LOGAN ELEMENTARY SCHOOL/MIDDLE SCHOOL
NEW SECURITY VESTIBULES & WINDOW REPLACEMENT

110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

PROJECT NUMBER: 19-18L

AND

CENTER SQUARE SCHOOL
NEW SECURITY VESTIBULE

100 PEACHWOOD DRIVE
LOGAN TOWNSHIP, NEW JERSEY 08085

PROJECT NUMBER: 19-18C

FOR THE

LOGAN TOWNSHIP SCHOOL DISTRICT

110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

CONSTRUCTION MANAGER:
GREYHAWK, LLC
2000 MIDLANTIC DRIVE, SUITE 210,
MOUNT LAUREL, NJ 08054
PHONE: 856-722-1800 FAX: 856-722-1806

MECHANICAL, PLUMBING, ELECTRICAL ENGINEER:
MULHERN CONSULTING ENGINEERS
321 SOUTH YORK ROAD, HATBORO, PA 19040
PHONE: 215-293-9900 FAX: 215-441-5984

GArrison Architects
A Professional Corporation of Architects and Planners
713 CREEK ROAD, BELLMAWR, NEW JERSEY 08031 (856) 396-6200

ISSUED FOR BID: 05-13-2019

19-18L LOGAN ELEMENTARY SCHOOL/MIDDLE SCHOOL - NEW SECURITY VESTIBULES & WINDOW REPLACEMENT
19-18C CENTER SQUARE SCHOOL - NEW SECURITY VESTIBULE

LOGAN ELEMENTARY SCHOOL/MIDDLE SCHOOL
NEW SECURITY VESTIBULES & WINDOW REPLACEMENT

110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

FOR THE

LOGAN TOWNSHIP SCHOOL DISTRICT

110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

PROJECT NUMBER: 19-18L
TYPE OF CONSTRUCTION: 2B
USE GROUP: E

NEW JERSEY MODEL CODE ADOPTIONS & STANDARDS:

BUILDING SUBCODE: INTERNATIONAL BUILDING CODE/2015, NEW JERSEY EDITION
PLUMBING SUBCODE: NATIONAL STANDARD PLUMBING CODE/2015
ELECTRICAL SUBCODE: NATIONAL ELECTRICAL CODE (NFPA 70)/2014
ENERGY SUBCODE: ASHRAE STD. 90.1-2013 (COMMERCIAL)
MECHANICAL SUBCODE: INTERNATIONAL MECHANICAL CODE/2015
FUEL GAS SUBCODE: INTERNATIONAL FUEL GAS CODE/2015
REHABILITATION SUBCODE: NJUCC, SUBCHAPTER 6
BARRIER FREE SUBCODE: (SUB 7) - ICC/ANSI A117.1-2009
FIRE PROTECTION SUBCODE: INTERNATIONAL BUILDING CODE/2015, NEW JERSEY EDITION
NJ UCC BULLETIN 00-3: PUBLIC SCHOOLS-FACILITY PLANNING STANDARDS & UCC ENHANCEMENTS

CONSTRUCTION MANAGER:

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MOUNT LAUREL, NJ 08054
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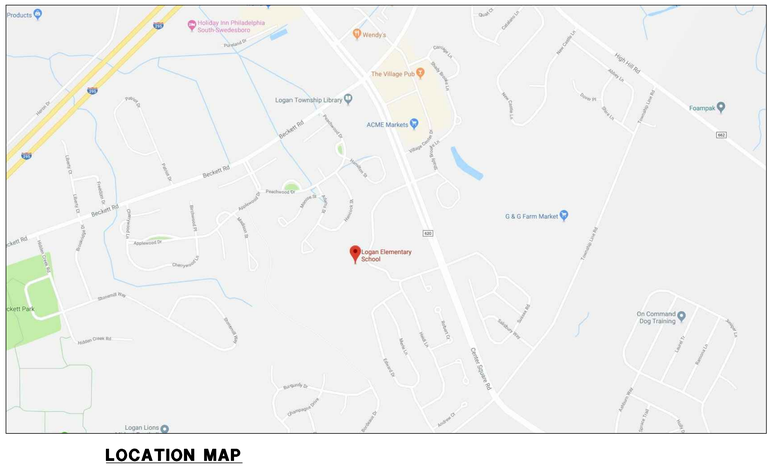
BIRD EYES VIEW

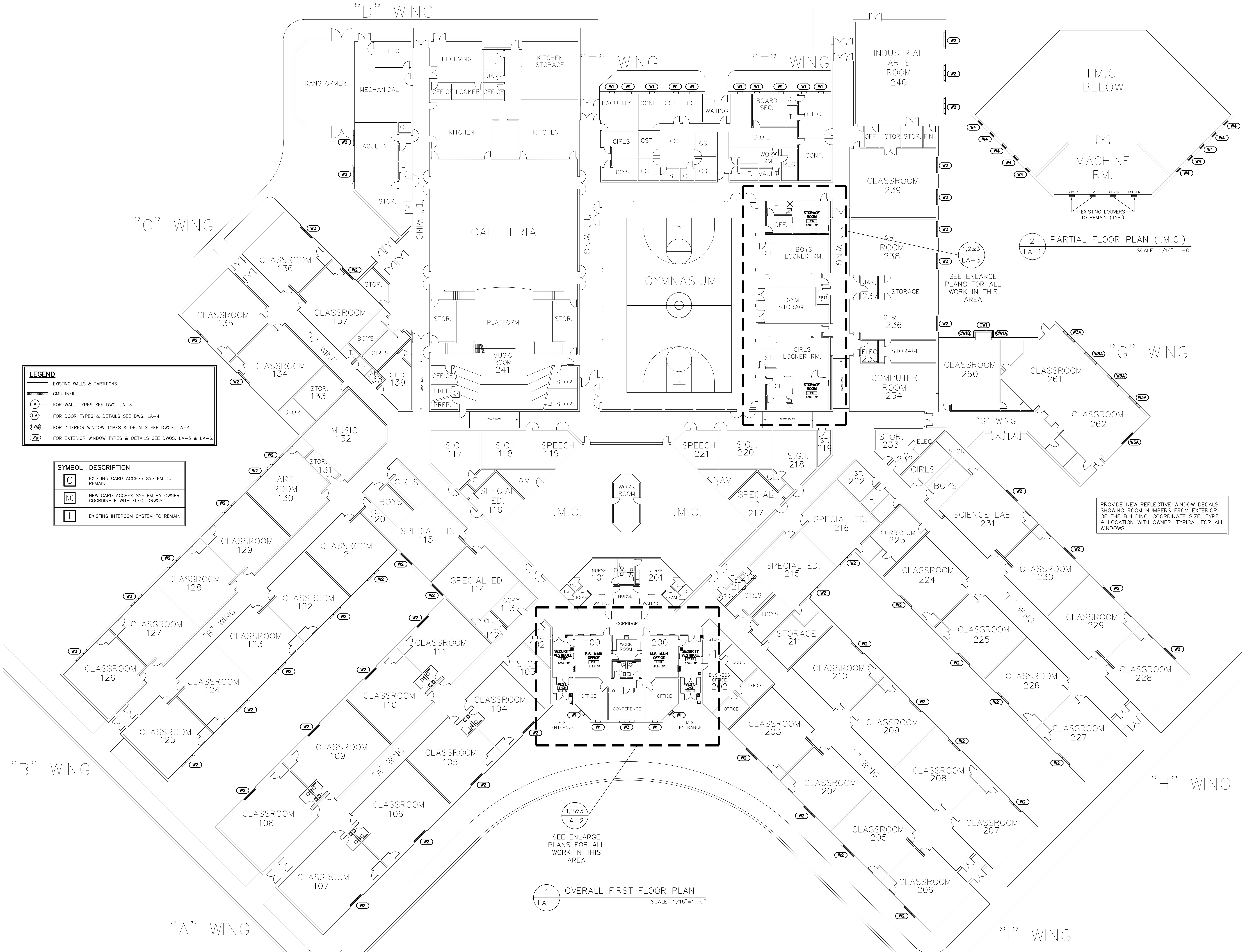


LOCATION MAP

No.	INDEX OF DRAWINGS
	COVER SHEET & INDEX
	ARCHITECTURAL
LA-1	OVERALL FLOOR PLAN
LA-2	PARTIAL ENLARGED FLOOR PLANS
LA-3	PARTIAL ENLARGED FLOOR PLANS
LA-4	DOOR SCHEDULE & DETAILS
LA-5	WINDOW TYPES
LA-6	WINDOW DETAILS
	PLUMBING
LP-1	PLUMBING/FIRE PROTECTION DEMOLOTION/NEW WORK PLAN
	ELECTRICAL
LE-1	ELECTRICAL PLAN
LE-2	ELECTRICAL PLAN
LE-3	ELECTRICAL NOTES & DETAILS

ISSUED FOR BID: 05-13-2019

19-18L LOGAN ELEMENTARY SCHOOL/MIDDLE SCHOOL - NEW SECURITY VESTIBULES & WINDOW REPLACEMENT



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LOGAN ELEMENTARY SCHOOL/MIDDLE SCHOOL
NEW SECURITY VESTIBULES AND WINDOW REPLACEMENT

110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

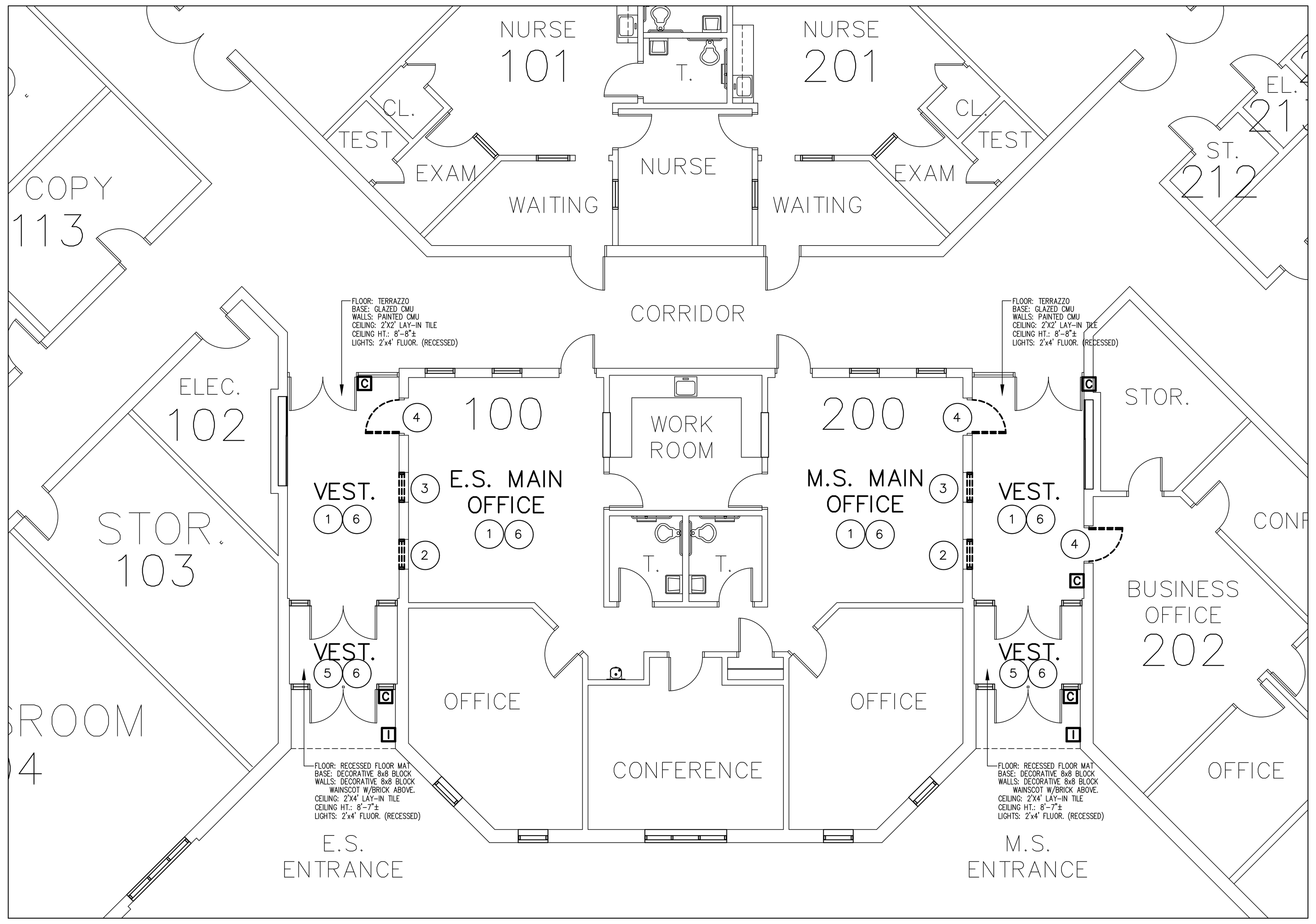
REVISIONS	
a.	e.
b.	f.
c.	g.

Project No. 19-18L
Date: 05/13/19
Scale: AS NOTED

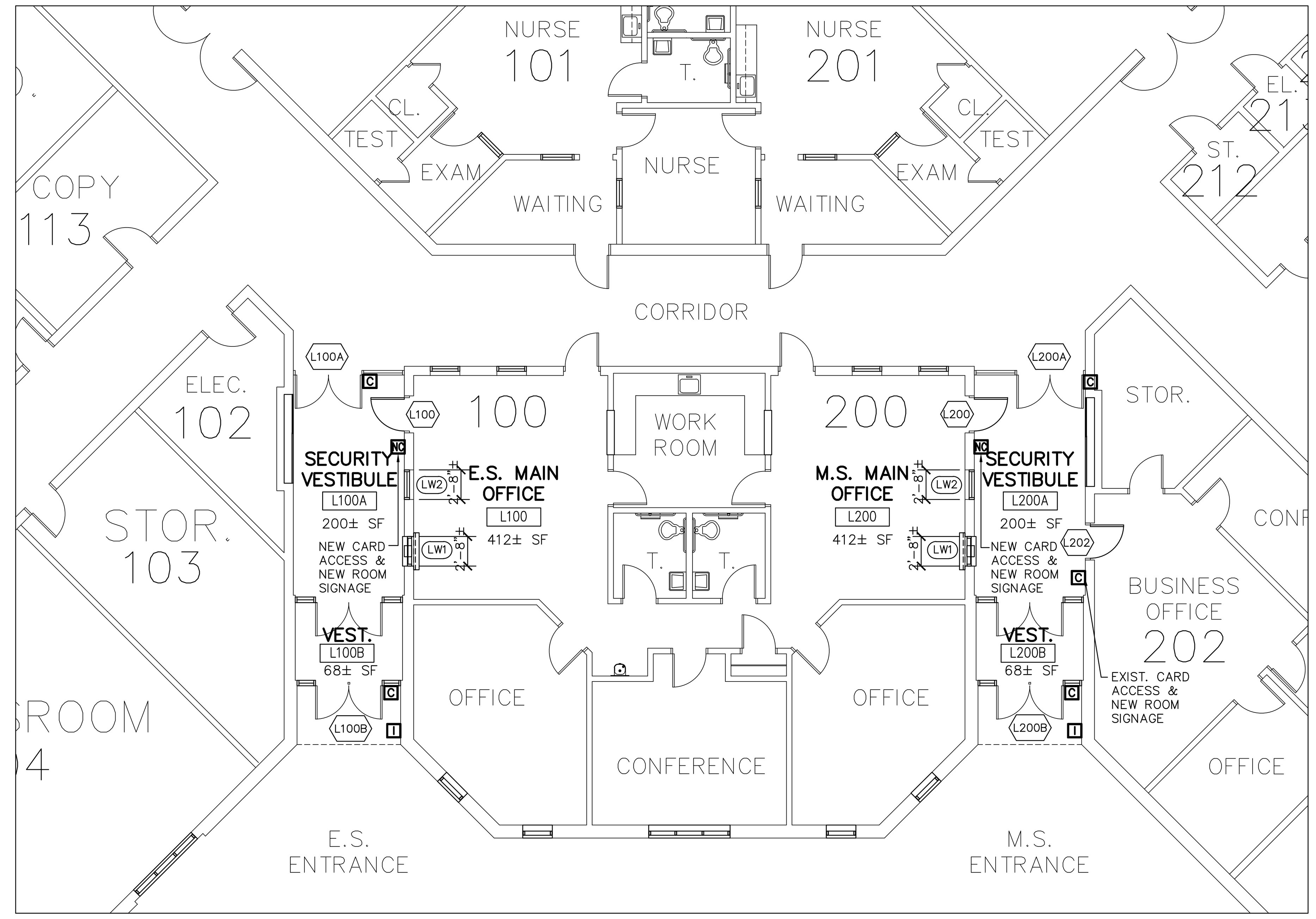
OVERALL FLOOR PLAN (ELEM+MS)

LA-1

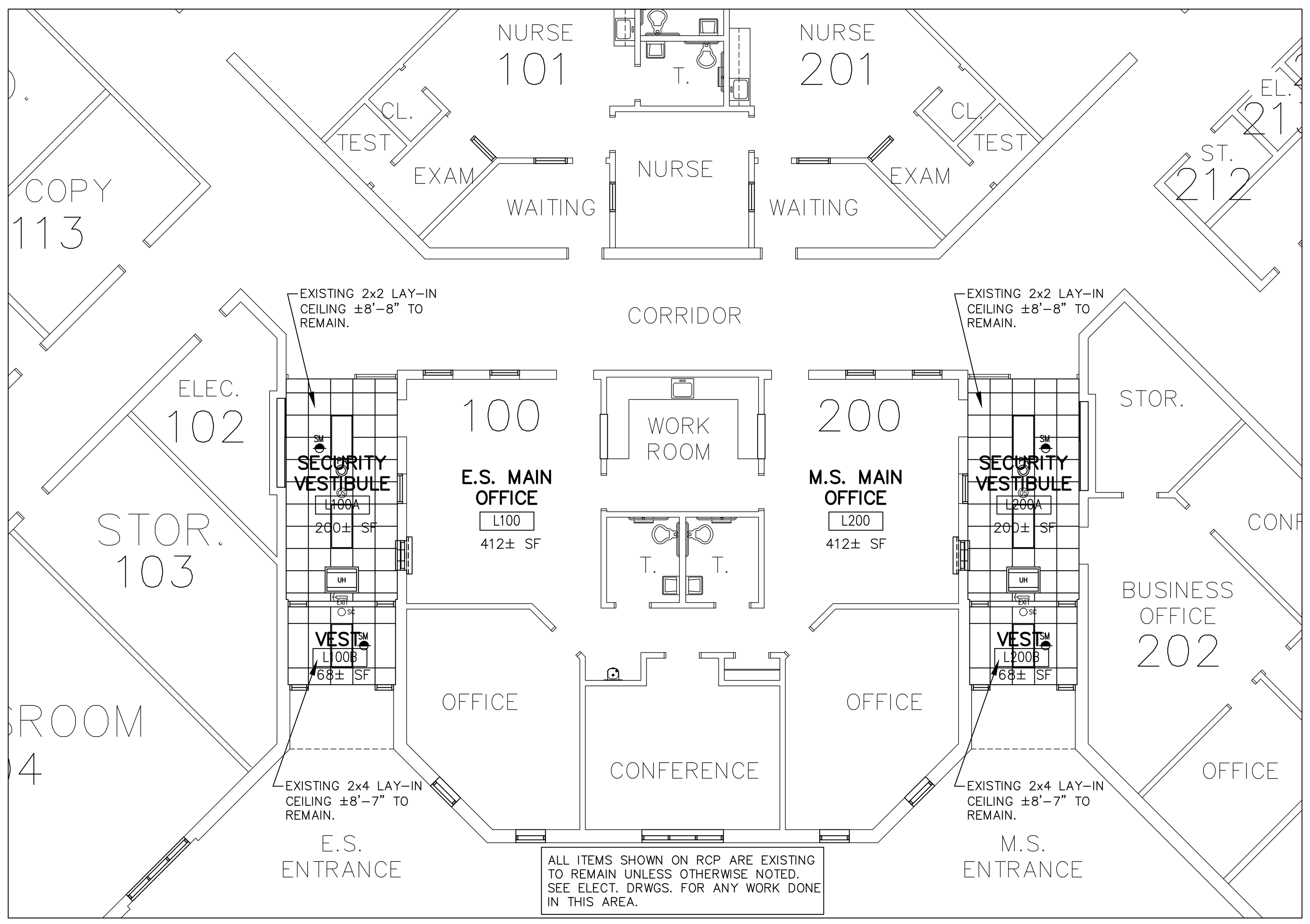
ISSUED FOR BID: 05-13-2019



1 LA-2 PARTIAL DEMOLITION FLOOR PLAN
SCALE: 1/8"=1'-0"



2 LA-2 PARTIAL PROPOSED FLOOR PLAN
SCALE: 1/8"=1'-0"



3 LA-2 PARTIAL EXISTING REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"

GENERAL DEMOLITION/ RENOVATION NOTES:

THE GENERAL CONTRACTOR SHALL REMOVE ALL ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO LOCKERS, DOORS AND FRAMES, WINDOWS AND FRAMES, CEILING SYSTEM, PARTITIONS, CARPET, STOREFRONT WINDOW SYSTEM, GUARDRAILS, HANDRAILS, TACK STRIPS, SHELVING/ CASEWORK AND TOILET PARTITIONS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL AFOREMENTIONED ITEMS ABOVE. REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE ARCHITECT FOR FURTHER CLARIFICATIONS.

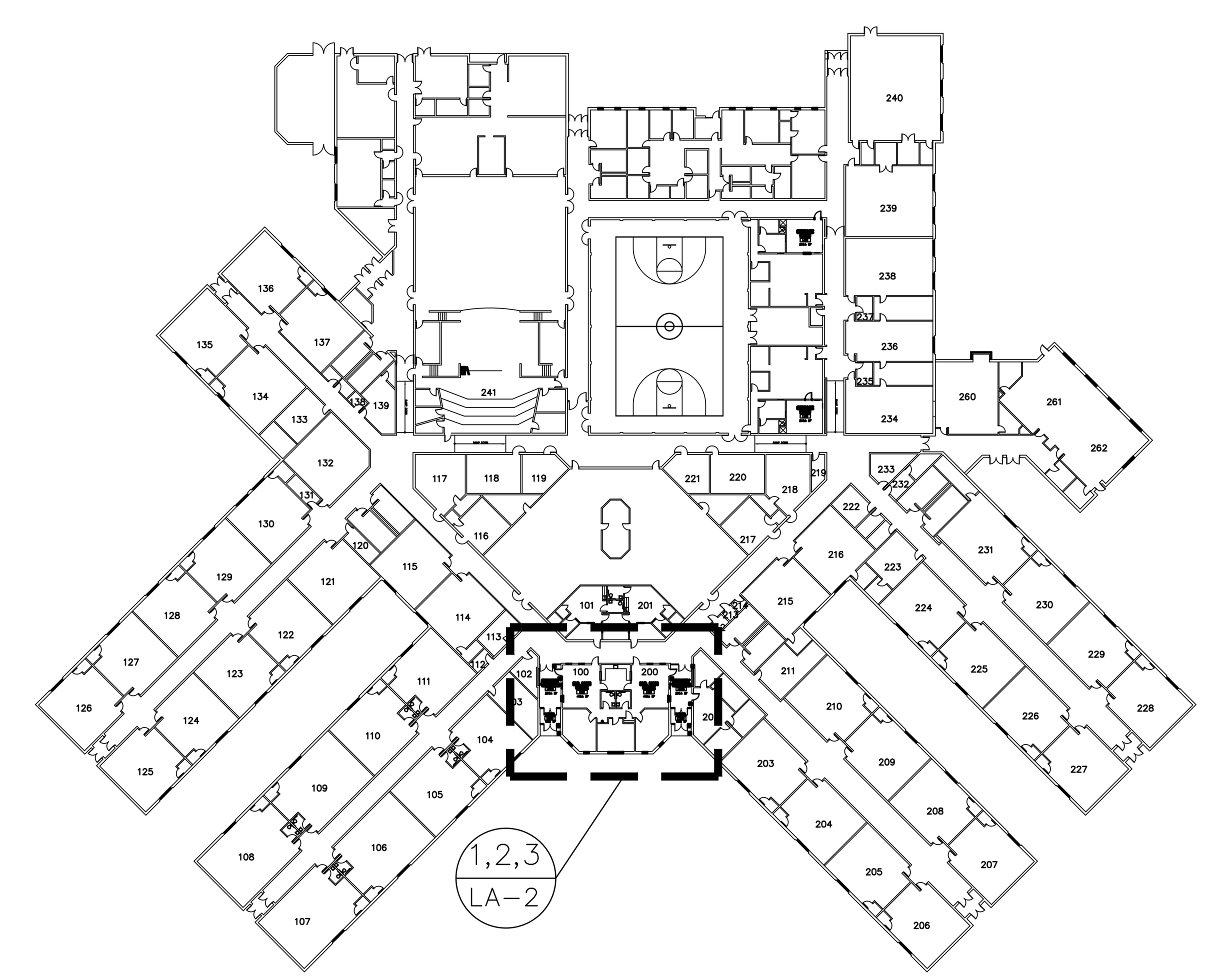
THE PLUMBING CONTRACTOR SHALL DISCONNECT AND CAP ALL PLUMBING ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO WATER CLOSETS, LAVATORIES, DRINKING FOUNTAINS, SHOWERS AND CONTROLS, SUPPLY LINES FOR HOT AND COLD WATER, EYE WASH STATIONS, WASH BASINS, LIMITED SPRINKLER SYSTEM AND AIR COMPRESSOR SUPPLY LINES. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL AFOREMENTIONED ITEMS ABOVE. REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE PLUMBING ENGINEER FOR FURTHER CLARIFICATIONS.

THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND CAP ALL ELECTRICAL ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO LIGHT FIXTURES, SWITCHES, WALL OUTLETS, WIRING/ CONDUIT AND TELEPHONE SYSTEMS, REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE ELECTRICAL ENGINEER FOR FURTHER CLARIFICATIONS.

THE H.V.A.C. CONTRACTOR SHALL DISCONNECT AND CAP ALL H.V.A.C. ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO UNIT VENTILATORS, THERMOSTATS, COOLING AND HEATING PIPES AND VALVE CONTROLS. THE H.V.A.C. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL AFOREMENTIONED ITEMS ABOVE. REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE H.V.A.C. ENGINEER FOR FURTHER CLARIFICATIONS.

ALL REMOVED ITEMS, IF REQUIRED TO BE SALVAGED BY OWNER, SHALL BE REMOVED BY OWNER BEFORE DEMOLITION WORK STARTS.

1. EXISTING FLOOR FINISH TO REMAIN. PROTECT DURING RENOVATION/CONSTRUCTION.
2. REMOVE EXISTING WINDOW SYSTEM IN IT'S ENTIRETY. MODIFY EXISTING OPENING. REMOVE ONE COURSE OF MASONRY AT SILL TO ACHIEVE 2'-8" SILL HEIGHT FOR NEW TRANSACTION WINDOW. INFILL ANY VOIDS OR HOLES IN MASONRY TO A SMOOTH FINISH w/MATERIALS TO MATCH ADJACENT. PRIME & REPAINT PER MANUFACTURERS SPECIFICATIONS. SEE FLOOR PLAN FOR NEW LAYOUT.
3. REMOVE EXISTING WINDOW SYSTEM IN IT'S ENTIRETY. EXISTING OPENING TO REMAIN. INFILL ANY VOIDS OR HOLES IN MASONRY TO A SMOOTH FINISH w/MATERIALS TO MATCH ADJACENT. PRIME & REPAINT PER MANUFACTURERS SPECIFICATIONS. SEE FLOOR PLAN FOR NEW LAYOUT.
4. REMOVE EXISTING DOOR & ASSOCIATED HARDWARE. TURN OVER HARDWARE TO OWNER. EXISTING FRAME TO REMAIN AND SHALL BE PREPPED TO RECEIVE NEW DOOR (SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION).
5. EXISTING RECESSED FLOOR MAT OVER CONCRETE FLOOR TO REMAIN.
6. EXISTING LAY-IN CEILING ASSEMBLY & EXISTING LIGHTING TO REMAIN.
7. CUT NEW OPENING IN EXISTING CMU WALL FOR NEW DOOR & FRAME. SHORE UP WALL BEFORE CUTTING. PROVIDE PRECAST LINTELS AS REQUIRED FOR SUPPORT. PROTECT ADJACENT SURFACES, PATCH AND PAINT ANY AREAS DAMAGED BY RENOVATION. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
8. REMOVE EXISTING 6 PERSON COLUMN SHOWER & CAP EXISTING PLUMBING LINES & DRAIN. PATCH EXISTING CERAMIC TILE FLOOR & GYPSUM BD. CEILING TO MATCH EXISTING, TYP.
9. EXISTING GYPSUM BD. CEILING ASSEMBLY & EXISTING LIGHTING TO REMAIN.
10. EXISTING CERAMIC TILES WALLS TO REMAIN. PROTECT DURING RENOVATION/CONSTRUCTION.
11. REMOVE EXISTING MARBLE THRESHOLD & PREP EXISTING OPENING FOR CMU INFILL, TYP.
12. REMOVE EXISTING SHOWER HEAD, KNOBS, GRAB BARS, SEAT, ETC. COVER WITH S.S. COVER PLATES. CAP EXISTING PLUMBING LINES & FLOOR DRAIN. PATCH EXISTING FLOOR TO MATCH EXISTING, TYP.



1,2,3 LA-2

KEY PLAN
SCALE: NTS

NOTE:
DURING CONSTRUCTION/RENOVATION, IF ASBESTOS IS DETECTED, THE CONTRACTOR SHALL NOTIFY THE SCHOOL DISTRICT'S ASBESTOS CONSULTANT TO VERIFY ALL MATERIAL WHERE ASBESTOS MAY BE PRESENT. IT SHALL BE REMOVED BY ASBESTOS ABATEMENT CONTRACTOR. IT SHALL BE ABATED AS CHANGE ORDER WORK. ALL IDENTIFICATION TO BE DONE WITHIN 45 DAYS OF NOTICE TO PROCEED SO THIS CONTRACTOR'S WORK WILL NOT BE AFFECTED.

LEGEND

(line)	EXISTING WALLS & PARTITIONS
(hatch)	CMU INFILL
#	FOR WALL TYPES SEE DWG. LA-3.
L#	FOR DOOR TYPES & DETAILS SEE DWG. LA-4.
LW#	FOR INTERIOR WINDOW TYPES & DETAILS SEE DWGS. LA-4.
W#	FOR EXTERIOR WINDOW TYPES & DETAILS SEE DWGS. LA-5 & LA-6.

LEGEND

(solid line)	EXISTING TO REMAIN
(dashed line)	EXISTING TO REMOVED

NOTE:
WHEN THE REMOVAL OF ANY HVAC EQUIPMENT OCCURS IN AN EXISTING MASONRY WALL, INTERIOR OR EXTERIOR, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INFILL OPENING WITH MATERIALS THAT MATCH ADJACENT OPENINGS. (COORDINATE ALL OPENINGS w/HVAC DRAWINGS PRIOR TO INFILL.

SYMBOL	DESCRIPTION
C	EXISTING CARD ACCESS SYSTEM TO REMAIN.
NC	NEW CARD ACCESS SYSTEM BY OWNER. COORDINATE WITH ELEC. DRWGS.
I	EXISTING INTERCOM SYSTEM TO REMAIN.

NOTE:
AFTER THE REMOVAL OF ANY WALL MOUNTED ITEMS IN A RENOVATED SPACE, IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO FILL ANY VOIDS OR HOLES IN THE WALLS TO A SMOOTH & LEVEL FINISH w/MATERIALS TO MATCH ADJACENT. IF ADJACENT AREA IS MASONRY, SCORE PATCHED AREA TO MATCH EXISTING COURSING. SEE ROOM FINISH SCHEDULE FOR FINISHES.

SEE PLUMBING & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTES & DETAILS.

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110 SCHOOL LANE
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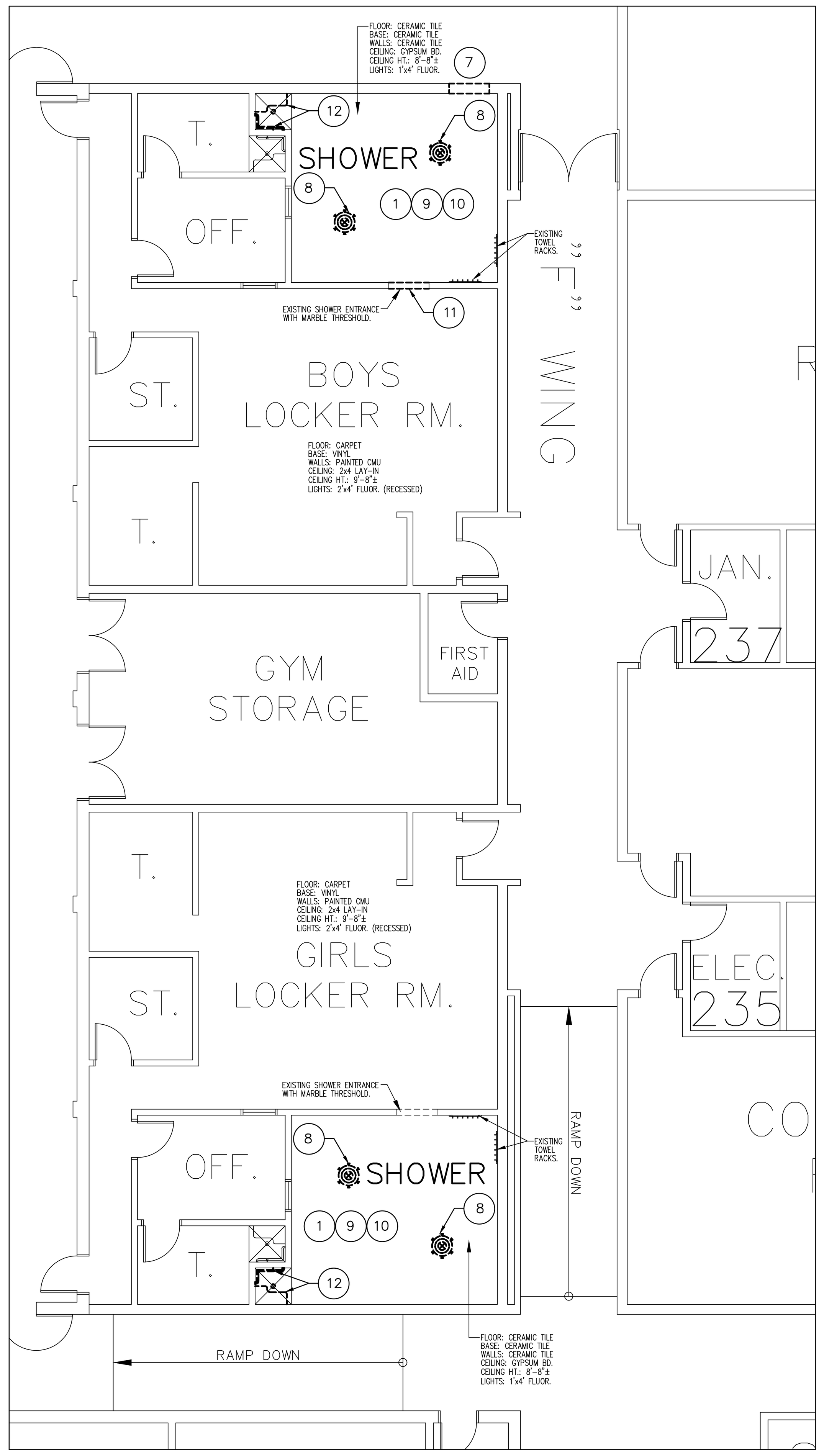
REVISIONS

a.	e.
b.	f.
c.	g.

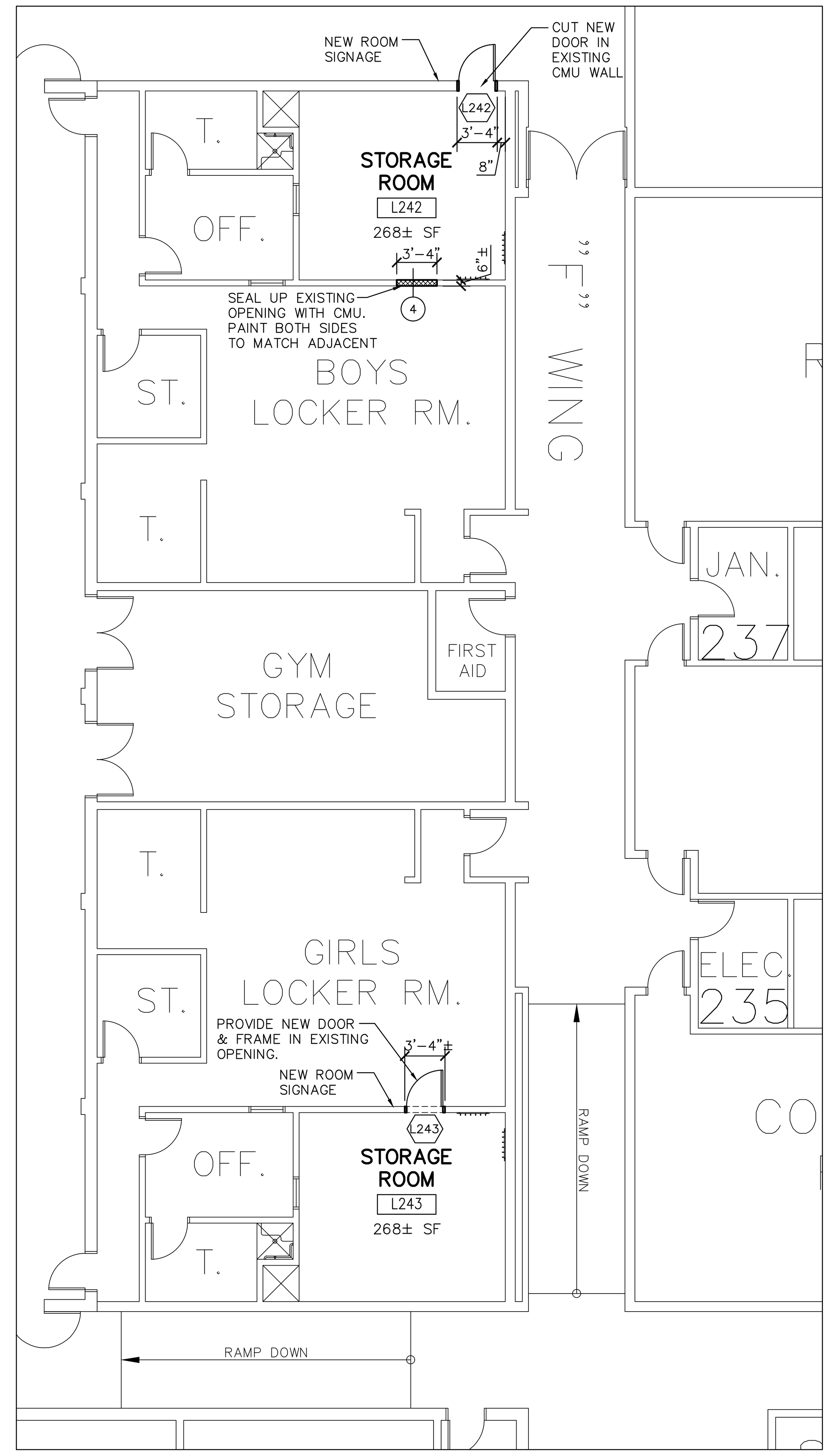
Project No. 19-18L
Date: 05/13/19
Scale: 1/8"=1'-0"

PARTIAL FLOOR PLANS

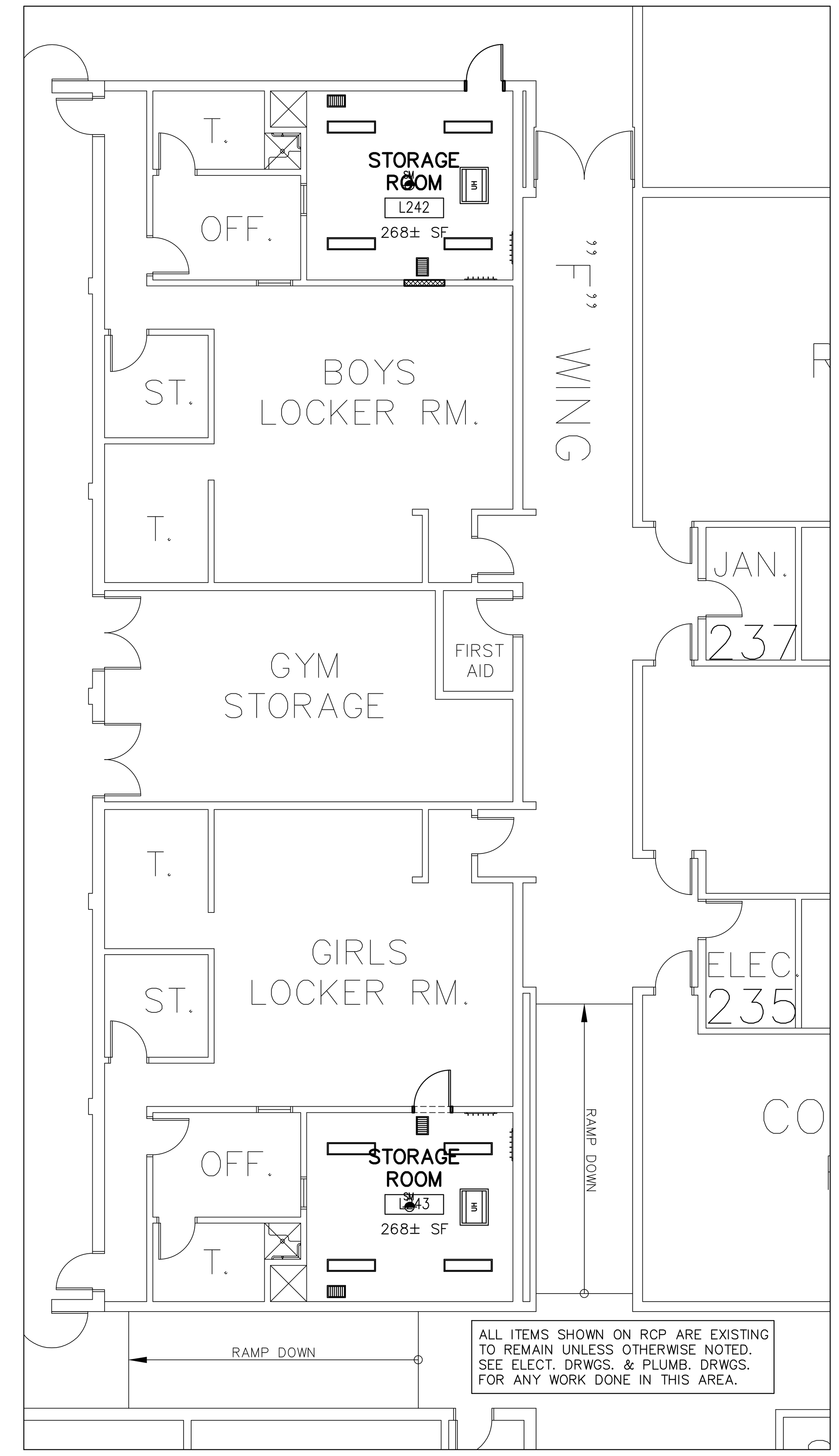
LA-2



1 / LA-3 PARTIAL DEMOLITION FLOOR PLAN
SCALE: 1/8"=1'-0"



2 / LA-3 PARTIAL PROPOSED FLOOR PLAN
SCALE: 1/8"=1'-0"

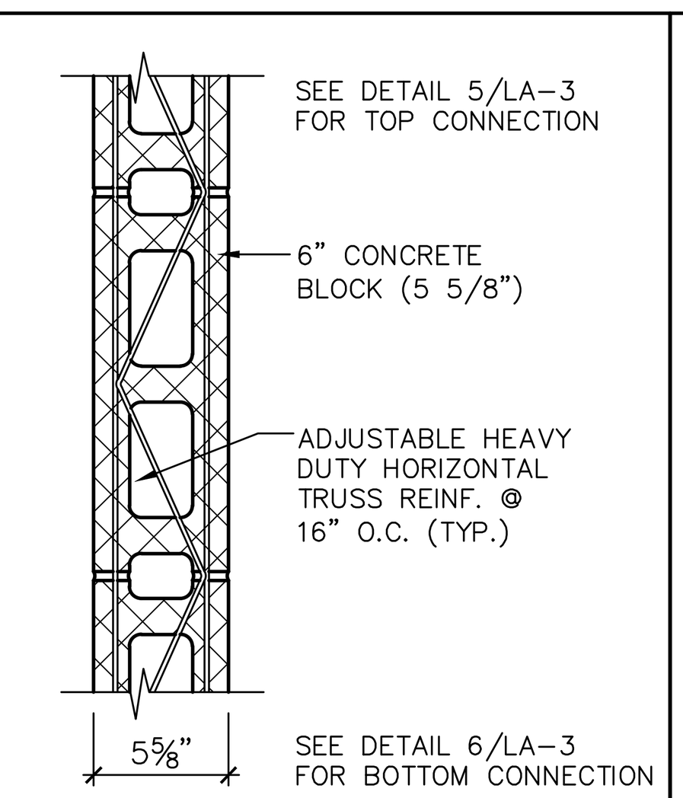


3 / LA-3 PARTIAL EXISTING REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"

LEGEND

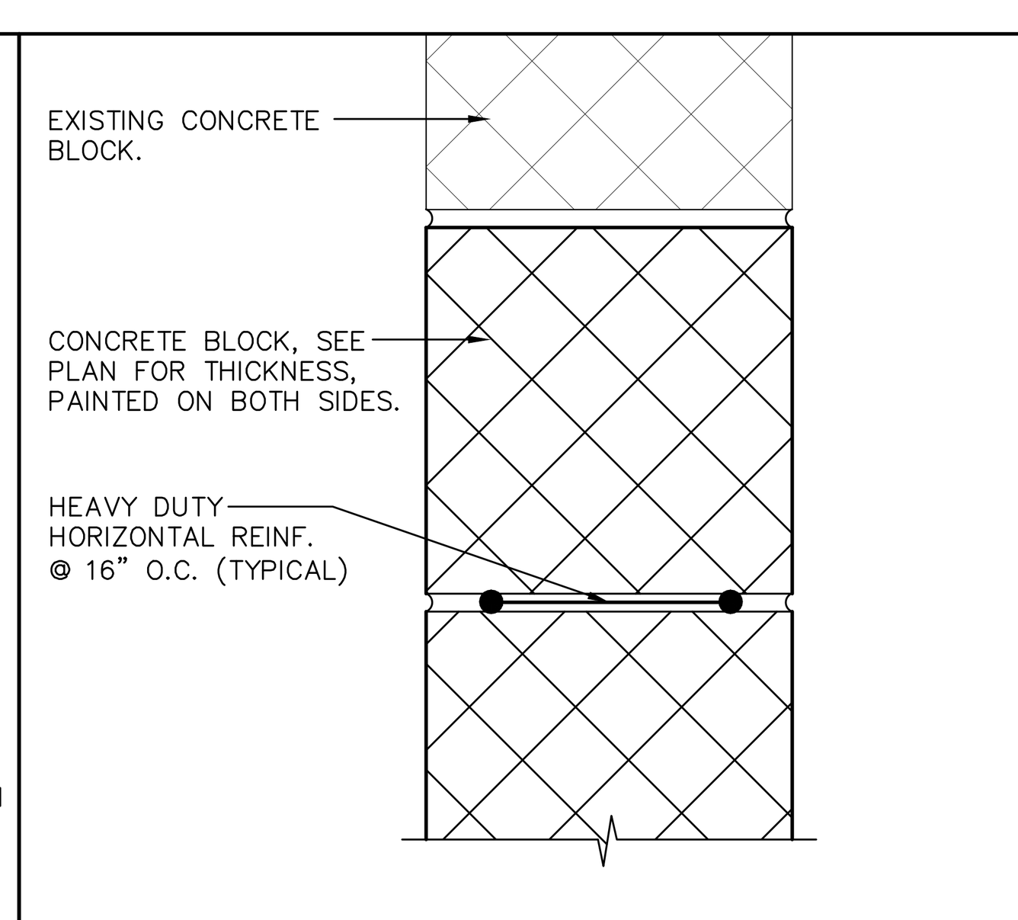
- EXISTING WALLS & PARTITIONS
- CMU INFILL
- (#) FOR WALL TYPES SEE DWG. LA-3.
- (L#) FOR DOOR TYPES & DETAILS SEE DWG. LA-4.
- (LW#) FOR INTERIOR WINDOW TYPES & DETAILS SEE DWGS. LA-4.
- (W#) FOR EXTERIOR WINDOW TYPES & DETAILS SEE DWGS. LA-5 & LA-6.

SYMBOL	DESCRIPTION
C	EXISTING CARD ACCESS SYSTEM TO REMAIN.
NC	NEW CARD ACCESS SYSTEM BY OWNER. COORDINATE WITH ELEC. DRWGS.
I	EXISTING INTERCOM SYSTEM TO REMAIN.

