Collegium Charter School
Alterations to the 515 Building

515 James Hance Court
Exton, Chester County, PA 19341

Owner:

COLLEGIUM CHARTER SCHOOL
435 BUILDING
435 CREAMERY WAY, SUITE #300
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ALLENTOWN, PA, 18103
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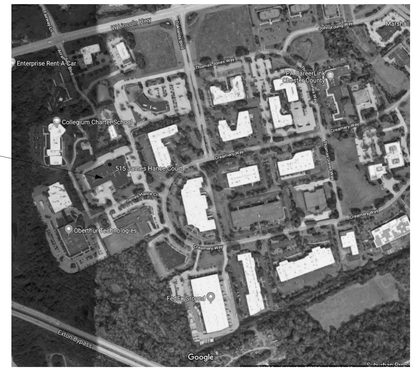
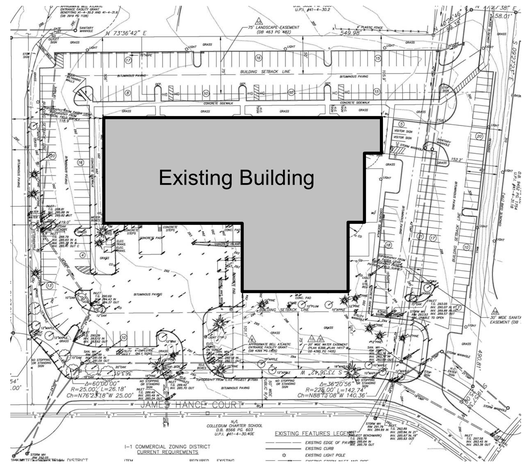
Location Map:



Site Map:



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Cover Sheet

PROJECT NUMBER
17.177

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SCALE
1" = 80'-0"

DATE
09.14.2018

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G001

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CODE INFORMATION:

Municipality: West Whiteland Township

All construction has been designed to meet the provisions of the Pennsylvania Uniform Construction Code (UCC), the accessible and usable buildings and facilities ICC / ANSI A1171-2009 (ANSI), IBC 2012 Chapter 11, and the 2009 International Building Code. The codes adopted by the UCC are the international codes, 2009, and Chapter 11 Accessibility 2012, as issued by the International Code Council, and in accordance with Americans with Disabilities Act (ADA)

Pennsylvania Uniform Construction Code

International Existing Building Code 2009 (IEBC 2009) including all appendices and resource information

International Existing Building Code 2015 (IEBC 2015) only Section 406.3 and the accessibility provisions from sections 107.2, 410, 605, 705, 801.1, 806, 901.2, 906, 1006, 1012.1.4, 1012.8, 1101.2, 1204.1, 1205.15, 1401.2.5, 1508, and appendix B

International Building Code 2009 (IBC 2009) excluding chapters 1, 11, & 30; including Appendix H

International Building Code 2015 (IBC 2015) only sections 304.1, 306.2, 2902.3, 902.1, 904.2, 904.2.1, 904.11 through 904.11.3, 907.2.11.3, 907.2.11.4, Chapter 11, and Appendix E

International Energy Conservation Code 2009 (IECC 2009)

International Energy Conservation Code 2015 (IECC 2015) only section 402.1.3

International Fire Code 2009 (IFC 2009) only to the extent referenced in the IBC 2009

International Fire Code 2015 (IFC 2015) only sections 202, 902.1, 904.2, 904.2.1, 904.11 through 904.4.11.3 , 907.2.11.3 and 907.2.11.4

International Mechanical Code 2009 (IMB 2009) excluding all appendices

International Mechanical Code 2015 (IMB 2015) only section 507.2

International Plumbing Code 2009 (IPC 2009) excluding all appendices

American National Standard Accessible and Usable Buildings and Facilities 2009 (ICC A117.1-2009)

2010 Americans with Disabilities Act Standards for Accessible Design (ADASAD 2010)

Project Description: This project includes alterations to an existing charter school building. Alterations will consist of a floor infill and elevator to access the lower level. The project includes no change of use to the original building.

TOILET FIXTURE REQUIREMENTS:

Per 2009 IEBC, Section 710 Plumbing:

Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantites specified in the IPC based on the increased occupant load.

Occupant load of story decreased (Existing unconcentrated assembly (7 NSF/occupant) to Proposed Educational Classroom (20 NSF/occupant)); therefore no additional plumbing fixtures required.

10 water closets provided
10 lavatories provided
3 drinking fountains provided
1 service sink provided

IBC 2009 Code Review

Review No.	Code Information	Section No.	Requirement
0 - PROJECT DATA			
0.00			
0.01	Occupancy Group	302	(E) Educational (Existing)
0.02			
0.03	Construction Type	602 / T 601	Type 2B
0.04	Sprinklers	903	Required and Provided
1 - BUILDING CONSTRAINTS			
1.00			Height & Area Limitations / Modifications - Actual Building Height & Area
1.01	Building Height, Base	T 503	55 feet (E)
1.02	Building Height, Increase	504	20 feet
1.03	Building Height, Allowable		75 feet
1.04	Building Height, Actual		25 feet - no height increase proposed
1.05	Building Area, Base	T 503	14,500 SF (E) per Story
1.06	Building Area, Increase	506.1	Aa = At + [At x If) + (At x Is)
1.07		506.2	Frontage Increase - If = 100 [F/P - 0.25] W/30 = 75% (where W=30)
1.08			P = total building perimeter = 1,182 linear ft
1.09			F = perimeter w/ 30' open space = 1,182 linear ft
1.10		506.3	Automatic Sprinkler Increase = 300% for no more than one story above grade [Is=3]
1.11	Building Area, Allowable	506	Aa = At + [At x If) + (At x Is) = X sq. ft. = 14,500 + (14,500 x 0.75) + (14,500 x 3) = 68,875 SF per Story
1.12	Building Area, Proposed		Lower Level - 9,585 SF First Floor Level - 60,230 SF
2 - FIRE RESISTANCE RATINGS			
2.00			
2.01	Fire Wall	T 706.4	N/A
2.02	Separation of Occupancies	T 508.4	No separation required
2.03	Fire Barriers between Building Areas	T 707.3.8	N/A
2.04	Structural Frame	T 601	0 hr
2.05	Bearing Wall, Exterior	T 601	0 hr
2.06	Bearing Partition, Interior	T 601	0 hr
2.07	Non-Bearing Wall, Exterior	T 601	0 hr
2.08	Fire Separation Distance	T 602	>30', 0 hr
2.09	Non-Bearing Partition, Interior	T 601	0 hr
2.10	Floor Construction	T 601	0 hr
2.11	Roof Construction	T 601	0 hr
2.12	Shafts, Required Enclosure	708.2	Required and Provided
2.13	Shafts, Rating	708.4	1-hour (connecting less than 4 stories)
2.14	Exit Access Corridors	T 1018.1	0 hr., sprinklered
2.15	Vertical Exit Enclosures, Required	1022.1	Enclosure not req'd. on stairs that are not a means of egress
2.16	Enclosures	Exceptions	
2.17	Vertical Exit, Rating	1022.1	Not less than 1-hour connecting 4 stories or less
2.18	Exterior Area of Rescue Assistance	1007.3 & 1007.4	
3 - OCCUPANCY			
3.00			See Life Safety Plan for detailed Occupancy Count
3.01	Occupancy Load Total	T 1004.1	644 Total Occupants in altered areas - 2,034 Total Occupants
4 - EGRESS			
4.00			
4.01	Minimum number of exits	T 1021.1	4 exits min. per story (+1000 occupants)
4.02	Spaces requiring 2 exits	T 1021.2	Spaces with 49 or more occupants
4.03	Buildings - Single Exit Allowed	T 1021.2	1 story occup & 75 ft. travel distance
4.04	Luminous egress path markings	1024	N/A
5 - EGRESS WIDTH			
5.00			
5.01	Doorways, per Occupant served	1005.1	0.2" per occupant (36" door allows 170 occupants and 72" opening allows 340 occupants)
5.02	Doors, minimum size	1008.1.1	32" clear width = 34" door
5.03	Corridors, per Occupant served	T 1005.1	0.2" per occupant
5.04	Corridors, minimum size	1018.2	72" corridor width with 100+ occupants
5.05	Stairs, per Occupant served	1005.1	0.3" per occupant served
5.06	Stairs, minimum size	1009.1	44"
5.07	Stairs, Accessible egress	1007.3	48" min. clear between handrails
5.08	Area of Rescue Assistance	1007.3, Excptn 3	Not Req'd in stairways in sprinklered bldg.

IBC 2009 Code Review

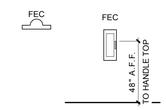
Review No.	Code Information	Section No.	Requirement
5.09	Area of Rescue Assistance, Size	1007.6.1	30" x 48" for each 200 occupants
5.10	Area of Rescue, 2-way Communication	1007.6.3	N/A
6 - EGRESS ACCESS DISTANCES			
6.00			
6.01	Exit Access Travel		
6.02	Most remote point to exit	T 1016.1	250' (with sprinkler system)
6.03	Common path Egress travel	1014.3, 1028.8	75' and not more than 30' from any seat to a point where an occupant has a choice of 2 paths of egress travel to 2 exits.
6.04	Dead End corridors	1018.4	20' max. 50' max in sprinklered building
6.05	Dead End Corridors	Exception 3	Unlimited if length of the dead-end corridor <2.5 times width of dead-end corridor
7 - INTERIOR FINISHES			
7.00			
7.01	Vertical Exits	T 803.9	Class B
7.02	Exit Corridors	T 803.9	Class C
7.03	Rooms / Enclosed Spaces	T 803.9	Class C
8 - FIRE PROTECTION			
8.00			
8.01	Where Required, by Use Group	903.2	E - fire area greater than 12,000 SF
9 - EMERGENCY PROVISIONS			
9.00			
9.01	Fire Alarm (by Use Group)	907.2	Manual req'd. for occupancy > 50
9.03	Emergency Lighting	1006.3	Illumination of means of egress, including exit discharge
9.04	Fire Extinguishers	906, T 906.3	1- 2A per 3,000 sf. max. floor area per unit of A
9.05	Fire Extinguishers	906, T 906.3	11,250 sf. max. floor area for fire extinguisher
9.06	Fire Extinguishers	906, T 906.3	75' max. travel distance to fire extinguisher
10 - HAZARDOUS AREAS			
10.00			
10.01	Furnace Rooms > 400,000 BTUH Output	T 508.2	N/A
10.02	Boiler Rooms > 15 psi and 10hp	T 508.2	N/A
10.03	Laundry Rooms > 100sf	T 508.2	N/A
11 - ACCESSIBILITY			
11.00			
11.01	Scoping requirements	1103	All buildings, including associated sites, shall be accessible, unless specifically exempted.
11.02	Scoping requirements	1103.2.3	Work areas – 300 sq ft or less & elevated 7" + above f.f. where the elevation is essential to the function of the space shall be exempt from all requirements.
11.03	Scoping requirements	1103.2.9	Spaces frequented only by personnel for maintenance, repair or monitoring of equipment are not required to be accessible.
11.04	Accessible Route	1104	
11.05	Accessible Route	1104.1	Site arrival point, see civil 'SP' drawings
11.06	Accessible Route	1104.2	At least one accessible route shall connect accessible elements on the same site
11.07	Accessible Route	1104.3	Accessible route can not pass through kitchens, storage rooms, restrooms, closets, etc.
11.08	Accessible Route	1104.3 Excptn 1	Assembly areas with fixed seats an accessible route shall not be required to serve levels where wheelchair spaces are not provided
11.09	Accessible Route	1104.3.1.1	Common use circulation paths within employee work areas shall be accessible routes.
11.10	Accessible Entrances	1105.1	At least 60 % of all public entrances shall be accessible. All entrances used for emergency egress to be accessible
11.11	Parking & Passenger Loading	1106	Where parking is provided accessible parking shall be provided
11.12	Number of Parking Spaces	T 1106.1	TBD
11.13	Van Accessible Spaces	1106.5	1 van accessible per 6 HC
11.14	Location	1106.6	shortest route to accessible entry
11.15	Passenger Loading Zones	1106.7	see civil 'SP' drawings
11.16	Other Features & Facilities	1109	
11.17	Toilet Facilities	1109.2.1	Unisex toilet required in group A where an aggregate of 6 or + male & female water closets are req'd. In mixed use - use Assembly quantity to determine aggregate number
11.18	Unisex Toilet	1109.3	At least 5% but not less than one sink provided in accessible spaces shall comply with ICC A117.1-2003

LIFE SAFETY LEGEND

EXIT 162	INDICATES POINT OF EXIT AND EXIT CAPACITY
	ACCESSIBLE ROUTE
	SMOKE PARTITION
	1-HOUR RATED RESISTANCE RATING
	2-HOUR RATED FIRE RESISTANCE RATING
FEC	FIRE EXTINGUISHER & CABINET WITH UL RATED 10 A:B:C 10 lb. CAPACITY
EWC	ELECTRIC WATER COOLER
	EXIT SIGN (X - high, XL - low, E - existing)
CA	CARD ACCESS (ELECTRIC STRIKE)

NOTES:
1. FURNITURE N.I.C. SHOWN FOR GRAPHIC PURPOSES ONLY.

FIRE EXTINGUISHER DETAILS



INSTALL RECESSED FIRE EXINGUISHER CABINET PER DRAWINGS, WHERE POSSIBLE. OTHERWISE, INSTALL PER ARCHITECT'S INSTRUCTIONS.

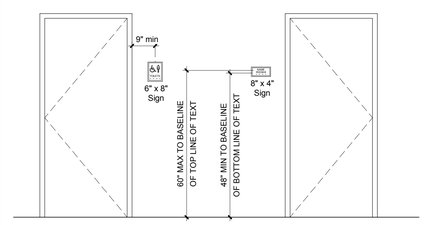
SIGNAGE DETAILS

Provide, at a minimum, one sign for every Exit Door, Toilet Room, and any other locations as required by code.

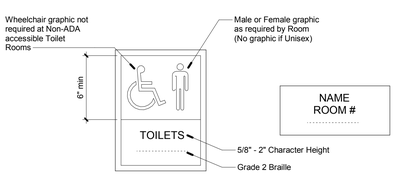
All signage to comply with all current ADA and code requirements.

Note: Where door is surrounded by glass, provide back plate to conceal back of sign on other side of glass.

Locate sign on the latch side of door, or as directed by Architect



MOUNTING DETAILS



BRAILLE DETAILS

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DRAWN BY

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SCALE

As indicated

DATE

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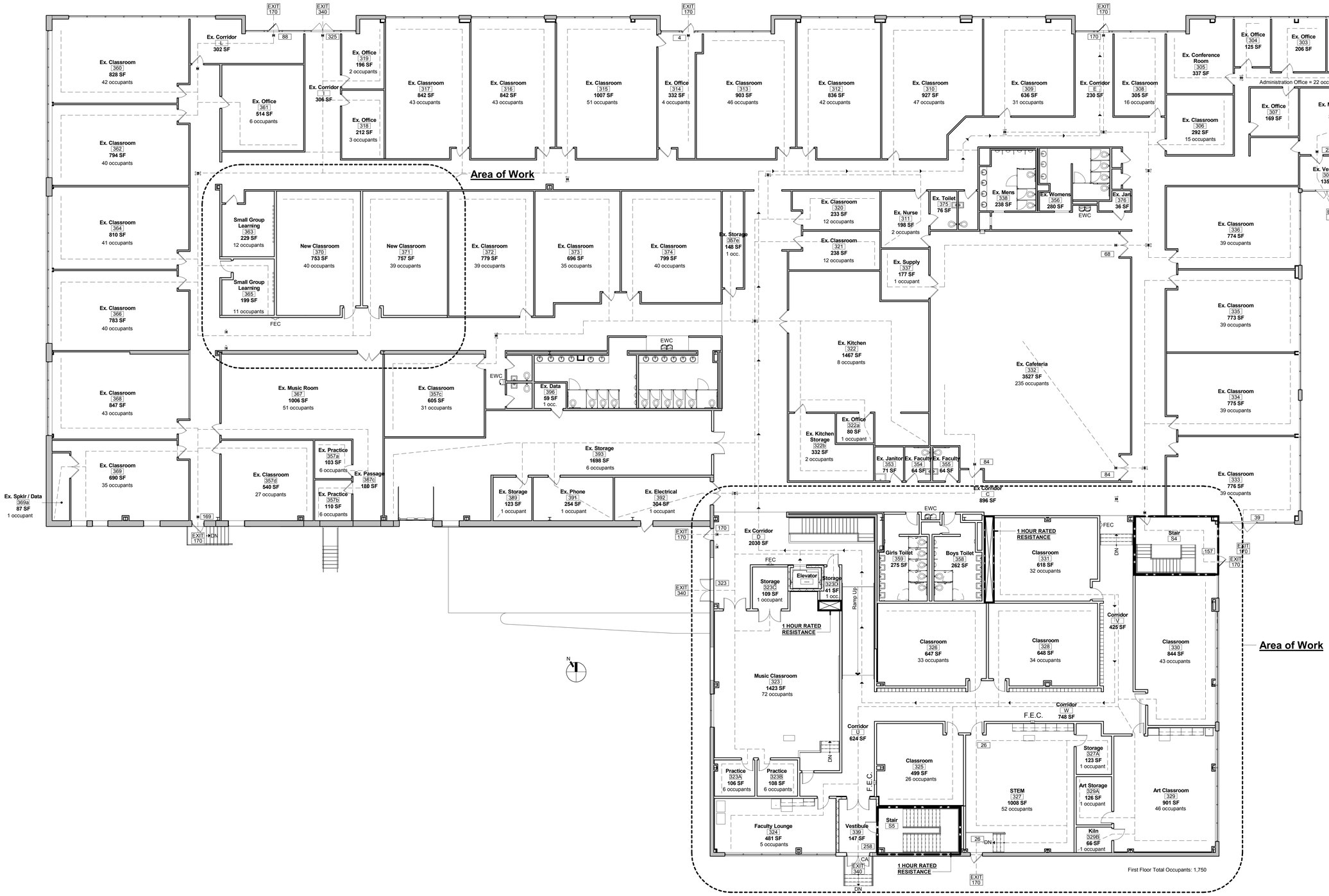

1 First Floor Life Safety Plan

3/32" = 1'-0"

LIFE SAFETY LEGEND

EXIT 162	INDICATES POINT OF EXIT AND EXIT CAPACITY
	ACCESSIBLE ROUTE
	SMOKE PARTITION
	1-HOUR RATED RESISTANCE RATING
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FEC	FIRE EXTINGUISHER & CABINET WITH UL RATED 10 A:B:C 10 lb. CAPACITY
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DRAWING TITLE: First Floor - Life Safety Plan

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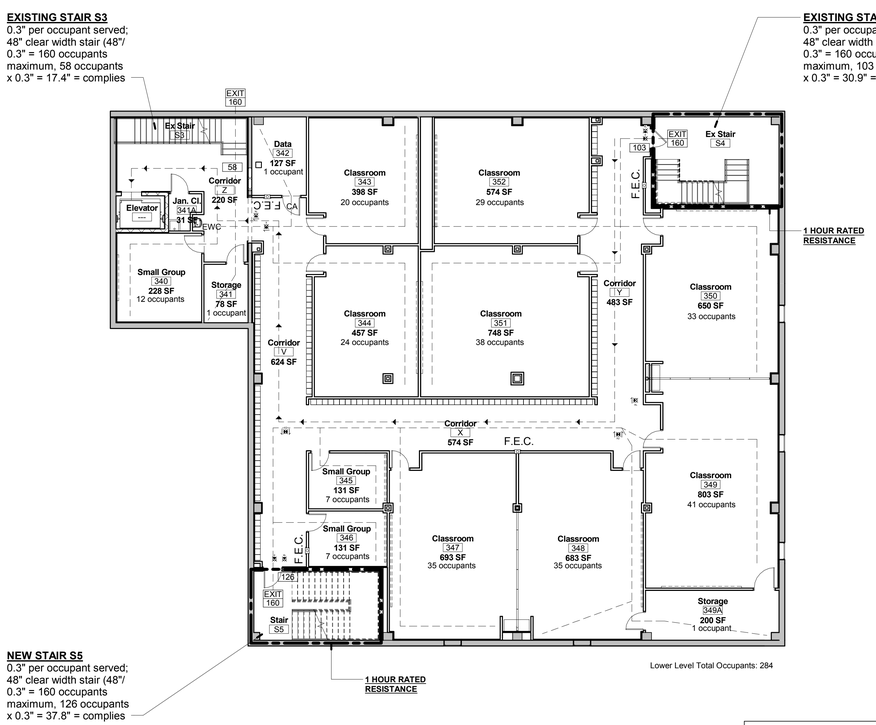

1 Lower Level Life Safety Plan

3/32" = 1'-0"

N

LIFE SAFETY LEGEND

EXIT 162	INDICATES POINT OF EXIT AND EXIT CAPACITY
	ACCESSIBLE ROUTE
	SMOKE PARTITION
	1-HOUR RATED RESISTANCE RATING
	2-HOUR RATED FIRE RESISTANCE RATING
FEC	FIRE EXTINGUISHER & CABINET WITH UL RATED 10 A:B:C 10 lb. CAPACITY
EWC	ELECTRIC WATER COOLER
	EXIT SIGN (X - high, XL - low, E - existing)
CA	CARD ACCESS (ELECTRIC STRIKE)

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Lower Level - Life Safety Plan

PROJECT NUMBER 17.177

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SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

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PHASING & CONSTRUCTION NOTES

1. THE SCHOOL AND SITE WILL BE OCCUPIED BY STUDENTS, STAFF, AND THE PUBLIC DURING THE COURSE OF THE WORK. ALL WORK MUST BE COORDINATED WITH THE OWNER.

2. THE CONTRACTORS ARE EXPECTED TO MOVE AS EXPEDITIOUSLY AS POSSIBLE, BUT AT THE SAME TIME, ALLOW THE OWNER TO OPERATE THE SCHOOL WITH A MINIMUM AMOUNT OF INTERRUPTIONS. THE GENERAL CONTRACTOR SHALL MEET WITH THE OWNER TO DEVELOP A SCHEDULE.

3. NO CONTRACTOR VEHICULAR TRAFFIC FROM 7:00 A.M. TO 8:00 A.M. AND 2:30 P.M. TO 3:30 P.M.

4. PROVIDE CHAIN LINK FENCING, MINIMUM 6' HIGH , ABOUT THE PERIMETER OF ALL CONTRACTOR TRAILER, STAGING, AND CONSTRUCTION YARD AREAS, AND ABOUT THE PERIMETER OF ALL CONSTRUCTION/ WORK AREAS. SOME LOCATIONS HAVE BEEN NOTED ON THE PHASING PLANS. THE REMAINDER AND EXACT LOCATIONS OF ALL FENCING SHALL BE WORKED OUT IN THE FIELD WITH THE OWNER.

5. ALL TEMPORARY INTERIOR PARTITIONS, WALLS, DOORS, AND FRAMES SHALL BE CONSTRUCTED AND PAINTED WITH MATERIALS SUITABLE TO BE EXPOSED ON THE OCCUPIED SIDE. SEAL WEATHER TIGHT AND PAINT ALL TEMPORARY PARTITIONS EXPOSED ON THE EXTERIOR OF THE BUILDING.

6. THE EXACT LOCATIONS OF ALL TEMPORARY FENCES, PARTITIONS, GATES, DOORS, WALLS, ETC, SHALL BE COORDINATED WITH THE OWNER PRIOR TO INSTALLATION.

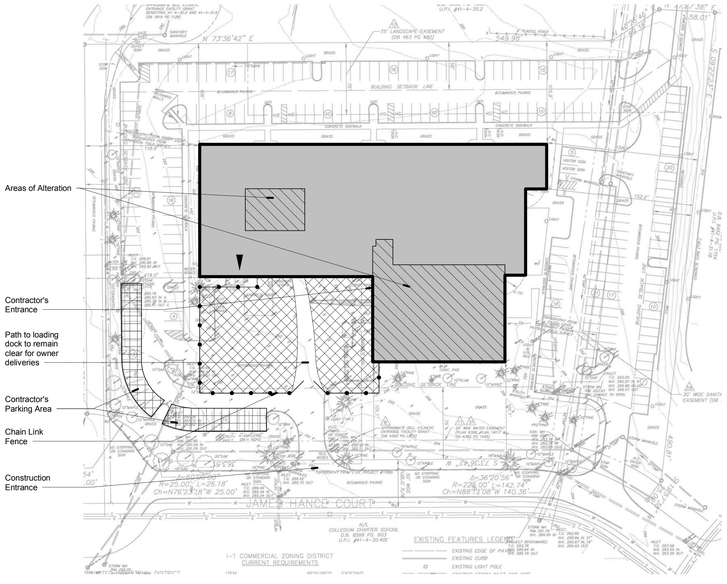
7. ALL TEMPORARY CONSTRUCTION DOORS, FENCES, PARTITONS, CEILINGS, AND OTHER TEMPORARY MEASURES SHALL BE COMPLETELY REMOVED AT THE COMPLETION OF THE PROJECT. ALL EXISTING SURFACES DAMAGED BY TEMPORARY CONSTRUCTION SHALL BE PATCHED AND REPAIRED TO MATCH THE EXISTING SURROUNDING FINISHES. COORDINATE THE REMOVAL OF ALL TEMPORARY CONSTRUCTION WITH THE OWNER.

8. IN ADDITION TO THE SIGN LOCATIONS NOTED ON THE PLANS, PROVIDE AN ADDITIONAL (4) TEMPORARY EMERGENCY EXIT SIGNS, LOCATIONS AS DIRECTED IN THE FIELD. SIGNS SHALL BE 30" WIDE X 24" HIGH PAINTED PLYWOOD, "EXIT TO BE USED ONLY IN AN EMERGENCY".

9. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY FACILITIES PROVIDED UNDER THE GENERAL CONSTRUCTION CONTRACT OR PROVIDED BY OWNER, INCLUDING BUT NOT LIMITED TO: ALL TEMPORARY SITE SERVICES FOR PARKING, LAY DOWN AREAS, ETC. AND SHALL RESTORE ALL SITE AREAS INCLUDING ROUGH AND FINE GRADING, SEEDING, PLANTING, AND ALL SUCH AREAS.

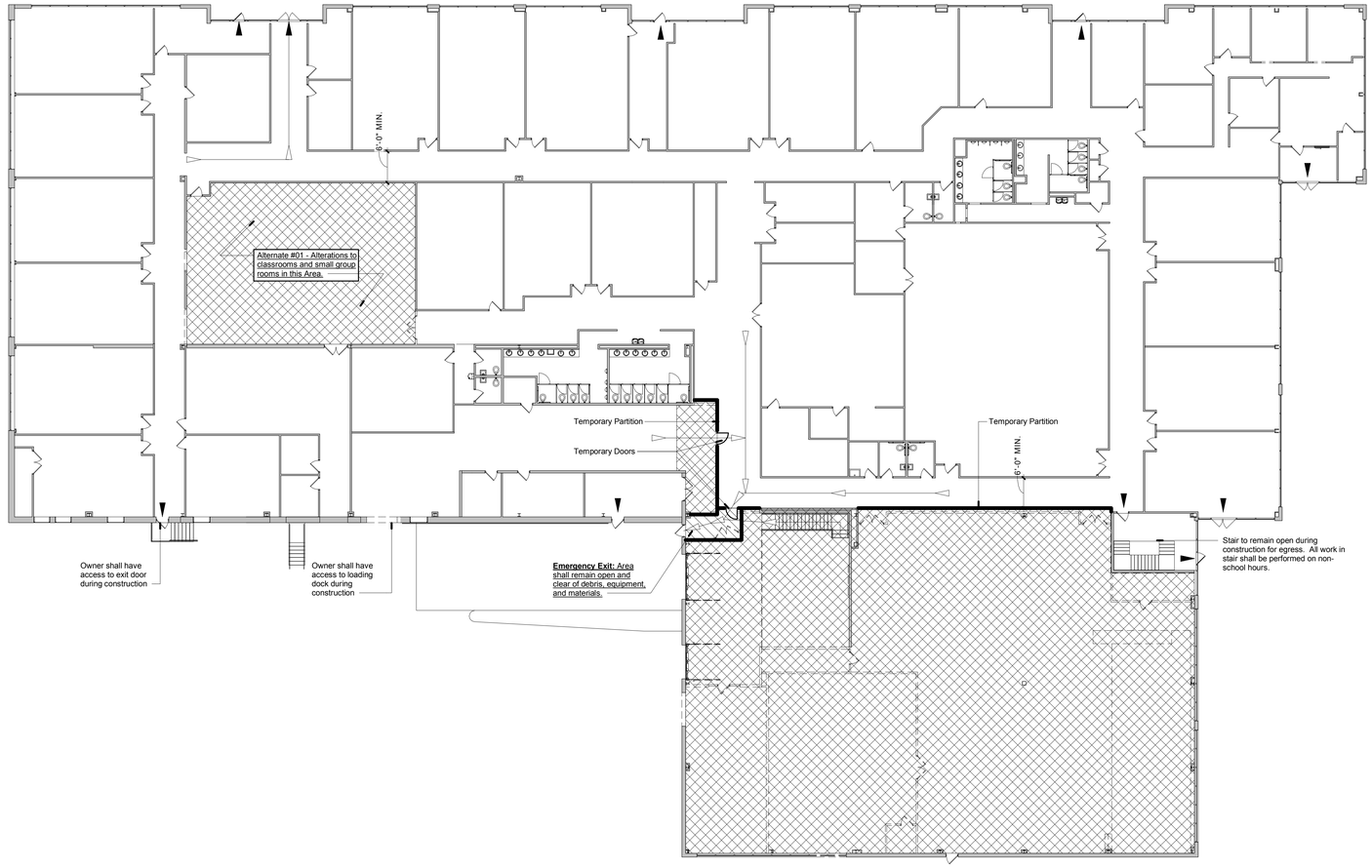
10. ALL EXISTING CURBS, STREETS, AND ADJACENT PROPERTIES ARE TO BE PROTECTED DURING CONSTRUCTION. ANY ITEMS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE COMPLETE SATISFACTION OF THE OWNER.

11. PATHWAYS AND EGRESS OUTSIDE OF THE BUILDING FROM EXIT WAYS SHALL BE MAINTAINED CLEAR AND OPEN AT ALL TIMES.



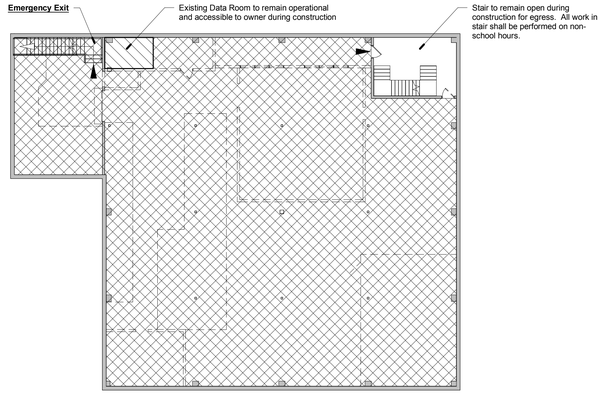
1 Site Plan - Phasing
1/64" = 1'-0"

KEY
- EXISTING BUILDING
- AREAS OF ALTERATION
- CONTRACTOR'S AREA



3 First Floor Phasing Plan
1/16" = 1'-0"

KEY
- OCCUPIED
- AREA OF ALTERATION
- EMERGENCY EXIT CORRIDOR
- EMERGENCY EXIT
- EMERGENCY EXIT PATH



2 Lower Level Phasing Plan
1/16" = 1'-0"

KEY
- AREA TO REMAIN ACCESSIBLE DURING CONSTRUCUTION
- AREA OF ALTERATION
- EMERGENCY EXIT
- EMERGENCY EXIT PATH

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Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

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Phasing Plan

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SCALE As indicated

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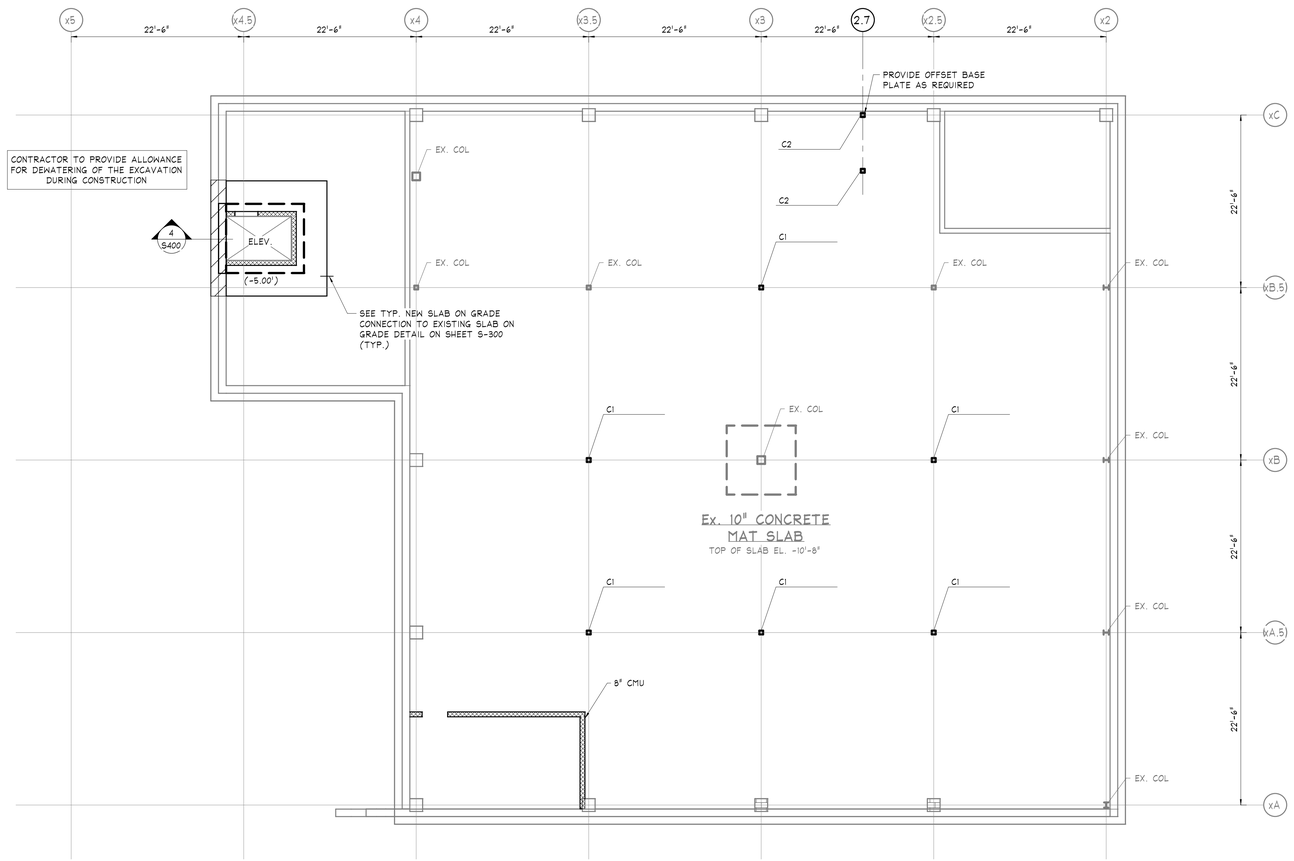

FOUNDATION PLAN - EAST

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

NOTES.

1) THE STRUCTURAL DOCUMENTS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON THE DOCUMENTS, THE ARCHITECTAND ENGINEER SHALL BE NOTIFIED.

2) SEE PLAN FOR FINISHED FLOOR ELEVATION RELATIVE TO DATUM ELEVATION 0.00'. SEE ARCHITECTURAL DOCUMENTS FOR ALL SLOPES AND VARIENCES FROM 0.00'.

3) ( ) INDICATES TOP OF FOOTING ELEVATION RELATIVE TO DATUM ELEVATION 0.00'.

4) FOUNDATIONS, COLUMNS AND PIERS ARE CENTERED ON THE GRID LINE, UNLESS NOTED OTHERWISE.

5) SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED.

6) { } INDICATES APPROXIMATE TOP OF EXISTING FOOTING ELEVATION RELATIVE TO DATUM ELEVATION 0.00' (V.I.F.).

7) "#" INDICATES BOTTOM OF FOOTING ELEVATION TO MATCH ADJACENT BOTTOM OF FOOTING ELEVATION (V.I.F.).

8) ALL EXISTING DIMENSIONS, ELEVATIONS AND LOCATION OF EXISTING STRUCTURES, OR RELATIVE TO EXISTING STRUCTURES, THAT ARE SHOWN ON THE STRUCTURAL DOCUMENTS WILL BE VERIFIED BY FIELD MEASUREMENTS PREFORMED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.

9) G.C. TO PROVIDE TEMPORARY SHORING OF EXISTING STRUCTURE AS REQUIRED DURING CONSTRUCTION PROCEDURES FOR ALL DEMOLITION, PHASING, RESPECTIVE SHORING, AND RELATED WORK IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN A LICENSED ENGINEER TO PREPARE SHORING DESIGN AND DOCUMENTATION TO ACCOMPLISH THE DESIGN INTENT OF THE A/E CONSTRUCTION DOCUMENTS. THE CONTRACTOR'S ENGINEER SHALL BE RESPONSIBLE FOR ALL FIELD OBSERVATIONS AND RECOMMENDATIONS TO WORK RELATED TO DEMOLITION AND SHORING.

10) ▨ INDICATES APPROXIMATE EXTENT OF UNDERPINNING. EXACT EXTENTS TO BE DETERMINED BY UNDERPINNING ENGINEER. ALL UNDERPINNING INFORMATION SHOWN IS FOR CONCEPT ONLY. ACTUAL DESIGN/DETAILING OF UNDERPINNING TO BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF PENNSYLVANIA HIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. SEALED SEALED SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW PRIOR TO START OF WORK.

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FOUNDATION PLAN - EAST

PROJECT NUMBER 17.177

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S100

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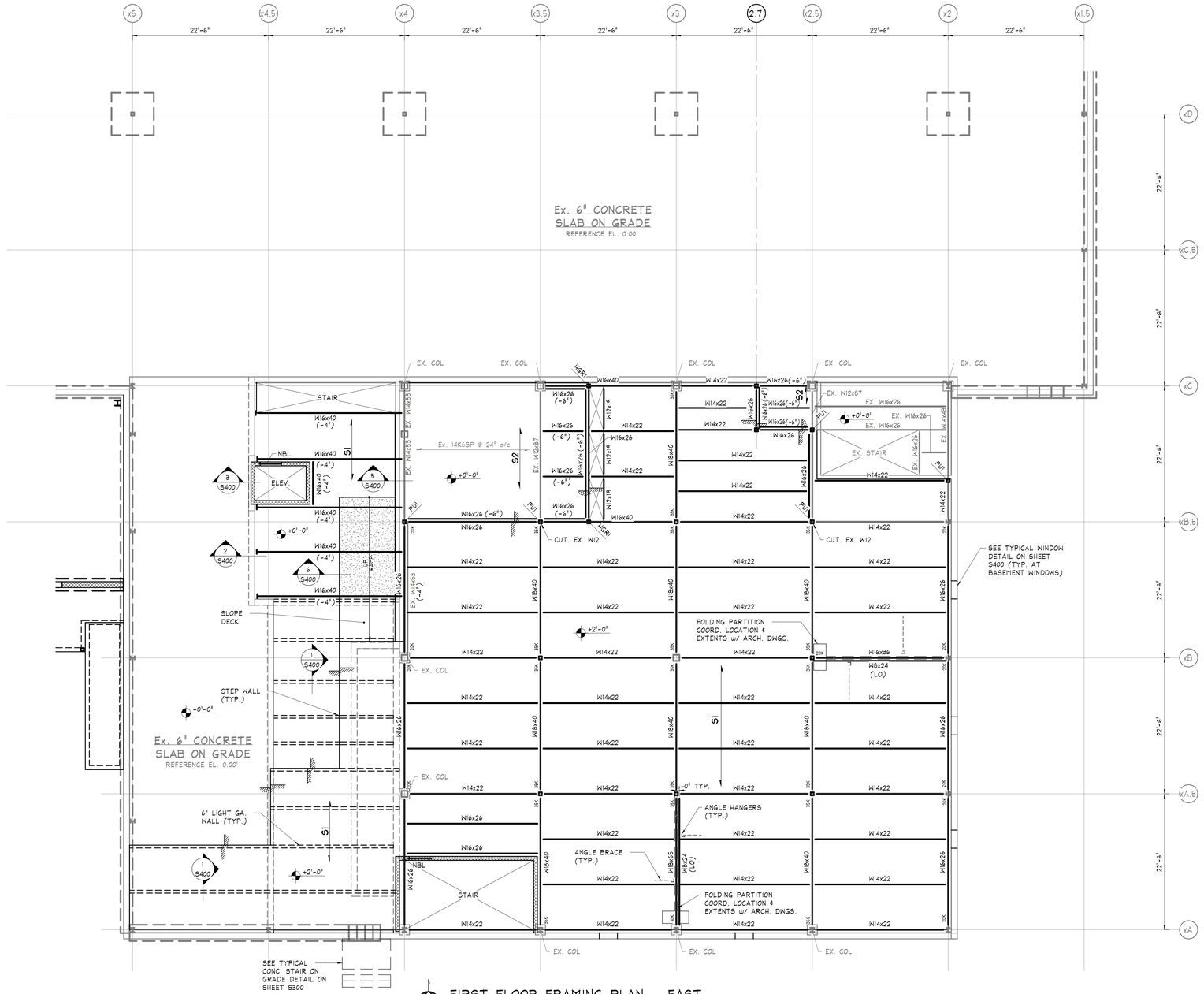

FIRST FLOOR FRAMING PLAN - EAST

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

NOTES:

1) TOP OF EXISTING FINISHED FLOOR ELEVATION SEE PLAN (V.I.F.).

2) TOP OF STEEL +1'-8" U.N.O.

3) ALL EXISTING DIMENSIONS, ELEVATIONS AND LOCATION OF EXISTING STRUCTURE, OR RELATIVE TO EXISTING STRUCTURES, THAT ARE SHOWN ON THE STRUCTURAL DOCUMENTS WILL BE VERIFIED BY FIELD MEASUREMENTS PREFORMED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.

4) COORDINATE FIRE PROOFING REQUIREMENTS w/ ARCH. DRAWINGS.

5) SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED.

6) THE STRUCTURAL DOCUMENTS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON THE DOCUMENTS, THE ARCHITECTAND ENGINEER SHALL BE NOTIFIED.

7) WHERE NEW STEEL ATTACHES TO EXISTING PROVIDE WELDED FULL DEPTH DOUBLE ANGLE CONNECTION. REMOVE/REPLACE EXIST. CONCRETE AS REQ'D.

8) ⟵S1⟶ INDICATES 2-1/2" NORMAL WEIGHT CONCRETE ON 1-1/2" - 20 Ga. COMPOSITE LOK-FLOOR DECK w/ 6x6 W1.4xW1.4 WWF (4" TOTAL THICKNESS).

9) ⟵S2⟶ INDICATES 3" NORMAL WEIGHT CONCRETE ON 3" - 20 Ga. COMPOSITE LOK-FLOOR DECK w/ 6x6 W1.4xW1.4 WWF (6" TOTAL THICKNESS).

10) G.C. TO PROVIDE TEMPORARY SHORING OF EXISTING STRUCTURE AS REQUIRED DURING CONSTRUCTION PROCEDURES FOR ALL DEMOLITION, PHASING, RESPECTIVE SHORING, AND RELATED WORK IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN A LICENSED ENGINEER TO PREPARE SHORING DESIGN AND DOCUMENTATION TO ACCOMPLISH THE DESIGN INTENT OF THE A/E CONSTRUCTION DOCUMENTS. THE CONTRACTOR'S ENGINEER SHALL BE RESPONSIBLE FOR ALL FIELD OBSERVATIONS AND RECOMMENDATIONS TO WORK RELATED TO DEMOLITION AND SHORING.

11) "HGRI" INDICATES HSS6x6x5/16 HANGER TO TOP OF BEAM BELOW. PROVIDE 3/4" BASE PLATE w/ (4) 3/4"ø BOLTS.

12) "PUI" INDICATES HSS6x6x5/16 POST UP OFF EXISTING COLUMN. PROVIDE 3/4" BASE PLATE w/ (4) 3/4"ø BOLTS.

13) INDICATES AREA OF 3" NORMAL WEIGHT CONCRETE ON POLYSTYRENE w/ 6x6 W1.4xW1.4 WWF

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REVISIONS

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PROJECT NUMBER: 17.177

DRAWN BY: Author

SCALE: As indicated

DATE: 09.14.2018

DRAWING NUMBER: **S101**

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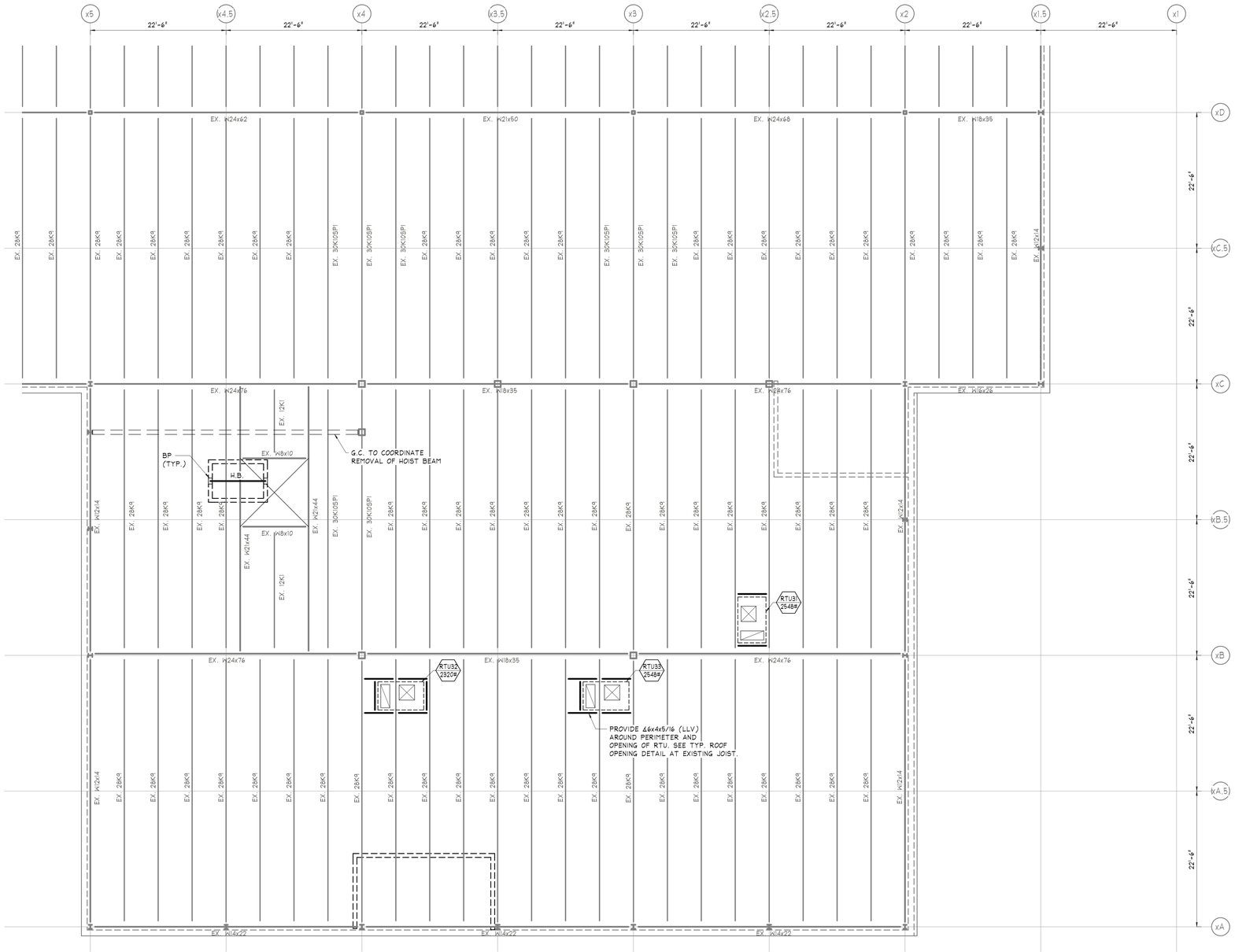

ROOF FRAMING PLAN - EAST

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

NOTES:

1) TOP OF EXISTING STEEL ELEVATION (V.I.F.).

2) TOP OF NEW STEEL TO MATCH EXISTING (U.N.O.) (V.I.F.).

3) ALL EXISTING DIMENSIONS, ELEVATIONS AND LOCATION OF EXISTING STRUCTURE, OR RELATIVE TO EXISTING STRUCTURES, THAT ARE SHOWN ON THE STRUCTURAL DOCUMENTS WILL BE VERIFIED BY FIELD MEASUREMENTS PREFORMED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.

4) COORDINATE FIRE PROOFING REQUIREMENTS w/ ARCH. DRAWINGS.

5) SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT INDICATED.

6) THE STRUCTURAL DOCUMENTS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON THE DOCUMENTS, THE ARCHITECTAND ENGINEER SHALL BE NOTIFIED.1) TOP OF EXISTING STEEL ELEVATION (V.I.F.).

7) G.C. TO PROVIDE TEMPORARY SHORING OF EXISTING STRUCTURE AS REQUIRED DURING CONSTRUCTION PROCEDURES FOR ALL DEMOLITION, PHASING, RESPECTIVE SHORING, AND RELATED WORK IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RETAIN A LICENSED ENGINEER TO PREPARE SHORING DESIGN AND DOCUMENTATION TO ACCOMPLISH THE DESIGN INTENT OF THE A/E CONSTRUCTION DOCUMENTS. THE CONTRACTOR'S ENGINEER SHALL BE RESPONSIBLE FOR ALL FIELD OBSERVATIONS AND RECOMMENDATIONS TO WORK RELATED TO DEMOLITION AND SHORING.

8) 'H.B.' INDICATES W8x18 HOIST BEAM. COORD. TOP OF STEEL ELEV. w/ ELEVATOR MFR.

9) 'BP' INDICATES 5/8x7-1/2x1'-0" BEARING PLATE.

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ROOF FRAMING PLAN - EAST

PROJECT NUMBER 17.177

DRAWN BY Author

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

S102

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GENERAL CONSTRUCTION

1. NOTES, TYPICAL DETAILS, AND SCHEDULES APPLY TO ALL STRUCTURAL WORK UNLESS NOTED OTHERWISE. TYPICAL DETAILS ARE TO BE USED FOR ALL CONDITIONS WHERE THE DETAIL IS APPLICABLE, WHETHER OR NOT NOTED ON PLAN. TYPICAL DETAILS MAY BE SLIGHTLY ALTERED IF REQUIRED DUE TO PROJECT CONDITIONS, ONLY WHEN SUBMITTED AND THE ENGINEER'S APPROVAL IS OBTAINED PRIOR TO PERFORMING THE WORK.

2. ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS, WITH THE EXCEPTION OF STRUCTURAL MEMBER SIZES, ARE GENERATED BY OTHER DISCIPLINES. ANY DIMENSIONS OR ELEVATIONS OMITTED OR NOT SHOWN ON THE STRUCTURAL DRAWINGS SHOULD BE OBTAINED FROM THE DRAWINGS OF THE OTHER DISCIPLINES. STRUCTURAL DRAWINGS ARE NOT "STAND-ALONE" DOCUMENTS AND SHOULD BE USED IN CONJUNCTION WITH, AND COORDINATED WITH THE SPECIFICATIONS, ARCHITECTURAL DRAWINGS AND ALL OTHER DISCIPLINE'S DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER AND ARCHITECT PRIOR TO PERFORMING THE WORK.

3. IF DIFFERENCES OCCUR WITHIN OR BETWEEN DRAWINGS AND SPECIFICATIONS REGARDING MATERIALS, STRENGTHS OR QUANTITIES, THE BETTER MATERIAL, HIGHER STRENGTH, AND GREATER QUANTITY INDICATED, SPECIFIED OR NOTED SHALL BE PROVIDED.

4. REPRODUCTIONS OF STRUCTURAL DRAWINGS FOR SUBMITTAL AS SHOP DRAWINGS IS PROHIBITED, UNLESS WRITTEN APPROVAL IS REQUESTED BY THE CONTRACTOR AND IT IS GRANTED BY O'DONNELL & NACCARATO, INC.

5. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONAL INFORMATION.

6. THESE DRAWINGS DO NOT DEFINE SCOPE OF CONTRACTOR OR SUBCONTRACTOR CONTRACTS.

7. AT ALL TIMES, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING MEANS AND METHODS OF CONSTRUCTION AND SAFETY OF PERSONS AND PROPERTY. THE ENGINEER'S PRESENCE OR REVIEW OF WORK AT THE JOBSITE IS FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT ONLY AND IS NOT EVER TO BE CONSTRUED AS A REVIEW OF MEANS AND METHODS OF CONSTRUCTION AND SAFETY METHODS.

8. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND FOR PROTECTING THE COMPLETED OR INCOMPLETED STRUCTURAL FRAMING FROM DAMAGE DUE TO TEMPORARY CONSTRUCTION LOADINGS.

9. COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.

10. ANY APPROVED CONTRACTOR REQUESTED CHANGES TO THESE DRAWINGS WILL BE DONE AT NO COST TO THE OWNER. APPROVAL OF CONTRACTOR REQUESTED CHANGES IN NO WAY STATES OR IMPLIES APPROVAL OF A CHANGE IN SCOPE OR CHANGE IN CONTRACT COST.

11. UNLESS EXPLICITLY NOTED AS "ISSUED FOR BID", THESE DRAWINGS ARE NOT SUITABLE FOR OBTAINING BIDS FROM GENERAL OR SUBCONTRACTORS. BIDDING OF DRAWINGS PRIOR TO DESIGN COMPLETION AND "ISSUED FOR BID" IS DONE AT THE SOLE RISK OF THE BIDDING CONTRACTOR. ADDITIONS OR CORRECTIONS TO DRAWINGS THAT ARE BID PRIOR TO DESIGN COMPLETION AND "ISSUED FOR BID" WILL NOT BE CONSIDERED AS DESIGN ERRORS OR OMISSIONS. STRUCTURAL DESIGN, BY NATURE, CANNOT BE COMPLETE PRIOR TO COMPLETION OF ARCHITECTURAL AND MECHANICAL DRAWINGS.

12. ALL REFERENCES TO WATER/DAMPPROOFING, FIREPROOFING, AND UTILITIES ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS FOR ALL WATER/DAMPPROOFING, FIREPROOFING AND UTILITIY DETAILS AND REQUIREMENTS. COORDINATE ALL UNDERGROUND UTILITY REQUIREMENTS WITH THE CIVIL/MEP DRAWINGS. ALL UTILITES SHALL BE ABOVE/BELOW FOOTING AND NOT LOCATED WITHIN THE FOOTINGS. NOTIFY ENGINEER OF RECORD IF OTHERWISE

13. IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY. THE CONTRACTOR MUST PROVIDE A SKETCH OF THE CONDITION WITH HIS PROPOSED MODIFICATION OF THE DETAILS GIVEN ON THE CONTRACT DOCUMENTS. THIS SKETCH MUST BE SUBMITTED TO AND APPROVAL MUST BE GRANTED BY THE ENGINEER PRIOR TO PERFORMING THE WORK.

14. SUBMIT SHOP DRAWINGS SUCH THAT BY THE TIME THEY ARE RECEIVED BY O'DONNELL & NACCARATO, INC., THERE WILL BE AT LEAST 14 DAYS BEFORE REVIEWED SUBMITTALS WILL BE NEEDED. ANY REVIEW THAT IS REQUIRED MORE EXPEDIENTLY WILL BE AT THE CONTRACTOR'S EXPENSE. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL CERTIFYING THAT HE HAS VERIFIED ALL FIELD MEASUREMENTS, CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS. IF REVIEW OF AN INCOMPLETE SHOP DRAWING IS REQUIRED, THAT SHOP DRAWING SHALL BE CLEARLY MARKED AS INCOMPLETE. THE AREA THAT NEEDS TO BE REVIEWED SHALL BE CLEARLY NOTED WITH AN EXPLANATION FOR THE REASON FOR PARTIAL APPROVAL.

15. IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION/BASEMENT WALL. IF THE CONTRACTOR DEEMS IT NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THEN 8'-0", THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND, AT HIS OWN EXPENSE, PROVIDE ADEQUATE SUPPORTS OR WALL BRACES TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.

16. SIZE AND/OR LOCATION OF OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, DEPRESSIONS, ETC. SHOWN ON THE STRUCTURAL DOCUMENTS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE TO COORDINATE ALL CONTRACT DOCUMENTS TO DETERMINE THE SIZE AND/OR LOCATION OF OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS, DEPRESSIONS, ETC.

17. SIZE AND/OR LOCATION OF EXISTING STRUCTURES AND UTILITIES SHOWN ON THE STRUCTURAL DOCUMENTS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE TO VERIFY BY FIELD MEASUREMENTS/INVESTIGATION THE SIZE AND/OR LOCATION OF ALL EXISTING STRUCTURES AND UTILITIES.

18. THE CONTRACTOR SHALL SUBMIT SIGNED AND SEALED CALCULATIONS AND SHOP DRAWINGS BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED SHOWING DESIGNS OF METAL STAIRS, METAL RAILINGS AND CONNECTIONS TO STRUCTURE TAKING INTO ACCOUNT THE VERTICAL AND LATERAL LOADS STATED IN THE GOVERNING CODES. WHERE HEADERS OR OTHER TYPES OF STRUCTURAL MEMBERS HAVE BEEN DESIGNATED ON THE STRUCTURAL CONTRACT DOCUMENTS TO SUPPORT THE STAIRS, THE CONNECTIONS FROM THE STAIRS SHALL BE DESIGNED SO THAT NO ECCENTRIC OR TORSIONAL FORCES ARE IMPOSED ON THESE STRUCTURAL MEMBERS. IF ECCENTRIC CONNECTIONS ARE USED, CONTRACTOR SHALL PROVIDE BRACING ELEMENTS FOR ALL SUPPORTING STEEL TO ELIMINATE THE TORSIONAL EFFECTS OF THE ECCENTRIC CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL EMBEDDED ITEMS AND HARDWARE AS REQUIRED PER THE STAIR DESIGN.

19. STRUCTURAL COMPONENTS ARE NOT DESIGNED FOR VIBRATING EQUIPMENT. MOUNT VIBRATING EQUIPMENT ON VIBRATION ISOLATORS, INERTIA PADS, ETC.

20. EXACT LOCATIONS OF ROOF PENETRATIONS TO BE COORDINATED BY THE GENERAL CONTRACTOR BETWEEN STEEL/JOIST/DECK/HVAC SUBCONTRACTORS. SEE DETAIL FOR ROOF FRAME REQUIREMENTS

EXISTING CONDITIONS/DEMOLITION

1. SHORING, BRACING, PROTECTION, AND UNDERPINNING OF EXISTING AND ADJACENT STRUCTURES DURING CONSTRUCTION, INCLUDING ALL DESIGN RESPONSIBILITIES, IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE SIGNED AND SEALED CALCULATIONS AND DRAWINGS TO OWNER. PROTECT AND MAINTAIN THE INTEGRITY OF ADJACENT STRUCTURES, BUILDINGS AND STREETS,

2. ALL EXISTING DIMENSIONS, ELEVATIONS, AND LOCATIONS OF EXISTING STRUCTURES, OR RELATIVE TO EXISTING STRUCTURES, THAT ARE SHOWN ON THE STRUCTURAL DOCUMENTS WILL BE VERIFIED BY FIELD MEASUREMENTS PERFORMED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.

3. THE STRUCTURAL DOCUMENTS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION, EXCAVATION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON THE DOCUMENTS, THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED.

4. ALL STRUCTURAL DEMOLITION MUST BE COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.

5. SELECTIVELY DEMOLISH STRUCTURAL COMPONENTS AS REQUIRED TO CONSTRUCT NEW WORK. PRIOR TO ANY DEMOLITION WORK, AN ENGINEERING SURVEY REPORT OF THE STRUCTURE SHALL BE PREPARED BY THE CONTRACTOR TO DOCUMENT THE CONDITION OF THE FRAMING, FLOORS, AND WALLS. ANY ADJACENT STRUCTURE WHERE OCCUPANTS MAY BE EXPOSED SHALL BE SIMILARLY REVIEWED.

6. WHERE NEW FRAMING IS TO BE CONNECTED TO AN EXISTING STRUCTURE WITH BRICK OR CMU VENEER, THE VENEER SHALL BE REMOVED SUFFICIENTLY TO PERMIT CONNECTION OF THE NEW FRAMING DIRECTLY TO THE BUILDING SUPERSTRUCTURE. NEW BRICK OR CMU SHALL BE INSTALLED TO MATCH THE EXISTING ADJACENT SURFACES. MAINTAIN A 1/2" SEPARATION BETWEEN THE BRICK OR CMU AND THE NEW FRAMING, UNLESS NOTED OTHERWISE ON DRAWINGS. FILL GAPS WITH BACKER RODS AND SEALANTS.

7. CONTRACTOR TO FIELD VERIFY ALL EXISTING FINISHED FLOOR ELEVATIONS PRIOR TO FABRICATION OF STEEL BEGINS. PROVIDE ALLOWANCE FOR ADDITIONAL LEVELING MATERIAL IN AREAS OF BREAK THROUGH TO THE EXISTING STRUCTURE TO ENSURE FINISHED FLOOR ELEVATION OF NEW MATCHES EXISTING.

8. CONTRACTOR SHALL RETAIN INDIVIDUAL TO PERFORM SITE SAFETY DEMOLITION PLAN, ENGINEERING STUDY AND ALL OTHER SERVICES RELATED TO DEMOLITION IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS.

FOUNDATIONS

1. PERFORM ALL SITE PREPARATION AND EXCAVATION WORK IN STRICT ACCORDANCE WITH THE

A. REPORT OF GEOTECHNICAL INVESTIGATION PREPARED BY MCCLYMONT AND RAK, INC. (N1, DATED N2).
B. REPORT ON GEOTECHNICAL INVESTIGATION PREPARED BY GEOTECH, INC. (N1, DATED N2).
C. GEOTECHNICAL ENGINEERING REPORT AS PREPARED BY SCE & ASSOCIATES (N1, DATED N2).
D. GEOTECHNICAL ENGINEERING REPORT AS PREPARED BY SCHNABEL ENGINEERING (N1, DATED N2).
E. SOILS REPORT PREPARED BY (N1 , DATED N2).

2. EXCAVATE THE BUILDING SITE TO THE DEPTH AND EXTENT INDICATED IN THE SOILS REPORT. ALL SUBGRADES SHALL BE APPROVED IN WRITING BY THE SOILS ENGINEER PRIOR TO BACKFILLING.

3. NO GEOTECHNICAL REPORT IS PROVIDED. BOTTOM OF FOOTINGS IS ASSUMED TO BEAR ON SOIL CAPABLE OF SAFELY SUPPORTING N1 PSF. PRIOR TO CONSTRUCTION, THE SERVICES OF A QUALIFIED GEOTECHNICAL ENGINEER SHALL BE RETAINED. THE GENERAL CONTRACTOR IS HEREIN RESPONSIBLE FOR PERFORMING ALL EARTHWORK OPERATIONS IN STRICT ACCORDANCE WITH GEOTECHNICAL ENGINEERING REQUIREMENTS. IF THE FOUNDATION RECOMMENDATIONS AND/OR DESIGN VALUES DIFFER FROM THAT ASSUMED, MODIFICATON TO THE DESIGN/DRAWINGS MAY BE REQUIRED.

4. BOTTOM OF FOOTINGS SHALL BEAR ON SUBGRADE PER THE GEOTECHNICAL REPORT.

5. SUBGRADE OF ALL FOOTINGS MUST BE INSPECTED UNDER THE SUPERVISION OF AND APPROVED BY A REGISTERED SOILS ENGINEER BEFORE PLACING ANY CONCRETE. APPROVAL IN WRITING MUST INDICATE THE SOIL IS ADEQUATE TO SAFELY SUSTAIN SPECIFIED SOIL BEARING PRESSURE.

6. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF N1 FEET BELOW EXTERIOR FINISH GRADE. ALL FOOTING ELEVATIONS SHOWN ON PLAN ARE THE BEST APPROXIMATIONS BASED ON AVAILABLE DATA. GENERAL CONTRACTOR MAY ALTER FOOTING ELEVATIONS FOR REASONS INCLUDING, BUT NOT LIMITED TO, REVISED GEOTECHNICAL OR CIVIL INFORMATION, UNFORESEEN CONDITIONS, ACTUAL INVERT ELEVATIONS, CONSTRUCTABILITY, ETC. CONTRACTOR SHALL NOTIFY ARCHITECT AND OBTAIN WRITTEN APPROVAL PRIOR TO ANY MODIFICATIONS.

7. ALL TIMBER PILES SHALL HAVE A CAPACITY TO SUPPORT A NET DESIGN DOWNWARD LOAD OF N1 TONS, A NET DESIGN UPLIFT LOAD OF N2 TONS AND A DESIGN LATERAL LOAD OF N3 TONS. PILES TO BE PRESSURE TREATED AS SPECIFIED IN THE SOILS REPORT AND AS REQUIRED FOR THEIR ENVIRONMENT. PILES SHALL CONFORM TO ASTM D25. LENGTH OF PILES AND TIP AND/OR BUTT DIAMETER TO BE AS SPECIFIED IN THE SOILS REPORT.

8. ALL STEEL PILES SHALL BE AS SPECIFIED IN THE SOILS REPORT AND SHALL HAVE A CAPACITY TO SUPPORT A NET DESIGN DOWNWARD LOAD OF N1 TONS, A NET DESIGN UPLIFT LOAD OF N2 TONS AND A DESIGN LATERAL LOAD OF N3 TONS.

9. INSTALL PILES IN ACCORDANCE WITH A SUITABLE DYNAMIC FORMULA TO BE SELECTED BY THE SOILS ENGINEER.

10. THE INSPECTION OF THE INSTALLATION OF PILES SHALL BE SUPERVISED AND CERTIFIED BY A REGISTERED SOILS ENGINEER.

11. PILING CONTRACTOR SHALL PERFORM A PILE LOAD TEST IN ACCORDANCE WITH THE SOILS REPORT AND ASTM D1143.

12. ALL AUGERCAST PILES SHALL BE AS SPECIFIED IN THE SOILS REPORT AND SHALL HAVE A CAPACITY TO SUPPORT A NET DESIGN DOWNWARD LOAD OF N1 TONS, A NET DESIGN UPLIFT LOAD OF N2 TONS AND A DESIGN LATERAL LOAD OF N3 TONS. PILE SUPPLIER TO PROVIDE SIGNED AND SEALED ENGINEERING CALCULATIONS AND DETAILING SHOWING THAT THE PILE DESIGN IS ABLE TO RESIST THE SPECIFIED LOADS.

13. GENERAL CONTRACTOR SHALL PROVIDE A FINAL REPORT CONSISTING OF THE FOLLOWING ITEMS: COMPLETE DRIVING RECORDS, CERTIFIED PILE LOCATION PLAN PREPARED BY A REGISTERED LAND SURVEYOR, TIP ELEVATIONS, PILE OUT OF PLUMB, BLOW COUNTS, AND A COMMENTARY ON DRIVING PROBLEMS SUCH AS SUSPECTED BENDING, TWISTING AND OUT-OF-PLUMB. REPORT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONCRETE PLACEMENT FOR PILE CAPS AND GRADE BEAMS.

14. BOTTOM OF ALL CAISSONS SHALL BE INSPECTED UNDER THE SUPERVISION OF AND APPROVED IN WRITING BY A REGISTERED SOILS ENGINEER.

15. ALL CAISSONS SHALL BE STRAIGHT CONCRETE SHAFTS

A. N1 FEET IN DIAMETER.
B. BELLED AT THEIR BASE.
C. BEARING ON UNDISTURBED VIRGIN SOIL CAPABLE OF SAFELY SUPPORTING N2 KSF.
D. BEARING ON UNDISTURBED ROCK CAPABLE OF SAFELY SUPPORTING N3 KSF.
E. OTHER

16. DO NOT BACKFILL ANY BASEMENT WALLS WITH AN UNBALANCED HEIGHT OF SOIL GREATER THAN THREE FEET UNTIL ELEVATED FLOOR IS IN-PLACE AND THE WALL HAS REACHED ITS DESIGN STRENGTH OR THE WALLS ARE ADEQUATELY BRACED.

17. EXPOSED CONCRETE/CMU WALLS SHALL HAVE CONTROL JOINTS AT 30 FEET MAXIMUM ON CENTER UNLESS NOTED OTHERWISE. WALLS WITH INTEGRAL COLUMN PIERS OR PILASTERS SHALL BE POURED MONOLITHICALLY AND SHALL HAVE A FORMED CONTROL JOINT ON ONE SIDE OF EACH PIER ON THE EXPOSED FACE OF THE WALL. JOINTS SHALL BE FILLED WITH AN APPROVED SEALANT.

18. BASIS OF DESIGN FOR ALL ROCK ANCHORS SHOWN ON DOCUMENTS IS DYWIDAG GRADE 75/150 THREADBAR, PERMANENT ANCHOR WITH DOUBLE CORROSION PROTECTON, DIAMETER OF N1" WITH ALLOWABLE/ULTIMATE LOAD OF N2 KIPS. COATINGS FOR BARS AND ACCESSORIES PER MANUFACTURER'S RECOMMENDATIONS. SPECIALTY PROFESSIONAL ENGINEER SHALL PROVIDE FULL DESIGN AND SIGNED AND SEALED DOCUMENTS SHOWING THE FOLLOWING ITEMS INCLUDING, BUT NOT LIMITED TO: TEST LOADING DATA AND SCHEDULE, ANCHOR LENGTH, TENDON SIZE, CAPACITY, LAYOUT, COUPLERS, HEX NUTS, PLATES AND ANCHOR CONNECTION.

CONCRETE

1. REINFORCING STEEL SHALL BE WITHIN TOLERANCES SET FORTH IN ACI 117, AND HAVE THE SPECIFIED CLEAR COVER, UNLESS NOTED OTHERWISE ON DRAWINGS:

CONCRETE POURED AGAINST EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#5 OR SMALLER	1 1/2"
#6 OR LARGER	2"

CLEAR COVER SHALL BE CLEARLY SHOWN ON ALL REINFORCING BAR DETAIL DRAWINGS.

2. ALL CONCRETE SHALL BE READY-MIX AND HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF:

A.	SPREAD FOOTINGS/WALL FOOTINGS/FOUNDATION WALL BASEMENT WALLS/RETAINING WALLS	3,000 PSI
B.	PIERS-MATCH WALL STRENGTH	(MINIMUM OF 3,000 PSI)
C.	SLAB-ON-GRADE	3,500 PSI
D.	CONCRETE SLABS ON METAL DECK	3,500 PSI
E.	OR AS SHOWN ON DRAWINGS.	

HAVE A MINIMUM OF 500 LBS. OF CEMENT PER CUBIC YARD. SLUMP (AT POINT OF CONCRETE PLACEMENT) SHALL BE 3 INCH MINIMUM AND 6 INCH MAXIMUM. CONCRETE EXPOSED TO WEATHER SHALL HAVE 5 PERCENT AIR ENTRAINMENT. CONCRETE NOT EXPOSED TO WEATHER SHALL NOT CONTAIN AN AIR-ENTRAINING AGENT. SUBMIT MIX DESIGNS FOR REVIEW.

NORMAL-WEIGHT CONCRETE TO BE GIVEN A HARD-TROWELED FINISH SHALL NOT CONTAIN AN AIR-ENTRAINING AGENT. TOTAL AIR CONTENT FOR THIS CONCRETE SHOULD NOT EXCEED 3 PERCENT (AT POINT OF CONCRETE PLACEMENT). ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST ACI BUILDING CODE (ACI 318), THE ACI DETAILING MANUAL (ACI 315), AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).

3. ALL REINFORCING STEEL SHALL BE MANUFACTURED FROM HIGH STRENGTH BILLET STEEL CONFORMING TO ASTM DESIGNATION A615 GRADE 60. WWF SHALL COMPLY WITH ASTM A185.

4. LAP ALL REINFORCING BARS 62 DIAMETERS. LAP ALL WWF A MINIMUM OF SIX INCHES.

5. ALL INSERTS AND SLEEVES SHALL BE CAST-IN-PLACE. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, ETC. AS REQUIRED BY ALL TRADES BEFORE THE CONCRETE IS POURED. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, AS WELL AS THE STRUCTURAL DRAWINGS FOR THE LOCATION, NUMBER, AND SIZE OF ALL OPENINGS, SLEEVES, ETC. HOWEVER, OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INSTALLED ONLY AFTER APPROVAL BY THE STRUCTURAL ENGINEER IS OBTAINED. DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING LOCATIONS AND DIMENSIONS OF ALL OPENINGS, SLEEVES, ETC. IN CAST-IN-PLACE CONCRETE SLABS, BEAMS, WALLS, COLUMNS, AND FOUNDATIONS. THESE DRAWINGS SHALL BE COORDINATED BY THE CONTRACTOR. OPENINGS AND SLEEVES THROUGH CAST-IN-PLACE CONCRETE FRAMING IS PROHIBITED EXCEPT WHERE THOSE SLEEVES AND OPENINGS ARE SHOWN ON THE STRUCTURAL DRAWINGS OR WHERE THEY ARE SHOWN ON THE APPROVED SLEEVE AND OPENING DRAWINGS THAT HAVE BEEN SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. SAW-CUTTING, CORING, OR DRILLING OF SLEEVES OR OPENING THROUGH PREVIOUSLY CAST CONCRETE IS NOT PERMITTED EXCEPT WHERE SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER.

6. SUBMIT ALL REINFORCING SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION.

7. FOR CONCRETE SLABS ON METAL DECK, FLOORS SHALL BE POURED TO THE THICKNESS SHOWN ON DOCUMENTS, NOT TO A LEVEL LINE.

8. THE CONTRACTOR SHALL INSTALL FLOOR LEVELING MATERIAL AND PERFORM OTHER CORRECTIVE MEASURES IN ALL AREAS, INCLUDING BUT NOT LIMITED TO, AREAS WHERE FLOOR FINISH PROVISIONS DO NOT COMPLY WITH THE FLATNESS AND LEVELNESS REQUIREMENTS. NOTE: UNLESS NOTED OTHERWISE, THE CALCULATED CENTER OF BAY DEFLECTION DUE TO DEAD LOADS ONLY, MEASURED ON A DIAGONAL DIMENSION BETWEEN COLUMNS, IS APPROXIMATELY N1" PER 10'-0" LENGTH.

9. CONTRACTOR TO ENGAGE AN ENGINEER, REGISTERED IN THE PROJECT'S JURISDICTION, TO DEVELOP ALL FORMWORK, SHORING, AND RESHORING DESIGNS AND PROCEDURES AND SUBMIT SIGNED AND SEALED DRAWINGS AND CALCULATIONS. ALL SHORING AND RESHORING MUST REMAIN IN PLACE FOR A MINIMUM OF 28 DAYS AFTER CONCRETE PLACEMENT, OR WHEN FULL STRENGTH IS ACHIEVED FROM FIELD CURED CYLINDERS.

STEEL

1. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE. ALL CONNECTIONS, INCLUDING AT HSS SECTIONS, SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE LATEST AISC CODE. UNLESS INDICATED OTHERWISE ON CONTRACT DOCUMENTS, IN ADDITION TO THE SHEAR CONNECTION, INCLUDE AS A MINIMUM, 4X4X3/8 ANGLES TOP AND BOTTOM OR ENDPLATE AT ALL HSS BEAMS/GIRDERS TO COLUMN CONNECTIONS. ALL WIDE FLANGE SHAPES SHALL BE ASTM A992. ALL OTHER STRUCTURAL STEEL SHALL BE ASTM A36 UNLESS NOTED OTHERWISE. ALL STEEL RECTANGULAR/SQUARE HOLLOW STRUCTURAL SECTIONS SHALL BE ASTM A500 GRADE C, FY = 50 KSI. ALL STEEL ROUND HOLLOW STRUCTURAL SECTIONS SECTIONS SHALL BE ASTM A500 GRADE C, FY = 46 KSI. ALL STEEL SHALL HAVE A SHOP COAT OF RUST INHIBITIVE PAINT. DELETE PAINT ON ALL STEEL TO RECEIVE SPRAYED-ON FIREPROOFING OR CONCRETE ENCASEMENT, AS NOTED ON ARCHITECTURAL DOCUMENTS. ORIENT ALL MILL CAMBER UPWARD DURING FABRICATION AND ERECTION. ALL STEEL SHALL BE THOROUGHLY CLEANED IN ACCORDANCE WITH SSPC- SP3 PRIOR TO PAINTING.

2. ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS, AS DESCRIBED IN "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE", AWS D1.1 LATEST EDITION, TO PERFORM THE TYPE OF WORK REQUIRED.

3. UNLESS OTHERWISE NOTED, ALL CONNECTIONS SHALL BE BOLTED WITH MINIMUM 3/4-INCH DIAMETER A325 OR A490 HIGH STRENGTH BEARING TYPE BOLTS OR WELDED. THE FABRICATOR IS RESPONSIBLE FOR THE SELECTION, DESIGN, AND DETAILING OF ALL CONNECTIONS, INCLUDING BUT NOT LIMITED TO MOMENT CONNECTIONS, BRACED FRAME CONNECTIONS, AND TRUSS CONNECTIONS, NOT FULLY DETAILED ON THE CONTRACT DRAWINGS. THIS INCLUDES TO DESIGN, DETAIL, FURNISH, AND INSTALL STIFFENERS, CONTINUITY PLATES, DOUBLER PLATES, OR OTHER NECESSARY ADDITIONAL LOCAL STRENGTHENING MEASURES AS REQUIRED. MEMBER SIZES INDICATED ON THE DRAWINGS ARE BASED ON MEMBER BEHAVIOR AWAY FROM CONNECTIONS. USE FULL DEPTH DOUBLE ANGLE CONNECTIONS ON ALL GIRDER AND BEAM CONNECTIONS TO COLUMNS. BOLTS SHALL BE AT 3 INCH O/C VERTICALLY. USE FULL DEPTH DOUBLE ANGLE CONNECTIONS WITH CLIP ANGLES TOP AND/OR BOTTOM ON ALL GIRDER AND BEAM CONNECTIONS TO COLUMNS AT LOCATIONS AS SHOWN ON DRAWINGS. BOLTS SHALL BE AT 3-INCH O/C VERTICALLY. INFILL BEAM CONNECTIONS MAY BE ONE-SIDED CONNECTIONS, UNLESS NOTED OTHERWISE. ALL GRAVITY MOMENT CONNECTIONS SHALL BE BOLTED WITH MINIMUM 3/4-INCH DIAMETER A325 OR A490 HIGH STRENGTH SLIP CRITICAL BOLTS OR WELDED.

UNLESS OTHERWISE NOTED, DETAILS INDICATED ON DRAWINGS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. DETAILS INDICATED ON DRAWINGS ARE NOT INTENDED TO CONVEY COMPLETE CONNECTOR SIZES, PLATE SIZES, WELD SIZES, NUMBER OF BOLTS, OR ANY OTHER SPECIFIC INFORMATION THAT IS OBTAINED THROUGH DESIGNING OF AN INDIVIDUAL CONNECTION FOR A GIVEN SET OF LOADS. THESE DETAILS DO NOT SHOW ERECTION AIDS. PROVIDE ERECTION AIDS AS REQUIRED AND REMOVE THEM AFTER WORK IS COMPLETE.

4. ALL ANCHOR RODS TO BE ASTM F1554 GRADE 36, UNLESS NOTED OTHERWISE.

5. ALL STEEL WELDING RODS SHALL BE E70XX.

6. SUBMIT ALL STEEL SHOP DRAWINGS FOR REVIEW PRIOR TO ANY FABRICATION. SHOP DRAWINGS SHALL SHOW COMPLETE BOLTING AND WELDING INFORMATION, BOTH SHOP AND FIELD. ALL WELDING INFORMATION SHALL USE AMERICAN WELDING SOCIETY SYMBOLS. SHOP OR FIELD SPLICING OF ANY STRUCTURAL STEEL SECTION WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS STRICTLY PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.

7. CONNECTIONS FOR ALL NON-COMPOSITE AND COMPOSITE BEAM/GIRDERS NOT CONNECTED TO COLUMNS SHALL BE DESIGNED FOR A MINIMUM UNFACTORED REACTION OF 15 KIPS, UNLESS NOTED GREATER ON DRAWINGS.

9. STEEL FABRICATOR IS SOLELY RESPONSIBLE FOR SURVEYING AND VERIFICATION OF EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO THE LOCATION, ELEVATION, AND DIMENSIONS OF EXISTING WALLS AND FRAMING.

10. PROVIDE WELDED STIFFENER PLATES ON BOTH SIDES OF THE WEB OF BEAMS AT POINTS OF CONCENTRATED LOADS INCLUDING BEAMS SUPPORTING COLUMNS OR RUNNING OVER THE TOPS OF COLUMNS, OR OTHER BEAMS. MINIMUM STIFFENER PLATE THICKNESS SHALL BE 3/8 INCH OR FLANGE THICKNESS OF COLUMN ABOVE OR BELOW OR BEAM WEB THICKNESS ABOVE OR BELOW, WHICHEVER IS GREATER.

11. ALL POST-INSTALLED EXPANSION ANCHORS FASTENED INTO CONCRETE SHALL BE HILTI KWIK BOLT TZ WITH MATERIAL TYPE, DIAMETER, AND EMBEDMENT PER DOCUMENTS, UNLESS NOTED OTHERWISE. ALL POST-INSTALLED ADHESIVE ANCHORS FASTENED INTO CONCRETE AND REINFORCING BAR DOWELING INTO CONCRETE SHALL USE HILTI HIT-RE 500-SD EPOXY ADHESIVE ANCHORING SYSTEM IN HAMMER-DRILLED HOLES WITH ROD TYPE, DIAMETER, EMBEDMENT AND SPACING/EDGE DISTANCE PER DOCUMENTS, UNLESS NOTED OTHERWISE.

12. ALL PIPING RUNS LARGER THAN 4' DIAMETER SHALL BE HUNG DIRECTLY FROM STEEL BEAMS AND NOT THE CONCRETE SLAB/METAL DECK SYSTEM. ANY SUPPLEMENTAL STEEL REQUIRED FOR BUILDING SYSTEMS (MECHANICAL, ELECTRICAL, PLUMBING, ETC.) IS NOT BY O'DONNELL & NACCARATO.

DECK

1. FLOOR DECK SHALL BE: GALVANIZED 1-1/2" - 20 GAGE LOK-FLOOR COMPOSITE METAL DECK AS MANUFACTURED BY UNITED STEEL DECK, INC. OR APPROVED EQUAL. MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE. FLOOR DECK FABRICATION AND INSTALLATION MUST COMPLY WITH STEEL DECK INSTITUTE STANDARDS. ALL FLOOR DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS.

2. ATTACH LOK-FLOOR COMPOSITE METAL DECK TO STRUCTURAL STEEL SUPPORTS WITH 5/8" DIAMETER PUDDLE WELDS (4 WELDS PER 36" WIDE SHEET PER SUPPORT). FASTEN SIDE JOINTS WITH #10 SELF-DRILLING SCREW, OR WELD, AT 3'-0" ON-CENTER MAXIMUM BETWEEN SUPPORTS.

3. NO CONDUIT SHALL BE PLACED WITHIN CONCRETE SLABS ON METAL DECK WITHOUT COMPLIANCE WITH THE LATEST VERSION OF THE DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND OBTAIN WRITTEN APPROVAL PRIOR TO ANY INSTALLATION.

MASONRY

1. MASONRY UNITS SHALL BE TYPE N-1 MEDIUM WEIGHT ASTM C90 SOLID (GREATER THAN OR EQUAL TO 75 PERCENT SOLID MATERIAL) OR ASTM C90 HOLLOW GROUTED SOLID. ALL CMU SHALL BE LAID IN A FULL BED OF MORTAR. CONSTRUCT COLUMN PIERS INTEGRALLY WITH FOUNDATION WALLS AND CONTINUE WALL REINFORCEMENT THROUGH THE PIER. GROUT COLUMN PIERS AND WALLS MONOLITHICALLY.

2. FOLLOWING ARE THE BLOCK STRENGTHS REQUIRED: ASTM C90 SOLID 1900 PSI ON GROSS AREA OF INDIVIDUAL UNITS. ASTM C90 HOLLOW 1900 PSI ON NET AREA OF INDIVIDUAL UNITS.

3. ALL MORTAR SHALL BE ASTM C270 TYPE S WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS.

4. GROUT SHALL BE A HIGH SLUMP MIX. IN ACCORDANCE WITH ASTM SPECIFICATION C476. HAVING A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

5. LAID UP MASONRY DESIGN F'M IS 1500 PSI FOR STANDARD CONCRETE MASONRY.

6. VERTICAL REINFORCING SHALL BE ASTM A615, GRADE 60 DEFORMED BARS. MINIMUM LAP SPLICE LENGTHS TO BE PER TABLE 1 (U.N.O. ON PLANS) AND SHALL BE AS FOLLOWS:

TABLE 1		TABLE 2	
#3:	27"	#3:	15"
#4:	36"	#4:	20"
#5:	45"	#5:	25"
#6:	54"	#6:	30"
#7:	63"	#7:	35"
#8:	72"	#8:	40"
#9:	82"	#9:	46"

FOR EPOXY-COATED BARS, MULTIPLY THESE VALUES BY 1.5. MECHANICAL SPLICING DEVICES WHICH ARE RATED TO DEVELOP 125 PERCENT OF FY OF THE BAR MAY BE SUBSTITUTED. SUBMIT PRODUCT DATA FOR ENGINEERING APPROVAL.

7. ALL CONCRETE MASONRY SHALL BE CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE LATEST ACI MASONRY CODE (ACI 530/ASCE 5/TMS 402) AND SPECIFICATIONS (ACI 530.1/ASCE 6/TMS 602).

8. PROVIDE HOT-DIPPED GALVANIZED TRUSS TYPE OR LADDER TYPE HORIZONTAL JOINT REINFORCEMENT, MINIMUM 9 GA, AT 16 INCHES ON CENTER VERTICAL IN ALL MASONRY WALLS. SPACE HORIZONTAL JOINT REINFORCEMENT AT 8 INCHES ON CENTER IN ALL PARAPETS. USE SHOP FABRICATED SPECIAL PIECES AT ALL CORNERS AND TEES.

LIGHTGAGE METAL FRAMING

1. LIGHTGAGE METAL STUD DESIGNATION SHOWN ON STRUCTURAL DRAWINGS ASSUME MARINO WARE AS A DESIGN BASIS. MANUFACTURER MUST SUBMIT LITERATURE INDICATING THAT THE MEMBERS SUPPLIED PROVIDE EQUIVALENT STRENGTH AND STIFFNESS. MANUFACTURER AND/OR SUPPLIER TO PREPARE INFORMATION INDICATING CAPACITY OF MEMBERS, FRAMING DETAILS, CONNECTIONS, BRACING, BRIDGING AND ALL OTHER APPURTENANCES OF MEMBERS TO CONFORM TO LOAD CRITERIA AS DIRECTED BY CONTRACTOR/CONSTRUCTION MANAGER.

2. ALL STEEL STUDS SHALL BE HOT-DIPPED GALVANIZED (G 60) IN ACCORDANCE WITH ASTM A924. STEEL STUDS SHALL BE DESIGNED, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND SHALL COMPLY WITH ASTM A653 & C955. ALL STUDS, JOISTS, AND ACCESSORIES SHALL HAVE THE FOLLOWING MATERIAL STRENGTHS:

54 MILS (16 GAGE) AND HEAVIER - FY = 50KSI.
33 MILS, 43 MILS (20 GAGE, 18 GAGE RESPECTIVELY) - FY = 33KSI.

3. ALL WELDING OF LIGHT GAGE STEEL FRAMING MUST BE DONE BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.3, SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES.

4. MAKE CONNECTIONS WITH SELF-TAPPING SCREWS OR WELDING SO THAT THE CONNECTIONS MEET OR EXCEED THE DESIGN LOADS. ALWAYS USE WELDS WHERE SHOWN ON DRAWINGS.

5. CUT ALL LIGHT GAGE STEEL FRAMING MEMBERS WITH SAWS OR SHEARS. FLAME CUTTING IS NOT PERMITTED.

6. THE LIGHT GAGE STEEL FRAMING SUPPLIER AND ERECTOR SHALL HAVE A MINIMUM 5 YEARS EXPERIENCE IN THE FABRICATION AND ERECTION OF LIGHT GAGE STEEL FRAMING SYSTEMS.

DESIGN LOAD SCHEDULE
(ALL LOADS SHOWN ARE IN POUNDS PER SQ. FT.)

COMPONENT \ AREA	SLAB ON GRADE	TYPICAL FLOOR		SLAB ON GRADE	ROOF	CATWALK
CONCRETE SLAB	75			50		
ROOF & INSULATION					11	
2-1/2" NWC ON 1-1/2" DECK		41				
STEEL & JOIST					7	10
STEEL		6				
CEILING		2			2	
MEP		3				
COLLATERAL		3			5	
STEEL GRATING						5
PARTITIONS		15				
TOTAL DEAD LOAD	75	70		50	25	15
TOTAL LIVE LOAD	100	40		100	30	40
TOTAL LOAD	175	110		150	55	55

SNOW DESIGN LOAD SCHEDULE
INTERNATIONAL BUILDING CODE 2009/ASCE 7-05

ITEM	SYMBOL	VALUE	REFERENCE
GROUND SNOW LOAD	P_g	30	FIGURE 1608.2
SNOW EXPOSURE FACTOR	C_e	1.0	TABLE 7-2
SNOW LOAD IMPORTANCE FACTOR	I_s	1.1	TABLE 7-4
THERMAL FACTOR	C_t	1.0	TABLE 7-3
FLAT-ROOF SNOW LOAD	P_f	23	SECTION 7.3

LATERAL LOAD DESIGN SCHEDULE
INTERNATIONAL BUILDING CODE 2009/ASCE 7-05

WIND LOAD

ITEM	SYMBOL	VALUE	REFERENCE
BASIC WIND SPEED (3 SEC. GUST)	V	90	FIGURE 1609
WIND LOAD IMPORTANCE FACTOR	I_W	1.15	TABLE 6-1
WIND EXPOSURE CATEGORY	-	B	SECTION 1609.4.3

SEISMIC LOAD

ITEM	SYMBOL	VALUE	REFERENCE
IMPORTANCE FACTOR	I_E	1.25	TABLE 11.5-1
SHORT PERIOD SPECTRAL ACCELERATION	S_{DS}	0.223	SECTION 1613.5.4
(1) SECOND PERIOD SPECTRAL ACCELERATION	S_{D1}	0.069	SECTION 1613.5.4
OCCUPANCY CATEGORY	-	III	TABLE 1604.5
SEISMIC DESIGN CATEGORY	-	B	TABLE 1613.5.6
SITE CLASSIFICATION	-	C	TABLE 1613.5.2
SEISMIC FORCE-RESISTING SYSTEM	-	ORDINARY REINFORCED MASONRY SHEARWALL	TABLE 12.2-1
RESPONSE MODIFICATION COEFFICIENT	R	2	TABLE 12.2-1
DEFLECTION AMPLIFICATION FACTOR	C_d	2	TABLE 12.2-1
SEISMIC BASE SHEAR	V	X	SECTION 12.8.1
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE PROCEDURE		SECTION 12.8

STEEL LINTEL SCHEDULE
NON-BEARING MASONRY VENEER

WIDTH OF OPENING	STEEL FOR EACH 4" OF WALL THICKNESS	REMARKS
UP TO 5'-11"	∠5x3 1/2x5/16 (LLV)	
5'-11" TO 9'-11"	∠5x5x5/16	
10'-0" TO 12'-0"	∠5x5x1/2	

NOTES:
1) ALL STEEL LINTELS SHALL BE ASTM A-36.
2) FILL CMU VOIDS SOLID (2) COURSES BELOW LINTEL BEARING.
3) ALL LINTELS SHALL HAVE 8" MINIMUM BEARING U.N.O.

COLUMN SCHEDULE

MARK	SIZE	BASE PLATE	ANCHOR RODS	REMARKS
C1	HSS6x6x5/16	1 x 12 x 1'-0"	-	EXISTING ANCHOR RODS TO BE RE-USED (V.I.F.)
C2	HSS6X6X5/16	1 x 12 x 1'-0"	(4) 3/4"ϕ	EPOXY ANCHOR MIN 6" EMBEDMENT

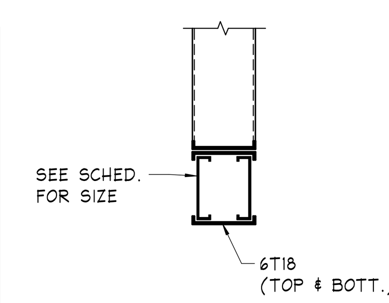
CONCRETE/STEEL LINTEL SCHEDULE
(NON-BEARING WALLS)

WIDTH OF OPENING	STEEL FOR EACH 4" OF WALL THICKNESS	REINF. CONC. FOR EACH 4" OF WALL THICKNESS	REMARKS
UP TO 2'-11"	∠3 1/2x3 1/2x5/16	(1) #4 TOP & BOTTOM	
3'-0" TO 3'-11"	∠4x3 1/2x5/16	(1) #4 TOP & BOTTOM	
4'-0" TO 5'-11"	∠5x3 1/2x5/16	(1) #4 TOP & BOTTOM	
6'-0" TO 8'-0"	∠6x3 1/2x5/16	(1) #5 TOP & BOTTOM	
8'-1" TO 10'-0"	∠6x3 1/2x3/8	(1) #5 TOP & BOTTOM	

NOTES:
1) ALL CONCRETE LINTELS SHALL BE 4000 PSI CONCRETE AT 28 DAYS WITH GRADE 60 REINFORCING
2) ALL STEEL LINTELS SHALL BE ASTM A-36.
3) FILL CMU VOIDS SOLID (2) COURSES BELOW LINTEL BEARING.
4) ALL LINTELS SHALL HAVE 8" MINIMUM BEARING U.N.O.
5) ALL CONCRETE LINTELS SHALL BE 8" DEEP, U.N.O.

METAL STUD HEADER SCHEDULE
(NON-BEARING WALLS)

WIDTH OF OPENING	METAL STUD LINTEL SIZE	JAMB STUDS	BRACING
UP TO 7'-0"	(2) 6SW16	(2) STUD	N.R.
7'-0" TO 10'-0"	(2) 8SW14	(2) STUD	N.R.
10'-0" TO 12'-0"	(2) 10SW14	(2) STUD	KICKERS REQ'D @ 4'-0" o/c
12'-0" TO 16'-0"	(2) 12SW12	(2) STUD	KICKERS REQ'D @ 4'-0" o/c
16'-0" TO ABOVE	(2) 14J12	(2) STUD	KICKERS REQ'D @ 4'-0" o/c



TYPICAL HEADER DETAIL

TYPICAL ABBREVIATIONS

A.B.	ANCHOR BOLT	L.P.	LOW POINT
A.F.F.	ABOVE FINISH FLOOR	L.W.	LIGHT WEIGHT
ADDL.	ADDITIONAL	LLH	LONG LEG HORIZONTAL
ALT.	ALTERNATE	LLV	LONG LEG VERTICAL
ARCH.	ARCHITECT	LWB	LONG WAY BOTTOM
B.C.E.	BOTTOM CHORD EXTENSION	M.E.P.	MECHANICAL ELECTRICAL PLUMBING
B.O.	BOTTOM OF	M.S.T.	METAL STUD TRUSS
BLDG.	BUILDING	MAX.	MAXIMUM
BM.	BEAM	MECH.	MECHANICAL
BOTT.	BOTTOM	MEZZ.	MEZZANINE
BRG.	BEARING	MFR.	MANUFACTURER
BSMT.	BASEMENT	MIN.	MINIMUM
BP_	BEARING PLATE	MISC.	MISCELLANEOUS
BTWN.	BETWEEN	MP_	MASONRY PIER
℄	CENTERLINE	NBL	NON BEARING LINTEL
CANT.	CANTILEVER	N.T.S.	NOT TO SCALE
CMU	CONCRETE MASONRY UNIT	N.W.	NORMAL WEIGHT
COL.	COLUMN	o/c	ON CENTER
CONC.	CONCRETE	P.A.F.	POWDER ACTUATED FASTENER
CONN.	CONNECTION	℘	PLATE
CONT.	CONTINUOUS	PC	PILE CAP
CTRD.	CENTERED	P/C	PRECAST
ϕ	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DWG.	DRAWING	PSI	POUNDS PER SQUARE INCH
E.F.	EACH FACE	PTN.	PARTITON
E.O.D.	EDGE OF DECK	REINF.	REINFORCEMENT
E.O.S.	EDGE OF SLAB	REQ'D.	REQUIRED
E.W.	EACH WAY	RET'G.	RETAINING
EA.	EACH	S.F.	STEP FOOTING
EL.	ELEVATION	S.O.G.	SLAB ON GRADE
ELEV.	ELEVATOR	SCHED.	SCHEDULE
EMBED.	EMBEDMENT	SECT.	SECTION
EQ.	EQUAL	SIM.	SIMILAR
EQUIP.	EQUIPMENT	SPECS.	SPECIFICATIONS
EWB	EACH WAY BOTTOM	STIFF.	STIFFENER
EWT	EACH WAY TOP	STRUCT.	STRUCTURAL
Ex.	EXISTING	SWB	SHORT WAY BOTTOM
EXIST.	EXISTING	T&B	TOP AND BOTTOM
EXP.	EXPANSION	T.	TOP
EXT.	EXTERIOR	T.O.	TOP OF
FDN.	FOUNDATION	T.O.C.	TOP OF CONCRETE
FIN.	FINISH	T.O.S.	TOP OF STEEL
FLR.	FLOOR	T.S.	THICKENED SLAB
FT.	FEET	TCELE	TOP CHORD EXTENSION LEFT END
FTG.	FOOTING	TCERE	TOP CHORD EXTENSION RIGHT END
GA.	GAGE	TDS	TURN DOWN SLAB
GALV.	GALVANIZED	THK.	THICK OR THICKENED
GB_	GRADE BEAM	TYP.	TYPICAL
H.P.	HIGH POINT	U.N.O.	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL	V.I.F.	VERIFY IN FIELD
I.F.	INSIDE FACE	VERT.	VERTICAL
IN.	INCHES	W.R.T.	WOOD ROOF TRUSS
INFO.	INFORMATION	w/	WITH
INT.	INTERIOR	WC	WET COLUMN
JT.	JOINT	WP	WALL PLATE
k	KIP	WWF	WELDED WIRE FABRIC
k-ft	KIP-FEET		

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SEAL

Collegium Charter School Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
GENERAL NOTES AND SCHEDULES

PROJECT NUMBER 17.177
DRAWN BY Author
SCALE As indicated
DATE 09.14.2018

DRAWING NUMBER
S200

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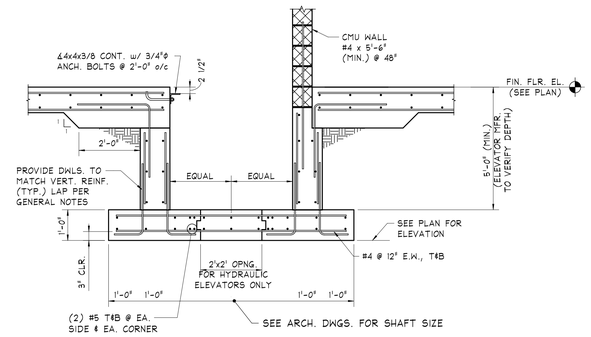
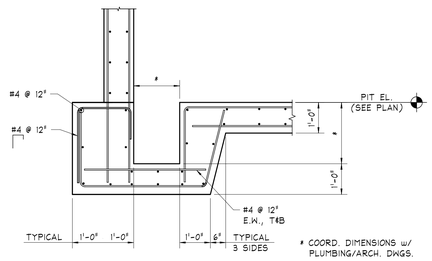
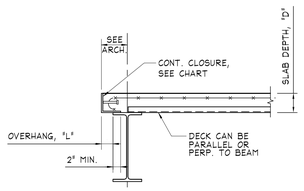


TYPICAL ELEVATOR PIT SECTION



TYPICAL SUMP PIT DETAIL

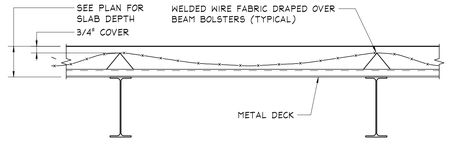


TYPICAL SECTION @ INTERIOR SLAB EDGE

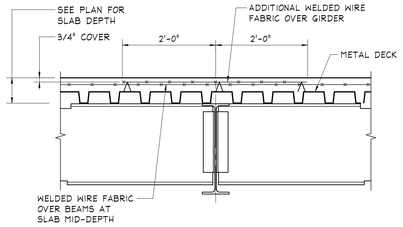
NOTES:
1) GAGE ℄ OR BENT ℄ PER CHART FOR SPECIFIC CONDITION.
2) AT LOCATIONS WHERE ITEMS (RAILING POST, METAL STUD, ETC.) ARE CONNECTED TO VERTICAL FACE OF CLOSURE ℄, PROVIDE MIN. 1/4" BENT ℄ w/ 1/2"ø x6" HEADED STUD @ 24" o/c. G.C. TO COORDINATE LOCATIONS.
3) PROVIDE AT ALL INTERIOR SLAB EDGES, U.N.O.
4) SEE SPECIFIC SECTIONS FOR ADDITIONAL REQUIREMENTS.

EDGE CLOSURE CHART

SLAB DEPTH "D"	OVERHANG "L"					
	≤ 3"	3" < L ≤ 5"	5" < L ≤ 9"	9" < L ≤ 12"	12" < L ≤ 15"	15" < L ≤ 18"
≤ 4"	16 Ga.	14 Ga.	10 Ga.	1/4"	1/4"	5/16"
4" < D ≤ 6"	16 Ga.	14 Ga.	10 Ga.	1/4"	1/4"	5/16"
6" < D ≤ 9"	12 Ga.	10 Ga.	10 Ga.	1/4"	1/4"	3/8"
9" < D ≤ 10 1/2"	10 Ga.	10 Ga.	1/4"	1/4"	1/4"	3/8"
10 1/2" < D ≤ 12"	10 Ga.	10 Ga.	1/4"	1/4"	5/16"	3/8"

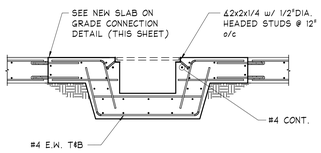


TYPICAL WELDED WIRE SUPPORT DETAIL OVER INFILL BEAMS



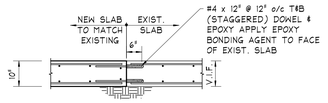
TYPICAL SLAB REINFORCING AT GIRDERS AND AT BEAMS/GIRDERS ALONG COLUMN LINES

(FOR CONCRETE THICKNESS OVER COMPOSITE DECK NOT EXCEEDING 3 1/2")

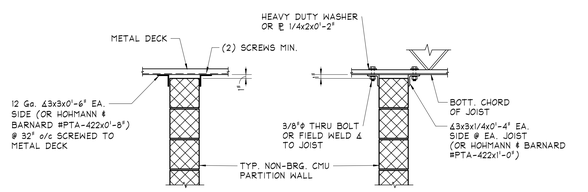


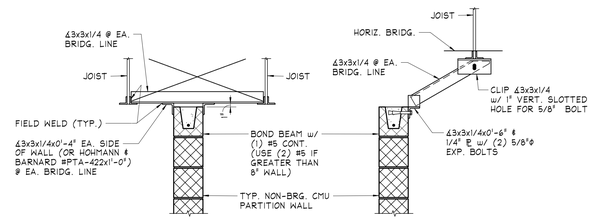
EJECTOR PUMP PIT DETAIL

#COORD. DIMENSIONS w/ PLUMBING/ARCH. DWGS.



NEW SLAB-ON-GRADE CONNECTION TO EXISTING SLAB-ON-GRADE TYPICAL DETAIL

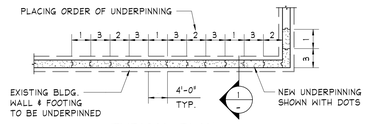




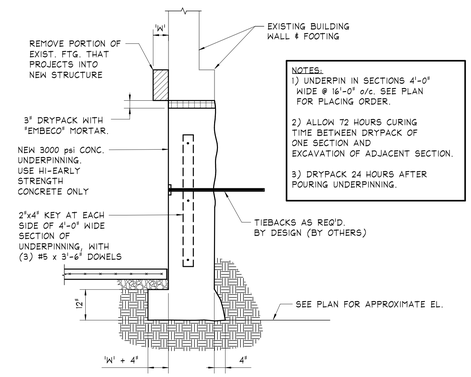
TYPICAL DETAILS @ TOP OF INTERIOR NON-LOADBEARING CMU PARTITION WALLS

NOTE:
1) COORDINATE w/ ARCH. DWGS. FOR ALL LOCATIONS, T.O. WALL HEIGHTS, ETC.

NOTE: INFORMATION SHOWN IS FOR CONCEPT ONLY. ACTUAL DESIGN/DETAILING OF UNDERPINNING IS TO BE PERFORMED BY A REGISTERED ENGINEER HIRED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE. SEALED SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW. SEE DRAWING FOR EXTENT OF UNDERPINNING.

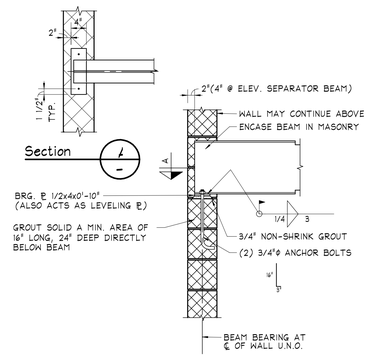


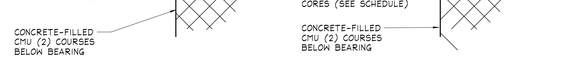
TYPICAL PLAN



NOTES:
1) UNDERPIN IN SECTIONS 4'-0" WIDE @ 16'-0" o/c. SEE PLAN FOR PLACING ORDER.
2) ALLOW 72 HOURS CURING TIME BETWEEN DRYPACK OF ONE SECTION AND EXCAVATION OF ADJACENT SECTION.
3) DRYPACK 24 HOURS AFTER POURING UNDERPINNING.

TYPICAL UNDERPINNING DETAIL

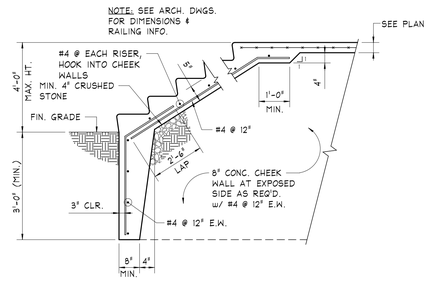




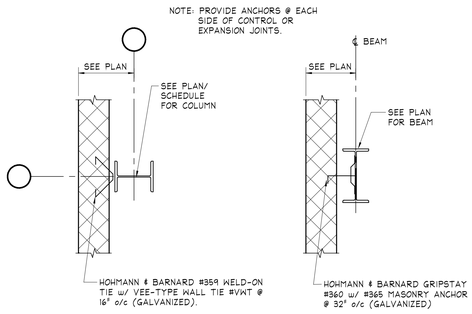
ANGLE LINTEL BEARING — WIDE-FLANGE LINTEL/BEAM BEARING

TYPICAL LINTEL/BEAM BEARING DETAILS

(AT CMU BEARING WALLS)

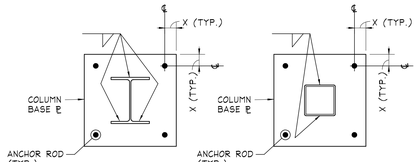


TYPICAL CONCRETE STAIR ON GRADE DETAIL



TYPICAL WALL ANCHOR DETAILS

(SEE ARCH. DWGS. FOR MASONRY WALL LOCATIONS)

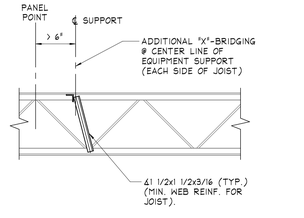


ANCH. ROD DIA.	DIMENSION "X"
3/4"	1 1/2"

NOTE: USE MINIMUM WASHER THICKNESS & DIMENSIONS PER AISC.

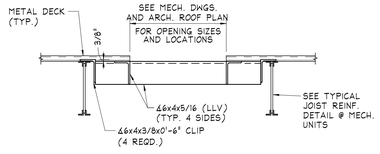
TYPICAL COLUMN BASE PLATE DETAIL

(USE FOR ALL COLUMNS UNLESS NOTED OTHERWISE)



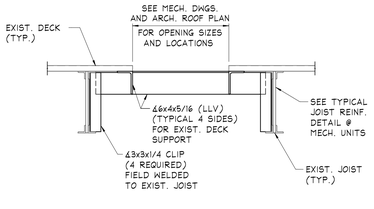
TYPICAL JOIST REINFORCING DETAIL AT CONCENTRATED LOAD

NOTE: REINFORCING ANGLE IS NOT REQUIRED IF FRAME ANGLE OR STRUCTURAL CURB BEARS WITHIN 6" OF JOIST PANEL POINT.



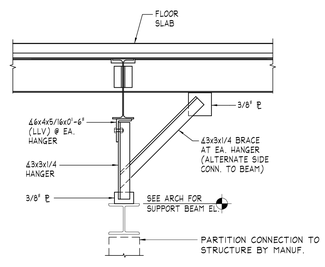
TYPICAL ROOF OPENING & RTU CURB SUPPORT DETAIL - MAXIMUM JOIST SPACING OF 6'-0"

NOTE:
1) PROVIDE AT PERIMETER OF ALL ROOFTOP MECHANICAL UNITS AND ROOF OPENINGS LARGER THAN 12" SQ. AS REQUIRED.
2) FOR OPENINGS LARGER THAN 6" UP TO 12", PROVIDE 2'-0"x2'-0"x0.071" STEEL ℄ WELDED TO DECK OR SCREWED w/ SHEET METAL SCREWS @ 6" o/c.
(PROVIDE ∠3x3x5/16 AT ROOF SUMPS)



TYPICAL ROOF OPENING AND RTU CURB SUPPORT DETAIL AT EXISTING JOIST

NOTE:
1) PROVIDE AT PERIMETER OF ALL ROOFTOP MECHANICAL UNITS AND ROOF OPENINGS LARGER THAN 12" SQ. AS REQUIRED.
2) FOR OPENINGS LARGER THAN 6" UP TO 12", PROVIDE 2'-0"x2'-0"x0.071" STEEL ℄ WELDED TO DECK OR SCREWED w/ SHEET METAL SCREWS @ 6" o/c.
(PROVIDE ∠3x3x5/16 AT ROOF SUMPS)



TYPICAL FOLDING PARTITION SUPPORT DETAIL

MKSD architects
Silvia A. Hoffman, AIA
Todd O. Chambers, AIA
Jill P. Hewes, AIA
MKSD, LLC
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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
TYPICAL DETAILS AND SECTIONS

PROJECT NUMBER 17.177
DRAWN BY Author
SCALE As indicated
DATE 09.14.2018
DRAWING NUMBER **S300**

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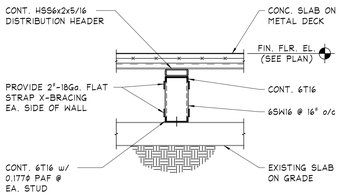
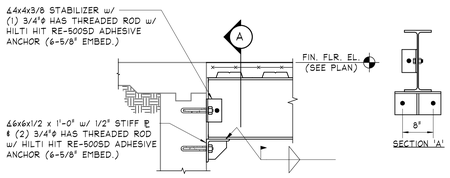
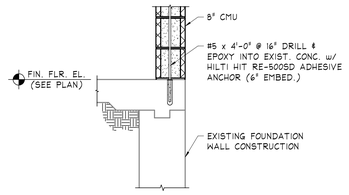


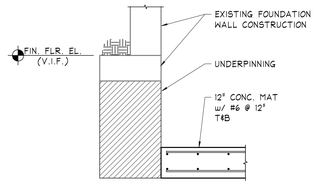
Section 1 S400



Section 2 S400



Section 3 S400



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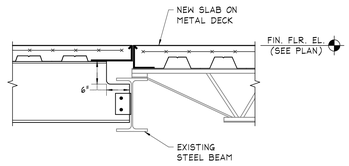

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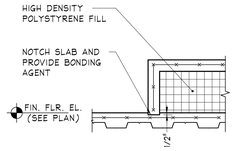

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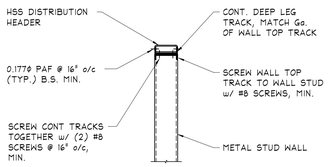
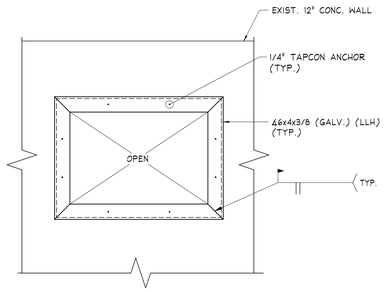


TYPICAL DISTRIBUTION HEADER CONNECTED TO WALL



TYPICAL BASEMENT WINDOW OPENING DETAIL

* FRAME INSTALLED ON EACH SIDE OF WALL

MKSD architects

Silvia A. Hoffman, AIA
Todd O. Chambers, AIA
Jill P. Hewes, AIA

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PROJECT NUMBER 17.177

DRAWN BY Author

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

S400

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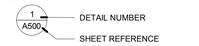
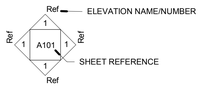
Symbols Legend

VIEW REFERENCE SYMBOLS

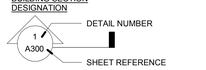
DETAIL



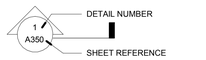
BUILDING ELEVATION



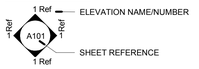
BUILDING SECTION DESIGNATION



WALL SECTION DESIGNATION



INTERIOR ELEVATION



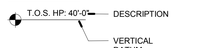
DRAWING SYMBOLS

ROOM IDENTIFICATION

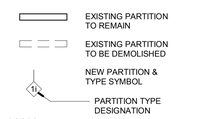
STRUCTURAL GRID IDENTIFICATION

LEVEL ELEVATION

POINT ELEVATION



PARTITIONS



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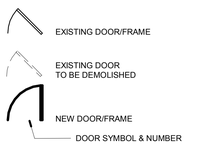

WINDOW TYPE INDICATOR

CEILING IDENTIFICATION

Abbreviations

A	
A/C	AIR CONDITIONING
A.C.M.	ALUMINUM COMPOSITE MATERIAL
A.C.T.	ACOUSTICAL CEILING TILE
A.F.F.	ABOVE FINISHED FLOOR
A.W.C.	ACOUSTIC WALL COVERING
ABV	ABOVE
ADD'L	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZED
APPROX	APPROXIMATE(LY)
AVG	AVERAGE
B	
BD	BOARD
BLDG	BUILDING
BRG	BEARING
BSMT	BASEMENT
BTM	BOTTOM
BTWN	BETWEEN
BUR	BUILT-UP ROOFING
BW	BOTH WAYS
C	
C.I.P.	CAST-IN-PLACE
C.J.	CONTROL JOINT
C.L.	CENTER LINE
C.M.T.	CERAMIC MOSAIC TILE
C.M.U.	CONCRETE MASONRY UNIT
C.T.	CERAMIC TILE
CLG	CEILING
COL	COLUMN
CONC	CONCRETE
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
CPT	CARPET
CTR	CENTER
D	
D.F.	DRINKING FOUNTAIN
DEMO	DEMOLITION
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DTL	DETAIL
DWG	DRAWING
E	
E	EAST
E.I.F.S.	EXTERIOR INSULATION FINISH SYSTEM
E.J.	EXPANSION JOINT
E.W.C.	ELECTRIC WATER COOLER
EA	EACH
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
EX	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F	
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.F.E.	FINISH FLOOR ELEVATION
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN FL	FINISH FLOOR
FL	FLOOR
FT (')	FOOT
FTG	FOOTING
G	
G.W.B.	GYPSUM WALLBOARD
GALV	GALVANIZED
H	
H.M.	HOLLOW METAL
HCP	HANDICAP(PED)
HT	HEIGHT
HORIZ	HORIZONTAL
I	
IN	INCH(ES)
INCL	INCLUDE(S)
INFO	INFORMATION
INSUL	INSULATION (INSULATED)
INT	INTERIOR
J	
JAN	JANITOR
JT	JOINT
L	
LAV	LAVATORY
LTG	LIGHTING
M	
M.B.	MARKER BOARD
M.O.	MASONRY OPENING
MAINT	MAINTENANCE
MAS	MASONRY
MAT'L	MATERIAL
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBERBOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MFR	MANUFACTURER
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MR	MOISTURE RESISTANT
MTD	MOUNTED
MTL	METAL
N	
N	NEW
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE

O	
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
P	
P LAM	PLASTIC LAMINATE
P.B.	PIN BOARD
PERF	PERFORATED
PERIM	PERIMETER
PL	PLATE
PLAS	PLASTER
PLBG	PLUMBING
PLWD	PLYWOOD
PNL	PANEL
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PT	PAINT
PTD	PAINTED
Q	
Q.T.	QUARRY TILE
QLTY	QUALITY
QTY	QUANTITY
R	
R	RISERS (STAIR)
r	RADIUS
R.D.	ROOF DRAIN
R.O.	ROUGH OPENING
R.W.C.	RAIN WATER CONDUCTOR
REINF	REINFORCE(D)(ING)(MENT)
REQ'D	REQUIRED
REV	REVISION, REVISED
RFRIG	REFRIGERATOR
RM	ROOM
RUB	RUBBER
S	
S.A.B.	SOUND ATTENUATION BLANKET
S.G.T.	STRUCTURAL GLAZED TILE
S.P.R.	SINGLE- PLY ROOFING
S.S.M.	SOLID SURFACE MATERIAL
SCHED	SCHEDULE
SECT	SECTION
SEP	SEPARATE
SF	SQUARE FOOT
SHWR	SHOWER
SIM	SIMILAR
SPEC	SPECIFICATIONS
SPEC'D	SPECIFIED
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUC	STRUCTURAL
SUSP	SUSPEND(ED)

T	
T	TREAD
T & G	TONGUE AND GROOVE
T.E.S.	TACTILE EXIT SIGN
T/	TOP OF
T/CONC	TOP OF CONCRETE
T/FTG	TOP OF FOOTING
T/JST	TOP OF JOIST
T/STL	TOP OF STEEL
T/WALL	TOP OF WALL
TB	TACK BOARD
T.B.R.	TO BE REMOVED
THRES	THRESHOLD
TLT	TOILET
T.S.	TACK STRIP
TYP	TYPICAL
TZ	TERRAZZO
U	
U.H.	UNIT HEATER
U.O.N.	UNLESS OTHERWISE NOTED
U/S	UNDERSIDE OF
V	
V.T.	VINYL TILE
VAR	VARIES
VAT	VINYL ASBESTOS TILE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
V.I.F.	VERIFY IN FIELD
VWC	VINYL WALL COVERING
W	
W.B.	DRY ERASE WHITE BOARD
W.C.	WATER CLOSET
W.W.F.	WELDED WIRE FABRIC
W/	WITH
W/O	WITHOUT
WD	WOOD
WGT	WEIGHT
WIN	WINDOW
Y	
YD	YARD

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Legends & Symbols

PROJECT NUMBER 17.177

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SCALE 1/4" = 1'-0"

DATE 09.14.2018

DRAWING NUMBER

A001

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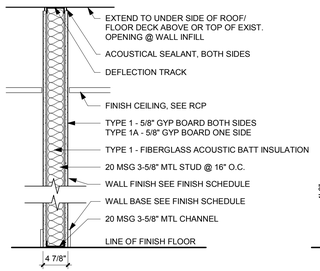
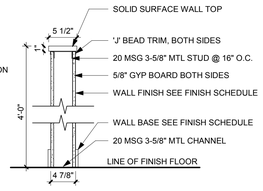
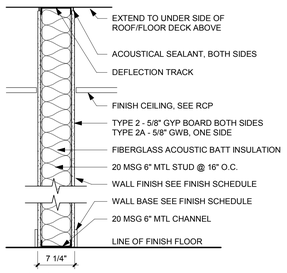


1 PARTITION TYPE
1" = 1'- 0"

1A PARTITION TYPE - no insulation, GWB on one side
1" = 1'- 0"

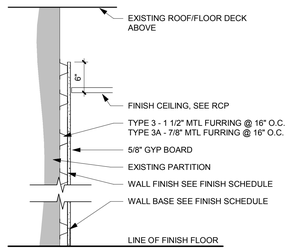


1B PARTITION TYPE
1" = 1'- 0"



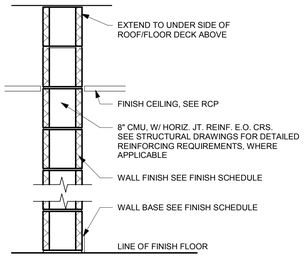
2 PARTITION TYPE
1" = 1'- 0"

2A PARTITION TYPE - no insulation, GWB on one side
1" = 1'- 0"

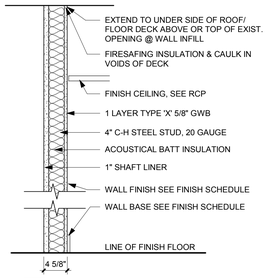


3 PARTITION TYPE (1 1/2" MTL FURRING)
1" = 1'- 0"

3A PARTITION TYPE (7/8" MTL FURRING)
1" = 1'- 0"



4 PARTITION TYPE
1" = 1'- 0"
FIRE RATED



5 PARTITION TYPE
1" = 1'- 0"
1HR RATED - SHAFT
UL DES #U415

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Partition Types

PROJECT NUMBER
17.177

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MKSD

SCALE
1" = 1'-0"

DATE
09.14.2018

DRAWING NUMBER
A002

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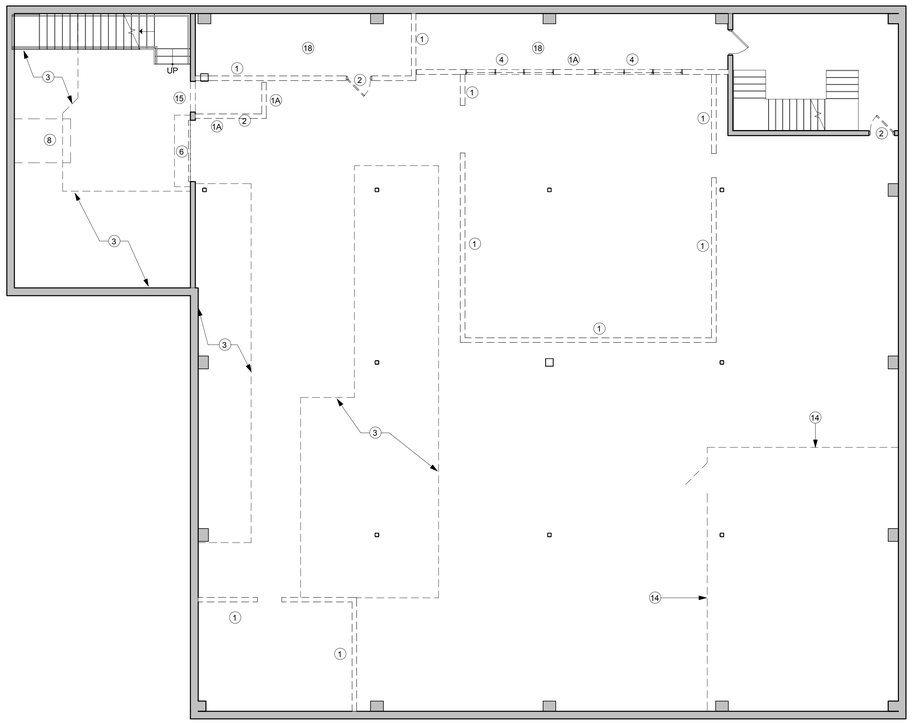
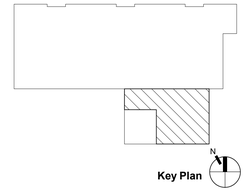


1 Lower Level Demolition Plan

1/8" = 1'-0"



GENERAL DEMOLITION NOTES:

A. The demolition work indicated is intended to assist the Contractor and give general information. It is recommended that the Contractor visit the Project site prior to bidding to fully acquaint themselves with the extent of all demolition work, which is necessary to complete the alterations and new construction as described in the Contract Documents. All demolition work required shall be included in the contract price. The Contractor will not be entitled to any claims for additional compensation related to required demolition.

B. The Contractor shall verify all conditions and dimensions with the contract scope of work and notify the Architect immediately in writing of any deviation from Contract Documents necessitated by field conditions or items not covered.

C. Dashed lines on the demolition plans represent walls, doors, soffits, casework, equipment, etc. to be removed. Patch and repair existing adjoining areas to remain.

D. Demolition item number indicates general area but does not show every occurrence.

E. Demolition work shall be performed in a safe and acceptable manner to authorities having jurisdiction and the Owner.

F. Prior to demolition, Contractor shall review above ceiling conditions and areas below construction to confirm building components and equipment that are required to be preserved. Contractor shall notify Architect immediately of any such instances.

G. Prior to demolition of any existing construction the Contractor must verify that it is not supporting construction to remain. Notify the Architect before demolition if an item is questionable. The Contractor shall provide all temporary shoring, scaffolding, etc. Which are necessary to prevent deflection, subsidence, collapse, or any other type of damage.

H. Prior to demolition, Contractor shall review all items to be demolished with Owner to identify which items are to be salvaged and remain as Owner's property or temporarily stored for reuse and/or reinstallation.

I. All trades shall be responsible for all cutting associated with the work done under their trade.

J. All trades shall be responsible for patching adjacent surfaces & existing walls after demolition to match existing/receive new finishes & equipment. Patching shall match adjacent work in finish, structural qualities, coursing of masonry, and other characteristics. Patched surfaces to comply with fire and smoke resistant partition/barrier ratings, acoustical ratings, and other performance criteria.

K. All masonry infill to be "toothed" into existing masonry assemblies where being exposed after construction.

L. Existing materials scheduled to remain may be temporarily removed if necessary for new work, but must be reinstalled in their previous locations in equal or better condition.

M. Contractor shall schedule the construction activities in order maintain the security of the building throughout the construction.

N. The Contractor shall maintain a safe means of egress during demolition work and provide temporary separation of work areas from other occupied areas of the building including dust partitions, walk-off mats, temporary filters, etc.. Fire alarm and smoke detection system to remain operational at all time. Protect smoke detectors as required and in conformance with codes and local authorities having jurisdiction.

O. Contractor to provide temporary partitions/dust protection which maintains the existing ratings. Proposed locations to be reviewed with Owner and Architect prior to start of work.

DEMOLITION NOTES

Demo Tag #	Notes
1	Remove existing Gyp.Bd./ Metal stud wall in its entirety. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
1A	Remove existing CMU wall in its entirety. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
2	Remove and discard existing door, frame, and hardware. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
3	Remove existing elevated concrete pads to a flush condition with adjacent concrete flooring. Patch, level, and prepare existing concrete flooring, as required, to receive new finishes.
4	Remove and discard existing interior vision panels in their entirety. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
5	Remove and discard portion of wall as required for new opening as indicated in new work. Coordinate with new work. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
6	Remove and discard existing overhead door, frame, hardware, and associated dock leveler (if present). Prepare for wall infill of like materials. Coordinate with new work and structural. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
7	Remove and discard existing handrail/guardrail and all associated brackets and hardware. Patch and prep wall surface and cordinate wall finish with new work.
8	Remove portion of existing concrete slab for elevator pit. Coordinate scope of demoliton with new work. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
9	Remove existing bollards in their entirety. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
10	Existing stage assembly in it's entirety to be removed by Owner. G.C. to clean, patch, and prepare all adjacent surfaces to receive new work/finish
11	Remove and discard existing raised access flooring in its entirety including but not limited to the finish floor, wall base, and support system. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
12	Remove and discard existing ceiling material. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
13	Remove, salvage, and return to Owner all existing stage lighitng, rigging, and AV system. Coordinate scope of demolition work with 'E' drawings. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
14	Remove chain link fence and gate. Patch and repair existing concrete flooring as required.
15	Remove existing Gyp.Bd. surround. Prepare for wall infill of like materials. Coordinate with new work and structural. Clean, patch, and prepare all adjacent surfaces to receive new work/finish.
16	Carefully remove existing handrail/guardrail and all associated brackets and hardware for re-use.
17	Existing light fixtures and exit signs to be removed and replaced with new fixtures. Refer to RCP and 'E' Dwgs for more information.
18	Remove and discard existing VCT, mastic, and all associated components, including wall base. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
19	Remove and discard existing VCT and mastic, and all associated components, including wall base affected by new construction work. Clean, patch, and prepare all adjacent surfaces to receive new work/finish. Align new tiles with existing tile layout.
20	Remove and discard existing stair treads, VCT, and mastic. Clean, patch, and prepare all adjacent surfaces to receive new work/finish.
21	Remove and discard all existing wall mounted equipment, whiteboards, and wall protection. Patch, and prepare all surfaces to receive new work/finish

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SEAL

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Alterations to the 515 Building

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REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Basement
Demolition Plan

PROJECT NUMBER 17.177

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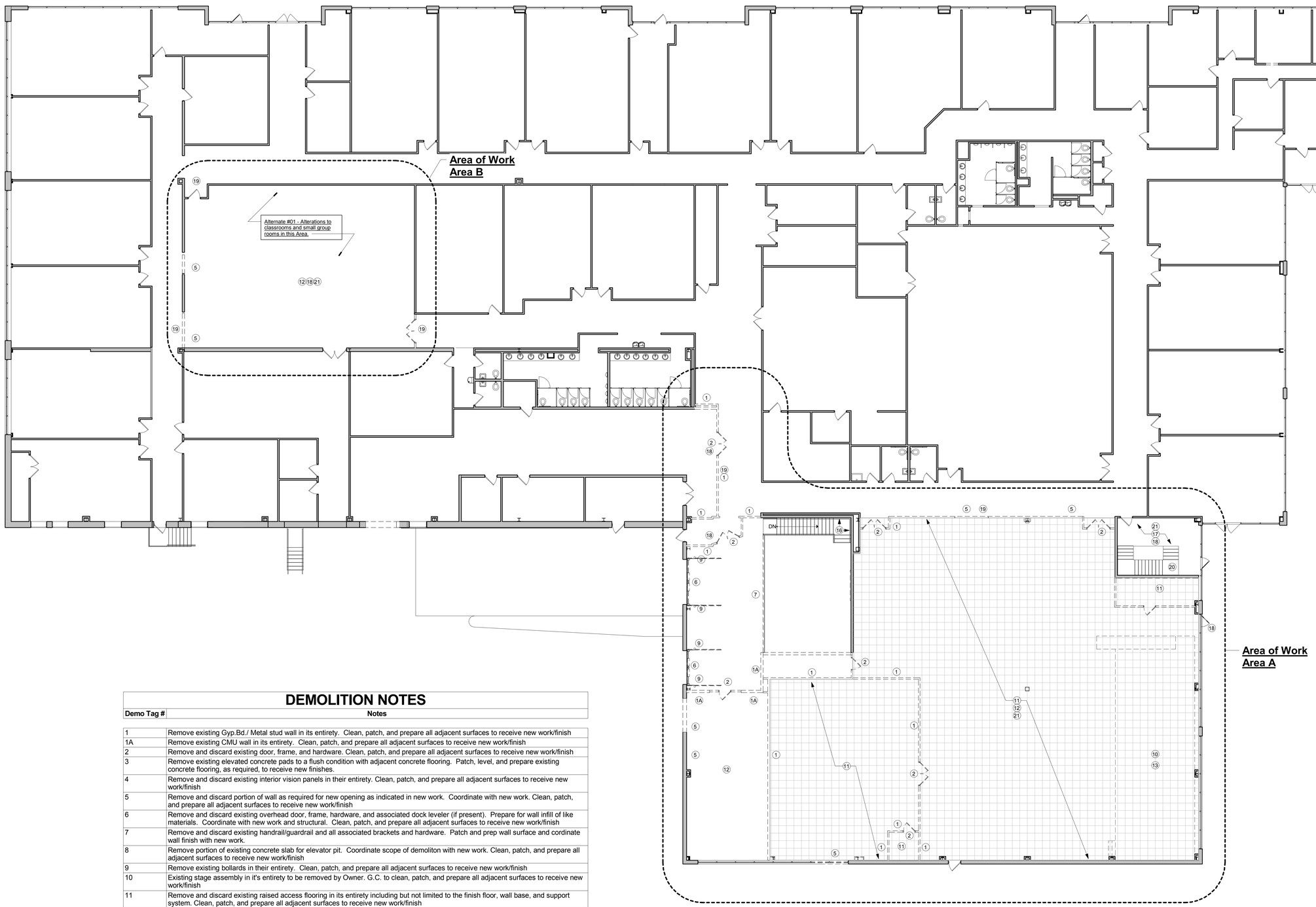

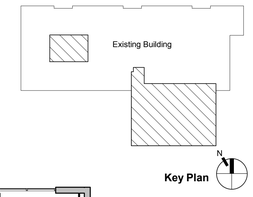

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4	Remove and discard existing interior vision panels in their entirety. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
5	Remove and discard portion of wall as required for new opening as indicated in new work. Coordinate with new work. Clean, patch, and prepare all adjacent surfaces to receive new work/finish
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20	Remove and discard existing stair treads, VCT, and mastic. Clean, patch, and prepare all adjacent surfaces to receive new work/finish.
21	Remove and discard all existing wall mounted equipment, whiteboards, and wall protection. Patch, and prepare all surfaces to receive new work/finish

1 First Floor Demolition Plan
3/32" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

First Floor
Demolition Plan

PROJECT NUMBER
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SCALE
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DATE
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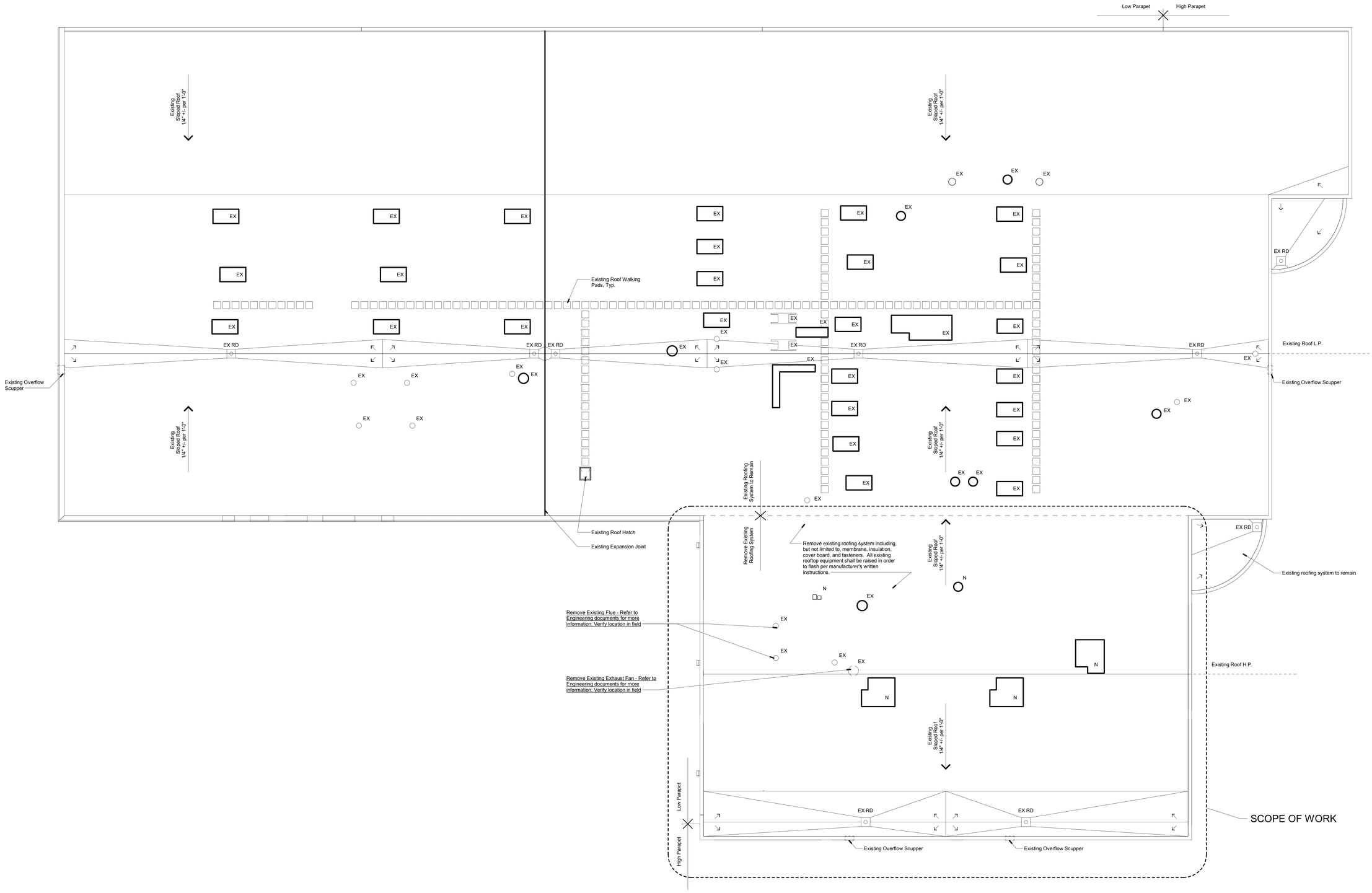

1 Roof Demolition Plan
3/32" = 1'-0"

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515 James Hance Court, Exton, PA 19341

REVISIONS

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No.	Date	Description

DRAWING TITLE
Roof Demolition Plan

PROJECT NUMBER
17.177

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SCALE
3/32" = 1'-0"

DATE
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AD103

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1 Overall First Floor Plan
3/32" = 1'-0"

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SEAL

Collegium Charter School Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
First Floor Plan - Overall

PROJECT NUMBER
17.177

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MKSD

SCALE
As indicated

DATE
09.14.2018

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9/27/2018 12:16:56 PM C:\Users\mks.MKSDARCHITECTS\Documents\17.177 Collegium 515 Classroom Renovations Central_mks.rvt

CONSTRUCTION KEY NOTES	
Note Number	Note
1	Metal Lockers, Not in Contract. Shown only for illustrative purposes.
2	Operable Partition, Manual.
3	Provide 12" High x 18" Wide Access Panel near ceiling. Verify height and location in field with Architect.
4	Provide New GWB to extend 6" above new ceiling height at perimeter column build-outs. Patch, repair, and create seemless transition between old and new GWB.
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6	Owner-provided refrigerator. Coordinate final installation with Owner and EC.
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8	New birck infill at removed O.H. door. Refer to A620 for details.
9	New door at removed O.H. door. Refer to A610 for details.
10	Overhead projection screen mounted above whiteboard, provided by owner. Provide in-wall blocking for owner installation.
11	Replace existing PLAM particle board sill with new sill to match existing sill. Verify finish and extent of replacement in the field.
12	Tackable wall surface, by owner. Provide in-wall blocking for owner installation.
13	Re-install salvaged handrail/ guardrail and all associated brackets and hardware.
14	New window at previous door and sidelight.
15	Apply window safety film to existing glazing.
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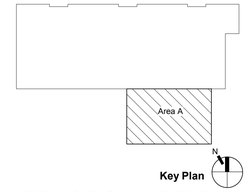
1 Lower Level Floor Plan

1/8" = 1'-0"

0' 2' 4' 8' 16' 32'



GENERAL CONSTRUCTION NOTES

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Lower Level
Enlarged Plans

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

A102

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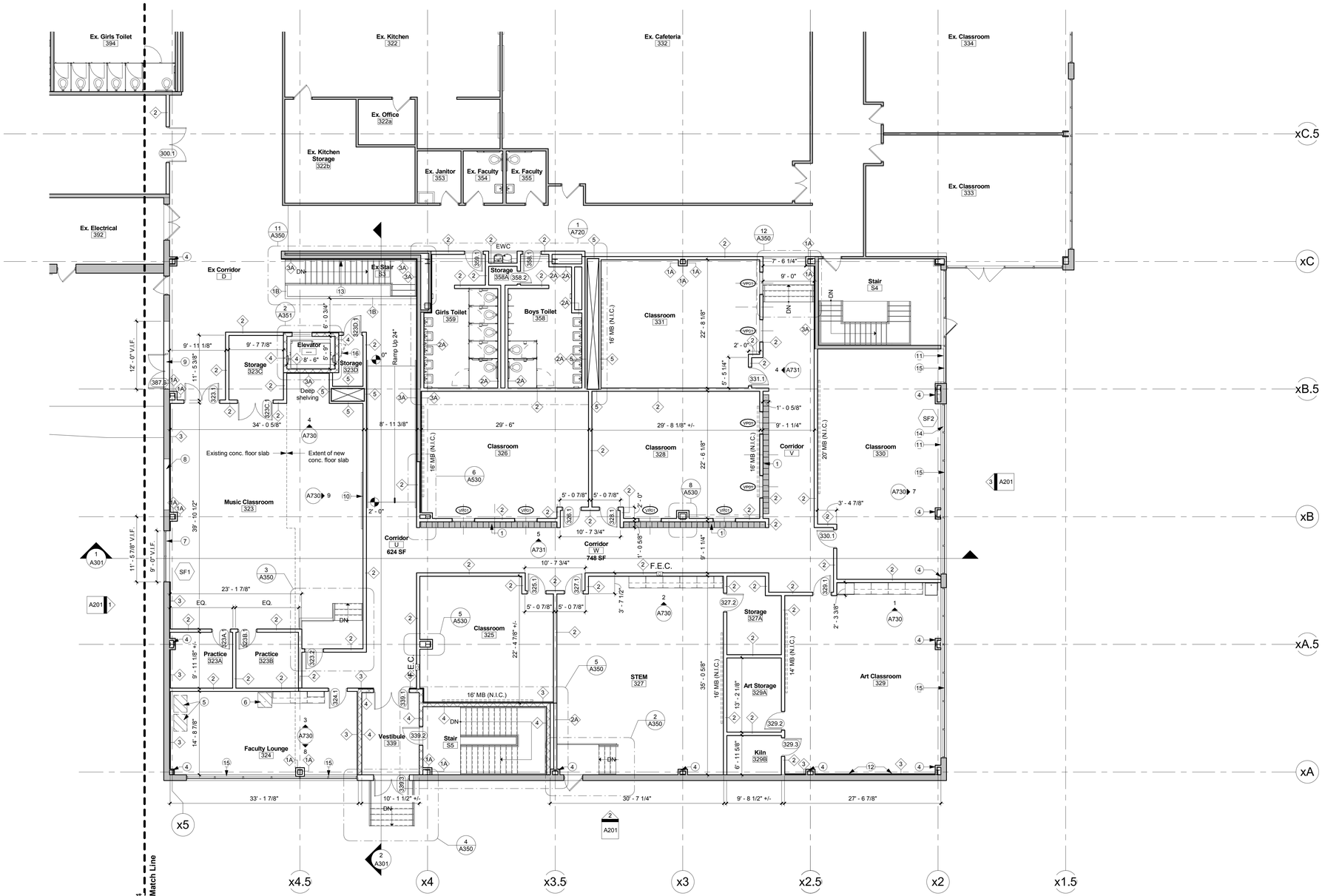

1 First Floor Plan - Area A

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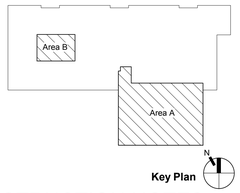

Key Plan

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SEAL

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Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

First Floor Enlarged Plan - Area 'A'

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

A103

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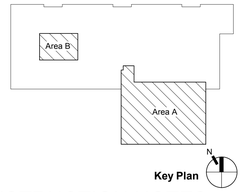
1 First Floor Plan - Area B

1/8" = 1'-0"

0' 2' 4' 8' 16' 32'



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2. ALL EXPOSED SURFACES TO RECEIVE FINISH AS IDENTIFIED ON FINISH SCHEDULE.

3. PROVIDE ALL NECESSARY IN-WALL BLOCKING PRIOR TO INSTALLATION.

4. ALL APPLIANCES (I.E. REFRIGERATORS, FREEZERS, MICROWAVES, ETC), PRINTERS, AND COMPUTERS ARE BY OWNER. OWNER TO PROVIDE ADA APPLIANCES AS APPLICABLE PER LOCATION.

5. PROVIDE WOOD BLOCKING AT ALL MARKERBOARD LOCATIONS. REFER TO PLANS FOR SPECIFIC LOCATIONS.

GENERAL PARTITION NOTES

1. ALL CMU WALLS TO HAVE HORIZONTAL REINFORCING EVERY OTHER COURSE UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL REINFORCING REQUIREMENTS.

2. ALL WALLS AND PARTITIONS REQUIRED TO BE A FIRE SEPARATION ASSEMBLIES, SMOKE PARTITION, OR CONSTRUCTED TO RESIST THE PASSAGE OF SMOKE, SHALL BE SEALED AT ALL VOIDS AT DECKS AND ALL ANNULAR SPACES SHALL BE SEALED WITH APPROVED MATERIAL FOR RATED APPLICATION.

3.ALL OUTSIDE CORNERS OF CMY AND CMU SILLS SHALL HAVE BULLNOSED EDGE PROFILE, INCLUDING AT DOOR AND WONDOW JAMBS.

4. SEE LIFE SAFETY PLAN FOR CONTINUITY OF RATED ASSEMBLIES.

5. PROVIDE DOUBLE 20 GA STUDS AT DOOR OPENINGS. PROVIDE DOUBLE 18 GA STUDS AT DOOR OPENINGS > 3'-6"

6. FOR METAL STUD/GWB PARTITIONS, PROVIDE MOISTURE RESISTANT GWB AT ALL WET LOCATIONS, UNLESS NOTED OTHERWISE.

7.WALL TYPES DO NOT INDICATE FINISH. SEE FINISH SCHEDULE FOR FINISHES.

8. PROVIDE CONTROL JOINTS IN THE GYPSUM BOARD WHERE ANY OF THE CONDITIONS BELOW EXIST:

A. WHERE A PARTITION, WALL, OR CEILING TRAVERSES A CONSTRUCTION JOINT (EXPANSION, SEISMIC OR BUILDING CONTROL ELEMENT) IN THE BASE BUILDING STRUCTURE.
B. WHERE A WALL OR PARTITION RUNS IN AN UNINTERRUPTED STRAIGHT PLANE EXCEEDING 30 LINEAR FEET.
C. IN CEILINGS WITH PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS DO NOT EXCEED 50 FT AND TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 2500 SQ FT.
D. IN CEILINGS WITHOUT PERIMETER RELIEF, CONTROL JOINTS SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS DO NOT EXCEED 30 FT AND TOTAL AREA BETWEEN CONTROL JOINTS DOES NOT EXCEED 900 SQ FT.
E. WHERE CEILING FRAMING MEMBERS CHANGE DIRECTION.
F. WHERE SPECIFIED BY THE ARCHITECT.

9. NOTE: WHERE A CONTROL JOINT OCCURS IN AN ACOUSTICAL OR FIRE-RATED SYSTEM, BLOCKING SHALL BE PROVIDED BEHIND THE CONTROL JOINT BY USING A BACKING MATERIAL SUCH AS 5/8" TYPE X GYPSUM BOARD, MINERAL FIBER, OR OTHER TESTED EQUIVALENT.

