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ADDENDUM NO. 2

PROJECT:	KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS	DATE OF ISSUANCE:	10/13/2022
OWNER:	Rebuild Philadelphia / Free Library of Philadelphia		

These drawings, specifications and instructions form a part of and modify the Drawings, Specifications, and Instructions issued for Packages to the extent noted herein:

Careful note of these Drawings, Specifications, and Instructions shall be taken by all parties of interest so that proper allowance is made in all computations, estimates, and contracts so that all trades affected are fully advised in the performance of Work that will be required of them.

These Drawings, Specifications, and Instructions supersede all previous Drawings, Specifications, and Instructions pertaining to these items.

All Drawings, Specifications and Instructions not reissued as part of Addendum No. 2 dated 13 Oct 2022 remain valid.

Summary:
Updates to drawings and specifications dated 9/07/22, Issued for Bid set and Addendum No. 1, dated 9/26/22.
Only revised Spec sections and Drawings are issued, and substantive changes listed below.

Hazardous Material Abatement: See Asbestos Inspection Report (City of Phila, Dept of Public Health, 8/16/19) and Abatement Work Plan (Pennoni Assoc, 2/28/22 - **Hazardous material abatement is to be performed by the GC. Spec sections indicating otherwise have been revised. See below.**

Bidders Questions and Responses

1. In review of the specifications, there are some contradicting items. Please Confirm the following:

- Cab door: Plastic laminate or stainless-steel Stainless Steel*
  Cab Interior: Baked Enamel on steel, Flush Wall plastic laminate or Laminate panels with Reveals? Laminate panels with reveals*.

- Elevator Car: Wood Core or Steel Shell? Steel Shell
  Car Position Indicator: Locate over the cab door or provide in the Car Operating Panel? Standard design is based on placing the digital car position indicator in the car operating panel.

- *However, All Final Finish Selections shall occur in the Submittal Phase in concert with the Free Library of Philadelphia.

- Section 2.10 H. – Is EMT service to be provided? EMT service is a medical emergency feature that is typically used in hospitals. Since this is not a hospital, EMT Service is not in this project.

- Elevator Controller Starter: Across the Line or Soft Start? Soft Start (aka Solid State Starter).

- 2.24 Elevator Car: are we to provide a Main AND auxiliary car station? There shall be a (1) car operating panel inside the cab. An auxiliary car station is not required.

2. What is required for the window finish, they list both painted and anodized in the window specification, and the spec also states, "*as noted in the window schedule"*, but there is no finish listed on the window schedule or notes.
   Answer: Window to be factory painted – color TBD. Applied interior trim and "partial interior window frames" adjacent to aluminum window frames to be painted Poplar. For interior trim, See Details 1 - 4.1/ A902-L

3. E-400 Single Line, E-500-I Panel MDP: Single Line for Elevator feed shows four #2 wires, Panel MDP schedule shows four #250 MCM. What size wire and conduit do we install for the elevator feeder? What size Safety Switch? Does Safety Switch require contacts for battery lowering? Provide 3#1/0&#6G wires in 1.5"C with 150A breaker for the elevator. The switch will be as shown on the single line diagram, a 200/200A fused disconnect switch. Provide contacts in the safety switch.

4. Drawing E-400-L shows Panel LPA to be recessed in Stairway, Drawing E-200-L shows Panel LPA to be relocated to Lower Level. Where do we install new panel LPA?
   Install new panel LPA in Electrical Room 005-2.

5. Drawing E-201-L: Can you provide a specification for Floor Boxes and Finish Plates? Drawing E-201-L: Can you provide a specification for Floor Boxes and Finish Plates? Provide floor box similar to Legrand Evolution 6AT Series.

6. Can you provide an Environmental Report to confirm floor tiles and mastic under rug are not hazardous material? See the Abatement Work Plan and the Asbestos Inspection Both of these documents are referred to under Hazardous Material Abatement.

7. Can you provide a fire alarm specification and contact for monitoring company? The existing FACP system is Fidelity Alarm. The contact is Pat Phillips at 1-800-224-1077.

8. Drawing M-500-L: "VFD's to be wired by EC". Can give a quantity and location of VFD's the EC has to wire? The VFD's are not shown on any floor plan. Provide wiring to VFDs on the following equipment: RTU-1, AHU-1, P-1, P-2, RF-1. Low voltage system design is by others.

9. Drawing T-401-L: Drawing has details for CCTV camera mounts. Are we bidding on a CCTV system and can you provide details (specified systems, floor plans, rack location, monitors) if we are bidding?
   See Telecom drawings issued in this Addendum.
10. Drawing T501-L: Can you provide a location for the Aiphone System and Door Release?
    Location for the Aiphone System and Door Release are shown on Drawings T102-L, T501-L and A201-L.

Clarifications:

1. Hazardous Material Abatement: Specifications have been updated and/or corrected to note hazardous material abatement is to be performed by contractor.
2. While Structural Tests & Special Inspections indicate a comprehensive Coordination Section for this project, the drawings have been updated to include specific reference to these. DWG A201-L, A202-L and A452-L are reissued in this addendum.
   a. Special Inspections required are:
      i. Structural Steel
      ii. Masonry Structural Walls
      iii. Existing Site Soil Conditions
      iv. Excavation and Filling
3. In General Notes on DWG G101-Lthe following Notes have been added regarding FF&E:

1. Move out of existing FF&E and all contents to be completed by others, prior to the start of demolition.
2. Contractor is responsible for FF&E Procurement, Installation and Coordination with the Owner, except as noted in Number 3.
3. All Owner provided equipment and materials will be moved in by others. GC required to be available for Owner Coordination.

4. The following Drawings have revisions:

DRAWINGS:

G101-L	GENERAL NOTES AND ABBREVIATIONS	ADD: Note to see specs and 2/A202-L for mockup locations ADD: FF&E and Moving coordinator/ contractor responsibilities
AD101-L	DEMOLITION PLAN – LOWER LEVEL	ADD: Note to "Coordinate all demolition with the hazardous abatement work plan"
AD102-L	DEMOLITION PLAN – FIRST FLOOR	ADD: Note to "Coordinate all demolition with the hazardous abatement work plan"
AD103-L	DEMOLITION RCP	ADD: Note to "Coordinate all demolition with the hazardous abatement work plan"
AD014-L	DEMOLITION PLAN - ROOF	ADD: Note to "Coordinate all demolition with the hazardous abatement work plan"
A102-L	NEW WORK PLAN-FIRST FLOOR	REV: Note clarified that all "**perimeter**" shelving to remain
A103-L	NEW WORK PLAN – ROOF	REV: Detail reference number corrected for fall arrest system and systems updated. See also Specs.
A202-L	BUILDING ELEVATIONS – EAST & NORTH	ADD: Mockup locations for windows and pointing indicated on North elevation
A501-L	INTERIOR ELEVATIONS	ADD: Note added for plaster repair: See Spec 09 2300
A502-L	INTERIOR ELEVATIONS	ADD: Note added for plaster repair: See Spec 09 2300 ADD: Wainscot replacement – photo and note added to elevation for locations
A503-L	INTERIOR ELEVATIONS	ADD: Note added for plaster repair: See Spec 09 2300
A512-L	MILLWORK – COPY CENTER, MOBILE DISPLAY, & RADIATOR DETAILS	ADD: Note added "Monitors, Keyboards, computers, stand alone copiers, scanners, printers, and payment kiosks supplied by owner"
A701-L	REFLECTED CEILING PLANS	REV: First floor light fixture locations shifted in some locations to avoid existing ceiling conditions ADD: Dimensions for light fixture placement
A801-L	FINISH PLANS AND SCHEDULE	ADD: Dimensions for floor finishes on first floor ADD: Threshold locations to reference details
A811-L	FURNITURE PLANS	REV: Circulation desk chair type change from CH-10 to CH-10a ADD: Note "equipment not tagged/scheduled are owner provided - includes computers, printers, keyboards, coin machine" ADD: Description for A-2 "tackable both sides, mounted low"

		ADD: Description for CH-20 “with wheels and arms”
A901-L	DOOR AND PARTITION SCHEDULES	ADD: Threshold detail for VCT to VCT REV: Threshold detail for transition from existing stone threshold to new LVT
T001-L	TELECOM GENERAL NOTES, ABBREVIATIONS & SYMBOLS	Issued for 100% CD
T101-L	TELECOM – NEW WORK PLAN – LOWER LEVEL	Issued for 100% CD
T102-L	TELECOM – NEW WORK PLAN – FIRST FLOOR	Issued for 100% CD
T301-L	TELECOM – ENLARGED PLANS	Issued for 100% CD
T401-L	TELECOM - DETAILS	Issued for 100% CD
T501-L	TELECOM - DIAGRAMS	Issued for 100% CD

SPECIFICATIONS:

	BID FORM	Updated to include separate bid for Hazmat abatement
01 3591	HISTORIC TREATMENT	Deleted contradictory wording regarding hazardous material and added wording to indicate this work by GC.
07 7200	ROOF ACCESSORIES	DELETED: All references to / paragraphs regarding Roof Hatches REVISED: Para 2.05.A.1 Revised fall arrest system at flat roof; Para 2.05.B.1 Revised fall arrest system at pitched roof ADD: Para 2.05.C.1 Fall Arrest Accessories (Note: Attachment for flat roof system as recommended by Manuf.- follow max. spacing guidelines; attach 16” x 16” with toggle bolts through min. ¾” deck. Attachment for pitched roof system as recommended by Manuf.- follow max. spacing guidelines; Attachment to be similar to details shown on detail sheet A611-L)
08 5113	ALUMINUM WINDOWS	DELETED: references to anodized finishes. REVISED/ADDED: clarified paint quality and custom color
27 0526	GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS	Issued for 100% CD
27 0544	SLEEVES AND SLEEVE SEALS FOR COMMUNICATIONS PATHWAYS AND CABLING	Issued for 100% CD
27 0533	IDENTIFICATION FOR COMMUNICATIONS SYSTEMS	Issued for 100% CD
27 1100	COMMUNICATIONS EQUIPMENT ROOM FITTINGS	Issued for 100% CD
27 1500	COMMUNICATIONS CABLING	Issued for 100% CD

This is the last page of Addendum No. 2.

AMENDMENT ACKNOWLEDGMENT

AMENDMENT NO. 2 **Dated:** 10/13/22

NOTICE

It is the sole responsibility of the sellers to ensure that it has received any and all Amendments and the Philadelphia Redevelopment Authority may in their sole discretion reject any bid for which all Amendments have not been executed and returned.

PROPOSAL FOR

Project No.: 52019E-01-01
Description: Kingsessing Library – Building Renovation and Site Improvements

IS AMENDED AS FOLLOWS:

1. **Amendments will be posted in [**https://phdcphila.org/rfps-rfqs-sales/construction-rfps/]. **Each Bidder shall ascertain prior to submitting a proposal that Bidder has received all Amendments issued, and shall acknowledge their receipt in their proposal submission.**

Seller must acknowledge receipt of Amendments in their proposal submission.

Bidder Signature / Date

_____ _____

ABBREVIATIONS

ABV	Above	EA	Each	LAM	Laminate	R	Radius, Riser, Rubber
AFF	Above Finish Floor	E	East	LAT	Lateral	RECD	Recieved
A P	Access Panel	E.O.S.	Edge of Slab	LAV	Lavatory	RECP	Receptacle
ACOUS	Acoustical	ELEC	Electric, Electrical	LB	Pound	REF	Reference
ACT	Acoustic Ceiling Tile	EWC	Electric Water Cooler	LH	Left Hand	REFR	Refrigerate, Refrigerator
AD	Acrylic Diffuser	EL	Elevation	LT	Light	REG	Register
AGGR	Aggregate	ELEV	Elevator	LWC	Light Weight Concrete	RFEC	Recessed Fire Extinguisher Cabinet
ALLOW	Allowance	ENCL	Enclosure	LTG	Lighting	REINF	Reinforce
ALT	Alternate	ENG	Engineering	LIN	Linear	RPP	Reinforced Plastic Paneling
AL. ALUM	Aluminum	EQ	Equal	LF	Linear Feet	REQ'D	Required
ANOD	Anodized	EQUIP	Equipment	LINO	Linoleum	RET	Returned
ARCH	Architect(ural)	EXH	Exhaust	LVR	Louver	RA	Return Air
A D	Area Drain	EXIST, EXTG	Existing	L PT	Low Point	REV	Revision
ASPH	Asphalt	EJ	Expansion Joint			RH	Right Hand
AVG	Average	EXT	Exterior	MGR	Manager	R.D.	Roof Drain
		FOW	Face of Wall	MAN	Manual	RM	Room
B	Base	FT	Feet	MFR	Manufacturer	RO	Rough Opening
BSMT	Basement	FIG	Figure	MFG	Manufacturing		
BRG	Bearing	FIN	Finish	M.O.	Masonry Opening	SAN	Sanitary
BET	Between	FEC	Fier Extinguisher Cabinet	MATL, MAT'L	Material	SND	Sanitary Napkin Dispenser
BIT	Bituminous	FHC	Fire Hose Cabinet	MAX	Maximum	SCH	Schedule
BLK	Block	FP	Fireproof(ing)	MECH	Mechanical	SLD	Sealed
BLK'G	Blocking	FLAM	Flammable	MED	Medium	SECT	Section
BD	Board	FLR	Floor	MEMB	Membrane	SHT	Sheet
BOT	Bottom	FD	Floor Drain	MTL	Metal	SIM	Similar
BTU	British Thermal Units	FLRG	Flooring	MEZZ	Mezzanine	SK	Sketch
BLDG	Building	FLOUR	Flourescent	MIN	Minimum	SLT	Slate
BUR	Built-up Roofing	FTG	Footing	MISC	Miscellaneous	STC	Sound Transmission Coefficient
BBD	Bulletin Board	FDN	Foundation	MTD	Mounted	S	South
BO	By Others					SPKR	Speaker
		GALV	Galvanize	NOM	Nominal	SPEC	Specificaton
CAB	Cabinet	GA	Gauge	N	North	SQ	Square
CR	Card Reader	GC	General Contractor	NIC	Not in Contract	SS	Stainless Steel
CPT	Carpet	GEN	Generator	NTS	Not to Scale	STND	Standard
CLG	Ceiling	GL	Glass	NO	Number	STL	Steel
CTR	Center	GL COAT	Glazed Coating			STR, STRUC	Structural
CL	Centerline	GYP	Gypsum	OFF	Office	SMFEC	Surface Mounted FEC
C to C, C-C	Center to Center	GWB	Gypsum Wall Board	OC	On Center	SUSP	Suspend, Suspended
CER	Ceramic			OPG	Opening		
CT	Ceramic Tile	HNDR	Handrail	OPP	Opposite	TEL	Telephone
CHAM	Chamfer	HDW	Hardware	OD	Outside Diameter	TEMP	Tempered
CIR	Circle	HD	Head	OA	Over-all	THK	Thick
CLR	Clear	HVAC	Heating, Ventilating & Air Conditioning	OVHD	Overhead	THRU	Through
CLO	Closet	HT	Height	OBD	Overhead Bifold Door	T&G	Tounge and Groove
CW	Cold Water	HM	Hollow Metal	OCD	Overhead Coiling Door	T&B	Top and Bottom
COL	Column	HOR, HORIZ	Horizontal	OCG	Overhead Coiling Grille	TOS	Top of Steel, Top of Slab
CONC	Concrete	HDG	Hot Dip Galvanized			T	Tread
CMU	Comcrete Masonry Unit	HW	Hot Water	PT	Paint	TYP	Typical
CONST	Construction			PTD	Painted		
CJ	Construction Joint	IN	Inch	PR	Pair	UL	Underwriters' Laboratories, Inc.
CONT	Continue or Continuous	INCL	Include	PNL	Panel		
CONTR	Contractor	INFO	Information	PKG	Parking	VB	Vapor Barrier, Vinyl Base
CG	Corner Guard	ID	Inside Diameter	PTN	Partition	VIF	Verify in Field
CORR	Corridor	INSUL	Insulate	PERP	Perpendicular	VERT	Vertical
CU FT	Cubic Feet	INT	Interior	PLAM	Plastic Laminate	V	Vinyl
CFM	Cubic Feet per Minute			PL	Plate	VCT	Vinyl Composition Tile
		JAN	Janitor's Closet	PLMB	Plumbing		
DEG	Degree	JT	Joint	PLYWD	Plywood	WC	Watercloser
DEMO	Demolition, Demolish	JB	Junction Box	PVC	Polyvinyl Chloride	WP	Waterproofing
DTL	Detail			PSF	Pounds per sq.ft.	W	West, Wide Flange, Width
DIA	Diameter	KIT	Kitchen	PSI	Pounds per sq.in.	WD	Wood
DIM	Dimension	KD	Knocked Down	PREFAB	Prefabricated	W/	With
DW	Dishwasher	KO	Knock Out	PROJ	Project, Projection	W/O	Without
DISP	Dispenser						
DR	Door			QTY	Quantity		
DBL	Double			QT	Quarry Tile		
DN	Down						
DR	Drain						
DWG	Drawing						

SYMBOLS

Room name
150 SF — AREA TAG

1 / A101 — SIM — CALLOUT TAG

℄ — CENTERLINE

101 — DOOR TAG

1 / A101 — ELEVATION MARK BODY_CIRCLE (ALSO UNFILLED)

Ref View Name / Ref View Name / A101 / Ref View Name — ELEVATION MARK BODY_SQUARE (ALSO UNFILLED)

0 — GRID HEAD - CIRCLE

0 — GRID HEAD - NO BUBBLE

? — KEYNOTE NUMBER - BOXED

Name / Elevation — LEVEL HEAD - CIRCLE

Name / Elevation — LEVEL HEAD - NO BUBBLE

? — MATERIAL TAG

NORTH ARROW

1 — REVISION TAG

Room name / 101 — ROOM TAG (ALSO W/ AREA OR VOLUME)

1 / A101 — SIM — SECTION HEAD - FILLED (ALSO UNFILLED)

1 / A101 — SIM — SECTION HEAD - NO ARROW

SECTION TAIL - FILLED

SPAN DIRECTION (ONE AND TWO WAY)

SPOT ELEVATION - CROSSHAIR/ TARGET

20R @ 7 1/2" — STAIR RUN TAG

Beam Type @ Spacing — STRUCTURAL BEAM SYSTEM TAG

1i — STRUCTURAL FRAMING TAG - BOXED

1 / A101 — VIEW REFERENCE

1 View Name / 1/8" = 1'-0" — VIEW TITLE

1i — WALL TAG

1t — WINDOW TAG

STAMP AREA

DEMOLITION GENERAL NOTES

1. CONTRACTOR IS REPONSIBLE FOR HAZARDOUS MATERIAL ABATEMENT. SEE ABATEMENT WORK PLAN & SPECIFICATIONS. PER REPORT, LEAD PAINT IS ALSO PRESENT AT WORK AREAS. ALL DISTURBANCE ACTIVITES SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING OSHA 29 CFR 1926.62.
2. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
3. BEFORE STARTING WORK, MAKE A THOROUGH EXAMINATION OF THOSE PORTIONS OF THE STRUCTURE IN WHICH THE WORK IS TO BE PERFORMED. CHECK ALL THE WORK ADJOINING OR AT UNDERLYING LOCATIONS. REPORT TO THE ARCHITECT ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE WORK. DO NOT START THE WORK UNTIL SUCH CONDITIONS HAVE BEEN EXAMINED AND A COURSE OF ACTION MUTUALLY AGREED UPON.
4. CONTRACTOR SHALL PERFORM ALL NECESSARY DEMOLITION AS REQUIRED FOR INSTALLATION OF NEW WORK AS SHOWN ON THE DRAWINGS. ALL DEMOLITION NOT SPECIFICALLY SHOWN BUT NECESSARY TO COMPLETE THE PROJECT AS SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL CALL TO THE ATTENTION OF THE OWNER: ANY DAMAGE, CRACKS OR OTHER IMPERFECTIONS IN THE WORK ADJACENT TO DEMOLITION AREAS.
6. CONTRACTORS SHALL INSPECT AND ASSESS EACH SPACE AND FULFILL THE INTENT OF THE WORK REQUIRED BY THE CONTRACT DOCUMENTS. DEVIATIONS REQUIRED BY FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING.
7. ANY CUTTING AND REMOVAL INDICATED ON THE DRAWINGS ARE GENERAL INDICATIONS ONLY AND DO NOT NECESSARILY SHOW THE FULL EXTENT OF CUTTING AND REMOVAL WHICH MAY BE REQUIRED BY JOB CONDITIONS.
8. CONSTRUCTION AND EXISTING FINISHES SHALL REMAIN UNLESS NOTED OTHERWISE. DURING DEMOLITION WORK, PROPERLY PROTECT ALL EXISTING WORK SHOWN TO REMAIN. EXERCISE CARE WHEN REMOVING ADJACENT WORK. PROPERLY REPAIR TO THE ORIGINAL CONDITIONS. ANY DAMAGE TO ITEMS SHOWN TO REMAIN, CAUSED BY DEMOLITION PROCEDURES, TO THE SATISFACTION OF, AND AT NO ADDITIONAL COST, TO THE OWNER. PATCH SURFACE FINISHES BEHIND DEMOLITION WORK (I.E. FLOORS. WALLS. CEILINGS, ETC.) TO MATCH SURROUNDING CONDITIONS.
9. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE BARRIERS AROUND TRAFFIC AREAS NEAR INTERIOR WORK AS REQUIRED AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS. PROTECT ALL EXISTING EQUIPMENT NOT DESIGNATED TO BE REMOVED. PERFORM ALL WORK REQUIRED TO PROTECT THE PUBLIC AND UTILITIES.
10. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT FROM RISING BY WETTING DEMOLISHED DEBRIS. EXCESSIVE USE OF WATER WILL NOT BE PERMITTED.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY, TEMPORARY BRACING AND/OR SHORING REQUIRED TO MAINTAIN THE INTEGRITY AND STRUCTURAL STABILITY OF THE BUILDING AND ITS INDIVIDUAL ELEMENTS.
12. EXCEPT WHERE NOTED OTHERWISE, REMOVE ALL DEMOLISHED MATERIALS FROM THE SITE. DO NOT BURN OR BURY MATERIALS ON THE SITE. AT THE COMPLETION OF WORK FOR EACH DAY, CLEAN THE ENTIRE AREA INVOLVED AND LEAVE IT IN A NEAT CONDITION, FREE OF DEBRIS AND RUBBISH. KEEP ALL ADJOINING PUBLIC AREAS CLEAN AND FREE OF DEBRIS OR CONSTRUCTION MATERIALS DURING WORKING HOURS. AND MAKE AN EFFORT TO PROVIDE SAFE CONDITIONS FOR THE GENERAL PUBLIC AND WORKMEN.
13. ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, SITE, AND LANDSCAPE DRAWINGS, AND PROJECT SPECIFICATIONS MAY PROVIDE ADDITIONAL DEMOLITION REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BEING FAMILIAR WITH THESE DRAWINGS AND PROJECT SPECIFICATIONS AND ANY REQUIREMENTS PROVIDED BY THEM.
14. PRIOR TO THE DEMOLITION OF THOSE ITEMS WHICH HAVE UTILITY CONNECTIONS (WATER, GAS, ELECTRICITY, STEAM, ETC.) THE CONTRACTOR SHALL ARRANGE WITH THE OWNER TO LOCATE SHUTOFF VALVES, PANEL BOXES AND OTHER CONTROL ELEMENTS, SO THAT WATER DAMAGE AND OTHER POTENTIALLY INCONVENIENT OR DANGEROUS SITUATIONS ARE AVOIDED.
15. REFERENCE PARTIAL DEMOLITION PLANS FOR SPECIFIC DEMOLITION REQUIREMENTS.
16. REFERENCE DIVISION 01 SPECIFICATION SECTIONS FOR SELECTIVE DEMOLITION, CUTTING, AND PATCHING. TEMPORARY FACILITIES AND CONTROLS, SITE AND BUILDING DEMOLITION, CONSTRUCTION WASTE MANAGEMENT, AND RELATED SECTIONS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING DEMOLITION REQUIREMENTS WITH PROJECT PHASING. NOTIFY ARCHITECT PRIOR TO START OF WORK WITH ANY CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT PROPER EXECUTION OF THE WORK.

HISTORIC GENERAL NOTES

1. THE LIBRARY IS LISTED ON THE PHILADELPHIA REGISTER OF HISTORIC PLACES. THE INTENT IS TO PROVIDE 100 YEAR REPAIRS TO THESE STRUCTURES. ALL WORK MUST CONFORM TO THE NATIONAL PARK SERVICE STANDARDS FOR REHABILITATION AND RESTORATION. ALL EXISTING HISTORIC BUILDING COMPONENTS ARE TO REMAIN IN PLACE TO THE GREATEST EXTENT POSSIBLE. HISTORIC BUILDING ELEMENTS ARE TO BE RESTORED WHENEVER POSSIBLE. IF REPLACEMENT IS NECESSARY, REPLACE WITH APPROVED MATERIALS, HAVING EXACT DIMENSIONS AND MATCHING HISTORIC MATERIALS, U.N.O. PROCEED WITH REPLACEMENT AFTER DIRECTION FROM ARCHITECT. DO NOT USE METHODS WHICH WILL RESULT IN UNNECESSARY LOSS OF DETAIL OR MATERIAL IN EXISTING SURFACES. WHEN IN QUESTION, REFER TO THE US DEPARTMENT OF THE INTERIOR GUIDELINES FOR THE RESTORATION OF HISTORIC STRUCTURES.
2. PROVIDE MOCK-UPS AND TEST PANELS AS INDICATED IN THE SPECIFICATIONS. WORK SHALL NOT PROCEED WITHOUT APPROVAL OF THE MOCKUPS OR TEST PANELS. LOCATIONS TO BE INDENTIFIED BY ARCHITECT.
3. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR PRIOR TO PROCEEDING WITH THE WORK.
4. A BINOCULAR SURVEY WAS CONDUCTED TO DETERMINE THE FAÇADE REPAIR AND CLEANING SCOPE. THE CONTRACTOR SHALL INFORM DESIGN PROFESSIONAL, IN WRITING, OF ANY DISCREPANCIES ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL NOTIFY DESIGN PROFESSIONAL AT ONCE OF UNSEEN EXISTING CONDITIONS ENCOUNTERED DURING THE COURSE OF THE WORK WHICH MAY AFFECT THE DESIGN MODIFICATIONS.
6. THE CONTRACTOR SHALL PROVIDE REQUEST FOR CHANGE, JUSTIFICATION, SHOP DRAWINGS, PROJECT COST AND SCHEDULE IMPACT FOR PROPOSED MODIFICATIONS TO THE CONTRACT DRAWINGS. CONTRACTOR SHALL PROVIDE REPLACEMENT QUANTITIES. PROCEED WITH REPLACEMENT AFTER DIRECTION FROM ARCHITECT. PROVIDE TEMPORARY PROTECTION.
7. ALL NEW ELEMENTS (WOOD, STONE, BRICK, TERRA COTTA) REPLACEMENT TO MATCH EXISTING PROFILES AND DIMENSIONS EXACTLY.
8. RAKE OUT ALL EXISTING SEALANTS, BOND BREAKERS AND RELATED ITEMS FROM ALL CONTROL JOINTS, EXPANSION JOINTS AND FLASHING LOCATIONS WHERE INDICATED. PROVIDE PRIMERS, BOND BREAKERS, COMPRESSABLE FOAM ROD WHERE REQUIRED BY MANUFACTURER. APPLY SEALANT AT CONTROL JOINTS AND OTHER LOCATIONS, ALLOWING FOR PROPER SEALANT MOVEMENT. SEALANT COLORS TO BE SELECTED BY ARCHITECT.
9. SEE ELEVATION AND WINDOW SCHEDULE SHEETS FOR WINDOW REPLACEMENT SCOPE.
10. SEE DWGS A201-L & 202-L BUILDING ELEVATIONS - NEW WORK FOR EXTERIOR MASONRY SCOPE OF WORK & A203-L FOR DETAILS.
11.
12. SEE DWGS A103-L NEW WORK PLAN - ROOF FOR ROOF PLACEMENT WORK SCOPE.
13. ALL SURFACE PREPARATION FOR PAINT AND SEALANT WORK SHALL MEET SSPC-SP2 HAND TOOL CLEANING.

EXTERIOR WORK GENERAL NOTES:

1. SITE OBSERVATIONS WERE CONDUCTED IN A NON-INVASIVE MANNER. EXTERIOR WORK GENERAL NOTES AND DRAWINGS REPRESENT SCOPE AND QUANTITIES OF REPAIR WORK REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE NOTES/DRAWINGS AND FIELD CONDITIONS PRIOR TO START OF WORK.
2. REMOVE WALL MOUNTED SIGNS PRIOR TO CLEANING & POINTING MASONRY. COORDINATE WITH OWNER FOR REINSTALLATION.
3. ALL FACADES TO BE CLEANED. SEE SPECIFICATIONS FOR DETAILS.
4. ALL HOLES IN BRICK TO BE PATCHED TO MATCH SURROUNDING MATERIAL IN COLOR AND TEXTURE.
5. SEE ELECTRICAL DRAWINGS FOR EXTERIOR LIGHTING SCOPE.
6. SEE ROOF DRAWING FOR REPOINTING SCOPE ON ROOF SIDE OF PARAPET.
7. WHERE FRAMES ARE SCHEDULED TO REMAIN, REMOVE CAULK AND SEALANT, CLEAN THOROUGHLY; RECAULK AND SEAL

GENERAL NOTES

1. PROVIDE MOCK-UPS AS INDICATED IN THE SPECIFICATIONS AND ON 2/A202-L.
2. REFERENCE FINISH SCHEDULE FOR ALL ROOM FINISHES.
3. REFERENCE EXTERIOR BUILDING ELEVATIONS AND WINDOW SCHEDULE FOR NEW WORK AT WINDOWS.
4. SEE ELEVATIONS AND FINISH SCHEDULE FOR EXTENT OF REPAIR OF PLASTER WALLS AND TREATMENT. SEE SPECIFICATIONS FOR PLASTER REPAIR.
5. SEE CEILING PLANS AND FINISH SCHEDULE FOR EXTENT OF REPAIR AND TREATMENT. SEE SPECIFICATIONS FOR PLASTER REPAIR.
6. REFERENCE DOOR SCHEDULE FOR DOOR TYPES, HARDWARE, AND PROPOSED NEW WORK.
7. REFERENCE BUILDING ELEVATIONS FOR EXTENT OF EXTERIOR WINDOW, DOOR, AND FACADE SCOPE.
8. COORDINATE NEW ELEVATOR SHAFT LOCATIONS WITH EXISTING DOOR OPENING. NOTIFY ARCHITECT IMMEDIATELY OF DIMENSIONAL DISCREPANCIES.
9. THE CONTRACTOR SHALL INVESTIGATE JOB SITE TO COMPARE CONTRACT DOCUMENTS AND EXISTING CONDITIONS. INCLUDE COST FOR ALL WORK DESCRIBED IN CONTRACT DOCUMENTS AND REQUIRED OR IMPLIED BY EXISTING CONDITIONS, NOTIFY ARCHITECT OF ANY OMISSIONS OR CONFLICTS IN THE DRAWINGS AND ANY RESTRICTIONS RELATED TO THE EXECUTION OF THE WORK.
10. THE CONTRACTOR SHALL COMPLY AND COORDINATE ALL WORK WITH BUILDING OWNER REGARDING HEAT, WATER, ELECTRICITY, DELIVERIES, ACCESS, NOISE CONTROL, TRASH AND DEBRIS REMOVAL, HOISTING, AND ANY OTHER UTILITIES OR OWNER'S RULES AND REGULATIONS CONCERNING THE PROJECT SITE. SEE DIV 01 SPECIFICATIONS.
11. THE CONTRACTOR SHALL COORDINATE SCHEDULING, PROVISIONS FOR INSTALLATION, LOCATIONS AND THE ACTUAL INSTALLATION OF ITEMS FURNISHED BY OWNER OR BY OTHERS.
12. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND IS RESPONSIBLE FOR ALL PHASES INCLUDING BIDDING, FABRICATION, COORDINATION AND CONSTRUCTION. CONTRACT DRAWINGS ARE NOT INTENDED TO REPRESENT EXACT DIMENSIONS.
13. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS.
14. CHANGES IN DRAWINGS OR ACTUAL WORK MUST BE ISSUED BY THE ARCHITECT.
15. PERFORM ALL WORK AND INSTALL MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS AND IN A MANNER CONSISTENT WITH INDUSTRY STANDARD OF WORKMANSHIP.
16. THE CONTRACTOR SHALL EXAMINE ALL SURFACES TO DETERMINE THAT THEY ARE SOUND, DRY, CLEAN AND READY TO RECEIVE FINISHES PRIOR TO INSTALLATION. START OF INSTALLATION SHALL IMPLY ACCEPTANCE OF SUBSTRATE AND SHALL NOT BE GROUNDS FOR CLAIMS AGAINST IMPROPER PERFORMANCE OF INSTALLED MATERIALS. ADVISE ARCHITECT OF ANY EXISTING CONSTRUCTION NOT LEVEL, SMOOTH AND PLUMB WITHIN INDUSTRY STANDARDS PRIOR TO START OF CONSTRUCTION.
17. WORK DAMAGED DURING CONSTRUCTION OR NOT CONFORMING TO SPECIFIED STANDARDS, TOLERANCES OR MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION SHALL BE REPLACED, BY THE CONTRACTOR, AT NO ADDITIONAL CHARGE TO THE OWNER.
18. THE CONTRACTOR SHALL MAINTAIN ALL EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES AND LIFE SAFETY SYSTEMS IN WORKING ORDER. CONTRACTOR TO PROVIDE TEMPORARY FIRE EXTINGUISHERS DURING THE COURSE OF CONSTRUCTION AS REQ'D BY THE AUTHORITIES HAVING JURISDICTION.
19. EXIT DOORS, EGRESS DOORS, AND OTHER DOORS REQUIRED FOR MEANS OF EGRESS SHALL BE OPERABLE FROM THE INSIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
20. CONTRACTOR SHALL FULLY ACQUAINT HIMSELF WITH THE CONDITIONS OF THE CONTRACT, LOCAL CONDITIONS RELATING TO LOCATION, ACCESSIBILITY AND GENERAL CHARACTER OF THE CONSTRUCTION SITE AND LOCAL LABOR CONDITIONS SO THAT HE UNDERSTANDS THE NATURE, EXTENT, DIFFICULTIES, AND RESTRICTIONS RELATED TO THE EXECUTION OF WORK. NOTIFY ARCHITECT OF ALL DISCREPANCIES PRIOR TO COMMENCING WORK.
21. ALL WOOD BLOCKING IN FIRE RATED ASSEMBLIES TO BE FIRE RETARDANT.
22. ALL WOOD ON EXTERIOR WALLS AND ROOF TO BE MOISTURE RESISTANT.
23. IN ALL INSTANCES WHERE WORK IS BEING CORRECTED OR REPAIRED, CONTRACTOR IS TO REPAINT ENTIRE WALL TO NEAREST CORNER OR BREAK- LINE WHERE WALL CHANGES DIRECTION.
24. CONTRACTOR TO COORDINATE WITH E.C. THE MOUNTING HEIGHT OF ALL SWITCHES AND OUTLETS AT MILLWORK, COUNTERS, SHELVING, SINKS, ETC.
25. CONTRACTOR IS TO PROVIDE ALL MISC. FRAMING, BLOCKING, ETC. TO HANG SCREENS, BULLETIN BOARDS, RAILS, TOILET ACCESSORIES, WOODWORK, ETC.
26. CONTROL JOINTS IN GYPSUM BOARD PARTITIONS AND GYPSUM BOARD CEILINGS SHALL BE SPACED AS FOLLOWS:
    A. PARTITIONS- 30 FT. MAXIMUM IN EITHER DIRECTION. INTERIOR CEILINGS- 30 FT. MAXIMUM IN EITHER DIRECTION.
27. ALL PENETRATIONS THROUGH RATED WALLS ARE TO BE SEALED TO MAINTAIN INTEGRITY OF WALL CONSTRUCTION AND RATING (ASTM E814 SYSTEM BY 3M, HILTI, OR SIM).
28. ALL INSULATION EXPOSED TO CEILING PLENUM IS TO BE FIRE AND DUST PROOF.
29. ALL NEW SUPPLY AIR AND RETURN GRILLES SHALL BE LOCATED IN THE CENTER LINE OF ACOUSTICAL TILES UNLESS OTHERWISE INDICATED ON PLANS.
30. CONTRACTOR SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS WHEN RELOCATING AND/OR INSTALLING ANY EQUIPMENT AND FURNISHINGS.
31. CONTRACTOR SHALL VERIFY EQUIPMENT LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
32. ALL PENETRATIONS THROUGH DRYWALL AND MASONRY SURFACES INCLUDING BUT NOT LIMITED TO PIPE, CONDUIT, DUCTWORK, GRILLES, REGISTERS, DEVICE BOXES, HANGER RODS, ETC. SHALL HAVE THEIR COMMON JOINTS WITH DRYWALL AND/OR MASONRY CAULKED TO PROVIDE AN AIR-TIGHT SEAL.
33. CONTRACTOR TO REMOVE ANY STRAY PAINT, DIRT, OR STAINS INCURRED DURING THE CONSTRUCTION PROCESS. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TEMPORARY EQUIPMENT COVERINGS USED DURING CONSTRUCTION AND HE SHALL ALSO BE RESPONSIBLE FOR REMOVING HIS TRASH OFF OF THE JOB SITE DAILY.
34. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND WELDING IN COMPLIANCE WITH THE PUBLISHED STANDARDS OF NFPA. THE CONTRACTOR SHALL PROVIDE FIRE WATCHES FOR ALL CUTTING, GRINDING, AND WELDING OPERATIONS. THE TRAINING OF THESE FIRE WATCHES AND THE USE OF THE CONTRACTOR'S SUPPLIED FIRE EXTINGUISHERS IS THE RESPONSIBILITY OF THE CONTRACTOR.
35. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR DETAILS OF UTILITY WALL PENETRATIONS.
36. ALL FIXTURES LABELED ** INDICATE HANDICAP ACCESSIBLE FIXTURES.
37. WHERE TWO DISSIMILAR METALS MEET, PAINT FACE OF ONE WITH BITUMINOUS PAINT.
38. ALL EXTERIOR ENTRANCE DOORS AND FRAMES TO RECEIVE PERIMETER WEATHER STRIPPING AS PER SPECIFICATIONS.
39. CONTRACTOR IS TO PROVIDE STUD BRACING AS REQUIRED FOR METAL STUD PARTITIONS ABOVE 10'-0".
40. ANY AREA OUTSIDE THE LIMITS OF CONSTRUCTION DISTURBED BY OPERATIONS OF THE CONTRACTOR SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.
41. ALL CONCRETE WALKS, ASPHALT, CURBS AND LANDSCAPING DAMAGED DURING CONSTRUCTION ARE TO BE REPAIRED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
42. CONTINUOUS BLOCKING SHALL BE PROVIDED AT DRYWALL PARTITIONS FOR ALL CABINET WORK AT TOP AND BOTTOM OF WALL MOUNTED UNITS AND UNDER COUNTER TOP LEVEL OF BASE CABINET. ALL OPEN-FACE SHELVING UNITS SHALL HAVE CONCEALED ANCHOR BRACKETS.
43. ALL EXTERIOR WINDOWS, DOORS, LOUVERS, VENTS, EXHAUST FANS, PIPE PENETRATIONS, AND ALL OTHER PENETRATIONS THRU EXTERIOR WALLS SHALL BE SEALED AROUND ENTIRE PERIMETER WITH SEALANT. (BOTH ON EXTERIOR AND INTERIOR SIDES)
44. FIRE EXTINGUISHER CABINETS TO BE MOUNTED 4'-0" A.F.F. TO TOP MAXIMUM IN ACCORDANCE WITH REQUIREMENTS. (FIRE EXTINGUISHERS WITH GROSS WEIGHT OVER 40LBS. MUST BE MOUNTED 3'-6" MAX.). CLEARANCE BETWEEN THE BOTTOM OF THE FLOOR AND THE EXTINGUISHER MAY NOT BE LESS THAN 4".)
45. CONTRACTOR TO COORDINATE WITH OWNER'S MOVING COORDINATOR. MOVING IN OF EQUIPMENT AND FURNISHINGS AT PROJECT COMPLETION WILL OVERLAP WITH FINAL PUNCHLIST COMPLETION; CONTRACTOR TO FACILITATE THIS WORK.

FF&E GENERAL NOTES:

1. MOVE OUT OF EXISTING FF&E AND ALL CONTENTS TO BE COMPLETED, BY OTHERS, PRIOR TO THE START OF DEMOLITION.
2. CONTRACTOR IS RESPONSIBLE FOR FF&E (NOTED ON ON A811-L) PROCUREMENT, INSTALLATION, AND COORDINATION WITH THE OWNER, EXCEPT AS NOTED IN #3.
3. ALL OWNER PROVIDED EQUIPMENT AND MATERIALS (SUCH AS BOOKS, COMPUTERS, PRINTERS, COIN MACHINES) WILL BE MOVED IN BY OTHERS. GC REQUIRED TO BE AVAILABLE FOR OWNER COORDINATION.

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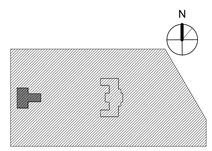
PHILADELPHIA — PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN

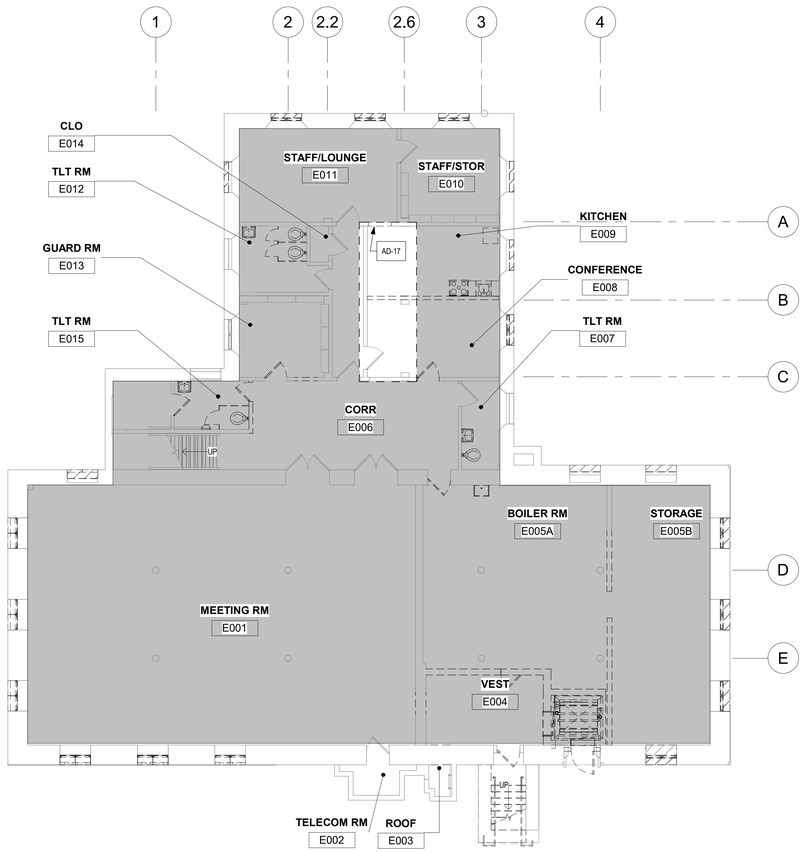


DRAWING TITLE

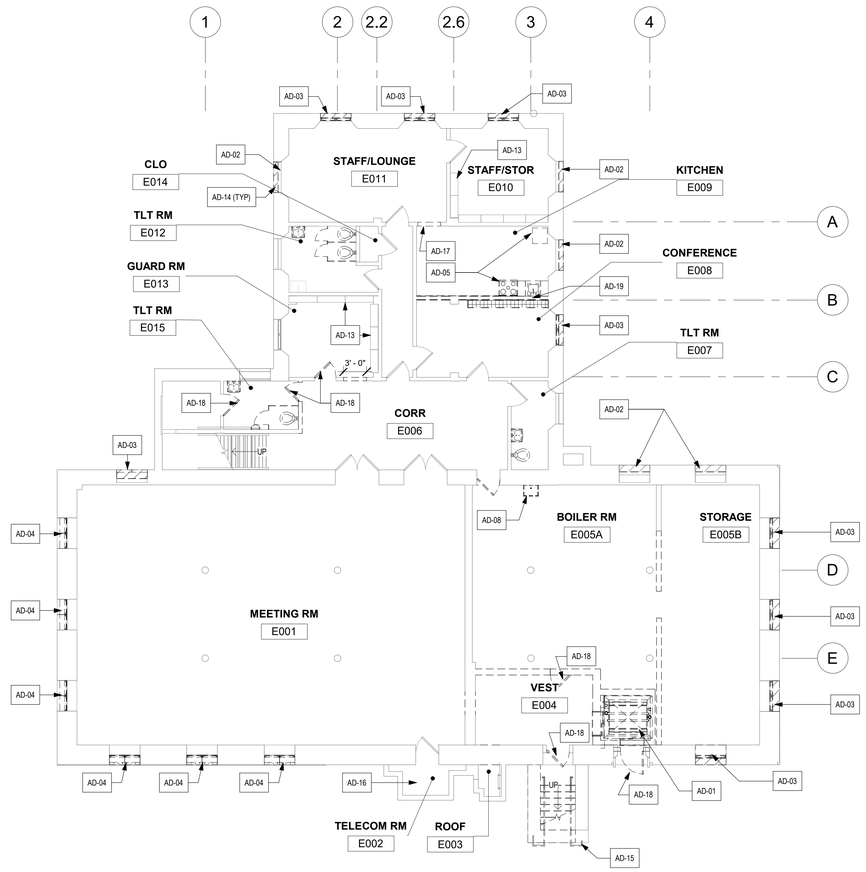
GENERAL NOTES AND ABBREVIATIONS

PROJECT NO.	DRAWING NO.
21070	G101-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY A.F.	
CHECKED BY D.B.	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



2 LOWER LEVEL - DEMOLITION PLAN BASE SCOPE
1/8" = 1'-0"



1 LOWER LEVEL - DEMOLITION PLAN BASE SCOPE
1/8" = 1'-0"

N

0' 4' 8' 16' 32'

ALTERNATE NO. 1

- SEE LANDSCAPE DRAWINGS

ALTERNATE NO. 2

- NEW STORAGE CLOSETS AT ENLARGED CONFERENCE ROOM - SEE NEW WORK

ALTERNATE NO. 3

- ADD BI-FOLD DOORS (SEE A102-L)

GENERAL DEMOLITION NOTES:

1. COORDINATE ALL DEMOLITION WITH THE HAZARDOUS ABATEMENT WORK PLAN
2. REMOVE INTERIOR WALLS AND DOORS (SHOWN DASHED) WITHIN AREAS OF GENERAL DEMOLITION. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT AND AVOID DAMAGE TO STRUCTURE AND FINISHES TO REMAIN.
3. REMOVE DOORS OR DOORS AND FRAME (SEE KEYNOTE AD-18); AT DOORS TO REMAIN, REMOVE HARDWARE AS SCHEDULED. SEE DOOR SCHEDULE FOR LOCATIONS & TREATMENT
4. REMOVE ALL TOILET ROOM FIXTURES, ACCESSORIES, AND FINISHES - SEE PLUMBING DWGS.
5. CHEMICALLY REMOVE EXISTING FLOOR SEALER ON ALL EXPOSED CONCRETE SLABS IN AREAS OF GENERAL DEMOLITION. PREPARE FLOOR FOR NEW SEALER, OR FLOOR FINISH. REFER TO FINISH SPECS
6. REMOVE FLOOR FINISHES AND BASE THROUGHOUT. PATCH AND CLEAN SUBSTRATES AS NECESSARY TO RECIEVE NEW FINISHES. PATCH AND REPAIR ANY DAMAGED FLOOR OR IRREGULARITIES INCLUDING DEPRESSIONS AND CRACKS TO PREPARE FOR NEW FINISHES.
7. SEE STRUCTURAL DRAWINGS FOR DEMOLITION OF ANY STRUCTURAL ITEMS OR SYSTEMS.
8. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR DEMOLITION OF HVAC, PLUMBING AND ELECTRICAL SYSTEMS.
9. PATCH AND REPAIR FLOORS, WALLS, AND CEILING SURFACES TO REMAIN, AS AFFECTED BY DEMOLITION.
10. LIBRARY STAFF + MOVE COORDINATOR WILL DETERMINE WHAT IS SALVAGED. GC/DEMO CONTRACTOR TO DEFER TO MOVE COORDINATOR.
9. SEE DRAWINGS AD201-L AND AD202-L ELEVATIONS FOR WINDOW AND WINDOW INFILL DEMOLITION
10. SEE DRAWINGS AD201-L AND AD202-L ELEVATIONS FOR EXTERIOR WORK

KEY NOTES: BASE BID

AD-01 REMOVE ELEVATOR, ELEVATOR SHAFT AND PIT

1 AD-02 REMOVE WINDOW INFILL (AND LOUVER WHERE PRESENT) - SEE ALSO ELEVATIONS

AD-03 REMOVE WINDOW AND INFILL - SEE ALSO ELEVATIONS

AD-04 REMOVE WINDOW - SEE ALSO ELEVATIONS

AD-05 REMOVE CABINETS, COUNTERS AND ASSOCIATED KITCHEN EQUIPMENT & APPLIANCES. ANY SALVAGE RETURN TO OWNER.

AD-06 REMOVE CIRCULATION DESK AND ALL ASSOCIATED WIRING

AD-07 REMOVE SECURITY GATES

AD-08 REMOVE JAN SINK. SEE PLUMBING DRAWINGS

AD -09 REMOVE EWC . SEE PLUMBING & ELEC DRAWINGS

AD -10 REMOVE WINDOW TREAMENT AND ALL ASSOCIATED HARDWARE

AD-12 REMOVE RADIATORS, AND ASSOCIATED PIPING. SEE MECH DWGS. REMOVE PORTION OF WALL AT EACH RADIATOR TO FACILITATE PIPING REMOVAL AS NEEDED ; PATCH AND REPAIR. SALVAGE (E) GRILLES FOR REUSE.

AD-13 EXIST BUILT-IN SHELVING TO REMAIN.

AD-14 REMOVE PORTION OF MASONRY WALL FOR NEW LOUVER WHERE SCHEDULED OR FOR BRICK REPLACEMENT. - SEE ELEVATIONS AND MEC DRAWINGS.

AD-15 DEMOLISH EXISTING STAIR AND HANDRAILS. PREP FOR NEW STAIR. SALVAGE GRANITE CURBS FOR REUSE.

AD-16 (E) TELECOM ROOM TO BE RELOCATED. EQUIPMENT TO BE REMOVED BY OTHERS; REMOVE REMAINING MOUNTING BOARDS, ETC.

AD-17 REMOVE (E) CASED OPENING INCLUDING WD FRAME

AD-18 REMOVE (E) DOOR AND FRAME

1 AD-19 REMOVE PORTION OF CONCRETE FLOOR FOR INSTALLATION OF (N) WIRE MANAGEMENT SYSTEM - SEE ELEC.

LEGEND

(E) WINDOW OR DOOR INFILL TO BE REMOVED - SEE ELEVATIONS

NOT IN ALTERANTE SCOPE

EXISTING WALL / PARTITION TO REMAIN

EXISTING WALL / PARITION TO BE REMOVED

AREA OF FLOOR TO BE DEMO'D

AREA NOT IN ALTERNATE SCOPE

EXISTING DOOR & FRAME TO REMAIN

EXISTING DOOR & FRAME TO BE REMOVED

3 AD-15 LOWER STAIR

6 AD-05 KITCHEN

7 AD-02 WINDOW INFILLS

STAMP AREA

REVISIONS

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2	10/13/22	ADDENDUM 2

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CITY OF PHILADELPHIA

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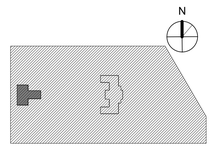
PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN

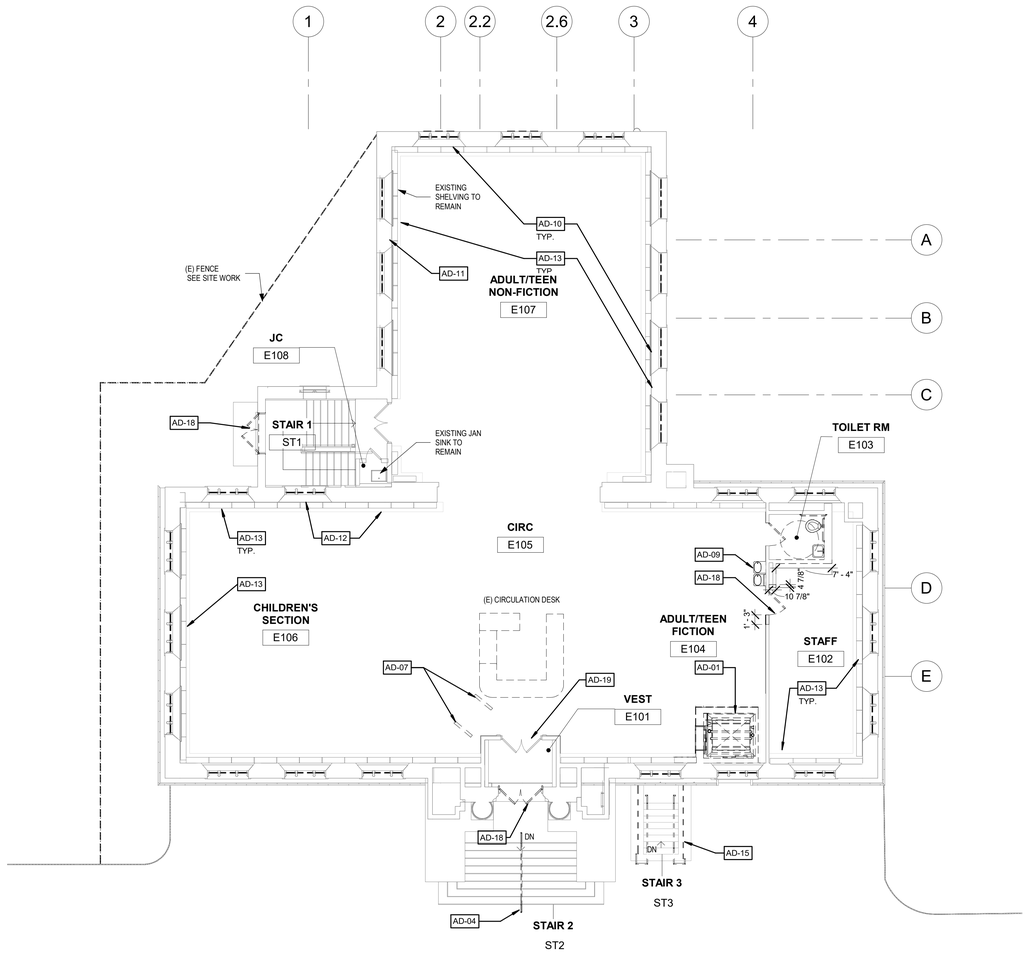


DRAWING TITLE

DEMOLITION PLAN - LOWER LEVEL

PROJECT NO.	DRAWING NO.
21070	AD101-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY A.F.	
CHECKED BY D.B.	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



1 FIRST FLOOR DEMOLITION PLAN
1/8" = 1'-0"

N

0' 4' 8' 16' 32'

GENERAL DEMOLITION NOTES:

1. COORDINATE ALL DEMOLITION WITH THE HAZARDOUS ABATEMENT WORK PLAN
2. REMOVE INTERIOR WALLS AND DOORS (SHOWN DASHED) WITHIN AREAS OF GENERAL DEMOLITION. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT AND AVOID DAMAGE TO STRUCTURE AND FINISHES TO REMAIN.
3. REMOVE DOORS OR DOORS AND FRAME (SEE KEYNOTE AD-18); AT DOORS TO REMAIN, REMOVE HARDWARE AS SCHEDULED. SEE DOOR SCHEDULE FOR LOCATIONS & TREATMENT
4. REMOVE ALL TOILET ROOM FIXTURES, ACCESSORIES, AND FINISHES - SEE PLUMBING DWGS.
5. CHEMICALLY REMOVE EXISTING FLOOR SEALER ON ALL EXPOSED CONCRETE SLABS IN AREAS OF GENERAL DEMOLITION, PREPARE FLOOR FOR NEW SEALER, OR FLOOR FINISH. REFER TO FINISH SPECS
6. REMOVE FLOOR FINISHES AND BASE THROUGHOUT. PATCH AND CLEAN SUBSTRATES AS NECESSARY TO RECIEVE NEW FINISHES. PATCH AND REPAIR ANY DAMAGED FLOOR OR IRREGULARITIES INCLUDING DEPRESSIONS AND CRACKS TO PREPARE FOR NEW FINISHES.
7. SEE STRUCTURAL DRAWINGS FOR DEMOLITION OF ANY STRUCTURAL ITEMS OR SYSTEMS.
8. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR DEMOLITION OF HVAC, PLUMBING AND ELECTRICAL SYSTEMS.
9. PATCH AND REPAIR FLOORS, WALLS, AND CEILING SURFACES TO REMAIN, AS AFFECTED BY DEMOLITION.
10. LIBRARY STAFF + MOVE COORDINATOR WILL DETERMINE WHAT IS SALVAGED. GC/DEMO CONTRACTOR TO DEFER TO MOVE COORDINATOR.
9. SEE DRAWINGS AD201-L AND AD202-L ELEVATIONS FOR WINDOW AND WINDOW INFILL DEMOLITION
10. SEE DRAWINGS AD201-L AND AD202-L ELEVATIONS FOR EXTERIOR WORK

KEY NOTES: BASE BID

AD-01. REMOVE ELEVATOR, ELEVATOR SHAFT AND PIT

AD-02 REMOVE WINDOW INFILL. SEE ELEVATIONS

AD-03 REMOVE LOUVERS; SEE ALSO ELEVATIONS

AD-04 REMOVE AND REPLICATE RAIL - SEE DETAILS

AD-05 REMOVE CABINETS, COUNTERS AND ASSOCIATED KITCHEN EQUIPMENT & APPLIANCES. ANY SALVAGE RETURN TO OWNER.

AD-06 REMOVE CIRCULATION DESK AND ALL ASSOCIATED WIRING

AD-07 REMOVE SECURITY GATES

AD-08 REMOVE JAN SINK. SEE PLUMBING DRAWINGS

AD -09 REMOVE EWC . SEE PLUMBING & ELEC DRAWINGS

AD -10 REMOVE WINDOW TREAMENT AND ALL ASSOCIATED HARDWARE

AD -11 BANNER RODS TO BE REMOVED AND SALVAGED. REPAIR WALLS AND FINISH AS SCHEDULED

AD-12 REMOVE RADIATORS, AND ASSOCIATED PIPING. SEE MECH DWGS. REMOVE PORTION OF WALL AT EACH RADIATOR TO FACILITATE PIPING REMOVAL AS NEEDED ; PATCH AND REPAIR. SALVAGE (E) GRILLES FOR REUSE.

AD-13 EXIST BUILT-IN SHELVING TO REMAIN.

AD-14 REMOVE PORTION OF MASONRY WALL FOR NEW LOUVER WHERE SCHEDULED OR FOR BRICK REPLACEMENT. - SEE ELEVATIONS AND MEC DRAWINGS.

AD-15 DEMOLISH EXISTING STAIR AND HANDRAILS. PREP FOR NEW STAIR. SALVAGE GRANITE CURBS FOR REUSE.

AD-16 (E) TELECOM ROOM TO BE RELOCATED. EQUIPMENT TO BE REMOVED BY OTHERS; REMOVE REMAINING MOUNTING BOARDS, ETC.

AD-17 REMOVE (E) CASED OPENING INCLUDING WD FRAME

AD-18 REMOVE (E) DOOR AND FRAME

AD-19 (E) STONE THRESHOLD TO REMAIN, SEE DTL 10/A901-L

LEGEND

EXISTING WALL / PARTITION TO REMAIN

EXISTING WALL / PARITION TO BE REMOVED

EXISTING DOOR & FRAME TO REMAIN

EXISTING DOOR & FRAME TO BE REMOVED

3 AD-04 RAILING AT MAIN STAIR

4 AD-15 LOWER STAIR

5 AD-12 RADIATOR & AD-13 SHELVING

6 AD-06 CIRC DESK

STAMP AREA

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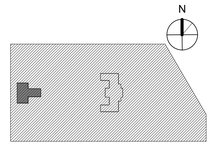

DRAWING TITLE

DEMOLITION PLAN - FIRST FLOOR

PROJECT NO.	21070
DRAWING NO.	AD102-L
DATE	9/7/22
SCALE	As indicated
DRAWN BY	A.F.
CHECKED BY	D.B.

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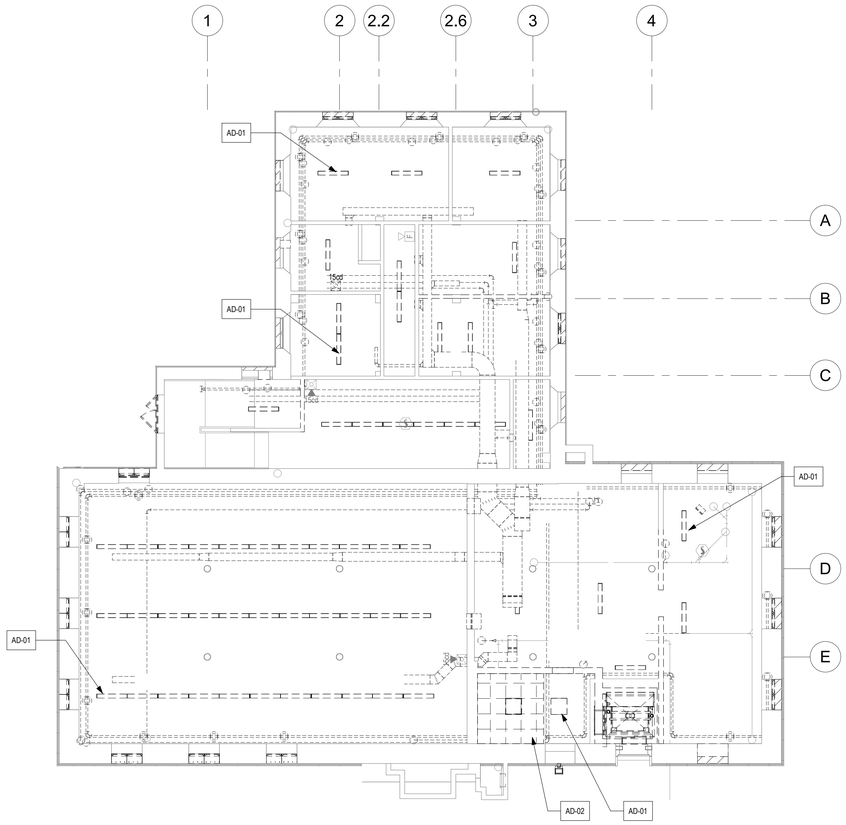
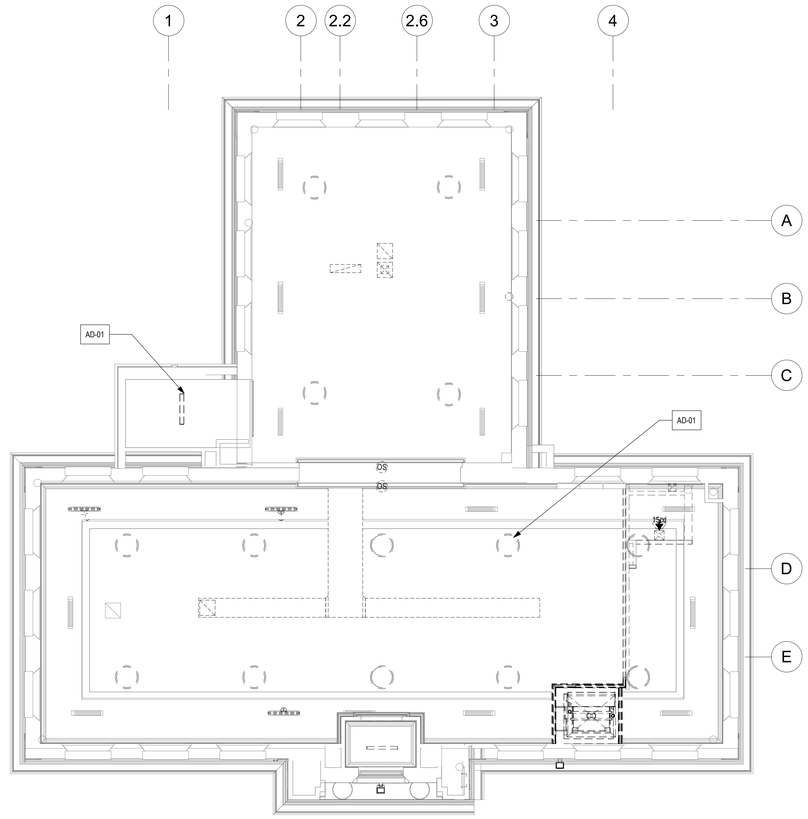


2 LOWER LEVEL RCP - DEMO
1/8" = 1'-0"



1 FIRST FLOOR RCP - DEMO
1/8" = 1'-0"

0' 4' 8' 16' 32'

GENERAL DEMOLITION NOTES:

1. COORDINATE ALL DEMOLITION WITH THE HAZARDOUS ABATEMENT WORK PLAN.
2. REMOVE INTERIOR LIGHT FIXTURES (SHOWN DASHED) WITHIN AREAS OF GENERAL DEMOLITION. TAKE ALL PRECAUTIONS NECESSARY TO PREVENT AND AVOID DAMAGE TO STRUCTURE AND FINISHES TO REMAIN.
3. PATCH AND CLEAN SUBSTRATES AS NECESSARY TO RECIEVE NEW FINISHES. PATCH AND REPAIR ANY DAMAGED CEILING OR IRREGULARITIES INCLUDING DEPRESSIONS AND CRACKS TO PREPARE FOR NEW FINISHES.
4. SEE STRUCTURAL DRAWINGS FOR DEMOLITION OF ANY STRUCTURAL ITEMS OR SYSTEMS.
5. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR DEMOLITION OF HVAC, PLUMBING AND ELECTRICAL SYSTEMS.
6. PATCH AND REPAIR FLOORS, WALLS, AND CEILING SURFACES TO REMAIN, AS AFFECTED BY DEMOLITION.
7. ALL MATERIALS AND EQUIPMENT NOTED TO BE SALVAGED SHALL BE REMOVED AND STORED ON-SITE IN LOCATION DESIGNATED BY OWNER.

KEY NOTES: BASE BID

AD-01 REMOVE LIGHT FIXTURES . SEE ELEC DRAWINGS.

AD-02 REMOVE ACT AS SHOWN

STAMP AREA

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CITY OF PHILADELPHIA

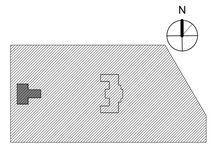
FREE LIBRARY OF PHILADELPHIA
1901 VINE ST
PHILADELPHIA, PA 19103

PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN

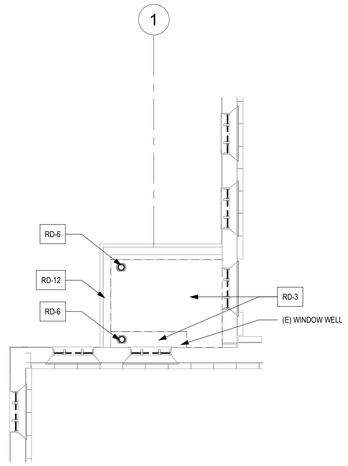


DRAWING TITLE

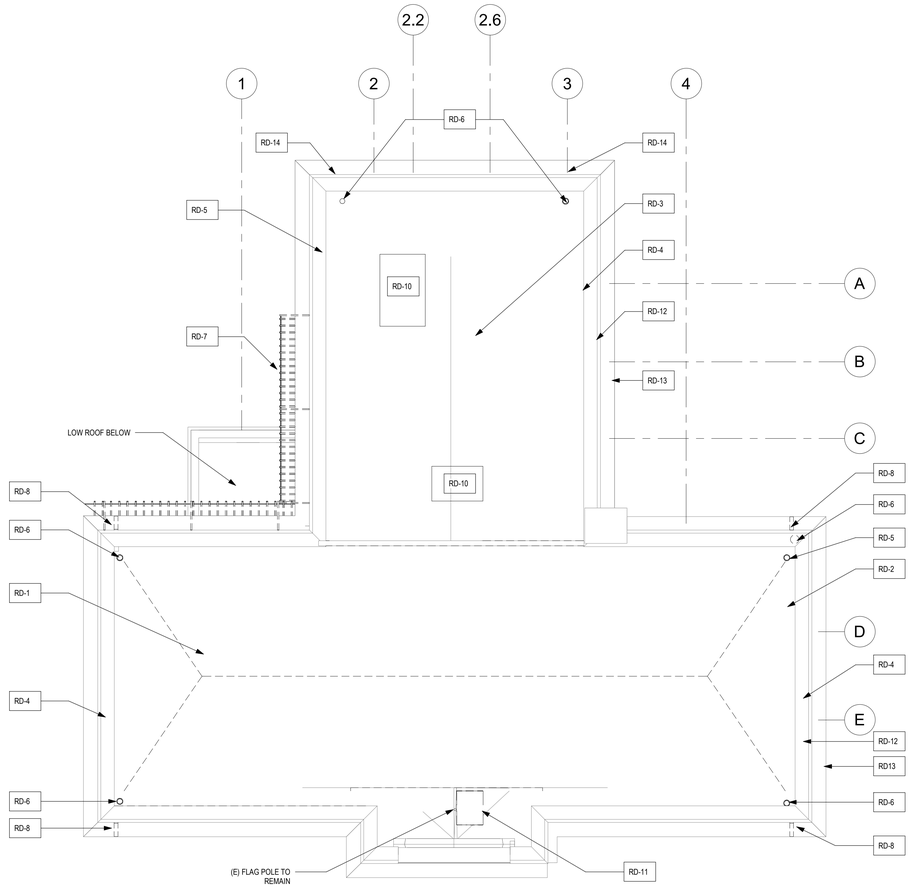
DEMOLITION RCP

PROJECT NO.	DRAWING NO.
21070	AD103-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY A.F.	
CHECKED BY D.B.	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



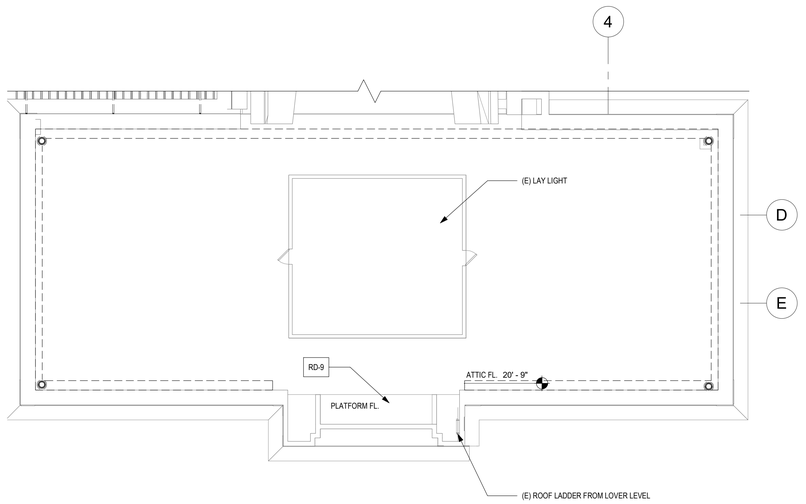
2 LOWER ROOF PLAN - DEMOLITION
1/8" = 1'-0"



1 ROOF DEMOLITION PLAN
1/8" = 1'-0"

N

0' 4' 8' 16' 32'



3 ATTIC FLOOR DEMOLITION PLAN
1/8" = 1'-0"

STAMP AREA

SEE DWG A103-L NEW WORK PLAN ROOF FOR SCOPE OF ROOF WORK

COORDINATE ALL DEMOLITION WITH THE HAZARDOUS ABATEMENT WORK PLAN 2

RD-1: PITCHED SHINGLE ROOF
1. DEMOLISH ALL EXISTING ASPHALT SHINGLES & UNDERLAYMENT DOWN TO EXISTING ROOF DECK.
2. INSPECT ROOF DECK AND MAKE NECESSARY REPAIRS.
3. REMOVE AND REPLACE LOWER PORTION OF DECKING AT FULL PERIMETER.
4. B.O.D. T&G BOARD

RD-2: BUILT-IN GUTTER
1. DEMOLISH EXISTING BUILT-IN GUTTER MEMBRANE DOWN TO EXISTING ROOF DECK. INSPECT ROOF DECK AND MAKE NECESSARY REPAIRS. SEE ABOVE FOR EXTENT.

RD-3: FLAT ROOF
1. DEMOLISH ALL EXISTING MEMBRANE ROOFING & UNDERLAYMENT, INSULATION DOWN TO EXISTING ROOF DECK.
2. REPAIR ROOF DECK - ASSUME 5% REPLACEMENT.
3. B.O.D. 1: THICK T&G BOARD.

RD-4: PARAPET
1. DEMOLISH ALL EXISTING METAL FLASHING INSTALLED AT PARAPET WALLS.

RD-5
1. DEMOLISH VENT PIPES - SEE MEP DRAWINGS

RD-6
1. DEMOLISH ROOF DRAINS - SEE MEP DRAWINGS

RD-7
1. DEMOLISH (E) METAL GRILLE , REPAIR HOLES, SEE ELEVATIONS

RD-8
1. DEMOLISH ROOF SCUPPER

RD-9
1. DEMOLISH (E) WOOD LADDER

RD-10
1. SEE MECH DRAWINGS FOR DEMOLITION OF MECHANICAL UNITS

RD-11
1. REMOVE (E) ROOF HATCH

RD-12
1. (E) LIMESTONE COPING - SEE ELEVATIONS AND PLAN A103-L FOR CLEANING. REPAIR AS NOTED AND REPOINTING

RD-13
1. (E) TERRACOTTA CORNICE - SEE ELEVATIONS AND PLAN A103-L FOR CLEANING. REPAIR AS NOTED AND REPOINTING.

RD-14
1. REMOVE PORTION OF WALL TO INSTALL NEW SCUPPER
2. SEE ROOF PLAN AND DETAIL 9/A611-L

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2	10/13/22	ADDENDUM 2

REVIEWED BY:

PROJECT COORDINATOR

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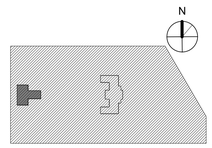

DRAWING TITLE

DEMOLITION PLAN - ROOF

PROJECT NO.	DRAWING NO.
21070	AD104-L
DATE 9/7/22	
SCALE 1/8" = 1'-0"	
DRAWN BY A.F.	
CHECKED BY D.B.	

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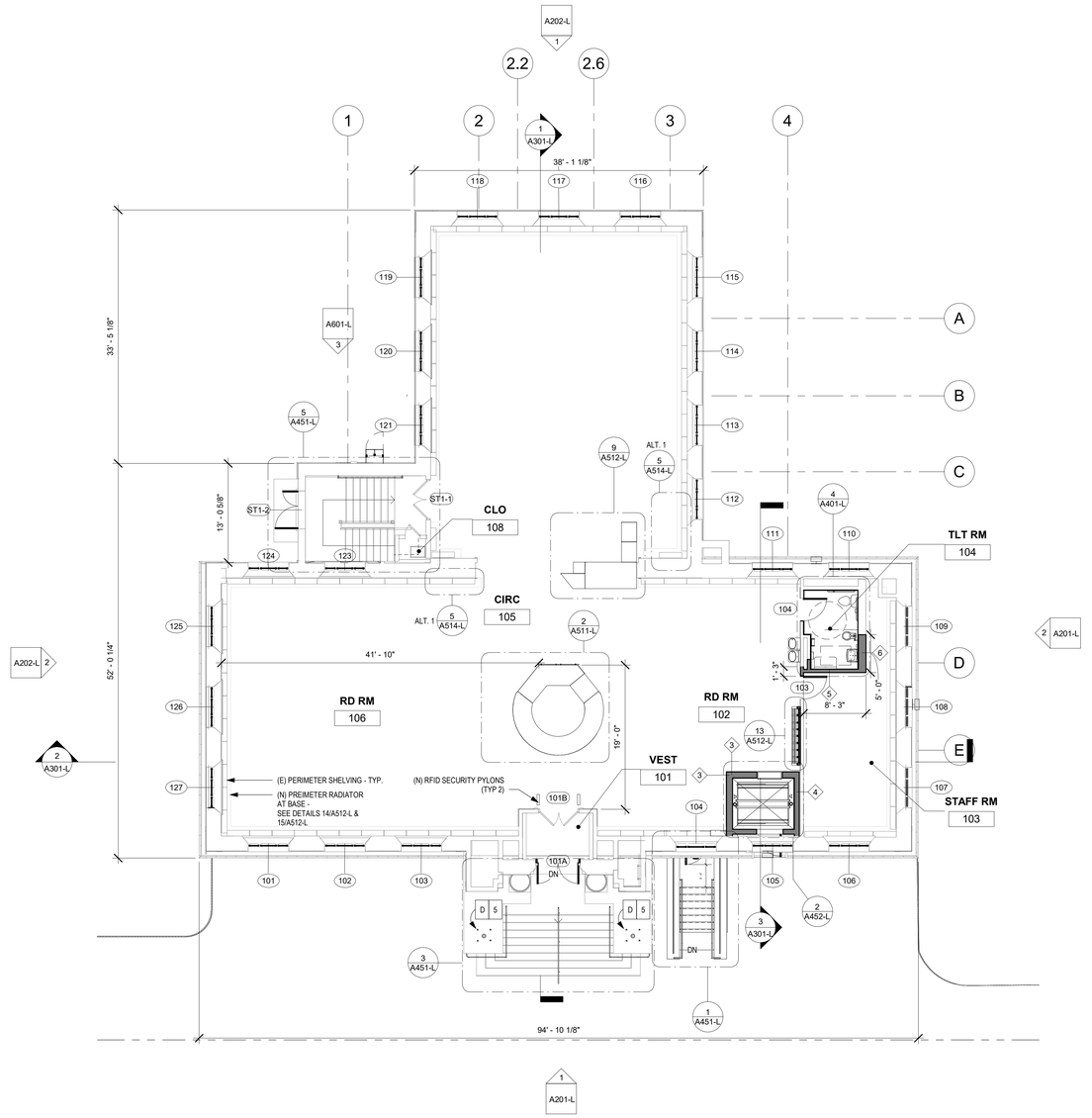

1 FIRST FLOOR - NEW WORK
1/8" = 1'-0"

N

0' 4' 8' 16' 32'

ALTERNATE NO.1

- SEE LANDSCAPE DRAWINGS

ALTERNATE NO. 2

- SEE LOVER LEVEL PLANS

ALTERNATE NO. 3

- ADD BI-FOLD DOORS AT SHELVING - (SEE DWG A514-L)

STAMP AREA

SCOPE OF WORK - FIRST FLOOR

SEE PHOTO PAGE FOR MORE INFORMATION

SEE ELEVATION SHEETS FOR EXTERIOR DOORS AND WINDOWS

NEW MEP SYSTEMS THROUGHOUT - SEE MEP DWGS.

SEE AD DWGS FOR EXISTING CONDITIONS

D | 5 SEE EXTERIOR ELEVATIONS & MASONRY SCHEDULE

FLOORS

1. INSTALL NEW FLOOR FINISHES AS SHOWN - SEE FINISH PLANS. PROVIDE NEW WOOD BASE AT NEW WALLS. SEE INTERIOR ELEVATIONS FOR PERIMETER WALLS
2. PROVIDE CERAMIC TILE AND BASE AT ALL TOILET ROOMS
3. VEST 101 - (E) QUARRY TILE FLOOR; CLEAN AND GROUT
4. STAIR 1: REMOVE VINYL TREADS, REFINISH WOOD STAIR; INSTALL NEW VINYL TREADS

WALLS

1. NEW MTL STUD AND GWB PARTITIONS AS SHOWN
2. PATCH AND REPAIR EXISTING WALLS (PLASTER AND GWB). SEE GENERAL NOTES
3. PROVIDE CERAMIC TILE TO 6'-0" AT ALL TOILET ROOMS
4. PATCH MOISTURE DAMAGED PLASTER AT PERIMETER WALLS. SEE GENERAL NOTES AND INTERIOR ELEVATIONS.
5. VEST 101: CLEAN MARBLE WAINSCOT WITH RESTORATION CLEANER. CLEAN AND REPAINT GRILLE
6. ALL INTERIOR PARTITIONS WHICH RECEIVE CERAMIC TILE SHALL BE FRAMED WITH 20 GA. MIN. STUDS AT 12" O.C. W/ HORIZONTAL COLD ROLLED STIFFENER CHANNELS AT 4'-0" O.C., IMAX, AND EXTEND FROM FINISHED FLOOR TO STRUCTURE ABOVE. 20 GA. DIAGONAL STUD KICKERS MUST ALSO BE INSTALLED AT EVERY OTHER VERTICAL STUD ABOVE CEILING.

DOORS, FRAMES

1. NEW DOORS AND FRAMES AS SHOWN, PAINTED P-13, SEE FINISH SCHED
2. EXISTING DOORS AND FRAMES TO REMAIN:
   - A. PATCH AND REPAIR WOOD DOORS; PREP AND REPAINT P-13, SEE FINISH SCHED.
   - B. INSTALL NEW LEVER AND EGRESS HARDWARE.
   - C. PATH AND REPAIR WOOD FRAMES. ASSUME 10% REPLACEMENT OF CASING

WINDOWS

1. INSTALL ALL NEW METAL WINDOWS

WOODWORK

1. EXISTING PERIMETER SHELVING TO REMAIN:
   - A. SAND, PATCH & REPAIR, REPAINT. SEE INTERIOR ELEVATIONS A501-L FOR FINISHES.
2. STAIR 1: REPAIR WOOD WAINSCOT. REPLACE 2 PANELS. SAND AND REPAINT THROUGHOUT. SAND AND REPAINT EXISTING WOOD HANDRAILS. INSTALL NEW HANDRAILS. SEE INTERIOR ELEVATIONS A502-L FOR FINISHES.

CEILINGS:

1. PATCH AND REPAIR PLASTER CEILING, REPAINT P-11. SEE FINISH SCHED.

TOILET ROOMS

1. INSTALL NEW PLUMBING FIXTURES, ACCESSORIES, PARTITIONS AS SHOWN

ELEVATOR

1. INSTALL NEW ELEVATOR AND ENCLOSURE; MATCH EXISTING TRIM.

DRAWING LEGEND

EXISTING WALL / PARTITION

NEW WALL / PARTITION

NEW DOOR

EXISTING DOOR & FRAME TO REMAIN

1i WINDOW NUMBER

101 DOOR NUMBER

1i PARTITION TYPE

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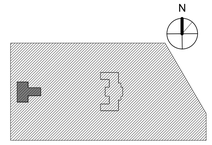

DRAWING TITLE

NEW WORK PLAN - FIRST FLOOR

PROJECT NO.	21070	DRAWING NO.	A102-L
DATE	9/7/22		
SCALE	As indicated		
DRAWN BY	A.F.		
CHECKED BY	D.B.		

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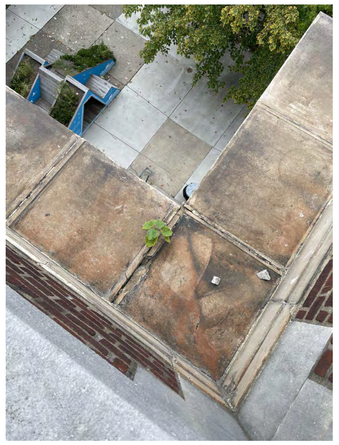


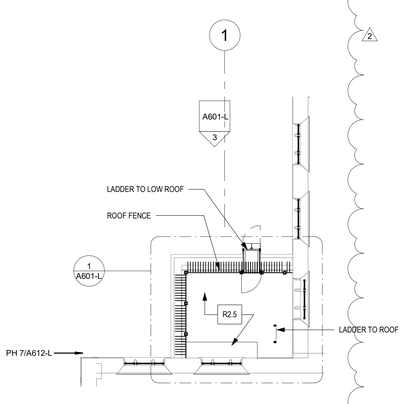
4 ROOF CONDITION - TERRACOTTA CORNICE

5 ROOF CONDITION - TERRACOTTA CORNICE

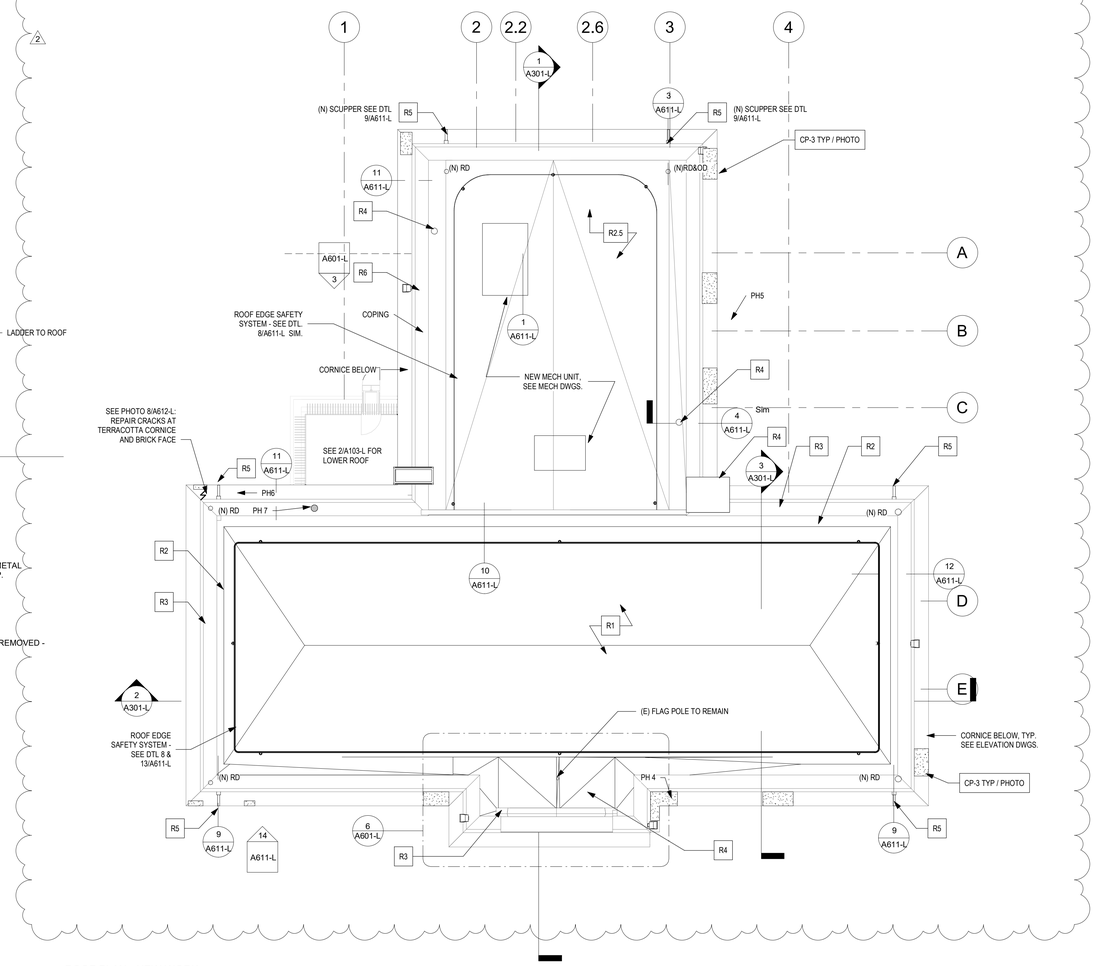
6 ROOF CONDITION - SCUPPER

7 ROOF CONDITION - GRILLE

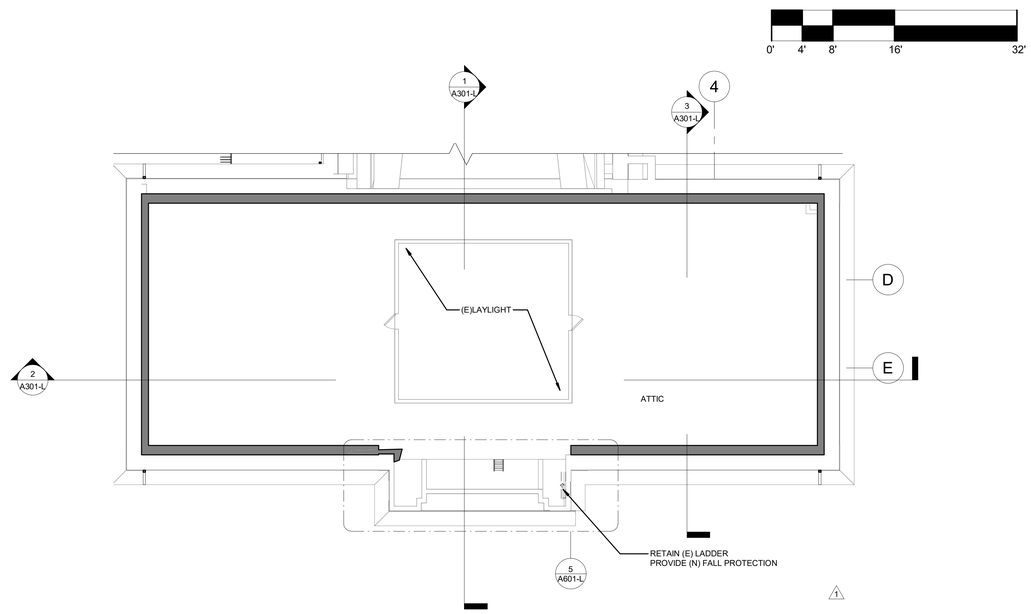
8 ROOF CONDITION - TERRACOTTA CORNICE



2 LOWER ROOF PLAN - NEW WORK
1/8" = 1'-0"



1 ROOF PLAN - NEW WORK
1/8" = 1'-0"



3 ATTIC PLAN -NEW WORK
1/8" = 1'-0"

N

STAMP AREA

SCOPE OF WORK

SEE ELEVATIONS FOR NEW MASONRY WORK AT FRONT SIDE OF PARAPET AND AT CHIMNEYS.

R1: PITCHED SHINGLE ROOF
1. REPLACEMENT: B.O.D. T&G BOARD; ASSUME 30" OF LOWER PORTION AT FULL PERIMETER.
2. PREPARE ROOF DECK FOR INSTALLATION OF NEW FINISH ROOF. INSTALL NEW ROOF UNDERLAYMENT
3. INSTALL NEW INSULATON
4. INSTALL NEW ROOF FINISH AT ALL PITCHED ROOFS AS SHOWN.
5. INSTALL ROOF EDGE SAFETY SYSTEM; ATTACH PER MANUFACTURER'S RECOMMENDATIONS.

R2: BUILT-IN GUTTER
1. PREPARE ROOF DECK FOR INSTALLATION OF NEW GUTTER LINER.
2. INSTALL NEW 4-PLY SBS ROOF MEMBRANE AT BUILT- IN GUTTER SEE DETAILS

R2.5: SBS LOW SLOPE ROOF
1. INSTALL NEW 4-PLY SBS ROOF MEMBRANE AT LOW SLOPE ROOF. SEE 6/A611-L

R3: PARAPET
1. REPOINTING. 100% REPOINTING AT ROOF FACING SIDE
   1. EXTERIOR SIDE – SEE ELEVATIONS.
   2. ALLOW FOR +/- 100 BRICK UNITS REPLACEMENT AT ROOF-FACING SIDE.
   3. SAW-CUT REGLETS AT RISING WALLS.

R4: PENETRATIONS
1. VENT PIPE & EXHAUST FANS; COORD W MEP FOR LOCATIONS
2. CHIMNEYS - STEP FLASHING @ MASONRY, CRICKETS.

R5: ROOF DRAINS TO SCUPPER & LEADER
1. PROVIDE NEW ROOF DRAINS
2. INSTALL NEW SCUPPER. SEE DETAIL 9/A611-L
3. PROVIDE VIDEO SCOPE AT DOWNSPOUT LOCATIONS FROM GROUND OUT TO 150'

R6: COPING (LIMESTONE)
1. REPOINTING. 100% REPOINTING
   A. RAKE OUT EXISTING MORTAR AND REPOINT AT BED JOINTS AND CROSS JOINTS. AT EXTERIOR BED JOINT AND FRONT, TOP, AND BACK JOINTS, HOLD MORTAR BACK APPROX ½" AND INSTALL BACKER AND SEALER.
   B. SEE DETAIL 8/A612-L

MASONRY REPAIR LEGEND
REFER TO DWG A201-L MASONRY REPAIR SCHEDULE

- SPALLS, DAMAGED TERRACOTA
- ABANDONED METAL OBJECT - REMOVE PATCH / REPAIR MASONRY
- CRACK - SEE STRUCTURAL
- PH1 PHOTO REFERENCE

ROOF LEGEND
- LIGHT FIXTURE - SEE ELEVATIONS AND ELEC DWGS
- OVERFLOW SCUPPER - SEE A611-L ROOF DETAILS
- ROOF FENCE
- ROOF LADDER - SEE A601-L ROOF ACCESS DETAILS

1

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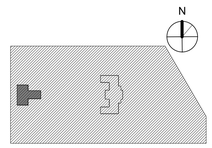

DRAWING TITLE
NEW WORK PLAN - ROOF

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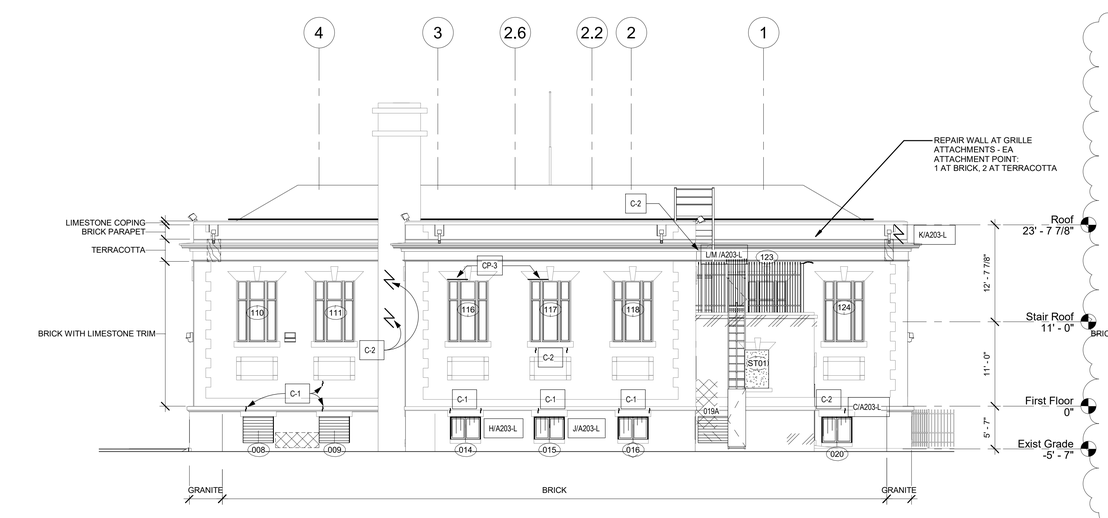
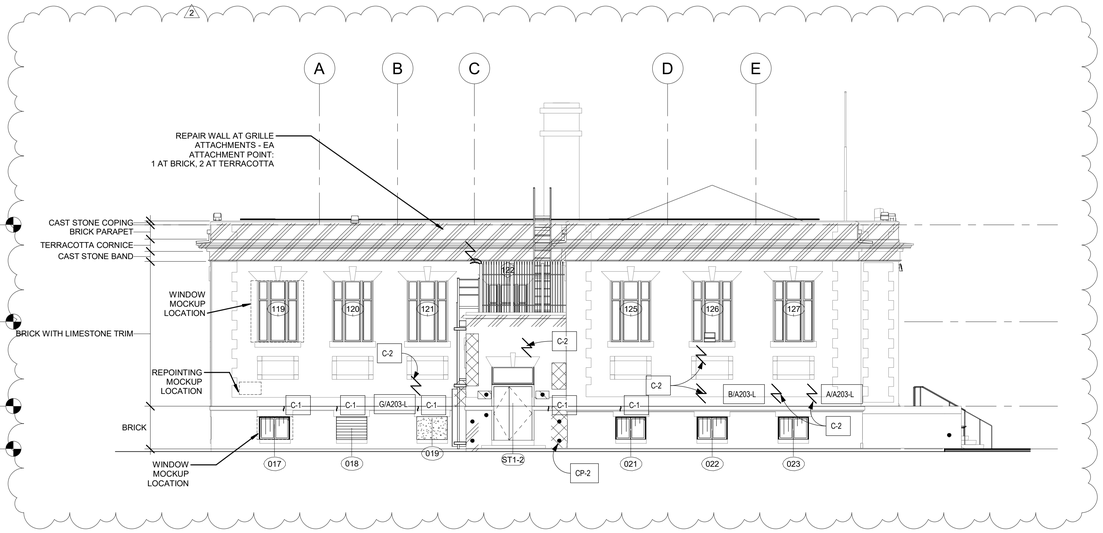


1 EAST ELEVATION - NEW WORK
1/8" = 1'-0"



2 NORTH ELEVATION - NEW WORK
1/8" = 1'-0"

0' 4' 8' 16' 32'

MASONRY REPAIR SCHEDULE

MARK	Condition	Substrate	Treatment	Basis of Design	Color Texture	ASSUMED QTY East	ASSUMED QTY North	Comments
Masonry Repair								
RP-1	Aged / Deteriorated / Open / failed mortar joints.	Brick	100% repoint with historic pointing mortar.	Jahn 110 pointing mortar	MatchSubstrate;assume up to 5 colors	1750 SF	1480 SF	See DTL 7/A612-L
RP-2	Aged / Deteriorated / Open / failed mortar joints.	Terracotta cornice, string band, sill band, and keystone	100% repoint with historic pointing mortar.	Jahn 110 pointing mortar	MatchSubstrate;assume up to 5 colors	250 SF	250 SF	See DTL 2/A612-L
RP-3	Aged / Deteriorated / Open / failed mortar joints.	Lime stone quoins, door surround, banding,sills, entry	100% repoint with historic pointing mortar.	Jahn 110 pointing mortar	MatchSubstrate;assume up to 5 colors	520 LF	650 SF	See DTL 7/A612-L
RP-4	Aged / Deteriorated / Open / failed mortar joints.	Granite base & water table course	100% repoint with historic pointing mortar	Jahn 110 pointing mortar	MatchSubstrate;assume up to 5 colors	100 SF	100 SF	See DTL 7/A612-L
RP-S	Skyward-facing joints.	Terracotta cornice; limestone coping	Repoint and Sealant - see roof plan	Silicone sealant, non-sag, single component	Match Substrate	350 SF	360 SF	Remove existing joint material and clean prior to installing; See DTL 8/A612-L
DM	Spalled Stone; holes	Granite, Limestone	Stone Dutchman Repair	Natural stone - match	Match Substrate	N/A	N/A	See DTL 5/A612-L
RT	Surface Deterioration	Granite	Power wash and clean to remove loose material down to sound material.	N/A	Match Substrate	Assume 20 SF	Assume 20 SF	Notify design team if more than 1" of surface material is removed
C-1	Masonry Crack	All masonry - Vertical cracks (typ at joints)	Saw cut joint, install EJ C-2 Repair of units as needed / indicated	See Spec	Match Substrate	15 LF	10 LF	Assume ave 10 brick repair at each location; See DTL 7/A612-L
C-2	Masonry Crack	All masonry, diagonal and/or thru unit	Grout repair, crack repair, masonry repair and brick repair or replacement	Brick or Soft Stone: Cathedral Stone M32 or M35 injection grout; Granite & Limestone: Cathedral Stone M31	Match Substrate	20 LF	15 LF	M35 for voids larger than 3/8"; Assume ave 5 brick repair at each location; See DTL 6/A612-L
R-1	Displaced Stone	All masonry	Reset stone and point	N/A	N/A	N/A	N/A	
CP-1	Chips, holes, voids	All stone units	Cementitious patch repair	Limestone: Jahn M70; Granite: Jahn M160; TC/Brick: Jahn M100; Pointing Mortar: Jahn M110	Match substrate	Assume 15 locations	Assume 15 Locations	Stone See DTL 5/A612-L
CP-2	Embedded metal objects	All masonry	Remove metal object; cementitious patch repair	Limestone: Jahn M70; Granite: Jahn M160; TC/Brick: Jahn M100; Pointing Mortar: Jahn M110	Match substrate	See Elevations	See Elevations	Clean any rust prior to patching; See DTL 4/A612-L
CP-3	Spalled Bisque, Chips	Terracotta	Cementitous patch repair	Conproco Matrix system or cathedral stone system	Color & finish from manuf selection	1 LOC	2 LOC	Allowance 10 locations; See DTL 1/A612-L
Masonry Cleaning								
CL	Atmospheric soils; biological, Efflorecence	All masonry	Low pressure water cleaning	N/A	N/A	--	--	100% of surface area. Pretreat as needed
RC	Atmostpheric soils; biological, Efflorecence	Granite, terracotta, Limestone, brick	Restoration Chemical Cleaner	Cathedral Stone Bio Cleaner; Light & Heavy Duty Cleaner; Efflorescence Remover	N/A	500 SF	500 SF	Medium to be determined by testing; Pretreat areas before high-pressure water cleaning
OX	Atmostpheric soils; biological, Efflorecence	Limestone	After RC treatment, spot treatment of remaining stains	Cathedral Stone Oxidation Remover or heavy duty cleaner	N/A	50 SF	75 SF	Medium to be determined by testing; protect limestone and terracotta from cleaners; Apply after initial cleaning
RR-1	Rust Staining	Granite, limestone, brick	Rust Remover	Cathedral Stone Rust Remover, Light & Heavy Duty Cleaner	N/A	100 SF	100 SF	Medium to be determined by testing; protect limestone & terracotta from cleaners
RR-2	Rust Staining	Terracotta	Rust Remover	Cathedral Stone	N/A	50 SF	50 SF	
PR	Graffiti Paint	Granite, Brick, Limestone	Paint Remover	Cathedral Stone Graffiti Remover	N/A	500 SF	500 SF	

NOTES: AT AREAS OF FERROUS METAL WHERE REINFORCEMENT IS EXPOSED TO REPAIR AREA OR REPAIRS ARE ADJACENT TO FERROUS METAL JAMBS, LINTELS, OR ANCHORING SYSTEMS, PREPARE METAL SURFACE AND APPLY COATING: B.O.D. COROTECH V160 SURFACE TOLERANT EPOXY MASTIC.

STAMP AREA

EXTERIOR SCOPE NOTES:

1. INSTALL ALL NEW METAL WINDOWS.
2. CLEAN, SCRAPE, AND REPAINT SECURITY BARS AND REINSTALL
3. INSTALL NEW SECURITY BARS AT WINDOW 004
4. INSTALL NEW ALUMINUM AND GLASS DOORS. REPAIR WOOD DOOR FRAME AND TRANSOM; REMOVE EXISTING PAINT, PREP, AND REPAINT.
5. SEE ROOF PLAN FOR WORK AT PARAPET ROOF SIDE.
6. SEE ROOF PLAN FOR NEW ANTI-CLIMBING DEVICE AT CORNICE
7. MASONRY REPAIRS, THROUGHOUT. SEE ALSO STRUCTURAL DRAWINGS.
8. 100% CLEANING WITH RESTORATION CLEANER.
   A. HEAVILY SOILED AREAS:
   B. SKY-FACING SURFACES AT CORNICES, LINTELS, AND BANDING.
   C. PARAPETS
9. REMOVE ALL BIOLOGICAL GROWTH.
10. REMOVE RUST STAINING.
11. 100% REPOINT GRANITE BASE, LIMESTONE & TERRACOTTA
12. REPOINT 100% BRICK AT PARAPET, INCL BACK SIDE.
13. REPOINT BRICK: 100% OF BRICK AT BASE (AFTER PAINT REMOVAL); 100% OF BRICK FACADE ABOVE BASE
14. REPOINT 100% COPING - SEE ROOF PLAN
15. RESECURE CORNER CORNICE PIECE; REPAIR CRACK - SEE PHOTO 8/A103-L; SEE SCHEDULE
16. REPOINT AND SEAL AT ALL SILLS
17. REPAIR CHIPS AT SILLS; ASSUME 50% OF SILLS
18. REPOINT MAIN STAIR
19. NEW ADA COMPLIANT HANDRAILS AT ENTRY STAIR
20. INSTALL NEW HANDRAILS & GUARD RAILS AT EXTERIOR EGRESS STAIR. REBUILD STAIR - SEE PLANS
21. INSTALL NEW HM EXTERIOR DOORS / TRANSOMS AS SCHEDULED
22. INSTALL SECURITY CALL BUTTON AT ELEVATOR
23. INSTALL NEW ALUM & GLASS ENTRY DOOR.
24. CORNICE: AFTER CLEANING, CEMENTITIOUS PATCH REPAIRS, AND REPOINTING, APPLY CATHEDRAL STONE/JAHN CSP POTASSIUM SILICATE (MINERAL) COATING THROUGHOUT.

MASONRY REPAIR GRAPHIC KEY

- BRICK REPLACEMENT / REPAIR / PLUG HOLES - SEE CP-2 REPAIR
- HEAVY SOILING - BIOLOGICAL & ATMOSPHERIC SOILS - SEE RC-1 AND RC-2 TREATMENT
- RUST STAIN REMOVAL - SEE RR TREATMENT
- EFFLORESCENCE AT BRICK - SEE EB TREATMENT
- SPALL / CHIP / HOLE
- CRACK - SEE STRUCTURAL
- CRACK - SEE C-1 AND C-2 REPAIR
- ABANDONED METAL OBJECT - REMOVE PATCH / REPAIR MASONRY
- D — DUTCHMAN REPAIR - SEE REPAIR TREATMENT
- D 5 — DUTCHMAN REPAIR - INDICATES NUMBER - SEE PLANS
- STUCCO INFILL

ELEVATION GRAPHIC KEY

- LOWER LEVEL WINDOW W/ SECURITY SCREEN - SEE WINDOW SCHED
- LOWER LEVEL WINDOW W/ SECURITY BARS - SEE WINDOW SCHED
- (E) MASONRY INFILL AT MASONRY OPENING - SEE WINDOW SCHED
- LOUVER INFILL AT MASONRY OPENING - SEE WINDOW SCHED

REVISIONS

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	09/28/22	ISSUE FOR PERMIT
2	10/13/22	ADDENDUM 2

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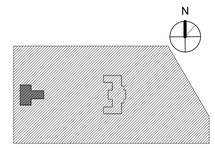
1901 VINE ST
PHILADELPHIA, PA 19103

PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN

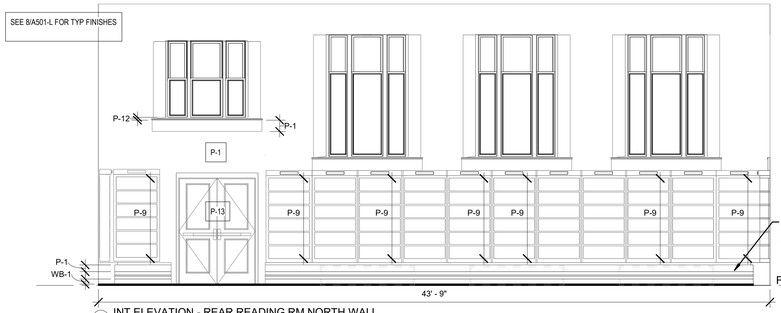


DRAWING TITLE

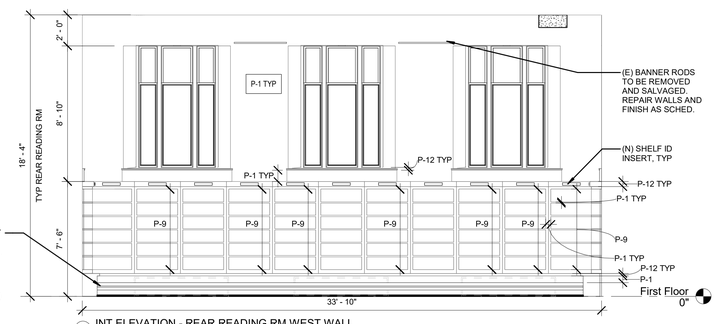
BUILDING ELEVATIONS - EAST & NORTH

PROJECT NO.	DRAWING NO.
21070	A202-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY A.F.	
CHECKED BY D.B.	

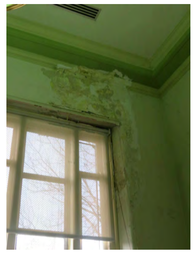
NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



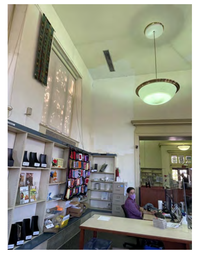
9 INT ELEVATION - REAR READING RM NORTH WALL
1/4" = 1'-0"



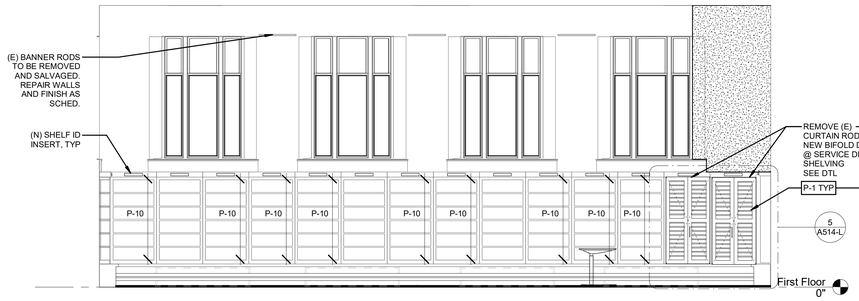
8 INT ELEVATION - REAR READING RM WEST WALL
1/4" = 1'-0"



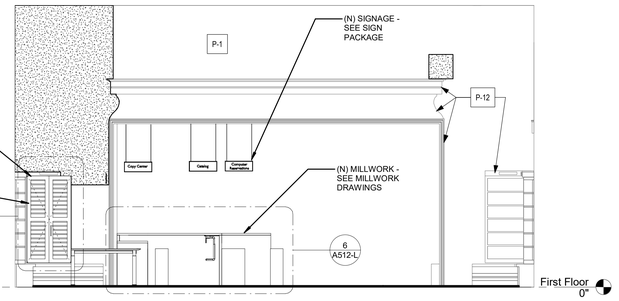
11 INT PLASTER REPAIR



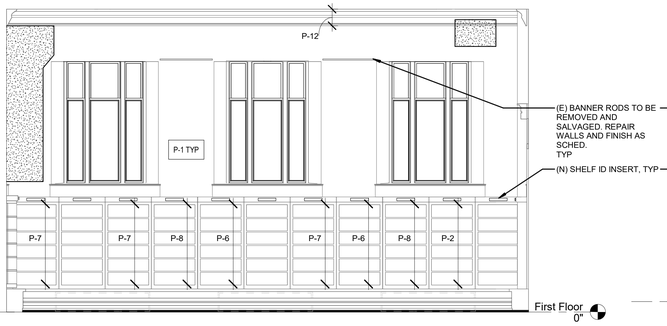
12 INT PLASTER REPAIR



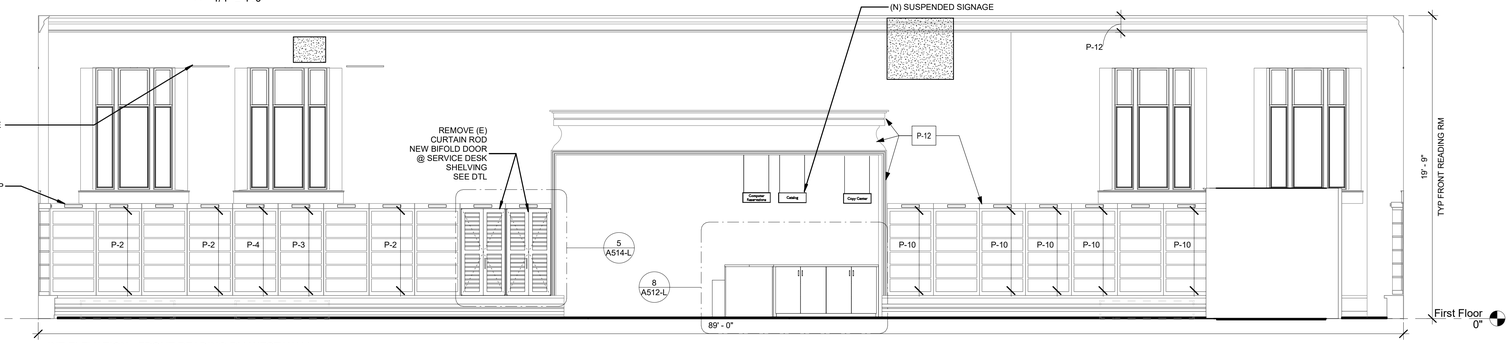
7 INT ELEVATION - REAR READING RM SOUTH WALL
1/4" = 1'-0"



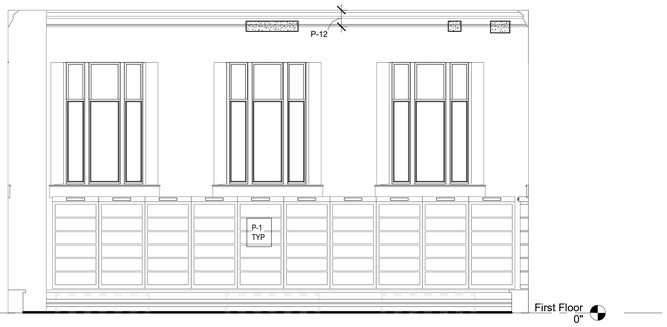
6 INT ELEVATION - REAR READING RM EAST WALL
1/4" = 1'-0"



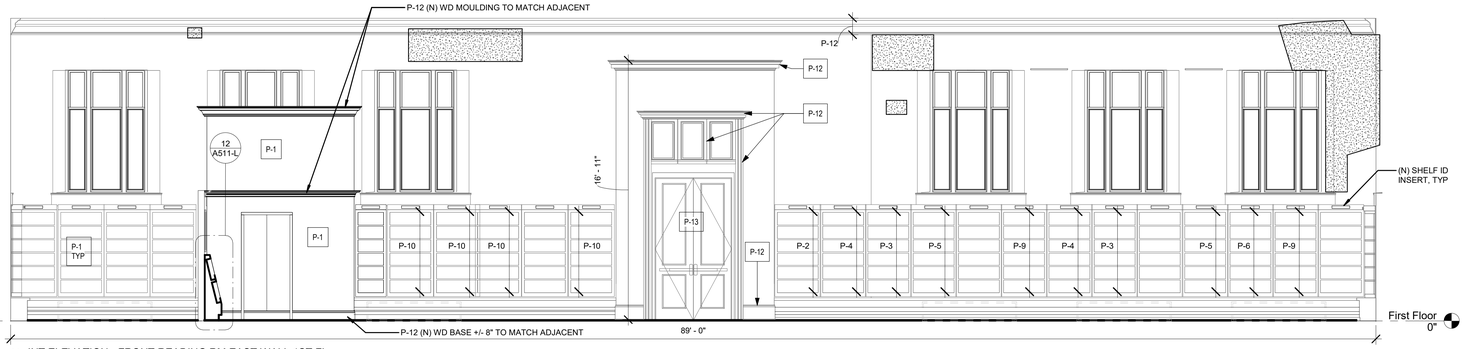
5 INT ELEVATION - FRONT READING RM NORTH WALL 1ST FL
1/4" = 1'-0"



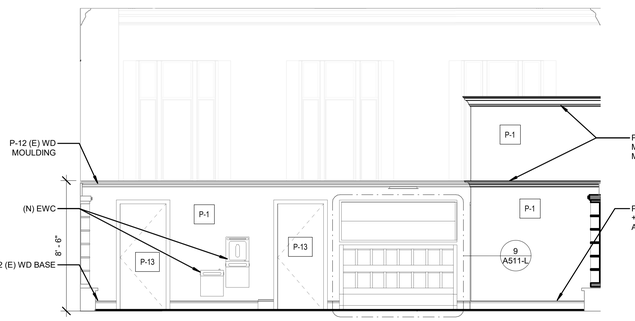
4 INT ELEVATION - FRONT READING RM WEST WALL
1/4" = 1'-0"



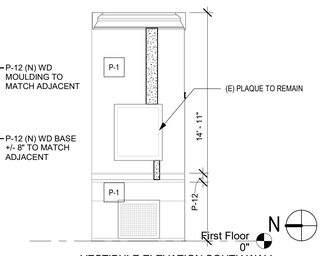
3 INT ELEVATION - STAFF OFFICE 1ST FLOOR SOUTH WALL
1/4" = 1'-0"



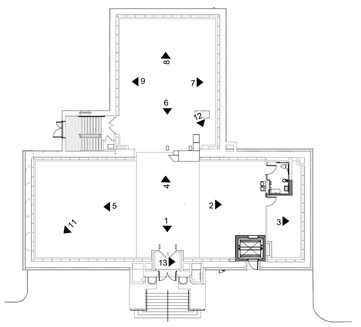
1 INT ELEVATION - FRONT READING RM EAST WALL 1ST FL
1/4" = 1'-0"



2 INT ELEVATION - FRONT READING RM SOUTH WALL
1/4" = 1'-0"



13 VESTIBULE ELEVATION SOUTH WALL
1/4" = 1'-0"



LEGEND

- AREAS OF PLASTER REPAIR - SEE SPEC 09 2300 APPROX. 254 SQUARE FEET
- (E) GRILLES TO BE REMOVED AND SALVAGED. BASE TO BE INFILLED - TYP ALL ELEVATIONS
- (N) RADIATOR - SEE DETAILS 14/A512-L & 15/A512-L

NOTE: SHELF REAR WALLS ARE PAINTED P-1 UNLESS OTHERWISE NOTED ON ELEVATIONS

STAMP AREA

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PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

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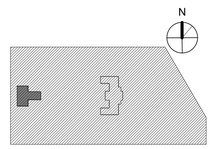

DRAWING TITLE

INTERIOR ELEVATIONS

PROJECT NO.	DRAWING NO.
21070	A501-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY A.F.	
CHECKED BY D.B.	

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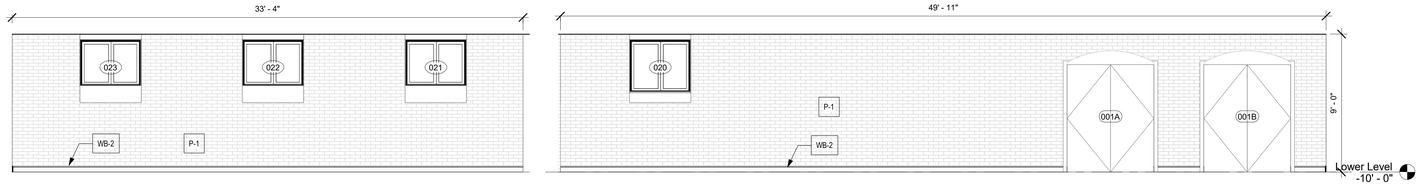
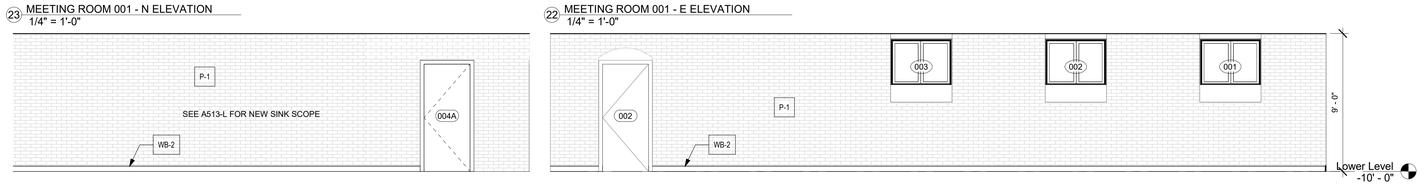


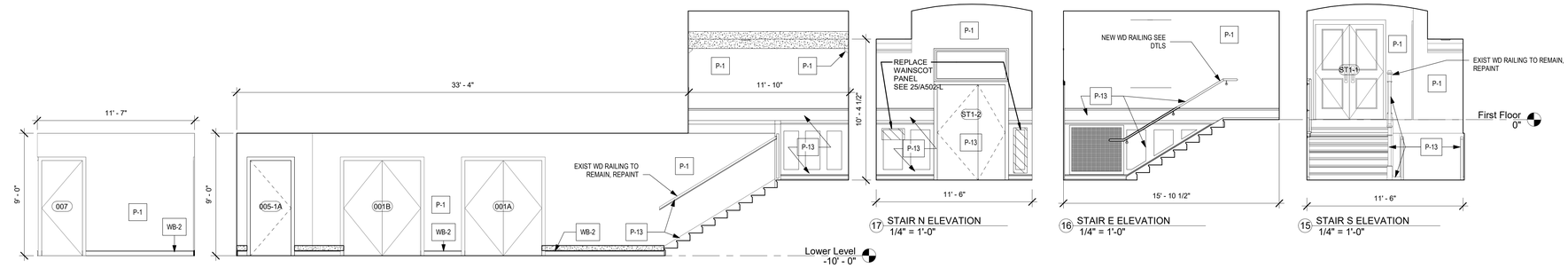
23 MEETING ROOM 001 - N ELEVATION
1/4" = 1'-0"

22 MEETING ROOM 001 - E ELEVATION
1/4" = 1'-0"



21 MEETING ROOM 001 - S ELEVATION
1/4" = 1'-0"

20 MEETING ROOM 001 - W ELEVATION
1/4" = 1'-0"



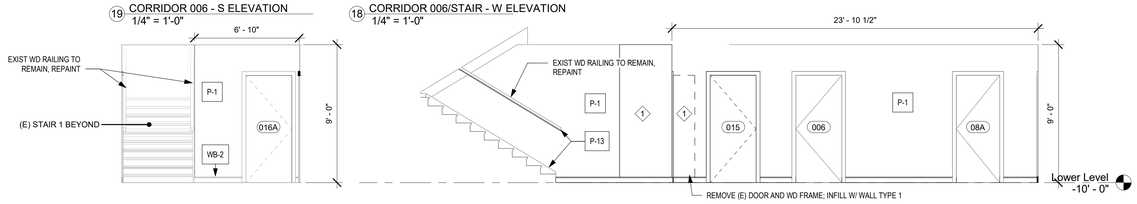
19 CORRIDOR 006 - S ELEVATION
1/4" = 1'-0"

18 CORRIDOR 006/STAIR - W ELEVATION
1/4" = 1'-0"

17 STAIR N ELEVATION
1/4" = 1'-0"

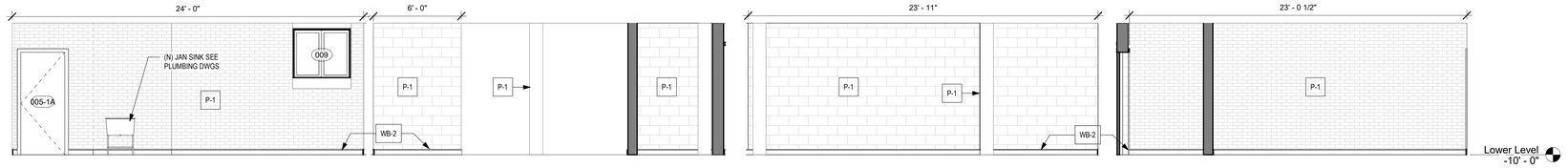
16 STAIR E ELEVATION
1/4" = 1'-0"

15 STAIR S ELEVATION
1/4" = 1'-0"



14 CORRIDOR 006 - N ELEVATION
1/4" = 1'-0"

13 CORRIDOR 006 - E ELEVATION
1/4" = 1'-0"

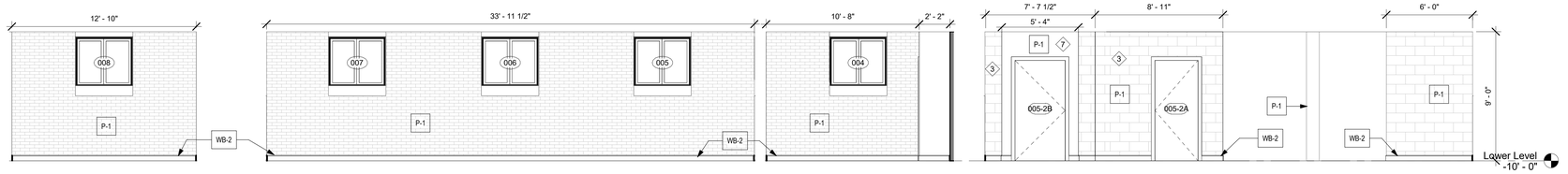


12 BOILER ROOM 005-1 - E ELEVATION
1/4" = 1'-0"

11 BOILER ROOM 005-1 - S ELEVATION
1/4" = 1'-0"

10 BOILER ROOM 005-1 - W ELEVATION
1/4" = 1'-0"

9 BOILER ROOM 005-1 - N ELEVATION
1/4" = 1'-0"

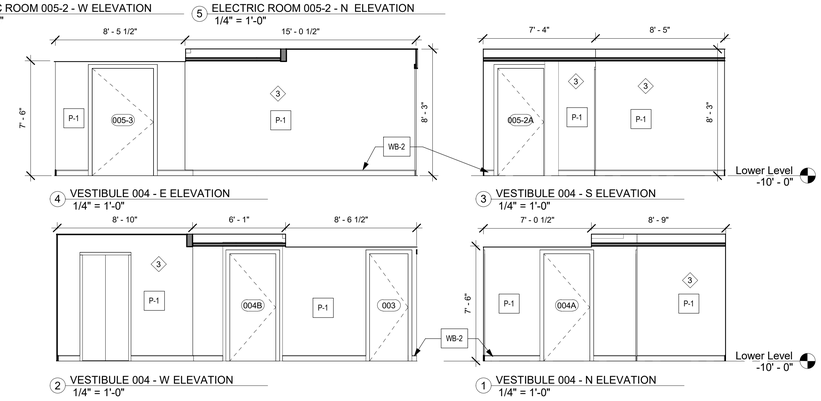


8 ELECTRIC ROOM 005-2 - E ELEVATION
1/4" = 1'-0"

7 ELECTRIC ROOM 005-2 - S ELEVATION
1/4" = 1'-0"

6 ELECTRIC ROOM 005-2 - W ELEVATION
1/4" = 1'-0"

5 ELECTRIC ROOM 005-2 - N ELEVATION
1/4" = 1'-0"



4 VESTIBULE 004 - E ELEVATION
1/4" = 1'-0"

3 VESTIBULE 004 - S ELEVATION
1/4" = 1'-0"

2 VESTIBULE 004 - W ELEVATION
1/4" = 1'-0"

1 VESTIBULE 004 - N ELEVATION
1/4" = 1'-0"

STAMP AREA

2

LEGEND

AREAS OF PLASTER REPAIR - SEE SPEC 09 2300
APPROX. 254 SQUARE FEET

(E) GRILLES TO BE REMOVED AND SALVAGED, BASE TO BE INFILLED - TYP ALL ELEVATIONS

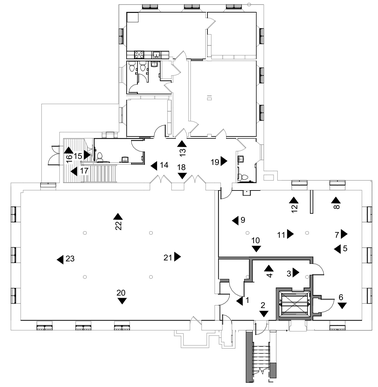
(N) RADIATOR - SEE DETAILS 14/A512-L & 15/A512-L

2

25 INT REPAIR
12" = 1'-0"

GENERAL NOTES:

1. REMOVE EXISTING PAINT FINISH FROM INTERIOR SURFACES, ALLOW FOR DESIGN PROFESSIONAL INSPECTION, AND THEN PAINT
2. REMOVE VINYL BASE, CLEAN AND REPAIR SUBSURFACE, ALLOW FOR DESIGN PROFESSIONAL INSPECTION, INSTALL NEW BASE AS SCHED
3. FOR INFILLED WINDOWS TO REMAIN: REMOVE EXISTING PAINT FINISH FROM WINDOW SURROUND SURFACES, REPAINT. SCRAPE AND REPAINT WOOD WINDOW FRAME
4. REPAIR/REPLACE EXISTING WAINSCOTING, 2 PANELS NEED REPLACED/REPAIRED. SCRAPE AND REPAINT.
5. REPLACE (E) WD RAILING AS INDICATED- SEE DTLS A451-L
6. REFER TO FINISH SCHEDULE FOR MATERIAL AND FINISH
7. ALL LOWER LEVEL DOORS AND DOOR FRAMES TO BE PAINTED P-13



24 LOWER LEVEL KEY PLAN_NEW
1/16" = 1'-0"

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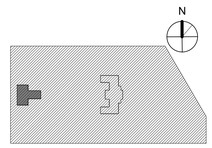
PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN



DRAWING TITLE

INTERIOR ELEVATIONS

PROJECT NO.	DRAWING NO.
21070	A502-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY A.F.	
CHECKED BY D.B.	

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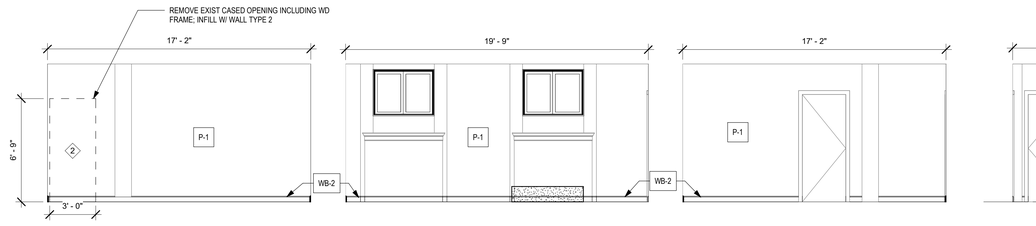
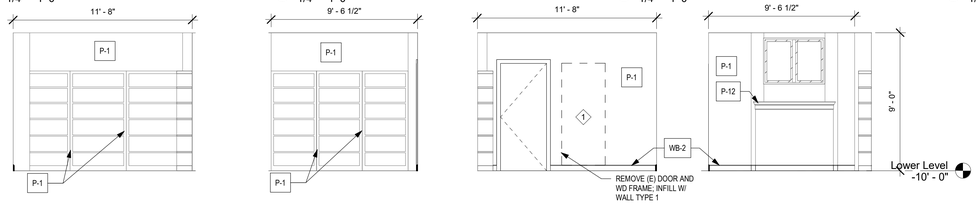


16 CLASSROOM - NORTH ELEVATION
1/4" = 1'-0"

15 CLASSROOM - EAST ELEVATION
1/4" = 1'-0"

14 CLASSROOM - SOUTH ELEVATION
1/4" = 1'-0"

13 CLASSROOM - WEST ELEVATION
1/4" = 1'-0"

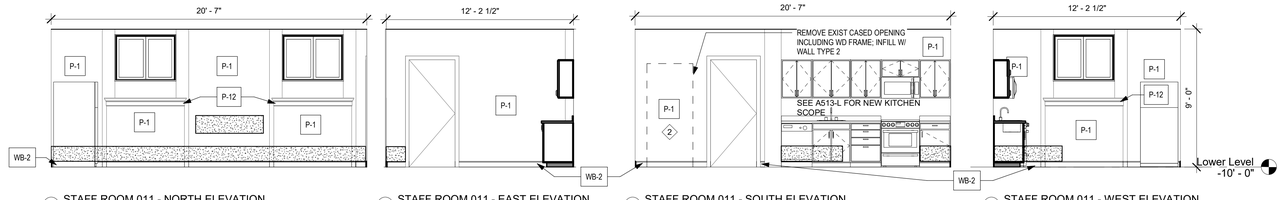


12 GUARD RM - NORTH ELEVATION
1/4" = 1'-0"

11 GUARD RM - EAST ELEVATION
1/4" = 1'-0"

10 GUARD RM - SOUTH ELEVATION
1/4" = 1'-0"

9 GUARD RM - WEST ELEVATION
1/4" = 1'-0"

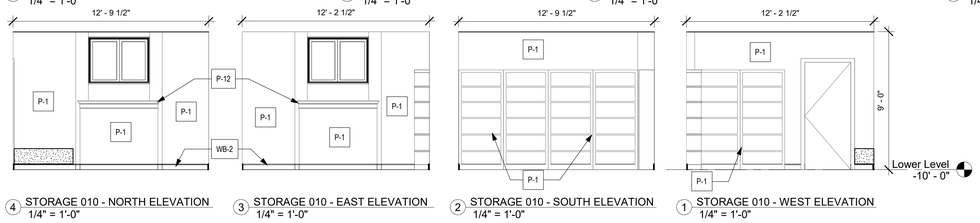


8 STAFF ROOM 011 - NORTH ELEVATION
1/4" = 1'-0"

7 STAFF ROOM 011 - EAST ELEVATION
1/4" = 1'-0"

6 STAFF ROOM 011 - SOUTH ELEVATION
1/4" = 1'-0"

5 STAFF ROOM 011 - WEST ELEVATION
1/4" = 1'-0"

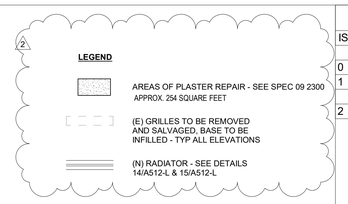


4 STORAGE 010 - NORTH ELEVATION
1/4" = 1'-0"

3 STORAGE 010 - EAST ELEVATION
1/4" = 1'-0"

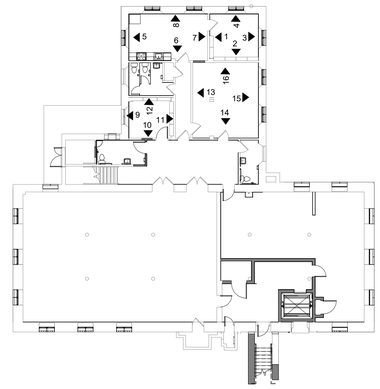
2 STORAGE 010 - SOUTH ELEVATION
1/4" = 1'-0"

1 STORAGE 010 - WEST ELEVATION
1/4" = 1'-0"



GENERAL NOTES:

1. REMOVE EXISTING PAINT FINISH FROM INTERIOR SURFACES, ALLOW FOR DESIGN PROFESSIONAL INSPECTION, AND THEN PAINT
2. REMOVE VINYL BASE, CLEAN AND REPAIR SUBSURFACE, ALLOW FOR DESIGN PROFESSIONAL INSPECTION, INSTALL NEW BASE AS SCHED
3. FOR INFILLED WINDOWS TO REMAIN: REMOVE EXISTING PAINT FINISH FROM WINDOW SURROUND SURFACES, REPAINT. SCRAPE AND REPAINT WOOD WINDOW FRAME
4. REPAIR/REPLACE EXISTING WAINSCOTING, 2 PANELS NEED REPLACED/REPAIRED. SCRAPE AND REPAINT.
5. REPLACE (E) WD RAILING AS INDICATED- SEE DTLS A451-L
6. REFER TO FINISH SCHEDULE FOR MATERIAL AND FINISH
7. ALL LOWER LEVEL DOORS AND DOOR FRAMES TO BE PAINTED P-13



17 LOWER LEVEL KEY PLAN_NEW 2
1/16" = 1'-0"

STAMP AREA

REVISIONS		
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SEALS

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Verde Architecture Consulting
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CITY OF PHILADELPHIA

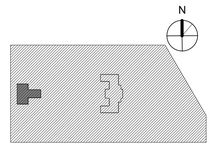
FREE LIBRARY OF PHILADELPHIA
1901 VINE ST
PHILADELPHIA, PA 19103

PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN

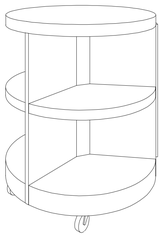


DRAWING TITLE

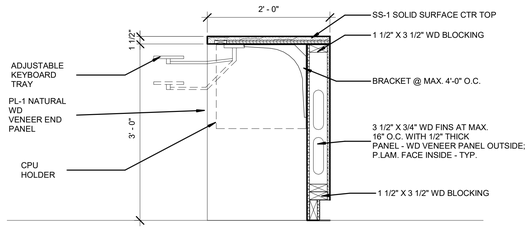
INTERIOR ELEVATIONS

PROJECT NO.	21070	DRAWING NO.	A503-L
DATE	9/7/22		
SCALE	As indicated		
DRAWN BY	A.F.		
CHECKED BY	D.B.		

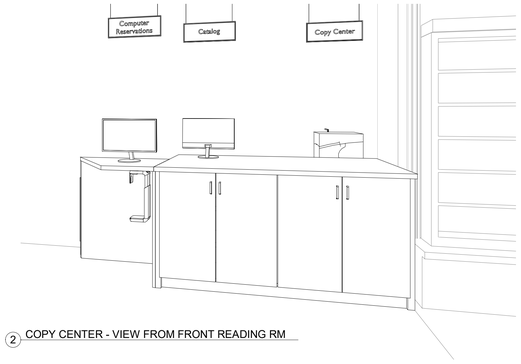
NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



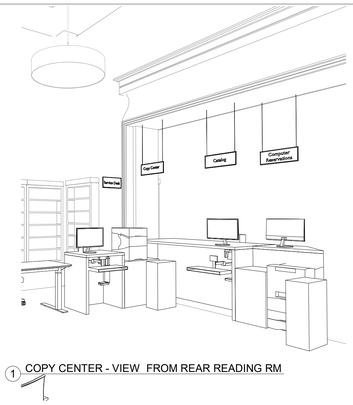
4 CIRCULAR DISPLAY



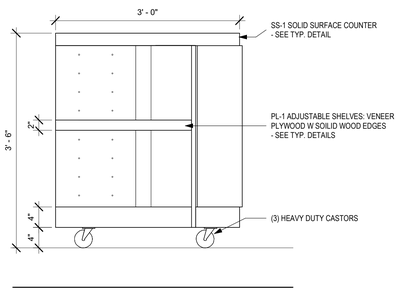
3 SECTION AT COMPUTER SIDE
1" = 1'-0"



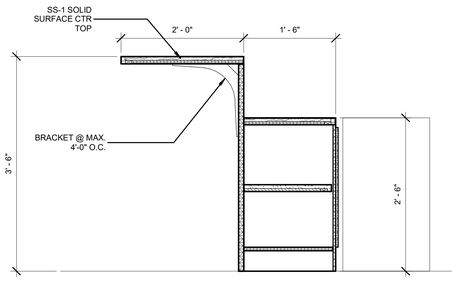
2 COPY CENTER - VIEW FROM FRONT READING RM



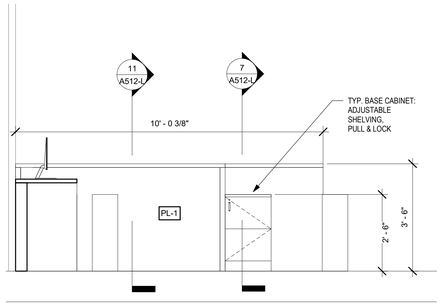
1 COPY CENTER - VIEW FROM REAR READING RM



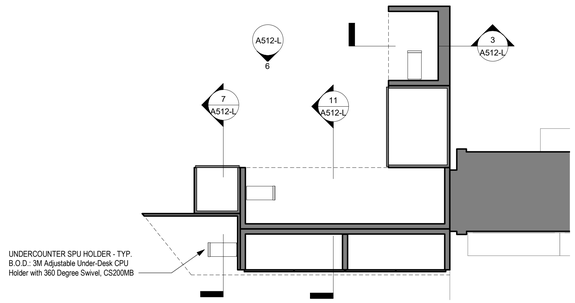
8 DISPLAY UNIT ELEVATION
1" = 1'-0"



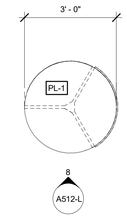
7 SECTION AT LOW COUNTER/RESERVATION COMPUTER
1" = 1'-0"



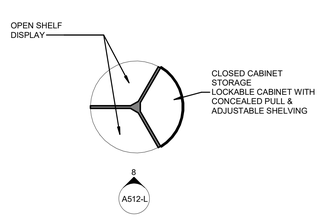
6 PRINTER AREA -SECTION/ELEVATION AT PRINTERS/CATALOG COMPUTER
1/2" = 1'-0"



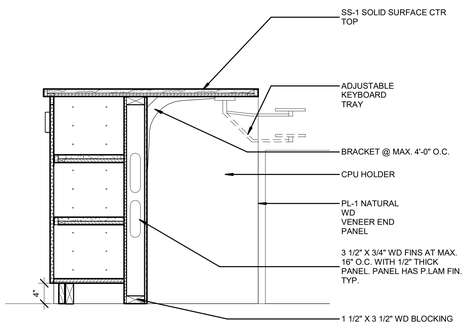
5 PRINTER AREA ENLARGED CUT PLAN
1/2" = 1'-0"



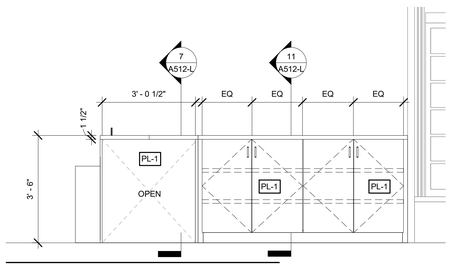
13 CIRCULAR DISPLAY UNIT PLAN
1/2" = 1'-0"



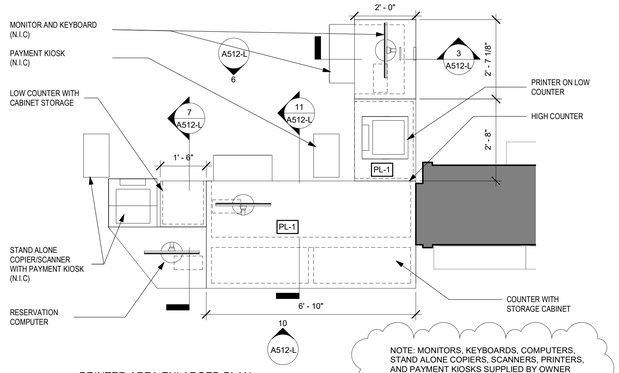
12 CIRCULAR DISPLAY UNIT CUT PLAN
1/2" = 1'-0"



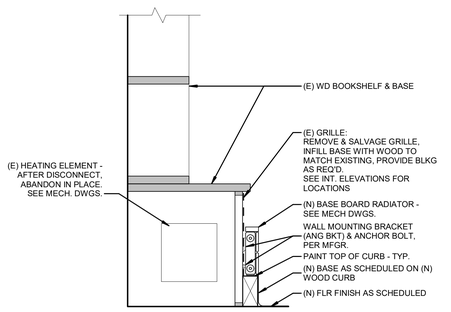
11 SECTION AT HIGH COUNTER/STORAGE CABINET
1" = 1'-0"



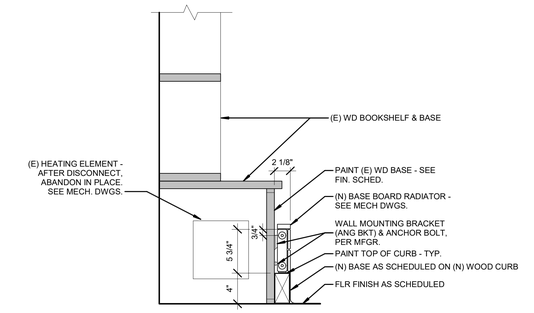
10 DISPLAY UNIT ELEVATION
1/2" = 1'-0"



9 PRINTER AREA ENLARGED PLAN
1/2" = 1'-0"



15 SECTION DETAIL AT RADIATOR - GRILLE
1 1/2" = 1'-0"



14 SECTION DETAIL AT RADIATOR -TYP
1 1/2" = 1'-0"

STAMP AREA

REVISIONS		
ISSUE	DATE	DESCRIPTION
0	09/07/22	ISSUE FOR BID
1	09/26/22	ISSUE FOR BID
	09/28/22	ISSUE FOR PERMIT
2	10/13/22	ADDENDUM 2

REVIEWED BY:

PROJECT COORDINATOR

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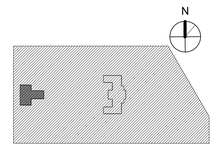
PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN



DRAWING TITLE

MILLWORK - COPY CENTER, MOBILE DISPLAY, & RADIATOR DTLS

PROJECT NO. 21070

DATE 9/7/22

SCALE As indicated

DRAWN BY M.K.

CHECKED BY D.B.

A512-L

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

NEW MEP SYSTEMS THROUGHOUT - SEE MEP DWGS.

SEE ELEC DWGS FOR ELEC SCOPE
SEE ELEC DWGS FOR LIGHT FIXTURE SCHED AND LAYOUTS

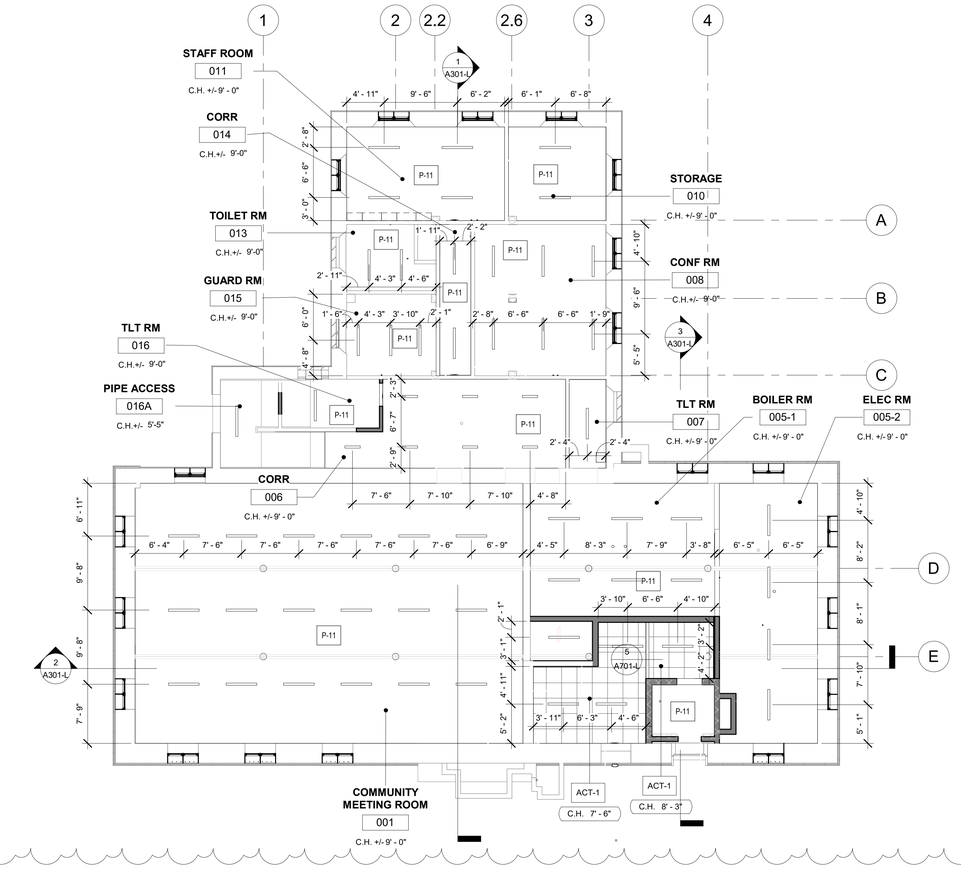
1. PATCH AND REPAIR PLASTER AND GWB CEILING, AT ALL AREAS, INCLUDING NEW PANEL OR DIFFUSER LOCATIONS, WHERE NOTED.
   PREP AND PAINT. SEE FINISH SCHED. FOR COLOR(S)
2. INSTALL ACCESS PANEL AT VOL. DAMPER LOCATIONS - COORDINATE WITH MECH.
   A. BOD: 16" X 16" CONCEALED FLANGE WITH DRYWALL INSERT
   B. LOCATIONS AS INDICATED.
   C. VOL. DAMPERS UNDER PITCHED ROOF ACCESSED IN ATTIC

1. VEST. 004.
   A. INSTALL NEW ACT

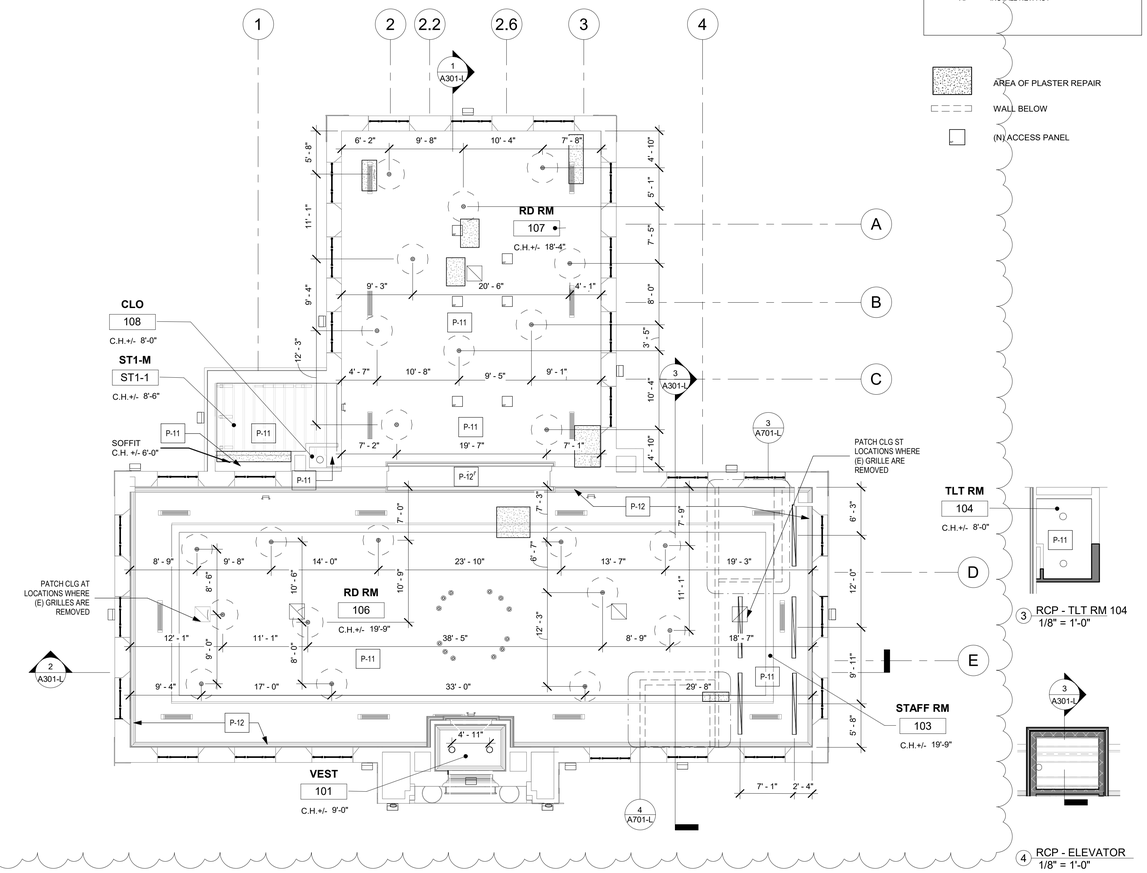
AREA OF PLASTER REPAIR

WALL BELOW

(N) ACCESS PANEL



2 LOWER LEVEL RCP
1/8" = 1'-0"

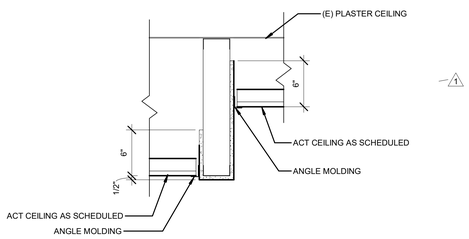


1 First FlOOR RCP
1/8" = 1'-0"

0' 4' 8' 16' 32'

3 RCP - TLT RM 104
1/8" = 1'-0"

4 RCP - ELEVATOR
1/8" = 1'-0"



5 ACT SOFFIT DETAIL
1 1/2" = 1'-0"

STAMP AREA

REVISIONS		
ISSUE	DATE	DESCRIPTION
0	09/07/22	ISSUE FOR BID
1	09/26/22	ISSUE FOR BID
	09/28/22	ISSUE FOR PERMIT
2	10/13/22	ADDENDUM 2

REVIEWED BY:

PROJECT COORDINATOR

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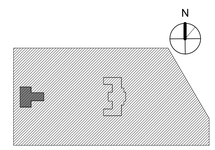
PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN

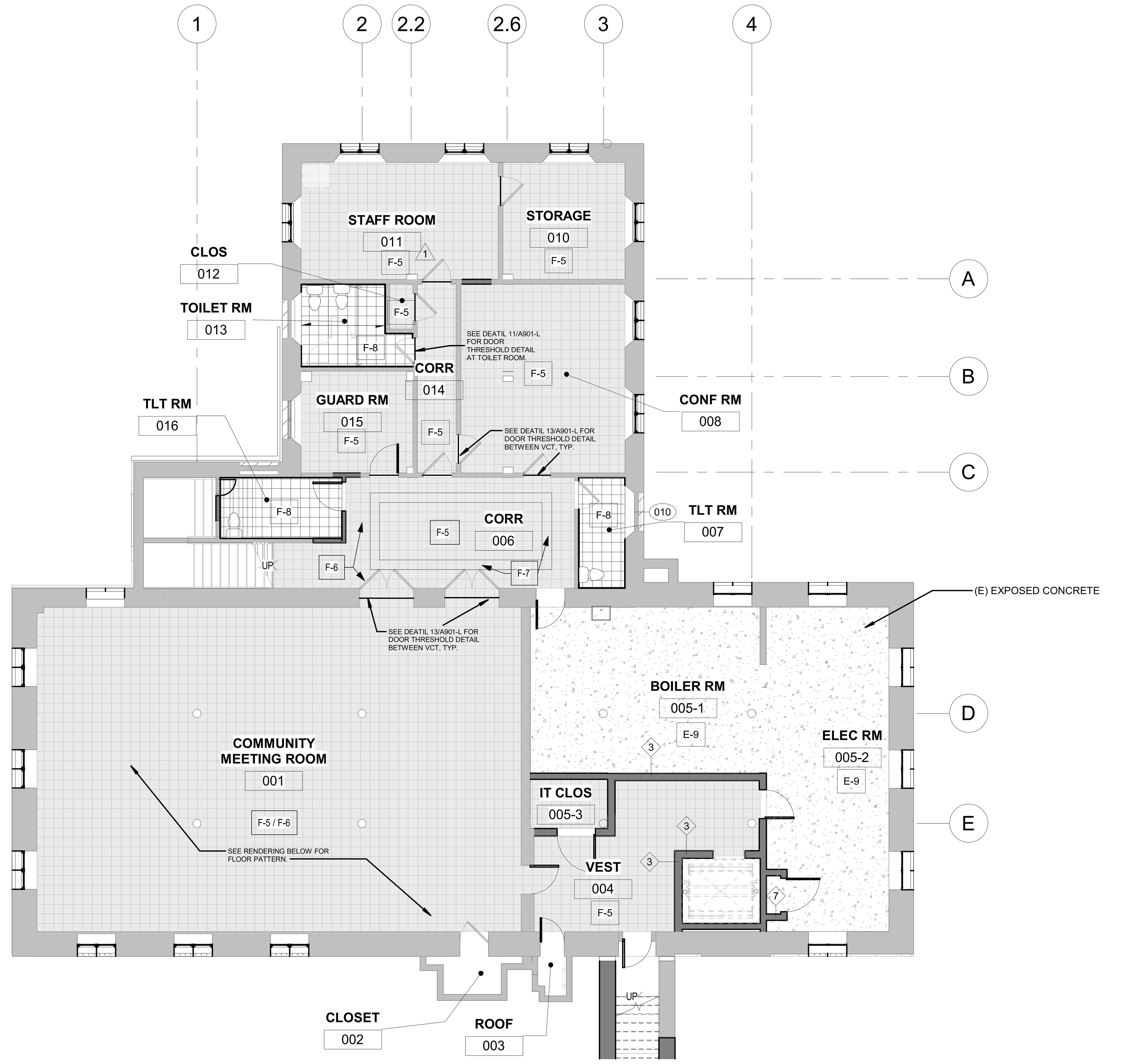


DRAWING TITLE

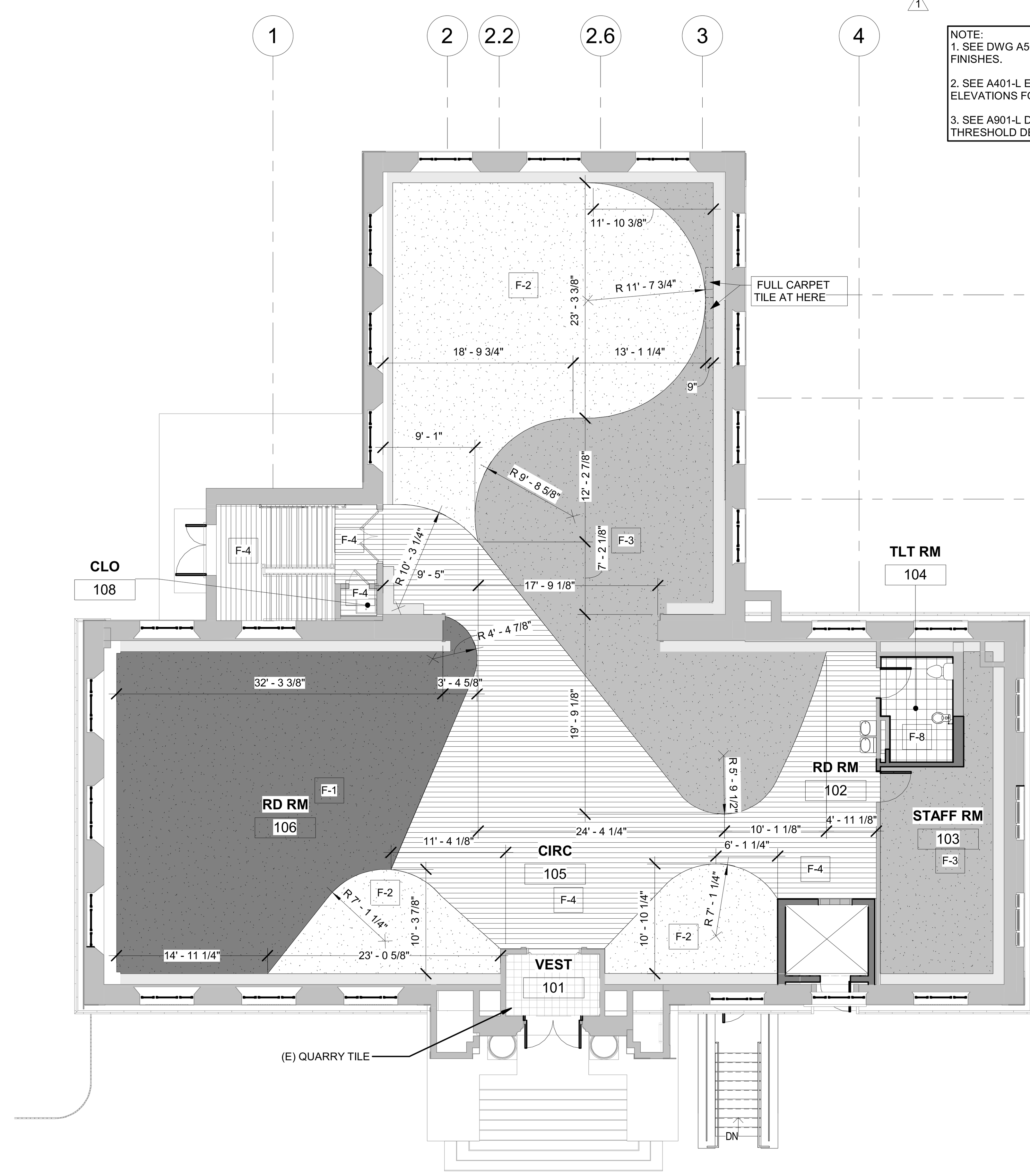
REFLECTED CEILING PLANS

PROJECT NO.	21070	DRAWING NO.	A701-L
DATE	9/7/22		
SCALE	As indicated		
DRAWN BY	A.F.		
CHECKED BY	D.B.		

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



2 LOWER LEVEL - FINISH PLAN
1/8" = 1'-0"



1 FIRST FLOOR - FINISH PLAN
1/8" = 1'-0"

NOTE:
1. SEE DWG A501, 502, 503 INTERIOR ELEVATONS FOR WALL FINISHES.

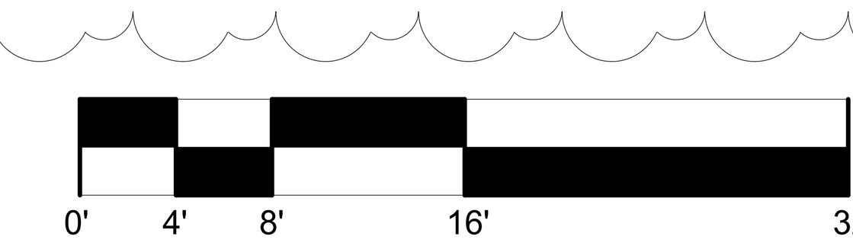
2. SEE A401-L ENLARGED RESTROOM PLANS AND ELEVATIONS FOR FINISHES.

3. SEE A901-L DOOR & PARTITION SCHEDULES FOR THRESHOLD DETAILS.

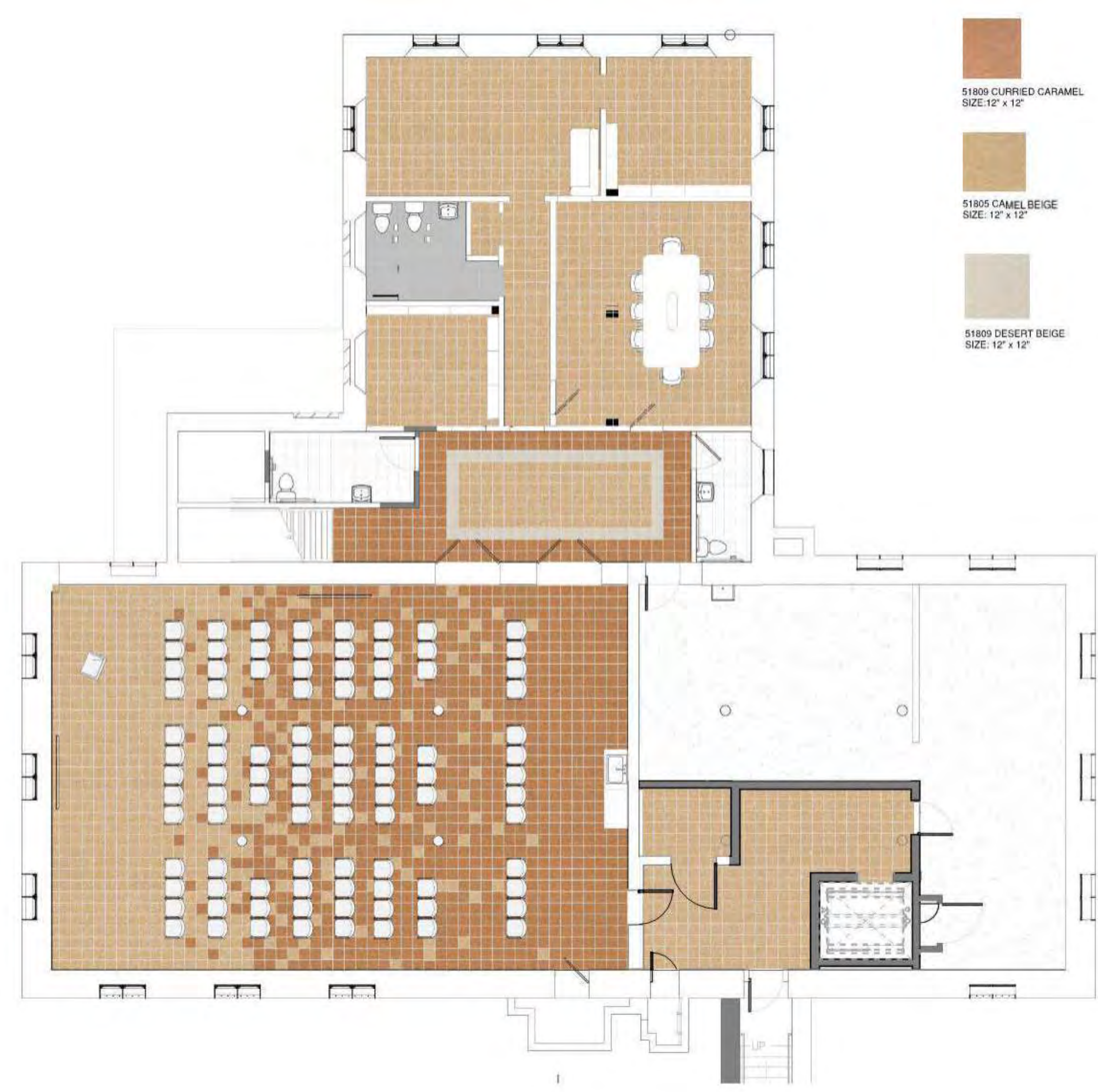
FINISH MATERIALS

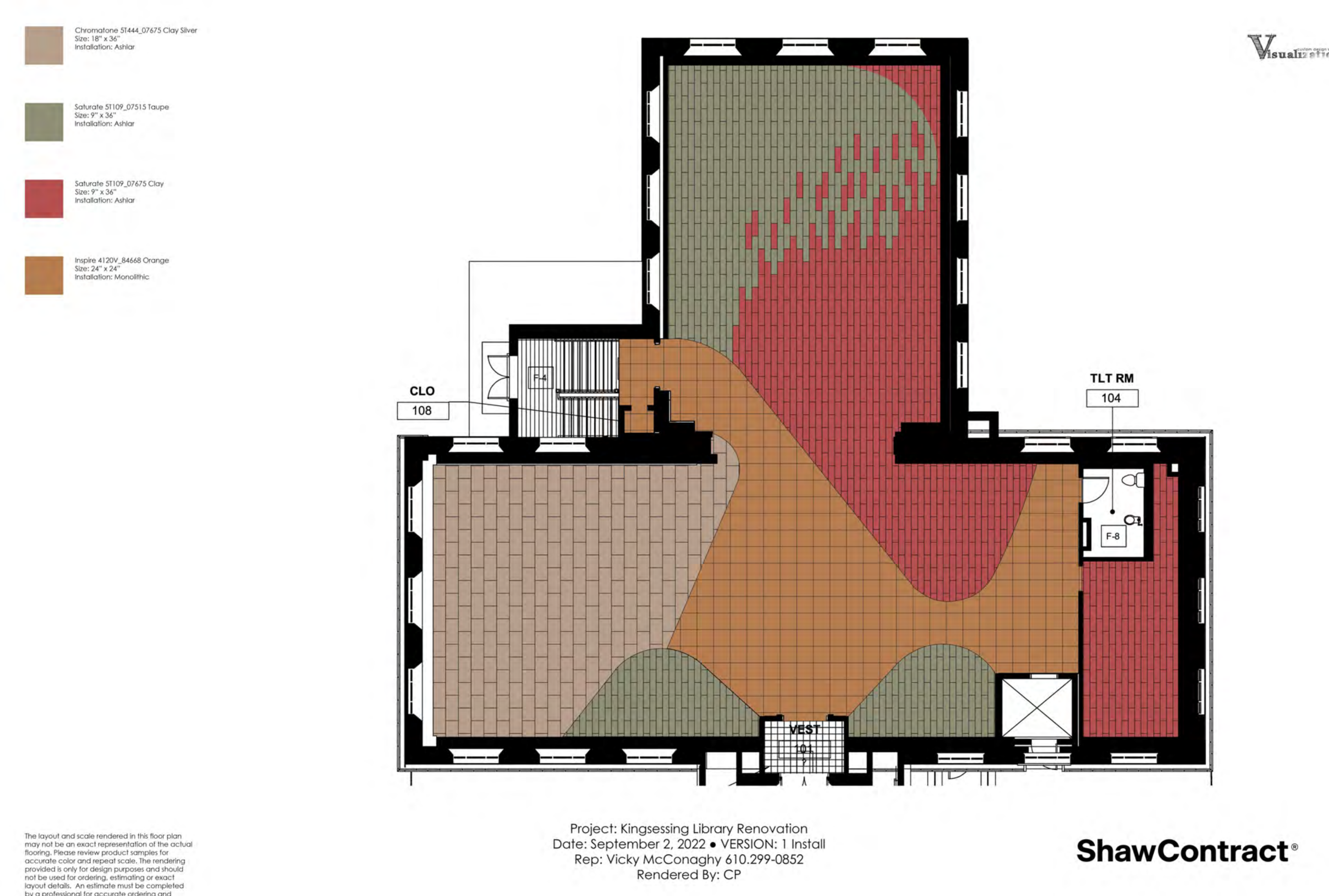
TAG	MATERIAL	MANUFACTURER	MODEL	FINISH	NOTES
F-1	CARPET TILE	SHAW CONTRACT	CHROMATONE TILE - 5T444	CLAY SILVER - 07675	ASHLAR INSTALLATION METHOD, WB-1
F-2	CARPET TILE	SHAW CONTRACT	SATURATE TILE - 5T109	TAUPE - 07515	ASHLAR INSTALLATION METHOD, WB-1
F-3	CARPET TILE	SHAW CONTRACT	SATURATE TILE - 5T109	CLAY - 07675	ASHLAR INSTALLATION METHOD, WB-1
F-4	LVT	SHAW CONTRACT	INSPIRE 5.0MM - 4120V	ORANGE - 84668	MONOLITHIC INSTALLATION METHOD, WB-1
F-5	VCT MAIN TILE	ARMSTRONG	IMPERIAL TEXTURE	51805 - CAMEL BEIGE	PATTERN AS SCHEDULED, WB-2
F-6	VCT ACCENT TILE	ARMSTRONG	IMPERIAL TEXTURE	51942 - CURRIED CARAMEL	PATTERN AS SCHEDULED, WB-2
F-7	VCT ACCENT TILE	ARMSTRONG	IMPERIAL TEXTURE	51809 - DESERT BEIGE	PATTERN AS SCHEDULED, WB-2
F-8	PORCELAIN TILE	DALTILE	KIMONA SILK	MORNING DOVE P325	12"x12" IN SIZE WITH 6"X12" COVE BASE, GROUT COLOR: G-2
CT-1	CERAMIC TILE	DALTILE	COLOR WHEEL CLASSIC	BISCUIT K175	4" x 4" IN SIZE, GROUT COLOR: G-1
CT-2	CERAMIC TILE	DALTILE	COLOR WHEEL CLASSIC	SPA 0148	4" x 4" IN SIZE, GROUT COLOR: G-1
G-1	GROUT COLOR	CUSTOM	FUSION PRO	#434 BLEACHED WOOD	WALL
G-2	GROUT COLOR	CUSTOM	FUSION PRO	TBD	FLOOR
WB-1	WALL BASE	ROPPE	PINNACLE RUBBER BASE	148 STEEL GRAY	FIRST FLOOR
WB-2	WALL BASE	ROPPE	PINNACLE RUBBER BASE	125 FIG	LOWER FLOOR
P-1	GENERAL PAINT	SHERWIN WILLIAMS	SW9504	EGGSHELL FINISH	WALL THROUGH OUT, GENERAL SHELVING, DOOR AND FRAME PAINT. PROVIDE LEVEL 4 MIN. GWB FINISH.
P-2	ACCENT PAINT (RED)	SHERWIN WILLIAMS	SW6866	EGGSHELL FINISH	PAINT BACK OF SHELVING AT KIDS AREA.
P-3	ACCENT PAINT (ORANGE)	SHERWIN WILLIAMS	SW6892	EGGSHELL FINISH	
P-4	ACCENT PAINT (YELLOW)	SHERWIN WILLIAMS	SW6907	EGGSHELL FINISH	
P-5	ACCENT PAINT (GREEN)	SHERWIN WILLIAMS	SW6918	EGGSHELL FINISH	
P-6	ACCENT PAINT (TEAL)	SHERWIN WILLIAMS	SW6769	EGGSHELL FINISH	
P-7	ACCENT PAINT (BLUE)	SHERWIN WILLIAMS	SW6795	EGGSHELL FINISH	
P-8	ACCENT PAINT (PURPLE)	SHERWIN WILLIAMS	SW6982	EGGSHELL FINISH	
P-9	ACCENT PAINT (NAVY)	SHERWIN WILLIAMS	SW6523	EGGSHELL FINISH	PAINT BACK OF SHELVING AT ADULT AREA.
P-10	ACCENT PAINT (DARK RED)	SHERWIN WILLIAMS	SW7598	EGGSHELL FINISH	PAINT BACK OF SHELVING AT TEEN AREA.
P-11	CEILING PAINT	SHERWIN WILLIAMS	SW7007	EGGSHELL FINISH	PROVIDE LEVEL 4 MIN. GWB FINISH.
P-12	SHELVING SILL PAINT	SHERWIN WILLIAMS	SW9006	EGGSHELL FINISH	PROVIDE LEVEL 4 MIN. GWB FINISH.
P-13	DOOR AND DOOR FRAME PAINT	SHERWIN WILLIAMS	SW7024	EGGSHELL FINISH	LOWER FLOOR DOOR, DOOR FRAME AND STAIR.
PL-1	WOOD VENEER LAMINATE	WILSONART	NEW AGE OAK 7938-38	-	SOLID WOOD EDGING TO MATCH
SS-1	SOLID SURFACE	WILSONART	MYSTIQUE 9200CS	-	-
E-1	EXISTING CONCRETE	ETR	ETR	CLEAN; SEALER	-
E-2	EXISTING QUARRY TILE	ETR	ETR	CLEAN AND PATCH AS NEEDED	-
ACT-1	ACOUSTIC CEILING TILE	ARMSTRONG	2X2 LAY IN TILE, CIRRUS		11/16" GRID , TEGULAR EDGE

LVT
VCT
CERAMIC TILE
(E) QUARRY TILE
CARPET TILE
CARPET TILE
CARPET TILE
(E) EXPOSED CONCRETE



STAMP AREA





Project: Kingsessing Library Renovation
Date: September 2, 2022 • VERSION: 1 Install
Rep: Vicky McConaghy 610 299-0852
Rendered By: CP

ShawContract®

REVISIONS

ISSUE	DATE	DESCRIPTION
0	09/07/22	ISSUE FOR BID
1	09/26/22	ISSUE FOR BID
	09/28/22	ISSUE FOR PERMIT
2	10/13/22	ADDENDUM 2

REVIEWED BY:

PROJECT COORDINATOR

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PROJECT TITLE

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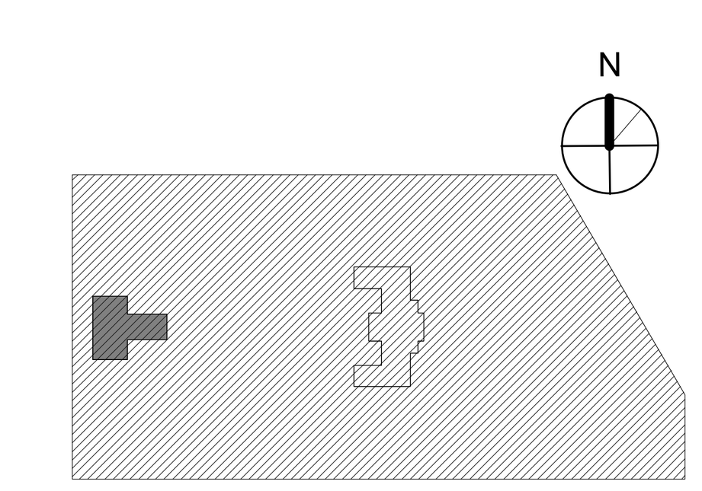
KEY PLAN



DRAWING TITLE

FINISH PLANS AND SCHEDULES

PROJECT NO.	DRAWING NO.
21070	A801-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY M.W.	
CHECKED BY D.B.	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

FURNITURE SCHEDULE - FIRST FLOOR

Type Mark	Count	MANUFACTURER	DESCRIPTION	COMMENTS	FLOOR LEVEL
CH-1	7	HAWORTH	JULI SIDE CHAIR	-	FIRST FLOOR
CH-2	3	HAWORTH	CHICK POUF	WITH BACKREST	FIRST FLOOR
CH-3	1	HAWORTH	CHICK POUF	WITHOUT BACKREST	FIRST FLOOR
CH-4	7	THE HON COMPANY	TANGRAM POUFS - VARSITY HEXAGON	-	FIRST FLOOR
CH-5	9	THE HON COMPANY	TANGRAM POUFS - JV HEXAGON	-	FIRST FLOOR
CH-6	6	THE HON COMPANY	TANGRAM STORY STEPS - BENCH	-	FIRST FLOOR
CH-7 BY OTHER	1	-	NURSING GLIDER	-	FIRST FLOOR
CH-8	18	THE HON COMPANY	REVEL - EDUCATION FIDGET STOOL	-	FIRST FLOOR
CH-9	3	THE HON COMPANY	TANGRAM STORY STEPS - STOOP	MULTI-FABRIC	FIRST FLOOR
CH-10	8	THE HON COMPANY	IGNITION 2.0 TASK - REACTIV LOW-BACK	-	FIRST FLOOR
CH-10a	2	THE HON COMPANY	IGNITION 2.0 TASK - REACTIV LOW-BACK TASK STOOL	-	FIRST FLOOR
CH-11	2	THE HON COMPANY	TANGRAM MODULAR LOUNGE - ARROW IN - HIGH BACK	MULTI-FABRIC	FIRST FLOOR
CH-12	2	THE HON COMPANY	TANGRAM MODULAR LOUNGE - ARROW OUT - LOW BACK	MULTI-FABRIC	FIRST FLOOR
CH-13	2	THE HON COMPANY	TANGRAM POUFS - VARSITY ARROW	-	FIRST FLOOR
CH-14	21	THE HON COMPANY	MOTIVATE - NESTING / STACKING FLEX-BACK CHAIR	ARMLESS	FIRST FLOOR
CH-15	2	HAWORTH	HI PAD STOOL - HIGH	HIGH STOOL	FIRST FLOOR
CH-16	2	ALLSTEEL	RECHARGE - MODULAR LOUNGE - ROUND POUF	-	FIRST FLOOR
T-2	3	HAWORTH	BUZZMILK COLLABORATIVE TABLE	-	FIRST FLOOR
T-3	3	THE HON COMPANY	BUILD - MAKERSPACE TABLE - SEATED HEIGHT - BUTCHER BLOCK TOP	SLOTTED END PANEL - 72"W x 42"D x 29" H	FIRST FLOOR
T-4	1	THE HON COMPANY	BIRK TABLES - TABLE TOP: SOFT SQUARE TOPS WITH FLAT EDGE	36" W	FIRST FLOOR
T-5	5	HAWORTH	PLANES - FIXED HEIGHT BENCH - DUAL-SIDED - 46"W x 24"D - CRANK ADJUSTMENT	WITH BELONG SCREENS 15"H x 42"D ON EACH TABLE (COUNT: 10)	FIRST FLOOR
T-6	2	THE HON COMPANY	BIRK TABLES - TABLE TOP: SOFT SQUARE TOPS WITH FLAT EDGE	42" W	FIRST FLOOR
T-7	1	HAWORTH	POP UP - RACETRACK TABLE - CASTERS	41"H x 30"D x 72"W	FIRST FLOOR
D-1	7	HAWORTH	PLANE ADJUSTABLE HEIGHT TABLE-RECTANGULAR - 58"W X 29"D	WITH CPU HOLDER CADDY BY ERGOTRON	FIRST FLOOR
D-2	1	HAWORTH	PLANE HEIGHT ADJUSTABLE TABLE-CORNER, 90° WRAP AROUND - 46" X 58" X 23"D	46"W SIDE ON RIGHT AS SHOWN IN PLAN, WITH CPU HOLDER CADDY BY ERGOTRON	FIRST FLOOR
A-1	4	HAWORTH	COMPOSE STORAGE 82"H	BOX / BOX / FILE PEDESTAL	FIRST FLOOR
A-2	2	HAWORTH	BELONG PLUS BACK SCREEN WITH MODESTY	27"H x 70"W, TACKABLE BOTH SIDES, MOUNTED LOW	FIRST FLOOR

FURNITURE SCHEDULE - LOWER FLOOR

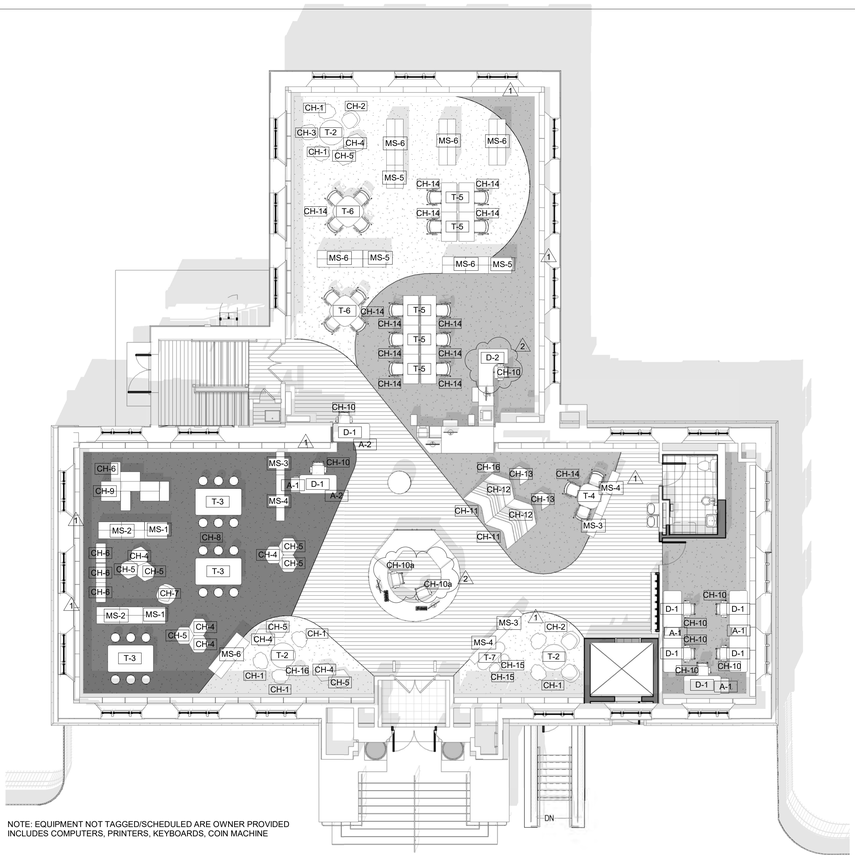
Type Mark	Count	MANUFACTURER	DESCRIPTION	COMMENTS	FLOOR LEVEL
CH-20	8	HAWORTH	VERY CONFERENCE CHAIR	WITH WHEELS AND ARMS	LOWER FLOOR
CH-21 BY OTHER	1	-	-	*SEE NOTE 1	LOWER FLOOR
CH-22 BY OTHER	4	-	-	*SEE NOTE 2	LOWER FLOOR
T-20	1	HAWORTH	IMMERSE SINGLE TABLE - RECTANGLE	ONE PIECE TOP - 60D x 120W x 29H - OBLONG PLANTER	LOWER FLOOR
T-21 BY OTHER	1	-	-	*SEE NOTE 3	LOWER FLOOR
T-22	1	HAWORTH	ASERIES CREDENZE - 1.5HIGH - STORAGE END	-	LOWER FLOOR

NOTE:
1. CH-21 - HAWORTH - CABANA LOUNGE (ONE ARM). PENDING OWNER'S DECISION.
2. CH-22 - HAWORTH - VERY SIDE CHAIR. PENDING OWNER'S DECISION.
3. T-21 - HAWORTH - JIVE ROUND TABLE. PENDING OWNER'S DECISION.

MOBILE SHELVING SCHEDULE - FIRST FLOOR

Symbols	Type Mark	Count	MANUFACTURER	DESCRIPTION	COMMENTS	FLOOR LEVEL
	MS-1	2	SPACESAVER	2 SHELVES HIGH 36"W x 24"D x 40"H	WILSONART NEW AGE OAK FINISH	FIRST FLOOR
	MS-2	2	SPACESAVER	2 SHELVES HIGH 72"W x 24"D x 40"H	WILSONART NEW AGE OAK FINISH	FIRST FLOOR
	MS-3	3	SPACESAVER	3 SHELVES HIGH 36"W x 18"D x 53"H	WILSONART NEW AGE OAK FINISH	FIRST FLOOR
	MS-4	3	SPACESAVER	3 SHELVES HIGH 72"W x 18"D x 53"H	WILSONART NEW AGE OAK FINISH	FIRST FLOOR
	MS-5	3	SPACESAVER	3 SHELVES HIGH 36"W x 24"D x 53"H	WILSONART NEW AGE OAK FINISH	FIRST FLOOR
	MS-6	6	SPACESAVER	3 SHELVES HIGH 72"W x 24"D x 53"H	WILSONART NEW AGE OAK FINISH	FIRST FLOOR

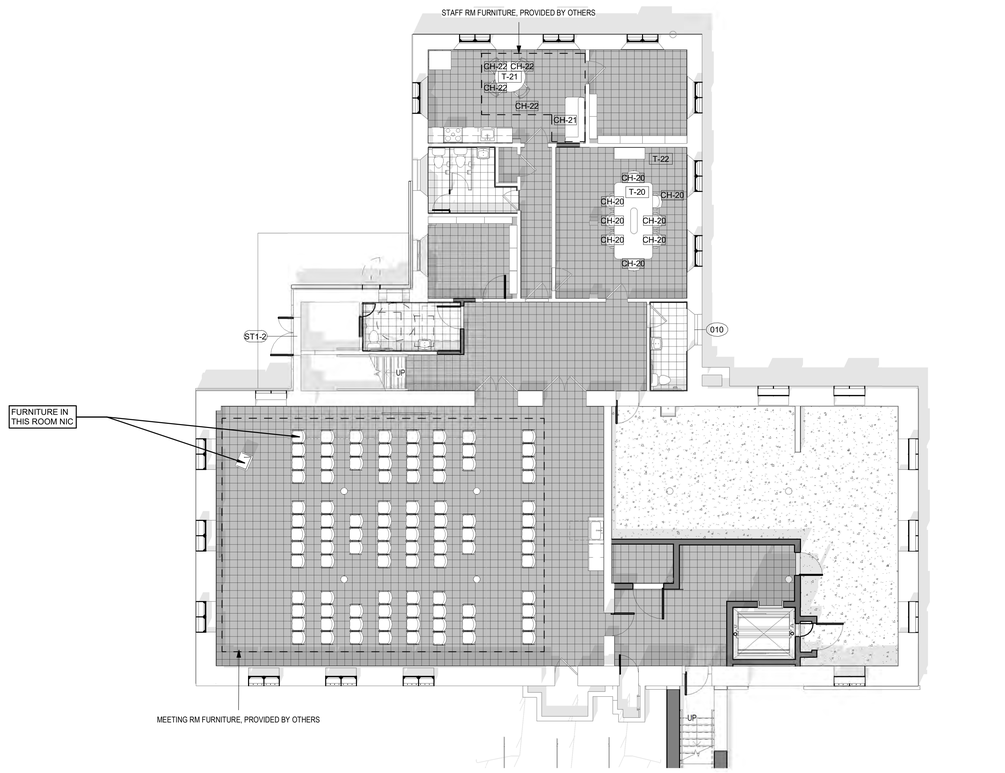
NOTE:
1. ALL HEIGHTS ARE NOMINAL.
2. PROVIDE CASTORS
3. PROVIDE 3MM PVC EDGED
4. SINGLE-FACE SHELVING TO HAVE CLOSED BACKS - FINISH SAME AS TOP AND SIDES
5. INTEGRAL LOW BACK AND DIVIDERS (1PER SHELF LEVEL)
6. ALLOW FOR TWO ADDITIONAL SHELVES AT (1) MS-3 AND (2) MS-4
7. SPACESAVER: DIVERSIFIED STORAGE SOLUTIONS, INC. MARK LANZI; 610-547-4625; MARK.LANZI@DIVERSIFIEDSS.COM



NOTE: EQUIPMENT NOT TAGGED/SCHEDULED ARE OWNER PROVIDED INCLUDES COMPUTERS, PRINTERS, KEYBOARDS, COIN MACHINE

1 FIRST FLOOR - FURNITURE PLAN 1
1/8" = 1'-0"

0' 4' 8' 16' 32'



2 LOWER LEVEL - FURNITURE PLAN 1
1/8" = 1'-0"

FURNITURE AND SHELVING BY FURNITURE VENDOR(S).
THIS SHEET ISSUED FOR INFORMATION / COORDINATION ONLY

STAMP AREA

REVISIONS

ISSUE	DATE	DESCRIPTION
0	09/07/22	ISSUE FOR BID
1	09/26/22	ISSUE FOR BID
	09/28/22	ISSUE FOR PERMIT
2	10/13/22	ADDENDUM 2

REVIEWED BY:

PROJECT COORDINATOR

SEALS

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www.kmarchitects.com

LANDSCAPE ARCHITECT:
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www.saltdesignstudio.com

M.E.P./F.P./SITE CIVIL ENGINEERS:
Pennoni Associates
1900 Market Street Suite 300
Philadelphia PA 19103
www.pennoni.com

LEED CONSULTANT:
Verde Architecture Consulting
1635 Market Street Suite 1600
Philadelphia PA 19103

CITY OF PHILADELPHIA

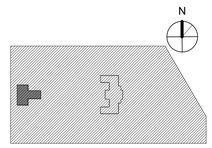
FREE LIBRARY OF PHILADELPHIA
1901 VINE ST
PHILADELPHIA, PA 19103

PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN



DRAWING TITLE

FURNITURE PLANS

PROJECT NO.	DRAWING NO.
21070	A811-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY M.W.	
CHECKED BY D.B.	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

DOOR SCHEDULE

DOORS NUMBER	DOORS NEW/EXISTING	ROOM NAME	DOORS SIZE HEIGHT	#	WIDTH LEAF	THICK	Type	MATERIAL	VISION PANEL	FRAME TYPE	FRAME MATERIAL	HDW SET	RATING	TREATMENT	NOTES
	N	Low Roof Gate	5' - 8 1/2"	1	2' - 7 1/2"										See low roof fence detail
001A	E	Meeting Room	7' - 0"	2	2' - 10"	2"	(E) 5	WD	Glass	(E)C	WD			D1, D2, F1, F2	
001B	E	Meeting Room	7' - 0"	2	2' - 10"	2"	(E) 5	WD	Glass	(E)C	WD			D1, D2, F1, F2	SEE PHOTO 1/AD105-L
002	E	Closet	7' - 0"	1	3' - 0"	1 3/4"	(E) 6	WD	-	(E)C	WD			D1, D2, F1	
003	N	Roof Access	7' - 0"	1	2' - 6"	1 3/4"	(E) 6	WD	-	(E)E	WD			F1	
004A	N	Vestibule	7' - 0"	1	3' - 0"	2"	3	HM	-	(N) A	HM		45 MIN		
004B	N	Vestibule	7' - 0"	1	3' - 0"	2"	3	HM	-	(N) A	HM				
004C	N	Elevator Door	7' - 0"	1	3' - 0"	1 3/4"	3	HM	-	(N)G	HM				PROVIDE HC PUSH PLATE
005-1A	N	Boiler Room	7' - 0"	1	3' - 0"	1 3/4"	3	HM	-	(E)D	HM			F1	(E) WD TRIM
005-2A	N	Boiler Room	7' - 0"	1	3' - 0"	1 3/4"	3	HM	-	(N) A	HM		45 MIN		
005-2B	N	Electrical Room	7' - 0"	1	3' - 6"	1 3/4"	3	HM	-	(N) A	HM		90 MIN		
005-3			7' - 0"	1	4' - 0"	2"		HM			HM				
006	E	Corridor	7' - 0"	1	3' - 0"	2"	8A	WD	Glass	(E)E	WD			D1, D2, F1	
007	E	Toilet	7' - 0"	1	3' - 0"	1 3/4"	8B	WD	-	(E)E	WD			D1, D2, F1, D4	
08A	E	Conf Room	7' - 0"	1	2' - 10"	2"	6	WD	-	(E)D	WD			D1, D2, F1	
08B	E	Conf Room	7' - 0"	1	3' - 0"	1 3/4"	6	WD	-	(E)D	WD			D1, D2, F1	
010	E	Stor	7' - 0"	1	3' - 0"	2"	6	WD	-	(E)E	WD			D1, D2, F1	
011	E	Staff Room	7' - 0"	1	3' - 0"	1 3/4"	7	WD	Glass	(E)D	WD			D1, D2, F1	
012	E	Clos.	7' - 0"	1	2' - 10"	2"	6	WD	-	(E)D	WD			D1, D2, F1	
013	E	Toilet	7' - 0"	1	2' - 8"	2"	7	WD	-	(E)D	WD			D1, D2, F1, D4	
015	E	Guard Room	7' - 0"	1	3' - 0"	1 3/4"	3	WD	-	(E)E	WD				
016A	N	Toilet	7' - 0"	1	3' - 0"	1 3/4"	6	WD	-	(N)E	WD			D4	
016B	N	Toilet Access Panel	4' - 0"	1	1' - 8"			WD		(N)E	WD				REMOVE (E) DR&FRAME, INFILL WALL
101A	N	Vestibule	9' - 4"	2	2' - 9"	1 3/4"	1	ALUM	Glass	E(F)	WD			D1, D2, F1, F3	F3.SEE PHOTO 4/AD111-L
101B	E	Vestibule	9' - 4"	2	2' - 6"	1 3/4"	2	WD	Glass	E(F)	WD			D1, D2, F1	
103	N	Staff Room	7' - 0"	1	3' - 0"	1 3/4"	3	WD	-	(N)E	WD				
104	N	Public Toilet	7' - 0"	1	3' - 0"	1 3/4"	4	WD	-	(N)E	WD			D4	
108	E	Jan Clos	7' - 0"	1	2' - 0"	2"	7	WD	-	(E)E	WD			D1, D2, F1	
201	E	Attic	4' - 0"	1	2' - 0"	2"									(E) TO REMAIN; NO WORK
202	E	Attic	4' - 0"	1	2' - 0"	2"									(E) TO REMAIN; NO WORK
213			4' - 10"	1	2' - 2"	1"									
ST1-1	E	ST1-M	7' - 0"	2	2' - 6"	1 3/4"	2	WD	Glass	(E)D	WD			D1, D2, F1	
ST1-2	N	ST1-M	7' - 0"	2	2' - 6"	1 3/4"	3	HM	Glass	(N)B	HM				

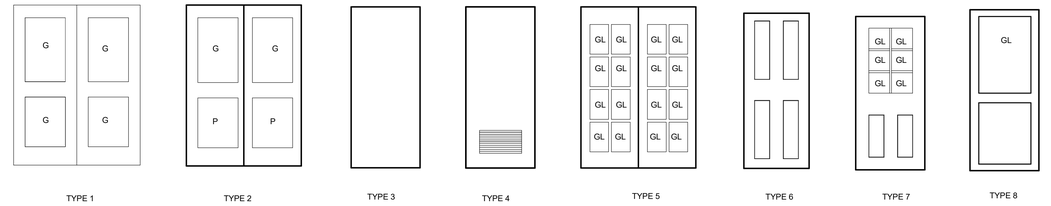
NOTES:

1. (X) Y = (NEW OR EXISTING) FRAME TYPE
2. ALL NEW DOORS AND FRAME (WOOD AND HOLLWO METAL) TO BE PAINTED. SEE FINISH AND PAINT SCHEDULE.

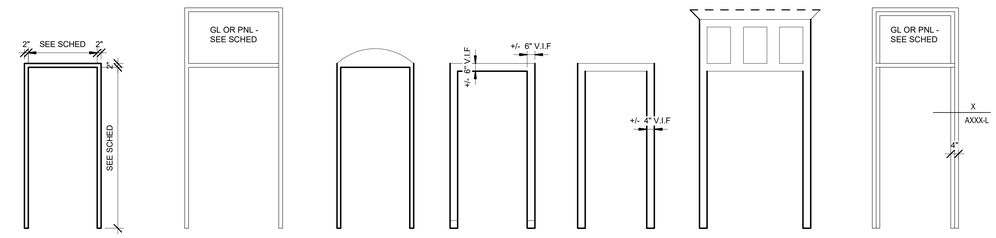
TREATMENT LEGEND (EXISTING DOORS AND FRAMES)

D1. REFINISH (E) DOOR. REMOVE EXIST. FINISH, SAND SMOOTH, PREP, PRIME, AND PAINT.
D2. PREP EXISTING DOOR FOR NEW HARDWARE.
D3. REPAIR DOOR - SEE COMMENTS
D4. UNDERCUT BOTTOM OF DOOR FOR VENTILATION BY 3/4" (1)

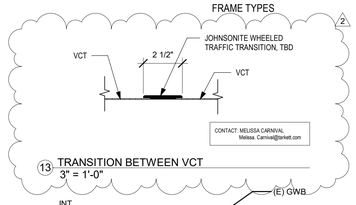
F1. REFINISH (E) FRAME; REMOVE FINISH, SAND SMOOTH, PREP, PRIME AND PAINT.
F2. REPAIR FRAME. SEE COMMENTS.
F3. CONSOLIDATE FRAME.



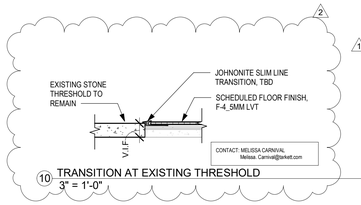
DOOR TYPES



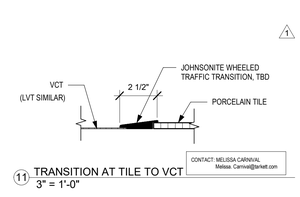
FRAME TYPES



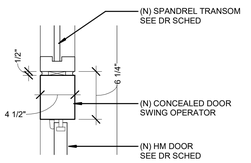
13 TRANSITION BETWEEN VCT
3" = 1'-0"



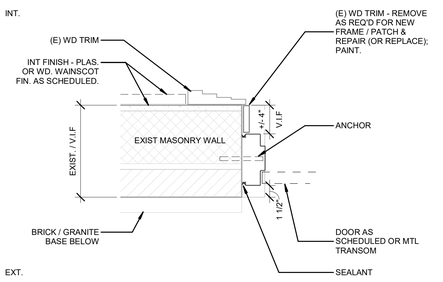
10 TRANSITION AT EXISTING THRESHOLD
3" = 1'-0"



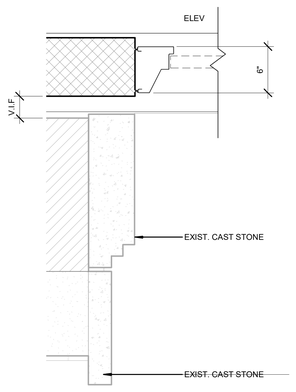
11 TRANSITION AT TILE TO VCT
3" = 1'-0"



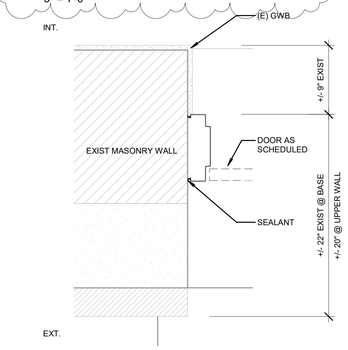
12 ELEVATOR HEAD w/ DOOR OPERATOR
1 1/2" = 1'-0"



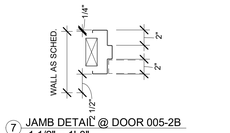
1 JAMB/HEAD SIM DTL - STAIR DOOR - HEAD SIM
1 1/2" = 1'-0"



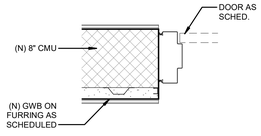
2 JAMB DETAIL @ EXT. ELEVATOR DR - HEAD SIM
1 1/2" = 1'-0"



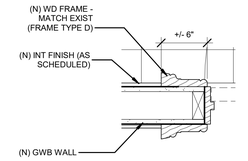
3 JAMB DETAIL @ DOOR 004B
1 1/2" = 1'-0"



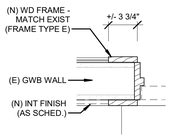
7 JAMB DETAIL @ DOOR 005-2B
1 1/2" = 1'-0"



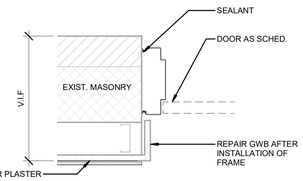
4 JAMB DETAIL @ DOOR 005-2A
1 1/2" = 1'-0"



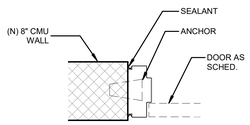
5 JAMB DETAIL @ DOOR 016A
1 1/2" = 1'-0"



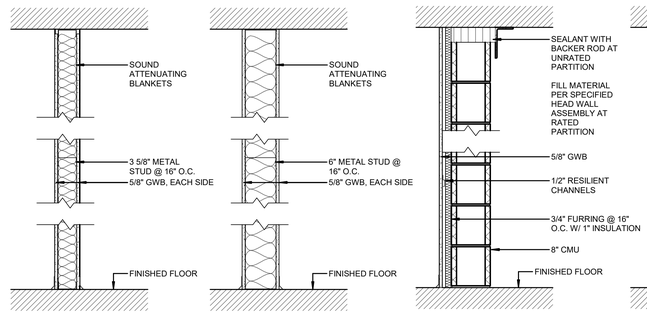
6 JAMB DETAIL @ DOOR 104
1 1/2" = 1'-0"



8 JAMB DETAIL @ TYPICAL FURRING
1 1/2" = 1'-0"



9 JAMB DETAIL @ NEW CMU
1 1/2" = 1'-0"



PARTITION TYPE 1 | PARTITION TYPE 2 | PARTITION TYPE 3 | PARTITION TYPE 4 | PARTITION TYPE 5 | PARTITION TYPE 6 | PARTITION TYPE 7

STAMP AREA

REVISIONS

ISSUE	DATE	DESCRIPTION
0	09/07/22	ISSUE FOR BID
1	09/26/22	ISSUE FOR BID
	09/28/22	ISSUE FOR PERMIT
2	10/13/22	ADDENDUM 2

REVIEWED BY:

PROJECT COORDINATOR

SEALS

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LANDSCAPE ARCHITECT:
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LEED CONSULTANT:
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CITY OF PHILADELPHIA

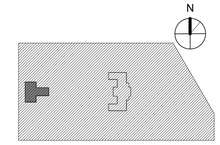
FREE LIBRARY OF PHILADELPHIA
1901 VINE ST
PHILADELPHIA, PA 19103

PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN



DRAWING TITLE

DOOR AND PARTITION SCHEDULES

PROJECT NO.	DRAWING NO.
21070	A901-L
DATE 9/7/22	
SCALE As indicated	
DRAWN BY P.B.	
CHECKED BY D.B.	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

GENERAL NOTES

1. THESE DRAWINGS DESCRIBE THE GENERAL REQUIREMENTS FOR THE INSTALLATION OF TELECOMMUNICATIONS STRUCTURED CABLING SYSTEM, PUBLIC ADDRESS SYSTEM, AND SECURITY SYSTEM WITHIN THE FACILITIES OF KINGSESSING LIBRARY & REC CENTER (KNG). THE PROJECT INCLUDES FURNISHING, INSTALLATION AND TESTING OF THE COMPONENTS FOR THE OUTSIDE PLANT STRUCTURED CABLING AS DESCRIBED HEREIN AND IN THE SPECIFICATIONS.

2. PRIOR TO ACCEPTANCE OF THE INSTALLATION, ALL SYSTEMS SHALL BE TESTED, AND OPERATED TO DEMONSTRATE TO THE OWNER, OR DESIGNATED REPRESENTATIVE, THAT THE INSTALLATION AND PERFORMANCE OF THESE SYSTEMS AND/OR PARTS THEREOF CONFORM TO THE DESIGN INTENT.

3. CONTRACT DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE, DESIGN INTENT, AND GENERAL ARRANGEMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES INCLUDING RESOLUTION OF FIELD CONFLICTS THAT MAY ARISE.

4. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD LOCATE AND IDENTIFY ALL EXISTING UTILITIES AND CONDITIONS IN THE CONSTRUCTION AREA, WHETHER INDICATED ON DRAWINGS OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO EXISTING UTILITIES, CABLES AND/OR FACILITIES DAMAGED DURING CONSTRUCTION. NO REIMBURSEMENT WILL BE ALLOWED FOR REPAIR AND/OR REPLACEMENT OF DAMAGED FACILITIES/UTILITIES.

5. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF UNDERGROUND UTILITIES WHICH PASS THROUGH THE CONSTRUCTION AREA BUT ARE NOT PART OF THE CONSTRUCTION SCOPE OF WORK. THE CONTRACTOR SHALL ENSURE THESE CABLES ARE PROTECTED AND THE SYSTEMS STAY FUNCTIONAL TO WHICH THEY ARE CONNECTED.

6. THE INTEGRATION OF EXISTING SYSTEMS IS WORK OF A COMPLEX NATURE WHICH WILL REQUIRE ACCURATE PLANNING, CAREFUL PREPARATION AND EXECUTION, ATTENTION TO DETAIL AND CLOSE SUPERVISION BY THE CONTRACTOR. THE CONTRACTOR SHALL BE REQUIRED TO DO THIS WORK IN FULL COOPERATION WITH ALL SYSTEM INTEGRATORS AND SUBJECT TO SCHEDULING ARRANGED TO MINIMIZE DISRUPTION OF NORMAL ACTIVITIES OF THE REST OF THE AIRPORT. PHASING OF ALL WORK SHALL BE DONE IN COORDINATION WITH THE CONSTRUCTION PHASING PLAN OR AS INSTRUCTED BY THE CM.

7. ALL CABLING, VAULTS, DEVICES AND BOXES INSTALLED SHALL BE TAGGED AND/OR MARKED AS IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

8. WHERE UTILITIES, SYSTEMS, SWITCHES, PANELS, POWER SUPPLIES, ROUTERS AND/OR SERVICES REQUIRE SHUTDOWN, IN THE MAIN TERMINAL, FOR THE WORK TO BE PERFORMED, NOTIFY THE CM AND OWNER. REQUESTS FOR SYSTEMS SHUTDOWNS SHALL BE SUBMITTED TO THE OWNER, IN WRITING, A MIN. OF 1 WEEK PRIOR TO THE SCHEDULED SHUTDOWN. THE REQUEST MUST INCLUDE ALL SYSTEMS TO BE AFFECTED AND THE EXPECTED DISRUPTION DURATIONS.

9. ALL MATERIALS SHALL COMPLY WITH APPLICABLE CODES, ORDINANCES AND REGULATIONS AND APPLICABLE CONTRACT SPECIFICATIONS.

10. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, INCIDENTALS, METHODS AND SERVICES REQUIRED TO INSTALL ALL WORK INDICATED COMPLETELY AND IN FULL OPERATION.

11. ALL WORK SHALL BE IN CONFORMANCE WITH THE LATEST AND ALL APPLICABLE LAWS, CODES, AND REGULATIONS ADOPTED BY MUNICIPAL, COUNTY, STATE, FEDERAL AUTHORITIES, UTILITY COMPANIES, INSURANCE AGENCIES AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK, INCLUDING CURRENT ENVIRONMENTAL REGULATIONS, AND SHALL COMPLY WITH THE APPLICABLE LOCAL ELECTRICAL CODES, LATEST ADOPTED EDITION OF THE NEC AND ANY APPLICABLE INDUSTRIAL CODES: NECA, NEC, NESC, NFPA, IEEE, ANSI/TIA, NORTH CAROLINA AND LOCAL CODES.

12. THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION FOR A PERIOD OF ONE YEAR (OR AS CONTRACTUALLY OBLIGATED) FROM THE DATE OF ACCEPTANCE OF THE SYSTEM(S) AS A WHOLE. ANY DEFECTS IN WORKMANSHIP, MATERIALS, MALFUNCTION OF EQUIPMENT OR UNSATISFACTORY PERFORMANCE, AND ALL OTHER WORK OR PARTS OF THE BUILDING DAMAGED THEREBY, AS A RESULT OF WORK OF THE PROJECT BY THE CONTRACTOR, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PAY ALL REPAIR COSTS ACCORDINGLY WITHOUT ADDITIONAL COSTS TO THE OWNER.

13. UNLESS OTHERWISE NOTED, ALL PARTS, EQUIPMENT, AND MATERIALS SHALL BE NEW AND SHALL BE SAME AND/OR UL APPROVED.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING CABLING. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR FURNISHING AND INSTALLING CONDUIT FROM ALL EQUIPMENT DEVICE LOCATIONS TO DESIGNATED TERMINATION ROOMS. ALL NEW CABLING SHALL BE INSTALLED IN CONDUIT UNLESS OTHERWISE NOTED.

15. ALL OSP CABLING SHALL BE INSTALLED IN CONCRETE ENCASED SCHEDULE 40 PVC OR RGS CONDUIT AS INDICATED IN DRAWINGS AND SPECS AND IN FABRIC INNERDUCT. ALL VERTICAL ELBOWS AND TRANSITIONS FROM UNDERGROUND TO ABOVE GROUND SHALL BE RGS. ALL SPARE CONDUITS SHALL CONTAIN FABRIC INTERDUCT AND/OR A PULL STRING AS INDICATED. PRIMARY AND SECONDARY BACKBONE CABLING SHALL NOT SHARE A PHYSICAL PATHWAY.

16. CONTRACTOR SHALL PROVIDE FINAL CONNECTIONS TO OWNER PROVIDED EQUIPMENT AS INDICATED ON THE PLANS.

17. INSTALLATION OF CATEGORY 6A CABLE SHALL BE IN ACCORDANCE WITH TIA GUIDELINES. CABLE INSTALLATION AND TERMINATIONS THAT DO NOT COMPLY SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
    A. THE MAXIMUM PULLING TENSION FOR A SINGLE CABLE SHALL NOT EXCEED 25 POUNDS.
    B. THE MINIMUM BENDING RADIUS OF THE CABLE SHALL NOT BE LESS THAN 4X THE OUTSIDE DIAMETER OF THE CABLE.
    C. THE CABLE SHALL BE INSTALLED WITHOUT KINKS OR TWISTS AND THE APPLICATION OF CABLE TIES SHALL NOT DEFORM THE CABLE BUNDLE. CONDUITS SHALL TRANSITION INTO CABLE TRAYS USING CONDUIT END BELLS, NO CABLE SHALL BE INSTALLED OVER ROUGH CONDUIT EDGES IN ANY TRANSITION.
    D. STRIP BACK ONLY AS MUCH CABLE JACKET AS IS REQUIRED TO TERMINATE THE CABLE. CABLE PAIRS SHALL NOT BE UNTWISTED MORE THAN 1/2 INCH.
    E. CABLES SHALL BE TESTED PER THE SPECIFICATIONS, CABLES WHICH DO NOT PASS TESTS SHALL BE REPLACED, OR RECTIFIED BY THE CONTRACTOR AT NO ADDITIONAL COST.

18. THE CONTRACTOR SHALL NOT INSTALL ANY NEW CATEGORY 6A OR HIGHER DATA CABLE AT LENGTHS GREATER THAN 90 METERS FROM PATCH PANEL TO OUTLET BOX. THE CONTRACTOR SHALL BRING ANY CONDITIONS EXCEEDING THE CABLE LIMIT DISTANCE TO THE ENGINEERS ATTENTION.

19. INSTALLATION OF FIBER OPTIC CABLES SHALL BE IN ACCORDANCE WITH TIA GUIDELINES. CABLE INSTALLATION AND TERMINATIONS THAT DO NOT COMPLY SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
    A. THE BEND RADIUS FOR HORIZONTAL OPTICAL FIBER CABLE SHALL NOT BE LESS THAN 1 INCH UNDER NO-LOAD CONDITIONS. WHEN UNDER A MAXIMUM TENSILE LOAD OF 50 LBF, THE BEND RADIUS SHALL NOT BE LESS THAN 2 INCHES.
    B. THE BEND RADIUS FOR FIBER BACKBONE SHALL NOT BE LESS THAN THAT RECOMMENDED BY THE MANUFACTURER IF NO RECOMMENDATION IS KNOWN, THEN THE APPLIED BEND RADIUS SHALL NOT BE LESS THAN 12 TIMES THE CABLE OUTSIDE DIAMETER UNDER NO-LOAD CONDITIONS AND NOT LESS THAN 15 TIMES THE CABLE OUTSIDE DIAMETER WHEN THE CABLE IS UNDER TENSILE LOAD.
    C. THE BEND RADIUS FOR OUTSIDE PLANT OPTICAL FIBER BACKBONE CABLE SHALL NOT BE LESS THAN THAT RECOMMENDED BY THE MANUFACTURER IF NO RECOMMENDATION IS KNOWN, THEN THE APPLIED BEND RADIUS SHALL NOT BE LESS THAN 10 TIMES THE CABLE OUTSIDE DIAMETER NO-LOAD CONDITIONS AND NOT LESS THAN 20 TIMES THE CABLE OUTSIDE DIAMETER WHEN THE CABLE IS UNDER A TENSILE LOAD.

20. ALL OUTSIDE PLANT COPPER CABLES SHALL INCLUDE A MINIMUM OF TWO SERVICE LOOPS IN ALL VAULTS, MANHOLES, HANDHOLES OR JUNCTION BOXES EQUIVALENT TO TWO PERIMETERS OF THE STRUCTURE THE CABLE IS PASSING THROUGH. UNLESS OTHERWISE SPECIFIED.

21. CONTRACTOR TO COORDINATE ALL UNDERGROUND UTILITY ROUTINGS. KEEP A MINIMUM OF 6-IN CLEAR FROM ALL FOUNDATIONS IN PLAN

22. CONTRACTOR TO COORDINATE UNDERGROUND UTILITY TO BE A MINIMUM OF 3" CLEAR BELOW THE BASE OF THE GRADE BEAMS WHEN PASSING BENEATH

ABBREVIATIONS:

AC	ALTERNATE CURRENT
ACP	ACCESS CONTROL PANEL
ACS	ACCESS CONTROL SYSTEM
AFG	ABOVE FINISHED GRADE
AMP	AMPLIFIER
AWG	AMERICAN WIRE GAUGE
BFC	BELOW FINISH CEILING
BHS	BAGGAGE HANDLING SYSTEM
C	CONDUIT
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CL	CENTER LINE
CLR	CLEAR
CM	CONSTRUCTION MANAGER
CMP	PLENUM CABLE
CMR	RISER CABLE
CT	CABLE TRAY
CV	COMMUNICATIONS VAULT
DAS	DISTRIBUTED ANTENNA SYSTEM
DC	DIRECT CURRENT
EMT	ELECTRICAL METALLIC TUBING
FLP	FREE LIBRARY OF PHILADELPHIA
FOC	FIBER OPTIC CABLE
FOPP	FIBER OPTIC PATCH PANEL
G.C.	GENERAL CONTRACTOR
GRND	GROUND
GT	GROUND TRANSPORTATION
HORIZ	HORIZONTAL(LY)
ID	IDENTIFICATION
IDC	INSULATION DISPLACEMENT CONTACT
IDF	INTERMEDIATE DISTRIBUTION FRAME
ISP	INSIDE PLANT CABLE
IT	INFORMATION TECHNOLOGY
JB	JUNCTION BOX
LAN	LOCAL AREA NETWORK
MAX	MAXIMUM
MDF	MAIN DISTRIBUTION FRAME
MIN	MINIMUM
NTS	NOT TO SCALE
NEC	NATIONAL ELECTRIC CODE
OFCI	OWNER FURNISHED OWNER INSTALLED
OSP	OUTSIDE PLANT CABLE
PBB	PASSENGER BOARDING BRIDGE
PG	PASSENGER GATE
RGS	RIGID GALVANIZED STEEL
SOC	SYSTEM ON CHIP
SCS	STRUCTURED CABLING SYSTEM
SMFO	SINGLE MODE FIBER OPTIC CABLE
STP	SHIELDED TWISTED PAIR
SUSP	SUSPENDED
T	TERMINAL
TBD	TO BE DETERMINED
TELECOM	TELECOMMUNICATIONS
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TO	TELECOMMUNICIATION OUTLET
TR	TELECOMMUNICATIONS ROOM
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VG	VEHICLE GATE
W/	WITH
WF	WALL FIELD

OUTLET: TYPES & CABLING

SYMBOL	DESCRIPTION
TAG # ▽	DATA OUTLET # DENOTES THE NUMBER OF CABLES. REFER TO SCS TAG LEGEND FOR TAG DETAILS.

OUTLET: MOUNTING LEGEND

SYMBOL	DESCRIPTION
▼ ▽ ▼	WALL MOUNTED OUTLET PROVIDE A 4-11/16"W x 4-11/16"H x 2½"DEEP DOUBLE GANG BACK BOX, DOUBLE GANG PLASTER RING AND CONDUIT FROM EACH OUTLET TO NEAREST ZONED TELECOM PATHWAY OR TR UON.
▽	CEILING MOUNTED OUTLET PROVIDE A 4-11/16"W x 4-11/16"H x 2½"DEEP DOUBLE GANG BACK BOX, DOUBLE GANG PLASTER RING AND CONDUIT FROM EACH OUTLET TO NEAREST ZONED TELECOM PATHWAY OR TR UON. OUTLET SHALL BE MOUNTED ON UNDERSIDE OF STRUCTURE UON.

OUTLET: SYSTEM ID LEGEND

ID (X)	DESCRIPTION
(NONE)	STANDARD DATA OUTLET PROVIDE 4-PAIR UTP CATEGORY 6A CABLES X = DENOTES CABLE QTY.
AP	WIRELESS ACCESS POINT PROVIDE (1) 4-PAIR UTP CATEGORY 6A CABLES, UON. MOUNTING REQUIREMENTS: - CEILING: ON NEAREST STRUCTURAL ELEMENT ABOVE ACCESSIBLE CEILINGS - WALL: AT 1' 0" BFC TYPICAL BUT NOT MORE THAN 10' 0" AFF.
CCTV	CLOSED-CIRCUIT TELEVISION REFER TO SECURITY DRAWINGS FOR LOCATIONS, QUANTITIES AND MOUNTING DETAILS. PROVIDE (1) 4-PAIR UTP CATEGORY 6 CABLE, UON. MOUNTING REQUIREMENTS: - CEILING: ON NEAREST STRUCTURAL ELEMENT ABOVE ACCESSIBLE CEILINGS - WALL: AT 1' 0" BFC TYPICAL BUT NOT MORE THAN 10' 0" AFF.

PATHWAYS & MISCELLANEOUS

SYMBOL	DESCRIPTION
TXXX #	DETAIL REFERENCE: # = DETAIL NUMBER; TXXX = DRAWING NUMBER
	LADDER STYLE CABLE TRAY
	CONDUIT OR SLEEVE GOING UP
	CONDUIT OR SLEEVE GOING DOWN
	CONDUIT GOING THROUGH
	TELECOM SPACES/ROOM OUTLINE
	PULL BOX LL = LOWER LEVEL FF = FIRST FLOOR
CB	ELEVATOR CALL BOX
I	INTERCOM MASTER MONITOR STATION
WP J XX	PROVIDE 4X4 EXTERIOR WEATHERPROOF JUNCTION BOX. XX DEFINES SYSTEM. PROVIDE RJ-45 CONNECTOR ON END OF CABLE AND PROVIDE MIN 36" OF SLACK.

AV SYMBOLS

SYMBOL	DESCRIPTION
Ⓢ	AV SPEAKER. SPEAKERS WILL BE CONNTECTED IN SERIES WITH MIN 18/2 SHIELDED CABLE IN FMC WITH ONE 18/2 CABLE HOMERUN TO AMPLIFIER IN MIN 3/4" CONDUIT

STAMP AREA

REVISIONS

ISSUE	DATE	DESCRIPTION

REVIEWED BY:

PROJECT COORDINATOR

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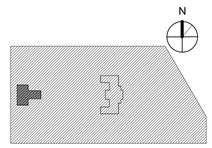
PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING RENOVATIONS AND SITE IMPROVEMENTS

KEY PLAN

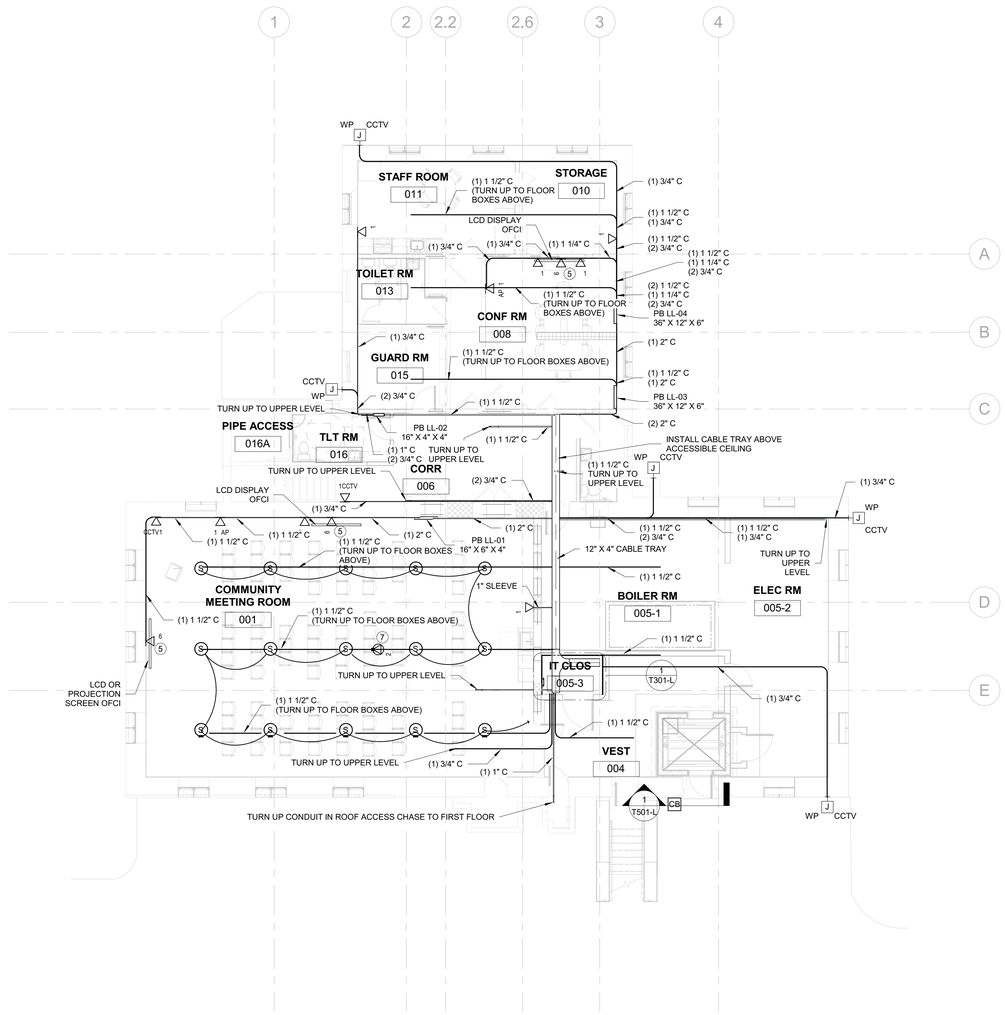


DRAWING TITLE

TELECOM GENERAL NOTES, ABBREVIATIONS & SYMBOLS

PROJECT NO.	DRAWING NO.
21070	T001-L
DATE 10/13/22	
SCALE 12" = 1'-0"	
DRAWN BY DK	
CHECKED BY EH	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



1 TELECOM FLOOR PLAN - LOWER LEVEL
1/8" = 1'-0"

STAMP AREA

GENERAL NOTES:

1. ALL END DEVICES SHALL BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR.
2. ALL CABLES SHALL BE RAN IN CONDUIT UON. ALL CONDUIT SHALL BE EMT AND NO LARGER THAN 2".
3. PAINT ALL CONDUIT AND PULL BOXES TO MATCH SURRONDINGS.
4. COORIDINATE FLOOR BOX PLACEMENT WITH ELECTRICAL DRAWINGS FOR POWER.
5. CABLES FOR FLOOR BOXES FED FROM CONDUIT RUNS SHOWN ON T101-L
6. AV SYSTEM EQUIPMENT FURNISHED AND INSTALLED BY OWNER. FIELD DEVICES (SCREENS, SPEAKERS, PROJECTOR, ETC.) FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
7. PRESEREVE INTRUSION DETECTION SYSTEM

KEYED NOTES: (#)

1. RUN CABLES FROM FLOOR BOX TO CABLE TERMINATION POINT IN FURNITURE CABLE TROUGH.
2. RUN EXPOSED CONDUIT ALONG TOP OF SHELVES, TURN UP TO DEVICES. CONTRACTOR SHALL MAKE BEST EFFORT TO CONCEAL CONDUIT.
3. ROUTE CONDUIT UP ALONG THE SIDE AND TOP OF VESITUBLE. TURN CONDUIT INTO ROOF ACCESS CHASE.
4. RUN CONDUITS HORIZANTALLY ALONG FLOOR AROUND PERIMITER OF ROOM. TURN UP TO TERMINATION POINTS.
5. PROVIDE 1 COAX RG 59U CABLE FOR EACH DISPLAY
6. PROVIDE DATA IN ELEVATOR PIT FOR MONITORING AND CAB INTERCOM. COORDINATE TERMINATION WITH ELEVATOR CONTROL PANEL.
7. CEILING MOUNTED DATA FOR PROJECTOR.

REVISIONS

ISSUE	DATE	DESCRIPTION

REVIEWED BY:

PROJECT COORDINATOR

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PROJECT TITLE

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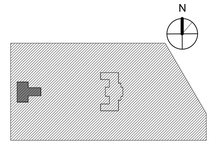
KEY PLAN

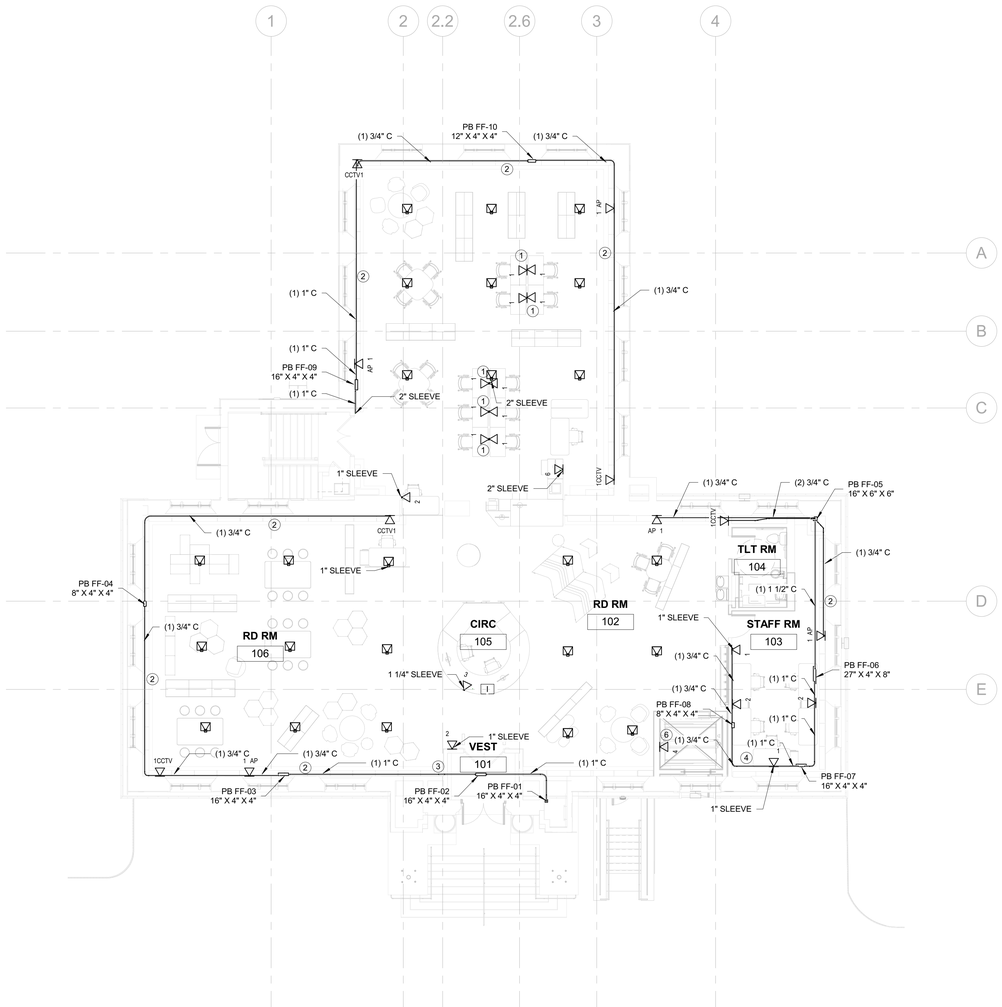


DRAWING TITLE

TELECOM - NEW WORK PLAN - LOWER LEVEL

PROJECT NO.	DRAWING NO.
21070	T101-L
DATE 10/13/22	
SCALE As indicated	
DRAWN BY DK	
CHECKED BY EH	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



1 TELECOM FLOOR PLAN - FIRST FLOOR
1/8" = 1'-0"

STAMP AREA

GENERAL NOTES:

1. ALL END DEVICES SHALL BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR.
2. ALL CABLES SHALL BE RAN IN CONDUIT UON. ALL CONDUIT SHALL BE EMT AND NO LARGER THAN 2".
3. PAINT ALL CONDUIT AND PULL BOXES TO MATCH SURRONDINGS.
4. COORIDINATE FLOOR BOX PLACEMENT WITH ELECTRICAL DRAWINGS FOR POWER.
5. CABLES FOR FLOOR BOXES FED FROM CONDUIT RUNS SHOWN ON T101-L.
6. AV SYSTEM EQUIPMENT FURNISHED AND INSTALLED BY OWNER. FIELD DEVICES (SCREENS, SPEAKERS, PROJECTOR, ETC.) FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
7. PRESEREVE INTRUSION DETECTION SYSTEM

KEYED NOTES: (#)

1. RUN CABLES FROM FLOOR BOX TO CABLE TERMINATION POINT IN FURNITURE CABLE TROUGH.
2. RUN EXPOSED CONDUIT ALONG TOP OF SHELVES, TURN UP TO DEVICES. CONTRACTOR SHALL MAKE BEST EFFORT TO CONCEAL CONDUIT.
3. ROUTE CONDUIT UP ALONG THE SIDE AND TOP OF VESITUBLE. TURN CONDUIT INTO ROOF ACCESS CHASE.
4. RUN CONDUITS HORIZANTALLY ALONG FLOOR AROUND PERMITER OF ROOM. TURN UP TO TERMINATION POINTS.
5. PROVIDE 1 COAX RG 59U CABLE FOR EACH DISPLAY
6. PROVIDE DATA IN ELEVATOR PIT FOR MONITORING AND CAB INTERCOM. COORDINATE TERMINATION WITH ELEVATOR CONTROL PANEL.
7. CEILING MOUNTED DATA FOR PROJECTOR.

REVISIONS

ISSUE	DATE	DESCRIPTION

REVIEWED BY:

PROJECT COORDINATOR

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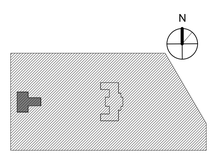
KEY PLAN

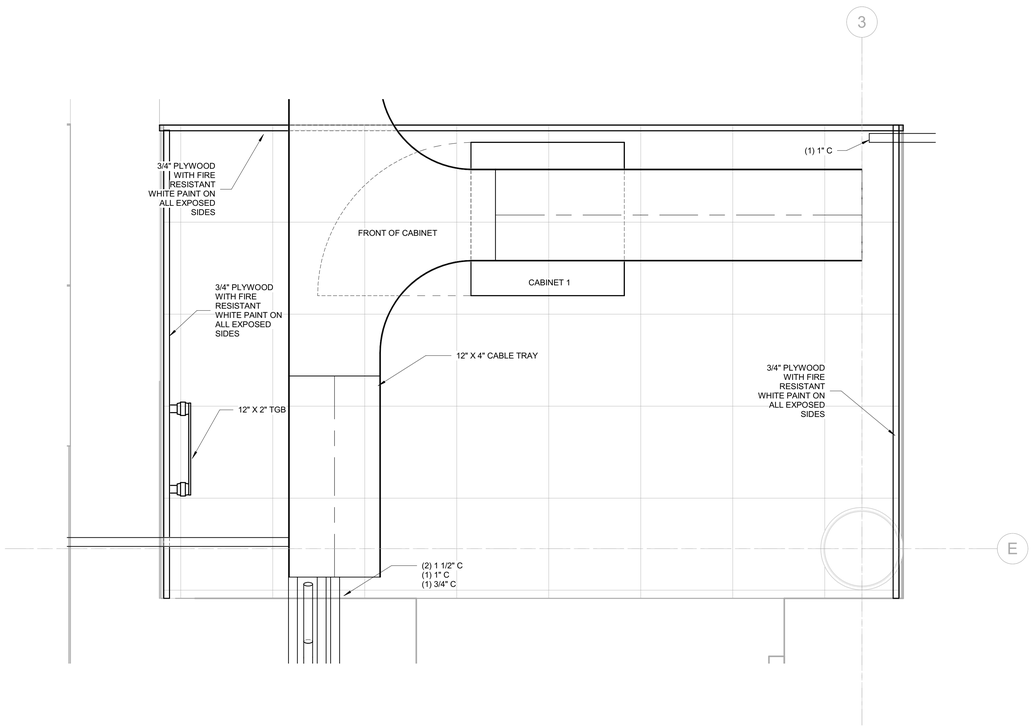


DRAWING TITLE

TELECOM - NEW WORK PLAN - FIRST FLOOR

PROJECT NO.	DRAWING NO.
21070	T102-L
DATE 10/13/22	
SCALE As indicated	
DRAWN BY DK	
CHECKED BY EH	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



1 IT CLOSET 005-03
1 1/2" = 1'-0"

CABINET 1			
RU	EQUIPMENT ID	(W)	DESCRIPTION
1			
2			
3	FIBER OPTIC PATCH PANEL		COORDINATE WITH LIBRARY TO PATCH INTO INCOMING SERVICES
4			
5	WIRE MANAGEMENT		
6	CAT 6 PATCH PANEL		
7			
8	SPACE FOR ACCESS SWITCH		BY FLP
9	CAT 6 PATCH PANEL		
10			
11	WIRE MANAGEMENT		
12	SPEAKER TERMINAL STRIP		
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23	SPACE RESERVED FOR LIBRARY EQUIPMENT		
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37	5 KVA UPS		
38			
39			
40			

FRONT OF CABINET

CABINET 1		
RU	EQUIPMENT ID	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20	VERTICAL PDU	
21		
22		
23		
24		
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26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		

BACK OF CABINET

STAMP AREA

REVISIONS

ISSUE	DATE	DESCRIPTION

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PROJECT TITLE

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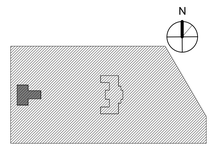
KEY PLAN

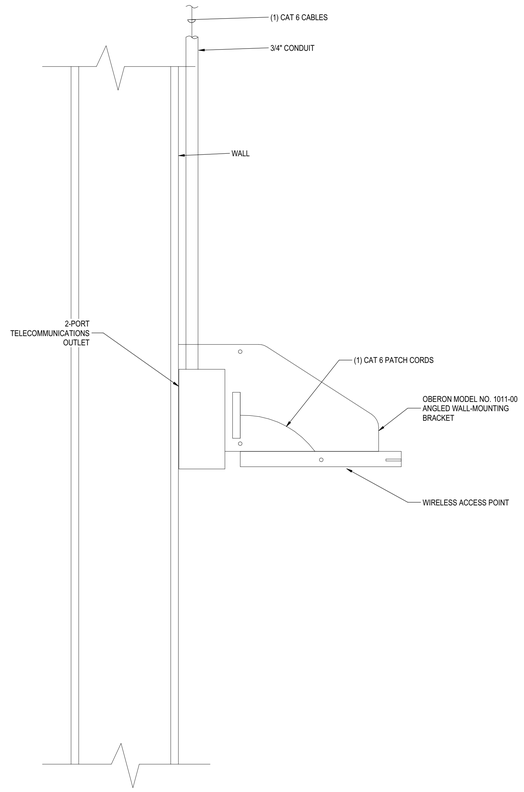


DRAWING TITLE

TELECOM - ENLARGED PLANS

PROJECT NO.	DRAWING NO.
21070	T301-L
DATE 10/13/22	
SCALE As indicated	
DRAWN BY DK	
CHECKED BY EH	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

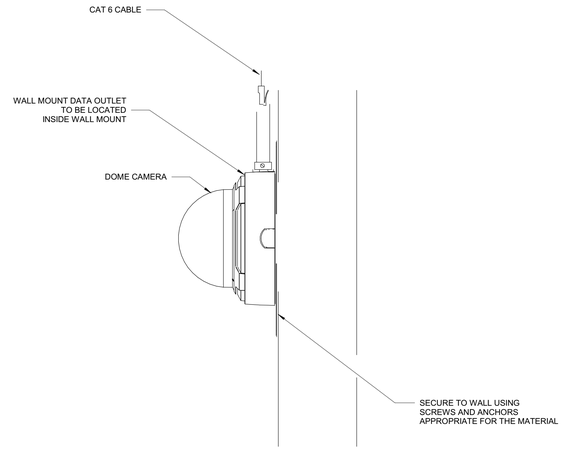


SECTION

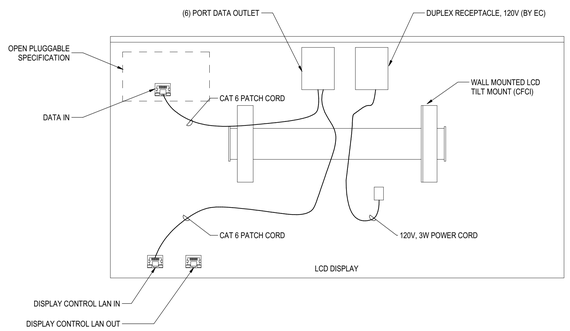
1 TYPICAL INDOOR, OMNIDIRECTIONAL, WALL-MOUNTED WIRELESS ACCESS POINT (WAP)
N.T.S.

GENERAL NOTES:

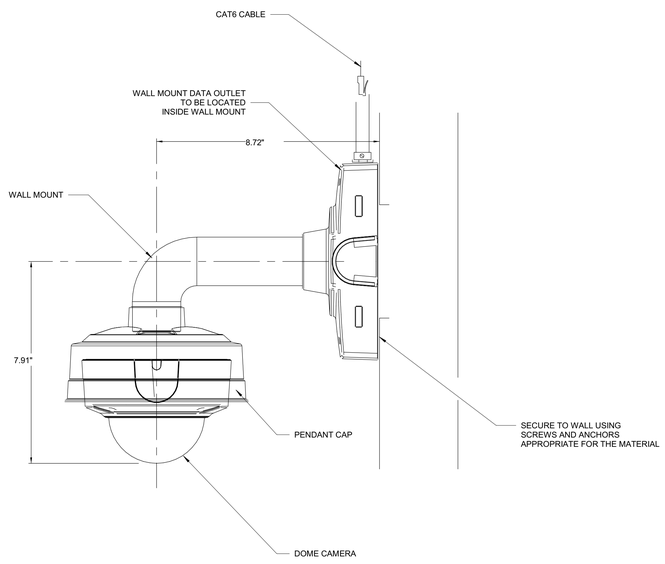
1. ALL DEVICES ON SHEET ARE OWNER FURNISHED AND CONTRACTOR INSTALLED.
2. MOUNTING METHODOLOGY SHOWN FOR REFERENCE ONLY. ACTUALLY MOUNTING METHOD WILL BE DETERMINED BY SPECIFIC EQUIPMENT FURNISHED BY OWNER. FOLLOW MANUFACTURER'S INSTALLATION GUIDE.



2 TYPICAL INDOOR CAMERA WALL MOUNT
N.T.S.



4 WALL MOUNTED - TILT MOUNT LCD SCREEN
N.T.S.



3 TYPICAL OUTDOOR CAMERA WALL PENDANT MOUNT
N.T.S.

STAMP AREA

REVISIONS

ISSUE	DATE	DESCRIPTION

REVIEWED BY:

PROJECT COORDINATOR

SEALS

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CITY OF PHILADELPHIA

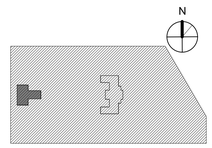
FREE LIBRARY OF PHILADELPHIA
1901 VINE ST
PHILADELPHIA, PA 19103

PHILADELPHIA PENNSYLVANIA

PROJECT TITLE

KINGSESSING LIBRARY BUILDING
RENOVATIONS AND SITE
IMPROVEMENTS

KEY PLAN

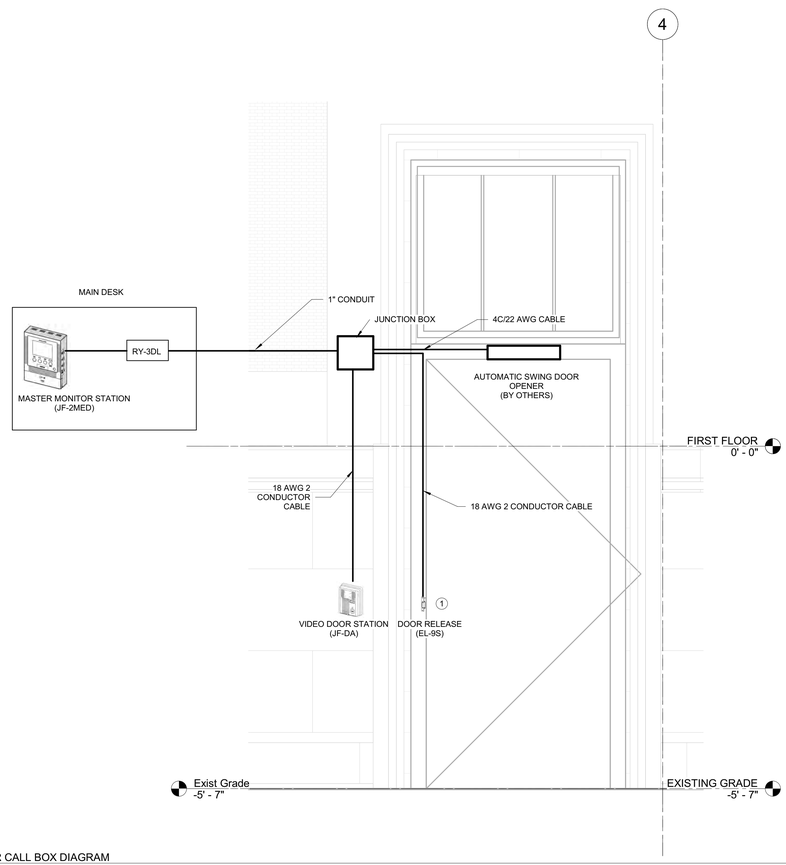


DRAWING TITLE

TELECOM - DETAILS

PROJECT NO.	DRAWING NO.
21070	T401-L
DATE 10/13/22	
SCALE As indicated	
DRAWN BY DK	
CHECKED BY EH	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.



1 ELEVATOR DOOR CALL BOX DIAGRAM
N.T.S.

NOTES:

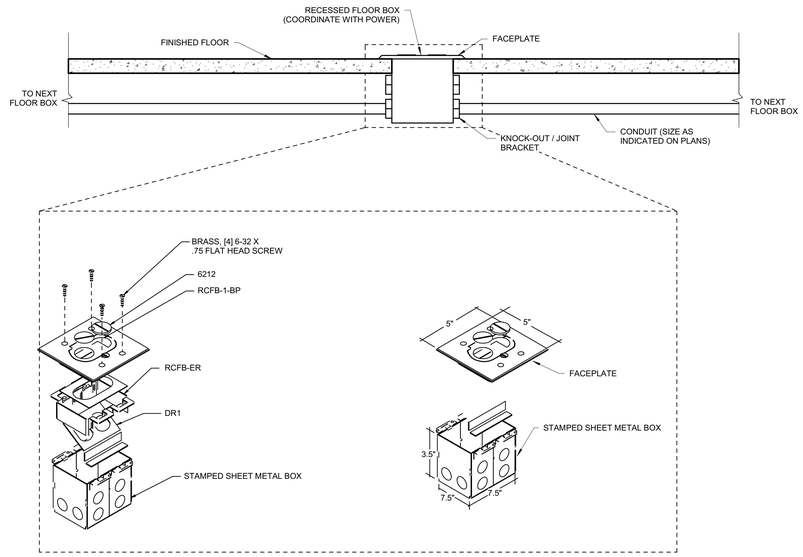
1. DESIGN BASED ON AIPHONE HANDS-FREE COLO VIDEO INTERCOM.

KEYED NOTES: (#)

1. UTILIZE POWER SOURCE FROM AUTOMATIC SWING DOOR OPENER FOR EL-9S

SEQUENCE OF OPERATIONS:

1. PERSON PRESSES BUTTON ON VIDEO DOOR STATION (JF-DA) WHICH CALLS TO MASTER MONITOR STATION (JF-2MED) LOCATED AT CIRCULATION DESK.
2. OPERATOR AT MASTER MONITOR STATION CALLS ELEVATOR TO STREET LEVEL.
3. ONCE ELEVATOR ARRIVES AT STREE LEVEL ELVATOR, ELVATOR DOOR OPENS
4. MASTER MONITOR STATION SIGNALS TO DOOR RELEASE (EL-9S) AND AUTOMATIC SWING DOOR OPENER TO OPEN DOOR.



2 TYPICAL FLOOR MOUNTED OUTLET
FOR NON-ACCESSIBLE CEILINGS
N.T.S.

NOTES:

1. REFER TO ELECTRICAL FOR FLOOR BOX DETAILS.
2. IN SLAB CONDUIT SHALL BE ROUTED TO THE NEAREST WALL.
3. REFER TO TELECOMMUNICATION GENERAL NOTES FOR CONDUIT BEND REQUIREMENTS.
4. CONTINUE CONDUIT ROUTING AS REQUIRED BY FLOOR TYPE. REFER TO GENERAL NOTES FOR CONDUIT ROUTING REQUIREMENTS.

SYMBOL: ☑

STAMP AREA

REVISIONS

ISSUE	DATE	DESCRIPTION

REVIEWED BY:

PROJECT COORDINATOR

SEALS

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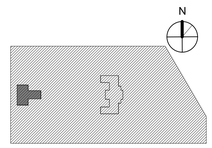

DRAWING TITLE

TELECOM - DIAGRAMS

PROJECT NO.	DRAWING NO.
21070	T501-L
DATE 10/13/22	
SCALE As indicated	
DRAWN BY DK	
CHECKED BY EH	

NOTE: ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE SITE BEFORE PROCEEDING WITH THE WORK.

SECTION 01 3591
HISTORIC TREATMENT

PROCEDURES PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Logan, Lovett, Marrero & Tacony Libraries and the following specific work:

1. Historic removal and dismantling.

B. Related Requirements:

1. Section 04 0101 Repair and Cleaning of Existing Masonry
2. Section 04 0511 Masonry Mortaring and Grouting

1.2 DEFINITIONS

A. Consolidate: To strengthen loose or deteriorated materials in place.

B. Dismantle: To disassemble and detach items by hand from existing construction to the limits indicated, using small hand tools and small one-hand power tools, so as to protect nearby historic surfaces; and legally dispose of dismantled items off-site, unless indicated to be salvaged or reinstalled.

C. Existing to Remain: Existing items that are not to be removed or dismantled.

D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance which are important to the successful preservation, rehabilitation, restoration and reconstruction as determined by Architect. Designated historic space, areas, rooms and surfaces are indicated on Drawings and scheduled in this Section.

1. Restoration Zones (REST-Z1): Areas of greatest architectural importance, integrity, and visibility; to be preserved and restored to the original, circa 1916 design and finish as shown on Drawings:
2. Renovation Zones (RENO-Z1): Areas of significant architectural importance,

integrity, and visibility; to be preserved and restored consistent with the remaining historic fabric and to the extent shown on Drawings:

3. Alteration Zones (ALT-Z1): Areas of slight architectural importance, integrity, and visibility; to leave any remaining original fabric untouched insofar as is consistent with accommodating modern uses for the building as shown on Drawings:

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.

F. Reconstruct: To remove existing item, replicate damaged or missing components, and reinstall in original position.

G. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

H. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

I. Remove: Specifically for historic spaces, areas, rooms, and surfaces, the term means to detach an item from existing construction to the limits indicated, using hand tools and hand-operated power equipment, and legally dispose of it off-site, unless indicated to be salvaged or reinstalled.

J. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. Includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

K. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

L. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

M. Reproduce: To fabricate a new item, accurate in detail to the original, and in either the same or a similar material as the original, unless otherwise indicated.

N. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

O. Retain: To keep existing items that are not to be removed or dismantled.

P. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.

Q. Salvage: To protect removed or dismantled items and deliver them to Owner ready for reuse.

R. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

S. Strip: To remove existing finish down to base material unless otherwise indicated.

1.3 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, light fixtures, antiques, and other items of interest or value to Owner that may be encountered during removal and dismantling work remain Owner's property. Carefully dismantle and salvage each item or object.

B. Coordinate with Architect, who will establish special procedures for dismantling and salvage.

1.4 INFORMATIONAL SUBMITTALS

A. Construction Schedule for Historic Treatments: Indicate for entire Project the following for each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces:

1. Detailed sequence of historic treatment work, with starting and ending dates, coordinated with Owner's continuing operations and other known work in progress.
2. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
3. Use of stairs.
4. Coordination of Owner's partial occupancy of completed Work.
5. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without Contractor's professional engineer's certification that the structure can support the imposed loadings without damage.

B. Qualification Data: For historic treatment specialist, historic removal and dismantling specialist, historic removal and dismantling specialist's field supervisors, historic removal and dismantling specialist's workers.

C. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.

D. Historic Treatment Program: Submit before work begins.

E. Fire-Prevention Plan: Submit before work begins.

F. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.

1.5 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to this work as specified in each section, and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrate the firm's qualifications to perform this work.

1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on Project site during times that historic treatment work is in progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.
2. Worker Qualification: Persons who are experienced in historic treatment work of types they will be performing.

B. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist. General selective demolition experience is not sufficient experience for historic removal and dismantling work.

C. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections.

1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

D. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-prevention devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include each fire watch's training, duties, and authority to enforce fire safety.

E. Mockups: Prepare mockups of specific historic treatment procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Typical Removal Work: Remove typical wall area of brick and plaster where shown on Drawings.

2. Typical Removal Work, Remove typical wall area of Terra Cotta and plaster where shown on Drawings.
3. Typical Removal Work, Remove exterior brick and masonry wall at new scupper.
4. Typical Exploratory Work,
5. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

F. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.

G. Standards: Comply with ANSI/ASSE A10.6.

H. Historic Treatment Preconstruction Conference: Conduct conference at Project site.

1. General: Review methods and procedures related to historic treatment including, but not limited to, the following:

   a. Review manufacturer's written instructions for precautions and effects of historic treatment procedures on materials, components, and vegetation.
   b. Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.
   c. Review qualifications of personnel assigned to the work and assign duties.
   d. Review material application, work sequencing, tolerances, and required clearances.
   e. Review areas where existing construction is to remain and requires protection.

2. Removal and Dismantling:

   a. Inspect and discuss condition of construction to be removed or dismantled.
   b. Review requirements of other work that relies on substrates exposed by removal and dismantling work.

1.6 STORAGE AND PROTECTION OF HISTORIC MATERIALS

A. Salvaged Historic Materials:

1. Clean only loose debris from salvaged historic items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. La
   bel contents of containers.

3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

B. Historic Materials for Reinstallation:

1. Repair and clean historic items as indicated and to functional condition for reuse.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make item functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

D. Storage and Protection: When taken from their existing locations, catalog and store historic items within a weathertight enclosure where they are protected from wetting by rain, snow, condensation, or ground water, and from freezing temperatures.

1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.

1.7 PROJECT CONDITIONS

A. General Size Limitation in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches or more.

B. Owner will occupy portions of building immediately adjacent to removal and dismantling area. Conduct removal and dismantling work so Owner's operations will not be disrupted.

C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1. Before removal and dismantling, Owner will remove the following items:

a. To be determined.

D. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

~~E. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.~~

~~1. Hazardous materials will be removed by Owner before start of the Work.~~
~~2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.~~

~~a. In the case of asbestos, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.~~

~~F. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.~~

~~1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.~~

~~a. In the case of asbestos, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.~~

G. Hazardous Materials: Hazardous materials are present in construction affected by removal and dismantling work. A report **and work plan** on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified ~~elsewhere in the Contract Documents.~~ **in the Asbestos Inspection Report (City of Phila, Dept of Public Health, 8/16/19) and Abatement Work Plan (Pennoni Assoc, 2/28/22.**
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
3. If unanticipated asbestos is suspected, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.

H. Storage or sale of removed or dismantled items on-site is not permitted unless

otherwise indicated.

PART 2 - PRODUCTS

(Not Used) PART 3

EXECUTION

3.1 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

A. Removal Equipment: Use only hand-held tools except as follows or unless otherwise approved by Architect on a case-by-case basis:

1. Light jackhammers are allowed subject to Architect's approval.
2. Large air hammers are not permitted.

B. Dismantling Equipment: Use manual, hand-held tools, except as follows or otherwise approved by Architect on a case-by-case basis:

1. Hand-held power tools and cutting torches are permitted only as submitted in the historic treatment program. They must be adjustable so as to penetrate or cut only the thickness of material being removed.
2. Pry bars more than 18 inches long and hammers weighing more than 2 lb are not permitted for dismantling work.

3.2 EXAMINATION

A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.

1. Verify that affected utilities have been disconnected and capped.
2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage.
3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
4. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures as a result of removal and dismantling work.

B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs and preconstruction videotapes.

1. Comply with requirements specified in Section 013233 "Photographic Documentation."

C. Perform surveys as the Work progresses to detect hazards resulting from historic treatment procedures.

3.3 PROTECTION, GENERAL

A. Ensure that supervisory personnel are on-site and on duty when historic treatment work begins and during its progress.

B. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide barricades, barriers, and temporary directional signage to exclude public from areas where historic treatment work is being performed.
3. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of historic treatment work.
4. Contain dust and debris generated by removal and dismantling work and prevent it from reaching the public or adjacent surfaces.
5. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
6. Protect floors and other surfaces along haul routes from damage, wear, and staining.
7. Provide supplemental sound-control treatment to isolate removal and dismantling work from other areas of the building.

C. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not deface or remove existing materials.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

D. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

E. Utility and Communications Services:

1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by the historic treatment work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for the historic treatment work.
3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

F. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.

1. Prevent solids such as stone or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

G. Existing Roofing: Prior to the start of work in an area, install roofing protection.

3.4 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or damage resulting from applications of chemical cleaners and paint removers.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof, UV resistant, and will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials staining.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected

surfaces.

D. Neutralize and collect alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.5 PROTECTION FROM FIRE

A. General: Follow fire-prevention plan and the following.

1. Comply with NFPA 241 requirements unless otherwise indicated.
2. Remove and keep area free of combustibles including, rubbish, paper, waste, and chemicals, except to the degree necessary for the immediate work.

    a. If combustible material cannot be removed, provide fire blankets to cover such materials.

3. Prohibit smoking by all persons within Project work and staging areas.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or highly combustible materials, including welding, torch-cutting, soldering, brazing, paint removal with heat, or other operations where open flames or implements utilizing high heat or combustible solvents and chemicals are anticipated:

1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
2. As far as practical, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or highly combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows.

a. Train each fire watch in the proper operation of fire-control equipment and alarms.
b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
d. Have fire watch perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work at Project sites to detect hidden or smoldering fires and to ensure that proper fire-prevention is maintained.
e. Maintain fire-watch personnel at Project sites until 60 minutes after conclusion of daily work.

C. Fire Extinguishers, Fire Blankets, and Rag Buckets: Maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire watch are trained in fire-extinguisher and blanket operation.

D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.

1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is completed.

3.6 GENERAL HISTORIC TREATMENT

A. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

B. Halt the process of deterioration and stabilize conditions unless otherwise indicated. Perform work as indicated on Drawings. Follow the procedures in subparagraphs below and procedures approved in historic treatment program:

1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs or video recordings. Comply with requirements in Section 013233 "Photographic Documentation."

C. Notify Architect of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation,

freezing, or thawing; or due to structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Architect.

D. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to approval of Architect.

E. Where Work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

F. Identify new and replacement materials and features with permanent marks hidden in the completed work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

3.7 HISTORIC REMOVAL AND DISMANTLING

A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.

B. Perform work according to the historic treatment program and approved mockup(s).

1. Provide supports or reinforcement for existing construction that becomes temporarily weakened by the work, until the work is completed.
2. Perform cutting by hand or with small power tools wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.
3. Do not operate air compressors inside building, unless approved by Architect in each case.
4. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
5. Do not use explosives.

C. Water-Mist Sprinkling: Use water-mist sprinkling and other wet methods to control dust only with adequate, approved procedures and equipment that ensure that such water will not create a hazard or adversely affect other building areas or materials.

D. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.

E. Removing and Dismantling Items on or near Historic Surfaces:

1. Use only dismantling tools and procedures within 12 inches of historic surface. Do not use pry bars. Protect historic surface from contact with or damage by tools.
2. Unfasten items to be removed, in the opposite order from which they were installed.
3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
4. Dismantle anchorages.

F. Masonry Walls:

1. Remove masonry carefully and erect temporary bracing and supports as needed to prevent collapse of materials being removed.
2. Dismantle top edge and sides before removing wall. Stop removal work and immediately inform Architect if any structural elements above or adjacent to the work show signs of distress or dislocation during any phase of removal work.
3. Remove wall in easily managed pieces.
4. During removal, Contractor is responsible for the stability of the partially remaining wall. Notify Architect of the condition of temporary bracing for wall if work is temporarily stopped during the wall's removal.

G. Steelwork:

1. Expose structural steel for examination by Architect and Contractor's professional engineer before proceeding with removal or dismantling.
2. If distress in structure is apparent during performance of the work, stop removal or dismantling and take immediate precautionary measures to ensure safety of the structure. Inform Architect of the problem, steps taken, and proposed corrective actions.
3. Brace and support structural steel being removed and remaining during removal and dismantling.
4. Concrete-Encased Steel: Where steel is known to be encased by concrete being removed, saw cut with blades that will cut no deeper than the thickness of the concrete cover with an adequate margin for error in the location of the steel. Isolate sections of concrete by saw cutting before beginning removal.

H. Loose Plaster: Identify loose, non-historic plaster and separate it from its substrate by tapping with a hammer and prying with a chisel or screwdriver. Do not use pry bars. Leave sound, firmly adhered plaster in place. Do not damage, remove, or dismantle historic plasterwork except where indicated or where it is an immediate hazard to personnel and as approved by Architect.

I. Concrete Floor Surface Removal: Remove floor surfaces, fill, and topping, to the indicated lower elevations or cleavage planes as indicated on Drawings. Use dismantling methods when removing floor surfaces 12 inches or less away from historic walls. Take away material to a uniform surface at the indicated level.

J. Anchorages:

1. Remove anchorages associated with removed items.
2. Dismantle anchorages associated with dismantled items.
3. In non-historic surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.
4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section specific to the historic surface being patched.

3.8 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

A. Existing Construction, to be removed:

1. Existing wall construction at new openings where shown on drawings, refer to paragraphs below for additional information.
2. Existing floor construction at enlarged elevator
3. First Floor and Basement wood windows and security screen or bars.
4. First and Second Floor doors and frames as indicated in plans and schedule.

B. Existing Items to Be Removed, Dismantled and Salvaged:

1. First Floor: banner rods between windows.

C. Existing Items to Be Removed, Dismantled and Reinstalled:

1. Grille and Vestibule

D. Existing Items to Remain: Historic elements to remain unless noted otherwise

3.9 HISTORIC TREATMENT SCHEDULE

A. Spaces, areas, rooms, and surfaces requiring special care and treatment to ensure successful preservation, rehabilitation, restoration and reconstruction are indicated on Drawings and generally described below.

1. Exterior granite, limestone, brick masonry and terra cotta surfaces and joints.
2. Wood frame and Main Entrance
3. Exterior security bars as indicated on elevation.
4. First Floor and Lower Level interior plaster walls, ceilings, openings, doors and frames as scheduled and wood trim.
5. First Floor perimeter shelving
6. Stair 1 wood wainscoting

END OF SECTION 013591

SECTION 07 7200
ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof curbs.

B. Roof Edge Safety Anchor and Cable System

C. Equipment rails and Equipment supports – 14 gauge galvanized steel, 3 ½ inches wide by height as needed.

D. Roof penetrations mounting curbs.

E. ~~Roof hatches with access ladders.~~

F. ~~Roof Scuttles to be provided for roof access – Aluminum curb frame and lid with insulation, provide additional aluminum liner on outside face of curb installation.~~

1.02 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.

C. Warranty Documentation:
   1. Submit manufacturer warranty.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Provide five year manufacturer warranty for all items listed..

PART 2 PRODUCTS

2.01 ROOF CURBS

A. Manufacturers:
1. AES Industries Inc: www.aescurb.com/#sle.
2. The Pate Company: www.patecurbs.com/#sle.
3. LMCurbs; Roof Curbs: www.lmcurbs.com/#sle.
4. MKT Metal Manufacturing: www.mktduct.com/#sle.
5. Roof Products & Systems (RPS): www.rpscurbs.com/#sle.

B. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.
1. Applications: Roof curbs used for roof penetrations/openings as indicated on drawings.
2. Roof Curb Mounting Substrate: Curb substrate consists of standing seam metal roof panel system.
3. Sheet Metal Material:
a. Aluminum: 0.080 inch minimum thickness, with 3003 alloy, and H14 temper.
1) Finish: Mill finish.
2) Color: As selected by Architect from manufacturer's standard line of colors.
4. Roofing Cants: Provide integral sheet metal roofing cants dimensioned to begin slope at top of roofing system at 1:1 slope; minimum cant height 4 inches.
5. Fabricate curb bottom and mounting flanges for installation directly on metal roof panel system to match slope and configuration of system.
a. Extend side flange to next adjacent roof panel seam and comply with seam configurations and seal connection, providing at least 6 inch clearance between curb and metal roof panel flange allowing water to properly flow past curb.
b. Where side of curb aligns with metal roof panel flange, attach fasteners on upper slope of flange to curb connection allowing water to flow past below fasteners, and seal connection.
c. Maintain at least 12 inch clearance from curb, and lap upper curb flange on underside of down sloping metal roof panel, and seal connection.
d. Lap lower curb flange overtop of down sloping metal roof panel and seal connection.
6. Provide layouts and configurations indicated on drawings.

2.02 ROOF HATCHES AND VENTS

A. ~~Roof Hatch Manufacturers:~~
1. ~~Subject to compliance with requirements established by basis of design and preformance requirements for complete system of roof hatch with integral roof curb, guard rail and ladder:~~
2. ~~Basis of Design by Bilco Company: www.bilco.com/#sle.~~
a. ~~Type S-50 (Library)~~
b. ~~Type L-50TB (Recreation Center)~~

3. Subject to compliance with requirements Approved Equal by the following:
4. Activar Construction Products Group, Inc. - JL Industries: www.activarcpg.com/#sle.
5. Acudor Products Inc; Galvanized Steel Roof Hatch: www.acudor.com/#sle.
6. Babcock-Davis; ThermalMAX: www.babcockdavis.com/#sle.
7. Best Access Doors; Series BA-GRH - Ladder Access Roof Hatch, Galvanized: www.bestaccessdoors.com/#sle.
8. Dur-Red Products: www.dur-red.com/#sle.
9. Elmdor Stoneman: www.elmdorstoneman.com/#sle.
10. FAKRO America LLC; Flat Roof Access Hatch DRL: www.fakrousa.com/#sle.
11. LMCurbs; Roof Hatch: www.lmcurbs.com/#sle.
12. Milcor, Inc: www.milcorinc.com/#sle.
13. Nystrom, Inc: www.nystrom.com/#sle.
14. Precision Ladders, LLC; Model PH-A: www.precisionladders.com/#sle.

B. Roof Access Hatches with Ladder: Factory-assembled roof hatch with frame and flat cover and metal access ladder, complete with operating and release hardware.
   1. Provide Basis of Design Product: Furnish and install where indicated on plans metal roof hatch Type L-50TB, size width: 30" (762mm) x length: 96" (2438mm). Length denotes hinge side. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.
      a. Library Basis-of-Design Manufacturer: Type S Roof Hatch by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-535-1582, Web: www.BILCO.com
         1) S-50: 36” x 30”
      b. Rec Center Basis-of-Design Manufacturer: Type L-50TB Roof Hatch by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-535-1582, Web: www.BILCO.com
         1) L-50TB: 30” x 96”
   2. Mounting: Provide frames and curbs suitable for mounting conditions as indicated on drawings.
   3. Thermally Broken Hatches: Provide insulation within hatch frame and cover.
   4. Folding Ladder Access: Triple section ladder, upper roof hatch door with PVC frame and lower insulated door with wood box to enclose and support ladder; 23-1/2 by 47 inches rough opening.
      a. Ladder Room Height Range: 91-3/4 to 110-1/4 inches, nominal.

C. Frames and Curbs: One-piece curb and frame with integral cap flashing to receive roof flashings; extended bottom flange to suit mounting.
   1. Insulation: Manufacturer's standard; 1 inch rigid glass fiber, located on outside face of curb.
   2. Curb Height: 12 inches from finished surface of roof, minimum.

D. Hardware: Steel, zinc coated and chromate sealed, unless otherwise indicated or required by manufacturer.
   1. Lifting Mechanisms: Compression or torsion spring operator with shock absorbers that automatically opens upon release of latch; capable of lifting covers despite 10 psf load.
   2. Hinges: Heavy duty pintle type.
   3. Hold open arm with vinyl-coated handle for manual release.
   4. Latch: Upon closing, engage latch automatically and reset manual release.
   5. Manual Release: Pull handle on interior.
   6. Locking: Padlock hasp on interior.

2.03 ~~ROOF HATCH Performance characteristics~~

A. ~~General:~~
   1. ~~Cover shall be reinforced to support a minimum live load of 40 psf (195kg/m^2) with a maximum deflection of 1/150th of the span or 20 psf (97kg/m^2) wind uplift.~~
   2. ~~Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.~~
   3. ~~Operation of the cover shall not be affected by temperature.~~
   4. ~~Entire hatch shall be weather tight with fully welded corner joints on cover and curb~~.

B. ~~Cover: Shall be [select: 14 gauge (1.9mm) paint bond G-90 galvanized steel or 11 gauge (2.3mm) aluminum] with a 3" (76mm) beaded flange with formed reinforcing members. Cover shall have a heavy extruded EPDM rubber gasket that is bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.~~

C. ~~Cover insulation: Shall be fiberglass of 1" (25mm) thickness, fully covered and protected by a metal liner 22 gauge (.8mm) paint bond G-90 galvanized steel or 18 gauge (1mm) aluminum.~~

D. ~~Curb: Shall be 12" (305mm) in height and of [select: 14 gauge (1.9mm) paint bond G-90 galvanized steel or 11 gauge (2.3mm) aluminum]. The curb shall be formed with a 3-1/2" (89mm) flange with 7/16" (11mm) holes provided for securing to the roof deck. The curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, fully welded at the corners, that features the Bil-Clip® flashing system, including stamped tabs, 6" (153mm) on center, to be bent inward to hold single ply roofing membrane securely in place.~~

E. ~~Curb insulation: Shall be rigid, high-density fiberboard of 1" (25mm) thickness on outside of curb.~~

F. ~~Lifting mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe [for aluminum construction: welded to the curb assembly; for steel construction: through bolted to the curb assembly.~~

G. ~~Hardware~~
   1. ~~Heavy pintle hinges shall be provided~~
   2. ~~Cover shall be equipped with a spring latch with interior and exterior turn handles~~
   3. ~~Roof hatch shall be equipped with interior and exterior padlock hasps.~~
   4. ~~The latch strike shall be a stamped component bolted to the curb assembly.~~
   5. ~~Cover shall automatically lock in the open position with a rigid hold-open arm equipped with a 1" (25mm) diameter red vinyl grip handle to permit easy release for closing.~~
   6. ~~All hardware shall be zinc plated and chromate sealed. [For installation in highly corrosive environments or when prolonged exposure to hot water or steam is anticipated, specify Type 316 stainless steel hardware.~~
   7. ~~Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.~~

H. ~~Finishes: Factory finish shall be [select: alkyd based red oxide primed steel or mill finish aluminum.~~

2.04 NON-PENETRATING ROOFTOP SUPPORTS/ASSEMBLIES

A. Non-Penetrating Rooftop Support/Assemblies: Manufacturer-engineered and factory-fabricated, with pedestal bases that rest on top of roofing membrane, and not requiring any attachment to roof structure and not penetrating roofing assembly.
   1. Design Loadings and Configurations: As required by applicable codes.
   2. Support Spacing and Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
   3. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
   4. Hardware, Bolts, Nuts, and Washers: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A153/A153M.

2.05 Roof Edge Safety Systems

A. Roof Edge Safety Anchor and Cable System
   1. **B.O.D.: 3M ROOFSAFE Cable Anchor system for use at edge flat roof area.**

B. Roof Edge Safety Anchor ~~and Rail~~ System
   1. **B.O.D.:** ~~Unirail~~ **3M 8MM Permanent Cable Anchor** system for use at bottom of pitched roof area.

C. Provide complete system; see drawings for location of anchors.
   1. **Install per manufacturer's instructions and recommendations.**
   2. **Provide (2) sets of accessories as recommended by manufacturer for the system(s), including Delta Harness and Webbing Lanyard and Self-Lock Twist Carabiner.**

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

B. When dissimilar metals come into contact with each other, back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 30 mils.

3.04 CLEANING

A. Clean installed work to like-new condition.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 07 7200

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SECTION 08 5113
ALUMINUM WINDOWS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 01 sections.

1.02 SUMMARY

A. Section Includes: Architectural Aluminum Windows including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of window units.
   1. Types of aluminum windows include:
      a. Thermal
      b. Fix and Operable as indicated on drawings

B. Related Sections:
   1. Division 5 for Security Screens
   2. 079200 “Joint Sealants” for joint sealants installed as part of the aluminum sliding door system
   3. 084113 "Aluminum-Framed Entrances and Windows"
   4. 088100 "Glazing"

1.03 DEFINITIONS

A. Performance class designations according to AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS):
   1. AW: Architectural Window

B. Performance grade number according to AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS):
   1. Design pressure number in pounds force per square foot used to determine the structural test pressure and water test pressure.

C. Structural Test Pressure: For uniform load structural test, is equivalent to 150 percent of the design pressure.

D. Definitions: For fenestration industry standard terminology and definitions refer to American Architectural Manufactures Association (AAMA) - AAMA Glossary (AAMA AG).

E. Minimum Test Size: Smallest gateway test size permitted for performance class. Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

1.04 PERFORMANCE REQUIREMENTS

A. General: Provide aluminum windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified, and that are of minimum test size indicated below:
   1. Size required by AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS) for minimum gateway performance.

B. Structural Performance: Provide aluminum windows capable of withstanding the effects of the following loads, based on testing units representative of those indicated for the Project that pass AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS), Uniform Load Structural Test:
   1. Design Wind Loads: Door shall be designed to withstand wind loads as noted on structural drawings.
   2. Deflection: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch (19 mm), whichever is less, at design pressure based on testing performed according to AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS), Uniform Load Deflection Test or structural computations.

C. Thermal Movements: Provide aluminum windows, including anchorage, that allow for thermal movements resulting from the following maximum change allowed in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

D. Recycled Content: Provide documentation indicating post-consumer recycled content plus one-half preconsumer recycled content.

E. VOC Emissions for Sealants: Provide certificate of compliance with California Department of Public Health (CDPH) Standard Method v1.1 – 2010, using the applicable exposure scenario.

F. VOC Content for Sealants: Provide documentation of compliant VOC content for SCAQMD Rule 1168.

1.05 SUBMITTALS

A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of aluminum window indicated.

B. Shop Drawings: Include plans, elevations, sections, details, hardware, attachments to other work, operational clearances and installation details.

C. Samples for Initial Selection: For units with factory-applied color finishes including samples of hardware and accessories involving color selection.

D. Samples for Verification: For aluminum windows and components required.

E. Product Schedule: For aluminum windows. Use same designations indicated on Drawings.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for each type, class, grade, and size of aluminum window. Test results based on use of downsized test units will not be accepted.

G. Maintenance Data: For operable sash, operating hardware and finishes to be include in maintenance manuals.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: An installer which has had successful experiences with installation of the same or similar units required for this project and other projects of similar size and scope.

B. Manufacturer Qualifications: A manufacturer capable of fabricating aluminum windows that meet or exceed performance requirements indicated and of documenting this performance by inclusion of test reports, and calculations.

C. Source Limitations: Obtain aluminum windows through one source from a single manufacturer.

D. Product Options: Drawings indicate size, profiles, and dimensional requirements of aluminum windows and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements." Do not modify size and dimensional requirements.
   1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.07 PROJECT CONDITIONS

A. Field Measurements: Verify aluminum window openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.08 WARRANTY

A. Manufacturer’s Warranty: Submit, for Owner’s acceptance, manufacturer’s standard warranty.
   1. Warranty Period: Two (2) years from Date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis-of-Design Product:
   1. Winco Window Co., 6200 Maple Ave., St. Louis, MO 63130-3305. ASD. Toll Free: 800-525-8089. Tel: 314-725-8088. Fax: 314-725-1419. Web: www.wincowindow.com.
   2. Winco Windows Products used:
      a. Winco Heavy Commercial Thermally Improved Windows as indicated on drawings and the following:
      b. 1450S Series 4” Thermal Fixed (Profile: Offset Double Hung)
      c. 1550 PI Thermal Double Leaf (Butterfly) Inswing Casement (Fixed)
      d. WINCO: Windows, Receptors, Vertical Mullions, Sill Extenders, Snap Trim and Sculptured Snap Trim with profiles as indicated on drawings as manufactured by Winco Windows.
   3. Performance requirements: Provide complete system with all components and configurations indicated on drawings which are in accordance with historic preservation intent as approved by the Philadelphia Historical Commission; these may included custom trim items.

B. Subject to compliance with requirements, provide a complete system of a comparable product by the following and only if basis of design products are not readily available:
   1. Graham Windows, Graham Architectural Products; grahamwindows.com

C. Substitutions: Refer to Substitutions Section for procedures and submission requirements.
   1. Pre-Contract (Bidding Period) Substitutions: Submit written requests ten (10) days prior to bid date.
   2. Post-Contract (Construction Period) Substitutions: Submit written request in order to avoid window installation and construction delays.
   3. Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
   4. Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for window system performance criteria, and (2) has been engaged in the design, manufacturer and fabrication of aluminum windows for a period of not less than ten (10) years. (Company Name)
   5. Test Reports: Submit test reports verifying compliance with each test requirement required by the project.
   6. Samples: Provide samples of typical product sections and finish samples in manufacturer's standard sizes.

D. Substitution Acceptance: Acceptance will be in written form, either as an addendum or modification, and documented by a formal change order signed by the Owner and Contractor.

2.02 MATERIALS

A. Aluminum Extrusions: Alloy and temper recommended by aluminum window manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070” wall thickness at any location for the main frame and sash members.
   1. Recycled Content: Provide documentation indicating post-consumer recycled content plus one-half pre-consumer recycled content.

B. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors, and other components.

C. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

D. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

E. Sliding-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.
   1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.

F. Sealant: For sealants required within fabricated windows, provide window manufacturer's standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
   1. VOC Emissions for Sealants: Provide certificate of compliance with California Department of Public Health (CDPH) Standard Method v1.1 – 2010, using the applicable exposure scenario.

2.03 ALUMINUM CLAD OVER EXISTING AND NEW WOOD FRAME WINDOW

A. Acceptable Product:
1. Winco 1450S Series: 4 inch Heavy Commercial Thermally Improved Window.

B. Performance: AAMA/WDMA/CSA 101/I.S.2/A440.
1. Architectural Window: AW-100.
2. Heavy Commercial: HC-100.
3. Water Resistance, ASTM E 331: 12 psf (575 Pa).
4. Water Resistance, ASTM E 547: 12 psf (575 Pa) for AW rated windows.
5. Air Infiltration, ASTM E 283 at static air pressure of 6.24 psf: 0.03 cfm/sf.
6. Uniform Load Structural Test, ASTM E 330: 120 psf (5748 Pa).
7. Forced Entry Resistance, ASTM F 588: Grade 10.
8. Condensation Resistance Factor (CRF), AAMA 1503.1: Frame: 68.
9. Thermal Performance ("U" Value), AAMA 1503.1: 0.45 BTU/Hr-F°-Ft^2.
10. Blast Resistant: Provide a complete blast resistant window assembly meeting UFC 4-010-01.
11. Provide impact resistant window assembly meeting either FBC 2007 – HVHZ Protocols; or ASTM E1886 and ASTM E1996 (Level D or E) Protocols

C. Frame: Thermally broken.
1. Wall Thickness: 0.125 inches (3.2 mm).
2. Depth: 4 inches (102 mm).
3. Corners: Closely fit and mechanically fastened with screws. Must be sealed using AAMA approved sealants in a multi-step process to provide sealant redundancy.
4. Bevel: Integral bevel on glazing leg or glazing bead

D. Ventilator and Access Sash: Thermally broken.
1. Wall Thickness: 0.125 inches (3.2 mm).
2. Ventilator Depth: 2 inches (51 mm).
3. All vent extrusions shall be tubular on all 4 sides.
4. Corners: Mitered and mechanically fastened with screws. Joinery is sealed with small joint sealant.
5. Each vent shall have two rows of Santoprene® weather stripping installed in a specifically designed weather strip pocket for the extrusion.
6. Bevel: Integral bevel on glazing leg or glazing bead

E. Weather Strip
1. All weather strips shall be double Santoprene® thermoplastic rubber or equal.

F. Thermal Barrier
1. Poured-in-place structural thermal barrier shall transfer during bending and provide composite action between frame components.
2. Thermal barrier pocket on aluminum extrusions shall be Azo-Braded to create a mechanical lock to improve the adhesion properties between the polyurethane polymer and the surface of the thermal barrier pocket.
3. Window manufacturer must provide a warranty from the manufacturer of the polyurethane thermal barrier that warrants against product failure as a result of thermal shrinkage beyond 1/8 inch (3.2 mm) from each end and fracturing of the polyurethane for a period not to exceed ten years from the date of window manufacture.
4. Thermal barriers made of crimped in place polyamide (insulbar®) strips are not acceptable unless all strips are covered and tooled with Dow 795 silicone caulking to climate water migration.

2.04 WINDOW

A. Window Type: Fixed with operable casement or as otherwise indicated on drawings and in Window Schedule.

B. Performance Requirements: Provide aluminum windows of performance indicated that comply with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS)
   1. Performance Class and Grade: XO/OX: AW-PG40-HS

C. Condensation-Resistance Factor (CRF): Provide aluminum windows tested for thermal performance according to AAMA 1503, with a CRF not less than Single Slide: 76 (frame) and 77 (glass) or Double Slide: 69 (frame) and 77 (glass).

D. Temperature Index (I): Provide aluminum windows tested for thermal performance according to CSA-A440 with a Temperature Index not less than Single Slide: 57 (frame) and 73 (glass) or Double Slide: 36 (frame) and 74 (glass).

E. Energy Efficiency:
   1. Thermal Transmittance: Provide aluminum windows tested for thermal performance according to AAMA 1503.
      a. Provide aluminum windows tested for thermal performance according to AAMA 1503, with a thermal transmittance (U-factor) no more than Single Slide: 0.25 BTU/hr/sf/°F or Double Slide: 0.28 BTU/hr/sf/°F.
      b. Provide aluminum windows simulated for thermal performance according to AAMA 507 and NFRC 100 with a thermal transmittance (U-factor) range of; Single Slide: 0.23 to 0.38 BTU/hr/sf/°F or Double Slide: 0.25 to 0.39 BTU/hr/sf/°F (Based on center of glass U-factor range 0.10 to 0.32 for triple glazing).
   2. Solar Heat-Gain Coefficient (SHGC): Provide aluminum windows with a whole-window SHGC as determined according to NFRC 200 and AAMA 507 procedures.

F. Air Infiltration: Maximum rate not more than indicated when tested according to AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS), Air Infiltration Test.
   1. Maximum Rate: 0.3 cfm/sq. ft. (0.5 L/s•m²) of area at an inward test pressure of 6.24 lbf/sq. ft. (300 Pa) in accordance with ASTM E283.

G. Water Resistance: No water leakage as defined in AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS) referenced test methods at a water test pressure equaling that indicated, when tested according to ASTM E547 and ASTM E331.
   1. Test Pressure: XO/OX and XX; 20 percent of positive design pressure, but not more than 10 lbf/sq. ft. (478 Pa).

H. Forced-Entry Resistance: Comply with Performance Grade 10 requirements when tested according to ASTM F 588.

I. Life-Cycle Testing: Test according to AAMA 910 and comply with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS).

J. Operating Force and Auxiliary (Durability) Tests: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS) for operating window types indicated.

K. Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC): When tested to AAMA Specification 1801 and in accordance with ASTM E1425 and ASTM E90, the STC and OITC Rating shall not be less than:
   1. XO UNIT = 32 (STC) and 26 (OITC)

L. Environmental Product Declarations (EPD): Provide a Type III Product-Specific EPD created from a Product Category Rule specific to North America.

2.05 TRIM AND PANS

A. Provide trim, pans and all other items as indicated on Drawings.

B. Sub Frame and Closure Plate.

C. Sill Starter.

D. Winco Sills: as indicated on drawings inches (as indicated on drawings mm).

E. Sub-Sill: as indicated on drawings Series.

F. Sill Extension: as indicated on drawings inches (as indicated on drawings mm).

G. PVC Comp. Channel (Frame Filler): For as indicated on drawings inch (as indicated on drawings mm) frame depth.

H. Strap Anchor.

I. Snap Cover: Part # as indicated on drawings.

J. Base Clip: Part # as indicated on drawings.

K. Replacement Pan Systems:
1. Pan Head, Jamb and Sill: Part # as indicated on drawings.
2. Pan Head and Jamb: For use with Part # as indicated on drawings.
3. Pan Extender: For use with Part # as indicated on drawings.
4. Pan Sill: For use with Part # as indicated on drawings.
5. Pan Sill: Part #as indicated on drawings.
6. Pan Jamb: Part # as indicated on drawings.
7. Pan Head: Part # as indicated on drawings.
8. Multi-Purpose Pan: Part # as indicated on drawings.

2.06 SCREENS

A. Frame: Extruded aluminum, 6063-T6 alloy and temper.
1. Screen mounting holes shall be pre-drilled at the factory

B. Screen Fabric: 0.011 inch (0.2194 mm) diameter 5154 alloy wire woven in 18 x 16 mesh.
1. Color: Charcoal anodized.

C. Screen Fabric: 0.009 inch (0.2286 mm) diameter stainless steel wire woven in 18 x 16 mesh.

2.07 BLINDS

A. Head Rail: 1.085 inch wide by 0.875 inch high by 0.050 inch thick (27 mm by 22 mm by 1.3 mm).

B. Bottom Rail: 1 inch wide by 0.355 inch high by 0.050inch thick (25 mm by 9 mm by 1.3 mm).

C. Rail Material: 6063-T5 extruded aluminum alloy and temper with a baked on polyester powder coat finish conforming to AAMA 603.8-1985.

D. Ladder Cord Locations: Shall not exceed 6 inches (152 mm) from end of the slot or 24 inches (610 mm) apart.

E. Tilt Control: Tilt control knob shall have slip feature to minimize damage due to over tilting of blind.

F. Tilt Control: Provide angled tilt control knobs.

G. Knobs: Provide removable key operated knobs.

H. Knobs: Provide Low Profile knobs.

I. Knobs: Provide Thumb turn knobs.

2.08 MULLIONS AND GRIDS

A. Mullion:
1. Non-Thermal Mullion: Part #as indicated on drawings.
2. Thermal Mullion: Part # as indicated on drawings.
3. Provide mullions as indicated on Drawings.

B. Window Depth: as indicated on drawings inches (as indicated on drawings mm).

C. Winco Window Series: types as indicated on drawings and glazing per Glazing Section 088100.
1. Note: special translucent glazing for one unit as indicated on drawings.

D. Stack:
1. Vertical.
2. Horizontal.

E. Non-Removable Grid Frames:
1. Non-Sloped: as indicated on drawings.
2. Sloped: as indicated on drawings.
3. Sculptured: as indicated on drawings.
4. Hurricane Glazed: as indicated on drawings.
5. Integral Bevel.

2.09 FINISH

A. ~~Anodic Finish: All exposed areas of aluminum windows and components shall receive a two-step finish: clear anodize components, then color coat with electrostatically deposited finish:~~
1. ~~Color: To be selected by the Architect from the manufacturer's standard colors.~~
2. ~~Color: As noted in the Window Schedule.~~
3. ~~Color: A44, Class I color anodized at 0.7 mils or greater in accordance with AAMA 611-98 (WINCO Finish 111 Light Bronze, 112 Medium Bronze or 113 Dark Bronze, 115 Black).~~

B. Paint Finish: Finish all exposed areas of aluminum windows and components with the following:
1. 70 percent Kynar in accordance with AA-M12-C42-R1X, AAMA 2605-98
2. ~~50 percent Kynar in accordance with AA-M12-C42-R1X, and AAMA 2604-98.~~

3. Color: **Custom color** to be selected by the Architect ~~from the manufacturer's standard colors.~~
4. ~~Color: As noted in the Window Schedule.~~
5. ~~Color: As indicated on drawings.~~

2.10 GLAZING

A. Glass and Glazing Materials: Refer to Division 08 Section "Glazing" for glass units and glazing requirements applicable to glazed aluminum window units.

B. Glazing System: Glazing method shall be a wet/dry type in accordance with manufacturer's standards. Exterior glazing shall be silicone back bedding sealant. Interior glazing shall be snap-in type glazing beads with an interior gasket in accordance with AAMA 702 or ASTM C864.

C. Glazing: All units shall be factory glazed with butyl tape, silicone cap bead on the exterior, with glazing vinyl and extruded snap-in aluminum glazing bead on the interior.

2.11 HARDWARE

A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum; designed to smoothly operate, tightly close, and securely lock aluminum windows, and sized to accommodate sash weight and dimensions.

B. Horizontal Sliding Windows: Provide the following operating hardware:
1. Handle: Continuous, integral pulls.
2. Sash Locks.
3. Composite adjustable tandem roller.
4. Stainless Steel roller track.
5. Standard auto lock.
6. Limit device.
7. Optional Sash Lock: Spring-loaded, snap-type lock on bottom rail of lower sash.
8. Limit Device: Sash stop limit device; for bottom sash located at jamb; two per sash.

2.12 INSECT SCREENS

A. General: Design windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches. Fabricate insect screens to fully integrate with window frame. Locate screens on outside of window and provide for each operable exterior sash.
1. Comply with SMA 1004, "Specifications for Aluminum Tubular Frame Screens for Windows," for minimum standards of appearance, fabrication, attachment of screen fabric, hardware, and accessories unless more stringent requirements are indicated.

B. Aluminum Insect Screen Frames: Manufacturer's standard aluminum alloy complying with SMA 1004. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners and removable PVC spline.
1. Extruded-Aluminum or Aluminum Tubular Framing Sections and Cross Braces: Not less than 0.050-inch (1.3-mm) wall thickness.
2. Finish: Manufacturer's standard.

2.13 FABRICATION

A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
   1. Profiles that are sharp, straight, and free of defects or deformations.
   2. Accurately fit joints; make joints flush, hairline and weatherproof.
   3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
   4. Physical and thermal isolation of glazing from framing members.
   5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
   6. Provisions for field replacement of glazing.
   7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

B. Fabricate aluminum windows in sizes indicated to be confirm by field measurement. Include a complete system for assembling components and anchoring windows.

C. Fabricate aluminum windows that are re-glazable without dismantling sash or framing.

D. Thermally Improved Construction: Fabricate aluminum windows with an integral, concealed, low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact. Thermal barriers shall be designed in accordance with AAMA TIR A8.
   1. Frame thermal barrier shall be polyamide with a minimum of 1” (25.4 mm) separation, installed continuously and mechanically bonded to the aluminum.
   2. Sash thermal barrier shall be polyamide with a minimum of 1/2” (12.7 mm) separation, installed continuously and mechanically bonded to the aluminum.

E. Weather Stripping: Provide full-perimeter weather stripping for each operable sash.

F. Weep Holes: Provide weep holes and internal passages in window frames to conduct infiltrating water to exterior.

G. Provide water-shed members as required above lines of natural water penetration.

H. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.

I. Sub frames: Provide sub frames with anchors for window units as shown, of profile and dimensions indicated but not less than 0.093-inch (2.4-mm) thick extruded aluminum. Miter or cope corners, and join with concealed mechanical joint fasteners. Finish to match window units. Provide sub frames capable of withstanding design loads of window units.

J. Factory-Glazed Fabrication: Glaze aluminum windows in the factory where practical and possible for applications indicated. Comply with requirements in Division 08 Section "Glazing" and with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS).

K. Glazing Stops: Provide snap-on glazing stops coordinated with Division 08 Section "Glazing" and glazing system indicated. Provide glazing stops to match sash.

2.14 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Factory Finishing:
   1. Kawneer Permanodic™ AA-M10C21A44 / AA-M45C22A44, AAMA 611, Architectural Class I Color Anodic Coating, Color: #40 Dark Bronze.
   2. Kawneer Permanodic™ AA-M10C21A41 / AA-M45C22A41, AAMA 611, Architectural Class I Clear Anodic Coating (Color #14 Clear) (Optional).

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight window installation.
   1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
   2. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
   3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing windows, hardware, accessories, and other components.

B. Install aluminum framed storefront system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

C. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.

D. Install aluminum framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within sliding door to the exterior.

E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.03 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
   1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

B. Testing Services: Testing and inspecting of installed windows shall take place as follows:

1. Testing Methodology: Testing Standard shall be per AAMA 502 including reference to ASTM E 783 for Air Infiltration Test and ASTM E 1105 for Water Penetration Test.
   a. Air Infiltration Test: Conduct test in accordance with ASTM E 783 at a minimum uniform static test pressure of 1.57 psf (75 Pa) for CW or 6.24 psf (300 Pa) for AW. The maximum allowable rates of air leakage for field testing shall not exceed 1.5 times the project specifications.
   b. Water Infiltration Test: Water penetration resistance tests shall be conducted in accordance with ASTM E 1105 at a static test pressure equal to 2/3 the specified water test pressure.
2. Testing Extent: Architect shall select window units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present.
3. Test Reports: Shall be prepared according to AAMA 502.

3.04 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes, screens, hardware, and accessories for a tight fit at contact points and weather stripping for smooth operation and weather tight closure. Lubricate hardware and moving parts.

B. Clean aluminum surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

C. Clean glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.

D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

E. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

3.05 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain window operating system. Refer to Section 017823 "Operating and Maintenance Manuals."

END OF SECTION 085113 08 5113

SECTION 270526

GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Requirements outside of Division 27:
   1. Section 260526 “Grounding and Bonding for Electrical Systems.”

1.2 SUMMARY

A. Section Includes:

   1. Grounding conductors.
   2. Grounding connectors.
   3. Grounding busbars.
   4. Grounding rods.
   5. Grounding labeling.

1.3 DEFINITIONS

A. BCT: Bonding conductor for telecommunications.

B. TGB: Telecommunications grounding busbar.

C. TMGB: Telecommunications main grounding busbar.

D. Service Provider: The operator of a service that provides telecommunications transmission delivered over access provider facilities.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For communications equipment room signal reference grid. Include plans, elevations, sections, details, and attachments to other work.

1.5 INFORMATIONAL SUBMITTALS

A. As-Built Data: Plans showing as-built locations of grounding and bonding infrastructure, including the following:

1. Ground rods.
2. Ground and roof rings.
3. BCT, TMGB, TGBs, and routing of their bonding conductors.

B. Qualification Data: For installation supervisor, and field inspector.

C. Qualification Data: For testing agency and testing agency's field supervisor, testing agency may be electrical contractor, submit testing qualifications for these systems.

D. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.

1. Result of the ground-resistance test, measured at the point of BCT connection.
2. Result of the bonding-resistance test at each TGB and its nearest grounding electrode.

1.7 QUALITY ASSURANCE

A. Installer Qualifications:
1. Field Inspector: Qualified to perform the on-site inspection, all qualification data must be submitted for review.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

C. Comply with TIA-607-C. All metallic pathways require grounding and bonding.

2.2 CONDUCTORS

A. Comply with UL 486A-486B.

B. Insulated Conductors: Stranded copper wire, green or green with yellow stripe insulation, insulated for 600 V, and complying with UL 83.

1. Ground wire for custom-length equipment ground jumpers shall be No. 6 AWG, 19-strand, UL-listed, Type THHN wire.
2. Cable Tray Equipment Grounding Wire: No. 6 AWG.

C. Cable Tray Grounding Jumper:

1. Not smaller than No. 6 AWG and not longer than 12 inches (300 mm). If jumper is a wire, it shall have a crimped grounding lug with two holes and long barrel for two crimps. If jumper is a flexible braid, it shall have a one-hole ferrule. Attach with grounding screw or connector provided by cable tray manufacturer.
2. Not smaller than No. 10 AWG and not longer than 12 inches (300 mm). If jumper is a wire, it shall have a crimped grounding lug with one hole and standard barrel for one crimp. If jumper is a flexible braid, it shall have a one- or two-hole ferrule. Attach with grounding screw or connector provided by cable tray manufacturer.

D. Bare Copper Conductors:

1. Solid Conductors: ASTM B3.
2. Stranded Conductors: ASTM B8.
3. Tinned Conductors: ASTM B33.
4. Bonding Cable: 28 kcmils (14.2 sq. mm), 14 strands of No. 17 AWG conductor, and 1/4 inch (6.3 mm) in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Tinned-copper tape, braided conductors terminated with two-hole copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.3 CONNECTORS

A. Irreversible connectors listed for the purpose. Listed by an NRTL as complying with NFPA 70 for specific types, sizes, and combinations of conductors and other items connected. Comply with UL 486A-486B.

B. Compression Wire Connectors: Crimp-and-compress connectors that bond to the conductor when the connector is compressed around the conductor. Comply with UL 467.

1. Electroplated tinned copper, C and H shaped.

C. Signal Reference Grid Connectors: Combination of compression wire connectors, access floor grounding clamps, bronze U-bolt grounding clamps, and copper split-bolt connectors, designed for the purpose.

D. Busbar Connectors: Cast silicon bronze, solderless compression-type, mechanical connector; with a long barrel and two holes spaced on 5/8- or 1-inch (15.8- or 25.4-mm) centers for a two-bolt connection to the busbar.

E. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.4 GROUNDING BUSBARS

A. TMGB: Predrilled, wall-mounted, rectangular bars of hard-drawn solid copper, 1/4 by 4 inches (6.3 by 100 mm) in cross section, length as indicated on Drawings. The busbar shall be NRTL listed for use as TMGB and shall comply with TIA-607-B.

1. Predrilling shall be with holes for use with lugs specified in this Section.
2. Mounting Hardware: Stand-off brackets that provide a 4-inch (100-mm) clearance to access the rear of the busbar. Brackets and bolts shall be stainless steel.
3. Stand-off insulators for mounting shall be Lexan or PVC. Comply with UL 891 for use in 600-V switchboards, impulse tested at 5000 V.

B. TGB: Predrilled rectangular bars of hard-drawn solid copper, 1/4 by 2 inches (6.3 by 50 mm) in cross section, length as indicated on Drawings. The busbar shall be for wall mounting, shall be NRTL listed as complying with UL 467, and shall comply with TIA-607-B.

1. Predrilling shall be with holes for use with lugs specified in this Section.
2. Mounting Hardware: Stand-off brackets that provide at least a 2-inch (50-mm) clearance to access the rear of the busbar. Brackets and bolts shall be stainless steel.
3. Stand-off insulators for mounting shall be Lexan or PVC. Comply with UL 891 for use in 600-V switchboards, impulse tested at 5000 V.

C. Rack and Cabinet Grounding Busbars: Rectangular bars of hard-drawn solid copper, accepting conductors ranging from No. 14 to No. 2/0 AWG, NRTL listed as complying with UL 467, and complying with TIA-607-B. Predrilling shall be with holes for use with lugs specified in this Section.

1. Cabinet-Mounted Busbar: Terminal block, with stainless-steel or copper-plated hardware for attachment to the cabinet.
2. Rack-Mounted Horizontal Busbar: Designed for mounting in 19- or 23-inch (483- or 584-mm) equipment racks. Include a copper splice bar for transitioning to an adjoining rack, and stainless-steel or copper-plated hardware for attachment to the rack.
3. Rack-Mounted Vertical Busbar: 72 or 36 inches (1827 or 914 mm) long, with stainless-steel or copper-plated hardware for attachment to the rack.

2.5 IDENTIFICATION

A. Comply with requirements for identification products in 270553 “Identification for Communication Standards”.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine the ac grounding electrode system and equipment grounding for compliance with requirements for maximum ground-resistance level and other conditions affecting performance of grounding and bonding of the electrical system.

B. Inspect the test results of the ac grounding system measured at the point of BCT connection.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with connection of the BCT only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Bonding shall include the ac utility power service entrance, the communications cable entrance, and the grounding electrode system. The bonding of these elements shall form a loop so that each element is connected to at least two others.

B. Comply with NECA 1.

C. Comply with TIA-607-C.

3.3 APPLICATION

A. Conductors: Install solid conductor for No. 8 AWG and smaller and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

1. The bonding conductors between the TGB and structural steel of steel-frame buildings shall not be smaller than No. 6 AWG.
2. The bonding conductors between the TMGB and structural steel of steel-frame buildings shall not be smaller than No. 6 AWG.

B. Underground Grounding Conductors: Install barecopper conductor, No. 2 AWG minimum.

C. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

D. Conductor Support:

1. Secure grounding and bonding conductors at intervals of not less than 36 inches (900 mm).

E. Grounding and Bonding Conductors:

1. Install in the straightest and shortest route between the origination and termination point, and no longer than required. The bend radius shall not be smaller than eight times the diameter of the conductor. No one bend may exceed 90 degrees.
2. Install without splices.
3. Support at not more than 36-inch (900-mm) intervals.
4. Install grounding and bonding conductors in 3/4-inch (21-mm) PVC conduit until conduit enters a telecommunications room. The grounding and bonding conductor pathway through a plenum shall be in EMT. Conductors shall not be installed in EMT unless otherwise indicated.

a. If a grounding and bonding conductor is installed in ferrous metallic conduit, bond the conductor to the conduit using a grounding.

3.4 GROUNDING ELECTRODE SYSTEM

A. The BCT between the TMGB and the ac service equipment ground shall not be smaller than No. 3/0 AWG.

3.5 GROUNDING BUSBARS

A. Indicate locations of grounding busbars on Drawings. Install busbars horizontally, on insulated spacers 2 inches (50 mm) minimum from wall, 12 inches (300 mm) above finished floor unless otherwise indicated. Install locking washers on both ends of the insulator.

B. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down; connect to horizontal bus. All bolts, nut, washers, locking washers, lugs shall be made of the same material as the busbar. Locking washers shall be installed on the nut side.

3.6 CONNECTIONS

A. Bond metallic equipment in a telecommunications equipment room to the grounding busbar in that room, using equipment grounding conductors not smaller than No. 6 AWG.

B. Stacking of conductors under a single bolt is not permitted when connecting to busbars.

C. Assemble the wire connector to the conductor, complying with manufacturer's written instructions and as follows:

1. Use crimping tool and the die specific to the connector.
2. Pretwist the conductor.
3. Apply an antioxidant compound to all bolted and compression connections.

D. Primary Protector: Bond to the TMGB with insulated bonding conductor.

E. Interconnections: Interconnect all TGBs with the TMGB with the telecommunications backbone conductor. If more than one TMGB is installed, interconnect TMGBs using the grounding equalizer conductor. The telecommunications backbone conductor and grounding equalizer conductor size shall not be less than 2 kcmils/linear foot (1 sq. mm/linear meter) of conductor length, up to a maximum size of No. 3/0 AWG unless otherwise indicated.

F. Telecommunications Enclosures and Equipment Racks: Bond metallic components of enclosures to the telecommunications bonding and grounding system. Install top-mounted rack grounding busbar unless the enclosure and rack are manufactured with the busbar. Bond the equipment grounding busbar to the TGB No. 2 AWG bonding conductors.

G. Structural Steel: Where the structural steel of a steel frame building is readily accessible within the room or space, bond each TGB and TMGB to the vertical steel of the building frame.

H. Electrical Power Panelboards: Where an electrical panelboard for telecommunications equipment is located in the same room or space, bond each TGB to the ground bar of the panelboard.

I. Shielded Cable: Bond the shield of shielded cable to the TGB in communications rooms and spaces. Comply with TIA-568-C.1 and TIA-568-C.2 when grounding shielded balanced twisted-pair cables.

J. Rack- and Cabinet-Mounted Equipment: Bond powered equipment chassis to the cabinet or rack grounding bar. Power connection shall comply with NFPA 70; the equipment grounding conductor in the power cord of cord- and plug-connected equipment shall be considered as a supplement to bonding requirements in this Section.

K. Equipment Room Signal Reference Grid: Provide a low-impedance path between telecommunications cabinets, equipment racks, and the reference grid, using No. 6 AWG bonding conductors.

1. Install the conductors in grid pattern on 4-foot (1200-mm) centers, allowing bonding of one pedestal from each access floor tile.
2. Bond the TGB of the equipment room to the reference grid at two or more locations.
3. Bond all conduits and piping entering the equipment room to the TGB at the perimeter of the room.

L. Towers and Antennas:

1. Ground Ring: Buried at least 30 inches (760 mm) below grade and at least 24 inches (610 mm) from the base of the tower or mounting.
2. Bond each tower base and metallic frame of a dish to the ground ring, buried at least 18 inches (460 mm) below grade.
3. Bond the ground ring and antenna grounds to the equipment room TMGB or TGB, buried at least 30 inches (760 mm) below grade.
4. Bond metallic fences within 6 feet (1.8 m) of towers and antennas to the ground ring, buried at least 18 inches (460 mm) below grade.
5. Special Requirements for Roof-Mounted Towers:

    a. Roof Ring: Meet requirements for the ground ring except the conductors shall comply with requirements in Section 264113 "Lightning Protection for Structures."
    b. Bond tower base footings steel, the TGB in the equipment room, and antenna support guys to the roof ring.
    c. Connect roof ring to the perimeter conductors of the lightning protection system.

3.7 IDENTIFICATION

A. Labels shall be preprinted or computer-printed type.

1. Label TMGB(s) with "fs-TMGB," where "fs" is the telecommunications space identifier for the space containing the TMGB.
2. Label TGB(s) with "fs-TGB," where "fs" is the telecommunications space identifier for the space containing the TGB.
3. Label the BCT and each telecommunications backbone conductor at its attachment point: "WARNING! TELECOMMUNICATIONS BONDING CONDUCTOR. DO NOT REMOVE OR DISCONNECT!"

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Must be qualified to perform testing, may be electrical contractor.

B. Perform tests and inspections.

C. Tests and Inspections:

1. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
2. Test the bonding connections of the system using an ac earth ground-resistance tester, taking two-point bonding measurements in each telecommunications equipment room containing a TMGB and a TGB and using the process recommended by BICSI TDMM. Conduct tests with the facility in operation.

    a. Measure the resistance between the busbar and the nearest available grounding electrode. The maximum acceptable value of this bonding resistance is 100 milliohms.

3. Test for ground loop currents using a digital clamp-on ammeter, with a full-scale of not more than 10 A, displaying current in increments of 0.01 A at an accuracy of plus/minus 2.0 percent.

    a. With the grounding infrastructure completed and the communications system electronics operating, measure the current in every conductor connected to the TMGB. Maximum acceptable ac current level is 1 A.

D. Excessive Ground Resistance: If resistance to ground at the BCT exceeds 5 ohms, notify Architect promptly and include recommendations to reduce ground resistance.

E. Grounding system will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

G. Comply with commissioning plan.

END OF SECTION

SECTION 270544

SLEEVES AND SLEEVE SEALS FOR COMMUNICATIONS PATHWAYS AND CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Sleeves for pathway and cable penetration of non-fire-rated construction walls and floors.
2. Sleeve-seal systems.
3. Sleeve-seal fittings.
4. Grout.
5. Silicone sealants.

B. Related Requirements:

1. Section "Penetration Firestopping" for penetration firestopping installed in fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 SLEEVES

A. Wall Sleeves:

1. Steel Pipe Sleeves: ASTM A53/A53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch (0.6-mm) minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

C. PVC-Pipe Sleeves: ASTM D1785, Schedule 40.

D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.

E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.

F. Sleeves for Rectangular Openings:

1. Material: Galvanized-steel sheet.
2. Minimum Metal Thickness:

a. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and with no side larger than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
b. For sleeve cross-section rectangle perimeter 50 inches (1270 mm) or more and one or more sides larger than 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

2.2 SLEEVE-SEAL SYSTEMS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and pathway or cable.
1. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
2. Pressure Plates: Carbon steel.
3. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

2.3 SLEEVE-SEAL FITTINGS

A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.

2.4 GROUT

A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.

B. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.

C. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.

D. Packaging: Premixed and factory packaged.

2.5 SILICONE SEALANTS

A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.

1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.

B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

PART 3 - EXECUTION

3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

A. Comply with NECA 1.

B. Comply with NEMA VE 2 for cable tray and cable penetrations.

C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:

1. Interior Penetrations of Non-Fire-Rated Walls and Floors:

a. Seal annular space between sleeve and pathway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.

2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
3. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and pathway or cable unless sleeve seal is to be installed.
4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level. Install sleeves during erection of floors.

3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at pathway entries into building.

B. Install type and number of sealing elements recommended by manufacturer for pathway or cable material and size. Position pathway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pathway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.3 SLEEVE-SEAL-FITTING INSTALLATION

A. Install sleeve-seal fittings in new walls and slabs as they are constructed.

B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.

C. Secure nailing flanges to concrete forms.

D. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION 270544

SECTION 270553

IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Color and legend requirements for labels and signs.
2. Labels.
3. Bands and tubes.
4. Tapes.
5. Signs.
6. Cable ties.
7. Fasteners for labels and signs.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for communications identification products.

B. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.

C. Identification Schedule:

1. Outlets: Scaled drawings indicating location and proposed designation.
2. Backbone Cabling: Riser diagram showing each communications room, backbone cable, and proposed backbone cable designation.
3. Racks: Scaled drawings indicating location and proposed designation.
4. Patch Panels: Enlarged scaled drawings showing rack row, number, and proposed designations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with NFPA 70 and TIA 606-B.

B. Comply with ANSI Z535.4 for safety signs and labels.

C. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 COLOR AND LEGEND REQUIREMENTS

A. Equipment Identification Labels:
1. Yellow letters on a green field.

2.3 LABELS

A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

B. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameters of raceway or cable they identify, that stay in place by gripping action.

C. Self-Adhesive Wraparound Labels: Preprinted, 3-mil- (0.08-mm-) thick, vinyl flexible labels with acrylic pressure-sensitive adhesive.
1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating protective shields over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
2. Marker for Labels: Permanent, waterproof black ink marker recommended by tag manufacturer.
3. Marker for Labels: Machine-printed, permanent, waterproof black ink recommended by printer manufacturer.

D. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3-mil- (0.08-mm-) thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
1. Minimum Nominal Size:

a. 1-1/2 by 6 inches (37 by 150 mm) for raceway and conductors.
b. 3-1/2 by 5 inches (76 by 127 mm) for equipment.
c. As required by authorities having jurisdiction.

2.4 BANDS AND TUBES

A. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, 2 inches (50 mm) long, with diameters sized to suit diameters of raceway or cable they identify, that stay in place by gripping action.

2.5 UNDERGROUND-LINE WARNING TAPE

A. Tape:

1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground communications utility lines.
2. Printing on tape shall be permanent and shall not be damaged by burial operations.
3. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:

1. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, and ANSI Z535.4.
2. Inscriptions for Orange-Colored Tapes: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL-FIBER CABLE" .

C. Tag: Type I

1. Detectable three-layer laminate, consisting of a printed pigmented polyolefin film, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core; bright colored,compounded for direct-burial service.
2. Width: 3 inches (75 mm).
3. Overall Thickness: 5 mils (0.125 mm).
4. Foil Core Thickness: 0.35 mil (0.00889 mm).
5. Weight: 28 lb/1000 sq. ft. (13.7 kg/100 sq. m).
6. Tensile according to ASTM D882: 70 lbf (311.3 N) and 4600 psi (31.7 MPa).

2.6 SIGNS

A. Baked-Enamel Signs:
1. Preprinted aluminum signs,punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal Size: 7 by 10 inches (180 by 250 mm).

B. Metal-Backed Butyrate Signs:
1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396-inch (1-mm) galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal Size: 10 by 14 inches (250 by 360 mm).

C. Laminated-Acrylic or Melamine-Plastic Signs:
1. Engraved legend.
2. Thickness:

a. For signs up to 20 sq. in. (129 sq. cm), minimum 1/16 inch (1.6 mm) thick.

b. For signs larger than 20 sq. in. (129 sq. cm), 1/8 inch (3.2 mm) thick.
c. Engraved legend with black letters on yellow face.
d. Self-adhesive.
e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.7 CABLE TIES

A. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C) according to ASTM D638: 12,000 psi (82.7 MPa).
3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
4. Color: Black, except where used for color-coding.

B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C) according to ASTM D638: 12,000 psi (82.7 MPa).
3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
4. Color: Black.

C. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C) according to ASTM D638: 7000 psi (48.2 MPa).
3. UL 94 Flame Rating: 94V-0.
4. Temperature Range: Minus 50 to plus 284 deg F (Minus 46 to plus 140 deg C).
5. Color: Black.

2.8 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying communications identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 INSTALLATION

A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

B. Install identifying devices before installing acoustical ceilings and similar concealment.

C. Verify identity of each item before installing identification products.

D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

E. Apply identification devices to surfaces that require finish after completing finish work.

F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of communications systems and connected items.

G. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.

H. Vinyl Wraparound Labels:

1. Secure tight to surface of raceway or cable at a location with high visibility and accessibility.
2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.
3. Provide label 6 inches (150 mm) from cable end.

I. Snap-Around Labels:

1. Secure tight to surface at a location with high visibility and accessibility.
2. Provide label 6 inches (150 mm) from cable end.

J. Self-Adhesive Wraparound Labels:

1. Secure tight to surface at a location with high visibility and accessibility.
2. Provide label 6 inches (150 mm) from cable end.

K. Self-Adhesive Labels:

1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.

L. Snap-Around, Color-Coding Bands: Secure tight to surface at a location with high visibility and accessibility.

M. Underground-Line Warning Tape:

1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches (400 mm) overall.
2. Limit use of underground-line warning tape to direct-buried cables.
3. Install underground-line warning tape for direct-buried cables and cables in raceways.

N. Cable Ties: General purpose, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.3 IDENTIFICATION SCHEDULE

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations with high visibility. Identify by system and circuit designation.

C. Accessible Fittings for Raceways and Cables within Buildings: Identify covers of each junction and pull box with self-adhesive labels containing wiring system legend.

1. System legends shall be as follows:
    a. Systems shall be individually identified
        1) SS/SA (Security CCTV)
        2) Fiber Optic Cable
        3) Public Address
        4) Etc…

D. Faceplates: Label individual faceplates with self-adhesive labels. Place label at top of faceplate. Each faceplate shall be labeled with its individual, sequential designation, composed of the following, in the order listed:

1. Wiring closet designation.
2. Colon.
3. Faceplate number.

E. Equipment Room Labeling:

1. Racks, Frames, and Enclosures: Identify front and rear of each with self-adhesive labels.
2. Patch Panels: Label individual rows and outlets, starting at to left and working down, with self-adhesive labels.
3. Data Outlets: Label each outlet with a self-adhesive label indicating the following, in the order listed:

    a. Room number being served.
    b. Colon.
    c. Faceplate number.

F. Backbone Cables: Label each cable with a vinyl-wraparound label indicating the location of the far or other end of the backbone cable. Patch panel or punch down block where cable is terminated should be labeled identically.

G. Horizontal Cables: Label each cable with a self-adhesive wraparound label indicating the following, in the order listed:

1. Room number, cabinet Number, Patch Panel Number
2. Colon.
3. Faceplate number.

H. Locations of Underground Lines: Underground-line warning tape for copper, coaxial, hybrid copper/fiber, and optical-fiber cable.

I. Instructional Signs: Self-adhesive labels.

J. Warning Labels for Indoor Cabinets, Boxes, and Enclosures: Self-adhesive labels.

1. Apply to exterior of door, cover, or other access.

K. Equipment Identification Labels:

1. Indoor Equipment: Laminated-acrylic or melamine-plastic sign.
2. Outdoor Equipment: Laminated-acrylic or melamine-plastic sign.
3. Equipment to Be Labeled:

    a. Communications cabinets.
    b. Uninterruptible power supplies.
    c. Computer room air conditioners.
    d. Fire-alarm and suppression equipment.
    e. Egress points.
    f. Power distribution components.

END OF SECTION 270553

SECTION 27 1100
COMMUNICATIONS EQUIPMENT ROOM FITTINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
B. The following specification sections are related to this work.
   1. Division 27 0000 Series

1.2 SUMMARY

A. Section Includes:
   1. Backboards.
   2. Boxes, enclosures, and cabinets.

1.3 DEFINITIONS

A. Access Provider: An operator that provides a circuit path or facility between the service provider and user. An access provider can also be a service provider.
B. BICSI: Building Industry Consulting Service International.
C. RCDD: Registered communications distribution designer.
D. Service Provider: The operator of a telecommunications transmission service delivered through access provider facilities.
E. TGB: Telecommunications grounding bus bar.
F. TMGB: Telecommunications main grounding bus bar.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for equipment racks and cabinets.
   2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
B. Shop Drawings: For communications equipment room fittings. Include plans, elevations, sections, details, and attachments to other work.
   1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   2. Equipment Racks and Cabinets: Include workspace requirements and access for cable connections.
   3. Grounding: Indicate location of grounding bus bar and its mounting detail showing standoff insulators and wall mounting brackets.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.
B. Seismic Qualification Data: Certificates, from manufacturer.
   1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
   2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions. Base certification on the maximum

number of components capable of being mounted in each rack type. Identify components on which certification is based.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: All installer qualifications shall be submitted for review.

PART 2 - PRODUCTS

2.1 BACKBOARDS

A. Backboards: Plywood, fire-retardant treated, 3/4 by 48 by 96 inches (19 by 1220 by 2440 mm).
B. Backboard Paint: Light-colored fire-retardant paint.

2.2 BOXES, ENCLOSURES, AND CABINETS

A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets shall be listed and labeled for intended location and use.
B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, Type FD, ferrous alloy, with gasketed cover.
D. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
F. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.
G. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
H. Device Box Dimensions: 4 inches square by 2-1/8 inches deep (100 mm square by 60 mm deep).
I. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 1 with continuous-hinge cover with flush latch unless otherwise indicated.
   1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
   2. Nonmetallic Enclosures: Plastic.
   3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.
J. Cabinets:
   1. NEMA 250, Type 1 galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
   2. Hinged door in front cover with flush latch and concealed hinge.
   3. Key latch to match panelboards.
   4. Metal barriers to separate wiring of different systems and voltage.
   5. Accessory feet where required for freestanding equipment.
   6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PART 3 - EXECUTION

3.1 ENTRANCE FACILITIES

A. Contact telecommunications service provider and arrange for installation of demarcation point, protected entrance terminals, and a housing when so directed by service provider.
B. Comply with requirements in Section 270528 "Pathways for Communications Systems" for materials and installation requirements for pathways.

3.2 INSTALLATION

A. Comply with NECA 1.
B. Comply with BICSI's "Telecommunications Distribution Methods Manual" for layout of communications equipment spaces.
C. Comply with BICSI's "Information Technology Systems Installation Methods Manual" for installation of equipment in communications equipment spaces.
D. Bundle, lace, and train conductors and cables to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
E. Coordinate layout and installation of communications equipment in racks and in room. Coordinate service entrance configuration with service provider and approved shop drawing layout.
    1. Meet jointly with systems providers, equipment suppliers, and Owner to exchange information and agree on details of equipment configurations and installation interfaces.
    2. Record agreements reached in meetings and distribute them to other participants.
    3. Adjust configurations and locations of distribution frames, cross-connects, and patch panels in equipment rooms to accommodate and optimize configurations and space requirements of communications equipment.
    4. Adjust configurations and locations of equipment with distribution frames, cross-connects, and patch panels of cabling systems of other communications, electronic safety and security, and related systems that share space in equipment room.
F. Coordinate location of power raceways and receptacles with locations of communications equipment requiring electrical power to operate.
G. Backboards:
    1. Install from 6 inches (150 mm) to 8 feet, 6 inches (2588 mm) above finished floor. If plywood is fire rated, ensure that fire-rating stamp is visible after installation.
    2. Paint all sides of backboard with two coats of paint, leaving fire rating stamp visible.
    3. Comply with requirements for backboard installation in BICSI's "Information Technology Systems Installation Methods Manual" and TIA-569-D.

3.3 SLEEVE AND SLEEVE SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 270544 "Sleeves and Sleeve Seals for Communications Pathways and Cabling."

3.4 FIRESTOPPING

A. Comply with requirements in Section "Firestopping."
B. Comply with TIA-569-D, Annex A, "Firestopping."
C. Comply with BICSI's "Information Technology Systems Installation Methods Manual," "Firestopping Practices" Ch.

END OF SECTION

SECTION 271500
COMMUNICATIONS HORIZONTAL CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. UTP cabling.
   2. Cable connecting hardware, patch panels, and cross-connects.
   3. Telecommunications outlet/connectors.
   4. Cabling system identification products.
   5. Surface mounted Raceway

1.3 DEFINITIONS

A. BICSI: Building Industry Consulting Service International.

B. Consolidation Point: A location for interconnection between horizontal cables extending from building pathways and horizontal cables extending into furniture pathways.

C. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.

D. EMI: Electromagnetic interference.

E. IDC: Insulation displacement connector.

F. LAN: Local area network.

G. MUTOA: Multiuser telecommunications outlet assembly, a grouping in one location of several telecommunications outlet/connectors.

H. Outlet/Connectors: A connecting device in the work area on which horizontal cable or outlet cable terminates.

I. RCDD: Registered Communications Distribution Designer.

J. UTP: Unshielded twisted pair.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordinate layout and installation of telecommunications cabling with Owner's telecommunications and LAN equipment and service suppliers.

B. Coordinate telecommunications outlet/connector locations with location of power receptacles at each work area.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. For all cable, include the following installation data for each type used:
      1. Nominal OD.
      2. Minimum bending radius.
      3. Maximum pulling tension.
      4. Cable Performance Specifications

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.
   1. Submit copies of the certification of the company and names of staff that will be performing the installation and termination of the installation to provide proof of compliance of this spec.
   2. Submit proof from manufacturer of contractor’s good standing in manufacturer’s program.

B. Source quality-control reports.

C. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For splices and connectors to include in maintenance manuals.

B. Test result documentation on system acceptance testing specified in paragraph 3.16 of this section.

C. As-Built documentation as outlined in paragraph 3.10 of this section.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Patch Cables: Provide 5% spare.
   2. Faceplates and connecting hardware: Provide 5% spare.

1.9 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
   1. Layout Responsibility: Preparation of Shop Drawings Cabling Administration Drawings, and field testing program development by an RCDD.
   2. Installation Supervision: Installation shall be under the direct supervision of Registered Technician who shall be present at all times when Work of this Section is performed at Project site.
   3. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

B. Testing Agency Qualifications: An NRTL.
   1. Testing Agency's Field Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Test cables upon receipt at Project site.
   1. Test each pair of UTP cable for open and short circuits.

1.11 WARRANTY

A. Twenty (20) Year Application Assurance
   1. The Twenty (20)/Twenty-Five (25) Year Application Assurance shall cover the failure of the wiring system to support the application which it was designed to support, as well as additional applications(s) introduced in the future, up to 1Gb/s parallel transmission schemes, by recognized standards or user forums that use the TIA/EIA or ISO/IEC IS 11801 component and link/channel specifications for cabling, for a twenty (20)/twenty-five (25) year period.

B. System Certification
   1. Upon successful completion of the installation and subsequent inspection, the customer shall be provided with a numbered certificate, from the manufacturing company, registering the installation. Digital Copies shall be sent to the owner’s representative with the product submittal.

PART 2 - PRODUCTS

2.1 HORIZONTAL CABLING DESCRIPTION

A. Horizontal cable and its connecting hardware provide the means of transporting signals between the telecommunications outlet/connector and the horizontal cross-connect located in the communications equipment room. This cabling and its connecting hardware are called a "permanent link," a term that is used in the testing protocols.

1. TIA/EIA-568-B.1 requires that a minimum of two telecommunications outlet/connectors be installed for each work area.
2. Horizontal cabling shall contain no more than one transition point or consolidation point between the horizontal cross-connect and the telecommunications outlet/connector.
3. Bridged taps and splices shall not be installed in the horizontal cabling.
4. Splitters shall not be installed as part of the optical fiber cabling.

B. A work area is approximately 100 sq. ft., and includes the components that extend from the telecommunications outlet/connectors to the station equipment.

C. The maximum allowable horizontal cable length is 295 feet. This maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment or in the horizontal cross-connect.

2.2 UTP CABLE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AMP NETCONNECT; a TE Connectivity Ltd. company.
2. Belden CDT Networking Division/NORDX.
3. Hubbell Premise Wiring.
4. Leviton Manufacturing Co., Inc.
5. Panduit Corp.
6. Siemon Co. (The).
7. Ortronics/Legrand
8. SYSTIMAX Solutions; a CommScope Inc. brand.
9. Approved Equal

B. Description: 100-ohm, four-pair UTP, formed into 25-pair, binder groups covered with a blue thermoplastic jacket.
1. Comply with ICEA S-90-661 for mechanical properties.
2. Comply with TIA/EIA-568-B.1 for performance specifications.
3. Comply with TIA/EIA-568-B.2, Category 6.
4. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444 and NFPA 70 for the following types:
    1. Communications, Plenum Rated: Type CMP, complying with NFPA 262.

2.3 COMMUNICATIONS COAXIAL CABLE

A. Description: Coaxial cable with a 75-ohm characteristic impedance designed for broadband data transmission.

B. NFPA and UL compliance, listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 13, and with NFPA 70, "Class 1, Class 2, and Class 3 Remote-Control, Signaling, and Power-Limited Circuits" and "Communications Circuits" articles. Types are as follows:

1. RG-59/U: UL Type CMP and CL2P.

    1. No. 20 AWG, solid copper conductor.
    2. Plenum rated.
    3. Gas-injected, foam-PE insulation.
    4. Single shielded with 100 percent aluminum shield and 40 percent aluminum braid.
    5. PVC jacket.

2.4 UTP CABLE HARDWARE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    1. AMP NETCONNECT; a TE Connectivity Ltd. company.
    2. Belden CDT Networking Division/NORDX.
    3. Hubbell Premise Wiring.
    4. Leviton Manufacturing Co., Inc.
    5. Panduit Corp.
    6. Siemon Co. (The).
    7. Ortronics/Legrand
    8. SYSTIMAX Solutions; a CommScope Inc. brand.
    9. Approved Equal

B. General Requirements for Cable Connecting Hardware: Comply with TIA/EIA-568-B.2, IDC type, with modules designed for punch-down caps or tools. Cables shall be terminated with connecting hardware of same category or higher.

C. Connecting Blocks: 110-style IDC for Category 6. Provide blocks for the number of cables terminated on the block, plus 25 percent spare. Integral with connector bodies, including plugs and jacks where indicated.

D. Cross-Connect: Modular array of connecting blocks arranged to terminate building cables and permit interconnection between cables.
    1. Number of Terminals per Field: One for each conductor in assigned cables.

E. Patch Panel: Modular panels housing multiple-numbered jack units with IDC-type connectors at each jack for permanent termination of pair groups of installed cables.
    1. Number of Jacks per Field: One for each four-pair UTP cable indicated.

F. Jacks and Jack Assemblies: Modular, color-coded, eight-position modular receptacle units with integral IDC-type terminals.

G. Patch Cords: Factory-made, four-pair cables in 36-inch, 48-inch lengths; terminated with eight-position modular plug at each end.
    1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure Category 6 performance. Patch cords shall have latch guards to protect against snagging.
    2. Patch cords shall have color-coded boots for circuit identification.

2.5 UTP MODULAR PATCH PANELS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:
   1. AMP NETCONNECT; a TE Connectivity Ltd. company.
   2. Belden CDT Networking Division/NORDX.
   3. Hubbell Premise Wiring.
   4. Leviton Manufacturing Co., Inc.
   5. Panduit Corp.
   6. Siemon Co. (The).
   7. Ortronics/Legrand
   8. SYSTIMAX Solutions; a CommScope Inc. brand.
   9. Approved Equal

B. The Modular Patch Panels shall
   1. Meet category 6 component compliance and be verified by a third-party nationally recognized independent testing laboratory
   2. Use low emission IDC contacts
   3. Use dual reactance technology to enhance the signal-to-noise ratio
   4. Require standard termination practices using a 110 impact tool
   5. Use a single piece IDC housing designed to accept larger category 6 conductors
   6. Support both t568b and t568a wiring
   7. Include easy to follow wiring labels
   8. Include label fields
   9. Allow for the use of icons
   10. Include full length metal rear cable management
   11. Be available in standard or high density
   12. Be backward compatible to category 3, 5 and 5e
   13. Be center tuned to category 6 test specifications
   14. Be available in both 24 and 48 port versions.
   15. Manufacturer shall match that of the cable terminating on the IDC contacts

2.6 TELECOMMUNICATIONS OUTLET/CONNECTORS

A. Jacks: 100-ohm, balanced, twisted-pair connector; four-pair, eight-position modular. Comply with TIA/EIA-568-B.1.

B. Workstation Outlets: One to six port connector assemblies mounted in single faceplate.
   1. Plastic Faceplate: High-impact plastic. Coordinate color with existing conditions
   2. Metal Faceplate: Stainless steel.
   3. For use with snap-in jacks accommodating any combination of UTP, optical fiber, and coaxial work area cords.
      1. Flush mounting jacks, positioning the cord at a 45-degree angle.
   4. Retain one of three "Legend" subparagraphs below; retain first for metal faceplates.

5. Legend: Machine printed, in the field, using adhesive-tape label.
6. Legend: Snap-in, clear-label covers and machine-printed paper inserts.

2.7 SURFACE MOUTNED RACEWAYS

A. General
   1. System: Provide surface raceway systems for branch circuit and data network video and other low-voltage wiring. Surface raceway system components necessary for a complete installation shall consist of the following:
      1. Components: Raceway bases, covers, fittings and device mounting plates.
   2. Configuration: Raceways shall be two-piece design with base and snap-on cover. Base shall be dividable with a fixed barrier for up to 4 compartments. Raceway shall be available in widths up to 5 inches. Provide raceways from a company that can provide custom sizes if required. Raceway covers shall be available in tamper-resistant form with screws on access plates and covers of fittings, but not on standard cover lengths.
   3. Fittings:
      1. Fittings shall include flat, internal and external elbows, couplings for joining raceway sections, wire clips, blank end fittings, and device mounting brackets and plates as applicable. Where required, provide tamper-resistant form, dividable with barriers and matching the size of the accompanying raceway base.
      2. Provide full capacity corner elbows and tee fittings to maintain a controlled 2 inches cable bend radius, meeting the specification for Fiber Optic and UTP cabling and exceeding the TIA/EIA-569-A requirements for communications pathways.
   4. Device Brackets and Plates: Provide in sizes to match the raceway width and with mounting holes located to ensure proper mounting of devices in up to 4 compartments. Device plates shall be available in any length from 6 inches to 60 inches Provide 6 inch and 12 inch long device plates with a flange to overlap the joint of adjacent cover as applicable.
   5. Communications Devices and Accessories: Raceway shall accommodate a complete line of connectivity outlets and modular inserts for Category 6 UTP and other low voltage cabling types with matching faceplates and adapters to facilitate mounting.

B. Classification:
   1. Compliance: Raceway and system components.
   2. UL listed.
   3. Surface raceways shall be suitable for use in dry interior locations only, as covered in Article 386 of the National Electrical Code.
   4. Surface metal raceways and fittings shall be listed by Underwriters Laboratories under File Number E4376, Listing and Classification Number RJBT and File Number E41751, Listing and Classification Number RJPR respectively.
   5. Systems shall comply with UL Standard UL5 for Surface Metal Raceways.

6. Product Requirements: Surface metallic raceway for dry interior locations, conforming to National Electrical Code, Article 352, Part B.
7. Metal Components: UL listed, conforming to specifications of UL 5.
8. Plastic Components: UL listed, exhibiting non-flammable, self-extinguishing characteristics when tested in accordance with UL 94, V-O.

C. Surface Metallic Raceways: Two-piece system of galvanized steel consisting of a base and snap-on cover.
1. Construction: 0.040 inch (1 mm) metal thickness; 1-7/8 inches (48 mm) wide by 7/8 inch (22 mm) deep; downward facing devices, bend radius control fittings.
2. Finish: Manufacturer's custom color matching wall color finish.

D. Brackets and Faceplates:
1. Steel Device Brackets and Plates: Steel overlap device plate for horizontal installation of devices. Plate shall overlap cover to conceal seam.

E. INSTALLATION
1. Install in accordance with manufacturer's instructions for system components and approved shop drawings. Coordinate installation with adjacent work to ensure proper clearances and to prevent electrical hazards.
2. Install in accordance with complete system instruction sheets.
3. Install enclosures to be mechanically continuous and connected to all electrical outlets, boxes, device mounting brackets, and cabinets, in accordance with manufacturer's installation sheets.
4. Install enclosures to be electrically continuous and bonded in accordance with the National Electric Code for proper grounding.

2.8 IDENTIFICATION PRODUCTS

A. Comply with TIA/EIA-606-A and UL 969 for labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3 - EXECUTION

3.1 ENTRANCE FACILITIES

A. Coordinate backbone cabling with the protectors and demarcation point provided by the facility.

3.2 WIRING METHODS

A. Install all cabling in pathways using only plenum rated cabling. Conceal pathways and cables except in unfinished spaces.
1. Install plenum cable in environmental air spaces, including plenum ceilings and conduit.

2. Comply with requirements in Section 270528 "Pathways for Communications Systems."

B. Conceal conductors and cables in accessible ceilings, walls, and floors where possible.

C. Wiring within Enclosures:
1. Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.
2. Install lacing bars and distribution spools.
3. Install conductors parallel with or at right angles to sides and back of enclosure.

3.3 INSTALLATION OF CABLES

A. Comply with NECA 1.

B. General Requirements for Cabling:
1. Comply with TIA/EIA-568-B.1.
2. Comply with BICSI ITSIM, Ch. 6, "Cable Termination Practices."
3. Install 110-style IDC termination hardware unless otherwise indicated.
4. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
5. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
6. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIM, "Cabling Termination Practices" Chapter. Install lacing bars and distribution spools.
8. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
10. In the communications equipment room, install a 10-foot-long service loop on each end of cable.
11. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.
12. Supply cross-connect cables, patch cords, and fiber patch cords for cross-connection and inter-connection of termination blocks and patch panels. The type of jumper-cables shall depend on the application and the termination block used.

C. UTP Cable Installation:
1. Comply with TIA/EIA-568-B.2.

2. Do not untwist UTP cables more than 1/2 inch from the point of termination to maintain cable geometry.
3. All UTP cables shall be run using a star topology format from the telecommunication equipment room to every individual information outlet.
4. A blank cover plate shall be provided on all outlet boxes where cable is not initially installed

D. Group connecting hardware for cables into separate logical fields.

E. Separation from EMI Sources:
1. Comply with BICSI TDMM and TIA-569-B for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.
2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
    1. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
    2. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
    3. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches.
3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
    1. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
    2. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
    3. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.
4. Separation between communications cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
    1. Electrical Equipment Rating Less Than 2 kVA: No requirement.
    2. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
    3. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.
5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches.
6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches.

3.4 FIRESTOPPING

A. Comply with TIA-569-B, Annex A, "Firestopping."

B. Comply with BICSI TDMM, "Firestopping Systems" Article.

C. Fire stop systems shall be installed in all openings and around all penetrating elements or devices as required by the contract drawings, and as required by applicable design, building and construction codes subject to the interpretation of the local authority having jurisdiction.

3.5 GROUNDING

A. Install grounding according to BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter.

B. Comply with J-STD-607-A.

C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall allowing at least 2-inch clearance behind the grounding bus bar. Connect grounding bus bar with a minimum No. 4 AWG grounding electrode conductor from grounding bus bar to suitable electrical building ground.

D. Bond metallic equipment to the grounding bus bar, using not smaller than No. 6 AWG equipment grounding conductor.

3.6 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with TIA/EIA-606-A. See Evaluations for discussion about designating the class of cabling plant administration and color-coding of cross-connect fields.
   1. Color-code cross-connect fields. Apply colors to voice and data service backboards, connections, covers, and labels.

B. Cable Schedule: Post in prominent location in each equipment room and wiring closet. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.

C. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, entrance pathways and cables, terminal hardware and positions, horizontal cables, work area terminal positions, grounding buses and pathways, and equipment grounding conductors. Follow convention of TIA/EIA-606-A. Furnish electronic record of all drawings, in software and format selected by Owner.

D. Cable and Wire Identification:
   1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
   2. Each wire connected to building-mounted devices is not required to be numbered at device if color of wire is consistent with associated wire connected and numbered within panel or cabinet.
   3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet.

4. Label each terminal strip and screw terminal in each cabinet, rack, or panel.
    1. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group being extended from a panel or cabinet to a building-mounted device shall be identified with name and number of particular device as shown.
    2. Label each unit and field within distribution racks and frames.
5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.

E. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in TIA/EIA-606-A.
    1. Cables use flexible vinyl or polyester that flex as cables are bent.

3.7 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
    1. Visually inspect UTP and optical fiber cable jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA/EIA-568-B.1.
    2. Visually confirm Category 6, marking of outlets, cover plates, outlet/connectors, and patch panels.
    3. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
    4. Test UTP backbone copper cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.
        1. Test instruments shall meet or exceed applicable requirements in TIA/EIA-568-B.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

    5. UTP Performance Tests:
        1. Test for each outlet. Perform the following tests according to TIA/EIA-568-B.1 and TIA/EIA-568-B.2:

            1) Wire map.
            2) Length (physical vs. electrical, and length requirements).
            3) Insertion loss.
            4) Near-end crosstalk (NEXT) loss.
            5) Power sum near-end crosstalk (PSNEXT) loss.

6) Equal-level far-end crosstalk (ELFEXT).
7) Power sum equal-level far-end crosstalk (PSELFEXT).
8) Return loss.
9) Propagation delay.
10) Delay skew.

6. Final Verification Tests: Perform verification tests for UTP systems after the complete communications cabling and workstation outlet/connectors are installed.
   1. Voice Tests: These tests assume that dial tone service has been installed. Connect to the network interface device at the demarcation point. Go off-hook and listen and receive a dial tone. If a test number is available, make and receive a local, long distance, and digital subscription line telephone call.
   2. Data Tests: These tests assume the Information Technology Staff has a network installed and is available to assist with testing. Connect to the network interface device at the demarcation point. Log onto the network to ensure proper connection to the network.

B. Document data for each measurement. Data for submittals shall be printed in a summary report that is formatted similar to Table 10.1 in BICSI TDMM, or transferred from the instrument to the computer, saved as text files, and printed and submitted.

C. End-to-end cabling will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

3.8 INSPECTION

A. On-going inspections shall be performed during construction by the Project Team. All work shall be performed in a high quality manner and the overall appearance shall be clean, neat and orderly. The following points will be examined and must be satisfactorily complied with:
   1. Is the design documentation complete? Are all cables properly labeled, from end-to-end?
   2. Have all terminated cables been properly tested in accordance with the specifications for the specific category as well as tested for opens, shorts, polarity reversals, transposition and presence of AC and/or DC voltage?
   3. Is the cable type suitable for its pathway? Are the cables bundled in parallel?
   4. Have the pathway manufacturer's guidelines been followed? Are all cable penetrations installed properly and fire stopped according to code?
   5. Has excessive cable bending been avoided?
   6. Have potential EMI and RFI sources been considered?
   7. Is cable fill ratio correct?
   8. Are telecommunications closet terminations compatible with applications equipment?
   9. Have patch panel instructions been followed?

1. Jacket removal point
2. Termination positions
3. All pair terminations tight with minimal pair distortions
4. Twists maintained up to Index Strip

10. Have Modular Panel instructions been followed?
    1. Cable dressing first
    2. Jackets remain up to the Connecting Block
    3. All pair terminations tight and undistorted
    4. Twists maintained up to the Connecting Block
11. Are connectors properly turned right side up in the outlets without cables wrapped or twisted around the mounting collars?
12. Are the correct outlet connectors used?
13. Is the jacket maintained right up to the jack?
14. Are identification markings uniform, permanent and readable?

3.9 FINAL DOCUMENTATION

A. Drawings and Diagrams
1. Provide the following as-built documentation:
    1. Cable routing
    2. Position of all components and apparatus
    3. Labeling plan

END OF SECTION

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www.pennoni.com

WORK PLAN

for

ABATEMENT OF ASBESTOS-CONTAINING MATERIALS

KINGSESSING LIBRARY
BUILDING AND SITE IMPROVEMENTS PROJECT
4901 KINGSESSING AVENUE
PHILADELPHIA, PENNSYLVANIA 19143

Prepared For:
Mr. Troy Leonard
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Prepared By:
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_____
Alan Lloyd
Project Designer #032182

Project No. KLMLX21003
February 28, 2022

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SECTION 01013

SUMMARY OF WORK

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions, and other Division-1 specification sections, apply to work of this section.

1.2 PROJECT/WORK IDENTIFICATION

A. The project name is Kingsessing Building and Site Improvement Project – Asbestos Abatement. The facility is located at 4901 Kingsessing Avenue, Philadelphia, Pennsylvania. The contract documents have been prepared by the Owner's Environmental Consultant, Pennoni Associates Inc. and are dated February 25, 2022.

B. The scope of the asbestos abatement project includes the proper removal and off-site disposal of asbestos-containing materials identified in this work plan. All work shall be conducted in accordance with the City of Philadelphia Asbestos Control Regulation Chapter 6-600 and all applicable Federal, State and Local Regulations. If required, the contractor shall submit an Alternative Method Request to treat each work area as a Minor Project for clearance purposes as well as an Alternative Method Request to utilize a remote 3 stage decontamination chamber.

C. Table 1A below lists the approximate quantities and locations of the identified and assumed asbestos-containing materials that are to be removed as part of this scope of work. The table is provided to supply Contractors with information to aid in the bidding process. The table shall in no way limit the scope of work. The Contractor shall be responsible to fully investigate the scope of work, verify all quantities and provide a proposal based on all existing conditions.

Table 1A – Identified and Presumed Asbestos-Containing Materials For Abatement
Kingsessing Library Building –
4901 Kingsessing Avenue
Philadelphia, Pennsylvania 19143

HID and Material	Location	Approx. Quantity
Ceiling Plaster	Boiler Room (E005A), Storage Room (E005B), Vestibule (E004)	1,150 SF
Vinyl Asbestos Containing Floor Tile (VAT) – below carpet tiles	Staff Room (E102), Adult/Teen Fiction Area (E104), Circulation Area (E105), Children's Section (E106), Adult/Teen Non-Fiction Area (E017)	4,325 SF

Table 1A – Identified and Presumed Asbestos-Containing Materials For Abatement Kingsessing Library Building – 4901 Kingsessing Avenue Philadelphia, Pennsylvania 19143		
HID and Material	**Location**	**Approx. Quantity**
Vinyl Asbestos Containing Floor Tile (VAT) – below non-asbestos 12" x 12" floor tile	Circulation Desk Area (E105), Stair Landings (ST1)	435 SF
Radiator Heat Shield Backing Insulation	Vestibule (E101)	2 x 10 SF Each – 20 SF Total
Radiator Heat Shield Backing Insulation	Radiators Throughout 1st Floor	26 x 60 SF Each – 1,560 SF Total
Asbestos Containing Pipe Insulation and Pipe Fitting Insulation	Pipe Risers in Wall – Circulation Area (E105)	2 x 20 LF Each – 40 LF Total
Asbestos Containing Pipe Insulation and Pipe Fitting Insulation	Attic and 1st Floor Risers	100 LF
Metal Fire Doors	Boiler Room	3 Doors
Roofing Materials (assumed)	Entire Roof	5,460 SF

SF – Square Feet; LF – Linear Feet; EA – Each; CF – Cubic Feet

D. Contractor shall submit to the Environmental Consultant a written request for pre-commencement, pre-encapsulation, and final inspections for each work area.

E. Contract documents indicate the work of the contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the contract documents include, but are not necessarily limited to the following:

1. Applicable codes and regulations (including fire codes)
2. Notices and permits
3. Existing site conditions and restrictions on use of the site
4. Work performed prior to work under this contract
5. Work to be performed concurrently by separate contractors
6. Work to be performed subsequent to work under this contract
7. Alternates
8. Allowances

9. Summary by References: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, Specification Sections, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual and including but not necessarily limited to printed material referenced by any of these. Work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions and other forces outside the contract documents.

10. General and administrative requirements are set forth in the following specification sections:

1. 01013 Summary of work
2. 01043 Project Coordination
3. 01091 Definitions And Standards
4. 01301 Submittals

11. Removal work requirements are set forth in the following specification sections, listed here according to the sequence of the work:

    1. 01092 Codes, Regulations, and Standards - Sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.
    2. 01503 Temporary Facilities - Sets forth the support facilities needed such as electrical and plumbing connections for the decontamination units.
    3. 01526 Temporary Enclosures and Work Area Preparation - Details the requirements for the sheet plastic barriers that isolate the work area from the balance of the building.
    4. 01410 Air Monitoring - Describes air monitoring by Asbestos Project Inspector (API) so that the building beyond the work area will remain uncontaminated. OSHA compliance air monitoring to determine required respiratory protection is the responsibility of the Contractor.
    5. 01563 Decontamination Units - Explains the setup and operation of the personnel and waste decontamination units.
    6. 01513 Temporary Pressure Differential and Air Filtration System - Sets forth the procedures to set up the negative air machines and ventilation of the work area.
    7. 01560 Worker Protection - Sets forth the procedures and equipment for adequate worker protection.
    8. 01562 Respiratory Protection - Sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.

12. Asbestos Removal Work Procedures are described in the following specification sections:

    1. 02079 Containment Bag Removal
    2. 02081 Removal of Asbestos-Containing Material
    3. 02084 Disposal of Asbestos-Containing Waste

13. Decontamination of the work area after completion of abatement work is

described in the following sections:

1. 01711 Project Decontamination - Describes the sequence of cleaning and decontamination procedures to be followed during removal of the sheet plastic barriers isolating a work area.
2. 01714 Work Area Clearance - Describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.
3. 01701 Project Closeout - Details the closeout procedures to end the project once asbestos removal work is complete including final paperwork requirements.

1.3 INSPECTION

A. Prior to commencement of work, inspect areas in which work will be performed. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to Environmental Consultant prior to starting work.

1.4 POTENTIAL HAZARDS

A. The disturbance or dislocation of asbestos-containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workmen and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the identified potential hazards and of proper work procedures which must be followed.

B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos-containing materials, take appropriate continuous measures as necessary to protect these persons from the potential hazard of exposure. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local city agencies.

C. **Lead-based paint** is located on components in the work area including walls, ceilings, window frames, columns, pipe valves, and door frames. When these materials are impacted, they should be handled following all federal, state, and local regulations.

1.5 STOP WORK

A. If the Owner or Environmental Consultant presents a written stop work order immediately and automatically stop all work. Do not recommence work until authorized in writing by the Owner or Environmental Consultant.

1.6 ASBESTOS-CONTAINING MATERIALS

A. The following asbestos-containing materials are known or presumed to be present at the worksite in the renovation areas. If any other materials are found, which are suspected of containing asbestos, notify the Environmental Consultant immediately both verbally and in writing. Do not proceed with additional work without written approval.

Library Building:

1. Ceiling Plaster
2. Vinyl Asbestos Containing Floor Tile (VAT)
3. Radiator Heat Shield Backing Insulation
4. Pipe Insulation
5. Pipe Fitting Insulation
6. Metal Fire Doors
7. Roofing Materials

1.7 QUALITY ASSURANCE

A. The Asbestos Abatement Contractor shall use adequate numbers of skilled workmen who are thoroughly trained and experienced in asbestos abatement and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this Section. The Asbestos Abatement Contractor must possess a valid Contractor certification as issued by the Commonwealth of Pennsylvania, Department of Labor and Industry and the City of Philadelphia Department of Public Health. All workers must possess a currently valid worker accreditation from the Commonwealth of Pennsylvania, Department of Labor and Industry and produce such accreditation upon request. The Contractor must also have onsite at least one individual with a currently valid supervisor's accreditation as issued by the Commonwealth of Pennsylvania, Department of Labor and Industry.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 ASBESTOS CONTRACTOR USE OF PREMISES

A. Use of the Site: Confine operations at the site to the areas permitted under the contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.

1. Keep existing entrances and adjacent parking areas serving the premises clear. Do not use these areas for parking or storage of materials. Parking and storage is available immediately adjacent to the building only.
2. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials/equipment and location of storage trailers to the areas indicated. If additional storage is necessary the Contractor must obtain and pay for such storage off site.
3. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with motor running or ignition key in place or accessible to unauthorized persons.

B. Contractor's Use of the Existing Buildings: Maintain existing building in a safe and weather tight condition.

1. Smoking or open fires will not be permitted within the building enclosure.
2. Keep means of egress clear of rubbish, construction materials and asbestos waste.
3. The Contractor shall be responsible for supplying, cleaning and maintaining adequate toilet facilities.
4. The Contractor shall be responsible for supplying an appropriate office trailer(s), exterior to the building, with adequate heat and/or air conditioning as needed.

3.2 BUILDING OCCUPANCY

A. All required access into portions of the building or utility service interruption that could affect the building must be carefully coordinated with the Owners' Environmental Consultant and the Owner.

B. Floors must remain un-occupied during abatement activities.

3.3 SUMMARY OF WORK - ASBESTOS ABATEMENT

A. The scope of the Asbestos Abatement Project includes the complete removal and off-site disposal of asbestos-containing materials indicated within this specification, Asbestos Inventory Report (AIR Form), Contract and described herein. The Contractor shall be responsible to fully investigate the scope of work and provide a proposal based on all existing conditions. Change orders for new materials not identified in this specification may be considered, but not for variances in quantities of known materials throughout the buildings. The contractor shall submit their bid based on existing conditions and observations made during the bid walkthrough.

B. All asbestos abatement shall be performed in strict accordance with the City of Philadelphia Asbestos Control Regulation Chapter 6-600 and all applicable Federal, State and Local Regulations.

C. All identified asbestos-containing materials shall be removed and properly disposed of as asbestos-containing waste off-site prior to building renovation.

D. The Contractor shall complete all abatement work, meet clearance criteria and breakdown containment in accordance with the sequence of work indicated below.

E. The Contractor shall:

1. Make all required notifications, obtain all permits and pay all fees associated with the work.
2. Coordinate all work with the Owners' Environmental Consultant and the Asbestos Project Inspector.
3. Isolate each work area and install temporary enclosures in accordance with Section 01526 and as necessary to perform abatement procedures. The Contractor shall maintain a minimum of critical barriers and air pressure differential in all Work Areas.
4. Install temporary facilities in accordance with Section 01503. The Asbestos Contractor shall make interconnection to existing electrical panels utilizing a Pennsylvania licensed electrician. The Asbestos Contractor shall make interconnection with site hydrants if needed utilizing back-flow preventers as necessary to provide adequate water for all abatement activities. Permitting and authorization for use shall be the responsibility of the asbestos contractor.
5. Install the decontamination facilities in accordance with Section 01563 where necessary to perform abatement procedures.
6. Remove all asbestos-containing material in accordance with Section 02081.
7. Dumpsters, vehicles, and all other equipment that will be required to perform the asbestos removal work shall be off-loaded, and stored onsite. Asbestos dumpsters shall be clearly marked. Asbestos dumpsters shall be watertight, completely enclosed and kept locked when left unattended.
8. Clean and decontaminate each work area in accordance with Section 01711.
9. After meeting air clearance criteria in accordance with Section 01714, and after receiving approval by the Environmental Consultant, breakdown and remove temporary enclosure systems and decontamination facilities.
10. Replace all removed materials with acceptable materials of the same kind. Replaced materials shall include, but not be limited to: joints associated

with fiberglass pipe insulation, end cap mastic, tank insulation, and floor tiles.

11. Submit all required documentation required to close out the project in accordance with Sections 01301 and 01701.

END OF SECTION

SECTION 01043

PROJECT COORDINATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions, and other Division-1 specification sections, apply to work of this section.

1.2 SUMMARY

A. This section specifies administrative and supervisory requirements necessary for project coordination including, but not necessarily limited to:

1. Notifications
2. Permits and Fees
3. Administrative and supervisory personnel
4. Pre-Construction meeting
5. Progress Meetings
6. Documentation required at the work site
7. Coordination of Subcontractors and other trades
8. Requirements for the Contractor's Construction Schedule are included in Section “Submittals”

1.3 NOTIFICATIONS:

A. The Contractor shall make all required notifications associated with this contract to include, but not be limited to those listed in Section 01092 - Codes, Regulations and Standards.

1.4 PERMITS AND FEES:

A. The Contractor shall obtain and pay for all required permits, and pay all fees associated with this contract to include, but not limited to those listed in Section 01092 - Codes, Regulations and Standards.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

A. General Superintendent: Provide a General Superintendent who is experienced in the administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 C.F.R. 1926 for the Contractor and is the Contractor's Representative responsible for

compliance with all applicable Federal, State, and Local Regulations, and this specification. This person shall have completed a course at an E.P.A. Training Center or an equivalent certified course in asbestos abatement procedures and have had a minimum of three (3) years of on-the-job training and meet any additional requirements set forth in 29 C.F.R. 1926 for a Competent Person and this specification. The responsibilities of the General Superintendent shall include but not be limited to the following:

1. When an event of unusual and significant nature occurs at the site (e.g. failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise the Owner's Agent/Fee Developer in advance at the earliest possible date. The General Superintendent shall submit these special reports directly to the Building Owner within one (1) day of occurrence. A copy shall be submitted to the Owners' Environmental Consultant and others affected by the occurrence.

B. Project Supervisor: Provide a full-time Project Supervisor who is certified and fully knowledgeable in the use of equipment and situations unique to that work site. A separate individual shall be required to fulfill this function for each work area and shift. This individual shall have a valid supervisor certification issued by the Commonwealth of Pennsylvania, Department of Labor and Industry. The responsibilities of the Project Supervisor shall include but not be limited to the following:

1. Ensure that the workers are wearing all proper personal protective equipment as outlined in Sections 01560 & 01562 of this specification and are properly trained in their use.
2. Keep all necessary log records as specified in this specification and ensure that they are recorded in accordance with this specification and Federal, State, and Local regulations.
3. Prepare and submit reports of significant accidents occurring at the site and anywhere else where work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.
4. Survey the work areas at a minimum of twice per work shift (e.g. once every four hours) to ensure that the workers protective equipment is not ripped or torn, that respiratory protection is worn at all times; that air filtration devices are operating at peak efficiency, and that all individuals are following the procedures outlined in this specification.

5. Ensure that sufficient personal protective equipment is stored on-site.

6. Ensure that precautions have been taken to prevent heat stress and other emergencies from occurring (e.g. selecting light-weight protective clothing, reducing the work rate, and providing adequate fluid breaks).

1.6 EMERGENCY PLAN

A. The Contractor shall develop and submit to the Owner, a contingency plan for emergencies, in case of fire, explosion, accidents, power failure, air filtration system failure, supplied air system failure, heat/cold related problems, and any other problem which may require modification or bypassing of decontamination. The plan shall include procedures for repair and clean up following temporary breach of containment barriers.

B. Emergency procedures shall be in written form and prominently posted in the clean change area and equipment room of the worker decontamination area and inside the work area itself. Everyone, prior to entering the work area, must read and sign these procedures to acknowledge receipt and understanding of work site layout, location of emergency exits and emergency procedures.

C. Employees shall be trained in evacuation procedures in the event of workplace emergencies.

1. For non-life-threatening, situations employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers if necessary, before exiting the workplace to obtain proper medical treatment.

2. For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove him/her from the workplace and secure proper medical treatment.

D. Telephone numbers and locations of all emergency response personnel shall be prominently posted in the clean change area and equipment room, along with the location of the nearest telephone.

1.7 PRE-CONSTRUCTION MEETING

A. The Contractor shall attend pre-construction meeting(s) scheduled by the Owners' Environmental Consultant. These meetings shall be attended by the Owner and/or the Owners' Environmental Consultant. At this meeting, the Contractor shall present in detail the following:

1. A detailed plan for preparation of each work area

2. Description of protective clothing and approved respirators to be used

3. Delineation of responsibility of work site isolation
4. Explanation of the decontamination sequence
5. Description of all removal methods to be used
6. Explanation of the handling of asbestos-contaminated waste
7. Proof of workers' medical exams substantiated by reports signed by the physician
8. Description of the final clean-up procedures to be used
9. Proposed waste disposal site and proof of transporter registration. If a change in either of these items occurs during the course of the project, the Contractor shall revise Federal, State, and Local notifications and notify the building Owner's Agent/Fee Developer and Owners' Environmental Consultant
10. A sample of the waiver form to be used for all authorized visitors to the site
11. Explanation of air filtration systems to be used for personnel protection, building protection, and environmental protection
12. List of equipment on hand or to be obtained, and the operation of each to include impact on the personnel, building environment, and work environment
13. Plan of action in the event of an emergency
14. A detailed Work Schedule with start and completion dates for all phases of asbestos abatement to include, but not be limited to, Worksite Preparation, Pre-inspection, Removal, Clean-up, Pre-encapsulation Inspection, Encapsulation, Final Clean, Clean-up Inspection, Disposal, Final Inspection, Post-testing, Analysis and Post Inspection

B. The Contractor (or independent air monitoring laboratory employed on his behalf) shall present in detail how compliance with OSHA monitoring requirements shall be fulfilled.

C. Asbestos work shall not proceed until the Owner, the Environmental Consultant, and the Contractor agree on the details listed in this article.

1.8 PROGRESS MEETINGS

A. The Contractor shall attend all pre-scheduled Progress Meetings. These shall be scheduled by the Owners' Construction Manager. This meeting shall also be attended by the OSHA Air Monitoring Firm. This meeting shall serve to update all items discussed in the Pre-Construction Meeting.

1.9 DOCUMENTATION REQUIRED AT WORK SITE

A. The Contractor shall display copies of required letters of Notification and Permits.

B. Additional documentation required to be available at the job site shall include:

1. List of emergency telephone numbers to include:

a. The Monitoring Firm employed by the Building Owner
b. EPA
c. OSHA
d. Fire Department
e. Police Department
f. Local Hospital
g. Emergency Squad
h. Contractor
i. Contractor's Project Supervisor and General Superintendent

2. Written work area emergency procedures

3. List of personnel including all new employees

4. A Daily Log of all persons entering the work area including all visitors. The Log shall include the full name and certification number of all employees, and the time when they enter and exit the work site. Non-employees of the Asbestos Contractor shall be required to sign an acceptable waiver form. The waiver form shall be approved by the Environmental Consultant.

5. The Daily Log shall include a record of start and stop times, any work area problems encountered, any corrective action, and estimated amount of asbestos waste generated.

6. The Contractor shall be responsible for obtaining a copy of the daily monitoring logs from their air testing firms and maintaining this with the Daily Log at the job site.

C. Work schedules and updated progress charts depicting all phases of work and completion deadlines

D. Copy of Waste Hauler's Certificate and copy of all landfill receipts.

1.10 COORDINATION OF SUBCONTRACTORS AND OTHER TRADES:

A. The Contractor shall work in complete cooperation and coordination with any Subcontractors or any other trades that may be involved in other work within or related to the facility.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01091

DEFINITIONS AND STANDARDS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents. Certain terms used in Contract Documents are defined in this article.

B. General Requirements: The provisions or requirements of Division-1 sections apply to the entire work of the Contract and, where so indicated, to other elements which are included in the project.

1.3 GENERAL DEFINITIONS

A. Definitions contained in this Article are not necessarily complete, but are general to the extent that they are not defined more explicitly elsewhere in the Contract Documents.

1. Approved: The term “approved”, where used in conjunction with the Owner’s action on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Architect stated in General and Supplementary Conditions. Such approval shall not release the Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in the Contract Documents.

2. Building Owner: The person in whom legal title to the premises is vested unless the premises are held in land trust, in which instance the Building Owner means the person in whom beneficial title is vested.

3. Construction Manager: The Construction Manager is the firm employed by the Owner.

4. Contractor: A self-employed person, company, unincorporated association, firm, partnership, or corporation and any owner or operator thereof, which engages in an asbestos project or employs persons engaged in an asbestos project.

5. Directed: Terms such as “directed”, “requested”, “authorized”, “selected”, “approved”, “required”, and “permitted” mean “directed by the Owner”, “requested by the “Owner”, and similar phrases. However, no implied

meaning shall be interpreted to extend the Owner’s responsibility into the Contractor's area of construction supervision.

6. Engineer: The term “Engineer” is used to refer to the Environmental Consultant for the purposes of this project.

7. Furnish: The term “furnish” is used to mean “supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations”.

8. General Superintendent: This is the Contractor's Representative at the work site. This person will be the Competent Person required by OSHA in 29 CFR 1926.

9. Indicated: This term refers to Paragraphs or Schedules in the Specifications, and similar requirements in Contract Documents. Where terms such as “shown”, “noted”, “scheduled”, and “specified” are used, it is to help locate the reference. No limitation on location is intended, except as specifically noted.

10. Install: The term “install” is used to describe operations at the project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations".

11. Project Site: The term indicates the space available to the Contractor for performance of the work, either exclusively or in conjunction with others performing other construction as part of the project

12. Provide: The term “provide” means “to furnish and install, complete and ready for the intended use”.

13. Regulation: The term “Regulations” includes laws, statutes, ordinances and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work, whether they are lawfully imposed by authorities having jurisdiction or not.

14. Testing Laboratories: A “testing laboratory” is an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report on, and, if required, to interpret, results of those inspections or tests.

1.4 DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT

A. Definitions

1. Abatement: Any and all procedures physically taken to control fiber release from asbestos-containing materials. This includes removal, encapsulation, enclosure and repair.

2. Abatement Activities: All activities from the initiation of work area preparation through the successful clearance air monitoring and work area breakdown performed at the conclusion of an asbestos project.

3. Accredited or Accreditation (when referring to a person or laboratory): A person or laboratory accredited in accordance with section 206 of Title II of the Toxic Substances Control Act (TSCA).

4. Aerosol: A system consisting of particles, solid or liquid, suspended in air.

5. Aggressive Sampling: A method of sampling in which the individual collecting the air sample creates or simulates activity by the use of mechanical equipment during the sampling period to stir up settled dust and simulate activity in that area of the building.

6. Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways separated by a distance of at least 4 feet such that one passes through one doorway not the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

7. Air Cell: Insulation normally used on pipes and duct work that is comprised of corrugated cardboard which is frequently comprised of asbestos combined with cellulose or refractory binders.

8. Air Monitoring: The process of sampling and measuring the fiber content of a known volume of air in a known period of time.

9. Air Sampling: The process of measuring the fiber content of a known volume of air collected during a known period of time. The procedure utilized for asbestos follows the NIOSH Standard Analytical Method 7400 or the provisional transmission electron microscopy methods developed by the USEPA which are utilized for lower detectability and specific fiber identification.

10. Ambient Air Monitoring: Measurement or determination of airborne asbestos fiber concentrations outside but in the general vicinity of the worksite.

11. Amended Water: Water to which a surfactant has been added to decrease the surface tension to 35 or less dynes.

12. ANSI: American National Standards Institute.

13. Approved Safety and Health Program: A program providing training in the handling and use of asbestos-containing material, and safety and health risks inherent in such handling and use, together with methods for minimizing the exposure of workers and the public to asbestos fibers, and instruction in all applicable federal, state and local laws and regulations pertaining to asbestos-related work.

14. Area Air Sampling: Any form of air sampling or monitoring where the sampling device is placed at some stationary location.

15. Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite - grunerite, anthophyllite, and actinolite - tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.

16. Asbestos-Containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.

17. Asbestos-Containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on interior structural members or other parts of a building.

18. Asbestos-Containing Waste Material: Any material which is, or is suspected of being, or any material contaminated with, an asbestos-containing material which is to be removed from a work area for disposal.

19. Asbestos-Contaminated Objects: Any objects that have been contaminated by asbestos or asbestos-containing material.

20. Asbestos Contractor: Any person who contracts to perform an asbestos project.

21. Asbestos Debris: Pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

22. Asbestos Inspection Report: A report on the condition of a building or structure in relation to the presence and condition of asbestos therein.

23. Asbestos Project: Any activity involving the removal, enclosure, or encapsulation of asbestos materials or any renovation, repair or demolition which disturbs asbestos materials.

24. Asbestos Project Inspector: An individual who is responsible for the enforcement of all applicable regulations and the project specifications for the Building Owner.

25. Asbestos Removal Plan: A plan which will be undertaken so as to prevent asbestos from becoming airborne in the course of the alteration, renovation, modification or demolition of any building or structure.

26. Asbestos Supervisor: An accredited EPA AHERA and PA DOL licensed Supervisor who supervises the workers during an asbestos project and ensures that proper asbestos abatement procedures as well as individual safety procedures are being adhered to. This individual shall have completed approved training courses and be fully certified.

27. Authorized Visitor: The Owner, testing lab personnel, the Project Environmental Consultant, emergency personnel or a representative of any federal, state and local regulatory or other agency having authority over the project.

28. Asbestos Worker: An individual who disturbs, removes, encapsulates, repairs, or encloses friable asbestos material. This individual shall have completed an approved training course and be fully certified.

29. Barrier: Any surface that seals off the work area to inhibit the movement of fibers.

30. Baseline Monitoring: A measurement or determination of airborne asbestos fiber concentrations inside the work area and outside the building prior to starting the abatement activities.

31. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

32. Building: Any public or private commercial, industrial, or institutional structure or any residential structure which contains four (4) or more dwelling units.

33. Building Occupants: Employees, tenants, or other persons who live, work or utilize the services offered in a building.

34. Building Owner: The owner of a building or his/her authorized representative.

35. Calibration: The determination within specific limits of the true value of the scale reading or indication of an instrument.

36. Category I Non-friable Asbestos-containing Material: Asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized

Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

37. Category II Non-friable Asbestos-containing Material: Any material, excluding Category I non-friable asbestos-containing material, containing more than 1 percent asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

38. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

39. Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

40. Certified Safety Professional (C.S.P.): An individual having a bachelor's degree from an accredited college or university and a minimum of four years' experience as a safety professional and who has successfully completed both levels of the examination administered by the Board of Certified Safety Professionals and who is currently certified.

41. CFR: Code of Federal Regulations.

42. Class I Asbestos Work: Means activities involving the removal of TSI and surfacing ACM and PACM.

43. Class II Asbestos Work: Means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal and asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

44. Class III Asbestos Work: Means repair and maintenance operations, where asbestos-containing material, including thermal system insulation and surfacing material, is unlikely to be disturbed.

45. Class IV Asbestos Work: Means maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.

46. Clean Room: An uncontaminated area or room which is part of the worker decontamination enclosure system with provisions for storage of workers' street clothes and protective equipment.

47. Clearance Air Monitoring: The employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers, and shall be performed as the final abatement activity.

48. Competent Person: Means in addition to the definition in 29 CFR 1926.32 [f], one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure and who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32 [f]: in addition for Class I and Class II work one who is specially trained in a training-course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for Project Designer or Supervisor, or its equivalent and, for Class II and Class IV work, one who is trained in an Operations and Maintenance (O&M) Course developed by the EPA [40 CFR 763.92 {a} {2}].

49. Containment: An area which has been sealed with polyethylene sheeting to prevent contamination of asbestos to the outside environment.

50. Controlled Area: An area which can be separated off from occupied areas of the building for the purpose of controlling fiber release to the occupied areas of the building. This area is controlled so as to limit access and to ensure that, when accessed, all appropriate health and safety protocols are utilized.

51. Critical Barrier: Two (2) layers of plastic sheeting applied to openings occurring in a wall, the underside of ceiling construction, electrical outlets, non-removable lights, HVAC systems, windows, doorways, entranceways, ducts, grilles, grates, diffusers, floor drains, etc., that prevent the distribution of asbestos fibers to the surrounding area.

52. Curtained Doorway: A device which consists of at least three overlapping sheets of plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets shall have weights attached at the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.

53. Decontamination Enclosure System: A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers, materials, waste containers, and equipment.

54. Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.

55. Disposal Bag: A properly labeled 6-mil thick leak-tight plastic bags used for transporting asbestos waste from the work area to the disposal site. Each bag is labeled as follows:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

AND
ASBESTOS, NA 2212, RQ
AND
CLASS 9 LABEL

In addition to the above labeling, all disposal containers will also be labeled with the owner's name and the location where the waste was generated.

56. Disturb: Any action taken which may alter, change, or stir, including but not limited to the removal, encapsulation, enclosure or repair of asbestos-containing material.

57. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.

58. Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

59. Penetrating encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

60. Removal encapsulant: A penetrating encapsulant specifically designed to minimize fiber release during removal of asbestos-containing materials rather than for in situ encapsulation.

61. Encapsulation: The spraying or coating of exposed asbestos materials with a sealant to prevent the release of asbestos fibers.

62. Enclosure: The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

63. EPA: United States Environmental Protection Agency.

64. Equipment Decontamination Enclosure System: That portion of a decontamination enclosure system designed for controlled transfer of materials and equipment into or out of the work area, typically consisting of a washroom and holding area.

65. Equipment Room: A contaminated area or room which is part of the worker decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.

66. Fiber: An acicular single crystal or a similarly elongated polycrystalline aggregate which displays some resemblance to organic fibers by having such properties as flexibility, high aspect ratio, silky luster, axial lineation, and others, and which has attained its shape primarily through growth rather than cleavage.

67. Fiber Count: Average number of fibers in a cubic centimeter of air (f/cc).

68. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

69. Fixed Object: A unit of equipment or furniture in the work area which cannot be removed from the work area.

70. Friable Asbestos Material: Material that contains more than 1.0% asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry or by the proposed abatement activity.

71. Glove bag: A sack (typically constructed of 6 mil transparent polyethylene or polyvinylchloride plastic) with inward projecting long sleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.

72. Glove bag Technique: A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces. The glove bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. All workers who are permitted to use the glove bag technique must be highly trained, experienced and skilled in this method.

73. HEPA Filter: A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in diameter.

74. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

75. High Volume Sampling Pump: An instrument used to draw ambient air over a filter at a flow rate between ten (10) and thirty (30) liters per minute. The high-volume sampling pumps are generally utilized for background or baseline samples, environmental samples, decontamination unit samples, and post-abatement samples.

76. Holding Area: A small chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.

77. HVAC: Heating, ventilation, and air conditioning.

78. Incidental Exposure: Occupational exposure to asbestos fibers caused to oneself by disturbing ACM during the performance of one's job, except during the performance of an asbestos project or minor project.

79. Industrial Hygiene: That science and art devoted to the recognition, evaluation and control of those environmental factors or stresses, arising in or from the work place, which may cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among the citizens of the community.

80. Industrial Hygienist: An individual having a college or university degree or degrees in Engineering, Chemistry, Physics, or Medicine or related Biological Sciences who, by virtue of special studies and training must have been sufficient in all of the above cognate sciences to provide the following abilities:

    a. To recognize the environmental factors and to understand their effect on people and their well-being.
    b. To evaluate, on the basis of experience and with the aid of quantitative measurement techniques, the magnitude of these stresses in terms of ability to impair people's health and well-being.
    c. To prescribe methods to eliminate, control or reduce such stresses when necessary to alleviate their effects.

81. Isolation Barrier: The construction of partitions, the placement of solid materials, and the plasticizing of apertures to seal off the work place from surrounding areas to contain asbestos fibers in the work area.

82. Log: An official record of all activities that occurred during the project and it shall identify the Building Owner, Agent, Contractor, and Workers, and other pertinent information (e.g., equipment malfunctions, contamination beyond the work area, etc.).

83. Low Volume Sampling Pump: An instrument used to collect air samples at rates ranging from one (1) to three (3) liters per minute. The low volume sampling pump, also known as the personal sampling pump, is essentially utilized for personal samples and work area samples.

84. Negative Pressure Equipment: A portable local exhaust system equipped with HEPA filtration. The system shall be capable of creating a negative pressure differential between the outside and inside of the work area.

85. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere, and negative during inhalation in relation to the air pressure of the outside atmosphere.

86. NESHAP: National Emission Standards for Hazardous Air Pollutants as prescribed in 40 CFR Part 61.

87. NIOSH: National Institute for Occupational Safety and Health.

88. Occupied Area: An area of the worksite where abatement is not taking place and where personnel or occupants normally function, or where workers are not required to use personal protective equipment.

89. OSHA: United States Occupational Safety and Health Administration.

90. Outside Air: The air outside the work place.

91. PCM: Phase contrast microscopy.

92. Permissible Exposure Limit: The permitted exposure to a particular concentration of a substance as specified by OSHA. The current permissible exposure limit for asbestos is 0.1 f/cc for an eight-hour (8) time-weighted average.

93. Personal Air Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

94. Personal Protective Equipment (PPE): Appropriate protective clothing, gloves, eye protection, footwear, head gear and approved respiratory protection.

95. Plasticize: To cover walls and floors with plastic sheeting as herein specified or by using approved spray plastics.

96. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

97. Qualitative Fit Test: The individual test subject's responding (either voluntarily or involuntarily) to a chemical challenge outside the respirator face piece. Three of the most popular methods include: irritant smoke test, odorous vapor test and taste test.

98. Quantitative Fit Test: Exposing the respirator wearer to a test atmosphere containing an easily detectable nontoxic aerosol, vapor or gas as the test agent. Instrumentation, which samples the test atmosphere and the air inside the face piece of the respirator, is used to measure quantitatively the leakage into the respirator. There are a number of test atmospheres, test agents, and exercises to perform during the tests.

99. Regulated Asbestos-Containing Material (RACM): (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has

a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

100. Removal: The stripping of any asbestos-containing materials from surfaces or components of a facility or taking out structural components in accordance with 40 CFR 61 Subparts A and M.

101. Removal Encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather that for in situ encapsulation.

102. Renovation: Altering in any way one or more facility components. Operations in which load supporting structural members are wrecked or taken out are excluded.

103. Replacement Material: Any material used to replace ACM that contains less than .01% asbestos.

104. Repair: Returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release.

105. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

106. Shift: A worker's, or simultaneous group of worker's, complete daily term of work.

107. Shower Room: A room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.

108. Staging Area: The work area near the waste decontamination chamber where containerized asbestos waste has been placed prior to removal from work area.

109. Strip: To remove friable asbestos materials from any part of the facility.

110. Structural Member: Any load-supporting member of a facility, such as beams and load-supporting walls, or any non-load-supporting member, such as ceiling and non-load-supporting walls.

111. Surface Barriers: The plasticizing of walls, floors, and fixed objects within the work area to prevent contamination from subsequent work.

112. Surfacing Material: Material in a building that is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

113. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

114. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

115. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

116. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.

117. Wet Methods: The use of amended water or removal encapsulant to minimize the generation of fibers during ACM disturbance.

118. Work Area: The area where asbestos-related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.

119. Worker Decontamination Enclosure System: A system designed for the controlled ingress and egress of workers, authorized visitors, and other individuals between the work area and the non-work area consisting of a clean room, a shower room, and an equipment room and maintained separately by the use of airlocks.

1.5 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. This Article is provided to help the user of these Specifications understand the format, language, implied requirements, and similar conventions. None of the explanations shall be interpreted to modify the substance of Contract requirements.

B. Specification Format: These Specifications are organized into Divisions, Sections or Trade Headings based on the Construction Specifications Institute's 16-Division format and the MASTERFORMAT numbering system. This organization conforms generally to recognized construction industry practice.

C. Specification Content: This Specification has been produced employing conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Language used in the Specifications and other Contract Documents is the abbreviated type. Implied words and meanings will be appropriately

interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the full context of the Contract Documents so indicates.

2. Imperative language is used generally in the Specifications. Requirements expressed imperatively are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or by others when so noted.

D. Assignment of Specialists: The Specification requires that certain specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and the assignments are requirements over which the Contractor has no choice or option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

1. This requirement should not be interpreted to conflict with enforcement of building codes or regulations governing the work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

E. Trades: Use of titles such as “carpentry” is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as “carpenter”. It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

1.6 INDUSTRY STANDARDS:

A. Applicability of Standards: Except where Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Contractor must keep available at the project site for reference.

1. Referenced industry standards take precedence over standards that are not referenced but recognized in the construction industry as applicable.

2. Unreferenced industry standards are not directly applicable to the work, except as a general requirement of whether the work complies with recognized construction industry standards.

B. Publication Dates: Where compliance with an industry standard is required,

comply with standard in effect as of date of Contract Documents.

C. Updated Standards: At the request of the Owner's Agent/ Fee Developer, Contractor or authority having jurisdiction, submit a Change Order proposal where applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected. The Owner's Agent/ Fee Developer will decide whether to issue a Change Order to proceed with the updated standard.

D. Conflicting Requirements: Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Owner's Agent/ Fee Developer for a decision before proceeding.

E. Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the Owner's Agent/ Fee Developer for decision before proceeding.

F. Copies of Standards: Each entity engaged in construction on the project is required to be familiar with industry standards applicable to that entities' construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

2. Although copies of standards needed for enforcement of requirements may be part of required submittals, the Owner's Agent/ Fee Developer reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

G. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. Names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of Contract Documents:

1. ACGIH - American Conference of Governmental Industrial Hygienists,

6500 Glenway Avenue, Building D-5, Cincinnati, Ohio 45211

2. AIHA - American Industrial Hygiene Association, 2700 Prosperity Ave., Suite 250, Fairfax, VA 22031
3. CFR - Code of Federal Regulations Available from Government Printing Office, Washington, DC 20402 (usually first published in Federal Register)
4. CGA - Compressed Gas Association, 1235 Jefferson Davis Highway, Arlington, VA 22202, 703/979-0900
5. CS - Commercial Standard of NBS (U.S. Dept. of Commerce), Government Printing Office, Washington, DC 20402, 202/377-2000
6. DOL&I(PA) - State of Pennsylvania Department of Labor and Industry Asbestos 0ccupations Accreditation and Certification, P.O. Box 3465, Harrisburg, PA 17105-3465
7. DOT - Department of Transportation, 400 Seventh St. SW, Washington, DC 20590, 202/426-4000
8. EPA - Environmental Protection Agency, 401 M St. SW, Washington, DC 20460, 202/382-3949
9. FS - Federal Specification (General Services Admin.) Regional GSA Office or GSA Specifications Unit (WFSIS), 7th and D Streets SW, Washington, DC 20406, 202/472-2205 or 2140.
10. GA - Gypsum Association, 1603 Orrington Ave. Evanston; IL 60201, 312/491-1744.
11. GSA - General Services Administration, F St. and 18th St. NW, Washington, DC 20405, 202/655-4000.
12. IEEE - Institute of Electrical and Electronic Engineers, 345 E. 47th Street New York, NY 10017, 212/705-7900.
13. MIL - Military Standardization Documents (U.S. Dept. of Defense) Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, PA 19120.
14. MSHA - Mine Safety and Health Administration, Approval and Certification Center, P.O. Box 251, Route 1, Triadelphia, WV 26059.
15. NBS - National Bureau of Standards (U.S. Dept. of Commerce) Gaithersburg, MD 20234, 301/921-1000.
16. NEC - National Electrical Code (by NFPA).
17. NESHAP - National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).
18. NIOSH - National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, OH 45226.
19. NFPA - National Fire Protection Association, Batterymarch Park, Quincy, MA 02269 617/770-3000.

20. NIST - National Institute of Standards & Technology, Gaithersburg, MD 20234, 301/921-1000

21. NRCA - National Roofing Contractors Association, 6250 River Road Rosemont, IL 60018, 312/318-6722.

22. NVLAP - National Voluntary Laboratory Accreditation Program, Gaithersburg, MD 20234, 301/921-1000

23. OSHA - Occupational Safety & Health Administration (U.S.D.O.L.), Government Printing Office Washington, DC 20402, 202/783-3238.

24. PS - Product Standard of NBS (U.S. Dept. of Commerce), Government Printing Office Washington, DC 20402, 202/783-3238.

25. RFCI - Resilient Floor Coverings Institute, 966 Hungerford Drive, Suite 12-B Rockville, MD 20805, 301/340-8580.

26. UL - Underwriters Laboratories, 333 Pfingsten Rd. Northbrook, IL 60062, 312/272-8800.

H. Trade Union Jurisdictions: The Contractor shall maintain and require subcontractors to maintain complete current information on jurisdictional matters, regulations and pending actions, as applicable to construction activities. The Contract Documents have not been organized or subdivided to imply any trade union or jurisdictional agreements.

1. Discuss new developments at project meetings at the earliest feasible dates. Record relevant information and actions agreed upon.

2. Assign and subcontract construction activities, and employ tradesmen and laborers in a manner that will not unduly risk jurisdictional disputes that could result in conflicts, delays, claims and losses.

1.8 SUBMITTALS:

A. Permits, Licenses and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01092

CODES, REGULATIONS, AND STANDARDS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY:

A. This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.
   1. Requirements include adherence to all work practices and procedures set forth in applicable codes, regulations and standards and this specification.
   2. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS:

A. General Applicability of Codes and Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

C. Federal Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

D. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

1. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules Title 29, Part 1910, Section 1001 and Part 1926, Section 58 of the Code of Federal Regulations
2. Respiratory Protection Title 29, Part 1910, Section 134 of the Code of Federal Regulations
3. Construction Industry Title 29, Part 1926, of the Code of Federal Regulations
4. Access to Employee Exposure and Medical Records Title 29, Part 1910, Section 2 of the Code of Federal Regulations
5. Hazard Communication Title 29, Part 1910, Section 1200 of the Code of Federal Regulations
6. Specifications for Accident Prevention Signs and Tags Title 29, Part 1910, Section 145 of the Code of Federal Regulations

E. DOT: U. S. Department of Transportation, including but not limited to:
1. Hazardous Substances Title 29, Part 171 and 172 of the Code of Federal Regulations

F. EPA: U. S. Environmental Protection Agency (EPA), including but not limited to:
1. Asbestos Abatement Projects; Worker Protection Rule Title 40 Part 763, Sub-part G of the Code of Federal Regulations
2. Asbestos Hazard Emergency Response Act (AHERA) Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Sub-part E of the Code of Federal Regulations
3. Training Requirements of (AHERA) Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Sub-part E, Appendix C of the Code of Federal Regulations.
4. National Emission Standards for Hazardous Air Pollutants (NESHAP) National Emission Standard for Asbestos Title 40, Part 61, Sub-part A, and Sub-part M (Revised Sub-part B) of the Code of Federal Regulations

G. State Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
1. Air Pollution Control Act, Chapter 124.
2. Bureau of Solid Waste Management Major Asbestos Standards.
3. Commonwealth of Pennsylvania Department of Labor and Industry Asbestos Occupations Accreditation and Certification Act, Act 194-1990

H. Local Requirements:
1. City of Philadelphia, Department of Public Health, Board of Health, Asbestos Control Regulation adopted pursuant to Title 6, Health Code, of the Phila. Code, specifically Chapter 6-600, Asbestos Projects; effective May 22, 1989, Amended March 4, 1993.

1.4 STANDARDS:

A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable standard on the part of himself, his employees, or his subcontractors.

C. Standards: which apply to asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

1. American National Standards Institute (ANSI) 1430 Broadway New York, New York 10018 (212)354-3300E
    a. Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79
    b. Practices for Respiratory Protection Publication Z88.2-80
2. American Society for Testing and Materials (ASTM) 100 Bar Harbor Drive, Conshohocken, PA 19428 (610)832-9585
    a. Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849-82

1.5 EPA GUIDANCE DOCUMENTS:

discuss asbestos abatement work or hauling and disposal of asbestos waste materials listed below for the Contractor's information only. These documents do not describe the work and are not a part of the work of this contract. EPA maintains an information number (800) 334-8571, publications can be ordered from (800) 424-9065 (554-1404 in Washington, DC):

A. Asbestos-Containing Materials in School Buildings - A Guidance Document. Part 1 & 2. (Orange Books) EPA C00090 (out of print)

B. Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book) EPA 560/5-85-024

C. Friable Asbestos-Containing Materials in Schools: Identification and Notification Rule (40 CFR Part 763)

D. Evaluation of the EPA Asbestos-in-Schools Identification and Notification Rule. EPA 560/5-84-005

E. Asbestos in Buildings: National Survey of Asbestos-Containing Friable Materials. EPA

560/5-84-006

F. Asbestos in Buildings: Guidance for Service and Maintenance Personnel. EPA 560/5-85-018

G. Asbestos Waste Management Guidance. EPA 530-SW-85-007

H. Asbestos Fact Book. EPA Office of Public Affairs. Asbestos in Buildings. Simplified Sampling Scheme for Friable Surfacing Materials

I. Commercial Laboratories with Polarized Light Microscopy Capabilities for bulk asbestos identification

J. A Guide to Respiratory Protection for the Asbestos Abatement Industry. EPA-560-OPTS-86-001

1.6 NOTICES:

A. U.S. ENVIRONMENTAL PROTECTION AGENCY

1. Send Written Notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M) to the regional Asbestos NESHAP Contact at least 10 days prior to beginning any work on asbestos-containing materials. Send notification to the following address:
2. USEPA REGION 3: Asbestos NESHAP Contact, Air & Waste Management Division, 841 Chestnut Street, Philadelphia, PA 19107, (215) 597-6552.Notification: Include the following information in the notification sent to the NESHAP contact:
    a. Name and address of owner or operator.
    b. Description of the facility being demolished or renovated, including the size, age, and prior use of the facility.
    c. Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area on other facility components. For facilities in which the amount of friable asbestos materials is less than 260 linear feet on pipes and less than 160 square feet on other facility components, explain techniques of estimation.
    d. Location of the facility being demolished or renovated.
    e. Scheduled starting and completion dates of demolition or renovation.
    f. Nature of planned demolition or renovation and method(s) to be used.
    g. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61 Subpart M).
    h. Name and location of the waste disposal site where the friable asbestos waste material will be deposited.
    i. For facilities being demolished under an order of a State or local governmental agency, issued because the facility is structurally unsound and

in danger of imminent collapse, the name, title, and authority of the State or local governmental representative who has ordered the demolition.

B. STATE AND LOCAL AGENCIES:

1. Send written notification as required by state and local regulations prior to beginning any work on asbestos-containing materials.

1.7 PERMITS:

A. The Contractor shall obtain all required Permits, and pay all Fees associated with his contract.

B. All asbestos containing waste is to be transported by an entity maintaining a current "Industrial waste hauler permit" specifically for asbestos-containing materials, as required for transporting of waste asbestos-containing materials to a disposal site.

1.8 LICENSES:

A. Licenses: Maintain current licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.9 POSTING AND FILING OF REGULATIONS:

A. Posting and Filing of Regulations: Post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulation and standard. Maintain one copy of each at job site. Keep on file in Contractor's office one copy of each.

1.10 SUBMITTALS:

A. Before Start of Work: Submit the following to the Owner's Representative for review. No work shall begin until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

B. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work including:

1. State and Local Regulations: Submit copies of codes and regulations applicable to the work.
2. Notices: Submit notices required by federal, state and local regulations together with

proof of timely transmittal to agency requiring the notice.

3. Permits: Submit copies of current valid permits required by state and local regulations.
4. Licenses: Submit copies of all State and local licenses and permits necessary to carry out the work of this contract.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01140

WORK RESTRICTIONS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

A. General provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 USE OF PREMISES:

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

1. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to adjacent property owners, and emergency vehicles at all times. Do not use these areas for parking or storage of materials unless approval is granted by the School.

a. Schedule deliveries to minimize use of driveways and entrances.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01301

SUBMITTALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY

A. This section specifies administrative and procedural requirements for submittals required for performance of the work, including:

1. Contractor's construction schedule
2. Submittal schedule
3. Daily construction reports
4. Product Data
5. Miscellaneous Submittals

B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits/Notifications
2. Applications for Payment
3. Performance and Payment Bonds
4. Insurance Certificates
5. Emergency Plan
6. Licenses/Certifications/Pennsylvania Act 34 Clearance
7. List of Subcontractors

1.3 SUBMITTAL PROCEDURES

A. Coordination: Transmit each submittal to the Environmental Consultant sufficiently in advance of performance of related activities to avoid delay.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Bar Chart Schedule: Prepare a fully developed, horizontal bar chart type Contractor's construction schedule. Submit at pre-construction meeting.

1. Coordinate the contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.

2. Indicate completion and clearance of each work area in advance of the date established for substantial completion. Allow time for testing and other Owner's Representative's procedures necessary for certification of clearance and substantial completion.

B. Phasing: Provide notations on the schedule to show how the sequence of the work is affected by requirements for phased completion to permit work by separate Contractors and partial occupancy by the Owner prior to substantial completion.

C. Work Stages: Indicate important stages of construction for each major portion of the work, including testing and installation.

1. Mobilization
2. Non-asbestos demolitions
3. Preparation of the work area
4. Asbestos removal
5. Clearance testing
6. Substantial completion
7. Demobilization

D. Area Separations: Provide a separate time bar to identify each work area or major construction area for each major portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities.

E. Distribution: Following response to the initial submittal, print and distribute copies to the Owner's Representative, Owner, Environmental Consultant, subcontractors, and other parties required to comply with scheduled dates.

F. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.5 PRODUCT DATA

A. Collect product data into a single submittal. Product data includes printed information such as manufacturer's installation instructions, catalog cuts, standard wiring diagrams and performance curves. Where product data must be specially prepared because standard printed data is not suitable for use, submit as "shop drawings".

B. Mark each copy to show applicable choices and options. Where printed product data includes information on several products, some of which is not required, mark copies to indicate the applicable information. Include the following information:

1. Manufacturer's printed recommendations.
2. Compliance with recognized trade association standards.
3. Compliance with recognized testing agency standards.
4. Application for testing agency labels and seals.

C. Preliminary Submittal: Submit a preliminary single-copy of product data where selection of options is required.

D. Submittals: Submit five (5) copies of each required submittal. The Owner's Representative will retain two (2) and will return the one marked with action taken and corrections or modifications required.

1.7 MISCELLANEOUS SUBMITTALS

A. Safety Data Sheets: Process material safety data sheets as “product data”.

B. Closeout Submittals: Refer to section "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information.

C. Field Records: Furnish a set of original documents as maintained on site.

1.8 OWNER'S REPRESENTATIVE'S ACTION

A. Compliance with specified characteristics is the Contractor's responsibility.

PART 2 PRODUCTS (NOT APPLICABLE).

PART 3 EXECUTION (NOT APPLICABLE).

END OF SECTION

SECTION 01410

AIR MONITORING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.

B. Air Monitoring: Work area clearance is described in Section 01714 Work Area Clearance.

1.2 DESCRIPTION OF THE WORK

A. Not in Contract Sum: This section describes work being performed by the Environmental Consultant. This work is not in the Contract Sum.

B. This section describes air monitoring carried out by the Environmental Consultant to verify that the building beyond the work area and the outside environment remains uncontaminated. This section also sets forth airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.

C. Air monitoring required by OSHA is work of the Contractor and is not covered in this Section. The Abatement Contractor is responsible for providing daily OSHA compliance monitoring as per 29 C.F.R. 1926.1101. OSHA monitoring shall be included in the Asbestos Contractor’s Contract Sum.

1.3 AIR MONITORING

A. Work Area Isolation: The purpose of the Environmental Consultant's air monitoring is to detect faults in the work area isolation such as:

1. Contamination of the building outside of the work area with airborne asbestos fibers.
2. Failure of filtration or rupture in the differential pressure system.
3. Contamination of air outside the building envelope with airborne asbestos fibers.

B. Should any of the above occur, immediately cease asbestos abatement activities until the fault is corrected. Do not recommence work until authorized by the Environmental Consultant.

1.4 WORK AREA AIRBORNE FIBER COUNT

A. The Environmental Consultant will monitor airborne fiber counts in the Work Area. The purpose of this air monitoring will be to detect airborne asbestos concentrations which may challenge the ability of the Work Area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

1.5 WORK AREA CLEARANCE

A. To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level, the Environmental Consultant will sample and analyze air per Section 01714 Work Area Clearance.

B. The Environmental Consultant will be conducting air monitoring throughout the course of the project.

1.6 STOP ACTION LEVELS

A. Inside Work Area:

1. Maintain an average airborne count in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts rise above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8-hour period exceeds the Stop Action Level, stop all work except corrective action, leave pressure differential and air circulation system in operation and notify the Environmental Consultant. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Environmental Consultant.

STOP ACTION LEVEL (f/cc)	IMMEDIATE STOP LEVEL (f/cc)	MINIMUM RESPIRATOR REQUIRED	PROTECTION FACTOR
0.5	1.0	PAPR	50

2. If airborne fiber counts exceed Immediate Stop Level given above for type of respiratory protection in use for any period of time cease all work except corrective action. Notify the Environmental Consultant. Do not recommence work until fiber counts fall below Stop Action Level given above for the type of respiratory protection in use. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by the Environmental Consultant.

B. Outside Work Area:

1. If any air sample taken outside of the Work Area exceeds the base line established below or is greater than 0.010 f/cc as determined by PCM analysis, whichever is greater, immediately and automatically stop all work except corrective action. The Environmental Consultant shall inspect and determine the source of the high reading and so notify the Contractor in writing.

2. If the high reading was the result of a failure of Work Area isolation measures initiate the following actions:

   a. Immediately erect new critical barriers as set forth in Section 01526 Temporary Enclosures to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, and floor).

   b. Decontaminate the affected area in accordance with Section 01712 Cleaning & Decontamination Procedures.

   c. Require that respiratory protection as set forth in Section 01562 Respiratory Protection be worn in affected area until area is cleared for re-occupancy in accordance with Section 01714 Work Area Clearance.

   d. Leave Critical Barriers in place until completion of work and insure that the operation of the pressure differential system in the Work Area results in a flow of air from the balance of the building into the affected area.

   e. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 01563 Decontamination Units at entry point to affected area.

   f. After Certification of Visual Inspection in the Work Area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in Section 01714 Work Area Clearance.

3. If the high reading was the result of other causes initiate corrective action as determined by the Environmental Consultant.

C. Effect on Contract Sum: Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities or negligence. The Contract Sum and schedule will be reviewed and may be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

1.7 ANALYTICAL METHODS

A. The following methods will be used by the Environmental Consultant in analyzing filters used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.

1. Phase Contrast Microscopy (PCM) will be performed using the NIOSH 7400 methodology.

2. Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) NIOSH Method 7402 clearance criteria shall be performed by EPA 40 CFR Part 763 Appendix A to Subpart E methodology and compared to the Philadelphia Asbestos Control Regulation Chapter 6-600.

1.8 SAMPLE VOLUMES

A. General: The number and volume of air samples taken by the Environmental Consultant will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used.

1.9 SCHEDULE OF AIR SAMPLES

A. Daily:

1. From start of work of Section 01526 Temporary Enclosures through the work of Section 01711 Project Decontamination, the Environmental Consultant may be taking the following samples on a daily basis:

a. Inside the Work Area: A minimum of one (1) sample shall be taken per work shift. A low volume sampler shall be employed, drawing a minimum sample volume of 180 liters.

b. Outside the Work Area, but inside the building: A minimum of two (2) samples shall be taken per work shift. A sampler shall be employed, drawing a sufficient sample volume to reach a detection limit of 0.010f/cc. The sampling device shall be placed in locations where potential contamination could occur (e.g. outside entrances and exits to the Work Area) and shall be moved periodically to assess the potential for contamination of adjacent areas at all critical points in the containment system. Special attention shall be given to locations where exhaust ducts from air filtration devices run through occupied areas of the building.

c. In the Clean Room of the Personnel/Waste Decontamination Unit: A minimum of one (1) sample shall be taken in the Decontamination Unit Clean Room per work shift. A high volume sampler shall be employed drawing a sufficient sample volume to reach a detection limit of 0.010f/cc. The sample(s) shall be taken at a time when

activity levels are expected to be at their peak (e.g. shift breaks).

d. Downwind of Air Filtration Unit Exhaust: Where feasible due to on site conditions, one (1) sample shall be taken per work shift to evaluate potential fiber escape through the Air Filtration Device. A high volume sampler shall be employed drawing a sufficient sample volume to reach a detection limit of 0.010f/cc.

e. The Analytical Method for all daily environmental monitoring shall be Phase Contrast Microscopy (PCM) (NIOSH 7400).

B. Additional samples may be taken at the Environmental Consultant's discretion or as required by the Asbestos Control Regulation. If airborne fiber counts exceed allowable limits, additional samples will be taken as necessary to monitor fiber levels.

1.10 LABORATORY TESTING

A. The services of a testing laboratory may be employed by the Environmental Consultant to perform laboratory analyses of the air samples. A microscope and technician with a Philadelphia Asbestos Lab License may be set up at the job site, or samples will be sent overnight on a daily basis, so that verbal reports on air sample results can be obtained within 24 hours. The Contractor shall have access to all air monitoring tests and results.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 ADDITIONAL TESTING

A. The Contractor may conduct his/her own air monitoring and laboratory testing. If he/she elects to do this, the cost of such air monitoring and laboratory testing shall be at no additional cost to the Owner.

3.2 PERSONAL MONITORING

A. The Environmental Consultant shall not perform air monitoring to meet Contractor's OSHA requirements for personnel sampling or any other purpose.

END OF SECTION

SECTION 01503

TEMPORARY FACILITIES

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS:

A. General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.3 SUBMITTALS:

A. Before the Start of Work: Submit the following to the Owner's Representative for review. Begin no work until these submittals are approved by the Owner's Representative.
   1. Scaffolding: Submit list of rolling and fixed scaffolding intended for use on the project. Submit sufficient detail to indicate compliance with applicable worker safety regulations or other requirements.
   2. Hot water heater: Submit manufacturers name, model number, size in gallons, heating capacity, power requirements.
   3. Decontamination Unit Sub-panel: Submit product data.
   4. Ground Fault Circuit Interrupters (GFCI): Submit product data.
   5. Lamps and Light Fixtures: Submit product data.
   6. Self-Contained Toilet Units: Provide product data and name of subcontractor to be used for servicing self-contained toilets. Submit method to be used for servicing.
   7. First Aid Supplies: Provide list of contents of first aid kit. Submit in form of check list.
   8. Fire Extinguishers: Provide product data. Submit schedule indicating location at job site.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT:

A. General: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 SCAFFOLDING:

A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.

B. The rungs of all metal ladders, etc. shall be equipped with an abrasive non-slip surface.

C. All surfaces subject to foot traffic shall have a nonskid surface. Surfaces shall be cleaned as required to remove slippery materials.

D. At the completion of the removal work, all construction aids shall be cleaned within the work area (encapsulated for wood) and wrapped in one layer of six (6) mil polyethylene sheeting and sealed before removal from the work area.

2.3 WATER SERVICE:

A. Temporary Water Service Connection: All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

B. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

C. Hot Water Heater: Provide UL rated 30 gallon electric hot water heater or on-demand instant water heater to supply hot water for the Decontamination Unit shower. Activate from 30 amp circuit breaker located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" deep pan, made of 19 gauge galvanized steel, with handles. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with NEMA, NECA, and UL standards.

D. Hot Water: May be secured from the building hot water system, provided backflow protection is installed at the point of connection as described in this section under Temporary Water Service connection, and if authorized in writing by the Owner's Representative.

2.4 ELECTRICAL SERVICE:

A. General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.

B. Temporary Power: Provide service to Decontamination Unit subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.

C. Voltage Differences: Provide identification warning signs at power outlets which are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.

D. Ground Fault Protection: Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate the panel exterior to Work Area.

E. Electrical Power Cords: Use only grounded extension cords; use "hard service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

F. Lamps and Light Fixtures: Provide general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture. Use of building lighting fixtures is strictly prohibited.

2.5 TEMPORARY HEAT:

A. Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the fuel being consumed. Use steam or hot water radiation heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

2.6 FIRST AID:

A. Comply with governing regulations and recognized recommendations within the construction industry.

2.7 FIRE EXTINGUISHERS:

A. Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case. The fire extinguishers shall comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Provide not less than one extinguisher in each work area in the equipment room of the decontamination unit and one outside the work area in the clean room. Distance between fire extinguishers within the work area shall not exceed seventy-five (75) feet.

PART 3 EXECUTION

3.1 SCAFFOLDING:

A. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.

B. Clean as necessary, debris from non-slip surfaces.

C. At the completion of abatement work clean all construction aids within the work area, wrap in one layer of 6 mil polyethylene sheeting and seal before removal from the Work Area.

3.2 INSTALLATION, GENERAL:

A. Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

B. Require that tradesmen accomplishing this work be licensed as required by local authority for the work performed.

C. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

D. The Contractor shall coordinate with the Building Owner for connection to existing building utilities. No connections shall be executed without prior approval of the building owner.

3.3 WATER SERVICE:

A. Water connection (without charge) to Owner's existing potable water system is the responsibility of the Contractor. Install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum

temperature of 100 F. Supply hot and cold water to the Decontamination Unit in accordance with Section 01516. In addition, water shall be supplied for all worksite uses.

B. Maintain hose connections and outlet valves in leak proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

3.4 ELECTRICAL SERVICE:

A. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

B. Lockout all existing power to or through the work area as described below. Unless specifically noted otherwise existing power and lighting circuits to the Work Area are not to be used. All power and lighting to the Work Area and Decontamination facilities are to be provided from temporary electrical panel described below.

1. Lockout power to Work Area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation “DANGER circuit being worked on”. Lock panel and have all keys under control of the Owner's designated Representative.
2. Lockout power to circuits running through Work Area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation “DANGER circuit being worked on”. Sign and date danger tag. Lock panel and turn keys over to the Owner's Representative for control. If circuits cannot be shut down for any reason, label at intervals 4’-0” on center with tags reading, “DANGER live electric circuit. Electrocution hazard”.

C. Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative.

D. Upon request provide and bear all costs associated with off-hour or twenty-four (24) hour electrical service to the work area as required by the Building Owner for Air Monitoring services.

E. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be at least exposed to damage from construction operations.

F. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of

proper size located in the temporary panel. Do not use outlet type GFCI devices.

G. Temporary wiring in the Work Area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

H. Number of Branch Circuits: Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:

1. One Circuit for each HEPA filtered fan unit.
2. For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).
    a. One outlet in the work area for each 2500 square feet of work area
    b. One outlet at each decontamination unit, located in equipment room
3. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:
    a. One in each work area
    b. One at clean side of each Decontamination Unit.
    c. One at each exhaust location for HEPA filtered fan units
4. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use for conducting final air sampling as set forth in Section 01714 Work Area Clearance as follows:
    a. Five inside work area
    b. Two outside work area in location designated by Owner's Representative

3.5 TEMPORARY LIGHTING:

A. Lockout: Lock out all existing power to lighting circuits in Work Area as described in section 01526 Temporary Enclosures. Unless specifically noted otherwise existing lighting circuits to the Work Area are not to be used. All lighting to the Work Area and Decontamination facilities is to be provided from temporary electrical panel described above.

B. Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level.

1. One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story,

located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

C. Provide lighting in areas where work is being performed as required to supply a 100 foot candle minimum light level.

D. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.

E. Provide lighting in the Decontamination Unit as required to supply a 50 foot candle minimum light level.

F. Provide sufficient lighting circuits as required by the work. All lighting circuits are to originate at temporary electrical panel.

G. Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

3.6 TEMPORARY HEAT:

A. General: Provide temporary heat where indicated or needed for performance of work.

B. Maintain a minimum temperature of 70 degrees F where finished work has been installed.

C. Maintain a minimum temperature of 75 degrees F in the shower of the decontamination unit.

D. Maintain a minimum temperature of 70 degrees F in the Work Area at all times that work is being performed. At all other times and at the completion of removal work, but before the start of reconstruction work, maintain a minimum temperature of 50 degrees F.

E. Maintain a minimum temperature of 70 degrees F in the Work Area at all times during and after removal work.

3.8 FIRE EXTINGUISHERS:

A. Fire Extinguishers: Comply with the applicable recommendations of NFPA Standard 10 “Standard for Portable Fire Extinguishers”. Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area in the Equipment Room and one outside Work Area in the Clean Room.

END OF SECTION

SECTION 01513

TEMPORARY PRESSURE DIFFERENTIAL & AIR FILTRATION SYSTEM

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work included in this section.

1.2 SUBMITTALS

A. Before Start of Work: Submit design of pressure differential system to the Environmental Consultant for review. Do not begin work until submittal is returned with the Environmental Consultant's approval. Include in the submittal:

1. Number of HEPA filtered fan units required and the calculations necessary to determine the number of machines.
2. Description of projected airflow within work area and methods required to provide adequate airflow in all portions of the work area.
3. Anticipated pressure differential across work area enclosures.
4. Description of methods of testing for correct air flow and pressure differentials.
5. Manufacturer's product data on the HEPA filtered fan units to be used.
6. Location of the machines in the work area.
7. Method of supplying adequate power to the machines and designation of building electrical panel(s) which will be supplying the power.
8. Description of work practices to ensure that airborne fibers travel away from workers.
9. Manufacturer's product data on equipment used to monitor pressure differential between inside and outside of work area.

1.3 QUALITY ASSURANCE

A. Monitor pressure differential at Personnel and Equipment Decontamination Units with one or more digital manometers equipped with a continuous recorder. Manometers shall be equipped with a warning buzzer which will sound if pressure differential drops below negative 0.02 inches of water column.

PART 2 PRODUCTS

2.1 RECORDING MANOMETERS

A. The Contractor shall supply a manometer for each Work Area for the purpose of continuously monitoring and recording the pressure differential between the Work Area and the building outside of the Work Area.

2.2 HEPA FILTERED FAN UNITS

A. General: Supply the required number of HEPA filtered fan units to the site in accordance with these specifications. A minimum of one (1) additional unit shall be installed as a backup to be used during primary unit filter changing and/or upon unit failure. Use units that meet the following requirements:

1. Cabinet: Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard-size doorways. Provide units whose cabinets are:
    a. Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance.
    b. Arranged to provide access to and replacement of all air filters from intake end.
    c. Mounted on casters or wheels.

2. Fans: Rated capacity of fan according to usable air-moving capacity under actual operating conditions.

3. HEPA Filters: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.
    a. Provide units with a continuous rubber gasket located between the filter and the filter housing which is in good condition in order to form a tight seal.
    b. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles when tested in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.
    c. Provide filters that are marked with the name of the manufacturer, serial number, airflow rating, efficiency and resistance, and the direction of test airflow.

d. Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. Provide units with the following pre-filters:

1) First-stage pre-filter: low-efficiency type (e.g., for particles 100 um and larger).

2) Second-stage (or intermediate) filter: medium efficiency (e.g., effective for particles down to 5 um in size).

e. Provide units with pre-filters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.

4. Instrumentation: Provide units equipped with:

a. Magnahelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed.

b. A table indicating the usable air-handling capacity for various static pressure readings on the Magnahelic gauge affixed near the gauge for reference, or the Magnahelic reading indicating at what point the filters should be changed, noting cubic feet per minute (CFM) air delivery at that point.

c. Elapsed time meter to show the total accumulated hours of operation.

5. Safety and Warning Devices: Provide units with the following safety and warning devices:

a. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter.

b. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge.

c. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red).

d. Audible alarm if unit shuts down due to operation of safety systems.

6. Electrical components: Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.

7. Manufacturers: Subject to compliance with requirements, manufacturers

offering products, which may be incorporated in the work, include, but are not limited to, the following:

a. Aerospace America, Inc. "Aero-Clean 2000" 900 Harry S. Truman Parkway Bay City, Michigan 48706

b. Asbestos Control Technology, Inc. "Micro-Trap" 115 Twinbridge Dr Ste G Pennsauken, NJ 08110

c. Control Resource Systems, Inc. "Hog" 2000 670 Mariner Drive Michigan City, Indiana 46360

d. Tri-Dim Filter Corporation "ACCU-2M" 93 Industrial Drive Louisa, VA 23093

PART 3 EXECUTION

3.1 AIR CIRCULATION IN THE WORK AREA

A. Air Circulation: For purposes of this section air circulation refers to either the introduction of outside air to the work area or the circulation and cleaning of air within the work area.

B. Air circulation in the work area is a minimum requirement intended to help maintain airborne fiber counts at a level that does not significantly challenge the work area isolation measures. The Contractor may also use this air circulation as part of the engineering controls in his worker protection program.

C. Determining the Air Circulation Requirements: Provide a fully operational air circulation system supplying a minimum of four (4) air changes per hour.

D. Determine the number of units needed to achieve required air circulation according to the following procedure:

1. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by the air change rate.

$$\text{Cubic Feet of Air per Minute (CFM)} = \frac{\text{Volume of work area (cu. ft.)}}{\text{15 minutes}}$$

2. Divide the air circulation requirement (CFM) above by the capacity of HEPA filtered fan unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machine's labeled operating characteristics.

$$\text{Number of Units Needed} = \frac{\text{Air circulation Requirement (CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}}$$

3. Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

3.2 PRESSURE DIFFERENTIAL ISOLATION

A. Isolate the work area from all adjacent areas or systems of the building with a pressure differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the work area.

B. Relative Pressure in the work area: Continuously maintain the work area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope, with a pressure differential of negative 0.02" water column as a minimum.

C. Accomplish the pressure differential by exhausting a sufficient number of HEPA filtered fan units from the work area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the work area. Determine the number of units required for pressure isolation by the following procedure:

1. Establish required air circulation in the work area, personnel and equipment decontamination units.
2. Exhaust a sufficient number of units from the work area to ensure the required air changes/hour.
3. The required number of units is the number determined above plus one additional unit.

D. Vent HEPA filtered fan units to the outside of the building unless otherwise authorized in writing by the Environmental Consultant. An Alternative Method Request may be required to vent exhaust into water filled barrels if venting to the exterior is not feasible.

1. Mount the units to exhaust directly or through disposable ductwork.
2. Use only new ductwork except for sheet metal connections and elbows.
3. Use ductwork and fittings of same diameter or larger than the discharge connection on fan unit.
4. Use inflatable, disposable plastic ductwork in lengths not greater than 100 feet.
5. Use spiral wire-reinforced flex duct in lengths not greater than 50 feet.
6. Arrange exhaust as required to inflate the duct to a rigidity sufficient to

prevent flapping.

7. If direction of discharge from fan unit is not aligned with duct, use sheet metal elbow to change direction. Use six feet of spiral wire reinforced flex duct after direction change.
8. Do not combine two (2) or more exhaust ductwork lengths into each other.

3.3 EXHAUST SYSTEM

A. Pressure differential isolation and air circulation in the work area are to be accomplished by an exhaust system as described below.

B. Exhaust all units from the work area outside the building unless approved by an Alternative Method Request.

C. Location of HEPA Filtered Fan Units: Locate fan unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses work area as much as possible. This may be accomplished by positioning the HEPA filtered fan unit(s) at a maximum distance from the worker access opening or other makeup air sources.

D. Place the intake end of the HEPA unit at the perimeter of the work area enclosure or locate its exhaust duct through an opening in the plastic barrier or wall covering. Seal plastic around the unit or duct with tape.

E. Vent to the outside of the building, unless authorized in writing by the Owner's Representative and approved by an Alternative Method Request.

F. Decontamination Units: Arrange the work area and decontamination units so that the majority of make-up air comes through the decontamination units. Use only the personnel or equipment decontamination unit at any one time and seal the other so that make up air passes through the unit in use.

G. Supplemental Makeup Air Inlets: Provide, where required, for proper airflow through the work area in a location approved by the Asbestos Technician. This can be done by making louvered openings in the plastic sheeting that allow air from outside the building into the work area. Locate auxiliary makeup air inlets as far as possible from the fan unit(s) (e.g., on an opposite wall), off the floor (preferably near the ceiling), and away from barriers that separate the work area from any clean areas. Cover with flaps to reseal automatically if the pressure differential system should shut down for any reason. Spray flap and around opening with spray adhesive so that if flap closes meeting surfaces are both covered with adhesive. Use adhesive that forms contact bond when dry.

3.4 RECIRCULATION SYSTEM

A. Pressure differential isolation and air circulation in the work area are to be accomplished by a recirculation system as described below:

1. Recirculate air in the work area through HEPA filtered fan units to accomplish air circulation requirements of this section.

2. Location of Fan Units: Locate HEPA filtered fan units so that air is circulated through all parts of the work area, and so that required pressure is maintained at all parts of work area geometry. Move units as necessary so that in any location where asbestos-containing materials are being disturbed the discharge from one HEPA filtered fan unit is blowing contamination away from workers. Direct airflow in these locations so that it is predominantly toward workers' backs at the breathing zone elevation.

3.5 AIR CIRCULATION IN DECONTAMINATION UNITS

A. Pressure Differential Isolation: Continuously maintain the pressure differential required for the work area in the:

1. Personnel Decontamination Unit: Across the shower room with the equipment room at a lower pressure than the clean room.

2. Equipment Decontamination Unit: Across the holding room with the wash room at a lower pressure than the clean room.

B. Air Circulation: Continuously maintain air circulation in decontamination units at the same level as required for the work area.

C. Air Movement: Arrange air circulation through the personnel unit so that it produces a movement of air from the clean room through the shower room into the equipment room.

3.6 USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

A. General: Each unit shall be serviced by a dedicated minimum 115V-20A circuit with ground fault circuit interrupter (GFCI) supplied from temporary power supply installed under requirements of Section 01503 “Temporary Facilities”. Do not use existing branch circuits to power fan units.

B. Testing the System: Test pressure differential system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the fan unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of pressure differential system to Asbestos Project Inspector.

C. Demonstrate condition of equipment for each HEPA filtered fan unit and pressure

differential monitoring equipment including proper operation of the following:

1. Squareness of HEPA filter.
2. Condition of seals.
3. Proper operation of lights.
4. Proper operation of automatic shut down if exhaust is blocked.
5. Proper operation of alarms.
6. Proper operation of magnehelic gauge.
7. Proper operation and calibration on pressure-monitoring equipment.

D. Demonstrate operation of the pressure differential system for the Asbestos Project Inspector. Including, but do not limited to, the following:

1. Plastic barriers and sheeting move slightly in toward the work area.
2. Curtain of decontamination units move slightly in toward the work area.
3. There is a noticeable movement of air through the decontamination unit.
4. Use smoke tube to demonstrate air movement from clean room through shower room to equipment room.
5. Use smoke tubes to demonstrate a definite motion of air across all areas in which work is to be performed.

E. Modify the pressure differential system as necessary to demonstrate successfully the above.

F. Use of system during abatement operations:

1. Start fan units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant pressure differential and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.

2. Do not shut down air pressure differential system during encapsulating procedures, unless authorized by the Asbestos Technician in writing. Supply sufficient pre-filters to allow frequent changes.

3. Start abatement work at a location farthest from the fan units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and fan units are operating again.

4. At completion of abatement work, allow fan units to run as specified under

Section 01711, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.

G. Dismantling the System:

1. When a final inspection and the results of final air tests indicate that the area has been decontaminated, fan units may be removed from the work area. Before removal from the Work Area, remove and properly dispose of pre-filters, secondary filters, and HEPA filters, decontaminate exterior of machine and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

END OF SECTION

SECTION 01526

TEMPORARY ENCLOSURES AND WORK AREA PREPARATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 SUBMITTALS

A. Before the start of work the Contractor shall submit a work plan to the Environmental Consultant for review. The Contractor shall not begin work until work plan submittals are approved by the Environmental Consultant. The work plan shall identify specific engineering controls and removal methods to be utilized for each work area.

1.3 TEMPORARY ENCLOSURES - CATEGORY I AND II NON-FRIABLE ACM MATERIAL

A. Primary Barriers shall not be required for work areas where Category I and II non-friable materials are to be removed using EPA approved non-friable removal methods.

B. Localized isolation consisting of critical barriers, drop cloths, splash guards if needed, and air filtration units shall be required.

1.4 TEMPORARY ENCLOSURES – FRIABLE ACM

A. Removal of asbestos-containing materials shall be accomplished utilizing full containment procedures techniques as outlined in the City of Philadelphia Asbestos Control Regulation, Chapter 6-600, Section VI STANDARDS.

B. Air filtration units and negative pressure enclosures shall be required.

PART 2 PRODUCTS

2.1 SHEET PLASTIC

A. Polyethylene Sheet: Provide flame-resistant 6 mil polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, 6-mil thick, frosted or black as indicated.

2.2 MISCELLANEOUS MATERIALS

A. Duct Tape: Provide duct tape (or approved equivalent) in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

B. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

C. Asbestos warning signs for posting at the perimeter of all work areas, as required by EPA and OSHA.

D. Flame resistant kiln dried lumber, any grade, 2” x 4” or 2” x 3” wood stud, PVC piping, metal stud or equivalent, in lengths appropriate for wall construction.

E. Flame resistant plywood sheathing (3/8” thick minimum) shall be used at all locations called for in the specifications. This may include, but is not limited to, isolation barriers, exhaust manifolds and personnel and waste/equipment decontamination units.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. The work area shall mean the location where asbestos-abatement work occurs. It is a variable of the extent of work of the Contract. It may be a portion of a room, a single room, or a complex of rooms. A “work area” is considered contaminated during the work, and must be isolated from the balance of the building, and decontaminated at the completion of the asbestos-control work.

B. The Contractor shall inspect each work location with the Asbestos Project Inspector. The Contractor and Asbestos Project Inspector shall agree on conditions of materials and worksite and select the appropriate abatement procedures. Should the Asbestos Project Inspector and Contractor not be in agreement, the Owner’s Representatives and Environmental Consultant shall make the final decision.

C. Completely isolate and seal the work area(s) from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. All seals and critical barriers shall be maintained in an air-tight condition to allow for clearance air testing to be conducted while abatement activities are in progress in adjacent areas. Should any area beyond the work area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in Section 01711. Perform all such required cleaning or decontamination at no additional cost to the owner.

D. Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to completion of work area isolation.

E. Lockout/tag-out all power to work area in accordance with Section 01503.

3.2 EMERGENCY PRECAUTIONS

A. The Contractor shall prepare a contingency plan for emergencies including fire, accident, power failure, air pressure differential system failure, supplied air system failure, or any other event that may require modification or abridgment of decontamination or work area isolation. Note that nothing in this Specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.

B. The Contractor shall provide barricades and adequate protection to safely prevent accidental entrance to the abatement area by any building occupants.

C. Before the Contractor starts actual abatement of asbestos material, the local fire department and ambulance crews shall be notified by the Contractor as to the dangers of entering the work area. The Contractor shall make every effort to help these agencies and form plans of action, should their personnel need to enter the contaminated area.

D. Local medical emergency personnel, both ambulance crews and hospital emergency room staff, shall be notified by the Contractor as to the possibility of having to handle injured work persons who are contaminated with asbestos dust. They shall be advised on safe decontamination procedures.

E. First aid shall comply with the governing regulations and all recognized recommendations within the construction industry.

F. Except as otherwise indicated, submit special reports directly to the Owner within one day of occurrence requiring special report, with a copy to the Owner's Representative, Environmental Consultant and others affected by the occurrence.

3.3 EMERGENCY EXITS

A. Provide emergency exits and emergency lighting as set forth below:

1. Emergency Exits: At each existing exit door from the work area provide the following means for emergency egress:

   a. Arrange exit door so that it is secure from outside the Work Area but permits exiting from the Work Area.

   b. Mark outline of door on Primary and Critical Barriers with luminescent paint at least 1" wide. Hang a razor knife on a string beside outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of the razor knife. Paint words “EMERGENCY EXIT” inside outline with luminescent paint in letters at least one foot high and 2” thick.

3.4 CONTROLLED ACCESS

A. Isolate the Work Area to prevent unauthorized entry into work area or

surrounding controlled areas. Accomplish isolation by the following:

1. After receiving authorization from the Asbestos Project Inspector, lock all doors into the Work Area, or, if doors cannot be locked, chain shut. Cover any signs that direct emergency exiting, either outside or inside of the Work Area, to locked doors. Do not obstruct doors required for emergency exits from the Work Area or from building.

2. Arrange the Work Area so that the only access into the Work Area is through lockable doors to personnel and equipment decontamination units.

3. Install temporary shuttered, lockable doors with entrance type locksets that are key lockable from the outside and always unlocked and operable from the inside. Do not use deadbolts or padlocks.

B. Provide warning signs at each locked door leading to work area printed in both English and Spanish reading as follows:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

C. Provide spacing between respective lines at least equal to the height of the respective upper line.

D. Provide Warning Signs (in English and Spanish) at each locked door leading to work area reading as follows:

LEGEND	**NOTATION**
KEEP OUT	3” Sans Serif Gothic or Block
BEYOND THIS POINT	1” Sans Serif Gothic or Block
ASBESTOS ABATEMENT WORK	1” Sans Serif Gothic or Block
IN PROGRESS	1” Sans Serif Gothic or Block
BREATHING ASBESTOS DUST MAY BE	14 Point Gothic
HAZARDOUS TO YOUR HEALTH	

3.5 ALTERNATE METHODS OF ENCLOSURE

A. NA

3.6 RESPIRATORY AND WORKER PROTECTION

A. Before proceeding beyond this point in providing Temporary Enclosures:

1. Provide Worker Protection per Section 01560.

2. Provide Respiratory Protection per Section 01562.
3. Provide Personnel Decontamination Unit per Section 01563.

3.7 ISOLATION BARRIERS

A. When an isolation barrier is required, it shall consist of partitions constructed of a minimum of: conventional 2x3 wood, polyvinyl chloride piping, or metal stud framing, on a sixteen-inch maximum center-to-center to support barriers in all openings larger than thirty-two square feet, except where any one dimension is one foot or less.

B. A solid construction material, such as plywood, of at least 3/8 inch thickness shall be applied to the work side of the framing where the barrier could be subject to damage.

C. Partitions shall be plasticized with Primary Barriers as described below.

D. All accessible walls surrounding the area shall contain a minimum 18” square transparent viewing port made of shatterproof material greater than or equal to 0.125” thickness located at a height appropriate for accessible viewing and in such a manner so as to maximize visibility of the work area. Viewing ports shall be maintained in a clear and unobstructed manner at all times.

3.8 CRITICAL BARRIERS

A. Completely separate the Work Area(s) from other portions of the building and the outside by closing all openings with two (2) independent layers of sheet plastic barriers at least 6 mil in thickness, individually sealed and sealing cracks and irregular openings with expanding fire-rated foam. All openings shall be air-tight and shall remain in place until clearance sampling indicates acceptable fiber concentration levels have been achieved.

B. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, elevator shafts, convectors and speakers, and other openings into the Work Area(s) with two (2) independent layers of polyethylene sheeting at least 6 mil in thickness, taped securely in place with duct tape. Maintain seals until all work including project decontamination is completed.

C. Provide two (2) individual layers of Sheet Plastic barriers at least 6 mil in thickness as required to seal openings completely from the work area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.

D. Fire-rated expandable foam may be used to properly seal any irregular openings not conducive to sealing with polyethylene sheeting.

E. Mechanically support sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic. The following are

acceptable methods of supporting sheet plastic barriers. Alternative support methods may be used if approved in writing by the Owner's Representative:

1. Plywood squares 6” x 6” x 3/8” held in place with one smooth masonry nail or electro-galvanized common nail driven through center of the plywood and duct tape on plastic so that plywood clamps the plastic to the wall. Locate plywood squares at each end, corner and at maximum 4 feet on centers.
2. Nylon or polypropylene rope or wire with a maximum unsupported span of 10 feet, minimum ¼” in diameter suspended between supports securely fastened on either side of opening at maximum 1 foot below ceiling. Tighten rope so that it has 2” maximum dip. Drape plastic over rope from outside work area so that a two foot long flap of plastic extends over rope into work area. Staple or wire plastic to itself 1” below rope at maximum 6” on centers to form a sheath over rope. Lift flap and seal to ceiling with duct tape or spray cement. Seal loop at bottom of flap with duct tape. Erect entire assembly so that it hangs vertically without a “shelf” upon which debris could collect.

F. Provide Pressure Differential System per Section 01513.

G. Clean housings and ducts of all debris or overspray materials prior to erection of any Critical Barrier that will restrict access.

3.9 PREPARE AREA:

A. Scaffolding: If fixed scaffolding is to be used to provide access, HEPA vacuum and wet clean area prior to scaffolding installation.

B. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc. which cover any part of the surface to be worked on with the work.

C. Remove all general construction items such as cabinets, casework, door and window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference with the work.

D. Clean all furniture, equipment, and or supplies with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Section 01712 Cleaning and Decontamination Procedures, prior to being moved or covered. All equipment, furniture, etc. is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by Environmental Consultant.

E. Clean all surfaces in the Work Area with a HEPA filtered vacuum or by wet wiping prior to the installation of the primary barrier.

3.10 PRIMARY BARRIER:

A. Protect building and other surfaces in the Work Area from damage from water and high humidity or from contamination from asbestos-containing debris, slurry or high airborne fiber levels by covering with a primary barrier as described below.

B. Sheet Plastic: Protect floor surfaces in the Work Area with two (2) layers of six (6) mil plastic sheeting and wall surfaces with two (2) layers of six (6) mil. thick plastic sheeting, or as otherwise directed on the Contract Drawings.

1. Protect floor surfaces in the Work Area with two (2) layers of six (6) mil plastic sheeting. Wall sheeting must extend up the wall surfaces a minimum of 12" in an alternating fashion with the wall sheeting or as otherwise directed on the Contract Drawings.

2. Cover all walls in the Work Area including "Critical Barrier" sheet plastic barriers with two layers of polyethylene sheeting, at least 6 mil in thickness, mechanically supported and sealed with duct tape and spray-glue, so as to overlap floor sheeting by at least 12 inches in the same manner as "Critical Barrier" sheet plastic barriers. Tape all joints including the joining with the floor covering with duct tape. Wall sheet barriers shall extend to the floor.

3. All vertical and horizontal surfaces except those of asbestos-containing materials shall be sealed with polyethylene sheeting. This includes all non-ACM pipe insulation.

4. Stairs and Ramps: Do not cover stairs or ramps with unsecured sheet plastic. Where stairs or ramps are covered with plastic, provide ¾" exterior grade plywood treads securely held in place, over the plastic. Do not cover rungs or rails with any type of protective materials.

5. Repair of Damaged Polyethylene Sheeting: Remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dry.

C. Viewing Port: All accessible walls surrounding the area shall contain a minimum 18"square viewing port made of shatterproof material greater than or equal to 0.125" thickness located at a height appropriate for accessible viewing and in such a manner as to maximize visibility of the work area.

3.11 STOP WORK

A. If the Critical barrier falls or is breached in any manner, stop work immediately. Do not start work until authorized in writing by the Asbestos Project Inspector.

3.12 EXTENSION OF THE WORK AREA

A. Extension of the Work Area: If the Critical Barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add the affected area to the work area, enclosing it as required by this Section of the specification and decontaminate it as described in Section 01711 Project Decontamination.

3.13 CONTAINMENT BAG REMOVAL

A. See Section 02079 Containment Bag Removal for Enclosure and Work Area Preparation for use during Containment Bag Removal of asbestos-containing Joint Insulation and asbestos-containing Pipe Insulation.

END OF SECTION

SECTION 01560

WORKER PROTECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. This section describes the equipment and procedures required for protecting workers and site visitors against asbestos contamination and other workplace hazards except for respiratory protection.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Respiratory Protection is specified in Section 01562.

1.4 WORKER TRAINING

A. State and Local License: All workers are to be trained and currently certified as asbestos workers and/or supervisors by the Commonwealth of Pennsylvania, Department of Labor and Industry and shall provide evidence of such certification upon request.

B. Train, in accordance with 29 CFR 1926.1101(k)(8), all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in the course to the following:

1. Methods of recognizing asbestos
2. Health effects associated with asbestos
3. Relationship between smoking and asbestos in producing lung cancer
4. Nature of operations that could result in exposure to asbestos
5. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
    a. Engineering controls
    b. Work practices
    c. Respirators
    d. Housekeeping procedures
    e. Hygiene facilities

f. Protective clothing

g. Decontamination procedures

h. Emergency procedures

i. Waste disposal procedures

6. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134

7. Appropriate work practices for the work

8. Requirements of medical surveillance program

9. Review of 29 CFR 1926.1101 (amended), including appendices

10. Pressure differential systems

11. Work practices including hands-on or on-job training

12. Personal decontamination procedures

13. Air monitoring, personal and area

1.5 MEDICAL EXAMINATIONS

A. Provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour Time Weighted Average. In the absence of specific airborne fiber data, provide medical examinations for all workers who will enter the Work Area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in 29 CFR 1926.1101(m). In addition, provide an evaluation of each individual's ability to work in environments capable of producing heat stress in the worker.

1.6 SUBMITTALS

A. Before start of work submit the following to the Owner's Representative for review. Do not start work until these submittals are approved by the Environmental Consultant.

1. State and Local License: Submit evidence that all workers have been trained and licensed as asbestos workers by the Commonwealth of Pennsylvania Department of Labor and Industry.

2. Certificate of Worker Acknowledgement: Submit an original signed copy of the Certificate of Worker's Acknowledgement for each worker who is to be at the job site or enter the Work Area.

3. Report from a medical examination conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:

a. Name and Social Security Number

b. Physicians written opinion from examining physician including at a minimum the following:

1) Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.

2) Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.

3) Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

c. Copy of information that was provided to physician in compliance with 29 CFR 1926.

d. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

4. Notarized Certifications: Submit certification signed by an officer of the abatement contracting firm and notarized confirming that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.

5. Copies of OSHA-approved confined space training (1910.146) certification for all workers entering OSHA-defined confined spaces.

PART 2 PRODUCTS

2.1 PROTECTIVE CLOTHING

A. Clothing: Provide fire-retardant “Tyvek” disposable protective clothing consisting of full-body coveralls, headcovers, and boots as required by the most stringent OSHA standards applicable to the work and as manufactured by DuPont or approved equal. Eye protection, hard hats, gloves, and safety shoes shall be worn. They shall be in accordance with ANSI Z89.1 (1969) and ANSI Z41.1 (1967).

B. Boots: Provide work boots with non-skid soles, and where required by OSHA, foot protectives, for all workers. Provide boots at no cost to workers. Paint uppers of all boots red with waterproof enamel. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with asbestos-containing material. Dispose of boots as asbestos- contaminated waste at the end of the work.

C. Hard Hats: Provide head protection (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner's Representative, Project Administrator, and Owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress

that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from Work Area at the end of the work.

D. Goggles: Provide eye protection (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Thoroughly clean, decontaminate and bag goggles before removing them from Work Area at the end of the work.

E. Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from Work Area. Dispose of gloves as asbestos-contaminated waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT

A. Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Owner's Representative, Environmental Consultants, and other authorized representatives who may inspect the jobsite. Provide two (2) respirators and six (6) complete coveralls and where applicable provide six (6) respirator filter changes per day. Sufficient HEPA cartridges for powered air-purifying respirators shall be provided for the workers to change during the work shift. No HEPA cartridges shall be used for longer than three (3) eight (8) hour work shifts. The respirators shall be worn at all times when in the contaminated area. There shall be no exceptions.

PART 3 EXECUTION

3.1 GENERAL

A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the Work Area.

B. Each time the Work Area is entered remove all street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3.2 DECONTAMINATION PROCEDURES

A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:

1. Type C Supplied Air or Powered Air-Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area:

a. When exiting area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.

b. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:

1) Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR) hold blower unit above head to keep canisters dry.

2) With respirator still in place thoroughly wash body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.

3) Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breath.

4) Carefully wash facepiece of respirator inside and out.

5) If using PAPR, shut down in the following sequence, first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.

6) Shower completely with soap and water.

7) Rinse thoroughly.

8) Rinse shower room walls and floor prior to exit.

c. Proceed from shower to Clean Room and change into street clothes or into new disposable work items.

2. If air-purifying negative pressure respirators are being utilized, require that all workers use the following decontamination procedures as a minimum requirement whenever leaving the Work Area with a half or full face cartridge-type respirator:

a. When exiting area, remove disposable coveralls, disposable headcovers and disposable footwear covers or boots in the equipment room.

b. Still wearing respirators. Proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid inhaling asbestos fibers while showering. The following procedure is required as a minimum:

1) Thoroughly wet body from neck down.

2) Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.

3) Take a deep breath, hold it and/or exhale slowly, complete wetting of hair thoroughly wetting face, respirator and filter (air purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breath.

4) Dispose of wet filters from air purifying respirator after each use.

5) Carefully wash facepiece of respirator inside and out.

6) Shower completely with soap and water.

7) Rinse thoroughly.

8) Rinse shower room walls and floor to exit

c. Proceed from shower to clean room and change into street clothes or into new disposable work suit.

B. Within the Work Area: Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, or drink, workers shall follow the procedure described above, then dress in street clothes before entering the non-work areas of the building. **Smoking is not permitted in any part of the building complex.**

END OF SECTION

SECTION 01562

RESPIRATORY PROTECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Instruct and train each worker involved in asbestos abatement or maintenance and repair of friable asbestos-containing materials in proper respiratory use. Require that each worker properly wear a respirator in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated and cleared through air monitoring. Use respiratory protection appropriate for the fiber level encountered in the workplace or as required for other toxic or oxygen-deficient situations encountered.

1.3 STANDARDS

A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.

1. OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910.1001 and 1910.134 as well as 29 CFR 1926.1101.

2. CGA - Compressed Gas Association, Inc., New York, Pamphlet G-7, “Compressed Air for Human Respiration if, and Specification G-7.1 “Commodity Specification for Air”.

3. CSA - Canadian Standard Association, Rexdal, Ontario, Standard Z180.1-1978, "Compressed Breathing Air".

4. ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992.

5. NIOSH - National Institute for Occupational Safety and Health.

6. MSHA - Mine Safety and Health Administration.

1.4 SUBMITTALS

A. Before Start of Work submit the following to the Environmental Consultant for review. Do not begin work until these submittals are approved by the Environmental Consultant.

1. Product Data: Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.

2. Operating Instruction: Submit complete operating and maintenance instructions for all components and systems as a whole. Submittal is to be in bound manual form suitable for field use.

3. Respiratory Protection Program: Submit Contractor's written respiratory protection program manual as required by OSHA 1926.1101.

1.5 DELIVERY

A. Deliver replacement parts, etc., not otherwise labeled by NIOSH or MSHA to job site in manufacturer's containers.

PART 2 EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS

A. Respirator Bodies: Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.

B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH Certification for “Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists” and color coded in accordance with ANSI Z228.2 (1980). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH Certification.

C. Non-permitted respirators: The use of single use, disposable or quarter face respirators is strictly forbidden.

2.2 POWERED AIR PURIFYING RESPIRATORS

A. Respirator Bodies: Provide full face type powered respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.

B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH Certification for “Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists” and color coded in accordance with ANSI

Z228.2 (1980). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH Certification.

PART 3 EXECUTION

3.1 GENERAL

A. Respiratory Protection Program: Comply with ANSI Z88.2 - 1980 “Practices for Respiratory Protection” and OSHA 29 CFR 1910 and 1926.

B. Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.

C. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Section 01714.

D. Regardless of Airborne Fiber Levels, require that the minimum level of respiratory protection used be half-face negative pressure air-purifying respirators with high efficiency filters.

E. Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

F. No one having a beard or other facial hair that will interfere with the mask seal will be permitted to don a respirator and enter any Work Area.

3.2 FIT TESTING

A. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a Certified Industrial Hygienist. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing has been provided.

B. On a weekly basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

C. Upon each wearing, require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED

A. The Asbestos Contractor shall, at a minimum, provide the following respiratory protection:

1. Air-Purifying Respirators: APR(s), Negative pressure, full-face or half-face respirators shall be worn during the Work Area preparation phase of

the project (at a minimum). There will be no exceptions. If air monitoring results show that fiber counts meet or exceed the action level, defined as half of the respirator use limit concentration (5f/cc), then Powered Air-Purifying respirators shall be used.

2. Powered Air-Purifying Respirators: PAPR(s), Positive pressure, full-face respirators or Type "C" respirators as specified shall be worn during removal and cleanup phases of the project (at a minimum). There will be no exceptions. If air monitoring results show that fiber counts meet or exceed (50f/cc) action level defined as half of the respirator use limit concentration, then Type "C" respirators shall be used.

3.4 PERMISSIBLE EXPOSURE LIMIT (PEL)

A. 8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed 0.1 fibers/cubic centimeter.

3.5 RESPIRATORY PROTECTION FACTOR

A. OSHA Respirator Type Protection Factor:

1. Air purifying: PF=10 - Negative pressure respirator high efficiency filter half-face piece.

2. Air purifying: PF=50 - Negative pressure respirator High efficiency filter full-face piece.

3. Powered Air Purifying (PAPR): PF= 50 - Positive pressure respirator high efficiency filter half-face piece.

4. Powered Air Purifying (PAPR): PF= 1000 - Positive pressure respirator high efficiency filter full-face piece.

3.6 AIR PURIFYING RESPIRATORS

A. Air purifying-half or full-face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, filter cartridges and facemask be washed each time a worker leaves the Work Area.

3.7 POWERED AIR PURIFYING RESPIRATORS

A. Powered air purifying full-face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change

filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, are washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

END OF SECTION

SECTION 01563

DECONTAMINATION UNITS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Refer to Section 01503 Temporary Facilities for electrical requirements and requirements relative to connection of decontamination facilities to utilities such as water and electric.

1.3 SUBMITTALS:

A. Before the Start of Work: Submit the following to the Environmental Consultant for review. Do not begin work until these submittals are approved by the Environmental Consultant.

B. Personnel Decontamination Unit: Provide shop drawing showing location and assembly of personnel decontamination units.

C. Equipment Decontamination Unit: Provide shop drawing showing location and assembly of equipment decontamination units.

D. Shower Pan: Provide shop drawing.

E. Shower Walls: Provide product data.

F. Shower Head and Controls: Provide product data.

G. Filters: Provide product data and shop drawing of installation on the decontamination unit.

H. Hose Bibb: Provide product data.

I. Shower Stall: For wash down station provide product data and shop drawing showing location and modifications.

J. Elastomeric membrane: Provide product data.

K. Lumber: Provide product data on fire resistance treatment.

L. Sump Pump: Provide product data.

M. Signs: Submit samples of signs to be used.

PART 2 PRODUCTS

2.1 SUPPLIES

A. Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6 mil thick as indicated, frosted or black as indicated.

B. Reinforced Polyethylene Sheet: Where plastic sheet is the only separation between the Work Area and the building exterior, provide translucent, nylon reinforced, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6 mil reinforced thick as indicated.

C. Duct Tape: Provide duct tape in 2” or 3” widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

D. Spray Adhesive: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

E. Shower Pan: Provide one piece stainless steel shower pan with a minimum 6” depth.

F. Shower Walls: Provide a shower with walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally support as necessary for stability.

G. Shower Head and Controls: Provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.

H. Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the Work Area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through the secondary filter.

1. Primary Filter - Passes particles 20 microns and smaller.

2. Secondary Filter - Passes particles 5 microns and smaller.

I. Hose Bibb: Provide heavy bronze angle type with wheel handle, vacuum breaker, and ¾” National Standard male hose outlet.

J. Shower Stall: For the Wash down Station, provide a leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3' x 3' square with minimum 6' high sides and back. Structurally support as necessary for stability. Equip with hose bibb, as specified

in this section, mounted at approximately 4'-0" above drain pan. Connect the drain to a reservoir, pump water from the reservoir through the above specified water filters and store for use in the work area or discharge to the public sanitary sewer system after obtaining written permission from the City of Philadelphia Water Department. Mount filters inside shower stall on back wall beneath hose bib.

K. Elastomeric membrane: Provide uniform flat sheets of flexible sheet roofing material fabricated from EPDM (ethylene propylene diene monomers) or Neoprene (polychloroprene), in a nominal 45 mil thickness.

L. Lumber: Provide kiln dried fire retardant lumber and plywood sheathing of any grade or species.

PART 3 EXECUTION

3.1 PERSONNEL DECONTAMINATION UNIT:

A. Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Clean Room, Shower Room, Equipment Room. Require all persons, without exception, to pass through the Personnel Decontamination Unit for entry into and exiting from the Work Area for any purpose. Provide temporary heating and lighting within the Personnel Decontamination Units as necessary to provide safe and comfortable conditions. Decontamination chamber doors shall be of sufficient height and width to enable replacement of equipment that may fail and to safely stretch or carry an injured worker from the site without destruction of the chamber or unnecessary risk to the integrity of the Work Area. Such doors must be at least three (3) feet wide, and the distance between sets of flaps must be at least three (3) feet. It shall also have a lockable, louvered door. When located outdoors, the decontamination unit shall be waterproof and windproof. It shall be constructed utilizing fire-retardant lumber and shall be sheathed with 3/8" minimum thickness plywood.

B. Clean Room: Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.

1. Construct using two (2) layers of opaque polyethylene sheeting, at least 6 mil thickness, to provide an airtight seal between the Clean Room and the rest of the building.

2. Locate so that access to the Work Area from the Clean Room is through the Shower Room.

3. Separate the Clean Room from the building by a sheet plastic flapped doorway with overlapping flags, and a lockable, louvered door.

4. Require workers to remove all street clothes in this room, dress in clean, disposable coveralls, and don respiratory protection equipment. Do not

allow asbestos-contaminated items to enter this room. Require workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.

5. Maintain the floor of the Clean Room. Ensure that the floor is dry and clean at all times. Do not allow overflow of water from the shower to wet the floor in the Clean Room.

6. Wet wipe all surfaces twice after each shift change with a disinfectant solution.

7. Provide posted information for all emergency phone numbers and procedures.

8. Provide one (1) storage locker per employee.

C. Shower Room: Provide a completely watertight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Clean Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.

1. Construct this room by providing a shower pan and 2 shower walls in a configuration that will cause water that will run down the walls to drip into the pan. Install a freely draining wooden floor in the shower pan at an elevation level with the top of the shower pan.

2. Separate this room from the rest of the building with airtight walls fabricated of two (2) layers of opaque 6 mil polyethylene.

3. Separate this room from the Clean Room with airtight walls fabricated of 6 mil polyethylene.

4. Provide splash proof entrances to Clean Room with doors of overlapping flapped polyethylene.

5. Provide shower head and controls supplied with hot and cold water adjustable within the shower. Provide one (1) shower for every eight (8) workers based upon largest shift size. Provide one (1) separate shower for every eight (8) women workers.

6. Provide a continuously adequate supply of liquid bath soap and shampoo and maintain in sanitary condition.

7. Provide a continuously adequate supply of disposable bath towels.

8. Arrange so that water from showering does not splash into the Clean or Equipment Rooms.

9. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the Work Area.

10. Used filters shall be disposed of as asbestos-containing waste material.

11. All wastewater shall be containerized as asbestos containing waste, solidified using an approved polymer for transport and disposal or collected and filtered using a five (5) micron particle size filtration system.

12. Properly filtered wastewater may be disposed of into the sanitary sewer system only after obtaining written approval from the City of Philadelphia Water Department.

D. Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers.

1. Separate this room from the Work Area by a 6-mil polyethylene overlapping flapped doorway.

2. Separate this room from the rest of the building with airtight walls fabricated from two (2) layers of opaque 6 mil polyethylene.

3. Separate this room from the Shower Room and Work Area with airtight walls fabricated from 6 mil polyethylene.

4. Provide a drop cloth layer of sheet plastic on floor in the Equipment Room for every expected shift change. Roll the drop cloth layer of plastic from the Equipment Room into the Work Area after each shift change. Replace the drop cloth before the next shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

E. Work Area: Separate the Work Area from the Equipment Room by polyethylene barriers. If the airborne asbestos level in the Work Area is expected to be high, as in dry removal, add an intermediate cleaning space between the Equipment Room and the Work Area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6 mil polyethylene per shift change and remove the contaminated layer after each shift.

F. Decontamination Sequence: Require that all workers and authorized visitors adhere to the following sequence when entering or leaving the Work Area.

1. All individuals that enter the Work Area shall sign the entry log, located in the Clean Room, upon each entry and exit.

2. Entering the Work Area: A worker enters the Clean Room and removes street clothing, puts on clean disposable overalls and respirator, and passes through the Shower Room into the Equipment Room, then into the Work Area.

a. Any additional clothing and equipment that is needed by the worker shall be obtained and donned in the Equipment Room.

b. Worker proceeds to Work Area.

3. Exiting the Work Area:

a. Before leaving the Work Area, the worker will be required to remove all gross contamination and debris from the outside of the

respirator, and protective clothing by wet wiping and HEPA vacuuming.

b. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment.

c. Extra work clothing such as boots, hard hats, goggles, gloves are to be stored in the contaminated end of the Equipment Room.

d. Disposable coveralls are placed in a bag for disposal with other material.

e. Require that Decontamination procedures found in Section 01560 are followed by all individuals leaving the Work Area.

f. After showering, the worker moves to the Clean Room and dresses in either new coveralls for another entry or street clothes if leaving.

3.2 CONSTRUCTION OF THE DECONTAMINATION UNITS:

A. Walls and Ceiling: Construct airtight walls and ceiling using two (2) layers of polyethylene sheeting, at least 6 mil in thickness. Attach to existing building components or a temporary framework. If the decontamination unit is located exterior of the building, the decontamination unit shall be sheathed with ½" fire retardant plywood.

B. Floors: Use two (2) layers (minimum) of 6 mil polyethylene sheeting to cover the floors in all areas of the Decontamination Units. Use only clear plastic to cover the floors.

C. Lockable Louvered Door: An entrance door to the clean room shall be equipped with a louvered/shuttered opening and shall be lockable from the outside. The lockset shall be equipped to remain unlocked from the inside at all times and shall not consist of a padlock or clasp type lock.

D. Flap Doors: Use three (3) overlapping sheets of 6 mil polyethylene sheeting with openings a minimum of four feet (4') wide. Configure so that the sheeting overlaps adjacent surfaces. Weigh sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of four feet (4') between the entrance and the exit of any room. Provide a minimum of four feet (4') between doors.

E. Visual Barrier: Where the Decontamination Area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that worker privacy is maintained, and work procedures are not visible to building occupants. Where the area adjacent to the Decontamination Area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct a barrier with wood or metal studs covered with minimum ½" thick hardboard or ½" thick plywood. Where the solid barrier is provided, sheeting need not be opaque.

F. If the Decontamination unit is located within an area containing friable asbestos

on overhead ceilings, ducts, piping, etc., provide the decontamination unit with a minimum ½" plywood "ceiling" with polyethylene sheeting, at least 6 mil in thickness covering the top of the "ceiling".

G. Alternate methods of providing Decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.

H. Electrical: Provide subpanel at Clean Room to accommodate all removal equipment. Power subpanel directly from a building electrical panel. Connect all electrical branch circuits in Decontamination Unit and particularly any pumps in the shower room to a ground-fault circuit protection device.

3.3 CLEANING OF DECONTAMINATION UNITS:

A. Clean debris and residue from inside of Decontamination Units on a daily basis or as otherwise indicated on Contract Documents. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.

B. If the Clean Room of the Personnel Decontamination Unit becomes contaminated with asbestos-containing debris, abandon the entire Decontamination Unit and erect a new Decontamination Unit. Use the former Clean Room as an inner section of the new Equipment Room.

3.4 SIGNS:

A. Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

1. Provide signs in both English and Spanish.

2. Legend:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
WEAR RESPIRATORY PROTECTION AND PROTECTIVE
CLOTHING IN THIS AREA

3. Provide spacing between respective lines at least equal to the height of the respective upper line.

4. Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each Work Area displaying the following legend with letter sizes and styles of a visibility at least equal to the following, in both English and Spanish:

LEGEND	NOTATION
NO FOOD, BEVERAGES OR TOBACCO PERMITTED	3/4" Block
ALL PERSONS SHALL DON PROTECTIVE CLOTHING (COVERINGS) BEFORE ENTERING THE AREA	3/4" Block
ALL PERSONS SHALL SHOWER IMMEDIATELY AFTER LEAVING WORK AREA AND BEFORE ENTERING THE CHANGE AREA	3/4" Block

END OF SECTION

SECTION 01601

MATERIALS AND EQUIPMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing the Asbestos Contractor's selection of products for use in the project.

B. The Asbestos Contractor's Construction Schedule and the Schedule of Submittals are included under Section “Submittals”.

C. Standards: Refer to Section “Definitions and Standards” for applicability of industry standards to products specified.

1.3 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as “specialties”, “systems”, “structures”, “finishes”, “accessories”, and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.

1. “Products” are items purchased for use in performing the work or for incorporation in the work, whether purchased for the project or taken from previously purchased stock. The term “product” includes the terms “material”, “equipment”, “system” and terms of similar intent.
2. “Named Products” are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
3. “Materials” are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the work.
4. “Equipment” are products that may be either operational or fixed.
    a. Operational equipment are products with operating parts, whether motorized or manually operated, that requires temporary or permanent service connections, such as wiring or piping.

b. Fixed equipment are products necessary for accomplishing the work that are used as a temporary facility during the work and removed afterward.

1.4 SUBMITTALS

A. Required submittals: A general listing of products requiring submittals is included at the end of Section 01301 “Submittals”. This listing may not be complete. Submittal requirements are found in each specification section. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed.

B. Product List Schedule:

1. Prepare a schedule showing products specified in a tabular form acceptable to the Environmental Consultant. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.

2. Coordinate the product list schedule with the Asbestos Contractor's Construction Schedule and the Schedule of Submittals.

C. Environmental Consultant's Action: The Environmental Consultant will approve the Asbestos Contractor's product list within 2 weeks of receipt. The Environmental Consultant's response will include a list of unacceptable product selections, containing a brief explanation for this action.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: When the Asbestos Contractor is given the option of selecting between two or more products for use on the project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

1. Schedule delivery to minimize long-term storage at the site and overcrowding of construction spaces.

2. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

3. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

4. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

5. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

PART 2 PRODUCTS

2.1 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.

B. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

C. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

D. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Asbestos Contractor to use of these products only, the Asbestos Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning “substitutions” to obtain approval for use of an unnamed product.

E. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

F. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

1. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

G. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

PART 3 EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.

B. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 01701

PROJECT CLOSEOUT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY

A. This section specifies administrative and procedural requirements for project closeout, including but not limited to:

1. Project record document submittal
2. Final cleaning

1.3 RECORD DOCUMENT SUBMITTALS

A. Contractor's final report shall include, but not be limited to the following:

1. All daily logs
2. Operational data
3. Summary of all daily OSHA compliance test results
4. Any updated medical reports
5. Proof that employees were notified if exposure levels exceeded current standards
6. Documented proof (receipts) that all asbestos materials have been properly disposed of in a legal, regulated landfill

B. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Owner's Representative's reference during normal working hours.

C. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 FINAL CLEANING

A. General: General cleaning during construction is required by the General Conditions and included in Section “Temporary Facilities”.

B. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.

C. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION

SECTION 01711

PROJECT DECONTAMINATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

A. General: Decontamination of the Work Area following asbestos abatement.

1. If the asbestos abatement work is on damaged or friable materials the work is a three step procedure with two cleanings of the Primary Barrier plastic prior to its removal and one cleaning of the room surfaces to remove any new or existing contamination. Unless specifically indicated otherwise all materials are considered damaged or friable for purposes of this section.

2. Operation of the pressure differential system is used to remove airborne fibers generated by the abatement work.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Removal of Gross Debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:

1. Section 02081 Removal of Asbestos-Containing Materials

B. Work Area Clearance: Air testing and other requirements which must be met before release of the Asbestos Contractor and re-occupancy of the work area are specified in Section 01714 Work Area Clearance.

PART 2 PRODUCTS

2.1 GENERAL

A. Encapsulant shall be Fiberset® PM No. 7470 as manufactured by Fiberlock Technologies, Inc. or approved equal.

PART 3 EXECUTION

3.1 GENERAL

A. Work of This Section includes the decontamination of air in the Work Area which has been, or may have been, contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos-containing materials in the space.

B. Work of This Section includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:

1. Primary and Critical Barriers erected by work of Section 01526
2. Decontamination Unit erected by work of Section 01563
3. Pressure Differential System installed by work of Section 01513

C. Work of This Section includes the cleaning and decontamination of all surfaces (ceilings, walls, floors) of the Work Area and all furniture or equipment in the Work Area.

3.2 START OF WORK

A. Previous Work: During completion of the asbestos abatement work specified in other sections, the secondary barrier of 6 mil polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.

B. Start of Work: Work of this section begins with the cleaning of the primary barrier. At start of work the following will be in place:

1. Primary Barrier: Two layers of 6 mil polyethylene sheeting on floor and two layers on walls.
2. Critical Barrier: An airtight barrier between the work area and other portions of the building or the outside.
3. Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.
4. Decontamination Units: For personnel and equipment in operating condition.
5. Pressure Differential System: In operation.

3.3 FIRST CLEANING

A. First Cleaning: Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Air (HEPA) filtered vacuum (Note: A HEPA vacuum may fail if used with wet material.). Do

not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

B. Remove all filters in air handling system(s) and dispose of as asbestos- containing waste in accordance with requirements of Section 02084 Disposal of Asbestos-Containing Waste Material.

C. Wait to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure differential system in operation for the entire air change period.

D. After completion of the first cleaning operation of the facility, the Asbestos Contractor shall give written notification to the Asbestos Project Inspector that a pre-encapsulation inspection is needed.

E. The Asbestos Project Inspector shall perform a visual inspection of the work area to ensure that it is dry and dust free.

F. After approval by the Asbestos Project Inspector, the Asbestos Contractor shall spray coat all dried exposed surfaces with a sealant. The surfaces to be coated shall include the polyethylene sheeting which has been used to cover walls, floors, and non-removable fixtures and equipment.

G. Encapsulation of substrate: Perform encapsulation of substrate or installation of spray-applied finishes or fireproofing, where required, at this time. Maintain pressure differential system in operation during encapsulation work. Perform work only after the surfaces have met the requirements for a visual inspection in this section.

H. After the encapsulation of the polyethylene, the first layer shall be carefully removed and rolled up with the contaminated portion inside. All equipment, machinery, scaffolding, tools, etc. within the isolated work area shall be cleaned with amended water, moved to the equipment room, and properly removed from the work area.

3.4 SECOND CLEANING

A. Second Cleaning: Carry out a second cleaning of all surfaces in the work area in the same manner as the first cleaning.

B. Removal of Primary Barriers:

1. Immediately following the second cleaning of the remaining layer of primary plastic, remove all primary barrier sheeting and waste decontamination unit, if there is one, leaving only:

a. Critical Barrier: Which forms the sole barrier between the work area and other portions of the building or the outside.

b. Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.

c. Decontamination Unit: For personnel, in operating condition.

d. Pressure Differential System: Maintain in continuous operation.

3.5 FINAL CLEANING

A. Final Cleaning: Carry out a final cleaning of all surfaces in the work area in the same manner as the previous cleanings.

B. The Asbestos Contractor shall request that a cleanup inspection be performed to insure all visible asbestos has been removed, the area is dust free and that the work area is ready for Clearance Sampling. The Asbestos Project Inspector and the Asbestos Contractor shall perform a complete visual inspection of the entire work area including:

1. Decontamination Unit.

2. Primary seals and critical barriers over HVAC openings, doorways, windows, and other openings.

C. Look for debris from any source, residue on surfaces, dust or other material. If any such debris, residue, dirt or other material is found, repeat the final cleaning and continue decontamination procedure from that point.

D. When the area is visually determined to be clean, post removal clearance air sampling shall be performed.

E. During inspection time allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure differential system in operation for the entire period.

3.6 VISUAL INSPECTION

A. Temporary lighting: Provide a minimum of 100 foot candles of lighting on all surfaces in the areas to be subjected to visual inspection. Provide hand held lights providing 150 foot candles at 4 feet capable of reaching all locations in work area.

B. Lifts: Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

3.7 FINAL AIR SAMPLING – PCM OR TEM

A. Phase Contrast Microscopy (PCM): After the work area is found to be visually clean, PCM air samples will be collected and analyzed in accordance with the procedure for Phase Contrast Microscopy set forth in Section 01714 Work Area Clearance:

1. If release criteria are not met, repeat final cleaning and continue decontamination procedure from that point.

2. If release criteria are met, proceed to work of this section on removal of work area isolation.

B. Transmission Electron Microscopy (TEM): After the work area is found to be visually clean, TEM air samples will be collected and analyzed in accordance with the procedure for Transmission Electron Microscopy set forth in Section 01714 Work Area Clearance:

1. If release criteria are not met, repeat final cleaning and continue decontamination procedure from that point.

2. If release criteria are met, proceed to work of this section on removal of work area isolation.

3.8 ENCAPSULATION

A. Encapsulation of substrate: Perform encapsulation of substrate or installation of spray-applied finishes or fireproofing, where required, before removal of work area isolation as specified below. Maintain pressure differential system in operation during encapsulation work.

B. After completion of cleaning all surfaces in the work area and upon receiving a satisfactory pre-sealant inspection, the Asbestos Contractor shall spray coat all dried exposed surfaces with a sealant. The color of this coat shall be separate and distinct from the underlying substrate. The surfaces to be coated shall include surfaces from which asbestos-containing materials have been removed (such as ceilings) and polyethylene which has been used to cover walls, floors and non-removable fixtures and equipment. Where the removal was conducted using the glove bag technique, the area within the glove bag enclosure shall be encapsulated.

C. Two coats of sealer shall be applied to the substrate after all asbestos-containing material has been removed. Application shall be with an airless spray gun and shall be in strict accordance with the manufacturers' instructions.

D. With the encapsulation procedure completed, a visual inspection shall be made of the area by the Asbestos Contractor and the Asbestos Project Inspector to check uniformity and coverage.

3.9 REMOVAL OF WORK AREA ISOLATION

A. After all requirements of this section and Section 01714 Work Area Clearance have been met:

1. Shut down and remove the pressure differential system. Seal HEPA filtered fan units, HEPA vacuums and similar equipment with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before

being moved from work area.

2. Remove personnel decontamination unit.

3. Remove the critical barriers separating the work area from the rest of the building. Remove any small quantities of residual material found upon removal of the plastic sheeting with wet wiping, HEPA filtered vacuum cleaners and local area protection. If significant quantities, as determined by the Owner's Representative, are found then the entire area affected shall be decontaminated as specified in Section 01712 Cleaning & Decontamination Procedures.

4. Remove all equipment, materials, debris from the work site.

5. Dispose of all asbestos-containing waste material as specified in Section 02084 Disposal of Asbestos Containing Waste Material.

3.10 SUBSTANTIAL COMPLETION OF ABATEMENT WORK

A. Asbestos abatement work is substantially complete upon meeting the requirements of this Section and Section 01714 Work Area Clearance, including submission of:

1. Certificate of Visual Inspection.

2. Receipts documenting proper disposal as required by Section 02084 Disposal of Asbestos-Containing Waste Material.

3. Punch list detailing repairs to be made and incomplete items.

END OF SECTION

SECTION 01714

WORK AREA CLEARANCE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.

B. Visual inspection required as a prerequisite of air testing, is set forth in Section 01711 Project Decontamination.

C. Air Monitoring performed by the Environmental Consultant during abatement work, is described in Section 01410 Air Monitoring - Test Laboratory Services.

1.2 SUMMARY

A. This section describes work being performed by the Owner's Environmental Consultant.

B. This Section sets forth required post-abatement airborne asbestos concentrations in the work area and describes testing procedures the Owner's Environmental Consultant will use to measure these levels.

C. This Section identifies specific contract requirements relative to re-testing a work area upon Asbestos Contractor's failure of clearance criteria.

1.3 ASBESTOS CONTRACTOR RELEASE CRITERIA

A. The asbestos abatement work area is cleared when the work area is visually clean and airborne asbestos fiber/structure concentrations have been reduced to the level specified below.

B. In the event of clearance criteria failure, the Asbestos Contractor shall reimburse the Owner for all expenses incurred by the Environmental Consultant for re-testing the work area.

1.4 VISUAL INSPECTION

A. Work of this Section will not begin until the visual inspection described in Section 01711 Project Decontamination is complete and has been certified by the API.

1.5 AIR MONITORING

A. To determine if the elevated airborne asbestos fiber/structure concentration encountered during abatement has been reduced to the specified level, the API will secure samples and analyze them according to the following procedures:

1. Aggressive sampling procedures as described below will be followed.
2. Clearance sampling shall be conducted utilizing Phase Contrast Microscopy (PCM) methodology for exterior and interior non-friable materials and Transmission Electron Microscopy (TEM) methodology for interior materials, if required.
3. Upon meeting clearance criteria, the requirements of Section 01711 Project Decontamination can continue.
4. Upon failure of clearance criteria, the Asbestos Contractor shall re-clean the work area at no additional expense to the Building Owner.

1.6 AGGRESSIVE SAMPLING

A. All air samples will be taken using aggressive sampling techniques as follows:

1. Sampling sites in the abatement area shall be selected on a random basis.
2. A field blank shall be taken at each abatement areas before sampling is initiated by removing the cap for not more than thirty (30) seconds and replacing it at the time of sampling. A sealed blank shall be carried with each sample set and shall not be opened in the field.
3. One 10 inch diameter fan per 10,000 cubic feet of work area volume will be mounted in a central location, directed toward ceiling and operated at low speed for the entire period of sample collection.
4. Air samples will be collected in areas subject to normal air circulation away from room corners and obstructed locations.
5. Floor, ceilings, and walls shall be swept with the exhaust of a one (1) horsepower (or equivalent) leaf blower.
6. Pump flow rates shall not exceed ten (10) liters per minute for twenty-five (25) millimeter cassettes.
7. After air sampling pumps have been shut off, fans will be shut off.
8. A minimum of 5 clearance samples shall be collected per work area per AHERA.

1.7 SCHEDULE OF AIR SAMPLES

A. At a minimum, the number of air samples procured within the work area by the Owner's Environmental Consultant shall be in accordance with the Philadelphia Asbestos Control Regulation Chapter6-600 and AHERA.

1.8 CLEARANCE CRITERIA

A. Each work area shall be considered cleared for removal of critical barriers, decontamination unit(s) and air filtration equipment when the fiber concentration does not exceed the Philadelphia Asbestos Control Regulation Chapter 6-600 for

a major project.

B. **If the first set of clearance samples fail, the Contractor will be financially responsible for subsequent analysis costs and sampling technician costs.**

1.9 ANALYTICAL METHODOLOGY

A. Phase Contrast Microscopy (PCM) air sampling and analysis shall be conducted in accordance with NIOSH 7400 Methodology.

B. Phase Contrast Microscopy (PCM) clearance criteria shall be performed by EPA 40 CFR Part 763 Appendix A to Subpart E methodology and compared to the Philadelphia Asbestos Control Regulation Chapter 6-600.

C. Transmission Electron Microscopy (TEM) clearance criteria shall be performed by EPA 40 CFR Part 763 Appendix A to Subpart E methodology and compared to the Philadelphia Asbestos Control Regulation Chapter 6-600.

1.10 LABORATORY TESTING & SAMPLE ANALYSIS

A. The services of a testing laboratory will be employed by the Owner's Environmental Consultant to perform laboratory analysis of the procured air samples. Air samples may be analyzed on-site or delivered to a laboratory on a daily basis. Verbal reports of PCM analysis shall be obtained within 24 hours of delivery to the laboratory. If required, verbal reports of TEM analysis shall also be obtained within 24 hours of delivery to the laboratory.

B. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the Owner, the Owner's Environmental Consultant, and the Asbestos Contractor (if requested).

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 02079

GLOVE BAG REMOVAL

PART 1 GENERAL

1.1 GLOVE BAG TECHNIQUE:

A. The removal of asbestos by use of glove-bag procedures shall be limited to the removal of asbestos-containing insulation from pipe joints and pipe runs not exceeding 16" in diameter. No glove-bag work shall be permitted on hot pipes exceeding a temperature of 150 degrees Fahrenheit.

B. The preparation of the Work Area for glove-bag removal shall include the following:

1. A minimum of two (2) persons are required to perform a glove bag removal project. A third person may be required to assist with supplies.
2. Use each glove-bag once. Do not move the glove-bag once it has been mounted.
3. All glove-bag procedures shall be performed utilizing negative air pressure.
4. The Work Area where the technique is to be utilized shall be sealed with critical barriers and posted with warning signs to prevent unauthorized personnel from entering the Work Area.
5. Building occupants shall be removed from any floor where a removal project is in progress unless the work area is completely separated by an airtight physical barrier such as a wall, or by an isolation barrier.
6. The work area shall be separated from the rest of the work site by isolation barriers consisting of solid physical barriers such as ceiling, floors, and walls, or solid partitions, with all openings such as doors, windows, and air vents covered with a single layer of plastic sheeting.
7. At least one (1) layer of plaster sheeting shall be taped to the floor beneath the pipes subject to the abatement extending at least five (5) feet from the area of removal in all directions.
8. The contractor shall pre-clean all surfaces within the room and shall arrange for the shut down and sealing of all electrical, heating, cooling and ventilating air handling systems.
9. Provide a one stage change chamber attached to each glove-bag Work Area. Provide a remote three stage decontamination unit equipped with showering facilities if approved with an Alternative Method Request.
10. All non-moveable items within the Work Area shall be cleaned via wet cleaning methods and shall be HEPA vacuumed when the surfaces have dried.
11. All necessary materials and supplies shall be brought into the Work Area before removal begins.

C. A visual inspection of the pipe where the work will be performed shall be made to

determine if any damaged pipe covering (broken, hanging, etc.) exists. If there is damage, the pipe shall be wrapped in polyethylene sheeting and fully secured with tape. This procedure will prevent high airborne fiber concentrations from occurring during the glove bag work caused by damaged pipe lagging several feet or even several yards away which may be jarred loose by the activity. Debris on the floor and other surfaces which has accumulated and contains asbestos shall be HEPA vacuumed and wet wiped clean and disposed of as contaminated. If the pipe is undamaged, one layer of tape shall be placed around the pipe at each end where the glove bag will be attached. This creates a good surface to which to seal the ends of the glove bag, and it minimizes the chance of releasing fibers when the tape at the ends of the glove bag is peeled off at the completion of the job.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 EXECUTE STEP BY STEP PROCEDURE AS FOLLOWS:

A. Slit the top of the glove bag open (if necessary) and cut down the sides to accommodate the size of the pipe (about two inches longer than the pipe diameter).

B. Place the necessary tools into the pouch located inside the glove bag. This will usually include the bone saw, utility knife, rags, scrub brush, wire cutters, tin snips and pre-cut wettable cloth. Cut out a donut shape in the cloth using the inner diameter of the pipe insulation being removed. Finally, cut a slit in each of the two donuts so they can be slipped around the pipe.

C. One strip of tape shall be placed along the edge of the open top slit of the glove bag for reinforcement.

D. Place the glove bag around the section of pipe to be worked on and staple the top together through the reinforcing tape. Staple at intervals of approximately one inch. Next, fold the stapled top flap back and tape it down. This should provide an adequate seal along the top. Next, tape the ends of the glove bag to the pipe itself, previously covered with plastic or duct tape.

E. The contractor shall smoke test each glove-bag to ensure that it does not leak. The asbestos project inspector shall personally witness the smoke testing of each glove-bag. Using the smoke tube and aspirator bulb, place the tube into the water sleeve (two-inch opening to glove bag). By squeezing the bulb, fill the bag with visible smoke. Remove the smoke tube and twist the water sleeve tightly to close it. Gently squeeze the glove bag and look for smoke leaking out, especially at the top and ends of the glove bag. If leaks are found, they shall be taped closed using duct tape and the bag shall be retested.

F. Insert the wand from the water sprayer through the water sleeve. Tape the water

sleeve tightly around the wand to prevent leakage.

G. One person places their hands into the long-sleeved gloves while the second person directs the amended water spray at the work.

H. If the section of pipe is covered with an aluminum jacket, this is removed first using the wire cutters to cut any bands and the tin snips to remove the aluminum. It is important to fold the sharp edges in to prevent cutting the bag when it is placed in the bottom. A box may be put in the bottom of the bag when the tools are placed in, and the metal placed in the box to further protect the bag from being cut.

I. With the insulation exposed, using the bone saw, cut the insulation at each end of the section to be removed. A bone saw is a serrated heavy-gauge wire with ring-type handles at each end. Throughout this process, amended water or removal encapsulant is sprayed on the cutting area to keep dust to a minimum.

J. Once the ends are cut, the section of insulation should be slit from end to end using the utility knife. The cut should be made along the bottom of the pipe and amended water continuously supplied. Again, care should be taken when using the knife not to puncture the bag. Some insulation may have wire to be clipped as well. Again, a box may be used here as in step (H) above to protect the bag from puncture.

K. Rinse all tools with water inside the bag and place back into pouch.

L. The insulation can now be lifted off the pipe and gently placed in the bottom of the bag, while the side of the insulation adjacent to the pipe is being thoroughly wetted.

M. Using the scrub brush, rags and amended water, scrub and wipe down the exposed pipe.

N. Wet the donut-shaped pieces of wettable cloth over the exposed ends of insulation remaining in the pipe.

O. Remove the water wand from the water sleeve, insert the encapsulant wand and encapsulate the pipe and the inside of the glove bag.

P. Remove the encapsulant wand from the water sleeve and attach the small nozzle from the HEPA filtered vacuum only briefly to collapse the bag.

Q. Remove the vacuum nozzle and twist the water sleeve closed and seal with tape.

R. From outside the bag, pull the tool pouch away from the bag. Place tape over the twisted portion and then cut the tool bag from the glove bag, cutting through the twisted/taped section. In this manner, the contaminated tools may be placed directly into the next glove bag without cleaning. Alternatively, the tool pouch with the tools can be placed in a bucket of water, opened underwater, and the tools cleaned and

dried without releasing asbestos into the air. This water shall be handled as asbestos-contaminated waste. Rags and the scrub brush cannot be cleaned in this manner and should be discarded with the asbestos waste. No more than one use of a glove-bag shall be permitted.

S. With removed insulation in the bottom of the bag, twist the bag several times and tape it to keep the material in the bottom during removal of the glove bag from the pipe.

T. Slip a six (6)-mil disposal bag over the glove bag (still attached to the pipe). Remove the tape and open the top of the glove bag and fold it down into the disposal bag.

U. All surfaces in the Work Area shall be cleaned using disposable cloths wetted with amended water. These cloths shall be disposed of or rinsed thoroughly to eliminate visible accumulation of debris. Then, when these surfaces have been allowed to dry, all surfaces shall be cleaned again using a HEPA filtered vacuum (See Section 01711).

V. Place any contaminated articles, debris, etc. into the bag with the waste.

W. Twist the top of the bag closed, fold this over, and seal with duct tape. Place this bag into a second six (6)-mil disposable bag, and seal as in the above manner. Label the bag with the appropriate warning labels.

X. Asbestos-containing material shall be disposed of as specified in with Section VI.C.7 of the Philadelphia Asbestos Control Regulation and Section 02084 of this specification.

Y. Air sampling shall be conducted after completion of glove bag projects to determine if undetected leakage occurred. Once the area has been found to be safe for re-entry by unprotected personnel, the barriers may be removed (See Section 01714).

END OF SECTION

SECTION 02081

REMOVAL OF ASBESTOS CONTAINING MATERIAL

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Installation of Critical and Primary Barriers, and Work Area Isolation Procedures are set forth in Section 01526 Temporary Enclosures.

B. Project Decontamination procedures after removal of the Secondary Barrier are specified in Section 01711 Project Decontamination.

C. Disposal of asbestos-containing waste is specified in Section 02084 Disposal of Asbestos-Containing Waste Material.

1.3 SUBMITTALS:

A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are approved by the Environmental Consultant.

1. Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.
2. Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.
3. NESHAP Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet Asbestos-Containing Materials to which it is applied as required by the National Emission Standard for Hazardous Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M).
4. Safety Data Sheet: Submit the Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant, encapsulating material and solvent proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

PART 2 PRODUCTS

A. Wetting Materials: For wetting prior to disturbance of Asbestos-Containing Materials use either amended water or a removal encapsulant:

1. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the Asbestos-Containing Material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
2. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of Asbestos-Containing Material. Use a material which results in wetting of the Asbestos-Containing Material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a mixture of 50% polyoxyethylene ester and 50% polyoxyethylene ether in five gallons of water.

B. Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.

C. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

D. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

E. Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of Asbestos Containing Waste Material.

F. Fiberboard Drums: Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.

G. Paper board Boxes: Provide heavy duty corrugated paper board boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

PART 3 EXECUTION

3.1 WORKER PROTECTION:

A. Before beginning work with any material for which a Safety Data Sheet has been

submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.2 GENERAL PROCEDURES FOR THE REMOVAL OF ASBESTOS-CONTAINING MATERIALS:

A. Preparation work for the removal of the identified asbestos-containing materials shall utilize Full Containment with three-stage personnel decontamination units, air filtration units and digital negative air pressure differential monitoring systems as indicated on the contract drawings and shall be in accordance with Philadelphia Asbestos Control Regulation Chapter 6-600 and shall be performed utilizing respiratory protection and proper Personal Protective Equipment (PPE). Preparation work shall only be deemed to be complete and acceptable following a satisfactory inspection by the API. Approval to proceed with removal activities shall be required in writing prior to commencing removal activities.

B. Thoroughly wet asbestos-containing materials to be removed prior to stripping and/or demolition to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for amended water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions.

C. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.

D. Asbestos-containing fitting insulation and pipe insulation in the risers of the library shall be removed under a full containment.

E. Radiator heat shield insulation in the library shall be removed under a full containment.

F. Asbestos-containing fitting insulation and pipe insulation in the attic of the library will be removed using containment bag techniques.

G. Asbestos-containing fitting insulation and pipe insulation may be present in the attic of the recreation center; however, it was inaccessible during the asbestos survey. If renovation activities will impact this material the material must be abated prior to disturbance. If removal is required, the material will be removed using containment bag techniques.

H. Asbestos-containing floor tile that cannot be removed non-friably shall be removed utilizing a full containment. Removal of floor tile that is located below a layer of floor tile or other adhered layer, will likely result in breakage of the VAT, therefore,

these materials must be removed as a friable abatement project as per the Philadelphia Asbestos Control Regulation (ACR).

I. Asbestos containing floor tile in the kitchen of the recreation center shall be removed under limited containment utilizing critical barriers. Floor tiles must be removed non-friably in an intact manner utilizing heat machines or dry ice. If floor tiles are to be removed utilizing dry ice, proper ventilation shall be supplied by contractor. Mastic is to be removed utilizing a no-odor solvent designed for flooring mastic removal. Unbroken tiles may be placed into clear 6-mil polyethylene bags and then placed into sealed leakproof drums.

J. Metal fire doors with ACM interior insulation shall be removed intact, wrapped, and completely sealed in two layers of 6-mil polyethylene sheeting then properly labeled and disposed of as friable ACM.

K. Removal of the asbestos material shall be done in small sections by two-person teams, on staging platforms if needed. The wet material from each section shall be packed and sealed into clear labeled 6-mil polyethylene bags. When possible, one worker shall remove and hand sections of asbestos material to the other worker who shall then place the material into labeled 6-mil polyethylene bags.

L. Asbestos-containing and asbestos-contaminated materials shall be containerized at that height for eventual disposal. Asbestos-containing materials shall be handled carefully. No asbestos is permitted to drop directly to the ground. Any unnecessary agitation of the material is strictly prohibited.

M. All asbestos-containing and asbestos-contaminated materials described in the scope of work shall be removed. The Contractor shall take care that all asbestos has been removed from fasteners, from channels of support systems, construction blocks, ductwork and piping, and all other hard to reach places.

N. As a method of organizing the asbestos removal work, workers shall begin working on the areas nearest to the decontamination unit and work towards the negative air filtration units.

O. Operations shall be continuous so that once an area is started it shall be worked on to the first wet wipe. The wet material from each section shall be packed and sealed into labeled 6-mil polyethylene bags and double bagged with visible labels prior to starting the next section. Water-soaked fallen material shall be picked up while wet to prevent water loss due to evaporation.

P. Maintain good housekeeping so as not to accumulate loose asbestos.

Q. Reach the clean wipe state as quickly as possible.

R. Remove the residues as quickly as possible so as not to walk or track through it, thus grinding it to smaller, more potentially dangerous sizes.

S. Place the asbestos into clear 6-mil polyethylene bags as quickly as possible so as not to allow asbestos to dry out and become airborne. Bags shall be handed down or chuted down carefully from one worker to another. All bags shall be placed into a second clear labeled 6-mil polyethylene bag for disposal.

T. Contaminated material containing sharp edged items shall be cut to size while adequately wet, placed in small cardboard boxes or burlap bags and double bagged, or double bagged and then placed in temporary fiber drums, the integrity of which is the Contractor's responsibility.

U. Bags shall be marked with the labels prescribed by 40 CFR Part 61 Section 61.150 of the EPA regulations. The outside of all containers shall be wet cleaned or HEPA vacuumed before leaving the work area.

V. After removal, the underlying material shall be brushed with a stiff, nylon bristle brush. Wire brushes are not permitted; asbestos fiber bundles break into smaller more hazardous fiber sizes when a wire brush is utilized. After the material is brushed, it shall be wet wiped with amended water. Only 100% removal will be accepted.

END OF SECTION

SECTION 02084

DISPOSAL OF ASBESTOS-CONTAINING WASTE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.

B. Section 01092 Codes and Regulations - Asbestos Abatement describes applicable federal, state and local regulations.

1.2 DESCRIPTION OF THE WORK

A. This section describes the disposal of Asbestos-Containing Materials. Disposal includes packaging of asbestos-containing waste materials.

1.3 SUBMITTALS

A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not commence work until these submittals are approved by the Environmental Consultant.

1. Copy of state or local license for waste hauler.
2. Name and address of landfill where asbestos-containing waste materials are to be buried. Include contact person and telephone number.
3. For operations that convert asbestos containing waste material into non-asbestos (asbestos-free) material, product data on process to be used.
4. Letters or other documents from the United States Environmental Protection Agency (USEPA) relative to the process:
    a. Indicating that the process to be used can produce an asbestos-free product and is capable of satisfying the requirement for an acceptable “alternative” means of complying with Section 61.150(a) of the NESHAP regulation for asbestos.
    b. Identifying process parameters or operating conditions important to the successful operation of the process.
5. Chain of Custody form and form of waste manifest proposed.
6. Sample of disposal bag and any added labels to be used.

B. On a weekly basis submit copies of all manifests and disposal site receipts to Owner's Environmental Consultant.

PART 2 PRODUCTS

2.1 DISPOSAL BAGS & LABELS

A. The Contractor shall provide 6 mil thick leak-tight polyethylene clear bags labeled with four (4) labels with text as follows:

B. First Label:

CAUTION: CONTAINS ASBESTOS FIBERS
AVOID OPENING OR BREAKING CONTAINER
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

C. Second Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication Standard:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

D. Third Label: Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances: Final Rule. Published November 21, 1986 and revised February 17, 1987:

RQ HAZARDOUS
SUBSTANCE
SOLID, NOS,
ORM-E, NA 9188
(ASBESTOS)

E. Fourth Label: Provide in accordance with 40 CFR Part 61 Asbestos NESHAP revision; Final Rule dated November 20, 1990.

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PART 3 EXECUTION

3.1 GENERAL

A. Comply with the following sections during all phases of this work:

1. Section 01560 Worker Protection - Asbestos Abatement.

2. Section 01562 Respiratory Protection.

B. All waste is to be hauled by a waste hauler with all required licenses from all state and local authorities with jurisdiction.

C. Load all asbestos-containing waste material in disposal bags or leak-tight drums. All materials are to be contained in one of the following:

1. Two 6 mil thick clear waste disposal bags.

2. Two 6 mil thick clear waste disposal bags and a fiberboard drum.

D. Protect interior walls and floor of truck or dumpster with one layer of 6 mil polyethylene sheeting.

E. Carefully load containerized waste in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.

F. Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to a sealed truck or dumpster.

G. Do not transport asbestos-containing materials in open trucks or dumpsters. Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with this specification.

H. Advise the landfill operator or processor, at least ten days in advance of transport, of the quantity of material to be delivered.

I. At disposal site, unload containerized waste:

1. At a disposal site, sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return the bags to the work site for re-bagging. Clean entire truck and contents using procedures set forth in section 01711 Project Decontamination.

2. At a waste processing site the truck and loading dock are arranged as a controlled Work Area and containerized waste is transferred to the storage area by site personnel. All bags including broken ones will be transferred. Clean the truck, using procedures set forth in section 01711 Project Decontamination.

J. Retain receipts from landfill or processor for materials disposed of.

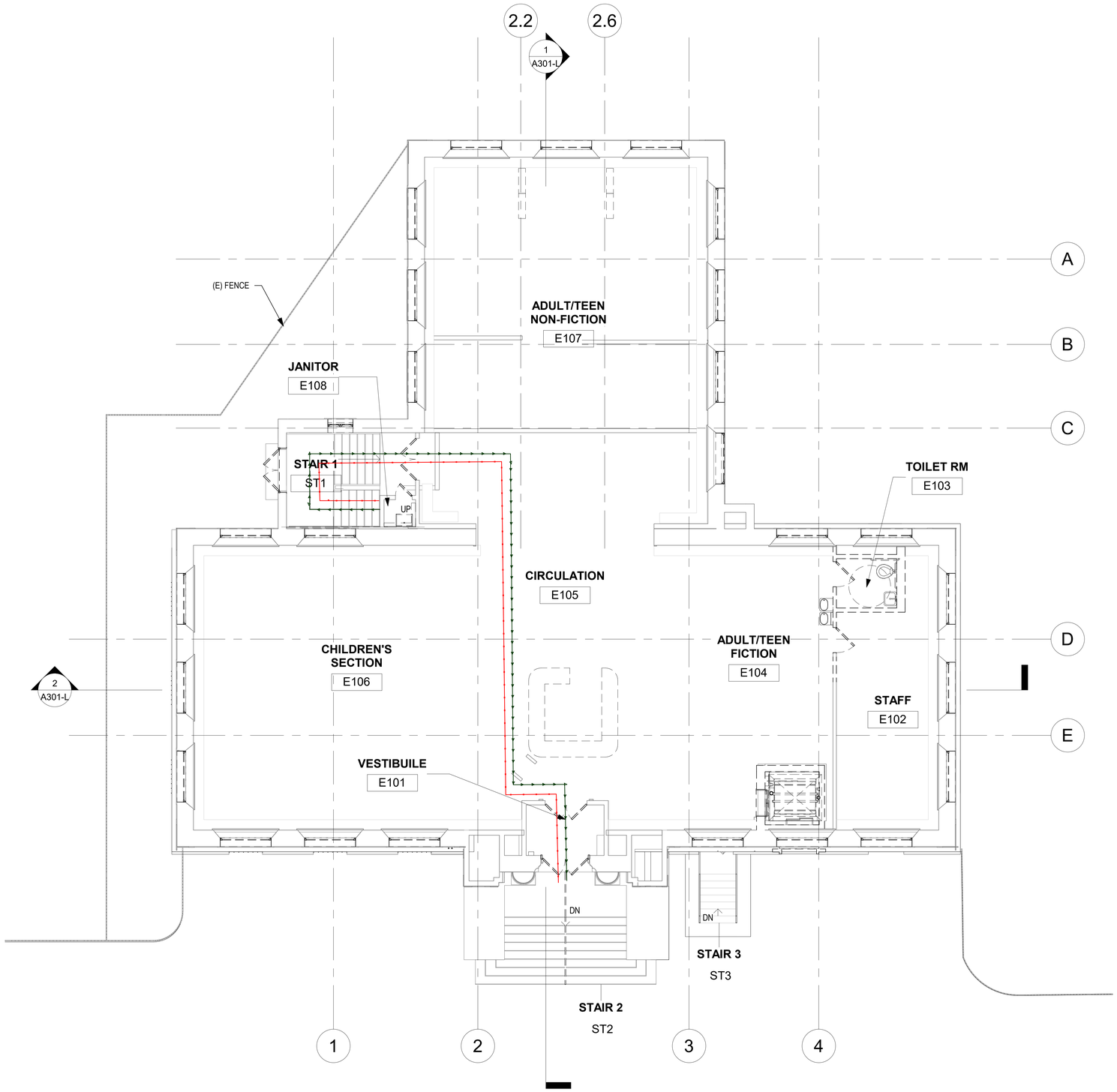
K. At completion of hauling and disposal of each load, submit a copy of the waste manifest, chain of custody form, and landfill receipt to Environmental Consultant.

END OF SECTION

LEGEND

WORKER INGRESS/EGRESS

WASTE ROUTE



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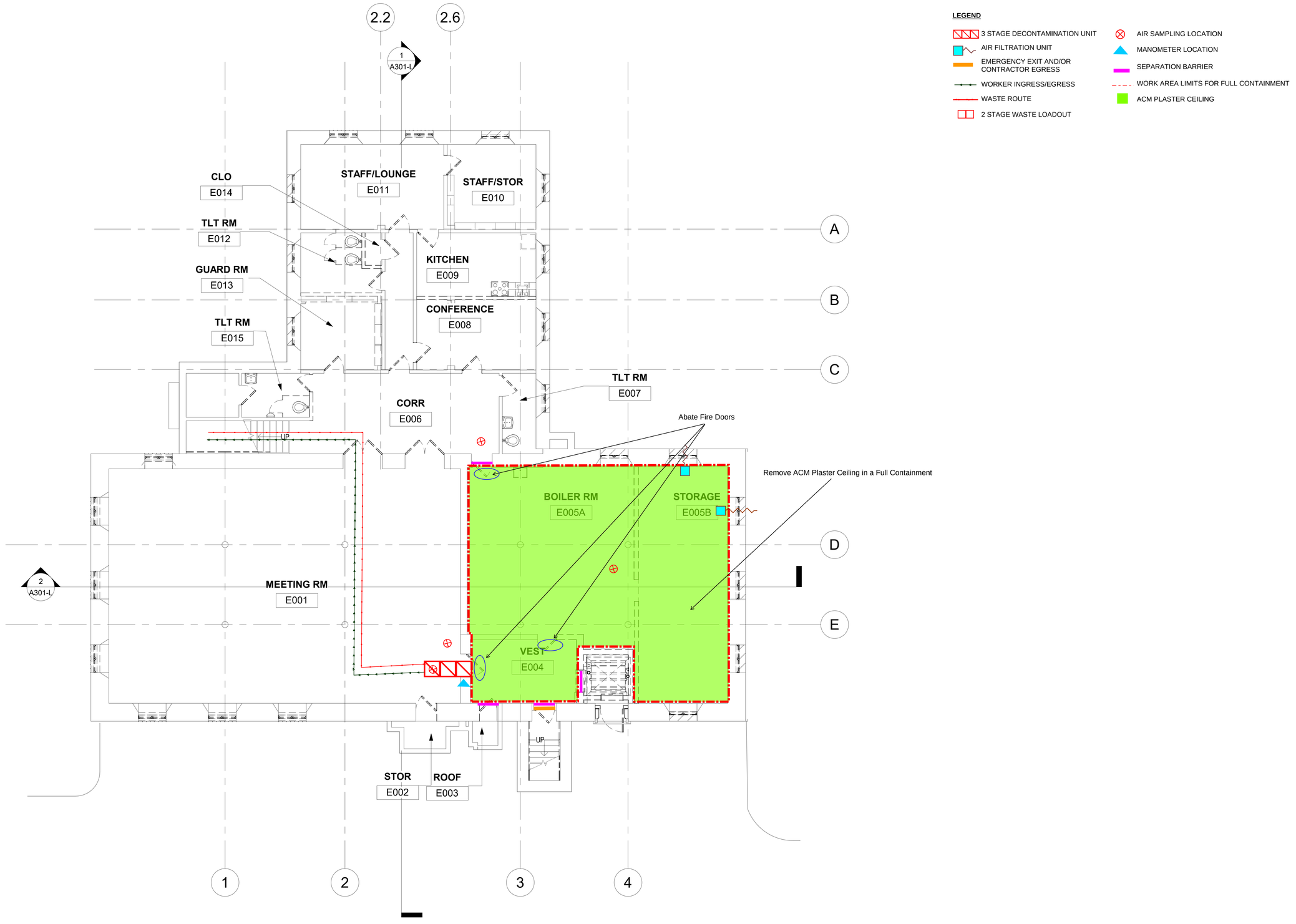
EGRESS PLAN - FIRST FLOOR

PROJECT	KLMLX21003
DATE	2/28/2022
DRAWING SCALE	NTS
DRAWN BY	NDV
APPROVED BY	

EGRESS-01

SHEET 1 OF 3



LEGEND

- 3 STAGE DECONTAMINATION UNIT
- AIR FILTRATION UNIT
- EMERGENCY EXIT AND/OR CONTRACTOR EGRESS
- WORKER INGRESS/EGRESS
- WASTE ROUTE
- 2 STAGE WASTE LOADOUT
- AIR SAMPLING LOCATION
- MANOMETER LOCATION
- SEPARATION BARRIER
- WORK AREA LIMITS FOR FULL CONTAINMENT
- ACM PLASTER CEILING

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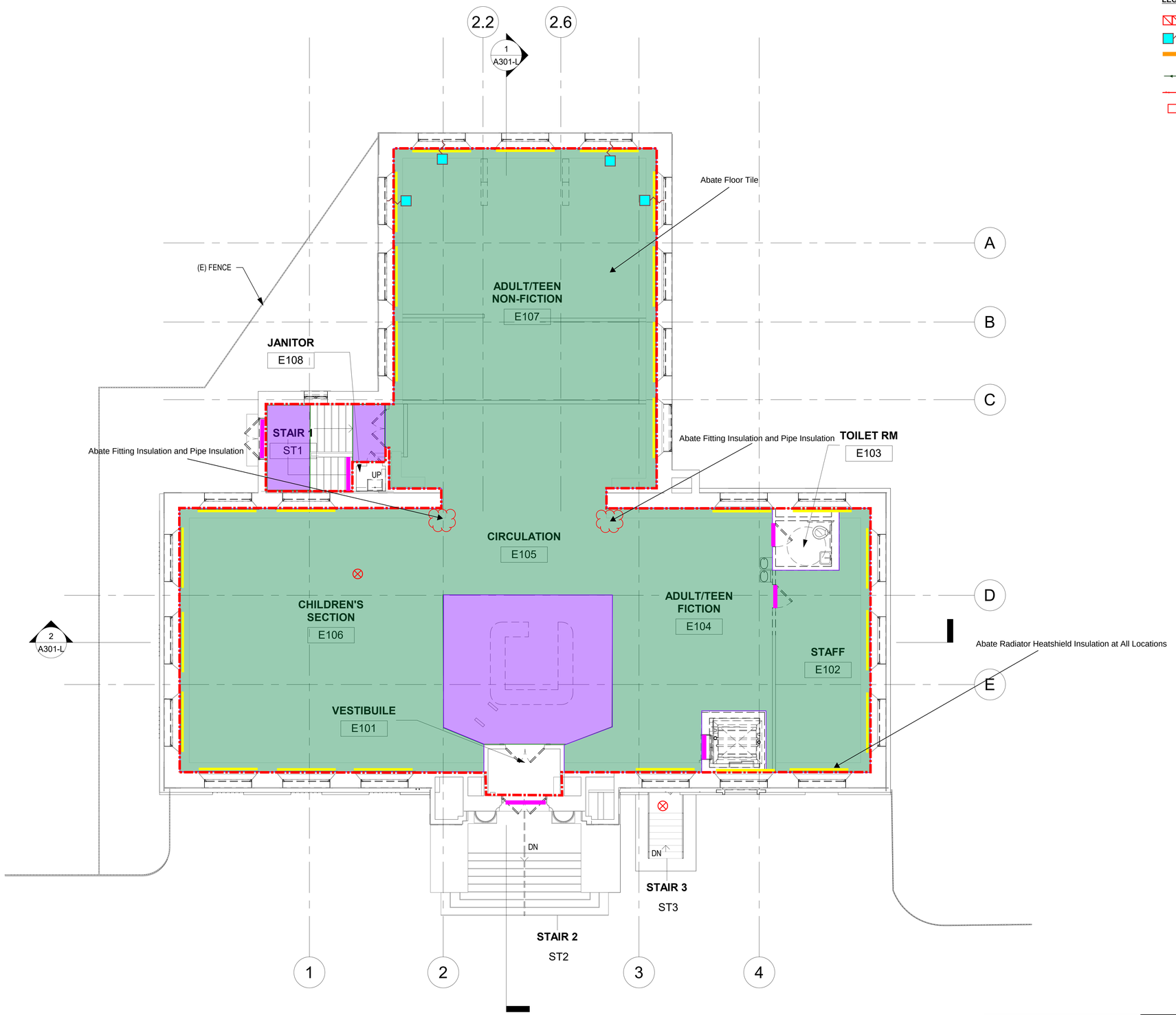
ASB-01

LEGEND

- 3 STAGE DECONTAMINATION UNIT
- AIR FILTRATION UNIT
- EMERGENCY EXIT AND/OR CONTRACTOR EGRESS
- WORKER INGRESS/EGRESS
- WASTE ROUTE
- 2 STAGE WASTE LOADOUT
- AIR SAMPLING LOCATION
- MANOMETER LOCATION
- SEPARATION BARRIER
- WORK AREA LIMITS FOR FULL CONTAINMENT
- ACM FLOOR TILE UNDER CARPET
- ACM FLOOR TILE UNDER NON-ACM FLOOR TILE
- ACM RADIATOR HEATSHIELD INSULATION



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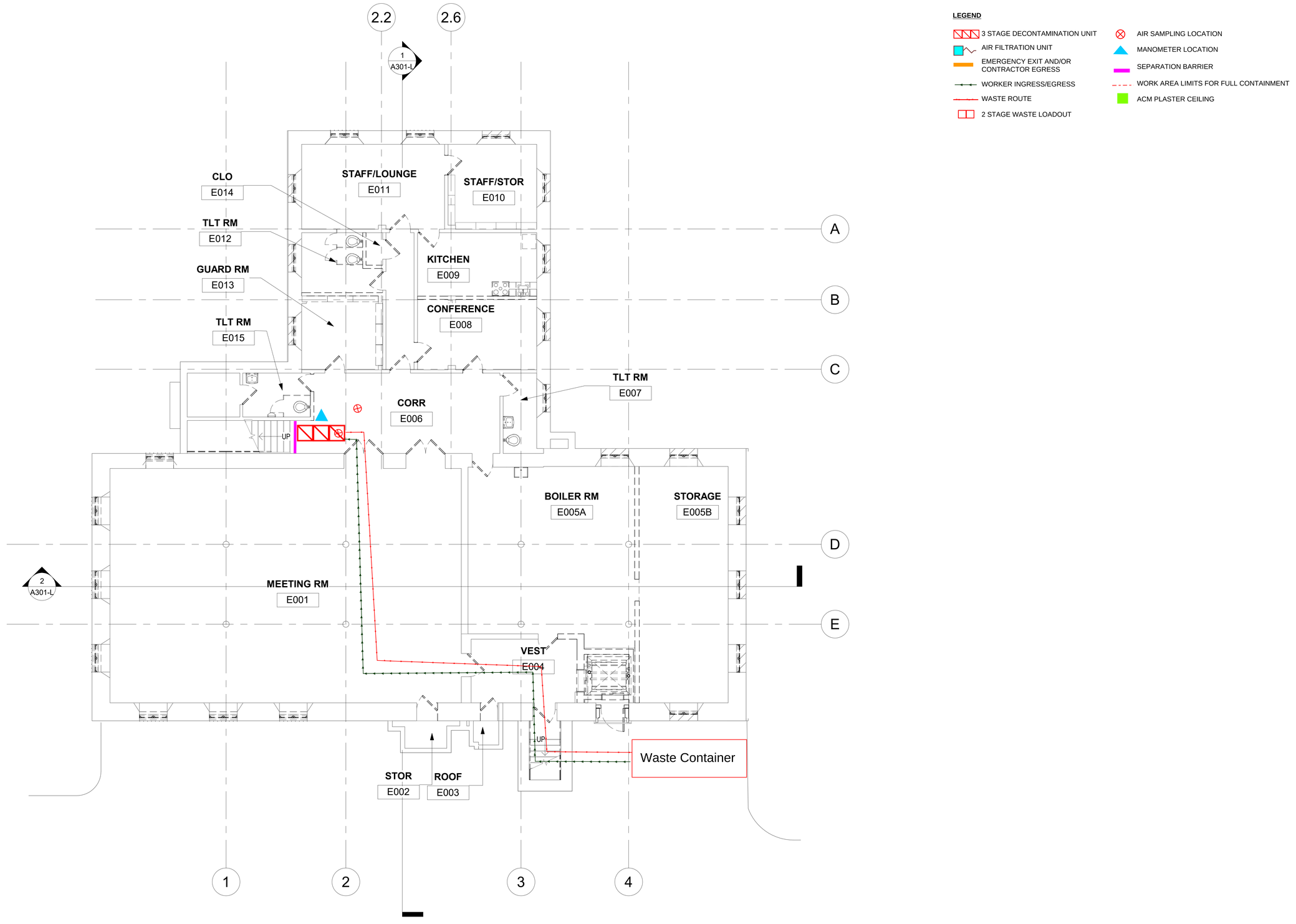

LEGEND

- 3 STAGE DECONTAMINATION UNIT
- AIR FILTRATION UNIT
- EMERGENCY EXIT AND/OR CONTRACTOR EGRESS
- WORKER INGRESS/EGRESS
- WASTE ROUTE
- 2 STAGE WASTE LOADOUT
- AIR SAMPLING LOCATION
- MANOMETER LOCATION
- SEPARATION BARRIER
- WORK AREA LIMITS FOR FULL CONTAINMENT
- ACM PLASTER CEILING

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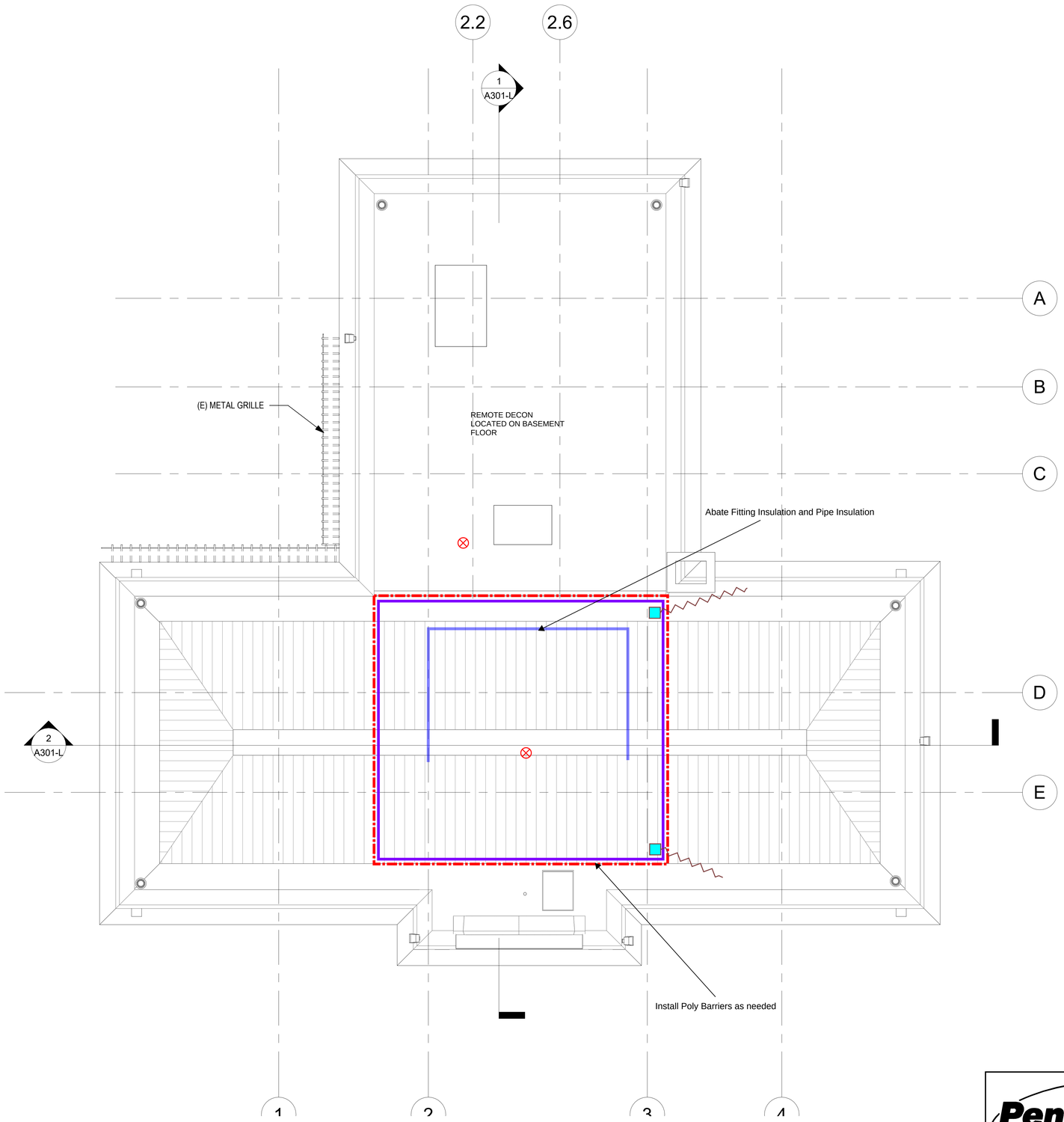
ASB-03

SHEET 3 OF 7



LEGEND

- 3 STAGE DECONTAMINATION UNIT
- AIR FILTRATION UNIT
- EMERGENCY EXIT AND/OR CONTRACTOR EGRESS
- WORKER INGRESS/EGRESS
- WASTE ROUTE
- 1 STAGE CHANGE ROOM
- AIR SAMPLING LOCATION
- MANOMETER LOCATION
- SEPARATION BARRIER
- WORK AREA LIMITS FOR LIMITED CONTAINMENT
- ACM PIPE INSULATION AND FITTING INSULATION
- POLY BARRIER

NOTE: An Alternative Method Request will be required to permit glove bag removal with no attached single stage decontamination chamber to tented work areas in attic and use of remote decontamination unit.

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DRAWING SCALE	NTS
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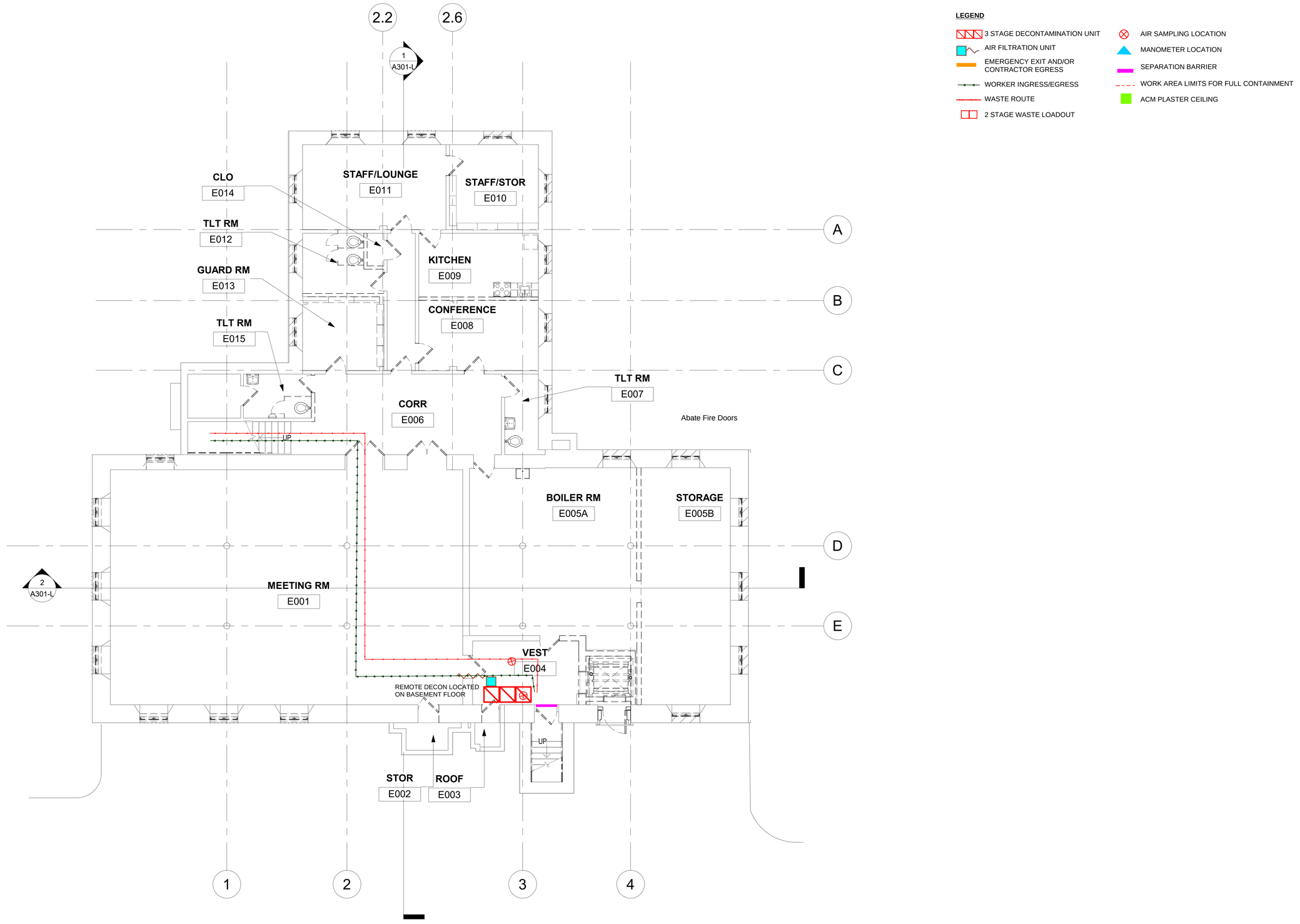
ASB-04



LEGEND

- 3 STAGE DECONTAMINATION UNIT
- AIR FILTRATION UNIT
- EMERGENCY EXIT AND/OR CONTRACTOR EGRESS
- WORKER INGRESS/EGRESS
- WASTE ROUTE
- 2 STAGE WASTE LOADOUT
- AIR SAMPLING LOCATION
- MANOMETER LOCATION
- SEPARATION BARRIER
- WORK AREA LIMITS FOR FULL CONTAINMENT
- ACM PLASTER CEILING

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ASB-05

SHEET 5 OF 7

City of Philadelphia - Department of Public Health
Air Management Services, 2nd Fl. Asbestos Control Unit
321 University Ave. Philadelphia, PA 19104

Asbestos Inspection Report

Office Use Only	Date Received L&I:	Date Received AMS:
	Date Inspected	Inspector No.

1. Name of Building / Property: Kingsessing Library Building
Address: 1201 S 51st Street, Philadelphia, PA 19143

2. Name of Building / Property Owner: City of Philadelphia Dept. of Recreation
Address: 1515 Arch Street;10th Floor,Philadelphia,PA
Phone No.: 215 683 3600

3. Name of Philadelphia Certified Investigator: John P. Fiorelli
Certification No.: 0232
Contact Information / Email / Phone No.: 215 755-2305
L&I Commercial Activity No. (Former Business Privilege License No.): H-31804
Business Tax ID No.: 559-2027

4. Name of Philadelphia Licensed Laboratory: IATL
License No.: 137
Phone No.: 856 231 9449

5. Scope of Work: (Insert or attach a complete description of the portion of the subject property inspected and the anticipated work that will result in the disturbance of the identified Asbestos Containing Materials (ACMs) (e.g. demolition, asbestos abatement, and / or renovation activities.)

The scope of work will be either complete demolition of the building or major renovations throughout the building. A comprehensive asbestos inspection along with bulk sampling of accessible suspect materials was performed. SEE ACMS LISTED IN SECTION 9. ON PAGES 2 Synertech Project No. 632-187

6. ☐ Property has been declared to be in imminent danger (ID) of failure or collapse by the City of Philadelphia Department of Licenses & Inspections. **Attached is a copy of the L&I Notice of Violation declaring the property I.D. **Note: INVESTIGATOR MUST BE ON SITE DURING DEMOLITION!**

7. (ACMs) identified? ☑ Yes (List Below) ☐ No (explain)

8. Suspected ACM's sampled? ☑ Yes (attached are copies of the laboratory chain of custody and bulk sample results.) ☐ No (Why?)

9. List all identified ACM's located in the planned renovation/demolition areas. Damaged ACM must be listed and then repaired or removed prior to renovation. You (Investigator) must label all ACM that may be left in the work area. (Attached are add'tl sheets)

Location	Description	Type (Code 1)	Amount Square	Amount Linear	Condition (Code 2)	Action (Code 3)

Code 1
FRI - Friable
NF1 - Non-Friable, Cat. 1
NF2 - Non-Friable, Cat. 2

Code 2
DD - Deteriorated or Delaminated
ND - Non-Damaged

Code 3
REM - Removal necessary prior to Demo/Reno
NRN - No removal necessary, label ACM
REP - Repair & Label ACM, removal not necessary

10. I hereby certify that the foregoing statements are true and the information contained in this report is true. This certification is made subject to the penalties set forth in 18 PA. C.S. S4904 relating to unsworn falsification to authorities. Furthermore I certify that the inspection, sampling, and labeling requirements of section X of the Asbestos Control Regulation (ACR) have been met. The building owner has been notified of the ACR requirements and given a copy of this report. If the inspection has revealed ACM which will be disturbed by the proposed work or if it has revealed ACM in bad condition, the building owner has been notified to remove or repair the ACM in accordance with the ACR prior to renovation or demolition activity.

11. Signature of Certified Asbestos Investigator:	Date:	Signature of Building Owner:	Date:
John Fiorelli	08/16/19		

Asbestos Inspection Report

9. List Asbestos Containing Material (ACM) located in the planned renovation/demolition area(s). Damaged ACM must be listed and then repaired or removed prior to renovation. You (Investigator) must label all ACM that may be left in the work area.

Q/U = Quantity Undetermined

Location	Description	Type (Code 1)	Amount Square	Amount Linear	Condition (Code 2)	Action (Code 3)
Basement – Elevator Lobby	Ceiling Plaster	FRI	150 square feet		ND	REM
1st Floor Library Areas	Vinyl Asbestos Containing Floor Tile (VAT) (below carpet tiles)	NF1	4,325 square feet		ND	REM
1st Floor Library Circulation Desk	Vinyl Asbestos Containing Floor Tile (VAT) (below non asbestos 12"x12" tile)	NF1	435 square feet		ND	REM
1st Floor Library Entry Lobby	Radiator Heat Shield Backing Insulation **(ASSUMED TO BE PRESENT BEHIND RADIATORS)**	FRI	10 square feet each (20 square feet total)		ND	REM
1st Floor Library	Radiator Heat Shield Backing Insulation **(ASSUMED TO BE PRESENT BEHIND FIN TUBE RADIATORS)**	FRI	10 square feet each (50 square feet total)		ND	REM
1st Floor Library	ACPI/ACPFI **(ASSUMED TO BE ABOVE PLASTER CEILING AND PERIMETER WALLS)**	FRI	Quantity Undetermined	Quantity Undetermined	ND	REM
Attic-Throughout	ACPI/ACPFI **(Observed-Confidently assumed – unable to be sampled due to location)**	FRI		Quantity Undetermined	DD	REM
Throughout	Metal Doors **(Assumed to be asbestos containing)**	NF2 (Enclosed Friable material)		Quantity Undetermined (not sampled to preserve integrity of fire rating)	ND	REM
Exterior	Roofing Materials **(Assumed to be asbestos containing)**	NF1		5,460 square feet	ND	REM

Signature of Certified Asbestos Investigator: John Smith Date:08/16/19 Signature of Building Owner: Date: