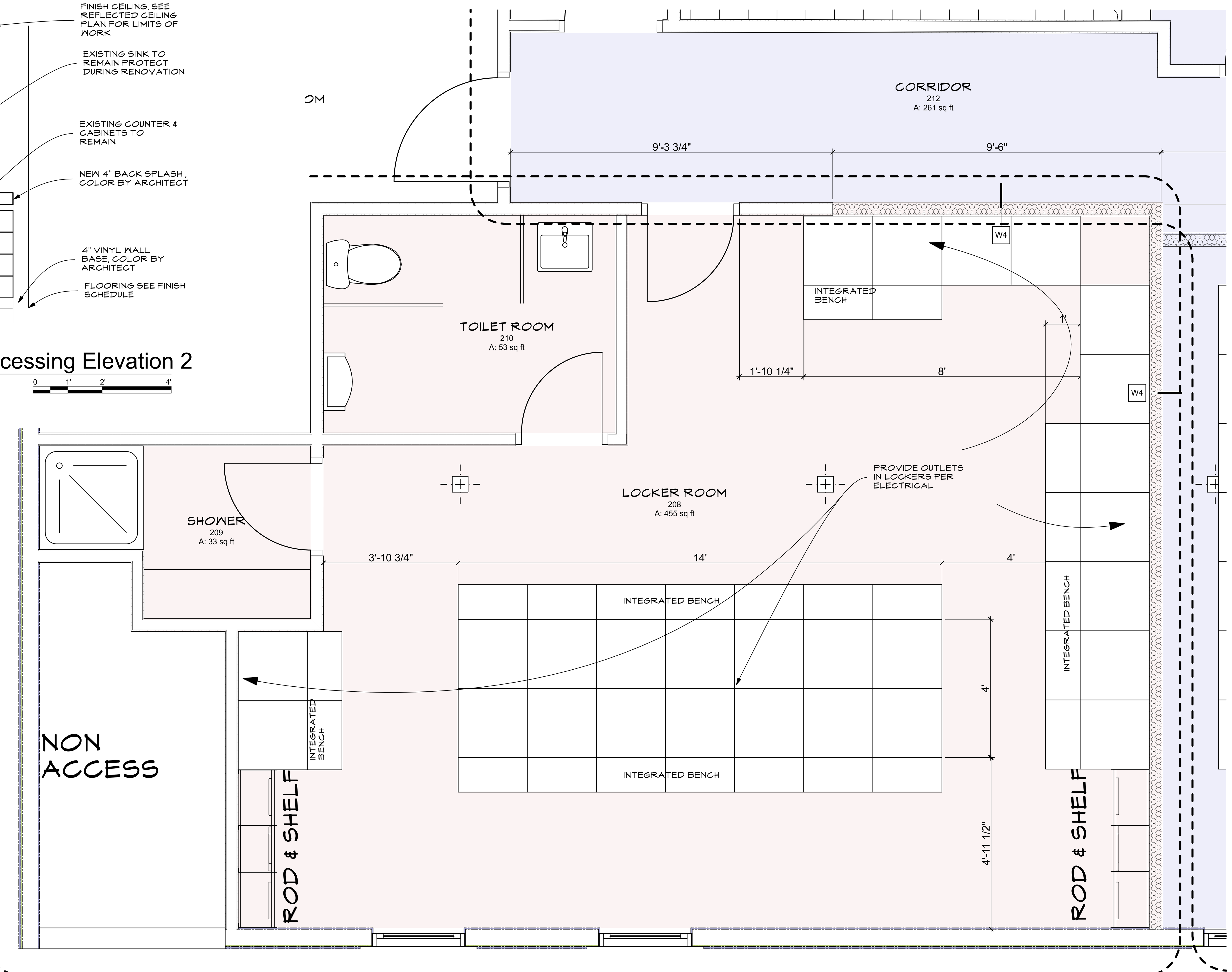
4 **Evidence Processing Elevation 2**
SCALE: 1/2" = 1'-0"



7 **Kitchen & Restrooms (1)**
SCALE: 1/2" = 1'-0"



LOCKERS
SCALE: 1" = 1'-0"



1 **Upper Level Enlarged Plan**
SCALE: 1/2" = 1'-0"

/Users/admin 1/Desktop/DMPATA Kreg/Amherst Police Station - 2019013 : 2017024/Archicad/Amherst Police Station_V23 2020-02-13 CD Bid2.pln Friday, May 22, 2020

AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

LICENSED ARCHITECT KREG T. JONES No. 04411 STATE OF NEW HAMPSHIRE

DENNIS MIRES, P.A. THE ARCHITECTS
697 Union Street, Manchester, NH
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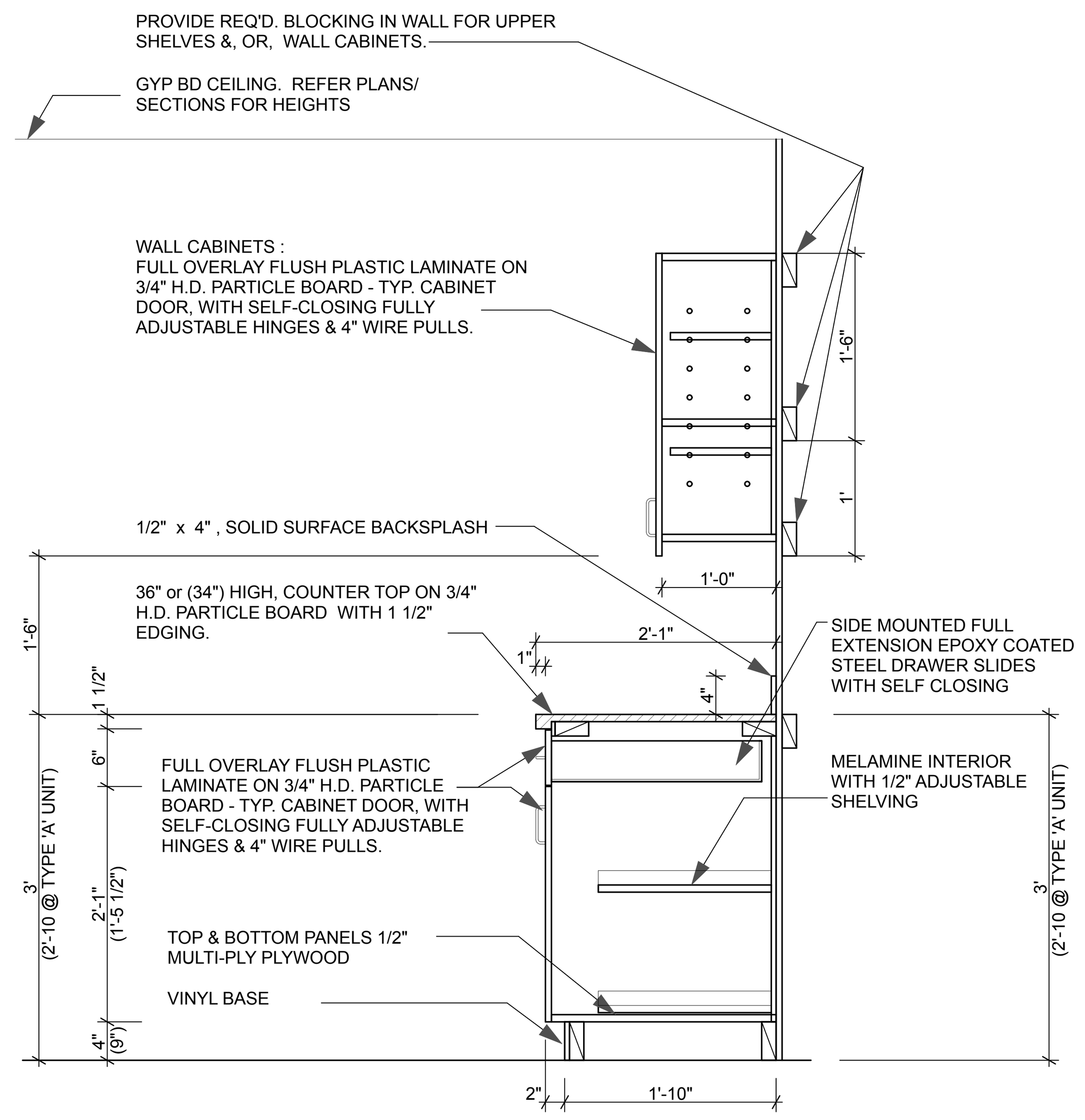
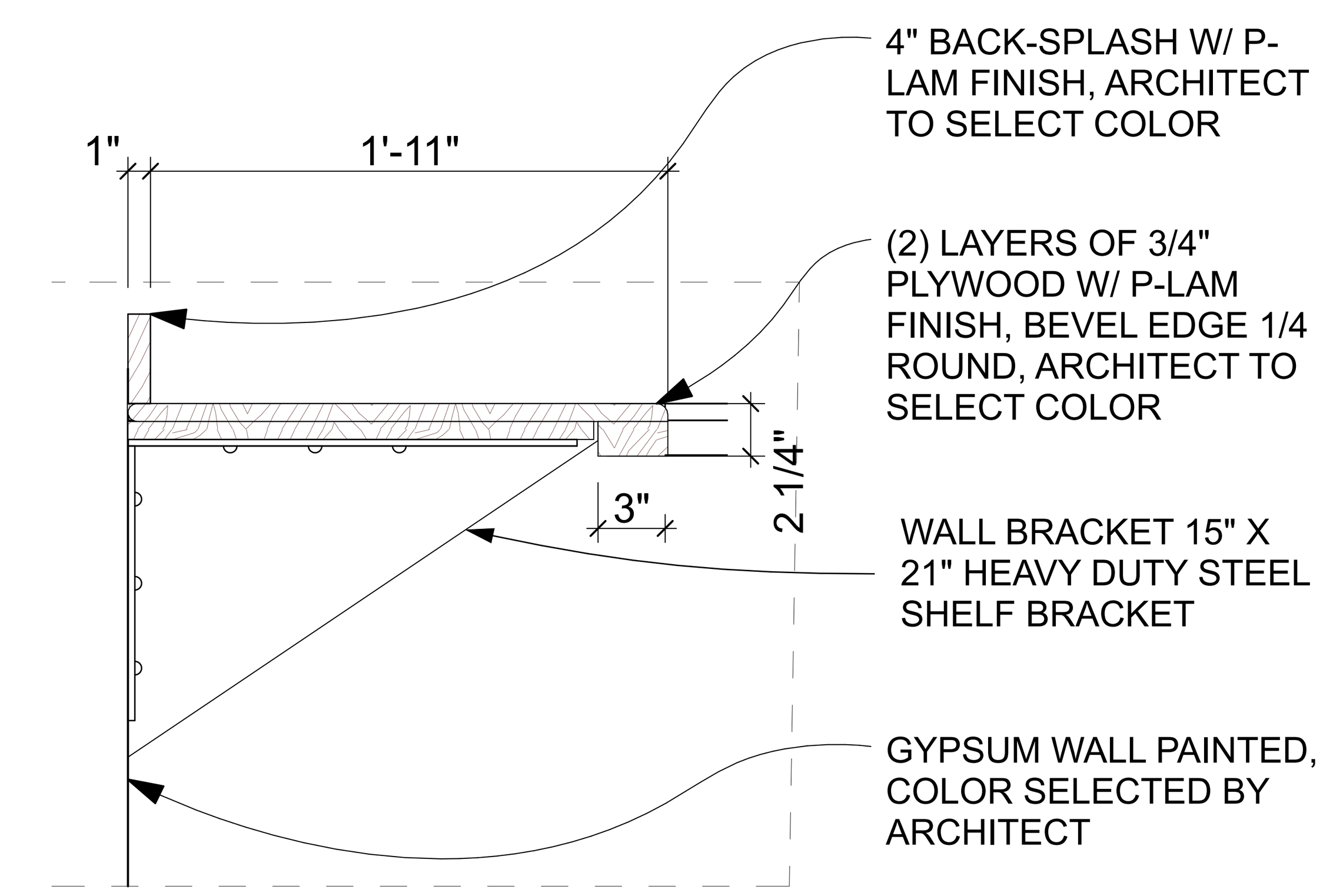
UPPER LEVEL ENLARGED PLANS

date: 5/22/20
proj. no.: 2017-024

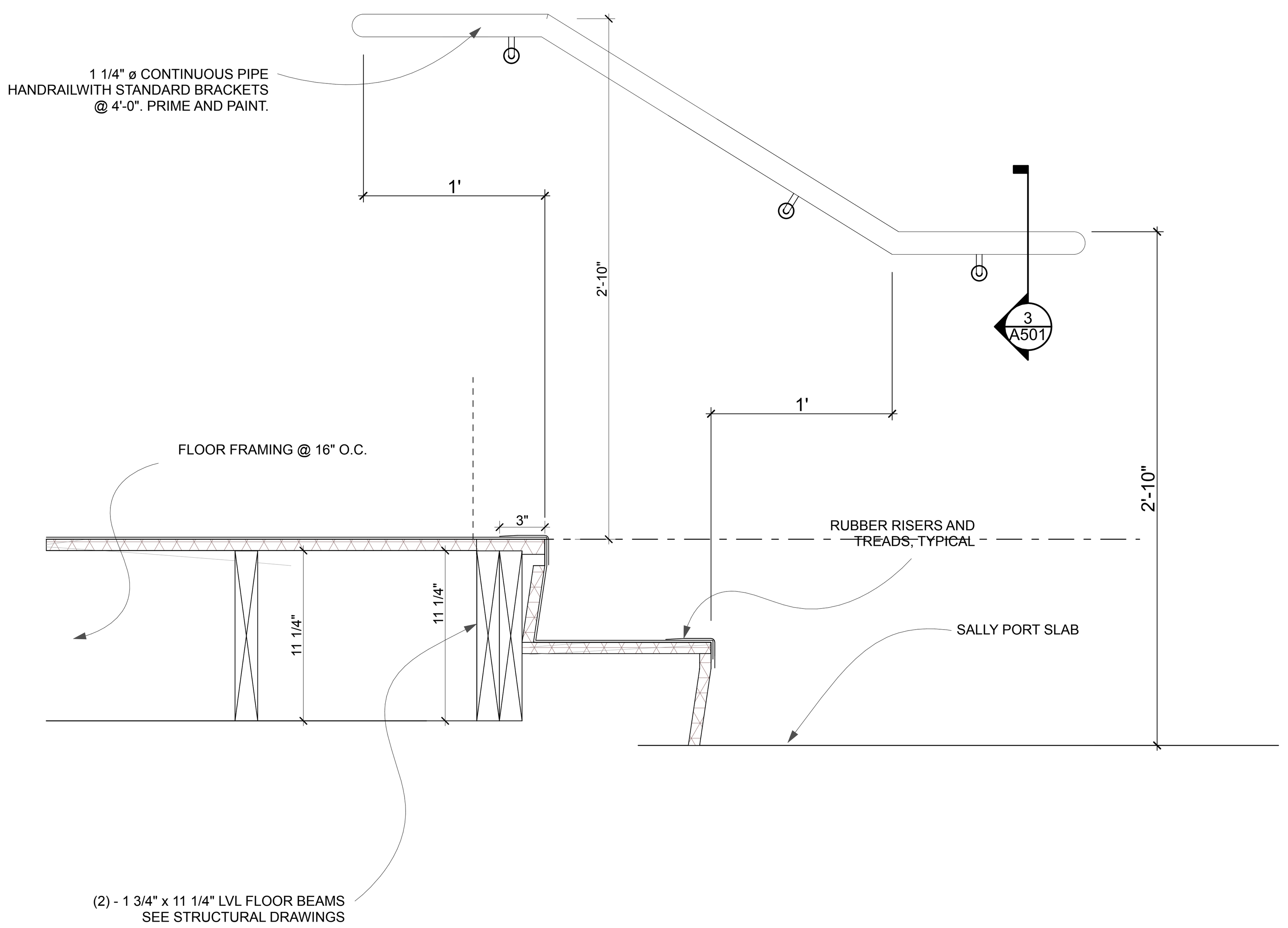
A404



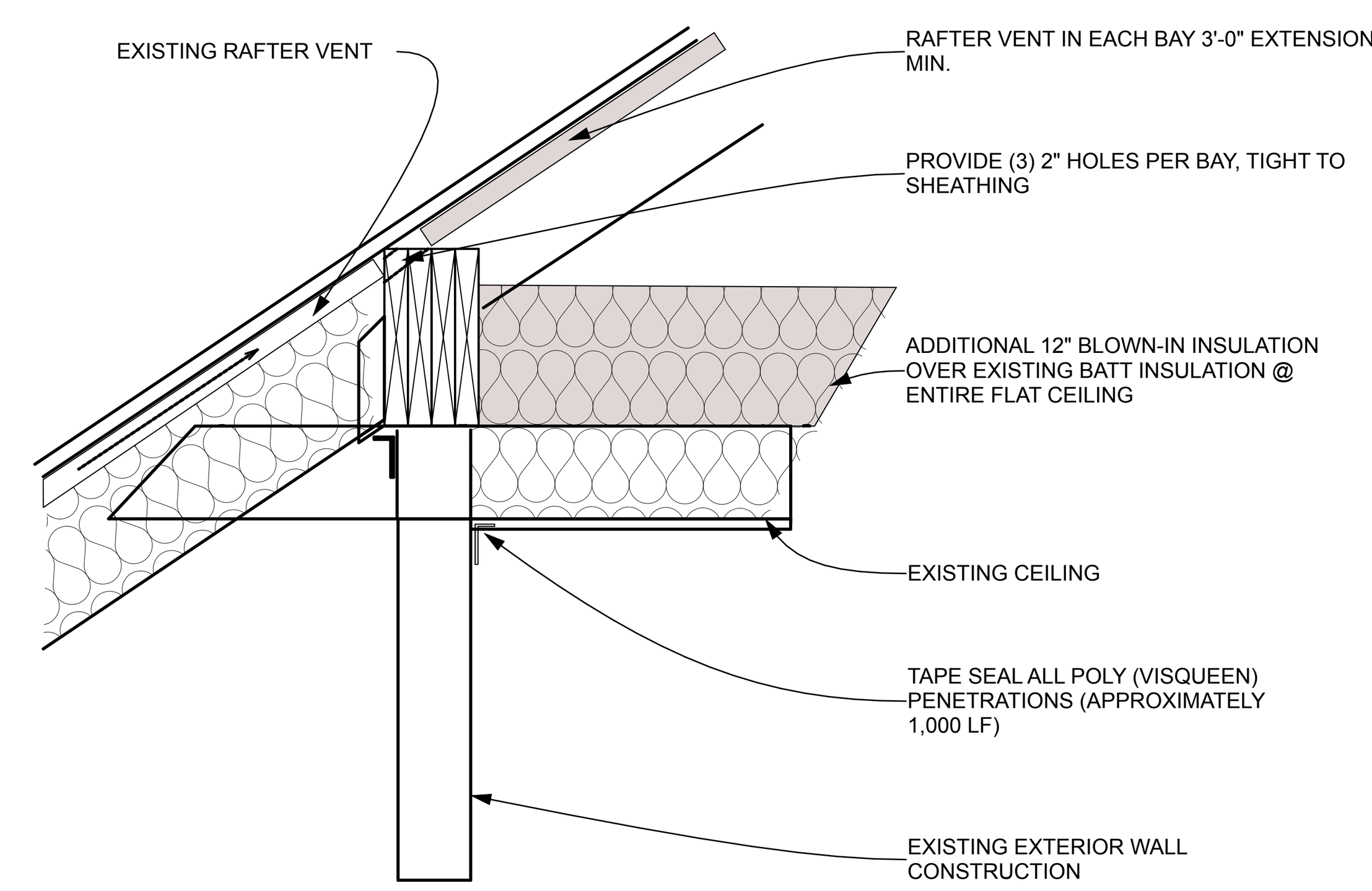
7 Typical Cabinet Section
SCALE: 3/4" = 1'-0"



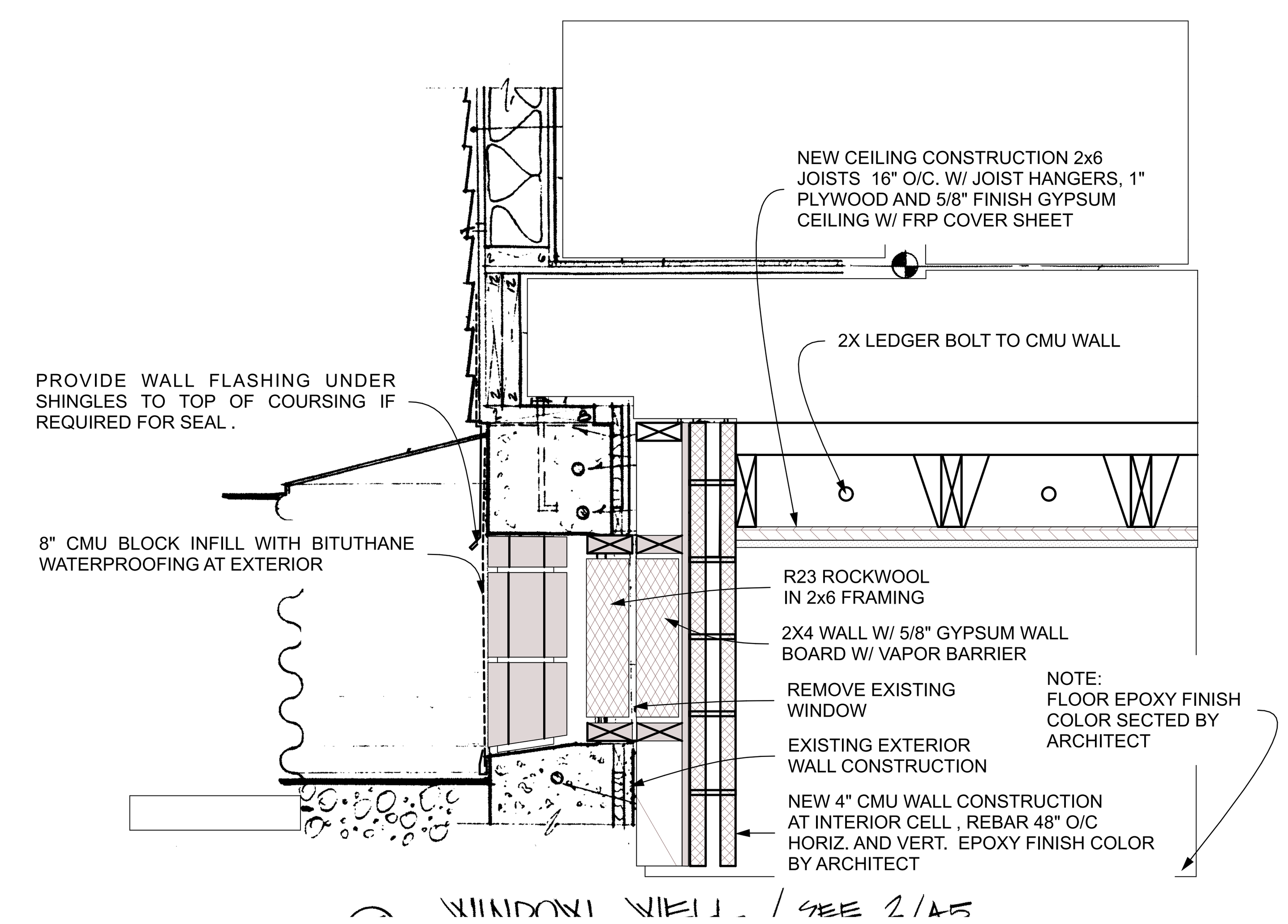
6 Work Station Counter Detail
SCALE: 1 1/2"= 1'-0"



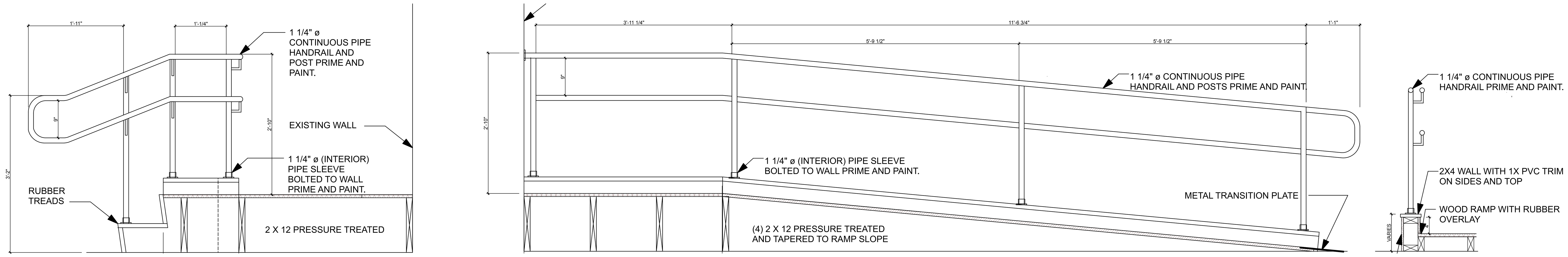
2 Typical Stair Detail
SCALE: 1 1/2"= 1'-0"



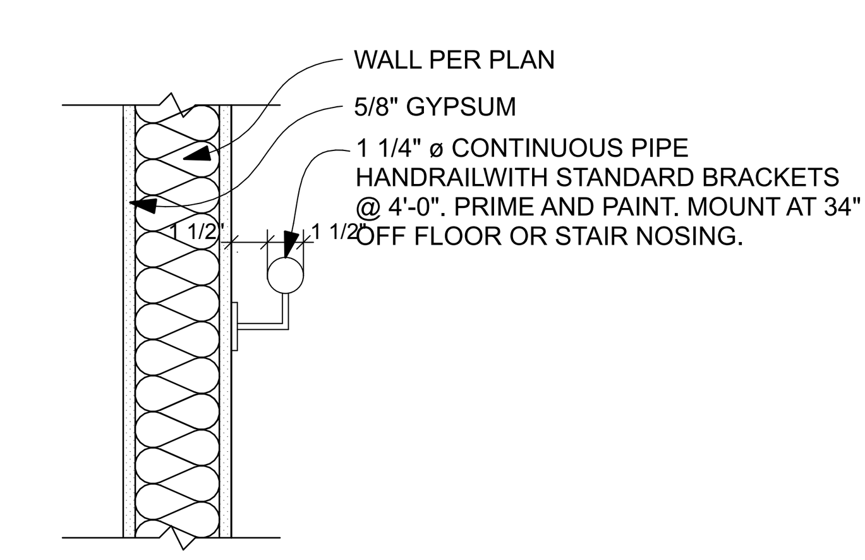
4 Roof Venting Detail
SCALE: 1" = 1'-0"



5 Basement Window Infill
SCALE: 1' = 1'-0"



1 Typical Details at Ramp
SCALE: 3/4" = 1'-0"



3 Typical Handrail
SCALE: 1 1/2"= 1'-0"

AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

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DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

DETAILS

date: 5/22/20
proj. no.: 2017-024

A501

GENERAL NOTES

1. FLOORING TO BE REPLACED IN ALL AREAS WITH MAJOR WORK (REFER TO SCHEDULE)
2. PAINT ALL ROOMS COMPLETE WITH MAJOR WORK.
3. ALL NEW ACT CEILINGS TO BE REPLACED IN NEW GRID. IF NO WORK IS PERFORMED WITHIN THE ROOM, EXCEPT LIGHTING AND MECHANICAL, CEILINGS ARE TO REMAIN.
4. PROVIDE CORNER GUARDS ON ALL CORNERS IN THE HALLWAY AND/OR BOOKING AREA OF THE LOWER LEVEL AND IN THE FINGER PRINTING ROOM ON THE MAIN LEVEL (15 MIN.)

MECHANICAL: (REFER TO MECHANICAL DRAWINGS)

1. EXISTING SALLY PORT EXHAUST SYSTEM TO BE REMOVED BY OWNER. NEW VENTILATION PER MECHANICAL DRAWINGS

ELECTRICAL: (REFER TO ELECTRICAL DRAWINGS)

1. ELECTRICAL SERVICE IS ADEQUATE FOR NEW USE.
2. ALL NEW FIXTURES TO BE LED.

PLUMBING: (REFER TO PLUMBING DRAWINGS)

1. EXISTING TOILET AND SHOWER ROOM ACCESSORIES TO REMAIN.

FLOORING

ENTRY MAT: CARPET, MATSINC. SUPERNOP 19X19 STERLING-COLOR BY ARCHITECT

CARPET-1: REFER TO SPECIFICATION (MOHAWK - LIVE & LEARN- SIDE STRIPE, COLOR BY ARCHITECT)

CARPET-2: REFER TO SPECIFICATION (MOHAWK - SKETCH EFFECT - FRAMED STRUCTURE, (2 MIXED) COLORS BY ARCHITECT)

LVT 1: REFER TO SPECIFICATION (MOHAWK - HOT & HEAVY - BOLDER, COLOR BY ARCHITECT)

LVT 2: REFER TO SPECIFICATION (MOHAWK - LARGE & LOCAL 9"X59" PLANKS, COLOR BY ARCHITECT)

VINYL: JOHNSONITE (OR EQUAL) 1/8"x4" VINYL BASE WITH STANDARD COVE TOE-COLOR BY ARCHITECT

RUBBER - TARKETT MICROTONE RUBBERTILE-HAMMERED COORDINATE TREADS

FINISH NOTES:

1. ALL GYPSUM WALLBOARD (GWB) TO BE PAINTED WITH BENJAMIN MOORE or SHERWIN WILLIAMS PAINTS, 1 COAT PRIMER AND 2 COATS FINISH PAINT- COLOR BY ARCHITECT.
2. HOLLOW METAL FRAMES: SEMI-GLOSS ENAMEL, CLEAR FINISH HDWD VENEER SOLID CORE DOORS
3. NOTE PAINTED FINISH AT WINDOW SASH AND INTERIOR TRIM
4. ALL ACT CEILING TILES TO BE 2X4 OR 2X2 (SALVAGE FOR REPLACEMENT PANELS IN OTHER ROOMS)
5. CMU PAINT TO BE SHERWIN-WILLIAMS LOXON CONCRETE PRIMER & SEALER WITH LOXON MASONRY TOPCOAT

1) EMPTY ENTRIES ARE EXISTING TO REMAIN
2) ** INDICATES OPTIONAL PER ALTERNATE

FINISH SCHEDULE

#	Name	Area	FLOOR		WALLS		CEILINGS		BASE		#	NOTES
			Floor	Finish	Wall Mat…	Finish	CEILINGS	Finish	Base	FINISH		
001	LOBBY	120.77	ENTRY MAT		GYP	PAINT	ACT		VINYL		001	
002	CLOSET	35.62	LVT1		GYP	PAINT	ACT		VINYL		002	
003	SGT OFFICE	198.12	CPT1		GYP	PAINT	ACT		VINYL		003	
004	HALLWAY	189.46	LVT1		GYP	PAINT	ACT		VINYL		004	
005	JUVINILE INT.	58.23	LVT1		GYP	PAINT	ACT		VINYL		005	
006	TOILET	49.89	LVT1		GYP	PAINT	ACT		COVE		006	
007	INTOX	58.03	LVT1		GYP	PAINT	ACT		VINYL		007	
008	BOOKING	265.98	LVT1		GYP	PAINT	ACT		VINYL		008	
009	CELL 1	49.00	PAINT		CMU	PAINT	GYP	FRP	CMU		009	CAULK PERIMETER AT FLOOR BASE- LOXON MASONRY PAINT ON WALLS
010	CELL 2	49.27	PAINT		CMU	PAINT	GYP	FRP	CMU		010	CAULK PERIMETER AT FLOOR BASE- LOXON MASONRY PAINT ON WALLS
011	ADA CELL 3	60.04	PAINT		CMU	PAINT	GYP	FRP	CMU		011	CAULK PERIMETER AT FLOOR BASE- LOXON MASONRY PAINT ON WALLS
012	LT. OFFICE	162.27				PAINT			VINYL		012	
013	TRAINING/MEETING ROOM	734.42	CPT 1 - LVT 1			PAINT	ACT		VINYL		013	LVT IN KITCHEN AREA
014	STORAGE	179.29									014	
015	MECH.	92.76									015	
016	SALLY PORT	763.85	EXISTING CONC.	PAINT		PAINT		PAINT			016	RUBBER FLOOR ON RAMP AND STAIR ONLY
017	ELECTRICAL	72.15									017	
018	STORAGE	144.23									018	
100	HALLWAY	500.72				PAINT					100	REPAINT HALLWAYS- ALL OTHER FINISHES TO REMAIN
101	LOBBY	143.23									101	
102	MEETING	161.65									102	
103	EQUIPMENT/VEHICLE STORAGE	378.37									103	
104	TOILET	48.77									104	
105	DISPATCH	201.70									105	
106	FINGERPRINTING	99.63	LVT 1		GYP	PAINT	ACT		VINYL		106	
107	EVIDENCE	94.50	LVT 1		GYP	PAINT	ACT		VINYL		107	
108	WORKSTATIONS	251.46	CPT 1 - LVT 1		GYP	PAINT	ACT		VINYL		108	ENTRY TO WORKSTATIONS TO BE LVT
109	DET. SGT POLYGRAPH	98.73	CPT 1		GYP	PAINT	ACT		VINYL		109	REPAIR WALLS - PATCH AND PAINT
110	VICTIM INT. SUPPORT	83.16									110	
111	DETECTIVE	209.50									111	
112	LT. SUPPORT	84.19									112	REPAIR WALLS (WINDOW REM.) - PATCH AND PAINT
113	INTERVIEW	51.31									113	
114	VIDEO/STOR	52.86									114	REPAIR WALLS (WINDOW REM.)- PATCH AND PAINT
115	KITCHEN	143.12									115	
116	WOMENS LKR	142.58									116	PATCH WALLS AT NEW LOCKERS
117	JAN.	33.57									117	
118-1	ADMINISTRATION	120.59									118-1	
118-2	ADMINISTRATION	120.96									118-2	
119	ADMIN	79.16									119	
120	POLICE CHIEF	143.69									120	
201	ACCESS	281.03									201	
202	UTILITY	87.66	CPT 2**		GYP	PAINT	ACT	PRIME CLG GYP.	VINYL		202	FLAT CEILING TO BE SHEETROCKED AND FIRE TAPED
203	IT ROOM	53.90									203	
204	ARMORY	58.30									204	
205	RECORDS ROOM	160.93									205	
206	EVIDENCE ROOM	398.23	LVT 2**		GYP	PAINT	GYP/ACT	PNT-PRIME CLG	VINYL		206	FLAT CEILING TO BE SHEETROCKED AND FIRE TAPED
207	INVESTIGATIONS OFFICE	424.68	CPT 2**		GYP	PAINT	GYP/ACT	PAINT	VINYL		207	WRAP POSTS IN GYP
208	LOCKER ROOM	454.94	CPT 2**		GYP	PAINT	GYP/ACT	PAINT	VINYL		208	
209	SHOWER	33.17	LVT 2**			PAINT		PAINT	VINYL		209	
210	TOILET ROOM	53.08	LVT 2**			PAINT		PAINT	VINYL		210	
211	WEIGHT ROOM	212.19									211	
212	CORRIDOR	260.62	LVT 2**		GYP	PAINT	GYP	PAINT	VINYL		212	
213	ATTIC	426.18									213	
ST 1	STAIR 1	95.75									ST 1	
ST 2	STAIR 2	30.79									ST 2	

BUILDING AREAS

Name	Area	NOTES
BASEMENT		
	3,772.74	
FIRST FLOOR		
	3,793.44	
SECOND FLOOR		
	2,722.04	
	10,288.22 sq ft	

CONSTRUCTION SCHEDULE **ALL AREAS INCLUDE: HVAC, ELECTRICAL, FIRE ALARMS, SECURIT**

Name	Area	NOTES
BASEMENT FULL REMODEL		
	1,091.20	INCLUDES FLOORING, NEW WALLS, PAINT, CEILINGS, PLUMBING (CUT SLAB), MILLWORK
BASEMENT LT. OFFICE		
	160.54	INCLUDES FLOORING, PAINT, CEILINGS
BASEMENT SGT OFFICE		
	192.57	INCLUDES FLOORING, PAINT, CEILINGS
BASEMENT TRAINING ROOM		
	730.53	INCLUDES PATCHING WALLS AND PAINT, (FLOORING, CEILINGS & NEW BEAM AS AN ALTERNATE)
FIRST FLOOR EVIDENCE REMODEL		
	466.42	INCLUDES FLOORING, NEW WALLS, PAINT, CEILINGS, WINDOWS, EVIDENCE CAGE, MILLWORK
FIRST FLOOR OFFICE REMODEL		
	98.79	INCLUDES FLOORING, NEW WALLS, PAINT, CEILINGS
SECOND FLOOR REMODEL ALTERNATE 1		
	564.57	INCLUDES FLOORING, NEW WALLS, PAINT, CEILINGS, INSULATION, WINDOWS, LOCKERS, ELECTRICAL
SECOND FLOOR REMODEL ALTERNATE 2		
	1,331.44	INCLUDES FLOORING, SHEETROCK, CEILING, PAINT
	4,636.06 sq ft	

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CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

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THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

ROOM FINISH SCHEDULE

date: 5/22/20
proj. no.: 2017-024

A601

New Doors Schedule - EMPTY CELLS MEAN THE EXISTING TO REMAIN OR EXISTING TO BE RE-USED

Door No.	D001	D001EX	D003	D004	D005	D008A	D008ST	D009-1	D009-2	D010-1	D010-2	D011-1	D011-2	D012
Leaf Size (WxH)	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"
Frame Size	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"
Swing														
Elevation														
NEW DOOR & FRAME				YES										
Closer	YES	REPLACE W/ NEW		YES		REPLACE W/ NEW	REPLACE W/ NEW							
Panic	YES	YES												
Lockset	KEYED	KEYED	KEYED	ACCESS W/ KEYPAD	KEYED	ACCESS W/ KEYPAD	ACCESS W/ KEYPAD							KEYED
Notes	DOOR REINFORCER	DOOR REINFORCER	DOOR REINFORCER	JAMB W/ ELECTRIC STRIKE	NEW SLAB IN EXISTING FRAME	NEW THRESHOLD AT EXISTING DOOR -JAMB WITH ELECTRIC STRIKE	DOOR REINFORCER -JAMB WITH ELECTRIC STRIKE	RELOCATE DOOR & FRAME W/ HARDWAREF ROM EXISTING CELLS	RELOCATE DOOR & FRAME W/ HARDWARE FROM EXISTING CELLS	RELOCATE DOOR & FRAME W/ HARDWARE FROM EXISTING CELLS	RELOCATE DOOR & FRAME W/ HARDWARE FROM EXISTING CELLS	RELOCATE DOOR & FRAME W/ HARDWARE FROM EXISTING CELLS	RELOCATE DOOR & FRAME W/ HARDWARE FROM EXISTING CELLS	RELOCATE DOOR & FRAME W/ HARDWARE FROM EXISTING LOCATION

Door No.	D013	D016	D100-1	D100-2	D100ST	D106	D107	D109	D202	D206	D207A	D207B	D212
Leaf Size (WxH)	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"	3'×6'-8"
Frame Size	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"	3'-4"×6'-10"
Swing													
Elevation													
NEW DOOR & FRAME			YES	YES		YES	YES	YES	YES		YES	YES	YES
Closer		Y	N	N	Y	N	N	N	N		N	N	N
Panic		N	N	N	N	N	N	N	N		N	N	N
Lockset	KEYED	KEYED	STOREROOM	STOREROOM	PASSAGE	PASSAGE	ACCESS W/ KEYPAD		PRIVACY	KEYED	KEYED	PASSAGE	PASSAGE
Notes					REMOVE KEYPAD-PATCH ELECTRIC STRIKE		ELECTRIC STRIKE						

HARDWARE NOTES:

*ALL HARDWARE TO BE COORDINATED & CONFIRMED WITH OWNER PRIOR TO PURCHASING

1. FINISH TO BE 626 SATIN CHROMIUM PLATED.
2. CYLINDRICAL LOCKSETS TO BE LEVERS; SCHLAGE OR APPROVED EQUAL
3. LEVER SET FUNCTIONS :
   PASSAGE FOR CLOSET DOORS
   PRIVACY FOR BATHROOM DOORS
   ENTRY LOCKSETS FOR ALL ENTRY DOORS
   TO BE CONFIRMED WITH OWNER
4. PROVIDE SMALL FORMAT INTERCHANGEABLE CORES.
5. PROVIDE DOOR STOPS FOR ROOM DOORS, WALL STOPS WHEREVER POSSIBLE.

MORTISE LOCKS: SCHLAGE - L9080J 17N 626
CYLINDRICAL LOCKS: SCHLAGE - ND80J 17 626
DOOR REINFORCER: STAINLESS STEEL BY GRAINGER MODEL 2MDN1 (OR SIMILAR)
CLOSER: ALLEGION LCN 4040XP

ACCESS CONTROL WITH ELECTRIC STRIKE
KEY PADS: IEI - 2000eM

COORDINATE KEYING WITH KAMCO LOCK SOLUTIONS

Security & Access Control Contracted Installers

Locks and Keypads: Kamco, out of Nashua, 889-0152
Cameras: American Security and Fire Protection, 387-5282 (Jim Cavagnaugh) asfp1@comcast.net

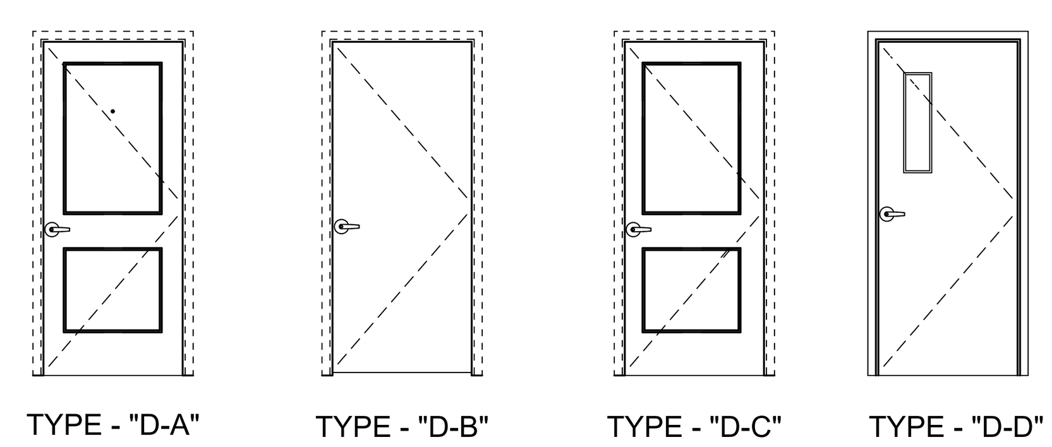
Camera Specification: Provide (10) ten new security cameras in the Lower Level in locations as directed by owner.
Model number: DS-2CD2135FWD-I
Provide one Netgear 10 port - Power over-the-ethernet switch tied to the Network Video Recorder in the First Floor Dispatch. All cabling to be CAT5, concealed.

TYPICAL EXTERIOR METAL DOORS
TYPE "D-A":
HOLLOW METAL FRAME WITH INSULATED & TEMPERED GLAZING. ADA COMPLIANT ALUMINUM SILL AND WEATHER STRIPPING. LOW-E COATING ON SOUTH FACING ENTRY. INTERIOR ENTRY DOORS SHALL BE SIMILAR WITH NO INSULATED GLASS REQUIRED. PTD WHITE.

TYPICAL EGRESS STAIR DOORS
TYPE "D-C"
ALL DOORS AT STAIRS ARE 1 3/4" STEEL, SIX PANEL STAMPED, PRIMED & PAINTED.
DOORS HAVE NARROW LITE VISION PANEL AND ARE TO BE **FIRE RATED 60 MIN.**

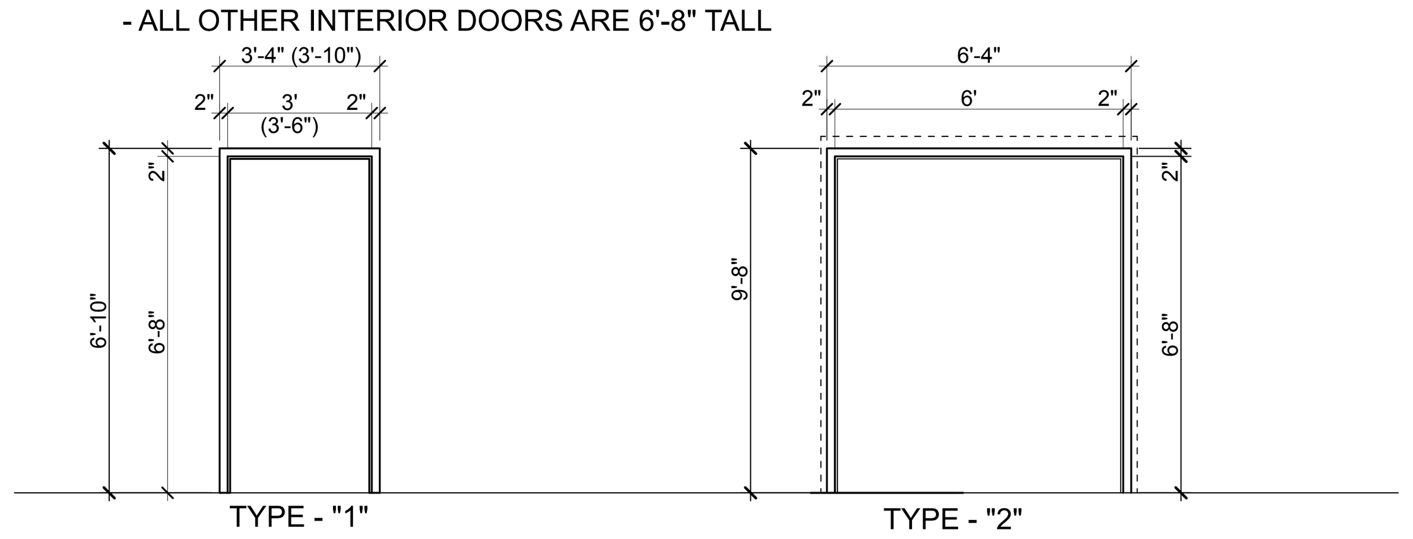
TYPICAL INTERIOR STEEL DOORS
TYPE "D-B":
ALL OTHER COMMON AREA DOORS ARE 1 3/4" STEEL, FLUSH, PRIMED & PAINTED.
DOORS ARE TO BE **FIRE RATED 20 MIN.**

NOTE: - ALL EXTERIOR ENTRY DOORS ARE 6'-8" TALL
- ALL INTERIOR DOORS ARE 6'-8" TALL



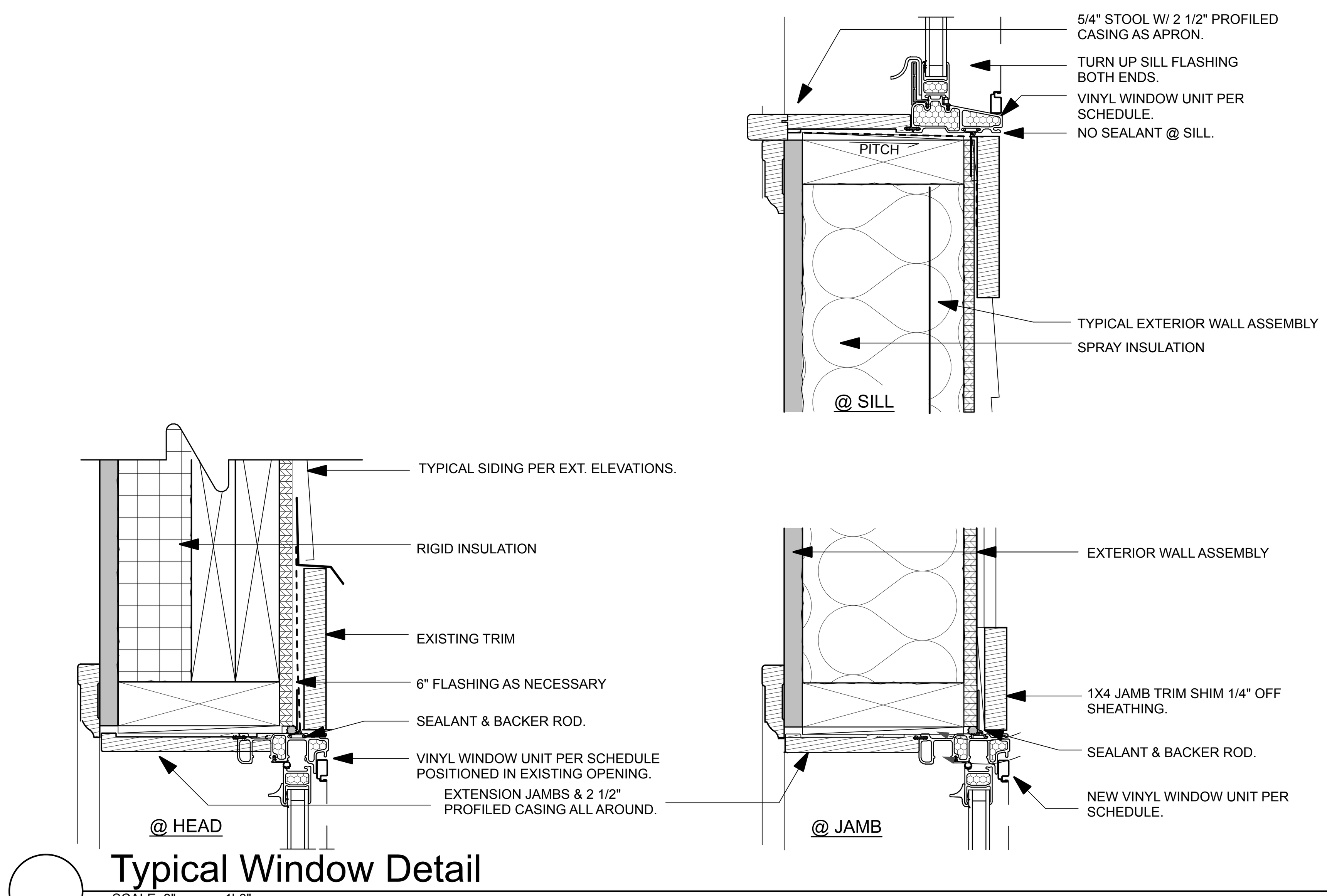
TYPICAL DOOR FRAMES & BORROWED LITES FRAMES:

KNOCKDOWN HOLLOW METAL FRAMES. 2" DRYWALL KD 18 GA.,1/2" BACKBEND.,
16 GA. AT FIRE RATED OPENINGS. PRIMED. COMPRESSION ANCHORS &
7 GA. HARDWARE REINFORCEMENTS.
1/4" TEMPERED GLASS AT VISION PANELS & SIDE LITES.
1/4" WIRED GLASS VISION PANELS AT FIRE RATED OPENINGS.
NO BACKBEND OUTSIDE AT FRAMES TYPES "2" & "3" TO ALLOW EXTERIOR TRIM APPLICATION.
NOTE: - ALL EXTERIOR DOORS & VESTIBULE DOORS ARE 6'-8" TALL
- ALL OTHER INTERIOR DOORS ARE 6'-8" TALL



WINDOW SCHEDULE

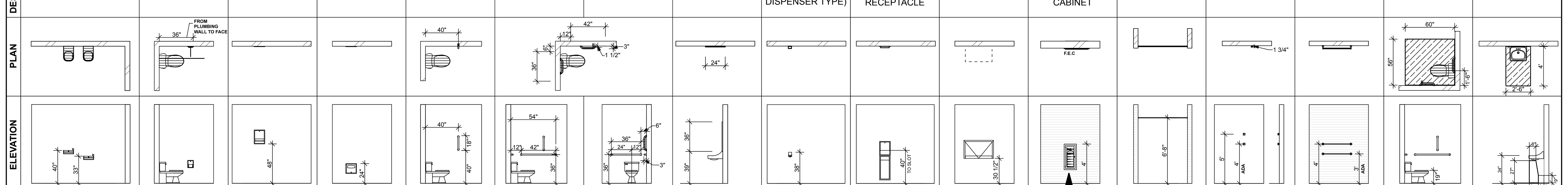
MARK	Quantity	Outside View	WxH	NOTES
N	1		2'-6"×3'-6"	METAL FRAME - SINGLE PANE W/ TEMPERED GLAZING
V	3		2'-8"×3'	ANDERSEN 200 SERIES VINYL CLAD DOUBLE HUNG WOOD WINDOW, BETWEEN-THE-GLASS GRILLES . PROVIDE LOUVER BLINDS
W	3		2'-8"×3'-6"	ANDERSEN 200 SERIES VINYL CLAD DOUBLE HUNG WOOD WINDOW, BETWEEN-THE-GLASS GRILLES. PROVIDE LOUVER BLINDS



Typical Window Detail
SCALE: 3" = 1'-0"

WALL ACCESSORY & A.D.A SCHEDULE

#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DESCRIP.	WALL MOUNTED DRINKING FOUNTAIN	TOILET PAPER DISPENSER	PAPER TOWEL DISPENSER	NAPKIN RECEPTACLE	VERTICAL GRAB BAR	HORIZONTAL GRAB BAR	HORIZONTAL GRAB BAR	MIRROR	SOAP DISPENSER (AUTOMATIC FOAM DISPENSER TYPE)	PAPER TOWEL DISPENSER & RECEPTACLE	CHANGING STATION	FIRE EXTINGUISHER W/ CABINET	SHOWER CURTAIN ROD	ROBE HOOK	TOWEL BAR	TOILET	LAVATORY
PLAN																	
ELEVATION																	



AMHERST POLICE DEPARTMENT
175 Amherst Street
Amherst, NH

CONSTRUCTION DOCUMENTS - BID 2
5/22/2020

LICENSED ARCHITECT
KREG T. JONES
No. 04411
STATE OF NEW HAMPSHIRE

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

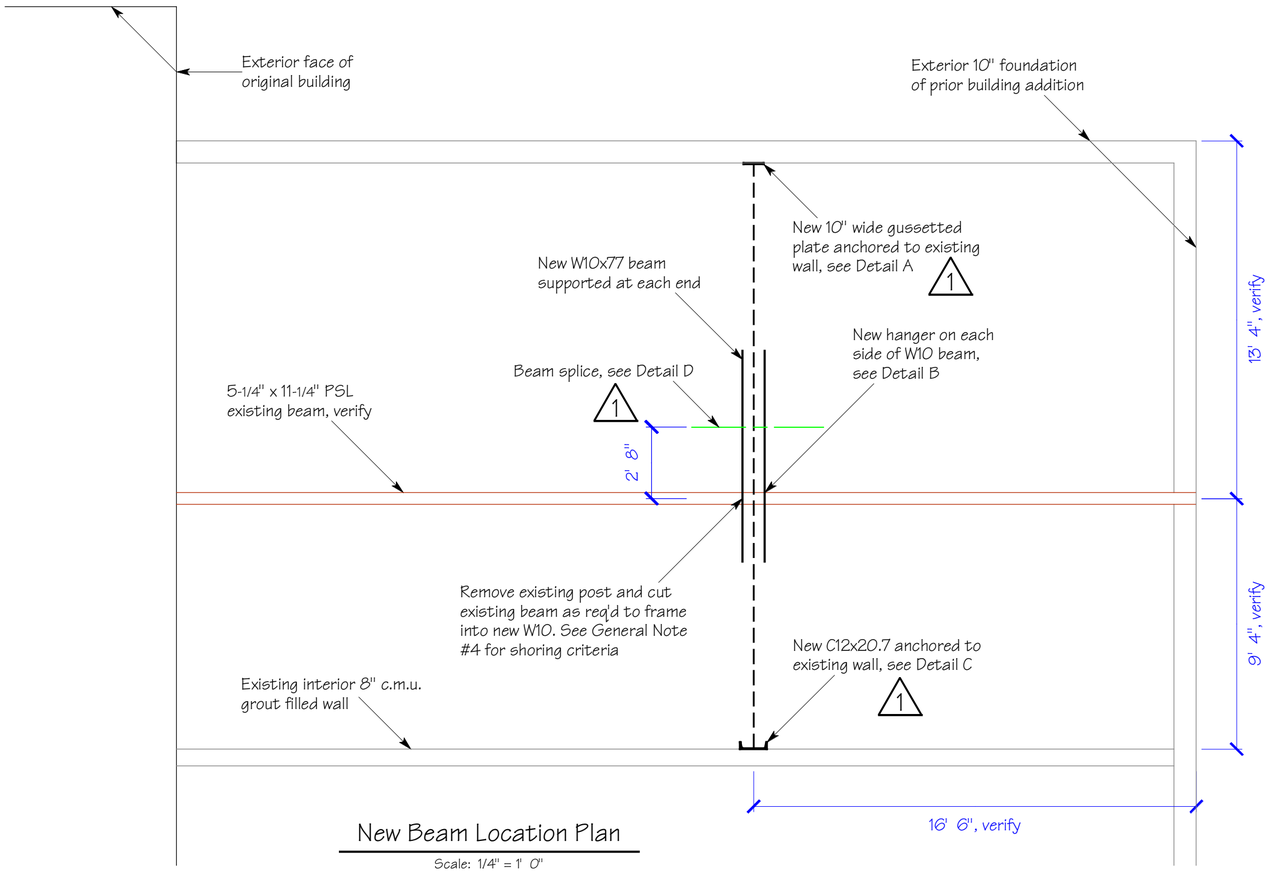
DOOR & WINDOW SCHEDULE

Date	Change Name
3/17/20	

date: 5/22/20
proj. no.: 2017-024

A602

/Users/admin 1/Desktop/DMPATA Kreg/Amherst Police Station - 2019013 : 2017024/Archicad/Amherst Police Station_V23 2020-02-13 CD Bid2.pln Friday, May 22, 2020



New Beam Location Plan

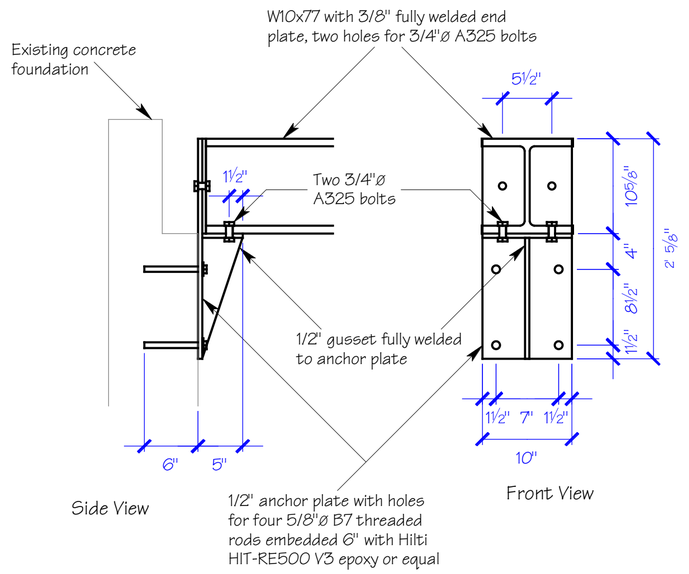
Scale: 1/4" = 1' 0"

General Notes:

1. Prior to construction, all dimensions necessary to complete the work shall be field verified and compared to information contained on other drawings. Any discrepancies shall be resolved without adversely affecting the structure.
2. All work shall conform to applicable criteria in the 2015 International Building Code as modified by the State of New Hampshire.
3. Structural sections were designed to support the following loads:
   floor dead = 16 psf, floor live = 80 psf;
4. The Contractor shall furnish and install all temporary and permanent shoring and reinforcement necessary to support and prevent movement of any portions of the structure that will be affected by the Work. If there are no encumberences cut ends of the existing PSL beam can be supported on 7.5 ton shoring posts extending down to the existing slab-on-grade and bearing on 3' 0" square hardwood cribbing. A shoring plan shall be submitted by the Contractor for review by the Engineer and either approval, approval as noted or rejection. All incidental items required for construction but not shown on the drawings shall be furnished, installed, and/or constructed by the Contractor. The Contractor shall be responsible for establishing baselines and laying out the work so that construction conforms to dimensions and elevations shown on the drawings. The Contractor shall keep the work area clean throughout the job, repair all damage, if any, to existing facilities and remove all construction debris prior to completion of work.

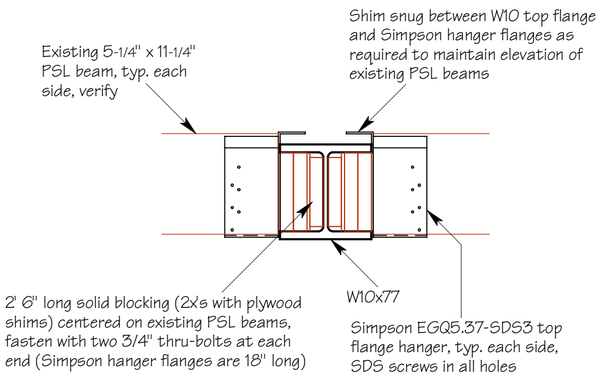
Steel Notes:

1. Members were designed and shall be fabricated and erected in conformance with criteria in the Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, Allowable Stress Design, contained in the American Institute of Steel Construction (AISC) "Manual of Steel Construction", Fifteenth Edition.
2. All steel shall be new. Steel shall conform to ASTM A992, Grade 50 for wide flange sections and ASTM A36 for plates and other items.
3. All bolts shall be the diameter noted on the drawings, shall conform to ASTM A325N, shall be installed to the snug tight condition as defined in Section 8.c of the AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".
4. All welding shall conform to requirements in the most recent "Structural Welding Code", ANSI/AWS D1.1, of the American Welding Society. Electrodes shall be E70XX.
7. All steel surfaces shall be coated as required by the Owner.



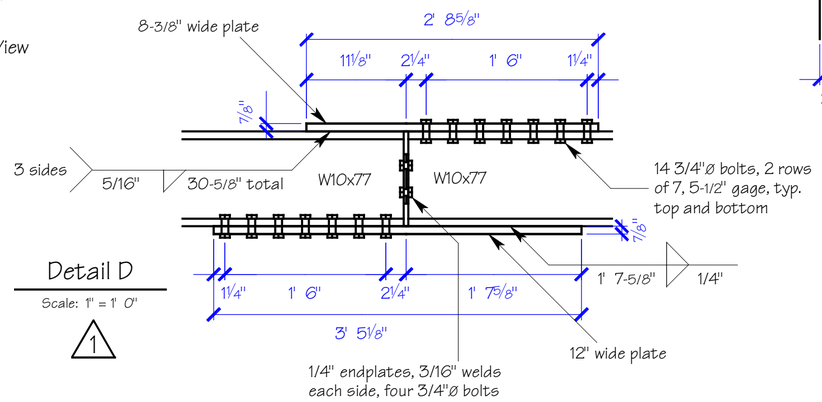
Detail A

Scale: 1" = 1' 0"



Detail B

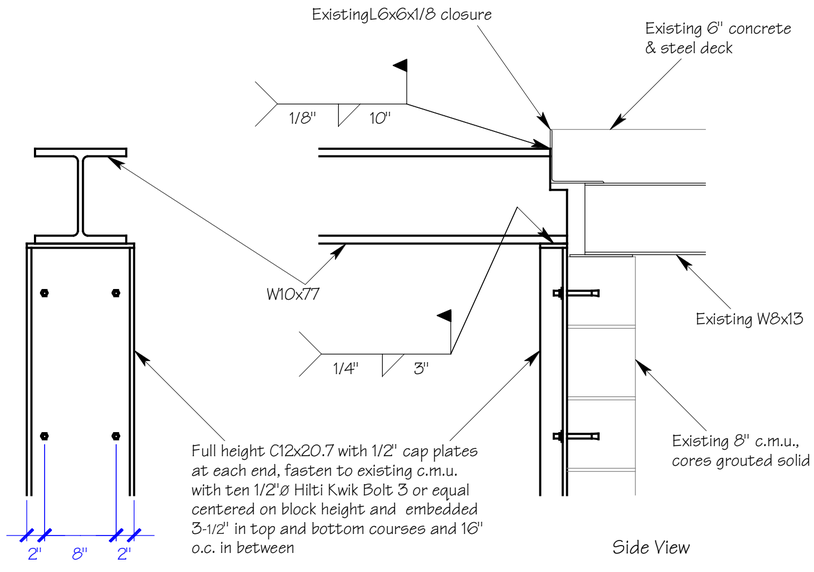
Scale: 1" = 1' 0"



Detail D

Scale: 1" = 1' 0"

1



Detail C

Scale: 1" = 1' 0"

S W & C Engineering, P.A.
857 Wellington Road Manchester, NH 03104
Tel: (603) 566-2986
e-mail: swcengineering@comcast.net

Prepared for: Dennis Mires, P.A. Manchester, NH

Amherst Police Station
New 2nd Floor Beam

175 Amherst Street Amherst, New Hampshire

Plan, Details & Notes

Certification:

STATE OF NEW HAMPSHIRE - ROBERT P BRECKNOCK No. 4761 LICENSED PROFESSIONAL ENGINEER

Scale: Noted

Issue Date: 28 January 2020

1 Revision # & Date: 10 April 2020

Designed: RPB

Sheet #: S - 1, r1

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

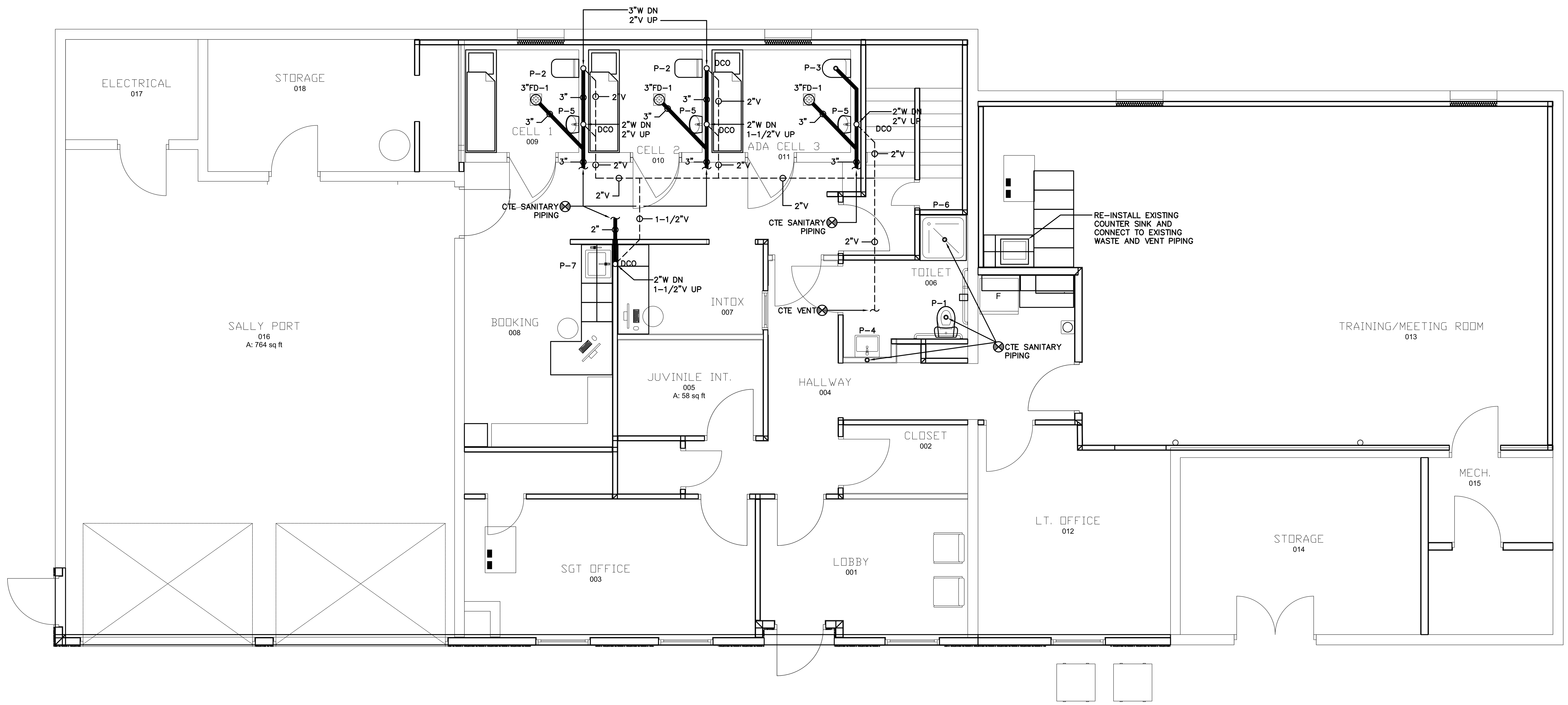
PLUMBING PROJECT MANAGER:

MARK R. RENAUD
EMAIL: MARKR@DESIGNDAYMECH.COM
PHONE: (603) 234-8292
ADDRESS: 118 MAGNOLIA DR, GOFFSTOWN, NH 03045

NOTE:

1. PLUMBING CONTRACTOR TO VERIFY FINAL POINTS OF CONNECTIONS TO EXISTING SANITARY AND VENT PIPING.

2. REFER TO ARCHITECTURAL DEMO DRAWINGS FOR FIXTURES THAT ARE TO BE REMOVED. CUT AND CAP WASTE AND VENT PIPING TO MAKE SAFE.



1 / P100 LOWER LEVEL SANITARY & VENT PIPING PLAN

1/4"=1'-0"

CONSTRUCTION DOCUMENTS - BID 2

05/22/20

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

STATE OF NEW HAMPSHIRE
ANDREW W. ARSENAULT
No. 7099
LICENSED PROFESSIONAL ENGINEER

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

LOWER LEVEL SANITARY & VENT PIPING PLAN

Rev#	DCN#	Change Name	Date

date: 05/22/20

proj. no.: 2017-024

P100A

DESIGN DAY Mechanicals Inc

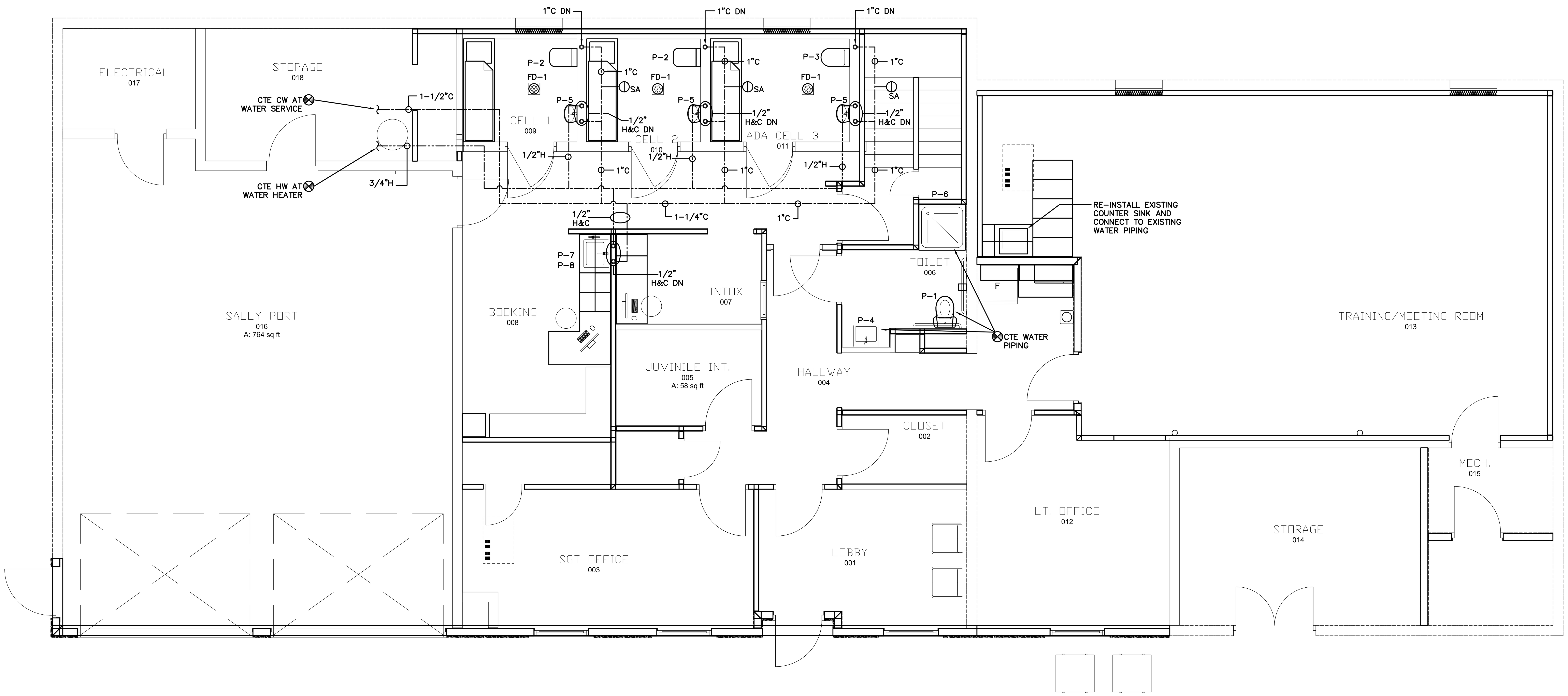
THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

PLUMBING PROJECT MANAGER:

MARK R. RENAUD
EMAIL: MARKR@DESIGNDAYMECH.COM
PHONE: (603) 234-8292
ADDRESS: 118 MAGNOLIA DR, GOFFSTOWN, NH 03045

NOTE:
1. PLUMBING CONTRACTOR TO VERIFY FINAL POINTS OF CONNECTIONS TO EXISTING DOMESTIC WATER PIPING.

2. REFER TO ARCHITECTURAL DEMO DRAWINGS FOR FIXTURES THAT ARE TO BE REMOVED. CUT AND CAP DOMESTIC WATER PIPING TO MAKE SAFE.



1
P200
LOWER LEVEL DOMESTIC WATER PIPING PAN
1/4"=1'-0"

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

STATE OF NEW HAMPSHIRE
ANDREW W. ARSENAULT
No. 7099
LICENSED PROFESSIONAL ENGINEER

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

LOWER LEVEL DOMESTIC WATER PIPING PLAN

Date	Change Name	DCN#	Rev#

date: 05/22/20
proj. no.: 2017-024

P100B

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

DIVISION 22 - PLUMBING SPECIFICATIONS

I) GENERAL

A) WORK INCLUDED:

1) THESE SPECIFICATIONS INCLUDE GENERAL REQUIREMENTS FOR ALL WORK REPRESENTED ON THESE DRAWINGS. NOT ALL SYSTEMS OR SYSTEM COMPONENTS DESCRIBED IN THESE SPECIFICATIONS ARE NECESSARILY INCLUDED AS A PART OF THIS PROJECT.

2) THE PLUMBING CONTRACTOR SHALL HEREAFTER BE DESCRIBED AS "THE CONTRACTOR" IN THIS PLUMBING SPECIFICATION. THE CONTRACTOR SHALL PROVIDE, INSTALL, PIPE AS REQUIRED, PLUMBING SYSTEMS AS DESCRIBED BELOW, AND SHOWN OR DESCRIBED ON THESE PLANS AND SPECIFICATIONS.

B) QUALITY ASSURANCE:

1) THE INTERNATIONAL PLUMBING CODE (IPC) 2015 AND THE INTERNATIONAL ENERGY CONSERVATION CODE (IEEC) 2015 ARE THE GOVERNING CODES FOR ALL PLUMBING WORK. THE CODES AND STANDARDS REFERENCED IN THE PLUMBING CODE SHALL BE CONSIDERED A PART OF THE REQUIREMENTS OF CODE TO THE PRESCRIBED EXTENT OF EACH SUCH REFERENCE. WHERE DIFFERENCES OCCUR BETWEEN PROVISIONS OF CODE AND THE REFERENCED STANDARDS, THE PROVISIONS OF CODE SHALL APPLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE REQUIREMENTS OF ALL CODES AS THEY HAVE BEEN ADOPTED BY THE STATE AND THE LOCAL JURISDICTION.

2) EXCEPT AS SPECIFICALLY DESCRIBED OTHERWISE IN THESE SPECIFICATIONS, ALL COMPONENTS ALLOWED WITHIN THE ABOVE REFERENCED CODES SHALL BE ALLOWED AS A PART OF THE WORK.

3) THE WORKMANSHIP AND MATERIALS COVERED BY THESE SPECIFICATIONS SHALL CONFORM TO ALL ORDINANCES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO, ALL APPLICABLE REGULATIONS OF THE CITY, COUNTY, AND STATE.

4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR PLUMBING PERMITS, INVESTMENT FEES, TAXES, CONNECTION AND INSPECTION FEES AS REQUIRED FOR THE COMPLETE INSTALLATION OF THE PLUMBING SYSTEM. THE CONTRACTOR SHALL PROVIDE TO THE OWNER ALL CERTIFICATES OF INSPECTION ISSUED BY THE JURISDICTION.

5) THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALL CONDITIONS AFFECTING THE PROPER EXECUTION OF THE CONTRACT, VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.

6) DURING THE PROGRESS OF THE WORK, THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING INSTALLATION FROM THE LAYOUT AND MATERIALS CONTAINED IN THE APPROVED DRAWINGS AND SPECIFICATIONS.

7) DRAWINGS AND CATALOG CUTS, SHOWING ALL PLUMBING EQUIPMENT AND SYSTEM COMPONENTS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. FIELD MEASURE AND COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS AND ALL OTHER TRADES THE PROPOSED LOCATIONS FOR NEW EQUIPMENT AND COMPONENTS BEFORE PRODUCING SUBMITTALS. NO ITEMS SHALL BE PURCHASED OR ORDERED BEFORE APPROVAL IS GIVEN BY THE ENGINEER IN WRITING.

8) THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES.

C) RELATED DOCUMENTS:

1) THE GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTAL GENERAL CONDITIONS OF THE CONTRACT AND DIVISION 1 SPECIFICATION SECTIONS PROVIDED BY THE ARCHITECT, AND ALL OTHER DRAWINGS AND SPECIFICATIONS PROVIDED AS A PART OF THIS PROJECT, APPLY TO THIS DIVISION 15 AND TO ALL CONTRACTORS, SUBCONTRACTORS, OR OTHER PERSONS SUPPLYING MATERIALS AND/OR LABOR, ENTERING INTO THE PROJECT SITE AND/OR PREMISES, DIRECTLY OR INDIRECTLY.

2) THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO BE COMPLEMENTARY. A PARTICULAR SECTION, PARAGRAPH OR HEADING IN A DIVISION MAY NOT DESCRIBE EACH AND EVERY DETAIL CONCERNING WORK TO BE DONE AND MATERIALS TO BE FURNISHED. THE DRAWINGS ARE DIAGRAMATIC AND MAY NOT SHOW ALL OF THE WORK REQUIRED OR ALL CONSTRUCTION DETAILS. DIMENSIONS ARE SHOWN FOR CRITICAL AREAS ONLY AS AN AID TO THE CONTRACTOR; ALL DIMENSIONS AND ACTUAL PLACEMENTS ARE TO BE VERIFIED IN THE FIELD. IT IS TO BE UNDERSTOOD THAT THE BEST TRADE PRACTICES OF THE DIVISION WILL PREVAIL.