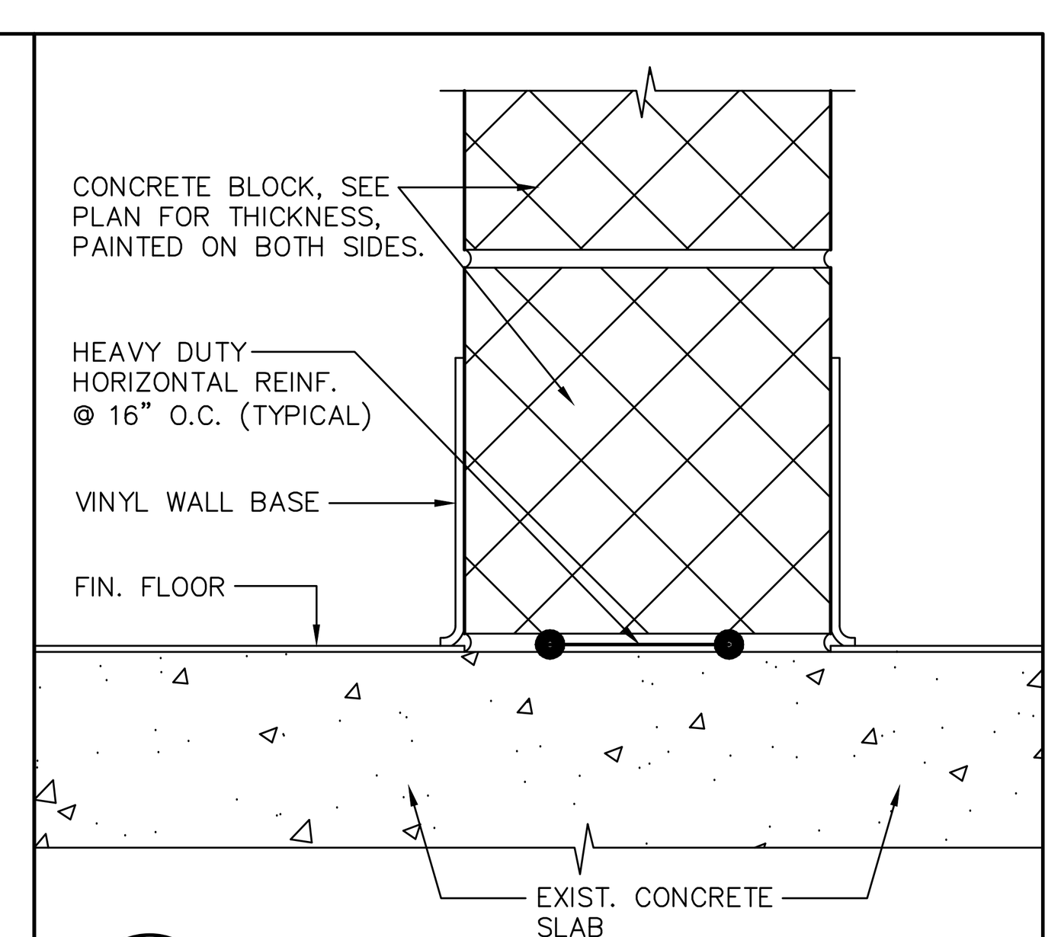


MIN. STC 45

4 / LA-3 DETAIL — SCALE 1 1/2"=1'-0"
6" C.M.U. INTERIOR WALL INFILL
NOTE: NO FIRE RATING REQUIRED



5 / LA-3 DETAIL — SCALE 3"=1'-0"
CMU WALL AT EXISTING CMU HEADER



6 / LA-3 DETAIL — SCALE 3"=1'-0"
CMU WALL AT FLOOR

GENERAL DEMOLITION/ RENOVATION NOTES:

1. EXISTING FLOOR FINISH TO REMAIN. PROTECT DURING RENOVATION/CONSTRUCTION.
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4. REMOVE EXISTING DOOR & ASSOCIATED HARDWARE. TURN OVER HARDWARE TO OWNER. EXISTING FRAME TO REMAIN AND SHALL BE PREPPED TO RECEIVE NEW DOOR (SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION).
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9. EXISTING GYPSUM BD. CEILING ASSEMBLY & EXISTING LIGHTING TO REMAIN.
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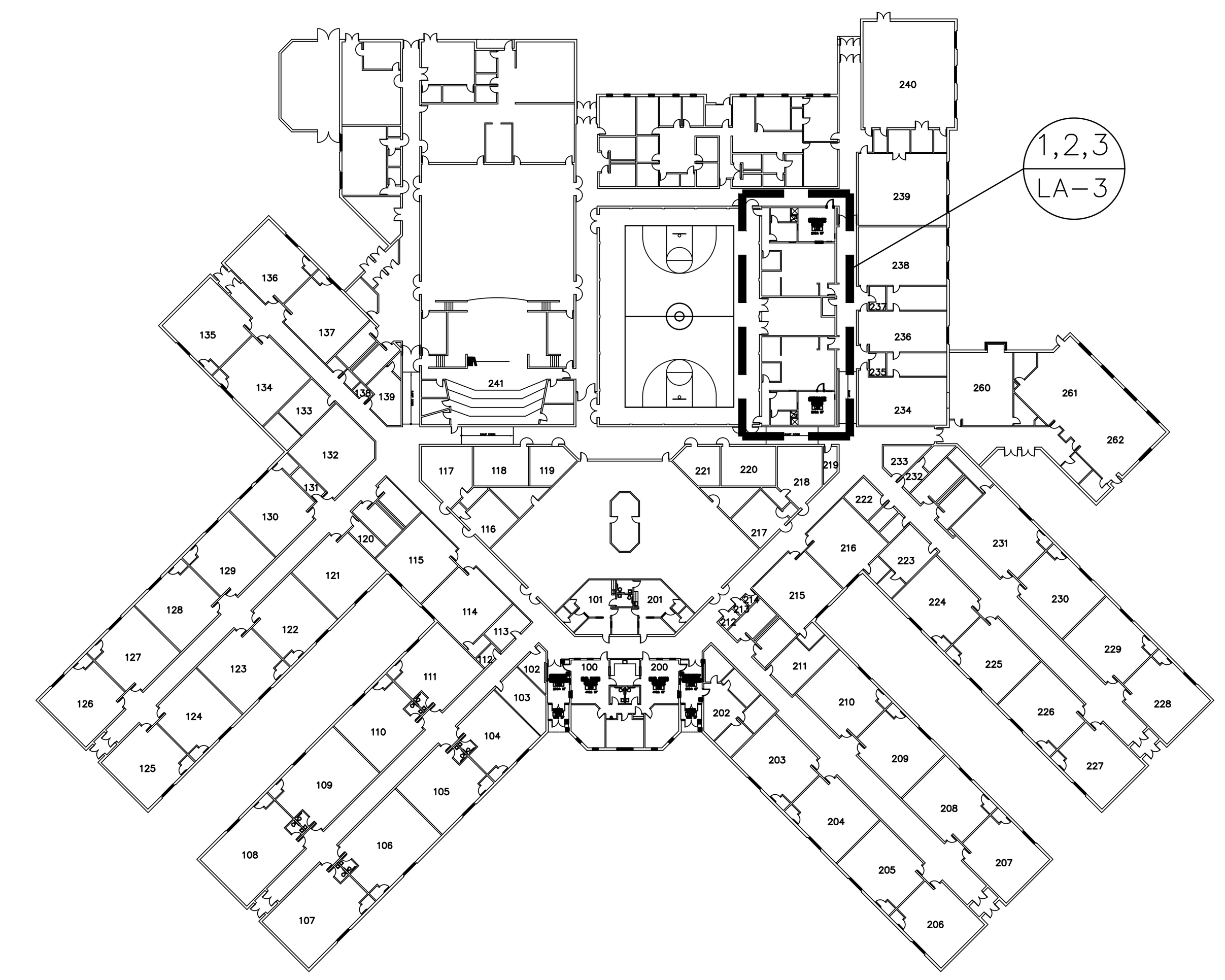

KEY PLAN
SCALE: NTS

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REVISIONS

a.	e.
b.	f.
c.	g.

Project No. 19-18L
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Scale: 1/8"=1'-0"

PARTIAL FLOOR PLANS

LA-3

ISSUED FOR BID: 05-13-2019

DOOR AND FRAME SCHEDULE

DR. NO.	FROM ROOM NO.	TO ROOM NO.	TYPE OF ROOM	DOOR (1 3/4" THICK DOOR U.N.O.) SIZE WIDTH	DOOR SIZE HEIGHT	DOOR MATERIAL	DOOR GAGE	DOOR TYPE	GLASS TYPE	GLASS THICKNESS	GLASS SIZE	THRESHOLD	HARDWARE SET NO.	FRAME MATERIAL	FRAME GAGE	FRAME DEPTH	FRAME TYPE	DETAILS SEE LA-4 HEAD	DETAILS JAMB	DETAILS SILL	FIRE RATING (LABEL)	NEW SOLID CORE WOOD DOOR (SEE GENERAL NOTE #3)	EXISTING HOLLOW METAL FRAME TO REMAIN. FRAME REQUIRES A LABEL. (SEE GENERAL NOTE #4)	NEW A.D.A. DOOR HARDWARE (SEE GENERAL NOTE #5)	NEW HOLLOW METAL FRAME (SEE GENERAL NOTE #6)	NEW CARD ACCESS SYSTEM (SEE HARDWARE SCHEDULE)	CHANGE DOOR SWING. SEE FLOOR PLAN.	EXISTING CARD ACCESS SYSTEM TO REMAIN. (SEE HARDWARE SCHEDULE)	EXISTING DOORS, FRAME & HARDWARE TO REMAIN	PROVIDE NEW 3M SECURITY FILM @ ALL GLASS LOCATIONS
BASE BID																														
L100	E.S. MAIN OFFICE	SECURITY VEST.	E.S. MAIN OFFICE	3'-0"	7'-0"	WOOD	–	A	RATED	1/4"	16x36	–	001-L	HM	–	–	1	1	2	3	20	✔	✔	✔		✔	✔			✔
L100A	CORRIDOR	SECURITY VEST.	SECURITY VESTIBULE	(2)3'-0"	7'-0"	FRP	–	B	–	–	–	–	002-L	ALUM	–	–	2	–	–	–	–							✔	✔	✔
L100B	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	(2)3'-0"	7'-0"	FRP	–	B	–	–	–	–	002-L	ALUM	–	–	3	–	–	–	–							✔	✔	✔
L200	M.S. MAIN OFFICE	SECURITY VEST.	M.S. MAIN OFFICE	3'-0"	7'-0"	WOOD	–	A	RATED	1/4"	16x36	–	001-L	HM	–	–	1	1	2	3	20	✔	✔	✔		✔	✔			✔
L200A	CORRIDOR	SECURITY VEST.	SECURITY VESTIBULE	(2)3'-0"	7'-0"	FRP	–	B	–	–	–	–	002-L	ALUM	–	–	2	–	–	–	–							✔	✔	✔
L200B	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	(2)3'-0"	7'-0"	FRP	–	B	–	–	–	–	002-L	ALUM	–	–	3	–	–	–	–							✔	✔	✔
L202	SECURITY VEST.	BUSINESS OFFICE	BUSINESS OFFICE	3'-0"	7'-0"	WOOD	–	A	RATED	1/4"	16x36	–	003-L	HM	–	–	1	4	5	6	20	✔	✔	✔				✔		✔
L242	STORAGE ROOM	CORRIDOR	STORAGE ROOM	3'-0"	7'-0"	WOOD	–	C	–	–	–	ALUM	004-L	HM	16	10 3/4"	4	7	8	9	20	✔		✔	✔					
L243	STORAGE ROOM	GIRLS LOCKER RM.	STORAGE ROOM	3'-0"	7'-0"	WOOD	–	C	–	–	–	ALUM	004-L	HM	16	6 3/4"	4	10	11	12	20	✔		✔	✔					

PROVIDE NEW ROOM SIGNAGE AT DOORS L100, L200 L202, L242 & L243.

SIGNAGE: ALL SIGNAGE SHALL COMPLY WITH CABO/ANSI A117.1 ALL INTERIOR DOORS ARE TO RECEIVE SIGNAGE

INSTALL PERMANENT SIGNS ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR AT MAX. 60" ABOVE FLOOR TO CENTER LINE OF SIGN, OVERHEAD SIGN SHALL BE INSTALLED AT 80" MIN. HEIGHT ABOVE FLOOR. SEE FIG. 0 & FIG. 8 .

LETTERS AND NUMBERS SHALL HAVE WIDTH TO HEIGHT RATIO BETWEEN 3:5 AND 1:1.

ALL LETTERS AND NUMBERS SHALL BE GRADE 2 BRAILLE, PROVIDE INTERNATIONAL SYMBOL FOR ACCESSIBILITY.

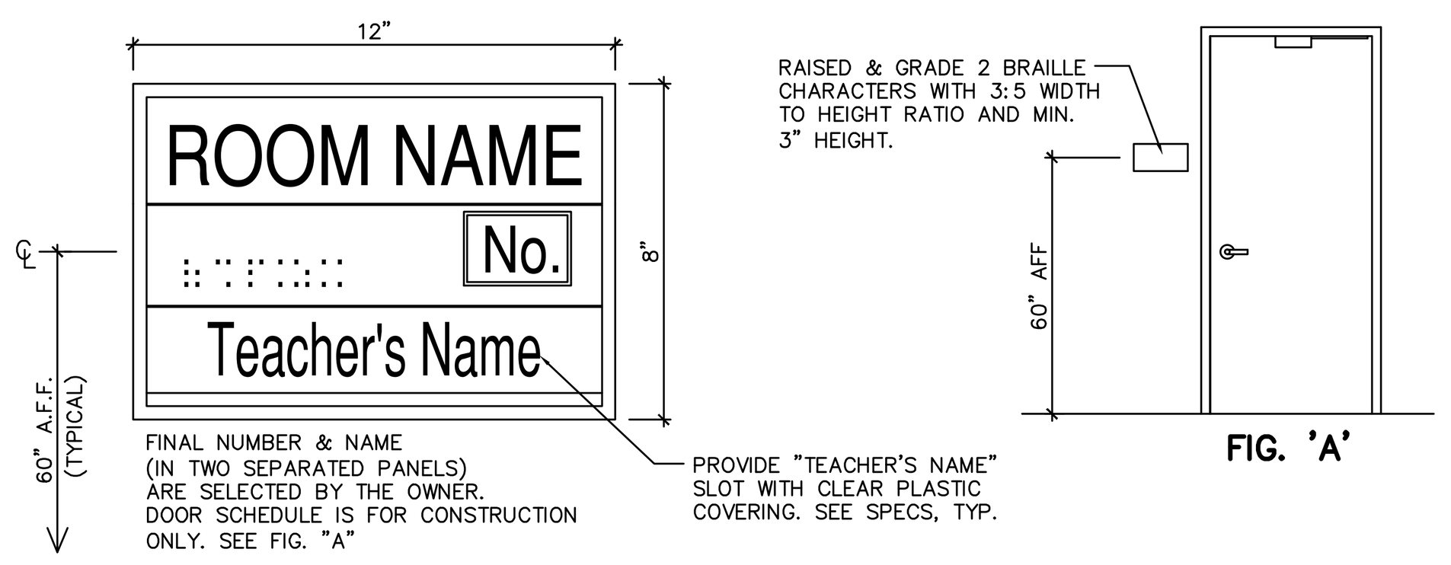
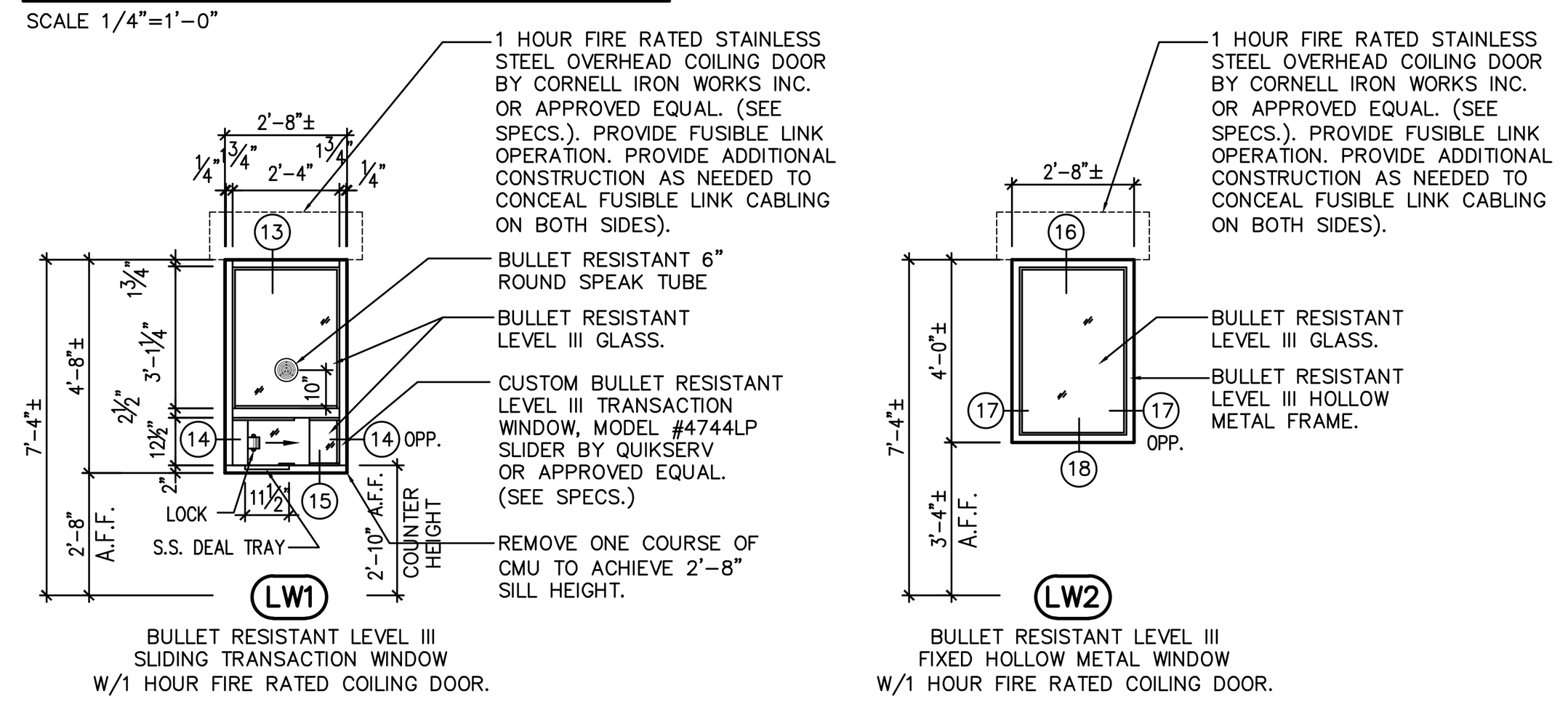


FIG. 'A'

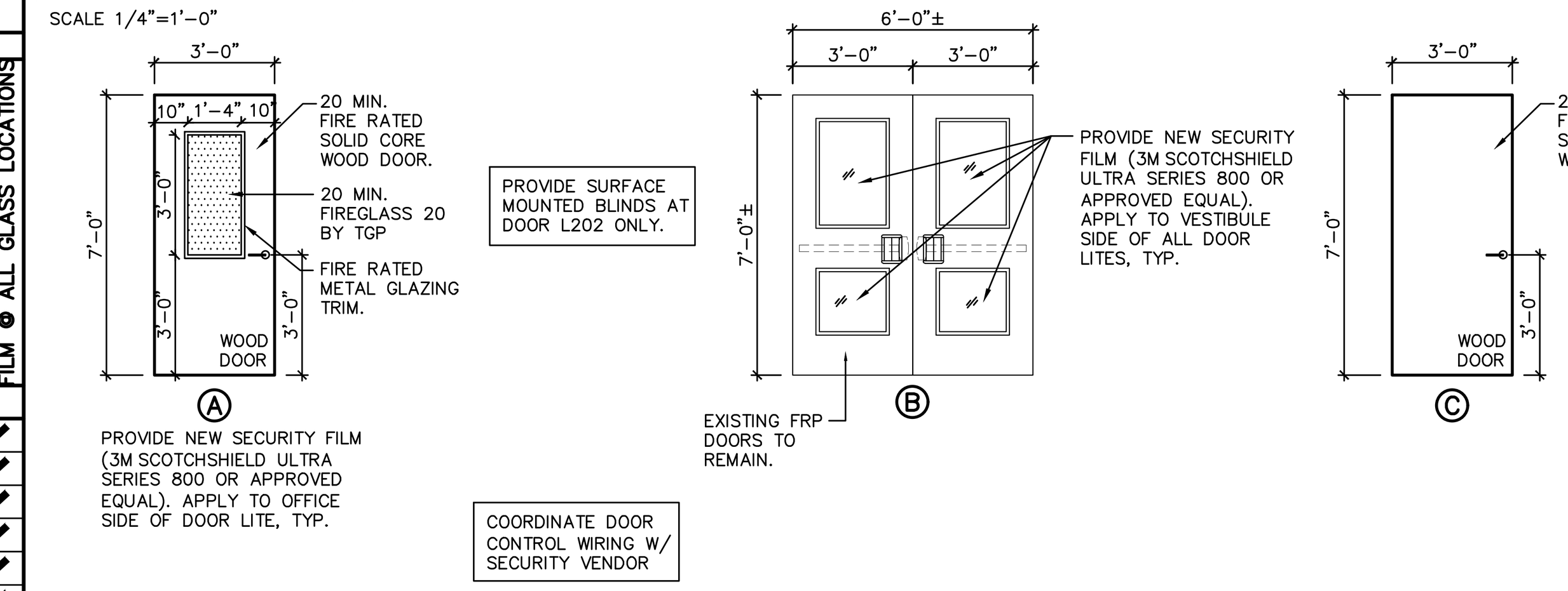
INTERIOR WINDOW TYPES:

SCALE 1/4"=1'-0"



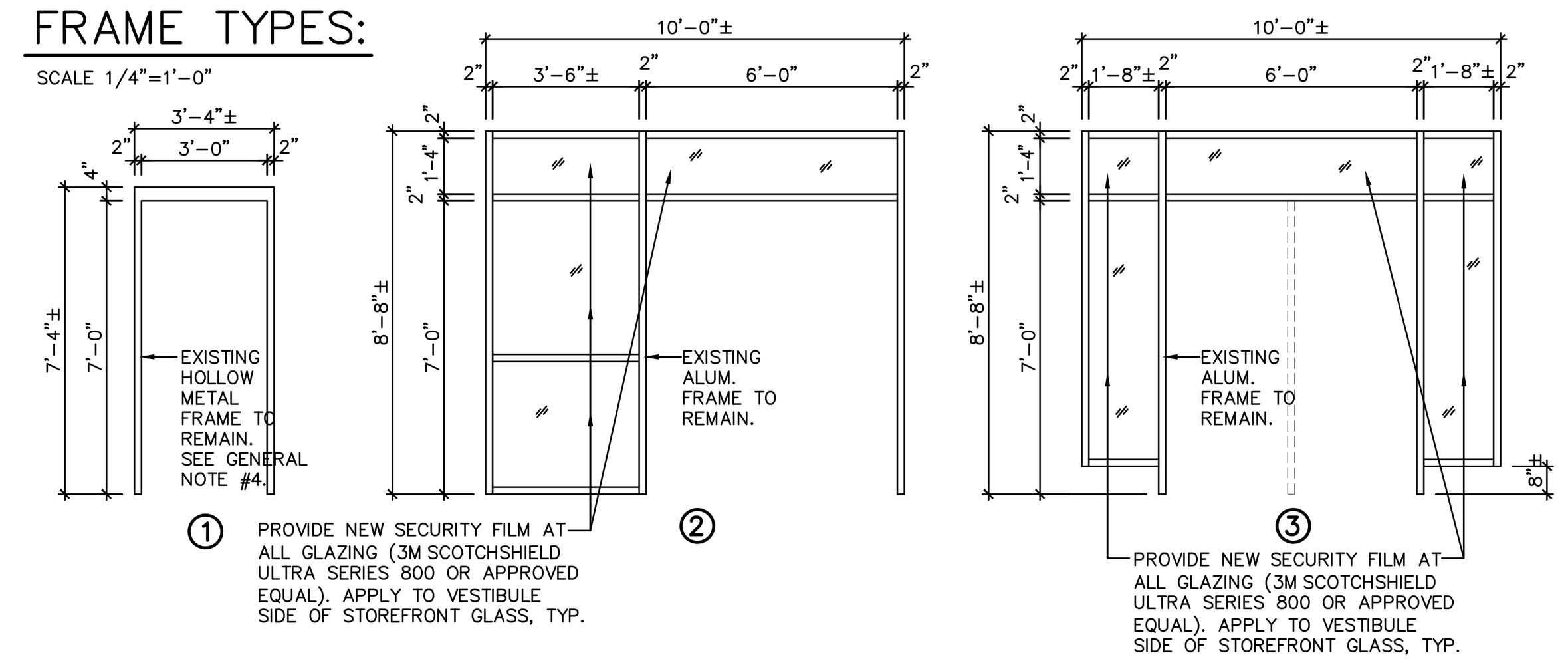
DOOR TYPES:

SCALE 1/4"=1'-0"



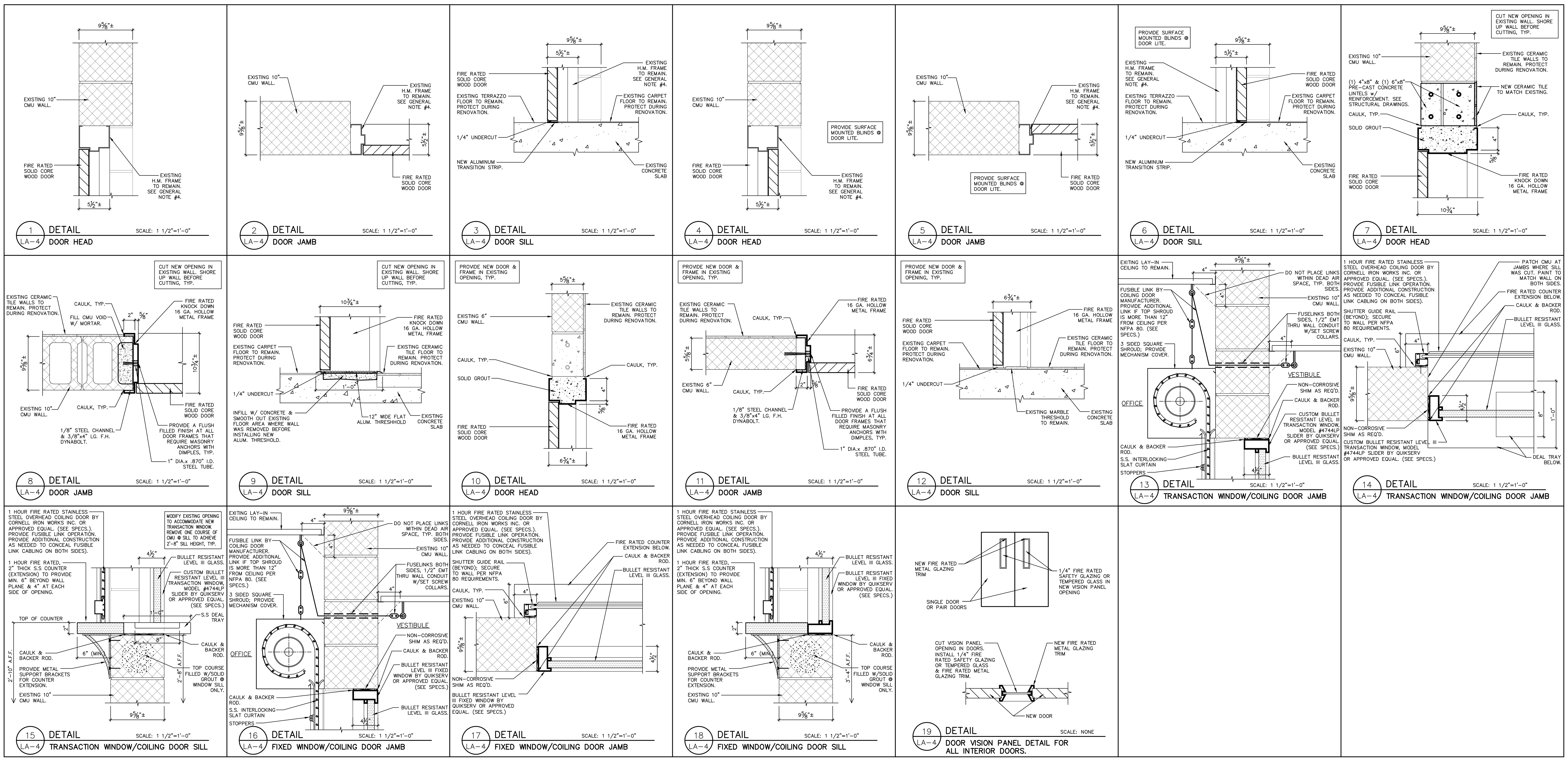
FRAME TYPES:

SCALE 1/4"=1'-0"



GENERAL NOTES:

1. CUT VISION PANEL OPENING INTO NEW DOORS & INSTALL FIRE RATED METAL GLAZING TRIM & FIRE RATED SAFETY GLAZING OR TEMPERED GLASS. TYPICAL FOR ALL DOORS W/ VISION PANEL. SEE DETAIL 19/LA-4.
2. ALL GLAZING OPENINGS ON WOOD DOORS SHALL BE MIN. 5" TO ANY HARDWARE.
3. NEW SOLID CORE WOOD DOORS. FINISH TO BE SELECTED BY OWNER. SEE DOOR SCHEDULE FOR RATING.
4. ALL EXISTING HOLLOW METAL FRAMES THAT ARE TO REMAIN SHALL BE PATCHED (ALL HOLES, STRIKE PLATES & HINGES TO BE FILLED WITH SELF TAPPING STEEL SCREW & GROUND SMOOTH OR WELDED STEEL PLATE) & REPAINTED IN THEIR ENTIRETY, COLOR TO BE SELECTED BY ARCHITECT. CONTRACTOR MUST PROVIDE A FIRE RATING LABEL FOR ALL EXISTING HOLLOW METAL FRAMES THAT REQUIRE A LABEL. CONTACT MIKE THORP AT GUARDIAN FIRE TESTING LABORATORIES (716-628-0538 DIRECT LINE OR 716-835-6880 MAIN OFFICE) OR APPROVED EQUAL. (SEE SCHEDULE FOR RATING) IF THE FRAME DOES NOT MEET THE REQUIRED FIRE RATING THAN IT MUST BE REPLACED.
5. ALL DOOR HARDWARE TO BE A.D.A. COMPLIANT WITH UCC BARRIER FREE CODE IN CONJUNCTION WITH ICC/ANSI A117.1-2009.
6. NEW HOLLOW METAL FRAME. FINISH TO BE SELECTED BY OWNER. SEE DOOR SCHEDULE FOR RATING.
7. ALL DIMENSIONS OR SCALES SHOWN AS PLUS OR MINUS (±) ARE FOR INFORMATIONAL PURPOSES AND SHALL NOT BE TAKEN AS EXACT. CONTRACTOR SHALL FIELD VERIFY ALL OPENINGS.
8. MODIFY OR REFURBISH AND PAINT ADJACENT SURFACES DAMAGED OR DISTURBED DURING RENOVATION. PROVIDE TRIM AS REQUIRED TO COVER SIGNS OF RENOVATION, TYP.
9. EXISTING DOOR CONTACTS SHALL BE DISCONNECTED & THEN REATTACHED TO NEW DOORS.
10. EXISTING CARD READERS & INTERCOM SYSTEMS SHALL BE RE-USED IN NEW DOORS. PROVIDE NEW WIRING AS REQUIRED. SEE HARDWARE SCHEDULE FOR NEW ELECTRIC STRIKES, ETC.



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NEW SECURITY VESTIBULES AND WINDOW REPLACEMENT
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REVISIONS	
a.	e.
b.	f.
c.	g.

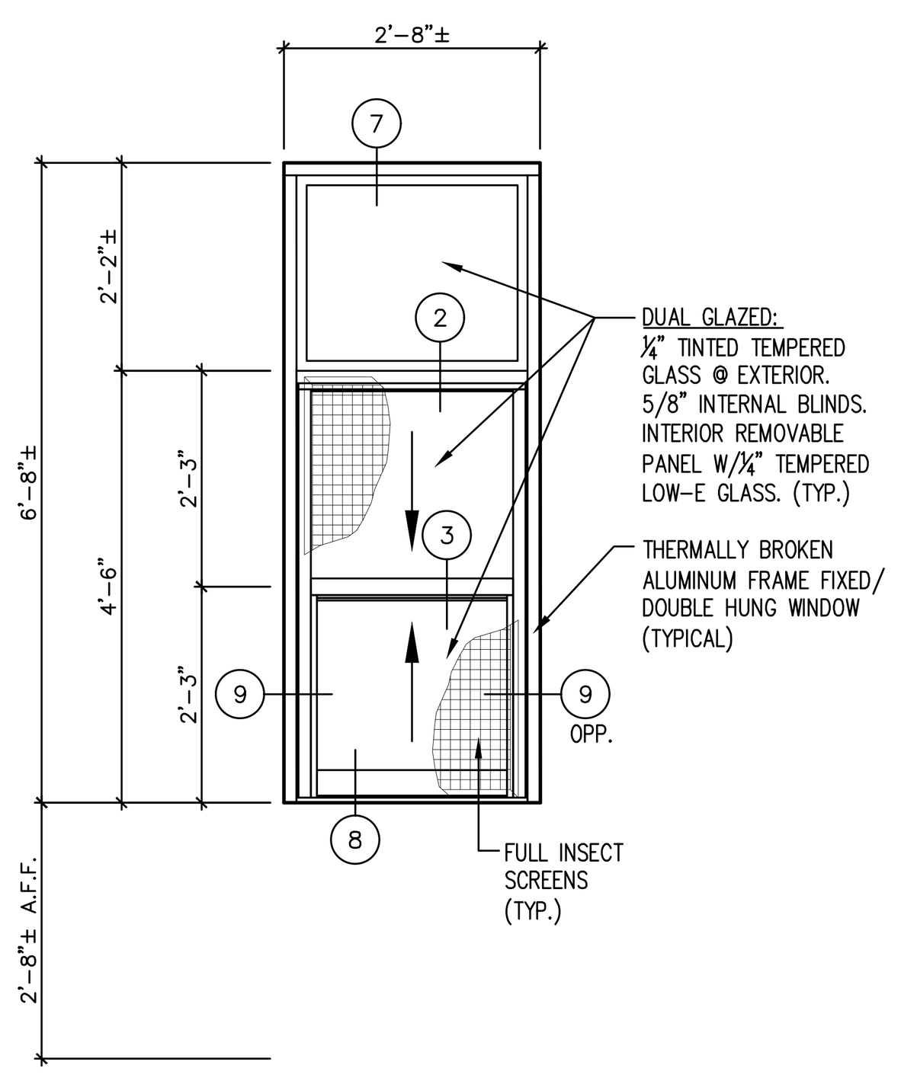
Project No. 19-18L
Date: 05/13/19
Scale: AS NOTED

DOOR SCHEDULE & DETAILS

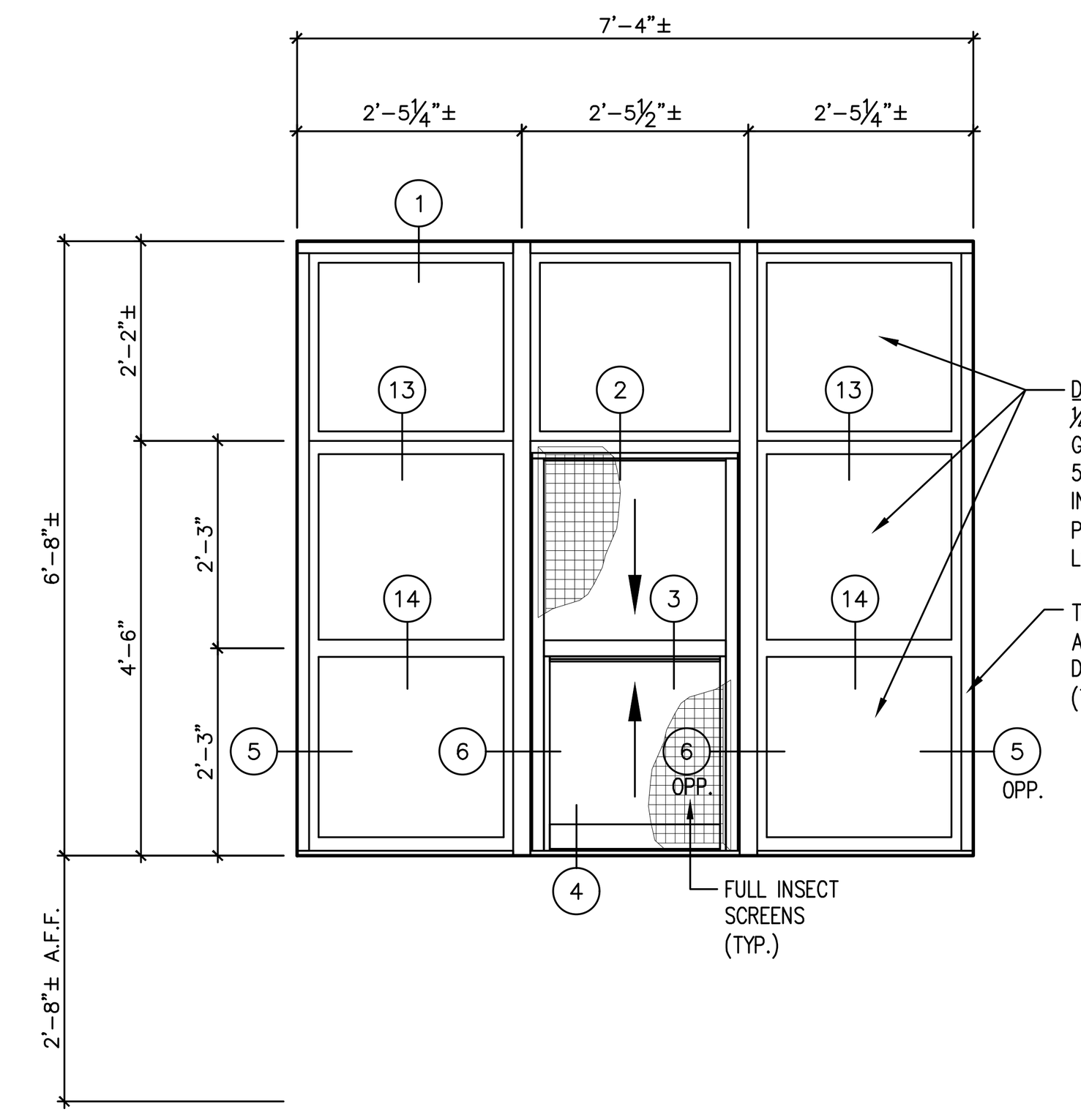
LA-4

EXTERIOR WINDOW TYPES:

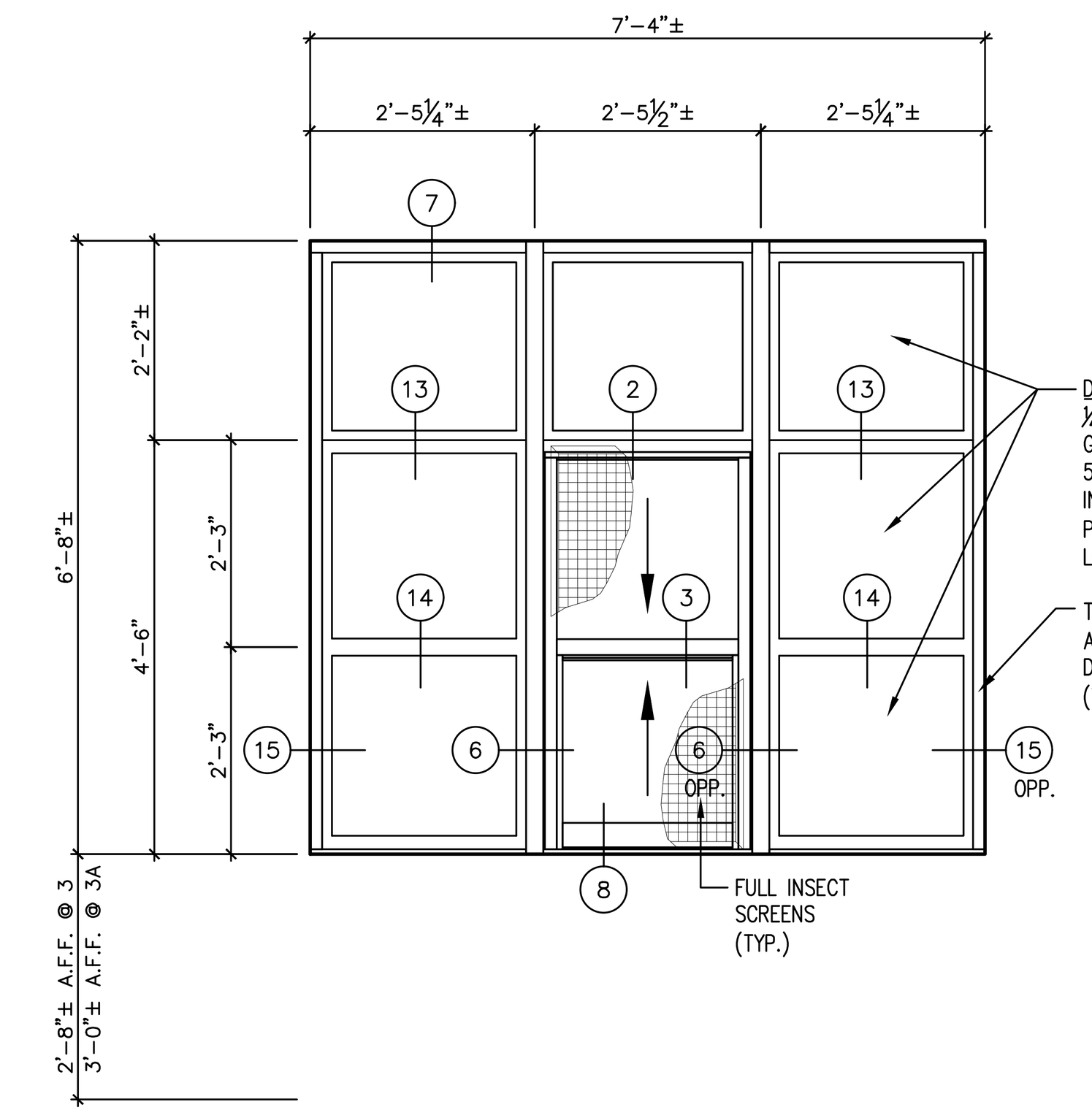
SCALE: 1/2"=1'-0"



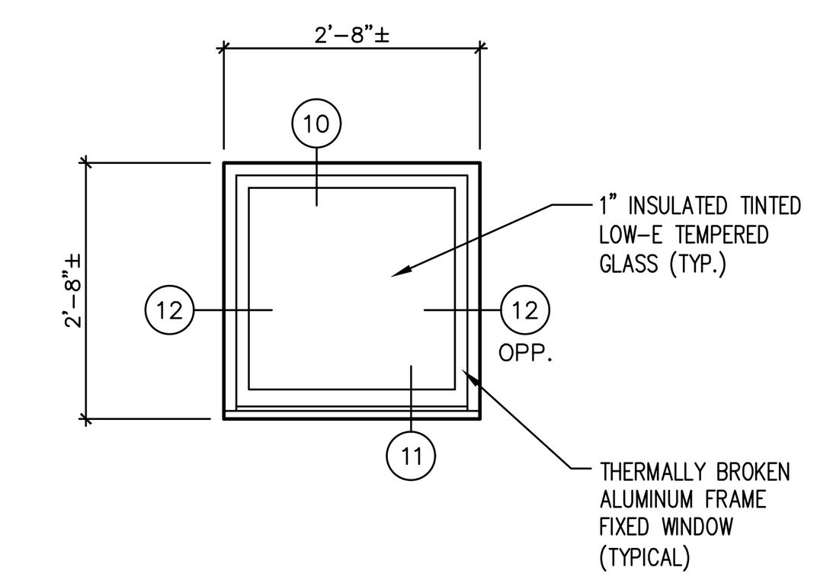
W1 WINDOW TYPE
SCALE: 1/2"=1'-0"
FIXED/DOUBLE HUNG



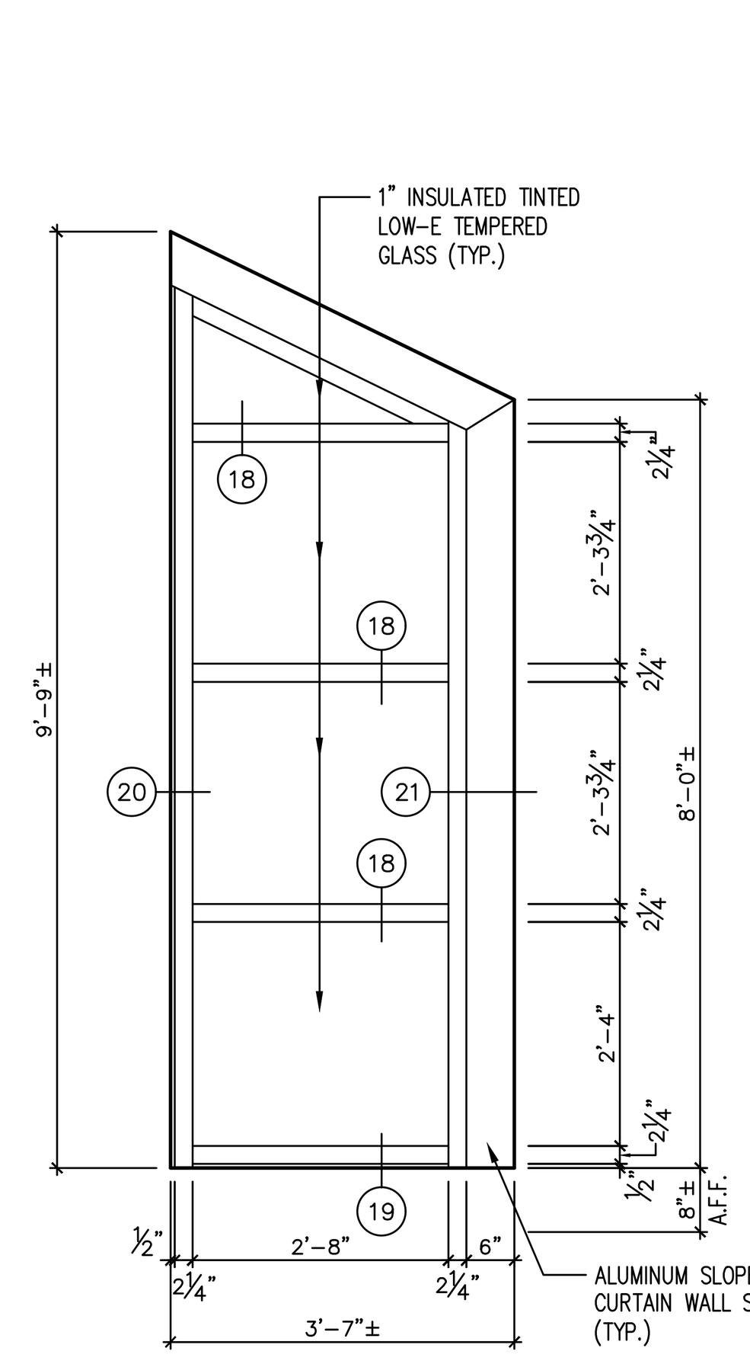
W2 WINDOW TYPE
SCALE: 1/2"=1'-0"
FIXED/DOUBLE HUNG



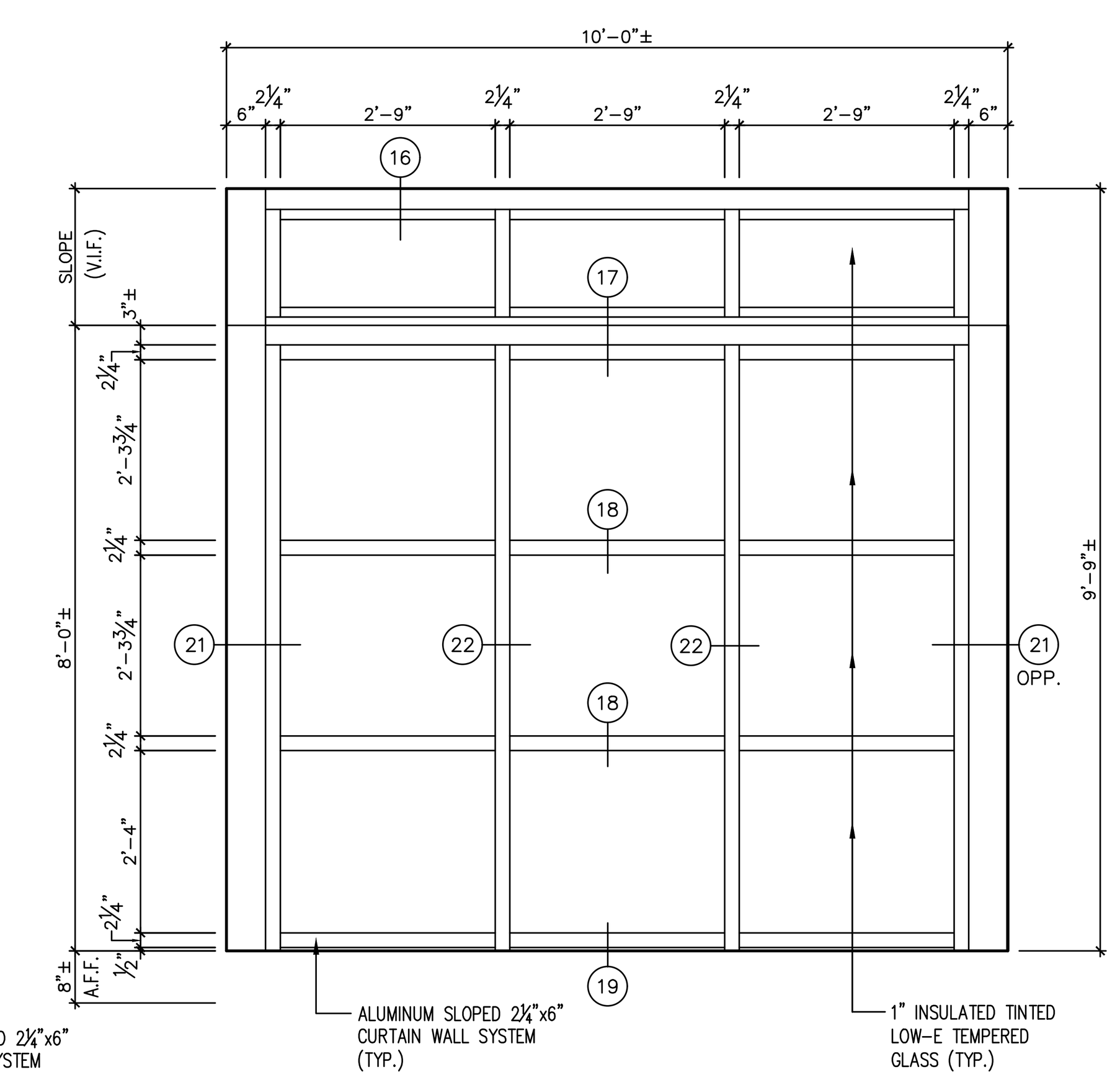
W3 / W3A WINDOW TYPE
SCALE: 1/2"=1'-0"
FIXED/DOUBLE HUNG



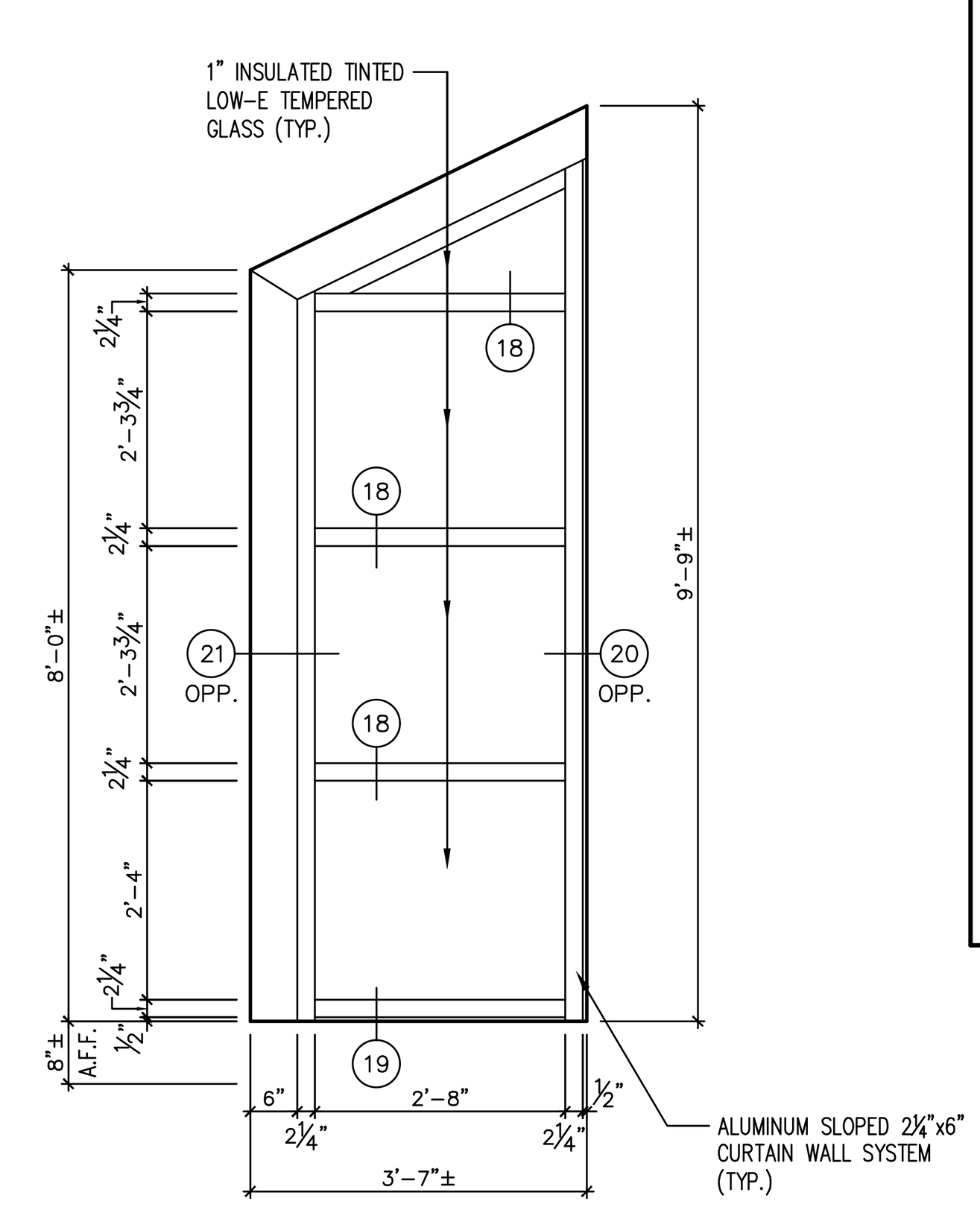
W4 WINDOW TYPE
SCALE: 1/2"=1'-0"
FIXED CLERESTORY @ I.M.C.



