ARCHITECTURE
ENGINEERING
PLANNING
CPLteam.com

ADDENDUM NO. 1

PROJECT:	Carmel Central School District 81 South Street, PO Box 296, Patterson, New York 12563 George Fischer Library Improvements & District Wide ADA Compliance
CPL PROJECT NO.	70019.01
SED PROJECT NO.	**Carmel High School - 48-01-02-06-0-003-022** **George Fischer Middle School - 48-01-02-06-0-008-018** **Kent Primary School - 48-01-02-06-0-010-013** **Kent Elementary School - 48-01-02-06-0-001-017** **Matthew Paterson Elementary School - 48-01-02-06-0-004-016**
DATE:	04-16-2021

This Addendum contains changes to the requirements of the Contract Documents. Such changes shall be incorporated into the Contract Documents and shall apply to the work with the same meaning and force as if they had been included in the original documents. Wherever this addendum modifies a portion of a paragraph of the project manual, or any portion of a drawing, the remainder of the paragraph or drawing affected shall remain in force.

The conditions of the project manual shall govern all work described in this addendum. Wherever the conditions of work and the quality or quantity of materials or workmanship are not fully described in this Addendum, the conditions of work, etc. described by the project manual for similar items of work shall apply to the work described in this Addendum.

The "Conditions of the Contract" apply to all work described in this Addendum.
This Addendum consists of 9 (8.5" x 11") pages and the following attachments.

PROJECT MANUAL:

(7 Pages)
1. **Section 00 4100 – BID FORM**

(1 Pages)
2. **Section 01 2300 – ALTERNATES**

(3 Pages)
3. **Section 01 7329 - CUTTING AND PATCHING**

(6 Pages)
4. **Section 09 3000 – TILING**

(2 Pages)
5. **Section 09 8430 – SOUND ABSORBING WALL AND CEILING UNITS**

(2 Pages)

332 Route 100 | Somers, NY 10589 I 914.276.0777 I cplteam.com

6. **Section 10 2113.19 - PLASTIC TOILET COMPARTMENTS**

(5 Pages)

7. **Section 14 4250 - VERTICAL WHEELCHAIR LIFTS**

(5 Pages)

8. **Section 22 4213.13 Commercial Water Closets**

(5 Pages)

9. **Section 22 4216.14 Commercial Lavatories**

(7 Pages)

10. **Section 26 0000 - General Provisions for Electrical Work**

(3 Pages)

11. **Section 26 0519 - Low-voltage conductors and cables**

(6 Pages)

12. **Section 26 0526 - Grounding and Bonding**

(4 Pages)

13. **Section 26 0529 - hangers and supports for electrical systems**

(9 Pages)

14. **Section 26 0533 - raceways and boxes**

(4 Pages)

15. **Section 26 0544 - sleeves and sleeve seals for electrical raceways and cabling**

(5 Pages)

16. **Section 26 0553 - electrical identification**

(7 Pages)

17. **Section 26 0923 - lighting control devices**

(5 Pages)

18. **Section 26 2616 - enclosed switches and circuit breakers**

(6 Pages)

19. **Section 26 5100 - interior lighting**

(5 Pages)

20. **Section 28 0153 - conductors and cables for electronic safety and security**

(4 Pages)

21. **Section 28 3111 - Addressable Fire Alarm System**

(2 Pages)

22. **CONSTRUCTION SCHEDULE**

DRAWINGS:

1. **LOG L-1**
2. **GF A109**
3. **GF A600**
4. **A800**
5. **MP-H204**
6. **GF P201**
7. **KE-P202**

8. **GEN-E000**
9. **GF-E101**
10. **GF-E201 BATHROOMS**
11. **GF-E201 LIBRARY**
12. **GF-E900**
13. **HS-E201**
14. **KE-E201**
15. **KP-E201**
16. **MP-E201**

The following changes are hereby made:

TO THE PROJECT MANUAL:

1. **Section 00 4100 – BID FORM – REPLACE with attached revised section.**

2. **Section 01 2300 – ALTERNATES – REPLACE with attached revised section.**

3. **Section 01 7329 Cutting and Patching – REPLACE with attached revised section.**

4. **Section 01 3000 Administrative Requirements, PART 3 EXECUTION, 3.11 SUBMITTAL PROCEDURES** – **INSERT** the following as paragraph B. "Contractor shall retain registered professional engineer licensed in New York State and provide stamp and seal shop drawings for delegated design of the ADA lifts."

5. **Section 08 0671 Door Hardware Schedule, PART 1 GENERAL, 1.02 RELATED REQUIREMENTS** – **ADD** the following as paragraph B. "Door hardware must comply with NFPA 101, ANSI 117.1-09 and SED MPS-98 S105."

6. **Section 08 8000 Glazing, PART 2 PRODUCTS, 2.01 MANUFACTURERS** – Add the following as paragraph D.

   D. Fire-Protection-Rated Glass: Provide products as required to achieve indicated fire-rating period.
      1. Manufacturers:
      2. SAFTIFIRST, a division of O'Keeffe's Inc; SuperClear 45-HS: www.safti.com/#sle.
      3. SCHOTT North America Inc; PYRAN Platinum 45: www.us.schott.com/#sle.
      4. Technical Glass Products; FireLite Plus - 45 Minute Rating: www.fireglass.com/#sle.
      5. Vetrotech North America; Contraflam 45: www.vetrotechusa.com/#sle.
      6. Substitutions: Refer to Section 01 6000 - Product Requirements.

7. **Section 08 1113, Hollow Metal Doors and Frames, PART 2 PRODUCTS, 2.01 MANUFACTUERERS, PAR. A. Hollow Metal Doors and Frames –** Add the following:
   4. Technical Glass Products [Fireframes Designer Series]

8. **Section 08 1113, Hollow Metal Doors and Frames, PART 2 PRODUCTS, 2.04 HOLLOW METAL FRAMES, PAR. E. Borrowed Lites Glazing Frames –** Add the following:
    1. Fire Rating: 45 Minutes at rated partitions as indicated on the drawings.

9. **Section 09 3000 – TILING – REPLACE with revised attached section.**

10. **Section 09 8430 – Sound Absorbing Wall and Ceiling Units – ADD entire section to Project Manual.**

11. **Section 10 2113.13 Metal Toilet Compartments – DELETE entire section from Project Manual.**

12. **Section 10 2113.19 Plastic Toilet Compartments – ADD entire section to Project Manual.**

13. **Section 14 4250, Vertical Wheelchair Lifts – ADD entire section to Project Manual.**

14. **Section 22 4213.13 Commercial Water Closets – REPLACE with attached revised section.**

15. **Section 22 4216.14 Commercial Lavatories – REPLACE with attached revised section.**

16. **Section 26 0000 - General Provisions for Electrical Work – ADD entire section to Project Manual.**

17. **Section 26 0519 - Low-voltage conductors and cables – ADD entire section to Project Manual.**

18. **Section 26 0526 - Grounding and Bonding – ADD entire section to Project Manual.**

19. **Section 26 0529 - Hangers and supports for electrical systems – ADD entire section to Project Manual.**

20. **Section 26 0533 - Raceways and boxes – ADD entire section to Project Manual.**

21. **Section 26 0544 - Sleeves and sleeve seals for electrical raceways and cabling – ADD entire section to Project Manual.**

22. **Section 26 0553 - Electrical identification – ADD entire section to Project Manual.**

23. **Section 26 0923 - Lighting control devices – ADD entire section to Project Manual.**

24. **Section 26 2616 - Enclosed switches and circuit breakers – ADD entire section to Project Manual.**

25. **Section 26 5100 - Interior lighting – ADD entire section to Project Manual.**

26. **Section 28 0153 - Conductors and cables for electronic safety and security – ADD entire**

section to Project Manual.

27. **Section 28 3111 - Addressable Fire Alarm System – ADD entire section to Project Manual.**

TO THE DRAWINGS:

1. LOG L-1 **– ADD** sheet to contract documents.
2. All other sheets listed above and attached are REVISED and are to replace said sheets in the contract documents. Revisions are clouded with revision #3.

QUESTIONS / CLARIFICATIONS:

1. ***Clarification: All existing doors and hardware called out to be removed in the contract documents are to be turned over to the Owner.***

2. What is the estimated budget for this project?
   Response: The estimated budget range is $1,300,000 - $1,500,000.

3. What is the work schedule for this project?
   Response: Refer to the attached schedule.

4. There are no electrical specifications in the bid documents please provide them.
   Response: Refer to the attached electrical specification sections.

5. On the Carmel SD projects, are all the schools first floor on slab or are there basements or crawlspaces involved?
   Response: All first-floor bathrooms are slab on grade.

6. Who is responsible for cutting and patching?
   Response: Refer to the revised SECTION 01 7329 CUTTING AND PATCHING attached to this addendum.

7. Drawing GF A101, on number 1, toilet rooms #102 and #103 removal plan there is a removal keynote 12 which is not listed under the removal keynotes. On the second drawing the construction plan for toilet rooms #102 and #103 the construction note 11 is used in the same area which calls for a gender neutral sign in the girls restroom.
   Response: The keynote #12 on drawing #1 should be #10 –The keynote on drawing #2 pointing to the same location should be construction keynote #8.

8. In reference to the installation of the new Water Closets in each project, the spec book shows 2 types of water closets, WC-1 which is a wall mounted and back discharge, and a WC-1A which is a floor mounted and floor discharge. I believe the error is the WC-1A is mistakenly indicating the ADA Handicap closets. The only WC-1A floor mounted closet

should be in the Kent Elementary P202.
Also, who is purchasing the fixtures?
Response: WC-1/WC-1A have been changed to wall mounted units in spec section 224213.13. WC-2A has been added as a floor mounted accessible water closet in spec section 224213.13. Drawing KE-P202 has been updated to reflect changes. Plumbing fixtures shall be purchased by plumbing contractor.

9. Please provide Fire Alarm Vendor and Fire alarm panel type for each school.
   Response: Refer to the revised electrical drawings.

10. Note 4N on drawing GFE201 not shown on legend points to ex fan.
    Response: Refer to the revised electrical drawings.

11. Please provide approximate length to Electrical panels for the Demo and new installations.
    Response: Refer to the revised electrical drawings.

12. Under the construction keynotes on drawing HS A100 #6 G.C. to install new light fixtures would that be under the Electrical Contract as well as #9 G.C. to install new motion sensors?
    Response: New light fixtures and motion sensors are under the electrical contract.

13. #10 G.C. to provide and install new plumbing fixtures would that be in the Plumbing Contract as stated in the specifications?
    Response: Provide and install plumbing fixtures are in the Plumbing Contract.

14. Construction keynotes on drawings GF A101, KE A102, KP A103, MP A104, and GF A109 calls for the G.C. to install new light fixtures please verify that would be under the Electrical Contract. On drawings KP A103 keynote #13 and MP A104 keynote #8 has G.C. to install new relocated light switch please verify as well.
    Response: ***New light fixtures and relocated light switch are under the electrical contract.***

15. Please verify who would be responsible for providing and installing New Ceiling vents.
    Response: New ceiling vents are in the HVAC contract.

16. Drawings KP A103 and MP A104 call for G.C. to provide new plumbing fixtures, please confirm that would be in the Plumbing contract as well as providing and installation of accessible sink on Drawing GF A109.
    Response: New plumbing fixtures and accessible sink are in the plumbing contract.

17. On Drawing MP A104 there is no Construction Keynote #15 but there are two shown on the Toilet Rooms Construction Plan.
    Response: For the note #15 pointing on the corridor wall for the Unisex Toilet 7, that should be construction keynote #13. For the keynote #15 pointing to the door in the

Nurse's Office 4 should be construction note #12.

18. On DWG A700, Library Door Schedule
    Frames noted as aluminum, please provide specification
    Wood doors are shown with aluminum frames on tags 17, 18, 19, 23 & 24. This is not industry standard, should be aluminum doors with aluminum frames or wood doors with HM frames. Please advise.
    Response: Provide hollow metal frames as indicated* in Section 08 1113 *changes to project manual above for doors #17, #18, #19. Provide modernfold door as specified for door #'s 23 & 24.

19. DWG A700, door schedules show frame material to be wood, details on same page and specifications show HM frames. Please confirm HM frames
    Response: Provide hollow metal frames as indicated* in Section 08 1113 *changes to project manual above.

20. DWG KP A407/MP A408 please advise if wall mounted handrail is metal or wood.
    Response: Metal.

21. Please provide specification for new wood flooring or is it basic materials?
    Response: The new wood flooring is to match the stage finish and species.

22. There are extremely long and abnormal lead times on all construction materials right now and it is very likely some of the material will not be available for installation prior to completion date. Please advise if there is a contingency plan. Should the contractor plan for temporary installations and complete work at 2nd shift when school is in session as part of their bid submission or will this be addressed as a change after award if material becomes unavailable.
    Response: Unusual Manufacturer delays will be handled post-award, which the Bid Schedule has tried to take in account. The contractor is still responsible to submit shop drawings and submittals on-time per the requirements of Division 01. If there is a need for temporary materials- to occupy a space by Substantial Completion, those items will be addressed post-award, with sufficient back up to the contractor's claim. Please reference the Bid Schedule, which indicates 2nd shift work after August 31st.

23. In specification section 015001 – Temp Facilities and controls I do not understand 1.01, B. Could you please clarify the extent of the prime contractors work within this section.
    Response: Paragraph B does not pertain since this project is a multi-prime contract.

24. Please Provide Data Rack Locations and or approximate length to data rack for new Data installations
    Response: Refer to the revised electrical drawings.

25. Is there any additional data rack equipment required

Response: Refer to the revised electrical drawings.

26. Are the Clocks in the library shown new? If so please provide clock information.
    Response: Refer to the revised electrical drawings.

27. Are the Speakers in the Library shown new if so please provide speaker information.
    Response: Refer to the revised electrical drawings.

28. Will Fire alarm wire/Data wire and speaker wire be open air.
    Response: Refer to the revised electrical drawings.

29. Please provide floor box type.
    Response: Refer to the revised electrical drawings.

30. Who is responsible for cutting the hole for the new floor box and patching?
    Response: Refer to the revised SECTION 01 7329 CUTTING AND PATCHING attached to this addendum.

31. Is there accessible space below the library where the utilities to serve the floor box can be routed or will saw cutting of the floor be required?
    Response: There is accessible space under the library.

32. There are two panel schedules please delineate what schedule is for which areas.
    Response: Refer to the revised electrical drawings.

33. Looking quickly through the drawings, I do not see formal material specs for the tile products. Could you please provide? The bathroom tiles could be standard products from Daltile, but the terrazzo tile at the library vestibules can vary depending on what's required. Please advise on how to proceed.
    Response: Refer to revised Section 09 300 Tiling attached to this addendum.

34. Dwg. MP H204, Key Note 1: Refers to "prepare piping for extension to new unit" Unit not scheduled & piping not shown?
    Response: See revised key note on H204.

35. Dwg. MP H204, Detail 6: Steam fan coil piping detail: Unit & piping not shown on drawing?
    Response: Detail removed, see revised H204.

36. Dwg. MP H204, Detail 8: Heating only fan coil controls schematic, MP-FC-1: Unit not scheduled or shown on drawing? The Daikin Aurora FDMQ12RVJU cassette & RXL12QMVJU9 condensing unit on schedule & drawings are a split heat pump system.
    Response: Controls revised, see H204.

37. DWG A901 shows terrazzo tile in library vestibule. There are no specifications for this, please provide and confirm if this is terrazzo tile or terrazzo flooring.
Response: Refer to REVISED Section 09 300 Tiling attached to this addendum.

38. Door 25 is listed as an fire rated aluminum door, please confirm this is correct?
Response: Door 25 does not need to be fire rated.

39. There are no details or specs for aluminum doors, please advise.
Response: Aluminum frames are for the Nanawall. All other doors and window frames are to be hollow metal frames as indicated in Section 08 1113 changes to project manual above.

40. Doors 20/21/22 are listed as 1-hour fire rated. These are for the Nanawall, please confirm this is correct.
Response: The Nanawall Doors #20, 21 & 22 do not need to be fire rated.

41. In Reference to plumbing fixtures, prints show Lav 1A, Lav 2 and Lav 3, specs do not reflect Lav 3. Also Eye Wash (EW) is in GC specs, is he supplying this?
Response: LAV-3 has been added to spec section 224216.14. Eye wash shall be provided by plumbing contractor.

42. The door schedule on page A700 of the drawings for Carmel Central School District. The schedule calls for wood and aluminum frames, but the head and jamb detail show Hollow Metal frames. Please clarify what material is to be used for the frames.
Response: Provide hollow metal frames as indicated in Section 08 1113 changes to project manual above.

43. The Room Finish Schedule for George Fischer Middle School currently calls out Nurses Toilet 116 however I cannot seem to find this room. Could you please advise me as to where it is located on the plans?
Response: This is the toilet for the gender-neutral bathroom as indicated on sheet GF A101.

44. Could you please provide a material legend for the ceramic tile. The interior elevations seem to show 12x12 size tiles but the specifications indicate a few other different sizes.
Response: Follow material legend and sizes indicated on interior elevation drawings.

END OF ADDENDUM NO. 1

SECTION 00 4100
BID FORM

CONTRACT 1 – GENERAL CONSTRUCTION

THE PROJECT AND THE PARTIES

TO: Carmel Central School District (Carmel CSD)
81 South Street
Patterson, New York 12563

FOR: 2019 Bond – George Fischer Library Improvements &
District Wide ADA Compliance

DATE: _____ **(BIDDER TO ENTER DATE)**

SUBMITTED BY: (BIDDER TO ENTER NAME AND ADDRESS)

Bidder's Full Name _____

Address _____

City, State, Zip _____

Phone Number _____

OFFER

THE UNDERSIGNED, IN COMPLIANCE WITH THE INVITATION AND INSTRUCTIONS TO BIDDERS,

A CORPORATION OF, ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF:

_____

A partnership consisting of:

_____

An individual trading as:

_____

of the City of in the State of

_____

Agrees that if this bid is accepted as hereinafter provided he/she will, except to the extent otherwise specifically provided in the Contract Documents, provide all labor, materials, supplies, tools, plant and equipment necessary to perform all work described in the Contract referred to in the Instructions to Bidders Letter in strict accordance with the terms and provisions of this Contract consisting of the documents listed as attachments as prepared by CPL.

for the following **BREAKDOWN OF COSTS for:**

CONTRACT 1 – GENERAL CONSTRUCTION

1.00 **BID FOR CONTRACT 1**: Cost to perform work as described by the Contract Documents

$_____

_____Dollars ($_____.____)

ALLOWANCE $ 70,000.00 (Seventy Thousand Dollars and no cents)

TOTAL BID FOR CONTRACT 1: This is the total of all work PLUS $70,000.00 Dollars

$_____

_____Dollars ($_____.____)

1.01 **ALTERNATE BIDS:**

A. **ALTERNATE No. 1 – FURNISH AND INSTALL ADA LIFTS AT KENT ELEMENTARY, KENT PRIMARY AND MATTHEW PATTERSON SCHOOLS.** This Alternate affects Contract 1and 4.

$_____

_____Dollars ($_____.____)

B. **ALTERNATE No. 2 – FURNISH AND INSTALL ACOUSTICAL CEILING BAFFLES.** This Alternate affects Contract 1.

$_____

_____Dollars ($_____.____)

1.02 **PROVISIONS** - There are no provisions for Contract 1

1.03 **UNIT PRICES** – There are no unit prices for Contract 1

Further, as part of the proposal, the undersigned agrees to the percentages set forth in Article 7 of the Conditions for extra work if ordered on a Time and Material basis which covers all overhead and profit allowances.

It is understood that the Owner reserves the right to accept or reject, in whole or in part, any and all bids that the Owner deems to be in his best interest.

1.04 ACCEPTANCE

A. THIS OFFER SHALL BE OPEN TO ACCEPTANCE AND IS IRREVOCABLE FOR A PERIOD OF FORTY FIVE (45) DAYS FROM THE BID CLOSING DATE. PRICES QUOTED SHALL BE GUARANTEED FOR FORTY FIVE (45) DAYS AFTER DATE OF PROPOSAL.

B. UPON NOTIFICATION OF ACCEPTANCE OF THIS PROPOSAL, THE UNDERSIGNED AGREES TO EXECUTE A CONTRACT IN THE FORM AS STATED WITHIN THESE CONTRACT DOCUMENTS FOR THE AMOUNT STATED.

C. IF WRITTEN NOTICE OF AWARD IS RECEIVED WITHIN FORTY FIVE (45) CALENDAR DAYS AFTER THE OPENING OF BIDS, THE UNDERSIGNED AGREES TO EXECUTE SAID CONTRACT AND FURNISH THE EXECUTED CONTRACT TO THE OWNER WITHIN SEVEN (7) DAYS AFTER RECEIPT OF SAID NOTICE OF AWARD, AND TO FURNISH TO THE OWNER WITHIN TEN (10) DAYS OF THE NOTICE OF AWARD THE PERFORMANCE BOND, LABOR AND MATERIAL BONDS AND INSURANCE CERTIFICATES REQUIRED HEREIN.

D. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s) and / or insurances, the security deposit shall be forfeited as damages to Carmel CSD by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

E. In the event our bid is not accepted, in whole or in part, within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.05 CONTRACT TIME

If this Bid is accepted, in whole or in part, we will complete the Work as described in 01 1000 - Summary.

1.06 CHANGES TO THE WORK

A. When the Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
   1. 15 percent overhead and profit on the net cost of our own Work;
   2. 5 percent on the cost of work done by any Subcontractor.

B. On work deleted from the Contract, our credit to Carmel CSD shall be Architect-approved net cost plus the overhead and profit percentage noted above.

1.07 ADDENDA

A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.

Addendum # _____ Dated _____.

Addendum # _____Dated_____.

Addendum # _____Dated_____.

Addendum # _____Dated_____.

Addendum # _____Dated_____.

Addendum # _____Dated_____.

1.08 BID FORM SUPPLEMENTS

A. The following Supplements are attached to this Bid Form and are considered an integral part of this Bid Form:

1. Bid Bond 00 6000 - amount described in Instructions to Bidders.

2. Non Collusive Bidding Certification - attached at end of bid form.

3. Document 00 4101 - Supplement to Bid Form, Contractors Qualifications.

1.09 BY SUBMISSION OF THIS PROPOSAL, THE UNDERSIGNED ACKNOWLEDGES THAT THEY HAVE VISITED THE SITE, INFORMED THEMSELVES OF THE EXISTING CONDITIONS, AND HAVE INCLUDED IN THE PROPOSAL A SUM TO COVER THE COSTS OF ALL ITEMS IN THE CONTRACTS.

1.10 CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law§ 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3) (b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the Carmel Central School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The Carmel Central School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I,_____, being duly sworn, deposes and states that she/he is the

_____of_____and that neither the

Bidder/Contractor nor any proposed subcontactor is identified on the Prohibited Entries List.

Sworn to before me this_____day

of_____, 2021.

_____

_____
Notary Public

SIGNED

1.11 CONFLICT OF INTEREST CERTIFICATION

The proposer warrants that, to the best of his/her/its knowledge and belief, and except as otherwise disclosed, there are no relevant facts or circumstances, which could give rise to conflicts of interest. The proposer agrees that, if after award, a conflict of interest is discovered, an immediate and full disclosure in writing must be made to the Carmel Central School District, which must include a description of the action, which the successful proposer has taken or proposes to take to avoid or mitigate such conflicts. If a conflict of interest is determined to exist, the Carmel Central School District may, at its discretion, cancel the Contract award. In the event the successful proposer was aware of a conflict of interest prior to the award of the Contract and did not disclose the conflict to the contracting officer, the Carmel Central School District may terminate the Contract for default.

The undersigned on behalf of the proposer hereby certifies that the information contained in this certification is accurate, complete, and current.

_____
Signature and Date

_____
Typed or Printed Name

_____
Title

1.12 NON-COLLUSIVE BIDDING CERTIFICATION

Every bid or proposal made to a political subdivision of the State or any public department, agency or official thereof, or to a fire district or any agency or official thereof, for work or services performed or to be performed or goods sold to, or to be sold, shall contain the following statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury and is made pursuant to Section 103d of the General Municipal Law of the State of New York as amended by Laws of 1966.

By submission of this bid each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to it's own organization, under penalty of perjury, that to the best of his knowledge and belief:

A. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

B. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to the opening, directly or indirectly, to any other bidder or to any competitor; and

C. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

D. The foregoing is affirmed as true under penalty of perjury.

Contractor's Name: _____

Contractor's Signature _____ Date _____

1.13 BID FORM SIGNATURE(S)

CONTRACTOR: _____

BY: _____

TITLE: _____

BUSINESS NAME: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

The Corporate Seal of _____
(Bidder - print the full name of your firm)

_____
was hereunto affixed in the presence of:

_____
(Authorized signing officer, Title)

(Seal)

1.14 IF THE BID IS A JOINT VENTURE OR PARTNERSHIP, ADD ADDITIONAL FORMS OF EXECUTION FOR EACH MEMBER OF THE JOINT VENTURE IN THE APPROPRIATE FORM OR FORMS AS ABOVE.

END OF CONTRACT 1 - BID FORM

SECTION 01 2300
ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Description of Alternates.

B. Procedures for pricing Alternates.

C. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED REQUIREMENTS

A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.

B. Document 00 5200 - Agreement Form: Incorporating monetary value of accepted Alternates.

1.03 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at OWNER's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 SCHEDULE OF ALTERNATES

A. ADD Alternate No. 1 - Contract #1 General Construction and Contract #4 Electrical Construction.
   1. Furnish and install ADA lifts at Kent Primary, Kent Elementary and Matthew Patterson Schools. All work in the contract documents related to these lifts including but not limited to related abatement, general construction and electrical contruction.

B. ADD Alternate No. 2 - Contract #1General Construction:
   1. Furnish and install acoustical ceiling baffles as shown on drawing GF A600 and per section 09 8430.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 7329
CUTTING AND PATCHING

GENERAL

1.01 REQUIREMENTS SET FORTH HEREIN ARE IN ADDITION TO AND SHALL BE CONSIDERED AS COMPLEMENTARY TO THE CONDITIONS OF THE CONTRACT AND THE BALANCE OF DIVISION #1 AND TECHNICAL SPECIFICATIONS.

A. All Contractors, Subcontractors, Sub-subcontractors, Vendors and the like shall be required to familiarize themselves with said provisions.

B. Provide materials, labor, equipment and services necessary and/or required to execute the work of this Section as shown on the drawings, specified herein and/or required by job conditions.

1.02 DEFINITIONS

A. "Cutting" - those operations required to expose existing construction, or required to permit the installation of work under this contract, or passage of new or relocated work through existing construction.

B. "Patching" - Those operations required to bring surfaces to a level to permit the application of a finish treatment.
   1. The Contractor responsible for performing the patching shall be responsible for the restoration of the substrate to match adjacent areas, whether new or existing, except for the following conditions:
   2. Exposed masonry, concrete or similar surfaces which do not require or call for painting.
   3. Those patched surfaces which are wholly contained within an area which is to receive a new finish treatment as called for elsewhere in the Contract Documents.

C. "Replace" - To furnish and install an entirely new element which matches the original element's material, color, dimension and design.

D. "Repair"- To make the existing element nearly as complete and as fully functional as new, by the means and methods indicated for each element.

E. "Fill" - To carefully and throughly remove, by approved methods, loose and deteriorated surface material and to install "new" material in the element so that the original contour is completely restored and color matched if exposed as a finish element.

F. "Match Original" - This type of replacement will match the best available representative element, in design, dimension and installation, with improvements, which represent the best standards of fabrication, so that even if an existing best example of an element is gouged or pitted or otherwise worn, the new element shall be unworn, and without defects and fabricated of new material. The Architect will designate areas of original elements for matching.

1.03 CUTTING AND PATCHING REQUIREMENTS

A. Where cutting, drilling or removals are required in existing wall, floor or roof construction, the work shall be done in a manner that will safeguard and not endanger the structure, and shall, in all cases, be as approved by the Architect.
   1. Prior to any cutting, drilling or removals, the Contractor shall investigate both sides of the surface involved, shall determine the exact location of adjacent structural members by visual examination, and shall avoid interference with such members.
   2. No structural members such as joists, beams, columns supporting work that is to remain shall be cut, drilled or removed unless such conditions are shown in detail on the Contract Documents and reinforcing of members affected or new members to compensate for such drilling, cutting and removals are shown.
   3. Positive instructions shall be obtained from the Architect before cutting beams or other structural members, arches, lintels and the like and the Contractor shall be guided by such instructions.