3) ALL TRADE SUBCONTRACTORS ARE TO NOTE THAT THE ORGANIZATION OF SPECIFICATIONS INTO DIVISIONS, AND LIKEWISE THE ARRANGEMENT OF THE DRAWINGS, IS SET UP FOR THE CONVENIENCE OF UNDERSTANDING THE SCOPE OF THE WORK ONLY. THIS STRUCTURING SHALL NOT CONTROL THE GENERAL CONTRACTOR IN DIVIDING THE WORK AMONG TRADE SUBCONTRACTORS OR IN ESTABLISHING THE EXTENT OF THE WORK TO BE PERFORMED BY ANY TRADE. REFER TO GENERAL CONDITIONS.

II) PRODUCTS

A) GENERAL PLUMBING MATERIALS:

1) WATER HAMMER ARRESTORS: INSTALL APPROPRIATELY SIZED WATER HAMMER ARRESTORS AT FAST CLOSING POSITIVE SHUTOFF VALVES TO PREVENT WATER HAMMER.

2) ESCUTCHEONS: AT ALL FINISHED WALL PENETRATIONS, PROVIDE CHROME-PLATED SPLIT-RING ESCUTCHEON. INSIDE DIAMETER SHALL CLOSELY FIT PIPE OUTSIDE DIAMETER OR OUTSIDE OF PIPE INSULATION WHERE PIPE IS INSULATED. OUTSIDE DIAMETER SHALL COMPLETELY COVER THE OPENING IN FLOORS, WALLS, OR CEILINGS.

3) DIELECTRIC UNIONS: PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS FOR THE PIPE MATERIALS IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED), WHICH EFFECTIVELY ISOLATE DISSIMILAR METALS, TO PREVENT GALVANIC ACTION, AND STOP CORROSION.

4) SLEEVES: GALVANIZED STEELMETAL OR SCHEDULE 40 STEEL PIPE AS APPROPRIATE FOR THE WALL CONSTRUCTION.

5) DRIP PANS: WHERE REQUIRED, PROVIDE DRIP PANS FABRICATED FROM CORROSION-RESISTANT SHEET METAL WITH WATERTIGHT JOINTS, AND WITH EDGES TURNED UP A MINIMUM OF 2-1/2". REINFORCE TOP, EITHER BY STRUCTURAL ANGLES OR BY ROLLING TOP OVER 1/4" STEEL ROD. PROVIDE HOLE, GASKET, AND FLANGE AT LOW POINT FOR WATERTIGHT JOINT AND 1" DRAIN LINE CONNECTION.

6) FIRESTOPPING/FIRE-RESISTANT SEALANT: WHERE REQUIRED, PROVIDE A FIRESTOP SYSTEM APPROPRIATE FOR THE ASSEMBLY PENETRATED AND THE PENETRATING ELEMENT. USE ONLY FIRESTOP PRODUCTS THAT HAVE BEEN UL 1479 OR ASTM E 814 TESTED FOR SPECIFIC FIRE-RATED CONDITIONS CONFORMING TO CONSTRUCTION ASSEMBLY TYPE, PENETRATING ITEM TYPE, ANNULAR SPACE REQUIREMENT AND FIRE-RATING INVOLVED FOR EACH SEPARATE INSTANCE. SUBMIT MANUFACTUER'S SPECIFIC DETAIL FOR EACH TYPE OF PENETRATION.

7) ACCESS DOORS: WHERE REQUIRED FOR PROPER SERVICE AND MAINTENANCE OF ALL MECHANICAL COMPONENTS, PROVIDE STEEL ACCESS DOORS AND FRAMES, FACTORY-FABRICATED AND ASSEMBLED UNITS, COMPLETE WITH ATTACHMENT DEVICES AND FASTENERS SUITABLE FOR THE SERVICE.

8) VALVES - PRESSURE AND TEMPERATURE RATED AS REQUIRED TO SUIT SYSTEM PRESSURES AND TEMPERATURES. UNLESS OTHERWISE INDICATED, PROVIDE VALVES OF SAME SIZE AS UPSTREAM PIPE SIZE.

9) THERMOMETERS: PROVIDE DIRECT MOUNT THERMOMETERS 9" ADJUSTABLE ANGLE TYPE, ALUMINUM CASE, ACRYLIC LENS, ORGANIC SPIRIT FILL OR SOLAR TYPE, SUITABLE FOR SERVICE REQUIRED. SELECT RANGE SUCH THAT NORMAL FLUID TEMPERATURES FALL WITHIN THE MIDDLE THIRD OF THE DISPLAY. ACCURACY OF THERMOMETERS SHALL BE PLUS OR MINUS 1 PERCENT FULL SCALE. PROVIDE THERMOMETER WELLS, BRASS OR STAINLESS STEEL, PRESSURE RATED TO MATCH PIPING SYSTEM DESIGN PRESSURE.

10)PRESSURE GAUGES: PRESSURE GAUGES SHALL BE PHOSPHOR BRONZE BOURDON-TUBE TYPE, ALUMINUM OR BRASS CASE, GLASS LENS, SUITABLE FOR SERVICE REQUIRED. SELECT RANGE SUCH THAT NORMAL FLUID PRESSURES FALL WITHIN THE MIDDLE THIRD OF THE DISPLAY. ACCURACY OF PRESSURE GAUGES SHALL BE PLUS OR MINUS 1 PERCENT FULL SCALE. PROVIDE PRESSURE GAUGE COCKS BETWEEN PRESSURE GAUGES AND GAUGE TEES, CONSTRUCTED OF BRASS WITH 1/4" FEMALE NPT ON EACH END, AND "T" HANDLE BRASS PLUG, WITH 1/4" BRASS BUSHING SNUBBER WITH CORROSION RESISTANT POROUS METAL DISC, THROUGH WHICH PRESSURE FLUID IS FILTERED. SELECT DISC MATERIAL FOR FLUID SERVED AND PRESSURE RATING.

11)SUPPORTS AND ANCHORS: HANGERS FOR PIPE UP TO AND INCLUDING 4" SHALL BE SWIVEL RING, SPLIT RING, WROUGHT PIPE CLAMP, BAND, ADJUSTABLE WROUGHT CLEVIS TYPE OR TRAPEZE. HANGERS FOR PIPES ABOVE 4" SHALL BE STANDARD CLEVIS, ROLLER OR TRAPEZE.

12)SADDLES AND SHIELDS: PROVIDE SADDLES AND SHIELDS UNDER PIPING HANGERS AND SUPPORTS, FACTORY-FABRICATED, FOR ALL INSULATED PIPING. SIZE SADDLES AND SHIELDS FOR EXACT FIT TO MATE WITH PIPE INSULATION.

B) IDENTIFICATION:

1) PROVIDE PIPE MARKERS, LINE MARKERS, VALVE TAGS, VALVE SCHEDULE FRAMES, AND EQUIPMENT MARKERS COMPLYING WITH ANSI A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS, AND INSTALLED VIEWING ANGLES OF IDENTIFICATION DEVICES.

2) SCHEDULES: SUBMIT VALVE SCHEDULE FOR EACH PIPING SYSTEM, TYPEWRITTEN AND REPRODUCED ON 8-1/2" X 11" BOND PAPER. TABULATE VALVE NUMBER, PIPING SYSTEM, SYSTEM ABBREVIATION (AS SHOWN ON TAG), LOCATION OF VALVE (ROOM OR SPACE), AND VARIATIONS FOR IDENTIFICATION (IF ANY). MARK VALVES WHICH ARE INTENDED FOR EMERGENCY SHUT-OFF AND SIMILAR SPECIAL USES, BY SPECIAL "FLAGS", IN MARGIN OF SCHEDULE.

3) PIPE MARKERS

(a) SNAP-ON TYPE: PROVIDE MANUFACTURER'S STANDARD PRE-PRINTED, SEMI-RIGID, SNAP- ON, COLOR-CODED, PIPE MARKERS.

(b) PRESSURE-SENSITIVE TYPE: PROVIDE MANUFACTURER'S STANDARD PRE-PRINTED, PERMANENT ADHESIVE, COLOR-CODED, PRESSURE-SENSITIVE VINYL PIPE MARKERS.

(c) INSTALL EVERY 40 FEET AND AT EACH CHANGE IN DIRECTION.

4) LINE MARKERS - UNDERGROUND TYPE: MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED, CONTINUOUS-PRINTED PLASTIC TYPE, INTENDED FOR DIRECT-BURIAL SERVICE; NOT LESS THAN 6" WIDE X 4 MILS THICK. PROVIDE TAPE WITH PRINTING WHICH MOST ACCURATELY INDICATES TYPE OF SERVICE OF BURIED PIPE.

5) VALVE TAGS: PROVIDE MANUFACTURER'S STANDARD BRASS OR PLASTIC VALVE TAGS WITH PRINTED ENAMEL LETTERING, WITH PIPING SYSTEM ABBREVIATION IN APPROXIMATELY 3/16" HIGH LETTERS AND SEQUENCED VALVE NUMBERS APPROXIMATELY 3/8" HIGH, AND WITH 5/32" HOLE FOR FASTENER.

6) VALVE TAG FASTENERS: MANUFACTURER'S STANDARD SOLID BRASS CHAIN (WIRE LINK OR BEADED TYPE), OR SOLID BRASS S-HOOKS OF THE SIZES REQUIRED FOR PROPER ATTACHMENT OF TAGS TO VALVES AND MANUFACTURED SPECIFICALLY FOR THAT PURPOSE.

7) VALVE SCHEDULES: PROVIDE VALVE SCHEDULES IN EITHER A 3-RING BINDER OR IN DISPLAY FRAMES, WITH SCREWS FOR REMOVABLE MOUNTING ON MASONRY WALLS. PROVIDE FRAMES OF EXTRUDED ALUMINUM OR PLASTIC WITH SSB-GRADE SHEET GLASS OR PLASTIC.

8) EQUIPMENT MARKERS: PROVIDE MANUFACTURER'S STANDARD LAMINATED PLASTIC, COLOR CODED EQUIPMENT MARKERS.

C) PIPE AND FITTINGS:

1) UNDERGROUND SANITARY AND VENT PIPE AND FITTINGS SHALL BE CAST IRON NO HUB (SV) WITH DWV FITTINGS OR SCHEDULE 40 PVC WITH DWV FITTINGS.

2) ABOVEGROUND SANITARY AND VENT PIPE AND FITTINGS SHALL BE SCHEDULE 40 PVC WITH DWV FITTINGS.

3) ABOVEGROUND DOMESTIC COLD AND HOT WATER PIPE AND FITTINGS SHALL BE HARD DRAWN COPPER TUBE TYPE "L" WITH WROUGHT FITTINGS SOLDERED WITH LEAD FREE SOLDER, CPVC, OR ASTM F876/F877 SDR9 CROSSLINKED POLYETHYLENE (PEX-A) WITH ASTM F1960 COLD EXPANSION FITTINGS AND PEX REINFORCING RINGS INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

4) UNDERGROUND DOMESTIC WATER PIPE AND FITTINGS WITHIN THE BUILDING SHALL BE TYPE "K" ROLLED COPPER WITH NO FITTINGS BELOW SLAB OR ASTM F876/F877 SDR9 CROSSLINKED POLYETHYLENE (PEX-A) WITH ASTM F1960 COLD EXPANSION FITTINGS AND PEX REINFORCING RINGS INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

5) PROVIDE AND INSTALL ISOLATION VALVES, UNIONS/FLANGES AND DRAIN VALVES AT ALL PIECES OF EQUIPMENT.

6) PROVIDE A DRAIN VALVE AT ALL LOW POINTS OF WATER PIPING.

7) CUT ALL HOLES OF SUFFICIENT SIZE AND HANG ALL PIPE SO THAT THERE WILL BE NO COPPER OR STEEL TO METAL CONTACT AND REQUIRED NOISE DURING PIPE EXPANSION AND CONTRACTION.

D) INSULATION:

1) ALL INSULATION SHALL BE UL APPROVED FOR A FLAME SPREAD RATING OF NOT OVER 25 AND A SMOKE DEVELOPED RATING OF NOT OVER 50.

2) ALL INSULATION SHALL CONFORM TO THE REQUIREMENTS OF THE ENERGY CODE.

3) PIPE INSULATION SHALL BE FIBERGLASS WITH ASJ AND PVC FITTING COVERS WITH FIBERGLASS INSERTS OR FLEXIBLE ELASTOMERIC THERMAL INSULATION (PROVIDE UV PROTECTIVE COATING ON ELASTOMERIC INSULATION THAT IS EXPOSED TO SUNLIGHT).

(a) COLD WATER PIPE INSULATION

(1) COPPER AND CPVC PIPES SHALL BE ½" THICK.

(2) PEX PIPING IS NOT INSULATED.

(b) HOT WATER (105-140F) PIPE INSULATION

(1) COPPER AND CPVC PIPES

(i) 1-1/4" PIPE & SMALLER SHALL BE 1" THICK.

(2) PEX PIPES ARE NOT INSULATED.

(3) NON-CIRULATED COPPER AND CPVC PIPES ARE NOT INSULATED BEYOND EIGHT (8) FEET FROM CIRCULATED SYSTEM.

III) EXECUTION

A) EACH FIXTURE OR PIECE OR EQUIPMENT SHALL HAVE ISOLATION OR STOP VALVES.

B) ALL FIXTURES SHALL BE PROPERLY SUPPORTED WITH CARRIERS OR WALL HANGERS.

C) SANITARY SYSTEM SHALL BE PROPERLY TRAPPED, VENTED AND HYDROSTATICALLY TESTED WITH ACCESSIBLE CLEANOUTS IN ACCORDANCE WITH CODE REQUIREMENTS AND GOVERNING REGULATIONS.

D) THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, EQUIPMENT, MATERIAL, MACHINERY, PLANS, RIGGING, AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE PLUMBING SYSTEM. SMALL DETAILS NOT USUALLY INDICATED ON THE DRAWINGS OR SPECIFIED, BUT WHICH ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEM SHALL BE INCLUDED IN THE WORK AND IN THE CONTRACTOR'S ESTIMATE THE SAME AS IF HEREIN SPECIFIED OR SHOWN ON THE DRAWINGS.

E) THE CONTRACTOR SHALL INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. WHERE THE DRAWINGS AND SPECIFICATIONS CONFLICT WITH THE MANUFACTURER'S RECOMMENDATIONS, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO BRING THIS TO THE ATTENTION OF THE ENGINEER.

F) THE CONTRACTOR SHALL INSTRUCT OWNER IN THE PROPER OPERATION OF EQUIPMENT, EXPLAIN THE PROPER OPERATING AND MAINTENANCE PROCEDURES AND SHALL FURNISH THE OWNER WITH ALL INSTRUCTION PAMPHLETS, BOOKS AND OTHER MATERIAL FURNISHED BY THE VARIOUS MANUFACTURERS

G) EQUIPMENT SHALL BE INSTALLED WITH CLEARANCE FOR PROPER MAINTENANCE. FILTERS, COILS, DRIVES, VALVES, AND CONTROLS SHALL BE ACCESSIBLE FOR SERVICING AND/OR REPLACEMENT.

H) EQUIPMENT SHALL BE COVERED FOR ONE YEAR FROM THE REVIEWING ENGINEER'S DATE OF ACCEPTANCE AND/OR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY, WHICH EVER IS LONGER. THE CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURER'S GUARANTEES OR WARRANTIES.

END OF DIVISION 22

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

PLUMBING PROJECT MANAGER:
MARK R. RENAUD
EMAIL: MARKR@DESIGNDAYMECH.COM
PHONE: (603) 234-8292
ADDRESS: 118 MAGNOLIA DR, GOFFSTOWN, NH 03045

LEGEND & ABBREVATIONS

——SAN——	UG SANITARY
······STORM······	UG STORM
——GW——	GARAGE WASTE
- - - GW - - -	GARAGE WASTE
—— PS ——	UG PUMPED SANITARY
——SAN——	AG SANITARY
——VENT——	VENT
——STORM——	AG STORM
——PS——	AG PUMPED SANITARY
—— CW ——	COLD WATER
—— HW ——	HOT WATER
——HWR——	HOT WATER RECIRC
——G——	GAS
⊗ CTE	CONNECT TO EXISTING
(symbol)	BALL VALVE
MV	MIXING VALVE
ET	EXPANSION TANK
PRV	PRESSURE RELIEF VALVE
VRV	VACUUM RELIEF VALVE
BFP	BACKFLOW PREVENTER
TH	THERMOMETER
ECO	END CLEANOUT
DCO	DANDY CLEANOUT
TP	TRAP PRIMER
SA	SHOCK ABSORBER
AAV	AIR ADMITTANCE VALVE
BV	BALL VALVE
SAN	SANITARY
STM	STORM
W	WASTE
V	VENT
C OR CW	COLD WATER
H OR HW	HOT WATER
DN	DOWN
INV	INVERT
VTR	VENT THROUGH ROOF
UG	UNDER GROUND
AG	ABOVE GROUND
FD	FLOOR DRAIN
FS	FLOOR SINK
GT	GREASE TRAP
WH	WALL HYDRANT
RD	ROOF DRAIN
ORD	OVER FLOW ROOF DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
PC	PLUMBING CONTRACTOR
GC	GENERAL CONTRACTOR
KEC	KITCHEN EQUIP.CONTRACTOR
NC	NORMALLY CLOSED
HWR	HOT WATER RETURN
FCV	FLOW CONTROL VALVE
HD	HUB DRAIN
G	GAS
HWH	HOT WATER HEATER
DHWP	DOMESTIC HOT WATER PUMP
AP	ACCESS PANEL
GW	GREASE WASTE

DRAIN SCHEDULE

MARK	DESCRIPTION	MAKE	MODEL	BODY	TOP	CONNECTIONS (INCHES)				SANITARY FIXTURE UNITS	ACCESSORIES & NOTES
						STORM	SAN	VENT	TRAP		
FCO-1	FLOOR CLEANOUT	ZURN	ZN-1400	CAST IRON	NICKEL BRONZE	-	SEE DWGS	-	-	-	-
FD-1	FLOOR DRAIN	ZURN	ZN-415-5B-P-VP	CAST IRON	NICKEL BRONZE	-	3"	1 1/2"	P-TRAP	5.00	PROVIDE 3" PROSET TRAP GUARD

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MAKE	MODEL	FIXTURE CONNECTIONS									FLOW CONTROL	FIXTURE UNITS				ACCESSORIES & NOTES	COLOR
				SAN	VENT	TRAP	IW	COLD	HOT	140°F	ELECTRICAL	GAS		CW	HW	TOTAL	SAN		
P-1	ADA WATER CLOSET	AMERICAN STANDARD	215AA.104.020	3"	2"	INTEGRAL	-	1/2"	-	-	-	-	1.28 GPF	5.00	-	5.00	4.00	CHURCH 295CT OPEN FRONT SEAT LESS COVER, CHROME PLATED STOP WITH BRAIDED FLEXIBLE SUPPLY, WAX RING AND BRASS CLOSET BOLTS	WHITE
P-2	EXISTING PENAL WATER CLOSET	-	-	3"	2"	INTEGRAL	-	1"	-	-	-	-	-	10.00	-	10.00	4.00	RE-INSTALL EXISTING FLUSH VALVE ASSEMBLY, WAX RING AND BRASS CLOSET BOLTS	SS
P-3	EXISTING ADA PENAL WATER CLOSET	-	-	3"	2"	INTEGRAL	-	1"	-	-	-	-	-	10.00	-	10.00	4.00	RE-INSTALL EXISTING FLUSH VALVE ASSEMBLY, WAX RING AND BRASS CLOSET BOLTS	SS
P-4	ADA LAVATORY	AMERICAN STANDARD	0321.075.020	1-1/2"	1-1/2"	P-TRAP	-	1/2"	1/2"	-	-	-	0.5 GPM	1.50	1.50	2.00	1.00	SYMMONS S-20-0-0.5 FAUCET, CHROME PLATED GRID STRAINER, CHROME PLATED STOPS WITH BRAIDED FLEXIBLE SUPPLIES, CHROME PLATED P-TRAP, SYMMONS 7-210-CK-W MIXING VALVE, ZURN Z-1231 CONCEALED CARRIER AND TRUEBRO 102 EZ LAV GUARD	WHITE
P-5	PENAL LAVATORY	ACORN	1652FALRB-1-DMS-04-M	1-1/2"	1-1/2"	P-TRAP	-	1/2"	1/2"	-	-	-	0.5 GPM	1.50	1.50	2.00	1.00	CHROME PLATED STOPS WITH BRAIDED FLEXIBLE SUPPLIES AND CHROME PLATED P-TRAP	SS
P-6	ADA SHOWER	AKER MAXX	OPS-3636	2"	1-1/2"	P-TRAP	-	1/2"	1/2"	-	-	-	2.5 GPM	3.00	3.00	4.00	2.00	SYMMONS S-9063-PLR-X SHOWER VALVE WITH TRIM AND HAND HELD SHOWER ASSEMBLY, PVC OR BRASS SHOWER DRAIN	WHITE
P-7	COUNTER SINK	ELKAY	LR2521-4	1-1/2"	1-1/2"	P-TRAP	-	1/2"	1/2"	-	-	-	2.2 GPM	1.00	1.00	1.40	2.00	SYMMONS S-23 FAUCET, STAINLESS STEEL BASKET STRAINER, CHROME PLATED STOPS WITH BRAIDED FLEXIBLE SUPPLIES AND CHROME PLATED P-TRAP	SS
P-8	EYE WASH	GUARDIAN	GBF1849LH	-	-	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	GUARDIAN G2600LF THERMOSTATIC MIXING VALVE	CP

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

STATE OF NEW HAMPSHIRE
ANDREW W. ARSENAULT
No. 7099
LICENSED PROFESSIONAL ENGINEER

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester, NH
603-625-4548 FAX 603-625-1067

SPECIFICATIONS, LEGEND & SCHEDULES

RevID	ChID	Change Name	Date

date: 05/22/20

proj. no.: 2017-024

P200

NOTE:
1) EXISTING DUCTWORK CONNECTED TO AHUS IS NOT SHOWN ON THESE PLANS. DUCTWORK ASSOCIATED WITH AHU-1 SHALL BE REMOVED. DUCTWORK ASSOCIATED WITH AHU-2 IS INTENDED TO REMAIN AS IS UNLESS IT IS NECESSARY TO MAKE CHANGES TO ACCOMMODATE ELEMENTS OF THE NEW DESIGN.
2) ALL EXISTING EXHAUST FANS & DUCTWORK TO REMAIN (EXCEPT THE VEHICLE EXHAUST IN THE SALLY PORT WHICH WILL BE REMOVED BY OWNER)
3) IN ORDER TO COMPLY WITH ASHRAE 15 REQUIREMENTS THE FOLLOWING ROOMS ON THIS PLAN MUST HAVE THEIR DOORS UNDERCUT BY 1": LT. OFFICE 012, LOBBY 001 & SGT. OFFICE 003. ADDITIONALLY, SGT. OFFICE 003 SHALL HAVE A 6"x12" TRANSFER GRILLE LOCATED LOW ON THE WALL CONNECTING THE ROOM TO HALL 004 OR IF A TRANSFER GRILLE IS UNDESIRABLE, THE DOOR MUST BE UNDER CUT BY 1-1/4"
4) REFER TO VENTILATION CALCULATION SPREADSHEET ON DWG M4.0 FOR SUPPLY AIR FLOW BALANCING FOR EXISTING AIR HANDLERS

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW. PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:
IRIS WAITT
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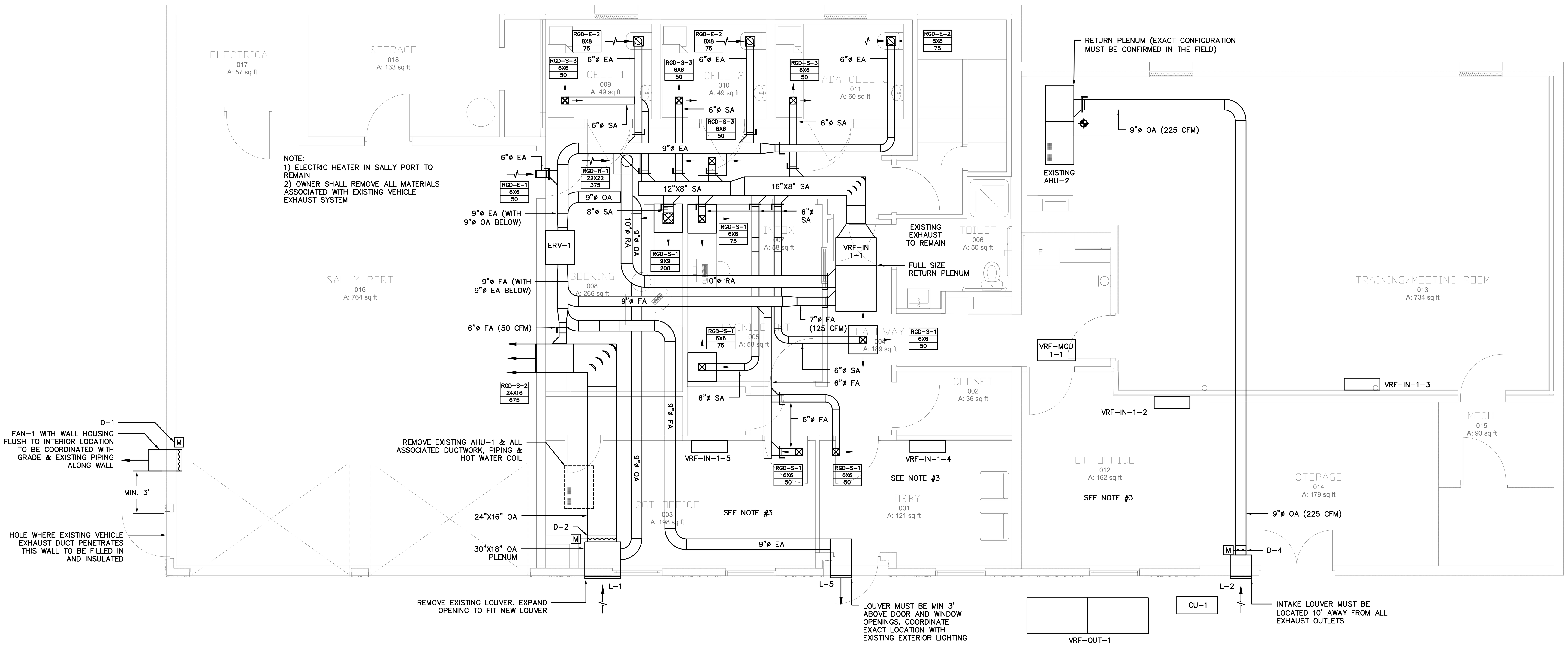

1 M100A LOWER LEVEL HVAC DUCTWORK PLAN
1/4"=1'-0"

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

ANDREW W. ARSENAULT No. 7099 STATE OF NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-5548 FAX 603-625-1067

LOWER LEVEL HVAC DUCTWORK PLAN

date: 05/22/20
proj. no.: 2017-024

M100A

NOTE:
1) REFRIGERANT SHOWN AS SINGLE LINE FOR CLARITY. REFER TO REFRIGERANT PIPING DIAGRAMS ON DWG M500 FOR PIPING DIMENSIONS
2) CONDENSATE PIPING FOR VRF UNITS TO BE COORDINATED IN THE FIELD. WHERE POSSIBLE DRAIN CONDENSATE OUT TO DAYLIGHT, 18" ABOVE GRADE, OTHERWISE DRAIN INDIRECTLY INTO SANITARY.

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:

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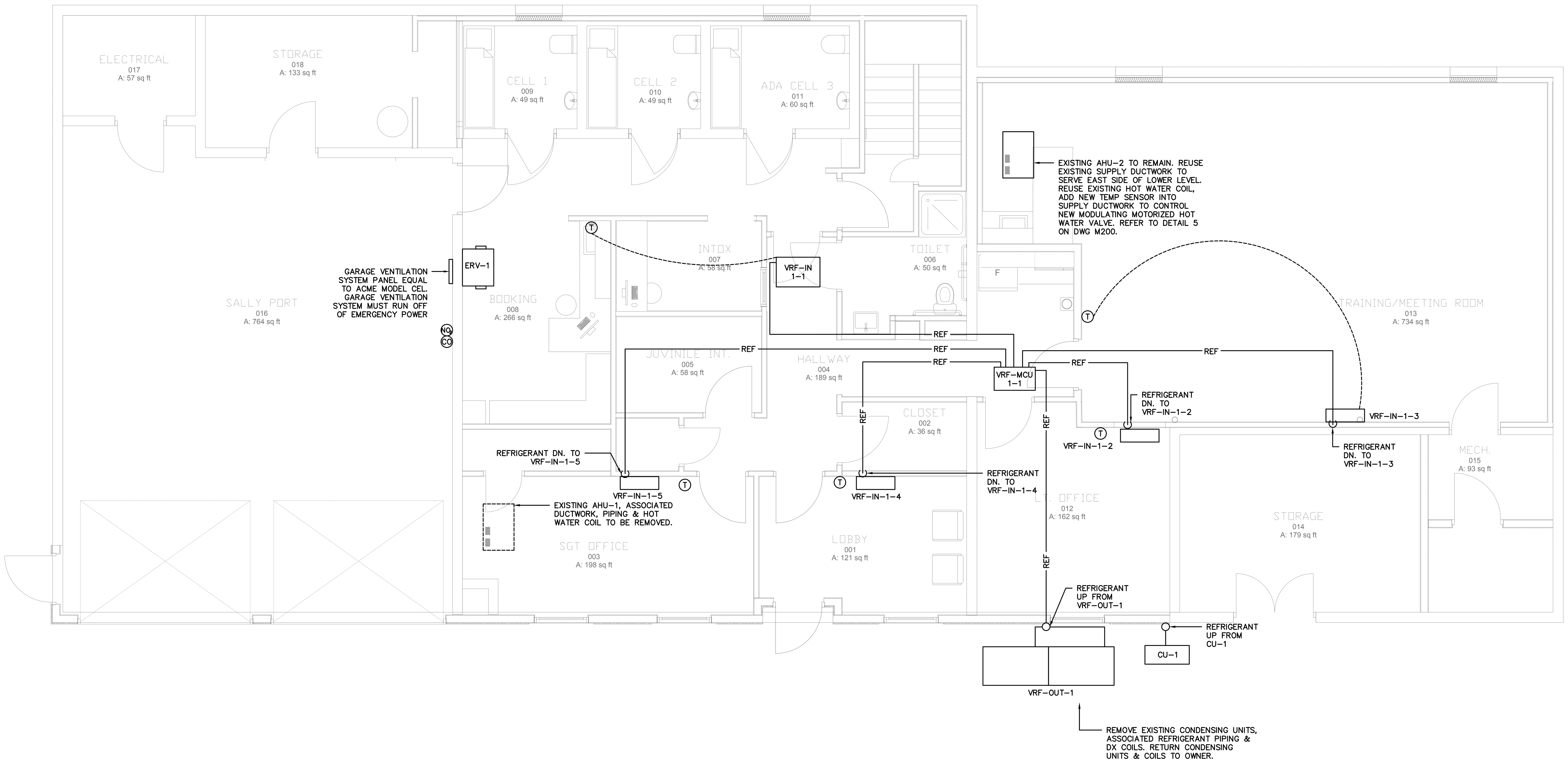

1 M100B LOWER LEVEL HVAC PIPING PLAN 1/4"=1'-0"

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

STATE OF NEW HAMPSHIRE
ANDREW W. ARSENAULT
No. 7099
LICENSED PROFESSIONAL ENGINEER

DENNIS MIRES, P.A.
THE ARCHITECTS

LOWER LEVEL HVAC PIPING PLAN

RevID	ChID	Change Name	Date

date: 05/22/20

proj. no.: 2017-024

M100B

NOTE:
1) EXISTING DUCTWORK CONNECTED TO AHUS IS NOT SHOWN ON THESE PLANS, BUT IS INTENDED TO REMAIN AS IS UNLESS IT IS NECESSARY TO MAKE CHANGES TO ACCOMMODATE ELEMENTS OF THE NEW DESIGN.
2) ALL EXISTING EXHAUST FANS & DUCTWORK TO REMAIN
3) REFRIGERANT SHOWN AS SINGLE LINE FOR CLARITY. REFER TO REFRIGERANT PIPING DIAGRAMS ON DWG M500 FOR PIPING DIMENSIONS
4) CONDENSATE PIPING FOR VRF UNITS TO BE COORDINATED IN THE FIELD. WHERE POSSIBLE DRAIN CONDENSATE OUT TO DAYLIGHT, 18" ABOVE GRADE, OTHERWISE DRAIN INDIRECTLY INTO SANITARY.
5) IN ORDER TO COMPLY WITH ASHRAE 15 REQUIREMENTS THE FOLLOWING ROOMS ON THIS PLAN MUST HAVE THEIR DOORS UNDERCUT BY 1": WOMEN'S LOCKER ROOM 116, KITCHEN 115, INTERVIEW 113, LT. SUPPORT 112, DETECTIVE 111, DET. SGT. POLY 109, VICTIM INT. 110, EVIDENCE ROOM 107, WORKSTATIONS 108, FINGERPRINTING 106, MEETING 102, LOBBY 101, DISPATCH 105, POLICE CHIEF 120, ADMINISTRATION 118–1, 118–2 & 119. ADDITIONALLY DETECTIVE 111, WORKSTATIONS 108 & DISPATCH 105 MUST HAVE A 16"X6" TRANSFER GRILLE LOCATED LOW IN THE WALL CONNECTING EACH ROOM TO HALL 100, OR IF A TRANSFER GRILLE IS UNDESIRABLE, THE DOOR MUST BE UNDER CUT BY 1–1/2"
6) REFER TO VENTILATION CALCULATION SPREADSHEET ON DWG M4.0 FOR SUPPLY AIR FLOW BALANCING FOR EXISTING AIR HANDLERS

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:

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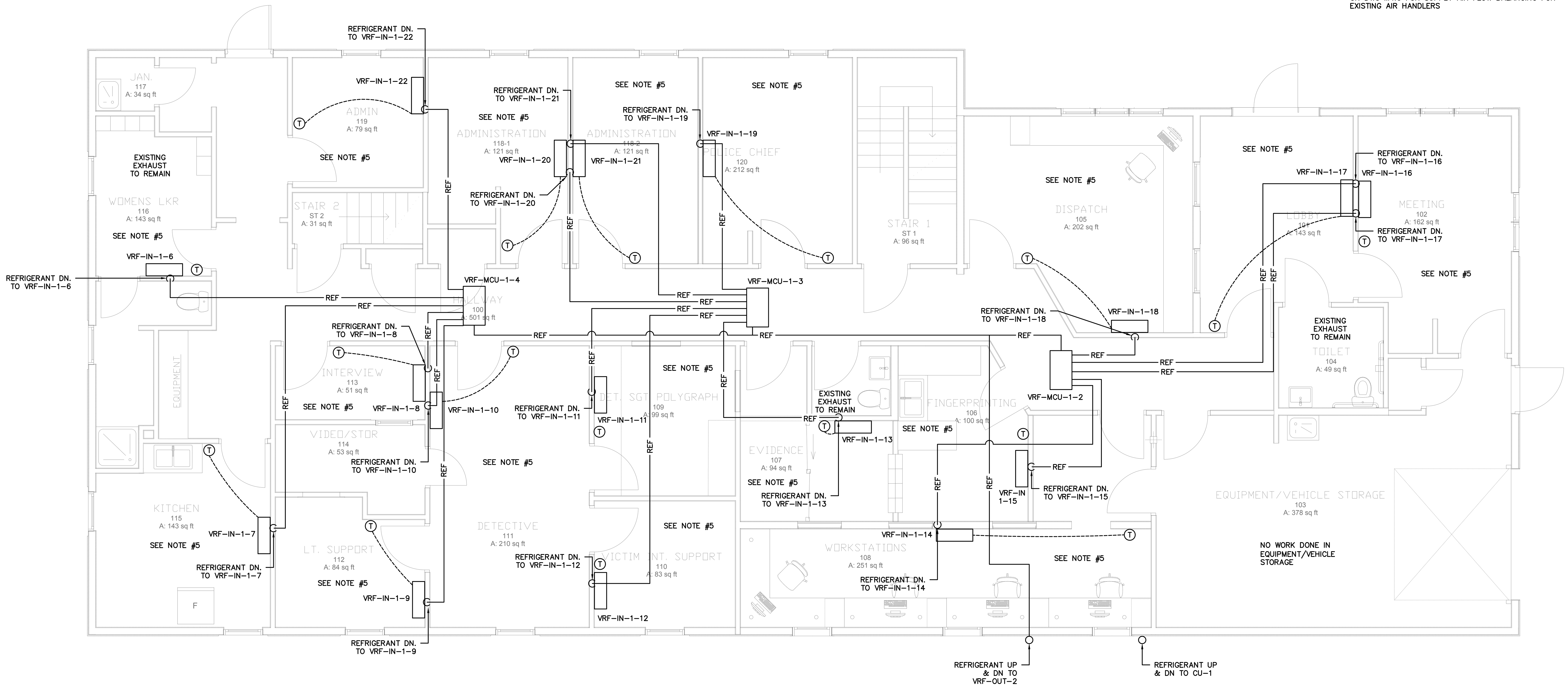
PHONE: (603) 801–2221
ADDRESS: 206 UNION ST. MILFORD, NH 03055



1 / M101 MAIN LEVEL HVAC PLAN 1/4"=1'-0"

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

STATE OF NEW HAMPSHIRE ANDREW W. ARSENAULT No. 7099 LICENSED PROFESSIONAL

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MAIN LEVEL HVAC PLAN

date: 05/22/20
proj. no.: 2017-024

M101

NOTE:
1) EXISTING DUCTWORK CONNECTED TO AHUS IS NOT SHOWN ON THESE PLANS, BUT IS INTENDED TO REMAIN AS IS UNLESS IT IS NECESSARY TO MAKE CHANGES TO ACCOMMODATE ELEMENTS OF THE NEW DESIGN.
2) ALL EXISTING EXHAUST FANS & DUCTWORK TO REMAIN
3) IN ORDER TO COMPLY WITH ASHRAE 15 REQUIREMENTS, THE FOLLOWING ROOMS ON THIS PLAN MUST HAVE THEIR DOORS UNDERCUT BY 1" & HAVE A 16"X6" TRANSFER GRILLE LOCATED LOW ON THE WALL CONNECTING THE ROOM TO CORRIDOR 212: WEIGHT ROOM 211 & LOCKER ROOM 208
4) REFER TO VENTILATION CALCULATION SPREADSHEET ON DWG M4.0 FOR SUPPLY AIR FLOW BALANCING FOR EXISTING AIR HANDLERS

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:
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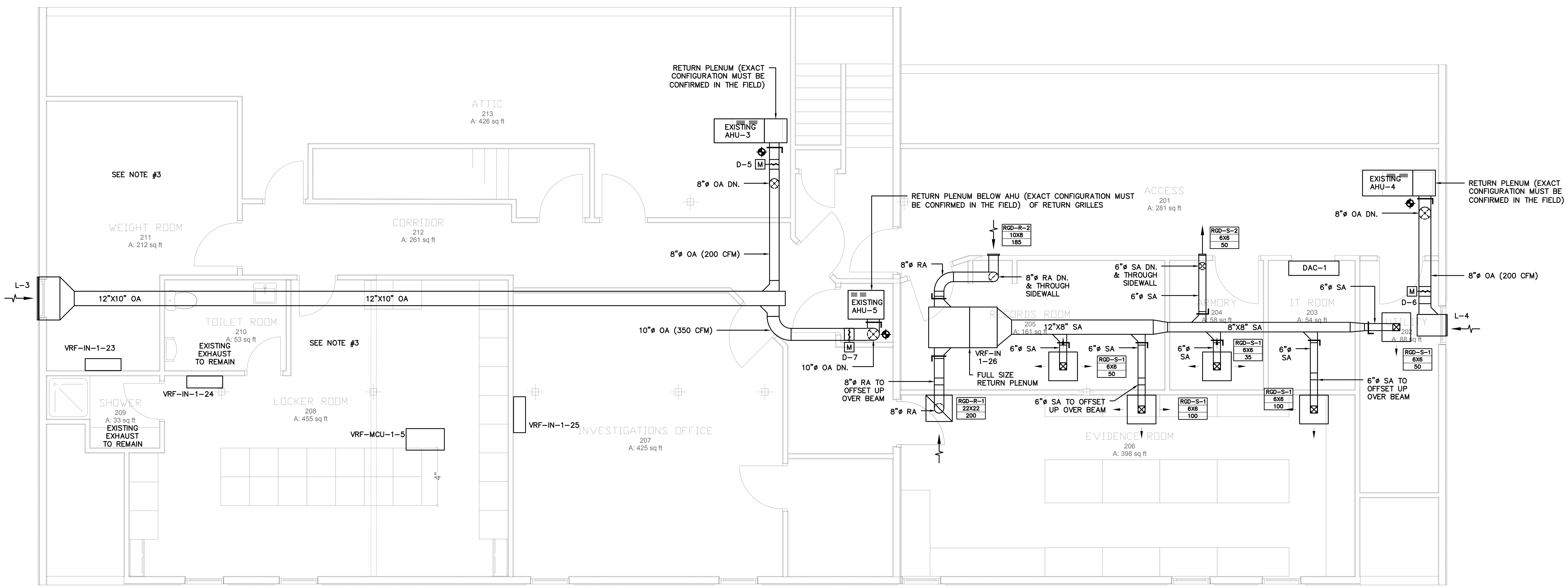
EMAIL: IRISW@DESIGNDAYMECH.COM
PHONE: (603) 801-2221
ADDRESS: 206 UNION ST. MILFORD, NH 03055



1 M102A UPPER LEVEL HVAC DUCTWORK PLAN
1/4"=1'-0"

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

/Volumes/ActiveProjects/Amherst Police Station - 2019013 : 2017024/Archicad/Amherst Police Station_V23 20191204.pln Tuesday, February 4, 2020

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

STATE OF NEW HAMPSHIRE
ANDREW W. ARSENAULT
No. 7099
LICENSED PROFESSIONAL ENGINEER

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UPPER LEVEL HVAC DUCTWORK PLAN

date: 05/22/20
proj. no.: 2017-024

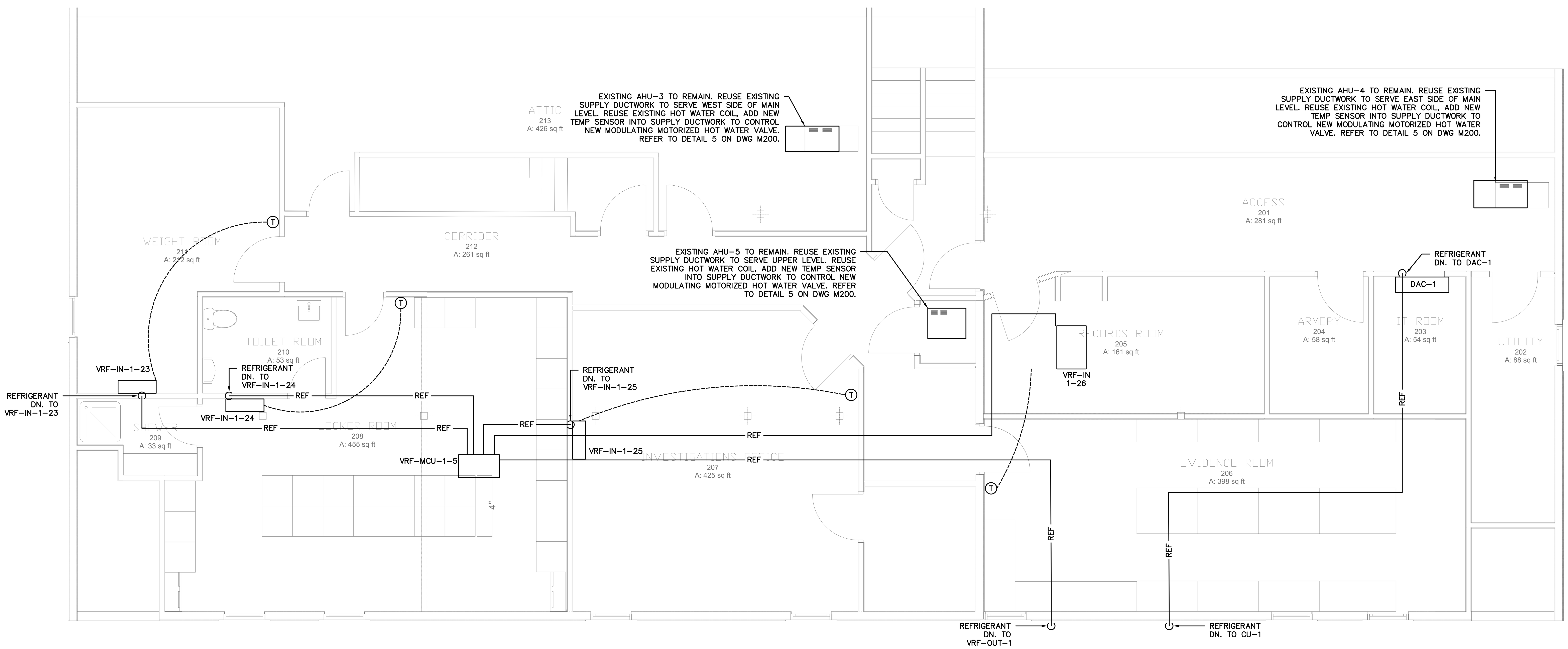
M102A

NOTE:
1) REFRIGERANT SHOWN AS SINGLE LINE FOR CLARITY. REFER TO REFRIGERANT PIPING DIAGRAMS ON DWG M500 FOR PIPING DIMENSIONS
2) CONDENSATE PIPING FOR VRF UNITS TO BE COORDINATED IN THE FIELD. WHERE POSSIBLE DRAIN CONDENSATE OUT TO DAYLIGHT, 18" ABOVE GRADE, OTHERWISE DRAIN INDIRECTLY INTO SANITARY.

DDMi DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:
IRIS WAITT
EMAIL: IRISW@DESIGNDAYMECH.COM
PHONE: (603) 801-2221
ADDRESS: 206 UNION ST. MILFORD, NH 03055



1 M102B *UPPER LEVEL HVAC PIPING PLAN*
1/4"=1'-0"

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

STATE OF NEW HAMPSHIRE ANDREW W. ARSENAULT No. 7099 LICENSED PROFESSIONAL ENGINEER

DENNIS MIRES, P.A.
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UPPER LEVEL HVAC PIPING PLAN

date: 05/22/20
proj. no.: 2017-024

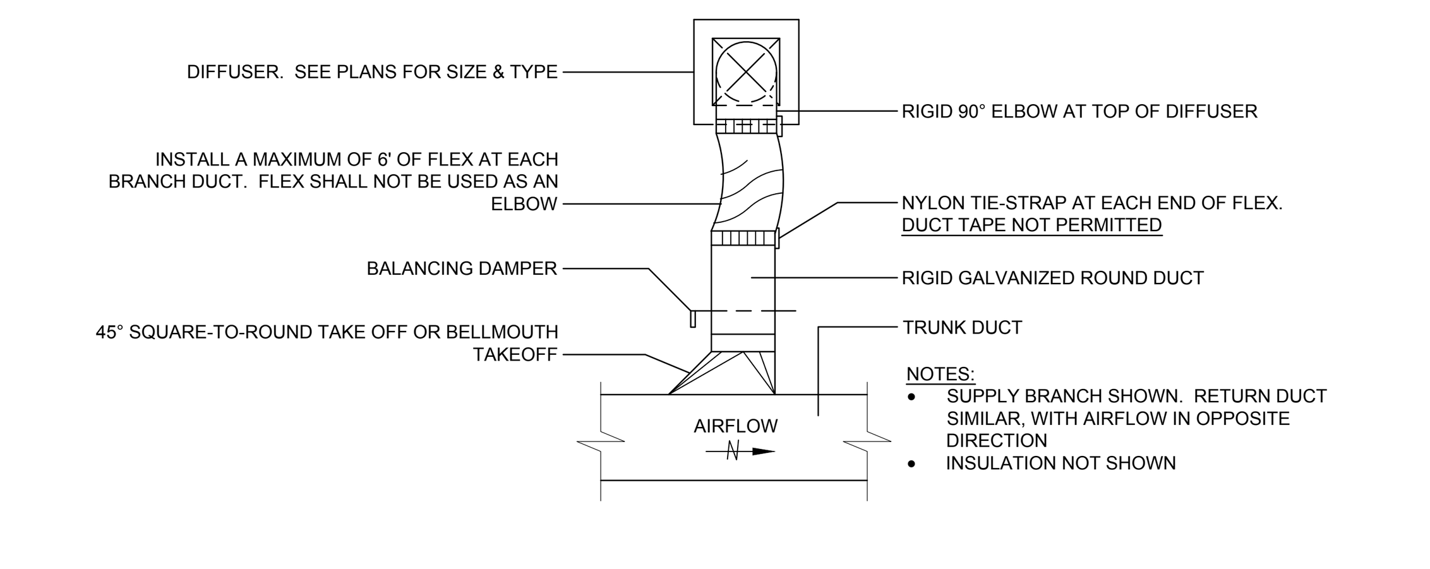
M102B

/Volumes/ActiveProjects/Amherst Police Station - 2019013 : 2017024/Archicad/Amherst Police Station_V23 20191204.pln Tuesday, February 4, 2020

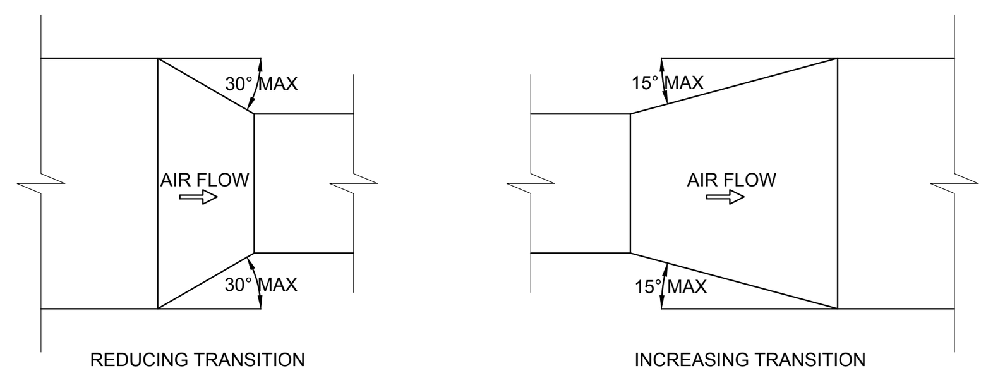
Amherst Police Department, Amherst, NH				
Design Conditions				
ASHRAE Weather Station - Manchester Regional, Manchester, NH				
Climate Zone 5A				

AHU Design Conditions

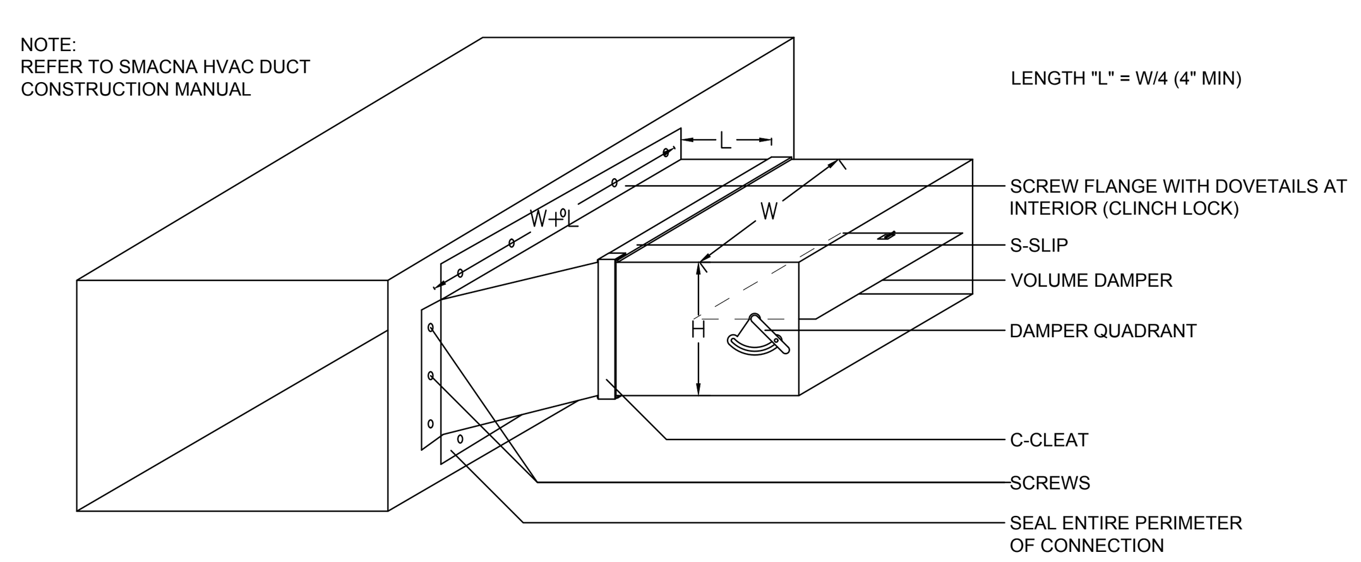
Season	Value	Units	Description	Source
Winter	-17.3	°F	OA Temp	ASHRAE 50 Year Extreme Design Conditions
Winter	70.0	°F	Indoor Temp	2015 IECC Section 302.1
Summer	91.1	°F	OA Dry-Bulb Temp	2013 ASHRAE Fundamentals, Chap 14, Cooling 0.4%
Summer	71.9	°F	OA Wet-Bulb Temp	2013 ASHRAE Fundamentals, Chap 14, Cooling 0.4%
Summer	75.0	°F	Indoor Temp	2015 IECC Section 302.1



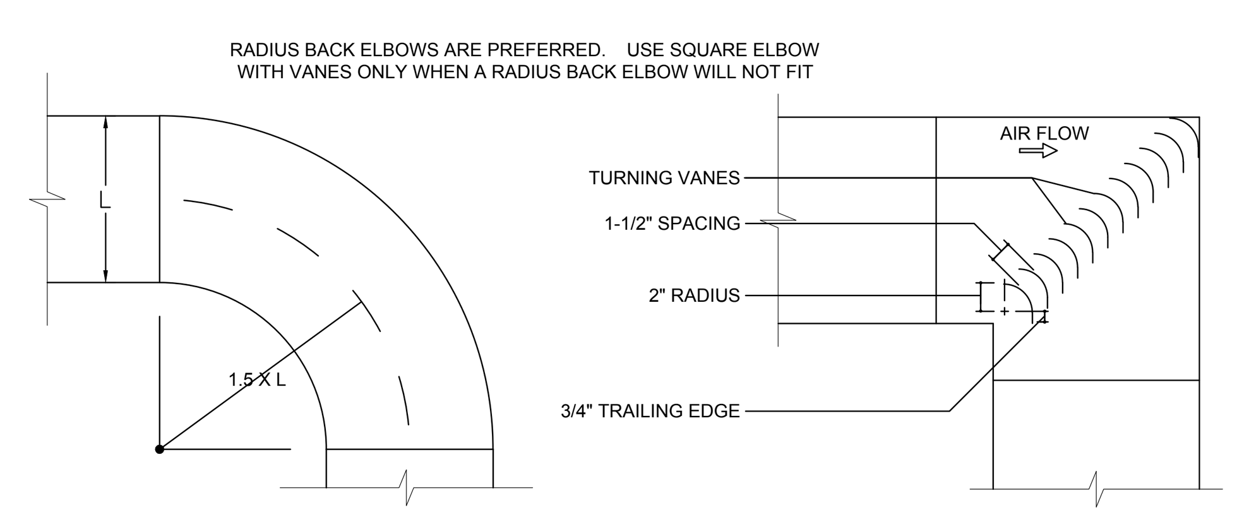
1 M200 TYPICAL ROUND BRANCH DUCT & DIFFUSER
NOT TO SCALE



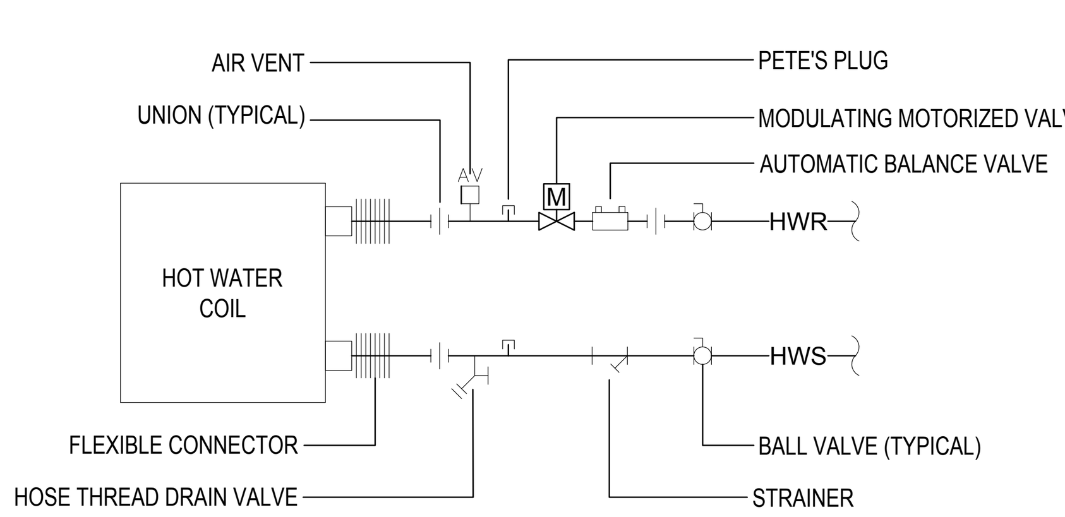
2 M200 TYPICAL DUCT TRANSITION
NOT TO SCALE



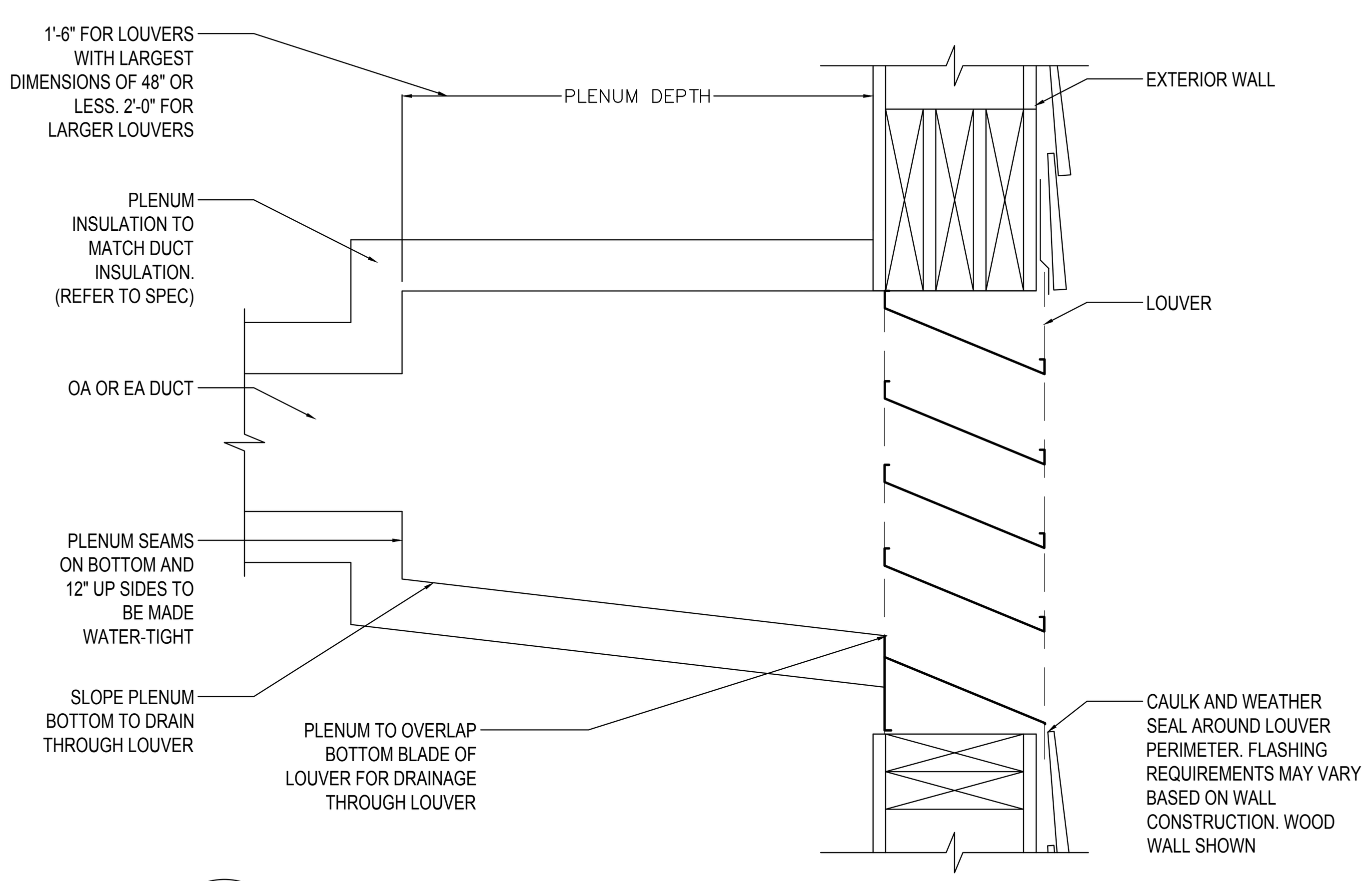
3 M200 TYPICAL RECTANGULAR BRANCH TAKEOFF
NOT TO SCALE



4 M200 TYPICAL RECTANGULAR ELBOW
NOT TO SCALE



5 M200 TYPICAL HOT WATER COIL WITH 2-WAY VALVE
NOT TO SCALE



6 M200 TYPICAL LOUVER AND PLENUM DETAIL
NOT TO SCALE

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	EAT	ENTERING AIR TEMPERATURE	HRV	HEAT RECOVERY VENTILATOR	MPT	MALE PIPE THREAD
AMP	AMPACITY	EC	ELECTRICAL CONTRACTOR	HW	HOT WATER	NA	NOT APPLICABLE
APD	AIR PRESSURE DROP	EER	ENERGY EFFICIENCY RATIO	HWUH	HOT WATER UNIT HEATER	NC	NORMALLY CLOSED
ATC	AUTOMATIC TEMP. CONTROL	EFT	ENTERING FLUID TEMPERATURE	HWCUH	HOT WATER CABINET HEATER	NO	NORMALLY OPEN
BTU/H	BRITISH THERMAL UNITS/HOUR	ERV	ENERGY RECOVERY VENTILATOR	HWR	HOT WATER RETURN	OA	OUTSIDE AIR
CAP	CAPACITY	ESP	EXTERNAL STATIC PRESSURE	HWS	HOT WATER SUPPLY	OD	OUTSIDE DIAMETER
CH	CHILLED	ET	EXPANSION TANK	HX	HEAT EXCHANGER	PD	PRESSURE DROP
CHW	CHILLED WATER	EWT	ENTERING WATER TEMPERATURE	ID	INSIDE DIAMETER	PG	PROPYLENE GLYCOL
C/HWR	CHILLED & HOT WATER RETURN	F	FAHRENHEIT	IN	INCHES	PSI	POUNDS PER SQUARE INCH
C/HWS	CHILLED & HOT WATER SUPPLY	FA	FRESH AIR	KW	KILOWATTS	PH/ø	PHASE
CHWR	CHILLED WATER RETURN	FPD	FLUID PRESSURE DROP	LAT	LEAVING AIR TEMPERATURE	R	RETURN
CHWS	CHILLED WATER SUPPLY	FPM	FEET PER MINUTE	LB/#	POUNDS	RA	RETURN AIR
COND	CONDENSATE	FPT	FEMALE PIPE THREAD	LFT	LEAVING FLUID TEMPERATURE	RTU	ROOFTOP UNIT
CONN	CONNECT OR CONNECTION	FT HD	FEET HEAD	LPS	LOW PRESSURE STEAM	SF	SQUARE FEET
CONV	CONVECTOR	FTR	FIN TUBE RADIATION	LWT	LEAVING WATER TEMPERATURE	SQ IN	SQUARE INCHES
CP	CIRCULATOR PUMP	FW	FRESH WATER	M	MINUTES	S	SUPPLY
CW	COLD WATER	GC	GENERAL CONTRACTOR	MAX	MAXIMUM	SA	SUPPLY AIR
CWR	CONDENSER WATER RETURN	GHWS	GLYCOL & WATER SUPPLY	MBH	THOUSANDS OF BTU/H	TEMP	TEMPERATURE
CWS	CONDENSER WATER SUPPLY	GHWR	GLYCOL & WATER RETURN	MC	MECHANICAL CONTRACTOR	V	VOLTS
DB	DRY BULB	GPM	GALLONS PER MINUTE	MCA	MINIMUM CIRCUIT AMPACITY	W	WATTS
DN	DOWN	HP	HORSEPOWER	MIN	MINUTE OR MINIMUM	WPD	WATER PRESSURE DROP
DX	DIRECT EXPANSION	HPS	HIGH PRESSURE STEAM	MOCP	MAX OVERCURRENT PROTECTION	WB	WET BULB
EA	EXHAUST AIR	HR	HOUR	MPS	MEDIUM PRESSURE STEAM	WC	WATER COLUMN

LEGEND OF PIPING SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PIPE ELBOW UP		BALL VALVE
	PIPE ELBOW DOWN		BUTTERFLY VALVE
	PIPE TEE UP		GATE VALVE
	PIPE TEE DOWN		OS&Y GATE VALVE
	PIPE CROSS OVER		CHECK VALVE
	UNION		BACK FLOW PREVENTER
	FLEXIBLE PIPE CONNECTOR		TRIPLE-DUTY VALVE
	END CAP		TRIPLE-DUTY VALVE WITH MEASUREMENT PORTS
	PETE'S PLUG		2-WAY MOTORIZED VALVE
	HOSE THREAD DRAIN VALVE WITH CAP AND CHAIN		3-WAY MOTORIZED VALVE
	CIRCUIT SETTER		TEMPERING VALVE
	STRAINER		PRESSURE REDUCING VALVE
	STRAINER WITH BLOWDOWN		TEMPERATURE & PRESSURE RELIEF VALVE
	CIRCULATOR PUMP		DIFFERENTIAL PRESSURE BYPASS VALVE
	MANUAL AIR VENT		SOLENOID VALVE
	AUTOMATIC AIR VENT		GAS COCK
	AIR SCOOP		DIRECTION OF FLOW
	AIR SCOOP WITH VENT		DIRECTION OF PITCH
			CONNECT TO EXISTING
	AIR SEPARATOR WITH VENT		PIPE CONTINUES
			THERMOMETER
MARK FEET	FIN TUBE IDENTIFICATION TAG		PRESSURE GAUGE WITH SHUTOFF & PIGTAIL
			VACUUM BREAKER
	FIN TUBE RADIATION WITH COVER		ELECTRIC HEAT TRACING

LEGEND OF DUCT SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	MANUAL BALANCING DAMPER		RECTANGULAR RETURN OR EXHAUST DUCT UP
FD	FIRE DAMPER		ROUND RETURN OR EXHAUST DUCT UP
SD	SMOKE DAMPER		RECTANGULAR RETURN OR EXHAUST DUCT DOWN
SFD	SMOKE & FIRE DAMPER		ROUND RETURN OR EXHAUST DUCT DOWN
	CABLE OPERATED DAMPER		RECTANGULAR SUPPLY DUCT UP
	BACK DRAFT DAMPER		ROUND SUPPLY DUCT UP
M	MOTORIZED DAMPER		RECTANGULAR SUPPLY DUCT DOWN
	SUPPLY AIRFLOW		ROUND SUPPLY DUCT DOWN
	RETURN / EXHAUST AIRFLOW	MARK SIZE CFM	REGISTER, GRILLE AND DIFFUSER IDENTIFICATION TAG
	CONNECT TO EXISTING		

LEGEND OF CONTROL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
T	THERMOSTAT	H	HUMIDISTAT
TS	TEMPERATURE SENSOR	P	PRESSURE SENSOR
CO	CARBON MONOXIDE SENSOR	SD	SMOKE DETECTOR
CO2	CARBON DIOXIDE SENSOR	L	INDICATOR LAMP

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

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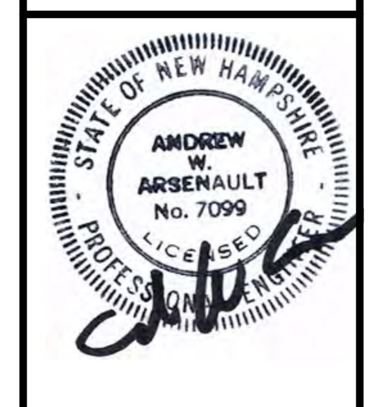

DENNIS MIRES, P.A.
THE ARCHITECTS
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HVAC LEGEND, DESIGN CONDITIONS & DETAILS

RevID	ChID	Change Name	Date

date: 05/22/20
proj. no.: 2017-024

M200

VFR OUTDOOR UNIT SCHEDULE (VRF-OUT)

MARK	SYSTEM #	MAKE	MODEL	COOLING			HEATING		REFRIG	REFRIGERANT PIPING			ELECTRICAL			NOTES
				TONS	TOTAL MBH	IEER	MBH	COP		LIQUID LINE	SUCTION LINE	DISCHARGE LINE	VOLT/PH	MCA	MOCP	
VRF-OUT-1	1	SAMSUNG	AM192KXVTFR/AA	16	189.5	22.50	220.4	3.55	R-410A	5/8	1-1/8	1-1/8	208/3	70 + 70	80 + 80	1
NOTES:																

1. HEAT RECOVERY UNIT, PROVIDE 18" HIGH SNOW STANDS, GC TO PROVIDE CONCRETE HOUSEKEEPING PAD

VRF INDOOR UNIT SCHEDULE (VRF-IN)

MARK	SYSTEM #	SERVES	MAKE	MODEL	TOTAL/SENS COOLING (MBH)	HEATING (MBH)	HIGH/LOW (CFM)	MAX ESP (IN W.C.)	REF PIPE (IN) VAPOR-LIQ UID	VOLT/PH	MCA	MOCP	STYLE	NOTES
VRF-IN-1-1	1	CELLS / BOOKING / INTOX / JUV. INT.	SAMSUNG	AM018MNMDCH/AA	17.4 / 13.3	21.4	406-601	0.60	1/4" - 1/2"	208/1	0.4		MEDIUM STATIC DUCTED	
VRF-IN-1-2	1	LT. OFFICE 012	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-3	1	TRAINING / MEETING ROOM 013	SAMSUNG	AM018MNVDCH/AA	17.3 / 11.7	20.9	290 - 417	-	1/4" - 1/2"	208/1	0.29		HIGH WALL	1
VRF-IN-1-4	1	LOBBY 001	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-5	1	SGT. OFFICE 003	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-6	1	WOMEN'S LOCKER ROOM 116	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-7	1	KITCHEN 115	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-8	1	INTERVIEW 113	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-9	1	LT. SUPPORT 112	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-10	1	DETECTIVE 111	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-11	1	DET. SGT. POLY. 109	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-12	1	VICTIM INT. SUPPORT 110	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-13	1	EVIDENCE 107	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-14	1	WORKSTATIONS 108	SAMSUNG	AM009MNVDCH/AA	9.1 / 6.3	10.5	152 - 201	-	1/4" - 1/2"	208/1	0.19		HIGH WALL	1
VRF-IN-1-15	1	FINGERPRINTING 106	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-16	1	MEETING 102	SAMSUNG	AM009MNVDCH/AA	9.1 / 6.3	10.5	152 - 201	-	1/4" - 1/2"	208/1	0.19		HIGH WALL	1
VRF-IN-1-17	1	LOBBY 101	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-18	1	DISPATCH 105	SAMSUNG	AM007MNVDCH/AA	7.3 / 4.9	8.5	141 - 191	-	1/4" - 1/2"	208/1	0.15		HIGH WALL	1
VRF-IN-1-19	1	POLICE CHIEF 120	SAMSUNG	AM007MNVDCH/AA	7.3 / 4.9	8.5	141 - 191	-	1/4" - 1/2"	208/1	0.15		HIGH WALL	1
VRF-IN-1-20	1	ADMINISTRATION 118-1	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-21	1	ADMINISTRATION 118-2	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-22	1	ADMIN. 119	SAMSUNG	AM005MNVDCH/AA	4.8 / 3.3	5.4	134-155	-	1/4" - 1/2"	208/1	0.13		HIGH WALL	1
VRF-IN-1-23	1	WEIGHT ROOM 211	SAMSUNG	AM007MNVDCH/AA	7.3 / 4.9	8.5	141 - 191	-	1/4" - 1/2"	208/1	0.15		HIGH WALL	1
VRF-IN-1-24	1	LOCKER ROOM 208	SAMSUNG	AM009MNVDCH/AA	9.1 / 6.3	10.5	152 - 201	-	1/4" - 1/2"	208/1	0.19		HIGH WALL	1
VRF-IN-1-25	1	INVESTIGATIONS OFFICE 207	SAMSUNG	AM015MNVDCH/AA	14.4 / 11.1	17.1	212 -314	-	1/4" - 1/2"	208/1	0.31		HIGH WALL	1
VRF-IN-1-26	1	EVIDENCE / RECORDS / ACCESS / ARMORY	SAMSUNG	AM015MNMDCH/AA	14.4 / 9.8	17.8	318 - 388	0.60	1/4" - 1/2"	208/1	0.32		MEDIUM STATIC DUCTED	
NOTES:														

1. PROVIDE CONDENSATE PUMP AS NEEDED

REGISTER GRILLE DIFFUSER SCHEDULE (RGD)

MARK	MAKE	MODEL	DAMPER	PATTERN	NECK SIZE	FRAME STYLE	MATERIAL	DESCRIPTION	NOTES
RGD-S-1	PRICE	SMD	NO	LOUVERED FACE DIRECTIONAL	SEE DWGS	AS NEEDED	STEEL	SUPPLY	
RGD-S-2	PRICE	520D	YES	DOUBLE DEFLECTION	SEE DWGS	AS NEEDED	STEEL	SUPPLY	1
RGD-S-3	PRICE	MSRRG	NO	RISK-RESISTANT GRILLE	SEE DWGS	AS NEEDED	STEEL	SUPPLY	
RGD-R-1	PRICE	85	NO	SIGHT-RESISTANT EGG CRATE	SEE DWGS	AS NEEDED	STEEL	RETURN	
RGD-R-2	PRICE	530	NO	SINGLE 45° DEFLECTION	SEE DWGS	AS NEEDED	STEEL	RETURN	
RGD-E-1	PRICE	530	NO	SINGLE 45° DEFLECTION	SEE DWGS	AS NEEDED	STEEL	EXHAUST	
RGD-E-2	PRICE	MSRRG	NO	RISK-RESISTANT GRILLE	SEE DWGS	AS NEEDED	STEEL	EXHAUST	
NOTES:									

1. RGD MOUNTED DAMPER FOR TRIM ONLY. PRIMARY VOLUME DAMPER TO BE LOCATED IN DUCTWORK.

VRF MODE CHANGE UNIT SCHEDULE (VRF-MCU)

MARK	SYSTEM #	MAKE	MODEL	NUMBER OF PORTS	REF PIPE CONNECTIONS FROM OUTDOOR UNIT (IN)			REF PIPE CONNECTIONS TO INDOOR UNITS (IN)		VOLT/PH	MCA	MOCP	NOTES
					LIQUID	GAS DISCHARGE	GAS	LIQUID	GAS				
VRF-MCU-1-1	1	SAMSUNG	MCUS6NEK2N	6	5/8	1-1/8	1-1/8	(6) 3/8	(6) 5/8	208/1	2	15	
VRF-MCU-1-2	1	SAMSUNG	MCU0S4NEK3N	4	5/8	1-1/8	1-1/8	(4) 3/8	(4) 5/8	208/1	2	15	
VRF-MCU-1-3	1	SAMSUNG	MCUS6NEK2N	6	5/8	1-1/8	1-1/8	(6) 3/8	(6) 5/8	208/1	2	15	
VRF-MCU-1-4	1	SAMSUNG	MCUS6NEK2N	6	5/8	1-1/8	1-1/8	(6) 3/8	(6) 5/8	208/1	2	15	
VRF-MCU-1-5	1	SAMSUNG	MCU0S4NEK3N	4	5/8	1-1/8	1-1/8	(4) 3/8	(4) 5/8	208/1	2	15	
NOTES:													

FAN SCHEDULE (FAN)

MARK	SERVES	MAKE	MODEL	CFM	ESP (IN. WC)	BHP	HP	VOLT/PH	SONES	NOTES
FAN-1	SALLY PORT HIGH EXHAUST	GREENHECK	SE1-12-432-VG	675	0.5	0.18	1/4	115/1	14.9	1,2
NOTES:										

1. PROVIDE WALL SLEEVE SUCH THAT FAN ENCLOSURE (INCLUDING DAMPER D-1) IS FLUSH TO THE INTERIOR OF THE WALL, INTERIOR OF ENCLOSURE TO HAVE GUARD, EXTERIOR OF ENCLOSURE TO END IN DOWN-TURNED WEATHER HOOD WITH BIRD SCREEN
2. PROVIDE DISCONNECT SWITCH

CONDENSING UNIT SCHEDULE (CU)

MARK	SERVES	MAKE	MODEL	NOMINAL TONS	COOLING EFFICIENCY	HEATING EFFICIENCY	LIQUID LINE	SUCTION LINE	REFRIG	VOLT/PH	MCA	MOCP	NOTES
CU-1	DAC-1	SAMSUNG	AR18NSWXCWKXCV	1.50	20.0 SEER	10.0 HSPF	1/4"	1/2"	R-410A	208/1	19.0	30	1,2
NOTES:													

1. COOLING OPERATION TO 0°, HEATING OPERATION TO 5°
2. INDOOR UNIT IS POWERED BY THE CONDENSING UNIT, PROVIDE 18" HIGH SNOW STANDS OR WALL MOUNT BRACKETS AS NEEDED

DUCTLESS AIR CONDITIONER SCHEDULE (DAC)

MARK	SERVES	MAKE	MODEL	COOLING (MBH)	HEATING @ 5 F (MBH)	AIRFLOW (CFM)	MOUNTING	CONDENSATE PUMP	NOTES
DAC-1	IT ROOM	SAMSUNG	AR18NSWXCWKNCV	18.0	20.6	364-551	HIGH WALL	YES	1,2
NOTES:									

1. POWERED FROM OUTDOOR UNIT
2. WIRED CONTROLLER

DAMPER SCHEDULE (D)

MARK	MAKE	MODEL	SIZE (IN.) W x H	CFM	VELOCITY (FPM)	APD (IN WC)	PURPOSE	MATERIAL	NOTES
D-1	GREENHECK	VCD-23	18X18	675	300	0.003	SALLY PORT HIGH EXHAUST	STEEL	1
D-2	GREENHECK	VCD-23	24X16	675	253	0.001	SALLY PORT INTAKE	STEEL	1
D-4	GREENHECK	VCDR-53	9" ROUND	225	510	0.022	AHU-2 OA INTAKE	STEEL	2
D-5	GREENHECK	VCDR-53	8" ROUND	200	573	0.032	AHU-3 OA INTAKE	STEEL	2
D-6	GREENHECK	VCDR-53	8" ROUND	200	573	0.032	AHU-4 OA INTAKE	STEEL	2
D-7	GREENHECK	VCDR-53	10" ROUND	350	642	0.043	AHU-5 OA INTAKE	STEEL	2
NOTES:									

1. 24V ACTUATOR, 2 POSITION, FAIL OPEN
2. 24V ACTUATOR, 2 POSITION, FAIL CLOSED

ENERGY RECOVERY UNIT SCHEDULE (ERV)

MARK	SERVES	MAKE	MODEL	SUPPLY/EXHAUST (CFM)	SUP/EXH ESP (IN. WC)	HEAT EXCHANGER						MHP	ELECTRICAL			FILTERS	NOTES
						WINTER			SUMMER				VOLT/PH	FLA	INPUT WATTS		
						OA DB/WB	RA DB/RH	SA DB	OA DB/WB	RA DB/RH	SA DB/WB						
ERV-1	SALLY PORT & CELLS	RENEWAIRE	EV300	275 / 275	.5 / .5	-17.3 / -17.3	70 / 35%	45.0	91.1 / 71.9	75 / 50%	79.6 / 67.0	.2	120/1	3.3	315	(2) 1" MERV-8	1
NOTES:																	

1. PERCENTAGE TIMER CONTROL (ERV TO RUN CONTINUOUSLY), LINE CORD POWER SUPPLY

LOUVER SCHEDULE (L)

MARK	MAKE	MODEL	SIZE (IN.) W x H	FREE AREA (SQ FT)	CFM	VELOCITY (FPM)	APD (IN WC)	FRAME	BLADES	PURPOSE	MATERIAL	FINISH	SCREEN	NOTES
L-1	GREENHECK	ESD-435	30X18	1.71	950	556	0.04	NON-FLGD	DRAINABLE	OA INTAKE	ALUMINUM	MILL	BIRD	1
L-2	GREENHECK	ESD-435	18X12	0.49	225	459	0.04	NON-FLGD	DRAINABLE	OA INTAKE	ALUMINUM	MILL	BIRD	1
L-3	GREENHECK	ESD-435	36X12	1.07	550	514	0.04	NON-FLGD	DRAINABLE	OA INTAKE	ALUMINUM	MILL	BIRD	1
L-4	GREENHECK	ESD-435	18X12	0.49	200	408	0.04	NON-FLGD	DRAINABLE	OA INTAKE	ALUMINUM	MILL	BIRD	1
L-5	GREENHECK	ESD-435	18X12	0.49	225	459	0.04	NON-FLGD	DRAINABLE	EXHAUST	ALUMINUM	MILL	BIRD	1
NOTES:														

1. COORDINATE PAINT COLOR WITH ARCHITECT

DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:
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NOTE: EQUAL SUBSTITUTIONS FOR THE EQUIPMENT SCHEDULED ON THIS DRAWING WILL BE ACCEPTED (PENDING FINAL APPROVAL FROM THE ENGINEER OF RECORD)

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Amherst, NH

STATE OF NEW HAMPSHIRE ANDREW W. ARSENAULT No. 7099 LICENSED PROFESSIONAL ENGINEER

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HVAC SCHEDULES

RevID	ChID	Change Name	Date

date: 05/22/20

proj. no.: 2017-024

M300

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

DIVISION 23 - HVAC SPECIFICATIONS

I) GENERAL

A) WORK INCLUDED:

1) THESE SPECIFICATIONS INCLUDE GENERAL REQUIREMENTS FOR ALL WORK REPRESENTED ON THESE DRAWINGS. NOT ALL SYSTEMS OR SYSTEM COMPONENTS DESCRIBED IN THESE SPECIFICATIONS ARE NECESSARILY INCLUDED AS A PART OF THIS PROJECT.

2) THE HEATING, VENTILATING, AND AIR CONDITIONING (HVAC) CONTRACTOR SHALL HEREAFTER BE DESCRIBED AS "THE CONTRACTOR" IN THIS HVAC SPECIFICATION. THE CONTRACTOR SHALL PROVIDE, INSTALL, PIPE, DUCT, AND WIRE, AS REQUIRED, HVAC SYSTEMS AS DESCRIBED BELOW, AND SHOWN OR DESCRIBED ON THESE PLANS AND SPECIFICATIONS.

B) QUALITY ASSURANCE:

1) THE INTERNATIONAL MECHANICAL CODE (IMC) 2015, AND THE INTERNATIONAL ENERGY CONSERVATION CODE (IEEC) 2015 ARE THE GOVERNING CODES FOR ALL HVAC WORK. THE CODES AND STANDARDS REFERENCED IN THE MECHANICAL CODE SHALL BE CONSIDERED A PART OF THE REQUIREMENTS OF CODE TO THE PRESCRIBED EXTENT OF EACH SUCH REFERENCE. WHERE DIFFERENCES OCCUR BETWEEN PROVISIONS OF THE CODE AND THE REFERENCED STANDARDS, THE PROVISIONS OF THE CODE SHALL APPLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE REQUIREMENTS OF ALL CODES AS THEY HAVE BEEN ADOPTED BY THE STATE AND LOCAL JURISDICTIONS.

2) EXCEPT AS SPECIFICALLY DESCRIBED OTHERWISE IN THESE SPECIFICATIONS, ALL COMPONENTS ALLOWED WITHIN THE ABOVE REFERENCED CODES SHALL BE ALLOWED AS A PART OF THE WORK.

3) THE WORKMANSHIP AND MATERIALS COVERED BY THESE SPECIFICATIONS SHALL CONFORM TO ALL ORDINANCES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO, ALL APPLICABLE REGULATIONS OF THE CITY, COUNTY, AND STATE.

4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR HVAC PERMITS, INVESTMENT FEES, TAXES, CONNECTION AND INSPECTION FEES AS REQUIRED FOR THE COMPLETE INSTALLATION OF THE HVAC SYSTEM. THE CONTRACTOR SHALL PROVIDE TO THE OWNER ALL CERTIFICATES OF INSPECTION ISSUED BY THE JURISDICTION.

5) THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALL CONDITIONS AFFECTING THE PROPER EXECUTION OF THE CONTRACT, VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.

6) DURING THE PROGRESS OF THE WORK, THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE HVAC INSTALLATION FROM THE LAYOUT AND MATERIALS CONTAINED IN THE APPROVED DRAWINGS AND SPECIFICATIONS.

7) DRAWINGS AND CATALOG CUTS, SHOWING ALL HVAC EQUIPMENT AND SYSTEM COMPONENTS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. FIELD MEASURE AND COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS AND ALL OTHER TRADES THE PROPOSED LOCATIONS FOR NEW EQUIPMENT AND COMPONENTS BEFORE PRODUCING SUBMITTALS. NO ITEMS SHALL BE PURCHASED OR ORDERED BEFORE APPROVAL IS GIVEN BY THE ENGINEER IN WRITING.

8) THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES.

C) RELATED DOCUMENTS:

1) THE GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTAL GENERAL CONDITIONS OF THE CONTRACT AND DIVISION 1 SPECIFICATION SECTIONS PROVIDED BY THE ARCHITECT, AND ALL OTHER DRAWINGS AND SPECIFICATIONS PROVIDED AS A PART OF THIS PROJECT, APPLY TO THIS DIVISION 23 AND TO ALL CONTRACTORS, SUBCONTRACTORS, OR OTHER PERSONS SUPPLYING MATERIALS AND/OR LABOR, ENTERING INTO THE PROJECT SITE AND/OR PREMISES, DIRECTLY OR INDIRECTLY.

2) THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO BE COMPLEMENTARY. A PARTICULAR SECTION, PARAGRAPH OR HEADING IN A DIVISION MAY NOT DESCRIBE EACH AND EVERY DETAIL CONCERNING WORK TO BE DONE AND MATERIALS TO BE FURNISHED. THE DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL OF THE WORK REQUIRED OR ALL CONSTRUCTION DETAILS. DIMENSIONS ARE SHOWN FOR CRITICAL AREAS ONLY AS AN AID TO THE CONTRACTOR; ALL DIMENSIONS AND ACTUAL PLACEMENTS ARE TO BE VERIFIED IN THE FIELD. IT IS TO BE UNDERSTOOD THAT THE BEST TRADE PRACTICES OF THE DIVISION WILL PREVAIL.

3) ALL TRADE SUBCONTRACTORS ARE TO NOTE THAT THE ORGANIZATION OF SPECIFICATIONS INTO DIVISIONS, AND LIKEWISE THE ARRANGEMENT OF THE DRAWINGS, IS SET UP FOR THE CONVENIENCE OF UNDERSTANDING THE SCOPE OF THE WORK ONLY. THIS STRUCTURING SHALL NOT CONTROL THE GENERAL CONTRACTOR IN DIVIDING THE WORK AMONG TRADE SUBCONTRACTORS OR IN ESTABLISHING THE EXTENT OF THE WORK TO BE PERFORMED BY ANY TRADE. REFER TO GENERAL CONDITIONS.

II) PRODUCTS

A) GENERAL MECHANICAL MATERIALS:

1) SLEEVES: GALVANIZED STEELMETAL OR SCHEDULE 40 STEEL PIPE AS APPROPRIATE FOR THE WALL CONSTRUCTION.

2) SLEEVE SEALS: MODULAR TYPE, CONSISTING OF INTERLOCKING SYNTHETIC RUBBER LINKS SHAPED TO CONTINUOUSLY FILL ANNULAR SPACE BETWEEN PIPE AND SLEEVE, CONNECTED WITH BOLTS AND PRESSURE PLATES WHICH CAUSE RUBBER SEALING ELEMENTS TO EXPAND WHEN TIGHTENED, PROVIDING WATERTIGHT SEAL AND ELECTRICAL INSULATION.

3) DRIP PANS: WHERE REQUIRED, PROVIDE DRIP PANS FABRICATED FROM CORROSION-RESISTANT SHEET METAL WITH WATERTIGHT JOINTS, AND WITH EDGES TURNED UP A MINIMUM OF 2-1/2". REINFORCE TOP, EITHER BY STRUCTURAL ANGLES OR BY ROLLING TOP OVER 1/4" STEEL ROD. PROVIDE HOLE, GASKET, AND FLANGE AT LOW POINT FOR WATERTIGHT JOINT AND 1" DRAIN LINE CONNECTION.

4) FIRESTOPPING/FIRE-RESISTANT SEALANT: WHERE REQUIRED, PROVIDE A FIRESTOP SYSTEM APPROPRIATE FOR THE ASSEMBLY PENETRATED AND THE PENETRATING ELEMENT. USE ONLY FIRESTOP PRODUCTS THAT HAVE BEEN UL 1479 OR ASTM E 814 TESTED FOR SPECIFIC FIRE-RATED CONDITIONS CONFORMING TO CONSTRUCTION ASSEMBLY TYPE, PENETRATING ITEM TYPE, ANNULAR SPACE REQUIREMENT AND FIRE-RATING INVOLVED FOR EACH SEPARATE INSTANCE. SUBMIT MANUFACTUER'S SPECIFIC DETAIL FOR EACH TYPE OF PENETRATION.

5) ACCESS DOORS: WHERE REQUIRED FOR PROPER SERVICE AND MAINTENANCE OF ALL MECHANICAL COMPONENTS, PROVIDE STEEL ACCESS DOORS AND FRAMES, FACTORY-FABRICATED AND ASSEMBLED UNITS, COMPLETE WITH ATTACHMENT DEVICES AND FASTENERS SUITABLE FOR THE SERVICE.

B) ELECTRICAL REQUIREMENTS OF MECHANICAL WORK:

1) BASIC ELECTRICAL COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO ALL REQUIRED STARTERS, DISCONNECT SWITCHES, CONTROL DEVICES, AND MOTORS. IT INCLUDES MOTORS THAT ARE FACTORY-INSTALLED AS PART OF EQUIPMENT AND APPLIANCES AS WELL AS FIELD-INSTALLED MOTORS.

2) STARTERS AND DISCONNECTS: WHERE AVAILABLE, PROVIDE FACTORY MOUNTED DISCONNECTS AND STARTERS, OR, WHEN FACTORY MOUNTED STARTERS AND DISCONNECTS ARE NOT AVAILABLE PROVIDE COMBINATION STARTERS AND DISCONNECT SWITCHES, OR, WHERE COMBINATION STARTERS AND DISCONNECT SWITCHES ARE NOT SUITABLE OR AVAILABLE, PROVIDE SEPARATE STARTERS AND DISCONNECTS FOR ALL HVAC EQUIPMENT, AS REQUIRED FOR PROPER INSTALLATION AND OPERATION OF EQUIPMENT.

C) MECHANICAL IDENTIFICATION:

1) PROVIDE EQUIPMENT MARKERS COMPLYING WITH ANSI A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS, AND INSTALLED VIEWING ANGLES OF IDENTIFICATION DEVICES.

2) PLASTIC EQUIPMENT MARKERS: PROVIDE MANUFACTURER'S STANDARD LAMINATED PLASTIC, COLOR CODED EQUIPMENT MARKERS.

3) LETTERING AND GRAPHICS: COORDINATE NAMES, ABBREVIATIONS AND OTHER DESIGNATIONS USED IN MECHANICAL IDENTIFICATION WORK, WITH CORRESPONDING DESIGNATIONS SHOWN, SPECIFIED OR SCHEDULED. PROVIDE NUMBERS, LETTERING AND WORDING AS INDICATED OR, IF NOT OTHERWISE INDICATED, AS RECOMMENDED BY MANUFACTURERS OR AS REQUIRED FOR PROPER IDENTIFICATION AND OPERATION/MAINTENANCE OF MECHANICAL SYSTEMS AND EQUIPMENT.

D) VIBRATION CONTROL AND SEISMIC RESTRAINTS:

1) FIBERGLASS PADS AND SHAPES, NEOPRENE PADS, VIBRATION ISOLATION SPRINGS, PAD-TYPE ISOLATORS, PLATE-TYPE ISOLATORS, DOUBLE-PLATE-TYPE ISOLATORS, THREADED DOUBLE- PLATE-TYPE ISOLATORS, ALL-DIRECTIONAL ANCHORS, NEOPRENE MOUNTINGS, FREE STANDING SPRING ISOLATORS, HOUSED SPRING ISOLATORS, VERTICALLY-RESTRAINED SPRING ISOLATORS, EARTHQUAKE-RESISTANT SPRING ISOLATORS, SEISMIC SNUBBERS, THRUST RESTRAINTS, EQUIPMENT RAILS, FABRICATED EQUIPMENT BASES, INERTIA BASE FRAMES, ROOF-CURB ISOLATORS, ISOLATION HANGERS, RISER ISOLATORS, FLEXIBLE PIPE CONNECTORS SHALL BE PROVIDED AS REQUIRED AND AS SUITABLE FOR USE AND SERVICE.

2) WHERE SEISMIC RESTRAINTS ARE REQUIRED, THE CONTRACTOR SHALL PROVIDE CALCULATIONS, DETAILS AND LOCATIONS THAT ARE STAMPED BY A PROFESSIONAL ENGINEER.

E) DUCTWORK:

1) UNLESS OTHERWISE SPECIFIED, ALL RIGID DUCTWORK SHALL BE SHEET METAL MATERIALS AS SPECIFIED IN ASTM A700, WITH GALVANIZED SHEET STEEL: LOCK-FORMING QUALITY, ASTM A527, COATING DESIGNATION G60; MILL PHOSPHATIZED FINISH.

(a) ALL SA, RA, EA DUCTS ASSOCIATED WITH POOLS SHALL BE ALUMINUM.

2) PRESSURE CLASS AND SEAL CLASS (PER SMACNA):

(a) 2" PRESSURE CLASS, SEAL CLASS A (ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS AND DUCT WALL PENETRATIONS).

3) RECTANGULAR DUCT FABRICATION: FABRICATE RECTANGULAR DUCTS WITH GALVANIZED SHEET STEEL, IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", TABLES 1-3 THROUGH 1-19, INCLUDING THEIR ASSOCIATED DETAILS. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS.

4) WHERE DUCT SUPPORTS ARE REQUIRED BETWEEN THE BUILDING STRUCTURAL FRAMING, SUITABLE INTERMEDIATE STEEL FRAMING SHALL BE PROVIDED BY THE CONTRACTOR.

5) WATER BASED LIQUID RUBBER DUCT SEALANT OR FLANGED JOINT MASTICS SHALL BE ONE-PART, ACID-CURING, SILICONE ELASTOMERIC JOINT SEALANTS, COMPLYING WITH ASTM C920, TYPE S, GRADE NS, CLASS 25, USE O.

6) FLEXIBLE DUCT CONNECTORS SHALL BE INSTALLED AT POINTS AS CLOSE AS POSSIBLE TO AIR HANDLERS AND FANS. THE CONNECTOR SHALL BE AT LEAST FOUR (4") INCHES WIDE AND FABRICATED SPECIFICALLY FOR USE AS A FLEXIBLE CONNECTOR. ALL CONNECTIONS SHALL BE AIR TIGHT AND MADE SO THE CONNECTOR IS UNDAMAGED WHEN THE JOINT IS REMOVED.

7) FLEXIBLE DUCTS: LIMITED TO 6 FEET MAXIMUM STRAIGHT AND FULLY STRETCHED. DO NOT USE FLEX AS AN ELBOW.

(a) INTERNAL FABRIC SHALL BE ACOUSTICALLY RATED BLACK RESILIENT CALENDERED FILM WITH COATED STEEL WIRE HELIX, 2" FIBERGLASS BLANKET (R-6.0), AND FIBERGLASS SCRIM REINFORCED ALUMINIZED POLYESTER FILM VAPOR BARRIER AS EXTERIOR FACING. LISTED AND LABELED AS A CLASS 1 AIR DUCT PER UL STD 181. RATED FOR PRESSURE CLASS LISTED ABOVE. EQUIVALENT TO THERMAFLEX M-KE.

8) BELLMOUTH OR 45 DEGREE TAKEOFFS SHALL BE USED FOR DUCT TAKEOFFS TO MINIMIZE PRESSURE DROP.

9) MANUAL VOLUME DAMPERS SHALL BE INSTALLED AT ALL DUCT TAKEOFFS AND AS NEEDED ELSEWHERE TO PROPERLY BALANCE THE SYSTEMS.

10)FIRE, SMOKE, COMBINATION FIRE/SMOKE DAMPERS AND CEILING RADIATION DAMPERS

(a) FIRE DAMPERS: UL 555 LISTED TYPE "B" (OUT OF AIRSTREAM) 1-1/2 HOUR RATED FOR LESS THAN 3-HOUR FIRE-RESISTANCE RATED ASSEMBLIES AND 3 HOUR RATED FOR 3-HOUR OR GREATER FIRE-RESISTANCE RATED ASSEMBLIES

(1) DYNAMIC FIRE DAMPERS SHALL BE USED IN SYSTEMS DESIGNED TO OPERATE WITH FANS ON DURING A FIRE.

(2) STATIC FIRE DAMPERS MAY BE USED IN SYSTEMS NOT OPERATIONAL DURING A FIRE.

(b) SMOKE DAMPERS: UL 555S LISTED.

(c) COMBINATION FIRE/SMOKE DAMPERS: UL 555 AND UL 555S LISTED

(d) CEILING RADIATION DAMPERS: UL 555C LISTED.

(e) REFER TO BOTH MECHANICAL AND ARCHITECTURAL DRAWINGS FOR THE LOCATION OF RATED ASSEMBLIES.

F) AIR CONDITIONING CONDENSATE PIPING

1) AIR CONDITIONING CONDENSATE PIPING SHALL BE SCHEDULE 40 PVC.

(a) INDOOR UNITS SHALL DRAIN CONDENSATE TO SANITARY OR STORM VIA INDIRECT CONNECTION.

G) REFRIGERATION PIPING SYSTEMS:

1) COPPER TUBE AND FITTINGS:

(a) DRAWN-TEMPER OR ANNEALED COPPER TUBE: ASTM B280, TYPE ACR.

(b) WROUGHT-COPPER FITTINGS: ASME B16.22.

(c) BRAZING FILLER METALS: AWS A5.8, CLASSIFICATION BAG-1 (SILVER)

2) PREINSULATED COPPER ROLLS, SIMILAR TO PDM GELCOPPER ARE ACCEPTABLE.

3) PROVIDE AND INSTALL ALL REFRIGERANT PIPING SPECIALTIES REQUIRED AND RECOMMENDED BY THE REFRIGERATION EQUIPMENT MANUFACTURER.

H) INSULATION:

1) ALL INSULATION SHALL BE UL APPROVED FOR A FLAME SPREAD RATING OF NOT OVER 25 AND A SMOKE DEVELOPED RATING OF NOT OVER 50.

2) ALL INSULATION SHALL CONFORM TO THE REQUIREMENTS OF THE ENERGY CODE.

3) REFRIGERANT PIPING INSULATION SHALL BE FLEXIBLE ELASTOMERIC THERMAL INSULATION: CLOSED-CELL, SPONGE- OR EXPANDED-RUBBER MATERIALS. COMPLY WITH ASTM C 534, TYPE I FOR TUBULAR MATERIALS AND TYPE II FOR SHEET MATERIALS.

(a) ADHESIVE: AS RECOMMENDED BY INSULATION MATERIAL MANUFACTURER.

(b) PROVIDE UV PROTECTIVE COATING ON ELASTOMERIC INSULATION THAT IS EXPOSED TO SUNLIGHT.

(c) REFRIGERANT PIPE INSULATION THICKNESS (40-60F OPERATING TEMPERATURE)

(1) ½" THICK INSULATION FOR 1-1/4" & SMALLER PIPE SIZES.

(2) 1" THICK INSULATION FOR 1-1/2" & LARGER PIPE SIZES.

4) DUCTWORK: ALL INDOOR SUPPLY AND OUTDOOR AIR DUCTS AND PLENUMS (INCLUDING THOSE INSTALLED IN RETURN AIR PLENUMS) SHALL BE INSULATED WITH FIBERGLASS WITH FSK JACKET WITH AN ***INSTALLED*** MINIMUM R-6 FORMALDEHYDE-FREE INSULATION, SIMILAR TO JOHNS MANVILLE MICROLITE EQ TYPE 75, 2-1/5" THICK. INTERNALLY LINED SUPPLY AIR DUCT DOES NOT REQUIRE EXTERNAL INSULATION.

(a) EXHAUST DUCTS SHALL BE INSULATED WITH R-6 TO TEN FEET BACK FROM BUILDING EXTERIOR.

(b) ADDITIONAL DUCTWORK INSULATION REQUIREMENTS MAY BE SHOWN ON THE DRAWINGS.

III) EXECUTION

A) THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, EQUIPMENT, MATERIAL, MACHINERY, PLANS, RIGGING, AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE MECHANICAL SYSTEM. SMALL DETAILS NOT USUALLY INDICATED ON THE DRAWINGS OR SPECIFIED, BUT WHICH ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEM SHALL BE INCLUDED IN THE WORK AND IN THE CONTRACTOR'S ESTIMATE THE SAME AS IF HEREIN SPECIFIED OR SHOWN ON THE DRAWINGS.

B) THE CONTRACTOR SHALL INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THIS INCLUDES CHECKING THE MANUFACTURER'S INSTRUCTIONS TO DETERMINE WHAT TYPE OF GLYCOL SYSTEM MAY BE USED WITHI EQUIPMENT SO AS NOT TO VOID THE WARRANTY OR IMPAIR THE OPERATION OF THE EQUIPMENT. WHERE THE DRAWINGS AND SPECIFICATIONS CONFLICT WITH THE MANUFACTURER'S RECOMMENDATIONS, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO BRING THIS TO THE ATTENTION OF THE ENGINEER.

C) THE HVAC EQUIPMENT MAY NOT BE USED FOR TEMPORARY HEAT DURING CONSTRUCTION. THE HVAC EQUIPMENT SHALL NOT BE STARTED AND TESTED UNTIL ALL CONSTRUCTION ACTIVITY THAT HAS THE POTENTIAL OF CREATING AIR BORNE PARTICULATES THAT COULD BE DRAWN INTO THE HVAC EQUIPMENT AND DUCTWORK SYSTEMS HAS BEEN COMPLETED. IN ADDITION, ALL DUCTWORK OPENINGS SHALL BE SEALED UNTIL THE TIME WHEN THE HVAC EQUIPMENT IS TO BE STARTED AND TESTED.

D) DUCTWORK AND FITTINGS SHALL HAVE ENDS COVERED WITH PLASTIC AT ALL TIMES.

E) UPON COMPLETION OF WORK, THE CONTRACTOR SHALL CLEAN, OIL AND GREASE (UNLESS FACTORY LUBRICATED) ALL FANS, PUMPS, MOTORS, ALL OTHER RUNNING EQUIPMENT AND APPARATUS AND MAKE CERTAIN THAT ALL SUCH APPARATUS AND MECHANISMS ARE IN PROPER WORKING ORDER AND MADE READY FOR TESTING.

F) REPLACE ALL FILTERS USED DURING CONSTRUCTION.

G) EQUIPMENT SHALL BE STARTED, TESTED, ADJUSTED AND PLACED IN SATISFACTORY OPERATING CONDITION BY THE CONTRACTOR.

H) THE CONTRACTOR SHALL INSTRUCT OWNER IN THE PROPER OPERATION OF EQUIPMENT, EXPLAIN THE PROPER OPERATING AND MAINTENANCE PROCEDURES AND SHALL FURNISH THE OWNER WITH ALL INSTRUCTION PAMPHLETS, BOOKS AND OTHER MATERIAL FURNISHED BY THE VARIOUS MANUFACTURERS

I) ALL VIBRATING EQUIPMENT NOT MOUNTED ON THE GROUND FLOOR SHALL BE MOUNTED ON OR SUSPENDED FROM VIBRATION ISOLATORS.

J) EQUIPMENT SHALL BE INSTALLED WITH CLEARANCE FOR PROPER MAINTENANCE. FILTERS, COILS, DRIVES, VALVES, AND CONTROLS SHALL BE ACCESSIBLE FOR SERVICING AND/OR REPLACEMENT.

K) EQUIPMENT SHALL BE COVERED FOR ONE YEAR FROM THE REVIEWING ENGINEER'S DATE OF ACCEPTANCE AND/OR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY, WHICH EVER IS LONGER. THE CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURER'S GUARANTEES OR WARRANTIES.

L) THE WATER AND AIR SYSTEMS SHALL BE BALANCED FROM -10% TO + 10% OF THE GPM AND CFM VALUES SHOWN ON THE APPROVED HVAC PLANS. BALANCING SHALL BE DONE IN ACCORDANCE WITH STANDARDS ESTABLISHED BY THE AABC OR NEBB USING REPORT SHEETS DEVELOPED BY THE AABC OR NEBB. SUBMIT REPORTS TO THE ENGINEER.

END OF DIVISION 23

DIVISION 25 - HVAC CONTROLS AND SEQUENCES OF OPERATION

I) GENERAL

A) REFER TO SPECIFICATION DIVISION 23 - HVAC SPECIFICATIONS, ESPECIALLY GENERAL FOR WORK INCLUDED, QUALITY ASSURANCE AND RELATED DOCUMENTS.

B) PROVIDE A COMPLETE ELECTRIC/ELECTRONIC CONTROL SYSTEM TO ACCOMPLISH ALL CONTROL SEQUENCES AS DESCRIBED BELOW.

C) ALL LINE AND LOW VOLTAGE CONTROL WIRING, TRANSFORMERS, DISCONNECTS, ETC REQUIRED FOR THE CONTROL SYSTEMS THAT IS NOT SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR (HENCEFORTH CALLED "THE CONTRACTOR").

1) LINE VOLTAGE POWER FROM CIRCUIT BREAKERS IN ELECTRICAL PANELS TO CONTROL TRANSFORMERS OR CONTROL DEVICES SHALL BE INSTALLED BY THE CONTRACTOR.

2) COMPLY WITH DIVISION 26 REQUIREMENTS.

3) CONNECT VARIABLE FREQUENCY DRIVES (VFD) AND DUCT & AREA SMOKE DETECTORS (FURNISHED BY OTHERS) INTO CONTROL CIRCUITS TO ACCOMPLISH THE SEQUENCES OF OPERATION

II) PRODUCTS

A) PROVIDE CONTROL PRODUCTS (IF NOT FACTORY PROVIDED BY HVAC EQUIPMENT MANUFACTURER) INCLUDING, BUT NOT LIMITED TO, CONTROL DAMPERS & VALVES, THERMOSTATS, TIMECLOCKS, SENSORS, RELAYS, CONTROLLERS, AND OTHER COMPONENTS AS REQUIRED FOR A COMPLETE INSTALLATION.

B) CONTROL DAMPERS SHALL BE LOW LEAKAGE DAMPERS WITH BLADE AND EDGE SEALS. CLASS 1 WITH LEAKAGE OF LESS THAN 4 CFM/SQFT AT 1.0" W.G. AND 8 CFM/SQFT AT 4.0" W.G.

C) CONTROL VALVES SHALL BE SELECTED FOR FLUID TYPE, TEMPERATURE AND PRESSURE CLASS WHICH MATCH PIPING MATERIALS AND END CONNECTIONS. CONTROL VALVES MUST CLOSE OFF AGAINST MAXIMUM SYSTEM PRESSURE.

D) DAMPER AND VALVE ACTUATORS SHALL BE ELECTRIC, SIZED TO SMOOTHLY OPERATE DAMPER OR VALVE WITH ADEQUATE TORQUE FOR TIGHT SHUTOFF AGAINST MAXIMUM SYSTEM PRESSURE.

1) ACTUATION REQUIREMENTS SHALL BE PER THE SEQUENCES OF OPERATION.

E) ROOM THERMOSTATS SHALL BE 7 DAY PROGRAMMABLE WITH A 5°F DEADBAND BETWEEN HEATING & COOLING AND SETBACK CAPABILITY (55°F HEATING & 85°F COOLING).

1) USER ADJUSTABLE SETPOINTS SHALL BE PROVIDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

III) EXECUTION

A) INSTALL SYSTEMS AND MATERIALS IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS AND ROUGHING-IN DRAWINGS AND DETAILS ON THE DRAWINGS. INSTALL ELECTRICAL COMPONENTS AND USE ELECTRICAL PRODUCTS COMPLYING WITH REQUIREMENTS OF APPLICABLE DIVISION 16 SECTIONS. COORDINATE THE INSTALLATION IN ACCORDANCE WITH FINAL SHOP DRAWINGS, FIELD MEASUREMENTS, MANUFACTURER'S DATA AND AS SPECIFIED HEREIN.

B) MOUNT CONTROLLERS AT CONVENIENT LOCATIONS AND HEIGHTS. COORDINATE WITH ARCHITECT AND OTHER TRADES.

C) PROVIDE REMOTE CONTROL OF MANUAL RESET CONTROLLERS AS REQUIRED FOR USER ACCESSIBILITY. COORDINATE WITH OWNER.

D) THE TERM "CONTROL WIRING" IS DEFINED TO INCLUDE PROVIDING OF WIRE, CONDUIT AND MISCELLANEOUS MATERIALS AS REQUIRED FOR MOUNTING AND CONNECTING ELECTRIC CONTROL DEVICES.

E) INSTALL COMPLETE CONTROL WIRING SYSTEM FOR CONTROL SYSTEMS. CONCEAL WIRING, EXCEPT IN MECHANICAL ROOMS AND AREAS WHERE OTHER CONDUIT AND PIPING ARE EXPOSED. PROVIDE MULTI-CONDUCTOR INSTRUMENT HARNESS (BUNDLE) IN PLACE OF SINGLE CONDUCTORS WHERE A NUMBER OF CONDUCTORS CAN BE RUN ALONG A COMMON PATH. FASTEN FLEXIBLE CONDUCTORS BRIDGING CABINETS AND DOORS NEATLY ALONG HINGE SIDE AND PROTECT AGAINST ABRASION. TIE AND SUPPORT CONDUCTORS NEATLY.

F) INSTALL CIRCUITS OVER 25-VOLT WITH COLOR-CODED THWN/THHN WIRE IN EMT OR MC CABLE AS WHIPS TO EQUIPMENT CONNECTIONS. USE LIQUID-TITE CONDUIT IN EXTERIOR OR HAZARDOUS LOCATIONS.

G) INSTALL CIRCUITS UNDER 25-VOLT WITH COLOR-CODED NO. 18 WIRE WITH INSULATION ON EACH CONDUCTOR AND PLASTIC SHEATH OVER ALL. PROVIDE PLENUM RATED CABLE IN PLENUM CEILINGS.

H) INSTALL LOW VOLTAGE CIRCUITS WHICH ARE LOCATED IN CONCRETE SLABS OR IN MASONRY WALLS IN CONDUIT.

I) WHERE CONTROL WIRING MUST BE SURFACE MOUNTED IN OCCUPIED ROOMS AND IT IS NOT POSSIBLE TO CONCEAL WIRING, RUN WIRING IN WIREMOLD RACEWAY (COLOR BY ARCHITECT).

J) NUMBER-CODE OR COLOR-CODE CONDUCTORS APPROPRIATELY FOR IDENTIFICATION AND SERVICING OF THE CONTROL SYSTEM.

K) DEMONSTRATE CONTROL SYSTEM TO AND TRAIN OWNER'S PERSONNEL IN OPERATION AND MAINTENANCE OF CONTROL SYSTEM.

IV) SEQUENCES OF OPERATION

A) EXISTING AIR HANDLERS AND HOT WATER COILS

1) AHU FANS SHALL OPERATE CONTINUOUSLY DURING OCCUPIED HOURS

2) NEW DUCT TEMPERATURE SENSOR LOCATED IN AHU SUPPLY DUCT SHALL MODULATE THE ASSOCIATED MOTORIZED VALVE TO PROVIDE A 70°F LEAVING AIR TEMPERATURE OFF OF THE HOT WATER COIL.

3) EXISTING AIR HANDLER THERMOSTATS TO REMAIN AND OPERATE AS A SECOND STAGE HEAT. THESE THERMOSTATS SHALL BE SET TO MAINTAIN A ROOM TEMPERATURE OF 55°F AND SHOULD HAVE THE ABILITY TO OVERRIDE THE NEW TEMPERATURE SENSORS MOUNTED IN THE AIR HANDLER'S SUPPLY DUCTWORK.

4) A LOW TEMPERATURE LOCKOUT SHALL SHUT THE OA DAMPER IF THE MIXED AIR TEMPERATURE DROPS TO 40°F.

5) A FREEZESTAT ON THE INCOMING FACE OF THE HOT WATER COIL SHALL STOP THE FAN IN THE AIR HANDLER AND OPEN THE HOT WATER CONTROL VALVE BELOW 40°F.

B) EXISTING BOILER AND ASSOCIATED CIRCULATOR PUMPS

1) WHENEVER THE BOILER IS CALLED TO OPERATE, WHETHER VIA TEMPERATURE SENSORS IN THE AIR HANDLER'S SUPPLY DUCTWORK OR BY THE SPACE MOUNTED THERMOSTATS, IT'S ASSOCIATED INJECTION PUMP SHALL OPERATE.

(a) THE CIRCULATOR PUMPS FOR EACH AIR HANDLER SYSTEM SHALL OPERATE WHENEVER THERE IS A CALL FOR HEATING EITHER FROM THE DUCT TEMPERATURE SENSOR OR THE SPACE MOUNTED THERMOSTAT.

C) VARIABLE REFRIGERANT FLOW UNITS (VRF)

1) INDOOR VRF UNIT FAN SHALL OPERATE ON A CALL FOR HEATING OR COOLING ONLY. (EXCEPT: VRF-IN-1-1 FAN SHALL OPERATE CONTINUOUSLY)

2) THE ASSOCIATED 7-DAY PROGRAMMABLE THERMOSTAT SHALL INCLUDE OCCUPIED AND UNOCCUPIED HEATING AND COOLING SETPOINTS WITH A DEADBAND OF 5°F.

(a) OCCUPIED SETPOINTS SHALL BE 70°F HEATING AND 75°F COOLING.

(b) UNOCCUPIED SETPOINTS SHALL BE 55°F HEATING AND 85°F COOLING.

3) THE OUTDOOR VRF UNIT SHALL OPERATE AS NEEDED TO SATISFY THE INDOOR VRF UNITS.

D) DUCTLESS SPLIT SYSTEMS (DAC)

1) COOLING OR HEATING SHALL OPERATE AS NEEDED TO MAINTAIN ROOM TEMPERATURE OF 70°F HEATING AND 75°F COOLING.

E) FANS

1) FAN-1 SEE SALLY PORT VENTILATION

F) SALLY PORT VENTILATION

1) ERV-1 (@ 50 CFM [GREATER THAN 0.05 CFM/SQ. FT]) SHALL OPERATE CONTINUOUSLY.

2) HIGH LEVEL EXHAUST FROM FAN-1 SHALL BE ACTIVATED UPON SIGNALS FROM THE GAS DETECTION SYSTEM

(a) FAN-1 (675 CFM) SHALL OPERATE SIMULTANEOUSLY WITH ERV-1 (50 CFM EA) TO GIVE A COMBINED HIGH EXHAUST RATE OF 725 CFM (GREATER THAN 0.75 CFM/SQ. FT.).

(b) CO SHALL START FAN-1 AT 35 PPM (RISING) AND SHALL STOP FAN-1 AT 15 PPM (FALLING).

(c) NO2 SHALL START FAN-1 AT 2.5 PPM (RISING) AND STOP FAN-1 AT 1.2 PPM (FALLING).

(d) WHEN FAN-1 IS CALLED TO OPERATE, POWER SHOULD BE REMOVED FROM BOTH D-1 (EXHAUST) & D-2 (INTAKE) SO THAT THEY SHALL FAIL OPEN (WHEN THERE IS NO CALL FOR HIGH LEVEL EXHAUST D-1 & D-2 SHALL BE POWERED CLOSED).

(g) FAN-1 SHALL HAVE NO DELAY

(h) FAN-1 SHALL HAVE A MINIMUM RUN TIME OF FIVE (5) MINUTES.

3) THE FIRE ALARM SYSTEM SHALL BE NOTIFIED VIA SEPARATE DRY CONTACTS IF ANY OF THE FOLLOWING OCCUR:

(a) WARNING LEVEL

(1) SUBJECT TO A ONE (1) MINUTE DELAY

(2) CO SHALL NOTIFY THE FIRE ALARM SYSTEM AT 100 PPM (RISING) AND STOP NOTIFYING THE FIRE ALARM SYSTEM AT 35 PPM (FALLING).

(3) NO2 SHALL NOTIFY THE FIRE ALARM SYSTEM AT 3.0 PPM (RISING) AND STOP NOTIFYING THE FIRE ALARM SYSTEM AT 2.5 PPM (FALLING).

(5) A WARNING LEVEL HAS A TEN (10) MINUTE MINIMUM ON TIME.

(6) THE FIRE ALARM SYSTEM SHALL ACTIVATE STROBE LIGHTS TO NOTIFY OCCUPANTS TO EVACUATE THE SALLY PORT.

(b) ALARM LEVEL

(1) IF CO RISES TO 200 PPM OR NO2 RISES TO 5.0 PPM THE FIRE ALARM SYSTEM SHALL BE NOTIFIED BY ACTIVATING THE HORN OUTPUT.

(2) THE FIRE ALARM SYSTEM SHALL THEN NOTIFY THE FIRE DEPARTMENT.

(c) SYSTEM TROUBLE - STROBE OUTPUT

4) FAN-1, D-1 & D-2 SHALL BE MANUALLY CONTROLLABLE SUBJECT TO A FIRE DEPARTMENT KEY SWITCH.

END OF DIVISION 25

NOTE: A BALANCING REPORT MUST BE COMPLETED TO DOCUMENT THE EXISTING AIRFLOWS AT EACH DIFFUSER CONNECTED TO THE EXISTING AIR HANDLER SYSTEMS. ONCE THAT BALANCING REPORT HAS BEEN COMPLETED, EACH SYSTEM SHOULD BE REBALANCED TO ENSURE THAT THE CORRECT RATIO OF FRESH AIR IS BEING DELIVERED TO EACH SPACE AS LISTED IN THE VENTILATION CALCULATIONS BELOW. WHERE NECESSARY: NEW DUCTWORK, DIFFUSERS & DAMPERS MAY NEED TO BE ADDED IN ORDER TO PROVIDE FRESH AIR TO ALL OF THE ROOMS WHICH REQUIRE IT. CONTRACTOR TO PROVIDE A PER DIFFUSER, PER ADDITIONAL FLEX DUCT, PER BALANCING DAMPER AND PER TAKE-OFF ALLOWANCE IN THEIR QUOTE.

DDMi DESIGN DAY Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW: PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

HVAC PROJECT MANAGER:

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Amherst Police Department, Amherst, NH				Per 2015 IMC Chapter 4 & ASHRAE 62.1-2013												
Ventilation Calculations & Airflows																
			Requirements									Supply	Zp	Return cfm	Exhaust cfm	
		Occupancy	Rp	Pz	Rp*Pz	Ra	Az	Ra*Az	Vbz		Voz	Vpz				
Room #	Room Name	Classification	cfm/p	# Occ	cfm	cfm/sf	Ft2	cfm	cfm	Ez	cfm	cfm				Notes
003	SGT Office	Office	5.0	2	10	0.06	193	12	22	1.0	22	50				
001	Lobby	Main entry lobbies	5.0	2	10	0.06	115	7	17	1.0	17	50				
		100% Outside Air (ERV-1) Total		**4**	**20**		**308**	**18**			**38**	**100**				
002/004	Closet/Hallway	Corridor				0.06	236	14	14	1.0	14	100	0.14			
005	Juvinile INT	Office	5.0	2	10	0.06	58	3	13	1.0	13	75	0.18			
006	Toilet	Toilet room - public					53								125	Existing Intermittent Fan
007	Intox	Office	5.0	2	10	0.06	58	3	13	1.0	13	75	0.18			
008	Booking	Office	5.0	2	10	0.06	243	15	25	1.0	25	200	0.12	375		
009	ADA Cell 3	Cell with plumbing fixtures	5.0	1	5	0.12	60	7	12	1.0	12	50	0.24		75	Exhaust through ERV-1
010	Cell 2	Cell with plumbing fixtures	5.0	1	5	0.12	49	6	11	1.0	11	50	0.22		75	Exhaust through ERV-1
011	Cell 1	Cell with plumbing fixtures	5.0	1	5	0.12	49	6	11	1.0	11	50	0.22		75	Exhaust through ERV-1
		VRF-IN-1-1 Total		**9**	**45**		**806**	**55**	**100**	**1.0**	**100**	**600**	**0.24**	**375**	**350**	
		Actual Total People At Any One Time		**9**		**IMC Requirements**										
						Ev	**D**	**Vou**	**Vot**			**Req OA**				
						0.9	1.00	100	111			**125**				
012	LT. Office	Office	5.0	2	10	0.06	162	10	20	1.0	20	100				
013	Training/Meeting Room	Conference Room	5.0	37	185	0.06	58	3	188	1.0	188	775				
		Existing AHU-2 Total		**39**	**195**		**220**	**13**	**208**	**1.0**	**208**	**875**				
												Req OA				
												225				
100	Hallway	Corridor				0.06	519	31	31	1.0	31	125				
	Toilet	Toilet room - public					26								75	Existing Intermittent Fan
109	Det. Sgt Polygraph	Office	5.0	1	5	0.06	100	6	11	1.0	11	50				
110	Victim Int Support	Office	5.0	1	5	0.06	83	5	10	1.0	10	50				
111	Detective	Office	5.0	2	10	0.06	210	13	23	1.0	23	100				
112	LT. Support	Office	5.0	1	5	0.06	84	5	10	1.0	10	50				
113	Interview	Office	5.0	2	10	0.06	52	3	13	1.0	13	75				
114	Video Storage	Storage Room				0.12	53	6	6	1.0	6	50				
115	Kitchen	Office	5.0	2	10	0.06	143	9	19	1.0	19	75				
116	Womens Locker	Locker/Dressing Room					142								125	Existing Intermittent Fan
117	Jan						34									
118	Administration	Office	5.0	2	10	0.06	177	11	21	1.0	21	100				
119	Admin	Office	5.0	2	10	0.06	79	5	15	1.0	15	75				
120	Police Chief	Office	5.0	2	10	0.06	212	13	23	1.0	23	100				
		Existing AHU-3 Total		**15**	**75**		**1914**	**106**	**181**	**1.0**	**181**	**850**			**200**	
												Req OA				
												200				
101	Lobby	Main entry lobbies	5.0	2	10	0.06	143	9	19	1.0	19	75				
102	Meeting	Conference Room	5.0	8	40	0.06	162	10	50	1.0	50	200				
103	Equipment/Vehicle Storage					0.18	385	69	69	1.0	69	300				
104	Toilet	Toilet room - public					49								75	Existing Intermittent Fan
105	Dispatch	Office	5.0	2	10	0.06	202	12	22	1.0	22	100				
106	Fingerprinting	Office	5.0	2	10	0.06	100	6	16	1.0	16	75				
107	Evidence	Office	5.0	1	5	0.06	95	6	11	1.0	11	50				
108	Workstation	Office	5.0	1	5	0.06	95	6	11	1.0	11	50				
		Existing AHU-4 Total		**16**	**80**		**1231**	**117**	**197**	**1.0**	**197**	**850**			**75**	
												Req OA				
												200				
201	Access	Storage Room				0.12	281	34	34	1.0	34	100				
202	Utility	Storage Room				0.12	88	11	11	1.0	11	50				
204	Armory	Storage Room				0.12	58	7	7	1.0	7	25				
205	Records Room	Storage Room				0.12	161	19	19	1.0	19	75				
206	Evidence Room	Storage Room				0.12	398	48	48	1.0	48	150				
	Meeting Storage	Storage Room				0.12	59	7	7	1.0	7	25				
207	Investigations Office	Conference Room	5.0	20	100	0.06	425	26	126	1.0	126	350				
212	Corridor	Corridor				0.06	211	13	13	1.0	13	50				
211	Weight Room	Health club/Weight Room	20.0	2	40	0.12	212	25	65	1.0	65	175				
210	Toilet Room	Toilet room - public					61								75	Existing Intermittent Fan
208	Locker Room	Locker/Dressing Room					455								125	Existing Intermittent Fan
209	Shower	Shower Room					33								50	Existing Intermittent Fan
		Existing AHU-5 Total		**22**	**140**		**2,442**	**189**		**1.0**	**329**	**1,000**			**200**	
												Req OA				
												350				
	Sally Port	Enclosed Parking Garage				0.05	954	48	48	1.0	48	50			50	
		ERV-1 Total					**954**	**48**		**1.0**	**48**	**50**			**50**	ERV-1 (Continuous), Fan-1 (High Exhaust)
												Req EA			**High EA**	
												50			**725**	

ANDREW W. ARSENAULT
No. 7099

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

AMHERST POLICE STATION
175 Amherst Street
Amherst, NH

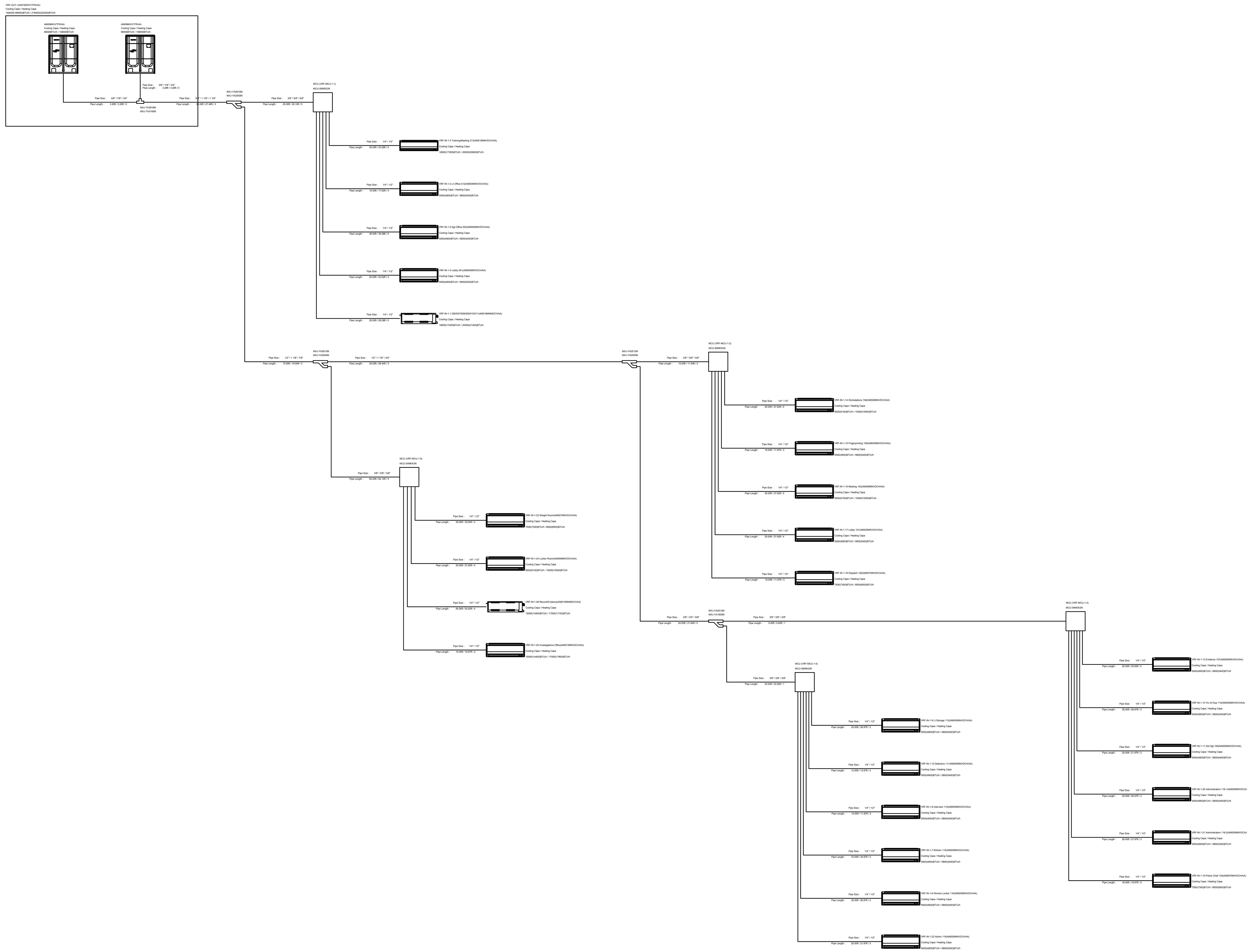
DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067

HVAC SPEC., CONTROL SEQ. & VENT. CALC.

RevID	ChID	Change Name	Date

date: 05/22/20
proj. no.: 2017-024

M400



DESIGN DAY
Mechanicals Inc

THE PROJECT MANAGER FOR THIS PROJECT IS NOTED BELOW. PLEASE REFER ALL QUESTIONS, SUBMITTALS AND CORRESPONDENCE TO THE PROJECT MANAGER.

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AMHERST POLICE STATION
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STATE OF NEW HAMPSHIRE
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LICENSED PROFESSIONAL ENGINEER

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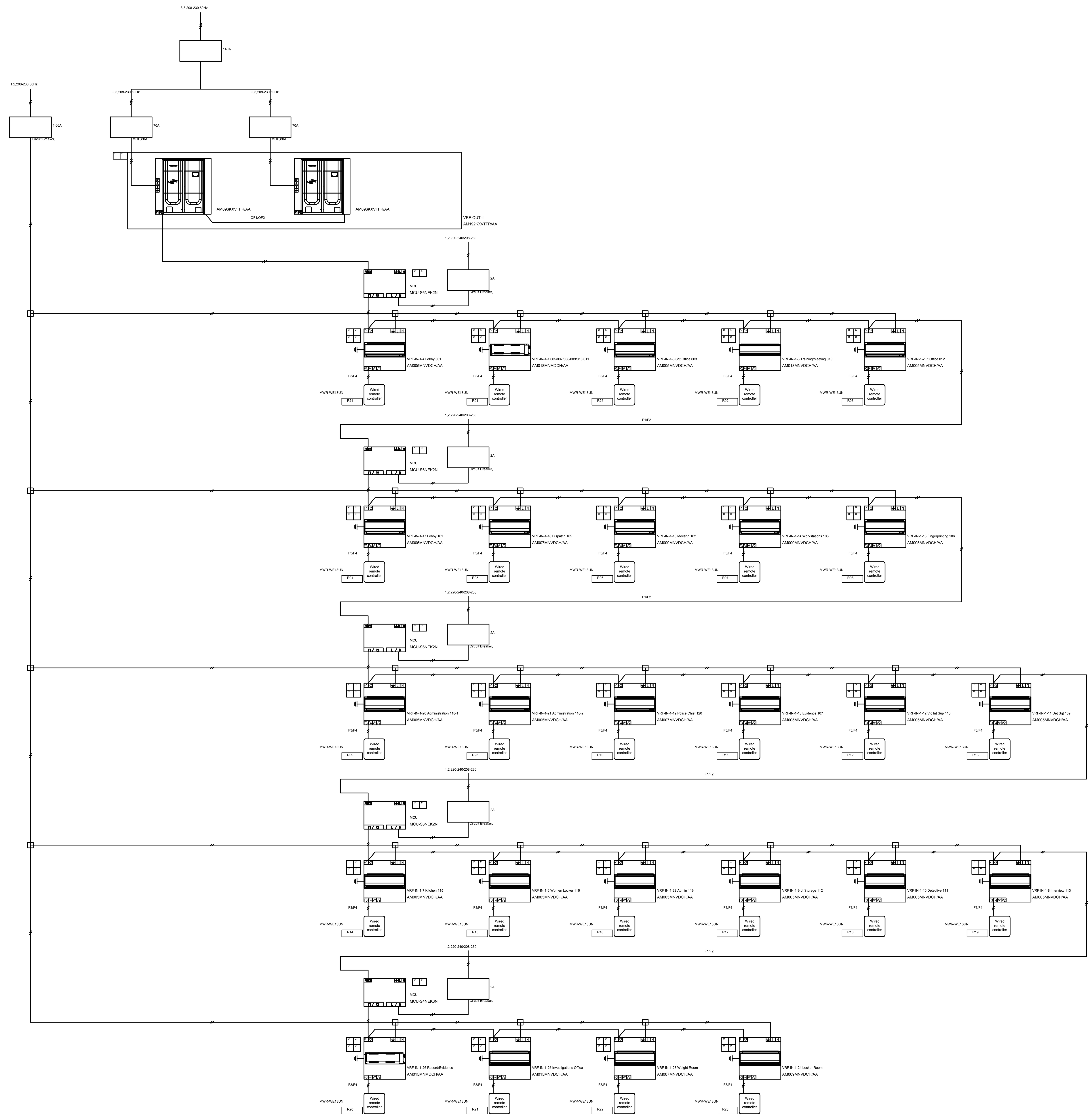
VRF-OUT-1
PIPING
DIAGRAM

date: 05/22/20
proj. no.: 2017-024

M500

CONSTRUCTION DOCUMENTS - BID 2
05/22/20



DESIGN DAY Mechanicals Inc

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VRF-OUT-1 WIRING DIAGRAM

date: 05/22/20
proj. no.: 2017-024

M600

CONSTRUCTION DOCUMENTS - BID 2
05/22/20

/Volumes/ActiveProjects/Amherst Police Station - 2019013 - 2017024/Archicad/Amherst Police Station_V23 20191204.pln Tuesday, February 4, 2020

ELECTRICAL LEGEND

LIGHT OUTLET AND FIXTURE - LETTER REFERS TO FIXTURE SCHEDULE

Symbol	Description
F	FLUORESCENT OR LINEAR INCANDESCENT FIXTURE
C,R OR P	INCANDESCENT, FLUORESCENT, OR H.I.D. FIXTURE
W	WALL MOUNTED FIXTURE
—	DIRECTIONALLY ORIENTATED FIXTURE
OR	FIXTURE EQUIPPED WITH INTEGRAL EMERGENCY BATTERY UNIT OR FIXTURE WIRED TO EMERGENCY CIRCUIT OR EMERGENCY INVERTER
NL	FIXTURE WIRED TO NIGHT LIGHTING CIRCUIT
—	EXIT SIGN - SINGLE FACE DOUBLE FACE - DIRECTIONAL ARROWS AS INDICATED

WIRING DEVICES - SWITCHES 20A., 120/277V. M.H. 48" TO ℄ EXCEPT AS NOTED

Symbol	Description
S	SINGLE POLE
S2	DOUBLE POLE
S3	THREE WAY
S4	FOUR WAY
—	SINGLE POLE SWITCH WITH THERMAL ELEMENT
D	DIMMER SWITCH - 600W-120V. (UNLESS NOTED OTHERWISE) LINEAR SLIDE BAR TYPE
FLD	DIMMER SWITCH - FLOURESCENT RATED - LINEAR SLIDE BAR TYPE
SMC	MAINTAINED CONTACT-THREE POSITION-CENTER OFF-SINGLE POLE-DOUBLE THROW
S	SPEED SWITCH - FURNISHED BY HVAC CONTRACTOR - INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR
SD	DOOR OPERATED SWITCH

OCCUPANCY SENSORS / AUTOMATIC CONTROL DEVICES

Symbol	Description
S	WALL MOUNTED - PIR AND ULTRASONIC, 120/277V RATED, MANUAL OVERIDE, WHITE FINISH - 15 MINUTE SETTING - WATTSTOPPER #DW-100-W
S2	DUAL CIRCUIT WALL MOUNTED - PIR AND ULTRASONIC, 120/277V RATED, MANUAL OVERIDE, WHITE FINISH - 15 MINUTE SETTING - WATTSTOPPER #DW-200-W
S CLG	SURFACE CEILING MOUNTED - PIR AND ULTRASONIC, 120/277V RATED, WHITE FINISH - WITH POWER PACK(S) AS REQUIRED - WATTSTOPPER #DT-300 - EXTENDED RANGE LENS, 24V DC
WP S	WALL MOUNTED LOW TEMPERATURE PIR OCCUPANCY SENSOR - 24V DC, WIDE ANGLE LENS - WATTSTOPPER #CB100 WITH POWER PACK(S) AS REQUIRED - MOUNTED 6" BELOW CEILING
ST	WALL MOUNTED - DIGITAL COUNT DOWN TIMER, 120/277V RATED, MANUAL OVERIDE (FIELD SET DIP SWITCHES AT 2 HOURS), WHITE FINISH - WATTSTOPPER #TS400W
HD S CLG	SURFACE CEILING MOUNTED PASSIVE INFRARED - 24V DC RATED - WHITE FINISH - 15 MINUTE SETTING - HIGH DENSITY LENS. WATTSTOPPER #CI-300-1 WITH POWER PACK(S) AS REQUIRED.
HV/HD S CLG	SURFACE CEILING MOUNTED PASSIVE INFRARED - 24V DC RATED - WHITE FINISH - 15 MINUTE SETTING - HIGH DENSITY LENS. WATTSTOPPER #CI-24-1 WITH INTERNAL ISOLATED RELAY
HV S CLG	SURFACE CEILING MOUNTED PASSIVE INFRARED - 24V DC RATED - WHITE FINISH - 15 MINUTE SETTING - EXTENDED RANGE LENS. WATTSTOPPER #CI-24 WITH INTERNAL ISOLATED RELAY
DT S CLG	SURFACE CEILING MOUNTED DUAL TECHNOLOGY - 24V DC RATED - WHITE FINISH - 15 MINUTE SETTING - HIGH DENSITY LENS. WATTSTOPPER #DT-300 WITH POWER PACK(S) AS REQUIRED.
PP	POWER PACK AND ENCLOSURE - 120/277V, 20A INPUT RATED. WATTSTOPPER #BZ-100
S DIM	WALL MOUNTED PIR DIMMABLE WALL SWITCH SENSOR - 120/277V RATED - WHITE FINISH - 15 MINUTE SETTING. WATTSTOPPER #WD-180-W

DAYLIGHTING SENSORS / AUTOMATIC CONTROL DEVICES

Symbol	Description
SZ DS CLG	SURFACE CEILING MOUNTED DAYLIGHTING CONTROLLER - SINGLE ZONE - 24V DC RATED. WATTSTOPPER #LS-101 WITH POWER PACK(S) AS REQUIRED.
MZ DS CLG	SURFACE CEILING MOUNTED DAYLIGHTING CONTROLLER - MULTI ZONE - 24V DC RATED. WATTSTOPPER WITH POWER PACK(S) AS REQUIRED.
DS	SURFACE CEILING MOUNTED LINE VOLTAGE DAYLIGHT SENSOR. HUBBELL #DLC-PC-O
DS DM	DAYLIGHT SENSOR DIMMING MODULE - 24V DC RATED WATT STOPPER LCD-203 WITH BT-203 POWER PACK AND LS-EB ENCLOSURE - MOUNT HIGH ON WALL ADJACENT TO LITE CONTROLS CONTROL SPLICE BOX (CSB)

CONDUIT AND WIRING (BRANCH AND FEEDER CIRCUITRY)

Symbol	Description
—	CONDUIT AND WIRING - DIAGONAL LINES INDICATE # OF WIRES (GROUNDING WIRE NOT SHOWN) MINIMUM WIRE SIZE #12 AWG. MINIMUM CONDUIT SIZE 3/4" (TYPICAL U.N.O.)
—	CONDUIT TURNING UP
—	CONDUIT TURNING DOWN
—	HOMERUN TO PANELBOARD DESIGNATED - 2 #12 & #12G-3/4"C. TO 20A-1P CIRCUIT BREAKER (TYPICAL UNLESS NOTED OTHERWISE)
—	FLEXIBLE CONDUIT AND EQUIPMENT CONNECTION

MISCELLANEOUS

Symbol	Description
—	INDEXING SYMBOL
—	ELECTRIC RADIATION - FURNISHED AND INSTALLED BY HVAC CONTRACTOR, WIRED BY THE ELECTRICAL CONTRACTOR
SP	PUBLIC ADDRESS FLUSH CEILING MOUNTED SPEAKER WITH VOLUME CONTROL
CR	CARD READER - PROVIDED BY SECURITY SYSTEM VENDOR
J or J	JUNCTION BOX
TC	TIME CLOCK (SWITCH) 7 DAY ASTRONOMIC DIAL - 24 HOUR - DIGITAL CONTROL - BATTERY BACKUP
LV T	LINE VOLTAGE THERMOSTAT
DR	ELECTRIC DOOR RELEASE
PP	POWER POLE - DUAL CHANNEL
TV	COAXIAL OUTLET FOR C.A.T.V.

WIRING DEVICES - RECEPTACLES 20A., 125V. GROUNDING TYPE. M.H. 18" TO ℄ A.F.F. (EXCEPT AS NOTED)

Symbol	Description
—	DUPLEX - WALL MOUNTED
—	DOUBLE DUPLEX
GFI	DUPLEX - GROUND FAULT INTERRUPTER TYPE WITH LED INDICATOR STATUS LIGHT
IG	DUPLEX - ISOLATED GROUND TYPE
WP	DUPLEX - WEATHERPROOF
R	RANGE OUTLET - 50A 125/250V GROUNDING TYPE
TP	TAMPERPROOF TYPE RECEPTACLE
KP	DUPLEX - KICKPLATE MOUNTING
C OR	DUPLEX - MOUNTED 42" A.F.F. OR ABOVE COUNTER BACKSPLASH
C OR USB	DUPLEX WITH INTEGRAL USB PORTS - MOUNTED 42" A.F.F. OR ABOVE COUNTER BACKSPLASH
—	SPECIAL PURPOSE RECEPTACLE - REFER TO FLOOR PLANS FOR TYPE
—	CLOCK OUTLET - SINGLE OR DUPLEX - 15A., 120V., MTD. 8'-0" A.F.F. TO ℄
—	WIREMOLD G4000 DUAL CHANNEL SURFACE MOUNTED (42" A.F.F.) RACEWAY SYSTEM WITH DUPLEX 20A-125V OUTLETS 24" O.C. ALTERNATELY WIRED AND DATA/VOICE OUTLETS AS REQUIRED BY THE TENANT
—	DUPLEX OUTLET WIRED TO NORMAL/EMERGENCY DISTRIBUTION SYSTEM

FLOOR BOXES AND POKE THRU DEVICES

Symbol	Description
FB P	FLUSH MOUNTED POWER FLOOR BOX WITH CONDUIT TAKE-OFF FOR FURNITURE POWER. WALKER #880MP WITH 880MPA, 817P FLANGE AND 829CKI COVER PLATE
FB T D/V	FLUSH MOUNTED TELECOM FLOOR BOX WITH CONDUIT TAKE-OFF FOR VOICE/DATA CABLING. WALKER #880MP WITH 880MPA, 817P FLANGE AND 829CKI COVER PLATE
FB	DUAL GANG FLUSH MOUNTED CAST IRON FLOOR BOX WITH 120V-20A DUPLEX RECEPTACLE, DATA/VOICE OUTLET AND BRASS COVER PLATE
PT	DUAL GANG FLUSH MOUNTED FIRE RATED POKE-THRU DEVICE WITH 20A-125V DUPLEX RECEPTACLE AND DATA/VOICE OUTLET AND BRASS COVER PLATE - REFER TO DETAIL ON DRAWING E-#
PT TV	TRIPLE GANG FLUSH MOUNTED FIRE RATED POKE-THRU DEVICE WITH 20A-125V DUPLEX RECEPTACLE, DATA/VOICE OUTLET AND CATV OUTLET AND BRASS COVER PLATE - REFER TO DETAIL ON DRAWING E-#
FB TV	TRIPLE GANG FLUSH MOUNTED FIRE RATED FLOOR BOX WITH 20A-125V DUPLEX RECEPTACLE, DATA/VOICE OUTLET AND CATV OUTLET AND BRASS COVER PLATE - REFER TO DETAIL ON DRAWING E-#
PT BF	COMBINATION POWER AND VOICE/DATA FIRE RATED MONUMENT TYPE POKE THRU DEVICE FOR FURNITURE SYSTEM CONNECTION - REFER TO DETAIL ON DRAWING E-#
PT BF	POWER ONLY FIRE RATED MONUMENT TYPE POKE THRU DEVICE FOR FURNITURE SYSTEM CONNECTION - REFER TO DETAIL ON DRAWING E-#
PT	VOICE/DATA ONLY FIRE RATED MONUMENT TYPE POKE THRU DEVICE FOR FURNITURE SYSTEM CONNECTION - REFER TO DETAIL ON DRAWING E-#
PT	MONUMENT TYPE FIRE RATED POKE THRU - REFER TO DETAIL ON DRAWING E-#
BF	BASE FEED MODULE CONNECTION TO PARTITION SYSTEM - REFER TO DETAIL ON DRAWING E-#

MOTOR CONTROLS AND DISTRIBUTION EQUIPMENT

Symbol	Description
—	NON-FUSIBLE DISCONNECT SWITCH - RATING AS INDICATED
—	FUSIBLE DISCONNECT SWITCH - RATING AS INDICATED
—	ENCLOSED CIRCUIT BREAKER - RATING AS INDICATED
—	MAGNETIC MOTOR STARTER - NUMERAL INDICATES NEMA SIZE
—	MOTOR - NUMERAL INDICATES HORSEPOWER
CP	CONTROL PANEL
—	TRANSFORMER - NUMERAL INDICATES KVA RATING
—	LIGHTING AND/OR POWER PANELBOARD
—	METER - CHECK METER EMON-DEMON WITH "PEAK DEMAND" READING - AMPERE AS INDICATED
VFD	VARIABLE FREQUENCY DRIVE

EMERGENCY LIGHTING SYSTEMS - 12 VOLT

Symbol	Description
—	BATTERY UNIT - DUAL-LITE #LZ15N12V03L (TYPICAL UNLESS NOTED OTHERWISE)
R	BATTERY UNIT - DUAL-LITE #LZ20N12V03L (TYPICAL UNLESS NOTED OTHERWISE)
M	BATTERY UNIT - DUAL-LITE #EV402L (TYPICAL UNLESS NOTED OTHERWISE)
—	REMOTE HEAD-WALL MOUNTED - DUAL-LITE #LZRSW1203L (TYPICAL U.N.O.) (UL DAMP LOCATION LISTED)
—	REMOTE HEADS-WALL MOUNTED - DUAL-LITE #LZRDW1203L (TYPICAL U.N.O.) (UL DAMP LOCATION LISTED)
—E—	EMERGENCY WIRING - 2#12-1/2" CONDUIT (TYPICAL UNLESS NOTED OTHERWISE)
WP	WEATHERPROOF EMERGENCY REMOTE HEAD - DUAL-LITE #OCRSW1203L
WP	WEATHERPROOF EMERGENCY REMOTE HEADS - DUAL-LITE #OCRDW1203L
TR	EMERGENCY TRANSFER RELAY - REFER TO DETAIL ON DRAWING E-#

BUSWAY DISTRIBUTION SYSTEM

Symbol	Description
—	FEEDER TYPE BUSWAY-AMPERAGE AS INDICATED
—	PLUG-IN TYPE BUSWAY-AMPERAGE AS INDICATED
EC	END CABLE TAP BOX
CB	PLUG-IN CIRCUIT BREAKER UNIT - REFER TO SCHEDULE

EXISTING ELECTRICAL EQUIPMENT

Symbol	Description
ETR	EXISTING EQUIPMENT TO REMAIN
—	DOTTED DENOTES EXISTING EQUIPMENT
XR	EXISTING EQUIPMENT TO BE RELOCATED
RX	NEW LOCATION OF RELOCATED EXISTING ELECTRICAL EQUIPMENT
X	EXISTING EQUIPMENT TO BE REMOVED

FIRE ALARM SYSTEM - ADDRESSABLE

Symbol	Description
FACP	FIRE ALARM CONTROL PANEL
F	MANUAL PULL STATION - M.H. 48" TO ℄ A.F.F. - "S" INDICATES MANUAL STATION WITH STOPPER COVER
—	HORN/STROBE UNIT - M.H. 80" AFF OR 6" BELOW CEILING - CANDELA RATING AS INDICATED
S	SPEAKER/STROBE UNIT - M.H. 80" AFF OR 6" BELOW CEILING - CANDELA RATING AS INDICATED
520	FIRE ALARM 520HZ SOUNDER - M.H. 80" AFF OR 6" BELOW CEILING
—	STROBE UNIT - M.H. 80" A.F.F. OR 6" BELOW CEILING - CANDELA RATINGS AS INDICATED
KK	KEY KEEPER - LOCK BOX - 10 KEY CAPACITY
HD	HEAT DETECTOR - COMBINATION TYPE - "DC" INDICATES DUAL CONTACTS
HD F	HEAT DETECTOR - FIXED TEMPERATURE TYPE
SD	SMOKE DETECTOR - "DC" INDICATES DUAL CONTACTS
SDW	WALL MOUNTED SMOKE DETECTOR
SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE WALL MOUNTED SMOKE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE SMOKE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
CO L	SINGLE OR MULTISTATION LOCAL 120V CARBON MONOXIDE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
TR BSD	BEAM TYPE SMOKE DETECTOR - TRANSMITTER
REC BSD	BEAM TYPE SMOKE DETECTOR - RECEIVER
SA SD	DUCT MOUNTED SMOKE DETECTOR - INSTALLED BY HVAC CONTR.,FURNISHED & WIRED BY ELECT. CONTR.
RTS	REMOTE INDICATING AND TESTING STATION WITH LED INDICATING LIGHT
EB	STANDBY BATTERY UNIT
WF	WATER FLOW SWITCH - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
TS	TAMPER (SUPERVISORY) SWITCH - FURN. & INSTALLED BY SPRINKLER CONTR., WIRED BY ELEC. CONTR.
PIV TS	TAMPER SWITCH - POST INDICATOR VALVE - FURNISHED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR
PS	PRESSURE SWITCH - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
RAI	REMOTE ALARM INDICATOR
RDD	REMOTE DIGITAL DISPLAY UNIT
DH	MAGNETIC DOOR HOLDER
—	RED EXTERIOR FLASHING BEACON
R FA	FIRE ALARM MONITORING RELAY
B	FIRE ALARM BELL - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
MM	MONITOR MODULE
CM	CONTROL MODULE
VOM	VENTILATION OVERIDE MODULE
—	MASTER BOX (SEE SPECIFICATIONS)
SD T	SMOKE DETECTOR WITH INTEGRAL THERMAL ELEMENT
177 SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE SMOKE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE AND VISUAL DEVICE AS WELL AS BATTERY BACKUP. CANDELA RATING AS INDICATED.
CO PE SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE SMOKE DETECTOR WITH INTEGRAL CARBON MONOXIDE DETECTOR, INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
CO SD PE	COMBINATION SMOKE DETECTOR (PHOTOELECTRIC) AND CARBON MONOXIDE DETECTOR WITH THERMAL AND INFRARED HEAT DETECTION
SD VF	SYSTEM PHOTOELECTRIC SMOKE DETECTOR WITH VERIFICATION FEATURE
SB SD VF	SYSTEM PHOTOELECTRIC SMOKE DETECTOR WITH VERIFICATION FEATURE AND 520HZ SOUNDER BASE
CO SB SD PE VF	COMBINATION SMOKE DETECTOR (PHOTOELECTRIC) AND CARBON MONOXIDE DETECTOR WITH THERMAL AND INFRARED HEAT DETECTION, VERIFICATION FEATURE AND 520HZ SOUNDER BASE
FA MV	MULTI-VOLTAGE RELAY - 120V TO 24V DC
SD	SMOKE/FIRE DAMPER FURNISHED AND INSTALLED BY OTHERS, WIRED BY THE ELECTRICAL CONTRACTOR

VOICE/DATA SYSTEMS

Symbol	Description
D/V	DATA/VOICE CONNECTION TO PARTITION SYSTEM - REFER TO DETAIL ON DRAWING E-#
—	VOICE/DATA OUTLET - WALL MOUNTED - REFER TO DETAIL ON DRAWING E-#
—	TELEPHONE OUTLET - WALL MOUNTED - REFER TO DETAIL ON DRAWING E-#
—	DATA OUTLET - WALL MOUNTED - REFER TO DETAIL ON DRAWING E-#
—V—	CABLE HOMERUN TO TERMINAL STRIP - REFER TO NOTES ON VOICE/DATA PLANS
—D—	CABLE HOMERUN TO PATCH PANEL - REFER TO NOTES ON VOICE/DATA PLANS
—	DATA ANTENNA STUB - PROVIDED BY TELECOMMUNICATIONS SYSTEM VENDOR

CABLE TRAY SYSTEMS

Symbol	Description
9	9" WIDE, 4" HIGH ALUMINUM LADDER TYPE CABLE TRAY STRAIGHT SECTION, 6" RUNG SPACING
18	18" WIDE, 4" HIGH ALUMINUM LADDER TYPE CABLE TRAY STRAIGHT SECTION, 6" RUNG SPACING
24	24" WIDE, 4" HIGH ALUMINUM LADDER TYPE CABLE TRAY STRAIGHT SECTION, 6" RUNG SPACING
—	90° HORIZONTAL BEND
—	CABLE TRAY TEE-SIZE AS REQUIRED

NOTE: THIS SYMBOL LIST IS A MASTER SCHEDULE. SOME OF THE SYMBOLS LISTED ABOVE MAY NOT BE APPLICABLE TO THE SCOPE OF WORK FOR THIS PROJECT.

GENERAL NOTES

1. ELECTRICAL CONDUIT SHALL BE RUN CONCEALED WHEREVER POSSIBLE. RUN EXPOSED CONDUIT PERPENDICULAR OR PARALLEL TO BUILDING WALLS OR COLUMNS.

2. WIRE AND CONDUIT SIZES INDICATED ON HOMERUNS SHALL RUN CONTINUOUS THROUGHOUT CIRCUIT.

3. A PROPERLY SIZED EQUIPMENT GROUNDING CONDUCTOR SHALL BE RUN WITH ALL CIRCUITS INSTALLED IN PVC, EMT OR RIGID STEEL RACEWAYS AND IN ALL PREMANUFACTURED WIRING SYSTEMS.

4. CONDUITS AND CIRCUITRY INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC ONLY. FINAL LOCATION OF CONDUIT SHALL BE FIELD COORDINATED SO AS TO AVOID CONFLICTS WITH OTHER TRADES.

5. ALL 120V BRANCH CIRCUITS WHEN 100 LINEAR FEET OR MORE FROM LAST OUTLET OR FIXTURE IN CIRCUIT TO RESPECTIVE PANELBOARDS SHALL BE A MINIMUM OF #10 AWG COPPER WIRE(S).

6. ALL 208V OR 277V BRANCH CIRCUITS WHEN 200 LINEAR FEET OR MORE FROM LAST OUTLET OR FIXTURE IN CIRCUIT TO RESPECTIVE PANELBOARDS SHALL BE A MINIMUM OF #10 AWG COPPER WIRE(S).

7. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT WITH H.V.A.C., PLUMBING, AND FIRE PROTECTION CONTRACTOR'S.

8. COORDINATE EXACT LOCATION OF TENANT EQUIPMENT WITH THE ARCHITECT'S FIELD SUPERVISOR.

9. RACEWAYS RUN THROUGH AREAS OF WIDELY DIFFERENT TEMPERATURES SHALL BE SEALED WITH A PLIABLE COMPOUND AT THE VARIANT TEMPERATURE AREA.

10. WHEN ROUGHING IN, OUTLET BOXES FOR DEVICES SHALL BE MEASURED OFF OF FINISHED FLOOR TO A SET HEIGHT, AND THEN ALIGNED HORIZONTALLY SO THAT ALL DEVICES WILL BE LEVEL WITHIN A GIVEN AREA.

11. PROVIDE ELECTRICAL OUTLET DEVICE PLATE GASKETS IN ALL WIRING DEVICE BOXES INSTALLED IN WALLS SEPARATING CONDITIONED AND UNCONDITIONED SPACES.

12. ALL RACEWAY PENETRATIONS THROUGH FIRE RATED WALL, CEILING, OR FLOOR ASSEMBLIES SHALL BE PROPERLY FIRE SEALED.

13. PROVIDE SEISMIC RESTRAINTS FOR ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE, 2015 EDITION RECOMMENDATIONS. SEISMIC SYSTEM DESIGN AND CALCULATIONS SHALL BE PREPARED AND STAMPED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.

