25-088 EMMORTON REC.
INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY

2213 OLD EMMORTON RD.
BEL AIR, MD

■ SYMBOLS

DATUM

HANDICAP SYMBOL

XX / XX — DRAWING NUMBER / ELEVATION INDICATOR / DRAWING SHEET

XX — DOOR NUM. DESIGNATION

W4 — GLAZING FRAME DESIGNATION

X — WALL TYPE

ROOM NAME / XXXX — ROOM NAME/NUM. DESIGNATION

XX / XX — DRAWING NUMBER / SECTION INDICATOR / DRAWING SHEET

XXX / XXX — DRAWING NUMBER / DETAIL INDICATOR / DRAWING SHEET

■ CODE INFORMATION

BUILDING CODE

2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL EXISTING BUILDING CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE
2021 INTERNATIONAL MECHANICAL CODE
2023 NATIONAL ELECTRIC CODE
2021 INTERNATIONAL PLUMBING CODE
2021 INTERNATIONAL FUEL GAS CODE
STATE OF MARYLAND FIRE PREVENTION CODE, COMAR 29.06.01
MARYLAND BUILDING REHABILITATION CODE COMAR 09.12.58
STATE OF MARYLAND ACCESSIBILITY CODE COMAR 09.12.53

■ BUILDING DATA

STORIES IN HEIGHT

- EXISTING 1 STORY BUILDING – 40'
- ALLOWABLE HEIGHT PER IBC TABLE 504.3 = 50'
- ALLOWABLE STORIES ABOVE GRADE PER IBC TABLE 504.2 = 2

BUILDING DATA

- BUILDING USE GROUP: MIXED USE ASSEMBLY (A4)
- BUILDING CONSTRUCTION TYPE: TYPE IIB (AS PERMITTING RECORDS SHOW)
- ALL WOOD SHALL BE FIRE-RETARDANT-TREATED (2021 IBC 603)
- EXISTING BUILDING AREA:
  BASKETBALL COURTS = 13,882 SF
  BATTING AND PITCHING AREA = 7,322 SF
  ACCESSORY USE AREA = 4,622 SF
  TOTAL BUILDING = 25,826 SF.
  AREA OF RENOVATION = 3,260 SF (LESS THAN 50%)
  ALTERATION LEVEL 3
- BUILDING IS NOT SPRINKLERED
- FIRE ALARM EXISTS THROUGHOUT
- MAXIMUM TRAVEL DISTANCE = 200' PER IBC TABLE 1017.2
- CORRIDOR RATING 0 HOUR PER TABLE 1020.1

OCCUPANCY

MIXED USE – ASSEMBLY (A4) SPORTS COURTS / ACCESSORY OCCUPANCY
OCCUPANCY SEPARATION – NO SEPARATION IS REQUIRED IBC TABLE 508.2.4
OCCUPANT LOAD
ASSEMBLY (A4) – 21,204 GROSS SF/50 = 425
ACCESSORY (B) – 4,662 SF/150 GROSS = 32
TOTAL OCCUPANT LOAD = 457 PEOPLE

■ ARCHITECT

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2215 Conowingo Road, Suite 101
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■ M.E.P. ENGINEER

JAL ENGINEERING
2007 TWIN LAKES DRIVE
JARRETTSVILLE, MD 21081
www.jalmep.com
(410) 776-5868

■ DRAWING LIST

CS	COVER SHEET
G1	EXIT PLAN DURING CONSTRUCTION
AD101	PARTIAL FLOOR PLAN–DEMOLITION–FRONT LOBBY & BATTING CAGES
A101	PARTIAL FLOOR PLAN–NEW WORK–FRONT LOBBY & BATTING CAGES
A102	PARTIAL FLOOR PLAN–REFLECTED CEILING–FRONT LOBBY & BATTING CAGES
A103	PARTIAL FLOOR PLAN–NEW WORK–BATTING CAGES
A201	ENLARGED FLOOR PLAN AND DETAILS
A301	SCHEDULES AND DETAILS
A302	CASEWORK AND DETAILS
A303	RAMP SECTION AND DETAILS
A304	STRUCTURAL PLANS
A305	SECTION AND DETAILS
E001	ELECTRICAL GENERAL NOTES
E101	ELECTRICAL DEMOLITION PLAN
E102	ELECTRICAL NEW WORK PLAN
E201	LIGHTING NEW WORK PLAN
E501	ELECTRICAL ONE-LINE AND SCHEDULES
E801	ELECTRICAL SPECIFICATION
M001	GENERAL NOTES, LEGEND AND ABBREVIATIONS
M101	HVAC DEMOLITION PLAN
M102	HVAC NEW WORK PLAN
M501	DETAILS
M601	SCHEDULES
M801	MECHANICAL SPECIFICATION
P001	GENERAL NOTES, LEGEND AND ABBREVIATIONS
P101	PLUMBING DEMOLITION PLAN
P501	PLUMBING DETAILS
P601	RISERS AND SCHEDULES
P801	PLUMBING SPECIFICATIONS

GENERAL NOTES:

1. THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVEL, ETC., AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO THE ACTUAL CONDITIONS AS REQUIRED.
2. ALL WORK AND MATERIALS MUST CONFORM TO LOCAL, STATE AND FEDERAL CODE REQUIREMENTS.
3. INSTALLATION OF MANUFACTURED COMPONENTS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND REQUIREMENTS.
4. BUILDING IS NOT SPRINKLERED.
5. ALL DIMENSIONS SHALL BE FIELD VERIFIED.
6. THE CONTRACTOR SHALL REFER ALL QUESTIONS AND RECEIVE DIRECTIONS ONLY TO/FROM THE OWNER.
7. IF PROPOSED OR ACTUAL DIMENSIONS OR MEASUREMENTS CONFLICT WITH EACH OTHER, CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER OR ARCHITECT IN WRITING PRIOR TO PROCEEDING. IF OWNER OR ARCHITECT IS NOT CONTACTED IN WRITING PRIOR TO COMMENCING WITH THE WORK, CONTRACTOR ASSUMES LIABILITY FOR ANY REPAIR OR RETROFIT CAUSED BY CONFLICT.
8. THE OWNER SHALL HAVE THE FIRST RIGHT OF REFUSAL FOR ALL ITEMS NOT SCHEDULED TO BE RELOCATED/REUSED.

ARCHITECT
8138-R
08/05/24
DOUGLAS JOSEPH POLT
STATE OF MARYLAND

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SEAL

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DJP	CAJ

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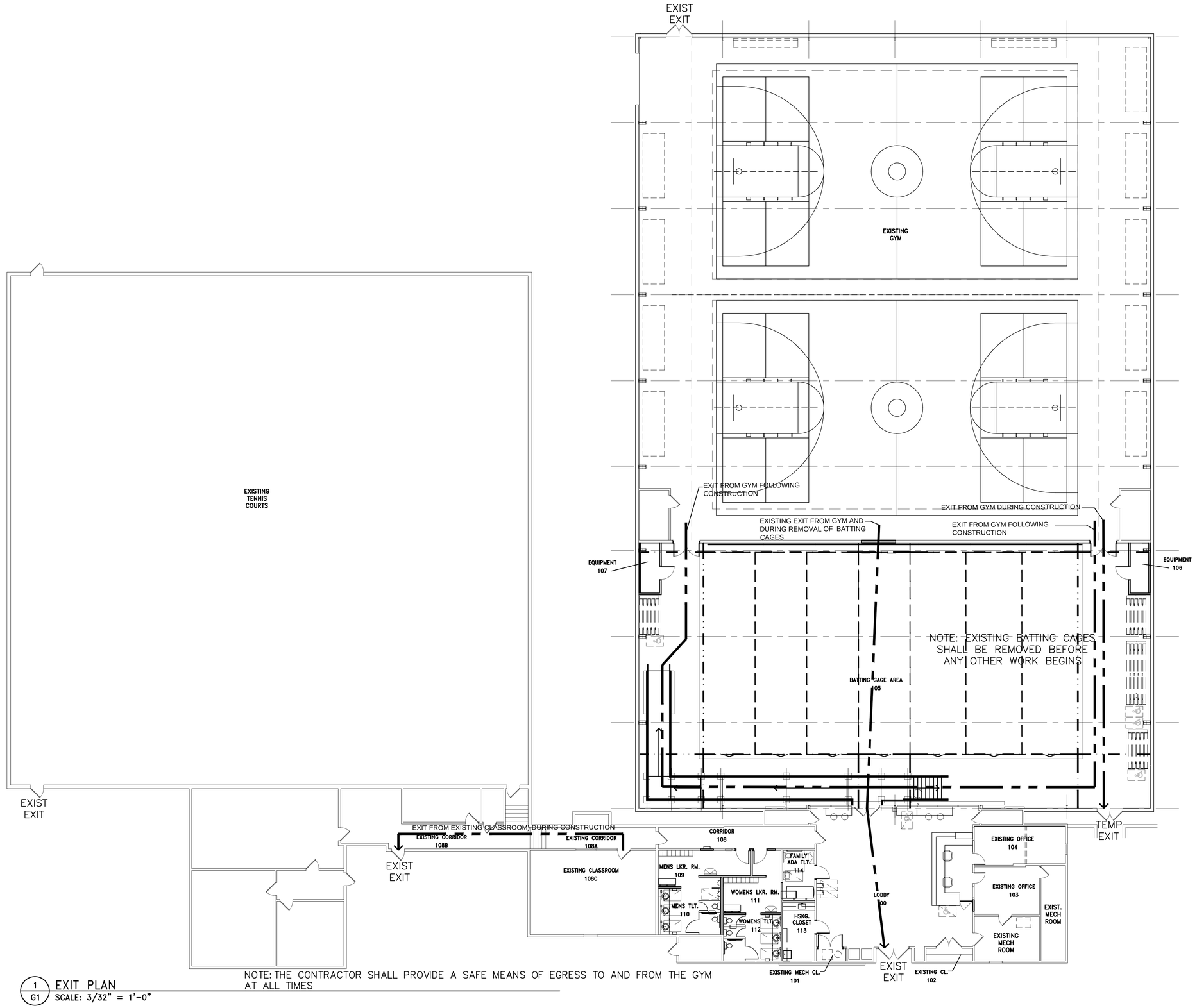
REVISIONS

no.	date	comments
1	6/23/25	PERMIT COMMENTS
2	8/27/25	PERMIT COMMENTS

COVER SHEET

SCALE	AS NOTED
JOB NO	230103.04
DATE	8/23/24

CS



NOTE: THE CONTRACTOR SHALL PROVIDE A SAFE MEANS OF EGRESS TO AND FROM THE GYM AT ALL TIMES

1 / G1 EXIT PLAN
SCALE: 3/32" = 1'-0"

GENERAL NOTES:

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EXIT PLAN DURING CONSTRUCTION

SCALE	AS NOTED
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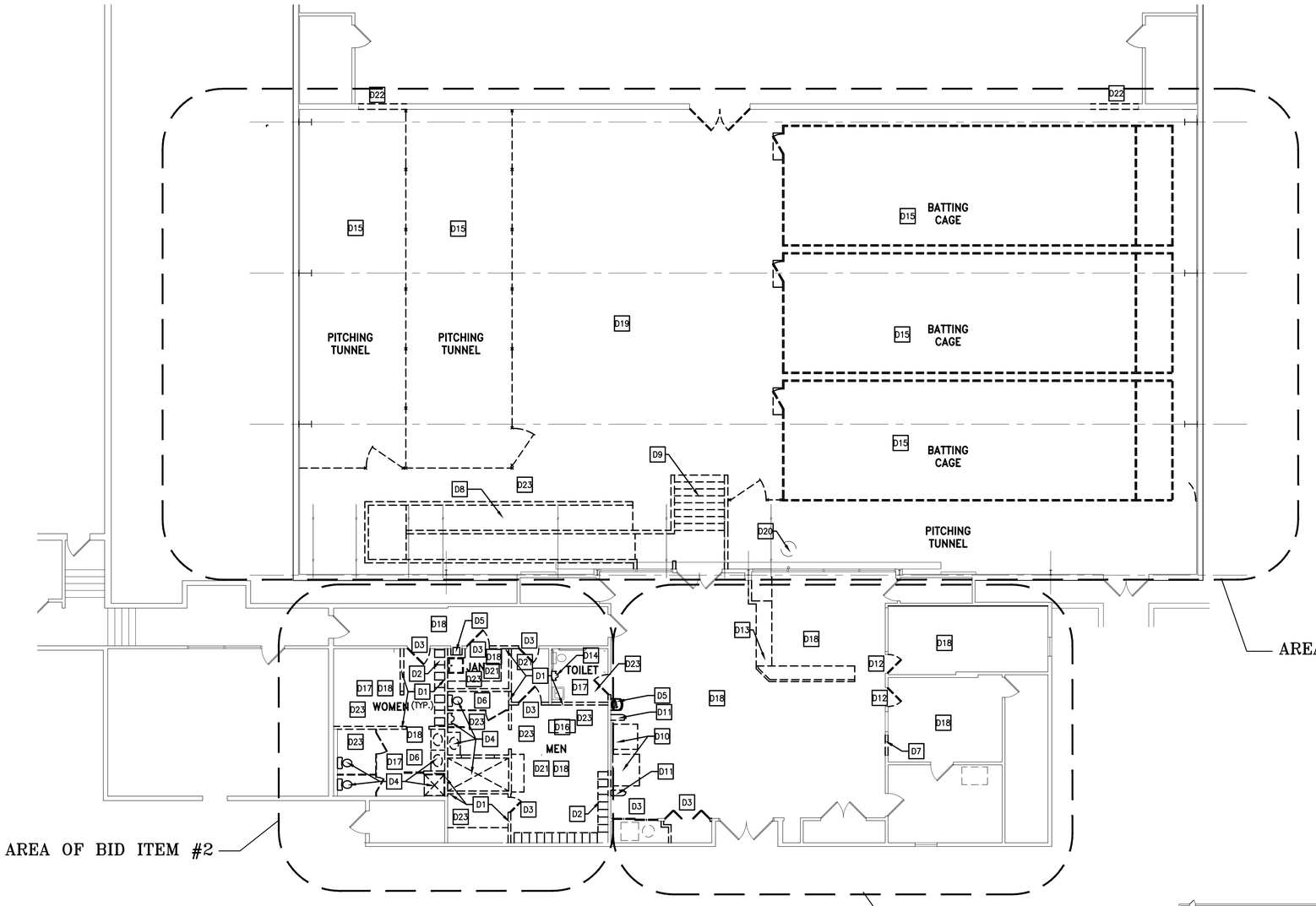
G1

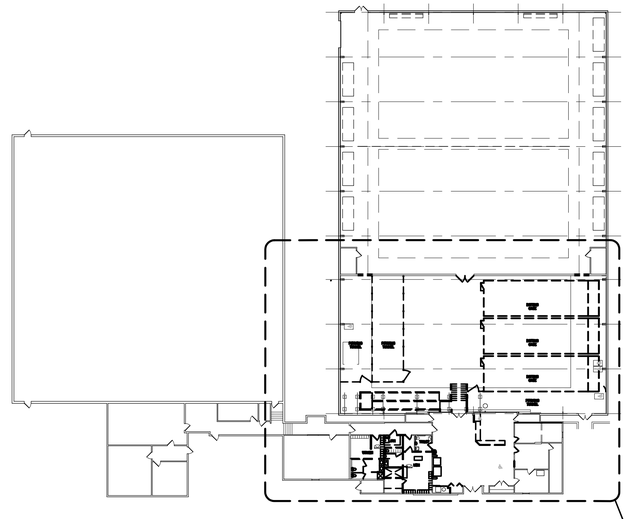


2 AD101 FLOOR PLAN – DEMOLITION – FRONT LOBBY, LOCKER ROOMS AND BATTING CAGES
SCALE: 1/8" = 1'-0"

DEMOLITION NOTES

- D1 REMOVE EXISTING WALLS.
- D2 REMOVE AND STORE EXISTING LOCKERS FOR RELOCATION
- D3 REMOVE EXISTING DOOR, FRAME AND HARDWARE.
- D4 REMOVE EXISTING PLUMBING FIXTURES AND CAP PLUMBING.
- D5 REMOVE EXISTING WATER COOLER
- D6 REMOVE ALL EXISTING TOILET ACCESSORIES AND TOILET PARTITIONS
- D7 REMOVE EXISTING WINDOW AND STORE FOR RELOCATION
- D8 REMOVE EXISTING WOOD RAMP
- D9 REMOVE EXISTING WOOD STAIRS
- D10 REMOVE EXISTING VENDING MACHINES - BY OTHERS
- D11 REMOVE EXISTING WING WALLS
- D12 REMOVE EXISTING DOOR AND PREPARE FOR NEW DOOR
- D13 REMOVE EXISTING CASEWORK
- D14 REMOVE URINAL
- D15 REMOVE EXISTING BATTING AND PITCHING CAGES IN THEIR ENTIRETY
- D16 REMOVE EXISTING ATTIC ACCESS
- D17 REMOVE EXISTING CEILING
- D18 REMOVE EXISTING FLOORING
- D19 REMOVE AND STORE EXISTING RUBBER TILE FLOORING AND REALLOCATE FOR PR
- D20 EXISTING SUMP PIT TO REMAIN
- D21 EXISTING GYP.BD. CEILING TO REMAIN
- D22 REMOVE EXISTING WALL FOR INSTALLATION OF NEW DOORS. PROVIDE SUB-FRAME AS REQUIRED
- D23 SAWCUT AND REMOVE EXISTING FLOOR AS REQUIRED FOR NEW FOOTINGS , PLUMBING AND NEW WORK. REPLACE AND PATCH FLOOR BACK TO ITS ORIGINAL CONDITION AND ELEVATION

NOTE:
DUE TO THE EXTENT OF ELECTRICAL DEVICES, WIRING, FIXTURES ETC. BEING REMOVED, A MASTER ELECTRICAL LICENSED TO WORK IN HARFORD COUNTY MUST OBTAIN AN ELECTRICAL DEMOLITION PERMIT BEFORE ANY DEMOLITION MAY TAKE PLACE. THE MASTER ELECTRICIAN SHALL BE RESPONSIBLE FOR DETERMINING HOW TO PREPARE THE BUILDING SO THE DEMOLITION FOR THE THE NEW BUILDING PERMIT CAN BE DONE SAFELY. A CONSULTATION INSPECTION WITH THE ELECTRICAL SERVICES DIVISION CAN BE REQUESTED BY THE MASTER ELECTRICIAN IF NEEDED. ANY ASSOCIATED BUILDING DEMOLITION PERMIT OR NEW WORK PERMIT WILL BE APPROVED BY THE DEPARTMENT WHEN THE ELECTRIC DEMOLITION PERMIT HAS RECEIVED AN APPROVED FINAL INSPECTION.



1 AD101 KEY PLAN
SCALE: N.T.S.

GENERAL NOTES:

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8138-R
08/05/24
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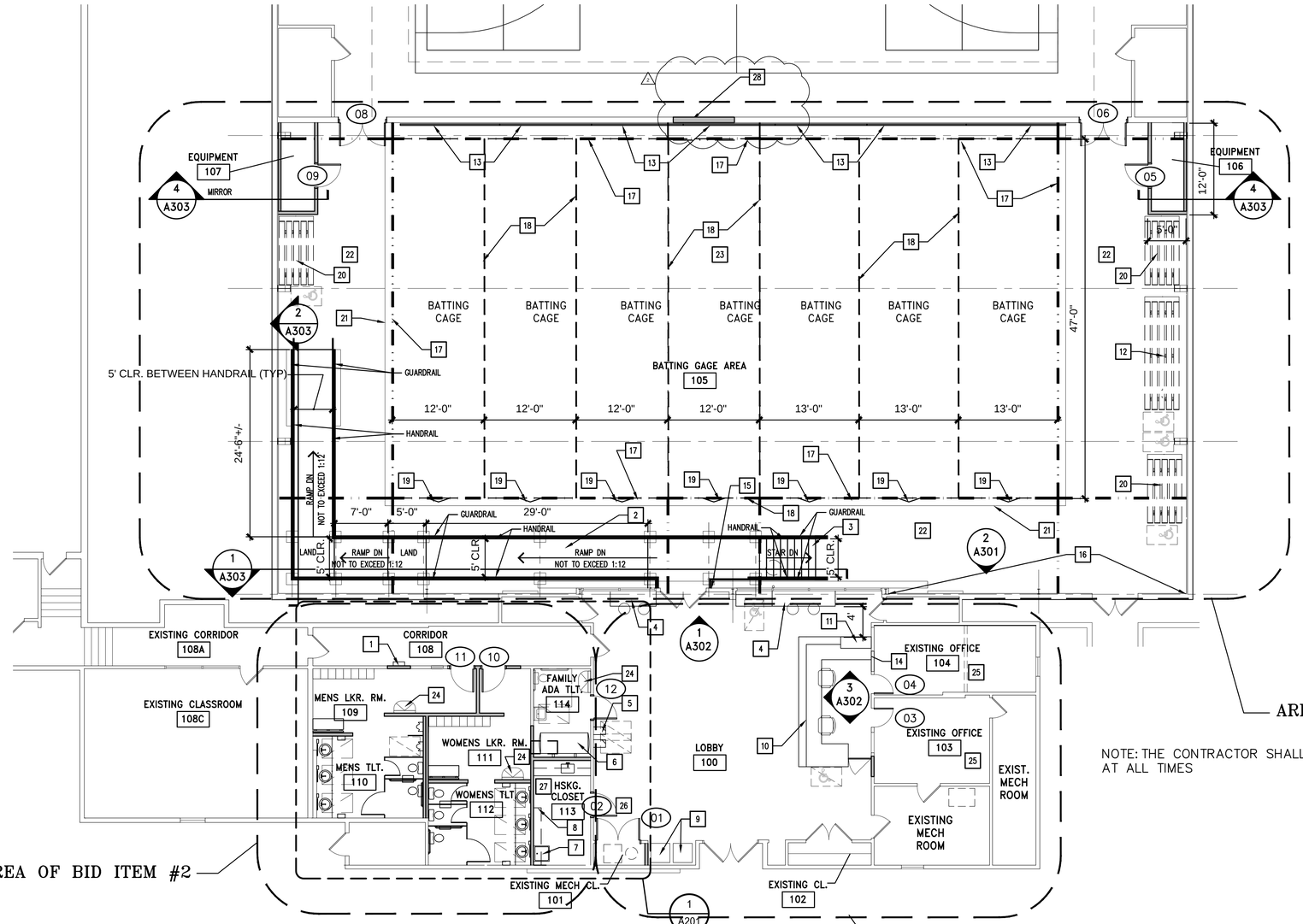
REVISIONS

no.	date	comments
1	8/27/25	PERMIT COMMENTS

PARTIAL FLOOR PLAN – DEMOLITION – FRONT LOBBY & BATTING CAGES

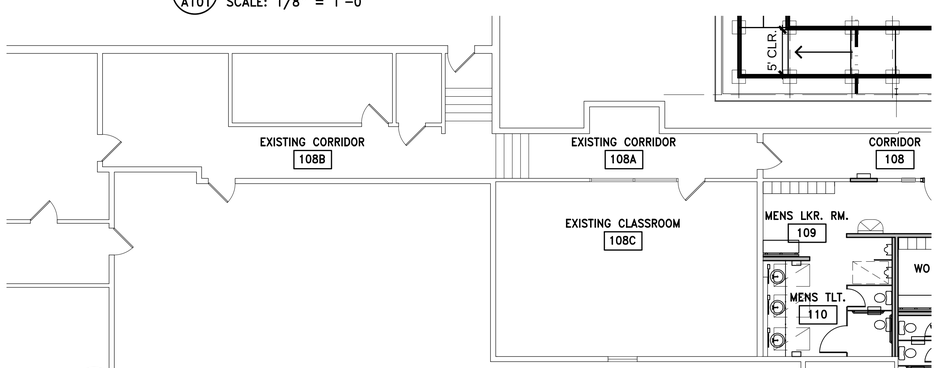
SCALE	AS NOTED
JOB NO	230103.04
DATE	8/23/24

AD101



2 A101 FLOOR PLAN – NEW WORK – FRONT LOBBY, LOCKER ROOMS AND BATTING CAGES
SCALE: 1/8" = 1'-0"

NOTE: THE CONTRACTOR SHALL PROVIDE A SAFE MEANS OF EGRESS TO AND FROM THE GYM AT ALL TIMES



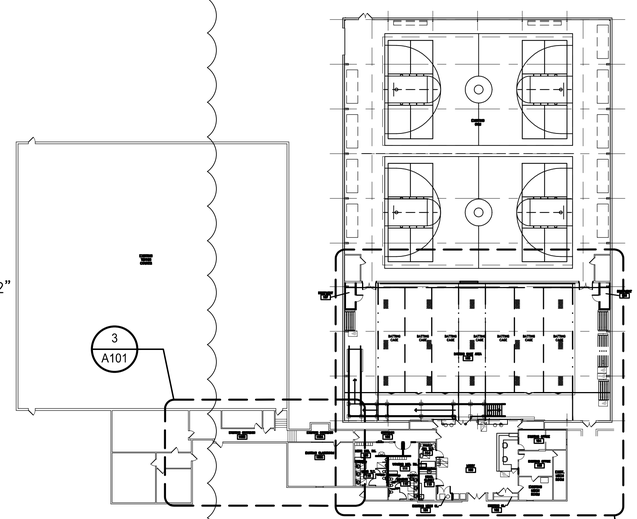
3 A101 FLOOR PLAN – NEW WORK – EXISTING COORIDORS AND CLASSROOM
SCALE: 1/8" = 1'-0"

NOTE: STAIR HANDRAILS SHALL EXTEND HORIZONTALLY NOT LESS THAN 12" BEYOND THE TOP RISER AND CONTINUE TO SLOPE FOR THE DEPTH OF ONE TREAD BEYOND THE BOTTOM RISER AND RAMPS SHALL EXTEND HORIZONTALLY ABOVE THE LANDING 12" MINIMUM BEYOND THE TOP AND BOTTOM RAMP RUNS PER IBC 2021 1014.6

BID ITEM #2 – ADD ALTERNATE 1
CONTINUE LVP FLOORING THROUGH CORRIDORS 108A AND 108B TO FITNESS ROOM DOOR AND BOTH TENNIS COURT DOORS AND VESTIBULE AREA

BID ITEM #2 – ADD ALTERNATE 2
CONTINUE PAINT THROUGH CORRIDORS 108A AND 108B TO FITNESS ROOM DOOR AND BOTH TENNIS COURT DOORS AND VESTIBULE

BID ITEM #2 – ADD ALTERNATE 3
REMOVE EXISTING FLOORING AND INSTALL NEW LVP FLOOR IN CLASSROOM 108C



1 A101 KEY PLAN
SCALE: N.T.S.

NEW WORK NOTES

1. BOTTLE FILLER
2. GALVANIZED STEEL RAMP WITH SEALED CONCRETE FILL – PRIMED AND PAINTED
3. NEW CONCRETE FILLED METAL PAN STAIR – PRIMED AND PAINTED
4. BAR HEIGHT COUNTER
5. DUAL HEIGHT WATER COOLER
6. WALL MOUNTED FIXED ADULT CHANGING TABLE MODEL SCT 3000 AS MANUFACTURE BY PATIENT SAFETY USA. PROVIDE BLOCKING IN WALL AS RECOMMENDED BY MANUFATURER
7. MOP SINK WITH BUCKET FILLING FAUCET
8. WALL CABINETS
9. VENDING MACHINES PROVIDED AND INSTALLED BY OWNER
10. CLIENT SERVICES DESK
11. MAIL STATION
12. 3 ROW, 15' L. ALUMINUM BLEACHER AS MANUFACTURED BY PERFORMANCE SPORTS SYSTEMS TRB0315DF TIP-N-ROLL WITH DOUBLE FOOT BLANK OR EQUAL
13. WALL PADDING – PERFORMANCE SPORTS SYSTEM 4120 WALL PADS, 2' WIDE X 8' HIGH WITH 1" LIPS TOP AND BOTTOM OR EQUAL
14. RELOCATED EXISTING WINDOW
15. WALL HUNG BANNER
16. FIRE-RETARDENT-TREATED ¾ PAINTED OSB OVER EXISTING SUBSTRATE
17. SHELL STATIONARY BATTING GAGE NETTING – SEE DRAWING A103 FOR ADDITIONAL INFORMATION
18. SLIDING DIVIDER NET – SEE DRAWING A103 FOR ADDITIONAL INFORMATION
19. BATTING CAGE DOOR
20. 3 ROW, 9' L. ALUMINUM BLEACHER AS MANUFACTURED BY PERFORMANCE SPORTS SYSTEMS TRB0309DF TIP-N-ROLL WITH DOUBLE FOOT BLANK OR EQUAL
21. FLOOR FINISH TRANSITION
22. PATCH EXISTING ASPHLT FLOOR AND INSTALL RUBBER TILES PREVIOUSLY REMOVED AT PERIMETER OF TURF TO THE WALL
23. PATCH EXISTING ASPHALT FLOOR AND INSTALL 5 MIL PGPN ARTIFICIAL TURF OR EQUAL
24. KOALA KB-200 BABY CHANGING STATION, HORIZONTAL FOR COMMERCIAL RESTROOMS OR EQUAL
25. NEW FLOOR AND WALL FINISHES. SEE ROOM FINISH SCHEDULE
26. DUCT UP THROUGH ROOF TO GOOSENECK ABOVE. CUT OPENING THROUGH ROOF DECK AND PATCH AND FLASH INTO THE EXISTING ROOF. THE EXISTING ROOF IS A GARLAND ROOF SYSTEM. A CERTIFIED GARLAND CONTRACTOR NEEDS TO PERFORM THE ROOFING WORK TO MAINTAIN THE ROOF WARRANTY.
27. PROVIDE FULL HEIGHT FRP ON ALL WALLS
28. INFILL EXISTING DOOR 6" METAL STUDS AND ¾" PAINTED FIRE TREATED OSB EACH SIDE

GENERAL NOTES:

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8138-R
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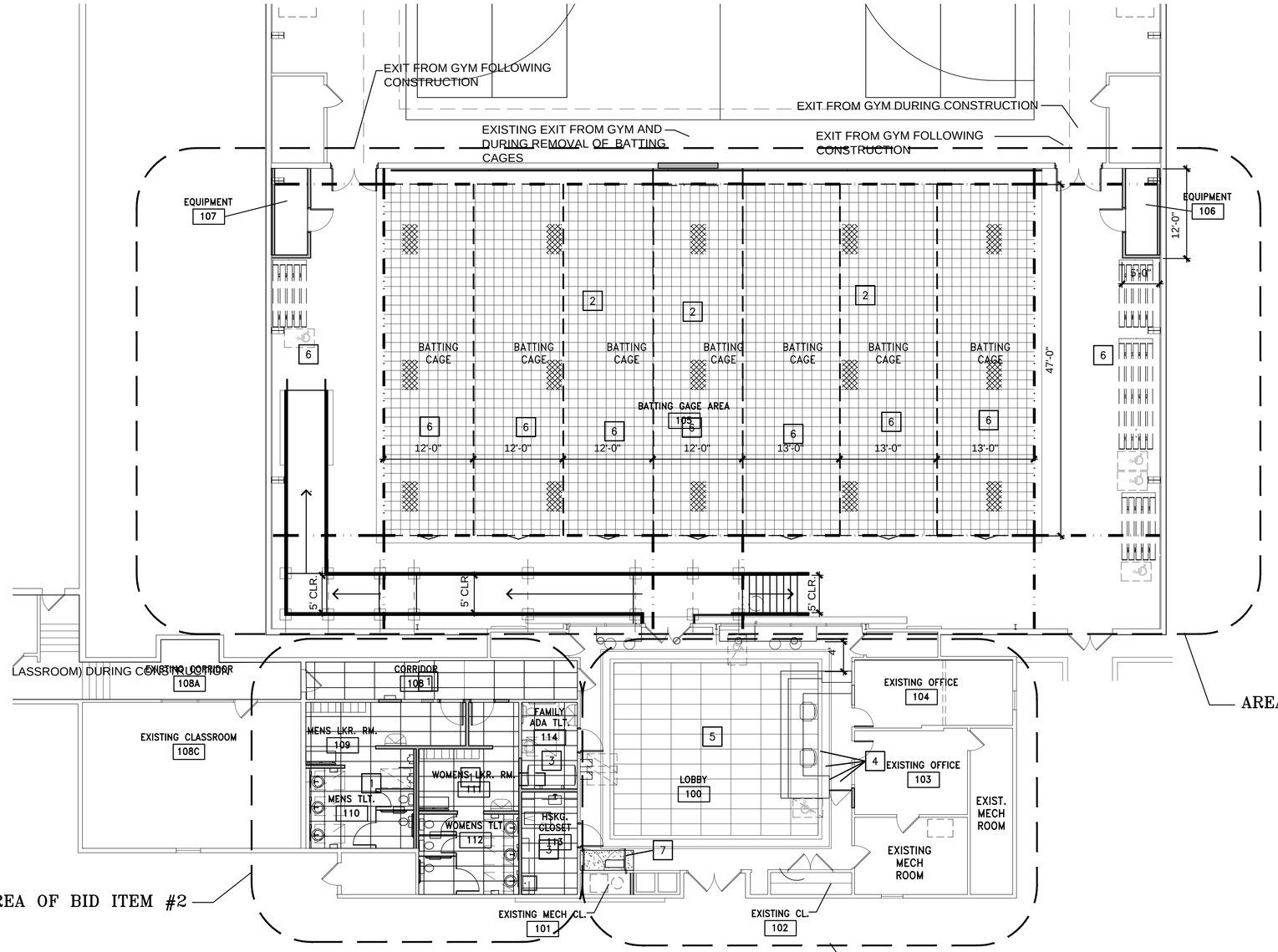
REVISIONS

no.	date	comments
1	6/23/25	PERMIT COMMENTS
2	8/27/25	PERMIT COMMENTS
3	10/30/25	PERMIT COMMENTS

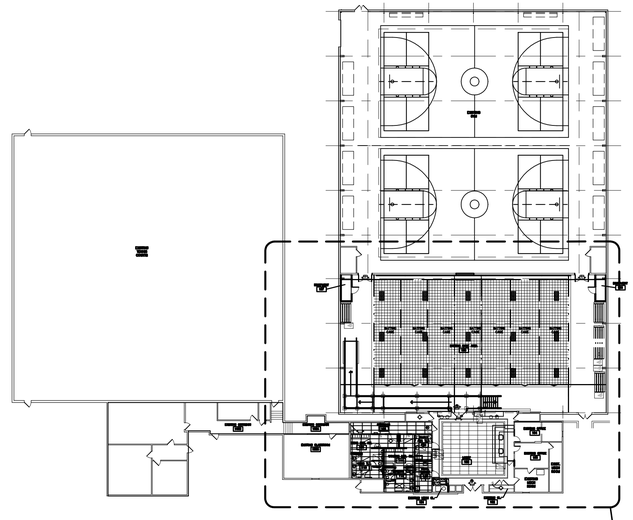
PARTIAL FLOOR PLAN – NEW WORK – FRONT LOBBY AND BATTING CAGES

SCALE	AS NOTED
JOB NO	230103.04
DATE	8/23/24

A101



2 / A102 FLOOR PLAN – REFLECTED CEILING – FRONT LOBBY, LOCKER ROOMS AND BATTING CAGES
SCALE: 1/8" = 1'-0"



1 / A102 KEY PLAN
SCALE: N.T.S.

NEW WORK NOTES

1. ACOUSTICAL TILE CEILING
2. BATTING CAGE CEILING NETTING - SEE DRAWING A103 FOR ADDITIONAL INFORMATION
3. PAINTED GYP. BD. CEILING
4. PAINT PERIMETER BULKHEAD, LIGHT COVE AND SLOPED COFFER
5. EXISTING CEILING AND LIGHTS TO REMAIN
6. REPAIR EXISTING CEILING SCRIM KRAFT FACED INSULATION WITH INSULATION REPAIR TAPE (6" WHITE VAPOR BARRIER INSULATION REPAIR TAPE AS MANUFACTURED BY BLUETEX INSULATION OR EQUAL). TAPE SHALL MATCH EXISTING INSULATION FACING.
7. CUT AND REMOVE EXISTING CEILING BULKHEAD AS REQUIRED FOR INSTALLATION OF MECHANICAL WORK. PATCH, REPAIR AND PAINT BULKHD. BACK TO ORIGINAL CONDITION WHEN WORK IS COMPLETE.

GENERAL NOTES:

ARCHITECT
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STATE OF MARYLAND
DOUGLAS JOSEPH POLT
08/05/24

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PARTIAL FLOOR PLAN – REFLECTED CEILING – FRONT LOBBY & BATTING CAGES

SCALE	AS NOTED
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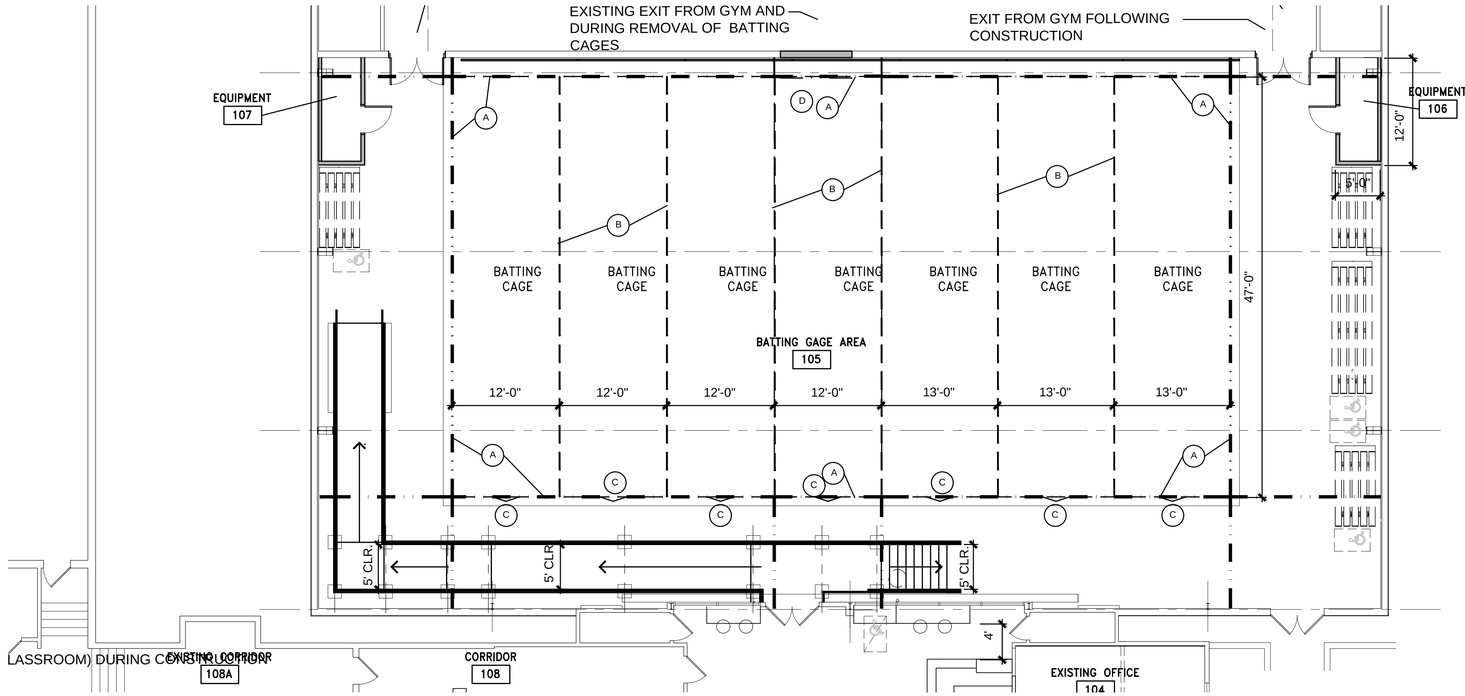
DATE	8/23/24

A102



2 / A103 FLOOR PLAN – NEW WORK – BATTING CAGES
SCALE: 1/8" = 1'-0"

CAGE NETTING DETAILS AND SPECIFICATION

A — Indicate 1-7/8" O.D. pipe for stationary netting support at 12'-0" off the floor.
The pipe will be supported from the structure above with 1/8" aircraft cable and/or chain.
It will also extend the walls at each end of the stationary portion shown for additional stability of the stationary net and when movable nets are stored or taken out.

Performance Sports Systems #4071 black polyethylene netting with 1 1/8" square mesh and in the following sizes:

(1) Stationary ceiling net, 87'-0" long by 47'-0" wide
(4) Stationary sides, 47'-0" long by 13'-0" high
(2) Stationary ends, 36'-0" long by 13'-0" high (one with three door openings with Velcro closer)
(2) Stationary ends, 39'-0" long by 13'-0" high (one with three door openings with Velcro closer)
(4) Movable sides, 47'-0" long by 11'-11" high with 1" vinyl bottom and pocket with weighted chain
(4) Movable ends, 12'-0" long by 11'-11" high with 1" vinyl bottom and pocket with weighted chain (two with door opening, one with pulley)

Stationary nets will be have 12" of additonal netting to drape on the floor to prevent passage of balls
Stationary nets will be connected to the other stationary netting sections with rope binding
Movable nets will be connected to the stationary netting with removable carabiner clips when in use
All netting shall have a flame spread index of not more than 25. △1

B — Indicate Performance Sports Systems #4013 walk-draw track, (6) @ 47'-0" long & (2) @ 12'-0" long, that will support the movable netting.

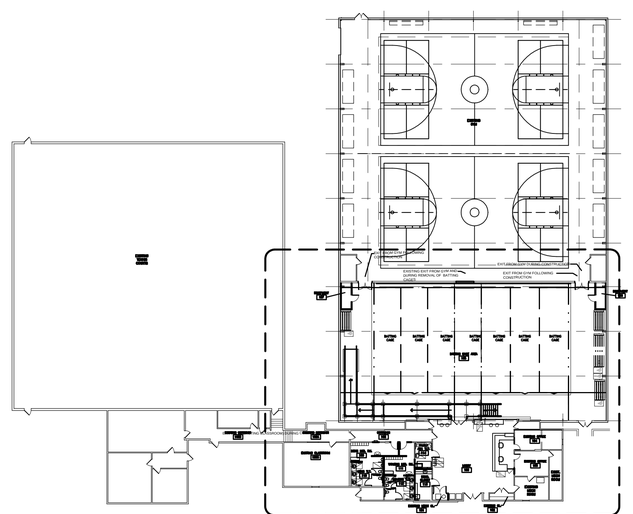
The 47'-0" lengths will be supported by the bottom of the 1 7/8" pipe at each end
and in between they will be supported by the structure above with 1/8" aircraft cable and/or chain.

The 12'-0" lengths will be supported by the bottom of the stationary 1-7/8" pipe.

△1 C — Batting Cage Door. The netting doors will have vinyl bound edges. Carabineers are not allowed.

D — Pull back and tie back netting for door access with cleat and pully.

△1
NOTES:
1. CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWING SHOWING BATTING CAGE SUPPORTS, UNI-STRUT, CABLES, ANCHORS, CONNECTIONS, NETTING, CAGE DOORS FLAME SPREAD RATING AND OTHER COMPONENTS FOR THE COMPLETE INSTALLATION FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.



1 / A103 KEY PLAN
SCALE: N.T.S.

2 / A103

GENERAL NOTES:

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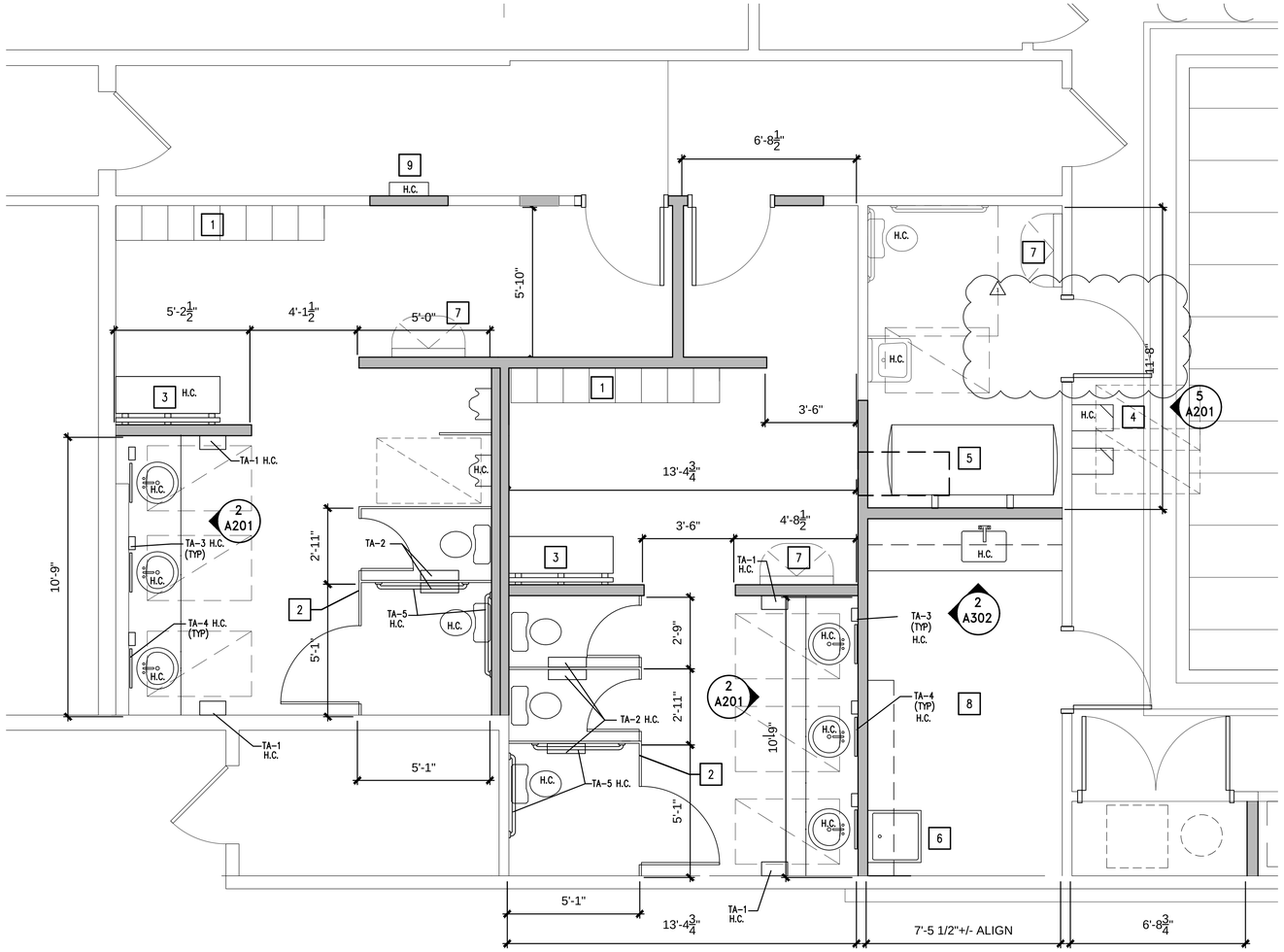
PARTIAL FLOOR PLAN – NEW WORK – BATTING CAGES

SCALE	AS NOTED
JOB NO	230103.04
DATE	8/23/24

A103



1 A201 ENLARGED FLOOR PLAN – NEW WORK
SCALE: 1/8" = 1'-0"

NEW WORK NOTES

1. RELOCATED LOCKERS – 5% MUST BE ADA ACCESSIBLE
2. HDPE FLOOR SUPPORTED TOILET PARTITIONS
3. 48" LONG SHOWER BENCH WITH BACK. BENCH MUST MEET THE REQUIRMENTS AND CONFIGURATION OF 2010 STANDARDS SECTION 903.
4. DUAL HEIGHT WATER COOLER
5. WALL MOUNTED FIXED ADULT CHANGING TABLE MODEL SCT 3000 AS MANUFACTURE BY PATIENT SAFETY USA. PROVIDE BLOCKING IN WALL AS RECOMMENDED BY MANUFATURER
6. MOP SINK WITH BUCKET FILLING FAUCET
7. KOALA KB-200 BABY CHANGING STATION, HORIZONTAL FOR COMMERCIAL RESTROOMS OR EQUAL
8. FLOOR TO CEILING FRP – ALL WALLS – COLOR TPD.
9. BOTTLE FILLER

NOTE:
ALL NEW WALLS SHALL BE CONSTRUCTED WITH 3 5/8" METAL STUDS @ 16" O.C. WITH 5/8" GYPSUM BD. EACH SIDE TO THE UNDERSIDE OF JOISTS. PROVIDE DEFLECTION CHANNEL CONNECTION TO TRUSS.
IN WET AREAS USE 5/8" WATER RESISTANT GYP. BD.

5 A201 ADA ELECTRIC WATER COOLER W/ WATER BOTTLE FILLER STATION
SCALE: 3/8" = 1'-0"

2 A201 ADA LAVATORY
SCALE: 3/8" = 1'-0"

3 A201 SECTION @ LAV.
SCALE: 1 1/2" = 1'-0"

SEE WALL FINISH PLANS FOR SCHEDULED FINISHES

4 A201 ADA PLUMBING FIXTURE
SCALE: 3/8" = 1'-0"

TOILET ACCESSORY SCHEDULE

NOTE: ALL TOILET ACCESSORIES SHALL BE MOUNTED AT HEIGHTS INDICATED IN THE MOUNTING HEIGHT SCHEDULE. SEE SPECIFICATIONS FOR TOILET ACCESSORY REQUIREMENTS. ALL ACCESSORIES WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.

TA-1 PAPER TOWEL DISPENSER: SCOTT - ESSENTIAL MANUAL HARD ROLL DISPENSER, (46253) (OWNER SUPPLIED, CONTRACTOR INSTALL)

TA-2 SURFACE-MOUNTED TOILET TISSUE DISPENSER
- GEORGIA-PACIFIC 59350 JUMBO (OWNER SUPPLIED, CONTRACTOR INSTALL

TA-3 FOAM TYPE SOAP DISPENSER
- GOJO LTX-12 (OWNER SUPPLIED, CONTRACTOR INSTALL)

TA-4 18"x 36" STAINLESS STEEL MIRROR W/ BRUSHED FINISH

TA-5 STAINLESS STEEL GRAB BARS WITH PEENED NON-SLIP SURFACE - BOBRICK B-5806 SERIES OR EQUAL

ACCESSORY FIXTURE MOUNTING HEIGHT SCHEDULE

ALL FIXTURE SHOWN ON THE DRAWINGS WITH THE ABBREVIATION H.C. SHALL BE MOUNTED AT HANDICAP HEIGHT PER THIS SCHEDULE UNLESS NOTED OR SPECIFIED OTHERWISE.
ALL DIMENSIONS ARE FROM FINISHED FLOOR LINE.

FIXTURE	HEIGHT
WATER CLOSET	18" TO TOP OF SEAT
URINAL	15" MAX.
LAVATORY	34" TO RIM
PAPER TOWEL DISPENSER	38" TO TOWEL OUTLET
TOILET PAPER DISPENSER	19" *1
GRAB BARS	34" TO CENTERLINE
SOAPDISPENSER	40" TO SOAP OUTLET
COAT HOOK	48" TO HOOK
MIRROR	40" TO BOTTOM OF REFLECTIVE SURFACE

*1 MEASURED TO CENTERLINE OF SPINDLE

GENERAL NOTES:

ARCHITECT
8138-R
STATE OF MARYLAND
DOUGLAS JOSEPH POLT
08/05/24

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SEAL

CHECKED BY:	DRAWN BY:
DJP	CAJ

25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY

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ENLARGED FLOOR PLAN AND DETAILS

SCALE	AS NOTED
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A201

DOOR SCHEDULE

NO.	DOOR SIZE W x H x T	HDW.	TYPE	MAT'L.	FIN.	LABEL	FRAME TYPE	FRAME MAT'L.	FRAME FIN.	DETAIL head	DETAIL jamb	DETAIL sill	LABEL	REMARKS
01	PR. 2'-10" x 7'-0" x 1 3/4"	4	D	SCW	PT	–	1	HM	PT				–	
02	3'-0" x 7'-0" x 1 3/4"	3	A	SCW	PT	–	1	HM	PT				–	
03	3'-0" x 7'-0" x 1 3/4"	5	C	SCW	PT	–	1	EXIST.	PT				–	
04	3'-0" x 7'-0" x 1 3/4"	5	C	SCW	PT	–	1	EXIST.	PT				–	
05	3'-0" x 7'-0" x 1 3/4"	2	A	SCW	PT	–	1	HM	PT				–	
06	PR. 3'-0" x 7'-0" x 1 3/4"	4	B	SCW	PT	60	1	HM	PT				60	
07	NOT USED	5	D	SCW	PT	–	1	EXIST.	PT				–	
08	PR. 3'-0" x 7'-0" x 1 3/4"	4	B	SCW	PT	60	1	HM	PT				60	
09	3'-0" x 7'-0" x 1 3/4"	2	A	SCW	PT	–	1	HM	PT				–	
10	3'-0" x 7'-0" x 1 3/4"	1	A	SCW	PT	–	1	HM	PT				–	
11	3'-0" x 7'-0" x 1 3/4"	1	A	SCW	PT	–	1	HM	PT				–	
12	3'-0" x 7'-0" x 1 3/4"	6	A	SCW	PT	–	1	HM	PT				–	

FINISH: SCW - SOLID CORE WOOD
PT - PAINTED
DOOR HARDWARE - BRUSHED STAINLESS STEEL AS APPLICABLE

DOOR HARDWARE:

1 HINGES
PASSAGE LATCHSET
WALL STOP
CLOSER

2 HINGES
STORAGE LOCKSET
WALL STOP

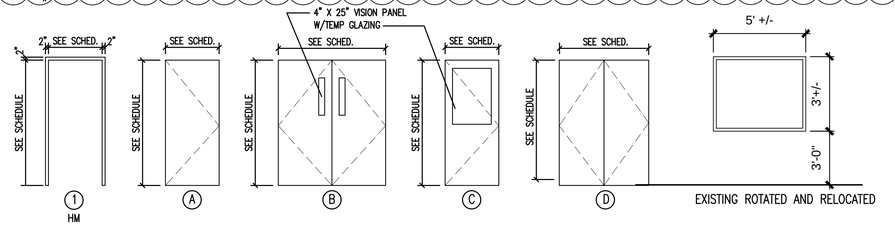
3 HINGES
CLASSROOM LOCKSET
WALL STOP

4 HINGES
PASSAGE LATCHSET
EMERGENCY EGRESS EXIT DEVICES
COORDINATOR
OVERHEAD STOPS
CLOSERS

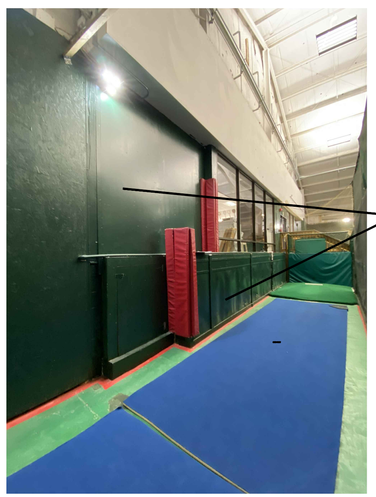
5. EXISTING

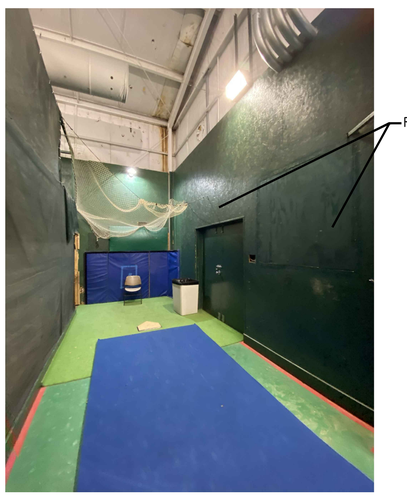
6 HINGES
PRIVACY LOCKSET
OVHD STOP

DOOR ACCESS CONTROL COMPONENTS: COORDINATE WITH DAN HIGBEE
FOR KEYING ACCESS USE CORBIN RUSSWIN 59 SERIES 6-PIN Z CLASS BITING KEY SYSTEM
(CR-59). UTILIZE THE SERVICES OF ASS ABLOY - BUDDY MORDERS (HARDWARE CONSULTANT
- PHONE # 240-446-9887



1 / A301 DOOR AND FRAME TYPES
SCALE: NTS





2 / A301 PHOTOS WEST WALL OF BATTIING CAGES
SCALE: NTS

ROOM FINISH SCHEDULE

NO.	ROOM NAME	FLOOR FIN.	FLOOR B.	WALLS N.	WALLS FIN.	WALLS E.	WALLS FIN.	WALLS S.	WALLS FIN.	WALLS W.	WALLS FIN.	CEILING TYPE	CEILING HT.	REMARKS
100	LOBBY	LVP	VB	GWB.	PT-1	GWB.	PT-1	GWB.	PT-1	GWB.	PT-1	ACT	MATCH EX.	
101	EXISTING MECH CL.	LVP	VB	GWB.	PT.	GWB.	PT.	GWB.	PT.	GWB.	PT.	GYP. BD	MATCH EX.	
102	EXISTING CL.	LVP	VB	GWB.	PT.	GWB.	PT.	GWB.	PT.	GWB.	PT.	ATC.	MATCH EX.	
103	EXISTING OFFICE	CPT	VB	GWB.	PT.	GWB.	PT.	GWB.	PT.	GWB.	PT.	ATC.	8'0"	
104	EXISTING OFFICE	CPT	VB	GWB.	PT.	GWB.	PT.	GWB.	PT.	GWB.	PT.	ATC.	8'0"	
105	BATTING CAGE AREA	TURF	–	OSB	PT.	OSB	PT.	OSB	PT.	OSB	PT.	EXPOSED	40' VARIES	
106	EQUIPMENT	RUBBER	–	OSB	PT.	OSB	PT.	OSB	PT.	OSB	PT.	EXPOSED	8'0"	
107	EQUIPMENT	RUBBER	–	OSB	PT.	OSB	PT.	OSB	PT.	OSB	PT.	EXPOSED	8'0"	
108	CORRIDOR	LVP	VB	GWB.	PT.	GWB.	PT.	GWB.	PT.	GWB.	PT.	ATC.	MATCH EX.	
109	MENS LKR. RM.	CT	CB	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	ATC.	8'0"	
110	MENS TOILET	CT	CB	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	ATC.	8'0"	
111	WOMENS LKR. RM.	CT	CB	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	ATC.	8'0"	
112	WOMENS TOILET	CT	CB	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	GWB.	PT./WP	ATC.	8'0"	
113	KSKP. CLOSET	CT	CB	GWB.	PT./FRP	GWB.	PT./FRP	GWB.	PT./FRP	GWB.	PT./FRP	ATC.	8'0"	FULL HT. FRP ON ALL WALLS
114	FAMILY ADA TOILET	CT	CB	GWB.	PT./CT	GWB.	PT./CT	GWB.	PT./CT	GWB.	PT./CT	ATC.	8'0"	

NOTE - SEE DRAWING A101 FOR ADDITIONAL ALTERNATE FINISHES

- ***Locker Rooms: 109,110, 111, 112, 113***
  - Daltile 2x2 Floor Tile (throughout)
    - Haut Monde – Glitterati Granite HM03 with Cove Base
  - Partitions
    - Scranton Products Eclipse HDPE
      - Glacier Grey – Orange Peel
  - Wall Protection
    - Inpro
      - Dove Gray 0106
  - Fixtures
    - Faucets & Toilet Accessories
      - Stainless Steel
    - Toilets
      - White
  - Ceiling Tile
    - Armstrong Cortega Sq. lay in 2 x 4 5/8 White (Moisture/ mold Resistant)
  - Paint
    - Walls
      - SW7661 Reflection
    - Trim/Door Frames
      - SW6168 Moderne White
  - Solid Surface Countertop
    - Wilsonart
      - Steel Grey Tempest 9194TM
  - Plastic Laminate
    - Wilsonart
      - Walnut Grey YS021 to be confirmed by County

- ***Family Bathroom: 114***
  - Daltile 2x2 Floor Tile (throughout)
    - Haut Monde – Glitterati Granite HM03 with Cove Base
  - Fixtures
    - Faucets & Toilet Accessories
      - Stainless Steel
    - Toilets
      - White
  - Ceiling Tile
    - Armstrong Cortega Sq. lay in 2 x 4 5/8 White (Moisture/ mold Resistant)
  - Paint Walls
    - SW7661 Reflection
    - Trim/Door Frames
      - SW6168 Moderne White
  - Wall Tile
    - Daltile 6x18 Glazed Porcelain
      - Artic White 0190 (Top Tile Needs Bullnose to transition to drywall)
  - Ceiling Tile
    - Armstrong Cortega Sq. lay in 2 x 4 5/8 White (Moisture/ mold Resistant)

- ***Offices: 103, 104***
  - Interface 24x24 Carpet Tile – Entropy – 7200 Variations or as selected by the Owner
  - Paint Walls
    - SW7661 Reflection
  - Trim/Door Frames
    - SW6168 Moderne White
  - Ceiling Tile
    - Armstrong Cortega Sq. lay in 2 x 4 5/8 White (Moisture/ mold Resistant)

- ***Lobby & Hallway: 108, 100***
  - Paint Walls
    - SW7661 Reflection
    - Trim/Door Frames
    - SW6168 Moderne White
  - LVP Flooring – SAR Floors, Soma Luxury Plank. Style: Clay. Color 93. Dimensions: 7" x 48".
  - Solid Surface Countertop
    - Wilsonart
      - Steel Grey Tempest 9194TM
  - Plastic Laminate
    - Wilsonart
      - Walnut Grey YS021 to be confirmed by County
  - Ceiling Tile
    - Armstrong Cortega Sq. lay in 2 x 4 5/8 White (Moisture/ mold Resistant)

GENERAL NOTES:

ARCHITECT
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DOUGLAS JOSEPH POLT
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08/05/24

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SCHEDULES AND DETAILS

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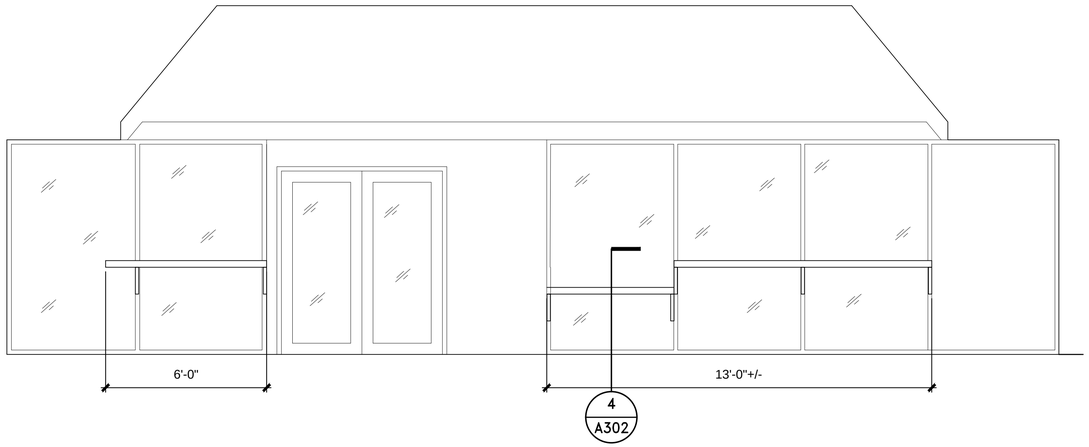
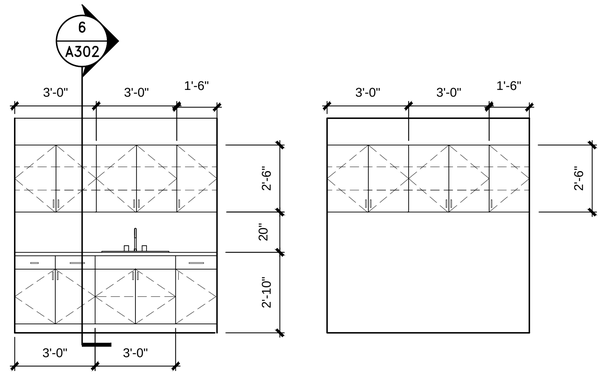
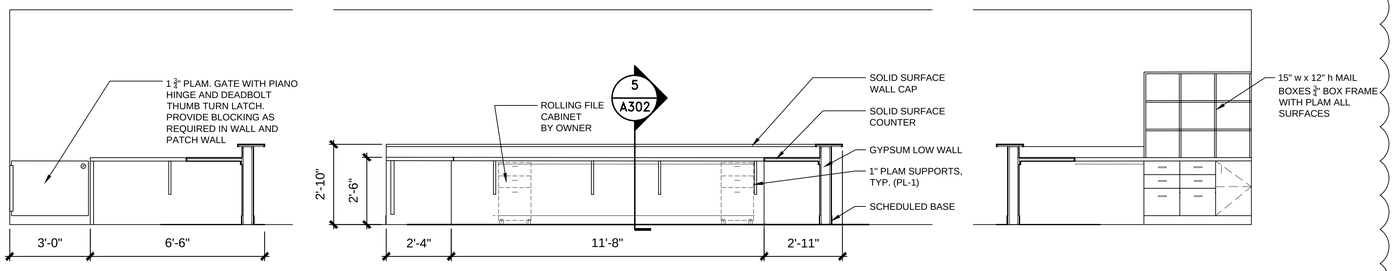
A301



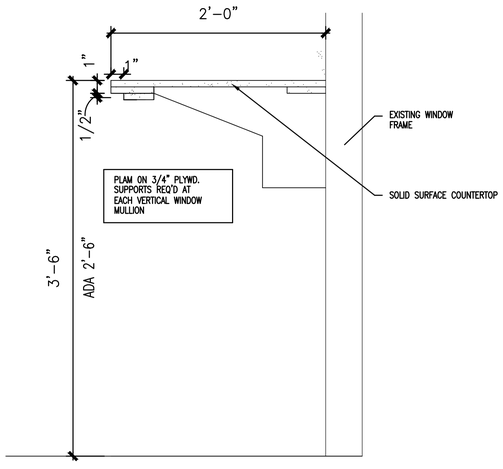
1 A302 CASEWORK ELEV. – LOBBY 100
SCALE: 3/8" = 1'-0"



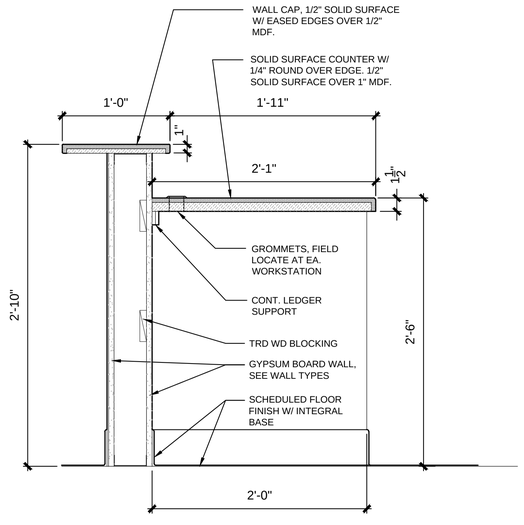
2 A302 CASEWORK ELEV. – HSKG. CL. 113
SCALE: 3/8" = 1'-0"



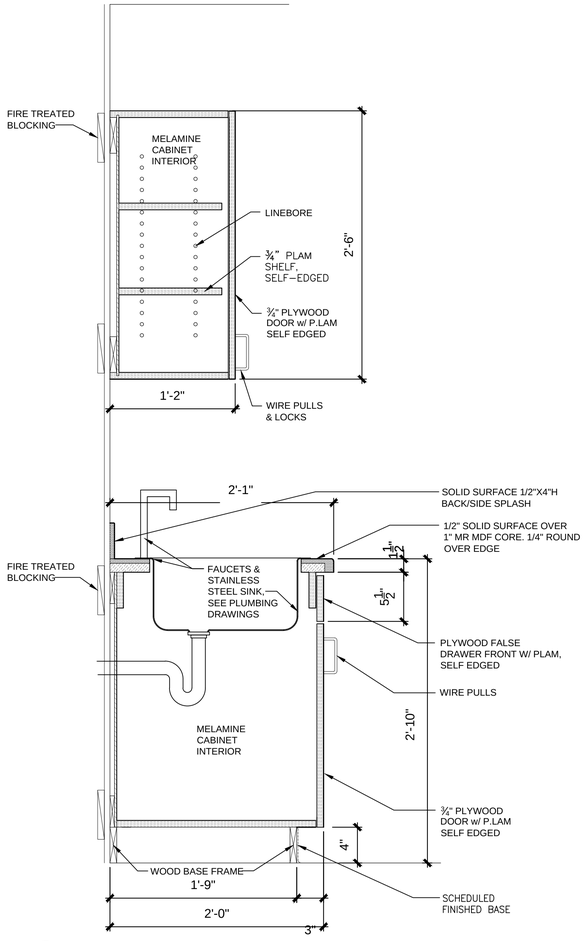
3 A302 CASEWORK ELEV. – LOBBY 100
SCALE: 3/8" = 1'-0"



4 A302 CASEWORK SECTION
SCALE: 3/8" = 1'-0"



5 A302 CASEWORK SECTION
SCALE: 3/8" = 1'-0"



6 A302 CASEWORK SECTION
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

ARCHITECT
8138-R
STATE OF MARYLAND
DOUGLAS JOSEPH POLT
08/05/24

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CASEWORK AND DETAILS

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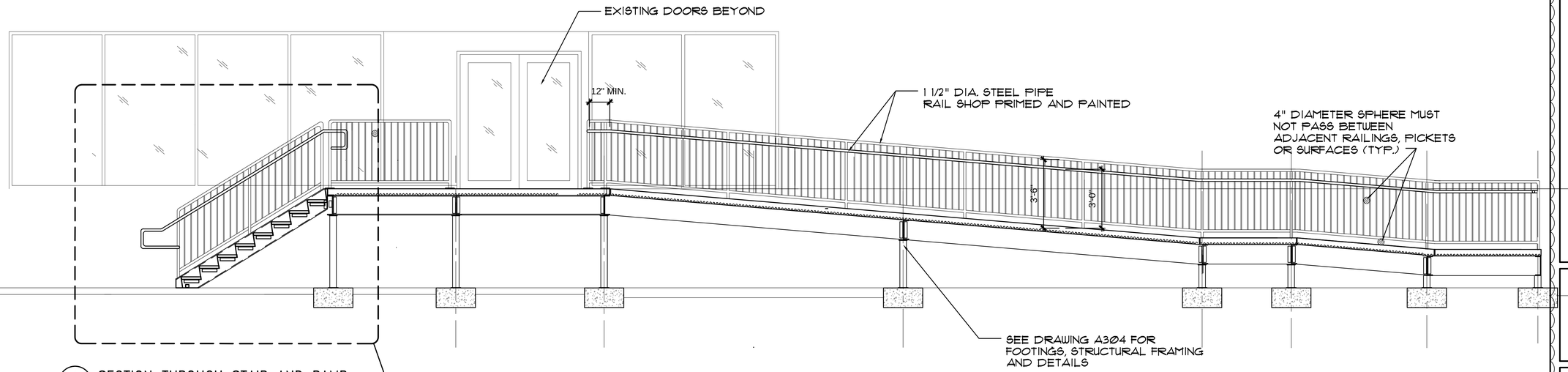
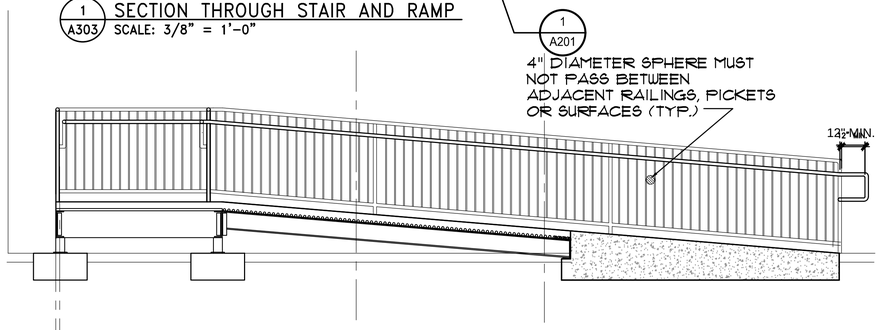
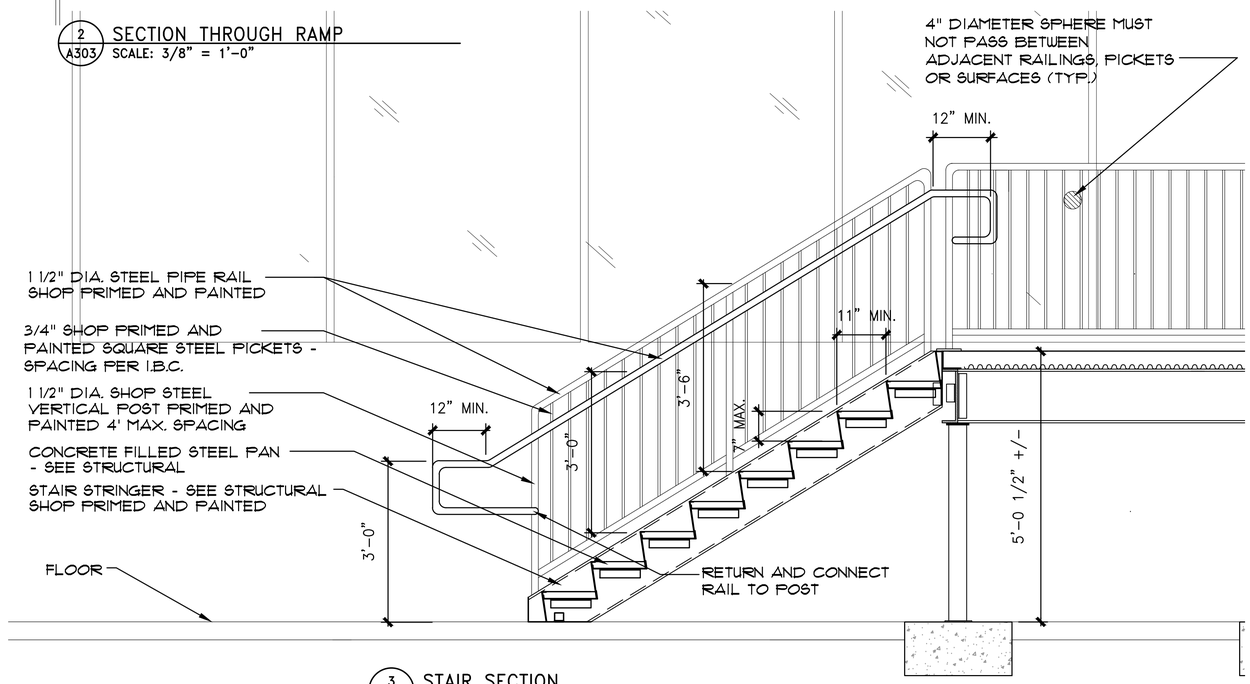


1 A303 SECTION THROUGH STAIR AND RAMP
SCALE: 3/8" = 1'-0"

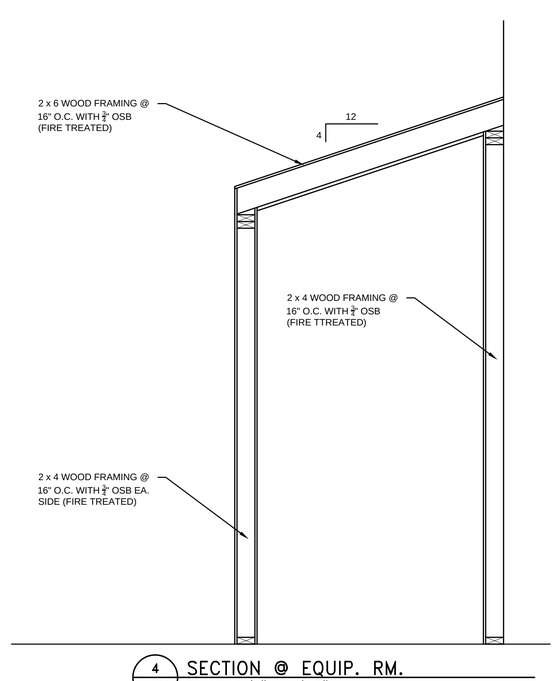


2 A303 SECTION THROUGH RAMP
SCALE: 3/8" = 1'-0"



3 A303 STAIR SECTION
SCALE: 3/4" = 1'-0"

GENERAL NOTES:
1. **ALL WOOD** SHALL BE FIRE RETARDENT-TREATED
2. STAIR AND PLATFORM CONSTRUCTION SHALL BE 100 (UNIFORM) PSF.
3. HANDRAIL TO RESIST LOAD OF 50 PLF.
4. ALL DIMENSIONS SHALL BE FIELD VERIFIED BEFORE FABRICATION OF THE STAIR AND RAMP.
5. CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWING SHOWING STAIR AND RAMP CONSTRUCTION AND CONNECTIONS FOR ALL MEMBERS FOR APPROVAL.
6. CONCRETE FILL SHALL BE 3000# PSI.
7. ALL EXPOSED STEEL SHALL BE PAINTED.
8. CONCRETE FILL SHALL BE SEALED.



4 A303 SECTION @ EQUIP. RM.
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

ARCHITECT
8138-R
DOUGLAS JOSEPH POLT
STATE OF MARYLAND
08/05/24

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3	10/30/25	PERMIT COMMENTS

RAMP SECTION AND DETAILS

SCALE	AS NOTED
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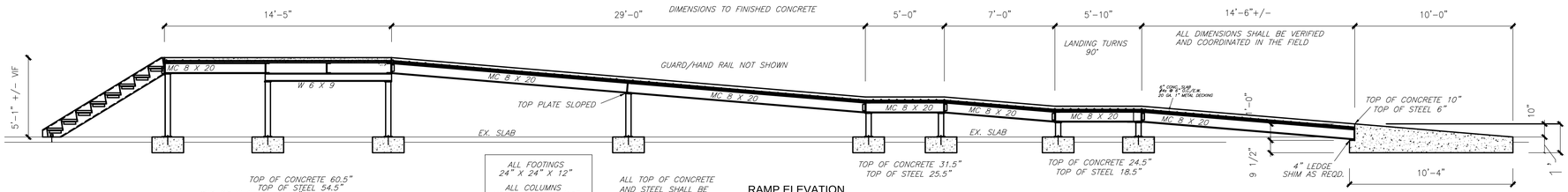
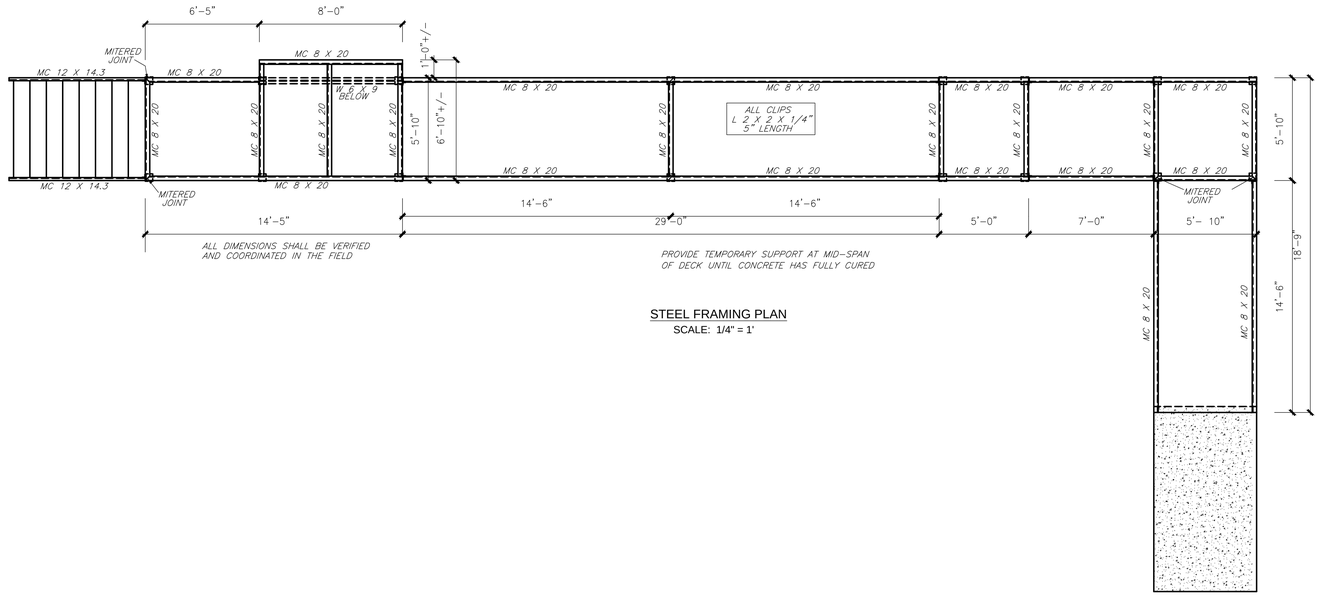
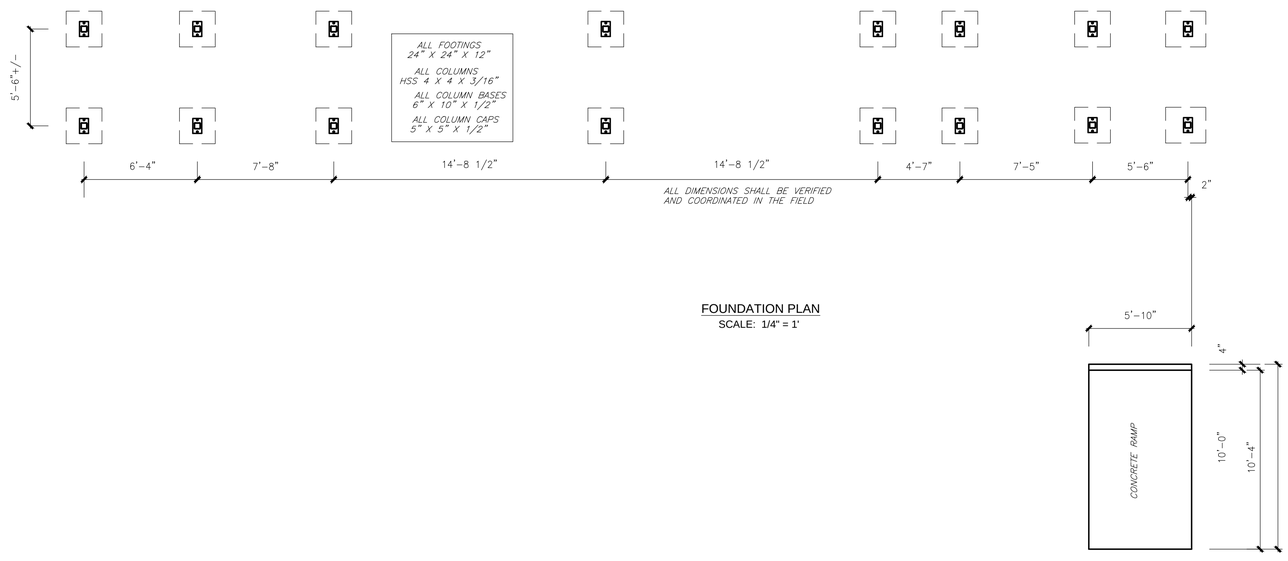
A303



RAMP ELEVATION
SCALE: 1/4" = 1'



STEEL FRAMING PLAN
SCALE: 1/4" = 1'



FOUNDATION PLAN
SCALE: 1/4" = 1'

GENERAL NOTES:

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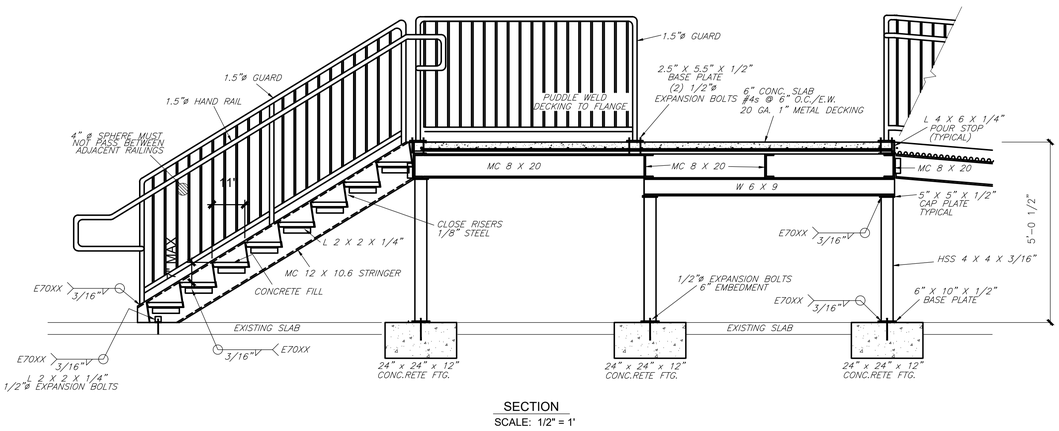
no.	date	comments
1	10/7/25	PERMIT COMMENTS
2	10/30/25	PERMIT COMMENTS
3	11/10/25	PERMIT COMMENTS

STRUCTURAL PLANS

SCALE	AS NOTED
JOB NO	230103.04
DATE	8/23/24

A304



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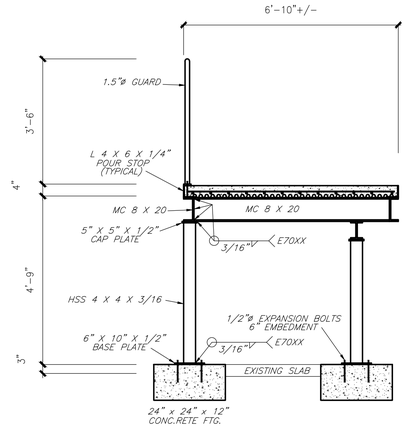

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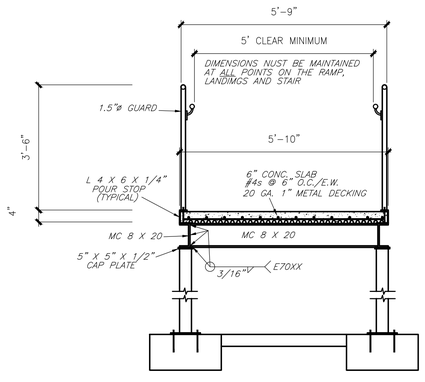

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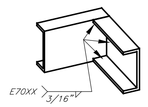
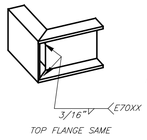


WELD DETAIL
SCALE: 1" = 1'



WELD DETAIL
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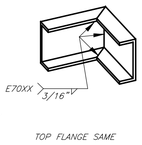

WELD DETAIL
SCALE: 1" = 1'

GENERAL NOTES:

ARCHITECT
8138-R

08/05/24
DOUGLAS JOSEPH POLT
STATE OF MARYLAND

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 8138, EXPIRATION DATE 5/23/26.
SEAL

CHECKED BY:	DRAWN BY:
DJP	CAJ

25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY

2213 OLD EMMORTON RD.
BEL AIR, MARYLAND

ARCHITECTURE
PLANNING
INTERIOR DESIGN

POLT DESIGN GROUP

2215 Conowingo Road, Suite 101
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REVISIONS

no.	date	comments
1	10/7/25	PERMIT COMMENTS
2	10/30/25	PERMIT COMMENTS
3	11/10/25	PERMIT COMMENTS

SECTION AND DETAILS

SCALE	AS NOTED
JOB NO	230103.04
DATE	8/23/24

A305

ELECTRICAL SYMBOL LEGEND

LINE WEIGHT & LINE TYPE DESIGNATIONS

SYMBOL	DESCRIPTION	REMARKS
	EXISTING (UNLESS OTHERWISE INDICATED)	
	PROVIDE AS NEW (UNLESS OTHERWISE INDICATED)	

BASIC DRAWING

SYMBOL	DESCRIPTION	REMARKS
#	KEYED DRAWING NOTE	
	REMOVALS	
	CIRCUIT	

ONE-LINE/RISER

SYMBOL	DESCRIPTION	REMARKS
	CIRCUIT BREAKER	
	FUSE	
	DISCONNECT SWITCH (NON-FUSED)	
	DISCONNECT SWITCH (FUSED)	
	TRANSFER SWITCH	
	TRANSFORMER	
	PANELBOARD	
M	METER (SELF CONTAINED)	
M	METER (WITH CURRENT TRANSFORMERS)	
#	MOTOR (NUMBER INDICATES HORSEPOWER)	
G	GENERATOR	
	CONTINUATION	

POWER - DISTRIBUTION

SYMBOL	DESCRIPTION	REMARKS
	PANELBOARD (FLUSH-MOUNTED)	
	PANELBOARD (SURFACE-MOUNTED)	
T	TRANSFORMER	
ATS	AUTOMATIC TRANSFER SWITCH	
MTS	MANUAL TRANSFER SWITCH	
	DISCONNECT SWITCH (NON-FUSED)	
	DISCONNECT SWITCH (FUSED)	
MS	MANUAL MOTOR STARTER	
	MAGNETIC MOTOR STARTER	
	COMBINATION MAGNETIC MOTOR STARTER/DISCONNECT	
VFD	VARIABLE FREQUENCY DRIVE (VFD)	
M	MOTOR	
	HARD-WIRED EQUIPMENT CONNECTION	
G	GENERATOR	
	GROUND ROD	

POWER - BRANCH DEVICES

SYMBOL	DESCRIPTION	REMARKS
	SIMPLEX RECEPTACLE	MOUNT AT 18" AFF, UNO
	DUPLEX RECEPTACLE	MOUNT AT 18" AFF, UNO
	DUPLEX RECEPTACLE	MOUNT ABOVE COUNTER, UNO MOUNT HORIZONTAL FOR ADA
	TWO DUPLEX RECEPTACLES MOUNTED IN COMMON BOX	MOUNT AT 18" AFF, UNO
	SPECIAL PURPOSE RECEPTACLE, SUBSCRIPT INDICATES TYPE	MOUNT AT 18" AFF, UNO
J J	JUNCTION BOX OR OUTLET BOX	
	RECEPTACLE(S) IN RECESSED FLOOR BOX	
	CEILING MOUNTED RECEPTACLE(S)	

TELEPHONE/DATA/COMMUNICATION

SCOPE OF WORK SHALL BE RACEWAY ONLY. FOR EACH WALL DEVICE LOCATION, PROVIDE RECESSED WALL-BOX AND 1" CONDUIT STUB WITH PULL STRING TO ACCESSIBLE ABOVE CEILING SPACE. FOR EACH CEILING DEVICE LOCATION, PROVIDE RECESSED CEILING BOX AND 1" CONDUIT TO NEAREST ACCESSIBLE ABOVE-CEILING SPACE. DEVICES, CABLING, EQUIPMENT, ETC. PROVIDED BY OTHERS.

SYMBOL	DESCRIPTION	REMARKS
#D ▽	DATA OUTLET. #D SUBSCRIPT INDICATE NUMBER OF DATA AND TELEPHONE JACKS. IF NO SUBSCRIPTS ARE GIVEN, PROVIDE BLANK COVERPLATE.	MOUNT AT 18" AFF, UNO
#V ▼	TELEPHONE OUTLET. #V SUBSCRIPT INDICATE NUMBER OF DATA AND TELEPHONE JACKS. IF NO SUBSCRIPTS ARE GIVEN, PROVIDE BLANK COVERPLATE.	MOUNT AT 18" AFF, UNO
#D#V ▽▼	TELEPHONE/DATA OUTLET. #D #V SUBSCRIPT INDICATE NUMBER OF DATA AND TELEPHONE JACKS. IF NO SUBSCRIPTS ARE GIVEN, PROVIDE BLANK COVERPLATE.	MOUNT AT 18" AFF, UNO
W	WIRELESS ACCESS POINT	
DR	DATA RACK (REFER TO RISER, AND/OR SPECIFICATIONS FOR TYPE)	
TV	CABLE TELEVISION OUTLET	MOUNT AT 18" AFF, UNO
	PUSHBUTTON (SUBSCRIPT INDICATES TYPE) EPO - EMERGENCY POWER OFF DB - DOOR BELL HC - DOOR OPENER	MOUNT AT 46" AFF, UNO
AD	AUDIBLE/VISUAL DOORBELL CHIME	MOUNTING HEIGHT PER ADA
IC	INTERCOM STATION	
SP	SPEAKER	

LIGHTING (LETTER INDICATES TYPE, REFER TO LIGHT FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION)

SYMBOL	DESCRIPTION	REMARKS
H H	LIGHT FIXTURE	WALL MOUNTED
H H	EMERGENCY LIGHT FIXTURE	WALL MOUNTED
	LIGHT FIXTURE	CEILING MOUNTED
	EMERGENCY LIGHT FIXTURE	CEILING MOUNTED
	LIGHT FIXTURE	CEILING MOUNTED
	EMERGENCY LIGHT FIXTURE	CEILING MOUNTED
	LIGHT FIXTURE	WALL MOUNTED
	EMERGENCY LIGHT FIXTURE	WALL MOUNTED
	STRIP LIGHT FIXTURE	CEILING MOUNTED
	EXIT LIGHT (HATCHING/ARROW INDICATES FACE/DIRECTION)	CEILING MOUNTED
	EXIT LIGHT (HATCHING/ARROW INDICATES FACE/DIRECTION)	WALL MOUNTED
	EMERGENCY BATTERY PACK LIGHT FIXTURE	WALL MOUNTED
S	SINGLE POLE SWITCH	MOUNT AT 48" AFF, UNO
S_3	SINGLE POLE SWITCH (3-WAY)	MOUNT AT 48" AFF, UNO
S_4	SINGLE POLE SWITCH (4-WAY)	MOUNT AT 48" AFF, UNO
S_D	SINGLE POLE SWITCH (DIMMER)	MOUNT AT 48" AFF, UNO
S_M	MOTOR RATED SWITCH	MOUNT AT UNIT
OS	OCCUPANCY SENSOR/WALL SWITCH (SUBSCRIPT INDICATES TYPE)	MOUNT AT 48" AFF, UNO
OS	OCCUPANCY SENSOR (SUBSCRIPT INDICATES TYPE)	CEILING MOUNTED
DS	DAYLIGHT SENSOR (SUBSCRIPT INDICATES TYPE)	CEILING MOUNTED
PC	PHOTOCELL	
TC	TIME CLOCK	POLE MOUNTED
	SITE LIGHT FIXTURE	

FIRE ALARM

SYMBOL	DESCRIPTION	REMARKS
FACP	FIRE ALARM CONTROL PANEL	
FAAP	FIRE ALARM REMOTE ANNUNCIATOR	
S	SMOKE DETECTOR	
S_S	SMOKE DETECTOR WITH SOUNDER BASE	
S_V	SMOKE DETECTOR WITH VISUAL BASE	
H	HEAT DETECTOR	
D	DUCT SMOKE DETECTOR	
F	MANUAL PULL STATION	
F	STROBE NOTIFICATION DEVICE	
F	COMBINATION HORN/STROBE NOTIFICATION DEVICE	
F	HORN NOTIFICATION DEVICE	
DH	DOOR HOLD-OPEN DEVICE	
FS	WATER FLOW DETECTION SWITCH	
TS	TAMPER SWITCH	
CM	CONTROL MODULE	
MM	MONITOR MODULE	
SD	SMOKE DAMPER	
PS	PRESSURE SWITCH	
C	CARBON MONOXIDE DETECTOR	
NAC	NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL	
KNO	KNOX BOX	

SECURITY/ACCESS CONTROL

SCOPE OF WORK SHALL BE RACEWAY ONLY. FOR EACH WALL DEVICE LOCATION, PROVIDE RECESSED WALL-BOX AND 3/4" CONDUIT STUB WITH PULL STRING TO ACCESSIBLE ABOVE CEILING SPACE. FOR EACH CEILING DEVICE LOCATION, PROVIDE RECESSED CEILING BOX AND 3/4" CONDUIT TO NEAREST ACCESSIBLE ABOVE-CEILING SPACE. DEVICES, CABLING, EQUIPMENT, ETC. PROVIDED BY OTHERS.

SYMBOL	DESCRIPTION	REMARKS
DC	DOOR CONTACT	
MD	MOTION DETECTOR	
CR	CARD READER	
KP	KEY PAD	
DS	DOOR STRIKE	
ML	MAGNETIC LOCK	
S	COMBINATION HORN/STROBE NOTIFICATION DEVICE	
CAM	CCTV CAMERA (SUBSCRIPT INDICATES TYPE)	

BRANCH CIRCUIT NOTES

1. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY AND INDICATE THE DEVICES REQUIRED TO BE CONNECTED TO DESIGNATED CIRCUITS.
2. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND PROVIDING THE ACTUAL NUMBER OF CONDUCTORS REQUIRED FOR ALL BRANCH CIRCUIT WIRING TO SERVE THE INTENDED FUNCTION.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY BALANCING LOADS ON ALL THREE PHASES.
4. ALL BRANCH CIRCUITS SHALL HAVE SEPARATE GROUND WIRE.
5. ALL BRANCH CIRCUITS SHALL HAVE SEPARATE NEUTRAL WIRE.
6. ALL BRANCH CIRCUITS SHALL BE SIZED PER OVERCURRENT PROTECTION RATING AND NEC REQUIREMENTS (INCLUDING NEC CONDUCTOR AMPACITY TABLES, ARTICLE 334.80, AND 338.10(B)(4)).
7. PROVIDE ARC-FAULT CIRCUIT PROTECTION PER NEC ARTICLE 210.12.

GENERAL NOTES

1. THE GENERAL NOTES APPLY TO ALL DRAWINGS UNDER THIS CONTRACT. REFER TO INDIVIDUAL DRAWINGS FOR ADDITIONAL NOTES.
2. ALL ELECTRICAL WORK SHOWN SHALL BE PROVIDED AS NEW UNLESS OTHERWISE NOTED.
3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWING IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS. BRANCH CIRCUIT NUMBERS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE THE CIRCUIT NUMBERS AND PROVIDE A SCHEDULE IN PANEL IDENTIFYING BRANCH CIRCUITS.
4. JUNCTION AND PULL BOXES SHALL GENERALLY BE LOCATED FOR FLUSH MOUNTING IN FINISHED SPACES. WHERE NECESSARY, CONDUITS SHALL BE REROUTED OR OTHER ARRANGEMENTS MADE FOR CONCEALMENT. PULL BOXES SHALL BE PROVIDED AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE AND COORDINATE LOCATIONS WITH OTHER TRADES. COVERS OF JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE. FOR EMPTY RACEWAY RUNS, PULL BOXES SHALL BE PROVIDED EVERY 100 FEET AND AS INDICATED OR NECESSARY.
5. BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. WALL AND SWITCH OUTLETS SHALL BE ERECTED IN ADVANCE OF FURRING AND FIREPROOFING. BOXES SHALL BE SECURED TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS.
6. IN EXISTING BUILDINGS, ALL REQUIRED ACCESS DOORS SHALL BE FURNISHED AND INSTALLED UNDER THE ELECTRICAL SECTION. ALL ACCESS DOOR LOCATIONS SHALL BE FIELD COORDINATED WITH THE OWNER.
7. NO ELECTRICAL RACEWAYS OR CONDUCTORS SHALL BE INSTALLED WITHIN 3 INCHES OF STEAM OR HOT WATER PIPES, OR APPLIANCES, EXCEPT FOR CROSSING WHERE RACEWAYS SHALL BE AT LEAST 1 INCH FROM PIPE COVER.
8. SUFFICIENTLY LONG WIRE SLACK SHALL BE LEFT IN RUNS TO ALLOW FOR MAKING PROPER FINAL CONNECTIONS. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH #12 AWG STEEL DRAG WIRES.
9. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL HVAC EQUIPMENT. (AC UNITS, FANS, VAV BOXES, ETC).
10. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION OF ALL PLUMBING EQUIPMENT.
11. ALL WIRING SHALL BE ROUTED IN AN ORGANIZED AND NEAT MANNER.
12. SUBMIT DIMENSIONED LAYOUTS OF ALL ELECTRIC EQUIPMENT WITH EQUIPMENT SUBMITTALS.
13. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL RACEWAYS RUNS WITH EXISTING CONDITIONS AND INCLUDE ALL PULLBOXES, OFFSETS, CUTTING, PATCHING, PAINTING TO MATCH EXISTING, SUPPORTS, ETC. AS REQUIRED.
14. THE ROUTING AND LOCATION OF CONDUIT RUNS ARE GENERALLY NOT DIMENSIONAL ON THE DRAWINGS BUT SHALL BE DETERMINED IN THE FIELD TO SUIT THE LOCATIONS OF EQUIPMENT, TO CONFORM TO STRUCTURAL AND ARCHITECTURAL FEATURES AND TO AVOID INTERFERENCES.
15. ALL CUTTING AND RESTORATION OF SLAB AND FLOOR SHALL BE IN ACCORDANCE WITH STRUCTURAL ENGINEER'S REQUIREMENTS AND AS APPROVED BY ENGINEER.
16. ELECTRICAL CONTRACTOR SHALL VERIFY ALL PENETRATIONS, POKE THRUS, AND EXISTING CONDUIT LOCATIONS PRIOR TO MODIFICATION.
17. ALL SIGHT EXPOSED ELECTRICAL DEVICES SHALL BE LOCATED AS PER ARCHITECT'S DRAWINGS AND/OR DIRECTION.
18. WHERE CONDUIT OR JUNCTION BOXES ARE RUN IN SLAB, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING, AND RESTORATION OF SLAB AND FLOOR.
19. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LIGHT FIXTURES, REMOTE BALLASTS AND ASSOCIATED WIRING, SUPPORTS, HARDWARE, AND ACCESSORIES AS REQUIRED.
20. SYMBOLS AND LEGENDS SHOWN ON THIS DRAWING ARE FOR ELECTRICAL DRAWINGS ONLY. SEE ARCHITECTURAL DRAWINGS AND TRADE DRAWINGS FOR RESPECTIVE SYMBOLS AND LEGENDS.
21. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL SLAB CUTS, FOUNDATION WALL PENETRATIONS, WALL OPENINGS, CORE DRILLING, ROOF PENETRATIONS, ETC. AND PATCHING AS REQUIRED TO PROVIDE ALL ELECTRICAL WORK. FOR FOUNDATION WALL PENETRATIONS PROVIDE 4"X4"X3/8" WELDED STEEL ANGLE BY THE CONTRACTOR AND APPROVED BY THE STRUCTURAL ENGINEER AND PROVIDE WATER PROOFING . ALL ROOF, TUNNEL AND FOUNDATION PENETRATIONS SHALL BE WATER PROOFED. COORDINATE WORK SO AS TO MAINTAIN ANY AND ALL WARRANTIES FOR ROOF SYSTEMS, FOUNDATIONS, ETC.
22. ALL TELEPHONE/DATA RACEWAYS SHALL BE PROVIDED WITH INSULATED END BUSHINGS.
23. SEPARATE RACEWAYS SHALL BE PROVIDED FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS.
24. HORIZONTAL OR CROSS RUNS IN PARTITIONS OR WALLS ARE NOT PERMITTED.
25. THE ELECTRICAL CONTRACTOR SHALL NOT INSTALL MORE THAN THE NUMBER OF CIRCUITS SHOWN IN ANY HOMERUN CIRCUIT.
26. CONTRACTOR TO PROVIDE FIRE PROOFING AT ALL PENETRATIONS OF RATED PARTITIONS, FLOORS, AND WHERE THE EXISTING FIRE PROOFING WAS REMOVED TO EXPOSE EXISTING STEEL FOR NEW HANGER INSTALLATION. REFER TO SPECIFICATION SECTION FIRE PROOFING.
27. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS. AT OR NEAR DOORS, INSTALL SWITCH ON SIDE OPPOSITE HINGE (VERIFY FINAL DOOR HINGE LOCATION IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION).
28. EXACT LOCATION OF LIGHTING FIXTURES SHALL BE IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLAN OR AS DIRECTED BY THE ARCHITECT.
29. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CEILING WORK WITH CEILING CONTRACTOR AND DETERMINE CEILING TYPE PRIOR TO THE PURCHASING AND INSTALLATION OF LIGHTING FIXTURES. SPEAKERS, SMOKE DETECTORS, EXIT LIGHTS, OR ANY OTHER CEILING MOUNTED ELECTRICAL ELEMENTS. THE ELECTRICAL CONTRACTOR SHALL ALSO COORDINATE ALL ELECTRICAL WORK WITH LOCATION OF DIFFUSERS AND SPRINKLERS AND OTHER MECHANICAL WORK.
30. EXACT LOCATION AND MOUNTING OF LIGHTING FIXTURES IN MECHANICAL AREAS SHALL BE COORDINATED WITH THE MECHANICAL TRADES TO AVOID CONFLICT WITH PIPING, DUCTS AND EQUIPMENT. IN GENERAL, THE FINAL LOCATION OF LIGHTING FIXTURES SHALL BE GOVERNED BY THE NEED OF TASK LIGHTING IN THE VICINITY OF PANEL BOARDS, MOTOR CONTROLS, CONTROL AND INSTRUMENT PANELS AND GAUGES.
31. LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIMS, PANELING, SUSPENDED CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT ANY ADDITIONAL EXPENSE TO THE OWNER.
32. ALL RACEWAYS, WIRING, AND ASSOCIATED ELECTRICAL EQUIPMENT SHALL BE ROUTED CONCEALED EXCEPT IN UNFINISHED AREAS.
33. ALL EQUIPMENT, MATERIALS, ETC. SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL. REFER TO SPECIFICATIONS FOR ADDITIONAL ACTION SUBMITTAL AND SHOP DRAWING REQUIREMENTS.
34. PRIOR TO CONSTRUCTION, COORDINATE WITH LOCAL AHJ THE UL CONDITIONAL LISTING REQUIREMENTS FOR ALL JUNCTIONS BOXES UTILIZED IN RATED WALLS AND CEILINGS.
35. WHERE CONFLICTS EXIST BETWEEN THE INFORMATION INCLUDED IN THESE DRAWINGS OR BETWEEN INFORMATION PROVIDED IN THESE DRAWINGS AND THE PROJECT SPECIFICATIONS OR WITHIN THE PROJECT SPECIFICATIONS, THE MORE STRINGENT AND/OR HIGHEST COST REQUIREMENTS SHALL APPLY. SHOULD THE CONTRACTOR REQUIRE FURTHER CLARIFICATION, AN RFI SHALL BE SUBMITTED FOR CLARIFICATION. WHERE CONFLICTS DO EXIST, THE PROJECT ENGINEER OF RECORD SHALL HAVE THE SOLE DISCRETION AND RIGHT TO PROVIDE INTERPRETATION OF INTENT OF THE CONTRACT DOCUMENTS AS REQUIRED AND THIS INTERPRETATION SHALL SERVE TO DIRECT THE CONTRACTOR IN ACCORDANCE WITH THE IMPLIED INTENT OF THE CONSTRUCTION DOCUMENTS WITHOUT ADDITIONAL COST TO THE PROJECT.
36. ALL VALUE ENGINEERING OR DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE DESIGN TEAM FOR APPROVAL. ANY COST INCURRED AS A RESULT OF ANY DEVIATIONS FROM THE BASIS OF DESIGN INDICATED IN THE CONTRACT DOCUMENTS (E.G. ELECTRICAL MODIFICATIONS TO ACCOMMODATE ALTERNATE EQUIPMENT SELECTIONS, DESIGN RELATED EXPENSES FOR REQUIRED DRAWING MODIFICATIONS, ETC)SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NO INCREASE IN CONTRACT COST WILL BE GRANTED UNLESS BORNE BY AND APPROVED IN WRITING BY THE OWNER CONTRACT DOCUMENTS ARE DEFINED TO INCLUDE ALL DISCIPLINES AND DIVISIONS OF THE CONTRACT.

ABBREVIATIONS

A	AMPERE(S)	KAIC	1000 AMPERE INTERRUPTING CAPACITY
AC	ALTERNATING CURRENT		
ADA	AMERICANS WITH DISABILITIES ACT	KCMIL	1000 CIRCULAR MIL(S)
AFCI	ARC-FAULT CIRCUIT INTERRUPTER	KVA	KILOVOLT AMPERE(S)
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT(S)
AFG	ABOVE FINISHED GRADE	LTG	LIGHTING
AHJ	AUTHORITY HAVING JURISDICTION	MC	MECHANICAL CONTRACTOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MCA	MINIMUM CIRCUIT AMPACITY
		MCB	MAIN CIRCUIT BREAKER
ATS	AUTOMATIC TRANSFER SWITCH	MIC	MICROWAVE
AWG	AMERICAN WIRE GUAGE	MISC	MISCELLANEOUS
BLDG	BUILDING	MIN	MINIMUM
C	CONDUIT	MFR	MANUFACTURER
CB/CKT BKR	CIRCUIT BREAKER	MH	MOUNTING HEIGHT
CL	CLOSET	MTD	MOUNTED
CLG	CEILING	N	NEUTRAL
CKT	CIRCUIT	NC	NORMALLY CLOSED
CO	CONDUIT ONLY	NEC	NATIONAL ELECTRIC CODE
CONC	CONCRETE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
COND	CONDUCTOR		
CONST	CONSTRUCTION	NL	NIGHT LIGHT
CONT	CONTRACT	NO	NORMALLY OPEN
CP	CONTROL PANEL	NTS	NOT TO SCALE
CT	CURRENT TRANSFORMER	P	POLE
CU	COPPER	PB	PULL BOX
DED	DEDICATED	PC	PLUMBING CONTRACTOR
DISC	DISCONNECT	PH/	PHASE
DISH	DISHWASHER	PL	PLUG LOAD
DISP	DISPOSAL	PNL	PANEL
DIV	DIVISION	PRI	PRIMARY
DT	DUAL TECHNOLOGY (IR/US)	PWR	POWER
DWG	DRAWING	QTY	QUANTITY
EA	EACH	REC/RECEPT	RECEPTACLE
EC	ELECTRICAL CONTRACTOR	REF	REFRIGERATOR
ELEC	ELECTRIC	SEC	SECONDARY
EM/EMER	EMERGENCY	SPEC	SPECIFICATION
EX/EXIST	EXISTING	SW	SWITCH
F	FUSE	TEL	TELEPHONE
FA	FIRE ALARM	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
FBO	FURNISHED BY OTHERS		
FDR	FEEDER	TYP	TYPICAL
FL	FLOOR	UG	UNDERGROUND
FLA	FULL LOAD AMPS	UL	UNDERWRITER'S LABORATORIES
FLUOR	FLUORESCENT	UNO	UNLESS NOTED OTHERWISE
FT	FEET	UON	UNLESS OTHERWISE NOTED
G/GND	GROUND	UPS	UNINTERRUPTIBLE POWER SUPPLY
GC	GENERAL CONTRACTOR	US	ULTRASONIC
GFI	GROUND FAULT INTERRUPTER	UV	ULTRAVIOLET
HC	HUNG CEILING	V	VOLT(S)
HOA	HAND-OFF-AUTO SELECTOR SWITCH	VA	VOLTAMPERE(S)
HP	HORSEPOWER	VFD	VARIABLE FREQUENCY DRIVE
IR	INFRARED	W	WATT(S)
JB	JUNCTION BOX	WP	WEATHERPROOF

EXISTING CONDITIONS, REMOVALS AND RELOCATIONS

1. THE CONTRACTOR SHALL INCLUDE ALL COSTS FOR REMOVALS AND RELOCATIONS IN THE CONTRACT. THESE COSTS SHALL INCLUDE WORK DESCRIBED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS WITH ALLOWANCES FOR NORMAL UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED.
2. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ARCHITECTURAL AND ELECTRICAL LAYOUTS AND SCHEMES IN FULL COORDINATION WITH THE ARCHITECT'S DEMOLITION PLAN. ALL WORK WHICH IS NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF POWER SUPPLY.
3. ALL ELECTRICAL WORK IN ADJOINING ROOMS OR AREAS WHICH IS REQUIRED TO FUNCTION BUT IS AFFECTED BY DEMOLITION WORK SHALL BE RECONNECTED AND RESTORED TO ITS PRESENT FUNCTION AS PART OF THE ELECTRICAL SYSTEM OF THE BUILDING(S).
4. ALL PRESENT MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL REMAIN THE PROPERTY OF THE OWNER AND/OR SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR AS DIRECTED.
5. PORTIONS OF FEEDER LINES THAT HAVE TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT ARE REQUIRED TO CONTINUE TO FUNCTION, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED FOR CONTINUATION OF THEIR PRESENT FUNCTION. NEW FEEDER EXTENSIONS SHALL MATCH EXISTING ONES IN ALL RESPECTS; CONDUCTOR CAPACITY, CONDUIT SIZE, ETC.
6. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE OWNER'S REQUIREMENTS. THE CONTRACTOR SHALL FOLLOW THE ARCHITECT'S DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE.
7. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES AND OTHER DEVICES, COMPLETE WITH ASSOCIATED WIRING, CONDUITS, ETC., FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS MAKES DEAD ELECTRICAL WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE THE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE REMOVED BACK TO THE NEAREST ELECTRICAL OUTLET BOX THAT IS TO REMAIN OR TO THE PANEL BOARD.
8. ALL RACEWAYS WHICH BECOME EXPOSED BEYOND FINISHED SURFACES BECAUSE OF THE ALTERATION WORK SHALL BE REMOVED AND REROUTED BEHIND THE FINISHED SURFACES.

GENERAL NOTES:

JAL Engineering
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STATE OF MARYLAND
JOSEPH A. LOPERO
No. 36616
PROFESSIONAL ENGINEER
6/22/24

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

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25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY

2213 OLD EMMORTON RD.
BEL AIR, MARYLAND

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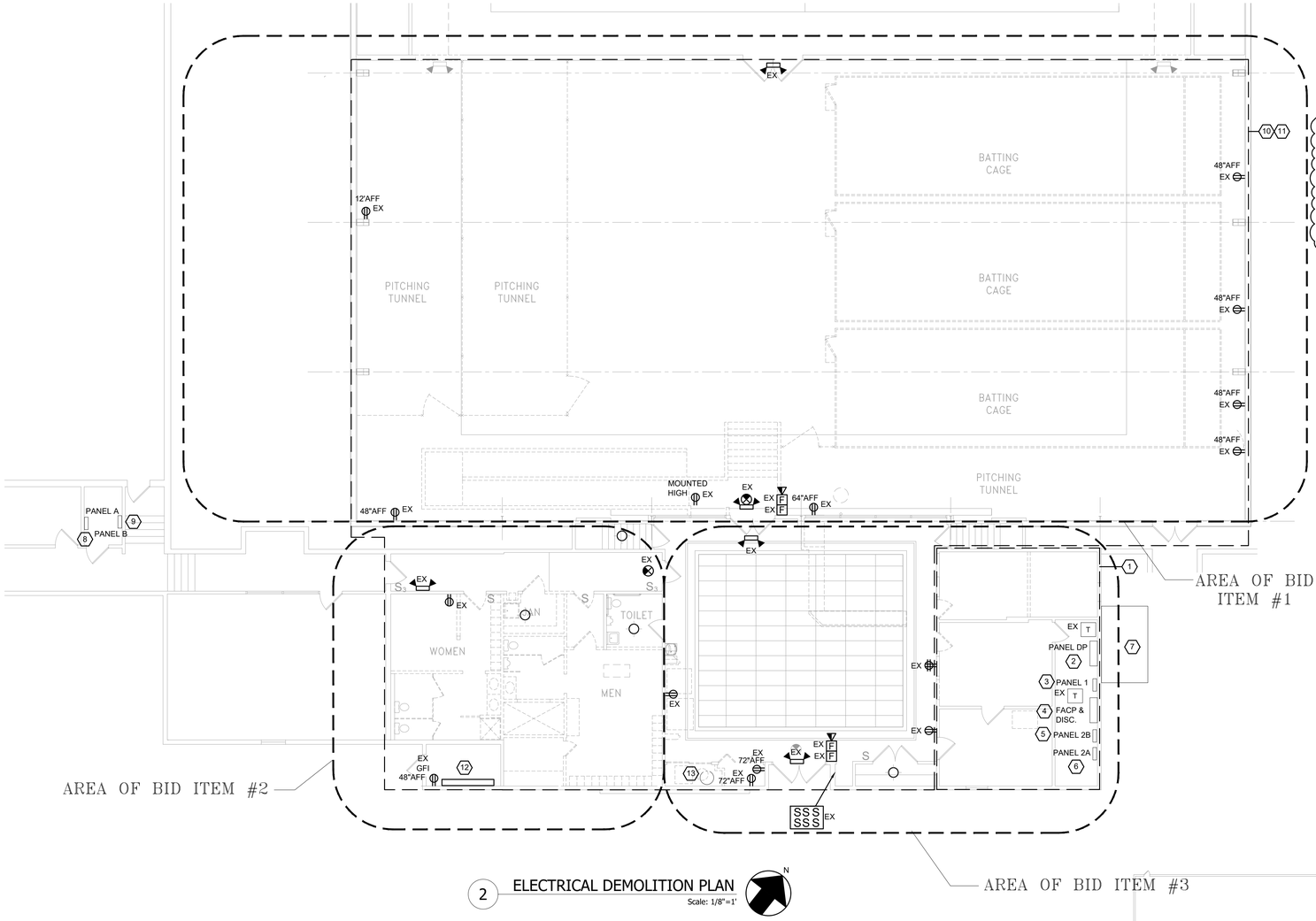
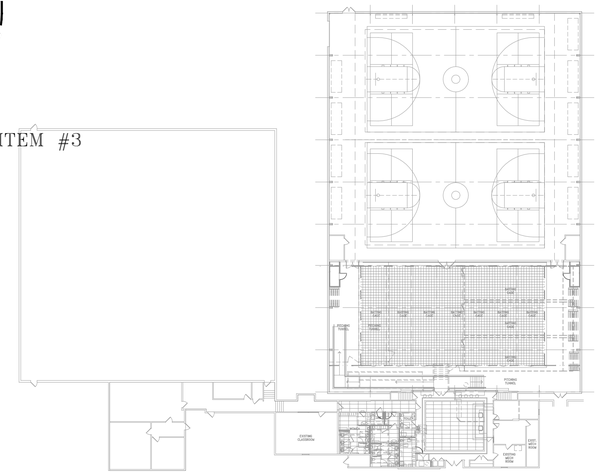
ELECTRICAL GENERAL NOTES

E001



2 ELECTRICAL DEMOLITION PLAN
Scale: 1/8"=1'



2 KEY PLAN
Scale: 1/32"=1'

GENERAL NOTES

THE INTENT OF THE PROJECT IS AN ALTERATION TO REPLACE EXISTING LIGHTING FIXTURES AND DEVICES IN A LIMITED AREA OF THE BUILDING AND TO REUSE EXISTING BRANCH CIRCUITS IN THE AREA.

NO ADDITIONAL LIGHTING OR DEVICE ELECTRICAL LOAD WILL BE ADDED TO THE EXISTING BRANCH CIRCUITS. EXISTING LIGHTING FIXTURES ARE TO BE REUSED

DUE TO THE EXTENT OF ELECTRIC DEVICES, WIRING, FIXTURES, ETC BEING REMOVED, A MASTER ELECTRICIAN LICENSED TO WORK IN HARFORD COUNTY MUST OBTAIN AN ELECTRIC DEMOLITION PERMIT BEFORE ANY DEMOLITION MAY TAKE PLACE. THE MASTER ELECTRICIAN SHALL BE RESPONSIBLE FOR DETERMINING HOW TO PREPARE THE BUILDING SO THE DEMOLITION FOR THE NEW BUILDING PERMIT CAN BE DONE SAFELY. A CONSULTATION INSPECTION WITH THE ELECTRIC SERVICES DIVISION CAN BE REQUESTED BY THE MASTER ELECTRICIAN IF NEEDED. ANY ASSOCIATED BUILDING DEMOLITION PERMIT OR NEW WORK PERMIT WILL BE APPROVED BY THE PERMIT DEPARTMENT WHEN THE ELECTRIC DEMOLITION PERMIT HAS RECEIVED AN APPROVED FINAL INSPECTION.

1

KEYED NOTES

1. AREAS ARE EXISTING TO REMAIN.
2. EXISTING 208/120V, 3 PHASE, 600A DP TO REMAIN.
3. EXISTING 240/120V, 1 PHASE, 200A MCB PANEL 1 TO REMAIN.
4. EXISTING DISCONNECT SWITCHES AND FACP.
5. EXISTING 240/120V, 1 PHASE, 60A MLO PANEL 2B TO REMAIN.
6. EXISTING 240/120V, 1 PHASE, 200A MCB PANEL 2A TO REMAIN.
7. EXISTING 208/120V, 3 PHASE, MDP AND SERVICE ENTRANCE EQUIPMENT TO REMAIN.
8. EXISTING 240/120V, 1 PHASE, MLO PANEL A TO REMAIN.
9. EXISTING 240/120V, 1 PHASE, MLO PANEL B TO REMAIN.
10. ALL DEVICES IN THE DEMOLISHED WALLS AND AREA SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE, UNLESS OTHERWISE NOTED. ALL DEVICES ON WALLS NOT TO BE DEMOLISHED SHALL BE REUSED WHEN POSSIBLE.
11. LIGHTING CONTROLS IN THE DEMOLISHED WALLS SHALL BE DISCONNECTED. EXISTING SWITCH LEGS SHALL BE MADE SAFE FOR REUSE. EXISTING LIGHTING FIXTURES REMOVED IN BATTING CAGE AREA SHALL BE SAVED FOR REUSE/RELOCATION. EXISTING LIGHTING CONTROLS IN OTHER AREAS SHALL REMAIN.
12. EXISTING BASEBOARD HEATER TO REMAIN.
13. EXISTING WATER HEATER TO REMAIN.

GENERAL NOTES:

1. REFER TO DWG. E001 FOR SYMBOL LIST, NOTES AND ABBREVIATIONS.
2. REFER TO E-501 ONE LINE DIAGRAM AND SCHEDULES.
3. 'EX' DENOTES EXISTING TO REMAIN. 'ED' DENOTES EXISTING TO BE REMOVED.

GENERAL NOTES:

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6/18/25

STATE OF MARYLAND
JOSEPH A. LOIECO
NO. 36616
PROFESSIONAL ENGINEER

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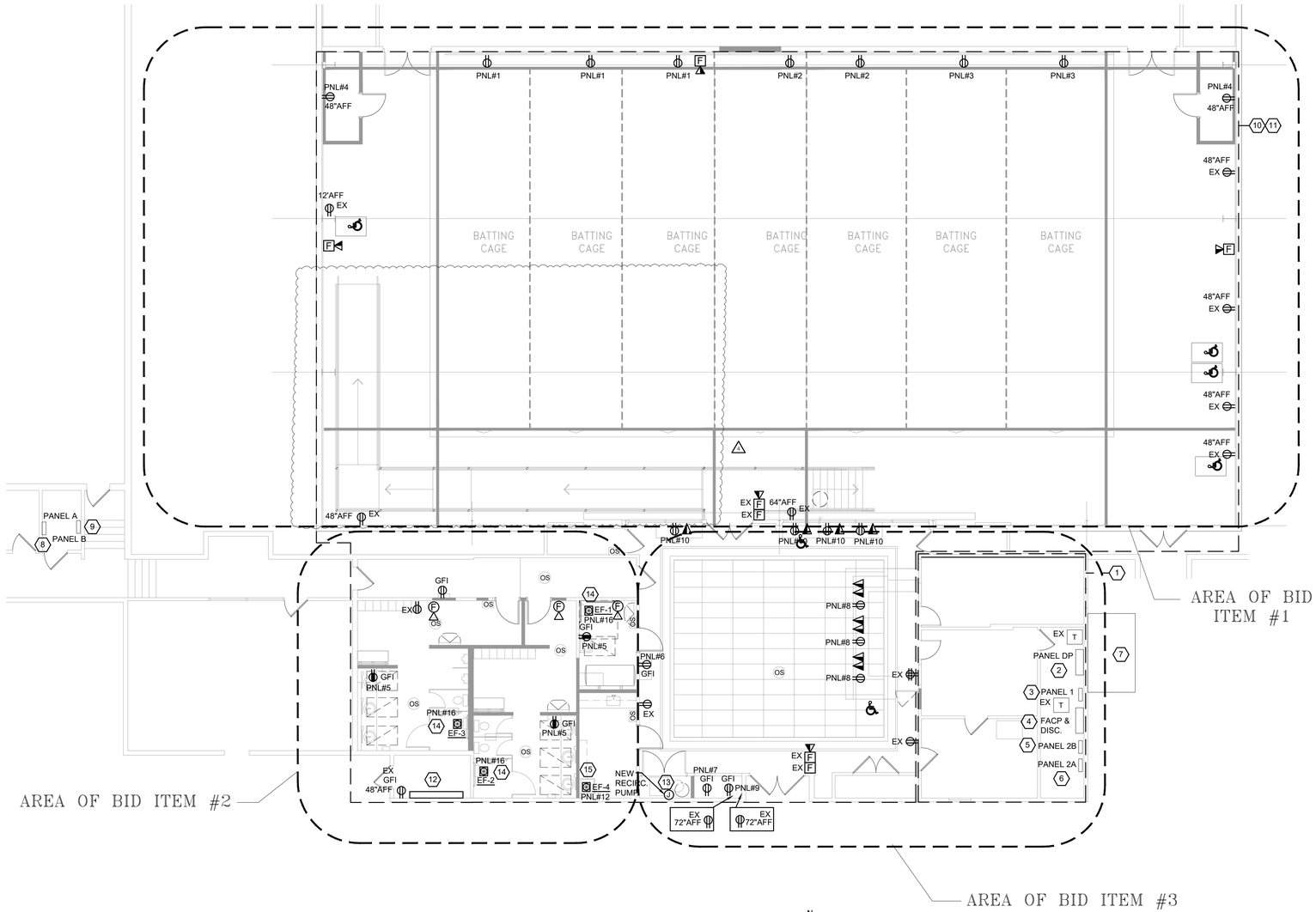
ELECTRICAL DEMOLITION PLAN

E101



1 ELECTRICAL NEW WORK PLAN
Scale: 1/8"=1'

GENERAL NOTES

THE INTENT OF THE PROJECT IS AN ALTERATION TO REPLACE EXISTING LIGHTING FIXTURES AND DEVICES IN A LIMITED AREA OF THE BUILDING AND TO REUSE EXISTING BRANCH CIRCUITS IN THE AREA.

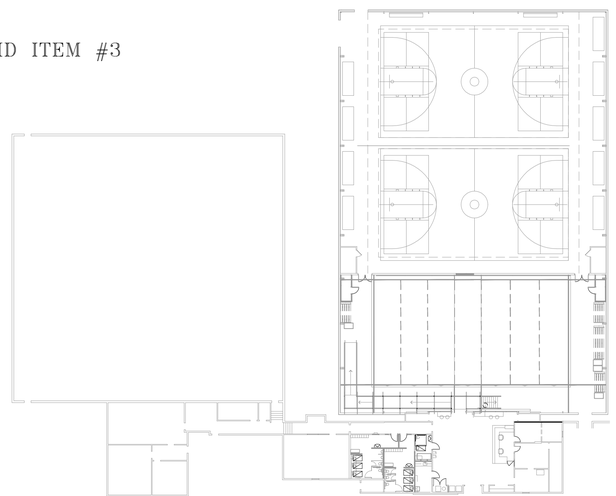
NO ADDITIONAL LIGHTING OR DEVICE ELECTRICAL LOAD WILL BE ADDED TO THE EXISTING BRANCH CIRCUITS. EXISTING LIGHTING FIXTURES ARE TO BE REUSED.

KEYED NOTES

1. AREAS ARE EXISTING TO REMAIN.
2. EXISTING 208/120V, 3 PHASE, 600A DP TO REMAIN.
3. EXISTING 240/120V, 1 PHASE, 200A MCB PANEL 1 TO REMAIN.
4. EXISTING DISCONNECT SWITCHES AND FACP.
5. EXISTING 240/120V, 1 PHASE, 60A MLO PANEL 2B TO REMAIN.
6. EXISTING 240/120V, 1 PHASE, 200A MCB PANEL 2A TO REMAIN.
7. EXISTING 208/120V, 3 PHASE, MDP AND SERVICE ENTRANCE EQUIPMENT TO REMAIN.
8. EXISTING 240/120V, 1 PHASE, MLO PANEL A TO REMAIN.
9. EXISTING 240/120V, 1 PHASE, MLO PANEL B TO REMAIN.
10. NEW DEVICES AND EQUIPMENT SHALL BE CONNECTED TO EXISTING BRANCH CIRCUITS CREATED DEMOLITION IN THE EXISTING ELECTRICAL PANEL A. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY.
11. NEW FIRE ALARM SYSTEM DEVICES SHALL MATCH BUILDING STANDARD AND SHALL BE CONNECTED TO EXISTING FIRE ALARM SYSTEM.
12. EXISTING BASEBOARD HEATER TO REMAIN.
13. EXISTING WATER HEATER TO REMAIN. CONTRACTOR SHALL CONNECT NEW RECIRC PUMP TO NEAREST AVAILABLE BRANCH CIRCUIT.
14. EXHAUST FAN SHALL BE CONTROLLED VIA BUILDING TIME CLOCK. COORDINATE WITH MECHANICAL CONTRACTOR.
15. EXHAUST FAN SHALL BE CONTROLLED BY LOCAL LIGHTING SWITCH AND CONNECTED TO LOCAL LIGHTING BRANCH CIRCUIT.

GENERAL NOTES:

1. REFER TO DWG. E001 FOR SYMBOL LIST, NOTES AND ABBREVIATIONS.
2. REFER TO E-501 ONE LINE DIAGRAM AND SCHEDULES.
3. 'EX' DENOTES EXISTING TO REMAIN. 'ED' DENOTES EXISTING TO BE REMOVED.
4. PANEL AND CIRCUIT NUMBERS REPRESENT AVAILABLE BRANCH CIRCUITS IN EXISTING PANELS CREATED DURING DEMOLITION. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY.



2 KEY PLAN
Scale: 1/32"=1'

GENERAL NOTES:

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10/8/25

STATE OF MARYLAND
JOSEPH A. LOVERDE
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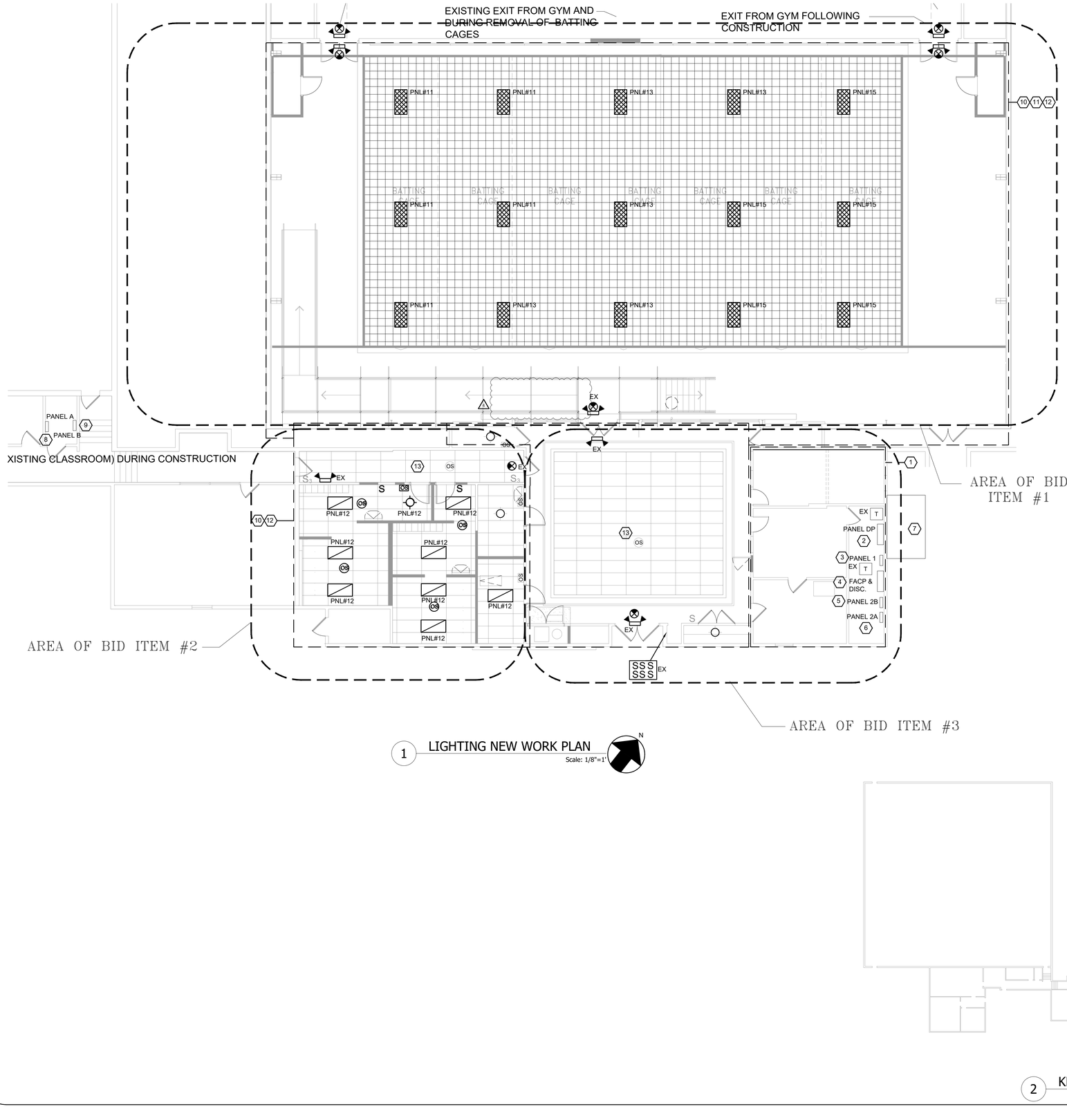
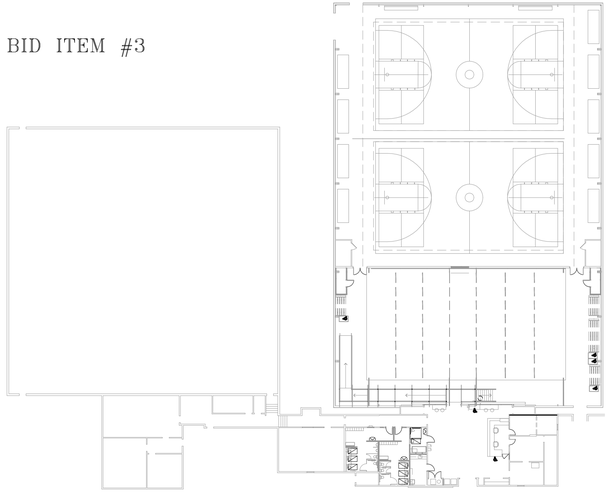
1	6/23/25	PERMIT COMMENTS
2	8/13/25	PERMIT COMMENTS
3	8/25/25	LIFT ADDITION
4	10/8/25	LIFT DELETION

ELECTRICAL NEW WORK PLAN

E102



1 LIGHTING NEW WORK PLAN
Scale: 1/8"=1'



2 KEY PLAN
Scale: 1/32"=1'

GENERAL NOTES

THE INTENT OF THE PROJECT IS AN ALTERATION TO REPLACE EXISTING LIGHTING FIXTURES AND DEVICES IN A LIMITED AREA OF THE BUILDING AND TO REUSE EXISTING BRANCH CIRCUITS IN THE AREA.

NO ADDITIONAL LIGHTING OR DEVICE ELECTRICAL LOAD WILL BE ADDED TO THE EXISTING BRANCH CIRCUITS. EXISTING LIGHTING FIXTURES ARE TO BE REUSED.

KEYED NOTES

1. AREAS ARE EXISTING TO REMAIN.
2. EXISTING 208/120V, 3 PHASE, 600A DP TO REMAIN.
3. EXISTING 240/120V, 1 PHASE, 200A MCB PANEL 1 TO REMAIN.
4. EXISTING DISCONNECT SWITCHES AND FACP.
5. EXISTING 240/120V, 1 PHASE, 60A MLO PANEL 2B TO REMAIN.
6. EXISTING 240/120V, 1 PHASE, 200A MCB PANEL 2A TO REMAIN.
7. EXISTING 208/120V, 3 PHASE, MDP AND SERVICE ENTRANCE EQUIPMENT TO REMAIN.
8. EXISTING 240/120V, 1 PHASE, MLO PANEL A TO REMAIN.
9. EXISTING 240/120V, 1 PHASE, MLO PANEL B TO REMAIN.
10. NEW LIGHTING SHALL BE CONNECTED TO EXISTING BRANCH CIRCUITS CREATED DEMOLITION IN THE EXISTING ELECTRICAL PANELS. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY.
11. CONTRACTOR SHALL REUSE EXISTING (6) 2x4 HIGH BAY PENDANT LIGHTING FIXTURES IN BATTING CAGE AREA REMOVED DURING DEMOLITION WHEN POSSIBLE. CONTRACTOR SHALL MATCH NEW (9) REQUIRED LIGHTING FIXTURES TO EXISTING. CONTRACTOR SHALL REUSE EXISTING LIGHTING CONTROLS WHEN POSSIBLE.
12. CONTRACTOR SHALL REUSE EXISTING EMERGENCY BATTERY PACK LIGHTING FIXTURES AND EXIT SIGNS REMOVED DURING DEMOLITION WHEN POSSIBLE. CONTRACTOR SHALL MATCH ANY REQUIRED NEW LIGHTING FIXTURES TO EXISTING AND CONNECT TO EXISTING BRANCH CIRCUIT.
13. HALLWAY, LOBBY LIGHTING AND CONTROLS ARE EXITING TO REMAIN.

GENERAL NOTES:

1. REFER TO DWG. E001 FOR SYMBOL LIST, NOTES AND ABBREVIATIONS.
2. REFER TO E-501 ONE LINE DIAGRAM AND SCHEDULES.
3. 'EX' DENOTES EXISTING TO REMAIN. 'ED' DENOTES EXISTING TO BE REMOVED.
4. PANEL AND CIRCUIT NUMBERS REPRESENT AVAILABLE BRANCH CIRCUITS IN EXISTING PANELS CREATED DURING DEMOLITION. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY.

GENERAL NOTES:

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10/8/25

STATE OF MARYLAND
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No. 36616
PROFESSIONAL ENGINEER

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JAL	JAL

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www.polt-design.com

1	6/23/25	PERMIT COMMENTS
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3	8/25/25	LIFT ADDITION
4	10/8/25	LIFT DELETION

LIGHTING NEW WORK PLAN

E201

LIGHT FIXTURE SCHEDULE

SYMBOL	MANUFACTURER & MODEL #:	DESCRIPTION
	LITHONIA LIGHTING: CPX 2X4 LED PANEL - UPC: 191848338506 OR 2X2 - UPC: 191848338650	2X4 LAY - I N LED PANEL - 38.9W - 4000K- 120V TRIM SHALL BE WHITE (2X2 AVAILABLE WHEN NEEDED)
	SURFACE MOUNTED LED	SELECTION BY OWNER
	2X4 LED HIGH BAY PENDANT	TO MATCH BUILDING STANDARD ALTERNATE: LITHONIA LIGHTING XIB-L48-CL-MVOLT-35K
	EXIT LIGHTING	TO MATCH BUILDING STANDARD
	EM BATTERY LIGHTING FIXTURE	TO MATCH BUILDING STANDARD

PANELBOARD PNL SCHEDULE

VOLTAGE: 120/240V | BUS RATING: X | LOCATION: X
PHASE: 1Φ | WIRE: 3W | MAIN BREAKER: X | MOUNTING:
AIC RATING: X | NEUTRAL SIZE: 100% | ISO. GROUND: N | TVSS: N

NOTE	TYPE	LOAD	DESCRIPTION	BRANCH C/B	BRANCH P	CIRCUIT #	CIRCUIT Φ	CIRCUIT #	BRANCH C/B	BRANCH P	DESCRIPTION	LOAD	TYPE	NOTE
	R	600	BATTING CAGE EQUIPMENT	20	1	1	A	2	20	1	BATTING CAGE EQUIPMENT	400	R	
	R	400	BATTING CAGE EQUIPMENT	20	1	3	B	4	20	1	STORAGE ROOM RECEPTACLES	400	R	
	R	600	BATHROOM RECEPTACLES	20	1	5	A	6	20	1	WATER COOLER	800	R	
	R	800	VENDING MACHINE	20	1	7	B	8	20	1	LOBBY RECEPTACLES	540	R	
	R	800	VENDING MACHINE	20	1	9	A	10	20	1	LOBBY RECEPTACLES	720	R	
	L	1200	BATTING CAGE LIGHTING	20	1	11	B	12	20	1	LIGHTING	600	L	
	L	1200	BATTING CAGE LIGHTING	20	1	13	A	14	20	1	LIFT POWER	1920	M	
	L	1200	BATTING CAGE LIGHTING	20	1	15	B	16	20	1	EF-1,2,3	184	E	
						17	A	18						
						19	B	20						
						21	A	22						
						23	B	24						
						25	A	26						
						27	B	28						
						29	A	30						
						31	B	32						
						33	A	34						
						35	B	36						
						37	A	38						
						39	B	40						
						41	A	42						

TYPE		CONNECTED LOAD (VA)	NEC DEMAND FACTOR	NEC DEMAND LOAD (VA)
R	RECEPTACLES ≤ 10KVA	6060	1.00	6060
	RECEPTACLES > 10KVA	-	0.50	-
M	LARGEST MOTOR	1920	1.25	2400
	REMAINING MOTORS	-	1.00	-
H	HEATING (RESISTIVE)	-	1.25	-
E	EQUIPMENT	184	1.00	184
K	KITCHEN EQUIPMENT	-	1.00	-
	TOTAL	12364		13894

PHASE A LOAD =	7040	VA
PHASE B LOAD =	5324	VA

NEC DEMAND LOAD =	58	A
SPARE CAPACITY =	92	A
TOTAL AVAILABLE =	150	A

NOTES: 1 PANEL AND CIRCUIT NUMBERS REPRESENT AVAILABLE BRANCH CIRCUITS IN EXISTING PANELS CREATED DURING DEMOLITION. CIRCUIT NUMBERS ARE FOR REFERENCE ONLY.

GENERAL NOTES:

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8/25/25

STATE OF MARYLAND · JOSEPH A. LOVERO · No. 36616 · PROFESSIONAL ENGINEER

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ELECTRICAL ONE-LINE AND SCHEDULES

E501

BASIC REQUIREMENTS

1. GENERAL

1.A. GENERAL CONTRACT PROVISIONS APPLY TO THE WORK OF THIS SECTION.

1.B. CODE: COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE (NEC), ALL GOVERNING BUILDING CODES AND ENERGY CODES, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), UNDERWRITER'S LABORATORIES (UL), AUTHORITIES HAVING JURISDICTION (AHJ), AND ALL APPLICABLE RULES AND REGULATIONS OF LOCAL AND STATE LAWS AND ORDINANCES.

1.C. PROVIDE ALL NECESSARY PERMITS, LICENSES, INSPECTIONS AND APPROVALS AS REQUIRED BY THE UTILITY COMPANY AND LOCAL AHJ. CONTRACTOR IS RESPONSIBLE FOR PAYING ALL ASSOCIATED AND REQUIRED FEES IN CONNECTION WITH THE WORK OF THIS CONTRACT.

1.D. ALL ELECTRICAL MATERIALS, EQUIPMENT, APPLIANCES, ETC. SHALL HAVE THE LISTING OF THE UNDERWRITER'S LABORATORIES, INC., AND SHALL BE TYPES APPROVED BY LOCAL AUTHORITIES HAVING JURISDICTION..

2. WORK INCLUDED

2.A. UNLESS NOTED AS EXISTING OR PROVIDED BY OTHERS, CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS SHOWN ON DRAWINGS AND INDICATED WITHIN THESE SPECIFICATIONS.

2.B. ALL MATERIALS PROVIDED SHALL BE NEW AND UNUSED.

2.C. THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS ARE INTENDED TO SECURE THE PROVISIONS OF ALL MATERIAL AND LABOR NECESSARY FOR THE COMPLETE INSTALLATIONS, TESTED AND READY FOR SERVICE, TOGETHER WITH COMPLETE ELECTRICAL WORK AS CALLED FOR HEREIN AND AS INDICATED ON THE DRAWINGS. WHEN CONFLICTS OCCUR IN THE SPECIFICATIONS OR ON THE DRAWINGS, OR BETWEEN EITHER, THE ITEMS OF GREATER QUANTITY OR HIGHER COST SHALL BE PROVIDED.

2.D. PROVIDE A COMPLETE WIRING SYSTEMS FOR LIGHTING AND POWER INSTALLATION, HVAC, PLUMBING AND SPRINKLER SYSTEMS AND MISCELLANEOUS DEVICES.

2.E. A GENERAL DESCRIPTION OF THE ELECTRICAL WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

2.E.A. RELOCATION AND/OR REMOVAL OF EXISTING ELECTRICAL WORK IN ACCORDANCE WITH DEMOLITION SCHEME, OR AS DIRECTED AND REQUIRED. RESTORATION OF ELECTRICAL SERVICE IN AFFECTED ADJOINING AREAS WHICH ARE TO CONTINUE TO FUNCTION.

2.E.B. REMOVAL AND/OR REINSTALLATION OF EXISTING CONSTRUCTION (CEILINGS, LIGHTING, ELECTRICAL EQUIPMENT, FIRE ALARM DEVICES, FURNISHINGS, ETC.) AS NECESSARY TO COMPLETE THE REMOVALS AND RENOVATION WORK REQUIRED BY THE DRAWINGS AND SPECIFICATIONS. REPLACE ANY ITEMS DAMAGED BY OR DUE TO THIS REMOVAL AND REINSTALLATION WITH NEW ITEMS TO MATCH EXISTING.

2.E.C. TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.

2.E.D. ELECTRICAL SERVICE INSTALLATION.

2.E.E. BRANCH CIRCUIT WIRING, SWITCHES, RECEPTACLES, TELEPHONE AND SIGNAL OUTLETS, AND ALL ASSOCIATED RACEWAYS. UNLESS NOTED OTHERWISE, WIRING, CONDUIT ROUTING, RACEWAYS, ETC. SHALL BE CONCEALED ABOVE ACCESSIBLE CEILINGS, IN WALLS, OR BENEATH FINISHED FLOORS IN ALL FINISHED SPACES. UNLESS NOTED OTHERWISE, DEVICES SHALL BE FLUSH MOUNTED IN ALL FINISHED SPACES.

2.E.F. LIGHTING FIXTURES AND LAMPS.

2.E.G. POWER WIRING TO MECHANICAL EQUIPMENT.

2.E.H. CUTTING AND ROUGH PATCHING REQUIRED TO PERFORM ELECTRICAL WORK, UNLESS NOTED OTHERWISE ON THE DRAWINGS. IN ADDITION, PATCH ALL OPENINGS CREATED BY ELECTRICAL DEMOLITION ACTIVITIES WHICH ARE NOT BEING UTILIZED FOR CONSTRUCTION. PATCH TO MATCH EXISTING ADJACENT SURFACES IN MATERIAL FINISH, TEXTURE, AND COLOR.

2.E.I. FURNISHING AND SETTING OF ALL SLEEVES THROUGH FLOORS, WALLS, WHERE REQUIRED, INCLUDING WATERPROOF AND FIREPROOF SEALING.

2.E.J. FIRE SEALING AROUND ALL BOXES, RACEWAYS, SLEEVES, ETC. WHERE PASSING THROUGH OR PENETRATING CONCRETE SLABS/WALLS AND ALL OTHER FIRE PARTITIONS. FIRE SEAL SHALL BE APPROVED AND INSTALLED IN ACCORDANCE WITH ASTM E814 AND AHJ REQUIREMENTS.

2.E.K. CORE DRILLING ASSOCIATED WITH THE ELECTRICAL WORK.

2.E.L. POWER AND LIGHT DISTRIBUTION SYSTEM

2.E.M. PANELBOARDS.

2.E.N. SAFETY DISCONNECT SWITCHES WHERE REQUIRED, UNLESS FURNISHED WITH STARTERS OR ON EQUIPMENT.

2.E.O. GROUNDING AS REQUIRED BY CODE.

2.E.P. IDENTIFICATION OF EQUIPMENT.

2.E.Q. PRIME PAINTING ELECTRICAL EQUIPMENT AND INSTALLATION COMPONENTS.

2.E.R. CABLE SUPPORT AND PULLBOXES.

2.E.S. TELEPHONE AND LOW-VOLTAGE SYSTEM EMPTY CONDUIT SYSTEMS.

2.E.T. WHERE INDICATED, INSTALLATION OF EQUIPMENT FURNISHED BY OTHERS.

2.E.U. HANGERS, ANCHORS, INSERTS, SUPPORTS, SLEEVES, CHASES, ETC. AS REQUIRED TO SECURELY FASTEN ELECTRICAL WORK TO BUILDING STRUCTURE.

2.E.V. STORAGE, RIGGING, SCAFFOLDING AND HANDLING OF ALL MATERIALS AND EQUIPMENT.

2.E.W. TESTS AND INSPECTIONS OF ALL SYSTEMS UNDER THIS SECTION.

2.E.X. PAYING ALL FEES AND PERFORMING ALL TESTING AND ADJUSTING, AND FURNISHING ALL CERTIFICATES OF APPROVAL.

3. SUBMITTALS/SHIPPING & HANDLING

3.A. SUBMITTAL SHALL INCLUDE MANUFACTURER'S STANDARD DATA, INSTALLATION INSTRUCTIONS AND SPECIFICATIONS.

3.B. SUBMIT SAMPLES FOR EACH ITEM AS REQUIRED.

3.C. SUBMIT SHOP DRAWINGS FOR ALL ITEMS DESCRIBED IN THE CONTRACT DOCUMENTS OR AS MAY BE REQUIRED BY THE ARCHITECT AND/OR ENGINEER INCLUDING (BUT NOT LIMITED TO):

3.C.A. LIGHT FIXTURES

3.C.B. POWER DISTRIBUTION EQUIPMENT (PANELBOARDS, TRANSFORMERS, SWITCHES, ETC.)

3.C.C. WIRING DEVICES

3.C.D. RACEWAY AND BOXES

3.C.E. WIRING

3.D. CONTRACTOR IS RESPONSIBLE FOR SHIPPING AND STORING OF ALL MATERIALS. HANDLE PRODUCTS CAREFULLY DURING SHIPPING, STORING, AND INSTALLING. DO NOT INSTALL DAMAGED EQUIPMENT OR COMPONENTS. IN SUCH INSTANCES REPLACE WITH NEW.

4. EXAMINATION OF EXISTING CONDITIONS OF PREMISES

4.A. BEFORE SUBMITTING THE BID, THIS CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AFFECTING THE WORK. NO EXTRA PAYMENTS WILL BE ALLOWED ON ACCOUNT OF EXTRA WORK MADE NECESSARY BY FAILURE TO DO SO.

4.B. EXAMINE ALL WORK PREPARED BY OTHERS TO RECEIVE THE WORK OF THIS SECTION AND REPORT ANY DEFECTS AFFECTING INSTALLATION TO THE GENERAL CONTRACTOR FOR CORRECTION. COMMENCEMENT OF WORK WILL BE CONSTRUED AS COMPLETE ACCEPTANCE OF PREPARATORY WORK BY OTHERS.

4.C. CONTRACTOR SHALL TEST ALL EXISTING BRANCH CIRCUITS IN EXISTING PANELBOARDS PRIOR TO RE-USING SAID BRANCH CIRCUITS FOR THIS PROJECT. TESTING SHALL BE DONE DURING PREMIUM TIME, UNLESS APPROVED BY BUILDING OWNER AND EXISTING TENANTS.

5. REMOVAL OF EXISTING WORK

5.A. REMOVE AND/OR RELOCATE ALL ELECTRICAL EQUIPMENT, WIRING ANDOTHER ELECTRICAL WORK SO INDICATED OR REQUIRED BY REMOVAL OF OR CHANGES IN EXISTING CONSTRUCTION. DISCONNECT LOAD AND LINE ENDS OF CONDUCTORS FEEDING PANELBOARDS, CONTROLLERS, MOTORS, APPLIANCES, AND DEVICES WHICH ARE TO BE REMOVED OR ABANDONED. REMOVE CONDUCTORS FROM EXISTING CONDUITS THROUGH WHICH NEW CONDUCTORS ARE TO BE PULLED. CUT AND CAP FLUSH WITH FLOOR ALL ABANDONED CONDUITS. REMOVE ABANDONED SURFACE MOUNTED CONDUITS. REMOVE MATERIAL AND EQUIPMENT AND DISPOSE OF SAME AS DIRECTED. WHERE ANY FIXTURE OR WIRING DEVICE IS REMOVED, PROVIDE ADEQUATE SIZE AND TYPE OF BLANK COVER PLATE OVER EACH OUTLET.

6. COORDINATION OF WORK WITH OTHERS

6.A. THE WORK OF THIS SECTION SHALL BE COORDINATED WITH THE WORK OF ALL OTHER CONTRACTS, THE UTILITY COMPANY, AND OF THE TELECOMMUNICATIONS COMPANY, AND SHALL BE SO ARRANGED THAT THERE WILL BE NO DELAY IN THE PROPER INSTALLATION AND COMPLETION OF ANY PART OR PARTS OF EACH RESPECTIVE WORK WHEREIN IT MAY BE INTERRELATED WITH THAT OF THIS CONTRACT SO THAT GENERALLY ALL CONSTRUCTION WORK CAN PROCEED IN ITS NATURAL SEQUENCE WITHOUT UNNECESSARY DELAY.

6.B. COORDINATE WORK WITH OTHER TRADES AND ADJUST EQUIPMENT LOCATIONS ACCORDINGLY TO FIT SPACES ALLOTTED.

6.C. ELECTRICAL EQUIPMENT AND DEVICE LOCATIONS SHOWN ARE APPROXIMATE. COORDINATE EXACT MOUNTING LOCATIONS AND HEIGHTS WITH OTHER TRADES AND ARCHITECTURAL ELEVATIONS, PLANS, AND FURNITURE LAYOUTS. VERIFY EXACT EQUIPMENT LOCATIONS PRIOR TO FEEDER ROUGH IN.

6.D. PRIOR TO ROUGH-IN FOR ANY CEILING MOUNTED ELECTRICAL DEVICE OR LIGHT FIXTURE, COORDINATE THE LOCATIONS OF SPRINKLER HEADS WITH PLUMBING CONTRACTOR. ALL CEILING-MOUNTED EQUIPMENT SHALL BE MOUNTED AT A DISTANCE FROM SPRINKLER HEADS THAT MEET NFPA MINIMUM REQUIREMENTS.

7. SHUTDOWNS/UTILITY INTERRUPTIONS

7.A. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. TO INSURE CONTINUOUS OPERATION, MAKE NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK WHEN SO REQUIRED.

7.B. WHEN INSTALLATION OF A NEW SYSTEM REQUIRES THE TEMPORARY SHUTDOWN OF AN EXISTING OPERATING SYSTEM, THE CONNECTION OF THE NEW SYSTEM SHALL BE PERFORMED AT SUCH TIME AS DESIGNATED BY THE OWNER.

7.C. NOTIFY AND OBTAIN PERMISSION FROM OWNER A MINIMUM OF 48 HOURS IN ADVANCE OF ANY UTILITY INTERRUPTION. COORDINATE ANY UTILITY INTERRUPTIONS WITH ALL OTHER CONTRACTORS.

7.D. WORK SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE, INCLUDING OVERTIME, AT NO EXTRA COST TO THE OWNER TO ASSURE THAT EXISTING OPERATION SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE NECESSARY CONNECTIONS.

8. MATERIAL AND WORKMANSHIP

8.C. ALL MATERIAL AND EQUIPMENT SHALL COMPLY WITH ALL ASSOCIATED CODES AND STANDARDS FOR THE INTENDED MATERIAL AND EQUIPMENT. CODES AND STANDARDS INCLUDE, BUT ARE NOT LIMITED TO, NATIONAL ELECTRIC CODE (NEC), UL, NMEA/ICEA, IEEE, AND NFPA.

8.D. ALL MATERIAL SHALL BE NEW AND OF THE BEST QUALITY AND SHALL HAVE THE APPROVED UNDERWRITER'S LABEL ATTACHED. THE LABEL OF APPROVAL SHALL BE OF THE TYPE FOR THE INTENDED APPLICATION. THE WORK THROUGHOUT SHALL BE EXECUTED IN THE BEST AND MOST THOROUGH MANNER UNDER THE DIRECTION OF, AND TO THE SATISFACTION OF, THE OWNER WHO WILL INTERPRET THE MEANINGS OF THE DRAWINGS AND SPECIFICATIONS, AND THE OWNER SHALL HAVE THE POWER TO REJECT ANY WORK AND MATERIALS WHICH, IN THEIR OPINION, IS NOT IN FULL CONFORMANCE THEREWITH.

8.E. IF, AFTER INSTALLATION, OPERATION OF THE EQUIPMENT PROVES TO BE UNSATISFACTORY TO THE OWNER BY REASONS OF DEFECTS, ERRORS OR OMISSIONS, THE OWNER RESERVES THE RIGHT TO OPERATE THE EQUIPMENT UNTIL IT CAN BE REMOVED FROM SERVICE FOR CORRECTION BY THE CONTRACTOR. THE CONTRACTOR SHALL PAY FOR ALL DAMAGES TO WORK OF OTHER TRADES CAUSED BY THIS DEFECTIVE EQUIPMENT AND ITS REPLACEMENT.

8.F. FURNISH WRITTEN GUARANTEE COVERING MATERIAL, OPERATION, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR.

8.G. INSTALL ALL CIRCUITRY PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, AND CEILING.

8.H. REMOVE MATERIALS AS WORK PROGRESSES, UPON COMPLETION OF WORK. LEAVE AREAS IN A CLEAN CONDITION.

8.I. PROVIDE A COMPETENT SUPERINTENDENT WHO SHALL BE IN CHARGE OF THE WORK TO BE INSTALLED UNDER THIS SECTION OF THE SPECIFICATIONS.

9. LABELING

9.A. ALL DEVICE AND EQUIPMENT LABELING SHALL BE TYPEWRITTEN. HANDWRITTEN LABELS WILL NOT BE ACCEPTED.

9.B. ALL DEVICE LABELING SHALL BE TYPEWRITTEN USING A LABEL MAKER AND SHALL BE PERMANENTLY AFFIXED TO EACH FACEPLATE.

9.C. FOR ALL EQUIPMENT PROVIDED UNDER PROJECT, PROVIDE STANDARD PHENOLIC NAMEPLATE WITH 1" MINIMUM SIZE ENGRAVED LETTERING INDICATING LOAD SERVED, POWER SOURCE, VOLTAGE, PHASE, AND CIRCUIT NUMBER. NAMEPLATES SHALL BE WHITE LETTERING ON BLACK BACKGROUND OR AS DIRECTED BY OWNER TO MATCH EXISTING LABELING.

9.D. UPON COMPLETION OF PROJECT, THE CONTRACTOR SHALL PROVIDE TYPEWRITTEN, UP-TO-DATE CIRCUIT BREAKER DIRECTORIES FOR ALL EXISTING PANELBOARDS IMPACTED BY PROJECT TO DESCRIBE NEW EQUIPMENT AND DEFINE THEIR CORRESPONDING CIRCUIT BREAKER.

9.E. UPON COMPLETION OF PROJECT, THE CONTRACTOR SHALL PROVIDE TYPWRITTEN, UP-TO-DATE CIRCUIT BREAKER DIRECTORIES FOR ALL NEW PANELBOARDS PROVIDED UNDER PROJECT.

9.F. EACH RECEPTACLE AND SWITCH PROVIDED OR ALTERED UNDER THIS CONTRACT SHALL BE LABELED WITH THE CORRESPONDING POWER PANEL NAME AND CIRCUIT BREAKER NUMBER.

9.G. ALL JUNCTION BOXES, OUTLET BOXES, PULL BOXES, ETC. SHALL BE CLEARLY LABELED WITH BLACK PERMANENT MAKER IDENTIFYING THE ASSOCIATED PANELBOARD AND CIRCUIT NUMBER.

10. FINAL INSPECTIONS, TESTS, AND CLOSE-OUTS

10.A. UPON COMPLETION OF THE ELECTRICAL INSTALLATION, CONDUCT A LOAD TEST BY TURNING ON ALL ELECTRICAL EQUIPMENT THROUGHOUT THE ENTIRE PROJECT FOR A CONTINUOUS PERIOD. ALTER FUSES, CIRCUIT BREAKERS, CIRCUIT CONNECTION ARRANGEMENTS, ETC. AS REQUIRED TO PERMIT SATISFACTORY PERFORMANCE. LOAD SHALL BE BALANCED WITHIN 5 .

10.B. AT THE TIME OF THE FINAL INSPECTION AND TESTS, ALL CONNECTIONS AT PANELS AND ALL SPLICES, ETC., MUST BE MADE. ALL FUSES MUST BE IN PLACE AND THE CIRCUITS CONTINUOUS FROM SERVICE SWITCHES TO ALL PANELS, RECEPTACLES, OUTLETS, MOTORS, ETC. EACH ENTIRE WIRING SYSTEM MUST TEST FREE FROM ALL SHORT CIRCUITS AND FROM GROUNDS AS REQUIRED BY THE N.E.C..

10.C. AFTER SUBSTANTIAL COMPLETION, PROVIDE OWNER DESIGNATED PERSONNEL WITH INSTRUCTIONS ON INSTALLED SYSTEMS.

10.D. PROVIDE OWNER WITH AN OPERATION AND MAINTENANCE MANUAL FOR EACH INSTALLED SYSTEM.

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

1. UNLESS NOTED OTHERWISE AND AS APPROVED BY THE AHJ, CONDUIT TYPES SHALL BE USED AS FOLLOWS:

1.A. ELECTRICAL METALLIC TUBING (EMT): PROVIDE FOR ALL INTERIOR BRANCH CIRCUITS, UNLESS OTHERWISE INDICATED.

1.B. FLEXIBLE METAL CONDUIT (FMC): PROVIDE FOR FINAL BRANCH CIRCUIT CONDUIT CONNECTION TO RECESSED CEILING LIGHT FIXTURES, 6' MAXIMUM LENGTH.

1.C. LIQUID-TIGHT FLEXIBLE METAL CONDUIT (LFMC): PROVIDE FOR FINAL CIRCUIT CONNECTIONS TO MOTORS AND EQUIPMENT, 6' MAXIMUM LENGTH.

1.D. INTERMEDIATE METAL CONDUIT (IMC): PROVIDE FOR ALL FEEDERS.

1.E. RIGID METAL CONDUIT (RMC): PROVIDE FOR ALL EXTERIOR EXPOSED, RISERS FROM GRADE, INTERIOR/EXTERIOR WET LOCATIONS, AND IN ALL INTERIOR/EXTERIOR AREAS WHERE PHYSICAL DAMAGE MAY OCCUR.

1.F. RIGID POLYVINYL CHLORIDE CONDUIT (PVC): PROVIDE FOR ALL UNDERGROUND EXTERIOR, UNDER-SLAB, AND CONCRETE ENCASED CIRCUITS/FEEDERS. SCHEDULE 80 PVC SHALL BE USED FOR ALL DIRECT-BURY APPLICATIONS. SCHEDULE 40 PVC SHALL BE USED UNDER-SLAB AND CONCRETE ENCASEMENT APPLICATIONS.

2. FITTINGS, SUPPORTS, ACCESSORIES, ETC. SHALL BE SPECIFICALLY DESIGNED FOR ASSOCIATED CONDUIT TYPES AND SHALL BE OF SAME MANUFACTURER OF CONDUIT PROVIDED.

3. MINIMUM RACEWAY SIZE SHALL BE 3/4".

4. PROVIDE PULL CORDS IN ALL CONDUITS/RACEWAYS FOR PULLING OF CABLING/WIRING.

5. RACEWAYS SHALL NOT CROSS PIPE SHAFTS OR VENTILATION DUCT OPENINGS AND SHALL NOT BE ROUTED THROUGH ELEVATOR SHAFTS OR ELEVATOR MACHINE ROOMS UNLESS SPECIFICALLY SERVING ELEVATOR OR ELEVATOR RELATED SYSTEMS.

6. PROVIDE BOXES AND FITTINGS OF TYPES AND SIZES WHICH ARE SUITABLE FOR INSTALLATION. COMPLY WITH PROVISIONS OF NEC FOR BOXES AND FITTINGS.

7. IN ADDITION TO BOXES SHOWN, PROVIDE ADDITIONAL BOXES WHERE REQUIRED TO PREVENT DAMAGE TO CABLES AND WIRES DURING PULLING OPERATIONS.

8. PROVIDE PULL BOXES AFTER EVERY TWO 90 DEGREE BENDS FOR ALL 4" CONDUITS. FOR ALL OTHER CONDUIT SIZES/RUNS PROVIDE PULL BOXES ARE REQUIRED BY NEC. SIZE ALL PULL BOXES PER NEC REQUIREMENTS.

9. PROVIDE ACCESSORIES AS REQUIRED FOR EACH INSTALLATION.

10. COUPLINGS AND CONNECTORS SHALL BE SET-SCREW TYPE.

11. SUPPORT ALL RACEWAYS AND BOXES SECURELY TO BUILDING STRUCTURE.

11.A. FASTEN ELECTRICAL BOXES SECURELY AND RIGIDLY TO STRUCTURAL SURFACES TO WHICH THEY ARE ATTACHED.

11.B. RACEWAYS SHALL BE SUPPORTED WITHIN 3' OF CONNECTION TO EQUIPMENT, BOXES, CABINETS, ETC.

11.C. PROVIDE RACEWAY SUPPORTS PER NEC SUPPORT SPACING REQUIREMENTS.

12. MECHANICALLY JOIN ALL METAL RACEWAYS, ENCLOSURES, AND RACEWAYS FOR CONDUCTORS TO FORM A CONTINUOUS ELECTRICAL CONDUCTOR. CONNECT ALL ELECTRICAL BOXES, FITTINGS AND CABINETS SO AS TO PROVIDE AN EFFECTIVE ELECTRICAL CONTINUITY AND A FIRM MECHANICAL ASSEMBLY.

13. INSTALL RACEWAYS SO THAT REQUIRED CONDUCTORS MAY BE DRAWN IN WITHOUT INJURY OR EXCESSIVE STRAIN TO THE RACEWAY OR CABLE.

14. INSTALL RACEWAYS TO AVOID PROXIMITY TO STEAM AND HOT WATER PIPES. KEEP RACEWAYS A MINIMUM OF 3" FROM SUCH PIPES.

15. KEEP ENDS OF RACEWAYS PLUGGED OR CAPPED DURING CONSTRUCTION. PROVIDE INSULATED BUSHINGS FOR ALL EMPTY CONDUITS AND CONDUIT ENDS.

16. PROVIDE EXPANSION - DEFLECTION FITTINGS IN ALL RACEWAYS PASSING THROUGH STRUCTURAL EXPANSION JOINTS.

17. FEEDERS TO PANELS SHALL BE IN CONDUIT.

18. COMBINING OF CIRCUITS IN SAME RACEWAY, OTHER THAN THOSE INDICATED ON DRAWING SHALL NOT BE PERMITTED.

19. ALL CONDUITS RUN UNDERGROUND OR BENEATH CONCRETE SLAB SHALL COMPLY WITH SET LOCATION REQUIREMENTS OF THE NEC.

20. RACEWAY PENETRATIONS OF FIRE-RATED WALLS AND/OR FLOORS SHALL BE SEALED TO MAINTAIN THE INTEGRITY OF CONSTRUCTION/RATING. ALL PRODUCTS, MATERIALS, AND METHODS OF INSTALLATION SHALL BE UL APPROVED AND MEET NFPA REQUIREMENTS.

CONDUCTORS AND CABLES

1. ALL CONDUCTORS SHALL BE COPPER, UNLESS OTHERWISE INDICATED.

2. ALL BRANCH CIRCUIT WIRING SHALL BE INSULATED COPPER CONDUCTORS (MINIMUM #12 AWG). #12 AWG AND #10 AWG SHALL BE SOLID, #8 AWG AND LARGER SHALL BE STRANDED. BRANCH CIRCUITS LONGER THAN 100' FROM PANEL TO LOAD SHALL BE #10 AWG MINIMUM FOR THE ENTIRE CIRCUIT.

3. UNLESS NOTED OTHERWISE AND AS AS APPROVED BY AHJ, CONDUCTOR (WIRE) TYPES SHALL BE AS FOLLOWS:

3.A. DRY, DAMP, AND WET LOCATIONS: TYPE THHN-THWN OR XHHW-2 WITH INSULATION RATING OF 75 PROVIDED AS CONDUCTORS IN CONDUIT. 90 INSULATION RATING MAY BE USED FOR DRY LOCATIONS ONLY.

3.B. DIRECT BURIAL: TYPE UF OR USE

3.C. THE USE OF AC CABLE, MC CABLE, OR FLEXIBLE METAL CONDUIT IS PERMITTED IN LIEU OF WIRE IN CONDUIT FOR BRANCH CIRCUITS 20A OR LESS IN INTERIOR SPACES. FOR ALL OTHER AREAS AND APPLICATIONS, THE USE OF TYPE AC CABLE, MC CABLE OR FLEXIBLE METAL CONDUIT WITH CONDUCTORS IS NOT PERMITTED, EXCEPT FOR FINAL CONNECTIONS TO LIGHT FIXTURES, HVAC EQUIPMENT, AND OTHER EQUIPMENT/TRANSFORMERS (FINAL FLEXIBLE CONNECTION LENGTH IS LIMITED TO MAXIMUM OF 6'). AC CABLE AND MC CABLE SHALL BE PROVIDED WITH AN INSULATED GREEN EQUIPMENT GROUND CONDUCTOR.

4. ALL CONDUCTORS SHALL BE COLOR CODED AS REQUIRED BY NEC. COLOR CODING SHALL BE BY MEANS OF COLORED INSULATING MATERIAL, COLORED BRAID OR JACKET OVER THE INSULATION, OR BY MEANS OF SUITABLE COLORED, PERMANENT, NON-AGING, INSULATING TAPE APPLIED TO CONDUCTORS AT EACH CABINET OR JUNCTION POINT. THE COLOR CODING SHALL BE ACCOMPLISHED AS TEH CONDUCTORS ARE BEING INSTALLED.

5. DRAWING FEEDER CONDUCTOR SIZES INDICATED ARE COPPER. WHERE APPROVED BY OWNER AND AHJ, ALUMINUM EQUIVALENT FEEDERS MAY BE USED FOR FEEDER SIZES OVER #8 AWG. CONTRACTOR IS RESPONSIBLE FOR PROVIDING EQUIVALENT CONDUCTOR SIZES/TYPES AND ANY ASSOCIATED INCREASE IN CONDUIT SIZE AS REQUIRED BY NEC.

6. CONNECTORS SHALL BE UL LISTED AND PROVIDED WITH APPROPRIATE TEMPERATURE RATINGS.

7. PROVIDE CONNECTORS AND FILLER WHICH ARE COMPATIBLE WITH THE CONDUCTOR MATERIAL. CONNECTORS AND FILLER INCLUDES, BUT ARE NOT LIMITED TO, INDENT-TYPE CONNECTORS, INDENT-TYPE PRESSURE CONNECTORS, SPRING-TYPE CONNECTORS, BOLT-ON PRESSURE CONNECTORS, TWO AND THREE-WAY CONNECTORS, AND FILLER FOR INDENTIONS IN CONNECTOR BODIES.

8. PROVIDE SPLICE KITS AND INSULATION TAPES WITH MECHANICAL STRENGTH AND INSULATION RATING EQUIVALENT OR BETTER THAN CONDUCTORS BEING SPLICED.

9. PRIOR TO ENERGIZING CIRCUITRY, CHECK INSTALLED WIRES AND CABLES WITH MEGOHM METER TO DETERMINE INSULATION RESISTANCE LEVELS AND ENSURE REQUIREMENTS ARE FULFILLED.

10. PRIOR TO ENERGIZING, TEST WIRES AND CABLES FOR ELECTRICAL CONTINUITY AND FOR SHORT CIRCUITS.

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. THE ENTIRE ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY UL 467 AND NATIONAL ELECTRICAL CODE (NEC).

2. ALL METALLIC RACEWAYS SHALL BE MECHANICALLY AND ELECTRICALLY SECURE AT ALL JOINTS AND AT ALL BOXES, CABINETS, FITTINGS, AND EQUIPMENT. METALLIC RACEWAYS SHALL NOT BE CONSIDERED SOLE MEANS OF GROUNDING.

3. A SEPARATE COPPER CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAYS AS THE EQUIPMENT GROUNDING MEANS. UNLESS NOTED OTHERWISE, GROUNDING CONDUCTOR SHALL BE SIZED PER NEC BASED ON THE SIZE OF THE RESPECTIVE FEEDER OVERCURRENT PROTECTIVE DEVICE. TERMINATE GROUNDING CONDUCTORS ON THE DEVICE/EQUIPMENT GROUND TERMINAL AND ON THE GROUND BUS INSTALLED IN PANELBOARDS, MOTOR CENTERS, ETC.

4. PROVIDE A DEDICATED NEUTRAL CONDUCTOR THE ENTIRE LENGTH OF ALL CIRCUITS. TERMINATE NEUTRAL CONDUCTORS ON THE DEVICE/EQUIPMENT NEUTRAL TERMINAL AND ON THE NEUTRAL BUS INSTALLED IN PANELBOARDS, MOTOR CENTERS, ETC. SHARED NEUTRAL CONDUCTORS ARE NOT PERMITTED.

5. GROUNDING CONNECTIONS:

5.A. EXOTHERMIC WELDING PROCESS: CADWELD OR APPROVED EQUAL

5.B. MECHANICAL COMPRESSION:

5.B.A. TIN-PLATED, HIGH-CONDUCTIVITY PURE ELECTROLYTIC COPPER EXTRUSION FITTINGS.

5.B.B. HYDRAULIC COMPRESSION EQUIPMENT AND DIES AS RECOMMENDED BY MANUFACTURER.

5.B.C. BOLTED CONNECTIONS: HIGH CONDUCTIVITY COPPER FITTINGS WITH CORROSION RESISTANT NUTS AND BOLTS.

6. PROVIDE BONDING FITTINGS AND BONDING JUMPERS TO ASSURE ELECTRICAL CONTINUITY OF THE GROUNDING CIRCUIT OF SERVICE EQUIPMENT AND ENCLOSURES THAT CONTAIN SERVICE CONDUCTORS. SIZE THE BONDING JUMPERS PER NEC BASED UPON THE SIZE OF THE SYSTEM PHASE CONDUCTORS.

PROVIDE GROUNDING BUSHINGS ON ALL CONDUIT TERMINATIONS AT PANELBAORDS AND JUNCTIONS BOXES. GROUND BUSHINGS TO EQUIPMENT GROUNDING BUSSES USING AN INSULATED, CONTINUOUS, STRANDED, COPPER CONDUCTOR (#12 AWG MINIMUM).

1. PROVIDE GROUNDING FOR TVSS SERIES FILTER PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND NEC.

2. TIGHTEN GROUNDING AND BONDING CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TOQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS.

3. CONTRACTOR SHALL TEST GROUNDING SYSTEM. THE RESISTANCE TO GROUND SHALL NOT BE MORE THAN FIVE (5) OHMS. SUBMIT TEST RESULTS TO ENGINEER. CONTRACTOR SHALL MAKE ALL UPGRADES AND ADDITIONS AS REQUIRED TO ACHEIVE THE FIVE (5) OHM REQUIREMENT.

4. PROVIDE COMPLETE LOW-VOLTAGE/TELECOMMUNICATIONS GROUNDING SYSTEM AS DETAILED ON DRAWINGS AND PER NEC AND ANSI/TIA/EIA REQUIREMENTS. SYSTEM SHALL INCLUDE, BUT IS NOT LIMITED TO, TELECOMMUNICATIONS MAIN GROUNDING BUSBAR, TELECOM BONDING BACKBONE, TELECOM GROUNDING BUSBAR, AND TELECOM BONDING BACKBONE INTERCONNECTING BONDING CONDUCTOR. BOND TO SERVICE ENTRANCE GROUNDING SYSTEM AND STRUCTURAL STEEL.

ENCLOSED SAFETY SWITCHES (DISCONNECT SWITCHES) AND CIRCUIT BREAKERS

1. SAFETY SWITCHES

1.A. UNLESS OTHERWISE NOTED, PROVIDE SAFETY SWITCHES OF TYPES, SIZES, CHARACTERISTICS, AND RATINGS INDICATED WHICH COMPLY WITH MANUFACTURER'S STANDARD DESIGN, MATERIALS, COMPONENTS, AND CONSTRUCTION IN ACCORDANCE WITH PUBLISHED PRODUCT INFORMATION; AND AS REQUIRED FOR A COMPLETE INSTALLATION.

1.B. SWITCHES SHALL BE RATED 240 VOLTS FOR 208 VOLT AND 240 VOLT SYSTEMS, AND 600 VOLTS FOR 480 VOLT SYSTEMS.

1.C. PROVIDE AMPERE RATING AND NUMBER OF POLES AS INDICATED ON THE CONTRACT DRAWINGS, OR IF NOT INDICATED, SAME AS BRANCH CIRCUIT OR FEEDER SERVING THE SWITCH.

1.D. PROVIDE WITH NEUTRAL BUS WHEN NEUTRAL AND/OR GROUNDING CONDUCTOR IS INCLUDED IN THE CIRCUIT.

1.E. PROVIDE FUSED OR UNFUSED AS INDICATED.

1.F. PROVIDE IN AN APPROVED NEMA ENCLOSURE, OR AS INDICATED.

1.G. SWITCHES SHALL BE HORSEPOWER RATED, HEAVY DUTY, QUICK-MAKE, QUICK-BREAK WITH DUAL COVER INTERLOCK.

2. ENCLOSED CIRCUIT BREAKERS

2.A. SHALL MEET ALL REQUIREMENTS OF "MOLDED CASE CIRCUIT BREAKERS" AS SPECIFIED HEREIN.

2.B. PROVIDE IN APPROVED NEMA ENCLOSURE, OR AS INDICATED.

3. INSTALL SAFETY SWITCHES AND ENCLOSED CIRCUIT BREAKERS AS INDICATED, COMPLYING WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, APPLICABLE REQUIREMENTS OF NEC, NEMA, AND NECA'S "STANDARD OF INSTALLATION," AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES.

FUSES

1. UNLESS OTHERWISE NOTED, PROVIDE FUSES OF MANUFACTURER'S STANDARD MATERIALS, AS INDICATED BY PUBLISHED PRODUCT INFORMATION, AND AS DESIGNED AND CONSTRUCTED AS RECOMMENDED BY THE MANUFACTURER AND AS REQUIRED FOR A COMPLETE INSTALLATION.

2. PROVIDE FUSES IN ALL FUSIBLE EQUIPMENT.

3. PROVIDE FUSES FROM ONE MANUFACTURER.

4. FUSES FOR ALL SAFETY SWITCHES AND SERVICE DISCONNECTS THAT ARE RATED 600 VOLTS AND LESS SHALL BE AS FOLLOWS:

4.A. TYPE: CARTRIDGE, TIME DELAY

4.B. INTERRUPTING CAPACITY: 200,000 AMPS

4.C. 0-99 AMPS: BUSSMAN "FUSETRON"

4.D. 100-599 AMPS: BUSSMAN "LOW-PEAK"

4.E. BASIS OF DESIGN: BUSSMAN

4.F. ACCEPTABLE MANUFACTURERS: BUSSMAN, CHASE-SHAWMUT, GENERAL ELECTRIC, APPROVED EQUAL.

WIRING DEVICES

1. PROVIDE WIRING DEVICES IN TYPES, COLORS, AND ELECTRICAL RATINGS FOR THE SERVICE INDICATED AND WHICH COMPLY WITH NEMA STANDARDS. WHERE TYPES AND GRADES ARE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO FULFILL THE WIRING REQUIREMENTS AND COMPLY WITH NEC AND NEMA STANDARDS FOR WIRING DEVICES.

2. LIGHT SWITCHES

2.A. HEAVY DUTY, TOGGLE, QUITE-TYPE, AND FULLY ENCLOSED IN COMPOSITION CASES

2.B. RATED 20A, 120/277 VOLTS, AC

2.C. STYLE AND FINISH TO BE DETERMINED BY ARCHITECT.

2.D. WHERE MORE THAN ONE SWITCH IS BEING INSTALLED, PROVIDE MULTIPLE GANG SWITCH PLATES FOR NUMBER OF SWITCHES AS REQUIRED.

2.E. SWITCH TYPE AS INDICATED (SINGLE, THREE-WAY, DIMMER, ETC.)

3. DUPLEX AND QUAD RECEPTACLES

3.A. NEMA 5-20R, COMMERCIAL GRADE, FEED-THROUGH TYPE, GROUNDING TYPE

3.B. 20A, 120 VOLT RATED

3.C. STYLE AND FINISH TO BE DETERMINED BY ARCHITECT.

4. GFCI DUPLEX AND QUAD RECEPTACLES

4.A. NEMA 5-20R, COMMERCIAL GRADE, FEED-TROUGH TYPE, GROUNDING TYPE

4.B. 5 MILLI AMP SENSITIVITY

4.C. 20A, 120 VOLT RATED

4.D. STYLE AND FINISH TO BE DETERMINED BY ARCHITECT

5. SURGE SUPPRESSION DUPLEX RECEPTACLES

5.A. NEMA 5-20R, INDUSTRIAL GRADE, FEED-THROUGH SURGE SUPPRESSION TYPE, GROUNDING TYPE

5.B. LED MONITOR, AUDIBLE ALARM, THERMAL PROTECTION

5.C. 20A, 120 VOLT RATED

5.D. PROVIDE BLUE FINISH

6. SPECIAL PURPOSE RECEPTACLES

6.A. PROVIDE TYPE AND CONFIGURATION AS INDICATED.

6.B. PROVIDE WITH AMPERE RATING AND VOLTAGE RATING TO MATCH APPLICATION.

6.C. STYLE AND FINISH TO BE DETERMINED BY ARCHITECT

7. OCCUPANCY SENSORS

7.A. PROVIDE CEILING-MOUNT, WALL-MOUNT, LIGHT SWITCH/SENSOR COMBO AS INDICATED ON DRAWINGS AND SCHEDULES

7.B. PROVIDE NECESSARY POWER PACKS FOR LOW-VOLTAGE SENSORS. VERIFY THE NUMBER OF POWER PACKS NEEDED TO PROVIDE A COMPLETE SYSTEM. TO MAINTAIN DRAWING CLARITY, POWER PACKS HAVE NOT BEEN SHOWN.

7.C. AIM OCCUPANCY SENSORS FOR OPTIMAL COVERAGE OF SPACE. SET EACH SENSOR FOR TIME SETTING AS DIRECTED BY OWNER'S REPRESENTATIVE AND AS REQUIRED BY APPLICABLE CODES.

7.D. ADDITIONAL SENSORS MAY BE REQUIRED TO PROVIDE COMPLETE COVERAGE DEPENDING ON, BUT NOT LIMITED TO, PARTITION HEIGHT/PLACEMENT, FURNITURE PLACEMENT, EQUIPMENT HEIGHT/PLACEMENT, AND SHELVING PLACEMENT. PROVIDE ADDITIONAL SENSORS AS REQUIRED.

7.E. IF REQUIRED, PROVIDE SENSOR MASKING KITS TO LIMIT COVERAGE OF AREAS. VERIFY WITH OWNER'S REPRESENTATIVE.

12. FLOOR BOXES

12.A. PROVIDE SIZE AND QUANTITY OF DEVICES AS INDICATED ON FLOOR PLANS.

12.B. PROVIDE INSTALLATION TYPE AS REQUIRED TO MATCH FLOOR CONSTRUCTION.

12.C. COORDINATE FINAL FINISH AND COVER PLATE WITH ARCHITECT AND FINISHED FLOORING TYPE.

13. WALL PLATES & WALL PLATE SCREWS

13.A. COORDINATE WALL PLATE MATERIAL AND FINISH COLOR WITH ARCHITECT.

13.B. SCREWS SHALL MATCH PLATE COLOR.

14. PROVIDE DEVICE COLORS AS SELECTED BY ARCHITECT.

15. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING FOR ELECTRICAL CONTINUITY AND FOR SHORT-CIRCUITS. ENSURE PROPER POLARITY OF CONNECTIONS IS MAINTAINED. SUBSEQUENT TO ENERGIZATION, TEST WIRING DEVICES TO DEMONSTRATE COMPLIANCE WITH REQUIREMENTS.

LIGHT FIXTURES

1. FURNISH AND INSTALL LIGHTING FIXTURES COMPLETE AS INDICATED ON THE DRAWINGS AND SCHEDULES.

2. PROVIDE LIGHT FIXTURES COMPLETE WITH, BUT NOT LIMITED TO, HOUSINGS, LAMPS, LAMP HOLDERS, REFLECTORS, TRIM, WIRING, ETC.

3. LAMPS/LIGHT SOURCE:

3.A. LED: PROVIDE LED LIGHT SOURCE INTEGRAL TO LIGHT FIXTURE. LIGHT FIXTURE SHALL BEAR THE UL LABEL AND CONSIST OF UL LABELED COMPONENTS. PROVIDE INTEGRAL OR REMOTE BALLAST AS REQUIRED BY LIGHT FIXTURE MANUFACTURER. MIN CRI 80, 3500 COLOR TEMP (UNLESS OTHERWISE INDICATED ON SCHEDULES), 50,000 HOURS RATED LIFE.

4. THE INSTALLATION AND PRACTICES SHALL COMPLY WITH NEC, NEMA, ANSI, AND THE UL LISTING REQUIREMENTS FOR THE LIGHT FIXTURES USED.

5. LIGHT FIXTURE PARTS SHALL BE PAINTED AFTER FABRICATION.

6. PROVIDE LIGHT FIXTURES WITH NECESSARY MOUNTING COMPONENTS AS REQUIRED TO INSTALL FIXTURES AT LOCATIONS/ELEVATIONS SHOWN ON DRAWINGS. MOUNTING COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO, INTERMEDIATE STEEL, CHAIR, AIR CRAFT CABLE, BOXES, HANGERS, ETC.

7. PROVIDE LIGHT FIXTURES AND/OR FIXTURE OUTLET BOXES WITH HANGERS TO PROPERLY SUPPORT FIXTURE WEIGHT. SUPPORT FIXTURES INDEPENDENT OF CEILING TO BUILDING STRUCTURE FROM AT LEAST TWO (2) FIXTURE POINTS OF CONNECTION.

8. PROVIDE A COMPLETE DIMMING SYSTEM AS INDICATED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO, DIMMER CONTROLS, WIRING FROM CONTROLS TO FIXTURES, DIMMABLE BALLASTS/FIXTURE DRIVERS, ETC. PROVIDE ALL WORK AS REQUIRED FOR A COMPLETE AND OPERABLE DIMMING SYSTEM AS INDICATED ON DRAWINGS. WHERE POSSIBLE, PROVIDE LIGHT FIXTURES COMPATIBLE WITH SAME DIMMING PROTOCOLS. WHERE NOT POSSIBLE, PROVIDE QUANTITY OF DIMMING PROTOCOLS (INCLUDING DIMMERS, WIRE, ETC.) AS REQUIRED FOR A COMPLETE DIMMING SYSTEM.

9. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT PLACEMENT OF ALL LIGHT FIXTURES.

10. LIGHT FIXTURES SHALL BE CLEAN AND LAMPED WITH NEW LAMPS AT THE TIME OF FINAL INSPECTION.

11. UPON COMPLETION OF INSTALLATION OF LIGHT FIXTURES, DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. WHERE POSSIBLE, CORRECT MALFUNCTIONING UNITS AT SITE, THEN RETEST TO DEMONSTRATE COMPLIANCE; OTHERWISE REMOVE AND REPLACE WITH NEW UNITS AND PROCEED WITH RETESTING.

LIGHTING SYSTEM FUNCTIONAL TESTING

BEFORE FINAL INSPECTION, A FACTORY CONTROL CONSULTANT SHALL PROVIDE EVIDENCE THAT LIGHTING CONTROLS HAVE BEEN TESTED, CALIBRATED, ADJUSTED, PROGRAMMED AND ARE IN WORKING CONDITION.

- TEST OCCUPANCY SENSORS RESPONSIVENESS.
- TEST OCCUPANCY SENSORS FOR DELAYED AUTOMATIC TIME OFF.
- TEST AUTO TIMECLOCK PROPER OPERATION IN LIGHTING CONTROL PANEL.
- TEST LOW VOLTAGE SWITCHES FOR PROPER OPERATION.

PROVIDE OWNER DOCUMENTS CERTIFYING LIGHTING CONTROLS MEET PERFORMANCE CRITERIA WITHIN 90 DAYS AFTER CERTIFICATE OF OCCUPANCY.

GENERAL NOTES:

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8/22/24
STATE OF MARYLAND
JOSEPH A. LOIERO
No. 36616
PROFESSIONAL ENGINEER

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

JAL	JAL

25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY

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ELECTRICAL SPECIFICATIONS

E801

ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
ABV	ABOVE
AC	AIR CURTAIN
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
@	AT
AFMS	AIR FLOW MEASURING STATION
AS	AIR SEPARATOR
ATG	ADC TRANSFER GRILL
AV	AUTOMATIC AIR VENT
B	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BC	BRANCH CONTROLLER
BDD	BACKDRAFT DAMPER (GRAVITY)
BDR	BASEBOARD RADIATOR
BEL	BELOW
BFP	BACKFLOW PREVENTION DEVICE
BHP	BRAKE HORESPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTUH	BRITISH THERMAL UNITS PER HOUR
CA	COMPRESSED AIR
CC	COOLING COIL
CD	CEILING DIFFUSER /CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CLG	CEILING
℄	CENTER LINE
COND	CONDENSATE
COP	COEFFICIENT OF PERFOMANCE
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONSTANT VOLUME / CONTROL VALVE
CW	DOMESTIC COLD WATER
CR	CONDENSER WATER RETURN
CS	CONDENSER WATER SUPPLY
DB	DRY BULB TEMPATURE
DC	DRY COOLER
°F	DEGREE FAHRENHEIT
DH	DEHUMIDIFIER
DN	DOWN
DOAS	DEDICATED OUTDOOR AIR SYSTEM
DP	DIFFERENTIAL PRESSURE
DX	DX COOLING COIL
EA	EXHAUST AIR
EA.	EACH
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENT RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE (LESS DAMPER)
EL	ELEVATION
ER	EXHAUST REGISTER
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WALL HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXT	EXTERNAL
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FL	FLOOR
FLEX	FLEXIBLE
FO	FLAT OVAL
FPM	FEET PER MINUTE
FPMB	FAN POWERED MIXING BOX
FSD	FIRE SMOKE DAMPER
FT	FEET
FT^2	SQUARE FEET
FTR	FINNED TUBE RADIATOR
GAL	GALLON
GC	GENERAL CONTRACTOR
GIH	GRAVITY INTAKE HOOD
GPM	GALLONS PER MINUTE
GR	GLYCOL RETURN
GRH	GAS RADIANT HEATER
GS	GLYCOL SUPPLY
GUH	GAS UNIT HEATER
GV	GRAVITY VENTILATOR
H	HUMIDIFIER
HC	HEATING COIL
HCWR	DUAL TEMPERATURE RETURN
HCWS	DUAL TEMPERATURE SUPPLY
HGRH	HOT GAS REHEAT
HP	HEAT PUMP / HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HR	HOUR
HRC	HEAT RECOVERY COIL
HRV	HEAT RECOVERY VENTILATOR

HW	HOT WATER
HWR	HW RECIRC/HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
HX	HEAT EXCHANGER
HZ	HERTZ
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
IN W.C.	INCHES WATER COLUMN
ISP	INTERNAL STATIC PRESSURE
IRH	INFRARED RADIANT TUBE HEATER
KEF	KITCHEN EXHAUST FAN
KH	KITCHEN EXHAUST HOOD
KW	KILOWATT
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
LBS/HR	POUNDS PER HOUR
LF	LINEAR FOOT
LG	LENGTH
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LWT	LEAVING WATER TEMPATURE
MAT	MIXED AIR TEMPERATURE
MAU	MAKEUP AIR UNIT
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSANDS OF BTU PER HOUR
MCA	MINIMUM CURRENT AMPACITY
MIN	MINIMUM
M.O.D.	MOTOR OPERATED DAMPER
MOCP	MAXIMUM OVERCURRENT PROTECTION
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OBD	OPPOSED BLADE DAMPER
OED	OPEN END DUCT
P	PUMP
PBD	PARALLEL BLADE DAMPER
PD	PRESSURE DROP
PDH	POOL ROOM DEHUMIDIFIER
PH	PHASE
PPM	PARTS PER MILLION
PRV	PRESSURE RELIEF VALVE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RA	RETURN AIR
RF	RETURN AIR FAN / RELIEF AIR
RG	RETURN GRILLE (LESS DAMPER)
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RLFA	RELIEF AIR
RM.	ROOM
RR	RETURN REGISTER (WITH DAMPER)
RTU	ROOFTOP AIR HANDLING UNIT
RX	REMOVE EXISTING
SA	SUPPLY AIR
SAF	SUPPLY AIR FAN
SD	SUPPLY DIFFUSER/SMOKE DAMPER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SQUARE FOOT
SPEC.	PROJECT SPECIFICATIONS
SPF	STAIR PRESSURIZATION FAN
SG	SUPPLY GRILLE
SR	SUPPLY REGISTER
STRUCT.	STRUCTURAL
TEMP	TEMPERATURE
TF	TRANSFER FAN
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VOLT
VAC	VOLTS ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME TERMINAL
VD	VOLUME DAMPER
VEH	VEHICLE EXHAUST
VFD	VARIABLE FREQUENCY DRIVE
VP	VELOCITY PRESSURE
VRF	VARIABLE REFRIGERANT FLOW
W	WATTS
W/	WITH
W/O	WITHOUT
WB	WET BULB
WG	WATER GAUGE
WSHP	WATER SOURCE HEAT PUMP

GENERAL NOTES

GENERAL MECHANICAL REQUIREMENTS

1. Materials, equipment, and systems shall meet all pertinent requirements of the Underwriters Laboratory (UL), the American Society for Testing Materials (ASTM), American Society of Heating, Refrigeration and Air–Conditioning Engineers (ASHRAE), Sheet Metal and Air Conditioning Contractors National Association (SMACNA), American Gas Association (AGA), National Fire Protection Association (NFPA)and other nationally recognized agencies as well as the latest adopted edition of state and local code procedures, methods, and requirements, including the most stringent of health and safety standards as required and as interpreted by the authority having jurisdiction. Applicable codes and standards include, but are not limited to the following: "international plumbing, building, energy, mechanical, and fuel gas codes" applicable local and municipal codes and ordinances.
2. Bidders shall be licensed contractors in accordance with local and state laws.
3. Bidders shall thoroughly acquaint themselves with the conditions under which the work is to be performed. They shall examine all services, equipment, surfaces, etc., which this work is in any way dependent upon, and bring any discrepancies determined or omissions found in the drawings to the owner's attention before submitting bid. Verify all dimensions by field measurements.
4. The systems shown on the drawings shall be provided to serve all fixtures, equipment, and areas within the Contract Limit Lines as set forth by the Architectural solution for the project. The bidding and contract requirements, general requirements, and general provisions shall apply to this section. Systems shall include all equipment, appurtenances, safety devices, and controls necessary for the intended service.
5. All permits and fees required for this work shall be secured and paid for by the mechanical contractor and included in bid price.
6. Anything drawn or specified on these plans shall not be construed to conflict with any local, municipal or state law, regulation or ordinance which governs the installation of any mechanical or related work. Where any portion of the systems is not installed in in accordance with applicable laws, ordinances, regulations and codes, this contractor shall make all changes required by the enforcing authorities in a manner approved by the owner and without additional cost to the owner. Where plan requirements are more stringent than code, the installation shall be in accordance with the plans.
7. Where job conditions require changes from the contract documents that do not change the scope of installation or nature of work required, the contractor shall make such changes without additional cost to the owner. No other changes may be made without written permission of the owner.
8. All equipment shall be new and unused, UON, and shall bear the label of an approved agency. All equipment shall be installed in strict conformance to manufacturer's instructions, except where these specifications require a higher quality installation than recommended by manufacturer. All mechanical equipment shall be provided with installation instructions, which shall be made available at the job site.
9. All installed systems, devices and related items shall be tested in place on site. Replace any and all contractor–supplied defective devices, items or systems at contractor's own expense before completion of the project. Report any problems with existing to remain (ETR) items to owner for resolution.
10. Contractor shall guarantee all work for which materials are furnished, fabricated or field erected, all factory assembled equipment for which no specific manufacturer's guarantee is furnished, and all work in connection with installing manufacturer's guaranteed equipment. This contractor's guarantee shall exist for a period of one (1) year from the date of final owner acceptance of the work and shall apply to defects in material and to defective workmanship of any kind.
11. Contractor shall replace at contractor's own expense any contractor–supplied materials, equipment, and related items that fail or are found to be defective within the guarantee period.
12. Arrange for chases, slots, and openings in other building components to allow for mechanical installations. Coordinate the installation of required supporting devices and sleeves to be set in poured in place concrete and other structural components, as they are constructed. Coordinate the cutting and patching of building components to accommodate installation of mechanical equipment and materials.
13. Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing–in the building.
14. Coordinate mechanical equipment and materials installation with other building components. Coordinate the installation of mechanical materials and equipment above ceilings with suspension system, light fixtures, and other installations.
15. Equipment locations, roof & wall openings are approximate: verify size and coordinate with G.C., equipment supplier, and owner. Provide steel framing around roof opening(s) where required and around wall opening(s) where required.
16. Do not endanger or damage installed Work through procedures and processes of cutting and patching. Arrange for repairs required to restore other work, because of damage caused as a result of mechanical installations.
17. Where mounting heights are not detailed or dimensioned, install mechanical services and overhead equipment to provide the maximum headroom possible.
18. Install mechanical equipment to facilitate maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
19. For all modified systems: adjust fans, supply register dampers, and duct volume dampers as needed to balance all systems to match listed airflows (+/– 10%), and provide a written summary report. Replace fan drive if required to achieve design airflows. Air balance shall be performed by an independent AABC or NEBB certified firm. Summary report shall include design, preliminary and final airflow data, and shall include a list of deficiencies.
20. For all water systems: adjust ball valves, balance valves, pumps, etc, as needed to balance all piping to match GPM and pressure and temperature ranges shown, and provide a written summary report. Water system balance shall be performed by an independent AABC or NEBB certified firm. Summary report shall include design, preliminary and final flow data, and shall include a list of deficiencies.
21. The entire installation, including the gauges of ductwork, shall be in strict compliance with SMACNA standards, except where these specifications require a stricter installation standard. System is 1" pressure class, UON. All ducts shall be sealed to meet SMACNA Class A requirements, and shall be supported at intervals not exceeding 10'. Sealant shall be UL–181A or 181B certified.
22. All 90 degree turns in supply and return ductwork shall be mitered elbows with single wall turning vanes at 2" spacing extended in the direction of airflow, or smooth radius elbows with a radius–to–width ratio of 1.0 or greater. Mitered elbows without turning vanes, square–throat radiused–heel elbows, and radiused–throat square–heel elbows are NOT acceptable. All duct transitions shall be smooth (30 degree taper maximum), not abrupt.
23. All supply and return and outside air ducts inside the building thermal envelope shall be insulated with 1.5 fiberglass duct insulation. All supply and return ductwork outside the building thermal envelope shall be insulated with 3" fiberglass duct insulation (minimum R–8 installed value). Insulation shall be fiberglass wrap with scrim–reinforced foil backing. Seal all joints and punctures to preserve vapor barrier.
24. Duct smoke detectors and accessories shall be UL tested and listed. Equipment and installation shall meet all pertinent requirements of the mechanical code and NFPA 72. Duct smoke detectors located more than 10 ft above the finished floor, or located such that the detector's alarm indicator is not visible to responding personnel, shall be provided with remote alarm indicators. Each remote indicator shall be clearly labeled as to function and air handling unit served, with an acrylic engraved nameplate.
25. All curtain–type fire dampers shall be UL 555 listed and dynamic rated, except that static rated fire dampers shall be permitted where the air handling system is automatically shut down in the event of fire. Provide and install duct access panel with acrylic engraved nameplate for each fire damper.
26. All diffusers and grilles shall be factory finished white, unless otherwise noted.
27. All mechanical equipment shall have vibration isolators, as well as flexible duct connectors. Flexible connectors shall be UL 181 tested and labeled, and shall not exceed 14' in length. Mechanical fasteners and sealants shall be used to connect ducts to mechanical equipment.
28. All duct coverings, linings, tape and vibration isolation connectors shall have a maximum flame spread rating of 25, and a maximum smoke generation rating of 50.
29. All duct dimensions listed on plans are inside clear dimensions. Where internally lined ductwork is specified, adjust sheet metal dimensions to accommodate liner.
30. Flexible ducts shall not exceed 6' in length, nor shall they be installed where they must be flattened. Flexible ducts shall be UL 181 tested and labeled, and must be fastened per SMACNA standards. If job conditions do not permit proper installation of flexible duct, rectangular galvanized steel duct with equal free area shall be used instead. Flexible ducts shall not be used where exposed, or where concealed above drywall or plaster ceilings.
31. Provide volume dampers at each branch off of a trunk duct to a supply diffuser.
32. Ductwork is shown in schematic form. All required duct risers and drops to allow general routing depicted may not be shown. Provide offsets as required to meet space requirements and to avoid interference with other trades and field conditions. Exact location of the ductwork may vary according to the coordinated space requirements. Each trade shall be totally responsible for coordination with other trades. Notify engineer of conditions representing significant changes to the designed routing
33. Coordinate size, quantity, and location of all openings required for duct and pipe penetrations through walls, floors, and roofs, with contractor responsible for rough framing. Coordinate location of air intakes with exhaust and plumbing vents so that intakes are a minimum of 10 feet from exhaust openings or plumbing vents
34. Install ducts in longest length possible and fewest possible joints. Install fabricated fittings for changes in directions, changes in size and shape, and connections
35. Install ducts, unless otherwise indicated, vertically and horizontally, parallel and perpendicular to building lines; avoid diagonal runs unless specifically indicated on drawings
36. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated
37. All mechanical equipment with the exception of air handling units, supported from floor structure shall be mounted on 4" thick concrete housekeeping pads unless noted otherwise. air–handling units shall be mounted on 6" thick concrete housekeeping pads to accommodate proper trapping of the condensate drain.
38. Air filters shall be replaced in all air handling equipment employing such prior to final completion and owner occupancy
39. Basis of design mechanical equipment is as scheduled on the drawings. Contractor assumes responsibility for coordinating physical space requirements of equivalent capacity mechanical equipment deemed acceptable by the engineer
40. Mechanical equipment factory finish damaged during the course of construction shall be restored to original condition prior to final acceptance
41. Coordinate mechanical ceiling devices such as diffusers and registers with light fixtures, speakers, sprinkler heads, etc.
42. Electrical equipment spaces: Route ductwork to avoid passing through transformer vaults and electrical equipment spaces and enclosures. Avoid routing ductwork directly above electrical equipment unless specifically indicated on the mechanical drawings
43. Non–Fire–Rated Partition Penetrations: where ducts pass through interior partitions and are exposed to view in mechanical rooms, conceal space between construction opening and duct or duct insulation with sheet metal flanges of same metal thickness as duct. overlap opening on four sides by at least 1–1/2 inches unless indicated otherwise
44. Fire–Rated Partition Penetrations: where ducts pass through interior partitions, install appropriately rated fire damper. Fire damper installation must strictly adhere to manufacturer's written instructions
45. All air handlers, condensers, control devices and other mechanical apparatus shall be clearly marked for easy identification and owner Use black plastic or bakelite name plate engraved with white letters 1/4" high. Punched tape is not acceptable.
46. Mechanical contractor shall furnish record set of drawings with any deviations marked in red ink, within 90 days of system acceptance.
47. Mechanical contractor shall furnish manuals for all new equipment within 90 days of system acceptance, including, at a minimum: equipment input and output capacity and required maintenance actions, O&M manuals, controls maintenance and calibration information (including wiring diagrams and controls set points), and a complete written narrative of how each system is intended to operate. Systems shall be tested to ensure that controls are calibrated, adjusted, and in proper working condition.
48. All submittals shall be sent in pdf format, hard copies will not be reviewed. Submittals shall be highlighted or redlined to indicate equipment ID from schedules, model number, performance data, electrical data, dimensions, weights, options and accessories, and shall be emailed to the Architect.
49. Ductwork systems in areas with drywall ceilings/bulkheads shall be balanced prior to closing of the ceiling. All air devices mounted in drywall ceiling to have trim panels. Where access to manual balancing dampers will not be easily accessible, provide cable controlled damper at neck of diffuser or at duct main takeoff. Metropolitan air technology "roto–twist" model RT–150 or equal.

MECHANICAL SYMBOLS LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
20x12	RECTANGULAR DUCT		4WAY BLOW SUPPLY AIR DIFFUSER
10"ø	ROUND DUCT		NON–4WAY DIFFUSER AIR PATTERN
12x8ø	FLAT OVAL DUCT		LINEAR SUPPLY AIR DIFFUSER
VD	VOLUME DAMPER		ROUND SUPPLY AIR DIFFUSER
FD / AD	FIRE DAMPER W/ACCESS DOOR		RETURN AIR GRILLE
SD / AD	SMOKE DAMPER W/ ACCESS DOOR		EXHAUST AIR REGISTER
SP	STATIC PRESSURE SENSOR		CEILING EXHAUST FAN
MOD	MOTOR OPERATED DAMPER		DIRECTION OF AIR FLOW
	FLEXIBLE CONNECTION		CONNECT TO EXISTING
	SOUND LINED DUCTWORK		DEMOLISH TO THIS LOCATION
	CAPPED DUCTWORK	T	THERMOSTAT
	CAPPED DUCTWORK	T_R	REVERSE ACTING THERMOSTAT
	DUCTWORK TRANSITIONS	H	HUMIDISTAT
	ROUND TO RECTANGULAR TRANS	S	SENSOR
	DUCTWORK TRANSITION	SD	SMOKE DETECTOR
R / D	RISE AND DROP IN DUCTWORK	P	PRESSURE SENSOR
R / D	RISE AND DROP IN DUCTWORK	G	GAS DETECTOR SENSOR
	TURNING VANES	$	ON/OFF SWITCH
	RADIUS ELBOW	$V	VARIABLE SPEED SWITCH
	SUPPLY DUCT DOWN	CFM	CUBIC FEET PER MINUTE (CFM)
	SUPPLY DUCT UP	ø	DIAMETER
	RETURN DUCT DOWN	◇	FLAT OVAL
	RETURN DUCT UP	1	DRAWING NOTE
	EXHAUST DUCT DOWN	1	REVISION SYMBOL
	EXHAUST DUCT UP	1"	1" UNDERCUT DOOR
	AIR TITE FITTING W/INTEGRAL VOLUME DAMPER	6"	DOOR LOUVER
	TOP AIR TITE FITTING CONNECTION	1	EQUIPMENT IDENTIFIER
	DOUBLE LINE FLEXIBLE DUCT		
	SINGLE LINE FLEXIBLE DUCT		

NOTE:

- ALL SYMBOLS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL NOTE THAT NOT ALL SYMBOLS MAY BE USED, AS WELL AS NOT ALL SYMBOLS USED MAY BE LISTED. REFER TO PROJECT SPECIFIC NOTES FOR ADDITIONAL INFORMATION.

DRAWING CONVENTIONS

- NEW WORK – HEAVY AND SOLID LINES
- EXISTING TO REMAIN – LIGHT AND SOLID LINES
- REMOVE EXISTING – HEAVY AND DASHED LINES

NOTICE TO CONTRACTORS

ALL CONTRACTORS PRIOR TO BID SUBMISSION PROCESS SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS. ANY CONDITIONS THAT DIFFER FROM THAT SHOWN ON THESE PLANS SHALL BE REPORTED TO ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULT FROM CONTRACTORS NEGLECT TO VISIT THE SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.

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STATE OF MARYLAND
JOSEPH A. LOVERDE
No. 36616
PROFESSIONAL ENGINEER
9/22/21

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

JAL | JAL

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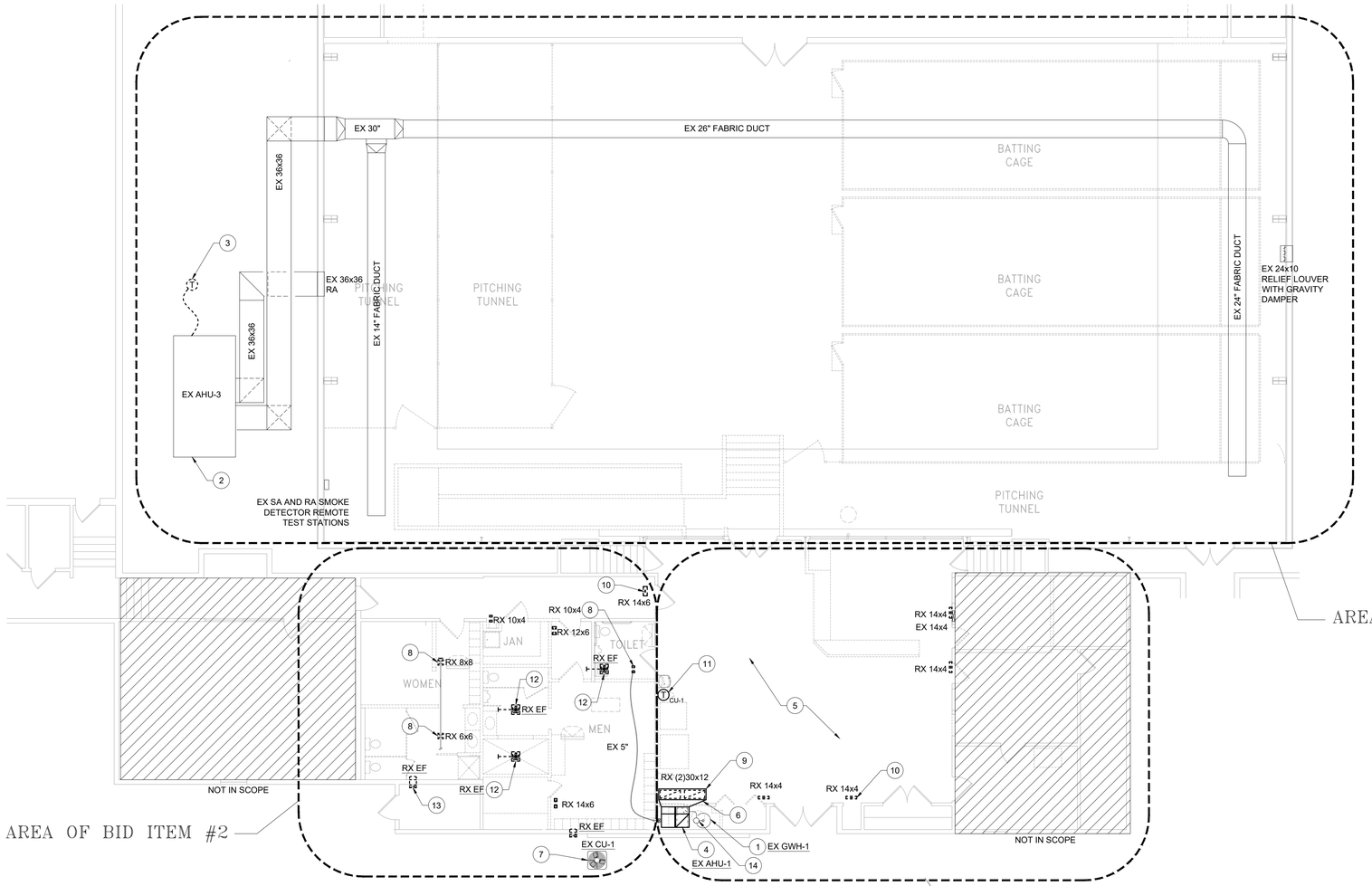
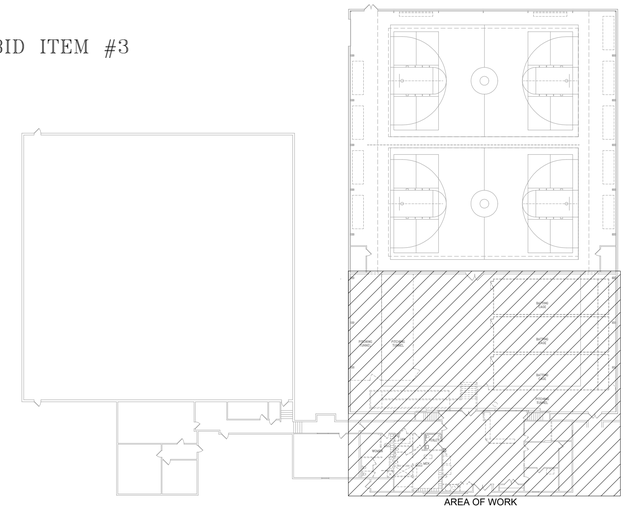
GENERAL NOTES, LEGEND, AND ABBREVIATIONS

M001



1 HVAC DEMOLITION PLAN
Scale: 1/8"=1'



2 KEY PLAN
Scale: 1/32"=1'

HVAC Drawing Notes: (1)(2)(#)

1. EXISTING GAS FIRED WATER HEATER TO REMAIN.
2. EXISTING GRADE MOUNTED EX AHU-3 SERVING BATTING CAGES TO REMAIN.
3. EXISTING THERMOSTAT/SENSOR FOR AHU-3 WAS NOT LOCATED DURING TIME OF SURVEY. ASSUMED TO BE OBSCURED BY EXISTING EQUIPMENT. CONTRACTOR TO VERIFY LOCATION OF THERMOSTAT DURING DEMOLITION AND RELOCATE IF OBSTRUCTED BY NEW EQUIPMENT LAYOUT. COORDINATE LOCATION WITH ENGINEER PRIOR TO WORK BEING PERFORMED.
4. EXISTING NOMINAL 2.5 TON FLOOR MOUNTED DOWNFLOW GAS FIRED FURNACE WITH DX SPLIT SYSTEM TO REMAIN. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE CHECKUP INCLUDING BUT NOT LIMITED TO: REPLACE FILTERS/BELTS, CHECK/CHARGE REFRIGERANT, CHECK/CLEAN HEAT EXCHANGER AND COOLING COILS, LUBRICATE BEARING, CHECK CONTROLS, ETC. TO ENSURE PROPER OPERATION AND BALANCE TO 1,000 CFM SUPPLY AND 190 CFM OUTSIDE AIR.
5. EXISTING SUPPLY AIR DUCTWORK FOR DOWNFLOW AHU-1 IS LOCATED UNDER FLOOR. CONTRACTOR TO FULLY CLEAN/VACUUM DUCTWORK.
6. EXISTING RETURN AIR DUCTWORK SUPPORTED FROM STRUCTURE ABOVE CEILING TO REMAIN (TYPICAL).
7. EXISTING OUTDOOR CONDENSING UNIT MOUNTED ON GRADE TO REMAIN.
8. REMOVE AND RELOCATE EXISTING CEILING MOUNTED SUPPLY AIR DIFFUSER AND ASSOCIATED FLEXIBLE DUCTWORK. SEE NEW WORK FOR NEW LOCATION (TYPICAL)
9. REMOVE AND REPLACE CEILING MOUNTED RETURN AIR REGISTERS WITH LIKE KIND. (TYPICAL)
10. REMOVE AND REPLACE FLOOR MOUNTED SUPPLY AIR REGISTERS WITH LIKE KIND. SEE NEW WORK FOR ANY DEVICES THAT ARE BEING MOVED TO NEW LOCATION. (TYPICAL)
11. REMOVE AND RELOCATE EXISTING THERMOSTAT. SEE NEW WORK PLAN FOR NEW LOCATION (TYPICAL)
12. REMOVE EXISTING CEILING MOUNTED EXHAUST FAN AND ALL ASSOCIATED DUCTWORK.
13. REMOVE EXISTING THRU THE WALL EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. PATCH EXTERIOR TO MATCH EXISTING
14. EXISTING 8" GAS FLUE SERVING EX AHU-1 AND EX GWH-1 UP THRU ROOF TO RAIN CAP.

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STATE OF MARYLAND
JOSEPH A. LOPERO
No. 36616
PROFESSIONAL ENGINEER
5/22/24

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

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25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY

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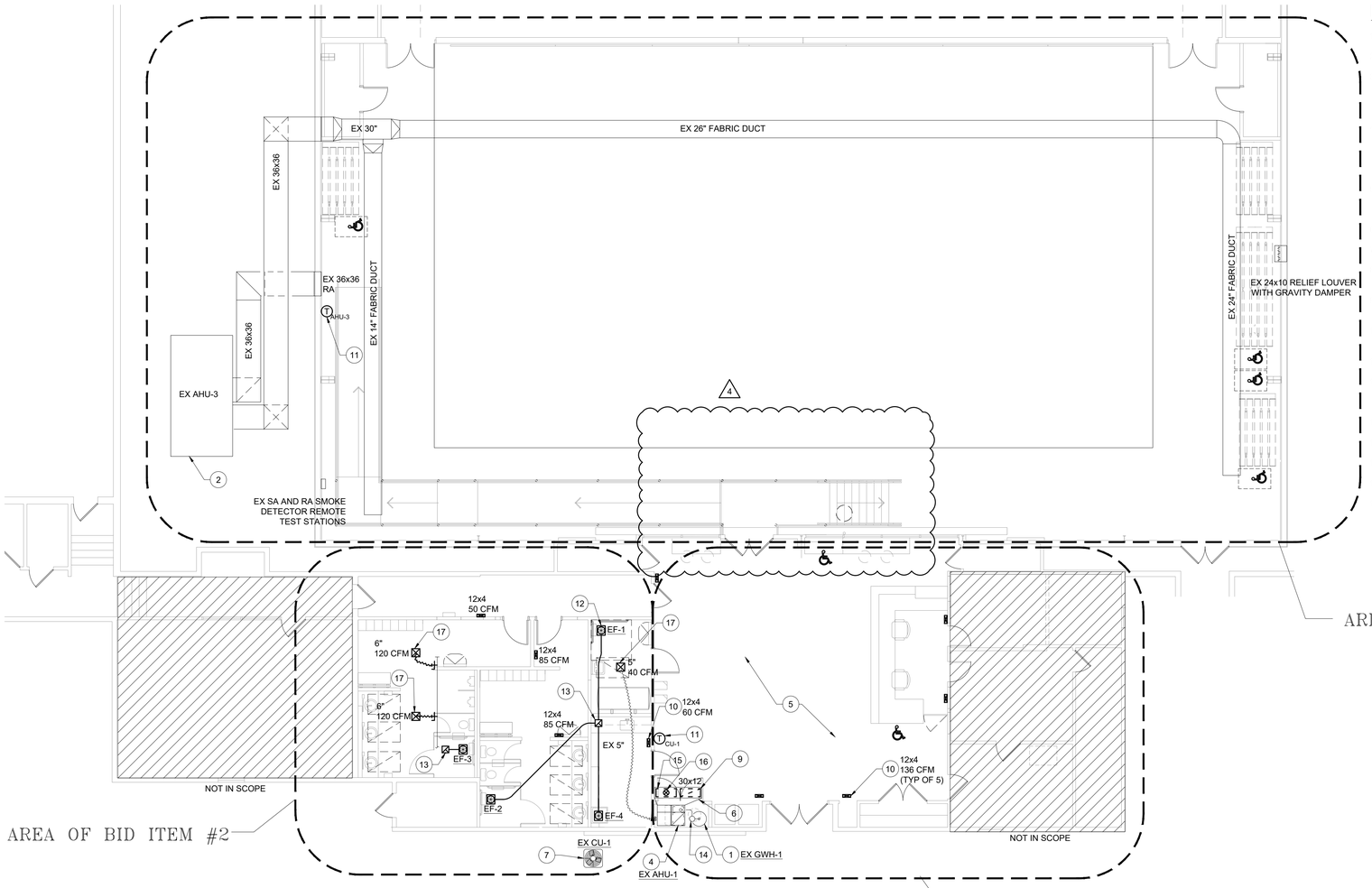
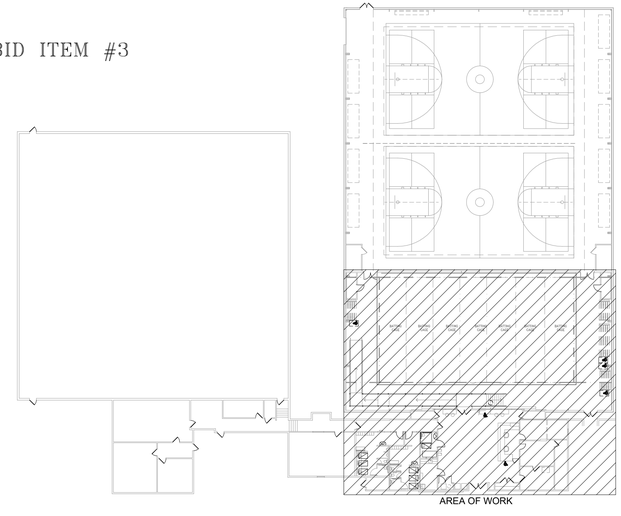
HVAC DEMOLITION PLAN

M101



1 HVAC NEW WORK PLAN
Scale: 1/4"=1'



2 KEY PLAN
Scale: 1/32"=1'

HVAC Drawing Notes: (1) (2) (#)

1. EXISTING GAS FIRED WATER HEATER TO REMAIN.
2. EXISTING GRADE MOUNTED EX AHU-3 SERVING BATTING CAGES TO REMAIN.
3. EXISTING THERMOSTAT/SENSOR FOR AHU-3 WAS NOT LOCATED DURING TIME OF SURVEY. ASSUMED TO BE OBSCURED BY EXISTING EQUIPMENT. CONTRACTOR TO VERIFY LOCATION OF THERMOSTAT DURING DEMOLITION AND RELOCATE IF OBSTRUCTED BY NEW EQUIPMENT LAYOUT. COORDINATE LOCATION WITH ENGINEER PRIOR TO WORK BEING PERFORMED.
4. EXISTING NOMINAL 2.5 TON FLOOR MOUNTED DOWNFLOW GAS FIRED FURNACE WITH DX SPLIT SYSTEM TO REMAIN. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE CHECKUP INCLUDING BUT NOT LIMITED TO: REPLACE FILTERS/BELTS, CHECK/CHARGE REFRIGERANT, CHECK/CLEAN HEAT EXCHANGER AND COOLING COILS, LUBRICATE BEARING, CHECK CONTROLS, ETC. TO ENSURE PROPER OPERATION AND BALANCE TO 1,000 CFM SUPPLY AND 190 CFM OUTSIDE AIR.
5. EXISTING SUPPLY AIR DUCTWORK FOR DOWNFLOW AHU-1 IS LOCATED UNDER FLOOR. CONTRACTOR TO FULLY CLEAN/VACUUM DUCTWORK. EXTEND DUCTWORK AS NECESSARY TO NEW FLOOR MOUNTED SUPPLY AIR DIFFUSERS. MODIFY AND TRANSITION DUCTWORK AS NECESSARY TO ACCOMMODATE NEW DEVICES.
6. EXISTING RETURN AIR DUCTWORK SUPPORTED FROM STRUCTURE ABOVE CEILING TO REMAIN (TYPICAL).
7. EXISTING OUTDOOR CONDENSING UNIT MOUNTED ON GRADE TO REMAIN.
8. RELOCATE EXISTING CEILING MOUNTED SUPPLY AIR DIFFUSER AND ASSOCIATED FLEXIBLE DUCTWORK. SEE NEW WORK FOR NEW LOCATION (TYPICAL)
9. REPLACE CEILING MOUNTED RETURN AIR REGISTER WITH LIKE KIND. REGISTERS SHALL BE TITUS MODEL 355RL OR APPROVED EQUAL.
10. NEW FLOOR MOUNTED LINEAR BAR SUPPLY AIR DIFFUSER. DIFFUSER SHALL BE TITUS MODEL CT480 OR APPROVED EQUAL. EXTEND AND MODIFY DUCTWORK AS NECESSARY TO MAKE NEW CONNECTIONS (TYPICAL)
11. RELOCATE EXISTING THERMOSTAT TO THIS LOCATION. MOUNT 48" AFF.
12. CEILING MOUNTED EXHAUST AIR FAN SUPPORTED FROM STRUCTURE AND INTERLOCKED WITH BUILDING TIME CLOCK TO BE ENERGIZED DURING OCCUPIED HOURS. EXTEND DISCHARGE DUCTWORK OVER TO COMMON RISER THRU ROOF. REFER TO SCHEDULE.
13. COMMON 8"x8" EXHAUST AIR DUCTWORK UP THRU ROOF TO GOOSENECK.
14. EXISTING 8" GAS FLUE SERVING EX AHU-1 AND EX GWH-1 UP THRU ROOF TO RAIN CAP.
15. BLANK OFF REMOVED RETURN REGISTER
16. 8" OUTSIDE AIR DUCTWORK UP TO GOOSENECK ON ROOF.
17. 12"x12" CEILING MOUNTED SUPPLY AIR REGISTER WITH NECK SIZE AND AIR QUANTITY INDICATED (TYPICAL). REGISTER SHALL HAVE DOUBLE DEFLECTION LOUVERS WITH OPPOSED BLADE DAMPER. PROVIDE RIGID/FLEXIBLE DUCTWORK BACK TO MAIN WITH AIR-TITE FITTING AND MANUAL VOLUME DAMPER.

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10/8/25

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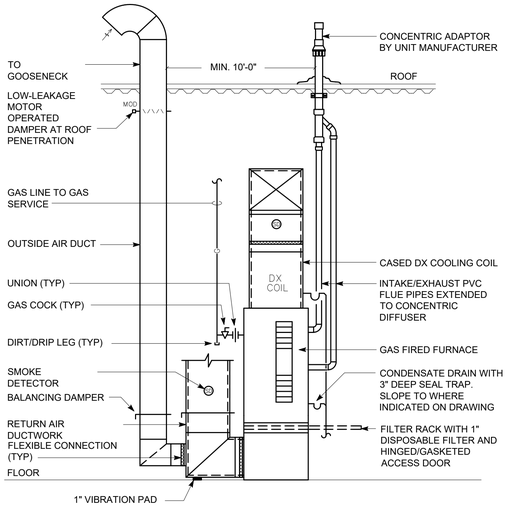
1	6/23/25	PERMIT COMMENTS
2	8/13/25	PERMIT COMMENTS
3	8/25/25	LIFT ADDITION
4	10/8/25	LIFT DELETION

HVAC NEW WORK PLAN

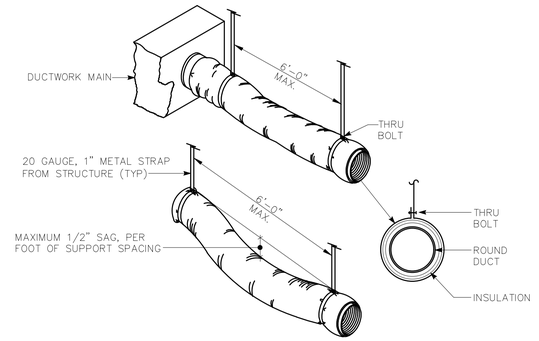
M102



GAS FIRED FURNACE DETAIL

NO SCALE

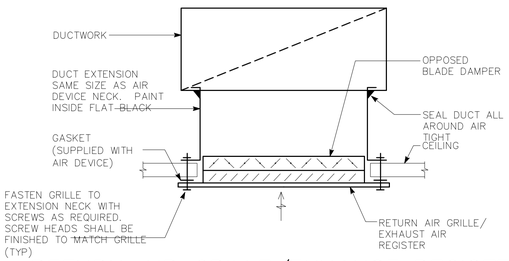
NOTES:
1) UNIT IS EXISTING AND DOWNFLOW CONFIGURATION. DETAIL IS SHOWN FOR TYPICAL OUTSIDE AIR CONNECTION.



FLEXIBLE DUCT RUN-OUT SUPPORT DETAIL

NO SCALE

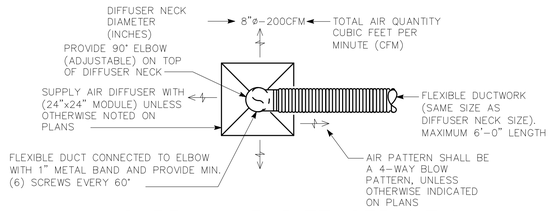
NOTES:
1) FLEXIBLE DUCT SHOULD EXTEND STRAIGHT FOR SEVERAL INCHES FROM RECTANGULAR DUCT CONNECTION BEFORE BENDING.
2) USE RIGID DUCTWORK WHEN FLEXIBLE DUCT LENGTH EXCEEDS 6'-0" LENGTH.



RETURN AIR GRILLE/EXHAUST REGISTER MOUNTING DETAIL

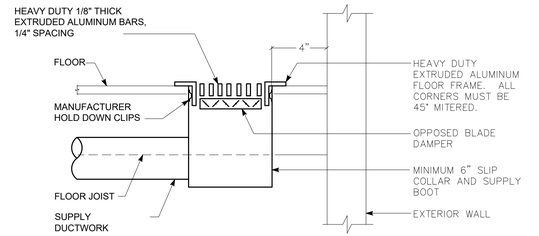
NO SCALE

NOTES:
1) ALL EXHAUST REGISTERS LOCATED IN WET AREAS SHALL BE ALUMINUM.
2) ALL EXHAUST AIR DUCTWORK CONVEYING MOISTURE SHALL BE ALL ALUMINUM.



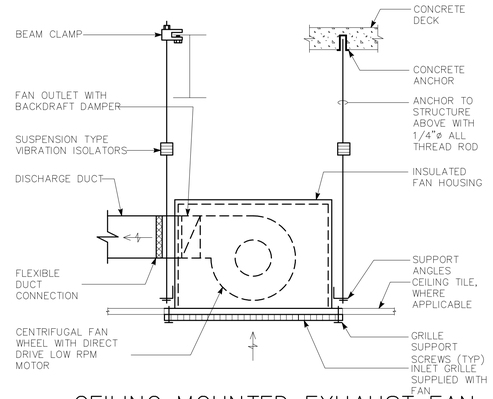
SUPPLY AIR DIFFUSER KEY

NO SCALE



LINEAR BAR FLOOR SUPPLY REGISTER DETAIL

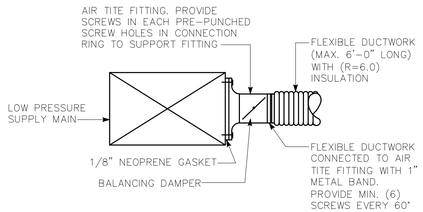
NO SCALE



CEILING MOUNTED EXHAUST FAN DETAIL

NO SCALE

NOTE:
PROVIDE VARIABLE SPEED CONTROLLER ON SIDE OF CASING FOR PROPER AIR BALANCE



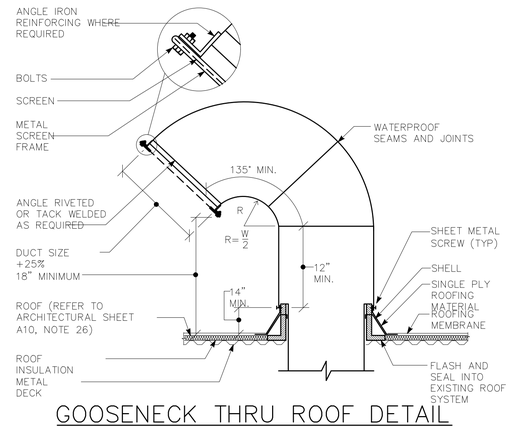
AIR-TITE SIZE CHART

DUCTSIZE	CONNECTION RING	DUCTSIZE	CONNECTION RING
5"	8"	9"	12"
6"	9"	10"	13"
7"	10"	11"	15"
8"	11"	12"	17"

NOTE:
WHERE CONNECTION RING SIZE IS LARGER THAN SUPPLY DUCT, THEN CONNECTION RING SHALL BE CRIMPED OVER DUCT AND CONNECTED, SCREWED & SEALED ON TOP AND BOTTOM OF SUPPLY DUCT.

AIR-TITE SPIN-IN FITTING DETAIL

NO SCALE



GOOSENECK THRU ROOF DETAIL

NO SCALE

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8/22/24
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DETAILS

M501

2021 INTERNATIONAL MECHANICAL CODE - VENTILATION CHART

SPACE NAME	A_z (FT^2)	R_a AREA OUTDOOR AIR RATE (CFM/FT^2)	R_aA_z AREA OUTDOOR AIR (CFM)	OCCUPANT LOAD RATE (# PEOPLE / 1,000FT^2)	P_z TOTAL # OF PEOPLE	R_p OCCUPANT OUTDOOR AIR RATE (CFM/ PERSON)	R_pP_z OCCUPANT OUTDOOR AIR (CFM)	V_{bz} BREATHING ZONE OUTDOOR AIR (CFM)	E_z ZONE AIR DISTRIBUTION EFFECTIVENESS	V_{oz} ZONE OUTDOOR AIR	V_{pz} TOTAL SUPPLY AIR TO SPACE	Z_p OUTDOOR AIR FRACTION
100 LOBBY	1225	0.06	74	10	13	5	65	139	0.8	174	680	0.26
108 CORRIDOR	182	0.06	11	0	0	0	0	11	0.8	14	50	0.28
112 WOMENS RESTROOM	303	50 CFM CONTINUOUS EXHAUST PER TOILET FIXTURE = 150 CFM									170	0
113 HOUSKEEPING CLOSET	102	0.06	7	5	1	5	5	12	0.8	15	60	0.25
114 FAMILY RESTROOM	86	50CFM CONTINUOUS EXHAUST PER TOILET FIXTURE = 50cfm									40	0
TOTAL	**1898**		**92**		**14**		**70**	**162**		**203**	**1000**	**0.28**

NOTES:
1.) EX AHU-1 SHALL BE BALANCED TO 190 CFM OF OUTSIDE AIR

System Ventilation Efficiency E_v =	**0.87**	
System Population =	**14**	
Occupant Diversity =	**1**	
Uncorrected Outdoor Air Intake =	**162**	
Total required Outdoor Air V_{ot}=	**187**	**CFM**

2021 INTERNATIONAL MECHANICAL CODE - VENTILATION CHART

SPACE NAME	A_z (FT^2)	R_a AREA OUTDOOR AIR RATE (CFM/FT^2)	R_aA_z AREA OUTDOOR AIR (CFM)	OCCUPANT LOAD RATE. (# PEOPLE / 1,000FT^2)	P_z TOTAL # OF PEOPLE	R_p OCCUPANT OUTDOOR AIR RATE (CFM/ PERSON)	R_pP_z OCCUPANT OUTDOOR AIR (CFM)	V_{bz} BREATHING ZONE OUTDOOR AIR (CFM)	E_z ZONE AIR DISTRIBUTION EFFECTIVENESS	V_{oz} ZONE OUTDOOR AIR	V_{pz} TOTAL SUPPLY AIR TO SPACE	Z_p OUTDOOR AIR FRACTION
110 MENS RESTROOM	322	50 CFM CONTINUOUS EXHAUST PER TOILET FIXTURE = 200 CFM									240	0
TOTAL	**322**		**0**		**0**		**0**	**0**		**0**	**240**	**0**

NOTES:
1.) Mens restroom is on seperate existing ahu serving adjacent spaces in building. Restroom does not require OA

System Ventilation Efficiency E_v =	**1**	
System Population =	**0**	
Occupant Diversity =	**1**	
Uncorrected Outdoor Air Intake =	**0**	
Total required Outdoor Air V_{ot}=	**0**	**CFM**

EXHAUST FAN SCHEDULE

ITEM#	AREA SERVED	CFM	SONES	HP / WATTS	FAN TYPE	ESP	DRIVE TYPE	RPM	ELECTRICAL DATA	CONTROL	WEIGHT (LBS)	MODEL #	MANUFACTURER
EF-1	Family Restroom	50	1.4	28W	CEILING	.375"	BELT	752	115V/1Φ	TIMECLOCK	15	GC-146	COOK
EF-2	Womens Restroom	150	3	69W	CEILING	.375"	BELT	873	115V/1Φ	TIMECLOCK	16	GC-186	COOK
EF-3	Mens Restroom	200	5	87W	CEILING	.375"	BELT	1,061	115V/1Φ	TIMECLOCK	16	GC-186	COOK
EF-4	Housekeeping Closet	75	2	34W	CEILING	.375"	BELT	873	115V/1Φ	SWITCH	15	GC-146	COOK

NOTES:
1.) HVAC TIMECLOCK SHALL ALLOW FANS EF-1,2,3 TO RUN CONTINUOUSLY DURING OCCUPIED TIMES. [50 CFM / WATERCLOSET OR URINAL PER IMC 403.3.1.1]
2.) ALL CEILING FANS SHALL BE EQUIPPED WITH BACKDRAFT DAMPERS AND FAN SPEED CONTROLLERS.

EXISTING GAS FIRED SPLIT SYSTEM SCHEDULE

ITEM#	AREA SERVED	FURNACE DATA															COOLING COIL DATA (MBH)					OUTDOOR UNIT				
		CFM	OA	HP	ESP	AFUE %	INPUT	OUTPUT	ΔT (°F)	STAGES	FLUE SIZE	VOLTAGE/PHASE	MCA/MOCP	WEIGHT	MODEL #	MANUFACTURER	TOTAL	SENS	SEER	MODEL #	MANUFACTURER	ELEC DATA	MCA / MOCP	WEIGHT (LBS)	MODEL #	MANUFACTURER
AHU-1	LOBBY	1000	190	1/2	0.5	80	90	72	35-65	1	4"	115/1	9.7/20	115	KG7SK-090924B1	GIBSON	30	21.3	EX	C7BAMX30C-B	GIBSON	208/1	18.5/30	EX	JS4BE-030KA	GIBSON

NOTES:
1.) CONTRACTOR TO MODIFY EXISTING AHU TO PROVIDE OUTSIDE AIR. SEE DETAIL AND SHEET M101.
2.) CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE CHECKUP INCLUDING BUT NOT LIMITED TO: REPLACE FILTERS/BELTS, CHECK/CHARGE REFRIGERANT, CHECK/CLEAN HEAT EXCHANGER AND COOLING COILS, LUBRICATE BEARING, CHECK CONTROLS, ETC. TO ENSURE PROPER OPERATION

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6/18/25

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SCHEDULES

M601

MECHANICAL SPECIFICATIONS

1. SECTION 15010 - BASIC MECHANICAL REQUIREMENTS

A. The work of each of the following sections includes furnishing and installing the material, equipment and systems complete as specified and/or indicated on the drawings. the installations, when finished, shall be complete and coordinated, ready for satisfactory service.

B. A work under this contract shall be done in strict accordance with all applicable municipal, state, county, NFPA, International and local codes that govern each particular trade.

C. The contractor shall make applications and pay all charges for all necessary permits, licenses and inspections as required under the above codes. Upon completion of the work, the customary certifications of approval shall be furnished. The contractor shall also coordinate and make all required submissions to the local utility companies as required.

D. No materials or equipment shall be used in the work until approved. Before submission of the shop drawings, and not more than thirty (30) days after award of the contract, the contractor shall submit for approval, a complete list of all materials and equipment which he intends to furnish, giving manufacturer and catalog numbers. A complete list of proposed sub-contractors shall also be submitted.

E. The contractor shall examine all drawings and specifications and shall visit the site and inspect the existing conditions in person. Certain areas may have been in-accessible at the time of the engineers survey and may only be visible during or after the demolition phase; therefor, those H.V.A.C. systems and coordination of those systems, shall become the responsibility of the contractors. Failure to comply with this requirement shall not relieve the contractors of their responsibilities for complying with the intent of the contract documents.

F. The drawings indicate the general arrangement of the mechanical installations. Details of proposed departures due to actual field conditions or other causes shall be submitted for approval prior to installation. Reworking of completed items due to improper field coordination shall be at the contractor's expense.

G. Provide sufficient access and clearance for all items of equipment requiring servicing and maintenance, such as valves, dampers, controls, drives, drains, vents, starters, switches, filters, traps, and major items of equipment.

H. The contractor shall perform all necessary cutting and patching as required to complete the installation of all mechanical work. Patching of walls, floors, ceilings, roof, etc. shall match the adjacent surfaces.

I. The contractor shall prepare three (3) copies of a record and information booklet. The booklet shall be bound in a three ring loose-leaf binder. Provide the following data in the booklet:

1) Catalog data on each piece of equipment furnished.
2) approved shop drawings on each piece of equipment furnished.
3) Maintenance, operation and lubrication on each piece of equipment furnished.
4) Simplified temperature control diagrams of all H.V.A.C. systems.
5) Manufacturer's and contractor's guarantees.
6) Air balancing reports.
7) Commissioning reports as required.
8) Schedule/description of all service work/maintenance inspections required by the paragraphs of this section.

J. All parts of the heating, ventilating, air conditioning and exhaust systems shall be adjusted, checked, balanced and tested by an independent A.A.B.C. or N.E.B.B. certified testing and balancing contractor approved by the owner. The contractor shall put all systems and equipment into full operation, and shall test and balance all devices to within ten (10) percent of capacities indicated on the drawings. Submit copies of the balancing reports to the architect. Permanently mark the position of each balancing damper.

K. Upon completion of the mechanical installations, the contractor shall provide a complete set of prints of the contract drawings which shall be legibly marke in red pencil to show all changes and departures of the installation as compared with the original design. They shall be suitable for use in preparation of as-built drawings.

L. All new installations, including all materials and labor shall be guaranteed for a period of one (1) year from date of owner acceptance. The above shall not in any way void or abrogate equipment manufacturer's guarantee or warranty. Certificates of guarantee shall be delivered to the owner.

M. Contractor shall also provide one (1) year free service to keep the equipment in operating condition. This service shall be provided and rendered upon request when notified of any equipment malfunction.

N. In addition to the first year warranty period, the contractor shall provide, at no additional cost to the owner, a minimum of four (4) service calls and maintenance inspections. A complete outline of the required maintenance and the proposed schedule shall be included in a "record and information booklet", for review and acceptance by the owner/representative and engineer. The inspections are to be performed at three (3) month intervals for a total of (4) four service calls and inspections during the first year warranty period plus the original system start-up commissioning.

The service work and inspections shall include, but not limited to the following:

- Replace all H.V.A.C. air filters before occupancy.
- Lubricate all motor and fan bearings as required.
- Clean drain pans and drain lines.
- Check and tighten all electrical connections as required.
- Inspect all belts for adjustment and condition, replace as required.
- Check operating pressures and refrigerant charge
- Inspect all controls for correct operation and calibrate as required.
- Perform all maintenance as outlined in the equipment manufacturers operation and maintenance manuals

Upon completion of each scheduled inspection, the contractor shall deliver to the building owner or owners representative, within (48) hours of completion, two (2) copies of the completed inspection report for record purposes.

O. The service contractor shall, at the ninth month, advise the owner of the termination date of the above services. This contractor shall also provide the owner with a detailed proposal, reflecting annual escalation, for the continuation of the services and inspections described above.

2. SECTION 15250 - MECHANICAL INSULATION

A. All rectangular supply, return, make-up air and outside air ductwork shall be insulated with fiberglass insulation. All insulation shall be noncombustible or shall have a flame spread index of not more then 25 and a smoke development index of not more then 50 when tested in accordance with ASTM E 84.

B. Ductwork shall be wrapped with nominal 2" thick glass fiber blanket insulation with "installed" thermal conductivity 'K' value of 0.25 at 75 F mean temperature and thermal resistance 'R' value of 6.0 at 1½" compressed thickness. Owens Corning "SOFTR" fiberglass type 100 with foil faced vapor barrier. Insulation shall be neatly installed and suitable for 40 F-250 F duct temperatures.

C. All refrigerant suction piping shall have 1" of armaflex insulation. Liquid line piping shall not require insulation. All insulation exposed to weather shall be 100 coated with a "UV" inhibitor for protection from solar radiation.

D. All internal duct lining shall be as specified under section 15880. All interior rectangular ductwork exposed within condition spaces may be provided with internal lining only, with no external duct wrap. refer to drawings for additional notes. Internal lining shall not be used for ductwork system conveying wet/moist air (ie: shower rooms, dishwasher hoods, etc.).

E. All exposed ductwork located on roof or exposed to weather shall have 2" rigid board insulation with minimum R-8 value and sealed 100 with FlexClad-400 as manufactured by MFM Building Products Corp., or approved equal. FlexClad is a pre-fabricated, self-adhering, sheet-type, all weather/light weight durable and tear-resistant material with a protective membrane that has a UV resistant aluminum weather-proof surface and a rubberized asphalt adhesive.

3. SECTION 15500 - HEATING, VENTILATING & AIR CONDITIONING (HVAC)

A. The work to be performed shall include all labor, materials and equipment necessary to furnish and install complete, all H.V.A.C. mechanical equipment as shown on drawings and/or hereinafter specified. It is the intent that the systems be installed complete with all items necessary to provide satisfactory service.

B. All heating, ventilating and air conditioning equipment which contains compressors shall be provided with extended warranties covering the compressors for a minimum of four (4) years.

4. SECTION 15880 - AIR DISTRIBUTION

A. Furnish all labor and materials necessary to complete the sheet metal work associated with the heating, ventilating, air conditioning and exhaust systems, and other miscellaneous items shown and required.

B. All supply, return, outside air, make-up air, exhaust and Type 2 ductwork shall be constructed and installed in accordance with the sheet metal and air conditioning contractors national association (SMACNA) standards and ASHRAE standards.

C. Flexible ductwork shall be Hart & Cooley type F216 or approved equal. Flexible duct shall comply with NFPA bulletin 90A and shall be U.L. Listed as class 1 airduct and connector, standard 181, with R-6 value insulation and microbial resistant. Maximum length of runout shall not exceed 6'-0".

D. Support horizontal ducts with hangers spaced not more than six (6) feet apart. Use strap hangers for ducts up to thirty (30) inches wide, angle hangers or rods for ducts over thirty (30) inches wide. Strap hangers to be one (1) inch wide, 20 gauge minimum; fasten to sides and bottom of duct with sheet metal screws.

E. Ducts shall be straight and smooth on the inside, with joints neatly finished. Ducts shall be suspended from the construction and shall be free from vibration. Curved elbows shall have a center radius equal to one and one-half (1-1/2) times the width of the duct. All square turns shall be vaned. Vanes consisting of curved metal blades shall permit the air to make abrupt turns without turbulence.

F. All joints in the heating, ventilating, and air conditioning and exhaust system ductwork shall be sealed air tight. Sealant shall be as manufactured by Hard Cast Inc. or approved equal and shall consist of a mineral impregnated woven tape and an actuator adhesive. Sealant shall be SMACNA and U.L. approved, with a flame spread of 10 and a smoke developed of 0, non-toxic and non-flammable. Sealant shall be approved for operating temperatures from 0 degrees F. to 200 degrees F. Sealant system shall be installed in strict accordance with the manufacturer's recommendations and when applied shall provide a permanent seal without any deterioration.

G. All rectangular supply and return air ductwork within fifteen (15) feet of each air handling unit shall be lined on the interior for sound attenuation. Lining shall have a one (1) inch thickness and shall be glued with one hundred (100) percent coverage and additionally secured with pins. Increase duct sizes indicated two (2) inches direction to accommodate the interior lining. Dimensions shown on drawings are clear inside dimensions. Liner shall be a non-fibrous elastomeric thermal (and acoustical) material, closed cell, moisture resistant with anti-microbial agent. Material shall meet ASTM E84 25/50 fire rating (NFPA 90A & 90B), ASTM G 21 & 22, VOC guidelines, ASTM C 518, etc. Lining shall be Nomaco K-Flex Gray, Evonikfoams Solcoustic or approved equal.

H. Supply air diffusers shall have all steel construction with louvered face andfinished with #26 off-white enamel. Titus model TMS, Metal-Aire, Krueger orapproved equal.

I. Return air grilles shall have all steel construction with 1/2" spaced louvers, 35 degree deflection and finished with #26 off-white enamel. Titus model 355R,Metal-Aire, Krueger or approved equal.

J. Supply air linear grille floor registers shall have all steel construction with 1/8" bars spaced 1/4" apart, 0 deflection, opposed blade damper and finished with #26 off-white enamel. Titus model CT-480, Metal-Aire, Krueger or approved equal.

K. Ceiling mounted exhaust fans shall be as manufactured by Cook. Fans shall have acoustically insulated housings and shall have a maximum sound level rating of 6.0 sones. Air deliveries shall be as indicated on the drawings and all fans shall bear the AMCA certified ratings seal and the U.L. label. Integral backdraft damper shall be totally chatter proof with no metal contact. Fan shall have true centrifugal wheels with inlet perpendicular to, or remote from, inlet grille. Ceiling mounted exhaust fan grilles shall be of aerodynamic design of white molded plastic eggcrate shape and provide eighty-five (85) percent free open area. Terminal box shall be provided on the housing with cord, plug, and receptacle inside the housing. Entire fan, motor and wheel assembly shall be easily removable without disturbing the housing. Motor speeds shall not exceed 1600 rpm and all fan motors shall be suitably grounded and mounted on rubber-in-shear vibration isolators.

5. SECTION 15950 - CONTROLS

A. The controls contractor under this heading shall furnish and install all wiring and equipment necessary for a complete operational system including: automatic temperature controls, ventilation systems, exhaust systems, economizer systems, etc. as indicated on the drawings. The system shall include all necessary thermostats, relays, switches, transformers, contactors, etc. required for successful operation of all equipment as described in the sequence of operations. Electrical work in connection with all control systems shall be performed by the controls contractor and coordinated with the electrical contractor as needed to provide a full and complete package.

B. Each unit shall be controlled by a wall mounted Honeywell model T-7350 heating/cooling thermostat with a (7) day/(24) hour program clock capable of (2) occupied/ non-occupied periods, with (2) heating/(2) cooling setpoints, remote temperature sensor capability (up to 9) and auxillary contact for Honeywell economizer controls. Thermostat assembly shall be compatible with the air handling unit's economizer and/or accessory package as specified under section 15500. Coordinate control requirements with the proposed equipment. Dual heating/ cooling thermostats shall have a minimum 5 degree deadband.

GENERAL NOTES:

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STATE OF MARYLAND
JOSEPH A. LOPERO
No. 36616
PROFESSIONAL ENGINEER
8/22/24

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

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25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY
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MECHANICAL SPECIFICATIONS

M801

ABBREVIATIONS

A	COMPRESSED AIR	HZ	HERTZ
AAV	AUTOMATIC ADMITTANCE VALVE	ICE	ICE MAKER
ABV	ABOVE	ID	INDIRECT DRAIN
ACU	AIR CONDITIONING UNIT	IE	INVERT ELEVATION
AD	AREA DRAIN	IN W.C.	INCHES WATER COLUMN
AE	ANESTHESIA EXHAUST	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	LAV	LAVATORY
AHU	AIR HANDLING UNIT	LBS	POUNDS
AS	AIR SEPARATOR	LBS/HR	POUNDS PER HOUR
AV	AUTOMATIC AIR VENT	LG	LENGTH
AW	ACID WASTE	LPR	LOW PRESSURE STEAM RETURN
	AT	LPS	LOW PRESSURE STEAM SUPPLY
B	BOILER	LWT	LEAVING WATER TEMPATURE
BAS	BUILDING AUTOMATION SYSTEM	MAU	MAKEUP AIR UNIT
BFP	BACKFLOW PREVENTION DEVICE	MAV	MANUAL AIR VENT
BHP	BRAKE HORESPOWER	MAX	MAXIMUM
BLDG	BUILDING	MBH	THOUSANDS OF BTU PER HOUR
BOP	BOTTOM OF PIPE	MC	MECHANICAL CONTRACTOR
BO	BOILER BLOW OFF	MCA	MINIMUM CURRENT AMPACITY
BTUH	BRITISH THERMAL UNITS PER HOUR	MIN	MINIMUM
CD	CEILING DIFFUSER /CONDENSATE DRAIN	MOCP	MAXIMUM OVERCURRENT PROTECTION
CH	CHILLER	MPR	MEDIUM PRESSURE RETURN
CHR	CHILLED WATER RETURN	MPS	MEDIUM PRESSURE STEAM
CHS	CHILLED WATER SUPPLY	N	NITROGEN
CLG	CEILING	N.C.	NORMALLY CLOSED
COND	CONDENSATE	NIC	NOT IN CONTRACT
COP	COEFFICIENT OF PERFOMANCE	NO	NITROUS OXIDE
CT	COOLING TOWER	N.O.	NORMALLY OPEN
CU	CONDENSING UNIT	NTS	NOT TO SCALE
CV	CONTROL VALVE	O	OXYGEN
CW	DOMESTIC COLD WATER	OFD	OVERFLOW ROOF DRAIN
D	DRAIN	P	PUMP
DC	DRY COOLER	P-1	PLUMBING FIXTURE IDENTIFIER
F	DEGREE FAHRENHEIT	PBD	PARALLEL BLADE DAMPER
DH	DEHUMIDIFIER	PC	PLUMBING CONTRACTOR
DI	DEIONIZED WATER	PD	PRESSURE DROP
DN	DOWN	PH	PHASE
DOAS	DEDICATED OUTDOOR AIR SYSTEM	PPM	PARTS PER MILLION
DS	DOWNSPOUT NOZZLE	PRV	PRESSURE RELIEF VALVE
DTR	DUAL TEMPERATURE RETURN	PS	PRESSURE SWITCH
DTS	DUAL TEMPERATURE SUPPLY	PSI	POUNDS PER SQUARE INCH
DW	DISHWASHER	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
EA.	EACH	PSIG	POUNDS PER SQUARE INCH GAUGE
EC	ELECTRICAL CONTRACTOR	PTAC	PACKAGED TERMINAL AIR CONDITIONER
EFF	EFFICIENCY	RD	ROOF DRAIN
EL	ELEVATION	RLA	RUNNING LOAD AMPS
ER	EXHAUST REGISTER	RL	RAIN LEADER
ET	EXPANSION TANK	RM.	ROOM
EWC	ELECTRIC WATER COOLER	RO	REVERSE OSMOSIS SUPPLY
EWH	ELECTRIC WATER HEATER	RPM	REVOLUTIONS PER MINUTE
EWT	ENTERING WATER TEMPERATURE	RR	REVERSE OSMOSIS RETURN
EX	EXISTING	RTU	ROOFTOP AIR HANDLING UNIT
EXT	EXTERNAL	RX	REMOVE EXISTING
FCO	FLOOR CLEANOUT	SF	SQUARE FOOT
FCU	FAN COIL UNIT	SH	SHOWER
FD	FLOOR DRAIN	SPEC.	PROJECT SPECIFICATIONS
FDC	FIRE DEPARTMENT CONNECTION	SS	STAINLESS STEEL
FDV	FIRE DEPARTMENT VALVE	STRUCT.	STRUCTURAL
FL	FLOOR	SW	STORM WATER
FLA	FULL LOAD AMPS	TEMP	TEMPERATURE
FOR	FUEL OIL RETURN	TMV	THERMOSTATIC MIXING VALVE
FOS	FUEL OIL SUPPLY	TOP	TOP OF PIPE
FOV	FUEL OIL VENT	TP	TRAP PRIMER
FPM	FEET PER MINUTE	TWH	TANKLESS WATER HEATER
FS	FLOOR SINK	TYP	TYPICAL
FSD	FIRE SMOKE DAMPER	UH	UNIT HEATER
FT	FEET	UON	UNLESS OTHERWISE NOTED
FT^2	SQUARE FEET	UR	URINAL
FTR	FINNED TUBE RADIATOR	V	VOLT / VACUUM
FW	FEED WATER PUMPED DISCHARGE	VAC	VOLTS ALTERNATING CURRENT
GAL	GALLON	VB	VACUUM BREAKER
GC	GENERAL CONTRACTOR	VP	VELOCITY PRESSURE
GPM	GALLONS PER MINUTE	VRF	VARIABLE REFRIGERANT FLOW
GR	GLYCOL RETURN	VTR	VENT THRU ROOF
GRH	GAS RADIANT HEATER	W	WATTS
GS	GLYCOL SUPPLY	W/	WITH
GUH	GAS UNIT HEATER	W/O	WITHOUT
GV	GRAVITY VENTILATOR	WC	WATER CLOSET
GW	GREASE WASTE	WCO	WALL CLEANOUT
GWH	GAS WATER HEATER	WF	WATER FILTER
H	HUMIDIFIER	WG	WATER GAUGE
HB	HOSE BIBB	WH	WALL HYDRANT
HC	HEATING COIL	WS	WATER SOFTENER
HCWR	DUAL TEMPERATURE RETURN	WSHP	WATER SOURCE HEAT PUMP
HCWS	DUAL TEMPERATURE SUPPLY		
HD	HUB DRAIN		
HP	HEAT PUMP / HORSEPOWER		
HPR	HIGH PRESSURE STEAM RETURN		
HPS	HIGH PRESSURE STEAM SUPPLY		
HR	HOUR		
HW	HOT WATER		
HWR	HW RECIRC/HEATING WATER RETURN		
HWS	HEATING WATER SUPPLY		
HX	HEAT EXCHANGER		

GENERAL NOTES

GENERAL PLUMBING REQUIREMENTS

1. Materials, equipment, and systems shall meet all pertinent requirements of the Underwriters Laboratory (UL), the American Society for Testing Materials (ASTM), American Water Works Association (AWWA), American Gas Association (AGA), National Fire Protection Association (NFPA), and other nationally recognized agencies as well as the latest adopted edition of state and local code procedures, methods, and requirements, including the most stringent of health and safety standards as required and as interpreted by the authority having jurisdiction. Applicable codes and standards include, but are not limited to the following: "international plumbing, building, energy, mechanical, and fuel gas codes" applicable local and municipal codes and ordinances.
2. Bidders shall be licensed contractors in accordance with local and state laws.
3. Bidders shall thoroughly acquaint themselves with the conditions under which the work is to be performed. They shall examine all services, equipment, surfaces, etc., which this work is in any way dependent upon, and bring any discrepancies determined or omissions found in the drawings to the owner's attention before submitting bid.
4. All installed systems, devices and related items shall be tested in place on site. Replace any and all contractor supplied defective devices, items or systems at contractor's own expense before completion of the project.
5. Contractor shall guarantee all work for which materials are furnished, fabricated or field erected, all factory assembled equipment for which no specific manufacturer's guarantee is furnished, and all work in connection with installing manufacturer's guaranteed equipment. This contractor's guarantee shall exist for a period of one (1) year from the date of final owner acceptance of the work and shall apply to defects in material and to defective workmanship of any kind.
6. The systems shown on the drawings shall be provided to serve all fixtures, equipment, and areas within the Contract Limit Lines as set forth by the Architectural solution for the project. Systems shall include all equipment, appurtenances, safety devices, and controls necessary for the intended service.
7. All permits and fees required for the work shall be secured and paid for by the plumbing contractor and included in bid price.
8. Anything drawn or specified on these plans shall not be construed to conflict with any local, municipal or state law, regulation or ordinance which governs the installation of any plumbing or related work. Where any portion of the systems are not installed as in accordance with applicable laws, ordinances, regulations and codes, this contractor shall make all changes required by the enforcing authorities in a manner approved by the owner and without additional cost to the owner.
9. Where job conditions require changes from the contract documents that do not change the scope of installation or nature of work required, the contractor shall make such changes without additional cost to the owner. No other changes may be made without written permission of the owner.
10. All equipment and fixtures shall be new and unused and installed in strict conformance to manufacturer's recommendations. Provide fixtures complete with all trim, stops, hangers, carriers, supports, etc. including provision for the handicapped, if required. Where fixtures are accessible to the handicapped, fixtures must comply with all federal ADA regulations.
11. Arrange for chases, slots, and openings in other building components to allow for plumbing installations. Coordinate the cutting and patching of building components to accommodate installation of plumbing equipment and materials.
12. Do not endanger or damage installed Work through procedures and processes of cutting and patching. Provide repairs required to restore other work, because of damage caused as a result of plumbing installations.
13. Coordinate the installation of required supporting devices and sleeves to be set in poured in place concrete and other structural components, as they are constructed. Plumbing contractor shall be responsible for assuring all hangers and supports are anchored or attached to building elements adequate for intended plumbing system or equipment. Plumbing contractor to provide and install nail plates where piping passes through stud(s) within 2" of nailing surface to protect pipe from nails or drywall screws.
14. Sequence, coordinate, and integrate installations of plumbing materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing-in the building.
15. Where mounting heights are not detailed or dimensioned, install plumbing services and overhead equipment to provide the maximum headroom possible.
16. Install plumbing equipment to facilitate maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
17. Coordinate the installation of plumbing materials and equipment above ceilings with suspension system, light fixtures, ductwork, conduit, and other installations. Coordinate plumbing equipment and materials installation with other building components.
18. All pipes shall be of the size given on the drawings. All piping shall be run true to line. Pipes may be moved, if necessary for installation, provided that the nature of the system is not changed. All pipes shall be concealed: located above ceiling, below floor or in walls, except where connection is made to fixture.
19. Coordinate connection of plumbing systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service and coordinate all locations, sizes and invert elevations with civil engineer.
20. Plumbing service rough-in shall be based on information, drawings, equipment cuts, etc. prepared by the equipment supplier. Final plumbing connections shall be made from rough-in to equipment after equipment is set in place.
21. Actual locations and mounting methods for fixtures and penetrations are subject to Architect's approval. All piping is shown schematically for clarity - coordinate with structure, ducts, lights, utilities, etc. Verify all dimensions by field measurements.
22. The hot and cold water supply line branches for all lavatories and sinks shall have Josam or Zurn water hammer arresters installed on the high point at the end of each branch line.
23. All above-ground water supply piping shall be Type L rigid copper. All below grade water supply piping shall be Type K soft copper with at least 50' between joints. All joints shall be soldered with "lead-free" solder (e.g., 95-5).
24. Flush and sterilize water system after connections are made in accordance with local regulations.
25. All sanitary waste piping below slab shall be cast-iron or solid-wall PVC. All grease waste piping shall be cast iron. Other DWV piping may be solid-wall PVC or cast-iron or galvanized steel, except that PVC may NOT be used in demising walls and may NOT be used in return plenum ceilings.
26. All condensate drain piping and indirect drains shall be DWV seamless copper tubing with soldered drainage fittings or schedule 40 plastic pipe with solvent sealed plastic fittings, except that PVC may NOT be used in demising walls and may NOT be used in return plenum ceilings.
27. All floor penetrations and all exterior penetrations shall be completely waterproofed, firesafed, and sealed. All pipe penetrations of fire rated assemblies shall be sleeved and sealed as required to maintain the rating of the assembly. Sleeves shall be used for all masonry penetrations. Proper sealing of penetrations as described here is the sole responsibility of the plumbing contractor.
28. All domestic water piping, vent piping and gas piping shall run above ceiling, UON. All sanitary piping shall be run under the floor, UON.
29. Existing piping shown on drawings is based on original drawings, and location, mounting heights and points of connection must be verified in field. All items that are indicated in bold print shall be considered new or relocated, unless otherwise noted.
30. In general, do not abandon old piping - remove and dispose of properly, unless inaccessible or under slab, or unless noted otherwise.
31. All water piping inside the building thermal envelope shall be insulated with Owens Corning SSL II with ASJ Max Fiberglas pipe insulation as follows: Cold water, 1/2 thick insulation; hot water supply and recirculation piping 1.25 dia and smaller, 1 thick insulation; hot water supply and recirculation piping 1.5 dia and larger, 1.5 thick insulation.
32. No hot and cold water supply piping shall be run in outside walls, crawl space, attic, or other unheated spaces.
33. All sanitary sewer traps and grease waste piping that is located in unheated areas shall be heat traced and insulated with 1 fiberglass minimum to prevent freezing. All heat tracing shall be controlled with a sensor on the coldest portion of the piping and set to turn on if pipe temperature drops below 45F.
34. Provide and install LavGuard by Truebro, Inc. ADA compliant, vinyl coated with standard white finish, foam insulation on all exposed plumbing waste and supply connectors underneath all lavatories, not just the one labeled with an H-. If there are any instant water heaters, transformers for hands-free devices, or any other sharp or abrasive objects under lavatory, provide and install full lavatory shield (LavShield by Truebro, Inc. or equal), maintaining ADA required clearances under all lavatories.
35. All horizontal branches and vents 3" in diameter and over shall be sloped at 1/8" per foot minimum, unless otherwise noted. All horizontal branches and vents under 3" in diameter shall be sloped at 1/4" per foot minimum, unless otherwise noted (UON).
36. Fabricate, install, inspect, test and purge natural gas systems in accordance with the latest IFGC 2018, and with local gas company. Gas pipe shall be schedule 40 black steel, UON.
37. Contractor to install, size and trap refrigerant piping per the manufacturer's recommendations.
38. All existing H.V.A.C. and piping/plumbing information shown was obtained from field surveys or original previous tenant design drawings. Contractor must verify this information prior to any work being performed.
39. Any cutting or patching of the roof to be done by the owner's roofing contractor so not to void any original warranties.
40. The general contractor shall coordinate all exterior plumbing inverts with actual site conditions, proposed installation and with civil drawings prior to construction, to ensure that all connection points leaving the building can be met..
41. All access panels required in hard ceilings and walls shall be furnished and installed by the contractor. Panels shall be wind-lock model stealth or approved equal with appropriate size.
42. All service valves, unions, gas cocks, etc., shall be manufactured by Nibco or equal.
43. All domestic water piping shall be insulated with 1" pre-molded fiberglass insulation with an all service jacket. Fittings shall be insulated with fiberglass and covered with PVC jackets.
44. All sanitary piping located above food storage racks, above food preparation areas or above food serving areas shall be copper pipe with soldered copper drainage and waste fittings.
45. All refrigerant piping shall be wrapped with 1" Armaflex insulation.
46. All sanitary piping shall be sloped at minimum 1/8" per foot. All sanitary piping 2" and smaller and located below first floor slab/grade shall be sloped at 1/4" per foot.
47. All indirect piping that is equal or greater then 4'-0" long shall be provided with trap at equipment connection.
48. Plumbing contractor is responsible for all services within building and to 5'-0" outside building foundation wall unless noted otherwise on plans. See site utility plans for related work by others.
49. Maintain a minimum clearance of 3'-0" in front of electrical panels and 1'-0" either side when installing plumbing systems in the same area. Pipe systems, equipment, etc. shall not be routed directly over panels or switch gear and where above may be as close as 12 inches from perimeter. Refer to adopted electrical codes where in doubt.
50. All cleanouts, valves, air chambers, etc. are to be accessible. Extend piping and provide access panels where necessary. Plumbing contractor will be required to demonstrate accessibility if it is questionable. Access panel sizes, locations, and final color shall be coordinated with the architect as well as all other trades to avoid any conflicts. Access panels required for this purpose are to be provided by plumbing contractor for installation by general contractor.
51. All plumbing system valves shall be installed in a location and orientation that will permit intended use.
52. Provide stops and/or isolation valves to each individual fixture or piece of equipment to allow for individual servicing unless noted otherwise on plans.
53. Indirect drain piping from fixtures, specialties, and equipment shall be routed to floor drain or other approved receptacles and terminated with an air gap 2 times the diameter of the drain piping but not less than a 1 inch gap. Support piping so drain piping cannot be deflected from drain source.
54. Wherever possible, horizontal soil or waste pipe shall come off top or at 45 degree vertically from center of pipe before offsetting horizontally to riser.
55. All vent terminations shall be coordinated with building structure, openings, air intakes, and other roof mounted equipment. Adjust vent through roof locations to comply with applicable code.
56. Plumbing contractor shall install air chambers on vertical drop to individual sinks with spray feature and piping to all shower valves. Install piston-type water hammer arrestors on horizontal piping prior to drop to all individual flush valve fixtures. Piston- or diaphragm-type water hammer arrestors may be utilized for water headers serving a group of fixtures within the same chase and shall be located upstream the last fixture served on the header. Locate arrestors in accessible location, or provide access panel. Size arrestors per manufacturer's recommendation for related fixture load.
57. Minimize developed length of branch runouts from circulated domestic hot water mains to fixtures and/or mixing valves whenever possible.
58. Plumbing contractor to install and test equipment per manufacturer's written instructions and recommendations to assure proper operation.
59. Insulate all above floor traps receiving chilled water or condensate with 1/2" thick elastomeric material.
60. Insulate all horizontal storm piping and exposed roof drain sumps (where applicable). See plumbing insulation specification for clarification.
61. The general contractor shall be responsible for removal and disposal of all construction debris and refuse from the job site.
62. All submittals must be sent in pdf format, highlighted or redlined
63. Upon completion of the work, the general contractor shall prepare a punch list first and notify architect to review and verify punch-list for corrections.
64. Plumbing contractor shall furnish record set of drawings with any deviations marked in red ink, within 90 days of system acceptance.

PLUMBING SYMBOLS LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
SAN	SANITARY PIPE		FLOOR DRAIN/HUB DRAIN
V	VENT PIPE		FLOOR SINK
	COLD WATER PIPE		SIAMESE CONNECTION
	HOT WATER PIPE		SPRINKLER HEAD
	HOT WATER RECIRC. PIPE	1	EQUIPMENT IDENTIFIER
SW	STORM WATER PIPE	HPS	HIGH PRESSURE STEAM
OFD	OVERFLOW DRAIN PIPE	MPS	MEDIUM PRESSURE STEAM
CD	CONDENSATE DRAIN PIPE	LPS	LOW PRESSURE STEAM
PCD	PUMPED CONDENSATE DRAIN PIPE	HPR	HIGH PRESSURE RETURN
FD	FOUNDATION DRAIN PIPE	MPR	MEDIUM PRESSURE RETURN
SW	STORM WATER	LPR	LOW PRESSURE RETURN
CS	CONDENSER WATER SUPPLY PIPE	FW	FEED WATER PUMPED DISCHARGE
CR	CONDENSER WATER RETURN PIPE	BO	BOILER BLOW OFF
CWS	CHILLED WATER SUPPLY PIPE	FOS	FUEL OIL SUPPLY
CWR	CHILLED WATER RETURN PIPE	FOR	FUEL OIL RETURN
HWS	HEATING WATER SUPPLY PIPE	FOV	FUEL OIL VENT
HWR	HEATING WATER RETURN PIPE	GS	GLYCOL SUPPLY
G	NATURAL GAS PIPE	GR	GLYCOL RETURN
PG	PROPANE GAS PIPE	RO	REVERSE OSMOSIS SUPPLY
RS/RL	REFRIGERANT PIPE	RR	REVERSE OSMOSIS RETURN
CA	COMPRESSED AIR PIPE	SW	STORM WATER
F	FIRE PROTECTION PIPE	O	OXYGEN
T.S.	OUTSIDE STEM & YOKE VALVE WITH TAMPER SWITCH	NO	NITROUS OXIDE
	UNION	N	NITROGEN
	PRESSURE REDUCING VALVE		GAS OUTLETS
	BALANCING VALVE		CONNECT TO EXISTING
	DIRECTION OF LIQUID FLOW		DEMOLISH TO THIS LOCATION
	GAS COCK	1	DRAWING NOTE
	BALL VALVE	1	REVISION SYMBOL
	GATE VALVE	1	EQUIPMENT IDENTIFIER
	THREE WAY CONTROL VALVE		
	TWO WAY CONTROL VALVE		
	CHECK VALVE		
	WYE STRAINER		
	PRESSURE GAUGE		
	THERMOMETER		
	PIPE DOWN		
	PIPE UP		
C.O. C.O.	CLEANOUT (FLOOR & WALL)		
	ANGLE STOP VALVE		
	HOSE BIB (SPIGOT)		
	WALL HYDRANT		

NOTE:

- ALL SYMBOLS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL NOTE THAT NOT ALL SYMBOLS MAY BE USED, AS WELL AS NOT ALL SYMBOLS USED MAY BE LISTED. REFER TO PROJECT SPECIFIC NOTES FOR ADDITIONAL INFORMATION.

NOTICE TO CONTRACTORS

ALL CONTRACTORS PRIOR TO BID SUBMISSION PROCESS SHALL VISIT PROPOSED WORK SITE AND FIELD VERIFY ALL EXISTING CONDITIONS. ANY CONDITIONS THAT DIFFER FROM THAT SHOWN ON THESE PLANS SHALL BE REPORTED TO ARCHITECT/ENGINEER SO THAT NEW AND REVISED BID DRAWINGS OR INFORMATION MAY BE ISSUED. MODIFICATIONS TO SCOPE OF WORK WHICH RESULT FROM CONTRACTORS NEGLECT TO VISIT THE SITE PRIOR TO SUBMITTING BID, SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY.

DRAWING CONVENTIONS

- NEW WORK - HEAVY AND SOLID LINES
- EXISTING TO REMAIN - LIGHT AND SOLID LINES
- REMOVE EXISTING - HEAVY AND DASHED LINES

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I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

JAL | JAL

25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY

2213 OLD EMMORTON RD.
BEL AIR, MARYLAND

ARCHITECTURE
PLANNING
INTERIOR DESIGN

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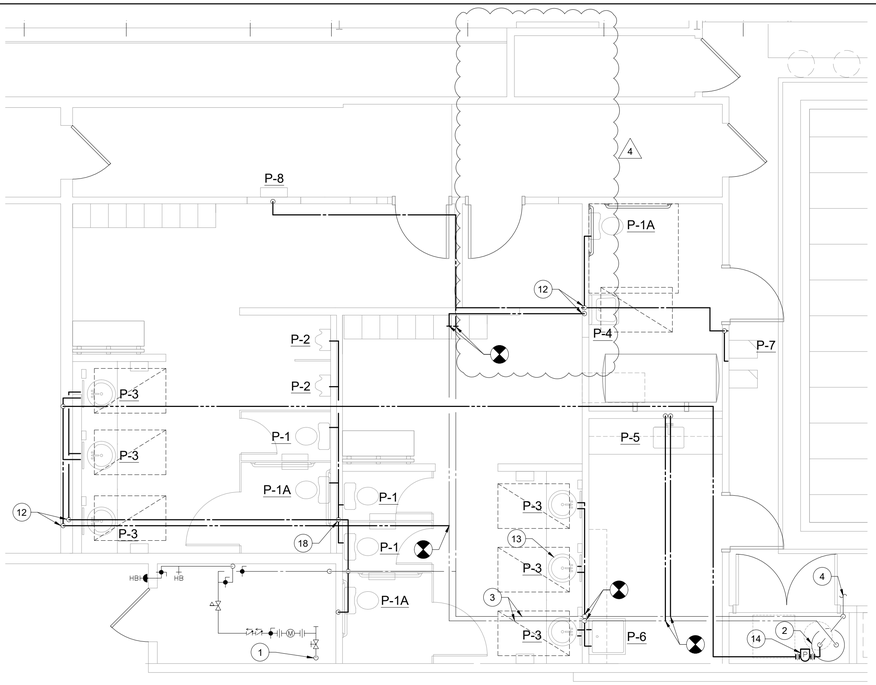
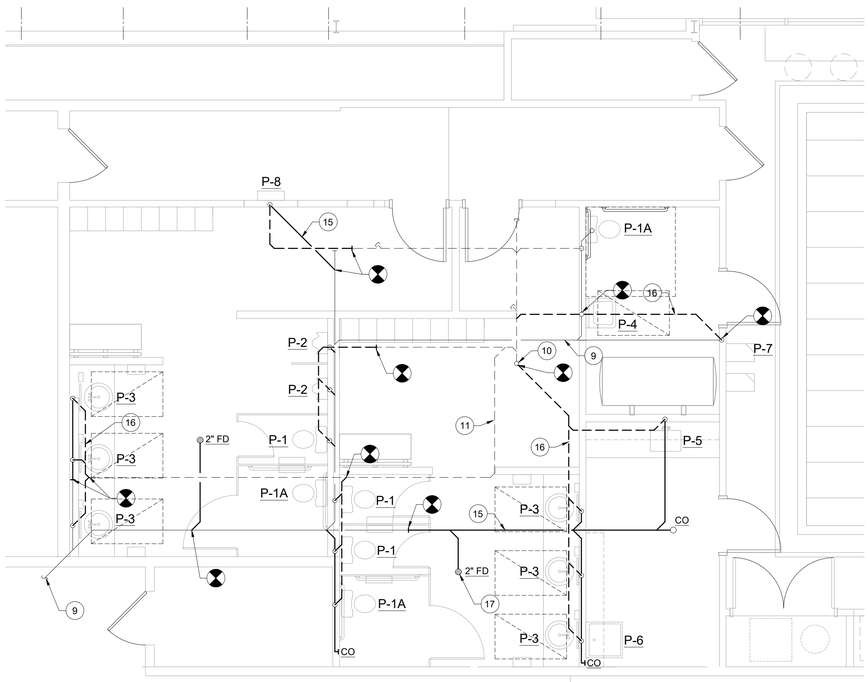
GENERAL NOTES, LEGEND, AND ABBREVIATIONS

P001



1 NEW WORK PLAN-DOMESTIC WATER

Scale: 1/4"=1'



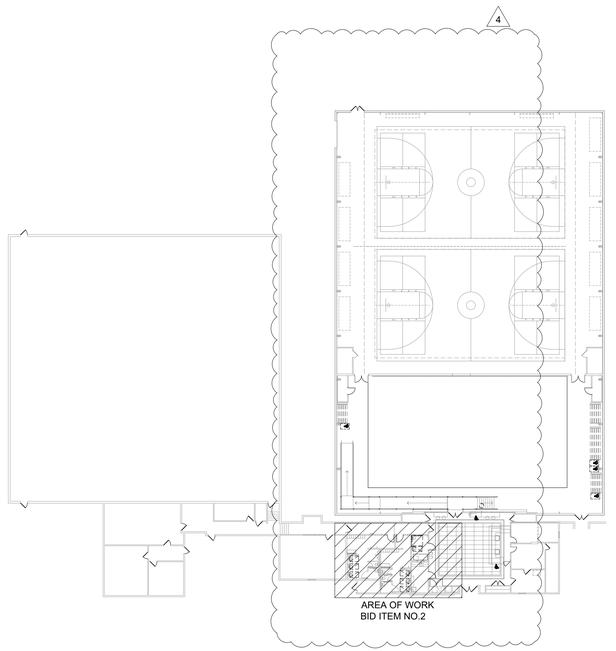
2 NEW WORK PLAN-SANITARY

Scale: 1/4"=1'

Plumbing Drawing Notes: (1) (2) (#)

1. EXISTING SERVICE ENTRANCE WITH BACKFLOW PREVENTER, PRESSURE REDUCIGN VALVE AND MAIN SHUTOFF VALVES
2. EXISTING GAS FIRED WATER HEATER TO REMAIN.
3. EXISTING DOMESTIC WATER PIPING SUPPORTED FROM STRUCTURE ABOVE CEILING.
4. EXISTING DOMESTIC WATER EXTENDED ABOVE CEILING. CONTRACTOR TO VERIFY TERMINATION POINT OF BRANCH IN FIELD.
9. APPROXIMATE LOCATION OF EXISTING PIPING BELOW FLOOR SLAB TO EXISTING SEPTIC SYSTEM. CONTRACTOR TO VERIFY EXACT LOCATION, SIZE, INVERT AND DIRECTION OF FLOW PRIOR TO WORK BEING PERFORMED.
10. EXISTING 3" VENT THRU ROOF TO REMAIN.
11. EXISTING VENT PIPING ABOVE CEILING TO REMAIN.
12. DOMESTIC WATER PIPING DOWN INSIDE WALL AND EXTENDED TO FIXTURE(S)/ EQUIPMENT.
13. UNDERSINK THERMOSTATIC MIXING VALVE WITH TAMPER-PROOF LOCKING CAP AND SET AT 105 F. WATTS LEAD-FREE LFUSG-B-M1 OR APPROVED EQUAL WITH ASSE1070 LISTING. TYPICAL OF ALL LAVATORIES.
14. HOT WATER RECIRCULATING PUMP. TACO MODEL 007 OR APPROVED EQUAL, WITH ALL BRONZE CONSTRUCTION, 4 G.P.M. 9' HEAD, 1/25 HP, 115V/1 PROVIDE TACO TIMER/AQUASTAT UNIT TO ENERGIZE PUMP DURING OCCUPIED TIMES AND MAINTAIN SYSTEM TEMPERATURE OF 140 F.
15. SANITARY PIPING BELOW FLOOR SLAB SLOPED AT MINIMUM 1/8" PER FOOT. ALL 2" SANITARY PIPING BELOW FIRST FLOOR SLAB/GRADE SHALL BE SLOPED AT 1/4" PER FOOT.
16. SANITARY VENT PIPING SUPPORTED FROM STRUCTURE ABOVE CEILING. (TYPICAL)
17. FLOOR DRAIN, SIZE AS INDICATED, WITH TRAP PRIMER (TYPICAL).
18. AUTOMATIC TRAP PRIMER/DISTRIBUTION UNIT LOCATED INSIDE WALL WITH BALL VALVE AND ACCESS DOOR. EXTEND 1/2" PIPING TO EACH FLOOR DRAIN TRAP. UNIT SHALL BE PPP MODEL
19. PR-500 PRIMER WITH DU-U-500 DISTRIBUTION UNIT, ASSE1018 LISTED, OR APPROVED EQUAL.
20. NOT USED
20. NOT USED

4



3 KEY PLAN

Scale: 1/32"=1'

GENERAL NOTES:

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10/8/25

STATE OF MARYLAND
JOSEPH A. LOVERDE
No. 36616
PROFESSIONAL ENGINEER

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

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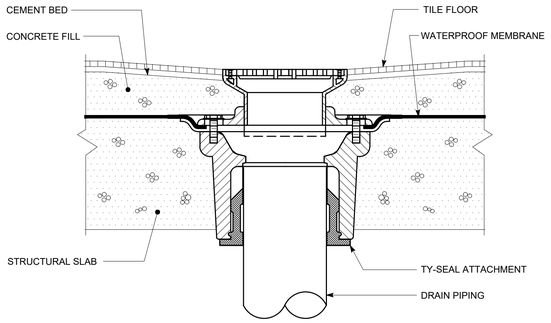
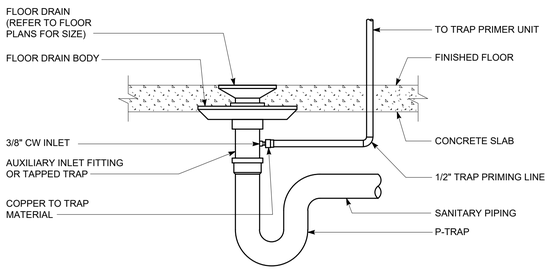
1	6/23/25	PERMIT COMMENTS
2	8/13/25	PERMIT COMMENTS
3	8/25/25	LIFT ADDITION
4	10/8/25	LIFT DELETION

PLUMBING NEW WORK PLANS

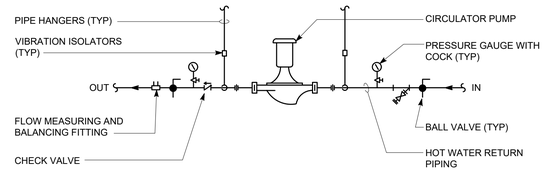
P102



FLOOR DRAIN
NO SCALE

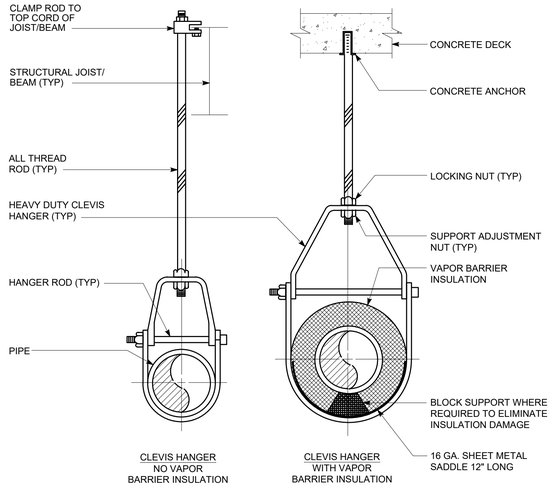


TYPICAL FLOOR DRAIN WITH TRAP PRIMER DETAIL
NO SCALE



DOMESTIC HOT WATER IN-LINE CIRCULATOR PUMP PIPING DIAGRAM
NO SCALE

NOTE:
SUPPORT PUMP FROM PIPING ONLY.
PROVIDE ADJUSTABLE PIPE SADDLE AND SUPPORT WITH NEOPRENE GASKETS AS REQUIRED.
2 GPM MIN / 3 GPM MAX PER TANKLESS UNIT

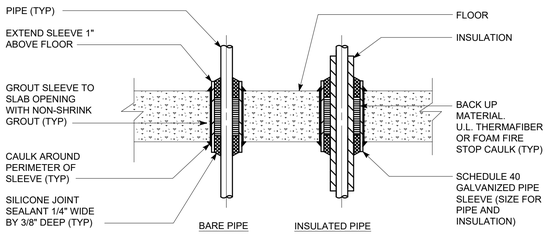


CLEVIS HANGER NO VAPOR BARRIER INSULATION

CLEVIS HANGER WITH VAPOR BARRIER INSULATION

PIPE SUPPORT DETAIL
NO SCALE

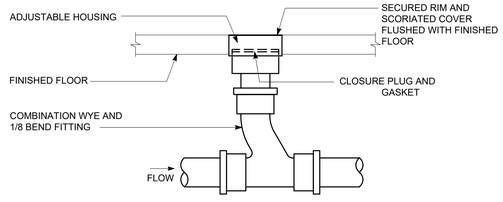
NOTES:
1) ALL HANGERS FOR COPPER PIPING SHALL BE COPPER COATED.
2) DISTANCE BETWEEN SUPPORTS: CAST IRON=6', COPPER=10', STEEL=12', PVC=4'



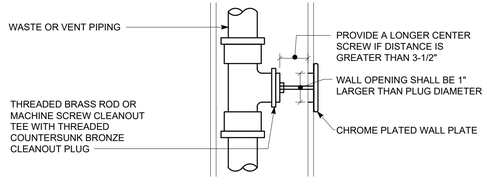
BARE PIPE INSULATED PIPE

PIPE SLEEVES THRU CONCRETE SLAB DETAIL
NO SCALE

NOTES:
1) AT THE CONTRACTORS' OPTION A U.L. LISTED/APPROVED FIRE STOP PIPE SLEEVE ASSEMBLY MAY BE SUBMITTED FOR APPROVAL.
2) FOR EXISTING FLOOR SLABS, CORE DRILL OR STAR DRILL OPENING THRU EXISTING FLOOR SLAB FOR PIPE SLEEVES AS DIRECTED BY BUILDING OWNER.
3) GALVANIZED SLEEVE SHALL BE CAST INTO NEW CONCRETE SLAB POURS.



FLOOR CLEANOUT (FCO)



WALL CLEANOUT (WCO)

INTERIOR CLEANOUT DETAIL
NO SCALE

GENERAL NOTES:

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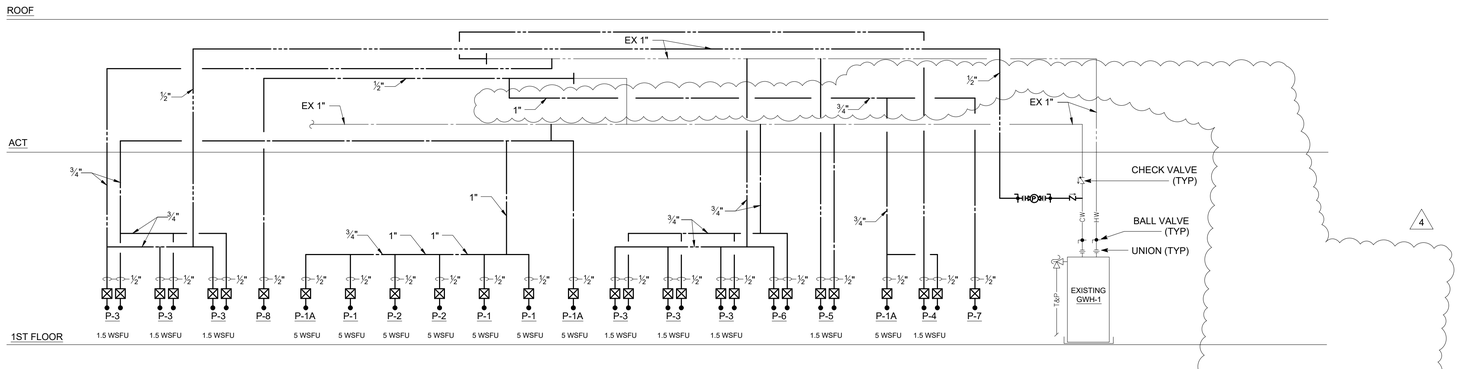
PLUMBING DETAILS

P501

PLUMBING FIXTURE SCHEDULE							
ITEM#	DESCRIPTION	PIPE SIZES				TRAP TYPE	REMARKS
		CW	HW	SAN	VENT		
P-1	WATER CLOSET (FLUSH TANK)	1/2"	-	4"	2"	INTEGRAL	
P-1A	WATER CLOSET (FLUSH TANK)	1/2"	-	4"	2"	INTEGRAL	ADA COMPLIANT
P-2	URINAL (FLUSH VALVE)	3/4"	-	2"	2"	INTEGRAL	
P-3	COUNTERTOP LAVATORY	1/2"	1/2"	2"	2"	"P"	ADA COMPLIANT
P-4	WALL HUNG LAVATORY	1/2"	1/2"	2"	2"	"P"	ADA COMPLIANT
P-5	COUNTERTOP LAVATORY	1/2"	1/2"	2"	2"	"P"	
P-6	MOP SINK	1/2"	1/2"	3"	2"	"P"	
P-7	DUAL HEIGHT WATER COOLER	1/2"		2"	2"	"P"	ADA COMPLIANT
P-8	BOTTLE FILLER	1/2"		2"	2"	"P"	ADA COMPLIANT

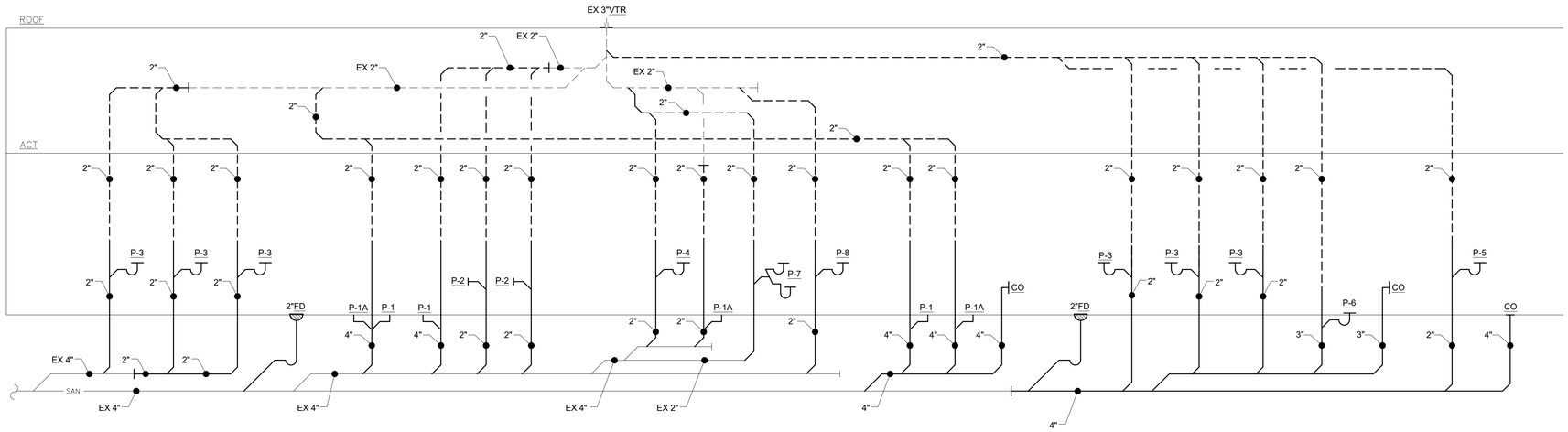
NOTES:
ALL LAVATORIES SHALL HAVE UNDERSINK THERMOSTATIC MIXING VALVE WITH TAMPER-PROOF LOCKING CAP



DOMESTIC WATER RISER DIAGRAM

NO SCALE

NOTES:
1) ALL LAVATORIES SHALL BE PROVIDED WITH UNDERSINK THERMOSTATIC MIXING VALVES SET AT 105 F



SANITARY RISER DIAGRAM

NO SCALE

NOTES:
1. ALL VENTING PIPING FROM HORIZONTAL BRANCH SHALL BE FROM TOP OF BRANCH AT A MINIMUM 45 DEGREE ANGLE AND SLOPED UPWARD. NO FLAT VENTING IS ALLOWED. REFER TO PLUMBING CODE SECTION 905.4.
2. VERTICAL DISTANCE BETWEEN FIXTURE OUTLET AND TRAP SHALL NOT EXCEED 24". REFER TO PLUMBING CODE SECTION 1002.1.
3. ALL SHOWN EXISTING PIPING IS SCHEMATIC AND ESTIMATED DUE TO BEING LOCATED UNDER SLAB AND LIMITED SURVEY VISIBILITY CONTRACTOR TO VERIFY EXACT LOCATION, SIZE, INVERT AND DIRECTION OF FLOW PRIOR TO WORK BEING PERFORMED AND NOTIFY ENGINEER OF ANY ISSUES THAT ARISE. CONTRACTOR MAY FIELD ROUTE PIPING AT THIER DISCRETION

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10/8/25

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RISERS AND SCHEDULES

P601

PIPING/PLUMBING SPECIFICATIONS

1. SECTION 15010 - BASIC PIPING/PLUMBING REQUIREMENTS

A. The work of each of the following sections includes furnishing and installing the material, equipment and systems complete as specified and/or indicated on the drawings. The installations, when finished, shall be complete and coordinated, ready for satisfactory service.

B. All work under this contract shall be done in strict accordance with all applicable municipal, state, county, NFPA, International and local codes that govern each particular trade.

C. The contractor shall make applications and pay all charges for all necessary permits, licenses and inspections as required under the above codes. Upon completion of the work, the customary certifications of approval shall be furnished. The contractor shall also coordinate and make all required submissions to the local utility companies (ie: load letters, water/gas demand forms, etc.).

D. No materials or equipment shall be used in the work until approved. Before submission of the shop drawings, and not more than thirty (30) days after award of the contract, the contractor shall submit for approval, a complete list of all materials and equipment which he intends to furnish, giving manufacturer and catalog numbers. A complete list of proposed sub-contractors shall also be submitted.

E. The contractor shall examine all drawings and specifications and shall visit the site and inspect the existing conditions in person. Certain areas may have been in-accessible at the time of the engineers survey and may only be visible during or after the demolition phase; therefore, those systems and coordination of those systems, shall become the responsiblity of the contractors. Failure to comply with this requirement shall not relieve the contractors of their responsibilities for complying with the intent of the contract documents.

F. The contractor shall snake/camera all existing below floor/grade sanitary systems serving the project area, as required, to verify sizes, inverts, direction of slope, etc. and ensure that the new sanitary system can connect to the existing system where indicated on the drawings.

G. The drawings indicate the general arrangement of the plumbing installations. Details of proposed departures due to actual field conditions or other causes shall be submitted for approval prior to installation. Reworking of completed items due to improper field coordination shall be at the contractor's expense.

H. Provide sufficient access and clearance for all items of equipment requiring servicing and maintenance, such as valves, drains, vents, filters, traps, etc. and major items of equipment.

I. The contractor shall perform all necessary cutting and patching as required to complete the installation of the all plumbing work. Patching of walls, floors, ceilings, roof, etc. shall match the adjacent surfaces.

J. The contractor shall prepare three (3) copies of a record and information booklet. The booklet shall be bound in a three ring loose-leaf binder. Provide the following data in the booklet:

1) Catalog data on each piece of equipment furnished
2) Approved shop drawings on each piece of equipment furnished
3) Maintenance, operation and lubrication instruction on each piece of equipment furnished
4) Manufacturer's and contractor's guarantees
5) Water balancing reports
6) Commissioning reports as required
7) Schedule/description of all service work/maintenance inspections required by the paragraphs of this section

K. The entire new and existing piping/plumbing system shall be tested hydrostatically before insulation covering is applied and proved tight under the following gauge pressures:

Sanitary piping ..... as specified below
Domestic water piping ..... 100 psig

Contractor shall also inspect and verify all existing piping located within the project area which listed to remain, for leaks, defects, etc. and repair as required.

L. All soil, waste and vent piping shall be tested by the contractor. The entire new drainage system and venting system shall have all necessary openings plugged and filled with water to the level of ten (10) feet above the main or branch being tested. The system shall hold this water for thirty (30) minutes without showing a drop greater than four (4) inches.

Note: If any code or authority requires testing which is different than the test listed above, the more stringent test shall be performed.

M. Upon completion of the plumbing installations, the contractor shall provide a complete set of prints of the contract drawings which shall be legibly marked in red pencil to show all changes and departures of the installation as compared with the original design. They shall be suitable for use in preparation of as-built drawings.

N. All piping and valve systems shall be identified with labels and tags. Materials shall be as manufactured by Seton name plate corporation. Color coding for piping shall be as follows:

Service	Color
Domestic Cold Water	Green
Domestic Hot Water and Recirc	Yellow
Sanitary Sewer and Vent	Green

O. All new installations, including all materials and labor shall be guaranteed for a period of one (1) year from date of owner acceptance. The above shall not in any way void or abrogate equipment manufacturer's guarantee or warranty. Certificates of guarantee shall be delivered to the owner.

P. Contractor shall also provide one (1) year free service to keep the equipment in operating condition. This service shall be provided and rendered upon request when notified of any equipment malfunction.

Q. In addition to the first year warranty period, the contractor shall provide, at no additional cost to the owner, a minimum of four (4) service calls and maintenance inspections. A complete outline of the required maintenance and the proposed schedule shall be included in a "record and information booklet", for review and acceptance by the owner/representative and engineer. The inspections are to be performed at three (3) month intervals for a total of four (4) service calls and inspections during the first year warranty period plus the original system start-up commissioning. Upon completion of each scheduled inspection, the contractor shall deliver to the building owner or owners representative, within (48) hours of completion, two (2) copies of the completed inspection report for record purposes.

R. The service contractor shall, at the ninth month, advise the owner of the termination date of the above services. This contractor shall also provide the owner with a detailed proposal, reflecting annual escalation, for the continuation of the services and inspections described above.

2. SECTION 15050 - BASIC PIPING/PLUMBING MATERIAL & METHODS

A. Provide all labor and materials necessary to furnish and install all piping systems on this project, including interior storm, sanitary, sanitary vent, domestic water, condensate drainage, condenser water, chilled water, natural gas and refrigerant piping systems.

B. Piping and valves shall be as follows:

1) Storm and sanitary drains below floor slab/grade:

Piping: Standard weight cast iron uncoated bell and spigot soil pipe.

Fittings: Standard weight cast iron bell and spigot uncoated soil pipe fittings.

Joints: Neoprene push-lock fittings.

Note: Piping larger than ten (10) inches and at the building exterior shall be reinforced concrete pipe.

- OR -

Piping: Schedule 40 PVC DWV pipe.

Fittings: Solvent weld joints.

2) Sanitary drains and sanitary vents above floor inside building:

Piping: Cast iron no-hub soil pipe and/or schedule 40 galvanized steel pipe and/or type DWV copper.

Fittings: Cast iron no-hub soil pipe fittings and/or galvanized drainage fittings and/or copper solder joint cast drainage fittings.

Joints: No-hub stainless steel gasketed fittings and/or solvent sealer and/or solder type wrought copper.

3) Domestic hot, cold and hot water recirc water piping inside building:

Piping: All water pipings shall be hard copper, type L above ground, type K below ground.

Fittings: Lead free solder type wrought copper.

Gate Valves: 2-1/2" or 3"= 150 psi, union bonnet, rising stem, solid wedge, bronze body, bonnet and stem. Nibco S-134.

Ball Valves: 2" or smaller= 150 psi, two piece body, full port, blowout-proof stem, chrome plated ball, bronze body and stem, reinforced TFE seat ring. Nibco S-585-70.

Unions: 125 psi., wrought copper, ground joint solder ends.

A. Copper pipe shall be revere, anaconda, or chase types "L" and "K" hard drawn, with approved solder fittings.

D. Cast iron piping shall be service weight drainage piping and shall conform to the requirements of the C.I.S.P.I.. Each length of pipe and each fitting shall be clearly marked with the manufacturer's initials and pipe classifications.

E. Steel piping shall be similar and equal to National Tube Company, Republic or Bethlehem black or zinc-coated (galvanized) steel as hereinbefore specified. Pipe shall be free from all defects which may affect the durability of the intended use. Each length of pipe shall be stamped with the manufacturer's name.

F. All hangers for copper piping shall be copper clad, split ring swivel type, having rods with machine threads and threaded copper clad ceiling flange. Cast iron and steel piping supports shall be similar without copper clad and prime paint finish. Maximum horizontal distance between pipe hangers shall be as follows:

Cast Iron Piping = 6'
Copper Piping = 12'
Copper Tubing (<=1-1/4") = 6'
Copper Tubing (>=1-1/2" = 10'
PVC Piping = 4'
Steel Piping = 12'

G. Provide dielectric couplings where non-ferrous metal piping is joined to ferrous metal piping. The gasket material shall be capable of withstanding the temperatures and pressures within the piping system in which installed. Submit dielectric coupling and gasket material for approval.

3. SECTION 15250 - PIPING INSULATION

A. All domestic water piping systems shall be insulated with fiberglass insulation. All insulation shall be noncombustible or shall have a flame spread index of not more then 25 and a smoke-developement index of not more then 50 when tested in accordance with ASTM E84.

B. Pipe insulation shall be premolded fiberglass insulation with an all service jacket, Owens Corning fiberglass SSL-II. Fittings shall be insulated and covered with PVC covers. All domestic hot water piping smaller then 1-1/2" shall have 1" of insulation and all domestic hot water piping between 1-1/2" and 4" shall have 1-1/2" of insulation. All domestic cold water and storm water piping shall have 1" of insulation.

5. SECTION 15400 - PLUMBING

A. The work covered by this section of the specifications consists of furnishing all labor, equipment and materials in connection with the rough-in, final setting and connections to all plumbing fixtures. The contractor shall carefully review the conditions at the site and all of the contract drawings to determine the extent of the new and renovation plumbing work required.

B. All plumbing fixtures shall be complete in every detail with all trimmings and connections. All fixtures shall be designed to prevent the backflow of polluted water or waste into the water supply system. Fixtures shall be as listed below or approved equal:

ALL FIXTURE SELECTIONS TO BE APPROVED BY OWNER

P-1 Flush Tank Water Closet: Crane #31885 "BigFoot", floor mounted, bottom outlet, elongated rim bowl, 1.1 GPF with vitreous china construction, 2" trapway, 15" high, pressure-assisted EcoFlush technology, trim bolt caps, closet flange, 12" rough-in, Church open front white seat with cover, rigid supply with angle stop valve.

P-1A Flush Tank Water Closet (ADA): Crane #31888 "BigFoot", floor mounted, bottom outlet, elongated rim bowl, 1.1 GPF with vitreous china construction, 2" trapway, 16-5/8" high, pressure-assisted EcoFlush technology, trim bolt caps, closet flange, 12" rough-in, Church open front white seat with cover, rigid supply with angle stop valve.

P-2 Urinal: Crane #7309 "Manhattan", 1.0 GPF, vitreous china, wall hung, siphon jet action with integral trap with 3/4" top inlet spud and J.R. Smith fig. 0635 urinal support. Provide Sloan #8186 "Optima" sensor activated flush valve, 1.0 GPF flush rate, battery powered (4-"AA" batteries), ADA compliant, 3 second delay flush w/override flush control, adjustable sensor range.

P-3 Counter Top Lavatory: Corian #810P counter top lavatory, acrylic-polyester solid surface, self-rimming, front overflow, grid drain, chrome supplies, stops and escutcheons, chrome tailpiece, trap and trap nipple. Provide Moen #4925 "Chateau" 4" center set lavatory faucet with lever handles.

P-4 Wall Hung Lavatory (ADA): Crane #1412V "Harwich" with vitreous china construction, front overflow, faucet ledge, grid drain, tailpiece, cast brass "P" trap, tubing to wall escutcheon, key operated supply valves with rigid supplies and chair carrier. Provide Moen #4925 "Chateau" 4" center set lavatory faucet with lever handles. All exposed waste piping and hot and cold water piping shall be insulated with Truebro Handi Lav-Guard model 102 insulation kit with white finish.

P-5 Countertop Lavatory: Elkay #GECR2521 "Celebrity" single compartment sink with 20 gauge, type 304 nickle bearing stainless steel, drop-in, 25"x21-1/4"x5-3/8" overall size and ADA compliant. Provide Delta #9159-DST gooseneck faucet with ADA single lever handle, swing spout and 2-function pull down sprayer. Sink shall be complete with crumb cup strainer, rigid supplies with loose key stops, cast brass clean out, tubing to wall and escutcheons. All exposed waste piping and hot and cold water piping shall be insulated with Truebro Handi Lav-Guard model 102 insulation kit with white finish.

P-6 Mop Sink: Fiat #MSB2424, 24"x24"x10" overall size, with one-piece molded stone basin and stainless steel drain body, #MSG2424 wall guard and 3" outlet. Provide Fiat #830AA faucet with wall to spout end, 10-1/2" spout, hose end connection, integral vacuum breaker, spout brace, adjustable union couplings and stop shanks.

P-7 Electric Water Cooler (ADA): Elkay #LRPBGRNM28RAK air cooled, wall-hung, bi-level, barrier-free with 18 gauge, type 300 stainless steel, round bowls and wall cover, front push pad and one-piece bubbler. Unit shall deliver a minimum of 7.5 gph of 50 degree f. drinking water with 90 degree f. water inlet at room temperature. Compressor shall be 260 watts, 120V, using HFC-134A refrigerant.

P-8 Electric Water Cooler w/bottle filler (ADA): Elkay #LZSTL8WSSK, air cooled, wall-hung, bi-level with stainless steel construction, hands-free, visual filter monitor, filtered, laminar flow, antimicrobial, flex-guard safety bubbler and front/side push pads. Unit shall have electronic bottle filler sensor and lead-free design. Unit shall deliver a minimum of 8.0 gph of 50 degree f. drinking water with 90 degree f. water inlet at room temperature. Compressor shall be 260 watts, 120V, using R-134A refrigerant.

C. Undersink thermostatic mixing valve shall be Watts USG-B-M1 or approved equal with ASSE1070 listing. Valve shall have bronze body construction with tamper-proof locking cap, internal check valves, strainer and complete with 3/8" compression fittings. Temperature setting range shall be 80-120 degree F with a flow range of 0.5-2.5 gpm.

D. Potable water systems shall be disinfected prior to use. The method to be followed shall be that prescribed by the health authority and code requirements.

GENERAL NOTES:

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STATE OF MARYLAND
JOSEPH A. LOIERO
No. 36616
PROFESSIONAL ENGINEER
6/22/21

I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 36616, EXPIRATION DATE 6/7/26.

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25-088 EMMORTON REC. INTERIOR RENOVATIONS - BATTING CAGE AREA, LOCKER ROOM AREAS, AND THE FRONT LOBBY
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PLUMBING SPECIFICATIONS

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