CW1A WINDOW TYPE
SCALE: 1/2"=1'-0"
SLOPED CURTAIN WALL SYSTEM



CW1 WINDOW TYPE
SCALE: 1/2"=1'-0"
SLOPED CURTAIN WALL SYSTEM



CW1B WINDOW TYPE
SCALE: 1/2"=1'-0"
SLOPED CURTAIN WALL SYSTEM

GENERAL SCOPE OF WORK:

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING WINDOWS, GLAZING, ASSOCIATED HARDWARE, TRIM AND ACCESSORIES COMPLETELY.
2. INSTALL WINDOWS AND ACCESSORIES AS SPECIFIED AND INDICATED ON CONTRACT DOCUMENTS.
   - A. PROVIDE AND INSTALL ADDITIONAL PRESSURE TREATED WOOD BLOCKING/FRAMING AS REQUIRED TO PROPERLY ANCHOR NEW WINDOW SYSTEM. WHEN ALUMINUM SYSTEMS ARE IN DIRECT CONTACT WITH PRESSURE TREATED WOOD:
     1. USE NON-CORROSIVE SHIMS BETWEEN THE ALUMINUM SYSTEM & THE TREATED WOOD.
     2. USE ONLY STAINLESS STEEL FASTENERS, SEE SPECS.
     3. DO NOT USE CA OR ACQ TREATED LUMBER FOR WOOD BLOCKING.
   - B. PROVIDE AND INSTALL ADDITIONAL TRIM/CLOSURES AS NEEDED TO COVER SIGNS OF RENOVATION.
   - C. MODIFY OR REFURBISH ADJACENT SURFACES DAMAGED OR DISTURBED DURING RENOVATION.
3. EXISTING THROUGH WINDOW MECHANICAL LOUVERS, FANS, DUCTWORK, A.C. UNITS, ETC. SHALL BE DISCONNECTED BY CONTRACTOR AND SALVAGED FOR INSTALLATION THROUGH NEW PANELS, (UNLESS INDICATED OTHERWISE). CONTRACTOR SHALL RE-USE EXISTING A.C. SUPPORT ANGLES (REPAINT). IF SUPPORT ANGLES ARE DAMAGED OR MISSING, CONTRACTOR SHALL PROVIDE NEW ALUM. 1/4" THICK SUPPORT ANGLES. CONTRACTOR MUST VERIFY EXISTING A.C. LOCATIONS & SIZES AND INDICATE ON SHOP DRAWINGS, TYPICAL. ANY EXISTING A.C. UNIT THAT IS NOT USED SHALL BE TURNED OVER TO OWNER.
4. WORK SEQUENCE: WINDOW REPLACEMENT MUST OCCUR ON AN "OPENING BY OPENING" BASIS. WINDOWS AT EACH OPENING MUST BE COMPLETE, INCLUDING TRIM AND SEALANT PRIOR TO REMOVING EXISTING WINDOWS AT THE NEXT OPENING. THE SEQUENCE OF WORK MUST BE INCLUDED IN THE PROJECT SCHEDULE PROPOSED BY THE CONTRACTOR & SUBMITTED TO OWNER & ARCHITECT FOR APPROVAL.
5. ALL CAULKING SHOULD BE SILICONE SEALANT. (SEE SPECIFICATIONS)
6. PROVIDE A LIMIT DEVICE FOR ALL OPERABLE WINDOWS. (COORDINATE WITH OWNER)
7. PROVIDE POLE-RING HARDWARE & POLES AT HIGH WINDOWS.
8. NEW PROJECT IN VENTS MUST OPEN TO FULLEST EXTENT. CONTRACTOR SHALL FIELD VERIFY ANY OBSTRUCTION THAT MAY CAUSE VENTS NOT TO FULLY OPEN & COMPENSATE FOR THE OBSTRUCTION WITH JAMB EXTENDERS. (TYPICAL)
9. IF NEW INTERIOR STOOLS ARE PROVIDED, CONTRACTOR MUST PROVIDE NEW WOOD BLOCKING FOR STOOLS TO BE SET UPON FOR PROPER ANCHORING & INSTALLATION.
10. EXISTING SLATE STOOLS THAT ARE TO REMAIN SHALL BE PROTECTED FROM DAMAGE DUE TO REMOVAL OF EXISTING WINDOWS OR INSTALLATION OF NEW WINDOWS. ANY DAMAGED SLATE STOOLS SHALL BE REPLACED BY THE CONTRACTOR.
11. ALL EXISTING EXPOSED STEEL LINTELS, BEAMS, COLUMNS, ETC. SHALL BE SCRAPED, PRIMED & PAINTED PER SPECIFICATIONS AT BOTH INTERIOR & EXTERIOR OF WINDOW OPENING. IF STEEL LINTELS ARE RUSTED OR DAMAGED BEYOND REPAIR THEN THEY MUST BE REPLACED, TYP.

GENERAL NOTES:

1. WINDOWS SHALL BE DESIGNED TO MEET IBC 2015 CODE REQUIREMENTS FOR WIND LOADS, SEE SPECIFICATIONS. CONTRACTOR TO SUBMIT SIGNED & SEALED, BY N.J. P.E., SHOP DRAWINGS, CALCULATIONS & FASTENING PATTERNS TYP.
2. CONTRACTOR SHALL VISIT THE SITE AND BUILDING TO DETERMINE ACTUAL CONDITIONS AND QUANTITIES OF MATERIALS AND EXISTING ITEMS. NO COMPENSATION WILL BE ALLOWED FOR FAILURE TO DETERMINE ACTUAL FIELD CONDITIONS.
3. CONTRACTOR SHALL VERIFY THE CONDITION OF ALL ITEMS WITHIN WORK AREA, AND NOTIFY OWNER OF ANY DAMAGE OR INOPERABLE ITEMS PRIOR TO COMMENCEMENT OR DEMOLITION AND/OR ALTERATION WORK.
4. ALL NOTES ON DETAILS REFER TO NEW MATERIALS UNLESS NOTED AS EXISTING.
5. CONTRACTOR SHALL REFURBISH OR REPLACE ANY DAMAGED OR DISTURBED ADJACENT SURFACES AT NO ADDITIONAL EXPENSE TO THE OWNER.
6. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH OWNER.
7. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS CREATED BY HIS WORK FROM THE SITE AT CONTRACTOR'S EXPENSE.
8. DIMENSIONS OR SCALES SHOWN AS PLUS OR MINUS (±) ARE FOR INFORMATIONAL PURPOSES AND SHALL NOT BE TAKEN AS EXACT. CONTRACTOR SHALL FIELD VERIFY ALL OPENINGS & QUANTITIES.
9. ALL TOILET ROOMS, LOCKER ROOMS OR PRIVATE AREAS SHALL HAVE OBSCURED GLAZING IN WINDOWS THAT FACE THE EXTERIOR, TYPICAL.
10. PROVIDE NEW REFLECTIVE WINDOW DECALS SHOWING ROOM NUMBERS FROM EXTERIOR OF THE BUILDING. COORDINATE SIZE, TYPE & LOCATION WITH OWNER. TYPICAL FOR ALL WINDOWS.

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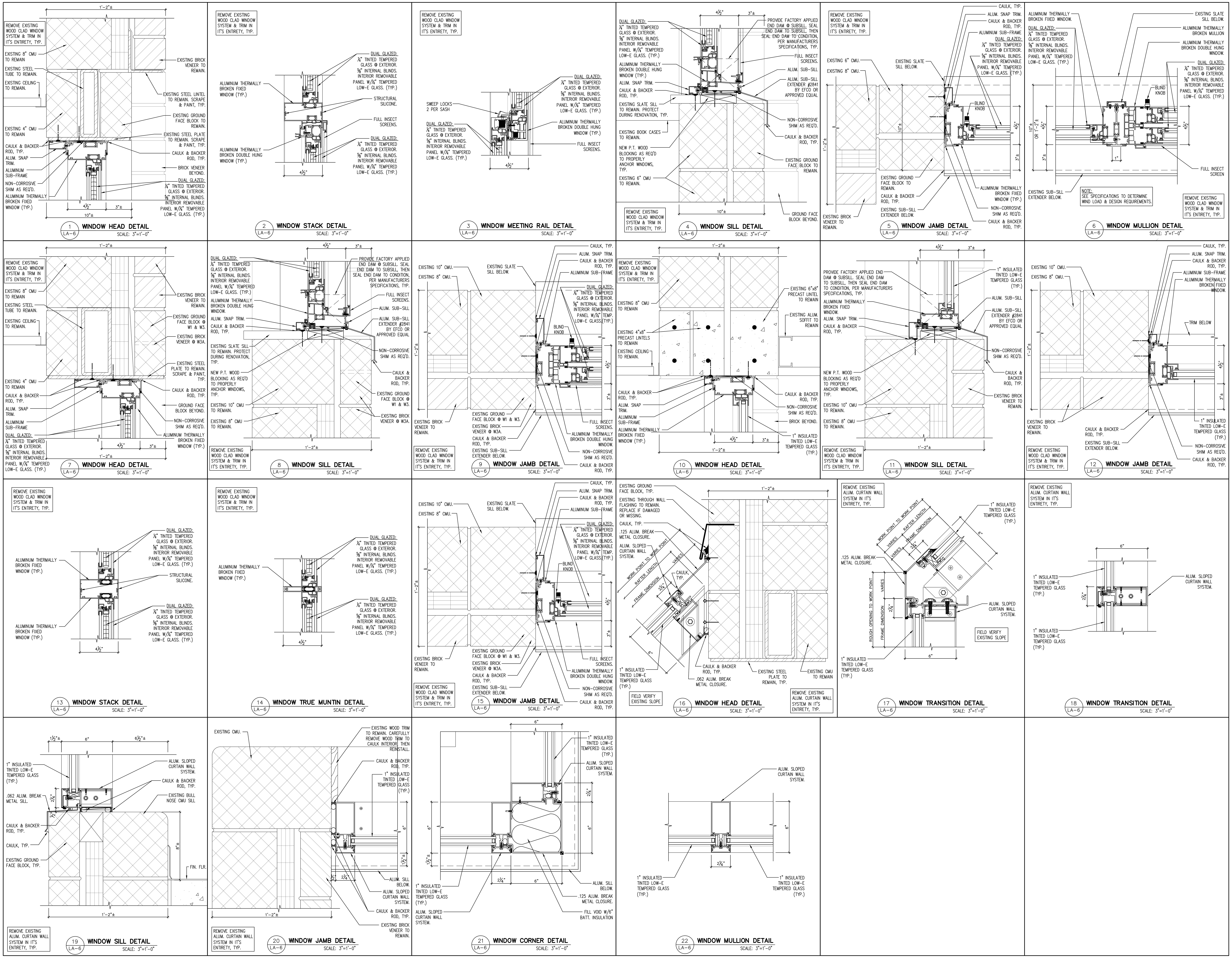
REVISIONS	
a.	e.
b.	f.
c.	g.

Project No. 19-18L
Date: 05/13/19
Scale: AS NOTED

WINDOW TYPES

LA-5

ISSUED FOR BID: 05-13-2019


1 WINDOW HEAD DETAIL LA-6 SCALE: 3"=1'-0"
2 WINDOW STACK DETAIL LA-6 SCALE: 3"=1'-0"
3 WINDOW MEETING RAIL DETAIL LA-6 SCALE: 3"=1'-0"
4 WINDOW SILL DETAIL LA-6 SCALE: 3"=1'-0"
5 WINDOW JAMB DETAIL LA-6 SCALE: 3"=1'-0"
6 WINDOW MULLION DETAIL LA-6 SCALE: 3"=1'-0"
7 WINDOW HEAD DETAIL LA-6 SCALE: 3"=1'-0"
8 WINDOW SILL DETAIL LA-6 SCALE: 3"=1'-0"
9 WINDOW JAMB DETAIL LA-6 SCALE: 3"=1'-0"
10 WINDOW HEAD DETAIL LA-6 SCALE: 3"=1'-0"
11 WINDOW SILL DETAIL LA-6 SCALE: 3"=1'-0"
12 WINDOW JAMB DETAIL LA-6 SCALE: 3"=1'-0"
13 WINDOW STACK DETAIL LA-6 SCALE: 3"=1'-0"
14 WINDOW TRUE MUNTIN DETAIL LA-6 SCALE: 3"=1'-0"
15 WINDOW JAMB DETAIL LA-6 SCALE: 3"=1'-0"
16 WINDOW HEAD DETAIL LA-6 SCALE: 3"=1'-0"
17 WINDOW TRANSITION DETAIL LA-6 SCALE: 3"=1'-0"
18 WINDOW TRANSITION DETAIL LA-6 SCALE: 3"=1'-0"
19 WINDOW SILL DETAIL LA-6 SCALE: 3"=1'-0"
20 WINDOW JAMB DETAIL LA-6 SCALE: 3"=1'-0"
21 WINDOW CORNER DETAIL LA-6 SCALE: 3"=1'-0"
22 WINDOW MULLION DETAIL LA-6 SCALE: 3"=1'-0"

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a.	e.
b.	f.
c.	g.

Project No. 19-18L
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Scale: AS NOTED

WINDOW DETAILS

LA-6

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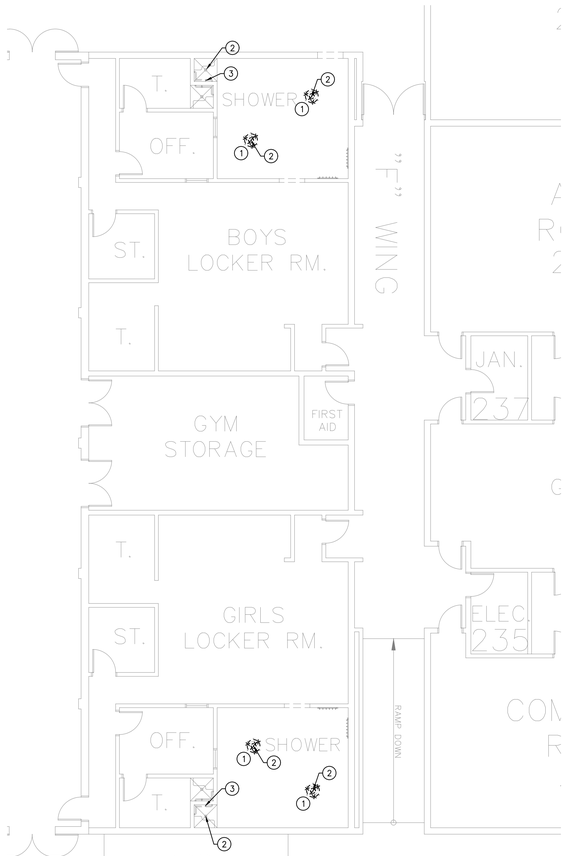
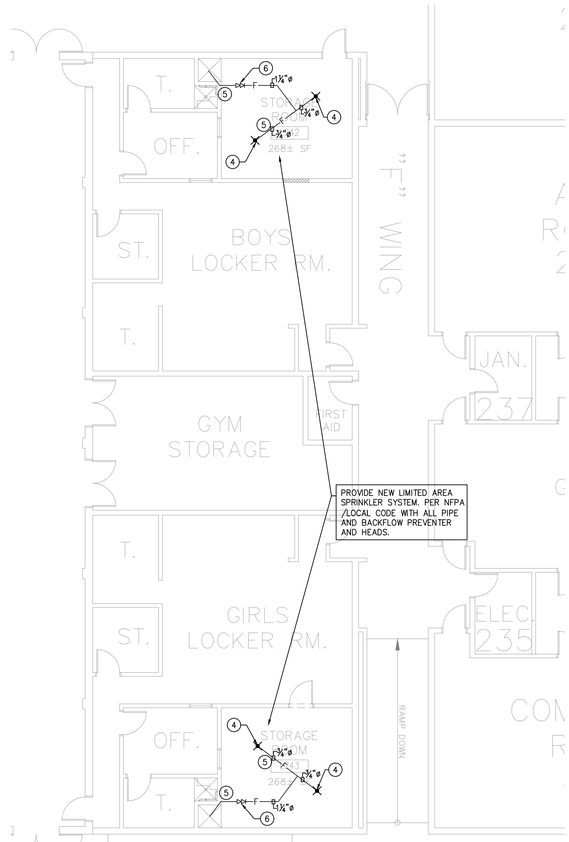


1 LP-1 PARTIAL FIRE PROTECTION AND PLUMBING DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



2 LP-1 PARTIAL FIRE PROTECTION NEW WORK PLAN
SCALE: 1/8" = 1'-0"

PLUMBING LEGEND

3CS	(3) COMPARTMENT SINK
ACD	ACCESS DOOR
AD	AREA DRAIN
BT	BATHTUB
CO	CLEANOUT
DC	DENTAL CHAIR
DN	DOWN
DF	DRINKING FOUNTAIN
DSW	DISHWASHER
DSHWR	DISHWASHER
EWC	ELECTRIC WATER COOLER
FH	FUME HOOD
FPS	FOOD PREP SINK
FS	FLOOR SINK
GS	GREASE INTERCEPTOR
HCLS	HANDICAPPED LAB STATION/SINK
HD	HUB DRAIN
HS	HAND SINK
HTUB	HYDRO THERAPY TUB
HWS	HAIR WASH SINK
IS	INSTRUCTORS TABLE/SINK
LAV	LAVATORY
LS	LAB STATION/SINK
MR	MOP RECEPTOR
MR	MOP RECEPTACLE
MH	MANHOLE
MV	MIXING VALVE
OI	OIL INTERCEPTOR
PEDSK	PEDICURE SINK
PS	PREP ROOM SINK
RWC	RAINWATER CONDUCTOR
SHWR	SHOWER
SI	SAND INTERCEPTOR
STK	STACK
SS	SERVICE SINK
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
V	VENT
VTR	VENT TO ROOF
WC	WATER CLOSET
WS	WASH STATION

A	COMPRESSED AIR
C	COLD WATER
H	DOMESTIC HOT WATER
HR	DOMESTIC HOT WATER RETURN
S	SANITARY SEWER
SD	STORM WATER
V	VENT PIPING
F	FIRE PROTECTION PIPE
VAC	VACUUM PIPE
DCA	DENTAL COMPRESSED AIR
AR	ACID RESISTANT PIPE
ARV	ACID RESISTANT VENT
	SPRINKLER HEAD
	CLEANOUT
	FLOOR DRAIN
	GATE VALVE
	CHECK VALVE
	RELIEF VALVE
	AUTOMATIC THREE-WAY VALVE
	GLOBE VALVE
	PRESSURE REDUCING VALVE
	AUTOMATIC TWO-WAY VALVE
	GAS COCK
	STRAINER
	SIAMESE CONNECTION
	UNION
	THERMOMETER
	PRESSURE GAUGE W/GAUGE COCK
WH(HB)	WALL HYDRANT (HOSE BIBB)
	NEW CONNECTION TO EXISTING
	POINT OF DEMOLITION
SA	SHOCK ABSORBER
	BALANCING VALVE

FIRE PROTECTION NOTES

1 REMOVE EXISTING SHOWER POLE AND CAP WATER SUPPLY PIPE AS REQUIRED.

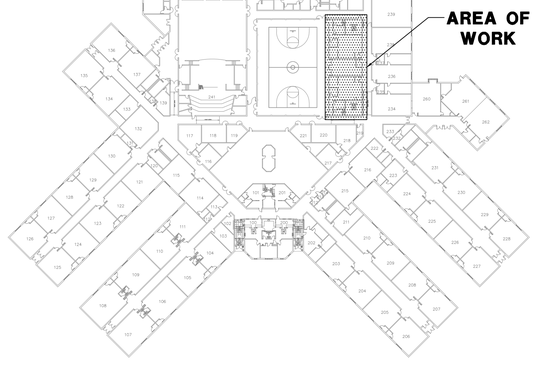
2 CAP OFF EXISTING FLOOR DRAIN.

3 EXISTING HOT WATER SUPPLY LINE TO BE CAPPED OFF. EXTEND EXISTING COLD WATER LINE TO NEW FIRE PROTECTION LINE. VERIFY EXACT LOCATION IN FIELD.

4 NEW SPRINKLER HEAD.

5 NEW FIRE PROTECTION LINE VERIFY LOCATION IN FIELD.

6 CONNECT NEW 1¼"ø TO EXISTING WITH VALVE. (VALVE NOT REQUIRED TO BE SUPERVISED BUT SHALL BE LOCKED TO OPEN POSITION AND HANDLE REMOVED)



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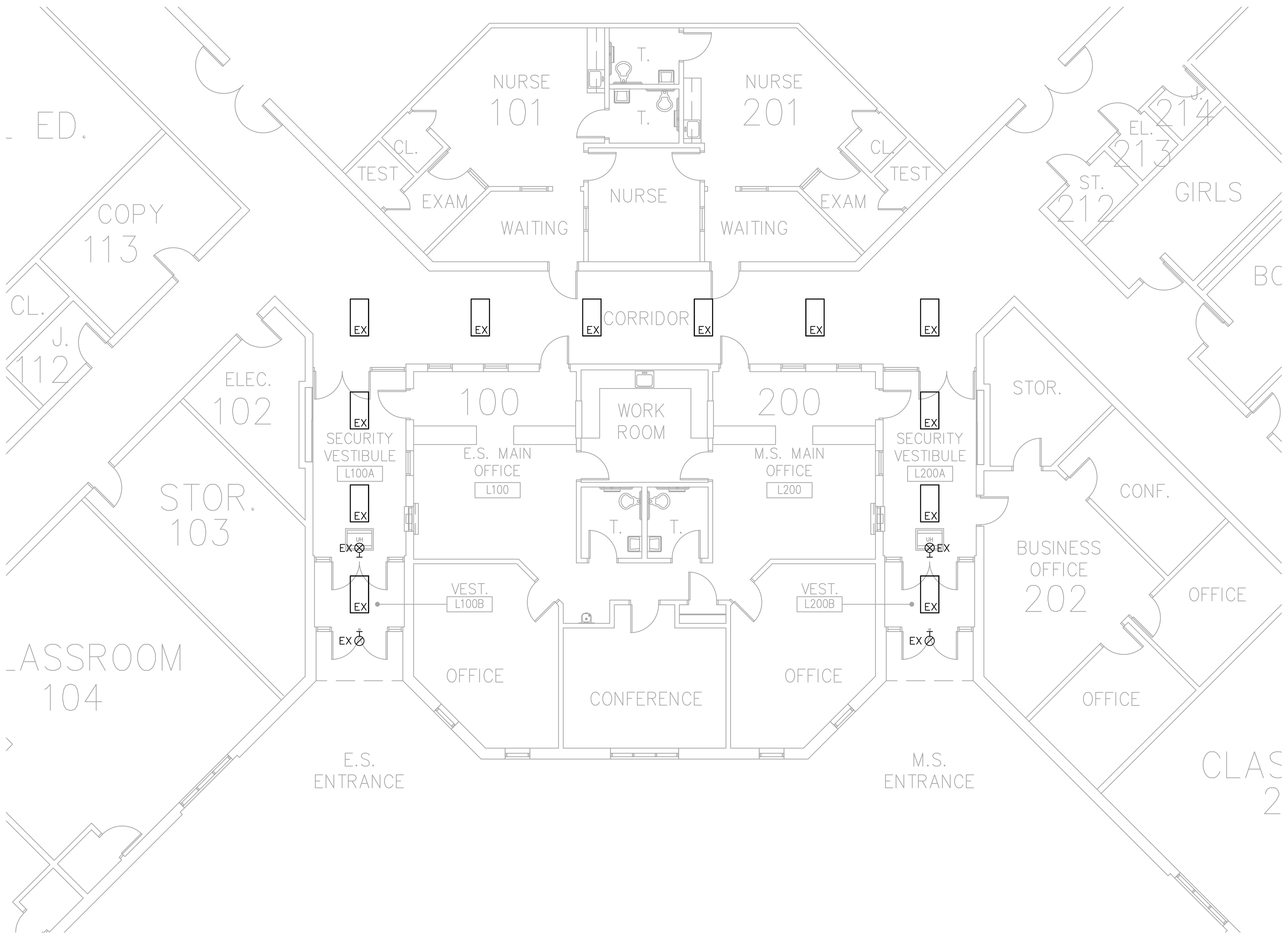
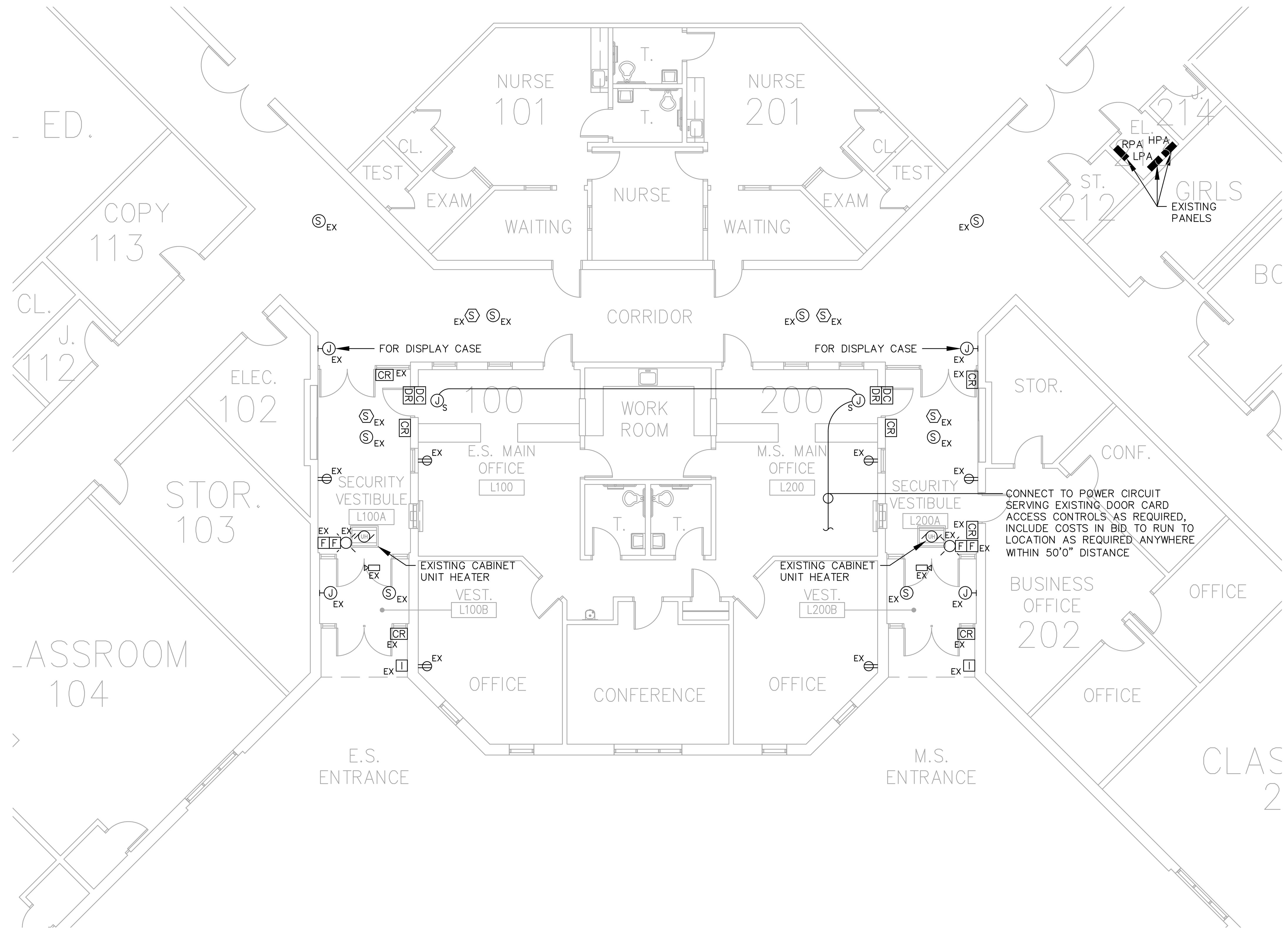
PLUMBING/FIRE PROTECTION DEMOLITION/ NEW WORK PLAN

LP-1



1 PARTIAL LIGHTING PLAN
LE1
GRAPHIC SCALE (FEET)



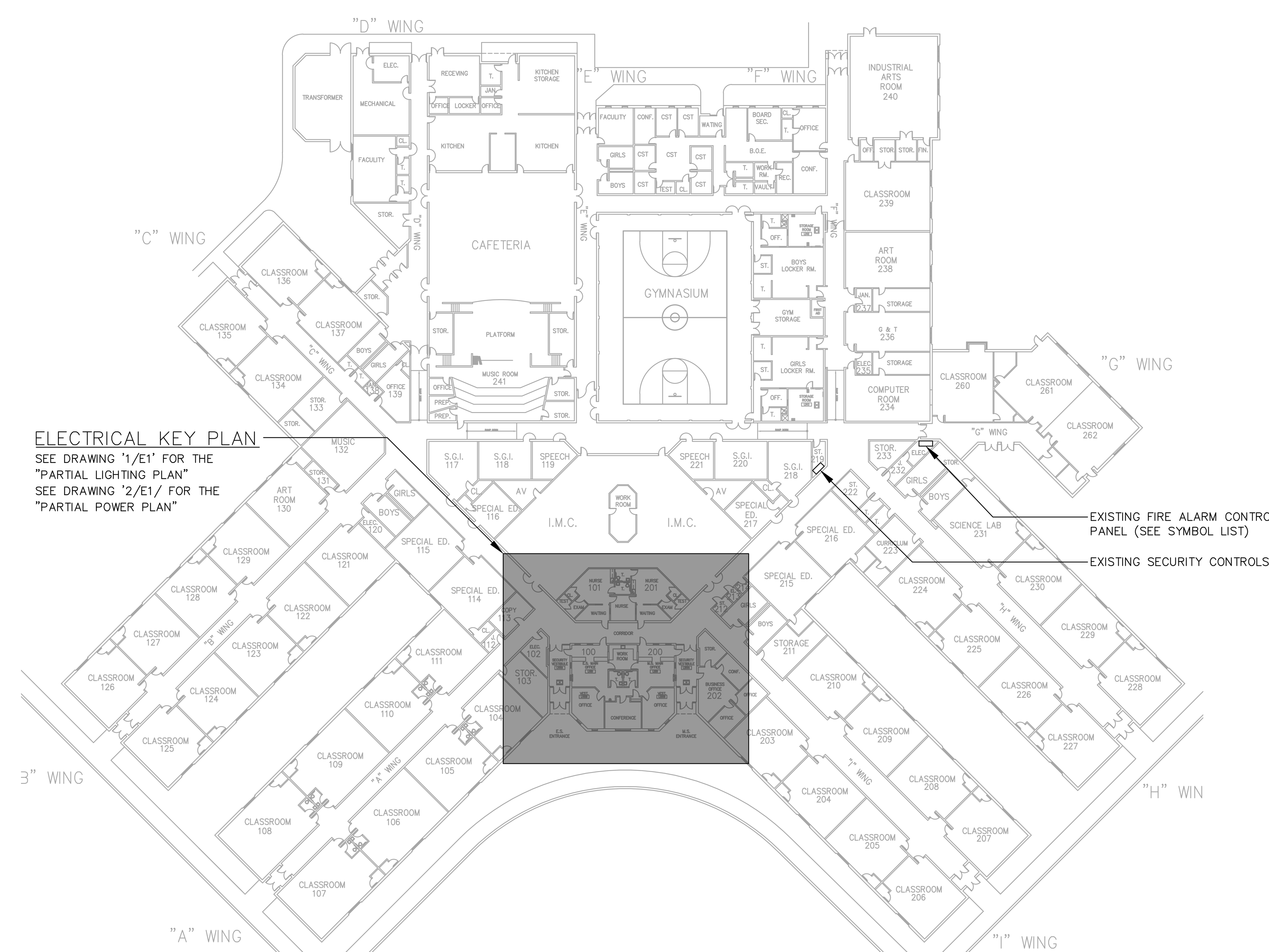
2 PARTIAL POWER PLAN
LE1
GRAPHIC SCALE (FEET)

LUMINAIRE SCHEDULE					
TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	ILLUMINATION/ LAMPS	REMARKS
EXIT	EXIT SIGN, RED LETTERS ON WHITE FACE AND HOUSING	EMERGI-LITE	WW PDN * R	INTEGRAL DIFFUSED LED	INTEGRAL NiCd BATTERY BACKUP, DIE CAST ALUMINUM HOUSING, CONNECT TO NEARBY LIGHTING CIRCUIT, UNIVERSAL MOUNTING (COORDINATE MOUNTING WITH ARCHITECT), QUANTITY OF FACES AS REQUIRED, PROVIDE DIRECTIONAL ARROWS WHERE SHOWN ON DRAWINGS

NOTES:

1) PROVIDE ALL LUMINAIRES AS UNIVERSAL 120 V AND 277 V OPERATION, UNLESS INDICATED OTHERWISE.
2) VERIFY ALL DEPTHS OF RECESSED LUMINAIRES PRIOR TO ORDERING, COORDINATE WITH CEILING DEPTHS.
3) WHERE LUMINAIRES ARE SPECIFIED OR OTHERWISE FURNISHED WITH TAMPER RESISTANT HARDWARE, SEE SPECIFICATIONS.
4) PROVIDE ALL LIGHT EMITTING DIODE (LED) AND FLUORESCENT LUMINAIRES WITH UNIVERSAL VOLTAGE (120-277 V) SOLID STATE ELECTRONIC DRIVERS/BALLASTS, UNLESS INDICATED OTHERWISE. PROVIDE ALL LINEAR FLUORESCENT LUMINAIRES WITH T8 ENERGY SAVING LAMPS, UNLESS INDICATED OTHERWISE.
5) FOR ALL LED AND FLUORESCENT LUMINAIRES SHOWN ON THIS SCHEDULE WITH 0-10 V DIMMABLE DRIVERS/BALLASTS (WHEREVER 0-10 V DIMMING IS INDICATED IN THE DESCRIPTION, LAMPS, OR REMARKS ABOVE OR WHERE A CATALOG NUMBER IS USED ABOVE WHICH DENOTES 0-10 V DIMMABLE DRIVERS/BALLASTS IN MANUFACTURER'S DATA), PROVIDE BOTH POWER WIRING AND 0-10 V CONTROL WIRING TO ALL LUMINAIRES. RUN CONTROL WIRING AS REQUIRED FROM ALL LIGHTS WITH 0-10 V DIMMABLE DRIVERS/BALLASTS TO THE RESPECTIVE DIMMER OR SWITCH CONTROLLING THE LIGHTING. WHERE DIMMERS ARE SHOWN ON THE DRAWINGS (INCLUDING COMBINATION SENSORS/DIMMERS), INTERCONNECT CONTROL WIRING WITH DIMMERS AS PER MANUFACTURER. WHERE DIMMERS ARE NOT SHOWN ON THE DRAWINGS, INSTALL CONTROL WIRING TO THE SWITCH (NON-DIMMED) LOCATION AND SAFELY INSULATE AND CAP OFF CONTROL WIRING AS REQUIRED (TO FACILITATE FUTURE REPLACEMENT OF NON-DIMMED SWITCH WITH DIMMER).
6) FOR ALL LUMINAIRES SHOWN ON THIS SCHEDULE AS DLC LISTED, PROVIDE ONLY LUMINAIRES QUALIFIED AND LISTED IN THE DESIGN LIGHTS CONSORTIUM (DLC) QUALIFIED PRODUCTS LISTING (QPL) AVAILABLE AT THE DLC WEBSITE (SEE BELOW). SUBMIT INFORMATION SHOWING LISTING IN THE DLC QLP AS PART OF SHOP DRAWINGS FOR REVIEW AND APPROVAL. HTTP://WWW.DESIGNLIGHTS.ORG/SEARCH/
7) PROVIDE ALL HIGH INTENSITY DISCHARGE LUMINAIRES WITH MULTIPLE TAP TYPE BALLASTS.
8) MANUFACTURERS SHOWN ABOVE INDICATE THE BASIS OF DESIGN. OTHER MANUFACTURERS (INCLUDING, BUT NOT LIMITED, TO THOSE SHOWN IN THE LIGHTING SPECIFICATIONS) SHALL BE CONSIDERED.

ELECTRICAL KEY PLAN
SEE DRAWING '1/E1' FOR THE "PARTIAL LIGHTING PLAN"
SEE DRAWING '2/E1' FOR THE "PARTIAL POWER PLAN"



ELECTRICAL KEY PLAN
SCALE: 1" = 40'

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ELECTRICAL PLAN

LE1

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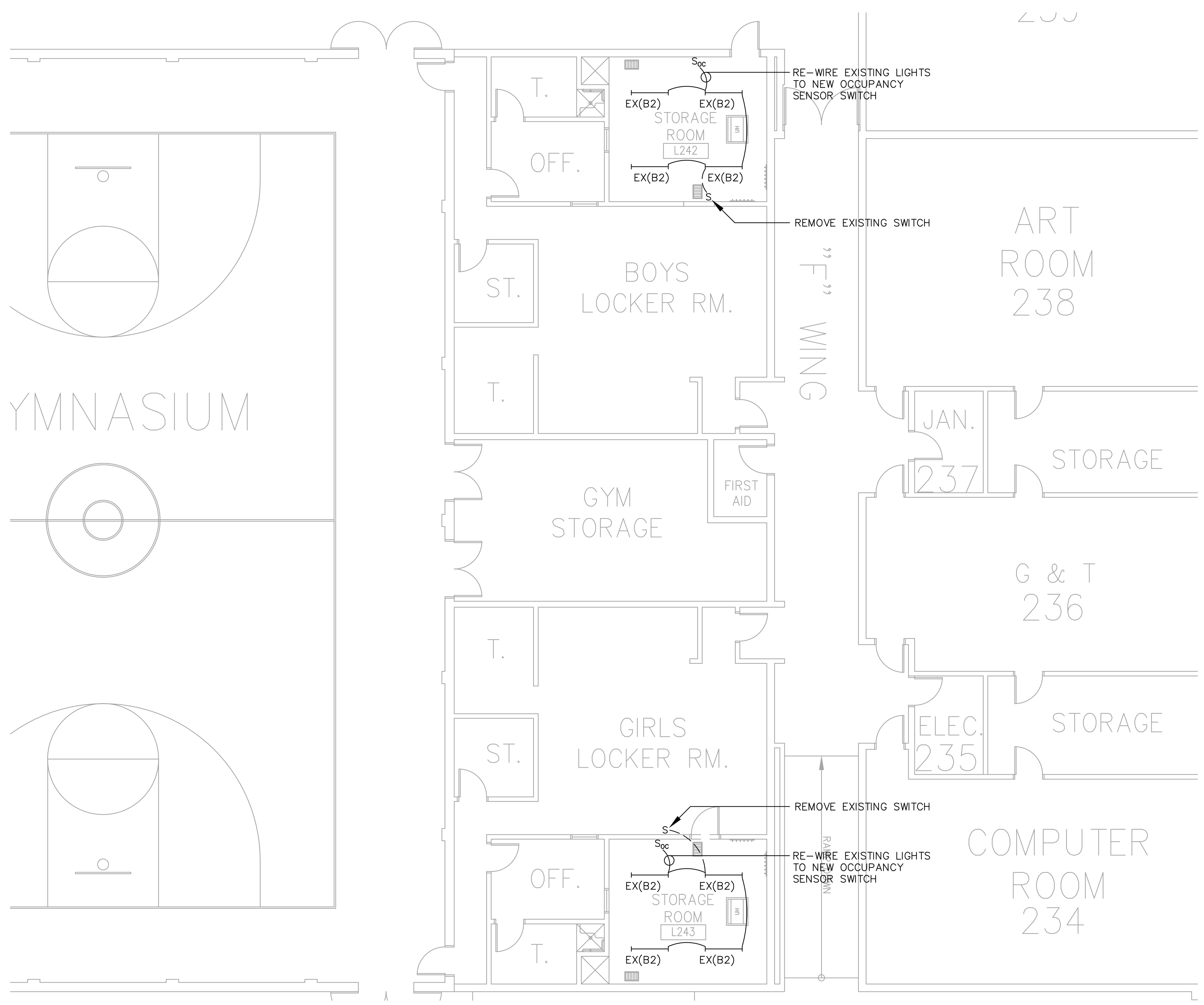
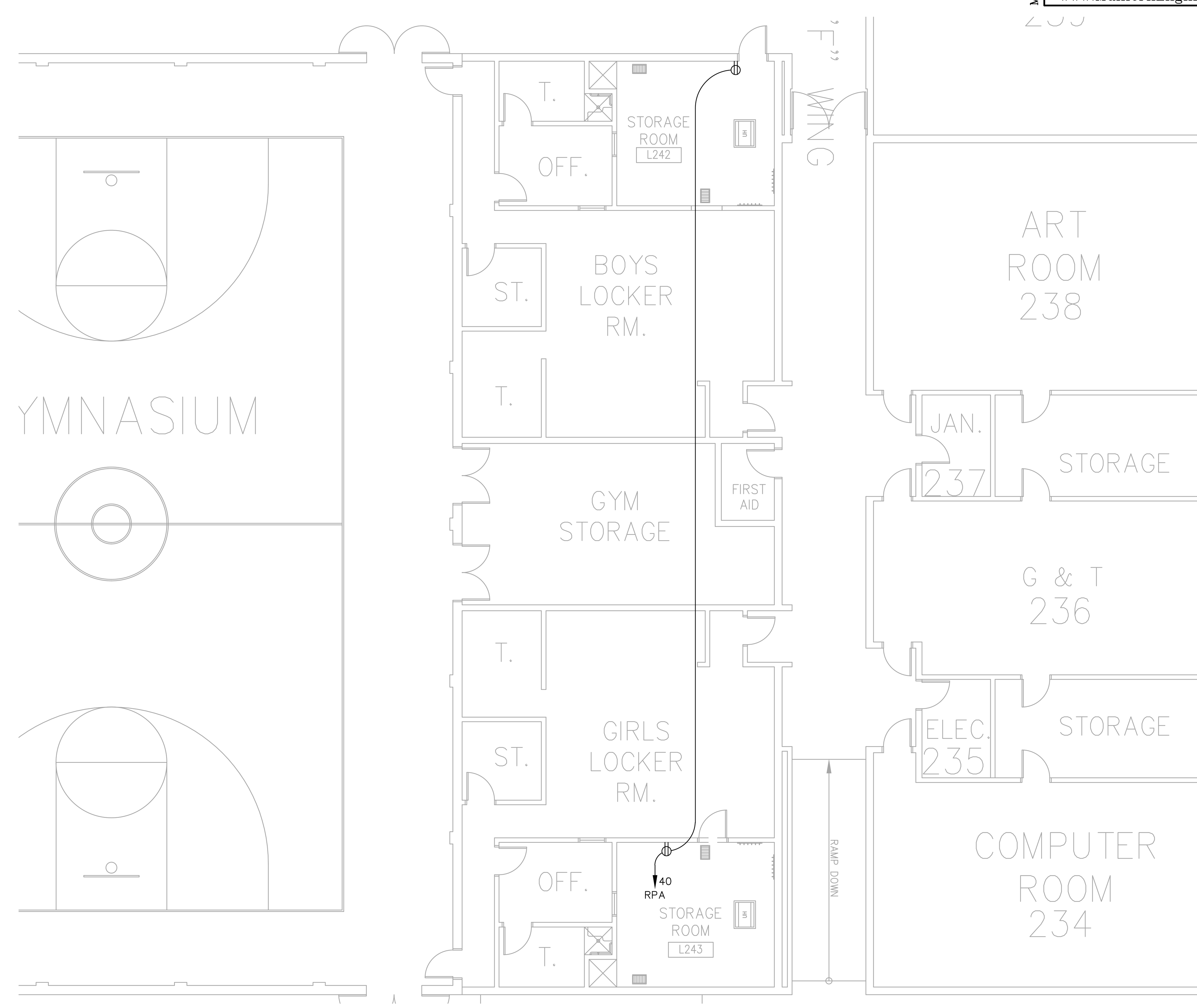


1 LE2 PARTIAL LIGHTING PLAN

GRAPHIC SCALE (FEET)



2 LE2 PARTIAL POWER PLAN

GRAPHIC SCALE (FEET)

EQUIPMENT CONNECTION NOTES

1) EXACT DETAILS OF EQUIPMENT CONNECTIONS ARE NOT INDICATED ON THE ELECTRICAL FLOOR PLAN DRAWINGS. EQUIPMENT CONNECTIONS DETAILS ARE INDICATED ON THE EQUIPMENT CONNECTION SCHEDULES ON THE ELECTRICAL DRAWINGS. APPROXIMATE EQUIPMENT LOCATIONS ONLY ARE INDICATED ON THE FLOOR PLAN DRAWINGS.