14. OUTLETS OR DEVICES MOUNTED ON EXISTING CMU OR CONCRETE WALLS SHALL BE SURFACE MOUNTED IN APPROPRIATE BOXES.

15. ELECTRICAL RACEWAYS WHICH TRAVERSE THROUGH CMU WALLS SHALL BE PROPERLY WEATHERSEALED.

16. FEEDERS OR BRANCH CIRCUITS TO ALL ELECTRICALLY POWERED ROOFTOP MOUNTED EQUIPMENT SHALL BE RUN IN THE JOIST SPACE ON THE UNDERSIDE OF THE ROOF DECK. FOR ROOFTOP AIR CONDITIONING UNITS THE POWER CIRCUIT AND RACEWAY SHALL RISE UP TO THE TERMINALS OF THE UNIT CONTROL PANEL WITHIN THE CURB CUT OPENING. FOR ALL OTHER ELECTRICALLY POWERED ROOFTOP EQUIPMENT PROVIDE PITCH POCKETS AND RACEWAY SEALS AS REQUIRED.

17. BACK TO BACK RECEPTACLES, SWITCH, AND/OR VOICE/DATA DEVICES AND OUTLETS WILL NOT BE ALLOWED IN THE SAME STUD SPACE OF ACOUSTICALLY TREATED OR FIRE RATED WALL PARTITIONS.

18. CONFIRM THE VOLTAGE AND AMPERAGE CHARACTERISTICS OF ALL ELECTRICALLY POWERED HVAC, PLUMBING OR FIRE PROTECTION EQUIPMENT WITH THE MECHANICAL CONTRACTORS PRIOR TO COMMENCING WORK AND BEFORE ORDERING ELECTRICAL DISTRIBUTION EQUIPMENT.

19. THE ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL RIGID OR FLEXIBLE WIRING SYSTEMS INSTALLED CONCEALED ABOVE SUSPENDED CEILINGS ARE NOT VISIBLE (FROM THE FINISHED SPACE) THROUGH PERFORATED OR BLADE TYPE SUPPLY OR RETURN AIR CEILING REGISTERS OR DIFFUSERS.

20. THE VOICE/DATA CONTRACTOR SHALL ENSURE THAT ALL RIGID OR FLEXIBLE WIRING SYSTEMS INSTALLED CONCEALED ABOVE SUSPENDED CEILINGS ARE NOT VISIBLE (FROM THE FINISHED SPACE) THROUGH PERFORATED OR BLADE TYPE SUPPLY OR RETURN AIR CEILING REGISTERS OR DIFFUSERS.

21. ALL WALL MOUNTED LIGHTING CONTROL DEVICES (I.E. ELECTRONIC TIMER SWITCHES, OCCUPANCY SENSORS, ETC.) SHALL HAVE A NEUTRAL CONDUCTOR INCLUDED WITH THE SWITCH LEGS OR CIRCUIT CONDUCTORS RUN FROM THE WALL BOX TO THE AREA LIGHTING CONTROLLED.

22. STRUCTURAL METAL THAT IS INTERCONNECTED TO FORM A METAL BUILDING FRAME OR THAT IS NOT INTERCONNECTED, BUT IS LIKELY TO BECOME ENERGIZED, AND IS NOT INTENTIONALLY GROUNDED SHALL BE BONDED TO THE BUILDING GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH N.E.C. TABLE 250.66.

23. ALL WIRING DEVICES SHALL HAVE THEIR PANELBOARD ORIGIN AND CIRCUIT NUMBERS STAMPED OR TAPED ON THE BACKSIDE OF THEIR ASSOCIATED WALLPLATE.

24. WIRING DEVICE COLORS SHALL AS FOLLOWS, UNLESS NOTED OTHERWISE: NORMAL POWER DEVICES: WHITE WITH WHITE WALL PLATES. ISOLATED GROUND: ORANGE WITH WHITE WALLPLATES. NORMAL/STANDBY OR EMERGENCY POWER: RED WITH RED FACEPLATES. UPS POWER: GREEN WITH WHITE FACEPLATES. CONFIRM COLOR OF DEVICES AND WALLPLATES WITH ARCHITECT PRIOR TO ORDERING.

25. ALL WIRING DEVICES, OUTLET BOXES, ETC SHALL BE FLUSH MOUNTED IN NEW WALLS OR CEILINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.

26. ALL NEMA 5-15R AND 5-20R RECEPTACLES SHALL BE TAMPER RESISTANT TYPE UNLESS SPECIFICALLY NOTED OTHERWISE.

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ISSUE	DATE	DESCRIPTION
	5-20-2020	

LEGEND & GENERAL NOTES

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ELECTRICAL SPECIFICATIONS

1. THE GENERAL CONDITIONS SHALL BE CONSIDERED AS FORMING A PART OF THESE SPECIFICATIONS AND SHALL BE CAREFULLY EXAMINED BEFORE PROPOSALS FOR ANY WORK ARE SUBMITTED.

2. THE SCOPE OF WORK SHALL CONSIST OF ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE ALL WORK INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS. THE WORK SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, THE FOLLOWING:

   A. MODIFICATIONS TO THE SECONDARY DISTRIBUTION SYSTEM AS INDICATED ON THE DRAWINGS.

   B. GROUNDING AND BONDING OF ELECTRICAL SYSTEMS AND EQUIPMENT.

   C. WIRING DEVICES (SWITCHES AND RECEPTACLES) COMPLETE WITH ASSOCIATED WALL PLATES.

   D. POWER WIRING TO HVAC, PLUMBING AND FIRE PROTECTION EQUIPMENT OR APPLIANCES.

   E. LIGHTING SYSTEM INCLUDING ALL FIXTURES, LAMPS, SWITCHING, ETC. AS REQUIRED.

   F. FIRE ALARM SYSTEM MODIFICATIONS COMPLETE WITH DEVICES AND WIRING.

   G. ALL OTHER SYSTEMS HEREINAFTER SPECIFIED OR AS INDICATED ON THE DRAWINGS.

3. ALL ELECTRICAL WORK SHALL MEET OR EXCEED THE LATEST REQUIREMENTS OF ALL NATIONAL, STATE, MUNICIPAL AND OTHER AUTHORITIES HAVING JURISDICTION OVER ELECTRICAL CONSTRUCTION WORK AND THE PROJECT.

4. OBTAIN AND PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TESTS, AND COMPLY WITH ALL LAWS, ORDINANCES AND CODES PERTAINING TO THIS PORTION OF THE CONTRACT.

5. ALL WORK PROVIDED UNDER THIS SECTION SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK.

6. PRIOR TO PURCHASING ANY EQUIPMENT OR MATERIALS A LIST OF THEIR MANUFACTURERS AND "SHOP DRAWINGS" CATALOG CUTS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL.

7. ALL BRANCH WIRING, AND MAIN FEEDERS RUN IN EXPOSED AREAS SHALL BE RUN IN EMT RACEWAYS. COORDINATE ANY EXPOSED WIRING WITH ARCHITECT FOR APPROVAL PRIOR TO ROUGHIN. BRANCH CIRCUITRY RUN ABOVE SUSPENDED CEILINGS OR RUN WITHIN STUD WALLS SHALL BE METAL CLAD CABLE TYPE MC W/ INSULATED GROUND CONDUCTOR. ISOLATED GROUND RECEPTACLES CIRCUITS SHALL BE CIRCUITED WITH "HOSPITAL GRADE" BX.

8. ALL WIRING SHALL BE COPPER WITH 600V INSULATION, THWN OR THHN FOR BRANCH CIRCUITRY, AND XHHW FOR FEEDERS. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG. USE SOLID OR STRANDED CONDUCTORS FOR #12 AND #10 AWG. USE STRANDED COPPER FOR #8 AWG AND LARGER.

9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE OUTLET, JUNCTION AND PULL BOXES AT ALL LOCATIONS WHERE THEY ARE REQUIRED TO FACILITATE THE PULLING, SUPPORTING, OR CONNECTING OF WIRES AND CABLES.

10. STANDARD DUPLEX CONVENIENCE RECEPTACLES SHALL BE 20A-125V-3 WIRE, GROUNDING TYPE BACK & SIDE WIRED. NEMA 5-20R, WHITE IN COLOR. STANDARD SWITCHES SHALL BE TOGGLE TYPE, AC QUITE DESIGN, 20A 125V/277V, SPEC GRADE WHITE IN COLOR. PROVIDE WHITE PLASTIC WALLPLATES WITH ALL WIRING DEVICES.

11. ALL EQUIPMENT AND SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH BEST INDUSTRY PRACTICE AND SHALL COMPLY WITH 2017 MASSACHUSETTS // 2017 NATIONAL ELECTRICAL CODE REQUIREMENTS.

12. BEFORE AN APPLICATION FOR FINAL ACCEPTANCE OF THE WORK, ALL TESTS DEEMED NECESSARY BY THE ARCHITECT TO SHOW PROPER EXECUTION OF THE WORK SHALL HAVE BEEN PERFORMED AND COMPLETED IN THE PRESENCE OF THE ARCHITECT. ANY DEFECTS OR DEFICIENCIES DISCOVERED IN ANY OF THE ELECTRIC WORK SHALL BE CORRECTED.

13. AS PART OF THE ELECTRICAL WORK, A COMPLETE SET OF "AS BUILTS" OR RECORD ELECTRICAL DRAWINGS SHALL BE MADE UP AND DELIVERED TO THE ARCHITECT. THE DRAWINGS SHALL BE PREPARED ON AUTOCAD AND SUBMITTED ON DISK AND ONE SET OF REPRODUCIBLE PLOTS AT THE COMPLETION OF THE PROJECT.

14. SUPPORT AND FASTEN ELECTRICAL WORK IN ACCORDANCE WITH BEST INDUSTRY PRACTICE.

15. ALL ELECTRICAL CONDUIT SHALL BE RUN CONCEALED WHEREVER POSSIBLE. RUN EXPOSED CONDUIT PERPENDICULAR OR PARALLEL TO BUILDING WALLS OR COLUMNS.

16. EXCEPT WHERE MODIFIED BY A SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF ANY ELECTRICAL ITEM IN THE DRAWINGS OR SPECIFICATIONS FOR ELECTRICAL WORK CARRIES WITH IT THE INSTRUCTION TO FURNISH, INSTALL AND CONNECT THE ITEM AS PART OF THE ELECTRICAL WORK REGARDLESS OF WHETHER OR NOT IT IS SPECIFICALLY STATED TO DO SO.

17. IT SHALL BE UNDERSTOOD THAT THE SPECIFICATIONS AND DRAWINGS FOR ELECTRICAL WORK ARE COMPLIMENTARY AND ARE TO BE TAKEN TOGETHER FOR A COMPLETE INTERPRETATION OF THE ELECTRICAL WORK, EXCEPT THAT INDICATIONS ON THE DRAWINGS, WHICH REFER TO AN INDIVIDUAL ELEMENTS OF WORK, TAKE PRECEDENCE OVER THE SPECIFICATIONS WHERE THEY CONFLICT WITH SAME.

18. THE ELECTRICAL CONTRACTOR SHALL BE PERMITTED TO INSPECT THE CONDITIONS AT THE SITE, IF HE/SHE SO DESIRES. FAILURE TO INSPECT EXISTING CONDITIONS OR TO FULLY UNDERSTAND THE WORK WHICH IS REQUIRED SHALL NOT EXCUSE THE ELECTRICAL CONTRACTOR FROM HIS/HER OBLIGATIONS TO FURNISH AND INSTALL THE WORK IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE CONTRACT DRAWINGS AND UNDER ALL SITE CONDITIONS AS THEY EXIST.

19. IN SPACES WITHIN SUSPENDED CEILINGS UTILIZED AS RETURN AIR PLENUMS, ALL WIRING SYSTEMS MUST EITHER BE RUN IN METALLIC RACEWAYS OR SHALL BE UL APPROVED FIRE RATED PLENUM CABLE.

20. ALL MATERIALS SHALL BE NEW AND SHALL BEAR THE UL LABEL.

21. THE INSULATION OF EACH WIRE OR CABLE SHALL BE COLOR CODED, AS PER THE 120/208V OR 277/480V 2017 MASSACHUSETTS // 2017 NATIONAL ELECTRIC CODE REQUIREMENTS.

22. QMQB DISTRIBUTION SWITCHES SHALL BE NEMA TYPE HEAVY DUTY (GENERAL DUTY WHERE 60A OR LESS) HORSEPOWER RATED SWITCHES.

23. THE HVAC CONTRACTOR SHALL PROVIDE MAGNETIC MOTOR STARTERS WHERE INDICATED FOR MECHANICAL EQUIPMENT. PROVIDE AUXILIARY CONTACTS IN MOTOR STARTERS WHERE REQUIRED FOR INTERLOCKING PURPOSES.

24. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING OR CORING OF WALL AND FLOOR SURFACES REQUIRED FOR THE INSTALLATION OF ANY ELECTRICAL WORK.

25. PROVIDE A TEMPORARY LIGHTING AND POWER SYSTEM THROUGHOUT THE SPACE FOR USE DURING THE CONSTRUCTION PERIOD. USE THE EXISTING PANELBOARDS FOR THE TEMPORARY FEED POINT. PROVIDE ALL EQUIPMENT THAT MAY BE REQUIRED INCLUDING METERING, PANELS, ETC. REMOVE ALL TEMPORARY WIRING, FIXTURES AND OUTLETS AT THE TERMINATION OF THE CONSTRUCTION PERIOD. THE GENERAL CONTRACTOR SHALL PAY FOR ALL ENERGY CONSUMED DURING THE CONSTRUCTION PERIOD.

26. THE GENERAL CONTRACTOR SHALL X-RAY THE SLAB BEFORE CUTTING OR CORING ANY EXISTING CONCRETE SLABS OR SURFACES.

27. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF ALL EXISTING ELECTRICAL WORK IN THE DESIGNATED RENOVATED AREAS UNLESS SPECIFICALLY NOTED OTHERWISE. COORDINATE ALL ITEMS TO BE DEMOLISHED WITH THE ARCHITECT BEFORE COMMENCING WORK.

28. OUTLETS OR DEVICES MOUNTED ON EXISTING C.M.U. WALLS SHALL BE SURFACE MOUNTED IN APPROPRIATE BOXES.

29. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND RE-INSTALLING ALL EXISTING CEILING TILES REQUIRED FOR THE ELECTRICAL CONTRACTOR TO PERFORM HIS/HER WORK.

30. ALL DRY TYPE TRANSFORMERS SHALL BE VENTILATED TYPE AND SHALL BE TP-1 RATED.

31. ALL WIRING DEVICES SHALL HAVE THEIR PANELBOARD ORIGIN AND CIRCUIT NUMBERS STAMPED OR TAPED ON THE BACKSIDE OF THEIR ASSOCIATED WALLPLATE.

32. PANELBOARDS SHALL BE OF BOLT-ON CONSTRUCTION WITH EQUIPMENT GROUND BAR AND TYPED CIRCUIT DIRECTORIES.

33. ALL NEW FIRE ALARM DEVICES SHALL BE AS MANUFACTURED BY THE EXISTING FIRE ALARM MANUFACTURER.

34. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE FIRE ALARM SYSTEM AT THE COMPLETION OF THE WORK TO THE SATISFACTION OF THE AMHERST FIRE DEPARTMENT OR THE AMHERST AUTHORITY HAVING JURISDICTION.

LIGHT FIXTURE SCHEDULE

MOUNTING	FLUORESCENT	LED	EXIT	LANDSCAPE
RECESSED	FR	R	XR	LR
CEILING/SURFACE	FC	C	XC	LC
WALL	FW	W	XW	LW
PENDANT/SUSPENDED/POLE	FP	P	XP	LP
TRACK	FT	T		LT

TYPE	DESCRIPTION	MANUFACTURER & CATALOG NO.	LAMPS		INPUT		REMARKS
			NO.	TYPE	VOLTS	WATTS	
R1	2 X 2 LED PANEL CEILING RECESSED	METALUX LIGHTING # 22FP3235C	LED	LED 3500K 80 CRI	120	29.2	
R2	2 X 2 LED PANEL CEILING RECESSED	METALUX LIGHTING # 22FP2535HE	LED	LED 3500K 80 CRI	120	20.1	
R3	2 X 2 DECORATIVE PANEL CEILING RECESSED	METALUX LIGHTING # 22EN-LD2-34-UNV-L835-CD1-U	LED	LED 3500K 80 CRI	UNV	28.5	
R4	4" RECESSED DOWNLIGHT CEILING RECESSED	HALO LIGHTING # HC415D010 / HM4 12 830 41 WD H WF	LED	LED 3000K 80 CRI	120	-	
C1	11" LED SURFACE MOUNT DOWNLIGHT CEILING SURFACE	JUNO LIGHTING # JSF 11IN 13LM 35K 90CRI 120 FRPC WH	LED	LED 3500K 90 CRI	120	15	
C2	7" LED SURFACE MOUNT DOWNLIGHT CEILING SURFACE	JUNO LIGHTING # JSF 7IN 13LM 35K 90CRI 120 FRPC WH	LED	LED 3500K 90 CRI	120	13	
C3	4' LED LENSED STRIP CEILING SURFACE	METALUX LIGHTING # 4SLSTP2040DD-UNV	LED	LED 4000k	120	21	
C4	18" DECORATIVE ROUND CEILING SURFACE	TERON LIGHITNG (TLI) # ALANTE AE18"-L35.0-1050 120V BN 30K	LED	LED 3000K 80 CRI	120	35	
C5	4' LED SURFACE WRAP CEILING SURFACE	METALUX LIGHTING # 2APVTLD-40L835	LED	LED 3500k 80 CRI	UNV	39	
C6	4' LED DECORATIVE SURFACE WRAP CEILING SURFACE	METALUX LIGHTING # 4WSL-LD2-40-SRS-UNV-L835-CD1-U	LED	LED 3500K 80 CRI	UNV	35.1	
W1	2' LED CONFINEMENT/ CORRECTIONAL CORNER MOUNT	FAILSAFE # FCC-D2-LD4-2-STD-35-UNV-80/86-EDDI	LED	LED 3500K 80 CRI	UNV	36.6	
W2	4' LED CONFINEMENT/ CORRECTIONAL CORNER MOUNT	FAILSAFE # FCC-D4-LD4-2-STD-35-UNV-80/86-EDDI	LED	LED 3500K 80 CRI	UNV	73.2	
W3	4' LED CORRECTIONAL WALL MOUNT ABOVE MIRROR	FAILSAFE # FMB-D2-LD4-1-STD/1STD-35-UNV-81/84-EDC1	LED	LED 3500K 85 CRI	UNV	36.6	
XW XC XP	SINGLE FACE UNIVERSAL MOUNT ILLUMINATED LED EXIT SIGN WITH INTEGRAL EMERGENCY BATTERY	LITHONIA LIGHTING # LQM-S-W-3-R-120/277-ELN	LED	LED	120/277	2.9	PROVIDE DIRECTIONAL ARROWS AS INDICATED
XW1 XC1 XP1	DUAL FACE UNIVERSAL MOUNT ILLUMINATED LED EXIT SIGN WITH INTEGRAL EMERGENCY BATTERY	LITHONIA LIGHTING # LQM-S-W-3-R-120/277-ELN	LED	LED	120/277	2.9	PROVIDE DIRECTIONAL ARROWS AS INDICATED
XW2	SINGLE FACE WALL MOUNTED LED EXIT SIGN WITH EMERGENCY BATTERY AND DUAL HEADS	LITHONIA LIGHTING # LHQM-LED-R-HO	LED	LED	120/277	5.3	PROVIDE DIRECTIONAL ARROWS AS INDICATED
XW2A	SINGLE FACE WALL MOUNTED LED EXIT SIGN WITH EMERGENCY BATTERY AND NO HEADS	LITHONIA LIGHTING # LHQM-LED-R-HO-RO	LED	LED	120/277	5.3	PROVIDE DIRECTIONAL ARROWS AS INDICATED

LIGHT FIXTURE SCHEDULE NOTES

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING FIXTURES COMPLETE WITH MOUNTING ACCESSORIES TO MEET JOB CONDITIONS.
2. THE ELECTRICAL CONTRACTOR SHALL VERIFY FIXTURE MOUNTING AND EXACT LOCATIONS AGAINST ARCHITECTS REFLECTED CEILING PLANS, ELEVATIONS AND DETAIL DRAWINGS.
3. SERIES FIXTURES SHALL BE LENGTH AS SHOWN ON DRAWINGS.
4. FIXTURE LETTERS SHOWN ONCE ON A CONTINUOUS ROW OF FIXTURES SHALL BE TYPICAL FOR THAT ROW UNLESS OTHERWISE NOTED.
5. ALL FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, INDEPENDENT OF HUNG CEILING.
6. EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL FIXTURES SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO ROUGHING IN.
7. ALL FLUORESCENT FIXTURES SHALL BE EQUIPPED WITH ENERGY SAVER LAMPS. ALL FLUORESCENT T8 SERIES LAMPS SHALL BE TRIPHOSPHOR LAMPS WITH NO SUBSTITUTIONS.
8. INFORMATION LISTED IN THE SECOND COLUMN OF THE FIXTURE SCHEDULE ABOVE SETS THE GENERAL DESCRIPTION OF EACH FIXTURE. INFORMATION LISTED IN THE THIRD COLUMN OF THE FIXTURE SCHEDULE SETS THE STANDARD OF QUALITY. IF DISCREPANCIES ARISE BETWEEN DESCRIPTION OF FIXTURE AND THE CATALOG NUMBER THEN NOTIFY THE ENGINEER BEFORE ORDERING SAID FIXTURE.
9. ONE LAMP OR THREE LAMP FLUORESCENT LUMINARES USED FOR GENERAL LIGHTING, AND MOUNTED WITHIN TEN FEET OF EACH OTHER AND WITHIN THE SAME ROOM SHALL BE TANDEM WIRED TO ELIMINATE UNNECESSARY USE OF SINGLE LAMP BALLASTS. USE ONE (3) LAMP BALLAST FOR THREE LAMP FIXTURES FOUR FOOT IN LENGTH. USE FOUR LAMP BALLASTS AND TANDEM WIRE ADJACENT TWO LAMP FIXTURES WHEREVER FEASIBLE.
10. ALL LIGHTING FIXTURES MOUNTED OVER OPEN FOOD DISPLAYS OR CASES SHALL BE EQUIPPED WITH LENSES OR THE LAMPS SHALL BE FITTED WITH PROTECTIVE TUBE GUARDS.
11. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR AIMING OR ADJUSTING ALL DIRECTIONALLY ORIENTED FIXTURES AT THE COMPLETION OF THE PROJECT AS PER THE ENGINEERS' DIRECTION.
12. ALL FLUORESCENT FIXTURES SHALL BE EQUIPPED WITH SOLID STATE HIGH FREQUENCY ELECTRONIC BALLASTS IN ACCORDANCE WITH THE SPECIFICATION UNLESS NOTED OTHERWISE. ELECTRONIC BALLASTS MUST BE UTILITY COMPANY "ELIGIBLE" BALLASTS.
13. ALL INDIVIDUALLY MOUNTED AND GROUP OR PATTERN MOUNTED SUSPENDED FIXTURES SHALL BE DONE SO WITH AIRCRAFT CABLE SUSPENSION SYSTEMS, (LENGTHS OR MOUNTING HEIGHTS AS INDICATED). PROVIDE ROUND WHITE 1" DIAMETER CANOPY COVER PLATES FOR CEILING PENETRATIONS OF AIRCRAFT CABLE.
14. MANUFACTURERS AND CATALOG NUMBERS ARE LISTED IN THE FIXTURE SCHEDULE TO SET A STANDARD OF QUALITY FOR THE LIGHTING FIXTURES, SUBSTITUTION OF LIGHTING FIXTURES WILL BE ALLOWED WHEN THE SUBSTITUTED FIXTURE(S) EQUAL OR EXCEED THE AESTHETIC AND PERFORMANCE CHARACTERISTICS OF THE LIGHTING FIXTURE(S) SPECIFIED, AND ARE APPROVED BY THE ENGINEER.
15. FIXTURES WITH LAMPS SPECIFIED AS 8 FOOT IN LENGTH MUST BE PROVIDED AS SPECIFIED. SUBSTITUTION OF TWO TANDEM 4 FOOT LAMPS IN LIEU OF 8 FOOT LAMP WILL NOT BE ACCEPTABLE.
16. ALL POWER CABLE CORD DROPS TO SUSPENSION MOUNTED FIXTURES SHALL BE DONE SO WITH 600V, #12 AWG TYPE SO STRAIGHT CABLE WITH A WHITE COVERED OUTER INSULATING PVC JACKET WITH NO VISIBLE MARKINGS.
17. FOR ALL FIXTURES EQUIPPED WITH REFLECTORS; PROVIDE ALIGNER CLIPS AT ALL FIXTURE JOINTS.
18. ALL RECESSED FIXTURES INSTALLED IN AREAS SEPERATING CONDITIONED AND UNCONDITIONED SPACES SHALL BE IC LABELED.
19. ALL ELECTRONIC BALLASTS SHALL BE UL LISTED AND COMPLY WITH ALL FCC AND NEMA LIMITS. TOTAL HARMONIC DISTORTION LEVELS SHALL BE LESS THAN 20% AND GREATER THAN 10%. CREST FACTORS SHALL BE LESS THAN 1.6 AND POWER FACTOR SHALL BE GREATER THAN 90%.
20. ALL FIXTURES MOUNTED IN COVES SHALL BE FIELD MEASURED AND THE MAXIMUM LENGTH OF UNITS SHALL BE PROVIDED TO CONTINUOUSLY ILLUMINATE COVES.
21. ALL RECESSED GRID CEILING MOUNTED LIGHTING FIXTURES SHALL BE EQUIPPED WITH EARTHQUAKE CLIPS THAT ARE IN COMPLIANCE WITH N.E.C. 410.36 MEANS OF SUPPORT.
22. ALL FLUORESCENT LAMPS OR LED ARRAYS SHALL BE LOW MERCURY T.C.L.P. COMPLIANT.
23. ALL FIXTURES EQUIPPED WITH INTEGRAL EMERGENCY BACKUP BATTERIES SHALL ALSO BE EQUIPPED WITH INTEGRAL TEST SWITCHES THAT ARE ACCESSABLE FROM THE ILLUMINATED SPACE WITHOUT THE REMOVAL OF SUSPENDED ACOUSTICAL CEILINGS OR PERMENANT CEILINGS.
24. ALL FLUORESCENT FIXTURES REFERENCED TO THIS NOTE SHALL BE EQUIPPED WITH UTILITY REBATE ELIGIBLE HIGH EFFICIENCY, HIGH BALLAST FACTOR, INSTANT START ELECTRONIC BALLASTS "QHE" SERIES OR EQUAL.
25. ALL LED LUMINAIRES SHALL COMPLY WITH LM79 AND LM80 TESTING STANDARDS.
26. ALL EXTERIOR LED POLE MOUNTED, GROUND MOUNTED OR BOLLARD TYPE LIGHTING FIXTURES SHALL BE PROVIDED WITH A LUMINAIRE SURGE PROTECTOR (LSP) DEVICE. THE LSP DEVICES SHALL BE LOCATED AT THE ACCESS HAND HOLE FOR ROUTINE MAINTENANCE. LSP SHALL BE THOMAS RESEARCH PRODUCTS # EOL3-20KA WITH AN LED END-OF-LIFE INDICATOR LIGHT, OR APPROVED EQUAL.
27. ALL EXTERIOR BUILDING MOUNTED LED LIGHTING FIXTURES SHALL BE PROVIDED WITH A LUMINAIRE SURGE PROTECTOR (LSP) DEVICE. THE LSP DEVICES SHALL BE LOCATED AT AN ACCESSIBLE LOCATION, JUNCTION BOX MOUNTED, WITHIN THE BUILDING, FOR ROUTINE MAINTENANCE. LSP SHALL BE THOMAS RESEARCH PRODUCTS # BSP3-277-20KA-TN OR APPROVED EQUAL.

Amherst Police Department
175 Amherst Street
Amherst, NH

ELECTRICAL SPECIFICATIONS, SCHEDULES AND NOTES

proj. no.: 2017-024

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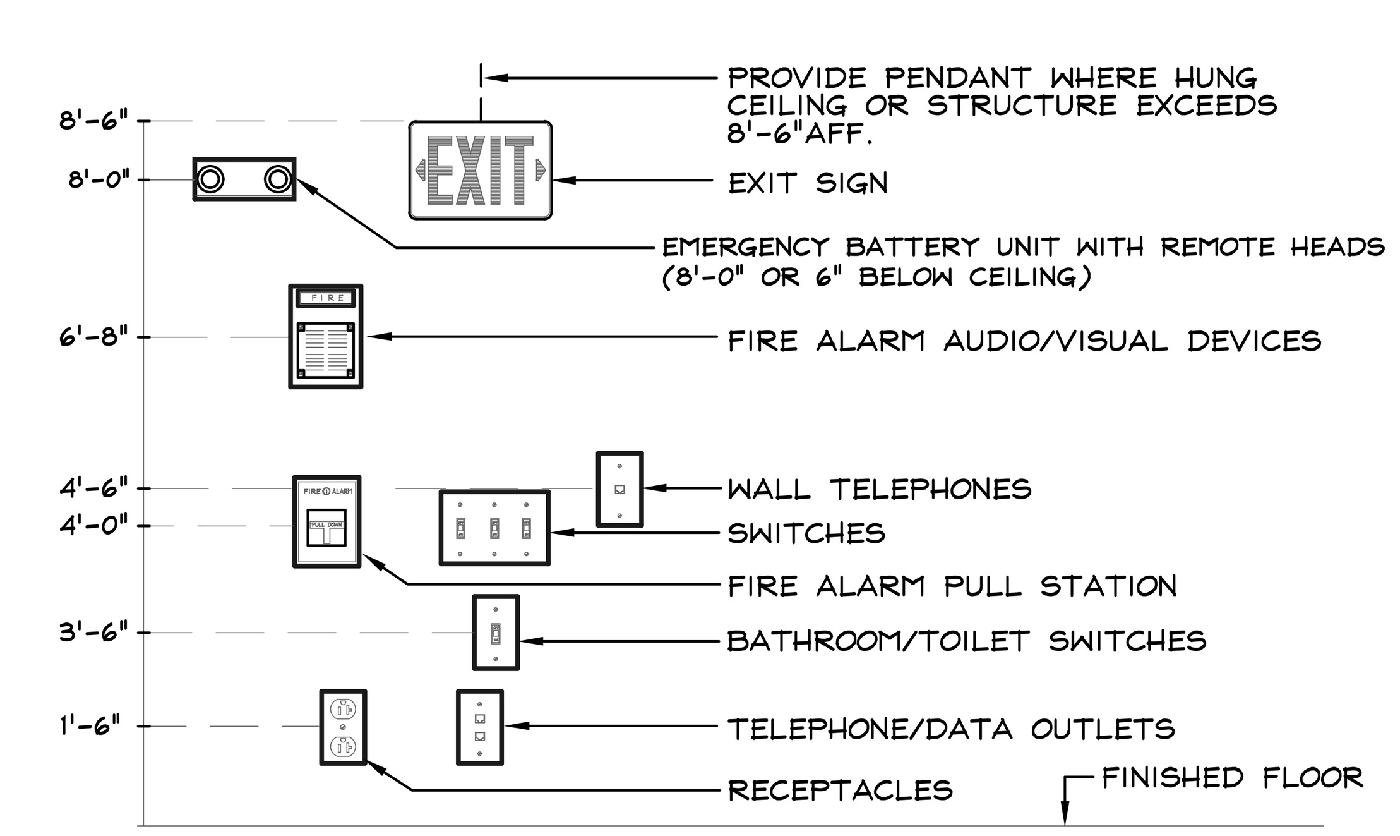
SCHEDULE OF SPECIAL EQUIPMENT

ITEM	EQUIPMENT DESIGNATION	ELECTRICAL RATING: KW	KVA	HP	AMPS	VOLTS	PHASE	WIRE	ELECTRIC WORK REQUIRED
E1	PC	.3	-	-	-	120	1	2	1, 2, 14
E2	PRINTER	.8	-	-	-	120	1	2	1, 2, 14
E3	REFRIDGERATOR	.8	-	-	-	120	1	2	1, 2, 14
E4	POWER ASSISTED DOOR	.1	-	-	-	120	1	2	1, 2, 14
E5	MICROWAVE	1.0	-	-	-	120	1	2	1, 2, 14
E6	SECURITY CONTROL PANEL	.2	-	-	-	120	1	2	1, 2, 14

ELECTRIC WORK NOTES PERTAINING TO SCHEDULE OF SPECIAL EQUIPMENT

1. REFER TO FLOOR PLANS FOR EXACT QUANTITIES OF ALL SCHEDULED EQUIPMENT. ALL SCHEDULED EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY OTHERS.
2. INSERT PLUG OF EQUIPMENT INTO RECEPTACLE.
3. EXTEND INDICATED POWER CIRCUIT AND CONNECT SAME TO THE LINE TERMINALS OF THE EQUIPMENT. WHEN THE SCHEDULED EQUIPMENT IS SUBJECT TO VIBRATION OR MOVEMENT, THE FINAL PORTION OF THE POWER FEED (NOT TO EXCEED 48" IN LENGTH) SHALL BE WITH FLEXIBLE METALLIC CONDUIT. WHEN THE SCHEDULED EQUIPMENT IS SUBJECTED TO MOISTURE THE FINAL PORTION OF THE POWER FEED SHALL BE WITH LIQUID- TITE FLEXIBLE CONDUIT.
4. LEAVE SUITABLE SLACK ON WIRES FOR POWER CIRCUIT CONNECTION BY OTHERS. PROVIDE SUITABLE PLATE ON OUTLET BOX.
5. PROVIDE DISCONNECTING MEANS AND CONNECTIONS AS REQUIRED TO INTERPOSE SAME BETWEEN TERMINATION OF BUILDING WIRING AND LINE TERMINALS OF UNIT -- TYPE OF DISCONNECTING MEANS AND MOUNTING LOCATION TO BE IN ACCORDANCE WITH INSTRUCTION ISSUED BY THE MANUFACTURER OF THE UNIT.
6. PROVIDE CONTROL CIRCUIT RUN FROM EQUIPMENT STARTER. TO ACTUATING DEVICE -- RUN TO CONTAIN AN ADEQUATE NUMBER OF WIRES FOR PROPER OPERATION.
7. EXTEND INDICATED POWER CIRCUIT AND CONNECT TO ILLUMINATED SIGNAGE FURNISHED AND INSTALLED BY OTHERS, WIRED BY ELECTRICAL CONTRACTOR.
8. EQUIPMENT IS PROVIDED WITH UNIT MOUNTED CONTROL PANEL WITH INTEGRAL STARTERS & CONTROLLERS PROVIDE NECESSARY POWER & CONTROL WIRING FOR EQUIPMENT OPERATION.
9. PROVIDE APPROPRIATE NEMA TWIST LOCK OUTLET AS REQUIRED BY EQUIPMENT MANUFACTURER.
10. PROVIDE CIRCUIT BREAKER AS INDICATED FOR LOCAL SHUTOFF.
11. COORDINATE EXACT LOCATION OF POWER FEED ENTRANCE TO EQUIPMENT WITH EQUIPMENT MANUFACTURER. UTILIZE MANUFACTURER'S CASE MOUNTED ELECTRICAL RACEWAYS TO EXTEND WIRING BETWEEN INTERCONNECTED PIECES OF EQUIPMENT.
12. PROVIDE EQUIPMENT ELECTRICAL CORD & PLUGS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
13. PROVIDE ELECTRICAL WORK AS PER DETAIL ON DRAWING E-?.
14. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF WIRING DEVICE WITH EQUIPMENT VENDOR AND GENERAL CONTRACTOR PRIOR TO ROUGHING IN OUTLET BOX FOR DEVICE.
15. EQUIPMENT IS FED VIA OVERHEAD CORD DROP REFER TO DRAWING E-13 FOR CORD DROP DETAIL.

TYPICAL DEVICE MOUNTING HEIGHT DETAIL



NOTES:
1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICES EXCEPT EXIT SIGNS.

2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.

3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.

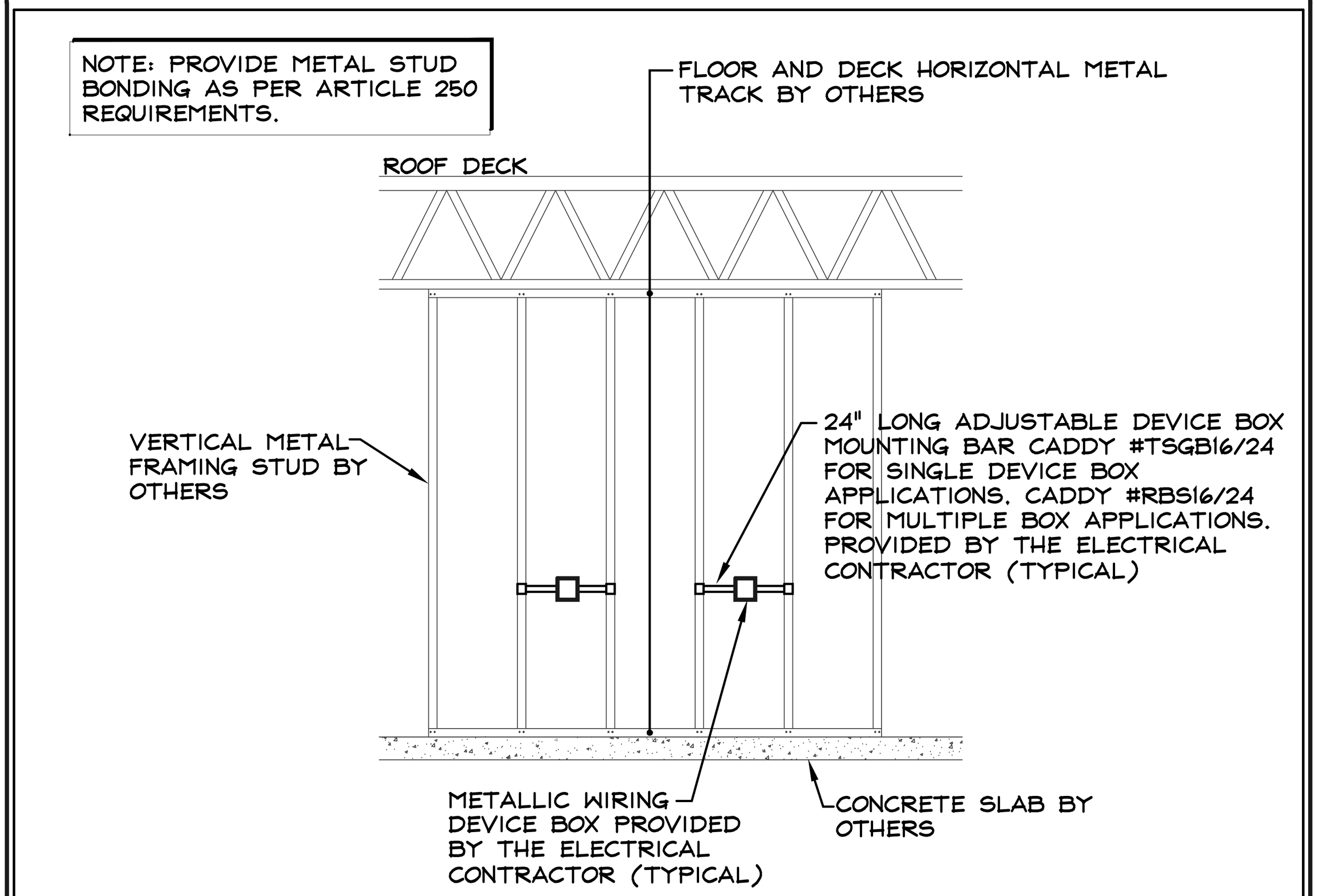
SCHEDULE OF MECHANICAL EQUIPMENT

ITEM	EQUIPMENT DESIGNATION	ELECTRICAL RATING: HP	AMPS	KW	VOLTS	PHASE	ELECTRICAL WORK REQUIRED
CP1	CONDENSATE PUMP	1/6	-	-	120	1	1, 2

ELECTRIC WORK NOTES PERTAINING TO SCHEDULE OF MECHANICAL EQUIPMENT

1. REFER TO FLOOR PLANS FOR EXACT QUANTITIES OF ALL SCHEDULED EQUIPMENT. ALL SCHEDULED EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY OTHERS. UNLESS NOTED OTHERWISE.
2. INSERT PLUG OF EQUIPMENT INTO RECEPTACLE.
3. EXTEND INDICATED POWER CIRCUIT AND CONNECT SAME TO THE LINE TERMINALS OF THE EQUIPMENT. WHEN THE SCHEDULED EQUIPMENT IS SUBJECT TO VIBRATION OR MOVEMENT, THE FINAL PORTION OF THE POWER FEED (NOT TO EXCEED 48" IN LENGTH) SHALL BE WITH FLEXIBLE METALLIC CONDUIT.
4. LEAVE SUITABLE SLACK ON WIRES FOR POWER CIRCUIT CONNECTION BY OTHERS. PROVIDE SUITABLE PLATE ON OUTLET BOX.
5. PROVIDE DISCONNECT MEANS AND CONNECTIONS AS REQUIRED TO INTERPOSE SAME BETWEEN TERMINATION OF BUILDING WIRING AND LINE TERMINALS OF UNIT -- TYPE OF DISCONNECT MEANS AND MOUNTING LOCATION TO BE IN ACCORDANCE WITH INSTRUCTION ISSUED BY THE MANUFACTURER OF THE UNIT.
6. PROVIDE CONTROL CIRCUIT RUN FROM EQUIPMENT STARTER TO ACTUATING DEVICE -- RUN TO CONTAIN AN ADEQUATE NUMBER OF WIRES FOR PROPER OPERATION.
7. EQUIPMENT IS PROVIDED WITH INTEGRAL DISCONNECT SWITCH WITHIN EQUIPMENT HOUSING.
8. EQUIPMENT IS PROVIDED WITH INTEGRAL STARTER AND ACTUATING DEVICE WITH OFF POSITION. PROVIDE NECESSARY POWER AND CONTROL WIRING FOR EQUIPMENT OPERATION.
9. INSTALL CONTROLLER FURNISHED SEPARATE FROM ELECTRIC WORK AS DIRECTED.
10. MOTOR IS PART OF FACTORY WIRED MULTIPLE MOTOR "SINGLE LINE CONNECTION" PACKAGE EQUIPMENT FURNISHED AND INSTALLED SEPARATE FROM ELECTRIC WORK COMPLETE WITH INTEGRAL MOTOR STARTERS. EXTEND INDICATED POWER CIRCUIT TO ONE SET OF LINE TERMINALS AS SHOWN ON THE DRAWINGS.
11. PROVIDE "HAND-OFF-AUTO" CONTROL IN STARTER COVER.
12. PROVIDE WHERE INDICATED ON DRAWINGS A REMOTE "START-STOP" STATION WITH PILOT LIGHT.
13. HVAC CONTRACTOR FURNISHES AND INSTALLS A TIME CLOCK FOR CONTROL OF MOTOR. ELECTRICAL CONTRACTOR WIRES THE CLOCK.
14. MAGNETIC MOTOR STARTER WITH "HAND" "OFF" "AUTO" CONTROL MOUNTED IN STARTER COVER. IS FURNISHED BY ELECTRICAL CONTRACTORS, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
15. EQUIPMENT IS PROVIDED WITH A CONTROL PANEL WITH INTEGRAL MOTOR STARTER AND OVERCURRENT DEVICE.
16. ELECTRICAL CONTRACTOR PROVIDES A DUPLEX MOTOR CONTROLLER WITH (2) NEMA ONE STARTERS, CIRCUIT BREAKERS, OVERLOAD RELAYS, H-O-A CONTROLLER, PILOT LIGHTS, AUTOMATIC ALTERNATION CONTROLS IN A COMMON NEMA ONE ENCLOSURE.
17. MECHANICAL CONTRACTOR PROVIDES A VARIABLE FREQUENCY DRIVE FOR MOTOR COMPLETE WITH INTERNAL OVERCURRENT DEVICE.
18. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING UNIT OF MECHANICAL EQUIPMENT TO BE RELOCATED. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
19. UNIT IS FURNISHED WITH INTEGRAL DISCONNECT AND 120/240V CONTROL TRANSFORMER. WIRING TO COMPONENTS PROVIDED BY THE ELECTRICAL CONTRACTOR.
20. MECHANICAL CONTRACTOR FURNISHES A VARIABLE FREQUENCY DRIVE. ELECTRICAL CONTRACTOR INSTALLS AND WIRES.
21. PROVIDE PILOT RELAY FOR EACH DESIGNATED MECHANICAL UNIT. RELAY TO INTERFACE WITH LOCAL AREA LIGHTING OCCUPANCY SENSOR TO DE-ACTIVATE MECHANICAL EQUIPMENT IN CONJUNCTION WITH DE-ACTIVATION OF LOCAL LIGHTING (TYPICAL).

TYPICAL DEVICE BOX INSTALLATION @ METAL STUD



SCHEDULE OF MECHANICAL EQUIPMENT

ITEM	EQUIPMENT DESIGNATION	ELECTRICAL RATING: HP	AMPS	KW	VOLTS	PHASE	ELECTRICAL WORK REQUIRED
VRF 1	VRF OUTDOOR UNIT	-	56.0 56.0	-	208	3	1, 3, 5, 10
VRF 1-1	VRF INDOOR UNIT	-	0.32	-	208	1	1, 3, 5
VRF 1-2	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-3	VRF INDOOR UNIT	-	0.24	-	208	1	1, 3, 5
VRF 1-4	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-5	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-6	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-7	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-8	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-9	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-10	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-11	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-12	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-13	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-14	VRF INDOOR UNIT	-	0.16	-	208	1	1, 3, 5
VRF 1-15	VRF INDOOR UNIT	-	0.12	-	208	1	1, 3, 5
VRF 1-16	VRF INDOOR UNIT	-	0.16	-	208	1	1, 3, 5
VRF 1-17	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-18	VRF INDOOR UNIT	-	0.12	-	208	1	1, 3, 5
VRF 1-19	VRF INDOOR UNIT	-	0.12	-	208	1	1, 3, 5
VRF 1-20	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-21	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-22	VRF INDOOR UNIT	-	0.11	-	208	1	1, 3, 5
VRF 1-23	VRF INDOOR UNIT	-	0.12	-	208	1	1, 3, 5
VRF 1-24	VRF INDOOR UNIT	-	0.16	-	208	1	1, 3, 5
VRF 1-25	VRF INDOOR UNIT	-	0.25	-	208	1	1, 3, 5
VRF 1-26	VRF INDOOR UNIT	-	0.26	-	208	1	1, 3, 5
MCU 1-1	MODE CHANGE UNIT	-	1.6	-	208	1	1, 3, 5
MCU 1-2	MODE CHANGE UNIT	-	1.6	-	208	1	1, 3, 5
MCU 1-3	MODE CHANGE UNIT	-	1.6	-	208	1	1, 3, 5
MCU 1-4	MODE CHANGE UNIT	-	1.6	-	208	1	1, 3, 5
MCU 1-5	MODE CHANGE UNIT	-	1.6	-	208	1	1, 3, 5
CU 1	CONDENSING UNIT	-	15.2	-	208	1	1, 3, 5
DAC 1	DUCTLESS AIR CONDITIONER INDOOR	1.0	-	-	208	1	1, 3, 5
ERV 1	ENERGY RECOVERY UNIT	-	3.3	-	120	1	1, 3, 5
FAN 1	EXHAUST FAN	1/4	-	-	120	1	1, 3, 5
MD 1	MOTORIZED DAMPER	-	-	-	120	1	1, 3, 5
MD 2	MOTORIZED DAMPER	-	-	-	120	1	1, 3, 5
MD 3	MOTORIZED DAMPER	-	-	-	120	1	1, 3, 5
MD 4	MOTORIZED DAMPER	-	-	-	120	1	1, 3, 5
MD 5	MOTORIZED DAMPER	-	-	-	120	1	1, 3, 5
MD 6	MOTORIZED DAMPER	-	-	-	120	1	1, 3, 5
MD 7	MOTORIZED DAMPER	-	-	-	120	1	1, 3, 5

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SCHEDULES AND NOTES

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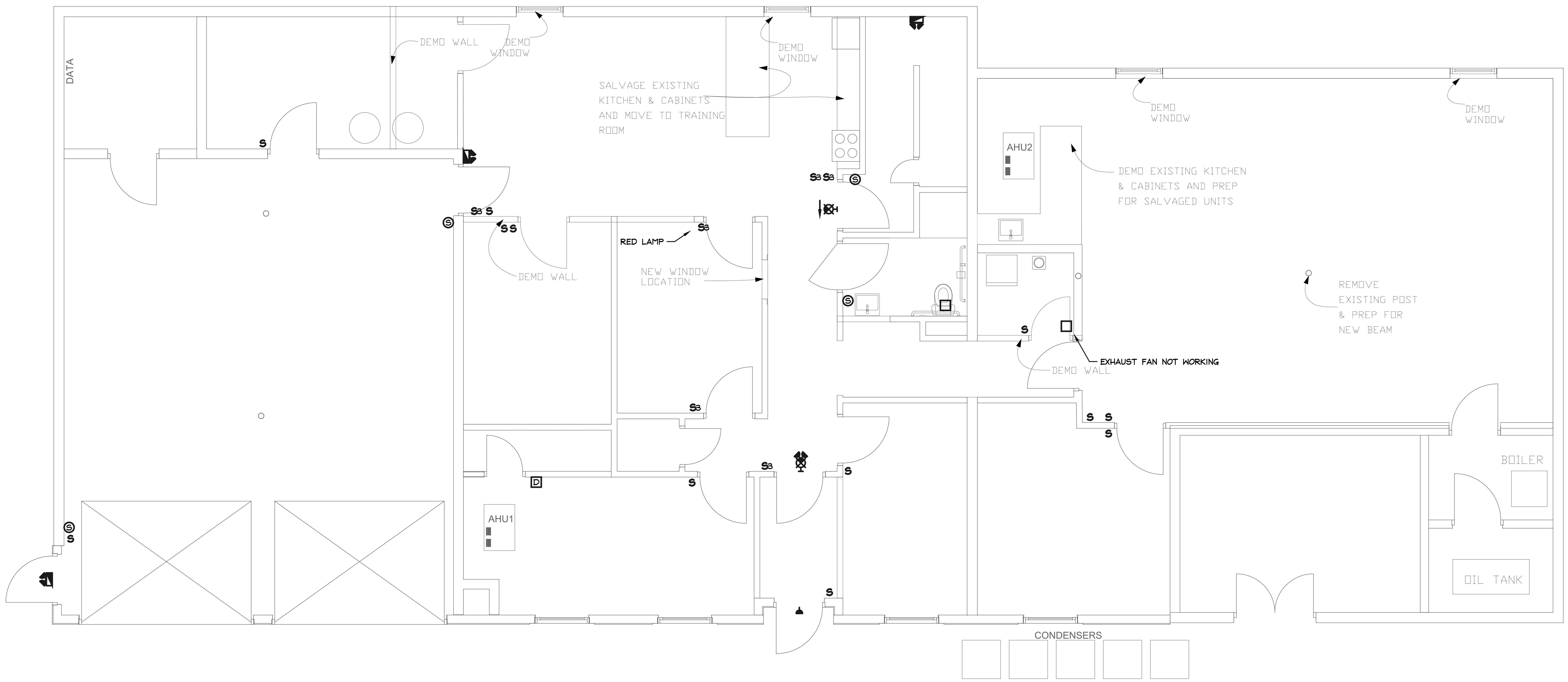

LOWER LEVEL DEMOLITION PLAN

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

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LOWER LEVEL DEMOLITION PLAN

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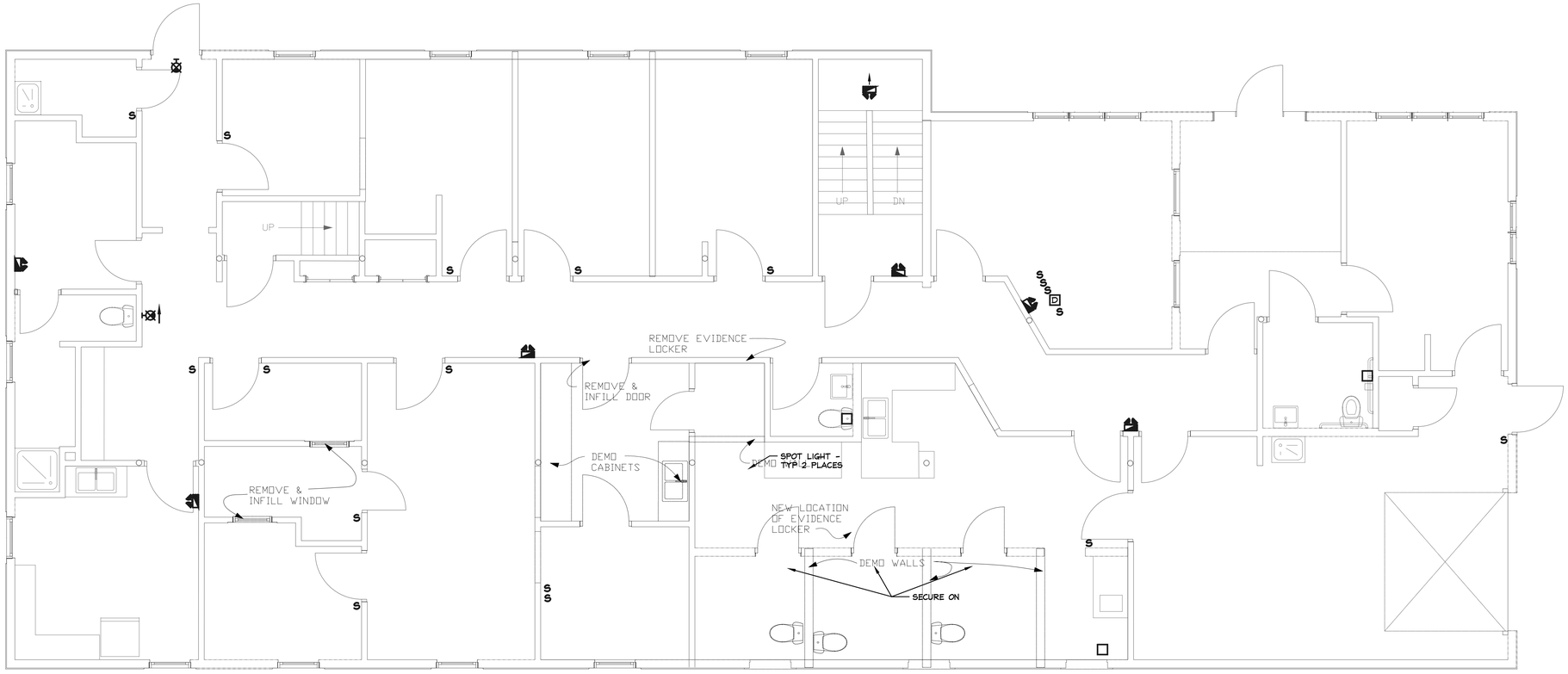

MAIN LEVEL DEMOLITION PLAN

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

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MAIN LEVEL
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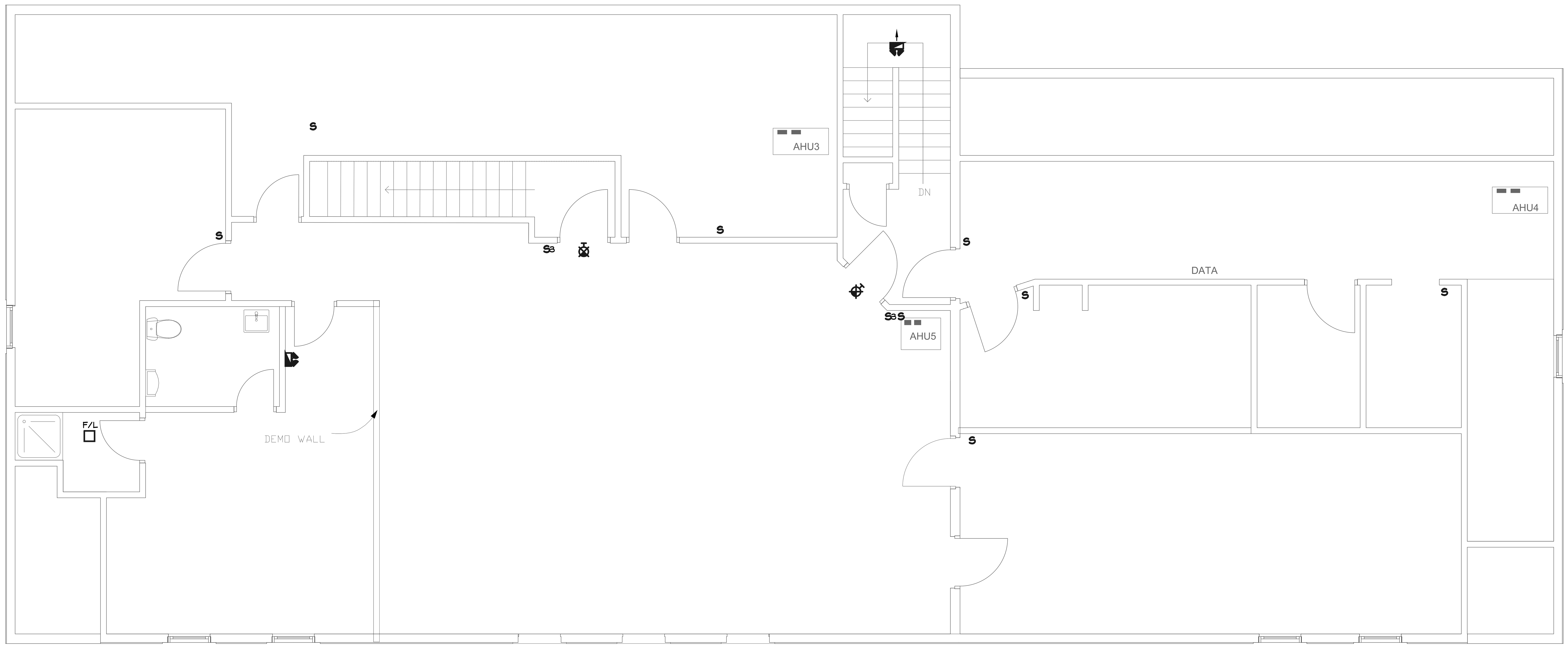

UPPER LEVEL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

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UPPER LEVEL DEMOLITION PLAN
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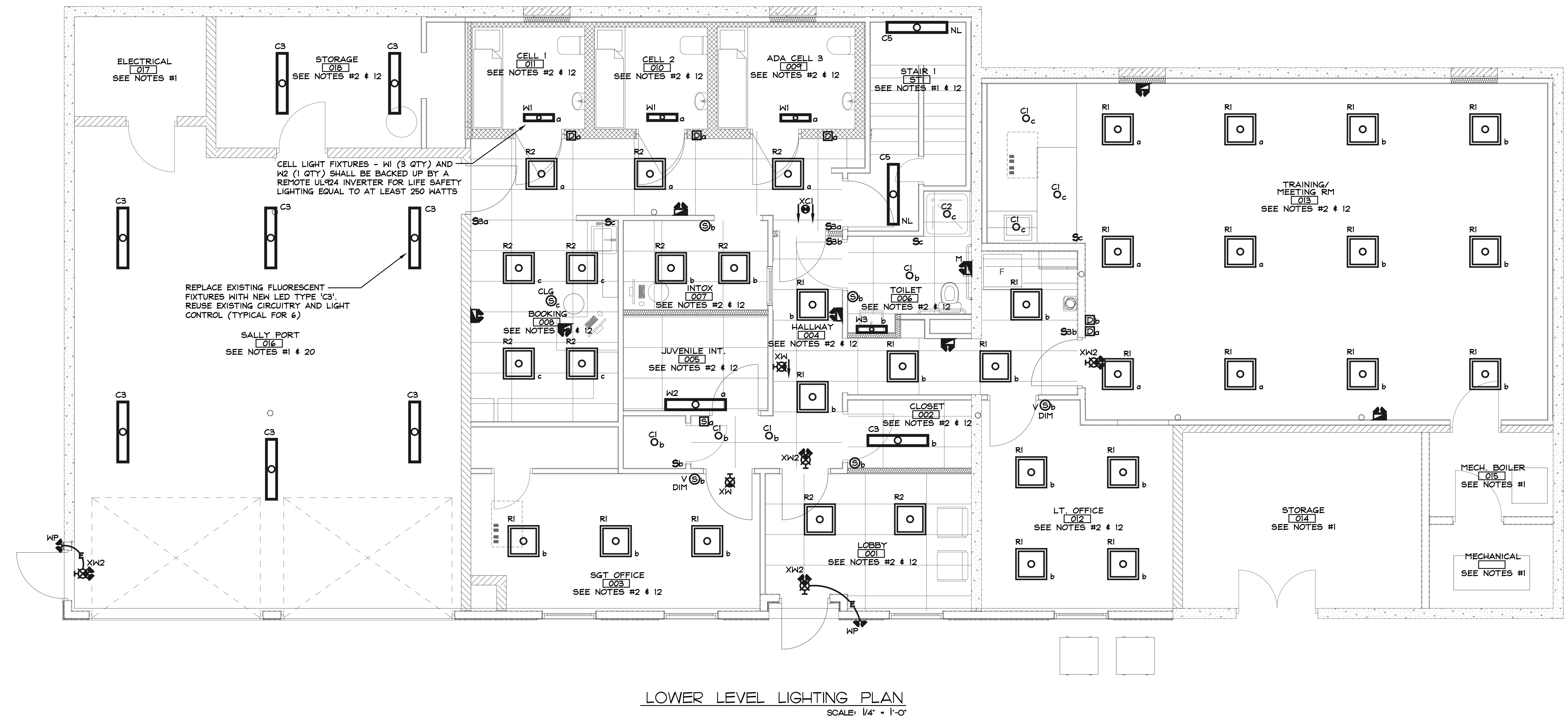


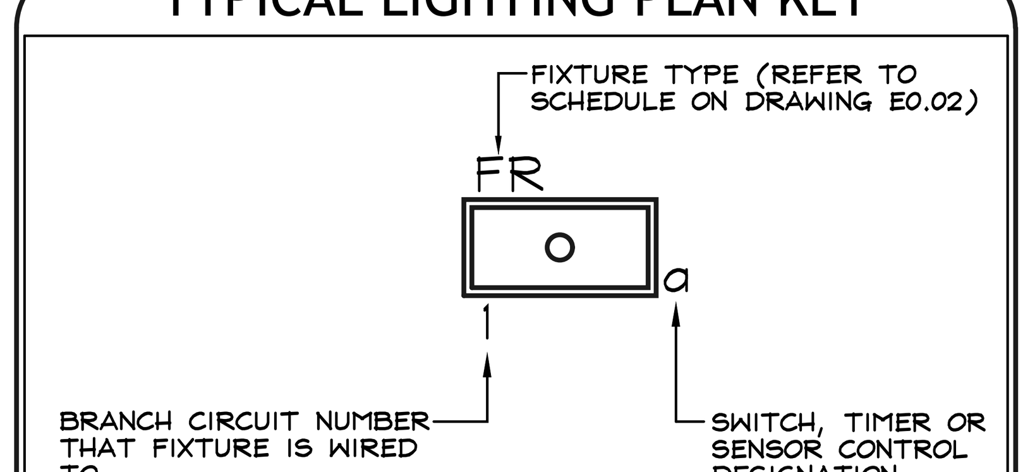
LOWER LEVEL LIGHTING PLAN

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

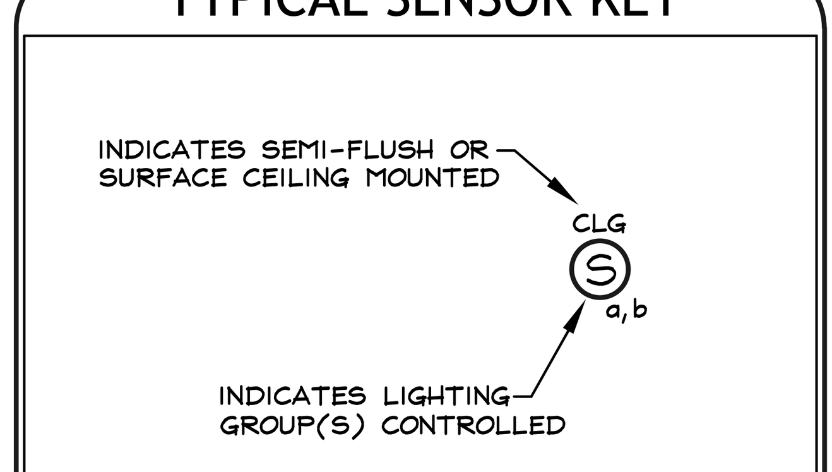
LIGHTING PLAN NOTES

1. ALL EXISTING LIGHTING, SWITCHING AND ASSOCIATED BRANCH CIRCUITRY, IN THIS ROOM OR AREA, SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.
2. ALL EXISTING LIGHTING SWITCHING AND ASSOCIATED BRANCH CIRCUITRY, IN THIS ROOM OR AREA, SHALL BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE.
3. SEE ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHTS AND EXACT LOCATIONS.
4. COORDINATE LOCATION AND AIMING OF FIXTURES WITH DRAWINGS AND DETAILS BEFORE INSTALLING.
5. REFER TO NOTES ON BRANCH CIRCUIT SIZING ON DRAWING E0.1.
6. PROVIDE HOMERUN TO NEW 20A-1P CIRCUIT BREAKER IN PANELBOARD DESIGNATED.
7. PROVIDE HOMERUN TO NEW CIRCUIT BREAKER IN PANELBOARD DESIGNATED.
8. WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL LIGHTING FIXTURES AND SWITCHING AS PER CIRCUIT NUMBER'S AND SWITCH GROUPS INDICATED.
9. ALTHOUGH NOT ALL BRANCH CIRCUIT WIRING IS SHOWN ON THESE PLANS, IT IS THE INTENT OF THESE DRAWINGS, THAT A COMPLETE BRANCH WIRING SYSTEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATION.
10. EMERGENCY BATTERY UNITS SHALL BE CIRCUITED TO THE LOCAL LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCHING, RELAYS, OR CONTROLS.
11. ALL EXIT SIGNS SHALL BE WIRED TO THE AREA 120V EMERGENCY LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCHING, RELAYS, OR CONTROLS. ALL NEW EXIT SIGN SHALL BE STANDARD TYPE FOR BUILDING.
12. CONNECT TO EXISTING AREA NORMAL 120V AREA LIGHTING CIRCUIT.
13. ALL LIGHT FIXTURES WITH MISSING OR BURNED OUT LAMPS TO BE REPLACED WITH NEW LAMPS.
14. CLEAN AND RELAMP ALL EXISTING FIXTURES TO REMAIN (ETR) IN THIS AREA.
15. LIGHTING FIXTURES DESIGNATED BY "RX" IS AN EXISTING LIGHTING FIXTURE TO BE RELOCATED (ALONG WITH ITS ASSOCIATED BRANCH CIRCUITRY) AND TO BE CLEANED AND REINSTALLED AT LOCATIONS SHOWN ON LIGHTING PLAN.
16. EXISTING LIGHTING FIXTURE TO BE DISCONNECTED FROM THE AREA 120V NORMAL LIGHTING CIRCUIT (WITHOUT DISRUPTING LOCAL SWITCHING) AND CIRCUIT TO THE AREA 277V EMERGENCY/NIGHT LIGHTING CIRCUIT.
17. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING TOGGLE SWITCH TO BE RELOCATED (ALONG WITH ITS ASSOCIATED BRANCH CIRCUITRY) TO THE LOCATION INDICATED ON THE FLOOR PLAN.
18. PROVIDE LIGHTOLIER SUNRISE SERIES DECORATIVE ROCKER SWITCHES TO MATCH DIMMER SWITCHES.
19. ALL DIMMER AND ROCKER SWITCHES SHALL BE MOUNTED UNDER A COMMON FACEPLATE.
20. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING FLUORESCENT FIXTURE THAT SHALL BE ELECTRICALLY DISCONNECTED AND REMOVED. PROVIDE NEW LED FIXTURE, REUSE EXISTING CIRCUITRY.
21. TO FACILITATE THE INSTALLATION OF THE NEW HVAC DISTRIBUTION SYSTEM THE GENERAL CONTRACTOR WILL BE REMOVED THE EXISTING ACOUSTICAL SUSPENDED CEILING TILES AND ACOUSTICAL TILE CEILING GRID SYSTEM DURING THE RENOVATION. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORT FOR THE EXISTING LIGHTING FIXTURES (AND ASSOCIATED BRANCH CIRCUITRY) DURING SUCH TIME THAT THE A.T.C. GRID SYSTEM IS REMOVED.
22. PROVIDE NEW PERFECT POWER SYSTEMS "POWER-LITE" ___WATT 120V, SINGLE PHASE, PURE SINE WAVE OUTPUT EMERGENCY LIGHTING INVERTER AS INDICATED. ALL NIGHT LIGHTING FIXTURES ON THIS FLOOR SHALL BE NORMAL/EMERGENCY FIXTURES CIRCUITED TO THE NEW INVERTER.
23. TEST EXISTING EBU AND REPLACE AS NECESSARY.

TYPICAL LIGHTING PLAN KEY



TYPICAL SENSOR KEY



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LOWER LEVEL LIGHTING PLAN

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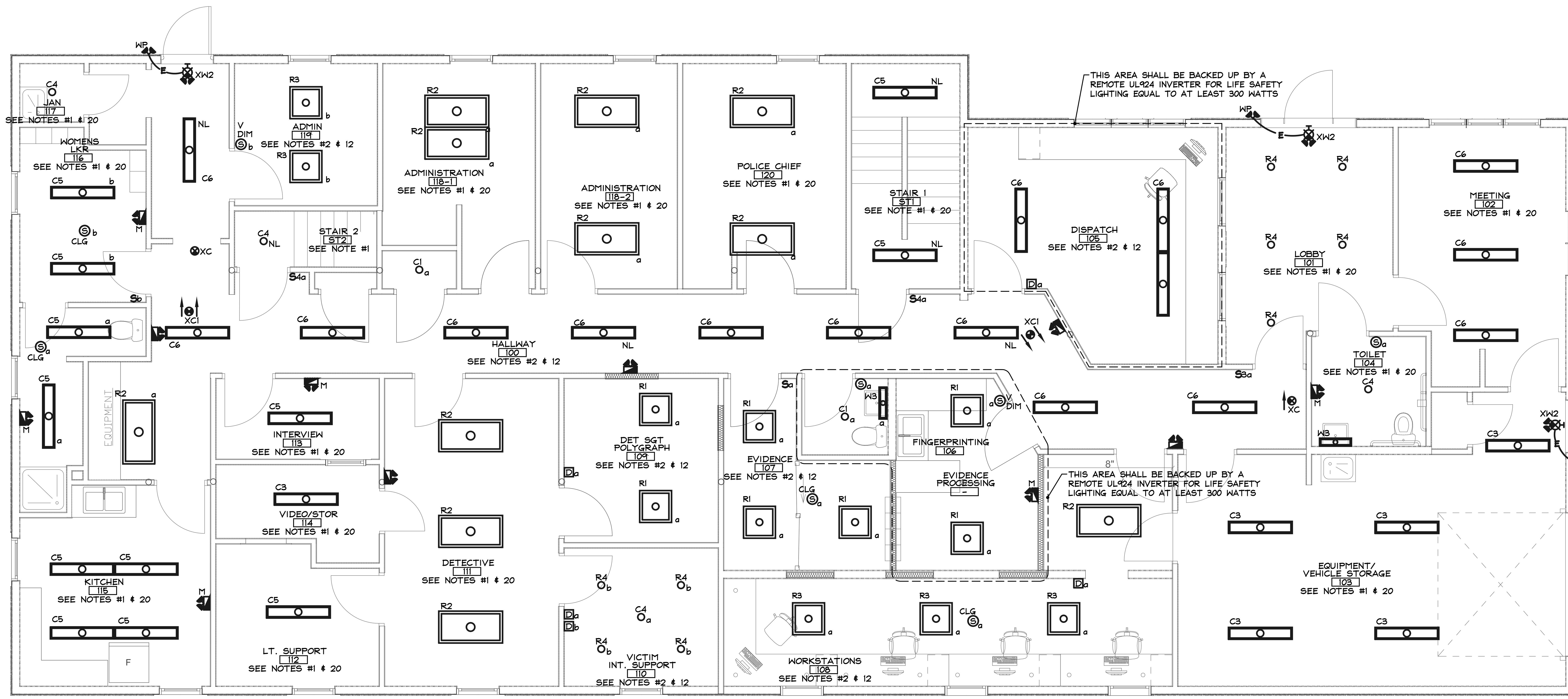

MAIN LEVEL LIGHTING PLAN

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

LIGHTING PLAN NOTES

1. ALL EXISTING LIGHTING, SWITCHING AND ASSOCIATED BRANCH CIRCUITRY, IN THIS ROOM OR AREA, SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.
2. ALL EXISTING LIGHTING SWITCHING AND ASSOCIATED BRANCH CIRCUITRY, IN THIS ROOM OR AREA, SHALL BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE.
3. SEE ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHTS AND EXACT LOCATIONS.
4. COORDINATE LOCATION AND AIMING OF FIXTURES WITH DRAWINGS AND DETAILS BEFORE INSTALLING.
5. REFER TO NOTES ON BRANCH CIRCUIT SIZING ON DRAWING E0.1.
6. PROVIDE HOMERUN TO NEW 20A-1P CIRCUIT BREAKER IN PANELBOARD DESIGNATED.
7. PROVIDE HOMERUN TO NEW CIRCUIT BREAKER IN PANELBOARD DESIGNATED.
8. WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL LIGHTING FIXTURES AND SWITCHING AS PER CIRCUIT NUMBER'S AND SWITCH GROUPS INDICATED.
9. ALTHOUGH NOT ALL BRANCH CIRCUIT WIRING IS SHOWN ON THESE PLANS, IT IS THE INTENT OF THESE DRAWINGS, THAT A COMPLETE BRANCH WIRING SYSTEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATION.
10. EMERGENCY BATTERY UNITS SHALL BE CIRCUITED TO THE LOCAL LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCHING, RELAYS, OR CONTROLS.
11. ALL EXIT SIGNS SHALL BE WIRED TO THE AREA 120V EMERGENCY LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCHING, RELAYS, OR CONTROLS. ALL NEW EXIT SIGN SHALL BE STANDARD TYPE FOR BUILDING.
12. CONNECT TO EXISTING AREA NORMAL 120V AREA LIGHTING CIRCUIT.
13. ALL LIGHT FIXTURES WITH MISSING OR BURNED OUT LAMPS TO BE REPLACED WITH NEW LAMPS.
14. CLEAN AND RELAMP ALL EXISTING FIXTURES TO REMAIN (ETR) IN THIS AREA.
15. LIGHTING FIXTURES DESIGNATED BY "RX" IS AN EXISTING LIGHTING FIXTURE TO BE RELOCATED (ALONG WITH ITS ASSOCIATED BRANCH CIRCUITRY) AND TO BE CLEANED AND REINSTALLED AT LOCATIONS SHOWN ON LIGHTING PLAN.
16. EXISTING LIGHTING FIXTURE TO BE DISCONNECTED FROM THE AREA 120V NORMAL LIGHTING CIRCUIT (WITHOUT DISRUPTING LOCAL SWITCHING) AND CIRCUIT TO THE AREA 277V EMERGENCY/NIGHT LIGHTING CIRCUIT.
17. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING TOGGLE SWITCH TO BE RELOCATED (ALONG WITH ITS ASSOCIATED BRANCH CIRCUITRY) TO THE LOCATION INDICATED ON THE FLOOR PLAN.
18. PROVIDE LIGHTOLIER SUNRISE SERIES DECORATIVE ROCKER SWITCHES TO MATCH DIMMER SWITCHES.
19. ALL DIMMER AND ROCKER SWITCHES SHALL BE MOUNTED UNDER A COMMON FACEPLATE.
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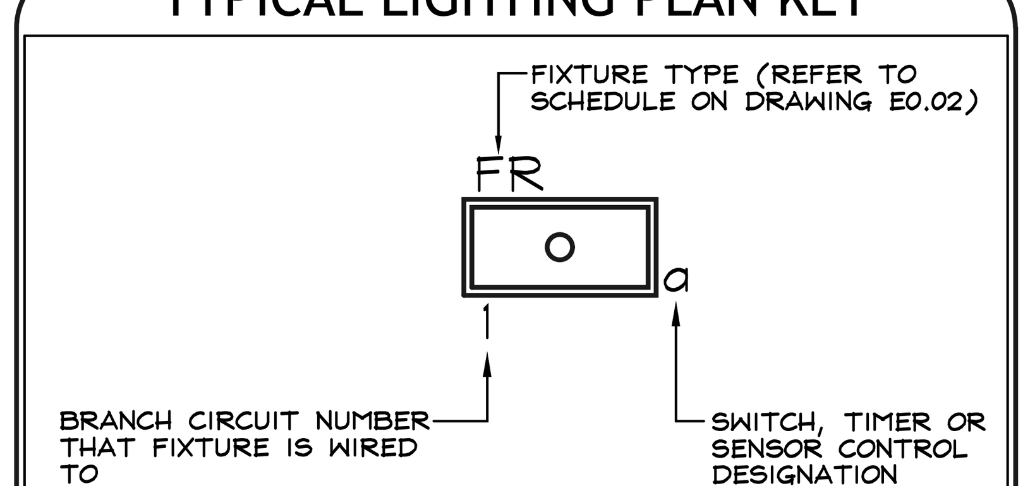
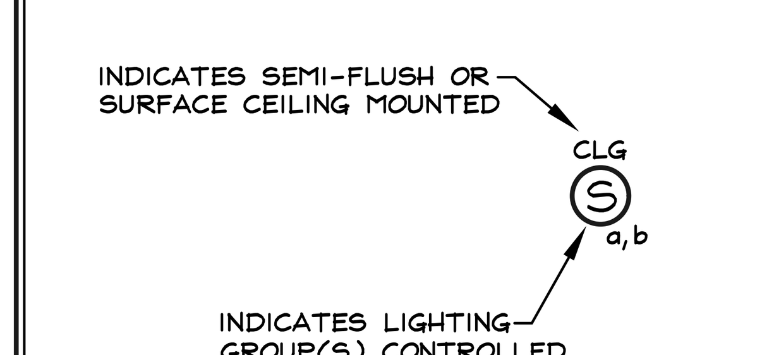
22. PROVIDE NEW PERFECT POWER SYSTEMS "POWER-LITE" ___WATT 120V, SINGLE PHASE, PURE SINE WAVE OUTPUT EMERGENCY LIGHTING INVERTER AS INDICATED. ALL NIGHT LIGHTING FIXTURES ON THIS FLOOR SHALL BE NORMAL/EMERGENCY FIXTURES CIRCUITED TO THE NEW INVERTER.
23. TEST EXISTING EBU AND REPLACE AS NECESSARY.

