PROJECT DRAWINGS

INSTRUCTIONAL MEDIA CENTER ALTERATIONS

GLOUCESTER CITY HIGH SCHOOL
1300 MARKET STREET
GLOUCESTER CITY, NJ 08030
CAMDEN COUNTY
LOT 6 / BLOCK 222
NJDOE SP# 1770-050-19-1000

UCC SUBCODES

The following subcodes as adopted by the New Jersey Uniform Construction Code (NJAC 5:23 et seq.), shall apply to this Project.

SUBCODE	NATIONAL MODEL CODE	UCC REFERENCE
Building	International Building Code NJ Ed/2018	NJAC 5:23-3.14
Plumbing	National Standard Plumbing Code/2018	NJAC 5:23-3.15
Electrical	National Electrical Code (NFPA 70)/2017	NJAC 5:23-3.16
Energy	ASHRAE 90.1-2016 (Comm & all other Res)	NJAC 5:23-3.18
Mechanical	International Mechanical Code/2018	NJAC 5:23-3.20
Rehabilitation Subcode	NJUCC, Subchapter 6 Alteration	NJAC 5:23-6
Barrier-Free	Barrier-Free Subcode & ICC/ANSI A117.1-2009	Chapter 11 of IBC/2018 & NJAC 5:23-7

LIST OF DRAWINGS

All Contractors shall examine all drawings indicated herein for required coordination between different trades and/or for work included in other sections of the Project Manual that may pertain to their respective contract.

CONSTRUCTION NOTES:

SCOPE OF WORK:
Contractor(s) shall comply with the current NEW JERSEY UNIFORM CONSTRUCTION CODE (UCC) REHABILITATION SUBCODE & all applicable subcodes, ordinances & regulations of federal, state, municipal, & other governing bodies.
Contractor(s) shall be solely responsible for & have control over construction means, methods, techniques, sequences & procedures, shoring & bracing, jobsite safety, & for coordinating all portions of work.
Prior to submitting a bid, the Contractor(s) shall visit the site of the Work & shall thoroughly familiarize themselves w/ the exist'g conditions affecting the work & shall report any errors to the Arch't. By the act of submitting a bid, the Contractor(s) shall be deemed to have made such an examination, to have accepted such conditions, and to have made allowance therefore in preparing their bid. No additional compensation will be granted on the account of extra work made necessary by the Contractors' failure to investigate such exist'g conditions. Contractor(s) shall perform the Work in accordance with the documents, or assume responsibility for corrections.
Contractor shall keep the premises & surrounding area free from accumulation of waste mat'ls & rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove from & about the Project waste mat'ls, rubbish, the Contractor's tools, construction equipment, machinery, & surplus mat'ls.

PERMITS:
General Contractor shall be responsible for providing all necessary permits.
Complete building permit application and file with authorities having jurisdiction within five days of the Notice to Proceed or the date of execution of the Contract whichever is later.
Fees shall be paid for by the Owner or reimbursed after submission of receipt to Architect for Owner's payment.

DIMENSIONS:
Are to outside surface of finish mat'ls unless shown otherwise.
All dimensions are nominal and shall be field verified.

DEMOLITION:
Prior to commencement of the Work, the Contractor shall survey the exist'g conditions & record them by use of preconstruction photographs &/or videotapes. Provide Architect with an electronic copy of the survey.
Prior to the commencement of the Work, the Contractor shall review with the Owner all mat'ls & equipment to be removed. Should the Owner opt to keep any items, the Contractor shall salvage & deliver the items to the Owner on the site where so directed & properly dispose of all other demolition & construction mat'ls.
Support exist'g structural system before removing & replacing exist'g structure. Temporarily brace & shore all areas where supporting structures are removed until new construction is securely in place.
Protect existing flooring to remain during the construction period with covering of hardboard panels or other suitable material. Do not use paper or plastic sheeting. Do not move heavy and sharp objects directly over exist'g or proposed flooring. Protect flooring as indicated above to prevent damage from storing or moving objects over flooring.
Maintain building envelope in a weathertight & secure condition for the duration of the Project.

REPAIR, PATCH & PAINT:
All areas disturbed during demolition & construction shall match adjacent mat'ls & finishes at project completion.
Exist'g openings in clgs & walls shall be patched to match adjacent mat'ls & finishes.

EXISTING CONCRETE FLOOR:
Contractor is responsible for preparing, finishing and all required testing of the concrete slabs in accordance with the most stringent requirements of the finish floor systems specified.
Scrape, shot blast, clean & patch as per ASTM D4259, *Standard Practice for Abrading Concrete* to provide an acceptable level floor. Prepare surface to receive specified floor finish.
Contractor shall ensure that the existing concrete work complies with the requirements of the finish floor manufacturer(s) selected for use on this project. This includes, but is not limited to, tolerances and conditions, rapid relative humidity testing as per ASTM F2170, *Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes,* bond testing, and alkalinity testing. General Contractor shall supply the Architect with copies of all test results, the finish floor manufacturer's concrete subfloor requirements, and letters of acceptance from the finish floor manufacturer(s) prior to proceeding with the concrete subfloor work.
Where cement based interior self-level'g underlayment is req'd, it shall be the responsibility of the Contractor to provide an underlayment compatible with the specified finish floor.
Contractor shall be required to employ whatever means necessary to meet the requirements of the finish floor manufacturers for concrete slabs without additional compensation or time extension.

PRINT DATE: 3/30/20

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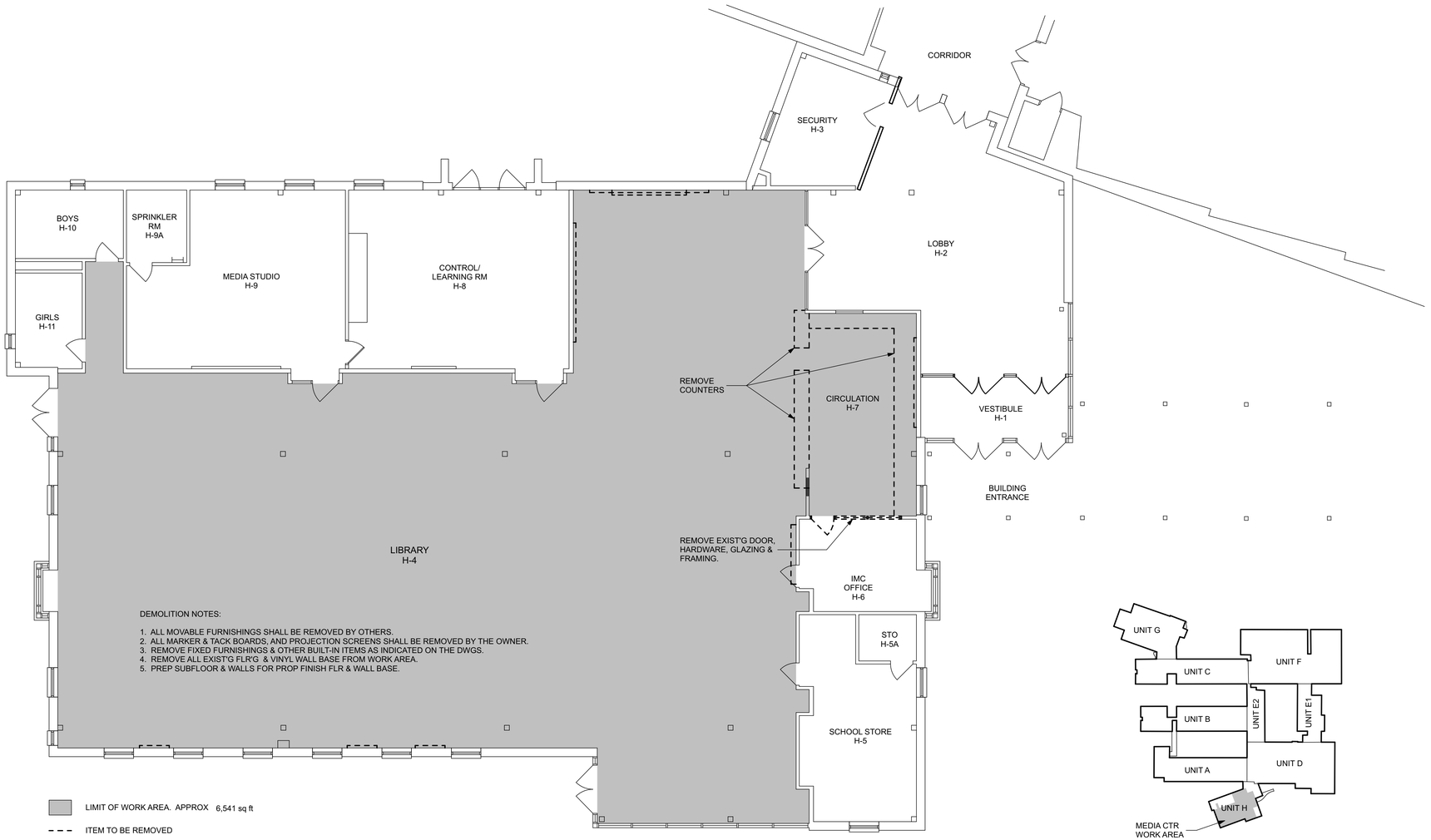
NJDOE SP #1770-050-19-1000
INSTRUCTIONAL MEDIA CENTER ALTERATION
GLOUCESTER CITY HIGH SCHOOL
1300 MARKET STREET
GLOUCESTER CITY, NJ 08030
TITLE: COVER SHEET

DRAWING DATE: 27 MAR 20
REVISION DATE:
DRAWN BY: APB
COMMISSION NO.: 5602B

CS

1 OF 1



UNIT H - DEMOLITION PLAN

SCALE: 1/8" = 1'-0" | 01

BLD'G NORTH

PRINT DATE: 3/30/20

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INSTRUCTIONAL MEDIA CENTER ALTERATION
GLOUCESTER CITY HIGH SCHOOL
1300 MARKET STREET
GLOUCESTER CITY, NJ 08030

TITLE: DEMOLITION PLAN

DRAWING DATE: 27 MAR 20
REVISION DATE:
DRAWN BY: APB
COMMISSION NO.: 5602B

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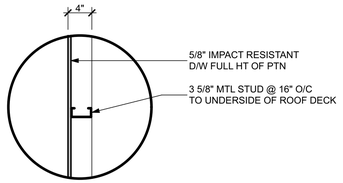
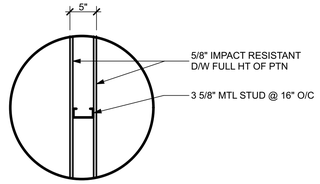
1 OF 3

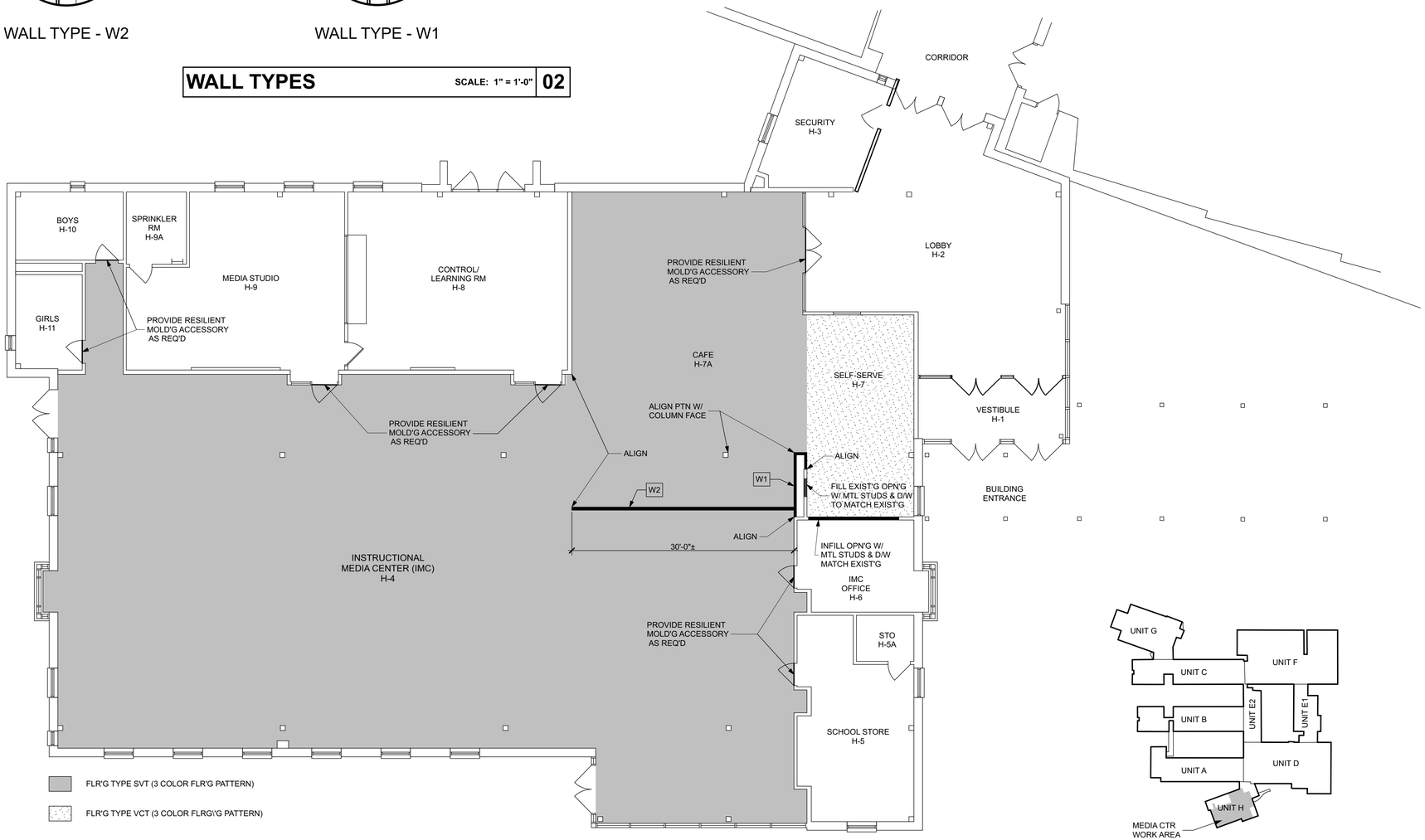


WALL TYPE - W2



WALL TYPE - W1

WALL TYPES — SCALE: 1" = 1'-0" — 02



UNIT H - PROPOSED PLAN — SCALE: 1/8" = 1'-0" — 01

BLD'G NORTH

PRINT DATE: 3/30/20

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INSTRUCTIONAL MEDIA CENTER ALTERATION

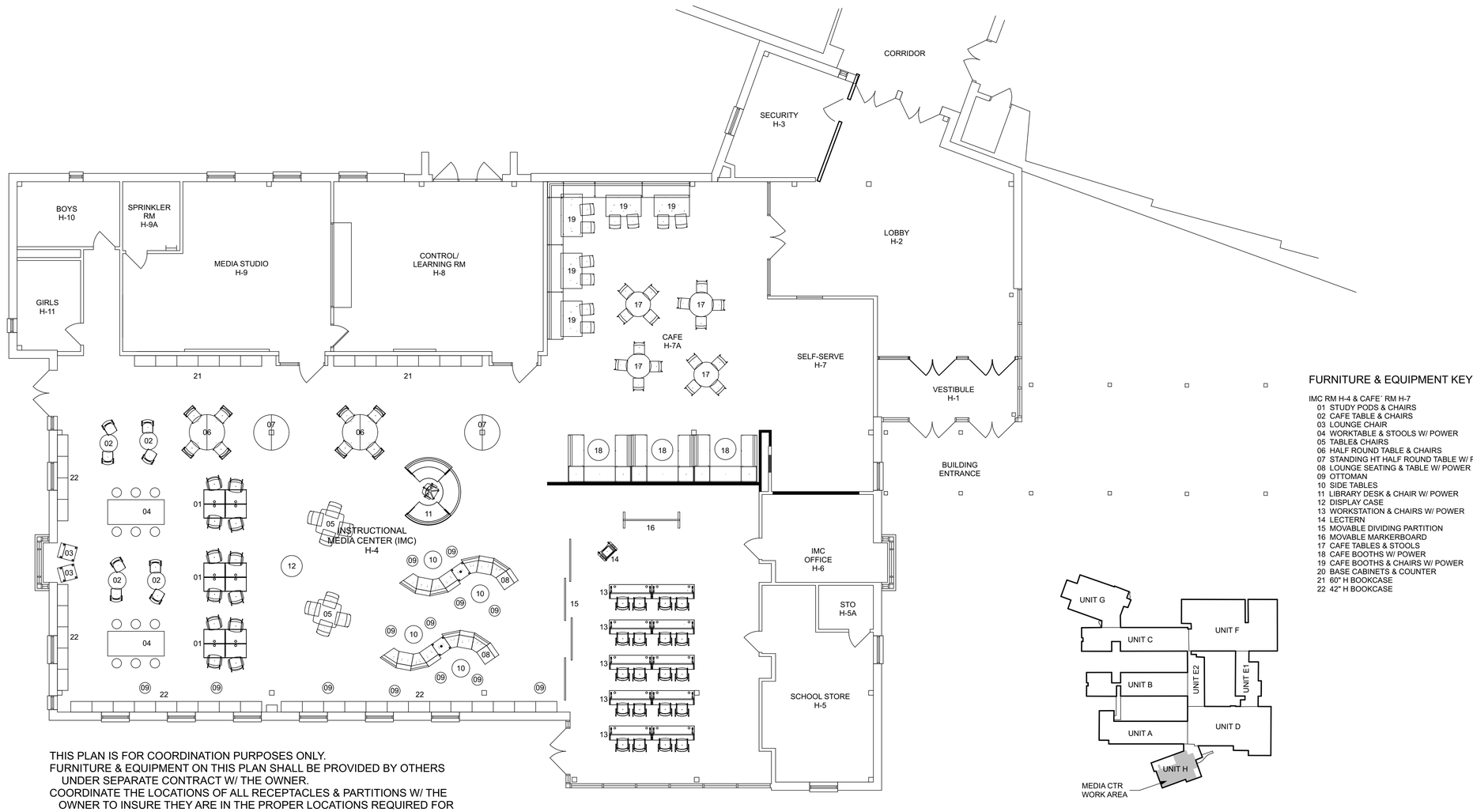
GLOUCESTER CITY HIGH SCHOOL
1300 MARKET STREET
GLOUCESTER CITY, NJ 08030

TITLE: PROPOSED PLAN

DRAWING DATE: 27 MAR 20
REVISION DATE:
DRAWN BY: APB
COMMISSION NO.: **5602B**

A.01

2 OF 3



THIS PLAN IS FOR COORDINATION PURPOSES ONLY.
FURNITURE & EQUIPMENT ON THIS PLAN SHALL BE PROVIDED BY OTHERS UNDER SEPARATE CONTRACT W/ THE OWNER.
COORDINATE THE LOCATIONS OF ALL RECEPTACLES & PARTITIONS W/ THE OWNER TO INSURE THEY ARE IN THE PROPER LOCATIONS REQUIRED FOR THE FURNISHINGS INDICATED.

FURNITURE & EQUIPMENT KEY

IMC RM H-4 & CAFE´ RM H-7
- 01 STUDY PODS & CHAIRS
- 02 CAFE TABLE & CHAIRS
- 03 LOUNGE CHAIR
- 04 WORKTABLE & STOOLS W/ POWER
- 05 TABLE& CHAIRS
- 06 HALF ROUND TABLE & CHAIRS
- 07 STANDING HT HALF ROUND TABLE W/ POWER
- 08 LOUNGE SEATING & TABLE W/ POWER
- 09 OTTOMAN
- 10 SIDE TABLES
- 11 LIBRARY DESK & CHAIR W/ POWER
- 12 DISPLAY CASE
- 13 WORKSTATION & CHAIRS W/ POWER
- 14 LECTERN
- 15 MOVABLE DIVIDING PARTITION
- 16 MOVABLE MARKERBOARD
- 17 CAFE TABLES & STOOLS
- 18 CAFE BOOTHS W/ POWER
- 19 CAFE BOOTHS & CHAIRS W/ POWER
- 20 BASE CABINETS & COUNTER
- 21 60" H BOOKCASE
- 22 42" H BOOKCASE

UNIT H - FURNITURE PLAN

SCALE: 1/8" = 1'-0" | 01

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PRINT DATE: 3/30/20

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TITLE: FURNITURE PLAN

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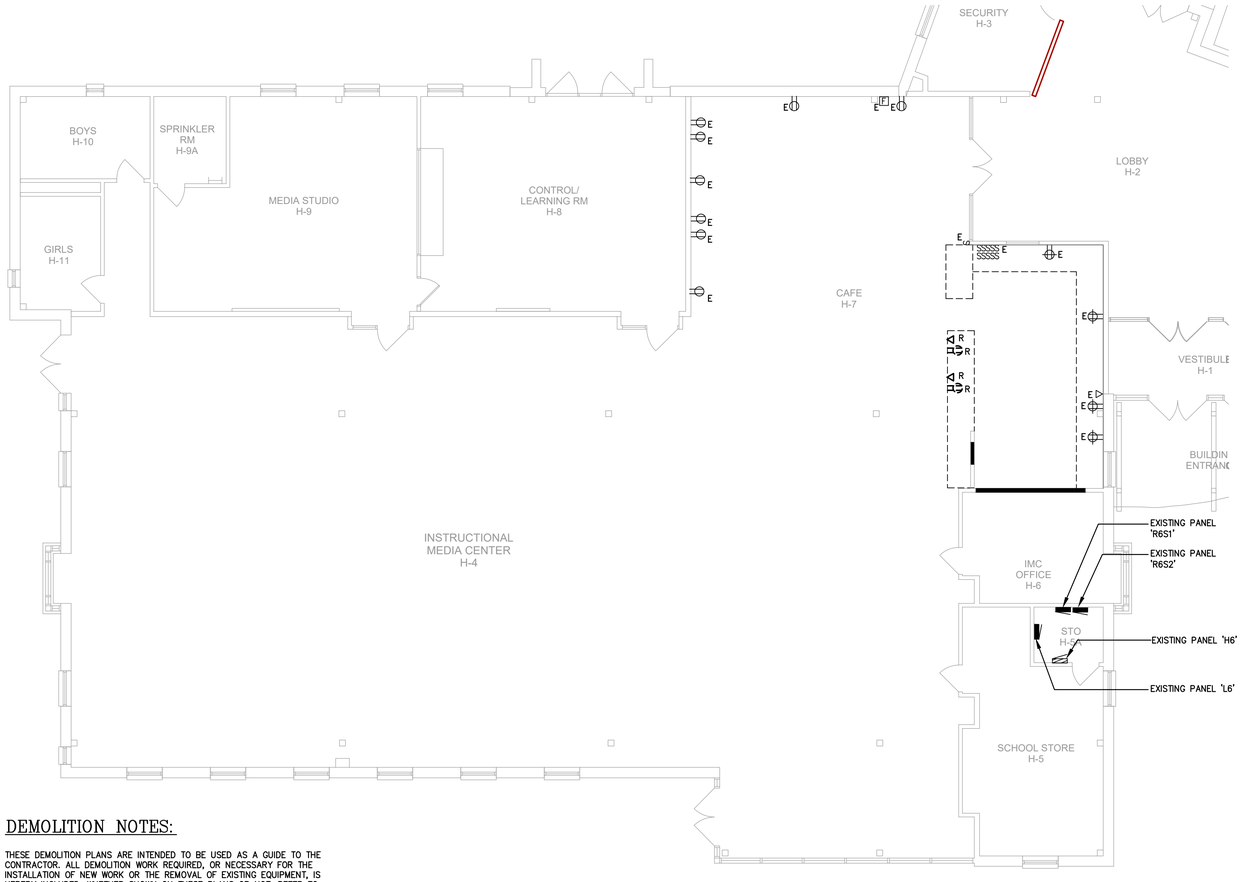
A.02

3 OF 3



SYMBOL LIST & ABBREVIATIONS

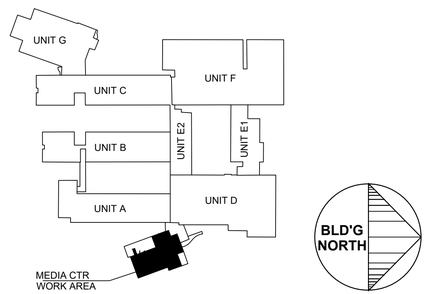
IG GFI	DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE, GROUNDED GFI INDICATES GROUND FAULT INTERRUPTION, IG INDICATES ISOLATED GROUND
Q	DOUBLE DUPLEX (QUAD) RECEPTACLE
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER HEIGHT;
	VOICE/DATA/VIDEO OUTLET – 4" X 4" OUTLET BOX WITH 3/4"C STUBBED UP ABOVE NEAREST ACCESSIBLE CEILING VERIFY LOCATION IN FIELD
S	SINGLE POLE SWITCH
F	FIRE ALARM, MANUAL PULL STATION
	WIRE & CONDUIT, CONCEALED IN CEILING OR WALL
	WIRE & CONDUIT, HOMERUN TO PANEL
AFF	ABOVE FINISHED FLOOR
E	EXISTING TO REMAIN
R	EXISTING TO BE REMOVED

DEMOLITION NOTES:

1. THESE DEMOLITION PLANS ARE INTENDED TO BE USED AS A GUIDE TO THE CONTRACTOR. ALL DEMOLITION WORK REQUIRED, OR NECESSARY FOR THE INSTALLATION OF NEW WORK OR THE REMOVAL OF EXISTING EQUIPMENT, IS HEREBY INCLUDED, WHETHER SHOWN ON THESE PLANS OR NOT. REFER TO DRAWINGS OF ALL TRADES FOR ADDITIONAL WORK, AND COORDINATE IN THE FIELD.
2. THE CONTRACTOR SHALL VERIFY ACTUAL SITE CONDITIONS PRIOR TO SUBMITTING HIS BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEMS. THE CONTRACTOR SHALL ALSO INCLUDE TEMPORARY REMOVAL AND REINSTALLATION OF EXISTING WORK WHEREVER NECESSARY. THE OWNER SHALL NOT ACCEPT EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.
3. THIS CONTRACTOR SHALL REMOVE ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES AS INDICATED ON THE DEMOLITION PLANS, OR THAT ARE NO LONGER NEEDED BY THE OWNER. ALL EXISTING WIRING AND CONDUIT WHERE NO LONGER REQUIRED SHALL BE REMOVED BACK TO EXISTING PANEL. ALL EXISTING DISCONNECTED CIRCUITS NOT BEING REUSED SHALL BE TURNED OFF AND LABELED "SPARE". WHERE CONDUITS ARE INACCESSIBLE, REMOVE WIRE AND ABANDON CONDUITS.
4. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY POWER IS BEING PROVIDED TO ALL EXISTING EQUIPMENT REQUIRED TO REMAIN IN SERVICE. RECONNECT ALL DISTURBED FACILITIES WHICH ARE EXISTING TO REMAIN AND PLACE THEM IN OPERATIONAL CONDITION.
5. REMOVE ALL WIRING DEVICES FROM WALLS TO BE DEMOLISHED. REMOVE EXISTING LIGHT SWITCHES WHERE NO LONGER REQUIRED. REUSE ALL EXISTING CONCEALED CONDUIT AND RECESSED DEVICE BOXES WHERE POSSIBLE. ABANDON BOXES IF THEY ARE IN EXISTING WALLS TO REMAIN. PATCH WALLS OVER ABANDONED BOXES TO MATCH ADJACENT SURFACES.
6. REMOVE ABANDONED OUTLET BOXES, SURFACE METAL RACEWAY AND CONDUIT THAT WOULD BE EXPOSED, AND REPAIR DISTURBED SURFACES TO MATCH ADJACENT AREAS.
7. MAJOR PIECES OF EQUIPMENT ARE TO BE TURNED OVER TO THE OWNER FOR HIS USE, OR AT THE OWNER'S DISCRETION, REMOVED FROM THE SITE AND DISPOSED OF, IF NO LONGER REQUIRED.
8. PATCH ALL WALLS TIGHT AT REMOVALS. MAINTAIN FIRE RATINGS AS REQUIRED.
9. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXTENT OF WALL FINISHES AND CEILINGS TO BE REPLACED. ALL EXISTING DEVICES TO REMAIN SHALL BE TEMPORARILY DISCONNECTED AND REINSTALLED. WHERE TEMPORARY REMOVAL IS NOT POSSIBLE THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF EXISTING EQUIPMENT IN PLACE.
10. THE EXISTING FIRE ALARM SYSTEM SHALL BE MAINTAINED THROUGHOUT DEMOLITION AND CONSTRUCTION. PROVIDE TEMPORARY SUPPORT OF EXISTING DEVICES AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE FIRE MARSHAL UPON ANY MODIFICATIONS TO OR ANY NECESSARY INTERRUPTION IN SYSTEM OPERATION. NOTE THAT COVERING DEVICES DURING CONSTRUCTION IS AN INTERRUPTION TO COVERAGE.

1 / ED.1 MEDIA CENTER PLAN – ELECTRICAL DEMOLITION

SCALE 1/8" = 1'-0"



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NJDOE SP #1770-050-19-1000

INSTRUCTIONAL MEDIA CENTER ALTERATION

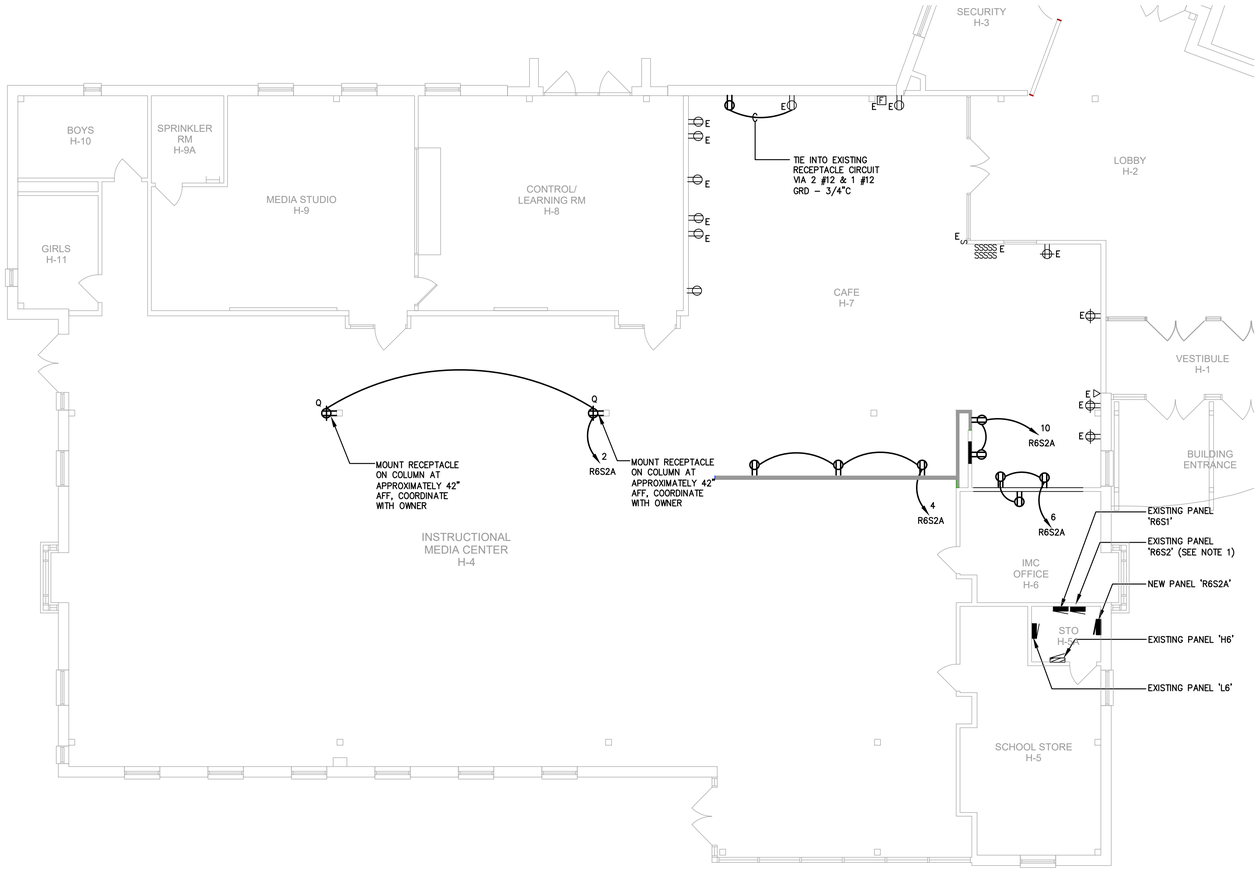
GLOUCESTER CITY HIGH SCHOOL
1300 MARKET STREET
GLOUCESTER CITY, NJ 08030

TITLE: DEMOLITION PLAN - ELECTRICAL

DRAWING DATE: 27 MAR 20
REVISION DATE:
DRAWN BY:
COMMISSION NO.: 5602B

ED.1

1 OF 3



1
E.1

MEDIA CENTER PLAN – ELECTRICAL

SCALE 1/8" = 1'–0"

EXISTING PANELBOARD 'R6S2'

208/120V, 3ø, 4W, S/N, SURFACE, 150A/3P MAIN CIRCUIT BREAKER

CKT#	DESCRIPTION	LOAD KVA	CIR. BREAKER POLES	CIR. BREAKER AMP	WIRE & CONDUIT	ø A ø B ø C	WIRE & CONDUIT	CIR. BREAKER AMP	CIR. BREAKER POLES	LOAD KVA	DESCRIPTION	CKT#
1	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	2
3	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	4
5	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	6
7	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	8
9	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	10
11	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	12
13	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	14
15	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	16
17	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	18
19	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	20
21	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	22
23	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	24
25	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	26
27	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	28
29	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	30
31	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	32
33	EXISTING	–	1	20	EXISTING		EXISTING	20	1	–	EXISTING	34
35	STUDIO LIGHTS	–	1	20	EXISTING		EXISTING	20	1	–	CNT. CTR RECEPS.	36
37	STUDIO LIGHTS	–	1	20	EXISTING		4 #6 & 1 #10 GRD – 1"C	60	3	–	SUBPANEL R6S2A	38
39	CONT. CEILING MON/ STUDIO MON. RECEPS.	–	1	20	EXISTING							40
41	STUDIO RM SMART BD/ DESK	–	1	20	EXISTING							42
	SUB TOTAL KVA	–								71.0	SUB TOTAL KVA	
		–	TOTAL CONNECTED LOAD									

NOTES:

1. REMOVE EXISTING CIRCUIT BREAKERS AND PROVIDE NEW 60A/3P CIRCUIT BREAKER TO FEED SUBPANEL 'R6S2A' TYPE AND AIC RATING TO MATCH EXISTING..

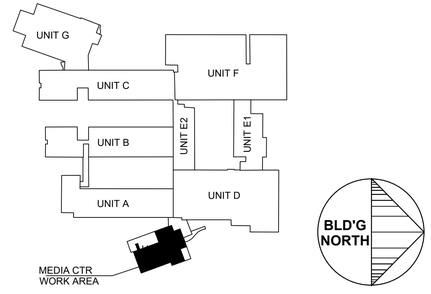
NEW PANELBOARD 'R6S2A'

208/120V, 3ø, 4W, S/N, SURFACE, 100A MAIN LUGS ONLY (10K AIC)

CKT#	DESCRIPTION	LOAD KVA	CIR. BREAKER POLES	CIR. BREAKER AMP	WIRE & CONDUIT	ø A ø B ø C	WIRE & CONDUIT	CIR. BREAKER AMP	CIR. BREAKER POLES	LOAD KVA	DESCRIPTION	CKT#
1	SEE NOTE 2	–	1	20	SEE NOTE 1		2 #12 & 1 #12 GRD–3/4"C	20	1	0.7	QUAD COLUMN REC.	2
3	SEE NOTE 2	–	1	20	SEE NOTE 1		2 #12 & 1 #12 GRD–3/4"C	20	1	0.5	PARTITION RECEPS.	4
5	SEE NOTE 2	–	1	20	SEE NOTE 1		2 #12 & 1 #12 GRD–3/4"C	20	1	0.4	IMC OFF./MEDIA REC.	6
7	SPARE	–	1	20	–		2 #12 & 1 #12 GRD–3/4"C	20	1	0.9	WBM FURNITURE REC.	8
9	SPARE	–	1	20	–		–	20	1	–	SPARE	10
11	SPARE	–	1	20	–		–	20	1	–	SPARE	12
13	SPARE	–	1	20	–		–	20	1	–	SPARE	14
15	SPACE	–	1	–	–		–	20	1	–	SPARE	16
17	SPACE	–	1	–	–		–	–	1	–	SPACE	18
19	SPACE	–	1	–	–		–	–	1	–	SPACE	20
21	SPACE	–	1	–	–		–	–	1	–	SPACE	22
23	SPACE	–	1	–	–		–	–	1	–	SPACE	24
25	SPACE	–	1	–	–		–	–	1	–	SPACE	26
27	SPACE	–	1	–	–		–	–	1	–	SPACE	28
29	SPACE	–	1	–	–		–	–	1	–	SPACE	30
	SUB TOTAL KVA	1.5								3.4	SUB TOTAL KVA	
		4.9	TOTAL CONNECTED LOAD									

NOTES:

1. EXISTING CIRCUIT WAS FED FROM PANEL R6S2 AND IS BEING RELOCATED TO NEW SUB–PANEL 'R6S2A', PROVIDE A JUNCTION BOX ABOVE TO INTERCEPT CIRCUITING AND PROVIDE CIRCUITING IN KIND TO SUBPANEL 'R6S2A'.
2. COPY CIRCUIT DESCRIPTION FROM PANEL 'R6S2' SCHEDULE.



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NJDOE SP #1770-050-19-1000

INSTRUCTIONAL MEDIA CENTER ALTERATION
GLOUCESTER CITY HIGH SCHOOL
1300 MARKET STREET
GLOUCESTER CITY, NJ 08030

TITLE: MEDIA CENTER PLAN - ELECTRICAL

DRAWING DATE: 27 MAR 20
REVISION DATE:
DRAWN BY:
COMMISSION NO.: **5602B**

E.1

ELECTRICAL SPECIFICATIONS

GENERAL REQUIREMENTS

Drawings and general provisions of the contract including general and supplementary conditions addenda and other division 01 specification section apply to these documents.

Drawings are diagrammatic. Sizes and locations of equipment are shown to scale where possible, but may be distorted for clarity on the Drawings. Final locations shall be as required or directed.

Light and power system riser diagrams and schematic diagrams generally indicate equipment and connections to be used for various systems. System conduit and wiring shall be as required. Provide all work shown on diagrams whether or not it is duplicated on the plans.

SCOPE OF WORK

In general the work includes, but is not limited to the following:

1. Raceways and Installation Components.
2. Wire and Cable.
3. Panelboards and Modifications.
4. Grounding.
5. Control Equipment
6. Testing.
7. Seismic Restraints.
8. Furnishing of Access Doors.
9. Furnishing and setting of all sleeves through the floors, roof, and walls where required, including waterproofing, and fireproof sealing, and cap flashing.
10. Cutting, drilling and boring associated with electrical work.
11. Prime painting, where required for electrical equipment and installation.
12. Final connection of all equipment unless otherwise noted.

QUALITY ASSURANCE AND STANDARDS

The complete installation shall be in accordance with NJUCC (The State Building Code).

Contractor shall be responsible for securing all permits and obtaining all necessary approvals. He shall complete all required forms and pay all associated fees.

SUBMITTALS

The Contractor shall submit shop drawings for all systems and components with such promptness as to cause no delay in his own work or that of another contractor.

EXAMINATION OF EXISTING CONDITIONS ON PREMISES

Before submitting his bid, this Contractor shall thoroughly familiarize himself with the existing conditions affecting the work. By the act of submitting a bid, the Contractor shall be deemed to have made such an examination, to have accepted such conditions, and to have made allowance therefore in preparing his bid. No additional compensation will be granted on account of extra work made necessary by the Contractor's failure to investigate such existing conditions. Verify all grades, elevations, dimensions, and clearances at the site.

COORDINATION OF WORK WITH OTHER TRADES

The contractor shall coordinate the work of this Section with the work of all other Contracts and all the Utility Companies. It shall be so arranged that there will be no delay in the proper installation and completion of all work.

INSPECTION AND TESTS

The entire wiring system must test free from shorts and open circuits. Every ground shall be tested for compliance with standards listed below.

PROTECTION, MAINTENANCE AND PRODUCT HANDLING OF ELECTRICAL EQUIPMENT

Electrical equipment shall be delivered and stored at the site, properly packed and crated until finally installed.

Provide effective protection against damage for all material and equipment during shipment and storage at the Project Site.

This Contractor shall be responsible for the maintenance of all installed equipment and systems until final acceptance by the Owner.

GUARANTEE

This Contractor shall guarantee in writing to the Owner that all work installed by him shall be free of defects in workmanship and materials and that all apparatus will develop the capacities and characteristics as indicated, and that, if during a period of not less than two years from date of final approval of work by the Architect, any defects in workmanship, materials or performance appear, he will remedy them without any cost to the Owner.

ACCESSIBILITY AND MEASUREMENTS

All work shall be installed so as to be readily accessible for operation, maintenance, and repair. Minor deviations from the plans may be made to accomplish this, subject to approval.

Before ordering any material or doing any work, the Contractor shall verify all measurements at the Building, and shall be responsible for the correctness of same as related to the work under this Contract.

IDENTIFICATION NAMEPLATES

Identify and mark all electrical equipment to meet OSHA standards and as specified herein.

Unless otherwise noted, nameplates shall be black laminate with white letters of uniform size consisting of reasonably large capital letters, 3/16 inch minimum.

SEISMIC RESTRAINTS

Provide lateral restraints for all electrical equipment installed on project; i.e., Battery racks, ballast racks, cable trays, conduit, generators, lighting fixtures, panels and transformers. Typically, lateral restraints shall consist of angle iron and "uni-strut" bracing, cross bracing, hanger rods, anchor clips, expansion shield anchor bolts, etc. The purpose of the restraints is to provide resistance to lateral (horizontal) movement during earthquake.

All equipment shall be anchored to the floor, ceiling structure or walls.

All suspended equipment, wiring trough and conduit trade size 2-1/2" or larger shall have (lateral) horizontal bracing capable of resisting 50% of the equipment weight. Horizontal bracing shall be placed at each point where vertical supports are specified or required.

All life safety equipment, and conduit shall have lateral bracing capable of resisting 100% of the equipment weight.

RACEWAYS AND INSTALLATION COMPONENTS

The requirements of this Section apply to raceway work specified elsewhere in these specifications.

The work includes the providing of completely coordinated grounded raceway systems complete with boxes, fittings, flexible connections to vibrating equipment and accessories, as specified and as required for a complete system.

Raceways and fittings shall be manufactured by Triangle or approved equal by Allied or Republic.

Rigid steel conduit shall be full weight steel pipe, hot dip galvanized inside and outside, threaded, minimum 3/4 inch.

Intermediate metal conduit (IMC) shall be intermediate steel pipe, hot dip galvanized, threaded, minimum 3/4 inch.

Rigid steel and IMC conduit fittings shall be standard threaded couplings, locknuts, bushings, and elbows. Material shall be steel or malleable iron only.

Rigid steel conduit shall be used for underground installation; in wet, damp or wash down locations; for exposed runs on the exterior of the building; embedded in concrete or masonry or below concrete that is in contact with earth.

Intermediate metal conduit (IMC) may be used in place of rigid steel in dry locations only.

Liquid-tight flexible steel conduit (Seal-tite) shall be zinc coated, consist of flexible galvanized steel tubing over which is extruded a liquid-tight sheathing of polyvinyl chloride (PVC). Conduit shall be provided with a continuous copper bonding conductor would spirally between the convolutions.

For indoor applications, boxes shall have a gray enamel finish. For outdoor and damp locations, boxes shall be galvanized.

Liquid-tight flexible metal conduit fittings shall incorporate a threaded grounding cone, a steel or plastic compression ring, and a gland for tightening. Connectors shall have insulated throats.

Individual conduit hangers, shall be designed for the purpose, and have pre-assembled closure bolt and nut, and provisions for receiving hanger rod.

Multiple conduit (trapeze) hangers shall be not less than 1-1/2 by 1-1/2 inch, 12 gauge steel, cold formed, lipped channels. Hanger rods shall be not less than 3/8-inch diameter steel.

All anchors types shall be a type approved for the purpose and intended use.

Provide and assume responsibility for locating and maintaining in proper position all penetrations and sleeves required for the work.

Openings through floors and walls in which cables, conduits, or pipe pass shall be sealed by U.L. classified smoke and fire stop fittings, and have an hourly rating equal to the fire rating of the floor or wall. Fittings shall be similar to O-Z/Gedney Type "CFS" or "CAFS".

Penetrations through fire-rated floors in which wiring for floor service outlets are routed shall be sealed by U.L. classified smoke and fire-stop fittings, and shall have an hourly rating equal to the floor rating. Fittings shall be similar to O-Z/Gedney Type "PTFS".

Junction, splice and pull boxes shall be made of code gauge sheet steel with removable covers fastened with brass or stainless steel screws, except as noted, and will include insulated supports for cables. Box dimensions shall conform to N.E.C. requirements.

Provide junction, splice and/or pull boxes as noted or as required to facilitate pulling of conductors or in raceway runs that have more than three (3) 90-degree bends.

Boxes shall have a gray enamel finish.

Wireways shall be as manufactured by Square D, General Electric, or approved equal.

Wireways shall be square, brake-formed of code gauge steel, furnished in standard 10-foot sections with knockouts as required. Wireways shall be of the screw cover type and all necessary offset and elbow fittings. They shall have a gray enamel finish. Size shall be as required for proper cable fill.

Install raceway and installation components as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and in accordance with the recognized industry practices, to ensure that products serve intended function.

Raceway supports shall be provided by means of ceiling trapeze, strap hangers, or wall brackets. Use structural steel angles or channels, or manufactured steel support system. Spacing of supports shall be as per NEC and per manufacturer's recommendations but in no case shall exceed 8'-0" on centers. Provide U-bolts at each floor level for riser raceways and anchor to acceptable supports. Secure raceways to supports with pipe straps or U-bolts.

Mechanically join all metal raceways, enclosures and junction boxes to assure continuity.

Branch circuit conduits shall be supported by the existing structure.

Provide expansion-deflection fittings at expansion joints in accordance with manufacturer's recommendations. Expansion-deflection fittings shall be used for all trade sizes 1-1/4" or larger. For trade sizes up to 1" in size, a suitable length of flexible conduit (or liquid-tight flexible conduit) with sufficient slack for movement and grounding conductor fastened on each side of joint shall be permitted.

Liquid-tight flexible steel conduit shall be used in damp locations for final connections to motor terminal boxes, transformers, and other vibrating equipment in damp and dry locations.

In general, cutting and core drilling is to be avoided. Where it becomes necessary, locations are to be coordinated with other trades, the Owner. There is to be no cutting or core drilling without prior approval.

Provide junction, splice and pull boxes where required to facilitate installation of wiring, whether or not shown on Drawings. Size boxes according to code, and provide interior partitions, insulated supports, hot dip galvanized angle iron braces, screw-on one-piece or split covers, ground connectors, and other accessories as required.

WIRE AND CABLE

The work includes providing wire and cable complete with all accessories in accordance with Drawings and Specifications and as required for a complete system. Wiring size referenced in this Section shall be AWG, except as noted

This project has been designed for copper conductors. Aluminum conductors are not acceptable and shall not be used. Cable shall be manufactured by Triangle or approved equal by Carol or Guardian Products.

No. 10 and smaller conductors shall be ASTM Standard, solid, copper; and, No. 8 and larger conductors shall be ASTM standard, stranded copper.

Minimum conductor size shall be No. 12 for lighting and power and No. 14 for control and alarm. Increase wire sizes as required for long runs to overcome voltage drop.

Communications and signal wiring shall conform to the recommendations of the manufacturer's communication and signal systems and shall be specified in respective Sections of these Specifications.

"THWN" or "XHHW" insulation shall be used for interior branch circuit and feeder wiring. Rating shall be 90oC in dry locations and 75oC in wet locations.

Green colored insulated wire shall be used for all grounding applications.

Phase wires shall be color-coded as follows:

1. 120/208 volt system: Black for A phase
   Red for B Phase
   Blue for C Phase

Neutral conductors shall be white for 120/208 volts.

Provide O-Z/Gedney Type "CSB" series or approved equal seal fittings between the wire and conduit for all cable and wire entering the building from underground, including service cables.

Not more than 3 current carrying conductors shall be in one (1) conduit unless otherwise indicated. Provide one neutral conductor for each 3 phase 4 wire homerun to a panelboard unless otherwise noted.

MC cable shall comply with the NEC article 330. MC cable shall be as manufactured by AFC or approved equal by Guardian Products.

MC cable shall include a green insulated ground wire of the same size as the other conductors.

Run MC cable in dry hollow metal partitions and above suspended ceilings. Install cable as slack span; do not pull tight. Maintain at least 6" clearance between parallel runs of light and power wiring to avoid inductive coupling. Maintain at least 24" clearance from hot water and steam piping. Provide conduit sleeves through walls and partitions that obstruct horizontal passage of wiring, and seal sleeves after installation of cables. Cable shall be secured by approved staples, hangers or similar fittings independent of ceiling grids or supports.

MC cable shall be used in conjunction with conduit. Cable shall only be permitted for single phase circuits in hallow metal walls and above accessible ceilings. Single phase cable runs shall be gathered into three phase conduit homeruns. In no case shall cable enter directly into panelboards.

Secure MC cable to ceiling structure at intervals not to exceed 6 feet and within 12 inches of every outlet box, junction box, or fitting.

Make wire splices electrically and mechanically secure. Install small wire connectors so that no bare conductor is exposed. Tighten bolts on large conductor connectors so that conductor is deformed, but do not break strands of wire. Use compression tool with proper die for compression connectors in accordance with manufacturer's recommendations, so that conductors are deformed but not broken. Apply insulation over splice so that insulation thickness is at least 1-1/2 times that on conductor. Lap applied insulation at least 1" over conductor insulation so that no bare conductor is exposed.

In general, all feeders No. 8 and larger shall be continuous from point of origin to equipment being served. Splices shall only be used where necessary and with prior written approval of the Engineer.

Terminate conductors on terminal strips in equipment where terminal strips are used. Provide appropriate connectors, or hook conductors around terminal screws as required.

Provide encapsulated splice kits (3-M type 85 series or approved equal) for all splices in areas subject to moisture, including wet locations inside buildings and underground handholes, manholes, and buried junction boxes. Install splice kit in accordance with manufacturer's recommendations, and make splice waterproof. Apply sealing putty to surround each cable. Install mold body so that resin covers each cable sheath by a minimum of one inch.

All copper conductors No. 8 & larger shall be terminated, spliced, and tapped with color-keyed compression connectors, as manufactured by Thomas & Betts Co., Series 54000, Ideal Industries Series 87000, or approved equal. The manufacturer's recommended tooling shall be used. Mechanical type connectors shall not be used.

All copper conductors No. 10 AWG & smaller shall be terminated and spliced with Ideal Industries wing-nut wire connectors or approved equal compression connectors. The flame-retardant thermoplastic insulated type shall be used to isolate the terminal from other metal parts and equipment.t

Use insulating boots supplied for compression connectors or fil joint with "Scotchfil" insulating putty and serve (3) 1/2 lap layers of "Scotch" #33 electrical tape.

WIRING DEVICES AND INSTALLATION COMPONENTS

All local switches near doors shall be located at strike side of door as finally hung, whether so indicated on the Drawings or not.

Height of outlets from finished floor to centerline of outlet shall be as follows:

Bracket Outlet in toilets: as required to clear top of mirror or behind medicine cabinet if light is part of cabinet.

Receptacle outlets: 1'-6", unless otherwise noted

Switch and receptacle colors shall be ivory.

* The top of the wall device is to be even with the top of the door frame (±7"-0) rough-in outlet box accordingly.

Wiring devices and installation components shall be manufactured by Hubbell, Bryant Electric, Pass & Seymour, Leviton, Cooper Industries-Arrow Hart, or General Electric.

Switches shall be heavy-duty specification grade, toggle, quiet type, fully enclosed in composition cases, color as selected by Architect at shop drawing stage. They shall be rated 20 amp, 120/277 volt, AC.

Receptacles shall be the grounding type, composition base, meeting NEMA standards, publication WD-1-1971, color as selected by Owner.

Duplex Convenience Receptacles shall be 20 amps, 125 volts, 2 pole, 3 wire, U ground slot type, Hubbell No. BR20.

Ground Fault Interrupter Duplex Receptacles: 20 amps, 125 volts, 2 pole, 3 wire, Hubbell No. GF-5352, with weatherproof cover, Hubbell No. 5221.

Where more than one switch or receptacle is being installed, provide multiple gang plates for number of devices as required.

Provide barriers in multi-gang boxes servicing multiple 277 volt circuits so as not to introduce 480 volts into a section.

Plates shall be beveled stainless steel satin chrome finish #302, of minimum .035" thickness.

Manual motor starters shall be Allen Bradley Bulletin 600 or approved equal by Square D or General Electric and shall be horsepower rated, and voltage rated for the motor load.

Wallboard and masonry shall fit snuggly to all sides of outlet boxes, grout and patch as required.

Convenience receptacles shall be mounted with ground pole up, except those mounted above counter levels.

Local wall switches and receptacles shall be mounted vertically unless otherwise indicated.

PANELBOARDS

The interior distribution system, in general, shall consist of 3-phase, 4-wire mains at 120/208 volts. The contractor shall balance the load on all feeders as nearly as possible on the three phases after the system is fully energized and all components are functioning.

Panelboards and distribution panels shall be General Electric "A" Series and CCB or approved equal by Square D, Cutler Hammer, or Siemens.

Panel circuit breaker overcurrent protective devices shall be as scheduled on the Drawings and as specified. All breakers shall be bolted-on thermal magnetic type

Panel circuit breakers shall be rated for 10,000 RMS symmetrical amperes minimum interrupting rating at 120/208 volts. Provide higher ratings as required or as scheduled on the Drawings.

Provide handle-locking attachments for all circuit breaker serving emergency lights, exit lights, clocks, and other functions indicated.

Cabinets and trim shall be fabricated of code gauge steel, with hinged door, lock and catch, and directory pocket covered with clear plastic shield over directory.

Furnish and install a typewritten circuit directory. Hand written will not be accepted.

GROUNDING

Grounding equipment shall be manufactured by Chance, Burndy, Cadweld, Thomas & Betts, Blackburn, or O-Z/Gedney.

The complete electrical installation shall be permanently and effectively grounded in accordance with all code requirements, whether or not such connections are specifically shown or specified. Measured resistance to ground shall be 5 ohms, maximum. All parts of the electrical installation shall be grounded.

Ground conductors shall be sized in accordance with the National Electrical Code. Ground conductors shall be continuous without splices.

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NJDOE SP #1770-050-19-1000

INSTRUCTIONAL MEDIA CENTER ALTERATION

GLOUCESTER CITY HIGH SCHOOL
1300 MARKET STREET
GLOUCESTER CITY, NJ 08030

TITLE: SPECIFICATIONS - ELECTRICAL

DRAWING DATE: 27 MAR 20
REVISION DATE:
DRAWN BY:
COMMISSION NO.: 5602B

E.2

3 OF 3