2) THE EQUIPMENT SCHEDULES INDICATE THE EQUIPMENT NAMEPLATE ELECTRICAL CHARACTERISTICS (VOLTAGE, PHASE, AND LOAD AS WELL AS HORSEPOWER, WHERE APPLICABLE), PANEL CIRCUIT BREAKER AMPERES, LOCAL DISCONNECTING MEANS (CORD-AND-PLUG [INCLUDING NEMA CONFIGURATION] OR SWITCH), AND CIRCUIT WIRE AND CONDUIT.

3) PRIOR TO ROUGH-IN, VERIFY EXACT POINT OF ELECTRICAL CONNECTION TO EACH PIECE OF EQUIPMENT IN THE FIELD TO AVOID PLACING SERVICE AT THE WRONG LOCATION.

4) ELECTRICAL INFORMATION SHOWN IS BASED ON NAMEPLATE AND/OR CATALOG CUT INFORMATION, AND IS ACCURATE TO THE BEST OF THE KNOWLEDGE OF THE ENGINEER AND OWNER. HOWEVER, NO GUARANTEES ARE MADE TO ITS ACCURACY. VERIFY EXACT ELECTRICAL, OPERATING, AND CONNECTION CHARACTERISTICS AND REQUIREMENTS IN THE FIELD PRIOR TO PURCHASING ASSOCIATED ELECTRICAL EQUIPMENT (PANEL BRANCH CIRCUIT BREAKERS, RECEPTACLES, SWITCHES, ETC.) AND PRIOR TO PULLING WIRING IN CONDUITS AND/OR ROUGHING-IN CABLE WIRING METHODS (WHERE PERMITTED).

5) PROVIDE CIRCUIT BREAKERS IN PANELS AS PER THE BREAKER AMPS ON THE EQUIPMENT SCHEDULES. FOR EXACT CIRCUITING AND CONNECTIONS AT PANELS, REFER TO THE APPROPRIATE PANEL SCHEDULES.

6) PROVIDE ALL EQUIPMENT WITH A LOCAL DISCONNECTING MEANS, CONSISTING OF ONE OF THE FOLLOWING, AS INDICATED ON THE EQUIPMENT SCHEDULE (OR AS OTHERWISE VERIFIED IN THE FIELD).

   A) CORD-AND-PLUG CONNECTED EQUIPMENT: PROVIDE RECEPTACLE OF NEMA CONFIGURATION OR SPECIFIC TYPE INDICATED ON THE EQUIPMENT SCHEDULE. PROVIDE SINGLE RECEPTACLES UNLESS INDICATED AS DUPLEX (DUP.), QUADRUPLEX (QUAD.), OR OTHERWISE NOTED. PROVIDE RECEPTACLE TYPES COMPATIBLE WITH PLUG TYPES ON EQUIPMENT CORDS, VERIFY IN FIELD. LOCATE RECEPTACLE NEAR EQUIPMENT AS REQUIRED. WHERE EQUIPMENT CORD IS NOT LONG ENOUGH TO REACH RECEPTACLE (OR WHERE EQUIPMENT DOES NOT INCLUDE CORD), PROVIDE A NEW CORD AND PLUG (TO MATCH EXISTING) AS REQUIRED. PROVIDE MAXIMUM CORD LENGTH NOT EXCEEDING 1.8 m (6'0").

   B) THERMAL OVERLOAD SWITCH (O/L SWITCH, MANUAL MOTOR STARTER): FOR ALL DIRECT CONNECTED (WITHOUT CORD AND PLUG) EQUIPMENT RATED 120 V OR 277 V AND 20 A OR LESS, PROVIDE A HORSEPOWER RATED THERMAL OVERLOAD SWITCH LOCATED AT OR ADJACENT TO THE EQUIPMENT. WHERE EQUIPMENT IS NOT POWERED OR IS POWER OPERATED BY SOURCES OTHER THAN ELECTRICITY (I.E. PNEUMATIC OPERATION, GAS FIRED, ETC.) AND WHERE ELECTRICITY IS REQUIRED ONLY FOR LOW VOLTAGE OR SOLID STATE CONTROLS, A SINGLE POLE 120/277 V SWITCH MAY BE UTILIZED.

   C) DISCONNECT SWITCH: FOR ALL DIRECT CONNECTED EQUIPMENT OVER 120 V (EXCEPT 277 V SINGLE-PHASE EQUIPMENT) OR OVER 20 A, PROVIDE A SUITABLE HEAVY DUTY SAFETY SWITCH. PROVIDE AMPERE RATING AND POLES AS PER THE EQUIPMENT SCHEDULES. PROVIDE SWITCHES OF THE UN-FUSED TYPE, EXCEPT WHERE FUSE SIZES (AFU) ARE INDICATED ON THE SCHEDULE. PROVIDE FUSED DISCONNECT SWITCHES WITH FUSES WHERE INDICATED ON THE SCHEDULE. WHERE INDICATED AS (ECB), PROVIDE AN ENCLOSED CIRCUIT BREAKER WITH TRIP RATING AS SHOWN.

   D) HARD WIRED DIRECT CONNECTION (J-BOX ONLY): FOR ALL DIRECT CONNECTED EQUIPMENT WHERE A DISCONNECTING MEANS IS NOT REQUIRED BY CODE AND NOT DESIRED BY THE OWNER FOR THE EQUIPMENT SERVED, PROVIDE A DIRECT HARD WIRED CONNECTION UTILIZING A SUITABLE JUNCTION OR OUTLET BOX. WHERE EQUIPMENT ENCLOSURE IS SUITABLE FOR USE AS A RACEWAY OR WIRE WAY, THE JUNCTION OR OUTLET BOX MAY BE OMITTED.

7) PROVIDE CIRCUIT WIRING AND CONDUIT FROM THE APPROPRIATE PANEL (REFER TO PANEL SCHEDULES) TO THE EQUIPMENT (PASSING THROUGH ANY APPLICABLE CONTROLS AND LOCAL DISCONNECTING MEANS) AS PER THE EQUIPMENT SCHEDULES. PROVIDE INDIVIDUAL NEUTRAL (WHERE APPLICABLE) AND EQUIPMENT GROUNDING CONDUCTORS WITH EACH CIRCUIT.

8) FEED FREE STANDING EQUIPMENT UNABLE TO BE SERVED BY WIRING RUN ON/ALONG WALLS OR COLUMNS WITH CONDUIT FROM THE CEILING OR UNDER THE FLOOR, SUITABLY SUPPORTED.

PANEL -	RPA (EXISTING)	VOLTAGE -	120/ 208
FOR -	GENERAL POWER	PHASE -	3 PH-4W
LOCATION -	#213 ELEC. ROOM (LOGAN)	MAIN -	100 A MCB
A.I.C. -	10,000 A	MOUNTING-	SURFACE

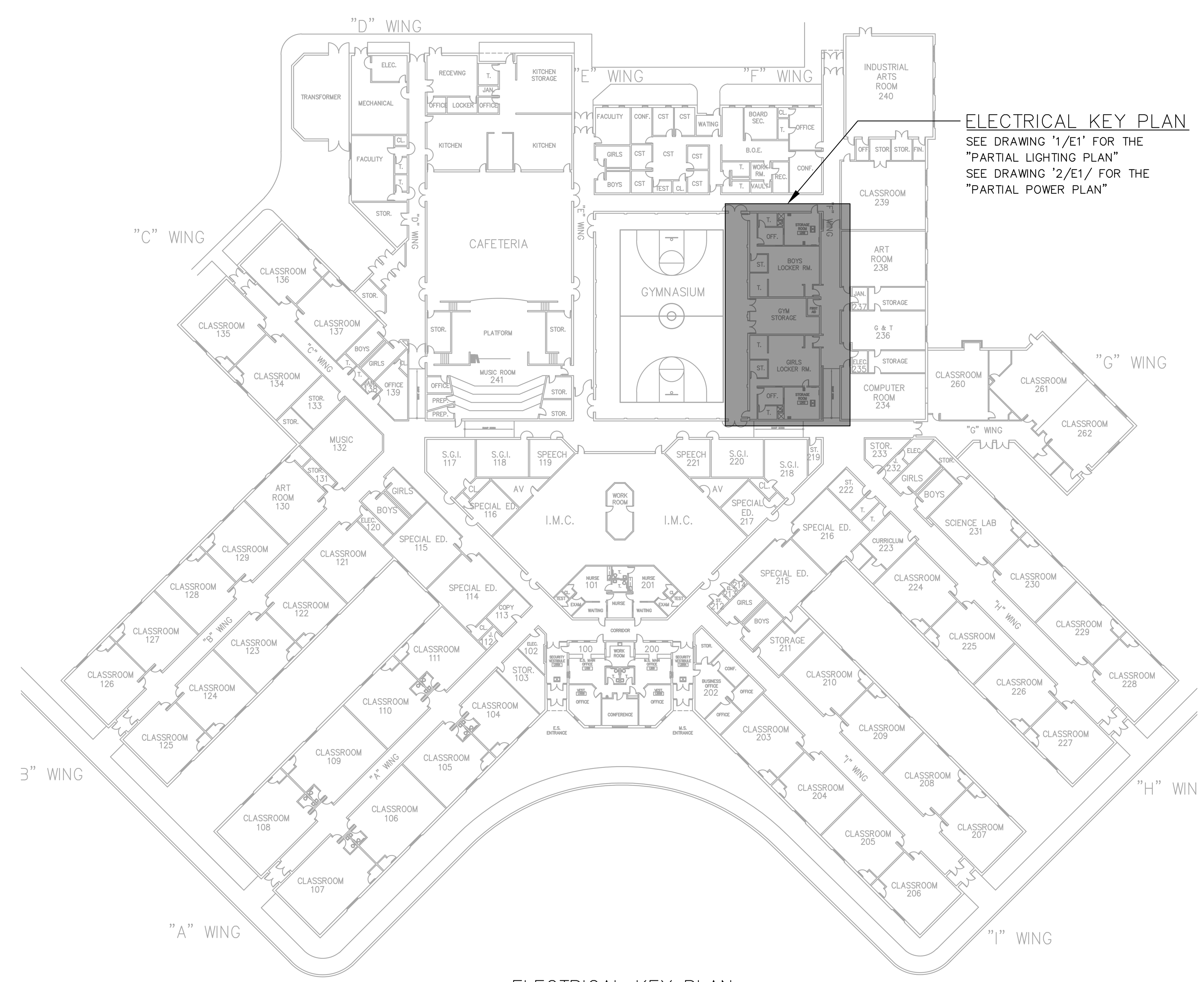
DESCRIPTION	LTG. VA	EQUIP. VA	HVAC VA	BKR. AMPS		BUS CONNECTION			BKR. AMPS		HVAC VA	EQUIP. VA	LTG. VA	DESCRIPTION
(EX) EXISTING CIRCUIT				20	1	1	A	2	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	3	B	4	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	5	C	6	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	7	A	8	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	9	B	10	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	11	C	12	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	13	A	14	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	15	B	16	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	17	C	18	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	19	A	20	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	21	B	22	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	23	C	24	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	25	A	26	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	27	B	28	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	29	C	30	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	31	A	32	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	33	B	34	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	35	C	36	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	37	A	38	20	1				(EX) EXISTING CIRCUIT
(EX) EXISTING CIRCUIT				20	1	39	B	40						SPACE
NEW STORAGE ROOMS RECEP. *		400		20*	1	41	C	42						SPACE
TOTALS	0	400	0								0	0	0	TOTALS

LOAD DESCRIPTION (CONNECTED/DEMAND)	CONN. VA	DMD. VA
LIGHTING	0	0
GENERAL POWER	400	200
HVAC EQUIPMENT	0	0
TOTAL	400	200
PERCENT LOADED	1%	1%

PANEL SCHEDULE
MULHERN CONSULTING ENGINEERS
AND ASSOCIATES, INC.
321 SOUTH YORK ROAD
HATBORO, PENNSYLVANIA 19040-3417
PHONE: 215-293-9900/FX: 215-441-5984
www.MulhernEngineers.com

PHASE BALANCE VA	
A	0
B	0
C	400
TOTAL	400
SD (σ)	189

NOTES:
1) THIS PANEL IS EXISTING, MODIFY AS SHOWN. EXISTING PANEL IS SQUARE-D TYPE "NQOD".
(EX) INDICATES EXISTING CIRCUIT TO REMAIN.
* INDICATES NEW CIRCUIT, PROVIDE NEW CIRCUIT BREAKER IN EXISTING SPACE OR IN SPACE FROM REMOVING AN EXISTING CIRCUIT BREAKER AS REQUIRED.
** INDICATES NEW CIRCUIT, CONNECT TO EXISTING SPARE CIRCUIT BREAKER OR CIRCUIT BREAKER FROM REMOVING AN EXISTING CIRCUIT AS REQUIRED.



ELECTRICAL KEY PLAN
SCALE: 1" = 40'

ISSUED FOR BID: 05-13-2019

GArrison Architects, A Professional Corporation of Architects and Planners
713 CREEK ROAD, BELLMAWR, NEW JERSEY 08031 (856) 396-6200

LOGAN ELEMENTARY SCHOOL/MIDDLE SCHOOL
NEW SECURITY VESTIBULES AND WINDOW REPLACEMENT
110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

REVISIONS	
a.	e.
b.	f.
c.	g.

Project No. 19-18L
Date: 05/13/19
Scale: AS NOTED

ELECTRICAL PLAN

LE2

ELECTRICAL NOTES

1) PERFORM ALL WORK IN STRICT ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC), OSHA REQUIREMENTS, ALL FEDERAL, STATE, AND LOCAL CODES AND ALL OWNER REQUIREMENTS.

2) INCLUDE ALL TEMPORARY POWER AND LIGHTING, PERMIT, LICENSE, AND INSPECTION COSTS IN BID.

3) VERIFY EXACT LOCATIONS AND MOUNTING OF ALL LUMINAIRES, SWITCHES, RECEPTACLES, OUTLETS, FIRE ALARM, AND OTHER EQUIPMENT WITH ARCHITECTURAL DRAWINGS AND IN THE FIELD PRIOR TO ROUGH IN.

4) VERIFY ELECTRICAL RATINGS, CONNECTION REQUIREMENTS, AND EXACT LOCATIONS OF ALL MECHANICAL AND OTHER UTILIZATION EQUIPMENT (WHERE APPLICABLE) IN FIELD PRIOR TO PURCHASING ASSOCIATED ELECTRICAL EQUIPMENT. PROVIDE A COMPLETE AND WORKING INSTALLATION.

5) THE TERM "PROVIDE" MEANS, "FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR", AND THE TERMS "CONTRACTOR" AND "E.C." MEAN "ELECTRICAL CONTRACTOR", UNLESS INDICATED OTHERWISE. ALL WORK INDICATED ON THE ELECTRICAL DRAWINGS AND ELECTRICAL SPECIFICATIONS IS BY THE E.C. (UNLESS INDICATED OTHERWISE) AND IS NEW (UNLESS INDICATED OTHERWISE). WHERE THE PROJECT IS PERFORMED BY MULTIPLE PRIME CONTRACTORS UNDER "MULTIPLE PRIME BIDS" THIS DESIGNATES THE WORK BY THE ELECTRICAL PRIME CONTRACTOR. WHERE THE PROJECT IS PERFORMED BY A SINGLE OVERALL CONTRACTOR UNDER "LUMP SUM BIDS" THIS APPROXIMATELY DESIGNATES THE WORK BY THE ELECTRICAL TRADE SUBCONTRACTOR (EXACT DIVISION OF TRADE SUBCONTRACTOR WORK IS THE SOLE RESPONSIBILITY OF THE SINGLE OVERALL CONTRACTOR; TRADE SUBCONTRACTOR WORK DIVISION SHOWN ON THE DRAWINGS/SPECIFICATIONS IS FOR REFERENCE AND CONVENIENCE ONLY).

6) COORDINATE ALL REQUIRED SHUTDOWNS WITH THE OWNER A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE. INCLUDE OVERTIME COSTS IN BID TO PERFORM ALL SHUTDOWNS (INCLUDING SHUTDOWNS FOR AREAS WHICH MAY BE UNOCCUPIED DURING CONSTRUCTION) AFTER NORMAL WORKING HOURS AS COORDINATED WITH THE OWNER. NO EXTRA CLAIMS OR COMPENSATION WILL BE GRANTED FOR OVERTIME COSTS ASSOCIATED WITH PERFORMING SHUTDOWNS.

7) PROVIDE MOUNTING HEIGHTS OF EQUIPMENT AS REQUIRED BY ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND STANDARDS, INCLUDING ALL APPLICABLE DISABLED (HANDICAPPED) ACCESS CODES AND THE AMERICANS WITH DISABILITIES ACT (ADA). CONTACT ANY AND ALL AUTHORITIES HAVING JURISDICTION TO VERIFY REQUIRED MOUNTING HEIGHTS.

8) VERIFY ALL UTILITY (ELECTRIC, TELEPHONE, DATA, CABLE TELEVISION, ETC. WHERE APPLICABLE) REQUIREMENTS IN WRITING WITH EACH UTILITY COMPANY AND OBTAIN APPROVALS FROM ALL UTILITIES (INCLUDING SUBMITTING ANY REQUIRED SERVICE APPLICATIONS AND SHOP DRAWINGS ON SERVICE-RELATED EQUIPMENT TO UTILITIES) PRIOR TO ROUGH-IN OR PURCHASING ANY SERVICE RELATED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS SOLELY RESPONSIBLE TO FULLY COORDINATE AND VERIFY SERVICE REQUIREMENTS WITH UTILITY COMPANIES (INCLUDE ALL COSTS IN BID). NO EXTRA CLAIMS OR COMPENSATION WILL BE GRANTED UNDER ANY CIRCUMSTANCE ASSOCIATED WITH FAILURE TO FULLY COORDINATE WITH OR OBTAIN FULL APPROVALS FROM UTILITY COMPANIES.

9) PERFORM ALL WORK IN PHASES AND SEQUENCES AS DIRECTED BY THE ARCHITECT. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. FULLY COORDINATE PHASES/SEQUENCES IN DETAIL WITH ALL CONTRACTORS/TRADES, THE ARCHITECT, AND THE OWNER PRIOR TO PERFORMING WORK AND INCLUDE ALL COSTS IN BID.

10) COMPLETELY DISCONNECT AND REMOVE ALL EXISTING WIRING AND ELECTRICAL EQUIPMENT IN AREAS BEING RENOVATED, IN AREAS OF GENERAL DEMOLITION, INTERFERING WITH NEW CONSTRUCTION BY ANY CONTRACTOR OR TRADE (INCLUDING, BUT NOT LIMITED TO, GENERAL CONSTRUCTION, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, ETC.), AND SERVING EQUIPMENT AND APPARATUS REMOVED AS PART OF THIS PROJECT (BY ANY CONTRACTOR OR TRADE), UNLESS INDICATED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR THE GENERAL SCOPE OF RENOVATIONS AND AREAS OF GENERAL DEMOLITION. REFER TO AND CAREFULLY EXAMINE DRAWINGS AND SPECIFICATIONS OF ALL TRADES TO IDENTIFY AREAS OF INTERFERENCE WITH NEW CONSTRUCTION AND EQUIPMENT/APPARATUS REMOVALS. BASE PRICING ON THE ASSUMPTION THAT ELECTRICAL REMOVALS ARE NECESSARY IN ALL AREAS OF DEMOLITION (GENERAL DEMOLITION AS WELL AS DEMOLITION OF ANY SYSTEMS IN THE BUILDING [SPECIFICALLY INCLUDING DUCTWORK, PIPING, AND WIRING SYSTEMS OF ANY KIND]) AND ALL AREAS OF PROPOSED NEW WORK (BY ANY TRADE), UNLESS ACTUALLY VERIFIED OTHERWISE BY THE ELECTRICAL CONTRACTOR. INCLUDE ALL COSTS IN BID.

11) WHERE EXISTING WIRING TO BE REMOVED (AS INDICATED ABOVE) OR OTHERWISE AFFECTED BY CONSTRUCTION (BY ANY CONTRACTOR OR TRADE, INCLUDING GENERAL CONSTRUCTION, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, ETC.) FEEDS LOADS WHICH REMAIN OR FEEDS LOADS IN ADJACENT OR OTHER AREAS NOT WITHIN THE SCOPE OF WORK, THE WIRING SHALL REMAIN. RELOCATE, EXTEND, AND/OR RE-FEED THE EXISTING WIRING AS REQUIRED TO MAINTAIN SERVICE, UNLESS INDICATED OTHERWISE. BASE PRICING ON THE ASSUMPTION THAT RELOCATING, EXTENDING, AND RE-FEEDING IS NECESSARY IN ALL AREAS OF DEMOLITION AND ALL AREAS OF PROPOSED NEW WORK (BY ANY TRADE), UNLESS ACTUALLY VERIFIED OTHERWISE BY THE ELECTRICAL CONTRACTOR. INCLUDE ALL COSTS IN BID.

12) WHERE RE-FEEDING EXISTING ELECTRICAL CIRCUITS AND LOADS, VERIFY ALL REQUIREMENTS IN THE FIELD AND INCLUDE ALL COSTS IN BID. VERIFY EXACT CONDUCTOR SIZES AND AMPACITY, EXISTING CIRCUIT BREAKER AND/OR FUSE AMPS, LOAD NAMEPLATE RATINGS, CONDUIT SIZES, ETC.. FOR EQUIPMENT TO BE RE-FED, PROVIDE ALL NEW WIRING DIRECTLY TO THE EQUIPMENT. DO NOT REUSE EXISTING WIRING TO RE-FEED EQUIPMENT, UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.

13) INFORMATION REGARDING EXISTING CONDITIONS AND EQUIPMENT AND ALL INFORMATION REGARDING REMOVALS (INCLUDING INFORMATION REGARDING THE SCOPE OF REMOVALS ON ARCHITECTURAL DRAWINGS) INDICATES GENERAL CONDITIONS AND ARE A GUIDE TO PRICING ONLY. PRIOR TO SUBMITTING BID, VISIT THE PROJECT SITE AND VERIFY ALL EXISTING CONDITIONS AND EQUIPMENT, ALL REMOVALS AND REQUIREMENTS, AND ALL TIE-INS TO EXISTING EQUIPMENT AND WIRING IN DETAIL. INCLUDE ALL COSTS IN BID. NO EXTRA CLAIMS OR COMPENSATION WILL BE GRANTED FOR NOT FIRST VERIFYING ALL CONDITIONS.

14) FOR ALL NEW CIRCUIT BREAKERS IN EXISTING BRANCH AND DISTRIBUTION PANELS, PROVIDE CIRCUIT BREAKERS MATCHING AND COMPATIBLE WITH EXISTING CIRCUIT BREAKERS. PROVIDE WITH SHORT CIRCUIT INTERRUPTING RATINGS EQUAL TO OR EXCEEDING THE HIGHEST RATED EXISTING BRANCH CIRCUIT BREAKER IN THE PANEL. CIRCUIT BREAKER TYPES INDICATED ON THE DRAWINGS (WHERE APPLICABLE) ARE GUIDES TO PRICING ONLY. VERIFY EXACT TYPE AND ALL REQUIREMENTS IN FIELD PRIOR TO RELEASING EQUIPMENT.

15) FOR ALL WIRING AND WORK INDICATED, INCLUDING ALL SYSTEMS (POWER, LIGHTING, FIRE ALARM, CONTROL, SIGNAL, SOUND, TELECOMMUNICATIONS, DATA, AND ALL OTHER SYSTEMS, WHERE APPLICABLE), PROVIDE ALL NEW CONDUITS, RACEWAYS, OUTLETS, AND CONDUCTORS, INCLUDE ALL COSTS IN BID. WHERE EXISTING CONDUITS AND RACEWAYS ARE DETERMINED BY THE ENGINEER TO BE IN ADEQUATE CONDITION, AND WHERE SPECIFICALLY APPROVED BY THE OWNER, ARCHITECT, AND ENGINEER, EXISTING CONDUITS AND RACEWAYS MAY BE REUSED. PROVIDE A SEPARATE GROUNDING CONDUCTOR, IN ADDITION TO ALL OTHER GROUNDING CONDUCTORS SPECIFIED, AND BOND TO ALL RACEWAYS, CONDUITS, BOXES, AND OUTLETS WHERE RACEWAYS ARE REUSED. DO NOT DEPEND ON EXISTING CONDUITS/RACEWAYS FOR GROUNDING PATHS. REUSE EXISTING CONDUCTORS ONLY WHERE SPECIFICALLY INDICATED ON THE DRAWINGS.

16) PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT (INCLUDING, BUT NOT LIMITED TO, SAFETY SWITCHES, ENCLOSED CIRCUIT BREAKERS, BRANCH PANELS, TRANSFORMERS, FUSED EQUIPMENT, POWER OUTLETS, THERMAL OVERLOAD SWITCHES, FIRE ALARM DEVICES, SWITCHES AND RECEPTACLES SERVING EQUIPMENT, ETC., WHERE APPLICABLE), REFER TO SPECIFICATIONS FOR INFORMATION.

17) WHERE ADDING NEW FIRE ALARM SIGNALING OR INITIATING DEVICES TO AN EXISTING FIRE ALARM SYSTEM, COMPLETELY TEST AND CERTIFY THE ENTIRE FIRE ALARM SYSTEM THROUGHOUT THE ENTIRE BUILDING TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS (INCLUDING ALL CODE AND MUNICIPAL REQUIREMENTS). WHERE ANY DISCREPANCIES OR MALFUNCTIONS ARE FOUND WITH EXISTING SYSTEM PORTIONS WHICH ARE NOT MODIFIED OR ADDED TO AS PART OF THIS PROJECT, NOTIFY THE OWNER.

18) PROVIDE ALL NEW FIRE ALARM VISUAL SIGNALING DEVICES (VISUAL ONLY STROBES AND STROBE PORTIONS OF COMBINATION HORN/STROBES) AS SYNCHRONIZED. PROVIDE ALL VISUAL SIGNALING DEVICES LOCATED IN THE SAME ROOM OR OTHERWISE WITHIN SIGHT SYNCHRONIZED TOGETHER (I.E. CONTROLLED BY A COMMON SYNCHRONIZING MODULE). PROVIDE ALL DEVICES OF TYPES FACILITATING SYNCHRONIZING AND PROVIDE ALL SIGNALING CIRCUITS INCLUDING SYNCHRONIZING CONTROLLERS AS REQUIRED. EXISTING VISUAL SIGNALING DEVICES ARE NOT REQUIRED TO SYNCHRONIZE WITH NEW DEVICES (UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS).

19) THE E.C. SHALL FURNISH AND INSTALL ALL ELECTRICAL DEVICES, EQUIPMENT, AND WIRING AT MILLWORK (CABINETS, DESKS, CREDENZAS, AND OTHER SIMILAR FURNITURE) AS REQUIRED. REFER TO ARCHITECTURAL, MILLWORK, AND FURNITURE DRAWINGS FOR ADDITIONAL INFORMATION (INCLUDING INFORMATION ON WIRING AND ELECTRICAL EQUIPMENT). PROVIDE EQUIPMENT AND WIRING AS REQUIRED, REGARDLESS OF WHETHER SHOWN ON ELECTRICAL DRAWINGS OR NOT.

20) COMPLETELY SEAL AND FIRE STOP ALL PENETRATIONS OF ALL FIRE AND/OR SMOKE RATED WALLS, FLOORS, CEILINGS, AND ANY OTHER CONSTRUCTION (INCLUDING ALL WALLS REQUIRED TO BE RATED BY CODE) TO A RATING MATCHING OR EXCEEDING THE FIRE RATING OF THE CONSTRUCTION. COMPLETELY SEAL AND WEATHERPROOF ALL PENETRATIONS OF EXTERIOR, AT OR BELOW GRADE, AND WET LOCATION WALLS AND FLOORS AND ROOF PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON FIRE RATINGS OF BUILDING CONSTRUCTION AND INCLUDE ALL COSTS IN BID. COMPLY WITH AND INSTALL FIRE STOPPING IN ACCORDANCE WITH ALL APPLICABLE FIRE RATING CODES AND STANDARDS (INCLUDING THE NEC, NFPA, IBC, AND THE UL "FIRE RESISTANCE DIRECTORY").

21) PROVIDE 120 V POWER TO ALL SECURITY AND DOOR HARDWARE AS REQUIRED. COORDINATE ALL REQUIREMENTS WITH ARCHITECTURAL DOCUMENTS, THE OWNER, AND SECURITY SUPPLIER. OBTAIN POWER FROM A SUITABLE NEARBY BRANCH CIRCUIT.

22) WHERE EXISTING CEILINGS ARE REMOVED AND REINSTALLED (EITHER PARTLY OR ENTIRELY), THE E.C. SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT (INCLUDING LIGHTING FIXTURES, FIRE ALARM DEVICES [INCLUDING, BUT NOT LIMITED TO, SMOKE AND HEAT DETECTORS, SIGNALING DEVICES, INDICATORS, ETC.], SECURITY/CCTV CAMERAS, MOTION DETECTORS, SPEAKERS, AND ALL OTHER ELECTRICAL DEVICES, EQUIPMENT, AND APPARATUS) FROM THE CEILING GRID AND CEILING TILES. LEAVE IN PLACE AT THE CEILING AND SUPPORT (IN A CODE APPROVED AND LOCAL CODE OFFICIAL APPROVED MANNER) AS REQUIRED TO FACILITATE CEILING REMOVAL. ONCE CEILING IS REINSTALLED, THE E.C. SHALL PERMANENTLY REINSTALL ALL ELECTRICAL EQUIPMENT IN THE CEILING. WHERE NEW EQUIPMENT IS SHOWN ON THE DRAWINGS, THE E.C. SHALL COMPLETELY DISCONNECT AND REMOVE EXISTING EQUIPMENT (BEING REPLACED) AND ALL ASSOCIATED WIRING AND PROVIDE ALL NEW EQUIPMENT AND ASSOCIATED WIRING AS SHOWN ON THE DRAWINGS. CEILINGS MAY BE LEFT OPEN FOR A LONG PERIOD OF TIME (I.E. THERE MAY BE SEVERAL MONTHS OR MORE BETWEEN THE TIME OF REMOVAL AND THE TIME OF REINSTALLING CEILINGS). WHEN CEILINGS ARE NOT IN PLACE, MAINTAIN (AS OPERATIONAL) ALL FIRE ALARM DEVICES AND EQUIPMENT AND NORMAL AND EMERGENCY LIGHTING AS REQUIRED (TEMPORARILY INSTALL FIRE ALARM DEVICES, SUPPORTED FROM STRUCTURE AND PROVIDE TEMPORARY LIGHTING OR TEMPORARILY SUPPORT EXISTING LIGHTING FROM STRUCTURE AS REQUIRED). WHEN CEILINGS ARE NOT IN PLACE, SAFELY SECURE EVERYTHING WHICH IS EXPOSED BY THE ABSENCE OF CEILINGS (NEW AND EXISTING) AND KEEP ALL AREAS CLEAN WHEN OCCUPIED. THIS CEILING WORK IS NOT SHOWN ON ELECTRICAL PLANS (SEE ARCHITECTURAL DRAWINGS AND CEILING PLANS AND OTHER TRADES DRAWINGS FOR INFORMATION). THIS CEILING WORK APPLIES REGARDLESS OF THE PARTY REMOVING THE CEILING AND REGARDLESS OF WHETHER OR NOT CEILING REMOVAL IS SHOWN ON DRAWINGS. COORDINATE WITH ALL CONTRACTORS AND TRADES TO CONFIRM THE EXTENT OF CEILING WORK AND INCLUDE ALL COSTS IN BID. THIS CEILING WORK ALSO APPLIES WHERE ANY CONTRACTOR CHOOSES TO INSTALL NEW CEILING IN LIEU OF REINSTALLING THE EXISTING CEILING.

23) WHERE EXISTING CEILINGS ARE REMOVED AND NEW CEILINGS ARE INSTALLED (EITHER PARTLY OR ENTIRELY), THE E.C. SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT (INCLUDING LIGHTING FIXTURES, FIRE ALARM DEVICES [INCLUDING, BUT NOT LIMITED TO, SMOKE AND HEAT DETECTORS, SIGNALING DEVICES, INDICATORS, ETC.], SECURITY/CCTV CAMERAS, MOTION DETECTORS, SPEAKERS, AND ALL OTHER ELECTRICAL DEVICES, EQUIPMENT, AND APPARATUS) FROM THE CEILING GRID AND CEILING TILES. LEAVE IN PLACE AT THE CEILING AND SUPPORT (IN A CODE APPROVED AND LOCAL CODE OFFICIAL APPROVED MANNER) AS REQUIRED TO FACILITATE CEILING REMOVAL. ONCE NEW CEILING IS INSTALLED, THE E.C. SHALL PERMANENTLY REINSTALL ALL ELECTRICAL EQUIPMENT IN THE CEILING. WHERE NEW EQUIPMENT IS SHOWN ON THE DRAWINGS, THE E.C. SHALL COMPLETELY DISCONNECT AND REMOVE EXISTING EQUIPMENT (BEING REPLACED) AND ALL ASSOCIATED WIRING AND PROVIDE ALL NEW EQUIPMENT AND ASSOCIATED WIRING AS SHOWN ON THE DRAWINGS. CEILINGS MAY BE LEFT OPEN FOR A LONG PERIOD OF TIME (I.E. THERE MAY BE SEVERAL MONTHS OR MORE BETWEEN THE TIME OF REMOVAL AND THE TIME OF INSTALLING NEW CEILINGS). WHEN CEILINGS ARE NOT IN PLACE, MAINTAIN (AS OPERATIONAL) ALL FIRE ALARM DEVICES AND EQUIPMENT AND NORMAL AND EMERGENCY LIGHTING AS REQUIRED (TEMPORARILY INSTALL FIRE ALARM DEVICES, SUPPORTED FROM STRUCTURE AND PROVIDE TEMPORARY LIGHTING OR TEMPORARILY SUPPORT NEW OR EXISTING LIGHTING FROM STRUCTURE AS REQUIRED). WHEN CEILINGS ARE NOT IN PLACE, SAFELY SECURE EVERYTHING WHICH IS EXPOSED BY THE ABSENCE OF CEILINGS (NEW AND EXISTING) AND KEEP ALL AREAS CLEAN WHEN OCCUPIED. THIS CEILING WORK IS NOT SHOWN ON ELECTRICAL PLANS (SEE ARCHITECTURAL DRAWINGS AND CEILING PLANS FOR INFORMATION).

24) WHERE ELECTRICAL WORK INVOLVES REMOVAL AND REINSTALLATION OF EXISTING CEILINGS, REMOVAL AND RELOCATION IS THE RESPONSIBILITY OF THE E.C.. AS AN ALTERNATIVE (AT THE E.C.'S OPTION) TO REINSTALLING CEILINGS REMOVED TO FACILITATE ELECTRICAL WORK, THE E.C. MAY INSTALL A NEW CEILING OF A TYPE MATCHING THE EXISTING CEILING PROVIDED THERE IS NO COST CHANGE TO THE CONTRACT (WHEREVER NEW CEILING INVOLVES ADDITIONAL COST TO THE CONTRACT, NEW CEILING IS NOT ACCEPTABLE). REPLACE ANY CEILING TILES DAMAGED AS PART OF ELECTRICAL WORK.

25) FOR ALL ROOFTOP/ATTIC AND SIMILAR EQUIPMENT, LOCATE ALL EQUIPMENT DISCONNECTING MEANS AS REQUIRED SO THE DISCONNECTING MEANS IS ACCESSIBLE FROM, OPERABLE FROM, AND SERVICEABLE FROM (INCLUDING SATISFYING NEC WORKING SPACE REQUIREMENTS) CATWALKS, WALKWAYS, OR WALKING PATHS. FULLY COORDINATE IN DETAIL WITH THE OWNER AND ARCHITECT PRIOR TO ROUGH-IN OR INSTALLING ANY DISCONNECTING MEANS.

ELECTRICAL SCOPE SPECIFICATIONS

1) PROVIDE ALL WIRING AS COPPER (CU) AND WITH INSULATION IDENTIFIED AS BOTH TYPES "THHN" AND "THWN", ALUMINUM (AL) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.

2) RUN ALL NEW WIRING AS CONCEALED WHEREVER POSSIBLE, UNLESS OTHERWISE APPROVED BY THE ARCHITECT, OWNER, AND ENGINEER. WHERE WIRING IS SPECIFICALLY PERMITTED TO RUN EXPOSED IN FINISHED INTERIOR OR EXTERIOR AREAS, PAINT RACEWAYS AS DIRECTED BY THE ARCHITECT. PROVIDE ALL WIRING AS #12 AWG MINIMUM, PROVIDE ALL CONDUIT AS 21 mm (3/4") MINIMUM, UNLESS INDICATED OTHERWISE.

3) UTILIZE #10 AWG MINIMUM WIRING FOR ALL OUTDOOR POWER AND LIGHTING CIRCUITS, EMERGENCY POWER AND LIGHTING CIRCUITS AND WIRING, AND ALL CIRCUITS EXCEEDING 23 m (75'0", FOR 120/208/240 V CIRCUITS) OR 46 m (150'0", FOR 277/480 V CIRCUITS) TO CENTER OF LOAD.

4) MULTIPLE BRANCH CIRCUITS MAY BE INSTALLED IN THE SAME RACEWAY WHERE PERMITTED BY CODE AND PROVIDED ALL OF THE FOLLOWING CONDITIONS ARE MET:
   A) APPLY APPROPRIATE NEC DERATING FACTORS AND ADJUST CONDUCTOR SIZES ACCORDINGLY.
   B) PROVIDE NO CONDUCTOR (AFTER DERATING ADJUSTMENT) EXCEEDING #10 AWG, EXCEPT GROUNDING CONDUCTORS AS PROVIDED BELOW.
   C) A SINGLE EQUIPMENT GROUNDING CONDUCTOR IS PERMITTED IN LIEU OF INDIVIDUAL EQUIPMENT GROUNDING CONDUCTORS FOR EACH INDIVIDUAL CIRCUIT. PROVIDE COMMON EQUIPMENT GROUNDING CONDUCTOR SIZE AT LEAST TWO (2) STANDARD WIRE SIZES LARGER THAN THE MINIMUM SIZE AS DETERMINED IN ACCORDANCE WITH THE NEC. WHERE ISOLATED GROUNDING CONDUCTORS ARE REQUIRED, THESE ARE IN ADDITION TO THE COMMON EQUIPMENT GROUNDING CONDUCTOR AND ARE REQUIRED INDIVIDUALLY FOR EACH CIRCUIT (ISOLATED GROUNDING CONDUCTORS COMMON TO TWO (2) OR MORE CIRCUITS ARE NOT PERMITTED).
   D) PROVIDE CONDUIT FILL (AFTER DERATING ADJUSTMENT) NOT EXCEEDING 30% (MAXIMUM NUMBER OF CONDUCTORS PERMITTED NOT EXCEEDING 75% OF THE MAXIMUM NUMBER OF CONDUCTORS ALLOWED BY CODE [I.E. REFER TO NEC CHAPTER 9, TABLES 3A, 3B, AND 3C], TO ALLOW FOR FUTURE WIRING). PROVIDE MINIMUM CONDUIT SIZE ADJUSTED TO MAINTAIN 30% MAXIMUM FILL.

5) PROVIDE A SEPARATE NEUTRAL CONDUCTOR WITH EACH BRANCH CIRCUIT WHERE A NEUTRAL IS REQUIRED. MULTI-WIRE BRANCH CIRCUITS WITH A SHARED COMMON NEUTRAL ARE NOT PERMITTED, UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.

6) PROVIDE COMPLETE GROUNDING AND BONDING IN ACCORDANCE WITH THE NEC. PROVIDE GROUNDING CONDUCTORS WITH ALL WIRING. INSTALL ALL METALLIC RACEWAYS IN SUCH A WAY (INCLUDING THE USE OF BONDING JUMPERS, ETC. WHERE REQUIRED FOR FLEXIBLE CONDUIT, LOOSELY JOINTED RACEWAYS, ETC.) TO MAINTAIN A CONTINUOUS GROUNDING PATH WITHOUT CONSIDERING THE GROUNDING CONDUCTOR REQUIRED ABOVE. WHEREVER CONNECTIONS TO GROUNDING ELECTRODES OR ELECTRODE SYSTEMS ARE REQUIRED BY CODE, PROVIDE, INTERCONNECT, CONNECT, AND BOND TO NEW DRIVEN (MADE) GROUNDING ROD ELECTRODES, DOMESTIC COLD WATER PIPING SYSTEM (AND ANY OTHER METAL PIPING SYSTEM WHERE REQUIRED BY THE NEC), STRUCTURAL STEEL AND/OR METAL BUILDING FRAME, AND ALL EXISTING GROUNDING ELECTRODE SYSTEMS, WHERE APPLICABLE.

7) UTILIZE ELECTRICAL METALLIC TUBING (EMT), WITH COMPRESSION TYPE FITTINGS (SET SCREW TYPE FITTINGS ARE NOT PERMITTED) FOR ALL WIRING, UNLESS INDICATED OTHERWISE.

8) UTILIZE STEEL RIGID METAL CONDUIT (RMC) FOR ALL EXTERIOR EXPOSED WIRING AND UNDERGROUND WIRING. UTILIZE STEEL RMC ONLY FOR ALL WIRING OVER 600 V (WHERE PERMITTED, PVC MAY BE UTILIZED UNDERGROUND). UTILIZE STEEL RMC ONLY WITHIN 1.2 m (4'0") OF ALL BUILDING EXTERIOR WALL PENETRATIONS. UTILIZE STEEL RMC ONLY, ENCASED IN A 76 mm (3") CONCRETE ENVELOPE, UNDER ALL ROADWAYS, PARKING LOTS, AND OTHER AREAS SUBJECT TO VEHICULAR TRAFFIC. PROVIDE RMC INSTALLED UNDERGROUND OR IN CONTACT WITH EARTH COATED WITH COAL TAR OR EPOXY BASED CORROSION RESISTANT COATING APPROVED BY THE ENGINEER. UTILIZE FULLY THREADED FITTINGS ONLY FOR STEEL RMC (SET SCREW, COMPRESSION, OR OTHER THREAD-LESS FITTINGS ARE NOT ACCEPTABLE).

9) UTILIZE FLEXIBLE CONDUIT FOR FLEXIBLE CONNECTIONS TO MOTORS AND EQUIPMENT REQUIRING FLEXIBILITY OR SUBJECT TO VIBRATION IN LENGTHS NOT EXCEEDING 1.8 m (6'0"). FLEXIBLE CONDUIT MAY BE UTILIZED FOR FLEXIBLE CONNECTIONS TO LUMINAIRES WHERE WIRING IS CONCEALED ONLY (IN LENGTHS NOT TO EXCEED 1.8 m (6'0")). FLEXIBLE CONDUIT MAY BE UTILIZED WHERE EXISTING WALLS ARE FISHED IN LENGTHS NOT TO EXCEED THE PORTION IN THE WALL PLUS 0.9 m (3'0"). EXPOSED FLEXIBLE CONDUIT IS NOT PERMITTED FOR LUMINAIRES (EXCEPT ADJUSTABLE LUMINAIRES). UTILIZE FLEXIBLE METAL CONDUIT (FMC, "GREENFIELD") IN DRY LOCATIONS ONLY. UTILIZE LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC, "SEALTITE") IN DAMP, WET, OR OUTDOOR LOCATIONS AND MECHANICAL ROOMS. SUPPORT AS PER THE NEC.

10) SCHEDULE 40 POLYVINYL CHLORIDE RIGID NONMETALLIC CONDUIT (PVC RNC) MAY BE UTILIZED FOR UNDERGROUND WIRING AND WIRING UNDER THE SLAB. TAKE PRECAUTIONS TO AVOID CRUSHING CONDUITS. ENCASE ALL PVC CONDUITS IN A 76 mm (3") CONCRETE ENVELOPE. UTILIZE STEEL RMC WHERE INDICATED ABOVE AS "STEEL RMC ONLY". UTILIZE STEEL RMC WHERE CONDUIT RUNS WITH PVC CONDUIT PROTRUDE EXPOSED ABOVE GRADE (IN INDOOR OR OUTDOOR LOCATIONS), FOR THE PORTION EXPOSED ABOVE GRADE/FLOOR DOWN TO A MINIMUM DEPTH OF 155 mm (6") BELOW FINISHED GRADE. PVC CONDUIT IS PERMITTED TO PROTRUDE ONLY WHEN COMPLETELY CONCEALED WITHIN EQUIPMENT ENCLOSURES.

11) WHERE WIRING IS CONCEALED IN WALLS OR CEILINGS, WHERE APPLICABLE BY CODE AND ACCEPTABLE TO LOCAL AUTHORITIES AND THE OWNER, AND UNLESS OTHERWISE NOTED, "BX" ARMORED CABLE (TYPE "AC") OR METAL CLAD CABLE (TYPE "MC") MAY BE UTILIZED FOR BRANCH WIRING ONLY. PROVIDE ALL FEEDER WIRING IN CONDUITS. "BX" ARMORED CABLE (TYPE "AC") IS NOT PERMITTED FOR USE ON CIRCUITS EXCEEDING 250 V OR FOR USE ON DC CIRCUITS.

12) PROVIDE ALL WIRING IN PLENUM CEILINGS AND OTHER PLENUM SPACES IN COMPLETE ACCORDANCE WITH THE NEC, PROVIDE WIRING METHODS IN EMT OR OTHER APPROVED METALLIC CONDUIT. WHERE OTHERWISE PERMITTED, TYPE "MC" CABLE MAY BE UTILIZED IN PLENUM CEILINGS. "BX" ARMORED CABLE (TYPE "AC") IS NOT ACCEPTABLE IN PLENUM CEILINGS OR SPACES.

13) ROMEX CABLE (TYPE "NM") IS NOT PERMITTED UNDER ANY CIRCUMSTANCE.

14) RUN FIRE ALARM WIRING IN CONDUIT, OPEN RUNS OF CABLE ARE NOT PERMITTED. FOR ALL DAMP LOCATIONS, RUN WIRING IN CONDUIT AND UTILIZE ONLY CABLES/CONDUCTORS SPECIFICALLY LISTED AND IDENTIFIED FOR USE IN DAMP OR WET LOCATIONS. FOR ALL WET (INCLUDING UNDERGROUND AND IN SLAB ON/BELOW GRADE) LOCATIONS, RUN WIRING IN CONDUIT AND UTILIZE ONLY CABLES/CONDUCTORS SPECIFICALLY DESIGNED FOR OUTDOOR AND SUBMERGED USE AND LISTED AND IDENTIFIED FOR USE IN WET LOCATIONS. PLENUM TYPE CABLES, EVEN WHEN RUN IN CONDUIT, ARE NOT PERMITTED IN DAMP AND WET LOCATIONS.

15) PROVIDE ALL SAFETY SWITCHES OF THE HEAVY DUTY TYPE. PROVIDE THREE (3) SPARE FUSES FOR EACH FUSED SWITCH (IN ADDITION TO ACTIVE FUSES) IN THE SWITCH ENCLOSURE. PROVIDE FUSES WITH INTERRUPTING RATING NOT LESS THAN THAT OF THE PANEL FEEDING THE FUSED SWITCH. UTILIZE ONLY FUSES OF THE DUAL ELEMENT TIME DELAY AND CURRENT LIMITING TYPE.

16) PROVIDE PANELS WITH BOLT-ON BREAKERS, BUS BARS MAY BE ALUMINUM. PROVIDE SEPARATE FACTORY GROUND AND NEUTRAL BUSSES (PROVIDE NEUTRAL WITH PROVISIONS FOR BONDING). PROVIDE PANELS WITH SHORT CIRCUIT RATINGS AS INDICATED ON THE DRAWINGS AND FULLY RATED, SERIES RATING IS NOT ACCEPTABLE.

17) FOR ALL FLUSH MOUNTED PANELS, PROVIDE A SUITABLE JUNCTION BOX AND/OR WIRING TROUGH FOR BRANCH WIRING ACCESS LOCATED ABOVE DROP CEILING OR OTHER ACCESSIBLE CEILING AS CLOSE AS PRACTICAL TO PANEL. PROVIDE 24"W X 8"H X 8"D (600 mm X 205 mm X 205 mm, MINIMUM) JUNCTION BOX, PROVIDE FOUR (4) 53 mm (2") CONDUITS BETWEEN PANEL AND JUNCTION BOX. PROVIDE ALL WIRING BETWEEN PANEL AND JUNCTION BOX IN ACCORDANCE WITH ALL APPLICABLE NEC DERATING FACTORS. PROVIDE THE INCOMING PANEL FEEDER AND ANY LOAD CIRCUITS RATED 60 A OR LARGER ENTERING DIRECTLY INTO THE FLUSH MOUNTED PANEL WITHOUT PASSING THROUGH THE JUNCTION BOX.

19) PROVIDE ALL BRANCH PANELS, SAFETY SWITCHES, ENCLOSED BREAKERS, TRANSFORMERS, CONTROL DEVICES, AND OTHER DISTRIBUTION EQUIPMENT AS EATON/CUTLER-HAMMER, GENERAL ELECTRIC, SCHNEIDER/SQUARE-D, SIEMENS, OR APPROVED EQUAL.

20) PROVIDE ALL NEW ELECTRICAL EQUIPMENT (INCLUDING BRANCH CIRCUIT BREAKERS IN DISTRIBUTION PANELS) WITH ENGRAVED LAMINATED PLASTIC SIGNS (WITH MINIMUM 6.5 mm (1/4") LETTERING), DESCRIBING THE EQUIPMENT, LOAD/DEVICE SERVED, VOLTAGE, PHASE, RATED AMPS, AND PANEL AND CIRCUIT NUMBER FEEDING THE EQUIPMENT, WHERE APPLICABLE (I.E. "LP1 - LIGHTING PANEL, 120/208V-3PH-4W, 100A MAIN, FED FROM MDP - CIRCUIT 4", "#P-1 - PUMP, 208V-3PH-3W, 20A, FED FROM LP1 - CIRCUIT 2-4-6", "OUTDOOR LIGHTING CONTACTOR - C1", ETC.). PROVIDE ALL SWITCHES (20 A AND LESS ONLY), RECEPTACLES, AND POWER OUTLETS WITH ENGRAVED LAMINATED PLASTIC SIGNS WHERE DEDICATED TO INDIVIDUAL EQUIPMENT (THESE SIGNS ONLY MAY UTILIZE 3.2 mm (1/8") MINIMUM LETTERING). SECURE ENGRAVED LAMINATED PLASTIC SIGNS WITH SUITABLE SCREWS OR RIVETS, SELF ADHESIVE SIGNS ARE NOT PERMITTED.