TYPICAL LIGHTING PLAN KEY



TYPICAL SENSOR KEY



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MAIN LEVEL LIGHTING PLAN

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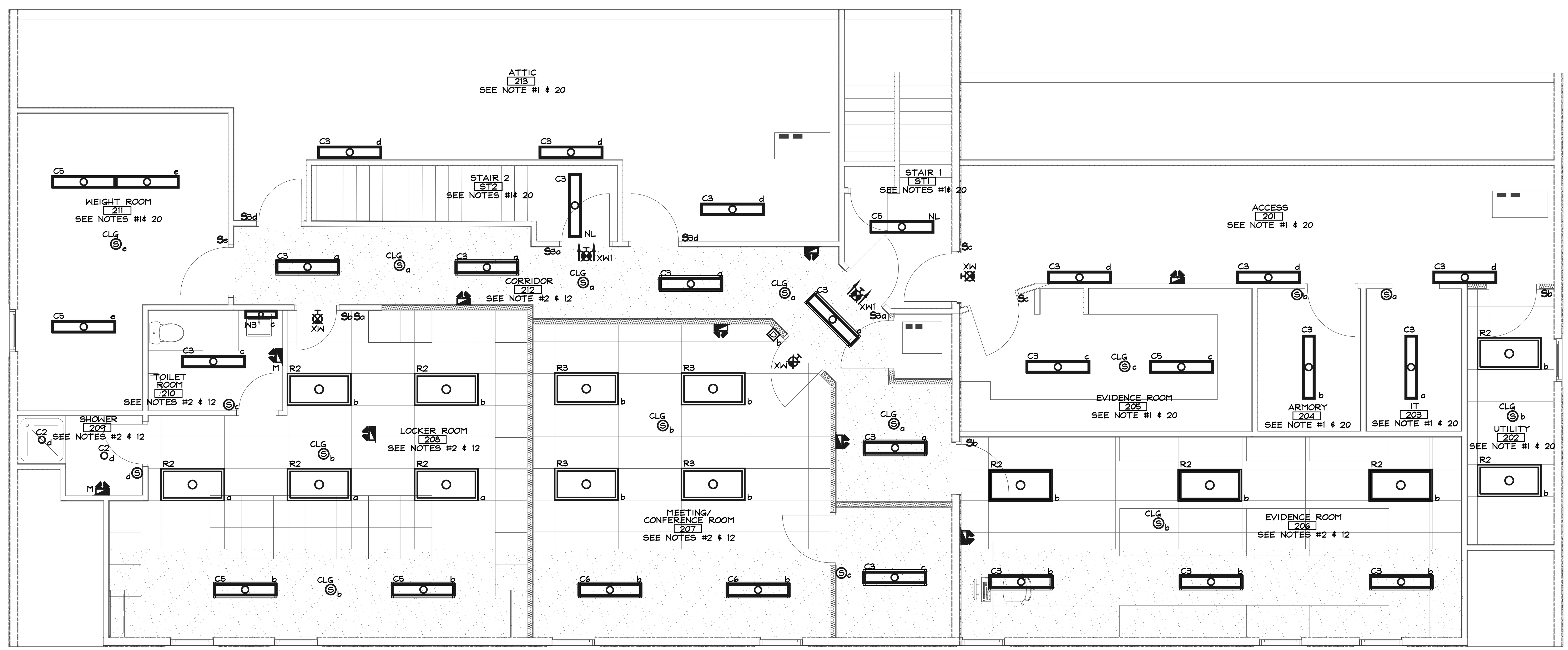

UPPER LEVEL LIGHTING PLAN

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

LIGHTING PLAN NOTES

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2. ALL EXISTING LIGHTING SWITCHING AND ASSOCIATED BRANCH CIRCUITRY, IN THIS ROOM OR AREA, SHALL BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE.
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4. COORDINATE LOCATION AND AIMING OF FIXTURES WITH DRAWINGS AND DETAILS BEFORE INSTALLING.
5. REFER TO NOTES ON BRANCH CIRCUIT SIZING ON DRAWING E0.1.
6. PROVIDE HOMERUN TO NEW 20A-1P CIRCUIT BREAKER IN PANELBOARD DESIGNATED.
7. PROVIDE HOMERUN TO NEW CIRCUIT BREAKER IN PANELBOARD DESIGNATED.
8. WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL LIGHTING FIXTURES AND SWITCHING AS PER CIRCUIT NUMBER'S AND SWITCH GROUPS INDICATED.
9. ALTHOUGH NOT ALL BRANCH CIRCUIT WIRING IS SHOWN ON THESE PLANS, IT IS THE INTENT OF THESE DRAWINGS, THAT A COMPLETE BRANCH WIRING SYSTEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATION.
10. EMERGENCY BATTERY UNITS SHALL BE CIRCUITED TO THE LOCAL LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCHING, RELAYS, OR CONTROLS.
11. ALL EXIT SIGNS SHALL BE WIRED TO THE AREA 120V EMERGENCY LIGHTING CIRCUIT AHEAD OF ANY LOCAL SWITCHING, RELAYS, OR CONTROLS. ALL NEW EXIT SIGN SHALL BE STANDARD TYPE FOR BUILDING.
12. CONNECT TO EXISTING AREA NORMAL 120V AREA LIGHTING CIRCUIT.
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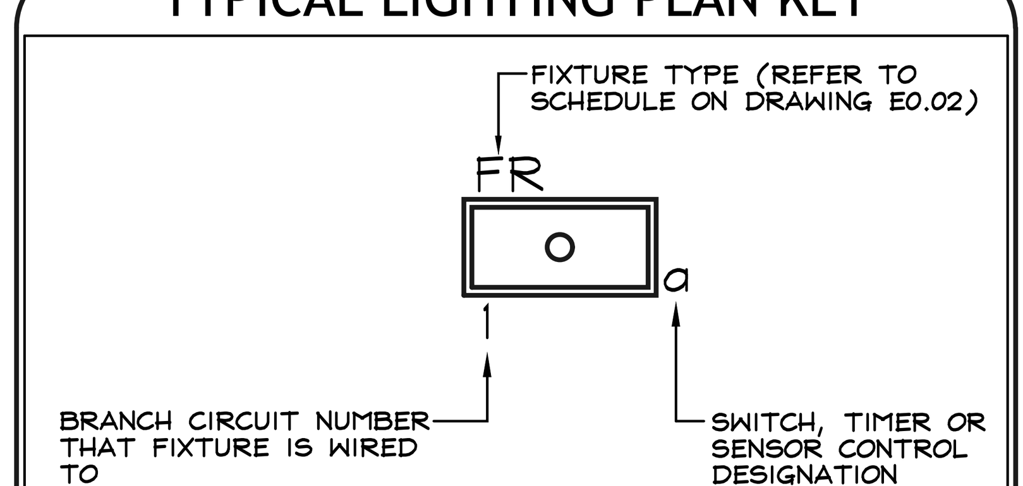
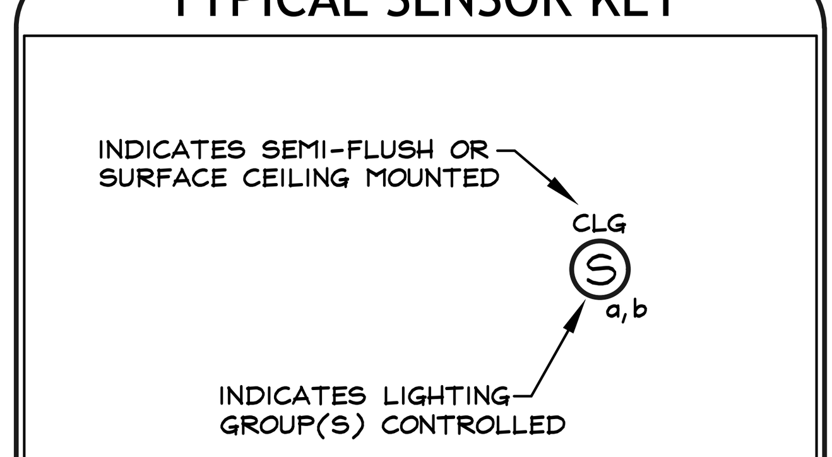
15. LIGHTING FIXTURES DESIGNATED BY "RX" IS AN EXISTING LIGHTING FIXTURE TO BE RELOCATED (ALONG WITH ITS ASSOCIATED BRANCH CIRCUITRY) AND TO BE CLEANED AND REINSTALLED AT LOCATIONS SHOWN ON LIGHTING PLAN.
16. EXISTING LIGHTING FIXTURE TO BE DISCONNECTED FROM THE AREA 120V NORMAL LIGHTING CIRCUIT (WITHOUT DISRUPTING LOCAL SWITCHING) AND CIRCUIT TO THE AREA 277V EMERGENCY/NIGHT LIGHTING CIRCUIT.
17. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING TOGGLE SWITCH TO BE RELOCATED (ALONG WITH ITS ASSOCIATED BRANCH CIRCUITRY) TO THE LOCATION INDICATED ON THE FLOOR PLAN.
18. PROVIDE LIGHTOLIER SUNRISE SERIES DECORATIVE ROCKER SWITCHES TO MATCH DIMMER SWITCHES.
19. ALL DIMMER AND ROCKER SWITCHES SHALL BE MOUNTED UNDER A COMMON FACEPLATE.
20. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING FLUORESCENT FIXTURE THAT SHALL BE ELECTRICALLY DISCONNECTED AND REMOVED. PROVIDE NEW LED FIXTURE, REUSE EXISTING CIRCUITRY.
21. TO FACILITATE THE INSTALLATION OF THE NEW HVAC DISTRIBUTION SYSTEM THE GENERAL CONTRACTOR WILL BE REMOVED THE EXISTING ACOUSTICAL SUSPENDED CEILING TILES AND ACOUSTICAL TILE CEILING GRID SYSTEM DURING THE RENOVATION. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORT FOR THE EXISTING LIGHTING FIXTURES (AND ASSOCIATED BRANCH CIRCUITRY) DURING SUCH TIME THAT THE A.T.C. GRID SYSTEM IS REMOVED.
22. PROVIDE NEW PERFECT POWER SYSTEMS "POWER-LITE" ___WATT 120V, SINGLE PHASE, PURE SINE WAVE OUTPUT EMERGENCY LIGHTING INVERTER AS INDICATED. ALL NIGHT LIGHTING FIXTURES ON THIS FLOOR SHALL BE NORMAL/EMERGENCY FIXTURES CIRCUITED TO THE NEW INVERTER.
23. TEST EXISTING EBU AND REPLACE AS NECESSARY.

TYPICAL LIGHTING PLAN KEY



TYPICAL SENSOR KEY



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ISSUE	DATE	DESCRIPTION
	5-20-2020	

UPPER LEVEL LIGHTING PLAN

proj. no.: *2017-024*

E1.03

219181E

POWER PLAN NOTES

1. ALL EXISTING WIRING DEVICES, ELECTRICAL EQUIPMENT, ETC. AND ASSOCIATED CIRCUITRY IN THIS ROOM OR AREA SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.
2. ALL EXISTING WIRING DEVICES, ELECTRICAL EQUIPMENT, ETC. AND ASSOCIATED CIRCUITRY IN THIS ROOM OR AREA SHALL BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE.
3. PROVIDE INDIVIDUAL NEUTRAL CONDUCTORS WITH EACH 120V RECEPTACLE CIRCUIT.
4. PROVIDE HOMERUN TO NEW 20A-1P C/B INSTALLED IN AVAILABLE SPACE IN PANELBOARD DESIGNATED.
5. PROVIDE HOMERUN TO NEW CIRCUIT BREAKER IN AVAILABLE SPACE IN PANELBOARD DESIGNATED.
6. PROVIDE 3/4" R.S. CONDUIT (WITH POWER CIRCUITRY AS INDICATED) FROM FLOOR BOX TO NEAREST WALL IN FLOOR SLAB CUTOUT BY THE GENERAL CONTRACTOR.
7. PROVIDE 3/4" R.S. CONDUIT (WITH NYLON PULL WIRE) FROM FLOOR BOX TO NEAREST WALL IN FLOOR SLAB CUTOUT PROVIDED BY THE GENERAL CONTRACTOR.
8. PROVIDE 1" R.S. CONDUIT (WITH NYLON PULL WIRE) FROM FLOOR BOX TO NEAREST WALL IN FLOOR SLAB CUTOUT PROVIDED BY THE GENERAL CONTRACTOR.
9. RISE UP CONCEALED IN WALL CONSTRUCTION AND EXTEND CONDUIT INTO SUSPENDED ACOUSTICAL CEILING PLENUM.
10. MAINTAIN EXISTING BRANCH CIRCUITS OUTSIDE OF RENOVATED AREAS.
11. HOLES OR OPENINGS LEFT BY THE REMOVAL OF EXISTING POKE-THRU DEVICES SHALL BE FIRE SEALED, FILLED AND GRINDED TO A SMOOTH FINISH BY THE GENERAL CONTRACTOR.
12. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SAWCUTTING THE EXISTING CONCRETE FLOOR SO THAT THE ELECTRICAL CONTRACTOR MAY INSTALL ALL FLOOR MOUNTED BOXES, DEVICES, ETC. THE GENERAL CONTRACTOR SHALL ALSO PATCH, REPAIR AND RETURN THE FLOOR SURFACE TO ITS NATURAL CONDITION.
13. EACH ITEM REFERRED TO THIS NOTES IS AN EXISTING WIRING DEVICE TO BE RELOCATED (ALONG WITH ITS ASSOCIATED BRANCH CIRCUITRY) TO THE LOCATION INDICATED.
14. CONNECT TO EXISTING RECEPTACLE CIRCUIT.
15. REUSE EXISTING ABANDONED AREA 120V RECEPTACLE CIRCUIT.
16. REPLACE EXISTING NON-TAMPER PROOF WIRING DEVICES WITH NEW TAMPERPROOF DEVICE WITH WHITE WALL PLATES.
17. REMOVE EXISTING RECEPTACLE AND MAINTAIN EXISTING BRANCH CIRCUIT.
18. ALL WIRING REQUIREMENTS, WIRE SIZES, CONDUIT SIZES, OVERCURRENT PROTECTION, ETC. SHALL BE CONFIRMED WITH THE SPECIAL EQUIPMENT MANUFACTURERS.
19. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE TELECOMMUNICATIONS AND INFORMATION TECHNOLOGY REQUIREMENTS WITH THE OWNER/TENANT PRIOR TO COMMENCING WORK.
20. CABLING SCHEDULE: VOICE/DATA OUTLET; ONE 4 PAIR #24 AWG UNSHIELDED TWISTED PAIR COPPER, UL CAT 5e PLENUM RATED CABLE FOR TELEPHONE (PROVIDED BY THE ELECTRICAL CONTRACTOR) AND ONE 4 PAIR #24 AWG UNSHIELDED TWISTED PAIR COPPER, UL CAT 5e, PLENUM RATED CABLE FOR DATA (PROVIDED BY THE ELECTRICAL CONTRACTOR) FROM OUTLET TO CLOSEST IDF ROOM.
21. CABLING SCHEDULE: VOICE OUTLET; ONE 4 PAIR #24 AWG UNSHIELDED TWISTED PAIR COPPER, UL CAT 5e PLENUM RATED PROVIDED BY THE ELECTRICAL CONTRACTOR FROM OUTLET TO CLOSEST IDF ROOM.
22. CABLING SCHEDULE: DATA OUTLET; ONE 4 PAIR #24 AWG UNSHIELDED TWISTED PAIR COPPER, UL CAT 5e PLENUM RATED PROVIDED BY THE ELECTRICAL CONTRACTOR FROM OUTLET TO CLOSEST IDF ROOM.
23. CABLING SCHEDULE CATV OUTLET: ONE 75 OHM COAXIAL CABLE, PLENUM RATED RG-6 PROVIDED BY THE ELECTRICAL CONTRACTOR.
24. PROVIDE WALL (JACK) OUTLETS AT EACH CATV, DATA, TELEPHONE OR VOICE / DATA OUTLET AS PER APD REQUIREMENTS. OUTLETS SHALL BE: RJ11 FOR VOICE, RJ45 FOR DATA, AND "F" CONNECTOR FOR CATV. LOW HEIGHT PARTITION SYSTEM DEVICES SHALL BE PROVIDED BY THE PARTITION SYSTEM MANUFACTURER. ALL OTHER WALL DEVICES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
25. THE APD SHALL IDENTIFY WHICH PATCH PANEL THE DATA CABLES SHALL BE BROUGHT TO. THE INFORMATION TECHNOLOGY SUBCONTRACTOR SHALL PUNCH DOWN ALL DATA CABLING AT THE PATCH PANEL AND AT THE REMOTE OUTLETS IN ACCORDANCE WITH TENANT STANDARDS AND APPLICABLE INDUSTRY STANDARDS.
26. DAISY CHAIN WIRING OF DEVICES IS NOT ALLOWED. ALL WIRING DEVICES SHALL BE CIRCUITED IN A STAR WIRING CONFIGURATION.
27. ALL EXISTING WIRING DEVICES, (DATA, VOICE OR TELEPHONE OUTLETS) ETC. AND ASSOCIATED CABLING IN THIS AREA SHALL BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE.
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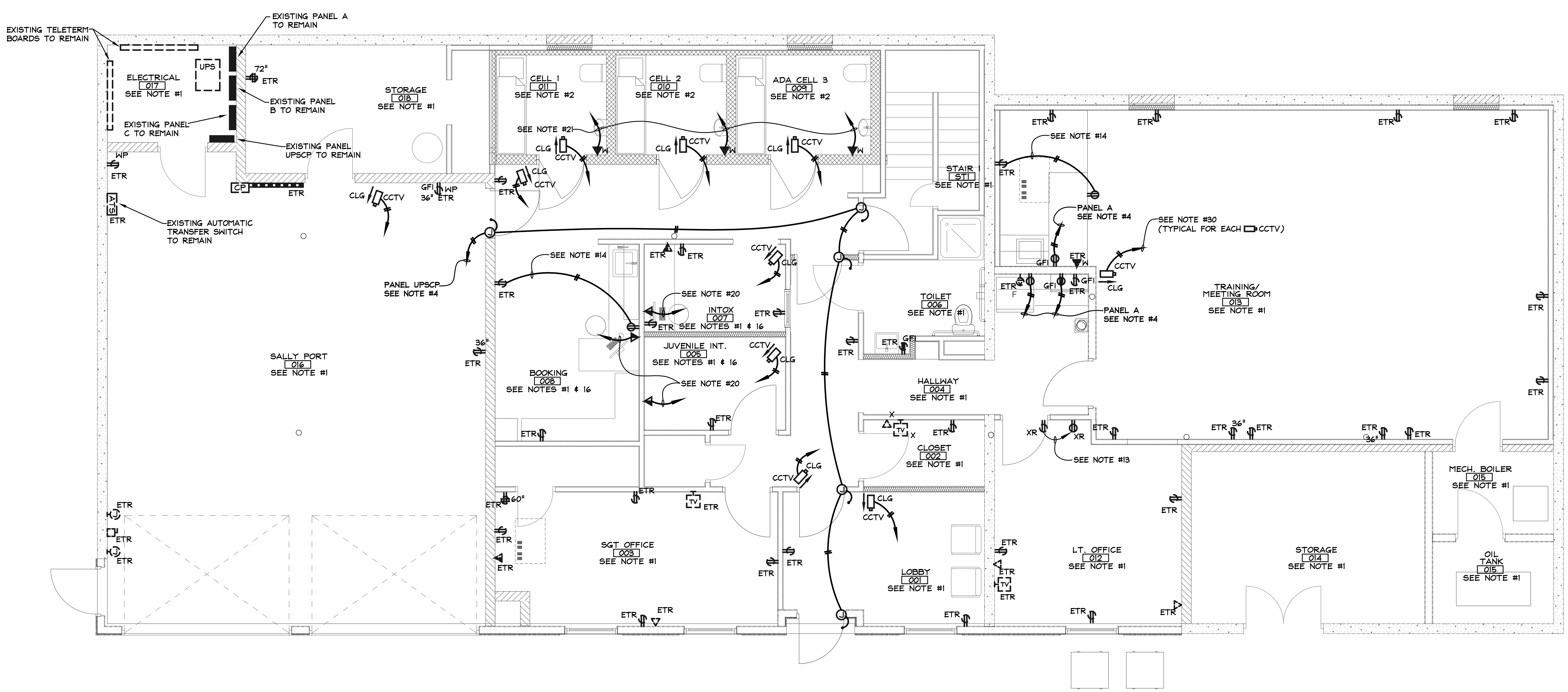
29. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING TEL/DATA DEVICE TO BE RELOCATED (ALONG WITH ITS ASSOCIATED CIRCUITRY) TO THE LOCATION INDICATED.
30. PROVIDE CEILING FLUSH MOUNTED CCTV CAMERAS AS INDICATED (MODEL #DS-2CD2 135 FWD-1). PROVIDE ONE NETGEAR 10 PORT, POWER OVER ETHERNET SWITCH TIED TO THE NETWORK VIDEO RECORDER IN THE FIRST FLOOR DISPATCH ROOM. ALL CABLING SHALL BE RUN CONCEALED AND SHALL BE PLENUM RATED, CAT 5 RATED.



LOWER LEVEL POWER PLAN

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

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LOWER LEVEL POWER PLAN

proj. no.: 2017-024

E2.01

219181E

POWER PLAN NOTES

1. ALL EXISTING WIRING DEVICES, ELECTRICAL EQUIPMENT, ETC. AND ASSOCIATED CIRCUITRY IN THIS ROOM OR AREA SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.
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4. PROVIDE HOMERUN TO NEW 20A-1P C/B INSTALLED IN AVAILABLE SPACE IN PANELBOARD DESIGNATED.
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6. PROVIDE 3/4" R.S. CONDUIT (WITH POWER CIRCUITRY AS INDICATED) FROM FLOOR BOX TO NEAREST WALL IN FLOOR SLAB CUTOUT BY THE GENERAL CONTRACTOR.
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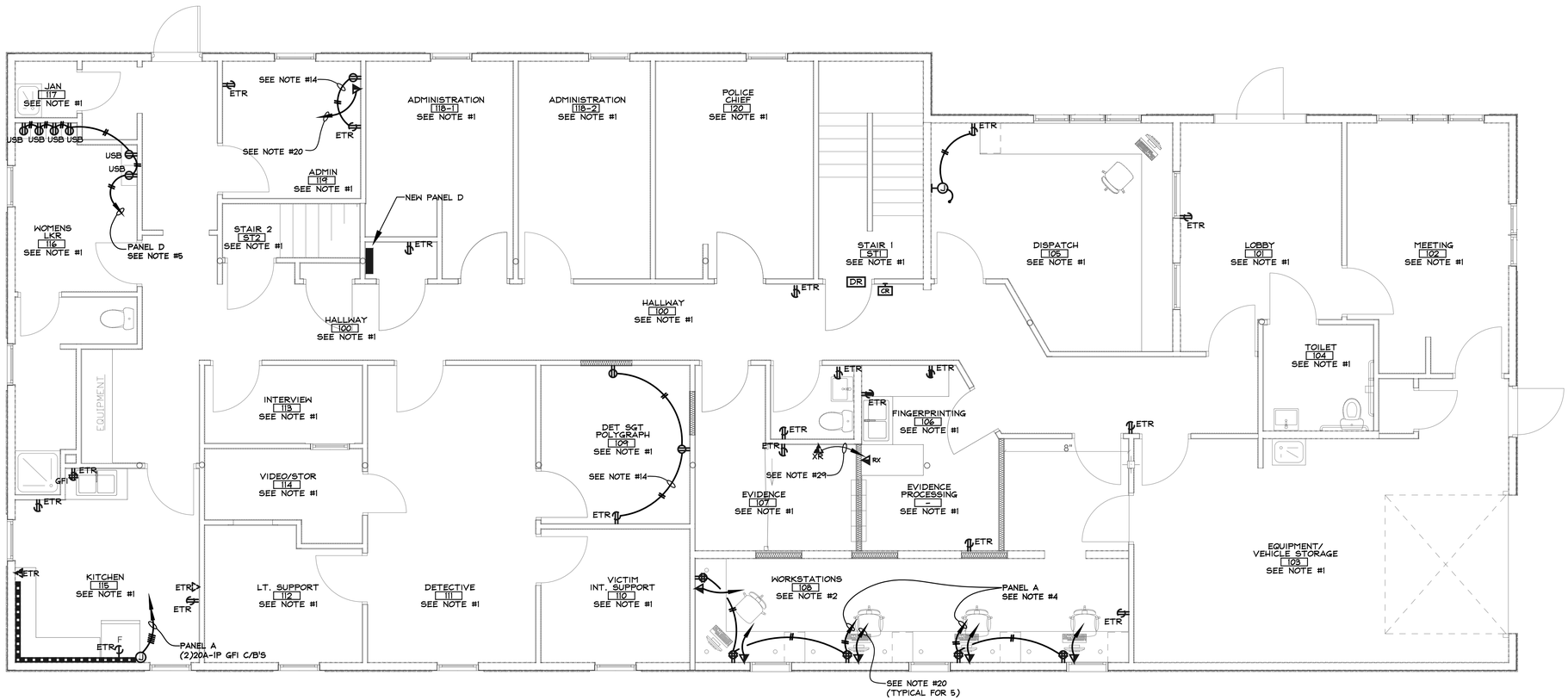

MAIN LEVEL POWER PLAN
SCALE: 1/4" = 1'-0"

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ISSUE	DATE	DESCRIPTION
	5-20-2020	

MAIN LEVEL POWER PLAN

proj. no.: *2017-024*

E2.02

219181E

POWER PLAN NOTES

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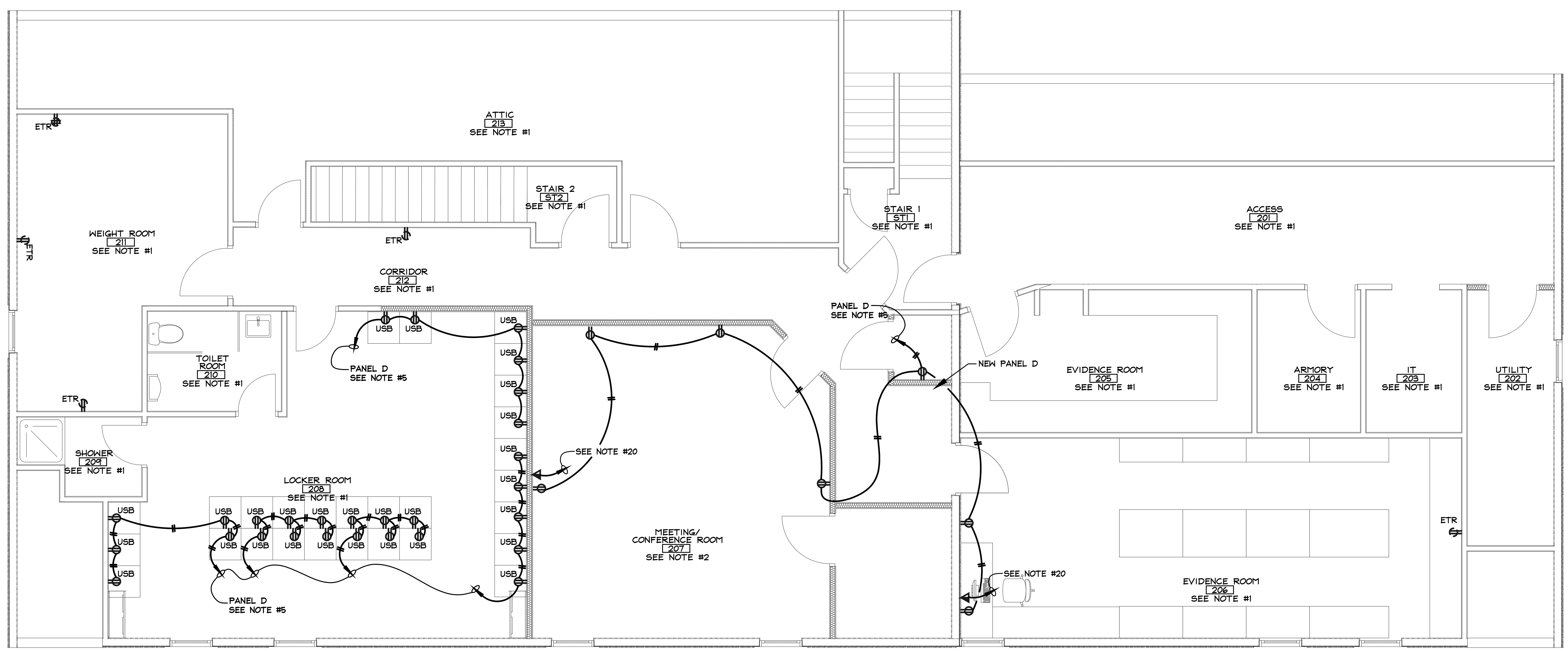

UPPER LEVEL POWER PLAN

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

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ISSUE	DATE	DESCRIPTION
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UPPER LEVEL POWER PLAN

proj. no.: 2017-024

E2.03

219181E

MECHANICAL POWER PLAN NOTES

1. ALL EXISTING ELECTRICALLY POWERED MECHANICAL EQUIPMENT AND ASSOCIATED CIRCUITRY IN THIS ROOM OR AREA SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.

2. ALL EXISTING UNITS OF MECHANICAL EQUIPMENT, IN THIS ROOM OR AREA, SHALL BE ELECTRICALLY DISCONNECTED BY THE ELECTRICAL CONTRACTOR, AND REMOVED BY THE MECHANICAL CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL REMOVE THE MECHANICAL EQUIPMENT BRANCH CIRCUITRY OR FEEDER BACK TO ITS POINT OF SUPPLY, AND SHALL REMOVE AND DISCARD ALL UNIT CONTROLLERS, WIRING DEVICES, AND/OR SAFETY SWITCHES.

3. COORDINATE WITH THE MECHANICAL DRAWINGS BEFORE COMMENCING WORK.

4. MAINTAIN EXISTING BRANCH CIRCUITS OUTSIDE OF RENOVATED AREAS.

5. PROVIDE HOMERUN(S) TO NEW 20A-1P C/B(s) INSTALLED IN AVAILABLE SPACE IN EXISTING PANELBOARD DESIGNATED.

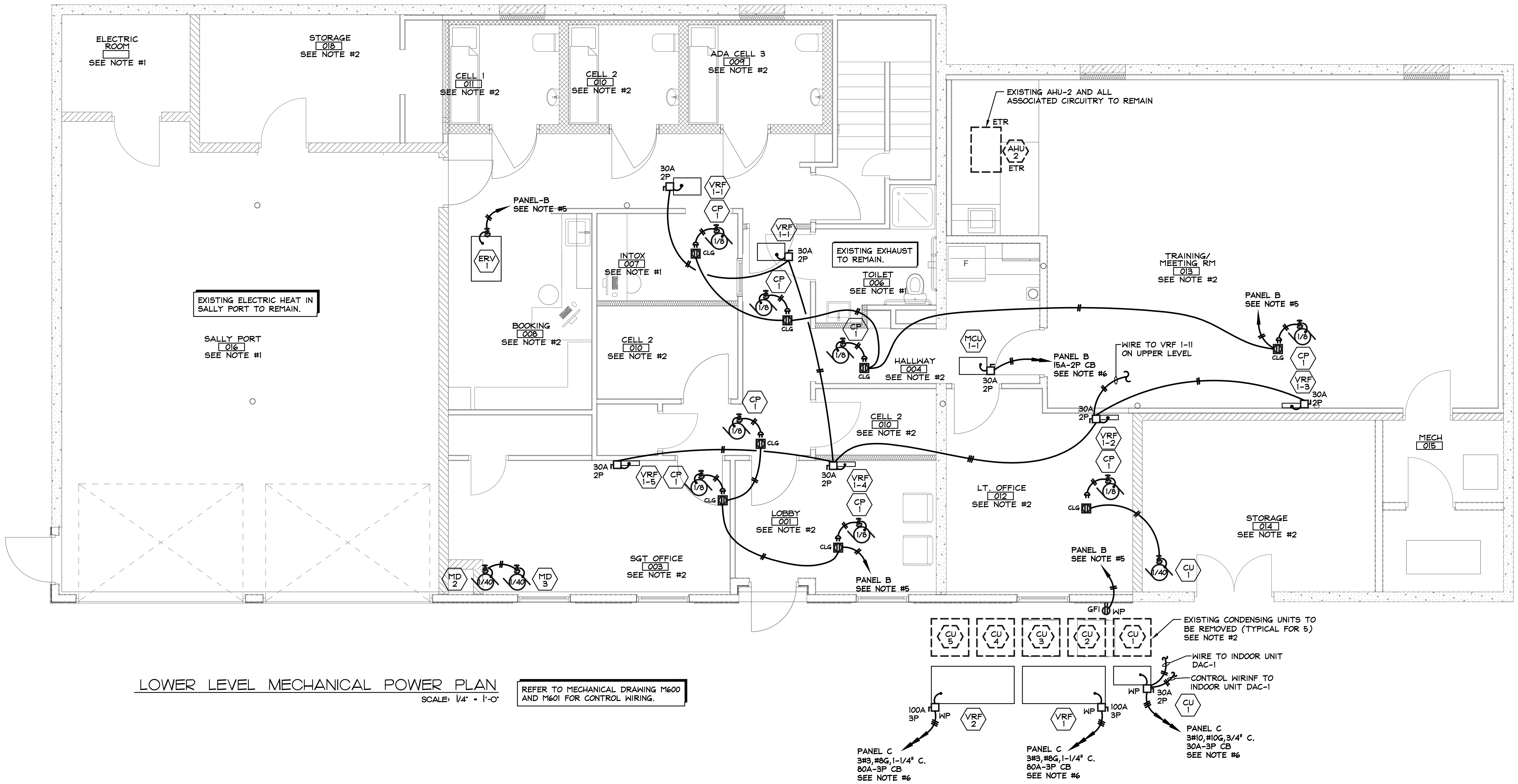
6. PROVIDE HOMERUN TO NEW CIRCUIT BREAKER INSTALLED IN AVAILABLE SPACE IN PANELBOARD DESIGNATED.

7. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING UNIT OF MECHANICAL EQUIPMENT TO BE RELOCATED (ALONG WITH ITS ASSOCIATED POWER CIRCUITRY) TO THE LOCATION INDICATED.

8. INTERCEPT EXISTING 120V BRANCH CIRCUIT AND CONNECT TO NEW MECHANICAL EQUIPMENT AS INDICATED ON FLOOR PLANS.

9. CONNECT TO AREA UNSWITCHED 120V RECEPTACLE CIRCUIT.

10. PROVIDE PILOT RELAY FOR EACH VAV UNIT. RELAY TO INTERFACE WITH LOCAL AREA LIGHTING OCCUPANCY SENSOR TO DE-ACTIVATE VAV IN CONJUNCTION WITH DE-ACTIVATION OF LOCAL LIGHTING (TYPICAL).



LOWER LEVEL MECHANICAL POWER PLAN
SCALE: 1/4" = 1'-0"

REFER TO MECHANICAL DRAWING M600 AND M601 FOR CONTROL WIRING.

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ISSUE	DATE	DESCRIPTION
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LOWER LEVEL MECHANICAL POWER PLAN

proj. no.: 2017-024

E2.04

219181E

MECHANICAL POWER PLAN NOTES

1. ALL EXISTING ELECTRICALLY POWERED MECHANICAL EQUIPMENT AND ASSOCIATED CIRCUITRY IN THIS ROOM OR AREA SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.

2. ALL EXISTING UNITS OF MECHANICAL EQUIPMENT, IN THIS ROOM OR AREA, SHALL BE ELECTRICALLY DISCONNECTED BY THE ELECTRICAL CONTRACTOR, AND REMOVED BY THE MECHANICAL CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL REMOVE THE MECHANICAL EQUIPMENT BRANCH CIRCUITRY OR FEEDER BACK TO ITS POINT OF SUPPLY, AND SHALL REMOVE AND DISCARD ALL UNIT CONTROLLERS, WIRING DEVICES, AND/OR SAFETY SWITCHES.

3. COORDINATE WITH THE MECHANICAL DRAWINGS BEFORE COMMENCING WORK.

4. MAINTAIN EXISTING BRANCH CIRCUITS OUTSIDE OF RENOVATED AREAS.

5. PROVIDE HOMERUN(S) TO NEW 20A-1P C/B(s) INSTALLED IN AVAILABLE SPACE IN EXISTING PANELBOARD DESIGNATED.

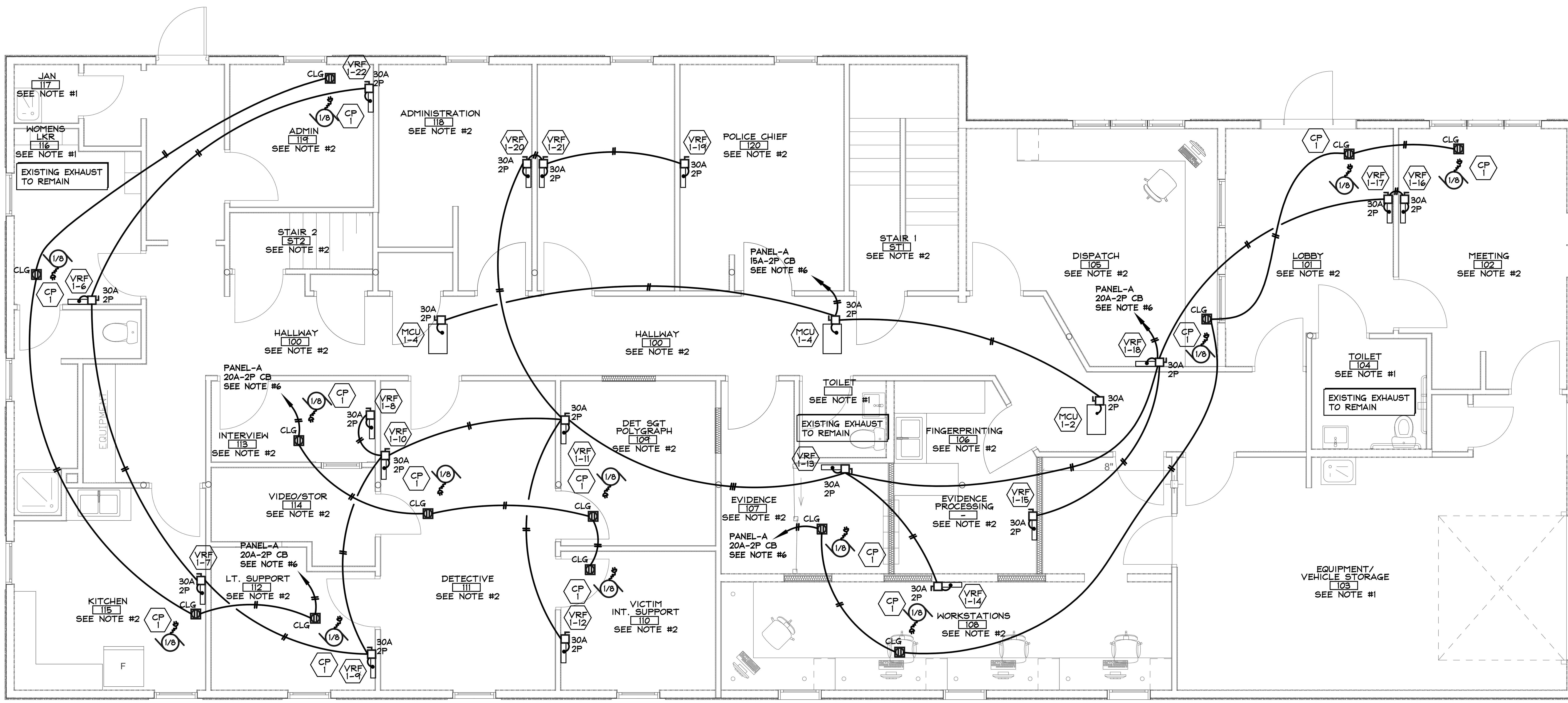
6. PROVIDE HOMERUN TO NEW CIRCUIT BREAKER INSTALLED IN AVAILABLE SPACE IN PANELBOARD DESIGNATED.

7. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING UNIT OF MECHANICAL EQUIPMENT TO BE RELOCATED (ALONG WITH ITS ASSOCIATED POWER CIRCUITRY) TO THE LOCATION INDICATED.

8. INTERCEPT EXISTING 120V BRANCH CIRCUIT AND CONNECT TO NEW MECHANICAL EQUIPMENT AS INDICATED ON FLOOR PLANS.

9. CONNECT TO AREA UNSWITCHED 120V RECEPTACLE CIRCUIT.

10. PROVIDE PILOT RELAY FOR EACH VAV UNIT. RELAY TO INTERFACE WITH LOCAL AREA LIGHTING OCCUPANCY SENSOR TO DE-ACTIVATE VAV IN CONJUNCTION WITH DE-ACTIVATION OF LOCAL LIGHTING (TYPICAL).



MAIN LEVEL MECHANICAL POWER PLAN
SCALE: 1/4" = 1'-0"

REFER TO MECHANICAL DRAWING M600 AND M601 FOR CONTROL WIRING.

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MAIN LEVEL MECHANICAL POWER PLAN

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MECHANICAL POWER PLAN NOTES

1. ALL EXISTING ELECTRICALLY POWERED MECHANICAL EQUIPMENT AND ASSOCIATED CIRCUITRY IN THIS ROOM OR AREA SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.

2. ALL EXISTING UNITS OF MECHANICAL EQUIPMENT, IN THIS ROOM OR AREA, SHALL BE ELECTRICALLY DISCONNECTED BY THE ELECTRICAL CONTRACTOR, AND REMOVED BY THE MECHANICAL CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL REMOVE THE MECHANICAL EQUIPMENT BRANCH CIRCUITRY OR FEEDER BACK TO ITS POINT OF SUPPLY, AND SHALL REMOVE AND DISCARD ALL UNIT CONTROLLERS, WIRING DEVICES, AND/OR SAFETY SWITCHES.

3. COORDINATE WITH THE MECHANICAL DRAWINGS BEFORE COMMENCING WORK.

4. MAINTAIN EXISTING BRANCH CIRCUITS OUTSIDE OF RENOVATED AREAS.

5. PROVIDE HOMERUN(S) TO NEW 20A-1P C/B(s) INSTALLED IN AVAILABLE SPACE IN EXISTING PANELBOARD DESIGNATED.

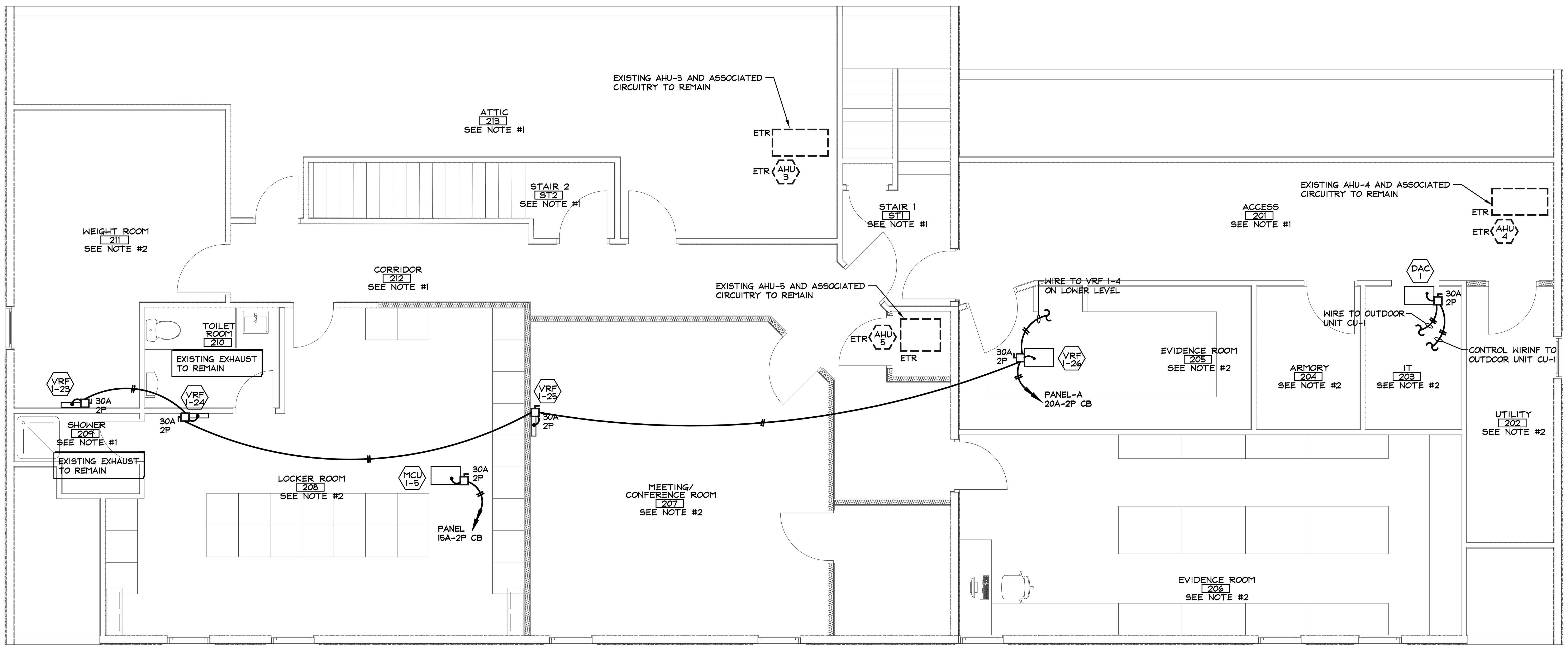
6. PROVIDE HOMERUN TO NEW CIRCUIT BREAKER INSTALLED IN AVAILABLE SPACE IN PANELBOARD DESIGNATED.

7. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING UNIT OF MECHANICAL EQUIPMENT TO BE RELOCATED (ALONG WITH ITS ASSOCIATED POWER CIRCUITRY) TO THE LOCATION INDICATED.

8. INTERCEPT EXISTING 120V BRANCH CIRCUIT AND CONNECT TO NEW MECHANICAL EQUIPMENT AS INDICATED ON FLOOR PLANS.

9. CONNECT TO AREA UNSWITCHED 120V RECEPTACLE CIRCUIT.

10. PROVIDE PILOT RELAY FOR EACH VAV UNIT. RELAY TO INTERFACE WITH LOCAL AREA LIGHTING OCCUPANCY SENSOR TO DE-ACTIVATE VAV IN CONJUNCTION WITH DE-ACTIVATION OF LOCAL LIGHTING (TYPICAL).



UPPER LEVEL MECHANICAL POWER PLAN
SCALE: 1/4" = 1'-0"

REFER TO MECHANICAL DRAWING M600 AND M601 FOR CONTROL WIRING.

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UPPER LEVEL MECHANICAL POWER PLAN

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PANEL: PANEL D   MOUNTING: SURFACE   TOTAL POLES: 30
PHASE: 3   WIRES: 4   A.I.C. 10 K   VOLTAGE: 120/208   MAINS: 100A MCB

DESCRIPTION OF LOADS	KVA LOAD AØ	BØ	CØ	BREAKER FRAME	TRIP	POLES	CKT	CKT	BREAKER POLES	TRIP	FRAME	KVA LOAD AØ	BØ	CØ	DESCRIPTION OF LOADS
RECEPTACLE				100	20	1	1	2	1	20	100				RECEPTACLE
							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							

PHASE A: 0   PHASE B: 0   PHASE C: 0   TOTAL: 0

ONE LINE POWER RISER NOTES

1. EACH ITEM REFERRED TO THIS NOTE IS A GROUNDING ELECTRODE CONDUCTOR EXTENDED TO THE EFFECTIVELY GROUNDED MAIN METALLIC WATER SERVICE AND THEN TO STRUCTURAL BUILDING STEEL AS SHOWN ON THE GROUNDING DETAIL ON DRAWING SE2.01.

2. ALL CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTOR AMPACITIES UNLESS NOTED OTHERWISE. ALUMINUM CONDUCTORS MAY BE UTILIZED. SIZE CONDUCTORS PER N.E.C. 310.16 AMPERAGE TABLES.

3. EACH ITEM REFERRED TO THIS NOTE IS A METER CENTER MAIN CIRCUIT BREAKER DEVICE RATED FOR 800 AMPERES, 3 POLE, SN 120/208V, 30K A.I.C. 100% RATED.

4. EACH ITEM REFERRED TO THIS NOTE IS AN INDOOR TYPE MODULAR METER CENTER WITH 800A CROSS BUSSING, GROUND BAR, 120/208V, 3PH, 4W. SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT.

5. EACH ITEM REFERRED TO THIS NOTE IS AN INDOOR TYPE METER/BREAKER DEVICE, 30K A.I.C., 200 AMPERE, 5 JAW, LOCAL UTILITY COMPANY APPROVED METERING SOCKET WITH A 100 AMPERE, 2 POLE, SN, BRANCH CIRCUIT BREAKER DEVICE.

6. EACH ITEM REFERRED TO THIS NOTE IS AN INDOOR TYPE METER/BREAKER DEVICE, 30K A.I.C., 200 AMPERE, 5 JAW, LOCAL UTILITY COMPANY APPROVED METERING SOCKET WITH A 125 AMPERE, 2 POLE, SN, BRANCH CIRCUIT BREAKER DEVICE.

7. EACH ITEM REFERRED TO IN THIS NOTE IS A METER CENTER MAIN CIRCUIT BREAKER DEVICE RATED FOR 400,600 OR 800 AMPERE, 3 POLE, SN, 120/208V, 3PH, 30K A.I.C. 100% RATED.

8. EACH ITEM REFERRED TO IN THIS NOTE IS AN INDOOR TYPE MODULAR METER CENTER WITH 400 CROSS BUSSING, GROUND BAR, 120/208V 3PH, 4W, SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT.

9. EACH ITEM REFERRED TO THIS NOTE IS AN INDOOR TYPE METER/BREAKER DEVICE, 30K A.I.C., 200 AMPERE, 5 JAW, LOCAL UTILITY COMPANY APPROVED METERING SOCKET WITH A 150 AMPERE, 2 POLE, SN, BRANCH CIRCUIT BREAKER DEVICE.

10. ALL PANELBOARDS, CONDUCTOR CONNECTORS, ETC. SHALL BE LISTED AND IDENTIFIED FOR USE WITH 75°C RATED CONDUCTORS.

11. ALL CIRCUIT BREAKERS THROUGHOUT THE DISTRIBUTION SYSTEM SHALL BE SERIES RATED.

12. PROVIDE THE EVERSOURCE APPROVED TERMINAL CONNECTORS AND INSTALL SECONDARY CABLES TO TRANSFORMER SPADES. COORDINATE INSTALLATION WITH EVERSOURCE BEFORE INSTALLING.

13. EACH ITEM REFERRED TO THIS NOTE IS AN EXISTING NATURAL GAS FIRED OPTIONAL STANDBY GENERATING SET WITH RATINGS AS FOLLOWS: 125KW, 150KVA, 120/208 VOLT. 3 PHASE, 4 WIRE, 60 HERTZ. GENERATOR CONTROL PANEL SHALL BE EQUIPPED WITH (1) 400A-3P 100% RATED, SHUNT TRIP TYPE CIRCUIT BREAKER.

14. EACH ITEM REFERRED TO THIS NOTE IS A 400A, 3P, SN, 120/208V, 60 HERTZ, AUTOMATIC TRANSFER SWITCH.

15. PROVIDE AN AUXILIARY CONTACT, THAT IS IN THE "OPEN" POSITION WHEN THE MAIN DISCONNECTING MEANS IS IN THE "OPEN" POSITION. THE AUXILIARY CONTACT SHALL CAUSE THE LIFT RETURN UNIT POWER SOURCE TO BE DISCONNECTED FROM THE LOAD WHEN THE DISCONNECTING MEANS IS IN THE "OPEN" POSITION.

16. PROVIDE SERVICE ENTRANCE CABLE SUPPORTS IN SWITCHBOARD TO PREVENT ANY PULL FROM VERTICAL CONDUCTORS ON SWITCHBOARD LUGS AND BUS BARS.

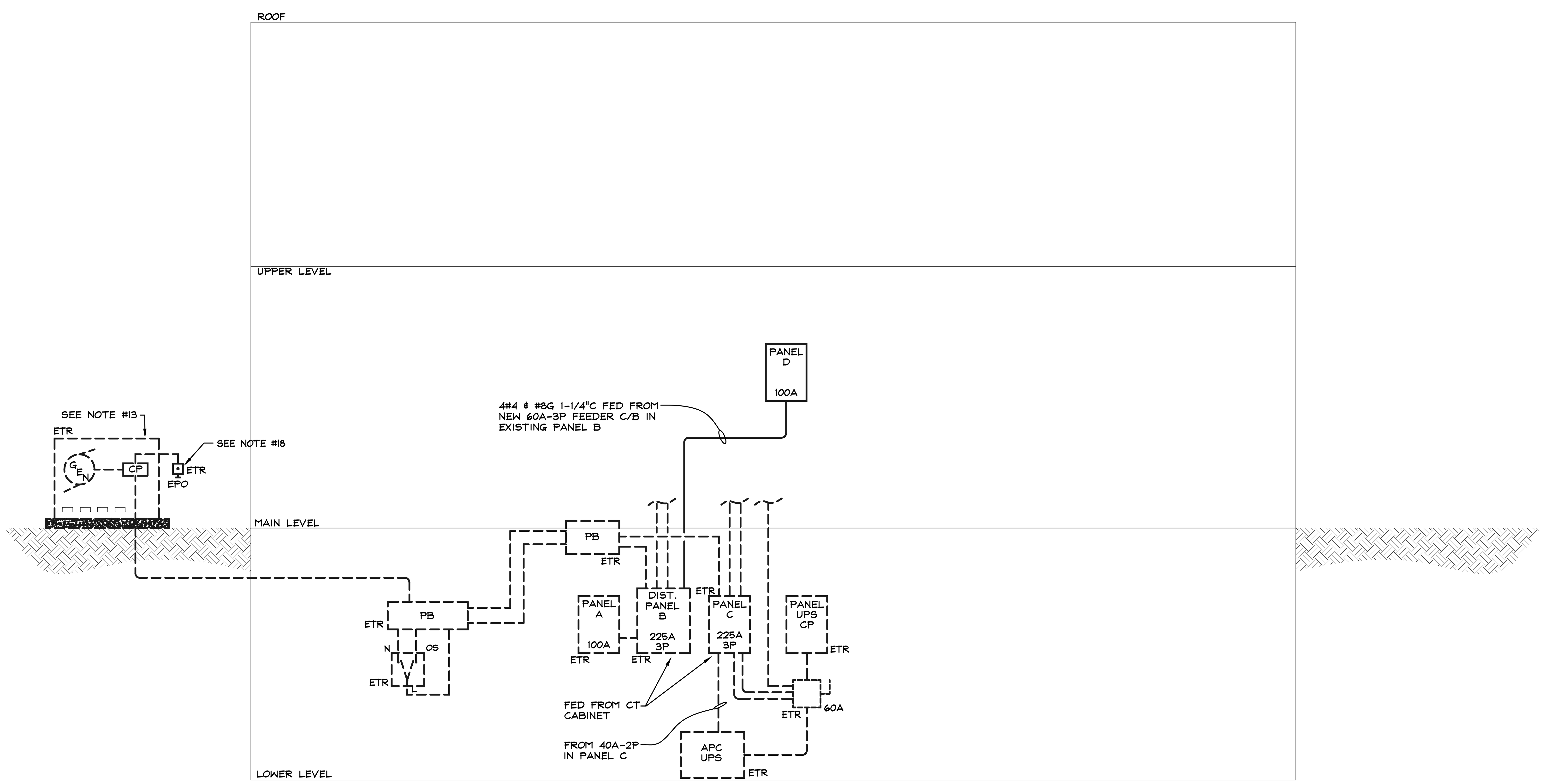
17. EACH ITEM REFERRED TO THIS NOTE IS A 3000 AMPERE, 277/480V WYE RATED TRANSIENT VOLTAGE SURGE SUPPRESSION SYSTEM. REFER TO SPECIFICATIONS.

18. EACH ITEM REFERRED TO THIS NOTED IS AN "EMERGENCY POWER OFF" SWITCH IN A NEMA 3R WEATHERPROOF STOPPER COVER. EPO SWITCH SHALL BE MOUNTED ON THE EXTERIOR OF THE GENERATOR ENCLOSURE IN AN ACCESSIBLE LOCATION.

19. EACH ITEM REFERRED TO THIS NOTE IS AN INDOOR TYPE MODULAR METER CENTER WITH 600A CROSS BUSHING, GROUND BAR, 3P, 4W, 120/208V, 30K AIC SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT.

20. EACH ITEM REFERRED TO THIS NOTE IS A METER CENTER MAIN CIRCUIT BREAKER DEVICE RATED FOR 600A, 3P, SN, 120/208V, 30K AIC 100% RATED

EXISTING CONDITIONS ONE LINE POWER DISTRIBUTION RISER DIAGRAM



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ONE-LINE POWER RISER DIAGRAM AND NOTES

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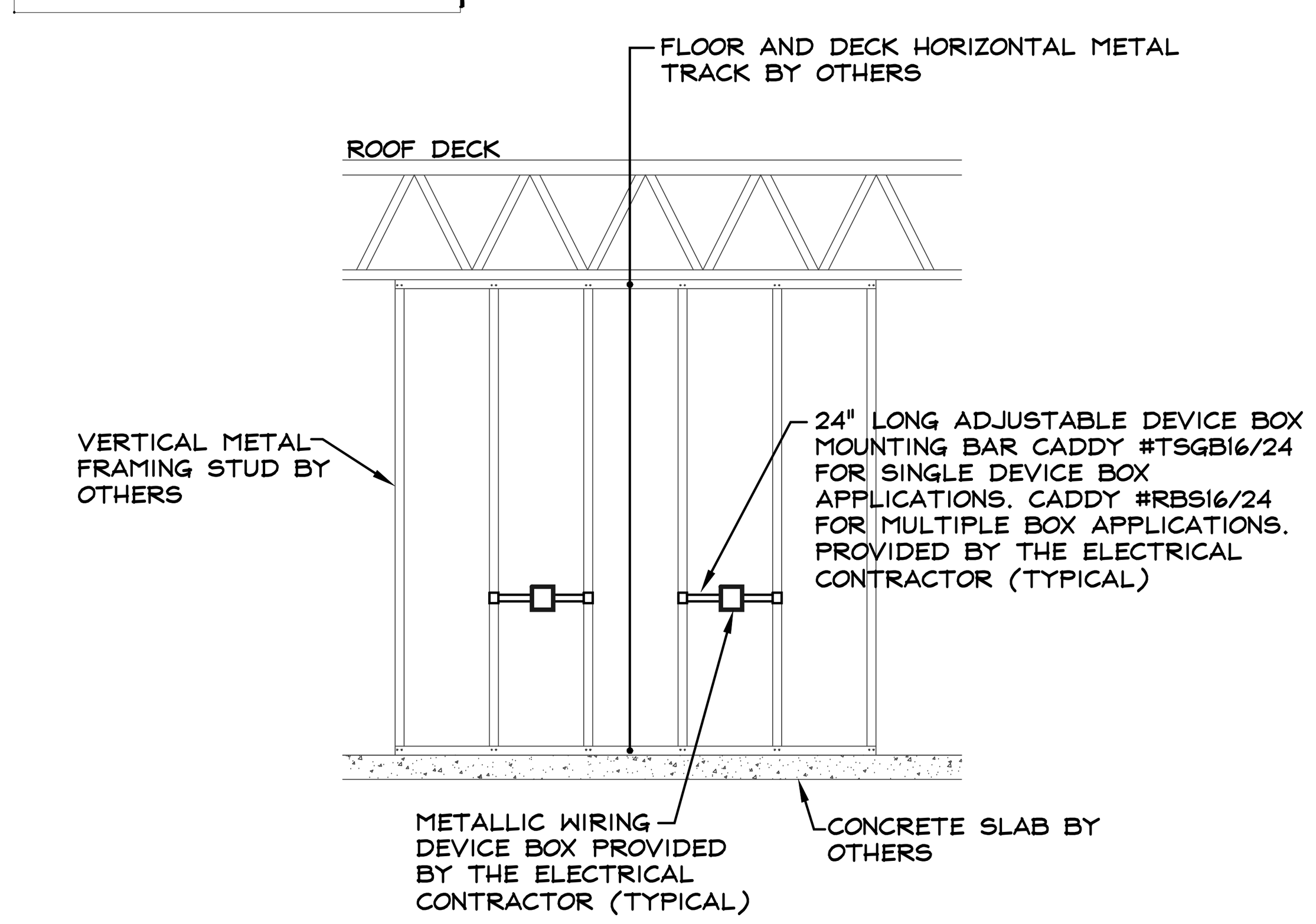
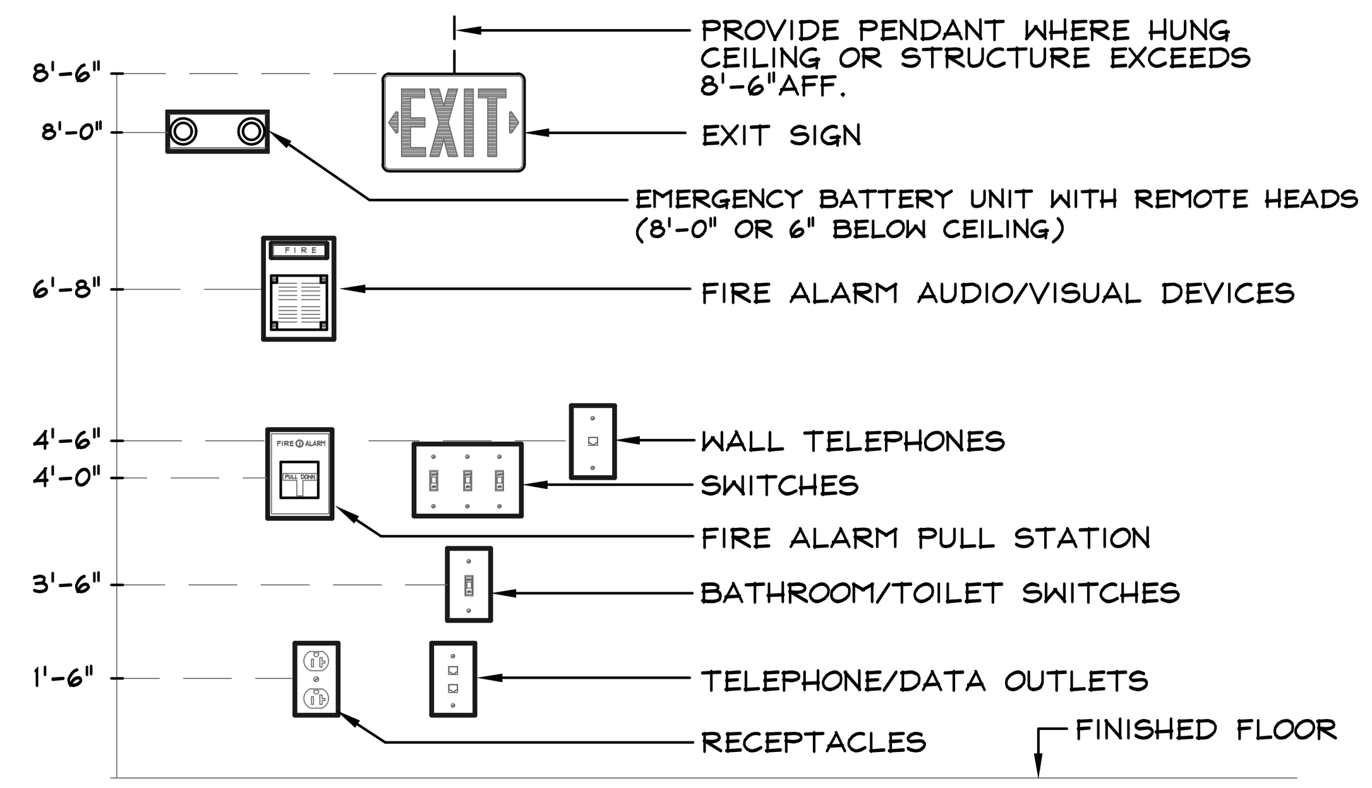
TYPICAL DEVICE BOX INSTALLATION @ METAL STUD

NOTE: PROVIDE METAL STUD BONDING AS PER ARTICLE 250 REQUIREMENTS.



TYPICAL DEVICE MOUNTING HEIGHT DETAIL

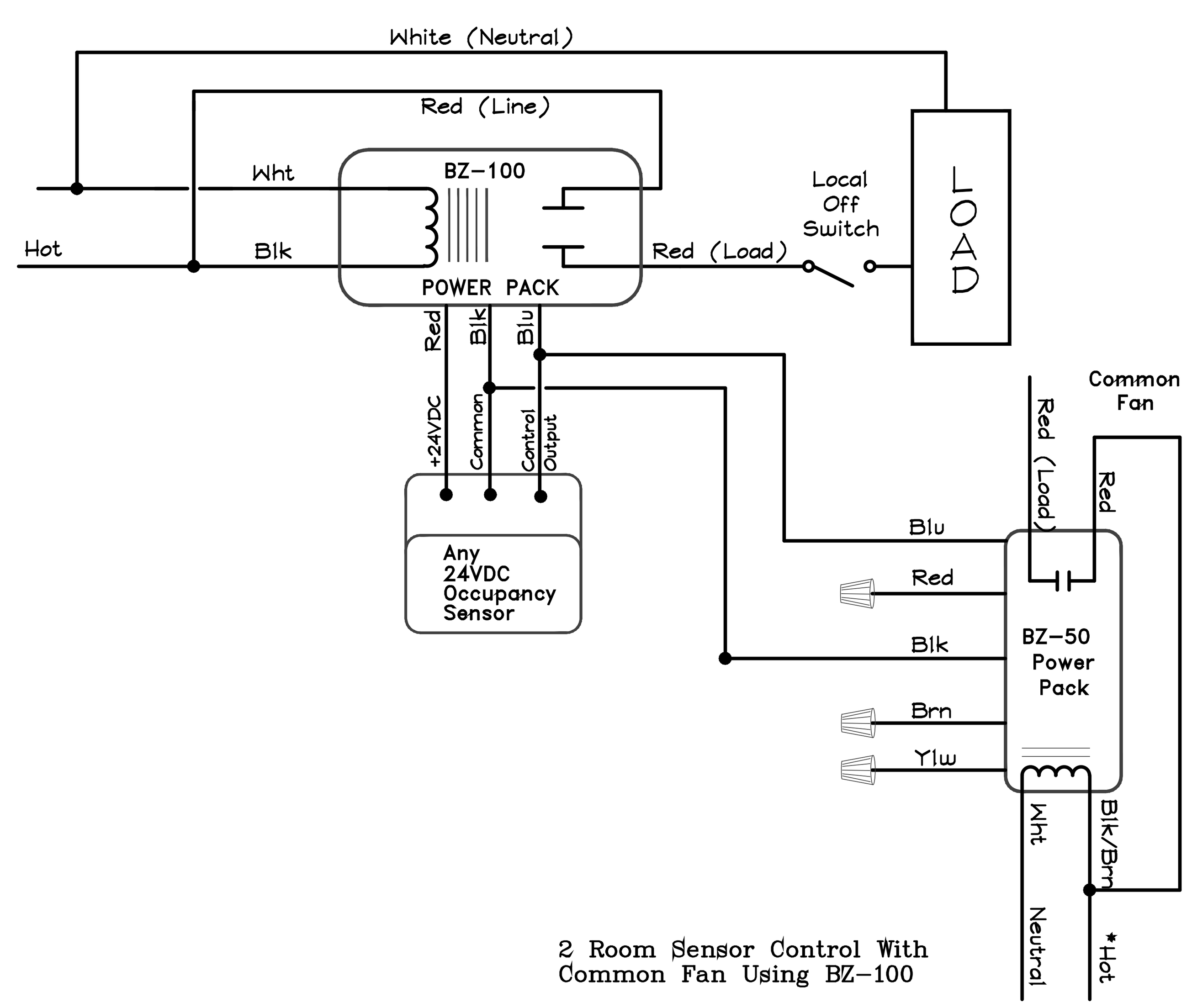


NOTES:
1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICES EXCEPT EXIT SIGNS.

2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.

3. ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS OTHERWISE NOTED.

TYPICAL WIRING DIAGRAM FOR SENSOR CONTROLLED BATHROOM LIGHTING AND EXHAUST FAN

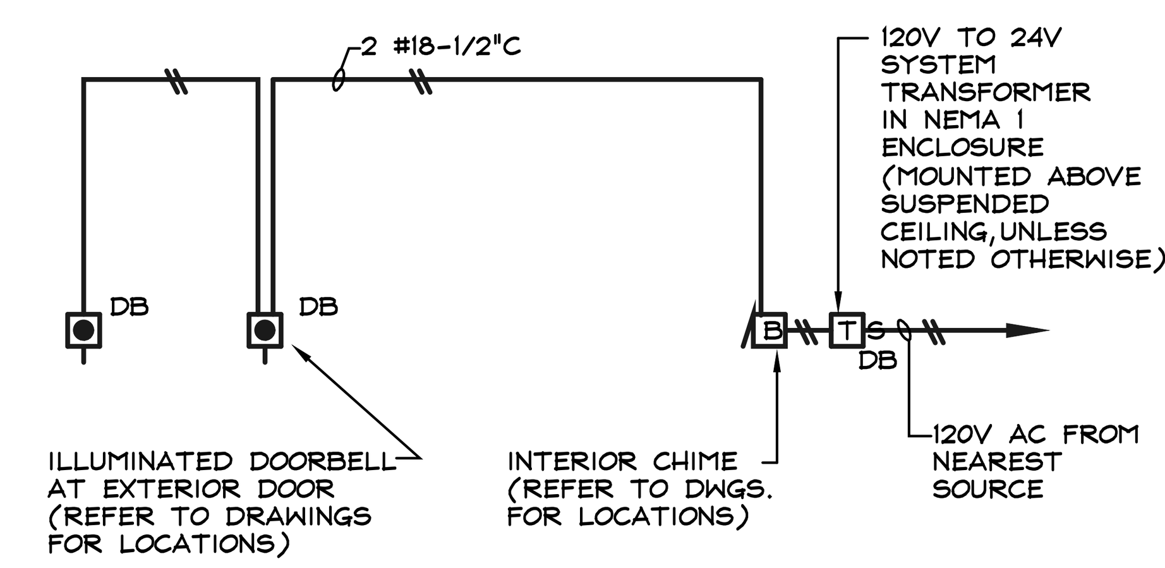


NOTES:

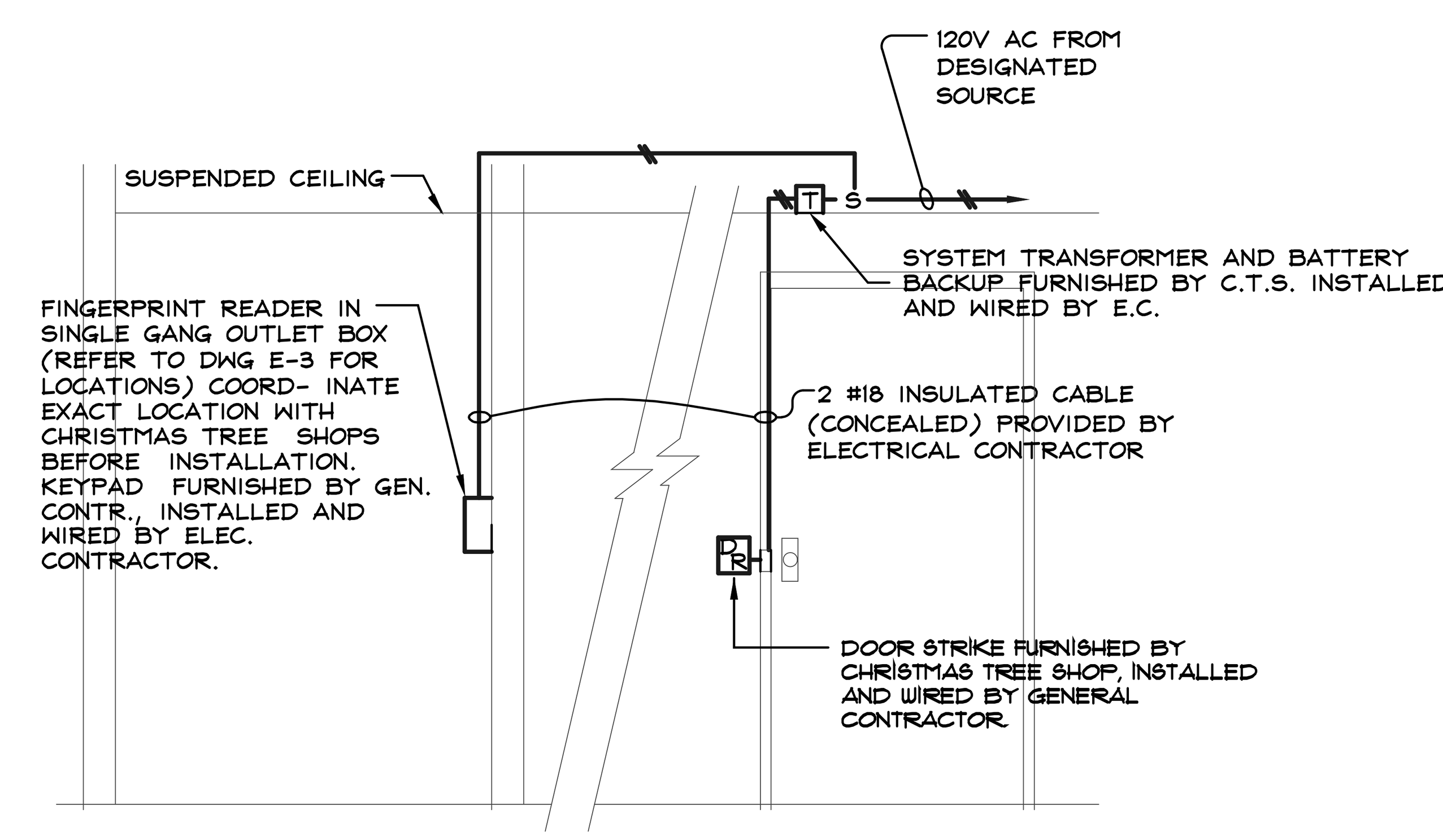
1. ALL POWER PACKS AND SLAVE PACKS TO BE LOCATED ABOVE SUSPENDED ACOUSTICAL CEILINGS IN THE ROOMS CONTROLLED

*Note:
Connect only the supply for the voltage being used. Cap unused power supply wire.

