NEW FACILITY FOR ROANOKE CITY
PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

PROJECT INFORMATION

PROJECT DESCRIPTION AND ADDRESS:
CONSTRUCTION OF NEW FIELD HOUSE FACILITY FOR PATRICK HENRY HIGH SCHOOL.
2102 GRANDIN RD SW
ROANOKE, VA 24015

SITE INFORMATION:
TAX MAP NO.: 1460101
ZONING: INPUD (C)
FLOOD ZONE: N/A

CONTRACTOR:
TBD

OWNER:
SCHOOL BOARD OF THE CITY OF ROANOKE, VIRGINIA
40 DOUGLASS AVENUE, N.W.
ROANOKE, VA 24012

CONTACT:
EMAIL:

PROJECT CONSULTANTS

PLUMBING/MECHANICAL ENGINEER:
LAWRENCE PERRY AND ASSOCIATES
15 E SALEM AVE SE, SUITE 10
ROANOKE, VA 24011

P.(540) 342-1816
F.(540) 344-3410

CONTACT: MELANIE MAYO
E-MAIL: MMAYO@LPA-INC.COM

CIVIL ENGINEER:
CALDWELL WHITE ASSOSIATES
4203 MELROSE AVENUE, N.W.
ROANOKE, VA 24017

P.(540) 366-3400
F.(540) 366-8702

CONTACT: CORBIN WHITE
E-MAIL: CWAROANOKE@AOL.COM

ELECTRICAL ENGINEER:
LAWRENCE PERRY AND ASSOCIATES
15 E SALEM AVE SE, SUITE 10
ROANOKE, VA 24011

P.(540) 342-1816
F.(540) 344-3410

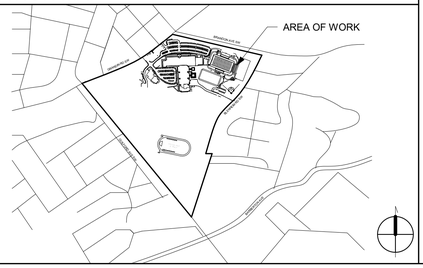
CONTACT: DANIEL PLECKER
E-MAIL: DPLECKER@LP-ICC

STRUCTURAL ENGINEER:
DAY & KINDER CONSULTING ENGINEERS, PLLC
3536 BRAMBELTON AVE #4
ROANOKE, VA 24018

P.(540) 774-5706
F.(540) 772-3266

CONTACT: JAY KINDER, PE
E-MAIL: JAY@DAYANDKINDER.COM

LOCATION MAP



BUILDING CODE DATA

APPLICABLE CODES:
VUSBC-2015 EDITION WITH 2015 REHABILITATION CODE, 2015 INTERNATIONAL BUILDING CODE, WHICH INCLUDES ALL CODES REFERENCED IN CHAPTER 1 - SECTION 101.2 AND ICC/ANSI 117.1

USE GROUP CLASSIFICATION: A-3, ASSEMBLY (SECTION 305.4)

ALLOWABLE HEIGHT AND AREAS (TABLES 504.3, 504.4, 506.2): A-3: 2 STORIES, 55', 9,500 SQ. FT.
ACTUAL HEIGHT AND AREAS: A-3 USE: 2 STORIES, 32', 7,020 SQ. FT. PER FLOOR OR 14,040 SQ. FT. TOTAL EXCLUDING BALCONY

FIRE RESISTANCE RATINGS FOR BUILDING ELEMENTS (TABLE 601):

STRUCTURAL FRAME: TYPE IIIB (TABLE 601)
(BEARING WALLS)
EXTERIOR: 2 HR.
INTERIOR: 0 HR.

(NON BEARING WALLS)
INTERIOR: 0 HR.
FLOOR CONSTR.: 0 HR.
ROOF CONSTR.: 0 HR.

FIRE RESISTANCE RATING (TABLE 602): 0 HR. X > 30 FT.

TYPE OF CONSTRUCTION: (SECTION 602.3): TYPE III B

SHAFT ENCLOSURE WALLS (SECTION 713.4) 1 HOUR FIRE RATED CONSTRUCTION. CONSTRUCTED AS FIRE BARRIER WALLS IN ACCORDANCE WITH SECTION 706.

AUTOMATIC SPRINKLER SYSTEM (SECTION 903): BUILDING IS NOT REQUIRED TO BE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.2.1.3.

FIRE ALARM AND DETECTION SYSTEM (SECTION 907): BUILDING IS NOT REQUIRED TO BE EQUIPPED THROUGHOUT WITH A MANUAL FIRE ALARM SYSTEM. AS THE OCCUPANT LOAD IS LESS THAN 300 (907.2.1)

DESIGN OCCUPANT LOAD (TABLE 1004.1.2):
FIRST FLOOR: 68 OCCUPANTS
SECOND FLOOR: 112 OCCUPANTS

COMMON PATH OF EGRESS TRAVEL (TABLE 1006.2.1) 75 FT. MAX.
ACTUAL MAXIMUM COMMON PATH OF EGRESS TRAVEL = 41 FT.

MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY: (TABLE 1006.3.1): 1-500 = 2, EXITS PROVIDED:
FIRST FLOOR: 5 SECOND FLOOR: 2

TWO EXITS OR EXIT ACCESS DOORWAYS (SECTION 1007.1.1) WHERE TWO EXITS OR EXIT ACCESS DOORWAYS ARE REQUIRED FROM ANY PORTION OF THE EXIT ACCESS, THE EXIT DOORS OR EXIT ACCESS DOORWAYS SHALL BE PLACED A DISTANCE APART EQUAL TO NOT LESS THAN ONE-HALF OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE BUILDING OR AREA TO BE SERVED.
MAXIMUM DIAGONAL: 48' DOOR SEPARATION: 28'

SIZE OF DOORS (SECTION 1010.1.1): ALL EGRESS DOORS ARE 36" WIDE WITH 32" MINIMUM CLEAR OPENING WIDTH.

EXIT ACCESS TRAVEL DISTANCE (TABLE 1017.2): 200 FT. MAXIMUM (USE GROUP A)
ACTUAL MAXIMUM EXIT ACCESS TRAVEL DISTANCE: 110 FT.

CORRIDOR FIRE RESISTANCE RATING (TABLE 1020.1): USE GROUP A, B, E, FA, AM, S, & U WITH OCCUPANT LOAD > 30: 1 HOUR WITHOUT SPRINKLER SYSTEM.

REQUIRED CORRIDOR WIDTH (SECTION 1020.2): 44 INCHES MIN., ACTUAL CORRIDOR WIDTHS: 52" MINIMUM.

ACCESSIBILITY (CHAPTER 11)
ACCESSIBLE ROUTE (SECTION 1104.1): ONE ACCESSIBLE ROUTE IS PROVIDED TO EACH FLOOR.
ACCESSIBLE ENTRANCES (SECTION 1105): 60% OF REQUIRED PUBLIC ENTRANCES MUST BE ACCESSIBLE (NEW CONSTRUCTION)
PARKING AND PASSENGER LOADING FACILITIES (SECTION 1106): ACCESSIBLE PARKING SPACES ARE PROVIDED IN EXISTING PARKING LOT.

2015 IC:
CLASS A FIRE HAZARDS (SECTION 906.3.1) PORTABLE FIRE EXTINGUISHERS FOR OCCUPANCIES CLASSIFIED ORDINARY (MODERATE) HAZARD SHALL BE SELECTED AND PLACED IN ACCORDANCE WITH TABLE (903.3(1): 2-A EXTINGUISHER FOR EVERY 3,000 SQ. FT.; 75 FT. MAXIMUM.

MINIMUM PLUMBING FACILITIES (TABLE 2902.1) SEE ATTACHED PLUMBING FIXTURE SCHEDULE

MINIMUM PLUMBING FACILITIES (TABLE 2902.1) CALCULATIONS

OCCUPANCY		WATER CLOSETS (MALE, FEMALE)				LAVATORIES (MALE, FEMALE)				DRINKING FOUNTAIN		SRVC SINK
USE	LOAD	RATIO	M	RATIO	F	RATIO	M	RATIO	F	RATIO	DF	
E EDUCATION	180	1 : 50	1.8	1 : 50	1.8	1 : 50	1.8	1 : 50	1.8	1 : 100	1.8	1 PER BLDG
SUBTOTAL			1.8		1.8		1.8		1.8		1.8	1
REQUIRED			2		2		2		2		2	1
PROVIDED			8		6		4		4		6	2

UNISEX LAVATORY, WATER CLOSET, AND ADA SHOWER AT COACHES 114 AND COACHES 110

1

ZONING INFORMATION:

TAX MAP NO. 1460101

ZONING: INPUD WITH CONDITIONS- ORDINANCE 41769-061520, ADOPTED AUGUST 15, 2020.

EXISTING USES: LIBRARY, EDUCATIONAL FACILITIES, ELEMENTARY/ MIDDLE/ SECONDARY, BUSINESS SCHOOL OR NON INDUSTRIAL TRADE SCHOOL, SCHOOL FOR ARTS.

PROPOSED USES: SAME AS EXISTING - NO CHANGE.

UTILITIES SHALL ALL BE UNDERGROUND.

NO CHANGES TO STADIUM LIGHTING.

SHEET INDEX

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE
1	CITY REVIEW	10.23.20

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

COVER SHEET

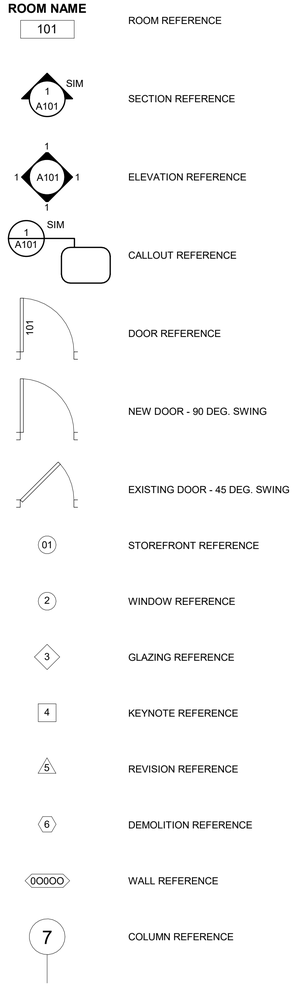
SHEET
G-001

10/23/2020 9:23:54 AM

LIST OF ABBREVIATIONS

AB	ANCHOR BOLT	NIC	NOT IN CONTRACT
AC	AIR CONDITIONING	NO	NUMBER
ACT	ACOUSTICAL CEILING TILE	NOM	NOMINAL
AFF	ABOVE FINISH FLOOR	NTS	NOT TO SCALE
ALUM	ALUMINUM		
ANOD	ANODIZED	OA	OVERALL
APPROX	APPROXIMATE	OC	ON CENTER
ARCH	ARCHITECT	OD	OUTSIDE DIAMETER
AUTO	AUTOMATIC	OF	OUTSIDE FACE
		OH	OPPOSITE HAND
BD	BOARD	OPNG	OPENING
BIT	BITUMINOUS	OPP	OPPOSITE
BLDG	BUILDING	OSB	ORIENTED STRAND BOARD
BM	BEAM		
BRG	BEARING	PL	PLATE
BSMT	BASEMENT	PLAM	PLASTIC LAMINATE
BTM	BOTTOM	PLAS	PLASTER
		PNL	PANEL
CAB	CABINET	PREF	PREFINISHED
CI	CAST IRON	PROP	PROPERTY
CJ	CONTROL JOINT	PSF	POUNDS PER SQUARE FOOT
CL	CENTER LINE	PSI	POUNDS PER SQUARE INCH
CLG	CEILING	PT	PRESSURE TREATED
CLR	CLEAR	PTD	PAINTED
CMU	CONCRETE MASONRY UNIT	PVC	POLY VINYL CHLORIDE
CO	CASED OPENING	PVMT	PAVEMENT
COL	COLUMN	PWD	PLYWOOD
CONC	CONCRETE		
CONST	CONSTRUCTION	QT	QUARRY TILE
CONT	CONTINUOUS		
CONTR	CONTRACTOR	R	RISER
CPT	CARPET	RA	RETURN AIR
CR	CHAIR RAIL	RAD	RADIUS
CS	CONTINUOUS SHEATHING	RD	ROOF DRAIN
CSMT	CASEMENT	REC	RECEPTACLE
CT	CERAMIC TILE	REF	REFERENCE
CTR	COUNTER	REFR	REFRIGERATOR
		REG	REGISTER
DEM	DEMOLITION	REINF	REINFORCED
DEPT	DEPARTMENT	REM	REMOVE
DET	DETAIL	REQD	REQUIRED
DIA	DIAMETER	RES	RESILIENT
DIAG	DIAGONAL	RET	RETURN
DIM	DIMENSION	REV	REVISION
DISP	DISPENSER	RH	RIGHT HAND
DIV	DIVISION	RM	ROOM
DL	DEAD LOAD	RO	ROUGH OPENING
DN	DOWN	ROW	RIGHT OF WAY
DR	DOOR		
DS	DOWNSPOUT	SC	SOLID CORE
		SCH	SCHEDULE
EA	EACH	SEC	SECTION
EIFS	EXTERIOR INSULATION	SHT	SHEET
	& FINISH SYSTEM	SHWR	SHOWER
EJ	EXPANSION JOINT	SIM	SIMILAR
ELEC	ELECTRIC	SL DR	SLIDING DOOR
ELEV	ELEVATOR	SPEC	SPECIFICATIONS
EMER	EMERGENCY	SPF	SPRUCE PINE FIR
ENCL	ENCLOSURE	SPR	SPRINKLER
ENG	ENGINEER	SQ FT	SQUARE FOOT
ENT	ENTRANCE	SS	STAINLESS STEEL
EQ	EQUAL	STO	STORAGE
EQUIP	EQUIPMENT	STRUC	STRUCTURAL
EST	ESTIMATE	SUSP	SUSPENDED
EW	EACH WAY	SYP	SOUTHERN YELLOW PINE
EWC	ELECTRIC WATER COOLER	SYS	SYSTEM
EX	EXISTING		
EXH	EXHAUST	T	TREAD
EXO	EXPOSED	T & G	TONGUE & GROOVE
EXT	EXTERIOR	TCP	THIN COAT PLASTER
EXST	EXISTING	TEL	TELEPHONE
		THK	THICK
FD	FLOOR DRAIN	THRU	THROUGH
FDN	FOUNDATION	TOIL	TOILET
FEC	FIRE EXTINGUISHER CABINET	TOS	TOP OF STEEL
FHC	FIRE HOSE CABINET	TOW	TOP OF WALL
FIN	FINISH	TV	TELEVISION
FIN FLR	FINISH FLOOR	TYP	TYPICAL
FLR	FLOOR		
FLUOR	FLUORESCENT	UNF	UNFINISHED
FRT	FIRE RETARDANT TREATED	UNO	UNLESS NOTED OTHERWISE
FT	FOOT, FEET		
FTG	FOOTING	VB	VAPOR BARRIER
		VCT	VINYL COMPOSITION TILE
GA	GAGE OR GAUGE	VERT	VERTICAL
GALV	GALVANIZED	VIF	VERIFY IN FIELD
GC	GENERAL CONTRACTOR	VTR	VENT TO ROOF
GL	GLASS	VWC	VINYL WALL COVERING
GWB	GYPSUM WALL BOARD		
GYP BD	GYPSUM BOARD	W	WIDE, WIDTH
		W/	WITH
HC	HOLLOW CORE	W/O	WITHOUT
HDCP	HANDICAP	WB	WOOD BASE
HDR	HEADER	WC	WATER CLOSET
HDWE	HARDWARE	WD	WOOD
HM	HOLLOW METAL	WG	WIRE GLASS
HOR	HORIZONTAL	WH	WALL HUNG
HTG	HEATING	WIN	WINDOW
HT	HEIGHT	WP	WEATHERPROOF
HVAC	HEATING / VENTILATION /	WSCT	WAINSCOTING
	AIR CONDITIONING	WSP	WOOD STRUCTURAL PANEL
HWD	HARDWOOD	WWF	WELDED WIRE FABRIC
HWH	HOT WATER HEATER		
ID	INSIDE DIAMETER		
INCL	INCLUDING, INCLUDED		
INSUL	INSULATE, INSULATION		
INTER	INTERIOR		
JAN	JANITOR		
KD	KILN DRIED		
KIT	KITCHEN		
LAM	LAMINATE		
LAV	LAVATORY		
LB	POUND		
LBL	LABEL		
LG	LONG, LENGTH		
LH	LEFT HAND		
LL	LIVE LOAD		
LTL	LINTEL		
LVR	LOUVER		
LW	LIGHTWEIGHT		
MAS	MASONRY		
MAT	MATERIAL		
MAX	MAXIMUM		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MH	MANHOLE		
MIN	MINIMUM		
MISC	MISCELLANEOUS		
MLD	MOLDING		
MO	MASONRY OPENING		
MTG	MOUNTING		
MTL	METAL		

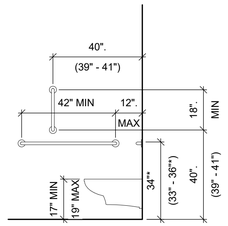
SYMBOLS



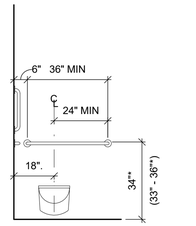
ACCESSORY & FIXTURE MOUNTING DIMENSIONS

NOTES:

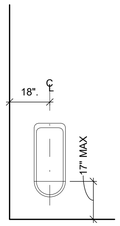
1. ACCESSORIES AND/OR FIXTURES SHOWN BELOW MAY OR MAY NOT BE UTILIZED IN THIS PROJECT.
2. ACCESSORIES AND/OR FIXTURES SHOWN BELOW MAY OR MAY NOT BE REPRESENTATIVE OF THE ACCESSORIES AND/OR FIXTURES SPECIFIED FOR THIS PROJECT.
3. ALL MOUNTING DIMENSIONS ARE TYPICAL UNLESS NOTED OTHERWISE.
4. SEE TOILET ACCESSORY SCHEDULE FOR TOILET ACCESSORY INFORMATION, IF APPLICABLE.



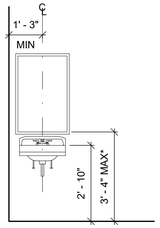
GRAB BARS & TOILET - SIDE WALL
* TO TOP OF GRIPPING SURFACE



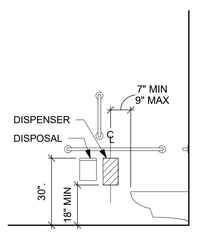
GRAB BARS & TOILET - FRONT WALL
* TO TOP OF GRIPPING SURFACE



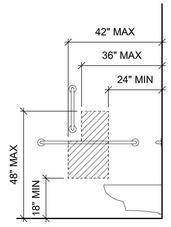
URINAL - WALL HUNG



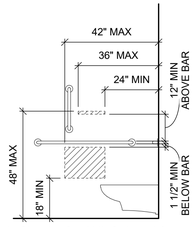
WALL HUNG SINK & MIRROR
*TO BOTTOM OF REFLECTIVE SURFACE



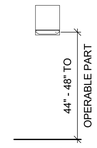
TOILET TISSUE DISPENSER &
SANITARY NAPKIN DISPOSAL



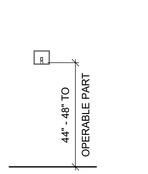
RECESSED DISPENSER LIMITS
OUTLET OF DISPENSER TO BE
WITHIN SHADED AREA



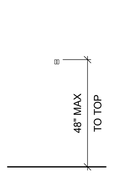
PROTRUDING DISPENSER LIMITS
OUTLET OF DISPENSER TO BE
WITHIN SHADED AREA



PAPER TOWEL
DISPENSER

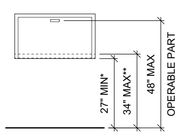


SOAP DISPENSER

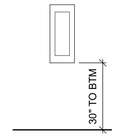


UTILITY/COAT HOOK

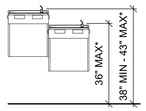
MOP HOLDER



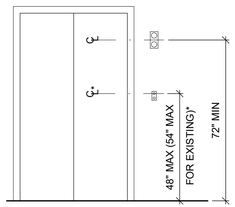
BABY CHANGING STATION
* TO BOTTOM OF WORK SURFACE
** TO HIGHEST PART OF WORK
SURFACE



FIRE EXTINGUISHER
CABINET



HI/LO DRINKING FOUNTAIN
*SPOUT OUTLET HEIGHT



ELEVATOR CALL BUTTONS AND SIGNALS
*CL OF HIGHEST OPERABLE PART

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE, 2015 EDITION, AND OTHER LOCAL CODES PREVAILING AT TIME OF CONSTRUCTION.

2. THE GENERAL CONTRACTOR SHALL COORDINATE ALL TRADES (ARCHITECTURAL, MECHANICAL, ELECTRICAL, STRUCTURAL) WITH THESE DOCUMENTS. THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED OF ANY OMISSIONS.

3. ALL REFERENCES TO THE STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION, OR TO CODES OF LOCAL OR STATE AUTHORITIES SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION, OR TENTATIVE SPECIFICATIONS ADOPTED AND PUBLISHED AT THE DATE OF TAKING BIDS, UNLESS OTHERWISE NOTED.

4. ALL DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF FRAMING / MASONRY UNLESS NOTED OTHERWISE.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, AND PROCEDURES OF CONSTRUCTION.

6. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY ANY EXISTING FIELD CONDITIONS, MEASUREMENTS, AND LOCATIONS AFFECTING THEIR WORK.

7. NOTIFY ARCHITECT OF ANY DISCREPANCIES AND EXISTING CONDITIONS NOT COMPLYING WITH DOCUMENTS.

8. DO NOT SCALE OFF OF DRAWINGS. ALWAYS REFER TO DIMENSIONS.

GENERAL DEMOLITION NOTES

1. BEFORE WORK HAS BEGUN, CONTRACTORS SHALL MAKE A THOROUGH SURVEY OF THE BUILDING AND NOTIFY THE OWNER, IN WRITING, OF ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN ON THE DRAWINGS. FAILURE BY THE CONTRACTOR TO HAVE ACQUAINTED HIMSELF WITH AVAILABLE INFORMATION CONCERNING EXISTING CONDITIONS SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITIES OF PERFORMANCE OF WORK IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS.

2. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS AND NOTIFY THE ARCHITECT, IN WRITING, OF ANY WORK DESCRIBED IN THE CONTRACT DOCUMENTS WHICH CANNOT BE PERFORMED DUE TO EXISTING CONDITIONS.

3. REMOVE OR MODIFY EXISTING CONSTRUCTION AS SHOWN. TYPICAL WALL REMOVAL INCLUDES FINISHES, BASES, DOORS AND FRAMES, MECHANICAL, PLUMBING AND ELECTRICAL SYSTEMS CONTAINED THERE IN UNLESS NOTED OTHERWISE.

4. PROTECT FROM DAMAGE ALL MATERIALS TO REMAIN.

5. AREAS OF EXISTING SURFACES NOT SCHEDULED FOR DEMOLITION WHICH BECOME DAMAGED, SHALL BE PATCHED OR REPAIRED TO MATCH ADJACENT SURFACES THICKNESS, FINISH, AND TEXTURE.

6. REFERENCE PLANS AND DETAILS TO DETERMINE THE EXTENT OF DEMOLITION WORK.

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

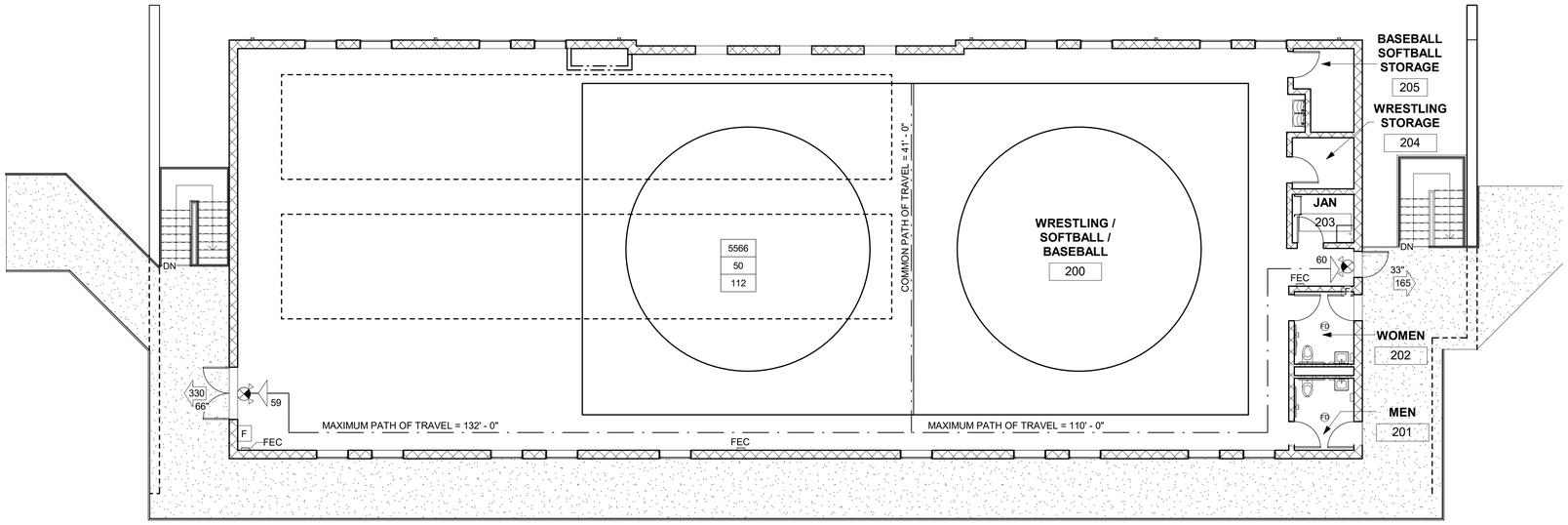
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

GENERAL NOTES AND INFORMATION

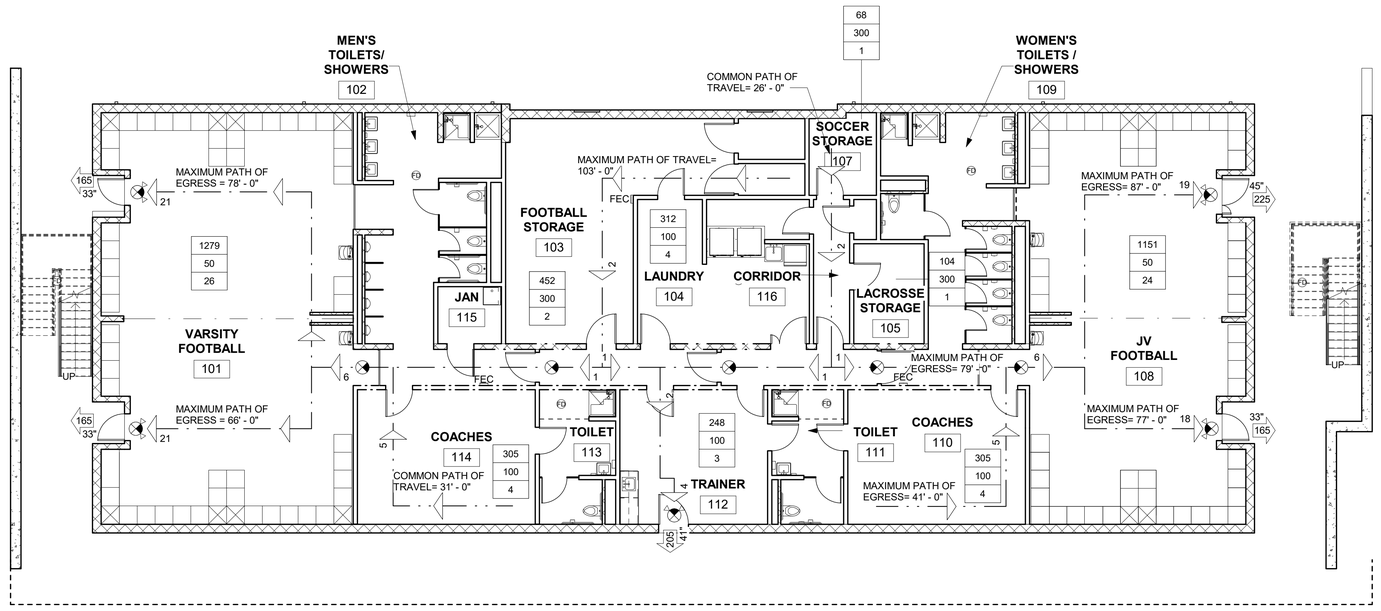
SHEET
G-002

10/1/2020 3:12:45 PM



SECOND LEVEL LIFE SAFETY PLAN

1/8" = 1'-0"



FIRST LEVEL LIFE SAFETY PLAN

1/8" = 1'-0"

GENERAL LIFE SAFETY NOTES

1. FIRE-RESISTANCE ASSEMBLY MARKING AND IDENTIFICATION (IBC SECTION 703.6): FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS OR ANY OTHER WALL REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING. SUCH IDENTIFICATION SHALL:
   A. BE LOCATED IN ACCESSIBLE CONCEALED FLOOR, FLOOR-CEILING OR ATTIC SPACES;
   B. BE REPEATED AT INTERVALS NOT EXCEEDING 30 FEET (9144 MM) MEASURED HORIZONTALLY ALONG THE WALL OR PARTITION; AND
   C. INCLUDE LETTERING NOT LESS THAN 0.5 INCH (12.7 MM) IN HEIGHT, INCORPORATING THE SUGGESTED WORDING. "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS" OR OTHER SIMILAR WORDING.
2. SEE ELECTRICAL DRAWINGS FOR EMERGENCY EGRESS LIGHTING.

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

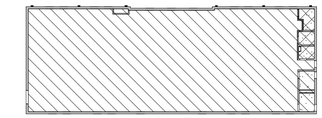
LIFE SAFETY OCCUPANCY LEGEND

ACCESSORY STORAGE AREA =
1,270 SQ. FT / 300 SQ. FT. / OCCUPANT = 5 OCCUPANTS

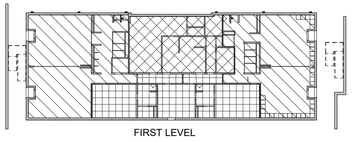
EXERCISE AREAS =
8,998 SQ. FT. / 50 SQ. FT. / OCCUPANT = 180 OCCUPANTS

BUSINESS =
1288 SQ. FT. / 100 SQ. FT. / OCCUPANT = 13 OCCUPANT

TOTAL OCCUPANT LOAD = 198 OCCUPANTS



SECOND LEVEL



FIRST LEVEL

LIFE SAFETY PLAN LEGEND

OCCUPANT LOAD CALCULATIONS

----- FLOOR AREA IN S.F.
----- ALLOWABLE S.F. PER OCCUPANT
----- OCCUPANT LOAD

MEANS OF EGRESS

NUMBER OF OCCUPANTS ALONG EGRESS PATH
000
EXIT ACCESS PATH OF EGRESS
COMMON PATH OF TRAVEL

EGRESS CAPACITY OF EXITS

WIDTH OF EGRESS COMPONENT
32"
001
CAPACITY OF EGRESS COMPONENT

FEC — FIRE EXTINGUISHER CABINET TO BE MODEL 2409-R3, ROLLED EDGE, SEMI-RECESSED 2 1/2" BY LARSEN'S MANUFACTURING CO. CABINET TO BE STEEL WITH WHITE BAKED ENAMEL FINISH WITH VERTICAL DUO DOOR AND CLEAR ACRYLIC GLAZING. PROVIDE MP5, 2A-10B:C FIRE EXTINGUISHER IN CABINET. MOUNT BOTTOM OF CABINET 30" AFF.

EXIT LIGHT WITH BATTERY BACKUP - ARROW INDICATES DIRECTION OF EGRESS

EX — EXISTING

INDICATES NEW 1 HR RATED WALL ASSEMBLY

INDICATES NEW 2 HR RATED WALL ASSEMBLY

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

0 8' 16' 24' 32'

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

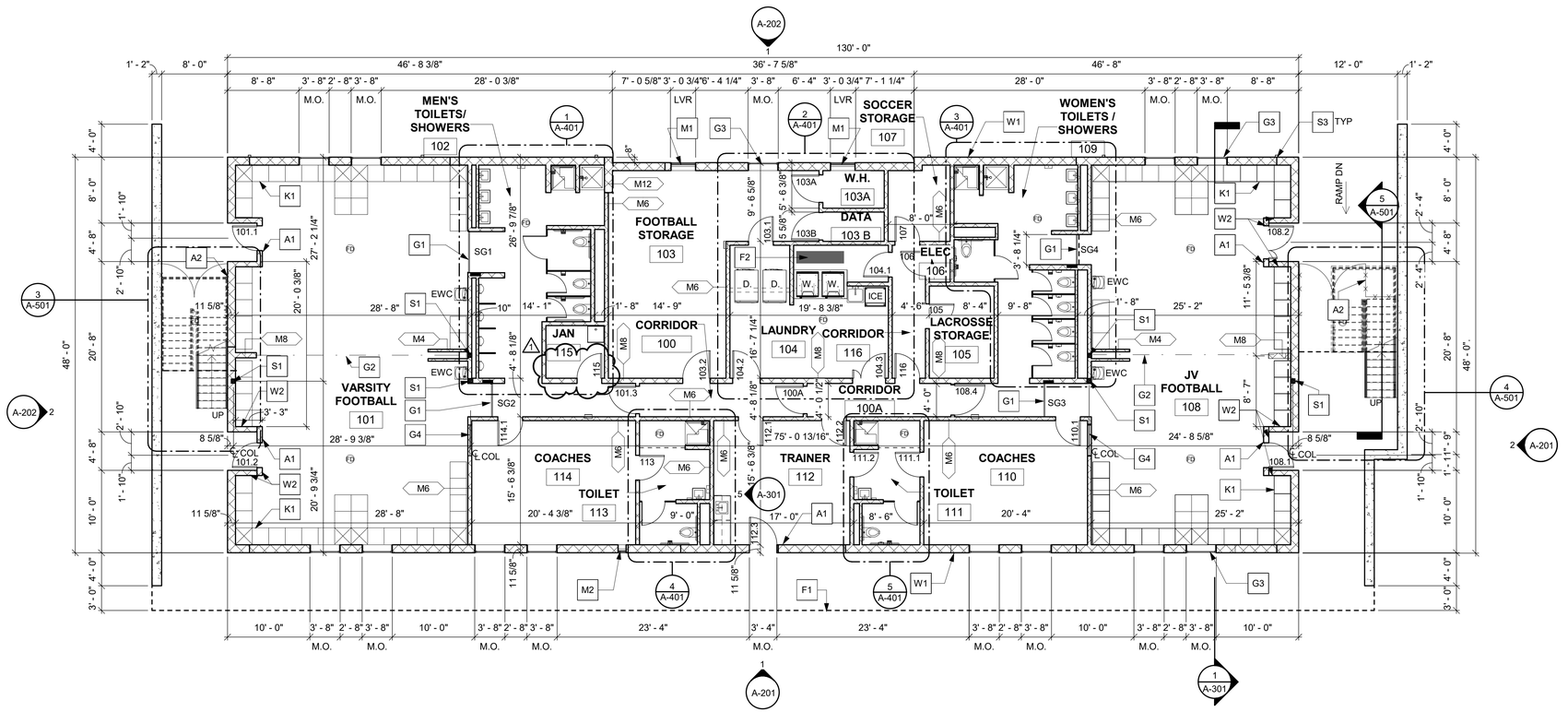
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

LIFE SAFETY PLAN

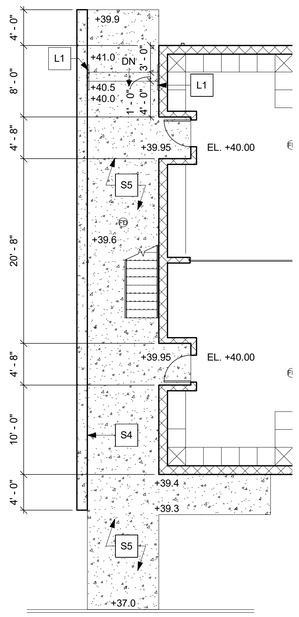
SHEET
G-003

10/1/2020 3:12:51 PM



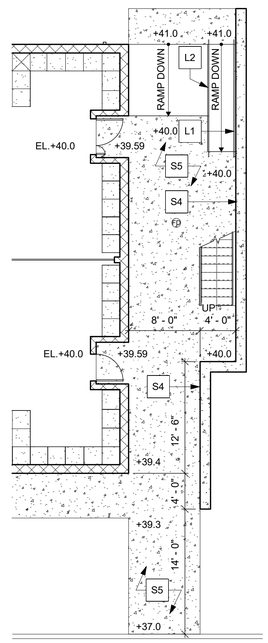
FIRST LEVEL FLOOR PLAN

1/8" = 1'-0"



NORTH AREAWAY DETAIL PLAN

1/8" = 1'-0"



SOUTH AREAWAY DETAIL PLAN

1/8" = 1'-0"

GENERAL CONSTRUCTION NOTES

1. SEE G-002 FOR GENERAL CONSTRUCTION NOTES.

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

FLOOR PLAN NOTES

A1. TYPE S-A SIGN. SEE A-602 SHEET.

A2. 7' - 0" HIGH VINYL COATED CHAIN FENCE WITH TWO 4' - 0" WIDE GATES UNDER STAIR LANDING. VERIFY HEIGHT.

F1. OUTLINE OF BALCONY ABOVE.

F2. 6' - 0" X 1' 6" X 12" DEEP SUMP WITH EXPANDED MESH COVER.

G1. FOLDING SECURITY GATE. SEE SPECIFICATIONS.

G2. ACCORDION PARTITION. SEE SPECIFICATIONS.

G3. 8" X 8" X 4" GLASS MASONRY BLOCK AT OPENINGS. PROVIDE HOLLOW METAL FRAME.

G4. HOLLOW METAL FRAME INTERIOR WINDOW F2.

K1. ATHLETIC LOCKERS (2' DEEP X 6' HIGH) WITH 4" HIGH CONCRETE LOCKER BASE. SEE ELEVATION 3 & SECTION 4 ON SHEET A-301.

L1. 1 1/2" DIAMETER GALVANIZED PIPE HANDRAIL ATTACHED TO WALL MOUNT 34" ABOVE RAMP.

L2. 1 1/2" DIAMETER GALVANIZED PIPE HANDRAIL WITH VERTICAL AT 5' - 0" O.C. MAX. AND HORIZONTAL RAILS AT 17" AND 34" ABOVE RAMP OR STEPS.

M1. MECHANICAL LOUVERS. SEE MECHANICAL DRAWINGS.

M2. 16" W X 12" HIGH LOUVER - SEE MECHANICAL PLANS.

S1. 6" X 6" x 1/4" TS COLUMN. SEE STRUCTURAL DRAWINGS.

S2. 4 x 4 x 1/4 T.S. COLUMN @ LANDING ABOVE. SEE STRUCTURAL DRAWINGS.

S3. CONTROL JOINT. SEE DETAIL 3, SHEET A-201 & BUILDING ELEVATIONS .

S4. CONCRETE RETAINING WALL. SEE STRUCTURAL DRAWINGS.

S5. 4" REINFORCED CONCRETE SLAB ON 4" COMPACTED POROUS STONE FILL.

W1. 12" PAINTED SPLIT FACE CMU W/ FOAMED-IN-PLACE INSULATION.

W2. 8" SPLIT FACE CMU.

FLOOR PLAN LEGEND

INDICATES EXISTING WALL CONSTRUCTION

INDICATES NEW WALL CONSTRUCTION

90 DEG. SWING INDICATES NEW DOOR

45 DEG. SWING INDICATES EXISTING DOOR

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

0 8' 16' 24' 32'

INTERACTIVE DESIGN

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE
1	CITY REVIEW	10.23.20

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

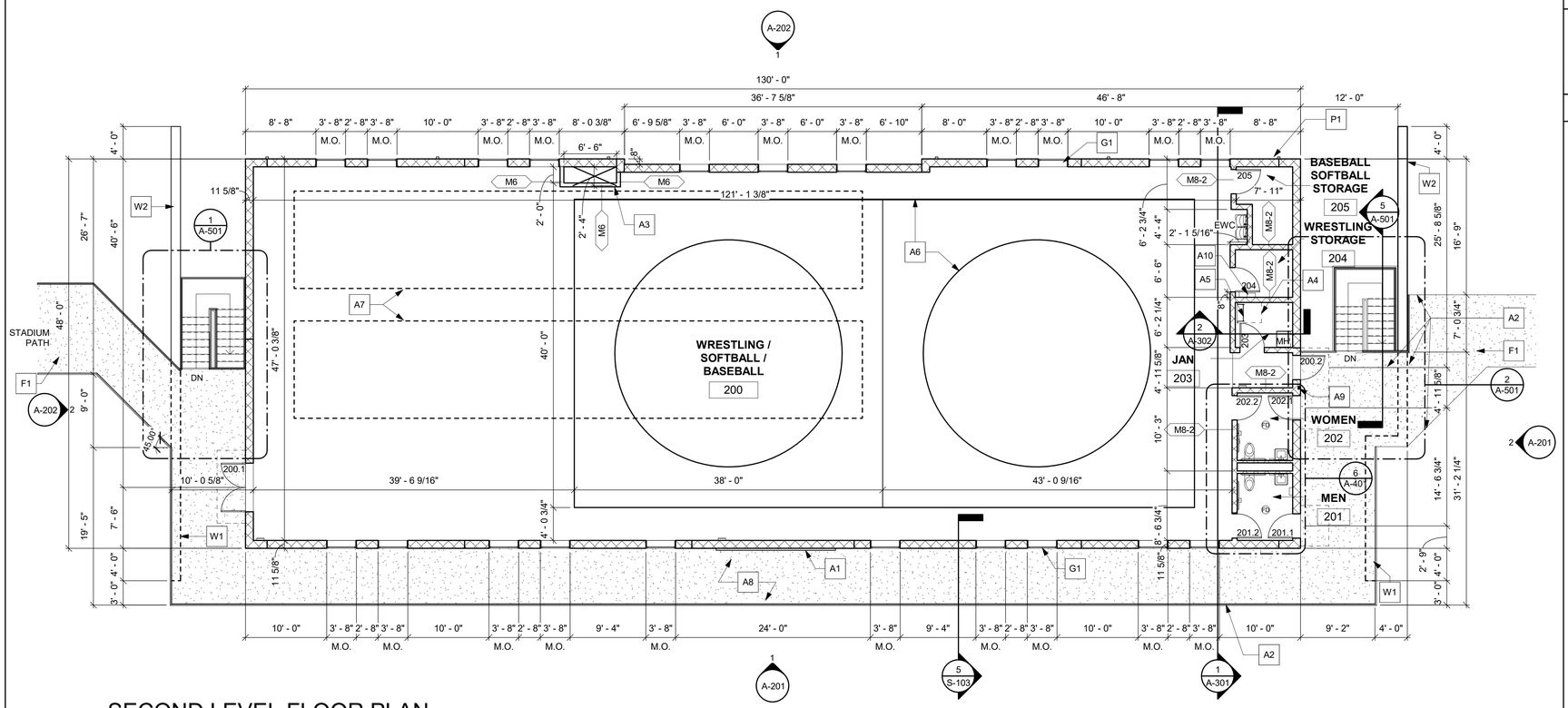
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

FIRST LEVEL FLOOR PLAN

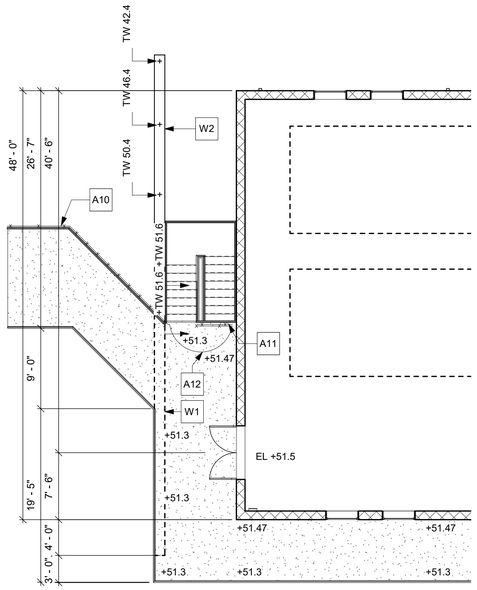
SHEET A-101

10/23/2020 9:27:03 AM



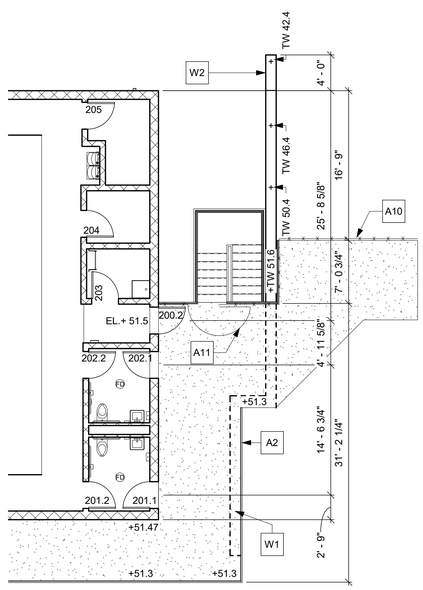
SECOND LEVEL FLOOR PLAN

1/8" = 1'-0"



ENTRANCE DETAIL PLAN

1/8" = 1'-0"



ENTRANCE DETAIL PLAN

1/8" = 1'-0"

GENERAL CONSTRUCTION NOTES

1. SEE G-002 FOR GENERAL CONSTRUCTION NOTES.

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

FLOOR PLAN NOTES

A1. SCORE BOARD N.I.C.

A2. 4'-0" HIGH STEEL GUARDRAIL W/ VERTICALS @ 6'-0" O.C. MAX & PICKETS @ 4" O.C.

A3. MECHANICAL CHASE. SEE MECHANICAL DRAWING.

A4. OUTLINE OF ROOF HATCH ABOVE.

A5. STEEL ACCESS LADDER. SEE SECTION 2, SHEET A-302.

A6. WRESTLING MAT (BY OWNER).

A7. 12' W. X 70' L. BATTING CAGES (BY OWNER).

A8. BALCONY OVERLOOKING STADIUM

A9. KNOX BOX.

A10. EMERGENCY LIGHTING INVERTER.

A11. VINYL- COATED CHAIN LINK FENCE TO MATCH EXISTING.

A12. VINYL- COATED CHAIN LINK GATE.

F1. NEW STADIUM PATH/SIDEWALK- SEE CIVIL DRAWING.