21) PROVIDE ALL NEW AND EXISTING BRANCH PANELS WITH ACCURATE AND DESCRIPTIVE TYPEWRITTEN CIRCUIT DIRECTORIES. FOR EXISTING PANELS, PROVIDE DIRECTORIES INCLUDING ALL MODIFICATIONS AS PART OF THIS PROJECT AS WELL AS PREVIOUS "PENCILED IN" CHANGES AND INFORMATION. ACTUAL TRACING AND IDENTIFYING EXISTING CIRCUITS IS NOT REQUIRED.

22) PREPARE AND SUBMIT (INCLUDE ALL COSTS) SHOP DRAWINGS AND EQUIPMENT CUTS ON ALL LUMINAIRES, BALLASTS/DRIVERS FOR LUMINAIRES, POWER AND DISTRIBUTION EQUIPMENT, FIRE ALARM (INCLUDING SYSTEM DRAWINGS, SPECIFICALLY PREPARED BY A QUALIFIED MANUFACTURER/SUPPLIER SHOWING ALL APPLICABLE INFORMATION REQUIRED OR REQUESTED BY CODE OFFICIALS AS PART OF OBTAINING FIRE ALARM PERMIT [AND INCLUDING SEALING BY REGISTERED P.E. IF REQUIRED BY CODE OFFICIALS]) AND OTHER SYSTEMS, AND ANY OTHER EQUIPMENT REQUESTED BY THE ENGINEER, ARCHITECT, OR OWNER TO THE ENGINEER AND ARCHITECT FOR REVIEW AND APPROVAL. SUBMIT SETS OF CUTS AS DIRECTED BY THE ARCHITECT BUT NOT LESS THAN TEN (10) SETS. APPROVAL OF SHOP DRAWINGS AND CUTS (INCLUDING SUBSTITUTED EQUIPMENT) IS CONDITIONAL UPON THERE BEING NO COST CHANGE TO THE OWNER (UNLESS SPECIFICALLY INDICATED AS PART OF THE APPROVAL).

23) SUBSTITUTIONS OF EQUIPMENT OF THE SAME OR BETTER QUALITY THAN THE EQUIPMENT SPECIFIED SHALL BE CONSIDERED (AFTER AWARD OF CONTRACT ONLY).

24) FOR ALL MECHANICAL AND OTHER UTILIZATION EQUIPMENT CONNECTIONS, THE CONTRACTOR SUPPLYING THE EQUIPMENT SHALL FURNISH AND INSTALL ALL STARTERS, CONTACTORS, AND OTHER CONTROL EQUIPMENT (INCLUDING THERMOSTATS, RELAYS, TIMERS, INTEGRATED CONTROLLERS, ETC.) AS WELL AS CONTROL WIRING (AND CONDUIT). THE E.C. SHALL FURNISH AND INSTALL ALL POWER WIRING, LOCAL DISCONNECTING MEANS AS REQUIRED, AND ALL FINAL CONNECTIONS AT THE EQUIPMENT. THIS INCLUDES THE E.C. PASSING POWER WIRING THROUGH SUPPLYING CONTRACTOR PROVIDED STARTERS, CONTACTORS, ETC., AND ALSO MAKING CONNECTIONS TO ONE OR MORE SETS OF POWER WIRING TERMINALS AT THE EQUIPMENT. THE E.C. SHALL OBTAIN EQUIPMENT CUTS FROM THE SUPPLYING CONTRACTOR TO VERIFY ALL REQUIREMENTS.

25) WHERE WIRING SERVES EQUIPMENT, PROVIDE COMPLETE CONNECTIONS TO EQUIPMENT AS REQUIRED. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH IN. FOR ALL EQUIPMENT RATED 120 V OR 277 V AND 20 A OR LESS, INCLUDE COSTS TO PROVIDE EITHER A DIRECT CONNECTION (INCLUDING THERMAL OVERLOAD SWITCH WHERE DISCONNECTING MEANS IS REQUIRED) OR A SUITABLE RECEPTACLE WHERE EQUIPMENT IS SUPPLIED WITH CORD AND PLUG.

25) UPON COMPLETION OF THE PROJECT, SUBMIT A COMPLETE SET OF BLUEPRINTS MARKED UP WITH ALL AS-BUILT CONDITIONS. PROVIDE AS-BUILT DRAWINGS INCLUDING DETAILED LOCATIONS AND ROUTING OF ALL CONCEALED WIRING. SUBMIT OPERATING AND MAINTENANCE (O&M) MANUALS FOR ALL NEW EQUIPMENT SUPPLIED.

27) SUPPORT ALL EQUIPMENT AND WIRING AS REQUIRED BY CODE (NEC AND IBC, INCLUDING APPLICABLE SEISMIC REQUIREMENTS) AND ADEQUATELY FOR THE PHYSICAL LOADS INVOLVED. COMPLETELY SEAL AND FIRE STOP ALL PENETRATIONS OF ALL FIRE AND/OR SMOKE RATED WALLS, FLOORS, CEILINGS, AND ANY OTHER CONSTRUCTION (INCLUDING ALL WALLS REQUIRED TO BE RATED BY CODE) TO A RATING MATCHING OR EXCEEDING THE FIRE RATING OF THE CONSTRUCTION. COMPLETELY SEAL AND WEATHERPROOF ALL PENETRATIONS OF EXTERIOR, AT OR BELOW GRADE, AND WET LOCATION WALLS AND FLOORS AND ROOF PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON FIRE RATINGS OF BUILDING CONSTRUCTION AND INCLUDE ALL COSTS IN BID. COMPLY WITH AND INSTALL FIRE STOPPING IN ACCORDANCE WITH ALL APPLICABLE FIRE RATING CODES AND STANDARDS (INCLUDING THE NEC, NFPA, IBC, AND THE UL "FIRE RESISTANCE DIRECTORY").

28) PROVIDE ALL EQUIPMENT AS NEW AND EITHER LISTED OR LABELED BY A QUALIFIED PRODUCT EVALUATING ORGANIZATION (UL, CSA, ETL, OR APPROVED EQUAL).

29) GUARANTEE AND WARRANTY ALL WORK FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL COMPLETION.

ELECTRICAL SYMBOL LIST

Symbol	Description
S $S_3$$S_4$	20 A, 277/120 V SWITCH, SINGLE POLE (S), THREE-WAY (S-3), AND FOUR-WAY (S-4), RESPECTIVELY, SPECIFICATION GRADE, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER; (EX) INDICATES EXISTING TO REMAIN
S_K	20A, 277/120V LOCKING STYLE SWITCH (S-K), SINGLE POLE, THREE-WAY, AND FOUR-WAY, RESPECTIVELY, SPECIFICATION GRADE, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER, PASS & SEYMOUR #20AC*-L SERIES; FURNISH AND TURN OVER TO THE OWNER AT LEAST ONE (1) KEY PER SWITCH INSTALLED; (EX) INDICATES EXISTING TO REMAIN
S_D	OCCUPANCY/VACANCY SENSOR LIGHTING CONTROL WITH INTEGRAL MANUAL OVERRIDE TO "ON" PUSH BUTTON (S-OC), FLUSH MOUNTED ON WALL (ON FLUSH MOUNTED OUTLET BOX), SELF-CONTAINED "STAND-ALONE" TYPE (SINGLE SENSOR FOR LOCAL LIGHTING CONTROL OF A SINGLE CIRCUIT ONLY), MULTI-TECHNOLOGY PASSIVE INFRARED (PIR) AND ULTRASONIC TYPE WITH INTEGRAL SWITCHING RELAY, RATED MINIMUM 800 W, 1,200 VA FOR 120 V OPERATION AND RATED MINIMUM 2,700 VA FOR 277 V OPERATION, SINGLE POLE, NOMINAL 93 m2 (1,000 SQ FT) COVERAGE, MEETING NEMA WD7 STANDARD, INTEGRAL SELECTABLE AMBIENT LIGHT LEVEL SENSOR, SELECTABLE AUTOMATIC (OCCUPANCY SENSOR) OR MANUAL (VACANCY SENSOR) MODES, SPECIFICATION GRADE, WHITE FINISH, EATON/COOPER #ONW-D-1001-MV-* (OR APPROVED EQUAL)
	LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	WALL MOUNTED LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	LINEAR/RECTANGULAR LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	"STRIP" OR "INDUSTRIAL" LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	INDICATES EMERGENCY AND NIGHT-LIGHTING LUMINAIRE, UN-SWITCHED, ON 24-HOURS; (EX) INDICATES EXISTING TO REMAIN
	EXIT SIGN, TYPE ("EXIT" UNLESS INDICATED OTHERWISE) AS INDICATED ON THE LUMINAIRE SCHEDULE; (EX) INDICATES EXISTING TO REMAIN
	20 A, 120 V DUPLEX RECEPTACLE (NEMA 5-20R), SPECIFICATION GRADE, TAMPER RESISTANT, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER, (+) INDICATES ABOVE COUNTER MOUNTING HEIGHT, (*) INDICATES MOUNTED HIGH ON WALL AT DISPLAY/SCREEN OR ABOVE BOARD; (EX) INDICATES EXISTING TO REMAIN
	20 A, 120 V DUPLEX GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE RECEPTACLE (NEMA 5-20R), SPECIFICATION GRADE, TAMPER RESISTANT, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER, (+) INDICATES ABOVE COUNTER MOUNTING HEIGHT, (WP) INDICATES WEATHER-RESISTANT TYPE RECEPTACLE MOUNTED IN A WEATHERPROOF OUTLET BOX WITH SINGLE SPRING-LATCHED WEATHERPROOF-WHILE-IN-USE COVER; FEED THROUGH PROTECTION OF STANDARD TYPE RECEPTACLES FROM OTHER GFCI RECEPTACLES OR PROTECTION OF STANDARD TYPE RECEPTACLES FROM GFCI CIRCUIT BREAKERS ARE NOT ACCEPTABLE
	QUADRUPLEX ("DOUBLE DUPLEX") RECEPTACLE, WITH RECEPTACLE TYPE AS INDICATED
	EQUIPMENT CONNECTION, REFER TO THE EQUIPMENT SCHEDULE AND THE EQUIPMENT NOTES FOR INFORMATION
	EQUIPMENT DESIGNATION, FOR REFERENCE TO THE EQUIPMENT SCHEDULE
	FUSED DISCONNECT (SAFETY) SWITCH, HEAVY DUTY TYPE, WITH SIZE, POLES, AND FUSES AS INDICATED, IN NEMA-1 ENCLOSURE, (WP) INDICATES NEMA-3R ENCLOSURE
	UN-FUSED DISCONNECT (SAFETY) SWITCH, HEAVY DUTY TYPE, WITH SIZE AND POLES AS INDICATED, IN NEMA-1 ENCLOSURE, (WP) INDICATES NEMA-3R ENCLOSURE
	ENCLOSED CIRCUIT BREAKER (ECB), WITH TRIP RATING AND POLES AS INDICATED, IN NEMA-1 ENCLOSURE, (WP) INDICATES NEMA-3R ENCLOSURE
S_T	THERMAL OVERLOAD SWITCH (I.E. MANUAL MOTOR STARTER, "O/L SWITCH", S-T), 277-120 V AND HORSEPOWER RATED, COORDINATE THERMAL OVERLOAD UNIT RATING WITH LOAD SERVED; IN FINISHED SPACES, PROVIDE FLUSH MOUNTED WITH COVER PLATE AS PER OWNER; IN UNFINISHED SPACES, PROVIDE FLUSH MOUNTED OR SURFACE MOUNTED IN A SUITABLE NEMA-1 ENCLOSURE, (WP) INDICATES MOUNTING IN A SUITABLE NEMA-3R ENCLOSURE
	ELECTRICAL PANEL, REFER TO THE RESPECTIVE PANEL SCHEDULE
J	ELECTRICAL JUNCTION BOX (J-BOX), AS INDICATED ON THE DRAWINGS, WHERE JUNCTION BOX SERVES EQUIPMENT, PROVIDE COMPLETE EQUIPMENT CONNECTIONS AS REQUIRED; (EX) INDICATES EXISTING TO REMAIN
EF	EXHAUST FAN CONNECTION (EF), PROVIDE COMPLETE EQUIPMENT CONNECTIONS AS REQUIRED (BRANCH CIRCUIT OVERCURRENT DEVICE SERVES AS MOTOR DISCONNECTING MEANS AS PER NEC ARTICLE 430.109(B))
	INDICATES HOME RUN OF WIRING TO PANEL AND CIRCUIT INDICATED
	TELEPHONE/DATA OUTLET, FLUSH MOUNTED, PROVIDE SUITABLE OWNER APPROVED OUTLET BOX (INCLUDE COSTS IN BID FOR 2-GANG OUTLET) IN WALL AND 27 mm (1") CONDUIT (WITH PULL WIRE) RUN FROM OUTLET STUBBED AND CAPPED INTO NEARBY ACCESSIBLE CEILING SPACE, (+) INDICATES ABOVE COUNTER MOUNTING HEIGHT OR WALL MOUNTED TELEPHONE MOUNTING HEIGHT (COORDINATE WITH ARCHITECT/OWNER DURING CONSTRUCTION), (*) INDICATES MOUNTED HIGH ON WALL AT DISPLAY/SCREEN OR ABOVE BOARD
F/A	FIRE ALARM CONTROL PANEL [F/A], EXISTING, ADDRESSABLE ANALOG TYPE, WITH INTEGRAL BATTERY BACKUP; GAMEWELL/FCI/HONEYWELL "S3 SERIES" (IN BOTH THE CENTER SQUARE SCHOOL AND LOGAN SCHOOL) SERVICED BY DCD FIRE & SECURITY (856-628-4756)
ANN	FIRE ALARM REMOTE ANNUNCIATOR PANEL [ANN], (EX) INDICATES EXISTING TO REMAIN
F	FIRE ALARM AUDIO/VISUAL HORN/STROBE, ADA APPROVED TYPE PROVIDING ADA APPROVED COVERAGE, WITH SYNCHRONIZED TYPE STROBE, SEMI-FLUSH MOUNTED; (EX) INDICATES EXISTING TO REMAIN
F	FIRE ALARM VISUAL ONLY STROBE, ADA APPROVED TYPE PROVIDING ADA APPROVED COVERAGE, SYNCHRONIZED TYPE, FLUSH MOUNTED
F	FIRE ALARM MANUAL PULL STATION [F], METAL, NON-CODED, DOUBLE ACTION TYPE, FLUSH MOUNTED, ADDRESSABLE TYPE; (EX) INDICATES EXISTING TO REMAIN
S	FIRE ALARM SMOKE DETECTOR (S), ADDRESSABLE ANALOG PHOTOELECTRIC TYPE, WITH SUITABLE BASE; (EX) INDICATES EXISTING TO REMAIN
S_{CO}	FIRE ALARM COMBINATION SMOKE AND CARBON MONOXIDE (CO) DETECTOR (S)CO, ADDRESSABLE ANALOG PHOTOELECTRIC TYPE, WITH SUITABLE BASE
H	FIRE ALARM HEAT DETECTOR (H), ADDRESSABLE ANALOG TYPE, CONFIGURE FOR 135 DEGREES F (57 DEGREES C) FIXED AND RATE-OF-RISE OPERATION (UNLESS DIFFERENT OPERATION IS INDICATED OTHERWISE), WITH SUITABLE BASE; (*) INDICATES MOUNT ABOVE DROP CEILING (WHERE AN ABOVE CEILING DETECTOR IS SHOWN IN CONJUNCTION WITH A DETECTOR BELOW THE CEILING, MOUNT THE ABOVE CEILING DETECTOR AS CLOSE AS PRACTICAL TO DIRECTLY ABOVE THE BELOW CEILING DETECTOR [FOR DROP CEILINGS, MOUNT ABOVE THE CEILING TILE CONTAINING THE BELOW CEILING DETECTOR])
S_D	FIRE ALARM DUCT TYPE SMOKE DETECTOR (ADDRESSABLE ANALOG PHOTOELECTRIC TYPE) AND HVAC EQUIPMENT SHUTDOWN INTERFACE (S)D, IN DUCT HOUSING WITH SAMPLING TUBES TO SUIT DUCTWORK (COORDINATE REQUIREMENTS WITH M.C.); PROVIDE SHUTDOWN INTERFACE INCLUDING A SUITABLE ADDRESSABLE SUPERVISED OUTPUT RELAY MODULE EITHER INTEGRAL TO OR FIELD INSTALLED DIRECTLY ADJACENT TO DUCT HOUSING; PROVIDE A SUITABLE REMOTE TEST, RESET, AND ALARM INDICATING STATION WALL MOUNTED AT AN OWNER APPROVED LOCATION IN A CORRIDOR OR COMMON USE SPACE NEAR THE DETECTOR; E.C. SHALL FURNISH COMPLETE DUCT DETECTOR AND WIRE TO FIRE ALARM SYSTEM, WHERE EITHER THE HVAC EQUIPMENT AND/OR ANY ASSOCIATED DUCTWORK ARE NEW OR MODIFIED, M.C. SHALL INSTALL DETECTOR ON DUCTWORK AND M.C./ATC CONTRACTOR SHALL PROVIDE ALL HVAC SHUTDOWN INTERFACE WIRING FROM RELAY TO HVAC EQUIPMENT; WHERE BOTH THE HVAC EQUIPMENT AND ALL ASSOCIATED DUCTWORK ARE EXISTING TO REMAIN, E.C. SHALL INSTALL DETECTOR ON DUCTWORK (AS DIRECTED BY AND UNDER THE SUPERVISION OF THE M.C. AND MECHANICAL ENGINEER) AND PROVIDE ALL HVAC SHUTDOWN INTERFACE WIRING FROM RELAY TO HVAC EQUIPMENT (MAKING FINAL CONNECTIONS AT HVAC EQUIPMENT AS DIRECTED BY AND UNDER THE SUPERVISION OF THE M.C./ATC CONTRACTOR AND MECHANICAL ENGINEER)
S	PAGING/INTERCOM SYSTEM CEILING SPEAKER, (EX) INDICATES EXISTING TO REMAIN
SEC	SECURITY ACCESS SYSTEM CONTROL PANEL [SEC], EXISTING, SERVICED BY INTELLICOM OF PENNSAUKEN, NJ (MODIFICATIONS SHALL BE BY THE OWNER'S SECURITY VENDOR)
I	INTERCOM STATION [I], (EX) INDICATES EXISTING TO REMAIN
CR	CARD READER OUTLET [CR], E.C. SHALL PROVIDE SUITABLE OWNER APPROVED OUTLET BOX IN WALL AND 21 mm (3/4") CONDUIT (WITH PULL WIRE) RUN FROM OUTLET TO SECURITY ACCESS SYSTEM DOOR JUNCTION BOX (OR SECURITY CONTROL PANEL WHERE SECURITY ACCESS SYSTEM DOOR JUNCTION BOX IS NOT SHOWN AT THE DOOR); CARD READER, WIRING, AND ALL FINAL CONNECTIONS SHALL BE BY THE OWNER'S SECURITY VENDOR; (EX) INDICATES EXISTING TO REMAIN
J_S	SECURITY ACCESS SYSTEM DOOR JUNCTION BOX (J-S), LOCATE ON SECURE SIDE OF DOOR, E.C. SHALL PROVIDE OWNER APPROVED JUNCTION BOX AND 27 mm (1") CONDUIT RUN FROM JUNCTION BOX STUBBED AND CAPPED INTO ACCESSIBLE CEILING SPACE; ALL SECURITY SYSTEM AND LOW VOLTAGE POWER WIRING AND FINAL CONNECTIONS (INCLUDING LOW VOLTAGE POWER SUPPLY) SHALL BE BY THE OWNER'S SECURITY VENDOR; E.C. SHALL PROVIDE 120 V POWER (TO POWER SUPPLY PRIMARY) WIRING AS SHOWN ON THE DRAWINGS/SPECIFICATIONS
DC	DOOR MONITORING CONTACT CONNECTION [DC], E.C. SHALL PROVIDE 21 mm (3/4") CONDUIT (WITH PULL WIRE) RUN FROM LATCH TO SECURITY ACCESS SYSTEM DOOR JUNCTION BOX; DOOR CONTACT (CONCEALED IN DOOR FRAME), WIRING, AND ALL FINAL CONNECTIONS SHALL BE BY THE OWNER'S SECURITY VENDOR
DR	DOOR RELEASE LATCH (OR MAGNETIC LOCK) CONNECTION [DR], G.C. SHALL FURNISH AND INSTALL LATCH IN DOOR FRAME, E.C. SHALL PROVIDE 21 mm (3/4") CONDUIT (WITH PULL WIRE) RUN FROM LATCH TO SECURITY ACCESS SYSTEM DOOR JUNCTION BOX; WIRING AND ALL FINAL CONNECTIONS SHALL BE BY THE OWNER'S SECURITY VENDOR
	CCTV SECURITY CAMERA; (EX) INDICATES EXISTING TO REMAIN
	NATIONAL ELECTRICAL CODE (NEC), LATEST ADOPTED EDITION
	ELECTRICAL CONTRACTOR (EC)
	MECHANICAL CONTRACTOR (MC), INCLUDING ALL MECHANICAL TRADES IN GENERAL (MECHANICAL, HVAC, ATC, PLUMBING, FIRE PROTECTION, ETC.), REFER TO MECHANICAL DOCUMENTS FOR DISTINCTION BETWEEN CONTRACTORS/TRADES
	GENERAL CONTRACTOR (GC), INCLUDING ALL GENERAL CONSTRUCTION TRADES IN GENERAL (CARPENTRY, STEEL, CONCRETE, SITE, ETC.), REFER TO ARCHITECTURAL AND SITE DOCUMENTS FOR DISTINCTION BETWEEN CONTRACTORS/TRADES

MCE #6029L
MULHERN Consulting Engineers
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321 South York Road
Hatboro, Pennsylvania 19040
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www.MulhernEngineers.com

Garrison Architects
A Professional Corporation of Architects and Planners
713 CREEK ROAD, BELLMAWR, NEW JERSEY 08031 (856) 396-6200

LOGAN ELEMENTARY SCHOOL/MIDDLE SCHOOL
NEW SECURITY VESTIBULES AND WINDOW REPLACEMENT
110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

REVISIONS

a.	e.
b.	f.
c.	g.

Project No. 19-18L
Date: 05/13/19
Scale: AS NOTED

ELECTRICAL NOTES AND DETAILS

LE3

ISSUED FOR BID: 05-13-2019

CENTER SQUARE SCHOOL
NEW SECURITY VESTIBULE

100 PEACHWOOD DRIVE
LOGAN TOWNSHIP, NEW JERSEY 08085

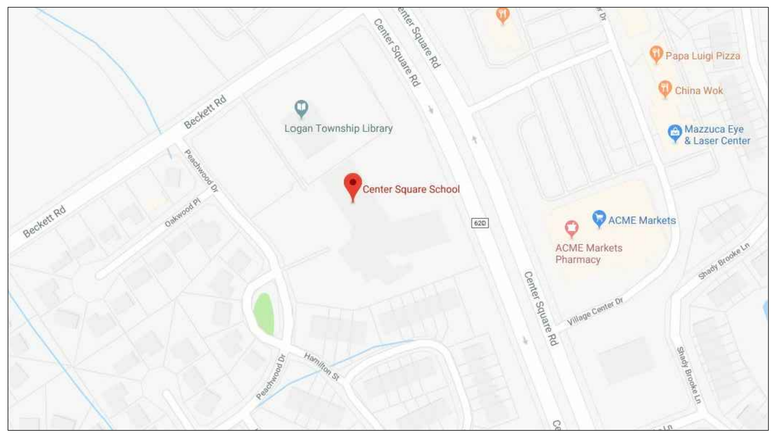
FOR THE

LOGAN TOWNSHIP SCHOOL DISTRICT

110 SCHOOL LANE
LOGAN TOWNSHIP, NEW JERSEY 08085

PROJECT NUMBER: 19-18C
TYPE OF CONSTRUCTION: 2B
USE GROUP: E

BIRD EYES VIEW



LOCATION MAP

No.	INDEX OF DRAWINGS
	COVER SHEET & INDEX
	ARCHITECTURAL
CA-1	OVERALL FLOOR PLAN
CA-2	PARTIAL ENLARGED FLOOR PLANS
CA-3	DOOR SCHEDULE & DETAILS
	MECHANICAL
CM-1	MECHANICAL PLANS, NOTES, SCHEDULES & DETAILS
	ELECTRICAL
CE-1	ELECTRICAL PLAN
CE-2	ELECTRICAL NOTES & DETAILS

NEW JERSEY MODEL CODE ADOPTIONS & STANDARDS:

BUILDING SUBCODE: INTERNATIONAL BUILDING CODE/2015, NEW JERSEY EDITION
PLUMBING SUBCODE: NATIONAL STANDARD PLUMBING CODE/2015
ELECTRICAL SUBCODE: NATIONAL ELECTRICAL CODE (NFPA 70)/2014
ENERGY SUBCODE: ASHRAE STD. 90.1-2013 (COMMERCIAL)
MECHANICAL SUBCODE: INTERNATIONAL MECHANICAL CODE/2015
FUEL GAS SUBCODE: INTERNATIONAL FUEL GAS CODE/2015
REHABILITATION SUBCODE: NJUCC, SUBCHAPTER 6
BARRIER FREE SUBCODE: (SUB 7) - ICC/ANSI A117.1-2009
FIRE PROTECTION SUBCODE: INTERNATIONAL BUILDING CODE/2015, NEW JERSEY EDITION
NJ UCC BULLETIN 00-3: PUBLIC SCHOOLS-FACILITY PLANNING STANDARDS & UCC ENHANCEMENTS

CONSTRUCTION MANAGER:

GREYHAWK, LLC

2000 MIDLANTIC DRIVE, SUITE 210,
MOUNT LAUREL, NJ 08054
PHONE: 856-722-1800 FAX: 856-722-1806

MECHANICAL, PLUMBING, ELECTRICAL ENGINEER:

MULHERN CONSULTING ENGINEERS

321 SOUTH YORK ROAD, HATBORO, PA 19040
PHONE: 215-293-9900 FAX: 215-441-5984

GArrison Architects
A Professional Corporation of Architects and Planners
713 CREEK ROAD, BELLMAWR, NEW JERSEY 08031 (856) 396-6200

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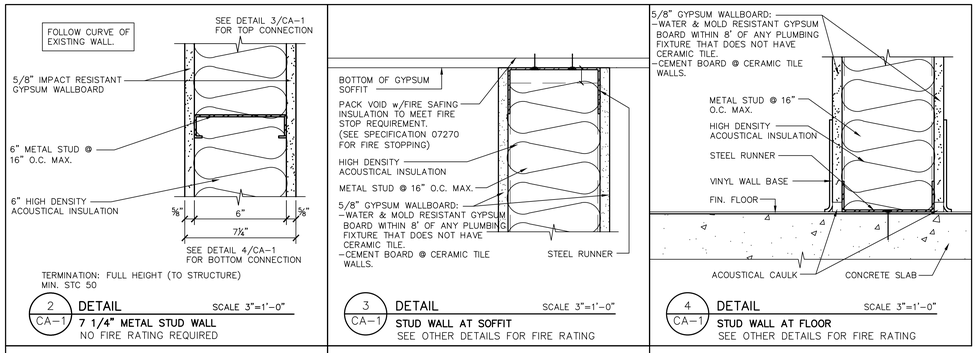

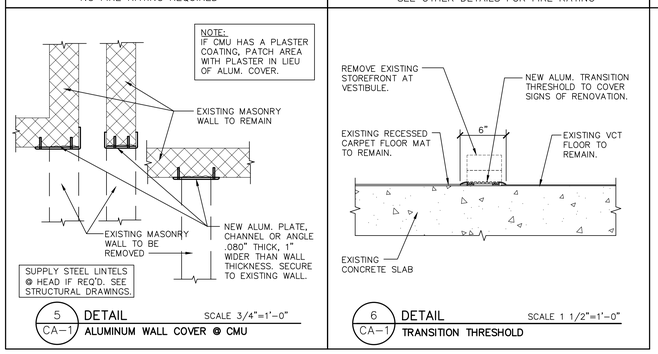

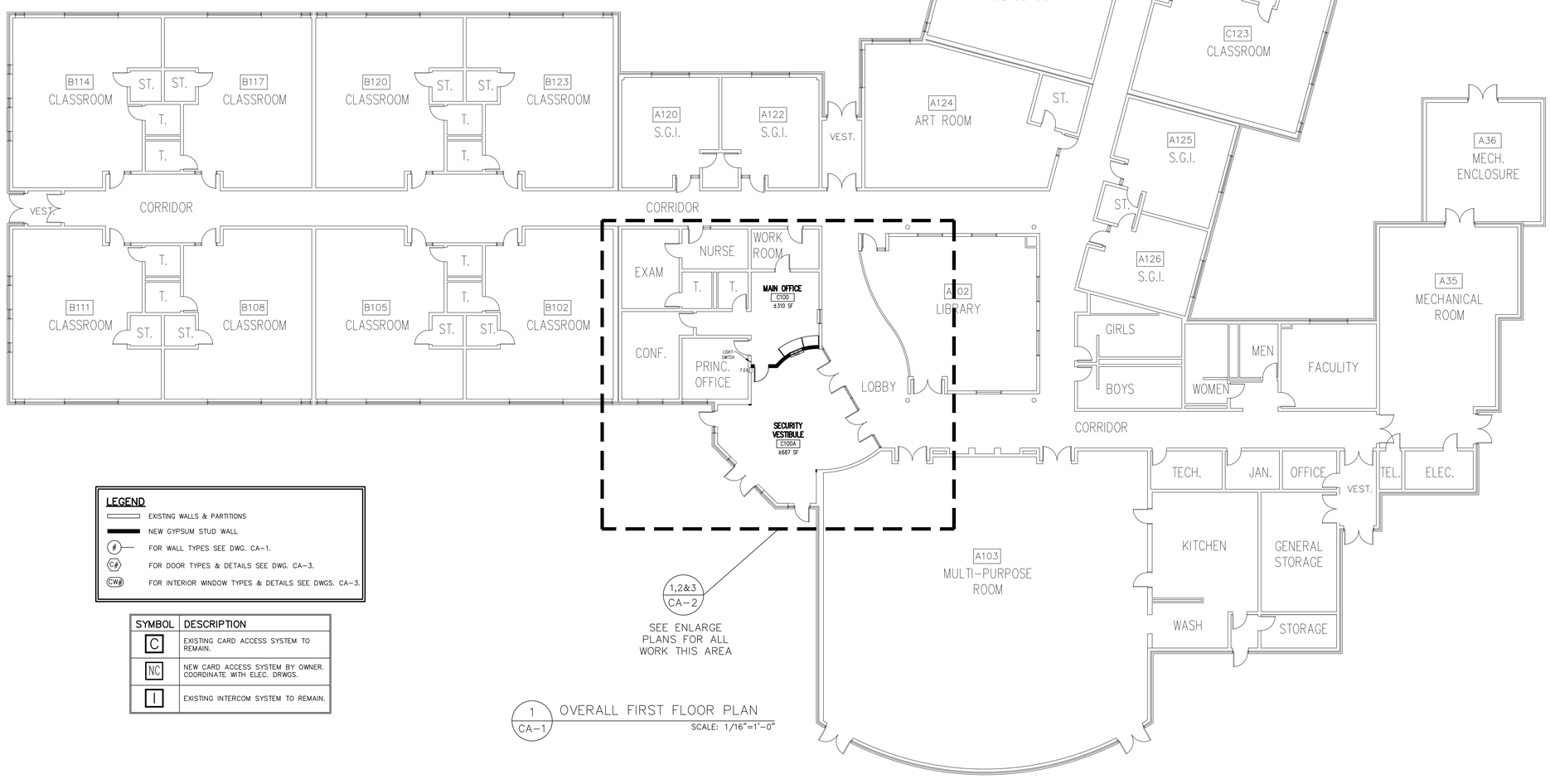

LEGEND

- EXISTING WALLS & PARTITIONS
- NEW GYPSUM STUD WALL
- (#) FOR WALL TYPES SEE DWG. CA-1.
- <C#> FOR DOOR TYPES & DETAILS SEE DWG. CA-3.
- (CW#) FOR INTERIOR WINDOW TYPES & DETAILS SEE DWGS. CA-3.

SYMBOL	DESCRIPTION
C	EXISTING CARD ACCESS SYSTEM TO REMAIN.
NC	NEW CARD ACCESS SYSTEM BY OWNER. COORDINATE WITH ELEC. DRWGS.
I	EXISTING INTERCOM SYSTEM TO REMAIN.

1 CA-1 OVERALL FIRST FLOOR PLAN
SCALE: 1/16"=1'-0"

ISSUED FOR BID: 05-13-2019

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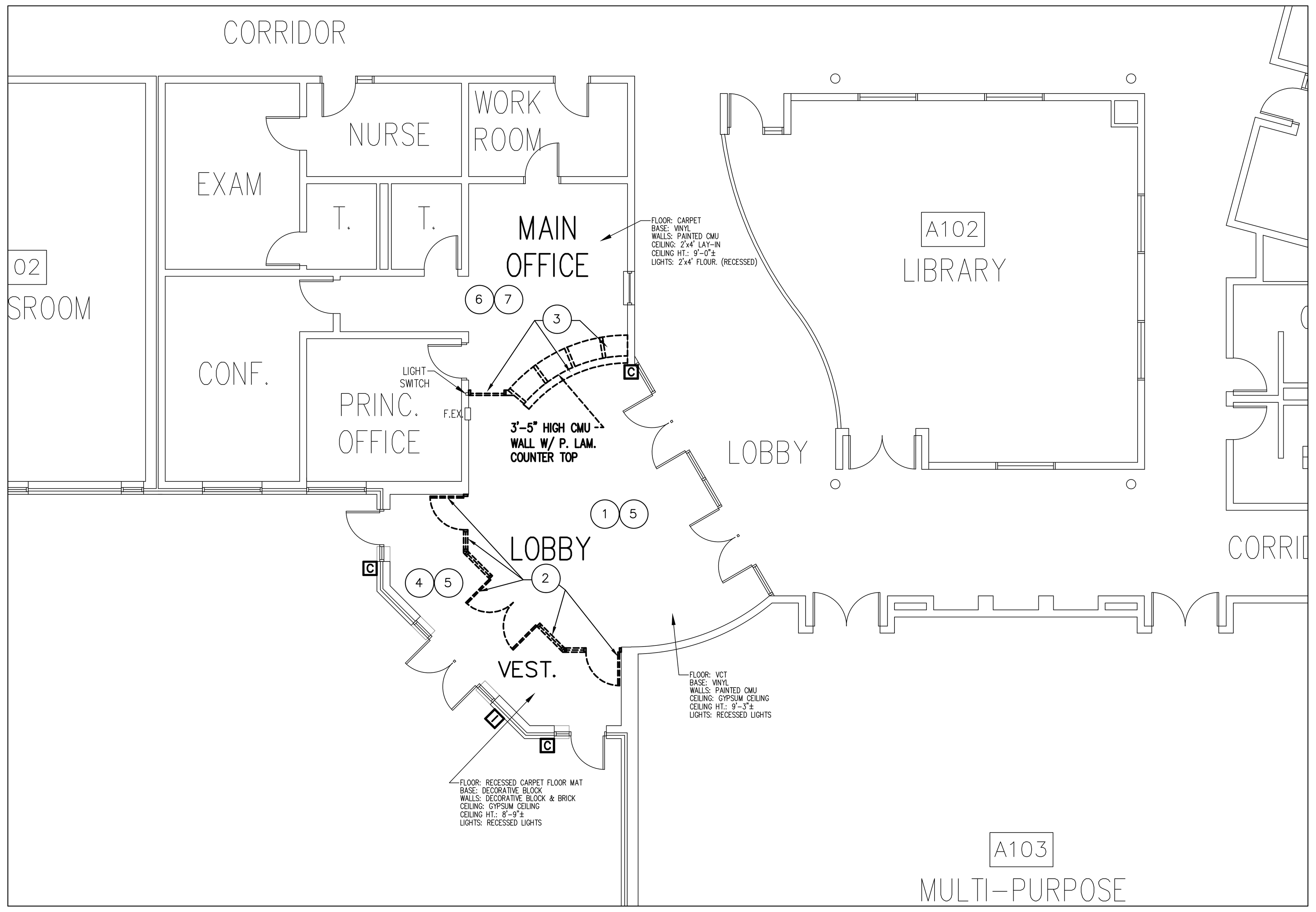
CENTER SQUARE SCHOOL
NEW SECURITY VESTIBULE
100 PEACHWOOD DRIVE
LOGAN TOWNSHIP, NEW JERSEY 08085

REVISIONS
a. e.
b. f.
c. g.

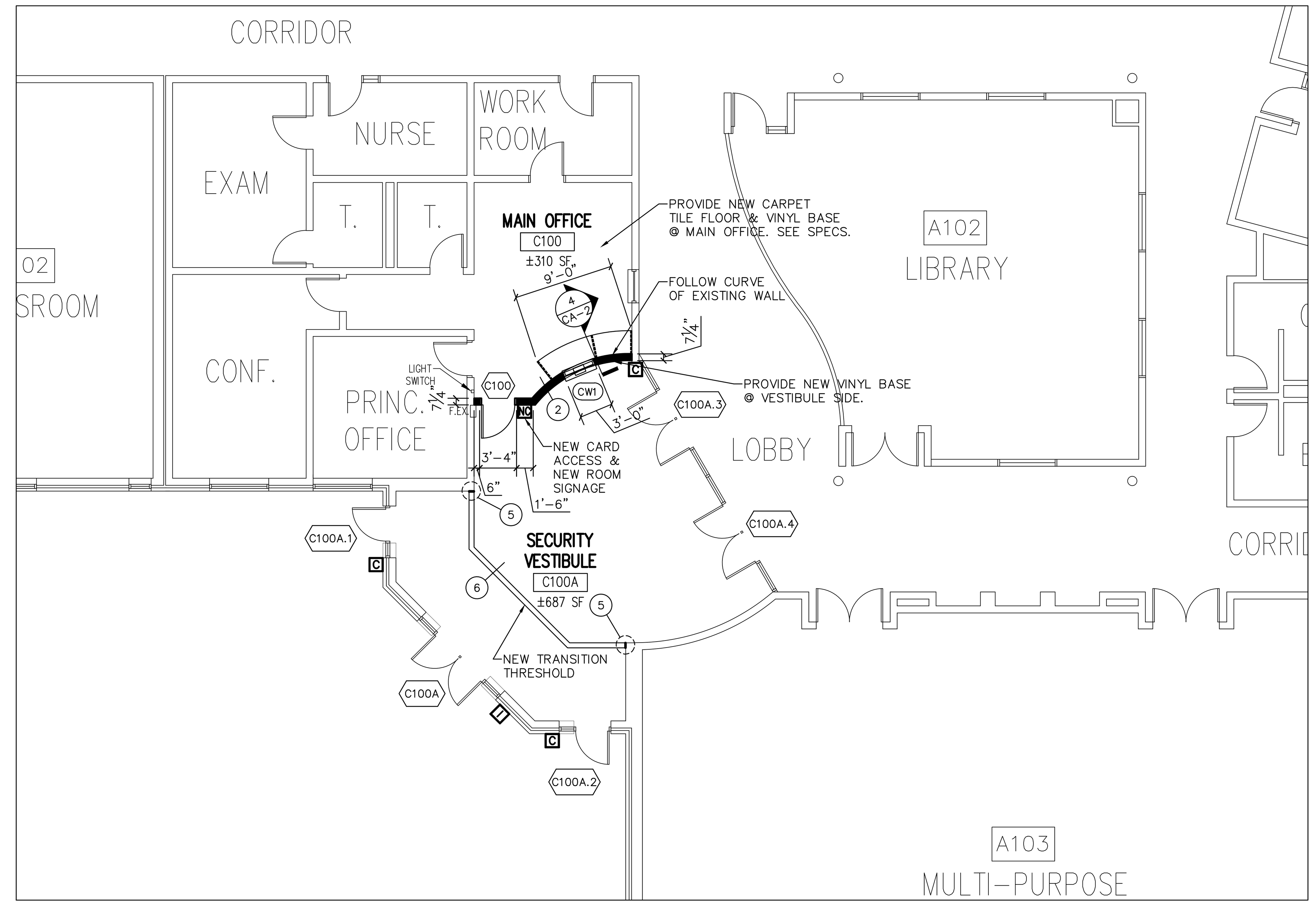
Project No: 9-18C
Date: 05/13/19
Scale: AS NOTED

OVERALL FLOOR PLAN (CENTER SQ.)

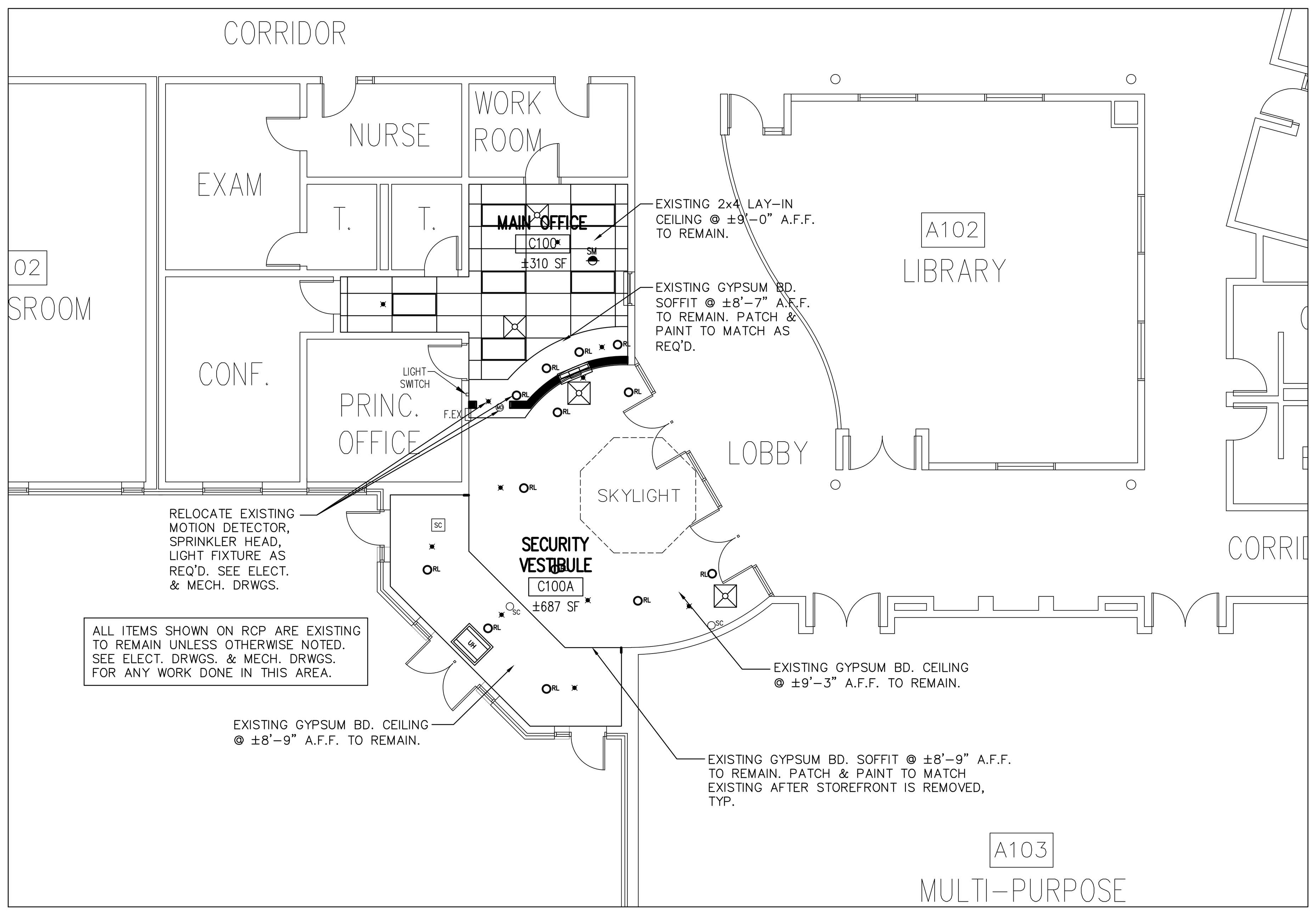
CA-1



1 PARTIAL DEMOLITION FLOOR PLAN (CA-2) — SCALE: 1/8"=1'-0"



2 PARTIAL PROPOSED FLOOR PLAN (CA-2) — SCALE: 1/8"=1'-0"



3 PARTIAL REFLECTED CEILING PLAN (CA-2) — SCALE: 1/8"=1'-0"

GENERAL DEMOLITION/ RENOVATION NOTES:

THE GENERAL CONTRACTOR SHALL REMOVE ALL ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO LOCKERS, DOORS AND FRAMES, WINDOWS AND FRAMES, CEILING SYSTEM, PARTITIONS, CARPET, STOREFRONT WINDOW SYSTEM, GUARDRAILS, HANDRAILS, TACK STRIPS, SHELVING/ CASEWORK AND TOILET PARTITIONS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL AFOREMENTIONED ITEMS ABOVE. REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE ARCHITECT FOR FURTHER CLARIFICATIONS.

THE PLUMBING CONTRACTOR SHALL DISCONNECT AND CAP ALL PLUMBING ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO WATER CLOSETS, LAVATORIES, DRINKING FOUNTAINS, SHOWERS AND CONTROLS, SUPPLY LINES FOR HOT AND COLD WATER, EYE WASH STATIONS, WASH BASINS, LIMITED SPRINKLER SYSTEM AND AIR COMPRESSOR SUPPLY LINES. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL AFOREMENTIONED ITEMS ABOVE. REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE PLUMBING ENGINEER FOR FURTHER CLARIFICATIONS.

THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND CAP ALL ELECTRICAL ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO LIGHT FIXTURES, SWITCHES, WALL OUTLETS, WIRING/ CONDUIT AND TELEPHONE SYSTEMS, REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE ELECTRICAL ENGINEER FOR FURTHER CLARIFICATIONS.

THE H.V.A.C. CONTRACTOR SHALL DISCONNECT AND CAP ALL H.V.A.C. ITEMS IN EXISTING SPACES THAT ARE BEING RENOVATED AND NO LONGER REQUIRED TO REMAIN IN THE DESIGN. THESE ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO UNIT VENTILATORS, THERMOSTATS, COOLING AND HEATING PIPES AND VALVE CONTROLS. THE H.V.A.C. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL AFOREMENTIONED ITEMS ABOVE. REFER TO THE DRAWINGS AND THE SPECIFICATIONS PREPARED BY THE H.V.A.C. ENGINEER FOR FURTHER CLARIFICATIONS.

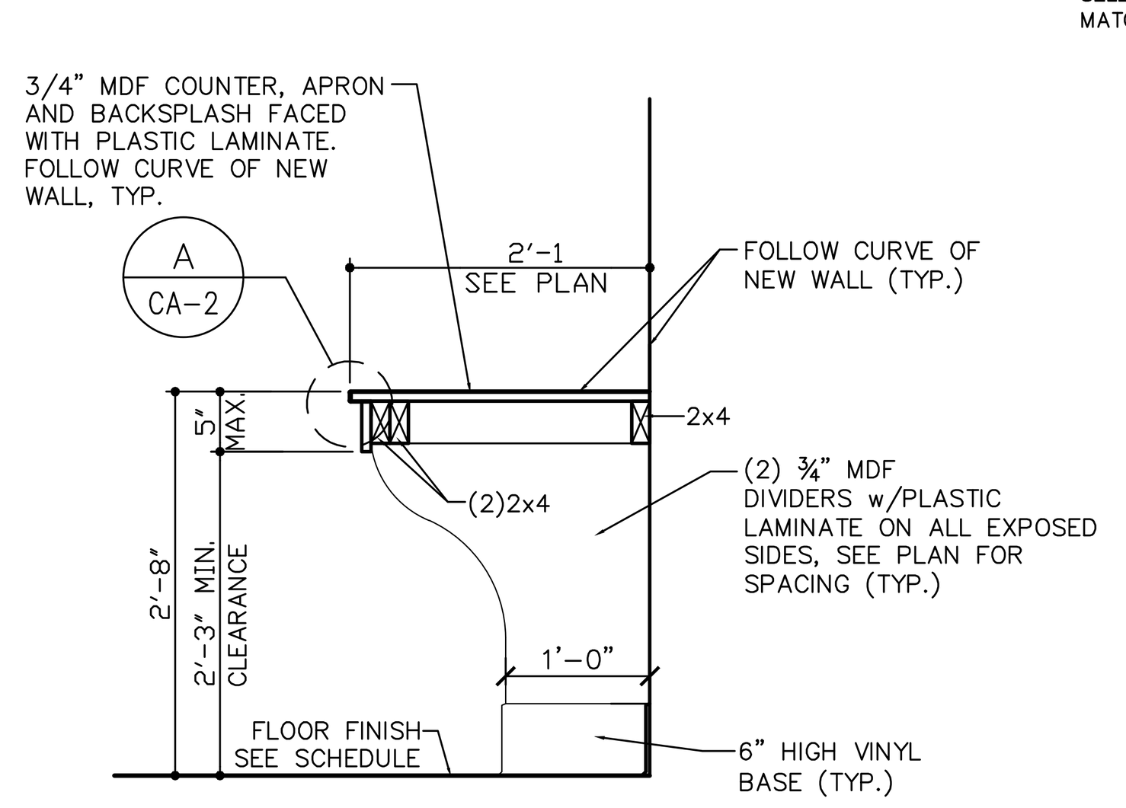
ALL REMOVED ITEMS, IF REQUIRED TO BE SALVAGED BY OWNER, SHALL BE REMOVED BY OWNER BEFORE DEMOLITION WORK STARTS.

1. EXISTING FLOOR FINISH TO REMAIN. PROTECT DURING RENOVATION/CONSTRUCTION. SEE ROOM FINISH SCHEDULE.
2. REMOVE EXISTING STOREFRONT SYSTEM & DOORS IN IT'S ENTIRETY. PROVIDE NEW FLOOR TRANSITION THRESHOLD TO COVER GAP BETWEEN EXISTING VCT FLOOR & EXISTING RECESSED CARPET FLOOR MAT. PATCH & PAINT EXISTING GYPSUM SOFFIT & PROVIDE ALUM. JAMB CLOSURES TO COVER SIGNS OF RENOVATION. SEE FLOOR PLAN FOR NEW LAYOUT.
3. REMOVE EXISTING 3'-5" HIGH CMU WALL, P.LAM COUNTERTOP W/ SUPPORT POSTS & DOUBLE ACTING DOOR IN IT'S ENTIRETY. SEE FLOOR PLAN FOR NEW LAYOUT.
4. EXISTING RECESSED CARPET FLOOR MAT OVER CONCRETE FLOOR TO REMAIN.
5. EXISTING PAINTED GYPSUM CEILING & EXISTING LIGHTING TO REMAIN.
6. REMOVE EXISTING CARPET FLOOR & VINYL BASE. PROVIDE NEW CARPET TILE FLOOR & VINYL BASE.
7. EXISTING LAY-IN CEILING ASSEMBLY & EXISTING LIGHTING TO REMAIN.

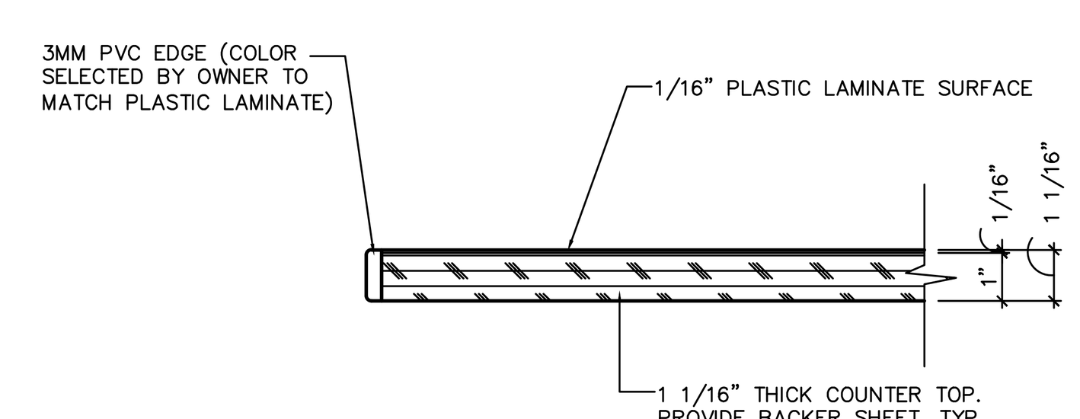
LEGEND

Symbol	Description
(open bar)	EXISTING WALLS & PARTITIONS
(solid bar)	NEW GYPSUM STUD WALL
(#)	FOR WALL TYPES SEE DWG. CA-1.
⟨C#⟩	FOR DOOR TYPES & DETAILS SEE DWG. CA-3.
(CW#)	FOR INTERIOR WINDOW TYPES & DETAILS SEE DWGS. CA-3.

SYMBOL	DESCRIPTION
C	EXISTING CARD ACCESS SYSTEM TO REMAIN.
NC	NEW CARD ACCESS SYSTEM BY OWNER. COORDINATE WITH ELEC. DRWGS.
I	EXISTING INTERCOM SYSTEM TO REMAIN.



4 SECTION COUNTER (CA-2) — SCALE: 3/4"=1'-0"



A EDGE DETAIL (CA-2) — SCALE: 3"=1'-0"
FOR ALL BUILT-IN CASEWORK & FURNITURE EDGE

NOTE:
DURING CONSTRUCTION/RENOVATION, IF ASBESTOS IS DETECTED, THE CONTRACTOR SHALL NOTIFY THE SCHOOL DISTRICT'S ASBESTOS CONSULTANT TO VERIFY ALL MATERIAL WHERE ASBESTOS MAY BE PRESENT. IT SHALL BE REMOVED BY ASBESTOS ABATEMENT CONTRACTOR. IT SHALL BE ABATED AS CHANGE ORDER WORK. ALL IDENTIFICATION TO BE DONE WITHIN 45 DAYS OF NOTICE TO PROCEED SO THIS CONTRACTOR'S WORK WILL NOT BE AFFECTED.

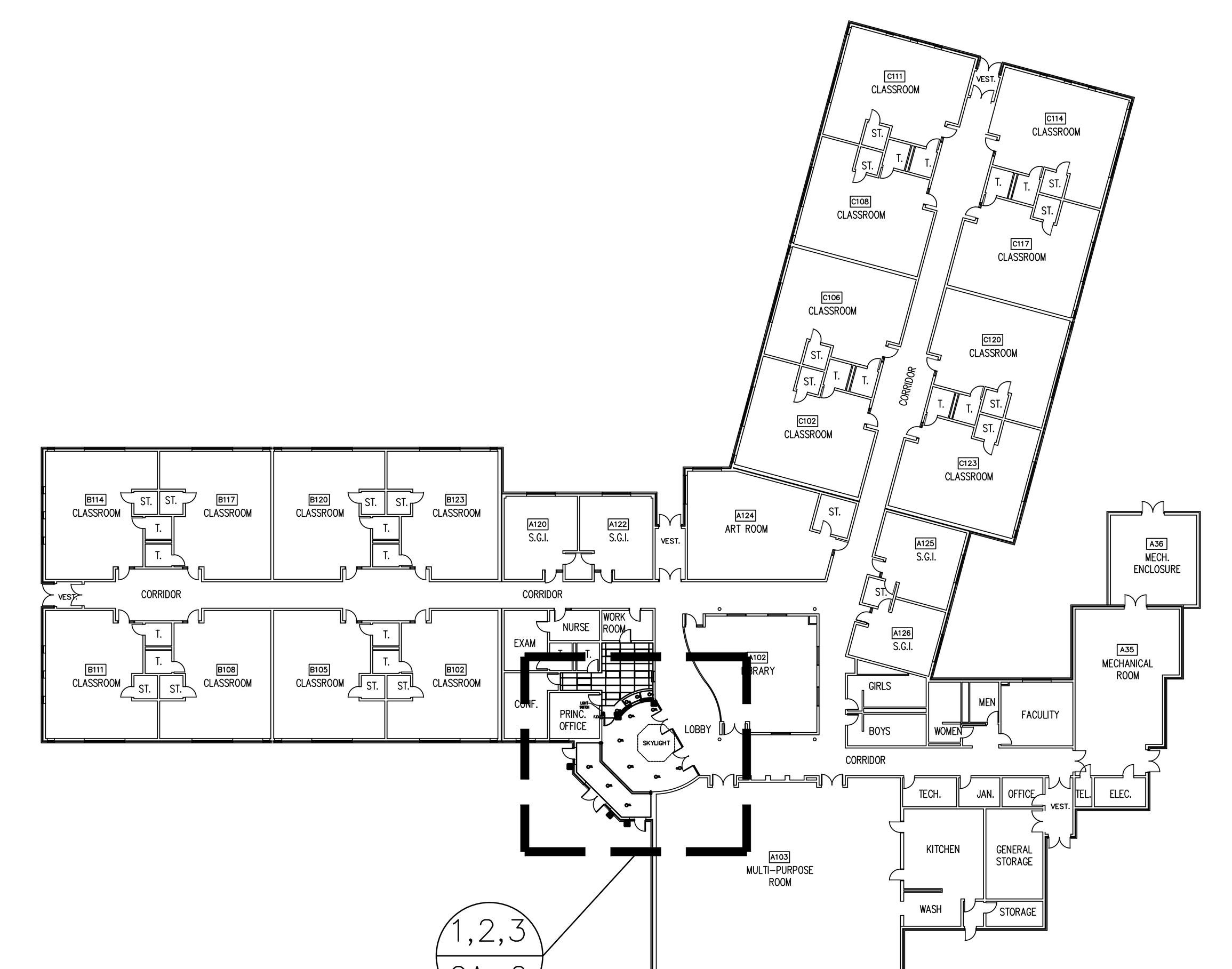
LEGEND

Line	Description
(solid line)	EXISTING TO REMAIN
(dashed line)	EXISTING TO REMOVED

NOTE:
WHEN THE REMOVAL OF ANY HVAC EQUIPMENT OCCURS IN AN EXISTING MASONRY WALL, INTERIOR OR EXTERIOR, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INFILL OPENING WITH MATERIALS THAT MATCH ADJACENT OPENINGS. (COORDINATE ALL OPENINGS w/HVAC DRAWINGS PRIOR TO INFILL.

NOTE:
AFTER THE REMOVAL OF ANY WALL MOUNTED ITEMS IN A RENOVATED SPACE, IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO FILL ANY VOIDS OR HOLES IN THE WALLS TO A SMOOTH & LEVEL FINISH w/MATERIALS TO MATCH ADJACENT. IF ADJACENT AREA IS MASONRY, SCORE PATCHED AREA TO MATCH EXISTING COURSING. SEE ROOM FINISH SCHEDULE FOR FINISHES.

SEE MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTES & DETAILS.



KEY PLAN
SCALE: NTS

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CENTER SQUARE SCHOOL
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100 PEACHWOOD DRIVE
LOGAN TOWNSHIP, NEW JERSEY 08085

REVISIONS

a.	e.
b.	f.
c.	g.

Project No. 19-18C
Date: 05/13/19
Scale: 1/8"=1'-0"

PARTIAL FLOOR PLANS (CENTER SQ.)
CA-2

ISSUED FOR BID: 05-13-2019

DOOR AND FRAME SCHEDULE

* BUILDING IS FULLY SPRINKLERED.

DR. NO.	FROM ROOM NO.	TO ROOM NO.	TYPE OF ROOM	DOOR (1 3/4" THICK DOOR U.N.O.) SIZE WIDTH	SIZE HEIGHT	MATERIAL	GAGE	TYPE	GLASS TYPE	GLASS THICKNESS	GLASS SIZE	THRESHOLD	HARDWARE SET NO.	FRAME MATERIAL	FRAME GAGE	FRAME DEPTH	FRAME TYPE	DETAILS SEE CA-3 HEAD	JAMB	SILL	REMARKS: FIRE RATING (LABEL)	NEW SOLID CORE WOOD DOOR (SEE GENERAL NOTE #3)	NEW HOLLOW METAL FRAME (SEE GENERAL NOTE #4)	NEW A.D.A. DOOR HARDWARE (SEE GENERAL NOTE #5)	NEW CARD ACCESS SYSTEM (SEE HARDWARE SCHEDULE)	EXISTING CARD ACCESS SYSTEM TO REMAIN. (SEE HARDWARE SCHEDULE)	EXISTING DOORS & FRAMES TO REMAIN. SEE HARDWARE SCHEDULE FOR NEW HARDWARE	EXISTING DOORS, FRAME & HARDWARE TO REMAIN	PROVIDE NEW 3M SECURITY FILM @ ALL GLASS LOCATIONS	NEW FRP DOORS (SEE GENERAL NOTE #6)	NEW ALUMINUM FRAMES (SEE GENERAL NOTE #7)
BASE BID																															
C100	MAIN OFFICE	SECURITY VEST.	MAIN OFFICE	3'–0"	7'–0"	WOOD	–	A	TEMP	1/4"	16x36	–	001–C	HM	16	6"	1	1	2	3	–	✔	✔	✔	✔				✔		
C100A	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	(2)3'–0"	7'–2"	ALUM	–	B	–	–	–	–	002–C	ALUM	–	–	2	–	–	–	–						✔		✔		
C100A.1	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	3'–0"	7'–2"	ALUM	–	C	–	–	–	–	005–C	ALUM	–	–	3	–	–	–	–					✔	✔		✔		
C100A.2	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	3'–0"	7'–2"	ALUM	–	C	–	–	–	–	005–C	ALUM	–	–	3A	–	–	–	–					✔	✔		✔		
C100A.3	CORRIDOR	SECURITY VEST.	SECURITY VESTIBULE	(2)3'–0"	7'–0"	FRP	–	D	–	–	–	–	003–C	ALUM	–	–	4	–	–	–	–					✔		✔	✔		
C100A.4	CORRIDOR	SECURITY VEST.	SECURITY VESTIBULE	(2)3'–0"	7'–0"	FRP	–	D	–	–	–	–	004–C	ALUM	–	–	4	–	–	–	–							✔	✔		
ALTERNATE BID #1																															
C100A	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	(2)3'–0"	7'–0"	FRP	–	E	TEMP	1"	FULL	ALUM	001–C–ALT	ALUM	–	4½"	5	4	5	6	–			✔					✔	✔	✔
C100A.1	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	3'–0"	7'–0"	FRP	–	F	TEMP	1"	FULL	ALUM	003–C–ALT	ALUM	–	4½"	6	4	5	6	–			✔		✔			✔	✔	✔
C100A.2	SECURITY VEST.	EXTERIOR	SECURITY VESTIBULE	3'–0"	7'–0"	FRP	–	F	TEMP	1"	FULL	ALUM	003–C–ALT	ALUM	–	4½"	6A	4	5	6	–			✔		✔			✔	✔	✔

PROVIDE NEW ROOM SIGNAGE AT DOOR C100.

SIGNAGE: ALL SIGNAGE SHALL COMPLY WITH CABO/ANSI A117.1
ALL INTERIOR DOORS ARE TO RECEIVE SIGNAGE

INSTALL PERMANENT SIGNS ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR AT MAX. 60" ABOVE FLOOR TO CENTER LINE OF SIGN, OVERHEAD SIGN SHALL BE INSTALLED AT 80" MIN. HEIGHT ABOVE FLOOR. SEE FIG. 0 & FIG. 8 .

LETTERS AND NUMBERS SHALL HAVE WIDTH TO HEIGHT RATIO BETWEEN 3:5 AND 1:1.

ALL LETTERS AND NUMBERS SHALL BE GRADE 2 BRAILLE, PROVIDE INTERNATIONAL SYMBOL FOR ACCESSIBILITY.

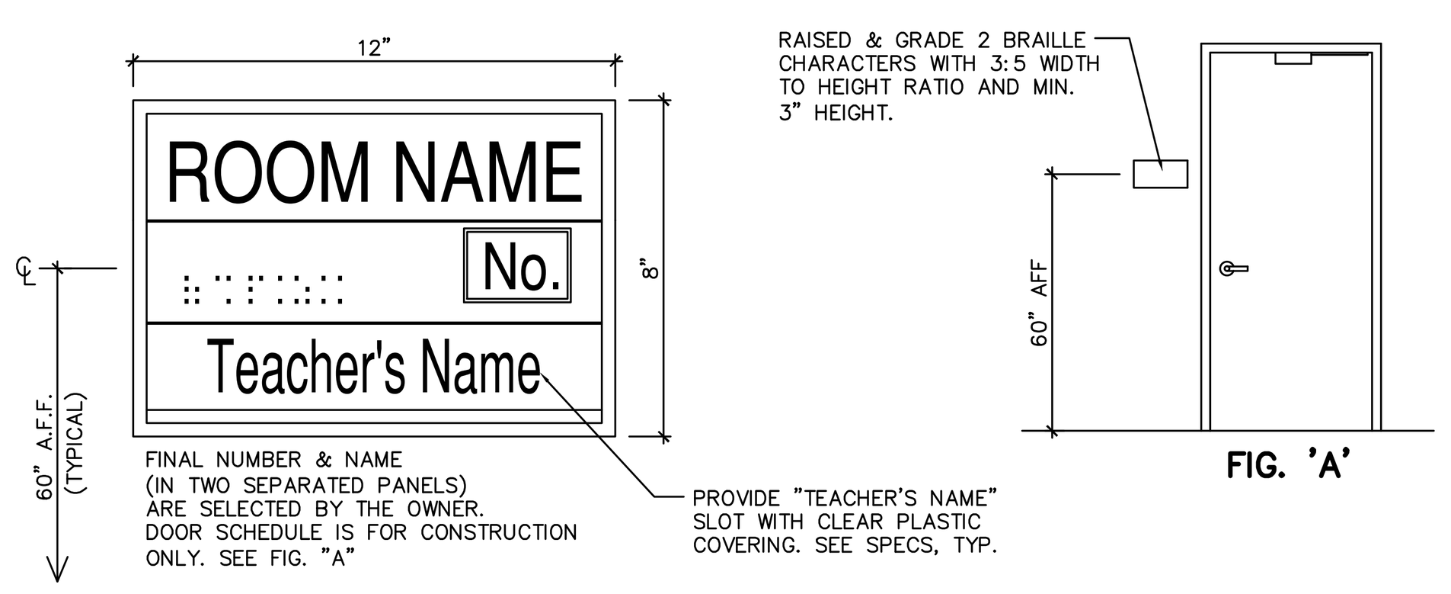
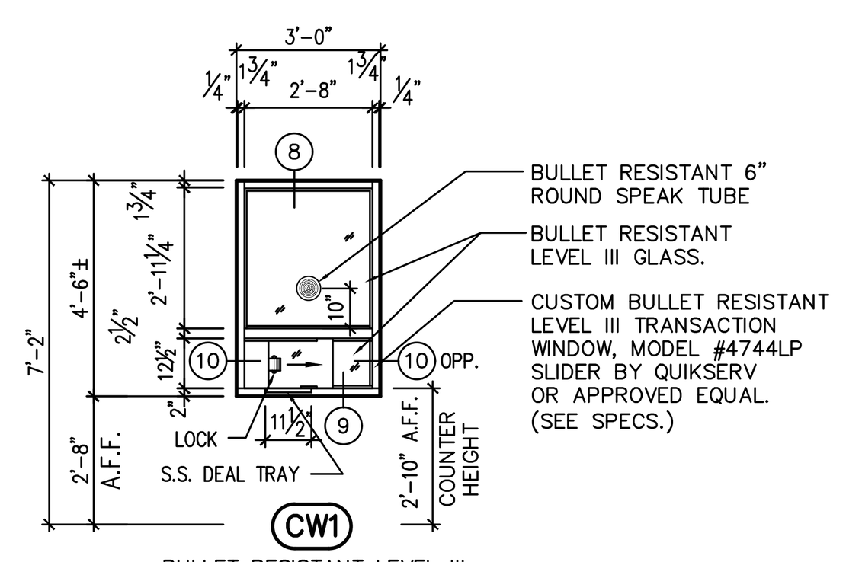


FIG. 'A'

INTERIOR WINDOW TYPES:

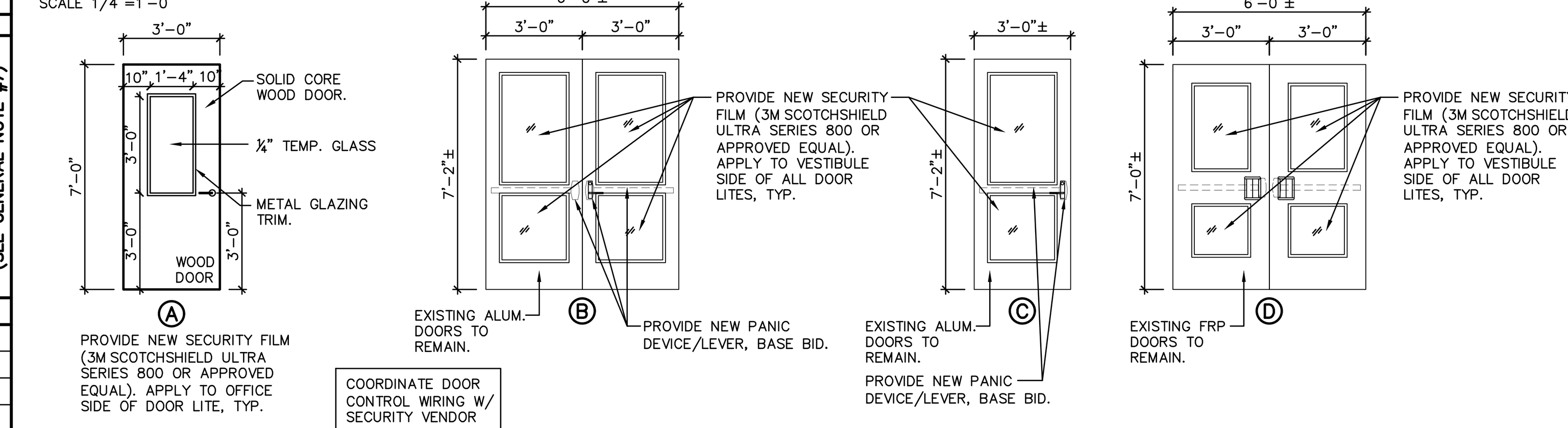
SCALE 1/4"=1'–0"



BULLET RESISTANT LEVEL III SLIDING TRANSACTION WINDOW

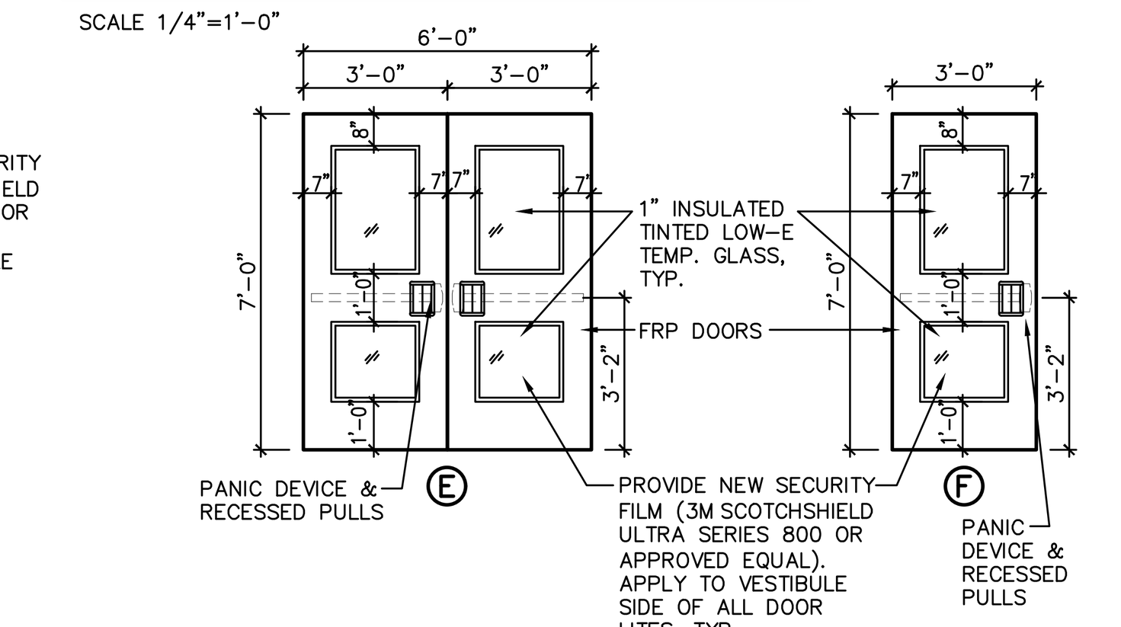
DOOR TYPES: (BASE BID)

SCALE 1/4"=1'–0"



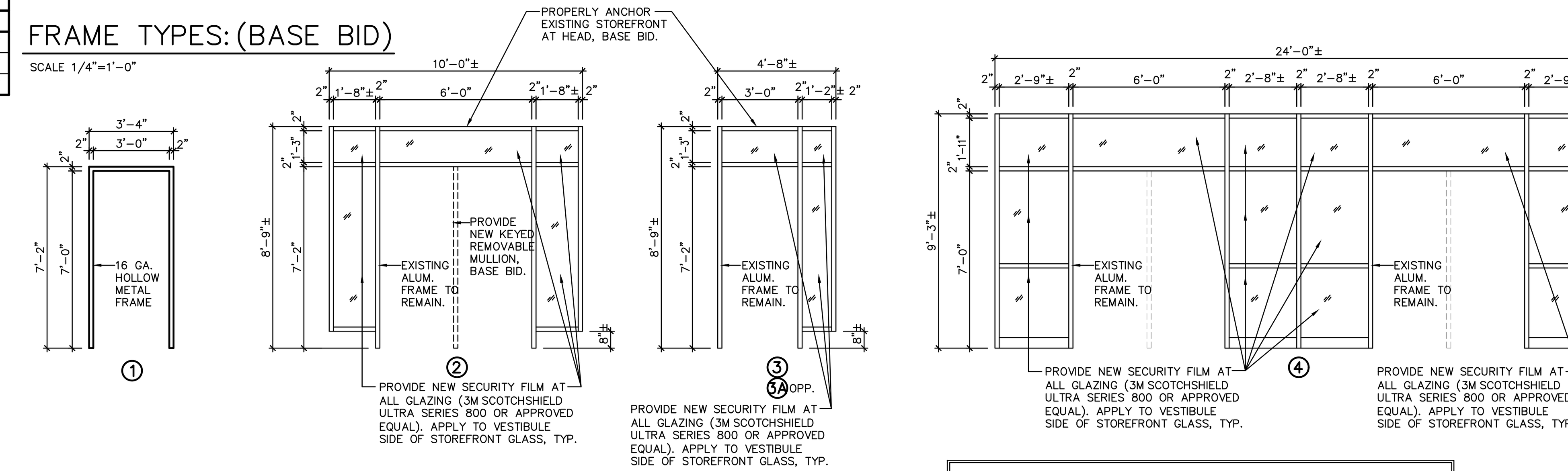
DOOR TYPES: (ALT. BID #1)

SCALE 1/4"=1'–0"



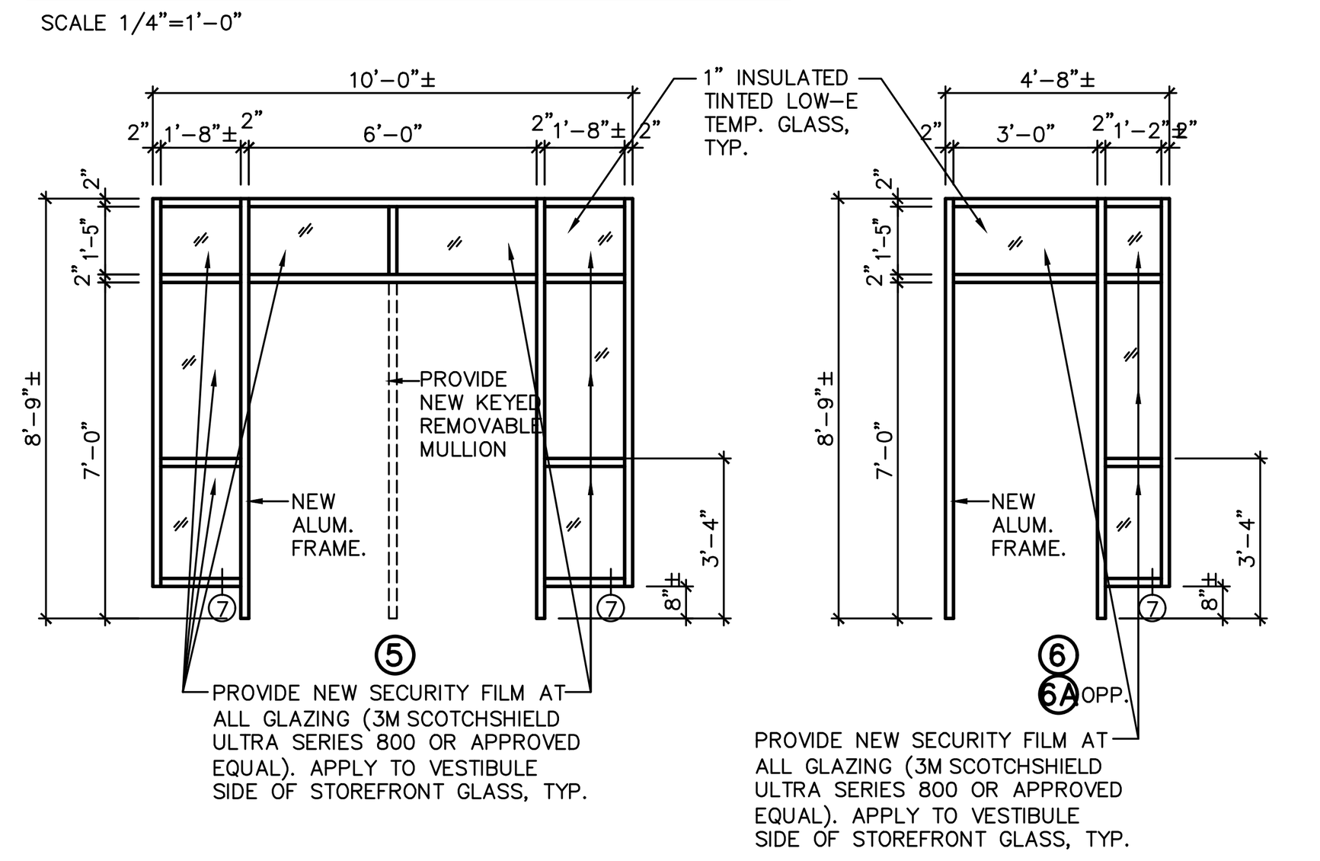
FRAME TYPES: (BASE BID)

SCALE 1/4"=1'–0"



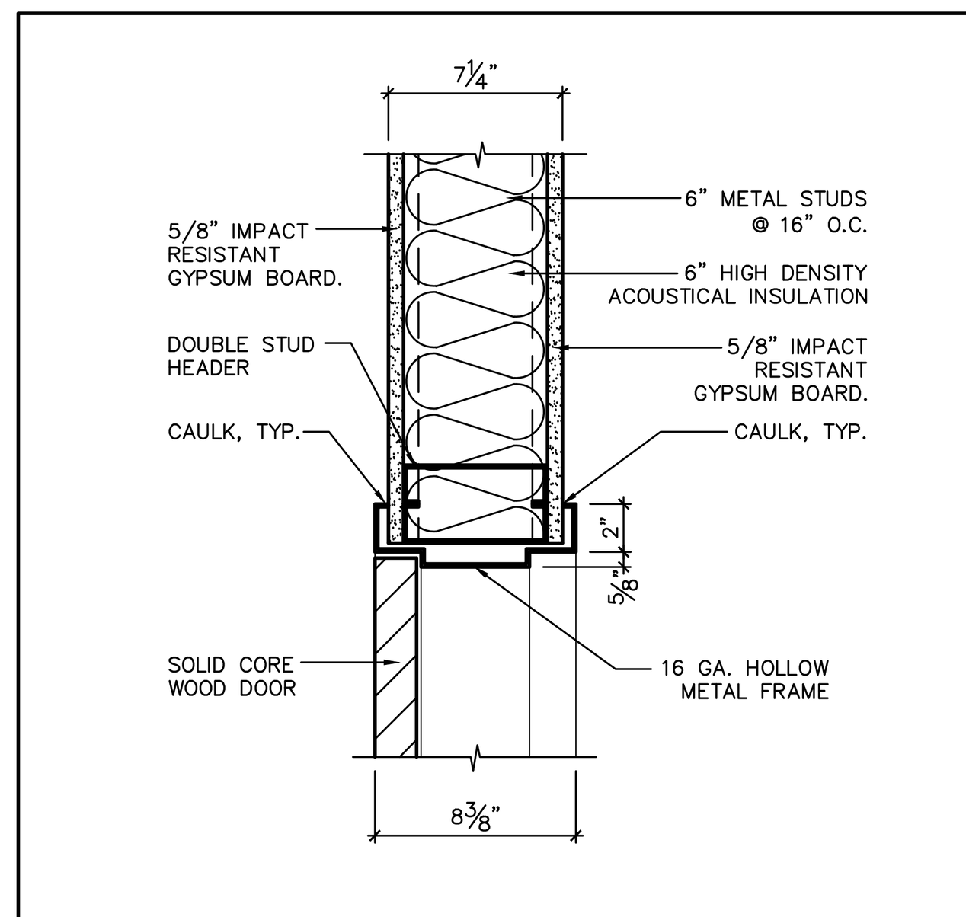
FRAME TYPES: (ALT. BID #1)

SCALE 1/4"=1'–0"

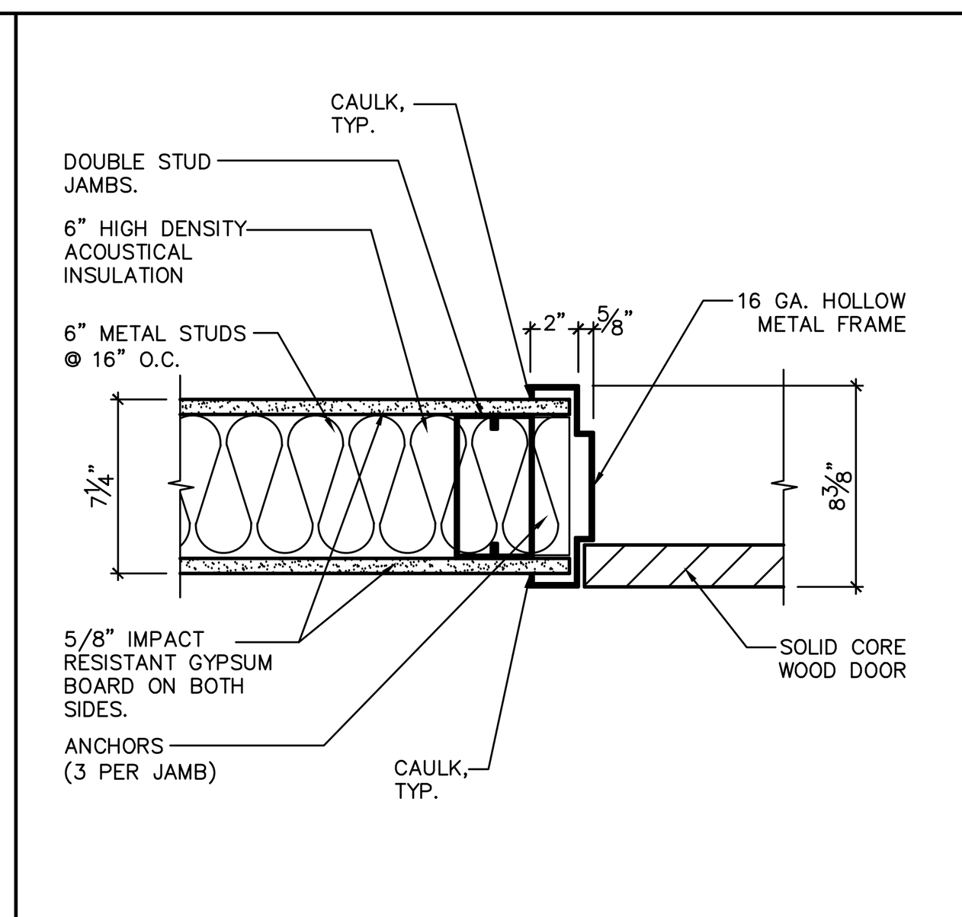


GENERAL NOTES:

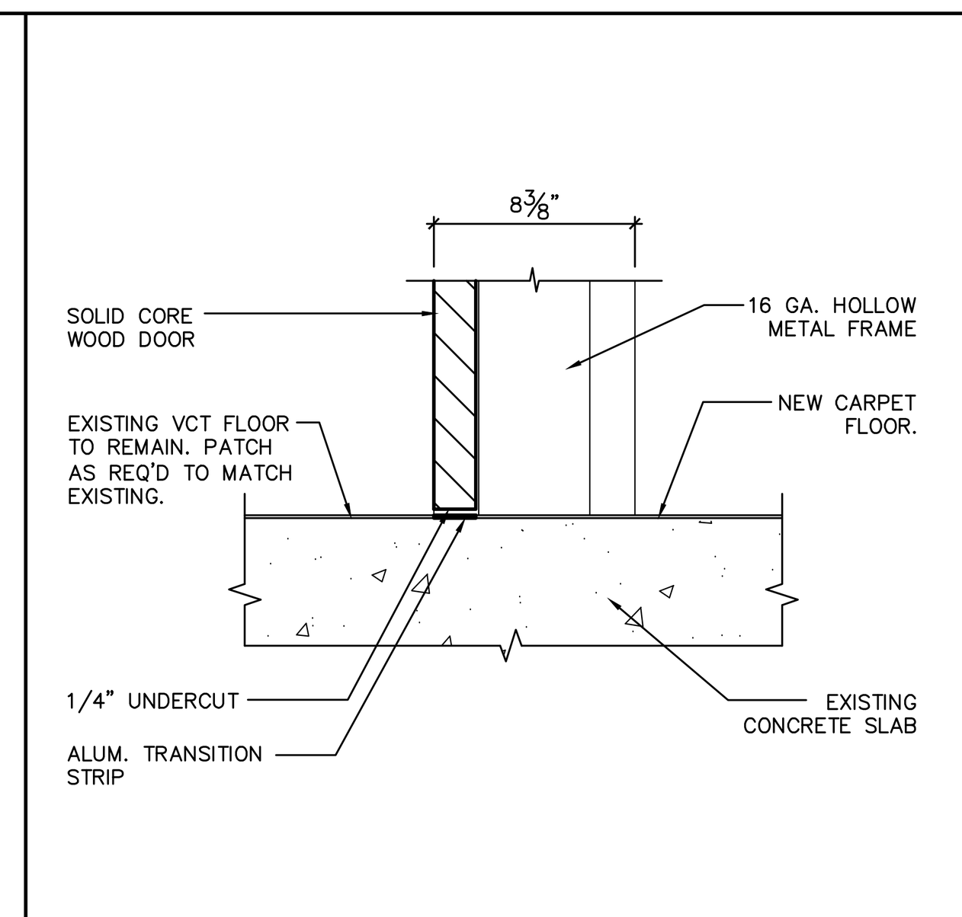
1. CUT VISION PANEL OPENING INTO NEW DOORS & INSTALL METAL GLAZING TRIM & TEMPERED GLASS. TYPICAL FOR ALL DOORS W/ VISION PANEL. SEE DETAIL 11/CA–3.
2. ALL GLAZING OPENINGS ON WOOD DOORS SHALL BE MIN. 5" TO ANY HARDWARE.
3. NEW SOLID CORE WOOD DOORS. FINISH TO BE SELECTED BY OWNER. SEE DOOR SCHEDULE FOR RATING.
4. NEW HOLLOW METAL FRAME. FINISH TO BE SELECTED BY OWNER. SEE DOOR SCHEDULE FOR RATING.
5. ALL DOOR HARDWARE TO BE A.D.A. COMPLIANT WITH UCC BARRIER FREE CODE IN CONJUNCTION WITH ICC/ANSI A117.1–2009.
6. NEW FRP DOORS. COLOR TO BE SELECTED BY OWNER.
7. NEW ALUMINUM STOREFRONT FRAMES. COLOR TO BE SELECTED BY OWNER.
8. ALL DIMENSIONS OR SCALES SHOWN AS PLUS OR MINUS (±) ARE FOR INFORMATIONAL PURPOSES AND SHALL NOT BE TAKEN AS EXACT. CONTRACTOR SHALL FIELD VERIFY ALL OPENINGS.
9. MODIFY OR REFURBISH AND PAINT ADJACENT SURFACES DAMAGED OR DISTURBED DURING RENOVATION. PROVIDE TRIM AS REQUIRED TO COVER SIGNS OF RENOVATION, TYP.
10. EXISTING DOOR CONTACTS SHALL BE DISCONNECTED & THEN REATTACHED TO NEW DOORS.
11. EXISTING CARD READERS & INTERCOM SYSTEMS SHALL BE RE–USED IN NEW DOORS. PROVIDE NEW WIRING AS REQUIRED. SEE HARDWARE SCHEDULE FOR NEW ELECTRIC STRIKES, ETC.



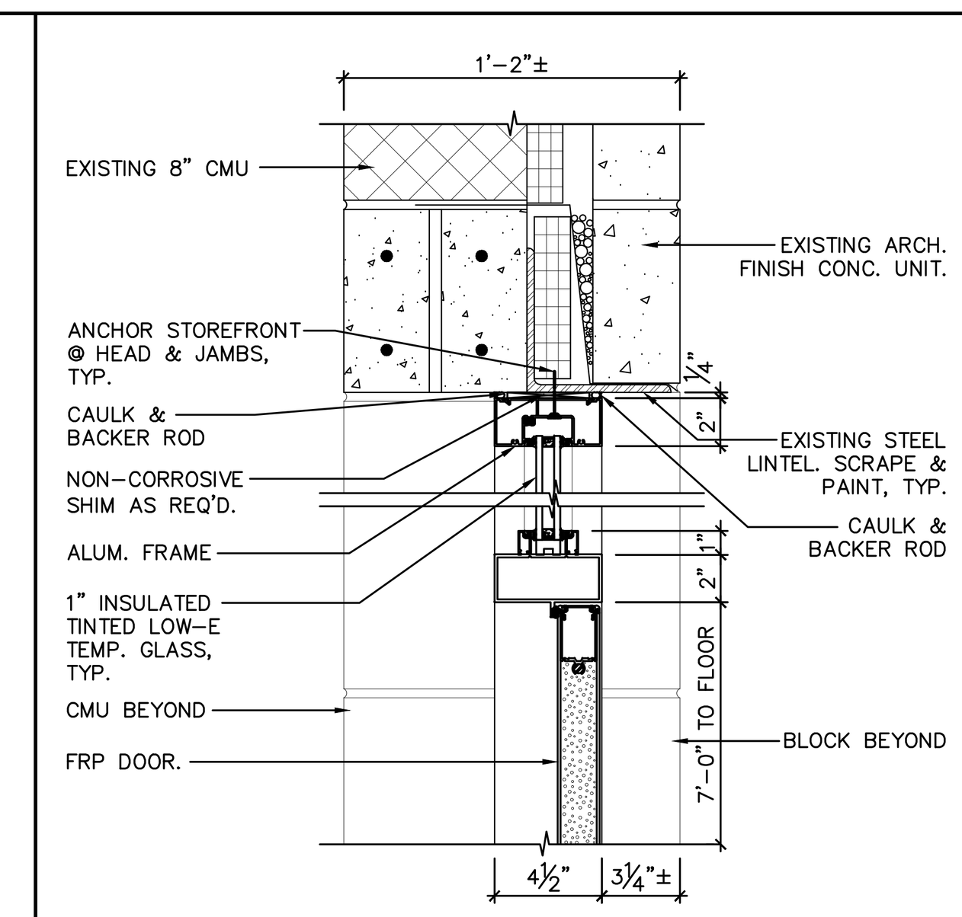
1 / CA–3 DETAIL — DOOR HEAD — SCALE: 1 1/2"=1'–0"



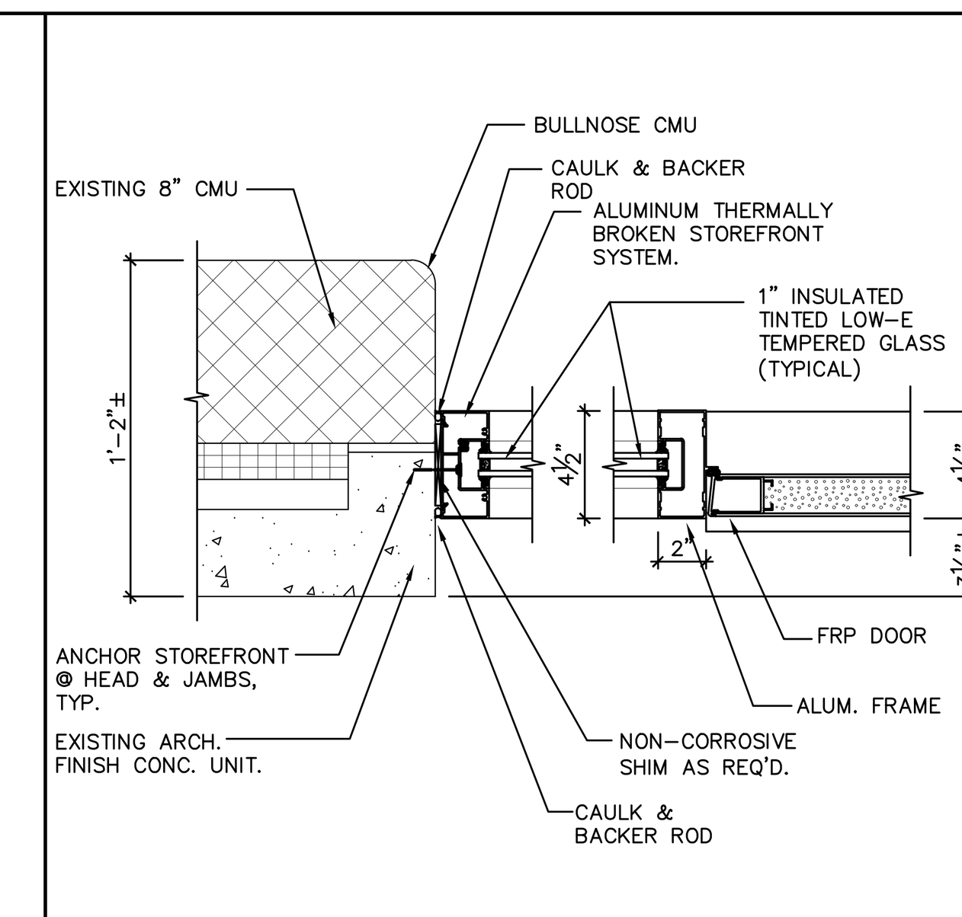
2 / CA–3 DETAIL — DOOR JAMB — SCALE: 1 1/2"=1'–0"



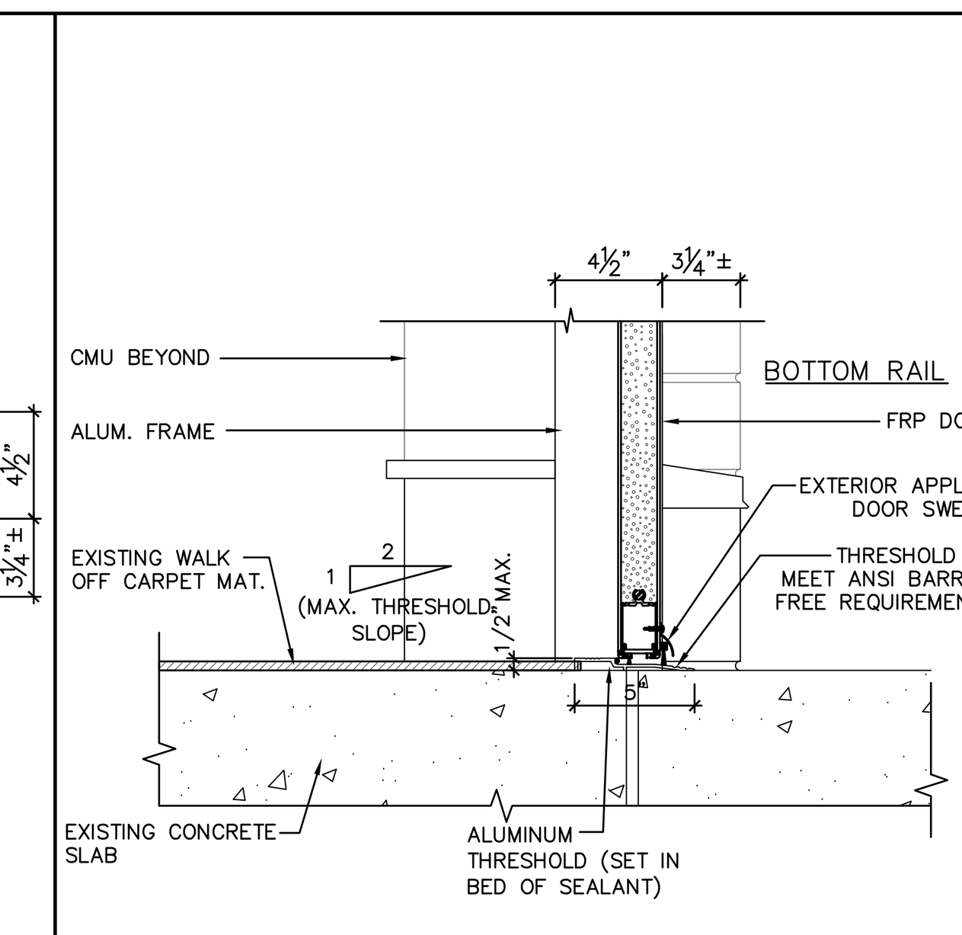
3 / CA–3 DETAIL — DOOR SILL — SCALE: 1 1/2"=1'–0"