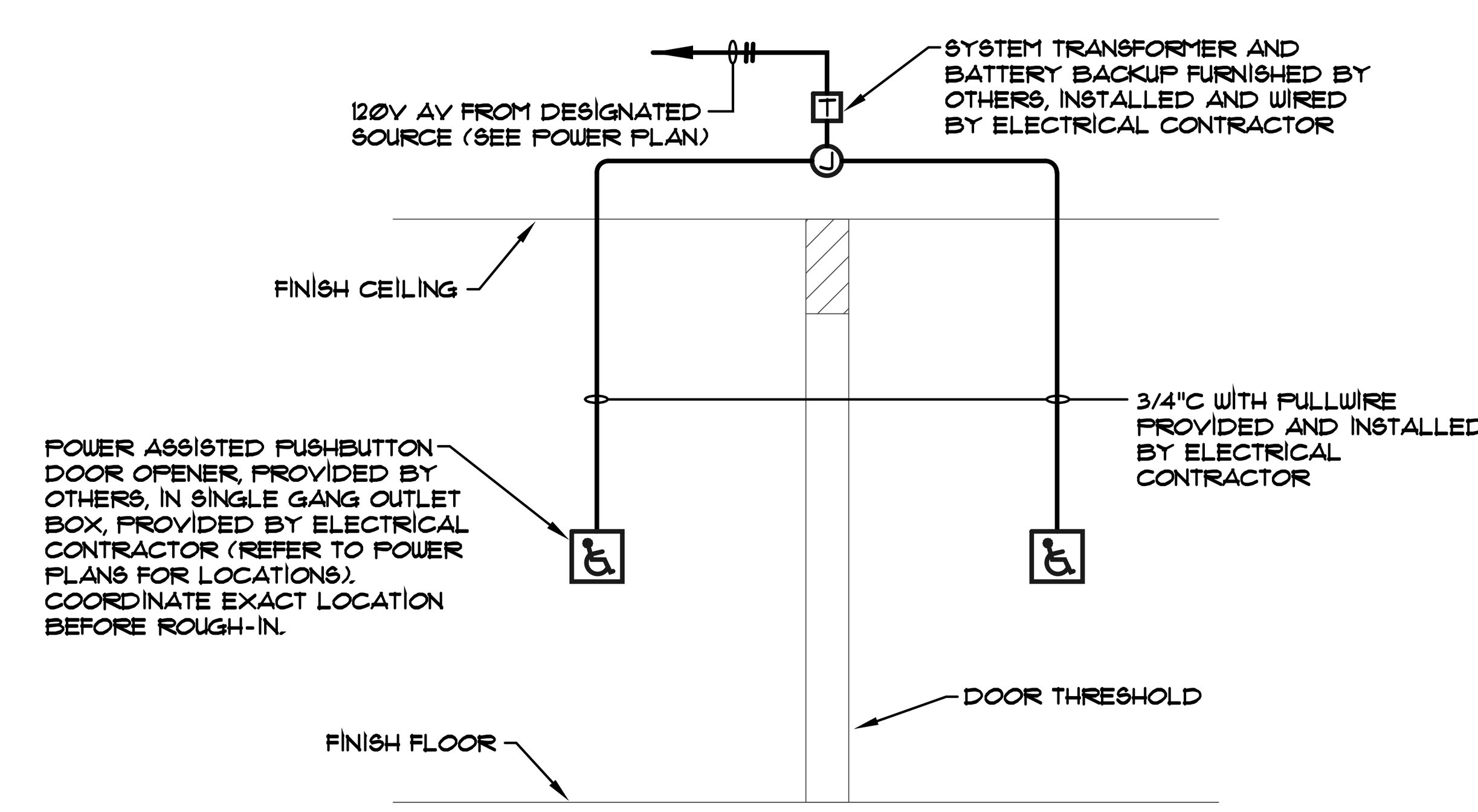
TYPICAL DOORBELL SYSTEM WIRING DIAGRAM



TYPICAL ACCESS SYSTEM ELECTRIC DOOR RELEASE SYSTEM WIRING DIAGRAM



TYPICAL POWER ASSISTED DOOR SYSTEM INSTALLATION DETAIL



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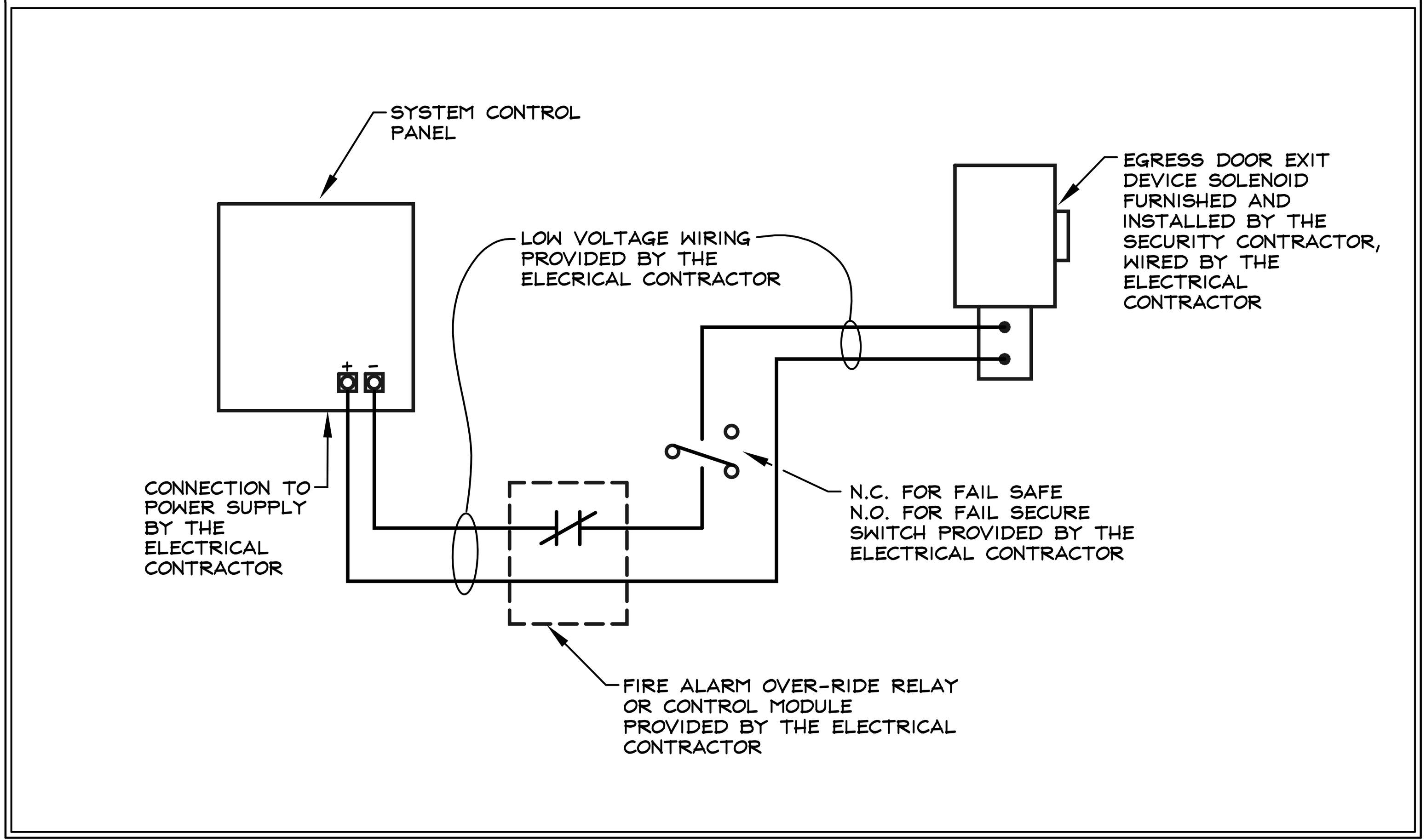
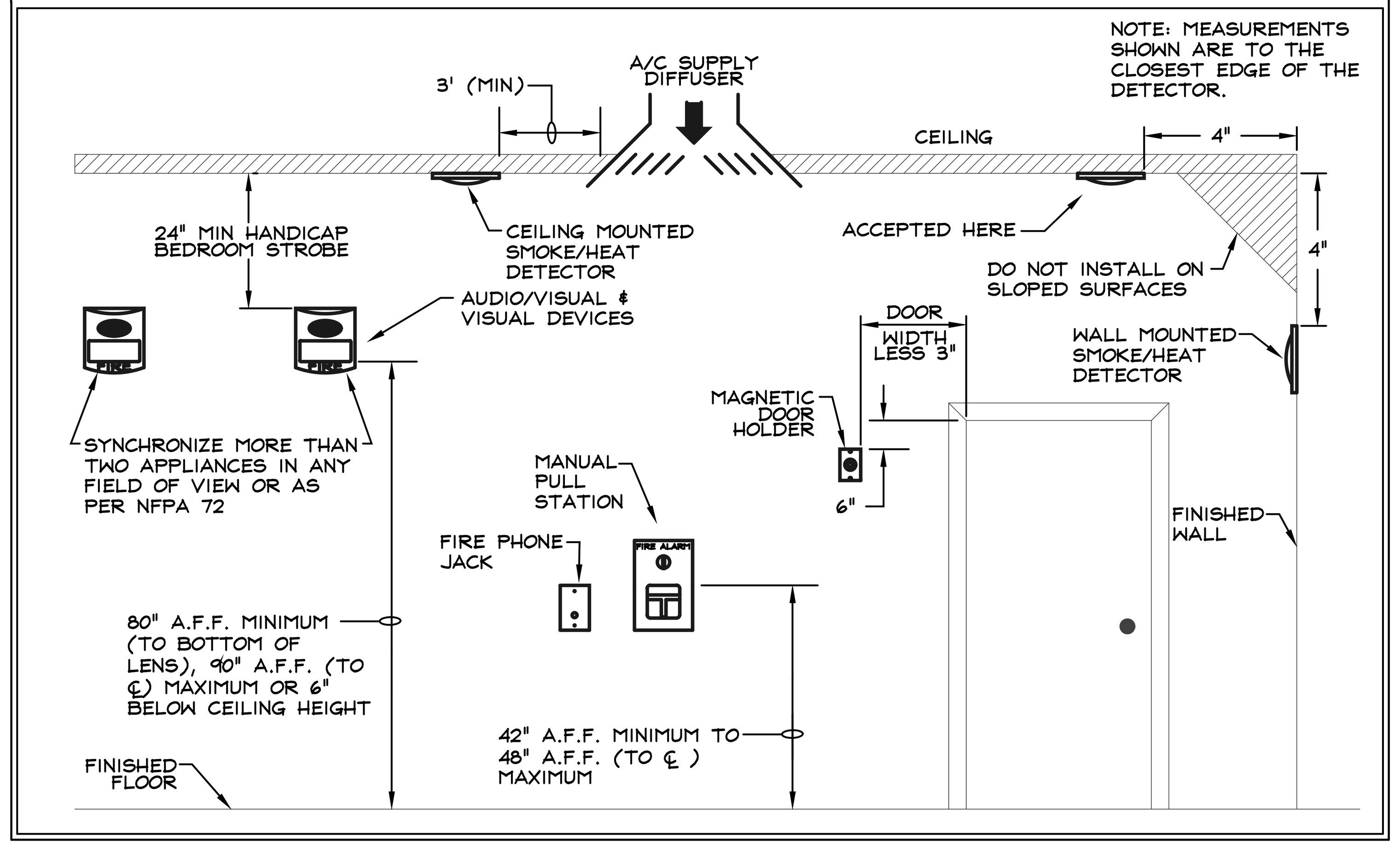
TYPICAL EGRESS DOOR RELEASE WIRING DIAGRAM



TYPICAL FIRE ALARM SYSTEM DEVICE MOUNTING HEIGHT DETAIL

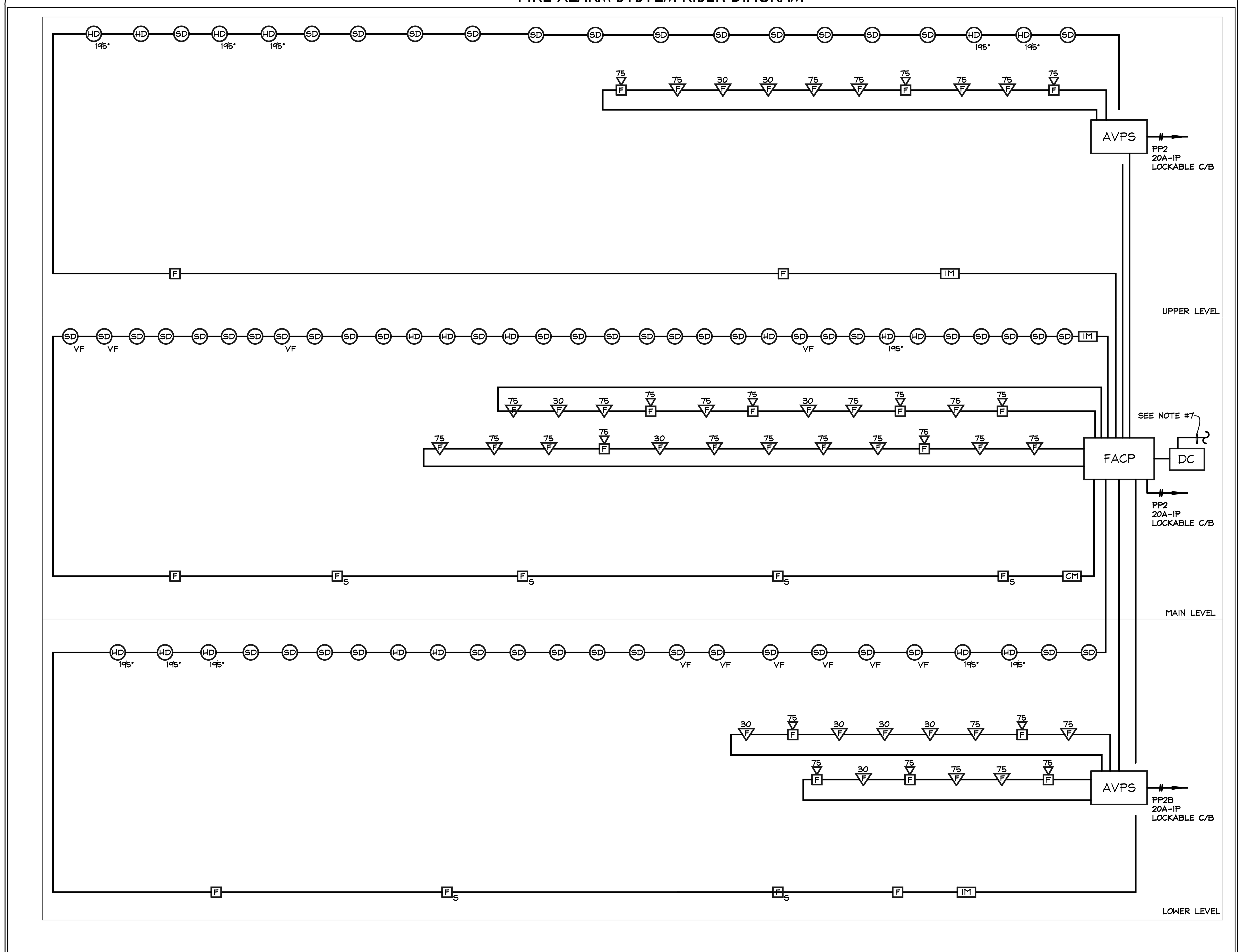


FIRE ALARM SYSTEM LEGEND - ADDRESSABLE

Symbol	Description
FACP	FIRE ALARM CONTROL PANEL
F	MANUAL PULL STATION - M.H. 48" TO ℄ A.F.F. - "S" INDICATES MANUAL STATION WITH STOPPER COVER
▷F	HORN/STROBE UNIT - M.H. 80" AFF OR 6" BELOW CEILING - CANDELA RATING AS INDICATED
520 ▷S	FIRE ALARM 520HZ SOUNDER - M.H. 80" AFF OR 6" BELOW CEILING
▷F	STROBE ONLY UNIT - M.H. 80" A.F.F. OR 6" BELOW CEILING - CANDELA RATINGS AS INDICATED
KK	KEY KEEPER - LOCK BOX - 10 KEY CAPACITY
HD	HEAT DETECTOR - COMBINATION TYPE - "DC" INDICATES DUAL CONTACTS
HD F	HEAT DETECTOR - FIXED TEMPERATURE TYPE
SD	SMOKE DETECTOR - "DC" INDICATES DUAL CONTACTS
SD	WALL MOUNTED SMOKE DETECTOR
SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE WALL MOUNTED SMOKE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE SMOKE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
CO L	SINGLE OR MULTISTATION LOCAL 120V CARBON MONOXIDE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
TR BD	BEAM TYPE SMOKE DETECTOR - TRANSMITTER
REC BD	BEAM TYPE SMOKE DETECTOR - RECEIVER
SA SD	DUCT MOUNTED SMOKE DETECTOR - INSTALLED BY HVAC CONTR.,FURNISHED & WIRED BY ELECT. CONTR.
RTS	REMOTE INDICATING AND TESTING STATION WITH LED INDICATING LIGHT
EB	STANDBY BATTERY UNIT
WF	WATER FLOW SWITCH - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
TS	TAMPER (SUPERVISORY) SWITCH - FURN. & INSTALLED BY SPRINKLER CONTR., WIRED BY ELEC. CONTR.
PIV TS	TAMPER SWITCH - POST INDICATOR VALVE - FURNISHED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR
PS	PRESSURE SWITCH - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
RAI	REMOTE ALARM INDICATOR
RDD	REMOTE DIGITAL DISPLAY UNIT
DH	MAGNETIC DOOR HOLDER
F	RED EXTERIOR FLASHING BEACON
R FA	FIRE ALARM MONITORING RELAY
B	FIRE ALARM BELL - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
MM	MONITOR MODULE
CM	CONTROL MODULE
IM	ISOLATION MODULE
VOM	VENTILATION OVERIDE MODULE
F	MASTER BOX (SEE SPECIFICATIONS)
SD T	SMOKE DETECTOR WITH INTEGRAL THERMAL ELEMENT
177 F SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE SMOKE DETECTOR WITH INTERNAL LOW FREQUENCY AUDIBLE AND VISUAL DEVICE AS WELL AS BATTERY BACKUP. CANDELA RATING AS INDICATED.
CO PE SD L	SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE SMOKE DETECTOR WITH INTEGRAL CARBON MONOXIDE DETECTOR, INTERNAL LOW FREQUENCY AUDIBLE DEVICE AND BATTERY BACKUP
CO SD PE	COMBINATION SMOKE DETECTOR (PHOTOELECTRIC) AND CARBON MONOXIDE DETECTOR WITH THERMAL AND INFRARED HEAT DETECTION
SD VF	SYSTEM PHOTOELECTRIC SMOKE DETECTOR WITH VERIFICATION FEATURE
SB SD VF	SYSTEM PHOTOELECTRIC SMOKE DETECTOR WITH VERIFICATION FEATURE AND 520HZ SOUNDER BASE
CO SB SD PE VF	COMBINATION SMOKE DETECTOR (PHOTOELECTRIC) AND CARBON MONOXIDE DETECTOR WITH THERMAL AND INFRARED HEAT DETECTION, VERIFICATION FEATURE AND 520HZ SOUNDER BASE
FA R MV	MULTI-VOLTAGE RELAY - 120V TO 24V DC
SD	SMOKE/FIRE DAMPER FURNISHED AND INSTALLED BY OTHERS, WIRED BY THE ELECTRICAL CONTRACTOR

NOTE: THIS SYMBOL LIST IS A MASTER SCHEDULE. SOME OF THE SYMBOLS LISTED ABOVE MAY NOT BE APPLICABLE TO THE SCOPE OF WORK FOR THIS PROJECT.

FIRE ALARM SYSTEM RISER DIAGRAM



FIRE ALARM SYSTEM RISER DIAGRAM NOTES

1. OR INDICATES # OF FIRE ALARM CONDUCTORS IN APPROPRIATELY SIZED CONDUIT. ALL FIRE ALARM CONDUCTORS MUST BE COPPER
2. INDICATES TO PROVIDE THE APPROPRIATE QUANTITY OF CONDUCTORS RECOMMENDED BY THE SYSTEM MANUFACTURER.
3. THE ELECTRICAL CONTRACTOR SHALL SUBMIT PLANS, SHOP DRAWINGS, BATTERY CALCULATIONS AND SPECIFICATIONS TO THE LOCAL FIRE DEPARTMENT ON THE LOCATION OF DEVICES AND THE SYSTEM ITSELF BEFORE COMMENCING WORK ON THIS PROJECT.
4. PROVIDE #6 CU. GROUND IN A 3/4"C TO THE MAIN METALLIC WATER SERVICE.
5. THE FIRE ALARM CONTROL PANEL AND ALL SYSTEM DEVICES SHALL BE ADDRESSABLE TYPE AND UL LISTED.
6. PROVIDE ISOLATOR, CONTROL, VENTILATION OVERRIDE, AND MONITOR MODULES AS REQUIRED AND AS NECESSARY.
7. THE TELECOM VENDOR SHALL PROVIDE DUAL LEASED TELEPHONE LINES FROM THE MAIN TELEPHONE TERMINAL BOARD TO THE DIGITAL COMMUNICATOR.
8. ALL DESIGNATED ROOFTOP UNIT SUPPLY AND RETURN AIR FANS SHALL BE AUTOMATICALLY SHUT DOWN WHEN THE FIRE ALARM SYSTEM IS ACTIVATED INTO "ALARM" CONDITION.
9. THE FIRE ALARM CONTROL PANEL SHALL BE EQUIPPED WITH INTEGRAL SURGE PROTECTION DEVICES.
10. ALL SMOKE AND HEAT DETECTOR BASES AND HEADS SHALL BE LABELLED AS IDENTIFIED IN THE FIRE ALARM CONTROL PANEL.
11. DUCT MOUNTED SMOKE DETECTORS SHALL BE AUTOMATICALLY RESET WHEN THE MAIN FIRE ALARM CONTROL PANEL IS RESET.
12. FIRE ALARM SYSTEM WIRING SHALL BE ISOLATED FROM ALL OTHER CONDUCTORS AND MUST TEST FREE OF ALL GROUNDS.
13. ALTERNATING CURRENT CARRYING CONDUCTORS SHALL NOT BE INSTALLED CLOSE TO, OR IN THE SAME RACEWAY WITH, THE FIRE ALARM CONDUCTORS
14. ALL FIRE ALARM SYSTEM WIRING SHALL BE COPPER AND SHALL BE UL LISTED AS PER N.E.C. 760.
15. THE FIRE ALARM WIRING METHOD SHALL BE EITHER TYPE MC FIRE ALARM CABLE OR THTN 18 GAUGE (MINIMUM) CONDUCTORS INSTALLED IN EMT CONDUIT.
16. ALL FIRE ALARM DEVICES SHALL BE INSTALLED IN A JUNCTION, WORK OR BACKBOX.
17. ALL FIRE ALARM SYSTEM RACEWAYS AND BOXES SHALL BE FIELD OR FACTORY PAINTED RED.
18. THERE SHALL BE NO "T" TAPPING ALLOWED ON ANY FIRE ALARM CIRCUITS.
19. ALL SMOKE AND HEAT DETECTORS SHALL BE LOCATED A MINIMUM OF 36" AWAY FROM SUPPLY AIR DIFFUSERS OR OUTLETS.
20. AUDIO/VISUAL UNITS SHALL BE SYNCHRONIZED AS PER INTERNATIONAL BUILDING CODE 2015 AND NFPA 72 2013 ANNEX A 18.4.2.5 REQUIREMENTS.
21. AUDIO/VISUAL UNITS SHALL BE SYNCHRONIZED AS PER INTERNATIONAL BUILDING CODE 2015 AND NFPA 72 2010 ANNEX A 18.4.2.5 REQUIREMENTS.
22. PROVIDE A MINIMUM OF 20% SPARE CAPACITY ON THE NOTIFICATION APPLIANCE CIRCUITS FOR POTENTIAL FUTURE VISIBLE NOTIFICATION DEVICES TO ACCOMMODATE HEARING IMPAIRED INDIVIDUALS.
23. PROVIDE APPROPRIATE 2 HOUR RATED CIRCUIT INTEGRITY FIRE ALARM CABLING IN METALLIC RACEWAYS.
24. IF THE AMHERST FIRE DEPARTMENT REQUIRES THE SUBMISSION OF AN INPUT/OUTPUT MATRIX AS PART OF THE PERMIT OR APPROVAL PROCESS, THEN THE INPUT/OUTPUT MATRIX SHALL BE PREPARED AND SUBMITTED TO THE AMHERST FIRE DEPARTMENT BY THE FIRE ALARM SYSTEM SUPPLIER.

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FIRE ALARM LEGEND AND DETAILS

proj. no.: 2017-024

FA0.01

219181E

FIRE ALARM PLAN NOTES

1. ALL EXISTING FIRE ALARM DEVICES, COMPONENTS, WIRING, ETC. SHALL REMAIN IN THIS ROOM OR AREA UNLESS SPECIFICALLY NOTED OTHERWISE.

2. ALL EXISTING FIRE ALARM DEVICES, COMPONENTS, WIRING, ETC. TO BE REMOVED IN THIS ROOM OR AREA UNLESS SPECIFICALLY NOTED OTHERWISE.

3. THE ELECTRICAL CONTRACTOR SHALL OBTAIN A FIRE ALARM PERMIT FROM THE AMHERST FIRE DEPARTMENT PRIOR TO COMMENCING WORK.

4. AT THE COMPLETION OF THE PROJECT, THE FIRE ALARM SYSTEM SHALL BE TESTED TO THE SATISFACTION OF THE AMHERST FIRE DEPARTMENT.

5. ALL SMOKE DETECTORS WHICH ARE EXISTING TO REMAIN OR ARE EXISTING TO BE RELOCATED IN THE RENOVATED AREA SHALL BE BAGGED AT THE BEGINNING OF EACH WORK SHIFT AND SHALL BE DE-BAGGED AT THE END OF EACH WORK SHIFT.

6. ALL INDICATING DEVICES SHALL BE SYNCHRONIZED TO COMPLY WITH INTERNATIONAL BUILDING CODE 2015 EDITION AND NFPA 72 2013 ANNEX A 18.4.2.5 REQUIREMENTS.

7. PROVIDE A STOPPER COVER ON EACH EXISTING MANUAL STATION REFERRED TO THIS NOTE.

8. THE BUILDING ENGINEER MUST BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF ANY WORK TO BE PERFORMED ON THE FIRE ALARM SYSTEM. THE FIRE ALARM SERVICE CONTRACTOR MUST BE PRESENT TO DISABLE AND RESTORE THE SYSTEM AT THE ELECTRICAL CONTRACTORS EXPENSE.

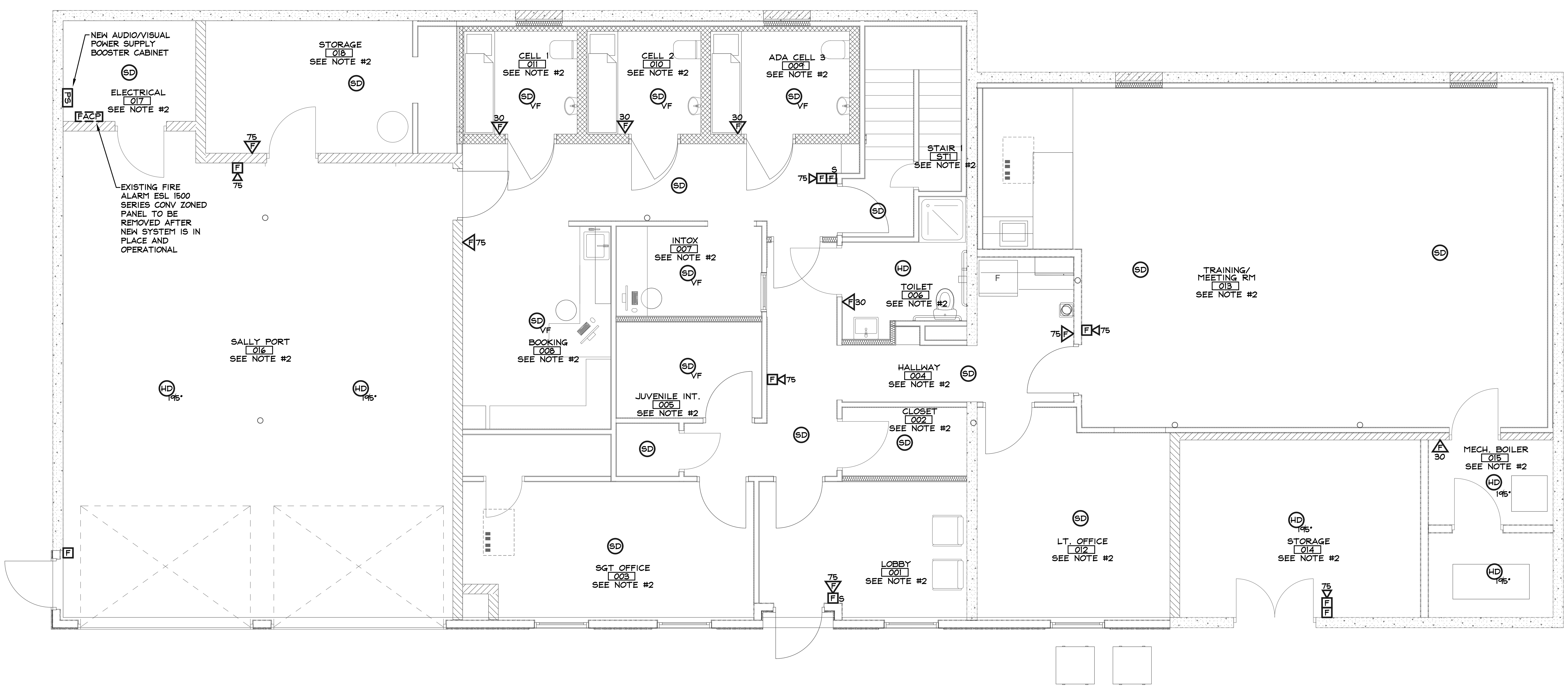
9. ONCE ACTIVATED, NO PORTION OF THE FIRE ALARM SYSTEM SHALL BE PERMITTED TO REMAIN OUT OF SERVICE OVERNIGHT.

10. FIRE ALARM TESTING MUST COMPLY WITH BUILDING MANAGEMENTS REQUIREMENTS (SEE BUILDING STANDARDS).

11. PROVIDE AUDIO/VISUAL SYSTEM SHUNT.

12. ALL MAGNETIC LOCK DEVICES AND ELECTRICAL LATCHES SHALL RELEASE UPON FIRE ALARM ACTIVATION.

13.FIRE ALARM CONTRACTOR SHALL COORDINATE WITH DOOR ACCESS CONTROL FOR ALL EGRESS DOORS.



LOWER LEVEL FIRE ALARM PLAN
SCALE: 1/4" = 1'-0"

Amherst Police Department
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Amherst, NH

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LOWER LEVEL FIRE ALARM PLAN
proj. no.: 2017-024

FA1.01

219181E

FIRE ALARM PLAN NOTES

1. ALL EXISTING FIRE ALARM DEVICES, COMPONENTS, WIRING, ETC. SHALL REMAIN IN THIS ROOM OR AREA UNLESS SPECIFICALLY NOTED OTHERWISE.

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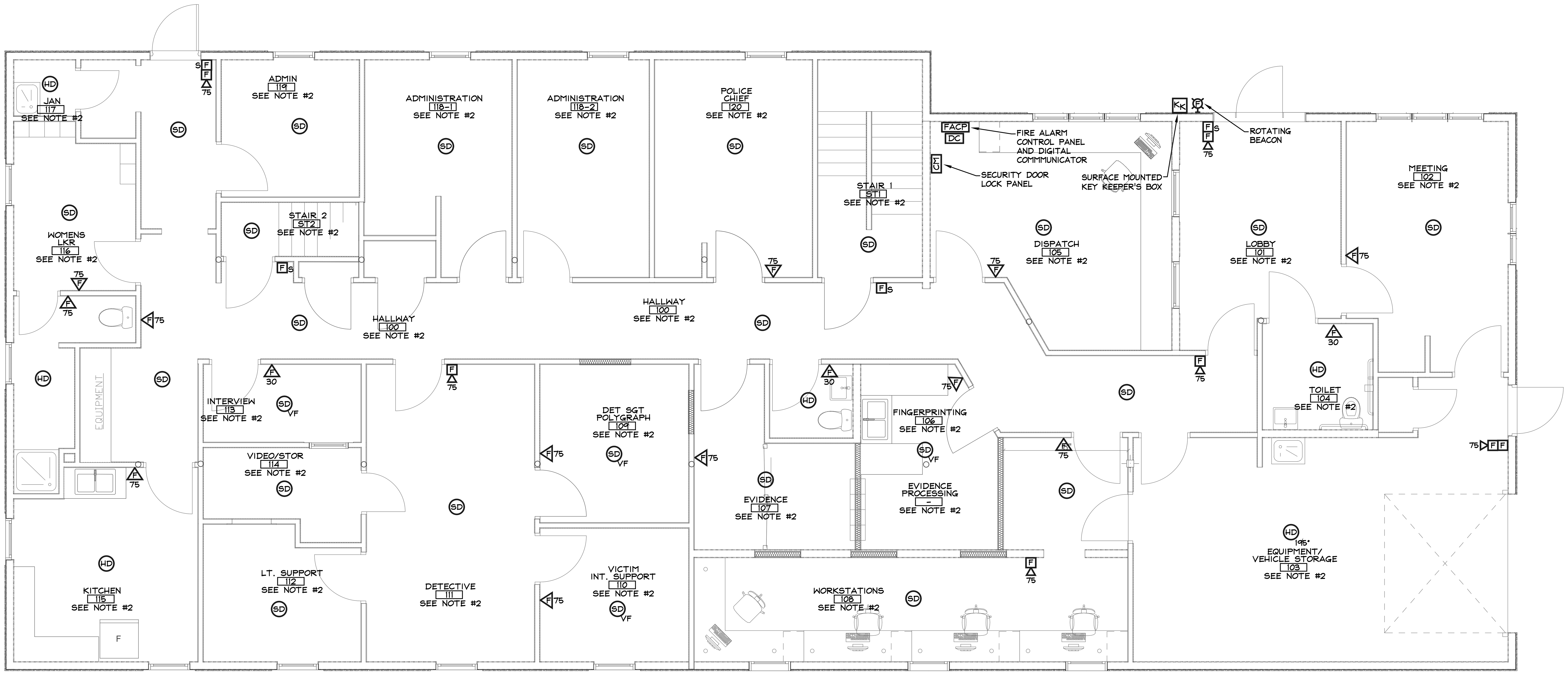

MAIN LEVEL FIRE ALARM PLAN

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

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ISSUE	DATE	DESCRIPTION
	5-20-2020	

MAIN LEVEL FIRE ALARM PLAN

proj. no.: 2017-024

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219181E

FIRE ALARM PLAN NOTES

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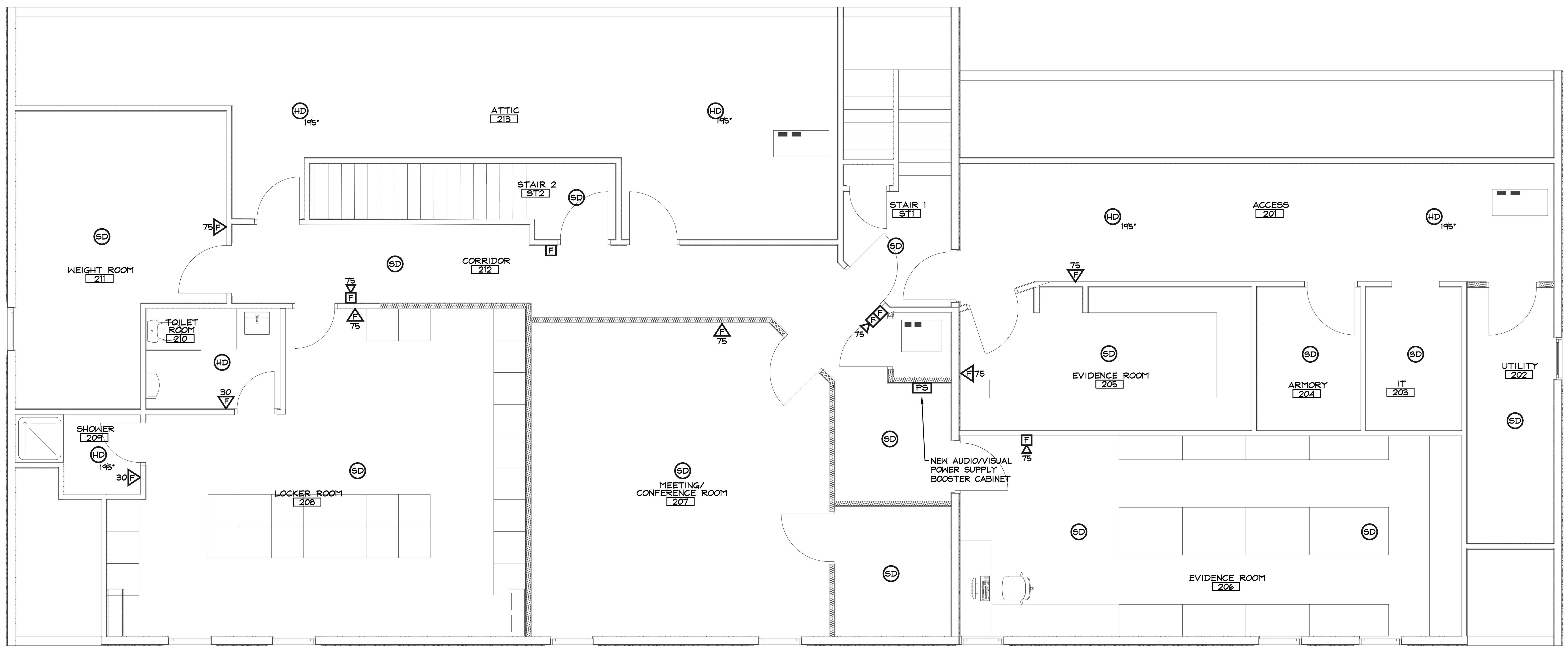

UPPER LEVEL FIRE ALARM PLAN

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

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UPPER LEVEL FIRE ALARM PLAN

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219181E

FIRE ALARM SYSTEM SPECIFICATION

- A. THE FIRE ALARM SYSTEM SHALL BE A MICROPROCESSOR BASED CLOSED CIRCUIT, ELECTRICALLY SUPERVISED ADDRESSABLE, FIRE ALARM SYSTEM AS SPECIFIED HEREIN AND INDICATED ON THE DRAWINGS. THE SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO ALL CONTROL PANELS, POWER SUPPLIES, INITIATING DEVICES, AUDIBLE AND VISUAL ALARM DEVICES, STANDBY BATTERIES, DIGITAL COMMUNICATOR, CONDUIT, WIRE, AND ALL ACCESSORIES REQUIRED TO PROVIDE A COMPLETE OPERATING FIRE ALARM SYSTEM.

- B. ALL FIRE ALARM SYSTEM EQUIPMENT SHALL BE LABELED WITH THE MANUFACTURER'S NAME AND LOGO TYPE TO ASSURE THE INTEGRITY OF THE COMPLETE SYSTEM. "HYBRIDIZED" SYSTEMS (SYSTEMS CONTAINING EQUIPMENT FROM SEVERAL DIFFERENT MANUFACTURERS) SHALL NOT BE ACCEPTED. ALL COMPONENTS OF THE SYSTEM, INCLUDING SIGNAL AND INITIATING DEVICES, SHALL BE OF THE ADDRESSABLE TYPE.

- C. ALL EQUIPMENT SHALL BE LISTED AS POWER LIMITED BY UNDERWRITERS LABORATORIES INC. APPROVED BY FACTORY MUTUAL RESEARCH OR AS ACCEPTED BY THE AUTHORITY HAVING JURISDICTION. THE FIRE ALARM SYSTEM IN ITS ENTIRETY SHALL BE IN COMPLIANCE WITH ALL APPLICABLE STATE AND LOCAL FIRE AND ELECTRICAL CODES AND COMPLY WITH THE REQUIREMENTS OF THE AMHERST FIRE DEPARTMENT FIRE PROTECTION REGULATIONS. THE SYSTEM SHALL ALSO COMPLY WITH AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. ACCESSORY COMPONENTS AS REQUIRED SHALL BE CATALOGED BY MANUFACTURER AND UL LISTED TO OPERATE WITH THE MANUFACTURER'S CONTROL PANEL.

- D. THE SYSTEM SHALL BE WIRED AS A CLASS A (FOUR WIRE) SYSTEM THROUGHOUT INCLUDING SIGNAL INITIATING AND AUDIBLE CIRCUITS OR AS REQUIRED BY THE AMHERST FIRE DEPT.

- E. THE FIRE ALARM SYSTEM SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE FOLLOWING CURRENT NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS:

1. NFPA 71, INSTALLATION, MAINTENANCE, AND USE OF SIGNALING SYSTEMS FOR CENTRAL STATION SERVICE.
2. NFPA 72, INSTALLATION, MAINTENANCE, AND USE OF PROTECTIVE SIGNALING SYSTEMS.
3. NFPA 90A, INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS
4. NFPA 101, SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES.

- F. ALL WIRE AND CABLE SHALL BE UL LISTED AND A MINIMUM OF 14 AWG AS REQUIRED BY LOCAL CODES AND AUTHORITY HAVING JURISDICTION. THE MINIMUM WIRE SIZE FOR AC POWER SUPPLY CONNECTIONS SHALL BE #12 AWG. RACEWAYS CONTAINING CONDUCTORS IDENTIFIED AS "FIRE PROTECTIVE ALARM SYSTEMS" CONDUCTORS SHALL NOT CONTAIN ANY OTHER CONDUCTORS AND NO AC CURRENT CARRYING CONDUCTORS SHALL BE ALLOWED IN THE SAME RACEWAY WITH THE FIRE ALARM DETECTION AND SIGNALING CONDUCTORS.

- G. THE ACTUATION OF ANY MANUAL ALARM STATION OR AUTOMATIC INITIATING DEVICE WITHIN THE SYSTEM SHALL CAUSE THE FOLLOWING ACTIONS OR EFFECTS TO TAKE PLACE:

1. INDICATE BY DISPLAY AT THE MAIN CONTROL PANEL THE LOCATION FROM WHICH THE DEVICE WAS ACTUATED.

2. SOUND ALL AUDIBLE DEVICES AND FLASH ALL-LIGHTS UNTIL MANUALLY RESET BY THE AMHERST FIRE DEPARTMENT.

3. OPERATE A RELAY AT THE FIRE ALARM CONTROL PANEL TO ACCOMMODATE TRANSMISSION OF A "FIRE" SIGNAL TO THE LICENSED CENTRAL STATION DIGITAL COMMUNICATOR. NOTE: TAMPER SWITCHES SHALL REPORT TO THE CENTRAL STATION FACILITY AS AN ALARM, BUT SHALL ACTIVATE THE CONTROL PANEL IN A "TROUBLE" MODE.

4. RETURN THE ELEVATOR TO THE DESIGNATED LEVEL.

- H. THE CONTROL PANEL SHALL BE MODULAR, OF DEAD-FRONT CONSTRUCTION USING SOLID-STATE COMPONENTS TO OPERATE THE SYSTEM. THE CONTROL PANEL SHALL HAVE A MINIMUM OF 198 POINT CAPABILITY WITH 99 INTELLIGENT DEVICE CAPACITY, 99 PROGRAMMABLE RELAYS AND 8 PROGRAMMABLE BELL CIRCUIT CAPABILITY. ALARM INITIATING CIRCUITS SHALL MEET MASSACHUSETTS ELECTRICAL CODE REQUIREMENTS FOR LIMITED ENERGY APPLICATIONS. THE CONTROL UNIT SHALL CONTAIN AN INTERNAL AUDIBLE SIGNAL WITH ITS OWN SILENCING SWITCH. THERE SHALL BE SEPARATE SWITCHES FOR SYSTEM RESET, LAMP TEST, ALARM SILENCE AND CENTRAL STATION CIRCUIT DISCONNECT.

1. WHEN THE OPERATED DEVICE IS RESTORED TO NORMAL, THE CONTROL PANEL SHALL BE MANUALLY AT REST, EXCEPT THAT THE ALARMS MAY BE SILENCED AS DESCRIBED ELSEWHERE IN THESE SPECIFICATIONS.

2. ALARMS SHALL BE SILENCED BY A SWITCH LOCATED IN THE CONTROL PANEL AND AT THE REMOTE DISPLAY/CONTROL UNIT. WHEN SILENCED, THIS SHALL NOT PREVENT THE RESOUNDING OF SUBSEQUENT ALARMS IF ANOTHER ZONE(S) SHOULD ALARM (SUBSEQUENT ALARM FEATURE).

3. WHEN ALARMS ARE SILENCED THE ZONE INDICATING RED LED'S ON THE CONTROL PANEL, AND ON ANY REMOTE DISPLAYS SHALL REMAIN LIT, UNTIL THE OPERATED DEVICE IS RETURNED TO NORMAL, AND THE CONTROL PANEL IS MANUALLY RESET.

4. A GREEN PILOT LED SHALL NORMALLY BE LIT, INDICATING THAT THE SYSTEM IS RECEIVING NORMAL 120 VAC ELECTRICAL POWER. A FAILURE OF NORMAL SYSTEM POWER SHALL CAUSE THIS LED TO EXTINGUISH.

5. A YELLOW "SYSTEM TROUBLE" LED SHALL LIGHT AND A SYSTEM TROUBLE SOUNDER SHALL SOUND WHENEVER ANY TROUBLE CONDITION EXISTS. FAILURE OF NORMAL POWER, OPENS OR SHORT CIRCUITS ON THE INDICATING CIRCUITS, DISARRANGEMENTS IN SYSTEM WIRING, OR SYSTEM GROUND FAULTS SHALL ACTIVATE THE TROUBLE CIRCUITRY. A SILENCING SWITCH SHALL BE PROVIDED TO SILENCE THE SOUNDER WHICH SHALL BE SO ARRANGED THAT THE TROUBLE LED WILL REMAIN LIT UNTIL THE SYSTEM IS RESTORED TO NORMAL. WHEN THE SYSTEM IS RESTORED TO NORMAL , THE SOUNDER SHALL RESOUND TO REMIND SERVICE PERSONNEL TO RETURN THE SILENCING SWITCH TO ITS NORMAL POSITION.

6. CIRCUITRY SHALL BE PROVIDED IN THE CONTROL PANEL TO PERMIT TRANSMISSION OF AN ALARM SIGNAL OVER A CENTRAL CIRCUIT RECEIVING PANEL. A REVERSE POLARITY CIRCUIT AS REQUIRED SHALL BE PROVED IN THE CONTROL PANEL. THERE SHALL BE A SUPERVISED DISCONNECT SWITCH TO ALLOW TESTING OF THE FIRE ALARM SIGNALS WITHOUT TRANSMITTING AN ALARM SIGNAL TO THE AMHERST FIRE DEPARTMENT.

7. THE CONTROL UNIT SHALL BE RED IN COLOR AND SHALL INCLUDE THE FOLLOWING FEATURES:

A. AUXILIARY SPDT CONTACTS IN THE CONTROL UNIT PER ZONE, AND ONE SET OF SPDT CONTACTS WHICH WILL OPERATE ON A GENERAL ALARM CONDITION.

B. AUXILIARY CIRCUITRY IN THE CONTROL PANEL TO OPERATE REMOTE RELAYS, FOR THE CONTROL OF BLOWERS IN THE AIR HANDLERS.

C. SIXTY (60) HOURS OF BATTERY STANDBY (AS REQUIRED PER NFPA 72) USING RECHARGEABLE BATTERIES WITH AUTOMATIC HIGH-LOW RATE CHARGER TO MAINTAIN STANDBY BATTERIES IN A FULLY CHARGED CONDITION. THE CHARGER SHALL BE CAPABLE OF CHARGING EITHER VENTED NICKEL CADMIUM OR SEALED LEAD-ACID BATTERIES.

D. A SOLID-STATE POWER TRANSFER CIRCUIT THAT SHALL SWITCH TO STANDBY POWER AUTOMATICALLY AND INSTANTANEOUSLY IF NORMAL POWER FAILS OR FALLS BELOW 15% OF NORMAL ("BROWN OUT" CONDITIONS). THIS CIRCUIT SHALL BE AN INTEGRAL PART OF THE POWER SUPPLY MODULE, TO ALLOW OPERATION OF THE COMPLETE FIRE ALARM SYSTEM ON THE SECONDARY SOURCE OF POWER WITH THE PRIMARY POWER REMOVED.

E. A MILLIMETER TO MEASURE CURRENT PASSING THROUGH THE SYSTEM.

F. A VOLTMETER TO MEASURE THE VOLTAGE (DC) AT WHICH THE SYSTEM IS OPERATING.

G. A GROUND FAULT DETECTION CIRCUIT, TO DETECT POSITIVE AND NEGATIVE GROUNDS ON ALL FIELD WIRING. THE GROUND FAULT DETECTOR SHALL CONTAIN AN INDIVIDUAL LED FOR VISUAL INDICATION OF EITHER A POSITIVE OR NEGATIVE GROUND FAULT CONDITIONS SHALL OPERATE THE GENERAL TROUBLE DEVICES AS SPECIFIED HEREIN BUT SHALL NOT CAUSE AN ALARM TO BE SOUNDED.

H. A "SHORT CIRCUIT" LED SHALL BE A STANDARD FEATURE OF THE FIRE ALARM CONTROL PANEL. THIS CIRCUIT SHALL MONITOR THE INDICATING APPLIANCE CIRCUITS FOR SHORT CIRCUITS AND SHALL HAVE AN INDIVIDUAL LED FOR VISUAL INDICATION OF CIRCUITS AS WELL AS OPERATING TROUBLE DEVICES AS SPECIFIED HEREIN BUT SHALL NOT CAUSE AN ALARM TO BE SOUNDED.

I. ALL TRANSISTORS ON THE COMMON CONTROL AND INDIVIDUAL ZONE PRINTED CIRCUIT BOARDS SHALL BE OF A PLUG-IN TYPE.

J. LIGHTNING PROTECTION SHALL BE A STANDARD FEATURE OF THE FIRE ALARM CONTROL PANEL, AND SHALL BE INCORPORATED INTO THE POWER SUPPLY CIRCUITS, COMMON CONTROL CIRCUITS, INDICATING APPLIANCE CIRCUITS, SMOKE DETECTOR POWER CIRCUITS, AND LEASED LINE POLARITY REVERSAL CIRCUIT. SYSTEMS THAT REQUIRE OPTIONAL MODULES TO PROVIDE THIS PROTECTION WILL NOT BE CONSIDERED EQUAL.

K. INDIVIDUAL CIRCUIT FUSES SHALL BE PROVIDED FOR THE FOLLOWING: SMOKE DETECTOR, POWER, MAIN POWER SUPPLY, EACH INDICATING APPLIANCE CIRCUIT, BATTERY STANDBY POWER, AND AUXILIARY OUTPUT.

L. A "BATTERY TEST" SWITCH SHALL BE A STANDARD FEATURE OF THE BASIC MASTER FIRE CARD, WHEN ACTIVATED IT SHALL DISCONNECT THE POWER SUPPLY AND OPERATE THE ALARM INDICATING APPLIANCES FROM THE STANDBY BATTERIES, WITHOUT SENDING A SIGNAL TO THE AMHERST FIRE DEPARTMENT OR CENTRAL STATION.

M. A "LAMP TEST" SWITCH SHALL BE A STANDARD FEATURE OF THE FIRE ALARM CONTROL PANEL AND SHALL TEST ALL SUPERVISED RED ALARM LED'S AND YELLOW TROUBLE LED'S CONTAINED WITHIN THE SYSTEM.

N. AN OVER VOLTAGE SENSING CIRCUIT SHALL CAUSE YELLOW LED TO LIGHT AND OPERATE THE SYSTEM TROUBLE DEVICES SHOULD A FAULT OCCUR WITHIN THE POWER SUPPLY CAUSING TOO HIGH VOLTAGE BEING SUPPLIED TO THE CONTROL PANEL.

O. THE CONTROL PANEL SHALL HAVE PROVISIONS FOR SUPERVISED REMOTE RESET CAPABILITIES.

8. AT A MINIMUM, THE FIRE ALARM CONTROL PANEL SHALL BE EQUIPPED WITH THE FOLLOWING SYSTEM COMPONENTS:

- CENTRAL PROCESSING UNIT.
- DIGITAL DISPLAY ASSEMBLY INCLUDING 30 KEY KEYPAD, 80 CHARACTER LCD AND DISPLAY INTERFACE BOARD.
- LOOP INTERFACE BOARD FOR COMMUNICATION WITH INTELLIGENT DETECTORS AND ADDRESSABLE MODULES.
- MAIN POWER SUPPLY UNIT MODULE
- AUDIO VISUAL POWER SUPPLY MODULE
- DIGITAL COMMUNICATOR TRIP MODULE.
- NOISE CONTROL MODULE FOR SLC LOOP CIRCUITS
- HIGH FREQUENCY FILTER CAPACITOR FOR EACH POWER SUPPLY MODULE.
- SERIAL INTERFACE BOARD
- SUPERVISED STANDBY BATTERIES.
- CENTRAL STATION DISCONNECT SWITCH
- VENTILATION OVERIDE MODULES
- INTERCONNECT BOARD AND CHASSIS ASSEMBLY.
- INTEGRAL SURGE SUPPRESSION MODULES.

- I. THE MAIN CONTROL UNIT SHALL BE U.L. LISTED FOR A MINIMUM OF 301 POINT CAPABILITY.

1. THE SYSTEM CABINET SHALL BE CONSTRUCTED WITH 16-GAUGE COLD ROLLED (CR) STEEL, AND A HINGED DOOR. THE DOOR SHALL CONTAIN A SINGLE LOOK, KEYED COMMON TO THE MANUAL STATIONS PROVIDED.

2. RESET SWITCHES, SILENCE SWITCHES, FUSES, ETC. SHALL BE CLEARLY MARKED AND SHALL BE BEHIND THE LOCKED DOOR TO PREVENT UNAUTHORIZED ENTRY. OPENING OF THE MAIN DOOR SHALL EXPOSE ALL COMPONENTS FOR INSPECTION AND/OR ADJUSTMENT WITHOUT ANY FURTHER DISMANTLING OF THE SYSTEM.

A. MOUNTING: THE SYSTEM CABINET SHALL BE EITHER SURFACE OR FLUSH MOUNTED, WITH A RED TEXTURED FINISH.

B. AUDIBLE SYSTEM TROUBLE SOUNDER: AN AUDIBLE SYSTEM TROUBLE SOUNDER SHALL BE INTEGRAL PART OF THE CONTROL UNIT. PROVISIONS SHALL ALSO BE PROVIDED FOR AN OPTIONAL SUPERVISED REMOTE TROUBLE SIGNAL.

3. THE 120 VAC MAIN POWER SHALL BE TRANSFORMER CONVERTED TO LOW VOLTAGE, RECTIFIED AND REGULATED 24 VDC FOR SYSTEM OPERATION, TO ELIMINATE THE POSSIBILITY OF THE LINE VOLTAGE BEING PRESENT ON ANY INTERNAL PANEL COMPONENTS.

4. THE ENTIRE SYSTEM SHALL OPERATE ON 24 VDC, FILTERED AND REGULATED, WITH THE RATED CURRENT AVAILABLE FROM ONE (1) POWER SUPPLY, AMPERAGE AS REQUIRED. DEPENDING UPON SYSTEM SIZE, IT SHALL BE POSSIBLE TO INCREASE PROJECT SPECIFIED POWER SUPPLY CAPABILITIES BY ADDING ONE OR MORE AUXILIARY POWER SUPPLY MODULES.

5. THE POWER SUPPLY SHALL COMPLY WITH U.L. STANDARD 864 FOR POWER LIMITED AND "BROWN OUT" OPERATION.

6. POWER SUPPLY CAPABILITIES PROVIDED SHALL BE SUFFICIENT ENOUGH TO PROVIDE POWER FOR THE COMPLETE SYSTEM INCLUDING AUXILIARY DEVICES AND STAND-BY BATTERY CHARGING.

A. A GREEN "POWER ON" LED LOCATED ON THE POWER SUPPLY SHALL BE PROVIDED TO INDICATE THE PRESENCE OF PRIMARY POWER. POWER SUPPLY OUTPUT SHALL BE 4 AMPERES (MINIMUM).

B. THE POWER SUPPLY SHALL CONTAIN AN INTEGRAL BATTERY CHARGER WITH A MAXIMUM CHARGING CURRENT OF 0.9 AMPERE (THIS CURRENT SHALL BE SUFFICIENT TO MAINTAIN THE SYSTEM BATTERIES AT FULL CHARGE). IF THE SYSTEM LOSES AC POWER , THE SYSTEM TROUBLE SOUNDER SHALL SOUND. THE CHARGER OUTPUT SHALL BE USED AND SUPERVISED THROUGH THE BASIC MASTER FIRE CARD.

C. BATTERIES SHALL BE OF SUFFICIENT CAPACITY TO PROVIDE POWER FOR THE ENTIRE SYSTEM UPON LOSS OF NORMAL 120 VAC POWER FOR A PERIOD OF SIXTY (60) HOURS WITH FIVE (5) MINUTES OF ALARM SIGNALING AT THE END OF THIS SIXTY (60) HOUR PERIOD, AS REQUIRED BY NFPA 72, CHAPTERS 7,8.

D. CONNECTIONS TO THE LIGHT AND POWER SERVICE SHALL BE ON A DEDICATED BRANCH CIRCUIT IN ACCORDANCE WITH THE MASSACHUSETTS ELECTRICAL CODE (MEC) AND THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ). THE CIRCUIT AND CONNECTIONS SHALL BE MECHANICALLY PROTECTED. A CIRCUIT DISCONNECTING MEANS SHALL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL AND SHALL BE CLEARLY MARKED "FIRE ALARM CIRCUIT CONTROL".

7. ENCLOSED WITHIN THE SYSTEM CABINET, THE BASIC MASTER FIRE CARD OR CENTRAL PROCESSING UNIT SHALL PROVIDE ALL FOR THE SYSTEM SIGNALING AND SUPERVISORY FUNCTIONS OF THE FIRE ALARM CONTROL. IT IS THE NUCLEUS OF THE SYSTEM THAT SERVES AS THE INTERFACE BETWEEN ALL EXTERNAL DEVICES AND THE OPERATING CIRCUITS.

A. THE CENTRAL PROCESSING UNIT SHALL BE COMPRISED OF MULTIPLE SUPERVISED INITIATING CIRCUITS, AND MULTIPLE SUPERVISED INDICATING APPLIANCE CIRCUITS. INITIATING AND INDICATING APPLIANCE CIRCUITS SHALL BE EXPANDABLE TO PRACTICALLY ANY REQUIREMENT UTILIZING SYSTEM EXPANSION MODULES.

B. THE CENTRAL PROCESSING UNIT SHALL HAVE FIVE (5) VISUAL TROUBLE INDICATORS AND FIVE (5) FUNCTIONAL SWITCHES AS LISTED BELOW:

LED'S GROUND FAULT
GROUND FAULT (POSITIVE)
GROUND FAULT (NEGATIVE)
SHORT CIRCUIT FAULT
CENTRAL STATION CIRCUIT

SWITCHES: TROUBLE SILENCE
BATTERY/BELL TEST
LAMP TEST
RESET
CENTRAL STATION DISCONNECT

- J. MANUAL FIRE BOXES SHALL BE NON-CODED AND SHALL BE SEMI-FLUSH MOUNTED. STATIONS SHALL BE DOUBLE-ACTION PUSH IN, THEN PULL DOWN. WHEN OPERATED, FIRE BOXES SHALL REMAIN MECHANICALLY LOCKED UNTIL MANUALLY RESET. CONSTRUCTION SHALL BE OF LEXAN WITH RAISED LETTERING AND CLEAR INSTRUCTIONS PROVIDED ON THE COVER. STATIONS SHALL HAVE NO PROTRUDING KNOBS OR HANDLES. MANUAL FIRE BOXES SHALL BE DOUBLE-ACTION TYPE. THE MANUAL STATION SHALL, ON COMMAND FROM THE CONTROL PANEL, SEND DATA TO THE PANEL ADDRESS SETTING BY USE OF ROTARY DECIMAL STITCHES. PROVIDE "STOPPER" COVERS ON ALL MANUAL STATIONS AS SHOWN ON THE PLANS.

- K. INTELLIGENT HEAT DETECTORS SHALL BE COMBINATION RATE-OF-RISE AND FIXED-TEMPERATURE TYPE. WHEN ACTUATED ON THE FIXED-TEMPERATURE LIMIT, UNITS SHALL BE NON-RESTORABLE AND GIVE VISUAL EVIDENCE OF SUCH OPERATION.

- L. ANALOG PHOTOELECTRIC SMOKE DETECTORS SHALL BE LOW VOLTAGE AND HAVE AN LED LIGHT SOURCE WHICH "BLINKS" EVERY TIME THE UNIT IS ADDRESSED, AND ILLUMINATES STEADY ON ALARM. THE DETECTORS SHALL BE CONTROLLED BY A REGULATING PHOTOCELL CIRCUIT MATCHED TO THE SMOKE DETECTION CIRCUIT. THE DETECTORS SHALL OPERATE ON THE LIGHT REFRACTORY PRINCIPLE AND SHALL HAVE A RATE COMPENSATION CIRCUIT TO INCREASE DETECTION SENSITIVITY UPON RAPED BUILDUP OF SMOKE. THE DETECTORS SHALL ALSO HAVE THERMAL ELEMENTS THAT WILL CAUSE THE DETECTORS TO ALARM WHEN THE TEMPERATURE EXCEEDS 135 F. EACH DETECTOR SHALL BE PROVIDED WITH A STEEL MOUNTING PLATE, DETECTOR BASE, SCREEN AND COVER. THE VISIBLE ALARM SIGNAL SHALL BE CAPABLE OF REMOTE LED ANNUNCIATION.

- M. INTELLIGENT DUCT MOUNTED SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. DUCT SMOKE DETECTORS SHALL BE IONIZATION TYPE WITH AUXILIARY SPDT RELAY CONTACTS AND SAMPLING TUBES.

- N. A FLUSH MOUNTED KEY KEEPERS LOCKBOX SHALL BE PROVIDED AT THE BUILDING ENTRANCE WHERE INDICATED ON DRAWINGS. KEY KEEPERS BOX SHALL BE 10 KEY 3200 SERIES OR AS REQUIRED BY THE AMHERST FIRE DEPARTMENT.

- O. GATE VALVE SUPERVISORY SWITCHES AND WATERFLOW SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE SPRINKLER CONTRACTOR, WIRED BY THE ELECTRICAL CONTRACTOR.

- P. ANALOG RATE-OF-RISE AUTOMATIC HEAT DETECTORS SHALL BE THE COMBINATIONS RATE-OF-RISE AND FIXED TEMPERATURE TYPE RATED AT 135°F FOR AREAS WHERE AMBIENT TEMPERATURES DO NOT EXCEED 100°F AND RATED AT 200°F FOR AREAS WHERE AMBIENT TEMPERATURE EXCEED 100°F BUT NOT 150°F. THE RATE OF RISE ELEMENT SHALL CONSIST OF AN AIR CHAMBER, A FLEXIBLE METAL DIAPHRAGM, AND A FACTORY-CALIBRATED MOISTURE PROOF, TROUBLE-FREE VENT AND SHALL OPERATE WHEN THE RATE OF TEMPERATURE RISE EXCEEDS 15°F PER MINUTE. DETECTORS SHALL BE ADDRESSABLE TYPE WITH DUAL THERMISTORS. VISIBLE LED'S SHALL "BLINK" EVERY TIME THE UNIT IS ADDRESSED, WITH LED'S ILLUMINATING STEADY DURING ALARM.

- Q. INTELLIGENT THERMAL DETECTORS SHALL BE WITHOUT NOTICEABLE THERMAL LAG AND DESCRIBED TO ANTICIPATE AND COMPENSATE FOR TEMPERATURE RATE-OF-RISE CONDITIONS WITHOUT RELIANCE ON ANY BAROMETRIC PRINCIPLE. DETECTORS SHALL BE ADDRESSABLE TYPE WITH DUAL THERMISTORS. VISIBLE LED'S SHALL "BLINK" EVERY TIME THE UNIT IS ADDRESSED, WITH LED'S ILLUMINATING STEADY DURING ALARM. DETECTORS RATED AT 135°F SHALL BE USED FOR ORDINARY AREAS WHERE 200°F FOR INTERMEDIATE AREAS WHERE CEILING TEMPERATURES MAY NORMALLY BE EXCEPTED TO EXCEED 100° BUT NOT 150°F.

- R. ALL HEAT AND SMOKE DETECTORS SHALL BE OF THE LOW PROFILE TYPE AND SHALL BE WHITE IN COLOR.

- S. AUDIOVISUAL ALARM HORNS SHALL HAVE INTENSITY FLASHING XENON STROBE LIGHT AND ALARM HORN AS AN INTEGRAL UNIT. BOTH AUDIO AND VISUAL COMPONENTS SHALL OPERATE FROM THE 24V DC POLARIZED INDICATING CIRCUITS. ALL HORNS SHALL MOUNT ON 4X4 INCH ELECTRICAL BOXES. THE HORN ASSEMBLY SHOULD BE HOUSED IN A RUGGED, DIE-CAST ENCLOSURE, AND THE ELECTRONIC LIGHT SOURCE SHALL BE SEALED IN SILICONE, BE CLEAR OR WHITE IN COLOR AND BE PROTECTED BY A LEXAN LENS. THE WORD FIRE SHALL APPEAR ON THE LENS. THE LIGHT WILL HAVE A MAXIMUM PULSE DURATION OF TWO-TENTHS OF ONE SECOND WITH A MAXIMUM DUTY CYCLE OF 40%. THE LIGHT INTENSITY SHALL BE A MINIMUM OF 75 CANDELA. THE MINIMUM SOUND LEVEL SHALL BE 95 DB AT TEN FEET. AUDIOVISUAL ALARM HORNS MUST BE SEMIFLUSH OR FLUSH MOUNTED, EXCEPT AS NOTED ON THE PLANS. UNITS SHALL BE MOUNTED 80" A.F.F. OR 6" BELOW THE SUSPENDED CEILING, WHICHEVER IS LOWER.

- T. PROVIDE A MONITOR MODULE FOR EACH INITIATING DEVICE OR NORMALLY OPEN DRY CONTACT ALARM ACTIVATION DEVICES. MONITOR MODULES SHALL RESPOND TO PERIODIC POLLS FROM THE CONTROL PANEL AND REPORT ITS TYPE AND STATUS OF ITS CORRESPONDING INITIATING DEVICE CIRCUIT. AN INTEGRAL FLASHING LED SHALL INDICATE THAT THE MODULE IS CONTACT WITH THE CONTROL PANEL.

- U. PROVIDE A CONTROL MODULE FOR EACH INDIVIDUAL AUDIO-VISUAL APPLIANCE CIRCUIT OR FORM C RELAY DEVICE. AN INTEGRAL LED "BLINKS" EACH TIME A COMMUNICATION IS RECEIVED FROM THE CONTROL PANEL.

- V. PROVIDE FAULT ISOLATOR MODULES ON EACH GROUP OF SENSORS IN A LOOP TO PROTECT THE REST OF THE LOOP. FAULT ISOLATOR MODULES SHALL BE POWERED BY THE SIGNALING LINE CIRCUIT.

- W. PROVIDE ALL WIRING, CONDUIT AND OUTLET BOXES REQUIRED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR THE ERECTION OF A COMPLETE SYSTEM AS DESCRIBED HEREIN AND AS INDICATED ON THE DRAWINGS.

- X. ALL LOW VOLTAGE WIRING SHALL BE A SHIELDED LOW ENERGY TYPE CABLE RUN IN CONDUIT OR TYPE MC FIRE ALARM CABLE UNLESS NOTED OTHERWISE ON THE PLANS AND SHALL MEET THE REQUIREMENTS OF ALL NATIONAL, STATE, AND LOCAL ELECTRICAL CODES. ALL WIRES SHALL BE TAGGED AT ALL JUNCTION POINTS AND SHALL TEST FREE FROM GROUNDS OR CROSSES BETWEEN THE CONDUCTORS.

- Y. ALL EQUIPMENT SHALL BE PROVIDED BY ONE MANUFACTURER WITH TOTAL RESPONSIBILITY FOR THE ENTIRE SYSTEM OPERATION, WARRANTY AND MAINTENANCE.

- Z. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A UNIVERSAL DIGITAL ALARM COMMUNICATOR TRANSMITTER FOR NOTIFYING THE UL LISTED CENTRAL STATION FACILITY OF THE SYSTEM STATUS. PROVIDE DUAL LEASED DEDICATED TELEPHONE LINES TO THE PUBLIC TELEPHONE NETWORK SYSTEM. DIGITAL COMMUNICATOR SHALL HAVE BUILT IN PROGRAMMER, MANUAL TEST REPORT FUNCTION, ANNUNCIATION, INDIVIDUAL LEDS, REAL TIME CLOCK AND TRANSIENT PROTECTION. DIGITAL COMMUNICATOR SHALL REPORT THE EXACT ADDRESS AND LOCATION OF THE INITIATING DEVICE IN ALARM OR TROUBLE MODE TO THE LICENSED CENTRAL STATION FACILITY.

- AA. IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE, THE AMHERST FIRE DEPARTMENT, AND AN OWNER'S REPRESENTATIVE, THE FINAL SYSTEM TESTING PROCEDURE SHALL BE AS FOLLOWS:

1. MANUALLY OPERATE EACH MANUAL STATION, HEAT DETECTOR, SMOKE DETECTOR, OR WATER FLOW SWITCH.
2. OPEN EACH INITIATING AND INDICATING CIRCUIT IN AT LEAST TWO LOCATIONS TO VERIFY THE CONTINUITY OF THE SUPERVISORY CIRCUITRY.
3. ONE HALF OF THE SYSTEM TESTING SHALL BE PERFORMED ON NORMAL POWER AND ONE HALF THE TESTING SHALL BE PERFORMED ON EMERGENCY POWER.
4. AFTER SYSTEM TESTING IS COMPLETE, RESET THE SYSTEM IN ITS NORMAL OPERATING MODE.
5. PERFORM ANY OTHER TEST SEQUENCES REQUESTED BY THE AMHERST FIRE DEPARTMENT REPRESENTATIVE.

- BB. UPON COMPLETION OF THE INSTALLATION AND AS DIRECTED BY THE OWNER, THE ELECTRIC WORK SHALL INCLUDE MAKING ALL ARRANGEMENTS AND PROVIDING ANY ASSISTANCE NECESSARY FOR INSPECTION AND TESTING AS REQUIRED FOR APPROVAL BY THE FIRE DEPARTMENT. MODIFICATIONS, ADJUSTMENTS, AND/OR CORRECTIVE WORK NECESSARY TO OBTAIN ALONG WITH SUBSEQUENT INSPECTION AND TESTS AS REQUIRED FOR APPROVAL ALONG WITH SUBSEQUENT INSPECTION AND TEST RESULTING FROM THE ISSUANCE OF A "NOTICE OF DEFECT" SHALL PRECEDE ANY CONSIDERATION OF FORMAL ACCEPTANCE BY THE ARCHITECT. IN CONJUNCTION WITH THE ABOVE, TRAINING AS DEEMED NECESSARY TO INSTRUCT AUTHORIZED BUILDING PERSONNEL IN THE PROPER OPERATION OF THE SYSTEM SHALL ALSO FORM A PART OF THE REQUIRED WORK.

- CC. THE FIRE ALARM RISER DIAGRAM INCLUDED IN THE CONTRACT DRAWINGS IS FOR INFORMATIONAL PURPOSE ONLY AND IS INCLUDED TO ASSIST IN THE UNDERSTANDING OF THE SYSTEM. THE DESIGNATED SYSTEM SUPPLIER AND ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT AND INTERCONNECTING WIRING TO ALLOW THE SYSTEM TO PERFORM AS SPECIFIED HEREIN. PROVIDE A COMPLETE SYSTEM WIRING DIAGRAM FOR REVIEW BY THE ENGINEER.

- DD. THE FIRE ALARM SYSTEM SHALL BE AS MANUFACTURED BY SIEMENS, SIMPLEX, GAMEWELL, NOTIFIER, OR EQUAL.

Amherst Police Department
175 Amherst Street
Amherst, NH

ELECTRICAL SYSTEMS ENGINEERING, INC.
22 MANCHESTER ROAD, SUITE 8A
DERRY NH 03038
T: 603.870.9009 F: 603.432.4255

STATE OF NEW HAMPSHIRE
SALVATORE F. FAZIO
No. 13395
LICENSED PROFESSIONAL ENGINEER

DENNIS MIRES, P.A.
THE ARCHITECTS
697 Union Street, Manchester NH
603-625-4548 FAX 603-625-1067
www.TheArchitects.net | info@thearchitects.net

ISSUE	DATE	DESCRIPTION

FIRE ALARM SPECIFICATION

proj. no.: 2017-024

FA2.01

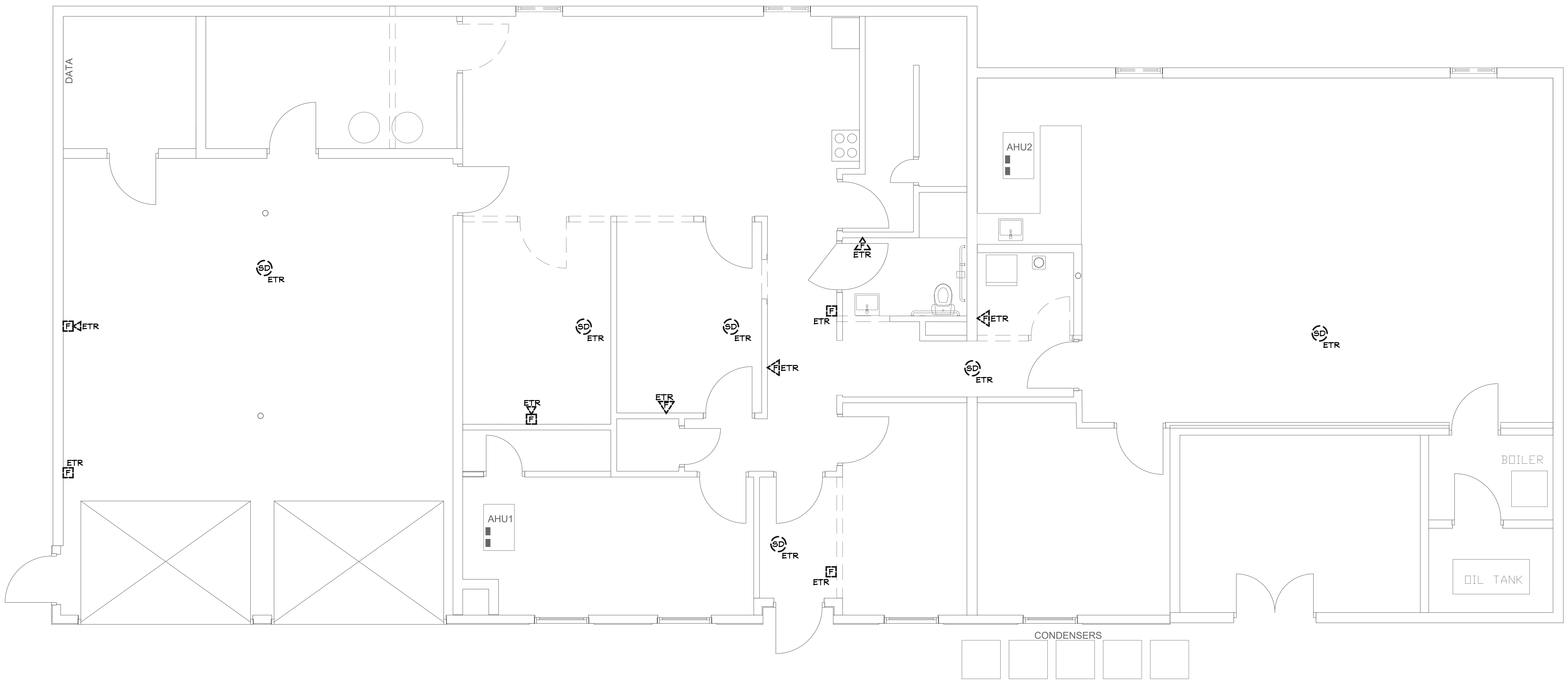
219181E

IMPAIRMENT PLAN NOTES

1. ALL EXISTING FIRE ALARM DEVICES, EQUIPMENT, WIRING, ETC. SHALL REMAIN IN PLACE AND OPERATIONAL UNTIL SUCH TIME THAT THE NEW FIRE ALARM SYSTEM IS INSTALLED, TESTED & APPROVED BY THE AMHERST FIRE DEPARTMENT. THEN THE ORIGINAL FIRE DETECTION AND SIGNALING SYSTEM SHALL BE REMOVED IN ITS ENTIRETY. GENERAL CONTRACTOR TO PATCH, PAINT AND REPAIR WALL OR CEILING SURFACES AS REQUIRED.

2. EXISTING SMOKE AND HEAT DETECTORS SHALL BE BAGGED AT THE BEGINNING OF EACH WORK DAY AND DE-BAGGED AT THE END OF EACH WORK DAY.

3. THIS BUILDING IS NOT EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM. THE EXISTING BUILDING STANDPIPE SYSTEM SHALL REMAIN ACTIVE THROUGHOUT THE COURSE OF THE FIRE ALARM SYSTEM UPGRADE PROJECT.



LOWER LEVEL FIRE ALARM IMPAIRMENT PLAN

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

Amherst Police Department
175 Amherst Street
Amherst, NH

ELECTRICAL SYSTEMS ENGINEERING, INC.
22 MANCHESTER ROAD, SUITE 8A
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ISSUE	DATE	DESCRIPTION
	9-20-2020	

LOWER LEVEL FIRE ALARM IMPAIRMENT PLAN

proj. no.: 2017-024

FAIP1.01

219181E

IMPAIRMENT PLAN NOTES

1. ALL EXISTING FIRE ALARM DEVICES, EQUIPMENT, WIRING, ETC. SHALL REMAIN IN PLACE AND OPERATIONAL UNTIL SUCH TIME THAT THE NEW FIRE ALARM SYSTEM IS INSTALLED, TESTED & APPROVED BY THE AMHERST FIRE DEPARTMENT. THEN THE ORIGINAL FIRE DETECTION AND SIGNALING SYSTEM SHALL BE REMOVED IN ITS ENTIRETY. GENERAL CONTRACTOR TO PATCH, PAINT AND REPAIR WALL OR CEILING SURFACES AS REQUIRED.

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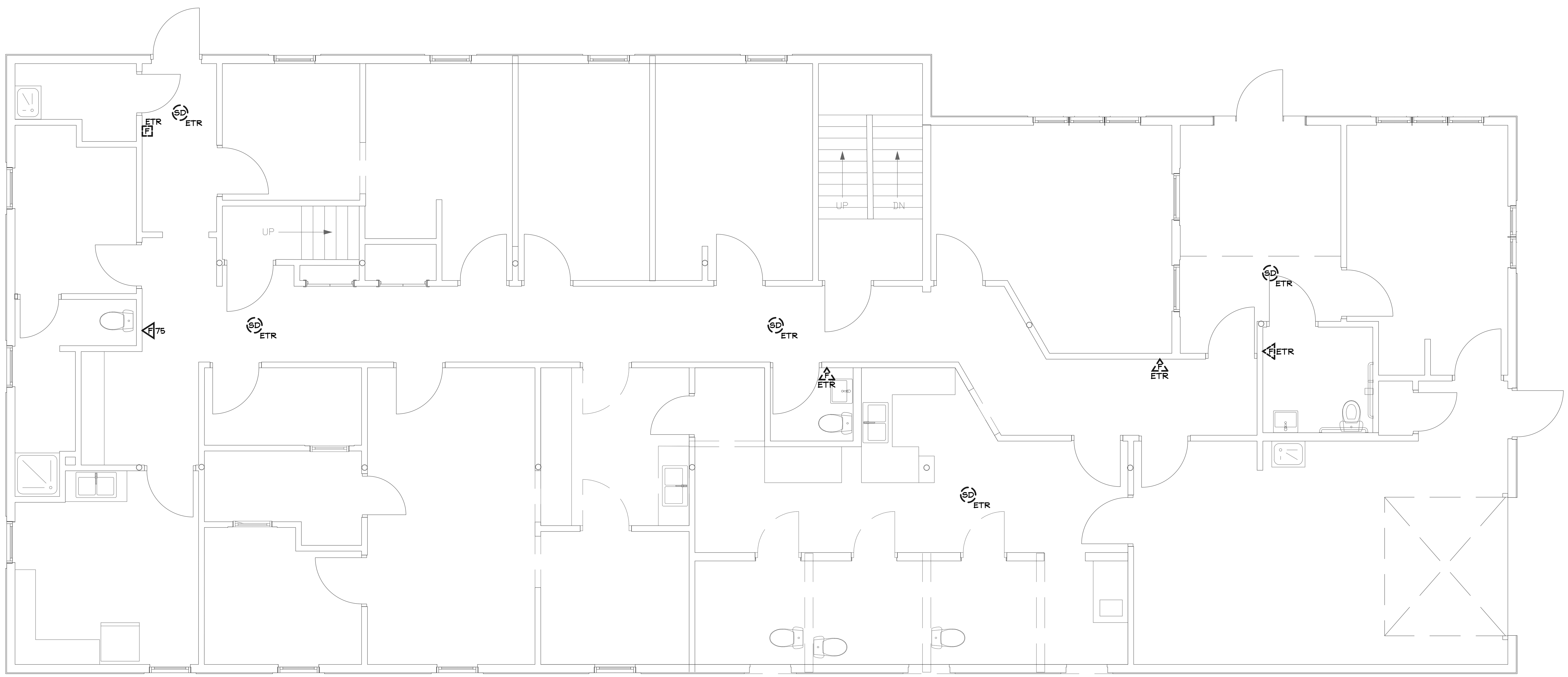

MAIN LEVEL FIRE ALARM IMPAIRMENT PLAN

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

Amherst Police Department
175 Amherst Street
Amherst, NH

ELECTRICAL SYSTEMS ENGINEERING, INC.
22 MANCHESTER ROAD, SUITE 8A
DERRY NH 03038
T: 603.870.9009 F: 603.432.4255

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ISSUE	DATE	DESCRIPTION
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MAIN LEVEL FIRE ALARM IMPAIRMENT PLAN

proj. no.: 2017-024

FAIP1.02

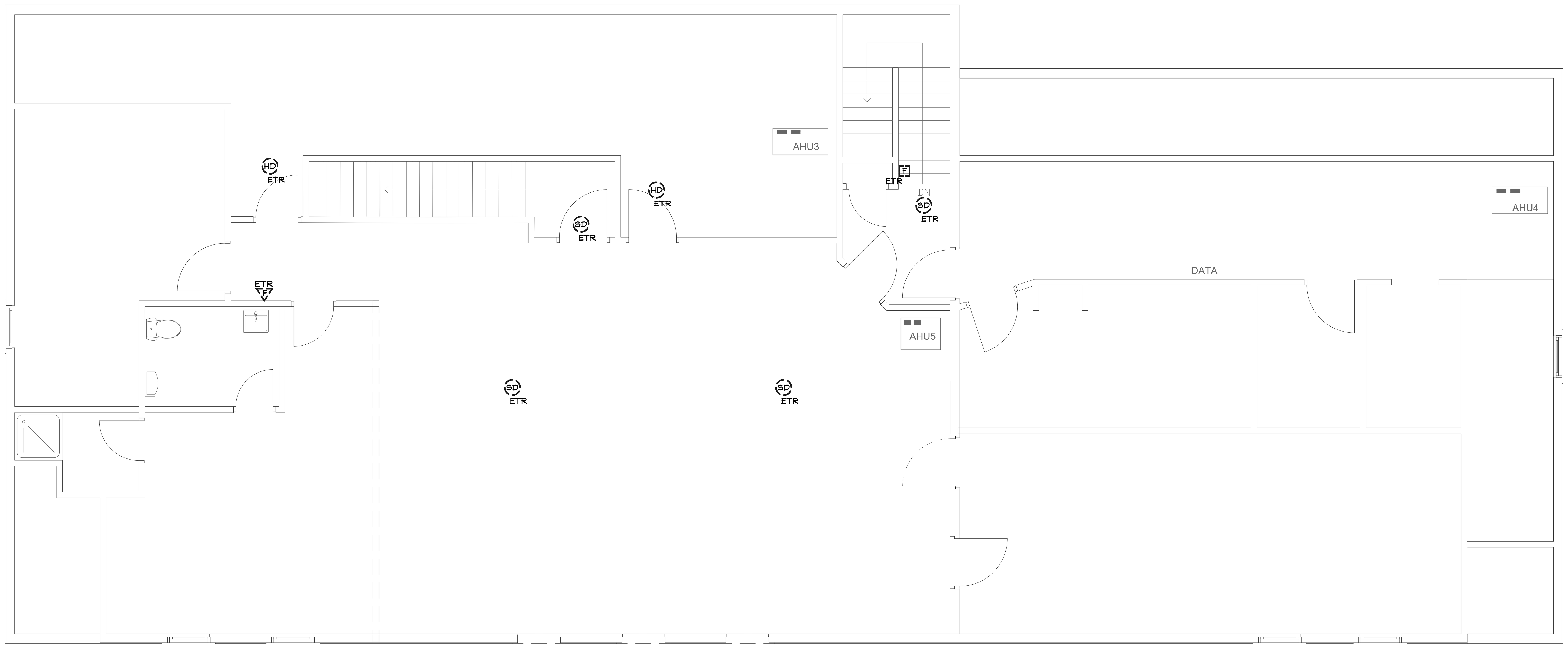
219181E

IMPAIRMENT PLAN NOTES

1. ALL EXISTING FIRE ALARM DEVICES, EQUIPMENT, WIRING, ETC. SHALL REMAIN IN PLACE AND OPERATIONAL UNTIL SUCH TIME THAT THE NEW FIRE ALARM SYSTEM IS INSTALLED, TESTED & APPROVED BY THE AMHERST FIRE DEPARTMENT. THEN THE ORIGINAL FIRE DETECTION AND SIGNALING SYSTEM SHALL BE REMOVED IN ITS ENTIRETY. GENERAL CONTRACTOR TO PATCH, PAINT AND REPAIR WALL OR CEILING SURFACES AS REQUIRED.