10. PROVIDE GWB FINISH ON EXISTING EXTERIOR WALLS AND EXTEND TO ROOF OR FLOOR STRUCTURE ABOVE.

11. PROVIDE GWB HEADS/JAMBS/RETURNS AT ALL EXISTING EXTERIOR WINDOWS AND FINISH WITH SOLID SURFACE WINDOW SILL.

12. DIMENSIONS INDICATED ON PLANS ARE FROM FACE OF STUD.

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

First Floor Enlarged Plan - Area 'B'

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

A104

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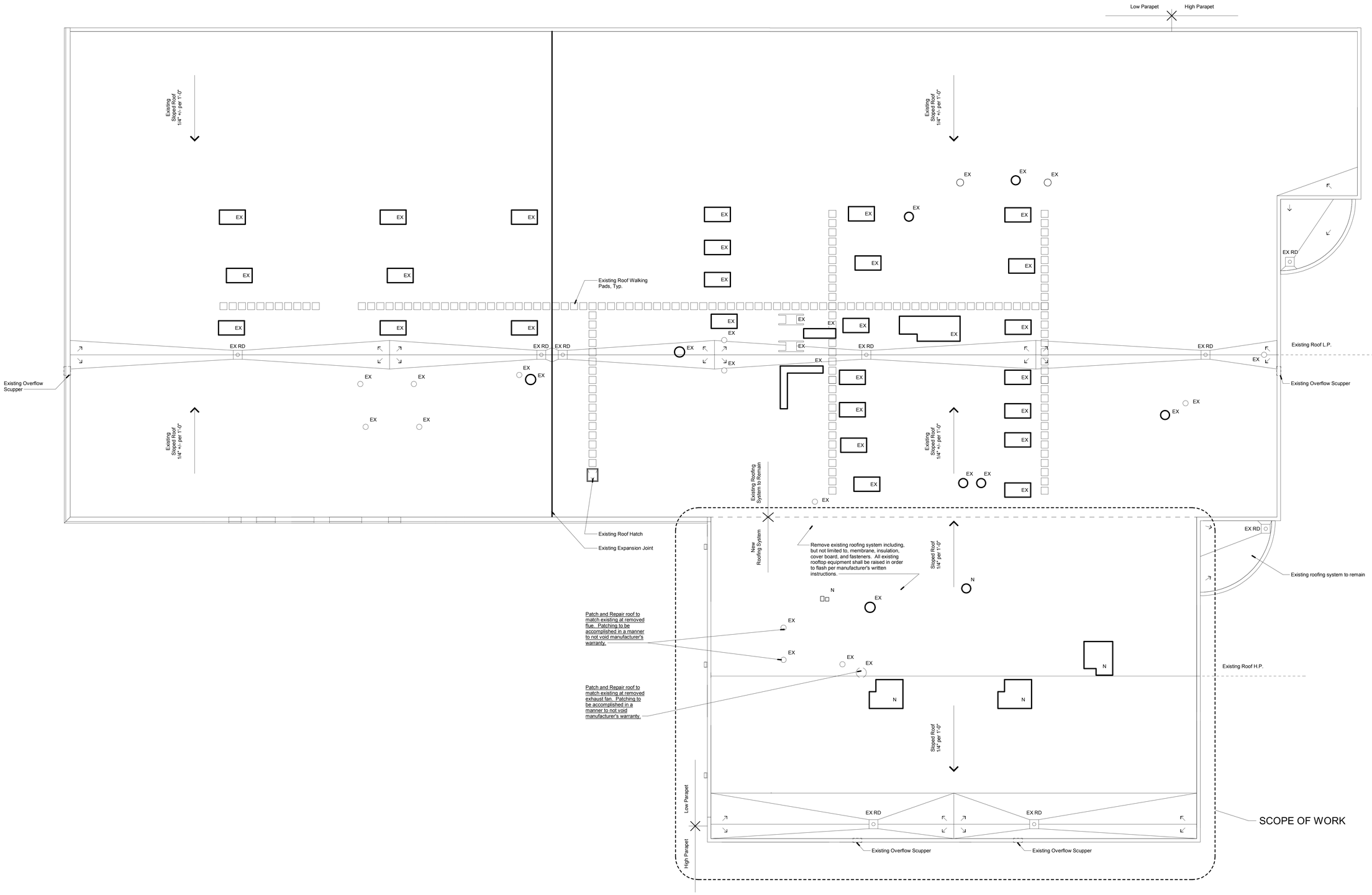

1 Roof Plan Overall
3/32" = 1'-0"

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Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Roof Plan

PROJECT NUMBER
17.177

DRAWN BY
MKSD

SCALE
3/32" = 1'-0"

DATE
09.14.2018

DRAWING NUMBER
A110

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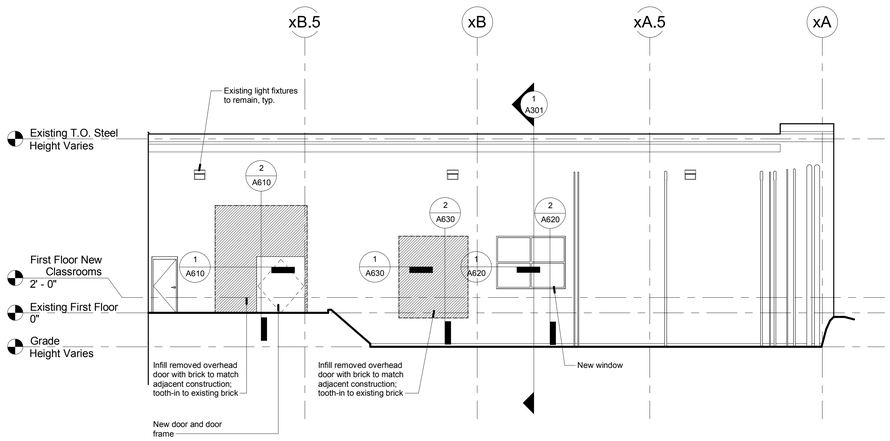
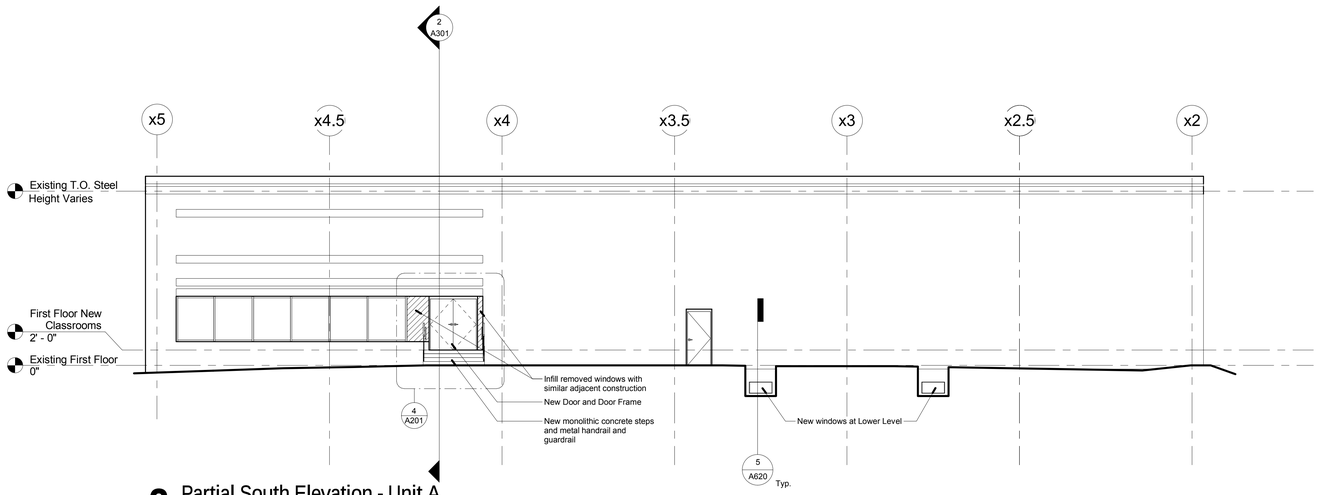
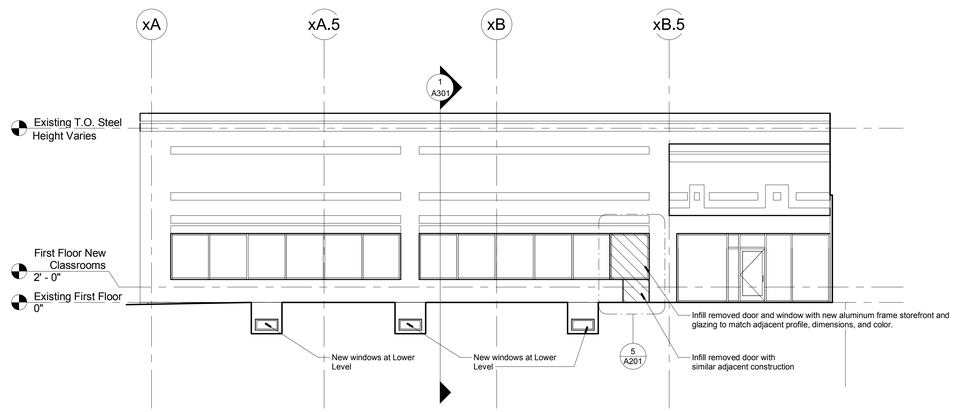


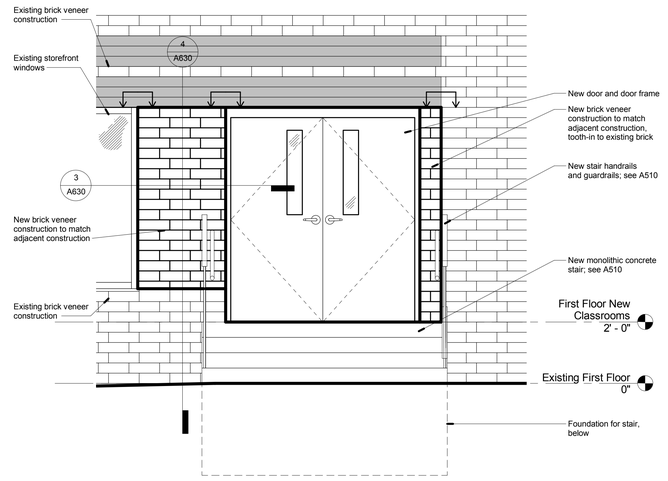
1 Partial West Elevation - Unit A
1/8" = 1'-0"



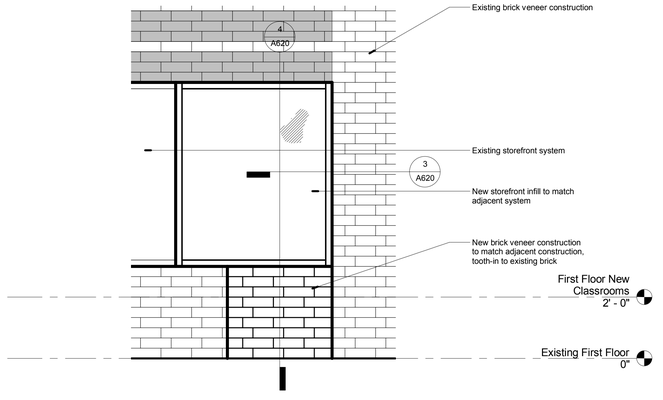
2 Partial South Elevation - Unit A
1/8" = 1'-0"



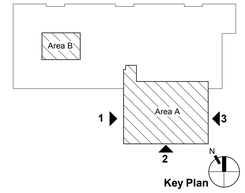
3 Partial East Elevation - Unit A
1/8" = 1'-0"



4 Enlarged Elevation - New Vestibule and Entry
1/2" = 1'-0"



5 Enlarged Elevation - Window Infill
1/2" = 1'-0"



Key Plan

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Building Elevations

PROJECT NUMBER 17.177

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SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

A201

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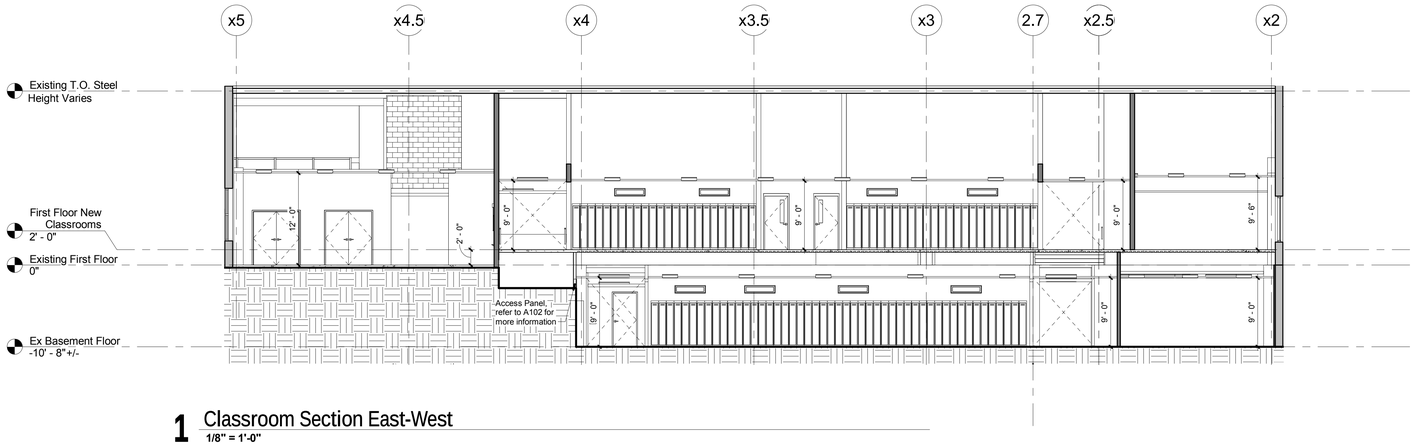
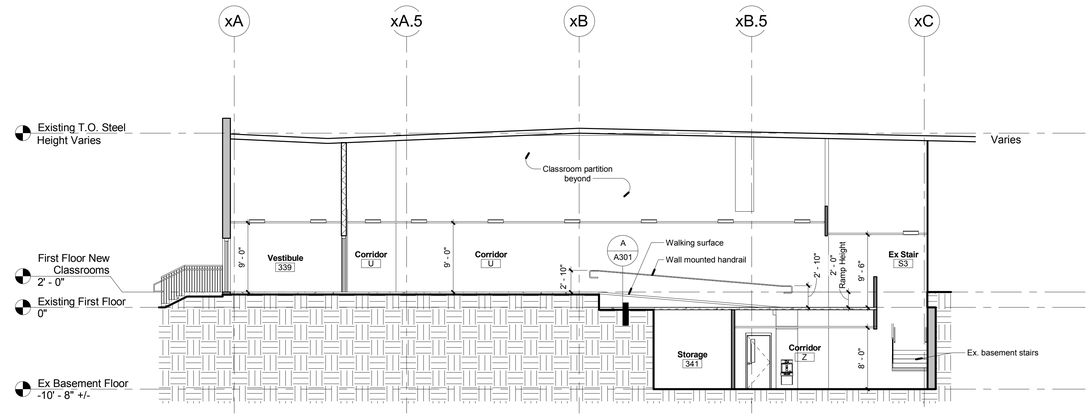


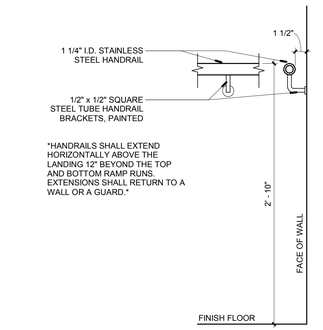
1 Classroom Section East-West

1/8" = 1'-0"



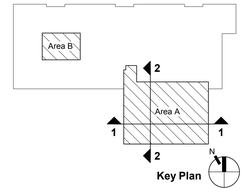
2 Classroom Section North-South

1/8" = 1'-0"



A Ramp Railing

1 1/2" = 1'-0"



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Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Building Sections

PROJECT NUMBER 17.177

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A301

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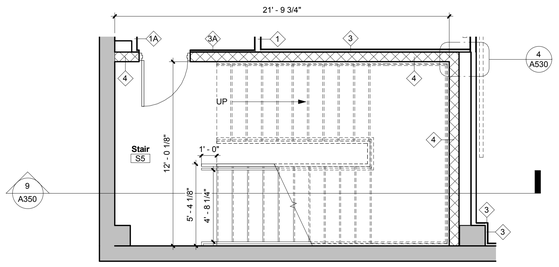
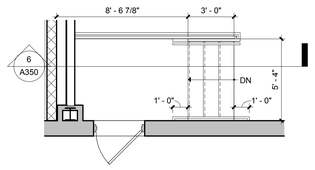
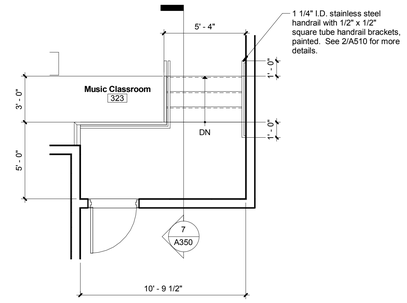


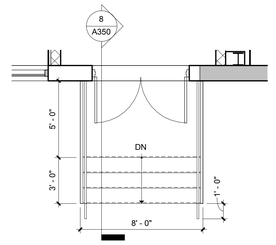
1 Enlarged Plan - Lower Level - Stair S5
1/4" = 1'-0"



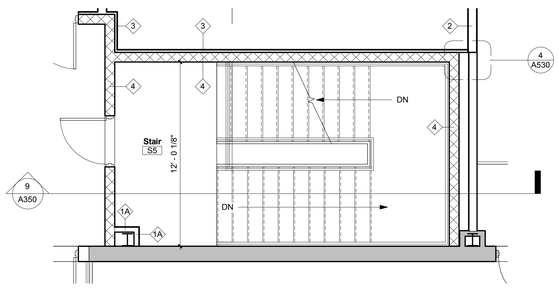
2 Enlarged Plan - Stair at STEM 327
1/4" = 1'-0"



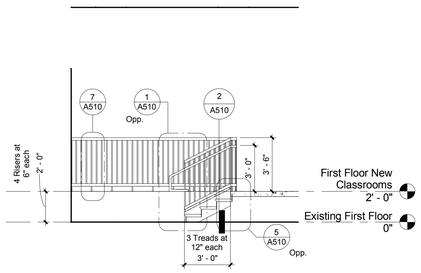
3 Enlarged Plan - Stair at Classroom
1/4" = 1'-0"



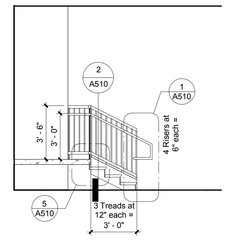
4 Enlarged Plan - Exterior Stair
1/4" = 1'-0"



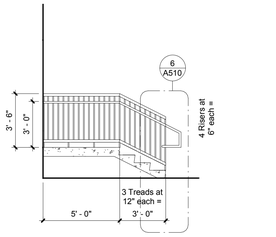
5 Enlarged Plan - First Floor Stair S5
1/4" = 1'-0"



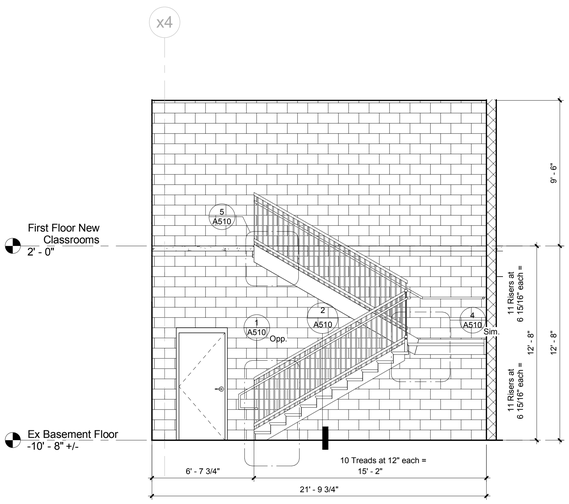
6 Stair Section at STEM 327
1/4" = 1'-0"



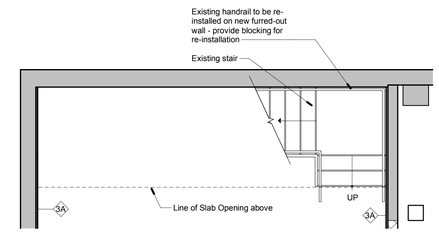
7 Stair Section at Classroom
1/4" = 1'-0"



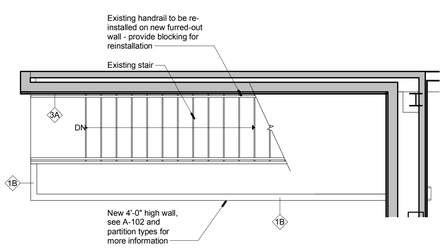
8 Stair Section at Exterior
1/4" = 1'-0"



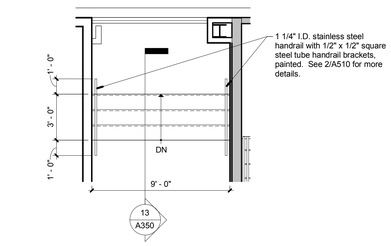
9 Stair Section - Stair S5
1/4" = 1'-0"



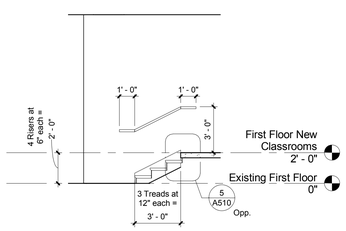
10 Enlarged Plan - Lower Level Existing Stair S3
1/4" = 1'-0"



11 Enlarged Plan - First Floor Existing Stair S3
1/4" = 1'-0"



12 Enlarged Plan - Corridor V Stair
1/4" = 1'-0"



13 Stair Section at Corridor V
1/4" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Stair Details

PROJECT NUMBER
17.177

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SCALE
1/4" = 1'-0"

DATE
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A350

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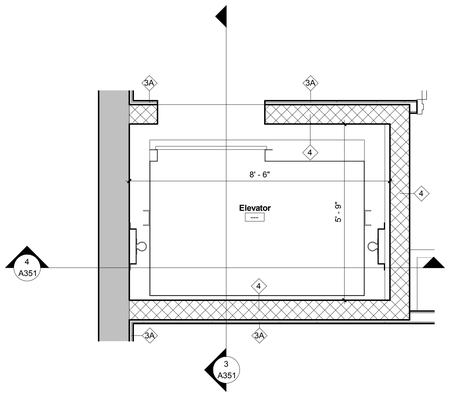
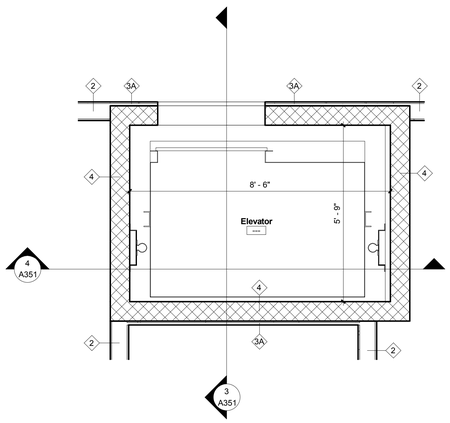
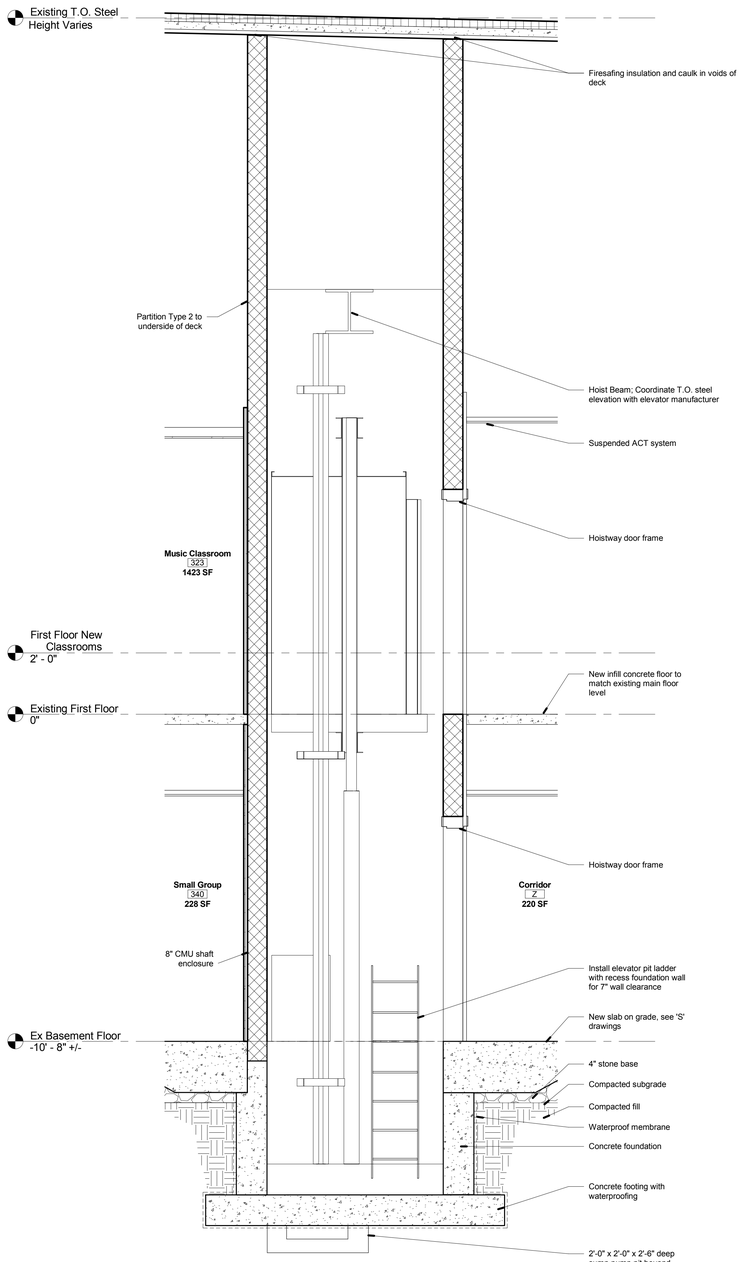


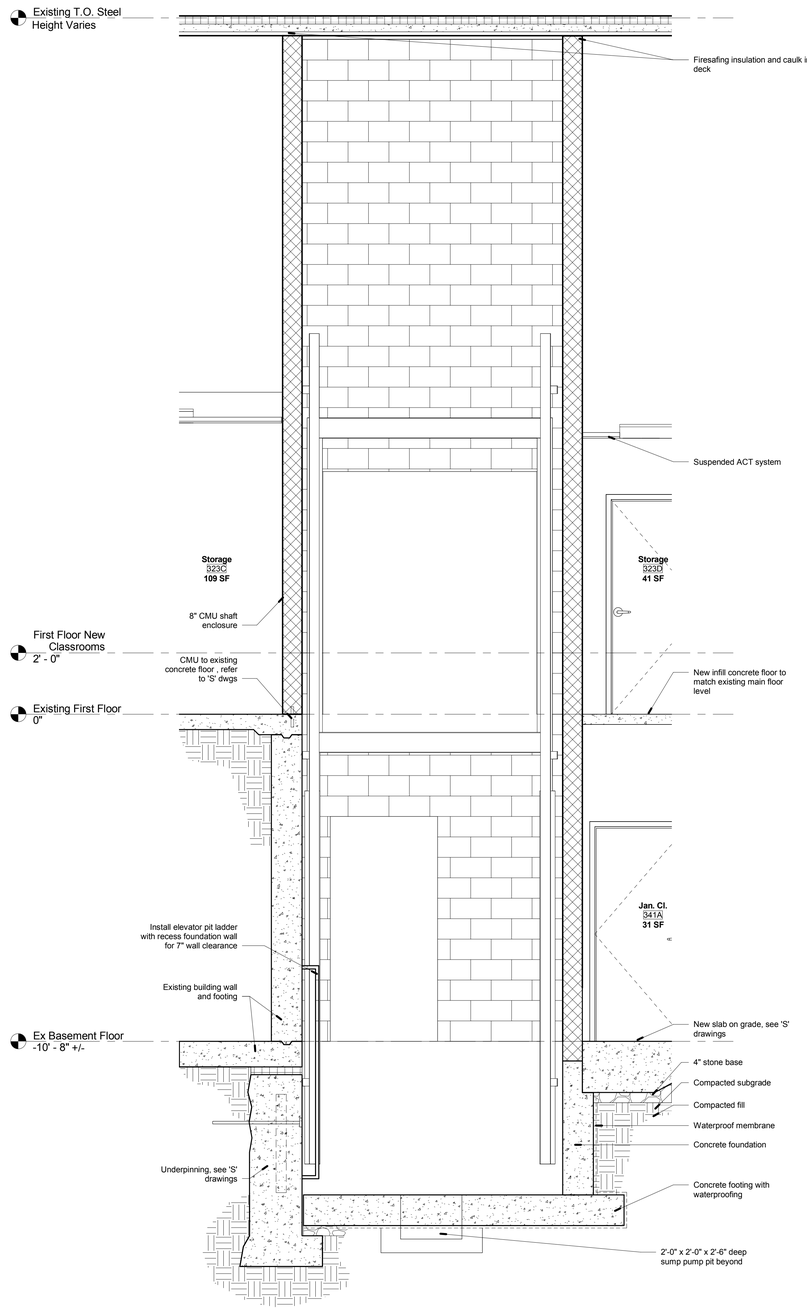
1 Enlarged Plan - Elevator - Lower Level
1/2" = 1'-0"



2 Enlarged Plan - Elevator - First Floor
1/2" = 1'-0"



3 Elevator Section
1/2" = 1'-0"



4 Elevator Section
1/2" = 1'-0"

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Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

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No.	Date	Description

DRAWING TITLE

Elevator Details

PROJECT NUMBER
17.177

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SCALE
1/2" = 1'-0"

DATE
09.14.2018

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A351

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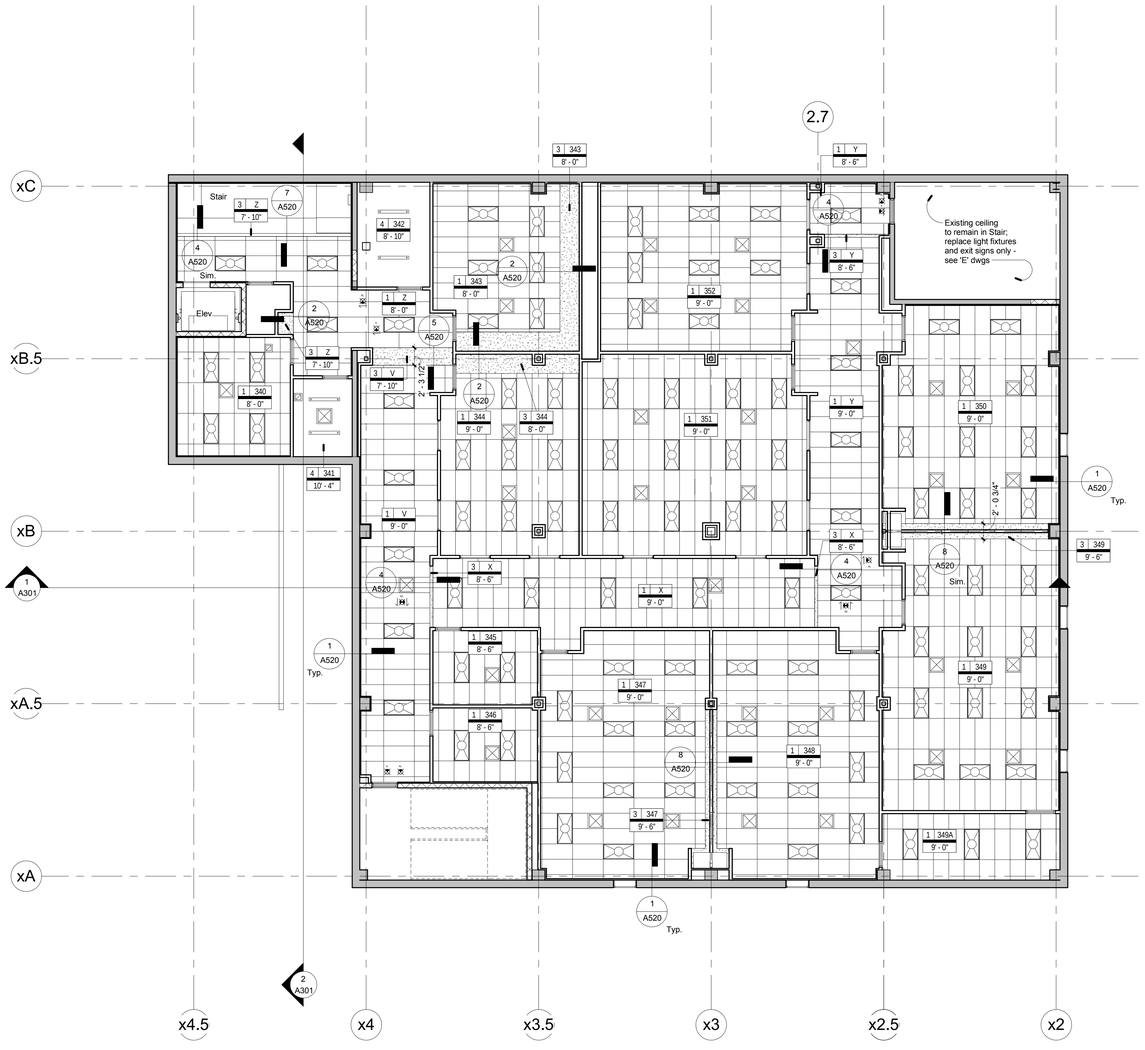
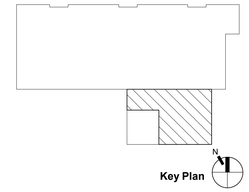


1 Lower Level - Reflected Ceiling Plan

1/8" = 1'-0"

0' 2' 4' 8' 16' 32'



CEILING NOTES

TYPE 1 — 24"x48" Armstrong 'Cortega 769' 24"x48" lay in ceiling tile with 15/16" grid

TYPE 2 — Not Used

TYPE 3 — Gypsum Wall Board, Painted. See Finish Schedule

TYPE 4 — Exposed deck/ structure, cleaned and painted by Contractor

CEILING LEGEND

- GYPSUM WALL BOARD, PAINTED, SEE FINISH SCHEDULE
- SUSPENDED ACOUSTICAL CEILING TILE (ACT)
- 24"x48" DIRECT/INDIRECT LIGHT FIXTURE, SEE 'E' DRAWINGS
- 24"x24" DIRECT/INDIRECT LIGHT FIXTURE, SEE 'E' DRAWINGS
- RECESSED LIGHT FIXTURE, SEE 'E' DRAWINGS
- RECESSED LINEAR LIGHT FIXTURE, SEE 'E' DRAWINGS
- PENDANT LINEAR LIGHT FIXTURE, SEE 'E' DRAWINGS
- SURFACE MOUNTED LIGHT FIXTURE, SEE 'E' DRAWINGS
- MECHANICAL RETURN AIR GRILLE, SEE 'M' DRAWINGS
- MECHANICAL SUPPLY AIR DIFFUSER, SEE 'M' DRAWINGS
- MECHANICAL SLOT DIFFUSER, SEE 'M' DRAWINGS

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Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

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No.	Date	Description

DRAWING TITLE

Lower Level Reflected Ceiling Plan

PROJECT NUMBER 17.177

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A400

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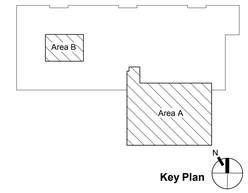
1 First Floor Reflected Ceiling Plan - Area A
1/8" = 1'-0"

0' 2' 4' 8' 16' 32'



CEILING NOTES

TYPE 1 — 24"x48" Armstrong 'Cortega 769' 24"x48" lay in ceiling tile with 15/16" grid

TYPE 2 — Not Used

TYPE 3 — Gypsum Wall Board, Painted. See Finish Schedule

TYPE 4 — Exposed deck/ structure, cleaned and painted by Contractor

CEILING LEGEND

- GYPSUM WALL BOARD, PAINTED, SEE FINISH SCHEDULE
- SUSPENDED ACOUSTICAL CEILING TILE (ACT)
- 24"x48" DIRECT/INDIRECT LIGHT FIXTURE, SEE 'E' DRAWINGS
- 24"x24" DIRECT/INDIRECT LIGHT FIXTURE, SEE 'E' DRAWINGS
- RECESSED LIGHT FIXTURE, SEE 'E' DRAWINGS
- RECESSED LINEAR LIGHT FIXTURE, SEE 'E' DRAWINGS
- PENDANT LINEAR LIGHT FIXTURE, SEE 'E' DRAWINGS
- SURFACE MOUNTED LIGHT FIXTURE, SEE 'E' DRAWINGS
- MECHANICAL RETURN AIR GRILLE, SEE 'M' DRAWINGS
- MECHANICAL SUPPLY AIR DIFFUSER, SEE 'M' DRAWINGS
- MECHANICAL SLOT DIFFUSER, SEE 'M' DRAWINGS

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
First Floor Enlarged Reflected Ceiling Plan - Area 'A'

PROJECT NUMBER
17.177

DRAWN BY
MKSD

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
A411

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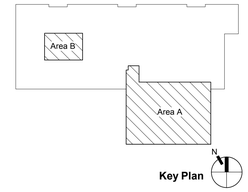
1 First Floor Reflected Ceiling Plan - Area B
1/8" = 1'-0"

0' 2' 4' 8' 16' 32'



CEILING NOTES

TYPE 1 — 24"x48" Armstrong 'Cortega 769' 24"x48" lay in ceiling tile with 15/16" grid

TYPE 2 — Not Used

TYPE 3 — Gypsum Wall Board, Painted. See Finish Schedule

TYPE 4 — Exposed deck/ structure, cleaned and painted by Contractor

CEILING LEGEND

- GYPSUM WALL BOARD, PAINTED, SEE FINISH SCHEDULE
- SUSPENDED ACOUSTICAL CEILING TILE (ACT)
- 24"x48" DIRECT/INDIRECT LIGHT FIXTURE, SEE 'E' DRAWINGS
- 24"x24" DIRECT/INDIRECT LIGHT FIXTURE, SEE 'E' DRAWINGS
- RECESSED LIGHT FIXTURE, SEE 'E' DRAWINGS
- RECESSED LINEAR LIGHT FIXTURE, SEE 'E' DRAWINGS
- PENDANT LINEAR LIGHT FIXTURE, SEE 'E' DRAWINGS
- SURFACE MOUNTED LIGHT FIXTURE, SEE 'E' DRAWINGS
- MECHANICAL RETURN AIR GRILLE, SEE 'M' DRAWINGS
- MECHANICAL SUPPLY AIR DIFFUSER, SEE 'M' DRAWINGS
- MECHANICAL SLOT DIFFUSER, SEE 'M' DRAWINGS

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
First Floor Enlarged Reflected Ceiling Plan - Area 'B'

PROJECT NUMBER 17.177
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SCALE As indicated
DATE 09.14.2018

DRAWING NUMBER
A412

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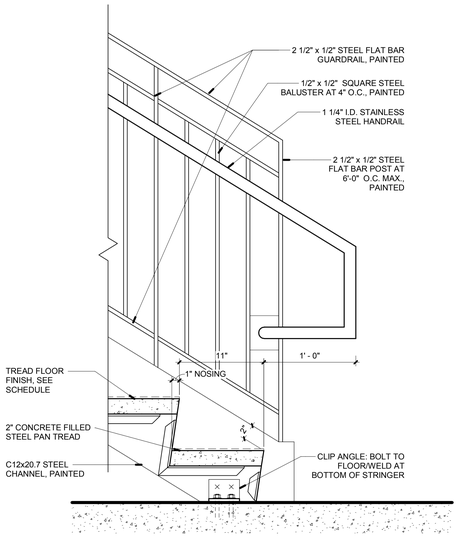
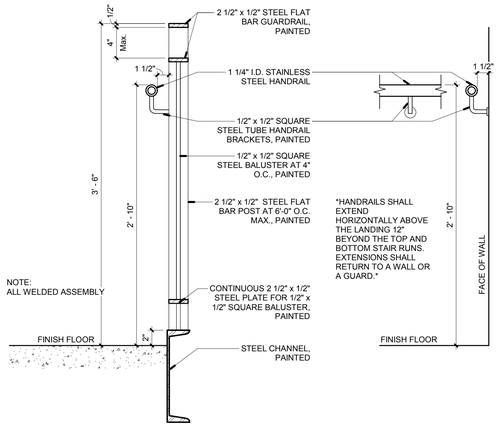
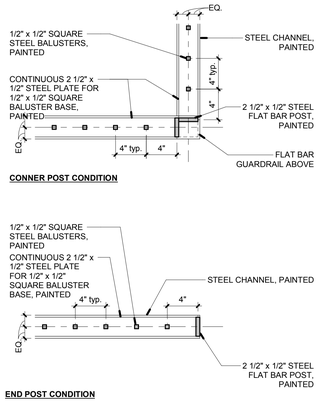


1 Stair Detail - Finish Floor
1 1/2" = 1'-0"



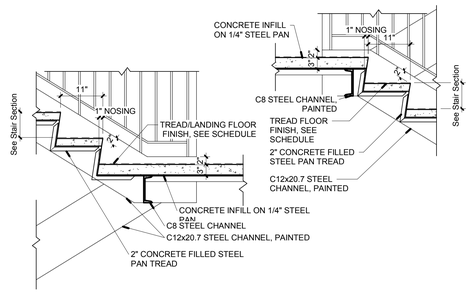
2 Stair Detail - Railing
1 1/2" = 1'-0"



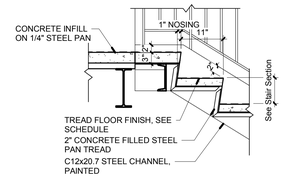
CONNER POST CONDITION

END POST CONDITION

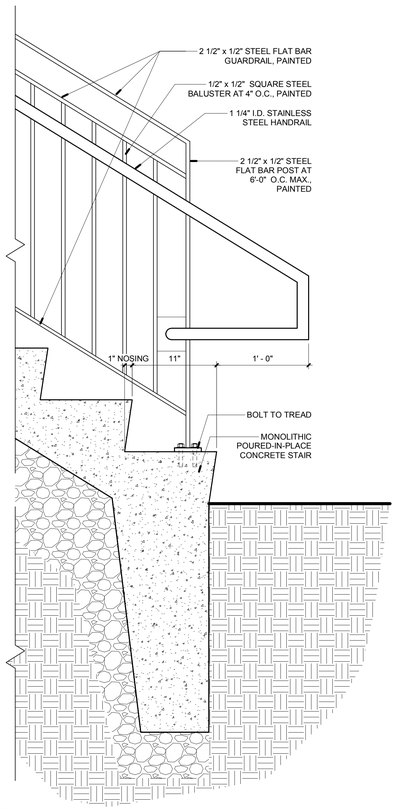
3 Stair Detail - Stair Post
1 1/2" = 1'-0"



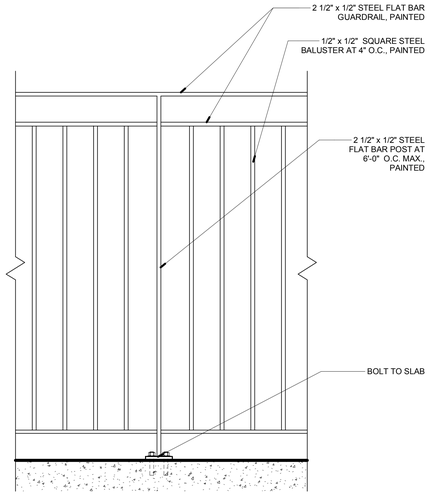
4 Stair Detail - Intermediate Landing
3/4" = 1'-0"



5 Stair Detail - Floor Landing
3/4" = 1'-0"



6 Stair Detail - Exterior Stair
1 1/2" = 1'-0"



7 Stair Detail - Guardrail
1 1/2" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Stair Details

PROJECT NUMBER
17.177

DRAWN BY
MKSD

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
A510

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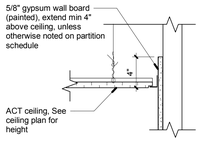
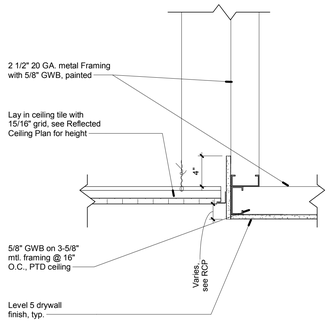
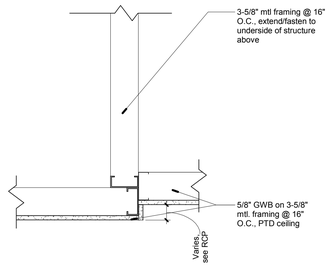


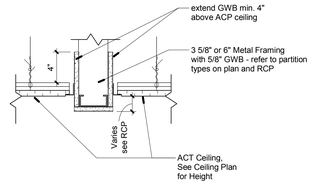
1 Ceiling Detail - Typ. ACT
1 1/2" = 1'-0"



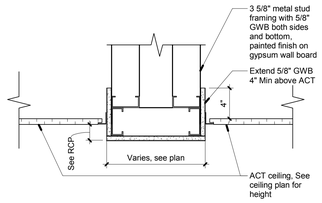
2 Ceiling Detail - GWB to ACT
1 1/2" = 1'-0"



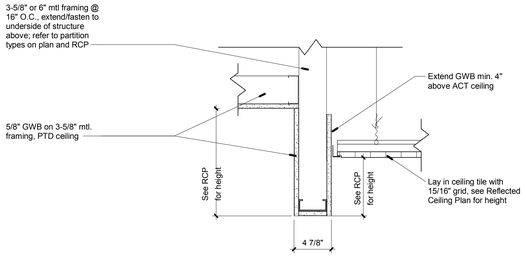
3 Ceiling Detail - GWB to GWB
1 1/2" = 1'-0"



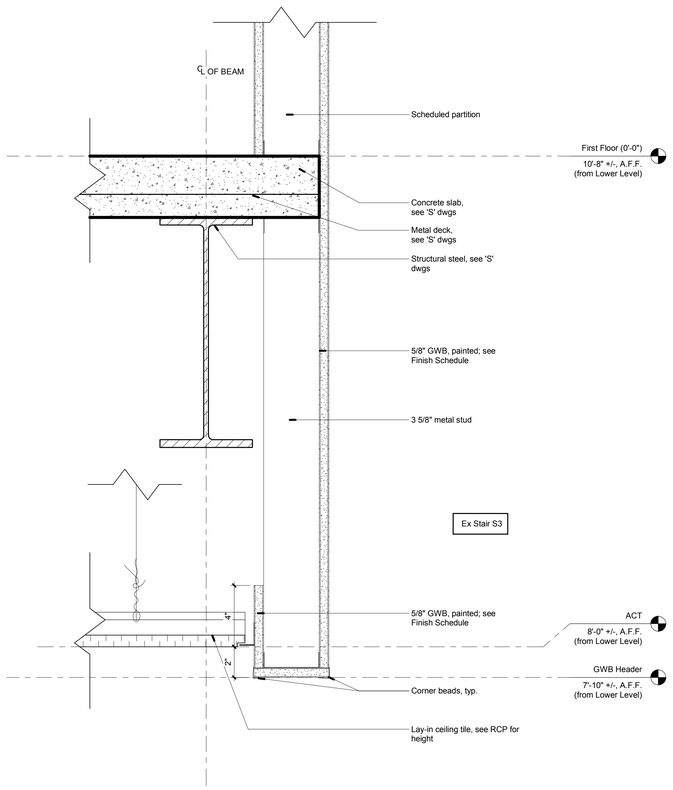
4 Ceiling Detail - Typ. Bulkhead
1 1/2" = 1'-0"



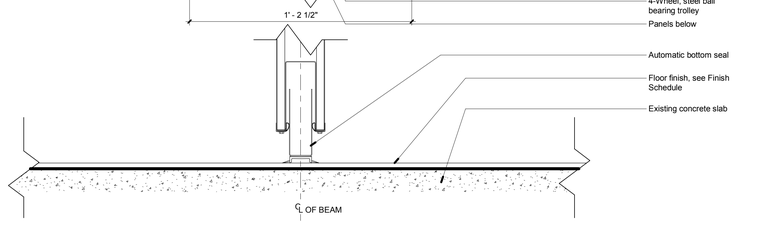
5 Ceiling Detail - Expanded Bulkhead
1 1/2" = 1'-0"



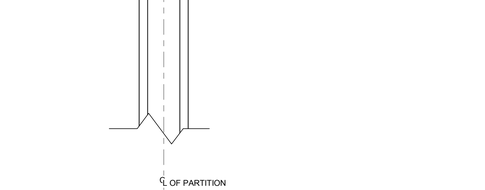
6 Ceiling Detail - GWB to Header to ACT
1 1/2" = 1'-0"



7 Ceiling Detail - Open Stair
3" = 1'-0"



8 Ceiling Detail - Operable Partition Head
3" = 1'-0"



9 Ceiling Detail - Operable Panel Head
3" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Ceiling Details

PROJECT NUMBER
17.177

DRAWN BY
MKSD

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
A520

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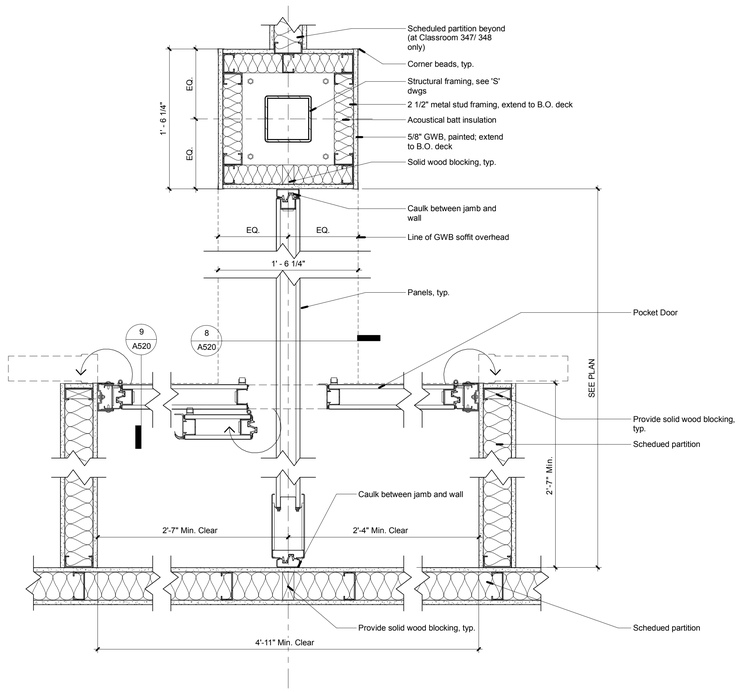
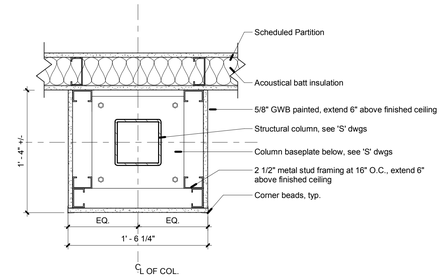
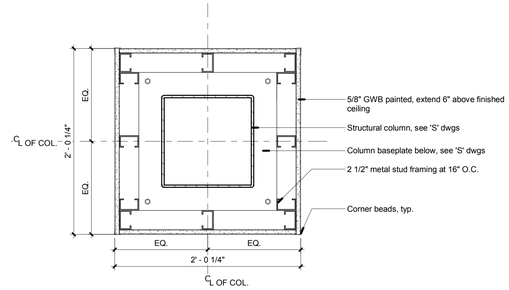


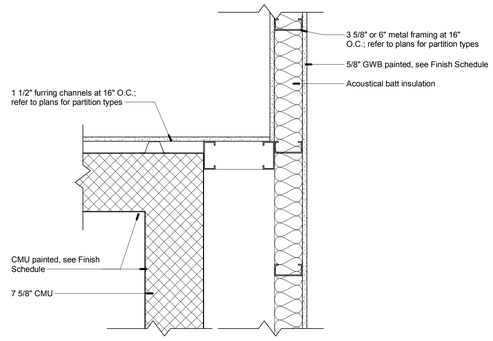
1 Plan Detail - Operable Partition
1 1/2" = 1'-0"



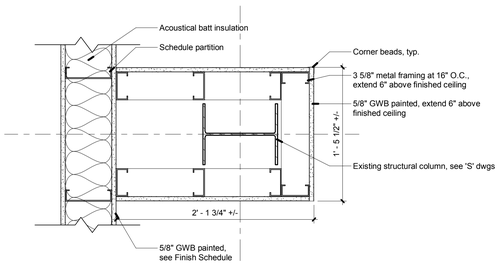
2 Plan Detail - Lower Level Wall/ Column
1 1/2" = 1'-0"



3 Plan Detail - Lower Level Freestanding Column
1 1/2" = 1'-0"

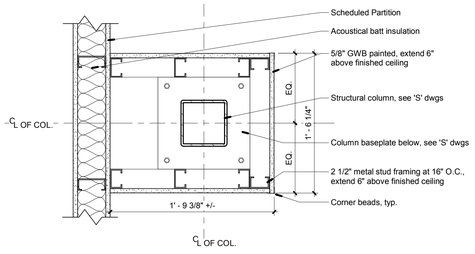


4 Plan Detail - CMU/ GWB Walls
1 1/2" = 1'-0"

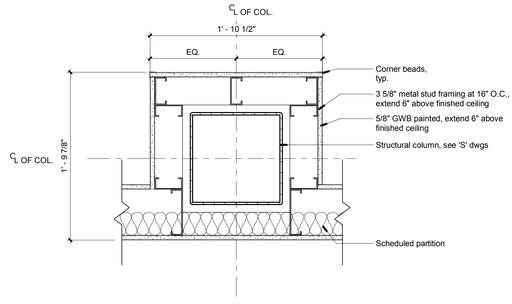


5 Plan Detail - First Floor Wall/ Column
1 1/2" = 1'-0"

6 Plan Detail - First Floor Existing/ New Walls
1 1/2" = 1'-0"



7 Plan Detail - Lower Level Wall/ Hall Column
1 1/2" = 1'-0"



8 Plan Detail - First Floor Wall/ Large Column
1 1/2" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Plan Details

PROJECT NUMBER
17.177

DRAWN BY
MKSD

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

DATE
09.14.2018

DRAWING NUMBER
A530

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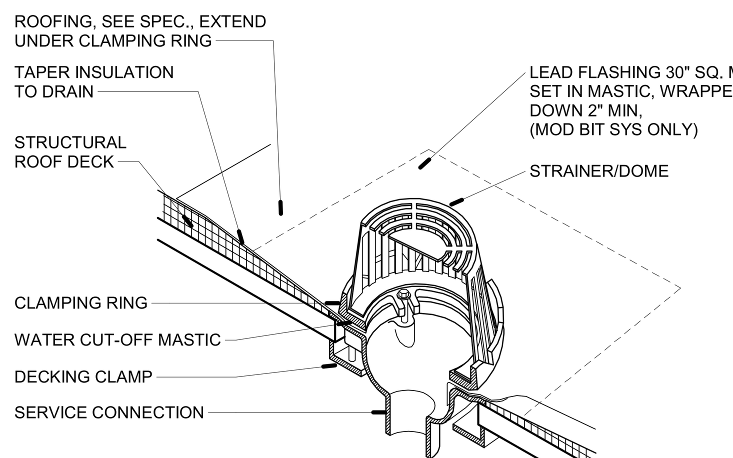


NOTES:

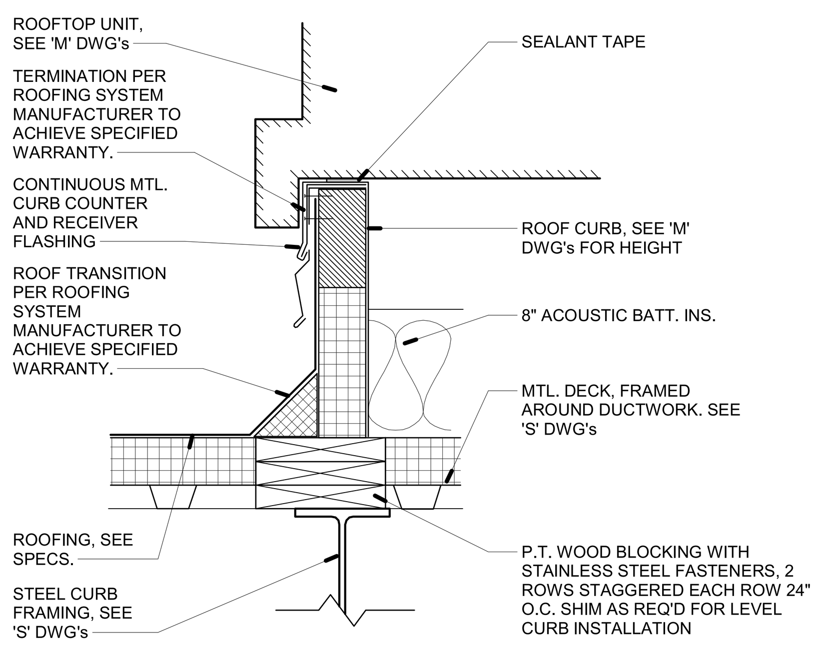
1. ALL BOLTS OR CLAMPS MUST BE IN PLACE TO PROVIDE CONSTANT COMPRESSION ON WATER CUT-OFF MASTIC.

2. CUT THE MEMBRANE SO IT EXTENDS A MINIMUM OF 1/2" FROM THE ATTACHMENT POINTS OF THE DRAIN CLAMPING RING.

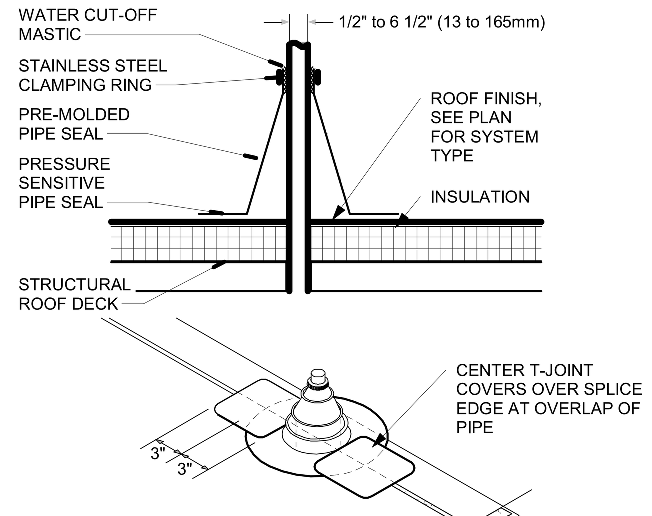
3. HOLE IN MEMBRANE MUST EXCEED SIZE OF DRAIN PIPE.

4. INSULATION TAPER SHALL NOT BE STEEPER THAN 6" (VERTICAL) IN 12" (HORIZONTAL).

1 Roof Detail - Roof Drain (Typ)
1 1/2" = 1'-0"



2 Roof Detail - Mechanical Curb (Typ)
1 1/2" = 1'-0"

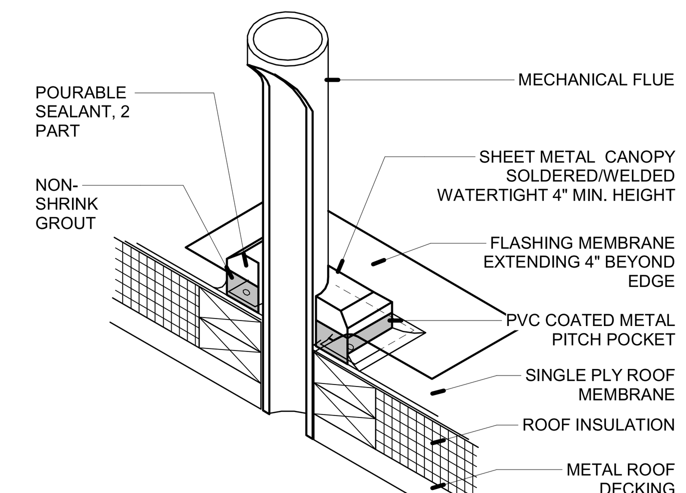


NOTE:

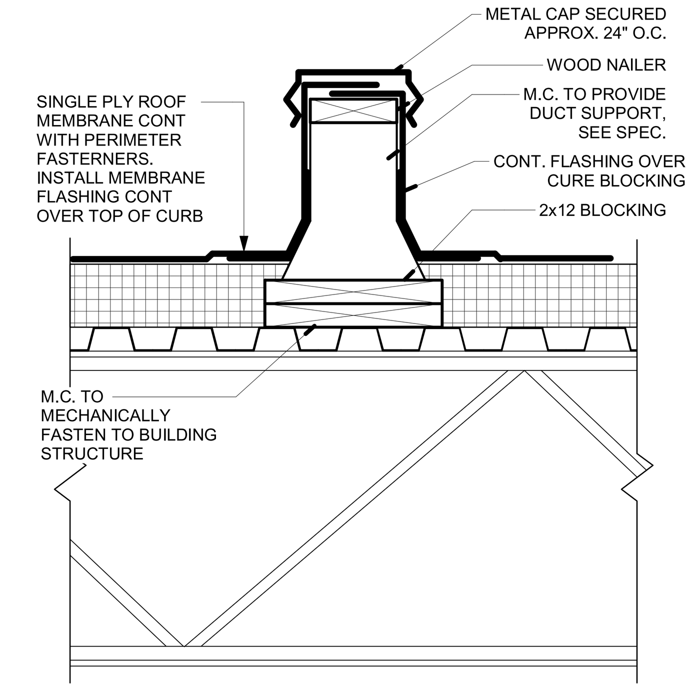
1. PIPE SEAL MUST HAVE INTACT RIB AT TOP EDGE, REGARDLESS OF PIPE DIAMETER.

2. DECK FLANGES OF THE PRE-MOLDED PIPE SEAL SHALL NOT BE OVERLAPPED, CUT OR APPLIED OVER ANY ANGLE CHANGE.

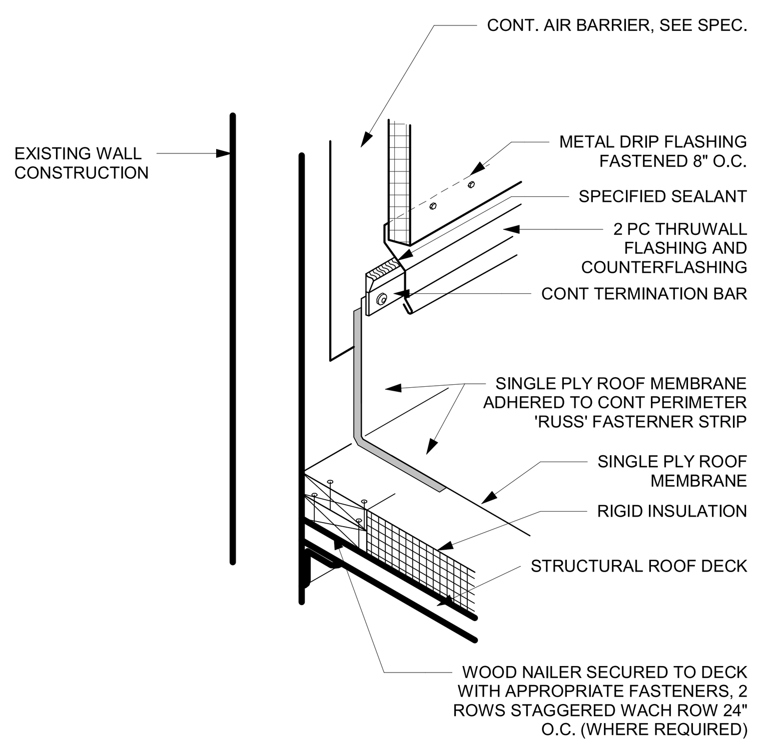
3 Roof Detail - Pipe VTR (Typ)
1 1/2" = 1'-0"



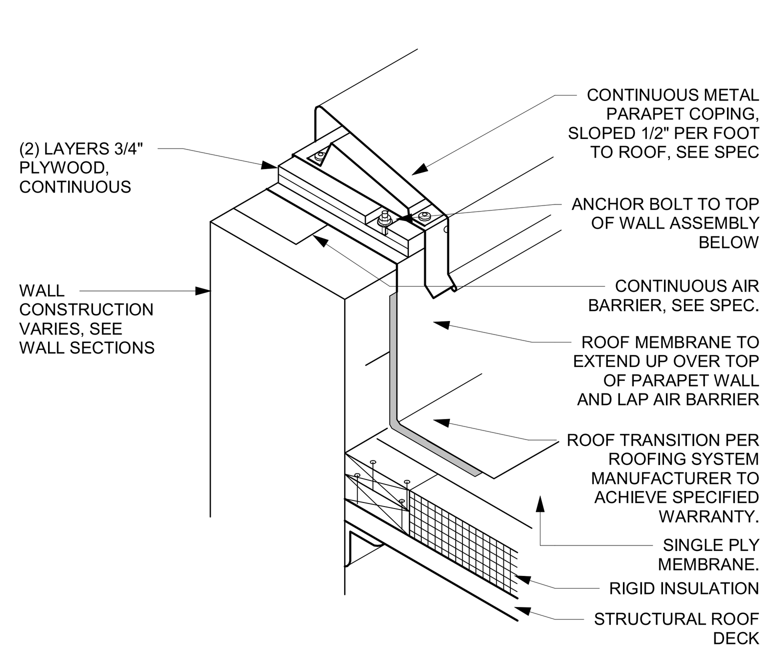
4 Roof Detail - Mechanical Flue (Typ)
1 1/2" = 1'-0"



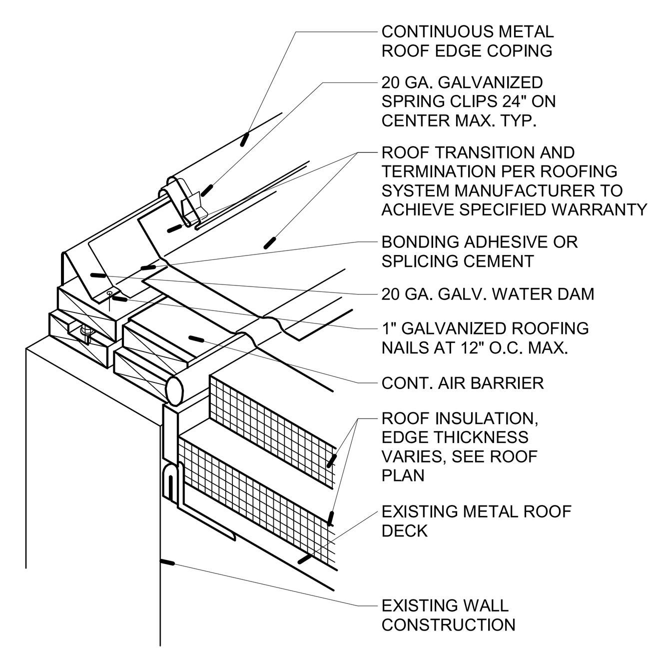
5 Roof Detail - Duct Roof Support Curb (Typ)
1 1/2" = 1'-0"



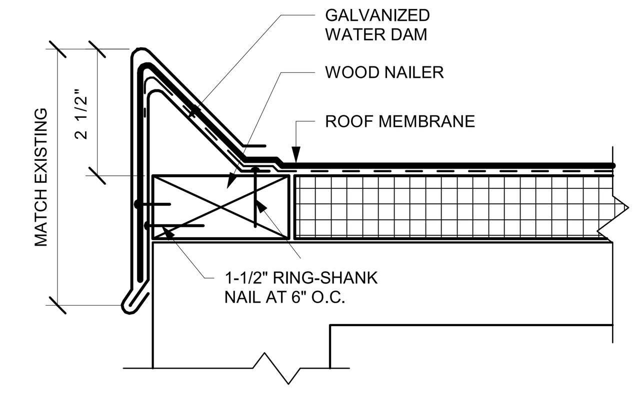
6 Roof Detail - Wall Flashing (Typ)
1 1/2" = 1'-0"



7 Roof Detail - Parapet Cap (Typ)
1 1/2" = 1'-0"



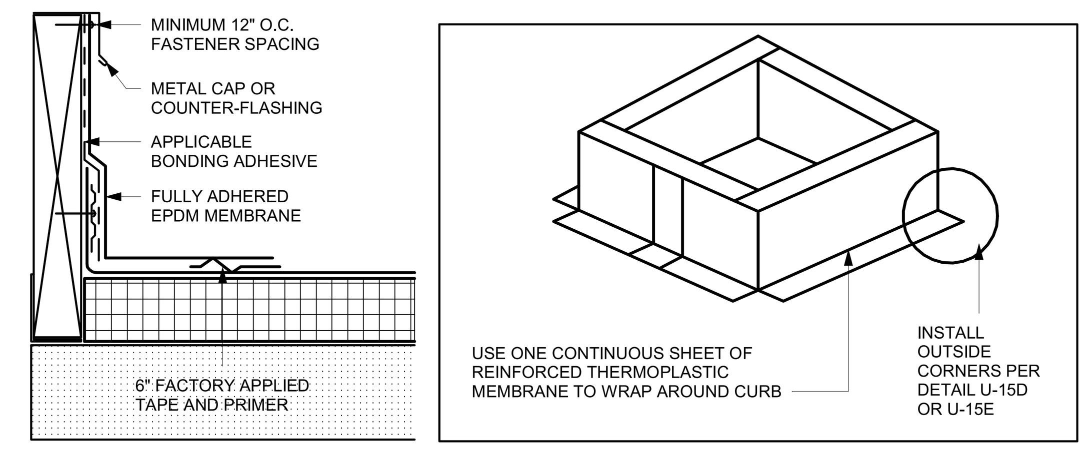
8 Roof Detail - Drip Edge (Typ)
1 1/2" = 1'-0"



NOTES:

1. WOOD NAILER MUST EXTEND PAST TOTAL WIDTH OF GRAVEL STOP DECK FLANGE
2. APPLY EPDM PRIMER TO THE MEMBRANE SURFACE PRIOR TO INSTALLING PRESSURE-SENSITIVE ELASTOFORM FLASHING
3. APPLY EPDM PRIMER TO THE MEMBRANE SURFACE PRIOR TO INSTALLING PRESSURE-SENSITIVE ELASTOFORM FLASHING
4. 6" WIDE SECTION OF PRESSURE-SENSITIVE ELASTOFORM FLASHING MAY ALSO BE CENTERED OVER FIELD SPLICE AT ANGLE CHANGE.

9 Roof Detail - Membrane Seam (Typ)
1 1/2" = 1'-0"

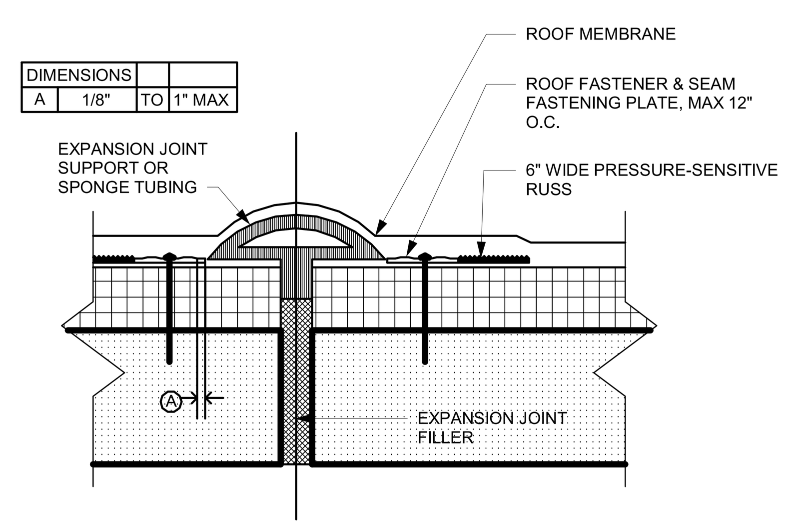


NOTES:

1. WHEN MECHANICAL FASTENERS ARE USED TO PENETRATE THE METAL COUNTER-FLASHING, USE EPDM WASHERS, APPLY WATER CUT-OFF MASTIC UNDER THE COUNTER-FLASHING OR CAULK THE FASTENER HEADS.

10 Roof Detail - Curb Flashing (Typ)
1 1/2" = 1'-0"

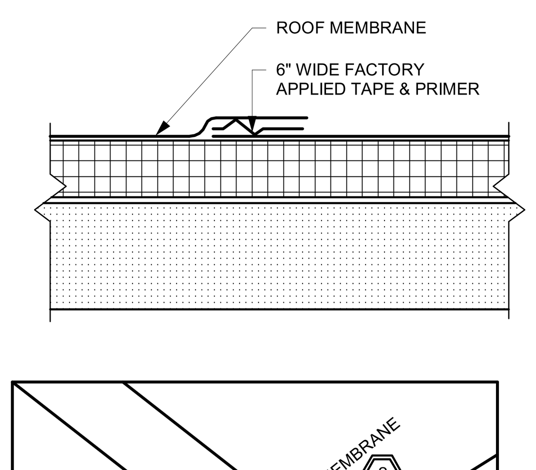
DIMENSIONS			
A	1/8"	TO	1" MAX

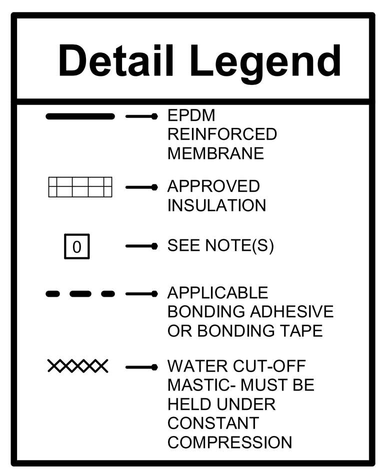


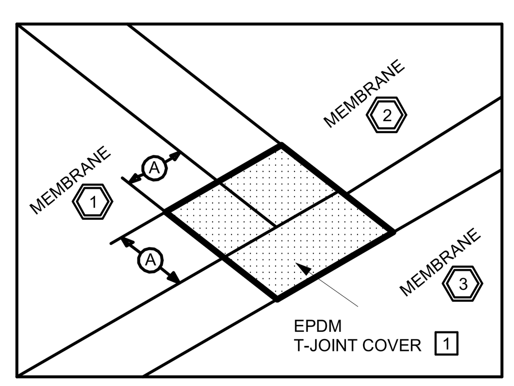
NOTES:

1. FOR EXPANSION JOINT INTERSECTIONS AND INTERECTIONS BETWEEN EXPANSION JOINTS TO WALL OR EDGING, USE TWO LAYERS OF PRESSURE-SENSITIVE ELASTOFORM FLASHING WITH SECOND LAYER 3" LARGER THAN PREVIOUS LAYER IN ALL DIRECTIONS
2. WIDTH OF JOINT SHALL BE A MINIMUM OF 3/4" AND SHALL NOT EXCEED 3" WHEN ROOF EXPANSION JOINT SUPPORT IS USED.
3. EPDM PRIMER MUST BE APPLIED TO BACK SIDE OF DECK MEMBRANE PRIOR TO COMPLETING SPLICE TO PRESSURE-SENSITIVE RUSS.

11 Roof Detail - Deck-to-Deck Expansion Joint (Typ)
3" = 1'-0"





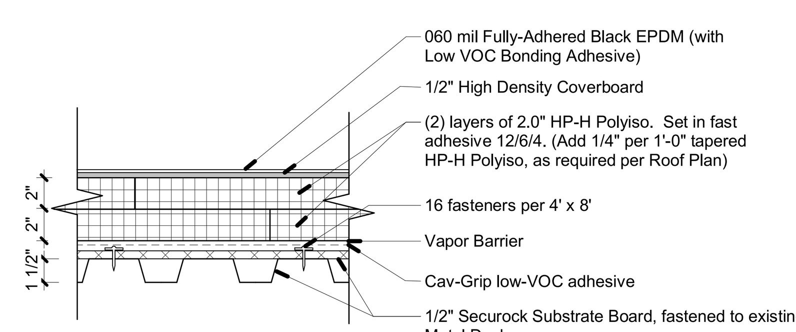


NOTES:

1. WHEN USING 60 MEMBRANE, APPLY A 6" x 6" "T-JOINT" COVER AT ALL FIELD SPLICE INTERSECTIONS.
2. APPROXIMATELY 1/8" DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF SURE-FLEX PVC MEMBRANE.

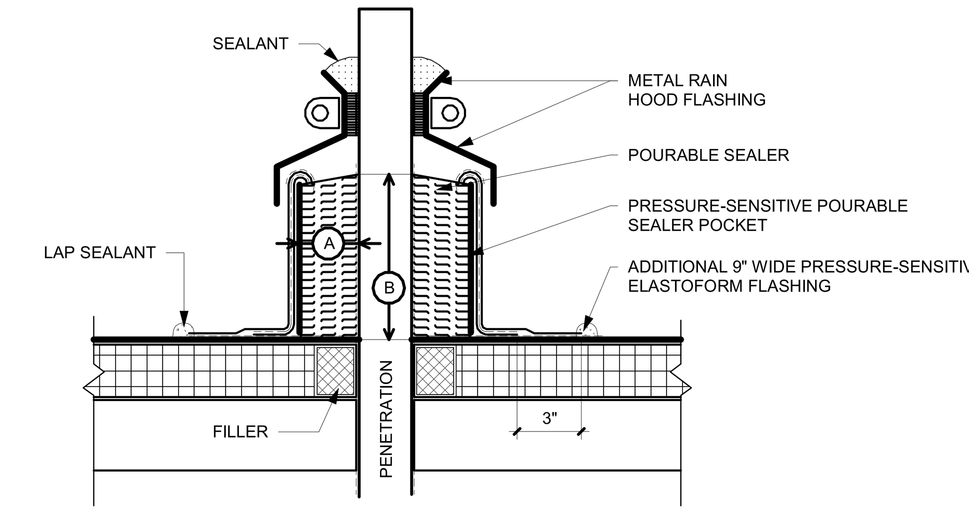
DIMENSIONS		
A	2-1/4"	MIN.

12 Roof Detail - Membrane Splice (Typ)
1 1/2" = 1'-0"



Note: Total system warranty to be for 20 years minimum
Total minimum system R-value = 22.8

13 Roof Detail - Typ
1 1/2" = 1'-0"

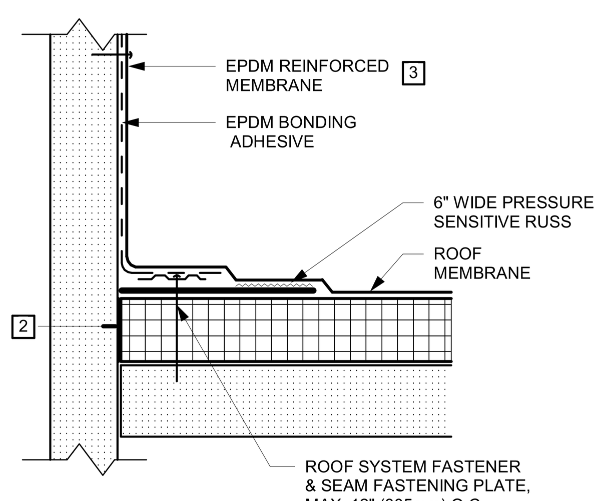


NOTES:

1. THE MAXIMUM ALLOWABLE SURFACE TEMPERATURE OF THE PENETRATION SHALL NOT EXCEED 180 DEGREES F.
2. PENETRATIONS, MEMBRANE, FLASHING, AND METAL (INSIDE POCKET) MUST BE PRIMED WITH EPDM PRIMER PRIOR TO APPLYING POURABLE SEALER. DO NOT PRIME PLASTIC SUPPORT STRIP.
3. POURABLE SEALER MUST COMPLETELY FILL POURABLE SEALER POCKET TO PREVENT PONDING OF WATER.
4. POURABLE SEALER MUST CONTACT PRIMED PRESSURE-SENSITIVE ELASTOFORM FLASHING AND DECK MEMBRANE.
5. SECUREMENT IS REQUIRED FOR POURABLE SEALER POCKETS WHICH ARE GREATER THAN 18" IN DIAMETER. REFER TO SPECIFICATIONS.
6. PIPE CLUSTERS MUST HAVE MINIMUM 1" CLEARANCE BETWEEN PENETRATIONS.

DIMENSIONS		
A	1"	MIN.
B	2"	MIN.

14 Roof Detail - Pressure Sensitive Pourable Sealer Pocket
1" = 1'-0"

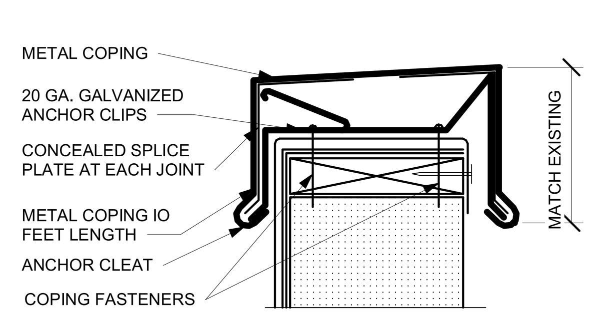


NOTES:

1. POSITION FASTENING PLATES 1/2" TO 1" FROM EDGE OF DECK MEMBRANE.
2. INSTALL SPRAY FOAM INSULATION SEAL CONTINUED AT PERIMETER OF ROOF INSULATION.
3. WHEN PARAPET WALL HEIGHT EXCEEDS 48", REFER TO DETAILS MFG DETAILS FOR ADDITIONAL REQUIREMENTS.

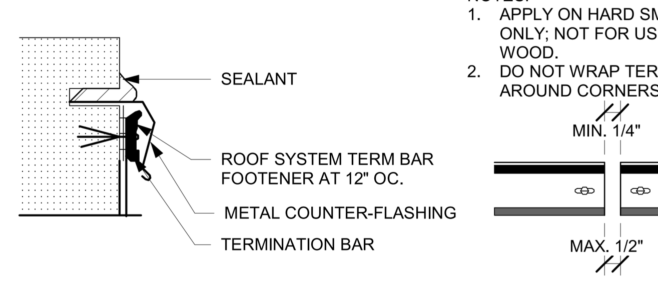
15 Roof Detail - Parapet Flashing (Typ)
1 1/2" = 1'-0"

METAL COPING



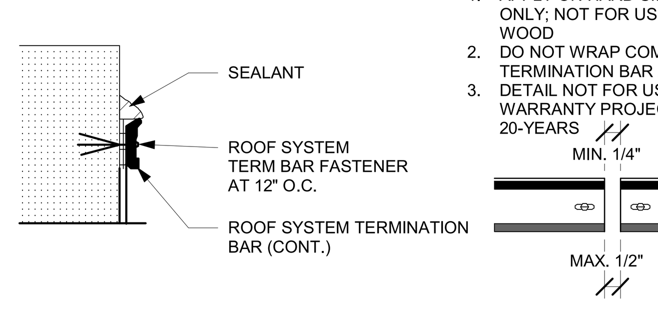
NOTE:
1. MEMBRANE SHOULD BE EXTENDED AT CORNERS TO PROVIDE COMPLETE COVERAGE OF THE TOP WALL SURFACE

MECHANICAL TERMINATION WITH COUNTER FLASHING



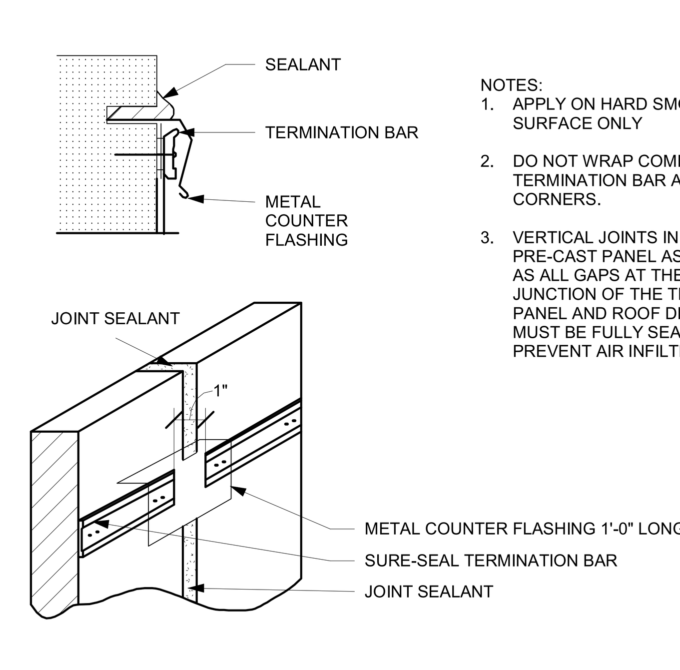
NOTES:
1. APPLY ON HARD SMOOTH SURFACE ONLY; NOT FOR USE ON EXPOSED WOOD.
2. DO NOT WRAP TERMINATION BAR AROUND CORNERS

MECHANICAL TERMINATION



NOTES:
1. APPLY ON HARD SMOOTH SURFACE ONLY; NOT FOR USE ON EXPOSED WOOD
2. DO NOT WRAP COMPRESSION TERMINATION BAR AROUND CORNERS
3. DETAIL NOT FOR USE ON WARRANTY PROJECTS ECEEDING 20-YEARS

MECHANICAL TERMINATIONS AT WALL CONTROL JOINTS



NOTES:
1. APPLY ON HARD SMOOTH SURFACE ONLY
2. DO NOT WRAP COMPRESSION TERMINATION BAR AROUND CORNERS.
3. VERTICAL JOINTS IN THE PRE-CAST PANEL AS WELL AS ALL GAPS AT THE JUNCTION OF THE TILT-UP PANEL AND ROOF DECK MUST BE FULLY SEALED TO PREVENT AIR INFILTRATION.

16 Roof Detail - Membrane Terminations (Typ)
3" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Typical Roof Details

PROJECT NUMBER 17.177
DRAWN BY MKSD
SCALE As indicated
DATE 09.14.2018

DRAWING NUMBER
A540

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FINISH SELECTION - BASIS OF DESIGN SUMMARY

FLOORING

Carpet Tile Flooring (CPT)
Code: CPT-01
Description: Walkoff Carpet
Manufacturer: Shaw (Basis of Design)
Product: Portal Tile
Color: Lava

Vinyl Composite Tile (VCT)
Code: VCT-01
Manufacturer: Armstrong (Basis of Design)
Product: Standard Excelon
Color: Cool White 51839

Code: VCT-02
Manufacturer: Armstrong (Basis of Design)
Product: Standard Excelon
Color: Gentian Blue 51946

Code: VCT-03
Manufacturer: Armstrong (Basis of Design)
Product: Standard Excelon Imperial Texture
Color: Golden 51878

Rubber Wall Base (RWB)
Code: RWB-01
Manufacturer: Burke 07011 (Basis of Design)
Color: Navy

Rubber Stair Tread (RT)
Code: RT-01
Manufacturer: Burke (Basis of Design)
Product: Rouleau Round Rasied Disk Pattern
Color: Navy

WALLS

Paint (PT)
Code: PT-01
Manufacturer: Sherwin Williams (Basis of Design)
Color: Dover White SW6385
Location: Field Color

Code: PT-02
Manufacturer: Sherwin Williams (Basis of Design)
Color: Bluebell SW6793
Location: Accent paint for Teaching Wall of Classrooms

Code: PT-03
Manufacturer: Sherwin Williams (Basis of Design)
Color: match existing
Location: Door Frames
All exposed steel associated with Stairs, Guardrails, and Railings construction

OTHER

Plastic Laminate (PLAM)
Code: PLAM-01
Manufacturer: Formica (Basis of Design)
Color: Selected by Architect
Location: Casework

Code: PLAM-02
Manufacturer: Formica (Basis of Design)
Color: Selected by Architect
Location: Countertops

FRP
Code: FRP-01
Manufacturer: Altro (Basis of Design)
Product: Puraguard
Color: White
Location: see elevations

Toilet Partitions
Code: TP-01
Manufacturer: Scranton (Basis of Design)
Product: Hiney Hiders
Color: Selected by Architect
Finish: Selected by Architect

GENERAL NOTES:

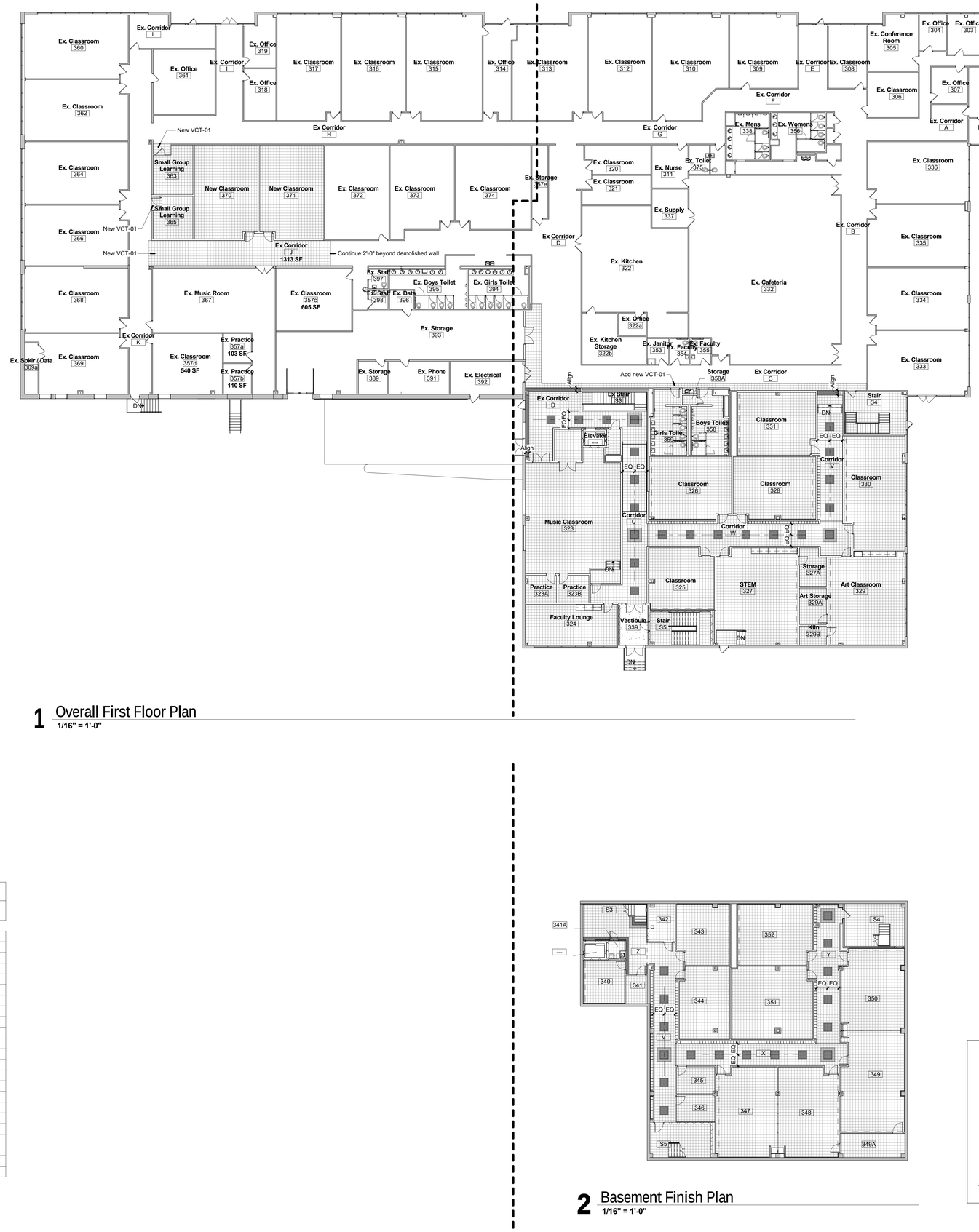
1. Manufacturers names and colors are listed as basis for design intent.
2. North in Finish Schedule relates to North on plans.
3. Vision panel frames to be painted to match door frames.
4. Provide resilient compliant thresholds at flooring material changes as required.
5. All soffits to be painted with flat sheen. All sides and underside of soffits to be painted the same color.
6. All paint in toilet rooms to be epoxy paint.
7. Install finish end panels to all exposed surfaces of casework.
8. Patch and repair all holes and damage to existing walls as required.
9. All patched wall finishes to be taken to the next corner or break in wall, as approved by The Architect.

Finish Schedule - First Floor

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Comments
---	Elevator	VCT-01	RWB-01	--	See elevator spec for cab finishes
323	Music Classroom	VCT-01 / RT-01	RWB-01	PT-01	Rubber Treads on Stairs, VCT-01 on Landings
323A	Practice	VCT-01	RWB-01	PT-01	
323B	Practice	VCT-01	RWB-01	PT-01	
323C	Storage	VCT-01	RWB-01	PT-01	
323D	Storage	VCT-01	RWB-01	PT-01	
324	Faculty Lounge	VCT-01	RWB-01	PT-01	PLAM-01 / PLAM-02
325	Classroom	VCT-01	RWB-01	PT-01	
326	Classroom	VCT-01	RWB-01	PT-01	
327	STEM	VCT-01 / RT-01	RWB-01	PT-01	PLAM-01 / PLAM-02 / FRP-01 backsplash / Rubber Treads on Stairs, VCT-01 on Landings
327A	Storage	VCT-01	RWB-01	PT-01	
328	Classroom	VCT-01	RWB-01	PT-01	
329	Art Classroom	VCT-01	RWB-01	PT-01	PLAM-01 / PLAM-02 / FRP-01 backsplash
329A	Art Storage	VCT-01	RWB-01	PT-01	
329B	Kiln	VCT-01	RWB-01	PT-01	
330	Classroom	VCT-01	RWB-01	PT-01	
331	Classroom	VCT-01	RWB-01	PT-01	
339	Vestibule	VCT-01	RWB-01	PT-01	
358	Boys Toilet	VCT-01	RWB-01	PT-01 / FRP-01	FRP up to 4'-0" / TP-01
358A	Storage	VCT-01	RWB-01	PT-01	
359	Girls Toilet	VCT-01	RWB-01	PT-01 / FRP-01	FRP up to 4'-0" / TP-01
363	Small Group Learning	VCT-01	RWB-01	PT-01	
365	Small Group Learning	VCT-01	RWB-01	PT-01	
370	New Classroom	VCT-01	RWB-01	PT-01	
371	New Classroom	VCT-01	RWB-01	PT-01	
C	Ex Corridor	VCT-01 / --	RWB-01	PT-01	Existing VCT to remain except where indicated on Finish Plan
D	Ex Corridor	VCT-01 / --	RWB-01	PT-01	Existing VCT to remain except where indicated on Finish Plan
H	Ex Corridor	VCT-01 / --	RWB-01	PT-01	Existing VCT to remain except where indicated on Finish Plan
J	Ex Corridor	VCT-01 / --	RWB-01	PT-01	Existing VCT to remain except where indicated on Finish Plan
K	Ex Corridor	VCT-01 / --	RWB-01	PT-01	Existing VCT to remain except where indicated on Finish Plan
S4	Stair	VCT-01 / RT-01	RWB-01	PT-01	Rubber Treads on Stairs, VCT-01 on Landings
S5	Stair	VCT-01 / RT-01	RWB-01	PT-01	Rubber Treads on Stairs, VCT-01 on Landings
U	Corridor	VCT-01	RWB-01	PT-01	
V	Corridor	VCT-01 / RT-01	RWB-01	PT-01	Rubber Treads on Stairs, VCT-01 on Landings
W	Corridor	VCT-01	RWB-01	PT-01	

Finish Schedule - Basement

Level	Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Other
Ex Basement Floor	---	Elevator	VCT-01	RWB-01	--	See elevator spec for cab finishes
Ex Basement Floor	340	Small Group	VCT-01	RWB-01	PT-01	
Ex Basement Floor	341	Storage	VCT-01	RWB-01	PT-01	
Ex Basement Floor	341A	Jan. Cl.	VCT-01	RWB-01	PT-01	
Ex Basement Floor	342	Data	VCT-01	RWB-01	PT-01	
Ex Basement Floor	343	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	344	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	345	Small Group	VCT-01	RWB-01	PT-01	
Ex Basement Floor	346	Small Group	VCT-01	RWB-01	PT-01	
Ex Basement Floor	347	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	348	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	349	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	349A	Storage	VCT-01	RWB-01	PT-01	
Ex Basement Floor	350	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	351	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	352	Classroom	VCT-01	RWB-01	PT-01	
Ex Basement Floor	S3	Ex Stair	VCT-01 / RT-01	RWB-01	PT-01	Rubber Treads on Stairs, VCT-01 on Landings
Ex Basement Floor	S4	Ex Stair	VCT-01 / RT-01	RWB-01	PT-01	Rubber Treads on Stairs, VCT-01 on Landings
Ex Basement Floor	S5	Stair	VCT-01 / RT-01	RWB-01	PT-01	Rubber Treads on Stairs, VCT-01 on Landings
Ex Basement Floor	V	Corridor	VCT-01 / VCT-02 / VCT-03	RWB-01	PT-01	
Ex Basement Floor	X	Corridor	VCT-01 / VCT-02 / VCT-03	RWB-01	PT-01	
Ex Basement Floor	Y	Corridor	VCT-01 / VCT-02 / VCT-03	RWB-01	PT-01	
Ex Basement Floor	Z	Corridor	VCT-01 / VCT-02 / VCT-03	RWB-01	PT-01	



1 Overall First Floor Plan
1/16" = 1'-0"

2 Basement Finish Plan
1/16" = 1'-0"

Finish Legend

- CPT-01
- VCT-01
- VCT-02
- VCT-03
- ACCENT WALL PAINT

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Lower Level & First Floor Finish Plans & Schedule

PROJECT NUMBER 17.177
DRAWN BY MKSD
SCALE As indicated
DATE 09.14.2018

DRAWING NUMBER
A600

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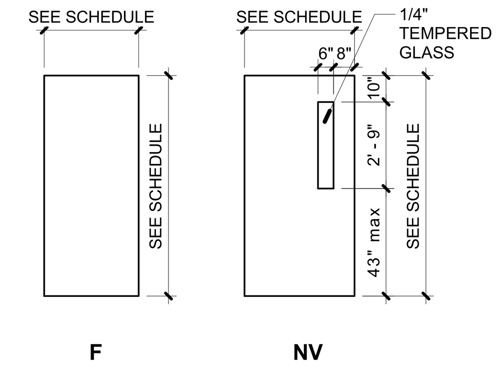
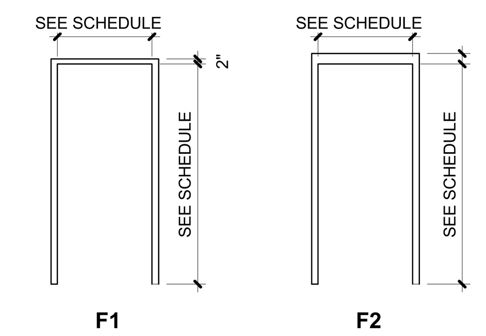
Door Schedule

Door Number	to / from Room	Type	Door					Fire Rating	Glazing	Frame			Jamb	Head	Comments
			Width	Height	Thickness	Material	Finish			Type	Material	Finish			
300.1	Ex Corridor	F	6' - 0"	7' - 0"	1 3/4"	HM	STN			F1	HM	Painted	J2	H2	
323.1	Ex Corridor	NV	6' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
323.2	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
323A.1	Practice	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
323B.1	Practice	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
323C.1	Music Classroom	F	6' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J2	H2	
323D.1	Storage	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J2	H2	
324.1	Faculty Lounge	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
325.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
326.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
327.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
327.2	STEM	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J2	H2	
328.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
329.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
329.2	Art Storage	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J2	H2	
329.3	Art Classroom	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
330.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
331.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J2	H2	
339.1	Vestibule	NV	6' - 0"	7' - 0"	1 3/4"	HM	FACT FIN	60 Min.	Clear Tempered	F1	HM	Factory	J4	H4	Card Reader
339.2	Vestibule	NV	3' - 0"	7' - 0"	1 3/4"	HM	FACT FIN	60 Min.	Clear Tempered	F1	HM	Factory	J3	H3	
339.3	Vestibule	NV	6' - 0"	6' - 8"	1 3/4"	HM	FACT FIN	60 Min.	Insulated Tinted Tempered	F1	HM	Factory	3/A630	2/A610 Sim.	
339.4	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	HM	FACT FIN	60 Min.	Clear Tempered	F1	HM	Factory	J4	H4	
340.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
341.1	Corridor	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	
341A.1	Corridor	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	
342.1	Corridor	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	Card Reader
343.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
344.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
345.1	Small Group	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
346.1	Small Group	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
347.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
348.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
348.2	Classroom	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	
349.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
349.2	Classroom	F	3' - 6"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	
350.1	Classroom	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
351.1	Classroom	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
352.1	Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J1	H1	
358.1	Boys Toilet	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	
358.2	Boys Toilet	F	2' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	
359.1	Girls Toilet	F	3' - 0"	7' - 0"	1 3/4"	WD	STN			F1	HM	Painted	J1	H1	
365.1	Ex Corridor	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J3	H3	
370.1	New Classroom	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J3	H3	
370.2	New Classroom	NV	3' - 0"	7' - 0"	1 3/4"	WD	STN		Clear Tempered	F1	HM	Painted	J3	H3	
387.6	Ex Corridor	NV	6' - 0"	7' - 0"	1 3/4"	WD	STN	90 Min.	Insulated Tinted Tempered	F2	HM	Painted	1/A620	2/A610	

Door Types:



Frame Types:



Door Schedule Abbreviations:

ALUM	Aluminum	KP	Key Pad
AO	Auto Opener	MAG	Mag Lock
ANOD	Anodized	MANUF	Manufacturer
CAM	Camera	MIN	Minutes
CR	Card Reader	MON	Monitor
DBL	Double	PP	Push Plate
DBR	Door Release Button	PREF	Pre-Finished
ES	Electric Release	PTD	Painted
FA	Fire Alarm	RR	Remote Release
FRT	Fire Retardant Treated	TEMP	Tempered Glass
HDWRE	Hardware	WD	Wood
HM	Hollow Metal	WS	Weatherstripping
HO	Magnetic Hold Open		
IC	Intercom		
IR	Impact Resistant		

General Door Notes:

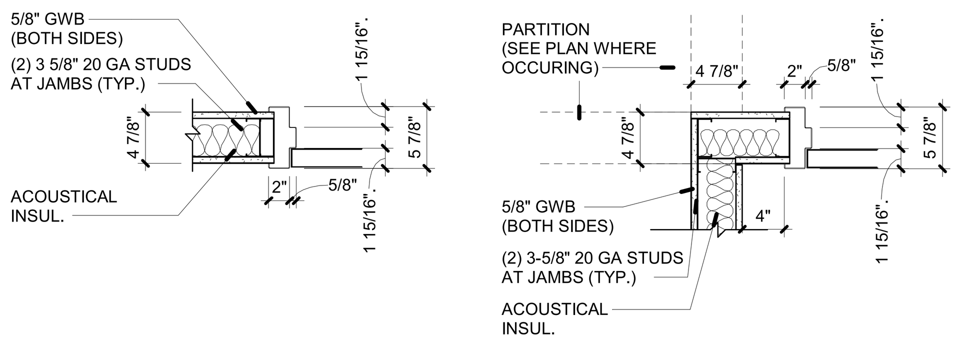
1. Refer to technical specifications for door hardware.

2. All doors scheduled to have swing clear hinges shall be set 6" off of the adjacent wall at the door's hinge side.

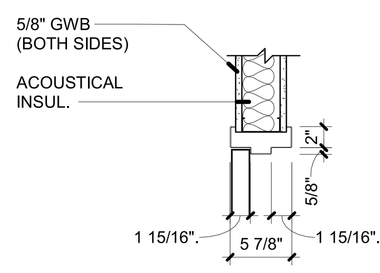
Door Device Legend:

HO	Magnetic Hold Open (For door operation)
CR	Card Reader
PP	Push Plate (For door operation)
AO	Automatic Opener
KP	Key Pad

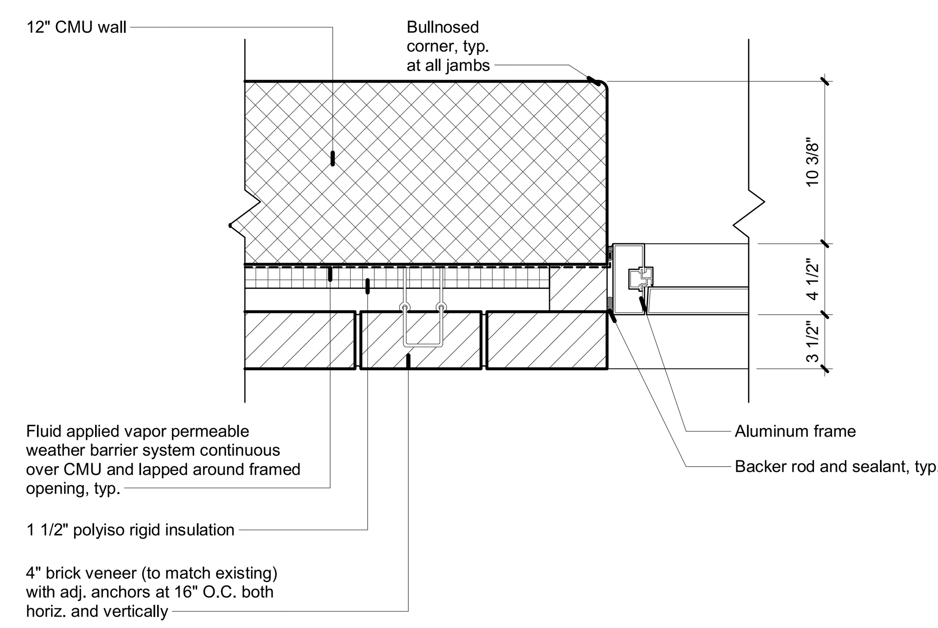
Note: Coordinate the location of all card readers, wall pushplates, remote releases, and other door devices with the owner and architect in field prior to finalizing the installation.



J1 J1 Jamb - 3-5/8" Stud
1" = 1'-0"



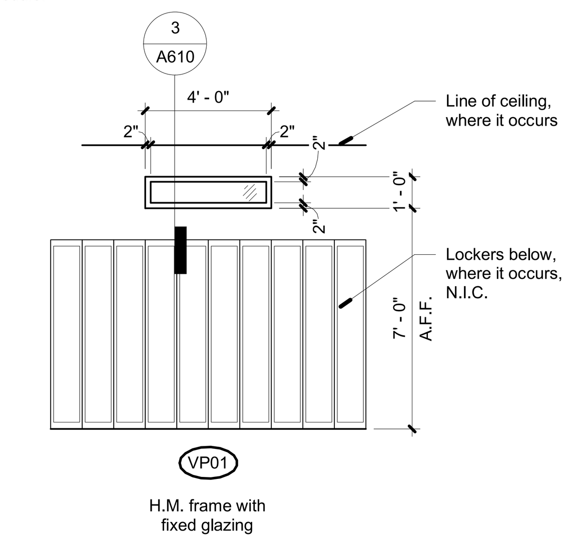
H1 H1 Head - 3-5/8" Stud
1" = 1'-0"



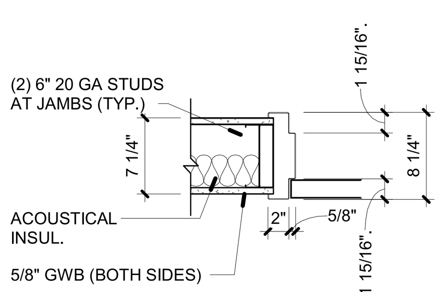
1 Plan Detail - New Door at Brick Infill
1 1/2" = 1'-0"

Vision Panel Types:

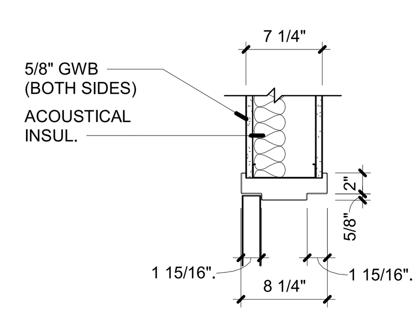
VISION PANEL NOTES:
1. All H.M. frames to be painted to match door frame color. Refer to vision schedule.



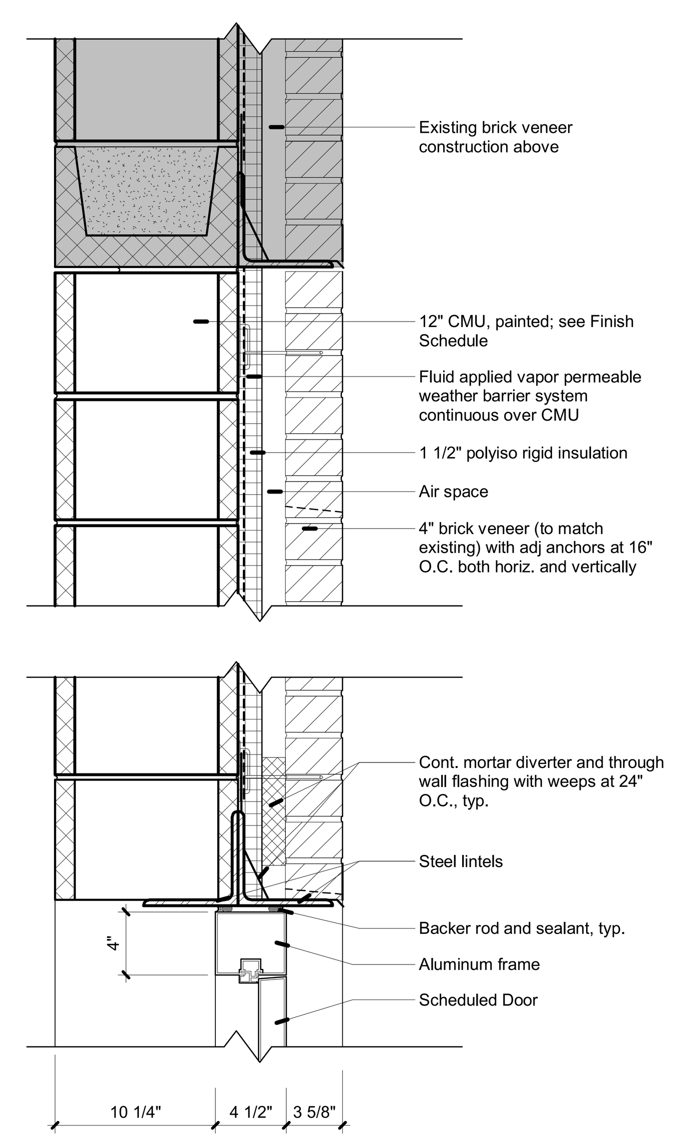
H.M. frame with fixed glazing



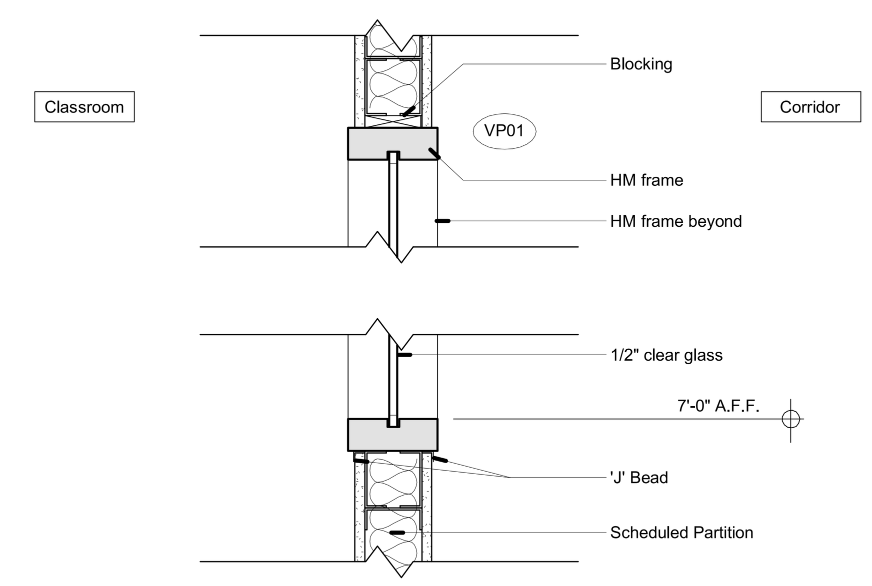
J2 J2 Jamb - 6" Stud
1" = 1'-0"



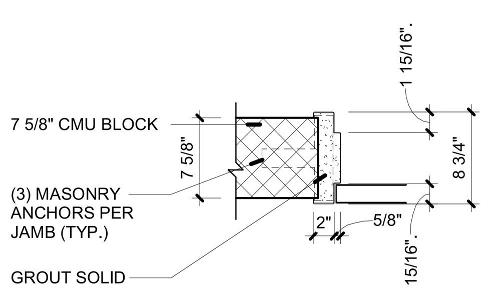
H2 H2 Head - 6" Stud
1" = 1'-0"



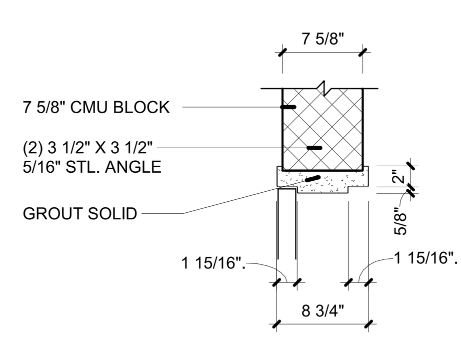
2 Section Detail - New Door at Brick Infill
1 1/2" = 1'-0"



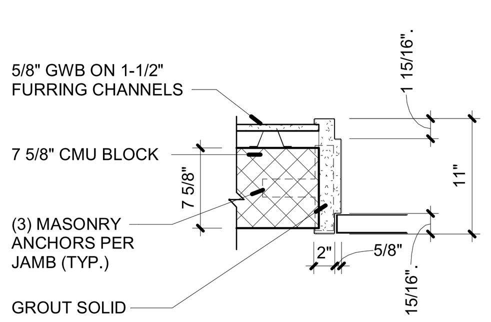
3 Section Detail - Vision Panel
1 1/2" = 1'-0"



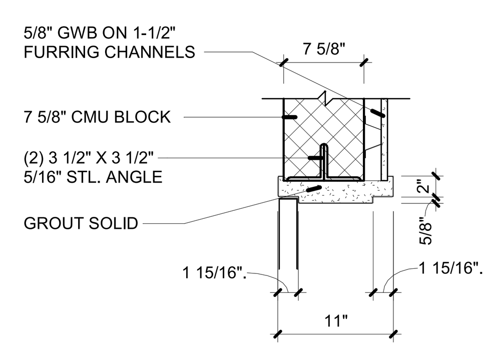
J3 J3 Jamb - 8" CMU
1" = 1'-0"



H3 H3 Head - 8" CMU
1" = 1'-0"



J4 J4 Jamb - 8" CMU + Furred Wall
1" = 1'-0"



H4 H4 Head - 8" CMU + Furred Wall
1" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Door Schedule, Door/Frame Types, & Vision Panel Schedule & Details

PROJECT NUMBER
17.177

DRAWN BY
MKSD

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
A610

ⓒ MKSD, LLC

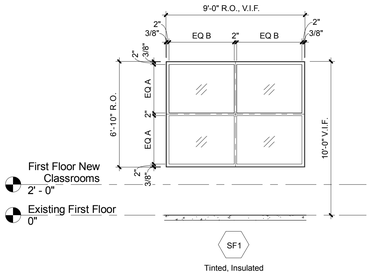
www.mksdarchitects.com

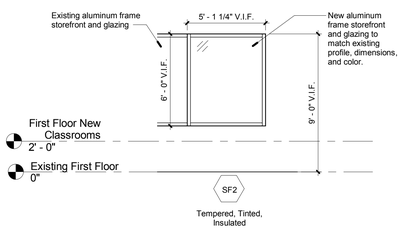
9/27/2018 12:17:53 PM C:\Users\cdw.MKSDARCHITECTS\Documents\17.177 Collegium 515 Classroom Renovations Central_cdw.rvt

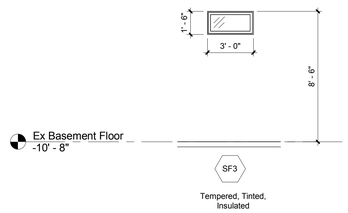
Window Schedule Legend:

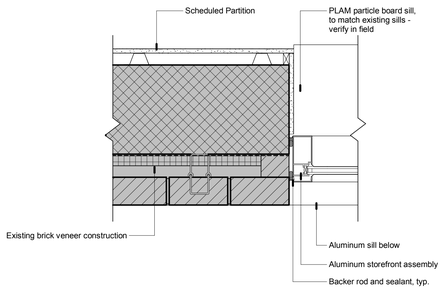
1) All Exterior glazing shall be 1" thick Insulated Low-E glass (by "PPG" with Solarban 60 finish, **tinted**, or approved equal).

2) Contractor to verify dimension in field, where indicated.

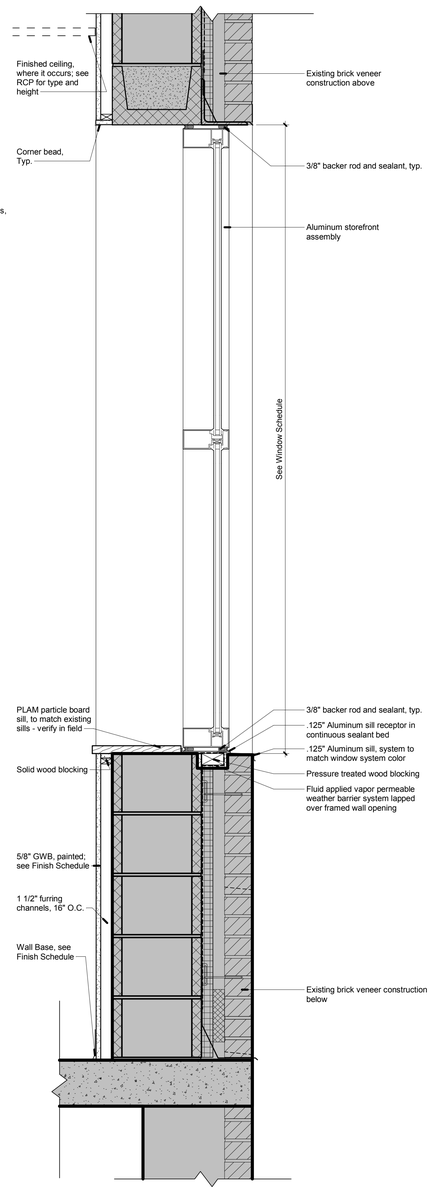




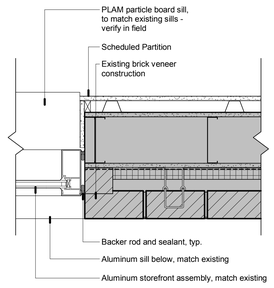




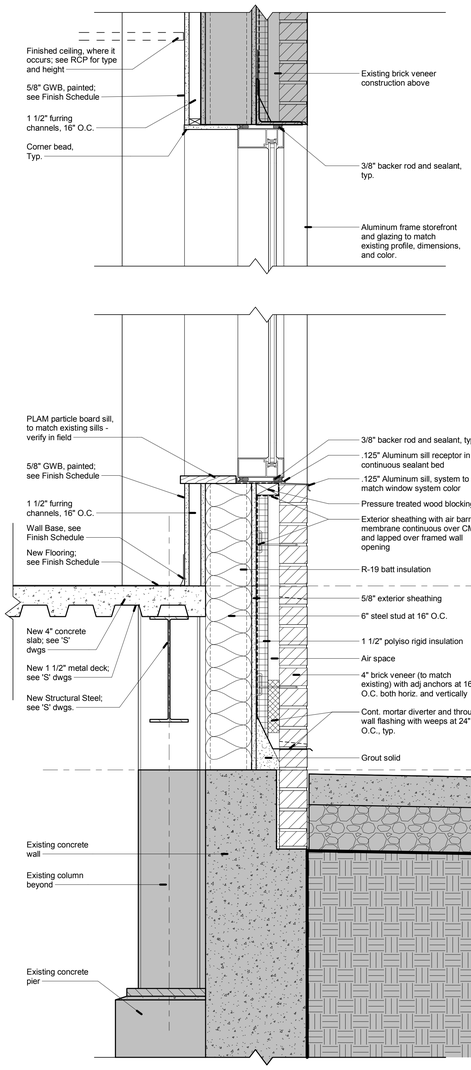
1 Plan Detail - New Window at Existing Brick Infill
1 1/2" = 1'-0"



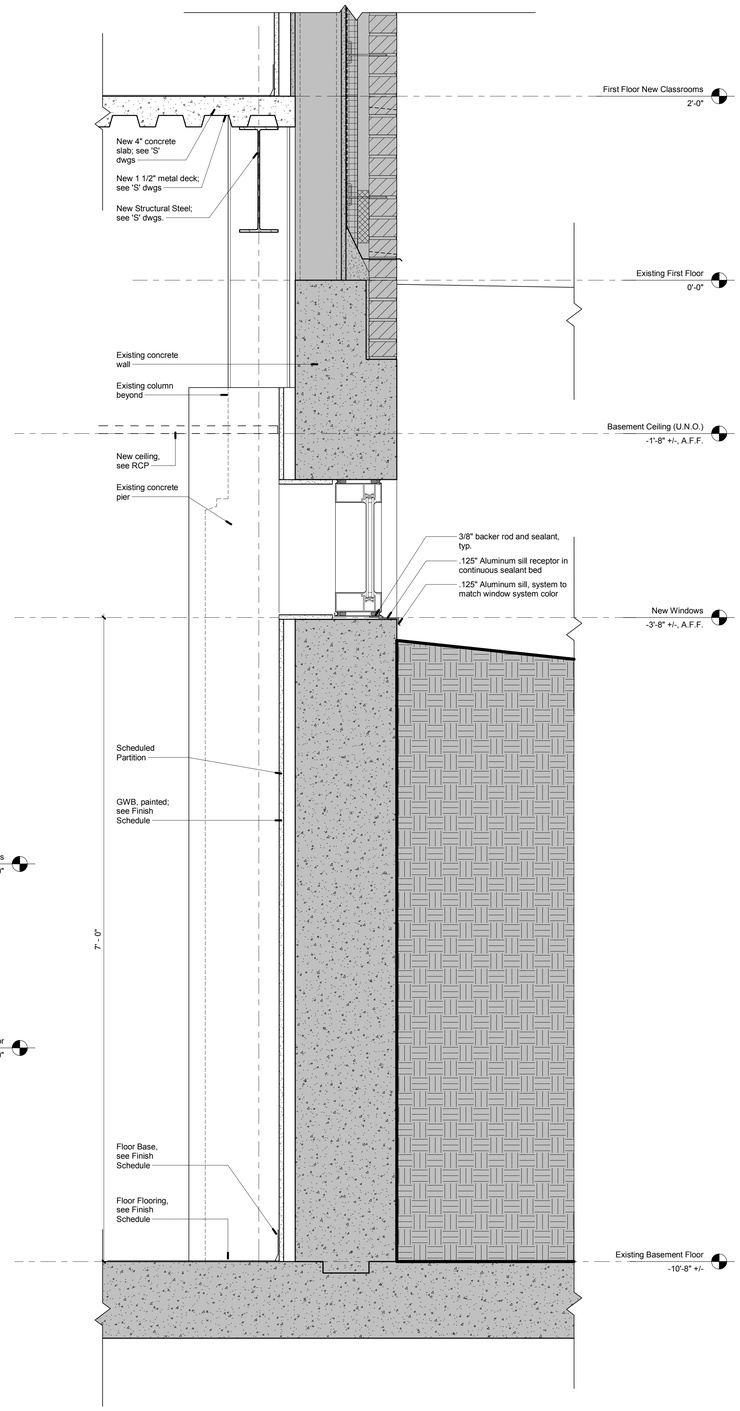
2 Section Detail - New Window at Existing Brick Infill
1 1/2" = 1'-0"



3 Plan Detail - Infill Window
1 1/2" = 1'-0"



4 Section Detail - Infill Window
1 1/2" = 1'-0"



5 Section Detail - Lower Level Window
1 1/2" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Window Types & Details

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

A620

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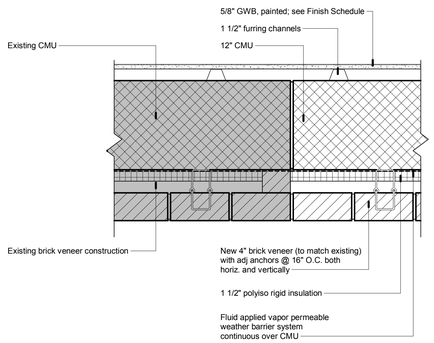
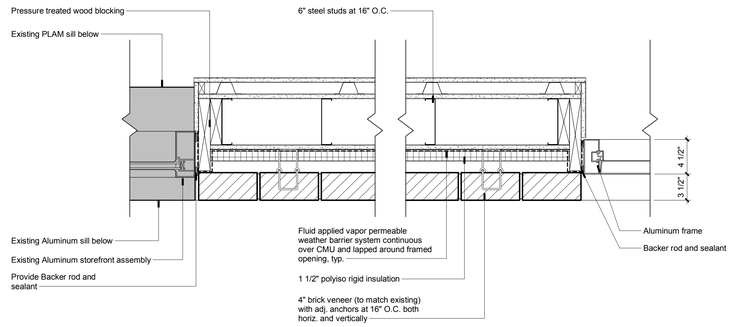


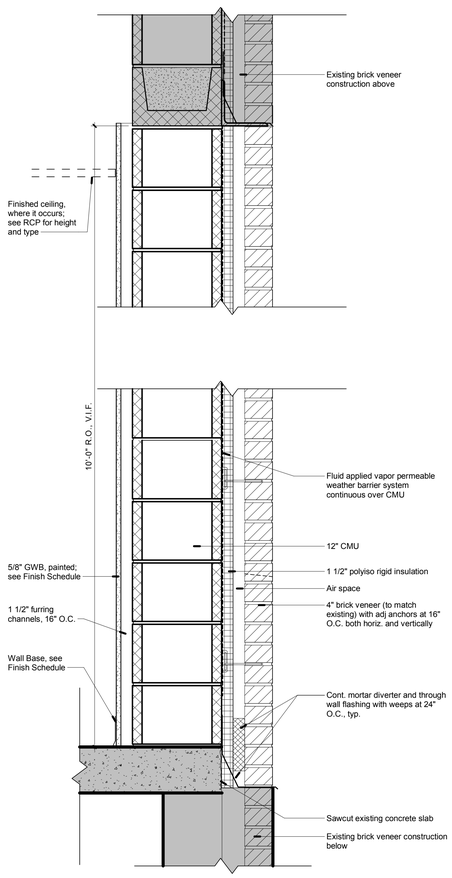
1 Plan Detail - New Brick Infill

1 1/2" = 1'-0"



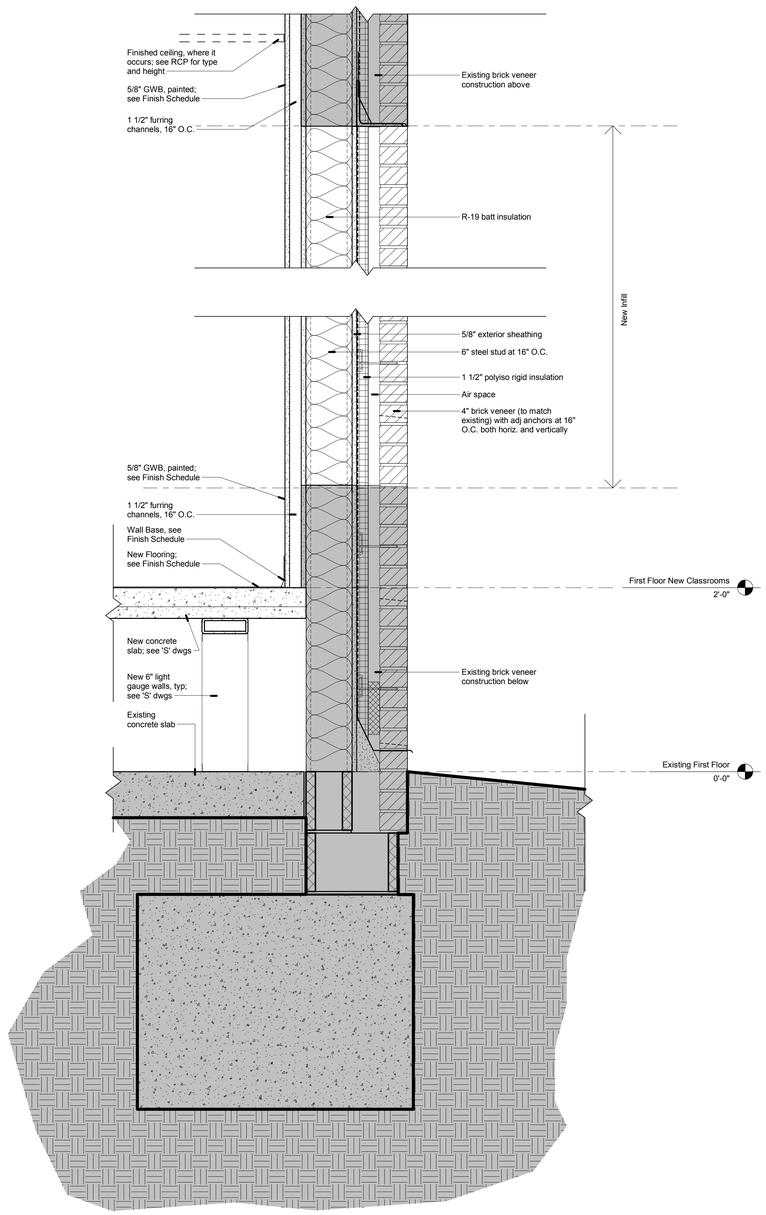
3 Plan Detail - Existing Storefront and New Door

1 1/2" = 1'-0"



2 Section Detail - New Brick Infill

1 1/2" = 1'-0"



4 Section Detail - New Brick Infill 2

1 1/2" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Exterior Details

PROJECT NUMBER 17.177

DRAWN BY MKSD

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

DATE 09.14.2018

DRAWING NUMBER

A630

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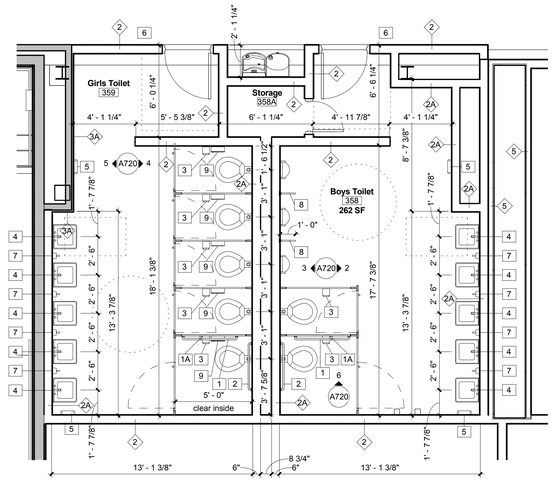
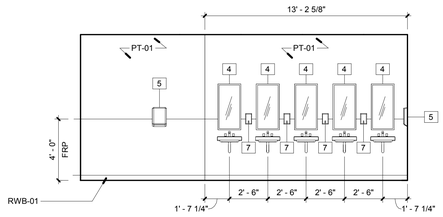
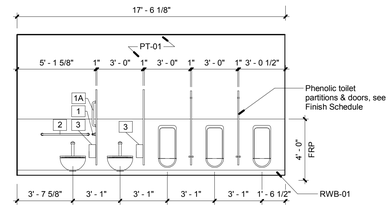


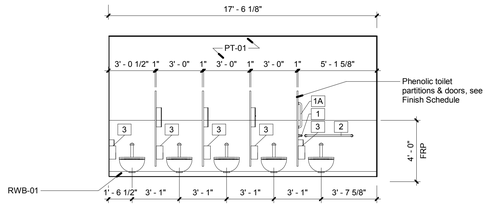
1 Enlarged Plan - Toilet Rooms 358 & 359
1/4" = 1'-0"



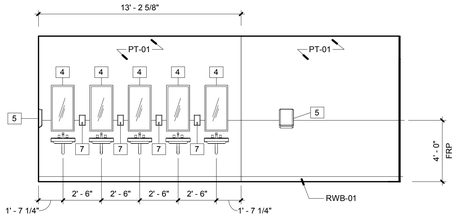
2 358 TR - East
1/4" = 1'-0"



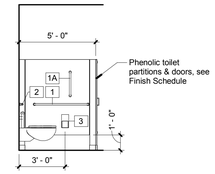
3 358 TR - West
1/4" = 1'-0"



4 359 TR - East
1/4" = 1'-0"



5 359 TR - West
1/4" = 1'-0"



6 HC Stall Elevation
1/4" = 1'-0"

TOILET ROOM ACCESSORY SCHEDULE

ITEM #	DESCRIPTION	BASIS-OF-DESIGN
1	GRAB BAR, 42"	BOBRICK B-6806
1A	VERTICAL GRAB BAR, 18"	BOBRICK B-6806
2	GRAB BAR, 36"	BOBRICK B-6806
3	TOILET TISSUE HOLDER - FURNISHED BY OWNER, INSTALLED BY GC	
4	MIRROR 24"x36"	BOBRICK CHANNEL FRAME MIRROR MODEL B-165 2436
5	PAPER TOWEL CABINET - FURNISHED BY OWNER, INSTALLED BY GC	
6	H.C. TOILET SIGN	
7	SOAP DISPENSER - FURNISHED BY OWNER, INSTALLED BY GC	
8	URINAL SCREEN	
9	SANITARY NAPKIN DISPOSAL - FURNISHED BY OWNER, INSTALLED BY GC	

NOTES

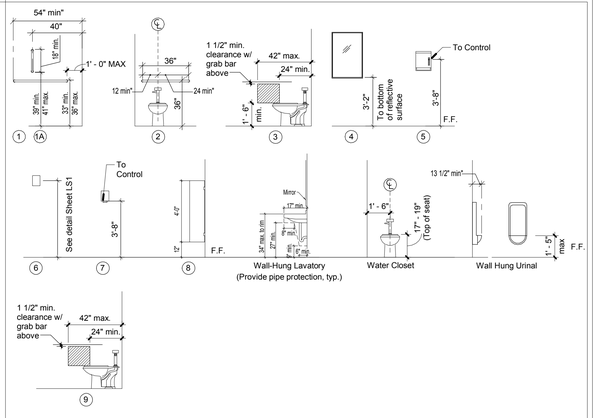
1. ALL ACCESSORIES, MOUNTING / FASTENING AND REQUIRED BLOCKING TO MEET ALL UFAS AND ADA REGULATIONS.

2. ANY ACCESSORIES NOT SHOWN OR SCEDULED ARE PROVIDED BY OWNER, INSTALLED BY CONTRACTOR.

3. PROVIDE ANY BLOCKING AS REQUIRED BY FIXTURE INSTALLATION.

4. PROVIDE PIPE COVERING TYPICAL FOR ALL H.C.P. SINK, SUPPLIED AND INSTALLED BY PLUMBING CONTRACTOR.

MOUNTING HEIGHTS



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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Enlarged Toilet Room Plans & Elevations

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE 1/4" = 1'-0"

DATE 09.14.2018

DRAWING NUMBER

A720

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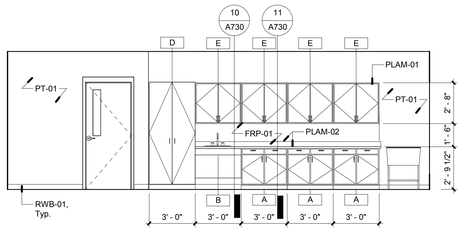
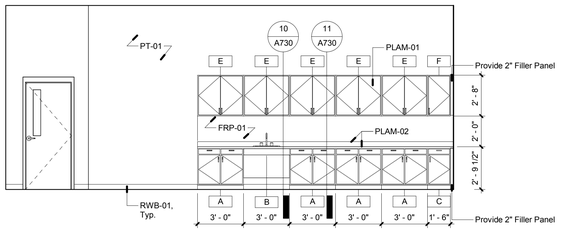
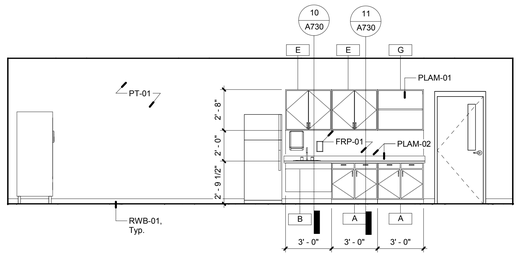


1 Elevation - Art Classroom 329 Casework
1/4" = 1'-0"

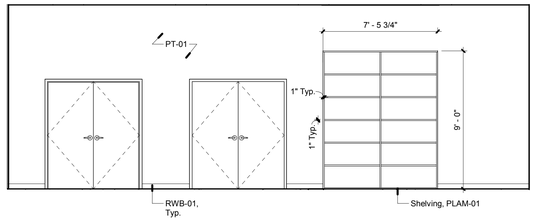


2 Elevation - STEM 327 Casework
1/4" = 1'-0"

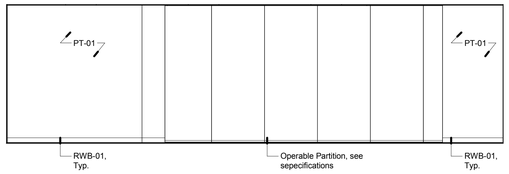


3 Elevation - Faculty Lounge 324
1/4" = 1'-0"

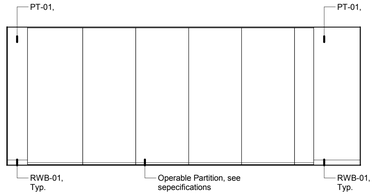
CASEWORK SCHEDULE				
Type	Width	Height	Depth	Model Number
A	36"	33.5"	24"	B006
B	36"	33.5"	24"	B011
C	18"	33.5"	24"	B008
D	36"	84"	24"	T001
E	36"	32"	14"	W001
F	18"	32"	14"	W007
G	36"	32"	14"	W001 (open shelves)
BASIS OF DESIGN MANUFACTURER: AMERICASE				



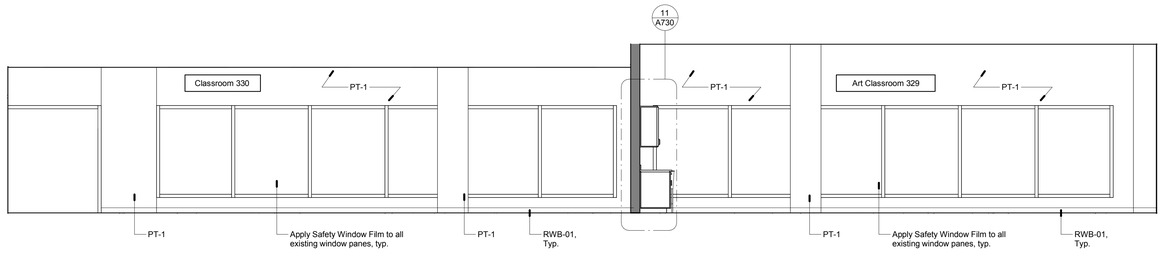
4 Elevation - Music Classroom 323 - Shelving
1/4" = 1'-0"



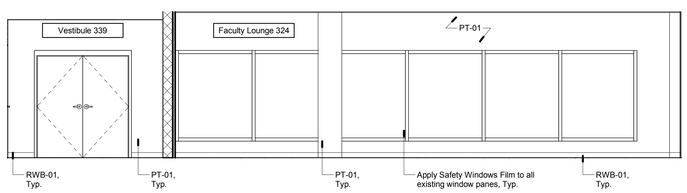
5 Elevation - Classroom 347 Operable Partition
1/4" = 1'-0"



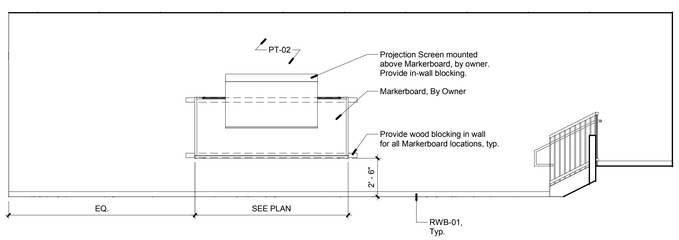
6 Elevation - Classroom 350 Operable Partition
1/4" = 1'-0"



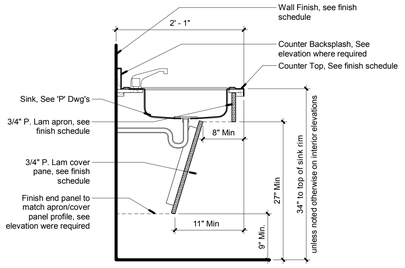
7 Elevation - Existing Classroom Windows - East
1/4" = 1'-0"



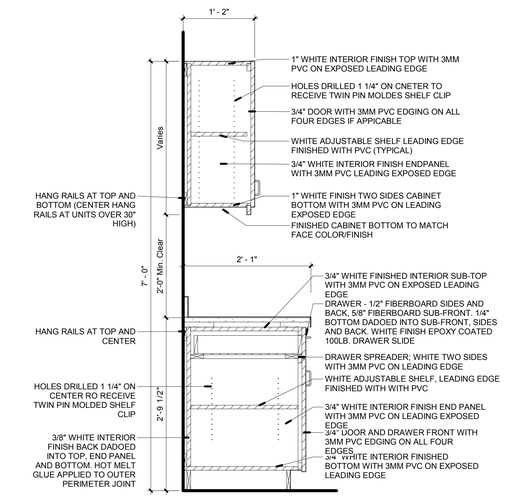
8 Elevation - Existing Faculty Windows - South
1/4" = 1'-0"



9 Elevation - Music Classrooom 323/ Typ. Markerboard
1/4" = 1'-0"



10 Millwork Section - Sink Counter
1" = 1'-0"



11 Casework Section - Typ. Casework
1" = 1'-0"

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Interior Elevations and Details

PROJECT NUMBER
17.177

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MKSD

SCALE
As indicated

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09.14.2018

DRAWING NUMBER
A730

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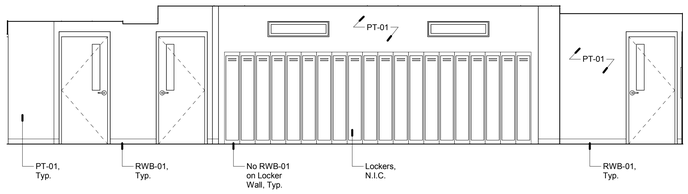
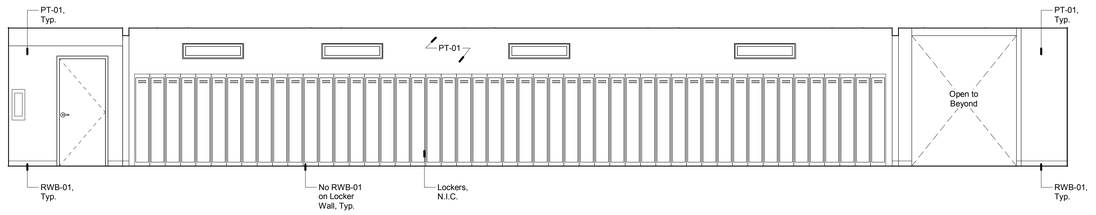
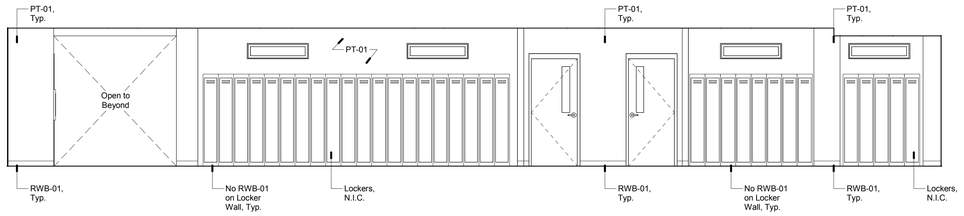


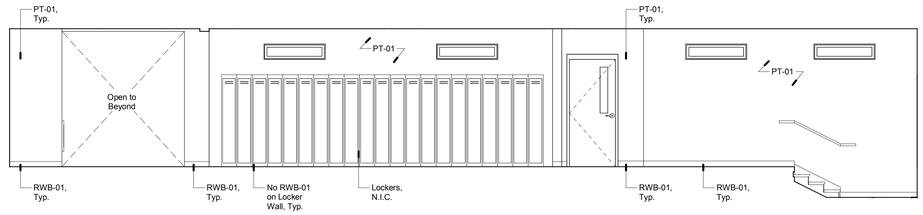
1 Elevation - Lower Level Corridor V
1/4" = 1'-0"



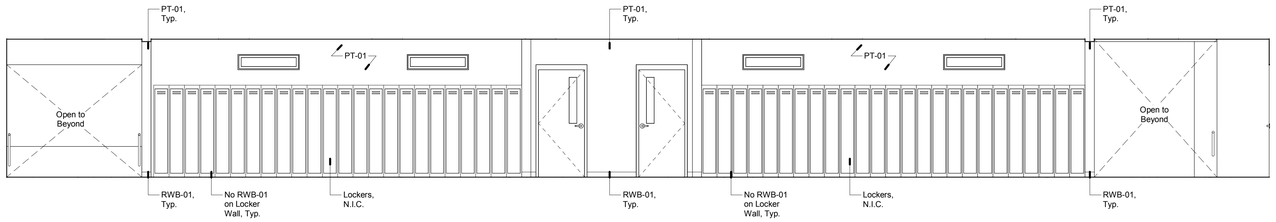
2 Elevation - Lower Level Corridor X
1/4" = 1'-0"



3 Elevation - Lower Level Corridor Y
1/4" = 1'-0"



4 Elevation - First Floor Corridor V
1/4" = 1'-0"



5 Elevation - First Floor - Corridor W
1/4" = 1'-0"

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SEAL

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515 James Hance Court, Exton, PA 19341

REVISIONS

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No.	Date	Description

DRAWING TITLE
Interior Elevations and Details

PROJECT NUMBER
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SCALE
1/4" = 1'-0"

DATE
09.14.2018

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A731

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MECHANICAL LEGEND, ABBREVIATIONS & SYMBOLS

ABBREVIATIONS:

AV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFMS	AIRFLOW MEASURING STATION
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
B	BOILER
BC	BLOWER COIL
BDD	BACKDRAFT DAMPER
BFW	BOILERFEED WATER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTUH	BRITISH TERMAL UNIT PER HOUR
CA	COMPRESSED AIR
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
COND	CODENSATE
CONV	CONVECTOR
CP	CONDENSATE PUMP
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CW	COLD WATER (DOMESTIC)
CR	CONDENSER WATER RETURN
CS	CONDENSER WATER SUPPLY
D	DIFFUSER
DB	DRY BULB TEMPERATURE
DC	DUCT COIL
DIA	DIAMETER
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DR	DRAIN
DSA	DUCT SOUND ATTENUATOR
DTR	DUAL TEMPERATURE RETURN
DTS	DUAL TEMPERATURE SUPPLY
EX	EXISTING
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
F	FAN
F & T	FLOAT AND THERMOSTATIC
FCU	FAN COIL UNIT
FCV	FLOW CONTROL VALVE
FD	FLOOR DRAIN OR FIRE DAMPER
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
F/SD	COMBINATION FIRE/SMOKE DAMPER
FT	FEET
FTR	FINNED TUBE RADIATION
GPM	GALLONS PER MINUTE
H	HUMIDISTAT
HC	HEATING COIL
HD	HEAD
HW	HOT WATER (DOMESTIC)
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HP	HORSEPOWER
HPRC	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HR	HEAT RECOVERY
HRC	HEAT RECOVERY COIL
HX	HEAT EXCHANGER
HZ	HERTZ
H2O	WATER
ID	INSIDE DIAMETER
IN	INCHES
KVA	KILO-VOLT-AMPERES
KW	KILOWATTS
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LPCR	LOW PRESSURE CONDENSATE RETURN
LPG	LIQUIFIED PETROLEUM GAS
LPS	LOW PRESSURE STEAM SUPPLY
LWT	LEAVING WATER TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1000 BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPERES
MIN	MINIMUM
MPCR	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MU	MAKE-UP WATER
NC	NORMALLY CLOSED
NEG	NEGATIVE
NG	NATURAL GAS
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OED	OPEN END DUCT
P	PUMP
PC	PUMPED CONDENSATE RETURN
PH	PHASE PRESS PRESSURE
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAUGE
PTAC	PACKAGED TERMINAL AIR CONDITIONING
RAF	RETURN AIR FAN
RCP	RADIANT CEILING PANEL
RF	RELIEF FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
RV	REFRIGERANT VENT
SAF	SUPPLY AIR FAN
SD	SMOKE DAMPER
SG	SUPPLY GRILLE
SP	STATIC PRESSURE
SR	SUPPLY REGISTER
SRV	SAFETY RELIEF VALVE
SS	SPLIT SYSTEM
ST	STEAM TRAP
STM	STEAM
T	THERMOSTAT
TA	TRANSFER AIR
TAB	TERMINAL AIR BOX
TEMP	TEMPERATURE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
UV	UNIT VENTILATOR
V	VOLTS
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VP	VELOCITY PRESSURE
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WG	WATER GAUGE
WT	WEIGHT

DUCTWORK IDENTIFICATION:

- SUPPLY AIR DUCT (RECTANGULAR OR SQUARE)
- RETURN AIR DUCT (RECTANGULAR OR SQUARE)
- EXHAUST AIR DUCT (RECTANGULAR OR SQUARE)
- OUTSIDE AIR DUCT (RECTANGULAR OR SQUARE)
- SUPPLY AIR DUCT (ROUND)
- RETURN AIR DUCT (ROUND)
- EXHAUST AIR DUCT (ROUND)
- OUTSIDE AIR DUCT (ROUND)
- SUPPLY AIR DUCT (FLAT OVAL)
- SUPPLY OR OUTSIDE AIR DUCT UP (RECTANGULAR OR SQUARE)
- RETURN OR EXHAUST AIR DUCT UP (RECTANGULAR OR SQUARE)
- SUPPLY AIR DUCT UP (FLAT OVAL)
- SUPPLY OR OUTSIDE AIR DUCT UP (ROUND)
- RETURN OR EXHAUST AIR DUCT UP (ROUND)
- SUPPLY OR OUTSIDE AIR DUCT DOWN (RECTANGULAR OR SQUARE)
- RETURN OR EXHAUST AIR DUCT DOWN (RECTANGULAR OR SQUARE)
- SUPPLY AIR DUCT DOWN (FLAT OVAL)
- SUPPLY OR OUTSIDE AIR DUCT DOWN (ROUND)
- RETURN OR EXHAUST AIR DUCT DOWN (ROUND)
- END OF DUCT (CAPPED)
- ROUND SUPPLY AIR DIFFUSER OFF BOTTOM OF DUCT
- SIDEWALL SUPPLY AIR GRILLE OR REGISTER
- SQUARE OR RECTANGULAR RETURN OR EXHAUST GRILLE OR REGISTER OFF BOTTOM OF DUCT
- SIDEWALL RETURN OR EXHAUST AIR GRILLE OR REGISTER
- 90° ELBOW WITH TURNING VANES
- 90° ELBOW WITHOUT TURNING VANES
- 90° RADIUS ELBOW
- ECCENTRIC TRANSITION
- CONCENTRIC TRANSITION
- MANUAL VOLUME DAMPER
- RECTANGULAR BRANCH TAKE-OFF
- ROUND BRANCH TAKE-OFF
- DUCT MOUNTED HEATING COIL
- FLEXIBLE CONNECTION
- FLEXIBLE DUCT
- RISE IN DUCT
- DROP IN DUCT
- DUCT WITH INTERNAL LINING
- DUCT WITH ACCESS DOOR

- SUPPLY AIR CEILING DIFFUSER
- LINEAR SUPPLY AIR DIFFUSER
- THERMOSTAT (MOUNT 44" AFF TO CENTER)
- HUMIDISTAT (MOUNT 44" AFF TO CENTER)
- OCCUPANCY SENSOR
- AIRFLOW MEASURING STATION
- DUCT MOUNTED HUMIDIFIER
- FIRE DAMPER (VERTICAL)
- FIRE DAMPER (HORIZONTAL)
- BACKDRAFT DAMPER
- FLOW SWITCH
- MOTOR OPERATED DAMPER
- DUCT MOUNTED SMOKE DETECTOR
- STATIC PRESSURE SENSOR

PIPING IDENTIFICATION:

- BFW — BOILER FEED WATER
- CHWS — CHILLED WATER SUPPLY
- CHWR — CHILLED WATER RETURN
- CS — CONDENSER WATER SUPPLY
- CR — CONDENER WATER RETURN
- DTS — DUAL TEMPERATURE WATER SUPPLY
- DTR — DUAL TEMPERATURE WATER RETURN
- FOS — FUEL OIL SUPPLY
- FOR — FUEL OIL RETURN
- FOV — FUEL OIL VENT
- NG — NATURAL GAS
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN
- LPG — LIQUIFIED PETROLEUM GAS
- RS — REFRIGERANT SUCTION
- RL — REFRIGERANT LIQUID
- HPS — HIGH PRESUURE STEAM SUPPLY
- MPS — MEDIUM PRESSURE STEAM SUPPLY
- LPS — LOW PRESSURE STEAM SUPPLY
- HPCR — HIGH PRESSURE CONDENSATE RETURN
- MPCR — MEDIUM PRESSURE CONDENSATE RETURN
- LPCR — LOW PRESSURE CONDENSATE RETURN
- EX. ( ) — EXISTING PIPING TO REMAIN
- EXISTING PIPING TO BE REMOVED
- SHUTOFF VALVE
- THROTTLING VALVE
- CHECK VALVE
- DRAIN VALVE
- PRESSURE REGULATING VALVE
- PRESSURE REDUCING VALVE
- CALIBRATED BALANCING VALVE
- TWO-WAY CONTROL VALVE
- THREE-WAY CONTROL VALVE
- SAFETY RELIEF VALVE
- BASKET STRAINER
- STRAINER
- PRESSURE GAUGE
- THERMOMETER
- ORIFICE PLATE FLOW MEASURING DEVICE
- VENTURI FLOW MEASURING DEVICE
- UNION
- END CAP
- EXPANSION LOOP
- FLEXIBLE CONNECTION
- PIPE ANCHOR
- 90° ELBOW
- 45° ELBOW
- PIPE ALIGNMENT GUIDE
- PIPE ELBOW UP
- PIPE ELBOW DOWN
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- STEAM TRAP
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER (ON TOP)
- ECCENTRIC REDUCER (ON BOTTOM)
- FLOW SWITCH
- TEMPERATURE SWITCH
- HEAT TRACING ON PIPING
- PUMP
- THERMOMETER WELL

ANNOTATION IDENTIFICATION:

- REVISION AREA
- REVISION NUMBER
- KEYED NOTE
- DEMOLITION KEYED NOTE
- POINT OF CONNECTION TO EXISTING
- POINT OF DEMOLITION
- DETAIL NUMBER / DRAWING NUMBER
- EQUIPMENT ABBREVIATION / EQUIPMENT NUMBER
- SECTION LETTER / DRAWING NUMBER

GENERAL NOTES (APPLIES TO ALL MECHANICAL DRAWINGS):

1. THE GENERAL NOTES BELOW APPLY TO ALL MECHANICAL DRAWINGS
2. NOT ALL SYMBOLS AND ABBREVIATIONS LISTED ON THIS SHEET MAY APPLY TO THIS PROJECT.
3. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY OFFSETS, TRANSITIONS, AND OTHER APPURTENANCES IN THE DUCTWORK AND PIPING SYSTEMS AS REQUIRED TO AVOID INTERFERENCES AND CONFLICTS AT NO ADDITIONAL COST TO THE PROJECT.
4. THE CONTRACTOR SHALL VERIFY ALL CONNECTIONS WITH THE EQUIPMENT MANUFACTURER'S CERTIFIED DRAWINGS AND MAKE THE NECESSARY TRANSITIONS OR OFFSETS REQUIRED TO MAKE THE FINAL CONNECTION. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION.
5. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL GRILLES, REGISTERS, AND DIFFUSERS WITH THE REFLECTED CEILING PLANS PRIOR TO INSTALLATION. SPACE SYMMETRY SHALL BE PROVIDED BASED ON THE FINAL SPACE LIGHTING LAYOUT.
6. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE GRILLE, REGISTER, AND DIFFUSER MOUNTING FRAME TYPE WITH THE REFLECTED CEILING PLANS PRIOR TO INSTALLATION. CONTRACTOR SHALL MATCH THE FRAME TYPE WITH THE CEILING CONFIGURATION.
7. THE FINAL ROUTING AND ELEVATIONS OF ALL DUCTWORK AND PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO FABRICATION AND INSTALLATION.
8. ALL DUCTWORK AND PIPING SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE UNDERSIDE OF BEAMS AND JOISTS.
9. PROVIDE ACCESS DOORS OR PANELS FOR DUCT MOUNTED FIRE, SMOKE, COMBINATION FIRE/SMOKE DAMPERS, AND DUCT MOUNTED SMOKE DETECTORS.
10. PROVIDE ACCESS DOORS OR PANELS IN ALL WALLS AND ACCESSIBLE CEILINGS TO SERVICE TO ANY DUCT MOUNTED FIRE OR SMOKE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, VALVES, AND OTHER CONCEALED EQUIPMENT REQUIRING PERIODIC MAINTENANCE.
11. THE DUCTWORK AND PIPING PLANS ARE DRAWN AT A SMALL SCALE AND THE FITTINGS ARE INDICATED SYMBOLLICALLY. REFER TO DETAILS FOR THE CONFIGURATION OF FITTINGS, TAPS, AND CONNECTIONS. DUCT CONSTRUCTION SHALL COMPLY WITH SMACNA CONSTRUCTION STANDARDS. ALL 90° ELBOWS SHALL BE LONG RADIUS TYPE UNLESS SPACE IS LIMITED. ALL SQUARE OR RECTANGULAR ELBOWS IN SUPPLY AIR DUCTWORK SHALL HAVE TURNING VANES.
12. PROVIDE FLEXIBLE CONNECTIONS BETWEEN THE DUCTWORK AND ALL FANS OR AIR HANDLING EQUIPMENT.
13. FLEXIBLE DUCTWORK SHALL NOT BE USED IN RETURN OR EXHAUST AIR DUCT SYSTEMS. WHERE USED IN SUPPLY AIR SYSTEMS, LIMIT TO A MAXIMUM LENGTH OF FIVE (5) FEET.
14. ALL DUCTWORK SIZES INDICATED ON THE PLANS ARE CLEAR INSIDE DIMENSIONS.
15. FIRE SAFE PIPE AND DUCTWORK PENETRATIONS AT ALL FIRE AND SMOKE RESISTIVE CONSTRUCTION.
16. UNLESS OTHERWISE NOTED, MOUNT ALL THERMOSTATS AT 48" ABOVE FINISHED FLOOR.
17. INSTALL ALL ROOFTOP EQUIPMENT REQUIRING PERIODIC MAINTENANCE A MINIMUM OF TEN (10) FEET FROM THE ROOF EDGE WITHOUT A PROTECTIVE HANDRAIL OR 42" HIGH PARAPET.
18. ALL DUCT SYSTEMS SHALL BE BALANCED TO THE AIR QUANTITIES INDICATED ON THE PLANS. ALL FANS SHALL BE TESTED IN THE FIELD TO PROVE THAT THEY ARE IN COMPLIANCE WITH THE SCHEDULED FAN PERFORMANCE AND SCHEDULED AIRFLOW AT THE TOTAL DESIGN STATIC PRESSURE.
19. PROVIDE VOLUME BALANCING DAMPERS AT ALL BRANCH DUCT TAKE-OFFS, AT EACH TERMINAL DEVICE, AND WHERE INDICATED ON THE PLANS.

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Mechanical Legend, Abbreviations & Symbols

PROJECT NUMBER 17.177

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SCALE As indicated

DATE 09.14.2018

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M000

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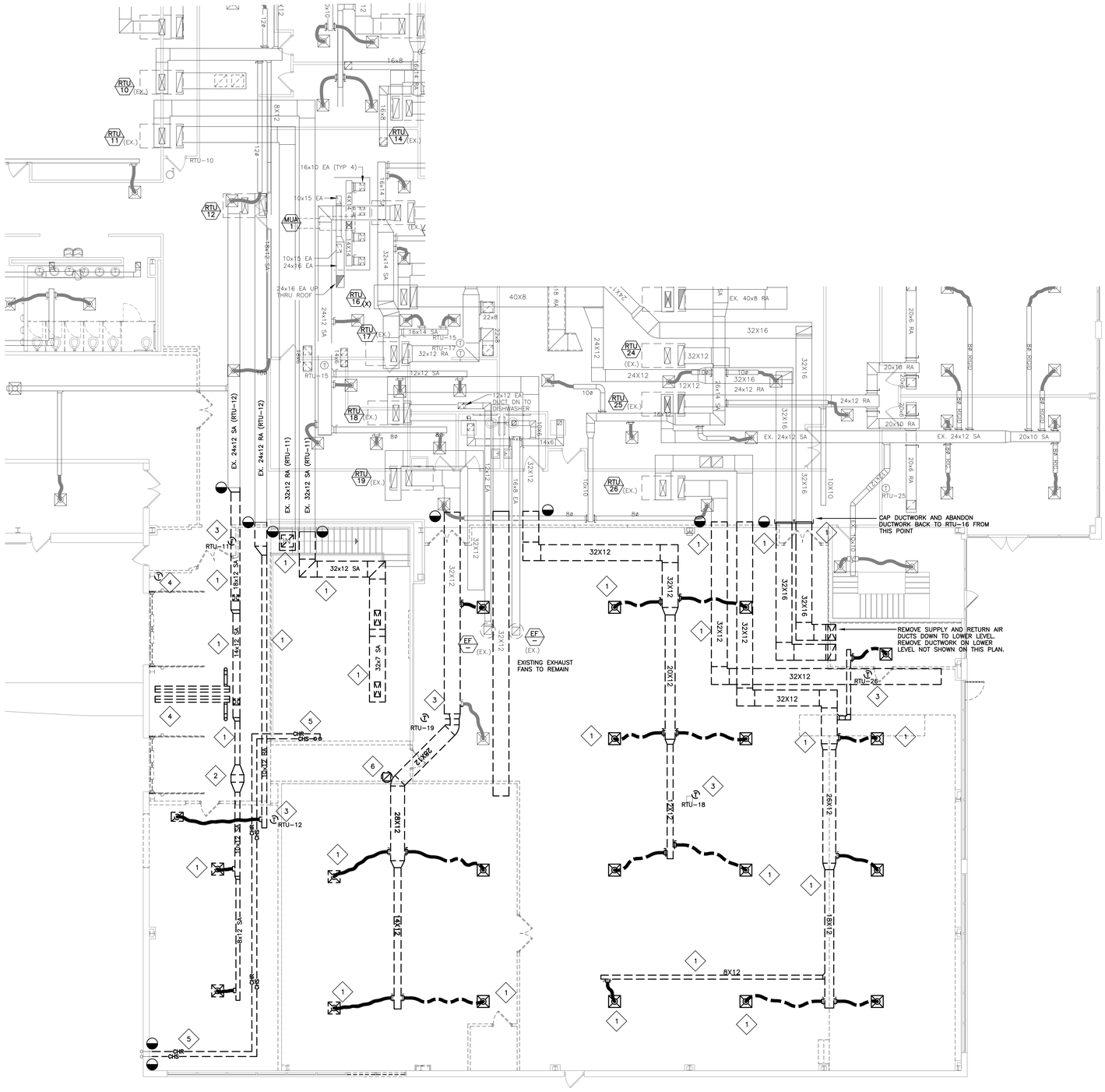
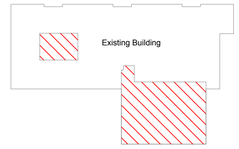


PARTIAL FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA A

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



Key Plan

KEYED DEMOLITION NOTES:

1. REMOVE EXISTING SUPPLY, RETURN, EXHAUST, OR TRANSFER AIR DUCTWORK IN ITS ENTIRETY INCLUDING ALL SUPPORTS, HANGERS, GRILLES, REGISTERS, DIFFUSERS, AND ALL OTHER APPURTENANCES.
2. REMOVE EXISTING IN-LINE FILTER MODULE IN ITS ENTIRETY INCLUDING ALL SUPPORTS, HANGERS, SUPPLY AIR DUCTWORK AND ALL OTHER APPURTENANCES.
3. REMOVE AND RELOCATE EXISTING WALL MOUNTED THERMOSTAT IN ITS ENTIRETY INCLUDING ALL CONTROL WIRING. PATCH EXISTING WALL FINISHES AS REQUIRED TO MATCH NEW OR EXISTING CONDITIONS. REFER TO NEW WORK PLAN FOR NEW THERMOSTAT LOCATION.
4. REMOVE EXISTING GAS-FIRED HEATING UNIT IN ITS ENTIRETY INCLUDING ALL SUPPORTS, HANGERS, THERMOSTAT, AND FLUE UP THRU ROOF. PATCH ROOF TO MATCH EXISTING. ALL ROOF PATCHING MUST BE ACCOMPLISHED IN A MANNER TO NOT VOID MANUFACTURER'S WARRANTY.
5. REMOVE ALL EXISTING ABANDONED-IN-PLACE PIPING, AND ALL ASSOCIATED FITTINGS, CONNECTIONS, SUPPORTS AND APPURTENANCES.
6. REMOVE EXISTING EXHAUST FAN ON ROOF ABOVE AND ALL ASSOCIATED EXHAUST AIR DUCTWORK DUCT. PATCH ROOD OPENING.

ALL AUTOMATIC TEMPERATURE CONTROL WORK SHALL BE FURNISHED AND INSTALLED BY THE OWNER. ANY TEMPERATURE CONTROLS WORK SHOWN ON THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY.

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Partial First Floor Mechanical Demolition Plan - Area A

PROJECT NUMBER 17.177

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M101A

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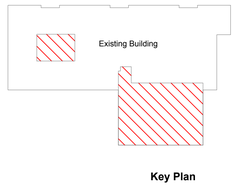
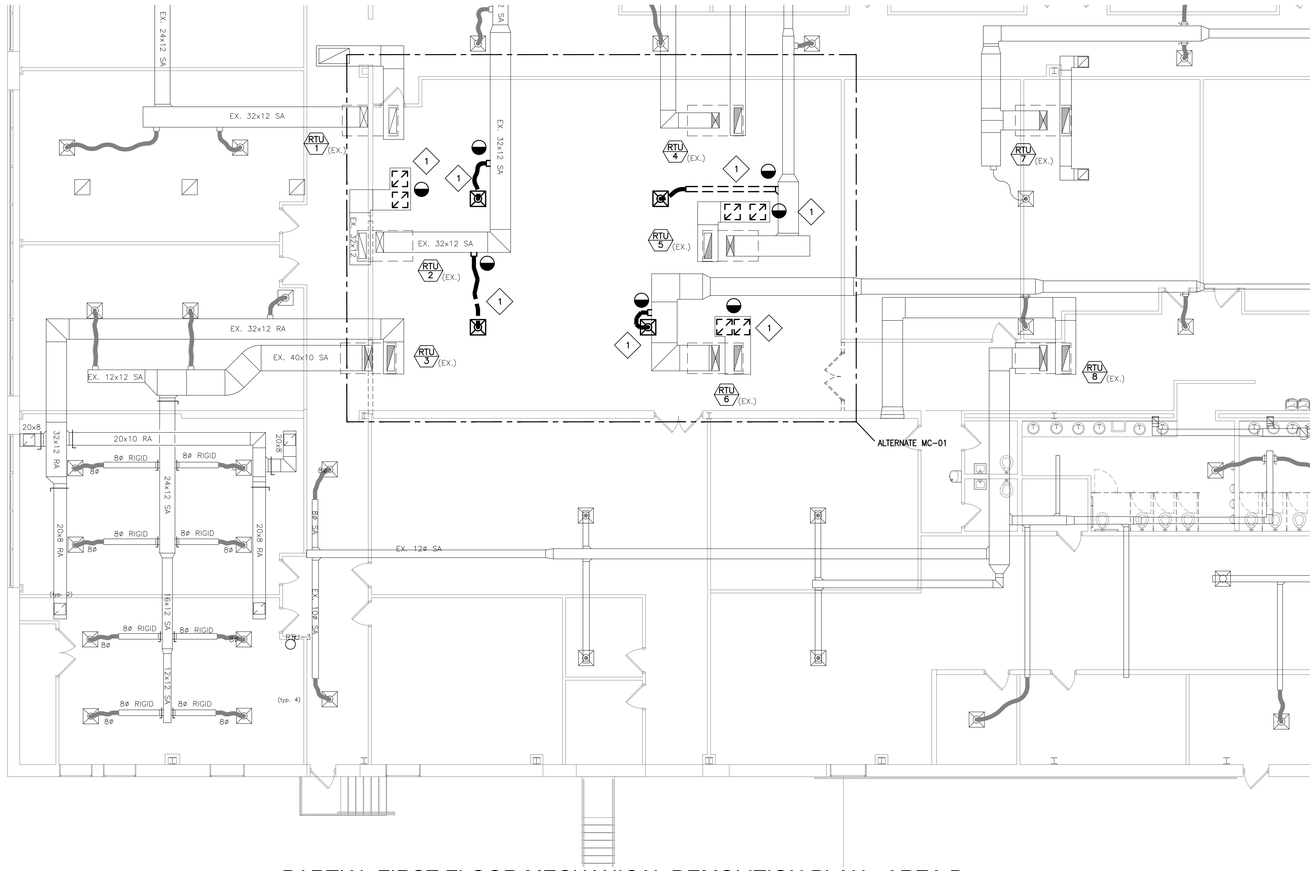


Key Plan



PARTIAL FIRST FLOOR MECHANICAL DEMOLITION PLAN - AREA B

SCALE: 3/32" = 1'-0"

KEYED DEMOLITION NOTES:

1. REMOVE EXISTING SUPPLY, RETURN, EXHAUST, OR TRANSFER AIR DUCTWORK IN ITS ENTIRETY INCLUDING ALL SUPPORTS, HANGERS, GRILLES, REGISTERS, DIFFUSERS, AND ALL OTHER APPURTENANCES.
2. REMOVE EXISTING RETURN AIR GRILLES AND PROVIDE WORE MESH SCREEN OVER EXISTING OPENINGS.

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

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Partial First Floor Mechanical Demolition Plan

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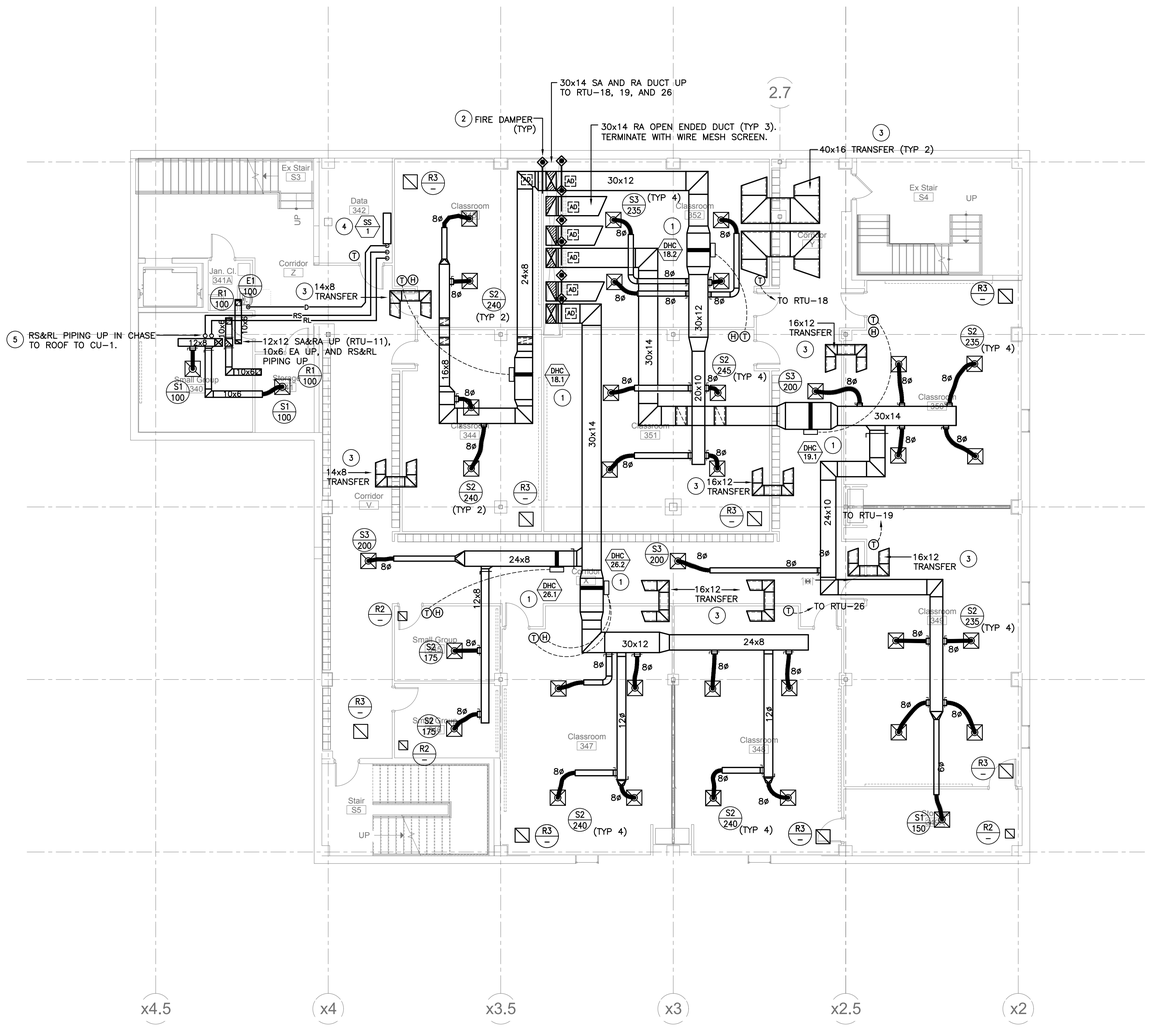

BASEMENT MECHANICAL NEW WORK PLAN

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

KEYED NEW WORK NOTES:

1. FURNISH AND INSTALL ELECTRIC DUCT COIL AS SCHEDULED. LOCATE DUCT COILS TO MAINTAIN 3'-0" CLEARANCE IN FRONT OF COIL CONTROL PANELS.
2. FURNISH AND INSTALL FIRE DAMPER AT SHAFT WALL PENETRATION. FURNISH AND INSTALL DUCT ACCESS DOORS FOR FIRE DAMPER ACCESS.
3. FURNISH AND INSTALL 1" LINED TRANSFER DUCT ABOVE CEILING AS INDICATED. TRANSFER DUCT SIZE INDICATED SHALL BE CLEAR AIRFLOW DIMENSIONS.
4. FURNISH AND INSTALL SPLIT SYSTEM AIR CONDITIONING SYSTEM AS SCHEDULED AND INDICATED. WALL MOUNT INDOOR UNIT. COORDINATE UNIT LOCATION WITH OTHER TRADES. EXTEND REFRIGERATION PIPING FROM INDOOR UNIT TO OUTDOOR UNIT LOCATED ON ROOF. ALL REFRIGERATION PIPE SIZING, PIPING DETAILS, AND PIPING CONFIGURATION SHALL BE IN STRICT ACCORDANCE WITH THE UNIT MANUFACTURER'S WRITTEN INSTRUCTIONS. FURNISH AND INSTALL WALL MOUNTED THERMOSTAT AND ASSOCIATED CONTROL WIRING. EXTEND 1" DRAIN PIPING FROM UNIT TO JANITOR'S CLOSET MOP SINK FOR INDIRECT WASTE CONNECTION.
5. EXTEND NEW REFRIGERATION LIQUID AND SUCTION PIPING UP IN CHASE TO CONDENSER LOCATED ON ROOF ABOVE. ALL REFRIGERATION PIPE SIZING, PIPING DETAILS, AND PIPING CONFIGURATION SHALL BE IN STRICT ACCORDANCE WITH THE UNIT MANUFACTURER'S WRITTEN INSTRUCTION.

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Basement Mechanical New Work Plan

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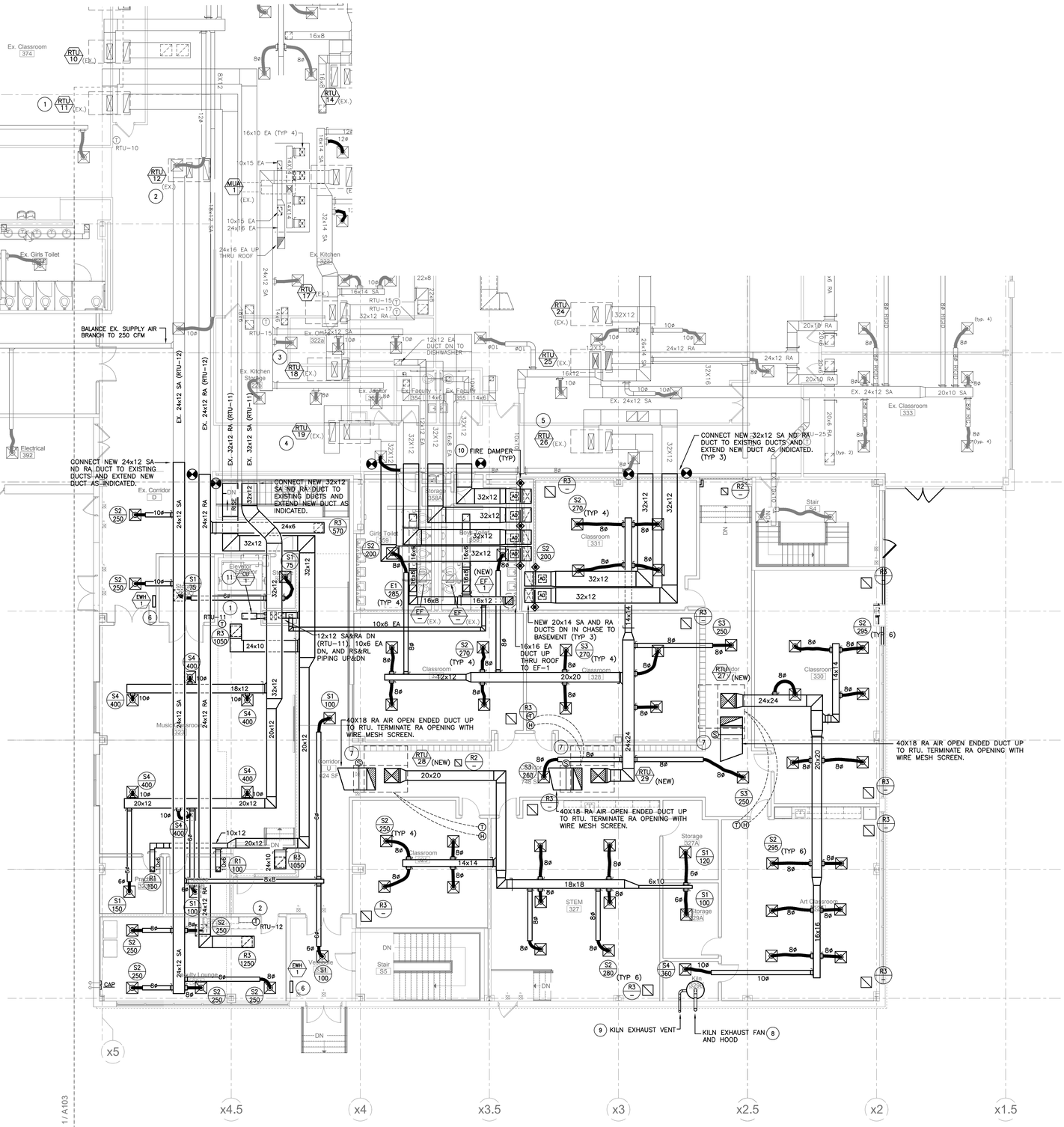
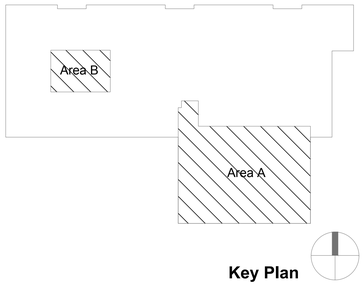


PARTIAL FIRST FLOOR NEW WORK MECHANICAL PLAN - AREA A

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



Key Plan

KEYED MECHANICAL NOTES:

1. EXISTING GAS-FIRED ROOFTOP UNIT RTU-11 TO REMAIN. REBALANCE EXISTING UNIT TO 3100 CFM SUPPLY AIR AND 700 CFM OUTSIDE AIR. RELOCATE EXISTING THERMOSTAT TO NEW LOCATION AS INDICATED.
2. EXISTING GAS-FIRED ROOFTOP UNIT RTU-12 TO REMAIN. REBALANCE EXISTING UNIT TO 2200 CFM SUPPLY AIR AND 220 CFM OUTSIDE AIR. RELOCATE EXISTING THERMOSTAT TO NEW LOCATION AS INDICATED.
3. EXISTING GAS-FIRED ROOFTOP UNIT RTU-18 TO REMAIN. REBALANCE EXISTING UNIT TO 2880 CFM SUPPLY AIR AND 705 CFM OUTSIDE AIR. RELOCATE EXISTING THERMOSTAT TO NEW LOCATION AS INDICATED.
4. EXISTING GAS-FIRED ROOFTOP UNIT RTU-19 TO REMAIN. REBALANCE EXISTING UNIT TO 2430 CFM SUPPLY AIR AND 515 CFM OUTSIDE AIR. RELOCATE EXISTING THERMOSTAT TO NEW LOCATION AS INDICATED.
5. EXISTING GAS-FIRED ROOFTOP UNIT RTU-26 TO REMAIN. REBALANCE EXISTING UNIT TO 2470 CFM SUPPLY AIR AND 660 CFM OUTSIDE AIR. RELOCATE EXISTING THERMOSTAT TO NEW LOCATION AS INDICATED.
6. FURNISH AND INSTALL ELECTRICAL WALL HEATER AS SCHEDULED.
7. INSTALL DUCT MOUNTED SMOKE DETECTOR IN RETURN AIR DUCT. DUCT DETECTOR SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
8. FURNISH AND INSTALL VENT-A-KILN SYSTEM MODEL 1437/500 NEGATIVE PRESSURE VENTILATION SYSTEM WITH 37" DIAMETER SPUN ALUMINUM HOOD, TWO-SPEED MOTOR, 1/8 HP, 115V/1ø, WITH 450 CFM FAN MOUNTED TO WALL WITH SUPPORT BRACKET, 6" DIAMETER FLEXIBLE INLET DUCT, AND ADJUSTABLE OVERHEAD PULLEY AND COUNTERWEIGHT SYSTEM. EXTEND 6" DIAMETER RIGID EXHAUST DUCT FROM FAN UP THRU EXTERIOR WALL. TERMINATE WITH GOOSENECK AND INSECT SCREEN 12'-0" ABOVE GRADE.
9. FURNISH AND INSTALL 3" ALUMINUM VENT DUCT FROM BOTTOM OF KILN VENT CONNECTION TO EXTERIOR WALL. TERMINATE WITH GOOSENECK AND INSECT SCREEN 12'-0" ABOVE GRADE.
10. FURNISH AND INSTALL FIRE DAMPER AT SHAFT WALL PENETRATION. FURNISH AND INSTALL DUCT ACCESS DOORS FOR FIRE DAMPER ACCESS.
11. DX-REFRIGERATION PIPING FROM INDOOR UNIT ON FLOOR BELOW TO OUTDOOR UNIT LOCATED ON ROOF ABOVE. ALL REFRIGERATION PIPE SIZING, PIPING DETAILS, AND PIPING CONFIGURATION SHALL BE IN STRICT ACCORDANCE WITH THE UNIT MANUFACTURER'S WRITTEN INSTRUCTIONS. FURNISH AND INSTALL "PATE" EQUIPMENT RAIL FOR MOUNTING CONDENSER AND PIPE CURB FOR REFRIGERATION PIPING AND ELECTRICAL CONDUIT THRU ROOF. PIPE RAILS AND CURBS SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. CUT, SET AND FLASH CURB INTO EXISTING ROOFING. COORDINATE ALL ROOFING WORK WITH EXISTING ROOFING WARRANTY SUCH THAT ALL WORK IS IN ACCORDANCE WITH THE ROOF WARRANTY. COORDINATE ELECTRICAL CONDUIT REQUIREMENTS FOR PIPE CURB WITH THE ELECTRICAL CONTRACTOR.

ALL AUTOMATIC TEMPERATURE CONTROL WORK SHALL BE FURNISHED AND INSTALLED BY THE OWNER. ANY TEMPERATURE CONTROLS WORK SHOWN ON THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY.

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Partial First Floor New Work Mechanical Plan - Area A

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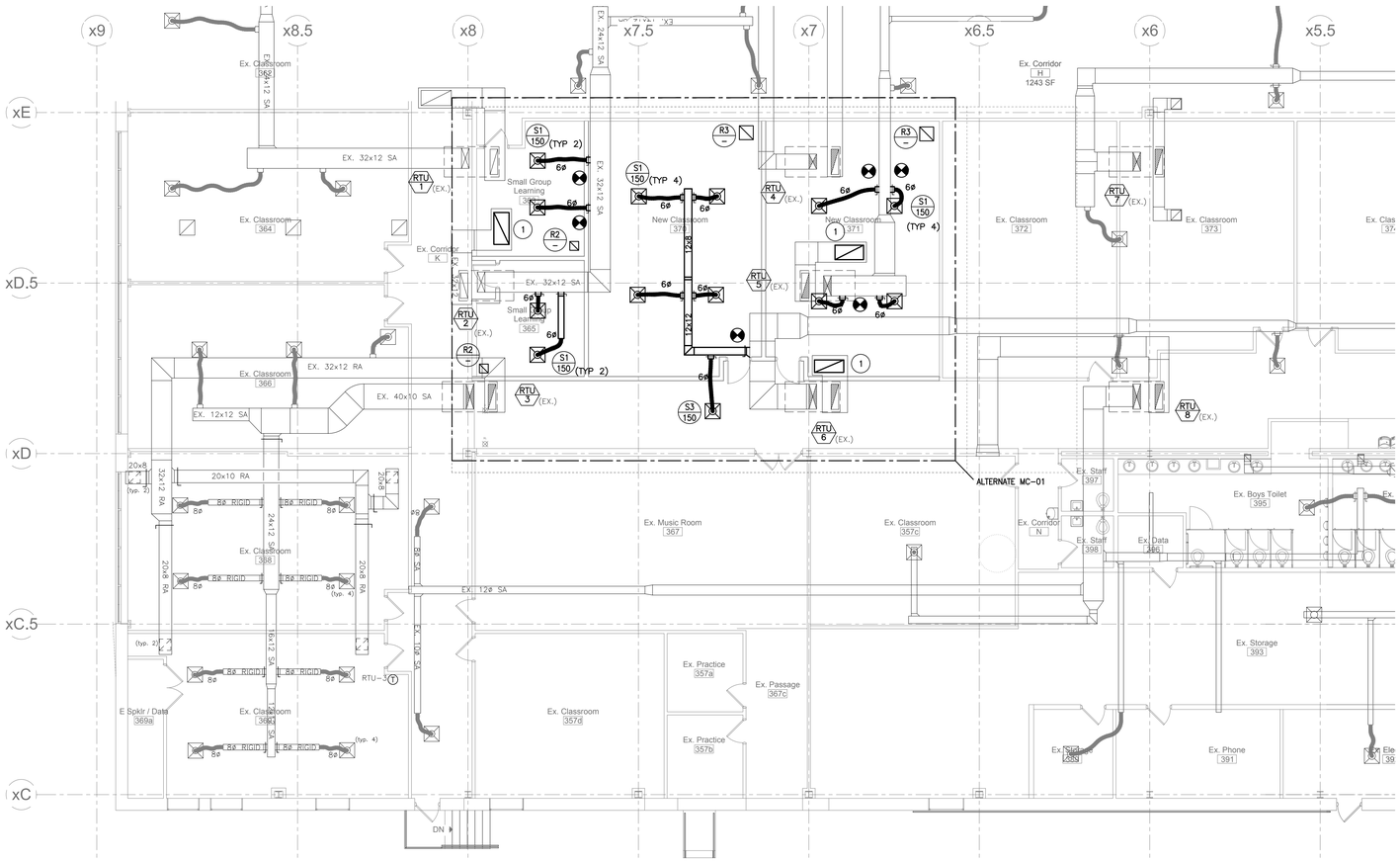
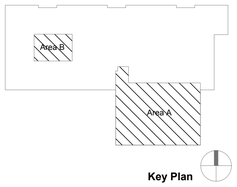


PARTIAL FIRST FLOOR NEW WORK MECHANICAL PLAN - AREA B

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

KEYED MECHANICAL NOTES:

1. PROVIDE WIRE MESH SCREEN OVER EXISTING RETRN AIR OPENING WHERE RETURN AIR GRILLES ARE TO BE REMOVED.



Key Plan

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POINTS LIST

SYSTEM: NEW ROOFTOP UNITS, EXISTING ROOFTOP UNITS, AND DUCT HEATING COILS

GRAPHIC DISPLAY

POINT DESCRIPTION	CONTROL RELAY	SOLENOID	HAND/OFF/AUTO	OFF/AUTO	DAMPER CONTROL	CONTROL SET POINT ADJUSTMENT	COIL(S) CONTROL	POSITION ADJUSTMENT	TEMPERATURE (DEGREES °F)	PRESSURE	DIFFERENTIAL PRESSURE SWITCH	DIFF. PRESSURE FLOW SWITCH	AUXILIARY CONTACT	PULSE	SWITCH STATUS	CURRENT SENSING RELAY	TEMPERATURE (DEGREES °F)	RELATIVE HUMIDITY (PERCENT)	STATIC PRESSURE PSIG, PSIA, PSID	CARBON DIOXIDE LEVEL	FLOW	DIFFERENTIAL PRESSURE
	HARDWARE																					
	OUTPUT									INPUT												
	DIGITAL				ANALOG					DIGITAL							ANALOG					
EXISTING ROOFTOP UNIT																						
ROOFTOP UNIT START/STOP	X																					
ROOFTOP UNIT ALARM CONDITION													X									
SMOKE ALARM STATUS													X									
ROOFTOP UNIT ZONE TEMPERATURE																	X					
ELECTRIC DUCT COIL CONTROL						X																
SPACE AIR TEMPERATURE																	X					
SPACE RELATIVE HUMIDITY																		X				
EXISTING ROOFTOP UNIT																						
ROOFTOP UNIT START/STOP	X																					
ROOFTOP UNIT ALARM CONDITION													X									
SMOKE ALARM STATUS													X									
ROOFTOP UNIT ZONE TEMPERATURE																	X					
SPACE RELATIVE HUMIDITY																		X				
EXHAUST FAN																						
EXHAUST FAN STATUS																X						
EXHAUST FAN START/STOP			X																			

POINT DESCRIPTION	CONTACT CLOSURE	HIGH LIMIT	LOW LIMIT	CURRENT RELAY	HIGH LIMIT	LOW LIMIT	RUN TIME	LOW LEVEL		SCHEDULE START/STOP	OPTIMUM START/STOP	DUTY CYCLING	DEMAND LIMITING	DAY/NIGHT SETBACK	ECONOMIZER CYCLE	VENTILATION/RECIRCULATION	HOT WATER BOILER SELECTION	HOT WATER OUTSIDE AIR RESET	CHILLED WATER RESET		LIGHTING CONTROL	RESET	FAILURE MODE **	
	HARDWARE									SOFTWARE														
	ALARMS									APPLICATIONS PROGRAMS														
	DIGITAL				ANALOG																			
EXISTING ROOFTOP UNIT																								
ROOFTOP UNIT START/STOP																								
ROOFTOP UNIT ALARM CONDITION																								
SMOKE ALARM STATUS																								
ROOFTOP UNIT ZONE TEMPERATURE																								
ELECTRIC DUCT COIL CONTROL																								
SPACE AIR TEMPERATURE																								
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SMOKE ALARM STATUS																								
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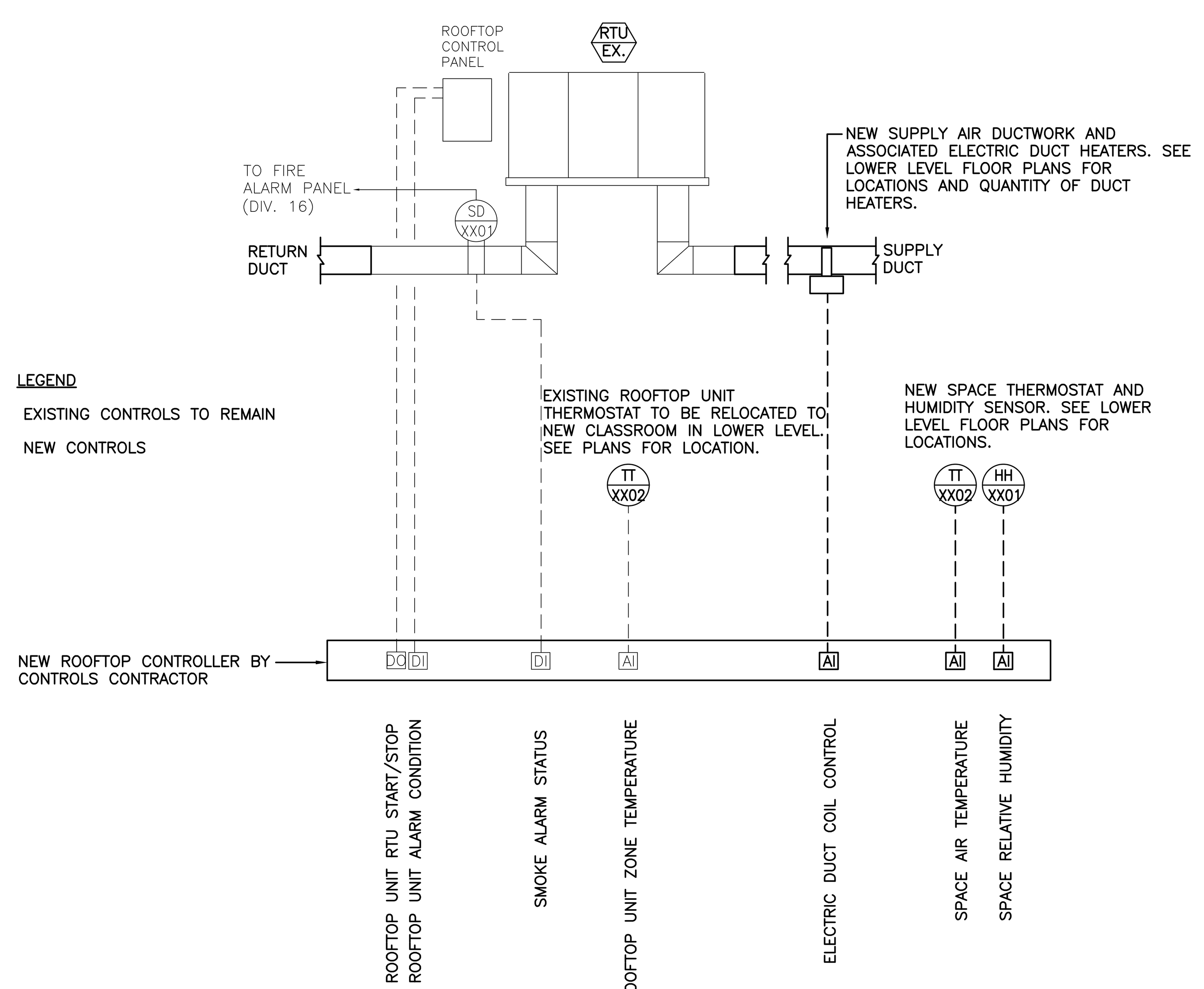
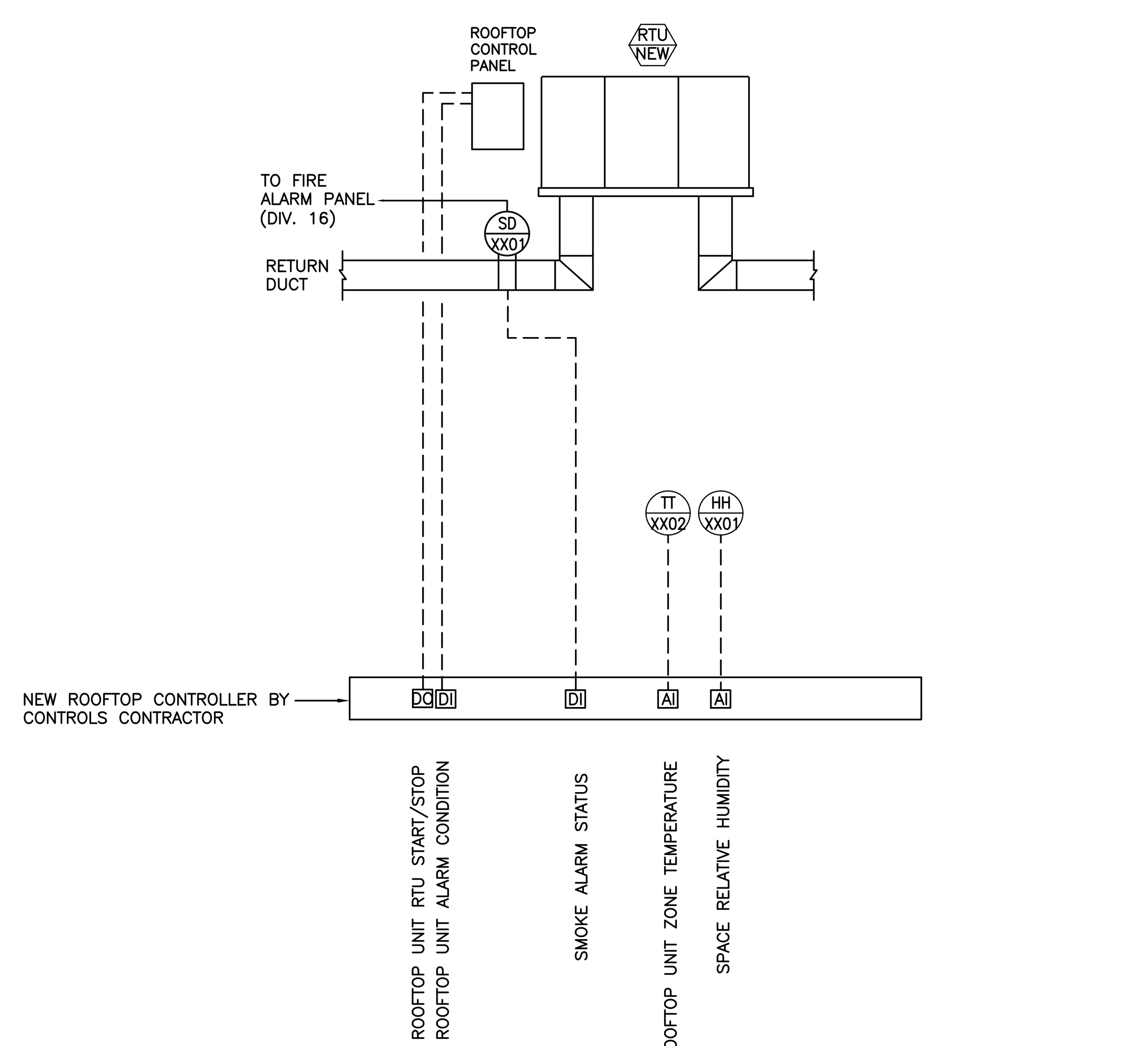
SPACE RELATIVE HUMIDITY																								
EXHAUST FAN																								
EXHAUST FAN STATUS																								
EXHAUST FAN START/STOP																								



EXISTING ROOFTOP UNIT CONTROL DIAGRAM

NO SCALE

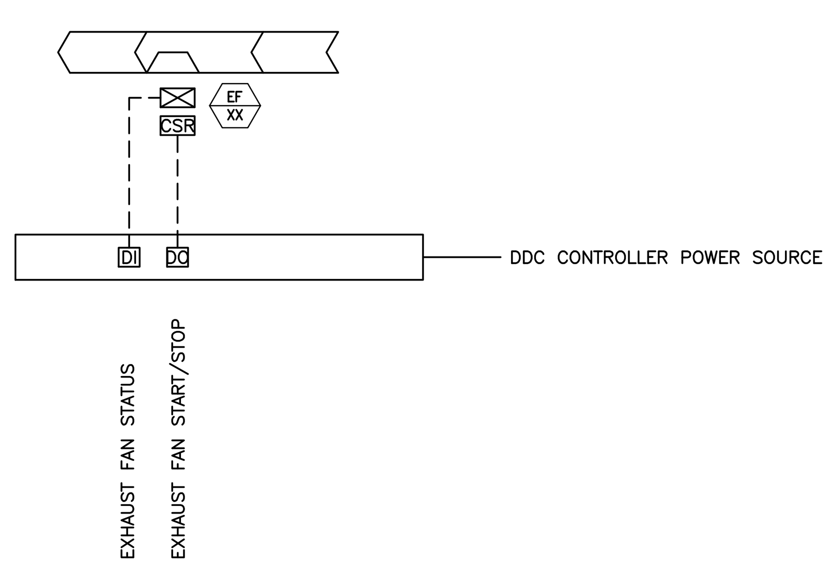
TYPICAL FOR RTU-18,19, AND 26



EXISTING ROOFTOP UNIT CONTROL DIAGRAM

NO SCALE

TYPICAL FOR RTU-27, 28, AND 29



EXHAUST FAN CONTROL DIAGRAM

NO SCALE

AUTOMATIC TEMPERATURE CONTROLS SPECIFICATIONS

1.1 SYSTEM SUMMARY

A. PROJECT CONSISTS OF OF AN EXTENSION TO THE EXISTING BUILDING DDC CONTROL SYSTEM FOR MODIFICATIONS TO EXISTING AND NEW PACKAGED ROOFTOP UNITS AND BUILDING EXHAUST FAN. THIS SHALL INCLUDE ALL NECESSARY WORK ASSOCIATED WITH THE NEW EQUIPMENT AS SPECIFIED HEREIN.

B. ALL NEW CONTROL SYSTEM ACTUATION AS SPECIFIED HEREIN SHALL BE ELECTRONIC. ALL REQUIRED POWER FOR THE CONTROLS SYSTEMS SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.

C. THIS CONTRACTOR IS RESPONSIBLE FOR STARTUP ASSISTANCE OF ALL EQUIPMENT AND RESPONSIBLE FOR VERIFYING ALL SEQUENCES OF OPERATION OF ALL EQUIPMENT.

D. CONTROL WIRING: INCLUDE CONDUIT, WIRE AND WIRING DEVICES TO INSTALL A COMPLETE CONTROL SYSTEM INCLUDING MOTOR CONTROL CIRCUITS, INTERLOCKS, AND THERMOSTATS. INCLUDES ALL WIRING FROM A DDC CABINET TO ALL SENSORS AND POINTS DEFINED IN THE POINTS LIST SUMMARY OR SPECIFIED HEREIN AND REQUIRED TO EXECUTE THE SEQUENCE OF OPERATION. INCLUDES NECESSARY POWER WIRING TO ALL DDC DEVICES, DIGITAL CONTROLLERS INCLUDING TERMINAL UNITS AND ACTUATORS.

1.2 QUALITY ASSURANCE

A. GENERAL

1. THE DIRECT DIGITAL CONTROL SYSTEM (DDC) HEREIN SPECIFIED SHALL BE FULLY INTEGRATED AND INSTALLED AS A COMPLETE PACKAGE BY THE AUTOMATIC TEMPERATURE CONTROLS (ATC) CONTRACTOR. THE SYSTEM SHALL INCLUDE ALL WIRING, INSTALLATION SUPERVISION, CALIBRATION, ADJUSTMENTS AND CHECKOUT NECESSARY FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM.
2. THE ATC CONTRACTOR SHALL HAVE A LOCAL BRANCH FACILITY WITHIN A 50-MILE RADIUS OF THE JOB SITE. EMERGENCY SERVICE SHALL BE AVAILABLE ON A 24-HOUR, 7-DAY-A-WEEK BASIS. THE FMS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK FITTING INTO PLACE IN A SATISFACTORY AND NEAT WORKMANLIKE MANNER ACCEPTABLE TO THE OWNER/ ARCHITECT/ENGINEER.
3. THE ATC CONTRACTOR WILL COORDINATE WITH OTHER TRADE CONTRACTORS REGARDING THE LOCATION AND SIZE OF PIPES, EQUIPMENT, FIXTURES, CONDUIT, DUCTS, OPENINGS, SWITCHES, OUTLETS AND SO FORTH, IN ORDER TO ELIMINATE ANY DELAYS IN THE PROGRESS OF THE JOB.

B. PRODUCTS

1. THE DDC SYSTEM ARCHITECTURE SHALL CONSIST OF THE PRODUCTS OF A MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF FACILITY MANAGEMENT SYSTEMS AND SHALL BE THE MANUFACTURER'S LATEST STANDARD OF DESIGN. CONTROLLERS AND DDC SYSTEM COMPONENTS SHALL BE CURRENT PRODUCTION PRODUCTS.
2. ALL OTHER EQUIPMENT SHALL BE THE PRODUCTS OF THE ATC CONTRACTOR MANUFACTURERS OR OF AN APPROVED MANUFACTURER REGULARLY ENGAGED IN PRODUCTION OF SPECIALIZED DDC SYSTEM MATERIALS OR EQUIPMENT.

C. GOVERNING CODE COMPLIANCE

1. THE FMS CONTRACTOR SHALL COMPLY WITH ALL CURRENT GOVERNING CODES, ORDINANCES AND REGULATIONS, INCLUDING UL, NFPA, THE LOCAL BUILDING CODE, NEC AND SO FORTH.

1.3 SUBMITTALS

A. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

1. THE ATC CONTRACTOR SHALL SUBMIT WITHIN 60 DAYS AFTER AWARD INSTALLATION DRAWINGS AND CONTROL STRATEGIES FOR REVIEW.
2. EACH SUBMITTAL SHALL HAVE A COVER SHEET WITH THE FOLLOWING INFORMATION PROVIDED: SUBMITTAL ID NUMBER; DATE; PROJECT NAME, ADDRESS AND TITLE; ATC CONTRACTOR NAME, ADDRESS AND PHONE NUMBER; ATC CONTRACTOR PROJECT MANAGER.
3. EACH SUBMITTAL SHALL INCLUDE THE FOLLOWING INFORMATION.
   a. DDC RISER DIAGRAM SHOWING ALL DDC CONTROLLERS, OPERATOR WORKSTATIONS, NETWORK REPEATERS AND NETWORK WIRING.
   b. 1-LINE SCHEMATICS AND SYSTEM FLOW DIAGRAMS SHOWING THE LOCATION OF ALL CONTROL DEVICES.
   c. POINTS LIST FOR EACH DDC CONTROLLER, INCLUDING: TAG, POINT TYPE, SYSTEM NAME, OBJECT NAME, EXPANDED ID, DISPLAY UNITS, CONTROLLER TYPE, ADDRESS, CABLE DESTINATION, MODULE TYPE, TERMINAL ID, PANEL, SLOT NUMBER, REFERENCE DRAWING AND CABLE NUMBER.
   d. VENDOR'S OWN WRITTEN DESCRIPTION FOR EACH SEQUENCE OF OPERATIONS, TO INCLUDE THE FOLLOWING:
      1) SEQUENCES SHALL REFERENCE INPUT/OUTPUT AND SOFTWARE PARAMETERS BY NAME AND DESCRIPTION.
      2) THE SEQUENCES OF OPERATIONS PROVIDED IN THE SUBMITTAL BY THE FMS CONTRACTOR SHALL REPRESENT THE DETAILED ANALYSIS NEEDED TO CREATE ACTUAL PROGRAMMING CODE FROM THE DESIGN DOCUMENTS.
   e. DETAILED BILL OF MATERIAL LIST FOR EACH PANEL, IDENTIFYING: QUANTITY, PART NUMBER, DESCRIPTION AND ASSOCIATED OPTIONS.
   f. CONTROL DAMPER SCHEDULES. THIS SPREADSHEET TYPE SCHEDULE SHALL INCLUDE A SEPARATE LINE FOR EACH DAMPER AND A COLUMN FOR EACH OF THE DAMPER ATTRIBUTES, INCLUDING: CODE NUMBER, FAIL POSITION, DAMPER TYPE, DAMPER OPERATOR, BLADE TYPE, BEARING TYPE, SEALS, DUCT SIZE, DAMPER SIZE, MOUNTING AND ACTUATOR TYPE.
   g. CONTROL VALVE SCHEDULES. THIS SPREADSHEET TYPE SCHEDULE SHALL INCLUDE A SEPARATE LINE FOR EACH VALVE AND A COLUMN FOR EACH OF THE VALVE ATTRIBUTES, INCLUDING: CODE NUMBER, CONFIGURATION, FAIL POSITION, PIPE SIZE, VALVE SIZE, BODY CONFIGURATION, CLOSE OFF PRESSURE, CAPACITY, VALVE CV, CALC CV, DESIGN PRESSURE, ACTUAL PRESSURE AND ACTUATOR TYPE.
   h. CATALOGED CUT SHEETS OF ALL EQUIPMENT USED. THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING: DDC PANELS, PERIPHERALS, SENSORS, ACTUATORS, DAMPERS AND SO FORTH.
   i. HARDWARE DATA SHEETS FOR ALL OPERATOR WORKSTATIONS, LOCAL ACCESS PANELS AND PORTABLE OPERATOR TERMINALS.
   j. SOFTWARE MANUALS FOR ALL APPLICATIONS PROGRAMS TO BE PROVIDED AS A PART OF THE OPERATOR WORKSTATIONS, PORTABLE OPERATOR TERMINALS, PROGRAMMING DEVICES AND SO FORTH FOR EVALUATION FOR COMPLIANCE WITH THE PERFORMANCE REQUIREMENTS OF THIS SPECIFICATION.
4. ATC CONTRACTOR SHALL NOT ORDER MATERIAL OR BEGIN FABRICATION OR FIELD INSTALLATION UNTIL RECEIVING AUTHORIZATION TO PROCEED IN THE FORM OF AN APPROVED SUBMITTAL. FMS CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY ITEM NOT APPROVED BY SUBMITTAL AT NO COST TO THE OWNER.

1.4 WARRANTY

A. MATERIAL

1. THE CONTROL SYSTEM SHALL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE. IF WITHIN 12 MONTHS FROM THE DATE OF COMPLETION ANY OF THE EQUIPMENT HEREIN DESCRIBED IS DEFECTIVE IN OPERATION, WORKMANSHIP OR MATERIALS, IT WILL BE REPLACED, REPAIRED OR ADJUSTED AT THE OPTION OF THE FMS CONTRACTOR FREE OF CHARGE. IN ADDITION, ALL CONTROL COMPONENTS MANUFACTURED BY THE ATC CONTRACTOR SHALL HAVE A 3 YEAR FROM DATE OF MANUFACTURE WARRANTY. SHOULD THE COMPONENT FAIL DURING THAT TIME, THE DEVICE WILL BE EITHER REPAIRED OR REPLACED AT NO COST TO THE OWNER. ANY REQUIRED FIELD LABOR TO REPLACE THE COMPONENT DURING YEARS 2 AND 3 WOULD NOT BE COVERED.

B. INSTALLATION

1. THE CONTROL SYSTEM SHALL BE FREE FROM DEFECTS IN INSTALLATION WORKMANSHIP FOR A PERIOD OF 1 YEAR FROM ACCEPTANCE. THE ATC CONTRACTOR SHALL, FREE OF CHARGE, CORRECT ANY DEFECTS IN WORKMANSHIP WITHIN 1 WEEK OF NOTIFICATION IN WRITING BY THE OWNER.

1.5 MANUFACTURERS

A. THE AUTOMATIC TEMPERATURE CONTROLS WORK SHALL BE PERFORMED BY SEBASTIAN & SONS, PAOLI, PA (610) 651-0808.

B. BIDS BY WHOLESALERS, CONTRACTORS AND FRANCHISED DEALERS OR ANY FIRM WHOSE PRINCIPAL BUSINESS IS NOT THAT OF MANUFACTURING AND INSTALLING AUTOMATIC TEMPERATURE CONTROL SYSTEMS ARE NOT ACCEPTABLE.

C. INDEPENDENT TEMPERATURE CONTROL SERVICE BY INDEPENDENT CONTRACTORS, DISTRIBUTORS AND FRANCHISED INSTALLERS WILL NOT BE ACCEPTED.

I.6 SEQUENCE OF OPERATION:

1.6.1. EXITING ROOFTOP UNITS (RTU-18, 19, AND 26):

A. OVERVIEW: EACH EXISTING CONSTANT-AIR-VOLUME PACKAGED ROOFTOP UNIT WILL SERVE AREAS WHERE INDICATED ON THE PLANS. EXISTING ROOFTOP UNIT SHALL BE CONNECTED TO THE BMS FOR UNIT START/STOP AND ALARM CONDITIONS.

B. EACH EXISTING ROOFTOP UNIT CONTAINS EXISTING THERMOSTAT FOR ROOFTOP UNIT OPERATION AND CONTROL. EXISTING WALL MOUNTED THERMOSTAT TO BE RELOCATED TO NEW SPACE AS INDICATED ON THE PLANS.

C. EACH EXISTING ROOFTOP SUPPLY DUCT DISTRIBUTION SYSTEM SHALL PROVIDED WITH NEW ELECTRIC DUCT COIL(S) TO PROVIDE DEHUMIDIFICATION CYCLE OF ROOFTOP UNIT. SPACES SERVED BY NEW ELECTRIC DUCT COILS SHALL INCLUDE SPACE THERMOSTAT AND HUMIDISTAT.

D. DUCT HEATING COIL CONTROL: THE DUCT HEATING COIL SHALL ENERGIZED ONLY WHEN THE ROOFTOP UNIT IS IN THE DEHUMIDIFICATION CYCLE. THE DUCT HEATING COIL SHALL NOT BE USED FOR COOLING MODE ZONE CONTROL.

E. DEHUMIDIFICATION CYCLE: UPON A RISE OF SPACE HUMIDITY SETPOINT, THE ROOFTOP UNIT SHALL BE INDEXED TO FULL COOLING. THE SPACE THERMOSTAT SHALL INDEX THE ELECTRIC DUCT COILS TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. UPON A DROP IN SPACE HUMIDITY SETPOINT, THE ROOFTOP UNIT RETURN TO NORMAL MODE OF OPERATION AND THE ELECTRIC DUCT COIL SHALL BE INDEXED OFF.

1.6.2 NEW ROOFTOP UNITS (RTU-27, 28, AND 29)

A. NEW ROOFTOP UNITS SHALL BE PROVIDED WITH ROOFTOP UNIT CONTROLLERS BY ROOFTOP MANUFACTURER.

B. CONTROL AND CONTROL STRATEGIES OF THE ROOFTOP UNITS SHALL BE THROUGH THE ROOFTOP MANUFACTURER'S CONTROL PANEL. EXISTING BMS SYSTEM SHALL ENABLE ROOFTOP UNIT BASED ON ADJUSTABLE TIME OF DAY SCHEDULE AND REPORT ANY ALARM CONDITIONS.

C. ROOFTOP UNIT CONTROLLER SHALL BE PROVIDED WITH GATEWAY TO OPERATE MODBUS INTERFACE WITH BACNET PROTOCOL.

D. PROVIDE CONTROL WIRING ASSOCIATED WITH THE ROOFTOP UNIT CONTROLLER, INCLUDING THERMOSTAT AND HUMIDISTAT FOR HOT GAS REHEAT CONTROL.

E. PROVIDE AN ALARM CONDITION DUE TO ACTIVATION OF DUCT MOUNTED SMOKE DETECTOR. PROVIDE INTERFACE WIRING FROM FIRE ALARM SYSTEM TO ROOFTOP UNIT CONTROL FOR FAN SHUT DOWN.

1.6.3 EXHAUST FAN:

A. THE BAS SHALL INDEX THE EXHAUST FAN ON BASED ON ADJUSTABLE TIME OF DAY SCHEDULE. THE EXHAUST FAN WILL OPERATE CONTINUOUSLY WHEN IN THE OCCUPIED MODE. A CURRENT SENSOR WILL MONITOR THE FAN MOTOR STATUS AND THE BAS WILL ALARM IF THE FAN FAILS (AFTER A 2 MINUTE DELAY).

ALL AUTOMATIC TEMPERATURE CONTROL WORK SHALL BE FURNISHED AND INSTALLED BY THE OWNER. ALL WORK SHOWN ON THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY.

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Temperature Controls Specifications and Diagrams

PROJECT NUMBER 17.177
DRAWN BY KJB
SCALE As indicated
DATE 09.14.2018
DRAWING NUMBER

M300

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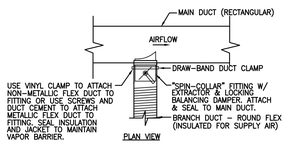
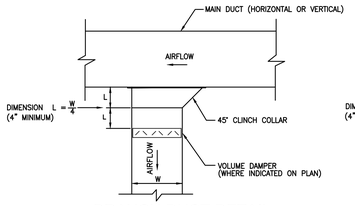
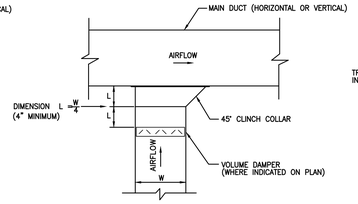


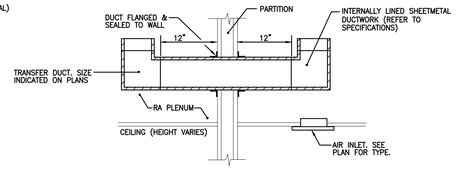
1 FLEXIBLE BRANCH DUCT DETAIL
NO SCALE (TYPICAL FOR ALL FLEX DUCT TAKEOFFS)
• DUCT SIZES AS NOTED ON PLANS



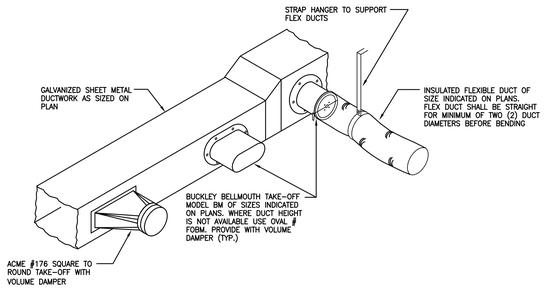
2 BRANCH DUCT DETAIL
NO SCALE (SUPPLY)
• DUCT SIZES NOTED ON PLANS



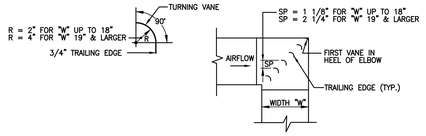
3 BRANCH DUCT DETAIL
NO SCALE RETURN OR EXHAUST
• DUCT SIZES NOTED ON PLANS



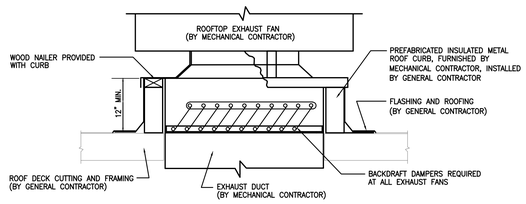
4 TRANSFER DUCT DETAIL
NO SCALE



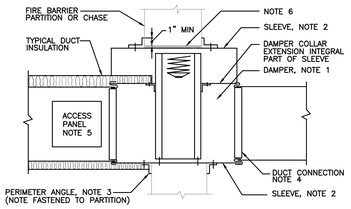
5 BRANCH DUCT AND TAKE-OFF DETAIL
NO SCALE



6 TURNING VANE DETAIL
NO SCALE
• 90° AND 45° RECTANGULAR ELBOWS
• SUPPLY, RETURN, AND EXHAUST DUCTS
• REFER TO SMACNA DUCT CONSTRUCTION STANDARDS



7 GENERAL EXHAUST FAN DETAIL
NO SCALE



NOTES:
1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, IS SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.
2. GALVANIZED SLEEVE: GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.
3. PERIMETER ANGELS: GALVANIZED STEEL, NOT LESS THAN 1 1/2" x 1 1/2", 10 GAGE, TO PROVIDE 1" MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.
4. BREAKAWAY DUCT CONNECTION.
5. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS. PROVIDE HINGED DOOR WITH CAM LOCK FASTENER AND NEOPRENE GASKET (6"X6" MINIMUM SIZE)
6. PROVIDE 1/4" TO 1/2" CLEARANCE ON HEIGHT AND WIDTH. FILL OPEN SPACE WITH ROCK WOOL FIRESTOP FIBER.
7. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SHALL BE PROVIDED WITH 4 INCH HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

8 FIRE DAMPER INSTALLATION DETAIL
NO SCALE

ROOFTOP UNIT VENTILATION AIR CALCULATIONS

Space	Az	Pz	Rp	Ra	Vbz	Ez	Voz	Vpz	Zp	Ev	Ps	D	Vou
Name/No.	Zone Area	Zone Pop	OA/person	Area OA	Breath zone OA	Zone air Eff	Zone OA	Space SA	Prim OA Fraction	Syst Vent Eff	System Pop	Population Div	Uncorr OA
Existing RTU-11													
Storage #323D	45	0	0	0	0	0.8	0	100	0.00	1	0	1.00	0
Storage #323C	60	0	0	0	0	0.8	0	100	0.00	1	0	1.00	0
Small Group #340	238	4	5	0.06	34	0.8	43	150	0.29	0.8	4	1.00	43
Storage #341	90	0	0	0	0	0.8	0	100	0.00	1	0	1.00	0
Music #323	1483	58	5	0.06	379	0.8	474	2400	0.20	0.9	58	1.00	474
Practice #323A	110	2	5	0.06	17	0.8	21	150	0.14	1	2	1.00	21
Practice#323B	108	2	5	0.06	16	0.8	21	100	0.21	0.9	2	1.00	21
Total							558	3100					
												Vou =	558
												Zp System =	0.29
												Ev System =	0.8
												Vot=	**697**
Existing RTU-12													
Ex. Corridor/Entry	940	0	0	0.06	56	0.8	71	500	0.14	1	0	1.00	71
Corridor	640	0	0	0.06	38	0.8	48	100	0.48	0.6	0	1.00	48
Vestibule #339	153	0	0	0.06	9	0.8	11	100	0.11	1	0	1.00	11
Faculty Lounge #324	476	12	5	0.06	89	0.8	111	1250	0.09	1	12	1.00	111
Ex. Storage	500	0	0	0	0	0.8	0	250	0.00	1	0	1.00	0
Total							241	2200					
												Vou =	130
												Zp System =	0.48
												Ev System =	0.6
												Vot=	**217**
Existing RTU-18													
Classroom #343	370	12	5	0.06	82	0.8	103	480	0.21	0.9	25	1.00	103
Classromm #344	427	12	5	0.06	86	0.8	107	480	0.22	0.9	25	1.00	107
Classromm #351	785	25	5	0.06	172	0.8	215	980	0.22	0.9	25	1.00	215
Classroom #352	695	25	5	0.06	167	0.8	208	940	0.22	0.9	25	1.00	208
Total							633	2880					
												Vou =	633
												Zp System =	0.22
												Ev System =	0.9
												Vot=	**704**
Existing RTU-19													
Clasroom #350	600	25	5	0.06	161	0.8	201	940	0.21	0.9	25	1.00	201
Classroom #349	600	25	5	0.06	161	0.8	201	940	0.21	0.9	25	1.00	201
Corridor	1200	0	0	0.06	72	0.8	90	400	0.23	0.9	0	1.00	90
Storage #349A	209	0	0	0	0	0.8	0	150	0.00	1	0	1.00	0
Total							493	2430					
												Vou =	493
												Zp System =	0.21
												Ev System =	0.9
												Vot=	**547**
Existing RTU-26													
Small Group #345	170	5	5	0.06	35	0.8	44	175	0.25	0.7	108	1.00	44
Small Group #346	174	5	5	0.06	35	0.8	44	175	0.25	0.7	108	1.00	44
Classroom #347	966	25	5	0.06	183	0.8	229	960	0.24	0.9	108	1.00	229
Classroom #348	966	25	5	0.06	183	0.8	229	960	0.24	0.9	108	1.00	229
Corridor	600	0	0	0.06	36	0.8	45	200	0.23	0.9	108	1.00	45
Total							591	2470					
												Vou =	591
												Zp System =	0.25
												Ev System =	0.9
												Vot=	**656**
New RTU-27													
Classroom #330	850	25	5	0.06	176	0.8	220	1770	0.12	1	25	1.00	220
Classroom #329	900	25	5	0.06	179	0.8	224	1770	0.13	1	25	1.00	224
Kiln #329B	70	0	0	0	0	0.8	0	360	0.00	1	0	1.00	0
Total							444	3900					
												Vou =	444
												Zp System =	0.13
												Ev System =	1
												Vot=	**444**
New RTU-28													
Classroom #325	495	15	5	0.06	105	0.8	131	1000	0.13	1	15	1.00	131
STEM #327	1000	25	5	0.06	185	0.8	231	1680	0.14	1	25	1.00	231
Storage #327A	125	0	0	0	0	0.8	0	120	0.00	1	0	1.00	0
Storage #328A	125	0	0	0	0	0.8	0	100	0.00	1	0	1.00	0
Total							362	2900					
												Vou =	362
												Zp System =	0.14
												Ev System =	1
												Vot=	**362**
New RTU-29													
Classroom #326	621	25	5	0.06	162	0.8	203	1080	0.19	0.9	25	1.00	203
Classroom #328	615	25	5	0.06	162	0.8	202	1080	0.19	0.9	25	1.00	202
Classroom #331	660	25	5	0.06	165	0.8	206	1080	0.19	0.9	25	1.00	206
Corridor	1200	0	0	0.06	72	0.8	90	750	0.12	1	0	1.00	90
Boys Toilet #358	300	0	0	0	0	0.8	0	200	0.00	1	0	1.00	0
Girls Toilet #359	300	0	0	0	0	0.8	0	200	0.00	1	0	1.00	0
Total							701	4390					
												Vou =	701
												Zp System =	0.19
												Ev System =	0.9
												Vot=	**779**

1. VENTILATION AIR CALCULATIONS BASED ON THE 2009, INTERNATIONAL MECHANICAL CODE, CHAPTER 4.
2. VENTILATION CALCULATIONS BASED ON THE FOLLOWING EQUATIONS 4-1, 4-2, 4-5, 4-6, 4-7 AND 4-8.
3. VENTILATION CALCULATIONS BASED ON TABLES 403.3, 403.3.1.2, AND 403.3.2.3.2.

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

SYMBOL	AREA SERVED	FAN CFM	FAN SPEED	FAN FLA	MCA	VOLTAGE / PH.	RATED COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	BASIS OF DESIGN
SS-1	DATA #342	374	MEDIUM	0.24	13.2	208 / 1ø	18.0	12.93	DAIKIN MODEL FTKB 18 AXVJU

REMARKS:
1. PROVIDE LOW AMBIENT KIT FOR OPERATION TO 0°F.

CONDENSING UNIT SCHEDULE

SYMBOL	COOLING CAPACITY		CONDENSING UNIT DATA			BASIS OF DESIGN
	MBH	SEER	COMP. (AMPS) COOLING	MFA	VOLTAGE / PH.	
CU-1	18.0	17.0	13.0	20.0	208 / 1ø	DAIKIN MODEL RKB 18 AXVJU

REMARKS:

DUCT MOUNTED ELECTRIC HEATING COIL SCHEDULE

SYMBOL	CFM	FACE VEL. (FPM)	TOTAL MBH	E.A.T. (°F)	L.A.T. (°F)	KW	VOLTAGE / PH	AIRFLOW	COIL SIZE	CONTROL	BASIS OF DESIGN
DHC-18.1	960	722	15.4	55	70.0	4.5	480/3	HORIZONTAL	28x10	SCR	BRASCH MANUFACTURING OPEN COIL, SLIP-IN TYPE
DHC-18.2	1920	717	30.7	55	70.0	9.0	480/3	HORIZONTAL	36x14	SCR	BRASCH MANUFACTURING OPEN COIL, SLIP-IN TYPE
DHC-19.1	2430	733	37.5	55	70.0	12.0	480/3	HORIZONTAL	44x14	SCR	BRASCH MANUFACTURING OPEN COIL, SLIP-IN TYPE
DHC-26.1	550	670	8.5	55	70.0	2.5	480/3	HORIZONTAL	24x8	SCR	BRASCH MANUFACTURING OPEN COIL, SLIP-IN TYPE
DHC-26.2	1920	718	30.7	55	70.0	9.0	480/3	HORIZONTAL	36x14	SCR	BRASCH MANUFACTURING OPEN COIL, SLIP-IN TYPE

REMARKS:

ELECTRIC WALL HEATER SCHEDULE

SYMBOL	TYPE	OUTPUT (BTU/HR.)	WATTS	KW	VOLTAGE / PH	BASIS OF DESIGN
EWH-1	RECESSED	16382	4800	4.8	277 / 1ø	TRANE CO. MODEL UHAA 481 CTAD

REMARKS:
1. FURNISH ELECTRIC WALL HEATER WITH TAMPER RESISTANT THERMOSTAT AND DISCONNECT SWITCH, STEEL PAINTED DISCHARGE GRILLE, WITH BAKED ENAMEL FINISH, AND FAN DELAY SWITCH.

EXHAUST FAN SCHEDULE

SYMBOL	TYPE	CFM	ESP	RPM	HP	VOLTAGE / PH.	CONTROL	BASIS OF DESIGN
EF-1	ROOFTOP DOMEX	1240	0.75	1015	1/3	115 / 1	ATC	PENN-BARRY MODEL DX 14 B

REMARKS:
1. EXHAUST FAN COLOR SHALL BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLOR CHART
2. EXHAUST FANS SHALL BE FURNISHED WITH AN ADDITIONAL BELT AND SHEAVE FOR FINAL BALANCING.
3. EXHAUST FANS SHALL BE MOUNTED ON A 12" HIGH PRE-FABRICATED FACTORY ROOF CURB.

AIR INLET & OUTLET SCHEDULE

SYMBOL	TYPE	MODULE SIZE	BACK PAN SIZE	NECK SIZE	PATTERN	OPPOSED BLADE DAMPER	FINISH	MATERIAL	BASIS OF DESIGN
S1	CEILING DIFFUSER	24x24	9x9	6"ø	4-WAY	YES	BAKED WHITE	STEEL	TITUS MODEL TDCA
S2	CEILING DIFFUSER	24x24	12x12	8"ø	4-WAY	YES	BAKED WHITE	STEEL	TITUS MODEL TDCA
S3	CEILING DIFFUSER	24x24	12x12	8"ø	2-WAY (OPPOSITE)	YES	BAKED WHITE	STEEL	TITUS MODEL TDCA
S4	CEILING DIFFUSER	24x24	15x15	10"ø	3-WAY	YES	BAKED WHITE	STEEL	TITUS MODEL TDCA
R1	CEILING GRILLE	———	———	8x8	———	NO	BAKED WHITE	STEEL	TITUS MODEL 350 RL
R2	CEILING GRILLE	———	———	14x14	———	NO	BAKED WHITE	STEEL	TITUS MODEL 350 RL
R3	CEILING GRILLE	———	———	22x22	———	NO	BAKED WHITE	STEEL	TITUS MODEL 350 RL
E1	CEILING REGISTER	———	———	8x8	———	YES	BAKED WHITE	STEEL	TITUS MODEL 350 RL
E2	CEILING REGISTER	———	———	14x14	———	YES	BAKED WHITE	STEEL	TITUS MODEL 350 RL

REMARKS:

GAS-FIRED ROOFTOP UNIT SCHEDULE

SYMBOL	AREA SERVING	CFM	MIN. OA CFM	MAX. OA CFM	ESP	TSP	CFM	SUPPLY FAN NO.	SUPPLY FAN BHP	SUPPLY FAN HP	SUPPLY FAN RPM	SUPPLY FAN VOLT/PH	EXHAUST FAN CFM/ESP/HP	COMPR. 1 RLA	COMPR. 2 RLA	SUPPLY FAN FLA	CONDENSER FANS (QTY) HP	CONDENSER FAN FLA	EXHAUST FANS (QTY) HP	EXHAUST FAN RPM	EXHAUST FAN FLA	COMBUSTION FAN (QTY) HP	COMBUSTION FAN FLA	UNIT FLA	MCA	MOP	EER	GROSS COOLING COIL DATA TOTAL MBH	GROSS COOLING COIL DATA SENSIBLE MBH	GROSS COOLING COIL DATA E.A.T. DB/WB	GROSS COOLING COIL DATA L.A.T. DB/WB	GAS HEATING DATA HEATING INPUT-MBH	GAS HEATING DATA HEATING OUTPUT-MBH	GAS HEATING DATA E.A.T. DB	GAS HEATING DATA L.A.T. DB	UNIT WEIGHT (LBS.)	BASIS OF DESIGN
RTU-27	FIRST FLOOR CLASSROOM	4000	710	4000	1.0	1.89	4000	1	0.86	4.0	1383	460/3	4000/0.5/4.0	4.5	7.9	4.0	4.0	4.0	4.0	1383	4.0	4.0	4.0	22.2	24.2	30	12.1	124	96.2	79.0/66.5	57.0/56.6	200	160	58.0	94.9	2548	DAIKIN MODEL DPS010A
RTU-28	FIRST FLOOR CLASSROOM	2800	680	2800	1.0	1.60	2800	1	1.12	4.0	1794	460/3	2800/0.5/4.0	5.4	3.9	4.0	4.0	4.0	4.0	1049	4.0	4.0	4.0	19.1	20.4	25	12.1	95.1	70.3	80.1/67.7	57.1/57.1	200	160	53.0	105.7	2320	DAIKIN MODEL DPS007A
RTU-29	FIRST FLOOR CLASSROOM	4400	1050	4400	1.0	2.05	4400	1	2.23	4.0	1278	460/3	4400/0.5/4.0	6.8	7.9	4.0	4.0	4.0	4.0	1501	4.0	4.0	4.0	24.5	26.5	30	11.2	152.6	110.8	79.4/67.3	56.4/56.3	300	240	51.0	101.3	2548	DAIKIN MODEL DPS012A

REMARKS:
1. ALL NEW ROOFTOP UNITS SHALL BE FURNISHED WITH VIBRATION ROOF CURB.
2. UNITS TO BE PROVIDED WITH HOT GAS REHEAT WITH DEHUMIDIFICATION CYCLE.
3. RTU-27 HOT GAS REHEAT COIL CAPACITY SHALL BE 56,458 BTUH
4. RTU-28 HOT GAS REHEAT COIL CAPACITY SHALL BE 39,075 BTUH
5. RTU-29 HOT GAS REHEAT COIL CAPACITY SHALL BE 65,059 BTUH

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SEAL

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Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Mechanical Schedules and Details

PROJECT NUMBER 17.177
DRAWN BY KJB
SCALE As indicated
DATE 09.14.2018
DRAWING NUMBER **M400**

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PLUMBING LEGEND, ABBREVIATIONS & SYMBOLS

ABBREVIATIONS:

A	ABANDON EXISTING
AAV	AUTOMATIC AIR VENT
AC	AIR COMPRESSOR
AD	ACCESS DOOR
AF	AIR FILTER
AFF	ABOVE FINISH FLOOR
AP	ACCESS PANEL
AV	ACID VENT
AW	ACID WASTE
CA	COMPRESSED AIR
CFH	CUBIC FOOT PER HOUR
CFM	CUBIC FOOT PER MINUTE
CO	CLEAN OUT
CO2	CARBON DIOXIDE
CW	COLD WATER (DOMESTIC)
DCBP	DOUBLE CHECK (ASSEMBLY) BACKFLOW PREVENTER
DE	DEIONZIED (WATER)
DF	DRINKING FOUNTAIN
DI	DISTILLED (WATER)
DIA	DIAMETER
DWH	DOMESTIC WATER HEATER
DP	DIFFERENTIAL PRESSURE
DR	DRAIN
DWH	DOMESTIC WATER HEATER
(E)	EXISTING
ET	EXPANSION TANK
(ETR)	EXISTING TO REMAIN
EW	EYE WASHER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EW/S	EYE WASHER/SAFETY SHOWER (COMBINATION)
FC	FLEXIBLE CONNECTOR
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FEET
GAS	(NATURAL) GAS
GWH	GAS WATER HEATER
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GCO	GROUND CLEAN OUT
HB	HOSE BIBB
HP	HORSEPOWER
HW	HOW WATER (SUPPLY)
HWR	HOT WATER RECIRCULATION
HX	HEAT EXCHANGER
HZ	HERTZ
IDW	INDIRECT WASTE
IE	INVERT ELEVATION
IN	INCHES
KW	KILOWATTS
LA	LABORATORY (COMPRESSED) AIR
LAV	LAVATORY
LPG	LIQUEFIED PETROLEUM GAS (PROPANE)
LV	LABORATORY VACUUM
LEC	LABORATORY EQUIPMENT CONTRACTOR
MA	MEDICAL (COMPRESSED) AIR
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1000 BTU PER HOUR
MIN	MINIMUM
MR	MOP RECEPTOR
MV	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
NC	NORMALLY CLOSED
NO	NORMALLY OPENED
O2	OXYGEN
OD	OUTSIDE DIAMETER
OWH	OIL WATER HEATER
P	PUMP
PD	PUMP DISCHARGE
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAGE
RD	ROOF DRAIN
RWC	RAIN WATER CONDUCTOR
RPM	REVOLUTIONS PER MINUTE
RZBP	REDUCED (PRESSURE) ZONE BACKFLOW PREVENTER
S	SANITARY (DRAIN/SEWER)
SF	SQUARE FOOT
SH	SHOWER
SS	SERVICE SINK
SSD	SUB-SOIL DRAIN
SSH	SAFETY SHOWER
STK	STACK
STM	STORM (DRAIN/SEWER)
T	TEMPERATURE
TOS	TOP OF STEEL
U	URINAL
V	(SANITARY) VENT
VAC	VACUUM
VTR	VENT THROUGH ROOF
W	WASTE (DRAW)
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WH	WALL HYDRANT
WHA	WALL HAMMER ARRESTOR
(X)	REMOVE EXISTING

PIPING SYSTEM IDENTIFICATION:

	SOIL OR WASTE (ABOVE FLOOR OR GRADE) – NEW
	SOIL OR WASTE (BELOW FLOOR OR GRADE) –NEW
	VENT
CW	COLD WATER
HW	HOT WATER (110 F UNLESS NOTED OTHERWISE)
HWR	HOT WATER RETURN (CIRCULATION)
CA	COMPESSED AIR
AV	ACID VENT
AW	ACID WASTE
DWS	DRINKING WATER SUPPLY
DWR	DRINKING WATER RETURN
G	GAS
ID	INDIRECT WASTE
LPG	LIQUIFIED PETROLEUM GAS (PROPANE)
V	MEDICAL VACUUM
N	NITROGEN
NO	NITROUS OXIDE
O	OXYGEN
PD	PUMP DISCHARGE
VAC	VACUUM
T	TEMPERED WATER
140°F	TEMPERATURE OF WATER
RWC	RAIN WATER CONDUCTOR (ABOVE FLOOR OR GRADE)
RWC	RAIN WATER CONDUCTOR (BELOW FLOOR OR GRADE)
CD	CONDESATE DRAIN
DI	DEIONIZED WATER
GV	GAS VENT
A	MEDICAL COMPRESSED AIR
LA	LABORTORY COMPRESSED AIR
WAGD	WASTE ANESTHESIA GAS DISPOSAL
LV	LABORTORY VACUUM
CO2	CARBON DIOXIDE
PIPE LABEL	EXISTING PIPING TO REMAIN
PIPE LABEL	EXISTING PIPING TO BE REMOVED

PIPING ACCESSORIES/EQUIPMENT IDENTIFICATION:

- CLEAN OUT
- UNION OR FLANGED CONNECTION
- PIPE UP AND DOWN
- WATER HAMMER ARRESTER
- THROTTLING VALVE
- CHECK VALVE
- DRAIN VALVE
- PRESSURE REGULATING VALVE
- PRESSURE REDUCING VALVE
- CALIBRATED BALANCING VALVE
- TWO-WAY MOTORIZED VALVE
- THREE-WAY MOTORIZED VALVE
- SOLENOID VALVE
- SAFETY RELIEF VALVE
- GAS COCK
- STRAINER
- PRESSURE GAUGE
- THERMOMETER
- ORIFICE PLATE FLOW MEASURING DEVICE
- VENTURI FLOW MEASURING DEVICE
- END CAP
- EXP — EXPANSION DEVICE
- EXPANSION COMPENSATOR
- EXPANSION LOOP
- FLEXIBLE CONNECTION
- PIPE ANCHOR
- 90° ELBOW
- 45° ELBOW
- PIPE ALIGNMENT GUIDE
- PIPE ELBOW UP
- PIPE ELBOW DOWN
- BACKFLOW PREVENTER
- FD- — FLOOR DRAIN

ANNOTATION IDENTIFICATION:

- REVISION AREA
- REVISION NUMBER
- KEYED NOTE
- DEMOLITION KEYED NOTE
- POINT OF CONNECTION TO EXISTING
- POINT OF DEMOLITION
- DETAIL NUMBER
- DRAWING NUMBER
- EQUIPMENT ABBREVIATION
- EQUIPMENT NUMBER
- SECTION LETTER
- DRAWING NUMBER

PLUMBING GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL PERTINENT CODES AND REGULATIONS.
2. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ELIMINATE ANY CONFLICTS BETWEEN PIPING, DUCTWORK, AND ELECTRICAL WORK.
3. THESE DRAWINGS ARE DIAGRAMMATIC, THEREFORE, THE PLUMBING CONTRACTOR SHALL MAKE ADJUSTMENTS AS REQUIRED FOR A COMPLETE INSTALLATION. EXAMINE ALL PROJECT DRAWINGS TO UNDERSTAND THE WORK REQUIRED AND TO AVOID ANY INTERFERENCE WITH THE EXISTING AND NEW WORK SUCH AS DUCTS, PIPING, LIGHTING FIXTURES, STRUCTURAL BEAMS, ETC.
4. THE PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND FEES AND ARRANGE FOR INSPECTIONS BY THE LOCAL AUTHORITIES HAVING JURISDICTIONS.
5. PROTECT ALL EQUIPMENT AND FIXTURES STORED OR SET IN PLACE ON THE CONSTRUCTION SITE.
6. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS, ROOM FINISHES, CEILING HEIGHTS, AND COORDINATE PLUMBING WORK WITH ARCHITECTURAL PLANS.
7. ALL PIPING SHALL BE CONCEALED ABOVE CEILINGS, IN WALLS, OR BELOW FLOOR UNLESS NOTED OTHERWISE.
8. SLOPE SANITARY AND WASTE PIPE AT A MINIMUM OF 1/8" PER FOOT. SLOPE ALL HORIZONTAL VENT PIPE UP TOWARDS VERTICAL VENT PIPES.
9. PROVIDE EACH PLUMBING FIXTURE WITH AN ACCESSIBLE KEYLESS STOP ON EACH SUPPLY PIPE.
10. PROVIDE AN ACCESSIBLE VALVE IN FOR EACH RISER.
11. PLUMBING WORK BELOW GRADE, BELOW FLOOR, WITHIN WALLS, OR ABOVE CEILINGS SHALL NOT BE COVERED OR CONCEALED UNTIL AFTER IT IS INSPECTED AND APPROVED BY THE PLUMBING INSPECTOR OR AUTHORITY HAVING JURISDICTION.
12. WHERE FIXTURES ARE TO BE INSTALLED IN PLACE OF EXISTING, FIELD VERIFY ROUGH-IN REQUIREMENTS AND PROVIDE NEW FIXTURES WITH THE APPROPRIATE ROUGH-IN DIMENSIONS.
13. PLUMBING CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING ASSOCIATED WITH THE INSTALLATION OF NEW FIXTURES, PIPING, CARRIERS, ETC. WITHIN EXISTING WALL, FLOOR, OR ABOVE CEILINGS. PATCH ALL AFFECTED AREAS TO MATCH THE EXISTING SURROUNDING SUBSTRATE AND FINISH SURFACES.
14. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CORE DRILLING OF CONCRETE FLOORS REQUIRED FOR THE INSTALLATION OF PIPING OR FIXTURES,
15. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXISTING CEILING GRID, TILES, OR LIGHT FIXTURES AS MAY BE REQUIRED FOR THE INSTALLATION OF THE NEW PIPING. REINSTALL ALL REMOVED GRID, TILES, AND LIGHT FIXTURES AFTER NEW WORK HAS BEEN INSTALLED AND TESTED.

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SEAL

SIGNATURE

Collegium Charter School
Renovation & New Elevator

515 James Hance Court, Exton, PA 19341

REVISIONS

03.05.18 - Issued for Permit

No.	Date	Description

DRAWING TITLE

PLUMBING LEGEND, ABBREVIATIONS & SYMBOLS

PROJECT NUMBER 18.112

DRAWN BY JBW

SCALE As Noted

DATE 03.05.2018

DRAWING NUMBER

P000

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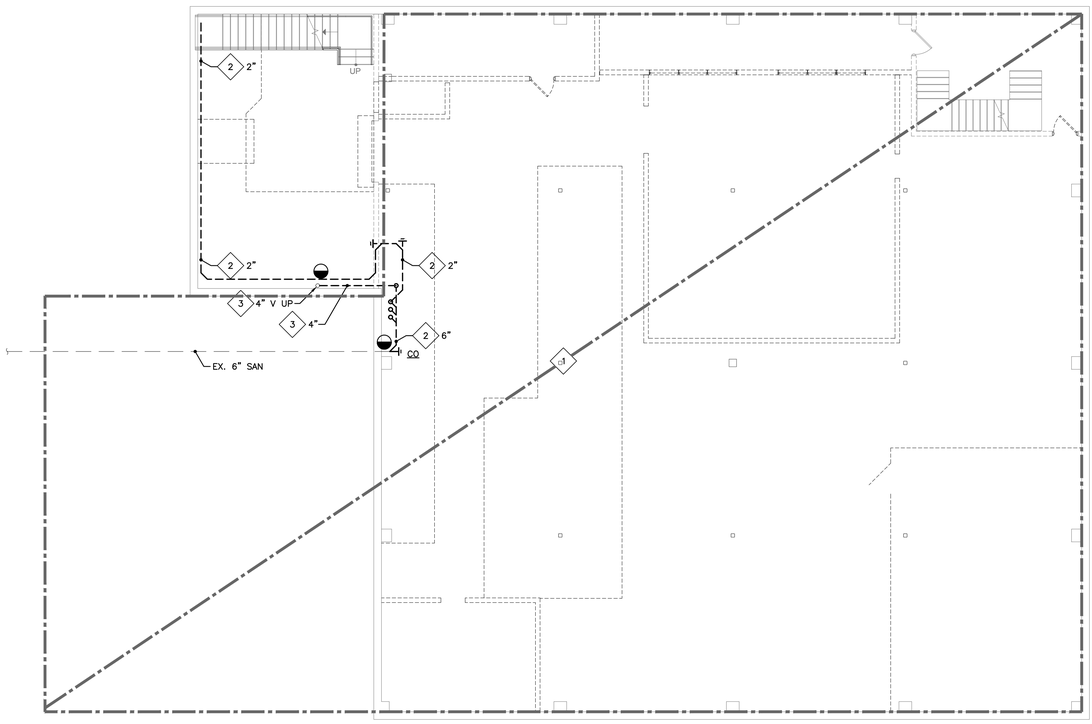
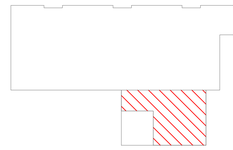


BASEMENT PLUMBING DEMOLITION PLAN

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

KEYED DEMOLITION NOTES:

1. REMOVE ALL EXISTING ABANDONED-IN-PLACE PIPING, AND ALL ASSOCIATED FITTINGS, CONNECTIONS, SUPPORTS AND APPURTENANCES.
2. REMOVE EXISTING SANITARY PIPING AND ALL ASSOCIATED FITTINGS, CONNECTIONS, SUPPORTS AND APPURTENANCES TO THE EXTENT INDICATED.
3. REMOVE EXISTING VENT PIPING AND ALL ASSOCIATED FITTINGS, CONNECTIONS, SUPPORTS AND APPURTENANCES TO ABOVE THE NEW MAIN FLOOR CEILING LEVEL. PREPARE EXISTING VENT PIPING FOR NEW PIPING CONNECTION.



Key Plan

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Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Basement Plumbing Demolition Plan

PROJECT NUMBER 17.177

DRAWN BY JBW

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

P100

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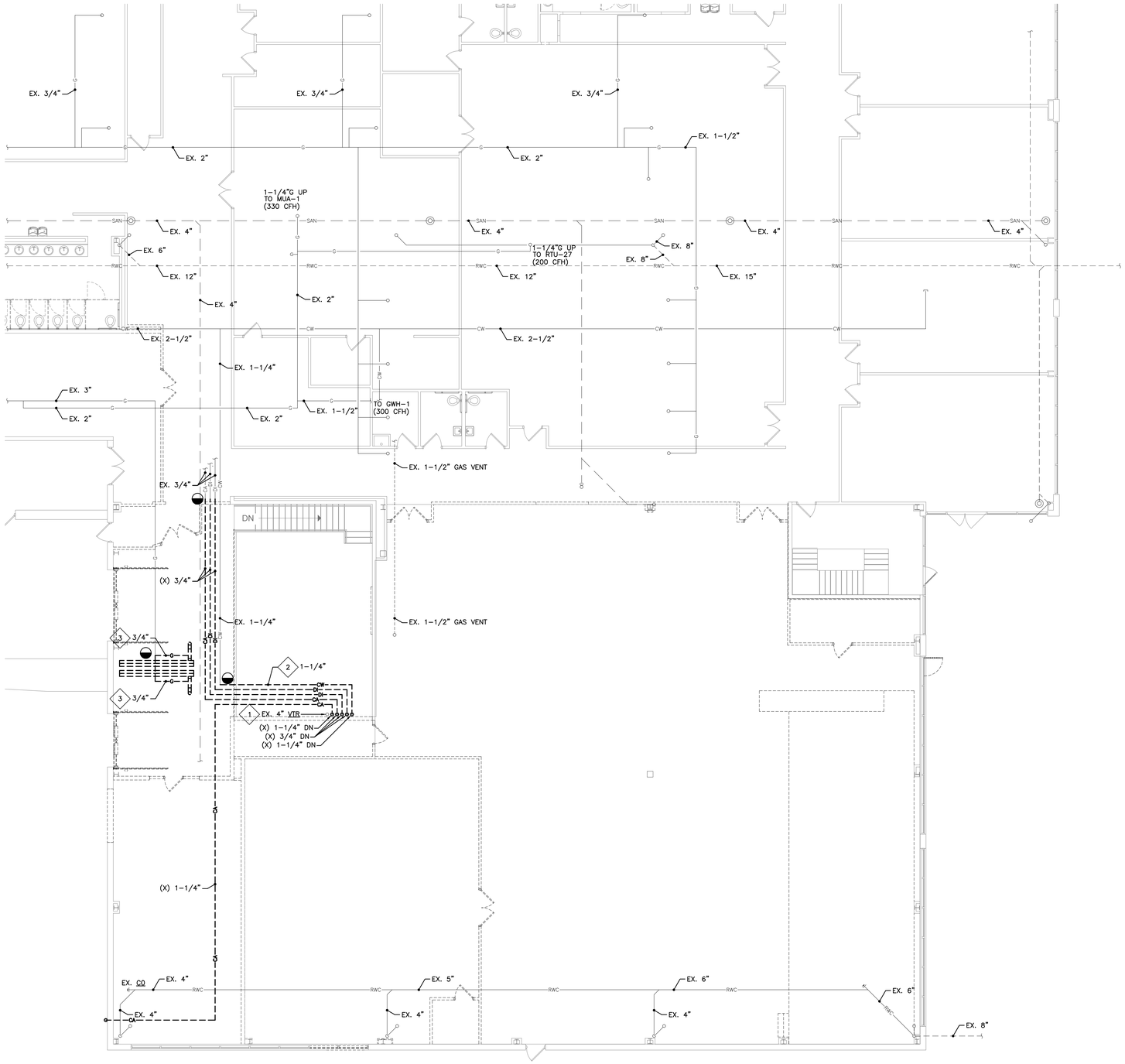

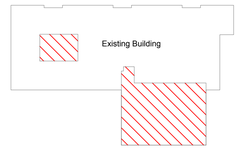

Key Plan

PARTIAL FIRST FLOOR PLUMBING DEMOLITION PLAN

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

KEYED DEMOLITION NOTES:

1. REMOVE EXISTING VENT PIPING AND ALL ASSOCIATED FITTINGS, CONNECTIONS, SUPPORTS AND APPURTENANCES TO ABOVE THE NEW MAIN FLOOR CEILING LEVEL. PREPARE EXISTING VENT PIPING FOR NEW PIPING CONNECTION.
2. REMOVE EXISTING DOMESTIC COLD WATER PIPING AND ALL ASSOCIATED FITTINGS, CONNECTIONS, SUPPORTS AND APPURTENANCES TO THE EXTENT INDICATED. PREPARE EXISTING PIPING FOR NEW PIPING CONNECTION.
3. REMOVE EXISTING NATURAL GAS PIPING AND ALL ASSOCIATED FITTINGS, CONNECTIONS, SUPPORTS AND APPURTENANCES TO THE EXTENT INDICATED. PREPARE PIPING FOR EXTENSION TO NEW ROOFTOP UNITS.

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REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Partial First Floor Plumbing Demolition Plan

PROJECT NUMBER 17.177

DRAWN BY JBW

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

P101

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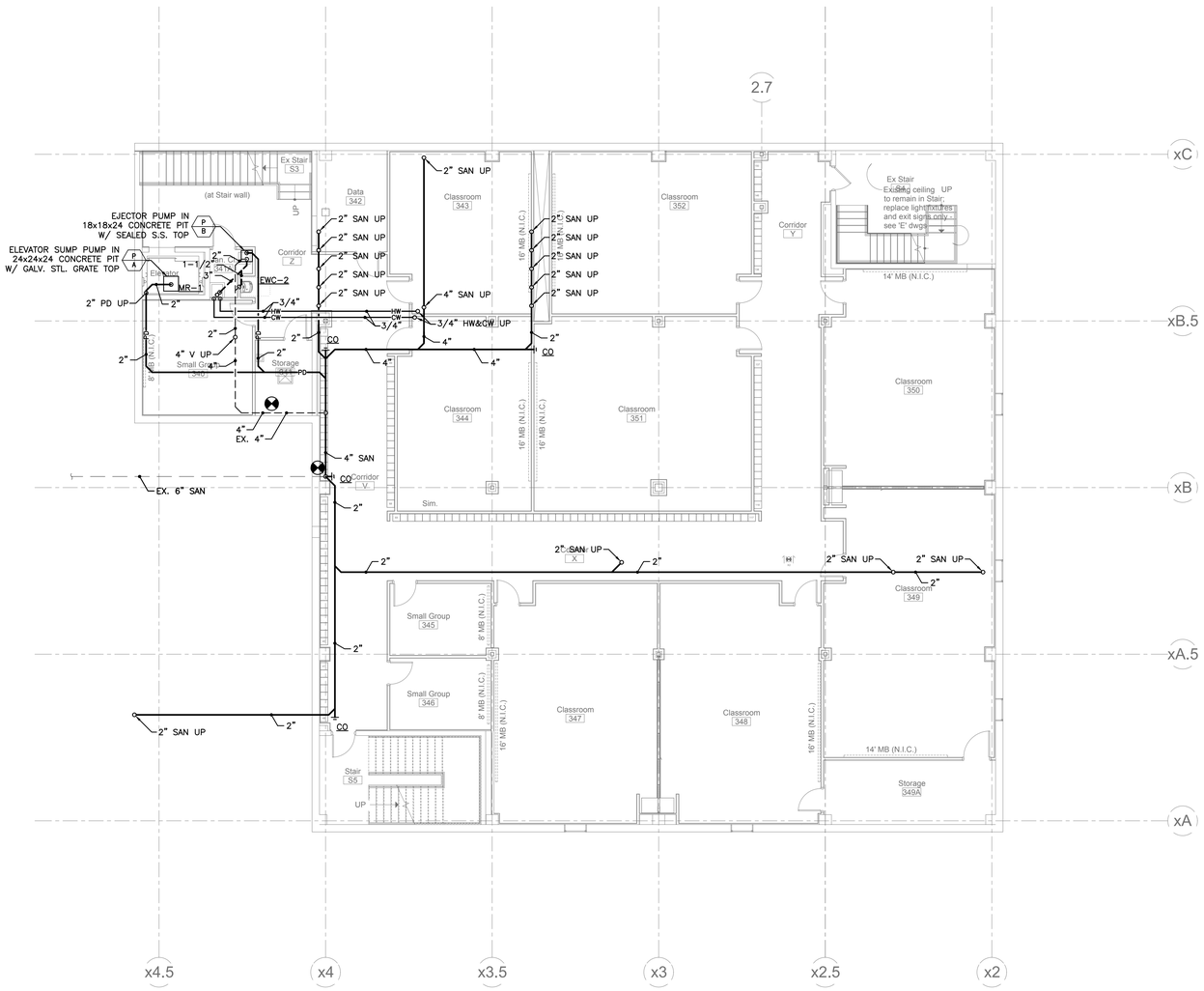
Key Plan



BASEMENT PLUMBING NEW WORK PLAN

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

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No.	Date	Description

DRAWING TITLE

Basement Plumbing New Work Plan

PROJECT NUMBER 17.177

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P200

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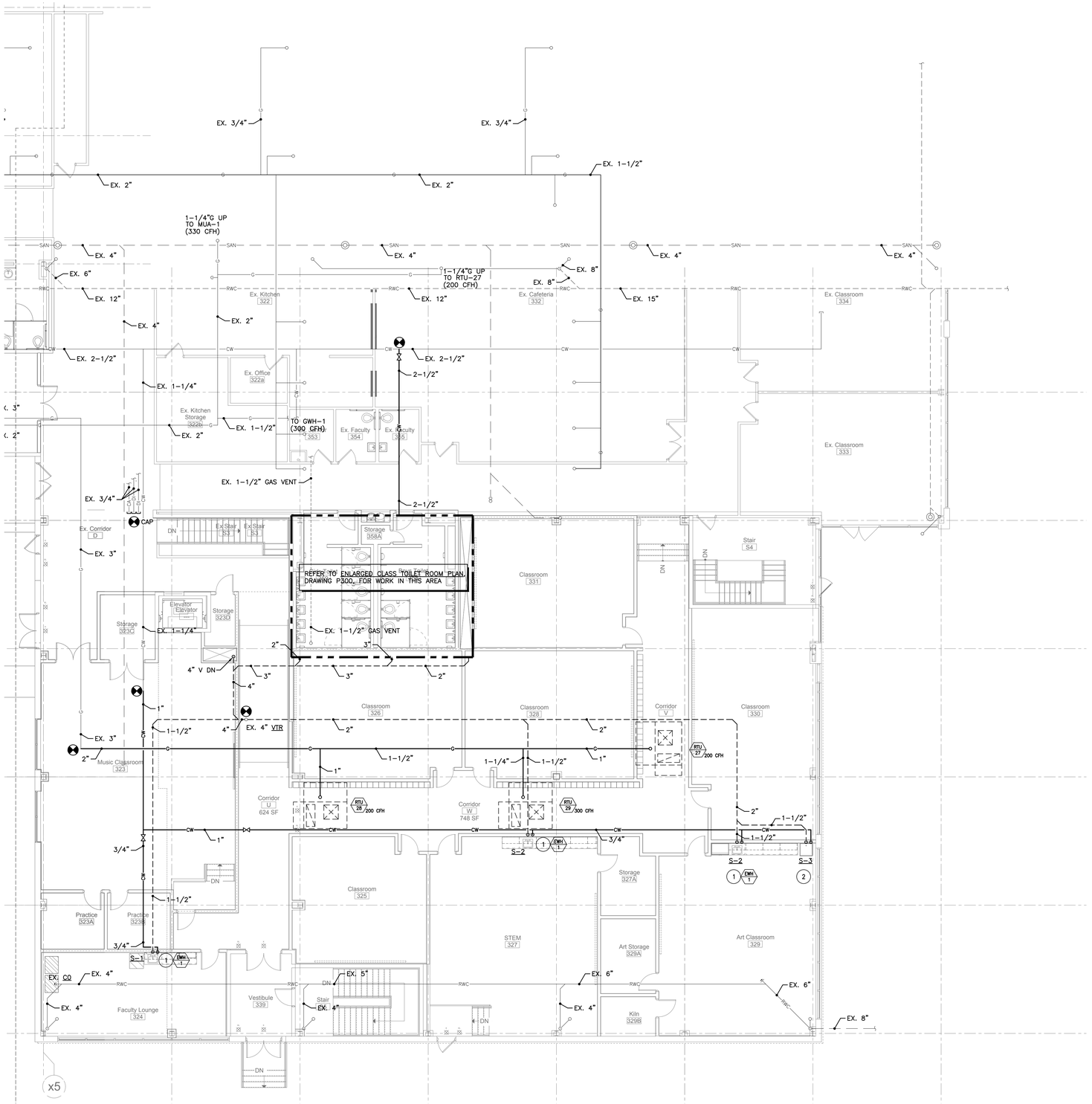

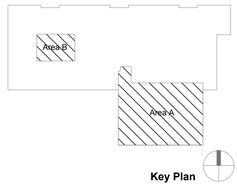

KEYED NEW WORK NOTES:

1. EXTEND 3/4" COLD WATER DOWN TO SERVE COLD AND HOT WATER CONNECTIONS FOR NEW SINK. EXTEND 3/4" TO COLD WATER INLET AND 3/4" TO SERVE UNDERCOUNTER INSTANTANEOUS ELECTRIC WATER HEATER. EXTEND 3/4" DOMESTIC HOT WATER PIPING FROM WATER HEATER TO SERVE SINK.
2. EXTEND 3/4" COLD WATER DOWN TO SERVE COLD WATER CONNECTION FOR NEW SINK. EXTEND 3/4" DOMESTIC HOT WATER PIPING FROM WATER HEATER AT ADJACENT SINK S-2 TO SERVE SINK S-3.

PARTIAL FIRST FLOOR NEW WORK PLUMBING PLAN - AREA A

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

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No.	Date	Description

DRAWING TITLE

Partial First Floor New Work Plumbing Plan - Area A

PROJECT NUMBER 17.177

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SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

P201A

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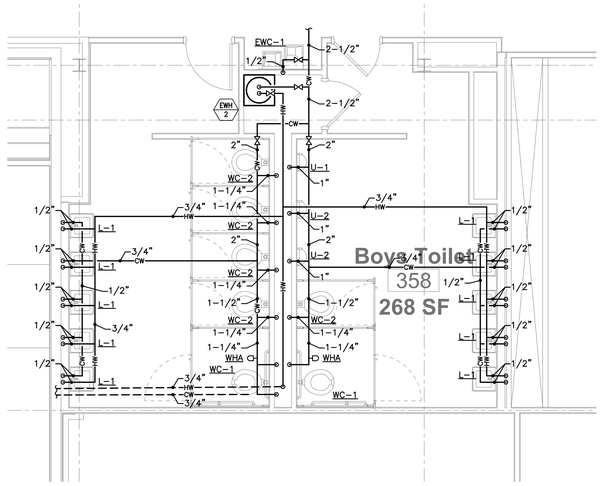
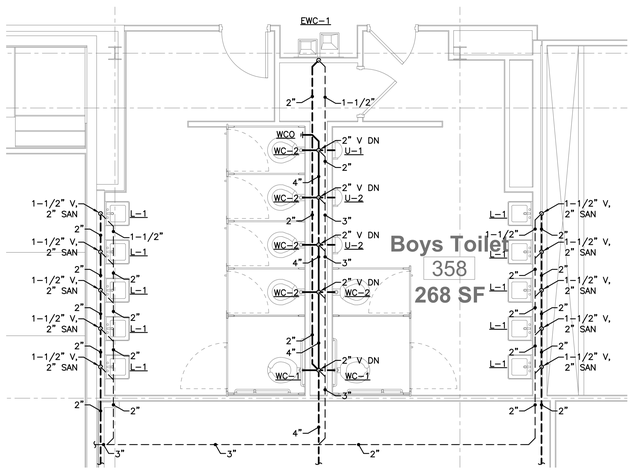


ENLARGED CLASS TOILET ROOM PLAN - DOMESTIC WATER

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



ENLARGED CLASS TOILET ROOM PLAN - SANITARY/VENT

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

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No.	Date	Description

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Enlarged Plumbing Plans

PROJECT NUMBER 17.177

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DATE 09.14.2018

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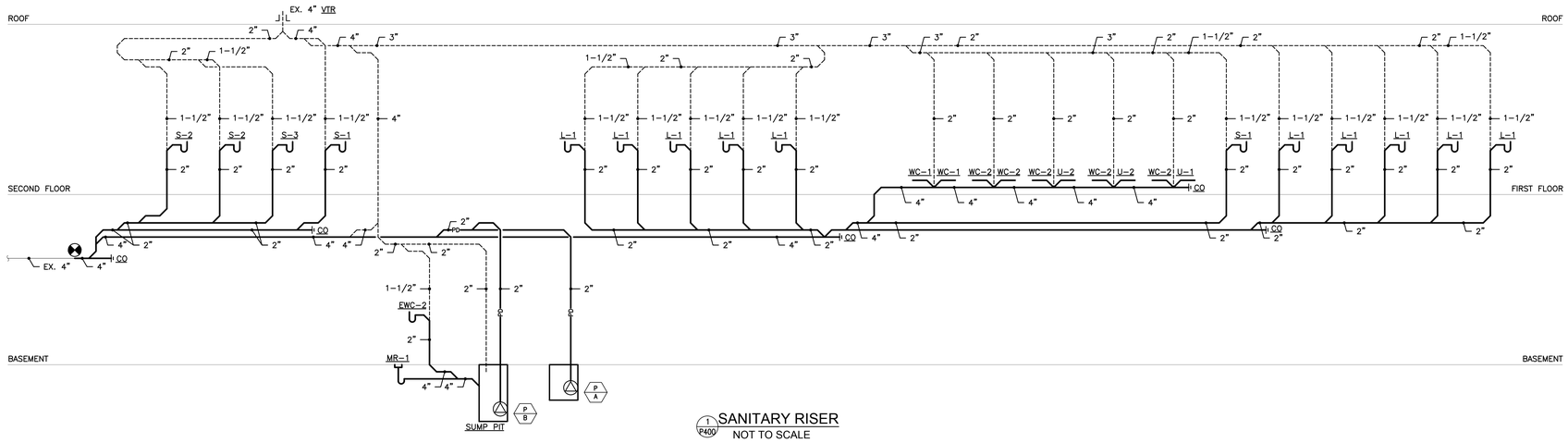
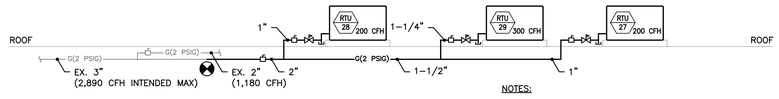


1 P400 SANITARY RISER
NOT TO SCALE



NOTES:

-PIPE SIZE CALCULATIONS BASED ON LONGEST RUN METHOD
-2 PSIG INLET, 1 PSIG DROP
-EX. 3" GAS PIPING ORIGINAL DESIGN CAPACITY 2,890 CFH
  - 1,180 CFH UTILIZED FOR KITCHEN RENOVATION.
  - 800 CFH NEW LOAD, 500 L.F. EQUIVALENT

2 P400 NATURAL GAS RISER
NOT TO SCALE

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Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Plumbing Risers

PROJECT NUMBER
17.177

DRAWN BY
JBW

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
P400

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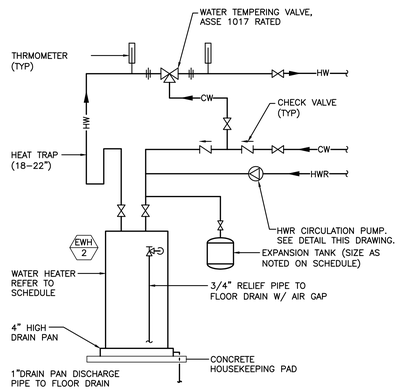
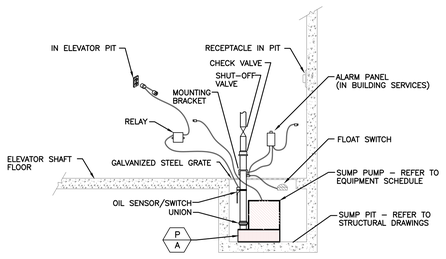
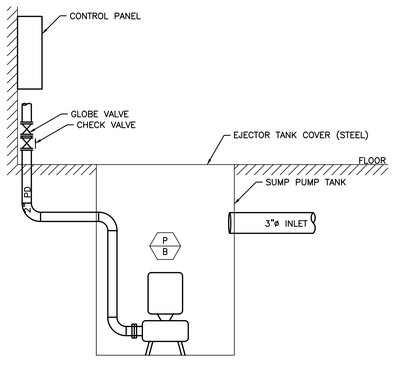


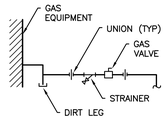
ELECTRIC WATER HEATER PIPING DIAGRAM
NOT TO SCALE



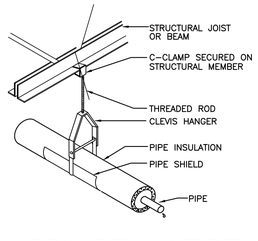
ELEVATOR PIT SUMP PUMP DETAIL
NOT TO SCALE



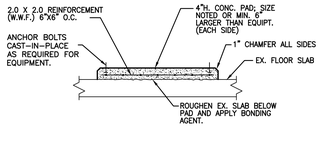
SIMPLEX STORMWATER SUMP PUMP
NOT TO SCALE



TYP GAS EQUIPMENT CONNECTION DETAIL
NOT TO SCALE



TYPICAL PIPE HANGER DETAIL
NOT TO SCALE



TYPICAL CONCRETE PAD DETAIL
NOT TO SCALE

SUMP PUMP SCHEDULE

SYMBOL	SERVICE	LOCATION	GPM	HEAD (FT.)	TYPE	RPM	HP	VOLTS	PHASE	PUMP PIT COVER	PUMP BASIS OF DESIGN	NOTES
P–A	ELEVATOR SUMP PUMP	ELEVATOR PIT	50	25	SUMP	3600	3/4	115	1	OPEN GRATE GALVANIZED STEEL	LIBERTY PUMPS: ELV290	SEE NOTES 1,2,3,4
P–B	BASEMENT SUMP PUMP	JANITOR	12	20	SUMP	3600	1/3	115	1	20x20x1/4" S.S. GASKETED	LIBERTY PUMPS: ELV290	SEE NOTES 1,2,3,4

NOTES:
1. PROVIDE WALL MOUNTED LIQUID LEVEL ALARM PANEL WITH RED WARNING LIGHT, HIGH DECIBEL ALARM, ALARM RE–SET/SILENCE SWITCH, POWER CORD, GROUNDED MOLDED PLUG, AND FLOAT SWITCH. PLUMBING CONTRACTOR SHALL PROVIDE LOW VOLTAGE WIRING FROM PUMP TO ALARM PANEL LOCATED IN ELEVATOR MACHINE ROOM. ALARM PANEL SHALL BE AS MANUFACTURED BY STANCOR INDUSTRIES.
2. PROVIDE WITH OIL SENSOR PUMP SWITCH WITH AUTOMATIC OPERATION ON LEVEL/OFF LEVEL MECHANICAL FLOAT SWITCH. TIE SWITCH INTO ALARM PANEL.
3. PROVIDE OPENINGS IN STEEL COVER FOR DISCHARGE PIPE AND WIRING.
4. CONCRETE PIT CONSTRUCTION BY GENERAL CONTRACTOR.

ELECTRIC WATER HEATER SCHEDULE

SYMBOL	STORAGE GALS	RECOVERY		ELECTRIC INPUT (KW)	ELECTRICAL VOLTS/PH	TEMP SETTING	BASIS OF DESIGN	NOTES
		GPH	DEG RISE					
EWH–1	0	60	55°F	8.0	277/1	110°F	CHRONOMITE MODEL: E–80L/208	–
EWH–2	40	25	90°F	5.5	277/1	110°F	A.O. SMITH MODEL: DEN–40	1,2

NOTES:
1. PROVIDE AO SMITH MODEL TW–12 OR EQUAL EXPANSION TANK.
2. WATER HEATER HAS ONE (1) EACH 5.5 KW HEATING ELEMENTS. RECOVERY BASED ON ONE (1) EACH 5.5 KW HEATING ELEMENT USAGE.

DRAINAGE SCHEDULE

SYMBOL	DESCRIPTION	BODY	TOP/STRAINER	NOTES
CO	CLEAN OUT	Z–1440	–	ABS PLUG; TAPERED THREADS
FCO	FLOOR CLEAN OUT	ZN–1400	BRONZE TOP	ADJUSTABLE TO FINISHED FLOOR
WCO	WALL CLEAN OUT	ZB–1446	STAINLESS STEEL WALL PLATE	ROUND WALL ACCESS PANEL

NOTES:
1. UNLESS OTHERWISE NOTED, MODEL NUMBERS SHOWN ARE FOR ZURN INDUSTRIES PRODUCT. SHOWN AS A BASIS OF DESIGN.
2. SEE PLANS FOR PIPE SIZES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR FINISHES. PROVIDE CLEAN OUT SUITABLE FOR FLOOR FINISH SHOWN PER SPECIFICATIONS.

WATER HAMMER ARRESTOR SCHEDULE

SYMBOL	DESRIPTION	FIXTURE UNITS	PIPE SIZE	AIR CHAMBER CAPACITY (CU. IN.)	NOTES
WHA–A	PLUMBING DRAINAGE INSTITUTE (PDI), TYPE A	1–11	1/2"	3.5	1, 2, 3
WHA–B	PLUMBING DRAINAGE INSTITUTE (PDI), TYPE B	12–32	3/4"	4.3	1, 2, 3
WHA–C	PLUMBING DRAINAGE INSTITUTE (PDI), TYPE C	33–60	1"	6.5	1, 2, 3

NOTES:
1. INSTALL IN AN ACCESSIBLE LOCATION FOR MAINTENANCE.
2. INSTALL ON ALL PLUMBING EQUIPMENT WITH QUICK CLOSING VALVES.
3. INSTALL ON COMMERCIAL DISHWASHER.

PLUMBING FIXTURE SPECIFICATION SCHEDULE

SYMBOL	FIXTURE	PIPE CONNECTION SIZES	MATERIAL	DESCRIPTION	OPERATION/CONTROLS	MANUFACTURERS		REMARKS
WC–1	ADA WATER CLOSET	CW: 1–1/4" HW: – VENT: 2" SAN: 4"	VITREOUS CHINA (WHITE)	ADA ACCESSIBLE STYLE: FLUSH VALVE OPERATION DESIGN CONSUMPTION: 1.6 GPF HEIGHT: ACCESSIBLE INLET: TOP SPUD OUTLET: REAR BOWL: ELONGATED TOILET SEAT: WHITE, OPEN FRONT, SS SELF SUSTAINING CHECK SUPPORT: CARRIER	FLUSHOMETER VALVE: CHROME PLATED BRASS BODY, CHECK VALVE, VACUUM BREAKER DESIGN: DIAPHRAGM STYLE: EXPOSED INLET SIZE: 1" VACCUM BREAKER: 1–1/2" TRIP MECHANISM: MANUAL, OSCILLATING CONSUMPTION: 1.6 GPF OR LESS	WATER CLOSET: KOHLER (MODEL: KINGSTON K–4325) AMERICAN STANDARD TOTO USA SEAT: CHURCH SEATS (MODEL: 9500SSCT)	FLUSH VALVE: SLOAN VALVE CO. (MODEL: ROYAL 111) AMERICAN STANDARD TOTO USA	FURNISH WITH CARRIER AND SEAL. REFER TO DRAWINGS FOR TRIP–LEVER SIDE OF WATER CLOSET.
WC–2	WATER CLOSET	CW: 1–1/4" HW: – VENT: 2" SAN: 4"	VITREOUS CHINA (WHITE)	STYLE: FLUSH VALVE OPERATION DESIGN CONSUMPTION: 1.6 GPF HEIGHT: ACCESSIBLE INLET: TOP SPUD OUTLET: REAR BOWL: ELONGATED TOILET SEAT: WHITE, OPEN FRONT, SS SELF SUSTAINING CHECK SUPPORT: CARRIER	FLUSHOMETER VALVE: CHROME PLATED BRASS BODY, CHECK VALVE, VACUUM BREAKER DESIGN: DIAPHRAGM STYLE: EXPOSED INLET SIZE: 1" VACCUM BREAKER: 1–1/2" TRIP MECHANISM: MANUAL, OSCILLATING CONSUMPTION: 1.6 GPF OR LESS	WATER CLOSET: KOHLER (MODEL: KINGSTON K–4325) AMERICAN STANDARD TOTO USA SEAT: CHURCH SEATS (MODEL: 9500SSCT)	FLUSH VALVE: SLOAN VALVE CO. (MODEL: ROYAL 111) AMERICAN STANDARD TOTO USA	FURNISH WITH CARRIER AND SEAL. REFER TO DRAWINGS FOR TRIP–LEVER SIDE OF WATER CLOSET.
U–1	URINAL	CW: 3/4" HW: – VENT: 1–1/2" SAN.: 2"	VITREOUS CHINA (WHITE)	ADA ACCESSIBLE STYLE: TOP SPUD, FLUSH VALVE OPERATION CONSUMPTION: 0.5 GPF HEIGHT: ACCESSIBLE MOUNTING: WALL OUTLET: BACK SUPPORT: WALL CARRIER	FLUSHOMETER VALVE: CHROME PLATED BRASS BODY, CHECK VALVE, VACUUM BREAKER DESIGN: DIAPHRAGM STYLE: EXPOSED INLET SIZE: 1" VACUUM BREAKER: 1–1/2" TRIP MECHANISM: MANUAL, OSCILLATING CONSUMPTION: 1.6 GPF OR LESS	URINAL: AMERICAN STANDARD CO. KOHLER CO. (MODEL: BARDON K–4904–ET) SLOAN VALVE COMPANY TOTO USA ZURN INDUSTRIES	FLUSH VALVE: SLOAN VALVE CO. (MODEL: ROYAL 188) AMERICAN STANDARD TOTO USA	REFER TO DRAWINGS FOR TRIP–LEVER SIDE OF URINAL.
U–2	URINAL	CW: 3/4" HW: – VENT: 1–1/2" SAN.: 2"	VITREOUS CHINA (WHITE)	STYLE: TOP SPUD, FLUSH VALVE OPERATION CONSUMPTION: 0.5 GPF HEIGHT: ACCESSIBLE MOUNTING: WALL OUTLET: BACK SUPPORT: WALL CARRIER	FLUSHOMETER VALVE: CHROME PLATED BRASS BODY, CHECK VALVE, VACUUM BREAKER DESIGN: DIAPHRAGM STYLE: EXPOSED INLET SIZE: 3/4" VACCUM BREAKER: 1" TRIP MECHANISM: MANUAL, OSCILLATING CONSUMPTION: 0.5 GPF OR LESS	URINAL: AMERICAN STANDARD CO. KOHLER CO. (MODEL: BARDON K–4904–ET) SLOAN VALVE COMPANY TOTO USA ZURN INDUSTRIES	FLUSH VALVE: SLOAN VALVE CO. (MODEL: ROYAL 188) AMERICAN STANDARD TOTO USA	REFER TO DRAWINGS FOR TRIP–LEVER SIDE OF URINAL.
L–1	WALL HUNG LAVATORY	CW: 1/2" HW: 1/2" VENT: 1–1/2" VENU: 2"	VITREOUS CHINA (WHITE)	ADA ACCESSIBLE SIZE: 21"L–R X 18"F–B STYLE: SLAB BACK RIM HEIGHT: SEE ARCH DWG. FAUCET HOLES: SINGLE HOLE DRAIN: GRID SUPPORT: CONCEALED ARMS CARRIER	ADA ACCESSIBLE FAUCET: COMMERCIAL, CHROME PLATED BRASS BODY OPERATION: MANUAL SINGLE LEVER CENTERS: 4" CENTERS MAX. FLOW RATE: 0.5 GPM SPOUT: RIGID SPOUT, NON–AERATING. SPOUT LENGTH: 5–9/16" TEMPERING VALVE: ASSE 1070	LAVATORY: KOHLER (MODEL: SOHO K–2084–0) AMERICAN STANDARD TOTO USA	FAUCET: CHICAGO FAUCET CO. (MODEL: 420–E2805ABCP) AMERICAN STANDARD TOTO USA	FURNISH WITH SEMI–CAST BRASS P–TRAP, GRID STRAINER, CHROME PLATED SUPPLIES, LOOSE KEY STOPS, ASSE 1070 TEMPERING VALVE, AND PS–1 PROTECTIVE SHIELDING KIT.
S–1	KITCHEN SINK	CW: 1/2" HW: 1/2" VENT: 1–1/2" SAN: 2"	STAINLESS STEEL – #18 GAUGE TYPE 304	ADA ACCESSIBLE BOWL: 19"L–R X 16"F–B OVERALL: 21"L–R X 19"F–B DEPTH: 6" MOUNTING: SELF–RIMMING FAUCET HOLES: THREE (3) @ 4" CENTERS DRAIN: 3–1/2" CRUMB–CUP STRAINER DRAIN LOCATION: CENTERED, REAR	ADA ACCESSIBLE FAUCET: COMMERCIAL, CHROME PLATED BRASS BODY OPERATION: NON–COMPRESSION, MANUAL HANDLES: 4" WRIST–BLADE CENTERS: 8" FIXED MAX. FLOW RATE: 1.0 GPM SPOUT: RIGID/SWING SPOUT, NON–AERATING. SPOUT LENGTH: 8"	SINK: ELKAY CO. (MODEL: LRAD–2222) JUST MANUF. CO. KOHLER CO. MOEN, INC. REVERE SINK STERLING PLUMBING GROUP, INC.	FAUCET: CHICAGO FAUCET CO. (MODEL: 786–GN8AE73XKABCP) DELTA FAUCET CO. MOEN COMMERCIAL T & S BRASS AND BRONZE INC. TOTO USA ZURN INDUSTRIES	FURNISH AND INSTALL SEMI–CAST BRASS P–TRAP, CHROME PLATED SUPPLIES, LOOSE KEY STOPS, AND PS–1 PROTECTIVE SHIELDING
S–2	CLASSROOM SINK	CW: 1/2" HW: 1/2" VENT: 1–1/2" SAN: 2"	STAINLESS STEEL – #18 GAUGE TYPE 304	ADA ACCESSIBLE BOWL: 19"L–R X 16"F–B OVERALL: 21"L–R X 19"F–B DEPTH: 6" MOUNTING: SELF–RIMMING FAUCET HOLES: THREE (3) @ 4" CENTERS DRAIN: 3–1/2" CRUMB–CUP STRAINER DRAIN LOCATION: CENTERED, REAR	ADA ACCESSIBLE FAUCET: COMMERCIAL, CHROME PLATED BRASS BODY OPERATION: NON–COMPRESSION, MANUAL HANDLES: 4" WRIST–BLADE CENTERS: 8" FIXED MAX. FLOW RATE: 1.0 GPM SPOUT: RIGID/SWING SPOUT, NON–AERATING. SPOUT LENGTH: 8"	SINK: ELKAY CO. (MODEL: LRAD–2222) JUST MANUF. CO. KOHLER CO. MOEN, INC. REVERE SINK STERLING PLUMBING GROUP, INC.	FAUCET: CHICAGO FAUCET CO. (MODEL: 786–GN8AE73XKABCP) DELTA FAUCET CO. MOEN COMMERCIAL T & S BRASS AND BRONZE INC. TOTO USA ZURN INDUSTRIES	FURNISH AND INSTALL SOLIDS INTERCEPTOR ZURN Z1180–1, CHROME PLATED SUPPLIES, LOOSE KEY STOPS, AND PS–1 PROTECTIVE SHIELDING
S–3	CLASSROOM SINK (ART ROOM LAUNDRY SINK)	CW: 1/2" HW: 1/2" VENT: 1–1/2" SAN: 2"	STAINLESS STEEL – #18 GAUGE TYPE 304	ADA ACCESSIBLE BOWL: 24"L–R X 24"F–B OVERALL: 27"L–R X 27"F–B DEPTH: 16" MOUNTING: FREE STANDING DRAIN: 3–1/2" GRID DRAIN DRAIN LOCATION: CENTERED, REAR	FAUCET: COMMERCIAL CHROME PLATED BRASS BODY MOUNTING: WALL OPERATION: COMPRESSION, MANUAL HANDLES: FOUR ARM CENTERS: 8 INCHES SPOUT: 3/4" HOSE THREAD PAIL HOOK: REQUIRED WALL BRACE: REQUIRED VACUUM BREAKER: REQUIRED	SINK: JUST MANUF. CO. (MODEL: J–127) ELKAY CO. KOHLER CO. MOEN, INC. REVERE SINK STERLING PLUMBING GROUP, INC.	FAUCET: FIAT PRODUCTS (MODEL: 830–AA) CHICAGO FAUCET CO. DELTA FAUCET CO. KOHLER CO. MOEN INC.	FURNISH AND INSTALL SOLIDS INTERCEPTOR ZURN Z1180–1, CHROME PLATED SUPPLIES, LOOSE KEY STOPS, AND PS–1 PROTECTIVE SHIELDING
MR–1	MOP RECEPTOR	CW: 1/2" HW: 1/2" VENT: 1–1/2" SAN.: 3"	MOLDED STONE	FLOOR MOUNTED SIZE: 24"L–R X 24"F–B HEIGHT: 10" AFF DRAIN: 3" WALL GUARDS: BACK, STAINLESS STEEL MOP BRACKET: 24"L X 3"W, (3) RUBBER TOOL GRIPS HOSE & BRACKET: 5/8" X 30"L	FAUCET: COMMERCIAL CHROME PLATED BRASS BODY MOUNTING: WALL OPERATION: COMPRESSION, MANUAL HANDLES: FOUR ARM CENTERS: 8 INCHES SPOUT: 3/4" HOSE THREAD PAIL HOOK: REQUIRED WALL BRACE: REQUIRED VACUUM BREAKER: REQUIRED	MOP RECEPTOR: FIAT PRODUCTS (MODEL: MSB 2424) AMERICAN STANDARD KOHLER CO.	FAUCET: FIAT PRODUCTS (MODEL: 830–AA) CHICAGO FAUCET CO. DELTA FAUCET CO. KOHLER CO. MOEN INC.	FURNISH AND INSTALL SEMI–CAST BRASS P–TRAP.
EWC–1	ELECTRIC WATER COOLER	CW: 1/2" HW: – VENT: 1–1/4" SAN.: 1–1/4"	STAINLESS STEEL, SATIN FINISH	ADA ACCESSIBLE TYPE: PB, PRESSURE WITH BUBBLER, OVAL SHAPE FOUNTAIN DESIGN MOUNTING: WALL, PARTIALLY RECESSED CABINET: BI–LEVEL, ONE ADA HEIGHT, ONE STANDARD HEIGHT, AND BOTTLE FILLER NOTE: ADA ON LEFT SIDE	CONTROL: PUSH OR PUSH BUTTON REFRIGERATION SYSTEM: REMOTE MOUNTED ABOVE CEILING CAPACITY: 8.0 GPH, 80 DEG INLET, 50 DEG OUTLET WATER ELECTRIC: 1/5HP, 120V, 60HZ SUPPORT: RECESSED IN WALL CANE TOUCH APRON: REQUIRED	WATER COOLER: ELKAY (LZSTL8WSSP) BRADLEY COMPANY HALSEY TAYLOR OASIS CORPORATION SUNROC CORPORATION		
EWC–2	ELECTRIC WATER COOLER	CW: 1/2" HW: – VENT: 1–1/4" SAN.: 1–1/4"	STAINLESS STEEL, SATIN FINISH	ADA ACCESSIBLE TYPE: PB, PRESSURE WITH BUBBLER, OVAL SHAPE FOUNTAIN DESIGN MOUNTING: WALL, PARTIALLY RECESSED CABINET: ONE ADA HEIGHT, WITH BOTTLE FILLER	CONTROL: PUSH OR PUSH BUTTON REFRIGERATION SYSTEM: REMOTE MOUNTED ABOVE CEILING CAPACITY: 8.0 GPH, 80 DEG INLET, 50 DEG OUTLET WATER ELECTRIC: 1/5HP, 120V, 60HZ SUPPORT: RECESSED IN WALL CANE TOUCH APRON: REQUIRED	WATER COOLER: ELKAY (LZS8WSSP) BRADLEY COMPANY HALSEY TAYLOR OASIS CORPORATION SUNROC CORPORATION		
PS–1	ADA PROTECTIVE SHIELDING GUARD	----	PLASTIC INSULATION WRAP (WHITE)	PLASTIC WRAP FOR COVERING PLUMBING FIXTURE HOT AND COLD WATER SUPPLIES, VALVES, TRAP, AND DRAIN PIPING	-------	McGUIRE MANUFACTURING CO., INC. PLUMBEREX SPECIALTY PRODUCTS INC. TRUEBRO, INC.		FURNISH AND INSTALL ON ALL ADA FIXTURES AND FIXTURES NOTED IN THIS SPECIFICATION SCHEDULE

NOTES:

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Plumbing Schedules and Details

PROJECT NUMBER
17.177

DRAWN BY
JBW

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
P500

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FIRE PROTECTION SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

GENERAL ABBREVIATIONS

@	AT
1Ø, 3Ø	SINGLE PHASE, THREE PHASE
A,AMP	AMPERE
ABV	ABOVE
AC	AIR COMPRESSOR
AD	ACCESS DOOR
ADR	AREA DRAIN
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
AP	ACCESS PANEL
APPROX	APPROXIMATELY
AR	ARGON
AUX	AUXILIARY
AV	ACID VENT
AVG	AVERAGE
AVTR	ACID VENT THRU ROOF
AW	ACID WASTE
AWS	ANIMAL WATERING SYSTEM
BA	BREATHING AIR
BAS	BUILDING AUTOMATION SYSTEM
BFC	BELOW FINISH CEILING
BFP	BACKFLOW PREVENTOR
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLW	BELOW
BSMT	BASEMENT
BMS	BUILDING MANAGEMENT SYSTEM
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALL VALVE
BWV	BACKWATER VALVE
BYP	BYPASS
°C	DEGREES CENTIGRADE
CA	COMPRESSED AIR
CAD	COMPRESSED AIR DRYER
CAF	COMPRESSED AIR FILTER
CAFM	COMPRESSED AIR FLOW METER
CAP	CAPACITY
CAR	COMPRESSED AIR RECEIVER
CB	CATCH BASIN
CBV	CIRCUIT BALANCING VALVE
CCW	COUNTERCLOCKWISE
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CGM	COMPRESSED GAS MANIFOLD
CHKV	CHECK VALVE
CI	CAST IRON
CIP	CLEAN IN PLACE
CL	CENTERLINE
CLL	COLUMN LINE
CLG	CEILING
CLS	CLEAN STEAM
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CO2	CARBON DIOXIDE
COL	COLUMN
COMP	COMPRESSOR
CON	CONCENTRIC
CONC	CONCRETE
COND	CONDENSATE
CONN	CONNECT/CONNECTION
CONT'N	CONTINUATION
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CP	CONTROL PANEL
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CUP SINK
CSW	COLD SOFT WATER
CTRL	CONTROL
CU	COPPER
CVS	CONTROL VALVE STATION
CW	CLOCKWISE
(D)	DEMOLITION
DB	DECIBEL
DCW	DOMESTIC COLD WATER
DEG	DEGREES
DEPT	DEPARTMENT
DET	DETAIL
DFU	DRAINAGE FIXTURE UNIT
DHW	DOMESTIC HOT WATER SUPPLY
DHWR	DOMESTIC HOT WATER RETURN
DI	DUCTILE IRON
DIA	DIAMETER
DIAG	DIAGRAM
DIFF	DIFFERENTIAL
DIR	DEIONIZED WATER RETURN
DIS	DEIONIZED WATER SUPPLY
DISCH	DISCHARGE
DIV	DIVISION
DIW	DOWN IN WALL
DN	DOWN
DS	DRY STANDPIPE
DWG	DRAWING
DWV	DRAINAGE, WASTE, & VENT
(E)	EXISTING / EXISTING TO REMAIN
(ER)	EXISTING TO BE RELOCATED
EA	EACH
EC	ELECTRICAL CONTRACTOR
ECC	ECCENTRIC
EFF	EFFICIENCY
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESC	ESCUTCHEON
ETC	AND SO FORTH
EW	EYEWASH
EWC	ELECTRICAL WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXAMPLE
EXP	EXPANSION
EXT	EXTERNAL / EXTERIOR
°F	DEGREES FAHRENHEIT
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FC	FAIL CLOSED
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FLOOR DEPARTMENT CONNECTION
FDV	FIRE DEPARTMENT VALVE
FDVC	FIRE DEPARTMENT VALVE CONNECTION
FLG	FLANGE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FO	FAIL OPEN
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBER REINFORCED POLYESTER
FS	FLOW SWITCH
FT	FEET
FTB	FLOOR TO BOTTOM
FTC	FLOOR TO CENTERLINE
FTT	FLOOR TO TOP
FURN	FURNISH
FUT	FUTURE
FXC	FLEXIBLE CONNECTION
G	NATURAL GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLV	GLOBE VALVE
GMP	GOOD MANUFACTURING PRACTICE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR/LB	GRAINS PER POUND
GV	GATE VALVE
GWH	GAS WATER HEATER
H2	HYDROGEN
H2O	WATER
HB	HOSE BIBB
HD	HEAD
HE	HELIUM
HP	HORSEPOWER
HR	HOUR
HS	HOSE STATION
HSW	HOT SOFT WATER
HSKPG	HOUSEKEEPING
HT	HEIGHT
HTR	HEATER
HZ	HERTZ
IA	INSTRUMENT AIR
ID	INSIDE DIMENSION / DIAMETER
IN	INCHES
INCL	INCLUDING
INFO	INFORMATION
INT	INTERNAL
INV	INVERT
INWC	INCHES OF WATER COLUMN
IPS	INTERNATIONAL PIPE STANDARD
KW	KILOWATTS
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LBS/HR	POUNDS PER HOUR (#/HR)
LIQ	LIQUID
LN2	LIQUID NITROGEN
LS	LAB SINK
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
MAV	MANUAL AIR VENT
MAWP	MAXIMUM ALLOWABLE WORKING PRESSURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MMBTU	MILLION BRITISH THERMAL UNIT
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MR	MOP RECEPTOR
MTD	MOUNTED
MV	MIXING VALVE
N2	NITROGEN
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NPW	NON-POTABLE WATER
NUM	NUMBER
NTS	NOT TO SCALE
O2	OXYGEN
OA	OUTSIDE AIR
OB	OFF BOTTOM
OC	ON CENTER
OCC	OCCUPIED / OCCUPANCY
OD	OUTSIDE DIMENSION / DIAMETER
OFCI	OWNER-FURNISHED, CONTRACTOR-INSTALLED
OFOI	OWNER-FURNISHED, OWNER-INSTALLED
OPNG	OPENING
OS	OPEN SITE DRAIN
OT	OFF TOP
PART	PARTIAL
PC	PLUMBING CONTRACTOR
PCW	PROCESS COLD WATER
PD	PRESSURE DROP
PE	PNEUMATIC-ELECTRIC
PERF	PERFORATED
PH	PHASE
PHW	PROCESS HOT WATER
PHWR	PROCESS HOT WATER RETURN
PI	PRESSURE INDICATOR
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PNEU	PNEUMATIC
POLY	POLYETHYLENE
POS	POSITIVE
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	REMOVE
(RE)	RELOCATED EXISTING
RAC	RUN ABOVE CEILING
RAF	RUN ABOVE FLOOR
RATC	RUN AT CEILING
RBC	RUN BELOW CEILING
RBF	RUN BELOW FLOOR
RBG	RUN BELOW GRADE
RBJ	RUN BETWEEN JOIST
RD	ROOF DRAIN
RDC	REDUCER
REC	RECESSED
RECIRC	RECIRCULATE
REL	RELIEF
REQD	REQUIRED
RIC	RUN IN CHASE
RICW	RUN IN CASEWORK
RIE	RUN IN ENCLOSURE
RIW	RISE IN WALL
RLA	RATED LOAD AMPS
RM	ROOM
RO	REVERSE OSMOSIS
ROD	ROOF OVERFLOW DRAIN
RPM	REVOLUTIONS PER MINUTE
S/SHO	SAFETY SHOWER
SS/EW	SAFETY SHOWER/EYEWASH
SA	SHOCK ABSORBER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SEC	SECONDARY
SF	SQUARE FOOT
SH	SHOWER
SIP	STERILIZE IN PLACE
SK	SINK
SP	SPRINKLER
SPEC	SPECIFICATION
SQ	SQUARE
SRV	SAFETY RELIEF VALVE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUCT	SUCTION
SUP	SUPPLY
SYS	SYSTEM
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TFA	TO FLOOR ABOVE
TI	TEMPERATURE INDICATOR
TK	TANK
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TP	TRAP PRIMER
TPW	TEMPERED WATER
T&P	TEMPERATURE & PRESSURE RELIEF
TYP	TYPICAL
UH	UNIT HEATER
UNOCC	UNOCCUPIED
UR	URINAL
V	VOLTS
VAC	LAB VACUUM
VB	VACUUM BREAKER
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VTR	VENT THRU ROOF
W/	WITH
W/O	WITHOUT
W	WIDTH
WC	WATER CLOSET
WCO	WATER CLEANOUT
WFU	WATER FIXTURE UNIT
WS	WET STANDPIPE

GENERAL SYMBOLS

SECTION TAG	## / AA-### — SECTION NUMBER; DRAWING ON WHICH SECTION IS SHOWN
ROOM TAG	ROOM / ### / DESCR — ROOM NAME; ROOM NUMBER; ADDITIONAL INFO (OPTIONAL)
EQUIPMENT TAG	X / # — DESIGNATION; REFERENCE NUMBER
MATCH LINE	REFER TO SHEET XX-###

EXTENT OF DEMOLITION	
CONNECT TO EXISTING	
DEMOLITION WORK NOTE	#
NEW WORK NOTE	#
PREPURCHASED EQUIPMENT	
CONNECT TO MANUFACTURER'S PREPIPED CONNECTION	
CONTINUATION REFERENCE	X
REVISION & NUMBER	1

LINE ABBREVIATIONS

(NAME)	EXISTING SERVICE
SP	WET-PIPE SPRINKLER PIPING
FOAM	FOAM PIPING
GLY-SP	GLYCOL-FILLED SPRINKLER PIPING
CLAG	CLEAN AGENT PIPING
(NAME)	EXISTING SERVICE TO BE REMOVED
F	FIRE MAIN
DRY-SP	DRY-PIPE SPRINKLER PIPING
PA-SP	PRE-ACTION SPRINKLER PIPING
CA	COMPRESSED AIR PIPING
N2	NITROGEN PIPING

CODE REFERENCE

1. ALL NEW WORK SHALL BE IN ACCORDANCE WITH:
   - 2007 EDITION OF NFPA 13
   - 2009 INTERNATIONAL FIRE CODE (IFC) WITH PA UCC 2015 AMENDMENTS AS APPLICABLE.
   - 2009 INTERNATIONAL BUILDING CODE (IBC) WITH PA UCC 2015 AMENDMENTS AS APPLICABLE.

HYDRANT FLOW TEST DATA

Flow Test By/From:	AQUA PA
Date of Test:	June 10, 2013
Time of Test:	1:00 PM
Flow Hydrant Location/#:	Creamery Way, 1023 Ft. East of Thomas Jones Way.
Pressure Hydrant Location/#:	Thomas Jones Way & Creamery Way
# of Outlets Flowed/Dia. (Inches):	One (1) - 2 -1/2
Static Pressure (psig):	164
Residual pressure (psig):	152
Flow (gpm)	2055
Pitot Pressure (psig):	150
Notes:	Avg. Static Pressure for Hydrant #58-236 is 162 psig

SINGLE LINE PIPING SYMBOLS

EXISTING PIPE TO REMAIN	NAME
EXISTING PIPE TO BE REMOVED	(NAME)
NEW PIPE	
DIRECTION OF FLOW	
PIPE SLOPE	
FITTINGS (DOWN ELBOW, DOWN TEE, AND UP ELBOW OR TEE)	
REDUCERS (CONCENTRIC & ECCENTRIC)	
UNIONS (THREADED, FLANGED & BLIND FLANGE)	
END CAP THREADED END CAP WELDED END CAP	
FLEXIBLE CONNECTION	
ISOLATION VALVES (IN PLAN & IN RISE)	
GATE VALVE	
BALL VALVES (NORMAL & CHARACTERIZED)	
BUTTERFLY VALVE (MANUAL & CONTROL)	
ANGLE VALVES (GATE, GLOBE, & STOP CHECK)	
PRESSURE REDUCING/ REGULATING VALVE	
CHECK VALVE	
SAFETY RELIEF VALVE & RUPTURE DISC	
STRAINERS (WITHOUT & WITH BLOWDOWN VALVES)	
TRANSMITTER (PRESSURE OR TEMPERATURE)	PT/TT
WATER MOTOR GONG	
FIRE DEPARTMENT CONNECTION	
FIRE HYDRANT	

DRAIN VALVES (BALL / GATE & HOSE CONN. / THREADED CAP)	
PRESSURE INDICATORS (WITHOUT & WITH SYPHON TUBE)	
PRESSURE INDICATORS IN RISE (WITHOUT & WITH SYPHON TUBE)	
SOLENOID VALVES (2-WAY & 3-WAY)	
ANCHORS (MAIN, INTERMEDIATE, & GUIDE)	
BACKFLOW PREVENTERS	
CONTROL VALVES (2-WAY & 3-WAY)	
HEAT TRACING	
PIPE CONTINUATION	
MANUAL PULL STATION	F
ABORT STATION	A
KEY MAINTENANCE SWITCH	K
PHOTOELECTRIC SMOKE DETECTOR	P
IONIZATION SMOKE DETECTOR	I
HEAT DETECTOR PRE-ACTION SYSTEM	H
AGENT RELEASE CONTROL PANEL	FACP
GRAPHIC ANNUNCIATOR PANEL	GAP
FLOW SWITCH	FS
TAMPER SWITCH	TS
ALARM BELL	
DISCHARGE HORN/STROBE	
DISCHARGE STROBE	

SPRINKLER SYMBOLS

NEW SPRINKLER HEAD	
NEW UPRIGHT SPRINKLER HEAD	
SPECIAL SPRINKLER HEAD	
SIDEWALL SPRINKLER HEAD	
EXISTING SPRINKLER HEAD TO REMAIN	
EXISTING SPRINKLER HEAD TO BE REMOVED	
CLEAN AGENT DISPENSING NOZZLE 360°	
CLEAN AGENT DISPENSING NOZZLE 180°	

GENERAL FIRE PROTECTION NOTES

1. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH THE EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK.
2. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, TESTING, AND INSPECTIONS.
3. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE CONTRACT DOCUMENTS. THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THESE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATIONS SHALL BE CORRECTED BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL BE RESPONSIBLE, EXCEPT AS OTHERWISE INDICATED OR APPROVED BY THE OWNER, TO PROVIDE LABOR AND MATERIALS TO RESTORE ALL SURFACES REMOVED, DAMAGED OR DISTURBED AS PART OF THE WORK OF THESE CONTRACT DOCUMENTS, TO A CONDITION THAT IS ACCEPTABLE TO THE ARCHITECT AND THE BUILDING OWNER EQUAL TO OR BETTER THAN THAT BEFORE THE WORK BEGAN. THIS SHALL INCLUDE BUT NOT BE LIMITED TO PATCHING, PAINTING, ROOFING, ETC. FOR ALL CUTTING AND PATCHING OF THE EXISTING FLOORS, WALLS AND PARTITIONS IN THE EXISTING BUILDING.
5. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER. CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION. ISOLATE WORK AREAS BY MEANS OF TEMPORARY PARTITIONS AND/OR TARPS TO KEEP DUST AND DIRT WITHIN THE CONSTRUCTION AREA. NO TRIPPING HAZARDS SHALL BE PRESENT DURING CONSTRUCTION OR AT COMPLETION OF WORK.
6. KEEP ALL EQUIPMENT AND MATERIALS AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR OF THE BUILDING. CLEAN THE JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSED BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT.
7. IF THE CONTRACTOR ENCOUNTERS WHAT APPEARS TO BE A HAZARDOUS OR QUESTIONABLE MATERIAL, THE CONTRACTOR SHALL DISCONTINUE WORK IMMEDIATELY AND CONTACT THE OWNER.
8. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. SYSTEMS SHALL NOT BE REMOVED, DISCONNECTED, OR SHUT DOWN WITHOUT PRIOR REVIEW WITH THE OWNER AND/OR ENGINEER TO CONFIRM THAT AREAS TO REMAIN IN OPERATION WILL NOT BE AFFECTED. IF ANY AREAS NOT WITHIN THE SCOPE OF WORK ARE AFFECTED BY ANY SHUTDOWN, REMOVAL OR DISCONNECTION, SUFFICIENT ADVANCE NOTICE MUST BE GIVEN TO THE OWNER INDICATING WHICH AREAS WILL BE AFFECTED, WHEN THE PROPOSED SHUTDOWN WILL OCCUR, AND FOR HOW LONG A PERIOD OF TIME.
9. ALL ITEMS TO BE DEMOLISHED OR REMOVED SHALL BE DISPOSED OF AS PER THE OWNER'S INSTRUCTIONS, UNLESS INDICATED OTHERWISE. ALL ITEMS WHICH ARE NOT TO BE STORED ON SITE BY OWNER SHALL BE REMOVED FROM THE BUILDING IMMEDIATELY.
10. THIS CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH ANY WORK. WHERE DISCREPANCIES OCCUR BETWEEN THESE DOCUMENTS AND EXISTING CONDITIONS, THE DISCREPANCY SHALL BE REPORTED TO THE OWNER AND/OR ENGINEER FOR EXPEDITING AND RESOLUTION.
11. USE OF THE OWNER'S ELEVATORS AND BUILDING CORRIDORS FOR HANDLING OF NEW AND REMOVED MATERIALS AND EQUIPMENT SHALL BE AT THE DIRECTION OF THE OWNER AND SHALL BE COORDINATED WITH OWNER'S OPERATIONS.
12. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM THE MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF THE DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFEKEEPING OF HIS OWN PROPERTY ON THE JOB SITE. OWNER ASSUMES NO RESPONSIBILITY FOR PROTECTION OF PROPERTIES AGAINST FIRE, THEFT, AND ENVIRONMENTAL CONDITIONS.
14. SEAL ALL OPENINGS AROUND ALL SYSTEM DISTRIBUTION (PIPING, DUCTWORK, CONDUIT, ETC.) THROUGH PARTITIONS, WALLS, AND FLOORS WITH APPROVED FIRESTOPPING MATERIAL.
15. FURNISH SHOP DRAWINGS FOR ALL EQUIPMENT AND MATERIALS BEING PROVIDED. SUBMIT TO OWNER AND ENGINEER FOR APPROVAL PRIOR TO FABRICATION, PURCHASE AND/OR INSTALLATION.
16. WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL."
17. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES PRIOR TO FABRICATION, PURCHASE AND/OR INSTALLATION OF ALL WORK.
18. ALL SYSTEMS DISTRIBUTION (PIPING, DUCTWORK, CONDUIT, ETC.) IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS, AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING TO AVOID OBSTRUCTIONS.
19. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF SYSTEM DISTRIBUTION (PIPING, DUCTWORK, CONDUIT, ETC.) AND EQUIPMENT.
20. SUPPORT NEW PIPING FROM BUILDING STRUCTURE AND OR FRAMING IN AN APPROVED MANNER, WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, PROVIDE ADDITIONAL FRAMING. COMPLY WITH ALL LOCAL AND PA CODES FOR SEISMIC ISOLATION. THE DRAWINGS DO NOT SHOW ALL SEISMIC ISOLATION POINTS, THEREFORE ALLOW FOR SEISMIC ISOLATION IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.
21. EXISTING MATERIALS THAT ARE REMOVED SHALL NOT BE REUSED IN NEW SYSTEMS, EXCEPT WHERE INDICATED AS BEING RELOCATED.
22. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE ADDITIONAL COST TO THE OWNER SHALL NOT BE MADE WITHOUT APPROVAL.
23. IF A DISCREPANCY ARISES BETWEEN CONTRACT DOCUMENTS, CONTACT THE ARCHITECT/ENGINEER FOR RESOLUTION BEFORE PROCEEDING.
24. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL. PRIOR TO CONSTRUCTION, DETERMINE EXACT ELEVATION, SIZE, AND LOCATION OF ALL EXISTING UTILITIES WHERE CONNECTIONS ARE TO BE MADE OR INTERSECTIONS OCCUR.
25. REMOVE AND REINSTALL EXISTING LAY-IN TYPE CEILINGS AS REQUIRED TO PERFORM THE WORK UNDER THE CONTRACT DOCUMENTS AND BE RESPONSIBLE FOR DAMAGE THAT MAY OCCUR TO CEILINGS AS A RESULT OF REMOVAL AND REPLACEMENT OF SAME. DAMAGED CEILING TILES, INCLUDING TILES WITH HOLES OR OPENINGS LEFT AS A RESULT OF DEMOLITION SHALL BE REPLACED. REMOVE ONLY THOSE CEILING TILES REQUIRED TO GAIN ACCESS TO AFFECTED SYSTEMS AND STORE IN PROTECTED AREA WHERE DESIGNATED BY THE OWNER. REINSTALL UPON COMPLETION OF THE WORK.
26. CONTRACTOR SHALL KEEP A CURRENT RECORD OF ALL DEVIATIONS FROM THE SPECIFICATIONS AND DRAWINGS. THE CONTRACTOR SHALL SUBMIT CORRECTED AS-BUILT DRAWINGS TO OWNER AND ENGINEER AT PROJECT COMPLETION.
27. CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACTUAL USE OF THE EQUIPMENT OR TURNOVER TO OWNER, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. WHERE DEFECTS OCCUR, ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF THE OTHER TRADES AFFECTED BY DEFECTS.
28. SUCCESSFULLY PRESSURE TEST ALL NEW OR REROUTED PIPING SYSTEMS. REPAIR AND RETEST AS REQUIRED UNTIL SYSTEMS PROVE TIGHT.
29. PROVIDE ALL NECESSARY TEMPORARY OR PERMANENT CAPS OR PLUGS FOR PIPING. DO NOT LEAVE PIPING OPEN-ENDED.
30. ALL HANGERS SHALL BE DESIGNED PER REQUIREMENTS OF NFPA 13.
31. SPRINKLERS SHALL BE INSTALLED UNDER FIXED OBSTRUCTIONS (IE: DUCTWORK) OVER 4'-0" WIDE. OPEN GRATE FLOORING OVER 4'-0" IN WIDTH SHALL REQUIRE SPRINKLER PROTECTION BELOW GRATING.

DRAWING NOMENCLATURE

FIELD NO.	1		2	3	4
DRAWING NO.	A	D*	#	#	#

FIELD 1	
G	GENERAL
C	CIVIL
S	STRUCTURAL
A	ARCHITECTURAL
F	FIRE PROTECTION
P	PLUMBING
Z	PROCESS
M	MECHANICAL
E	ELECTRICAL

*A "D" AFTER THE DISCIPLINE DESIGNATOR DENOTES A DEMOLITION DRAWING.

FIELD 2	
0	GENERAL
1	PLANS
2	PLANS
3	PLANS
4	PLANS
5	ENLARGED PLANS / SECTIONS / 3D
6	DIAGRAMS
7	DETAILS
8	SCHEDULES
9	SPECIFICATIONS

NOTE: PLAN TYPES FOR SERIES 1-4 ARE PROJECT- AND DISCIPLINE-SPECIFIC.

FIELD 3
ONE ALPHANUMERIC VALUE TYPICALLY REPRESENTING THE FLOOR OR LEVEL.

FIELD 4
ONE NUMERIC VALUE REPRESENTING THE SHEET SEQUENCE NUMBER, STARTING WITH "1".

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Fire Protection Symbols, Abbreviations, and General Notes

PROJECT NUMBER 17.177

DRAWN BY SMM/TCL

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER **F001**

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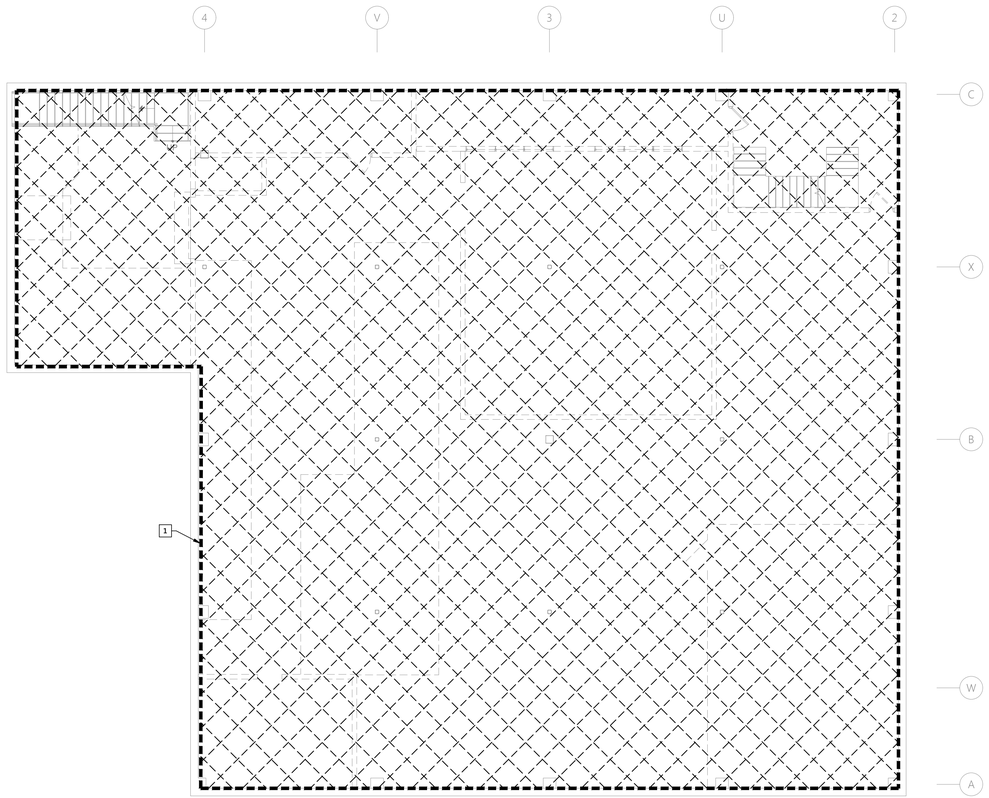

1 PLAN - DEMOLITION - BASEMENT

1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES:

1. SEE DRAWING F001, FIRE PROTECTION COVER SHEET, FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL NOTES. SEE DRAWING F701 FOR DETAILS.
2. REMOVALS SHOWN ON THIS DRAWING ARE A GENERAL INDICATION ONLY, AND DO NOT INDICATE THE FULL EXTENT OF REMOVALS WHICH MAY BE REQUIRED TO COMPLETE THIS WORK. THEREFORE, PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS.

DEMOLITION SHEET NOTES:

1 REMOVE EXISTING SPRINKLERS, ASSOCIATED PIPE AND FITTINGS BACK TO FEED MAIN WHERE IT ENTERS BASEMENT. PLUG OR CAP PIPE AT POINT OF DEMOLITION.

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DRAWING TITLE

Fire Protection
Basement
Demolition Plan

PROJECT NUMBER 17.177

DRAWN BY SMM/TCL

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

FD100

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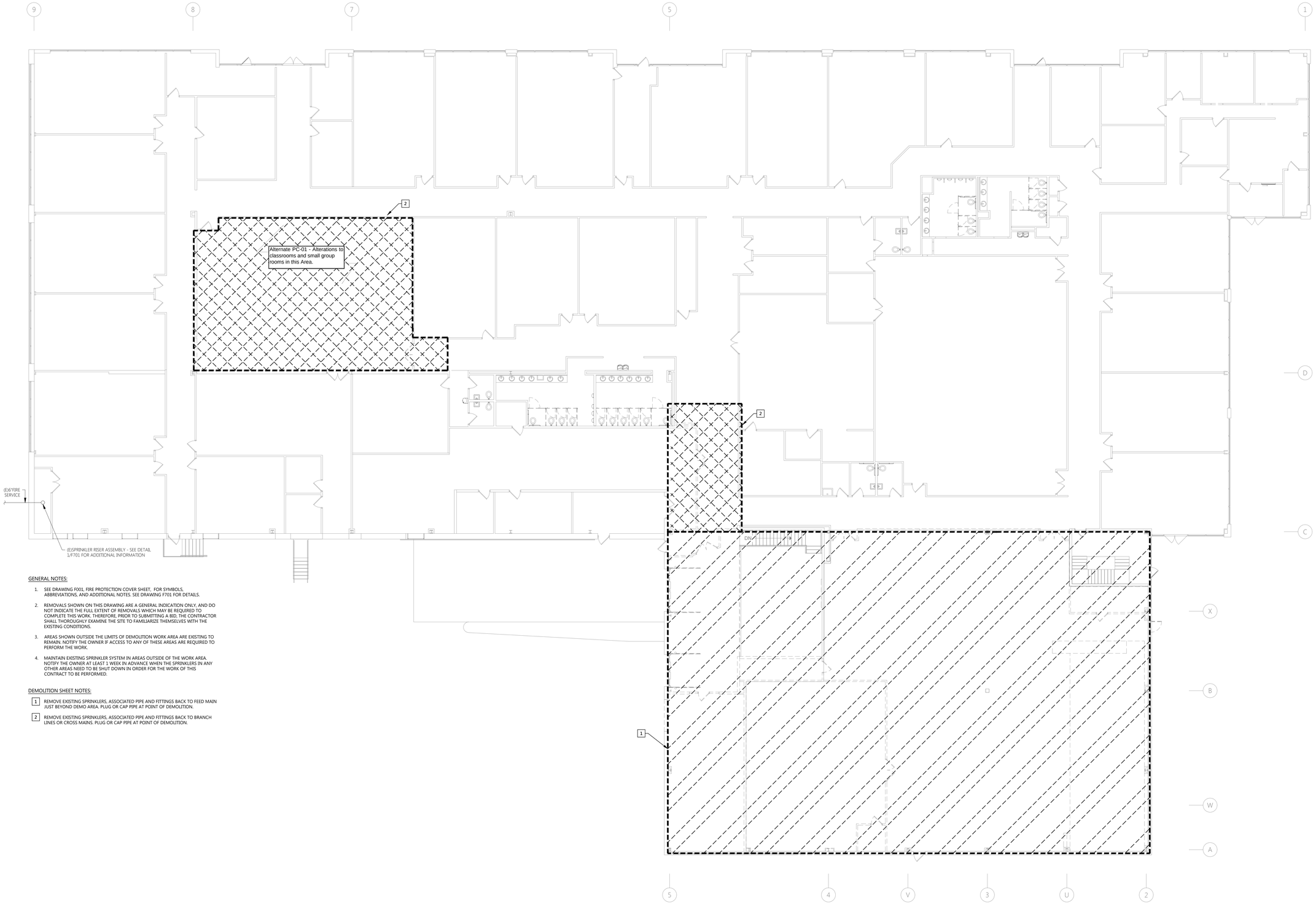

GENERAL NOTES:

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2. REMOVALS SHOWN ON THIS DRAWING ARE A GENERAL INDICATION ONLY, AND DO NOT INDICATE THE FULL EXTENT OF REMOVALS WHICH MAY BE REQUIRED TO COMPLETE THIS WORK. THEREFORE, PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS.
3. AREAS SHOWN OUTSIDE THE LIMITS OF DEMOLITION WORK AREA ARE EXISTING TO REMAIN. NOTIFY THE OWNER IF ACCESS TO ANY OF THESE AREAS ARE REQUIRED TO PERFORM THE WORK.
4. MAINTAIN EXISTING SPRINKLER SYSTEM IN AREAS OUTSIDE OF THE WORK AREA. NOTIFY THE OWNER AT LEAST 1 WEEK IN ADVANCE WHEN THE SPRINKLERS IN ANY OTHER AREAS NEED TO BE SHUT DOWN IN ORDER FOR THE WORK OF THIS CONTRACT TO BE PERFORMED.

DEMOLITION SHEET NOTES:

1 REMOVE EXISTING SPRINKLERS, ASSOCIATED PIPE AND FITTINGS BACK TO FEED MAIN JUST BEYOND DEMO AREA. PLUG OR CAP PIPE AT POINT OF DEMOLITION.

2 REMOVE EXISTING SPRINKLERS, ASSOCIATED PIPE AND FITTINGS BACK TO BRANCH LINES OR CROSS MAINS. PLUG OR CAP PIPE AT POINT OF DEMOLITION.

1 PLAN - DEMOLITION - FIRST FLOOR

3/32" = 1'-0"

0 8' 16' 24'

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No.	Date	Description

DRAWING TITLE

Fire Protection
First Floor
Demolition Plan

PROJECT NUMBER 17.177

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DATE 09.14.2018

DRAWING NUMBER

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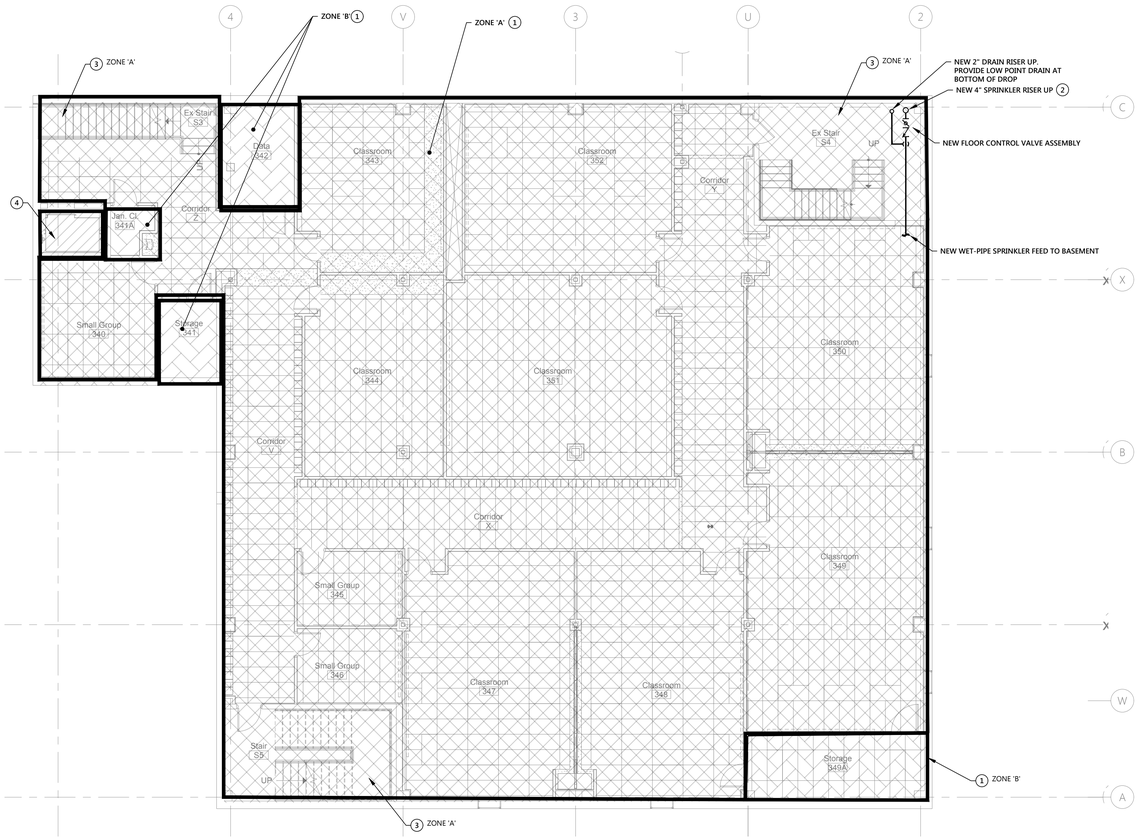

1 PLAN - NEW WORK - BASEMENT

1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES:

1. SEE DRAWING F001, FIRE PROTECTION COVER SHEET FOR ADDITIONAL SYMBOLS, ABBREVIATIONS, SPRINKLER SCHEDULE AND NOTES. SEE DRAWING F701 FOR DETAILS.
2. ALL SHUT DOWNS OF THE EXISTING SPRINKLER SYSTEM MUST BE COORDINATED WITH OWNER AND LOCAL FIRE MARSHAL.
3. PROVIDE THE MODIFICATION OF THE EXISTING WET PIPE SPRINKLER SYSTEM FOR THE AREA OF RENOVATION WITH ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED FOR A COMPLETE FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
4. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR FINAL COORDINATION OF SPRINKLER LAYOUT WITH NEW CEILING, HVAC, ELECTRICAL, PIPING, LIGHTING, ETC. REFER TO ARCHITECTURAL SHEETS FOR FULL EXTENT OF CEILING REMOVAL IN AREAS OF RENOVATION.
5. CONTRACT DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE ALL REQUIRED SYSTEM COMPONENTS, PIPES, OR FITTINGS FOR A COMPLETE FUNCTIONING FIRE PROTECTION SYSTEM. THE INSTALLING CONTRACTOR IS REQUIRED TO PROVIDE ALL NECESSARY EQUIPMENT FOR A FULLY FUNCTIONAL SPRINKLER SYSTEM AS DESCRIBED ON THE DRAWINGS, SPECIFICATIONS, AND NFPA 13.

NEW WORK SHEET NOTES:

1. PROVIDE NEW PIPING AND PENDENT SPRINKLERS IN THIS AREA. CONNECT TO NEW BASEMENT SPRINKLER FEED.
2. EXTEND NEW 4" SPRINKLER RISER FROM FIRST FLOOR. PROVIDE NEW FLOOR CONTROL VALVE ASSEMBLY (SEE DETAIL 6/F701) IN STAIR.
3. PROVIDE SPRINKLER PROTECTION AT BOTTOM OF STAIR ENCLOSURE IN ACCORDANCE WITH NFPA 13.
4. PROVIDE SPRINKLER PROTECTION IN ELEVATOR PIT IN ACCORDANCE WITH NFPA 13.

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No.	Date	Description

DRAWING TITLE

Fire Protection
Basement
New Work Plan

PROJECT NUMBER 17.177

DRAWN BY SMM/TCL

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

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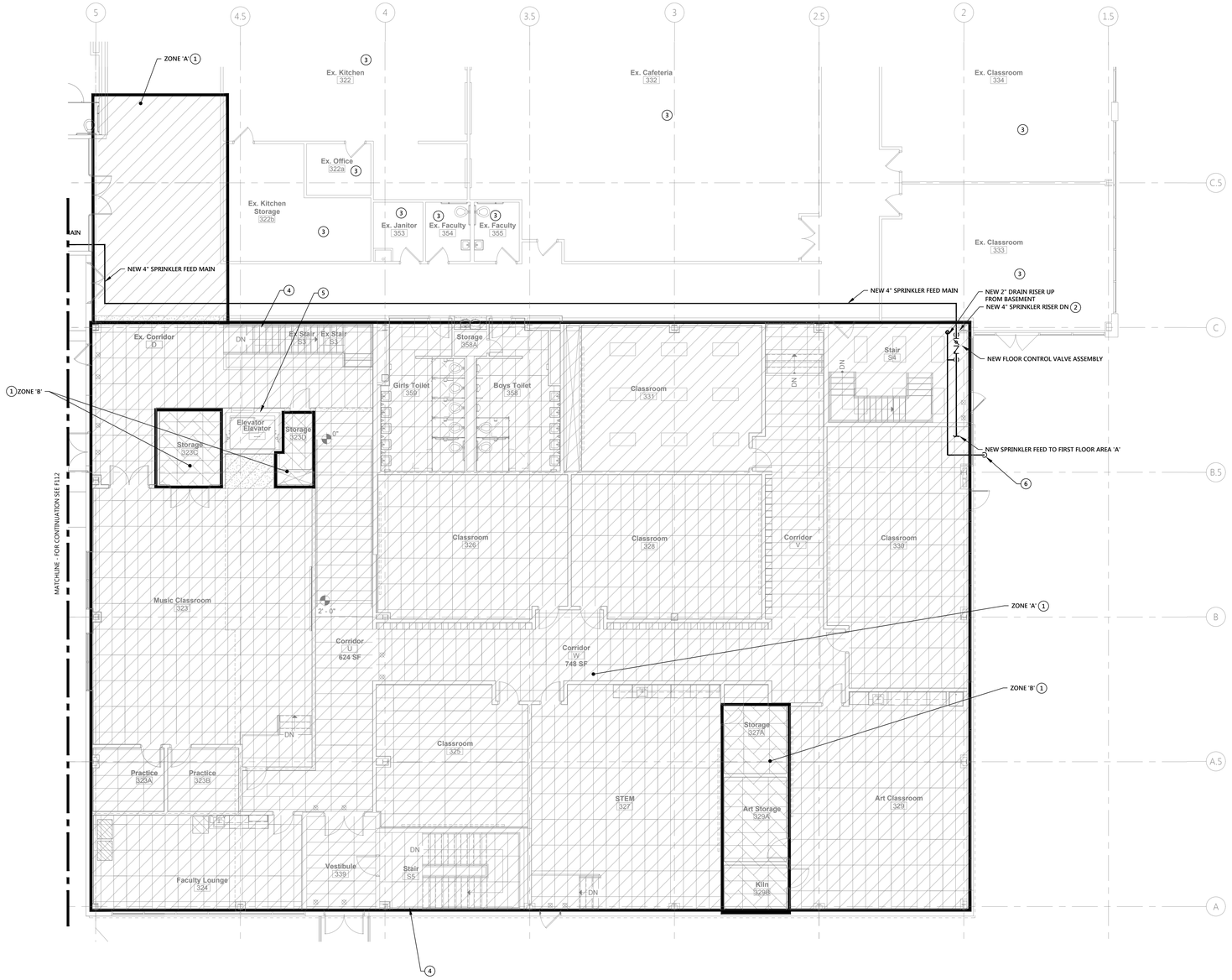

1 NEW WORK - FIRST FLOOR - PARTIAL PLAN AREA 'A'

1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES:

1. SEE DRAWING F001, FIRE PROTECTION COVER SHEET FOR ADDITIONAL SYMBOLS, ABBREVIATIONS, SPRINKLER SCHEDULE AND NOTES. SEE DRAWING F701 FOR DETAILS.
2. ALL SHUT DOWNS OF THE EXISTING SPRINKLER SYSTEM MUST BE COORDINATED WITH OWNER AND LOCAL FIRE MARSHAL.
3. PROVIDE THE MODIFICATION OF THE EXISTING WET PIPE SPRINKLER SYSTEM FOR THE AREA OF RENOVATION WITH ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED FOR A COMPLETE FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
4. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR FINAL COORDINATION OF SPRINKLER LAYOUT WITH NEW CEILING, HVAC, ELECTRICAL, PIPING, LIGHTING, ETC. REFER TO ARCHITECTURAL SHEETS FOR FULL EXTENT OF CEILING REMOVAL IN AREAS OF RENOVATION.
5. CONTRACT DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE ALL REQUIRED SYSTEM COMPONENTS, PIPES, OR FITTINGS FOR A COMPLETE FUNCTIONING FIRE PROTECTION SYSTEM. THE INSTALLING CONTRACTOR IS REQUIRED TO PROVIDE ALL NECESSARY EQUIPMENT FOR A FULLY FUNCTIONAL SPRINKLER SYSTEM AS DESCRIBED ON THE DRAWINGS, SPECIFICATIONS, AND NFPA 13.

NEW WORK SHEET NOTES:

1. PROVIDE NEW PIPING AND PENDENT SPRINKLERS IN THIS AREA. CONNECT TO NEW FIRST FLOOR SPRINKLER FEED.
2. EXTEND NEW 4" SPRINKLER RISER FROM FIRST FLOOR. PROVIDE NEW FLOOR CONTROL VALVE ASSEMBLY (SEE DETAIL 6/F701) IN STAIR.
3. THIS AREA IS NOT IN THE SCOPE OF THIS PROJECT.
4. PROVIDE SPRINKLERS AT TOP OF STAIR ENCLOSURE IN ACCORDANCE WITH NFPA 13.
5. NO SPRINKLER REQUIRED AT TOP OF ELEVATOR SHAFT PER NFPA 13, SECTION 8.15.5.
6. RUN NEW 2" DRAIN TO OUTSIDE. PROVIDE SPLASH GUARD AT GRADE LEVEL.

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REVISIONS

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No.	Date	Description

DRAWING TITLE

Fire Protection
First Floor New Work
Partial Plan - Area A

PROJECT NUMBER 17.177

DRAWN BY SMM/TCL

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

F111

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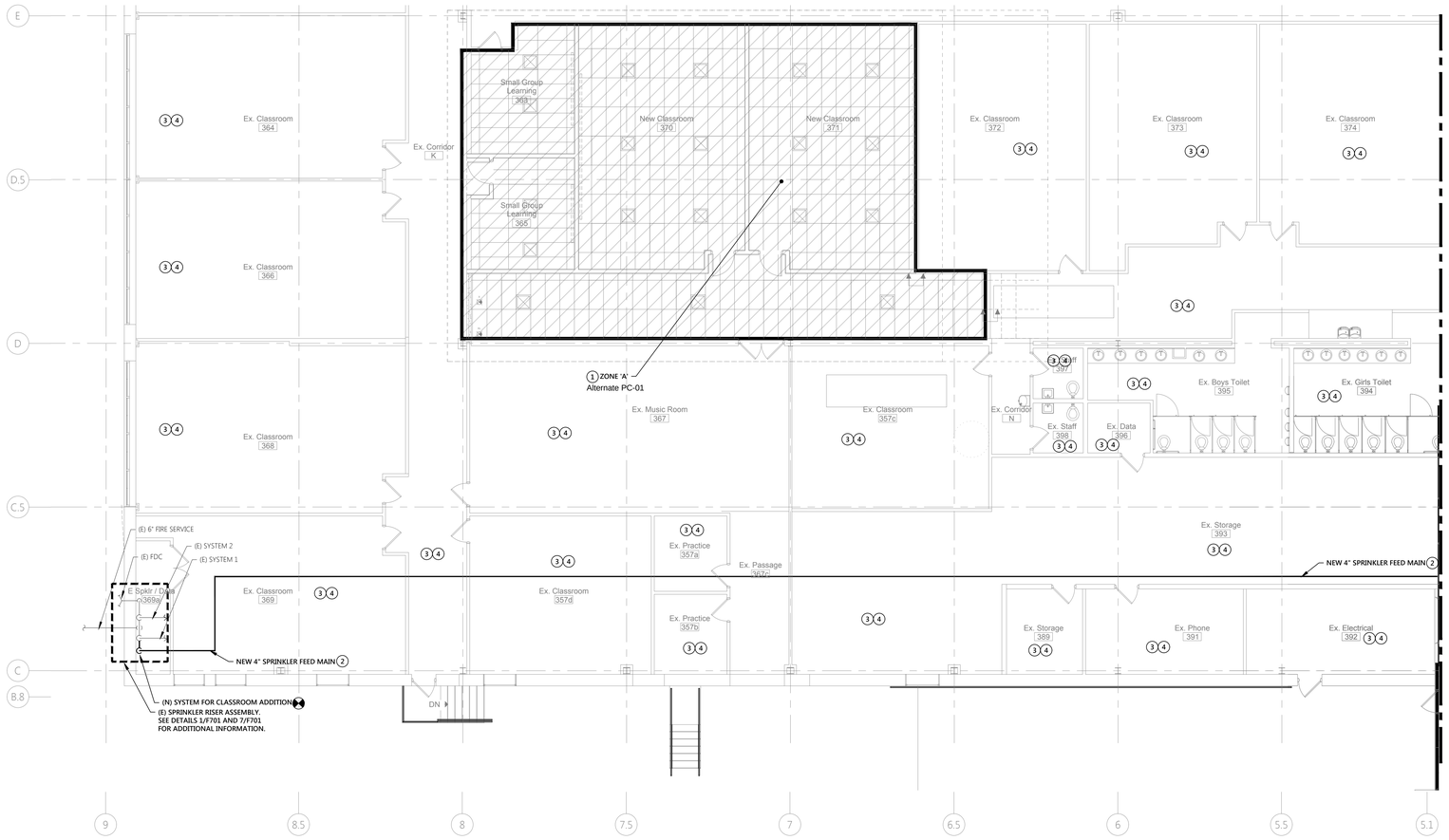

1 NEW WORK - FIRST FLOOR - PARTIAL PLAN AREA 'B'

1/8" = 1'-0"

0 4' 8' 16'

GENERAL NOTES:

1. SEE DRAWING F001, FIRE PROTECTION COVER SHEET FOR ADDITIONAL SYMBOLS, ABBREVIATIONS, SPRINKLER SCHEDULE AND NOTES. SEE DRAWING F701 FOR DETAILS.
2. ALL SHUT DOWNS OF THE EXISTING SPRINKLER SYSTEM MUST BE COORDINATED WITH OWNER AND LOCAL FIRE MARSHAL.
3. PROVIDE THE MODIFICATION OF THE EXISTING WET PIPE SPRINKLER SYSTEM FOR THE AREA OF RENOVATION WITH ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED FOR A COMPLETE FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
4. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR FINAL COORDINATION OF SPRINKLER LAYOUT WITH NEW CEILING, HVAC, ELECTRICAL, PIPING, LIGHTING, ETC. REFER TO ARCHITECTURAL SHEETS FOR FULL EXTENT OF CEILING REMOVAL IN AREAS OF RENOVATION.
5. CONTRACT DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE ALL REQUIRED SYSTEM COMPONENTS, PIPES, OR FITTINGS FOR A COMPLETE FUNCTIONING FIRE PROTECTION SYSTEM. THE INSTALLING CONTRACTOR IS REQUIRED TO PROVIDE ALL NECESSARY EQUIPMENT FOR A FULLY FUNCTIONAL SPRINKLER SYSTEM AS DESCRIBED ON THE DRAWINGS, SPECIFICATIONS, AND NFPA 13.

NEW WORK SHEET NOTES:

1. PROVIDE NEW PENDENT SPRINKLERS IN THIS AREA. RUN NEW PIPING TO EXISTING BRANCHES OR CROSS MAINS. PROVIDE HANGERS WHERE REQUIRED.
2. PROVIDE NEW 4" SPRINKLER FEED MAIN. CONNECT TO EXISTING 6" FIRE WATER SERVICE IN SPRINKLER ROOM. RUN NEW FEED MAIN TO STAIR 54. PROVIDE ZONE CONTROL STATION IN STAIR FOR FIRST FLOOR AREA. SEE DRAWING F-111 FOR MORE INFORMATION.
3. NO CEILING WORK IS PLANNED FOR THIS AREA. PROTECT EXISTING SPRINKLERS DURING THE RENOVATION WORK.
4. THIS AREA IS NOT IN THE SCOPE OF THIS PROJECT.
5. RELOCATE OR ADD SPRINKLERS IN THIS AREA TO MAINTAIN LIGHT HAZARD OCCUPANCY IN ACCORDANCE WITH NFPA 13. SEE SPRINKLER SCHEDULE FOR MORE INFORMATION.

SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Fire Protection
First Floor New Work
Partial Plan - Area B

PROJECT NUMBER 17.177

DRAWN BY SMM/TCL

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

F112

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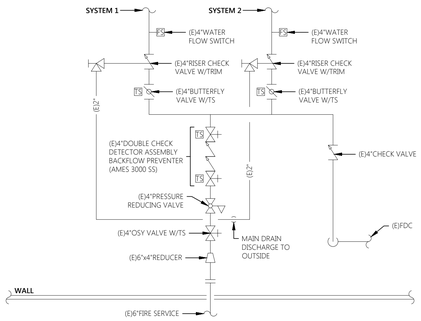
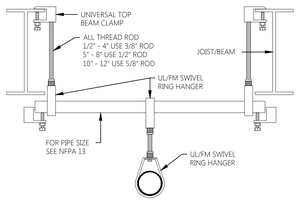


1 DETAIL - SPRINKLER RISER ASSEMBLY (EXISTING)

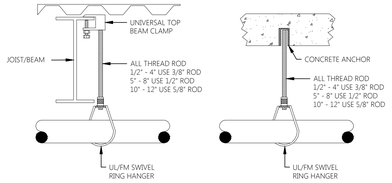
NOT TO SCALE



NOTE:
MAXIMUM HANGER SPACING AND LOCATION PER NFPA 13 REQUIREMENTS.

2 DETAIL - TRAPEZE PIPE HANGER

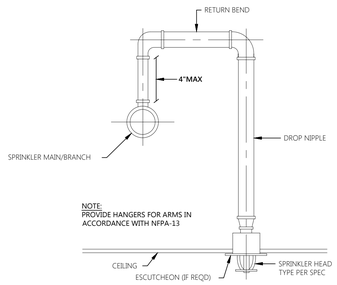
NOT TO SCALE



NOTE:
MAXIMUM HANGER SPACING AND LOCATION PER NFPA 13 REQUIREMENTS.

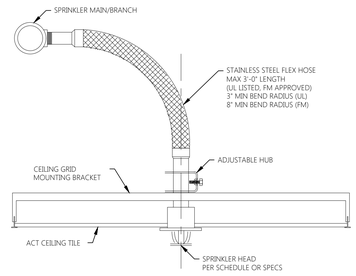
3 DETAIL - PIPE HANGERS

NOT TO SCALE



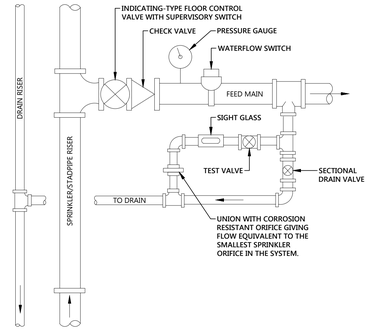
4 DETAIL - SPRINKLER RETURN BEND

NOT TO SCALE



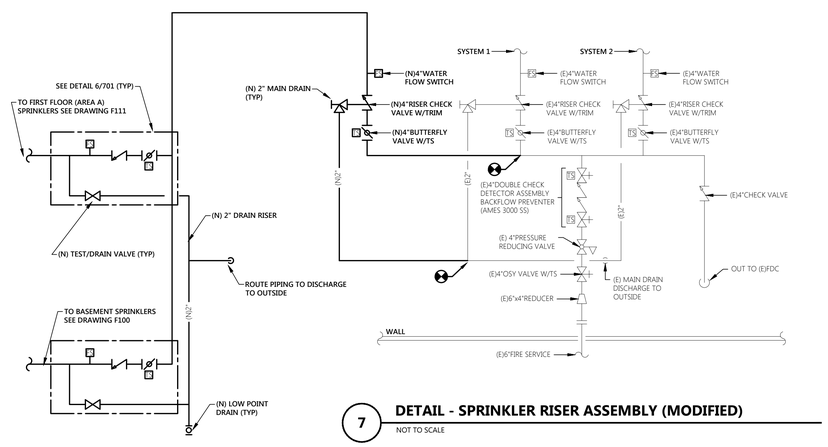
5 DETAIL - FLEX SPRINKLER CONNECTION (ACT CEILING)

NOT TO SCALE



6 SPRINKLER RISER FLOOR CONTROL VALVE ASSEMBLY

NOT TO SCALE



7 DETAIL - SPRINKLER RISER ASSEMBLY (MODIFIED)

NOT TO SCALE

PIPING DATA SHEET, SP1	
SYSTEM	FIRE SPRINKLER, WET
SYSTEM RATING	STANDARD PRESSURE 175 PSIG
PIPE MATERIAL	SCHEDULE 40 CARBON STEEL PIPE, ASTM A53, BLACK STEEL, TYPE E, GRADE B
	SCHEDULE 10 CARBON STEEL PIPE, ASTM A135/A795, BLACK STEEL
PIPING & FITTINGS	PRESSURE RATINGS OF ALL FITTINGS AND GASKETS SHALL MEET OR EXCEED MAXIMUM WORKING PRESSURES AVAILABLE WITHIN THE SYSTEM.
	2" AND SMALLER - SCHEDULE 40 BLACK STEEL PIPING, ASTM A53, TYPE E, GRADE B, WITH THREADED ENDS & FITTINGS. FACTORY OR FIELD FORMED ENDS ACCEPTABLE.
	2-1/2" AND LARGER - SCHEDULE 40 BLACK STEEL PIPING, ASTM A53, TYPE E, GRADE B, WITH THREADED OR CUT-GROOVED ENDS & FITTINGS OR SCHEDULE 10, ASTM A135/A795, BLACK STEEL WITH ROLL GROOVED ENDS. FACTORY OR FIELD FORMED ENDS ACCEPTABLE.
	PROVIDE FITTINGS FOR CHANGES IN DIRECTION OF PIPING AND FOR ALL CONNECTIONS. ARRANGE PIPING SO THAT IT CAN BE DRAINED AT THE MAIN RISER. MAKE CHANGES IN PIPING SIZES THROUGH STANDARD TAPERED, REDUCING PIPE FITTINGS. THE USE OF BUSHINGS WILL NOT BE PERMITTED.
PIPING FINISH	STANDARD MANUFACTURER'S FINISH
JOINTS	GROOVED JOINTS AND FITTINGS - ASSEMBLE JOINTS AND FITTINGS WITH LISTED COUPLING AND GASKET, LUBRICANT, AND BOLTS FROM SAME MANUFACTURER. FITTINGS AND ATTACHED COUPLINGS SHALL BE FROM THE SAME MANUFACTURER. LUBRICANT LISED ON GASKETS FOR MECHANICAL FITTINGS MUST BE NON-PETROLEUM BASED AND APPROVED BY ENGINEER
	THREADED JOINTS - COMPLY WITH NFPA 13 FOR PIPE THICKNESS AND THREADS. DO NOT THREAD PIPE WITH WALL THICKNESS LESS THAN SCHEDULE 40. JOINTING COMPOUND FOR PIPE THREADS SHALL BE PTFE PIPE THREAD TAPE ONLY, APPLY ON MALE THREADS. PIPE DOPE MAY NOT BE USED.
VALVES, BALL	NPS 1-1/2 AND SMALLER: BRONZE BODY WITH THREADED ENDS, UL 1091.
	NPS 2 AND NPS 2-1/2: BRONZE BODY WITH THREADED ENDS OR DUCTILE-IRON BODY WITH GROOVED ENDS, UL 1091.
	NPS 3: DUCTILE-IRON BODY WITH GROOVED ENDS.
VALVES, CHECK	UL 312, 250 PSIG, SWING CHECK, BRONZE/STAINLESS STEEL SEAT RING AND EPDM RUBBER CLAPPER FACING, CAST IRON BODY, FLANGED OR GROOVED ENDS.
VALVES, OS&Y	UL 262, 250 PSIG, CAST OR DUCTILE IRON BODY, FLANGED OR GROOVED ENDS.
PAINTING (OPTIONAL)	PAINT EXPOSED PIPING RED.
NOTES:	
THIS SPECIFICATION COVERS PIPE, FITTINGS, AND ACCESSORIES USED IN SPRINKLER APPLICATIONS.	
ALL PRODUCTS SHALL BE FM APPROVED AND UL LISTED.	
VALVES AND DRAIN ASSEMBLIES: TYCO FIRE, VICTAULIC, STOCKHAM, KENNEDY, JENKINS, RELIABLE AUTOMATIC SPRINKLER, VIKING CORP	
SPRINKLERS: TYCO FIRE, RELIABLE AUTOMATIC SPRINKLER, VIKING CORP, VICTAULIC	
VALVE SUPERVISORY SWITCHES: POTTER ELECTRIC SIGNAL, SYSTEM SENSOR, KENNEDY VALVE DIV	

SPRINKLER SCHEDULE

ZONE	SYSTEM TYPE	SPRINKLER TYPE	SPRINKLER FINISH	SPRINKLER RESPONSE TYPE	SPRINKLER TEMP RATING (oF)	COVER PLATE TEMP RATING (oF)	K FACTOR	MAX SPRINKLER SPACING (SQ FT)	OCCUPANCY CLASSIFICATION	DESIGN DENSITY (GPM/SQ FT)	DESIGN AREA (SQ FT)	HOSE STREAM ALLOWANCE (GPM)	CODE REFERENCE	NOTES
A	WET PIPE	PENDENT, CONCEALED	WHITE POLYESTER	QUICK	155	135	5.6	225	LIGHT HAZARD	0.10	1500	100	NFPA 13 11.2.3.3.1	
B	WET PIPE	PENDENT, RECESSED	WHITE POLYESTER	QUICK	155	N/A	8.0	130	ORDINARY HAZARD GR I	0.15	1500	250	NFPA 13 11.2.3.3.1	

NOTES:
1

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Fire Protection Details and Specifications

PROJECT NUMBER 17.177

DRAWN BY SMM/TCL

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

F701

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DISTRIBUTION

SYMBOL	MOUNTING HEIGHT	DESCRIPTION
	EXISTING	EXISTING PANELBOARD – FLUSH MOUNTED
	EXISTING	EXISTING PANELBOARD – SURFACE MOUNTED
	TOP BREAKER 6'-0" AFF	NEW PANELBOARD – FLUSH MOUNTED
	TOP BREAKER 6'-0" AFF	NEW PANELBOARD – SURFACE MOUNTED
	AS NOTED	PULL BOX OR WIREWAY
		BRANCH CIRCUITING – (2)#12 PER 1 POLE CIRCUIT WITH SEPARATE #12 GROUND WIRE MINIMUM
		HOMERUN TO PANELBOARD – PANEL AND CIRCUIT NUMBER AS INDICATED
		EQUIPMENT ON SAME CIRCUIT BUT SEPARATELY CONTROLLED
		CIRCUITRY MATCH LINE

SWITCHES

SYMBOL	MOUNTING HEIGHT	DESCRIPTION
S	44" AFF	SINGLE POLE TOGGLE SWITCH–FLUSH
S3	44" AFF	THREE WAY TOGGLE SWITCH–FLUSH
S4	44" AFF	FOUR WAY TOGGLE SWITCH–FLUSH
SD	44" AFF	DIMMER SWITCH–1000 WATT UNLESS NOTED OTHERWISE
SM	44" AFF	MOTOR OPERATING SWITCH, WITH THERMAL OVERLOAD PROTECTION
STP	44" AFF	THERMAL SWITCH WITH PILOT LIGHT–FLUSH
SP	44" AFF	TOGGLE SWITCH WITH PILOT LIGHT–FLUSH
SMC	44" AFF	TOGGLE SWITCH MOMENTARY CONTACT TYPE–FLUSH
SRL	44" AFF	TOGGLE SWITCH MOMENTARY CONTACT TYPE–RAISE/LOWER–FLUSH (K–INDICATES KEY OPERATED)
SK	44" AFF	SINGLE POLE TOGGLE SWITCH–KEY OPERATED–FLUSH
S3K	44" AFF	THREE WAY TOGGLE SWITCH–KEY OPERATED–FLUSH
S4K	44" AFF	FOUR WAY TOGGLE SWITCH–KEY OPERATED–FLUSH
SS	44" AFF	DUAL SWITCHING – REFER TO NOTE ON DRAWING
D#	44" AFF	DIGITAL SWITCH (# INDICATES NO. OF CONTROL BUTTONS)

AUDIO/VISUAL

SYMBOL	MOUNTING HEIGHT	DESCRIPTION
AVH	90" AFF	AUDIO\VISUAL OUTLET (HIGH MOUNT)
AVL	18" AFF	AUDIO\VISUAL OUTLET (LOW MOUNT)
TVH	90" AFF	CATV OUTLET (HIGH MOUNT)
TVHL	–	CATV OUTLET (HIGH\LOW MOUNT)
TVL	18" AFF OR AS NOTED	CATV OUTLET (LOW MOUNT)
P	CEILING	PROJECTOR (CEILING)
12:00	96" AFF OR AS NOTED	DIGITAL CLOCK\SOUND SYSTEM SPEAKER COMBO
	96" AFF	POWER CONNECTION FOR OWNER PROVIDED CLOCK
S	CEILING	CEILING MOUNTED SPEAKER
S WP	96" AFF	WALL MOUNTED SPEAKER (WP DENOTES WEATHER–PROOF)
S	AS NOTED	SIREN
S	18" BFC	REMOTE SOUND SYSTEM CEILING MOUNTED SPEAKER
S SUB	AS NOTED	REMOTE SOUND SYSTEM SUBWOOFER
VC	44" AFF	REMOTE VOLUME CONTROL
PC	CEILING	PROJECTOR INTERFACE
PW	18" AFF	PROJECTOR INTERFACE
PT	18" AFF	LAB TABLE TO PROJECTOR INTERFACE

GENERAL NOTE

NO OPERABLE DEVICE SHALL EXCEED THE MAXIMUM MOUNTING HEIGHT OF +48" AFF. EC SHALL ADJUST THE MOUNTING HEIGHT INDICATED ON THIS LEGEND IF ANY OPERABLE PORTION OF THE DEVICE EXCEEDS THE MAXIMUM MOUNTING +48".

EQUIPMENT

SYMBOL	MOUNTING HEIGHT	DESCRIPTION
J	18" AFF	JUNCTION BOX–FLUSH
J	3" AFF	JUNCTION BOX–WITH CAST OUTLET BOX ON STAND PIPE
B	18" AFF	BLANK OUTLET–FLUSH
J	X	JUNCTION BOX
B	X	BLANK OUTLET
J	FLOOR	JUNCTION BOX–FLUSH
B	FLOOR	BLANK OUTLET–FLUSH
D	CEILING	DROP CORD
R	CEILING	CORD REEL
30A/3P B	5'-0" AFF	ENCLOSED CIRCUIT BREAKER–RATING AS INDICATED
C	X	CONTACTOR
45 T	X	DRY TYPE TRANSFORMER–NUMERAL DENOTES KVA RATING
45 T K-13	X	DRY TYPE TRANSFORMER–NUMERAL DENOTES KVA RATING LETTER AND NUMERAL DENOTE K–FACTOR RATING
	5'-0" AFF	SAFETY SWITCH–NON–FUSED (30A/3P NEMA TYPE 1, UNLESS NOTED OTHERWISE)
30/20 F	5'-0" AFF	SAFETY SWITCH–FUSED–SWITCH RATING AND FUSE RATING AS INDICATED (NEMA TYPE 1, UNLESS NOTED OTHERWISE)
60/40/3 1	5'-0" AFF	COMBINATION STARTER–NEMA SIZE, SWITCH, AND FUSE RATING AS INDICATED (NEMA TYPE 1, UNLESS NOTED OTHERWISE)
60/3 1	5'-0" AFF	NON–FUSED COMBINATION STARTER–NEMA SIZE AND SWITCH AS INDICATED (NEMA TYPE 1, UNLESS NOTED OTHERWISE)
1	5'-0" AFF	MOTOR STARTER–NEMA SIZE AS INDICATED (NEMA TYPE 1, UNLESS NOTED OTHERWISE)
	X	MOTOR
SD	X	MOTORIZED SMOKE DAMPER
R	X	RELAY
E	44" AFF	PUSHBUTTON–EMERGENCY STOP
K	44" AFF	PUSHBUTTON WITH KEY RESET
	44" AFF	PUSHBUTTON–START/STOP
	44" AFF	PUSHBUTTON
PP	44" AFF	MOTORIZED DOOR PUSHPLATE

TELECOMMUNICATION

SYMBOL	MOUNTING HEIGHT	DESCRIPTION
	18" AFF	TELEPHONE\VOICE OUTLET, WALL–MOUNT IN OUTLET BOX
#	18" AFF	DATA OUTLET–FLUSH, WHITE, WALL–MOUNT IN OUTLET BOX
# #	18" AFF	VOICE\DATA OUTLET–FLUSH, WALL–MOUNT IN OUTLET BOX
#	FLOOR	VOICE OUTLET, MOUNT IN FLOOR BOX WITH POWER
#	FLOOR	DATA OUTLET, MOUNT IN FLOOR BOX WITH POWER
#	FLOOR	VOICE\DATA OUTLET, MOUNT IN FLOOR BOX WITH POWER
	CEILING	TELEPHONE\VOICE OUTLET–CEILING MOUNTED
	CEILING	DATA OUTLET–CEILING MOUNTED
	CEILING	VOICE\DATA OUTLET–CEILING MOUNTED
W	44" AFF	TELEPHONE\VOICE OUTLET, WALL–MOUNT PHONE TYPE
	AS NOTED	HORIZONTAL SURFACE RACEWAY

NOTE: NUMBER BY DEVICE INDICATES QUANTITY OF DROPS, DEFAULT ONE.
"C" BY DEVICE INDICATES MOUNTING AT COUNTER HEIGHT (6" ABOVE COUNTER).

ANNOTATION

CLOUD	XX/XX EQUIPMENT TAG – REFER TO MECHANICAL AND/OR PLUMBING DRAWINGS
X REVISION	X INDICATES KEYED NOTE NUMBER
X CIRCLE KEYNOTE	

RECEPTACLES

SYMBOL	MOUNTING HEIGHT	DESCRIPTION
	18" AFF	SINGLE RECEPTACLE–FLUSH
	18" AFF	DUPLEX RECEPTACLE–FLUSH
C	6" ABOVE COUNTER BACKSPLASH	DUPLEX RECEPTACLE–FLUSH–MOUNTED ABOVE COUNTER
	18" AFF	DUPLEX RECEPTACLE–FLUSH–WITH GROUND FAULT INTERRUPTER
C	6" ABOVE COUNTER BACKSPLASH	DUPLEX RECEPTACLE–FLUSH–WITH GROUND FAULT INTERRUPTER–MOUNTED ABOVE COUNTER
WP	24" AFG	DUPLEX RECEPTACLE–EXTERIOR–FLUSH–WITH GROUND FAULT INTERRUPTER WITH WEATHERPROOF COVER
	18" AFF	DUPLEX RECEPTACLE–FLUSH–TRANSIENT VOLTAGE SURGE SUPPRESSION TYPE (TVSS)
IG	18" AFF	DUPLEX RECEPTACLE WITH ISOLATED GROUND–FLUSH
	18" AFF	DOUBLE DUPLEX RECEPTACLE–FLUSH
C	6" ABOVE COUNTER BACKSPLASH	DOUBLE DUPLEX RECEPTACLE–FLUSH–MOUNTED ABOVE COUNTER
IG	18" AFF	DOUBLE DUPLEX RECEPTACLE WITH ISOLATED GROUND–FLUSH
	18" AFF	SPECIAL PURPOSE RECEPTACLE–SINGLE PHASE
	18" AFF	SPECIAL PURPOSE RECEPTACLE–THREE PHASE
	AS NOTED	SURFACE RACEWAY WITH SINGLE RECEPTACLES AS INDICATED
	AS NOTED	SURFACE RACEWAY WITH DUPLEX RECEPTACLES AS INDICATED
	AS NOTED	SURFACE RACEWAY
	CEILING	DUPLEX RECEPTACLE–FLUSH
	FLOOR	DUPLEX RECEPTACLE–FLUSH
	FLOOR	DOUBLE DUPLEX RECEPTACLE–FLUSH
	FLOOR	SPECIAL PURPOSE RECEPTACLE–SINGLE PHASE–FLUSH
	FLOOR	SPECIAL PURPOSE RECEPTACLE–THREE PHASE–FLUSH
	FLOOR	DUPLEX RECEPTACLE–FLUSH– WITH GROUND FAULT INTERRUPTER
	FLOOR	COMBINATION DUPLEX RECEPTACLE/DATA/VOICE OUTLET–FLUSH
	FLOOR	COMBINATION DOUBLE DUPLEX RECEPTACLE/DATA/VOICE OUTLET–FLUSH
	FLOOR	COMBINATION DUPLEX RECEPTACLE AND DATA OUTLET–FLUSH
	FLOOR	COMBINATION DOUBLE DUPLEX RECEPTACLE AND DATA OUTLET–FLUSH
	3" AFF	DUPLEX RECEPTACLE–WITH CAST OUTLET BOX ON STAND PIPE
	3" AFF	DUPLEX RECEPTACLE–WITH GROUND FAULT INTERRUPTER–WITH CAST OUTLET BOX ON STAND PIPE
	3" AFF	DOUBLE DUPLEX RECEPTACLE–WITH CAST OUTLET BOX ON STAND PIPE
	3" AFF	SPECIAL PURPOSE RECEPTACLE–WITH CAST OUTLET BOX ON STAND PIPE SINGLE PHASE
	3" AFF	SPECIAL PURPOSE RECEPTACLE–WITH CAST OUTLET BOX ON STAND PIPE THREE PHASE
	18" AFF	POWER CONNECTION TO SYSTEMS FURNITURE–POWER WALL FEED
	18" AFF	POWER POKE THRU SERVICE FITTING FOR SYSTEMS FURNITURE FEED–POWER FLOOR FEED
	18" AFF	ABOVE CEILING FITTING FOR SYSTEMS FURNITURE FEED–POWER CEILING FEED
P	FLOOR	POKE THROUGH DEVICE WITH: DUPLEX RECEPTACLE, DATA, AND TELEPHONE (# OF DATA AND TELEPHONE DROPS AS INDICATED ON PLANS)

FIRE ALARM

SYMBOL	DESCRIPTION
(15)	CANDELA RATING
	FIRE ALARM WALL MOUNTED VISIBLE NOTIFICATION APPLIANCE
	FIRE ALARM CEILING MOUNTED VISIBLE NOTIFICATION APPLIANCE
	FIRE ALARM WALL MOUNTED AUDIBLE NOTIFICATION APPLIANCE
	FIRE ALARM CEILING MOUNTED AUDIBLE NOTIFICATION APPLIANCE
	FIRE ALARM WALL MOUNTED COMBINED AUDIBLE/VISIBLE NOTIFICATION APPLIANCE
	FIRE ALARM CEILING MOUNTED COMBINED AUDIBLE/VISIBLE NOTIFICATION APPLIANCE
	HEAT DETECTOR
135	HEAT DETECTOR 135°F FIXED TEMPERATURE
R/F	RATE OF RISE/FIXED TEMPERATURE HEAT DETECTOR
F	FIXED TEMPERATURE HEAT DETECTOR
	SMOKE DETECTOR
S	DUCT SMOKE DETECTOR
FAP	FIRE ALARM PANEL
FAAP	FIRE ALARM ANNUNCIATOR
AMP	AMPLIFIER PANEL
NAC	NOTIFICATION APPLIANCE CIRCUIT POWER EXTENDER PANEL
	MANUAL PULL STATION
DH	DOOR HOLDER
S	SMOKE DAMPER (BY OTHERS)
S/F	SMOKE/FIRE DAMPER (BY OTHERS)
FS	FLOW SWITCH (BY OTHERS)
TS	TAMPER SWITCH (BY OTHERS)

LIGHTING FIXTURES

SYMBOL	MOUNTING HEIGHT	DESCRIPTION
	RECESSED/SURFACE	EMERGENCY LIGHT FIXTURE WITH INTEGRAL EMEGENCNY BATTERY
	RECESSED/SURFACE	LIGHT FIXTURE
	WALL	LIGHT FIXTURE
	WALL	LIGHT FIXTURE ENTIRELY CONNECTED TO NORMAL/EMERGENCY CIRCUIT
	RECESSED/PENDANT	LINEAR LIGHT FIXTURE
	WALL	WALL SCONCE
	WALL	EMERGENCY WALL SCONCE WITH INTEGRAL EMEGENCNY BATTERY
	RECESSED	INCANDESCENT, FLUORESCENT, OR LED WALLWASH FIXTURE
	AS NOTED	INCANDESCENT, FLUORESCENT, OR LED LIGHT FIXTURE
	AS NOTED	EMERGENCY LIGHT FIXTURE WITH INTEGRAL EMEGENCNY BATTERY
	AS NOTED	TRACK LIGHTING
	RECESSED/SURFACE	INCANDESCENT, FLUORESCENT, OR LED DOWNLIGHT
	RECESSED/SURFACE	NORMAL EMERGENCY DOWNLIGHT
	6" ABOVE DOOR JAMB	EXIT SIGN WITH DIRECTIONAL ARROWS WHERE INDICATED
	CEILING	EXIT SIGN WITH DIRECTIONAL ARROWS WHERE INDICATED
	12" BELOW CEILING MAX. 8'-0" AFF	EMERGENCY LIGHT BATTERY UNIT
	18" BELOW CEILING MAX. 8'-0" AFF	EMERGENCY LIGHT BATTERY UNIT

ABBREVIATIONS

A	AMPERES	MAX.	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MC	MECHANICAL CONTRACTOR
AFG	ABOVE FINISHED GRADE		
AHU	AIR HANDLING UNIT	MIN.	MINIMUM
ATC	AUTOMATIC TEMPERATURE CONTROL	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH		
AWG	AMERICAN WIRE GAUGE	NEC	NATIONAL ELECTRICAL CODE
		N.C.	NORMALLY CLOSED
BFF	BELOW FINISHED FLOOR	NO.	NUMBER
BFG	BELOW FINISHED GRADE	N.O.	NORMALLY OPEN
		OC	ON CENTER
CPT	CONTROL POWER TRANSFORMER		
CUH	CABINET UNIT HEATER	P	PUMP
CUV	CABINET UNIT VENTILATOR	PC	PLUMBING CONTRACTOR
CU	CONDENSING UNIT	PSI	POUNDS PER SQUARE INCH
		PVC	POLYVINYL CHLORIDE
DIA	DIAMETER		
DPDT	DOUBLE POLE, DOUBLE THROW	QTY.	QUANTITY
EC	ELECTRICAL CONTRACTOR	RAF	RETURN AIR FAN
EHD	ELECTRIC HAND DRYER	RCP	RADIANT CEILING PANEL
EF	EXHAUST FAN	RCS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING	RTU	ROOF TOP UNIT
ETR	EXISTING TO REMAIN		
EWC	ELECTRIC WATER COOLER	SCU	SELF–CONTAINED UNIT
		SPDT	SINGLE POLE, DOUBLE THROW
F	FAN	SPST	SINGLE POLE, SINGLE THROW
FCU	FAN COIL UNIT	STP	SHIELDED TWISTED PAIR
FLA	FULL LOAD AMPERES	SS	SPLIT SYSTEM
FR	FINNED RADIATION		
		TYP	TYPICAL
GFI	GROUND FAULT INTERRUPTER		
		UH	UNIT HEATER
H–O–A	HAND–OFF–AUTOMATIC	UG	UNDERGROUND
HUH	HORIZONTAL UNIT HEATER	UTP	UNSHIELDED TWISTED PAIR
HP	HORSEPOWER		
HT	HEIGHT	V	VOLT, VOLTS
		VA	VOLT AMPERES
IMC	INTERMEDIATE METALLIC CONDUIT	VAV	VARIABLE AIR VOLUME
KCMIL	KILO CIRCULAR MILS	WP	WEATHERPROOF
KVA	KILOVOLT–AMPERES		
KW	KILOWATTS	XFMR	TRANSFORMER
		XP	EXPLOSION PROOF
LRA	LOCKED ROTOR AMPERES		
LTG	LIGHTING		

LIGHTING CONTROL SYMBOLS

OSW	44" AFF	WALL MOUNT PASSIVE INFRARED AUTOMATIC SWITCH
OSTS	44" AFF	DIGITAL TIME SWITCH
OS	+102" AFF OR 6" BELOW CEILING	CORNER MOUNT PASSIVE INFRARED OCCUPANCY SENSOR
OSDT	+102" AFF OR 6" BELOW CEILING	CORNER MOUNT DUAL TECHNOLOGY (PASSIVE INFRARED & ULTRASONIC) OCCUPANCY SENSOR
OSDT	CEILING MOUNT	CEILING MOUNT DUAL TECHNOLOGY (PASSIVE INFRARED & ULTRASONIC) OCCUPANCY SENSOR
OSU	CEILING MOUNT	CEILING MOUNT ULTRASONIC OCCUPANCY SENSOR
GTD 20A	ABOVE CEILING	EMERGENCY LIGHTING RELAY CONTROL DEVICE (BODINE OR EQUAL)
LRP#	SURFACE MTD.	LIGHTING CONTROL RELAY PANEL
DP#	SURFACE MTD.	LIGHTING DIMMING PANEL

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Electrical Legend, Symbols, and Abbreviations

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E000

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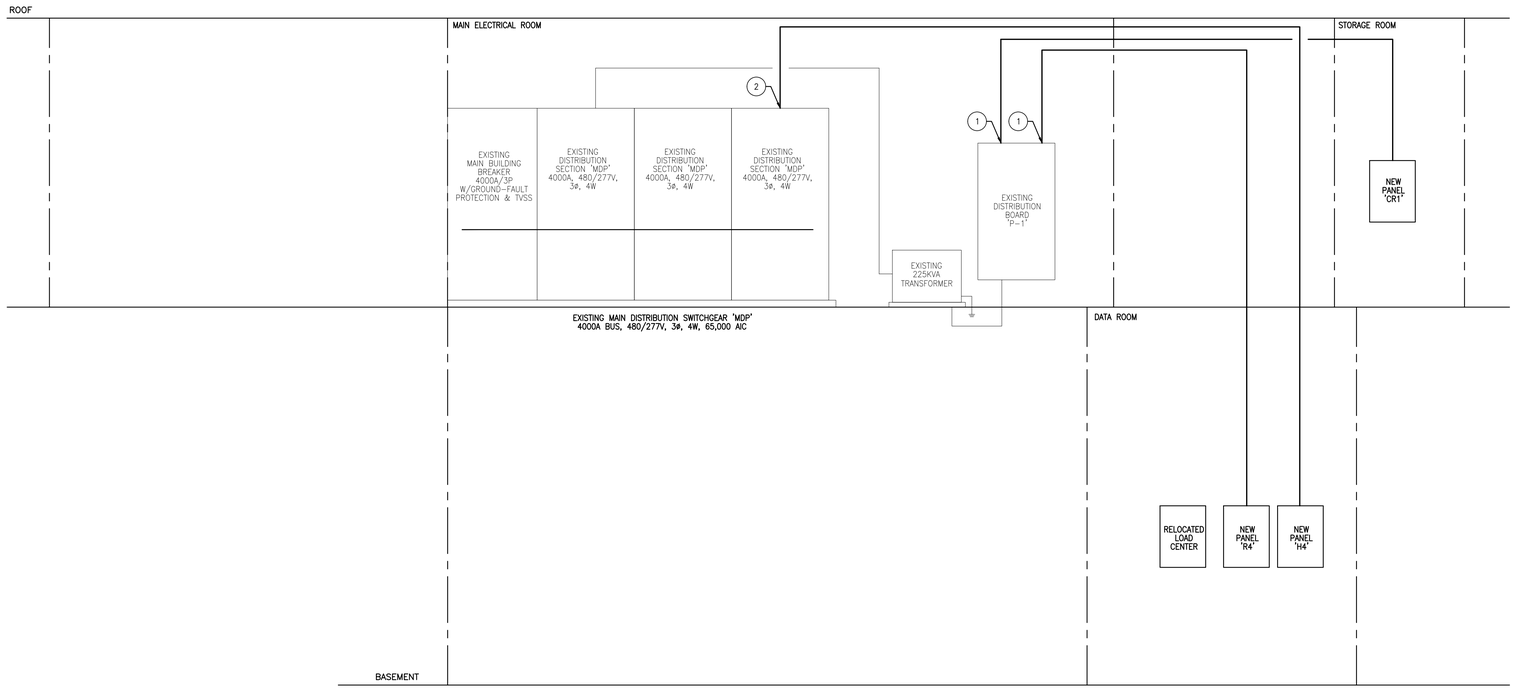
GENERAL NOTES:

1. ALL ELECTRICAL EQUIPMENT, CONDUITS, AND FEEDERS SHOWN DARK ARE NEW.
2. ALL EQUIPMENT AND FEEDERS SHOWN SOLID AND LIGHT ARE EXISTING TO REMAIN, U.O.N.

SHEET NOTES:

(1) EC SHALL PROVIDE A NEW 125A/3P CIRCUIT BREAKER (TYPE AND AIC RATING TO MATCH EXISTING) IN THE AVAILABLE BLANK SPACE OF EXISTING DISTRIBUTION PANEL 'P-1' AND ROUTE 4#1 + #6 GND IN A 1 1/2" CONDUIT TO SERVE THE PANEL INDICATED.

(2) EC SHALL PROVIDE A NEW 125A/3P CIRCUIT BREAKER (TYPE AND AIC RATING TO MATCH EXISTING) IN THE AVAILABLE BLANK SPACE OF EXISTING DISTRIBUTION SWITCHBOARD 'MDP' AND ROUTE 4#1 + #6 GND IN A 1 1/2" CONDUIT TO SERVE THE PANEL INDICATED.



1 PARTIAL ELECTRICAL SINGLE-LINE DIAGRAM - NEW WORK

NOT TO SCALE

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515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Partial Electrical Single-line Diagram - New Work

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E004

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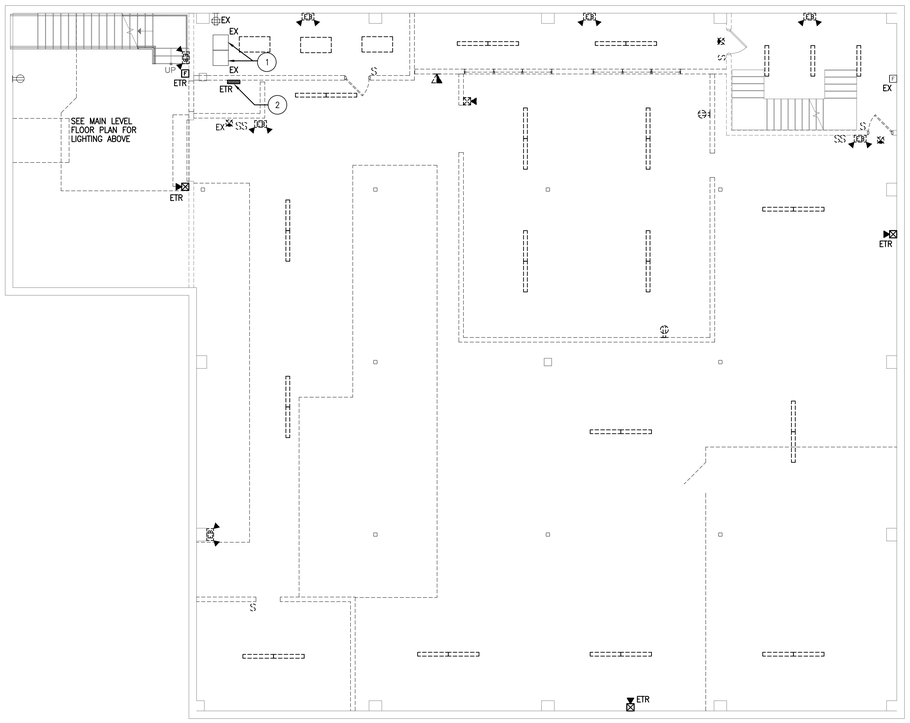
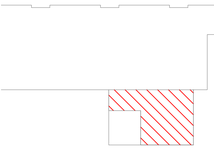


BASEMENT FLOOR PLAN - ELECTRICAL DEMOLITION

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



Key Plan

GENERAL NOTES:

1. ALL ELECTRICAL SWITCHES, LIGHT FIXTURES, AND DEVICES SHOWN DASHED ARE EXISTING TO BE REMOVED, UNLESS OTHERWISE NOTED.
2. EC IS RESPONSIBLE FOR THE REMOVAL OF ALL DISCONNECTS, STARTERS, AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE SERVING ANY HVAC EQUIPMENT BEING REMOVED. EC SHALL COORDINATE WITH MECHANICAL DEMOLITION PLANS FOR THE EXACT TYPE AND LOCATION OF EQUIPMENT BEING REMOVED.
3. THE EXISTING FIRE ALARM DEVICES SHALL BE REUSED AND RELOCATED TO THE FULLEST EXTENT POSSIBLE. THE EC SHALL BE RESPONSIBLE FOR TAKING DOWN, CLEANING, AND TESTING THE EXISTING DEVICES THAT ARE TO BE REUSED. REFER TO DRAWING E101 FOR NEW FIRE ALARM LAYOUT.
4. ELECTRICAL, FIRE ALARM DEVICES, LIGHT FIXTURES, ETC. NOTED WITH THE SUBSCRIPT 'ETR' ARE EXISTING TO BE RELOCATED.
5. ELECTRICAL, FIRE ALARM DEVICES, LIGHT FIXTURES, ETC. SHOWN SOLID AND LIGHT OR NOTED WITH THE SUBSCRIPT 'EX' ARE EXISTING TO REMAIN U.O.N.

DEMOLITION NOTES:

(1) EXISTING DATA RACKS TO REMAIN. SEE NEW WORK PLANS FOR ADDITIONAL INFORMATION.

(2) EC SHALL RELOCATE EXISTING LOAD CENTER AND SHALL BE RESPONSIBLE FOR EXTENDING THE EXISTING MAIN FEED AND EXISTING BRANCH CIRCUITS TO THE NEW LOCATION. REFER TO THE NEW POWER PLAN FOR ADDITIONAL INFORMATION.

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REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Basement Floor Plan - Electrical Demolition

PROJECT NUMBER
17.177

DRAWN BY
AMV/HMB

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
E100

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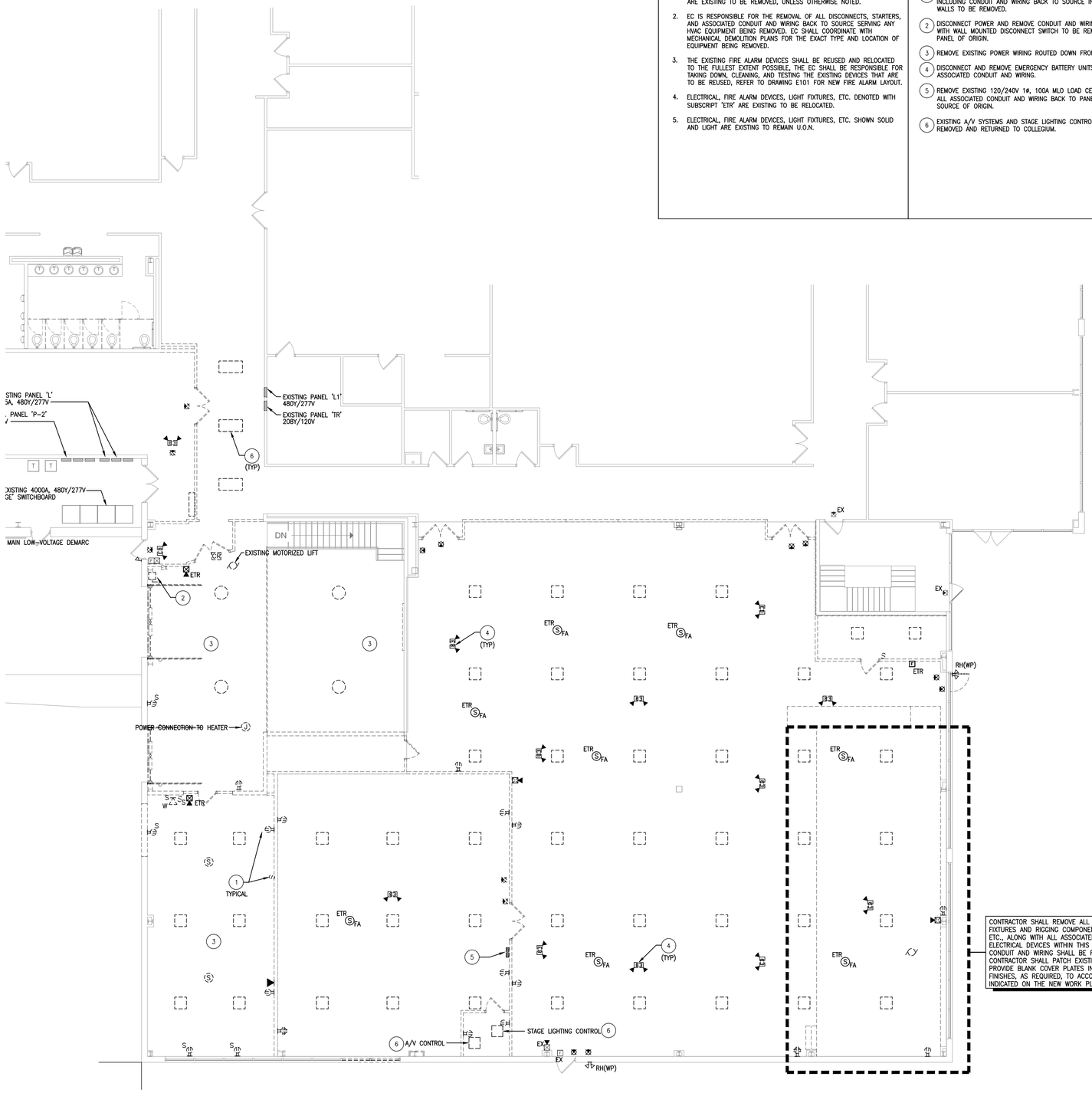
GENERAL NOTES:

1. ALL ELECTRICAL SWITCHES, LIGHT FIXTURES, AND DEVICES SHOWN DASHED ARE EXISTING TO BE REMOVED, UNLESS OTHERWISE NOTED.
2. EC IS RESPONSIBLE FOR THE REMOVAL OF ALL DISCONNECTS, STARTERS, AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE SERVING ANY HVAC EQUIPMENT BEING REMOVED. EC SHALL COORDINATE WITH MECHANICAL DEMOLITION PLANS FOR THE EXACT TYPE AND LOCATION OF EQUIPMENT BEING REMOVED.
3. THE EXISTING FIRE ALARM DEVICES SHALL BE REUSED AND RELOCATED TO THE FULLEST EXTENT POSSIBLE, THE EC SHALL BE RESPONSIBLE FOR TAKING DOWN, CLEANING, AND TESTING THE EXISTING DEVICES THAT ARE TO BE REUSED, REFER TO DRAWING E101 FOR NEW FIRE ALARM LAYOUT.
4. ELECTRICAL, FIRE ALARM DEVICES, LIGHT FIXTURES, ETC. DENOTED WITH SUBSCRIPT 'ETR' ARE EXISTING TO BE RELOCATED.
5. ELECTRICAL, FIRE ALARM DEVICES, LIGHT FIXTURES, ETC. SHOWN SOLID AND LIGHT ARE EXISTING TO REMAIN U.O.N.

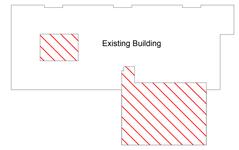
DEMOLITION NOTES:

1. DISCONNECT AND REMOVE ALL WALL MOUNTED ELECTRICAL DEVICES, INCLUDING CONDUIT AND WIRING BACK TO SOURCE INDICATED ON WALLS TO BE REMOVED.
2. DISCONNECT POWER AND REMOVE CONDUIT AND WIRING ASSOCIATED WITH WALL MOUNTED DISCONNECT SWITCH TO BE REMOVED, BACK TO PANEL OF ORIGIN.
3. REMOVE EXISTING POWER WIRING ROUTED DOWN FROM THE CEILING.
4. DISCONNECT AND REMOVE EMERGENCY BATTERY UNITS, ALONG WITH ALL ASSOCIATED CONDUIT AND WIRING.
5. REMOVE EXISTING 120/240V 1ø, 100A MLO LOAD CENTER INCLUDING ALL ASSOCIATED CONDUIT AND WIRING BACK TO PANEL AND/OR SOURCE OF ORIGIN.
6. EXISTING A/V SYSTEMS AND STAGE LIGHTING CONTROL SYSTEMS TO BE REMOVED AND RETURNED TO COLLEGIUM.



PARTIAL FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA A

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



Key Plan

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No.	Date	Description

DRAWING TITLE

PARTIAL FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA A

PROJECT NUMBER 17.177

DRAWN BY AMV/HMB

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E101A

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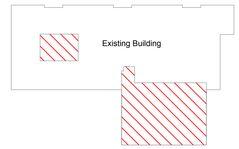
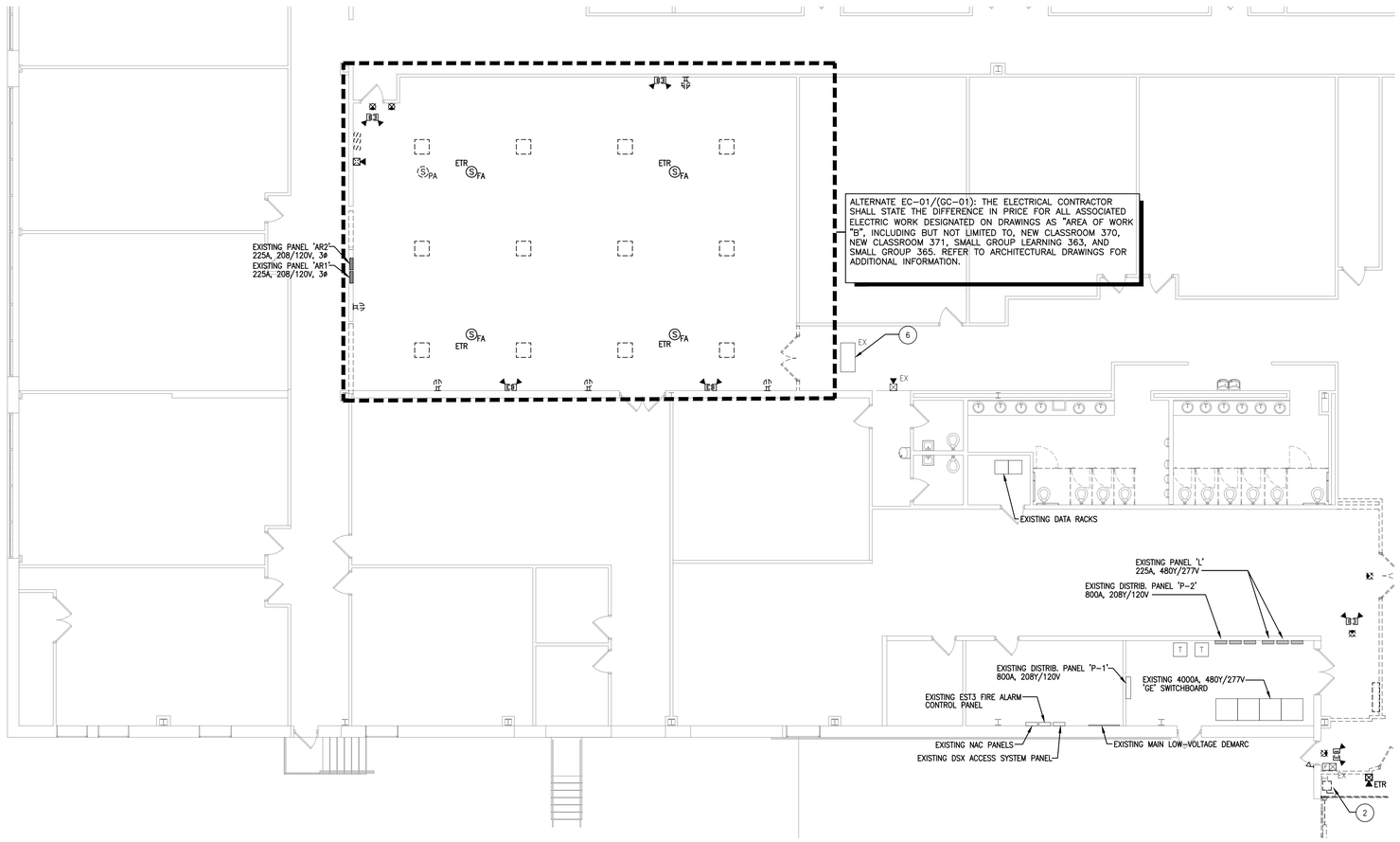


Key Plan

GENERAL NOTES:	DEMOLITION NOTES: Notes Apply to Area 'A' and 'B'
1. ALL ELECTRICAL SWITCHES, LIGHT FIXTURES, AND DEVICES SHOWN DASHED ARE EXISTING TO BE REMOVED, UNLESS OTHERWISE NOTED. 2. EC IS RESPONSIBLE FOR THE REMOVAL OF ALL DISCONNECTS, STARTERS, AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE SERVING ANY HVAC EQUIPMENT BEING REMOVED. EC SHALL COORDINATE WITH MECHANICAL DEMOLITION PLANS FOR THE EXACT TYPE AND LOCATION OF EQUIPMENT BEING REMOVED. 3. THE EXISTING FIRE ALARM DEVICES SHALL BE REUSED AND RELOCATED TO THE FULLEST EXTENT POSSIBLE, THE EC SHALL BE RESPONSIBLE FOR TAKING DOWN, CLEANING, AND TESTING THE EXISTING DEVICES THAT ARE TO BE REUSED, REFER TO DRAWING E101 FOR NEW FIRE ALARM LAYOUT. 4. ELECTRICAL, FIRE ALARM DEVICES, LIGHT FIXTURES, ETC. DENOTED WITH SUBSCRIPT 'ETR' ARE EXISTING TO BE RELOCATED. 5. ELECTRICAL, FIRE ALARM DEVICES, LIGHT FIXTURES, ETC. SHOWN SOLID AND LIGHT ARE EXISTING TO REMAIN U.O.N.	(1) DISCONNECT AND REMOVE ALL WALL MOUNTED ELECTRICAL DEVICES, INCLUDING CONDUIT AND WIRING BACK TO SOURCE INDICATED ON WALLS TO BE REMOVED. (2) DISCONNECT POWER AND REMOVE CONDUIT AND WIRING ASSOCIATED WITH WALL MOUNTED DISCONNECT SWITCH TO BE REMOVED, BACK TO PANEL OF ORIGIN. (3) REMOVE EXISTING POWER WIRING ROUTED DOWN FROM THE CEILING. (4) DISCONNECT AND REMOVE EMERGENCY BATTERY UNITS, ALONG WITH ALL ASSOCIATED CONDUIT AND WIRING. (5) REMOVE EXISTING 120/240V 1ø, 100A MLO LOAD CENTER INCLUDING ALL ASSOCIATED CONDUIT AND WIRING BACK TO PANEL AND/OR SOURCE OF ORIGIN. (6) REFER TO ARCHITECTURAL REFLECTED CEILING AND LIGHTING PLAN FOR INTEGRATION OF NEW CORRIDOR CEILING AND LIGHTING FIXTURES INTO EXISTING.



PARTIAL FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA B

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

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REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

PARTIAL FIRST FLOOR ELECTRICAL DEMOLITION PLAN - AREA B

PROJECT NUMBER 17.177

DRAWN BY AMV/HMB

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E101B

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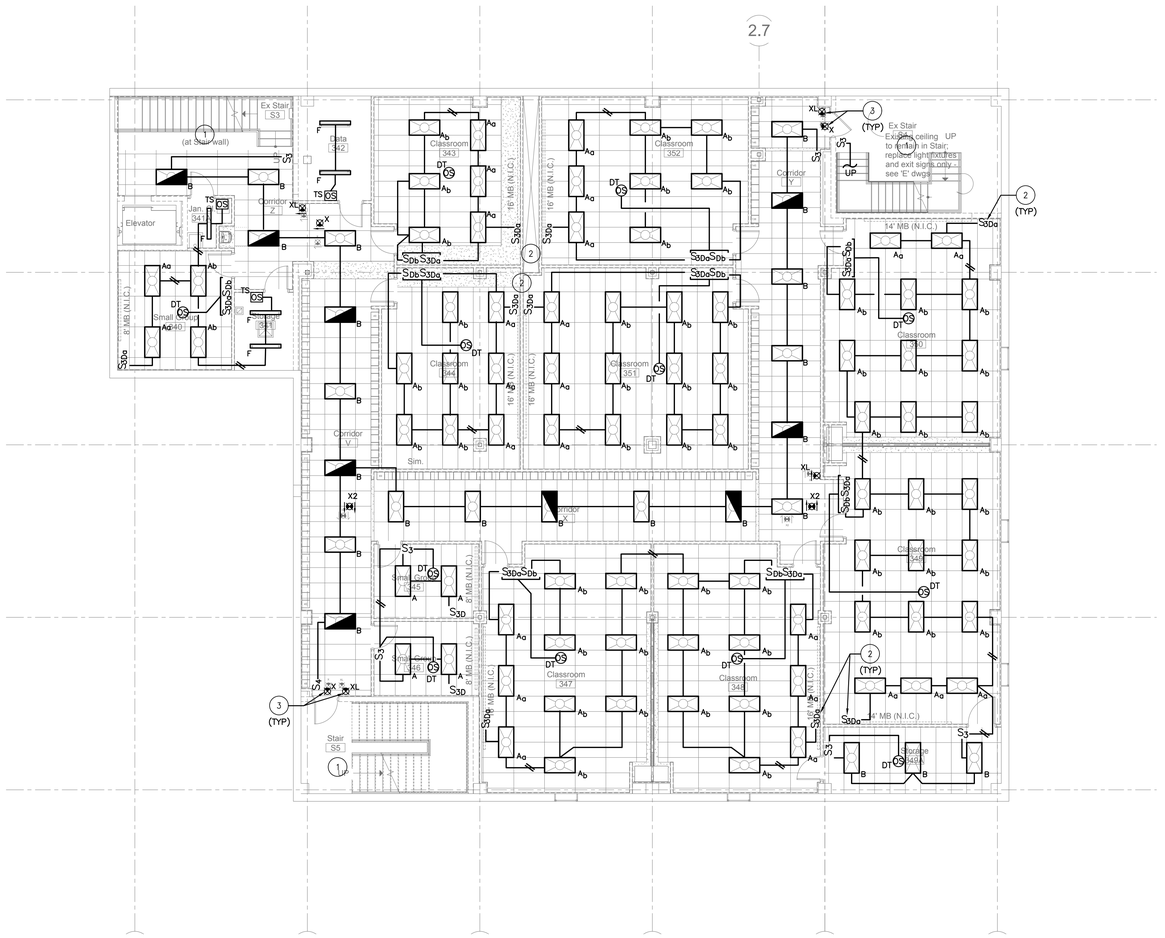
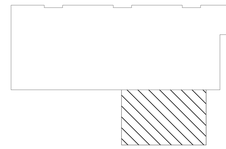


BASEMENT FLOOR NEW WORK LIGHTING PLAN

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



Key Plan

GENERAL NOTES:

1. REFER TO DRAWING 'E000' FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND SYMBOLS.
2. REFER TO ELECTRICAL POWER/TELECOM/FIRE ALARM NEW WORK PLANS FOR LOCATIONS OF ALL ELECTRICAL PANELS.
3. ALL LIGHT FIXTURES AND ELECTRICAL DEVICES, ETC. DENOTED WITH THE SUBSCRIPT 'EX' ARE EXISTING TO REMAIN.
4. ALL LIGHT FIXTURES AND ELECTRICAL DEVICES, ETC. DENOTED WITH THE SUBSCRIPT 'R' ARE EXISTING FIXTURES RELOCATED.
5. COORDINATE WITH ARCHITECTURAL CEILING PLANS, SECTIONS, AND ELEVATIONS FOR EXACT QUANTITIES AND LOCATIONS OF ALL CEILING AND WALL MOUNTED LIGHTING FIXTURES AND DEVICES. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO PURCHASE AND/OR INSTALLATION.
6. THESE DRAWINGS DEPICT THE LOCATION AND TYPE OF OCCUPANCY SENSORS USED. THE E.C. IS RESPONSIBLE FOR ALL REQUIRED POWER PACKS, LOW VOLTAGE WIRING, AND ACCESSORIES NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL OCCUPANCY SENSING SYSTEM FOR EACH AREA INDICATED.
7. ALL EMERGENCY EXIT SIGNS SHALL BE CIRCUITED TO THE NEAREST 120V OR 277V LIGHTING CIRCUIT SERVING RESPECTIVE AREA. EXIT SIGNS SHALL NOT BE WIRED THROUGH ANY SWITCHING OR LIGHTING RELAY DEVICES.
8. EMERGENCY EXIT SIGNS SHALL BE MOUNTED SUCH THAT THEY ARE READILY VISIBLE FROM ANY DIRECTION OF EXIT ACCESS, OTHER THAN THOSE LOCATED DIRECTLY AT EXIT DOORS. EXIT SIGNS SHALL BE PLACED SUCH THAT NO POINT IN THE EXIT ACCESS IS MORE THAN 100 FEET FROM THE NEAREST VISIBLE SIGN. CONTRACTOR SHALL PROVIDE PENDANT KITS AND MOUNTING ACCESSORIES AS REQUIRED.
9. ALL CONSTRUCTABILITY ISSUES SHALL BE BROUGHT TO THE ENGINEER AND ARCHITECT'S ATTENTION PRIOR TO INSTALLATION.
10. ALL MECHANICAL, ELECTRICAL ROOM, BACK OF HOUSE LIGHTING, ETC. SHALL BE CLOSELY COORDINATED WITH EQUIPMENT AND THE WORK OF OTHER TRADES.
11. EC SHALL PROVIDE SURFACE MOUNTED METALLIC RACEWAY AS REQUIRED ON EXISTING CMU BLOCK WALLS WHERE EXISTING CONSTRUCTION DOES NOT ALLOW NEW WIRING TO BE ROUTED THROUGH THE EXISTING WALLS.

SHEET NOTES:

1. REFER TO FIRST FLOOR NEW WORK LIGHTING PLANS FOR ADDITIONAL WORK IN THIS AREA.
2. CONFIRM FINAL INSTRUCTOR/PODIUM DIMMING SWITCH LOCATIONS WITH OWNER PRIOR TO ROUGH-IN AND/OR INSTALLATION. TYPICAL.
3. ALL HIGH/LOW EXIT SIGNAGE LOCATIONS AND INSTALLATION SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, ELEVATIONS, AND FINISHES. TYPICAL.

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SEAL

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REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Basement Floor New Work Lighting Plan

PROJECT NUMBER 17.177

DRAWN BY HMB

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E200

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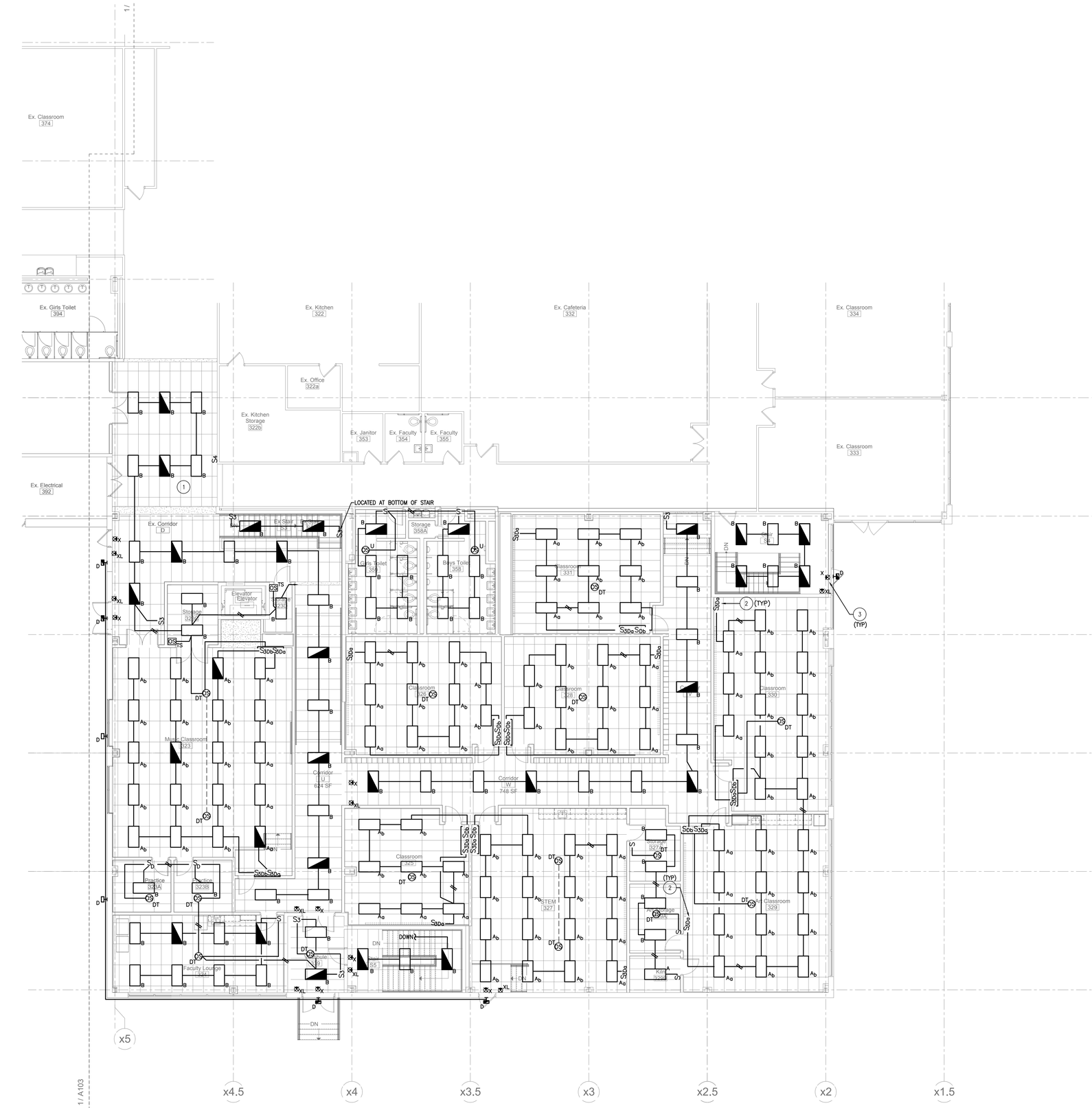
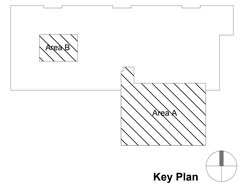


PARTIAL FIRST FLOOR NEW WORK LIGHTING PLAN - AREA A

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



GENERAL NOTES:

1. REFER TO DRAWING 'E000' FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND SYMBOLS.
2. REFER TO ELECTRICAL POWER/TELECOM/FIRE ALARM NEW WORK PLANS FOR LOCATIONS OF ALL ELECTRICAL PANELS.
3. ALL LIGHT FIXTURES AND ELECTRICAL DEVICES, ETC. DENOTED WITH THE SUBSCRIPT 'EX' ARE EXISTING TO REMAIN.
4. ALL LIGHT FIXTURES AND ELECTRICAL DEVICES, ETC. DENOTED WITH THE SUBSCRIPT 'R' ARE EXISTING FIXTURES RELOCATED.
5. COORDINATE WITH ARCHITECTURAL CEILING PLANS, SECTIONS, AND ELEVATIONS FOR EXACT QUANTITIES AND LOCATIONS OF ALL CEILING AND WALL MOUNTED LIGHTING FIXTURES AND DEVICES. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO PURCHASE AND/OR INSTALLATION.
6. THESE DRAWINGS DEPICT THE LOCATION AND TYPE OF OCCUPANCY SENSORS USED. THE E.C. IS RESPONSIBLE FOR ALL REQUIRED POWER PACKS, LOW VOLTAGE WIRING, AND ACCESSORIES NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL OCCUPANCY SENSING SYSTEM FOR EACH AREA INDICATED.
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8. EMERGENCY EXIT SIGNS SHALL BE MOUNTED SUCH THAT THEY ARE READILY VISIBLE FROM ANY DIRECTION OF EXIT ACCESS, OTHER THAN THOSE LOCATED DIRECTLY AT EXIT DOORS. EXIT SIGNS SHALL BE PLACED SUCH THAT NO POINT IN THE EXIT ACCESS IS MORE THAN 100 FEET FROM THE NEAREST VISIBLE SIGN. CONTRACTOR SHALL PROVIDE PENDANT KITS AND MOUNTING ACCESSORIES AS REQUIRED.
9. ALL CONSTRUCTABILITY ISSUES SHALL BE BROUGHT TO THE ENGINEER AND ARCHITECT'S ATTENTION PRIOR TO INSTALLATION.
10. ALL MECHANICAL, ELECTRICAL ROOM, BACK OF HOUSE LIGHTING, ETC. SHALL BE CLOSELY COORDINATED WITH EQUIPMENT AND THE WORK OF OTHER TRADES.
11. EC SHALL PROVIDE SURFACE MOUNTED METALLIC RACEWAY AS REQUIRED ON EXISTING CMU BLOCK WALLS WHERE EXISTING CONSTRUCTION DOES NOT ALLOW NEW WIRING TO BE ROUTED THROUGH THE EXISTING WALLS.

SHEET NOTES:

1. REFER TO FIRST BASEMENT NEW WORK LIGHTING PLAN FOR CONTINUATION OF WORK IN THIS AREA.
2. CONFIRM FINAL INSTRUCTOR/PODIUM DIMMING SWITCH LOCATIONS WITH OWNER PRIOR TO ROUGH-IN AND/OR INSTALLATION. TYPICAL.
3. ALL HIGH/LOW EXIT SIGNAGE LOCATIONS AND INSTALLATION SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, ELEVATIONS, AND FINISHES. TYPICAL.

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REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Partial First Floor New Work Lighting Plan - Area A

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E201A

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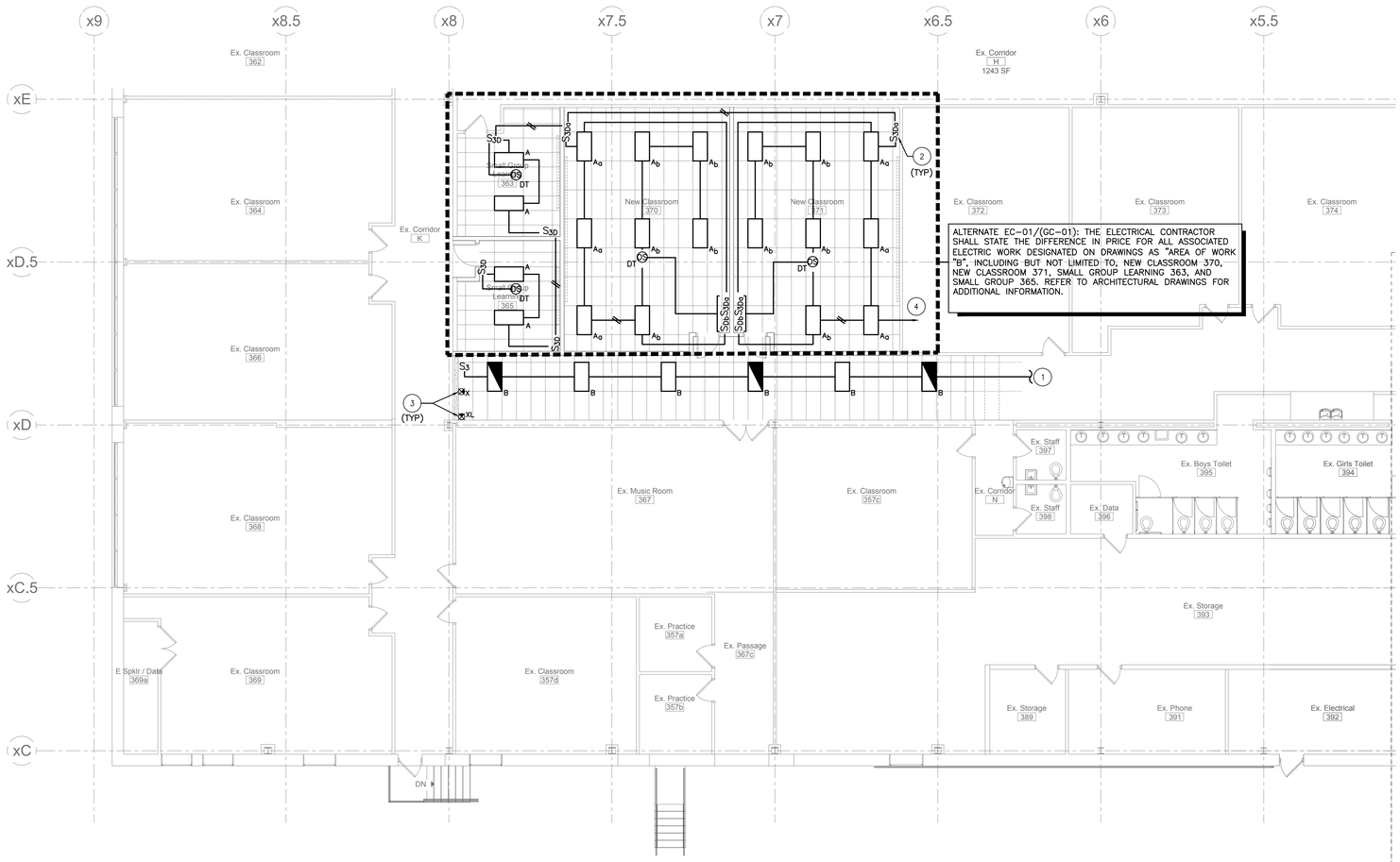
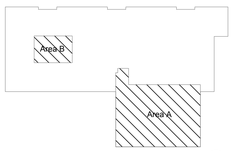


ALTERNATE EC-01/(GC-01): THE ELECTRICAL CONTRACTOR SHALL STATE THE DIFFERENCE IN PRICE FOR ALL ASSOCIATED ELECTRIC WORK DESIGNATED ON DRAWINGS AS "AREA OF WORK "B", INCLUDING BUT NOT LIMITED TO, NEW CLASSROOM 370, NEW CLASSROOM 371, SMALL GROUP LEARNING 363, AND SMALL GROUP 365. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

PARTIAL FIRST FLOOR NEW WORK LIGHTING PLAN - AREA B

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



Key Plan

GENERAL NOTES:

1. REFER TO DRAWING 'E000' FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND SYMBOLS.
2. REFER TO ELECTRICAL POWER/TELECOM/FIRE ALARM NEW WORK PLANS FOR LOCATIONS OF ALL ELECTRICAL PANELS.
3. ALL LIGHT FIXTURES AND ELECTRICAL DEVICES, ETC. DENOTED WITH THE SUBSCRIPT 'EX' ARE EXISTING TO REMAIN.
4. ALL LIGHT FIXTURES AND ELECTRICAL DEVICES, ETC. DENOTED WITH THE SUBSCRIPT 'R' ARE EXISTING FIXTURES RELOCATED.
5. COORDINATE WITH ARCHITECTURAL CEILING PLANS, SECTIONS, AND ELEVATIONS FOR EXACT QUANTITIES AND LOCATIONS OF ALL CEILING AND WALL MOUNTED LIGHTING FIXTURES AND DEVICES. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO PURCHASE AND/OR INSTALLATION.
6. THESE DRAWINGS DEPICT THE LOCATION AND TYPE OF OCCUPANCY SENSOR USED. THE E.C. IS RESPONSIBLE FOR ALL REQUIRED POWER PACKS, LOW VOLTAGE WIRING, AND ACCESSORIES NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL OCCUPANCY SENSING SYSTEM FOR EACH AREA INDICATED.
7. ALL EMERGENCY EXIT SIGNS SHALL BE CIRCUITED TO THE NEAREST 120V OR 277V LIGHTING CIRCUIT SERVING RESPECTIVE AREA. EXIT SIGNS SHALL NOT BE WIRED THROUGH ANY SWITCHING OR LIGHTING RELAY DEVICES.
8. EMERGENCY EXIT SIGNS SHALL BE MOUNTED SUCH THAT THEY ARE READILY VISIBLE FROM ANY DIRECTION OF EXIT ACCESS, OTHER THAN THOSE LOCATED DIRECTLY AT EXIT DOORS. EXIT SIGNS SHALL BE PLACED SUCH THAT NO POINT IN THE EXIT ACCESS IS MORE THAN 100 FEET FROM THE NEAREST VISIBLE SIGN. CONTRACTOR SHALL PROVIDE PENDANT KITS AND MOUNTING ACCESSORIES AS REQUIRED.
9. ALL CONSTRUCTABILITY ISSUES SHALL BE BROUGHT TO THE ENGINEER AND ARCHITECT'S ATTENTION PRIOR TO INSTALLATION.
10. ALL MECHANICAL, ELECTRICAL ROOM, BACK OF HOUSE LIGHTING, ETC. SHALL BE CLOSELY COORDINATED WITH EQUIPMENT AND THE WORK OF OTHER TRADES.
11. EC SHALL PROVIDE SURFACE MOUNTED METALLIC RACEWAY AS REQUIRED ON EXISTING CMU BLOCK WALLS WHERE EXISTING CONSTRUCTION DOES NOT ALLOW NEW WIRING TO BE ROUTED THROUGH THE EXISTING WALLS.

SHEET NOTES:

1. PROVIDE NEW LIGHTING AND CONTROL AS INDICATED, WIRING AS REQUIRED, AND CONNECT TO EXISTING 277V LIGHTING CIRCUIT SERVING EXISTING CORRIDOR LIGHTING.
2. CONFIRM FINAL INSTRUCTOR/PODIUM DIMMING SWITCH LOCATIONS WITH OWNER PRIOR TO ROUGH-IN AND/OR INSTALLATION. TYPICAL.
3. ALL HIGH/LOW EXIT SIGNAGE LOCATIONS AND INSTALLATION SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, ELEVATIONS, AND FINISHES. TYPICAL.
4. EC SHALL EXTEND NEW WIRING AS REQUIRED AND PROVIDE A NEW 20A/1P C/B IN EXISTING 480Y/277V PANEL 'L', LOCATED IN EXISTING MAIN ELECTRICAL DISTRIBUTION ROOM 392. CIRCUIT BREAKER TYPE AND AIC TO MATCH EXISTING INSTALLED.

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Partial First Floor New Work Lighting Plan - Area B

PROJECT NUMBER
17.177

DRAWN BY
HMB

SCALE
As indicated

DATE
09.14.2018

DRAWING NUMBER
E201B

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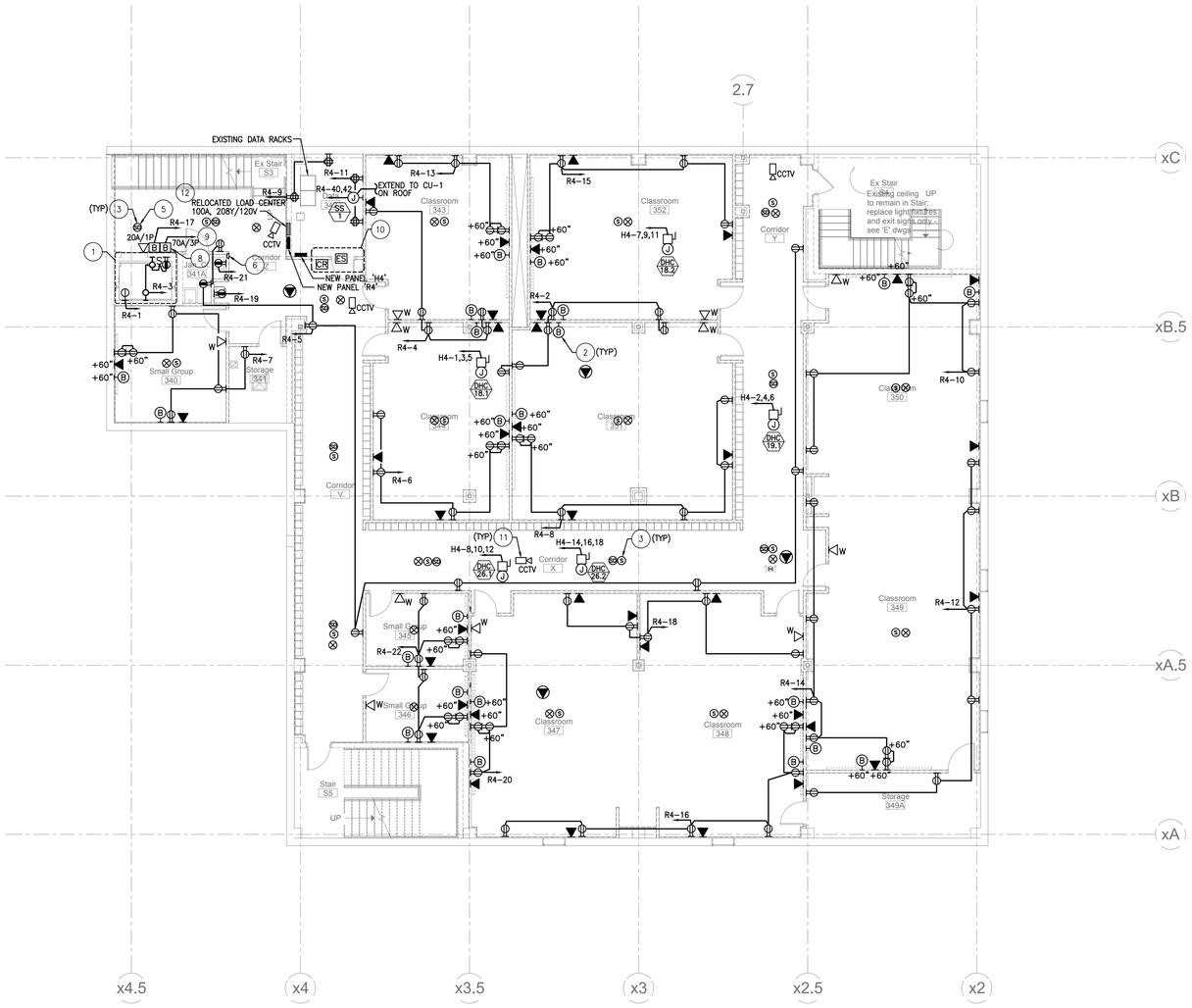

BASEMENT FLOOR PLAN - POWER, TELECOM, FIRE ALARM PLAN - NEW WORK

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

Key Plan

GENERAL NOTES:

1. ELECTRICAL, TELECOM, AND FIRE ALARM DEVICES DENOTED WITH SUBSCRIPT 'R' ARE EXISTING DEVICES THAT HAVE BEEN RELOCATED.
2. ELECTRICAL AND FIRE ALARM DEVICES DENOTED WITH SUBSCRIPT 'EX' ARE EXISTING DEVICES.
3. EC SHALL PROVIDE SURFACE MOUNTED ELECTRICAL DEVICES WITH SURFACE MOUNTED METALLIC RACEWAY FOR ALL NEW ELECTRICAL DEVICES MOUNTED ON EXSITING CMU BLOCK WALLS WHERE THE NEW WIRING CAN NOT BE ROUTED THROUGH THE EXISTING WALLS.
4. ALL CAMERAS', LOW-VOLTAGE AND A/V DEVICES ARE FOR INFORMATIONAL PURPOSE ONLY, THE ELECTRICAL CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR THE PATHWAY (ROUGH-IN OF BACKBOX AND CONDUIT) FOR ALL LOW-VOLTAGE SYSTEMS, EC SHALL REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. EC SHALL UTILIZE SHALLOW BACKBOXES ON THE EXTERIOR/FOUNDATION WALLS FOR ALL ELECTRICAL DEVICES.

SHEET NOTES:

1. ALL DEVICES LOCATED IN THE ELEVATOR PIT SHALL BE NEMA 4X TYPE. LIGHT FIXTURES SHALL BE HUBBELL MANUFACTURER, CATALOG #VW1-VHBLU15-VLSLC-VCC15 (OR EQUAL), NON-METALLIC VAPORTIGHT FIXTURE WITH HIGH OUTPUT LED DRIVER (20W LEDS), WALL MOUNTED ADAPTER AND HEAT RESISTANT GLASS GLOBE AND GUARD. MOUNT LIGHT SWITCH AT +84" ABOVE ELEVATOR PIT FLOOR BY ENTRANCE.
2. EC SHALL PROVIDE A SINGLE-GANG BACKBOX WITH A 1 1/4" EMPTY CONDUIT TO THE ACCESSIBLE CEILING FOR A/V INTERFACE WIRING.
3. FIRE ALARM DEVICES AND SPEAKERS ARE FOR INFORMATIONAL PURPOSES ONLY, EC SHALL PROVIDE A BACKBOX AND A 1" CONDUIT TO THE ACCESSIBLE CEILING AND SHALL COORDINATE WITH THE OWNER'S SECURITY/FIRE ALARM VENDOR "ESS" ELECTRONIC SECURITY SOLUTIONS TO PROVIDE ALL DEVICES AND WIRING TO TIE THE NEW DEVICES INTO THE EXISTING EST FIRE ALARM SYSTEM SERVING THIS BUILDING.
4. EC SHALL PROVIDE A 70A/3P (VERIFY BREAKER SIZE WITH ELEVATOR MANUFACTURER) CIRCUIT BREAKER (TYPE AND AIC RATING TO MATCH EXISTING) IN THE AVAILABLE BLANK SPACES OF THE EXISITNG 480/277V, 4000A, GE SWITCHBOARD AND ROUTE 3#4 + #8 GND IN A 1 1/2" CONDUIT TO SERVE THE NEW ELEVATOR.
5. REFER TO THE FIRE ALARM ELEVATOR INTERFACE DETAIL 1 ON DRAWING 'E400' FOR FIRE ELEVATOR CONTROL/FIRE ALARM INTERFACE. FIRE ALARM VENDOR TO INSTALL ALL DEVICES AND INTERCONNECTION WIRING.
6. AREA OF RESCUE REMOTE STATION. COORDINATE EXACT LOCATION WITH BUILDING OWNER AND FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO DETAIL 1 ON DRAWING 'E400' FOR ADDITIONAL INFORMATION.
7. EC SHALL PROVIDE A 20A/1P CIRCUIT BREAKER (TYPE AND AIC RATING TO MATCH EXISTING) IN AN AVAILABLE BLANK SPACE IN EXISTING PANEL 'R4' AND ROUTE 2#12 + #12 GND IN A 3/4" CONDUIT TO SERVE THE CIRCUIT INDICATED.
8. EC SHALL PROVIDE AN ENCLOSED SHUNT-TRIP, CIRCUIT BREAKER, LOCKABLE IN THE 'ON' OR 'OFF' POSITION. EC SHALL COORDINATE ENCLOSED BREAKER SIZE AND WIRING WITH THE ELEVATOR POWER REQUIREMENTS PRIOR TO PURCHASING, SIZES MAY VARY PER MANUFACTURER. COORDINATE POWER, FIRE ALARM, TELECOM CONNECTIONS WITH ELEVATOR CONTROLLER KNOCKOUTS ON ENTRANCE SIDE.
9. EC SHALL PROVIDE A 70A/3P (VERIFY BREAKER SIZE WITH ELEVATOR MANUFACTURER) CIRCUIT BREAKER (TYPE AND AIC RATING TO MATCH EXISTING) IN THE AVAILABLE BLANK SPACES OF THE EXISITNG 480/277V, 4000A, GE SWITCHBOARD AND ROUTE 3#4 + #8 GND IN A 1 1/2" CONDUIT TO SERVE THE NEW ELEVATOR.
10. REFER TO DETAIL 6 ON DRAWING 'E400' FOR TYPICAL CARD READER ROUGH-IN DETAIL.
11. CCTV CAMERAS ARE FOR INFORMATIONAL PURPOSES ONLY THE EC SHALL COORDINATE WITH THE CCTV VENDOR FOR ANY BACKBOXES AND PATHWAY REQUIRED TO MOUNT THE CAMERAS. THE OWNER'S CCTV VENDOR WILL BE RESPONSIBLE FOR INSTALLING THE CAMERA AND ALL INTERCONNECTION WIRING.
12. EXTEND AND RE=ROUTE THE EXISTING MAIN FEED AND ALL BRANCH CIRCUITS TO THE NEW LOCATION.

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Basement and Orchestra Pit Floor Plans - Power, Telecom, Fire Alarm Plan - New Work

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E300

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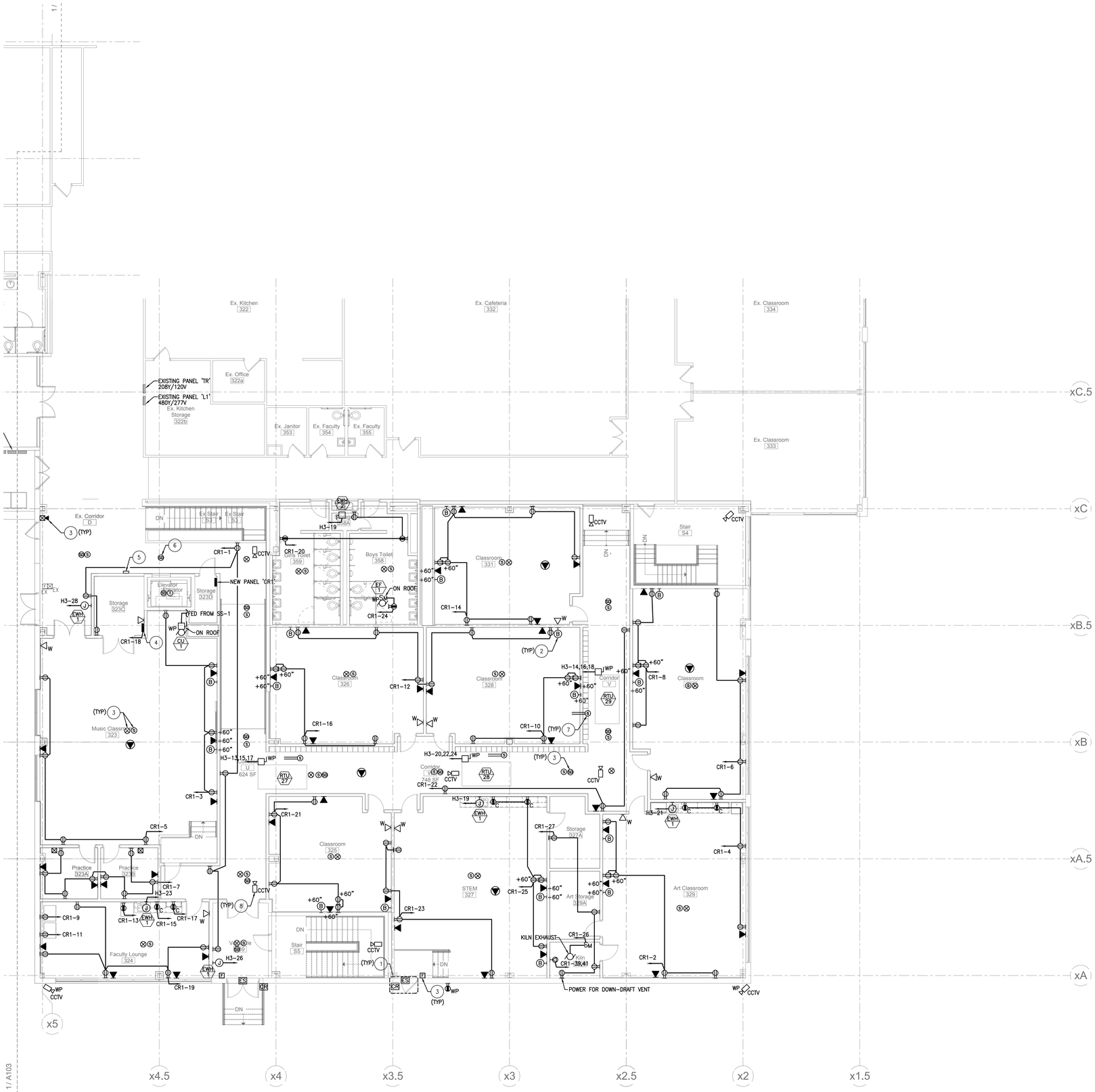
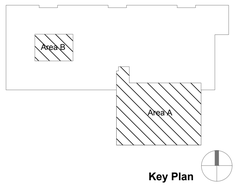


PARTIAL FIRST FLOOR PLAN - POWER, TELECOM, FIRE ALARM NEW WORK - AREA A

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



GENERAL NOTES:

1. ELECTRICAL, TELECOM, AND FIRE ALARM DEVICES DENOTED WITH SUBSCRIPT 'R' ARE EXISTING DEVICES THAT HAVE BEEN RELOCATED.
2. ELECTRICAL AND FIRE ALARM DEVICES DENOTED WITH SUBSCRIPT 'EX' ARE EXISTING DEVICES.
3. EC SHALL PROVIDE SURFACE MOUNTED ELECTRICAL DEVICES WITH SURFACE MOUNTED METALLIC RACEWAY FOR ALL NEW ELECTRICAL DEVICES MOUNTED ON EXISTING CMU BLOCK WALLS WHERE THE NEW WIRING CAN NOT BE ROUTED THROUGH THE EXISTING WALLS.
4. ALL LOW-VOLTAGE AND A/V DEVICES ARE FOR INFORMATIONAL PURPOSE ONLY. THE ELECTRICAL CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR THE PATHWAY (ROUGH-IN OF BACKBOX AND CONDUIT) FOR ALL LOW-VOLTAGE SYSTEMS. EC SHALL REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SHEET NOTES:

1. REFER TO DETAIL 6 ON DRAWING 'E400' FOR TYPICAL CARD READER ROUGH-IN DETAIL.
2. EC SHALL PROVIDE A SINGLE-GANG BACKBOX WITH A 1 1/4" EMPTY CONDUIT TO THE ACCESSIBLE CEILING FOR A/V INTERFACE WIRING.
3. FIRE ALARM DEVICES AND SPEAKERS ARE FOR INFORMATIONAL PURPOSES ONLY. EC SHALL PROVIDE A BACKBOX AND A 1" CONDUIT TO THE ACCESSIBLE CEILNG AND SHALL COORDINATE WITH THE OWNER'S SECURITY/FIRE ALARM VENDOR "ESS" ELECTRONIC SECURITY SOLUTIONS TO PROVIDE ALL DEVICES AND WIRING TO TIE THE NEW DEVICES INTO THE EXISTING EST FIRE ALARM SYSTEM SERVING THIS BUILDING.
4. AREA OF RESCUE SYSTEM/BATTERY BACK-UP CABINET, REFER TO DETAIL 1 ON DRAWING 'E300' FOR ADDITIONAL INFORMATION.
5. AREA OF RESCUE MASTER STATION. COORDINATE EXACT LOCATION WITH COLLEGIUM AND FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO DETAIL 1 ON DRAWING 'E400' FOR ADDITIONAL INFORMATION.
6. REFER TO THE FIRE ALARM ELEVATOR INTERFACE DETAIL 1 ON DRAWING 'E400' FOR FIRE ELEVATOR CONTROL/FIRE ALARM INTERFACE. FIRE ALARM VENDOR TO INSTALL ALL DEVICES AND INTERCONNECTION WIRING.
7. DUCT DETECTOR FOR HVAC SHUTDOWN, REFER TO DETAIL 3 ON DRAWING 'E400' FOR ADDITIONAL INFORMATION.
8. CCTV CAMERAS ARE FOR INFORMATIONAL PURPOSES ONLY THE EC SHALL COORDINATE WITH THE CCTV VENDOR FOR ANY BACKBOXES AND PATHWAY REQUIRED TO MOUNT THE CAMERAS. THE OWNER'S CCTV VENDOR WILL BE RESPONSIBLE FOR INSTALLING THE CAMERA AND ALL INTERCONNECTION WIRING.

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SEAL

Collegium Charter School
Alterations to the 515 Building

515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Partial First Floor Plan - Power, Telecom, Fire Alarm New Work - Area A

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E301A

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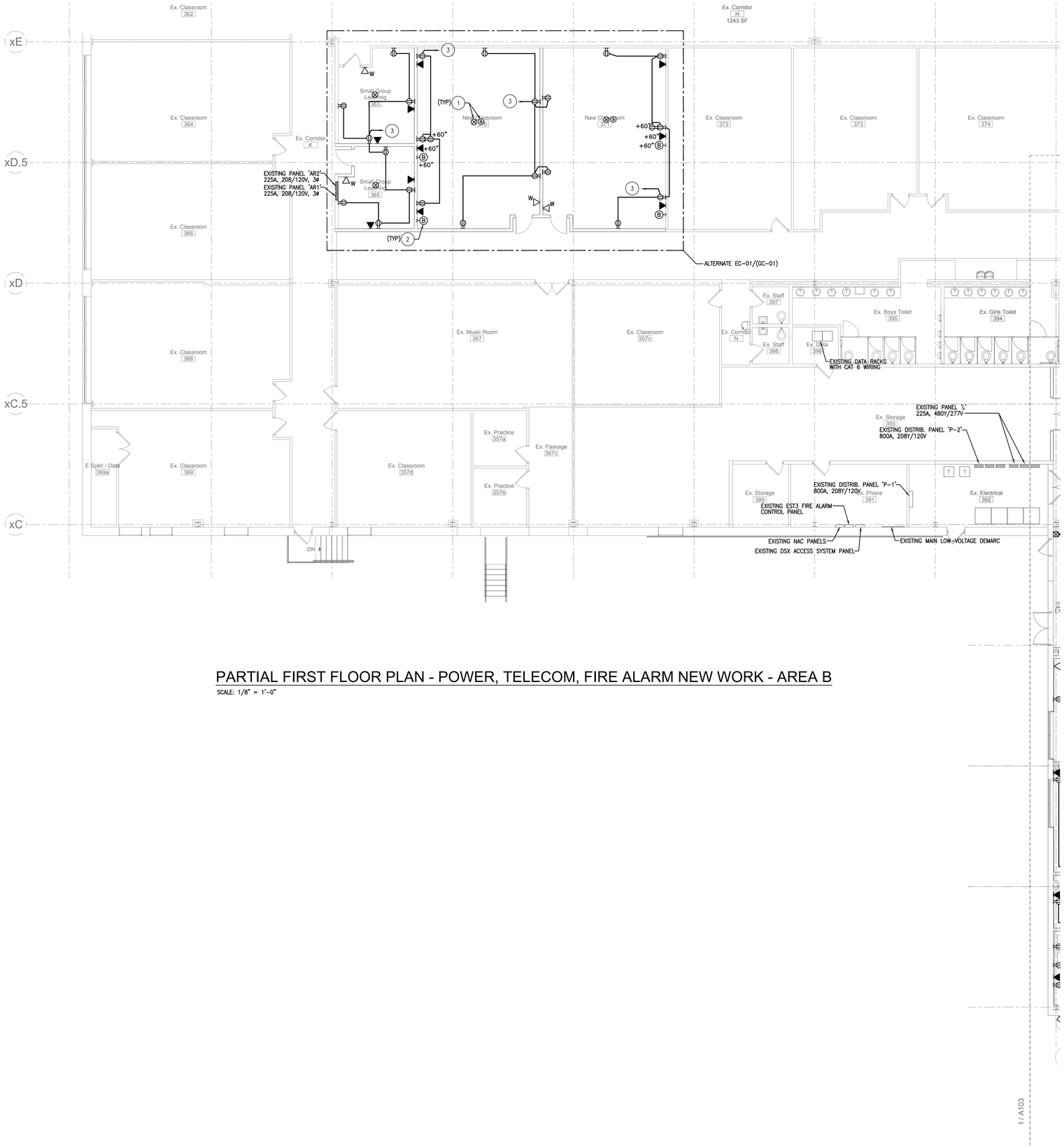
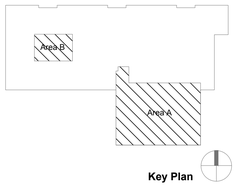


PARTIAL FIRST FLOOR PLAN - POWER, TELECOM, FIRE ALARM NEW WORK - AREA B

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



GENERAL NOTES:

1. ELECTRICAL, TELECOM, AND FIRE ALARM DEVICES DENOTED WITH SUBSCRIPT 'R' ARE EXISTING DEVICES THAT HAVE BEEN RELOCATED.
2. ELECTRICAL AND FIRE ALARM DEVICES DENOTED WITH SUBSCRIPT 'EX' ARE EXISTING DEVICES.
3. EC SHALL PROVIDE SURFACE MOUNTED ELECTRICAL DEVICES WITH SURFACE MOUNTED METALLIC RACEWAY FOR ALL NEW ELECTRICAL DEVICES MOUNTED ON EXISTING CMU BLOCK WALLS WHERE THE NEW WIRING CAN NOT BE ROUTED THROUGH THE EXISTING WALLS.
4. ALL LOW-VOLTAGE AND A/V DEVICES ARE FOR INFORMATIONAL PURPOSE ONLY, THE ELECTRICAL CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR THE PATHWAY (ROUGH-IN OF BACKBOX AND CONDUIT) FOR ALL LOW-VOLTAGE SYSTEMS, EC SHALL REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SHEET NOTES:

1. FIRE ALARM DEVICES AND SPEAKERS ARE FOR INFORMATIONAL PURPOSES ONLY, EC SHALL PROVIDE A BACKBOX AND A 1" CONDUIT TO THE ACCESSIBLE CEILING AND SHALL COORDINATE WITH THE OWNER'S SECURITY/FIRE ALARM VENDOR "ESS" ELECTRONIC SECURITY SOLUTIONS TO PROVIDE ALL DEVICES AND WIRING TO TIE THE NEW DEVICES INTO THE EXISTING EST FIRE ALARM SYSTEM SERVING THIS BUILDING.
2. EC SHALL PROVIDE A SINGLE-GANG BACKBOX WITH A 1 1/4" EMPTY CONDUIT TO THE ACCESSIBLE CEILING FOR A/V INTERFACE WIRING.
3. CONNECT TO AN AVAILABLE SPARE 20A/1P CIRCUIT BREAKER IN THE EXISTING 208/120V PANELS 'AR1 OR AR2' SERVING THIS AREA THAT HAS BECOME AVAILABLE FROM THE DEMOLITION, IF THERE ARE NO AVAILABLE SPARES THE EC SHALL PROVIDE A 20A/1P CIRCUIT BREAKER(TYPE AND AIC RATING TO MATCH EXISTING_ IN AN AVAILABLE BLANK SPACE TO SERVE THE CIRCUIT INDICATED.

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SEAL

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REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Partial First Floor Plan - Power, Telecom, Fire Alarm New Work - Area B

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E301B

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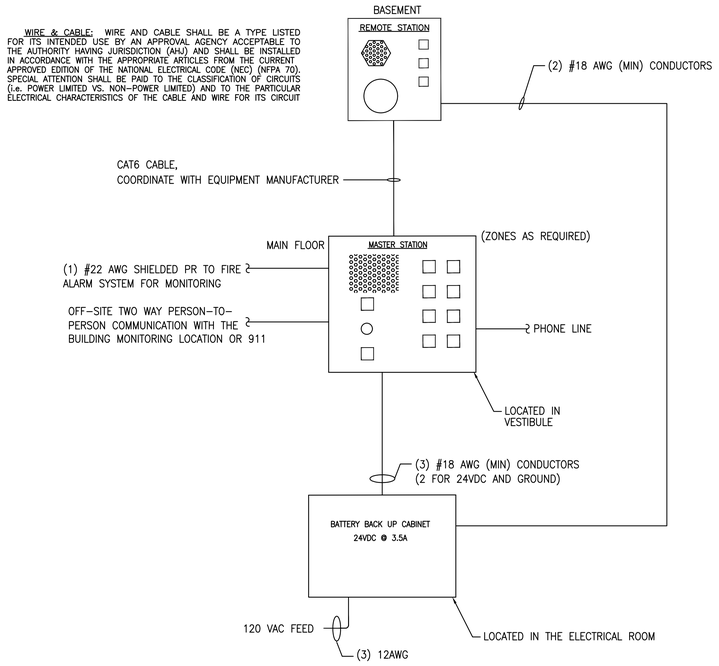
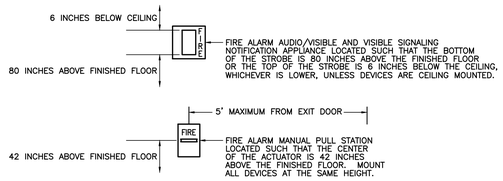
WIRE & CABLE: WIRE AND CABLE SHALL BE A TYPE LISTED FOR ITS INTENDED USE BY AN APPROVAL AGENCY ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION (AHJ) AND SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROPRIATE ARTICLES FROM THE CURRENT APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) (NFPA 70). SPECIAL ATTENTION SHALL BE PAID TO THE CLASSIFICATION OF CIRCUITS (i.e. POWER LIMITED VS. NON-POWER LIMITED) AND TO THE PARTICULAR ELECTRICAL CHARACTERISTICS OF THE CABLE AND WIRE FOR ITS CIRCUIT



1 AREA OF RESCUE RISER DIAGRAM

SCALE: NONE

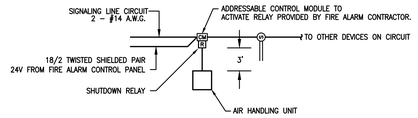


DETAIL NOTES:

1. WHERE FLOOR PLAN INDICATES THAT NOTIFICATION APPLIANCE AND MANUAL PULL STATION ARE LOCATED IN THE SAME AREA, THEY SHALL BE MOUNTED IN THE SAME VERTICAL LINE.

2 MANUAL PULL STATION, STROBE, AND HORN STROBE MOUNTING DETAIL

SCALE: NONE

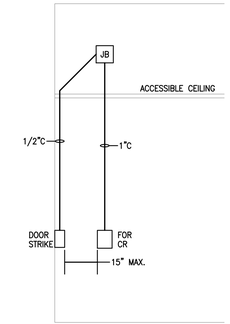


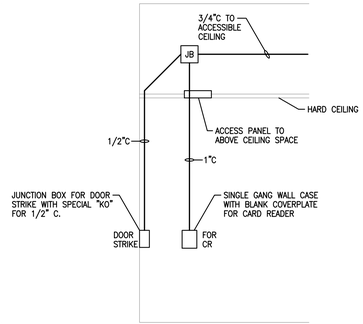
DETAIL NOTES:

1. ACTIVATION OF DUCT SMOKE DETECTOR SHALL CAUSE SHUT DOWN RELAY TO BE ACTIVATED.
2. DUCT SMOKE DETECTOR PROVIDED BY THE CONTRACTOR AND INSTALLED BY OTHERS. ALL CONNECTIONS, POWER SUPPLY, AND RELAY SHALL BE BY THE CONTRACTOR.
3. THE ARRANGEMENT SHOWN DOES NOT PROHIBIT THE USE OF A RELAY BASE DUCT DETECTOR AS LONG AS THE HVAC DEVICE SHUT DOWN IS ACCOMPLISHED WITHIN 3 FEET OF THE RELAY.
4. ALL CONNECTIONS SHALL BE BY THE FIRE ALARM CONTRACTOR.

3 FIRE ALARM HVAC SHUTDOWN

SCALE: NONE





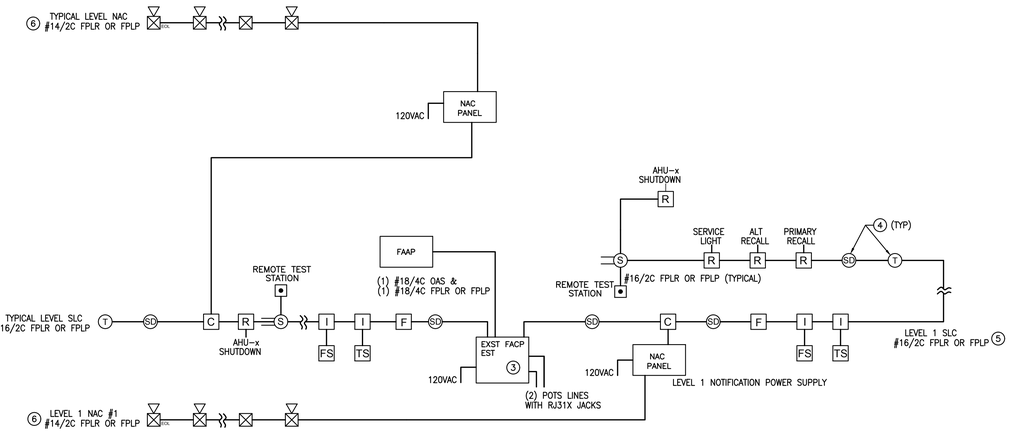
NOTE: ALL CONDUITS AND PULLWIRES SHALL BE CONCEALED IN CONSTRUCTION. ALL BOXES SHALL BE MOUNTED FLUSH WITH FINISHED WALLS.

6 TYPICAL DOOR CARD READER ROUGH-IN DETAIL

NOT TO SCALE

NOTE:

1. IF DOOR IS NOT PROVIDED WITH ACTUAL CARD READER AND HARDWARE. ELECTRICAL CONTRACTOR SHALL PROVIDE BLANK COVERPLATES OVER OPENINGS. FINISH OF PLATES SHALL MATCH EXISTING SURFACES.

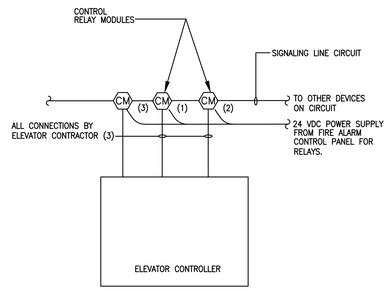


4 FIRE ALARM RISER DIAGRAM ①②

SCALE: NONE

RISER DIAGRAM NOTES

1. THE RISER DIAGRAM IS INTENDED TO PROVIDE GENERAL INSTALLATION AND PERFORMANCE GUIDELINES FOR THE EXPANSION OF THE EXISTING FIRE ALARM SYSTEM. REFER TO FLOOR PLANS FOR LOCATIONS OF ALL MAJOR EQUIPMENT AND SPECIFICATIONS FOR DETAILED SYSTEM REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE ALL RELAYS, INTERFACE DEVICES, WIRE, CONDUIT, BOXES, AND PROGRAMMING NECESSARY TO PROVIDE SYSTEM PERFORMANCE FOR FIRE ALARM PURPOSES.
3. IT IS THE CONTRACTOR'S DISCRETION TO PROVIDE ADDITIONAL COMPONENTS FOR DISTRIBUTION OF SIGNALING LINE CIRCUITS. PROVIDE HORN/STROBE POWER PANELS AS REQUIRED. PROVIDE SMOKE DETECTORS AT EACH PANEL LOCATION.
4. ALL CONNECTIONS SHALL BE MADE WITH TERMINAL BLOCKS. PIGTAILING SHALL NOT BE USED TO MAKE FIELD CONNECTIONS.
5. PROVIDE STYLE 4 CLASS A SIGNALING LINE CIRCUITS. EACH SLC SHALL HAVE MINIMUM 15% SPARE CAPACITY.
6. NOTIFICATION APPLIANCE CIRCUITS CIRCUITS SHALL BE ARRANGED AS CLASS A FOR CONNECTION OF ALL HORNS AND STROBES. PROVIDE EACH INSTALLED CIRCUIT WITH A MINIMUM 20% SPARE CAPACITY. CIRCUIT DEVICES BY BUILDING LEVEL.
7. TYPICAL DISTRIBUTION FOR FIELD DEVICES. NOTIFICATION AND ADDRESSABLE CIRCUITS MAY BE RUN IN THE SAME CONDUIT ONLY WHEN PERMITTED BASED ON WIRING TYPE AND PROVIDED 40% FILL IS NOT EXCEEDED. EACH WIRE SHALL BE TAGGED AND LABELED WITH CIRCUIT NUMBER AT EACH JUNCTION BOX AND TERMINAL BOX.



NOTES:

1. CONTROL MODULE FOR ELEVATOR RECALL TO DESIGNATED LEVEL.
2. CONTROL MODULE FOR ELEVATOR RECALL TO ALTERNATE LEVEL.
3. RELAY MODULE FOR FLASHING OF IN-CAB FIREFIGHTER HELMET LAMP.
4. COORDINATE LOCATION AND MODULE FUNCTION WITH THE ELEVATOR CONTRACTOR.

5 FIRE ALARM/ELEVATOR INTERFACE DETAIL

SCALE: NONE

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515 James Hance Court, Exton, PA 19341

REVISIONS

09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE

Electrical Details

PROJECT NUMBER 17.177

DRAWN BY MKSD

SCALE As indicated

DATE 09.14.2018

DRAWING NUMBER

E400

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PANEL DESIGNATION: CR1 | BUS AMP: 125 | MIN. A.I.C.: 10,000 | MAIN BREAKER: MLO
LOCATION: STORAGE | PHASE: 3 | WIRE: 4 | VOLTAGE: 208Y/120
MOUNTING: SURFACE | NOTES:
TOTAL POLES: 42

CKT NO	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE
1	CORRIDOR REC	20	1	0.9			2	12	12	3/4
3	MUSIC RM REC	20	1		0.7		2	12	12	3/4
5	MUSIC RM REC	20	1			0.7	2	12	12	3/4
7	PRACTICE RM REC	20	1	1.4			2	12	12	3/4
9	VENDING MACH	20	1		1.0		2	12	12	3/4
11	VENDING MACH	20	1			1.0	2	12	12	3/4
13	REFRIGERATOR	20	1	1.0			2	12	12	3/4
15	MICROWAVE	20	1		1.5		2	12	12	3/4
17	COFFEE MKR	20	1			0.9	2	12	12	3/4
19	FACILITY LOUNGE REC	20	1	0.7			2	12	12	3/4
21	CLASSRM REC	20	1		1.3		2	12	12	3/4
23	CLASSRM REC	20	1			0.9	2	12	12	3/4
25	CLASSRM REC	20	1	1.3			2	12	12	3/4
27	STORAGE RM REC	20	1		0.5		2	12	12	3/4
29	SPARE	20	1			0.0				
31	SPARE	20	1	0.0						
33	SPARE	20	1		0.0					
35	SPARE	20	1			0.0				
37	SPARE	20	1	0.0						
39	KILN	60	2		5.0		3	4	10	1 1/4
41						5.0				
	SIDE TOTAL KW LOAD			5	10	8				

COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT NO
3/4	12	12	2	1.0			1	20	ART CLASSRM REC	2
3/4	12	12	2		0.9		1	20	ART CLASSRM REC	4
3/4	12	12	2			1.0	1	20	CLASSRM REC	6
3/4	12	12	2	0.7			1	20	CLASSRM REC	8
3/4	12	12	2		0.9		1	20	CLASSRM REC	10
3/4	12	12	2			1.1	1	20	CLASSRM REC	12
3/4	12	12	2	1.4			1	20	CLASSRM REC	14
3/4	12	12	2		0.8		1	20	CLASSRM REC	16
3/4	12	12	2			0.4	1	20	AREA OF RESCUE SYSTEM	18
3/4	12	12	2	0.4			1	20	TOILET RM REC	20
3/4	12	12	2		0.7		1	20	CORRIDRO REC	22
3/4	12	12	2			0.0	1	20	EF-1	24
3/4	12	12	2	0.7			1	20	KILN EXHAUST	26
					0.0		1	20	SPARE	28
						0.0	1	20	SPARE	30
				0.0			1	20	SPARE	32
					0.0		1	20	SPARE	34
						0.0	1	20	SPARE	36
				0.0			1	20	SPARE	38
					0.0		1	20	SPARE	40
						0.0	1	20	SPARE	42
				4	3	2			SIDE TOTAL KW LOAD	

PANEL DESIGNATION: H3 (EXISTING) | BUS AMP: 225 | MIN. A.I.C.: 22,000 | MAIN BREAKER: MLO
LOCATION: ELEC RM | PHASE: 3 | WIRE: 4 | VOLTAGE: 480Y/277
MOUNTING: SURFACE | NOTES: *NEW CIRCUIT BREAKER (TYPE AND AIC RATING TO MATCH EXISTING)
TOTAL POLES: 27

CKT NO	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE
1	EXISTING CIRCUIT	20	3	0.0			4	12	12	3/4
3					0.0					
5						0.0				
7	EXISTING CIRCUIT	20	3	0.0			4	12	12	3/4
9					0.0					
11						0.0				
13	RTU-29	*30	3	5.3			4	10	10	3/4
15					5.3					
17						5.3				
19	EMH-2	*25	1	5.5			2	10	10	3/4
21	EMH-1	*40	1		8.0		2	8	10	3/4
23	EMH-1	*40	1			8.0	2	8	10	3/4
25	EMH-1	*40	1	8.0			2	8	10	3/4
27	BLANK				0					
29	BLANK					0				
	SIDE TOTAL KW LOAD			19	13	13				

COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT NO
2	8	1	4	0.0			3	100	EXISTING CIRCUIT	2
					0.0					4
						0.0				6
3/4	12	12	4	0.0			3	20	EXISTING CIRCUIT	8
					0.0					10
						0.0				12
3/4	10	10	4	6.1			3	*30	RTU-27	14
					6.1					16
						6.1				18
3/4	10	10	4	5.3			3	*25	RTU-28	20
					5.3					22
						5.3				24
3/4	10	10	2	4.8			1	*25	EMH-1	26
3/4	10	10	2		4.8		1	*25	EMH-1	28
						0			BLANK	30
				16	16	11			SIDE TOTAL KW LOAD	

PANEL DESIGNATION: H4 | BUS AMP: 225 | MIN. A.I.C.: 10,000 | MAIN BREAKER: MLO
LOCATION: DATA RM | PHASE: 3 | WIRE: 4 | VOLTAGE: 208Y/120
MOUNTING: SURFACE | NOTES:
TOTAL POLES: 38

CKT NO	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE
1	ELEVATOR SUMP	20	1	0.5			2	12	12	3/4
3	ELEVATOR PIT LTG/REC	20	1		0.4		2	12	12	3/4
5	GEN REC	20	1			1.4	2	12	12	3/4
7	SMALL GROUP REC	20	1	1.2			2	12	12	3/4
9	DATA REC	20	1		1.0		2	12	12	3/4
11	DATA REC	20	1			1.0	2	12	12	3/4
13	CLASSRM REC	20	1	0.8			2	12	12	3/4
15	CLASSRM REC	20	1		1.0		2	12	12	3/4
17	ELEVATOR LIGHTING	20	1			0.4	2	12	12	3/4
19	EMC	20	1	0.6			2	12	12	3/4
21	SUMP PUMP	20	1		0.7		2	12	12	3/4
23	SPARE	20	1			0.0				
25	SPARE	20	1	0.0						
27	SPARE	20	1		0.0					
29	SPARE	20	1			0.0				
31	SPARE	20	1	0.0						
33	SPARE	20	1		0.0					
35	SPARE	20	1			0.0				
37	BLANK			0						
39	BLANK				0					
41	BLANK					0				
	SIDE TOTAL KW LOAD			3	3	3				

COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT NO
3/4	12	12	2	0.9			1	20	CLASSRM REC	2
3/4	12	12	2		0.9		1	20	CLASSRM REC	4
3/4	12	12	2			1.2	1	20	CLASSRM REC	6
3/4	12	12	2	1.2			1	20	CLASSRM REC	8
3/4	12	12	2		1.2		1	20	CLASSRM REC	10
3/4	12	12	2			0.9	1	20	CLASSRM REC	12
3/4	12	12	2	1.2			1	20	CLASSRM REC	14
3/4	12	12	2		1.4		1	20	CLASSRM REC	16
3/4	12	12	2			0.9	1	20	CLASSRM REC	18
3/4	12	12	2	1.0			1	20	CLASSRM REC	20
3/4	12	12	2		1.7		1	20	SMALL GROUP REC	22
						0.0	1	20	SPARE	24
0.0							1	20	SPARE	26
	0.0						1	20	SPARE	28
						0.0	1	20	SPARE	30
0.0							1	20	SPARE	32
	0.0						1	20	SPARE	34
						0.0	1	20	SPARE	36
0							1	20	BLANK	38
3/4	12	12	3		1.0		2	20	SS-1/CU-1	40
						1.0				42
				4	6	4			SIDE TOTAL KW LOAD	

PANEL DESIGNATION: H4 | BUS AMP: 125 | MIN. A.I.C.: 22,000 | MAIN BREAKER: MLO
LOCATION: DATA RM | PHASE: 3 | WIRE: 4 | VOLTAGE: 480Y/277
MOUNTING: SURFACE | NOTES:
TOTAL POLES: 21

CKT NO	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE
1	DHC 18.1	15	3	1.5			4	12	12	3/4
3					1.5					
5						1.5				
7	DHC 18.2	20	3	3.0			4	12	12	3/4
9					3.0					
11						3.0				
13	SPARE	20	1	0.0						
15	SPARE	20	1		0.0					
17	SPARE	20	1			0.0				
19	BLANK			0						
21	BLANK				0					
23	BLANK					0				
25	BLANK			0						
27	BLANK				0					
29	BLANK					0				
31				0						
33					0					
35						0				
37				0						
39					0					
41						0				
	SIDE TOTAL KW LOAD			5	5	5				

COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT NO
3/4	12	12	4	4.0			3	20	DHC 19.0	2
					4.0					4
						4.0				6
3/4	12	12	4	0.8			3	15	DHC 26.1	8
					0.8					10
						0.8				12
3/4	12	12	4	3.0			3	20	DHC 26.2	14
					3.0					16
						3.0				18
				0.0			1	20	SPARE	20
					0.0		1	20	SPARE	22
						0.0	1	20	SPARE	24
				0					BLANK	26
					0				BLANK	28
						0			BLANK	30
				0						32
					0					34
						0				36
				0						38
					0					40
						0				42
				8	8	8			SIDE TOTAL KW LOAD	

LIGHTING FIXTURE SCHEDULE

	MANUFACTURER/ CATALOG #	DETAIL	WATTAGE/ LAMP	VOLTAGE	MOUNTING	NOTES
A	TOPAZ #F-L24/50/840/D/HE2 BEL12/12-48V*	2'x4' HIGH PERFORMANCE LED PANEL, IC RATED FOR DIRECT CONTACT INSULATION, AND 0-10V, 1-100% DIMMING.	50W LED 6250 LUMENS 80 CRI 4000K	120/277V	RECESSED	*PROVIDE INTEGRAL EMERGENCY BATTERY PACK FOR FIXTURES INDICATED AS EMERGENCY
B	TOPAZ #F-L24/38/840/D/HP-75 BEL12/12-48V*	2'x4' HIGH PERFORMANCE LED PANEL, IC RATED FOR DIRECT CONTACT INSULATION, AND 0-10V, 1-100% DIMMING.	38W LED 4350 LUMENS 80 CRI 4000K	120/277V	RECESSED	*PROVIDE INTEGRAL EMERGENCY BATTERY PACK FOR FIXTURES INDICATED AS EMERGENCY
C	FOCAL POINT #FLC6D-R0-2000L-120-LD1-T-LC6-RD-2000L-35K-DN-CD-XX OR EQUAL	6" DIA. OPEN LED DOWNLIGHT WITH 50' CUTOFF. NEW CONSTRUCTION OPTION WITH 0-10V, 100%-10% DIMMING. ROUND OVERLAP TRIM, SELF FLANGED, CLEAR DIFFUSE REFLECTOR.	21W LED 2000 LUMENS 80 CRI 3500K	120/277V	RECESSED	ARCHITECT TO SELECT FLANGE FINISH OPTION.
D	PHILIPS GARDCO #121-EP2-35-NW-UNIV-PCB-XX OR EQUAL	EXTERIOR, WALL MOUNTED DIE-CAST LED WALL SCONCE, WET LOCATION, DARK SKY COMPLIANT WITH BOTTOM LENS AND TYPE III DISTRIBUTION AND INTEGRAL PHOTO CONTROL. (BUG RATING B1-U0-G1) WITH INTEGRAL EMERGENCY BATTERY	35W LED 3736 LUMENS 70 CRI 4000K	120/277V	EXTERIOR WALL	ARCHITECT TO SELECT FIXTURE FINISH OPTION. *PROVIDE INTEGRAL EMERGENCY BATTERY PACK FOR FIXTURES INDICATED AS EMERGENCY ON DRAWINGS
F	COLUMBIA #LCL4-35ML-EU-CSHC-ELL14* OR EQUAL	4' LONG LINEAR LED LENSED STRIPLIGHT WITH FROSTED LINEAR PRISMATIC ACRYLIC LENS, WHITE BAKED ENAMEL FINISH, AND FIXED OUTPUT DRIVER. CHAIN HANGER ASSEMBLY.	42W LED 5329 LUMENS 3500K	120V/277V	SURFACE/PENDNAT	*PROVIDE INTEGRAL EMERGENCY BATTERY PACK FOR FIXTURES INDICATED AS EMERGENCY ON DRAWINGS
X/X2/XL	DUAL LITE #EVE-U-R-W-E-I OR EQUAL	SURFACE MOUNTED, HIGH AND LOW ARCHITECTURAL LED EMERGENCY EXIT SIGN WITH RED LETTERS, WHITE THERMOPLASTIC HOUSING, SELF DIAGNOSTICS, UNIVERSAL MOUNTING CANOPY. MAINTENANCE FREE NIMH BATTERY. NOTE: --MATCH EXISTING INSTALLED THROUGHOUT THIS FACILITY--	LED (RED)	277V	CEILING/WALL/SURFACE LOW-RECESSED	CONTRACTOR TO PROVIDE SINGLE OR DOUBLE FACE AS INDICATED ON DRAWINGS AND DIRECTIONAL ARROWS AS SHOWN.

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SEAL

Collegium Charter School
Alterations to the 515 Building
515 James Hance Court, Exton, PA 19341

REVISIONS
09.14.18 - Issued for Bidding

No.	Date	Description

DRAWING TITLE
Electrical Schedules

PROJECT NUMBER
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DRAWN BY
MKSD

SCALE
As indicated

DATE
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