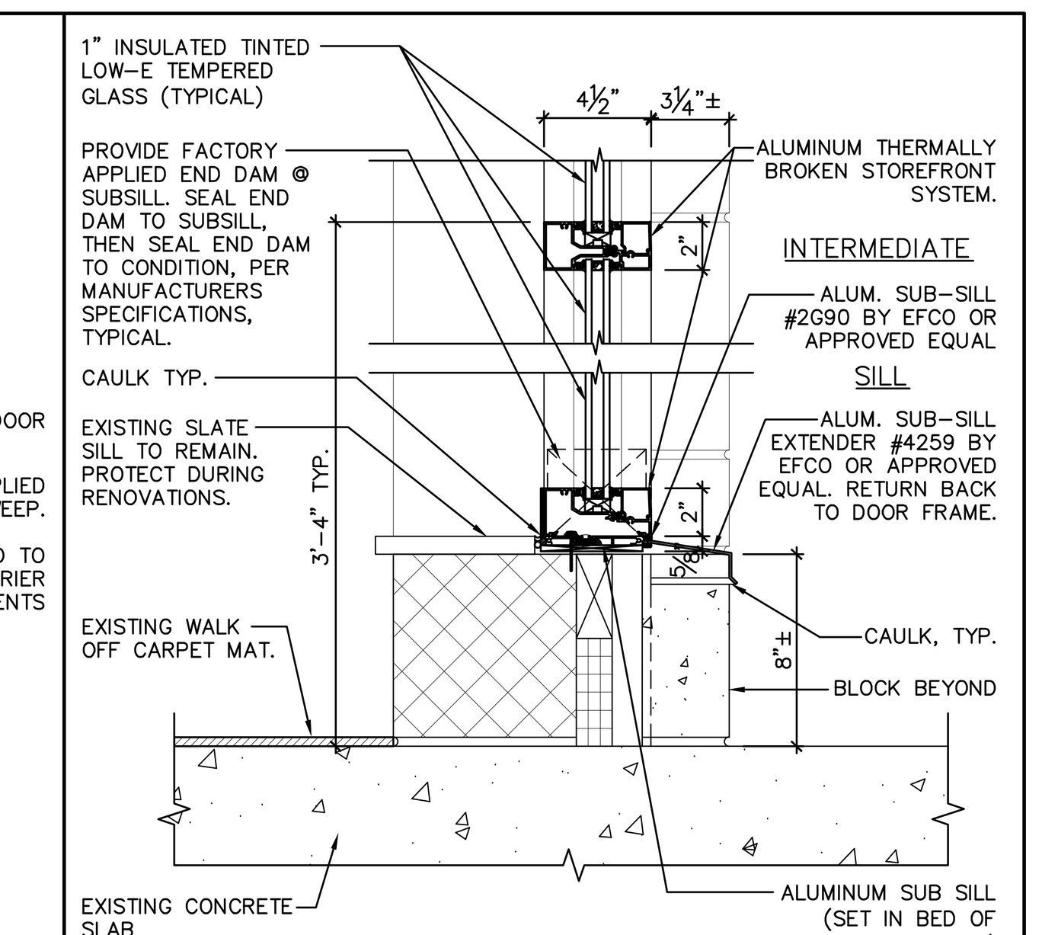
4 / CA–3 DETAIL — ALUMINUM DOOR HEAD — SCALE: 1 1/2"=1'–0"



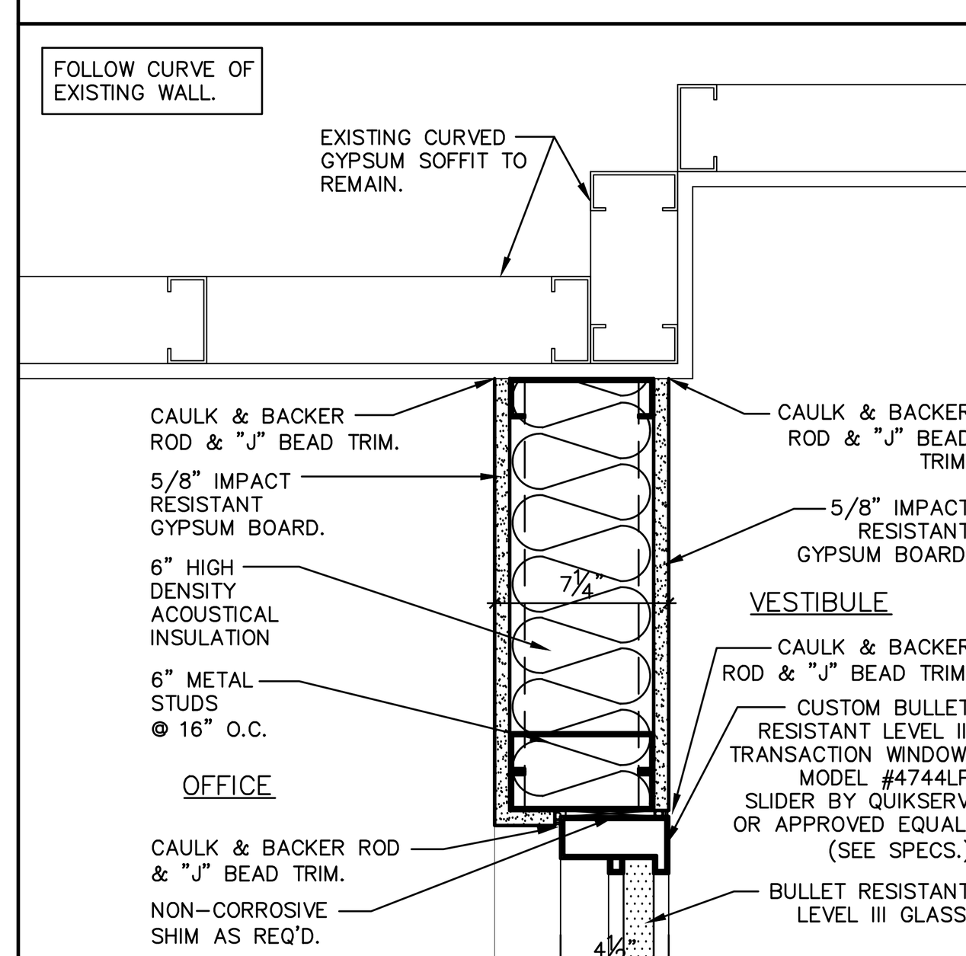
5 / CA–3 DETAIL — ALUMINUM DOOR JAMB — SCALE: 1 1/2"=1'–0"



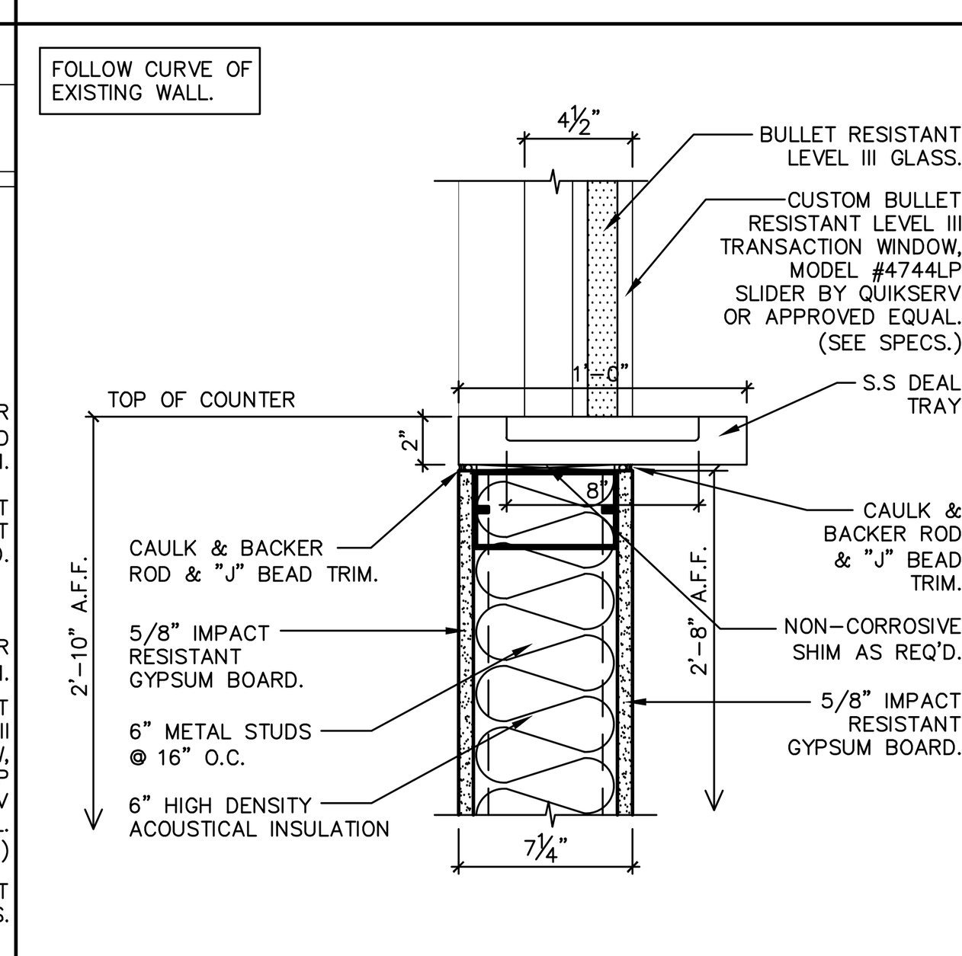
6 / CA–3 DETAIL — ALUMINUM DOOR SILL — SCALE: 1 1/2"=1'–0"



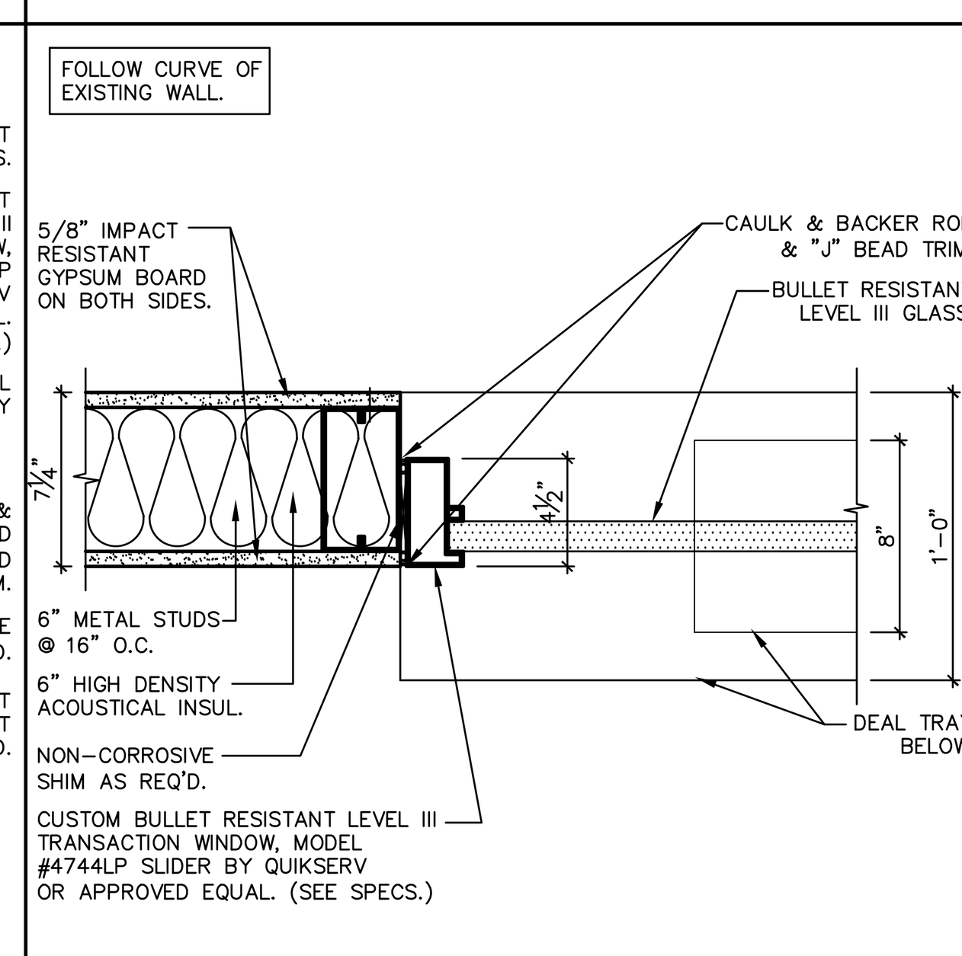
7 / CA–3 DETAIL — ALUM. STOREFRONT INTERMEDIATE/SILL — SCALE: 1 1/2"=1'–0"



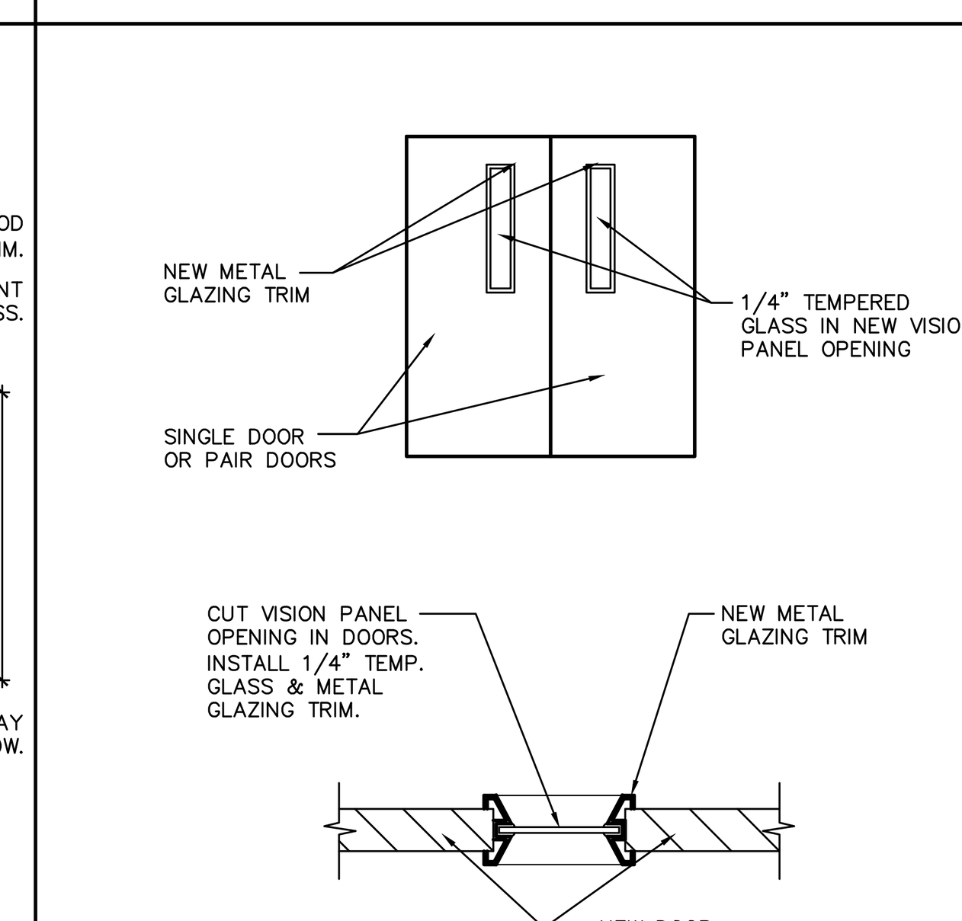
8 / CA–3 DETAIL — TRANSACTION WINDOW HEAD — SCALE: 1 1/2"=1'–0"



9 / CA–3 DETAIL — TRANSACTION WINDOW SILL — SCALE: 1 1/2"=1'–0"



10 / CA–3 DETAIL — TRANSACTION WINDOW JAMB — SCALE: 1 1/2"=1'–0"



11 / CA–3 DETAIL — DOOR VISION PANEL DETAIL FOR ALL INTERIOR DOORS. — SCALE: NONE

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CENTER SQUARE SCHOOL
NEW SECURITY VESTIBULE
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REVISIONS	
a.	e.
b.	f.
c.	g.

Project No. 19–18C
Date: 05/13/19
Scale: AS NOTED

DOOR SCHEDULE & DETAILS

CA-3

ISSUED FOR BID: 05-13-2019

MULHERN
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Phone: (215) 293-9900
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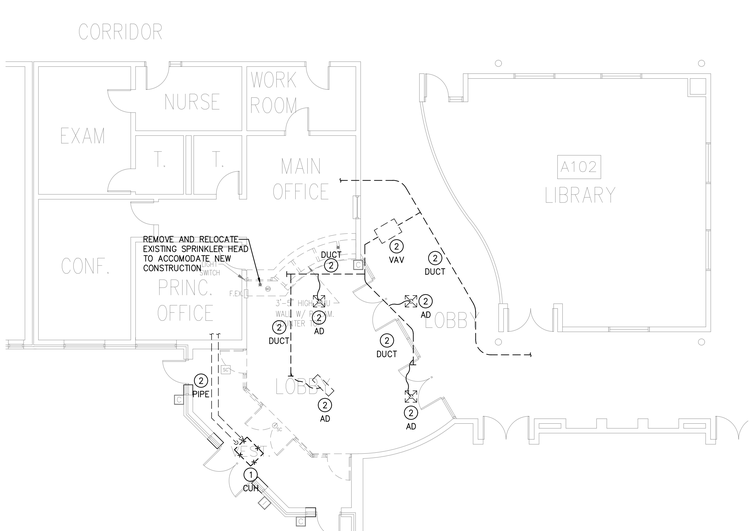
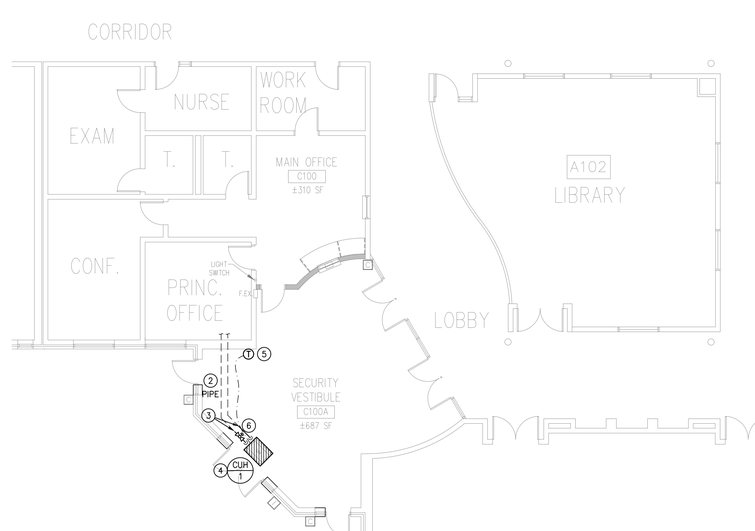


1 M-1 PARTIAL MECHANICAL FIRST FLOOR DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



2 M-1 PARTIAL MECHANICAL FIRST FLOOR NEW WORK PLAN
SCALE: 1/8" = 1'-0"

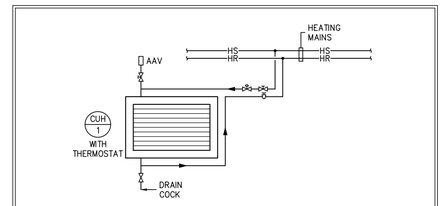
MECHANICAL LEGEND

A/L	ACOUSTICALLY LINED	—C—	CONDENSATE PIPE
AP	ACCESS PANEL	—HWS—	HOT WATER HEATING SUPPLY (SYSTEM)
AD	AIR DEVICE	—HWR—	HOT WATER HEATING RETURN (SYSTEM)
ADR	AUTOMATIC DAMPER	—CHWR—	CHILLED WATER RETURN (SYSTEM)
BDD	BACK DRAFT DAMPER	—CHWS—	CHILLED WATER SUPPLY (SYSTEM)
BTJ	BETWEEN THE JOISTS	—CWR—	CONDENSER WATER RETURN
CS	CHILLED WATER SUPPLY	—CWS—	CONDENSER WATER SUPPLY
CR	CHILLED WATER RETURN	—R—	REFRIGERANT PIPE
CD	CEILING DIFFUSER		GATE VALVE
CU	CONDENSING UNIT		CHECK VALVE
CUH	CABINET UNIT HEATER		RELIEF VALVE
DBR	DOWN BLOW REGISTER		CONTROL VALVE
DL	DOOR LOUVER		AUTOMATIC THREE-WAY VALVE
DN	DOWN		GLOBE VALVE
DX	DIRECT EXPANSION COIL		PRESSURE REDUCING VALVE
(E)	EXISTING		AUTOMATIC TWO-WAY VALVE
EF	EXHAUST FAN		PLUG OR BALL VALVE
EG	EXHAUST GRILLE		BALANCING VALVE
ER	EXHAUST REGISTER		STRAINER
FDR	FIRE DAMPER		UNION
FVAV	FAN POWERED VAV UNIT	T H	HEATING THERMOSTAT
GV	GATE VALVE	T HC	HEATING & COOLING THERMOSTAT
HR	HOT WATER HEATING RETURN	T C	COOLING THERMOSTAT
HS	HOT WATER HEATING SUPPLY		THERMOMETER
LAD	LOUVER/AUTO DAMPER		PRESSURE GAUGE W/GAUGE COCK
LBD	LOUVER/BACKDRAFT DAMPER	AAV	AUTOMATIC AIR VENT
LID	LINEAR DIFFUSER		FLEXIBLE CONNECTION
LMD	LOUVER/MANUAL DAMPER		NEW CONNECTION TO EXISTING
LVR	LOUVER		POINT OF DEMOLITION
MUA	MAKEUP AIR UNIT		DUCT REDUCER
MVD	MANUAL VOLUME DAMPER		
OAI	OUTSIDE AIR INTAKE		
RG	RETURN GRILLE		
RR	RETURN REGISTER		
SG	SUPPLY GRILLE		
SF	SUPPLY FAN		
SR	SUPPLY REGISTER		
SDR/FDR	SMOKE/FIRE DAMPER		
TF	TRANSFER FAN		
TWJ	THROUGH WEB OF JOIST		
TYP	TYPICAL (OF QUANTITY)		
UNO	UNLESS NOTED OTHERWISE		
VAV	VARIABLE AIR VOLUME TERMINAL UNIT		
VVT	VARIABLE AIR VOLUME TEMPERATURE UNIT		
WMS	WIRE MESH SCREEN		

UNIT HEATER & CABINET UNIT HEATER SCHEDULE

SYMBOL: CUH / UH

NO.	MBH	GPM	P.D., FT. WATER	ENTER AIR TEMP.	ENTER WATER TEMP.	CFM	FINAL AIR TEMP.	FAN H.P.	REMARKS
1	49.7	5	0.93	60	180	608	120	1/10	CABINET UNIT HEATER RECESSED, HORIZ. BOTTOM OUTLET/INLET



HOT WATER CABINET UNIT HEATER PIPING DETAIL
SCALE: NO SCALE

MECHANICAL SHEET NOTES

1. EXISTING TO BE REMOVED. REMOVE ALL APPURTENANCES. CAP ALL FINISHED SURFACES. PATCH EXISTING SURFACES DISTURBED TO MATCH ADJACENT SURFACES.
2. EXISTING TO REMAIN, ITEM AS INDICATED. VERIFY ALL CONDITIONS IN FIELD. PROTECT DURING CONSTRUCTION.
3. CONNECT NEW HOT WATER PIPE TO EXISTING PIPE. VERIFY EXACT LOCATION OF EXISTING PIPE IN FIELD.
4. NEW RECESSED CABINET UNIT HEATER IN CEILING. VERIFY EXACT LOCATION IN FIELD.
5. NEW THERMOSTAT WITH LOCKABLE COVERS.
6. NEW HOT WATER SUPPLY AND RETURN PIPE ABOVE CEILING.

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REVISIONS

a.	e.
b.	f.
c.	g.

Project No: 19-18C
Date: 05/13/19
Scale: AS NOTED

MECHANICAL PLANS NOTES SCHEDULES & DETAILS

CM-1

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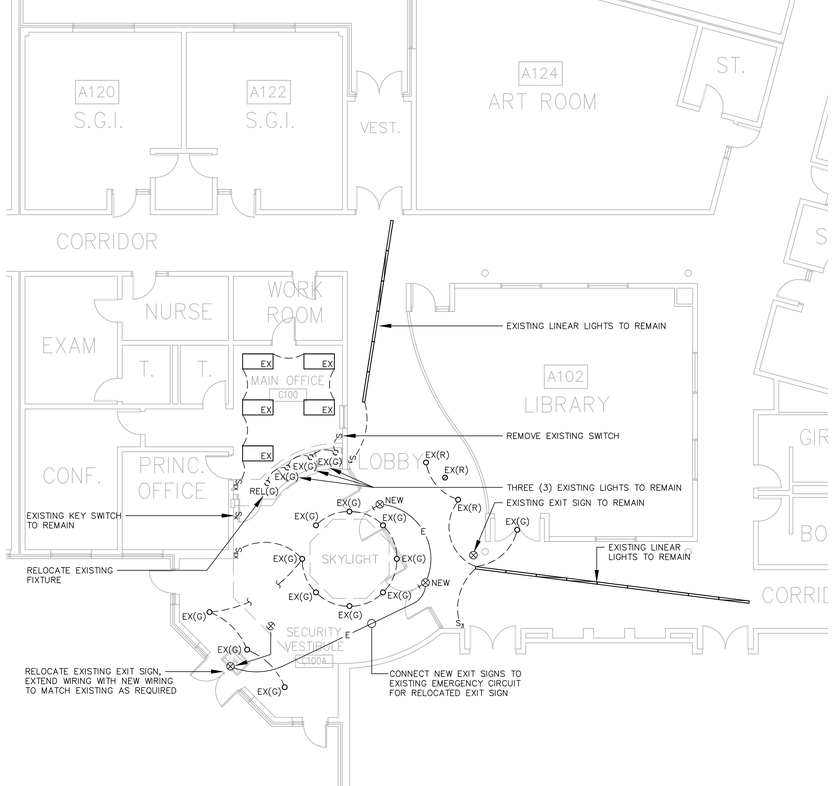
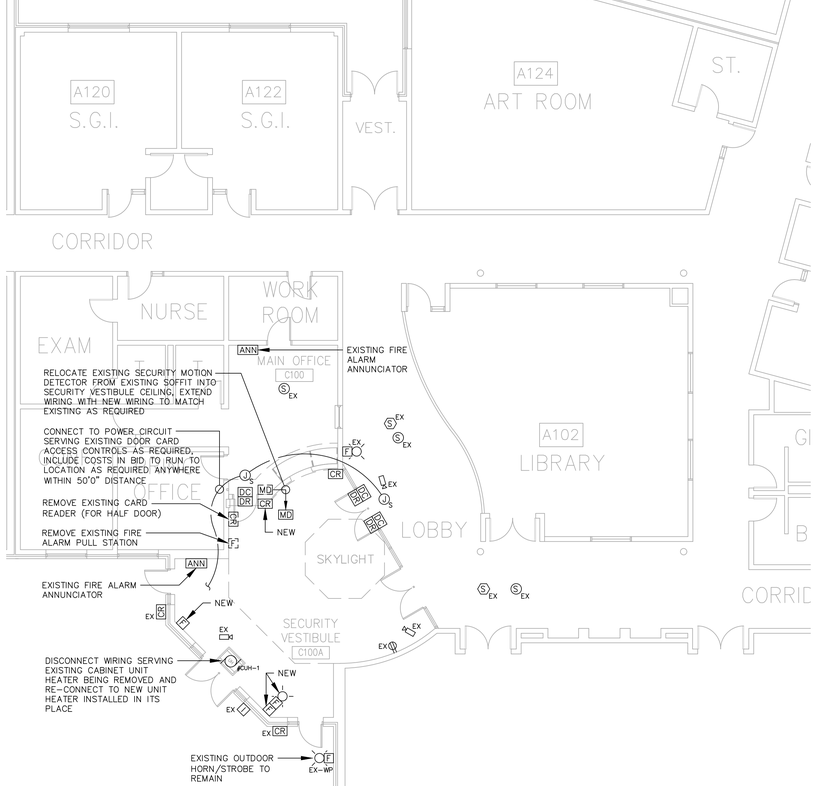
MCE #6020C



1 CE1 LIGHTING PLAN

GRAPHIC SCALE (FEET) 0 4 8 24



2 CE1 POWER PLAN

GRAPHIC SCALE (FEET) 0 4 8 24

EQUIPMENT CONNECTION NOTES

1) EXACT DETAILS OF EQUIPMENT CONNECTIONS ARE NOT INDICATED ON THE ELECTRICAL FLOOR PLAN DRAWINGS. EQUIPMENT CONNECTIONS DETAILS ARE INDICATED ON THE EQUIPMENT CONNECTION SCHEDULES ON THE ELECTRICAL DRAWINGS. APPROXIMATE EQUIPMENT LOCATIONS ONLY ARE INDICATED ON THE FLOOR PLAN DRAWINGS.

2) THE EQUIPMENT SCHEDULES INDICATE THE EQUIPMENT NAMEPLATE ELECTRICAL CHARACTERISTICS (VOLTAGE, PHASE, AND LOAD AS WELL AS HORSEPOWER, WHERE APPLICABLE), PANEL CIRCUIT BREAKER AMPERES, LOCAL DISCONNECTING MEANS (CORD-AND-PLUG [INCLUDING NEMA CONFIGURATION] OR SWITCH), AND CIRCUIT WIRE AND CONDUIT.

3) PRIOR TO ROUGH-IN, VERIFY EXACT POINT OF ELECTRICAL CONNECTION TO EACH PIECE OF EQUIPMENT IN THE FIELD TO AVOID PLACING SERVICE AT THE WRONG LOCATION.

4) ELECTRICAL INFORMATION SHOWN IS BASED ON NAMEPLATE AND/OR CATALOG CUT INFORMATION, AND IS ACCURATE TO THE BEST OF THE KNOWLEDGE OF THE ENGINEER AND OWNER. HOWEVER, NO GUARANTEES ARE MADE TO ITS ACCURACY. VERIFY EXACT ELECTRICAL, OPERATING, AND CONNECTION CHARACTERISTICS AND REQUIREMENTS IN THE FIELD PRIOR TO PURCHASING ASSOCIATED ELECTRICAL EQUIPMENT (PANEL BRANCH CIRCUIT BREAKERS, RECEPTACLES, SWITCHES, ETC.) AND PRIOR TO PULLING WIRING IN CONDUITS AND/OR ROUGHING-IN CABLE WIRING METHODS (WHERE PERMITTED).

5) PROVIDE CIRCUIT BREAKERS IN PANELS AS PER THE BREAKER AMPS ON THE EQUIPMENT SCHEDULES. FOR EXACT CIRCUITING AND CONNECTIONS AT PANELS, REFER TO THE APPROPRIATE PANEL SCHEDULES.

6) PROVIDE ALL EQUIPMENT WITH A LOCAL DISCONNECTING MEANS, CONSISTING OF ONE OF THE FOLLOWING, AS INDICATED ON THE EQUIPMENT SCHEDULE (OR AS OTHERWISE VERIFIED IN THE FIELD).

   A) CORD-AND-PLUG CONNECTED EQUIPMENT: PROVIDE RECEPTACLE OF NEMA CONFIGURATION OR SPECIFIC TYPE INDICATED ON THE EQUIPMENT SCHEDULE. PROVIDE SINGLE RECEPTACLES UNLESS INDICATED AS DUPLEX (DUP.), QUADRUPLEX (QUAD.), OR OTHERWISE NOTED. PROVIDE RECEPTACLE TYPES COMPATIBLE WITH PLUG TYPES ON EQUIPMENT CORDS, VERIFY IN FIELD. LOCATE RECEPTACLE NEAR EQUIPMENT AS REQUIRED. WHERE EQUIPMENT CORD IS NOT LONG ENOUGH TO REACH RECEPTACLE (OR WHERE EQUIPMENT DOES NOT INCLUDE CORD), PROVIDE A NEW CORD AND PLUG (TO MATCH EXISTING) AS REQUIRED. PROVIDE MAXIMUM CORD LENGTH NOT EXCEEDING 1.8 m (6'0").

   B) THERMAL OVERLOAD SWITCH (O/L SWITCH, MANUAL MOTOR STARTER): FOR ALL DIRECT CONNECTED (WITHOUT CORD AND PLUG) EQUIPMENT RATED 120 V OR 277 V AND 20 A OR LESS, PROVIDE A HORSEPOWER RATED THERMAL OVERLOAD SWITCH LOCATED AT OR ADJACENT TO THE EQUIPMENT. WHERE EQUIPMENT IS NOT POWERED OR IS POWER OPERATED BY SOURCES OTHER THAN ELECTRICITY (I.E. PNEUMATIC OPERATION, GAS FIRED, ETC.) AND WHERE ELECTRICITY IS REQUIRED ONLY FOR LOW VOLTAGE OR SOLID STATE CONTROLS, A SINGLE POLE 120/277 V SWITCH MAY BE UTILIZED.

   C) DISCONNECT SWITCH: FOR ALL DIRECT CONNECTED EQUIPMENT OVER 120 V (EXCEPT 277 V SINGLE-PHASE EQUIPMENT) OR OVER 20 A, PROVIDE A SUITABLE HEAVY DUTY SAFETY SWITCH. PROVIDE AMPERE RATING AND POLES AS PER THE EQUIPMENT SCHEDULES. PROVIDE SWITCHES OF THE UN-FUSED TYPE, EXCEPT WHERE FUSE SIZES (AFU) ARE INDICATED ON THE SCHEDULE. PROVIDE FUSED DISCONNECT SWITCHES WITH FUSES WHERE INDICATED ON THE SCHEDULE. WHERE INDICATED AS (ECB), PROVIDE AN ENCLOSED CIRCUIT BREAKER WITH TRIP RATING AS SHOWN.

   D) HARD WIRED DIRECT CONNECTION (J-BOX ONLY): FOR ALL DIRECT CONNECTED EQUIPMENT WHERE A DISCONNECTING MEANS IS NOT REQUIRED BY CODE AND NOT DESIRED BY THE OWNER FOR THE EQUIPMENT SERVED, PROVIDE A DIRECT HARD WIRED CONNECTION UTILIZING A SUITABLE JUNCTION OR OUTLET BOX. WHERE EQUIPMENT ENCLOSURE IS SUITABLE FOR USE AS A RACEWAY OR WIRE WAY, THE JUNCTION OR OUTLET BOX MAY BE OMITTED.

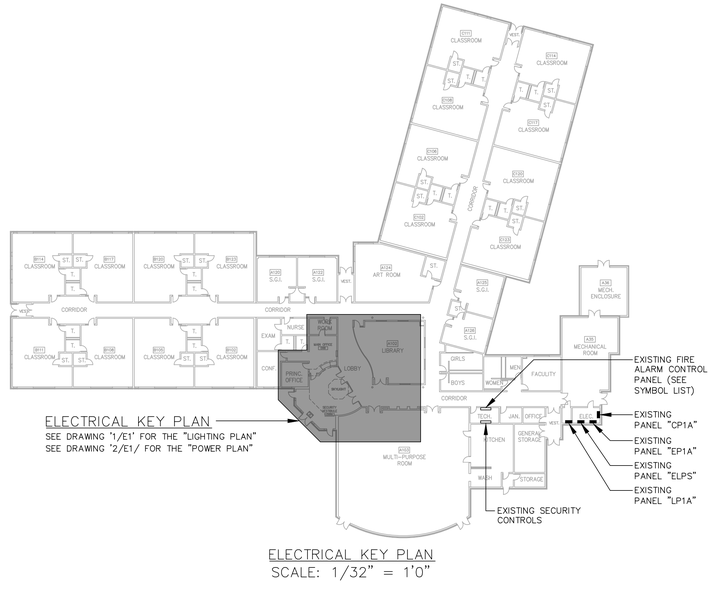
7) PROVIDE CIRCUIT WIRING AND CONDUIT FROM THE APPROPRIATE PANEL (REFER TO PANEL SCHEDULES) TO THE EQUIPMENT (PASSING THROUGH ANY APPLICABLE CONTROLS AND LOCAL DISCONNECTING MEANS) AS PER THE EQUIPMENT SCHEDULES. PROVIDE INDIVIDUAL NEUTRAL (WHERE APPLICABLE) AND EQUIPMENT GROUNDING CONDUCTORS WITH EACH CIRCUIT.

8) FEED FREE STANDING EQUIPMENT UNABLE TO BE SERVED BY WIRING RUN ON/ALONG WALLS OR COLUMNS WITH CONDUIT FROM THE CEILING OR UNDER THE FLOOR, SUITABLY SUPPORTED.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	ILLUMINATION/ LAMPS	REMARKS
EXIT	EXIT SIGN, RED LETTERS ON WHITE FACE AND HOUSING	EMERGI-LITE	WW PDN * R	INTEGRAL DIFFUSED LED	INTEGRAL NiCd BATTERY BACKUP, DIE CAST ALUMINUM HOUSING, CONNECT TO NEARBY LIGHTING CIRCUIT, UNIVERSAL MOUNTING (COORDINATE MOUNTING WITH ARCHITECT), QUANTITY OF FACES AS REQUIRED, PROVIDE DIRECTIONAL ARROWS WHERE SHOWN ON DRAWINGS

NOTES:
1) PROVIDE ALL LUMINAIRES AS UNIVERSAL 120 V AND 277 V OPERATION, UNLESS INDICATED OTHERWISE.
2) VERIFY ALL DEPTHS OF RECESSED LUMINAIRES PRIOR TO ORDERING, COORDINATE WITH CEILING DEPTHS.
3) WHERE LUMINAIRES ARE SPECIFIED OR OTHERWISE FURNISHED WITH TAMPER RESISTANT HARDWARE, SEE SPECIFICATIONS.
4) PROVIDE ALL LIGHT EMITTING DIODE (LED) AND FLUORESCENT LUMINAIRES WITH UNIVERSAL VOLTAGE (120-277 V) SOLID STATE ELECTRONIC DRIVERS/BALLASTS, UNLESS INDICATED OTHERWISE. PROVIDE ALL LINEAR FLUORESCENT LUMINAIRES WITH T8 ENERGY SAVING LAMPS, UNLESS INDICATED OTHERWISE.
5) FOR ALL LED AND FLUORESCENT LUMINAIRES SHOWN ON THIS SCHEDULE WITH 0-10 V DIMMABLE DRIVERS/BALLASTS (WHEREVER 0-10 V DIMMING IS INDICATED IN THE DESCRIPTION, LAMPS, OR REMARKS ABOVE OR WHERE A CATALOG NUMBER IS USED ABOVE WHICH DENOTES 0-10 V DIMMABLE DRIVERS/BALLASTS IN MANUFACTURER'S DATA), PROVIDE BOTH POWER WIRING AND 0-10 V CONTROL WIRING TO ALL LUMINAIRES. RUN CONTROL WIRING AS REQUIRED FROM ALL LIGHTS WITH 0-10 V DIMMABLE DRIVERS/BALLASTS TO THE RESPECTIVE DIMMER OR SWITCH CONTROLLING THE LIGHTING. WHERE DIMMERS ARE SHOWN ON THE DRAWINGS (INCLUDING COMBINATION SENSORS/DIMMERS), INTERCONNECT CONTROL WIRING WITH DIMMERS AS PER MANUFACTURER. WHERE DIMMERS ARE NOT SHOWN ON THE DRAWINGS, INSTALL CONTROL WIRING TO THE SWITCH (NON-DIMMED) LOCATION AND SAFELY INSULATE AND CAP OFF CONTROL WIRING AS REQUIRED (TO FACILITATE FUTURE REPLACEMENT OF NON-DIMMED SWITCH WITH DIMMER).
6) FOR ALL LUMINAIRES SHOWN ON THIS SCHEDULE AS DLC LISTED, PROVIDE ONLY LUMINAIRES QUALIFIED AND LISTED IN THE DESIGN LIGHTS CONSORTIUM (DLC) QUALIFIED PRODUCTS LISTING (QPL) AVAILABLE AT THE DLC WEBSITE (SEE BELOW). SUBMIT INFORMATION SHOWING LISTING IN THE DLC QLP AS PART OF SHOP DRAWINGS FOR REVIEW AND APPROVAL.
HTTP://WWW.DESIGNLIGHTS.ORG/SEARCH/
7) PROVIDE ALL HIGH INTENSITY DISCHARGE LUMINAIRES WITH MULTIPLE TAP TYPE BALLASTS.
8) MANUFACTURERS SHOWN ABOVE INDICATE THE BASIS OF DESIGN. OTHER MANUFACTURERS (INCLUDING, BUT NOT LIMITED, TO THOSE SHOWN IN THE LIGHTING SPECIFICATIONS) SHALL BE CONSIDERED.



ELECTRICAL KEY PLAN
SEE DRAWING '1/E1' FOR THE "LIGHTING PLAN"
SEE DRAWING '2/E1/' FOR THE "POWER PLAN"

ELECTRICAL KEY PLAN
SCALE: 1/32" = 1'0"

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REVISIONS
a. e.
b. f.
c. g.

Project No. 19-18C
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Scale: AS NOTED

ELECTRICAL PLAN

CE1

ELECTRICAL NOTES

1) PERFORM ALL WORK IN STRICT ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC), OSHA REQUIREMENTS, ALL FEDERAL, STATE, AND LOCAL CODES AND ALL OWNER REQUIREMENTS.

2) INCLUDE ALL TEMPORARY POWER AND LIGHTING, PERMIT, LICENSE, AND INSPECTION COSTS IN BID.

3) VERIFY EXACT LOCATIONS AND MOUNTING OF ALL LUMINAIRES, SWITCHES, RECEPTACLES, OUTLETS, FIRE ALARM, AND OTHER EQUIPMENT WITH ARCHITECTURAL DRAWINGS AND IN THE FIELD PRIOR TO ROUGH IN.

4) VERIFY ELECTRICAL RATINGS, CONNECTION REQUIREMENTS, AND EXACT LOCATIONS OF ALL MECHANICAL AND OTHER UTILIZATION EQUIPMENT (WHERE APPLICABLE) IN FIELD PRIOR TO PURCHASING ASSOCIATED ELECTRICAL EQUIPMENT. PROVIDE A COMPLETE AND WORKING INSTALLATION.

5) THE TERM "PROVIDE" MEANS, "FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR", AND THE TERMS "CONTRACTOR" AND "E.C." MEAN "ELECTRICAL CONTRACTOR", UNLESS INDICATED OTHERWISE. ALL WORK INDICATED ON THE ELECTRICAL DRAWINGS AND ELECTRICAL SPECIFICATIONS IS BY THE E.C. (UNLESS INDICATED OTHERWISE) AND IS NEW (UNLESS INDICATED OTHERWISE). WHERE THE PROJECT IS PERFORMED BY MULTIPLE PRIME CONTRACTORS UNDER "MULTIPLE PRIME BIDS" THIS DESIGNATES THE WORK BY THE ELECTRICAL PRIME CONTRACTOR. WHERE THE PROJECT IS PERFORMED BY A SINGLE OVERALL CONTRACTOR UNDER "LUMP SUM BIDS" THIS APPROXIMATELY DESIGNATES THE WORK BY THE ELECTRICAL TRADE SUBCONTRACTOR (EXACT DIVISION OF TRADE SUBCONTRACTOR WORK IS THE SOLE RESPONSIBILITY OF THE SINGLE OVERALL CONTRACTOR; TRADE SUBCONTRACTOR WORK DIVISION SHOWN ON THE DRAWINGS/SPECIFICATIONS IS FOR REFERENCE AND CONVENIENCE ONLY).

6) COORDINATE ALL REQUIRED SHUTDOWNS WITH THE OWNER A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE. INCLUDE OVERTIME COSTS IN BID TO PERFORM ALL SHUTDOWNS (INCLUDING SHUTDOWNS FOR AREAS WHICH MAY BE UNOCCUPIED DURING CONSTRUCTION) AFTER NORMAL WORKING HOURS AS COORDINATED WITH THE OWNER. NO EXTRA CLAIMS OR COMPENSATION WILL BE GRANTED FOR OVERTIME COSTS ASSOCIATED WITH PERFORMING SHUTDOWNS.

7) PROVIDE MOUNTING HEIGHTS OF EQUIPMENT AS REQUIRED BY ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND STANDARDS, INCLUDING ALL APPLICABLE DISABLED (HANDICAPPED) ACCESS CODES AND THE AMERICANS WITH DISABILITIES ACT (ADA). CONTACT ANY AND ALL AUTHORITIES HAVING JURISDICTION TO VERIFY REQUIRED MOUNTING HEIGHTS.

8) VERIFY ALL UTILITY (ELECTRIC, TELEPHONE, DATA, CABLE TELEVISION, ETC. WHERE APPLICABLE) REQUIREMENTS IN WRITING WITH EACH UTILITY COMPANY AND OBTAIN APPROVALS FROM ALL UTILITIES (INCLUDING SUBMITTING ANY REQUIRED SERVICE APPLICATIONS AND SHOP DRAWINGS ON SERVICE-RELATED EQUIPMENT TO UTILITIES) PRIOR TO ROUGH-IN OR PURCHASING ANY SERVICE RELATED EQUIPMENT. THE ELECTRICAL CONTRACTOR IS SOLELY RESPONSIBLE TO FULLY COORDINATE AND VERIFY SERVICE REQUIREMENTS WITH UTILITY COMPANIES (INCLUDE ALL COSTS IN BID). NO EXTRA CLAIMS OR COMPENSATION WILL BE GRANTED UNDER ANY CIRCUMSTANCE ASSOCIATED WITH FAILURE TO FULLY COORDINATE WITH OR OBTAIN FULL APPROVALS FROM UTILITY COMPANIES.

9) PERFORM ALL WORK IN PHASES AND SEQUENCES AS DIRECTED BY THE ARCHITECT. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. FULLY COORDINATE PHASES/SEQUENCES IN DETAIL WITH ALL CONTRACTORS/TRADES, THE ARCHITECT, AND THE OWNER PRIOR TO PERFORMING WORK AND INCLUDE ALL COSTS IN BID.

10) COMPLETELY DISCONNECT AND REMOVE ALL EXISTING WIRING AND ELECTRICAL EQUIPMENT IN AREAS BEING RENOVATED, IN AREAS OF GENERAL DEMOLITION, INTERFERING WITH NEW CONSTRUCTION BY ANY CONTRACTOR OR TRADE (INCLUDING, BUT NOT LIMITED TO, GENERAL CONSTRUCTION, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, ETC.), AND SERVING EQUIPMENT AND APPARATUS REMOVED AS PART OF THIS PROJECT (BY ANY CONTRACTOR OR TRADE), UNLESS INDICATED OTHERWISE. REFER TO ARCHITECTURAL DRAWINGS FOR THE GENERAL SCOPE OF RENOVATIONS AND AREAS OF GENERAL DEMOLITION. REFER TO AND CAREFULLY EXAMINE DRAWINGS AND SPECIFICATIONS OF ALL TRADES TO IDENTIFY AREAS OF INTERFERENCE WITH NEW CONSTRUCTION AND EQUIPMENT/APPARATUS REMOVALS. BASE PRICING ON THE ASSUMPTION THAT ELECTRICAL REMOVALS ARE NECESSARY IN ALL AREAS OF DEMOLITION (GENERAL DEMOLITION AS WELL AS DEMOLITION OF ANY SYSTEMS IN THE BUILDING [SPECIFICALLY INCLUDING DUCTWORK, PIPING, AND WIRING SYSTEMS OF ANY KIND]) AND ALL AREAS OF PROPOSED NEW WORK (BY ANY TRADE), UNLESS ACTUALLY VERIFIED OTHERWISE BY THE ELECTRICAL CONTRACTOR. INCLUDE ALL COSTS IN BID.

11) WHERE EXISTING WIRING TO BE REMOVED (AS INDICATED ABOVE) OR OTHERWISE AFFECTED BY CONSTRUCTION (BY ANY CONTRACTOR OR TRADE, INCLUDING GENERAL CONSTRUCTION, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, ETC.) FEEDS LOADS WHICH REMAIN OR FEEDS LOADS IN ADJACENT OR OTHER AREAS NOT WITHIN THE SCOPE OF WORK, THE WIRING SHALL REMAIN. RELOCATE, EXTEND, AND/OR RE-FEED THE EXISTING WIRING AS REQUIRED TO MAINTAIN SERVICE, UNLESS INDICATED OTHERWISE. BASE PRICING ON THE ASSUMPTION THAT RELOCATING, EXTENDING, AND RE-FEEDING IS NECESSARY IN ALL AREAS OF DEMOLITION AND ALL AREAS OF PROPOSED NEW WORK (BY ANY TRADE), UNLESS ACTUALLY VERIFIED OTHERWISE BY THE ELECTRICAL CONTRACTOR. INCLUDE ALL COSTS IN BID.

12) WHERE RE-FEEDING EXISTING ELECTRICAL CIRCUITS AND LOADS, VERIFY ALL REQUIREMENTS IN THE FIELD AND INCLUDE ALL COSTS IN BID. VERIFY EXACT CONDUCTOR SIZES AND AMPACITY, EXISTING CIRCUIT BREAKER AND/OR FUSE AMPS, LOAD NAMEPLATE RATINGS, CONDUIT SIZES, ETC.. FOR EQUIPMENT TO BE RE-FED, PROVIDE ALL NEW WIRING DIRECTLY TO THE EQUIPMENT. DO NOT REUSE EXISTING WIRING TO RE-FEED EQUIPMENT, UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.

13) INFORMATION REGARDING EXISTING CONDITIONS AND EQUIPMENT AND ALL INFORMATION REGARDING REMOVALS (INCLUDING INFORMATION REGARDING THE SCOPE OF REMOVALS ON ARCHITECTURAL DRAWINGS) INDICATES GENERAL CONDITIONS AND ARE A GUIDE TO PRICING ONLY. PRIOR TO SUBMITTING BID, VISIT THE PROJECT SITE AND VERIFY ALL EXISTING CONDITIONS AND EQUIPMENT, ALL REMOVALS AND REQUIREMENTS, AND ALL TIE-INS TO EXISTING EQUIPMENT AND WIRING IN DETAIL. INCLUDE ALL COSTS IN BID. NO EXTRA CLAIMS OR COMPENSATION WILL BE GRANTED FOR NOT FIRST VERIFYING ALL CONDITIONS.

14) FOR ALL NEW CIRCUIT BREAKERS IN EXISTING BRANCH AND DISTRIBUTION PANELS, PROVIDE CIRCUIT BREAKERS MATCHING AND COMPATIBLE WITH EXISTING CIRCUIT BREAKERS. PROVIDE WITH SHORT CIRCUIT INTERRUPTING RATINGS EQUAL TO OR EXCEEDING THE HIGHEST RATED EXISTING BRANCH CIRCUIT BREAKER IN THE PANEL. CIRCUIT BREAKER TYPES INDICATED ON THE DRAWINGS (WHERE APPLICABLE) ARE GUIDES TO PRICING ONLY. VERIFY EXACT TYPE AND ALL REQUIREMENTS IN FIELD PRIOR TO RELEASING EQUIPMENT.