2. EXISTING SMOKE AND HEAT DETECTORS SHALL BE BAGGED AT THE BEGINNING OF EACH WORK DAY AND DE-BAGGED AT THE END OF EACH WORK DAY.

3. THIS BUILDING IS NOT EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM. THE EXISTING BUILDING STANDPIPE SYSTEM SHALL REMAIN ACTIVE THROUGHOUT THE COURSE OF THE FIRE ALARM SYSTEM UPGRADE PROJECT.



UPPER LEVEL FIRE ALARM IMPAIRMENT PLAN

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

Amherst Police Department
175 Amherst Street
Amherst, NH

ELECTRICAL SYSTEMS ENGINEERING, INC.
22 MANCHESTER ROAD, SUITE 8A
DERRY NH 03038
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STATE OF NEW HAMPSHIRE
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ISSUE	DATE	DESCRIPTION
	5-20-2020	

UPPER LEVEL FIRE ALARM IMPAIRMENT PLAN

proj. no.: 2017-024

FAIP1.03

219181E

SECTION 000101 - PROJECT TITLE PAGE

PROJECT MANUAL

FOR

AMHERST POLICE REMODEL BID 2

ARCHITECTS PROJECT NUMBER: 2019-013

TOWN OF AMHERST

175 AMHERST ST.

AMHERST , NEW HAMPSHIRE 03031

DATE: (MAY 22, 2020)

PREPARED BY:

DENNIS MIRES P.A. THE ARCHITECTS

END OF SECTION

SECTION 000102 - PROJECT INFORMATION

PART 1 GENERAL

1.01 **PROJECT IDENTIFICATION**

A. Project Name: Amherst Police Remodel Bid 2, located at:
175 Amherst St..
Amherst, New Hampshire03031.

B. The Owner, hereinafter referred to as Owner: Town of Amherst

C. Owner's Project Manager: Eric Hahn.

1. Department: DPW Amherst.

1.02 **NOTICE TO PROSPECTIVE BIDDERS**

A. These documents constitute an Invitation to Bid to and request for qualifications from General Contractors for the construction of the project described below.

1.03 **PROJECT DESCRIPTION**

A. Summary Project Description: The Police Station Department located at 175 Amherst Street is owned by the Town. The Town seeks to occupy the lower level of the building that the EMS recently vacated. The lower level will be reconfigured for a meeting room, jail cells, booking, a sally port and department offices. The main level will be partially remodeled to reconfigure an evidence room and upgrade finishes. The upper level will enlarge locker rooms, create an evidence and investigation room and upgrade finishes and insulation. The entire heating and cooling system will be replaced, electrical will be upgraded and a new addressable fire alarm system will be installed. .

B. Contract Scope: Construction, demolition, renovation, and facility operations during occupancy.

C. Contract Terms: Lump sum (fixed price, stipulated sum).

D. The currently occupied premises at the project site are open for examination by bidders only during the following hours:

1. Monday through Friday: 8am to 4pm. By appointment.

1.04 **PROJECT CONSULTANTS**

1.05 **PROCUREMENT TIMETABLE**

A. Pre-Bid Site Tour: TBD at [____].

B. Last Request for Substitution Due: 7 days prior to due date of bids.

C. Last Request for Information Due: 7 days prior to due date of bids.

D. Anticipated Proposal Due Date: June 12, 2020, before 4 PM local time.

E. Bid Opening: Same day, 4 PM local time.

F. Notice of Award: Within 7 days after due date.

G. Proposals May Not Be Withdrawn Until: 60 days after due date.

H. Desired Construction Start: Not later than July 15, 2020.

I. Desired Final Completion Date: Not later than 150 calendar days from Notice to Proceed.

J. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.

1.06 **PROCUREMENT DOCUMENTS**

A. Availability of Documents: Complete sets of procurement documents may be obtained:

1. From Owner or by request in pdf format from Dennis Mires, The Architects.

1.07 **PROPOSAL SECURITY**

A. Proposals shall be accompanied by a security deposit as follows:

1. Bid Bond in the amount of $ $30,000 on AIA A310 Bid Bond Form.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 000110 - TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

SPECIFICATIONS

END OF SECTION

SECTION 002113 - INSTRUCTIONS TO BIDDERS

SUMMARY

1.01 **DOCUMENT INCLUDES**

- A. Invitation
  1. Bid Submission
  2. Intent
  3. Work Identified in Contract Documents
  4. Contract Time
- B. Bid Documents and Contract Documents
- C. Site Assessment
  1. Site Examination
  2. A hazardous materials survey has been completed. No haszardous materials have been identified.
- D. Qualifications
  1. Qualifications
- E. Bid Submission
  1. Bid Depository
- F. Bid Enclosures/Requirements
  1. Agreement to Bond
  2. Performance Assurance
  3. Insurance
  4. Bid Form Signature

INVITATION

2.01 **BID SUBMISSION**

- A. Bids signed and under seal, executed, and dated will be received at the office of Amherst Police Department at 175 Amherst St. Amherst, NH 03031 before 4 p.m. local standard time on the 12th day of June.
- B. Offers will be opened publicly immediately after the time for receipt of bids.

2.02 **INTENT**

- A. The intent of this Bid request is to obtain an offer to perform work to complete a remodel located at Amherst Police Department for a Stipulated Sum contract, in accordance with Contract Documents.

2.03 **WORK IDENTIFIED IN THE CONTRACT DOCUMENTS**

- A. Work of this proposed Contract comprises building construction, including general construction Work.

2.04 **CONTRACT TIME**

- A. Identify Contract Time in the Bid Form. The completion date in the Agreement shall be the Contract Time added to the commencement date.

BID DOCUMENTS AND CONTRACT DOCUMENTS

3.01 **DEFINITIONS**

- A. Bid Documents: Contract Documents supplemented with Invitation To Bid, Instructions to Bidders, Information Available to Bidders, Bid Form Supplements To Bid Forms and Appendices identified.

3.02 **AVAILABILITY**

- A. Bid documents may be obtained at via email link from kreg@thearchitects.net.

3.03 **EXAMINATION**

- A. Upon receipt of Bid Documents verify that documents are complete. Notify Architect should the documents be incomplete.
- B. Immediately notify Architect upon finding discrepancies or omissions in the Bid Documents.

3.04 **PRODUCT/ASSEMBLY/SYSTEM SUBSTITUTIONS**

- A. Where the Bid Documents stipulate a particular product, substitutions will be considered up to 7 days before receipt of bids. Materials and Products are encouraged based on an "or Equal" qualification per this section.

B. The submission shall provide sufficient information to determine acceptability of such products.
C. Provide complete information on required revisions to other work to accommodate each proposed substitution.
D. Provide products as specified unless substitutions are submitted in this manner and accepted.

SITE ASSESSMENT

4.01 **SITE EXAMINATION**

A. A visit to the project site has been arranged for bidders as follows: By appointment with the Police Department

4.02 **PREBID CONFERENCE**

A. A bidders conference has been scheduled for 10 a.m. on the 2nd day of June at the location of Amherst Police Department, 175 Amherst St., Amherst, NH..
B. All general contract bidders are invited. Entry into the building will be done following a protocol of only 5 individuals per walkthrough. The prebid information will be addressed outside the building prior to walkthroughs.
C. Representatives of Architect will be in attendance.

QUALIFICATIONS

5.01 **EVIDENCE OF QUALIFICATIONS**

A. To demonstrate qualification for performing the Work of this Contract, bidders are requested to submit written evidence of previous experience and current commitments and character reference letters and/or examples of similar project work.

5.02 **SUBCONTRACTORS/SUPPLIERS/OTHERS**

A. Owner reserves the right to reject a proposed subcontractor for reasonable cause.
B. Refer to General Conditions.

BID SUBMISSION

6.01 **SUBMISSION PROCEDURE**

A. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.
B. Submit one copy of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.

6.02 **BID INELIGIBILITY**

A. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.
B. Failure to provide security deposit, bonding or insurance requirements may, at the discretion of Owner, be waived.

BID ENCLOSURES/REQUIREMENTS

7.01 **SECURITY DEPOSIT**

A. Bids shall be accompanied by a security deposit as follows:
    1. Bid Bond in the amount of $ 30,000 on AIA A310 Bid Bond Form.
B. Endorse the Bid Bond in the name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.
C. The security deposit will be returned after delivery to the Owner of the required Performance and Payment Bond(s) by the accepted bidder.
D. Include the cost of bid security in the Bid Amount.
E. After a bid has been accepted, all securities will be returned to the respective bidders .
F. If no contract is awarded, all security deposits will be returned.

7.02 **AGREEMENT TO BOND**

7.03 **PERFORMANCE ASSURANCE**

A. Include the cost of Performance and Payment Bonds (1.5% of the bid with all Alternates included) in the Bid Amount and identify the cost on the Bid Form.

7.04 **INSURANCE**

A. Provide an executed "Undertaking of Insurance" on a standard form provided by the insurance company stating their intention to provide insurance to the bidder in accordance with the insurance requirements of Contract Documents. Insurance requirements shall maintain $1,000,000 minimum per occurance.

7.05 **FEES FOR CHANGES IN THE WORK**

A. Include the fees for overhead and profit on own Work and Work by subcontractors, identified in Document 007300 - Supplementary Conditions .

B. Include in the Bid Form, the overhead and profit fees on own Work and Work by subcontractors, applicable for Changes in the Work, whether additions to or deductions from the Work on which the Bid Amount is based.

7.06 **ADDITIONAL BID INFORMATION**

A. Local Permit Fees will waived, but the documents will still be reviewed by the Town of Amherst, NH, Building Inspector. Any other applicable permits required by the State of other agencies will still be required and part of the bid price.

B. The General Contractor is to supply a Builder's Risk policy withthe Owner listed as additionally insured.

C. Submit the following Supplements concurrent with bid submission:

1. Document 004323 - Alternates Form: Include the cost variation to the Bid Amount applicable to the Work described in Section [_____].
2. Document 004325 - Substitution Request Form - During Procurement.

D. Submit the following Supplements 48 hours after bid submission:

1. Document 004373 - Proposed Schedule of Values Form identifies the Bid Amount segmented into portions as requested.

7.07 **SELECTION AND AWARD OF ALTERNATES**

A. Indicate variation of bid price for Alternates listed on the Bid Form. Unless otherwise indicated, indicate Alternates as a difference in bid price by adding to or deducting from the base bid price.

OFFER ACCEPTANCE/REJECTION

8.01 **DURATION OF OFFER**

A. Bids shall remain open to acceptance and shall be irrevocable for a period of sixty (60) days after the bid closing date.

8.02 **ACCEPTANCE OF OFFER**

A. Owner reserves the right to accept or reject any or all offers.

B. After acceptance by Owner, Architect on behalf of Owner, will issue to the successful bidder, a written Bid Acceptance.

END OF SECTION

SECTION 004100 - BID FORM

THE PROJECT AND THE PARTIES

1.01 **TO:**

A. Town of Amherst (Owner) Amherst Police Department
175 Amherst St.
Amherst, New Hampshire03031

1.02 **FOR:**

A. Project: Amherst Police Remodel Bid 2

1.03 **DATE: _____ (BIDDER TO ENTER DATE)**

1.04 **SUBMITTED BY: (BIDDER TO ENTER NAME AND ADDRESS)**

A. Bidder's Full Name _____
1. Address _____
2. City, State, Zip_____

1.05 **OFFER**

A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Bid Documents prepared by [_____] for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

B. _____
_____ dollars
($_____), in lawful money of the United States of America.

C. We have included the required security Bid Bond as required by the Instruction to Bidders.

D. We have included the required performance assurance bonds in the Bid Amount as required by the Instructions to Bidders.
1. The cost of the required performance assurance bonds is _ _____ _dollars ($_____), in lawful money of the United States of America.

E. All applicable federal taxes are included and State of [_____] taxes are included in the Bid Sum.

F. All Cash and Contingency Allowances described in Section 012100 - Allowances are included in the Bid Sum.

1.06 **CONTRACT TIME**

A. If this Bid is accepted, we will:

B. Complete the Work in _____ calendar weeks from Notice to Proceed. (Bidder to enter number of weeks.)

1.07 **CHANGES TO THE WORK**

A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
1. _____ percent overhead and profit on the net cost of our own Work;
2. _____ percent on the cost of work done by any Subcontractor.

B. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus _____ of the overhead and profit percentage noted above.

1.08 **ADDENDA**

A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
1. Addendum # _____ Dated _____.
2. Addendum # _____ Dated _____.

1.09 **BID FORM SUPPLEMENTS**

A. The following information is included with Bid submission:
1. EXHIBIT A - SCHEDULE OF VALUES
2. Alternates: 1 Locker Room Add Alternate, 2 Balance of Upper Level Renovation, [_____].

B. The following Supplements are attached to this Bid Form and are considered an integral part of this Bid Form:

1. EXHIBIT A - Schedule of Values
2. Document 004323 - Alternates Form: Include the cost variations to the Bid Sum applicable to the Work as described in Section [_____].
3. Document 004325 - Substitution Request Form - During Procurement.
4. Document 004373 - Proposed Schedule of Values Form (Exhibit A) identifies the Bid Sum segmented into portions as requested.

C. We agree to submit the following Supplements to Bid Forms within 48 hours after submission of this bid for additional bid information:
1. Document 004373 - Proposed Schedule of Values Form identifies the Bid Price/Sum segmented into portions as requested.

1.10 **BID FORM SIGNATURE(S)**

A. The Corporate Seal of
B. _____
C. (Bidder - print the full name of your firm)
D. was hereunto affixed in the presence of:
E. _____
F. (Authorized signing officer, Title)
G. (Seal)
H. _____
I. (Authorized signing officer, Title)

1.11 **IF THE BID IS A JOINT VENTURE OR PARTNERSHIP, ADD ADDITIONAL FORMS OF EXECUTION FOR EACH MEMBER OF THE JOINT VENTURE IN THE APPROPRIATE FORM OR FORMS AS ABOVE.**

END OF SECTION

EXHIBIT A

Amherst Police Department
Amherst, NH

DENNIS MIRES, P.A.
THE ARCHITECTS

Company Name & Address	BASE BID OFFER	SCHEDULE OF VALUES	VALUE OF ALTERNATE	ADDITIONAL INFORMATION PROVIDED	Comments
		GENERAL CONDITIONS			
		GENERAL CONSTRUCTION FRAMING, DRYWALL, MASONRY, STEEL BEAM, INSULATION, WINDOWS, DOORS			
		FLOOR FINISHES, CEILINGS, PAINTING			
		MILWORK & SPECIALTIES (LOCKERS)			
		PLUMBING			
		MECHANICAL			
		ELECTRICAL & FIRE ALARM			
		OTHER			
BID TOTAL		**ALTERNATES TOTAL**			

SECTION 004323 - ALTERNATES FORM

PARTICULARS

1.01 **THE FOLLOWING IS THE LIST OF ALTERNATES REFERENCED IN THE BID SUBMITTED BY:**

1.02 **(BIDDER) _____**

ALTERNATES LIST

2.01 **THE FOLLOWING AMOUNTS SHALL BE ADDED TO OR DEDUCTED FROM THE BID AMOUNT. REFER TO SECTION 012300 - ALTERNATES.**

ALTERNATE # 1: ADD $ _____ LOCKER ROOM ALTERNATE WITH ALL HVAC IN BASE BID

ALTERNATE # 2: ADD $ _____ BALANCE OF UPPER LEVEL RENOVATION WITH ALL HVAC IN BASE BID

END OF SECTION

SECTION 005000 - CONTRACTING FORMS AND SUPPLEMENTS

PART 1 GENERAL

1.01 **AGREEMENT AND CONDITIONS OF THE CONTRACT**

A. See Section 005200 - Agreement Form for the Agreement form to be executed.
B. See Section 007200 - General Conditions for the General Conditions.
C. The Agreement is based on AIA A101.
D. The General Conditions are based on AIA A201.

1.02 **FORMS**

A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in Contract Documents.
B. Bond Forms:
C. Post-Award Certificates and Other Forms:
    1. Schedule of Values Form: AIA G703.
    2. Application for Payment Forms: AIA G702 with AIA G703 (for Contractors).
D. Closeout Forms:
    1. Certificate of Substantial Completion Form: AIA G704.

1.03 **REFERENCE STANDARDS**

A. AIA A101 - Standard Form of Agreement Between Owner and Contractor where the basis of Payment is a Stipulated Sum 2017.
B. AIA A201 - General Conditions of the Contract for Construction 2017.
C. AIA G702 - Application and Certificate for Payment 1992.
D. AIA G703 - Continuation Sheet 1992.
E. AIA G704 - Certificate of Substantial Completion 2017.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 007200 - GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

1.01 **THE GENERAL CONDITIONS APPLICABLE TO THIS CONTRACT IS ATTACHED FOLLOWING THIS PAGE. AIA A201-2017**

END OF SECTION

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

Amherst Police Department
175 Amherst Street
Amherst, NH 03031

THE OWNER:
(Name, legal status and address)

Town of Amherst, NH
2 Main Street
Amherst, NH 03031

THE ARCHITECT:
(Name, legal status and address)

Dennis Mires, P.A The Architects
697 Union Street
Manchester, NH 03104

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

TABLE OF ARTICLES

Init.
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(Topics and numbers in bold are Section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- **.1** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- **.2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- **.4** As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and

.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a Separate Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

.1 employees on the Work and other persons who may be affected thereby;
.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances
§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or

expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during

that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- **.3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- **.1** that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- **.2** that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- **.1** cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

Additions and Deletions Report for
AIA® Document A201™ – 2017

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

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PAGE 1

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 16:43:40 ET on 03/17/2020 under Order No. 6617800152 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ – 2017, General Conditions of the Contract for Construction, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

_____

(Signed)

_____

(Title)

_____

(Dated)

SECTION 007300 - SUPPLEMENTARY CONDITIONS

PART 1 GENERAL

1.01 **SUMMARY**

A. These Supplementary Conditions amend and supplement the General Conditions defined in Document 007200 - General Conditions and other provisions of Contract Documents as indicated below. Provisions that are not so amended or supplemented remain in full force and effect.

B. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

1.02 **MODIFICATIONS TO GENERAL CONDITIONS**

A. Refer to the document 007300 Supplementary Conditions attached after this page.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SUPPLEMENTARY CONDITIONS TO THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The following supplements additionally modify the AIA Document A201, 2007 Edition "General Conditions of the Contract for Construction," as indicated. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 1: GENERAL PROVISIONS

1.1.2 At the end of Section 1.1.2 add the following:

If any part of the Contract Documents or their application to any situation is to any extent invalidated or found to be contrary to law, the remainder of the Contract Documents and the application to other situations of any provision found valid as to any given situation, shall not be affected thereby.

1.1.9 Add the following new Section 1.1.9:

1.1.9 PROVIDE

The term "provide" shall include furnishing and installing a product, materials, systems, and/or equipment, complete in place, fully tested and approved.

1.1.10 Add the following new Section 1.1.10:

1.1.10 MISCELLANEOUS DEFINITIONS

1.1.10.1 Where the words "equal", "approved equal", "equivalent", "satisfactory", "directed", "designated", "selected", "as required", and words of similar meanings are used, the written approval, selection, satisfaction, directions, or similar action of the Engineer or Architect is required.

1.1.10.2 Words such as "shown", "indicated", "detailed", "noted", "scheduled", or words of similar meaning shall mean that reference is made to the drawings unless otherwise noted.

1.1.10.3 Where the words "required" and words of similar meaning are used, it shall mean as required to properly complete the work and as required by the Owner, unless stated otherwise.

1.1.10.4 Where the words "furnish" and "perform" are used, it is understood and intended to mean that the Contractor, at his expense, shall furnish and install the work, complete in place and ready for use, including furnishing of necessary labor, materials, tools, equipment and transportation. These definitions apply the same to future, present and past tenses.

1.2.4 Add the following new Section 1.2.4:

1.2.4 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract. When reference is made to standard or reference type specification documents or to another part of the Contract Documents, it shall have the same force and effect as if the document or portion referenced were exactly repeated in the place where reference is made. Standard or reference specifications such as ANSI, ASTM, ASTE, ACI, NEC, NFPA, ASHRAE, and other organizations, associations, government agencies, professional and technical societies, either by full name or abbreviations, shall be as specified. Abbreviations used to indicate the specific standard and reference specification documents shall be interpreted according to their recognized and wellknown technical or trade meaning. Reference to the published codes, guides, regulations, or standard specification shall be to the latest edition thereof, unless laws, ordinances, or regulations require compliance with a specific edition, in which case the document shall be of the specified edition.

1.2.5 Add the following new Section 1.2.5:

1.2.5 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.

1.2.6 Add the following new Section 1.2.6:

1.2.6 In the event of conflicts or discrepancies among the Contract Documents, the Documents shall be interpreted on the basis of the following priorities:

First:	These Supplementary General Conditions
Second	The Agreement
Third	General Conditions
Fourth:	Drawings and Specifications
Fifth:	Unit Cost Breakdowns (if any)
Sixth:	Components of Interior Completion

In Drawings, large scale details shall govern small scale drawings. In General: Drawings govern Specifications for quantity and location, and Specifications govern Drawings for quality and performance. In the event of ambiguity in quantity or quality, the greater quantity and the better quality shall govern. In the event of conflicts or discrepancies among Drawings and Specifications, Contractor shall first consult with the Architect and Owner, if Architect and Owner cannot resolve then the Drawings and Specifications shall be interpreted so as to require the most substantial and comprehensive performance of the Work consistent with the intent and requirements of the Contract Documents, and such Work shall be performed by the Contractor without extra cost to the Owner. Should any conflict occur between the Contract Documents, the Contractor is deemed to have based his estimate upon the more expensive method of performing the Work unless he has requested and received a written decision from the Architect and Owner before submission of his proposal.

Drawings are intended to show general arrangement, design and extent of work and are partly diagrammatic. As such, they are not intended to be scaled for measurements or to serve as shop drawings. Dimensions must be computed and not obtained by scaling drawings. The Contractor shall study and compare all the Drawings and verify all figures before laying out or constructing work. The Contractor shall be responsible for errors in his work which might have been avoided thereby. Whether or not an error is believed to exist, deviation from the Drawings and the dimensions given thereon shall be made only after approval in writing from the Architect.

1.2.7 Add the following new Section 1.2.7:

1.2.7 Where no explicit quality or standards for materials workmanship are established for Work, such Work is to be of as good quality as the surrounding Work and of the construction of the Project generally.

1.2.8 Add the following new Section 1.2.8:

1.2.8 For convenience, the Specifications may be arranged in Sections, but such separation shall not be considered as the limits of the Work required of any separate trade. The terms and conditions of such limitations shall be exclusively between the Contractor and his subcontractors. Requirements contained in any section shall be required as if contained in all Sections and the contractor shall, prior to awarding subcontracts, assure himself that the entire Work as a whole has been coordinated among the subcontractors.

1.5.2 At the end of Section 1.5.2 add the following:

All copies of the Instruments of Service, except for a record set, shall be returned to Owner upon completion of the Work. Submission or distribution of Instruments of Service to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed publication in derogation of the Architect's or Owner's common law copyright or other reserved rights.

1.6.2 At the end of Section 1.6.2 add the following:

1.6.2 If the Architect does provide computer files for use by other parties, the file recipient agrees to accept computer diskettes, e-mails, and/or electronic files from Architect and its subconsultants without any warranties, guarantees, and/or representations of any nature from the Owner whatsoever regarding the correctness, accuracy and/or completeness of any information contained therein. Said files may not necessarily reflect any referenced plans, approved plans or existing conditions. The recipient acknowledges that the use of the diskettes and electronic files is entirely at his/her own risk, and agrees to release, indemnify, hold harmless and defend the Owner, the Architect and its subconsultants with respect to any claims, costs, losses, damages and/or liabilities arising out of or relating to the use, misuse, modification, interpretation, misrepresentation and/or misrepresentation of any such information. The recipient further agrees that said data is for the recipient's sole use and is not to be transferred to others for any purpose without the explicit written consent of Architect.

ARTICLE 2: OWNER

2.1.2 Delete Section 2.1.2 in its entirety.

2.2.1 Delete the last sentence of Section 2.2.1 in its entirety.

2.5 Revise Section 2.5 by deleting the phrase "ten-day" in the first sentence, and substituting therefore the phrase "seven-day".

ARTICLE 3: CONTRACTOR

3.1.4 Add the following new Section 3.1.4:

3.1.4 Contractor shall comply with all federal, state and local laws, statutes, rules, regulations and ordinances applicable to Contractor or to the Work.

3.2.1 Delete Section 3.2.1 in its entirety and insert in place thereof the following:

3.2.1 By executing the Contract, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed (including without limitation, climatic conditions, shortage of labor or materials and labor strife), and will correlate his observations with the requirements of the Contract Documents.

3.2.2 Delete the second sentence of Section 3.2.2.

3.2.5 Add the following new Section 3.2.5:

3.2.5 Contractor warrants and represents to Owner that the Contractor is solvent, can timely pay his debts, has sufficient working capital to perform this Contract in accordance with its terms, has the required experience in staff and is fully qualified to perform and complete the Work, holds all licenses and permits required by law to construct the Project and perform work in the State of New Hampshire. Contractor further warrants and represents to Owner that Contractor has reviewed or will review and become thoroughly familiar with the Drawings and Specifications, and the other Contract Documents, understands the contents thereof and that the Work can be completed within the Contract Time in accordance with the Contract Documents in accordance with the budget for the Work.

3.2.6 Add the following new Section 3.2.6:

3.2.6 Before ordering any materials or performing any work, the Contractor shall examine the Architectural, Structural, Mechanical and Electrical Drawings and verify all measurements. Any discrepancies between Drawings and/or Specifications and actual measurements shall be reported to the Architect in writing, who will issue written instructions as required.

3.3.4 Add the following new Section 3.3.4:

3.3.4 The Contractor shall inspect all materials as delivered to the project site and shall reject any materials that will not conform to the Contract Documents when properly installed.

3.4.2 Delete 3.4.2 in its entirety and insert in place thereof the following:

3.4.2 The Contractor shall be solely responsible for determining that all labor and materials meet the requirements of the Plans, Specifications and other Contract Documents. When a material, equipment, or system is specified by the name of one or more manufacturers, such material, equipment, or system shall form the basis of the

contract. If the Contractor desires to use another material, equipment, or system in lieu he shall request approval in writing and shall submit samples and data as required for Owner's consideration. Any reasonable request for substitution will be considered by the Owner. If, in the opinion of the Owner (after consultation with the Architect), such material, equipment, or system is equal in every respect to the material specified and is entirely satisfactory for use in the Project, then the Owner will approve such substitution(s). However, the Owner will be the sole judge of the above requirements. Any use as a basis for bidding of a material, equipment, or system other than that specified unless such material, equipment, or system has been approved by the Owner before submission of Contractor's Bid to Owner, will be made at bidder's risk. No substitution will be made without authority in writing from Owner.

3.4.3 After "employees" in the first sentence insert the following:

, subcontractors

3.4.4 Add the following new Section 3.4.4:

3.4.4 Contractor will use its good faith best efforts to cooperate with the Building Inspector, Public Works Director, and other officials of the town or city where the Project is located in connection with any inspections, required corrections, or other matters relating to the Project and the establishment of utility services, the control and management of access through residential neighborhoods and other areas of town, and related matters, it being understood that the Owner desires to maintain good public relations with the Owner and the town or city where the Project is located and their officials during the construction process.

3.5.3 Add the following new Section 3.5.3:

3.5.3 The Contractor shall, in the case of work performed by his Subcontractors which require guarantees, secure all applicable guarantees and warranties from Subcontractors and material suppliers, which are in addition to and not a limitation of the foregoing, and deliver copies of same to the Architect and Owner within fifteen (15) days after substantial completion of the Work. Such warranties must comply fully with all applicable Contract Documents.

3.5.4 Add the following new Section 3.5.4:

3.5.4 The warranties provided in this Section 3.5 shall be in addition to and not in limitation of any other warranties or guaranties required by or included in the Contract Documents or otherwise prescribed by law.

3.7.4 Revise Section 3.7.4 by deleting the phrase "14 days" in the first sentence, and substituting therefore the phrase "2 days".

3.10.4 Add the following new Section 3.10.4:

3.10.4 The Contractor shall prepare a weekly schedule summary report in a form and of sufficient detail satisfactory to Architect and Owner. The report as a minimum shall specify whether the Contractor's Work on the Project is on schedule, and if not, the reason therefor and a new proposed /schedule. The Contractor shall arrange for and attend weekly job meetings with the Architect and Owner and such other persons as the Architect or Owner may from time to time wish to have present. The Contractor shall be represented by a person or persons who have authority to bind and make decisions on behalf of the Contractor. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, change orders, time schedules and manpower. Any notices required under the Contract may be served on such representatives.

3.12.11 Add the following new Section 3.12.11:

3.12.11 No claim for delay shall be allowed on account of failure of the Architect to furnish instructions or to return Shop Drawings, Product Data, Samples, or similar materials.

3.12.12 Add the following new Section 3.12.12:

3.12.12 Contractor shall, in addition to the duties set forth in Section 3.12, provide for Owner's review and records copies of all Shop Drawings, Product Data and Samples. If the Owner has any comments with respect to the Shop Drawings, Product Data and Samples, the Owner's actions will be taken with such reasonable promptness as to cause no delay in the Work. The Owner's review of such submittals is not conducted for the purpose of determining the accuracy and completeness or other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems. The Owner's review of said submittals shall not relieve Contractor or Architect of their obligations pursuant to this Agreement, including but not limited to the requirements of Section 3.12. The Owner's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures. The Owner's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

3.18.1 Delete 3.18.1 in its entirety and insert in place thereof the following:

3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner and the officers, directors, agents and employees of

Owner from and against all claims, damages, losses and expenses, including attorney's fees, interest, penalties, and fines, arising out of, relating to or resulting from the acts, failure to act or omissions of the Contractor, a subcontractor, supplier, a sub-subcontractor, anyone directly or indirectly employed or controlled by them or anyone for whose acts they may be liable. In addition, and in no way abrogating or limiting the foregoing Contractor shall defend, indemnify and hold harmless the Owner and the officers, directors, agents and employees of Owner from any and all claims, damages and liabilities arising out of or relating to injuries to employees of Contractor as well as injuries to employees of any subcontractor, sub-subcontractors and suppliers, while on or about the site whether or not it is caused in part by a party indemnified hereunder or whether or not it is covered by Contractor's insurance carrier.

3.19 Add the following new Section 3.19:

3.19 SECURITY

3.19.1 Only previously authorized personnel will be permitted on the construction site. The Contractor shall, on request of the Owner, submit to the Owner the names of all personnel either directly employed by the Contractor or in the employ of any Subcontractor who will be present on the site.

3.19.1.1 All construction personnel will comply with any applicable site security requirements.

3.19.1.2 Site-parked mobile equipment and operable machinery, and hazardous parts of the new construction subject to mischief, shall be kept locked or otherwise made safe or inoperable whenever left unattended.

3.19.1.3 Contractor shall take appropriate steps in accordance with applicable laws to assure that the Project site is safe and drug free.

3.20 Add the following new Section 3.20:

3.20 ADDITIONAL COVENANTS OF CONTRACTOR

3.20.1 The Contractor agrees to the following additional terms and conditions, and also agrees that these conditions shall also apply to the Architect, all subcontractors, sub-subcontractors of the Contractor at all tiers for all Work performed on the Project.

.1 The Contractor shall be responsible for employing skilled and competent personnel who will work compatibly with Owner and all other contractors

and suppliers on the Project and who will comply with all rules established for work at the work site including but not limited to, rules regarding reserved gate site access and site visitation.

.2 There shall be no manifestations on the Project site of any dispute between any labor organization and the Contractor. The Contractor agrees to employ workers, agents, suppliers, and sub-contractors who are willing to cross or to work behind picket lines and who will perform the Work whether or not other employees or mechanics on the Work site are members of any labor organization.

.3 The Contractor agrees not to participate in or permit any cessation of work on the Project which is a result of any labor dispute, regardless of whether said labor dispute involves the Owner, the Contractor or any other employer on or supplier to the Project.

.4 The Contractor shall insure that all employees in the Contractor's employ, or in the employ of the Architect or a subcontractor or sub-subcontractor of Contractor, have submitted to their employer I-9s demonstrating they are eligible to work lawfully in the United States and are covered by current Workers' Compensation insurance policies.

.5 The Contractor shall properly classify all workers on the Project as employees and not as "independent contractors" and shall treat them accordingly for purposes of Workers' Compensation insurance coverage, employee tax withholdings, employer payroll taxes, unemployment insurance, any applicable health or wage and hour laws, and all subcontractors shall pay all employees on the Project by check, making all withholdings and payments required by state and federal law.

.6 The Contractor must be registered to do business in the state in which the Project is located.

.7 In addition to, and not in abrogation of, any other provision set forth herein, failure to abide by the above terms shall constitute a breach of this Agreement. If, for any reason, there is a work stoppage, picketing, boycott, violation of work site rules or other interference with the Work by employees of the Contractor, its agents or suppliers, or the representatives of the union(s) with which they have agreements or of which their employees are members, which in the sole judgment of Owner will interfere with or disrupt the work on the Project or is likely to cause a delay in the progress of construction, then upon twenty-four (24) hours

notice, Owner shall have the right to declare the Contractor in default of the Contract Documents.

3.20.3 In no way abrogating any provision hereof, upon request of the Owner, the Contractor shall provide the Owner copies of all subcontracts, sub-subcontracts, agreements with materialmen or suppliers, invoices, payment and accounting records, daily log sheets, payroll records or any other document, agreement or other writing pertaining to the Work or this Agreement.

ARTICLE 4: ARCHITECT:

4.2.6 Delete 4.2.6 in its entirety and insert in place thereof the following:

4.2.6 The Owner and the Architect will have authority to reject Work which does not conform to the Contract Documents. Whenever, in their opinion they consider it necessary or advisable for the implementation of the intent of the Contract Documents, they will have authority to require special inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3 whether or not such Work be then fabricated, installed or completed.

4.2.10 Delete the second sentence of Section 4.2.10 in its entirety.

4.2.13 Delete the period at the end of Section 4.2.13 and insert the following:

subject to the approval of the Owner.

ARTICLE 5: SUBCONTRACTORS:

5.1.3 Add the following new Section 5.1.3:

5.1.3 Nothing contained in the Contract Documents shall create any contractual obligation on the Owner to pay or to see to the payment of any sums due any Subcontractor, nor create any obligation of any kind, express or implied, upon the Owner or Architect in favor of any Subcontractor or Sub-subcontractor.

5.2.1 Add the following to the end of Section 5.2.1:

All contracts with subcontractors shall by fixed price contracts unless otherwise agreed to by Owner.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTOR

6.1.5 Add the following new Section 6.1.5:

6.1.5 The Owner reserves the right to take possession and use any completed or partially completed portion of the building before completion providing it does not interfere with the Contractor's Work. Such partial occupancy or taking possession will be based on the following:

6.1.5.1 Occupancy of any portion of the Work will not constitute an acceptance of the Work not performed in accordance with Contractor Documents or relieve the Contractor of liability to perform work required by the Contract Documents, but not completed at the time of occupancy.

6.1.5.2 Immediately before any partial occupancy, Contractor, Owner and Architect shall make a thorough joint inspection of that portion of the Work affected and mutually agree upon the conditions of occupancy and status of the work. The Architect shall be the final judge in determining responsibility at the time of final inspections for the conditions resulting from said occupancy. Damage to the work affected by the Owner or his representative before final acceptance will be the responsibility of the Owner.

6.2.2 Revise Section 6.2.2 as follows:

Insert after "the Architect" in the first sentence the following:

"and Owner"

6.3 Add the following to the end of Section 6.3:

Any accumulation of debris that is not removed within 48 hours after written notification shall result in back charges to the appropriate contractors. The determination of responsibility and allocation of costs shall be in the sole judgment of the Owner.

ARTICLE 7: CHANGES IN THE WORK

7.3.1 At the end of Section 7.3.1 add the following:

"Sufficient substantiating data, as described in 7.3.10 and 7.3.11, shall be provided."

7.3.3 Delete 7.3.3 in its entirety and insert in place thereof the following:

7.3.3 If a Construction Change Directive provides for an adjustment to the Contract Sum, the amount by which the Contract Sum shall be adjusted resulting from a change in the Work shall be determined by one of the following methods as selected by the Owner:

(a) By mutual acceptance of a lump sum properly itemized by Contractor and supported by sufficient substantiating data to permit evaluation;
(b) By unit prices stated in the Contract Documents or to be subsequently agreed upon;
(c) By Cost (as defined herein) estimated by the Contractor as provided in Clause 7.3.3.1 and accepted by the Owner, plus Percentage (as defined in 7.3.3.2). The Contractor's estimate plus Percentage shall become a fixed price which shall not be changed by any variation of the actual cost of executing the change; or
(d) as provided in Section 7.3.7;

7.3.3.1 Add the following new Clause 7.3.3.1:

7.3.3.1 As used in Section 7.3.3, "Cost" shall mean the estimated or actual net increase or decrease in cost to the Contractor, Subcontractors, or Sub-subcontractors for performing the Work covered by the change, including actual payments for materials, equipment rentals, expendable items, wages and associated benefits to workmen and to supervisors employed full time at the site, insurance, bonds and other provable direct costs, but not including any administrative or accounting costs, or other indirect or overhead costs, unless a change in Project duration or any wages or benefits of supervisory personnel not assigned full time to the site, or any amount for profit to the Contractor, Subcontractors or Sub-subcontractors.

7.3.3.2 Add the following new Section 7.3.3.2:

7.3.3.2 As used in this Section 7.3.3, "Percentage" shall mean an allowance to be added to Cost in lieu of overhead and profit and of any other expense which is not included in Cost as defined in Section 7.3.3.1, and shall be five percent (5%) for overhead and five percent (5%) for profit. When in the reasonable judgment of the Architect a series of changes effect a single change, Percentage shall be calculated on the cumulative net increase in Cost, if any. In the case of changes which result in a net decrease in Cost, the Contract Sum shall be reduced by the decrease in Cost.

7.3.4 Revise Section 7.3.4 by deleting the phrase "7.3.3.3" in the second sentence, and substituting therefore the phrase "7.3.3(c)"

7.3.11 Add the following new Section 7.3.11:

7.3.11 In order to facilitate checking of quotations for extras or credits, all Contractor and subcontractor proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs, including labor, materials, and sub-subcontracts. Labor and materials shall be itemized in the manner prescribed above. When major cost items are sub-subcontracts, they shall also be itemized.

ARTICLE 8: TIME

8.2.4 Add the following new Section 8.2.4:

8.2.4 If the Architect or Owner determines that the Contractor is entitled to an extension of the Contract Times as provided in Section 8.3, the calendar dates in the Progress Schedule shall be adjusted accordingly to retain their same relationship to the adjusted date of Substantial Completion and/or Final Completion, as appropriate, and the dollar value of Work to be completed as of the first of each month shall be adjusted pro-rata.

8.2.5 Add the following new Section 8.2.5:

8.2.5 Nothing in this Section 8.2 shall limit the Owner's right to consequential, liquidated or other damages for delays or to any other remedy which he may possess under other provisions of the Contract Documents or by law.

8.3.1 Delete 8.3.1 in its entirety and insert in place thereof the following:

8.3.1 If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner, or by any employee of Owner, or by any separate contractor employed by the Owner (excluding the Architect), or by approved changes ordered in the Work, or by labor disputes, fire, casualties, (not caused negligently by Contractor) or any causes beyond the Contractor's control or by delay authorized by the Owner, then the Contract Times shall be extended by Change Order for such reasonable time as the Architect and Owner may determine. Delays occasioned by weather or soils conditions which are determined by the Owner to be prevailing in the locality in which the Project is located shall specifically not constitute justification for extension of time or for forgiveness of liquidated or actual or consequential damages. In no event shall a labor dispute, jurisdictional, union or otherwise be the cause for any delay in the Work. It is the Contractor's sole responsibility to provide an action plan to avoid and/or prevent such occurrences

ARTICLE 9: PAYMENTS AND COMPLETION

9.3.1 Add the following sentence to the end of Section 9.3.1:

The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet. Contractor shall also provide for Contractor and for every Subcontractor, with each periodic application and final application, an affidavit and release of liens, mechanic's liens and claims in form and content acceptable to Owner and Owner's lender's and Owner's lender's title insurance company.

9.3.4 Add the following new Section 9.3.4:

9.3.4 Contractor shall within ten (10) days after receipt of notice of the existence of any liens filed against the Project by any Subcontractor, sub-subcontractor, supplier of materials or any other person or entity claiming to be a creditor of Contractor, cause the same to be removed as of record at Contractor's sole cost and expense. Any payment due Contractor hereunder shall be reduced by an amount equal to one hundred fifty percent (150%) of the amount of any lien until such lien is removed as of record. Unless said lien is caused by Owner's failure to meet its contractual responsibilities. It is expressly agreed that should Owner withhold payment to Contractor pursuant to Owner's rights under the Contract Documents, said withholding shall not be deemed a failure by Owner to meet its contractual obligations.

9.3.5 Add the following new Section 9.3.5:

9.3.5 The Contractor agrees to indemnify and hold the Owner harmless against all claims, damages, losses and expenses, including reasonable attorney's fees, resulting from any breach of warranty or misrepresentation in connection with the warranties and representations contained in Sections 9.3.3 and 9.3.4.

9.6.9 Add the following new Section 9.6.9:

9.6.9 The Owner reserves the right to issues joint checks to Contractor and subcontractors being paid pursuant to any particular requisition.

9.8.1 Add the following to the end of Section 9.8.1:

, and a certificate of occupancy has been issued by the municipality having jurisdiction over the Project such that the Owner can legally occupy the Project.

9.8.2 Delete 9.8.2 in its entirety and inset in place thereof the following:

9.8.2 When the Contractor considers that the Work or a designated portion thereof which is acceptable to the Owner is Substantially Complete as defined in Section 9.8.1, the Contractor shall prepare for submission to the Owner and Architect a list of items (hereinafter referred to as "Punch List") to be completed or corrected within thirty five (35) days following receipt of the list. The Owner may withhold 150% of the amount estimated by the Architect to be necessary to complete the punch list items. Any items not completed within said time because of Contractor's or its subcontractors lack of diligence in performing the work may be completed by the Owner and costs incurred deducted from the Contractor's final payment in accordance with the Contract Documents. The failure to include any items on such list does to alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the Architect or Owner on the basis of an inspection determines that the Work or designated portion thereof is Substantially Complete, he will then prepare a Certificate of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 Add the following to the end of Section 10.1:

The Contractor shall maintain the site in compliance with all applicable codes and regulations concerning safe working conditions including, but not restricted to, all Federal, State and local regulations, and the Owner's written regulations and practices (if any). The Contractor shall bear sole responsibility for job site safety. The Owner and the Architect will not be responsible for financial damages arising out of regulatory citations or civil claims resulting from the Contractor's failure to maintain a safe job site. The Contractor will provide to the Owner, prior to beginning Work on the Project at the job site, a Safety Plan, which shall be reviewed with the Owner. Contractor will conduct scheduled safety meetings on a regular basis, not less than weekly, minutes of which will be provided to the Owner.

10.2.1 Add the following to the end of Section 10.2.1:

.4 Provide to the Owner, prior to beginning work on the project at the job site, a Safety Plan, which shall be reviewed with the Owner.

.5 Conduct scheduled safety meetings on a regular basis, not less than weekly, minutes of which will be provided to the Owner.

ARTICLE 11: INSURANCE AND BONDS

11.1. Delete Section 11.1 in its entirety and insert in place thereof the following:

11.1 CONTRACTOR'S INSURANCE

11.1.1 Contractor shall maintain, at its sole cost and expense, the insurance coverages set forth below in Section 11.1.2, below. Such insurance shall be provided whether or not required by the laws of the State of New Hampshire. All insurance policies are to be written by companies acceptable to Owner and licensed to do business in the State of New Hampshire. Such insurance companies shall have a Best's rating of "A-" or better. The company shall also be in a Best's financial size category of Class "IX" or higher. All certificates or insurance are to contain substantially the following statement: "The insurance coverages evidenced by this certificate shall not be canceled nor materially altered except after **thirty (30) days** written notice has been provided and received by Owner." The insurance polices shall be endorsed to provide such notice. Contractor shall require its subcontractors and suppliers to carry and maintain insurance in accordance with industry practices and as reasonably requested by the Owner.

11.1.2 Contractor shall furnish satisfactory evidence to Owner prior to the commencement of the Work that Contractor has complied with all of the requirements of Section 11.1.1 and that the following coverages, including the specific amounts required, are in force. Contractor shall furnish certificates of insurance with the Project name stated on the certificates prior to the beginning of on-site operations. In addition, within ten (10) days of written request by Owner, Contractor shall provide copies of all of its insurance policies, certified by Contractor's insurance agent that they are true and correct, and contain all amendments, endorsements and addenda. Contractor shall have the right, but not the obligation, to prohibit Contractor or any contractor or subcontractor from entering upon the Project site until a certificate of insurance indicating full compliance with these requirements is received and approved by Owner. Failure of Owner to demand such certificate of insurance or failure of Owner to identify a deficiency in such evidence, shall not be construed as a waiver of Subcontractor's obligation to purchase and maintain such insurance. The coverages and amounts below are minimum requirements and do not establish limits to Contractor's liability. Other coverages and higher limits may be provided at Contractor's expense.

11.1.2.1 Workers Compensation:

(a) Statutory Workers Compensation coverage for the State of New Hampshire and the state of hire, if different, or any other state where such coverage is required.

(b) Employers Liability Coverage with minimum limits not less than the following:

Bodily Injury by Accident	$100,000 Each Accident
Bodily Injury by Disease	$500,000 Policy Limit
Bodily Injury by Disease	$100,000 Each Employee

(c) If applicable to the Project, coverage under the Longshore and Harbor Workers' Compensation Act; the Jones Act or other Admiralty or Maritime Law; or any other Federal Workers Compensation and Employers Liability Laws, shall be provided.

11.1.2.2 Commercial General Liability:

(a) Commercial General Liability Coverage with minimum limits not less than the following*:

General Aggregate Limit	$2,000,000
Products-Completed Operations Aggregate Limit	$2,000,000
Personal & Advertising Injury Limit	$1,000,000
Bodily Injury and Property Damage Liability - Each Occurrence Limit	$1,000,000

*Umbrella Excess Liability policy may be used to satisfy required minimum limits.

(b) Commercial General Liability coverage shall include, without exception, coverage for Premises-Operations; Independent Contractors; Contractual Liability (covering all indemnification and hold harmless clauses); Personal & Advertising Injury; Products-Completed Operations; Broad Form Property Damage including Completed Operations; "x, c and u" coverage for Property Damage. Any endorsements or modifications to the Commercial General Liability coverage which reduce, restrict or limit the scope of coverage must be identified on the Certificate of Insurance. In no way limiting the prior sentence, there shall be no limitations or exclusions from coverage for Exterior Insulation Finish Systems/Exterior Finish Insulation Systems or Direct Exterior Finish Systems, if applicable.

(c) Products and Completed Operations to be maintained for one year, unless longer duration required by Owner, after final payment.

(d) General Aggregate Limit shall apply on a "Per Project" basis, or separately to this Project.

(e) Owner, the Architect (and others as may be required by Owner) shall be named as Additional Insureds . Additional Insured coverage shall apply to any all liability arising out of Contractor's Work, and applies: (i) whether such work is performed by Contractor or performed by others on behalf of Contractor; and (ii) regardless of acts or omissions of the Additional Insured(s). Additional Insured coverage shall not be limited to general supervision of Contractor's Work. Such insurance secured by the Contractor shall be on a primary basis with the Additional Insured's own insurance coverage or self-insurance being excess and non-contributory. In addition, Additional Insured coverage shall extend to include Products and Completed Operations coverage.

(f) A Waiver of Subrogation shall apply in favor of Owner (and any others named as Additional Insureds).

11.1.2.3 Automobile Liability:

(a) Automobile Liability Coverage with minimum limits not less than the following*:

$1,000,000 Any One Accident or Loss

*Umbrella Excess Liability policy may be used to satisfy required minimum limits.

(b) Such coverage shall apply to all Owned, Hired and Non-Owned Automobiles.

(c) Owner, the Architect (and others, if required by the Owner) shall be named as Additional Insureds . Additional Insured coverage shall apply to any all liability arising out of Contractor's Work, and applies: (i) whether such work is performed by Contractor or performed by others on behalf of Contractor; and (ii) regardless of acts or omissions of the Additional Insured(s). Additional Insureds coverage shall not be limited to general supervision of Contractor's Work. Such insurance secured by the Contractor shall be on a primary basis with the Additional Insureds' own insurance coverage or self-insurance being excess and non-contributory.

(d) A Waiver of Subrogation shall apply in favor of Owner (and others named as Additional Insureds).

11.1.2.4 Umbrella Excess Liability:

(a) Umbrella Excess Liability coverage to apply in excess of coverages required under 11.1.2.1(b), 11.1.2.2 and 11.1.2.3, above, with minimum limits not less than the following:

Each Occurrence Limit	$5,000,000.00
Aggregate Limit	$5,000,000.00

(b) Owner, the Architect (and others, if required by the Owner) shall be named as Additional Insureds . Additional Insured coverage shall apply to any all liability arising out of Contractor's Work, and applies: (i) whether such work is performed by Contractor or performed by others on behalf of Contractor; and (ii) regardless of acts or omissions of the Additional Insured(s). Additional Insureds coverage shall not be limited to general supervision of Contractor's Work. Such insurance secured by the Contractor shall be on a primary basis with the Additional Insureds' own insurance coverage or self-insurance being excess and non-contributory.

(c) A Waiver of Subrogation shall apply in favor of Owner (and others named as Additional Insureds).

(d) In no way limiting any other provision hereof, there shall be no limitations or exclusions from coverage for Exterior Insulation Finish Systems/Exterior Finish Insulation Systems or Direct Exterior Finish Systems, if applicable.

11.1.2.5 Coverage for Contractor's Tools and Equipment:

(a) Contractor is responsible for insuring its own tools and equipment and any tools and equipment which Contractor utilizes in connection with its Work.

(b) A Waiver of Subrogation shall apply in favor of Owner (and others named as Additional Insureds).

11.1.2.6 Other Insurance Provisions:

(a) By requiring the insurance as set forth above, Owner does not represent that the coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor's liability under any indemnification provided to Owner (whether pursuant to the Contract Documents or otherwise).

(b) Owner will have the right, but not the obligation, to procure and maintain the above insurance in the name of and at the expense of Contractor, with the right to offset said costs against any and all sums due Contractor, should Contractor fail to procure and

maintain the required insurance. Contractor shall provide all information as may be necessary or desirable in order to procure and maintain such insurance.

11.1.3 To the extent allowed under the applicable builders risk or similar property insurance policy, Contractor waives all rights against the Owner for damages caused by fire or other perils to the extent covered by builders risk or similar property insurance provided, except such rights as they may have for the proceeds of such insurance. Contractor shall require similar waivers from its contractors, subcontractors, materialmen and suppliers.

11.1.4 Contractor and its insurer(s) waive all rights against Owner (and others named as Additional Insureds) for recovery of damages whether or not these damages are covered by the Commercial General Liability; Automobile Liability; and Umbrella Excess Liability policies obtained by Contractor as set forth, above. In addition, a similar waiver applies to any applicable physical damage coverage on Contractor's tools, equipment and vehicles which Contractor utilizes in connection with its Work, whether or not such items are owned by Contractor.

11.3.3 Add Section 11.3.3:

11.3.3 The Contractor shall provide a "Builder's Risk" policy with the Owner listed as additionally insured. The insurance shall cover the interests of the Owner, contractors, subcontractors and Architect.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.2.2.1 Revise Section 12.2.2.1 as follows:

After the words "one year" in the first sentence and third sentence of Section 12.2.2.1 insert the following clause:

(or for such period of time that any Bond is outstanding)

12.2.2.2 After the words "one-year period" in the first line of Section 12.2.2.2 insert the following clause:

(or for such period of time that any Bond is outstanding)

12.2.2.3 After the words "one-year period" in the first sentence of Section 12.2.2.3 insert the following clause:

(or for such period of time that any Bond is outstanding)

12.2.5 After the words "one-year period" in the second sentence of Section 12.2.5 insert the following clause:

(or for such period of time that any Bond is outstanding)

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.2.1 Delete 13.2.1 in its entirety and insert in place thereof the following:

13.2.1 The Owner and the Contractor each binds himself, successors, assigns and legal representatives to the other party hereto and to the successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any moneys due or to become due to him hereunder, without the previous written consent of the Owner. It is understood that Owner may intend to assign its rights hereunder to its lender and Contractor agrees, if requested, to enter into a written agreement, on a form provided by said lender, with such lender pursuant to which at the lender's request, Contractor will complete the Work upon payment of the balance of the contract price, as adjusted by Change Orders. Any entity which shall succeed to the rights of Owner shall be entitled to enforce the rights of Owner hereunder.

13.3.3 Add Section 13.3.3 with the following:

13.3.3 Notwithstanding anything to the contrary, the applicable statute of limitations period shall not commence, nor shall any cause of action be deemed to accrue prior to the latest date on which such period would commence or accrue by the discovery rule or otherwise, under the laws of the state of New Hampshire.

13.6 Add the following new Section 13.6:

13.6 Confidentiality

13.6.1 The Contractor acknowledges that certain of the Owner's valuable, confidential and proprietary information may come into the Contractor's possession. Accordingly, the Contractor agrees to hold all information it obtains from or about the Owner or this Project, and which information is not generally known to the public or in the public domain, in strictest confidence, and not to use such information other than for the performance of the services under this Agreement, and to cause its employees, subcontractors or consultants to whom such information is transmitted to be bound to the same obligation of confidentiality to which the Contractor is bound. The Contractor shall not communicate the Owner's information in any form to any third party without the

Owner's prior written consent. In the event of any violation of this provision, the Owner shall be entitled to preliminary and permanent injunctive relief as well as an equitable accounting of all profits or benefits arising out of such violation, which remedy shall be in addition to any other rights or remedies to which the Owner may be entitled.

ARTICLE 15: CLAIMS AND DISPUTES

15.1.2 After the word "Claims" in the second sentence of Section 15.1.2 add the following:

during the Construction Phase,

15.1.6 Delete Section 15.1.6 in its entirety.

15.4 Replace Section 15.4 and all of its Sections with the following:

15.4 Section 15.4 and all references to arbitration in this Contract and the Contract Documents, including the Agreement are deleted. All claims, disputes, and other matters in controversy, shall be resolved by mediation followed, if necessary, by litigation.

SECTION 011000 - SUMMARY

PART 1 GENERAL

1.01 **PROJECT**

A. The Project consists of the alteration of the Amherst Police Department.

1.02 **CONTRACT DESCRIPTION**

1.03 **OWNER OCCUPANCY**

A. Owner intends to occupy the Project upon Substantial Completion.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

1.04 **CONTRACTOR USE OF SITE AND PREMISES**

A. Provide access to and from site as required by law and by Owner:

1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
2. Do not obstruct roadways, sidewalks, or other public ways without permit.

1.05 **WORK SEQUENCE**

A. Construct Work in stages during the construction period:

1. Stage 1: Lower Level Renovations.
2. Stage 2: Main Level Renovations.
3. Stage 3: Upper Level Renovations.

B. Coordinate construction schedule and operations with Owner.

END OF SECTION

SECTION 012000 - PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Procedures for preparation and submittal of applications for progress payments.

1.02 **SCHEDULE OF VALUES**

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
C. Forms filled out by hand will not be accepted.

1.03 **APPLICATIONS FOR PROGRESS PAYMENTS**

A. Payment Period: Submit at intervals stipulated in the Agreement.
B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
D. Forms filled out by hand will not be accepted.
E. Execute certification by signature of authorized officer.
F. Submit one electronic and three hard-copies of each Application for Payment.

1.04 **MODIFICATION PROCEDURES**

A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
    1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
    2. Promptly execute the change.
C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within [____] days.
D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 6000.
E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.

END OF SECTION

SECTION 012100 - ALLOWANCES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Cash allowances.

B. Contingency allowance.

1.02 **CASH ALLOWANCES**

A. Costs Included in Cash Allowances: Cost of product to Contractor or subcontractor, less applicable trade discounts, less cost of delivery to site , less applicable taxes .

B. Costs Not Included in Cash Allowances: Product delivery to site and handling at the site, including unloading, uncrating, and storage; protection of products from elements and from damage; and labor for installation and finishing. [_____] .

C. Contractor Responsibilities:

1. Assist Architect in selection of products, suppliers , and installers.
2. Obtain proposals from suppliers and installers and offer recommendations.

1.03 **CONTINGENCY ALLOWANCE**

A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.

B. Funds will be drawn from the Contingency Allowance only by Change Order.

1.04 **NO ALLOWANCES ARE IDENTIFIED SPECIFICALLY FOR THE PURPOSE OF THE BID. THE CONTRACTOR MAY PROPOSE ALLOWANCES FOR ANY BID CATEGORY, BUT WILL BE CONSIDERED PART OF THE TOTAL BID FOR DETERMINING THE BID AMOUNT.**

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

2.01 **GENERAL REQUIREMENTS**

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.

D. Limit each request to a single proposed substitution item.

2.02 **RESOLUTION**

2.03 **ACCEPTANCE**

END OF SECTION

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 **RELATED REQUIREMENTS**

A. Section 011000 - Summary: Lists of products to be removed from existing building.

B. Section 012500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

C. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

D. Section 017419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.02 **SUBMITTALS**

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 **EXISTING PRODUCTS**

A. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

B. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is required.

1. See Section 011000 for list of items required to be salvaged for reuse and relocation.

2.02 **NEW PRODUCTS**

A. Provide new products unless specifically required or permitted by Contract Documents.

B. Use of products having any of the following characteristics is not permitted:

C. Where other criteria are met, Contractor shall give preference to products that:

1. If used on interior, have lower emissions, as defined in Section 016116.

2. If wet-applied, have lower VOC content, as defined in Section 016116.

2.03 **PRODUCT OPTIONS**

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.01 **SUBSTITUTION LIMITATIONS**

A. See Section 012500 - Substitution Procedures.

3.02 **TRANSPORTATION AND HANDLING**

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 **STORAGE AND PROTECTION**

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.
B. Store and protect products in accordance with manufacturers' instructions.
C. Store with seals and labels intact and legible.
D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
E. For exterior storage of fabricated products, place on sloped supports above ground.
F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
G. Comply with manufacturer's warranty conditions, if any.
H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
I. Prevent contact with material that may cause corrosion, discoloration, or staining.
J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 024100 - DEMOLITION

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Building demolition excluding removal of hazardous materials and toxic substances.
B. Selective demolition of built site elements.
C. Selective demolition of building elements for alteration purposes.
D. Abandonment and removal of existing utilities and utility structures.

1.02 **RELATED REQUIREMENTS**

A. Section 003100 - Available Project Information: Existing building survey conducted by Owner; information about known hazardous materials.
B. Section 011000 - Summary: Limitations on Contractor's use of site and premises.
C. Section 011000 - Summary: Sequencing and staging requirements.
D. Section 011000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
E. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
F. Section 016000 - Product Requirements: Handling and storage of items removed for salvage and relocation.
G. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
H. Section 312323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

PART 3 EXECUTION

2.01 **SCOPE**

A. Remove portions of existing buildings in the following sequence:
B. Remove other items indicated, for salvage, relocation, recycling, and [_____].
C. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 312200.

2.02 **GENERAL PROCEDURES AND PROJECT CONDITIONS**

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
    1. Obtain required permits.
    2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
    3. Provide, erect, and maintain temporary barriers and security devices.
    4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
    5. Do not close or obstruct roadways or sidewalks without permit.
    6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
    7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
B. Do not begin removal until receipt of notification to proceed from Owner.
C. Protect existing structures and other elements that are not to be removed.
    1. Provide bracing and shoring.
    2. Prevent movement or settlement of adjacent structures.
    3. Stop work immediately if adjacent structures appear to be in danger.

2.03 **EXISTING UTILITIES**

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.
D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

2.04 **SELECTIVE DEMOLITION FOR ALTERATIONS**

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and [_____]): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
D. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

2.05 **DEBRIS AND WASTE REMOVAL**

A. Remove debris, junk, and trash from site.
B. Leave site in clean condition, ready for subsequent work.
C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 030100 - MAINTENANCE OF CONCRETE

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Cleaning of existing concrete surfaces.
B. Repair of exposed structural, shrinkage, and settlement cracks.
C. Resurfacing of concrete surfaces having spalled areas and other damage.
D. Repair of internal concrete reinforcement.

PART 2 PRODUCTS

2.01 **CLEANING MATERIALS**

A. Degreaser:
    1. Manufacturers:
        a. Euclid Chemical Company; Euco Clean and Strip: www.euclidchemical.com/#sle.
        b. SpecChem, LLC; Orange Peel-Citrus Cleaner: www.specchemllc.com/#sle.
        c. Substitutions: See Section 016000 - Product Requirements.
B. Detergent: Non-ionic detergent.

2.02 **CEMENTITIOUS PATCHING AND REPAIR MATERIALS**

A. Manufacturers:
    1. Kaufman Products Inc: www.kaufmanproducts.net/#sle.
    2. The QUIKRETE Companies: www.quikrete.com/#sle.
    3. SpecChem, LLC: www.specchemllc.com/#sle.
    4. Substitutions: See Section 016000 - Product Requirements.
B. Cementitious Repair Mortar, Trowel Grade: One- or two-component, factory-mixed, polymer-modified cementitious mortar.

2.03 **EPOXY PATCHING AND REPAIR MATERIALS**

A. Epoxy Injection Adhesive:

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that surfaces are ready to receive work.
B. Beginning of installation means acceptance of substrate.

3.02 **CLEANING EXISTING CONCRETE**

A. Clean concrete surfaces of dirt or other contamination using the gentlest method that is effective.
    1. Try the gentlest method first, then, if not clean enough, use a less gentle method taking care to watch for impending damage.
    2. Clean out cracks and voids using same methods.
B. The following are acceptable cleaning methods, in order from gentlest to less gentle:
    1. Water washing using low-pressure, maximum of 100 psi, and, if necessary, brushes with natural or synthetic bristles.
    2. Increasing the water washing pressure to maximum of 400 psi.
    3. Adding detergent to washing water; with final water rinse to remove residual detergent.
    4. Steam-generated low-pressure hot-water washing.

3.03 **CONCRETE STRUCTURAL MEMBER REPAIR**

3.04 **CRACK REPAIR USING EPOXY ADHESIVE INJECTION**

A. Repair exposed cracks.
B. Provide temporary entry ports spaced to accomplish movement of fluids between ports; no deeper than the depth of the crack to be filled or port size diameter no greater than the thickness of the crack. Provide temporary seal at concrete surface to prevent leakage of adhesive.
C. Inject adhesive into ports under pressure using equipment appropriate for particular application.
D. Begin injection at lower entry port and continue until adhesive appears in adjacent entry port. Continue from port to port until entire crack is filled.
E. Remove temporary seal and excess adhesive.
F. Clean surfaces adjacent to repair and blend finish.

3.05 **CONCRETE SURFACE REPAIR USING CEMENTITIOUS MATERIALS**

A. Clean concrete surfaces, cracks, and joints of dirt, laitance, corrosion, and other contamination using method(s) specified above and allow to dry.
B. Apply coating of bonding agent to entire concrete surface to be repaired.
C. Fill voids with cementitious mortar flush with surface.
D. Apply repair mortar by steel trowel to a minimum thickness of 1/4 inch (6 mm) over entire surface, terminating at a vertical change in plane on all sides.
E. Trowel finish to match adjacent concrete surfaces.

END OF SECTION

SECTION 032000 - CONCRETE REINFORCING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Reinforcing steel for cast-in-place concrete.

1.02 **RELATED REQUIREMENTS**

A. Section 033000 - Cast-in-Place Concrete.

1.03 **REFERENCE STANDARDS**

A. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.

PART 2 PRODUCTS

2.01 **REINFORCEMENT**

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
   1. Plain billet-steel bars.
   2. Unfinished.

2.02 **RE-BAR SPLICING:**

A. Coupler Systems: Mechanical devices for splicing reinforcing bars; capable of developing full steel reinforcing design strength in tension and compression.

2.03 **FABRICATION**

PART 3 EXECUTION

3.01 **PLACEMENT**

A. Place, support and secure reinforcement against displacement. Do not deviate from required position.

END OF SECTION

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Floors and slabs on grade.
B. Concrete reinforcement.
C. Joint devices associated with concrete work.
D. Concrete curing.

1.02 **RELATED REQUIREMENTS**

A. Section 079200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.03 **REFERENCE STANDARDS**

A. ACI 301 - Specifications for Structural Concrete 2016.
B. ACI 302.1R - Guide to Concrete Floor and Slab Construction 2015.
C. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete 2000 (Reapproved 2009).
D. ACI 308R - Guide to External Curing of Concrete 2016.
E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
F. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
G. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete 2015.
H. ASTM E1993/E1993M - Standard Specification for Bituminous Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs 1998 (Reapproved 2020).

PART 2 PRODUCTS

2.01 **REINFORCEMENT MATERIALS**

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
    1. Type: Deformed billet-steel bars.
    2. Finish: Unfinished, unless otherwise indicated.
B. Steel Welded Wire Reinforcement (WWR): Galvanized, plain type, ASTM A1064/A1064M.
C. Reinforcement Accessories:
    1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch (1.29 mm).
    2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.02 **CONCRETE MATERIALS**

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
    1. Acquire cement for entire project from same source.

2.03 **ACCESSORY MATERIALS**

A. Underslab Waterproofing and Vapor Retarder: Semi-rigid bituminous membrane, seven-ply, complying with ASTM E1993/E1993M.

2.04 **BONDING AND JOINTING PRODUCTS**

A. Epoxy Bonding System:
    1. Complying with ASTM C881/C881M and of Type required for specific application.
B. Slab Isolation Joint Filler: 1/2 inch (13 mm) thick, height equal to slab thickness, with removable top section that will form 1/2 inch (13 mm) deep sealant pocket after removal.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 **PREPARATION**

A. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
    1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.

B. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches (150 mm). Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 **INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS**

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

3.04 **PLACING CONCRETE**

A. Place concrete in accordance with ACI 304R.

B. Place concrete for floor slabs in accordance with ACI 302.1R.

C. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 **SLAB JOINTING**

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

3.06 **FLOOR FLATNESS AND LEVELNESS TOLERANCES**

A. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.07 **CONCRETE FINISHING**

A. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:

1. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.

3.08 **CURING AND PROTECTION**

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Surfaces Not in Contact with Forms:

1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
3. Final Curing: Begin after initial curing but before surface is dry.

3.09 **DEFECTIVE CONCRETE**

END OF SECTION

SECTION 033511 - CONCRETE FLOOR FINISHES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

1.02 **RELATED REQUIREMENTS**

A. Section 033000 - Cast-in-Place Concrete: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.

B. Section 033000 - Cast-in-Place Concrete: Curing compounds that also function as sealers.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **CONCRETE FLOOR FINISH APPLICATIONS**

A. Unless otherwise indicated, all concrete floors are to be finished using liquid densifier/hardener.

B. Liquid Densifier/Hardener:

2.02 **SURFACE TREATMENTS**

A. Troweling Aid, Densifier and Curing Agent: Liquid reactive colloidal silica-based topical treatment, spray-applied to wet concrete and floated or troweled into the surface.

2.03 **DENSIFIERS AND HARDENERS**

A. Liquid Densifier/Hardener: Penetrating chemical compound that reacts with concrete, filling the pores and dustproofing; for application to concrete after set.

1. Products:
   a. Kaufman Products Inc; Silicure: www.kaufmanproducts.net/#sle.
   b. PROSOCO, Inc; Consolideck LS/CS: www.prosoco.com/consolideck/#sle.
   c. SpecChem, LLC; Cure Hard: www.specchemllc.com/#sle.
   d. Substitutions: See Section 016000 - Product Requirements.

2.04 **COATINGS**

A. Colored Coating: Pigmented coating recommended by manufacturer for finishing concrete floors and slabs.

1. Gloss: Matte.
2. Color(s): As selected by Architect from manufacturer's standard range.
3. Products:
   a. Allied Construction Technologies, Inc; AC Tech 2170: www.actechperforms.com/#sle.
   b. ARDEX Engineered Cements; [____]: www.ardexamericas.com/#sle.
   c. Dayton Superior Corporation; [_____]: www.daytonsuperior.com/#sle.
   d. Kaufman Products Inc; SurePoxy HiBild: www.kaufmanproducts.net/#sle.
   e. Sika Corporation; Sikafloor 510N LPL: www.sikausa.com/#sle.
   f. SpecChem, LLC; Surface Shine Gray: www.specchemllc.com/#sle.
   g. BASIS OF DESIGN: Sika Corporation; Sikafloor 750: www.sikausa.com/#sle..
   h. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that floor surfaces are acceptable to receive the work of this section.

B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

3.02 **GENERAL**

A. Apply materials in accordance with manufacturer's instructions.

3.03 **COATING APPLICATION**

A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.

B. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.

C. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.

END OF SECTION

SECTION 040511 - MORTAR AND MASONRY GROUT

PART 1 GENERAL

1.01 **RELATED REQUIREMENTS**

A. Section 042600 - Single-Wythe Unit Masonry: Installation of mortar and grout.
B. Section 081113 - Hollow Metal Doors and Frames: Products and execution for grouting steel door frames installed in masonry.

1.02 **REFERENCE STANDARDS**

A. ASTM C5 - Standard Specification for Quicklime for Structural Purposes 2018.
B. ASTM C91/C91M - Standard Specification for Masonry Cement 2018.
C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2020.
D. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
E. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.
F. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019.
G. ASTM C387/C387M - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar 2017.
H. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
I. ASTM C476 - Standard Specification for Grout for Masonry 2019.

PART 2 PRODUCTS

2.01 **MORTAR AND GROUT APPLICATIONS**

A. At Contractor's option, mortar and grout may be field-mixed from packaged dry materials, made from factory premixed dry materials with addition of water only, or ready-mixed.
B. Mortar Mix Designs: ASTM C270, Property Specification.
    1. Exterior Masonry Veneer: Type N.
    2. Interior, Non-loadbearing Masonry: Type O.
C. Grout Mix Designs:
    1. Bond Beams and Lintels: 3,000 psi (21 MPa) strength at 28 days; 8-10 inches (200-250 mm) slump; provide premixed type in accordance with ASTM C 94/C 94M.
        a. Fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less.
    2. Engineered Masonry: 3,000 psi (21 MPa) strength at 28 days; 8-10 inches (200-250 mm) slump; provide premixed type in accordance with ASTM C 94/C 94M.

2.02 **MATERIALS**

A. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C387/C387M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
    1. Color: Standard gray.
B. Portland Cement: ASTM C150/C150M.
    1. Type: Type I - Normal; ASTM C150/C150M.
    2. Color: Standard gray.
C. Masonry Cement: ASTM C91/C91M.
    1. Type: Type N; ASTM C91/C91M.
D. Hydrated Lime: ASTM C207, Type S.
E. Quicklime: ASTM C5, non-hydraulic type.
F. Mortar Aggregate: ASTM C144.
G. Grout Aggregate: ASTM C404.
H. Water: Clean and potable.

2.03 **MORTAR MIXING**

A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.
B. Maintain sand uniformly damp immediately before the mixing process.
C. Do not use anti-freeze compounds to lower the freezing point of mortar.
D. If water is lost by evaporation, re-temper only within two hours of mixing.

2.04 **GROUT MIXING**

A. Mix grout in accordance with ASTM C94/C94M.

B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

PART 3 EXECUTION

3.01 **PREPARATION**

A. Plug clean-out holes for grouted masonry with brick masonry units. Brace masonry to resist wet grout pressure.

3.02 **INSTALLATION**

A. Install mortar and grout to requirements of section(s) in which masonry is specified.

B. Work grout into masonry cores and cavities to eliminate voids.

3.03 **GROUTING**

A. Use either high-lift or low-lift grouting techniques, at Contractor's option, subject to other limitations of Contract Documents.

B. Low-Lift Grouting:

1. Limit height of pours to 12 inches (300 mm).
2. Limit height of masonry to 16 inches (400 mm) above each pour.
3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.

C. High-Lift Grouting:

1. Verify that horizontal and vertical reinforcement is in proper position and adequately secured before beginning pours.
2. Place grout for spanning elements in single, continuous pour.

END OF SECTION

SECTION 042600 - SINGLE-WYTHE UNIT MASONRY

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Concrete masonry units.
B. Reinforcement, anchorage, and accessories.

1.02 **RELATED REQUIREMENTS**

A. Section 032000 - Concrete Reinforcing: Reinforcing steel for grouted masonry.
B. Section 040511 - Mortar and Masonry Grout: Mortar and grout for single wythe unit masonry.

1.03 **REFERENCE STANDARDS**

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
B. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire 2019.
C. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2016, with Editorial Revision (2018).
D. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
E. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2016a.
F. UL (FRD) - Fire Resistance Directory Current Edition.

PART 2 PRODUCTS

2.01 **CONCRETE MASONRY UNITS**

A. Concrete Block: Comply with referenced standards and as follows:
   1. Regulatory Requirements: Comply with applicable code for UL Assembly No. [____].
   2. Size: Standard units with nominal face dimensions of 16 x 8 inches (400 x 200 mm) and nominal depth of 4 inches (100 mm).
   3. Load-Bearing Units: ASTM C90, normal weight.
      a. Both hollow and solid block, as indicated.
      b. Exposed Faces: Manufacturer's standard color and texture where indicated.

2.02 **MORTAR AND GROUT MATERIALS**

A. Mortar and Grout: As specified in Section 040511.

2.03 **REINFORCEMENT AND ANCHORAGE**

A. Manufacturers:
   1. Blok-Lok Limited; [_____]: www.blok-lok.com/#sle.
   2. Hohmann & Barnard, Inc; [_____]: www.h-b.com/#sle.
   3. WIRE-BOND: www.wirebond.com/#sle.
   4. Substitutions: See Section 016000 - Product Requirements.
B. Reinforcing Steel: Type specified in Section 032000; size as indicated on drawings; uncoated finish.
C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
   1. Type: Truss or ladder.
   2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
D. Strap Anchors: Bent steel shapes configured as required for specific situations, 1-1/4 in (32 mm) width, 0.105 in (2.7 mm) thick, lengths as required to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage from masonry face, corrugated for embedment in masonry joint, hot dip galvanized to ASTM A153/A153M Class B.
E. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage from masonry face.

2.04 **LINTELS**

A. Precast Concrete Lintels: [_____] type, 56"x8" inch (____x____ mm) size, [____] psi ([____] MPa) strength at 28 days.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that field conditions are acceptable and are ready to receive masonry.

3.02 **PREPARATION**

3.03 **COURSING**

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:

1. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
2. Mortar Joints: Flush.

3.04 **PLACING AND BONDING**

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

3.05 **REINFORCEMENT AND ANCHORAGE**

A. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Space anchors at maximum of 24 inches (600 mm) horizontally and 16 inches (400 mm) vertically.

3.06 **LINTELS**

A. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.

1. Openings to 42 inches (1070 mm): Place two, No. 3 (M9) reinforcing bars 1 inch (25 mm) from bottom web.
2. Openings from 42 inches (1070 mm) to 78 inches (1980 mm): Place two, No. 5 (M16) reinforcing bars 1 inch (25 mm) from bottom web.

B. Maintain minimum 8 inch ([____] mm) bearing on each side of opening.

3.07 **GROUTED COMPONENTS**

A. Reinforce bond beams with 2, No. 5 (M[____]) bars, 1 inch (25 mm) from bottom web.

B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.

C. Place and consolidate grout fill without displacing reinforcing.

3.08 **FIELD QUALITY CONTROL**

A. An independent testing agency, as specified in Section 014000 - Quality Requirements, will conduct field tests.

END OF SECTION

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Structural steel framing members.

B. Structural steel support members and struts.

1.02 **REFERENCE STANDARDS**

A. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges 2016.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:

1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.

PART 2 PRODUCTS

2.01 **MATERIALS**

2.02 **FABRICATION**

A. Shop fabricate to greatest extent possible.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

3.02 **ERECTION**

A. Erect structural steel in compliance with AISC 303.

B. Field weld components and shear studs indicated on shop drawings.

3.03 **TOLERANCES**

3.04 **FIELD QUALITY CONTROL**

END OF SECTION

SECTION 055213 - PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Wall mounted handrails.

1.02 **RELATED REQUIREMENTS**

A. Section 062000 - Finish Carpentry: Wood handrail.

B. Section 099123 - Interior Painting: Paint finish.

PART 2 PRODUCTS

2.01 **RAILINGS - GENERAL REQUIREMENTS**

A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.

B. Allow for expansion and contraction of members and building movement without damage to connections or members.

C. Dimensions: See drawings for configurations and heights.

1. Top Rails and Wall Rails: 1-1/2 inches (38 mm) diameter, round.
2. Intermediate Rails: 1-1/4 by 1 inch (32 by 25 mm) rectangular.
3. Posts: 1-1/2 inches (38 mm) diameter, round.
4. Balusters: 1/2 inch (12 mm) square solid bar.

D. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.

E. Provide slip-on non-weld mechanical fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

2.02 **FABRICATION**

A. Accurately form components to suit specific project conditions and for proper connection to building structure.

B. Fit and shop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

PART 3 EXECUTION

3.01 **PREPARATION**

3.02 **INSTALLATION**

A. Install in accordance with manufacturer's instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.

C. Anchor railings securely to structure.

END OF SECTION

SECTION 060573 - WOOD TREATMENT

PART 1 GENERAL

PART 2 PRODUCTS

2.01 **SITE-APPLIED WOOD TREATMENT**

A. Manufacturers:
   1. Nisus Corporation: www.nisuscorp.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Site Applied Termiticide for Wood: Borate mineral salt based, spray applied, penetrating termiticide.

C. Site Applied Termiticide and Mildewcide: Borate mineral salt based, spray applied termiticide, mildewcide and mold growth preventative.

D. Site Applied Termiticide for Wood, Steel and Concrete: Borate mineral salt based, spray applied termiticide formulated for use on wood, steel, concrete and other building materials.

PART 3 EXECUTION

3.01 **PREPARATION**

A. Remove dust, dirt and other contaminants from treatment surfaces. Remove tarpaulins, dropcloths, strippable protective films, etc., from areas to be treated Move equipment and stored materials that block or prevent product application.

3.02 **INSTALLATION - GENERAL**

3.03 **SITE APPLIED WOOD TREATMENT**

A. Comply with manufacturers written mixing and installation instructions.

END OF SECTION

SECTION 061000 - ROUGH CARPENTRY

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Structural dimension lumber framing.
B. Non-structural dimension lumber framing.
C. Rough opening framing for doors, windows, and roof openings.

1.02 **REFERENCE STANDARDS**

A. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings 2015.
B. PS 20 - American Softwood Lumber Standard 2020.

PART 2 PRODUCTS

2.01 **GENERAL REQUIREMENTS**

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
   2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 **DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

A. Sizes: Nominal sizes as indicated on drawings, S4S.
B. Moisture Content: S-dry or MC19.
C. Stud Framing (2 by 2 through 2 by 6 (50 by 50 mm through 50 by 150 mm)):
   1. Grade: No. 2.

PART 3 EXECUTION

3.01 **INSTALLATION - GENERAL**

A. Select material sizes to minimize waste.
B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

3.02 **FRAMING INSTALLATION**

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
C. Install structural members full length without splices unless otherwise specifically detailed.
D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes, AWC (WFCM) Wood Frame Construction Manual, and [_____].
E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
F. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.03 **BLOCKING, NAILERS, AND SUPPORTS**

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

END OF SECTION

SECTION 062000 - FINISH CARPENTRY

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Finish carpentry items.
B. Wood door frames, glazed frames.
C. Wood casings and moldings.
D. Hardware and attachment accessories.

1.02 **RELATED REQUIREMENTS**

A. Section 061000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
B. Section 064100 - Architectural Wood Casework: Shop fabricated custom cabinet work.
C. Section 081416 - Flush Wood Doors.
D. Section 099123 - Interior Painting: Painting of finish carpentry items.

1.03 **REFERENCE STANDARDS**

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards 2014, with Errata (2018).
B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1 2017, with Errata (2019).

PART 2 PRODUCTS

2.01 **FINISH CARPENTRY ITEMS**

A. Interior Woodwork Items:
    1. Moldings, Bases, Casings, and Miscellaneous Trim: Clear white pine; prepare for paint finish.

2.02 **LUMBER MATERIALS**

2.03 **FABRICATION**

A. Shop assemble work for delivery to site, permitting passage through building openings.
B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

2.04 **SHOP FINISHING**

A. Sand work smooth and set exposed nails and screws.
B. Apply wood filler in exposed nail and screw indentations.
C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify adequacy of backing and support framing.

3.02 **INSTALLATION**

A. Set and secure materials and components in place, plumb and level.
B. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (0.79 mm). Do not use additional overlay trim to conceal larger gaps.

END OF SECTION

SECTION 064100 - ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Specially fabricated cabinet units.
B. Countertops.
C. Hardware.
D. Factory finishing.

1.02 **RELATED REQUIREMENTS**

A. Section 123600 - Countertops.

1.03 **REFERENCE STANDARDS**

A. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1 2017, with Errata (2019).
B. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

1.04 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
    1. Scale of Drawings: 1-1/2 inch to 1 foot (125 mm to 1 m), minimum.
C. Product Data: Provide data for hardware accessories.
D. Samples: Submit actual samples of architectural cabinet construction, minimum 12 inches (300 mm) square, illustrating proposed cabinet, countertop, and shelf unit substrate and finish.
E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

PART 2 PRODUCTS

2.01 **CABINETS**

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
B. Plastic Laminate Faced Cabinets: Custom grade.

2.02 **WOOD-BASED COMPONENTS**

A. Wood fabricated from old growth timber is not permitted.

2.03 **LAMINATE MATERIALS**

A. Manufacturers:
    1. Formica Corporation; [____]: www.formica.com/#sle.
    2. Wilsonart LLC; [____]: www.wilsonart.com/#sle.
B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

2.04 **COUNTERTOPS**

A. Countertops are specified in Section 123600.

2.05 **ACCESSORIES**

A. Plastic Edge Banding: Extruded PVC, convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness.

2.06 **HARDWARE**

A. Countertop Supports:
    1. Material: Aluminum
    2. Finish/Color: Clear anodized.
    3. Manufacturers:
        a. Rakks/Rangine Corporation; Sill Supports: www.rakks.com/#sle
B. Drawer and Door Pulls: "U" shaped wire pull, steel with chrome finish, 4 inch centers ("U" shaped wire pull, steel with chrome finish, 100 mm centers).
C. Drawer Slides:
    1. Type: Full extension.
    2. Static Load Capacity: Commercial grade.
    3. Mounting: Side mounted.

4. Manufacturers:
    a. Accuride International, Inc; Heavy-Duty Drawer Slides: www.accuride.com/#sle.
    b. Substitutions: See Section 016000 - Product Requirements.

D. Hinges: European style concealed self-closing type, steel with polished finish.
1. Manufacturers:
    a. Blum, Inc; [_____]: www.blum.com/#sle.
    b. Substitutions: See Section 016000 - Product Requirements.

E. Soft Close Adapter: Concealed, frame-mounted, screw-adjustable damper ; steel with polished finish.

2.07 **FABRICATION**

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs. (Locate counter butt joints minimum 600 mm from sink cut-outs.)

2.08 **SHOP FINISHING**

A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify adequacy of backing and support framing.

3.02 **INSTALLATION**

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch (0.79 mm). Do not use additional overlay trim for this purpose.

E. Secure cabinets to floor using appropriate angles and anchorages.

F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 **ADJUSTING**

A. Adjust installed work.

END OF SECTION

SECTION 068316 - FIBERGLASS REINFORCED PANELING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Fiberglass reinforced plastic panels.

1.02 **REFERENCE STANDARDS**

A. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels 2017.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Fiberglass Reinforced Plastic Panels:

1. Nudo Products, Inc; [_____]: www.nudo.com/#sle.
2. Panolam Industries International, Inc; Panolam FRP: www.panolam.com/#sle.

2.02 **PANEL SYSTEMS**

A. Wall Panels at Cell Ceilings:

1. Panel Size: 4 by 8 feet (1.2 by 2.4 m).
2. Panel Thickness: 0.10 inch (2.5 mm).
3. Surface Design: Embossed.
4. Color: As selected by Architect.
5. Attachment Method: Adhesive only, sealant joints, no trim.

2.03 **MATERIALS**

A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.

1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.

B. Sealant: Type recommended by panel manufacturer; white.

PART 3 EXECUTION

3.01 **INSTALLATION - WALLS & CEILINGS**

A. Install panels in accordance with manufacturer's instructions.

B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.

C. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.

D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.

E. Install panels with manufacturer's recommended gap for panel field and corner joints.

F. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.

G. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

SECTION 071400 - FLUID-APPLIED WATERPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fluid-Applied Waterproofing:
   1. Cold-applied rubberized asphalt waterproofing.
   2. Cold-applied rubberized asphalt/HDPE composite waterproofing.

1.02 REFERENCE STANDARDS

A. ASTM C836/C836M - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course 2018.
B. ASTM C1306/C1306M - Standard Test Method for Hydrostatic Pressure Resistance of a Liquid-Applied Waterproofing Membrane 2008, with Editorial Revision (2016).
C. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016.
D. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.
E. ASTM E154/E154M - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover 2008a, with Editorial Revision (2013).
F. ICC-ES AC29 - Acceptance Criteria for Cold, Liquid-Applied, Below-Grade, Exterior Dampproofing and Waterproofing Materials 2011, with Editorial Revision (2014).
G. NRCA (WM) - The NRCA Waterproofing Manual 2005.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Cold-Applied Rubberized Asphalt Waterproofing:
   1. AVM Industries, Inc; AVM System 500 (Aussie Membrane): www.avmindustries.com/#sle.
   2. Epro Waterproofing Systems; ECOLINE-S: www.eproserv.com/#sle.

2.02 FLUID APPLIED WATERPROOFING MATERIALS

A. Cold-Applied Rubberized Asphalt Waterproofing: Rubberized asphaltic compound, suitable for installation on concrete and concrete masonry.
   1. Cured Thickness: 60 mils, 0.060 inch (1.52 mm), minimum.
   2. Complying with ICC-ES AC29; evidence of compliance includes current ICC-ES evaluation report citing ICC-ES AC29.
   3. Hydrostatic Pressure Resistance: When tested in accordance with ASTM C1306/C1306M, at least 50 pounds per square inch (340 kPa) by the rapid test and at least 35 pounds per square inch (240 kPa) by the long term test.
   4. Low Temperature Resistance: No cracking, loss of adhesion, splitting or pinholes when tested at minus 15 degrees F (minus 25 degrees C) in accordance with ASTM C836/C836M.
   5. Adhesion: No separation when tested in accordance with ASTM C836/C836M.
   6. Decay Resistance: No decay when tested in accordance with ASTM E154/E154M.
   7. Wet Film Sag Resistance: No sag or sag within plus/minus 5 mils (0.1 mm) when tested in accordance with ASTM C836/C836M.
   8. Water Vapor Permeance: Less than 1 perm (57 ng/(Pa s sq m)), when tested in accordance with ASTM E96/E96M.
   9. Heat Aging Resistance: No cracking, splitting, or pinholes when tested in accordance with ASTM C836/C836M.
   10. Elongation at Break: 1000 percent, minimum, when tested in accordance with ASTM D412.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install waterproofing to specified minimum thickness in accordance with manufacturers instructions and NRCA (WM) applicable requirements.

B. Seal membrane and flashings to adjoining surfaces.

END OF SECTION

SECTION 072100 - THERMAL INSULATION

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, underside of floor slabs, over roof deck, over roof sheathing, exterior wall behind [_____] wall finish, and interior wall with facer providing exposed finish.
B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 **RELATED REQUIREMENTS**

A. Section 072500 - Weather Barriers: Separate air barrier and vapor retarder materials.

1.03 **REFERENCE STANDARDS**

A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.
C. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C 2019a.

1.04 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

2.02 **APPLICATIONS**

A. Insulation in Wood Framed Walls: Batt insulation with separate vapor retarder.
B. Insulation Above Lay-In Acoustical Ceilings: Batt insulation with no vapor retarder.

2.03 **BATT INSULATION MATERIALS**

A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
    1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
    2. Formaldehyde Content: Zero.
C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
    1. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.

2.04 **ACCESSORIES**

A. Sheet Vapor Retarder: Specified in Section 072500.
B. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
    1. Application: Sealing of interior circular penetrations, such as pipes or cables.
    2. Width: Are required for application.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 **BATT INSTALLATION**

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches (152 mm) on center. Lap and seal sheet retarder joints over face of member.
F. Tape seal tears or cuts in vapor retarder.
G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

END OF SECTION

SECTION 072126 - BLOWN INSULATION

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Exterior Walls: Blown insulation pneumatically placed into wall spaces through access holes.

B. Ceiling and Attic: Blown insulation pneumatically placed into joist spaces through access holes.

1.02 **REFERENCE STANDARDS**

A. ASTM C1015 - Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation 2017.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Blown Insulation:

1. CertainTeed Corporation; [_____]: www.certainteed.com/#sle.
2. Johns Manville; [_____]: www.jm.com/#sle.
3. Thermafiber, Inc; [_____]: www.thermafiber.com/#sle.
4. Substitutions: See Section 016000 - Product Requirements.

2.02 **MATERIALS**

A. Applications: Provide blown insulation in attic, exterior walls, and ceiling as indicated on drawings.

2.03 **ACCESSORIES**

A. Roof Ventilation Baffles: Prefabricated ventilation channels for placement under roof sheathing with baffles to prevent wind-washing.

1. Material: Polyvinyl chloride (PVC).
2. Roof Joist/Truss Spacing: 24 inch (610 mm) on center, nominal.
3. Manufacturers:
   a. Brentwood Industries, Inc; AccuVent Original: www.brentwoodindustries.com/#sle.
   b. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 **EXAMINATION**

3.02 **INSTALLATION**

A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.

B. Completely fill intended spaces leaving no gaps or voids.

END OF SECTION

SECTION 078400 - FIRESTOPPING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Firestopping systems.

1.02 **RELATED REQUIREMENTS**

A. Section 070553 - Fire and Smoke Assembly Identification.

B. Section 092116 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

1.03 **REFERENCE STANDARDS**

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2019.

B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).

C. ITS (DIR) - Directory of Listed Products current edition.

D. FM (AG) - FM Approval Guide current edition.

E. UL 1479 - Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.

F. UL (FRD) - Fire Resistance Directory Current Edition.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Firestopping Manufacturers:

1. 3M Fire Protection Products; [_____]: www.3m.com/firestop/#sle.
2. Hilti, Inc; [_____]: www.us.hilti.com/#sle.
3. Substitutions: See Section 016000 - Product Requirements.

2.02 **MATERIALS**

A. Firestopping Materials: Any materials meeting requirements.

B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

2.03 **FIRESTOPPING SYSTEMS**

A. Firestopping: Any material meeting requirements.

1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify openings are ready to receive the work of this section.

3.02 **PREPARATION**

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

3.03 **INSTALLATION**

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

END OF SECTION

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Non-fire-rated hollow metal doors and frames.
B. Hollow metal frames for wood doors.
C. Fire-rated hollow metal doors and frames.
D. Thermally insulated hollow metal doors with frames.
E. Commercial security hollow metal doors and frames.
F. Detention security hollow metal doors and frames.
G. Bullet-resistant hollow metal doors and frames.

1.02 **RELATED REQUIREMENTS**

A. Section 087100 - Door Hardware.
B. Section 088000 - Glazing: Glass for doors and borrowed lites.

1.03 **REFERENCE STANDARDS**

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2011.
C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.
D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2019a.
E. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable 2018.
F. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.
G. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
H. UL 752 - Standard for Bullet-Resisting Equipment Current Edition, Including All Revisions.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Hollow Metal Doors and Frames:
   1. Steelcraft, an Allegion brand; [____]: www.allegion.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.
B. Stainless-Steel Hollow Metal Doors and Frames:
C. Bullet-Resistant, Commercial Security, and Detention Security Hollow Metal Doors and Frames:

2.02 **PERFORMANCE REQUIREMENTS**

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
   2. Accessibility: Comply with ICC A117.1 and ADA Standards.
B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 **HOLLOW METAL DOORS**

A. Door Finish: Factory primed and field finished.
B. Type Flush , Exterior Doors: Thermally insulated.
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 1 - Standard-duty.

b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
c. Model 1 - Full Flush.
d. Door Face Metal Thickness: 20 gage, 0.032 inch (0.8 mm), minimum.
2. Door Thickness: 1-3/4 inch (44.5 mm), nominal.
3. Top Closures for Outswinging Doors: Flush with top of faces and edges.
4. Door Face Sheets: Flush.
5. Weatherstripping: Refer to Section 087100.

C. Type [___] , Commercial Security, Detention Security, and Bullet-Resistant Doors; Interior and Exterior:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
a. Level 1 - Standard-duty.
b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
c. Model 1 - Full Flush.
d. Door Face Metal Thickness: 20 gage, 0.032 inch (0.8 mm), minimum.
2. Bullet Resistance: UL 752, Threat Level Rating - Level 1.
3. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
4. Door Thickness: As required to meet requirements indicated.
5. Hinge Rail and Reinforcement: Non-beveled edge, reinforced with continuous steel channel, 12 gage, 0.093 inch (2.3 mm) minimum metal thickness, welded at 5 inch (127 mm) on center maximum, and compatible with 4-1/2 inch (114 mm) full mortise template and continuous geared hinges.

2.04 **HOLLOW METAL FRAMES**

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
B. Exterior Door Frames: Knock-down type.
1. Weatherstripping: Separate, see Section 087100.
C. Bullet-Resistant Door Frames: Comply with UL 752, with same level of bullet resistance as door; face welded construction, ground smooth, fully prepared and reinforced for hardware installation.
D. Commercial and/or Detention Security-Resistant Door Frames: With same security resistance as door; face welded or full profile/continuously welded construction, ground smooth, fully prepared and reinforced for hardware installation.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
B. Coordinate frame anchor placement with wall construction.
C. Install door hardware as specified in Section 087100.

END OF SECTION

SECTION 081213 - HOLLOW METAL FRAMES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Non-fire-rated hollow metal frames for non-hollow metal doors.
B. Fire-rated hollow metal frames for non-hollow metal doors.

1.02 **RELATED REQUIREMENTS**

A. Section 087100 - Door Hardware: Hardware, silencers, and weatherstripping.
B. Section 099113 - Exterior Painting: Field painting.
C. Section 099123 - Interior Painting: Field painting.

1.03 **REFERENCE STANDARDS**

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
B. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.
C. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2011.
D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2019a.
E. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable 2018.
F. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.
G. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames 2016.
H. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
I. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames 2002.
J. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames 2011.

1.04 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Hollow Metal Frames with Integral Casings:
    1. Steelcraft, an Allegion brand; [____]: www.allegion.com/#sle.
    2. Or Equal.
    3. Substitutions: See Section 016000 - Product Requirements.

2.02 **PERFORMANCE REQUIREMENTS**

A. Door Frame Type: Provide hollow metal door frames with [_____].
B. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
C. Accessibility: Comply with ICC A117.1 and ADA Standards.
D. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior frame that is also indicated as being sound-rated must comply with the requirements specified for exterior frames and for sound-rated frames; where two requirements conflict, comply with the most stringent.
E. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115, NAAMM HMMA 830, NAAMM HMMA 831 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

2.03 **FINISHES**

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.04 **ACCESSORIES**

A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 **PREPARATION**

3.03 **INSTALLATION**

A. Install frames in accordance with manufacturer's instructions and related requirements of specified frame standards or custom guidelines indicated.
B. Coordinate frame anchor placement with wall construction.
C. Install door hardware as specified in Section 087100.

END OF SECTION

SECTION 081416 - FLUSH WOOD DOORS

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Flush wood doors; flush and flush glazed configuration; fire-rated, non-rated, acoustical, special function, and [_____].

1.02 **RELATED REQUIREMENTS**

A. Section 081213 - Hollow Metal Frames.

1.03 **REFERENCE STANDARDS**

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards 2014, with Errata (2018).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1 2017, with Errata (2019).

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Wood Veneer Faced Doors:

1. VT Industries, Inc; [____]: www.vtindustries.com/#sle.

2.02 **DOORS AND PANELS**

A. Doors: Refer to drawings for locations and additional requirements.

1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

2.03 **DOOR AND PANEL CORES**

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

2.04 **DOOR FACINGS**

A. Veneer Facing for Transparent Finish: White birch, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.

2.05 **DOOR CONSTRUCTION**

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

E. Provide edge clearances in accordance with the quality standard specified.

2.06 **FACTORY FINISHING - WOOD VENEER DOORS**

A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:

B. Factory finish doors in accordance with approved sample.

C. Seal door top edge with color sealer to match door facing.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install doors in accordance with manufacturer's instructions and specified quality standard.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

END OF SECTION

SECTION 083613 - SECTIONAL DOORS

PART 1 GENERAL

1.01 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

PART 2 PRODUCTS

2.01 **COMPONENTS**

A. Sill Weatherstripping: Resilient hollow rubber strip, one piece; fitted to bottom of door panel, full length contact.

B. Jamb Weatherstripping: Roll formed aluminum section full height of jamb, fitted with resilient weatherstripping, placed in moderate contact with door panels.

C. Head Weatherstripping: EPDM rubber seal, one piece full length.

D. Panel Joint Weatherstripping: Neoprene foam seal, one piece full length.

E. Lock: Inside center mounted, adjustable keeper, spring activated latch bar with feature to retain in locked or retracted position; interior and exterior handle.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install door unit assembly in accordance with manufacturer's instructions.

B. Anchor assembly to wall construction and building framing without distortion or stress.

C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

D. Fit and align door assembly including hardware.

END OF SECTION

SECTION 085200 - WOOD WINDOWS

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Factory fabricated wood windows.
B. Glazing.
C. Wood trim for exterior finishing.

1.02 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work, installation requirements, and [_____].
C. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.03 **QUALITY ASSURANCE**

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than three years of documented experience.
B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.04 **FIELD CONDITIONS**

A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C).
B. Maintain this minimum temperature during and after installation of sealants.

1.05 **WARRANTY**

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
B. Correct defective Work within a five year period after Date of Substantial Completion.
C. Provide five year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Basis of Design: [_____].
B. Wood Windows:
   1. Andersen Windows, Inc; 200 Series: www.andersenwindows.com/#sle.
C. Vinyl Clad Wood Windows:
   1. Andersen Windows, Inc; 200 Series Double Hung Windows: www.andersenwindows.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 **WOOD WINDOWS**

A. Wood Windows: Wood frame and sash, factory fabricated and assembled.
   1. Color: As selected by Architect from manufacturer's standard range.
   2. Configuration: As indicated on drawings.
   3. Vinyl Cladding: Extruded PVC, low sheen surface, factory fit to profile of wood members.

2.03 **COMPONENTS**

A. Glazing: Double glazed, clear, Low-E coated, argon filled, with glass thicknesses as recommended by manufacturer for specified wind conditions.
B. Frames: [____] inch ([____] mm) wide by [____] inch ([____] mm) deep profile; flush solid wood glass stops of screw fastened type, sloped for positive drainage.
C. Sills: Extruded aluminum, with [____] inch ([____] mm) nominal thickness; sloped for positive drainage; fits under sash and projects at least 1/2 inch (12 mm) beyond exterior face of wall; single piece full width of opening.
D. Fasteners: Stainless steel.
E. Sealant and Backing Materials: As specified in Section 079200 of types as indicated.
F. Flashing: Provide related flashings, with necessary anchors and attachment devices.
G. Sealant for Setting Sills, Stools, Aprons, and Sill Flashing: Non-curing butyl type.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install windows in accordance with manufacturer's instructions.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

3.02 CLEANING

A. Remove protective material from factory finished surfaces.

B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

END OF SECTION

SECTION 087100 - DOOR HARDWARE

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Hardware for wood, aluminum, hollow metal, and [_____] doors.
B. Hardware for fire-rated doors.
C. Electrically operated and controlled hardware.
D. Lock cylinders for doors that hardware is specified in other sections.
E. Thresholds.
F. Weatherstripping and gasketing.
G. Gate locks.

1.02 **RELATED REQUIREMENTS**

A. Section 081113 - Hollow Metal Doors and Frames.
B. Section 081213 - Hollow Metal Frames.
C. Section 102600 - Wall and Door Protection: Door and frame protection.
D. Section 281000 - Access Control: Electronic access control devices.

1.03 **REFERENCE STANDARDS**

A. BHMA (CPD) - Certified Products Directory Current Edition.
B. BHMA A156.1 - American National Standard for Butts and Hinges 2016.
C. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches 2017.
D. BHMA A156.3 - American National Standard for Exit Devices 2014.
E. BHMA A156.4 - American National Standard for Door Controls - Closers 2013.
F. BHMA A156.6 - American National Standard for Architectural Door Trim 2015.
G. BHMA A156.8 - American National Standard for Door Controls - Overhead Stops and Holders 2015.
H. BHMA A156.12 - American National Standard for Interconnected Locks 2013.
I. BHMA A156.13 - American National Standard for Mortise Locks & Latches Series 1000 2017.
J. BHMA A156.16 - American National Standard for Auxiliary Hardware 2018.
K. BHMA A156.18 - American National Standard for Materials and Finishes 2016.
L. BHMA A156.22 - American National Standard for Door Gasketing and Edge Seal Systems Sponsor 2017.
M. BHMA A156.25 - American National Standard for Electrified Locking Devices 2018.
N. BHMA A156.28 - American National Standard for Recommended Practices for Mechanical Keying Systems 2018.
O. BHMA A156.31 - American National Standard for Electric Strikes and Frame Mounted Actuators 2013.
P. DHI (KSN) - Keying Systems and Nomenclature 1989.
Q. ITS (DIR) - Directory of Listed Products current edition.
R. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
S. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2019.
T. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2017.
U. UL (DIR) - Online Certifications Directory Current Edition.
V. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

1.04 **ADMINISTRATIVE REQUIREMENTS**

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
C. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.05 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

PART 2 PRODUCTS

2.01 **DESIGN AND PERFORMANCE CRITERIA**

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:

1. Applicable provisions of federal, state, and local codes.
2. Fire-Rated Doors: NFPA 80, listed and labeled by qualified testing agency for fire protection ratings indicated, based on testing at positive pressure in accordance with NFPA 252 or UL 10C.
3. Hardware on Fire-Rated Doors: Listed and classified by UL (DIR), ITS (DIR), testing firm acceptable to authorities having jurisdiction, or [_____] as suitable for application indicated.
4. Listed and certified compliant with specified standards by BHMA (CPD).
5. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified.

D. Electrically Operated and/or Controlled Hardware: Provide necessary power supplies, power transfer hinges, relays, and interfaces as required for proper operation; provide wiring between hardware and control components and to building power connection in compliance with NFPA 70.

1. Refer to Section 281000 for additional access control system requirements.

2.02 **HINGES**

A. Manufacturers:

1. Hager Companies; [_____]: www.hagerco.com/#sle.

B. Hinges: Comply with BHMA A156.1, Grade 1.

1. Provide hinges on every swinging door.
2. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
3. Provide following quantity of butt hinges for each door:
   a. Doors From 60 inches (1.5 m) High up to 90 inches (2.3 m) High: Three hinges.

2.03 **EXIT DEVICES**

A. Manufacturers:

1. Hager Companies; [_____]: www.hagerco.com/#sle.
2. Von Duprin, an Allegion brand; [_____]: www.allegion.com/us/#sle.

B. Exit Devices: Comply with BHMA A156.3, Grade 1.

1. Lever design to match lockset trim.
2. Provide cylinder with cylinder dogging or locking trim.
3. Provide exit devices properly sized for door width and height.
4. Provide strike as recommended by manufacturer for application indicated.
5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.

2.04 **ELECTRIC STRIKES**

A. Manufacturers:

1. Adams Rite, HES, or Securitron; an Assa Abloy Group company; [_____]: www.assaabloydss.com/#sle.
2. Pamex, Inc; [_____]: www.pamexinc.com/#sle.

B. Electric Strikes: Comply with BHMA A156.31, Grade 1.

1. Provide UL (DIR) listed burglary-resistant electric strike; style to suit locks.

2. Provide non-handed 24 VDC electric strike suitable for door frame material and scheduled lock configuration.

2.05 **CYLINDRICAL LOCKS**

A. Manufacturers:
   1. Schlage, an Allegion brand; ND80J 17 626: www.allegion.com/us/#sle.

B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
   1. Bored Hole: 2-1/8 inch (54 mm) diameter.
   2. Latchbolt Throw: 1/2 inch (12.7 mm), minimum.
   3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.

2.06 **MORTISE LOCKS**

A. Manufacturers:
   1. Schlage, an Allegion brand; L9080J 17N 626: www.allegion.com/us/#sle.

B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
   1. Latchbolt Throw: 3/4 inch (19 mm), minimum.
   2. Deadbolt Throw: 1 inch (25.4 mm), minimum.
   3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.

2.07 **ELECTROMECHANICAL LOCKS**

A. Manufacturers:
   1. Schlage, an Allegion brand; [_____]: www.allegion.com/us/#sle.

B. Electromechanical Locks: Comply with BHMA A156.25, Grade 1.
   1. Provide motor-driven or solenoid-driven locks, with strike that is applicable to frame.
   2. Type: Mortise deadbolt.

2.08 **INTERCONNECTED LOCKS**

A. Manufacturers:
   1. Schlage, an Allegion brand; [_____]: www.allegion.com/us/#sle.

B. Interconnected Locks: Comply with BHMA A156.12, Grade 1, 5000 Series.

2.09 **DOOR PULLS AND PUSH PLATES**

A. Door Pulls and Push Plates: Comply with BHMA A156.6.
   1. Pull Type: Straight, unless otherwise indicated.
   2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
      a. Edges: Beveled, unless otherwise indicated.
   3. Material: Aluminum, unless otherwise indicated.

2.10 **CLOSERS**

A. Manufacturers; Surface Mounted:
   1. Corbin Russwin, Norton, Rixson, Sargent, or Yale; an Assa Abloy Group company; [_____]: www.assaabloydss.com/#sle.
   2. Hager Companies; [_____]: www.hagerco.com/#sle.

B. Closers: Comply with BHMA A156.4, Grade 1.
   1. Type: Surface mounted to door.
   2. Provide door closer on each exterior door.

2.11 **OVERHEAD STOPS AND HOLDERS**

A. Overhead Stops and Holders (Door Checks): Comply with BHMA A156.8, Grade 1.
   1. Provide stop for every swinging door, unless otherwise indicated.

2.12 **PROTECTION PLATES**

A. Protection Plates: Comply with BHMA A156.6.

B. Edges: Beveled, on four sides unless otherwise indicated.

C. Fasteners: Countersunk screw fasteners.

2.13 **KICK PLATES**

A. Manufacturers:
   1. Ives, an Allegion brand; [_____]: www.allegion.com/us/#sle.Ives, an Allegion brand; [_____]: www.allegion.com/us/#sle.Ives, an Allegion brand; [_____]: www.allegion.com/us/#sle.Ives, an Allegion brand; [_____]: www.allegion.com/us/#sle.
   2. Trimco; [_____]: www.trimcohardware.com/#sle.

B. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
   1. Size: 8 inch (203 mm) high by 2 inch (51 mm) less door width (LDW) on push side of door.

2.14 **DOOR HOLDERS**

A. Door Holders: Comply with BHMA A156.16, Grade 1.
   1. Type: Lever, or kick down stop, with rubber bumper at bottom end.
   2. Material: Aluminum.

2.15 **FLOOR STOPS**

A. Manufacturers:
   1. Hager Companies; [_____]: www.hagerco.com/#sle.

B. Floor Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
   1. Type: Manual hold-open, with pencil floor stop.
   2. Material: Aluminum housing with rubber insert.

2.16 **WALL STOPS**

A. Manufacturers:
   1. Hager Companies; [_____]: www.hagerco.com/#sle.

B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
   1. Type: Bumper, concave, wall stop.
   2. Material: Aluminum housing with rubber insert.

2.17 **WEATHERSTRIPPING AND GASKETING**

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company; [_____]: www.assaabloydss.com/#sle.
   2. Hager Companies; [_____]: www.hagerco.com/#sle.
   3. National Guard Products, Inc; [_____]: www.ngpinc.com/#sle.

B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
   1. Head and Jamb Type: Adjustable.
   2. Door Sweep Type: Encased in retainer.
   3. Material: Aluminum, with brush weatherstripping.

2.18 **COAT HOOKS**

A. Coat Hooks: Provide on room side of door, screw fastened.

B. Material: Brass.

2.19 **WIRELESS ACCESS MANAGEMENT SYSTEMS**

A. Wireless Access Management Systems: Comply with guidelines of BHMA A156.25, and including necessary hardware for fully functional system.
   1. Reader Formats: Provide magnetic stripe, proximity, dual validation, or key Fob to activate access system functionality.
   2. Door Locking Hardware: Provide applicable cylindrical locksets, panic hardware, or mortise locksets in compliance with project access control requirements.

2.20 **KEY CONTROL SYSTEMS**

A. Manufacturers:
   1. Basis of Design: IEI 2000eM.

B. Key Control Systems: Comply with guidelines of BHMA A156.28.
   1. Provide keying information in compliance with DHI (KSN) standards.

2. Keying: Grand master keyed.
3. Supply keys in following quantities:
    a. 1 each Grand Master keys.

2.21 **KEY PAD**

A. Manufacturers:
    1. Basis of Design: IEI 2000eM.
B. Key Pad: Indoor or outdoor use, 12-key digital keypad with silicone rubber keys, and compatible with access control systems using standard Wiegand output.
    1. Power: 12 VDC; 35mA Active and 7mA at Rest.
    2. Mounts on narrow mullion, 1-1/2 inch wide by 7 inch high by 1 inch deep (38 mm wide by 178 mm high by 25.4 mm deep).
    3. Operating Temperature: Minus 22 to 158 degrees F (Minus 30 to 70 degrees C).
    4. Finish: Black.

2.22 **POWER SUPPLY**

A. Power Supply: Hard wired, with multiple zones providing eight (8) breakers for each output panel with individual control switches and LED's; UL (DIR) Class 2 listed.
    1. Power: 24 VAC, 10 Amp; with 120 VAC power supply.
    2. Operating Temperature: 32 to 110 degrees F (0 to 43 degrees C).
    3. Provide with emergency release terminals that release devices upon activation of fire alarm system.

2.23 **FINISHES**

A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
    1. Primary Finish: 626; satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D); BHMA A156.18.
    2. Secondary Finish: 625; bright chromium plated over nickel, with brass or bronze base material (former US equivalent US26); BHMA A156.18.
        a. Use secondary finish in kitchens, bathrooms, and other spaces containing chrome or stainless steel finished appliances, fittings, and equipment; provide primary finish on one side of door and secondary finish on other side if necessary.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install hardware in accordance with manufacturer's instructions and applicable codes.
B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.
C. Use templates provided by hardware item manufacturer.
D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

END OF SECTION

SECTION 088000 - GLAZING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Insulating glass units.

1.02 **RELATED REQUIREMENTS**

A. Section 072500 - Weather Barriers.

B. Section 085200 - Wood Windows: Glazing furnished by window manufacturer.

1.03 **REFERENCE STANDARDS**

A. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.

B. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016.

C. GANA (SM) - GANA Sealant Manual 2008.

D. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2017.

E. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2014, with Errata (2017).

F. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2017.

1.04 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data on Insulating Glass Unit, Glazing Unit, Plastic Sheet Glazing Unit, Plastic Film, and [_____] Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Float Glass Manufacturers:

1. Cardinal Glass Industries; [_____]: www.cardinalcorp.com/#sle.

B. Fire-Resistance-Rated Glass: Provide products as required to achieve indicated fire-rating period.

C. Fire-Protection-Rated Glass: Provide products as required to achieve indicated fire-rating period.

1. Fabricators:

a. GGI - General Glass International; New Wire Glass: www.generalglass.com/#sle.

D. Wired Glass Manufacturers:

1. GGI - General Glass International; Wire Glass: www.generalglass.com/#sle.

2.02 **PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES**

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.

1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
3. Glass thicknesses listed are minimum.

B. Vapor Retarder and Air Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier.

1. In conjunction with vapor retarder and joint sealer materials described in other sections.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:

1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.

3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 **GLASS MATERIALS**

PART 3 EXECUTION

3.01 **INSTALLATION, GENERAL**

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.02 **CLEANING**

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove non-permanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

END OF SECTION

SECTION 090561 - COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
   1. Resilient tile and sheet.
   2. Carpet tile.
B. Removal of existing floor coverings.
C. Preparation of new and existing concrete floor slabs for installation of floor coverings.
D. Testing of concrete floor slabs for moisture and alkalinity (pH).
E. Patching compound.
F. Preparation of new and existing wood-based floors and subfloors for installation of new floor coverings.

1.02 REFERENCE STANDARDS

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens) 2020a.
B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete 2020.
C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2016a.
D. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings 2011.

1.03 QUALITY ASSURANCE

A. Moisture and alkalinity (pH) testing will be performed by an independent testing agency employed and paid by Owner.
B. Contractor may perform adhesive and bond test with Contractor's own personnel or hire a testing agency.
C. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
   1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.
D. Contractor's Responsibility Relating to Independent Agency Testing:
   1. Provide access for and cooperate with testing agency.
   2. Confirm date of start of testing at least 10 days prior to actual start.
   3. Allow at least 4 business days on site for testing agency activities.
   4. Achieve and maintain specified ambient conditions.
   5. Notify Owner when specified ambient conditions have been achieved and when testing will start.

1.04 FIELD CONDITIONS

A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F (18 degrees C) or more than 85 degrees F (30 degrees C).
B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
   1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.

2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
3. Products:
    a. USG Corporation; Durock Brand Advanced Skim Coat Floor Patch: www.usg.com/#sle.
    b. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 **CONCRETE SLAB PREPARATION**

A. Perform following operations in the order indicated:
1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
    a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
    b. Removal of existing floor covering.
2. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:
3. Preliminary cleaning.
4. Moisture vapor emission tests; 3 tests in the first 1000 square feet (100 square meters) and one test in each additional 1000 square feet (100 square meters), unless otherwise indicated or required by flooring manufacturer.
5. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
6. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
7. Specified remediation, if required.
8. Patching, smoothing, and leveling, as required.
9. Other preparation specified.
10. Adhesive bond and compatibility test.
11. Protection.

3.02 **REMOVAL OF EXISTING FLOOR COVERINGS**

A. Comply with local, State, and federal regulations and recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to floor covering being removed.
B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 **MOISTURE VAPOR EMISSION TESTING**

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
C. Test in accordance with ASTM F1869 and as follows.
D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet (1.4 kg per 93 square meters) per 24 hours.
F. Report: Report the information required by the test method.

3.04 **ALKALINITY TESTING**

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
B. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.05 **ADHESIVE BOND AND COMPATIBILITY TESTING**

A. Comply with requirements and recommendations of floor covering manufacturer.

3.06 **APPLICATION OF REMEDIAL FLOOR COATING**

A. Comply with requirements and recommendations of coating manufacturer.

3.07 **PROTECTION**

A. Cover prepared floors with building paper or other durable covering.

END OF SECTION

SECTION 092116 - GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Performance criteria for gypsum board assemblies.
B. Metal stud wall framing.
C. Metal channel ceiling framing.
D. Gypsum wallboard.
E. Joint treatment and accessories.
F. Textured finish system.

1.02 **REFERENCE STANDARDS**

A. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2019b.
B. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base 2019.
C. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
D. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels 2019.
E. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2016.
F. GA-216 - Application and Finishing of Gypsum Panel Products 2016.

PART 2 PRODUCTS

2.01 **BOARD MATERIALS**

A. Manufacturers - Gypsum-Based Board:
    1. CertainTeed Corporation; [____]: www.certainteed.com/#sle.
    2. Georgia-Pacific Gypsum; [____]: www.gpgypsum.com/#sle.
    3. USG Corporation; [____]: www.usg.com/#sle.
B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
    1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
    2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
    3. Thickness:
        a. Vertical Surfaces: 5/8 inch (16 mm).
        b. Ceilings: 5/8 inch (16 mm).
    4. Mold Resistant Paper Faced Products:
        a. CertainTeed Corporation; M2Tech 5/8" Type C Moisture & Mold Resistant Drywall.
        b. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall.
        c. Substitutions: See Section 016000 - Product Requirements.
C. Abuse Resistant Wallboard:
    1. Application: High-traffic areas indicated.
    2. Surface Abrasion: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
    3. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
    4. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
    5. Paper-Faced Type: Gypsum wallboard, as defined in ASTM C1396/C1396M.
    6. Type: Fire-resistance-rated Type X, UL or WH listed.
    7. Thickness: 5/8 inch (16 mm).
    8. Edges: Tapered.

2.02 **GYPSUM WALLBOARD ACCESSORIES**

A. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
    1. Corner Beads: Low profile, for 90 degree outside corners.
        a. Products:

1) CertainTeed Corporation; No-Coat Drywall Corner: www.certainteed.com/#sle.
2) Substitutions: See Section 016000 - Product Requirements.

2. L-Trim with Tear-Away Strip: Sized to fit [5/8] inch ([_____] mm) thick gypsum wallboard.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 **FRAMING INSTALLATION**

A. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
B. Studs: Space studs at 16 inches on center (at 406 mm on center).
1. Extend partition framing to structure where indicated and to ceiling in other locations.
2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.

3.03 **BOARD INSTALLATION**

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

3.04 **INSTALLATION OF TRIM AND ACCESSORIES**

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
B. Corner Beads: Install at external corners, using longest practical lengths.

3.05 **TEXTURE FINISH**

A. Apply finish texture coating by means of spraying apparatus in accordance with manufacturer's instructions and to match approved sample.
B. Texture Required: Smooth - Level 5.

END OF SECTION

SECTION 095100 - ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Suspended metal grid ceiling system.
B. Acoustical units.

1.02 **REFERENCE STANDARDS**

A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2017.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Acoustic Tiles/Panels:
   1. Armstrong World Industries, Inc; 1912 ULTIMA BEVELED TEGULAR WITH SUPRAFINE 9/16" GRID or 1915 ULTIMA BEVELED TEGULAR WITH SUPRAFINE 9/16" GRID: www.armstrongceilings.com/#sle.
   2. OR EQUAL.
   3. Substitutions: See Section 016000 - Product Requirements.
B. Suspension Systems:
   1. Same as for acoustical units.

2.02 **PERFORMANCE REQUIREMENTS**

2.03 **ACOUSTICAL UNITS**

2.04 **SUSPENSION SYSTEM(S)**

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
B. Exposed Suspension System, Type SUPRAFINE 9/16": Hot-dipped galvanized steel grid with aluminum cap.
   1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
   2. Profile: Tee; [9/16"] inch ([____] mm) face width.
   3. Finish: Baked enamel.
   4. Color: White.
   5. Products:
      a. ARMSTRONG.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify existing conditions before starting work.
B. Verify that layout of hangers will not interfere with other work.

3.02 **PREPARATION**

A. Install after major above-ceiling work is complete.
B. Coordinate the location of hangers with other work.

3.03 **INSTALLATION - SUSPENSION SYSTEM**

A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
B. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
C. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
D. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
E. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.
F. Do not eccentrically load system or induce rotation of runners.

3.04 **INSTALLATION - ACOUSTICAL UNITS**

A. Install acoustical units in accordance with manufacturer's instructions.
B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
C. Fit border trim neatly against abutting surfaces.
D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
E. Cutting Acoustical Units:
    1. Make field cut edges of same profile as factory edges.

3.05 **TOLERANCES**

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).
B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 096500 - RESILIENT FLOORING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Resilient tile flooring.
B. Resilient base.
C. Resilient stair accessories.
D. Installation accessories.

1.02 **RELATED REQUIREMENTS**

A. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.
B. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

1.03 **REFERENCE STANDARDS**

A. ASTM F1344 - Standard Specification for Rubber Floor Tile 2015.
B. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile 2020.
C. ASTM F1861 - Standard Specification for Resilient Wall Base 2016.

PART 2 PRODUCTS

2.01 **TILE FLOORING**

A. Vinyl Tile - Type LVT 1 & LVT 2: Printed film type, with transparent or translucent wear layer; acoustic interlayer or backing.
    1. Manufacturers:
        a. Mohawk Group, LVT 1, HOT & HEAVY BOLDER.
        b. Substitutions: See Section 016000 - Product Requirements.
    2. Minimum Requirements: Comply with ASTM F1700, Class III.
    3. Wear Layer Thickness: 0.020 inch (0.50 mm).
    4. Total Thickness: 0.20 inch (5 mm).
B. Rubber Tile - Type RUBBER: Homogeneous, color and pattern throughout thickness.
    1. Manufacturers:
        a. Johnsonite, a Tarkett Company; MICROTONE RUBBER TILE -HAMMERED: www.johnsonite.com/#sle.
    2. Minimum Requirements: Comply with ASTM F1344, of Class corresponding to type specified.
    3. Size: 18 by 18 inch (457 by 457 mm) nominal.
    4. Total Thickness: 0.125 inch (3.2 mm).
    5. Texture: Hammered.

2.02 **STAIR COVERING**

A. Stair Treads: Rubber; full width and depth of stair tread in one piece; tapered thickness.
    1. Manufacturers:
        a. Johnsonite, a Tarkett Company; Hammered: www.johnsonite.com/#sle.
        b. Substitutions: See Section 016000 - Product Requirements.
    2. Nosing: Square.
    3. Striping: 2 inch (24 mm) wide contrasting color abrasive strips.
    4. Pattern: Hammered.
    5. Color: To be selected by Architect from manufacturer's full range.
B. Stair Risers: Full height and width of tread in one piece, matching treads in material and color.
    1. Manufacturers:
        a. Johnsonite, a Tarkett Company; [_____]: www.johnsonite.com/#sle.
    2. Thickness: 0.080 inch (2.0 mm).
C. Stair Treads with Integral Risers: Rubber; full height of riser, full width and depth of tread in one piece; tapered thickness.
    1. Manufacturers:
        a. Johnsonite, a Tarkett Company; [_____]: www.johnsonite.com.
    2. Nosing: Square.

2.03 **RESILIENT BASE**

A. Resilient Base - Type [____]: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
   1. Height: 4 inch (100 mm).
   2. Thickness: 0.125 inch (3.2 mm).
   3. Finish: Satin.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
B. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
   1. Test in accordance with Section 090561.
   2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 **PREPARATION**

3.03 **INSTALLATION - GENERAL**

A. Starting installation constitutes acceptance of subfloor conditions.
B. Install in accordance with manufacturer's written instructions.

3.04 **INSTALLATION - TILE FLOORING**

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

3.05 **INSTALLATION - RESILIENT BASE**

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.
B. Install base on solid backing. Bond tightly to wall and floor surfaces.

3.06 **INSTALLATION - STAIR COVERINGS**

A. Adhere over entire surface. Fit accurately and securely.

3.07 **CLEANING**

A. Remove excess adhesive from floor, base, and wall surfaces without damage.
B. Clean in accordance with manufacturer's written instructions.

END OF SECTION

SECTION 096813 - TILE CARPETING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Carpet tile, fully adhered.
B. Removal of existing carpet tile.

1.02 **RELATED REQUIREMENTS**

A. Section 017419 - Construction Waste Management and Disposal: Reclamation/Recycling of new carpet tile scrap, removed carpet tile, and [_____].
B. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Tile Carpeting:
   1. Mohawk Group; [____]: www.mohawkgroup.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 **MATERIALS**

A. Tile Carpeting, Type CPT 1, Live and Learn, Side Stripe, 24"x24": CPT 2, Sketch Effect, Framed Structure, manufactured in one color dye lot.
   1. Tile Size: 24" by 24" inch (____by____ mm), nominal.

2.03 **ACCESSORIES**

A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
B. Edge Strips: Embossed aluminum, [_____] color.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
   1. Test in accordance with Section 090561.
   2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

3.02 **PREPARATION**

A. Remove existing carpet tile.
B. Prepare floor substrates for installation of flooring in accordance with Section 090561.

3.03 **INSTALLATION**

A. Starting installation constitutes acceptance of subfloor conditions.
B. Install carpet tile in accordance with manufacturer's instructions.
C. Blend carpet from different cartons to ensure minimal variation in color match.
D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
F. Trim carpet tile neatly at walls and around interruptions.
G. Complete installation of edge strips, concealing exposed edges.

END OF SECTION

SECTION 097800 - INTERIOR WALL PANELING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Decorative fiberglass reinforced plastic (FRP) wall paneling.

1.02 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Decorative FRP Wall Paneling:
   1. Panolam Surface Systems; Panolam Duet Wall Panels: www.panolam.com/#sle.

2.02 **DECORATIVE FRP WALL PANELING**

A. Type: Manufacturer's standard scratch-resistant, UV-resistant protective coating.
   1. Panel Size: 4 by 8 feet (1.2 by 2.4 m).
   2. Pattern: Embossed.
   3. Material: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
      a. Surface Burning Characteristics: Maximum flame spread index of less than 200 and smoke developed index of less than 450; when tested in accordance with ASTM E84.

2.03 **ACCESSORIES**

A. Trim:
   1. Material: Vinyl.
   2. Color/Finish: By Architect.
B. Adhesive: Type recommended by panel manufacturer.
C. Sealant: Type recommended by paneling manufacturer; clear.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install panels in accordance with manufacturer's instructions.
B. Apply adhesive to the back side of the panel using trowel recommended by adhesive manufacturer.
C. Apply panels to wall with vertical joints plumb and horizontal joints level and pattern aligned with adjoining panels.
D. Using a roller, apply pressure to panel face to ensure proper adhesion between surfaces.
E. Install panels with manufacturer's recommended gaps for panel field and corner joints.
F. Install trim with adhesive.
G. Seal joints at wall base and between panels with approved sealant to prevent moisture intrusion.
H. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

SECTION 099123 - INTERIOR PAINTING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Surface preparation.
B. Field application of paints.
C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Floors, unless specifically indicated.
   6. Glass.
   7. Concealed pipes, ducts, and conduits.

1.02 **REFERENCE STANDARDS**

A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
B. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
C. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
B. Paints:
   1. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
C. Substitutions: See Section 016000 - Product Requirements.

2.02 **PAINTS AND FINISHES - GENERAL**

A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each paint material in quantity required to complete entire project's work from a single production run.
   3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
C. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.

2.03 **PAINT SYSTEMS - INTERIOR**

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, and aluminum.
   1. Two top coats and one coat primer.
   2. Top Coat(s): High Performance Architectural Interior Latex; MPI #138, 139, 140, or 141.
      a. Products:

1) Sherwin-Williams Pre-Catalyzed Waterbased Epoxy, Semi-Gloss. (MPI #141)

3. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #143, 144, 145, 146, 147, or 148.
   a. Products:
      1) Sherwin-Williams Harmony Interior Acrylic Latex, Eg-Shel. (MPI #144)
      2) Sherwin-Williams ProMar 200 HP Series, Eg-Shel. (MPI #145)
      3) Substitutions: Section 016000 - Product Requirements.

B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
   1. Medium duty applications include doors, door frames, railings, handrails, guardrails, and balustrades.
   2. Two top coats and one coat primer.
   3. Top Coat(s): Interior Epoxy-Modified Latex; MPI #115 or 215.
      a. Products:
         1) Sherwin-Williams Waterbased Catalyzed Epoxy, Semi-Gloss.
         2) Substitutions: Section 016000 - Product Requirements.

C. Paint I-OP-MD-WC - Medium Duty Vertical and Overhead: Including gypsum board, plaster, concrete, concrete masonry units, uncoated steel, shop primed steel, galvanized steel, and aluminum.
   1. Two top coats and one coat primer.

PART 3 EXECUTION

3.01 **PREPARATION**

A. Clean surfaces thoroughly and correct defects prior to application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
D. Seal surfaces that might cause bleed through or staining of topcoat.
E. Concrete:
F. Masonry:
G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
H. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
I. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
J. Galvanized Surfaces:
K. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
   3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.
L. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
M. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

3.02 **APPLICATION**

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
D. Sand wood and metal surfaces lightly between coats to achieve required finish.
E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.03 **CLEANING**

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.04 **PROTECTION**

END OF SECTION

SECTION 099300 - STAINING AND TRANSPARENT FINISHING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Surface preparation.

B. Field application of stains and transparent finishes.

1.02 **REFERENCE STANDARDS**

A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Provide finishes used in any individual system from the same manufacturer; no exceptions.

B. Transparent Finishes:

1. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

C. Stains:

1. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

D. Substitutions: See Section 016000 - Product Requirements.

2.02 **STAINS AND TRANSPARENT FINISHES - GENERAL**

A. Finishes:

1. Provide finishes capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
3. Supply each finish material in quantity required to complete entire project's work from a single production run.
4. Do not reduce, thin, or dilute finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

2.03 **INTERIOR STAIN AND TRANSPARENT FINISH SYSTEMS**

A. Finish on Wood - Vertical Surfaces:

1. 3 coat(s) varnish over 1 coat(s) stain.
2. Top Coat Sheen:
   a. Satin: MPI gloss level 4; use this sheen at all locations.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

3.02 **PREPARATION**

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

3.03 **APPLICATION**

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

D. Reinstall items removed prior to finishing.

3.04 **CLEANING**

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 **PROTECTION**

A. Protect finishes until completion of project.

END OF SECTION

SECTION 099723 - CONCRETE AND MASONRY COATINGS

PART 2 PRODUCTS

1.01 MANUFACTURERS

A. Concrete and Masonry Coatings:
   1. SHERWIN WILLIAMS -LOXON SEALER & TOPCOAT.

1.02 CONCRETE AND MASONRY COATINGS

A. Provide high-build, weather resistant coating systems that meet the following minimum performance criteria, unless more stringent criteria are specified:
   1. Salt Spray Resistance: Passes when tested according to ASTM B117 for 2000 hours.
   2. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0, maximum, when tested in accordance with ASTM E84.
   3. Accelerated Outdoor Exposure: Passes when tested according to ASTM G153 for 5,000 hours.

1.03 MATERIALS

A. Coatings - General: Provide complete systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated.
   1. Maximum volatile organic compound (VOC) content: As required by applicable regulations.

PART 3 EXECUTION

2.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.

2.02 PREPARATION

A. Clean surfaces of loose foreign matter.
B. Remove substances that would bleed through finished coatings.
C. Remove finish hardware, fixture covers, and accessories and store.
D. Existing Painted and Sealed Surfaces:
   1. Clean with mixture of trisodium phosphate and water to remove surface grease and foreign matter.
E. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.

2.03 PRIMING

A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

2.04 COATING APPLICATION

A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified.
B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

2.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
B. Clean surfaces immediately of overspray, splatter, and excess material.
C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

2.06 PROTECTION

A. Protect finished work from damage.

END OF SECTION

SECTION 101400 - SIGNAGE

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Room and door signs.
B. Interior directional and informational signs.
C. Emergency evacuation maps.

1.02 **REFERENCE STANDARDS**

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.
B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
C. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.
C. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.

1.04 **FIELD CONDITIONS**

A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
B. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Flat Signs:
    1. Cosco Industries (ADA signs); ADA Series 1: www.coscoarchitecturalsigns.com/#sle.

2.02 **SIGNAGE APPLICATIONS**

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 [_____], unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
B. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.
    1. Sign Type: Flat signs with engraved panel media as specified.
    2. Provide "tactile" signage, with letters raised minimum 1/32 inch (0.8 mm) and Grade II braille.
    3. Character Height: 1 inch (25 mm).
    4. Sign Height: 2 inches (50 mm), unless otherwise indicated.
    5. Office Doors: Identify with room numbers to be determined later, not the numbers indicated on drawings; in addition, provide "window" section for replaceable occupant name.
    6. Conference and Meeting Rooms: Identify with room numbers to be determined later, not the numbers indicated on drawings; in addition, provide "window" section with sliding "In Use/Vacant" indicator.
    7. Service Rooms: Identify with room names and numbers to be determined later, not those indicated on drawings.
    8. Rest Rooms: Identify with pictograms, the names "MEN" and "WOMEN", room numbers to be determined later, and braille.
C. Interior Directional and Informational Signs:
D. Emergency Evacuation Maps:
    1. Use clear plastic panel silk-screened on reverse, in brushed aluminum frame, screw-mounted.

2.03 **SIGN TYPES**

A. Flat Signs: Signage media without frame.
    1. Edges: Square.

2. Corners: Square.
3. Wall Mounting of One-Sided Signs: Tape adhesive.

B. Color and Font: Unless otherwise indicated:
1. Character Font: Helvetica, Arial, or other sans serif font.
2. Character Case: Upper case only.
3. Background Color: Clear.
4. Character Color: Contrasting color.

2.04 **TACTILE SIGNAGE MEDIA**

A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
1. Total Thickness: 1/16 inch (1.6 mm).

2.05 **NON-TACTILE SIGNAGE MEDIA**

A. Silk Screened Plastic Panels: Letters and graphics silk screened onto reverse side of plastic surface:
1. Sign Color: Clear.
2. Total Thickness: 1/8 inch (3 mm).

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install in accordance with manufacturer's instructions.
B. Install neatly, with horizontal edges level.
C. Protect from damage until Substantial Completion; repair or replace damaged items.

END OF SECTION

SECTION 102213 - WIRE MESH PARTITIONS

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Wire mesh systems for MAIN FLOOR EVIDENCE ROOM.

1.02 **REFERENCE STANDARDS**

A. ASTM A510/A510M - Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel 2018.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Wire Mesh Partitions:
   1. ULINE - SLIDING DOOR AND PANEL FOR SECURITY ROOM (MODEL H-8306) OR EQUAL .
   2. Substitutions: See Section 016000 - Product Requirements.

2.02 **WIRE MESH PARTITIONS**

A. Wire Mesh Partitions: Factory-fabricated modular assemblies of panels, doors, anchors, hardware, and accessories as required to provide a complete system.
   1. Design Criteria:
      a. Design partition system to provide for movement of components without damage, undue stress on fasteners or other detrimental effects, when subject to design loads.
      b. Design system to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
      c. Consists of slding door, side panel, posts and integrated hardware/lock.

2.03 **COMPONENTS**

A. Woven Wire Mesh: Standard duty.
   1. Material: ASTM A510/A510M uncoated crimped steel wire.
   2. Wire Size: 10 gage, 0.135 inch (3.5 mm).
   3. Mesh Opening Size: 1-1/2 inch (38 mm) diamond shape.
   4. Mesh Weave: Plain weave, inter-crimped.

2.04 **FASTENERS**

A. Bolts, Nuts and Washers: Hot dip galvanized.

B. Anchorage Devices: Provide power driven, powder actuated, and drilled expansion bolts.

END OF SECTION

SECTION 102600 - WALL AND DOOR PROTECTION

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Corner guards.

1.02 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Corner Guards:

1. Wallguard www.wallguard.com or equal.

2.02 **PRODUCT TYPES**

A. Corner Guards - Surface Mounted:

1. Material: High impact vinyl with full height extruded aluminum retainer.
2. Width of Wings: 3 inches (76 mm).
3. Corner: Square.
4. Color: As selected from manufacturer's standard colors.
5. Length: 4'-0".
6. Preformed end caps.

2.03 **FABRICATION**

A. Fabricate components with tight joints, corners and seams.

END OF SECTION

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Commercial toilet accessories.
B. Commercial shower and bath accessories.

1.02 **REFERENCE STANDARDS**

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
B. ASTM C1036 - Standard Specification for Flat Glass 2016.
C. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror 2018.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Commercial Toilet, Shower, and Bath Accessories:
   1. Bradley Corporation; [_____]: www.bradleycorp.com/#sle.

2.02 **MATERIALS**

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
B. Keys: Provide [_____] keys for each accessory to Owner; master key lockable accessories.
C. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

2.03 **FINISHES**

A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 **COMMERCIAL TOILET ACCESSORIES**

A. Toilet Paper Dispenser: Double roll, surface mounted, for coreless type rolls.
   1. Products:
B. Toilet Paper Dispenser: Single roll, semi-recessed, stainless steel unit with pivot hinge, tumbler lock.
C. Paper Towel Dispenser: Electric, roll paper type.
   1. Cover: Stainless steel.
   2. Paper Discharge: Touchless automatic.
   3. Capacity: 6 inch diameter roll.
   4. Mounting: Semi recessed.
   5. Power: Battery operated.
   6. Refill Indicator: Illuminated refill indicator.
D. Automated Soap Dispenser: Liquid soap dispenser, wall-mounted, with stainless steel cover and window to gauge soap level, tumbler lock.
   1. Minimum Capacity: 48 ounces (1.5 liters).
   2. Products:
      a. Georgia-Pacific Professional; GP enMotion Brushed Stainless Automated Touchless Soap and Sanitizer Dispenser: www.blue-connect.com/#sle.
E. Mirrors: Stainless steel framed, 1/4 inch (6 mm) thick annealed float glass; ASTM C1036.
   1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
   2. Size: 24"x36".
   3. Frame: 0.05 inch (1.3 mm)angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
   4. Fixed Tilt Mirrors: Minimum 3 inches (75 mm) tilt from top to bottom.
   5. Shelf: Stainless steel; gage and finish to match mirror frame, turned down edges, welded to frame; 5 inches (125 mm) deep, full width of mirror.
F. Grab Bars: Stainless steel, peened surface.
   1. Standard Duty Grab Bars:
      a. Push/Pull Point Load: 250 pound-force (1112 N), minimum.

b. Dimensions: 1-1/4 inch (32 mm) outside diameter, minimum 0.05 inch (1.3 mm) wall thickness, exposed flange mounting, 1-1/2 inch (38 mm) clearance between wall and inside of grab bar.
c. Length and Configuration: As indicated on drawings.

2.05 **COMMERCIAL SHOWER AND BATH ACCESSORIES**

A. Shower Curtain Rod: Stainless steel tube, 1 inch (25 mm) outside diameter, 0.04 inch (1.0 mm) wall thickness, satin-finished, with 3 inch (75 mm) outside diameter, minimum 0.04 inch (1.0 mm) thick satin-finished stainless steel flanges, for installation with exposed fasteners.

B. Shower Curtain:
1. Material: Opaque vinyl, 0.008 inch (0.2 mm) thick, matte finish, with antibacterial treatment, flameproof and stain-resistant.
2. Material: Nylon, machine washable, and mildew-resistant.
3. Size: 36 by 72 inches (914 by 1830 mm), hemmed edges.
4. Grommets: Stainless steel; pierced through top hem on 6 inch (150 mm) centers.
5. Color: White.
6. Shower Curtain Hooks: Chrome-plated or stainless steel spring wire designed for snap closure.

C. Wall-Mounted Soap Dish: Heavy duty, seamless stainless steel, surface-mounted with drain holes, without grab bar, satin finish; with concealed mechanical fastening suitable for substrate and backplate.

D. Towel Bar: Stainless steel, 3/4 inch (20 mm) square tubular bar; rectangular brackets, concealed attachment, satin finish.
1. Length: 18 inches (460 mm).

E. Robe Hook: Heavy-duty stainless steel, single-prong, rectangular-shaped bracket and backplate for concealed attachment, satin finish.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. See Section [_____] for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings.

3.02 **PREPARATION**

A. Provide templates and rough-in measurements as required.

3.03 **INSTALLATION**

A. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

END OF SECTION

SECTION 104400 - FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Fire extinguishers.
B. Fire extinguisher cabinets.

1.02 **REFERENCE STANDARDS**

A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).
B. NFPA 10 - Standard for Portable Fire Extinguishers 2017, with Errata (2018).

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Fire Extinguishers:
   1. Kidde, a unit of United Technologies Corp; [_____]: www.kidde.com/#sle.
B. Fire Extinguisher Cabinets and Accessories:
   1. Kidde, a unit of United Technologies Corp; [_____]: www.kidde.com/#sle.

2.02 **FIRE EXTINGUISHERS**

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
   1. Class: A:B:C type.
   2. Temperature range: Minus 40 degrees F (Minus 40 degrees C) to [___] degrees F ([___] degrees C).

2.03 **FIRE EXTINGUISHER CABINETS**

A. Fire Rating: Listed and labeled in accordance with ASTM E814 requirements for fire resistance rating of walls where being installed.
B. Fire Rated Cabinet Construction: One-hour fire rated.
   1. Steel; double wall or outer and inner boxes with 5/8 inch (15.9 mm) thick fire barrier material.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install in accordance with manufacturer's instructions.
B. Install cabinets plumb and level in wall openings, 38 inches ([____] mm) from finished floor to Top of Cabinet.

END OF SECTION

SECTION 105113 - METAL LOCKERS

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Metal lockers.

B. Locker benches.

1.02 **RELATED REQUIREMENTS**

A. Section 062000 - Finish Carpentry: Bench tops for locker bench support brackets.

1.03 **REFERENCE STANDARDS**

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2019a.

1.04 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate locker plan layout, numbering plan and combination lock code.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Metal Lockers:

1. Donnegan Systems, Inc., OR APPROVED EQUAL.
2. Substitutions: See Section 016000 - Product Requirements.

2.02 **LOCKER APPLICATIONS**

A. Personal Storage Lockers: Metal lockers, free-standing with matching closed base.

1. Width: 24 inches (610 mm).
2. Depth: 38 inches ([____] mm).
3. Height: 84 inches (2.134 m).
4. Configuration: Single tier.
5. Fittings: Size and configuration as indicated on drawings.
   a. Upper shelf.
   b. Lock box.
   c. Hooks: One single prong.
   d. Lower shelf/seat.
6. Ventilation: Perforated side panels and doors.
7. Locking: Built-in combination locks.

B. Locker Bench Support Brackets: Welded structural aluminum single arm floor mount pedestal bench support brackets; pre-drilled for bench top material attachment and for wall anchorage.

2.03 **METAL LOCKERS**

A. Lockers: Factory assembled, made of formed sheet steel, ASTM A653/A653M SS Grade 33/230, with G60/Z180 coating, stretcher leveled; metal edges finished smooth without burrs; baked enamel finished inside and out.

1. Where ends or sides are exposed, provide flush panel closures.
2. Provide filler strips where indicated, securely attached to lockers.
3. Color: To be selected by Architect.

B. Locker Body: Formed and flanged; with steel stiffener ribs; electric spot welded.

C. Frames: Formed channel shape, welded and ground flush, welded to body, resilient gaskets and latching for quiet operation.

D. Doors: Hollow double pan, sandwich construction, 1-3/16 inch (30 mm) thick; welded construction, channel reinforced top and bottom with intermediate stiffener ribs, grind and finish edges smooth.

1. Door Outer Face: 18 gage, 0.0478 inch (1.21 mm), minimum.
2. Door Inner Face: 20 gage, 0.0359 inch (0.91 mm), minimum.
3. Form recess for operating handle and locking device.

E. Coat Hooks: Stainless steel or zinc-plated steel.

F. Locks: Locker manufacturer's standard type indicated above.

G. Built-In Lock Boxes: Same material as locker, manufacturer's standard size, with padlock hasps, for padlocks provided by Owner.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.
B. Place and secure on prepared base.
C. Install lockers plumb and square.
D. Bolt adjoining locker units together to provide rigid installation.
E. Install fittings if not factory installed.
F. Replace components that do not operate smoothly.

END OF SECTION

SECTION 105613 - METAL STORAGE SHELVING

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Four post shelving.

1.02 **REFERENCE STANDARDS**

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Rated uniform shelf loads.
2. Details of shelving assemblies, including reinforcement.
3. Accessories.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Four Post Shelving:

1. ULINE WIDESPAN STORAGE RACKS - WIRE DECKING.

2.02 **SHELVING - GENERAL**

A. See drawings for layout and sizes. THREE SHELF SYSTEM WITH WIRE SHELVES AND MAXIMUM CAPACITY OF 1,000LBS.

B. Anchors: Provide anchoring hardware to secure each shelving unit to floor and wall.

1. Provide hardware of type recommended by manufacturer for substrate.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install in accordance with manufacturer's instructions.

B. Anchor and reinforce as specified, as indicated on drawings, and as recommended by manufacturer.

C. Install shelving with shelf surfaces level and vertical supports plumb; adjust feet and bases as required.

END OF SECTION

SECTION 105617 - WALL MOUNTED STANDARDS AND SHELVING

PART 2 PRODUCTS

1.01 **COMPONENTS**

A. Fasteners: Screws as recommended by manufacturer for intended application or as otherwise required by project conditions. Finish of exposed to view fasteners to match finish of standards and other components.

END OF SECTION

SECTION 122113 - HORIZONTAL LOUVER BLINDS

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Horizontal slat louver blinds.

B. Operating hardware.

1.02 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Horizontal Louver Blinds Without Side Guides:

1. Levolor; Metal Blinds: www.levolor.com/commercial/#sle.

2.02 **BLINDS WITHOUT SIDE GUIDES**

A. Description: Horizontal slat louvers hung from full-width headrail with full-width bottom rail.

B. Slat Support: Woven polypropylene cord, ladder configuration.

C. Head Rail: Pre-finished, formed aluminum box, with end caps; internally fitted with hardware, pulleys, and bearings for operation; same depth as width of slats.

D. Headrail Attachment: Wall brackets.

2.03 **FABRICATION**

A. Determine sizes by field measurement.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install blinds in accordance with manufacturer's instructions.

B. Secure in place with flush countersunk fasteners.

3.02 **ADJUSTING**

A. Adjust blinds for smooth operation.

3.03 **CLEANING**

A. Clean blind surfaces just prior to occupancy.

END OF SECTION

SECTION 123200 - MANUFACTURED WOOD CASEWORK

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Manufactured standard and custom casework, with cabinet hardware.
B. Countertops.

1.02 **REFERENCE STANDARDS**

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards 2014, with Errata (2018).
B. BHMA A156.9 - American National Standard for Cabinet Hardware 2015.

1.03 **SUBMITTALS**

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate casework types, sizes, and locations, using large scale plans, elevations, and cross sections. Include rough-in and anchors and reinforcements, placement dimensions and tolerances, clearances required, and keying information.
C. Casework Samples: Representative of types in the project.
    1. Base Cabinet: Cabinet with drawer and door and specified hardware. Type indicated on drawings.
    2. Tall Cabinet: Cabinet with shelves and supports, door and specified hardware. Type indicated on drawings.
    3. Wall Cabinet: Cabinet with shelves and supports, door and specified hardware. Type indicated on drawings.
D. Maintenance Data: Manufacturer's recommendations for care and cleaning.
E. Finish touch-up kit for each type and color of materials provided.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

A. Plastic Laminate Casework:
    1. Local Supplier anticipated.
    2. Substitutions: See Section 016000 - Product Requirements.

2.02 **CASEWORK, GENERAL**

A. Quality Standard: AWI/AWMAC/WI (AWS), unless noted otherwise.

2.03 **FABRICATION**

A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.
B. Construction: As required for selected grade.
C. Structural Performance: Safely support the following minimum loads:
    1. Base Units: 500 pounds per linear foot (744 kgs/linear m) across the cabinet ends.
    2. Suspended Units: 300 pounds (136 kg) static load.
    3. Drawers: 125 pounds (57 kg), minimum.
    4. Shelves: 100 pounds (45 kg), minimum.
D. Fixed panels at backs of open spaces between base cabinets.
E. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
F. Scribes and Fillers: Panels of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.
G. Sloped tops for wall and floor cabinets: With closed ends, of matching construction and finish. Concealed anchorages for attachment to cabinet(s) below.
H. Apron Frames: Construction similar to other cabinets, with modifications.
I. Countertop Panel-Type Supports: Materials similar to adjacent casework, 1-1/2 inch (38 mm) in width, with front-to-back and toe space dimensions matching base cabinet. Designed to be secured in a concealed fashion to countertop material. Include two leveling devices per support panel.

2.04 **PLASTIC-LAMINATE-CLAD CASEWORK**

A. Plastic-Laminate-Clad Casework: Solid wood and wood panel construction; each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable

levelers for base cabinets.

1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.
2. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with following front-to-back dimensions:
   a. Base Cabinets: 22 inches (559 mm).
   b. Tall Cabinets: 22 inches (559 mm).
   c. Wall Cabinets: 16 inches (406 mm).
3. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
   a. Finish: Matte or suede, gloss rating of 5 to 20.
   b. Surface Color and Pattern: As selected by Architect from manufacturer's full line.

2.05 **COUNTERTOPS**

A. Plastic Laminate Countertops: High pressure decorative laminate sheet bonded to substrate.
   1. Fabricate in accordance with manufacturer's standard requirements.
B. Natural Quartz and Resin Composite Countertops: Sheet or slab of natural quartz and plastic resin over continuous substrate.
   1. Fabricate in accordance with manufacturer's standard requirements.

2.06 **CABINET HARDWARE**

A. Manufacturer's standard types, styles and finishes.
B. Comply with BHMA A156.9 requirements.
   1. Acceptable base materials for plated finishes include brass, bronze, and steel.

2.07 **MATERIALS**

A. Wood-Based Materials:
   1. Solid Wood: Air-dried to 4.5 percent moisture content, then tempered to 6 percent moisture content before use.

2.08 **ACCESSORIES**

A. Plastic Edge Banding: Extruded PVC, convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
   1. Color: As selected by Architect from manufacturer's standard range.

PART 3 EXECUTION

3.01 **PREPARATION**

3.02 **EXAMINATION**

A. Site Verification of Environmental Conditions:
   1. Do not deliver casework until the following conditions have been met:
      a. Building has been enclosed (windows and doors sealed and weather-tight).
      b. An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
      c. Ceiling, overhead ductwork, piping, and lighting have been installed.
      d. Installation areas do not require further “wet work” construction.
B. Verify adequacy of support framing and anchors.
C. Verify that service connections are correctly located and of proper characteristics.

3.03 **INSTALLATION**

A. Perform installation in accordance with manufacturer's instructions.
B. Use anchoring devices to suit conditions and substrate materials encountered. Use concealed fasteners to the greatest degree possible. Use exposed fasteners only where allowed by approved shop drawings, or where concealed fasteners are impracticable.
C. Set casework items plumb and square, securely anchored to building structure.
D. Align cabinets to adjoining components, install filler and/or scribe panels where necessary to close gaps.
E. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch (1.6 mm). In addition, do not exceed the following tolerances:
   1. Variation of Tops of Base Cabinets from Level: 1/16 inch (1.6 mm) in 10 feet (3 m).

2. Variation of Faces of Cabinets from a True Plane: 1/8 inch (3 mm) in 10 feet (3 m).
3. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch (0.8 mm).
4. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch (1.6 mm).

F. Base Cabinets: Fasten cabinets to service space framing and/or wall substrates, with fasteners spaced not more than 16 inches (407 mm) on center. Bolt adjacent cabinets together with joints flush, tight, and uniform.
G. Install hardware uniformly and precisely.
H. Countertops: Install countertops intended and furnished for field installation in one true plane, with ends abutting at hairline joints, and no raised edges.
I. Replace units that are damaged, including those that have damaged finishes.

3.04 **CLEANING**

A. Clean casework and other installed surfaces thoroughly.

3.05 **PROTECTION**

A. Do not permit finished casework to be exposed to continued construction activity.
B. Protect casework and countertops from ongoing construction activities. Prevent workmen from standing on, or storing tools and materials on casework or countertops.
C. Repair damage, including to finishes, that occurs prior to Date of Substantial Completion, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

END OF SECTION

SECTION 123600 - COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for architectural cabinet work.
B. Countertops for manufactured casework.
C. Wall-hung counters and vanity tops.

1.02 RELATED REQUIREMENTS

A. Section 064100 - Architectural Wood Casework.
B. Section 123100 - Manufactured Metal Casework.
C. Section 123200 - Manufactured Wood Casework.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard 2016.
B. ANSI A208.2 - American National Standard for Medium Density Fiberboard for Interior Use 2016.
C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards 2014, with Errata (2018).
D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1 2017, with Errata (2019).
E. ISFA 2-01 - Classification and Standards for Solid Surfacing Material 2013.
F. NEMA LD 3 - High-Pressure Decorative Laminates 2005.
G. PS 1 - Structural Plywood 2009.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
C. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

PART 2 PRODUCTS

2.01 COUNTERTOPS

A. Quality Standard: See Section 123100.
B. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
    1. Laminate Sheet, Type [___]: NEMA LD 3, Grade HGS, 0.048 inch (1.2 mm) nominal thickness.
        a. Manufacturers:
            1) Arborite; [_____]: www.arborite.com/#sle.
            2) Formica Corporation; [_____]: www.formica.com/#sle.
            3) Wilsonart; [_____]: www.wilsonart.com/#sle.
            4) Substitutions: See Section 016000 - Product Requirements.
        b. Finish: Matte or suede, gloss rating of 5 to 20.
    2. Exposed Edge Treatment: Square, substrate built up to minimum 1-1/4 inch (32 mm) thick; covered with matching laminate.
    3. Back and End Splashes: Same material, same construction.
    4. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Custom Grade.
C. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
    1. Flat Sheet Thickness: 1/2 inch (12 mm), minimum.
    2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.

a. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
b. Color and Pattern: As selected by Architect from manufacturer's full line.

3. Other Components Thickness: 1/2 inch (12 mm), minimum.
4. Back and End Splashes: Same sheet material, square top; minimum 4 inches (102 mm) high.

D. Natural Stone Countertops: Stone slabs bonded to substrate; use as large pieces as possible with inconspicuous adhesive joints.
1. Stone: Granite without cracks, voids, or pin holes ; filling with matching epoxy resin is acceptable.
2. Color: Match Existing Adjacent.
3. Quarry Name: [_____]; no substitutions.
4. Stone Thickness: 1/2 inch (12 mm), minimum.
5. Surface Finish: Polished.
6. Back and End Splashes: Same material, same thickness; for field attachment.

2.02 **MATERIALS**

A. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch (19 mm) thick; join lengths using metal splines.
B. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
C. Joint Sealant: Mildew-resistant silicone sealant, white.

2.03 **FABRICATION**

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
1. Join lengths of tops using best method recommended by manufacturer.
2. Fabricate to overhang fronts and ends of cabinets 1 inch (25 mm) except where top butts against cabinet or wall.
3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
2. Height: 4 inches (102 mm), unless otherwise indicated.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Do not begin installation until substrates have been properly prepared.
B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 **PREPARATION**

A. Clean surfaces thoroughly prior to installation.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 **INSTALLATION**

A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of [3/4] inch ([___] mm).
C. Seal joint between back/end splashes and vertical surfaces.

3.04 **CLEANING**

3.05 **PROTECTION**

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION