# By eMARYLAND MARKETPLACE (eMM) ONLY

# ADDENDUM NO. 4

# TO THE CONTRACT DOCUMENTS FOR THE

# **BCDC YOUTH DETENTION CENTER**

# at the Baltimore City Detention Center

# in the

# **Division of Pretrial Detention and Services (DPDS)**

### STATE OF MARYLAND CONTRACT NUMBER: KT-000-150-C01

DATE OF ISSUE: MARCH 2, 2015

To All Bidders: This Addendum is intended to modify, explain, correct and/or delete the provisions of the original Contract Documents issued February 5, 2015, and previously-issued Addenda, and is hereby (unless noted otherwise) made a part of the Contract Documents on which the Construction Contract will be based.

Acknowledge receipt of the Addendum by inserting its number and date in the Construction Bid Form (issued with Addendum 1 on February 10, 2015, with pages 6 and 8 revised and issued with Addendum 4 on March 2, 2015). Failure to do so may subject the bidder to disqualification.

Addendum No. 4 consists of eleven (11) 8<sup>1</sup>/<sub>2</sub>" x 11" pages, plus eight (8) specification attachments containing sixty (60) pages and eighty-seven (87) full-size drawing sheets.

- I. Addendum: eleven (11) pages.
- II. Attachments:

Specifications: Sixty (60) total pages), as follows

- 00 12 50 CONSTRUCTION BID FORM—Pages 6 and 8 (2 pages)
- 01 21 00 SPECIALTY ALLOWANCES (6 pages)
- 01 22 00 UNIT PRICES (7 pages)
- 10 14 00 SIGNAGE—ATTACHMENT A (7 pages)
- 10 14 00 SIGNAGE—ATTACHMENT B (9 pages)
- 23 09 23.11 CONTROL VALVES (8 pages)
- 23 09 23.12 CONTROL DAMPERS (11 pages)
- 28 23 13 VIDEO SURVEILLANCE FOR ELECTRONIC SECURITY (10 pages)

Drawings: eighty-seven (87) sheets, as follows:

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SO110	SP110B	SP140A	S301	S500	
SO120	SP120A	SP150A	S302	S504	
SP110A	SP120B	S300	S303	S601	
Seventeen (1	7) Architectural she	eets:			
A220	A302	A322	A505	FE110A	FE120B
A300	A320	A403	A620	FE110B	FE130A
A301	A321	A504	FE100	FE120A	And a subsection of the sector
Seven (7) De	tention sheets:				
D110A	D120A	D130	D403		
D110B	D120B	D400	Apple desides of the second		
					alas uninantens
Five (5) Plum	bing sheets				ale second
Five (5) Plum P100	bing sheets P101	PO182	PO183	PO184	A second s
Five (5) Plum P100	bing sheets P101	PO182	PO183	PO184	
Five (5) Plum P100 Twenty-three	bing sheets P101 (23) Mechanical sh	PO182	PO183	PO184	MO180
Five (5) Plum P100 Twenty-three MO001	bing sheets P101 (23) Mechanical sl MD140 MO100	PO182 neets: MV110B MO120	PO183 MV130A MO140	PO184 MO160 MO161	MO180 MO181
Five (5) Plum P100 Twenty-three MO001 MD100	bing sheets P101 (23) Mechanical sh MD140 MO100 MO110	PO182 neets: MV110B MO120	PO183 MV130A MO140 MV140A	PO184 MO160 MO161 MO170	MO180 MO181 MO182
Five (5) Plum P100 Twenty-three MO001 MD100 MD110	bing sheets P101 (23) Mechanical sh MD140 MO100 MO110	PO182 neets: MV110B MO120 MV120A	PO183 MV130A MO140 MV140A	PO184 MO160 MO161 MO170 MO171	MO180 MO181 MO182
Five (5) Plum P100 Twenty-three MO001 MD100 MD110 MD120	bing sheets P101 (23) Mechanical sh MD140 MO100 MO110 MV110A	PO182 neets: MV110B MO120 MV120A MV120B	PO183 MV130A MO140 MV140A MV140B	PO184 MO160 MO161 MO170 MO171	MO180 MO181 MO182
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Five (5) Plum P100 Twenty-three MO001 MD100 MD110 MD120 Twenty (20) I FG000	bing sheets P101 (23) Mechanical sh MD140 MO100 MO110 MV110A Electrical sheets: EL120A	PO182 neets: MV110B MO120 MV120A MV120B EP110B	PO183 MV130A MO140 MV140A MV140B EP140	PO184 MO160 MO161 MO170 MO171 E400	MO180 MO181 MO182
Five (5) Plum P100 Twenty-three MO001 MD100 MD110 MD120 Twenty (20) I EG000 Fl 100	bing sheets P101 (23) Mechanical sh MD140 MO100 MO110 MV110A Electrical sheets: EL120A FL 120B	PO182 neets: MV110B MO120 MV120A MV120B EP110B EP120A	PO183 MV130A MO140 MV140A MV140B EP140 EY100	PO184 MO160 MO161 MO170 MO171 E400 E401	MO180 MO181 MO182

ES112

E541

EP110A

Issued by:

EL110B

Katherine Dixon, Acting Director Division of Capital Construction and Facilities Maintenance Department of Public Safety and Correctional Services State of Maryland 6776 Reisterstown Road Suite 201 Baltimore, MD 21215-2341 Telephone: 410-585-3027

**EP130** 

Prepared by: PSA-Dewberry + Penza Bailey Architects, A Joint Venture 401 Woodbourne Avenue Baltimore, MD 21212 A. Clarifications and General Bidders' Questions (THESE ARE INTENDED ONLY TO CLARIFY PROVISIONS OF THE CONTRACT DOCUMENTS BUT DO NOT MODIFY THEM):

4.1.	<b>Question:</b> Request to add a manufacturer or a product to a list of acceptable manufacturers or products in a specification section.
	<b>Response:</b> Lists of products and manufacturers in the specifications are in the form of either a Restricted List or a Nonrestricted List, as defined in Section 01 60 00 PRODUCT REQUIREMENTS. In the case of a Nonrestricted List, submission of an unnamed product or manufacturer does not require a substitution or change to the Contract Documents, but must comply with requirements for "Comparable Products" as outlined in that Section.
	For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with the requirements in "Comparable Products" Article in Section 01 60 00 PRODUCT REQUIREMENTS. Such a product is not considered a substitution.
	Proposed changes to a Restricted List shall be in accordance with Section 01 25 00 SUBSTITUTION PROCEDURES.
	Per the Contract Documents, no substitutions will be entertained during the bidding period. After Contract award, alternate approaches or substitutions may be reviewed in accordance with the procedures outlined in Section 01 25 00 SUBSTITUTION PROCEDURES.
4.2.	Question: Requests to add manufacturers or products to various Division 28 Sections.
	<b>Response:</b> See revisions to Division 28 Sections of the Project Manual, below.
4.3.	Question: Section 28 50 500 MISCELLANEOUS SYSTEMS FOR ELECTRONIC SECURITY, PART 2 – PRODUCTS, 2.4 and 2.5: are the listed manufacturers correct for those items?
	Response: Manufacturers are correct as shown. See revision to this section, below.
4.4.	<b>Question:</b> In Section 11 19 23 DETENTION STAINLESS STEEL WINDOWS, request to remove requirements for Grade No. 1 and Grade No. 2 Composite T.R. Steel at 1.3.A.6; 1.3.A.8, and 2.2.C.
	<b>Response:</b> No revisions are required at these locations, as the listed grades are presented as options from which the Contractor must choose.
4.5.	Question: Is a badging station required as part of Electronic Security?
	Response: No badging station is required.
4.6.	Question: Contractor's responsibilities and scope for lightning protection system.
	<b>Response:</b> Requirements for lightning protection system are specified in Section 26 41 13 LIGHTNING PROTECTION FOR STRUCTURES, including requirements for delegated design of the system by a Professional Engineer and protection of new construction and existing building.

# B. Drawings

4.7.	Sheet SO110: Replace this sheet with revised sheet SO110, attached.	٦
4.8.	Sheet SO120: Replace this sheet with revised sheet SO120, attached.	

4.9.	Sheet SP110A: Replace this sheet with revised sheet SP110A, attached.
4.10.	Sheet SP110B: Replace this sheet with revised sheet SP110B, attached.
4.11.	Sheet SP120A: Replace this sheet with revised sheet SP120A, attached.
4.12.	Sheet SP120B: Replace this sheet with revised sheet SP120B, attached.
4.13.	Sheet SP140A: Replace this sheet with revised sheet SP140A, attached.
4.14.	Sheet SP150A: Replace this sheet with revised sheet SP150A, attached.
4.15.	Sheet S300: Replace this sheet with revised sheet S300, attached.
4.16.	Sheet S301: Replace this sheet with revised sheet S301, attached.
4.17.	Sheet S302: Replace this sheet with revised sheet S302, attached.
4.18.	Sheet S303: Replace this sheet with revised sheet S303, attached.
4.19.	Sheet S500: Replace this sheet with revised sheet S500, attached.
4.20.	Sheet S504: Replace this sheet with revised sheet S504, attached.
4.21.	Sheet S601: Replace this sheet with revised sheet S601, attached.
4.22.	Sheet A220: Replace this sheet with revised sheet A220, attached.
4.23.	Sheet A300: Replace this sheet with revised sheet A300, attached.
4.24.	Sheet A301: Replace this sheet with revised sheet A301, attached.
4.25.	Sheet A302: Replace this sheet with revised sheet A302, attached.
4.26.	Sheet A320: Replace this sheet with revised sheet A320, attached.
4.27.	Sheet A321: Replace this sheet with revised sheet A321, attached.
4.28.	Sheet A322: Replace this sheet with revised sheet A322, attached.
4.29.	Sheet A403: Replace this sheet with revised sheet A403, attached.
4.30.	Sheet A504: Replace this sheet with revised sheet A504, attached.
4.31.	Sheet A505: Replace this sheet with revised sheet A505, attached.
4.32.	Sheet A620: Replace this sheet with revised sheet A620, attached.
4.33.	Sheet FE100: Replace this sheet with revised sheet FE100, attached.
4.34.	Sheet FE110A: Replace this sheet with revised sheet FE110A, attached.
4.35.	Sheet FE110B: Replace this sheet with revised sheet FE110B, attached.
4.36.	Sheet FE120A: Replace this sheet with revised sheet FE120A, attached.

4.37.	Sheet FE120B: Replace this sheet with revised sheet FE120B, attached.
4.38.	Sheet FE130A: Replace this sheet with revised sheet FE130A, attached.
4.39.	Sheet AF801 ROOM FINISH SCHEDULE: Change 6.2 HOT & COLD PREP Floor Finish from SC-6/SC-7 to SC-6.
4.40.	Sheet D110A: Replace this sheet with revised sheet D110A, attached.
4.41.	Sheet D110B: Replace this sheet with revised sheet D110B, attached.
4.42.	Sheet D120A: Replace this sheet with revised sheet D120A, attached.
4.43.	Sheet D120B: Replace this sheet with revised sheet D120B, attached.
4.44.	Sheet D130: Replace this sheet with revised sheet D130, attached.
4.45.	Sheet D400: Replace this sheet with revised sheet D400, attached.
4.46.	Sheet D403: Replace this sheet with revised sheet D403, attached.
4.47.	Sheet P100: Replace this sheet with revised sheet P100, attached.
4.48.	Sheet P101: Add sheet P101, attached.
4.49.	Sheet PO182: Replace this sheet with revised sheet PO182, attached.
4.50.	Sheet PO183: Replace this sheet with revised sheet PO183, attached.
4.51.	Sheet PO184: Replace this sheet with revised sheet PO184, attached.
4.52.	Sheet MO001: Replace this sheet with revised sheet MO001, attached.
4.53.	Sheet MD100: Replace this sheet with revised sheet MD100, attached.
4.54.	Sheet MD110: Replace this sheet with revised sheet MD110, attached
4.55.	Sheet MD120: Replace this sheet with revised sheet MD120, attached
4.56.	Sheet MD140: Replace this sheet with revised sheet MD140, attached
4.57.	Sheet MO100: Replace this sheet with revised sheet MO100, attached.
4.58.	Sheet MO110: Replace this sheet with revised sheet MO110, attached.
4.59.	Sheet MV110A: Replace this sheet with revised sheet MV110A, attached.
4.60.	Sheet MV110B: Replace this sheet with revised sheet MV110B, attached.
4.61.	Sheet MO120: Replace this sheet with revised sheet MO120, attached.
4.62.	Sheet MV120A: Replace this sheet with revised sheet MV120A, attached.
4.63.	Sheet MV120B: Replace this sheet with revised sheet MV120B, attached.
4.64.	Sheet MV130A: Replace this sheet with revised sheet MV130A, attached.

4.65.	Sheet MO140: Replace this sheet with revised sheet MO140, attached.
4.66.	Sheet MV140A: Replace this sheet with revised sheet MV140A, attached.
4.67.	Sheet MV140B: Replace this sheet with revised sheet MV140B, attached.
4.68.	Sheet MO160: Replace this sheet with revised sheet MO160, attached.
4.69.	Sheet MO161: Replace this sheet with revised sheet MO161, attached.
4.70.	Sheet MO170: Replace this sheet with revised sheet MO170, attached.
4.71.	Sheet MO171: Replace this sheet with revised sheet MO171, attached.
4.72.	Sheet MO180: Replace this sheet with revised sheet MO180, attached.
4.73.	Sheet MO181: Replace this sheet with revised sheet MO181, attached.
4.74.	Sheet MO182: Replace this sheet with revised sheet MO182, attached.
4.75.	Sheet EG000: Replace this sheet with revised sheet EG000.
4.76.	Sheet EL100: Replace this sheet with revised sheet EL100.
4.77.	Sheet EL110A: Replace this sheet with revised sheet EL110A.
4.78.	Sheet EL110B: Replace this sheet with revised sheet EL110B.
4.79.	Sheet EL120A: Replace this sheet with revised sheet EL120A.
4.80.	Sheet EL120B: Replace this sheet with revised sheet EL120B.
4.81.	Sheet EP100: Replace this sheet with revised sheet EP100.
4.82.	Sheet EP110A: Replace this sheet with revised sheet EP110A.
4.83.	Sheet EP110B: Replace this sheet with revised sheet EP110B.
4.84.	Sheet EP120A: Replace this sheet with revised sheet EP120A.
4.85.	Sheet EP120B: Replace this sheet with revised sheet EP120B.
4.86.	Sheet EP130: Replace this sheet with revised sheet EP130.
4.87.	Sheet EP140: Replace this sheet with revised sheet EP140.
4.88.	Sheet EY100: Replace this sheet with revised sheet EY100.
4.89.	Sheet ES111: Replace this sheet with revised sheet ES111.
4.90.	Sheet ES112: Replace this sheet with revised sheet ES112.
4.91.	Sheet E400: Replace this sheet with revised sheet E400.
4.92.	Sheet E401: Replace this sheet with revised sheet E401.

4.93.	Sheet E402: Replace this sheet with revised sheet E402.
4.94.	Sheet E541: Replace this sheet with revised sheet E500.
4.95.	Sheet TY110A, FIRST FLOOR PLAN AREA A – SECURITY, GENERAL NOTES: Move General Note 3 to Keyed Notes on this sheet and label as Keyed Note 3.

# C. Project Manual

4.96.	Section 00 12 50 CONSTRUCTION BID FORM: Replace pages 6 and 8 with revised pages 6 and 8, attached.
4.97.	Section 01 10 00 SUMMARY OF WORK, PART 1 – GENERAL, 1.9 ACCESS TO SITE, Paragraph D.4.: Add subparagraph a as follows:
	<ul> <li>Contractor may access SUI Building basement via existing exterior stair at Forrest St. Existing freight elevator may be accessed via the existing OSTC loading at Forrest St. Loading dock provides a wider path to the freight elevator. Comply with requirements for security control for access to occupied areas.</li> </ul>
4.98.	Section 01 21 00 SPECIALTY ALLOWANCES: Replace entire section with revised Section 01 21 00, attached.
4.99.	Section 01 22 00 UNIT PRICES: Replace entire section with revised Section 01 22 00, attached.
4.100.	Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS, PART 3 – EXECUTION, 3.2 TEMPORARY UTILITY INSTALLATION, Paragraph A.10: Replace subparagraph b with the following:
	b. Coordinate with BGE to provide a temporary Medium Voltage switch, transformer, conduit, CT cabinet, metering and all associated appurtenances required to maintain power to the OSTC and other occupied areas of the SUI Building. Locate the temporary equipment on the sidewalk between Truxton street and the SUI Building. This will include new underground conduits from the nearest BGE manhole to the transformer and underground conduits from the BGE transformer to a CT cabinet located on the exterior of the SUI Building per BGE standards. Provide bollards around the transformer per BGE standards. Adjacent to the CT cabinet, provide a new 600A 480V breaker in a NEMA 3R enclosure and extend two sets of 4 # 350kcmil in 2-4" EMT conduits routed in the basement of the SUI Building to the existing-to-remain switchboard.
	This reconnection or cutover from the existing to the temporary service shall be performed while the OSTC area is unoccupied (after 4:00pm and until 6:00am on weekdays, or else on weekends). The contractor shall be fully responsible to coordinate all aspects of the BGE work to maintain service to occupied areas of the SUI Building. The energy usage component of this service shall be paid by the Owner. An allowance as described in Section 01 21 00 SPECIALTY ALLOWANCES is included to cover the BGE cost for this service.
4.101.	Section 08 88 53 DETENTION GLAZING, PART 1 – GENERAL, 1.5 QUALITY ASSURANCE: Delete Paragraph C. Indiana Building Code, Chapters 43 and 54.
4.102.	Section 08 88 53 DETENTION GLAZING, PART 2 – PRODUCTS, 2.1 MANUFACTURERS: Add Paragraph B as follows:
	B. Provide all security glazing products from a single manufacturer.
4.103.	Section 10 14 00 SIGNAGE: Replace entire Attachment A SIGNAGE SCHEDULE & entire Attachment B SIGNAGE DRAWINGS with revised Attachments A & B.

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4.104	MATER	11 19 IALS:	23 DETENTION STAINLESS STEEL WINDOWS, PART 2 – PRODUCTS, 2.2 Replace Paragraph C and subparagraphs 1 through 4 with the following:
	C	Tool-I shall (	Resisting Steel Bars: Shall be painted with approved-rust-inhibitive primer paint and conform to ONE of the following grades by ASTM A 627-03 standard:
		1. 2. 3.	Grade No. 1, Composite T.R. Steel, 1" dia. round & 3/8" x 2 1/4" flat. Grade No. 2, Composite T.R. Steel, 1" dia. round & 3/8" x 2 1/4" flat. Grade No. 3, Homogenous T.R. Steel, 1" dia. Round & 5/16" x 2 1/4" flat.
4.105	QUALIT	23 05 Y AS	93 TESTING, ADJUSTING, AND BALANCING FOR HVAC, PART 1 – GENERAL, 1.5 SURANCE: Replace Paragraph A and subparagraphs 1 and 2 with the following:
	A. 1	ГАВ (	Contractor Qualifications: Engage a TAB entity certified by AABC or NEBB
	1	t.	TAB Field Supervisor: Employee of the TAB contractor and certified by AABC or NEBB.
	2	2.	TAB Technician: Employee of the TAB contractor and certified by AABC or NEBB as a TAB technician.
4.106	Section 2	23 05 Y ASS	93 TESTING, ADJUSTING, AND BALANCING FOR HVAC, PART 1 – GENERAL, 1.5 SURANCE: Replace Paragraph C. with the following:
	С. т	rab f	Report Forms: TAB forms are to be AABC or NEBB standard forms.
4.107	Section 2 QUALITY	23 05 Y ASS	93 TESTING, ADJUSTING, AND BALANCING FOR HVAC, PART 1 – GENERAL, 1.5 SURANCE: Replace Paragraph D with the following:
	D. A	All equ	uipment and procedures are to follow AABC or NEBB current standards.
4.108	Section 2 attached.	23 09	23.11 CONTROL VALVES: Replace entire section with revised Section 23 09 23.11,
4.109	Section 2 attached.	23 09	23.12 CONTROL DAMPERS: Replace entire section with revised Section 23 09 23.12,
4.110.	Section 2 Leakage	3 31 Tests	13 METAL DUCTS, PART 3 – EXECUTION, 3.6 FIELD QUALITY CONTROL, B. 3: Add subparagraph 6 as follows:
	6	i     !	All ductwork except transfer ducts are to be leak tested regardless of the requirements or recommendations by SMACNA. All of the ductwork leak testing is to be witness by the TAB contractor and documented by the TAB contractor. See specification section 230800 for additional requirements.
4.111.	Section 2 Paragrap	3 33 h D:	00 AIR DUCT ACCESSORIES, PART 3 0 EXECUTION, 3.1 INSTALLATION, Add subparagraph 2 as follows:
	2	.   ;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	nstall duct mounted manual volume dampers at each duct branch, riser take off, tap, air device, grille, diffuser, register, equipment/device connection, open ended duct, etc.
4.112.	NOT USE	ED	
4.113.	Section 2 EXECUT	6 23 ION, 3	13 MEDIUM VOLTAGE LOAD INTERRUPTER SWITCHGEAR, PART 3 – 3.1 FACTORY TESTING, Paragraph B: Delete subparagraph 2.
4.114.	Section 20 EXECUTI	6 23 ION, 3	14 INTERIOR MEDIUM VOLTAGE METAL-ENCLOSED SWITCHGEAR, PART 3 – 3.1 FACTORY TESTING, Paragraph B: Delete subparagraph 2.

4.115.	Section H.	26 24 16 PANELBOARDS, PART 3 - EXECUTION, 3.2 INSTALLATION: Delete paragraph
4.116.	Section	26 25 24 COORDINATION WITH DIVISION 28, PART 3 - EXECUTION: Replace Paragraph
	3.1 and	all subparagraphs with the following:
	3.1 Wo	ork provided under Division 28
	А.	All electrical work associated with the security electronics systems including conduit, conduit bodies, back boxes, wire and cable, wiring devices, panel boards, and all appurtenances thereto are part of the Division 26 scope of work; exceptions are as noted under item B below.
	В.	The interface between the electrical and security electronics scope of work is as follows:
		<ol> <li>Security system power distribution is the responsibility of the Division 26 contractor. Conduit, wire, wiring devices and panel boards shall be provided under the Division 26 scope of work. All material and workmanship will be as specified in the Division 26 specifications. Power to all security control consoles, equipment cabinets, etc. is the responsibility of the Division 26 contractor.</li> </ol>
		2. Elevator interface panels are provided under the Division 28 scope of work. All conduit and wire associated with the security electronics control side of the interface is by Division 26. Conduit and wire between the security electronics interface panel and the elevator equipment is by Division 26.
		3. Security lighting control interface requires the lighting distribution circuits to be routed through the relay cabinet. The distribution circuits, relays and locations controlled are described in the relay schedules on sheet E542 and see detail 2 sheet TY601. The Division 26 electrical contractor is responsible for all conduit, wire, and fixtures etc. for the lighting circuits. The electrical contractor is responsible for providing the relay panels and control relays and integrating the control into the PLC/Bacnet.
		4. Security receptacle control interface requires the power distribution circuits to be routed through the relays cabinet. The distribution circuits, relays and locations controlled are described in the relay schedules on sheet E542 and see detail 2 on sheet TY601. The Division 26 electrical contractor is responsible for all conduit, and wire, for the receptacle circuits. The electrical contractor is responsible for providing the relay panels and control relays and integrating the control into the PLC/Bacnet.
1		5. The signal grounding system indicated on electrical and security drawings provided by the Division 26 contractor. Conduit and wire required to connect the TMGB to the main electrical ground point is the responsibility of the Division 26 contractor. Connection of the telecommunications rooms (MDF/IDF) ground buss bars to the signal grounding system is by the Division 26 contractor.
4.117.	Section Revise	26 32 13 DIESEL GENERATOR, PART 1 – GENERAL, 1.8 WARRANTY, A. Base Warranty: "twelve (24) months" to "twenty-four (24) months".
4.118.	Section PROTE WARR	26 43 13 SURGE PROTECTIVE DEVICES (SPDS) – LOW VOLTAGE AC SURGE ECTION FOR ELECTRICAL DISTRIBUTION SYSTEMS, PART 3 – EXECUTION, 3.4 ANTY, Paragraph A: Revise "ten (10) year warranty" to "five (5) year warranty."

4.4.4.0	
4.119.	At each of the following Sections, PART 2 – PRODUCTS, 2.1 GENERAL:
	28 05 11 BACKBONE SYSTEM CABLING FOR ELECTRONIC SECURITY, 28 05 26 GROUNDING AND BONDING FOR ELECTRONIC SECURITY, 28 11 16 CABINETS AND ENCLOSURES FOR ELECTRONIC SECURITY, 28 13 00 ACCESS CONTROL SYSTEM FOR ELECTRONIC SECURITY, 28 46 19 PLC HARDWARE FOR ELECTRONIC SECURITY, 28 46 20 PLC SOFTWARE FOR ELECTRONIC SECURITY, 28 50 00 MISCELLANEOUS SYSTEMS FOR ELECTRONIC SECURITY, 28 51 23 INTEGRATED INTERCOM/PAGING SYSTEM FOR ELECTRONIC SECURITY,
	Replace Paragraph B with the following:
	B. Lists of products and manufacturers are Nonrestricted. Submission of an unnamed product or manufacturer does not require a substitution or change to the Contract Documents, but must comply with requirements for "Comparable Products" as outlined in Section 01 60 00 PRODUCT REQUIREMENTS.
4.120.	Section 28 23 13 VIDEO SURVEILLANCE FOR ELECTRONIC SECURITY: Replace entire section with revised Section 28 23 1, attached.
4.121.	Section 28 50 00 MISCELLANEOUS SYTEMS FOR ELECTRONIC SECURITY, PART 2 – PRODUCTS, 2.5 PANIC ALARM PUSHBUTTON, UNDER COUNTER, Paragraph B. Acceptable Manufacturers: Delete the following from subparagraph 1: "Button head engraved 'DURESS'."

# END of ADDENDUM NO. 4

# CONSTRUCTION BID FORM

# ISSUE DATE: February 5, 2015 **REVISED 02 MARCH 2015 ADDENDUM 4** Construction Documents

# BCDC YOUTH DETENTION CENTER DPSCS CONTRACT NO. KT-000-150-C01

# BALTIMORE CITY DETENTION CENTER BALTIMORE, MARYLAND

SA-2	Removal of Hazardous Roof Material: In accordance with description and requirements in Section 01 21 00 Specialty Allowances.	1	\$ 25,000.00	\$ 25,000.00
SA-3	Removal of Hazardous Material from Existing Fire Suppression System and Fire Alarm/Detection System in the OSTC Portion of SUI Building: In accordance with description and requirements in Section 01 21 00 Specialty Allowances.	1	\$15,000.00	\$15,000.00
SA-4	Repair of the Existing Concrete Masonry Partition that Separates the Renovated YDC Portion of the SUI Building from the OSTC Portion of the SUI Building: In accordance with description and requirements in Section 01 21 00 Specialty Allowances	1	\$10,000.00	\$10,000.00
SA-5	Upgrade to Existing Fire Suppression System in OSTC Occupied Portion of SUI Building In accordance with description and requirements in Section 01 21 00 Specialty Allowances.	1	\$45,000.00	\$45,000.00
SA-6	Resolution to Unknown Below Grade or Hidden Utility Conflicts In accordance with description and requirements in Section 01 21 00 Specialty Allowances.	1	\$25,000.00	\$25,000.00
SA-7	Penetration Scan of First Floor "Dox Plank" Type Slab System in YDC Renovation Area of SUI Building to Locate Existing Reinforcing for New Openings In accordance with description and requirements in Section 01 21 00 Specialty Allowances.	1	\$10,000.00	\$10,000.00
SA-8	Maintenance of Electrical Service to Occupied Areas of SUI Building: In accordance with description and requirements of Section 01 2100 Specialty Allowances.	1	\$30,000	\$30,000
SA-9	Repairs to Existing 15kV Switchgear in D-Block Basement: In accordance with description and requirements of Section 01 20 00 Specialty Allowances.	1	\$7,500	\$7,500
		LUIVIP	JUNITUTAL	φ 197, 000.00

Total **LUMP SUM PRICE** for **SPECIALTY ALLOWANCE SCHEDULE A** as required by the Contract Documents:

# One Hundred Ninety-seven Thousand Five Hundred & 00/100 Dollars

# Written

# (\$) 197,500.00

Figures

Include Lump Sum Price for the Specialty Allowance in the <u>Lump Sum Bid Price</u>, <u>Paragraph B, above</u>

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(Sign for Identification)
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# CONSTRUCTION BID FORM ISSUE DATE: February 5, 2015 REVISED 02 MARCH 2015 ADDENDUM 4 Construction Documents

# BCDC YOUTH DETENTION CENTER DPSCS CONTRACT NO. KT-000-150-C01

# BALTIMORE CITY DETENTION CENTER BALTIMORE, MARYLAND

UPA-3	Removal of Unsuitable Material (backfill with structural fill material): In accordance with description and requirements in Section 01 22 00 Unit Price Allowances. Unit of Measurement: Payment will be made for the actual number of cubic yards of fill material in place.	1,200 CY	\$/CY	\$
UPA-4	Removal of unsuitable material (backfill with aggregate fill material): In accordance with description and requirements in Section 01 22 00 Unit Price Allowances. Unit of Measurement: Payment will be made for the actual number of cubic yards of fill material in place.	1,500 CY	\$ <u>/</u> CY	\$
UPA-5	Provision of Exit Signs, in Place: In accordance with description and requirements in Section 01 22 00 Unit Price Allowances. Unit of Measurement: Payment will be made per exit sign, in place. Each sign shall include 100 linear feet of wiring.	10 EA	\$/EA	\$
UPA-6	Provision of Security Cameras: In accordance with description and requirements in Section 01 22 00 Unit Price Allowances.	5 EA 0.3 Mega Pixel Interior IP	\$/EA	\$
	Unit of Measurement: Payment will be made for each camera type, including 150 linear feet of wiring	5 EA 0.3 Mega Pixel Exterior IP	\$ <u>/</u> EA	\$
	per camera.	1 EA 1.3 Megapixel Exterior IP	\$ <u>/</u> EA	\$
		2 EA 1.3 Megapixel Interior IP	\$ <u>/</u> EA	\$
		1 EA Wall Mount V-Cell Fixed IP	\$/EA	\$
		3 EA Corner Mount V-Cell Fixed IP	\$ <u>/</u> EA	\$

# SECTION 01 21 00 – SPECIALTY ALLOWANCES

PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and other Division 00, Division 01, and Division 02 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Specialty Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Unit-cost allowances per Section 012200, Unit Price Allowances.
  - 2. Specialty allowances.
- C. Related Requirements:
  - 1. Division 01 Section 012200 "Unit Prices" for procedures for using unit prices.
  - 2. Division 01 Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
  - 3. Division 01 Section 012900 "Payment Procedures" for Application for Payment.
  - 4. Division 01 Section 014000 "Quality Requirements" for general testing and inspecting requirements.
  - 5. Division 01 Section 016000 "Product Requirements" for Product Options and Substitutions.
  - 6. Division 31 Section 312500 "Erosion and Sediment Control.
  - 7. Divisions 02 through 33 Sections for items of Work covered by allowances.

# 1.3 DEFINITIONS

A. Rock: Any material which cannot be removed by methods other than special rock excavation machinery, drilling, wedging and/or blasting shall be termed rock excavation. All other excavations shall be termed earth excavation. Should boulders be encountered, those in size up to 1/2 cubic yard shall be termed earth excavation.

B. Unknown, as applied to below-grade structure and infrastructure described under Schedule of Specialty Allowances: Subsurface or latent conditions not shown in either the Contract Documents, including the Limited Hazardous Materials Survey, or in the referenced existing building drawings provided by the Owner.

# 1.4 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by a Specialty Allowance must be completed to avoid delaying the Work.
- B. At Owner's and Architect's request, obtain proposals for each Specialty Allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

### 1.5 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders, as specified in Section 01 26 00, Contract Modification Procedures.

### 1.6 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each Specialty Allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the Specialty Allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

#### 1.7 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

## 1.8 SPECIALTY ALLOWANCES

A. Allowance shall include: Cost of material, product or services to General Contractor and/or Subcontractor, less applicable trade discounts; all applicable direct and indirect costs; delivery to site; applicable fees and taxes, permit costs, warranty costs, bond costs, unemployment compensation, and insurance costs; testing and cleanup; overhead and profit; labor and installation; finishing; unloading, uncrating, handling, and storage; protection from elements and damage; submittals, engineering, and shop drawing requirements; supplementary or miscellaneous items, appurtenances and devices, tools or equipment incidental to or necessary for a sound, secure and complete installation.

- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, and similar General Condition costs shall be included as part of the Contract Sum and not part of the Specialty Allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
  - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.
- D. Use the Specialty Allowance only as directed by Owner and reviewed by Architect, for Owner's purposes and only by a proposal that indicate amounts to be charged to the allowance.
- E. Payment shall be made in accordance with Section 012900, "Payment Procedures", and GENERAL CONDITIONS.
- F. These Specialty Allowances are included in the Contract Sum. However, Contractor must submit a proposal and obtain authorization from the Owner for the use of the funds from the Specialty Allowance.
- G. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count. If the actual work requires more or fewer quantities than those quantities indicated in the proposal, provide the actual quantities to be applied against the Specialty Allowance.
- H. At Project closeout, credit all unused amounts remaining in the specialty allowances back to the Owner.
- I. General Contractor is advised that the proposed Specialty Allowance prices given to him shall be subject to negotiations and revisions resulting in final prices that shall be mutually agreed upon and approved by the Owner.
- J. Submit substantiation of scope of work, if any, claimed in proposal related to Specialty Allowances.
- K. Final payment for work governed by specialty allowance prices will be made on the basis for the actual measurements and quantities accepted by the Owner.
  - 1. List of Specialty Allowances: A schedule of Specialty Allowances is included in Part 3.

PART 2 - PRODUCTS (Not Used)

# PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

### 3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

## 3.3 SCHEDULE OF SPECIALTY ALLOWANCES

- A. In accordance with the General Conditions and Division 1, "Specialty Allowance", or "Unit Prices", when Owner orders work to be performed beyond the work limits as set forth in the Contract Documents including materials, operations, and items of work, etc., related to the specialty allowance items listed in the following schedule, the allowance prices for these items shall prevail.
- B. Accordingly, the Contractor is advised that the proposed Lump Sum Total Price given by him for the items listed below shall be subject to measurement negotiations and revisions resulting in <u>Final</u> prices which shall be mutually agreed upon.
- C. The Owner and Architect shall determine that the work associated with the Specialty Allowance items are applicable to this allowance and beyond the limits and requirements set forth within the Contract Documents.
- D. All costs associated with the Specialty Allowance prices noted in the Schedule below shall be provided within the proper Construction Bid Form as required by Section 00 12 50.
- E. **Precedence of Allowances:** For all work beyond the limits and requirements as set forth within the Contract Documents, the use of the Unit Price Allowance Items shall take precedence over the use of **Specialty Allowances 1 through 7**, as described below.
- F. **SA-1 Removal of Unknown Below-Grade Site Structures:** Include **\$30,000** for the demolition, removal and disposal off-site of unforeseen below-grade existing infrastructure (utilities, foundation walls and footings, tanks, rubble, etc.) within the Project site, due to unknown and unforeseen conditions that require resolution to enable the proper and complete construction of the Project. Removal of unknown and unforeseen below-grade hazardous materials is included in this allowance, and shall be performed with applicable Division 02 Environmental Sections. Such work may require environmental testing and

laboratory services to determine the actual extent of contamination in accordance with Division 01 Section "Environmental Inspection, Testing and Laboratory Services." The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.

- G. <u>SA-2 Removal of Hazardous Roof Material:</u> Include \$25,000.00 for the abatement and removal of hazardous roof material within the roofing system of the SUI building to the extent of the roof replacement. The work may require environmental testing and laboratory services to determine the actual extent of contamination in accordance with Division 01 "Environmental Inspection, Testing & Laboratory Services. All Environmental work shall be performed in strict accordance with Division 02 Section "Asbestos Abatement". This unforeseen or unsatisfactory condition requires resolution to enable the proper and complete construction of the Project. The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.
- H. SA-3 Removal of Hazardous Material from Existing Fire Suppression System and Fire Alarm/Detection System in the OSTC Portion of SUI Building: Include \$15,000.00 for the abatement and removal of hazardous material associated with the existing fire suppression system upgrade within the OSTC portion of the SUI Building as defined in the Contract Documents. The work may require environmental testing and laboratory services to determine the actual extent of contamination in accordance with Division 01 "Environmental Inspection, Testing & Laboratory Services. All Environmental work shall be performed in strict accordance with Division 02 Section "Asbestos Abatement". This unforeseen or unsatisfactory condition requires resolution to enable the proper and complete construction of the Project. The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.
- SA-4 Repair of the Existing Concrete Masonry Partition that Separates the I. Renovated YDC Portion of the SUI Building from the OSTC Portion of the SUI Building: Include \$10,000.00 for the repair and infill of the existing concrete masonry wall between the new YDC portion of the SUI Building and the existing OSTC portion of the SUI Building on both the first and second existing floor levels. It is unknown whether the existing wall runs to the underside of the floor or roof deck and that all penetrations, and openings throughout the height and length of the wall are properly infilled, sealed, and made smoketight to ensure a sound smoke barrier as shown in the construction documents. Smaller opening may be firesafed or smoke sealed. Larger openings may be receive a more stable infill system. This unforeseen or unsatisfactory condition requires resolution to enable the proper and complete construction of the Project. The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.
- J. <u>SA-5</u> Upgrade to Existing Fire Suppression System in OSTC Occupied Portion of SUI Building: Include \$45,000 for the upgrade or replacement of the existing fire suppression system in the OSTC occupied portion of the SUI Building. This may include, but not be limited to: replacement or relocation of sprinkler heads, provision of new sprinkler heads, replacement of existing piping, provision of new fire suppression piping, removal and reinstallation of existing suspended ceilings to obtain access to fire suppression systems, etc. This unforeseen or unsatisfactory condition requires resolution to enable the

proper and complete construction of the Project. The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.

- K. SA-6 Resolution to Unknown Below Grade or Hidden Utility Conflicts: Include \$25,000.00 for the resolution of below grade conflicts between new work and existing utilities or structures within Forrest St. This work may include, but not be limited to: relocation of new work to accommodate existing conditions to remain in place, alternate detailing to bridge over an existing utility, etc. These unknown or unforeseen conditions require resolution to enable the proper and complete construction of the Project. The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.
- L. <u>SA-7 Penetration Scan of First Floor "Dox Plank" Type Slab System in</u> <u>YDC Renovation Area of SUI Building to Locate Existing Reinforcing for</u> <u>New Openings:</u> Include \$10,000 to perform a penetration scan of the existing "Dox Plank" type slab system in the YDC renovation area of SUI Building in order to determine the configuration of the reinforcing in the existing system. This information will be used by the Architect, and its consultants, to properly locate and detail the new openings in the slab for the new work (ducts, piping, chases, conduits, etc.) relative to the reinforcing. The scan only needs to occur where penetrations occur or existing large openings are to be filled. This unforeseen or unsatisfactory condition requires resolution to enable the proper and complete construction of the Project. The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.
- M. SA-8 Maintenance of Electrical Service to Occupied Areas of SUI Building: Include \$30,000 for BGE costs associated with a temporary transformer and meter to main electrical service to the OSTC and other occupied areas of the SUI Building. Allowance does not apply to all other costs associated with maintaining this service, including cable, conduit, breakers and other equipment and labor, which shall be included in the bid price before the addition of the Allowance.
- N. SA-9 Repairs to Existing 15kV Switchgear in D-Block Basement: Include \$7,500 for repairs to existing switchgear in D-Block Basement required to perform the Work of this contract. The Owner and Architect shall determine that the work is applicable to this allowance and beyond the requirements set forth within the Contract Documents.

END OF SECTION 01 21 00

# SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices:
  - 1. The unit prices in the UNIT PRICE SCHEDULE shall be used to increase or decrease the contract price depending upon the quantities of the items actually measured in place and authorized by the Owner. Each unit price shall include all work, materials and incidentals necessary to complete the Work required by the item.
  - 2. The unit costs will be used to adjust the Contract Sum and shall include all direct and indirect costs, as noted below. The unit price work is above and beyond the work shown in the Contract Documents and the project work limits, however, during the course of the Work, the Owner may direct their incorporation as necessary. Payment for unit price items will be made on the basis of the quantities actually measured in place.
- B. Types of allowances include the following:
  - 1. Specialty allowances per Section 012100, Specialty Allowances
  - 2. Unit Price Allowances:
    - a. For purposes of this Information for Bid (IFB), a Unit Price Allowance has been developed which includes quantity-unit assumptions. The Contractor shall apply a unit cost to determine a total allowance for each Unit Price noted in the Unit Price Schedule. The Lump Sum total of the Unit Price Schedule is to be included in the Bid, Paragraph B, Section 00 12 50, Construction Bid Form.
    - b. As noted in Paragraph 1.2, A above, the Contractor's unit costs and actual measured quantities, will be charged to the Unit Price Allowance. Any adjustment to the Contract Sum due to a difference between the Unit Price Allowance and the actual used will be resolved as noted above, and in Section 01 29 00, Payment Procedures.
- C. Related Requirements:
  - 1. Division 01 Section 012100 "Specialty Allowance" for procedures for using the specialty allowances.
  - 2. Division 01 Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
  - 3. Division 01 Section 012900 "Payment Procedures" for Application for Payment.
  - 4. Division 01 Section 014000 "Quality Requirements" for general testing and inspecting requirements.

- 5. Division 01 Section 016000 "Product Requirements" for Product Options and Substitutions.
- 6. Division 31 Section 312500 "Erosion and Sediment Control.
- 7. Divisions 02 through 33 Sections for items of Work covered by allowances.

### 1.3 DEFINITIONS

- A. Unit price is an amount proposed by the Bidders and stated on the Bid Form as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.
- B. Rock: Any material which cannot be removed by methods other than special rock excavation machinery, drilling, wedging and/or blasting shall be termed rock excavation. All other excavations shall be termed earth excavation. Should boulders be encountered, those in size up to 1/2 cubic yard shall be termed earth excavation.

# 1.4 ACTION SUBMITTALS

A. Submit proposals for Owner's approval for purchase of products or systems included in allowances, in the form specified for Change Orders, as specified in Section 01 26 00, Contract Modification Procedures.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each unit price allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of unit price allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

# 1.6 COORDINATION

1.7 Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

# 1.8 PROCEDURES

A. Unit Price Costs include: Cost of material, product or services to General Contractor and/or Subcontractor, less applicable trade discounts; all applicable direct and indirect costs; delivery to site; applicable fees and taxes, permit costs, warranty costs, bond costs, unemployment compensation, and insurance costs; testing and cleanup; overhead and profit; labor and installation; finishing; unloading, uncrating, handling, and storage; protection from elements and damage; submittals, engineering, and shop drawing requirements; supplementary or miscellaneous items, appurtenances and devices, tools or equipment incidental to or necessary for a sound, secure and complete installation.

- B. Use the Unit Prices only as directed by Owner and reviewed by Architect, for Owner's purposes and only by a proposal that indicate amounts to be charged to the unit price allowance.
- C. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
  - 1. Quantities Specified:
    - a. Quantities indicated in the Construction Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the owner determine payment.
    - b. If the actual work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted.
  - 2. Measurement of Quantities:
    - a. The calculations for determining the number of units of work, unless otherwise noted, shall be of actual units of measurement for the class of work, complete in place and accepted or omitted. No allowance for waste, loss, bulking factor, or damage will be made.
    - b. Measurement by devices:
      - 1) Weigh scales: Inspected, tested and certified by the applicable State Weights and Measures department within the past year.
      - 2) Platform scales: Of sufficient size and capacity to accommodate the conveying vehicle.
      - 3) Metering devices: Inspected, tested and certified by the applicable State department within the past year
    - c. Measurement by weight: Handbook or scale weight.
    - d. Measurement by volume: Measured by cubic dimension using mean length, width and height or thickness.
    - e. Measurement by area: Measured by square dimension using mean length and width or radius.
    - f. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
    - g. Hours
    - h. Numbers by individual items
  - 3. Take all measurements and compute quantities. The Owner in coordination with the Agency Construction Manager will verify measurements and quantities.
- D. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor. If found that the Contractor's measurement was unreasonably determined, the expense will revert to the Contractor.
  - 1. If the unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated increase or decrease by more

than twenty percent (20%), or if application of the agreed unit prices to the quantities of work proposed will cause substantial inequity to the Owner or the Contractor, the applicable unit prices shall be equitably adjusted.

- E. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
- F. Payment shall be made in accordance with Section 012900, "Payment Procedures", and GENERAL CONDITIONS.

# G. AT PROJECT CLOSEOUT, CREDIT ALL UNUSED UNIT PRICE ALLOWANCES REMAINING BACK TO THE OWNER.

- H. General Contractor is advised that the proposed unit allowance prices given by him shall be subject to negotiations and revisions resulting in final prices that shall be mutually agreed upon and approved by the Owner.
- I. Submit substantiation of scope of work, if any, claimed in proposal related to Unit Price Allowances.
- J. Final payment for work governed by unit allowance prices will be made on the basis for the actual measurements and quantities, accepted by the Owner and Agency Construction Manager, and multiplied by the unit sum/price for work, which is incorporated in or made necessary by the work.
- K. List of Unit Price Allowances: A schedule of Unit Price Allowances is included in Part 3.
- L. All unit prices shall apply equally to both additions and/or deductions.
- PART 2 PRODUCTS (Not Used)

# PART 3 - EXECUTION

#### 3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

#### 3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

# 3.3 SCHEDULE OF UNIT PRICES ALLOWANCES

A. In accordance with the General Conditions and Division 1, "Specialty Allowance", or "Unit Price Allowances", when Owner orders work to be performed beyond the work limits, as set forth in the Contract Documents, including materials, operations, and items of work, etc., related to the unit price allowance items listed in the following schedule, the unit price allowance prices for these items shall prevail.

- B. Accordingly, the Contractor is advised that the proposed Lump Sum Total Price given by him for the items listed below shall be subject to measurement negotiations and revisions resulting in <u>Final</u> prices which shall be mutually agreed upon.
- C. The Owner and Architect shall determine that the work associated with the Unit Price Allowance items are applicable to this allowance and beyond the limits and requirements set forth within the Contract Documents.
- D. All costs associated with the Unit Price Allowance items noted in the Schedule below shall be provided within the Construction Bid Form as required by Section 00 12 50, CONSTRUCTION BID FORM.

# E. **Precedence of Allowances:**

1. For all work beyond the limits and requirements as set forth within the Contract Documents, the use of the Unit Price Allowance Items shall take precedence over the use of **Specialty Allowances 1 through 4**, as described in Division 01, Section "Specialty Allowance Schedule".