15) FOR ALL WIRING AND WORK INDICATED, INCLUDING ALL SYSTEMS (POWER, LIGHTING, FIRE ALARM, CONTROL, SIGNAL, SOUND, TELECOMMUNICATIONS, DATA, AND ALL OTHER SYSTEMS, WHERE APPLICABLE), PROVIDE ALL NEW CONDUITS, RACEWAYS, OUTLETS, AND CONDUCTORS, INCLUDE ALL COSTS IN BID. WHERE EXISTING CONDUITS AND RACEWAYS ARE DETERMINED BY THE ENGINEER TO BE IN ADEQUATE CONDITION, AND WHERE SPECIFICALLY APPROVED BY THE OWNER, ARCHITECT, AND ENGINEER, EXISTING CONDUITS AND RACEWAYS MAY BE REUSED. PROVIDE A SEPARATE GROUNDING CONDUCTOR, IN ADDITION TO ALL OTHER GROUNDING CONDUCTORS SPECIFIED, AND BOND TO ALL RACEWAYS, CONDUITS, BOXES, AND OUTLETS WHERE RACEWAYS ARE REUSED. DO NOT DEPEND ON EXISTING CONDUITS/RACEWAYS FOR GROUNDING PATHS. REUSE EXISTING CONDUCTORS ONLY WHERE SPECIFICALLY INDICATED ON THE DRAWINGS.

16) PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT (INCLUDING, BUT NOT LIMITED TO, SAFETY SWITCHES, ENCLOSED CIRCUIT BREAKERS, BRANCH PANELS, TRANSFORMERS, FUSED EQUIPMENT, POWER OUTLETS, THERMAL OVERLOAD SWITCHES, FIRE ALARM DEVICES, SWITCHES AND RECEPTACLES SERVING EQUIPMENT, ETC., WHERE APPLICABLE), REFER TO SPECIFICATIONS FOR INFORMATION.

17) WHERE ADDING NEW FIRE ALARM SIGNALING OR INITIATING DEVICES TO AN EXISTING FIRE ALARM SYSTEM, COMPLETELY TEST AND CERTIFY THE ENTIRE FIRE ALARM SYSTEM THROUGHOUT THE ENTIRE BUILDING TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS (INCLUDING ALL CODE AND MUNICIPAL REQUIREMENTS). WHERE ANY DISCREPANCIES OR MALFUNCTIONS ARE FOUND WITH EXISTING SYSTEM PORTIONS WHICH ARE NOT MODIFIED OR ADDED TO AS PART OF THIS PROJECT, NOTIFY THE OWNER.

18) PROVIDE ALL NEW FIRE ALARM VISUAL SIGNALING DEVICES (VISUAL ONLY STROBES AND STROBE PORTIONS OF COMBINATION HORN/STROBES) AS SYNCHRONIZED. PROVIDE ALL VISUAL SIGNALING DEVICES LOCATED IN THE SAME ROOM OR OTHERWISE WITHIN SIGHT SYNCHRONIZED TOGETHER (I.E. CONTROLLED BY A COMMON SYNCHRONIZING MODULE). PROVIDE ALL DEVICES OF TYPES FACILITATING SYNCHRONIZING AND PROVIDE ALL SIGNALING CIRCUITS INCLUDING SYNCHRONIZING CONTROLLERS AS REQUIRED. EXISTING VISUAL SIGNALING DEVICES ARE NOT REQUIRED TO SYNCHRONIZE WITH NEW DEVICES (UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS).

19) THE E.C. SHALL FURNISH AND INSTALL ALL ELECTRICAL DEVICES, EQUIPMENT, AND WIRING AT MILLWORK (CABINETS, DESKS, CREDENZAS, AND OTHER SIMILAR FURNITURE) AS REQUIRED. REFER TO ARCHITECTURAL, MILLWORK, AND FURNITURE DRAWINGS FOR ADDITIONAL INFORMATION (INCLUDING INFORMATION ON WIRING AND ELECTRICAL EQUIPMENT). PROVIDE EQUIPMENT AND WIRING AS REQUIRED, REGARDLESS OF WHETHER SHOWN ON ELECTRICAL DRAWINGS OR NOT.

20) COMPLETELY SEAL AND FIRE STOP ALL PENETRATIONS OF ALL FIRE AND/OR SMOKE RATED WALLS, FLOORS, CEILINGS, AND ANY OTHER CONSTRUCTION (INCLUDING ALL WALLS REQUIRED TO BE RATED BY CODE) TO A RATING MATCHING OR EXCEEDING THE FIRE RATING OF THE CONSTRUCTION. COMPLETELY SEAL AND WEATHERPROOF ALL PENETRATIONS OF EXTERIOR, AT OR BELOW GRADE, AND WET LOCATION WALLS AND FLOORS AND ROOF PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON FIRE RATINGS OF BUILDING CONSTRUCTION AND INCLUDE ALL COSTS IN BID. COMPLY WITH AND INSTALL FIRE STOPPING IN ACCORDANCE WITH ALL APPLICABLE FIRE RATING CODES AND STANDARDS (INCLUDING THE NEC, NFPA, IBC, AND THE UL "FIRE RESISTANCE DIRECTORY").

21) PROVIDE 120 V POWER TO ALL SECURITY AND DOOR HARDWARE AS REQUIRED. COORDINATE ALL REQUIREMENTS WITH ARCHITECTURAL DOCUMENTS, THE OWNER, AND SECURITY SUPPLIER. OBTAIN POWER FROM A SUITABLE NEARBY BRANCH CIRCUIT.

22) WHERE EXISTING CEILINGS ARE REMOVED AND REINSTALLED (EITHER PARTLY OR ENTIRELY), THE E.C. SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT (INCLUDING LIGHTING FIXTURES, FIRE ALARM DEVICES [INCLUDING, BUT NOT LIMITED TO, SMOKE AND HEAT DETECTORS, SIGNALING DEVICES, INDICATORS, ETC.], SECURITY/CCTV CAMERAS, MOTION DETECTORS, SPEAKERS, AND ALL OTHER ELECTRICAL DEVICES, EQUIPMENT, AND APPARATUS) FROM THE CEILING GRID AND CEILING TILES. LEAVE IN PLACE AT THE CEILING AND SUPPORT (IN A CODE APPROVED AND LOCAL CODE OFFICIAL APPROVED MANNER) AS REQUIRED TO FACILITATE CEILING REMOVAL. ONCE CEILING IS REINSTALLED, THE E.C. SHALL PERMANENTLY REINSTALL ALL ELECTRICAL EQUIPMENT IN THE CEILING. WHERE NEW EQUIPMENT IS SHOWN ON THE DRAWINGS, THE E.C. SHALL COMPLETELY DISCONNECT AND REMOVE EXISTING EQUIPMENT (BEING REPLACED) AND ALL ASSOCIATED WIRING AND PROVIDE ALL NEW EQUIPMENT AND ASSOCIATED WIRING AS SHOWN ON THE DRAWINGS. CEILINGS MAY BE LEFT OPEN FOR A LONG PERIOD OF TIME (I.E. THERE MAY BE SEVERAL MONTHS OR MORE BETWEEN THE TIME OF REMOVAL AND THE TIME OF REINSTALLING CEILINGS). WHEN CEILINGS ARE NOT IN PLACE, MAINTAIN (AS OPERATIONAL) ALL FIRE ALARM DEVICES AND EQUIPMENT AND NORMAL AND EMERGENCY LIGHTING AS REQUIRED (TEMPORARILY INSTALL FIRE ALARM DEVICES, SUPPORTED FROM STRUCTURE AND PROVIDE TEMPORARY LIGHTING OR TEMPORARILY SUPPORT EXISTING LIGHTING FROM STRUCTURE AS REQUIRED). WHEN CEILINGS ARE NOT IN PLACE, SAFELY SECURE EVERYTHING WHICH IS EXPOSED BY THE ABSENCE OF CEILINGS (NEW AND EXISTING) AND KEEP ALL AREAS CLEAN WHEN OCCUPIED. THIS CEILING WORK IS NOT SHOWN ON ELECTRICAL PLANS (SEE ARCHITECTURAL DRAWINGS AND CEILING PLANS AND OTHER TRADES DRAWINGS FOR INFORMATION). THIS CEILING WORK APPLIES REGARDLESS OF THE PARTY REMOVING THE CEILING AND REGARDLESS OF WHETHER OR NOT CEILING REMOVAL IS SHOWN ON DRAWINGS. COORDINATE WITH ALL CONTRACTORS AND TRADES TO CONFIRM THE EXTENT OF CEILING WORK AND INCLUDE ALL COSTS IN BID. THIS CEILING WORK ALSO APPLIES WHERE ANY CONTRACTOR CHOOSES TO INSTALL NEW CEILING IN LIEU OF REINSTALLING THE EXISTING CEILING.

23) WHERE EXISTING CEILINGS ARE REMOVED AND NEW CEILINGS ARE INSTALLED (EITHER PARTLY OR ENTIRELY), THE E.C. SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT (INCLUDING LIGHTING FIXTURES, FIRE ALARM DEVICES [INCLUDING, BUT NOT LIMITED TO, SMOKE AND HEAT DETECTORS, SIGNALING DEVICES, INDICATORS, ETC.], SECURITY/CCTV CAMERAS, MOTION DETECTORS, SPEAKERS, AND ALL OTHER ELECTRICAL DEVICES, EQUIPMENT, AND APPARATUS) FROM THE CEILING GRID AND CEILING TILES. LEAVE IN PLACE AT THE CEILING AND SUPPORT (IN A CODE APPROVED AND LOCAL CODE OFFICIAL APPROVED MANNER) AS REQUIRED TO FACILITATE CEILING REMOVAL. ONCE NEW CEILING IS INSTALLED, THE E.C. SHALL PERMANENTLY REINSTALL ALL ELECTRICAL EQUIPMENT IN THE CEILING. WHERE NEW EQUIPMENT IS SHOWN ON THE DRAWINGS, THE E.C. SHALL COMPLETELY DISCONNECT AND REMOVE EXISTING EQUIPMENT (BEING REPLACED) AND ALL ASSOCIATED WIRING AND PROVIDE ALL NEW EQUIPMENT AND ASSOCIATED WIRING AS SHOWN ON THE DRAWINGS. CEILINGS MAY BE LEFT OPEN FOR A LONG PERIOD OF TIME (I.E. THERE MAY BE SEVERAL MONTHS OR MORE BETWEEN THE TIME OF REMOVAL AND THE TIME OF INSTALLING NEW CEILINGS). WHEN CEILINGS ARE NOT IN PLACE, MAINTAIN (AS OPERATIONAL) ALL FIRE ALARM DEVICES AND EQUIPMENT AND NORMAL AND EMERGENCY LIGHTING AS REQUIRED (TEMPORARILY INSTALL FIRE ALARM DEVICES, SUPPORTED FROM STRUCTURE AND PROVIDE TEMPORARY LIGHTING OR TEMPORARILY SUPPORT NEW OR EXISTING LIGHTING FROM STRUCTURE AS REQUIRED). WHEN CEILINGS ARE NOT IN PLACE, SAFELY SECURE EVERYTHING WHICH IS EXPOSED BY THE ABSENCE OF CEILINGS (NEW AND EXISTING) AND KEEP ALL AREAS CLEAN WHEN OCCUPIED. THIS CEILING WORK IS NOT SHOWN ON ELECTRICAL PLANS (SEE ARCHITECTURAL DRAWINGS AND CEILING PLANS FOR INFORMATION).

24) WHERE ELECTRICAL WORK INVOLVES REMOVAL AND REINSTALLATION OF EXISTING CEILINGS, REMOVAL AND RELOCATION IS THE RESPONSIBILITY OF THE E.C.. AS AN ALTERNATIVE (AT THE E.C.'S OPTION) TO REINSTALLING CEILINGS REMOVED TO FACILITATE ELECTRICAL WORK, THE E.C. MAY INSTALL A NEW CEILING OF A TYPE MATCHING THE EXISTING CEILING PROVIDED THERE IS NO COST CHANGE TO THE CONTRACT (WHEREVER NEW CEILING INVOLVES ADDITIONAL COST TO THE CONTRACT, NEW CEILING IS NOT ACCEPTABLE). REPLACE ANY CEILING TILES DAMAGED AS PART OF ELECTRICAL WORK.

25) FOR ALL ROOFTOP/ATTIC AND SIMILAR EQUIPMENT, LOCATE ALL EQUIPMENT DISCONNECTING MEANS AS REQUIRED SO THE DISCONNECTING MEANS IS ACCESSIBLE FROM, OPERABLE FROM, AND SERVICEABLE FROM (INCLUDING SATISFYING NEC WORKING SPACE REQUIREMENTS) CATWALKS, WALKWAYS, OR WALKING PATHS. FULLY COORDINATE IN DETAIL WITH THE OWNER AND ARCHITECT PRIOR TO ROUGH-IN OR INSTALLING ANY DISCONNECTING MEANS.

ELECTRICAL SCOPE SPECIFICATIONS

1) PROVIDE ALL WIRING AS COPPER (CU) AND WITH INSULATION IDENTIFIED AS BOTH TYPES "THHN" AND "THWN", ALUMINUM (AL) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.

2) RUN ALL NEW WIRING AS CONCEALED WHEREVER POSSIBLE, UNLESS OTHERWISE APPROVED BY THE ARCHITECT, OWNER, AND ENGINEER. WHERE WIRING IS SPECIFICALLY PERMITTED TO RUN EXPOSED IN FINISHED INTERIOR OR EXTERIOR AREAS, PAINT RACEWAYS AS DIRECTED BY THE ARCHITECT. PROVIDE ALL WIRING AS #12 AWG MINIMUM, PROVIDE ALL CONDUIT AS 21 mm (3/4") MINIMUM, UNLESS INDICATED OTHERWISE.

3) UTILIZE #10 AWG MINIMUM WIRING FOR ALL OUTDOOR POWER AND LIGHTING CIRCUITS, EMERGENCY POWER AND LIGHTING CIRCUITS AND WIRING, AND ALL CIRCUITS EXCEEDING 23 m (75'0", FOR 120/208/240 V CIRCUITS) OR 46 m (150'0", FOR 277/480 V CIRCUITS) TO CENTER OF LOAD.

4) MULTIPLE BRANCH CIRCUITS MAY BE INSTALLED IN THE SAME RACEWAY WHERE PERMITTED BY CODE AND PROVIDED ALL OF THE FOLLOWING CONDITIONS ARE MET:
   A) APPLY APPROPRIATE NEC DERATING FACTORS AND ADJUST CONDUCTOR SIZES ACCORDINGLY.
   B) PROVIDE NO CONDUCTOR (AFTER DERATING ADJUSTMENT) EXCEEDING #10 AWG, EXCEPT GROUNDING CONDUCTORS AS PROVIDED BELOW.
   C) A SINGLE EQUIPMENT GROUNDING CONDUCTOR IS PERMITTED IN LIEU OF INDIVIDUAL EQUIPMENT GROUNDING CONDUCTORS FOR EACH INDIVIDUAL CIRCUIT. PROVIDE COMMON EQUIPMENT GROUNDING CONDUCTOR SIZE AT LEAST TWO (2) STANDARD WIRE SIZES LARGER THAN THE MINIMUM SIZE AS DETERMINED IN ACCORDANCE WITH THE NEC. WHERE ISOLATED GROUNDING CONDUCTORS ARE REQUIRED, THESE ARE IN ADDITION TO THE COMMON EQUIPMENT GROUNDING CONDUCTOR AND ARE REQUIRED INDIVIDUALLY FOR EACH CIRCUIT (ISOLATED GROUNDING CONDUCTORS COMMON TO TWO (2) OR MORE CIRCUITS ARE NOT PERMITTED).
   D) PROVIDE CONDUIT FILL (AFTER DERATING ADJUSTMENT) NOT EXCEEDING 30% (MAXIMUM NUMBER OF CONDUCTORS PERMITTED NOT EXCEEDING 75% OF THE MAXIMUM NUMBER OF CONDUCTORS ALLOWED BY CODE [I.E. REFER TO NEC CHAPTER 9, TABLES 3A, 3B, AND 3C], TO ALLOW FOR FUTURE WIRING). PROVIDE MINIMUM CONDUIT SIZE ADJUSTED TO MAINTAIN 30% MAXIMUM FILL.

5) PROVIDE A SEPARATE NEUTRAL CONDUCTOR WITH EACH BRANCH CIRCUIT WHERE A NEUTRAL IS REQUIRED. MULTI-WIRE BRANCH CIRCUITS WITH A SHARED COMMON NEUTRAL ARE NOT PERMITTED, UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.

6) PROVIDE COMPLETE GROUNDING AND BONDING IN ACCORDANCE WITH THE NEC. PROVIDE GROUNDING CONDUCTORS WITH ALL WIRING. INSTALL ALL METALLIC RACEWAYS IN SUCH A WAY (INCLUDING THE USE OF BONDING JUMPERS, ETC. WHERE REQUIRED FOR FLEXIBLE CONDUIT, LOOSELY JOINTED RACEWAYS, ETC.) TO MAINTAIN A CONTINUOUS GROUNDING PATH WITHOUT CONSIDERING THE GROUNDING CONDUCTOR REQUIRED ABOVE. WHEREVER CONNECTIONS TO GROUNDING ELECTRODES OR ELECTRODE SYSTEMS ARE REQUIRED BY CODE, PROVIDE, INTERCONNECT, CONNECT, AND BOND TO NEW DRIVEN (MADE) GROUNDING ROD ELECTRODES, DOMESTIC COLD WATER PIPING SYSTEM (AND ANY OTHER METAL PIPING SYSTEM WHERE REQUIRED BY THE NEC), STRUCTURAL STEEL AND/OR METAL BUILDING FRAME, AND ALL EXISTING GROUNDING ELECTRODE SYSTEMS, WHERE APPLICABLE.

7) UTILIZE ELECTRICAL METALLIC TUBING (EMT), WITH COMPRESSION TYPE FITTINGS (SET SCREW TYPE FITTINGS ARE NOT PERMITTED) FOR ALL WIRING, UNLESS INDICATED OTHERWISE.

8) UTILIZE STEEL RIGID METAL CONDUIT (RMC) FOR ALL EXTERIOR EXPOSED WIRING AND UNDERGROUND WIRING. UTILIZE STEEL RMC ONLY FOR ALL WIRING OVER 600 V (WHERE PERMITTED, PVC MAY BE UTILIZED UNDERGROUND). UTILIZE STEEL RMC ONLY WITHIN 1.2 m (4'0") OF ALL BUILDING EXTERIOR WALL PENETRATIONS. UTILIZE STEEL RMC ONLY, ENCASED IN A 76 mm (3") CONCRETE ENVELOPE, UNDER ALL ROADWAYS, PARKING LOTS, AND OTHER AREAS SUBJECT TO VEHICULAR TRAFFIC. PROVIDE RMC INSTALLED UNDERGROUND OR IN CONTACT WITH EARTH COATED WITH COAL TAR OR EPOXY BASED CORROSION RESISTANT COATING APPROVED BY THE ENGINEER. UTILIZE FULLY THREADED FITTINGS ONLY FOR STEEL RMC (SET SCREW, COMPRESSION, OR OTHER THREAD-LESS FITTINGS ARE NOT ACCEPTABLE).

9) UTILIZE FLEXIBLE CONDUIT FOR FLEXIBLE CONNECTIONS TO MOTORS AND EQUIPMENT REQUIRING FLEXIBILITY OR SUBJECT TO VIBRATION IN LENGTHS NOT EXCEEDING 1.8 m (6'0"). FLEXIBLE CONDUIT MAY BE UTILIZED FOR FLEXIBLE CONNECTIONS TO LUMINAIRES WHERE WIRING IS CONCEALED ONLY (IN LENGTHS NOT TO EXCEED 1.8 m (6'0")). FLEXIBLE CONDUIT MAY BE UTILIZED WHERE EXISTING WALLS ARE FISHED IN LENGTHS NOT TO EXCEED THE PORTION IN THE WALL PLUS 0.9 m (3'0"). EXPOSED FLEXIBLE CONDUIT IS NOT PERMITTED FOR LUMINAIRES (EXCEPT ADJUSTABLE LUMINAIRES). UTILIZE FLEXIBLE METAL CONDUIT (FMC, "GREENFIELD") IN DRY LOCATIONS ONLY. UTILIZE LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC, "SEALTITE") IN DAMP, WET, OR OUTDOOR LOCATIONS AND MECHANICAL ROOMS. SUPPORT AS PER THE NEC.

10) SCHEDULE 40 POLYVINYL CHLORIDE RIGID NONMETALLIC CONDUIT (PVC RNC) MAY BE UTILIZED FOR UNDERGROUND WIRING AND WIRING UNDER THE SLAB. TAKE PRECAUTIONS TO AVOID CRUSHING CONDUITS. ENCASE ALL PVC CONDUITS IN A 76 mm (3") CONCRETE ENVELOPE. UTILIZE STEEL RMC WHERE INDICATED ABOVE AS "STEEL RMC ONLY". UTILIZE STEEL RMC WHERE CONDUIT RUNS WITH PVC CONDUIT PROTRUDE EXPOSED ABOVE GRADE (IN INDOOR OR OUTDOOR LOCATIONS), FOR THE PORTION EXPOSED ABOVE GRADE/FLOOR DOWN TO A MINIMUM DEPTH OF 155 mm (6") BELOW FINISHED GRADE. PVC CONDUIT IS PERMITTED TO PROTRUDE ONLY WHEN COMPLETELY CONCEALED WITHIN EQUIPMENT ENCLOSURES.

11) WHERE WIRING IS CONCEALED IN WALLS OR CEILINGS, WHERE APPLICABLE BY CODE AND ACCEPTABLE TO LOCAL AUTHORITIES AND THE OWNER, AND UNLESS OTHERWISE NOTED, "BX" ARMORED CABLE (TYPE "AC") OR METAL CLAD CABLE (TYPE "MC") MAY BE UTILIZED FOR BRANCH WIRING ONLY. PROVIDE ALL FEEDER WIRING IN CONDUITS. "BX" ARMORED CABLE (TYPE "AC") IS NOT PERMITTED FOR USE ON CIRCUITS EXCEEDING 250 V OR FOR USE ON DC CIRCUITS.

12) PROVIDE ALL WIRING IN PLENUM CEILINGS AND OTHER PLENUM SPACES IN COMPLETE ACCORDANCE WITH THE NEC, PROVIDE WIRING METHODS IN EMT OR OTHER APPROVED METALLIC CONDUIT. WHERE OTHERWISE PERMITTED, TYPE "MC" CABLE MAY BE UTILIZED IN PLENUM CEILINGS. "BX" ARMORED CABLE (TYPE "AC") IS NOT ACCEPTABLE IN PLENUM CEILINGS OR SPACES.

13) ROMEX CABLE (TYPE "NM") IS NOT PERMITTED UNDER ANY CIRCUMSTANCE.

14) RUN FIRE ALARM WIRING IN CONDUIT, OPEN RUNS OF CABLE ARE NOT PERMITTED. FOR ALL DAMP LOCATIONS, RUN WIRING IN CONDUIT AND UTILIZE ONLY CABLES/CONDUCTORS SPECIFICALLY LISTED AND IDENTIFIED FOR USE IN DAMP OR WET LOCATIONS. FOR ALL WET (INCLUDING UNDERGROUND AND IN SLAB ON/BELOW GRADE) LOCATIONS, RUN WIRING IN CONDUIT AND UTILIZE ONLY CABLES/CONDUCTORS SPECIFICALLY DESIGNED FOR OUTDOOR AND SUBMERGED USE AND LISTED AND IDENTIFIED FOR USE IN WET LOCATIONS. PLENUM TYPE CABLES, EVEN WHEN RUN IN CONDUIT, ARE NOT PERMITTED IN DAMP AND WET LOCATIONS.

15) PROVIDE ALL SAFETY SWITCHES OF THE HEAVY DUTY TYPE. PROVIDE THREE (3) SPARE FUSES FOR EACH FUSED SWITCH (IN ADDITION TO ACTIVE FUSES) IN THE SWITCH ENCLOSURE. PROVIDE FUSES WITH INTERRUPTING RATING NOT LESS THAN THAT OF THE PANEL FEEDING THE FUSED SWITCH. UTILIZE ONLY FUSES OF THE DUAL ELEMENT TIME DELAY AND CURRENT LIMITING TYPE.

16) PROVIDE PANELS WITH BOLT-ON BREAKERS, BUS BARS MAY BE ALUMINUM. PROVIDE SEPARATE FACTORY GROUND AND NEUTRAL BUSSES (PROVIDE NEUTRAL WITH PROVISIONS FOR BONDING). PROVIDE PANELS WITH SHORT CIRCUIT RATINGS AS INDICATED ON THE DRAWINGS AND FULLY RATED, SERIES RATING IS NOT ACCEPTABLE.

17) FOR ALL FLUSH MOUNTED PANELS, PROVIDE A SUITABLE JUNCTION BOX AND/OR WIRING TROUGH FOR BRANCH WIRING ACCESS LOCATED ABOVE DROP CEILING OR OTHER ACCESSIBLE CEILING AS CLOSE AS PRACTICAL TO PANEL. PROVIDE 24"W X 8"H X 8"D (600 mm X 205 mm X 205 mm, MINIMUM) JUNCTION BOX, PROVIDE FOUR (4) 53 mm (2") CONDUITS BETWEEN PANEL AND JUNCTION BOX. PROVIDE ALL WIRING BETWEEN PANEL AND JUNCTION BOX IN ACCORDANCE WITH ALL APPLICABLE NEC DERATING FACTORS. PROVIDE THE INCOMING PANEL FEEDER AND ANY LOAD CIRCUITS RATED 60 A OR LARGER ENTERING DIRECTLY INTO THE FLUSH MOUNTED PANEL WITHOUT PASSING THROUGH THE JUNCTION BOX.

19) PROVIDE ALL BRANCH PANELS, SAFETY SWITCHES, ENCLOSED BREAKERS, TRANSFORMERS, CONTROL DEVICES, AND OTHER DISTRIBUTION EQUIPMENT AS EATON/CUTLER-HAMMER, GENERAL ELECTRIC, SCHNEIDER/SQUARE-D, SIEMENS, OR APPROVED EQUAL.

20) PROVIDE ALL NEW ELECTRICAL EQUIPMENT (INCLUDING BRANCH CIRCUIT BREAKERS IN DISTRIBUTION PANELS) WITH ENGRAVED LAMINATED PLASTIC SIGNS (WITH MINIMUM 6.5 mm (1/4") LETTERING), DESCRIBING THE EQUIPMENT, LOAD/DEVICE SERVED, VOLTAGE, PHASE, RATED AMPS, AND PANEL AND CIRCUIT NUMBER FEEDING THE EQUIPMENT, WHERE APPLICABLE (I.E. "LP1 - LIGHTING PANEL, 120/208V-3PH-4W, 100A MAIN, FED FROM MDP - CIRCUIT 4", "#P-1 - PUMP, 208V-3PH-3W, 20A, FED FROM LP1 - CIRCUIT 2-4-6", "OUTDOOR LIGHTING CONTACTOR - C1", ETC.). PROVIDE ALL SWITCHES (20 A AND LESS ONLY), RECEPTACLES, AND POWER OUTLETS WITH ENGRAVED LAMINATED PLASTIC SIGNS WHERE DEDICATED TO INDIVIDUAL EQUIPMENT (THESE SIGNS ONLY MAY UTILIZE 3.2 mm (1/8") MINIMUM LETTERING). SECURE ENGRAVED LAMINATED PLASTIC SIGNS WITH SUITABLE SCREWS OR RIVETS, SELF ADHESIVE SIGNS ARE NOT PERMITTED.

21) PROVIDE ALL NEW AND EXISTING BRANCH PANELS WITH ACCURATE AND DESCRIPTIVE TYPEWRITTEN CIRCUIT DIRECTORIES. FOR EXISTING PANELS, PROVIDE DIRECTORIES INCLUDING ALL MODIFICATIONS AS PART OF THIS PROJECT AS WELL AS PREVIOUS "PENCILED IN" CHANGES AND INFORMATION. ACTUAL TRACING AND IDENTIFYING EXISTING CIRCUITS IS NOT REQUIRED.

22) PREPARE AND SUBMIT (INCLUDE ALL COSTS) SHOP DRAWINGS AND EQUIPMENT CUTS ON ALL LUMINAIRES, BALLASTS/DRIVERS FOR LUMINAIRES, POWER AND DISTRIBUTION EQUIPMENT, FIRE ALARM (INCLUDING SYSTEM DRAWINGS, SPECIFICALLY PREPARED BY A QUALIFIED MANUFACTURER/SUPPLIER SHOWING ALL APPLICABLE INFORMATION REQUIRED OR REQUESTED BY CODE OFFICIALS AS PART OF OBTAINING FIRE ALARM PERMIT [AND INCLUDING SEALING BY REGISTERED P.E. IF REQUIRED BY CODE OFFICIALS]) AND OTHER SYSTEMS, AND ANY OTHER EQUIPMENT REQUESTED BY THE ENGINEER, ARCHITECT, OR OWNER TO THE ENGINEER AND ARCHITECT FOR REVIEW AND APPROVAL. SUBMIT SETS OF CUTS AS DIRECTED BY THE ARCHITECT BUT NOT LESS THAN TEN (10) SETS. APPROVAL OF SHOP DRAWINGS AND CUTS (INCLUDING SUBSTITUTED EQUIPMENT) IS CONDITIONAL UPON THERE BEING NO COST CHANGE TO THE OWNER (UNLESS SPECIFICALLY INDICATED AS PART OF THE APPROVAL).

23) SUBSTITUTIONS OF EQUIPMENT OF THE SAME OR BETTER QUALITY THAN THE EQUIPMENT SPECIFIED SHALL BE CONSIDERED (AFTER AWARD OF CONTRACT ONLY).

24) FOR ALL MECHANICAL AND OTHER UTILIZATION EQUIPMENT CONNECTIONS, THE CONTRACTOR SUPPLYING THE EQUIPMENT SHALL FURNISH AND INSTALL ALL STARTERS, CONTACTORS, AND OTHER CONTROL EQUIPMENT (INCLUDING THERMOSTATS, RELAYS, TIMERS, INTEGRATED CONTROLLERS, ETC.) AS WELL AS CONTROL WIRING (AND CONDUIT). THE E.C. SHALL FURNISH AND INSTALL ALL POWER WIRING, LOCAL DISCONNECTING MEANS AS REQUIRED, AND ALL FINAL CONNECTIONS AT THE EQUIPMENT. THIS INCLUDES THE E.C. PASSING POWER WIRING THROUGH SUPPLYING CONTRACTOR PROVIDED STARTERS, CONTACTORS, ETC., AND ALSO MAKING CONNECTIONS TO ONE OR MORE SETS OF POWER WIRING TERMINALS AT THE EQUIPMENT. THE E.C. SHALL OBTAIN EQUIPMENT CUTS FROM THE SUPPLYING CONTRACTOR TO VERIFY ALL REQUIREMENTS.

25) WHERE WIRING SERVES EQUIPMENT, PROVIDE COMPLETE CONNECTIONS TO EQUIPMENT AS REQUIRED. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH IN. FOR ALL EQUIPMENT RATED 120 V OR 277 V AND 20 A OR LESS, INCLUDE COSTS TO PROVIDE EITHER A DIRECT CONNECTION (INCLUDING THERMAL OVERLOAD SWITCH WHERE DISCONNECTING MEANS IS REQUIRED) OR A SUITABLE RECEPTACLE WHERE EQUIPMENT IS SUPPLIED WITH CORD AND PLUG.

25) UPON COMPLETION OF THE PROJECT, SUBMIT A COMPLETE SET OF BLUEPRINTS MARKED UP WITH ALL AS-BUILT CONDITIONS. PROVIDE AS-BUILT DRAWINGS INCLUDING DETAILED LOCATIONS AND ROUTING OF ALL CONCEALED WIRING. SUBMIT OPERATING AND MAINTENANCE (O&M) MANUALS FOR ALL NEW EQUIPMENT SUPPLIED.

27) SUPPORT ALL EQUIPMENT AND WIRING AS REQUIRED BY CODE (NEC AND IBC, INCLUDING APPLICABLE SEISMIC REQUIREMENTS) AND ADEQUATELY FOR THE PHYSICAL LOADS INVOLVED. COMPLETELY SEAL AND FIRE STOP ALL PENETRATIONS OF ALL FIRE AND/OR SMOKE RATED WALLS, FLOORS, CEILINGS, AND ANY OTHER CONSTRUCTION (INCLUDING ALL WALLS REQUIRED TO BE RATED BY CODE) TO A RATING MATCHING OR EXCEEDING THE FIRE RATING OF THE CONSTRUCTION. COMPLETELY SEAL AND WEATHERPROOF ALL PENETRATIONS OF EXTERIOR, AT OR BELOW GRADE, AND WET LOCATION WALLS AND FLOORS AND ROOF PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR INFORMATION ON FIRE RATINGS OF BUILDING CONSTRUCTION AND INCLUDE ALL COSTS IN BID. COMPLY WITH AND INSTALL FIRE STOPPING IN ACCORDANCE WITH ALL APPLICABLE FIRE RATING CODES AND STANDARDS (INCLUDING THE NEC, NFPA, IBC, AND THE UL "FIRE RESISTANCE DIRECTORY").

28) PROVIDE ALL EQUIPMENT AS NEW AND EITHER LISTED OR LABELED BY A QUALIFIED PRODUCT EVALUATING ORGANIZATION (UL, CSA, ETL, OR APPROVED EQUAL).

29) GUARANTEE AND WARRANTY ALL WORK FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL COMPLETION.

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ELECTRICAL SYMBOL LIST

Symbol	Description
S S_3 S_4	20 A, 277/120 V SWITCH, SINGLE POLE (S), THREE-WAY (S-3), AND FOUR-WAY (S-4), RESPECTIVELY, SPECIFICATION GRADE, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER; (EX) INDICATES EXISTING TO REMAIN
S_K	20A, 277/120V LOCKING STYLE SWITCH (S-K), SINGLE POLE, THREE-WAY, AND FOUR-WAY, RESPECTIVELY, SPECIFICATION GRADE, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER, PASS & SEYMOUR #20AC*-L SERIES; FURNISH AND TURN OVER TO THE OWNER AT LEAST ONE (1) KEY PER SWITCH INSTALLED; (EX) INDICATES EXISTING TO REMAIN
S_D	OCCUPANCY/VACANCY SENSOR LIGHTING CONTROL WITH INTEGRAL MANUAL OVERRIDE TO "ON" PUSH BUTTON (S-OC), FLUSH MOUNTED ON WALL (ON FLUSH MOUNTED OUTLET BOX), SELF-CONTAINED "STAND-ALONE" TYPE (SINGLE SENSOR FOR LOCAL LIGHTING CONTROL OF A SINGLE CIRCUIT ONLY), MULTI-TECHNOLOGY PASSIVE INFRARED (PIR) AND ULTRASONIC TYPE WITH INTEGRAL SWITCHING RELAY, RATED MINIMUM 800 W, 1,200 VA FOR 120 V OPERATION AND RATED MINIMUM 2,700 VA FOR 277 V OPERATION, SINGLE POLE, NOMINAL 93 m2 (1,000 SQ FT) COVERAGE, MEETING NEMA WD7 STANDARD, INTEGRAL SELECTABLE AMBIENT LIGHT LEVEL SENSOR, SELECTABLE AUTOMATIC (OCCUPANCY SENSOR) OR MANUAL (VACANCY SENSOR) MODES, SPECIFICATION GRADE, WHITE FINISH, EATON/COOPER #ONW-D-1001-MV-* (OR APPROVED EQUAL)
○	LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	WALL MOUNTED LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	LINEAR/RECTANGULAR LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	"STRIP" OR "INDUSTRIAL" LUMINAIRE; (EX) INDICATES EXISTING TO REMAIN
	INDICATES EMERGENCY AND NIGHT-LIGHTING LUMINAIRE, UN-SWITCHED, ON 24-HOURS; (EX) INDICATES EXISTING TO REMAIN
⊗	EXIT SIGN, TYPE ("EXIT" UNLESS INDICATED OTHERWISE) AS INDICATED ON THE LUMINAIRE SCHEDULE; (EX) INDICATES EXISTING TO REMAIN
	20 A, 120 V DUPLEX RECEPTACLE (NEMA 5-20R), SPECIFICATION GRADE, TAMPER RESISTANT, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER, (+) INDICATES ABOVE COUNTER MOUNTING HEIGHT, (*) INDICATES MOUNTED HIGH ON WALL AT DISPLAY/SCREEN OR ABOVE BOARD; (EX) INDICATES EXISTING TO REMAIN
	20 A, 120 V DUPLEX GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE RECEPTACLE (NEMA 5-20R), SPECIFICATION GRADE, TAMPER RESISTANT, FLUSH MOUNTED, FINISH AND COVER PLATE AS PER OWNER, (+) INDICATES ABOVE COUNTER MOUNTING HEIGHT, (WP) INDICATES WEATHER-RESISTANT TYPE RECEPTACLE MOUNTED IN A WEATHERPROOF OUTLET BOX WITH SINGLE SPRING-LATCHED WEATHERPROOF-WHILE-IN-USE COVER; FEED THROUGH PROTECTION OF STANDARD TYPE RECEPTACLES FROM OTHER GFCI RECEPTACLES OR PROTECTION OF STANDARD TYPE RECEPTACLES FROM GFCI CIRCUIT BREAKERS ARE NOT ACCEPTABLE
	QUADRUPLEX ("DOUBLE DUPLEX") RECEPTACLE, WITH RECEPTACLE TYPE AS INDICATED
⊠	EQUIPMENT CONNECTION, REFER TO THE EQUIPMENT SCHEDULE AND THE EQUIPMENT NOTES FOR INFORMATION
	EQUIPMENT DESIGNATION, FOR REFERENCE TO THE EQUIPMENT SCHEDULE
	FUSED DISCONNECT (SAFETY) SWITCH, HEAVY DUTY TYPE, WITH SIZE, POLES, AND FUSES AS INDICATED, IN NEMA-1 ENCLOSURE, (WP) INDICATES NEMA-3R ENCLOSURE
	UN-FUSED DISCONNECT (SAFETY) SWITCH, HEAVY DUTY TYPE, WITH SIZE AND POLES AS INDICATED, IN NEMA-1 ENCLOSURE, (WP) INDICATES NEMA-3R ENCLOSURE
	ENCLOSED CIRCUIT BREAKER (ECB), WITH TRIP RATING AND POLES AS INDICATED, IN NEMA-1 ENCLOSURE, (WP) INDICATES NEMA-3R ENCLOSURE
S_T	THERMAL OVERLOAD SWITCH (I.E. MANUAL MOTOR STARTER, "O/L SWITCH", S-T), 277-120 V AND HORSEPOWER RATED, COORDINATE THERMAL OVERLOAD UNIT RATING WITH LOAD SERVED; IN FINISHED SPACES, PROVIDE FLUSH MOUNTED WITH COVER PLATE AS PER OWNER; IN UNFINISHED SPACES, PROVIDE FLUSH MOUNTED OR SURFACE MOUNTED IN A SUITABLE NEMA-1 ENCLOSURE, (WP) INDICATES MOUNTING IN A SUITABLE NEMA-3R ENCLOSURE
	ELECTRICAL PANEL, REFER TO THE RESPECTIVE PANEL SCHEDULE
Ⓙ	ELECTRICAL JUNCTION BOX (J-BOX), AS INDICATED ON THE DRAWINGS, WHERE JUNCTION BOX SERVES EQUIPMENT, PROVIDE COMPLETE EQUIPMENT CONNECTIONS AS REQUIRED; (EX) INDICATES EXISTING TO REMAIN
EF	EXHAUST FAN CONNECTION (EF), PROVIDE COMPLETE EQUIPMENT CONNECTIONS AS REQUIRED (BRANCH CIRCUIT OVERCURRENT DEVICE SERVES AS MOTOR DISCONNECTING MEANS AS PER NEC ARTICLE 430.109(B))
	INDICATES HOME RUN OF WIRING TO PANEL AND CIRCUIT INDICATED
▼	TELEPHONE/DATA OUTLET, FLUSH MOUNTED, PROVIDE SUITABLE OWNER APPROVED OUTLET BOX (INCLUDE COSTS IN BID FOR 2-GANG OUTLET) IN WALL AND 27 mm (1") CONDUIT (WITH PULL WIRE) RUN FROM OUTLET STUBBED AND CAPPED INTO NEARBY ACCESSIBLE CEILING SPACE, (+) INDICATES ABOVE COUNTER MOUNTING HEIGHT OR WALL MOUNTED TELEPHONE MOUNTING HEIGHT (COORDINATE WITH ARCHITECT/OWNER DURING CONSTRUCTION), (*) INDICATES MOUNTED HIGH ON WALL AT DISPLAY/SCREEN OR ABOVE BOARD
F/A	FIRE ALARM CONTROL PANEL [F/A], EXISTING, ADDRESSABLE ANALOG TYPE, WITH INTEGRAL BATTERY BACKUP; GAMEWELL/FCI/HONEYWELL "S3 SERIES" (IN BOTH THE CENTER SQUARE SCHOOL AND LOGAN SCHOOL) SERVICED BY DCD FIRE & SECURITY (856-628-4756)
ANN	FIRE ALARM REMOTE ANNUNCIATOR PANEL [ANN], (EX) INDICATES EXISTING TO REMAIN
F	FIRE ALARM AUDIO/VISUAL HORN/STROBE, ADA APPROVED TYPE PROVIDING ADA APPROVED COVERAGE, WITH SYNCHRONIZED TYPE STROBE, SEMI-FLUSH MOUNTED; (EX) INDICATES EXISTING TO REMAIN
F	FIRE ALARM VISUAL ONLY STROBE, ADA APPROVED TYPE PROVIDING ADA APPROVED COVERAGE, SYNCHRONIZED TYPE, FLUSH MOUNTED
F	FIRE ALARM MANUAL PULL STATION [F], METAL, NON-CODED, DOUBLE ACTION TYPE, FLUSH MOUNTED, ADDRESSABLE TYPE; (EX) INDICATES EXISTING TO REMAIN
Ⓢ	FIRE ALARM SMOKE DETECTOR (S), ADDRESSABLE ANALOG PHOTOELECTRIC TYPE, WITH SUITABLE BASE; (EX) INDICATES EXISTING TO REMAIN
$Ⓢ_{CO}$	FIRE ALARM COMBINATION SMOKE AND CARBON MONOXIDE (CO) DETECTOR (S)CO, ADDRESSABLE ANALOG PHOTOELECTRIC TYPE, WITH SUITABLE BASE
Ⓗ	FIRE ALARM HEAT DETECTOR (H), ADDRESSABLE ANALOG TYPE, CONFIGURE FOR 135 DEGREES F (57 DEGREES C) FIXED AND RATE-OF-RISE OPERATION (UNLESS DIFFERENT OPERATION IS INDICATED OTHERWISE), WITH SUITABLE BASE; (*) INDICATES MOUNT ABOVE DROP CEILING (WHERE AN ABOVE CEILING DETECTOR IS SHOWN IN CONJUNCTION WITH A DETECTOR BELOW THE CEILING, MOUNT THE ABOVE CEILING DETECTOR AS CLOSE AS PRACTICAL TO DIRECTLY ABOVE THE BELOW CEILING DETECTOR [FOR DROP CEILINGS, MOUNT ABOVE THE CEILING TILE CONTAINING THE BELOW CEILING DETECTOR])
$Ⓢ_D$	FIRE ALARM DUCT TYPE SMOKE DETECTOR (ADDRESSABLE ANALOG PHOTOELECTRIC TYPE) AND HVAC EQUIPMENT SHUTDOWN INTERFACE (S)D, IN DUCT HOUSING WITH SAMPLING TUBES TO SUIT DUCTWORK (COORDINATE REQUIREMENTS WITH M.C.); PROVIDE SHUTDOWN INTERFACE INCLUDING A SUITABLE ADDRESSABLE SUPERVISED OUTPUT RELAY MODULE EITHER INTEGRAL TO OR FIELD INSTALLED DIRECTLY ADJACENT TO DUCT HOUSING; PROVIDE A SUITABLE REMOTE TEST, RESET, AND ALARM INDICATING STATION WALL MOUNTED AT AN OWNER APPROVED LOCATION IN A CORRIDOR OR COMMON USE SPACE NEAR THE DETECTOR; E.C. SHALL FURNISH COMPLETE DUCT DETECTOR AND WIRE TO FIRE ALARM SYSTEM, WHERE EITHER THE HVAC EQUIPMENT AND/OR ANY ASSOCIATED DUCTWORK ARE NEW OR MODIFIED, M.C. SHALL INSTALL DETECTOR ON DUCTWORK AND M.C./ATC CONTRACTOR SHALL PROVIDE ALL HVAC SHUTDOWN INTERFACE WIRING FROM RELAY TO HVAC EQUIPMENT; WHERE BOTH THE HVAC EQUIPMENT AND ALL ASSOCIATED DUCTWORK ARE EXISTING TO REMAIN, E.C. SHALL INSTALL DETECTOR ON DUCTWORK (AS DIRECTED BY AND UNDER THE SUPERVISION OF THE M.C. AND MECHANICAL ENGINEER) AND PROVIDE ALL HVAC SHUTDOWN INTERFACE WIRING FROM RELAY TO HVAC EQUIPMENT (MAKING FINAL CONNECTIONS AT HVAC EQUIPMENT AS DIRECTED BY AND UNDER THE SUPERVISION OF THE M.C./ATC CONTRACTOR AND MECHANICAL ENGINEER)
⟨S⟩	PAGING/INTERCOM SYSTEM CEILING SPEAKER, (EX) INDICATES EXISTING TO REMAIN
SEC	SECURITY ACCESS SYSTEM CONTROL PANEL [SEC], EXISTING, SERVICED BY INTELLICOM OF PENNSAUKEN, NJ (MODIFICATIONS SHALL BE BY THE OWNER'S SECURITY VENDOR)
I	INTERCOM STATION [I], (EX) INDICATES EXISTING TO REMAIN
CR	CARD READER OUTLET [CR], E.C. SHALL PROVIDE SUITABLE OWNER APPROVED OUTLET BOX IN WALL AND 21 mm (3/4") CONDUIT (WITH PULL WIRE) RUN FROM OUTLET TO SECURITY ACCESS SYSTEM DOOR JUNCTION BOX (OR SECURITY CONTROL PANEL WHERE SECURITY ACCESS SYSTEM DOOR JUNCTION BOX IS NOT SHOWN AT THE DOOR); CARD READER, WIRING, AND ALL FINAL CONNECTIONS SHALL BE BY THE OWNER'S SECURITY VENDOR; (EX) INDICATES EXISTING TO REMAIN
$Ⓙ_S$	SECURITY ACCESS SYSTEM DOOR JUNCTION BOX (J-S), LOCATE ON SECURE SIDE OF DOOR, E.C. SHALL PROVIDE OWNER APPROVED JUNCTION BOX AND 27 mm (1") CONDUIT RUN FROM JUNCTION BOX STUBBED AND CAPPED INTO ACCESSIBLE CEILING SPACE; ALL SECURITY SYSTEM AND LOW VOLTAGE POWER WIRING AND FINAL CONNECTIONS (INCLUDING LOW VOLTAGE POWER SUPPLY) SHALL BE BY THE OWNER'S SECURITY VENDOR; E.C. SHALL PROVIDE 120 V POWER (TO POWER SUPPLY PRIMARY) WIRING AS SHOWN ON THE DRAWINGS/SPECIFICATIONS
DC	DOOR MONITORING CONTACT CONNECTION [DC], E.C. SHALL PROVIDE 21 mm (3/4") CONDUIT (WITH PULL WIRE) RUN FROM LATCH TO SECURITY ACCESS SYSTEM DOOR JUNCTION BOX; DOOR CONTACT (CONCEALED IN DOOR FRAME), WIRING, AND ALL FINAL CONNECTIONS SHALL BE BY THE OWNER'S SECURITY VENDOR
DR	DOOR RELEASE LATCH (OR MAGNETIC LOCK) CONNECTION [DR], G.C. SHALL FURNISH AND INSTALL LATCH IN DOOR FRAME, E.C. SHALL PROVIDE 21 mm (3/4") CONDUIT (WITH PULL WIRE) RUN FROM LATCH TO SECURITY ACCESS SYSTEM DOOR JUNCTION BOX; WIRING AND ALL FINAL CONNECTIONS SHALL BE BY THE OWNER'S SECURITY VENDOR
	CCTV SECURITY CAMERA; (EX) INDICATES EXISTING TO REMAIN
	NATIONAL ELECTRICAL CODE (NEC), LATEST ADOPTED EDITION
	ELECTRICAL CONTRACTOR (EC)
	MECHANICAL CONTRACTOR (MC), INCLUDING ALL MECHANICAL TRADES IN GENERAL (MECHANICAL, HVAC, ATC, PLUMBING, FIRE PROTECTION, ETC.), REFER TO MECHANICAL DOCUMENTS FOR DISTINCTION BETWEEN CONTRACTORS/TRADES
	GENERAL CONTRACTOR (GC), INCLUDING ALL GENERAL CONSTRUCTION TRADES IN GENERAL (CARPENTRY, STEEL, CONCRETE, SITE, ETC.), REFER TO ARCHITECTURAL AND SITE DOCUMENTS FOR DISTINCTION BETWEEN CONTRACTORS/TRADES

ISSUED FOR BID: 05-13-2019

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REVISIONS

a.	e.
b.	f.
c.	g.

Project No. 19-18C
Date: 05/13/19
Scale: AS NOTED

ELECTRICAL NOTES AND DETAILS

CE2