G1. 8" X 8" X 4" GLASS MASONRY BLOCK AT OPENINGS. PROVIDE PERIMETER CHANNEL & STAINLESS STEEL REINFORCEMENT @ MORTAR JOINTS.

P1. PREFINISHED METAL RAINWATER LEADER HEAD W/ OVERFLOW & DOWNSPOUT.

W1. OUTLINE OF RETAINING WALL BELOW.

W2. CONCRETE RETAINING WALL WITH DAMPPROOFING ON FILL SIDE.

FLOOR PLAN LEGEND

INDICATES EXISTING WALL CONSTRUCTION

INDICATES NEW WALL CONSTRUCTION

90 DEG. SWING INDICATES NEW DOOR

45 DEG. SWING INDICATES EXISTING DOOR

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

0 8' 16' 24' 32'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

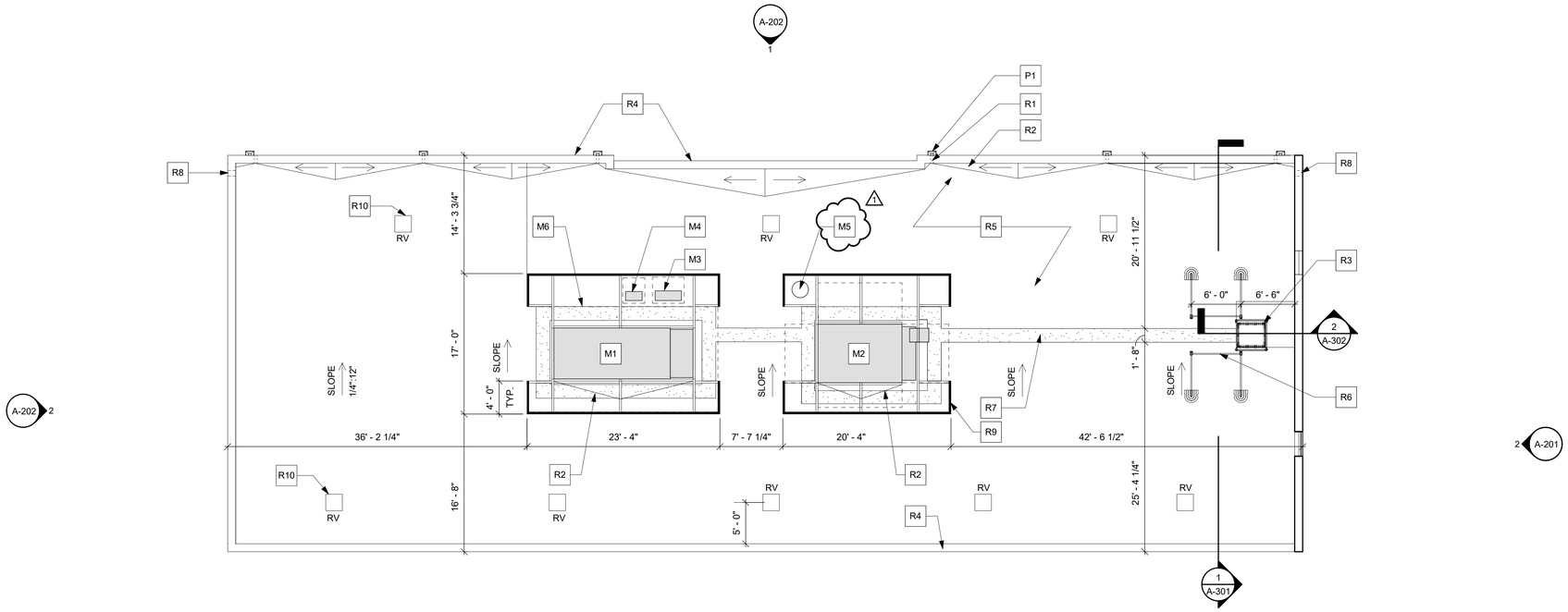
DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

SECOND LEVEL FLOOR PLAN

SHEET

A-102

10/1/2020 3:09:29 PM



ROOF PLAN

1/8" = 1'-0"

ATTIC VENTILATION:

VENT AREA REQUIRED: 6240 SF/150 =41.6 SF (VCC 1203.2)

VENT AREA REQUIRED: 43.06 SF

6 WALL LOUVERS : 4.27 SF FREE AREA = 25.62 SF
8 ROOF VENTS: 2.18 SF FREE AREA =17.44 SF
43.06 SF

GENERAL INT. ELEV. & CASEWORK NOTES

1. CASEWORK TO MEET A.W.I. STANDARD FOR CUSTOM AND COMMERCIAL CASEWORK.

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

INTERIOR ELEV. & CASEWORK NOTES

M1. RT-1, SEE MECHANICAL DRAWINGS. UNIT WITH CURB IS 6' - 3" HIGH.

M2. RT-2, SEE MECHANICAL DRAWINGS. UNIT WITH CURB IS 6' - 2" HIGH.

M3. HP-1, SEE MECHANICAL DRAWINGS. UNIT IS 4' - 3" HIGH.

M4. HP-2, SEE MECHANICAL DRAWINGS. UNIT IS 4' - 3" HIGH.

M5. EF-2, SEE MECHANICAL DRAWINGS.

M6. DASHED LINES INDICATES MAINTENANCE CLEARANCE FOR ROOFTOP MECHANICAL EQUIPMENT.

P1. PREFINISHED METAL RAINWATER LEADER HEAD W/ OVERFLOW & DOWNSPOUT.

R1. THROUGH- WALL PREFINISHED METAL SCUPPER.

R2. TAPERED RIGID INSULATION.

R3. 30" X 36" ROOF HATCH- LADDER ACCESS W/ ROOF HATCH SAFETY RAIL SYSTEM.

R4. PREFINISHED METAL COPING.

R5. FULLY ADHERED TPO ROOFING ON 1/2" MIN RIGID INSULATION.

R6. 42" HIGH ROOFTOP GUARDRAIL SYSTEM FOR LOW-SLOPE ROOFS.

R7. ROOFTOP WALKWAY PADS (SHADED AREAS).

R8. EMERGENCY OVERFLOW SCUPPERS.

R9. CURB MOUNTED MECHANICAL SCREEN- SEE SPECIFICATIONS. SCREEN PANELS ARE 5' - 0" HIGH. PROVIDE 1' - 6" CLEAR SPACE UNDER PANELS.

R10. SHEET METAL ROOF VENT ON 24" X 24" X 8" HIGH ROOF CURB. PROVIDE 22" X 22" OPENING IN ROOF DECK.

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

0 8' 16' 24' 32'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE
1	CITY REVIEW	10.23.20

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

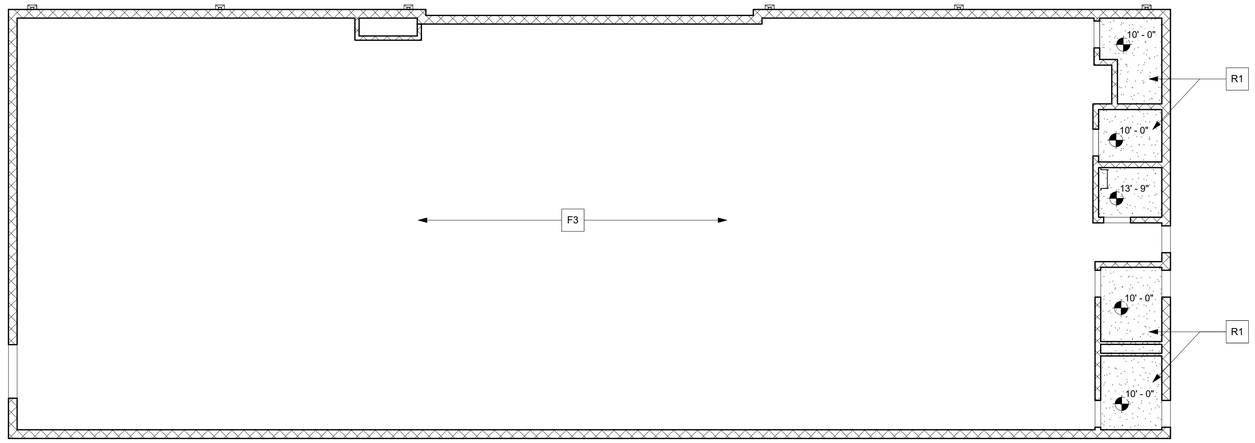
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

ROOF PLAN

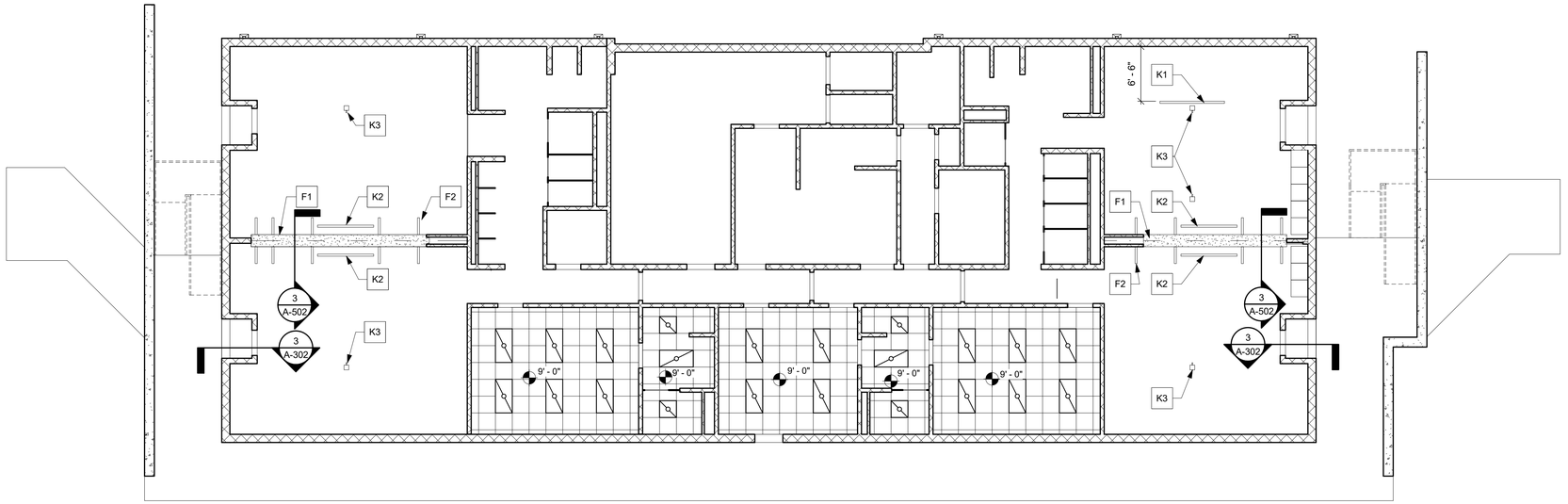
SHEET
A-103

10/23/2020 11:41:44 AM



SECOND LEVEL REFLECTED CEILING PLAN

1/8" = 1'-0"



FIRST LEVEL REFLECTED CEILING PLAN

1/8" = 1'-0"

GENERAL CEILING NOTES

1. SEE ELECTRICAL DRAWINGS FOR EMERGENCY EGRESS LIGHTING, EXTERIOR LIGHT FIXTURES, AND OTHER DEVICES NOT SHOWN ON THESE DRAWINGS.

2. ALL CEILING GRIDS TO BE CENTERED IN SPACE AS SHOWN, UNLESS NOTED OTHERWISE.

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

REFLECTED CEILING PLAN NOTES

F1. BULKHEAD AT ACCORDION PARTITION.

F2. BRACES FOR ACCORDION PARTITION SUPPORT BEAM.

F3. PAINTED PLYWOOD CEILING.

K1. MOTORIZED PROJECTION SCREEN TYPE A- SEE SPECIFICATIONS.

K2. MOTORIZED PROJECTION SCREEN TYPE B- SEE SPECIFICATIONS.

K3. CEILING - MOUNTED VIDEO PROJECTOR BY OWNER. VERIFY LOCATION WITH ARCHITECT IN FIELD.

R1. INSTALL 1/2" GWB ON BOTTOM CHORD OF ROOF TRUSSES IN THESE ROOMS IN ADDITION TO 10' - 0" GWB CEILING.

REFLECTED CEILING PLAN LEGEND

- ACOUSTICAL CEILING TILE
- GWB CEILING
- EXPOSED STRUCTURE AT CEILING
- CEILING HEIGHT (ABOVE FINISH FLOOR)
- EXIT SIGN - CEILING MOUNTED
- EXIT SIGN - WALL MOUNTED
- EXIT SIGN WITH INTEGRAL EMERGENCY EGRESS LIGHTS
- EMERGENCY EGRESS LIGHT
- CAN LIGHT
- PENDANT LIGHT
- 2' X 2' RECESSED LIGHT FIXTURE
- 2' X 4' RECESSED LIGHT FIXTURE
- 1' X 4' LIGHT FIXTURE
- WALL-MOUNTED LIGHT FIXTURE
- 2' X 2' SUPPLY DIFFUSER
- 2' X 2' RETURN GRILLE
- EX EXISTING

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

0 8' 16' 24' 32'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

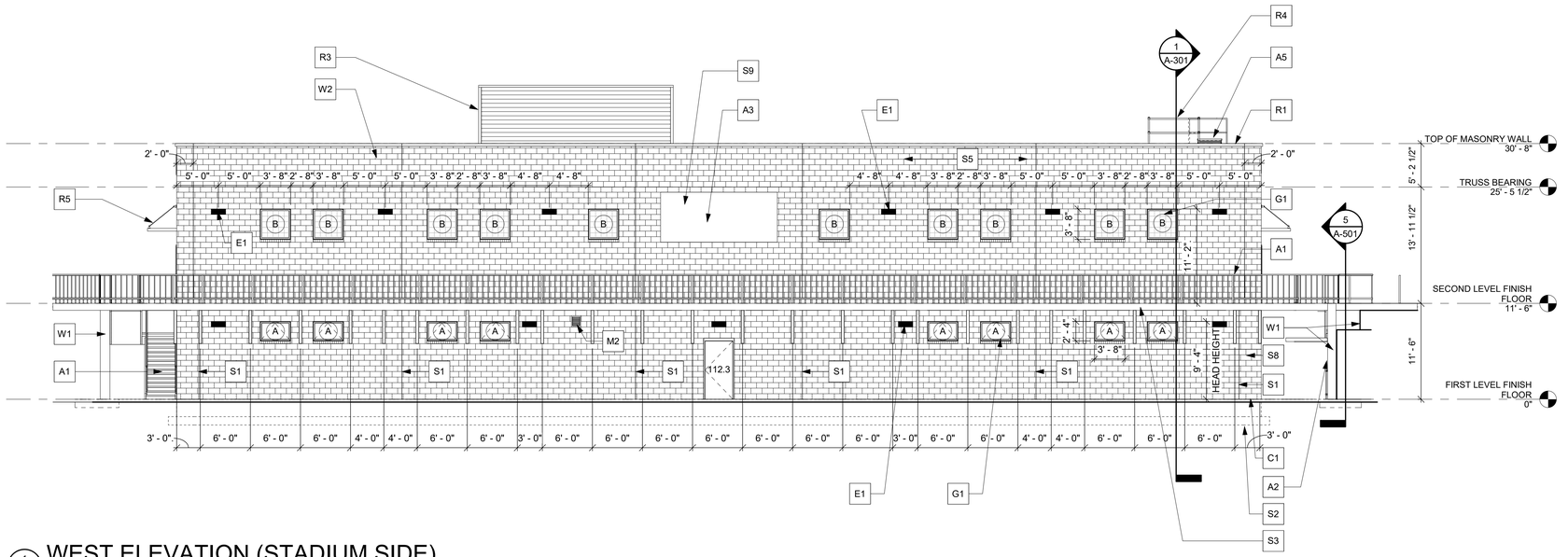
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

REFLECTED CEILING PLAN

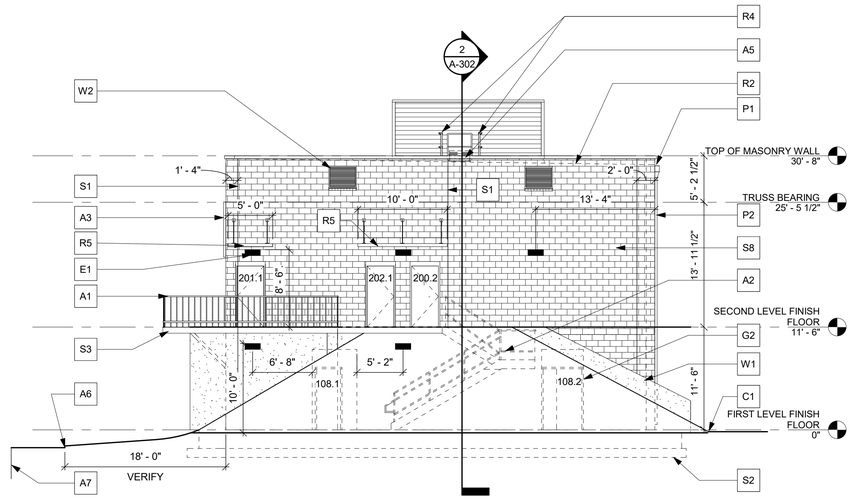
SHEET
A-104

10/1/2020 11:18:43 AM



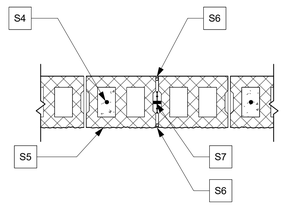
1 A-201 WEST ELEVATION (STADIUM SIDE)

1/8" = 1'-0"



2 A-201 EAST ELEVATION

1/8" = 1'-0"



3 A-201 TYPICAL CONTROL JOINT DETAIL

3/4" = 1'-0"

GENERAL ELEVATION NOTES

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

ELEVATION NOTES

A1. 4'-0" HIGH STEEL GUARDRAIL W/ VERTICALS @ 6'-0" O.C. MAX & PICKETS @ 4" B

A2. OUTLINE OF STAIRS BEYOND.

A3. SCOREBOARD (BY OWNER)

A4. NOT USED.

A5. ROOF HATCH BEYOND W/ SAFETY RAIL SYSTEM.

A6. EDGE OF TURF.

A7. END LINE OF END ZONE.

C1. FINISH GRADE- SEE CIVIL DRAWINGS.

E1. EXTERIOR SCONCE LIGHTS- SEE ELECTRICAL.

G1. SEE DETAILS 4 AND 5 ON A-502. GLASS MASONRY BLOCK IN HOLLOW METAL FRAME.

G2. OUTLINE OF DOORS BEYOND.

M1. 3' - 8" NW X 2' - 4" HO MECHANICAL LOUVER- SEE MECHANICAL PLANS.

M2. 16" NW X 12" HIGH LOUVER - SEE MECHANICAL PLANS.

M3. DRYER EXHAUST VENTS - SEE MECHANICAL PLANS.

P1. PREFINISHED METAL RAINWATER LEADER HEAD NW/ OVERFLOW.

P2. PREFINISHED METAL DOWNSPOUT. LOCATED OVER MASONRY CONTROL JOINT.

P3. THROUGH - WALL PREFINISHED METAL SCUPPER.

P4. SEE CIVIL DRAWINGS FOR COLLECTION OF DOWNSPOUTS.

P5. CAST ALUMINUM DOWNSPOUT BOOT.

R1. PREFINISHED METAL COPING.

R2. OUTLINE OF ROOF BEYOND. LOCATED OVER MASONRY CONTROL JOINT.

R3. CURB MOUNTED MECHANICAL SCREEN. SEE SPECIFICATIONS.

R4. 42" HIGH, GUARDRAIL SYSTEM.

R5. CANOPY OVER DOORS. SEE DETAIL 2, SHEET A-502.

S1. CONTROL JOINT. SEE DETAIL 3, SHEET A-201

S2. CONCRETE FOOTING- SEE STRUCTURAL DRAWINGS.

S3. 3" CONCRETE DECK ON STEEL CHANNEL FRAMING MW/ DIAGONAL STEEL STRUTS @ 6'-0" O/AC SEE STRUCTURAL PLANS.

S4. STEEL REINFORCEMENT IN GROUTED CELLS.

S5. 12" PAINTED SPLIT FACE CMU NW/ FOAMED-IN-PLACE INSULATION.

S6. BACKER ROD AND SEALANT.

S7. PREFORMED GASKET.

S8. PAINTED SPLIT FACE CMU WITH FOAMED-IN-PLACE INSULATION - R-12.5

S9. 6' HIGH X 14' WIDE PAINTED STANDARD CMU WITH FOAMED-IN-PLACE INSULATION AT SCOREBOARD. VERIFY DIMENSIONS WITH ARCHITECTS IN FIELD.

W1. RETAINING WALL BEYOND.

W2. 3' - 8" X 2' - 4" ATTIC VENTILATION LOUVERS.

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

0 8' 16' 24' 32'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

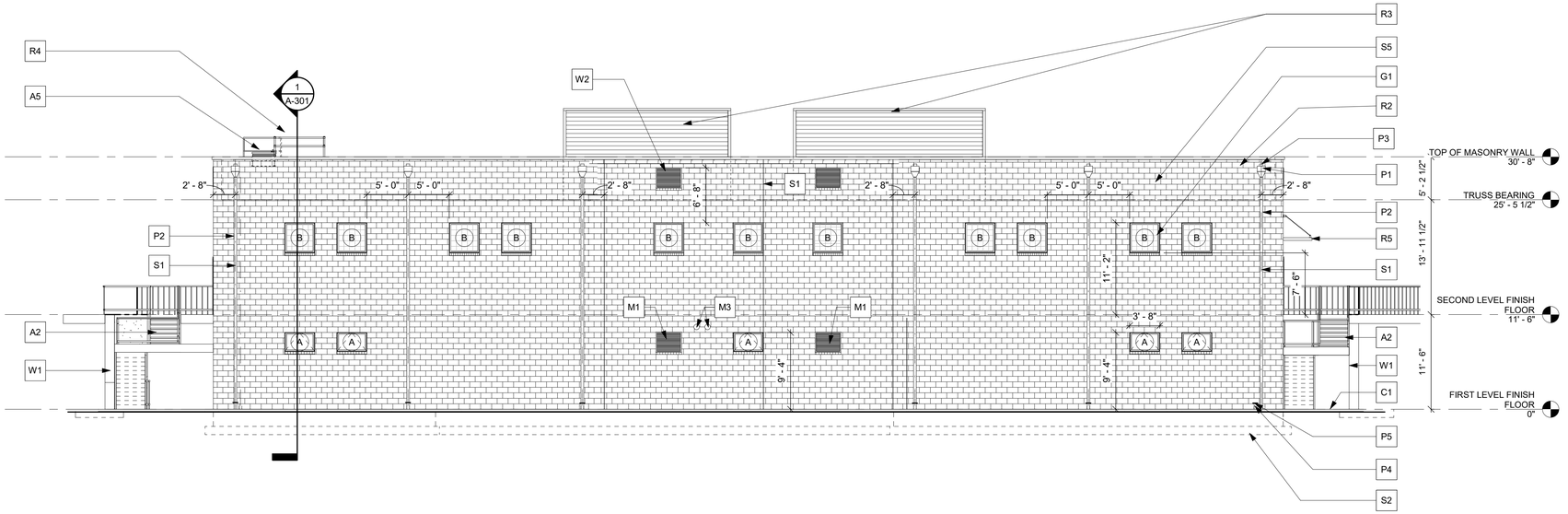
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

ELEVATIONS

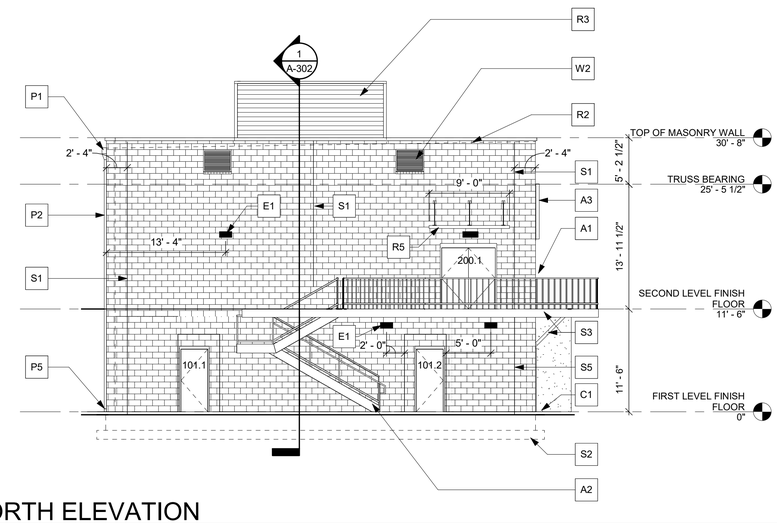
SHEET A-201

10/1/2020 3:00:56 PM



1 A-202 EAST ELEVATION (BLENHEIM ROAD)

1/8" = 1'-0"



2 A-202 NORTH ELEVATION

1/8" = 1'-0"

GENERAL ELEVATION NOTES

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

ELEVATION NOTES

A1. 4'-0" HIGH STEEL GUARDRAIL W/ VERTICALS @ 6'-0" O.C. MAX & PICKETS @ 4" B

A2. OUTLINE OF STAIRS BEYOND.

A3. SCOREBOARD (BY OWNER)

A4. NOT USED.

A5. ROOF HATCH BEYOND W/ SAFETY RAIL SYSTEM.

A6. EDGE OF TURF.

A7. END LINE OF END ZONE.

C1. FINISH GRADE- SEE CIVIL DRAWINGS.

E1. EXTERIOR SCONCE LIGHTS- SEE ELECTRICAL.

G1. SEE DETAILS 4 AND 5 ON A-502. GLASS MASONRY BLOCK IN HOLLOW METAL FRAME.

G2. OUTLINE OF DOORS BEYOND.

M1. 3' - 8" NW X 2' - 4" HO MECHANICAL LOUVER- SEE MECHANICAL PLANS.

M2. 16" NW X 12" HIGH LOUVER - SEE MECHANICAL PLANS.

M3. DRYER EXHAUST VENTS - SEE MECHANICAL PLANS.

P1. PREFINISHED METAL RAINWATER LEADER HEAD NW/ OVERFLOW.

P2. PREFINISHED METAL DOWNSPOUT. LOCATED OVER MASONRY CONTROL JOINT.

P3. THROUGH - WALL PREFINISHED METAL SCUPPER.

P4. SEE CIVIL DRAWINGS FOR COLLECTION OF DOWNSPOUTS.

P5. CAST ALUMINUM DOWNSPOUT BOOT.

R1. PREFINISHED METAL COPING.

R2. OUTLINE OF ROOF BEYOND. LOCATED OVER MASONRY CONTROL JOINT.

R3. CURB MOUNTED MECHANICAL SCREEN. SEE SPECIFICATIONS.

R4. 42" HIGH, GUARDRAIL SYSTEM.

R5. CANOPY OVER DOORS. SEE DETAIL 2, SHEET A-502.

S1. CONTROL JOINT. SEE DETAIL 3, SHEET A-201

S2. CONCRETE FOOTING- SEE STRUCTURAL DRAWINGS.

S3. 3" CONCRETE DECK ON STEEL CHANNEL FRAMING MW/ DIAGONAL STEEL STRUTS @ 6'-0" O/AC SEE STRUCTURAL PLANS.

S4. STEEL REINFORCEMENT IN GROUTED CELLS.

S5. 12" PAINTED SPLIT FACE CMU NW/ FOAMED-IN-PLACE INSULATION.

S6. BACKER ROD AND SEALANT.

S7. PREFORMED GASKET.

S8. PAINTED SPLIT FACE CMU WITH FOAMED-IN-PLACE INSULATION - R-12.5

S9. 6' HIGH X 14' WIDE PAINTED STANDARD CMU WITH FOAMED-IN-PLACE INSULATION AT SCOREBOARD. VERIFY DIMENSIONS WITH ARCHITECTS IN FIELD.

W1. RETAINING WALL BEYOND.

W2. 3' - 8" X 2' - 4" ATTIC VENTILATION LOUVERS.

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

0 8' 16' 24' 32'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

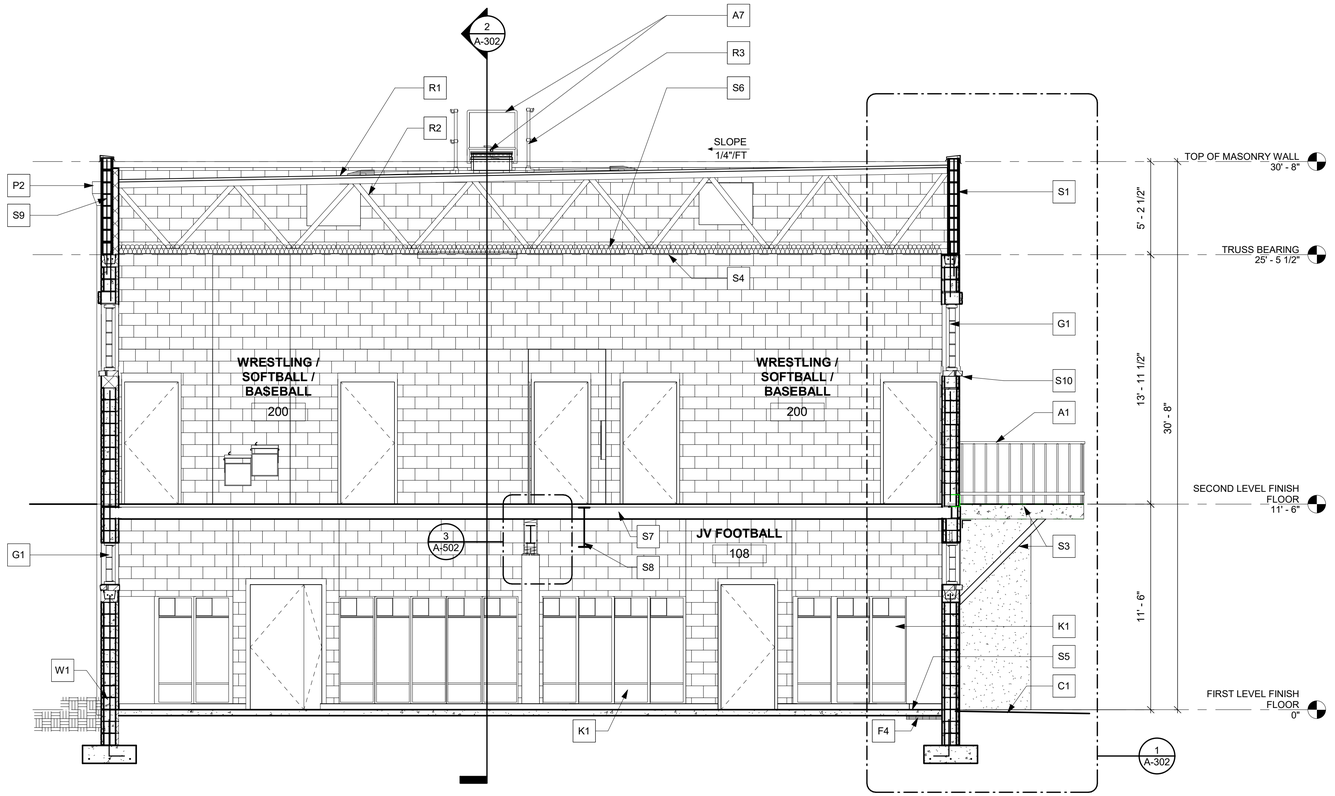
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

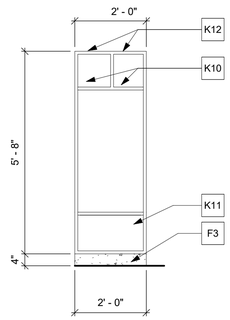
ELEVATIONS

SHEET A-202

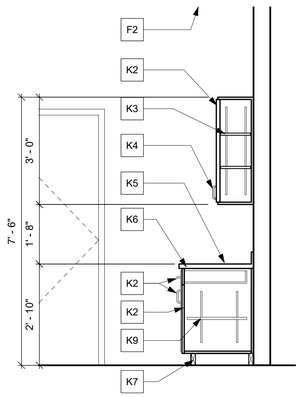
10/12/2020 2:55:38 PM



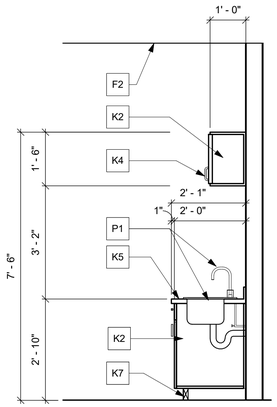
1 TYPICAL CROSS SECTION
A-301 — 1/4" = 1'-0"



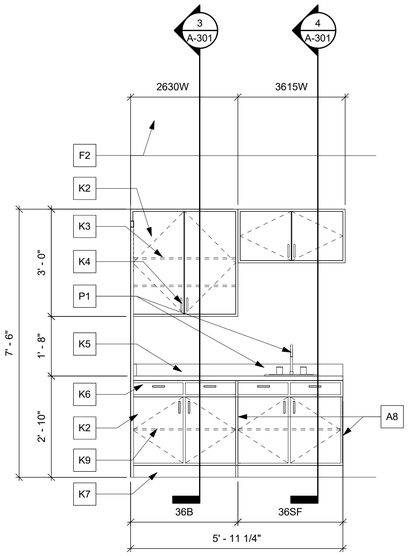
2 ELEVATION OF METAL ATHLETIC LOCKERS
A-301 — 1/2" = 1'-0"



3 SECTION.
A-301 — 1/2" = 1'-0"



4 SECTION
A-301 — 1/2" = 1'-0"



5 ELEVATION
A-301 — 1/2" = 1'-0"

GENERAL BUILDING & WALL SECTION NOTES

1. NOTE.

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

SECTION NOTES

A1. 4'-0" HIGH STEEL GUARDRAIL W/ VERTICALS @ 6'-0" O.C. MAX & PICKETS @ 4" O.C.

A2. PROVIDE EDGE TRIM @ EXPOSED ENDS.

A3. 3/4" PREFINISHED PLYWOOD BACK.

A4. DOUBLE COAT HOOK.

A5. 3/4" FINISHED PLYWOOD FRAME-PAINTED.

A6. CONT. 1 X 3 CLEAT @ SEAT.

A7. ROOF HATCH BEYOND W/ SAFETY RAIL SYSTEM.

A8. SUPPORT BRACKETS (TYP.)

C1. FINISH GRADE. SEE CIVIL DRAWINGS.

F1. 4" CONCRETE LOCKER BASE.

F2. CEILING AS SCHEDULED (TYP).

F4. 2" X 24" PERIMETER INSULATION.

G1. 8" X 8" X 4" GLASS MASONRY BLOCK IN HOLLOW METAL FRAME.

K1. ATHLETIC LOCKERS (2' DEEP X 6' HIGH) WITH 4" HIGH CONCRETE LOCKER BASE. SEE ELEVATION 3 & SECTION 4 ON SHEET A-301.

K2. PLASTIC LAMINATE CASEWORK (TYP)

K3. ADJUSTABLE SHELVES (TYP)

K4. WIRE OR HARDWARE PULL (TYP)

K5. PLASTIC LAMINATE COUNTERTOP, BACKSPLASH AND APRON (TYP)

K6. DRAWER (TYP)

K7. TOE KICK (TYP)

K8. PLASTIC LAMINATE BASE CABINET WITH REMOVABLE PANEL (TYP).

K9. FIXED SHELF.

K10. PROVIDE TWO LOCKABLE STORAGE COMPARTMENTS.

K11. VENTILATED, LOCKABLE FOOT LOCKER.

K12. PROVIDE 1" DIAMETER OPENING WITH PLASTIC GROMMET IN TOP OF EACH UPPER STORAGE COMPARTMENT.

P1. SINK AND FAUCET (TYP.)

P2. PREFINISHED METAL RAINWATER LEADER HEAD W/ OVERFLOW.

P3. PREFINISHED METAL DOWNSPOUT WITH CAST BOOT ALUMINUM.

R1. FULLY ADHERED TPO ROOF ON 1/2" INSULATION ON 5/8 FIRE RETARDANT PLYWOOD DECK.

R2. PREFABRICATED WOOD TRUSSES @ 2'-0" O.C.

R3. 42" HIGH ROOFTOP GUARDRAIL SYSTEM FOR FLAT @ LOW-SLOPE ROOFS.

S1. PAINTED SPLIT FACE 8" CMU W/ FOAMED-IN-PLACE INSULATION.

S2. 12" PAINTED SPLIT FACE CMU W/ FOAMED-IN-PLACE INSULATION.

S3. 3" CONCRETE DECK ON STEEL CHANNEL FRAMING W/ DIAGONAL STEEL STRUTS @ 6'-0" O.C. SEE STRUCTURAL PLANS.

S4. 5/8" PLYWOOD ON STEEL HAT CHANNELS.

S5. 4" REINFORCED CONCRETE SLAB ON 4" POROUS STONE FILL.

S6. (R-40) BLOWN-IN INSULATION.

S7. 8" PRECAST PLANKS W/ 2" CONCRETE TOPPING.

S8. STEEL BEAM - SEE STRUCTURAL DRAWINGS (TYP.)

S9. WIDE FLANGE STEEL REINFORCEMENT IN GROUTED CELLS.

S10. THRU- WALL FLASHING.

W1. SMOOTH 12" CMU 2 COURSES HIGH WITH WATER PROOFING.

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

0 4' 8' 12' 16'

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

0 2' 4' 6' 8'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

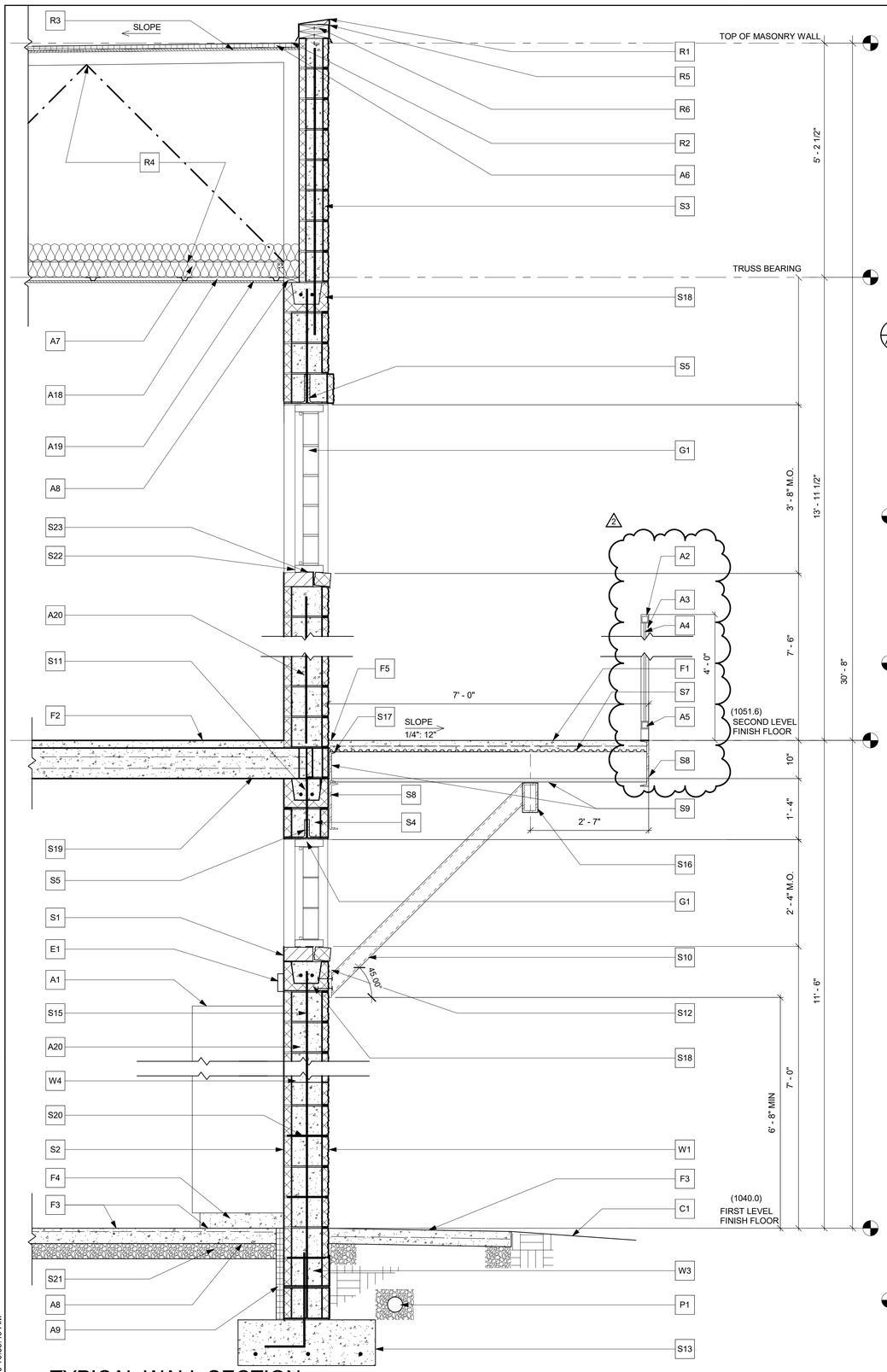
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

SECTIONS

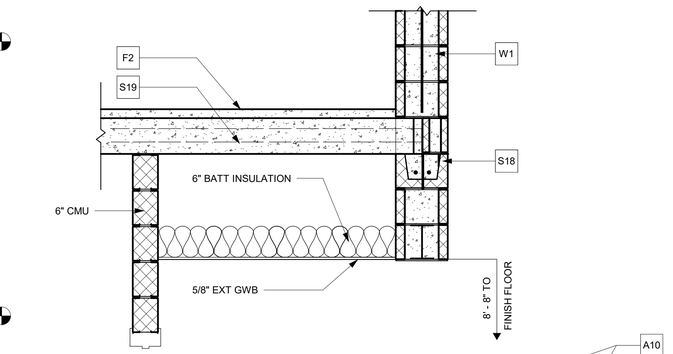
SHEET
A-301

10/1/2020 3:04:29 PM



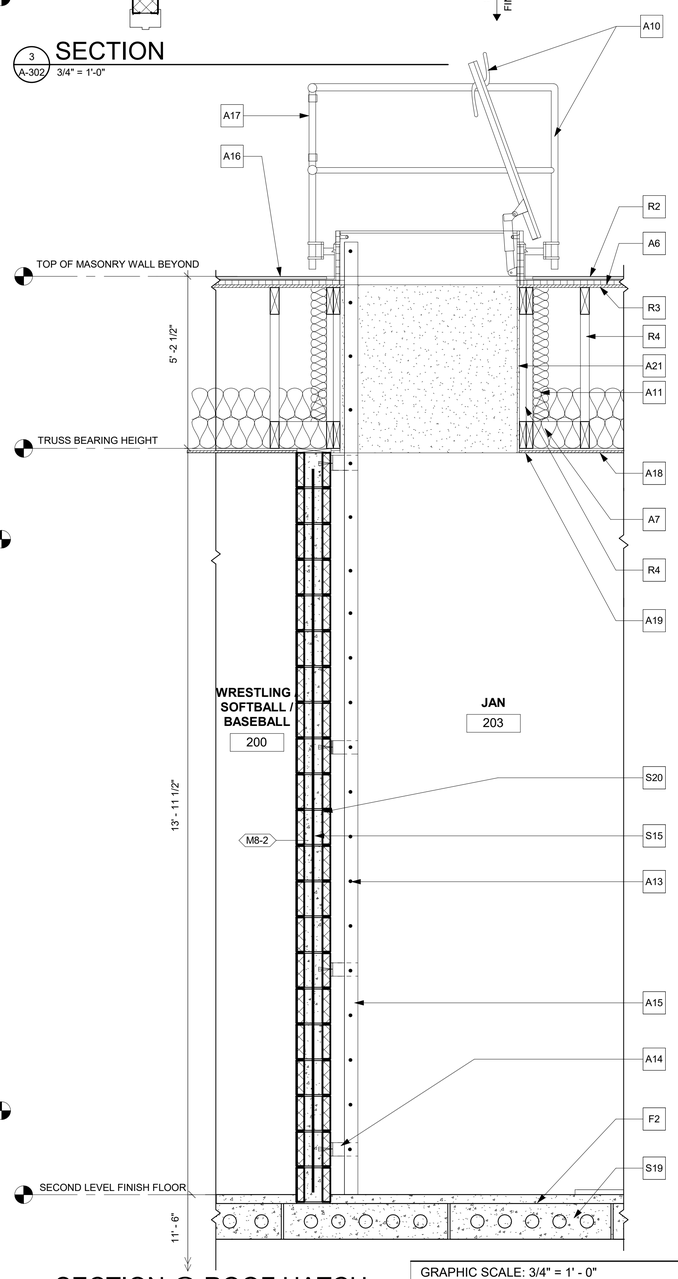
1 A-302 TYPICAL WALL SECTION

3/4" = 1'-0"



3 A-302 SECTION

3/4" = 1'-0"



2 A-302 SECTION @ ROOF HATCH

3/4" = 1'-0"

GRAPHIC SCALE: 3/4" = 1' - 0"

0 1' 2' 3' 4' 5'

GENERAL BUILDING & WALL SECTION NOTES

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

SECTION NOTES

A1. ATHLETIC LOCKERS.

A2. HSS 2" X 2" X 5/16" TOP RAIL.

A3. HSS 2" X 2" X 5/16 VERTICALS @ 5'-0" O.C. MAX. WELD TO CHANNEL WITH 3/16" FILLET WELD ALL AROUND.

A4. 3/4" SQUARE STOCK PICKETS @ 4 1/2" O.C.

A5. HSS 2" X 2" X 5/16" BOTTOM RAIL.

A6. 1" RIGID INSULATION.

A7. (R-40) FIBERGLASS BLOWN-IN INSULATION.

A8. PT 2X4 PLATE WITH ANCHOR BOLTS @ 24" O.C.

A9. 2" (R-10) RIGID PERIMETER SLAB INSULATION.

A10. BILCO TYPE S ROOF HATCH BEYOND W/ BIL- GUARD 2.0 ROOF HATCH SAFETY RAIL SYSTEM.

A11. 3 1/2" (R-11) FIBERGLASS BATT INSULATION.

A12. NOT USED.

A13. 3/4" DIA. RUNGS @ 1' - 0" O.C.

A14. 3" X 3" X 9" X 1/4" CLIP ANGLE. ATTACH TO WALL.

A15. 3" X 3/8" FLAT BAR.

A16. WALKWAY PADS.

A17. ACCESS GATE.

A18. 7/8" HAT CHANNELS @ 24" O.C.

A19. 1/2" PLYWOOD SHEATHING.

A20. PROVIDE MIN. (R-12.5) FOAMED IN PLACE IN CMU CELLS.

A21. 1/2" GYPSUM WALL BOARD.

C1. FINISH GRADE- SEE CIVIL DRAWINGS.

E1. OUTLETS OVER LOCKERS - SEE ELECTRICAL PLANS.

F1. 3" CONCRETE SLAB W/ 6X6 W1.4XW1.4 WWF.

F2. 2" CONCRETE TOPPING SLAB.

F3. 4" CONCRETE SLAB W/ 6X6 W1.4XW1.4 WWF. ON 10 MIL POLY VAPOR BARRIER POLY AT EXTERIOR SLABS.

F4. 4" HIGH CONCRETE CURB UNDER LOCKERS. RECESS CURB 2" BACK FROM LOCKER FACES.

F5. EXPANSION JOINT MATERIAL

G1. 8" X 8" X 4" GLASS BLOCK. PROVIDE 2" HOLLOW METAL FRAME.

P1. 4" PERFORATED DRAIN TILE W/ FILTER FABRIC IN CLEAN GRAVEL BED.

R1. EXTEND TPO ROOFING OVER TOP OF BLOCKING.

R2. FULLY ADHERED TPO ROOFING.

R3. 5/8" PLYWOOD ROOF SHEATHING.

R4. PRE-FABRICATED WOOD ROOF TRUSSES @ 24" O.C. SECURE EACH TRUSS TO PLATE WITH A HURRICANE CLIP.

R5. PREFINISHED METAL COPING.

R6. 2-2 X 6 P-T. WOOD BLOCKING.

S1. PAINTED CONCRETE CINDER BRICK OR CLAY BRICK.

S2. 12" PAINTED SPLIT FACE CMU.

S3. 8" PAINTED SPLIT FACE CMU.

S4. 12" PAINTED CMU AT BALCONY CHANNEL.

S5. STEEL ANGLE LINTEL. SEE STRUCTURAL DRAWINGS.

S6. NOT USED

S7. 9/16" 28 GA METAL DECKING. SEE STRUCTURAL DRAWINGS.

S8. C12 X 20.7 STEEL CHANNEL. SEE STRUCTURAL DRAWINGS.

S9. C8 X STEEL CHANNEL. SEE STRUCTURAL DRAWINGS.

S10. TS. 4 X 4 X 1/4 @ STEEL STRUT @ 6'-0" O.C. MAX. SEE STRUCTURAL DRAWINGS.

S11. PROVIDE SMOOTH FACE CMU BOND BEAM.

S12. 3/4" X 8"W. X 12"L. PLATE. WELD TO TS 4 X 4 X 1/4. SECURE TO WALL W/ 4"-1/2" DIA.EXPANSION ANCHORS. SEE STRUCTURAL DRAWINGS.

S13. CONCRETE FOOTING W/ REINFORCEMENT. SEE STRUCTURAL DRAWINGS.

S14. NOT USED.

S15. VERTICAL STEEL REINFORCEMENT GROUT CELLS SOLID- SEE STRUCTURAL DRAWINGS.

S16. TS. 4 X 8 X 1/4 BETWEEN C8 CHANNELS. WELD TO TS. 4 X 4 X 1/4 STRUT.

S17. SECURE C8 CHANNEL TO CMU WALL W/ EXPANSION ANCHORS @ 1'-4" O.C.

S18. 12" PAINTED SPLIT FACE CMU BOND BEAM W/ 2 # 4 HORIZONTAL.

S19. 8" PRECAST REINFORCED CONCRETE PLANKS. SEE STRUCTURAL DRAWINGS.

S20. HORIZONTAL JOINT REINFORCEMENT @ 16" O.C.

S21. 4" COMPACTED POROUS STONE FILL.

S22. H.M. FRAME W/ APPLIED STOPS.

S23. THRU-WALL FLASHING.

W1. PAINTED SPLIT FACE CMU.

W3. FILL ALL CMU BELOW GRADE WITH CONCRETE.

W4. GROUT CELLS SOLID @ VERTICAL REINFORCEMENT.

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE
2	CITY REVIEW	11.10.20

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

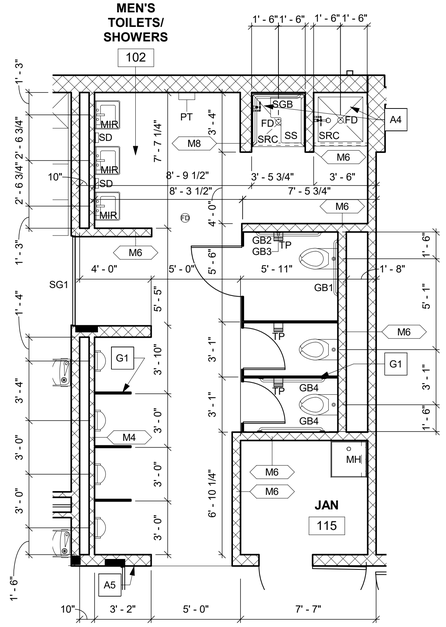
DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

WALL SECTION

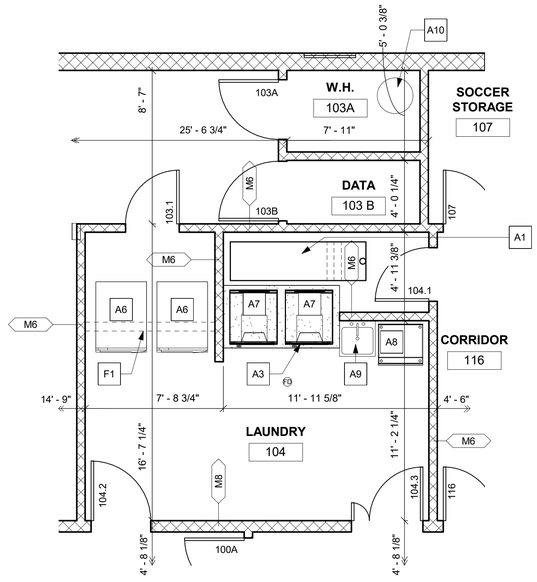
SHEET

A-302

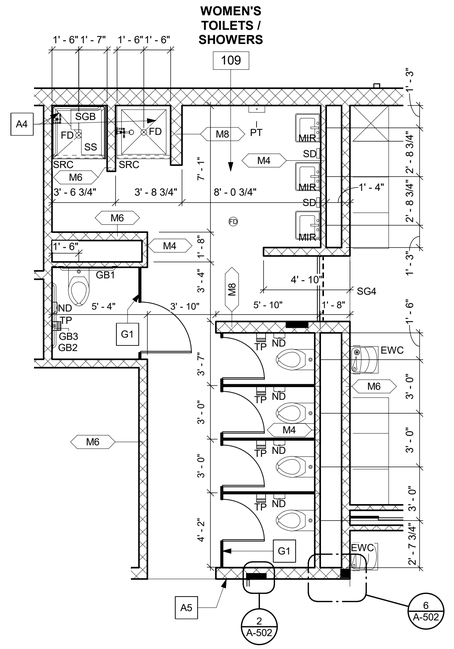
11/10/2020 10:59:49 AM



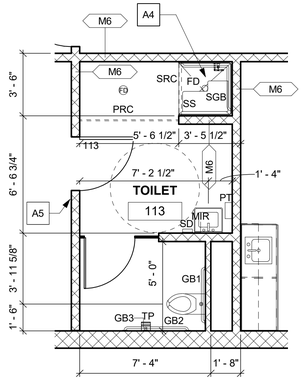
1 A-401 MEN'S TOILET (LOWER LEVEL)
1/4" = 1'-0"



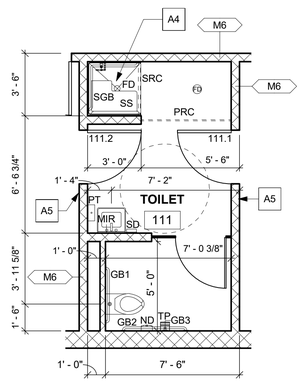
2 A-401 LAUNDRY
1/4" = 1'-0"



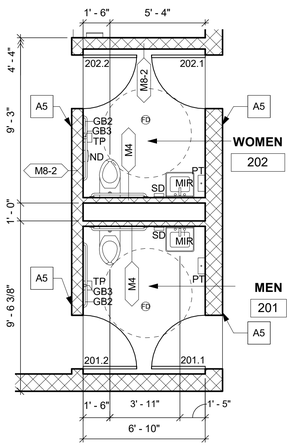
3 A-401 WOMEN'S TOILET (LOWER LEVEL)
1/4" = 1'-0"



4 A-401 MEN'S TOILET (COACHES)
1/4" = 1'-0"



5 A-401 WOMEN'S TOILET (COACHES)
1/4" = 1'-0"



6 A-401 MEN'S & WOMEN'S TOILETS (UPPER LEVEL)
1/4" = 1'-0"

TOILET ACCESSORY SCHEDULE

MARK	ITEM	MANUFACTURER	MODEL #	MOUNTING HEIGHT
GB1	36" GRAB BAR	BOBRICK	B-5806.99 X 36"	SEE SHEET G-002
GB2	42" GRAB BAR	BOBRICK	B-5806.99 X 42"	SEE SHEET G-002
GB3	18" GRAB BAR	BOBRICK	B-5806.99 X 18"	SEE SHEET G-002
GB4	42" GRAB BAR	BOBRICK	B-5806 X 42"	34" MOUNTING HEIGHT
MH	MOP HOLDER	BOBRICK	B-223 X 24"	SEE SHEET G-002
MIR	MIRROR	BOBRICK	B-165 2436	SEE SHEET G-002
ND	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270	SEE SHEET G-002
PT	PAPER TOWEL DISPENSER	BOBRICK	B-4262	SEE SHEET G-002
PRC	PRIVACY ROD & CURTAIN	BOBRICK	B-6047 x 60 W/ 204-1 SHOWER CURTAIN HOOK $ 204-3 SHOWER CURTAIN	SEE SHEET G-002
SD	SOAP DISPENSER	BOBRICK	B-4112	SEE SHEET G-002
SS	SHOWER SEAT	BOBRICK	B-5181	18" MOUNTING HEIGHT
SRC	SHOWER ROD & CURTAIN	BOBRICK	B-6107X 36 W/ 204-1 SHOWER CURTAIN HOOK & 204-2 SHOWER CURTAIN	74 1/2" MOUNTING HEIGHT
SGB	SHOWER GRAB BAR	BOBRICK	B-6861	34" MOUNTING HEIGHT
TP	TOILET TISSUE DISPENSER	BOBRICK	B-4288	SEE SHEET G-002

GENERAL ENLARGED PLANS NOTES

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

ENLARGED PLANS NOTES

A1. TRENCH DRAIN CAST IN PLACE CONCRETE - SEE PLUMBING FOUNDATIONS DRAWING.

A2. NOT USED.

A3. 6" HIGH CONCRETE PAD FOR WASHING MACHINES.

A4. SLOPE SHOWER FLOOR TO FLOOR DRAIN.

A5 TYPE S-C SIGN. SEE A-602 SHEET.

A6. 75# DRYER (BY OWNER).

A7. 50# WASHER (BY OWNER). PROVIDE 6" CONCRETE BASE. CONFIRM SIZE.

A8. ICE MACHINE (BY OWNER).

A9. LAUNDRY SINK.

A10. WATER HEATER.

F1. PROVIDE GWB BULKHEAD FROM CEILING DOWN TO 1" ABOVE DRYER.

G1. PHENOLIC FLOOR MOUNTED TOILET PARTITIONS.

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

0 4' 8' 12' 16'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

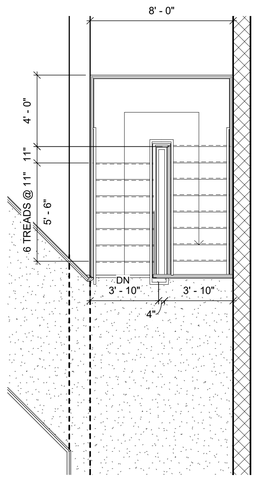
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

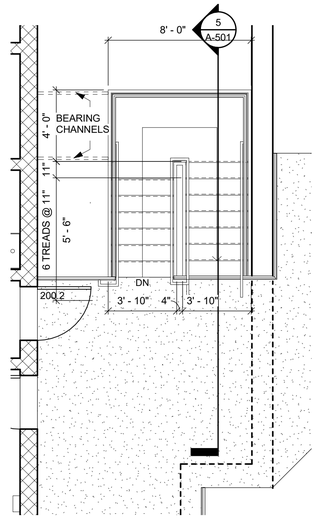
ENLARGED PLANS

SHEET
A-401

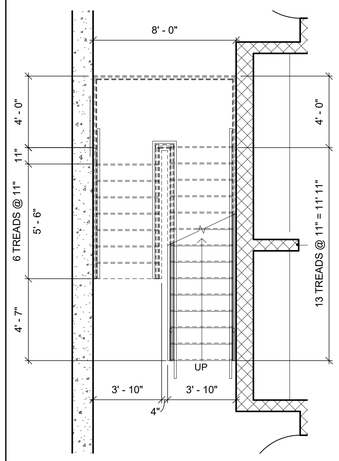
10/1/2020 11:18:48 AM



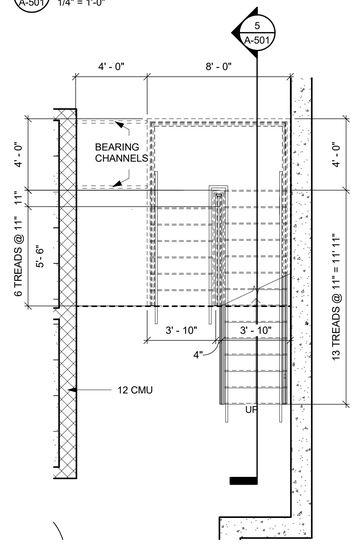
1 A-501 LEFT SIDE STAIRS- SECOND LEVEL
1/4" = 1'-0"



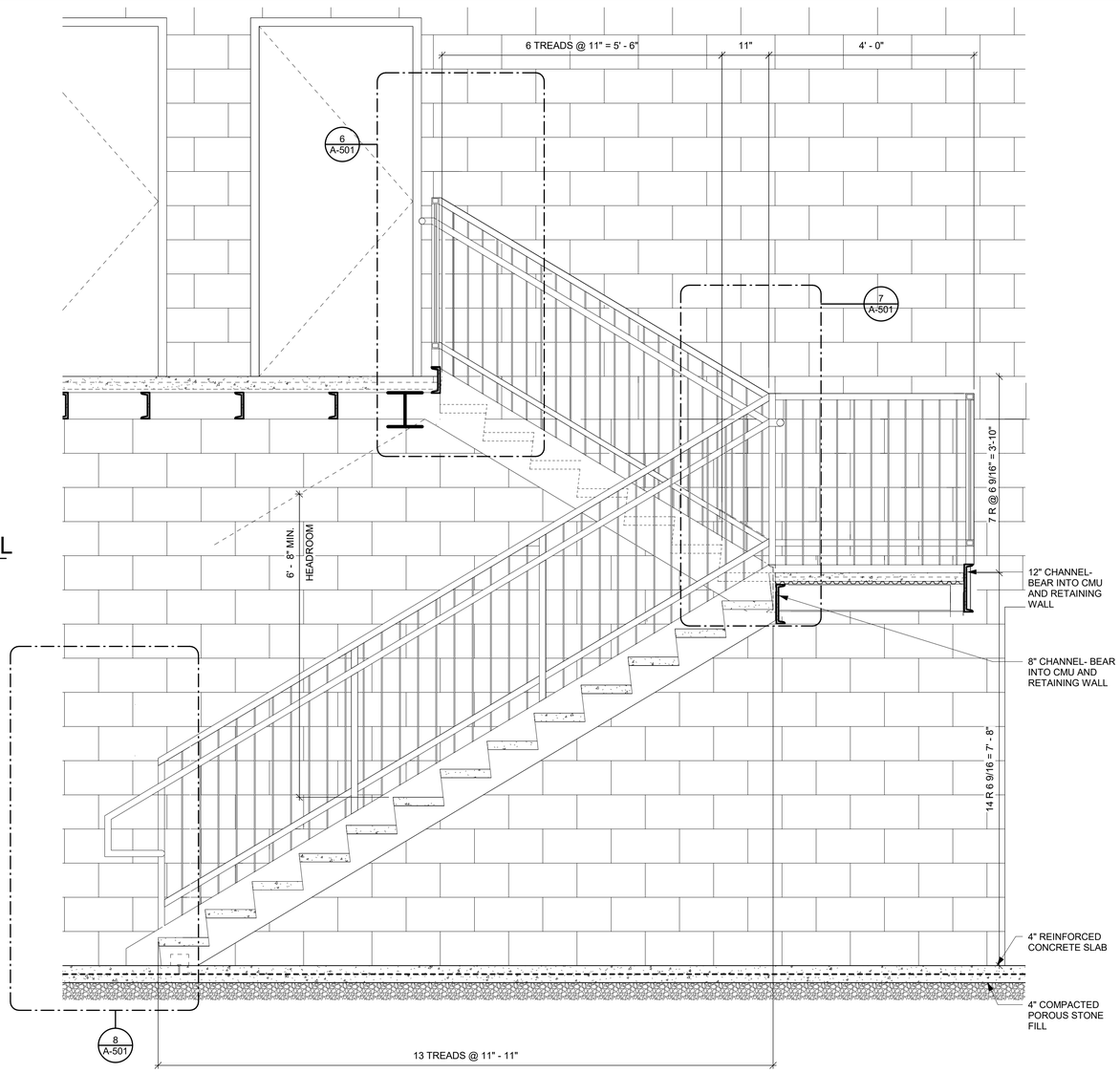
2 A-501 RIGHT SIDE STAIRS- SECOND LEVEL
1/4" = 1'-0"



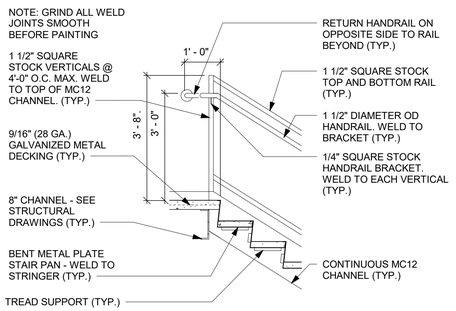
3 A-501 LEFT SIDE STAIRS- FIRST LEVEL
1/4" = 1'-0"



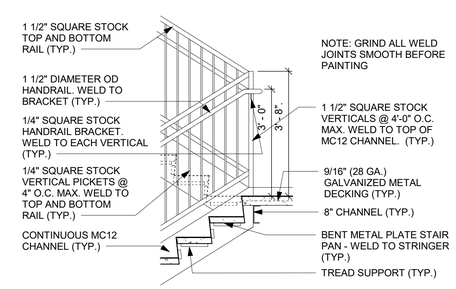
4 A-501 RIGHT SIDE STAIRS- FIRST LEVEL
1/4" = 1'-0"



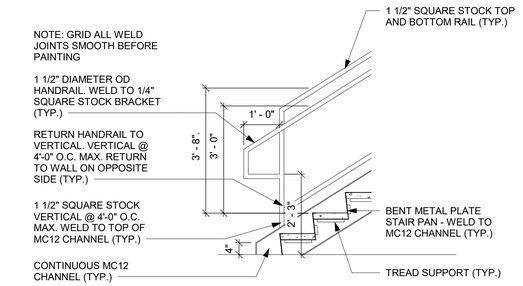
5 A-501 SECTION @ STAIRS
3/4" = 1'-0"



6 A-501 STAIR DETAIL - TOP
1/2" = 1'-0"



7 A-501 STAIR DETAIL - SWITCH BACK
1/2" = 1'-0"



8 A-501 STAIR DETAIL
1/2" = 1'-0"

10/1/2020 4:45:54 PM

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

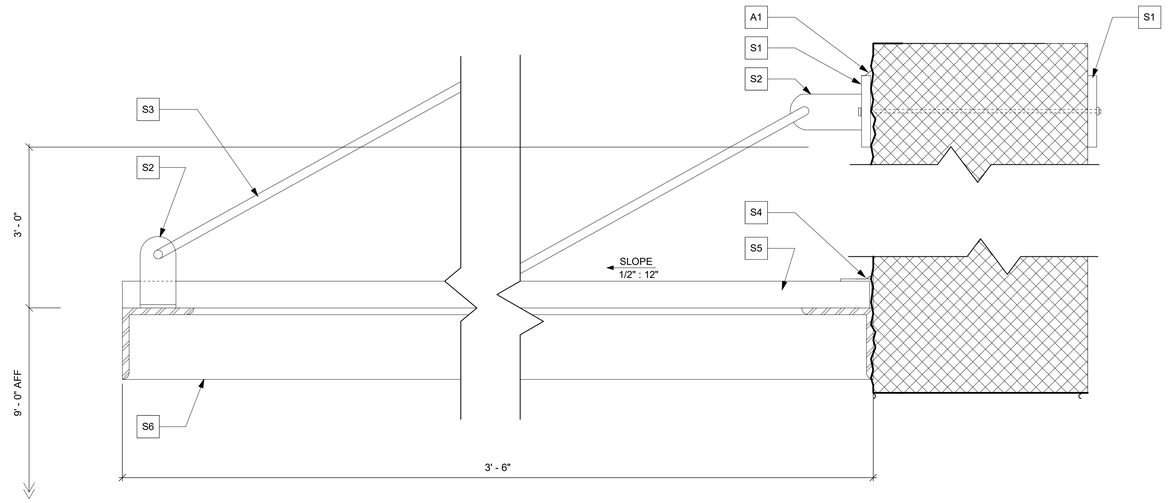
PATRICK HENRY HIGH SCHOOL FIELDHOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

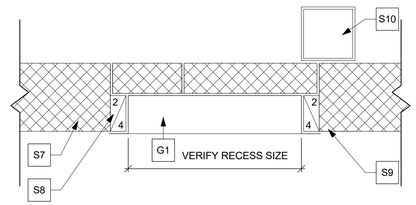
STAIR DETAILS

SHEET
A-501



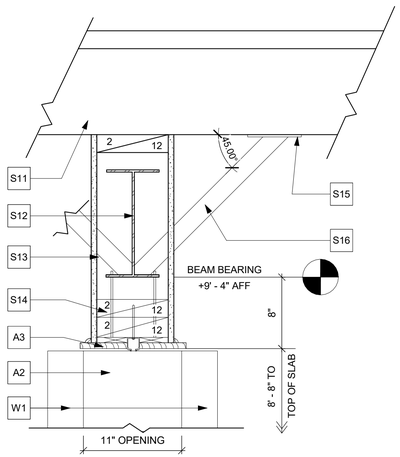
1 A-502 DETAIL AT CANOPIES

3" = 1'-0"



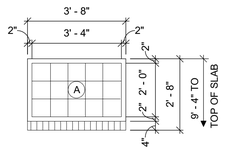
2 A-502 DETAILS OF SECURITY GATE RECESS

1 1/2" = 1'-0"



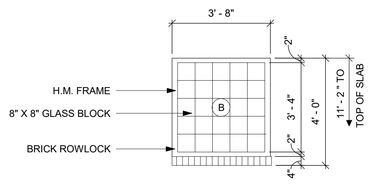
3 A-502 DETAIL AT ACCORDION PARTITION SUPPORT

1 1/2" = 1'-0"



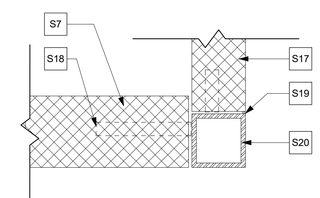
4 A-502 FIRST FLOOR WINDOWS

3/8" = 1'-0"



5 A-502 SECOND FLOOR WINDOWS

3/8" = 1'-0"



6 A-502 DETAIL

1 1/2" = 1'-0"

GENERAL ELEVATION NOTES

NOTES LEGEND

A - MISCELLANEOUS	G - DOORS / GLAZINGS	P - PLUMBING
C - CIVIL	K - FURNITURE / FINISHES	R- ROOF
E - ELECTRICAL	L - LIFE SAFETY	S - STRUCTURAL
F - FLOORS / CEILINGS	M - MECHANICAL	W - WALLS

ELEVATION NOTES

A1. SEALANT.

A2. ACCORDION PARTITION.

A3. 3/4" X 6 " WOOD TRIM.

G1. SECURITY GATE RECESS.

S1. 4" X 4" X 1/2" PLATE W/ 3/4" BOLT AND DOUBLE NUTS.

S2. 2" X 1/2" CLIP.

S3. 1/2" DIA SUPPORT ROD.

S4. 1/8" BENT PLATE W/ SEALANT

S5. 1 1/2" GALV ROOF DECK.

S6. 4" X 4" X 3/8" GALV. FRAME.

S7. 8" CMU.

S8. PT WOOD NAILER.

S9. 4" CMU.

S10. 6" X 6" x 1/4" TS COLUMN. SEE STRUCTURAL DRAWINGS.

S11. PRECAST PLANKS FLOOR SYSTEM.

S12. W 12 X 26.

S13. 5/8" GWB.

S14. DOUBLE 2 X 12 HEADER ON LEVELING BOLTS.

S15. 6" X 6" X 1/4" PLATE.

S16. TS 2" X 2" X 3/16" BRACING @ 5' - 0" O.C. BOTH SIDES.

S17. 6" CMU.

S18. WELD CORRUGATED MASONRY TIES TO COLUMN @ 24" O.C. VERT.

S19. 1/2" CJ WITH SEALANT.

S20. TS 6X6 COLUMN.

W1. 4" CMU POCKET WALLS (BEYOND).

GRAPHIC SCALE: 3" = 1' - 0"

0 3" 6" 9" 1' 1' - 3" 1' - 6"

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

0 1' 2' 3'

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

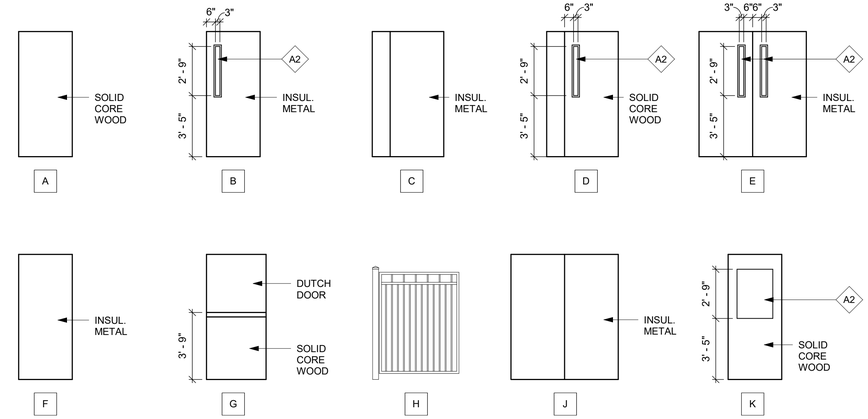
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

DETAILS

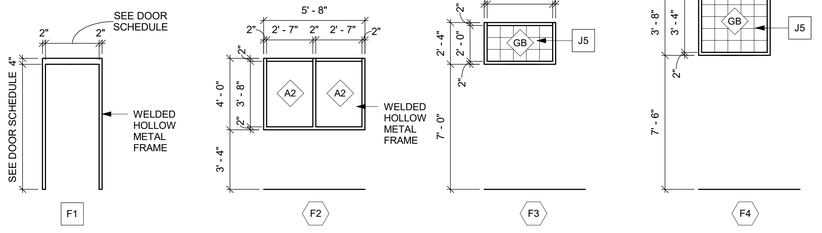
SHEET A-502

10/1/2020 3:18:46 PM



DOOR TYPES

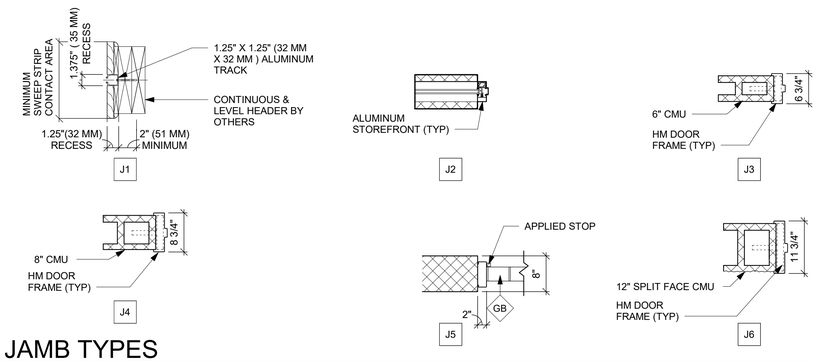
1/4" = 1'-0"



FRAME TYPES

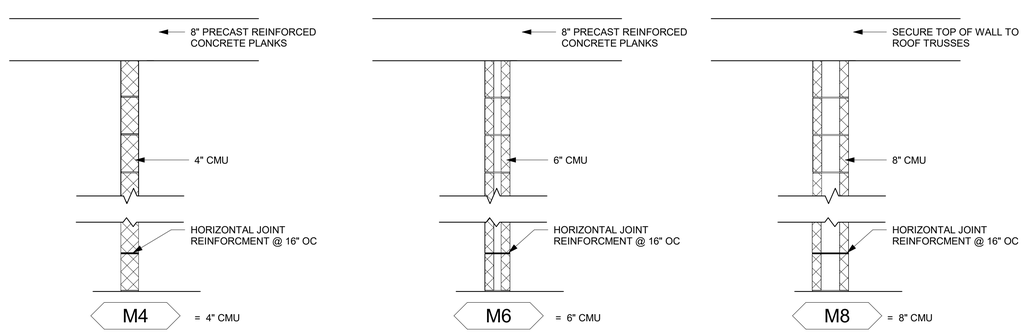
1/4" = 1'-0"

ROOMS 110 & 114 | FIRST FLOOR WINDOWS | SECOND FLOOR WINDOWS



JAMB TYPES

3/4" = 1'-0"



WALL TYPES

3/4" = 1'-0"

DOOR SCHEDULE

DOOR NO.	TYPE	W	H	T	MAT'L	GLAZING	FRAME TYPE	FRAME MAT'L	DETAIL JAMB	DETAIL HEAD	FIRE RATING LABEL	HDWRE SET NO.	REMARKS
100A	A	3' - 4"	7' - 0"	1 3/4"	WOOD		F1	H.M.	J3	J3 SIM	------	L3, C1, H2, S1, S12	------
101.1	F	3' - 0"	7' - 0"	1 3/4"	INSUL METAL	------	F1	H.M.	J4	J4 SIM	------	L3, C1, H2, S1, S12, WT	------
101.2	F	3' - 0"	7' - 0"	1 3/4"	INSUL METAL	------	F1	H.M.	J4	J4 SIM	------	L3, C1, H2, S1, S12, WT	------
101.3	A	3' - 4"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	------	L3, C1, H2, S1, S12	------
103.1	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	------	L4, H1	DS2
103.2	G	3' - 4"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J4	J4 SIM	20 MIN	L4, C1, H2, S12, KHO, S3	------
103A	A	3' - 4"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	------	L4, H1, S1	------
103B	A	3' - 4"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	------	L4, H1, S1	------
104.1	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	20 MIN	L4, C1, H2, S1	------
104.2	B	3' - 4"	7' - 0"	1 3/4"	WOOD	A3	F1	H.M.	J4	J4 SIM	20 MIN	L4, C1, H2, S1, S30, KHO	------
104.3	D	4' - 0"	7' - 0"	1 3/4"	WOOD	A3	F1	H.M.	J4	J4 SIM	20 MIN	L4, C1, H2, S1, S30, S5, KHO	------
105	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	20 MIN	L4, C1, H2	DS4
106	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	20 MIN	L4, C1, H2	DS4
107	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	20 MIN	L4, C1, H2, S1	DS4
108.1	F	3' - 0"	7' - 0"	1 3/4"	INSUL METAL	------	F1	H.M.	J4	J4 SIM	------	L3, C1, H2, S1, S12, WT	------
108.2	C	4' - 0"	7' - 0"	1 3/4"	INSUL METAL	------	F1	H.M.	J4	J4 SIM	------	L3, C1, H2, S1, S12, S5, WT	------
108.4	A	3' - 8"	7' - 0"	1 3/4"	WOOD		F1	H.M.	J3	J3 SIM	------	L3, C1, H2, S1, S12	------
110.1	K	3' - 0"	7' - 0"	1 3/4"	WOOD	A3	F1	H.M.	J3	J3 SIM	20 MIN	L3, C1, H2, S1	------
111.1	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	------	L2, L7, H1	------
111.2	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	20 MIN	L2, L7, H1, S1	------
112.1	B	3' - 0"	7' - 0"	1 3/4"	WOOD	A3	F1	H.M.	J3	J3 SIM	20 MIN	L3, C1, H2	------
112.2	B	3' - 0"	7' - 0"	1 3/4"	WOOD	A3	F1	H.M.	J3	J3 SIM	20 MIN	L3, C1, H2	------
112.3	B	3' - 4"	7' - 0"	1 3/4"	INSUL METAL	A2	F1	H.M.	J4	J4 SIM	------	L3, C1, H2, S12, WT	------
113	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	------	L2, H1	------
114.1	K	3' - 0"	7' - 0"	1 3/4"	WOOD	A3	F1	H.M.	J3	J3 SIM	20 MIN	L3, C1, H2, S1	------
115	A	3' - 0"	7' - 0"	1 3/4"	WOOD	------	F1	H.M.	J4	J4 SIM	20 MIN	L4, C1, H2, S1, S12, KHO	------
116	B	3' - 0"	7' - 0"	1 3/4"	WOOD	A3	F1	H.M.	J4	J4 SIM	20 MIN	L4, C1, H2, S1, S12, KHO	------
SG1	H	5' - 0"	7' - 6"	1 1/2"	STEEL	------	-----	-----	-----	-----	------	-----	SECURITY GATE W/ MANUFACTURER STANDARDS HARDWARE
SG2	H	4' - 0"	7' - 6"	1 1/2"	STEEL	------	-----	-----	-----	-----	------	-----	SECURITY GATE W/ MANUFACTURER STANDARDS HARDWARE
SG3	H	4' - 0"	7' - 6"	1 1/2"	STEEL	------	-----	-----	-----	-----	------	-----	SECURITY GATE W/ MANUFACTURER STANDARDS HARDWARE
SG4	H	3' - 8"	7' - 6"	1 1/2"	STEEL	------	-----	-----	-----	-----	------	-----	SECURITY GATE W/ MANUFACTURER STANDARDS HARDWARE
200.1	J	6' - 0"	6' - 10"	1 3/4"	INSUL METAL	------	F1	H.M.	J5	J5 SIM	------	E1, C1, H2, S12, WT	------
200.2	A	3' - 0"	6' - 10"	1 3/4"	INSUL METAL	------	F1	H.M.	J5	J5 SIM	------	E1, C1, H2, S12, WT	------
201.1	F	3' - 0"	6' - 10"	1 3/4"	INSUL METAL	------	F1	H.M.	J5	J5 SIM	------	L2, L7, C1, H2, S1	------
201.2	A	3' - 0"	6' - 10"	1 3/4"	WOOD	------	F1	H.M.	J4	J4 SIM	------	L2, L7, H1, S1, S12	DS1
202.1	F	3' - 0"	6' - 10"	1 3/4"	INSUL METAL	------	F1	H.M.	J5	J6 SIM	------	L2, L7, C1, H2, S1, S12	------
202.2	A	3' - 0"	6' - 10"	1 3/4"	WOOD	------	F1	H.M.	J4	J4 SIM	------	L2, L7, H1, S1, S12	DS1
203	A	3' - 0"	6' - 10"	1 3/4"	WOOD	------	F1	H.M.	J3	J3 SIM	------	L4, H1, S1, S12	DS1
204	A	3' - 0"	6' - 10"	1 3/4"	WOOD	------	F1	H.M.	J4	J4 SIM	------	L4, H1, S2, S12	DS1
205	A	3' - 0"	6' - 10"	1 3/4"	WOOD	------	F1	H.M.	J4	J4 SIM	------	L4, H1, S12	DS3

GENERAL DOOR NOTES

NOTES:
1. NEW WOOD DOORS TO BE CUSTOM GRADE, 5-PLY PARTICLEBOARD OR STRUCTURAL COMPOSITE LUMBER CORES. FACES: GRADE A VENEER. SPECIES AND GRAINING TO BE SELECTED BY OWNER. LIGHT FRAMES: SAME SPECIES AS DOOR. COLOR AND FINISH: TO BE SELECTED BY OWNER. (TYP.)

2. DOOR HARDWARE TO BE SELECTED BY OWNER.. CONTRACTOR TO FIELD VERIFY FINISH. LOCKSETS TO HAVE LEVER TYPE HARDWARE (ADA APPROVED). PROVIDE INTERCHANGEABLE CORE TO MATCH OWNERS MASTER KEY SYSTEM. (TYP.)

3. EXTERIOR AND INTERIOR DOOR HARDWARE TO BE SELECTED BY OWNER. (TYP.)

4. CONTRACTOR TO COORDINATE WITH OWNER ON DOORS WITH ACCESS CONTROL, COORDINATE WITH OWNER'S SECURITY CONTRACTOR FOR ACCESS CONTROL HARDWARE REQUIREMENTS PRIOR TO ORDERING, MODIFYING OR INSTALLING DOORS AND HARDWARE. NEW DOORS AND FRAMES TO BE FACTORY PREPPED FOR ACCESS CONTROL HARDWARE. (TYP.)

5. ALL DOOR CLOSERS TO BE MOUNTED ON INTERIOR (ROOM SIDE) OF DOOR OPENING. PROVIDE REGULAR-ARM, PARALLEL-ARM OR TOP JAMB MOUNTED CLOSERS AS NECESSARY. COORDINATE CLOSER SIZE WITH STOREFRONT STILE WIDTH SO CLOSER COVER DOES NOT HANG BELOW STILE OR BELOW 6'-8" A.F.F. COORDINATE ARM OF CLOSER WHERE DOOR OPENS AGAINST STOREFRONT WALL

GENERAL GLAZING NOTES

BUILDING ENVELOPE REQUIREMENTS: FENESTRATION (CLIMATE ZONE 4 EXCEPT MARINE)

VERTICAL FENESTRATION
***U*-FACTOR:**
FIXED FENESTRATION: 0.38
OPERABLE FENESTRATION: 0.45
ENTRANCE DOORS: 0.77

SHGC:
SHGC: 0.40

GLASS BLOCK:
***U*-FACTOR:** 0.34

OPAQUE DOORS
***U*-FACTOR OR R-FACTOR:**
SWINGING: U-0.61
ROLL UP OR SLIDING: R-4.75

GLAZING TYPES

- A1 — 1/4" FLOAT
- A2 — 1/4" TEMPERED FLOAT
- A3 — 1/4" FIRE GLASS, TEMPERED
- A4 — OUTBOARD: 1/4" TINTED FLOAT - LOW-E COATING ON THIRD SURFACE - INBOARD: 1/4" CLEAR FLOAT - UNIT THICKNESS: 1"
- GB — GLASS BLOCK

GENERAL DOOR NOTES

DS1. PROVIDE 10" X 6" DOOR GRILLE

DS2. PROVIDE 16" X 10" DOOR GRILLE

DS3. PROVIDE 16" X 6" DOOR GRILLE

DS4. UNDERCUT DOOR 1"

DOOR HARDWARE TYPES

LOCKSET
L1 PASSAGE
L2 PRIVACY
L3 ENTRY / OFFICE
L4 STOREROOM
L5 CLASSROOM
L6 PUSH BUTTON
L7 CYLINDERICAL DEADBOLT

EXIT
E1 RIM EXIT DEVICE
E2 VERTICAL ROD EXIT DEVICE

CONTROLLING DEVICE
C1 CLOSER

SUSPENSION
H1 STANDARD HINGES
H2 BALL BEARING HINGES
H3 DOUBLE ACTING PIVOT HINGES
H4 CONTINUOUS HINGES

PROTECTION
S1 WALL STOP
S2 FLOOR STOP
S3 OVERHEAD STOP
S12 KICK PLATES - 12"
S5 FLUSH BOLTS
S30 KICK PLATES - 30"

SPECIALITY HARDWARE
MHO MAGNETIC HOLD OPEN/SMOKE RELEASE
RM REMOVABLE MULLION
HRH HOSPITAL RESCUE HARDWARE
WT WEATHERSTRIPPING & THRESHOLD & DOOR SWEEP
AC ACCESS CONTROL SYSTEM
KHO KICK-DOWN HOLD OPEN
DD DUTCH DOOR HARDWARE

WALL TYPES LEGEND & KEY

LEGEND

1G3DA

- 1G — ACOUSTICAL INSULATION
- 3D — WALL HEIGHT TERMINATION
- A — WALL STRUCTURE SIZE (NOMINAL)
- G — WALL FINISH / MAKEUP
- 1 — FIRE RATING (HOURS)

KEY

A = WALL CONTAINS ACOUSTICAL INSULATION

C = WALL TERMINATES AT BOTTOM OF CEILING

D = WALL TERMINATES AT BOTTOM OF DECK

F = GWB + METAL FURRING

G = GWB + METAL STUD

M = MASONRY

P = WALL PENETRATES CEILING

W = GWB + WOOD STUDS

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

DOOR SCHEDULE AND WALL TYPES

SHEET
A-601

10/1/2020 2:58:42 PM

FINISH KEY

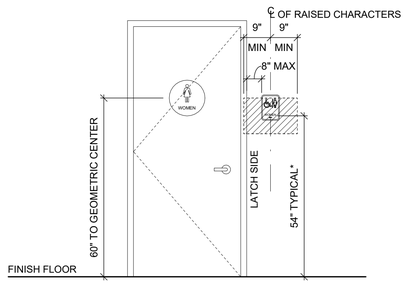
KEY	MANUFACTURER	PRODUCT #	COLOR #	REMARKS
ACT-1	-----	-----	-----	2' X 2' ACOUSTIC CEILING TILES
CONC-1	-----	-----	-----	SEALED CONCRETE
EP-1	-----	-----	-----	EPOXY FLOOR
PLAM-1	-----	-----	-----	PLASTIC LAMINATE - VERTICAL SURFACES
PLAM-2	-----	-----	-----	PLASTIC LAMINATE - HORIZONTAL SURFACES
PNT-1	-----	-----	-----	GENERAL WALL PAINT - INTERIOR LATEX, EGGSHELL
PNT-2	-----	-----	-----	TRIM PAINT - METAL - ACRYLIC SEMIGLOSS
PNT-3	-----	-----	-----	BATHROOM / WET AREA PAINT - WATER BASED EPOXY, EGGSHELL
PNT-4	-----	-----	-----	ACCENT WALL PAINT - INTERIOR LATEX, EGGSHELL
PNT-5	-----	-----	-----	ACCENT WALL & BULKHEAD PAINT - INTERIOR LATEX, EGGSHELL
RB-1	-----	-----	-----	4" HIGH, RUBBER COVE BASE
VCT-1	-----	-----	-----	12" X 12" VINYL COMPOSITION TILE

FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR FINISH	BASE MAT'L	WALL		CEILING			REMARKS
				MAT'L	FINISH	MAT'L	FINISH	HEIGHT	
100	CORRIDOR	EP-1	EP-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	NOTE FS1
100A	CORRIDOR	EP-1	EP-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	NOTE FS1
101	VARSITY FOOTBALL	EP-1	EP-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	NOTE FS1
102	MEN'S TOILETS/ SHOWERS	EP-1	EP-1	CMU	PNT-3	EXPOSED STRUCTURE	PNT-5	11'- 4"	NOTE FS1
103	FOOTBALL STORAGE	CONC-1	RB-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	-----
103 B	DATA								
103A	W.H.	CONC-1	RB-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	-----
104	LAUNDRY	CONC-1	RB-1	CMU	PNT-3, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	-----
105	LACROSSE STORAGE	CONC-1	RB-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	-----
106	ELEC	CONC-1	RB-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	-----
107	SOCCER STORAGE	CONC-1	RB-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	-----
108	JV FOOTBALL	EP-1	EP-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	NOTE FS1
109	WOMEN'S TOILETS / SHOWERS	EP-1	EP-1	CMU	PNT-3	EXPOSED STRUCTURE	PNT-5	11'- 4"	NOTE FS1
110	COACHES	VCT-1	RB-1	CMU	PNT-1, PNT-2	ACT-1	------	10'- 0"	-----
111	TOILET	VCT-1	RB-1	CMU	PNT-3, PNT-2	ACT-1	------	10'- 0"	-----
112	TRAINER	VCT-1	RB-1	CMU	PNT-1, PNT-2	ACT-1	------	10'- 0"	-----
113	TOILET	VCT-1	RB-1	CMU	PNT-1, PNT-2	ACT-1	------	10'- 0"	-----
114	COACHES	VCT-1	RB-1	CMU	PNT-1, PNT-2	ACT-1	------	10'- 0"	-----
115	JAN	CONC-1	RB-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'- 4"	-----
116	CORRIDOR	CONC-1	RB-1	CMU	PNT-1, PNT-2	EXPOSED STRUCTURE	PNT-5	11'-4"	-----
200	WRESTLING / SOFTBALL / BASEBALL	CONC-1	RB-1	CMU	PNT-1, PNT-2	PLYWOOD	PNT-5	13'-9 1/2"	-----
201	MEN	CONC-1	RB-1	CMU	PNT-3, PNT-2	GWB	PNT-5	13'-9 1/2"	-----
202	WOMEN	CONC-1	RB-1	CMU	PNT-3, PNT-2	GWB	PNT-5	13'-9 1/2"	-----
203	JAN	CONC-1	RB-1	CMU	PNT-1, PNT-2	GWB	PNT-5	13'-9 1/2"	-----
204	WRESTLING STORAGE	CONC-1	RB-1	CMU	PNT-1, PNT-2	GWB	PNT-5	13'-9 1/2"	-----
205	BASEBALL SOFTBALL STORAGE	CONC-1	RB-1	CMU	PNT-1, PNT-2	GWB	PNT-5	13'-9 1/2"	-----

FINISH SCHEDULE NOTES

FS1. PROVIDE 4" HIGH EPOXY BASE IN THESE ROOMS.



* ALL CHARACTERS TO BE BETWEEN 48" AND 60" AFF - CALCULATED MOUNTING HEIGHT TO BE TYPICAL

SIGNAGE MOUNTING LOCATION

1/2" = 1'-0"

SIGNAGE SCHEDULE

DOOR NO.	ROOM NAME	SIGN TYPE	NUMBER ON SIGN	VERBIAGE ON SIGN	BRAILLE	LOCATION	NOTES
101.1	VARSITY FOOTBALL	S-A	-----	-----	YES	DOOR/ WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
101.2	VARSITY FOOTBALL	S-A	-----	-----	YES	WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
108.1	JV FOOTBALL	S-A	-----	-----	YES	WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
108.2	JV FOOTBALL	S-A	-----	-----	YES	WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
111.1	TOILET	S-B S-C	111	UNISEX	YES	WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
111.2	TOILET	S-B S-C	111	UNISEX	YES	DOOR/ WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
112.3	TRAINER	S-A	-----	-----	YES	WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
113	TOILET	S-B S-C	113	MALE	YES	DOOR/ WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
200.1	WRESTLING/SOFTBALL/BASEBALL	S-A	200	-----	YES	WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
200.2	WRESTLING/SOFTBALL/BASEBALL	S-A	200	-----	YES	WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
201.1	MEN	S-B S-C	201	MEN	YES	DOOR/ WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
201.2	MEN	S-B S-C	201	MEN	YES	DOOR/ WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
202.1	WOMEN	S-B S-C	202	WOMEN	YES	DOOR/ WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION
202.2	WOMEN	S-B S-C	202	WOMEN	YES	DOOR/ WALL	SEE ENLARGED PLANS FOR SIGNAGE LOCATION

NOTE: OWNER TO VERIFY FINAL SIGNAGE ROOM VERBIAGE DESIGNATIONS AND ROOM NUMBERS.

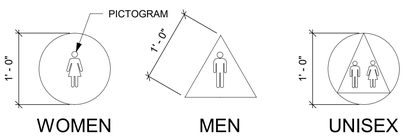
GENERAL SIGNAGE NOTES

1. ALL SIGNAGE CORNERS TO BE 1/4" RADIUS (TYP)

2. ALL VISUAL CHARACTERS, RAISED CHARACTERS, BRAILLE, PICTOGRAMS, SYMBOLS OF ACCESSIBILITY, ETC. TO COMPLY WITH ICC A117.1-2009 (TYP)

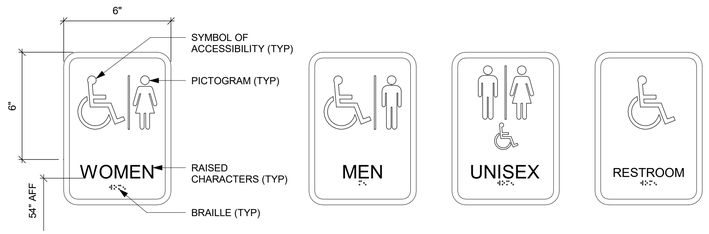
SIGNAGE SPECIFICATION

SECTION 101400 - SIGNAGE
A. SUBMITTALS: PRODUCT DATA, SHOP DRAWINGS, AND COLOR SAMPLES.
B. REGULATORY REQUIREMENTS: COMPLY WITH APPLICABLE PROVISIONS IN THE U.S. ARCHITECTURAL & TRANSPORTATION BARRIERS COMPLIANCE BOARD'S ADA-ABA ACCESSIBILITY GUIDELINES AND ICC A117.1.
C. INTERIOR PANEL SIGNS: MATTE-FINISHED OPAQUE ACRYLIC WITH LASER-ENGRAVED OR ADHESIVELY APPLIED GRAPHICS ROUNDED CORNERS.
1. FINISHES AND COLORS: AS SELECTED FROM MANUFACTURER'S FULL RANGE.
2. TACTILE CHARACTERS: WALL SIGNS: ADA ACRYLIC – 1/16" SUBSTRATE, 1/32" TACTILE GRADE 2 BRAILLE. DOOR SIGNS: ADA ACRYLIC – ¼" ACRYLIC, 1/32" TACTILE.
D. LOCATE SIGNS WHERE INDICATED OR DIRECTED BY ARCHITECT. INSTALL SIGNS LEVEL, PLUMB, AND AT HEIGHTS INDICATED, WITH SIGN SURFACES FREE FROM DISTORTION AND OTHER DEFECTS IN APPEARANCE.
E. WALL-MOUNTED SIGNS:
1. TWO-FACE TAPE: MOUNT SIGNS TO SMOOTH, NONPOROUS SURFACES, OTHER THAN VINYL.



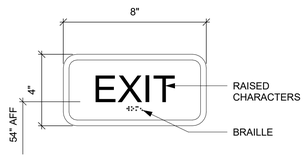
SIGN TYPE "S-B" - TOILET ROOM DOOR

1" = 1'-0"



SIGN TYPE "S-C" - TOILET ROOM WALL

3" = 1'-0"



SIGN TYPE "S-A" - EXIT

3" = 1'-0"

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
RICHARD A. RIFE
No. 005477
SEPTEMBER . 30 . 2020
ARCHITECT

NO.	REVISIONS	DATE

NEW FACILITY FOR ROANOKE CITY PUBLIC SCHOOLS

PATRICK HENRY HIGH SCHOOL FIELDHOUSE

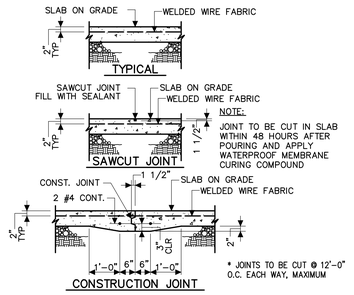
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPTEMBER . 30 . 2020
DRAWN	AS
CHECKED	DS/ RAR
JOB	19-059

FINISH AND SIGNAGE SCHEDULES

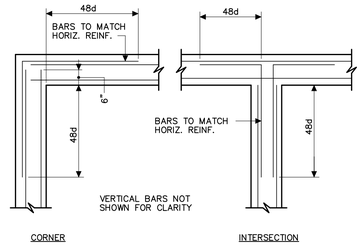
SHEET
A-602

10/1/2020 3:12:00 PM



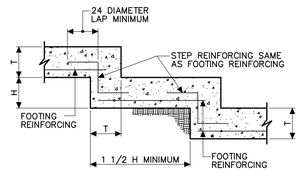
1 S-100 TYPICAL SLAB CONSTRUCTION DETAIL

SCALE: N.T.S.



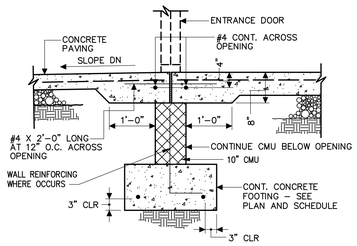
2 S-100 CORNER REINFORCING IN CONCRETE FOOTINGS DETAIL

SCALE: N.T.S.



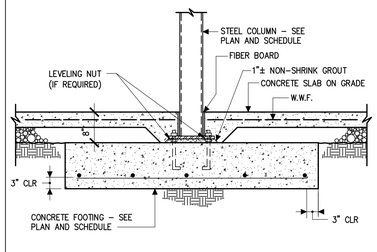
3 S-100 TYPICAL STEP FOOTING DETAIL

SCALE: N.T.S.



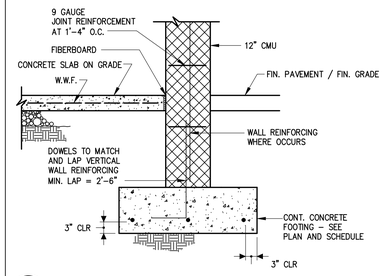
4 S-100 TYPICAL ENTRANCE SLAB DETAIL

SCALE: N.T.S.



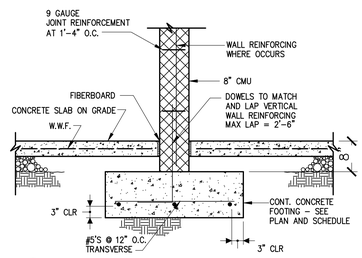
5 S-100 SECTION

SCALE: N.T.S.



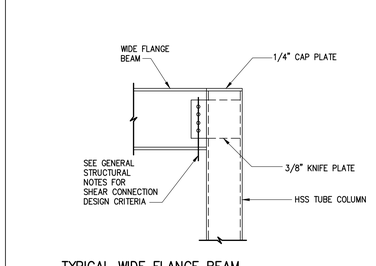
6 S-100 SECTION

SCALE: N.T.S.



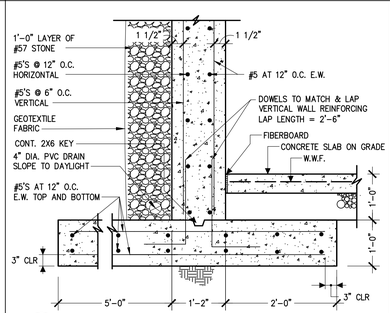
7 S-100 SECTION

SCALE: N.T.S.



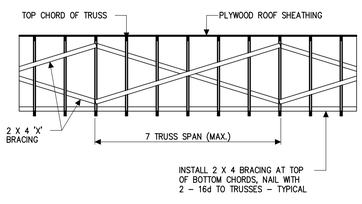
8 S-100 TYPICAL WIDE FLANGE BEAM TO COLUMN CONNECTION

SCALE: N.T.S.



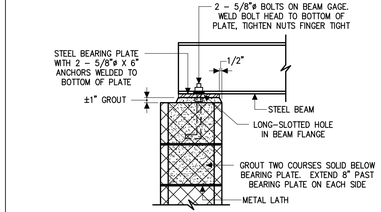
9 S-100 SECTION

SCALE: N.T.S.



10 S-100 TYPICAL WOOD ROOF TRUSS BRACING

SCALE: N.T.S.



11 S-100 SECTION

SCALE: N.T.S.

SCHEDULES

FOOTING SCHEDULE

MARK	SIZE	REINFORCING	REMARKS
F1	1'–0" X 3'–6" X CONT.	3 #5'S CONT. & #5'S AT AT 12" O.C. TRANSVERSE	-----
F2	1'–0" X 6'–6" X 6'–6"	6 #7'S E.W.	-----
F3	1'–0" X 2'–6" X CONT.	3 #5'S CONT.	-----

COLUMN SCHEDULE

MARK	SIZE	BASEPLATE	ANCHOR BOLTS	REMARKS
C1	HSS 6" X 6" X 1/4"	3/4" X 14" X 14"	4 – 3/4"ø	NOTE 1

COLUMN NOTES:

1. PROVIDE ANCHORS BOLTS WITH 9" EMBEDMENT WITH 3" LEG.
2. PROVIDE 1/4" FILLET WELD ALL AROUND BASE PLATE.
3. ALL ANCHOR BOLTS SHALL BE F1554 FY = 36 KSI.
4. ALL ANCHOR BOLTS SHALL BE CONTAINED WITHIN THE PIER REINFORCING CAGE.

LINTEL SCHEDULE

MARK	TYPE	SIZE	REMARKS
L1		(3) ANGLES 5" X 3 1/2" X 3/8" (LLV)	-----
L2		(2) ANGLES 5" X 3 1/2" X 3/8" (LLV)	-----

LINTEL NOTES:

1. ALL LINTELS SHALL CONFORM TO ARCHITECTURAL HEAD DETAILS.
2. UNLESS OTHERWISE NOTED PROVIDE ONE ANGLE 3 1/2" X 3 1/2" X 5/16" (LLV) FOR SPANS LESS THAN 6'–0" AND ANGLE 6" X 3 1/2" X 3/8" (LLV) FOR SPANS GREATER THAN 6'–0" FOR EACH NOMINAL 4" WALL THICKNESS AS LINTELS OVER ALL OPENINGS IN BEARING AND NON–BEARING WALLS REQUIRED FOR DOORS, DUCTS, RECESSED HEATING UNITS, PANELS, GRILLES, ETC. NOT SHOWN.
3. PROVIDE MINIMUM 8" BEARING ON SOLID GROUTED MASONRY AT EACH END OF ALL LINTELS, UNLESS NOTED OTHERWISE.

BEARING PLATE SCHEDULE

MARK	THICKNESS	WIDTH	LENGTH	REMARKS
BP1	3/8"	6"	6"	NOTE 1

BEARING PLATE NOTES:

1. PROVIDE TYPICAL BEAM BEARING DETAIL 11/S–100.

GENERAL STRUCTURAL NOTES

CODE: 2015 VIRGINIA CONSTRUCTION CODE
RISK CATEGORY : II

DESIGN LOADS:

ROOF LIVE LOAD = 30 PSF (SNOW DRIFT APPLIED PER CODE)
SUPPORTED FLOOR LIVE LOAD = 100 PSF
SLAB ON GRADE LIVE LOAD = 100 PSF

WIND LOADS:
BASIC WIND SPEED = 115 MPH (3 SECOND GUST)
EXPOSURE 'B'
K = 1.0
Gcpi = ± 0.18
ROOF UPLIFT = 20 PSF
Kz = 34.0 PSF

GROUND SNOW LOAD = 30 PSF
I = 1.0
Ce = 1.0
Ct = 1.0
Pf = 21 PSF

SEISMIC LOADS:
Ss = 0.189g
S1 = 0.063g
SEISMIC DESIGN CATEGORY 'B'
SITE CLASSIFICATION 'D'
I = 1.0
Sds = 0.202g
Sd1 = 0.101g
Cs = 0.136
R = 2.0
Cs = 0.101

EQUIVALENT LATERAL FORCE PROCEDURE

SHEETS S–100 THRU S–103 ARE STRUCTURAL DESIGN DRAWINGS ONLY (REQUIRED FOR THE FOUNDATION PLAN, FLOOR FRAMING PLAN, ROOF FRAMING PLAN, DETAILS AND SCHEDULES). ANY REFERENCE TO ARCHITECTURAL MATERIALS, SYSTEMS, OR CONCEPTS IS FOR CLARITY ONLY.

ALL FILL AND UNSUITABLE FOUNDATION MATERIAL SHALL BE REMOVED AND FOOTINGS SHALL REST ON UNDISTURBED SOIL OR ENGINEERED FILL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

FOOTINGS ARE DESIGNED FOR A MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

ALL EXTERIOR CONCRETE EXPOSED TO WEATHER SHALL BE 4000 PSI, AIR–ENTRAINED. ALL OTHER CONCRETE SHALL BE 3000 PSI. ALL MATERIALS AND PROCESSES TO THIS END SHALL CONFORM IN GENERAL TO ACI RECOMMENDED PRACTICE FOR THE DESIGN OF CONCRETE MIXES. (ACI–613 LAST REVISED).

PROVIDE 3/4" CHAMFER ON EXPOSED CONCRETE EDGES.

UNLESS NOTED OTHERWISE, ALL FLOOR SLABS ON GRADE SHALL BE 4" THICK AND SHALL BE REINFORCED WITH ONE LAYER OF 6 X 6 – W1.4 X W1.4 W.W.F. AT CONTRACTOR'S OPTION FIBER MESH REINFORCEMENT MAY BE USED IN LIEU OF WELDED WIRE FABRIC.

DEPRESS ALL FLOOR SLABS AS REQUIRED FOR FLOOR FINISHES. SEE ARCHITECTURAL DRAWINGS.

CONTRACTOR SHALL PLACE 1/2" ASPHALT IMPREGNATED FIBER BOARD IN JOINTS OF CONCRETE SLAB ON GRADE AGAINST VERTICAL SURFACES.

STEEL REINFORCING SHALL BE BILLET STEEL ASTM A–615, GRADE 60.

MESH SHALL BE WELDED WIRE FABRIC ASTM A–185.

ROUND STEEL PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A–501. SQUARE AND RECTANGULAR STEEL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A–500, GRADE B. ALL STRUCTURAL STEEL BEAMS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A992, Fy= 50KSI. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A–36. ALL STEEL SHALL RECEIVE ONE COAT OF SHOP PAINT, UNLESS NOTED OTHERWISE.

ALL BOLTS SHALL BE 3/4" DIAMETER, ASTM A–325 TYPE N, UNLESS OTHERWISE SHOWN OR NOTED.

CUTS, HOLES, COPINGS, ETC. IN STRUCTURAL STEEL MEMBERS REQUIRED BY WORK OF OTHER TRADES SHALL BE MADE IN THE SHOP AND SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OF HOLES OR CUTS IN THE FIELD WILL NOT BE PERMITTED WITHOUT SPECIFIC APPROVAL OF THE ENGINEER.

FOR OPENINGS IN THE ROOF, SEE ARCHITECTURAL AND MECHANICAL DRAWINGS.

UNLESS NOTED OTHERWISE, ALL BEAM SHEAR CONNECTIONS SHALL BE DESIGNED FOR ONE HALF THE ALLOWABLE UNIFORMLY DISTRIBUTED LOADING IN ACCORDANCE WITH THE UNIFORM LOAD CONSTANTS AS TABULATED IN THE AISC MANUAL (FOURTEENTH EDITION) FOR THE INDICATED SPAN PLUS 2 KIPS.

f'm MASONRY SHALL BE 2100 PSI (MINIMUM).

ALL GROUT SHALL BE 3000 PSI (MINIMUM).

PROVIDE 9 GAUGE HORIZONTAL JOINT REINFORCEMENT IN CMU WALLS AT 1'–4" O.C.

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
JAMES F. KINDER, JR.
Lic. No. 015761
9/30/2020
PROFESSIONAL ENGINEER

DAY & KINDER CONSULTING ENGINEERS, PLLC
3959 ELECTRIC ROAD
SUITE 348
ROANOKE, VIRGINIA 24018
PHONE: 540 774–5706
COMM. NO. 20–033

NO.	REVISIONS	DATE

NEW CONSTRUCTION FOR

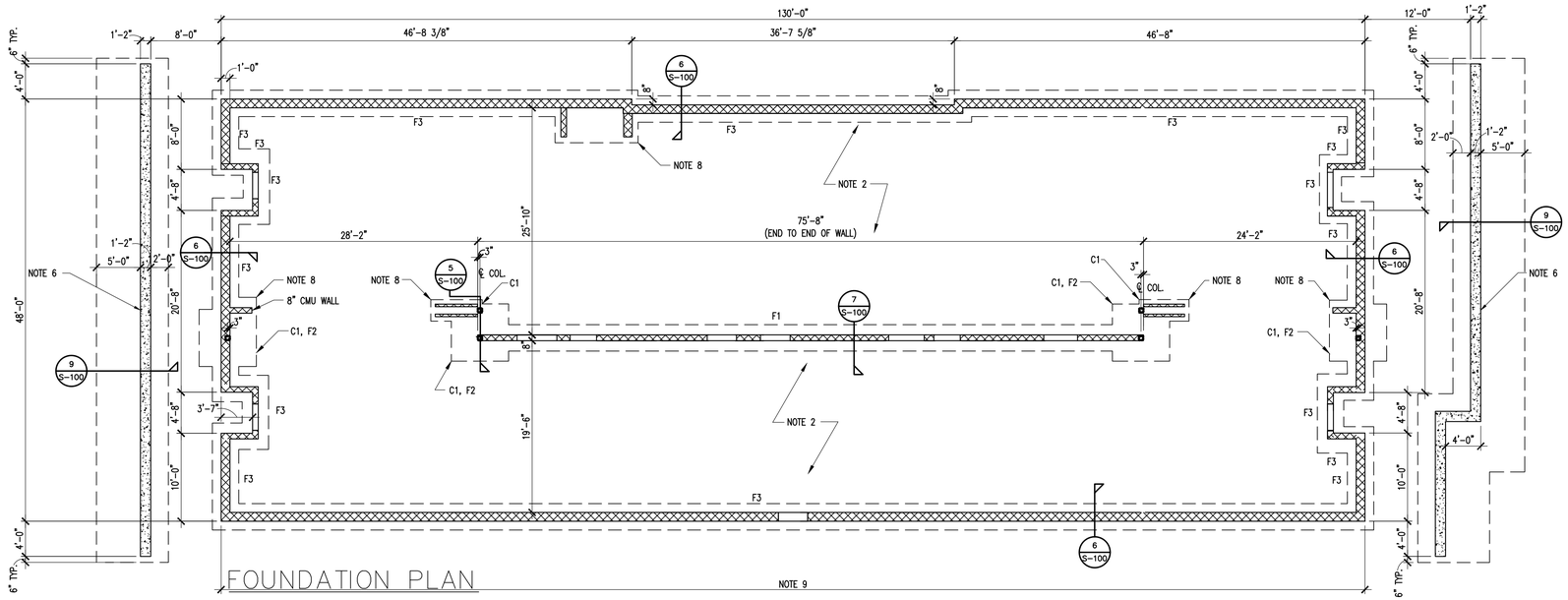
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPT. 30, 2020
DRAWN	BMB
CHECKED	JFK
JOB	19-059

GENERAL STRUC. NOTES, SCHED. & TYP. SECTIONS

SHEET
S-100



FOUNDATION PLAN

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

FOUNDATION PLAN NOTES:

1. SEE SHEET S-100 FOR GENERAL STRUCTURAL NOTES, SCHEDULES, AND TYPICAL DETAILS.

2. PROVIDE 4" CONCRETE SLAB ON GRADE REINFORCED WITH ONE LAYER OF 6 X 6 – W1.4 X W1.4 W.W.F. OVER VAPOR BARRIER OVER #57 GRANULAR FILL – TYPICAL OVER ENTIRE FLOOR, UNLESS NOTED OTHERWISE. FINISH FLOOR ELEVATION SHALL BE 0'-0".

3. TOP OF ALL EXTERIOR FOOTINGS SHALL BE (-2'-0") BELOW FINISH FLOOR ELEVATION 0'-0" AND TOP OF INTERIOR FOOTINGS SHALL BE (-0'-8") BELOW FINISH FLOOR ELEVATION 0'-0".

4. ALL 8" AND 12" CMU MASONRY WALLS SHOWN ON PLAN SHALL BE REINFORCED WITH #5 AT 2'-8" O.C. FULL HEIGHT IN FULLY GROUTED CELLS, UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL DRAWINGS FOR CONTROL JOINTS IN MASONRY WALLS, UNLESS NOTED OTHERWISE.

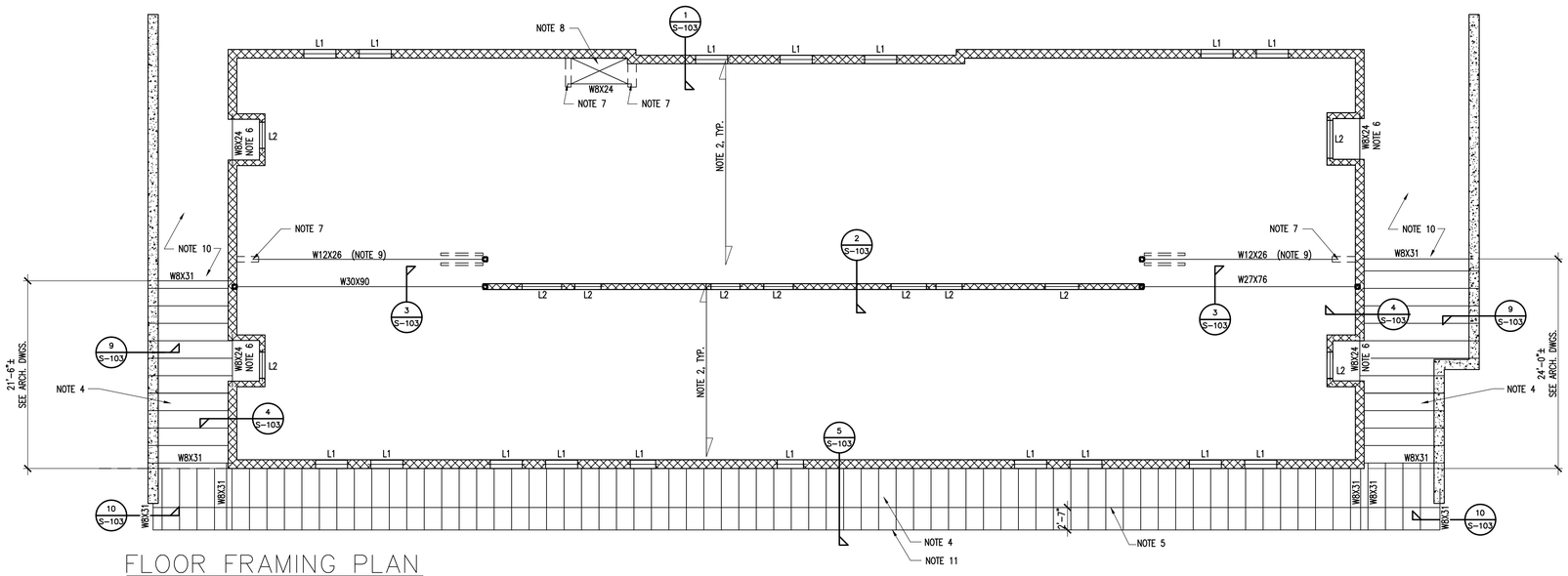
5. FILL CMU SOLID WITH 3000 PSI GROUT AT VERTICAL WALL REINFORCEMENT. PROVIDE 9 GAUGE HORIZONTAL JOINT REINFORCEMENT IN CMU WALLS AT 1'-4" O.C.

6. CONCRETE RETAINING WALL.

7. FOR DIMENSIONS NOT SHOWN – SEE ARCHITECTURAL DRAWINGS. FOR DISCREPANCIES IN DIMENSIONS – ARCHITECTURAL DRAWINGS CONTROL.

8. EXTEND FOOTING 6" BEYOND EDGE OF CMU WALL TO SUPPORT WALLS. PROVIDE ADDITIONAL #5'S AT 12" O.C. E.W REINFORCEMENT IN FOOTING.

9. PROVIDE #5'S AT 1'4" O.C. IN 12" CMU WALL, FULL HEIGHT OF WALL BETWEEN FIRST FLOOR AND SECOND FLOOR IN FULLY GROUTED CELLS. SEE SECTION 5/S-103 FOR ADDITIONAL WALL REINFORCEMENT AT WALKWAY BRACES.



FLOOR FRAMING PLAN

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

FLOOR FRAMING PLAN NOTES:

1. SEE SHEET S-100 FOR GENERAL STRUCTURAL NOTES, SCHEDULES, AND TYPICAL DETAILS.

2. TYPICAL FLOOR CONSTRUCTION SHALL BE 8" PRECAST HOLLOW CORE PLANKS WITH 2" COMPOSITE TOPPING.

3. FINISH FLOOR ELEVATION SHALL BE 11'-6" ABOVE REFERENCE ELEVATIONS 0'-0".

4. PROVIDE 3" CONCRETE REINFORCED WITH (1) LAYER OF 6X6 W1.4 X W1.4 W.W.F. SUPPORTED BY 9/16 " 28 GAUGE METAL FORMDECK SUPPORTED BY C8X11.5 STEEL CHANNELS SPACED AT 2'-0" O.C. MAX. FINISHED SLAB ELEVATION (+11'-6") ABOVE REFERENCE ELEVATION 0'-0".

5. CONTINUOUS HSS 8" X 4" X 1/4" (LSV) SUPPORTED BY HSS 4" X 4" X 1/4" WITH KNEE BRACES SPACED AS SHOWN ON ARCHITECTURAL DRAWINGS.

6. PROVIDE 3/8" X 11" CONT. BOTTOM PLATE ON W8X24 TO SUPPORT MASONRY.

7. PROVIDE BEARING PLATE BP-1 FOR ALL BEAMS BEARING ON CMU WALLS. SEE TYPICAL SHEET S-100.

8. CHASE – SEE ARCH. DWGS.

9. FOLDING PARTITION SUPPORT BEAM – SEE ARCH. DWGS. FOR FURTHER INFORMATION.

10. PRE-FABRICATED STEEL STAIR – SEE ARCH. DWGS.

11. PROVIDE CONT. C12X20.7 PERIMETER CHANNEL.

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
JAMES F. KINDER, JR.
Lic. No. 015761
9/30/2020
PROFESSIONAL ENGINEER

DAY & KINDER CONSULTING ENGINEERS, PLLC
3959 ELECTRIC ROAD
SUITE 348
ROANOKE, VIRGINIA 24018
PHONE: 540 774-5706
COMM. NO. 20-033

NO.	REVISIONS	DATE

NEW CONSTRUCTION FOR

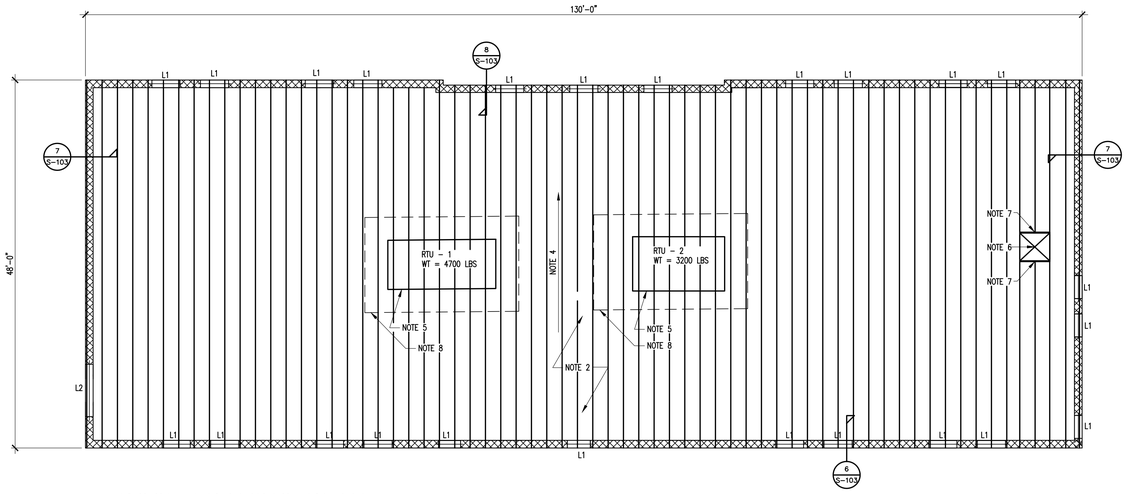
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPT. 30, 2020
DRAWN	BMB
CHECKED	JFK
JOB	19-059

FOUNDATION PLAN & FLOOR FRAMING PLAN

SHEET
S-101



ROOF FRAMING PLAN

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

ROOF FRAMING PLAN NOTES:

1. SEE SHEET S-100 FOR GENERAL STRUCTURAL NOTES, SCHEDULES, AND TYPICAL DETAILS.
2. TYPICAL ROOF CONSTRUCTION SHALL BE 5/8" PLYWOOD ROOF SHEATHING SUPPORTED BY PRE-ENGINEERED WOOD ROOF TRUSSES SPACED AT 2'-0" O.C. - USE PLYWOOD CLIPS AT ALL UNSUPPORTED EDGES.
3. TRUSS BEARING SHALL BE 25'-5 1/2" ABOVE REFERENCE ELEVATION 0'-0".
4. ROOF SLOPE - SEE ARCHITECTURAL DRAWINGS.
5. G.C. COORDINATE SIZE WEIGHT AND LOCATION OF RTU'S WITH TRUSS SUPPORT FOR PROPER TRUSS DESIGN.
6. G.C. COORDINATE LOCATION OF ROOF HATCH WITH ARCHITECTURAL DRAWINGS.
7. TRUSS HEADER BY TRUSS MANUFACTURER.
8. MECHANICAL SCREEN BY OTHERS - SEE ARCH. DWGS.

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
JAMES F. KINDER, JR.
Lic. No. 015761
9/30/2020
PROFESSIONAL ENGINEER

DAY & KINDER CONSULTING ENGINEERS, PLLC
3959 ELECTRIC ROAD
SUITE 348
ROANOKE, VIRGINIA 24018
PHONE: 540 774-5706
COMM. NO. 20-033

NO.	REVISIONS	DATE

NEW CONSTRUCTION FOR

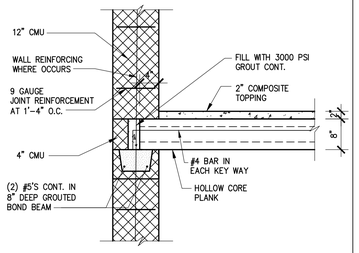
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	SEPT. 30, 2020
DRAWN	BMB
CHECKED	JFK
JOB	19-059

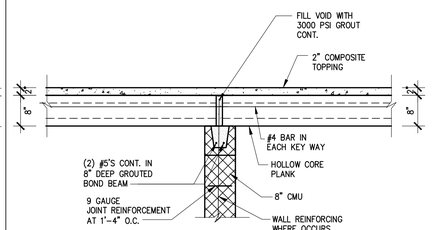
ROOF FRAMING PLAN

SHEET
S-102



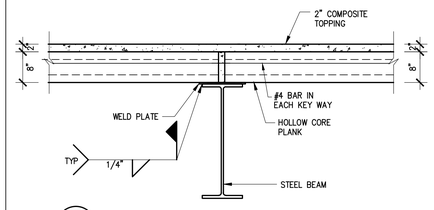
1 S-103 SECTION

SCALE: N.T.S.



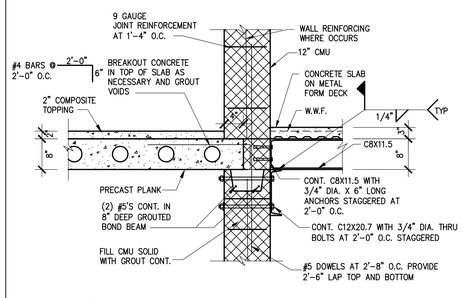
2 S-103 SECTION

SCALE: N.T.S.



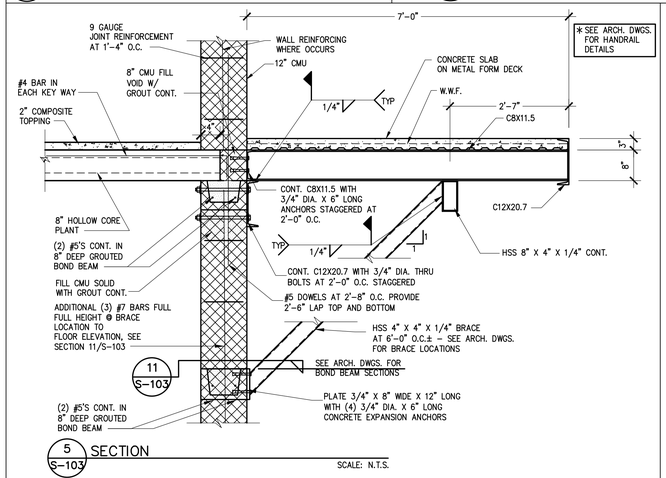
3 S-103 SECTION

SCALE: N.T.S.



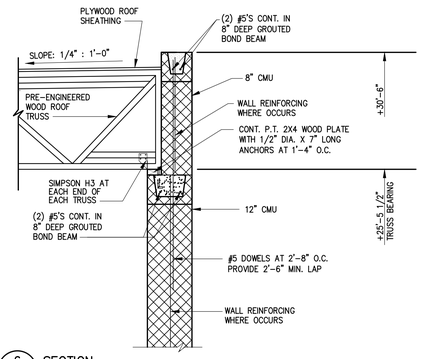
4 S-103 SECTION

SCALE: N.T.S.



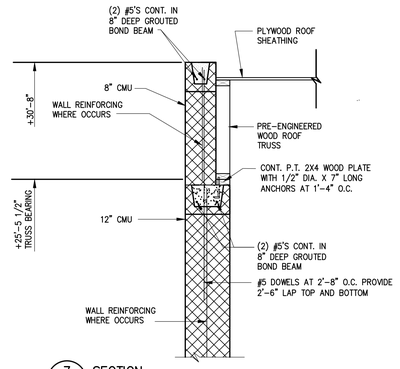
5 S-103 SECTION

SCALE: N.T.S.



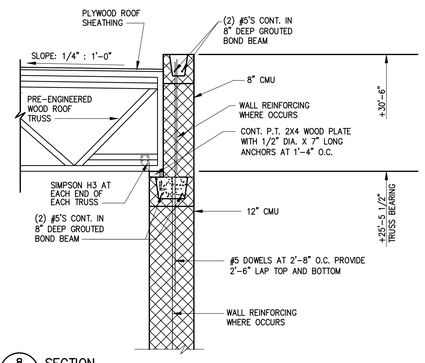
6 S-103 SECTION

SCALE: N.T.S.



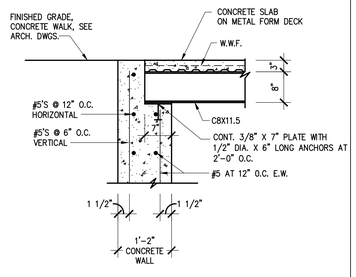
7 S-103 SECTION

SCALE: N.T.S.



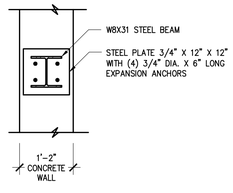
8 S-103 SECTION

SCALE: N.T.S.



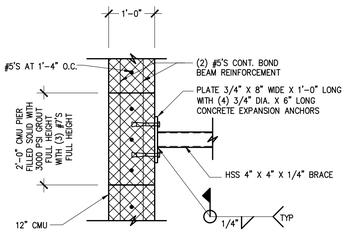
9 S-103 SECTION

SCALE: N.T.S.



10 S-103 SECTION

SCALE: N.T.S.



11 S-103 PLAN VIEW

SEE ARCH. DWGS. FOR BOND BEAM LOCATION.

SCALE: N.T.S.

INTERACTIVE • DESIGN

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

COMMONWEALTH OF VIRGINIA
JAMES F. KINDER, JR.
Lic. No. 015761
9/30/2020
PROFESSIONAL ENGINEER

DAY & KINDER CONSULTING ENGINEERS, PLLC
3959 ELECTRIC ROAD
SUITE 348
ROANOKE, VIRGINIA 24018
PHONE: 540 774-5706
COMM. NO. 20-033

NO.	REVISIONS	DATE

NEW CONSTRUCTION FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

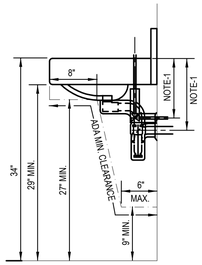
DATE	SEPT. 30, 2020
DRAWN	BMB
CHECKED	JFK
JOB	19-059

SECTIONS

SHEET
S-103

WATER HEATER SCHEDULE

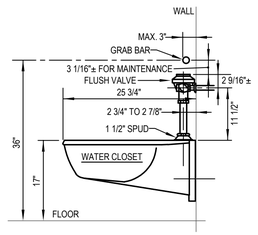
MARK	MANUFACTURER	MODEL #	RECOVERY	KW	VOLTS/ PHASE	STORAGE CAPACITY	DIMENSIONS
WHR-1	SEE SPECS	SEE SPECS	1.50 GPM @ 66'F RISE	14.4	120/1	TANKLESS	



NOTE-1:
AS REQUIRED TO MAINTAIN ADA CLEARANCE

HANDICAPPED LAVATORY INSTALLATION ADA REQUIREMENTS - WALL MOUNTED

NO SCALE



HANDICAPPED WC ROUGH-IN DETAIL

NO SCALE

FIXTURE CONNECTION SCHEDULE

MARK	FIXTURE	WASTE	VENT	COLD	HOT	REMARKS
WC-1	WATER CLOSET (FLUSH VALVE)	4"	2"	1"	-	WALL MOUNTED, 14" FINISH FLOOR TO RIM
WC-2	WATER CLOSET (FLUSH VALVE)	4"	2"	1"	-	WALL MOUNTED, HANDICAPPED# 17" FINISH FLOOR TO RIM
UR-1	URINAL	2"	1 1/2"	3/4"	-	WALL MOUNTED, 24" FINISH FLOOR TO RIM
UR-2	URINAL	2"	1 1/2"	3/4"	-	WALL MOUNTED, HANDICAPPED# 17" FINISH FLOOR TO RIM
L-1	LAVATORY	1 1/4"	1 1/2"	1/2"	1/2"	WALL MOUNTED, 31" FINISH FLOOR TO RIM
L-2	LAVATORY	1 1/4"	1 1/2"	1/2"	1/2"	WALL MOUNTED, HANDICAPPED# 34" FINISH FLOOR TO RIM
EWC-1	ELECTRIC WATER COOLER	1 1/4"	1 1/2"	1/2"	-	WALL MOUNTED, 40" FINISH FLOOR TO RIM
EWC-2	ELECTRIC WATER COOLER	1 1/4"	1 1/2"	1/2"	-	WALL MOUNTED, HANDICAPPED# 36" FINISH FL TO SPOUT OUTLET
EWC-3	ELECTRIC WATER COOLER(HI/LOW)	1 1/4"	1 1/2"	1/2"	-	WALL MOUNTED, HANDICAPPED# LOW UNIT 36" FF TO SPOUT OUTLET
SK-1	SINK (SINGLE COMPARTMENT)	1 1/2"	1 1/2"	1/2"	1/2"	COUNTER TOP, HANDICAPPED#
SSK-1	SERVICE SINK	3"	1 1/2"	1/2"	1/2"	WALL MOUNTED, 29" FINISH FLOOR TO RIM (TRAP STANDARD)
MS-1	MOP SINK	3"	1 1/2"	1/2"	1/2"	FLOOR MOUNTED
SH-1	SHOWER	2"	1 1/2"	1/2"	1/2"	
SH-2	SHOWER	2"	1 1/2"	1/2"	1/2"	HANDICAPPED#

* MOUNT TOP SURFACE OF COUNTER TOP 34" ABOVE FINISHED FLOOR AND LAVATORY INSTALLED 2" BACK FROM FRONT EDGE OF COUNTER TOP.
# INSTALLATION SHALL MEET 2010 AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES.

PLUMBING LEGEND

ABOVE	ABV
ABOVE FINISHED FLOOR	AFF
ABOVE FINISHED GRADE	AFG
BACK FLOW PREVENTER	BFP
BALANCING VALVE	
BELOW	BEL
BELOW FINISHED FLOOR	BFF
CEILING	CLG
CHECK VALVE	
CIRCUIT SETTER	CS(GPM)
IN VERTICAL OR FLUSH WITH FLOOR	CO
DOMESTIC COLD WATER PIPE, NEW	CW
DOMESTIC HOT WATER PIPE, NEW	HW
DOMESTIC HOT WATER CIRCULATING PIPE, NEW	HWR
DRINKING FOUNTAIN	DF
ELECTRIC WATER COOLER	EWC
FLOOR DRAIN	FD
GAS COCK	
GATE VALVE	GV
BALL VALVE	
HOSE BIBB	HB
HOT WATER CIRCULATING PUMP	HWCP
HOT AND COLD WATER	H&CW
LAVATORY	L
LAUNDRY TUB	LT
MOP SINK	MS
NATURAL GAS PIPE, NEW	G
PIPING INDICATION WITH RESPECT TO WATER FLOW	
BOTTOM TAKEOFF	
SIDE CONNECTION	
CONNECTION (BOTTOM,TEE OR TOP)	
TOP TAKEOFF	
TURN DOWN OR FROM BELOW	
TURN UP OR DOWN	
SANITARY SEWER, NEW	SS
EXISTING TO REMAIN	SS — EX — SS
SANITARY WASTE PIPE, NEW	SW
SERVICE SINK	SSK
SHOWER	SH
SINK	SK
TEMPERATURE & PRESSURE RELIEF VALVE	T&P
THERMOMETER	
TRENCH DRAIN	TD
UNION	
URINAL	UR
VENT PIPE, NEW	V
VENT THRU ROOF	VTR
WALL HYDRANT	WH
WASTE PIPE	W
WASTE STACK	WS
WASTE VENT STACK	WVS
WATER CLOSET	WC

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

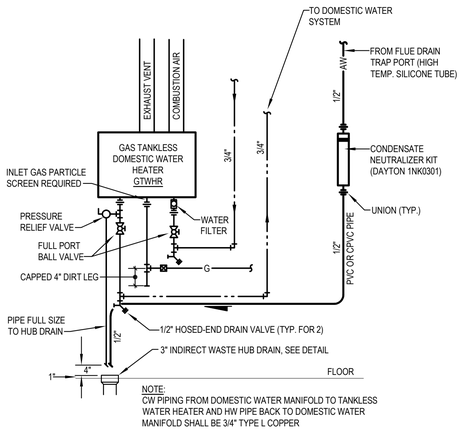
LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

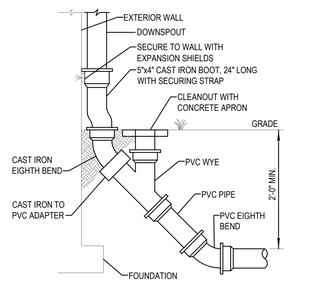
NO.	REVISIONS	DATE



NOTE:
CW PIPING FROM DOMESTIC WATER MANIFOLD TO TANKLESS WATER HEATER AND HW PIPE BACK TO DOMESTIC WATER MANIFOLD SHALL BE 3/4" TYPE L COPPER

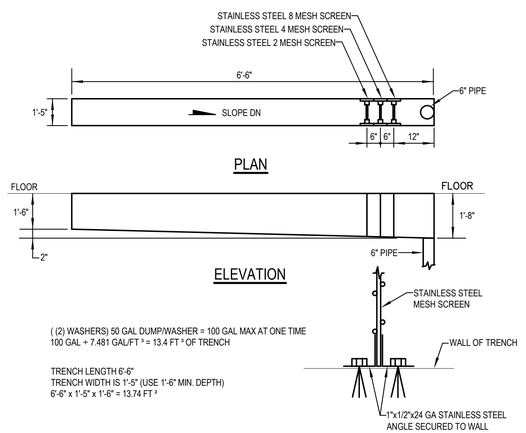
TANKLESS GAS WATER HEATER DETAIL

NO SCALE



CAST IRON BOOT DETAIL

NO SCALE



((2) WASHERS) 50 GAL DUMP/WASHER = 100 GAL MAX AT ONE TIME
100 GAL ÷ 7.481 GAL/FT ³ = 13.4 FT ³ OF TRENCH

TRENCH LENGTH 6'-6"
TRENCH WIDTH IS 1'-5" (USE 1'-6" MIN. DEPTH)
6'-6" x 1'-5" x 1'-6" = 13.74 FT ³

TRENCH DRAIN FOR WASHERS

NO SCALE

GENERAL PLUMBING NOTES (GPN):

1. SEE SITE PLAN SHEET FOR THE EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.
2. MAKE PIPING CONNECTIONS AS REQUIRED TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAINS, ELBOWS AND CONNECTIONS ARE NOT SHOWN.
3. CHECK WITH ARCHITECTURAL WORKING DRAWINGS BEFORE ROUGHING-IN PLUMBING FIXTURES.
4. SLOPES AND INVERT ELEVATIONS OF SEWERS, MANHOLES, ETC., SHALL BE ESTABLISHED AND VERIFIED BY CONTRACTOR BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPE WILL BE MAINTAINED AND NECESSARY INVERT ELEVATIONS OBTAINED.
5. ALL PIPES SHALL BE COORDINATED WITH OTHER DUCTS, PIPES, LIGHTS, STRUCTURAL SYSTEM, CEILING SUPPORTS AND FRAMING BEFORE INSTALLATION. MINOR PIPE OFFSETS SHALL BE PROVIDED AS REQUIRED. MEASUREMENTS FOR VERTICAL CLEARANCES SHALL BE TAKEN AT THE JOB SITE BEFORE INSTALLATION OF ANY PIPING.
6. WASTE PIPE BELOW FLOOR, VENT PIPING ABOVE CEILING, PIPING OFFSET FOR CLARITY.
7. DOMESTIC WATER PIPING SHALL BE INSTALLED ABOVE CEILINGS UNLESS NOTED OTHERWISE. DOMESTIC WATER PIPING SHOWN IN PIPE CHASE WALLS SHALL BE INSTALLED IN CHASE SPACE, PIPING OFFSET FOR CLARITY.
8. DOMESTIC WATER PIPING SHALL NOT BE INSTALLED IN LOCATIONS SUBJECT TO FREEZING OR SPACES EXTERIOR TO BUILDING INSULATION.
9. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS.
10. MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
11. WHERE PIPE CONNECTIONS ARE SHOWN CONNECTING TO EXISTING, CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND CONNECTION SIZES PRIOR TO INSTALLATION.
12. CONTRACTOR SHALL MAKE ARRANGEMENTS WITH ROANOKE GAS COMPANY FOR GAS METER AND GAS METER INSTALLATION, AND INCLUDE ALL CHARGES FOR THIS WORK IN THE CONTRACT.
13. LIMITS OF CONTRACT: DOMESTIC WATER SERVICE, SANITARY AND STORM WATER PIPING SHALL BE EXTENDED UNDER THIS SECTION OF THE SPECIFICATIONS TO POINTS 5'-0" BEYOND THE BUILDING LINES, UNLESS OTHERWISE INDICATED ON THE DRAWINGS, WHERE THE PIPES SHALL BE CAPPED OR PLUGGED AND LEFT READY FOR CONNECTION AND EXTENSION BY OTHERS, AND THE LOCATIONS MARKED WITH A STAKE OR OTHER APPROVED MEANS.
14. MODIFY FLUSH VALVE ON INDICATED HANDICAPPED WATER CLOSETS SO THAT OPERATOR IS ON RIGHT SIDE OF VALVE WHEN FACING THE PLUMBING FIXTURE. DOMESTIC COLD WATER SUPPLY RUNOUT SHALL BE LOCATED TO ACCOMMODATE MODIFICATION. SEE DRAWINGS FOR WATER CLOSETS TO BE MODIFIED.
15. RETURN AIR PLENUM NOTE: ALL MATERIAL LOCATED IN THE RETURN AIR PLENUMS SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, SECTION 602.2.1.
16. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS. COORDINATE INSTALLATION OF PIPES WITH ELECTRICAL PANELS WHEN SHOWN NEAR PANELS OR OVER ELECTRICAL ROOMS.

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

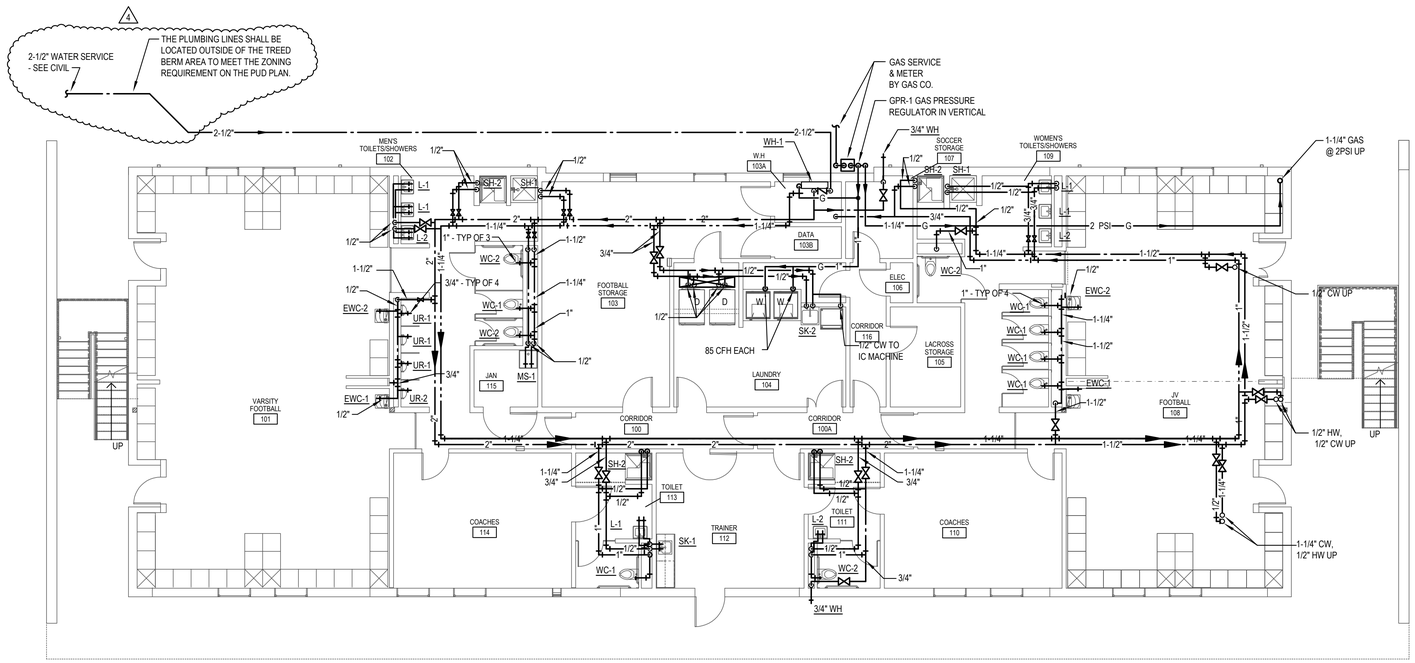
2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	TFR
CHECKED	MGW
JOB	19-059

PLUMBING LEGEND AND NOTES

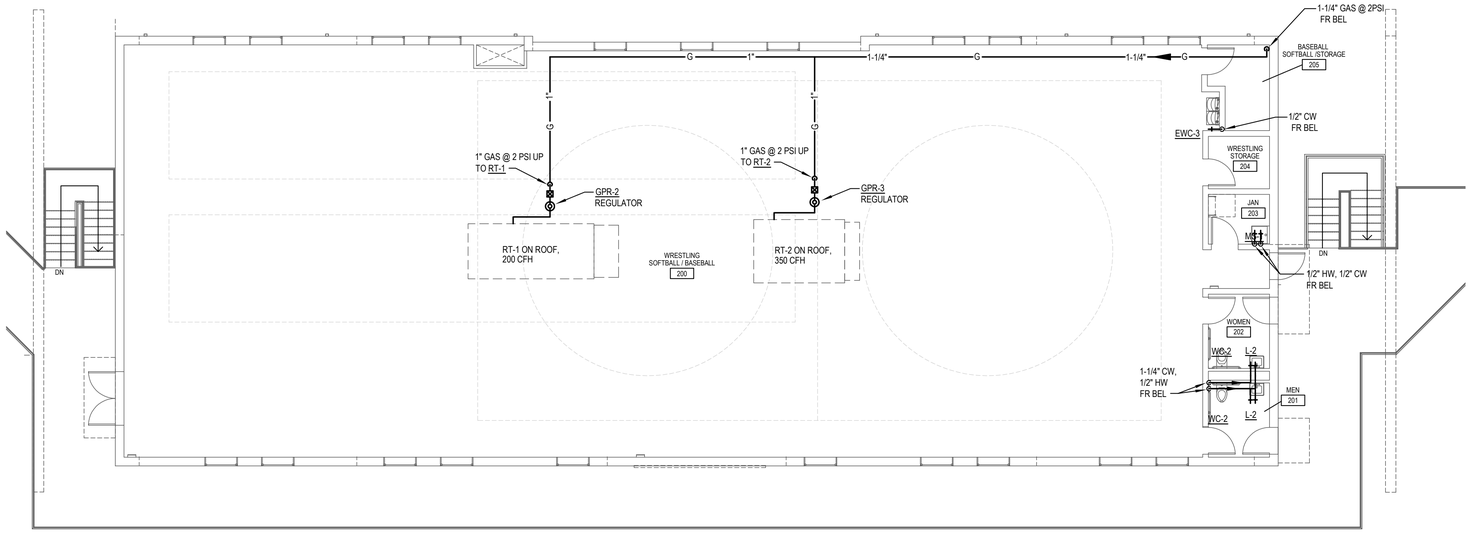
SHEET

P-001



FIRST FLOOR PLAN - WATER & GAS PIPING

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



SECOND FLOOR PLAN - WATER & GAS PIPING

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE
1	CITY REVIEW	11.12.20

NEW FACILITY FOR

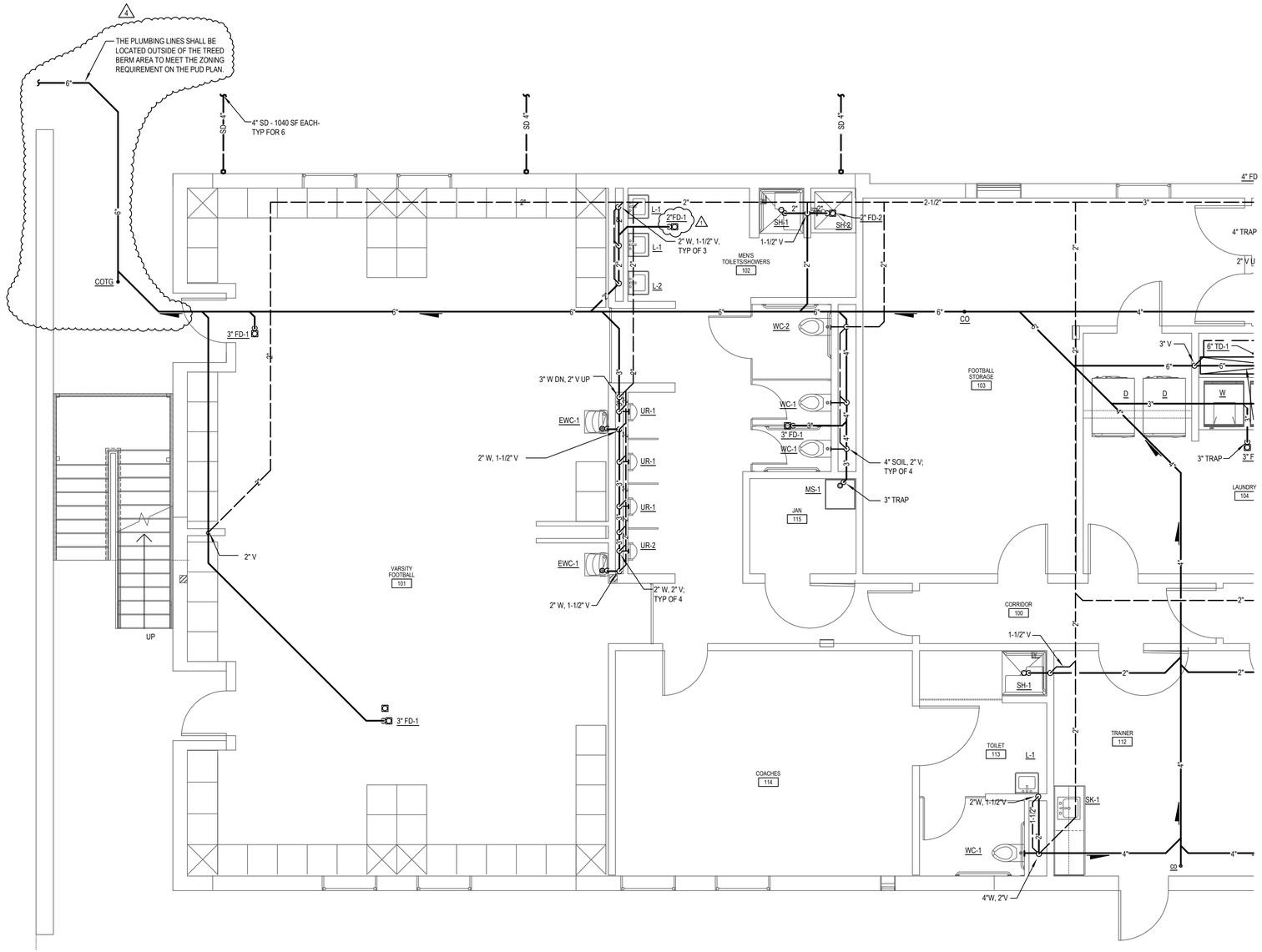
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	TFR
CHECKED	MGW
JOB	19-059

WATER AND GAS PIPING FLOOR PLAN

SHEET
P-101



PARTIAL FIRST FLOOR PLAN AREA A - SANITARY

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE
1	CITY REVIEW	10.23.20
2	CITY REVIEW	11.12.20

NEW FACILITY FOR

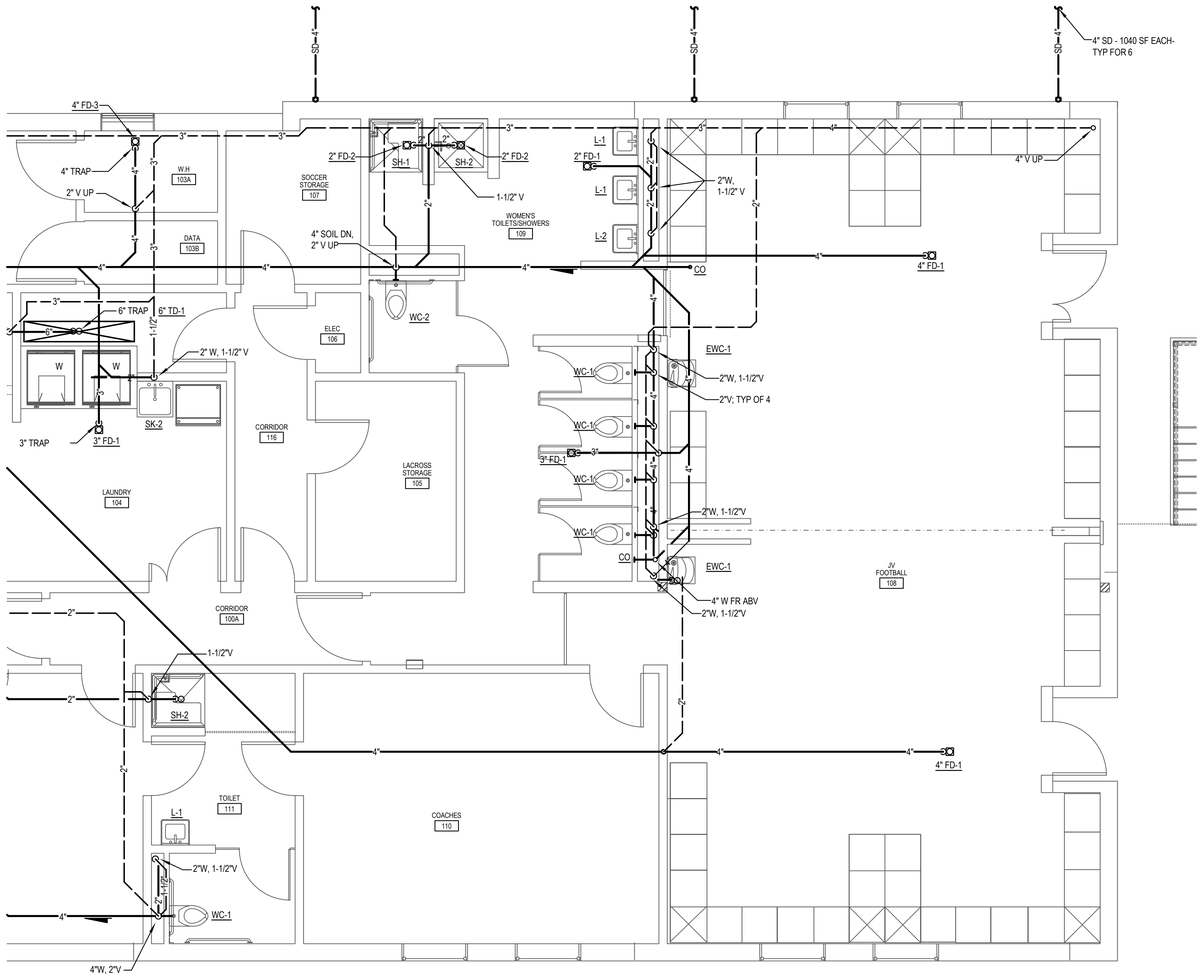
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	TFR
CHECKED	MGW
JOB	19-059

PARTIAL FIRST FLOOR PLAN AREA A - SANITARY

SHEET
P-102



PARTIAL FIRST FLOOR PLAN AREA B - SANITARY

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

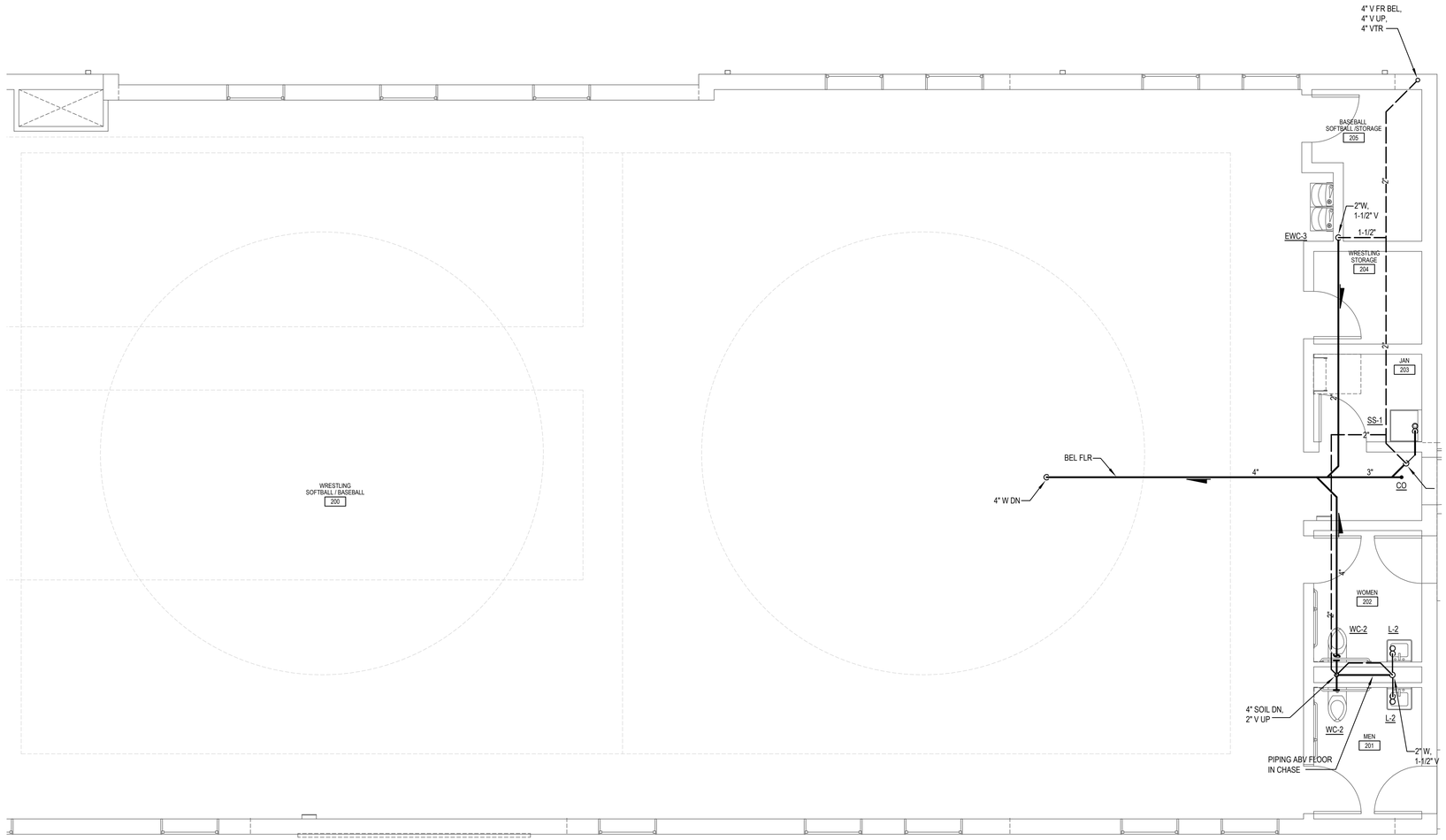
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	TFR
CHECKED	MGW
JOB	19-059

PARTIAL FIRST FLOOR PLAN AREA B - SANITARY

SHEET
P-103



PARTIAL SECOND FLOOR PLAN - SANITARY

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	TFR
CHECKED	MGW
JOB	19-059

PARTIAL SECOND FLOOR PLAN - SANITARY

SHEET
P-104

ELECTRIC HEATERS

SPECIFICATIONS SECTION 238239

MARK	TYPE	WATTS	MBH	CFM	MOTOR RPM	MOTOR HP	VOLTAGE / PHASE	MODEL NUMBER
CH-1	CEILING HEATER	1500	6.8	175	700	--	120/1	E3383D-RPT
CH-2	CEILING HEATER	3000	10.2	175	700	--	208/1	HF3386D-RPT
CH-3	CEILING HEATER	1500	6.8	175	700	--	120/1	E3383D-RPT
WH-1	WALL HEATER	2250	7.6	175	600	--	208/1	HF3315TRPWD
WH-2	WALL HEATER	750	2.5	175	600	--	120/1	E3313TRPWD

NOTES
1. MODEL NUMBERS LISTED ARE MARKEL.
2. CH-1: PROVIDE BUILT-IN SINGLE POLE TAMPER RESISTANT THERMOSTAT, MANUAL RESET THERMAL LIMIT, AND DISCONNECT SWITCH.
3. CH-2: PROVIDE SURFACE MOUNTING ADAPTER, BUILT-IN TAMPER RESISTANT THERMOSTAT, MANUAL RESET THERMAL LIMIT, AND DISCONNECT SWITCH.
4. CH-3: PROVIDE SURFACE MOUNTING ADAPTER, BUILT-IN SINGLE POLE TAMPER RESISTANT THERMOSTAT, MANUAL RESET THERMAL LIMIT, AND DISCONNECT SWITCH.
5. WH-1: PROVIDE BUILT-IN SINGLE POLE TAMPER RESISTANT THERMOSTAT AND DISCONNECT SWITCH.
6. WH-2: PROVIDE BUILT-IN SINGLE POLE THERMOSTAT AND DISCONNECT SWITCH.

ROOF EQUIPMENT SUPPORTS

SPECIFICATIONS SECTION 230529

1. THYBAR CORP. MODEL TEMS-1 OR MODEL TEMS-3 OR COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
   A. GREENHECK.
   B. CUSTOM CURB, INC.
   C. ROOF PRODUCTS & SYSTEMS CORP.
2. CONSTRUCTION: WELDED 18 GAGE GALVANIZED STEEL SUPPORT SHELL AND BASE PLATE, AND COUNTER FLASHING CAP. PROVIDE FACTORY INSTALLED WOOD NAILER AND INTERNAL BULKHEAD REINFORCEMENT. MODEL TEMS-1 SHALL HAVE MITERED 3 INCH CANT WITH CANT RAISED TO MATCH ROOF INSULATION THICKNESS. MINIMUM 12 INCH HEIGHT ABOVE ROOF INSULATION AND ROOF MEMBRANE.
3. INSTALLATION:
   A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
   B. ATTACH SUPPORTS TO ROOF DECK OR BUILDING STRUCTURE. SECURE EQUIPMENT TO SUPPORTS.
   C. EQUIPMENT SHALL BE SET LEVEL. TOP OF SUPPORTS SHALL BE LEVEL; PROVIDE SUPPORTS WITH BOTTOM SLOPED TO MATCH PITCH OF ROOF OR PROVIDE SHIMS UNDER BOTTOM OF SUPPORTS.

MINI-SPLIT SYSTEMS

SPECIFICATIONS SECTION 238126.13

INDOOR UNIT	FC-1	FC-2
SUPPLY FAN		
SUPPLY AIR, CFM	880	700
OUTDOOR AIR, DESIGN CFM	140	140
EXTERNAL SP, INCH H_2O	0.60	0.60
COOLING COIL		
TOTAL COOLING, BTU/HR	30,000	24,000
SEER	15.5	19.6
EER	--	11.7
HEAT PUMP		
HEATING CAPACITY, BTU/HR	32,000	28,000
COP	--	4.35
HSPF (IV), BTU/HR/W	9.4	10.8
UNIT VOLTAGE/PHASE	208 / 1	208 / 1
MODEL NUMBER	PEAD-A30AA	PEAD-A24AA7
OUTDOOR UNIT	HP-1	HP-2
UNIT VOLTAGE/PHASE	208 / 1	208 / 1
MODEL NUMBER	PUZ-A30NHA3	PUZ-A24NHA7

NOTES
1. MODEL NUMBERS LISTED ARE MITSUBISHI.
2. COOLING CAPACITIES ARE BASED ON 80F DB / 67F WB ENTERING AIR TEMPERATURE AND 95F DB OUTDOOR AIR TEMPERATURE.
3. HEATING CAPACITIES ARE BASED ON 70F DB ENTERING AIR TEMPERATURE AND 47F DB OUTDOOR AIR TEMPERATURE.
4. PROVIDE WIRED WALL MOUNTED REMOTE CONTROLLER FOR EACH SYSTEM.
5. PROVIDE HEAVY-DUTY LOCKING GUARD FOR EACH REMOTE CONTROLLER.
6. FC-2: PROVIDE A WATER LEVEL DETECTION DEVICE IN THE DRAIN PAN OR PRIMARY CONDENSATE DRAIN LINE. DEVICE SHALL SHUT OFF THE UNIT AND PROVIDE AN ALARM SIGNAL TO THE BAS IF WATER LEVEL INDICATES A DRAIN RESTRICTION OR BLOCKAGE.
7. CONTRACTOR SHALL INSTALL A GLOBAL PLASMA SOLUTIONS AIR PURIFICATION DEVICE IN EACH MINI-SPLIT SYSTEM. TYPE AND SIZE SHALL BE AS RECOMMENDED BY GLOBAL PLASMA SOLUTIONS.

FANS

SPECIFICATIONS SECTION 233423

MARK	CFM	SP, INCH WG	MOTOR HP	TYPE	VOLTAGE /PHASE	MAX SONES	MODEL NUMBER
EF-1	280	0.50	¼	CENTRIFUGAL CABINET FAN	120/1	6.4	BCF-106
EF-2	430	0.50	1/6	DOWNBLAST CENTRIFUGAL ROOF FAN	120/1	7.4	G-090-VG/6/D
SF-1	300	0.75	¼	CENTRIFUGAL CABINET FAN	120/1	7.8	BCF-106

NOTES
1. MODEL NUMBERS LISTED ARE GREENHECK.
2. EF-1: PROVIDE DISCONNECT SWITCH, INSULATED HOUSING, AND HANGING NEOPRENE VIBRATION ISOLATORS.
3. EF-2, DOWNBLAST CENTRIFUGAL ROOF FAN: PROVIDE DISCONNECT SWITCH, BIRDSCREEN, MOTOR OPERATED DAMPER AND PREFABRICATED ROOF CURB. PREFABRICATED ROOF CURBS SHALL BE WELDED ALUMINUM (0.064 INCH THICK) CONSTRUCTION, 12 INCHES HIGH, WITH 1 INCH THICK 3 POUND DENSITY GLASS FIBER INSULATION. CURB BASE SHALL MATCH PITCH OF ROOF.
4. SF-1: PROVIDE DISCONNECT SWITCH, INSULATED HOUSING, INLET FILTER BOX (SLOPED FILTER) AND HANGING NEOPRENE VIBRATION ISOLATORS. AIR FILTER SHALL BE PLEATED MEDIA, 2 INCHES THICK, MERV 8 AS RATED BY ASHRAE 52, 16" x 20" SIZE.

DIFFUSERS, REGISTERS AND GRILLES

SPECIFICATIONS SECTION 233713

MARK	SERVICE	DESCRIPTION	MODEL
CD-1	SUPPLY	ROUND, STEEL CONSTRUCTION WITH TWO POSITION CORE, RADIAL OPPOSED BLADE DAMPER, STRAIGHTENING GRID, SAFETY CHAIN AND WIRE GUARD	RCDE
CG-1	RETURN	HEAVY DUTY STEEL CONSTRUCTION, MINIMUM 14 GAGE BLADES SET AT 0 DEGREE ANGLE AND ¾" SPACING, BLADES PARALLEL TO LONG DIMENSION OF GRILLE, WITH SAFETY CHAIN	95L
CG-2	RETURN	PERFORATED FACE FILTER RETURN, T-BAR PANEL MOUNT, FOR 24 x 24 T-BAR CEILING, HINGED FACE WITH LATCHES; PROVIDE 1" THICK GLASS FIBER AIR FILTER OF SIZE INDICATED ON FLOOR PLAN	10FF
CG-3	RETURN	PERFORATED FACE FILTER RETURN, SURFACE MOUNT, HINGED FACE WITH LATCHES; PROVIDE 1" THICK GLASS FIBER AIR FILTER OF SIZE INDICATED ON FLOOR PLAN	10FF
CR-1	EXHAUST	ALUMINUM CONSTRUCTION, BLADES SET AT 45 DEGREE ANGLE AND 1/2" SPACING, BLADES PARALLEL TO LONG DIMENSION OF GRILLE, PANEL MOUNTED TO FIT 24 x 24 T-BAR CEILING, WITH ALUMINUM OPPOSED BLADE DAMPER	635DAL
CR-2	RETURN OR EXHAUST	ALUMINUM CONSTRUCTION, BLADES SET AT 45 DEGREE ANGLE AND ¾" SPACING, BLADES PARALLEL TO LONG DIMENSION OF GRILLE, SURFACE MOUNT, WITH ALUMINUM OPPOSED BLADE DAMPER	630DAL
TG-1	TRANSFER	ALUMINUM CONSTRUCTION WITH HORIZONTAL BLADES SET AT 45 DEGREE ANGLE	630
TR-1	SUPPLY	ALUMINUM, DOUBLE DEFLECTION, VERTICAL FACE BLADES, ¾" BLADE SPACING, OPPOSED BLADE DAMPER	620D
TR-2	RETURN OR EXHAUST	ALUMINUM WITH FIXED VERTICAL BLADES SET AT 0 DEGREE ANGLE, ¾" BLADE SPACING, ALUMINUM OPPOSED BLADE DAMPER	610ZDAL

NOTES
1. MODEL NUMBERS LISTED ARE PRICE INDUSTRIES.
2. CEILING AIR OUTLETS SHALL HAVE STANDARD 4 WAY AIR PATTERN (2 WAY AIR PATTERN FOR SLOT DIFFUSERS) UNLESS INDICATED OTHERWISE ON FLOOR PLAN.
3. DIFFUSERS, REGISTERS AND GRILLES SHALL HAVE MANUFACTURER'S STANDARD WHITE FINISH.

LOUVERS

SPECIFICATIONS SECTION 233713

1. RUSKIN MANUFACTURING MODEL ELF375DX OR COMPARABLE PRODUCTS BY ONE OF THE FOLLOWING:
   A. ARROW UNITED INDUSTRIES.
   B. GREENHECK CORP.
2. TYPE: 4 INCH DEEP EXTRUDED ALUMINUM, DRAINABLE, WITH BLADES ON 37.5 DEGREE SLOPE, ¾" X 0.051 INCH EXPANDED, FLATTENED ALUMINUM BIRD SCREEN IN REMOVABLE FRAME.
3. FABRICATION: 6063T5 EXTRUDED ALUMINUM, 0.081 INCH THICK FRAME, 0.081 INCH THICK BLADES.
4. FINISH: KYNAR FLUOROPOLYMER FINISH, 1.2 MIL THICKNESS AFTER BAKING AT 450 DEGREES F FOR TEN MINUTES. COLOR SHALL BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLOR CHART.

PACKAGED ROOF TOP AIR CONDITIONING UNITS

SPECIFICATIONS SECTION 237413

MARK	RT-1	RT-2
SUPPLY FAN		
SUPPLY AIR, CFM	3,460	3,800
OUTDOOR AIR, DESIGN CFM	3,460	2,160
OUTDOOR AIR, MINIMUM CFM	--	470
EXTERNAL SP, INCH H_2O	0.75	0.75
MOTOR HP	4	3
FAN TYPE	BI PLENUM FAN	FC CENTRIFUGAL
FAN DRIVE	DIRECT	BELT
		SINGLE ZONE VAV WITH VFD
MAXIMUM SOUND POWER LEVEL RE 10^{-12} WATT PER OCTAVE BAND MIDFREQUENCY AT SUPPLY FAN DISCHARGE		
63	--	83
125	--	78
250	--	71
500	--	73
1000	--	65
2000	--	62
4000	--	60
EXHAUST FAN		
EXHAUST AIR, CFM	3,460	3,800
EXTERNAL SP, IN H_2O	0.75	--
MOTOR HP	4	¾
FAN TYPE	BI PLENUM FAN	FC CENTRIFUGAL
FAN DRIVE	DIRECT	DIRECT
TEMPERATURE OF RETURN AIR ENTERING ENERGY RECOVERY WHEEL		
SUMMER: DEGREES F DB/WB	75.0 / 63.0	--
WINTER: DEGREES F DB/WB	70.0 / 53.0	--
TEMPERATURE OF OUTDOOR AIR ENTERING ENERGY RECOVERY WHEEL		
SUMMER: DEGREES F DB/WB	88.0 / 73.0	--
WINTER: DEGREES F DB/WB	12.0 / 10.0	--
COOLING COIL		
TOTAL COOLING, MBH	137.7	176.25
SENSIBLE COOLING, MBH	97.3	118.07
ENTERING AIR TEMP, DEG F DB/WB	79.4 / 66.9	82.41 / 68.97
OUTDOOR AIR TEMP, DEG F DB	88	88
MINIMUM EER	15.4	12.0
REHEAT COIL		
ENTERING AIR TEMP, DEG F DB/WB	53.9 / 53.9	--
LEAVING AIR TEMP, DEG F DB/WB	67.01 / 59.08	--
NATURAL GAS HEAT EXCHANGER		
INPUT MBH	200	350
OUTPUT MBH	160	280
ENTERING AIR TEMP, DEG F DB/WB	48.7 / 39.7	39.8
CONTROL	MODULATING 10:1 TURNDOWN	MODULATING 2.5:1 TURNDOWN
MAXIMUM WEIGHT, LBS	4,700	3,200
UNIT VOLTAGE/PHASE	208 / 3	208 / 3
MODEL NUMBER	OAGD120	YHD180

NOTES
1. MODEL NUMBERS LISTED ARE TRANE.
2. FURNISH FIVE YEAR MANUFACTURERS WARRANTY FOR COMPRESSORS.
3. CONTRACTOR SHALL INSTALL A GLOBAL PLASMA SOLUTIONS AIR PURIFICATION DEVICE IN EACH PACKAGED ROOF TOP AIR CONDITIONING UNIT. TYPE AND SIZE SHALL BE AS RECOMMENDED BY GLOBAL PLASMA SOLUTIONS.
4. PROVIDE FOR EACH UNIT:
   A. ROOF CURB
   B. THROUGH THE BASE ELECTRIC ACCESS
   C. HINGED ACCESS DOORS
   D. NON-FUSED DISCONNECT SWITCH
   E. CONDENSER COIL GUARDS
   F. GFCI CONVENIENCE OUTLET
   G. ONE YEAR MANUFACTURERS WARRANTY INCLUDING PARTS, REFRIGERANT, AND LABOR.
   H. FOUR YEAR PARTS WARRANTY EXTENSION FOR COMPRESSORS
   I. BACNET COMMUNICATIONS INTERFACE AND CONNECTION TO OWNER'S EXISTING TRANE BUILDING AUTOMATION SYSTEM (BAS)
5. PROVIDE FOR RT-1:
   A. 2 INCH THICK INSULATED DOUBLE WALL CONSTRUCTION
   B. STAINLESS STEEL CONDENSATE PAN
   C. TOTAL ENERGY RECOVERY WHEEL
   D. AIR FILTERS FOR OUTDOOR AIR AND RETURN AIR
   E. VARIABLE SPEED COMPRESSOR ON ONE REFRIGERANT CIRCUIT
   F. MODULATING HOT GAS REHEAT COIL
   G. INDIRECT FIRED NATURAL GAS HEATING SECTION WITH MODULATING BURNER
   H. STAINLESS STEEL BURNER, TYPE 439 STAINLESS STEEL HEAT EXCHANGER WITH 25 YEAR WARRANTY
   I. ELECTRONICALLY COMMUTATED SUPPLY AND EXHAUST FAN MOTORS
   J. AIR FLOW MONITORING STATION
   K. VFD CONTROL OF CONDENSER FANS TO INCREASE REHEAT CAPACITY AND PROVIDE LOW AMBIENT COOLING
   L. 3-POLE MOLDED CASE HACR CIRCUIT BREAKER WITH PROVISION FOR THROUGH-THE-BASE ELECTRICAL CONNECTIONS
   M. VOLTAGE/PHASE MONITOR TO PROTECT AGAINST PHASE UNBALANCE, OVER AND UNDER VOLTAGE, PHASE LOSS AND PHASE REVERSAL
   N. WALL MOUNT TEMPERATURE AND HUMIDITY SENSORS IN VARSITY FOOTBALL 101 AND JV FOOTBALL 101; UNIT CONTROLLER SHALL USE THE AVERAGE TEMPERATURE AND THE AVERAGE HUMIDITY.
   O. PLEATED MEDIA AIR FILTERS, MERV 14 AS RATED BY ASHRAE 52.
6. PROVIDE FOR RT-2:
   A. SINGLE ZONE VAV CONTROL WITH SUPPLY FAN VFD; VFD SHALL ALLOW BYPASS OPERATION OF SUPPLY FAN
   B. WALL MOUNT CO_2 SENSOR AND WIRING
   C. WALL MOUNT TEMPERATURE SENSOR
   D. COMPARATIVE ENTHALPY ECONOMIZER CONTROL WITH LOW LEAKAGE DAMPERS
   E. STAINLESS STEEL CONDENSATE PAN
   F. MODULATING GAS HEAT WITH TYPE 304 STAINLESS STEEL HEAT EXCHANGER
   G. TEN YEAR HEAT EXCHANGER WARRANTY
   H. CLOGGED FILTER SWITCH
   I. FAN FAILURE SWITCH
   J. DISCHARGE AIR TEMPERATURE SENSOR
   K. POWER EXHAUST
   L. DISCHARGE LINE THERMOSTAT
   M. PLEATED MEDIA AIR FILTERS, MERV 13 AS RATED BY ASHRAE 52.

HVAC LEGEND

BOTTOM GRILLE	BG	
CARBON DIOXIDE SENSOR		CO_2
CEILING DIFFUSER	CD	
CEILING GRILLE	CG	
CEILING REGISTER	CR	
CUBIC FEET PER MINUTE	CFM	
DEGREES FAHRENHEIT	°F	
DIAMETER	DIA	Φ
DRY BULB	DB	
DUCT SMOKE DETECTOR		SD
ENTERING AIR TEMPERATURE	EAT	
FEET	FT	
FEET PER MINUTE	FPM	
FIRE DAMPER	FD	
FLEXIBLE DUCT CONNECTION		
HORSEPOWER	HP	
HOUR	HR	
HUMIDITY SENSOR		H
INCH	IN	
KILOWATT	KW	
LEAVING AIR TEMPERATURE	LAT	
MANUAL DAMPER	MD	
MOTOR OPERATED DAMPER	MOD	
OUTDOOR AIR	OA	
POUNDS	LBS	
PRESSURE DROP	PD	
REVOLUTIONS PER MINUTE	RPM	
STATIC PRESSURE	SP	
THERMOSTAT OR TEMPERATURE SENSOR	TSTAT	T
THOUSAND BTU PER HOUR	MBH	
TOP GRILLE	TG	
TOP REGISTER	TR	
WET BULB	WB	

GENERAL MECHANICAL NOTES

1. MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION.
2. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS.
3. CONTRACTOR SHALL PROVIDE ALL SUPPORTS REQUIRED TO INSTALL MECHANICAL EQUIPMENT, PIPING AND DUCTWORK.
4. ALL DUCTWORK AND PIPING SHALL BE COORDINATED WITH BUILDING STRUCTURE AND WORK OF OTHER TRADES BEFORE INSTALLATION. MINOR DUCT AND PIPE OFFSETS AND MINOR DUCT TRANSITIONS SHALL BE PROVIDED AS REQUIRED. WHERE TRANSITIONS ARE REQUIRED, CROSS SECTIONAL AREA OF DUCT SHALL NOT BE REDUCED. MEASUREMENTS FOR VERTICAL CLEARANCES OF DUCTWORK SHALL BE TAKEN AT THE JOB SITE BEFORE FABRICATION OF ANY DUCTWORK.
5. DUCTWORK AND PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING WITH ELECTRICAL PANELS WHEN SHOWN NEAR PANELS OR OVER ELECTRICAL ROOMS.
6. ALL REMOTE MOUNTED TEMPERATURE CONTROL DEVICES AND TEMPERATURE CONTROL WIRING SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
7. LOCATIONS OF ROOF-MOUNTED EQUIPMENT AND ROOF OPENINGS SHALL BE COORDINATED WITH ROOF FRAMING.
8. ALL EQUIPMENT LOCATED ON THE ROOF SHALL BE SET LEVEL. TOP OF CURBS AND ROOF EQUIPMENT SUPPORTS SHALL BE LEVEL; PROVIDE CURBS WITH BOTTOM SLOPED TO MATCH PITCH OF ROOF OR PROVIDE SHIMS UNDER BOTTOM OF CURBS.
9. ALL PIPING AND DUCTWORK SHALL BE ABOVE CEILING EXCEPT IN SPACES THAT HAVE NO CEILING PIPING AND DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE.
10. FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF SIDE SHOWN OR INDICATED.
11. TURNING VANES SHALL BE PROVIDED IN ALL RECTANGULAR ELBOWS.
12. SIZES OF DIFFUSERS, REGISTERS AND GRILLES SHOWN ON FLOOR PLANS ARE NECK SIZES.
13. COORDINATE LOCATIONS OF CEILING MOUNTED DIFFUSERS, REGISTERS AND GRILLES WITH LIGHT FIXTURES AND CEILING GRID.
14. CEILING GRID AND OTHER ITEMS SHALL NOT BE SUPPORTED FROM OR IN CONTACT WITH FAN COIL UNITS. CONDUIT, WIRING, PIPING AND SUPPORTS SHALL NOT BE LOCATED BELOW FAN COIL ACCESS PANELS.
15. PIPING, DUCTWORK AND EQUIPMENT SHALL BE SUPPORTED FROM, OR ANCHORED TO, THE BUILDING STRUCTURE. CEILING CONSTRUCTION SHALL NOT BE USED FOR SUPPORT OR ANCHORING OF NEW WORK.
16. ACCESS SHALL BE MAINTAINED TO ALL MANUAL VOLUME DAMPERS AND CONTROL DEVICES. ACCESS PANEL SIZES AND LOCATIONS SHALL BE DETERMINED PRIOR TO BIDDING AND SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT WORK. ACCESS PANELS SHALL BE INSTALLED WHERE REQUIRED.
17. INSTALL THERMOSTATS AND SENSORS WITH CENTER 48" ABOVE FLOOR. WHERE THERMOSTATS, SENSORS AND OTHER ELECTRICAL DEVICES ARE INDICATED IN CLOSE PROXIMITY ON THE SAME WALL, THE LOCATIONS SHALL BE COORDINATED.
18. MOUNT WALL HEATERS NOMINAL 16" ABOVE FLOOR.
19. CONTRACTOR SHALL INSTRUCT THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF THE MECHANICAL SYSTEMS.
20. SYSTEMS SHALL OPERATE UNDER CONDITIONS OF LOAD WITHOUT UNUSUAL OR EXCESSIVE NOISE OR VIBRATION. UNUSUAL OR EXCESSIVE NOISE OR VIBRATION SHALL BE CORRECTED.
21. EQUIPMENT, MATERIALS AND LABOR REQUIRED BY THESE CONTRACT DRAWINGS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS OR WORKMANSHIP FOR ONE YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT UNLESS SPECIFIED OTHERWISE. DEFECTIVE MATERIALS OR WORKMANSHIP OCCURRING DURING THIS PERIOD SHALL BE CORRECTED AT NO ADDITIONAL COST.

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	JLK
CHECKED	RDF
JOB	19-059

MECHANICAL LEGEND & SCHEDULES

SHEET
M-001

SEQUENCE OF OPERATION

1. DEFINITIONS
   - A. THE DIRECT ELECTRONIC TEMPERATURE CONTROL SYSTEM IS REFERRED TO AS THE BAS (BUILDING AUTOMATION SYSTEM).
   - B. VFD: VARIABLE FREQUENCY DRIVE.
2. GENERAL
   - A. THE BUILDING AUTOMATION SYSTEM SHALL BE AN EXTENSION OF THE EXISTING TRANE TRACER SUMMIT CONTROL SYSTEM. PROVIDE ALL WIRING, CONTROL DEVICES, INTERFACE DEVICES, SOFTWARE UPDATES, PROGRAMMING AND GRAPHICS, MISCELLANEOUS HARDWARE AND ACCESSORIES REQUIRED TO PROVIDE CONTROL AND MONITORING OF HVAC EQUIPMENT. REFER TO EQUIPMENT SCHEDULES FOR ADDITIONAL REQUIREMENTS.
   - B. THE BAS SHALL PROVIDE REMOTE CONTROL OF ALL AVAILABLE HVAC EQUIPMENT CONTROL POINTS AND SHALL MONITOR ALL AVAILABLE HVAC EQUIPMENT STATUS POINTS AND ALARMS.
   - C. IF COMMUNICATION IS LOST WITH THE BAS, EACH EQUIPMENT CONTROLLER SHALL MAINTAIN EXISTING SETPOINTS AND SHALL CONTINUE TO OPERATE IN A STAND-ALONE MODE.
   - D. INSTALL WALL MOUNTED SENSORS WITH CENTER 48" ABOVE FLOOR.
   - E. WHERE SEQUENCES ARE DESCRIBED FOR A RISE IN SPACE TEMPERATURE. REVERSE SEQUENCE SHALL OCCUR ON A FALL IN SPACE TEMPERATURE.
   - F. ALL SETPOINTS AND TIME INTERVALS SHALL BE ADJUSTABLE.
3. TEMPERATURE SETPOINTS
   - A. THE TEMPERATURE SETPOINTS LISTED BELOW ARE THE BASIS OF DESIGN; SETPOINTS MAY BE ADJUSTED AS REQUESTED BY THE OWNER.
   - B. WRESTLING/SOFTBALL/BASEBALL, LOCKER ROOMS, TOILETS, LAUNDRY & OFFICES
     - (1) OCCUPIED COOLING 75F
     - (2) OCCUPIED HEATING 70F
     - (3) UNOCCUPIED COOLING 80F
     - (4) UNOCCUPIED HEATING 55F
   - C. STORAGE ROOMS & EQUIPMENT ROOMS
     - (1) NO COOLING; VENTILATION ONLY.
     - (2) HEATING 55F
4. PACKAGED ROOF TOP AIR CONDITIONING UNIT RT-1
   - A. OCCUPIED MODE
     - (1) THE OUTDOOR AIR DAMPER AND THE EXHAUST DAMPER SHALL OPEN.
     - (2) THE SUPPLY FAN AND EXHAUST FAN SHALL OPERATE CONTINUOUSLY.
     - (3) UNIT CONTROLLER SHALL MONITOR SPACE TEMPERATURE AND HUMIDITY IN VARSITY FOOTBALL 101 AND JV FOOTBALL 101.
     - (4) BASED ON AVERAGE SPACE TEMPERATURE AND HUMIDITY, UNIT CONTROLLER SHALL MODULATE THE GAS BURNER, CONTROL ENERGY RECOVERY, ECONOMIZER, MODULATE MECHANICAL COOLING AND HOT GAS REHEAT TO MAINTAIN SPACE COOLING, HEATING AND HUMIDITY SETPOINTS.
   - B. UNOCCUPIED MODE
     - (1) SUPPLY AND EXHAUST FANS SHALL STOP AND OUTSIDE AIR AND EXHAUST DAMPERS SHALL CLOSE.
     - (2) UNIT CONTROLLER SHALL OPEN OUTDOOR AND EXHAUST DAMPERS, CYCLE THE SUPPLY AND EXHAUST FANS AND CONTROL THE UNIT TO MAINTAIN THE UNOCCUPIED SETPOINTS.
   - C. OCCUPIED/UNOCCUPIED MODE
     - (1) SYSTEM SHALL BE PLACED IN OCCUPIED OR UNOCCUPIED MODE BY THE BAS IN ACCORDANCE WITH OWNER SPECIFIED SCHEDULE.
   - D. SAFETIES
     - (1) REPORT AND ALARM ANY FAILURE SIGNAL, DIRTY FILTER STATUS AND HIGH OR LOW SUPPLY AIR TEMPERATURES TO THE BAS.
5. PACKAGED ROOF TOP AIR CONDITIONING UNIT RT-2 & EXHAUST FAN EF-2
   - A. BUILDING AUTOMATION SYSTEM INTERFACE: THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE UNIT CONTROLLER OCCUPIED BYPASS, MORNING WARM-UP/PRE-COOL, OCCUPIED/UNOCCUPIED AND HEAT/COOL MODES. THE BAS SHALL ALSO SEND SPACE TEMPERATURE SETPOINT. IF COMMUNICATION IS LOST WITH THE BAS, THE CONTROLLER SHALL OPERATE USING DEFAULT MODES AND SETPOINTS.
   - B. OCCUPIED MODE
     - (1) THE UNIT SUPPLY FAN SHALL OPERATE CONTINUOUSLY.
     - (2) OUTDOOR AIR DAMPER SHALL OPEN TO PROVIDE MINIMUM OUTDOOR AIR FLOW RATE (REFER TO EQUIPMENT SCHEDULE).
     - (3) IF THE RETURN AIR CARBON DIOXIDE LEVEL EXCEEDS 800 PPM (ADJUSTABLE) THE OUTDOOR AIR DAMPER SHALL OPEN TO PROVIDE DESIGN OUTDOOR AIR FLOW RATE (REFER TO EQUIPMENT SCHEDULE).
     - (4) THE UNIT CONTROLLER, ON A RISE IN SPACE TEMPERATURE, SHALL MODULATE THE GAS BURNER TO REDUCE HEATING CAPACITY; ON A FURTHER RISE IN SPACE TEMPERATURE THE GAS BURNER SHALL BE SHUT OFF. ON A CONTINUED RISE IN TEMPERATURE THE OUTDOOR AIR DAMPER SHALL MODULATE UP TO 100 PERCENT OPEN TO PROVIDE ATMOSPHERIC COOLING IF THE OUTDOOR AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY. WHEN THE OUTDOOR AIR CANNOT PROVIDE SUFFICIENT COOLING, THE MECHANICAL COOLING SHALL BE ENERGIZED IN STAGES TO MAINTAIN SETPOINT.
     - (5) THE UNIT CONTROLLER SHALL CONTROL THE POWER EXHAUST FAN TO ASSIST ECONOMIZER OPERATION.
     - (6) EXHAUST FAN EF-2 DAMPER SHALL OPEN AND FAN SHALL OPERATE CONTINUOUSLY.
   - C. UNOCCUPIED MODE
     - (1) THE OUTDOOR AIR DAMPER SHALL BE CLOSED.
     - (2) THE UNIT CONTROLLER SHALL CYCLE THE SUPPLY FAN AND CONTROL HEATING AND COOLING TO MAINTAIN UNOCCUPIED TEMPERATURE SETPOINTS.
     - (3) EXHAUST FAN EF-2 SHALL STOP AND DAMPER SHALL CLOSE.
   - D. OPTIMAL START: UNIT CONTROLLER SHALL AUTOMATICALLY DETERMINE THE OPTIMAL START TIME, SUCH THAT THE OCCUPIED SPACE WILL REACH IT'S OCCUPIED SETPOINT TEMPERATURE IN TIME FOR SCHEDULED OCCUPANCY.
   - E. MORNING WARM-UP/PRECOOL: UNIT CONTROLLER SHALL OPERATE THE SUPPLY FAN, CYCLE COMPRESSORS, MODULATE HEAT, AND/OR ENABLE AIRSIDE ECONOMIZING TO RAISE OR LOWER SPACE TEMPERATURE TO IT'S OCCUPIED SETPOINT. THE OUTDOOR AIR DAMPER SHALL REMAIN CLOSED UNLESS ECONOMIZING.
     - (1) EXHAUST FAN EF-2 SHALL BE DE-ENERGIZED AND DAMPER CLOSED.
   - F. SINGLE ZONE VARIABLE AIR VOLUME: UNIT CONTROLLER SHALL VARY SUPPLY FAN SPEED TO OPTIMIZE MINIMUM FAN SPEED. THE OUTDOOR AIR DAMPER SHALL MODULATE IN PROPORTION TO CHANGING SUPPLY FAN SPEED TO BRING IN THE REQUIRED VENTILATION AIR FLOW.
   - G. OCCUPIED/UNOCCUPIED MODE: SYSTEM SHALL BE PLACED IN OCCUPIED OR UNOCCUPIED MODE BY THE BAS IN ACCORDANCE WITH OWNER SPECIFIED SCHEDULE.
   - H. SAFETIES
     - (1) SMOKE DETECTOR IN THE RETURN AIR SHALL DE-ENERGIZE THE FAN AND SIGNAL THE FIRE ALARM SYSTEM IF PRODUCTS OF COMBUSTION ARE DETECTED.
     - (2) REPORT AND ALARM ANY FAILURE SIGNAL, DIRTY FILTER STATUS AND HIGH OR LOW SUPPLY AIR TEMPERATURES TO THE BAS.
6. MINI-SPLIT SYSTEM FC-1/HP-1 (FC-2/HP-2 SIMILAR)
   - A. OCCUPIED MODE
     - (1) FAN COIL UNIT SUPPLY FAN SHALL OPERATE CONTINUOUSLY.
     - (2) SYSTEM CONTROLS SHALL OPERATE THE SYSTEM TO MAINTAIN OCCUPIED COOLING AND HEATING SETPOINT TEMPERATURES.
   - B. UNOCCUPIED MODE
     - (1) FAN COIL UNIT SUPPLY FANS SHALL CYCLE ON DEMAND FOR HEATING OR COOLING.
     - (2) SYSTEM CONTROLS SHALL OPERATE THE SYSTEM TO MAINTAIN UNOCCUPIED COOLING AND HEATING SETPOINT TEMPERATURES.
   - C. OCCUPIED/UNOCCUPIED MODE
     - (1) SYSTEM SHALL BE PLACED IN OCCUPIED OR UNOCCUPIED MODE BY THE BAS.
   - D. BAS INTERFACE
     - (1) THE BAS SHALL MONITOR ALL AVAILABLE POINTS.
     - (2) THE BAS SHALL HAVE THE CAPABILITY TO ENABLE/DISABLE THE SYSTEM AND TO REMOTELY SET COOLING AND HEATING TEMPERATURE SETPOINTS.
7. SUPPLY FAN SF-1 & EXHAUST FAN EF-1
   - A. DAMPERS SHALL OPEN AND FANS SHALL OPERATE CONTINUOUSLY WHEN FC-1 AND/OR FC-2 ARE IN OCCUPIED MODE.
   - B. FANS SHALL STOP AND DAMPERS SHALL CLOSE WHEN FC-1 AND FC-2 ARE IN UNOCCUPIED MODE.
8. EXHAUST FAN EF-3
   - A. EXHAUST FAN EF-3 SHALL BE ENERGIZED WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT (80 DEGREES F, ADJUSTABLE).
   - B. CONNECTION TO THE BAS IS NOT REQUIRED.
9. LAUNDRY
   - A. OUTDOOR AIR DAMPER SHALL BE INTERLOCKED WITH ALL CLOTHES DRYERS (FURNISHED BY OWNER).
     - (1) OUTDOOR AIR DAMPER SHALL OPEN WHEN ANY OR ALL DRYERS ARE OPERATING.
     - (2) OUTDOOR AIR DAMPER SHALL CLOSE WHEN ALL DRYERS ARE OFF.
10. ELECTRIC HEATERS (CUH-1, WH-1 & WH-2)
    - A. CONNECTION TO THE BAS IS NOT REQUIRED.
    - B. BUILT-IN THERMOSTAT SHALL CONTROL UNIT TO MAINTAIN HEATING SETPOINT.
11. ALARMS
    - A. THE BAS SHALL PROVIDE AN ALARM AT THE OPERATOR WORKSTATION IF ANY SPACE TEMPERATURE FALLS BELOW 50 DEGREES F (ADJUSTABLE).

POINT LIST

1. GENERAL:
   - A. PROVIDE THE FOLLOWING POINTS AND ALL OTHER POINTS REQUIRED TO ACCOMPLISH THE SEQUENCE OF OPERATION.
   - B. PROVIDE REMOTE CONTROL OF ALL AVAILABLE HVAC EQUIPMENT CONTROL POINTS AND MONITOR ALL AVAILABLE HVAC EQUIPMENT STATUS POINTS AND ALARMS.
2. PACKAGED ROOF TOP AIR CONDITIONING UNITS (TYPICAL)
   - A. UNIT ENABLE / DISABLE — BINARY OUTPUT
   - B. SPACE TEMPERATURE — ANALOG INPUT
   - C. SPACE TEMPERATURE SETPOINT — ANALOG OUTPUT
   - D. SPACE HUMIDITY (RT-1) — ANALOG INPUT
   - E. SPACE HUMIDITY SETPOINT (RT-1) — ANALOG OUTPUT
   - F. SPACE CO2 LEVEL (RT-2) — ANALOG INPUT
   - G. SPACE CO2 LEVEL SETPOINT (RT-2) — ANALOG OUTPUT
   - H. UNIT OCCUPIED / UNOCCUPIED MODE — BINARY OUTPUT
   - I. DIRTY AIR FILTER — BINARY INPUT
   - J. COOLING STATUS — BINARY INPUT
   - K. HEATING STATUS — BINARY INPUT
   - L. AIR PURIFICATION DEVICE STATUS — BINARY INPUT
   - M. ALL ALARMS — BINARY INPUT
3. MINI-SPLIT SYSTEMS (TYPICAL FOR FC-1/HP-1 & FC-2/HP-2)
   - A. SPACE TEMPERATURE — ANALOG INPUT
   - B. SPACE TEMPERATURE SETPOINT — ANALOG OUTPUT
   - C. SYSTEM ENABLE / DISABLE — BINARY OUTPUT
   - D. AIR PURIFICATION DEVICE STATUS — BINARY INPUT
   - E. ALL ALARMS — BINARY INPUT
4. FANS (TYPICAL FOR EF-1, EF-2 & SF-1)
   - A. FAN START / STOP — BINARY OUTPUT
   - B. FAN STATUS — BINARY INPUT
5. GENERAL
   - A. OUTDOOR DRY BULB TEMPERATURE — ANALOG INPUT
   - B. OUTDOOR WET BULB TEMPERATURE OR RELATIVE HUMIDITY — ANALOG INPUT
6. ALARMS
   - A. COMMUNICATION FAILURE
   - B. LOW SPACE TEMPERATURE

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

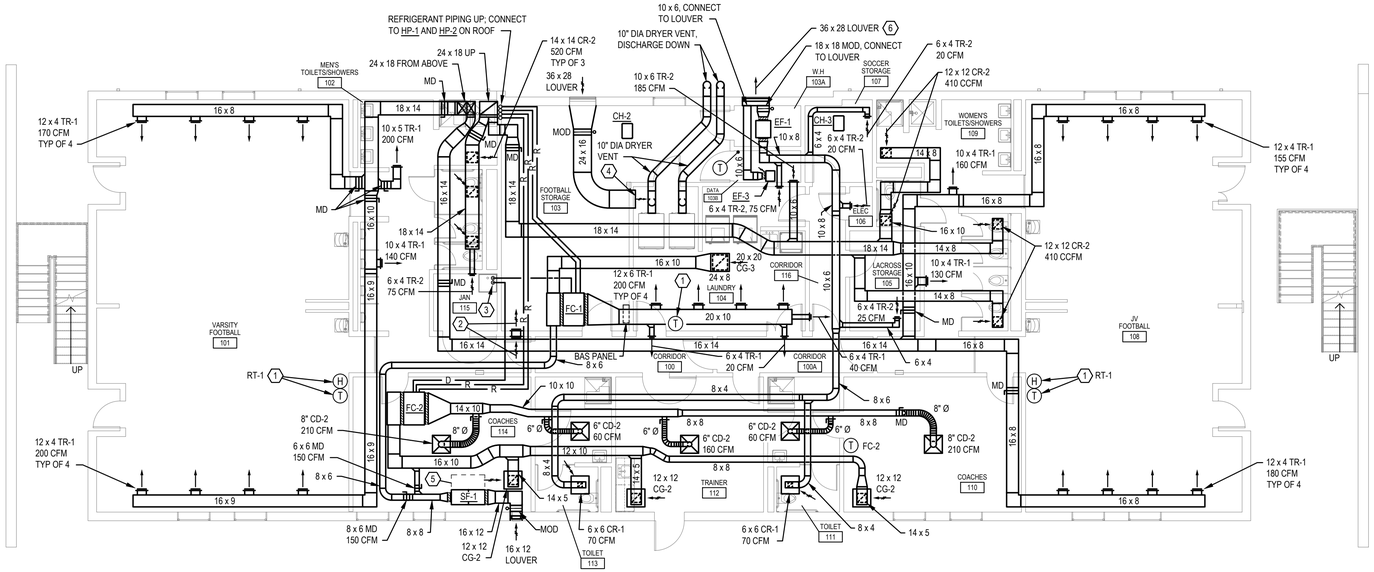
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	JLK
CHECKED	RDF
JOB	19-059

MECHANICAL CONTROLS

SHEET
M-002

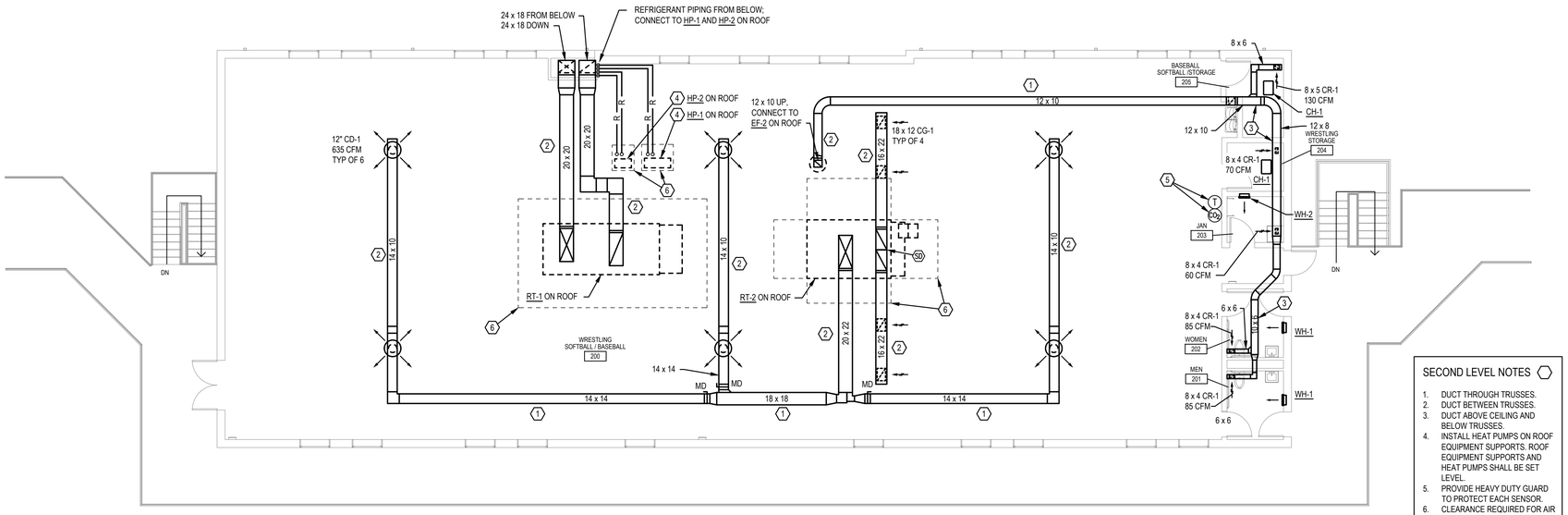


FIRST LEVEL FLOOR PLAN - MECHANICAL

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

FIRST LEVEL NOTES

1. PROVIDE HEAVY DUTY GUARD TO PROTECT EACH SENSOR.
2. 12 x 8 TG-1.
3. DISCHARGE CONDENSATE DRAIN INTO JANITOR SINK.
4. COVER OPEN END OF DUCT WITH 4 MESH GALVANIZED HARDWARE CLOTH.
5. SPACE REQUIRED FOR FILTER ACCESS AND FAN MAINTENANCE.
6. CLOSE UNUSED PART OF LOUVER (ROOM SIDE) WITH SHEET METAL AND INSULATE AS SPECIFIED FOR SUPPLY DUCT.



SECOND LEVEL FLOOR PLAN - MECHANICAL

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

SECOND LEVEL NOTES

1. DUCT THROUGH TRUSSES.
2. DUCT BETWEEN TRUSSES.
3. DUCT ABOVE CEILING AND BELOW TRUSSES.
4. INSTALL HEAT PUMPS ON ROOF EQUIPMENT SUPPORTS. ROOF EQUIPMENT SUPPORTS AND HEAT PUMPS SHALL BE SET LEVEL.
5. PROVIDE HEAVY DUTY GUARD TO PROTECT EACH SENSOR.
6. CLEARANCE REQUIRED FOR AIR FLOW AND MAINTENANCE ACCESS.

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
RODNEY D. FANNING
Lic. No. 034568
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	JLK
CHECKED	RDF
JOB	19-059

MECHANICAL FIRST & SECOND LEVEL PLANS

SHEET
M-101

GENERAL NOTES:

1. LOAD SIDE CONDUCTOR AND CONDUIT SIZES FROM DISCONNECT SWITCHES AND STARTERS TO EQUIPMENT SHALL BE THE SAME AS LINE SIDE CONDUCTORS AND CONDUIT.
2. CAREFULLY COORDINATE ALL ELECTRICAL EQUIPMENT LOCATIONS WITH DUCTWORK, PIPING AND MECHANICAL EQUIPMENT. MAINTAIN ALL CLEARANCES AND SPACES REQUIRED BY THE NEC.
3. WHERE MULTIPLE CIRCUITS ARE COMBINED IN A SINGLE CONDUIT, DERATE CONDUCTORS PER THE NEC.
4. SEE SPECIFICATION SECTION 26 05 19 FOR REQUIREMENTS REGARDING OVERSIZING CONDUCTORS FOR 1-POLE 15- AND 20-AMP CIRCUITS TO REDUCE VOLTAGE DROP - THESE OVERSIZING REQUIREMENTS TAKE PRECEDENCE OVER THE WIRE AND CONDUIT SIZES SHOWN IN THE PANEL SCHEDULES. OVERSIZED CONDUCTORS FOR VOLTAGE DROP ON OTHER CIRCUITS ARE INDICATED IN THE PANEL SCHEDULES.
5. UNLESS INDICATED OTHERWISE, ALL EXIT SIGNS AND THE VOLTAGE SENSING TERMINALS OF ALL EMERGENCY BATTERY PACKS SHALL BE CONNECTED AHEAD OF ALL SWITCHES, RELAYS, SENSORS AND POWER PACKS WITH 2 #12 AND 1 #12 GROUND IN 3/4" CONDUIT.
6. ALL EMERGENCY LIGHTING FIXTURES SHALL BE MARKED SO AS TO BE IDENTIFIED BY VISUAL INSPECTION FOR TESTING PURPOSES. IDENTIFICATION SHALL BE BY ONE 1/2" RED SELF-STICK DOT ON THE VERTICAL PORTION OF LOUVER OR ON THE TOP OF THE LENS.
7. EXACT LOCATION AND ORIENTATION OF OCCUPANCY SENSORS SHALL BE AS RECOMMENDED BY MANUFACTURER TO OBTAIN COMPLETE COVERAGE. IF THE CONTRACTOR USES A SENSOR THAT HAS A COVERAGE PATTERN DIFFERENT FROM THAT WHICH IS SPECIFIED, AND AS A RESULT ADDITIONAL SENSORS ARE REQUIRED TO COMPLETELY COVER A SPACE, THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS REQUIRED (CONNECTED IN PARALLEL WITH EACH OTHER) AT NO ADDITIONAL COST TO THE OWNER. ALL OCCUPANCY SENSOR TIME DELAYS SHALL BE SET TO NO MORE THAN 30 MINUTES.
8. UNLESS INDICATED OTHERWISE, SWITCHES AND OCCUPANCY SENSORS IN A ROOM/SPACE SHALL CONTROL ALL LIGHTING FIXTURES IN THAT ROOM/SPACE.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALL PANELBOARD FEEDER ENTRANCE LOCATIONS (TOP, BOTTOM, SIDE).
10. DUCT SMOKE DETECTORS FOR AIR HANDLING EQUIPMENT SHALL BE INSTALLED IN THE DUCT(S) BEFORE ANY BRANCH TAKE-OFFS. CONTROL WIRING FROM SMOKE DETECTOR CONTROL RELAY WILL BE PROVIDED BY CONTROL SYSTEM CONTRACTOR. WHERE DUCTWORK CONFIGURATION IS SUCH THAT ONE DETECTOR WILL NOT PROPERLY SAMPLE THE AIR, ADDITIONAL DETECTORS SHALL BE PROVIDED. FIRE ALARM SYSTEM SUPPLIER SHALL MAKE THIS DETERMINATION BEFORE SUBMITTING HIS BID.
11. CAREFULLY COORDINATE LOCATIONS OF ALL LIGHTING FIXTURES, OCCUPANCY SENSORS, SMOKE AND HEAT DETECTORS, FIRE ALARM NOTIFICATION APPLIANCES AND OTHER ELECTRICAL CEILING DEVICES WITH SPRINKLER HEADS AND HVAC CEILING DEVICES. COORDINATE SURFACE MOUNTED LIGHTING FIXTURES ON LOW CEILINGS SUCH THAT FIXTURES WILL NOT INTERFERE WITH DOOR SWINGS.
12. PROVIDE SHALLOW BOXES FOR NEW DEVICES IN FURRED WALLS. COORDINATE DEPTH WITH ARCHITECTURAL.
13. WHERE OUTLETS ARE SHOWN ABOVE A COUNTER OR SIMILAR SURFACE WITH A SPECIFIC MOUNTING HEIGHT, COORDINATE MOUNTING HEIGHT WITH BOTH THE SURFACE BELOW AND WITH ANY WALL MOUNTED ARCHITECTURAL ITEMS ABOVE (TACKBOARDS, ETC.) BEFORE ROUGH-IN.
14. FOR WALL DEVICES MOUNTED ABOVE ARCHITECTURAL ITEMS (SUCH AS MARKERBOARDS, TACKBOARDS OR SMARTBOARDS), COORDINATE MOUNTING HEIGHTS OF WALL DEVICES SUCH THAT THEY DO NOT INTERFERE WITH ARCHITECTURAL ITEMS.
15. SEE ARCHITECTURAL DRAWINGS FOR RATED WALL, FLOOR AND CEILING CONSTRUCTION, AND PROVIDE NECESSARY RATED DEVICES AND FIRE SEALANT FOR PENETRATIONS. WHERE NEW DEVICES ARE SHOWN RECESSED IN RATED PARTITIONS, CAREFULLY COORDINATE LOCATIONS AND OFFSETS.
16. PROVIDE CORD AND PLUG TO MATE AND MATCH WITH RECEPTACLE PROVIDED FOR ALL DRYERS, WASHERS AND ICE MACHINE..
17. PROVIDE ALL 120-VOLT POWER NEEDED BY THE BAS. COORDINATE WITH THE CONTROLS SPECIFICATIONS AND CONTRACTOR.
18. FOR ALL EXTERIOR UNDERGROUND CONDUIT AND WIRING, CAREFULLY COORDINATE ALL WORK WITH EXISTING AND NEW SOIL CONDITIONS AND WITH EXISTING AND NEW UTILITIES IN ORDER TO AVOID CONFLICTS.

ELECTRICAL ABBREVIATIONS

A OR AMP	AMPERE
ABD	ABANDONED
ABV	ABOVE
AC	ALTERNATING CURRENT
ACB	ABOVE COUNTER BACKSPLASH
AF OR AFI	ARC FAULT INTERRUPTER
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AIP	ABANDONED IN PLACE
AL	ALUMINUM
AM	AMMETER
AMPL	AMPLIFIER
ASYM	ASYMMETRICAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAGE
BAS	BUILDING AUTOMATION SYSTEM
BEL	BELOW
BD	BUS DUCT
BOT	BOTTOM
BRKR	BREAKER
C	COUNTERTOP
CA	CABLE
CAB	CABINET
CATV	CABLE TV
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CF	COMPACT FLUORESCENT
CKT	CIRCUIT
CLG	CEILING
CND	CONDUIT
CNTR	CENTER
COMB	COMBINATION
COMM	COMMUNICATIONS
COND	CONDUCTOR
CONN	CONNECTION
CONT	CONTACTOR
CR	CORROSION RESISTANT
CT	CURRENT TRANSFORMER
CTRL	CONTROL
CU	COPPER
CW	COLD WATER
DB	DOOR BELL
DC	DIRECT CURRENT
DIM	DIMENSION
DISC	DISCONNECT
DR	DOOR RELEASE SERVICE
DS	DOOR SWITCH
DWG	DRAWING
E OR EMER	EMERGENCY
EC	EMPTY CONDUIT
ECNC	EXIST CND AND NEW CONDS
EGC	EQUIPMENT GROUNDING CONDUCTOR
EL	EXIST RELOCATED TO THIS LOCATION
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EM	EXIST REMOVED
EML	EXIST REMOVED AND RELOCATED
EMN	EXIST REMOVED AND NEW INSTALLED
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENG	ENGINE
EP	EXPLOSIONPROOF
EQUIP	EQUIPMENT
ER	EXIST TO REMAIN
ERC	ELEVATOR RECALL
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXT	EXTERIOR
FA	FIRE ALARM
FACP	**FIRE ALARM CONTROL PANEL**
FACU	FIRE ALARM CONTROL UNIT
FDR	FEEDER
FC	FOOTCANDLE
FLUOR	**FLUORESCENT**
FSD	FIRE/SMOKE DAMPER
FSS	FUSIBLE SAFETY SWITCH
FXTR	FIXTURE
G	RECEPTACLE GUARD
GD	GARAGE DOOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GF,GFI,GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION/PROTECTED
GND	GROUND
GTD	GENERATOR TRANSFER DEVICE
H OR HOR	HORIZONTAL
HG	HOSPITAL GRADE
HGT	HEIGHT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER OR HEAT PUMP
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HW	HOT WATER
HZ	HERTZ
IC	INTERCOM OR INTERRUPTING CAPACITY
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INC	INCANDESCENT
INIT	INITIAL
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KO	KNOCKOUT
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
LA	LIGHTNING ARRESTER
LED	LIGHT EMITTING DIODE
LPS	LOW PRESSURE SODIUM
LRP	LIGHTING RELAY PANEL
LTG	LIGHTING
LUM	LUMENS OR LUMINAIRE
MAG	MAGNETIC
MAN	MANUAL
MATV	MASTER ANTENNA TELEVISION
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MDF	MAIN DISTRIBUTION FRAME
M/G	MOTOR/GENERATOR
MH	METAL HALIDE OR MOUNTING HEIGHT
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MMS	MANUAL MOTOR STARTER
MNS	MASS NOTIFICATION SYSTEM
MOCP	MAXIMUM OVER CURRENT PROTECTION
MOD	MOTOR OPERATED DAMPER
MOT	MOTOR
MS	MAGNETIC STARTER
MTG	MOUNTED OR MOUNTING
MTR	METER
MV	MERCURY VAPOR
N OR NORM	NORMAL
NEC	NATIONAL ELECTRICAL CODE
NEUT	NEUTRAL
NFSS	NON-FUSIBLE SAFETY SWITCH
NL	NIGHT LIGHT
NO	NUMBER
OH	OVERHEAD
P	POLE
PB	PULL BOX OR PUSHBUTTON
PBS	PUSHBUTTON STATION
PH	PHASE
PNL	PANEL OR PANELBOARD
PNLBRD	PANELBOARD
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
RB	RELAY BASE
REC	RECEPTACLE
REFRIG	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL CONDUIT
S/O	SPACE ONLY
SB	SOUNDER BASE
SCCR	SHORT CIRCUIT CURRENT RATING
SEC	SECONDARY
SL	SINGLE STATION
SMD	MOTOR OPERATED SMOKE DAMPER
SMR	SURFACE METAL RACEWAY
SN	SOLID NEUTRAL
SP	SPECIAL PURPOSE
SPD	SURGE PROTECTIVE DEVICE
SPKR	SPEAKER
SR	SURFACE RACEWAY
SS	SURGE SUPPRESSOR
STR	STARTER
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
T	TAMPER RESISTANT
TC	TIME CLOCK
TEL	TELEPHONE
TV	TELEVISION
TYP	TYPICAL
U	USB CHARGER
UC	UNDERCOUNTER
UF	UNDERFLOOR
UG	UNDERGROUND
UL	UNDERWRITERS' LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VA	VOLT-AMPERE
VAR	VOLT-AMPERE REACTIVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
W	WATT OR WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFER	TRANSFER
XFMR	TRANSFORMER

NOTE (ELECTRICAL ABBREVIATIONS):

1. ALL ABBREVIATIONS LISTED MAY NOT APPLY TO THIS PROJECT. REFER TO OTHER ABBREVIATION LISTS ELSEWHERE IN THESE DOCUMENTS FOR ABBREVIATIONS NOT LISTED HERE.

ELECTRICAL LEGEND

MTG. HGT.	SYMBOL	DESCRIPTION
	(1)	PLAN NOTE DESIGNATION.
	(A1)	LIGHTING FIXTURE TYPE DESIGNATION.
	○	LIGHTING FIXTURE, LED, CEILING MOUNTED. SYMBOL SIZE VARIES WITH LIGHTING FIXTURE TYPE.
	●	LIGHTING FIXTURE, LED, CEILING MOUNTED WITH INTEGRAL EMERGENCY LED DRIVER (TYPICAL FOR ALL LIGHTING FIXTURES)
	□	LIGHTING FIXTURE, LED, CEILING MOUNTED.
	○	LIGHTING FIXTURE, LED, CEILING MOUNTED.
	⊸○	LIGHTING FIXTURE, LED, WALL MOUNTED.
	⊗	EXIT SIGN, CEILING MOUNTED. SHADED QUADRANT(S) INDICATES FACE(S). PROVIDE ARROWS AS INDICATED ON DRAWINGS. LIGHTING FIXTURE TYPE "X1", UNO.
7'-6" TO CENTER	⊗	EXIT SIGN, WALL MOUNTED. SHADED QUADRANT(S) INDICATES FACE(S). PROVIDE ARROWS AS INDICATED ON DRAWINGS. LIGHTING FIXTURE TYPE "X1", UNO.
4'-0"	$a	GENERAL USE SWITCH, SINGLE POLE. LOWER CASE ALPHABETIC SUBSCRIPT, WHERE SHOWN, INDICATES LOADS CONTROLLED. (TYPICAL FOR ALL SWITCHES)
1'-4" TO BOT	⊖	RECEPTACLE, DUPLEX, WALL. ALPHA-NUMERIC OR NUMERIC SUBSCRIPT, WHERE SHOWN, INDICATES CIRCUIT. (TYPICAL FOR ALL RECEPTACLES)
	⊖	RECEPTACLE, DUPLEX, CEILING.
1'-4" TO BOT	⊖	RECEPTACLE, DUPLEX GFCI, WALL. "WP" DENOTES WEATHER PROOF WHILE-IN-USE COVER
1'-4" AFF TO BOT, UNO	⊲	RECEPTACLE, SPECIAL PURPOSE, WALL. NEMA TYPE AS NOTED.
1'-4" TO BOT, UNO	(J)	JUNCTION BOX, WALL.
1'-4" TO BOT	◀	TELECOM OUTLET, WALL. COMBINATION TELEPHONE, CABLE TELEVISION OR COMPUTER PORTS. (TYPICAL FOR TELECOM OUTLETS). "W" DENOTES WALL TELEPHONE OUTLET MOUNTED 4'-6" AFF. "WP" DENOTES WEATHER PROOF WHILE-IN-USE COVER.
	◀	TELECOM OUTLET, CEILING.
	(S)D	DUCT SMOKE DETECTOR, CEILING.
1'-0" AFF TO BOT	▬	GROUND BAR. MOUNT WITH LONG DIMENSION HORIZONTAL.
	(M)	ELECTRIC MOTOR CONNECTION.
6'-0"	▨	208/120 VOLT PANELBOARD.
5'-0"	N/3/60	NON-FUSIBLE SAFETY SWITCH, WALL OR EQUIPMENT MOUNTED. NUMBER INDICATES NON-FUSED/3-POLE/60 AMP RATING.
5'-0"	F/3/60/45	FUSIBLE SAFETY SWITCH, WALL OR EQUIPMENT MOUNTED. NUMBER INDICATES FUSED/3-POLE/60 AMP RATING/45 AMP FUSES.
	2HB1-24	CIRCUIT DESIGNATION. DESIGNATION SHOWN INDICATES PANEL 2HB1 AND CIRCUIT NUMBER 24.
	———	CONDUIT CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE.
	– – – –	CONDUIT EXPOSED.
	PC	PHOTOCELL, EXTERIOR WALL OR SOFFIT MOUNTED.

NOTES (ELECTRICAL LEGEND):

1. THESE ARE STANDARD ELECTRICAL SYMBOLS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS. HOWEVER, WHEREVER AN ELECTRICAL SYMBOL APPEARS ON THE PROJECT DRAWINGS, THE ITEM SHALL BE FURNISHED AND INSTALLED.
2. MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO TOP OF OUTLET OR EQUIPMENT, UNO. WHERE THE MOUNTING HEIGHT INDICATED ON THE DRAWINGS IS DIFFERENT FROM THE LEGEND, THE DRAWING TAKES PRECEDENT. SEE DRAWINGS FOR MOUNTING HEIGHTS NOT INDICATED IN THE LEGEND. ALL MOUNTING HEIGHTS NOTED ON THE FLOOR PLAN SHALL BE FROM FINISHED FLOOR TO TOP OF DEVICE/EQUIPMENT, UNO.
3. SEE ELECTRICAL ABBREVIATIONS FOR ALPHABETIC SUBSCRIPT WITH SYMBOL, UNO.

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

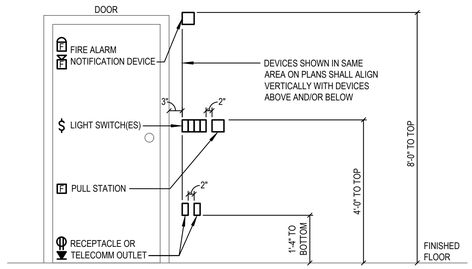
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

GENERAL NOTES ABBREVIATIONS LEGEND

SHEET
E-001

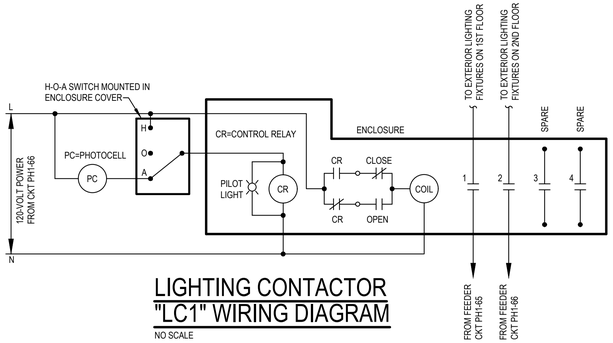


TYPICAL WALL DEVICE LOCATION DETAIL NOTES:

- NOT ALL DEVICES SHOWN ARE USED IN ALL LOCATIONS. REFER TO THE ELECTRICAL FLOOR PLANS FOR DEVICE LOCATIONS.
- WHERE DEVICE HEIGHTS INDICATED ON FLOOR PLANS ARE DIFFERENT FROM WHAT IS SHOWN IN THE DETAIL, THE HEIGHTS INDICATED ON FLOOR PLANS SHALL TAKE PRECEDENCE.
- DEVICES SHOWN SIDE-BY-SIDE ON THE PLANS THAT ARE NOT GANGED TOGETHER SHALL HAVE 2" OF SEPARATION BETWEEN FACEPLATES UNLESS NOTED OTHERWISE OR UNLESS MORE SEPARATION IS REQUIRED TO MAINTAIN FIRE RATING OF WALL.
- FOR WALL DEVICES MOUNTED ABOVE ARCHITECTURAL ITEMS (SUCH AS FIRE ALARM STROBES MOUNTED ABOVE MARKERBOARDS, TACKBOARDS OR SMARTBOARDS), COORDINATE MOUNTING HEIGHTS OF WALL DEVICES SUCH THAT THEY DO NOT INTERFERE WITH ARCHITECTURAL ITEMS.

TYPICAL WALL DEVICE LOCATION DETAIL

NO SCALE



LIGHTING CONTACTOR "LC1" WIRING DIAGRAM

NO SCALE

LIGHTING SENSOR AND SWITCH SCHEDULE

TYPE	MOUNTING	WIRED OR WIRELESS	SENSOR MODEL NUMBER	TIME DELAY SETTING	NOTES
O1	CEILING	WIRELESS	LRF2-OCR2B-P-WH	REFER TO FLOOR PLANS	SET THE AUTO-ON OPTION IN THE SENSOR TO 'ENABLE' TO MAKE THE SENSOR AN OCCUPANCY SENSOR (AUTO-ON/AUTO-OFF OPERATION).
V1	CEILING	WIRELESS	LRF2-OCR2B-P-WH	REFER TO FLOOR PLANS	SET THE AUTO-ON OPTION IN THE SENSOR TO 'DISABLE' TO MAKE THE SENSOR A VACANCY SENSOR.
PS	CEILING	WIRELESS	LRF2-DCRB-WH	-	WIRELESS DAYLIGHT SENSOR, SEE FLOOR PLANS FOR ZONE(S) TO BE CONTROLLED BY THIS SENSOR
$V1	WALL (46" AFF TO CENTER)	WIRED	MS-OPS6M2-DV-XX	-	SET THE AUTO-ON OPTION IN THE SENSOR TO "VACANCY" TO MAKE THE SENSOR A VACANCY SENSOR. COLOR OF DEVICE SHALL BE AS SELECTED BY THE ARCHITECT.
$L1	WALL (46" AFF TO CENTER)	WIRELESS	PJ2-2B-XX-L01	-	THIS LOW-VOLTAGE WIRELESS SWITCH SHALL PROVIDE 'ON/OFF' CONTROL FOR ONE ZONE OF LIGHT FIXTURES. COLOR OF DEVICE SHALL BE AS SELECTED BY THE ARCHITECT.
$L2	WALL (46" AFF TO CENTER)	WIRELESS	PJ2-3BRL-XX-L01	-	THIS LOW-VOLTAGE WIRELESS SWITCH SHALL PROVIDE 'ON/OFF/RAISE/LOWER/PRESET' CONTROL FOR ONE ZONE OF LIGHT FIXTURES. COLOR OF DEVICE SHALL BE AS SELECTED BY THE ARCHITECT.
$L3	WALL (46" AFF TO CENTER)	WIRED	QSWS2-5BRLI-XX-NST	-	THIS LOW-VOLTAGE WALL STATION SHALL PROVIDE ON/OFF/RAISE LOWER CONTROLS FOR THREE LIGHTING ZONES. REFER TO SWITCH DETAIL ON E-102 FOR BUTTON ENGRAVINGS AND FUNCTIONALITY. COLOR OF DEVICE SHALL BE AS SELECTED BY THE ARCHITECT.

LIGHTING SENSOR AND SWITCH SCHEDULE NOTES:

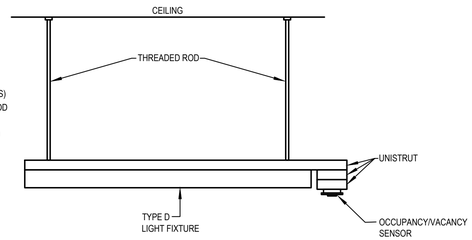
1. DEVICE FINISHES SHALL BE AS OUTLINED IN THE SPECIFICATIONS.
2. EXACT LOCATIONS OF ALL SENSORS SHALL BE AS RECOMMENDED BY MANUFACTURER.
3. ALL OCCUPANCY/VACANCY SENSOR TIME DELAYS SHALL BE 15 MINUTES, UNLESS NOTED OTHERWISE IN THE LIGHT CONTROL - SEQUENCE OF OPERATIONS NOTED ON THE FLOOR PLANS.
4. PROVIDE ALL LOW-VOLTAGE WIRING NEEDED FOR A FULLY OPERATIONAL SYSTEM (CAT 5E, 0-10V VIOLET-AND-GRAY, ANY OTHER MANUFACTURER-RECOMMENDED CABLING, PLENUM-RATED WHERE IN AIR HANDLING SPACES, IN DEDICATED CONDUIT SYSTEM WHERE NOT ABOVE ACCESSIBLE CEILINGS, IN DEDICATED SLEEVES WHERE PENETRATING PARTITIONS).
5. PROVIDE ALL PROGRAMMING NEEDED TO SET UP SENSORS, POWER PACKS AND LOW-VOLTAGE SWITCHES PRIOR TO SUBSTANTIAL COMPLETION. LOW-VOLTAGE CONTROLS (SENSORS, SCENES AND SWITCHES) SHALL BE USER-CONFIGURABLE EITHER VIA A MOBILE APP OR HANDHELD REMOTE CONTROLS - PROVIDE ONE OF EACH DEVICE REQUIRED FOR USER-CONFIGURATION AFTER INITIAL SETUP.
6. ALL MANUAL CONTROL MOUNTING HEIGHTS SHALL BE 48" AFF TO THE TOP. LOAD CONTROLLERS SHALL BE LOCATED ABOVE THE NEAREST ACCESSIBLE CEILING (PLENUM-RATED WHERE IN AIR HANDLING SPACES).
7. PROVIDE LOAD CONTROLLERS IN QUANTITIES NEEDED TO SERVE THE NUMBER OF ZONES INDICATED ON THE DRAWINGS. ROOMS MAY SHARE LOAD CONTROLLERS IF THERE ARE SUFFICIENT OUTPUTS AND IF ROOMS CAN STILL OPERATE INDEPENDENTLY OF ONE ANOTHER. LOAD CONTROLLERS SHALL BE THE DIMMING TYPE WITH 0-10V WIRING IN ROOMS WHERE SWITCHES ARE THE DIMMING TYPE.
8. LOW-VOLTAGE CONTROL WIRING (INCLUDING 0-10V) MUST BE INSTALLED AS CLASS 2 CIRCUITS. IN FULL COMPLIANCE WITH NEC 725.136. LOW-VOLTAGE WIRING CANNOT SHARE THE SAME RACEWAY WITH LINE-VOLTAGE WIRING EXCEPT UNDER THE CONDITIONS LISTED IN NEC 725.136(I).
9. SEE SPECIFICATIONS FOR MORE DETAILS.

LIGHTING FIXTURE SCHEDULE

FXTR TYPE	MOUNTING	LAMP (NO.) TYPE	MANUFACTURER AND CATALOG NO. (BASIS OF DESIGN)	REMARKS
A1E	SURFACE / WALL	LED	LITHONIA #WSTLED-P3-40K-VF-120-E20WC-XX	6000 LUMENS. 4000K COLOR TEMP. 50 INPUT WATTS. 70 CRI. E20WC OPTION (18W BATTERY PACK). ARCHITECT SHALL CONFIRM FINISH. MOUNT WITH BOTTOM OF FIXTURE 10'-0" AFF OF ASSOCIATED FLOOR, UNLESS NOTED OTHERWISE.
A2E	SURFACE / WALL	LED	LITHONIA #WSTLED-P1-40K-VW-120-E20WC-XX	1500 LUMENS. 4000K COLOR TEMP. 12 INPUT WATTS. 70 CRI. E20WC OPTION (18W BATTERY PACK). ARCHITECT SHALL CONFIRM FINISH. MOUNT WITH BOTTOM OF FIXTURE 10'-0" AFF OF ASSOCIATED FLOOR, UNLESS NOTED OTHERWISE.
B	RECESSED / CEILING	LED	LITHONIA #2BLT4-40L-ADP-GZ10-LP840	4000 LUMENS. CURVED, RIBBED DIFFUSER. 0-10V DIMMING TO 10%. 80CRI. 4000K COLOR TEMP. 31 INPUT WATTS.
BE	RECESSED / CEILING	LED	LITHONIA #2BLT4-40L-ADP-GZ10-LP840-EL14L	4000 LUMENS. CURVED, RIBBED DIFFUSER. 0-10V DIMMING TO 10%. 80CRI. 31 INPUT WATTS. " EL14L" OPTION (1400 LUMEN INTEGRAL BATTERY PACK).
C	SURFACE / CEILING	LED	ACUITY - LUMINAIRE LED VISION #VPF12-4FT-MIN10-160W-40K-120-OP-XX	15,500 LUMENS. 0-10V DIMMING TO 10%. 4000K COLOR TEMP. 160 INPUT WATTS. 80 CRI. ARCHITECT SHALL CONFIRM FINISH.
CE	SURFACE / CEILING	LED	ACUITY - LUMINAIRE LED VISION #VPF12-4FT-MIN10-160W-40K-120-OP-XX-EMB125R	15,500 LUMENS. 0-10V DIMMING TO 10%. 4000K COLOR TEMP. 160 INPUT WATTS. 80 CRI. "EMB125R" OPTION (125WATTS REMOTE BATTERY PACK). ARCHITECT SHALL CONFIRM COLOR.
D	PENDANT / CEILING	LED	LITHONIA #ZL1D-L48-SMR-5000LM-FST-MVOLT-40K-80CRI-XX	5000 LUMENS. 0-10V DIMMING TO 10%. 4000K, 80CRI. 41 INPUT WATTS. ARCHITECT SHALL CONFIRM PAINT FINISH. PROVIDE THREADED ROD HANGERS AND ALL NECESSARY ACCESSORIES TO PENDANT MOUNT LIGHT FIXTURES. REFER TO FLOOR PLANS FOR MOUNTING HEIGHTS.
DE	PENDANT / CEILING	LED	LITHONIA #ZL1D-L48-SMR-5000LM-FST-MVOLT-40K-80CRI-E10WLCP-XX	5000 LUMENS. 0-10V DIMMING TO 10%. 4000K, 80CRI. 41 INPUT WATTS. 80 CRI. " E10WLCP" OPTION (10W BATTERY PACK). ARCHITECT SHALL CONFIRM PAINT FINISH. PROVIDE THREADED ROD HANGERS AND ALL NECESSARY ACCESSORIES TO PENDANT MOUNT LIGHT FIXTURES. REFER TO FLOOR PLANS FOR MOUNTING HEIGHTS.
E	SURFACE / CEILING	LED	ACUITY - LUMINAIRE LED THE FORM #FFW1212-MIN10-40W-40K-MVOLT-CLP-XX-WL	3600 LUMENS. 0-10V DIMMING TO 10%. 4000K COLOR TEMP. 40 INPUT WATTS. 80 CRI. PROVIDE "WL" WET LOCATION OPTION. ARCHITECT SHALL CONFIRM FINISH.
F	RECESSED / CEILING	LED	LITHONIA #LDN4-40/20-L04-AR-LSS-MVOLT-GZ10	2000 LUMENS. 0-10V DIMMING TO 10%. 4000K COLOR TEMP. 22 INPUT WATTS. 80 CRI.
FE	RECESSED / CEILING	LED	LITHONIA #LDN4-40/20-L04-AR-LSS-MVOLT-GZ10-EL	2000 LUMENS. 0-10V DIMMING TO 10%. 4000K COLOR TEMP. 22 INPUT WATTS. 80 CRI. "EL" OPTION (10W BATTERY PACK).
X1	SURFACE / UNIVERSAL	LED	LITHONIA #LQM-S-W-3-R-120/277-ELN-SD	SINGLE-FACE EXIT SIGN ORIENTED AS INDICATED ON FLOOR PLAN. PROVIDE CHEVRONS AS SHOWN ON FLOOR PLANS. PROVIDE INTEGRAL NICKEL CADMIUM BATTERY.

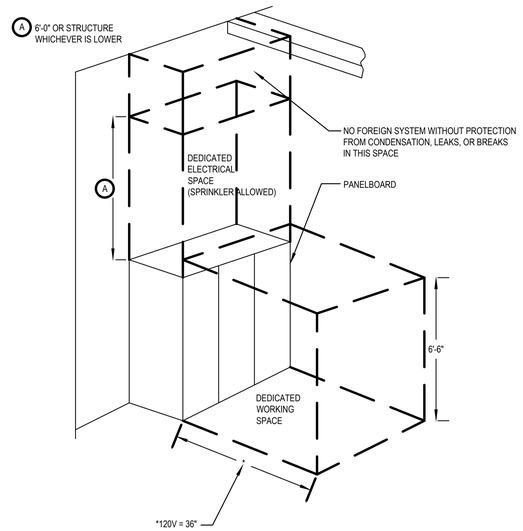
PENDANT MOUNTED OCCUPANCY/VACANCY SENSOR GENERAL NOTES:

1. "TYPE D" AND "TYPE DE" LIGHT FIXTURES WITH OCCUPANCY OR VACANCY SENSOR(S) PENDANT MOUNTED WITH THE FIXTURE SHALL BE INSTALLED ON THE THREADED ROD UNISTRUT STRUCTURE AS DETAILED.
2. THE OCCUPANCY/VACANCY SENSOR SHALL EXTEND BELOW THE LIGHT FIXTURE SO AS NOT TO BLOCK ANY OF THE SENSING COVERAGE AREA.



PENDANT MOUNTED OCCUPANCY/VACANCY SENSOR DETAIL

SCALE: NONE



WORKING SPACE DETAIL - TYPICAL

NO SCALE

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

LIGHTING SCHEDULES AND DETAILS

SHEET
E-002

GENERAL NOTES:

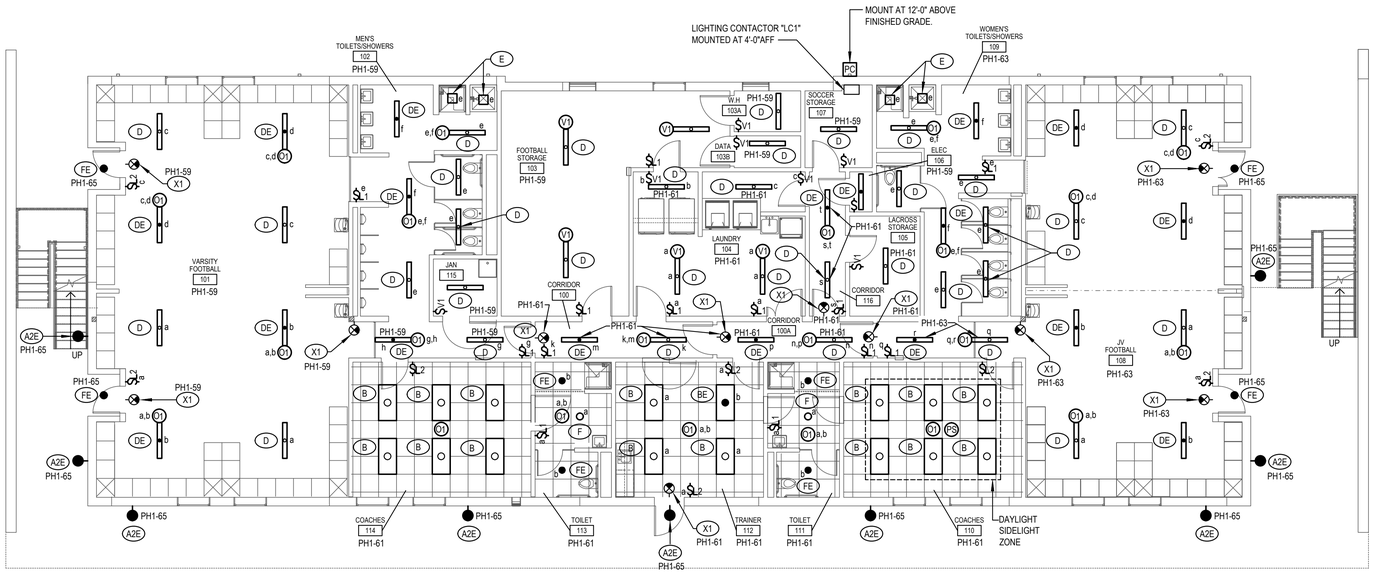
1. EXTERIOR LIGHTING FIXTURE TYPES A1E AND A2E SHALL BE MOUNTED 10 FEET ABOVE FINISHED FIRST FLOOR TO BOTTOM OF FIXTURE.
2. ALL TYPE "D" & "DE" LIGHT FIXTURES SHALL BE PENDANT MOUNTED AT 8 FEET ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE.
3. ALL TYPE "X1" EXIT SIGNS SHOWN LOCATED ABOVE DOORS SHALL BE WALL MOUNTED SO THAT THE EXIT SIGN IS 4" ABOVE THE TOP OF THE DOOR TRIM TO THE BOTTOM OF THE EXIT SIGN. ALL TYPE "X1" EXIT SIGNS SHOWN ON A WALL SHALL BE WALL MOUNTED SO THAT THE EXIT SIGN IS 8 FEET ABOVE THE FINISHED FLOOR TO THE BOTTOM OF THE EXIT SIGN.
4. REFER TO "PENDANT MOUNTED OCCUPANCY/VACANCY SENSOR DETAIL" ON SHEET E-002.
5. REFER TO LIGHTING CONTACTOR WIRING DIAGRAM ON SHEET E-002 FOR ALL EXTERIOR LIGHT FIXTURES.

LIGHTING CONTROLS - SEQUENCE OF OPERATIONS (ROOM BY ROOM):

1. COACHES 114:
   - 1.1. ALL LIGHT FIXTURES IN THIS ROOM ARE ON A SINGLE LIGHTING ZONE.
   - 1.2. SET THE AUTO-ON OPTION IN THE CEILING MOUNTED WIRELESS "O1" SENSOR TO 'ENABLE' TO MAKE IT AN OCCUPANCY SENSOR. SET THE TIME DELAY TO 15 MINUTES.
   - 1.3. THE LIGHT FIXTURES SHALL BE MANUALLY TURN ON/OFF/RAISED/LOWERED BY THE WALL MOUNTED WIRELESS DIMMER "$L2".
   - 1.4. PROVIDE THE REQUIRED WIRELESS DIMMING POWER PACKS AND/OR RELAYS TO BE LOCATED ABOVE THE ACCESSIBLE CEILING.
     - 1.4.1. SET THE DIMMING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 50% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
   - 1.5. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #6; C405.2.1.1 #1 & #2 & #3.
2. TOILET/SHOWER 111 & 113:
   - 2.1. THE LIGHT FIXTURES IN THESE ROOMS ARE ON TWO LIGHTING ZONES IN EACH ROOM. LIGHTING ZONE "b" IS FOR EMERGENCY EGRESS LIGHTING AND LIGHTING ZONE "a" IS FOR NORMAL POWER LIGHTING.
   - 2.2. SET THE AUTO-ON OPTION IN THE CEILING MOUNTED WIRELESS "O1" SENSORS TO 'ENABLE' TO MAKE THEM OCCUPANCY SENSORS (AUTO-ON/AUTO-OFF OPERATION). SET THE TIME DELAY TO 30 MINUTES.
   - 2.3. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE ACCESSIBLE CEILING FOR BOTH LIGHTING ZONES.
     - 2.3.1. SET THE SWITCHING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 100% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
   - 2.4. NORMAL POWER LIGHT ZONE (TYPE "F" LIGHT FIXTURE):
     - 2.4.1. THE NORMAL POWER LIGHT FIXTURE CAN BE MANUALLY TURNED ON/OFF VIA THE LOW-VOLTAGE WIRELESS SWITCH "$L1".
   - 2.5. EMERGENCY EGRESS LIGHT ZONE (TYPE "FE" LIGHT FIXTURES):
     - 2.5.1. THE EGRESS LIGHT FIXTURES **SHALL NOT BE ABLE TO BE MANUALLY TURNED ON/OFF** VIA THE LOW-VOLTAGE WALL SWITCH "$L1" IN THIS ROOM. EGRESS LIGHT FIXTURES SHALL ONLY BE TURNED ON/OFF VIA OCCUPANCY SENSOR.
     - 2.5.2. THE EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACKS.
   - 2.6. CODE REQUIREMENTS:
     - 2.6.1. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #7; C405.2.1.1 #1, #2 (EXCEPTION), & #3.
     - 2.6.2. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.3, 1008.3.4, 1008.3.5, 2702.2.11.
3. VARSITY FOOTBALL 101 & JV FOOTBALL 119:
   - 3.1. THE LIGHT FIXTURES IN THESE ROOMS ARE ON FOUR LIGHTING ZONES IN EACH ROOM. LIGHTING ZONES "b" & "d" ARE FOR EMERGENCY EGRESS LIGHTING AND LIGHTING ZONES "a" & "c" ARE FOR NORMAL POWER LIGHTING.
   - 3.2. SET THE AUTO-ON OPTION IN THE WIRELESS "O1" SENSORS TO 'ENABLE' TO MAKE THEM OCCUPANCY SENSORS. SET THE TIME DELAY TO 15 MINUTES.
   - 3.3. NORMAL POWER LIGHT ZONE (TYPE "D" LIGHT FIXTURES):
     - 3.3.1. THE NORMAL POWER LIGHT FIXTURES CAN BE MANUALLY TURNED ON/OFF/RAISED/LOWERED VIA THE LOW-VOLTAGE WIRELESS DIMMERS "$L2".
     - 3.3.2. PROVIDE THE REQUIRED DIMMING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA FOR NORMAL POWER LIGHTING ZONES.
       - 3.3.2.1. SET THE DIMMING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 50% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
   - 3.4. EMERGENCY EGRESS LIGHT ZONE (TYPE "DE" LIGHT FIXTURES):
     - 3.4.1. THE EGRESS LIGHT FIXTURES **SHALL NOT BE ABLE TO BE MANUALLY TURNED ON/OFF/RAISED/LOWERED** VIA THE LOW-VOLTAGE WALL DIMMERS "$L2" IN THESE ROOMS. EGRESS LIGHT FIXTURES SHALL ONLY BE TURNED ON/OFF VIA THE OCCUPANCY SENSORS.
     - 3.4.2. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA FOR EMERGENCY EGRESS LIGHT ZONES.
       - 3.4.2.1. SET THE SWITCHING POWER PACKS AND/OR RELAYS SO THE EGRESS LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 100% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
     - 3.4.3. THE EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACKS.
   - 3.5. CODE REQUIREMENTS:
     - 3.5.1. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #10; C405.2.1.1 #1, #2 (EXCEPTION), & #3.
     - 3.5.2. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.3, 1008.3.4, 1008.3.5, 2702.2.11.

LIGHTING CONTROLS - SEQUENCE OF OPERATIONS (ROOM BY ROOM):

4. MEN'S TOILET/SHOWER 102 & WOMEN'S TOILET/SHOWER 109:
   - 4.1. THE LIGHT FIXTURES IN THESE ROOMS ARE ON TWO LIGHTING ZONES IN EACH ROOM. LIGHTING ZONE "f" IS FOR EMERGENCY EGRESS LIGHTING AND LIGHTING ZONE "e" IS FOR NORMAL POWER LIGHTING.
   - 4.2. SET THE AUTO-ON OPTION IN THE WIRELESS "O1" SENSORS TO 'ENABLE' TO MAKE THEM OCCUPANCY SENSORS (AUTO-ON/AUTO-OFF OPERATION). SET THE TIME DELAY TO 30 MINUTES.
   - 4.3. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA FOR BOTH LIGHTING ZONES.
     - 4.3.1. SET THE SWITCHING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 100% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
   - 4.4. NORMAL POWER LIGHT ZONE (TYPE "F" LIGHT FIXTURE):
     - 4.4.1. THE NORMAL POWER LIGHT FIXTURES CAN BE MANUALLY TURNED ON/OFF VIA THE LOW-VOLTAGE WIRELESS SWITCH "$L1".
   - 4.5. EMERGENCY EGRESS LIGHT ZONE (TYPE "FE" LIGHT FIXTURES):
     - 4.5.1. THE EGRESS LIGHT FIXTURES **SHALL NOT BE ABLE TO BE MANUALLY TURNED ON/OFF** VIA THE LOW-VOLTAGE WALL SWITCH "$L1" IN THIS ROOM. EGRESS LIGHT FIXTURES SHALL ONLY BE TURNED ON/OFF VIA OCCUPANCY SENSOR.
     - 4.5.2. THE EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACKS.
   - 4.6. CODE REQUIREMENTS:
     - 4.6.1. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #7; C405.2.1.1 #1, #2 (EXCEPTION), & #3.
     - 4.6.2. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.3, 1008.3.4, 1008.3.5, 2702.2.11.
5. FOOTBALL STORAGE 103:
   - 5.1. ALL LIGHT FIXTURES IN THIS ROOM ARE ON A SINGLE LIGHTING ZONE.
   - 5.2. SET THE AUTO-ON OPTION IN THE CEILING MOUNTED WIRELESS "V1" SENSOR TO 'DISABLED' TO MAKE IT A VACANCY SENSOR. SET THE TIME DELAY TO 15 MINUTES.
   - 5.3. THE LIGHT FIXTURES SHALL BE MANUALLY TURN ON/OFF BY THE WALL MOUNTED WIRELESS SWITCH "$L1".
   - 5.4. PROVIDE THE REQUIRED WIRELESS SWITCHING POWER PACKS AND/OR RELAYS TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA.
     - 5.4.1. SET THE SWITCHING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES TURN ON TO 100% LIGHT LEVEL WHEN THE WIRELESS SWITCH "$L1" IS MANUALLY TURNED ON.
   - 5.5. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #8; C405.2.1.1 #1 & #2 & #3.
6. LAUNDRY 104:
   - 6.1. THE LIGHT FIXTURES IN THIS ROOM ARE ON THREE LIGHTING ZONES "a", "b", & "c".
   - 6.2. FOR LIGHTING ZONE "a" SET THE AUTO-ON OPTION IN THE WIRELESS "V1" SENSORS TO 'DISABLED' TO MAKE THEM VACANCY SENSORS. SET THE TIME DELAY TO 15 MINUTES.
   - 6.3. FOR LIGHTING ZONES "b" & "c" SET THE AUTO-ON OPTION IN THE "$V1" SENSOR/SWITCHES TO 'VACANCY' TO MAKE THEM VACANCY SENSORS. SET THE TIME DELAY TO 15 MINUTES.
   - 6.4. LIGHTING ZONE "a" LIGHT FIXTURES SHALL BE MANUALLY TURNED ON/OFF VIA THE LOW-VOLTAGE WIRELESS SWITCHES "$L1".
     - 6.4.1. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA.
   - 6.5. LIGHTING ZONES "b" & "c" LIGHT FIXTURES SHALL BE MANUALLY TURNED ON/OFF VIA THE LINE-VOLTAGE SENSOR/SWITCHES "$V1".
   - 6.6. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #11; C405.2.1.1 #1 & #2 & #3.
7. SOCCER STORAGE 107; W.H. 103A; DATA 103B; JAN 115; LACROSS STORAGE 105:
   - 7.1. THE LIGHT FIXTURES IN THESE ROOMS ARE ON A SINGLE LIGHTING ZONE IN EACH ROOM.
   - 7.2. SET THE AUTO-ON OPTION IN THE "$V1" SENSOR/SWITCHES TO 'VACANCY' TO MAKE THEM VACANCY SENSORS. SET THE TIME DELAY TO 15 MINUTES.
   - 7.3. LIGHT FIXTURES SHALL BE MANUALLY TURNED ON/OFF VIA THE LINE-VOLTAGE SENSOR/SWITCHES "$V1".
   - 7.4. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #8 & #9; C405.2.1.1 #1 & #2 & #3.
8. CORRIDOR 100; CORRIDOR 100A; CORRIDOR 116; CORRIDOR OFF OF VARSITY FOOTBALL 101; CORRIDOR OFF OF JV FOOTBALL 119:
   - 8.1. THE LIGHT FIXTURES IN THESE ROOMS ARE ON TWO LIGHTING ZONES IN EACH ROOM. LIGHTING ZONES "h,m,p,r,t" ARE FOR EMERGENCY EGRESS LIGHTING AND LIGHTING ZONE "g,k,n,q,s" ARE FOR NORMAL POWER LIGHTING.
   - 8.2. SET THE AUTO-ON OPTION IN THE WIRELESS "O1" SENSORS TO 'ENABLE' TO MAKE THEM OCCUPANCY SENSORS (AUTO-ON/AUTO-OFF OPERATION). SET THE TIME DELAY TO 15 MINUTES.
   - 8.3. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA FOR ALL LIGHTING ZONES.
     - 8.3.1. SET THE SWITCHING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 100% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
   - 8.4. NORMAL POWER LIGHT ZONE (TYPE "D" LIGHT FIXTURE):
     - 8.4.1. THE NORMAL POWER LIGHT FIXTURES CAN BE MANUALLY TURNED ON/OFF VIA THE LOW-VOLTAGE WIRELESS SWITCHES "$L1".
   - 8.5. EMERGENCY EGRESS LIGHT ZONE (TYPE "DE" LIGHT FIXTURES):
     - 8.5.1. THE EGRESS LIGHT FIXTURES **SHALL NOT BE ABLE TO BE MANUALLY TURNED ON/OFF** VIA THE LOW-VOLTAGE WALL SWITCH "$L1" IN THIS ROOM. EGRESS LIGHT FIXTURES SHALL ONLY BE TURNED ON/OFF VIA OCCUPANCY SENSOR.
     - 8.5.2. THE EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACKS.
   - 8.6. CODE REQUIREMENTS:
     - 8.6.1. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1.1 #1, #2 (EXCEPTION), & #3.
     - 8.6.2. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.2, 1008.3.4, 1008.3.5, 2702.2.11.
9. ELEC 106:
   - 9.1. THE LIGHT FIXTURE IN THIS ROOM IS AN EMERGENCY EGRESS LIGHT FIXTURE.
   - 9.2. LIGHT FIXTURE SHALL BE MANUALLY TURNED ON/OFF VIA THE TOGGLE TYPE LIGHT SWITCH.
   - 9.3. THE EGRESS LIGHT FIXTURE SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACK.
   - 9.4. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.3, 1008.3.4, 1008.3.5, 2702.2.11.
10. TRAINER 112:
    - 10.1. THE LIGHT FIXTURES IN THIS ROOM ARE ON TWO LIGHTING ZONES. LIGHTING ZONE "b" IS FOR EMERGENCY EGRESS LIGHTING AND LIGHTING ZONE "a" IS FOR NORMAL POWER LIGHTING.
    - 10.2. SET THE AUTO-ON OPTION IN THE CEILING MOUNTED WIRELESS "O1" SENSOR TO 'ENABLE' TO MAKE IT AN OCCUPANCY SENSOR. SET THE TIME DELAY TO 15 MINUTES.
    - 10.3. NORMAL POWER LIGHT ZONE (TYPE "B" LIGHT FIXTURES):
      - 10.3.1. THE NORMAL POWER LIGHT FIXTURES CAN BE MANUALLY TURNED ON/OFF/RAISED/LOWERED VIA THE LOW-VOLTAGE WIRELESS DIMMER "$L2".
      - 10.3.2. PROVIDE THE REQUIRED DIMMING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE ACCESSIBLE CEILING SPACE FOR NORMAL POWER LIGHTING ZONE.
        - 10.3.2.1. SET THE DIMMING POWER PACK(S) AND/OR RELAY(S) SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 50% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
    - 10.4. EMERGENCY EGRESS LIGHT ZONE (TYPE "BE" LIGHT FIXTURES):
      - 10.4.1. THE EGRESS LIGHT FIXTURE **SHALL NOT BE ABLE TO BE MANUALLY TURNED ON/OFF/RAISED/LOWERED** VIA THE LOW-VOLTAGE WALL DIMMER "$L2" IN THIS ROOM. THE EGRESS LIGHT FIXTURE SHALL ONLY BE TURNED ON/OFF VIA THE OCCUPANCY SENSOR.
      - 10.4.2. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE ACCESSIBLE CEILING SPACE FOR EMERGENCY EGRESS LIGHT ZONE.
        - 10.4.2.1. SET THE SWITCHING POWER PACK(S) AND/OR RELAY(S) SO THE EGRESS LIGHT FIXTURE SHALL AUTOMATICALLY TURN ON TO 100% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
      - 10.4.3. THE EGRESS LIGHT FIXTURE SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACK.
    - 10.5. CODE REQUIREMENTS:
      - 10.5.1. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #1; C405.2.1.1 #1, #2, & #3.
      - 10.5.2. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.3, 1008.3.4, 1008.3.5, 2702.2.11.
11. COACHES 110:
    - 11.1. ALL LIGHT FIXTURES IN THIS ROOM ARE ON A SINGLE LIGHTING ZONE.
    - 11.2. SET THE AUTO-ON OPTION IN THE CEILING MOUNTED WIRELESS "O1" SENSOR TO 'ENABLE' TO MAKE IT AN OCCUPANCY SENSOR. SET THE TIME DELAY TO 15 MINUTES.
    - 11.3. THE LIGHT FIXTURES SHALL BE MANUALLY TURN ON/OFF/RAISED/LOWERED BY THE WALL MOUNTED WIRELESS DIMMER "$L2".
    - 11.4. ALL LIGHT FIXTURES IN THIS ROOM ARE IN A SIDELIGHT DAYLIGHT ZONE: AFTER THE LIGHTS TURN ON THE LIGHT FIXTURES SHALL AUTOMATICALLY RAISE OR DIM VIA THE CEILING MOUNTED PHOTO SENSOR "PS" TO MAINTAIN 50 FOOT CANDLES AT 2'-6" ABOVE FINISHED FLOOR.
    - 11.5. PROVIDE THE REQUIRED WIRELESS DIMMING POWER PACKS AND/OR RELAYS TO BE LOCATED ABOVE THE ACCESSIBLE CEILING.
      - 11.5.1. SET THE DIMMING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 50% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
    - 11.6. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #6; C405.2.1.1 #1 & #2 & #3; C405.2.3 #1; C405.2.3.1; C405.2.3.2.
12. EXTERIOR LIGHTING:
    - 12.1. ALL THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES ARE ON A SINGLE LIGHTING ZONE.
    - 12.2. ALL THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES ARE CONTROLLED THROUGH A PHOTOCELL VIA THE LIGHT CONTACTOR "LC1" IN THE SOCCER STORAGE 107. REFER TO SHEET E-002 FOR WIRING DIAGRAM.
      - 12.2.1. THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON AT DUSK AND TURN OFF AT DAWN.
    - 12.3. THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACK.
    - 12.4. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.5 #1.
    - 12.5. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1 (EXCEPTION 1), 1008.3.2, 1008.3.4, 1008.3.5, 2702.2.11.



FIRST LEVEL FLOOR PLAN - LIGHTING

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

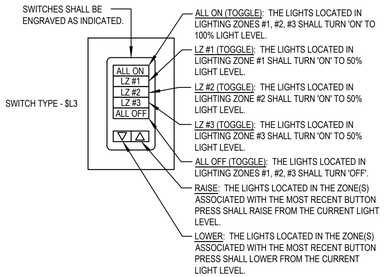
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

FIRST LEVEL FLOOR PLAN - LIGHTING

SHEET
E-101



WRESTLING/SOFTBALL/BASEBALL 200 - SWITCH DETAIL

SCALE: NONE

PLAN NOTES:

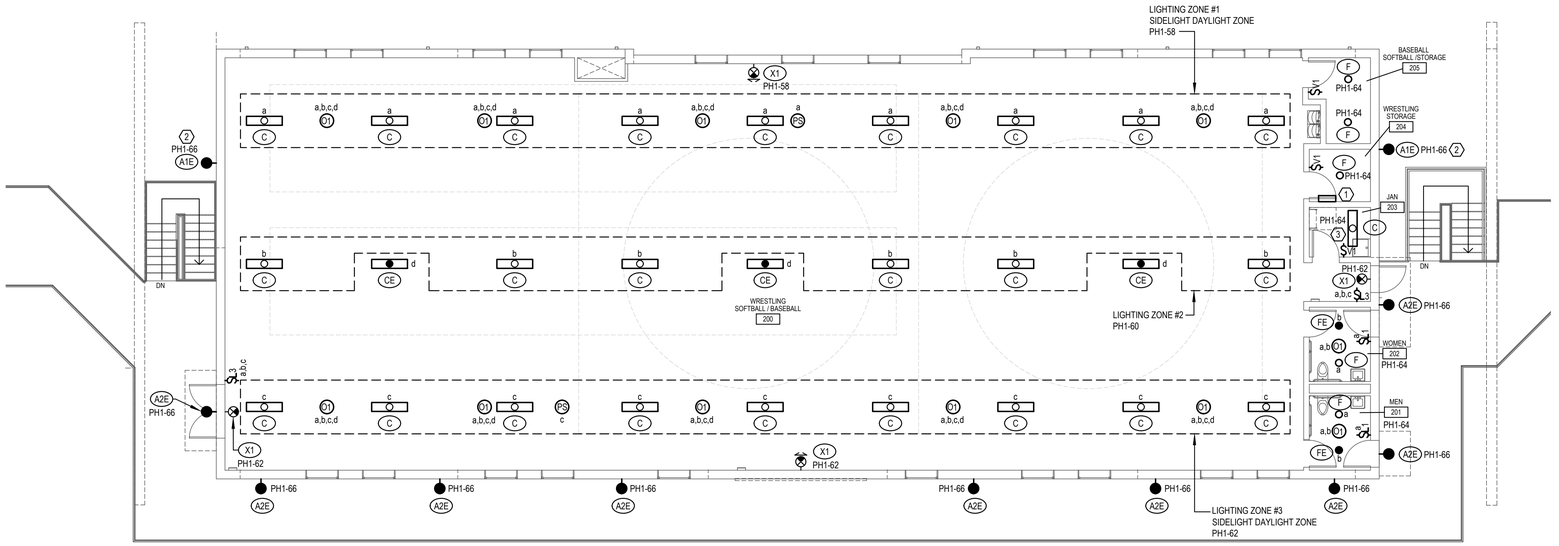
1. A SINGLE REMOTE INVERTER SHALL BE INSTALLED IN WRESTLING STORAGE 204 TO FEED EACH OF THE THREE EMERGENCY EGRESS "TYPE CE" LIGHT FIXTURES IN WRESTLING/SOFTBALL/BASEBALL 200. REFER TO THE MANUFACTURES INSTRUCTIONS ON MAXIMUM WIRE LENGTHS. MOUNT THE INVERTER 48" AFF TO TOP.
2. THIS LIGHT FIXTURE SHALL BE MOUNTED 10FT ABOVE 2ND STORY FINISHED FLOOR TO BOTTOM OF FIXTURE.
3. MOUNT THIS TYPE C LIGHT FIXTURE AT 13FT AFF TO THE OPEN CEILING IN THE JANITORS CLOSET 203. MAKE SURE FIXTURE IS OUT OF THE WAY OF THE ROOF ACCESS HATCH.

GENERAL NOTES:

1. LIGHTING IN WRESTLING/SOFTBALL/BASEBALL 200 SHALL BE SURFACE MOUNTED TO PLYWOOD CEILING.
2. PROVIDE WIRE GUARDS FOR OCCUPANCY SENSORS "O1" AND PHOTOSENSORS "PS" IN WRESTLING/SOFTBALL/BASEBALL 200.
3. EXTERIOR LIGHTING FIXTURE TYPES A1E AND A2E SHALL BE MOUNTED 10 FEET ABOVE FINISHED SECOND FLOOR TO BOTTOM OF FIXTURE.
4. REFER TO LIGHTING CONTACTOR WIRING DIAGRAM ON SHEET E-002 FOR ALL EXTERIOR LIGHT FIXTURES.

LIGHTING CONTROLS - SEQUENCE OF OPERATIONS (ROOM BY ROOM):

1. WRESTLING/SOFTBALL/BASEBALL 200:
   - 1.1. THE LIGHT FIXTURES IN THIS ROOM ARE ON FOUR LIGHTING ZONES. LIGHTING ZONE "d" IS FOR EMERGENCY EGRESS LIGHTING AND LIGHTING ZONES "a,b,c" ARE FOR NORMAL POWER LIGHTING.
   - 1.2. SET THE AUTO-ON OPTION IN THE CEILING MOUNTED WIRELESS "O1" SENSORS TO 'ENABLE' TO MAKE THEM OCCUPANCY SENSORS. SET THE TIME DELAY TO 30 MINUTES.
   - 1.3. NORMAL POWER LIGHT ZONE (TYPE "C" LIGHT FIXTURES):
     - 1.3.1. THE NORMAL POWER LIGHT FIXTURES CAN BE MANUALLY TURNED ON/OFF/RAISED/LOWERED VIA THE LOW-VOLTAGE WALL STATION "$L3".
     - 1.3.2. PROVIDE THE REQUIRED DIMMING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA FOR NORMAL POWER LIGHTING ZONES.
       - 1.3.2.1. SET THE DIMMING POWER PACK(S) AND/OR RELAY(S) SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 50% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
     - 1.3.3. LIGHTING ZONES "a" & "c" IN THIS ROOM ARE SIDELIGHT DAYLIGHT ZONES: AFTER THE LIGHTS TURN ON THE LIGHT FIXTURES SHALL AUTOMATICALLY RAISE OR DIM VIA THE CEILING MOUNTED PHOTO SENSOR "PS" TO MAINTAIN 50 FOOT CANDLES AT FINISHED FLOOR.
   - 1.4. EMERGENCY EGRESS LIGHT ZONE (TYPE "CE" LIGHT FIXTURES):
     - 1.4.1. THE EGRESS LIGHT FIXTURE **SHALL NOT BE ABLE TO BE MANUALLY TURNED ON/OFF/RAISED/LOWERED** VIA THE LOW-VOLTAGE WALL STATION "$L3" IN THIS ROOM. THE EGRESS LIGHT FIXTURE SHALL ONLY BE TURNED ON/OFF VIA THE OCCUPANCY SENSORS.
     - 1.4.2. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE IN THE EXPOSED CEILING AREA FOR EMERGENCY EGRESS LIGHT ZONE.
       - 1.4.2.1. SET THE SWITCHING POWER PACK(S) AND/OR RELAY(S) SO THE EGRESS LIGHT FIXTURE SHALL AUTOMATICALLY TURN ON TO 100% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
     - 1.4.3. THE EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACKS.
   - 1.5. CODE REQUIREMENTS:
     - 1.5.1. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #2; C405.2.1.1 #1, #2, & #3; C405.2.3 #1; C405.2.3.1; C405.2.3.2.
     - 1.5.2. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.3, 1008.3.4, 1008.3.5, 2702.2.11.
2. MEN BATHROOM 201 & WOMEN BATHROOM 202:
   - 2.1. THE LIGHT FIXTURES IN THESE ROOMS ARE ON TWO LIGHTING ZONES IN EACH ROOM. LIGHTING ZONE "b" IS FOR EMERGENCY EGRESS LIGHTING AND LIGHTING ZONE "a" IS FOR NORMAL POWER LIGHTING.
   - 2.2. SET THE AUTO-ON OPTION IN THE CEILING MOUNTED WIRELESS "O1" SENSORS TO 'ENABLE' TO MAKE THEM OCCUPANCY SENSORS (AUTO-ON/AUTO-OFF OPERATION). SET THE TIME DELAY TO 30 MINUTES.
   - 2.3. PROVIDE THE REQUIRED SWITCHING POWER PACK(S) AND/OR RELAY(S) TO BE LOCATED ABOVE ACCESSIBLE CEILING FOR BOTH LIGHTING ZONES.
     - 2.3.1. SET THE SWITCHING POWER PACKS AND/OR RELAYS SO THE LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON TO 100% LIGHT LEVEL WHEN OCCUPANCY IS INITIALLY DETECTED.
   - 2.4. NORMAL POWER LIGHT ZONE (TYPE "F" LIGHT FIXTURE):
     - 2.4.1. THE NORMAL POWER LIGHT FIXTURE CAN BE MANUALLY TURNED ON/OFF VIA THE LOW-VOLTAGE WIRELESS SWITCH "$L1".
   - 2.5. EMERGENCY EGRESS LIGHT ZONE (TYPE "FE" LIGHT FIXTURES):
     - 2.5.1. THE EGRESS LIGHT FIXTURES **SHALL NOT BE ABLE TO BE MANUALLY TURNED ON/OFF** VIA THE LOW-VOLTAGE WALL SWITCH "$L1" IN THIS ROOM. EGRESS LIGHT FIXTURES SHALL ONLY BE TURNED ON/OFF VIA OCCUPANCY SENSOR.
     - 2.5.2. THE EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACKS.
   - 2.6. CODE REQUIREMENTS:
     - 2.6.1. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #7; C405.2.1.1 #1, #2 (EXCEPTION), & #3.
     - 2.6.2. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1, 1008.3.3, 1008.3.4, 1008.3.5, 2702.2.11.
3. JANITOR CLOSET 203, WRESTLING STORAGE 204 & BASEBALL/SOFTBALL STORAGE 205:
   - 3.1. THE LIGHT FIXTURES IN THESE ROOMS ARE ON A SINGLE LIGHTING ZONE IN EACH ROOM.
   - 3.2. SET THE AUTO-ON OPTION IN THE "$V1" SENSOR/SWITCHES TO 'VACANCY' TO MAKE THEM VACANCY SENSORS. SET THE TIME DELAY TO 15 MINUTES.
   - 3.3. LIGHT FIXTURES SHALL BE MANUALLY TURNED ON/OFF VIA THE LINE-VOLTAGE SENSOR/SWITCHES "$V1".
   - 3.4. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.1 #8 & #9; C405.2.1.1 #1 & #2 & #3
4. EXTERIOR LIGHTING:
   - 4.1. ALL THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES ARE ON A SINGLE LIGHTING ZONE.
   - 4.2. ALL THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES ARE CONTROLLED THROUGH A PHOTOCELL VIA THE LIGHT CONTACTOR "LC1" IN THE SOCCER STORAGE 107. REFER TO SHEET E-002 FOR WIRING DIAGRAM.
     - 4.2.1. THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES SHALL AUTOMATICALLY TURN ON AT DUSK AND TURN OFF AT DAWN.
   - 4.3. THE EXTERIOR EMERGENCY EGRESS LIGHT FIXTURES SHALL BE PROVIDED WITH INTEGRAL CODE REQUIRED 90 MINUTE BATTERY PACK.
   - 4.4. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA ENERGY CONSERVATION CODE (VECC) C405.2.5 #1.
   - 4.5. THIS MEETS REQUIREMENTS OF 2015 VIRGINIA CONSTRUCTION CODE (VCC) 1008.2, 1008.2.1 (EXCEPTION 1), 1008.3.2, 1008.3.4, 1008.3.5, 2702.2.11.



SECOND LEVEL FLOOR PLAN - LIGHTING

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

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410
Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

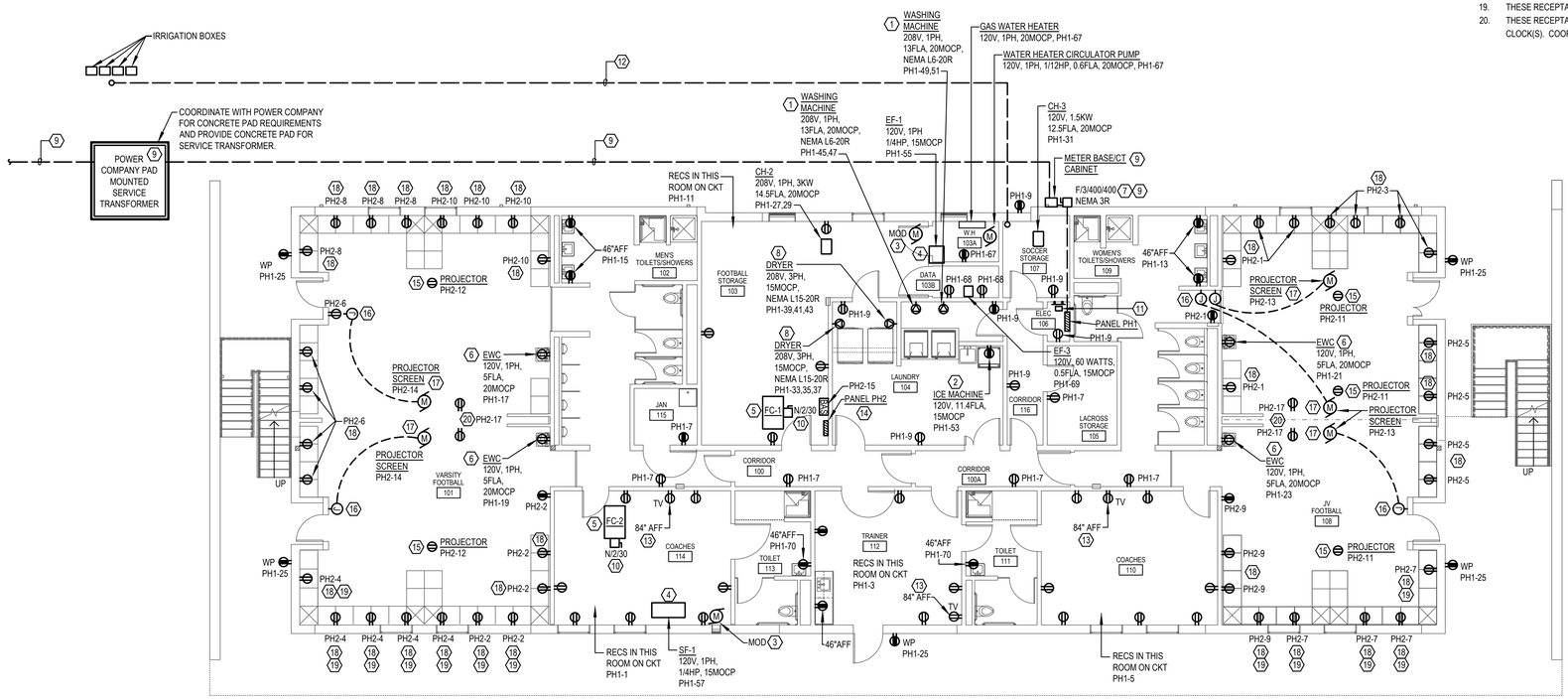
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

SECOND LEVEL FLOOR PLAN - LIGHTING

SHEET
E-102



PLAN NOTES:

1. WASHING MACHINE RECEPTACLES SHALL BE INSTALLED IN THE WALL DIRECTLY BEHIND THE WASHING MACHINES. CONTRACTOR TO VERIFY WITH APPROVED WASHING MACHINE SUBMITTAL TYPE OF CORD AND PLUG REQUIRED. FEMALE PLUG SHALL MATCH TYPE REQUIRED IN APPROVED SUBMITTAL. FIELD VERIFY LENGTH OF CORD AND PLUG NEEDED. MOUNT THESE RECEPTACLES 48" AFF.
2. CONTRACTOR TO VERIFY WITH APPROVED ICE MACHINE SUBMITTAL TYPE OF CORD AND PLUG REQUIRED. FEMALE PLUG SHALL MATCH TYPE REQUIRED IN APPROVED SUBMITTAL.
3. MOD POWERED FROM EXHAUST FAN CIRCUIT. PROVIDE CONNECTIONS AS REQUIRED PER MANUFACTURER.
4. EXHAUST FAN EF-1 AND SUPPLY FAN SF-1 ARE PROVIDED WITH AN INTEGRAL DISCONNECT.
5. INDOOR UNIT POWERED FROM OUTDOOR UNIT(S) ON ROOF. ROUTE CIRCUIT TO INDOOR UNIT THROUGH DISCONNECT SWITCH. PROVIDE CONDUIT AND WIRE AS RECOMMENDED BY MANUFACTURER. CONDENSATE PUMP BUILT IN TO INDOOR UNIT AND IS POWERED FROM INDOOR UNIT CIRCUIT.
6. COORDINATE WITH THE ELECTRIC WATER COOLER (EWC) INSTALLER AND THE APPROVED SUBMITTAL FOR FINAL ROUGH-IN LOCATION AND REQUIREMENTS. PROVIDE A RECEPTACLE WHERE THE EWC IS PROVIDED WITH A CORD-&-PLUG. PROVIDE A DIRECT CONNECTION WHERE THE EWC IS NOT PROVIDED WITH A CORD-&-PLUG. CIRCUIT BREAKER IN PANEL IS SPECIFIED TO BE GROUND FAULT, SO A GROUND FAULT RECEPTACLE AT THE EWC WOULD NOT BE REQUIRED.
7. CONTRACTOR TO COORDINATE EXACT LOCATION OF SERVICE ENTRANCE EQUIPMENT ON OUTSIDE OF BUILDING WITH POWER COMPANY. INSTALL TWO 2" CONDUITS UNDER SLAB FROM ELECTRICAL PANEL "PH1" TO SERVICE ENTRANCE RATED DISCONNECT.
8. CONTRACTOR TO VERIFY WITH APPROVED DRYER SUBMITTAL TYPE OF CORD AND PLUG REQUIRED. FEMALE PLUG SHALL MATCH TYPE REQUIRED IN APPROVED SUBMITTAL.
9. REFER TO ONE-LINE DIAGRAM ON SHEET E-401 FOR DETAILS.
10. COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION TO INSTALL DISCONNECT SWITCH ON SIDE OF FC UNIT SO THAT IT DOES NOT INTERFERE WITH SERVICE CLEARANCE REQUIREMENTS.
11. INSTALL EXTERNAL SPD ON WALL NEXT TO PANEL PH1.
12. PROVIDE A 1" CONDUIT WITH PULL STRING FOR IRRIGATION CONTROLS/POWER. STUB CONDUIT UP 12" ABOVE FINAL FINISHED GRADE AT THE IRRIGATION BOXES (COORDINATE EXACT LOCATION WITH IRRIGATION INSTALLER) AND STUB UP THE OTHER END 12" AFF IN THE SOCCER STORAGE ROOM 107. PROVIDE CAPS ON BOTH ENDS UNTIL WIRING IS INSTALLED.
13. TV RECEPTACLE AN DATA OUTLET SHALL COORDINATE IN THE FIELD WITH THE TV INSTALLER TO BE MOUNTED BEHIND THE TV AND TO NOT CONFLICT WITH THE TV WALL BRACKET.
14. ELECTRICAL CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR SO THAT BOTTOM OF OVERHEAD DUCTWORK IS NO LESS THAN 12'-6" ABOVE FINISHED FLOOR TO BOTTOM OF DUCT, SO THAT NEC 110.23 (E)(1) DEDICATED EQUIPMENT SPACE ABOVE TOP OF PANEL IS COMPLIANT WITH CODE.
15. COORDINATE LOCATION OF RECEPTACLE FOR PROJECTOR WITH PROJECTOR INSTALLER.
16. PROVIDE JUNCTION BOX FOR MOTORIZED PROJECTOR SCREEN CONTROL PANEL. PROVIDE CONDUIT SIZED PER THE PROJECTOR SCREEN MANUFACTURERS RECOMMENDATIONS FOR CONTROL WIRING FROM JUNCTION BOX TO MOTORIZED PROJECTOR SCREEN.
17. COORDINATE ELECTRICAL CONNECTION LOCATION TO MOTORIZED PROJECTOR SCREEN WITH PROJECTOR SCREEN INSTALLER.
18. RECEPTACLES SHOWN ABOVE LOCKERS SHALL BE MOUNTED 82" AFF.
19. THESE RECEPTACLES ABOVE THE LOCKERS SHALL BE SURFACE MOUNTED.
20. THESE RECEPTACLES SHALL BE MOUNTED IN THE PARTITION BULKHEAD FOR USE WITH INDOOR GAME CLOCK(S). COORDINATE EXACT LOCATION WITH GAME CLOCK INSTALLER.

FIRST LEVEL FLOOR PLAN - POWER

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

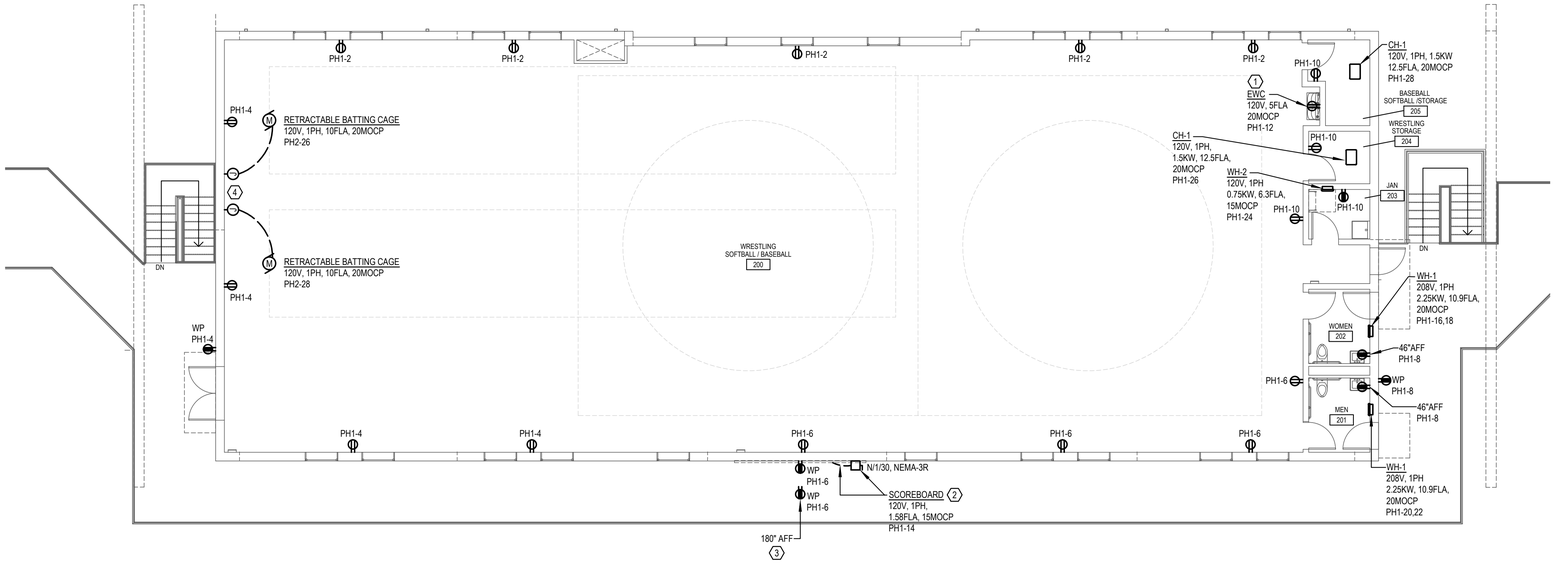
DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

FIRST LEVEL FLOOR PLAN - POWER

SHEET
E-201

PLAN NOTES: ⬡

1. COORDINATE WITH THE ELECTRIC WATER COOLER (EWC) INSTALLER AND THE APPROVED SUBMITTAL FOR FINAL ROUGH-IN LOCATION AND REQUIREMENTS. PROVIDE A RECEPTACLE WHERE THE EWC IS PROVIDED WITH A CORD-&-PLUG. PROVIDE A DIRECT CONNECTION WHERE THE EWC IS NOT PROVIDED WITH A CORD-&-PLUG. CIRCUIT BREAKER IN PANEL IS SPECIFIED TO BE GROUND FAULT, SO A GROUND FAULT RECEPTACLE AT THE EWC WOULD NOT BE REQUIRED.
2. COORDINATE WITH THE SCORE BOARD INSTALLER FOR LOCATION OF POWER CONNECTION. PROVIDE DISCONNECT SWITCH UNDER SCORE BOARD, ROUTE WIRING IN CONDUIT FROM DISCONNECT SWITCH TO SCORE BOARD FOR DIRECT ELECTRICAL CONNECTION.
3. PROVIDE RECEPTACLE CENTERED ABOVE SCOREBOARD FOR CONNECTION TO CAMERA. VERIFY HEIGHT WITH SCORE BOARD INSTALLER.
4. PROVIDE JUNCTION BOX AND 3/4" CONDUIT EXTENDED TO MOTOR FOR RETRACTABLE BATTING CAGES. COORDINATE EXACT LOCATION OF MOTOR WITH BATTING CAGE INSTALLER. THIS SYSTEM SHALL UTILIZE A 3-POSITION KEY SWITCH FOR MOTOR CONTROLS PER THE MANUFACTURER. PROVIDE WIRING BETWEEN 3-POSITION KEY SWITCH AND MOTORS PER MANUFACTURERS WIRING DIAGRAM, SIZE OF WIRING AS REQUIRED BY MANUFACTURER.



SECOND LEVEL FLOOR PLAN - POWER

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA

LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

SECOND LEVEL FLOOR PLAN - POWER

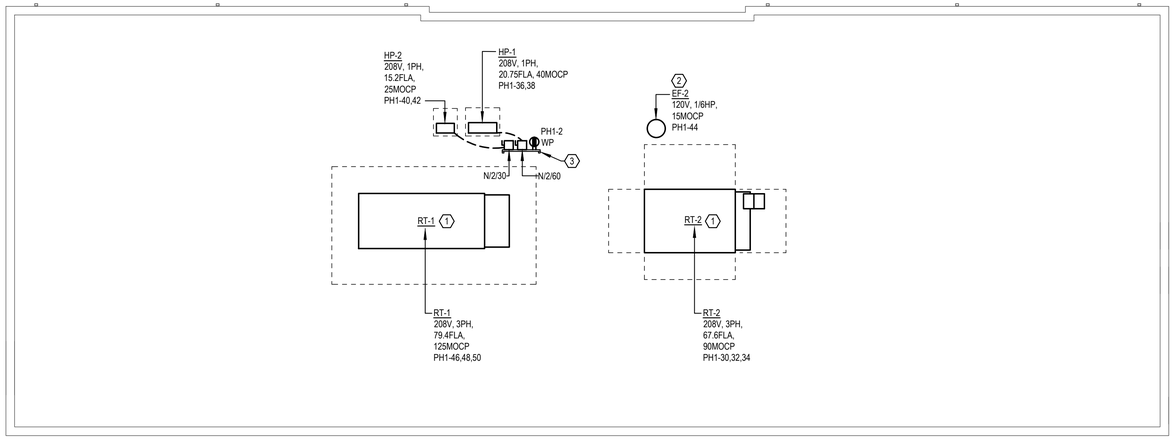
SHEET
E-202

GENERAL NOTES:

1. COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE WEATHER TIGHT ROOF MEMBRANE PENETRATION FOR ALL FEEDERS TO ROOF TOP EQUIPMENT AND DEVICES.

PLAN NOTES: ⬡

1. ROOFTOP UNIT RT-1 AND RT-2 IS PROVIDED WITH SINGLE POINT ELECTRICAL CONNECTION WITH FACTORY INSTALLED NON FUSED DISCONNECT SWITCH AND BUILT IN GFCI CONVENIENCE OUTLET.
2. ROOF TOP EXHAUST FAN PROVIDED WITH FACTORY MOUNTED DISCONNECT SWITCH AND MOTOR OPERATED DAMPER. MOTOR OPERATED DAMPER POWERED FROM EXHAUST FAN CIRCUIT.
3. PROVIDE KINDORF STRUCTURE ADJACENT TO HP-1 AND HP-2 MAINTAINING REQUIRED CLEARANCES AROUND EQUIPMENT. MOUNT TWO DISCONNECTS, ONE TO SERVE HP-1 AND THE OTHER TO SERVE HP-2. MOUNT WEATHER PROOF GFCI RECEPTACLE ON STRUCTURE ADJACENT TO DISCONNECTS. COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE WEATHER-TIGHT ROOF MEMBRANE PENETRATION(S). COORDINATE ROOF MOUNTING REQUIREMENTS FOR KINDORF STRUCTURE.



ROOF LEVEL PLAN - POWER

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

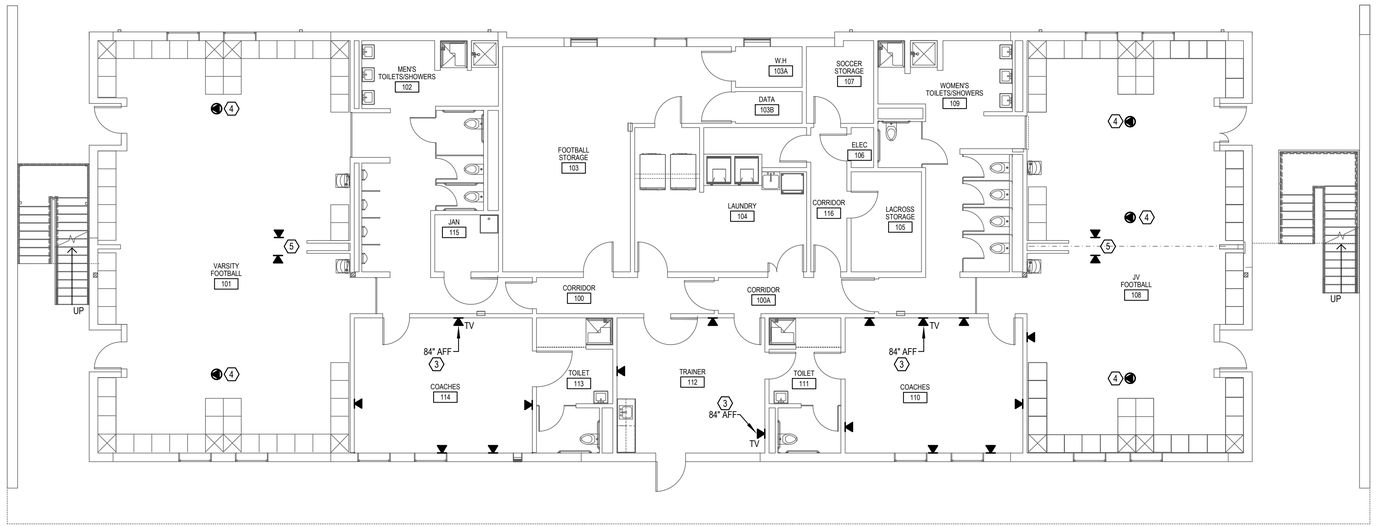
DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

ROOF LEVEL PLAN - POWER

SHEET
E-203

PLAN NOTES:

1. COORDINATE DEVICE LOCATION WITH LIGHT SWITCHES.
2. MOUNT DEVICE ABOVE DOOR.
3. TV RECEPTACLE AN DATA OUTLET SHALL COORDINATE IN THE FIELD WITH THE TV INSTALLER TO BE MOUNTED BEHIND THE TV AND TO NOT CONFLICT WITH THE TV WALL BRACKET.
4. COORDINATE LOCATION OF DATA OUTLET FOR PROJECTOR WITH PROJECTOR INSTALLER.
5. THESE DATA OUTLETS SHALL BE MOUNTED IN THE PARTITION BULKHEAD FOR USE WITH INDOOR GAME CLOCK(S). COORDINATE EXACT LOCATION WITH GAME CLOCK INSTALLER. INSTALL 1" CONDUIT FROM SCORE BOARD DATA OUTLET TO THESE DATA OUTLETS.



FIRST LEVEL FLOOR PLAN - COMMUNICATIONS

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

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

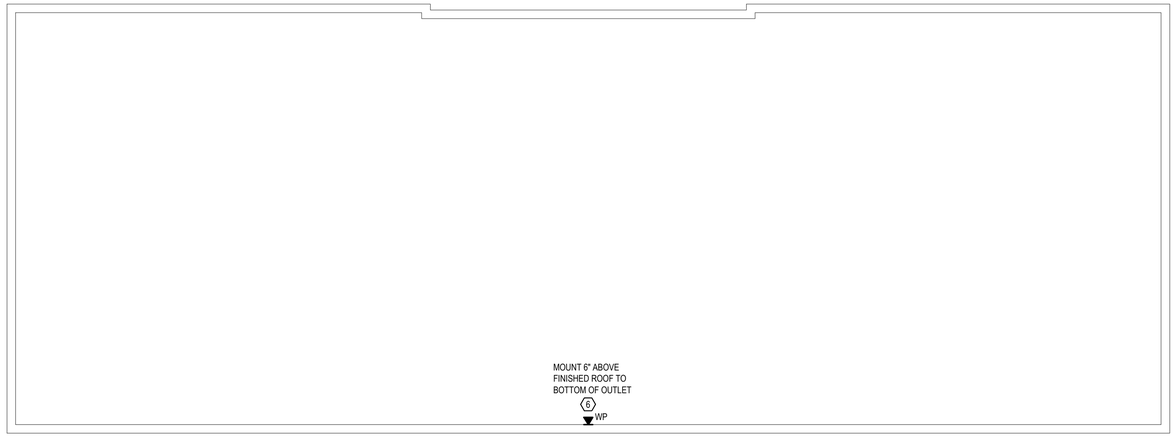
PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

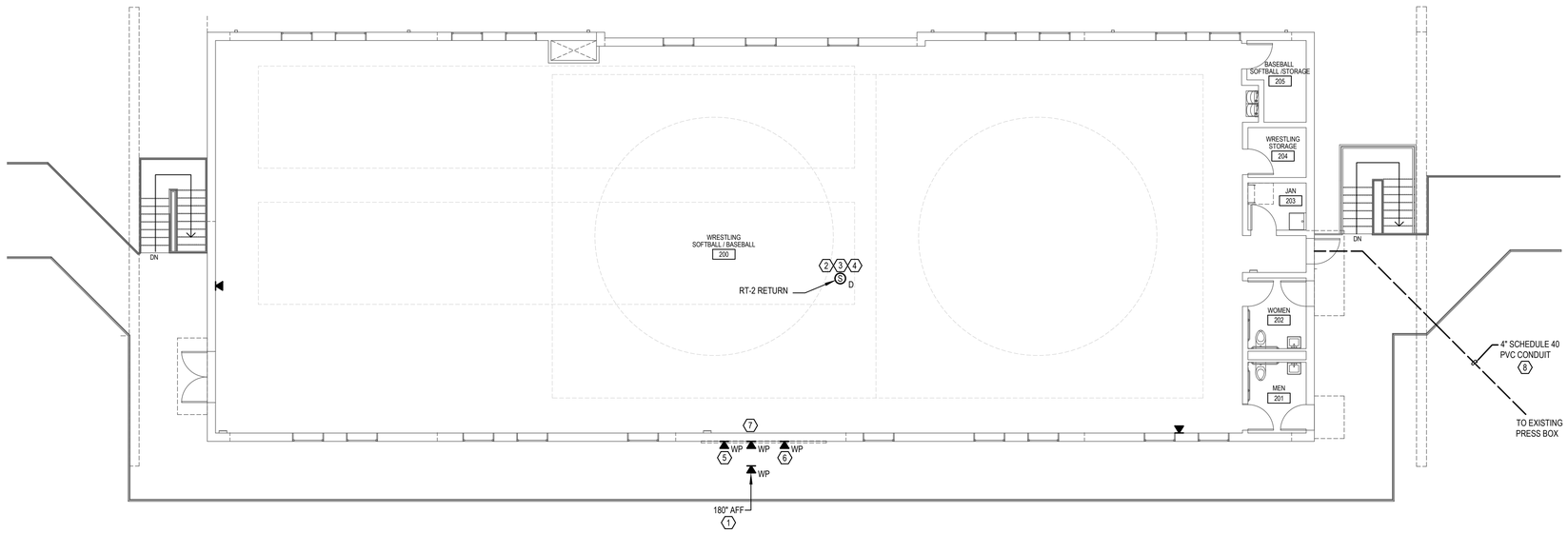
FIRST LEVEL FLOOR PLAN - COMM.

SHEET
E-301



ROOF LEVEL PLAN - COMMUNICATION

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



SECOND LEVEL FLOOR PLAN - COMMUNICATIONS

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

GENERAL NOTES:

1. SEE SHEET M-101 FOR PLACEMENT OF DUCT SMOKE DETECTOR FOR ROOFTOP UNIT 2 (RT-2).

PLAN NOTES:

1. PROVIDE DATA OUTLET CENTERED ABOVE SCOREBOARD FOR CONNECTION TO CAMERA. VERIFY HEIGHT WITH SCOREBOARD INSTALLER.
2. PROVIDE DUCT SMOKE DETECTOR AT THIS LOCATION PER THE FOLLOWING SPECIFICATIONS:
   - 2.1. PHOTOELECTRIC SMOKE DETECTORS:
     - a. SENSOR: LED OR INFRARED LIGHT SOURCE WITH MATCHING SILICON-CELL RECEIVER.
     - b. DETECTOR SENSITIVITY: BETWEEN 2.5 AND 3.5 PERCENT/FOOT SMOKE OBSCURATION WHEN TESTED ACCORDING TO UL 268A.
   - 2.1. UL 268A LISTED, OPERATING AT 24VDC NOMINAL.
   - 2.2. DUCT SMOKE DETECTOR HOUSING: DETECTOR AND ASSOCIATED ELECTRONIC COMPONENTS SHALL BE MOUNTED IN A PLUG-IN MODULE THAT CONNECTS TO A FIXED BASE (DETECTOR HOUSING). THE FIXED BASE SHALL BE DESIGNED FOR MOUNTING DIRECTLY TO THE AIR DUCT. PROVIDE TERMINALS IN THE FIXED BASE FOR CONNECTION TO BUILDING WIRING.
   - 2.3. WEATHERPROOF DUCT SMOKE DETECTOR HOUSING: UL LISTED FOR USE WITH THE SUPPLIED DETECTOR. THE ENCLOSURE SHALL COMPLY WITH NEMA 250 REQUIREMENTS FOR TYPE 4X.
   - 2.4. SELF-RESTORING: DETECTORS SHALL NOT REQUIRE RESETTING OR READJUSTMENT AFTER ACTUATION TO RESTORE THEM TO NORMAL OPERATION.
   - 2.5. INTEGRAL VISUAL-INDICATING LIGHT: LED TYPE INDICATING DETECTOR HAS OPERATED AND POWER-ON STATUS.
   - 2.6. PROVIDE A REMOTE TEST SWITCH WITH LED INDICATORS WHERE DUCT SMOKE DETECTOR IS NOT VISIBLE FROM FLOOR. TEST STATION ASSEMBLY SHALL INCLUDE A KEY SWITCH, RED LED ALARM INDICATOR AND GREEN LED POWER-ON INDICATOR. THE TEST SWITCH ASSEMBLY SHALL BE MOUNTED ON A SINGLE GANG STAINLESS STEEL PLATE FOR MOUNTING ON A SINGLE GANG OUTLET BOX. TEST STATION SHALL BE CEILING MOUNTED IN CLOSE PROXIMITY TO THE DETECTOR.
   - 2.7. EACH SENSOR SHALL HAVE MULTIPLE LEVELS OF DETECTION SENSITIVITY.
   - 2.8. SAMPLING TUBES: DESIGN AND DIMENSIONS AS RECOMMENDED BY MANUFACTURER FOR THE SPECIFIC DUCT SIZE, AIR VELOCITY, AND INSTALLATION CONDITIONS WHERE APPLIED.
3. PROVIDE INDICATOR LIGHT AND LOCAL SOUNDER BASE TO ALERT UPON DUCT SMOKE DETECTOR ACTIVATION. LABEL INDICATOR LIGHT AND SOUNDER BASE TO INDICATE ASSOCIATION WITH DUCT SMOKE DETECTOR ACTIVATION.
4. COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE CONTROL WIRING FROM DUCT SMOKE DETECTOR TO RT-2 CONTROL PANEL TO SHUT POWER DOWN TO RT-2 UPON ACTIVATION OF DUCT SMOKE DETECTOR.
5. PROVIDE DATA OUTLET AND EXTEND 1" CONDUIT(S) TO GAME CLOCK DATA OUTLETS LOCATED IN THE JV AND VARSITY LOCKER ROOMS. SEE SHEET E-301 FOR DATA OUTLET LOCATIONS IN THE LOCKER ROOMS. COORDINATE EXACT LOCATION WITH GAME CLOCK INSTALLER.
6. PROVIDE DATA OUTLET AND EXTEND 1" CONDUIT TO DATA OUTLET LOCATED ON ROOF. COORDINATE WITH SCORE BOARD INSTALLER FOR EXACT LOCATION.
7. COORDINATE FINAL LOCATION AND MOUNTING HEIGHT FOR SCORE BOARD DATA OUTLET DURING INSTALLATION WITH SCORE BOARD INSTALLER.
8. INSTALL 4" SCHEDULE 40 PVC CONDUIT MINIMUM 24" BELOW GRADE/SLAB TO TOP. ROUTE FROM PROPOSED DATA 103B TO EXISTING PRESS BOX. COORDINATE ROUTING OF CONDUIT WITH GENERAL CONTRACTOR IN FIELD TO AVOID CONFLICTS WITH PROPOSED RETAINING WALL.

INTERACTIVE DESIGN GROUP

301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers

15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410

Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

SECOND LEVEL FLOOR PLAN - COMM.

SHEET
E-302

PANEL PH1

VOLTAGE: 208Y/120V
SYSTEM: 3PH, 4W
SOLID NEUTRAL: YES

MAIN: 400A MLO
BUS RATING: 400A
GROUND BUS: YES

INTEGRAL SPD: NO
MOUNTING: SURFACE
INTERRUPT RATING: 22,000 AIC

CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	DMD	L1	L2	L3	CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	DMD	L1	L2	L3
1	RECS COACHES ROOM 114	20/1	#12	#12	#12	3/4"	R	1.44			2	RECS WRESTLING/BASEBALL/SOFTBALL 200	20/1	#12	#12	#12	3/4"	R	1.08		
3	RECS TRAINER 112	20/1	#12	#12	#12	3/4"	R		.9		4	RECS WRESTLING/BASEBALL/SOFTBALL 200	20/1	#12	#12	#12	3/4"	R		.9	
5	RECS COACHES ROOM 110	20/1	#12	#12	#12	3/4"	R			1.26	6	RECS WRESTLING/BASEBALL/SOFTBALL 200	20/1	#12	#12	#12	3/4"	R			.9
7	RECS CORRIDOR 100, 100A, JAN 114, STOR 105	20/1	#12	#12	#12	3/4"	R	1.08			8	RECS MENS BATH 201/WOMENS BATH 202	20/1	#12	#12	#12	3/4"	R	.54		
9	RECS RMS 104, 106, 107, 116	20/1	#12	#12	#12	3/4"	R		1.26		10	RECS JAN 203/WRESTLING 204/BASEBALL 205	20/1	#12	#12	#12	3/4"	R		.9	
11	RECS FOOTBALL STORAGE 103	20/1	#12	#12	#12	3/4"	R			.9	12	WRESTLING/BASEBALL/SOFTBALL 200 EWC	20/1	#12	#12	#12	3/4"	N			.6
13	RECS WOMENS 109	20/1	#12	#12	#12	3/4"	R	.36			14	SCOREBOARD	15/1	#12	#12	#12	3/4"	C	.19		
15	RECS MENS 102	20/1	#12	#12	#12	3/4"	R		.36		16	WOMEN BATH 202 WALL HEATER (WH-1)	20/2	#12	-	#12	3/4"	H		1.13	
17	VARSITY FOOTBALL 101 EWC	20/1	#12	#12	#12	3/4"	N			.6	18	WOMEN BATH 202 WALL HEATER (WH-1)	-	#12	-	-	-	H			1.13
19	VARSITY FOOTBALL 101 EWC	20/1	#12	#12	#12	3/4"	N	.6			20	MEN BATH 201 WALL HEATER (WH-1)	20/2	#12	-	#12	3/4"	H	1.13		
21	JV FOOTBALL 119 EWC	20/1	#12	#12	#12	3/4"	N		.6		22	MEN BATH 201 WALL HEATER (WH-1)	-	#12	-	-	-	H		1.13	
23	JV FOOTBALL 119 EWC	20/1	#12	#12	#12	3/4"	N			.6	24	JANITOR CLOSET 203 WALL HEATER (WH-2)	15/1	#12	#12	#12	3/4"	H			.75
25	RECS 1ST FLOOR EXTERIOR	20/1	#12	#12	#12	3/4"	R	.9			26	STORAGE 204 CEILING HEATER (CH-1)	20/1	#12	#12	#12	3/4"	H	1.5		
27	FOOTBALL STORAGE 103 - ELEC HEAT CH-2	20/2	#12	-	#12	3/4"	H		1.5		28	STORAGE 205 CEILING HEATER (CH-1)	20/1	#12	#12	#12	3/4"	H		1.5	
29	FOOTBALL STORAGE 103 - ELEC HEAT CH-2	-	#12	-	-	-	H			1.5	30	RT-2 ROOF TOP UNIT	90/3	#3	-	#8	1"	H			8.11
31	SOCCER STORAGE 107 - ELEC HEAT CH-3	20/1	#12	#12	#12	3/4"	H	1.5			32	RT-2 ROOF TOP UNIT	-	#3	-	-	-	H	8.11		
33	LAUNDRY 104 - DRYER	15/3	#12	-	#12	3/4"	M		.76		34	RT-2 ROOF TOP UNIT	-	#3	-	-	-	H		8.11	
35	LAUNDRY 104 - DRYER	-	#12	-	-	-	M			.76	36	ROOF TOP HP-1	40/2	#8	-	#10	3/4"	H			2.16
37	LAUNDRY 104 - DRYER	-	#12	-	-	-	M	.76			38	ROOF TOP HP-1	-	#8	-	-	-	H	2.16		
39	LAUNDRY 104 - DRYER	15/3	#12	-	#12	3/4"	M		.76		40	ROOF TOP HP-2	25/2	#10	-	#10	3/4"	H		1.58	
41	LAUNDRY 104 - DRYER	-	#12	-	-	-	M			.76	42	ROOF TOP HP-2	-	#10	-	-	-	H			1.58
43	LAUNDRY 104 - DRYER	-	#12	-	-	-	M	.76			44	ROOF TOP EXHAUST FAN EF-2	15/1	#12	#12	#12	3/4"	M	.53		
45	LAUNDRY 104 - WASHING MACHINE	20/2	#12	#12	#12	3/4"	M		1.35		46	RT-1 ROOF TOP UNIT	125/3	#1	-	#6	1-1/4"	H		9.53	
47	LAUNDRY 104 - WASHING MACHINE	-	#12	-	-	-	M			1.35	48	RT-1 ROOF TOP UNIT	-	#1	-	-	-	H			9.53
49	LAUNDRY 104 - WASHING MACHINE	20/2	#12	#12	#12	3/4"	M	1.35			50	RT-1 ROOF TOP UNIT	-	#1	-	-	-	H	9.53		
51	LAUNDRY 104 - WASHING MACHINE	-	#12	-	-	-	M		1.35		52	USED SPACE FOR 125A BREAKER	-/3	-	-	-	-	-		-	
53	ICE MACHINE - LAUNDRY 104	15/1	#12	#12	#12	3/4"	N			1.37	54	USED SPACE FOR 125A BREAKER	-	-	-	-	-	-			-
55	W.H. 103A - EXHAUST FAN EF-1	15/1	#12	#12	#12	3/4"	M	.7			56	USED SPACE FOR 125A BREAKER	-	-	-	-	-	-	-		
57	COACHES 114 - SUPPLY FAN SF-1	15/1	#12	#12	#12	3/4"	M		.7		58	LIGHTS RM 200 LIGHTING ZONE 1	20/1	#12	#12	#12	3/4"	L		1.62	
59	LIGHTS RM 101,102,103,103A,106,107,115 103B	25/1	#10	#10	#10	3/4"	L			2.07	60	LIGHTS RM 200 LIGHTING ZONE 2	20/1	#12	#12	#12	3/4"	L			1.61
61	LIGHT100,100A,104,105,110-114,116	20/1	#12	#12	#12	3/4"	L	1.47			62	LIGHTS RM 200 LIGHTING ZONE 3	20/1	#12	#12	#12	3/4"	L	1.63		
63	LIGHTS RM 109 & 108	20/1	#12	#12	#12	3/4"	L		1.2		64	LIGHTS RM 201,202,203,204,205	20/1	#12	#12	#12	3/4"	L		.31	
65	EXTERIOR LIGHTS 1ST FLOOR	20/1	#12	#12	#12	3/4"	L			.12	66	EXTERIOR LIGHTS 2ND FLOOR	20/1	#12	#12	#12	3/4"	L			.21
67	RECS W.H. 103A, W.H., W.H. CIRC. PUMP	20/1	#12	#12	#12	3/4"	W	.43			68	RECS DATA 103B	20/1	#12	#12	#12	3/4"	R	.36		
69	DATA 103B - EXHAUSET FAN EF-3	15/1	#12	#12	#12	3/4"	M		.06		70	RECS TOILET/SHOWER 111 & 113	20/1	#12	#12	#12	3/4"	R		.36	
71	SPARE	20/1	-	-	-	-	-			-	72	SPARE	20/1	-	-	-	-	-			-
73	SPARE	20/1	-	-	-	-	-	-			74	SPARE	20/1	-	-	-	-	-	-		
75	SPARE	20/1	-	-	-	-	-		-		76	SPARE	20/1	-	-	-	-	-		-	
77	SPARE	20/1	-	-	-	-	-			-	78	SPARE	20/1	-	-	-	-	-			-
79	SPD BREAKER	60/3	#6	#6	#6	1"	-	-			80	PANEL PH2	100/3	#3	#3	#8	1-1/4"	SF	5.04		
81	SPD BREAKER	-	#6	-	-	-	-		-		82	PANEL PH2	-	#3	-	-	-	SF		4.44	
83	SPD BREAKER	-	#6	-	-	-	-			-	84	PANEL PH2	-	#3	-	-	-	SF			4.44

NOTE 1. PROVIDE GROUND FAULT EQUIPMENT PROTECTION FOR CIRCUIT(S) 12, 17, 19, 21, 23
NOTE 2. PROVIDE HACR RATED BREAKER(S) FOR CIRCUIT 53

PHASE LOAD TOTALS: 43.15 | 42.31 | 42.31

LOADS (KVA)	CONNECTED	DEMAND FACTOR	DEMAND
LIGHTING	10.24	1.25	12.8
REC TO 10 KVA	10	1.0	10
REC REMAINING	13.04	0.5	6.52
SPACE HEATING	73.17	1.0	73.17
AIR CONDITIONING	0	0.0	0
NON-SEASONAL MOTORS	16.15	1.0	16.15
LARGEST MOTOR	13.36	0.25	3.34
WATER HEATING	.43	1.0	.43

LOADS (KVA)	CONNECTED	DEMAND FACTOR	DEMAND	
KITCHEN EQUIPMENT	0	1.0	0	
CONTINUOUS	.19	1.25	.24	
NON-CONTINUOUS	4.55	1.0	4.55	
DEMAND	0	1.0	0	
TOTAL CONNECTED LOAD	127.8	KVA	354.9	AMPS
MIN. FEEDER / PANEL CAPACITY	127.2	KVA	353.3	AMPS
OVERALL DEMAND FACTOR	1.00			

PANEL PH2

VOLTAGE: 208Y/120V
SYSTEM: 3PH, 4W
SOLID NEUTRAL: YES

MAIN: 100A MLO
BUS RATING: 100A
GROUND BUS: YES

INTEGRAL SPD: NO
MOUNTING: SURFACE
INTERRUPT RATING: 10,000 AIC

CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	DMD	L1	L2	L3	CKT	LOAD SERVED	BKR	PHASE	NEUT	GND	COND	DMD	L1	L2	L3
1	RECS JV FOOTBALL 108	20/1	#12	#12	#12	3/4"	R	.9			2	RECS VARSITY FOOTBALL 101	20/1	#12	#12	#12	3/4"	R	.9		
3	RECS JV FOOTBALL 108	20/1	#12	#12	#12	3/4"	R		.72		4	RECS VARSITY FOOTBALL 101	20/1	#12	#12	#12	3/4"	R		.9	
5	RECS JV FOOTBALL 108	20/1	#12	#12	#12	3/4"	R			.72	6	RECS VARSITY FOOTBALL 101	20/1	#12	#12	#12	3/4"	R			.9
7	RECS JV FOOTBALL 108	20/1	#12	#12	#12	3/4"	R	.72			8	RECS VARSITY FOOTBALL 101	20/1	#12	#12	#12	3/4"	R	.72		
9	RECS JV FOOTBALL 108	20/1	#12	#12	#12	3/4"	R		.72		10	RECS VARSITY FOOTBALL 101	20/1	#12	#12	#12	3/4"	R		.72	
11	PROJECTOR RECS JV FOOTBALL 108	20/1	#12	#12	#12	3/4"	R			.54	12	PROJECTOR RECS VARSITY FOOTBALL 101	20/1	#12	#12	#12	3/4"	R			.36
13	PROECTOR SCREENS JV FOOTBALL 108	20/1	#12	#12	#12	3/4"	M	1.08			14	PROJECTOR SCREENS VARSITY FOOTBALL 101	20/1	#12	#12	#12	3/4"	M	.72		
15	ELEC 106 - BAS CONTROLLER	20/1	#12	#12	#12	3/4"	N		.18		16	MOTORIZED BATTING CAGE	20/1	#12	#12	#12	3/4"	M		1.2	
17	RECS FOR LOCKER ROOM GAME CLOCKS	20/1	#12	#12	#12	3/4"	R			.72	18	MOTORIZED BATTING CAGE	20/1	#12	#12	#12	3/4"	M			1.2
19	SPARE	20/1	-	-	-	-	-	-			20	SPARE	20/1	-	-	-	-	-	-		
21	SPARE	20/1	-	-	-	-	-		-		22	SPARE	20/1	-	-	-	-	-		-	
23	SPARE	20/1	-	-	-	-	-			-	24	SPARE	20/1	-	-	-	-	-			-
25	SPARE	20/1	-	-	-	-	-	-			26	SPARE	20/1	-	-	-	-	-	-		
27	SPARE	20/1	-	-	-	-	-		-		28	SPARE	20/1	-	-	-	-	-		-	
29	SPARE	20/1	-	-	-	-	-			-	30	SPARE	20/1	-	-	-	-	-			-
31	SPARE	20/1	-	-	-	-	-	-			32	SPARE	20/1	-	-	-	-	-	-		
33	SPARE	20/1	-	-	-	-	-		-		34	SPARE	20/1	-	-	-	-	-		-	
35	SPACE ONLY	-	-	-	-	-	-			-	36	SPACE ONLY	-	-	-	-	-	-			-
37	SPACE ONLY	-	-	-	-	-	-	-			38	SPACE ONLY	-	-	-	-	-	-	-		
39	SPACE ONLY	-	-	-	-	-	-		-		40	SPACE ONLY	-	-	-	-	-	-		-	
41	SPACE ONLY	-	-	-	-	-	-			-	42	SPACE ONLY	-	-	-	-	-	-			-
43	SPACE ONLY	-	-	-	-	-	-	-			44	SPACE ONLY	-	-	-	-	-	-	-		
45	SPACE ONLY	-	-	-	-	-	-		-		46	SPACE ONLY	-	-	-	-	-	-		-	
47	SPACE ONLY	-	-	-	-	-	-			-	48	SPACE ONLY	-	-	-	-	-	-			-
49	SPACE ONLY	-	-	-	-	-	-	-			50	SPACE ONLY	-	-	-	-	-	-	-		
51	SPACE ONLY	-	-	-	-	-	-		-		52	SPACE ONLY	-	-	-	-	-	-		-	
53	SPACE ONLY	-	-	-	-	-	-			-	54	SPACE ONLY	-	-	-	-	-	-			-

PHASE LOAD TOTALS: 5.04 | 4.44 | 4.44

LOADS (KVA)	CONNECTED	DEMAND FACTOR	DEMAND
LIGHTING	0	1.25	0
REC TO 10 KVA	9.54	1.0	9.54
REC REMAINING	0	0.5	0
SPACE HEATING	0	0.0	0
AIR CONDITIONING	0	1.0	0
NON-SEASONAL MOTORS	4.2	1.0	4.2
LARGEST MOTOR	1.2	0.25	.3
WATER HEATING	0	1.0	0

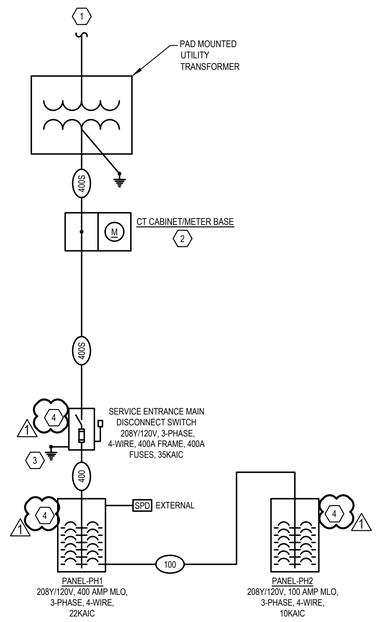
LOADS (KVA)	CONNECTED	DEMAND FACTOR	DEMAND	
KITCHEN EQUIPMENT	0	1.0	0	
CONTINUOUS	0	1.25	0	
NON-CONTINUOUS	.18	1.0	.18	
DEMAND	0	1.0	0	
TOTAL CONNECTED LOAD	13.9	KVA	38.7	AMPS
MIN. FEEDER / PANEL CAPACITY	14.2	KVA	39.5	AMPS
OVERALL DEMAND FACTOR	1.02			

SHORT-CIRCUIT CALCULATIONS:

1. SHORT-CIRCUIT FAULT CURRENT FROM UTILITY IS ESTIMATED TO BE 27,750.

2. SHORT-CIRCUIT CALCULATIONS FOR NEW PANEL PH1:
   A. Isc sym RMS = Isc x M = 27,750 x 0.44 = 12,279 ~ 13KAIC
   B. M = 1 / (1+ f) = 1 / (1 + 1.26) = 0.44
   C. f = (1.73 x L x Isc) / (C x V) = (1.732 x 140 x 27,750) / (25,686 x 208) = 1.26
      a. L = LENGTH OF CONDUCTOR FROM SERVICE TRANSFORMER TO NEW PANEL PH1 = 140 FEET.
      b. Isc = EXISTING SHORT-CIRCUIT CURRENT AT SERVICE TRANSFORMER = 27,750.
      c. C = CONSTANT FROM TABLE C FOR #3/0 CONDUCTORS = 12,843. MULTIPLY THIS BY # OF CONDUCTORS PER PHASE (FOR MULTIPLE SETS). TWO SET: 12,843 x 2 = 25,686.
      d. V = VOLTAGE = 208
   D. SHORT-CIRCUIT RATING FOR NEW PANEL PH1 SHALL BE GREATER THAN 13KAIC, WHICH IT HAS BEEN SET TO 22KAIC.

3. SHORT-CIRCUIT CALCULATIONS FOR NEW PANEL PH2:
   A. Isc sym RMS = Isc x M = 12,279 x 0.44 = 5,402 ~ 6KAIC
   B. M = 1 / (1+ f) = 1 / (1 + 1.29) = 0.44
   C. f = (1.73 x L x Isc) / (C x V) = (1.732 x 60 x 12,279) / (4,760 x 208) = 1.29
      a. L = LENGTH OF CONDUCTOR FROM 400 AMP PANEL PH1 TO NEW PANEL PH2 = 60 FEET.
      b. Isc = EXISTING SHORT-CIRCUIT CURRENT AT 400 AMP PANEL PH1 = 12,279.
      c. C = CONSTANT FROM TABLE C FOR #3 CONDUCTORS = 4,760, MULTIPLY THIS BY # OF CONDUCTORS PER PHASE (FOR MULTIPLE SETS). ONE SET: 4,760 x 1 = 4,760.
      d. V = VOLTAGE = 208
   D. SHORT-CIRCUIT RATING FOR NEW PANEL PH2 SHALL BE GREATER THAN 6KAIC, WHICH IT HAS BEEN SET TO 10KAIC.



ONE-LINE DIAGRAM

SCALE: NONE

COPPER FEEDER SCHEDULE

SYMBOL	# OF SETS	CONDUCTORS (COPPER)	GND.	CONDUIT	AMPS
400S	2	4-#3/0	-	TWO 2"	400A
400	2	4-#3/0	#3	TWO 2"	400A
100	1	4-#3	#8	1-1/4"	200A

ONE-LINE PLAN NOTES:

1. PROVIDE SCHEDULE 80 PVC 4" CONDUIT FROM THE EXISTING POWER COMPANY POWER POLE NORTH OF THE BUILDING TO EXTEND A MINIMUM OF 3 FEET BELOW FINAL FINISHED GRADE AND TURN UP UNDER POWER COMPANY PAD MOUNTED SERVICE TRANSFORMER NEXT TO THE BUILDING. STUB CONDUIT UP 2 FEET ABOVE FINAL FINISHED GRADE AT THE POWER POWER, POWER COMPANY TO PROVIDE POWER POLE RISER CONDUIT FROM STUB UP. COORDINATE WITH POWER COMPANY VERIFY THE TYPE OF CONDUIT, THE SIZE OF THE CONDUIT AND THE QUANTITY OF CONDUIT REQUIRED. POWER COMPANY TO PROVIDE PRIMARY WIRING AND PRIMARY TERMINATIONS TO SERVICE TRANSFORMER.
2. INSTALL POWER COMPANY METER BASE PROVIDED BY POWER COMPANY. VERIFY THE POWER COMPANY CAN PROVIDE A METER BASE FOR THE 400 AMP SERVICE WITHOUT A CT CABINET. OTHERWISE PROVIDE A 400 AMP CT CABINET AND LOCATE ON EXTERIOR WALL NEXT TO METER BASE AND SERVICE DISCONNECT SWITCH. PROVIDE SECONDARY FEEDER FROM PAD MOUNTED SERVICE TRANSFORMER TO METER BASE AND/OR CT CABINET. SECONDARY FEEDER SHALL BE INSTALLED A MINIMUM OF 3 FEET BELOW FINAL FINISHED GRADE. ALL UNDERGROUND PVC CONDUIT TURNING UP ALONG THE EXTERIOR WALL SHALL TRANSITION TO RIGID CONDUIT STARTING AT THE 90 DEGREE ELBOW UNDER GRADE.
3. SERVICE ENTRANCE RATED DISCONNECT SWITCHES SHALL BE PROVIDED WITH A ISOLATED NEUTRAL BUS FROM THAT OF THE GROUND BUS. PROVIDE A MAIN BONDING JUMPER IN SERVICE ENTRANCE DISCONNECT SWITCH AND CONNECT TO THE GROUND ELECTRODE SYSTEM(S). 400 AMP DISCONNECT SWITCH MAIN BONDING JUMPER, SUPPLY BONDING JUMPER, AND SUPPLY-SIDE BONDING JUMPER SHALL BE #1/0 AWG CU. PROVIDE A GROUND ELECTRODE SYSTEM THAT IS CONNECTED TO ONE OR MORE GROUND ELECTRODES PER 2014 NEC 250.52. THE GROUND ELECTRODE SYSTEM SHALL BE 25 OHMS OR LESS, WHERE IT IS GREATER THAN 25 OHMS PROVIDE ADDITIONAL GROUND ELECTRODES UNTIL IT IS 25 OHMS OR LESS. GROUND ELECTRODES SHALL BE:
   3.1. METAL UNDERGROUND WATER PIPE WHERE IT IS IN CONTACT WITH EARTH FOR 10 FEET OR MORE AND THE PIPE IS METAL.
   3.2. METAL FRAME OF THE BUILDING OR STRUCTURE.
   3.3. CONCRETE-ENCASED ELECTRODE.
   3.4. GROUND ROD(S). NOTE PER 2014 NEC 250.53 (2) ANY SINGLE GROUND ROD SHALL BE SUPPLEMENTED BY ANOTHER GROUND ELECTRODE. WHERE SUPPLEMENTING WITH MORE THAN ONE GROUND ROD THEY SHALL BE SEPARATED BY 6 FEET OR MORE.
4. PROVIDE AVAILABLE FAULT CURRENT MARKINGS ON SERVICE ENTRANCE MAIN DISCONNECT SWITCH AND PANELS PH1 AND PH2 AS REQUIRED BY NEC 110.24. FIELD MARKINGS SHALL INCLUDE THE DATE THE FAULT-CURRENT CALCULATION WAS PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. DATE SHALL BE THE DATE SHALL BE THE DATE THE COORDINATION STUDY, SPECIFICATION SECTION 26 05 73, ENGINEER PROVIDED THE CALCULATIONS AND THE ENGINEER OF RECORD APPROVED THE COORDINATION STUDY.

INTERACTIVE DESIGN GROUP
301 6TH STREET SW
ROANOKE, VA 24016
P. 540.342.7534 F. 540.342.7536

LPA
LAWRENCE PERRY & ASSOCIATES
Consulting Engineers
15 E Salem Avenue SE, Suite 101 Ph: (540) 342-1816
Roanoke, Virginia 24011 Fax: (540) 344-3410
Comm. No.: 20101.05

COMMONWEALTH OF VIRGINIA
09/30/20
WINSTON A. MATTHEWS
Lic. No. 044469
PROFESSIONAL ENGINEER

NO.	REVISIONS	DATE
1	CITY REVIEW	10.23.20

NEW FACILITY FOR

PATRICK HENRY HIGH SCHOOL FIELD HOUSE

2102 GRANDIN RD SW
ROANOKE, VA 24015

DATE	09 . 30 . 2020
DRAWN	DKP/WAM
CHECKED	WAM
JOB	19-059

PANEL SCHED., ONE-LINE DIAGRAM

SHEET
E-401