# F. UPA-1, Filling of Existing Openings in Gypsum Deck System in YDC Renovation Area of SUI Building, in Place:

1. Provision, per square feet, for filling/patching of existing gypsum roof deck openings up to 6 inches deep, in accordance with structural detail shown in Structural Construction Drawings. **Quantity = 500 SF;** 

# G. UPA-2, Rock Excavation and replacement with satisfactory soil material:

1. Provision, per cubic yard, for open rock excavation, including rock excavation in trenches, caissons, and including disposal off site, and replacement with satisfactory fill material or engineered fill form off site, according to Section 312000 "Earth Moving"; **Quantity = 250 CY**;

# H. UPA-3, Removal of Unsuitable Material (backfill with structural fill material):

 Provision, per cubic yard, for removal of unsuitable material and replacement with structural fill for backfill adjacent to foundations, below paved areas, at utility excavations, behind walls and within 5 feet of building foundations in accordance with Section 312000, "Earth Moving"; Quantity = 1200 CY;

# I. UPA-4, Removal of Unsuitable Material (Backfill with Aggregate Fill Material):

 Provision, per cubic yard, for removal of unsuitable material within the building footprint below sub-grade elevation indicated on the drawings and replacement with aggregate fill material in accordance with the Geotechnical Report prepared by EBA Engineering, August, 2014. Allowance does not apply to backfill of voids created by the demolition work that are located below the proposed building foundations and slabs-on-grade, which shall be included in the bid price before the addition of the prices for the Specialty and Unit Price Allowances. Quantity = 1500 CY;

# J. UPA-5, Provision of Exit Signs, in Place:

 Provision of additional exit lights as specified in Section 265100, "Interior Lighting", and in accordance with Contract Documents; Need and location shall be as determined by Owner, and Architect, or State Fire Marshall, and shall include attachments, installation, and applicable required wiring. Quantity = 10 Exit Signs and 100 LF wiring per sign;

# K. UPA-6, Provision of Security Cameras:

- 1. Provision of security camera types noted below, including installation, conduits, and wiring/cabling in accordance with Division 28, "Electronic Safety and Security". Camera types:
  - a. Interior IP Fixed 0.3 Mega Pixel Camera; **Quantity = 5 Cameras and 150** LF wiring per camera;
  - b. Exterior IP Fixed 0.3 Mega Pixel Camera; Quantity = 5 Cameras and 150 LF wiring per camera;
  - c. Exterior IP Fixed 1.3 Mega Pixel Camera; Quantity = 1 Cameras and 150 LF wiring per camera;
  - d. Interior IP Fixed 1.3 Mega Pixel Camera; Quantity = 2 Cameras and 150 LF wiring per camera;
  - e. Wall Mount IP, V-Cell Fixed Camera; Quantity = 1 Cameras and 150 LF wiring per camera;
  - f. Corner Mount IP, V-Cell Fixed Camera; **Quantity = 3 Cameras and 150** LF wiring per camera;
- L. **UPA-7**, Patching of Existing Concrete Roof Slab where Roofing Material is Removed on SUI Building:
  - 1. Provision, per square feet, of concrete leveling repair system for spalled, chipped damaged or deteriorated gypsum roof deck in accordance, including equipment, materials, placing, complete; **Quantity = 1200 SF**

# M. UPA-8, Replacement of Conduit & Wiring for Existing OSTC Fire Alarm System:

1. Provision, per linear feet, of replacement conduit and wiring for the existing fire alarm system conduit and wiring, including equipment, materials, placing, complete; **Quantity = 5000 LF** 

# N. UPA-9, Replacement of Duct Detectors for Existing OSTC Fire Alarm System:

- 1. Provision, per duct detector, including new duct detector, wiring, and conduit to nearest addressable loop, programming of fire alarm panel, removal of existing control wiring for AHU shut down, reconnection to new duct detector and fire alarm panel, complete; **Quantity = 10 EA and 100 LF of wiring and conduit.**
- O. **UPA-10,** Filling of Existing Small Unreinforced Openings (< .5 SF) in First Floor "Dox Plank" Type Slab System in YDC Renovation Area of SUI Building:
  - 1. Provision, per square feet, of concrete fill, in accordance with structural detail shown in Structural Construction Drawings, including equipment, materials, placing, complete; **Quantity = 250 SF**

- P. **UPA-11**, Filling of Existing Large Reinforced Openings (> .5 SF) in First Floor "Dox Plank" Type Slab System in YDC Renovation Area of SUI Building:
  - 1. Provision, per square feet, of reinforced concrete fill, steel support framing, and metal deck, in accordance with structural detail shown in Structural Construction Drawings, including equipment, materials, placing, complete; **Quantity = 250 SF**
- Q. **UPA-12**, Filling of Existing Openings in Second Floor Metal Deck and Concrete Slab System in YDC Renovation Area of SUI Building:
  - 1. Provision, per square feet, of reinforced concrete fill, steel support framing, and metal deck, in accordance with structural detail shown in Structural Construction Drawings, including equipment, materials, placing, complete; **Quantity = 250 SF**

END OF SECTION 01 22 00





ADDENDUM # 4 02/2

02/26/2015

SIGNAGE DRAWINGS

10 14 00 ATTATCHMENT B 2/9



ADDENDUM # 4 02/26/2015

SIGNAGE DRAWINGS

10 14 00 ATTATCHMENT B 3/9



10 14 00 SIGNAGE










BUILDING SIGNAGE SCHEDULE												
					DOO	R TAG						SIGN
	A NUMBER		ITECTURAL R NUMBER		Ж		NOITA		×	TION	<b>RKS</b>	
	00		RCH	YPE	OLO	nrr :	NSH	YPE	OIO	OCA.	EMA	TEVT
BASEMENT	E002	ELECTRICAL ROOM	11.1.22	-	-	4		-	-		<u> </u>	ILAI
BASEMENT	E003	MECHANICAL ROOM	11.1.20	-	-				-			
BASEMENT	E004	ELECTRICAL ROOM	11.1.18	-	-				-			
BASEMENT	E008	CLASSROOM	11.1.28	-	-				-			
BASEMENT	E008		11.1.29	-	-				-			
BASEMENT	E009	MECHANICAE ROOM	11.1.17	-	-				-			
BASEMENT	E011	ELEVATOR	-	-	-				-			
BASEMENT	E012	STAIR 4	11.1.21	-	-			-	-	-		
BASEMENT	11.0.1	MAIN ELECTRIC ROOM	11.0.1A	1.0	-	Х	-	3.0	-	WHL		ELECTRIC RM.
BASEMENT	11.0.1	EMERGENICY ELECTRIC ROOM	11.0.1B	1.0	-	X	-	3.0	-	WHL		ELECTRIC RM.
BASEMENT	11.0.2	MDF ROOM	11.0.2	1.0	-	x	-	3.0	-	WSI		
BASEMENT	11.0.4	WATER SPRINKLER ROOM	11.0.4	1.0	-	X	-	3.0	-	WHL		WATER SPRINKLER
BASEMENT	-		11.1.19	1.0	-	-	-	-	-	-		
FIRST FLOOR	0.1	ENTRY VEST.	0.1A	1.0	-	-	Х	-	-	-		-
FIRST FLOOR	0.1	CALLVDODT	0.1B	1.0	-	-	X	-	-	-		-
	0.2	SALLYPORT	0.2A	1.0	-	X	X	12	-	ופח		- NO VISITORS BEVOND THIS POINT
FIRST FLOOR	0.2		0.2D	1.0	-	X	X	-	-	-		-
FIRST FLOOR	0.3	STAFF SALLY	0.3A	1.0	-	Х	Х	3.0	-	DPL	2	MASTER CONTROL
FIRST FLOOR	0.3		0.3B	1.0	-	Х	Х	-	-	-		-
FIRST FLOOR	0.4	QUEUING AREA	-	-	-	-	-	4.2	-	CLG	1	SECURITY SCREENING
FIRST FLOOR	0.6	SECURITY SCREEN	0.6	1.0	-	Х	Х	-	-	-		-
FIRST FLOOR	0.8.1	W TIT	- 0.8.1	1.0	-	×	-	32	-	WSI		- WOMEN
FIRST FLOOR	0.8.1	W. TLT.	0.8.1	-	-	-	-	4.0	-	DPH		VISITORS ONLY
FIRST FLOOR	0.8.2	M. TLT.	0.8.2	1.0	-	Х	-	3.3	-	WSL		MEN
FIRST FLOOR	0.8.2	M. TLT.	0.8.2	-	-	-	-	4.0	-	DPH		VISITORS ONLY
FIRST FLOOR	1.0	CORRIDOR	1.0A	1.0	-	X	X	4.2	-	DPL		NO VISITORS BEYOND THIS POINT
	1.0		1.0B	1.0	-	- X	X	3.0	-	DPH		ADMINISTRATION SUPPORT
FIRST FLOOR	1.2	MGT. ASSOC. OFFICE	1.2	1.0	-	-	X	3.1	-	DPH		"NAME & TITLE"
FIRST FLOOR	1.3	CONF. RM.	1.3A	1.0	-	Х	-	3.0	-	DPL		CONFERENCE RM.
FIRST FLOOR	1.3		1.3B	1.0	-	-	Х		-	-		-
FIRST FLOOR	1.4	ADMIN. SUPPORT	-	-	-	-	-	-	-	-		-
	1.5	SUPPLY CLOS.	1.5	-	-	-	X	3.0	-	WSH		
FIRST FLOOR	1.0	STAFF TLT.	1.7	1.0	-	-	X	3.4	-	WSH		STAFF
FIRST FLOOR	2.9.1	LT. OFFICE	2.9.1	1.0	-	-	X	3.0	-	WSH	3	LIEUTENANT
FIRST FLOOR	2.10.1	COUNSELOR OFFICE	2.10.1	1.0	-	Х	-	3.1	-	WSL		"NAME & TITLE"
FIRST FLOOR	2.11.1	CASE MGR. OFFICE	2.11.1	1.0	-	Х	-	3.1	-	WSL		"NAME & TITLE"
FIRST FLOOR	3.0.1	CORR.	3.0.1	1.0	-	X	Х	2.0	-	14/51		
FIRST FLOOR	3.1.1	HOLD	312	1.0	-	x	-	3.0	-	WSL		HOLD 1 HOLD 2
FIRST FLOOR	3.2	Y. TLT.	3.2	1.0	-	X	-	3.4	-	WSL		YOUTH
FIRST FLOOR	3.3	ADMISS. / REL. OFF.	3.3	1.0	-	-	Х	3.0	-	WSH	3	ADDMISSION/RELEASE
FIRST FLOOR	3.6	SECURE VEST.	3.6A	1.0	-	Х	Х	-	-	-		-
FIRST FLOOR	3.6		3.6B	1.0	-	X	X	-	-	-		-
	3./		3.7B	1.0	-	X	X	-	-	-	-	-
FIRST FLOOR	4.0.1	CORR.	4.0.1 4.0.2A	1.0	-	x	-	-	-	-		-
FIRST FLOOR	4.0.2		4.0.2B	1.0	-	X	-	-	-	-		-
FIRST FLOOR	4.0.3	CORR.	4.0.3	1.0	1	Х	Х	3.0	-	WSH		HEALTH SERVICES
FIRST FLOOR	4.0.4	CORR.	4.0.4	1.0	-	Х	Х	-	-	-		
FIRST FLOOR	4.1	YOUTH WAITING	4.1	1.0	-	X	-	3.0	-	WSL		WAITING ROOM
FIRST FLOOR	4.2	CLINICIAN EXAM RM.	4.2	1.0	-	X	-	3.0	-	WSL		EXAM 1
FIRST FLOOR	4.4.1	YOUTH TLT.	4.4.1	1.0	-	-	х	3.4	-	WSH		YOUTH
FIRST FLOOR	4.4.2	YOUTH TLT.	4.4.2	1.0	1	1	Х	3.4	-	WSH		YOUTH
FIRST FLOOR	4.5	NURSE STATION	4.5A	1.0	-	Х	-	-	-	-		-
FIRST FLOOR	4.5		4.5B	1.0	-	-	X	-	-	-		
	4./	ADIVIIN. SUPPORT RM.	4./A	1.0	-	- V	X	3.U 2.0	-	WSH W/CI		HEALTH SERVICES ADMINISTRATION
FIRST FLOOR	4.7	SUPPLY STOR.	4.70	1.0	-	x	-	3.0	-	WSL		STORAGE CLOSFT
FIRST FLOOR	4.9	MEDICAL FILE WORKROOM	4.9	1.0	-	-	х	3.0	-	WSH		FILE ROOM
FIRST FLOOR	4.10.1	MED. SUPPLY RM.	4.10.1	1.0	-	-	Х	3.0	-	WSH		MEDICAL SUPPLY 2
FIRST FLOOR	4.10.2	MED.SUPPLY RM.	4.10.2	1.0	-	Х	-	3.0	-	WSL		MEDICAL SUPPLY 1
FIRST FLOOR	4.11	SECURE MED. RM.	4.11	1.0	-	X	-	3.0	-	WSL	2	SECURE MEDICATION
	4.12		4.12	1.0	-	X	-	3.0	-	WHL	3	DENTAL
FIRST FLOOR	4.14	COMP. RM.	4.14	1.0	-	x	-	-	-	-		-
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BUILDING SIGNAGE SCHEDULE												
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LEVEL	ROG	ROOM NAME	ARC DO(	ТҮР	CO	PUL	PUS	ΤYP	COL	ГÓ	REN	TEXT
FIRST FLOOR	4.15.1	STAFF TLT.	4.15.1	1.0	-	-	Х	3.4	-	WSH		STAFF
FIRST FLOOR	4.15.2	STAFF TLT.	4.15.2	1.0	1	-	Х	3.4	-	WSH		STAFF
FIRST FLOOR	4.16	PHYS. / PSYCH. OFFICE	4.16	1.0	-	-	Х	3.0	-	WSH		OFFICE
FIRST FLOOR	4.17		4.17	1.0	-	X	-	3.0	-	WSL	-	
FIRST FLOOR	4.18	ISOLATION RM (ADA)	4.18	1.0	-	X	-	3.0	-	-		EDUCATION SERVICES
FIRST FLOOR	4.20.2	ISOLATION RM.	4.20.2	1.0	-	X	-	-	-	-		-
FIRST FLOOR	4.21.1	ANTE	4.21.1	1.0	-	Х	-	3.0	-	WSL	3	ISOLATION ROOM 1
FIRST FLOOR	4.21.2	ANTE	4.21.2	1.0	-	Х	-	3.0	-	WSL	3	ISOLATION ROOM 2
FIRST FLOOR	4.22.1	INFIRM. RM. (ADA)	4.22.1	1.0	-	Х	-	3.0	-	WSL		INFIRM RM 1
FIRST FLOOR	4.22.2	INFIRM. RM.	4.22.2	1.0	-	X	-	3.0	-	WSL	-	INFIRM RM 2
FIRST FLOOR	4.22.3	INFIRM. RM. (ADA)	4.22.3	1.0	-	X	-	3.0 5.0	-	DPI		
FIRST FLOOR	4.23.2	SAFE CELL	4.23.2	1.0	-	X	-	5.0	-	DPL		SAFE CELL 2
FIRST FLOOR	4.23.3	SAFE CELL	4.23.3	1.0	-	Х	-	5.0	-	DPL		SAFE CELL 3
FIRST FLOOR	4.23.4	SAFE CELL (ADA)	4.23.4	1.0	-	Х	-	5.0	-	DPL		SAFE CELL 4
FIRST FLOOR	4.24	C.U.	4.24	1.0	-	Х	-	3.0	-	WSL		CLEAN UTILITIES
FIRST FLOOR	4.25	S.U.	4.25	1.0	-	X	-	3.0	-	WSL		SOILED UTILITIES
FIRST FLOOR	4.26.1	SAFE SHOWER	4.20.1	1.0	-	×	-	3.0	-	W/SL		SHOWER 1
FIRST FLOOR	5.1	PYSCH. OFFICE	5.1	1.0	-	X	-	3.1	-	WSL	3	"NAME & TITLE"
FIRST FLOOR	5.2	CLINICIAN OFFICE	5.2	1.0	-	Х	-	3.1	-	WSL	3	"NAME & TITLE"
FIRST FLOOR	5.3	GROUP ASSESS. / INTERVENTION	5.3	1.0	1	Х	-	3.0	-	WSL	3	GROUP ASSESSMENT
FIRST FLOOR	5.4	B.H. STOR.	5.4	1.0	-	-	Х	3.0	-	WSH		STORAGE CLOSET
FIRST FLOOR	6	BEV. COOLER			-				-		-	
FIRST FLOOR	6.1	HOT & COLD PREP	6.24	1.0	-	Y	- X	-	-			
FIRST FLOOR	6.2		0.2A	1.0	_	~	~	4.4	-	DPL		FOOD SERVICES RECEIVING
FIRST FLOOR	6.2		6.2B	1.0	-	Х	х	-				
FIRST FLOOR	6.2							4.4	-	DPL		FOOD SERVICES
FIRST FLOOR	6.2		6.2C	1.0	-	Х	Х	3	-	WSH		FOOD SERVICES
FIRST FLOOR	6.3	AMBIENT STOR.	6.3	1.0	-	-	Х	3.0	-	WSH	-	AMBIENT STORAGE
FIRST FLOOR	6.4	IAN	6.5	10	-	-	x	3.0	-	WSH		IANITOR CLOSET
FIRST FLOOR	6.6	YOUTH DINING RM.	6.6A	1.0	-	х	X	-	-			5 MILLON 020021
FIRST FLOOR	6.6		6.6B	1.0	-	Х	Х	3.0	-	WSH		DINNING ROOM
FIRST FLOOR	6.7	CLEAN CART	6.7	1.0	-	Х	-	4.4	-	DPL		CLEAN CART
FIRST FLOOR	6.8	NON-FOOD STOR	6.8	1.0	-	-	Х	3.0	-	WSH		NON-FOOD STORAGE
	6.9		6.9	1.0	-	X	-	4.4	-	DPL W/SI		CAN WASH STAFE
FIRST FLOOR	6.11	SANITIZ.	6.11	1.0	-	X	X	3.0	-	WSH		SANITIZE
FIRST FLOOR	6.12	F.S. OFF.	6.12	1.0	-	Х	-	3.0	-	WSL		OFFICE
FIRST FLOOR	6.13	JAN.	6.13	1.0	1	-	Х	3.0	-	WSL		JANITOR CLOSET
FIRST FLOOR	6.14	SOILED CART	6.14	1.0	-	Х	-	4.4	-	DPL		SOILED CART
FIRST FLOOR	7.1	MASTER CONTROL	-	-	-	- V	- V	-	-	- \\/CLI		
FIRST FLOOR	7.10	STAFF LOCKER	7.10	1.0	-	×	X	3.0	-	WSH		ROLL CALL
FIRST FLOOR	7.4.1	SECURITY ELEC.	7.4.1	1.0	-	X	-	3.0	-	WSH		SECURITY ELECTRIC RM.
FIRST FLOOR	7.5	CAPT. OFFICE	7.5	1.0	1	-	Х	3.1	1	WSH	3	"NAME & TITLE"
FIRST FLOOR	7.6	STAFF BREAK AREA	-	-	-	-	-	-	-	-		-
FIRST FLOOR	7.7	STAFF SALLY		-	-				-			67455
FIRST FLOOR	7.8	STAFF ILI.	7.8	1.0	-	X	- X	3.4	-	WSL WSH		STAFF STAFF TOU FT/SHOW/FR
FIRST FLOOR	8.1.1	INTER.	8.1.1	1.0	-	-	X	3.0	-	WSL		C
FIRST FLOOR	8.1.2	N.C. INTER.	8.1.2	1.0	-	Х	-	3.0	-	WSL		В
FIRST FLOOR	8.1.3	N.C. INTER.	8.1.3	1.0	-	Х	-	3.0	-	WSL		В
FIRST FLOOR	8.1.4	N.C. INTER.	8.1.4	1.0	-	Х	-	3.0	-	WSL		A
FIRST FLOOR	8.1.5	N.C. INTER.	8.1.5	1.0	-	Х	-	3.0	-	WSL		Α
FIRST FLOOR	841	SEARCH	841	1.0	-	x	-	3.0	-	WSI		SEARCH 1
FIRST FLOOR	8.4.2	SEARCH	8.4.2	1.0	-	X	-	3.0	-	WSL		SEARCH 2
FIRST FLOOR	8.6	YOUTH TLT.	8.6	1.0	-	Х	-	3.4	-	WSL		YOUTH
FIRST FLOOR	8.7	CORR.	8.7A	1.0	-	Х	Х	4.2	-	DPL		NO VISITORS BEYOND THIS POINT
FIRST FLOOR	8.7		8.7B	1.0	-	X	Х	-	-	-		-
FIRST FLOOR	10.8F	FEIVIALE OUTDOOR REC.	10.8F	1.0	-	X	- V	-	-	- \\//CLI		- EMERGENCY EVIT STAID
FIRST FLOOR	11.1 1	SIAINA	11.1.1A	- 1.0	-	-	-	2.0	-	WSI	1	STAIR A/ FLOOR 1
FIRST FLOOR	11.1.1		11.1.1B	1.0	-	х	х	4.0	-	DPH	-	EXIT TO GRADE
FIRST FLOOR	-	CORR.	-	-	-	-	-	-	-	-		-
FIRST FLOOR	11.1.4	JAN.	11.1.4	1.0	-	Х	-	3.0	-	WSL		JANITOR CLOSET
FIRST FLOOR	11.1.5	STAIR B CORR.	11.1.5A	1.0	-	Х	X	4.0	-	DPH		EXIT TO GRADE
FIRST FLOOR	11.1.5		11.1.5B	1.0	-	Х	Х	4.0	-	DPH		EXIT TO GRADE

BUILDING SIGNAGE SCHEDULE												
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LEVEL	ROC	ROOM NAME	ARC	TYΡ	CC	2 UL	۶Uc	TYΡ	COL	ГОС	REV	TEXT
FIRST FLOOR	11.1.6	MECH. RM.	11.1.6	1.0	-	X	-	3.0	-	WSL		MECHANICAL RM.
FIRST FLOOR	-	ELEVATOR	-	-	-				-			
FIRST FLOOR	11.1.8	MECH. RM.	11.1.8	1.0	-	Х	Х	4.4	-	DPL		MECHANICAL RM.
FIRST FLOOR	11.1.9	ELEC. RM.	11.1.9	1.0	-	Х	Х	4.4	-	DPL		ELECTRIC RM.
FIRST FLOOR	11.1.10	STAIR B	11.1.10A	1.0	-	X	X	2.0	-	WHH	3,4	EMERGENCY EXIT STAIR
	11.1.10		11.1.10B	1.0	-	X	X	2.0	-	WHH	3,4	
FIRST FLOOR	11.1.10	CORR	- 11 1 14	10	-	x	x	4.0	-	ADH	2	EXIT TO OSTC
FIRST FLOOR	11.1.15	MECH.	11.1.15	1.0	-	X	-	3.0	-	WSL		MECHANICAL RM.
FIRST FLOOR		SECURE DOCK (COVERED)			-				-			
FIRST FLOOR		OPEN DOCK (COVERED)		-	-				-			
FIRST FLOOR		SECURE DOCK (COVERED)		-	-				-			
	11.5	SUPPLY STOR.	11.5A	1.0	-	X	X	3.0	-	WSH		
FIRST FLOOR	2F 0 1	SALLY	2E 0 14	1.0	-	×	×	4.2	-		2	F
FIRST FLOOR	2F.0.1	5/(21	2F.0.1B	1.0	-	X	X	-	-	-	-	-
FIRST FLOOR	2F1.1	BEDROOM	2F1.1	1.0	-	Х	-	5.0	-	DPL		2
FIRST FLOOR	2F.1.2	BEDROOM	2F.1.2	1.0	-	Х	-	5.0	-	DPL		3
FIRST FLOOR	2F.1.3	BEDROOM	2F.1.3	1.0	-	Х	-	5.0	-	DPL		4
FIRST FLOOR	2F.1.4	BEDROOM	2F.1.4	1.0	-	Х	-	5.0	-	DPL		5
FIRST FLOOR	2F.1.5	BEDROOM	2F.1.5	1.0	-	X	-	5.0	-	DPL		6
FIRST FLOOR	2F.1.0 2F.1.7	BEDROOM	2F.1.0 2F.1.7	1.0	-	X	-	5.0	-	DPL		/ 8
FIRST FLOOR	2F.1.8	BEDROOM	2F.1.8	1.0	-	X	-	5.0	-	DPL		9
FIRST FLOOR	2F.1.9	BEDROOM	2F.1.9	1.0	-	Х	-	5.0	-	DPL		10
FIRST FLOOR	2F.2	ADA BEDROOM	2F.2	1.0	-	Х	-	5.0	-	DPL		1
FIRST FLOOR	2F.0.3	CORR.	2F.0.3	1.0	-	Х	Х	4.1	-	ADL	2	F
FIRST FLOOR	2F.3A	FEMALE DAYROOM	2F.3A	1.0	-	X	-	-	-	-		-
	2F.3B		2F.3B	1.0	-	X	-	-	-	-		-
FIRST FLOOR	2F.3C 2F.3D		2F.3C 2F.3D	1.0	-	X	-	-	-	-		
FIRST FLOOR	2F.3E		2F.3E	1.0	-	X	-	-	-	-		-
FIRST FLOOR	2F.4	GROUP ACTIVITY	2F.4	1.0	-	Х	-	3.0	-	WSL	3	GROUP ACTIVITY
FIRST FLOOR	2F.5	READING / WRITING	2F.5	1.0	-	Х	-	3.0	-	WSL	3	READING/WRITING
FIRST FLOOR	2F.6	SHOWER	-	-	-			5.1	-	DPL	1	А
FIRST FLOOR	2F.6		-	-	-			5.1		DPL	1	В
	2F.6	STOP	- 25.7	-	-	v		5.1		DPL	1	
FIRST FLOOR	-	STAFF STATION	-	-	-	-	-	-	-	-		-
FIRST FLOOR	2F.12	JAN.	2F.12	1.0	-	х	-	3.0	-	WSL		JANITOR CLOSET
FIRST FLOOR	2F.13	STAFF TLT.	2F.13	1.0	-	1	Х	3.4	-	WSH		STAFF
FIRST FLOOR	2F.14	YOUTH LAUNDRY	2F.14	1.0	-	Х	-	5.1	-	DPL		LAUNDRY
FIRST FLOOR	2F.15	C.U.	2F.15	1.0	-	Х	-	3.0	-	WSL		CLEAN UTILITIES
FIRST FLOOR	N/A	EXISTING STAIR TO BASEMENT @	-	-				4.4	-	DPL		MAIN ELECTRICAL ROOM
SECOND ELOOR	2.6	STAFF TIT	2.6	10	-	-	x	3.4	-	WSH		STAFE
SECOND FLOOR	2.7	STOR / C.U.	2.7	1.0	-	-	X	3.0	-	WSH		STORAGE/CLEAN UTILITIES
SECOND FLOOR	2.8	LOCAL CONTROL	-	-	-	ì	-	-	-	-		-
SECOND FLOOR	2.9.2	LT. OFFICE	2.9.2	1.0	-	-	Х	3.0	-	WSH	3	LIEUTENANT
SECOND FLOOR	2.10.2	COUNSELOR OFFICE	2.10.2	1.0	-	-	X	3.0	-	WSH	3	COUNSELOR
SECOND FLOOR	2.11.2		2.11.2	1.0	-	-	X	3.0	-	WSH	3	
SECOND FLOOR	9.1.1	CLASSROOM 1	7.4.Z 9.1.1	1.0	-	-	X	3.0	-	WSH WSI	3	
SECOND FLOOR	9.1.2	CLASSROOM 2	9.1.2	1.0	-	-	X	3.0	-	WSL	3	CLASSROOM 2
SECOND FLOOR	9.1.3	CLASSROOM 3	9.1.3	1.0	-	-	Х	3.0	-	WSL	3	CLASSROOM 3
SECOND FLOOR	9.1.4	SCIENCE LAB	9.1.4	1.0	-	-	Х	3.0	-	WSL	3	SCIENCE LAB
SECOND FLOOR	9.1.5	ART ROOM	9.1.5	1.0	-	-	Х	3.0	-	WSL	3	ART ROOM
SECOND FLOOR	9.2.1	CLASSROOM 4	9.2.1	1.0	-	-	X	3.0	-	WSL	3	CLASSROOM 4
SECOND FLOOR	9.2.2		9.2.2	1.0	-	-	X	3.0	-	WSL WSL	3	
SECOND FLOOR	9,3.1	COMPUTER LAB	9.3.1	1.0	-	-	x	3.0	-	WSL	3	COMPUTER LAB
SECOND FLOOR	9.3.2	STOR.	9.3.2	1.0	-	х	-	-	-	-	2	-
SECOND FLOOR	9.4.1	MEDIA CENTER	9.4.1A	1.0	-	Х	Х		-	WHL	3	MEDIA CENTER
SECOND FLOOR	9.4.1		9.4.1B	1.0	-	Х	Х	3.0	-	WSL	3	MEDIA CENTER
SECOND FLOOR	9.4.2	STOR.	9.4.2	1.0	-	X	-	-	-	-		-
SECOND FLOOR	9.4.3		9.4.3	1.0	-	X	-	-	-	-	2	-
	9.5		9.5	1.0	-	X	-	3.U 2.0	-	WSL W/SI	3	
SECOND FLOOR	9.7.1	YOUTH TLT.	9.7.1	1.0	-	x	-	3.4	-	WSL	3	YOUTH
SECOND FLOOR	9.7.2	YOUTH TLT.	9.7.2	1.0	-	х	-	3.4	-	WSL		YOUTH
SECOND FLOOR	9.8	TEACHER WORKROOM	9.8A	1.0	-	Х	Х	3.0	-	WSL	3	TEACHER WORKROOM
SECOND FLOOR	9.8		9.8B	1.0	-	Х	Х	3.0	-	WSL	3	TEACHER WORKROOM

		BUIL	DING S	<b>IGN</b>	AGE	SCH	EDU	LE				
					DOO	R TAG						SIGN
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LEVEL	R(	ROOM NAME	AF D(	É	ŭ	ЪГ	PL	F	ŭ	2	RE	TEXT
SECOND FLOOR	9.9	STAFF TLT.	9.9	1.0	-	-	Х	3.4	-	WSH		STAFF
SECOND FLOOR	9.10	GEN. STOR.	9.10	1.0	-	Х	-	3.0	-	WSL		STORAGE CLOSET
SECOND FLOOR	9.11	PRINCIPAL	9.11A	1.0	-	-	Х	3.1	-	WSH	3	"NAME & TITLE"
SECOND FLOOR	9.11		9.11B	1.0	-	X	-	3.0	-	WSL	_	PRINCIPAL
SECOND FLOOR	9.12	SPEC ED IEP MTG	9.12	1.0	-	X	-	3.0	-	WSL	3	MEETING
SECOND FLOOR	9.13	GUIDANCE CNSLR	9.13	1.0	-	Х	-	3.0	-	WSL	3	GUIDANCE
SECOND FLOOR	9.14	ADMIN. SUPPORT	9.14A	1.0	-	-	X	3.0	-	WSH	3	ADMIN SUPPORT
SECOND FLOOR	9.14	1441	9.14B	1.0	-	-	Х	3.0	-	WSH	3	
SECOND FLOOR	9.15		9.15	1.0	-	X	-	3.0	-	VVSL	2	JANITOR CLOSET
SECOND FLOOR	9.10		9.10	1.0	-	×	-	3.0	-	W/SL	2	
	0.19		0.19	1.0	-	×	-	3.0	-		2	"NAME & TITLE"
SECOND FLOOR	10.84		10.844	1.0		Ŷ	-	5.1		VV3L	3	
SECOND FLOOR	10.84	OUTDOOK NEC	10.8AR	1.0	-	X	-	-	-	_		
SECOND FLOOR	10.8R		10.8RA	1.0	-	x	-	-		-		_
SECOND FLOOR	10.0D	of Door REC	10.8BB	1.0	-	X	-	-	-	-		_
SECOND FLOOR	10.80	OUTDOOR REC	10.8CA	1.0	-	X	-	-	-	-		_
SECOND FLOOR	10.80		10.8CB	1.0	-	x	-	-	-	-		_
SECOND FLOOR	10.8D	OUTDOOR REC	10.8DA	1.0	-	X	-	-	-	-		-
SECOND FLOOR	10.8D		10.8DB	1.0	-	X	-	-	-	-		_
SECOND FLOOR	11.2.1	STAIR A	11.2.1	1.0	-	X	Х	2.0	-	WSH		EMERGENCY EXIT STAIR
SECOND FLOOR	11.2.1		11.2.1	-	-	-	-	2.2		WSL	1	STAIR A/FLOOR 2
SECOND FLOOR	11.2.5	CORR.	11.2.5A	1.0	-	Х	Х	2.0	-	WHH	3,4	EMERGENCY EXIT STAIR
SECOND FLOOR	11.2.5		11.2.5B	1.0	-	Х	Х	2.0	-	WHH	3,4	EMERGENCY EXIT STAIR
SECOND FLOOR	11.2.5		-	-	-	-	-	2.2	-	-	1	STAIR B/FLOOR 2
SECOND FLOOR	11.2.7	ELEVATOR	-	-	-				-			
SECOND FLOOR	11.2.10	STAIR B	-	-	-	-	-	-	-	-		-
SECOND FLOOR	11.2.15	CORR.	11.2.15	1.0	-	Х	Х	2.0	-	WSL		EMERGENCY EXIT STAIR
SECOND FLOOR	11.2.16	SALLY	11.2.16	1.0	-	Х	Х	2.0	-	WSL		EMERGENCY EXIT STAIR
SECOND FLOOR	11.2.17	IT. CLOS.	11.2.17	1.0	1	Х	-	3.0	1	WSL		IT CLOSET
SECOND FLOOR	11.2.18	ELEC.	11.2.18	1.0	1	Х	-	3.0	ŀ	WSL		ELECTRIC RM.
SECOND FLOOR	11.2.19	ELEC.	11.2.19	1.0	1	1	Х	3.0	1	WSH		ELECTRIC RM.
SECOND FLOOR	11.2.20	JAN.	11.2.20	1.0	1	Х	-	3.0	1	WSL		JANITOR CLOSET
SECOND FLOOR	2A.1.1	BEDROOM	2A.1.1	1.0	-	Х	-	5.0	-	DPL	2	1
SECOND FLOOR	2A.1.2	BEDROOM	2A.1.2	1.0	-	Х	-	5.0	-	DPL	2	2
SECOND FLOOR	2A.1.3	BEDROOM	2A.1.3	1.0	-	Х	-	5.0	-	DPL	2	3
SECOND FLOOR	2A.1.4	BEDROOM	2A.1.4	1.0	-	Х	-	5.0	-	DPL	2	4
SECOND FLOOR	2A.1.5	BEDROOM	2A.1.5	1.0	-	Х	-	5.0	-	DPL	2	5
SECOND FLOOR	2A.2	ADA BEDROOM	2A.2	1.0	-	Х	-	5.0	-	DPL	2	6
SECOND FLOOR	2A.3	DAYROOM	2A.3A	1.0	-	Х	-	-	-	-		-
SECOND FLOOR	2A.3		2A.3B	1.0	-	Х	-	-	-	-		-
SECOND FLOOR	2A.3		2A.3C	1.0	-	Х	-	-	-	-		-
SECOND FLOOR	2A.6	SHOWER	-	-	-	-	-	5.1	-	DPL	1	A
SECOND FLOOR	2A.6		-	-	-	-	-	5.1	-	DPL	1	В
	2A.6	IAN	-	- 1.0	-	-	-	2.1	-	UPL	1	
SECOND FLOOR	2A.12		2A.12	1.0	-	^	- V	3.0	-	VV SL		STAFF
	2A.13 2A.15		2A.13	1.0	-	v	_	5.5 5.1	-	יעטם		
SECOND FLOOR	2A 16	SALLY	2A 164	1.0	-	x	x	<u>4</u> 1	-	ADI	2	Δ
SECOND FLOOR	2A 16		2A.16B	1.0	-	x	X	-	-	-	-	Ω
SECOND FLOOR	2A.17	STAFF STATION	-	-	-	-	-	-	-	-		-
SECOND FLOOR	2B.1.1	BEDROOM	2B,1.1	1.0	-	х	-	5.0	-	DPL	2	1
SECOND FLOOR	2B.1.2	BEDROOM	2B.1.2	1.0	-	X	-	5.0	-	DPL	2	2
SECOND FLOOR	2B.1.3	BEDROOM	2B.1.3	1.0	-	X	-	5.0	-	DPL	2	3
SECOND FLOOR	2B.1.4	BEDROOM	2B.1.4	1.0	-	Х	-	5.0	-	DPL	2	4
SECOND FLOOR	2B.1.5	BEDROOM	2B.1.5	1.0	-	Х	-	5.0	-	DPL	2	4
SECOND FLOOR	2B.1.6	BEDROOM	2B.1.6	1.0	-	Х	-	5.0	-	DPL	2	6
SECOND FLOOR	2B.2	ADA BEDROOM	2B.2	1.0	-	Х	-	5.0	-	DPL	2	7
SECOND FLOOR	2B.3	DAYROOM	2B.3A	1.0	-	Х	-	-	-	-		-
SECOND FLOOR	2B.3		2B.3B	1.0	-	Х	-	-	-	-		-
SECOND FLOOR	2B.3		2B.3C	1.0	-	Х	-	-	-	-		-
SECOND FLOOR	2B.3		2B.3D	1.0	-	Х	-	-	-	-		-
SECOND FLOOR	2B.6	SHOWER	-	-	-	-	-	5.1	-	DPL	1	A
SECOND FLOOR	2B.6		-	-	-	-	-	5.1	-	DPL	1	В
SECOND FLOOR	2B.6		-	-	-	-	-	5.1	-	DPL	1	С
SECOND FLOOR	2B.12	JAN.	2B.12	1.0	-	Х	-	3.0	-	WSL		JANITOR CLOSET
SECOND FLOOR	2B.13	STAFF TLT.	2B.13	1.0	-	-	Х	3.5	-	WSH		STAFF
SECOND FLOOR	2B.15	LAUNDRY	2B.15	1.0	-	Х	-	5.1	-	DPL		LAUNDRY
SECOND FLOOR	2B.16	SALLY	2B.16A	1.0	-	Х	Х	4.1	-	ADL	2	В
SECOND FLOOR	2B.16		2B.16B	1.0	-	Х	Х	-	-	-		-
SECOND FLOOR	2B.17	STAFF STATION	-	-	-	-	-	-	-	-		-
SECOND FLOOR	2C.1.1	BEDROOM	2C.1.1	1.0	-	Х	-	5.0	-	DPL	2	1

BUILDING SIGNAGE SCHEDULE															
			DOOR TAG							SIGN					
LEVEL	ROOM NUMBER	ROOM NAME	ARCHITECTURAL DOOR NUMBER	TYPE	COLOR	PULL SIDE	PUSH SIDE	TYPE	COLOR	LOCATION	REMARKS	TEXT			
SECOND FLOOR	2C.1.2	BEDROOM	2C.1.2	1.0	-	Х	-	5.0	-	DPL	2	2			
SECOND FLOOR	2C.1.3	BEDROOM	2C.1.3	1.0	-	Х	-	5.0	-	DPL	2	3			
SECOND FLOOR	2C.1.4	BEDROOM	2C.1.4	1.0	-	Х	-	5.0	-	DPL	2	4			
SECOND FLOOR	2C.1.5	BEDROOM	2C.1.5	1.0	-	X	-	5.0	-	DPL	2	5			
SECOND FLOOR	20.1.6		20.1.6	1.0	-	X	-	5.0	-	DPL	2	5			
SECOND FLOOR	20.2	DAYROOM	2C.2	1.0	-	x	_	-	-	-	2	-			
SECOND FLOOR	2C.3		2C.3B	1.0	-	X	-	-	-	-		-			
SECOND FLOOR	2C.3		2C.3C	1.0	-	Х	-	-	-	-		-			
SECOND FLOOR	2C.3		2C.3D	1.0	-	Х	-	-	-	-		-			
SECOND FLOOR	2C.6	SHOWER	-	-	-	-	-	5.1	-	DPL	1	A			
SECOND FLOOR	20.6		-	-	-	-	-	5.1		DPL	1	В			
SECOND FLOOR	20.0	IAN	20.12	- 1.0	-	x	-	3.0	-	WSI	1	IANITOR CLOSET			
SECOND FLOOR	2C.12	STAFF TLT.	2C.12	1.0	-	-	х	3.5	-	WSH		STAFF			
SECOND FLOOR	2C.15	LAUNDRY	2C.15	1.0	-	Х	-	5.1	-	DPL		LAUNDRY			
SECOND FLOOR	2C.16	SALLY	2C.16A	1.0	-	Х	Х	4.1	-	ADL	2	C			
SECOND FLOOR	2C.16		2C.16B	1.0	-	Х	Х	-	-	-		-			
SECOND FLOOR	2C.17		-	-	-	-	-	-	-	-	2	-			
SECOND FLOOR	2D.1.1 2D.1.2	BEDROOM	2D.1.1 2D.1.2	1.0	-	X	-	5.0	-		2	2			
SECOND FLOOR	2D.1.2 2D.1.3	BEDROOM	2D.1.2 2D.1.3	1.0	_	X	_	5.0	-	DPL	2	3			
SECOND FLOOR	2D.1.4	BEDROOM	2D.1.4	1.0	-	X	-	5.0	-	DPL	2	4			
SECOND FLOOR	2D.1.5	BEDROOM	2D.1.5	1.0	-	Х	-	5.0	-	DPL	2	5			
SECOND FLOOR	2D.2	ADA BEDROOM	2.D2	1.0	-	Х	-	5.0	-	DPL	2	6			
SECOND FLOOR	2D.3	DAYROOM	2D.3A	1.0	-	Х	-	-	-	-		-			
SECOND FLOOR	2D.3		2D.3B	1.0	-	X	-	-	-	-		-			
SECOND FLOOR	2D.5 2D.6	SHOWER	2D.3C	-	-	-	-	5.1	-	DPL	1	- A			
SECOND FLOOR	2D.6		-	-	-	-	-	5.1		DPL	1	В			
SECOND FLOOR	2D.6		-	-	-	-	-	5.1		DPL	1	С			
SECOND FLOOR	2D.12	JAN	2D.12	1.0	-	Х	-	3.0	-	WSL		JANITOR CLOSET			
SECOND FLOOR	2D.13	STAFF TLT.	2D.13	1.0	-	-	Х	3.5	-	WSH		STAFF			
SECOND FLOOR	2D.15 2D.16		2D.15 2D.16A	1.0	-	X	- X	5.1	-		2	LAUNDRY			
SECOND FLOOR	2D.10 2D.16	JALLI	2D.16A 2D.16B	1.0	-	X	X	-	-	-	2	-			
SECOND FLOOR	2D.17	STAFF STATION	-	-	-	-	-	-	-	-		-			
SECOND FLOOR MEZZ.	2A.1.6	BEDROOM	2A.1.6	1.0	-	Х	-	5.0	-	DPL		7			
SECOND FLOOR MEZZ.	2A.1.7	BEDROOM	2A.1.7	1.0	-	Х	-	5.0	-	DPL		8			
SECOND FLOOR MEZZ.	2A.1.8	BEDROOM	2A.1.8	1.0	-	X	-	5.0	-	DPL		9			
SECOND FLOOR MEZZ	2A.1.9 2A 1 10	BEDROOM	2A.1.9	1.0	-	×	-	5.0	-	DPL		10			
SECOND FLOOR MEZZ.	2A.1.11	BEDROOM	2A.1.11	1.0	-	X	-	5.0	-	DPL		12			
SECOND FLOOR MEZZ.	2A.19	MEZZ. CORR.	2A.19A	1.0	-	Х	-	-	-	-		-			
SECOND FLOOR MEZZ.	2A.19		2A.19B	1.0	-	Х	-	-	-	-		-			
SECOND FLOOR MEZZ.	2A.19	2522221	2A.19C	1.0	-	X	-	-	-	-		-			
SECOND FLOOR MEZZ.	2B.1.7	BEDROOM	2B.1.7	1.0	-	X	-	5.0	-	DPL		8			
SECOND FLOOR MEZZ.	2B.1.0 2B.1.9	BEDROOM	2B.1.0 2B.1.9	1.0	-	X	-	5.0	-	DPL		10			
SECOND FLOOR MEZZ.	2B.1.10	BEDROOM	2B.1.10	1.0	-	Х	-	5.0	-	DPL		11			
SECOND FLOOR MEZZ.	2B.1.11	BEDROOM	2B.1.11	1.0	-	Х	-	5.0	-	DPL		12			
SECOND FLOOR MEZZ.	2B.1.12	BEDROOM	2B.1.12	1.0	-	Х	-	5.0	-	DPL		13			
SECOND FLOOR MEZZ.	2B.1.13	STORAGE	2B.1.13	1.0	-	X	-	3.0	-	WSL		STORAGE CLOSET			
SECOND FLOOR MEZZ	2B.19 2B.19	WIEZZ. CORR.	2B.19A 2B.19B	1.0	-	×	-	-	-	-		-			
SECOND FLOOR MEZZ.	2B.19		2B.190	1.0	-	X	-	-	-	-		-			
SECOND FLOOR MEZZ.	2B.19		2B.19D	1.0	-	Х	-	-	-	-		-			
SECOND FLOOR MEZZ.	2C.1.7	BEDROOM	2C.1.7	1.0	-	х	-	5.0	-	DPL		8			
SECOND FLOOR MEZZ.	2C.1.8	BEDROOM	2C.1.8	1.0	-	X	-	5.0	-	DPL		9			
SECOND FLOOR MEZZ.	20.1.9		20.1.9	1.0	-	X	-	5.0	-			10			
SECOND FLOOR MEZZ.	2C.1.10 2C.1.11	BEDROOM	2C.1.10	1.0	_	X	_	5.0	-	DPL		12			
SECOND FLOOR MEZZ.	2C.1.12	BEDROOM	2C.1.12	1.0	-	Х	-	5.0	-	DPL	<u> </u>	13			
SECOND FLOOR MEZZ.	2C.1.13	STORAGE	2C.1.13	1.0	-	Х	-	3.0	-	WSL		STORAGE CLOSET			
SECOND FLOOR MEZZ.	2C.19	MEZZ. CORR.	2C.19A	1.0	-	Х	-	-	-	-		-			
SECOND FLOOR MEZZ.	2C.19		2C.19B	1.0	-	X	-	-	-	-		-			
SECOND FLOOR MEZZ.	20.19		20.190	1.0	-	X X	-	-	-	-		-			
SECOND FLOOR MEZZ	2D.1.6	BEDROOM	2D.1.6	1.0	-	X	-	5.0	-	DPL		7			
SECOND FLOOR MEZZ.	2D.1.7	BEDROOM	2D.1.7	1.0	-	Х	-	5.0	-	DPL	<u> </u>	8			
SECOND FLOOR MEZZ.	2D.1.8	BEDROOM	2D.1.8	1.0	-	Х	-	5.0	-	DPL		9			
SECOND FLOOR MEZZ.	2D.1.9	BEDROOM	2D.1.9	1.0	-	Х	-	5.0	-	DPL		10			

BUILDING SIGNAGE SCHEDULE														
					DOO	R TAG			SIGN					
LEVEL	ROOM NUMBER	ROOM NAME	ARCHITECTURAL DOOR NUMBER	түре	COLOR	PULL SIDE	PUSH SIDE	түре	COLOR	LOCATION	REMARKS	ТЕХТ		
SECOND FLOOR MEZZ.	2D.1.10	BEDROOM	2D.1.10	1.0	-	Х	-	5.0	-	DPL		11		
SECOND FLOOR MEZZ.	2D.1.11	BEDROOM	2D.1.11	1.0	-	Х	-	5.0	-	DPL		12		
SECOND FLOOR MEZZ.	2D.19	MEZZ. CORR.	2D.19A	1.0	-	Х	-	-	-	-		-		
SECOND FLOOR MEZZ.	2D.19		2D.19B	1.0	-	Х	-	-	-	-		-		
SECOND FLOOR MEZZ.	2D.19		2D.19C	1.0	-	Х	-	-	-	-		-		
THIRD FLOOR	10.1	GYMNASIUM	-	1.0	-	-	-	-	-	-		-		
THIRD FLOOR	10.10	REC. OFFICE	10.10	1.0	-	-	Х	3.0	-	WSH	3	RECREATION OFFICE		
THIRD FLOOR	10.2.1	EQ. STOR.	10.2.1	1.0	-	-	Х	3.0	-	WHL		EQUIPMENT STORAGE		
THIRD FLOOR	10.3	FITNESS RM.	10.3	1.0	-	Х	-	3.0	-	WSL	3	FITNESS ROOM		
THIRD FLOOR	10.4	YOUTH TLT.	10.4	1.0	-	Х	-	3.4	-	WSL		YOUTH		
THIRD FLOOR	10.7	STAFF TLT.	10.7	1.0	-	-	Х	3.4	-	WSH		STAFF		
THIRD FLOOR	10.9	JAN.	10.9	1.0	-	Х	-	3.0	-	WSL		JANITOR CLOSET		
THIRD FLOOR	11.3.1	STAIR A	11.3.1	1.0	-	Х	Х	2.0	•	WSH		EMERGENCY EXIT STAIR		
THIRD FLOOR	11.3.1		-	-	-	-	-	2.2	-	WSL	1	STAIR A/ FLOOR 3		
THIRD FLOOR	11.3.3	CORR.	11.3A	1.0	-	Х	Х	3.0	-	WSL		GYMNASIUM		
THIRD FLOOR	11.3.3		11.3B	1.0	-	Х	х		-					
THIRD FLOOR	11.3.6	ELEVATOR	-	1.0	-				-					
THIRD FLOOR	11.3.7	MECH. RM.	11.3.7	1.0	-	-	Х	3.0	-	WHH		MECHANICAL RM.		
THIRD FLOOR	11.3.8	MECH. RM.	11.3.8	1.0	-	-	х	3.0	-	WHH		MECHANICAL RM.		
THIRD FLOOR	11.3.9	ELEV. REMOTE CLOSET	11.3.9	1.0	-	Х	-	3.0	-	WSL		ELEVATOR REMOTE		
THIRD FLOOR	11.3.10	STAIR B	11.3.10A	1.0	-	Х	Х	2.0	-	DPH		EMERGENCY EXIT STAIR		
THIRD FLOOR			11.3.10A	-	-	-	-	3.0	-	WSL		GYMNASIUM		
THIRD FLOOR	11.3.10		11.3.10A	-	-	-	-	2.2	-	WSL	1	STAIR B/FLOOR3		
THIRD FLOOR	11.3.10		11.3.10B	1.0	-	Х	Х		-					
MAIN ENTRANCE (GREENMOUNT AVE)	-	-	-	-				6.0		POLE MOU NTED		NO SMOKING BEYOND THIS POINT		

SIGN LOCATION ABBREVIATIONS								
	MOUNT TO	ADEJACENT TO	SIDE OF DOOR					
DPH	DOOR	STRIKE	PUSH					
DPL	DOOR	STRIKE	PULL					
WHH	WALL	HINGE	PUSH					
WHL	WALL	HINGE	PULL					
WSH	WALL	STRIKE	PUSH					
WSL	WALL	STRIKE	PULL					
ADH	WALL	ABOVE DOOR	PUSH					
ADL	WALL	ABOVE DOOR	PULL					
CLG	CEILING	-	-					

#### REMARKS

- 1 COORDINATE LOCATION WITH FIELD ARCHITECT
- 2 CONSIDER THE DOOR HOUSING SIDE OF SLIDING DOOR TO BE THE PULL SIDE FOR MOUNTING PURPOSES
- 3 LOCATE ON NEAREST ADJACENT WALL
- 4 CONSIDER THE SIDE OF DOOR FACING THE STAIRS AS PULL SIDE FOR MOUNTING PURPOSES
- 5 USE TEMPLATE 2.1 FOR STAIRWAY IDENTIFICATION SIGN

	SIGN TYPE	
1.0	DOOR TAG PLAQUE	NON-ADA
2.0	EMERGENCY EXIT STAIRS	ADA
2.1	TEMPLATE FOR STAIRWAY ID	NON-ADA
3.0	ROOM PLAQUE	ADA
3.1	ROOM PLAQUE W/ WINDOW INSERT	
3.2	WOMEN	ADA
3.3	MEN	ADA
3.4	UNISEX	ADA
3.5	UNISEX (NON-ADA)	NON-ADA
4.0	SINGLE LINE TEXT PLAQUE	NON-ADA
4.1	SINGE LETTER TEXT PLAQUE	NON-ADA
4.2	MULTI-LINE TEXT PLAQUE	NON-ADA
4.3	SUSPENDED MULTI-LINE TEXT PLAQUE	NON-ADA
5.0	BEDROOM NUMBER SIGNS	NON-ADA
5.1	SINGLE LINE ADHESIVE VINLY LETTERING	NON-ADA

## SECTION 23 09 23.11 - CONTROL VALVES

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 control valves and actuators for DDC systems.
- B. Related Requirements:
  - 1. Section 230923 "Direct-Digital Control System for HVAC" control equipment and software, relays, electrical power devices, uninterruptible power supply units, wire, and cable.
  - 2. Section 230933 "Electric and Electronic Control System for HVAC" for electric/electronic control valves and actuators in electric and electronic control systems.
  - 3. Section 230943 "Pneumatic Control System for HVAC" for pneumatic control valves and actuators in pneumatic control systems.
  - 4. Section 230993 "Sequence of Operations for HVAC Controls" for requirements that relate to Section 230923.11.

### 1.3 DEFINITIONS

- A. Cv: Design valve coefficient.
- B. DDC: Direct-digital control.
- C. NBR: Nitrile butadiene rubber.
- D. PTFE: Polytetrafluoroethylene
- E. RMS: Root-mean-square value of alternating voltage, which is the square root of the mean value of the square of the voltage values during a complete cycle.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product, including the following:
  - 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes.
  - 2. Operating characteristics, electrical characteristics, and furnished accessories indicating process operating range, accuracy over range, control signal over range, default control signal with loss of power, calibration data specific to each unique application, electrical power requirements, and limitations of ambient operating environment, including temperature and humidity.

- 3. Product description with complete technical data, performance curves, and product specification sheets.
- 4. Installation, operation, and maintenance instructions, including factors affecting performance.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, and mounting details.
  - 2. Include details of product assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 3. Include diagrams for power, signal, and control wiring.
  - 4. Include diagrams for pneumatic signal and main air tubing.
- C. Delegated-Design Submittal:
  - 1. Schedule and design calculations for control valves and actuators, including the following:
    - a. Flow at project design and minimum flow conditions.
    - b. Pressure differential drop across valve at project design flow condition.
    - c. Maximum system pressure differential drop (pump close-off pressure) across valve at project minimum flow condition.
    - d. Design and minimum control valve coefficient with corresponding valve position.
    - e. Maximum close-off pressure.
    - f. Leakage flow at maximum system pressure differential.
    - g. Torque required at worst case condition for sizing actuator.
    - h. Actuator selection indicating torque provided.

# 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plan drawings and corresponding product installation details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
  - 1. Control valve installation location shown in relationship to room, duct, pipe, and equipment.
  - 2. Size and location of wall access panels for control valves installed behind walls.
  - 3. Size and location of ceiling access panels for control valves installed above inaccessible ceilings.

#### 1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For control valves to include in operation and maintenance manuals.

PART 2 - PRODUCTS

## 2.1 PERFORMANCE REQUIREMENTS

- 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. ASME Compliance: Fabricate and label products to comply with ASME Boiler and Pressure Vessel Code where required by authorities having jurisdiction.
- C. Delegated Design: Engage a qualified professional[engineer], as defined in Section 014000 "Quality Requirements," to size products where indicated as delegated design.
- D. Ground Fault: Products shall not fail due to ground fault condition when suitably grounded.
- E. Backup Power Source: Systems and equipment served by a backup power source shall have associated control valve actuators served from a backup power source.
- F. Environmental Conditions:
  - 1. Provide electric control valve actuators, with protective enclosures satisfying the following minimum requirements unless more stringent requirements are indicated. Electric control valve actuators not available with integral enclosures, complying with requirements indicated, shall be housed in protective secondary enclosures.
    - a. Hazardous Locations: Explosion-proof rating for condition.
- G. Determine control valve sizes and flow coefficients by ISA 75.01.01.
- H. Control valve characteristics and rangeability shall comply with ISA 75.11.01.
- 2.2 GLOBE-STYLE CONTROL VALVES
  - A. General Globe-Style Valve Requirements:
    - 1. Globe-style control valve body dimensions shall comply with ISA 75.08.01.
    - 2. Construct the valves to be serviceable from the top.
    - 3. For cage guided valves, trim shall be field interchangeable for different valve flow characteristics, such as equal percentage, linear, and quick opening.
    - 4. Reduced trim for one nominal size smaller shall be available for industrial valves NPS 1 (DN 25) and larger.
    - 5. Replaceable seats and plugs.
    - 6. Furnish each control valve with a corrosion-resistant nameplate indicating the following:
      - a. Manufacturer's name, model number, and serial number.
      - b. Body and trim size.
      - c. Arrow indicating direction of flow.

- 2.3 SOLENOID VALVES
  - A. Description:
    - 1. Action: Either normally open or normally closed in the event of electrical power failure as required by the application.
    - 2. Size to close against the system pressure.
    - 3. Manual override capable.
    - 4. Heavy-duty assembly.
    - 5. Body: Brass.
    - 6. Seats and Discs: NBR or PTFE.
    - 7. Solenoid Enclosure: NEMA 250, Type 4.

### 2.4 ELECTRIC AND ELECTRONIC CONTROL VALVE ACTUATORS

- A. Position indicator and graduated scale on each actuator.
- B. Type: Motor operated, with or without gears, electric and electronic.
- C. Deliver torque required for continuous uniform movement of controlled device from limit to limit when operated at rated voltage.
- D. Function properly within a range of 85 to 120 percent of nameplate voltage.
- E. Construction:
  - 1. For Actuators Less Than 100 W: Fiber or reinforced nylon gears with steel shaft, copper alloy or nylon bearings, and pressed steel enclosures.
  - 2. For Actuators from 100 to 400 W: Gears ground steel, oil immersed, shaft hardened steel running in bronze, copper alloy or ball bearings. Operator and gear trains shall be totally enclosed in dustproof cast-iron, cast-steel or cast-aluminum housing.
  - 3. For Actuators Larger Than 400 W: Totally enclosed reversible induction motors with auxiliary hand crank and permanently lubricated bearings.
- F. Field Adjustment:
  - 1. Spring Return Actuators: Easily switchable from fail open to fail closed in the field without replacement.
  - 2. Gear Type Actuators: External manual adjustment mechanism to allow manual positioning when the actuator is not powered.
- G. Two-Position Actuators: Single direction, spring return or reversing type.
- H. Modulating Actuators:
  - 1. Operation: Capable of stopping at all points across full range, and starting in either direction from any point in range.
  - 2. Control Input Signal:
    - a. Three Point, Tristate, or Floating Point: Clockwise and counter-clockwise inputs. One input drives actuator to open position and other input drives actuator to close position. No signal of either input remains in last position.
    - b. Proportional: Actuator drives proportional to input signal and modulates throughout its angle of rotation. Suitable for zero- to 10 signals.

- c. Pulse Width Modulation (PWM): Actuator drives to a specified position according to pulse duration (length) of signal from a dry contact closure, triac sink, or source controller.
- d. Programmable Multi-Function:
  - 1) Control Input, Position Feedback, and Running Time: Factory or field programmable.
  - 2) Diagnostic: Feedback of hunting or oscillation, mechanical overload, mechanical travel, and mechanical load limit.
  - 3) Service Data: Include, at a minimum, number of hours powered and number of hours in motion.
- I. Fail-Safe:
  - 1. Where indicated, provide actuator to fail to an end position.
  - 2. Internal spring return mechanism to drive controlled device to an end position (open or close) on loss of power.
  - 3. Batteries, capacitors, and other non-mechanical forms of fail-safe operation are acceptable only where uniquely indicated.
- J. Integral Overload Protection:
  - 1. Provide against overload throughout the entire operating range in both directions.
  - 2. Electronic overload, digital rotation sensing circuitry, mechanical end switches, or magnetic clutches are acceptable methods of protection.
- K. Enclosure:
  - 1. Suitable for ambient conditions encountered by application.
  - 2. NEMA 250, Type 2 for indoor and protected applications.
  - 3. NEMA 250, Type 4 or Type 4X for outdoor and unprotected applications.
  - 4. Provide actuator enclosure with heater and control where required by application.
  - 5. Spring Return: 62 dBA.
  - 6. Non-Spring Return: 45 dBA.

## PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for valves installed in piping to verify actual locations of piping connections before installation.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

- 3.2 INSTALLATION, GENERAL
  - A. Furnish and install products required to satisfy most stringent requirements indicated.
  - B. Install products level, plumb, parallel, and perpendicular with building construction.
  - C. Properly support instruments, tubing, piping, wiring, and conduits to comply with requirements indicated. Brace all products to prevent lateral movement and sway or a break in attachment when subjected to a <Insert value> force.
  - D. Provide ceiling, floor, roof, and wall openings and sleeves required by installation. Before proceeding with drilling, punching, or cutting, check location first for concealed products that could potentially be damaged. Patch, flash, grout, seal, and refinish openings to match adjacent condition.
  - E. Firestop penetrations made in fire-rated assemblies and seal penetrations made in acoustically rated assemblies.
  - F. Fastening Hardware:
    - 1. Stillson wrenches, pliers, and other tools that will cause injury to or mar surfaces of rods, nuts, and other parts are prohibited for assembling and tightening nuts.
    - 2. Tighten bolts and nuts firmly and uniformly. Do not overstress threads by excessive force or by oversized wrenches.
    - 3. Lubricate threads of bolts, nuts, and screws with graphite and oil before assembly.
  - G. Install products in locations that are accessible and that will permit calibration and maintenance from floor, equipment platforms, or catwalks. Where ladders are required for Owner's access, confirm unrestricted ladder placement is possible under occupied condition.
  - H. Corrosive Environments:
    - 1. Use products that are suitable for environment to which they will be subjected.
    - 2. Use Type 316 stainless-steel tubing and fittings when in contact with a corrosive environment.
    - 3. When conduit is in contact with a corrosive environment, use Type 316 stainless-steel conduit and fittings or conduit and fittings that are coated with a corrosive-resistant coating that is suitable for environment.
    - 4. Where control devices are located in a corrosive environment and are not corrosive resistant from manufacturer, field install products in a NEMA 250, Type 4X enclosure constructed of Type 316L stainless steel.

## 3.3 ELECTRIC POWER

- A. Furnish and install electrical power to products requiring electrical connections.
- B. Furnish and install circuit breakers. Comply with requirements in Section 262816 "Enclosed Switches and Circuit Breakers."
- C. Furnish and install power wiring. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

D. Furnish and install raceways. Comply with requirements in Section 260533 "Raceways and Boxes for Electrical Systems."

#### 3.4 CONTROL VALVES

- A. Install pipe reducers for valves smaller than line size. Position reducers as close to valve as possible but at distance to avoid interference and impact to performance. Install with manufacturer-recommended clearance.
- B. Install flanges or unions to allow drop-in and -out valve installation.
- C. Clearance:
  - 1. Locate valves for easy access and provide separate support of valves that cannot be handled by service personnel without hoisting mechanism.
  - 2. Install valves with at least 12 inches of clear space around valve and between valves and adjacent surfaces.
- D. Threaded Valves:
  - 1. Note internal length of threads in valve ends, and proximity of valve internal seat or wall, to determine how far pipe should be threaded into valve.
  - 2. Align threads at point of assembly.
  - 3. Apply thread compound to external pipe threads, except where dry seal threading is specified.
  - 4. Assemble joint, wrench tight. Apply wrench on valve end as pipe is being threaded.
- E. Flanged Valves:
  - 1. Align flange surfaces parallel.
  - 2. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly with a torque wrench.

### 3.5 CONNECTIONS

A. Connect electrical devices and components to electrical grounding system. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

#### 3.6 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Each piece of wire, cable, and tubing shall have the same designation at each end for operators to determine continuity at points of connection. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

# 3.7 CLEANING

A. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from exposed interior and exterior surfaces.

- B. Wash and shine glazing.
- C. Polish glossy surfaces to a clean shine.

# 3.8 CHECKOUT PROCEDURES

- A. Control Valve Checkout:
  - 1. Check installed products before continuity tests, leak tests, and calibration.
  - 2. Check valves for proper location and accessibility.
  - 3. Check valves for proper installation for direction of flow, elevation, orientation, insertion depth, or other applicable considerations that will impact performance.
  - 4. For pneumatic products, verify air supply for each product is properly installed.
  - 5. For pneumatic valves, verify that pressure gauges are provided in each air line to valve actuator and positioner.
  - 6. Verify that control valves are installed correctly for flow direction.
  - 7. Verify that valve body attachment is properly secured and sealed.
  - 8. Verify that valve actuator and linkage attachment are secure.
  - 9. Verify that actuator wiring is complete, enclosed, and connected to correct power source.
  - 10. Verify that valve ball, disc, and plug travel are unobstructed.
  - 11. After piping systems have been tested and put into service, but before insulating and balancing, inspect each valve for leaks. Adjust or replace packing to stop leaks. Replace the valve if leaks persist.

## 3.9 ADJUSTMENT, CALIBRATION, AND TESTING

- A. Stroke and adjust control valves following manufacturer's recommended procedure, from 100 percent open to 100 percent closed back to 100 percent open.
- B. Stroke control valves with pilot positioners. Adjust valve and positioner following manufacturer's recommended procedure, so valve is 100 percent closed, 50 percent closed, and 100 percent open at proper air pressures.
- C. Check and document open and close cycle times for applications with a cycle time of less than 30 seconds.
- D. For control valves equipped with positive position indication, check feedback signal at multiple positions to confirm proper position indication.

END OF SECTION 230923.11

## SECTION 23 09 23.12 - CONTROL DAMPERS

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 control dampers and actuators for DDC systems.
- B. Related Requirements:
  - 1. Section 230923 "Direct-Digital Control System for HVAC" for control equipment and software, relays, electrical power devices, uninterruptible power supply units, wire, and cable.
  - 2. Section 230993 "Sequence of Operations for HVAC Controls" for requirements that relate to Section 230923.12.

#### 1.3 DEFINITIONS

- A. DDC: Direct-digital control.
- B. RMS: Root-mean-square value of alternating voltage, which is the square root of the mean value of the square of the voltage values during a complete cycle.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product, including the following:
  - 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes.
  - 2. Operating characteristics, electrical characteristics, and furnished accessories indicating process operating range, accuracy over range, control signal over range, default control signal with loss of power, calibration data specific to each unique application, electrical power requirements, and limitations of ambient operating environment, including temperature and humidity.
  - 3. Product description with complete technical data, performance curves, and product specification sheets.
  - 4. Installation instructions, including factors affecting performance.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, and mounting details.
  - 2. Include details of product assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

- 3. Include diagrams for power, signal, and control wiring.
- 4. Include diagrams for air and process signal tubing.
- 5. Include diagrams for pneumatic signal and main air tubing.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plan drawings and corresponding product installation details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
  - 1. Product installation location shown in relationship to room, duct, and equipment.
  - 2. Size and location of wall access panels for control dampers and actuators installed behind walls.
  - 3. Size and location of ceiling access panels for control dampers and actuators installed above inaccessible ceilings.

#### 1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For control dampers to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- 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. ASME Compliance: Fabricate and label products to comply with ASME Boiler and Pressure Vessel Code where required by authorities having jurisdiction.
- C. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to size products where indicated as delegated design.
- D. Ground Fault: Products shall not fail due to ground fault condition when suitably grounded.
- E. Backup Power Source: Systems and equipment served by a backup power source shall have associated control damper actuators served from a backup power source.
- F. Environmental Conditions:
  - 1. Provide electric control-damper actuators, with protective enclosures satisfying the following minimum requirements unless more stringent requirements are indicated. Electric control-damper actuators not available with integral enclosures, complying with requirements indicated, shall be housed in protective secondary enclosures.
    - a. Hazardous Locations: Explosion-proof rating for condition.
- G. Selection Criteria:
  - 1. Fail positions unless otherwise indicated:

### CONTROL DAMPERS

- a. Supply Air: Open.
- b. Return Air: Open.
- c. Outdoor Air: Close.
- d. Mixed Air: Close.
- e. Exhaust Air: Close.
- 2. Dampers shall have stable operation throughout full range of operation, from design to minimum airflow over varying pressures and temperatures encountered.
- 3. Select modulating dampers for a pressure drop of 2 percent of fan total static pressure unless otherwise indicated.
- 4. Two-position dampers shall be full size of duct or equipment connection unless otherwise indicated.

### 2.2 RECTANGULAR CONTROL DAMPERS

- A. General Requirements:
  - 1. Unless otherwise indicated, use parallel blade configuration for two-position control, equipment isolation service, and when mixing two airstreams. For other applications, use opposed blade configuration.
  - 2. Factory assemble multiple damper sections to provide a single damper assembly of size required by the application.
  - 3. Damper actuator shall be factory installed by damper manufacturer as integral part of damper assembly. Coordinate actuator location and mounting requirements with damper manufacturer.
- B. Rectangular Dampers with Aluminum Airfoil Blades:
  - 1. Performance:
    - a. Leakage: AMCA 511, Class 1A. Leakage shall not exceed 3 cfm/sq. ft. against 1in. wg differential static pressure.
    - b. Pressure Drop: 0.05-in. wg at 1500 fpm across a 24-by-24-inch damper when tested according to AMCA 500-D, figure 5.3.
    - c. Velocity: Up to 6000 fpm.
    - d. Temperature: Minus 40 to plus 185 deg F.
    - e. Pressure Rating: Damper close-off pressure equal to fan shutoff pressure with a maximum blade deflection of 1/200 of blade length.
    - f. Damper shall have AMCA seal for both air leakage and air performance.
  - 2. Construction:
    - a. Frame:
      - 1) Material: ASTM B 211, Alloy 6063 T5 extruded-aluminum profiles,0.07 inch thick.
      - Hat-shaped channel with integral flange(s). Mating face shall be a minimum of 1 inch.
      - 3) Width not less than 5 inches.
    - b. Blades:
      - 1) Hollow, airfoil, extruded aluminum.
      - 2) Parallel or opposed blade configuration as required by application.

- 3) Material: ASTM B 211, Alloy 6063 T5 aluminum, 0.07 inch thick.
- 4) Width not to exceed 6 inches.
- 5) Length as required by close-off pressure, not to exceed 48 inches.
- c. Seals:
  - 1) Blades: Replaceable, mechanically attached extruded silicone, vinyl, or plastic composite.
  - 2) Jambs: Stainless steel, compression type.
- d. Axles: 0.5-inch-diameter plate steel, mechanically attached to blades.
- e. Bearings:
  - 1) Molded synthetic or stainless-steel sleeve mounted in frame.
  - 2) Where blade axles are installed in vertical position, provide thrust bearings.
- f. Linkage:
  - 1) Concealed in frame.
  - 2) Constructed of aluminum and plated steel.
  - 3) Hardware: Stainless steel.
- g. Transition:
  - 1) For round and flat oval duct applications, provide damper assembly with integral transitions to mate to adjoining field connection.
  - 2) Factory mount damper in a sleeve with a close transition to mate to field connection.
  - 3) Damper size and sleeve shall be connection size plus 2 inches.
  - 4) Sleeve length shall be not less than 12 inches for dampers without jackshafts and shall be not less than 16 inches for dampers with jackshafts.
  - 5) Sleeve material shall match adjacent duct.
- h. Additional Corrosion Protection for Corrosive Environments:
  - 1) Provide anodized finish for aluminum surfaces in contact with airstream. Anodized finish shall be a minimum of 0.0007 inch thick.
  - 2) Axles, damper linkage, and hardware shall be constructed of Type 316L stainless steel.
- 3. Airflow Measurement:
  - a. Where indicated, provide damper assembly with integral airflow monitoring.
  - b. Zero- to 10-V dc or 4- to 20-mA scaled output signal for remote monitoring of actual airflow.
  - c. Accuracy shall be within 5 percent of the actual flow rate between the range of minimum and design airflow. For applications with a large variation in range between the minimum and design airflow, configure the damper sections and flow measurement assembly as required to comply with the stated accuracy over the entire modulating range.
  - d. Provide a straightening device as part of the flow measurement assembly to achieve the specified accuracy with configuration indicated.
  - e. Suitable for operation in untreated and unfiltered air.
  - f. Provide temperature and altitude compensation and correction to maintain accuracy over temperature range encountered at site altitude.

- g. Provide automatic zeroing feature.
- 4. Airflow Control:
  - a. Where indicated, provide damper assembly with integral airflow measurement and control.
  - b. A factory-furnished and -calibrated controller shall be programmed, in nonvolatile EPROM, with application-specific airflow set point and range.
  - c. The controller and actuator shall communicate to control the desired airflow.
  - d. The controller shall receive a zero- to 10-V dc input signal and report a zero- to 20mA output signal that is proportional to the airflow.
  - e. Airflow measurement and control range shall be suitable for operation between 150 to 2000 fpm.
- C. Rectangular Dampers with Steel Airfoil Blades:
  - 1. Performance:
    - a. Leakage: AMCA 511, Class 1A. Leakage shall not exceed 3 cfm/sq. ft. against 1in. wg differential static pressure.
    - b. Pressure Drop: 0.06-in. wg at 1500 fpm across a 24-by-24-inch damper when tested according to AMCA 500-D, figure 5.3.
    - c. Velocity: Up to 6000 fpm.
    - d. Temperature: Minus 40 to plus 185 deg F.
    - e. Pressure Rating: Damper close-off pressure equal to fan shutoff pressure with a maximum blade deflection of 1/200 of blade length.
    - f. Damper shall have AMCA seal for both air leakage and air performance.
  - 2. Construction:
    - a. Frame:
      - 1) Material: ASTM A 653/A 653M galvanized-steel profiles, 0.06 inch thick.
      - 2) Hat-shaped channel with integral flanges. Mating face shall be a minimum of 1 inch.
      - 3) Width not less than 5 inches.
    - b. Blades:
      - 1) Hollow, airfoil, galvanized steel.
      - 2) Parallel or opposed blade configuration as required by application.
      - 3) Material: ASTM A 653/A 653M galvanized steel, 0.05 inch thick.
      - 4) Width not to exceed 6 inches.
      - 5) Length as required by close-off pressure, not to exceed 48 inches.
    - c. Seals:
      - 1) Blades: Replaceable, mechanically attached extruded silicone, vinyl, or plastic composite.
      - 2) Jambs: Stainless steel, compression type.
    - d. Axles: 0.5-inch- diameter stainless steel, mechanically attached to blades.
    - e. Bearings:
      - 1) Stainless steel mounted in frame.

- 2) Where blade axles are installed in vertical position, provide thrust bearings.
- f. Linkage:
  - 1) Concealed in frame.
  - 2) Constructed of aluminum and plated steel.
  - 3) Hardware: Stainless steel.
- g. Transition:
  - 1) For round and flat oval duct applications, provide damper assembly with integral transitions to mate to adjoining field connection.
  - 2) Factory mount damper in a sleeve with a close transition to mate to field connection.
  - 3) Damper size and sleeve shall be connection size plus 2 inches.
  - 4) Sleeve length shall be not less than 12 inche for dampers without jackshafts and shall be not less than 16 inches for dampers with jackshafts.
  - 5) Sleeve material shall match adjacent duct.
- h. Additional Corrosion Protection for Corrosive Environments:
  - 1) Provide epoxy finish for surfaces in contact with airstream.
  - 2) Axles, damper linkage, and hardware shall be constructed of Type 316L stainless steel.

## 2.3 ROUND CONTROL DAMPERS

- A. Round Dampers, Sleeve Type:
  - 1. Construction:
    - a. Frame:
      - 1) Material: Galvanized steel, 0.04 in thick.
      - 2) Outward rolled stiffener beads positioned approximately 1 inch inboard of each end.
      - 3) Sleeve-type connection for mating to adjacent ductwork.
      - 4) Size Range: 4 to 24 inches.
      - 5) Length not less than 7 inches.
      - 6) Provide 2-inch sheet metal stand-off for mounting actuator.
    - b. Blade: Double-thickness circular flat blades sandwiched together and constructed of galvanized steel.
    - c. Blade Seal: Polyethylene foam seal sandwiched between two sides of blades and fully encompassing blade edge.
    - d. Axle: 0.5-inch-diameter plated steel, mechanically attached to blade.
    - e. Bearings: Stainless-steel sleeve pressed into frame.

## 2.4 GENERAL CONTROL-DAMPER ACTUATORS REQUIREMENTS

- A. Actuators shall operate related damper(s) with sufficient reserve power to provide smooth modulating action or two-position action and proper speed of response at velocity and pressure conditions to which the damper is subjected.
- B. Actuators shall produce sufficient power and torque to close off against the maximum system pressures encountered. Actuators shall be sized to close off against the fan shutoff pressure as a minimum requirement.
- C. The total damper area operated by an actuator shall not exceed 80 percent of manufacturer's maximum area rating.
- D. Provide one actuator for each damper assembly where possible. Multiple actuators required to drive a single damper assembly shall operate in unison.
- E. Avoid the use of excessively oversized actuators which could overdrive and cause linkage failure when the damper blade has reached either its full open or closed position.
- F. Use jackshafts and shaft couplings in lieu of blade-to-blade linkages when driving axially aligned damper sections.
- G. Provide mounting hardware and linkages for connecting actuator to damper.
- H. Select actuators to fail in desired position in the event of a power failure.
- I. Actuator Fail Positions: As indicated below:
  - 1. Exhaust Air: Close.
  - 2. Outdoor Air: Close.
  - 3. Supply Air: Open.
  - 4. Return Air: Open.

#### 2.5 ELECTRIC AND ELECTRONIC ACTUATORS

- A. Type: Motor operated, with or without gears, electric and electronic.
- B. Voltage:
  - 1. Voltage selection is delegated to professional designing control system.
  - 2. Actuator shall deliver torque required for continuous uniform movement of controlled device from limit to limit when operated at rated voltage.
  - 3. Actuator shall function properly within a range of 85 to 120 percent of nameplate voltage.
- C. Construction:
  - 1. Less Than 100 W: Fiber or reinforced nylon gears with steel shaft, copper alloy or nylon bearings, and pressed steel enclosures.
  - 2. 100 up to 400 W: Gears ground steel, oil immersed, shaft-hardened steel running in bronze, copper alloy, or ball bearings. Operator and gear trains shall be totally enclosed in dustproof cast-iron, cast-steel, or cast-aluminum housing.
  - 3. Greater Than 400 W: Totally enclosed reversible induction motors with auxiliary hand crank and permanently lubricated bearings.

- D. Field Adjustment:
  - 1. Spring return actuators shall be easily switchable from fail open to fail closed in the field without replacement.
  - 2. Provide gear-type actuators with an external manual adjustment mechanism to allow manual positioning of the damper when the actuator is not powered.
- E. Two-Position Actuators: Single direction, spring return or reversing type.
  - 1. Where indicated, provide actuator to fail to an end position.
  - 2. Internal spring return mechanism to drive controlled device to an end position (open or close) on loss of power.
  - 3. Batteries, capacitors, and other non-mechanical forms of fail-safe operation are acceptable only where uniquely indicated.
- F. Integral Overload Protection:
  - 1. Provide against overload throughout the entire operating range in both directions.
  - 2. Electronic overload, digital rotation sensing circuitry, mechanical end switches, or magnetic clutches are acceptable methods of protection.
- G. Damper Attachment:
  - 1. Unless otherwise required for damper interface, provide actuator designed to be directly coupled to damper shaft without need for connecting linkages.
  - 2. Attach actuator to damper drive shaft in a way that ensures maximum transfer of power and torque without slippage.
  - 3. Bolt and set screw method of attachment is acceptable only if provided with at least two points of attachment.
- H. Temperature and Humidity:
  - 1. Temperature: Suitable for operating temperature range encountered by application with minimum operating temperature range of minus 20 to plus 120 deg.
  - 2. Humidity: Suitable for humidity range encountered by application; minimum operating range shall be from 5 to 95 percent relative humidity, non-condensing.
- I. Enclosure:
  - 1. Suitable for ambient conditions encountered by application.
  - 2. NEMA 250, Type 2 for indoor and protected applications.
  - 3. NEMA 250, Type 4 or Type 4X for outdoor and unprotected applications.
  - 4. Provide actuator enclosure with a heater and controller where required by application.
- J. Stroke Time:
  - 1. Operate damper from fully closed to fully open within 60 seconds.
  - 2. Operate damper from fully open to fully closed within 60 seconds.
  - 3. Move damper to failed position within 15 seconds.
  - 4. Select operating speed to be compatible with equipment and system operation.
  - 5. Actuators operating in smoke control systems comply with governing code and NFPA requirements.
- K. Sound:

- 1. Spring Return: 62 dBA.
- 2. Non-Spring Return: 45 dBA.

### PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for dampers and instruments installed in duct systems to verify actual locations of connections before installation.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Furnish and install products required to satisfy most stringent requirements indicated.
- B. Properly support dampers and actuators, tubing, wiring, and conduit to comply with requirements indicated. Brace all products to prevent lateral movement and sway or a break in attachment when subjected to a force.
- C. Provide ceiling, floor, roof, and wall openings and sleeves required by installation. Before proceeding with drilling, punching, or cutting, check location first for concealed products that could potentially be damaged. Patch, flash, grout, seal, and refinish openings to match adjacent condition.
- D. Seal penetrations made in fire-rated and acoustically rated assemblies.
- E. Fastening Hardware:
  - 1. Stillson wrenches, pliers, or other tools that will cause injury to or mar surfaces of rods, nuts, and other parts are prohibited for assembling and tightening nuts.
  - 2. Tighten bolts and nuts firmly and uniformly. Do not overstress threads by excessive force or by oversized wrenches.
  - 3. Lubricate threads of bolts, nuts, and screws with graphite and oil before assembly.
- F. Install products in locations that are accessible and that will permit calibration and maintenance from floor, equipment platforms, or catwalks. Where ladders are required for Owner's access, confirm unrestricted ladder placement is possible under occupied condition.
- G. Corrosive Environments:
  - 1. Use products that are suitable for environment to which they will be subjected.
  - 2. Use Type 316 stainless-steel tubing and fittings when in contact with a corrosive environment.

- 3. When conduit is in contact with a corrosive environment, use Type 316 stainless-steel conduit and fittings or conduit and fittings that are coated with a corrosive-resistant coating that is suitable for environment.
- 4. Where actuators are located in a corrosive environment and are not corrosive resistant from manufacturer, field install products in a NEMA 250, Type 4X enclosure constructed of Type 316L stainless steel.

## 3.3 ELECTRIC POWER

- A. Furnish and install electrical power to products requiring electrical connections.
- B. Furnish and install circuit breakers. Comply with requirements in Section 262816 "Enclosed Switches and Circuit Breakers."
- C. Furnish and install power wiring. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- D. Furnish and install raceways. Comply with requirements in Section 260533 "Raceways and Boxes for Electrical Systems."

#### 3.4 CONTROL DAMPERS

- A. Install smooth transitions, not exceeding 30 degrees, to dampers smaller than adjacent duct. Install transitions as close to damper as possible but at distance to avoid interference and impact to performance. Consult manufacturer for recommended clearance.
- B. Clearance:
  - 1. Locate dampers for easy access and provide separate support of dampers that cannot be handled by service personnel without hoisting mechanism.
  - 2. Install dampers with at least 24 inches of clear space on sides of dampers requiring service access.
- C. Service Access:
  - 1. Dampers and actuators shall be accessible for visual inspection and service.
  - 2. Install access door(s) in duct or equipment located upstream of damper to allow service personnel to hand clean any portion of damper, linkage, and actuator. Comply with requirements in Section 233300 "Air Duct Accessories."
- D. Install dampers straight and true, level in all planes, and square in all dimensions. Install supplementary structural steel reinforcement for large multiple-section dampers if factory support alone cannot handle loading.
- E. Attach actuator(s) to damper drive shaft.
- F. For duct-mounted and equipment-mounted dampers installed outside of equipment, install a visible and accessible indication of damper position from outside.

### 3.5 CONNECTIONS

A. Connect electrical devices and components to electrical grounding system. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

### 3.6 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Each piece of wire, cable, and tubing shall have the same designation at each end for operators to determine continuity at points of connection. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems. "Section 260553 "Electrical Identification."
- B. Install engraved phenolic nameplate with damper identification on damper.

## 3.7 CHECKOUT PROCEDURES

- A. Control-Damper Checkout:
  - 1. Check installed products before continuity tests, leak tests, and calibration.
  - 2. Check dampers for proper location and accessibility.
  - 3. Check instrument tubing for proper isolation, fittings, slope, dirt legs, drains, material, and support.
  - 4. For pneumatic products, verify air supply for each product is properly installed.
  - 5. For pneumatic dampers, verify that pressure gages are provided in each airline to damper actuator and positioner.
  - 6. Verify that control dampers are installed correctly for flow direction.
  - 7. Verify that proper blade alignment, either parallel or opposed, has been provided.
  - 8. Verify that damper frame attachment is properly secured and sealed.
  - 9. Verify that damper actuator and linkage attachment are secure.
  - 10. Verify that actuator wiring is complete, enclosed, and connected to correct power source.
  - 11. Verify that damper blade travel is unobstructed.

#### 3.8 ADJUSTMENT, CALIBRATION, AND TESTING:

- A. Stroke and adjust control dampers following manufacturer's recommended procedure, from 100 percent open to 100 percent closed back to 100 percent open.
- B. Stroke control dampers with pilot positioners. Adjust damper and positioner following manufacturer's recommended procedure, so damper is 100 percent closed, 50 percent closed, and 100 percent open at proper air pressure.
- C. Check and document open and close cycle times for applications with a cycle time of less than 30 seconds.
- D. For control dampers equipped with positive position indication, check feedback signal at multiple positions to confirm proper position indication.

END OF SECTION 230923.12

# SECTION 282313 - VIDEO SURVEILLANCE FOR ELECTRONIC SECURITY

## PART 1 - GENERAL

## 1.1 SYSTEM DESCRIPTION

- A. Visual surveillance of the facility via cameras as indicated on the plans.
- B. Video monitoring of all cameras on VMS workstations and displays at locations identified on the plans.
- C. Review capabilities for the recorded images via the Video Management System.
- D. Stored image transfer capabilities to allow archival functions and stored image transfer via removable media such as CD/DVD.
- E. Cameras shall utilize Category 6 cable to transport video signal to the system.
- F. Video surveillance system shall integrate with PLC/GUI Control system allowing for automatic camera call up upon manual input via touch screen icons, alarm or event activation. Alarms such as panic device activation or events such as intercom call acknowledge. When an alarm is activated, the nearest camera shall be displayed on the control station VMS displays automatically.
- G. All IP cameras, recording devices, viewing stations, and controllers shall reside on a private dedicated Video Surveillance Ethernet Network included by the security electronics contactor as part of the system.
- H. Provide all software and licensing as required.
- I. Camera system to provide masking capability. Typical masking to include toilet/shower areas in detention areas, as well as other areas requested by Owner during final system testing.
- J. Recording parameters and storage capacity
  - 1. Servers and Mass storage devices are specified below. Provide a quantity of servers and storage devices necessary to accommodate the number of cameras indicated on the floor plans based on the camera specifications, and the following recording parameters:
    - a. 7 IPS per camera
    - b. Record based on motion
    - c. Calculate motion based on 50% motion factor
    - d. Minimum stored image retention of 45 days
    - e. 30 IPS per camera when in alarm condition
  - 2. If the installed system fails to provide the minimum 45 days of storage image retention for each camera; the integrator shall increase the storage array capacity until the 45 day requirement is met at no additional cost to the owner.

# PART 2 - PRODUCTS

# 2.1 GENERAL

- A. Equipment specified is intended as a reference standard for level of quality.
- B. Substitutions of equal quality will be accepted for ONLY those products which state "Approved Equal" under the Acceptable Manufacturers list.
- C. Provide materials listed by UL or ETL.

# 2.2 CORNER MOUNT CAMERA

A. Specifications

1. 2. 3. 4. 5.	Imaging Device Max Resolution Shutter Speed Angle of View Lens	1 / 2.8" Exmor CMOS 1920 x 1080 1/10000 – 1/60 (slow shutter 1/15, 1/8, ¼) 120 degrees(H) – 70 degrees(V) Fixed 2.6mm, F2.0
6.	Input Voltage	24 VAC, 12 VDC
7.	Power Consumption	POE IEEE 802.3af Class 0 24 VAC / 12VDC 500mA 6.0W PoE 48 VDC 125mA 6W
8.	Ethernet	RJ-45 10BASE-T/100BASE-TX
9.	Radio Frequency	FCC, CE
10.	Operating Temp	0 degrees celcius – 50 degrees celcius
11.	Humidity	0 – 80% (non-condensing)
12.	External Dimension	15" x 12.6"
13.	Weight	1600g

# B. Acceptable Manufacturers

- 1. Vicon XX247-10-01 V-CELL HD Corner Mount Camera
- 2. Vicon

## 2.3 FIXED VIDEO SURVEILLANCE CAMERA 0.3 MP

- A. Specifications
  - 1. Imaging Device: 1/2.8-inch CMOS sensor
  - 2. Max. Resolution: SD (D1)
  - 3. Shutter Speed: 1⁄4 1/20,000
  - 4. Automatic Gain Control: On/Off selectable
  - Signal-to-Noise Ratio: >50 dB
     Sensitivity: VGA: C
    - VGA: Color: 0.12 fc (1.25 lux);
      - B&W: 0.014 fc (0.15 lux),slow shutter On, @f/1.6, 30 IRE 720P/1080P: Color: 0.07 fc (0.7 lux);

# B&W: 0.007 fc (0.08 lux),slow shutter On, @f/1.4, 50 IRE

7. 8. 9. 10.	Zoom and Focus Slow Shutter: Electronic Zoom: Lens Adjustment:	Motorized focus and Zoom 2X 1 ~ 10X (client software) Focus and zoom adjustment; fixed lens, DC iris/P-iris motorized lens, iris automatically adjusts to zoom
11. 12. 13. 14.	Focal Length: Horizontal Field of View: Input Voltage: Current (MFZ On/Off):	condition 3-9 mm (3X zoom) 3-9 mm: 93°- 31.7° 24 VAC, 12 VDC, PoE 24 VAC: 590 mA 12 VDC: 550 mA
		PoE: Class 2
15.	Power Consumption (MFZ Off/On):	12 VDC: 6.5 W, 24VAC: 7.5W, POE: 6.4W
16.	Connectors:	Power: 24 VAC/12 VDC screw terminal PoE/Network: RJ-45
		Video/Data: RJ-45 Alarm In/Out: terminal block Audio In /Out: jack (audio out requires external amplifier) Slot for SD card Composite output provided for installation (NTSC/PAL selectable)
17.	Radio Frequency	
	Emission Rating:	FCC Class A; CE
18.	Operating Temperature:	-40° to 122°F (-40° to 50℃)
19. 20.	Humidity: Construction:	<90% relative, non-condensing Plastic Dome: clear polycarbonate tamperproof screws,
21.	Dimensions:	Height: 4.3 in. (110 mm), Diameter: 6.06 in. (154 mm)
22.	Weight:	Approximately 2.5 lb (1.1 kg)

- B. Acceptable Manufacturers
  - 1. Vicon V920D-39MD-IP, typical of interior and exterior cameras. Provide required mounting supports and hardware. Provide quantity shown on plans. Provide software license as required.
  - 2. Vicon

# 2.4 FIXED VIDEO SURVEILLANCE CAMERA 1.3 MP

A. Specifications

<ol> <li>Imaging Device:</li> <li>Max. Resolution:</li> <li>Shutter Speed:</li> <li>Signal-to-Noise Ratio:</li> <li>Tilt and Horizontal Adjustment:</li> <li>Electronic Zoom:</li> <li>Lens Adjustment:</li> <li>Focal Length:</li> <li>Horizontal Field of View:</li> <li>Input Voltage:</li> <li>Current (MFZ On/Off):</li> </ol>	1/2.8-inch CMOS sensor 720p 1/4 - 1/20,000 >50 dB 3-axis adjustment: pan (360°), tilt (90°) and roll (lens may be rotated on its axis 360°) 1 ~ 10X (client software) Focus and zoom adjustment; fixed lens, DC iris/P-iris motorized lens, iris automatically adjusts to zoom condition 3-9 mm 3-9 mm 3-9 mm: 93°- 31.7° 24 VAC, 12 VDC or PoE 24 VAC: 590 mA 12 VDC: 550 mA PoE: Class 2
12 Power Consumption	
(MFZ Off/On):	12 VDC: 6.5 W, 24VAC: 7.5W, POE: 6.4W
13. Connectors:	Power: 24 VAC/12 VDC screw terminal PoE/Network: RJ-45
	Video/Data: RJ-45 Alarm In/Out: terminal block Audio In /Out: jack (audio out requires external amplifier) Slot for SD card Composite output provided for installation (NTSC/PAL selectable)
14. Radio Frequency	
Emission Rating:	FCC Class A; CE
15. Operating Temperature:	-40° to 122°F (-40° to 50 ℃)
16. Humidity:	<90% relative, non-condensing
18. Dimensions:	die-cast aluminum base Height: 4.3 in. (110 mm), Diameter: 6.06 in. (154 mm)
	Dome Diameter: 4.3 in. (110 mm)
19. Weight:	Approximately 2.5 lb (1.1 kg)

B. Acceptable Manufacturers

- 1. Vicon V921D-39MD-IP, typical of interior cameras. Provide required mounting supports and hardware. Provide quantity shown on plans. Provide software license as required.
- 2. Vicon

# 2.5 MONITOR

- A. Specifications
  - 1. LCD Panel:
  - 2. Screen Size:
  - 3. Pixel Pitch:
  - 4. Resolution:
  - 5. Aspect Ratio:
  - 6. Display Colors:
  - 7. Response Times:
  - 8. Backlight:
  - 9. Luminance:
  - 10. Contrast:
  - 11. Viewing angle:
  - 12. Digital Input:
- B. Acceptable Manufacturer
  - 1. Vicon VM-6215 LED-1
  - 2. Approved Equal

## 2.5 MONITOR MOUTING ARM

- A. Specifications
  - 1. Accommodates CCTV Monitor size.
  - 2. Accommodates CCTV Monitor weight.
  - 3. Extends 16" (minimum)
  - 4. Equipped with +/- 15 degree (minimum) tilt capabilities.
- B. Acceptable Manufacturers
  - 1. CorLiving A-202-MLM
  - 2. Approved Equal

# 2.6 VIDEO MANAGEMENT SYSTEM

- A. Specifications
  - 1. Enterprise-Class Client/Server based video management system.
  - 2. System-wide user management, alarm handling, health monitoring, and configuration.
  - 3. Full virtual matrix capabilities, including analog monitor support and CCTV keyboard control

24" .248" x .248" 1920x1080 pixels 16:9 16.7 million colors 5 ms LED 250 cd/m<sup>2</sup> 1000:1 170 deg/160 deg DVI-D, HDMI, VGA

LED

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- 4. Superior alarm handling with alarm priorities and selectable user group distribution.
- 5. Provide load balanced storage across multiple arrays with recording failover in the event of an array malfunction.
- 6. Workstations must be capable of displaying live video independent of management server in the event the management server is unavailable.
- 7. Advances user interface concepts for effective and efficient operation
- 8. Supports all ONVIF Profile S devices,H.264, MPEG-4 encoders, decoders, IP cameras, IP auto domes.
- 9. Enterprise support for multiple management servers.
- 10. Video decoder support.
- 11. Support for camera call up. No scripting shall be required for interfacing between the VMS and PLC system.
- 12. VMS must have capability to monitor all network devices using SNMP.
- 13. Software Maintenance Agreements shall not be *required* by the manufacturer but rather offered.
- 14. Minimum Client Workstation PC Requirements a. HP Z420 Series
- 15. Minimum Central Server PC Requirements
  - a. HP R8 Series
- B. Acceptable Manufacturer
  - 1. Vicon Viconnet Version 7. Provide expansion modules as required for support of viewing stations identified on plans, as well as modules required for video recording, system configuration and management, and system monitoring. Provide software license as required. Provide Software Maintenance as required.
  - 2. Vicon
- 2.7 VIDEO MANAGEMENT SERVER
  - A. Specifications
    - 1. 1RU Rack Mount
    - 2. Windows Server 2012 standard, 64 bit OS
    - 3. Intel Xeon E5-2603 Processor 1.8 GHz 4C 10M 6.4GT Hyper T 80 Watt
    - 4. 16 GB 1RX4 RDIMM DDR3 1600
    - 5. (4) 1TB 3.5" SATA enterprise hard drive 7.2K, 6 GB/s Hot Swap
    - 6. Slim SATA DVD Optical
    - 7. Mouse
    - 8. Keyboard
    - 9. Single monitor video card
    - 10. Intel Pro/1000 PT Dual Port 1GB Ethernet Adapter
    - 11. Dual 800 Watt Redundant PS
    - 12. 3 Year onsite service
  - B. Acceptable Manufactures
    - 1. Lenovo Thinkserver RD530
    - 2. HP
    - 3. Dell
    - 4. Vicon

# 2.8 VIDEO STORAGE ARRAY

# A. Specifications

- 1. The IP Video Storage System shall be an embedded, all-in-one IP Video Storage subsystem that provides "plug-and-play" iSCSI-based recording and management.
- 2. The IP Video Storage Array shall be a 2 U rack-mount chassis with eight (9) hot swappable, 3 Gbps SATA-II hard disk drives with RAID-5 protection..
- 3. The IP Video Storage Array shall be equipped with two (2) redundant 1 GbE network interfaces.
- 4. The IP Video Storage System shall contain a Disk-on-Module (DoM) solid-state memory module that contains a non-volatile backup image of all system software which can be used to initiate a full system recovery in the event the system partition is lost or corrupted.
- 5. The IP Video Storage Array shall be installed with the Microsoft Windows Storage Server 2012 operating system.
- 6. The IP Video Storage Array shall support the following:
  - a. SNMP
  - b. Remote Desktop
  - c. HTTP monitoring
- 7. The IP Video Storage Array processor shall include ECC Unbuffered memory protection.
- 8. The storage array is designed so that all data is protected even if one hard disk drive completely fails.
- 9. Each 2TB disk drive in the storage array is hot swappable, so that a failed drive can be easily replaced without cycling power or interrupting recording or data retrieval.
- B. Acceptable Manufacturer
  - 1. Vicon NVR-Shadow digital video storage array. Provide a quantity of digital storage arrays to support the number of cameras shown on the plans.
  - 2. Vicon

# 2.9 SECURITY NETWORK SWITCH

- A. Specifications
  - 1. (24) Ethernet 10/100/1000 ports, (4) shared SFB/GBIC 1000ports
  - 2. Switching fabric:
  - 3. Forwarding rate:
  - 4. Memory:
  - 5. MAC addresses:
  - 6. IGMP groups/Multicast routes:
  - 7. Configurable MTU:
  - 8. 1000BaseT ports:
  - 9. Stacking:
  - 10. Stacking Backplane:
  - 11. Input power:
  - 12. Indicators:
    - a. Port link integrity
    - b. Port disabled
    - c. Port speed
    - d. Port full duplex

- 50 mpps 64 MB DRAM & 32 MB flash Up to 10,000
- Up to 255

68 Gbps

- 10000 Bytes with jumbo frames RJ-45 connectors
- Minimum 16 switches
- 10gbps
- 100 240 VAC auto-ranging

- e. System status
- f. System RPS
- g. System link status
- h. System link duplex
- i. System link speed
- 13. Operating Temp:
- 14. Operating relative humidity:
- 15. Power consumption:
- 16. Certifications:
- 17. POE: simultaneously
- B. Acceptable Manufacturers
  - 1. IFS NS3601-24P/4S
  - 2. Cisco
  - 3. HP

## PART 3 COMPLETION

### 3.6 INSTALLATION

- A. All system programming shall be done at the Trade Contractor's facility prior to installation on site.
- B. Qualified personnel shall install the System in strict compliance with manufacturer's instructions.
- C. Wiring shall be color coded, uniform and in accordance with national electric codes and manufacturer's instructions.
- D. Equipment shall be firmly secured, plumb and level.
- E. All cable runs to the main equipment rack shall be tagged and identified.
- F. Coordinate all work with General Contractor other Trades Contractors.
- G. Grounding of cables and peripheral equipment shall be installed per manufacturer's direction to eliminate noise induction and achieve optimum system performance.
- H. Install and configure Security local area network as required for control and communication between system devices. When required, provide necessary coordination, termination, and programming associated with integrating Security local area network with facility administrative network.
- I. Equipment cabinets shall be assembled in the Security Electronics Contractor's shop prior to delivery to the job site.
- J. Cameras shall be aimed and focused in the presence and at the direction of the Owner.

0 to 50 degrees C 10 – 85% non-condensing 40 Watts max (120VAC) UL listed, FCC part 15 Class A IEEE 802.3af on all ports

# 3.7 SOFTWARE SUPPORT

A. Refer to Section 284620 for software support and programming requirements.

# 3.8 SYSTEM INITIALIZING AND PROGRAMMING

- A. All programming shall occur in the Security Electronics Contractor's shop prior to installation on site.
- B. The System shall be turned on and adjustment made to meet requirements of the specification and on-site conditions.
- C. The System shall be programmed to function as specified.
- D. Any special programming shall be documented and a written copy given to the Owner/User.
- E. Coordinate integration of other electronic systems as called for in the contract documents.

# 3.9 FINAL ADJUSMENTS

- A. Before obtaining permission from the Owner to schedule the acceptance test, provide written certification to the Architect Engineer that the complete system has been calibrated, tested and is ready to begin the 14 day burn-in period and acceptance testing.
- B. Acceptance tests
  - 1. Conduct final acceptance test after a period of not less than 14 consecutive normal working days of trouble free operation, on the complete and operational video surveillance system to demonstrate that it is functioning in accordance with all requirements of this specification. During this burn-in period, the video surveillance system shall operate continuously for 24 hours per day. Demonstrate the correct operation of all monitored and controlled points as well as the operation and capabilities of all sequences during the acceptance test.
  - 2. Should retesting be deemed necessary by the Architect Engineer due to malfunction or inappropriate construction methods, the Trade Contractor shall be fully responsible for additional cost incurred for retesting, including the Architect Engineer and Trade Contractor's time.
  - 3. Final system acceptance shall be based upon the completion of the following items:
    - a. Completion of the installation of all hardware items. Complete operation of the system, with no failures during the entire acceptance test period.
    - b. Satisfactory completion of the as-builts, operating, and maintenance manuals.
    - c. Satisfactory completion of all training programs.
    - d. Upon final acceptance, the warranty period shall begin.

## 3.10 SYSTEM TEST PROCEDURES

A. The System shall be completely tested to assure that all components are hooked up and in working order. Inspect system for defects. Correct all causes of such defects. If the cause is outside of the scope of the Division 28 series scope of work, promptly notify the Architect Engineer in writing, indicating the cause of the defect and suggested corrective procedures.

- B. The Security Electronics Contractor is to verify the system is communicating with all controlled devices.
- C. Test 120VAC power equipment and hardware internal to all equipment racks. Test all conductors for shorts, opens, and polarity.
- D. Verify operation of UPS power conditioning and backup. Test by removing utility power from system.
- E. Verify all field wiring is free of defects prior to termination of head end electronics.
- F. After termination of head end electronics, fully test operation of system including activation of field devices, alarm initiation from field devices.
- G. Provide written documentation showing all test results.
- H. The System shall be final tested in the presence of the Architect Engineer. Trade Contractor is to provide all required testing equipment.

### 3.11 TRAINING

- A. Contractor is responsible for providing operational and maintenance training applicable to the entire control system. Training is to include, but not be limited to the following-
  - 1. Review all O+M manuals with Owner representatives present for training.
  - 2. Perform a tour of the entire facility. During the tour the trainer shall point out all surveillance equipment and provide a brief description of its purpose and use. This is to include but not be limited to cameras, monitors, control stations, recording devices, and devices controlled.

## END OF SECTION 282313










32'









![](_page_78_Figure_0.jpeg)

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1/8" = 1'-*0*"

- ELEVATIONS.
- ROOF & CLERESTORY FRAMING PLAN NOTES:

ROOF AND CLERESTORY FRAMING PLAN

- TOP OF STEEL ELEVATION = +36.67' AS MEASURED FROM REFERENCE DATUM.
   ELEVATIONS NOTED THUS (-0") IN PLAN ARE MEASURED FROM TOP OF STEEL ELEVATION. SLOPE STEEL UNIFORMLY BETWEEN HIGH AND LOW POINTS.
- 3. ROOF SHALL BE 8" THICK NORMAL WEIGHT ONE-WAY CONVENTIONAL CAST-IN-PLACE CONCRETE SLAB. REINFORCE WITH A CONTINUOUS MAT OF #6@12" O.C. CENTER EACH WAY. 4. HOUSING ROOF CONSTRUCTION SHALL BE 6-1/2" NORMAL WEIGHT CONCRETE ON 1-1/2" (16 GA HAT / 18 GA PAN) ACOUSTICAL CELLULAR FORM DECK (8" TOTAL THICKNESS). REINFORCE SLAB WITH A CONTINUOUS MAT OF #5@12" O.C. TOP AND BOTTOM EACH WAY. PROVIDE ADDITIONAL REINFORCING AS SHOWN ON
- PLAN. CONTRACTOR SHALL SHORE DECK DURING CONSTRUCTION AS REQUIRED BY DECK MANUFACTURER. ALL STEEL SHALL BE ASTM A992, UNLESS NOTED OTHERWISE.
   ROOF JOISTS SHALL BE DESIGNED FOR NET UPLIFT OF 20 PSF.
   IN PLAN INDICATES MOMENT CONNECTION.
- 8. "SW-#" ON PLAN INDICATES A CONCRETE SHEAR WALL. COORDINATE WITH TYPICAL DETAILS AND CONCRETE SHEAR WALL ELEVATIONS. 9. "VT-#" ON PLAN INDICATES A VERTICAL TRUSS. COORDINATE WITH TYPICAL DETAILS AND VERTICAL TRUSS
- 10. SEE ARCHITECTURAL AND/OR MECHANICAL DRAWINGS FOR:
  A. LOCATION OF FLOOR DRAINS AND SLOPE OF FINISHED FLOOR.
  B. SIZE AND LOCATION OF SLAB OPENINGS AND/OR MECHANICAL SLEEVES.
- 11. WORK THIS DRAWING WITH: A. GENERAL NOTES: SGOXX SERIES B. SUPERSTRUCTURE SECTIONS AND DETAILS: S5XX SERIES
- C. LATERAL BRACING: S3XX SERIES
- D. COLUMN SCHEDULE: S6XX SERIES 12. COLUMNS NOTED THUS (A) IN PLAN ARE ABOVE ONLY. 13. COLUMNS NOTED THUS (B) IN PLAN ARE BELOW ONLY.
- 14. FILLER BEAM/JOIST LAYOUT IS BASED ON EQUAL SPACING BETWEEN COLUMN LINES, UNLESS NOTED OTHERWISE. COORDINATE WITH TYPICAL DETAILS AROUND OPENINGS.
- 15. REFER TO ARCHITECTURAL DRAWING FOR EXTENT OF NEW CONSTRUCTION.
   16. ALL DIMENSIONS ADJACENT TO EXISTING CONSTRUCTION SHALL BE VERIFIED.
   17. VERIFY ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS. REPORT ANY DISCREPANCIES TO THE ARCHITECT FOR REVIEW.

![](_page_78_Picture_25.jpeg)

![](_page_78_Figure_26.jpeg)

![](_page_79_Figure_0.jpeg)

, UNLESS NOTED OTHERWISE.	

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O VERTICAL TRUSS ELEVATIONS.	

![](_page_79_Figure_19.jpeg)

(F)

(E.5)

(D)

	6'-4	" /	11' - 9 13 <i>/1</i>	16"	, 7' - 0 3/16"		18' - 1	0"		6' - 4"			19' - 10"			/	19	1' - <i>O</i> "		7'-	2"			
			— CANTILEVI HSS5x4x3 TYP	ERED 1/8 (GALV	(.),							_	- CANT H555; TYP - TYPE I JOIST TYP.	ILEVEREI x4x3/8 (1 R12 TOP EXTENSIO	CHORD	a								
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											<u>/</u>		W16X40					16×40						
;" )—	ī <b>→</b>	T I				-					(-6'-	9 9/16" )	7,10/(-10	( -5' -	11 9/16" )		/16" )	(	-5' - 2 1/16" )	<b>₽</b> ┝──				
			$\frown$			l						1	1	1			1	1			- 1			
		-	15							3/8			1	1			1				3/8			
		юх 20/62	5503	   		1				(4X)		•				0		1			44X			
4 0		4 X 4	•					2		4	<del>4</del> 0	ž	X	Ϋ́	Ϋ́	5 7 4 7	X	X	X		<b>1</b> 4			
16)		-1				l I		5504			<u>5</u>	• _			12	Z	<del>, ,</del>		<del></del>	<u>                                     </u>				
~																								
				( +3' - 11 9/16	" <b>h</b>	( 14 2 1/1/	2" )																	
		— m	W21X4		W21X44		W21X4	44		-7' - 0 3/4"	)	•	-6	( -5' -	11 9/16" )	( -5' - 11 1	1/16" )		-6	_( -4' - 10	1/2" )_			
		Ī	( -8' - 2 1/	(2" )		( +4' - 3 1/	/16" )	( +5' - 0 1/	(-	+5' - 0 1/2" I	)	VT	-6	( +6' -	1 9/16" )	<b>•</b> ( +6' - 1 9/	(16" )		-6	( +7' 2 1	1/16" )			
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-0 -	2 1/2 )	- 0	<u>(-8'-21/</u>	<sup>1</sup> / <sub>2"</sub> ) <b>──↓</b>	M21844	(+4' - 3 1/	/16") /16")	++++ + (+5'-01/	2")	+5' - 0 1/2" -7' - 0 3/4"	)		-1 -1	(+6'-	1 9/16" )	(+6'-19 	/16")		-1 -+	( +7' - 2 1' ( -4' - 10	1/16" ) 1/2" )		~- ++ +	
			(+;	3' - 11 9/16" )																				
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5")											<b>+</b> ( -6' - '	9 9/16" )	M16X40	( -5' -	11 9/16" )	( -5' - 11 9	/16") /	16×40 (	-5' - 2 1/16" )	Ť		*		
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		I I				l I			I I				CANTILE							1				
						I							HSS5x4: TYP	х3/8 (GA	LV.),									

(G)

(H.2)

![](_page_79_Figure_22.jpeg)

2

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

![](_page_79_Figure_25.jpeg)

![](_page_80_Figure_0.jpeg)

![](_page_80_Figure_1.jpeg)

2 STAIR A SECOND FLOOR 1/8" = 1'-0"

CONCRETE SHEAR WALL NOTES:

1. COORDINATE WITH CONCRETE SHEAR WALL ELEVATIONS FOR REINFORCING AND OPENINGS. 2. COORDINATE WITH ARCHITECTURAL AND MEP DRAWINGS FOR ADDITIONAL OPENING LOCATIONS AND DIMENSIONS. 3. REINFORCE OPENINGS PER TYPICAL SHEAR WALL OPENING REINFORCING DETAIL.

3 STAIR A THIRD FLOOR 1/8" = 1'-0" CONCRETE SHEAR WALL NOTES: AND DIMENSIONS.

\_\_\_\_*t*\_

![](_page_80_Figure_6.jpeg)

5 STAIR B SECOND FLOOR 1/8" = 1'-0"

CONCRETE SHEAR WALL NOTES: COORDINATE WITH CONCRETE SHEAR WALL ELEVATIONS FOR REINFORCING AND OPENINGS.
 COORDINATE WITH ARCHITECTURAL AND MEP DRAWINGS FOR ADDITIONAL OPENING LOCATIONS AND DIMENSIONS. 3. REINFORCE OPENINGS PER TYPICAL SHEAR WALL OPENING REINFORCING DETAIL.

![](_page_80_Figure_9.jpeg)

(B) ELEVATOR SECOND FLOOR 1/B" = 1'-O"

CONCRETE SHEAR WALL NOTES: COORDINATE WITH CONCRETE SHEAR WALL ELEVATIONS FOR REINFORCING AND OPENINGS.
 COORDINATE WITH ARCHITECTURAL AND MEP DRAWINGS FOR ADDITIONAL OPENING LOCATIONS AND DIMENSIONS.

3. REINFORCE OPENINGS PER TYPICAL SHEAR WALL OPENING REINFORCING DETAIL.

![](_page_80_Picture_14.jpeg)

![](_page_80_Picture_15.jpeg)

6 STAIR B THIRD FLOOR 1/8" = 1'-0" CONCRETE SHEAR WALL NOTES: COORDINATE WITH CONCRETE SHEAR WALL ELEVATIONS FOR REINFORCING AND OPENINGS.
 COORDINATE WITH ARCHITECTURAL AND MEP DRAWINGS FOR ADDITIONAL OPENING LOCATIONS AND DIMENSIONS. 3. REINFORCE OPENINGS PER TYPICAL SHEAR WALL OPENING REINFORCING DETAIL.

![](_page_80_Picture_17.jpeg)

CONCRETE SHEAR WALL NOTES:

 COORDINATE WITH CONCRETE SHEAR WALL ELEVATIONS FOR REINFORCING AND OPENINGS.
 COORDINATE WITH ARCHITECTURAL AND MEP DRAWINGS FOR ADDITIONAL OPENING LOCATIONS AND DIMENSIONS. 3. REINFORCE OPENINGS PER TYPICAL SHEAR WALL OPENING REINFORCING DETAIL.

NOTE: CONTRACTOR SHALL COORDINATE ALL SHEAR WALL GEOMETRY AND OPENING DIMENSIONS, ELEVATIONS, LOCATIONS AND QUANTITY WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, IT, ETC. PROVIDE SHOP DRAWINGS SHOWING AND DIMENSIONING ALL PROPOSED SHEAR WALL PENETRATIONS. REINFORCE ALL OPENINGS PER TYPICAL DETAILS.

![](_page_80_Figure_21.jpeg)

1. COORDINATE WITH CONCRETE SHEAR WALL ELEVATIONS FOR REINFORCING AND OPENINGS. 2. COORDINATE WITH ARCHITECTURAL AND MEP DRAWINGS FOR ADDITIONAL OPENING LOCATIONS 3. REINFORCE OPENINGS PER TYPICAL SHEAR WALL OPENING REINFORCING DETAIL.

![](_page_80_Figure_23.jpeg)

![](_page_80_Figure_24.jpeg)

![](_page_81_Figure_0.jpeg)

![](_page_81_Figure_1.jpeg)

![](_page_81_Figure_2.jpeg)

7<u>SW-7</u> 1/8" = 1'-0"

![](_page_81_Figure_5.jpeg)

12' - 2" — #5@12" O.C. VERT, E.F. #5@12" O.C. HORIZ, E.F. THIRD FLOOR 28' - 0" - #5@12" O.C. VERT, E.F. #5@12" O.C. HORIZ, E.F. SECOND FLOOR 14' - 0" - #6@12" O.C. VERT, E.F. #6@12" O.C. HORIZ, E.F. 4' - 3 3/4" 4' -- REINFORCE SHEAR WALL OPENINGS PER TYPICAL SHEAR WALL OPENING REINFORCING DETAIL, TYP. FIRST FLOOR  $\overline{}$ 

- #5@12" O.C. VERT, E.F. #5@12" O.C. HORIZ, E.F.

PLUMBING, IT, ETC. PROVIDE SHOP DRAWINGS SHOWING AND DIMENSIONING ALL PROPOSED SHEAR WALL PENETRATIONS. REINFORCE ALL OPENINGS PER TYPICAL DETAILS.

8 <u>511-8</u> 1/8" = 1'-0"

4 SW-4 1/8" = 1'-0"

NOTE: CONTRACTOR SHALL COORDINATE ALL SHEAR WALL GEOMETRY AND OPENING DIMENSIONS, ELEVATIONS, LOCATIONS AND QUANTITY WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL,

![](_page_81_Picture_90.jpeg)

![](_page_82_Figure_0.jpeg)

![](_page_82_Figure_4.jpeg)

4 <u>5M-12</u> 1/8" = 1'-0"

# NOTE: CONTRACTOR SHALL COORDINATE ALL SHEAR WALL GEOMETRY AND OPENING DIMENSIONS, ELEVATIONS, LOCATIONS AND QUANTITY WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, IT, ETC. PROVIDE SHOP DRAWINGS SHOWING AND DIMENSIONING ALL PROPOSED SHEAR WALL PENETRATIONS. REINFORCE ALL OPENINGS PER TYPICAL DETAILS.

![](_page_82_Figure_11.jpeg)

- #5@12" O.C. VERT, E.F. #5@12" O.C. HORIZ, E.F.

#6@12" O.C. ∨ERT, E.F. #6@12" O.C. HORIZ, E.F.

![](_page_82_Figure_14.jpeg)

![](_page_82_Figure_15.jpeg)

![](_page_82_Figure_16.jpeg)

1. ALL VERTICAL BAR CHORD AND WEB REINF. SPLICE TO BE A CLASS 'B' SPLICE. 2. PROVIDE 90 HOOKS AT ALL DISCONTINUOUS BAR ENDS. 3. PROVIDE END PIER REINFORCING AT ALL CORNERS AND END CONDITIONS, FULL HEIGHT.

( ८ ) DETAIL \5302 3/4" = 1'-0" TYPICAL REINFORCING AT WALL CORNER

![](_page_82_Picture_19.jpeg)

![](_page_83_Figure_0.jpeg)

![](_page_83_Figure_4.jpeg)

![](_page_84_Figure_0.jpeg)

![](_page_84_Figure_5.jpeg)

![](_page_85_Figure_0.jpeg)

![](_page_85_Figure_1.jpeg)

![](_page_85_Figure_2.jpeg)

![](_page_85_Figure_4.jpeg)

![](_page_85_Figure_6.jpeg)

W/ ARCH DWGS.

------ STEEL BEAM (GALV.), SEE PLAN, TYP. SECOND FLOOR 14' - 0" - \_\_\_\_\_ \_\_\_\_ STEEL POST (GALV.), SEE PLAN  $^-$  1/2" THICK x 7 1/2" WIDE x 2'-4"
 LONG BASE PLATE (GALV.) W/
 (4) 1/2"Φ x 4 1/4" EMBED HILTI HIT HY 150 ADHESIVE ANCHORS (OR APPROVED EQUAL). ONE ANCHOR PER CMU CELL. - 8" BOND BEAM W/ (2)#5 CONT. BRICK VENEER, COORD. - 8" CMU, REINF. W/ W/ ARCH DWGS. #5@8" O.C. VERT.

SECTION

6 5504 3/4" = 1'-0"

![](_page_85_Figure_10.jpeg)

8 SECTION 5504 3/4" = 1'-*0*"

- COLD FORMED METAL FRAMING, COORD. W/ ARCH DWGS.

— METAL DECK, SEE PLAN STEEL BEAM, SEE PLAN STEEL JOISTS, SEE PLAN 5504 3/4" = 1'-0"

![](_page_85_Figure_15.jpeg)

![](_page_86_Figure_0.jpeg)

![](_page_86_Figure_5.jpeg)

	4	
DETAIL	5601	3/4" = 1'-0"
COLL	IMN SPLICE DETAIL	

TYPICAL STEEL COLUMN BASEPLATE SCHEDULE							
COLUMN SIZE	BASEPLATE	ANCHOR RODS					
H558x8x1/2	3/4"x16x16"	(4)-3/4"Φ					
HSS8x8x5/8	1"×16×16"	(8)-3/4" <b>Φ</b>					

BASEPLATE DETAILING SCHEDULE									
ANCHOR ROD	BASEPLATE	BASEPLATE PLATE WASHER ANCH							
DIAMETER (d)	HOLE DIAMETER	DIAMETER	THICKNESS (U.N.O.)	EDGE DISTANCE (U.N.O.)					
3/4"	1 5/16"	2"	1/4"	1 1/2"					
1"	1 13/16"	3"	3/8"	1 1/2"					
1 1/4"	2 1/16"	3"	1/2"	1 3/4"					
1 1/2"	2 5/16"	3 1/2"	1/2"	2"					
1 3/4"	2 3/4"	4"	5/8"	2 1/2"					
2"	3 1/4"	5"	3/4"	2 3/4"					
2 1/2"	3 3/4"	5 1/2"	7/8"	3 1/4"					
NOTES: 1. SEE COLUMN SCHEDULE FOR ANCHOR BOLT DIAMETER. 2. PLATE WASHERS SHALL HAVE STANDARD HOLES.									

![](_page_86_Figure_9.jpeg)

![](_page_87_Figure_0.jpeg)

![](_page_88_Figure_0.jpeg)

# -PRE-FINISHED ALUMINUM WALL PANEL SYSTEM

# PRE-FINISHED ALUMINUM COMPOSITE PANEL SYSTEM (PROVIDE 4 EQUAL PANELS WITH -OUTSIDE MITERED CORNERS)

-FINISHED STANDING SEAM FING AND RIGID INSUL. ON PING STRUCTURAL FRAMING		
	49'-0"	- Y

# COMPOSITE PANEL SYSTEM 2'-4" (PROVIDE 1 PANEL WITH OUTSIDE MITERED CORNER)

RE-FINISHED	T.O. PRE-CAST PANEL	
	 	$\neg$

T.O. PRE-CAST PANEL \_\_\_\_\_ 36'-0" -DETENTION HOLLOW METAL

## FRAMES AND GLAZING 28' - 0" -FIBERGLASS SANDWICH

PANEL ASSEMBLY \_\_\_\_\_ SECOND FLOOR MEZZ. 22' - 8" CAST STONE VENEER

# SECOND FLOOR \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ 14' -T O MAS'Y

	I.O MAS Y	
	7'-4"	Ψ
CJ-		
		Ŧ
		$\mathbf{r}$
1'-4 3	/8"	I
	F Contraction of the second seco	

# 28' - 0

SECOND FLOOR MEZZ. 22' - 8"

# SECOND FLOOR 14' - 0"

# FIRST FLOOR

# **GENERAL NOTES - BUILDING ELEVATIONS**

1. SEE SHEET SERIES A320 FOR ARCHITECTURAL CAST STONE CS## ELEVATIONS

2. SEE SHEET A620 FOR ALUMINUM FRAME SF# ELEVATIONS 3. SEE SHEET F3/A532 FOR CJ (CONTROL JOINT) DETAIL

4. SEE SHEET A620 FOR FIBERGLASS SANDWICH PANEL ASSEMBLY (F##) ELEVATIONS

![](_page_88_Figure_28.jpeg)

![](_page_89_Figure_0.jpeg)

# **GENERAL NOTES - BUILDING ELEVATIONS**

1. SEE SHEET SERIES A320 FOR ARCHITECTURAL CAST STONE CS## ELEVATIONS

4. SEE SHEET A620 FOR FIBERGLASS SANDWICH PANEL ASSEMBLY (F##) ELEVATIONS

![](_page_89_Figure_13.jpeg)

![](_page_90_Figure_0.jpeg)

![](_page_90_Figure_1.jpeg)

![](_page_90_Figure_2.jpeg)

# **GENERAL NOTES - BUILDING ELEVATIONS**

2. SEE SHEET A620 FOR ALUMINUM FRAME SF## ELEVATIONS

3. SEE SHEET F3/A532 FOR CJ (CONTROL JOINT) DETAIL 4. SEE SHEET A620 FOR FIBERGLASS SANDWICH PANEL ASSEMBLY (F##) ELEVATIONS

![](_page_90_Figure_12.jpeg)

![](_page_90_Figure_13.jpeg)

![](_page_90_Figure_14.jpeg)

1/A200

B2 1/A200 Scale: 1/8" = 1'-0"

![](_page_90_Figure_15.jpeg)

![](_page_90_Figure_16.jpeg)

![](_page_90_Figure_17.jpeg)

![](_page_90_Figure_18.jpeg)

![](_page_90_Figure_19.jpeg)

![](_page_90_Figure_25.jpeg)

![](_page_91_Figure_0.jpeg)

![](_page_91_Figure_5.jpeg)

![](_page_91_Figure_6.jpeg)

![](_page_92_Figure_0.jpeg)

![](_page_93_Figure_0.jpeg)

![](_page_94_Figure_0.jpeg)

![](_page_94_Figure_3.jpeg)

![](_page_94_Figure_8.jpeg)

![](_page_95_Figure_0.jpeg)

![](_page_96_Figure_0.jpeg)

![](_page_97_Figure_0.jpeg)

![](_page_98_Figure_0.jpeg)

16'

				2							1			
	NOTES			FURNIT	URE, FI	IXTUR	ES, AND	EQUIPM	IENT SC	CHEDUL	E			
	BLE FOR COORDINATION OF ALL				ЪВY	ВҮ	REQ'D	CONTR	ACTOR	INSTAL	LED UTI	LITIES	-	
	'ITH EQUIPMENT. G FOR ALL EQUIP. MTD ON MTL STU ONS AND EXTENTS WITH WITH FOR				ISHED	ALLED	WATE	NATEF	щ	R	ш			
	FICATIONS FOR ADDITIONAL REQU	JIRED	TAG	DESCRIPTION	FURN	INST/	COLD	НОТ \	WAS	POWI	CABL	DATA	MNT. HGT.	COMMENT
	EQUIPMENT INSTALLER, U.N.O. IAMPER-PROOF METAL FASTENER	2	1	KI 60" x 24" HURRY UP TABLE #HUN246074P	0	0								1
			3	NEW WINDSOR FLIP-UP CHAIR	0	0								
	IS FOR FSL EQUIPMENT REQUIREN NAL EQUIPMENT SCHEDULED HER CONNECTIONS.	E	5	TREK TABLE 60" DIAMETER	0	0								
	"C" INDICATES CONTRACTOR.		7	#115STFC 4-DRAWER FILE CABINET	0	0								
			8	WALL MOUNTED 46" FLATSCREEN TV AND MOUNTING BRACKET	0	C				YES	YES			6
			9	CLG MTD 46" FLAT SCREEN TV (O/C) AND MOUNTING BRACKET (C/C)	0	C				YES	YES			7
			10	MEZZANINE MTD 46" FLAT SCREEN TV AND MOUNTING BRACKET	0	C				YES	YES			8
			12	BRACKET, AND SECURITY HOUSING ZUMA CANTILEVER TWO-STUDENT DESK WITH	0	0								
Control Healthy         Control Healthy         Control Healthy         Control Healthy         Control Healthy           Control Healthy	SHEETS FOR SCOPE		13	BOOK BOX #ZDESK226027BOX MOBILE MEDICATION CART	0	0								
	BEYOND THIS LIMIT		14	MCE ENGAGE TASK CHAIR COUNTERTOP DENTAL LIGHT CURING MACHINE	0	0				YES				
Image: Disc of conservement of a construction of the state o			16 17	COUNTERTOP DENTAL AMALGMATOR COUNTERTOP DENTAL ULTRASONIC CLEANING SYSTEM	0	0				YES				
			18	DENTAL CHAIR, CHAIR MNT LIGHT, CHAIR MNT DENTAL DELIVERY SYSTEM, & STOOL	0	С	YES		YES	YES				2
P         Contraction of the Late Action of the Late Acti			19 20	WALL MTD DIGITAL X-RAY AND ARM SURFACE MTD X-RAY VIEW BOX	0 0	C C				YES YES		YES	3'-9"AFF 3'-6"AFF	
			21 22	COUNTERTOP DENTAL AUTOCLAVE STERILIZER DENTAL ASSISTANT STOOL	0	0				YES				
1         1			23 24	DENTAL PANOREX DIGITAL X-RAY FLOOR MTD DENTAL COMPRESSOR	0	0 C			YES	YES YES		YES		2
			25 26	DENTAL AIR-WATER SEPARATOR           FLOOR MTD DENTAL VACUUM PUMP	0	C C	YES YES		YES	YES				2
Part of the second product of the second pr			28	EXAM STOOL - RITTER	0	0								
1         1			23	TABLE #4000 AND EXAM STOOL, BREWER COMPNAY, #22400										
9         0			30 31	FOOSEBALL TABLE PING-PONG TABLE	0 0	0 0								
9         2000 Up 100 CONTROL CONTROL         0			32	KI DATALINK MULTIPURPOSE TABLE 30" X 72" WITH POWER UP DMD256F/2 74P-WHITE	0	0								1
Image: Second Transfer			33	COMPUTER STATIONS - MCE STUDY CARREL	0	0								
9         Description         Description         Description         Description           9         Description         Description <thdescription< th="">         Description</thdescription<>			35 36	CYBEX ELLEPITICAL - 625AT ARC TRAINER CYBEX FUNCTIONAL TRAINER - FT450	0	0								
No.         Control (1974)         Control (1974) <thcontrol (1974)<="" th="">         Control (1974)<td></td><td></td><td>37</td><td>CARBON BLUE PERFORMANCE PLUS EXERCISE BIKE</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thcontrol>			37	CARBON BLUE PERFORMANCE PLUS EXERCISE BIKE	0	0								
			38 39	CYBEX TREDMILL - 625T FULL HEIGHT REFRIGERATOR	0 0	0	YES			YES YES				
#         0.00000000000000000000000000000000000			40 41	MICROWAVE, COUNTERTOP ALTA SIDE CHAIR #12215NAS	0	0				YES				3
Bit Standard Standard Standard Standard         D         D         D           Bit Standard Standard Standard Standard         D         D         D         D           Bit Standard Standa			42 43	GUARDIAN HEAVY DUTY CHAIR, MCE #122140 TREK TABLE 48" DIAMETER	0	0								
4         Statuting (Statuting (S			45	STANDARD L-SHAPED DESK #115LDL	0	0								
Description         Description         Description         Description           31         manufacture         manufacture         manufacture         manufacture           31         manufacture         manufacture         manufacture         manufacture         manufacture           31         manufacture         manufacture         manufacture         manufacture         manufacture         manufacture           31         manufacture         manufacture         manufacture			49	STANDARD 30 JORAWER LATERAL FILE CABINET #115LF3	0	0								
And Section         Construction         Construction         Construction         Construction           Image: Construction         Image: Construction         Image: Construction         Image: Construction         Image: Construction         Image: Construction           Image: Construction <td></td> <td></td> <td>50 51</td> <td>TENOR MID BACK #122UN7700 MINI REFRIGERATOR, MAGIC CHEF APPLIANCE</td> <td>0 0</td> <td>0</td> <td></td> <td></td> <td></td> <td>YES</td> <td></td> <td></td> <td></td> <td></td>			50 51	TENOR MID BACK #122UN7700 MINI REFRIGERATOR, MAGIC CHEF APPLIANCE	0 0	0				YES				
Marcal Status         Marcal Status         Marcal Status         Marcal Status         Marcal Status           9         Marcal Status		<u>}</u>	52	#MCBR360S CLARIDGE 4'W X 4'H BULLETIN BOARD AND CARINET 2040 (PROVIDE LEXAN		C	$\sim$	<b>~~~~</b>						
Init Control work work = 0 (200 km/s)         Init Control work (14400 ± 0.000 km/s)         Init Control work (14400 ± 0.0000 km/s)         Init C			<b>5</b> 4	POLYCARBONATE)	 0	0	um	um	un	<u>u</u>	h	h	mm	m
S         CLARGE 24 XAT HARDER DANA SHALLS         0         C         2.3'APF           FC         CLARGE 24 XAT HARDER DANA DANA         0         C         2.3'APF           FC         CLARGE 24 XAT HARDER DANA DANA         0         C         2.3'APF           FC         CLARGE 24 XAT HARDER DANA DANA         0         C         2.3'APF           FC         CLARGE 24 XAT HARDER DANA         0         C         2.3'APF           FC         CLARGE 24 XAT HARDER DANA         0         C         2.3'APF           FC         CLARGE 24 XAT HARDER DANA         0         C         2.3'APF           FC         SCARGE 25 XAT CLARGE 24 WARDER DANA         0         C         2.3'APF           FC         SCARGE 24 WARDE 25 WARDE 100         0         C         2.3'APF           FC         SCARGE 24 WARDE 25 WARDE 100         0         C         2.3'APF           FC         SCARGE 24 WARDE 25 WARDE 100         0         C         2.3'APF           FC         SCARGE 24 WARDE 25 WARDE 100         0         C         2.3'APF           FC         SCARGE 24 WARDE 25 WARDE 100         0         C         2.3'APF           FC         SCARGE 24 WARDE 25 WARDE 100 WARDE 20 WARDE 100         0				TALL CABINET WITH SWING HANDLE LOCK #2571 M2 48" Wx24"Dx78"H										
3         Column 200 with the Lake         0         0         2.8 kPH           8         Column 200 with the C			55 56	CLARIDGE 4'W X 4'H MARKER BOARD, S4-4x4-LCS CLARIDGE 8'W X 4'H MARKER BOARD, S4-4x8-LCS	0	C C							2'-8"AFF 2'-8"AFF	
91     CLARDCE SW X4H ORAK 56 MAR 34-MT     0     0     0     2.4*MF       93     CLARDCE SW X4H ORAK 56 MAR 300 (2)     0     0     0     2.4*MF       93     CLARDCE SW X4H OLIT ENSING     0     0     0     0     0       94     ALL CALL MARKET FUNCTION     0     0     0     0     0       94     ALL CALL MARKET FUNCTION     0     0     0     0     0       94     MERICE SW X4H ORAK 55 MARKET SW 11     0     0     0     0     0       94     MERICE SW X4H ORAK 55 MARKET SW 11     0     0     0     0     0       94     MERICE SW X4H ORAK 55 MARKET SW 11     0     0     0     0     0       94     MERICE SW X4H ORAK 55 MARKET SW 11     0     0     0     0     0       94     MERICE SW X4H ORAK 55 MARKET SW 20     0     0     0     0     0       95     SAMINE HORAK 114 MARKET SOMARET     0     0     0     0     0     0       95     SAMINE HORAK 114 MARKET SOMARET     SAMINE HORAK 114 MARKET SOMARET     0     0     0     0     0       96     SAMINE HORAK 114 MARKET SOMARET     0     0     0     0     0     0     0			57	CARIDGE 8 W X 4 H BULLE IN BOARD AND CABINET, 2046 (PROVIDE LEXAN POLYCARBONATE)	0								2-8 AFF	
02       STUDENT FORMS JUMA STG 21/2016 (AP)       0       0       0         12       STUDENT FORMS JUMA STG 21/2016 (AP)       0       0       0         14       STARATION DULL THANK STG 21/2016 (AP)       0       0       0         15       STUDENT FORMS JUMA STG 21/2016 (AP)       0       0       0         16       MARCH DATA STG 21/2016 (AP)       0       0       0         17       STUDENT FORMS JUMA STG 21/2016 (AP)       0       0       0         18       MARCH DATA STG 21/2016 (AP)       0       0       0       1         18       MARCH DATA STG 21/2016 (AP)       0       0       1       1         19       MERCH MARC MARCH AND STG 20/2017 (AP)       0       0       1       1         19       MERCH MARC MARCH AND STG 20/2017 (AP)       0       0       1       1       1         10       MARCH AND STG 20/2017 (AP)       0       0       1       2       2       1       1         11       MARCH AND STG 20/2017 (AP)       0       0       1       2       2       1       1       1       1       1       1       1       1       1       1       1       1       1			61	CLARIDGE 3'W X 4'H CHALK BOARD, S4-4X3-VIT (BLACK)	0	С							2'-8"AFF	
4         IDEATABLE SPACE         0         0         0           4         IDEATABLE SPACE         0         0         0           65         INFORCE         TABLE SPACE         0         0           66         INFORCE         TABLE SPACE         0         0           67         INFORCE         TABLE SPACE         0         0           68         INFORCE         TABLE SPACE         0         0           69         INSTRICT         INFORCE         O         0         0           74         INFORCE         INFORCE         O         0         0         0         1           74         INFORCE         INFORCE         INFORCE         O         0         0         0         0         0         2         2         7           78         STANDER DE LORANDE         0         0         0         0         0         2         2         7         1           78         STANDER DE LORANDE         0         0         0         0         0         2         2         7         2         2         7         2         2         2         7         3         3         3<		$\geq$	62 63	STUDENT CHAIRS, ZUMA STG ZU418 (18") CLARIDGE 3'W X 4'H BULLETIN BOARD, S4.4X3.COP, CLARIDGE COPK	0	C							2'-8"AFF	
6         H PORTIOU TABLE SPW 2012 HESPE EDGE-14P         0         0           6         M ENDLOS HEALTH, WIRE SHELWING OTS WITH         0         0         VES         11           6         MENDLOS HEALTH, WIRE SHELWING OTS WITH         0         0         VES         11           7         MENDLOS HEALTH, WIRE SHELWING OTS WITH         0         0         VES         11           7         MENDLOS HEALTH, WIRE SHELWING OTS WITH         0         0         VES         11           9         METAL SHELWING MICE ALLOS ON XAY REY         0         0         VES         1           10         OTAL THROME ON XANDER         0         0         VES         1           11         OTAL THROME ON XANDER         0         0         VES         1           11         OTAL THROME ON XANDER         0         0         VES         1           12         OUNCTON CARL RAVER BOARD, 0         0         0         VES         2         2         7         7           13         OLARDER OF XANDER THORNOW AND	$\leq$		64	KI DATALINK MULTI PURPOSE TABLE 36"x36" DMS3FX74P	0	0								
68         MEDICAL FEAT IN WRITE SHIT WALK ATTS WITH         0         0         VES         11           90         MESCE TEXTING MEDICAL STATE SHITE STATE         0         0         VES         11           90         METAL SHIT WALKS MEDICAL STATE STATE         0         0         VES         11           90         METAL SHIT WALKS MEDICAL STATE STATE         0         0         0         VES         1           91         METAL SHIT WALKS MEDICAL STATE STATE STATE         0         0         VES         1           92         METAL STATE S			65 67	KI PORTICO TABLE 36"Wx72"L #P36F EDGE-74P STANDARD EXECUTIVE DESK #115ED	0 0	0 0								
10         10         10         10         10           13         10         10         10         10         10           13         10         10         10         10         10           13         10         10         10         10         10           14         14         14         15         10         10         10           15         14         14         15         10         10         10           15         14         10         10         10         10         10           16         16         16         16         16         16         16           17         16         16         16         16         16         16           17         16         16         16         16         16         16         16           18         16         16         16         16         16         16         16           18         16         16         16         16         16         16         16         16           18         16         16         16         16 <th16< th=""> <th16< th=""></th16<></th16<>			68	MEDICUS HEALTH, WIRE SHELVING KITS WITH BASKET #2071M3, 24"Dx36"Wx63"H	0	0				VEO				11
Image: Server 1           73         Mark Herkland Herk			70	METAL SHELVING, MCE #124013 (36"x 24"x 82")	0	0				YES			2'-8"AFF	
76       SUFFICE DEMANDER DE GADOS X.R.M.Y SCHANER       0       0       YES       1         78       CLAINICE: 00       YES       2.47AFF       2.47AFF         78       CLAINICE: 00       YES       2.47AFF       2.47AFF         79       CLAINICE: 20       YES       2.47AFF       2.47AFF         80       CLAINICE: 20       YES       YES       7.87AFF         84       YES       YES       YES       YES       7.87AFF         84       SHORT THROW FROLECTOR AND WALL MOUNT       0       0       YES       YES       4         84       SHORT THROW FROLECTOR AND WALL MOUNT       0       0       YES       YES       4         84       SHORT THROW FROLECTOR AND WALL MOUNT       0       0       YES       YES       4         84       SHORT THROW FROLECTOR AND WALL MOUNT       0       0       YES       YES       4         86       MORE CRASHCART       0       0       YES       YES       3.47AFF         86       MORE CRASHCART       0       0       YES       YES       3.47AFF         86       MORE CRASHCART       0       0       YES       3.47AFF         87       N			74	S4-4X6-LCS WALK-THROUGH METAL SCANNER	0	0				YES				1
→       SUM HARE       0       C       -			75	SMITHS HEIMANN HS 6040DS X-RAY SCANNER WITH CONVEYOR, MONITOR, CART, KEYBOARD	0	0				YES				1
19       0 ANDRE 1 OF VAH BULLETIN BOARD, 0       0       C       2.4"NFF         19       0 CLARIDGE 12 W 4H HABKER BOARD       0       C       YES       7.8"NFF         18       SHORT THROW PROJECTOR AND WALL MOUNT       0       C       YES       YES       4         18       SHORT THROW PROJECTOR AND WALL MOUNT       0       C       YES       YES       4         18       SHORT THROW PROJECTOR AND WALL MOUNT       0       C       YES       YES       4         18       SHORT THROW PROJECTOR AND WALL MOUNT       0       C       YES       YES       4         18       SHORT THROW PROJECTOR AND WALL MOUNT       0       C       YES       YES       4         18       RELECTRONC MARCHAR       0       0       YES       YES       5         18       RELECTRONC MARCHAR       0       0       VES       YES       5         10.01       RELOTRONC MARCHAR THE LIANCOTICS CABINET, WALL       0       0       VES       YES       5         10.01       RELOTRONC MARCHAR THE LIANCOTICS CABINET, WALL       0       0       VES       1       0       1       1       1       1       1       1       1       1       1 </td <td></td> <td></td> <td>78</td> <td>CLARIDGE 10'W x 4'H MARKER BOARD, S4-4x10-LCS</td> <td>0</td> <td>С</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2'-8"AFF</td> <td></td>			78	CLARIDGE 10'W x 4'H MARKER BOARD, S4-4x10-LCS	0	С							2'-8"AFF	
80         CLARIDCE 12' W 34'H MARKER BOARD         0         C         YES         YES         7-8'AFF           81         SHORT THROW PROJECTOR AND WALL MOUNT         0         C         YES         YES         4           81         SHORT THROW PROJECTOR AND WALL MOUNT         0         0         YES         YES         4           81         SHORT THROW PROJECTOR AND WALL MOUNT         0         0         YES         YES         4           83         MOBIL CRASH CART         0         0         VES         YES         4           84         FIRNITER COOPT MACHINE         0         0         VES         YES         5           86         IMANTE HONE (TOPENTER         0         0         VES         YES         5           87         ROLL FOLD POWER OPERATED DIMOER         C         C         YES         YES         5           88         DUMPSTER         0         0         VES         YES         3'6'AFF           90         ITASONC MTOPHENT IMACK         0         0         YES         4'6'AFF           91         ILOCKNOS STEEL NARCOTCS CABINET, WALL MTD         0         0         YES         4'6'AFF           92         ITAC	2		79	CLARIDGE 12'W X 4'H BULLETIN BOARD, S4-4x12-COR, CLARIDGE CORK	0	С							2'-8"AFF	
81       SHORT I HRXW PROJECTOR AND WALL MOUNT       0       0       0       1       1       1         82       HYBRID TV BOX TUNDR       0       0       0       1			80	CLARIDGE 12' W X 4'H MARKER BOARD S4-4x12-LCS	0	C							2'-8"AFF	
83       MUBLIE RI COPY MUSCINE       0       0       0       VES       VES       3:6"AFF         85       INMATE PHONE       0       0       0       VES       3:6"AFF         86       DESITOP PRINTER       0       0       VES       YES       5         87       ROLL FOLD POWER OPERATED DIVIDER       C       C       VES       5         88       ELECTRONC KITCHEN TIME CLOCK       0       0       VES       3:0" AFF         90       TTRASH COMMACTOR       0       0       VES       3:0" AFF         90       TTRASH COMMACTOR       0       0       VES       3:0" AFF         91       LOCKING STEEL INARCOTICS CASINET, WALL       0       0       VES       4:6" AFF         92       T1:       EQUIPMENT RACK       0       0       VES       4:6" AFF         92       T1:       EQUIPMENT RACK       0       0       VES       4:6" AFF         93       DUCKNOS STEEL INARCOTICS CASINET, WALL MTD       0       0       VES       4:6" AFF         94       TRACITON ELEVANT RACK       0       0       VES       4:6" AFF         94       TRACITON ELEVANT RACK       0       0       VE			81 82	SHORT THROW PROJECTOR AND WALL MOUNT HYBRID TV BOX TUNER	0	C 0				YES YES		YES YES	7'-8"AFF	4
80       DESKTOP PRINTER       0       0       YES       YES       1.00         87       ROLL-OLD POWER OPERATED DIVIDER       C       C       YES       5         88       ELECTRONC KITCHEN TIME CLOCK       0       0       YES       YES       3'0' AFF         88       ELECTRONC KITCHEN TIME CLOCK       0       0       YES       YES       3'0' AFF         80       DUMPSTER       0       0       YES       YES       3'0' AFF         90       TRASH COMPACTOR       0       0       YES       YES       4'6'AFF         91       LOCKING STEEL NARCOTICS CABINET, WALL       0       0       YES       4'6'AFF         92       T. FOUIPMENT RACK       0       0       YES       4'6'AFF         92       T. FOUIPMENT RACK       0       0       YES       4'6'AFF         93       DIAGNOSTIC INSTRUMENT SET, WALL MTD       0       0       YES       10         94       TRACTION ELEVATOR       C       C       YES       4'6'AFF         94       TRACTION ELEVATOR       0       0       1       10       10         95       PREMANUFACTURED CROSSROADS       0       0       1			83 84	PRINTER / COPY MACHINE	0	0				YES		YES	3' 6"AEE	
CURTAN         CURTAN<			86 87	DESKTOP PRINTER BOLL-FOLD POWER OPERATED DIVIDER	0 0 C	0				YES		YES		5
89       DUMPSTER       0       0       VES       1         91       LOCKING STEEL NARCOTICS CABINET, WALL       0       0       YES       3-6*AFF         91       LOCKING STEEL NARCOTICS CABINET, WALL       0       0       YES       YES         92       LT. EOUIPMENT RACK       0       0       YES       YES       4-6*AFF         92       LT. EOUIPMENT RACK       0       0       YES       4-6*AFF         93       DIAGNOSTICINSTRUMENT SET, WALL MTD       0       0       YES       4-6*AFF         94       TRACTION ELEVATOR       C       C       YES       4-6*AFF         94       TRACTION DESK - WILSONART KENSINGTON MARLE FINISH 10776-80       0       0       0       0         96       6*2*H DEL SIDED MCE LIBRARY SHELF ADDER       0       0       0       0       0         97       178       100 CONCEL BRARY SHELF STARTER       0       0       0       0       0       0         98       BEDSIDE TABLE       0       0       0       0       0       0       0       0         99       BEDSIDE TABLE       0       0       0       YES       0       0       0       0 </td <td></td> <td></td> <td>88</td> <td>CURTAIN ELECTRONIC KITCHEN TIME CLOCK</td> <td>0</td> <td>0</td> <td></td> <td></td> <td></td> <td>YES</td> <td></td> <td>YES</td> <td>3'-0" AFF</td> <td></td>			88	CURTAIN ELECTRONIC KITCHEN TIME CLOCK	0	0				YES		YES	3'-0" AFF	
91       LOCKING STEEL NARCOTICS CABINET, WALL       0       0       YES       YES         92       I.T. EQUIPMENT RACK       0       0       YES       YES			89 90	DUMPSTER TRASH COMPACTOR	0	0				YES				
92       11. EUGIP INCLUT NALK       0       0       1/E3       1/E3       4-6*AFF         94       TRACTION ELLEVATOR       C       C       VES       4       4       6*AFF         94       TRACTION ELLEVATOR       C       C       C       YES       4       6*AFF         94       TRACTION ELLEVATOR       C       C       C       YES       4       6*AFF         95       PREMAUFACTURED CROSSROADS       0       0       1			91	LOCKING STEEL NARCOTICS CABINET, WALL MTD	0	0				VEQ		VES	3'-6"AFF	
1         1			92 93 94	DIAGNOSTIC INSTRUMENT SET, WALL MTD TRACTION ELEVATOR	0	0				YES			4'-6"AFF	
Image:			95	PREMANUFACTURED CROSSROADS CIRCULATION DESK - WILSONART KENSINGTON	0	0								
97       42"H OBL SIDED MCE LIBRARY SHELF STARTER       0 </td <td></td> <td></td> <td>96</td> <td>VIAPLE FINISH 10776-60 42"H DBL SIDED MCE LIBRARY SHELF ADDER</td> <td>0</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			96	VIAPLE FINISH 10776-60 42"H DBL SIDED MCE LIBRARY SHELF ADDER	0	0								
98         OVERBED TABLE         0         0         0         1         1           99         BEDSIDE TABLE         0         0         0         YES         1         1           100         BODY ORIFICE SCANNER         0         0         YES         YES         1           101         ELECTRONIC TIME CLOCK         0         0         YES         YES         1           102         MCE 3W x 18"D x 78"H STORAGE CABINET         0         0         YES         YES         1           103         3W x 12"D x 78"H STORAGE CABINET         0         0         1			97	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT	0	0								
100BODY ORIFICE SCANNER00YES10101ELECTRONIC TIME CLOCK00YESYES3'-0"102MCE 3'W x 18"D x 78"H STORAGE CABINET000001033'W x 12"D x 76"H MEDICAL FILE CABINET00000104CROSS COURT BASKETBALL GOAL ANDCCC000105BASKETBALL GOAL AND SUPPORTSCC0000106ATHLETIC WALL PADDINGCC0000107VOLLEYBALL STANDARD FLOOR SLEEVESCC01010108SGL SIDED FULL HEIGHT MCE LIBRARY SHELF000003109SGL SIDED FULL HEIGHT MCE LIBRARY SHELF00000110WALL MOUNTED COMPUTER WORK STATION0C01010111KI 30" x 72" HÜRRY UP TABLE #HÜLN3072-74P0001111			98 99	OVERBED TABLE BEDSIDE TABLE	0	0								
102       MCE 3'W x 18"D x 78"H STORAGE CABINET       0       0       0       0         103       3'W x 12"D x 76"H MEDICAL FILE CABINET       0       0       0       0       0         104       CROSS COURT BASKETBALL GOAL AND SUPPORTS       C       C       C       0       0       0       0         105       BASKETBALL GOAL AND SUPPORTS       C       C       0       0       0       0       0         106       ATHLETIC WALL PADDING       C       C       C       0       0       0       0       0         107       VOLLEYBALL STANDARD FLOOR SLEEVES       C       C       0			100 101	BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK	0	0				YES YES		YES	3'-0"	
104       CRUSS COURT BASKETBALL GOAL AND SUPPORTS       C<			102 103	MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET	0	0								
100     Difference     0     0     0     0       106     ATHLETIC WALL PADDING     C     C     C     Image: Constraint of the constrain			104	UKUSS CUURT BASKETBALL GOAL AND SUPPORTS BASKETBALL GOAL AND SUPPORTS	C	C								
108       SGL SIDED FULL HEIGHT MCE LIBRARY SHELF       0       0       0       0       0         109       SGL SIDED FULL HEIGHT MCE LIBRARY SHELF       0       0       0       0       0       0       0         110       WALL MOUNTED COMPUTER WORK STATION       0       C       YES       YES       YES       YES       11       YES			105 106 107	ATHLETIC WALL PADDING VOLLEYBALL STANDARD FLOOR SLEFVFS	C C	C C								10
109       SGL SIDED FULL HEIGHT MCE LIBRARY SHELF       0       0       0       0         110       WALL MOUNTED COMPUTER WORK STATION       0       C       YES       YES         111       KI 30" x 72" HURRY UP TABLE #HULN3072-74P       0       0       0       1			108	SGL SIDED FULL HEIGHT MCE LIBRARY SHELF ADDER UNIT	0	0								
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		3	109	SGL SIDED FULL HEIGHT MCE LIBRARY SHELF STARTER UNIT	0	0				YES		YES		
			111	KI 30" x 72" HURRY UP TABLE #HULN3072-74P		Ň			~~~~					

SCHEDULE COMMENTS

 CONTRACTOR TO COORDINATE LOCATION OF ELECTRICAL FLOOR BOX WTIH EQUIPMENT.
 CONTRACTOR TO PROVIDE FLOOR AND WALL PENETRATIONS AS REQUIRED TO CONCEAL AND ROUTE RELATED EQUIPMENT PIPING UNDERFLOOR FROM CHAIR LOCATION TO EQUIPMENT IN COMPRESSOR ROOM. RATE PENETRATIONS AS REQUIRED ELSEWHERE. 3. CONTRACTOR TO PROVIDE POWER OUTLET LOCATED IN BACK WALL OF UPPER WALL CABINET CONTAINING MICROWAVE.

4. SEE CASEWORK AND ELECTRICAL DWGS FOR LOCATION AND CONFIGURATION OF THE TV TUNER BOX AND IT'S REQUIRED CONNECTIONS.

PROVIDE CONCEALED CONDUIT FOR VGA, USB (CAT5), HDMI, AND DATA FROM THE PROJECTOR LOCATION TO THE TV TUNER LOCATION AND THEN TO THE CABLE TRAY LEADING TO THE IDF ROOM.

5. SEE PROJECT MANUAL SPECIFICATIONS FOR STRUCTURAL SUPPORT COORDINATION REQUIREMENTS. 6. SEE DETAIL A1 / A581.

7. SEE DETAIL B1 / A581. 8. SEE DETAIL A3 & B3 / A581.

9. SEE DETAIL D1 / A581.

![](_page_98_Figure_12.jpeg)

![](_page_99_Figure_0.jpeg)

![](_page_99_Figure_5.jpeg)

			FURNITU	RE, FI	IXTUR	ES, AND	EQUIPM	ENT SC	HEDUL	E			
TUD QUIPMENT				SHED BY	LED BY	REQ'D	CONTR/	ACTOR	INSTALI		ITIES	_	
UIRED		TAG	DESCRIPTION	FURNIS	INSTAL	COLD V	НОТ W	WASTE	POWER	CABLE	DATA	MNT. HGT.	COMMENTS
R	-	1 2 2	KI 60" x 24" HURRY UP TABLE #HUN246074P STANDARD L-SHAPED DESK #115RDL	0	0								1
EMENTS. RE		3 4 5	NEW WINDSOR FLIP-UP CHAIR 4 DRAWER LATERAL FILE #115STFC TREK TABLE 60" DIAMETER	0 0 0	0 0 0								
		6 7	STANDARD CANTON STAFF CREDENZA #115STFC 4-DRAWER FILE CABINET	0	0								
		8	WALL MOUNTED 46" FLATSCREEN TV AND MOUNTING BRACKET CLG MTD 46" FLAT SCREEN TV (O/C) AND	0	C C				YES YES	YES YES			6 7
		10	MOUNTING BRACKET (C/C) MEZZANINE MTD 46" FLAT SCREEN TV AND MOUNTING BRACKET	0	С				YES	YES			8
AREA B		11 12	WALL MTD 46" FLAT SCREEN TV, MOUTING BRACKET, AND SECURITY HOUSING ZUMA CANTILEVER TWO-STUDENT DESK WITH	0	С О				YES	YES			9
EE SHT. AP110B		13 14 <b>(</b>	MOBILE MEDICATION CART	0	0 0								
		15 16 17	COUNTERTOP DENTAL LIGHT CURING MACHINE COUNTERTOP DENTAL AMALGMATOR COUNTERTOP DENTAL ULTRASONIC CLEANING	0 0 0	0 0 0				YES YES YES				
	<u> </u>	18	SYSTEM DENTAL CHAIR, CHAIR MNT LIGHT, CHAIR MNT DENTAL DELIVERY SYSTEM, & STOOL	0	С	YES		YES	YES				2
		19 20 21	WALL MTD DIGITAL X-RAY AND ARM SURFACE MTD X-RAY VIEW BOX COUNTERTOP DENTAL AUTOCLAVE STERILIZER	0 0 0	C C 0				YES YES YES		YES	3'-9"AFF 3'-6"AFF	
		22 23 24	DENTAL ASSISTANT STOOL DENTAL PANOREX DIGITAL X-RAY ELOOR MTD DENTAL COMPRESSOR	0 0	0 0 C			YES	YES		YES		2
		25 26 27	DENTAL AIR-WATER SEPARATOR FLOOR MTD DENTAL VACUUM PUMP	0	C C	YES YES		YES	YES				2 2
		28 29	EXAM STOOL - RITTER EXAM TABLE, BREWER COMPANY, BASIC EXAM	0	0								
		30	COMPNAY, #22400 FOOSEBALL TABLE	0	0								
		32	KI DATALINK MULTIPURPOSE TABLE 30" X 72" WITH POWER UP DMD256F/2 74P-WHITE	0	0								1
		34	COMPUTER STATIONS - MCE STUDY CARREL #106180	0	0								
		35 36 37	CYBEX ELLEPTICAL - 625AT ARC TRAINER CYBEX FUNCTIONAL TRAINER - FT450 CARBON BLUE PERFORMANCE PLUS EXERCISE	0	0								
		38 39	CYBEX TREDMILL - 625T FULL HEIGHT REFRIGERATOR	0 0	0 0	YES			YES YES				
		40 41 42	MICROWAVE, COUNTERTOP ALTA SIDE CHAIR #12215NAS GUARDIAN HEAVY DUTY CHAIR, MCE #122140	0 0 0	0 0 0				YES				3
		43 45 46	TREK TABLE 48" DIAMETER TENOR HIGH BACK #122UN7700D STANDARD L-SHAPED DESK #115LDL	0 0 0	0 0 0								
		47 49	STANDARD 60"x36" BOOKCASE #115BC6036B STANDARD 3-DRAWER LATERAL FILE CABINET #115LF3	0 0	0 0								
		50 51	TENOR MID BACK #122UN7700 MINI REFRIGERATOR, MAGIC CHEF APPLIANCE #MCBR360S	0 0	0				YES				
	₫	52	CLARIDGE 4'W X 4'H BULLETIN BOARD AND CABINET, 2040 (PROVIDE LEXAN POLYCARBONATE)	0	C					. mar		na na n	m
		54	MEDICUS HEALTH CLEARVIEW STAINLESS STEEL TALL CABINET WITH SWING HANDLE LOCK #2571 M2 48" Wx24"Dx78"H	0	0								
		55 56 57	CLARIDGE 4'W X 4'H MARKER BOARD, S4-4x4-LCS CLARIDGE 8'W X 4'H MARKER BOARD, S4-4x8-LCS CLARIDGE 8'W X 4'H BULLETIN BOARD AND	0 0 0	C C C							2'-8"AFF 2'-8"AFF 2'-8"AFF	
		61	CABINET, 2046 (PROVIDE LEXAN POLYCARBONATE) CLARIDGE 3'W X 4'H CHALK BOARD, S4-4X3-VIT	0	C							2'-8"AFF	
		62 63	(BLACK) STUDENT CHAIRS, ZUMA STG ZU418 (18") CLARIDGE 3'W X 4'H BULLETIN BOARD,	0	C							2'-8"AFF	
		64	S4-4X3-COR, CLARIDGE CORK KI DATALINK MULTI PURPOSE TABLE 36"x36" DMS3FX74P	0	0								
0- 0- 0-	^	65 67 68	KI PORTICO TABLE 36"Wx72"L #P36F EDGE-74P STANDARD EXECUTIVE DESK #115ED MEDICUS HEALTH, WIRE SHELVING KITS WITH	0 0 0	0 0 0								
	<u> </u>	69 70	BASKET #2071M3, 24"Dx36"Wx63"H HOSPITAL BEDS, HILL ROM CENTRA SERIES 80 METAL SHELVING, MCE #124013 (36"x 24"x 82")	0	0				YES				11
0	· · · ·	73 74	CLARIDGE 6'W X 4'H MARKER BOARD, S4-4X6-LCS WALK-THROUGH METAL SCANNER	0	С О				YES			2'-8"AFF	1
		75	SMITHS HEIMANN HS 6040DS X-RAY SCANNER WITH CONVEYOR, MONITOR, CART, KEYBOARD SOFTWARE	0	0				YES				1
		78 79	CLARIDGE 10'W x 4'H MARKER BOARD, S4-4x10-LCS CLARIDGE 12'W X 4'H BULLETIN BOARD,	0	C C							2'-8"AFF 2'-8"AFF	
		80	S4-4x12-COR, CLARIDGE CORK CLARIDGE 12' W X 4'H MARKER BOARD S4-4x12-LCS	0	С							2'-8"AFF	
•		81 82 83	HYBRID TV BOX TUNER MOBILE CRASH CART	0 0 0	0 0				YES		YES	7'-8"AFF	4
		84 85 86	PRINTER / COPY MACHINE INMATE PHONE DESKTOP PRINTER	0 0 0	0 0 0				YES YES		YES YES YES	3'-6"AFF	
7. / / / / /		87 88	ROLL-FOLD POWER OPERATED DIVIDER CURTAIN ELECTRONIC KITCHEN TIME CLOCK	C 0	С О				YES YES		YES	3'-0" AFF	5
		89 90 91	DUMPSTER TRASH COMPACTOR LOCKING STEEL NARCOTICS CABINET, WALL	0 0 0	0 0 0				YES			3'-6"AFF	
		92 93	MTD I.T. EQUIPMENT RACK DIAGNOSTIC INSTRUMENT SET, WALL MTD	0	0				YES YES		YES	4'-6"AFF	
		94 95	TRACTION ELEVATOR PREMANUFACTURED CROSSROADS CIRCULATION DESK - WILSONART KENSINGTON	C O	C 0				YES				
		96	MAPLE FINISH 10776-60 42"H DBL SIDED MCE LIBRARY SHELF ADDER UNIT	0	0								
		97 98	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE	0	0								
		99 100 101	BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK	0 0 0	0 0 0		_		YES YES		YES	3'-0"	
		102 103 104	MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET CROSS COURT BASKETBALL COAL AND	0 0 0	0 0 0				-		-	-	
89		105	SUPPORTS BASKETBALL GOAL AND SUPPORTS ATHLETIC WALL PADDING	0 0	С С								
		107 108	VOLLEYBALL STANDARD FLOOR SLEEVES SGL SIDED FULL HEIGHT MCE LIBRARY SHELF	C 0	C 0								10
		109	SGL SIDED FULL HEIGHT MCE LIBRARY SHELF STARTER UNIT	0	0				YES		YEQ		
	$\checkmark$	111 111	KI 30" x 72" HURRY UP TABLE #HULN3072-74P	~~~~ ~~~~			~~~~ 	~~~~		 			
== ЭПТ. АР110В													

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SCHEDULE COMMENTS

 CONTRACTOR TO COORDINATE LOCATION OF ELECTRICAL FLOOR BOX WTIH EQUIPMENT.
 CONTRACTOR TO PROVIDE FLOOR AND WALL PENETRATIONS AS REQUIRED TO CONCEAL AND ROUTE RELATED EQUIPMENT PIPING UNDERFLOOR FROM CHAIR LOCATION TO EQUIPMENT IN COMPRESSOR ROOM. RATE PENETRATIONS AS REQUIRED ELSEWHERE. 3. CONTRACTOR TO PROVIDE POWER OUTLET LOCATED IN BACK WALL OF UPPER WALL CABINET CONTAINING MICROWAVE. 4. SEE CASEWORK AND ELECTRICAL DWGS FOR LOCATION AND CONFIGURATION OF THE TV TUNER BOX AND IT'S REQUIRED CONNECTIONS.

PROVIDE CONCEALED CONDUIT FOR VGA, USB (CAT5), HDMI, AND DATA FROM THE PROJECTOR LOCATION TO THE TV TUNER LOCATION AND THEN TO THE CABLE TRAY LEADING TO THE IDF ROOM. 5. SEE PROJECT MANUAL SPECIFICATIONS FOR STRUCTURAL SUPPORT COORDINATION REQUIREMENTS.

6. SEE DETAIL A1 / A581. 7. SEE DETAIL B1 / A581.

8. SEE DETAIL A3 & B3 / A581. 9. SEE DETAIL D1 / A581.

![](_page_99_Figure_14.jpeg)

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				2							1			
				FURNIT	URE, FI	XTUR	es, and	EQUIPN	ENT SC	HEDUL	E			
					RNISHED BY	TALLED BY	LD WATER A	T WATER	ACTOR			LITIES		
equired ). :Ner			TAG	DESCRIPTION KI 60" x 24" HURRY UP TABLE #HUN246074P	EUI	NN NN	Ö	Ŷ	MA	PO	CAI	_PD	MNT. HGT.	COMMENT
VIREMENTS. HERE			2 3 4 5	STANDARD L-SHAPED DESK #115RDL NEW WINDSOR FLIP-UP CHAIR 4 DRAWER LATERAL FILE #115STFC TREK TABLE 60" DIAMETER	0 0 0 0	0 0 0 0								
			6	STANDARD CANTON STAFF CREDENZA #115STFC 4-DRAWER FILE CABINET	0	0								
			8	WALL MOUNTED 46" FLATSCREEN TV AND MOUNTING BRACKET CLG MTD 46" FLAT SCREEN TV (O/C) AND	0	C C				YES	YES			6
			10	MOUNTING BRACKET (C/C) MEZZANINE MTD 46" FLAT SCREEN TV AND MOUNTING BRACKET	0	С				YES	YES			8
			11	WALL MTD 46" FLAT SCREEN TV, MOUTING BRACKET, AND SECURITY HOUSING ZUMA CANTILEVER TWO-STUDENT DESK WITH BOOK BOX #ZDESK226027BOX	0	с 0				YES	YES			9
			13 14 15	MOBILE MEDICATION CART MCE ENGAGE TASK CHAIR COUNTERTOP DENTAL LIGHT CURING MACHINE	0	0				YES				
		4	16 17	COUNTERTOP DENTAL AMALGMATOR COUNTERTOP DENTAL ULTRASONIC CLEANING SYSTEM	0	0	VEO		VEO	YES				2
			18 19 20	DENTAL CHAIR, CHAIR MINT LIGHT, CHAIR MINT DENTAL DELIVERY SYSTEM, & STOOL WALL MTD DIGITAL X-RAY AND ARM SURFACE MTD X-RAY VIEW BOX	0	C C C	YES		YES	YES YES YES		YES	3'-9"AFF 3'-6"AFF	2
			21 22 23	DENTAL ASSISTANT STOOL DENTAL PANOREX DIGITAL X-RAY	0 0 0	0 0				YES		YES		
			24 25 26	FLOOR MTD DENTAL COMPRESSOR         DENTAL AIR-WATER SEPARATOR         FLOOR MTD DENTAL VACUUM PUMP	0 0 0	C C C	YES YES		YES YES	YES YES				2 2 2
			27 28 29	MCE 3' METAL SHELVING 124009 EXAM STOOL - RITTER EXAM TABLE, BREWER COMPANY, BASIC EXAM TABLE #4000 AND EXAM STOOL, BREWER	0 0 0	0 0 0								
			30 31	FOOSEBALL TABLE PING-PONG TABLE	0	0								
			32 33	KI DATALINK MULTIPURPOSE TABLE 30" X 72" WITH POWER UP DMD256F/2 74P-WHITE SCIENCE STOOL - VIRCO 3000 SERIES 3821LS	0	0								1
			34 35	COMPUTER STATIONS - MCE STUDY CARREL #106180 CYBEX ELLEPITICAL - 625AT ARC TRAINER	0	0								
			36 37	CYBEX FUNCTIONAL TRAINER - FT450 CARBON BLUE PERFORMANCE PLUS EXERCISE BIKE	0	0								
			38 39 40	CYBEX TREDMILL - 625T FULL HEIGHT REFRIGERATOR MICROWAVE, COUNTERTOP	0 0 0	0 0 0	YES			YES YES YES				3
			41 42 43 45	ALTA SIDE CHAIR #12215NAS GUARDIAN HEAVY DUTY CHAIR, MCE #122140 TREK TABLE 48" DIAMETER TENOR HIGH BACK #1221 N7700D	0 0 0	0 0 0								
			46 47 40	STANDARD L-SHAPED DESK #115LDL STANDARD 60"x36" BOOKCASE #115BC6036B	0	0								
			50 51	#115LF3 TENOR MID BACK #122UN7700	0	0				VES				
	[3]-		52	#MCBR360S CLARIDGE 4'W X 4'H BULLETIN BOARD AND CABINET, 2040 (PROVIDE LEXAN		C	~~~~	<u>~~~</u>				~~~~		
			<b>5</b> 4	POLYCARBONATE) MEDICUS HEALTH CLEARVIEW STAINLESS STEEL TALL CABINET WITH SWING HANDLE LOCK #2571	0	0	m	m	mm	un	m	mm	mm	<u> </u>
			55 56	M2 48" Wx24"Dx78"H CLARIDGE 4'W X 4'H MARKER BOARD, S4-4x4-LCS CLARIDGE 8'W X 4'H MARKER BOARD, S4-4x8-LCS	0	C C							2'-8"AFF 2'-8"AFF	
			57	CLARIDGE 8'W X 4'H BULLETIN BOARD AND CABINET, 2046 (PROVIDE LEXAN POLYCARBONATE)	0	С							2'-8"AFF	
	>		61 62	CLARIDGE 3'W X 4'H CHALK BOARD, S4-4X3-VIT (BLACK) STUDENT CHAIRS, ZUMA STG ZU418 (18")	0	С							2'-8"AFF	
			63 64	CLARIDGE 3'W X 4'H BULLETIN BOARD, S4-4X3-COR, CLARIDGE CORK KI DATALINK MULTI PURPOSE TABLE 36"x36"	0	С О							2'-8"AFF	
			65 67	MIS3FX74P KI PORTICO TABLE 36"Wx72"L #P36F EDGE-74P STANDARD EXECUTIVE DESK #115ED	0	0								
			68 69	MEDICUS HEALTH, WIRE SHELVING KITS WITH BASKET #2071M3, 24"Dx36"Wx63"H HOSPITAL BEDS, HILL ROM CENTRA SERIES 80	0	0				YES				11
			<b>7</b> 0 73	METAL SHELVING, MCE #124013 (36"x 24"x 82") CLARIDGE 6'W X 4'H MARKER BOARD, S4-4X6-LCS	0	0 C							2'-8"AFF	
			74 75	WALK-THROUGH METAL SCANNER SMITHS HEIMANN HS 6040DS X-RAY SCANNER WITH CONVEYOR, MONITOR, CART, KEYBOARD	0	0				YES YES				1
			78	CLARIDGE 10'W x 4'H MARKER BOARD, S4-4x10-LCS	0	С							2'-8"AFF	
			80	CLARIDGE 12 W X 4 H BOLLETIN BOARD, S4-4x12-COR, CLARIDGE CORK CLARIDGE 12' W X 4'H MARKER BOARD S4-4x12-LCS	0	C							2-6 AFF 2'-8"AFF	
			81 82	SHORT THROW PROJECTOR AND WALL MOUNT HYBRID TV BOX TUNER	0	C 0				YES YES		YES YES	7'-8"AFF	4
			83 84 85	PRINTER / COPY MACHINE INMATE PHONE DESKTOD DRINTED	0	0				YES		YES YES	3'-6"AFF	
			80	ROLL-FOLD POWER OPERATED DIVIDER CURTAIN	C	C				YES		YES		5
			89 90	DUMPSTER TRASH COMPACTOR	0	0				YES				
			91 92	I.T. EQUIPMENT RACK	0	0				YES		YES	3'-0"AFF	
			93 94 95	TRACTION ELEVATOR PREMANUFACTURED CROSSROADS	0 C 0	0 C 0				YES			4-0 AFF	
			96	MAPLE FINISH 10776-60 42"H DBL SIDED MCE LIBRARY SHELF ADDER	0	0								
			97 QR	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT	0	0								
			99 100 101	BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK	0 0 0	0 0 0				YES		YES	3'-0"	
			102 103	MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET	0	0						0		
			105	BASKETBALL GOAL AND SUPPORTS	C	C								
			107 108	VOLLEYBALL STANDARD FLOOR SLEEVES SGL SIDED FULL HEIGHT MCE LIBRARY SHELF	C 0	C C 0								10
		A	109	SGL SIDED FULL HEIGHT MCE LIBRARY SHELF STARTER UNIT	0	0				YES		YEQ		
		$\mathbf{X}$		KI 30" x 72" HURRY UP TABLE #HULN3072-74P					~~~~					

SCHEDULE COMMENTS

CONTRACTOR TO COORDINATE LOCATION OF ELECTRICAL FLOOR BOX WTIH EQUIPMENT.
 CONTRACTOR TO PROVIDE FLOOR AND WALL PENETRATIONS AS REQUIRED TO CONCEAL AND ROUTE RELATED EQUIPMENT PIPING

UNDERFLOOR FROM CHAIR LOCATION TO EQUIPMENT IN COMPRESSOR ROOM, RATE PENETRATIONS AS REQUIRED ELSEWHERE. 3. CONTRACTOR TO PROVIDE POWER OUTLET LOCATED IN BACK WALL OF UPPER WALL CABINET CONTAINING MICROWAVE. 4. SEE CASEWORK AND ELECTRICAL DWGS FOR LOCATION AND CONFIGURATION OF THE TV TUNER BOX AND IT'S REQUIRED CONNECTIONS. PROVIDE CONCEALED CONDUIT FOR VGA, USB (CAT5), HDMI, AND DATA FROM THE PROJECTOR LOCATION TO THE TV TUNER LOCATION

AND THEN TO THE CABLE TRAY LEADING TO THE IDF ROOM. 5. SEE PROJECT MANUAL SPECIFICATIONS FOR STRUCTURAL SUPPORT COORDINATION REQUIREMENTS.

6. SEE DETAIL A1 / A581. 7. SEE DETAIL B1 / A581. 8. SEE DETAIL A3 & B3 / A581.

9. SEE DETAIL D1 / A581.

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			2						1				
			FUF	RNITURE, F	IXTUR	RES, AND	EQUIPMENT S	CHEDUL	Ξ				
				BY	BΥ	REQ'D			ED UTII	LITIES	_		
PMENT				ISHED	VLLED	WATE	VATER E	ĸ	ш				
ED		TAG	DESCRIPTION	FURN	INSTA	COLD	HOT V WAST	POWE	CABLI	DATA	MNT. HGT.	COMMENTS	
		1	KI 60" x 24" HURRY UP TABLE #HUN246074P	0	0							1	4
NTS.		2 3	NEW WINDSOR FLIP-UP CHAIR	0	0								9 59 1
		4 5 6	TREK TABLE 60" DIAMETER	0	0								4 20
		7	#115STFC 4-DRAWER FILE CABINET	0	0								18
		8	WALL MOUNTED 46" FLATSCREEN TV AND MOUNTING BRACKET	0	С			YES	YES			6	4
		9	CLG MTD 46" FLAT SCREEN TV (O/C) AND MOUNTING BRACKET (C/C)	0	C			YES	YES			7	1
		11	MOUNTING BRACKET WALL MTD 46" FLAT SCREEN TV, MOUTING	0	C C			YES	YES			9	1
		12	BRACKET, AND SECURITY HOUSING	H O	0								39
		13	MOBILE MEDICATION CART	0	0								1
			COUNTERTOP DENTAL LIGHT CURING MACHIN	NE O	0			YES					 
	4	17	COUNTERTOP DENTAL ULTRASONIC CLEANIN SYSTEM	IG O	0			YES					1
		18	DENTAL CHAIR, CHAIR MNT LIGHT, CHAIR MN DENTAL DELIVERY SYSTEM, & STOOL		C	YES	YES	YES		VEO		2	1
		19 20 21	SURFACE MTD X-RAY AND ARM		C C			YES		YES	3'-9"AFF 3'-6"AFF		1
		22	DENTAL ASSISTANT STOOL DENTAL PANOREX DIGITAL X-RAY		0			YES		YES			1
		24 25	FLOOR MTD DENTAL COMPRESSOR DENTAL AIR-WATER SEPARATOR	0	C C	YES	YES	YES				2 2	1
		26 27	FLOOR MTD DENTAL VACUUM PUMP MCE 3' METAL SHELVING 124009	0 0	C 0	YES	YES	YES				2	1 58
		28 29	EXAM STOOL - RITTER EXAM TABLE, BREWER COMPANY, BASIC EXA	0 .M 0	0 0								2
		20	TABLE #4000 AND EXAM STOOL, BREWER COMPNAY, #22400										1
		31 32	PING-PONG TABLE KI DATALINK MULTIPURPOSE TABLE 30" X 72"	0	0							1	1
		33	WITH POWER UP DMD256F/2 74P-WHITE SCIENCE STOOL - VIRCO 3000 SERIES 3821LS	0	0							·	12
		34	COMPUTER STATIONS - MCE STUDY CARREL #106180	0	0								20
		35 36	CYBEX ELLEPITICAL - 625AT ARC TRAINER CYBEX FUNCTIONAL TRAINER - FT450		0								2
		37	CARBON BLUE PERFORMANCE PLUS EXERCIS BIKE CYBEX TREDMILL - 625T		0			YES					2
		39 40	FULL HEIGHT REFRIGERATOR MICROWAVE, COUNTERTOP	0	0	YES		YES				3	3
		41 42	ALTA SIDE CHAIR #12215NAS GUARDIAN HEAVY DUTY CHAIR, MCE #122140	0 0	0								15 13
		43 45	TREK TABLE 48" DIAMETER TENOR HIGH BACK #122UN7700D	0	0								1 16
		46	STANDARD L-SHAPED DESK #115LDL STANDARD 60"x36" BOOKCASE #115BC6036B		0								7 24
		49 50	#115LF3 TENOR MID BACK #122UN7700		0								55
	•	51	MINI REFRIGERATOR, MAGIC CHEF APPLIANC	E O	0			YES					3
	3	52	CLARIDGE 4'W X 4'H BULLETIN BOARD AND CABINET, 2040 (PROVIDE LEXAN POLYCARRONATE)	0	С								13
		54	MEDICUS HEALTH CLEARVIEW STAINLESS ST TALL CABINET WITH SWING HANDLE LOCK #2	EEL O	0	m	man	menn		here	mm	<u>mannenne</u>	2
		55	M2 48" Wx24"Dx78"H CLARIDGE 4'W X 4'H MARKER BOARD, S4-4x4-	LCS O	С						2'-8"AFF		23
		56 57	CLARIDGE 8'W X 4'H MARKER BOARD, S4-4x8- CLARIDGE 8'W X 4'H BULLETIN BOARD AND	LCS O O	C C						2'-8"AFF 2'-8"AFF		13 8
		61	POLYCARBONATE) CLARIDGE 3'W X 4'H CHALK BOARD. S4-4X3-VI	то	C						2'-8"AFF		1
		62	(BLACK) STUDENT CHAIRS, ZUMA STG ZU418 (18")										168
		63	CLARIDGE 3'W X 4'H BULLETIN BOARD, S4-4X3-COR, CLARIDGE CORK	0	C						2'-8"AFF		23
		65	KI DATALINK MOLTI PURPOSE TABLE 36 X36 DMS3FX74P KI PORTICO TABLE 36"Wx72"L #P36F EDGE-74	P O	0								5
	^	67 68	STANDARD EXECUTIVE DESK #115ED MEDICUS HEALTH, WIRE SHELVING KITS WITH	0 1 0	0								
	4	69	BASKET #2071M3, 24"Dx36"Wx63"H HOSPITAL BEDS, HILL ROM CENTRA SERIES 8	0 0	0			YES				11	5
		70 73	METAL SHELVING, MCE #124013 (36"x 24"x 82") CLARIDGE 6'W X 4'H MARKER BOARD, S4-4X6-LCS	) 0	0 C						2'-8"AFF		<u>    16    </u> 6
		74 75	WALK-THROUGH METAL SCANNER	0 2 0	0			YES YES				1	2
			WITH CONVEYOR, MONITOR, CART, KEYBOAR SOFTWARE	RD									
		78	CLARIDGE 10'W x 4'H MARKER BOARD, S4-4x10-LCS	0	C						2'-8"AFF		3
		80	S4-4x12-COR, CLARIDGE CORK CLARIDGE 12' W X 4'H MARKER BOARD	0	C						2'-8"AFF		7
		81	S4-4x12-LCS SHORT THROW PROJECTOR AND WALL MOUN	NT O	C			YES		YES	7'-8"AFF	4	13
		82 83	HYBRID TV BOX TUNER MOBILE CRASH CART	0	0			YES		YES		4	13
		84 85		0	0			YES		YES YES	3'-6"AFF		4 23 10
		87	ROLL-FOLD POWER OPERATED DIVIDER CURTAIN	C	C			YES		163		5	1
		88 89	ELECTRONIC KITCHEN TIME CLOCK DUMPSTER	0 0	0			YES		YES	3'-0" AFF		1
		90 91	TRASH COMPACTOR LOCKING STEEL NARCOTICS CABINET, WALL	0 0	0 0			YES			3'-6"AFF		1
		92	MID I.T. EQUIPMENT RACK	0	0			YES		YES			7
		93 94 95	TRACTION ELEVATOR	0 C	0 C			YES			4-0 AFF		  
			CIRCULATION DESK - WILSONART KENSINGTO MAPLE FINISH 10776-60										
		96	42"H DBL SIDED MCE LIBRARY SHELF ADDER UNIT	0	0								8
		97 98	UNIT										3 5
		99 100	BEDSIDE TABLE BODY ORIFICE SCANNER	0	0			YES					5
		101 102	ELECTRONIC TIME CLOCK MCE 3'W x 18"D x 78"H STORAGE CABINET	0	0			YES		YES	3'-0"		1
		103 104	3'W x 12"D x 76"H MEDICAL FILE CABINET CROSS COURT BASKETBALL GOAL AND	0 C	0 C								2
		105	SUPPORTS BASKETBALL GOAL AND SUPPORTS	C	C								2
		106 107	ATHLETIC WALL PADDING VOLLEYBALL STANDARD FLOOR SLEEVES	C C	C C							10	11 2
	•	108	ADDER UNIT	- 0									2
		110	STARTER UNIT WALL MOUNTED COMPUTER WORK STATION	0				YES		YES			<u>_</u>
	X	111	KI 30" x 72" HURRY UP TABLE #HULN3072-74P			mun		hun			han man	1	5

# SCHEDULE COMMENTS

 CONTRACTOR TO COORDINATE LOCATION OF ELECTRICAL FLOOR BOX WTIH EQUIPMENT.
 CONTRACTOR TO PROVIDE FLOOR AND WALL PENETRATIONS AS REQUIRED TO CONCEAL AND ROUTE RELATED EQUIPMENT PIPING UNDERFLOOR FROM CHAIR LOCATION TO EQUIPMENT IN COMPRESSOR ROOM, RATE PENETRATIONS AS REQUIRED ELSEWHERE. 3. CONTRACTOR TO PROVIDE POWER OUTLET LOCATED IN BACK WALL OF UPPER WALL CABINET CONTAINING MICROWAVE.

4. SEE CASEWORK AND ELECTRICAL DWGS FOR LOCATION AND CONFIGURATION OF THE TV TUNER BOX AND IT'S REQUIRED CONNECTIONS. PROVIDE CONCEALED CONDUIT FOR VGA, USB (CAT5), HDMI, AND DATA FROM THE PROJECTOR LOCATION TO THE TV TUNER LOCATION AND THEN TO THE CABLE TRAY LEADING TO THE IDF ROOM.

5. SEE PROJECT MANUAL SPECIFICATIONS FOR STRUCTURAL SUPPORT COORDINATION REQUIREMENTS. 6. SEE DETAIL A1 / A581.

7. SEE DETAIL B1 / A581. 8. SEE DETAIL A3 & B3 / A581.

9. SEE DETAIL D1 / A581.

![](_page_101_Figure_12.jpeg)

![](_page_102_Figure_0.jpeg)

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# **GENERAL NOTES**

- I. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF AL GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL EQUIPMENT INSTALLATION.
   COORDINATE EXACT UTILITY CONNECTIONS WITH EQUIPMENT.
   PROVIDE CONCEALED FIRE TREATED WD BLKG FOR ALL EQUIP. MTD ON MTL S
- PARTITION WALLS. COORD BLOCKING LOCATIONS AND EXTENTS WITH WITH REQUIREMENTS.

									•			
			FURNIT	URE, FI		RES, AND EQUIPM	IENT SC	HEDULI	Ξ			
				DΒY	BΥ		ACTOR	INSTALL		ITIES	-	
L STUD I EQUIPMENT				NISHE	ALLED	D WAT	Ш	ĒR	Щ	-		
EQUIRED		TAG	DESCRIPTION	FURN	INST	COLI	WAS	POW	CABI	DAT/	MNT. HGT.	COMMENT
D. INER		1	KI 60" x 24" HURRY UP TABLE #HUN246074P	0	0							1
IIREMENTS.		2	STANDARD L-SHAPED DESK #115RDL NEW WINDSOR FLIP-UP CHAIR	0	0							
HERE		4	4 DRAWER LATERAL FILE #115STFC TREK TABLE 60" DIAMETER	0	0							
		6	STANDARD CANTON STAFF CREDENZA #115STFC	0	0							
		8	4-DRAWER FILE CABINE I WALL MOUNTED 46" FLATSCREEN TV AND	0	0 C			YES	YES			6
		9	CLG MTD 46" FLAT SCREEN TV (O/C) AND	0	С			YES	YES			7
		10	MEZZANINE MTD 46" FLAT SCREEN TV AND MOUNTING BRACKET	0	С			YES	YES			8
		11	WALL MTD 46" FLAT SCREEN TV, MOUTING BRACKET, AND SECURITY HOUSING	0	С			YES	YES			9
		12	ZUMA CANTILEVER TWO-STUDENT DESK WITH BOOK BOX #ZDESK226027BOX	0	0							
		13 14	MOBILE MEDICATION CART	0	0							
		15	COUNTERTOP DENTAL LIGHT CURING MACHINE COUNTERTOP DENTAL AMALGMATOR	0	0			YES YES				
	4	17	COUNTERTOP DENTAL ULTRASONIC CLEANING SYSTEM	0	0			YES				
		18	DENTAL CHAIR, CHAIR MNT LIGHT, CHAIR MNT DENTAL DELIVERY SYSTEM, & STOOL	0	C	YES	YES	YES		1/50		2
		19 20	SURFACE MTD X-RAY VIEW BOX	0	C C			YES YES		YES	3'-9"AFF 3'-6"AFF	
		21 22	DENTAL ASSISTANT STOOL	0	0			YES				
		23 24	FLOOR MTD DENTAL COMPRESSOR	0	0 C		YES	YES YES		YES		2
		25 26	DENTAL AIR-WATER SEPARATOR       FLOOR MTD DENTAL VACUUM PUMP	0	C C	YES YES	YES	YES				2
		27 28	MCE 3' METAL SHELVING 124009 EXAM STOOL - RITTER	0	0							
		29	EXAM TABLE, BREWER COMPANY, BASIC EXAM TABLE #4000 AND EXAM STOOL, BREWER	0	0							
		30	FOOSEBALL TABLE	0	0							
		31	KI DATALINK MULTIPURPOSE TABLE 30" X 72"	0	0							1
		33	SCIENCE STOOL - VIRCO 3000 SERIES 3821LS	0	0							
×		34	#106180	0	0							
		36	CYBEX FUNCTIONAL TRAINER - FT450	0	0							
		38	BIKE	0	0			YES				
		39 40	FULL HEIGHT REFRIGERATOR	0	0	YES		YES				3
		40	ALTA SIDE CHAIR #12215NAS	0	0							5
		43	TREK TABLE 48" DIAMETER	0	0							
		46	STANDARD L-SHAPED DESK #115LDL	0	0							
		49	STANDARD 3-DRAWER LATERAL FILE CABINET #115LF3	0	0							
		50 51	TENOR MID BACK #122UN7700 MINI REFRIGERATOR, MAGIC CHEF APPLIANCE	0	0			YES				
	\$	<b>5</b> 2	#MCBR360S CLARIDGE 4'W X 4'H BULLETIN BOARD AND		C			$\sim$		~~~~		······
		- Euro	CABINET, 2040 (PROVIDE LEXAN	h	·····	mun	un	un	h	um	mm	mm
		54	MEDICUS HEALTH CLEARVIEW STAINLESS STEEL TALL CABINET WITH SWING HANDLE LOCK #2571	0	0							
		55	CLARIDGE 4'W X 4'H MARKER BOARD, S4-4x4-LCS	0	C						2'-8"AFF	
		56	CLARIDGE 8'W X 4'H MARKER BOARD, S4-4x8-LCS CLARIDGE 8'W X 4'H BULLETIN BOARD AND	0	C						2'-8"AFF 2'-8"AFF	
		61	CLADINGE 3'W X 4'H CHALK BOARD S4 4X3 V/IT	0	C							
		62	(BLACK) STUDENT CHAIRS, ZUMA STG ZU418 (18")									
		63	CLARIDGE 3'W X 4'H BULLETIN BOARD, S4-4X3-COR, CLARIDGE CORK	0	С						2'-8"AFF	
		64	KI DATALINK MULTI PURPOSE TABLE 36"x36" DMS3FX74P	0	0							
		65 67	KI PORTICO TABLE 36"Wx72"L #P36F EDGE-74P STANDARD EXECUTIVE DESK #115ED	0	0							
<		68	MEDICUS HEALTH, WIRE SHELVING KITS WITH BASKET #2071M3, 24"Dx36"Wx63"H	0	0							
		69 70	HOSPITAL BEDS, HILL ROM CENTRA SERIES 80 METAL SHELVING, MCE #124013 (36"x 24"x 82")	0	0			YES				11
		73	CLARIDGE 6'W X 4'H MARKER BOARD, S4-4X6-LCS	0	С						2'-8"AFF	
		74 75	WALK-THROUGH METAL SCANNER SMITHS HEIMANN HS 6040DS X-RAY SCANNER	0	0			YES YES				1
			WITH CONVEYOR, MONITOR, CART, KEYBOARD									
		78	CLARIDGE 10'W X 4'H MARKER BOARD, S4-4x10-LCS	0	C						2'-8"AFF	
		80	S4-4x12-COR, CLARIDGE CORK	0							2-0 AFF	
		81	S4-4x12-LCS SHORT THROW PROJECTOR AND WALL MOUNT	0	С С			YES		YES	7'-8"AFF	4
		82 83	HYBRID TV BOX TUNER MOBILE CRASH CART	0	0			YES		YES		4
		84 85	PRINTER / COPY MACHINE	0	0			YES		YES YES	3'-6"AFF	
		86 87	DESKTOP PRINTER BOLL-FOLD POWER OPERATED DIVIDER	0	0 C			YES		YES		5
		88		0	0			YES		YES	3'-0" AFF	
		89 90	DUMPSTER TRASH COMPACTOR	0	0			YES				
		91	LOCKING STEEL NARCOTICS CABINET, WALL MTD	0	0						3'-6"AFF	
		92 93	I.T. EQUIPMENT RACK DIAGNOSTIC INSTRUMENT SET, WALL MTD	0	0			YES YES		YES	4'-6"AFF	
		94 95	TRACTION ELEVATOR PREMANUFACTURED CROSSROADS	C O	C O			YES				
			CIRCULATION DESK - WILSONART KENSINGTON MAPLE FINISH 10776-60									
			42"H DBL SIDED MCE LIBRARY SHELF ADDER	0	0							
		96		0	0							
		96	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT	-	-							
		96 97 98 99	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE	0	0							
		96 97 98 99 100 101	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK	0 0 0 0	0 0 0 0			YES YES		YES	3'-0"	
		96 97 98 99 100 101 102 103	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET	0 0 0 0 0 0	0 0 0 0 0 0			YES YES		YES	3'-0"	
		96 97 98 99 100 101 102 103 104	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET CROSS COURT BASKETBALL GOAL AND SUPPORTS	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0			YES YES		YES	3'-0"	
		96 97 98 99 100 101 102 103 104 105 106	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET CROSS COURT BASKETBALL GOAL AND SUPPORTS BASKETBALL GOAL AND SUPPORTS ATHLETIC WALL PADDING	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			YES YES		YES	3'-0"	
		96         97         98         99         100         101         102         103         104         105         106         107         108	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET CROSS COURT BASKETBALL GOAL AND SUPPORTS BASKETBALL GOAL AND SUPPORTS ATHLETIC WALL PADDING VOLLEYBALL STANDARD FLOOR SLEEVES SGL SIDED FULL HEIGHT MCE LIBRARY SHELF ADDER LINIT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			YES YES		YES	3'-0"	10
		96           97           98           99           100           101           102           103           104           105           106           107           108           109	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET CROSS COURT BASKETBALL GOAL AND SUPPORTS BASKETBALL GOAL AND SUPPORTS ATHLETIC WALL PADDING VOLLEYBALL STANDARD FLOOR SLEEVES SGL SIDED FULL HEIGHT MCE LIBRARY SHELF ADDER UNIT SGL SIDED FULL HEIGHT MCE LIBRARY SHELF STARTER UNIT	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			YES YES		YES	3'-0"	10
		96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111	42"H DBL SIDED MCE LIBRARY SHELF STARTER UNIT OVERBED TABLE BEDSIDE TABLE BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET CROSS COURT BASKETBALL GOAL AND SUPPORTS BASKETBALL GOAL AND SUPPORTS ATHLETIC WALL PADDING VOLLEYBALL STANDARD FLOOR SLEEVES SGL SIDED FULL HEIGHT MCE LIBRARY SHELF ADDER UNIT SGL SIDED FULL HEIGHT MCE LIBRARY SHELF STARTER UNIT WALL MOUNTED COMPUTER WORK STATION KI 30" x 72" HURRY UP TABLE #HUL M3072-74B		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			YES		YES	3'-0"	10

SCHEDULE COMMENTS

 CONTRACTOR TO COORDINATE LOCATION OF ELECTRICAL FLOOR BOX WTIH EQUIPMENT.
 CONTRACTOR TO PROVIDE FLOOR AND WALL PENETRATIONS AS REQUIRED TO CONCEAL AND ROUTE RELATED EQUIPMENT PIPING UNDERFLOOR FROM CHAIR LOCATION TO EQUIPMENT IN COMPRESSOR ROOM. RATE PENETRATIONS AS REQUIRED ELSEWHERE. 3. CONTRACTOR TO PROVIDE POWER OUTLET LOCATED IN BACK WALL OF UPPER WALL CABINET CONTAINING MICROWAVE. 4. SEE CASEWORK AND ELECTRICAL DWGS FOR LOCATION AND CONFIGURATION OF THE TV TUNER BOX AND IT'S REQUIRED CONNECTIONS. PROVIDE CONCEALED CONDUIT FOR VGA, USB (CAT5), HDMI, AND DATA FROM THE PROJECTOR LOCATION TO THE TV TUNER LOCATION AND THEN TO THE CABLE TRAY LEADING TO THE IDF ROOM.

5. SEE PROJECT MANUAL SPECIFICATIONS FOR STRUCTURAL SUPPORT COORDINATION REQUIREMENTS. 6. SEE DETAIL A1 / A581.

7. SEE DETAIL B1 / A581. 8. SEE DETAIL A3 & B3 / A581.

9. SEE DETAIL D1 / A581.

![](_page_102_Figure_17.jpeg)

![](_page_103_Figure_0.jpeg)

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	TAG	DESCRIPTION	й О	<u>∠</u>   0	Ŭ	Ĭ	<u>≥</u>	ŭ T	Ŭ		MNT. HGT.	
	2 3	STANDARD L-SHAPED DESK #115RDL NEW WINDSOR FLIP-UP CHAIR	0 0	0 0								•
	4 5	4 DRAWER LATERAL FILE #115STFC TREK TABLE 60" DIAMETER STANDARD CANTON STAFE CREDENZA	0	0								
	7	#115STFC 4-DRAWER FILE CABINET	0	0								
	8	WALL MOUNTED 46" FLATSCREEN TV AND MOUNTING BRACKET	0	C				YES	YES			6
	10	MOUNTING BRACKET (C/C) MEZZANINE MTD 46" FLAT SCREEN TV AND	0	C C				YES	YES			8
	11	MOUNTING BRACKET WALL MTD 46" FLAT SCREEN TV, MOUTING BRACKET, AND SECURITY HOUSING	0	С				YES	YES			9
	12	ZUMA CANTILEVER TWO-STUDENT DESK WITH BOOK BOX #ZDESK226027BOX	0	0								
	13 14 15	MOBILE MEDICATION CART MCE ENGAGE TASK CHAIR COUNTERTOP DENTAL LIGHT CURING MACHINE	0	0				YES				
	16 17	COUNTERTOP DENTAL AMALGMATOR COUNTERTOP DENTAL ULTRASONIC CLEANING	0	0 0				YES YES				
772	18	SYSTEM DENTAL CHAIR, CHAIR MNT LIGHT, CHAIR MNT DENTAL DELIVERY SYSTEM, & STOOL	0	C	YES		YES	YES				2
	19 20	WALL MTD DIGITAL X-RAY AND ARM SURFACE MTD X-RAY VIEW BOX	0 0	C C				YES YES		YES	3'-9"AFF 3'-6"AFF	
	21 22 23	COUNTERTOP DENTAL AUTOCLAVE STERILIZER DENTAL ASSISTANT STOOL	0	0				YES		VES		
	23 24 25	FLOOR MTD DENTAL COMPRESSOR DENTAL AIR-WATER SEPARATOR	0	C C	YES		YES	YES				2 2
	26 27	FLOOR MTD DENTAL VACUUM PUMP MCE 3' METAL SHELVING 124009	0	C 0	YES		YES	YES				2
	28	EXAM STOOL - RITTER EXAM TABLE, BREWER COMPANY, BASIC EXAM TABLE #4000 AND EXAM STOOL, BREWER	0	0								
	30	COMPNAY, #22400 FOOSEBALL TABLE	0	0								
	32	KI DATALINK MULTIPURPOSE TABLE 30" X 72" WITH POWER UP DMD256F/2 74P-WHITE	0	0								1
	33 34	SCIENCE STOOL - VIRCO 3000 SERIES 3821LS COMPUTER STATIONS - MCE STUDY CARREL #106180	0	0								
	35 36	CYBEX ELLEPITICAL - 625AT ARC TRAINER CYBEX FUNCTIONAL TRAINER - FT450	0	0								
	37	CARBON BLUE PERFORMANCE PLUS EXERCISE BIKE	0	0				VES				
	39 40	FULL HEIGHT REFRIGERATOR MICROWAVE, COUNTERTOP	0	0	YES			YES				3
	41 42	ALTA SIDE CHAIR #12215NAS GUARDIAN HEAVY DUTY CHAIR, MCE #122140	0	0								
	43 45 46	TREK TABLE 48" DIAMETER TENOR HIGH BACK #122UN7700D STANDARD L-SHAPED DESK #115LDL	0 0 0	0								
	47 49	STANDARD 60"x36" BOOKCASE #115BC6036B STANDARD 3-DRAWER LATERAL FILE CABINET #1151 E3	0 0	0								
	50 51	TENOR MID BACK #122UN7700 MINI REFRIGERATOR, MAGIC CHEF APPLIANCE	0	0				YES				
3	52	#MCBR360S CLARIDGE 4'W X 4'H BULLETIN BOARD AND CABINET, 2040 (PROVIDE LEXAN	~~~~	Č	$\sim$	~~~~		~~~	~~~~		*****	
	<b>5</b> 4	POLYCARBONATE) MEDICUS HEALTH CLEARVIEW STAINLESS STEEL	0	0	um	un	·····	u	·····	hanne	m	hannahan
	55	M2 48" Wx24"Dx78"H CLARIDGE 4'W X 4'H MARKER BOARD, S4-4x4-LCS	0	C							2'-8"AFF	
	56 57	CLARIDGE 8'W X 4'H MARKER BOARD, S4-4x8-LCS CLARIDGE 8'W X 4'H BULLETIN BOARD AND CABINET 2046 (PROVIDE LEXAN	0 0	C C							2'-8"AFF 2'-8"AFF	
	61	POLYCARBONATE) CLARIDGE 3'W X 4'H CHALK BOARD, S4-4X3-VIT	0	C							2'-8"AFF	
	62	(BLACK) STUDENT CHAIRS, ZUMA STG ZU418 (18") CLARIDGE 3'W X 4'H BUU ETIN BOARD	0	C							2'-8"AFF	
	64	S4-4X3-COR, CLARIDGE CORK KI DATALINK MULTI PURPOSE TABLE 36"x36"	0	0								
	65 67	KI PORTICO TABLE 36"Wx72"L #P36F EDGE-74P STANDARD EXECUTIVE DESK #115ED	0	0								
	68	MEDICUS HEALTH, WIRE SHELVING KITS WITH BASKET #2071M3, 24"Dx36"Wx63"H	0	0				1/50				
	70	HOSPITAL BEDS, HILL ROM CENTRA SERIES 80 METAL SHELVING, MCE #124013 (36"x 24"x 82") CLARIDGE 6'W X 4'H MARKER BOARD	0	0 0 C				YES			2'-8"AFF	11
	74	S4-4X6-LCS WALK-THROUGH METAL SCANNER	0	0				YES				1
	/5	SMITHS HEIMANN HS 6040DS X-RAY SCANNER WITH CONVEYOR, MONITOR, CART, KEYBOARD SOFTWARE	0	0				YES				1
	78	CLARIDGE 10'W x 4'H MARKER BOARD, S4-4x10-LCS CLARIDGE 12'W X 4'H BUILLETIN BOARD	0	C							2'-8"AFF	
	80	S4-4x12-COR, CLARIDGE CORK CLARIDGE 12' W X 4'H MARKER BOARD	0	C							2'-8"AFF	
	81 82	S4-4x12-LCS SHORT THROW PROJECTOR AND WALL MOUNT HYBRID TV BOX TUNER	0	С О				YES YES		YES YES	7'-8"AFF	4 4
	83 84	MOBILE CRASH CART PRINTER / COPY MACHINE	0	0				YES		YES		
	85 86 87	INMATE PHONE DESKTOP PRINTER ROLL-FOLD POWER OPERATED DIVIDER	0 0 C	0 0 0				YES YFS		YES	3'-6"AFF	5
	88	CURTAIN ELECTRONIC KITCHEN TIME CLOCK	0	0				YES	_	YES	3'-0" AFF	
	89 90 91	DUMPSTER TRASH COMPACTOR LOCKING STEEL NARCOTICS CABINET WALL	0 0 0	0 0 0				YES			3'-6"AFF	
	92	MTD I.T. EQUIPMENT RACK	0	0				YES		YES		
	93 94 95	DIAGNOSTIC INSTRUMENT SET, WALL MTD TRACTION ELEVATOR PREMANUFACTURED CROSSROADS	0 C 0	0 C 0				YES YES			4'-6"AFF	
		CIRCULATION DESK - WILSONART KENSINGTON MAPLE FINISH 10776-60	~									
	96 97	42 TI DOL SIDED MICE LIBRARY SHELF ADDER UNIT 42"H DBL SIDED MCE LIBRARY SHELF STARTER	0	0								
	98	UNIT OVERBED TABLE BEDSIDE TABLE	0	0								
	99 100 101	BODY ORIFICE SCANNER ELECTRONIC TIME CLOCK	0	0				YES YES		YES	3'-0"	
	102 103	MCE 3'W x 18"D x 78"H STORAGE CABINET 3'W x 12"D x 76"H MEDICAL FILE CABINET	0	0								
	104	BASKETBALL GOAL AND SUPPORTS	C	C C								
	106 107	ATHLETIC WALL PADDING VOLLEYBALL STANDARD FLOOR SLEEVES	C C	C C								10
^	108	ADDER UNIT SGL SIDED FULL HEIGHT MCE LIBRARY SHELF	0	0								
	110	STAKTER UNIT WALL MOUNTED COMPUTER WORK STATION KI 30" X 72" HURRY UP TABLE #HITI N3075-74P	0 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	C R		~~~~		YES		YES		1
· · · ·	hum	which we wanted a start which we wanted a start with the start of the	nin	لمتر	hun	hun	hun	سبر	hum	hun	inn	hannen

SCHEDULE COMMENTS

 CONTRACTOR TO COORDINATE LOCATION OF ELECTRICAL FLOOR BOX WTIH EQUIPMENT.
 CONTRACTOR TO PROVIDE FLOOR AND WALL PENETRATIONS AS REQUIRED TO CONCEAL AND ROUTE RELATED EQUIPMENT PIPING UNDERFLOOR FROM CHAIR LOCATION TO EQUIPMENT IN COMPRESSOR ROOM. RATE PENETRATIONS AS REQUIRED ELSEWHERE. 3. CONTRACTOR TO PROVIDE POWER OUTLET LOCATED IN BACK WALL OF UPPER WALL CABINET CONTAINING MICROWAVE. 4. SEE CASEWORK AND ELECTRICAL DWGS FOR LOCATION AND CONFIGURATION OF THE TV TUNER BOX AND IT'S REQUIRED CONNECTIONS.

PROVIDE CONCEALED CONDUIT FOR VGA, USB (CAT5), HDMI, AND DATA FROM THE PROJECTOR LOCATION TO THE TV TUNER LOCATION AND THEN TO THE CABLE TRAY LEADING TO THE IDF ROOM. 5. SEE PROJECT MANUAL SPECIFICATIONS FOR STRUCTURAL SUPPORT COORDINATION REQUIREMENTS.

6. SEE DETAIL A1 / A581.

7. SEE DETAIL B1 / A581. 8. SEE DETAIL A3 & B3 / A581. 9. SEE DETAIL D1 / A581.

![](_page_103_Figure_12.jpeg)

![](_page_104_Figure_0.jpeg)

![](_page_104_Figure_2.jpeg)

![](_page_105_Figure_0.jpeg)

![](_page_106_Figure_0.jpeg)

![](_page_106_Figure_1.jpeg)

![](_page_106_Figure_2.jpeg)

![](_page_107_Figure_0.jpeg)

# **KEY NOTES:**

DN1.1	SECURITY MIRROR	DN3.1A ARM CHAIR, OFOI
DN1.2	FOLDING SHOWER SEAT	DN3.2 4 BEAM SEAT W/ END ARMS, OFOI
DN1.3	SECURITY GRAB BAR, XX" NOTE: LETTER DEFINES GRAB BAR LENGTH: A=24", B=36", C=42", D=48", E=54"	DN3.3 LOUNGE CHAIR, LEFT ARM, OFOI
DN1.4	TRANSACTION DRAWER	DN3.4 LOUNGE CHAIR, ARMLESS, OFOI
DN2.1	LEG STYLE TABLE (30" X 72"), OFOI	DN3.5 LOUNGE CHAIR, RIGHT ARM, OFOI
DN2.2	TABLE, OFOI	DN3.6 STACKABLE CHAIR, OFOI
DN2.3	OUTDOOR TABLE (44" X 44"), OFOI	DN4.1 DETENTION SHELF, OFOI
DN2.4	TABLE, FIXED SEATING ROUND TABLE, 42", OFOI	DN4.2 DETENTION DESK, OFOI
DN2.5	TABLE, LEG STYLE TABLE, 48" ROUND, OFOI	DN4.3 DETENTION BUNK, OFOI
DN2.6	TABLE, FIXED SEATING ROUND TABLE, 48" ADA, OFOI	DN4.4 FLOOR MOUNTED STOOL, OFOI
DN2.7	TABLE, 72" ROUND W/ 6 CHAIRS, OFOI	DN4.5 BEDROOM BUNK, OFOI
DN2.8	TABLE, 36" SQUARE LEG STYLE, OFOI	DN4.6 THREE COMPARTMENT SHELF, OFOI
DN2.9	TABLE, 72" ROUND 5 SEAT - ADA, OFOI	DN4.7 WALL MOUNTED SWING STOOL, OFOI
DN3.1	ARMLESS CHAIR, OFOI	DN4.8 FLOOR MOUNTED SAFE CELL BED, OFOI

![](_page_107_Figure_6.jpeg)

![](_page_107_Figure_7.jpeg)




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	<u>с</u>			DO	OR			DETE	ENTIO AME	n doof	R SCH	IEDULE		DETAILS
	OOR NUMBE	EAF QTY		SIZE		ЧРЕ	ATERIAL	L	ATERIAL	LAZING	IRE LABEL	ARDWARE		
F	0.2A 0.2B		3' - 0" 3' - 0"	HEIGHT 7' - 0" 7' - 0"	THICKNESS	HG P HG P		DF5	DHM DHM	0 SG-12R SG-12R	20 20	DHW-820R DHW-820R	HEAD 12/D403 12/D403	JAMB 13-14/D403 13-14/D403
	0.2C 0.3A 0.3B	1 1 1	3' - 0" 2' - 6" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG	DHM DHM DHM	DF5 DF5 DF2	DHM DHM DHM	SG-12 SG-12R SG-12	20	DHW-820 DHW-820R DHW-320	12/D403 12/D403 4/D403	13-14/D403 13-14/D403 5/D403
	0.6 2.8 2A.1.1	1 1 1	3' - 0" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	FG2 HG HG P	DHM DHM DHM	DF1 DF5	DHM DHM DHM	SG-16 SG-12 SG-12		DHW-310M DHW-310M DHW-810	4/D403 1/D403 12/D403	5/D403 7/D403 13-15/D403
	2A.1.2 2A.1.3 2A.1.4 2A.1.5	1 1 1 1	2' - 6" 2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0" 7' - 0"	2" 2" 2" 2"	HG P HG P HG P HG P	DHM DHM DHM DHM	DF5 DF5 DF5 DF5	DHM DHM DHM DHM	SG-12 SG-12 SG-12 SG-12		DHW-810 DHW-810 DHW-810 DHW-810	12/D403 12/D403 12/D403 12/D403	13-15/D403 13-15/D403 13-15/D403 13-15/D403
	2A.1.6 2A.1.7 2A.1.8 2A 1.9	1 1 1 1	2' - 6" 2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM DHM	DF2 DF2 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-310M DHW-310M	4/D403 4/D403 4/D403 4/D403	5/D403 5/D403 5/D403 5/D403
	2A.1.0 2A.1.10 2A.1.11	1	2'-6" 2'-6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P	DHM DHM	DF2 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-310M	4/D403 4/D403 12/D403	5/D403 5/D403 12,15/D403
	2A.2 2A.3A 2A.3B	1 1 1	2' - 0" 2' - 0"	6' - 4" 6' - 4"	2" 2" 2"	F F	DHM DHM DHM	DF3 DF1 DF1	DHM DHM DHM	-		DHW-810 DHW-116 DHW-116	4/D403 4/D403	5/D403 5/D403
	2A.3C 2A.16A 2A.16B 2A.19A	1 1 1 1 1	2' - 0" 3' - 0" 3' - 0" 2' - 0"	6' - 4" 7' - 0" 7' - 0" 6' - 4"	2" 2" 2" 2"	F NP NP F	DHM DHM DHM DHM	DF1 DF5 DF5 DF1	DHM DHM DHM DHM	- SG-12R SG-12 -	20S	DHW-116 DHW-820R DHW-820 DHW-116	4/D403 12/D403 12/D403 4/D403	5/D403 13-14/D403 13-14/D403 5/D403
Е	2A.19B 2A.19C 2B.1.1 2B.1.2	1 1 1 1	2' - 0" 2' - 0" 2' - 6"	6' - 4" 6' - 4" 7' - 0" 7' - 0"	2" 2" 2"	F F HG P	DHM DHM DHM	DF1 DF1 DF5 DF5	DHM DHM DHM	- - SG-12		DHW-116 DHW-116 DHW-810	4/D403 4/D403 12/D403 12/D403	5/D403 5/D403 13-15/D403
	2B.1.2 2B.1.3 2B.1.4 2B.1.5	1 1 1 1	2' - 6" 2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM DHM	DF5 DF5 DF5 DF5	DHM DHM DHM	SG-12 SG-12 SG-12 SG-12		DHW-810 DHW-810 DHW-810 DHW-810	12/D403 12/D403 12/D403 12/D403	13-15/D403 13-15/D403 13-15/D403 13-15/D403
	2B.1.6 2B.1.7 2B.1.8	1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM DHM	DF5 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-810 DHW-310M DHW-310M	12/D403 4/D403 4/D403	13-15/D403 5/D403 5/D403
	2B.1.9 2B.1.10 2B.1.11	1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM DHM	DF2 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-310M	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	2B.1.12 2B.1.13 2B.2	1 1 1	2' - 6" 2' - 6" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM DHM	DF2 DF2 DF5	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-810	4/D403 4/D403 12/D403	5/D403 5/D403 13-15/D403
	2B.3A 2B.3B 2B.3C	1 1 1 1	2' - 0" 2' - 0" 2' - 0"	6' - 4" 6' - 4" 6' - 4"	2" 2" 2"	F F F	DHM DHM DHM	DF1 DF1 DF1 DF1	DHM DHM DHM	-		DHW-010 DHW-116 DHW-116 DHW-116	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403 5/D403
	2B.3D 2B.16A 2B.16B	1 1 1	2' - 0" 3' - 0" 3' - 0"	6' - 4" 7' - 0" 7' - 0"	2" 2" 2"	F N P HG P	DHM DHM DHM	DF1 DF5 DF5	DHM DHM DHM	- SG-12R SG-12	20S	DHW-116 DHW-820R DHW-820	4/D403 12/D403 12/D403	5/D403 13-14/D403 13-14/D403
	2B.19A 2B.19B 2B.19C	1 1 1	2' - 0" 2' - 0" 2' - 0"	6' - 4" 6' - 4" 6' - 4"	2" 2" 2"	F F F	DHM DHM DHM	DF1 DF1 DF1	DHM DHM DHM			DHW-116 DHW-116 DHW-116	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	2B.19D 2C.1.1	1	2' - 0" 2' - 6"	6' - 4" 7' - 0" 7' - 0"	2" 2" 2"	F HG P HG P	DHM DHM	DF1 DF5	DHM DHM	- SG-12		DHW-116 DHW-810	4/D403 12/D403	5/D403 13-15/D403
D	2C.1.2 2C.1.3 2C.1.4	1 1 1	2 - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM	DF5 DF5 DF5	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-810 DHW-810 DHW-810	12/D403 12/D403 12/D403	13-15/D403 13-15/D403
	2C.1.5 2C.1.6 2C.1.7	1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P N	DHM DHM DHM	DF5 DF5 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-810 DHW-810 DHW-310M	12/D403 12/D403 4/D403	13-15/D403 13-15/D403 5/D403
	2C.1.8 2C.1.9 2C.1.10	1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	N N N	DHM DHM DHM	DF2 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-310M	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	2C.1.11 2C.1.12 2C.1.13 2C.2	1 1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	N N N	DHM DHM DHM	DF2 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-310M	4/D403 4/D403 4/D403 12/D403	5/D403 5/D403 5/D403
	2C.2 2C.3A 2C.3B	1 1 1 1	2' - 0" 2' - 0" 2' - 0"	6' - 4" 6' - 4"	2" 2" 2"	F F	DHM DHM DHM	DF3 DF1 DF1	DHM DHM DHM	-		DHW-810 DHW-116 DHW-116	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	2C.3D 2C.16A	1 1 1	2 - 0" 2' - 0" 3' - 0"	6' - 4" 7' - 0"	2" 2" 2"	F F NP	DHM DHM	DF1 DF1 DF5	DHM DHM DHM	- - SG-12R	20S	DHW-116 DHW-820R	4/D403 4/D403 12/D403	5/D403 5/D403 13-14/D403
	2C.16B 2C.19A 2C.19B	1 1 1	3' - 0" 2' - 0" 2' - 0"	7' - 0" 6' - 4" 6' - 4"	2" 2" 2"	F F	DHM DHM DHM	DF5 DF1 DF1	DHM DHM DHM			DHW-820 DHW-116 DHW-116	4/D403 4/D403 4/D403	13-14/D403 5/D403 5/D403
	2C.19C 2C.19D 2D.1.1	1 1 1	2' - 0" 2' - 0" 2' - 6"	6' - 4" 6' - 4" 7' - 0"	2" 2" 2"	F F HG P	DHM DHM DHM	DF1 DF1 DF5	DHM DHM DHM	- - SG-12		DHW-116 DHW-116 DHW-810	4/D403 4/D403 12/D403	5/D403 5/D403 13-15/D403
	2D.1.2 2D.1.3 2D.1.4	1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM DHM	DF5 DF5 DF5	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-810 DHW-810 DHW-810	12/D403 12/D403 12/D403	13-15/D403 13-15/D403 13-15/D403
C	2D.1.5 2D.1.6 2D.1.7	1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P N N	DHM DHM DHM	DF5 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-810 DHW-310M DHW-310M	12/D403 4/D403 4/D403	13-15/D403 5/D403 5/D403
C	2D.1.8 2D.1.9 2D.1.10	1 1 1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	N N N	DHM DHM DHM	DF2 DF2 DF2	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-310M	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	2D.1.11 2D.2 2D.3A	1 1 1	2' - 6" 3' - 0" 2' - 0"	7' - 0" 7' - 0" 6' - 4"	2" 2" 2"	N HG P F	DHM DHM DHM	DF2 DF5 DF1	DHM DHM DHM	SG-12 SG-12 -		DHW-310M DHW-810 DHW-116	4/D403 12/D403 4/D403	5/D403 13-15/D403 5/D403
	2D.3B 2D.3C 2D.16A	1 1 1	2' - 0" 2' - 0" 3' - 0"	6' - 4" 6' - 4" 7' - 0"	2" 2" 2"	F F NP	DHM DHM DHM	DF1 DF1 DF5	DHM DHM DHM	- - SG-12R	205	DHW-116 DHW-116 DHW-820B	4/D403 4/D403 12/D403	5/D403 5/D403 13-14/D403
	2D.16B 2D.19A 2D.19A	1	3' - 0" 2' - 0"	7' - 0" 6' - 4"	2" 2" 2"	N P F	DHM DHM DHM	DF5 DF1 DF1	DHM DHM DHM	SG-12 -		DHW-820 DHW-116	12/D403 4/D403	13-14/D403 5/D403
	2D.195 2D.19C 2F.0.1A 2F.0.1B	1 1 1 1	2 - 0 2' - 0" 3' - 0" 3' - 0"	6' - 4" 6' - 4" 7' - 0" 7' - 0"	2" 2" 2"	F F NP HGP	DHM DHM DHM	DF1 DF5 DF5	DHM DHM DHM	- - SG-12R SG-12	20S	DHW-116 DHW-820R DHW-820	4/D403 4/D403 12/D403 12/D403	5/D403 5/D403 13-14/D403 13-14/D403
	2F.0.3 2F.1.1 2F.1.2	1 1 1	3' - 0" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG	DHM DHM DHM	DF5 DF5 DF1	DHM DHM DHM	SG-12R SG-12 SG-12	20S	DHW-820R DHW-810 DHW-310M	12/D403	13-14/D403 13-15/ <del>D4</del> 03 19/D403
	2F.1.3 2F.1.4 2F.1.5	1	2' - 6" 2' - 6" 2' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG HG HG	DHM DHM	DF1 DF1 DF1	DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M	18/D403 18/D403	19/D403 19/D403
	2F.1.6 2F.1.7 2F.1.7	1	2'-6" 2'-6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG HG HG	DHM DHM DHM	DF1 DF1 DF1	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-310M	4/D403 4/D403	5/D403
	2F.1.8 2F.1.9 2F.2	1 1 1	2 - 6 2' - 6" 3' - 0"	7 - 0 7' - 0" 7' - 0"	2" 2" 2"	HG HG HG P	DHM DHM DHM	DF1 DF1 DF5	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-310M DHW-810	4/D403 4/D403 12/D403	5/D403 5/D403 13-15/D403
В	2F.3A 2F.3B 2F.3C 2F.3D	1 1 1 1	2' - 0" 2' - 0" 2' - 0"	6' - 4" 6' - 4" 6' - 4"	2" 2" 2"	F F F	DHM DHM DHM	DF1 DF1 DF1	DHM DHM DHM	-		DHW-116 DHW-116 DHW-116	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403 5/D403
	2F.3E 3.0.1	1 1 1	2'-0" 2'-0" 3'-6"	6' - 4" 7' - 0"	2" 2" 2"	F N	DHM DHM DHM	DF1 DF2	DHM DHM DHM	- - SG-12	20	DHW-116 DHW-320R	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	3.1.1 3.1.2 3.2	1	3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG HG N	DHM DHM DHM	DF6 DF6 DF1	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310 DHW-310 DHW-111	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	3.3 3.6A 3.6B	1 1 1	3' - 0" 3' - 0" 3' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG HG P HG P	DHM DHM DHM	DF2 DF5 DF5	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-310M DHW-820 DHW-820	4/D403 12/D403 12/D403	5/D403 13-14/D403 13-14/D403
	3.7B 4.0.1 4.0.2A	1 1 1	3' - 0" 3' - 6" 2' - 6"	7' - 0" 7' - 0" 5' - 6"	2" 2" 2"	N N F	DHM DHM DHM	DF2 DF2 DNC	DHM DHM DHM	SG-12 SG-12R -	20S	DHW-320X DHW-320MR DHW-116	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	4.0.2B 4.0.3 4.0.4	1 1 1	2' - 6" 3' - 0" 3' - 0"	5' - 6" 7' - 0" 7' - 0"	2" 2" 2"	F HG N	DHM DHM DHM	DNC DF10 DF2	DHM DHM DHM	- SG-12R SG-12R	20S 20S	DHW-116 DHW-320MR DHW-320MR	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	4.1 4.7A 4.7B	1 1 1	3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	N HG HG	DHM DHM DHM	DF1 DF6 DF6	DHM DHM DHM	SG-12 SG-12R SG-12	20 20S	DHW-320R DHW-320MR DHW-320M	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	4.11 4.12 4.23.1	1 1 1	3' - 0" 3' - 0" 2' - 8"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	N HG HG P	DHM DHM DHM	DF1 DF7 DF2	DHM DHM DHM	SG-12 SG-12R SG-12	20	DHW-210M DHW-320R DHW-810	4/D403 4/D403 12/D403	5/D403 5/D403 13-15/D403
	4.23.2 4.23.3 4.23.4	1 1 1	2' - 8" 2' - 8" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG P HG P HG P	DHM DHM DHM	DF2 DF2 DF5	DHM DHM DHM	SG-12 SG-12 SG-12		DHW-810 DHW-810 DHW-810	12/D403 12/D403 12/D403	13-15/D403 13-15/D403 13-15/D403
А	5.3 6.2A 6.2B	1 1 1	3' - 0" 3' - 6" 3' - 6"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	HG N N	DHM DHM DHM	DF8 DF2 DF2	DHM DHM DHM	SG-12R ISG2 ISG2	20 45	DHW-320R DHW-320X DHW-320X	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	6.2C 6.6A	1 1 1	3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	N N N	DHM DHM	DF2 DF2 DF2	DHM DHM	SG-12 SG-12R SG-12P	20	DHW-310M DHW-320R DWH-320P	4/D403 4/D403 4/D403	5/D403 5/D403 5/D403
	6.11 7.4.1	1 1 1 1	3' - 0" 3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	2" 2" 2"	N F F		DF2 DF1 DF1	DHM DHM	SG-12R - SG-12P	20	DHW-320R DHW-112M	4/D403 4/D403 4/D403	5/D403 5/D403
	8.1.3 8.1.5	1	3' - 0" 3' - 0"	7' - 0" 7' - 0"	2" 2"	N N	DHM	DF2 DF2	DHM	SG-12 SG-12		DHW-310 DHW-310	4/D403 4/D403	5/D403 5/D403

		ER
	ARKS	R NUMB
SILL	REM	1000
6/D403 6/D403		0.2A 0.2B
6/D403 6/D403		0.2C 0.3A
 6/D403		0.3B 0.6
6/D403 20/D403		2.8 2A.1.1
20/D403 20/D403		2A.1.2 2A.1.3
20/D403 20/D403		2A.1.4 2A.1.5 2A.1.6
		2A.1.7 2A.1.8
		2A.1.9 2A.1.10
 20/D403		2A.1.11 2A.2
		2A.3A 2A.3B
 20/D403 20/D403		2A.3C 2A.16A 2A.16B
2010 100		2A.19A 2A.19B
19/D403		2A.19C 2B.1.1
19/D403 19/D403		2B.1.2 2B.1.3
19/D403 19/D403		2B.1.4 2B.1.5
19/0403		2B.1.0 2B.1.7 2B.1.8
		2B.1.0 2B.1.9 2B 1 10
		2B.1.10 2B.1.11 2B.1.12
19/D403		2B.1.13 2B.2
		2B.3A 2B.3B
		2B.3C 2B.3D
19/D403 19/D403		2B.16A 2B.16B
		2B.19A 2B.19B 2B.19C
19/D403		2B.19C 2B.19D 2C.1.1
19/D403 19/D403		2C.1.2 2C.1.3
19/D403 19/D403		2C.1.4 2C.1.5
19/D403		2C.1.6 2C.1.7
		2C.1.8 2C.1.9
		2C.1.10 2C.1.11
19/D403		2C.1.12 2C.1.13 2C.2
13/0403		2C.3A 2C.3B
		2C.3C 2C.3D
19/D403 19/D403		2C.16A 2C.16B
		2C.19A 2C.19B
10/D402		2C.19C 2C.19D
19/D403 19/D403		2D.1.1 2D.1.2 2D.1.3
19/D403 19/D403		2D.1.4 2D.1.5
		2D.1.6 2D.1.7
		2D.1.8 2D.1.9
19/D403		2D.1.10 2D.1.11 2D.2
13/0400		2D.3A 2D.3B
19/D403		2D.3C 2D.16A
19/D403		2D.16B 2D.19A
10/0400		2D.19B 2D.19C
19/D403 19/D403		2F.0.1A 2F.0.1B 2F.0.3
19/D403		2F.1.2
<u>4</u>		2F.1.3 2F.1.4
		2F.1.5 2F.1.6
		2F.1.7 2F.1.8
19/D403		2F.1.9 2F.2
		2F.3B 2F.3C
		2F.3D 2F.3E
		3.0.1 3.1.1
		3.1.2 3.2
19/D403		3.3 3.6A 3.6B
		3.7B 4.0.1
		4.0.2A 4.0.2B
		4.0.3 4.0.4
		4.1 4.7A
		4.7B 4.11 4.12
19/D403 19/D403		4.23.1 4.23.2
19/D403 19/D403		4.23.3 4.23.4
		5.3 6.2A
		6.2B 6.2C
		0.6A 6.6B 6.11
		7.4.1
		8.1.3 8.1.5

							DETE	ENTIO	N DOOI	R SCH	EDULE					
Ř			DC	OR			FR/	AME				DETAILS				Ř
DOOR NUMBE	LEAF QTY	WIDTH	SIZE	THICKNESS	ТҮРЕ	MATERIAL	ТҮРЕ	MATERIAL	GLAZING	FIRE LABEL	HARDWARE	HEAD	JAMB	SILL	REMARKS	DOOR NUMBE
0.4.4	4	21 01	71 01	0"	NI	DUM		DUM	00.40			4/0402	E/D 400			0.4.4
8.4.1	1	3' - 0"	7' - 0"	2"	N		DF2		SG-12		DHW-320M	4/D403	5/D403			8.4.1
0.4.2	1	3-0	7 - 0	2					36-12			4/D403	5/D403			0.4.2
0.0 9.7A	1	3-0	7 - 0	2"					- SC 12			4/D403	5/D403			8.7
8.7R	1	3' - 0"	7 - 0	2"					SG-12	20	DHW-320MP	4/D403	5/D403			8.7R
10.844	1	3' - 0"	7 - 0	2"	FG2		013		1562	20		2/D403	3/D403			10.844
10.8AR	1	3' - 0"	7' - 0"	2"	N	DHM	DF2		1662 ISG2		DHW-310MX	2/D403	3/D403			10.8AR
10.8RA	1	3' - 0"	7' - 0"	2"	FG2	DHM			ISG2		DHW-310MX	2/D403	3/D403			10.8RA
10.8BB	1	3' - 0"	7' - 0"	2"	N	DHM	DF2	DHM	ISG2		DHW-310MX	2/D403	3/D403			10.8BB
10.8CA	1	3' - 0"	7' - 0"	2"	FG2	DHM		DHM	ISG2		DHW-310MX	2/D403	3/D403			10.8CA
10.8CB	1	3' - 0"	7' - 0"	2"	N	DHM	DF2	DHM	ISG2		DHW-310MX	2/D403	3/D403			10.8CB
10.8DA	1	3' - 0"	7' - 0"	2"	FG2	DHM		DHM	ISG2		DHW-310MX	2/D403	3/D403			10.8DA
10.8DB	1	3' - 0"	7' - 0"	2"	N	DHM	DF2	DHM	ISG2		DHW-310MX	2/D403	3/D403			10.8DB
10.8F	1	3' - 0"	7' - 0"	2"	SR	DHM		DHM	ISG2		DHW-310MX	2/0403	3/D403			10.8F
11.1.1A	1	3' - 0"	7' - 0"	2"	F	DHM	DF2	DHM	SG-12R	45	DHW-320MR	18/D403	19/D403	4		11.1.1A
11.1.1B	1	3' - 0"	7' - 0"	2"	Ν	DHM	DF2	DHM	SG-12R	45	DHW-320MX	2)10403	and the second	<u> </u>		11.1.1B
11.1.5A	1	3' - 6"	7' - 0"	2"	Ν	DHM	DF2	DHM	GL-2	60MIN.	DHW-320MR	E3/A650	D3/A650			11.1.5A
11.1.5B	1	3' - 6"	7' - 0"	2"	Ν	DHM	DF2	DHM	SG-12R	45	DHW-320MX	2/D403	3/D403			11.1.5B
11.1.10A	2	3' - 0"	7' - 0"	2"	Ν	DHM	DF4	DHM	SG-12R	45	DHW-321R	4/D403	5/D403			11.1.10A
11.1.10B	2	3' - 0"	7' - 0"	2"	Ν	DHM	DF4	DHM	SG-12R	90	DHW-321R	4/D403	5/D403			11.1.10B
11.1.14	1	3' - 0"	7' - 0"	2"	HG P	DHM	DF5	DHM	SG-12		DHW-820R	12/D403	13-14/D403	19/D403		11.1.14
11.2.1	1	3' - 0"	7' - 0"	2"	F	DHM	DF2	DHM	-	45	DHW-320MR	18/D403	19/D403			11.2.1
11.2.5A	2	3' - 0"	7' - 0"	2"	Ν	DHM	DF4	DHM	SG-12R	45	DHW-321R	4/D403	5/D403			11.2.5A
11.2.5B	2	3' - 0"	7' - 0"	2"	Ν	DHM	DF4	DHM	SG-12R	90	DHW-321R	4/D403	5/D403			11.2.5B
11.2.15	1	3' - 0"	7' - 0"	2"	ΝP	DHM	DF5	DHM	SG-12		DHW-820	12/D403	13-14/D403	19/D403		11.2.15
11.2.16	1	3' - 0"	7' - 0"	2"	F	DHM	DF2	DHM	-		DHW-310M	2/D403	3/D403			11.2.16
11.3.1	1	3' - 0"	7' - 0"	2"	F	DHM	DF2	DHM	-	45	DHW-310	4/D403	5/D403			11.3.1
11.3.3A	1	3' - 0"	7' - 0"	2"	Ν	DHM	DF2	DHM	SG-12	20	DHW-320M	4/D403	5/D403			11.3.3A
11.3.3B	1	3' - 6"	7' - 0"	2"	Ν	DHM	DF2	DHM	SG-12		DHW-320M	4/D403	5/D403			11.3.3B
11.3.10A	1	3' - 0"	7' - 0"	2"	N	DHM	DF2	DHM	ISG2		DHW-310MX	2/D403	3/D403			11.3.10A
11.3.10B	1	3' - 0"	7' - 0"	2"	Ν	DHM	DF2	DHM	ISG2		DHW-310MX	2/D403	3/D403			11.3.10B
11.5B	1	3' - 6"	7' - 0"	2"	F	DHM	DF2	DHM	SG-12R	45	DHW-320X	2/D403	3/D403			11.5B

WINDOW				F	RAME			FIRE	
NUMBER	ROOM NAME	WIDTH	HEIGHT	DEPTH	TYPE	MATERIAL	GLAZING TYPE	LABEL	Co
W2A.1.1	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2A.1.2	BEDROOM	1' - 4"	2' - 8"	8" o"	DF23	SS	ISG2		
W2A.1.3 W2A.1.4	BEDROOM	1'-4"	2 - 8	8"	DF23	SS	ISG2		
W2A.1.5	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2A.1.6 W2A 1 7	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2A.1.8	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2A.1.9	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2A.1.10 W2A.1.11	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23 DF23	SS	ISG2		-
W2A.2	ADA BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2A.3B		1' - 4"	2' - 8"	8" 8"	DF23	SS	ISG2		
W2A.30	OUTDOOR REC	5' - 4"	2 - 8 8' - 8"	8"	DF23	DHM	ISG2		
W2A.19B	DAYROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2A.19C W2B 1 1	DAYROOM BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2B.1.2	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2B.1.3	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2B.1.4 W2B.1.5	BEDROOM	1 - 4	2 - 8	8"	DF23 DF23	SS	ISG2		
W2B.1.6	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2B.1.7	BEDROOM	1' - 4"	2' - 8"	8" o"	DF23	SS	ISG2		-
W2B.1.0 W2B.1.9	BEDROOM	1'-4	2 - 8	8"	DF23	SS	ISG2		
W2B.1.10	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2B.1.11 W2B 1 12	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2B.1.12 W2B.1.13	STORAGE	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2B.2	ADA BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2B.3B W2B.3C	DAYROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	SG-12R SG-12R	45 45	
W2B.3D	OUTDOOR REC	5' - 4"	8' - 8"	8"	DF21	DHM	ISG2		
W2B.19B	DAYROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2B.19C W2C.1.1	BEDROOM	1' - 4"	2' - 8" 2' - 8"	8"	DF23 DF23	SS	ISG2		
W2C.1.2	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2C.1.3	BEDROOM	1' - 4"	2' - 8"	8" o"	DF23	SS	ISG2		
W2C.1.4 W2C.1.5	BEDROOM	1'-4	2 - 0	0 8"	DF23	SS	ISG2		
W2C.1.6	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2C.1.7	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2C.1.9	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2C.1.10	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2C.1.11 W2C.1.12	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2C.1.12	STORAGE	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2C.2	ADA BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2	45	
W2C.3A W2C.3C	OUTDOOR REC	1' - 4" 5' - 4"	2' - 8" 8' - 8"	8" 8"	DF23	DHM	ISG2	45	
W2C.19B	DAYROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2D.1.1	BEDROOM	1' - 4"	2' - 8"	8" o"	DF23	SS	ISG2		
W2D.1.2 W2D.1.3	BEDROOM	1'-4"	2 - 8	8"	DF23	SS	ISG2		
W2D.1.4	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2D.1.5 W2D 1.6	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2D.1.7	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2D.1.8	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2D.1.9 W2D.1.10	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23 DF23	SS	ISG2		
W2D.1.11	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2D.2	ADA BEDROOM	1' - 4"	2' - 8"	8" o"	DF23	SS	ISG2		
W2D.3A W2D.3B	DAYROOM	1'-4"	2 - 8	8"	DF23	SS	ISG2		
W2D.3D	OUTDOOR REC	5' - 4"	8' - 8"	8"	DF21	DHM	ISG2		
W2D.19B		1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2F.1.1	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2F.1.2	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2F.1.3 W2F.1.4	BEDROOM	1' - 4" 1' - 4"	2' - 8" 2' - 8"	8" 8"	DF23	SS	ISG2		
W2F.1.5	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		
W2F.1.6	BEDROOM	1' - 4"	2' - 8"	8" o"	DF23	SS	ISG2		
W2F.1.7 W2F.1.8	BEDROOM	1 - 4	2 - 8	8"	DF23 DF23	SS	ISG2		
W2F.1.9	BEDROOM	1' - 4"	2' - 8"	8"	DF23	SS	ISG2		<b>_</b>
W2F.2		1' - 4" 3' _ 0"	2' - 8" 4' - 0"	8" &"	DF23	SS	ISG2		
W3.3B	ADMISS. / REL. OFF.	3 - 0"	4 - 0	o 8"	DF31	DHM	SG-12 SG-12		
W3.3C	ADMISS. / REL. OFF.	4' - 0"	4' - 8"	5 3/4"	DF25	DHM	SG-12		
W4.0.1 W4 1A		3' - 4" 7' - 0"	2' - 8" 6' - 0"	8" 5 3/4"	DF24		ISG2	45	
W4.1B	YOUTH WAITING	7' - 0"	6' - 0"	5 3/4"	DF19	DHM	SG-8R	45	
W4.5	NURSE STATION	11' - 4"	5' - 4"	5 3/4"	DF20	DHM	SG-8R	45	
vv4.16A	OFFICE	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2		
W4.16B	PHYS. / PSYCH.	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2		
W4.20.1	ISOLATION RM.	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2		
	(ADA)			-					
W4.20.2	ISOLATION RM.	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2	L	<u> </u>

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Comments	WINDOW NUMBER
	W2A.1.1
	W2A.1.2 W2A.1.3
	W2A.1.4
	W2A.1.5 W2A.1.6
	W2A.1.7 W2A.1.8
	W2A.1.9 W2A.1.10
	W2A.1.11 W2A.2
	W2A.3B
	W2A.3C W2A.3D
	W2A.19B W2A.19C
	W2B.1.1 W2B.1.2
	W2B.1.3 W2B.1.4
	W2B.1.5
	W2B.1.0 W2B.1.7
	W2B.1.8 W2B.1.9
	W2B.1.10 W2B.1.11
	W2B.1.12 W2B 1 13
	W2B.2
	W2B.3C
	W2B.3D W2B.19B
	W2B.19C W2C.1.1
	W2C.1.2
	W2C.1.4
	W2C.1.5 W2C.1.6
	W2C.1.7 W2C.1.8
	W2C.1.9 W2C.1.10
	W2C.1.11
	W2C.1.13
	W2C.3A
	W2C.3C W2C.19B
	W2D.1.1 W2D.1.2
	W2D.1.3 W2D.1.4
	W2D.1.5
	W2D.1.7
	W2D.1.8 W2D.1.9
	W2D.1.10 W2D.1.11
	W2D.2 W2D.3A
	W2D.3B W2D.3D
	W2D.19B
	W2F.1.1
	W2F.1.2 W2F.1.3
	W2F.1.4 W2F.1.5
	W2F.1.6 W2F.1.7
	W2F.1.8 W2F 1 9
	W2F.2
	W3.3B
	W3.3C W4.0.1
	W4.1A W4.1B
	W4.5 W4.16A
	W4.16B
	W4.20 1
	W4 20 2
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				DETENTION	I WINDOW	SCHEDULE					
WINDOW		FRAME								WINDO'	
NUMBER	ROOM NAME	WIDTH	HEIGHT	DEPTH	TYPE	MATERIAL	GLAZING TYPE	LABEL	Comments	NUMBE	
W/4 22 1	INFIRM RM (ADA)	3' - 4"	2' - 8"	8"	DE24	рнм	1962			W/4 22 1	
W/4.22.1		3' - 4"	2 - 0	8"	DF24		1502			W/4 22 2	
W4.22.2	INFIRM RM (ADA)	3' - 4"	2'-8"	8"	DF24		1862			W4 22 3	
W4.22.3		3' - 4"	2 - 0	8"	DF24		1502			W/4 23 1	
W4.23.2		3' - 4"	2'-8"	8"	DF24		1862			W4 23 2	
W4.23.3	SAFE CELL (ADA)	3' - 4"	2' - 8"	8"	DF24		1862			W4 23 3	
W4 23 4	SAFE CELL	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W4 23 4	
W6.6A	CORR	7' - 0"	6' - 0"	5 3/4"	DF19	DHM	SG-8R	45		W6.6A	
W6.6R		7' - 0"	6' - 0"	5 3/4"	DF19		SG-8R	45		W6.6R	
W6.12	F S OFF	3' - 0"	4' - 0"	8"	DF31		SG-16	-10		W6.0D	
W82	SECURITY SCREEN	9' - 4"	4' - 8"	5 3/4"	DF12		SG-16R	45		W8.2	
W87	CORR	3' - 3"	4' - 8"	5 3/4"	DF11		SG-12R	45		W8.7	
W0.7	CLASSROOM 1	3' - 4"	2' - 8"	8"	DF24		ISG2	-10		W9.11A	
W9.1.1A	CLASSROOM 1	3' - 4"	2'-8"	8"	DF24	DHM	1862			W9.1.1A	
W9.1.1D	CLASSROOM 1	3' - 4"	2' - 8"	8"	DF24		1862			W9.1.1D	
W9.1.2A	CLASSROOM 2	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.10	
W9.1.2R	CLASSROOM 2	3' - 4"	2' - 8"	8"	DF24		ISG2			W9.1.2R	
W9.1.2C	CLASSROOM 2	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.2D	
W913A	CLASSROOM 3	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.20	
W9.1.3B	CLASSROOM 3	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.3B	
W9.1.3C	CLASSROOM 3	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.3C	
W9.1.4A	SCIENCE LAB	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.4A	
W9.1.4B	SCIENCE LAB	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.4B	
W9.1.4C	SCIENCE LAB	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.4C	
W9.1.5A	ART ROOM	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.5A	
W9.1.5B	ART ROOM	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.5B	
W9.1.5C	ART ROOM	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.1.5C	
W9.2.1A	CLASSROOM 4	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.2.1A	
W9.2.1B	CLASSROOM 4	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.2.1B	
W9.2.1C	CLASSROOM 4	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.2.1C	
W9.2.2A	CLASSROOM 5	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.2.2A	
W9.2.2B	CLASSROOM 5	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.2.2B	
W9.2.2C	CLASSROOM 5	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.2.2C	
W9.2.3	CLASSROOM 6	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.2.3	
W9.3.1A	COMPUTER LAB	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.3.1A	
W9.3.1B	COMPUTER LAB	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.3.1B	
W9.11	PRINCIPAL	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W9.11	
W10.8F	FEMALE DAYROOM	5' - 4"	10' - 8"		DF10	DHM	ISG2			W10.8F	
W11.2.12	CORR.	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W11.2.12	
W11.2.14	CORR.	3' - 4"	2' - 8"	8"	DF24	DHM	ISG2			W11.2.14	









### **GENERAL SHEET NOTES:**

- <sup>1.</sup> THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT DISCREPANCIES, IF ANY, TO THE ENGINEER FOR CLARIFICATION PRIOR TO STARTING ANY WORK.
- 2. EXACT LOCATION OF ALL EQUIPMENT AND ACCESSORIES SHALL BE VERIFIED IN THE FIELD
- 3. ALL MATERIALS SHALL BE AS PER THE DRAWINGS AND SPECIFICATIONS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO ITS INSTALLATION.

### SHEET NOTES:

- 1 12" FLUE UP APPROXIMATELY 35 FEET TO TOP OF CHIMNEY. TERMINATE WITH CAP. PROVIDE SUPPORT AT BOTTOM, TOP, AND TWO INTERMEDIATE SUPPORTS. REMOVE AND REINSTALL BRICKS AS NECESSARY TO INSTALL INTERMEDIATE SUPPORTS. EXTEND STACK DOWN TO CHIMNEY ACCESS DOOR AND PROVIDE CLEANOUT AND CONDENSATE DRAIN.
- 2 REMOVE ANY DEBRIS FROM BOTTOM OF EXISTING CHIMNEY AND VACUUM.







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2

PROVIDE A SUBMERSIBLE DUPLEX PUMP<u>SP-2</u>, 25 GPM AT 20 FT HEAD, 1/2HP, **1** 1PH 115V MOTOR BY WEIL MODEL 1411 OR APPROVED EQUAL. PROVIDE CONTROL PANELWITH DISCONNECT, U/L LABLE, PUMP SELECTOR SWITCHS, POWER TO PUMP LIGHT, HIGH WATER ALARM WITH BUZZER, AUXILIARY DRY CONTACT, TERMINAL BLOCK AND TEST SWITCH. SET HIGH WATER ALARM AT 30" WATER LEVEL. PROVIDE 24" DIA X 36" DEEP STEEL BASIN WITH COVER . PROVIDE BUILT IN DIAPHRAGM SWITCH, PROVIDE STAINLESS STEEL LIFTING CABLE, JUNCTION BOX, CONTROLS WITH THERMAL OVERLOAD PROTECTION, AND MICROSWITCH FOR OVERFLOW PROTECTION.

2 ALL UNDERGROUND WASTE WATER PIPING SHALL BE POLYVINYL CHOLRIDE (PVC) PIPING.



























2

# PLUMBING FIXTURE ZONE SHUT-OFF RISER DIAGRAM

NOT TO SCALE




1.	THESE NOTES APPLY TO ALL MECHANICAL DRAWINGS, AS LISTED IN THE DRAWING INDEX ON THIS SHEET. SEE ALSO GENERAL NOTES ON INDIVIDUAL DRAWINGS.
2.	CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, LABOR AND SERVICES NECESSARY TO SUCCESSFULLY COMPLETE ALL MECHANICAL WORK INDICATED. ALL WORK SHOWN IS EXISTING UNLESS SPECIFICALLY INDICATED AS DEMOLITION OR NEW WORK. SUCCESSFUL COMPLETION OF ALL WORK MEANS THAT ALL INSTALLED SYSTEMS SHALL BE COMPLETE AND READY FOR OPERATION. SUCCESSFUL COMPLETION ALSO INCLUDES COMPLETION OF ALL TESTING AND BALANCING WORK INDICATED IN THESE DRAWINGS.
3.	CONTRACTOR SHALL APPLY FOR AND OBTAIN, AT NO ADDITIONAL COST TO THE OWNER,

MECHANICAL PROJECT NOTES

ALL LICENSES AND PERMITS REQUIRED BY STATE AND LOCAL JURISDICTIONAL AUTHORITIES FOR PERFORMANCE OF MECHANICAL WORK. ALL MECHANICAL WORK (MATERIALS, LABOR, AND EQUIPMENT) SHALL BE WARRANTED

FOR A PERIOD OF ONE YEAR COMMENCING WITH THE DATE OF ACCEPTANCE OF ALL WORK BY THE OWNER. ADDITIONAL WARRANTIES AS PER SPECIFICATIONS SHALL ALSO APPLY.

ALL MECHANICAL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS. ALL PRODUCTS (MATERIALS AND EQUIPMENT) SHALL BE FIRST-QUALITY NEW AND

UNUSED PRODUCTS OF REPUTABLE MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF SUCH PRODUCTS. ALL DEMOLITION, INSTALLATION, TESTING AND BALANCING WORK SHALL BE PERFORMED IN A PROFESSIONAL, FIRST CLASS, AND WORKMANLIKE MANNER BY WORKERS SKILLED IN THE TYPE OF WORK BEING PERFORMED.

INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURERS' PRINTED INSTRUCTIONS AND APPLICABLE NOTES AND SPECIFICATIONS ON THESE DRAWINGS. IF MANUFACTURERS' INSTRUCTIONS ARE IN DIRECT CONFLICT WITH INSTRUCTIONS ON THE DRAWINGS OR IN THE SPECIFICATIONS THE ENGINEER OF RECORD SHALL BE CONTACTED FOR CLARIFICATION.

CONTRACTOR SHALL ADHERE AT ALL TIMES TO ALL SAFETY REGULATIONS AND PROCEDURES REQUIRED BY THE LATEST EDITIONS OF THE FEDERAL/STATE OCCUPATIONAL SAFETY AND HEALTH ACTS (OSHA) AND TO ALL SAFETY REGULATIONS AND PROCEDURES REQUIRED BY THE OWNER.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND CLEARANCES AND SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO FABRICATION OR INSTALLATION OF ANY WORK. NO ALLOWANCES WILL BE MADE BY OWNER FOR ANY ERROR OR NEGLIGENCE ON THE CONTRACTOR'S PART CONCERNING EXISTING CONDITIONS.

DUE TO THE SMALL SCALE OF THE DRAWINGS, NOT ALL OFFSETS, FITTINGS OR 10. ACCESSORIES THAT MAY BE REQUIRED ARE INDICATED. CONTRACTOR SHALL CAREFULLY INVESTIGATE ALL CONDITIONS THAT WILL AFFECT THE WORK TO BE PERFORMED AND SHALL ARRANGE FOR SUCH WORK ACCORDINGLY, FURNISHING ALL MATERIAL AND LABOR REQUIRED FOR COMPLETE AND WORKABLE SYSTEMS AS NOTED ABOVE.

11. THE OWNER OR THEIR REPRESENTATIVE SHALL HAVE THE FINAL DETERMINATION IN CLARIFICATIONS AND INTERPRETATIONS REGARDING THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. ANY DEVIATIONS FROM THE DRAWINGS MUST BE APPROVED IN WRITING BY THE OWNER OR THEIR REPRESENTATIVE.

CONTRACTOR SHALL NOT DISCONNECT ANY EXISTING MECHANICAL OR ELECTRICAL 12 SYSTEMS AND SHALL NOT CUT ANY EXISTING STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL FROM THE OWNER OR THEIR REPRESENTATIVE.

CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITY WITH THE OWNER OR 13. THEIR REPRESENTATIVE TO MINIMIZE DISRUPTION TO OSTC NORMAL BUILDING OPERATIONS.

CONTRACTOR SHALL KEEP THE WORK SITE AND SURROUNDING AREA FREE FROM 14. ACCUMULATION OF WASTE MATERIALS GENERATED BY WORK PERFORMED UNDER THIS CONTRACT. SUCH DEBRIS SHALL BE REMOVED FROM THE WORK SITE, HAULED FROM THE PREMISES AND DISPOSED OF IN A LEGAL MANNER ON A DAILY BASIS.

PROTECT ALL EXISTING WORK WHICH IS TO REMAIN IN PLACE. ANY EXISTING WORK TO 15 REMAIN WHICH IS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

CONTRACTOR SHALL PERFORM ALL TESTS AND SECURE ALL INSPECTIONS REQUIRED AT 16. NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL FURNISH COPIES OF ALL REQUIRED INSPECTION CERTIFICATES TO OWNER PRIOR TO FINAL PAYMENT.

# DESIGN CODES & STANDARDS

С	ALL CODES REFERENCED ARE TO BE MODIFIED AS REQUIRED BY STATE AND LOCAL AMENDMENTS:	12.
	2012 INTERNATIONAL MECHANICAL CODE 2009 NATIONAL STANDARD PLUMBING CODE 2012 INTERNATIONAL ENERGY CONSERVATION CODE 2012 INTERNATIONAL FUEL GAS CODE 2006 NFPA 101 LIFE SAFETY CODE 2006 INTERNATIONAL EXISTING BUILDING CODE 2006 INTERNATIONAL EXISTING BUILDING CODE ANSI/ASHRAE/IESNA STANDARD 90.1-2007 ANSI/ASHRAE 55-2007 ANSI/ASHRAE 55-2007 ASHRAE GUIDELINE 0-2007 USGBC LEED-NC RATING SYSTEM 3.0 2009 UNIFIED FACILITIES CRITERIA (UFC) ASHRAE 90.1-2004 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS	

- THESE NOTES APPLY TO ALL MECHANICAL DEMOLITION DRAWINGS.
- FROM THE PREMISES AND DISPOSED OF IN A LEGAL MANNER. ALL EQUIPMENT AND MATERIALS WHICH ARE INDICATED TO BE RELOCATED OR REUSED
- BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- ADDITIONAL COST TO THE OWNER.
- FLOORS, CEILINGS AND WALLS REMAINING AFTER REMÓVALS, MATCHING ADJACENT WORK.
- ETC., AS PART OF SYSTEMS INDICATED TO BE REMOVED. AREA OF THIS CONTRACT.

THE RENOVATED SPACES SHALL BE SERVED BY NEW AND EXISTING HVAC EQUIPMENT AND PLUMBING SERVICES AS INDICATED ON PLANS. ALL REVISIONS TO EXISTING SUPPLY, RETURN AND EXHAUST DUCTWORK ARE SHOWN ON THE CONTRACT DRAWINGS. COORDINATE ALL NEW WORK WITH WALL AND CEILING CONSTRUCTION. ALL DUCT DIMENSIONS INDICATED ARE INSIDE (AIR-PATH) DIMENSIONS.

- ALL PIPING DIAMETERS INDICATED ARE NOMINAL DIAMETERS.
- USE ONLY PLENUM-RATED MATERIALS ABOVE THE CEILING.
- SIZES PRIOR TO FABRICATION OF NEW WORK.
- AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION).
- PROCEDURES TO PROTECT THE DUCTWORK:

# EQUIPMENT WITH PLASTIC.

- INSTITUTE DAILY CLEANING ACTIVITIES, SUCH AS USING WETTING AGENTS TO CLEANING.
- SPECIFICATIONS.

D

# DEMOLITION NOTES

ALL EQUIPMENT AND MATERIALS WHICH ARE INDICATED TO BE REMOVED AND NOT RELOCATED, REUSED OR SALVAGED SHALL BE REMOVED FROM THE WORK SITE, HAULED ACU ACC

AFF

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ASHRAE

ASTM

**BFP** 

BTU

CA

CFN CHF CHS CLG

CISP

CRU

DESIG. DIA.

DN

DW⊢

E.A.T.

EDH

GP

GPM

LB(S

LPS MAX MBH

MIN

MOD MPS

(N) N.C. NFPA

NG

NO

OA O.C. OED OSHA PD PPM

PRV

PVĆ RA RAD

REL.

RPM RPZ

SAD SAN

VTR

W.B. W.C.

WH

WATER HEATER

SMACNA

CR

SHALL BE PROTECTED BY THE CONTRACTOR DURING AND AFTER THE REMOVAL. ANY EXISTING WORK TO BE RELOCATED WHICH IS DAMAGED DURING CONSTRUCTION SHALL PROTECT ALL EXISTING WORK WHICH IS TO REMAIN IN PLACE. ANY EXISTING WORK TO REMAIN WHICH IS DAMAGED DURING DEMOLITION SHALL BE REPLACED AT NO

PROVIDE ALL REQUIRED CUTTING AND PATCHING. CUT EXISTING WORK WHERE INDICATED FOR REMOVALS AND REPAIR ALL OPENINGS, CRACKS AND DEPRESSIONS IN

DUE TO CONCEALMENT, THE EXTENT OF THE EXISTING DUCTWORK AND PIPING SYSTEMS MAY NOT BE FULLY SHOWN OR MAY DIFFER FROM THAT SHOWN. CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EQUIPMENT, DUCTWORK, PIPING,

7. PRIOR TO REMOVAL OF EQUIPMENT, PIPING AND DUCTWORK, CONTRACTOR SHALL VERIFY THAT SYSTEMS ARE NO LONGER IN SERVICE TO ANY AREAS OUTSIDE THE WORK

ALL EQUIPMENT, DUCTWORK, AND PIPING SYSTEMS INDICATED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY, REMOVE ALL VALVES, HANGERS, INSULATION, ETC. ASSOCIATED WITH DEMOLISHED PIPING SYSTEMS. REMOVE ALL HANGERS, INSULATION AND ACCESSORIES ASSOCIATED WITH DEMOLISHED HVAC SYSTEMS.

# GENERAL NOTES

INSTALL DUCTWORK SUCH THAT ALL DAMPERS ARE EASILY ACCESSIBLE.

EXISTING DUCTWORK AND PIPING SIZES SHOWN ARE APPROXIMATE. FIELD VERIFY ALL

UPON COMPLETION OF NEW WORK, CONTRACTOR SHALL VERIFY PROPER OPERATION OF EXISTING HVAC EQUIPMENT AND PLUMBING AND PIPING SERVICES.

CONTRACTOR IS REQUIRED TO MEET OR EXCEED THE "GUIDELINES FOR OCCUPIED BUILDING DURING CONSTRUCTION", 1995, CHAPTER 3 OF SMACNA (SHEET METAL AND

10. HVAC PROTECTION: PROTECT ALL NEW AND EXISTING HVAC EQUIPMENT BEFORE AND AFTER INSTALLATION, INCLUDING DUCTWORK, VAV TERMINALS, ZONE DAMPERS AND DIFFUSERS, FROM DUST AND CONTAMINATION. IF THE HVAC SYSTEM IS USED DURING IT-OUT CONSTRUCTION. THE PRESCRIPTIVE MEASURES IN SMACNA (CHAPTER 3) SHALL BE FOLLOWED REGARDING SOURCE CONTROL. PATHWAY INTERRUPTION. HOUSEKEEPING AND CLEANUP. CONTRACTOR IS RESPONSIBLE FOR CLEANUP COST FOR EQUIPMENT AND DUCTWORK CONTAMINATED WITH CONSTRUCTION DUST INCLUDING VACUUM CLEANING THE PLENUM SPACE ABOVE THE CEILING. FOLLOWING ARE

SEAL ALL DUCT OPENINGS, BOTH SUPPLY AND RETURN, AND WRAP ALL

PLACE FILTER MEDIA (NO LESS THAN MERV 8 RATED FILTERS) AT ALL OPENINGS FOR RETURN AIR INCLUDING RETURN GRILLES IN THE CEILING OR NEGATIVE PRESSURE SIDE OF THE SYSTEM. REGULARLY REPLACE THE FILTER MEDIA. NO LESS THAN ONCE PER WEEK, FOR THE DURATION OF CONSTRUCTION.

MINIMIZE AIRBORNE DUSTS. VACUUM CLEAN WITH HEPA FILTERS FOR FINAL

11. PROVIDE ALL PIPING LEAK TESTING AND INSULATION AS PER SPECIFICATIONS. PROVIDE MECHANICAL IDENTIFICATION FOR EQUIPMENT, PIPING AND DUCTWORK AS PER

	$\mathbf{\hat{H}}$	
AIR COOLED CONDENSING UNIT ADJUSTABLE		
ABOVE FINISHED FLOOR AMERICAN NATIONAL STANDARDS INSTITUTE		
AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR-CONDITIONING ENGINEERS	$\langle 1 \rangle$	
AMERICAN SOCIETY FOR TESTING AND MATERIALS BACKFLOW PREVENTER		
BRITISH THERMAL UNITS BRITISH THERMAL UNITS PER HOUR		
COMBUSTION AIR CONDENSATE DRAIN		
COMBUSTION FLUE CUBIC FEET PER MINUTE		
CHILLED WATER RETURN CHILLED WATER SUPPLY -		
CEILING CAST IRON SOIL PIPE INSTITUTE -		
CONDENSATE RETURN CONDENSATE BETURN UNIT		
CONDENSING UNIT; CUBIC COLD WATER		
DRY BULB		
DIAMETER –		
DOMESTIC WATER HEATER –		
ENTERING AIR TEMPERATURE _		
ELECTRIC DUCT HEATER	CD	
ELEVATION ELECTRIC WATER HEATER	G	
EXISTING TO REMAIN EXTERIOR; EXTERNAL	~	
FAN – DEGREES FAHRENHEIT		
FIRE HOSE VALVE – FOOT (FEET)	<del></del>	
FILTERED WATER	0	
GAUGE		
GALLONS PER HOUR GALLONS PER MINUTE -		
HEIGHT HORIZONTAL/VERTICAL –		
HORSEPOWER HIGH PRESSURE STEAM		
HOUR HOT WATER	2	
HEATING WATER RETURN	)	
INCH(ES) –		
KILOWATT(S)	(\	
LOW PRESSURE STEAM CONDENSATE RETURN		
MAXIMUM		
	$\hat{\mathbf{P}}$	
MEDIUM PRESSURE STEAM		
NOISE CRITERIA	< 1	
NATIONAL FINE FINITEOTION AGENUT NATURAL GAS	$\bigcirc$	
	(0)	
OPEN END DUCT		
PUMPED DISCHARGE		
PRESSURE REDUCING VALVE	¢	
RETURN AIR	¢_	
RETURN AIR DUCT RELOCATE EXISTING	±	
REFRIGERANT LIQUID REVOLUTIONS PER MINUTE	Ø	
REFRIGERANT SUCTION		
ROOFTOP UNIT REMOVE EXISTING		
SENSOR/STEAM SUPPLY AIR		
SUPPLY AIR DUCT SANITARY		
SQUARE FEET SHEET METAL AND AIR-CONDITIONING CONTRACTORS'		
ASSOCIATION STATIC PRESSURE		
SQUARE STEAM RELIEF VENT		
THERMOSTAT TESTING AND BALANCING		
TRANSFER AIR DUCT		
THERMOSTATIC MIXING VALVE TYPICAL VENT: VOLT(S)		
THERMOSTATIC MIXING VALVE TYPICAL VENT; VOLT(S) VARIABLE AIR VOLUME		

### CONNECT NEW TO EXISTING

EXTENT OF DEMOLITION; PATCH EXISTING MAIN TC MATCH EXISTING WHERE OPENING IS NOT REUSED

DRAWING NOTE

DUCTWORK DROP

DUCTWORK RISE

DUCT TRANSITION

EXISTING WORK TO REMAIN

NEW WORK

WORK TO BE DEMOLISHED

HIDDEN WORK

DOMESTIC COLD WATER PIPING

DOMESTIC HOT WATER PIPING

DOMESTIC HOT WATER RETURN PIPING

CONDENSATE DRAIN PIPING

NATURAL GAS PIPING

FLOW DIRECTION

TEE TURNED DOWN

TEE TURNED UP

ELBOW TURNED DOWN

ELBOW TURNED UP

PIPE CAP

CONTINUATION SYMBOL

CONCENTRIC REDUCER

SHUT-OFF VALVE

CHECK VALVE

BALANCING VALVE

PRESSURE REDUCING VALVE

GAS COCK

3-WAY CONTROL VALVE

**AIRFLOW DIRECTION** 

THERMOSTAT

CARBON MONOXIDE SENSOR

WATER METER

CUBIC FEET PER MINUTE

CENTERLINE

PLUS OR MINUS

DIAMETER, PHASE

### HVAC REQUIREMENTS

INDOOR AIR QUALITY AND VENTILATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH ASHRAE STANDARD 62.1-2004 WITH THE FOLLOWING MINIMUM VENTILATION RATES MAINTAINED DURING HEATING AND COOLING: OUTSIDE DESIGN CONDITIONS: FROM THE 2005 ASHRAE HANDBOOK OF FUNDAMENTALS FOR BALTIMORE, MARYLAND ARE AS FOLLOWS HEATING: 12°F DB

COOLING: 91 °F DB & 77 °F WB DEHUMIDIFICATION: 74°F DEWPOINT, 128 GRAINS OF MOISTURE PER POUND OF DRY AIR.

DB = DRY-BULB TEMPERATURE

WB = WET-BULB TEMPERATURE 7000 GRAINS OF MOISTURE = 1 POUND OF WATER (58,310 GRAINS = 1 GALLON)

INSIDE DESIGN CONDITIONS: a. GENERAL:

HEATING: \*70 °F DB SUMMER: \*\*75 °F DB & 50% RH

b. ROOMS AND DAYROOMS:

HEATING: \*68 °F DB COOLING: \*\*78°F DB

HUMIDIFICATION EQUIPMENT WILL NOT BE PROVIDED AND THEREFORE HUMIDITY WILL NOT BE CONTROLLED DURING THE HEATING SEASON. SYSTEMS WILL BE DESIGNED TO MAINTAIN 50% RH AT DESIGN CONDITIONS. CONTROL SYSTEMS

WILL BE SET TO MAINTAIN RH BELOW 60%.

RH = RELATIVE HUMIDITY

VENTILATION REQUIREMENTS

- PREFERRED FAN DESIGN IS SINGLE INLET, SINGLE WIDTH CENTRIFUGAL TYPE WITH BACKWARDLY INCLINED AIRFOILED BLADES. HOWEVER, UTILIZATION OF AIRFOILS, PROPELLERS, AND DUCT AXIAL FANS ARE ENCOURAGED/HERE APPROPRIATE.
- 2. FAN VOLUME CONTROL (VFD) SHALL BE PROVIDED WHEN THE SYSTEM HAS FEATURES TO CAUSE A VARIANCE IN VOLUME.
- PROVIDE RIGID STRUCTURAL STEEL BASE FOR BOTH FAN AND MOTOR WITH SLIDE RAILS FOR DRIVE ADJUSTMENT. HINGED MOTOR BASES ARE ACCEPTABLE.
- FILTERS SHALL HAVE 85% EFFICIENCY (DUST SPOT METHOD USING ATMOSPHERIC DUST) AT 500 FEET PER MINUTE FACE VELOCITY. 4.
- FOLLOW ASHRAE VENTILATION REQUIREMENTS AND MERV RATINGS ON FILTERS AS REQUIRED BY LEED AND THE INDOOR AIR QUALITY MANAGEMENT PLAN DURING CONSTRUCTION AND BEFORE OCCUPANCY. 5.

SYSTEMS INTEGRATION REQUIREMENTS

MECHANICAL SYSTEMS SHALL FUNCTION SEAMLESSLY TO DELIVER THE PERFORMANCE LEVELS NEEDED TO MAINTAIN SPACE COMFORT WITHIN SPECIFICATIONS SET FORTH BY ASHRAE STANDARD 55-2007. THE HVAC SYSTEM WILL BE CAPABLE OF PROVIDING OUTSIDE AIR VOLUME THAT EXCEED ASHRAE STANDARD 62.1-2007 AND MAINTAIN ADEQUATE LEVELS OF BUILDING PRESSURIZATION.

- PROVIDE HUMIDITY LEVELS MONITORING IN THE SPACE TO BE MAINTAINED LESS THAN 60% RELATIVE HUMIDIT AND SHOULD NEVER BE ALLOWED TO REACH A LEVEL THAT WOULD ALLOW CONDENSATE TO FORM ON HVACEQUIPMENT OR OTHER BUILDING ELEMENTS.
- THE HVAC SYSTEM SHALL BE CAPABLE OF REMOTE ACCESS/ALARM NOTIFICATION VIA LCD SCREENS IN THEMAINTENANCE AND MECHANICAL ROOMS.





	DEMOLITION GENERAL NOTES:
	<ol> <li>GENERAL:         <ul> <li>A. CONTRACTOR SHALL THOROUGHLY EXAMINE PREMISES AND OBSERVE ALL CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED. NO ALLOWANCES WILL BE MADE FOR ERRORS OR NEGLIGENCE IN THIS RESPECT.</li> <li>B. COORDINATE ALL WORK WITH OWNER'S OPERATION SCHEDULE IN ORDER NOT TO DISRUPT OR DELAY SUCH OPERATIONS. WORK SHALL BE COORDINATED AND SCHEDULED IN ADVANCE AND APPROVED BY CONSTRUCTION MANAGER AND OWNER. PERFORM ALL WORK ONLY AFTER SECURING APPROVAL FROM THE CONSTRUCTION MANAGER TO COMMENCE. NOTIFY THE CONSTRUCTION MANAGER IN ADVANCE BEFORE DISRUPTING ANY EXISTING EQUIPMENT, BUILDING SERVICES OR UTILITIES.</li> <li>C. ALL AREAS ADJACENT TO THE CONSTRUCTION SITE WILL REMAIN OCCUPIED. CONTRACTOR SHALL MAINTAIN ALL SERVICES (AIR SYSTEMS, SERVICE PIPING)</li> </ul> </li> </ol>
	ETC.) TO THESE AREAS AS INDICATED, AS REQUIRED AND AS DIRECTED BY THE CONSTRUCTION MANAGER IN THE FIELD. D. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. DO NOT SCALE THE DRAWINGS. SCHEDULE OF WORK: E. PHASE WORK AS DIRECTED BY CONSTRUCTION MANAGER DURING PRE-BID
——(A.E)	<ul> <li>MEETING. SCHEDULE AND ACCOMPLISH ALL WORK IN SUCH A MANNER AS TO CAUSE THE LEAST IMPACT ON OWNER'S OPERATIONS.</li> <li>F. SCHEDULE AND ARRANGE WORK TO MINIMIZE THE NUMBER AND DURATION OF OUTAGES FOR INDIVIDUAL SYSTEMS OR SERVICES.</li> <li>G. UTILIZE TEMPORARY PIPE AND DUCT SERVICES WHERE REQUIRED TO ACCOMMODATE PHASING AND TO MINIMIZE OUTAGES. INCLUDE ALL TEMPORARY WORK IN BID.</li> <li>H. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH OWNER'S CONSTRUCTION SCHEDULES AND PHASING REQUIREMENTS AND SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT AND WORK SUCH HOURS (INCLUDING EXTRA SHIFTS) AS MAX BE NECESSARY TO ENSURE COMPLETION OF WORK IN ACCORDANCE WITH</li> </ul>
	<ol> <li>OWNER'S REQUIREMENTS.</li> <li>PROTECTION OF EXISTING WORK:         <ul> <li>A. WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL</li> <li>BE EXERCISED WITH REGARD TO PROTECTION OF EXISTING WORK. CORRECT ALL</li> <li>DAMAGE TO EXISTING WORK TO THE SATISFACTION OF THE OWNER AND AT NO COST.</li> </ul> </li> </ol>
B.E	4. INTERRUPTION OF EXISTING UTILITIES: A. NOTIFY THE CONSTRUCTION MANAGER IN ADVANCE OF ANY REQUIRED SHUTDOWNOF THE HVAC SYSTEMS, ELECTRICAL SERVICE OR OTHER SYSTEM OR SERVICE UTILITY. UPON RECEIPT OF APPROVAL FROM THE CONSTRUCTION MANAGER, SHUTDOWNS SHALL BE PERFORMED ON PREMIUM TIME UNLESS OTHERWISE DIRECTED IN THE FIELD, AND ALL COSTS SHALL BE INCLUDED IN THE BASE BID.
(C.E)	<ol> <li>ALTERATIONS AND REMOVAL:         <ul> <li>A. SCHEDULE AND PERFORM DEMOLITION WORK AS REQUIRED TO KEEP EXISTING BUILDING SERVICES AND SYSTEMS IN OPERATION AND TO MINIMIZE DISRUPTION TO OCCUPANTS. WHEN SHUTDOWN OF SYSTEM OR SERVICE IS REQUIRED PERFORM AS HEREIN SPECIFIED UNDER "INTERRUPTION OF UTILITIES."</li> <li>B. REMOVE WORK BY HAND AS FAR AS POSSIBLE. POWER DRIVEN EQUIPMENT, WHEN REQUIRED, SHALL BE USED SUBJECT TO THE APPROVAL OF THE OWNER.</li> <li>C. CAP, SEAL, OR PLUG ALL ABANDONED WORK. REMOVE TO THE EXTENT REQUIRED TO ALLOW CONCEALMENT BEHIND NEW FINISH MATERIALS.</li> <li>D. WHERE EQUIPMENT OR FIXTURES ARE INDICATED TO BE REMOVED, REMOVE ALL RELATED SUPPORTS, HANGERS, PIPING, WIRING, DUCTS, CONTROLS, INSULATION, ETC., UNLESS NOTED OTHERWISE.</li> <li>E. EXISTING EQUIPMENT, PIPING, CONDUIT, WIRING AND DUCTWORK, ETC., AFFECTED BY DEMOMENT ON PURPORT AND AND POOL AND POOL OF DEMOMENTING PURPORTS.</li> </ul> </li> </ol>
———(D.E)	<ul> <li>REMOVAL OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE REINSTALLED OR SUPPORTED AS REQUIRED. ALL WORK SHALL BE COMPLETED TO THE OWNER'S SATISFACTION.</li> <li>F. EXISTING CONDITIONS INDICATED (I.E., DUCTWORK, PIPING, EQUIPMENT, ETC.), WERE OBTAINED FROM AVAILABLE RECORD DRAWINGS AND LIMITED FIELD SURVEYAND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL DUCTWORK, PIPING, ETC., IN THE FIELD PRIOR TO STARTING ANY WORK.</li> <li>G. DELIVER TO OWNER AT LOCATION DESIGNATED BY HIM ALL MATERIALS AND EQUIPMENT DESIGNATED OR DIRECTED BY OWNER TO BE SALVAGED. ALL OTHER MATERIALS OR EQUIPMENT REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.</li> </ul>
— E.E	DEMOLITION SHEET NOTES:
(F.E)	1REMOVE EXISTING HEATING SUPPLY AND RETURN WATER TO HVAC IN BASEMENT.2REMOVE EXISTING AIR HANDLING UNIT AND ASSOCIATED THERMOSTAT AND WIRING. REMOVE ALL ASSOCIATED REHEAT PIPING.
(H.E)	







ECO ARCH

SEAL







- 1. GENERAL:
- SEE GENERAL NOTES ON SHEET MD100.

### **DEMOLITION SHEET NOTES:**

- REMOVE EXISTING SA DUCTWORK AS INDICATED.
- REMOVE EXISTING AIR HANDLING UNIT AND ASSOCIATED THERMOSTAT AND WIRING. REMOVE ALL ASSOCIATED REHEAT PIPING.
- [3] REMOVE EXISTING SUPPLY AIR DIFFUSER.
- 4 REMOVE EXISTING RETURN AIR REGISTER.

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DATE TITLE







### DEMOLITION GENERAL NOTES:

1. GENERAL:

SEE GENERAL NOTES ON SHEET MD100.

DEMOLITION SHEET NOTES:

- REMOVE EXISTING SA DUCTWORK AS INDICATED.
- REMOVE EXISTING AIR HANDLING UNIT AND ASSOCIATED THERMOSTAT AND WIRING. REMOVE ALL ASSOCIATED REHEAT PIPING.
- (3) REMOVE EXISTING SUPPLY AIR DIFFUSER.
- (4) REMOVE EXISTING RETURN AIR REGISTER.















- — — (B.F



-(G.E)

-(H.E)





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### SHEET NOTES:

1 REMOVE EXISTING EXHAUST FAN WITH ROOF CURB AND ASSOCIATED ACCESSRIES. CLOSE REMAINING ROOF OPENING WITH 16 GAGE GALVANIZED STEEL SHEET TILL THE OPENING IS CLOSED PERMANENTLY UNDER ARCHITECTURAL WORK (TYP.)

1

— —(A.E)			
— — (B.E)			

—(E.E) -(F.E)

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SHEET NOTES:

- 1 PROVIDE UNIT WITH A MINIMUM OF A 3/4" DRAIN COPPER LINE. DRAIN CONDENSATE TO FLOOR DRAIN WITH DRAIN LINE TERMINATING A MINIMUM OF ONE INCH OF FLOOR DRAIN. SPLIT SYSTEM UNIT SHALL BE INSTALL A MINIMUM OF 60" ABOVE FINISH FLOOR.
- 2 PROVIDE INTAKE/EXHAUST LOUVER, INSECT SCREEN AND BARRIER GRILLE AT PERIMETER WALL OPENING. BARRIER GRILLE SHALL BE TITUS SG-BG-FM OR APPROVED EQUAL. FEILD VERIFY WALL PENTRATION SIZE TO INSURE SURCURE FIT IN WALL OPENING.
- 3 EXHAUST FAN <u>EF-1</u> AND SUPPLY FAN <u>SF-1</u> SHALL BE ELECTRONICALLY INTERLOCKED FOR THEIR ON AND OFF OPERATION.
- 4 PROVIDE FLEXIBLE CONNECTION BETWEEN UNIT AND DUCTWORK AS SHOWN. UNITS ARE CEILING HUNG, SEE INLINE FAN DETAIL FOR ADDITIONAL HANGING INFORMATION.





1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT DISCREPANCIES, IF ANY, TO THE ENGINEER FOR CLARIFICATION PRIOR TO STARTING ANY

2. EXACT LOCATION OF ALL EQUIPMENT AND ACCESSORIES SHALL BE VERIFIED IN THE FIELD 3. ALL MATERIALS SHALL BE AS PER THE DRAWINGS AND SPECIFICATIONS AND SHALL BE





### **GENERAL SHEET NOTES:**

- 1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT DISCREPANCIES, IF ANY, TO THE ENGINEER FOR CLARIFICATION PRIOR TO STARTING ANY WORK.
- 2. ALL MATERIALS SHALL BE AS PER THE DRAWINGS AND SPECIFICATIONS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO ITS INSTALLATION.
- 3. EXACT LOCATION OF ALL EQUIPMENT AND ACCESSORIES SHALL BE VERIFIED IN THE FIELD
- 4. PROVIDE BARRIER GRILLES AT ALL OPENINGS EXCEEDING 8"X8" IN SECURITY WALLS AND PARTITIONS, AS WELL AS FLOORS AND ROOFS ENCLOSING SECURE AREAS. SEE MECHANICAL DRAWINGS FOR LOCATIONAND SIZE OF DUCT AND OTHER PENETRACTIONS. GRILLES TO BE TOOL RESISTANT STEEL (TRBG) WHEN PENETRATING THE INSTITUTIONAL PERIMETER. BARRIER GRILLES ARE NOT REQUIRED BEHIND MAXIMUM SECURITY AIR GRILLES AND/OR DIFFUSERS UNLESS SPECIFICALLY NOTED.
- BARRIER GRILLES TO BE INSTALLED IN INSTITUTIONAL PERIMETERS WHERE MAXIMUM SECURITY GRILLES AND DIFFUSERS ARE NOT SCHEDULED.









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

-(A.E)

-(**B.E**)

-(C.E)

-(D.E)

–(G.E)

-(H.E)

### **GENERAL SHEET NOTES:**

- 1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT DISCREPANCIES, IF ANY, TO THE ENGINEER FOR CLARIFICATION PRIOR TO STARTING ANY WORK.
- 2. ALL MATERIALS SHALL BE AS PER THE DRAWINGS AND SPECIFICATIONS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO ITS INSTALLATION.
- 3. EXACT LOCATION OF ALL EQUIPMENT AND ACCESSORIES SHALL BE VERIFIED IN THE FIELD
- 4. PROVIDE BARRIER GRILLES AT ALL OPENINGS EXCEEDING 8"X8" IN SECURITY WALLS AND PARTITIONS, AS WELL AS FLOORS AND ROOFS ENCLOSING SECURE AREAS. SEE MECHANICAL DRAWINGS FOR LOCATIONAND SIZE OF DUCT AND OTHER PENETRACTIONS. GRILLES TO BE TOOL RESISTANT STEEL (TRBG) WHEN PENETRATING THE INSTITUTIONAL PERIMETER. BARRIER GRILLES ARE NOT REQUIRED BEHIND MAXIMUM SECURITY AIR GRILLES AND/OR DIFFUSERS UNLESS SPECIFICALLY NOTED.
- BARRIER GRILLES TO BE INSTALLED IN INSTITUTIONAL PERIMETERS WHERE MAXIMUM SECURITY GRILLES AND DIFFUSERS ARE NOT SCHEDULED.

### DRAWING NOTES:

- PROVIDE ROOFTOP ONE THERMOSTAT AND CO2 MONITOR AS SHOWN. MOUNT A MINIMUM OF 48 INCHES ABOVE FINISH FLOOR. PROVE TAMPER PROOF CLEAR COVER.
- 2 PROVIDE ROOFTOP TWO THERMOSTAT AND CO2 MONITOR AS SHOWN. MOUNT A MINIMUM OF 48 INCHES ABOVE FINISH FLOOR. PROVE TAMPER PROOF CLEAR COVER.





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- 3. ALL MATERIALS SHALL BE AS PER THE DRAWINGS AND SPECIFICATIONS AND SHALL BE



















## **GENERAL SHEET NOTES:**

- 1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT DISCREPANCIES, IF ANY, TO THE ENGINEER FOR CLARIFICATION PRIOR TO STARTING ANY WORK.
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—(A.E)

—(B.E)

—(C.E)

(D.E)

É.E

-(G.E)

—(H.E)







B.E



## GENERAL SHEET NOTES:

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	AIR DISTRIBUTION DEVICE SCHEDULE												
MARK	CFM RANGE	FACE (IN)	NECK (IN)	TYPE	MANU./MODEL #	NOTES	REMARKS						
CD-1	0 - 400	24 x 24	8"	SUPPLY	TITUS/ SG-TDC	CEILING MOUNTED SECURITY SUPPLY DIFFUSER	1, 2 AND 5						
CD-2	0 - 100	12 x 12	4"	SUPPLY	TITUS/ SG-TDC	CEILING MOUNTED SECURITY SUPPLY DIFFUSER	1, 2 AND 5						
CD-3	0 - 100	8 x 8	6"	SUPPLY	TITUS/ SG-PR	SIDEWALL MOUNTED SECURITY SUPPLY GRILL	2 AND 5						
CD-4	0 - 600	22"	12"	SUPPLY	TITUS/ TMR	CEILING MOUNTED SUPPLY DIFFUSER	2, 5 AND 6						
CD-5	0 - 1200	14 x 14	VARY	SUPPLY	TITUS/ SG-3300RL	SIDEWALL MOUNTED SECURITY SUPPLY GRILL	2 AND 5						
RG-1	0 - 800	24 x 24	VARY	RETURN	TITUS/ SG-LFF	CEILING MOUNTED SECURITY SUPPLY DIFFUSER	2						
RG-2	0 - 400	12 x12	VARY	RETURN	TITUS/ SG-LFF	CEILING MOUNTED SECURITY SUPPLY DIFFUSER	2						
RG-3	0 - 52000	62 x 38	60 x 36	RETURN	TITUS/ 300RS	SIDEWALL MOUNTED SECURITY SUPPLY DIFFUSER	2						
SD-1	0 - 1200	16 x12	14 x 10	RETURN	TITUS/ SG-LFF	SIDEWALL MOUNTED SECURITY SUPPLY GRILL	2						
EG-1	0 - 100	12 x12	4"	EXHAUST	TITUS/ SG-PS	CEILING MOUNTED SECURITYEXHAUST GRILLE	4						
EG-2	0 - 600	12 x12	10 x 10	EXHAUST	TITUS/ SG-LFF	SIDEWALL MOUNTED SECURITY SUPPLY GRILL	3						
NOTE:													
1. LOL	JVERED DIF	FUSEER S	SHALL BE	SURFACE M	OUNTED WITH 4-WAY BL	OW PATTERN UNLESS SPECIFIED.							

ALL AIR DEVICES SHALL BE SECURED WITH TAMPER PROOF SCREWS.
 PROVIDE GRILLE WITH 3/4" STEEL ANCHOR BARS. POSITION 3" FROM BACK OF FACE OF PLATE.
 PROVIDE GRILLE WITH 10 GAUGE x #2 MESH WIRE, WITH 3/16" STELL PLATE WITH 2" SQUARE HOLES, 1" FRET BARS

AND 1" BORDERS.

AIR DEVICES SHALL BE SELECTED WITH A MAXIMUM NC RATING OF 30.
 PROVIDE WITH RADIAL SLIDING BLADE DAMPER.

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					CO	NDENSING	i UNIT (CU) SCHEDUI	_E					ELECTRI	CAL UNIT HEA	TERS SCHED	DULE			
	UNIT	ELECTRICAL DATA MIN CIR MAX OVER					HEATING			ELECTRIC	CAL DATA								
UNIT#	SERVED	V	PH	HZ	AMP	CURRENT	COOLING CAPACITY (MBH)	MAKE/MODEL	REMARKS			CAPACITY(							
CU-01	AHU1	208	1	60	8.75	15	12	DAIKIN RZQ12PVJU OR APPROVED EQUAL	SEE NOTE 1	UNIT NO	LOCATION	KW)	CFM	V	PH	HZ	FLA	MAKE/MODEL	REMARKS
CU-02	AHU-2	208	1	60	17.5	15	24	DAIKIN RZQ24PVJU OR APPROVED EQUAL	SEE NOTE 1	EUH -02	BASEMENT AREA A	5	350	480	3	60	6	QMARK MUH541	SEE NOTE 1
CU-03	AHU-3	208	1	60	13	15	18		SEE NOTE 1	EUH - 01	BASEMENT AREA A	5	350	480	3	60	6	QMARK MUH541	SEE NOTE 1
		460	3	60	43 43 43	50 50 50	307		SEE NOTE 1	EUH-03	FIRST FLOOR MECHANICAL RM	3	350	480	3	60	3.6	QMARK MUH341	SEE NOTE 1
		-00	0	00	+0, +0, +0	50, 50, 50	307	RECOVERY-COMBO OR APPROVED EQUAL		EUH-04	FIRST FLOOR ELECTRICAL RM	3	350	480	3	60	3.6	QMARK MUH341	SEE NOTE 1
CU-05 A, B, C	VRV SYS.	460	3	60	43, 43, 43	50, 50, 50	334	DAIKIN-REYQ(160-240 MBH) VRV-IV-HEAT	SEE NOTE 1	EUH-05	THIRD FLOOR MECH. ROOM	5	350	480	3	60	6	QMARK MUH541	SEE NOTE 1
,			_		_ , _ , _	, ,		RECOVERY-COMBO OR APPROVED EQUAL		EUH-06	THIRD FLOOR MECH ROOM	5	350	480	3	60	6	QMARK MUH541	SEE NOTE 1
CU-06 A, B, C	VRV SYS.	460	3	60	43, 43, 43	50, 50, 50	192	DAIKIN-REYQ(160-240 MBH) VRV-IV-HEAT RECOVERY-COMBO OR APPROVED EQUAL	SEE NOTE 1	NOTE:									
NOTE:										1. DISCONI	NECT PROVIDED BY ELECTRICAL C	ONTRATOR.							

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1. DISCONNECT AND STARTER PROVIDED BY ELECTRICAL CONTRATOR.

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RET	BARS

UNIT NO	CFM	E.S.P INCHES W.G.	FAN RPM	TYPE	DRIVE
EF-01	2700	0.4	1770	CENTRIFUGAL	BELT
EF-02	4900	1.5	1929	CENTRIFUGAL	BELT
EF-03	110	0.1	950	CENTRIFUGAL	DIRECT
EF-04	2030	1.2	3847	CENTRIFUGAL	BELT
EF-05	2030	1.2	3847	CENTRIFUGAL	BELT
EF-06	1300	0.75	1200	CENTRIFUGAL	DIRECT
EF-07	1300	0.75	1200	CENTRIFUGAL	DIRECT
EF-08	465	0.1	1725	CENTRIFUGAL	DIRECT
EF-09	465	0.1	1725	CENTRIFUGAL	DIRECT
EF-10	150	0.1	1050	CENTRIFUGAL	DIRECT
EF-11	150	0.1	1050	CENTRIFUGAL	DIRECT
SF-01	2700	0.4	1725	CENTRIFUGAL	BELT
SF-02	2000	0.2	1725	CENTRIFUGAL	BELT
SF-03	2000	0.2	1725	CENTRIFUGAL	BELT
NOTE:					

1. DISCONNECT AND STARTER PROVIDED BY MECHANICAL CONTRATOR. 2. ON/OFF CONTROL SHALL BE INTERCONNECTED LOCAL LIGHTING.
 3. DISCONNECT AND STARTER PROVIDED BY ELECTRICAL CONTRATOR.

	AIR HANDLING UNIT (AHU) SCHEDULE															
	SUPPLY AIR		SUPPLY AIR HEATING			COOLING DATA				SUPPLY FAN			ATA			
UNIT NO	SA CFM	RA CFM	OA CFM	TOTAL MBH	TOTAL COOLING CAPACITY (MBH)	EAT DB/WB.	LAT DB/WB.	EXT.SP (IN WG)	FAN RPM	MCA	V	HZ	PH	AREA SERVED	MAKE/MODEL	REMARKS
AHU-01	600	600	0	21	18	72/68	56/67	0.2	850	0.4	208	60	1	SECOND FLOOR	DAIKIN-FCQ30PAVJU	SEE NOTE 1
AHU-02	750	670	80	24	22	72/68	56/67	0.3	1030	0.5	208	60	1	SECOND FLOOR	DAIKIN-FXMQ24PVJU	SEE NOTE 1
AHU-03	400	360	40	13.5	12	72/68	56/67	0.1	950	0.5	208	60	1	THIRD FLOOR	DAIKIN-FBQ36PVJU	SEE NOTE 1
AHU-04	8090	7060	1030	240	307	82/66	56/54	1.34	1750	3	480	60	3	GYM, FITNESS RM	AAON-RN015	SEE NOTE 1
NOTE:																

1. DISCONNECT PROVIDED BY ELECTRICAL CONTRATOR.

FAN COIL SCHEDULE (VRV)	

					HEATING	DATA		COOL	ING DATA	1		ELE	ECTRICAL D	ATA			
					HEATING		COOLING										
				CEM							V	LI7	РЦ				
						70/60	(010/П)				V 208		<u>- PH</u>				REMARKS
				400	20000	70/60	19000	72/00	57/54	0.0	200	60	1	0.0	15		
				1090	20000	70/60	72000	72/00	57/54	0.22	200	60	1	1.0	15		
				1200	18000	70/60	72000	72/68	57/54	0.01	208	60	1	1.0	15		
				750	18000	70/60	20000	72/00	57/54	0.22	200	00	1	1.0	15		
			ADMIN. SUPPORT 1.1, 1.2, 1.3, 1.4	750	27000	70/60	24000	72/68	57/54	0.23	208	60	1	1.0	15		
VRV-06	FIRST FLOOR			490	18000	70/60	20000	72/68	57/54	0.22	208	60	I	1.6	15	SEE NOTE 1	
VRV-07	FIRST FLOOR			900	18000	70/60	20000	72/68	57/54	0.22	208	60		1.6	15	SEE NOTE I	
VRV-08	FIRST FLOOR			490	18000	70/60	20000	72/68	57/54	0.23	208	60		1.6	15	SEE NOTE I	
VRV-09	FIRST FLOOR	DAIKIN-FXMQ24PAVJU	3.2, 3.6, 3.12	675	27000	70/60	24000	72/68	57/54	0.25	208	60	1	1.8	15	SEE NOTE 1	
VRV-10	FIRST FLOOR	DAIKIN-FXMQ36PAVJU	GELLS	1000	81000	70/60	/2000	72/68	57/54	0.61	208	60	1	1.6	15	SEE NOTE 1	
VRV-11	FIRST FLOOR	DAIKIN-FXZQ0/M/VJU	COUNSELOR OFFICE	200	8700	70/60	/500	/2/68	57/54	0.11	208	60	1	0.8	15	SEE NOTE 1	
VRV-12	FIRST FLOOR	DAIKIN-FXZQ07M7VJU	CASE MGR OFFICE	200	8700	70/60	7500	72/68	57/54	1.38	208	60	1	0.8	15	SEE NOTE 1	
VRV-13	FIRST FLOOR	DAIKIN-FXAQ18PAVJU	MECH. 11.1.6	635	2000	70/60	24000	72/68	57/54	0.23	208	60	1	1.6	15	SEE NOTE 1	
VRV-14	FIRST FLOOR	DAIKIN-FXAQ24PAVJU	SECURITY ELEC. 7.4.1	635	20000	70/60	24000	72/68	57/54	0.23	208	60	1	1.6	15	SEE NOTE 1	
VRV-15	FIRST FLOOR	DAIKIN-FXZQ07M7VJU	LT OFFICE	200	8700	70/60	7500	72/68	57/54	0.08	208	60	1	0.8	15	SEE NOTE 1	
VRV-16	FIRST FLOOR	DAIKIN-FXZQ07M7VJU	CAPT. OFFICE	200	8700	70/60	7500	72/68	57/54	0.08	208	60	1	0.8	15	SEE NOTE 1	
VRV-17	SECOND FLOOR	DAIKIN-FXMQ36PAVJU	DAYROOM 2A.3	1020	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-18	SECOND FLOOR	DAIKIN-FXMQ36PAVJU	DAYROOM 2D.3	1020	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-19	SECOND FLOOR	DAIKIN-FXMQ36PAVJU	DAYROOM 2B.3	1020	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-20	SECOND FLOOR	DAIKIN-FXMQ36PAVJU	DAYROOM 2C.3	1020	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-21	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	CLASSROOM-1	600	27000	70/60	24000	72/68	80/67	0.19	208	60	1	1.4	15	SEE NOTE 1	
VRV-22	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	CLASSROOM-2	600	27000	70/60	24000	72/68	80/67	0.19	208	60	1	1.4	15	SEE NOTE 1	
VRV-23	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	CLASSROOM-3	600	27000	70/60	24000	72/68	80/67	0.19	208	60	1	1.4	15	SEE NOTE 1	
VRV-24	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	SCIENCE LAB	600	27000	70/60	24000	72/68	80/67	0.19	208	60	1	1.4	15	SEE NOTE 1	
VRV-25	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	ARTROOM	800	27000	70/60	24000	72/68	80/67	0.19	208	60	1	1.4	15	SEE NOTE 1	
VRV-26	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	9.6,9.11,9.14	800	27000	70/60	24000	72/68	80/67	0.19	208	60	1	1.4	15	SEE NOTE 1	
VRV-27	SECOND FLOOR	DAIKIN-FXDQ12PAVJU	TEACHER WORK ROOM	280	13500	70/60	12000	72/68	80/67	0.09	208	60	1	0.9	15	SEE NOTE 1	
VRV-28	SECOND FLOOR	DAIKIN-FXDQ12PAVJU	TITLE, SOCIAL WORK	280	13500	70/60	12000	72/68	80/67	0.09	208	60	1	0.9	15	SEE NOTE 1	
VRV-29	SECOND FLOOR	DAIKIN-FXDQ36PAVJU	MEDIA CENTER	1200	40000	70/60	36000	72/68	80/67	0.38	208	60	1	2.9	15	SEE NOTE 1	
VRV-30	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	CLASSROOM-4	600	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-31	SECOND FLOOR	DAIKIN-FXDQ18PAVJU	9.12	600	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-32	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	CLASSROOM-4	600	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-33	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	CLASSROOM-5	600	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-34	SECOND FLOOR	DAIKIN-FXDQ24PAVJU	CLASSROOM-6	600	27000	70/60	24000	72/68	80/67	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-36	THIRD FLOOR	DAIKIN-FXMQ36PAVJU	CELLS	1200	40000	70/60	36000	72/68	57/54	0.38	208	60	1	2.9	15	SEE NOTE 1	
VRV-37	THIRD FLOOR	DAIKIN-FXMQ36PAVJU	CELLS	1200	40000	70/60	36000	72/68	57/54	0.38	208	60	1	2.9	15	SEE NOTE 1	
VRV-38	THIRD FLOOR	DAIKIN-FXMQ48PAVJU	CELLS	1300	54000	70/60	48000	72/68	57/54	0.46	208	60	1	3.4	15	SEE NOTE 1	
VRV-39	THIRD FLOOR	DAIKIN-FXMQ48PAVJU	CELLS	1300	54000	70/60	48000	72/68	57/54	0.46	208	60	1	3.4	15	SEE NOTE 1	
VRV-40	SECOND FLR, AREA A	DAIKIN-FXAQ24PAVJU	SEC. ELEC. 7.4.2	638	0	70/60	24000	72/68	57/54	0.23	208	60	1	1.6	15	SEE NOTE 1	
VRV-41	SECOND FLR. AREA A	DAIKIN-FXAQ24PAVJU	STOR/CU. 2.7	638	0	70/60	24000	72/68	57/54	0.23	208	60	1	1.8	15	SEE NOTE 1	
VRV-42	THIRD FLOOR	DAIKIN-FXLQ18MVJU	STAIRWELL B	490	18000	70/60	24000	72/68	57/54	0.11	208	60	1	1.6	15	SEE NOTE 1	
VRV-43	BASEMENT AREA B	DAIKIN-FXAQ24PAVJU	MDF ROOM, 11.0.3	635	0	70/60	24000	72/68	57/54	0.05	208	60	1	0.6	15	SEE NOTE 1	
VRV-44	SECOND FLOOR. AREA B	DAIKIN-FXAQ24PAVJU	I.T. CLOS. 11.2.17	635	0	70/60	24000	72/68	57/54	0.05	208	60	1	0.6	15	SEE NOTE 1	
VRV-45	SECOND FLOOR. AREA B	DAIKIN-FXAQ24PAVJU	ELEC. 11.2.18	635	24000	70/60	26500	72/68	57/54	0.05	208	60	1	0.6	15	SEE NOTE 1	
VRV-46	BASEMENT AREA B	DAIKIN-FXAQ24PAV.IU	EMERGENCY ELECTRIC ROOM	635	24000	70/60	26500	72/68	57/54	0.05	208	60	1	0.6	15	SEE NOTE 1	
					2.000	,		, 00	0.701	0.00			•	0.0			
NOTE:																	

DISCONNECT PROVIDED BY ELECTRICAL CONTRATOR.
 VRV-35 USED.

### EXHAUST/SUPPLY AIR FANS (EF/SF) SCHEDULE

	ELECTRI	CAL DATA			
HP	v	PH	HZ	MAKE/MODEL	REMARKS
1	460	3	60	GREENHECK/AX-47-190-0428-A10 OR APROVED EQUAL	SEE NOTE 3
3	460	3	60	GREENHECK/18-TCF-1-I OR APROVED EQUAL	SEE NOTE 3
0.08	120	1	60	GREENHECK/SP-B110 OR APROVED EQUAL	SEE NOTE 1, 2
2	460	3	60	GREENHECK/VECTOR-H-10-9 OR APROVED EQUAL	SEE NOTE 3
2	460	3	60	GREENHECK/VECTOR-H-10-9 OR APROVED EQUAL	SEE NOTE 3
0.5	208	1	60	GREENHECK/G-143- VG OR APPROVED EQUAL	SEE NOTE 3
0.5	208	1	60	GREENHECK//G-143- VG OR APPROVED EQUAL	SEE NOTE 3
0.1	208	1	60	GREENHECK/CBF OR APROVED EQUAL	SEE NOTE 1, 2
0.1	208	1	60	GREENHECK/CBF OR APROVED EQUAL	SEE NOTE 1, 2
0.17	208	1	60	GREENHECK/CSP-B OR APROVED EQUAL	SEE NOTE 1, 2
0.17	208	1	60	GREENHECK/CSP-B OR APROVED EQUAL	SEE NOTE 1, 2
0.75	460	3	60	GREENHECK/AX-47-190-0428-A10 OR APROVED EQUAL	SEE NOTE 3
0.75	460	3	60	GREENHECK/RSFP OR APROVED EQUAL	SEE NOTE 3
0.75	460	3	60	GREENHECK/RSFP OR APROVED EQUAL	SEE NOTE 3













UNIT# EIH-01 VEHICLE SALLY EIH-02 VEHICLE SALLY

								MAK	E UP AIF	R UNIT (M	IAU) SCH	IEDULE			
					E	ELECTRICAL DAT	Ą			HEA	TING				
	TOTAL SUPPLY AIR	EXT SP (IN.	TOTAL SP						OUTDOOR			OUTPUT	UNIT		
UNIT NO	CFM	WG)	(IN. WG)	FLA	HP	V	PH	HZ	AIR (F)	LEAVING AIR	INPUT (MBH)	(MBH)	WEIGHT(IBS)	MAKE/MODEL	NOTES
MUA-01	4900	0.4	0.6	4.8	3	460	3	60	13	65	300	280	0	IGX-112-H22 (BASIC OF DESIGN)	

UNIT GV-GV

			AIR	DIFFUSING	UNIT (ADU)	SCHEDU	LE			
					ELECTR	CAL DAT	A			
UNIT#	LOCATION	CFM	WEIGHT(lb)	WATTS	AMPS	V	PH	HZ	MAKE/MODEL	REMARKS
ADU-01	GYMNASIUM	547	9	35	0.32	120	1	60	AIRIUS A25SPSTD120W OR APPROVED EQUAL	
ADU-02	GYMNASIUM	547	9	35	0.32	120	1	60	AIRIUS A25SPSTD120W OR APPROVED EQUAL	
ADU-03	GYMNASIUM	547	9	35	0.32	120	1	60	AIRIUS A25SPSTD120W OR APPROVED EQUAL	
ADU-04	GYMNASIUM	547	9	35	0.32	120	1	60	AIRIUS A25SPSTD120W OR APPROVED EQUAL	

					ELECT	RICAL WAL	L UNIT HEAT	ER			
UNIT#	AREA SERVED	HEATING CAPACITY (KW)	CFM	V	PH	HZ	AMPS	DEPTH	HEIGHT	WIDTH	MAKE/MODEL
WH - 01	CORR. 11.1.5	1.5	100	120	1	60	15	4-1/2	19-3/8	16-1/4	QMARK MODEL CWH3150F OR APPROVED EQUAL
WH - 02	SALLY 11.2.16	1.5	100	120	1	60	15	4-1/2	19-3/8	16-1/4	QMARK MODEL CWH3150F OR APPROVED EQUAL
NOTE: 1. THE HEA DAYTON	ATER SHALL BE N MODEL#3UG58	RECESSED TYPE. THERMOS OR APPROVED EQUAL.	TAT SHALL	. BE INTERN	ALLY MOUNT	red. Prov	IDE SECURIT	Y COVER FC	OR EACH WA	LL HEATER	. USE

# ROOF TOP UNIT (RTU) SCHEDULE

PLY AIR		(	COOLING COI	L		HEA	TING			ELE	ECTRICAL D	ATA			
TAL OA CFM	E.S.P INCHES W.G.	EAT DB/WB.	LAT DB/WB.	TOTAL MBH	EAT DB/WB	LAT DB/WB	MBH IN	MBH OUT	V	PH	HZ	MCA	MOA	MAKE/MODEL	REMARKS
2080	1.8	83/71	65/63	132	45	95	275	220	460	3	60	39	50	AAON/RN-013-3-0-E-AC-GAS-ECONOMIZER OR APPROVED EQUAL	SERVING MEDICAL AREA. SEE NOTE 1 AND 2.
350	1.5	79/69	63/62	56	60	95	106	85	460	3	60	29	35	AAON/RN-090-3-0-E-AC-GAS-ECONOMIZER OR APPROVED EQUAL	SERVING KITCHEN AREA. SEE NOTE 1 AND 2.
2480	1.5	95/75	70/68	214	10	70	157	126	460	3	60	29	35	AAON/RN-018-3-0-E-AC-GAS-ECONOMIZER OR APPROVED EQUAL	DOAS, SERVING SECOND FLOOR CLASS ROOM AREA B. SEE NOTE 1AND 2
1080	2.2	95/75	70/68	428	10	70	810	648	460	3	60	111	125	AAON/RN-040-3-0-E-AC-GAS-ECONOMIZER OR APPROVED EQUAL	DOAS, SERVING FIRST, SECOND, AND THIRD FLOOR AREA A. SEE NOTE 1 AND 2

# 4

		ELEC	TRICAL INF	RARED HEA	TER SCHED	DULE
TING			ELECTRIC	CAL DATA		
TY( kW)	CFM	V	PH	HZ	HP	MAKE/MODEL
6	0	480	3	60	0	INFRATECH COMFORT MODEL# WD 6024SS OR APPROVED EQUAL
6	0	480	3	60	0	INFRATECH COMFORT MODEL# WD 6024SS OR APPROVED EQUAL

			GRAVITY	VENTILATOR		
T NO	LOCATION	TYPE	DEPTH(IN)	HEIGHT(IN)	WIDTH(IN)	MAKE/MODEL
/-01	THIRD FLOOR MECH ROOM	GRAVITY	12	10	10	GREENHECK
/-02	THIRD FLOOR MECH. ROOM	GRAVITY	12	10	10	GREENHECK

			CFM	HEATING
Mark	UNIT SIZE	MAX	MIN	CAPACITY (kW
VAV#1-1	3	540	160	-
VAV#1-2	2	235	100	-
VAV#1-3	2	330	330	1.5
VAV#1-4	2	430	430	2
VAV#1-5	2	460	140	1
VAV#1-6	2	500	500	1
VAV#1-7	2	200	100	-
VAV#1-8	5	720	270	-
VAV#1-9	2	280	100	-
VAV#1-10	3	520	160	-
VAV#1-11	3	810	180	-
VAV#2-1	2	300	100	-
VAV#2-2	5	900	270	-
VAV#2-3	5	1020	300	-

VARIABLE AIR VOLUME BOX (VAV) SCHEDULE

1. FOR LEFT HAND OR RIGHT HAND ORIENTATION OF VAV CONTROL PANEL SEE FLOOR PLANS.



















# SEQUENCE OF OPERATION (SERVING MEDICAL AREA)

RETURN FAN, AND A FINAL FILTER AND SUPPLY FAN. THE SUPPLY AND RETURN FAN SHALL BE PROVIDED WITH VARIABLE FREQUENCY DRIVES TO MAINTAIN <u>GENERAL</u>

AND DAMPERS OPERATORS SHALL BE DDC CONTROLLED W/ELECTRONIC OPERATORS. AIR HANDLER SHALL BE IN: HEATING MODE W/ MIXED AIR TEMPERATURE (T-2) OF 54°F OR LOWEF COOLING MODE W/ MIXED AIR TEMPERATURE (T-2) OF 56 °F OR HIGHER

### AIR HANDLING UNIT

MEASURING STATION (AFMS-2).

THE FANS ARE STARTED WITH THE VARIABLE FREQUENCY CONTROLLERS AT MINIMUM SPEED. THE RETURN FAN IS INTERLOCKED THROUGH SOFTWARE TO RUN WHEN THE SUPPLY FAN RUNS. ALL THE CONTROL ALGORITHMS ARE ALLOWED TO FUNCTION WHEN THE UNIT STARTS.

MEASURED BY TEMPERATURE SENSOR (T-1) WHENEVER THE UNIT IS NOT IN OPERATION. TEMPERATURE CONTROL

# (ADJ.) MINIMUM KUNTIME.

- THE COOLING SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ. AND THE ECONOMIZER (IF PRESENT) IS DISABLED OR FULLY OPEN.
- AND THE SUPPLY FAN STATUS IS ON AND THE HEATING (IF PRESENT) IS NOT ACTIVE.
- ALARMS SHALL BE PROVIDED AS FOLLOWS:

(ADJ.) MINIMUM RUNTIME.

- THE HEATING SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS LESS THAN 65 °F (ADJ.). AND THE SUPPLY FAN STATUS IS ON
- AND THE COOLING (IF PRESENT) IS NOT ACTIVE. THE HEATING STAGES SHALL RUN FOR FREEZE PROTECTION WHENEVER: SUPPLY AIR TEMPERATURE DROPS FROM 40 °F TO 35 °F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON. ALARMS SHALL BE PROVIDED AS FOLLOWS:

# POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.

- THE ECONOMIZER SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.). AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE. AND THE SUPPLY FAN STATUS IS ON.
- THE ECONOMIZER SHALL CLOSE WHENEVER: MIXED AIR TEMPERATURE DROPS FROM 40 °F TO 35 °F (ADJ.). OR THE FREEZESTAT (IF PRESENT) IS ON. OR ON LOSS OF SUPPLY FAN STATUS.

MODULATE TO FULLY CLOSED.

1000 PPM (ADJUSTIBLE).

# AND USE AS REQUIRED FOR ECONOMIZER CONTROL (IF PRESENT).

2. ALARMS SHALL BE PROVIDED AS FOLLOWS: HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90 °F (ADJ.). LOW MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

RETURN AIR TEMPERATURE 1. THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE THROUGH RETURN AIR

2. ALARMS SHALL BE PROVIDED AS FOLLOWS: LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).





## CONTROL DIAGRAM - RTU-1 AND RTU-2

- THE AIR HANDLING SYSTEM SHALL CONSISTS OF A SUPPLY AIR, OUTSIDE AIR AND RETURN AIR SECTION WITH OUTSIDE AIR DAMPERS, WITH A PRE-FILTER, A RETURN AIR SECTION WITH A PRE-FILTER AND A
- CONSTANT AIRFLOW TO THE SPACE. THE OUTSIDE AIR INLET, RETURN FAN AND SUPPLY FAN INLET ARE PROVIDED WITH AIRFLOW MEASURING DEVICES TO PROVIDE AIRFLOW READINGS TO THE CONTROLLER THE AIR HANDLING UNITS ARE SCHEDULED FOR ON/OFF MODES. THE CONTROL SEQUENCE AND SAFETY MODES ARE AS FOLLOWS (ALL SUGGESTED SET POINTS AND SETTINGS ARE ADJUSTABLE.).
- THE UNITS IS STARTED/STOPPED AUTOMATICALLY WHENEVER ANY ZONE IS OCCUPIED. WHEN THE UNIT IS OFF, THE OUTSIDE AIR DAMPER (D-1) AND THE RETURN AIR DAMPER (D-2) SHALL BEVFALLVERSCLOSED.
  - (ADJUSTIBLE) (ADJUSTIBLE)

### THE SYSTEM SHOULD RUN CONTINUOUSLY TO PROVIDE SUPPLY AIR TO HEALTH CARE AREA. WHEN THE UNIT IS COMMANDED TO START. OUTSIDE AIR DAMPER (D-1) AND RETURN AIR DAMPER (D-2) SHALL OPEN FULLY, CLOSING THE DAMPER END SWITCH, ALLOWING THE SUPPLY AND RETURN FANS TO OPERATE. THE RETURN FAN SPEED MODULATES TO MAINTAIN RETURN AIRFLOW RATE MEASURED AT AIRFLOW

ALL VALVES AND DAMPERS SHALL RETURN TO THEIR NORMAL POSITION WHENEVER THE UNIT IS NOT IN OPERATION. THE CONTROLLER SHALL MODULATES THE HEATING FURNACE STAGES TO MAINTAIN 40 F AS

### TEMPERATURE SENSOR (T-5), THROUGH THE CONTROLLER SHALL MODULATES THE DX CYCLE AND GAS HEATING STAGES TO MAINTAIN DESIRED FAN DISCHARGE AIR TEMPERATURE SETPOINT AS FOLLOWS:

<u>COOLING STAGES</u> 1. THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE

- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5 °F (ADJ.) GREATER THAN SETPOINT
- GAS HEATING STAGES 1. THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN SETPOINT.
- THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2°F (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTÀIN A' MINIMUM ADJUSTABLE
- THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL
- MINIMUM OUTSIDE AIR VENTILATION FIXED PERCENTAGE 1. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION DURING BUILDING OCCUPIED HOURS AND BE CLOSED DURING UNOCCUPIED HOURS. CARBON DIOXIDE SENSOR IN SPACE SHALL MODULATE OUTDOOR AIR DAMPER AND RETURN FAN TO MAINTAIN CO2 CONCENTRATION LEVEL BELOW
- MIXED AIR TEMPERATURE 1. THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE THROUGH MIX AIR SENSOR (T-3)
- SENSOR (T-2) AND USE AS REQUIRED FOR SETPOINT CONTROL OR ECONOMIZER CONTROL (IF PRESENT).
- HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).

SUPPLY AIR TEMPERATURE:

- THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE THROUGH SUPPLY AIR SENSOR (T-5) ALARMS SHALL BE PROVIDED AS FOLLOWS: • HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120 °F (ADJ.).

SERVED. SEE FLOOR PLAN FOR LOCATION.

- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45 °F (ADJ.). AIR FLOW CONTROL
- MINIMUM OUTSIDE AND RETURN AIRFLOW IS MEASURED BY AIRFLOW MEASURING STATION AFMS-1 AND AFMS-2 RESPECTIVELY LOCATED IN THE OUTSIDE AND RETURN AIR INTAKE. AFMS-3 AND CONTROLLER MODULATES THE SUPPLY FAN VARIABLE FREQUENCY DRIVE TO MAINTAIN AIRFLOW SETPOINT. FILTER ALARM
- THE OUTSIDE AIR FILTRATION SYSTEM CONSISTS OF A MERV 7 FILTER. A PRESSURE TRANSMITTERS SHALL BE PROVIDED FOR THE FILTER.
- THE CONTROLLER OPERATES A MAINTENANCE ALARM WHEN THE PRESSURE DROP ACROSS THE FILTER BEING MONITORED EXCEEDS THE MANUFACTURER MAXIMUM RECOMMENDED PRESSURE DROP FOR THE MEDIA PROVIDED AS MEASURED BY THE ANALOG PRESSURE TRANSMITTER. FREEZE PROTECTION
- FREEZESTAT SENSOR (T-4) SHALL STOPS THE OUTSIDE AIR FAN AND SENDS AN ALARM TO THE CONTROLLER WHEN IT SENSES 38 °F (ADJUSTABLE) AIR ENTERING THE COOLING COIL.
- SMOKE DETECTION

A SUPPLY AND RETURN DUCT SMOKE DETECTOR (SD-1 AND SD-2) I SHALL BE PROVIDED IN THE AIR HANDLING UNIT SUPPLY AND RETURN SYSTEM. WHENEVER DUCT A SMOKE DETECTOR (HARDWIRED) SENSES PRODUCTS OF COMBUSTION, RTU-1 SHALL SHUT DOWN AND AN ALARM SHALL BE SIGNALLED TO THE FIRE ALARM SYSTEM AND AND THE CONTROLLER. THE SMOKE DETECTOR AND THE FIRE ALARM CONTROL PANEL MUST BE MANUALLY RESET BEFORE SYSTEM CAN RESTART. CONNECTIONS TO PANEL RTU-1 CONTROLLER SHALL BE MADE BY THE ATC CONTRACTOR AND CONNECTIONS TO THE FIRE ALARM SYSTEM SHALL BE MADE BY THE FIRE ALARM CONTRACTOR.

- HIGH DUCT STATIC PRESSURE DETECTION
- STATIC PRESSURE SWITCHES SP-1 AND SP-2 IN THE SUPPLY AND RETURN DUCTS SET TO STOP THE SUPPLY AND RETURN AND EXHAUST FANS IF THE DUCT PRESSURE EXCEEDS THE PRESSURE CLASSIFICATION OF THE DUCTWORK. AUTOMATIC SHUTDOWN/RESTART
- WHEN THE AIR HANDLING UNIT IS SHUT DOWN ON A POWER FAILURE, AND THE POWER IS RESTORED, IT IS TO BE RESTARTED THROUGH A SEQUENCE PROGRAM TO PREVENT OVERLOADING OF THE ELECTRICAL DISTRIBUTION SYSTEM.
- IF ANY SAFETY DEVICE SHUTS THE UNIT DOWN IT IS TO BE MANUALLY RESET
- EMERGENCY CONSTANT SPEED OPERATION
- UPON FAILURE OF THE VFD THE FANS MAY BE STARTED/STOPPED MANUALLY THROUGH THE BYPASS STARTER AND THE FANS OPERATE SHALL AT FULL SPEED. FANS STATUS
- THE CONTROLLER SYSTEM USE A DIFFERENTIAL PRESSURE SENSOR INSTALLED ACROSS THE SUPPLY FAN, AND RETURN FAN TO CONFIRM THE FANS ARE IN THE DESIRED STATE (I.E. ON OR OFF) AND GENERATES AN ALARM IF STATUS DEVIATES FROM THE CONTROLLER START/STOP CONTROL.

ROOFTOP (RTU-1&	:2)		SY	STE	M	IN	ΡU	JT,	/0	U	ΓP	UT	Ρ	0	IN	Т	SI	UN	1M	AF	Υ				
			AN	ALO	G				C	IG	ITA	L					SY	′ST	ΕM	1 F	ΈA	ΑTU	JRE	S	_
System Name:		ΙΡΙ	JTS	S	С	UT		IN	ΡU	TS		Οι	JT	F		AL/	٩R	MS			Ρ	RO	GR	A٨	IS
ROOFTOP UNIT (RTU-1&2)	TEMP (DRY BULB)	TEMP (WET BULB)	PRESSURE	VOLUME	CLIRRENT	RESET CAPABILITY		PRESSURE SWITCH	SWITCH CLOSURE	CURRENT SENSOR		CONTROL RELAY			EQUIPMENT STATUS	MAINTENANCE	CONTROL RELAY	HIGH LIMIT	LOW LIMIT		START/STOP	POINT HISTORY	ECONOMIZER	TEMP. CONTROL	SUPPLY AIR RESET
POINT DESCRIPTION																									
SUPPLY AIR																									
RETURN AIR																									
MIXED AIR																									
OUTDOOR AIR																									
RELIEF AIR																									
SUPPLY AIR FAN																									
RETURN AIR FAN																									
HEATING FURNACE																									
COOLING COIL																									
SMOKE DETECTOR (TYP OF 2)																									
_																									









SEQUENCE OF OPERATION (SERVING KITCHEN AREA THE AIR HANDLING SYSTEM SHALL CONSISTS OF A SUPPLY AIR, OUTSIDE AIR, RELIEF AIR AND RETURN AIR SECTIONS WITH OUTSIDE AIR AND RELIEF AIR DAMPERS. A RETURN AIR SECTION WITH A RETURN FAN, AND A MERV 7 FILTER AND SUPPLY FAN.

THE OUTSIDE AIR INLET, RETURN FAN AND SUPPLY FAN INLET ARE PROVIDED WITH AIRFLOW MEASURING DEVICES TO PROVIDE AIRFLOW READINGS TO THE CONTROLLER.

THE AIR HANDLING UNITS ARE SCHEDULED FOR ON/OFF MODES. THE CONTROL SEQUENCE AND SAFETY MODES ARE AS FOLLOWS (ALL SUGGESTED SET POINTS AND SETTINGS ARE ADJUSTABLE.).

### **GENERAL**

THE UNITS CONTROLLER SHALL START AUTOMATICALLY IN OCCUPIED MODE. AND DEENERGIZED IN THE UNOCCUPIED MODE AS PROGRAMMED. WHEN THE UNIT IS OFF, THE OUTSIDE AIR DAMPER (D-1) AND THE RETURN AIR DAMPER (D-2) SHALL BE FULLY CLOSED. VALVES AND DAMPER OPERATORS SHALL BE DDC CONTROLLED W/ELECTRONIC OPERATORS.

AIR HANDLER SHALL BE IN: HEATING MODE W/ MIXED AIR TEMPERATURE (T-2) OF 54°F OR LOWER

### AIR HANDLING UNIT

MEASURING STATION (AFMS-2).

THE RETURN FAN IS INTERLOCKED THROUGH SOFTWARE TO RUN WHEN THE SUPPLY FAN RUNS.

ALL THE CONTROL ALGORITHMS ARE ALLOWED TO FUNCTION WHEN THE UNIT STARTS. ALL VALVES AND DAMPERS SHALL RETURN TO THEIR NORMAL POSITION WHENEVER THE UNIT IS NOT IN OPERATION. THE CONTROLLER SHALL MODULATES THE HEATING FURNACE STAGES TO MAINTAIN 40 F AS MEASURED BY TEMPERATURE SENSOR (T-1) WHENEVER THE UNIT IS NOT IN OPERATION. **TEMPERATURE CONTROL** 

TEMPERATURE SENSOR (T-5), THROUGH THE CONTROLLER SHALL MODULATES THE DX CYCLE AND GAS HEATING STAGES TO MAINTAIN DESIRED FAN DISCHARGE AIR TEMPERATURE SETPOINT AS FOLLOWS:

<u>COOLING STAGES</u> 1. THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

- THE COOLING SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS GREATER THAN 60 °F (ADJ.). AND THE ECONOMIZER (IF PRESENT) IS DISABLED OR FULLY OPEN. AND THE SUPPLY FAN STATUS IS ON.
- AND THE HEATING IS NOT ACTIVE.
- ALARMS SHALL BE PROVIDED AS FOLLOWS:

GAS HEATING STAGES 1. THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM KUNTIME.

- THE HEATING SHALL BE ENABLED WHENEVER: • OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON. AND THE COOLING (IF PRESENT) IS NOT ACTIVE.
- THE HEATING STAGES SHALL RUN FOR FREEZE PROTECTION WHENEVER: SUPPLY AIR TEMPERATURE DROPS FROM 40 °F TO 35 °F (ADJ.). • AND THE SUPPLY FAN STATUS IS ON.

ALARMS SHALL BE PROVIDED AS FOLLOWS: LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN SETPOINT.

ECONOMIZER: 1. THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE 1. THE CONTROLLER SHALL MEASURE TO MAINTAIN A SETPOINT 2°F (AD.I.) LESS THAN THE S' ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2°F (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A' MINIMUM ADJUSTABLE POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.

- THE ECONOMIZER SHALL BE ENABLED WHENEVER: OUTSIDE AIR ENTHALPY IS LESS THAN CHANGE OVERSET POINT. AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE. AND THE SUPPLY FAN STATUS IS ON.
- THE ECONOMIZER SHALL CLOSE WHENEVER: MIXED AIR TEMPERATURE DROPS FROM 40°F TO 35°F (ADJ.). OR THE FREEZESTAT (IF PRESENT) IS ON. OR ON LOSS OF SUPPLY FAN STATUS.

MODULATE TO FULLY CLOSED.

MINIMUM OUTSIDE AIR VENTILATION - FIXED PERCENTAGE THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION DURING BUILDING OCCUPIED HOURS AND BE CLOSED DURING UNOCCUPIED HOURS. CARBON DIOXIDE SENSOR IN SPACE SHALL MODULATE OUTDOOR AIR DAMPER AND RETURN FAN TO MAINTAIN CO2 CONCENTRATION LEVEL BELOW 1000 PPM (ADJUSTIBLE).

IXED AIR TEMPERATURE THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE THROUGH MIX AIR SENSOR (T-3) AND USE AS REQUIRED FOR ECONOMIZER CONTROL (IF PRESENT).

2. ALARMS SHALL BE PROVIDED AS FOLLOWS: • HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90 °F (ADJ.). • LOW MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45 °F (ADJ.).

RETURN AIR TEMPERATURE 1. THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE THROUGH RETURN AIR THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE THROUGH RETURN AIR THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE THROUGH RETURN AIR THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE THROUGH RETURN AIR SENSOR (T-2) AND USE AS REQUIRED FOR SETPOINT CONTROL OR ECONOMIZER CONTROL (IF PRESENT).

# **CONTROL DIAGRAM - RTU-2**

# THE SUPPLY AND RETURN FAN SHALL BE PROVIDED TO MAINTAIN CONSTANT AIRFLOW TO THE SPACE.

COOLING MODE W/ MIXED AIR TEMPERATURE (T-2) OF 56°F OR HIGHER

(ADJUSTIBLE) (ADJUSTIBLE)

### THE SYSTEM SHALL RUN CONTINUOUSLY TO PROVIDE SUPPLY AIR TO THE KITCHEN AREA. WHEN THE UNIT IS COMMANDED TO START, OUTSIDE AIR DAMPER (D-1) AND RETURN AIR DAMPER (D-2) SHALL OPEN FULLY, CLOSING THE DAMPER END SWITCH, ALLOWING THE SUPPLY AND RETURN FANS TO OPERATE. THE RETURN FAN SPEED SHALL MODULATE TO MAINTAIN RETURN AIRFLOW RATE MEASURED AT AIRFLOW

• HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5 °F (ADJ.) GREATER THAN SETPOINT.

### THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL

ALARMS SHALL BE PROVIDED AS FOLLOWS: • HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90 °F (ADJ.). LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

SERVED. SEE FLOOR PLAN FOR LOCATION.

<u>SUPPLY AIR TEMPERATURE:</u> 1. THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE THROUGH SUPPLY AIR SENSOR (T-5)

ALARMS SHALL BE PROVIDED AS FOLLOWS: • HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120 °F (ADJ.). • LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.). MORNING WARM-UP / COOL-DOWN

ONCE THE CONTROLLER IS OCCUPIED IT WILL ENTER THE MORNING WARM-UP MODE IF THE SPACE TEMPERATURE IS ABOVE OCUPIED MODE COOL-DOWN SETPOINT, IT WILL ENTER THE COOL-DOWN MODE

DURING MORNING WARM-UP, GAS HEATING SECTION CONTROL VALVE MODULATE TO RAISE THE SPACE AIR TEMPERATURE TO SETPOINT MORNING WARM-UP SETPOINT.

DURING MORNING COOL-DOWN, COOLING SHALL BE MODULATING AND/OR STAGED TO MAINTAIN THE SPACE COOLING SETPOINT. THE OUTSIDE AIR DAMPER WILL REMAIN CLOSED AND THE EXHAUST FAN AND HEAT WHEEL IS OFF. THIS MODE WILL CONTINUE UNTIL THE SPACE OCCUPIED SETPOINT IS REACHED OR THE TWO-HOUR TIMER EXPIRES. DEHUMIDIFICATION MODE

THE DEHUMIDIFICATION MODE WILL BE ENABLED WHEN THE RETURN AIR DEWPOINT RISES ABOVE THE DEHUMIDIFICATION SETPOINT PLUS HYSTERESIS. DURING THE DEHUMIDIFICATION MODE, THE DDC CONTROLLER WILL MODULATE AND/OR STAGE COOLING TO MAINTAIN THE RETURN AIR DEWPOINT AT THE DEHUMIDIFICATION SETPOINT. THE DEHUMIDIFICATION MODE WILL REMAIN ACTIVE UNTIL THE RETURN AIR DEWPOINT FALLS BELOW THE RETURN AIR DEHUMIDIFICATION SETPOINT MINUS HYSTERESIS. REHEAT WILL BE MODULATED AND/OR STAGED TO MAINTAIN THE SUPPLY AIR COOLING SETPOINT MINUS 1 °F. AIR FLOW CONTROL

MINIMUM OUTSIDE AND RETURN AIRFLOW IS MEASURED BY AIRFLOW MEASURING STATION AFMS-1 AND AFMS-2 RESPECTIVELY LOCATED IN THE OUTSIDE AND RETURN AIR INTAKE. AFMS-3 AND CONTROLLER MODULATES THE SUPPLY FAN VARIABLE FREQUENCY DRIVE TO MAINTAIN AIRFLOW SETPOINT. FILTER ALARM

THE OUTSIDE AIR FILTRATION SYSTEM CONSISTS OF A MERV 8 FILTER. A PRESSURE TRANSMITTERS SHALL BE PROVIDED FOR THE FILTER.

THE CONTROLLER OPERATES A MAINTENANCE ALARM WHEN THE PRESSURE DROP ACROSS THE FILTER BEING MONITORED EXCEEDS THE MANUFACTURER MAXIMUM RECOMMENDED PRESSURE DROP FOR THE MEDIA PROVIDED AS MEASURED BY THE ANALOG PRESSURE TRANSMITTER.

FREEZE PROTECTION

FREEZESTAT SENSOR (T-4) SHALL STOPS THE OUTSIDE AIR FAN AND SENDS AN ALARM TO THE CONTROLLER WHEN IT SENSES 38 °F (ADJUSTABLE) AIR ENTERING THE COOLING COIL. SMOKE DETECTION

A SUPPLY AND RETURN DUCT SMOKE DETECTOR (SD-1 AND SD-2) I SHALL BE PROVIDED IN THE AIR HANDLING UNIT SUPPLY AND RETURN SYSTEM. WHENEVER DUCT A SMOKE DETECTOR (HARDWIRED) SENSES PRODUCTS OF COMBUSTION, RTU-1 SHALL SHUT DOWN AND AN ALARM SHALL BE SIGNALLED TO THE FIRE ALARM SYSTEM AND AND THE CONTROLLER. THE SMOKE DETECTOR AND THE FIRE ALARM CONTROL PANEL MUST BE MANUALLY RESET BEFORE SYSTEM CAN RESTART. CONNECTIONS TO PANEL RTU-1 CONTROLLER SHALL BE MADE BY THE ATC CONTRACTOR AND CONNECTIONS TO THE FIRE ALARM SYSTEM SHALL BE MADE BY THE FIRE ALARM CONTRACTOR.

HIGH DUCT STATIC PRESSURE DETECTION

STATIC PRESSURE SWITCHES SP-1 AND SP-2 IN THE SUPPLY AND RETURN DUCTS SET TO STOP THE SUPPLY AND RETURN AND EXHAUST FANS IF THE DUCT PRESSURE EXCEEDS THE PRESSURE CLASSIFICATION OF THE DUCTWORK.

AUTOMATIC SHUTDOWN/RESTART

WHEN THE AIR HANDLING UNIT IS SHUT DOWN ON A POWER FAILURE AND THE POWER IS RESTORED, IT IS TO BE RESTARTED THROUGH A SEQUENCE PROGRAM TO PREVENT OVERLOADING OF THE ELECTRICAL DISTRIBUTION SYSTEM.

IF ANY SAFETY DEVICE SHUTS THE UNIT DOWN IT IS TO BE MANUALLY RESET.

EMERGENCY CONSTANT SPEED OPERATION

UPON FAILURE OF THE VFD THE FANS MAY BE STARTED/STOPPED MANUALLY THROUGH THE BYPASS STARTER AND THE FANS SHALL OPERATE AT FULL SPEED

## FANS STATUS

THE CONTROLLER SYSTEM SHALL USE A DIFFERENTIAL PRESSURE SENSOR INSTALLED ACROSS THE SUPPLY FAN AND RETURN FAN TO CONFIRM THE FANS ARE IN THE DESIRED STATE (I.E. ON OR OFF) AND GENERATES AN ALARM IF STATUS DEVIATES FROM THE CONTROLLER START/STOP CONTROL.

AIR HANDLING UNIT (A	Ηι	J —	1)		sys	ΤE	М	IN	Ρι	JT,	/C	)UT	ΓΡι	JT	F	<sup>0</sup>	IN	Т	SI	JN	1M	AF	۲Y		
		,	AN.	AL(	ЭG				D	)IG	ITA	L					SY	ST	ΕM	F	ΈA	ιTL	JRE	S	
System Name:	IN	ΙPι	JTS	5	(	DUT		IN	ΡU	TS		OL	JT		,	4L/	ARI	٧S			Ρ	RO	GR	AM	1S
AIR-HANDLING UNIT (AHU-A)	TEMP (DRY BULB)	TEMP (WET BULB)	PRESSURE	VOLUME		RESET CAPABILITY		PRESSURE SWITCH	SWITCH CLOSURE	CURRENT SENSOR		CONTROL RELAY			EQUIPMENT STATUS	MAINTENANCE	CONTROL RELAY	HIGH LIMIT	LOW LIMIT		START/STOP	POINT HISTORY	ECONOMIZER	TEMP. CONTROL	SUPPLY AIR RESET
POINT DESCRIPTION																									
SUPPLY AIR																									
RETURN AIR																									
MIXED AIR																									
OUTDOOR AIR																									
RELIEF AIR																									
SUPPLY AIR FAN																									
RETURN AIR FAN																									
HEATING FURNACE																									
COOLING COIL																									
SMOKE DETECTOR (TYP OF 2)																									
-																									





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	IN	PU	TS		01	UT		IN	ΡU	ΤS		οι	JT		AL.	AR	MS			Ρ	RO	GR	AN	1S
	TEMPERATURE	PARTS PER MILLION	AIRFLOW		CURRENT	RESET CAPABILITY		MONITOR SYSTEM	SWITCH CLOSURE	CURRENT SENSOR	OPEN-CLOSE	CONTROL SYSTEM	ON-OFF	EQUIPMENT STATUS	MAINTENANCE	CRITICAL	HIGH LIMIT	LOW LIMIT		START/STOP	POINT HISTORY	RUNTIME	OUTPUT TO EQUIPMENT	INPUT FROM EQUIP.
RE	X	1															$\boxtimes$							
ER POSIT.											X													
JRE	$\mathbf{X}$																							
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IRE	$\mathbf{X}$																							$\overline{>}$
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### THE CONTROLLER SYSTEM SHALL USE A DIFFERENTIAL PRESSURE SENSOR INSTALLED ACROSS THE SUPPLY FAN AND EXHAUST FAN TO CONFIRM THE FANS ARE IN THE DESIRED STATE (I.E. ON OR OFF) AND GENERATES AN ALARM IF STATUS DEVIATES FROM THE CONTROLLER START/STOP CONTROL.

IF ANY SAFETY DEVICE SHUTS THE UNIT DOWN IT IS TO BE MANUALLY RESET.

WHEN THE AIR HANDLING UNIT IS SHUT DOWN ON A POWER FAILURE AND THE POWER IS RESTORED. IT IS TO BE RESTARTED THROUGH A SEQUENCE PROGRAM TO PREVENT OVERLOADING OF THE ELECTRICAL

STATIC PRESSURE SWITCHES SP-1 AND SP-2 IN THE SUPPLY AND EXHAUST DUCTS SET TO STOP THE SUPPLY AND EXHAUST FANS IF THE DUCT PRESSURE EXCEEDS THE PRESSURE CLASSIFICATION OF THE

A SUPPLY AND RETURN DUCT SMOKE DETECTOR (SD-1 AND SD-2) I SHALL BE PROVIDED IN THE AIR HANDLING UNIT SUPPLY AND RETURN SYSTEM. WHENEVER DUCT A SMOKE DETECTOR (HARDWIRED) SENSES PRODUCTS OF COMBUSTION, RTU-3 SHALL SHUT DOWN AND AN ALARM SHALL BE SIGNALLED TO THE FIRE ALARM SYSTEM AND AND THE CONTROLLER. THE SMOKE DETECTOR AND THE FIRE ALARM CONTROL PANEL MUST BE MANUALLY RESET BEFORE SYSTEM CAN RESTART. CONNECTIONS TO PANEL RTU-1 CONTROLLER SHALL BE MADE BY THE ATC CONTRACTOR AND CONNECTIONS TO THE FIRE ALARM SYSTEM SHALL BE MADE BY THE FIRE ALARM CONTRACTOR.

FREEZESTAT SENSOR (T-1) SHALL STOPS THE OUTSIDE AIR FAN AND SENDS AN ALARM TO THE CONTROLLER WHEN IT SENSES 38 °F (ADJUSTABLE) AIR ENTERING THE COOLING COIL.

THE CONTROLLER OPERATES A MAINTENANCE ALARM WHEN THE PRESSURE DROP ACROSS THE FILTER BEING MONITORED EXCEEDS THE MANUFACTURER MAXIMUM RECOMMENDED PRESSURE DROP FOR THE MEDIA PROVIDED AS MEASURED BY THE ANALOG PRESSURE TRANSMITTER.

THE OUTSIDE AIR FILTRATION SYSTEM CONSISTS OF A MERV 8 FILTER. A PRESSURE TRANSMITTERS SHALL

MINIMUM OUTSIDE AND EXHAUST AIRFLOW SHALL BE MEASURED BY AIRFLOW MEASURING STATION AFMS-1 AND AFMS-2 RESPECTIVELY LOCATED IN THE OUTSIDE AND EXHAUST AIR INTAKE.

 •	



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SYMBOL ABBREV		DESCRIPTION						
Ś	SD	SMOKE DETECTOR						
$\Box  \checkmark $	D	CONTROL DAMPER						
$\bigcirc$	T	SPACE TEMPERATURE SENSOR						
	T	EQUIPMENT MOUNTED TEMPERATURE SENSOR						
₽	DP	DIFFERENTIAL PRESSURE SWITCH						
$\diamond$	HS-	GAS FURNACE COIL						
	TS-	DX COIL						
	SPS-	STATIC PRESSURE SENSOR						
۲ø٦		DIFFERENTIAL PRESSURE SWITCH						
		AIR FLOW MONITORING STATION						
	N.C.	NORMALLY CLOSED						
	N.O.	NORMALLY OPEN						

AUTOMATIC TEMPERATURE CONTROL LEGEND

SUPPLY FAN RUN STATUS AFMS-1 FAN BYPASS DAMPER NC . MERV 8 FILTER O/A O/A (DO) DAMPER <u>D-1</u>

SEQUENCE OF OPERATION (SERVING SECOND FLOOR OUTDOOR AIR) ROOF TOP UNIT (RTU-4) SHALL BE PROVIDED WITH A DDC CONTROLLER WHICH SHALL MONITOR AND CONTROL THE UNIT IN A STAND-ALONE. THE CONTROLLER SHALL BE FACTORY PROGRAMMED, MOUNTED,

POINTS AND MONITORING UNIT OPERATION.

UNOCCUPIED MODES. ARE AS FOLLOWS (ALL SUGGESTED SET POINTS AND SETTINGS ARE ADJUSTABLE.).

**GENERAL** 

AND DAMPERS OPERATORS SHALL BE DDC CONTROLLED W/ELECTRONIC OPERATORS.

AIR HANDLER SHALL BE IN: HEATING MODE W/ MIXED AIR TEMPERATURE (T-2) OF 54 °F OR LOWER COOLING MODE W/ MIXED AIR TEMPERATURE (T-2) OF 56°F OR HIGHER

AIR HANDLING UNIT

THE SUPPLY AND EXHAUST AIR FANS TO OPERATE.

ALL THE CONTROL ALGORITHMS ARE ALLOWED TO FUNCTION WHEN THE UNIT STARTS. MEASURED BY TEMPERATURE SENSOR (T-1) WHENEVER THE UNIT IS NOT IN OPERATION.

**TEMPERATURE CONTROL** 

COOLING STAGES

(ADJ.) MINIMÙM ŔUNTIME.

THE COOLING SHALL BE ENABLED WHENEVER: OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.). AND THE SUPPLY FAN STATUS IS ON.

AND THE HEATING IS NOT ACTIVE

ALARMS SHALL BE PROVIDED AS FOLLOWS:

MAINTAIN ITS HEATING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER (ADJ.) MINIMUM KUNTIME

THE HEATING SHALL BE ENABLED WHENEVER:

• OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).

AND THE SUPPLY FAN STATUS IS ON.

AND THE COOLING (IF PRESENT) IS NOT ACTIVE

THE HEATING STAGES SHALL RUN FOR FREEZE PROTECTION WHENEVER: • SUPPLY AIR TEMPERATURE DROPS FROM 40 °F TO 35 °F (ADJ.).

 AND THE SUPPLY FAN STATUS IS ON. 4. ALARMS SHALL BE PROVIDED AS FOLLOWS:

UPPLY AIR TEMPERATURE

ALARMS SHALL BE PROVIDED AS FOLLOWS:



# **CONTROL DIAGRAM - RTU-4**

- AND TESTED. CONTROLLER SHALL HAVE A USER TERMINAL WITH LCD READOUT FOR CHANGING SET
- THE BUILDING AUTOMATION SYSTEM SHALL INTERFACE INTO FACTORY MOUNTED CONTROLS TO ALLOW FOR CHANGING OF SETPOINTS, MONITORING OF ALARMS, AND CHANGING FROM OCCUPIED TO
- THE ROOFTOP UNIT ARE SCHEDULED FOR ON/OFF MODES. THE CONTROL SEQUENCE AND SAFETY MODES
- THE UNIT IS STARTED/STOPPED AUTOMATICALLY WHENEVER ANY ZONE IS OCCUPIED. WHEN THE UNIT IS OFF. THE OUTSIDE AIR DAMPER (D-1) AND THE RETURN AIR DAMPER (D-2) SHALL BEVAUMESCLOSED.
  - (ADJUSTIBLE) (ADJUSTIBLE)
- THE SYSTEM SHOULD BUN CONTINUOUSLY TO PROVIDE SUPPLY AIR. WHEN THE UNIT IS COMMANDED TO START, OUTSIDE AIR DAMPER (D-1) SHALL OPEN FULLY, CLOSING THE DAMPER END SWITCH, ALLOWING
- ALL VALVES AND DAMPERS SHALL RETURN TO THEIR NORMAL POSITION WHENEVER THE UNIT IS NOT IN OPERATION. THE CONTROLLER SHALL MODULATES THE HEATING FURNACE STAGES TO MAINTAIN 40 F AS
- TEMPERATURE SENSOR (T-5), THROUGH THE CONTROLLER SHALL MODULATES THE DX CYCLE AND GAS HEATING STAGES TO MAINTAIN DESIRED FAN DISCHARGE AIR TEMPERATURE SETPOINT AS FOLLOWS:
- 1. THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5 °F (ADJ.) GREATER THAN SETPOINT.
- GAS HEATING STAGES 1. THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE HEATING TO DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN SETPOINT.
  - THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE THROUGH SUPPLY AIR SENSOR
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120 °F (ADJ.). LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

A SUPPLY AND EXHAUST DUCT SMOKE DETECTOR (SD-1 AND SD-2) SHALL BE PROVIDED IN THE AIR HANDLING UNIT SUPPLY AND EXHAUST SYSTEM. WHENEVER DUCT A SMOKE DETECTOR (HARDWIRED) SENSES PRODUCTS OF COMBUSTION, RTU-4 SHALL SHUT DOWN AND AN ALARM SHALL BE SIGNALED TO THE FIRE ALARM SYSTEM AND AND THE CONTROLLER. THE SMOKE DETECTOR AND THE FIRE ALARM CONTROL PANEL MUST BE MANUALLY RESET BEFORE SYSTEM CAN RESTART. CONNECTIONS TO PANEL RTU-1 CONTROLLER SHALL BE MADE BY THE ATC CONTRACTOR AND CONNECTIONS TO THE FIRE ALARM SYSTEM SHALL BE MADE BY THE FIRE ALARM CONTRACTOR.

MINIMUM OUTSIDE AND EXHAUST AIRFLOW SHALL BE MEASURED BY AIRFLOW MEASURING STATION AFMS-1

THE OUTSIDE AIR FILTRATION SYSTEM CONSISTS OF A MERV 8 FILTER. A PRESSURE TRANSMITTERS SHALL

THE CONTROLLER OPERATES A MAINTENANCE ALARM WHEN THE PRESSURE DROP ACROSS THE FILTEF

FREEZESTAT SENSOR (T-1) SHALL STOPS THE OUTSIDE AIR FAN AND SENDS AN ALARM TO THE

CONTROLLER WHEN IT SENSES 38 °F (ADJUSTABLE) AIR ENTERING THE COOLING COIL.

BEING MONITORED EXCEEDS THE MANUFACTURER MAXIMUM RECOMMENDED PRESSURE DROP FOR THE

AND AFMS-2 RESPECTIVELY LOCATED IN THE OUTSIDE AND EXHAUST AIR INTAKE

MEDIA PROVIDED AS MEASURED BY THE ANALOG PRESSURE TRANSMITTER.

SMOKE CONTROL

UPON ACTIVATION OF THE SMOKE CONTROL SYSTEM, RTU-4 CONTROLLER SHALL SHUT DOWN THE SUPPLY AIR FAN. THE UNIT EXHAUST AIR FAN SHALL CONTINUE TO OPERATE UNTIL THE UNIT IS MANUALLY RESET

HIGH DUCT STATIC PRESSURE DETECTION STATIC PRESSURE SWITCHES SP-1 AND SP-2 IN THE SUPPLY AND EXHAUST DUCTS SET TO STOP THE

SUPPLY AND EXHAUST FANS IF THE DUCT PRESSURE EXCEEDS THE PRESSURE CLASSIFICATION OF THE DUCTWORK.

AUTOMATIC SHUTDOWN/RESTART

AIR FLOW CONTROL

BE PROVIDED FOR THE FILTER.

FREEZE PROTECTION

SMOKE DETECTION

<u>FILTER ALARM</u>

WHEN THE AIR HANDLING UNIT IS SHUT DOWN ON A POWER FAILURE AND THE POWER IS RESTORED, IT IS TO BE RESTARTED THROUGH A SEQUENCE PROGRAM TO PREVENT OVERLOADING OF THE ELECTRICAL DISTRIBUTION SYSTEM.

IF ANY SAFETY DEVICE SHUTS THE UNIT DOWN IT IS TO BE MANUALLY RESET.

# FANS STATUS

THE CONTROLLER SYSTEM SHALL USE A DIFFERENTIAL PRESSURE SENSOR INSTALLED ACROSS THE SUPPLY FAN AND EXHAUST FAN TO CONFIRM THE FANS ARE IN THE DESIRED STATE (I.E. ON OR OFF) AND GENERATES AN ALARM IF STATUS DEVIATES FROM THE CONTROLLER START/STOP CONTROL.

SYSTEM INPUT / OUTPUT POINT SUMMARY																							
			ANALOG						DIGITAL					SYSTEM FEATURES								S	
System Name:	IN	PU	TS		01	JT		IN	PU	TS	С	UT			AL,	٩R	MS			P	RO	GRA	AMS
RTU-4	TEMPERATURE	PARTS PER MILLION	AIRFLOW		CURRENT	RESET CAPABILITY		MONITOR SYSTEM	SWITCH CLOSURE	CURRENT SENSOR	CONTROL SYSTEM	ON-OFF		EQUIPMENT STATUS	MAINTENANCE	CRITICAL	HIGH LIMIT	LOW LIMIT		SIARI/SIUP	POINT HISTORY	RUNTIME	OULPUT TO EQUIPMENT INPUT FROM EQUIP.
POINT DESCRIPTION																							
SUPPLY AIR TEMPERATURE																							
SUPPLY AIR DEWPOINT																							
OA FACE/BYPASS DAMPER POSIT.																							
EXHAUST AIR TEMPERATURE																							$\square$
RETURN AIR DAMPER POSITION																							$\square$
OUTSIDE AIR TEMPERATURE																							
SUPPLY FAN																							
EXHAUST FAN																							$\square$
GENERAL ALARM																							
OCCUPIED/UNOCCUPIED																							
ISOLATION VALVE END SWITCH									$\times$														
ISOLATION VALVE V-1												X											$\square$
FREEZE PROTECTION PUMP ERUP												X		X									
SMOKE DETECTOR (TYP OF 2)									$\times$							$\boxtimes$							
SUPPLY AIRFLOW																							$\square$
EXHAUST AIRFLOW																							$\square$
CO2 SENSOR		$\boxtimes$																					$\triangleleft$



		ELECTRICAL	LEGEND		
F	SYMBOL	DESCRIPTION		<u>SYMBOL</u>	DESCRIPTION
		RECESSED 2'X2' LIGHT FIXTURE			TV OUTLET; MH=84"AFF; 3/4" C TO CABLE TRAY.
		PENDANT-MOUNTED LIGHT FIXTURE		$\nabla$	.TELEPHONE OUTLET; MH=24"AFF; 3/4" C TO CABLE TRAY
_		SURFACE-MOUNTED MAXIMUN SECURITY 1'X4' LIGHT FIXTURE		$\mathbf{V}$	2 TELEPHONE / 2 DATA OUTLET; MH=24"AFF; PROVIDE DOUBLE GANG BOX & 1" C TO CABLE TRAY.
				$_{igma}$ w	WALL-MOUNTED TELEPHONE OUTLET; MH=54"AFF, 3/4" C TO CABLE TRAY.
F		RECESSED MAXIMUN SECURITY 2'X2' LIGHT FIXTURE		▼ IP	4 DATA OUTLET; MH=24"AFF; PROVIDE DOUBLE GANG BOX & 1" C TO CABLE TRAY.
		UNSWITCHED EMERGENCY EGRESS LIGHT FIXTURE		$\mathbf{\nabla}$	IMMATE TELEPHONE OUTLET; MH=54"AFF; 3/4" C TO CABLE TRAY.
		RECESSED / SURFACE-MOUNTED MAXIMUN SECURITY 1'X1' LIGHT FIXTURE		∲\$ ∕	NURSE CALL SYSTEM PATIENT STATION; MH=54"AFF
				ES	NURSE CALL EMERGENCY STATION; 48"AFF
	O	SURFACE-MOUNTED SCONCE		MS>	NURSE CALL DESK-MOUNTED MASTER STATION AND OUTLET; MH=24"A
_	$\bigcirc$	PENDANT-MOUNTED HIGH BAY LIGHT FIXTURE			NURSE CALL DOME LIGHT
	2	WALL-MOUNTED LIGHT FIXTURE		R	LOW VOLTAGE LIGHTING RELAY
		EXIT LIGHT WITH LIGHTED FACE AND CHEVRONS AS INDICATED		[SC]	SIDECOM OUTLET; MH=24"AFF
	ş	SINGLE-POLE TOGGLE SWITCH: MH=48"AFF			SPECIAL 3 GANG BOX, 2 1/4" DEEP A/V OUTLET; $MH=24$ "AFF; SEE SPEC
D	<b>\$</b> 3	THREEWAY TOGGLE SWITCH; MH=48"AFF		WG	DENOTES WIRE GUARD
	<b>\$</b> 4	FOURWAY TOGGLE SWITCH: MH=48"AFF		A Cd ▼ RATING	FIRE ALARM SYSTEM WALL-MOUNTED COMBINATION SPEAKER / STROBE
	<b>\$</b> 0	OCCUPANCY SWITCH; MH=48"AFF			FIRE ALARM SYSTEM WALL-MOUNTED STROBE; MH=80"AFF
	<b>\$</b> к	KEY-OPERATED TOGGLE SWITCH; MH=48"AFF		E	FIRE ALARM SYSTEM MANUAL PULL STSTION; MH=48"AFF
	<b>\$</b> вк	KEY-OPERATED THREEWAY TOGGLE SWITCH; MH=48"AFF		EK	FIRE ALARM SYSTEM MANUAL PULL STSTION KEY TYPE: MH=48"AFE
	<b>\$</b> 4K	KEY-OPERATED FOURWAY TOGGLE SWITCH; MH=48"AFF			FIRE ALARM SYSTEM SPRINKLER FLOW SWITCH
	\$_∨	LOW VOLTAGE, MOMENTARY CONTACT SWITCH; MH=48"AFF		VPS	FIRE ALARM SYSTEM SPRINKLER VALVE POSITION SWITCH
С	OS	CEILING-MOUNTED, DUAL TECHNOLOGY, OCCUPANCY SENSOR / RELAY.		H	FIRE ALARM SYSTEM MAGNETIC DOOR HOLD OPEN
	DH	CEILING-MOUNTED, DAYLIGHT HARVESTING SENSOR / RELAY.			FIRE ALARM SYSTEM HEAT DETECTOR
				$\Theta$	FIRE ALARM SYSTEM SMOKE DETECTOR
_	φ	DUPLEX RECEPTACLE: MH=24"AFF	(	D	
	φ GFIC	GROUND-FAULT CIRCUIT INTERRUPTER TYPE DUPLEX RECEPTACLE; MH=24"AFF			EXISTING
	Ψ_	TAMPER-RESISTANT TYPE DUPLEX RECEPTACLE: MH=24"AFF			RELOCATED
	u O WP				REMOVED
В		DUPLEX RECEPTAGEE WITH WEATHER-PROOF GOVER, MIT=24 AF			
					CONDUIT AND WIRING; HATCH MARKS DENOTE QUANTITY OF #12A IN 3/4" CONDUIT UNLESS NOTED OTHERWISE; ARROW DENOTES H PANELBOARD INDICATED.
		ELECTRICAL DISTRIBUTION PANEL			
		277/480VAC BRANCH CIRCUIT PANELBOARD			
		120/208VAC BRANCH CIRCUIT PANELBOARD			
	Т	TRANSFORMER			
A		DISCONNECT SWITCH			

### 2

# **GENERAL NOTES:**

- 1. ALL SPECIAL SYSTEM WIRING SHALL BE IN CONDUIT.
- 2. ALL RECEPTACLE & SWITCHES IN INMATE AREAS SHALL BE TAMPER PROOF & SECURITY TYPE FACE PLATE WITH 4 TEMPER PROOF SCREWS.
- 3. ALL SPARE CONDUITS SHALL HAVE PULL STRINGS.
- 4. ALL SCREWS IN INMATE AREAS SHALL BE TAMPER PROOF.
- 5. ALL BEDROOM SWITCHES SHALL BE INSTITUTIONAL GRADE OF THE TOGGLE TYPE.
- 6. FOR ALL 15A AND 20A SINGLE PHASE 120V CIRCUITS, USE #10 AWG CONDUCTORS FOR CONDUCTOR LENGTHS OF 75' TO 120' AND #8 AWG CONDUCTORS FOR CONDUCTOR LENGTHS OF 120' TO 200'. FOR ALL 15A AND 20A SINGLE PHASE 277V CIRCUITS, USE # 10 AWG CONDUCTORS FOR CONDUCTOR LENGTHS OF 150' TO 250' AND #8 AWG CONDUCTORS FOR CONDUCTOR LENGTHS OF WIRE FOR LENGTHS 250' TO 450'.

# CABLE

## 1" C TO

RAY.

### Γ; MH=24"AFF

SEE SPEC.

R / STROBE; MH=80"AFF

8"AFF

Y OF #12AWG CONDUCTORS ENOTES HOMERUN TO 







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F		
г		
E		
D		
С		
В		
А		



MAIN LEVEL PLAN - LIGHTING - AREA A Scale: 1/8" = 1'-0"

## <u>GENERAL SHEET NOTES:</u>

2

1. REFER TO SHEET E500 FOR LIGHTING FIXTURE SCHEDULE.







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С

MAIN LEVEL PLAN - LIGHTING - AREA B Scale: 1/8" = 1'-0"

GENERAL SHEET NOTES: 1. REFER TO SHEET E500 FOR LIGHTING FIXTURE SCHEDULE.





1. REFER TO SHEET E500 FOR LIGHTING FIXTURE SCHEDULE.










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HEAVY-DUTY, NON-FUSED, 30A, 3 POLE, 600VAC IN NEMA 1 ENCLOSURE.

BASEMENT LEVEL PLAN - POWER Scale: 1/8" = 1'-0"



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MAIN LEVEL PLAN - POWER - AREA A Scale: 1/8" = 1'-0"





5	HEAVY-DUTY, NON-FUSED, 30A, 3 POLE, 240VAC IN NEMA 3R ENCLOSURE.
6	FVNR, SIZE 0, 480VAC, 3 PHASE COMBINATION MOTOR STARTER IN NEMA 3R ENCLOSURE.
7	HEAVY-DUTY, FUSED @ 60A, 3 POLE, 600VAC IN NEMA 3R ENCLOSURE.
8	PROVIDE ELECTRICAL CONNECTION FOR WALK-IN COOLER EVAPORATOR FAN.
9	PROVIDE ELECTRICAL CONNECTION FOR WALK-IN COOLER CONTROLS AND HEATER.
10	HEAVY-DUTY, NON-FUSED, 30A, 3 POLE, 600VAC IN NEMA 4 ENCLOSURE.



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## SHEET KEYNOTES:

_	
1 >	PROVIDE ELECTRICAL CONNECTION FOR WALL-MOUNTED HAND

- 2 PROVIDE ELECTRICAL CONNECTION FOR WALL-MOUNTED ELECTRIC WATER COOLER.
- (3) HEAVY-DUTY, NON-FUSED, 30A, 2 POLE, 240VAC IN NEMA 1 ENCLOSURE.
- PROVIDE ELECTRICAL CONNECTION FOR SOLENOID VALVE. OPERATION OF SOLENOID VALVE BY MASTER CONTROL WITH LOW VOLTAGE RELAY.  $\langle 4 \rangle$

D-DRYER.











Α

THIRD LEVEL PLAN - POWER Scale: 1/8" = 1'-0"





























# 2 EXTERIOR SWITCHGEAR WEST ELEVATION Scale: 1/4" = 1'-0"











	EXISTING MCC1 600A, 408VAC, 3 PHASE, 3 WIRE		
			PENTHOUSE
	EXISTING TRANSFORMER T2-2 225KVA, 3 PHASE, 480VAC DELTA PRIMARY 120/208VAC WYE SEC. DRY-TYPE	EXISTING TRANSFORMER T3-2 112.5KVA, 3 PHASE, 480VAC DELTA PRIMARY 120/208VAC WYE SEC. DRY-TYPE EX. PANEL HP2-2	EX. PANEL HP4-2
			SECOND LEVEL
	EX. PANEL HP1-1	EX. PANEL HP3-1	EX. PANEL HP5-1 MAIN LEVEL
GROUP-MOUNTED DISTRIBUTION SECTION	EXISTING MCC2 150A, 408VAC, 3 PHASE, 3 WIRE	EXISTING TRANSFORMER T1-B 150KVA, 3 PHASE, 480VAC DELTA	
00A		PRIMARY 120/208VAC WYE SEC. DRY-TYPE	
			BASEMENT LEVEL

## EXISTING OSTC









Switchboard: HSB

5

Frame Size

400 A

400 A

2000 A

400 A

400 A

12000 A

1200 A

2000 A

1200 A

1200 A

1200 A

1200 A

1200 A

1200 A

400 A

2000 A

400 A

1200 A

400 A

Estimated Demand

353290 VA

110843 VA

41806 VA

11295 VA

CKT #22

CKT #24

CKT #25

CKT #26

CKT #18

CKT #20

CKT #21

603404 VA

Trip Rating

20 A

20 A

20 A

20 A

1200 A

800 A

400 A

1200 A

1200 A

800 A

800 A

1200 A

1200 A

2000 A

1200 A

1200 A

1200 A

1200 A

1200 A

1200 A

20 A

2000 A

20 A

20 A

1200 A

Total Conn. Load: 1187358 VA

Total Amps: 1428 A

2000 A

Volts: 480/277 Wye

# of Poles

A.I.C. Rating: 65,000

Mains Type: 2000 A

Mains Rating: 2000 A MCB Rating: 2000 A

Load

0 VA

Remarks

0 VA MAIN (TRIP UNIT-LSIG)

0 VA SPARE (TRIP UNIT-LSIG)

251585 VA FEEDER (TRIP UNIT-LSIG)

91863 VA FEEDER (TRIP UNIT-LSIG)

311476 VA FEEDER (TRIP UNIT-LSIG) 328189 VA FEEDER (TRIP UNIT-LSIG)

249300 VA FEEDER (TRIP UNIT-LSIG)

0 VA MAIN (TRIP UNIT-LSIG)

Panel Totals

Total Conn. Load: 1187358 VA

Total Est. Demand: 1120637 VA

Total Conn.: 1428 A Total Est. Demand: 1348 A

F		Location: MAIN ELECTRIC Supply From:	; ROOM 11.0.1	Volts: 480/ Phases: 3
		Mounting: Free Standing Enclosure: NEMA 1		Wires: 4
	Notes:			
	СКТ	Circuit Descript	ion	# of Poles
	2	Power Quality Meter		3
	4	TVSS for Draw-Out Magnum Power Circuit Breaker	b b b b b b b b b b b b b b b b b b b	3
	5 6	Draw-Out Magnum Power Circuit Breaker Space Draw-Out Magnum Power Circuit Breaker	<u>}</u>	3
	7 8	DPB1 DP1A		3
	9 10	Provision Provision		3
	11 12	DP2A DP3A		3
	13 14	Provision Provision		3
_	15 16	Draw-Out Magnum Power Tie Circuit Breaker Provision		3
E	17	Provision		3
	19	Draw-Out Magnum Power Circuit Breaker Provision		3
	21	Provision Provision		3
	23	Generator Main Draw-Out Magnum Power Circu	it Breaker	3
	25	Provision		3
	20			3
	28 29			
	30			
	Legend:			
	Load Clas	ssification	Connected Load	Demand Factor
	Motor Other		577643 VA 353290 VA	104.46%
	Receptacl	e	211686 VA 33445 VA	52.36% 125.00%
D	Power		11295 VA	100.00%
	Notes			
С		CKT #1 CKT #2	CKT #6	CKT #14
_		CKT #4		CKT #16
				•
		0/7 #5		<b>J</b>
			GRI #9 GRI #15	UKT #17
_		1 HOU Scale: 1/2	<b>SE SERVI</b> 2" = 1'-0"	CESW
A				

4

	Location: Supply From: Mounting: Enclosure:		Volts: 13200   Phases: 3 Wires: 3	Delta		A.I.C. Rating Mains Type Mains Rating MCB Rating	g: 9: g:	
lotes:								
o./=								
		lion	# of Poles	Frame Size	125 A		Remark	S
2	EXISTING FEEDER SWITCH AND FUSE		3	600 A	0 A	0 VA		
3	EXISTING METERING / CONTROLS		3	600 A	20 A	0 VA		
4	EXISTING MAIN SWITCH		3	600 A	20 A	0 VA		
5	EXISTING METERING / CONTROLS		3	600 A	20 A	0 VA		
6	EXISTING TIE		3	600 A	20 A	0 VA		
7	EXISTING MAIN SWITCH		3	600 A	20 A	0 VA		
8			3	600 A	20 A	0 VA		
9			3	600 A	20 A	0 VA		
10	New Feeder Switch and Fose		3	600 A	125 A	U VA		
12								
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28								
29								
30				ן דו	otal Conn. I oad	0 VA		
					Total Amps:	0 A		
.egend:								
Load Clas	sification	Connected Load	Demand Factor	Estimated De	mand		Panel	Totals
Power		0 VA	0.00%	0 VA				
						Total Co	nn. Load:	0 VA
				Total Est. Demand:		Demand:	0 VA	
						To	tal Conn.:	0 A
						Total Est.	Demand:	0 A

2



## E SWITCHBOARD ELEVATION

2 EXISTING 15KV SWITCHGEAR ELEVATION Scale: 1/2" = 1'-0"