B. Each Trade Contractor shall furnish and install all sleeves, inserts, hangers and the like required for the execution of his work; failing to provide such, he shall do all necessary cutting and patching required for the execution of his work.
   1. Coordinate with MEP drawings and specifications for packing of sleeves, pipe penetrations and duct openings for firesafing material and/or caulking.

C. The Contractor shall not endanger any work by cutting or drilling or otherwise, and shall not cut or alter the work of any other contractor except with the written consent of the Architect.

D. All holes cut through masonry exposed to view in the finished work and concrete slabs shall be core drilled except for specific holes that have been structurally detailed per Contract Documents.
   1. The Contractor shall locate adjacent structural members before core drilling to insure that structural members are not damaged.
   2. No jack hammering will be permitted in the work.

E. Exposed patches and repairs shall be as inconspicuous as possible.
   1. Where new work does not match exactly the color, finish, dimension, size and the like of the existing, the new work shall be carried across the surface to which it is applied and be continued to a natural stopping point or corner.

F. All cutting and patching shall be performed using skilled mechanics of the trade or craft involved.

G. Where two or more contractors are involved with work within same penetration, firesafing shall be performed by the trade with the largest share of the opening being used.
   1. Example : Ducts, electrical conduits, sprinkler piping, drainage piping. HVAC Contractor due to duct penetration; otherwise, largest diameter pipe is governing criteria.
   2. Firesafing and smoke stopping shall be accomplished in accordance with requirements set forth in ASTM E814 and as specified in Section 07270.

1.04 SPECIFIC REQUIREMENTS BY CONTRACTOR

A. The Contractor for General Construction (CGC) shall perform :
   1. All cutting, drilling and patching required to install his work under the Contract and as indicated on the Architectural drawings.
   2. All cutting, trenching, backfilling and repairs to slabs for each prime contractor. The CGC shall also provide bedding and coordinate with each prime contractor.
   3. Cutting, patching and fire stopping of openings larger than 12"x12". CGC shall also provide structural lintels as required.
   4. Finish patching of openings at walls and slabs created by the removal of existing ductwork, piping, conduit, equipment or installation of new work.
      a. Those removals and/or openings shall be as indicated on the Drawings
   5. Cutting and patching of existing and/or new roof membrane, insulation and the like for installation of work.
   6. If existing pipes or conduits are removed by other Contractors and those openings are indicated on the Architectural drawings, patching work shall be accomplished by the CGC.
      a. If said resultant openings are not indicated on the drawings, then said patching work shall be accomplished by the respective Prime Contractor removing said pipe, duct or conduit.

B. The HVAC Contractor or Subcontractors directly related to the "HVAC" operations shall perform:
   1. All cutting required to install his work under the Contract.
   2. Cutting and patching of existing interior and exterior walls necessary for the installation of new duct work, piping and equipment except for the following which will be performed by the "CGC" as above.

a. Cutting and patching of existing ceilings, for the installation of new ductwork, piping and equipment, which are beyond the extent of ceiling areas that will be removed/replaced by the General Contractor as indicated on the Architectural, Structural and Site drawings.
b. Cutting and patching of existing slabs for the installation of new ductwork and piping shall be accomplished by the "CGC" if shown on the Architectural, Structural and Site drawings.
    1) If said openings are not indicated on those drawings, then cutting and patching work shall be accomplished by the Contractor performing the required work except as maybe defined above.

C. The Electrical Contractor or Subcontractors directly related to the "Electrical" operations shall perform:
1. All cutting and patching required to install his work under the Contract.
2. Cutting and patching of existing interior and exterior walls and existing slabs necessary for the installation of new conduits, busducts, equipment or other materials except shall be accomplished by the "CGC" if shown on the Architectural, Structural and Site series drawings.
3. Cutting and patching of existing ceilings, for the installation of new conduits, busduct, feeders, fixtures and equipment, which are beyond the extent of ceiling areas that will be removed/replaced by the General Contractor as indicated on the Architectural drawings.

D. The Plumbing Contractor or Subcontractors directly related to the "Plumbing" operations shall perform :
1. All cutting and rough patching required to install his work under the Contract.
2. Cutting and patching of existing interior and exterior walls and existing slabs necessary for the installation of new water supply, waste and vent pipes, or other materials except shall be accomplished by the “CGC” if shown on the Architectural, Structural and Site drawings.

****END OF SECTION****

SECTION 09 3000
TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Cementitious backer board as tile substrate.

D. Stone thresholds.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

B. Section 09 2116 - Gypsum Board Assemblies: Tile backer board.

1.03 REFERENCE STANDARDS

A. ANSI A108/A118/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium). 2013.1.
   1. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2014.
   2. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).
   3. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex-Portland Cement 1999 (Reaffirmed 2010).
   4. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive 2009 (Revised).
   5. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).
   6. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy 1999 (Reaffirmed 2010).
   7. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2010).
   8. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2010).
   9. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 1999 (Reaffirmed 2010).
   10. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).
   11. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2010).
   12. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar 2017.
   13. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar 2012 (Revised).

14. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation 2010 (Revised).

B. ASTM C847 - Standard Specification for Metal Lath 2014a.

C. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2016.

1.04 SUBMITTALS

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

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches in size illustrating pattern, color variations, and grout joint size variations.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Material Safety and Data Sheets (MSDS) for all products used.

G. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

H. Maintenance Materials: Furnish the following for OWNER's use in maintenance of project.
1. See Section 01 6000 - Product Requirements, for additional provisions.
2. Extra Tile: 10 square feet of each size, color, and surface finish combination.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.

B. Installer Qualifications:
1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.06 MOCK-UP

A. See Section 01 4000 - Quality Requirements, for general requirements for mock-up.

B. Construct tile mock-up where indicated on drawings, incorporating all components specified for the location.
1. Minimum size of mock-up is indicated on drawings.
2. Approved mock-up may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products by the same manufacturer.
1. American Olean: www.americanolean.com.
2. Dal-Tile Corporation: www.daltile.com/#sle.

3. Summitville Tiles, Inc: www.summitville.com.
4. Substitutions: See Section 01 6000 - Product Requirements.

B. Ceramic Mosaic Tile: ANSI A137.1 standard grade.
1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
2. Size: 1 by 1 inch, nominal.
3. Shape: Square.
4. Edges: Square.
5. Color(s): To be selected by ARCHITECT from manufacturer's standard range.
6. Pattern: Subway.
7. Trim Units: Matching bead, cove, and surface bullnose shapes in sizes coordinated with field tile.

C. Glazed Wall Tile: ANSI A137.1 standard grade.
1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
2. Size: 4-1/4 by 4-1/4 inch, nominal.
3. Edges: Square.
4. Surface Finish: High gloss.
5. Color(s): To be selected by ARCHITECT from manufacturer's standard range.
6. Color(s): To be selected by ARCHITECT from manufacturer's standard range..
7. Pattern: Subway.
8. Trim Units: Matching bead, bullnose, cove, and base shapes in sizes coordinated with field tile.
9. Products:
   a. Dal-Tile Corporation: www.daltile.com/#sle.
   b. Substitutions: See Section 01 6000 - Product Requirements.

D. Porcelain Tile: ANSI A137.1 standard grade.
1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
2. Size: 6 by 6 inch, nominal.
3. Thickness: 3/8 inch.
4. Edges: Cushioned.
5. Surface Finish: Unglazed.
6. Color(s): To be selected by ARCHITECT from manufacturer's standard range.
7. Color(s): To be selected by ARCHITECT from manufacturer's standard range..
8. Trim Units: Matching bullnose, double bullnose, cove base, and cove shapes in sizes coordinated with field tile.
9. Products:
   a. Dal-Tile Corporation: www.daltile.com/#sle.
   b. Substitutions: See Section 01 6000 - Product Requirements.

E. Terrazzo Tile:
1. Composition: Portland cement, ASTM C150/C150M; aggregate complying with ASTM C33/C33M.
2. Size: 12 by 12 inch, nominal.
3. Thickness: 1/2 inch.
4. Surface Finish: Honed.
5. Edges: Chamfered.
6. Color(s): To be selected by ARCHITECT from manufacturer's standard range.
7. Trim Units: Matching base with straight edge in sizes indicated.
8. Products:
   a. Fritztile by Stonhard: https://archello.com/product/fritztile.
   b. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ADHESIVE MATERIALS

A. Manufacturers:
1. Bonsal American, Inc: www.sakrete.com
2. Bostik Inc: www.bostik-us.com.
3. Mapei Corporation: www.mapei.com.

B. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.

C. Epoxy Adhesive: ANSI A118.3, thinset bond type.

2.03 MORTAR MATERIALS

A. Manufacturers:
1. Bonsal American, Inc: www.sakrete.com
2. Bostik Inc: www.bostik-us.com.
3. Custom Building Products: www.custombuildingproducts.com.
4. Substitutions: See Section 01 6000 - Product Requirements.

B. Mortar Bed Materials: Portland cement, sand, latex additive , Hydrated Lime ASTM C 206 or ASTM C 207 Type S and water.

C. Mortar Bond Coat Materials:
1. Dry-Set Portland Cement type: ANSI A118.1.
2. Latex-Portland Cement type: ANSI A118.4.

2.04 GROUTS

A. Manufacturers:
1. Bonsal American, Inc: www.sakrete.com
2. Bostik Inc: www.bostik-us.com/#sle.
3. Custom Building Products: www.custombuildingproducts.com.

B. Standard Grout: Any type specified in ANSI A118.6 or A118.7.

2.05 ACCESSORY MATERIALS

A. Waterproofing Membrane at Floors: PVC sheet membrane, 40 mils thick, minimum; specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.

B. Mesh Tape: 2 inch wide self-adhesive fiberglass mesh tape.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.

D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.

E. Install tile backer board in strict accordance with manufacturer's instructions, using galvanized roofing nails or corrosion-resistant bugle head drywall screws. Bed fiberglass self-adhesive tape at all joints and corners with material used to set tiles.

F. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.19 , manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Tile work shall be laid out so that no tiles less than one-half of full size shall occur.

D. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

E. Align all wall joints to give straight uniform grout lines, plumb and level.

F. Align all floor joints to give straight uniform grout lines, parallel with walls.

G. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

H. Intersections and returns shall be accurately formed. Cutting and drilling of tile shall be neatly done without marring the surface. The cut edges of tile against trim, finish or built-in items shall be carefully ground and jointed. Tile shall fit closely around electrical outlets, piping, fixtures and fittings so that plates, collars or coverings shall overlap the tile. Recesses of proper size for built-in accessories shall be provided. Only sufficient clearance shall be allowed for leveling and plumbing to permit the metal trim to overlap the tile.

I. Form internal angles square and external angles bullnosed.

J. Install thresholds where indicated.

K. Sound tile after setting. Replace hollow sounding units.

L. Keep control and expansion joints free of mortar, grout, and adhesive.

M. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

N. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

O. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

P. Floor shall not be grouted before 72 hours after setting, and walls before 24 hours. Before grouting, tile work shall be wet with clean water.

Q. Order of tile setting shall be first- base, second- walls, third - floors.

R. Provide all trimmers as necessary for a complete installation. Shapes shall be integral with wall tile (combinations) unless otherwise shown or noted. Tile plinths shall be provided where trim is shown for door openings in connection with tile base or wall finish. Wall finish shall extend into reveals of openings and shall be overlapped by trim unless otherwise shown.

S. All tile shall have standard combinations at external and internal corners and at intersections with wall and floor finish.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over exterior concrete substrates, install in accordance with TCNA (HB) Method F102, with standard grout.

B. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout, unless otherwise indicated.
   1. Use uncoupling membrane under all tile unless other underlayment is indicated.
   2. Where waterproofing membrane is indicated, install in accordance with TCA Handbook Method F122, with latex-portland cement grout.

C. Over wood substrates, install in accordance with TCNA (HB) Method F142, with standard grout, unless otherwise indicated.

D. Over wood substrate with backer board underlayment, install in accordance with TCNA (HB) Method F144, for cementitious backer boards, with standard grout.

3.05 CLEANING

A. Clean tile and grout surfaces.

B. Remove all grout haze, observing both tile and grout manufacturer's recommendations as to use of acid and chemical cleaners.

C. Polish surface of tile work with soft cloth.

3.06 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

B. As soom as the tile work in each space has been grouted and cleaned, it shall be covered with either reinforced Kraft paper (Sisalkraft). Floor coverings shall be kept and maintained unitl completion of the work of all trades or as otherwise directed by the Architect, when it shall be removed without damage to tile or adjoining work.

C. All tiles which are cracked, broken, chipped or otherwise damaged shall be promptly removed and replaced.

END OF SECTION

SECTION 09 8430
SOUND-ABSORBING WALL AND CEILING UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sound-absorbing ceiling baffles.

B. Mounting accessories.

1.02 REFERENCE STANDARDS

A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method 2017.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.

C. ASTM E795 - Standard Practices for Mounting Test Specimens During Sound Absorption Tests 2016.

1.03 SUBMITTALS

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

B. Product Data: Manufacturer's printed data sheets for products specified.

C. Shop Drawings: Fabrication and installation details, panel layout, and fabric orientation.

D. Selection Samples: Manufacturer's color charts for fabric covering, indicating full range of fabrics, colors, and patterns available.

E. Test Reports: Certified test data from an independent test agency verifying that panels meet specified requirements for acoustical and fire performance.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect acoustical units from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until units are needed for installation.

B. Store units flat, in dry, well-ventilated space; do not stand on end.

C. Protect edges from damage.

1.05 MOCK-UP

A. See Section 01 4000 - Quality Requirements, for additional mock-up requirements.

B. Construct mock-up of acoustical units at location as indicated by ARCHITECT.
   1. Minimum mock-up, install one baffle.
   2. Approved mock-up may remain as part of the Work.

PART 2 PRODUCTS

2.01 FABRIC-COVERED SOUND-ABSORBING UNITS

A. Manufacturers:
   1. Decoustics Claro acoustical baffles: https://decoustics.com/products/baffles/.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. General:
   1. Prefinished, factory assembled fabric-covered panels.
   2. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.

C. Fabric-Covered Acoustical Ceiling Baffles:
   1. Baffle Core: Manufacturer's standard rigid or semi-rigid fiberglass core.
   2. Baffle Size: 12 inches by 72 inches, 36 inches & 18 inches.
   3. Corners: Square.
   4. Fabric: Woven polyester.

5. Color: As selected by ARCHITECT from manufacturer's full range.
6. Mounting: Vertically suspended from ceiling or structure by one edge of panel.

2.02 FABRICATION

A. Fabric Wrapped, General: Fabricate panels to sizes and configurations as indicated, with fabric facing installed without sagging, wrinkles, blisters, or visible seams.

B. Tolerances: Fabricate to finished tolerance of plus or minus 1/16 inch for thickness, overall length and width, and squareness from corner to corner.

2.03 ACCESSORIES

A. Ceiling-Suspended Accessories: Manufacturer's standard accessories at locations as indicated on each acoustical unit, sized appropriately for weight of acoustical unit.
   1. Stainless steel spiral hangers screwed into top edge of baffle.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install acoustical units in locations as indicated, following manufacturer's installation instructions.

B. Suspend ceiling baffles at locations and heights as indicated.

C. Install acoustical units to construction tolerances of plus or minus 1/16 inch for the following:
   1. Plumb and level.
   2. Flatness.

3.02 CLEANING

A. Clean fabric facing upon completion of installation from dust and other foreign materials, following manufacturer's instructions.

END OF SECTION

SECTION 10 2113.19
PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Solid plastic toilet compartments.

B. Urinal and Vestibule screens.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Blocking and supports.

B. Section 10 2800 - Toilet, Bath, and Laundry Accessories.

1.03 REFERENCE STANDARDS

A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.

1.04 SUBMITTALS

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

B. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.

C. Samples: Submit one sample of partition panels, 6_x_6 inch in size illustrating panel finish, color, and sheen.

D. Manufacturer's Installation Instructions: Indicate special procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Solid Plastic Toilet Compartments:
   1. Scranton Products (Santana/Comtec/Capital); [_____]: www.scrantonproducts.com/#sle.
   2. Substitutions: Section 01 6000 - Product Requirements.

2.02 COMPONENTS

A. Toilet Compartments: Solid molded plastic panels, doors, and pilasters, floor-mounted headrail-braced.
   1. All sheet materials shall be constructed from polymer resins plus fire retardants with a Flame Spread rating of not more than 200 and a Smoke Density rating of less than 75 or a Smoke Developed rating of less than 450.
   2. Doors panels and pilasters shall be 1" thick constructed from High Density Polyethene (HDPE) resins. Partitions shall be fabricated from polymer resins compounded under high pressure, forming a single component which is waterproof, nonabsorbant and has a self-lubricating surgace that resists marks from pens, pencils, markers and other writing instruments. All plastic components shall be covered with a protective plastic masking.

B. Door and Panel Dimensions:
   1. Thickness: 1 inch.
   2. Door Width: 24 inch.
   3. Door Width for Handicapped Use: 36 inch , out-swinging.
   4. Height: 58 inch.
   5. Thickness of Pilasters: 1 inch.

C. Urinal Screens: Wall mounted with two panel brackets, and vertical upright consisting of pilaster anchored to wall.

2.03 ACCESSORIES

A. Pilaster Shoes: Stainless steel, satin finish, 3 inches high; concealing floor fastenings.

1. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.

B. Head Rails: Hollow chrome plated steel tube, 1 x 1-5/8 inch size, with anti-grip strips and cast socket wall brackets.

C. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.
1. For attaching panels and pilasters to brackets: Through-bolts and nuts ; tamper proof.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify correct spacing of and between plumbing fixtures.

C. Verify correct location of built-in framing, anchorage, and bracing.

3.02 INSTALLATION

A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.

B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.

C. Attach panel brackets securely to walls using anchor devices.
1. At solid masonry 1/4" diameter x 3-1/2" long stainless steel expansion shields and bolts at 13" o.c. vertical spacing.
2. At cavity masonry 1/4" diameter x required length stainless steel toggle bolts at 13" o.c. vertical spacing.
3. Stagger bolts in bracket legs so that vertical spacing is not more than 6-1/2"
4. At metal studs 1/4" diameter x 2-1/2" long stainless steel toggle bolts at 13" o.c. vertical spacing.

D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

E. Field touch-up of scratches or damaged finish will not be permitted. Replace damaged or scratched materials with new materials.

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/4 inch.

B. Maximum Variation From Plumb: 1/8 inch.

3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.

B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.

C. Adjust adjacent components for consistency of line or plane.

3.05 WARRANTY

A. Written, fifteen years against breakage, corrosion and delamination under normal conditions for 15 years from date of substantial completion set by architect. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge, excluding labor.

B. Installers warranty - The installer shall futher warrant a secure and stable installation for a period of two years after substantial completion to include all reanchoring, connections and adjustments.

END OF SECTION

SECTION 144250
VERTICAL WHEELCHAIR LIFTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Unenclosed Vertical Wheelchair Lift.

1.2 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete: Concrete shaftway and anchor placement.

B. Section 04800 - Masonry Assemblies: Masonry shaftway and anchor placement.

C. Section 06100 - Rough Carpentry: Blocking in framed construction for lift attachment.

D. Section 09260 - Gypsum Board Assemblies: Gypsum board shaftway.

E. Division 16 - Electrical: Dedicated telephone service and wiring connections.

F. Division 16 - Electrical: Lighting and wiring connections at top of shaft.

G. Division 16 - Electrical: Electrical power service and wiring connections.

1.3 REFERENCES

A. ASME A17.1 - Safety Code for Elevators and Escalators.

B. ASME A17.5 - Elevator and Escalator Electrical Equipment.

C. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.

D. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.

E. NFPA 70 - National Electric Code.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Submit manufacturer's installation instructions, including preparation, storage and handling requirements.
   2. Include complete description of performance and operating characteristics.
   3. Show maximum and average power demands.

C. Shop Drawings:
   1. Show typical details of assembly, erection and anchorage.
   2. Include wiring diagrams for power, control, and signal systems.
   3. Show complete layout and location of equipment, including required clearances and coordination with shaftway.

D. Selection Samples: For each finished product specified, provide two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finished product specified, two samples, minimum size 1-3/4 inch by 2-1/4 inches, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm with minimum 10 years experience in manufacturing of vertical platform lifts, with evidence of experience with similar installations of type specified.

B. Installer Qualifications: Licensed to install equipment of this scope, with evidence of experience with specified equipment. Installer shall maintain an adequate stock of replacement parts, have qualified people available to ensure fulfillment of maintenance and callback service without unreasonable loss of time in reaching project site.

C. Installed by Handi-Lift, Inc. – 730 Garden Street, Carlstadt, NJ 07072; Toll Free Tel.: 800-432-5438; Tel.: 201-933-0111; Fax: 201-933-0050; Email: bgrigorov@handi-lift.com ; Web: http://www.handi-lift.com/

1.6 REGULATORY REQUIREMENTS

A. Provide platform lifts in compliance with:
1. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
2. ASME A17.1 - Safety Code for Elevators and Escalators.
3. ASME A17.5 - Elevator and Escalator Electrical Equipment.
4. NFPA 70 - National Electric Code.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store components off the ground in a dry covered area, protected from adverse weather conditions.

1.8 PROJECT CONDITIONS

A. Do not use wheelchair lift for hoisting materials or personnel during construction period.

1.9 WARRANTY

A. Warranty: Provide one year limited warranty for wheelchair lift materials and workmanship.

B. Preventive Maintenance Agreement required.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Garaventa Lift; United States - P.O. Box 1769, Blaine, WA 98231-1769. Canada - 18920 - 36th Ave., Surrey, BC V3Z 0P6. ASD. Toll Free: 800-663-6556. Tel: (604) 594-0422. Fax: (604) 594-9915. Email:productinfo@garaventalift.com. Web:www.garaventalift.com.

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 UNENCLOSED VERTICAL WHEELCHAIR LIFT

A. Capacity: 750 lbs (340 kg) rated capacity.

B. Mast Height:

1. Model GVL-OP-42; 42 inches (1067 mm) maximum lifting height.

C. Platform Size and Nominal Clear Platform Dimensions:
1. Standard: 36 inches (914 mm) by 48-7/8 inches (1242 mm) clear platform dimensions.

D. Platform Configuration:
1. Straight Through: Front and rear openings.

E. Landing Openings: Gates shall be self closing type.
1. Gate Height: 42-1/8 inches (1070 mm).
2. Platform Gate: Travels with platform and opens at lower landing.
3. Upper Landing Gate: Detached, freestanding type.

F. Lift Components:
1. Machine Tower: Custom aluminum extrusion.
2. Base Frame: Structural steel.
3. Platform Side Wall Panels: 16 gauge (1.5 mm) galvanized steel sheet.
4. Side Guard Panels: 42-1/8 inches (1070 mm) high mounted on platform.

G. Base Mounting at Lower Landing:
1. Pit Mount: Lift to be mounted in pit with dimensions to meet manufacturers requirements for the platform size specified. Pit construction shall be in accordance to Section 03300.

H. Hydraulic Drive:
1. Drive Type: Chain hydraulic.
2. Emergency Operation: Manual device to lower platform and battery auxiliary power to raise or lower platform.
3. Safety Devices:
   a. Slack chain safety device.
   b. Shoring device.
4. Travel Speed: 17 fpm (5.2 m/minute).
5. Motor: 3.0 hp (2.2 kW); 24 volts DC.
6. Power Supply:
   a. 120 VAC single phase; 60 Hz on a dedicated 15 amp circuit.
   b. Powered by continuous building mains converted to 24 VDC, equipped with auxiliary power system capable of running lift up and down for a minimum of 5 trips with rated load.

I. Platform Controls: 24 VDC control circuit with the following features.
1. Direction Control: Illuminated tactile and constant pressure elevator-style buttons with dual platform courtesy lights and safety light.
2. Illuminated and audible emergency stop switch shuts off power to lift and activates audio alarm with battery backup.
3. Keyless operation.
4. Emergency Telephone: Platform shall be equipped with ADA compliant integrated telephone with a stainless steel faceplate. Telephone shall operate in the event of power failure. A telephone line shall be supplied to the lift site as specified under Division 16.

J. Call Station Controls: 24 VDC control circuit with the following features.
1. Direction Control:
   a. Illuminated tactile and continuous pressure elevator-style buttons with dual platform courtesy lights and safety light.
2. Keyless operation.
3. Call Station Mounting:
   a. Upper:

1) Frame mounted.

K. Safety Devices and Features:
1. Grounded electrical system with upper, lower, and final limit switches.
2. Tamper resistant interlock to electrically monitor that the gate is in the closed position and the lock is engaged before lift can move from landing.
3. Electrical disconnect shall shut off power to the lift.
4. Under platform safety pan with five waterproof safety switches to detect obstruction under platform.

L. Finishes
1. Aluminum Extrusions: Electrostatically applied baked powder finish, Fine Textured Silver Moon (RAL 7047).
2. Ferrous Components: Electrostatically applied baked powder finish, fine textured.
a. Color: Silver Moon.

PART 3 EXECUTION

3.1 EXAMINATION

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

B. Verify shaft and machine space are of correct size and within tolerances.

C. Verify required landings and openings are of correct size and within tolerances.

D. Verify electrical rough-in is at correct location.

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

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install lifts in accordance with applicable regulatory requirements including ASME A 17.1, ASME A 18.1 and the manufacturer's instructions.

B. Install system components and connect to building utilities.

C. Accommodate equipment in space indicated.

D. Startup equipment in accordance with manufacturer's instructions.

E. Adjust for smooth operation.

3.4 FIELD QUALITY CONTROL

A. Perform tests in compliance with ASME A 17.1 or A18.1 and as required by authorities having jurisdiction.

B. Schedule tests with agencies and Architect, Owner, and Contractor present.

3.5 PROTECTION

A. Protect installed products until completion of project.

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

END OF SECTION

SECTION 224213.13 - COMMERCIAL WATER CLOSETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Water closets.
2. Flushometer valves.
3. Toilet seats.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for water closets.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

1.4 CLOSEOUT SUBMITTALS

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

PART 2 - PRODUCTS

2.1 WALL-MOUNTED, BACK-OUTLET WATER CLOSETS

A. Water Closets WC-1: Wall mounted, back outlet, top spud.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
a. American Standard America. Equal to Madera #2234.001
b. Gerber Plumbing Fixtures LLC.
c. Kohler Co.
d. Mansfield Plumbing Products LLC.
e. TOTO USA, INC.
f. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Bowl:
a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5.
b. Material: Vitreous china.
c. Type: Siphon jet.
d. Style: Flushometer valve.
e. Height: Standard.
f. Rim Contour: Elongated.
g. Water Consumption: 1.28 gal. per flush.
h. Spud Size and Location: NPS 1-1/2; top.

i. Color: White.

3. Bowl-to-Drain Connecting Fitting: ASTM A 1045 or ASME A112.4.3.
4. Flushometer Valve: FV-1.
5. Toilet Seat: Open front - required.

B. Water Closets WC-1A: Accessible wall mounted, back outlet, top spud.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. American Standard America. Equal to Madera # 3461.001
   b. Gerber Plumbing Fixtures LLC.
   c. Kohler Co.
   d. Mansfield Plumbing Products LLC.
   e. TOTO USA, INC.
   f. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Bowl:
   a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5.
   b. Material: Vitreous china.
   c. Type: Siphon jet.
   d. Style: Flushometer valve.
   e. Height: Accessible
   f. Rim Contour: Elongated.
   g. Water Consumption: 1.28 gal. per flush.
   h. Spud Size and Location: NPS 1-1/2; top.
   i. Color: White.
3. Bowl-to-Drain Connecting Fitting: ASTM A 1045 or ASME A112.4.3.
4. Flushometer Valve: FV-1.
5. Toilet Seat: Open front - required.

C. Water Closets WC-2A: Accessible Floor mounted, bottom outlet, top spud.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. American Standard America. Equal to Madera # 3461.001
   b. Gerber Plumbing Fixtures LLC.
   c. Kohler Co.
   d. Mansfield Plumbing Products LLC.
   e. TOTO USA, INC.
   f. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Bowl:
   a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5.
   b. Material: Vitreous china.
   c. Type: Siphon jet.
   d. Style: Flushometer valve.
   e. Height: Accessible
   f. Rim Contour: Elongated.
   g. Water Consumption: 1.28 gal. per flush.
   h. Spud Size and Location: NPS 1-1/2; top.
   i. Color: White.
3. Bowl-to-Drain Connecting Fitting: ASTM A 1045 or ASME A112.4.3.
4. Flushometer Valve: FV-1.

5. Toilet Seat: Open front - required.

2.2 FLUSHOMETER VALVES

A. Manual Diaphragm Flushometer Valves FV-1:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
a. American Standard America
b. Sloan Valve Company. Equal to Royal #111.1.28
c. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Standard: ASSE 1037.
3. Minimum Pressure Rating: 125 psig.
4. Features: Include integral check stop and backflow-prevention device.
5. Material: Brass body with corrosion-resistant components.
6. Exposed Flushometer-Valve Finish: Chrome plated.
7. Style: Exposed.
8. Consumption: 1.28 gal. per flush.
9. Minimum Inlet: NPS 1.
10. Minimum Outlet: NPS 1-1/4.

2.3 TOILET SEATS

A. Toilet Seats :
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
a. American Standard America.
b. Bemis Manufacturing Company.
c. Church Seats.
d. Olsonite Seat Co.
e. TOTO USA, INC.
f. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Standard: IAPMO/ANSI Z124.5.
3. Material: Plastic.
4. Type: Commercial (Heavy duty).
5. Shape: Elongated rim, open front.
6. Hinge: Self-sustaining.
7. Hinge Material: Noncorroding metal.
8. Seat Cover: Not required.
9. Color: White.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before water-closet installation.

B. Examine walls and floors for suitable conditions where water closets will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Water-Closet Installation:
   1. Install level and plumb according to roughing-in drawings.
   2. Install floor-mounted water closets on bowl-to-drain connecting fitting attachments to piping or building substrate.
   3. Install accessible, wall-mounted water closets at mounting height for handicapped/elderly, according to ICC/ANSI A117.1.

B. Flushometer-Valve Installation:
   1. Install flushometer-valve, water-supply fitting on each supply to each water closet.
   2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
   3. Install lever-handle flushometer valves for accessible water closets with handle mounted on open side of water closet.
   4. Install actuators in locations that are easy for people with disabilities to reach.

C. Install toilet seats on water closets.

D. Wall Flange and Escutcheon Installation:
   1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations and within cabinets and millwork.
   2. Install deep-pattern escutcheons if required to conceal protruding fittings.
   3. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."

E. Joint Sealing:
   1. Seal joints between water closets and walls and floors using sanitary-type, one-part, mildew-resistant silicone sealant.
   2. Match sealant color to water-closet color.
   3. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 CONNECTIONS

A. Connect water closets with water supplies and soil, waste, and vent piping. Use size fittings required to match water closets.

B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."

C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

D. Where installing piping adjacent to water closets, allow space for service and maintenance.

3.4 ADJUSTING

A. Operate and adjust water closets and controls. Replace damaged and malfunctioning water closets, fittings, and controls.

B. Adjust water pressure at flushometer valves to produce proper flow.

3.5 CLEANING AND PROTECTION

A. Clean water closets and fittings with manufacturers' recommended cleaning methods and materials.

B. Install protective covering for installed water closets and fittings.

C. Do not allow use of water closets for temporary facilities unless approved in writing by Owner.

END OF SECTION 224213.13

SECTION 224216.14 - COMMERCIAL LAVATORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Lavatories.
   2. Faucets.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for lavatories.
   2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For lavatories and faucets to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 VITREOUS-CHINA, WALL-MOUNTED LAVATORIES

A. Lavatory LAV-1 & LAV-1A: Accessible height, Vitreous china, wall mounted, with back for toilet rooms.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. American Standard America. Equal to Lucerne 0355.012
      b. Gerber Plumbing Fixtures LLC.
      c. Kohler Co.
      d. Mansfield Plumbing Products LLC.
      e. Zurn Industries, LLC; Commercial Brass and Fixtures.
   2. Fixture:
      a. Standard: ASME A112.19.2/CSA B45.1.
      b. Type: For wall hanging.
      c. Nominal Size: Oval, 20 by 18 inches.
      d. Faucet-Hole Punching: Three hole.
      e. Faucet-Hole Location: Top.
      f. Color: White.
      g. Mounting Material: Chair carrier.
   3. Faucet: LF-1.

4. Support: ASME A112.6.1M, Type II, concealed-arm lavatory carrier with escutcheons.
5. Protective Insulation Shielding Guards, Per ADA requirements: Required

2.2 SOLID SURFACE, TWO OR THREE STATION LAVATORIES

A. Lavatory LAV-2: Accessible height, two station, solid surface, infrared faucet, Thermostatic Mixing Valve .

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Bradley. Equal to Express Lavatory System MG-2/IRP-NSD-TMA-S-CHROME
   b. Gerber Plumbing Fixtures LLC.
   c. Kohler Co.
   d. Mansfield Plumbing Products LLC.
   e. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Fixture:
   a. Standard: ASME A112.19.2/CSA B45.1.
   b. Type: For wall hanging.
   c. Nominal Size: Oval, 20 by 18 inches.
   d. Faucet-Hole Punching: Three hole.
   e. Faucet-Hole Location: Top.
   f. Color: White.

B. Lavatory LAV-3: Accessible height, three station, solid surface, infrared faucet, Thermostatic Mixing Valve .

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Bradley. Equal to Express Lavatory System MG-3/IRP-NSD-TMA-S-CHROME
   b. Gerber Plumbing Fixtures LLC.
   c. Kohler Co.
   d. Mansfield Plumbing Products LLC.
   e. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Fixture:
   a. Standard: ASME A112.19.2/CSA B45.1.
   b. Type: For wall hanging.
   c. Nominal Size: Oval, 20 by 18 inches.
   d. Faucet-Hole Punching: Three hole.
   e. Faucet-Hole Location: Top.
   f. Color: White.

2.3 SOLID-BRASS, MANUALLY OPERATED FAUCETS (Nurse Area only)

A. NSF Standard: Comply with NSF/ANSI 61, "Drinking Water System Components - Health Effects," for faucet materials that will be in contact with potable water.

B. Lavatory Faucets LF-1: Manual operated, Temperature control mixing, commercial, solid-brass valve.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Chicago Faucet. 420-T41E2805ABCP
      b. American Standard America.
      c. Speakman Company.
      d. T & S Brass and Bronze Works, Inc.
      e. Zurn Industries, LLC; Commercial Brass and Fixtures.
   2. Standard: ASME A112.18.1/CSA B125.1.
   3. General: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture hole punchings; coordinate outlet with spout and fixture receptor.
   4. Body Type: Three hole.
   5. Body Material: Commercial, solid brass.
   6. Finish: Polished chrome plate.
   7. Maximum Flow Rate: 0.5 GPM aerator.
   8. Mounting Type: Deck, exposed.
   9. Spout: Rigid type.
   10. Operation: single lever.

2.4 SOLID-BRASS, SENSOR OPERATED FAUCETS (All other locations, except Nurse Area)

A. NSF Standard: Comply with NSF/ANSI 61, "Drinking Water System Components - Health Effects," for faucet materials that will be in contact with potable water.

B. Lavatory Faucets LF-1: Sensor operated, Temperature control mixing, commercial, solid-brass valve.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Chicago Faucet. E80-A11H-16ABCP
      b. American Standard America.
      c. Speakman Company.
      d. T & S Brass and Bronze Works, Inc.
      e. Zurn Industries, LLC; Commercial Brass and Fixtures.
   2. Standard: ASME A112.18.1/CSA B125.1.
   3. General: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture hole punchings; coordinate outlet with spout and fixture receptor.
   4. Body Type: Single hole.
   5. Body Material: Commercial, solid brass.
   6. Finish: Polished chrome plate.
   7. Maximum Flow Rate: 0.5 GPM aerator.
   8. Mounting Type: Deck, exposed.
   9. Spout: Rigid type.
   10. Operation: sensor operated.

2.5 SUPPLY FITTINGS

A. NSF Standard: Comply with NSF/ANSI 61, "Drinking Water System Components - Health Effects," for supply-fitting materials that will be in contact with potable water.

B. Standard: ASME A112.18.1/CSA B125.1.

C. Supply Piping: Chrome-plated-brass pipe or chrome-plated copper tube matching water-supply piping size. Include chrome-plated-brass or stainless-steel wall flange.

D. Supply Stops: Chrome-plated-brass, one-quarter-turn, ball-type or compression valve with inlet connection matching supply piping.

E. Operation: Loose key.

F. Risers:
1. NPS 1/2.
2. Chrome-plated, rigid-copper-pipe and brass straight or offset tailpieces or ASME A112.18.6, braided- or corrugated-stainless-steel, flexible hose riser.

2.6 WASTE FITTINGS

A. Standard: ASME A112.18.2/CSA B125.2.

B. Drain: Grid type with NPS 1-1/4 offset and straight tailpiece.

C. Trap:
1. Size: NPS 1-1/2 by NPS 1-1/4.
2. Material: Chrome-plated, two-piece, cast-brass trap and swivel elbow with 0.032-inch-thick brass tube to wall; and chrome-plated, brass or steel wall flange.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before lavatory installation.

B. Examine counters and walls for suitable conditions where lavatories will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install lavatories level and plumb according to roughing-in drawings.

B. Install supports, affixed to building substrate, for wall-mounted lavatories.

C. Install accessible wall-mounted lavatories at handicapped/elderly mounting height for people with disabilities or the elderly, according to ICC/ANSI A117.1.

D. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons if required to conceal protruding fittings. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."

E. Seal joints between lavatories, counters, and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

F. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible lavatories. Comply with requirements in Section 220719 "Plumbing Piping Insulation."

3.3 CONNECTIONS

A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.

B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."

C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

3.4 ADJUSTING

A. Operate and adjust lavatories and controls. Replace damaged and malfunctioning lavatories, fittings, and controls.

B. Adjust water pressure at faucets to produce proper flow.

3.5 CLEANING AND PROTECTION

A. After completing installation of lavatories, inspect and repair damaged finishes.

B. Clean lavatories, faucets, and other fittings with manufacturers' recommended cleaning methods and materials.

C. Provide protective covering for installed lavatories and fittings.

D. Do not allow use of lavatories for temporary facilities unless approved in writing by Owner.

END OF SECTION 224216.14

SECTION 260000 – GENERAL PROVISIONS FOR ELECTRICAL WORK

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. The work included in this Contract is shown on the drawings and described in these specifications. It consists of furnishing all labor, material, services, supervision and connection of all systems shown and/or specified including the requirements of:

DIVISION	0	-	BIDDING AND CONTRACT REQUIREMENTS
DIVISION	1	-	GENERAL REQUIREMENTS
DIVISION	26	-	ELECTRICAL
DIVISION	28	-	ELECTRONIC SAFETY AND SECURITY

B. Contractor is responsible to review and understand all drawings and all work of all trades to ensure a complete and thorough project.

C. Provide all labor, tools, materials, equipment, coordination, and plans necessary for installation and proper operation of the electrical systems.

D. Contract drawings and specifications are complementary and must be so used to ascertain all requirements of the work.

1.2 DEFINITIONS

A. Provide, furnish, install, and furnish and install shall have the same meaning. That is, the Contractor shall purchase, transport to the site and install all required components of the work unless specifically stated otherwise in the contract documents.

B. Wiring pertains to raceway, fittings, conductors, terminations, hangers, supports, etc. as required to form a complete system.

1.3 DRAWINGS AND SPECIFICATIONS

A. The plans are diagrammatic and indicate only the sizes and general arrangement of conduit, devices, and equipment; exact locations of all elements shall be determined as work progresses, in cooperation with the work of other trades. It is not intended to show every item of work or minor piece of equipment, but every item shall be furnished and installed without additional remuneration as necessary to complete the system in accordance with the best practice of the trade.

B. As previously stated, the exact locations of electrical devices and equipment is diagrammatic. The owner may request for any devices or equipment to be installed at different locations than what is indicated on the drawings in a specific area or room. It is the responsibility of the Electrical Contractor to coordinate the locations of devices in all areas prior to installation.

1.4 APPLICABLE STANDARDS

A. All equipment shall bear the UL label.

B. The latest edition of the following minimum standards shall apply wherever applicable:

ASA	American Standards Association
ASTM	American Society for Testing Materials

ETL	Electrical Testing Laboratories, Inc.
IEEE	Institute of Electrical and Electronic Engineers
IPCEA	Insulated Power Cable for Engineers Association
OSHA	Occupational Safety and Health Act
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
UL	Underwriters Laboratories, Inc.

Power company standards and regulations.
Local and state codes.

C. In the event there are conflicts between specifications and standards, standards shall govern unless specifications are in excess of standards.

1.5 PERMITS AND INSPECTIONS

A. Permits: The Contractor shall apply for and pay the cost for any local permits necessary for the work of this contract.

B. Inspections: The Contractor shall be responsible for obtaining inspection of and the certificate by a 3rd party inspection agency for the entire electrical system. Turn over certificate of inspection to the architect.

C. The undertaking of periodic inspections by the Owner or Engineer shall not be construed as supervision of actual construction. The Owner or Engineer is not responsible for providing a safe place of work for the Contractor, Contractor's employees, suppliers or subcontractors for access, visits, use, work, travel or occupancy by any person.

1.6 CODES AND REGULATIONS

A. Comply with all applicable rules and regulations of the municipal laws and ordinances and latest revisions thereof. All work shall be done in full conformity with the requirements of all authorities having jurisdiction. Modifications required by the above authorities will be made without additional charges to the Owner. Where alterations to and/or deviations from the Contract Documents are required by the authorities, report the requirements to the Engineer and secure approval before work is started.

B. Furnish and file with the proper authorities, all drawings required by them in connection with the work. Obtain all permits, licenses, and inspections and pay all legal and proper fees and charges in this connection.

C. Should any work shown or specified be of lighter or smaller material than Code requires, same shall be executed in strict accordance with the regulations.

D. Heavier or larger size material than Code requires shall be furnished and installed, if required by the Plans and Specifications.

E. This Contractor shall have the electrical work inspected from time to time by authorized inspectors and shall pay all expense incurred by same. At the completion of the work, the Contractor shall furnish a Certificate of Approval, in triplicate, indicating full approval of the work furnished and installed in this Contract from the local authority having jurisdiction.

F. Equipment and components parts thereof shall bear manufacturer's name-plate, giving manufacturer's name, size, type and model number or serial number, electrical characteristic to

facilitate maintenance and replacements. Name plates of distributors or contractors are not acceptable.

G. Engineer will have privilege of stopping any work or use of any material that in his opinion is not being properly installed and each Contractor shall remove all materials delivered, or work erected, which does not comply with Contract Drawings and Specifications, and replace with proper materials, or correct such work as directed by the Engineer, at no additional cost to Owner.

H. If equipment or materials are installed before proper approvals have been obtained, each Contractor shall be liable for their removal and replacement including work of other trades affected by such work, at no additional cost to Owner, if such items do not meet intent of the Drawings and Specifications.

1.7 RECORD DRAWINGS

A. The Electrical Contractor shall keep an accurate location record of all underground and concealed piping, and of all changes from the original design. He is required to furnish this information to the Engineer prior to his application for final payment.
   1. Submit prior to final acceptance inspection, one complete marked-up set of reproducible engineering design drawings.
      a. Fully illustrate all revisions made by all crafts in course of work.
      b. Include all field changes, adjustments, variances, substitutions and deletions, including all Change Orders.
      c. Exact location of raceways, equipment and devices.
      d. Exact size and location of underground and under floor raceways, grounding conductors and duct banks.
   2. These drawings shall be for record purposes for Owner's use and are not considered shop drawings.

B. At completion of the project, all changes and deviations from the Contract Documents shall be recorded by the Contractor.

C. Four (4) corrected sets of all operating and maintenance instructions and complete parts lists bound in hard covers shall be furnished to the Owner.

1.8 CLEANING CONDUIT AND EQUIPMENT

A. Conduit and electrical equipment shall be thoroughly cleaned of dirt, cuttings, and other foreign substances.

1.9 VIBRATION ISOLATION

A. Vibration isolators shall prevent, as far as practicable, transmission of vibration, noise or hum to any part of building.

B. Wiring and other electrical connections to equipment mounted on vibration isolators; made flexible with minimum 180 degree loop of "greenfield" in order to avoid restraining equipment and short circuiting vibration isolator.

1.10 BALANCED LOAD

A. It is intended that design and features of the work as indicated will provide balanced load on the feeders and main service. Contractor shall provide material and installation to provide this balance load insofar as possible.

B. Contractor shall take current and voltage measurements at all panels of at least 1/2 hour. Reconnections of loads shall be made when deemed necessary by the Engineers.

1.11 JOB CONDITIONS

A. Examine site related work and surfaces before starting work of any Section. Failure to do so shall in no way relieve the Contractor of the responsibility to properly install the new work.
   1. Report to the Engineer, in writing, conditions, which will prevent proper provision of this work ten (10) days prior to bid date, in time for an addendum to be issued .
   2. Beginning work of any Section without reporting unsuitable conditions to the Engineer constitutes acceptance of conditions by the Contractor.
   3. Perform any required removal, repair or replacement of this work caused by unsuitable conditions at no additional cost to Owner.
   4. The Contractor is responsible for performing routine maintenance and cleaning of any existing equipment where he is making connections to new work and to the building where his work adds debris.

B. Connections to existing work:
   1. Install new work and connect to existing work with minimum interference to existing facilities.
   2. Provide temporary shutdowns of existing services only with written consent of Owner at no additional charges and at time not to interfere with normal operation of existing facilities.
   3. Maintain continuous operation of existing facilities as required with necessary temporary connections between new and existing work.
   4. Do not interrupt alarm and emergency systems.
   5. Connect new work to existing work in neat and acceptable manner.
   6. Restore existing disturbed work to original condition including maintenance of wiring and continuity as required. Replace damaged or rusted conduit to which new equipment is being installed and connected.

C. Removal and relocation of existing work.
   1. Disconnect, remove or relocate electrical material, equipment and other work noted and required by removal or changes in existing construction.
   2. Provide new material and equipment required for relocated equipment.
   3. Disconnect load and line end of conductors feeding existing equipment.
   4. Remove conductors from existing raceways to be rewired.
   5. Remove conductors and cap outlets on raceways to be abandoned.
   6. Dispose of removed raceways and wire.
   7. Dispose of removed electrical equipment as directed by Owner. The Owner shall provide a list of equipment of the Contractor of equipment to be delivered to the Owner.

1.12 SPECIAL TOOLS AND LOOSE ITEMS

A. Furnish to Owner at completion of work:
   1. One set of any special tools required to operate, adjust, dismantle or repair equipment furnished under any section of this Division.
   2. "Special Tools": Those not normally found in possession of maintenance personnel.
   3. Keys
   4. Redundant components and spare parts.

B. Deliver items to Owner and obtain receipt prior to approval of final payment.

1.13 REVIEW OF CONSTRUCTION

A. Work may be reviewed at any time by representative of the Engineer.

B. Advise Architect and Engineer that work is ready for review at following times:
   1. Prior to backfilling buried work.
   2. Prior to concealment of work in walls and above ceilings.
   3. When all requirements of contract have been completed.

C. Neither backfill nor conceal work without Engineer's consent.

1.14 SHOP DRAWING SUBMITTALS

A. Submit required shop drawings, samples and product information in accordance with Division 1, requirements and as required in the various sections of these specifications.

B. Submittals shall show evidence of checking by the Contractor for accuracy. Product information (catalog sheets) shall indicate complete catalog number, color, accessories, etc., as well as, name of manufacturer and local distributor or manufacturer’s representative.

C. Submit for review detailed coordination drawings 3/8" or larger scale plans for all major electrical equipment and any areas of conflicts by drafting location of equipment, lighting fixtures, cable trays and conduits larger than 1-1/2" trade size. Contractor shall refer to Division 1 for preparing coordination drawings.

D. Incomplete submittals will be rejected.

E. Additionally, the Contractor will submit data on the following:
   1. All electrical equipment including all panelboards and switching devices (disconnects, switches, occupancy sensors, etc.).
   2. Fire stop seals used for wall penetrations.
   3. Any proposed variation in specified wiring plans and circuitry.
   4. All special items and panels, made or constructed specifically for this project, including wiring diagrams, component layout and component data or materials list.
   5. All settings of installed equipment, such as overcurrent protection, overload settings, temperature settings, time settings, etc. This includes equipment provided by other contractors or subcontractors and connected and tested by this Contractor.

F. All submittals of NON SPECIFIED equipment and components will be reviewed. It is the submitting Contractor's responsibility to prove compliance and not the Architect/Engineer to prove non-compliance. The submitting Contractor will be charged the prevailing wage of the reviewing Engineer for all submittals requiring over one (1) hour to review that were not originally specified.

1.15 OPERATING INSTRUCTIONS

A. It shall be the Contractor’s responsibility to insure that the Owner’s representative is given adequate instruction on the operation of all equipment prior to final payment.

1.16 TEMPORARY POWER

A. The Contractor shall provide all temporary power to all trades for all construction locations of this contract. This will include but not be limited to temporary lighting and power outlets.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials and equipment shall be new and as specified or of equal or better quality.

B. Basic hardware and miscellaneous items shall meet existing trade standards of quality and shall carry UL or FM listings where applicable.

C. All equipment supplied shall be the standard equipment of the manufacturer.

D. Multiple items such as panelboards, wiring devices, switches, breakers, raceways, etc., shall be from the same manufacturer.

E. Drawings and specifications are based on specific manufacturer's equipment. Therefore, the Contractor shall assume all responsibility, cost and coordination involved in making any necessary revisions to apply another manufacturer's equipment, even though it may be approved as an "equal" item by the Engineer.

PART 3 - EXECUTION

3.1 COORDINATION OF WORK

A. All work shall be executed in accordance with recognized standards of workmanship. All work shall be installed in a neat and orderly manner.

B. The Contractor shall exchange information with other Contractors and the Owner in order to insure orderly progress of the work.

C. The Contractor must contact the Owner's representative and schedule all work ten (10) days prior to start.

D. The Contractor shall check for possible interference before installing any items. If any work is installed, and later develops interference with other features of the design, the Contractor will be responsible to make such changes to eliminate the interference.

3.2 CEILING REMOVAL

A. Existing ceilings which must be removed for the installation of new work or demolition of existing conditions shall be done by the Contractor. No ceiling shall be removed without prior approval of the Owner. Ceilings which must be removed shall be restored to their original condition as soon as practical and prior to final payment.

B. The removed tile of lay-in type ceilings shall be stored either in the ceiling space or at a designated space in the building. No tiles shall be stored in the occupied space.

C. The Contractor shall take all necessary precautions to prevent damage to the existing ceilings. All damaged ceilings shall be replaced with new ceiling construction to match the existing and to the Owner's satisfaction.

3.3 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Comply with NECA 1.

B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.

D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

E. Right of Way: Give to piping systems installed at a required slope.

3.4 FIRESTOPPING

A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 7 Section "Through-Penetration Firestop Systems."

END OF SECTION 260000

SECTION 260519 – LOW-VOLTAGE CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.

1.3 SUBMITTALS

A. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: In addition to requirements specified in Division 1, an independent testing agency shall meet OSHA criteria for accreditation of testing laboratories, Title 29, Part 1907; or shall be a full-member company of the InterNational Electrical Testing Association.
   1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies, to supervise on-site testing specified in Part 3.

B. Listing and Labeling: Provide wires and cables specified in this Section that are listed and labeled.
   1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
   2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

C. Comply with NFPA 70.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver wires and cables according to NEMA WC 26.

1.6 COORDINATION

A. Coordinate layout and installation of cables with other installations.

B. Revise locations and elevations from those indicated, as required to suit field conditions and as approved by Architect.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Wires and Cables:
      a. Okonite

b. American Insulated Wire Corp.; Leviton Manufacturing Co.
c. BICC Brand-Rex Company.
d. Southwire Company.

2. Connectors for Wires and Cables:
   a. General Signal; O-Z/Gedney Unit.
   b. Square D Co.; Anderson.
   c. 3M Company; Electrical Products Division.

2.2 BUILDING WIRES AND CABLES

A. UL-listed building wires and cables with conductor material, insulation type, cable construction, and rating as specified in Part 3 "Wire and Insulation Applications" Article.

B. Rubber Insulation Material: Comply with NEMA WC 3.

C. Thermoplastic Insulation Material: Comply with NEMA WC 5.

D. Cross-Linked Polyethylene Insulation Material: Comply with NEMA WC 7.

E. Ethylene Propylene Rubber Insulation Material: Comply with NEMA WC 8.

F. Conductor Material: Copper.

G. Stranded conductors.

2.3 CONNECTORS AND SPLICES

A. UL-listed, factory-fabricated wiring connectors of size, ampacity rating, material, type, and class for application and service indicated. Comply with Project's installation requirements and as specified in Part 3 "Wire and Insulation Applications" Article.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine raceways and building finishes to receive wires and cables for compliance with requirements for installation tolerances and other conditions affecting performance of wires and cables. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 WIRE AND INSULATION APPLICATIONS

A. Feeders: Type THHN/THWN, in raceway.

B. Branch Circuits: Type THHN/THWN, in raceway.

C. Fire Alarm Circuits: Power-limited, fire-protective, signaling circuit cable.

D. Class 1 Control Circuits: Type THHN/THWN, in raceway.

E. Class 2 Control Circuits: Type THHN/THWN, in raceway.

3.3 INSTALLATION

A. Install wires and cables as indicated, according to manufacturer's written instructions and NECA's "Standard of Installation."

B. Remove existing wires from raceway before pulling in new wires and cables.

C. Pull Conductors: Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

E. Install exposed cables, parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

F. Support cables according to Division 26 Section "General Provisions for Electrical Work."

G. Seal around cables penetrating fire-rated elements according to Division 7 Section "Penetration Firestopping."

H. Identify wires and cables according to Division 26 Section "Electrical Identification."

3.4 CONNECTIONS

A. Conductor Splices: Keep to minimum.

B. Install splices and tapes that possess equivalent or better mechanical strength and insulation ratings than conductors being spliced.

C. Use splice and tap connectors compatible with conductor material.

D. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

E. Connect outlets and components to wiring and to ground as indicated and instructed by manufacturer.

F. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.5 FIELD QUALITY CONTROL

A. Testing: On installation of wires and cables and before electrical circuitry has been energized, demonstrate product capability and compliance with requirements.
   1. Procedures: Perform each visual and mechanical inspection and electrical test stated in NETA ATS, Section 7.3.1. Certify compliance with test parameters.

B. Correct malfunctioning conductors and cables at Project site, where possible, and retest to demonstrate compliance; otherwise, remove and replace with new units and retest.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Data: For the following:
   1. Ground rods.
   2. Chemical rods.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article.

D. Field Test Reports: Submit written test reports to include the following:
   1. Test procedures used.
   2. Test results that comply with requirements.
   3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Testing agency as defined by OSHA in 29 CFR 1910.7 or a member company of the InterNational Electrical Testing Association and that is acceptable to authorities having jurisdiction.
   1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association to supervise on-site testing specified in Part 3.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
   1. Comply with UL 467.

C. Comply with NFPA 70; for overhead-line construction and medium-voltage underground construction, comply with IEEE C2.

D. Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Grounding Conductors, Cables, Connectors, and Rods:
      a. Copperweld Corp.
      b. Erico Inc.; Electrical Products Group.
      c. Framatome Connectors/Burndy Electrical.
      d. O-Z/Gedney Co.; a business of the EGS Electrical Group.
      e. Thomas & Betts, Electrical.

2.2 GROUNDING CONDUCTORS

A. For insulated conductors, comply with Division 16 Section "Conductors and Cables."

B. Material: Copper.

C. Equipment Grounding Conductors: Insulated with green-colored insulation.

D. Isolated Ground Conductors: Insulated with green-colored insulation with yellow stripe. On feeders with isolated ground, use colored tape, alternating bands of green and yellow tape to provide a minimum of three bands of green and two bands of yellow.

E. Grounding Electrode Conductors: Stranded cable.

F. Underground Conductors: Bare, tinned, stranded, unless otherwise indicated.

G. Bare Copper Conductors: Comply with the following:
   1. Solid Conductors: ASTM B 3.
   2. Assembly of Stranded Conductors: ASTM B 8.
   3. Tinned Conductors: ASTM B 33.

H. Copper Bonding Conductors: As follows:
   1. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG copper conductor, 1/4 inch in diameter.
   2. Bonding Conductor: No. 4 or No. 6 AWG, stranded copper conductor.
   3. Bonding Jumper: Bare copper tape, braided bare copper conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

I. Ground Conductor and Conductor Protector for Wood Poles: As follows:
   1. No. 4 AWG minimum, soft-drawn copper conductor.

J. Grounding Bus: Bare, annealed copper bars of rectangular cross section, with insulators.

2.3 CONNECTOR PRODUCTS

A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.

B. Bolted Connectors: Bolted-pressure-type connectors, or compression type.

C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions.

2.4 GROUNDING ELECTRODES

A. Ground Rods: Sectional type; copper-clad steel.
   1. Size: 3/4 diameter by 120 inches in length.

PART 3 - EXECUTION

3.1 APPLICATION

A. Use only copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.

B. In raceways, use insulated equipment grounding conductors.

C. Exothermic-Welded Connections: Use for connections to structural steel and for underground connections, except those at test wells.

D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.

E. Underground Grounding Conductors: Use tinned-copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches below grade or bury 12 inches above duct bank when installed as part of the duct bank.

3.2 EQUIPMENT GROUNDING CONDUCTORS

A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.

B. Install equipment grounding conductors in all feeders and circuits.

C. Install insulated equipment grounding conductor with circuit conductors for the following items, in addition to those required by NEC:
   1. Feeders and branch circuits.
   2. Lighting circuits.
   3. Receptacle circuits.
   4. Single-phase motor and appliance branch circuits.
   5. Three-phase motor and appliance branch circuits.
   6. Flexible raceway runs.

D. Computer Outlet Circuits: Install insulated equipment grounding conductor in branch-circuit runs from computer-area power panels or power-distribution units.

E. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate grounding conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

F. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways unless they are designated for telephone or data cables.

G. Air-Duct Equipment Circuits: Install an equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners and heaters. Bond conductor to each unit and to air duct.

H. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate equipment grounding conductor to each electric water heater, heat-tracing, and antifrost heating cable. Bond conductor to heater units, piping, connected equipment, and components.

I. Signal and Communication Systems: For telephone, alarm, voice and data, and other communication systems, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.
   1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-2-by-12-inch grounding bus.
   2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

J. Metal Poles Supporting Outdoor Lighting Fixtures: Provide a grounding electrode in addition to installing a separate equipment grounding conductor with supply branch-circuit conductors.

K. Common Ground Bonding with Lightning Protection System: Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

3.3 INSTALLATION

A. Ground Rods: Install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes.
   1. Drive ground rods until tops are 2 inches below finished floor or final grade, unless otherwise indicated.
   2. Interconnect ground rods with grounding electrode conductors. Use exothermic welds, except at test wells and as otherwise indicated. Make connections without exposing steel or damaging copper coating.

B. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

C. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment. Use exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, use a bolted clamp. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts. Install straps only in locations accessible for maintenance.

D. Metal Water Service Pipe: Provide insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes by grounding clamp connectors. Where a dielectric main water fitting is installed, connect grounding conductor to street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

E. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with grounding clamp connectors.

F. Bond interior metal piping systems and metal air ducts to equipment grounding conductors of associated pumps, fans, blowers, electric heaters, and air cleaners. Use braided-type bonding straps.

3.4 CONNECTIONS

A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
   1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
   2. Make connections with clean, bare metal at points of contact.
   3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
   4. Make aluminum-to-galvanized steel connections with tin-plated copper jumpers and mechanical clamps.
   5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

B. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.

C. Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.

D. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.

E. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

F. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

G. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

3.5 UNDERGROUND DISTRIBUTION SYSTEM GROUNDING

A. Duct Banks: Install a grounding conductor with at least 50 percent ampacity of the largest phase conductor in the duct bank.

B. Manholes and Handholes: Install a driven ground rod close to wall and set rod depth so 4 inches will extend above finished floor. If necessary, install ground rod before manhole is placed and provide a No. 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive tape or heat-shrunk insulating sleeve from 2 inches above to 6 inches below concrete. Seal floor opening with waterproof, nonshrink grout.

C. Connections to Manhole Components: Connect exposed-metal parts, such as inserts, cable racks, pulling irons, ladders, and cable shields within each manhole or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG minimum, stranded, hard-drawn copper conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields as recommended by manufacturer of splicing and termination kits.

D. Pad-Mounted Transformers and/or Switches: Provide service transformer ground grid as shown on associated electrical drawings. Ground pad-mounted equipment and noncurrent-carrying metal items associated with transformers or substations by connecting them to underground cable and grounding electrodes. Use tinned-copper conductors for counterpoise and for taps to equipment ground pad.

3.6 FIELD QUALITY CONTROL

A. Testing: Perform the following field quality-control testing:
   1. After installing grounding system but before permanent electrical circuitry has been energized, test for compliance with requirements.
   2. Test completed grounding system at each location where a maximum ground-resistance level is specified and at service disconnect enclosure grounding terminal. Measure ground resistance not less than two full days after the last trace of precipitation, and without the soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests, by the fall-of-potential method according to IEEE 81.
      a. Equipment Rated 500 kVA and Less: 10 ohms.
      b. Equipment Rated 500 to 1000 kVA: 5 ohms.
      c. Equipment Rated More Than 1000 kVA: 3 ohms.
      d. Substations and Pad-Mounted Switching Equipment: 5 ohms.
      e. Manhole Grounds: 10 ohms.
   3. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

3.7 GRADING AND PLANTING

A. Restore surface features, including vegetation, at areas disturbed by Work of this Section. Reestablish original grades, unless otherwise indicated. If sod has been removed, replace it as soon as possible after backfilling is completed. Restore areas disturbed by trenching, storing of dirt, cable laying, and other activities to their original condition. Include application of topsoil, fertilizer, lime, seed, sod, sprig, and mulch. Comply with Division 32 Section "Turfs and Grasses." Maintain restored surfaces. Restore disturbed paving as indicated.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Hangers and supports for electrical equipment and systems.
   2. Construction requirements for concrete bases.

1.2 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. IMC: Intermediate metal conduit.

C. RMC: Rigid metal conduit.

1.3 PERFORMANCE REQUIREMENTS

A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.4 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Comply with NFPA 70.

1.5 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

B. Coordinate installation of roof curbs, equipment supports, and roof penetrations

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Allied Tube & Conduit.
      b. Cooper B-Line, Inc.; a division of Cooper Industries.
      c. ERICO International Corporation.
      d. Thomas & Betts Corporation.

e. Unistrut; Tyco International, Ltd.
f. Wesanco, Inc.

2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
3. Channel Dimensions: Selected for applicable load criteria.

B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
   a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      1) Hilti Inc.
      2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      3) MKT Fastening, LLC.
      4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
   a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      1) Cooper B-Line, Inc.; a division of Cooper Industries.
      2) Hilti Inc.
      3) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      4) MKT Fastening, LLC.
3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
   1. Secure raceways and cables to these supports with two-bolt conduit clamps.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
   1. To Wood: Fasten with lag screws or through bolts.
   2. To New Concrete: Bolt to concrete inserts.
   3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
   4. To Existing Concrete: Expansion anchor fasteners.
   5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
   6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
   7. To Light Steel: Sheet metal screws.
   8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use 3000-psi, 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Division 3 Section "Cast-in-Place Concrete."

C. Anchor equipment to concrete base.
   1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   2. Install anchor bolts to elevations required for proper attachment to supported equipment.
   3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
   1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Touchup: Comply with requirements in Division 9 painting Sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 26 0529

SECTION 260533 - RACEWAYS AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes raceways, fittings, connectors and couplings, boxes, enclosures, and cabinets for electrical wiring.
   1. Raceways include the following:
      a. RMC.
      b. IMC.
      c. PVC externally coated, rigid steel conduits.
      d. PVC externally coated, IMC.
      e. EMT.
      f. FMC.
      g. LFMC.
      h. LFNC.
      i. RNC.
      j. ENT.
      k. Wireways.
      l. Surface raceways.
      m. Type MC cable
   2. Boxes, enclosures, and cabinets include the following:
      a. Device boxes.
      b. Floor boxes.
      c. Outlet boxes.
      d. Pull and junction boxes.
      e. Cabinets and hinged-cover enclosures.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. ENT: Electrical nonmetallic tubing.

C. FMC: Flexible metal conduit.

D. IMC: Intermediate metal conduit.

E. LFMC: Liquidtight flexible metal conduit.

F. LFNC: Liquidtight flexible nonmetallic conduit.

G. RMC: Rigid metal conduit.

H. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, hinged-cover enclosures, and cabinets.

B. Shop Drawings: Include layout drawings showing components and wiring for nonstandard boxes, enclosures, and cabinets.

1.5 QUALITY ASSURANCE

A. Listing and Labeling: Provide raceways and boxes specified in this Section that are listed and labeled.
   1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
   2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

B. Comply with NECA's "Standard of Installation."

C. Comply with NFPA 70.

1.6 COORDINATION

A. Coordinate layout and installation of raceways and boxes with other construction elements to ensure adequate headroom, working clearance, and access.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Metal Conduit and Tubing:
      a. Alflex Corp.
      b. Anamet, Inc.; Anaconda Metal Hose.
      c. Carol Cable Co., Inc.
      d. Cole-Flex Corp.
      e. Electri-Flex Co.
      f. Flexcon, Inc.; Coleman Cable Systems, Inc.
      g. Grinnell Co.; Allied Tube and Conduit Div.
   2. Nonmetallic Conduit and Tubing:
      a. Anamet, Inc.; Anaconda Metal Hose.
      b. Arnco Corp.
      c. Cantex Industries; Harsco Corp.
      d. Certainteed Corp.; Pipe & Plastics Group.
      e. Cole-Flex Corp.
      f. Condux International; Electrical Products.
      g. Electri-Flex Co.
      h. Hubbell, Inc.; Raco, Inc.
      i. Lamson & Sessions; Carlon Electrical Products.
      j. R&G Sloan Manufacturing Co., Inc.
      k. Thomas & Betts Corp.
   3. Conduit Bodies and Fittings:
      a. American Electric; Construction Materials Group.

b. Crouse-Hinds; Div. of Cooper Industries.
c. Emerson Electric Co.; Appleton Electric Co.
d. Hubbell, Inc.; Killark Electric Manufacturing Co.
e. Lamson & Sessions; Carlon Electrical Products.
f. O-Z/Gedney; Unit of General Signal.

4. Metal Wireways:
   a. Hoffman Engineering Co.
   b. Keystone/Rees, Inc.
   c. Square D Co.
5. Nonmetallic Wireways:
   a. Hoffman Engineering Co.
   b. Lamson & Sessions; Carlon Electrical Products.
6. Surface Metal Raceways:
   a. American Electric; Construction Materials Group.
   b. Butler Manufacturing Co.; Walker Division.
   c. Wiremold Co. (The); Electrical Sales Division.
7. Surface Nonmetallic Raceways:
   a. Butler Manufacturing Co.; Walker Division.
   b. Hubbell, Inc.; Wiring Device Division.
   c. Lamson & Sessions; Carlon Electrical Products.
   d. Panduit Corp.
   e. United Telecom; Premier Telecom Products, Inc.
   f. Wiremold Co. (The); Electrical Sales Division.
8. Boxes, Enclosures, and Cabinets:
   a. American Electric; FL Industries.
   b. Butler Manufacturing Co.; Walker Division.
   c. Crouse-Hinds; Div. of Cooper Industries.
   d. Electric Panelboard Co., Inc.
   e. Hoffman Engineering Co.; Federal-Hoffman, Inc.
   f. Hubbell Inc.; Killark Electric Manufacturing Co.
   g. Hubbell Inc.; Raco, Inc.
   h. Lamson & Sessions; Carlon Electrical Products.
   i. O-Z/Gedney; Unit of General Signal.
   j. Parker Electrical Manufacturing Co.
   k. Robroy Industries, Inc.; Electrical Division.
   l. Thomas & Betts Corp.
   m. Woodhead Industries, Inc.; Daniel Woodhead Co.

2.2 METAL CONDUIT AND TUBING

A. Rigid Steel Conduit: ANSI C80.1.

B. Rigid Aluminum Conduit: ANSI C80.5.

C. IMC: ANSI C80.6.

D. Plastic-Coated Steel Conduit and Fittings: NEMA RN 1.

E. Plastic-Coated IMC and Fittings: NEMA RN 1.

F. EMT and Fittings: ANSI C80.3.
   1. Fittings: Set-screw or compression type.

G. FMC: Aluminum.

H. FMC: Zinc-coated steel.

I. LFMC: Flexible steel conduit with PVC jacket.

J. Fittings: NEMA FB 1; compatible with conduit/tubing materials.

2.3 NONMETALLIC CONDUIT AND TUBING

A. ENT: NEMA TC 13.

B. RNC: NEMA TC 2, Schedule 40 or 80 PVC.

C. ENT and RNC Fittings: NEMA TC 3; match to conduit or conduit/tubing type and material.

D. LFNC: UL 1660.

2.4 METAL WIREWAYS

A. Material: Sheet metal sized and shaped as indicated.

B. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

C. Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.

D. Wireway Covers: As indicated

E. Wireway Covers: Hinged type.

F. Wireway Covers: Screw-cover type.

G. Wireway Covers: Flanged-and-gasketed type.

H. Finish: Manufacturer's standard enamel finish.

2.5 NONMETALLIC WIREWAYS

A. Description: Fiberglass polyester, extruded and fabricated to size and shape indicated, with no holes or knockouts. Cover is gasketed with oil-resistant gasket material and fastened with captivated screws treated for corrosion resistance. Connections are flanged, with stainless-steel screws and oil-resistant gaskets.

B. Description: PVC plastic, extruded and fabricated to size and shape indicated, with snap-on cover and mechanically coupled connections using plastic fasteners.

C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.

2.6 NON-METALLIC SURFACE RACEWAY

A. Wiremold 5400 two-piece surface non-metallic raceway or approved equivalent. Electrical Contractor is responsible for providing and installing all surface mounted

raceway as indicated on associated electrical drawings. Raceway system shall include but not be limited to items listed below. Contractor is responsible for providing a complete operational surface raceway system where indicated on associated electrical drawings.

1. Provide divider plate for separation of communications and power wiring.
2. Size: 1-11/16" x 5-1/4"W
3. Provide two section Base No. 5400TB and cover No. 5400C as required.
4. Install where indicated on the associated electrical drawings with devices as noted.
5. Install where ceilings are inaccessible.
6. Raceway color shall be ivory. Color of receptacles and connectors shall match raceway.
7. Provide all necessary parts including, but not limited to, the following:
    a. Wire Clip No. 5400TWC
    b. Cover Clip No. 5406A
    c. Flat Elbow No. 5411
    d. End Cap No. 5410
    e. Internal Elbow No. 5417
    f. External Elbow No. 5418
    g. Device Bracket and Faceplate No. 5407
    h. Duplex Faceplate No. 5507D

2.7 CONNECTORS AND COUPLINGS

A. Locknuts: Appleton Electric Co. BL-50 Series, Gould Inc. Efcor 151 Series, Midwest Electric Mfg. Corp. 10 Series, OZ/Gedney Co. 1-50S Series, Raco Inc. 1002 Series, or Thomas & Betts Corp. 141 Series.

B. Grounding Wedge: Thomas & Betts Corp. 3650 Series

C. Couplings (For Rigid and IMC Conduit): Standard threaded couplings as furnished by conduit manufacturer.

D. Three Piece Conduit Coupling (For Rigid and IMC Conduit): Gould Inc. Efcor 165 Series, Midwest Electric Mfg. Corp. 190 Series, OZ/Gedney Co. 4-50 Series, Raco Inc. 1502 Series, or Thomas & Betts Corp. 675 Series

E. Set Screw Type: Appleton Electric Co., Gould Inc. Efcor, Midwest Electric Mfg. Corp., Raco Inc., Tomic Electric, or Thomas & Betts Corp.

F. Flexible Steel Conduit Connectors: Midwest Electric Mfg. Corp. 1708, 1736 Series, OZ/Gedney Co. C-8T, 24-34T, ACV-50T Series, or Thomas & Betts Corp. Nylon insulated Tite-Bite Series.

G. Sealtite Connectors (For Liquidtight Metal Conduit): Appleton Electric Co. STB Series, Crouse-Hinds Co. LTB Series, Gould Inc Efcor 11-50B Series, Ideal Industries Inc. 75-521 Series, Midwest Electric Mfg. Corp. LTB Series, OZ/Gedney Co. 4Q-50T Series, Raco Inc. 3512 Series, or Thomas & Betts Corp. 5332 Series.

2.8 FLOOR BOXES

A. Floor Boxes: metallic or nonmetallic, shallow, rectangular box.

B. Four compartment with wiring dividers for power and communication wiring.

C. Provide with mud cap for protection during concrete pour of floor slab.

D. Provide with internal duplex receptacle brackets and communication brackets.

E. Provide with brushed metal cover - finish to be determined by architect at submittal time. Cover to have capability to remain closed with cables exiting box.

F. Legrand RFB2 Series.

2.9 OUTLET AND DEVICE BOXES

A. Sheet Metal Boxes: NEMA OS 1.

B. Cast-Metal Boxes: NEMA FB 1, Type FD, cast box with gasketed cover.

2.10 PULL AND JUNCTION BOXES

A. Small Sheet Metal Boxes: NEMA OS 1.

B. Cast-Metal Boxes: NEMA FB 1, cast aluminum with gasketed cover.

2.11 ENCLOSURES AND CABINETS

A. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous hinge cover and flush latch.
1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
2. Nonmetallic Enclosures: Plastic, finished inside with radio-frequency-resistant paint.

B. Cabinets: NEMA 250, Type 1, galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage, and include accessory feet where required for freestanding equipment.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive raceways, boxes, enclosures, and cabinets for compliance with installation tolerances and other conditions affecting performance of raceway installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 WIRING METHODS

A. Outdoors: Use the following wiring methods:
1. Exposed: Rigid steel.
2. Concealed: Rigid steel.
3. Underground, Single Run: RNC.
4. Underground, Grouped: RNC.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
6. Boxes and Enclosures: NEMA 250, Type 3R or Type 4.

B. Indoors: Use the following wiring methods:

1. Exposed: EMT. Non-metallic and metallic surface raceways as shown on associated electrical drawings.
2. Concealed: EMT
3. Concealed in slab on grade: RNC (transition to 90 degree rigid steel elbow prior to exiting floor slab on grade)
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC; except in wet or damp locations, use LFMC.
5. Damp or Wet Locations: Rigid steel conduit.
6. Boxes and Enclosures: NEMA 250, Type 1, except as follows:
   a. Damp or Wet Locations: NEMA 250, Type 4, stainless steel.

3.3 INSTALLATION

A. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.

B. Minimum Raceway Size: 3/4-inch trade size. Unless otherwise noted

C. Conceal conduit and EMT, unless otherwise indicated, within finished walls, ceilings, and floors.

D. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

E. Install raceways level and square and at proper elevations. Provide adequate headroom.

F. Complete raceway installation before starting conductor installation.

G. Support raceways as specified in Division 16 Section "Basic Electrical Materials and Methods."

H. Use temporary closures to prevent foreign matter from entering raceways.

I. Protect stub-ups from damage where conduits rise through floor slabs. Arrange so curved portion of bends is not visible above the finished slab.

J. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.

K. Use raceway fittings compatible with raceways and suitable for use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings, unless otherwise indicated.

L. Run concealed raceways, with a minimum of bends, in the shortest practical distance considering the type of building construction and obstructions, unless otherwise indicated.

M. Raceways Embedded in Slabs: Install in middle third of slab thickness where practical, and leave at least 1-inch concrete cover.
   1. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
   2. Space raceways laterally to prevent voids in concrete.
   3. Run conduit larger than 1-inch trade size parallel to or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
   4. Transition from nonmetallic tubing to Schedule rigid steel conduit before rising above floor.

N. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.

1. Run parallel or banked raceways together, on common supports where practical.
2. Make bends in parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.

O. Join raceways with fittings designed and approved for the purpose and make joints tight.
1. Make raceway terminations tight. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight.
2. Use insulating bushings to protect conductors.

P. Terminations: Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against the box. Where terminations are not secure with 1 locknut, use 2 locknuts: 1 inside and 1 outside the box.

Q. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align raceways so the coupling is square to the box and tighten the chase nipple so no threads are exposed.

R. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of the pull wire.

S. Telephone and Signal System Raceways, 2-Inch Trade Size and Smaller: In addition to the above requirements, install raceways in maximum lengths of 150 feet and with a maximum of two 90-degree bends or equivalent. Separate lengths with pull or junction boxes where necessary to comply with these requirements.

T. Install raceway sealing fittings according to manufacturer's written instructions. Locate fittings at suitable, approved, and accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
1. Where conduits pass from warm to cold locations, such as the boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

U. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with the finished floor. Extend conductors to equipment with rigid steel conduit; FMC may be used 6 inches above the floor. Install screwdriver-operated, threaded flush plugs flush with floor for future equipment connections.

V. Flexible Connections: Use maximum of 6 feet of flexible conduit for recessed and semirecessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquid tight flexible conduit in wet or damp locations. Install separate ground conductor across flexible connections.

W. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in a nonmetallic sleeve.

X. Do not install aluminum conduits embedded in or in contact with concrete.

Y. PVC Externally Coated, Rigid Steel Conduits: Use only fittings approved for use with that material. Patch all nicks and scrapes in PVC coating after installing conduits.

Z. Surface Raceways: Install a separate, green, ground conductor in raceways from junction box supplying the raceways to receptacle or fixture ground terminals.
   1. Select each surface raceway outlet box, to which a lighting fixture is attached, of sufficient diameter to provide a seat for the fixture canopy.
   2. Where a surface raceway is used to supply a fluorescent lighting fixture having central-stem suspension with a backplate and a canopy (with or without extension ring), no separate outlet box is required.
   3. Provide surface metal raceway outlet box, and the backplate and canopy, at the feed-in location of each fluorescent lighting fixture having end-stem suspension.
   4. Where a surface metal raceway extension is made from an existing outlet box on which a lighting fixture is installed, no additional surface-mounted outlet box is required. Provide a backplate slightly smaller than the fixture canopy.

AA. Set floor boxes level and adjust to finished floor surface.

BB. Install hinged-cover enclosures and cabinets plumb. Support at each corner.

3.4 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure coatings, finishes, and cabinets are without damage or deterioration at the time of Substantial Completion.
   1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
   2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

3.5 CLEANING

A. On completion of installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finish, including chips, scratches, and abrasions.

END OF SECTION 260533

SECTION 260544 - SLEEVES & SLEEVE SEALS FOR ELECTRICAL RACEWAYS & CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

B. Related Requirements:
1. Section 078413 "Penetration Firestopping" for penetration firestopping installed in fire-resistance-rated walls, horizontal assemblies, and smoke barriers, with and without penetrating items.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 SLEEVES

A. Wall Sleeves:
1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

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

C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.

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

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

F. Sleeves for Rectangular Openings:
1. Material: Galvanized sheet steel.

2. Minimum Metal Thickness:
   a. For sleeve cross-section rectangle perimeter less than 50 inches and with no side larger than 16 inches, thickness shall be 0.052 inch.
   b. For sleeve cross-section rectangle perimeter 50 inches or more and one or more sides larger than 16 inches, thickness shall be 0.138 inch.

2.2 SLEEVE-SEAL SYSTEMS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Advance Products & Systems, Inc.
   b. CALPICO, Inc.
   c. Metraflex Company (The).
   d. Pipeline Seal and Insulator, Inc.
   e. Proco Products, Inc.
2. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
3. Pressure Plates: carbon steel or stainless steel.
4. Connecting Bolts and Nuts: carbon steel, with corrosion-resistant coating or stainless steel of length required to secure pressure plates to sealing elements.

2.3 SLEEVE-SEAL FITTINGS

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

2.4 GROUT

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

B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.

C. Design Mix: 5000-psi 28-day compressive strength.

D. Packaging: Premixed and factory packaged.

2.5 SILICONE SEALANTS

A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
2. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

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

PART 3 - EXECUTION

3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

A. Comply with NECA 1.

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

C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
   1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
      a. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
      b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
   2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
   3. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed.
   4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
   5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches above finished floor level. Install sleeves during erection of floors.

D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:
   1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
   2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.

E. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.

F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel or cast-iron pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

G. Underground, Exterior-Wall and Floor Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing sleeve-seal system.

3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

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

B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve

seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.3 SLEEVE-SEAL-FITTING INSTALLATION

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

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

C. Secure nailing flanges to concrete forms.

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

END OF SECTION 260544

SECTION 260553 - ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes electrical identification materials and devices required to comply with ANSI C2, NFPA 70, OSHA standards, and authorities having jurisdiction.

1.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Schedule of Nomenclature: An index of electrical equipment and system components used in identification signs and labels.

C. Samples: For each type of label and sign to illustrate color, lettering style, and graphic features of identification products.

1.4 QUALITY ASSURANCE

A. Comply with ANSI C2.

B. Comply with NFPA 70.

C. Comply with ANSI A13.1 and NFPA 70 for color-coding.

PART 2 - PRODUCTS

2.1 RACEWAY AND CABLE LABELS

A. Comply with ANSI A13.1, Table 3, for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
   1. Color: Black letters on orange field.
   2. Legend: Indicates voltage and service.

B. Adhesive Labels: Preprinted, flexible, self-adhesive vinyl with legend overlaminated with a clear, weather- and chemical-resistant coating.

C. Pretensioned, Wraparound Plastic Sleeves: Flexible, preprinted, color-coded, acrylic band sized to suit the diameter of the line it identifies and arranged to stay in place by pretensioned gripping action when placed in position.

D. Colored Adhesive Tape: Self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

E. Underground-Line Warning Tape: Permanent, bright-colored, continuous-printed, vinyl tape.
   1. Not less than 6 inches wide by 4 mils thick.
   2. Compounded for permanent direct-burial service.
   3. Embedded continuous metallic strip or core.
   4. Printed legend indicating type of underground line.

F. Tape Markers: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.

G. Aluminum, Wraparound Marker Bands: Bands cut from 0.014-inch- thick aluminum sheet, with stamped or embossed legend, and fitted with slots or ears for permanently securing around wire or cable jacket or around groups of conductors.

H. Plasticized Card-Stock Tags: Vinyl cloth with preprinted and field-printed legends. Orange background, unless otherwise indicated, with eyelet for fastener.

I. Aluminum-Faced, Card-Stock Tags: Weather-resistant, 18-point minimum card stock faced on both sides with embossable aluminum sheet, 0.002 inch thick, laminated with moisture-resistant acrylic adhesive, punched for fasteners, and preprinted with legends to suit each application.

J. Brass or Aluminum Tags: 2 by 2 by 0.05-inch metal tags with stamped legend, punched for fastener.

2.2 NAMEPLATES AND SIGNS

A. Safety Signs: Comply with 29 CFR, Chapter XVII, Part 1910.145.

B. Engraved Plastic Nameplates and Signs: Engraving stock, melamine plastic laminate, minimum 1/16 inch thick for signs up to 20 sq. in. and 1/8 inch thick for larger sizes.
   1. Engraved legend with black letters on white face.
   2. Punched or drilled for mechanical fasteners.

C. Baked-Enamel Signs for Interior Use: Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for the application. 1/4-inch grommets in corners for mounting.

D. Exterior, Metal-Backed, Butyrate Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for the application. 1/4-inch grommets in corners for mounting.

E. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32, stainless-steel machine screws with nuts and flat and lock washers.

2.3 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Cable Ties: Fungus-inert, self-extinguishing, one-piece, self-locking, Type 6/6 nylon cable ties.
   1. Minimum Width: 3/16 inch.
   2. Tensile Strength: 50 lb minimum.
   3. Temperature Range: Minus 40 to plus 185 deg F.
   4. Color: According to color-coding.

B. Paint: Formulated for the type of surface and intended use.
   1. Primer for Galvanized Metal: Single-component acrylic vehicle formulated for galvanized surfaces.
   2. Primer for Concrete Masonry Units: Heavy-duty-resin block filler.
   3. Primer for Concrete: Clear, alkali-resistant, binder-type sealer.
   4. Enamel: Silicone-alkyd or alkyd urethane as recommended by primer manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Identification Materials and Devices: Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

B. Lettering, Colors, and Graphics: Coordinate names, abbreviations, colors, and other designations with corresponding designations in the Contract Documents or with those required by codes and standards. Use consistent designations throughout Project.

C. Sequence of Work: If identification is applied to surfaces that require finish, install identification after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before applying.

E. Circuits with More Than 600 V: Identify raceway and cable with "DANGER--HIGH VOLTAGE" in black letters 2 inches high, stenciled with paint at 10-foot intervals over a continuous, painted orange background. Identify the following:
   1. Entire floor area directly above conduits running beneath and within 12 inches of a basement or ground floor that is in contact with earth or is framed above unexcavated space.
   2. Wall surfaces directly external to conduits concealed within wall.
   3. All accessible surfaces of concrete envelope around conduits in vertical shafts, exposed in the building, or concealed above suspended ceilings.
   4. Entire surface of exposed conduits.

F. Install painted identification according to manufacturer's written instructions and as follows:
   1. Clean surfaces of dust, loose material, and oily films before painting.
   2. Prime surfaces using type of primer specified for surface.
   3. Apply one intermediate and one finish coat of enamel.

G. Color Banding Raceways and Exposed Cables: Band exposed and accessible raceways of the systems listed below:
   1. Bands: Pretensioned, wraparound plastic sleeves; colored adhesive tape; or a combination of both. Make each color band 2 inches wide, completely encircling conduit, and place adjacent bands of two-color markings in contact, side by side.
   2. Band Locations: At changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
   3. Apply the following colors to the systems listed below:
      a. Fire Alarm System: Red.
      b. Fire-Suppression Supervisory and Control System: Red and yellow.
      c. Combined Fire Alarm and Security System: Red and blue.
      d. Security System: Blue and yellow.
      e. Mechanical and Electrical Supervisory System: Green and blue.
      f. Telecommunication System: Green and yellow.

H. Caution Labels for Indoor Boxes and Enclosures for Power and Lighting: Install pressure-sensitive, self-adhesive labels identifying system voltage with black letters on orange background. Install on exterior of door or cover.

I. Circuit Identification Labels on Boxes: Install labels externally.
   1. Exposed Boxes: Pressure-sensitive, self-adhesive plastic label on cover.
   2. Concealed Boxes: Plasticized card-stock tags.

3. Labeling Legend: Permanent, waterproof listing of panel and circuit number or equivalent.

J. Paths of Underground Electrical Lines: During trench backfilling, for exterior underground power, control, signal, and communication lines, install continuous underground plastic line marker located directly above line at 6 to 8 inches below finished grade. Where width of multiple lines installed in a common trench or concrete envelope does not exceed 16 inches overall, use a single line marker. Install line marker for underground wiring, both direct-buried cables and cables in raceway.

K. Secondary Service, Feeder, and Branch-Circuit Conductors: Color-code throughout the secondary electrical system.
1. Color-code 208/120-V system as follows:
   a. Phase A: Black.
   b. Phase B: Red.
   c. Phase C: Blue.
   d. Neutral: White.
   e. Ground: Green.
2. Color-code 480/277-V system as follows:
   a. Phase A: Yellow.
   b. Phase B: Brown.
   c. Phase C: Orange.
   d. Neutral: White with a colored stripe or gray.
   e. Ground: Green.
3. Factory apply color the entire length of conductors, except the following field-applied, color-coding methods may be used instead of factory-coded wire for sizes larger than No. 10 AWG:
   a. Colored, pressure-sensitive plastic tape in half-lapped turns for a distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Use 1-inch-wide tape in colors specified. Adjust tape bands to avoid obscuring cable identification markings.

L. Power-Circuit Identification: Metal tags or aluminum, wraparound marker bands for cables, feeders, and power circuits in vaults, pull and junction boxes, manholes, and switchboard rooms.
1. Legend: 1/4-inch- steel letter and number stamping or embossing with legend corresponding to indicated circuit designations.
2. Tag Fasteners: Nylon cable ties.
3. Band Fasteners: Integral ears.

M. Apply identification to conductors as follows:
1. Conductors to Be Extended in the Future: Indicate source and circuit numbers.
2. Multiple Power or Lighting Circuits in the Same Enclosure: Identify each conductor with source, voltage, circuit number, and phase. Use color-coding to identify circuits' voltage and phase.
3. Multiple Control and Communication Circuits in the Same Enclosure: Identify each conductor by its system and circuit designation. Use a consistent system of tags, color-coding, or cable marking tape.

N. Apply warning, caution, and instruction signs as follows:
   1. Warnings, Cautions, and Instructions: Install to ensure safe operation and maintenance of electrical systems and of items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.
   2. Emergency Operation: Install engraved laminated signs with white legend on red background with minimum 3/8-inch- high lettering for emergency instructions on power transfer, load shedding, and other emergency operations.

O. Equipment Identification Labels: Engraved plastic laminate. Install on each unit of equipment, including central or master unit of each system. This includes power, lighting, communication, signal, and alarm systems, unless units are specified with their own self-explanatory identification. Unless otherwise indicated, provide a single line of text with 1/2-inch- high lettering on 1-1/2-inch- high label; where two lines of text are required, use labels 2 inches high. Use white lettering on black field. Apply labels for each unit of the following categories of equipment using mechanical fasteners:
   1. Panelboards, electrical cabinets, and enclosures.
   2. Access doors and panels for concealed electrical items.
   3. Electrical switchgear and switchboards.
   4. Electrical substations.
   5. Emergency system boxes and enclosures.
   6. Motor-control centers.
   7. Disconnect switches.
   8. Enclosed circuit breakers.
   9. Motor starters.
   10. Push-button stations.
   11. Power transfer equipment.
   12. Contactors.
   13. Remote-controlled switches.
   14. Dimmers.
   15. Control devices.
   16. Transformers.
   17. Inverters.
   18. Rectifiers.
   19. Frequency converters.
   20. Battery racks.
   21. Power-generating units.
   22. Telephone switching equipment.
   23. Clock/program master equipment.
   24. Call system master station.
   25. TV/audio-monitoring master station.
   26. Fire alarm master station or control panel.
   27. Security-monitoring master station or control panel.

END OF SECTION 260553

SECTION 260923 – LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Time switches.
2. Photoelectric switches.
3. Indoor occupancy sensors.
4. Lighting contactors.

B. Related Requirements:
1. Section 262726 "Wiring Devices" for wall-box dimmers, manual light switches, and color/finish of devices.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Show installation details for occupancy sensors.
1. Interconnection diagrams showing field-installed wiring.
2. Include diagrams for power, signal, and control wiring.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each type of lighting control device to include in emergency, operation, and maintenance manuals.

PART 2 - PRODUCTS

2.1 TIME SWITCHES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Intermatic, Inc.
2. Cooper Industries, Inc.
3. Invensys Controls.
4. Leviton Mfg. Company Inc.
5. NSi Industries LLC; TORK Products.
6. Tyco Electronics; ALR Brand.

B. Electronic Time Switches: Solid state, programmable, with alphanumeric display; complying with UL 917.
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Contact Configuration: As indicated on drawings.
3. Contact Rating: As indicated on drawings.
4. Programs: As indicated on drawings.

5. Switch to include 2 independent outputs for separate circuit programming.
6. Circuitry: Allow connection of a photoelectric relay as substitute for on-off function of a program
7. Astronomic Time: All channels.
8. Automatic daylight savings time changeover.
9. Battery Backup: Not less than seven days reserve, to maintain schedules and time clock.
10. Intermatic ET270 Series.

2.2 OUTDOOR PHOTOELECTRIC SWITCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cooper Industries, Inc.
2. Intermatic, Inc.
3. NSi Industries LLC; TORK Products.
4. Tyco Electronics; ALR Brand.
5. Paragon.

B. Description: Solid state, with SPST or DPST dry contacts rated for 1800-VA tungsten or 1000-VA inductive, to operate connected relay, contactor coils, or microprocessor input; complying with UL 773A.
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Light-Level Monitoring Range: 1.5 to 10 fc, with an adjustment for turn-on and turn-off levels within that range, and a directional lens in front of the photocell to prevent fixed light sources from causing turn-off.
3. Time Delay: Fifteen second minimum, to prevent false operation.
4. Surge Protection: Metal-oxide varistor.
5. Mounting: Twist lock complies with NEMA C136.10, with base-and-stem mounting or stem-and-swivel mounting accessories as required to direct sensor to the north sky exposure.

2.3 DAYLIGHT-HARVESTING DIMMING CONTROLS

A. System Description: Sensing daylight and electrical lighting levels, the system adjusts the indoor electrical lighting levels. As daylight increases, the lights are dimmed.

1. Lighting control set point is based on two lighting conditions:

a. When no daylight is present (target level).
b. When significant daylight is present.

2. System programming is done with two hand-held, remote-control tools.

a. Initial setup tool.
b. Tool for occupants to adjust the target levels by increasing the set point up to 25 percent, or by minimizing the electric lighting level.

B. Ceiling-Mounted Dimming Controls: Solid-state, light-level sensor unit, with integrated or separate power pack, to detect changes in indoor lighting levels that are perceived by the eye.

C. Electrical Components, Devices, and Accessories:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Sensor Output: 0- to 10-V dc to operate luminaires. Sensor is powered by controller unit.
3. Light-Level Sensor Set-Point Adjustment Range: 20 to 100 fc (120 to 1080 lux).

D. Power Pack: Dry contacts rated for 20-A load at 120- and 277-V ac. Sensor has 24-V dc, 150-mA, Class 2 power source, as defined by NFPA 70.

1. LED status lights to indicate load status.
2. Plenum rated.

E. Power Pack: Digital controller capable of accepting RJ45 inputs with two outputs rated for 20-A load at 120- and 277-V ac. Sensor has 24-V dc Class 2 power source, as defined by NFPA 70.

1. With integral current monitoring

a. Compatible with digital addressable lighting interface.

1) Plenum rated.

2.4 INDOOR OCCUPANCY SENSORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Cooper Industries, Inc.
2. Lightolier Controls.
3. Lithonia Lighting; Acuity Lighting Group, Inc.
4. Lutron Electronics Co., Inc.
5. Sensor Switch, Inc.
6. Square D; a brand of Schneider Electric.
7. Watt Stopper.

B. General Requirements for Sensors: Wall- or ceiling-mounted, solid-state indoor occupancy sensors with a separate power pack.
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Operation: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 30 minutes.
3. Sensor Output: Contacts rated to operate the connected relay, complying with UL 773A. Sensor is powered from the power pack.
4. Power Pack: Dry contacts rated for 20-A ballast load at 120- and 277-V ac, for 13-A tungsten at 120-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc, 150-mA, Class 2 power source, as defined by NFPA 70.
5. Mounting:
   a. Sensor: Suitable for mounting in any position on a standard outlet box.
   b. Relay: Externally mounted through a 1/2-inch knockout in a standard electrical enclosure.

c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.

6. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.
7. Bypass Switch: Override the "on" function in case of sensor failure.
8. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc; turn lights off when selected lighting level is present.
9. Dual Relay Units: Shall have provisions for setting both relays to turn on when occupancy is detected. Units that allow only one relay to default to “on” are not acceptable.
10. Occupancy sensor to be compatible with all other lighting controls and light fixtures in room. Contractor and lighting supplier to verify coordination prior to submittal and shall be responsible to replace any devices that do not operate as intended.

C. Dual-Technology Type: Ceiling mounted; detect occupants in coverage area using PIR and ultrasonic detection methods. The particular technology or combination of technologies that control on-off functions is selectable in the field by operating controls on unit.
1. Sensitivity Adjustment: Separate for each sensing technology.
2. Detector Sensitivity: Detect occurrences of 6-inch- minimum movement of any portion of a human body that presents a target of not less than 36 sq. in., and detect a person of average size and weight moving not less than 12 inches in either a horizontal or a vertical manner at an approximate speed of 12 inches/s.
3. Detection Coverage (Small Room): Detect occupancy anywhere within a circular area of 600 sq. ft. when mounted on a 96-inch- high ceiling.
4. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of 1000 sq. ft. when mounted on a 96-inch- high ceiling.
5. Detection Coverage (Large Room): Detect occupancy anywhere within a circular area of 2000 sq. ft. when mounted on a 96-inch- high ceiling.
6. Ceiling sensor to be provided with isolated relay for integration with Building HVAC management system.

D. Ceiling Mounted Occupancy Sensor with Integral Photocell:
1. Passive Infrared Technology Type.
2. Extended range (20’ radius, 360 degrees), 1500 square-foot coverage pattern.
3. Auto control photocell prevents lights from coming on if adequate daylight is available.
4. UL and cUL Listed and labeled.
5. Sensitivity adjustment 20%-100%
6. Line Voltage Input.
7. General Space Sensors Light-Level Monitoring Range: 5 to 200 fc, with an adjustment for turn-on and turn-off levels within that range.
8. Time Delay: Adjustable from 30 seconds to 30 minutes.
9. Set-Point Adjustment: Equip with deadband adjustment of 25, 50, and 75 percent above the "on" set point, or provide with separate adjustable "on" and "off" set points.
10. Walk test indicator light.
11. Color to be white.
12. Manufacturer: Hubbell Building Automation, Inc., Model # PIR10P. .

2.5 SWITCHBOX-MOUNTED OCCUPANCY SENSORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Cooper Industries, Inc.

2. Leviton Mfg. Company Inc.
3. Lightolier Controls.
4. Lithonia Lighting; Acuity Lighting Group, Inc.
5. Lutron Electronics Co., Inc.
6. Sensor Switch, Inc.
7. Square D; a brand of Schneider Electric.
8. Watt Stopper.

B. General Requirements for Sensors: Automatic-wall-switch occupancy sensor, suitable for mounting in a single gang switchbox.

C. Vacancy Sensor with integral 0-10v manual dimming control.
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Operating Ambient Conditions: Dry interior conditions, 32 to 120 deg F.
3. Switch Rating: Not less than 800-VA fluorescent at 120 V, 1200-VA fluorescent at 277 V, and 800-W incandescent.
4. Standard Range: 180-degree field of view, field adjustable from 180 to 40 degrees; with a minimum coverage area of 900 sq. ft.
5. Sensing Technology: Dual technology (PIR and ultrasonic).
6. Switch Type: Single-relay or dual-relay, as indicated on drawing.
   a. Dual-Relay Units: Shall have provisions for setting both relays to turn on when occupancy is detected. Units that allow only one relay to default to “on” are not acceptable.
7. Voltage: Match the circuit voltage.
8. Ambient-Light Override: Concealed, field-adjustable, light-level sensor from 10 to 150 fc. The switch prevents the lights from turning on when the light level is higher than the set point of the sensor.
9. Concealed, field-adjustable, "off" time-delay selector at up to 30 minutes.
10. Concealed "off" time-delay selector at 30 seconds, and 5, 10, and 20 minutes.
11. Adaptive Technology: Self-adjusting circuitry detects and memorizes usage patterns of the space and helps eliminate false "off" switching.
12. Color/finish shall match that of other wiring devices in the project.
13. Sensor to be compatible with all other lighting controls and light fixtures in room. Contractor and lighting supplier to verify coordination prior to submittal and shall be responsible to replace any devices that do not operate as intended.

2.6 LIGHTING CONTACTORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Allen-Bradley/Rockwell Automation.
2. ASCO Power Technologies, LP; a division of Emerson Electric Co.
3. Eaton Corporation.
4. General Electric Company; GE Consumer & Industrial - Electrical Distribution; Total Lighting Control.
5. Square D; a brand of Schneider Electric.

B. Description: Electrically operated and electrically held, combination-type lighting contactors, complying with NEMA ICS 2 and UL 508.

1. Current Rating for Switching: Listing or rating consistent with type of load served, including tungsten filament, inductive, and high-inrush ballast (ballast with 15 percent or less total harmonic distortion of normal load current).
2. Fault Current Withstand Rating: Equal to or exceeding the available fault current at the point of installation.
3. Enclosure: Comply with NEMA 250.
4. Provide with control and pilot devices as indicated on Drawings, matching the NEMA type specified for the enclosure.

2.7 DIMMER SWITCH

A. Description: Wall box dimmer switch.
1. On/Off switch with slider to raise/lower light level.
2. 0-10v dimming control.
3. Compatible with associated dimming driver in luminaire.
4. Finish of decorator switch to be brown.
5. Wall plate to be satin-finished stainless steel.
6. Multiple gang face plates to accommodate quantity of switches required.
7. Provide additional components (power supply, power booster) if required to wire system.
8. Manufacturers:
   a. Wattstopper, Inc.
   b. Lutron
   c. Hunt Dimming

2.8 CONDUCTORS AND CABLES

A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Section 260519 "Low-Voltage Conductors and Cables."

B. Classes 2 and 3 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 18 AWG. Comply with requirements in Section 260519 "Low-Voltage Conductors and Cables."

C. Class 1 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 14 AWG. Comply with requirements in Section 260519 "Low-Voltage Conductors and Cables."

PART 3 - EXECUTION

3.1 SENSOR INSTALLATION

A. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression systems, and partition assemblies.

B. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

3.2 WIRING INSTALLATION

A. Wiring Method: Comply with Section 260519 "Low-Voltage Conductors and Cables." Minimum conduit size is 1/2 inch.

B. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.

C. Size conductors according to lighting control device manufacturer's written instructions unless otherwise indicated.

D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.3 IDENTIFICATION

A. Identify components and power and control wiring according to Section 260553 "Electrical Identification."

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
   1. Operational Test: After installing and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation.
   2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

B. Lighting control devices will be considered defective if they do not pass tests and inspections.

3.5 ADJUSTING

A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting sensors to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.
   1. For occupancy and motion sensors, verify operation at outer limits of detector range. Set time delay to suit Owner's operations.

3.6 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain lighting control devices.

END OF SECTION 260923

SECTION 262616 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes individually mounted enclosed switches and circuit breakers used for the following:
   1. Service disconnecting means.
   2. Feeder and branch-circuit protection.
   3. Motor and equipment disconnecting means.

B. Related Sections include the following:
   1. Division 26 Section "Wiring Devices" for attachment plugs, receptacles, and toggle switches used for disconnecting means.
   2. Division 26 Section "Fuses" for fusible devices.

1.3 DEFINITIONS

A. GFCI: Ground-fault circuit interrupter.

B. RMS: Root mean square.

C. SPDT: Single pole, double throw.

1.4 SUBMITTALS

A. Product Data: For each type of switch, circuit breaker, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each switch and circuit breaker.
   1. Dimensioned plans, elevations, sections, and details, including required clearances and service space around equipment. Show tabulations of installed devices, equipment features, and ratings. Include the following:
      a. Enclosure types and details for types other than NEMA 250, Type 1.
      b. Current and voltage ratings.
      c. Short-circuit current rating.
      d. UL listing for series rating of installed devices.
      e. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
   2. Wiring Diagrams: Power, signal, and control wiring. Differentiate between manufacturer-installed and field-installed wiring.

C. Manufacturer Seismic Qualification Certification: Submit certification that enclosed switches and circuit breakers, accessories, and components will withstand seismic forces. Include the following:
   1. Basis of Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
      a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
   2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
   3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

D. Qualification Data: Submit data for testing agencies indicating that they comply with qualifications specified in "Quality Assurance" Article.

E. Field Test Reports: Submit written test reports and include the following:
   1. Test procedures used.
   2. Test results that comply with requirements.
   3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

F. Manufacturer's field service report.

G. Maintenance Data: For enclosed switches and circuit breakers and for components to include in maintenance manuals specified in Division 1. In addition to requirements specified in Division 1, include the following:
   1. Routine maintenance requirements for components.
   2. Manufacturer's written instructions for testing and adjusting switches and circuit breakers.
   3. Time-current curves, including selectable ranges for each type of circuit breaker.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Testing agency that is a member company of the InterNational Electrical Testing Association and that is acceptable to authorities having jurisdiction.
   1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NEMA AB 1 and NEMA KS 1.

D. Comply with NFPA 70.

E. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions, unless otherwise indicated:
   1. Ambient Temperature: Not less than minus 22 deg F and not exceeding 104 deg F.
   2. Altitude: Not exceeding 6600 feet.

1.7 COORDINATION

A. Coordinate layout and installation of switches, circuit breakers, and components with other construction, including conduit, piping, equipment, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Verify existing panelboard KAIC ratings for installation of new breakers. New breakers to be added to existing panelboards shall be U.L. listed/labeled for use with the existing panelboards. Interrupting rating of new breakers shall match rating of existing associated panelboard.

1.8 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Spares: For the following:
      a. Control-Power Fuses: 2
      b. Fuses for Fused Switches: 2
   2. Spare Indicating Lights: Six of each type installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Square D Co.
   2. Eaton Corp.; Cutler-Hammer Products.

2.2 ENCLOSED SWITCHES

A. Enclosed, Nonfusible Switch: NEMA KS 1, Type HD, with lockable handle.

B. Enclosed, Fusible Switch, 800 A and Smaller: NEMA KS 1, Type HD, with clips to accommodate specified fuses, lockable handle with two padlocks, and interlocked with cover in closed position.

2.3 ENCLOSURES

A. NEMA AB 1 and NEMA KS 1 to meet environmental conditions of installed location.
   1. Outdoor Locations: NEMA 250, Type 3R.
   2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
   3. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
   4. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7C.

2.4 FACTORY FINISHES

A. Manufacturer's standard prime-coat finish ready for field painting.

B. Finish: Manufacturer's standard gray paint applied to factory-assembled and -tested enclosures before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 26 Section “Electrical Identification”.

B. Enclosure Nameplates: Label each enclosure with engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws.

3.4 CONNECTIONS

A. Install equipment grounding connections for switches and circuit breakers with ground continuity to main electrical ground bus.

B. Install power wiring. Install wiring between switches and circuit breakers, and control and indication devices.

C. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.5 FIELD QUALITY CONTROL

A. Prepare for acceptance tests as follows:
   1. Test insulation resistance for each enclosed switch, circuit breaker, component, and control circuit.
   2. Test continuity of each line- and load-side circuit.

B. Testing: After installing enclosed switches and circuit breakers and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.
   1. Procedures: Perform each visual and mechanical inspection and electrical test indicated in NETA ATS, Section 7.5 for switches. Certify compliance with test parameters.
   2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

C. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each enclosed switch and circuit breaker. Open or remove doors or panels so connections are accessible to portable scanner.
   1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each unit 11 months after date of Substantial Completion.

2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
3. Record of Infrared Scanning: Prepare a certified report that identifies switches and circuit breakers checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken and observations after remedial action.

3.6 CLEANING

A. On completion of installation, inspect interior and exterior of enclosures. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION 262616

SECTION 265100 - INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Interior lighting fixtures with LED lamps.
   2. Lighting fixtures mounted on exterior building surfaces.
   3. Exit signs.
   4. Accessories.

B. Related Sections include the following:
   1. Division 26 Section "Lighting Control Devices" for automatic control of lighting, including time switches, photoelectric relays, occupancy sensors and manual wall-box dimmers for LED fixtures.

1.3 DEFINITIONS

A. CRI: Color rendering index.

B. CU: Coefficient of utilization.

C. Luminaire: Complete lighting fixture, including ballast housing if provided.

D. LER: Luminaire efficiency rating, which is calculated according to NEMA LE 5. This value can be estimated from photometric data using the following formula:
   1. LER is equal to the product of total rated lamp lumens times BF times luminaire efficiency, divided by input watts.

E. RCR: Room cavity ratio.

1.4 SUBMITTALS

A. Product Data: For each type of lighting fixture indicated, arranged in order of fixture designation. All lighting fixture types shall be submitted in a single complete brochure, at the same time, which shall be in the form of a soft cover binder with each fixture separated by an identified index tab. Information on each fixture shall include data on features, accessories, and the following:
   1. Physical description of fixture, including dimensions and verification of indicated parameters.
   2. Fluorescent and high-intensity-discharge ballasts.
   3. Lamps.

B. Shop Drawings: Show details of nonstandard or custom fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.

C. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:

1. Lighting fixtures.
2. Suspended ceiling components.
3. Structural members to which suspension systems for lighting fixtures will be attached.
4. Other items in finished ceiling including the following:
    a. Air outlets and inlets.
    b. Speakers.
    c. Sprinklers.
    d. Smoke and fire detectors.
    e. Occupancy sensors.
    f. Access panels.
5. Perimeter moldings.

B. All submittals of NON SPECIFIED fixtures must include documentation or they will be automatically rejected.

C. Wiring Diagrams: Power, signal, and control wiring.

D. Samples for Verification:
    a. For interior lighting fixtures designated for sample submission in the Interior Lighting Fixture Schedule.
        1) Lamps: Specified units installed.
        2) Ballast: 120-V models of specified ballast types.
        3) Accessories: Cords and plugs.
    b. Substitution fixtures as requested by the engineer at time of submittal.
        1) Lamps: Specified units installed.
        2) Ballast: 120-V models of specified ballast types.
        3) Accessories: Cords and plugs.
    c. Paint sample for light poles and associated luminaires.

E. Product Certificates: For each type of ballast for dimmer-controlled fixtures, signed by product manufacturer.

F. Source quality-control test reports.

G. Field quality-control test reports.

H. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section Closeout Procedures include the following:
1. Catalog data for each fixture. Include the diffuser, ballast, and lamps installed in that fixture.

I. Warranties: Special warranties specified in this Section.

J. Submittals that fail to comply with the above requirements will automatically be rejected.

K. It is the Contractor’s responsibility to provide submittals in an organized and timely manner in order so as not to delay the project schedule and hamper the work of other trades.

L. All submittals of NON SPECIFIED equipment and components will be reviewed. It is the submitting Contractor's responsibility to prove compliance and not the Architect/Engineer to prove non-compliance. The submitting Contractor will be charged the prevailing wage of the reviewing Engineer for all submittals requiring over one (1) hour to review that were not originally specified.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
   1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

N. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

O. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.

P. Comply with NFPA 70.

Q. NFPA 101 Compliance: Comply with visibility and luminance requirements for exit signs.

1.6 COORDINATION

A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Plastic Diffusers and Lenses: 1 for every 100 of each type and rating installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Refer to Luminaire Schedule for specified products and manufacturers.
   1. Basis-of-Design Product: The design for each lighting fixture is based on the product named. Subject to compliance with requirements, provide either the named product or a product of equal performance and construction.
   2. Non specified products will be subject to possible request of point by point calculations and samples for comparison.

2.2 FIXTURES AND COMPONENTS, GENERAL

A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.

B. Metal Parts: Free of burrs and sharp corners and edges.

C. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.

D. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

E. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.
4. Laminated Silver Metallized Film: 90 percent.

F. Plastic Diffusers, Covers, and Globes:
1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
a. Lens Thickness: At least 0.125 inch minimum unless different thickness is scheduled.
b. UV stabilized.
2. Glass: Annealed crystal glass, unless otherwise indicated.
3. All fixture lenses shall meet ASTM E-84, maximum smoke developed of 450 and ASTM E-635, maximum burn rate of 2.5 inches per minute.

G. Electromagnetic-Interference Filters: A component of fixture assembly. Suppress conducted electromagnetic-interference as required by MIL-STD-461D. Fabricate lighting fixtures with one filter on each ballast indicated to require a filter.

2.3 EXIT SIGNS

A. General: Comply with UL 924; for sign colors and lettering size, comply with authorities having jurisdiction.

B. Die-cast aluminum housing and canopy.

C. Universal snap-out directional arrows as required.

D. Single and double face housing as required.

E. Universal mounting with canopy.

F. Internally Lighted Signs:
1. Lamps for AC Operation: White, light-emitting diodes, 70,000 hours minimum of rated lamp life.

G. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
1. Battery: Sealed, maintenance-free, nickel-cadmium type with special warranty. Battery to deliver 90 minute minimum capacity to fixture.
2. Charger: Fully automatic, solid-state type with sealed transfer relay.
3. Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.

2.4 LED SOURCES

A. LEDs to meet LM-80 performance for 50,000 hours

B. High efficiency driver

C. Standard full range dimming on troffers.

D. 5-year warranty of entire fixture including fixture construction and LED light engine driver.

E. LED lamp minimum CRI of 82

F. Fixture tested in accordance with IESNA LM-79.

2.8 FIXTURE SUPPORT COMPONENTS

G. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.

H. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.

I. Twin-Stem Hangers: Two, 1/2-inch steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.

J. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated, [12 gage].

K. Wires For Humid Spaces: ASTM A 580/A 580M, Composition 302 or 304, annealed stainless steel, 12 gage.

L. Rod Hangers: 3/16-inch- minimum diameter, cadmium-plated, threaded steel rod.

M. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

N. Aircraft Cable Support: Use cable, anchorages, and intermediate supports recommended by fixture manufacturer.

2.9 FINISHES

O. Fixtures: Manufacturers' standard, unless otherwise indicated.
   1. Paint Finish: Applied over corrosion-resistant treatment or primer, free of defects.
   2. Metallic Finish: Corrosion resistant.

2.10 SOURCE QUALITY CONTROL

P. Provide services of a qualified, independent testing and inspecting agency to factory test fixtures with ballasts and lamps; certify results for electrical ratings and photometric data.

Q. Factory test fixtures with ballasts and lamps; certify results for electrical ratings and photometric data.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.

B. Support for Fixtures in or on Grid-Type Suspended Ceilings: Complete all of the following:
   1. Install a minimum of two ceiling support system rods or wires for each fixture. Locate not more than 6 inches from fixture corners. Wire or rod shall have breaking strength of

the weight of fixture at a safety factor of 3 and be supported by building steel (not ceiling system grid supports).

2. Support Clips: Fasten to fixtures and to ceiling grid members at or near each fixture corner with clips that are UL listed for the application.
3. Fixtures of Sizes Less Than Ceiling Grid: Install as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two 3/4-inch metal channels spanning and secured to ceiling tees.

C. Suspended Fixture Support: As follows:
1. Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.
4. Continuous Rows: Suspend from cable.

D. Adjust aimable fixtures to provide required light intensities.

3.2 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.3 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Verify normal operation of each fixture after installation.

C. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify normal transfer to battery power source and retransfer to normal.

D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

E. Corroded Fixtures: During warranty period, replace fixtures that show any signs of corrosion.

END OF SECTION 265100

SECTION 280153 – CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. RS-232 cabling.
   2. RS-485 cabling.
   3. Fire alarm wire and cable.

1.2 QUALITY ASSURANCE

A. Testing Agency Qualifications: An NRTL.

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

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

   1. Flame-Spread Index: 25 or less.
   2. Smoke-Developed Index: 50 or less.

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

PART 2 - PRODUCTS

2.1 RS-232 CABLE

A. Standard Cable: NFPA 70, Type CM.

   1. Paired, 2 pairs, No. 22 AWG, stranded (7x30) tinned copper conductors.
   2. Polypropylene insulation.
   3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
   4. PVC jacket.
   5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
   6. Flame Resistance: Comply with UL 1581.

B. Plenum-Rated Cable: NFPA 70, Type CMP.

   1. Paired, 2 pairs, No. 22 AWG, stranded (7x30) tinned copper conductors.

2. Plastic insulation.
3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
4. Plastic jacket.
5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
6. Flame Resistance: Comply with NFPA 262.

2.2 RS-485 CABLE

A. Standard Cable: NFPA 70, Type CM or CMG.

1. Paired, 2 pairs, twisted, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. Flame Resistance: Comply with UL 1581.

B. Plenum-Rated Cable: NFPA 70, Type CMP.

1. Paired, 2 pairs, No. 22 AWG, stranded (7x30) tinned copper conductors.
2. Fluorinated ethylene propylene insulation.
3. Unshielded.
4. Fluorinated ethylene propylene jacket.
5. Flame Resistance: NFPA 262, Flame Test.

2.3 FIRE ALARM WIRE AND CABLE

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Comtran Corporation.
2. Draka Cableteq USA.
3. Genesis Cable Products; Honeywell International, Inc.
4. Rockbestos-Suprenant Cable Corp.
5. West Penn Wire; a brand of Belden Inc.

B. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760.

C. Signaling Line Circuits: Twisted, shielded pair, size as recommended by system manufacturer.

1. Circuit Integrity Cable: Twisted shielded pair, NFPA 70, Article 760, Classification CI, for power-limited fire alarm signal service Type FPL. NRTL listed and labeled as complying with UL 1424 and UL 2196 for a 2-hour rating.

D. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.

1. Low-Voltage Circuits: No. 16 AWG, minimum.

2. Line-Voltage Circuits: No. 12 AWG, minimum.
3. Multiconductor Armored Cable: NFPA 70, Type MC, copper conductors, Type TFN/THHN conductor insulation, copper drain wire, copper armor with outer jacket with red identifier stripe, NTRL listed for fire alarm and cable tray installation, plenum rated, and complying with requirements in UL 2196 for a 2-hour rating.

3.0 WIRING METHOD

A. Install wiring in metal pathways and wireways.

1. Minimum conduit size shall be 3/4 inch. Control and data-transmission wiring shall not share conduits with other building wiring systems.
2. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems."

B. Install cable, concealed in accessible ceilings, walls, and floors when possible.

3.1 FIRE ALARM WIRING INSTALLATION

A. Comply with NECA 1 and NFPA 72.

B. Wiring Method: Install wiring in metal pathway according to Section 260529 "Hangers and Supports for Electrical Systems."

1. Install plenum cable in environmental air spaces, including plenum ceilings.
2. Fire alarm circuits and equipment control wiring associated with the fire alarm system shall be installed in a dedicated pathway system. This system shall not be used for any other wire or cable.

C. Wiring Method:

1. Cables and pathways used for fire alarm circuits, and equipment control wiring associated with the fire alarm system, may not contain any other wire or cable.
2. Fire-Rated Cables: Use of two-hour, fire-rated fire alarm cables, NFPA 70, Types MI and CI, is not permitted.
3. Signaling Line Circuits: Power-limited fire alarm cables shall not be installed in the same cable or pathway as signaling line circuits.

D. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

E. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.

F. Color Coding: Color code fire alarm conductors differently from the normal building power wiring. Use one color code for alarm circuit wiring and another for supervisory circuits. Color code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire alarm system junction boxes and covers red.

G. Risers: Install at least two vertical cable risers to serve the fire alarm system. Separate risers in close proximity to each other with a minimum one-hour-rated wall, so the loss of one riser does not prevent the receipt or transmission of signals from other floors or zones.

H. Wiring to Remote Alarm Transmitting Device: 1-inch conduit between the fire alarm control panel and the transmitter. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

3.2 CONNECTIONS

A. Comply with requirements in Section 283111 "Digital, Addressable Fire-Alarm System" for connecting, terminating, and identifying wires and cables.

3.3 FIRESTOPPING

A Comply with requirements in Section 078413 "Penetration Firestopping."

B. Comply with TIA-569-D.

C. Comply with BICSI Information Technology Systems Installation Methods Manual.

3.4 GROUNDING

A. For low-voltage wiring and cabling, comply with requirements in Section 260526 "Grounding and Bonding."

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

C. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
1. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.

B. Prepare test and inspection reports.

END OF SECTION 280153

SECTION 283111 – FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Work of this section includes the following: Modifications to the existing Fire Alarm System in each building. Modifications to include additional notification devices, initiating devices, addressable relays, one remote annunciator panel, support equipment, and all wiring, components, connections, and testing.

1.2 SCOPE & RELATED DOCUMENTS

A. The work covered by this section of the specifications includes the furnishing of all labor, equipment, materials, and performance of all operations in connection with the installation of the Fire Alarm System as shown on the drawings and as herein specified.

B. The requirements of the conditions of the Contract, Supplementary Conditions and General Requirements, apply to the work specified in this section.

C. The complete installation is to conform to the applicable sections of NFPA-72, Local Code Requirements and National Electrical Code with particular attention to Article 760.

D. Additionally, the entire installed system and all integrated system operations shall be within the guidelines of the SBCCI Standard Building Code.

E. The work covered by this section of the specifications is to be coordinated with the related work as specified elsewhere under the project specifications.

1.3 QUALITY ASSURANCE

A. Each and all items of the Fire Alarm System shall be listed as a product of a SINGLE fire alarm system manufacturer under the appropriate category by Underwriters' Laboratories, Inc. (UL), and shall bear the "U.L." label. All control equipment is to be listed under UL category UOJZ as a single control unit. Partial listing shall NOT be acceptable.

B. The equipment and installation supervision furnished under this specification is to be provided by a manufacturer who has been engaged in production of this type (software driven) of equipment for at least ten (10) years, and has a fully-quipped service organization within thirty-five (35) miles of the installation.

C. All control equipment must have transient protection devices to comply with UL864 requirements.

D. In addition to the UL-UOJZ requirement mentioned above, the system controls shall be UL listed for Power Limited Applications per NEC 760. All circuits must be marked in accordance with NEC article 760.

E. Supplier shall provide documentation that fire alarm technicians are NICET LEVEL 2 certified (minimum of 4)

F. Suppliers’ service organization must have been established in the local Tappan/Orangeburg area for a minimum of ten (10) years with ten (10) years experience on specific equipment brand supplied.

1.4 GENERAL

A. Make all connections to the existing building system and leave the entire fire alarm system in first class operating condition.

B. Add smoke detectors, heat detectors, carbon monoxide detectors, horns (A/V's), visuals, etc., all wiring, connections to devices, outlet boxes, junction boxes, and all other necessary material for a complete operating system.

C. All peripheral devices shall be the standard product of a single manufacturer and shall display the manufacturer's name on each component.

PART 2 - PRODUCTS

2.1 PERIPHERAL DEVICES

A. The Contractor shall furnish and install devices that are compatible with the existing Fire Alarm Control Panel in the building.

B. Devices Required but not limited to:
1. Manual Pull Stations
2. Photoelectric Smoke Detectors
3. Heat Detectors
4. Smoke Duct Detectors
5. Carbon Monoxide Detectors with audible base
6. Remote Test Stations for Smoke Duct Detectors
7. Fan Shut Down Relay Devices
8. Sprinkler System Flow Monitoring Module
9. Sprinkler System Tamper Switch
10. Visual Alarm (Strobe) Stations
11. Combination Horn/Strobe Stations
12. Auxiliary contacts on devices where indicated on drawings.
13. Monitor Modules
14. Heat/Smoke Detector Bases
15. Intelligent Relay Bases
16. Control Relay Modules
17. Magnetic door hold opens
18. Addressable Relay Modules
19. NAC panel and 120v power as required for a complete operating system.
20. Flush mounted remote annunciator panel.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide and install the system in accordance with the plans and specifications, all applicable codes and the manufacturer's recommendations. All wiring shall be installed in strict compliance with all the provisions of NEC - Article 760 A and C, Power-Limited Fire Protective Signaling Circuits or if required may be reclassified as non-power limited and wired in accordance with NEC-Article 760 A and B. Upon completion, the contractor shall so certify in writing to the owner and general contractor.

B. All junction boxes shall be sprayed red and labeled "Fire Alarm". Wiring color code shall be maintained throughout the installation.

C. Installation of equipment and devices that pertain to other work in the contract shall be closely coordinated with the appropriate subcontractors.

D. The contractor shall clean all dirt and debris from the inside and the outside of the fire alarm equipment after completion of the installation.

E. The manufacturer's authorized representative shall provide on-site supervision of installation.

3.2 TESTING

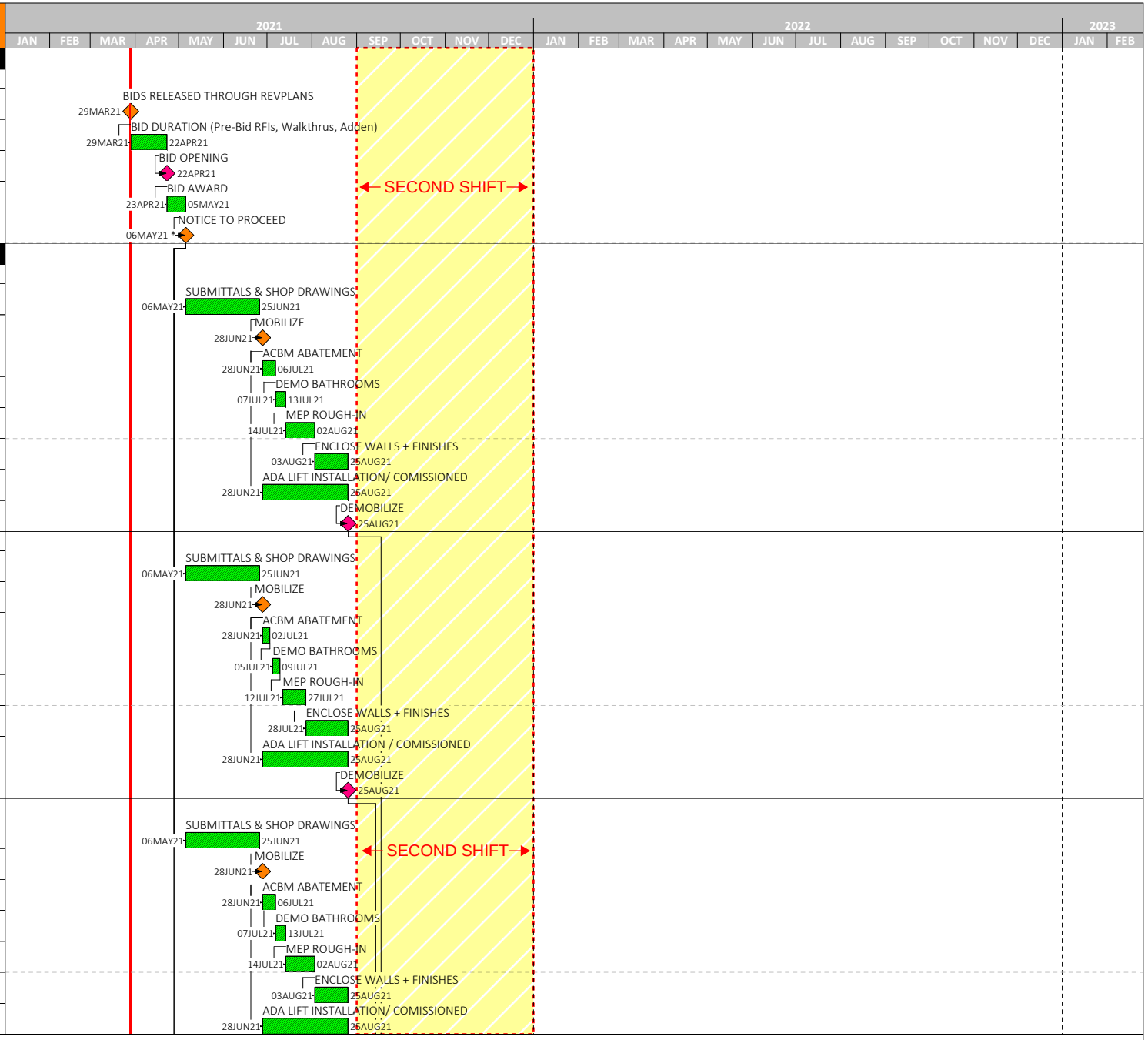
A. The completed fire alarm system shall be fully tested in accordance with NFPA-72H by the contractor in the presence of the owner's representative and the Local Fire Marshal. Upon completion of a successful test, the contractor shall certify in writing to the owner and general contractor.

3.3 WARRANTY

A. The contractor shall warrant the completed fire alarm system wiring and equipment to be free from inherent mechanical and electrical defects for a period of one (1) year from the date of the completed and certified test or from the date of first beneficial use

END OF SECTION 283111

Act ID	Description	Orig Dur
BID & AWARD PHASE		
KENT PS, KENT ES, MPES, GFMS & CARMEL HS		
0160	BIDS RELEASED THROUGH REVPLANS	0
0170	BID DURATION (Pre-Bid RFIs, Walkthrus, Adden)	19
0180	BID OPENING	0
0190	BID AWARD	9
0200	NOTICE TO PROCEED	0
CONSTRUCTION PHASE		
KENT PRIMARY SCHOOL		
1402	SUBMITTALS & SHOP DRAWINGS	37
1412	MOBILIZE	0
1422	ACBM ABATEMENT	7
1472	DEMO BATHROOMS	5
1473	MEP ROUGH-IN	14
1474	ENCLOSE WALLS + FINISHES	17
1475	ADA LIFT INSTALLATION/ COMISSIONED	43
1483	DEMOBILIZE	0
KENT ELEMENTARY SCHOOL		
1430	SUBMITTALS & SHOP DRAWINGS	37
1431	MOBILIZE	0
1432	ACBM ABATEMENT	5
1442	DEMO BATHROOMS	5
1443	MEP ROUGH-IN	12
1452	ENCLOSE WALLS + FINISHES	21
1455	ADA LIFT INSTALLATION / COMISSIONED	43
1632	DEMOBILIZE	0
MATTHEW PATERSON ELEMENTARY SCHOOL		
1461	SUBMITTALS & SHOP DRAWINGS	37
1462	MOBILIZE	0
1469	ACBM ABATEMENT	7
1480	DEMO BATHROOMS	5
1481	MEP ROUGH-IN	14
1485	ENCLOSE WALLS + FINISHES	17
1490	ADA LIFT INSTALLATION/ COMISSIONED	43



Company name	TRITON/ CPL
Project name	CCSD-BID SCHED_...
Project title	Construction Bid Schedule
Number/Version	BID 03-29-21
Page number	1A

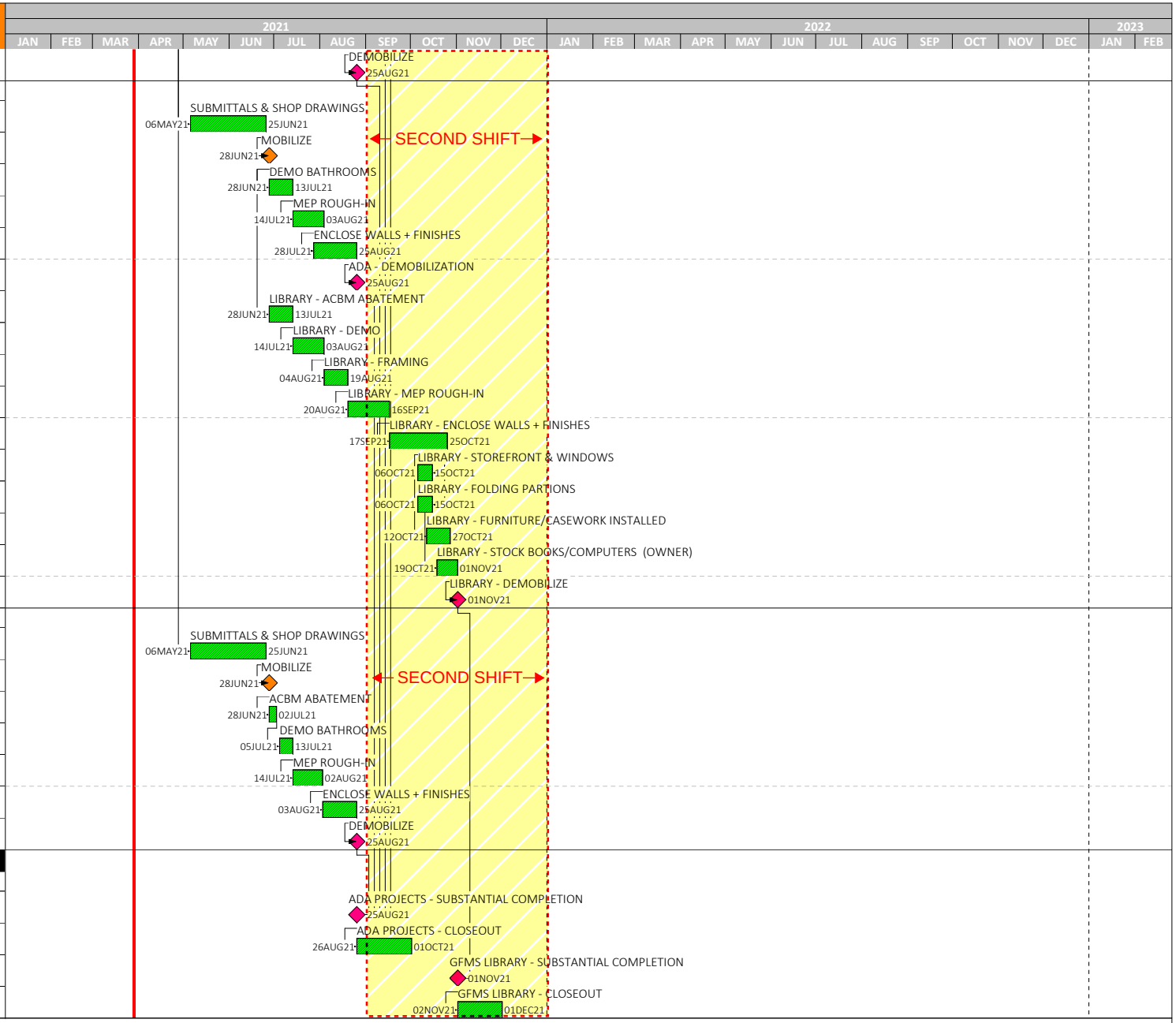
CARMEL CENTRAL SCHOOL DISTRICT

CAPITAL IMPROVEMENT BOND PROJECT

CONSTRUCTION BID SCHEDULE

- Early bar
- Progress bar
- Summary bar
- Start milestone point
- Finish milestone point

Act ID	Description	Orig Dur
1642	DEMOBILIZE	0
GEORGE FISCHER MIDDLE SCHOOL		
1530	SUBMITTALS & SHOP DRAWINGS	37
1531	MOBILIZE	0
1542	DEMO BATHROOMS	12
1552	MEP ROUGH-IN	15
1652	ENCLOSE WALLS + FINISHES	21
1712	ADA - DEMOBILIZATION	0
1722	LIBRARY - ACBM ABATEMENT	12
1732	LIBRARY - DEMO	15
1742	LIBRARY - FRAMING	12
1752	LIBRARY - MEP ROUGH-IN	20
1762	LIBRARY - ENCLOSE WALLS + FINISHES	27
1763	LIBRARY - STOREFRONT & WINDOWS	1
1764	LIBRARY - FOLDING PARTIONS	1
1772	LIBRARY - FURNITURE/CASEWORK INSTALLED	12
1782	LIBRARY - STOCK BOOKS/COMPUTERS (OWNER)	10
1792	LIBRARY - DEMOBILIZE	0
CARMEL HIGH SCHOOL		
1662	SUBMITTALS & SHOP DRAWINGS	37
1672	MOBILIZE	0
1682	ACBM ABATEMENT	5
1692	DEMO BATHROOMS	7
1702	MEP ROUGH-IN	14
1812	ENCLOSE WALLS + FINISHES	17
1822	DEMOBILIZE	0
CLOSEOUT PHASE		
KENT PS, KENT ES, MPES, GFMS & CARMEL HS		
1572	ADA PROJECTS - SUBSTANTIAL COMPLETION	0
1583	ADA PROJECTS - CLOSEOUT	27
1612	GFMS LIBRARY - SUBSTANTIAL COMPLETION	0
1622	GFMS LIBRARY - CLOSEOUT	22



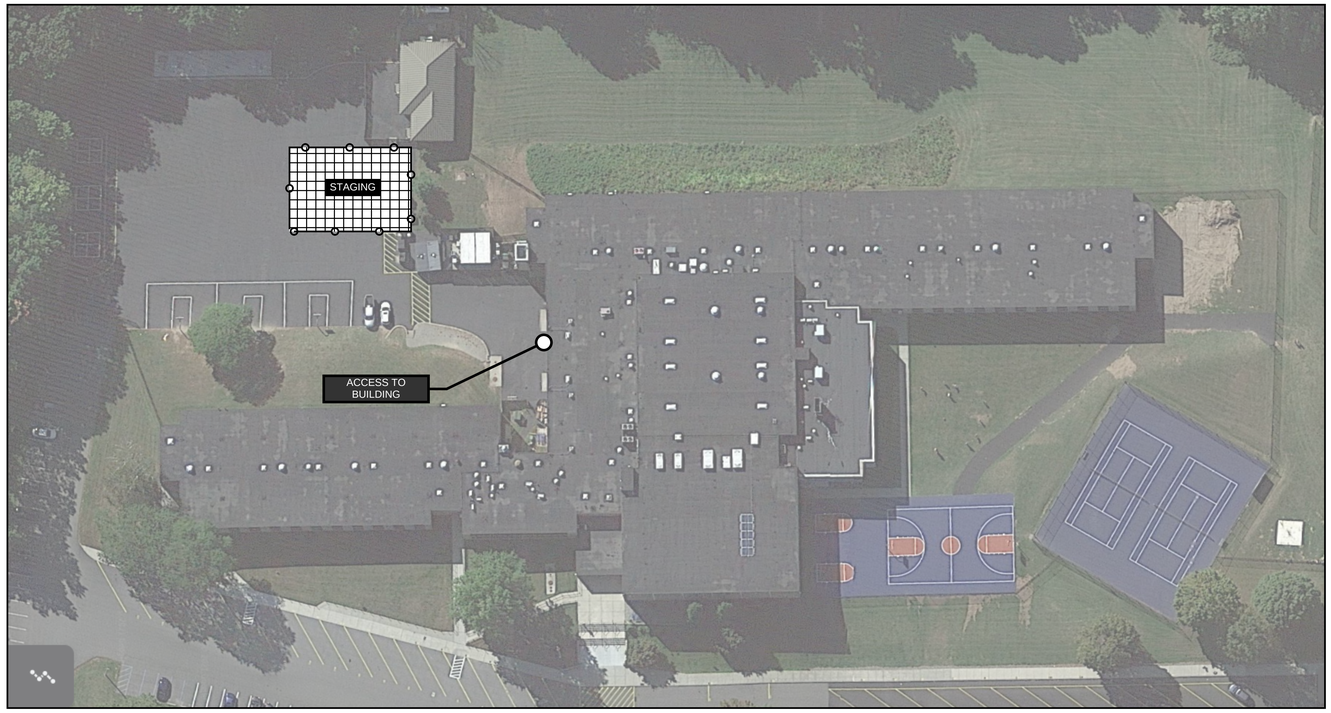
Company name	TRITON/ CPL
Project name	CCSD-BID SCHED_...
Project title	Construction Bid Schedule
Number/Version	BID 03-29-21
Page number	2A

CARMEL CENTRAL SCHOOL DISTRICT

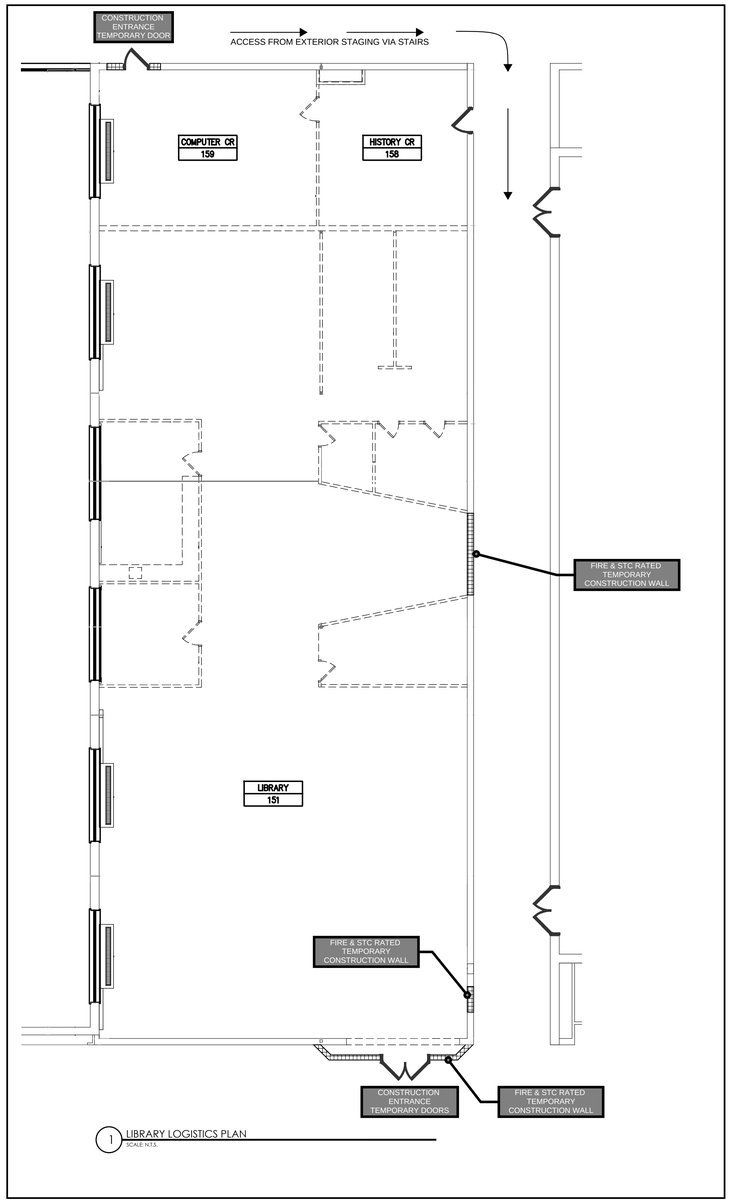
CAPITAL IMPROVEMENT BOND PROJECT

CONSTRUCTION BID SCHEDULE

- Early bar
- Progress bar
- Summary bar
- Start milestone point
- Finish milestone point



5 LIBRARY LOGISTICS PLAN - SITE
SCALE:N.T.S.



1 LIBRARY LOGISTICS PLAN
SCALE:N.T.S.

GENERAL LOGISTICS NOTES

1. GENERAL CONSTRUCTION TRADE TO PROVIDE 8'-0" CONSTRUCTION FENCE W/ PRIVACY SCREEN AROUND ALL STORED MATERIAL AND AS SHOWN ON THE PLANS.

2. ALL TRADE CONTRACTORS TO UTILIZE STAGING LOCATION, PROVIDED BY THE GC.

3. MATERIAL WILL NOT BE PERMITTED TO BE STORED OUTSIDE FENCED-IN AREAS OR IN AREAS NOT DESIGNATED BY THE CONSTRUCTION MANAGER/OWNER. MATERIAL STORAGE ON THE INTERIOR OF THE BUILDING THAT IS NOT USED WITHIN 72HRS, WILL NOT BE PERMITTED.

4. THE GC PROVIDING THE STAGING LOCATION IS RESPONSIBLE TO REPAIR THE GRADE, GRASS, SHRUBBERY, AND HARDSCAPES AFTER REMOVAL OF FENCING AND MATERIAL FROM ALL ACTIVITIES WITHIN THE STAGING LOCATION. THIS INCLUDES ANY REPAIRS AS A RESULT OF THEIR EQUIPMENT AND ACTIVITIES AROUND THE BUILDING AS A RESULT OF THEIR WORK. DAMAGE TO THE LANDSCAPE/HARDSCAPE AS A RESULT OF ANOTHER PRIME CONTRACTOR, OUTSIDE OF THE STAGING AREA, WILL BE THE RESPONSIBILITY OF THAT CONTRACTOR TO REPAIR.

5. DELIVERIES ARE TO BE COORDINATE WITH THE CM AND SITE CONTRACTOR TO AVOID INTERFERENCE WITH PAVING.

6. DUMPSTERS AND REFUSE CONTAINERS, PROVIDED BY THE GENERAL CONSTRUCTION TRADE FOR ALL PRIME CONTRACTORS, ARE PERMITTED WITHIN STAGING AREAS. IF DUMPSTERS ARE NEEDED OUTSIDE OF STAGING AREAS, THEY WILL NEED TO BE SURROUNDED BY FENCING.

7. EACH PRIME CONTRACTOR IS REQUIRED TO COORDINATE ON SITE FOR THE INSTALLATION OF THEIR WORK.

8. THE GENERAL CONSTRUCTION PRIME CONTRACTOR IS TO PROVIDE AND MAINTAIN PERIODICALLY ALL TEMPORARY CONSTRUCTION SIGNAGE AS SHOWN ON THE LOGISTICS PLANS AND PER OSHA AND LOCAL GOVERNMENT REGULATION.

9. THIS INCLUDES BUT IS NOT LIMITED TO:
•JOBSITE RULES SIGN (3'-4" X 2'-3") SECURED TO SITE FENCE AT EACH ENTRANCE OF THE STAGING AREA (4 MINIMUM - 1 AT EACH LOCATION)
•"PERSONAL PROTECTIVE EQUIPMENT/ HARD HATS REQUIRED" SIGNAGE AT 20' INTERVALS ON ENTIRE PERIMETER OF SITE FENCE.
•"PERSONAL PROTECTIVE EQUIPMENT/ HARD HATS REQUIRED" SIGNAGE AT 20' INTERVALS ON ENTIRE PERIMETER OF SITE FENCE.
•"NOTICE – PREVENT SPREAD OF CORONAVIRUS, SANITIZE/WASH YOUR HANDS FREQUENTLY", "WEAR FACE MASK WHILE MAINTAINING SOCIAL DISTANCING"

10. EACH PRIME CONTRACTOR WILL BE REQUIRED TO SCHEDULE DELIVERIES WITH THE CONSTRUCTION MANAGER AND THE DISTRICT. THE DISTRICT AND/OR THE CONSTRUCTION MANAGER HOLD THE RIGHT TO REJECT DELIVERIES IF NOT SCHEDULED WITH THE CONSTRUCTION MANAGER OR DISTRICT.

11. EACH PRIME CONTRACTOR IS REQUIRED TO PROVIDE A (2X) DEDICATED FLAGMEN WHEN ACCEPTING DELIVERIES WITHIN THE STREET, TO THE STAGING AREA.

12. PARKING FOR EMPLOYEES WILL BE DESIGNATED AT TIME OF CONSTRUCTION.

13. WORKERS ARE REQUIRED TO WEAR ID BADGES, HIGH VISIBILITY VESTS, HARD HATS AND ALL OTHER REQUIRED PPE AT ALL TIMES WHILE ON SITE. WORKERS/PERSONNEL WITHOUT THESE REQUIREMENTS WILL BE ASKED TO BE REMOVED FROM THE SITE WITH A ONE-STRIKE POLICY.

14. INTERACTION BETWEEN CONSTRUCTION PERSONNEL AND STAFF/STUDENTS IS NOT PERMITTED. ANY PERSONNEL FOUND INTERACTING WILL BE ESCORTED BY LAW ENFORCEMENT FROM THE SITE. THIS IS A ZERO-STRIKE POLICY.

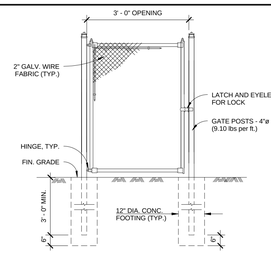
15. EACH PRIME CONTRACTOR MUST IMPLEMENT AND FOLLOW ALL NYS GUIDELINES AND REGULATIONS REGARDING COVID-19. INCLUDING BUT NOT LIMITED TO HAND WASHING/SANITIZING STATIONS, DISINFECTING, SOCIAL DISTANCING, CONTACT TRACING LOGS, ETC.. COVID-19 PROTOCOLS, POLICY AND PROCEDURES MUST BE DETAILED AND INCLUDED IN EACH PRIME CONTRACTOR'S SAFETY MANUAL AND LOGISTICS PLAN AND IS TO BE SUBMITTED TO THE CONSTRUCTION MANAGER. THIS REQUIREMENT EXTENDS TO ALL SUBCONTRACTORS OF THE PRIME CONTRACTOR.

ADA LOGISTICS NOTES

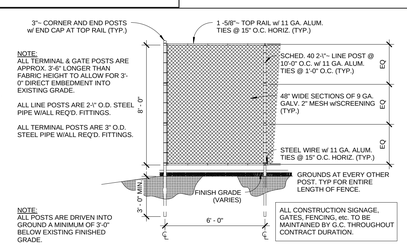
GC - TO PROVIDE REFUSE CONTAINER FOR EACH ADA PROJECT FOR ALL TRADES, ENCLOSED IN TEMPORARY CONSTRUCTION FENCE

NOTE FOR TEMPORARY FENCING:
STANCHIONS/PLATES MAY BE USED FOR HARDSCAPE (ASPHALT & CONCRETE), WITH A WIND RATING OF 75 MPH.

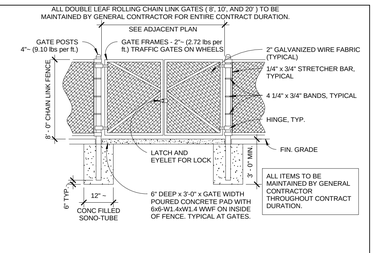
2 JOBSITE RULES SIGN DETAIL
NOT TO SCALE



3 TEMPORARY 3' SWING GATE
NOT TO SCALE



4 DETAIL @ CONSTRUCTION FENCE PANELS
NOT TO SCALE



5 DETAIL @ CONSTRUCTION GATE
NOT TO SCALE

CPLteam.com
ARCHITECTURE • ENGINEERING • PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CJS	RFD 1 FOR CONSTRUCTION DOCUMENTS SUBMISSION
2	01/07/2021	LJ	CJS	ADDENDUM #1
3	03/29/2021	JG	JP	ISSUED FOR BID

ENVIRONMENTAL CONSULTANT
ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509
TEL. 845. 278. 7710
FAX. 845.278.7750

TRITON CONSTRUCTION

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563
CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATTERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

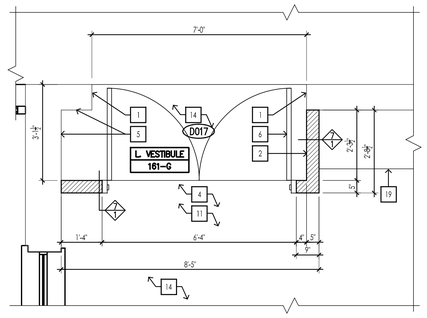
DATE	DRAWN	CHECKED
3/29/21	JH	

SCALE AS SHOWN

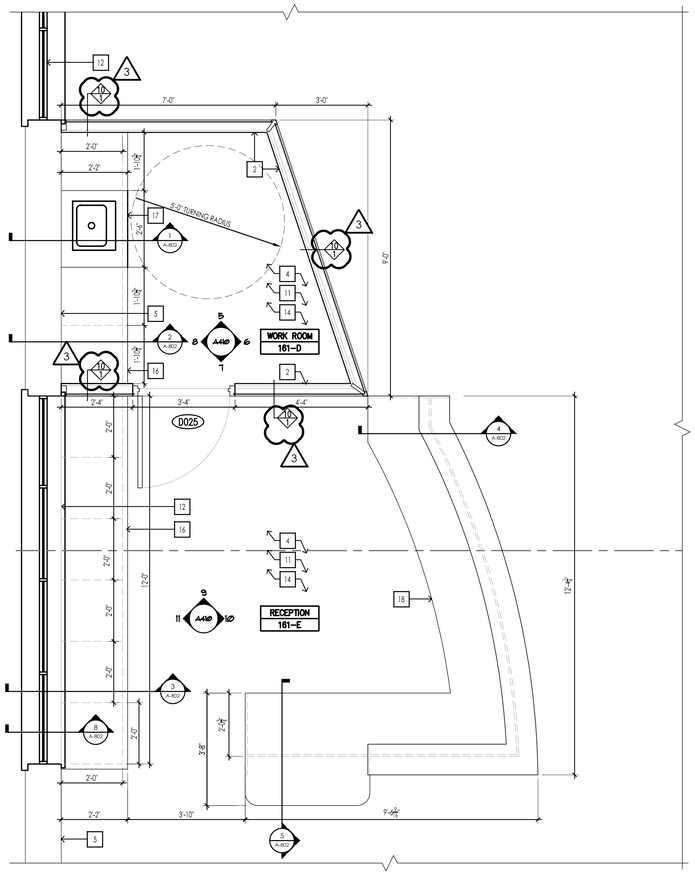
SHEET TITLE
PROJECT LOGISTICS PLANS & DETAILS

PROJECT NUMBER
70019.00

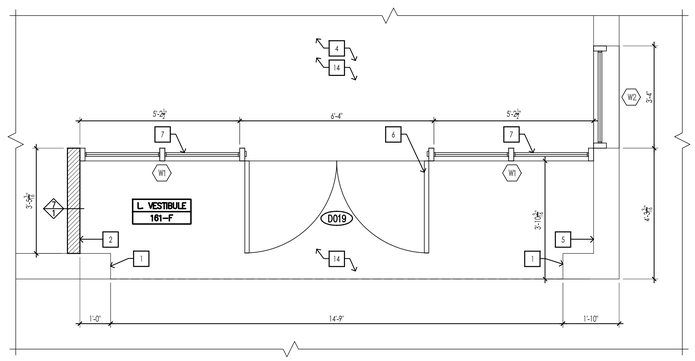
LOG L-1
DRAWING NUMBER



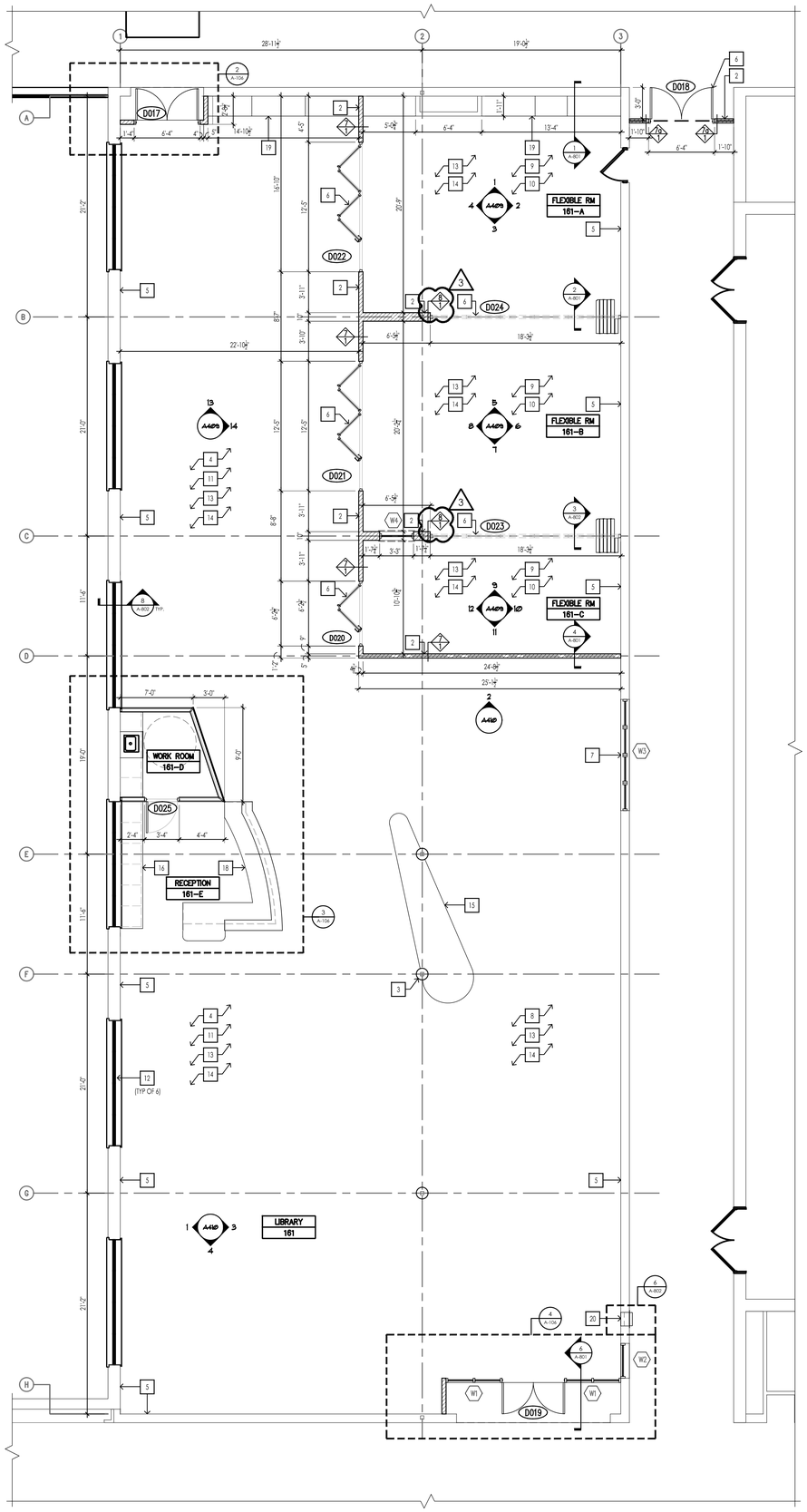
2 PART LIBRARY CONSTRUCTION PLAN
SCALE: 1/2"=1'-0"



3 PART LIBRARY CONSTRUCTION PLAN
SCALE: 1/2"=1'-0"



4 PART LIBRARY CONSTRUCTION PLAN
SCALE: 1/2"=1'-0"



1 LIBRARY CONSTRUCTION PLAN
SCALE: 3/16"=1'-0"

GENERAL REMOVAL / CONSTRUCTION NOTES

1. REMOVAL DRAWINGS INDICATE ONLY MAJOR SCOPE OF REMOVALS INCLUDING BUT NOT LIMITED TO PARTITIONS, WALLS, CEILINGS, FLOORS, COLUMN ENCLOSURES, DOOR FRAMES AND DOORS, AND ANY OTHER EXISTING ITEMS. CONTRACTOR IS REQUIRED TO REMOVE ANY AND ALL ITEMS NOT SHOWN AS REQUIRED TO SUIT ALL NEW WORK.
2. EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, FIXTURES, RISERS, SHAFTS, PIPES, OUTLETS, DEVICES, ETC. SHOWN ON DRAWINGS ARE APPROXIMATELY LOCATED. CONTRACTOR IS TO DETERMINE EXACT LOCATIONS OF ALL ITEMS IN THE FIELD.
3. ALL EXISTING ITEMS LISTED IN NOTE NO. 2 WHICH ARE TO REMAIN SHALL BE PROVIDED WITH NEW GYPSUM BOARD ENCLOSURES BY THE CONSTRUCTION CONTRACTOR. LOCATIONS SHOWN ARE APPROXIMATE. ALL PIPES AND DUCTS SHALL BE ENCLOSED IN ALL SPACES BY DRYWALL CONSTRUCTION AND HUNG CEILINGS EXCEPT SHAFTS WHICH SHALL BE EXTENDED TO STRUCTURAL DECK. CONTRACTOR IS TO INFORM OWNERS REPRESENTATIVE OF EXISTING LOCATIONS FOR POSSIBLE DIMENSIONAL ADJUSTMENTS.
4. CONTRACTOR IS TO VERIFY ANY MAJOR DIMENSIONAL DEVIATIONS FROM DRAWINGS OR STRUCTURAL OBSTRUCTIONS. THESE SHALL BE BROUGHT TO THE OWNERS REPRESENTATIVES ATTENTION. ALL CONTRACT DRAWINGS INDICATE APPROXIMATE DIMENSIONS AND EXISTING CONDITIONS BASED ON FIELD SURVEY AND DRAWINGS FURNISHED BY THE OWNER. VARIATIONS MAY EXIST AS TO FIELD CONDITIONS. THE COST FOR ANY SUCH VARIATIONS SHALL BE INCLUDED WITHIN THE CONTRACT BID.
5. ALL SURFACES DISTURBED BY REMOVALS SHALL BE PATCHED TO MATCH EXISTING ADJACENT FINISHES, TYPICAL THROUGHOUT FOR WALLS, CEILINGS AND FLOORS, OR AS NOTED ON NEW FINISH SCHEDULE.
6. EACH CONTRACTOR SHALL FIRESTOP ALL NEW TRADE RELATED PENETRATIONS THROUGH FLOORS. PARTITIONS AND WALLS AT ALL LOCATIONS WITH APPROVED MATERIALS AND SYSTEMS.
7. PC TO REPLUMB EXISTING WATER AND WASTE PIPES TO NEW FIXTURES -SEE P-X FOR ADDITIONAL SCOPE.
8. GC TO PROVIDE OPENINGS IN EXISTING CMU WALLS, PROVIDE LINTELS AS SCHEDULED AND ALL CODE COMPLIANT FIRE STOPPING.
9. GC TO PATCH AND PREPARE MASONRY WALLS FOR REPAINTING.
10. GC TO PATCH AND PREPARE CONCRETE SLAB FOR NEW EPOXY FLOOR FINISH.

CONSTRUCTION KEYNOTES

1. PATCH, PRIME AND PAINT EXISTING CMU WALL WHERE THE WALL WAS SAW CUT OR REMOVED.
2. G.C. TO CONSTRUCT NEW WALL. REFER TO PARTITION TYPES ON SHEET 1/A800.
3. G.C. TO CONSTRUCT NEW COLUMN COVER. REFER TO PARTITION TYPES ON SHEET 5/A801.
4. SEE GF A600
5. G.C. TO CLEAN, PRIME AND PAINT EXISTING INTERIOR WALLS. PATCH WHERE WALLS WERE REMOVED. REFER TO SHEET A900 FOR FINISH SELECTIONS.
6. G.C. TO PROVIDE AND INSTALL NEW DOOR. REFER TO DOOR SCHEDULE FOR SIZING AND HARDWARE INFORMATION ON SHEET A700.
7. G.C. TO PROVIDE AND INSTALL NEW WINDOW. REFER TO WINDOW DETAILS ON SHEET A701.
8. SEE GF A600
9. SEE GF A600
10. SEE GF A600
11. G.C. TO CLEAN, PRIME AND PAINT EXISTING INTERIOR SLAB. REFER TO SHEET A-900 FOR FINISH SELECTIONS.
12. G.C. TO PROVIDE A WINDOW HEAD AND WALL OVER THE EXISTING WINDOW. REFER TO WINDOW DETAILS ON SHEET 8/A801.
13. SEE GF A600 AND MEP DRAWINGS.
14. G.C. TO INSTALL NEW FLOOR AND BASE ON SCHEDULE. SEE SHEET A900 AND A901
15. G.C. TO INSTALL LAMINATE COUNTER TOP WITH CUSTOM BUILT BASE. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
16. G.C. TO INSTALL CUSTOM BUILT ON SITE CABINET AND LAMINATE COUNTER TOP. SEE DETAILS ON SHEET 3/A802.
17. G.C. TO INSTALL ACCESSIBLE SINK. SEE DETAILS ON SHEET 1/A802.
18. G.C. TO INSTALL CUSTOM BUILT ON SITE FRONT DESK. SEE DETAILS ON SHEET 4/A802.
19. G.C. TO INSTALL CUSTOM BUILT ON SITE FURNITURE. SEE DETAILS ON SHEET 5/A802.
20. G.C. TO INSTALL BOOK DROP. SEE DETAILS ON SHEET 6/A802.

CONSTRUCTION LEGEND

- [#] = CONSTRUCTION KEY
- = PROPOSED PARTITION. REFER TO SHEET 1/A-800 FOR PARTITION TYPES
- D# = NEW DOOR TAG
- W# = NEW WINDOW TAG
- # = PARTITION TYPE TAG
- = 5'-0" TURNING RADIUS
- = 1 HOUR RATED PARTITION

CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LI	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2022	-	-	ADDENDUM #1
2	03/29/2021	JKS	JP	ISSUED FOR BID
3	04/01/2021	JKS	JP	SED ADDENDUM #2
4	04/16/2021	JKS	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT
ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509
TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DAVID JOHN SAMMEL 023158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563
CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	LI	CG

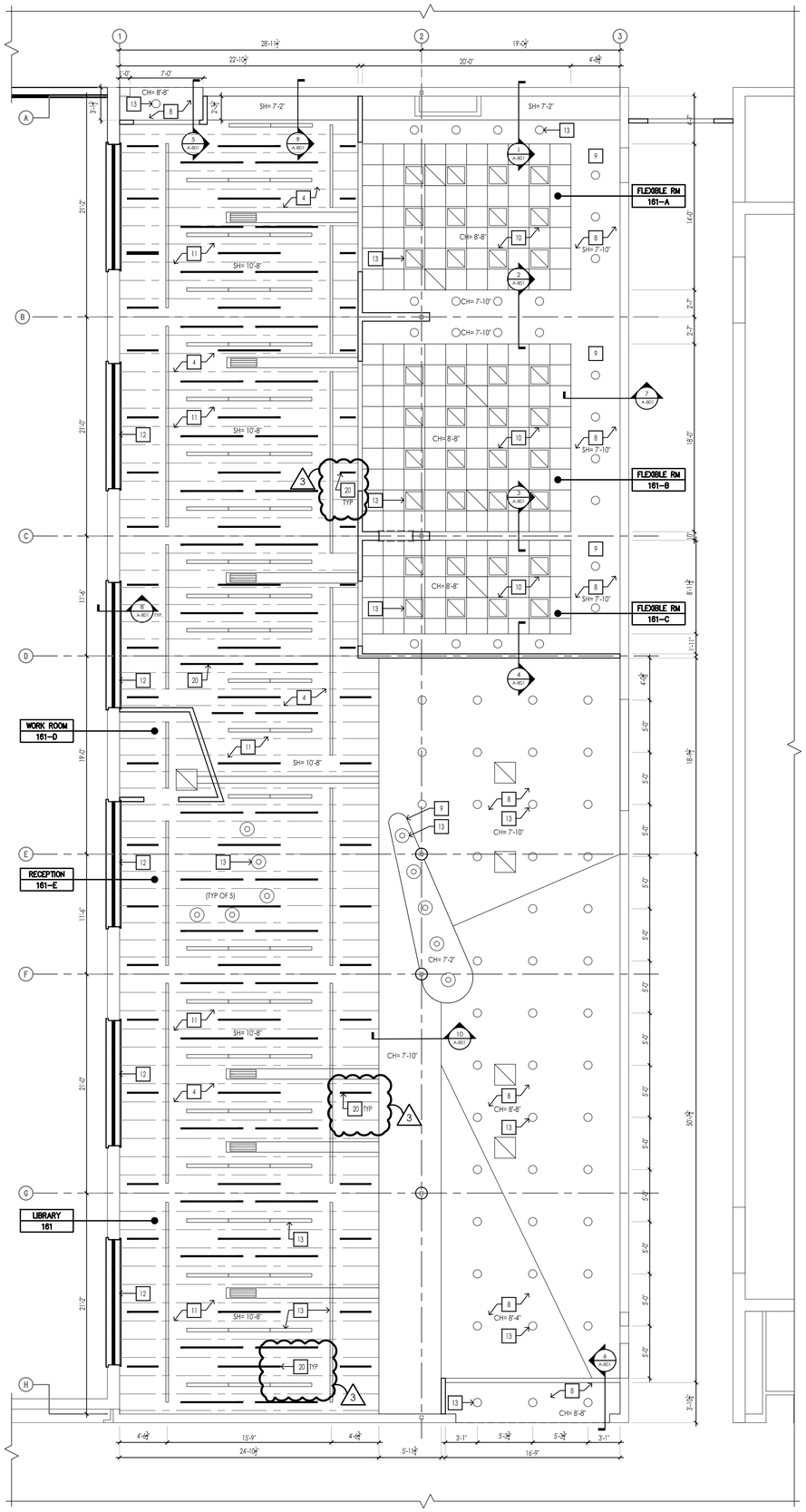
SCALE: AS SHOWN

SHEET TITLE
LIBRARY CONSTRUCTION PLANS

PROJECT NUMBER
70019.00

GF A109
DRAWING NUMBER

Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\3D Design\06 CAD\AutoCAD\ARCH\GF\GF A109 - LIBRARY PLANS.dwg Date last accessed: 3/31/2021 11:35 AM Plotted By: Julie Gamerota
Date last plotted: 4/16/2021 10:14 AM



1 LIBRARY REFLECTED CEILING PLAN
SCALE: 3/16"=1'-0"

GENERAL REMOVAL / CONSTRUCTION NOTES

1. REMOVAL DRAWINGS INDICATE ONLY MAJOR SCOPE OF REMOVALS INCLUDING BUT NOT LIMITED TO PARTITIONS, WALLS, CEILINGS, FLOORS, COLUMN ENCLOSURES, DOOR FRAMES AND DOORS, AND ANY OTHER EXISTING ITEMS. CONTRACTOR IS REQUIRED TO REMOVE ANY AND ALL ITEMS NOT SHOWN AS REQUIRED TO SUIT ALL NEW WORK.
2. EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, FIXTURES, RISERS, SHAFTS, PIPES, OUTLETS, DEVICES, ETC. SHOWN ON DRAWINGS ARE APPROXIMATELY LOCATED. CONTRACTOR IS TO DETERMINE EXACT LOCATIONS OF ALL ITEMS IN THE FIELD.
3. ALL EXISTING ITEMS LISTED IN NOTE NO. 2 WHICH ARE TO REMAIN SHALL BE PROVIDED WITH NEW GYPSUM BOARD ENCLOSURES BY THE CONSTRUCTION CONTRACTOR. LOCATIONS SHOWN ARE APPROXIMATE. ALL PIPES AND DUCTS SHALL BE ENCLOSED IN ALL SPACES BY DRYWALL CONSTRUCTION AND HUNG CEILINGS EXCEPT SHAFTS WHICH SHALL BE EXTENDED TO STRUCTURAL DECK. CONTRACTOR IS TO INFORM OWNERS REPRESENTATIVE OF EXISTING LOCATIONS FOR POSSIBLE DIMENSIONAL ADJUSTMENTS.
4. CONTRACTOR IS TO VERIFY ANY MAJOR DIMENSIONAL DEVIATIONS FROM DRAWINGS OR STRUCTURAL OBSTRUCTIONS. THESE SHALL BE BROUGHT TO THE OWNERS REPRESENTATIVE'S ATTENTION. ALL CONTRACT DRAWINGS INDICATE APPROXIMATE DIMENSIONS AND EXISTING CONDITIONS BASED ON FIELD SURVEY AND DRAWINGS FURNISHED BY THE OWNER. VARIATIONS MAY EXIST AS TO FIELD CONDITIONS. THE COST FOR ANY SUCH VARIATIONS SHALL BE INCLUDED WITHIN THE CONTRACT BID.
5. ALL SURFACES DISTURBED BY REMOVALS SHALL BE PATCHED TO MATCH EXISTING ADJACENT FINISHES, TYPICAL THROUGHOUT FOR WALLS, CEILINGS AND FLOORS, OR AS NOTED ON NEW FINISH SCHEDULE.
6. EACH CONTRACTOR SHALL FIRESTOP ALL NEW TRADE RELATED PENETRATIONS THROUGH FLOORS, PARTITIONS AND WALLS AT ALL LOCATIONS WITH APPROVED MATERIALS AND SYSTEMS.
7. PC TO REPLUMB EXISTING WATER AND WASTE PIPES TO NEW FIXTURES -SEE P-X FOR ADDITIONAL SCOPE.
8. GC TO PROVIDE OPENINGS IN EXISTING CMU WALLS. PROVIDE LINTELS AS SCHEDULED AND ALL CODE COMPLIANT FIRE STOPPING.
9. GC TO PATCH AND PREPARE MASONRY WALLS FOR REPAINTING.
10. GC TO PATCH AND PREPARE CONCRETE SLAB FOR NEW EPOXY FLOOR FINISH.

CONSTRUCTION KEYNOTES

1. SEE GF A106
2. SEE GF A106
3. SEE GF A106
4. G.C. TO CLEAN, PRIME AND PAINT EXISTING JOIST AND BEAM. REFER TO SHEET A-900 FOR FINISH SELECTIONS.
5. SEE GF A106
6. SEE GF A106
7. SEE GF A106
8. G.C. TO INSTALL NEW CEILING BOARD AND PAINT AS REQUIRED. REFER TO SHEET A-900 FOR FINISH SELECTIONS.
9. GC. TO INSTALL NEW CEILING BOARD AND PAINT AS REQUIRED. REFER TO SHEET A-900 FOR FINISH SELECTIONS.
10. G.C. TO INSTALL NEW ACT. CEILING. REFER TO SHEET A-900 FOR FINISH SELECTIONS.
11. G.C. TO CLEAN, PRIME AND PAINT UNDERSIDE OF EXISTING INTERIOR SLAB. REFER TO SHEET A-900 FOR FINISH SELECTIONS.
12. G.C. TO PROVIDE A WINDOW HEAD AND WALL OVER THE EXISTING WINDOW. REFER TO WINDOW DETAILS ON SHEET 8/A-801.
13. G.C. TO INSTALL NEW LIGHT FIXTURES. REFER TO SHEET A-600 AND MEP DRAWINGS.
14. SEE GF A106
15. SEE GF A106
16. SEE GF A106
17. SEE GF A106
18. SEE GF A106
19. SEE GF A106
20. GC TO INSTALL HANGING SOUND BAFFLES

ALTERNATE NO. 2
3

CONSTRUCTION LEGEND

- 4 = CONSTRUCTION KEY
- SH = SLAB HEIGHT
- CH = CEILING HEIGHT
- = EXISTING BEAMS AND JOIST
- = 6'-0" L x 12" H SOUND BAFFLE
- = 3'-0" L x 12" H SOUND BAFFLE
- = 1'-6" L x 12" H SOUND BAFFLE
- = 24" x 24" ACOUSTICAL TILE
- = 24"x 24" RECESSED FLUORESCENT LIGHT
- = CEILING TRACK, MULTIPLE SPOTLIGHT
- = 4" x 48" INDUSTRIAL PENDANT LAMP
- = 16" INDUSTRIAL PENDANT LAMP
- = 8" RECESSED LIGHT
- = SUPPLY GRILLE, REFER TO MEP DRAWINGS

ALTERNATE NO. 2
3

CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING

332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0717
FAX (914) 276-0779

REVISIONS NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JKS	JP	ISSUED FOR BID
3	04/01/2021	JKS	JP	SED ADDENDUM #3
4	04/16/2021	JKS	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DAVID JOHN SAMMEL 023158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	LJ	CG

SCALE: AS SHOWN

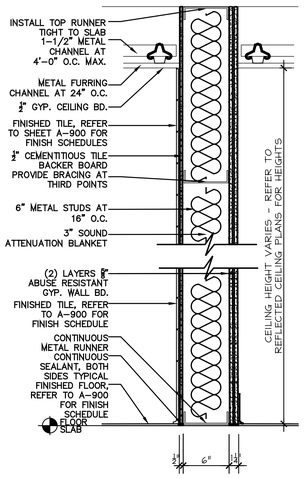
SHEET TITLE: LIBRARY REFLECTED CEILING PLAN

PROJECT NUMBER: 70019.00

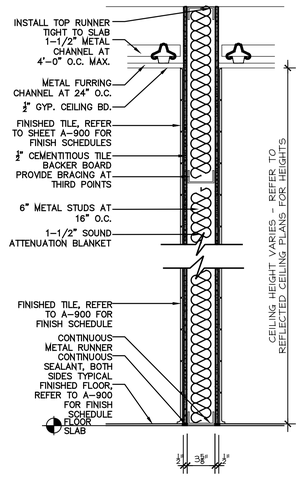
GF A600

DRAWING NUMBER

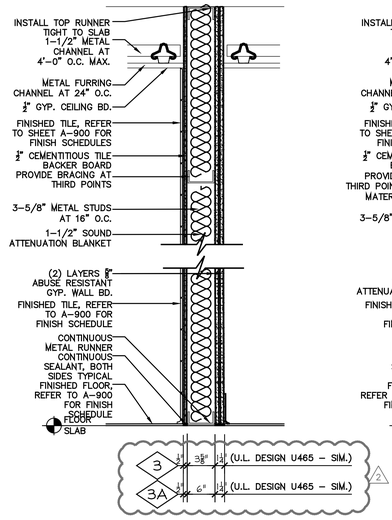
Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ARCH\GF\GF A600 - LIBRARY RCP.dwg Date last accessed: 4/16/2021 1:17 PM Date last plotted: 4/16/2021 1:30 PM Plotted By: Julie Gamerota



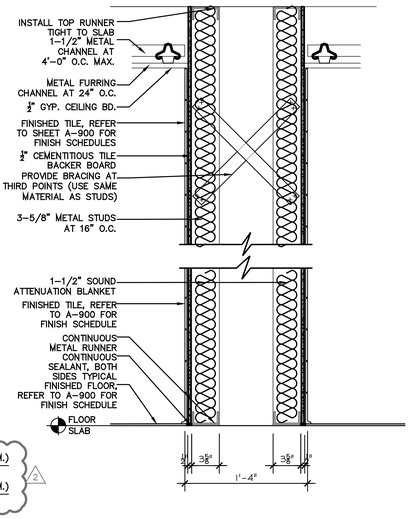
1 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"



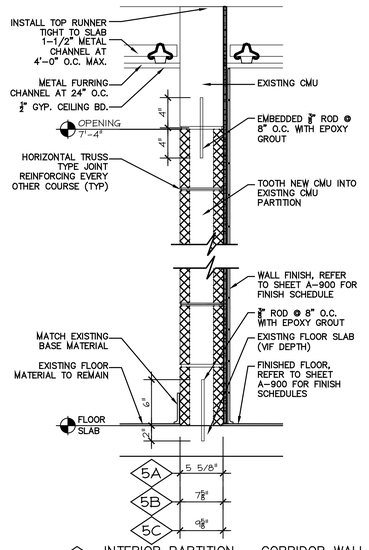
2 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"



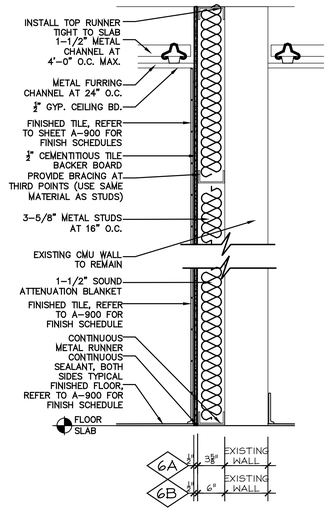
3 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"



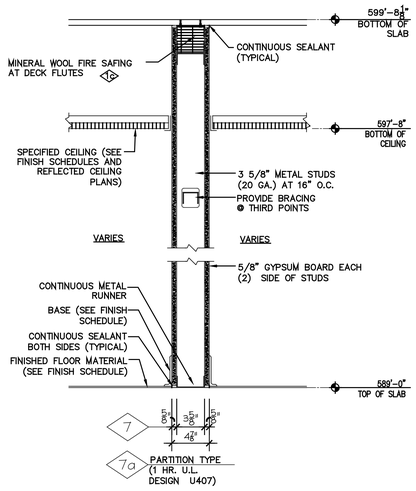
4 INTERIOR PARTITION - PLUMBING WALL
SCALE: 1-1/2"=1'-0"



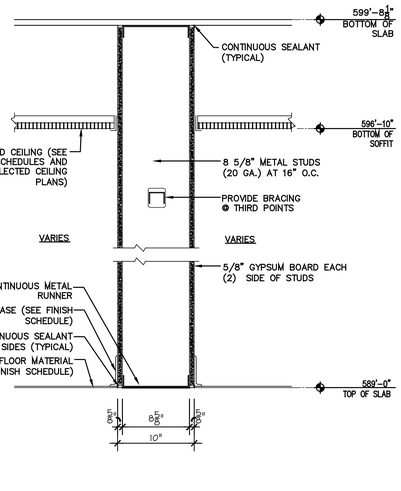
5 INTERIOR PARTITION - CORRIDOR WALL
SCALE: 1-1/2"=1'-0"



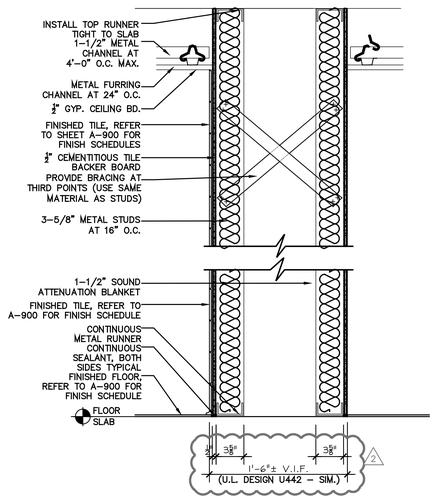
6 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"



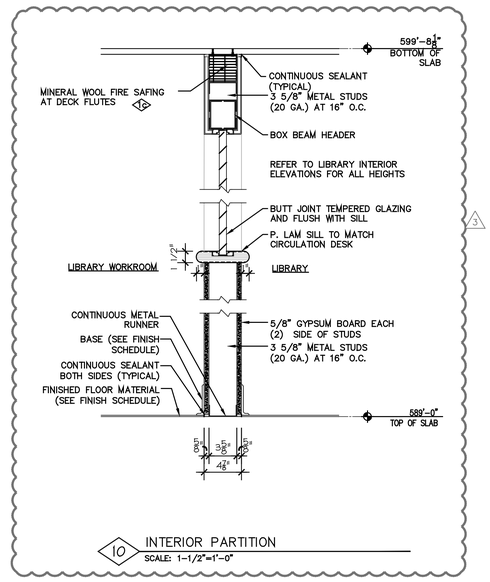
7 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"



8 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"

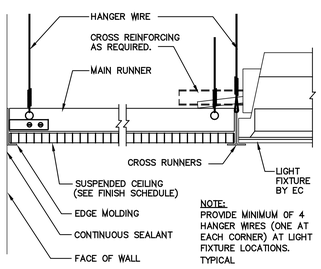


9 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"

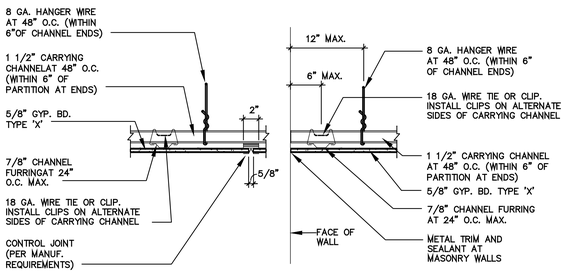


10 INTERIOR PARTITION
SCALE: 1-1/2"=1'-0"

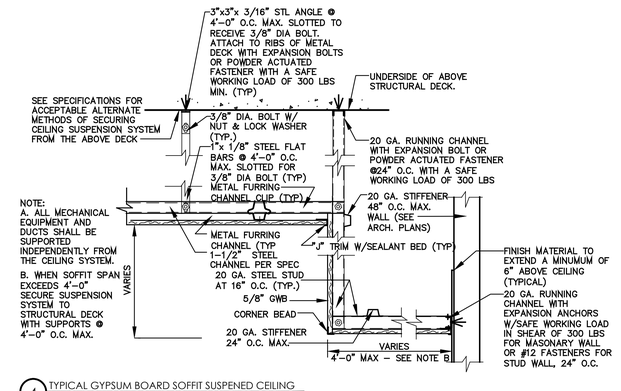
1 PARTITION TYPES
SCALE: 1-1/2"=1'-0"



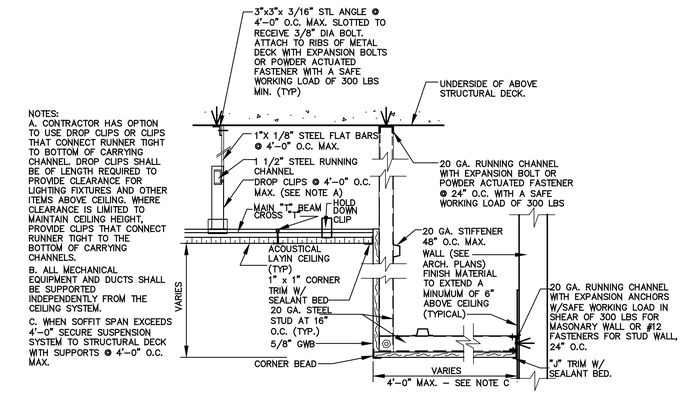
2 TYPICAL SUSPENDED ACOUSTICAL CEILING
SCALE: 3"=1'-0"



3 TYPICAL SUSPENDED GYPSUM BOARD CEILING
SCALE: 1-1/2"=1'-0"



4 TYPICAL GYPSUM BOARD SOFFIT SUSPENED CEILING
SCALE: 1-1/2"=1'-0"



5 TYPICAL GYPSUM BOARD SOFFIT & SUSPENED CEILING ACOUSTICAL LAY-IN CEILING
SCALE: 1-1/2"=1'-0"

CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	BID DOCS CONSTRUCTION DOCUMENTS SUBMISSION
2	01/07/2021	LJ	CG	ADDENDUM #1
3	01/27/2021	JG	JP	ISSUED FOR BID
4	04/01/2021	JG	JP	BID ADDENDUM #3
5	04/16/2021	JG	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT
ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509
TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DANIEL JOHN SAMMEL 023158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563
CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

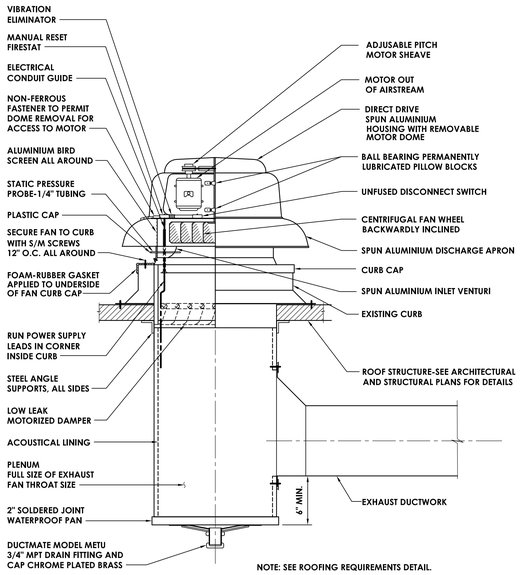
DATE	DRAWN	CHECKED
11/30/2020	LJ/JG	CG

SCALE AS SHOWN

SHEET TITLE
PARTITION TYPES & DETAILS

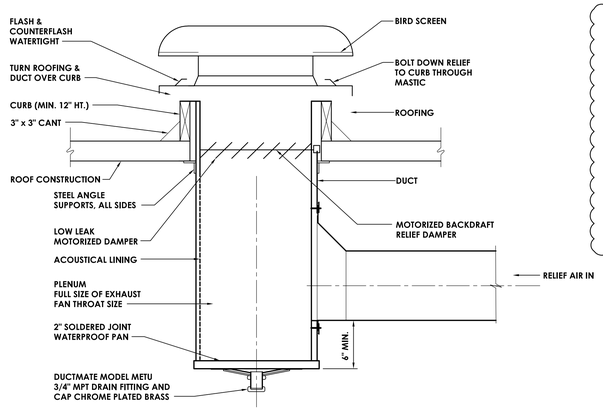
PROJECT NUMBER 70019.00

A800
DRAWING NUMBER



NOTE: SEE ROOFING REQUIREMENTS DETAIL.

3 H204 **EXHAUST FAN DETAIL**
NOT TO SCALE

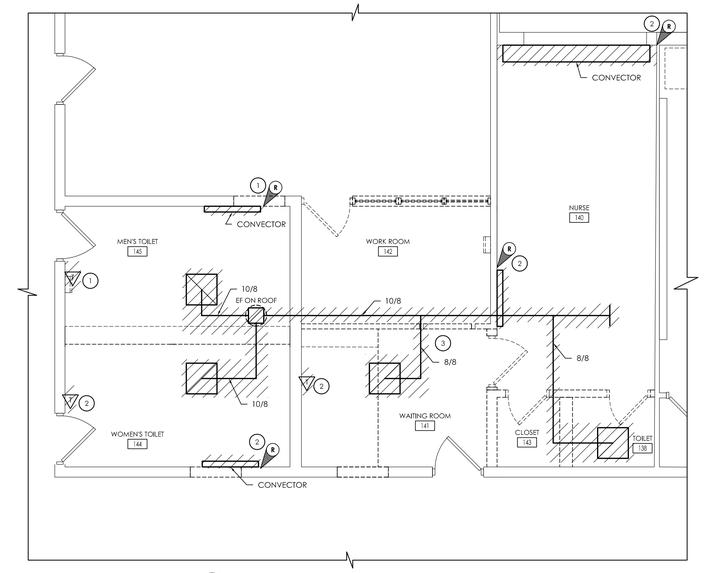


4 H204 **LOUVERED PENTHOUSE - RELIEF VENT**
NOT TO SCALE

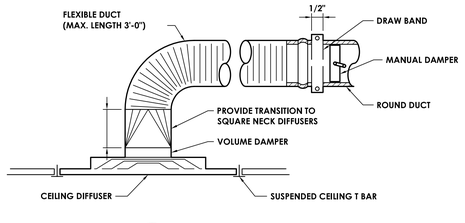
5 H204 **TOILET EXHAUST FAN CONTROLS DIAGRAM**
NOT TO SCALE

KEY NOTES:

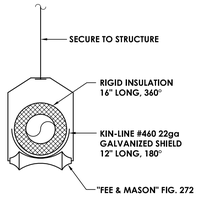
1. REMOVE EXISTING CONVECTOR AND ASSOCIATED CONTROLS. CUT AND CAP EXISTING PIPING. COORDINATE WITH GC.
2. REMOVE EXISTING CONVECTOR AND ASSOCIATED CONTROLS. CAP PIPING FLUSH WITH FLOOR.
3. REMOVE EXISTING EXHAUST DUCTWORK AND ASSOCIATED FAN CONTROLS AND GRILLES. FIELD VERIFY FAN LOCATION AND SIZE. PREPARE CURB FOR RE-USE.
4. FIELD VERIFY CURB LOCATIONS. RE-USE CURB FOR NEW FAN. ADJUST DUCTWORK ACCORDINGLY.
5. PROVIDE NEW CEILING RECESSED FAN COIL. MOUNT UNIT AS HIGH AS POSSIBLE. LEAVE SUFFICIENT ROOM FOR STEAM PIPING. CONNECT TO EXISTING CONTROLS (HONEYWELL).
6. PROVIDE NEW GRAVITY INTAKE AND CURB FOR OUTDOOR AIR. DUCT TO FAN COIL MIXING BOX.
7. PROVIDE NEW TEMPERATURES CONTROLS. CONNECT TO EXISTING HONEYWELL BMS.
8. TERMINATE CONDENSATE DRAIN PIPING IN NEAREST JANITORS CLOSET FLOOR DRAIN.



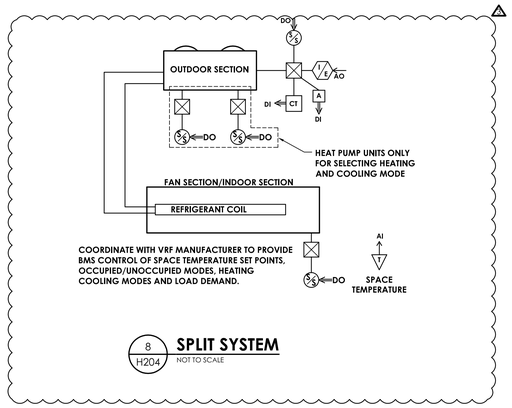
1 H204 **TOILET ROOM'S DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



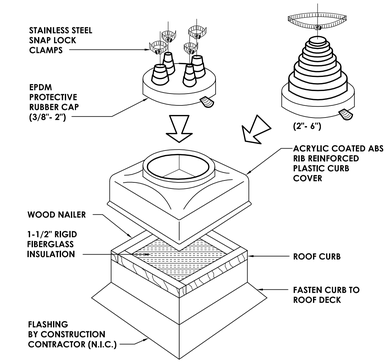
6 H204 **DIFFUSER DETAIL**
NOT TO SCALE



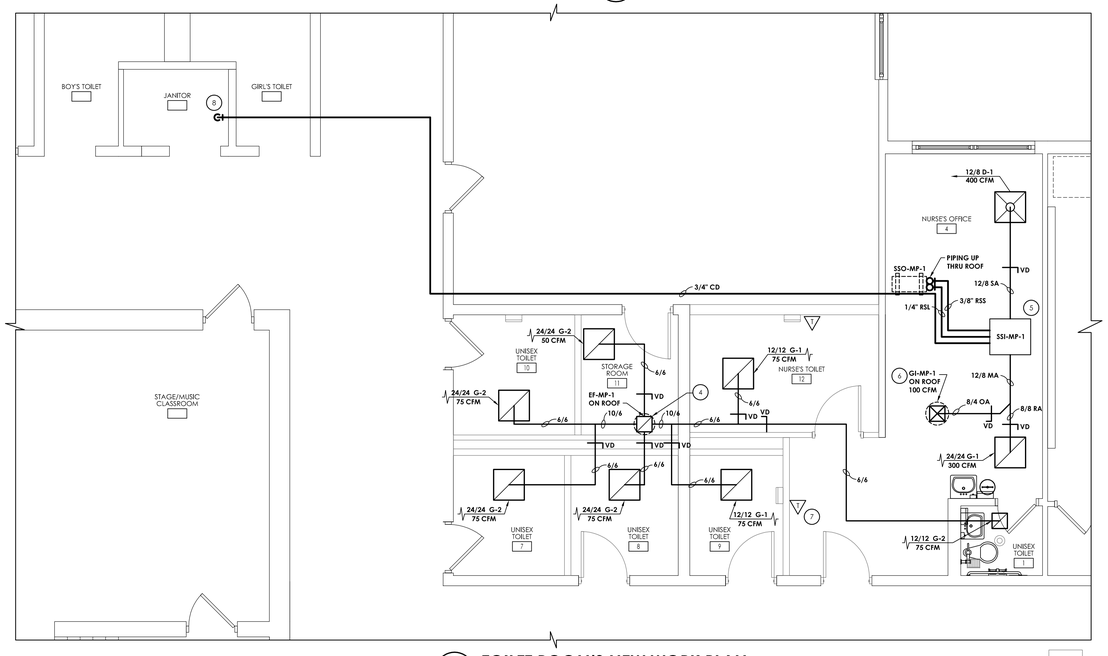
7 H204 **PIPE HANGER DETAIL**
NOT TO SCALE



8 H204 **SPLIT SYSTEM**
NOT TO SCALE



9 H204 **PIPE PORTAL DETAIL**
NOT TO SCALE



2 H204 **TOILET ROOM'S NEW WORK PLAN**
SCALE: 1/4" = 1'-0"

REGISTERS, GRILLES, AND DIFFUSERS

MARK	APPLICATION	MATERIAL	TYPE	FINISH	DESIGN EQUIP.	REMARKS
D-1	SUPPLY	STEEL	LAY-IN	WHITE	TITUS, TMS	-
G-1	RETURN/EA	STEEL	LAY-IN	WHITE	TITUS, 50F-NT	-
G-2	RETURN/EA	STEEL	SURFACE MOUNT	WHITE	TITUS, 50F-NT	-

GRAVITY INTAKE SCHEDULE

MARK	LOCATION	SERVICE	THROAT AREA (SQ. FT.)	HOOD AREA (SQ. FT.)	AIR FLOW (CFM)	SP (IN. W.G.)	TYPICAL UNIT MFG & MODEL NO.	REMARKS:
GI-MP-1	ROOF	VENTILATION AIR	1	3	100	0.011	LOREN COOK 12x12GI	1

REMARKS: 1. PROVIDE WITH WIRE MESH BIRD SCREEN.

FAN SCHEDULE

MARK	LOCATION	SERVICE	TYPE	ROOF OPENING (IN.)	CFM	SP IN W.G.	RPM	ELECTRICAL DATA			TYPICAL UNIT MFG & MODEL NO.	REMARKS:
								BHP / HP	VOLTS	PHASE		
EF-MP-1	ROOF	TOILETS	DOWN BLAST	18X18	500	0.5	1413	0.084/0.5	120	1	LOREN COOK 101C15D	1,2,3

REMARKS: 1. PROVIDE DISCONNECT.
2. ALUMINUM BIRD SCREEN.
3. HINGED BASE.

MATTHEW PATTERSON SED OA CALCULATION

SPACE	TOTAL SQ. FT.	CFM/ft^2 AT MAXIMUM	OCCUPANT DENSITY #/1000 SQFT	TOTAL OCCUPANCY FOR VENTILATION	O.A. PER PERSON (CFM)	O.A. PER SQ. FT. (CFM)	Vbz (CFM)	Ez	Voz=Vot (CFM)	DESIGN OUTSIDE AIR CFM	DESIGN SUPPLY AIR CFM
NURSE'S OFFICE - 4	347	0.29	5.00	2	5	0.06	29.495	0.8	37	100	400

SPLIT SYSTEM INDOOR UNIT SCHEDULE

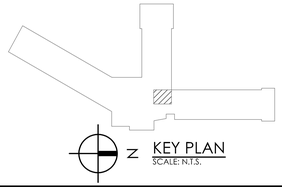
MARK	TOTAL AIRFLOW CFM	OUTSIDE AIR CFM	NOM.HEATING CAPACITY BTU/HR	NOM.COOLING CAPACITY BTU/HR	DIMENSIONS (H" X W" X D")	COLOR	WEIGHT (LBS)	POWER (Ø/V/Hz)	MCA AMPS	TYPICAL UNIT MFG & MODEL NO.	REMARKS:
SSI-MP-1	400	100	13,600	10,800	9-5/8 X 27-9/16 X 31-1/2	WHITE	64	1 / 208-230 / 60	13	DAIKIN AURORA FDMQ12RVJU	1,2,3

REMARKS: 1. FURNISH DISCONNECT SWITCH.
2. PROVIDE MERV 8 FILTERS FOR FAN COIL UNIT.
3. UNIT SHALL INCLUDE INTEGRATED CONDENSATE PUMP.

OUTDOOR CONDENSING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	NOM.HEATING CAPACITY BTU/HR	NOM.COOLING CAPACITY BTU/HR	ELECTRICAL			WEIGHT (LBS)	REMARKS:
					POWER (Ø/V/Hz)	MCA (AMPS)	RLA (AMPS)		
SSO-MP-1	DAIKIN	RXL12QMVJU9	13,600	10,800	208-230/60/1	13	12	70	1,2,3

REMARKS: 1. PROVIDE DISCONNECT.
2. PROVIDE MANUFACTURER'S SNOW HOOD.
3. PROVIDE RECTORSEAL BIG FOOT STAND MODEL: B5551 WITH 18" INCH CLEARANCE ABOVE ROOF DECK.



CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 1009, CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JKS	JP	ISSUED FOR BID
3	04/01/2021	JKS	JP	SED ADDENDUM #3
4	04/16/2021	JKS	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DAVID JOHN SAMUEL 023158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

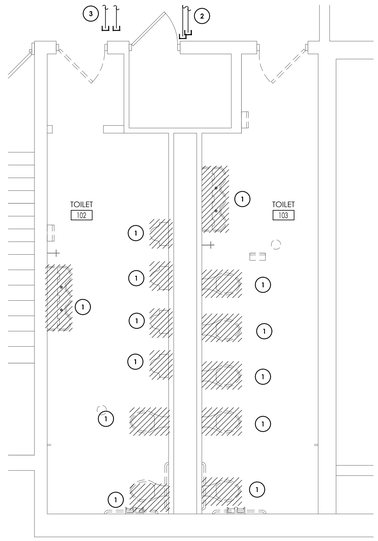
DATE	DRAWN	CHECKED
11/30/2020	ZBH	JJM

SCALE AS NOTED

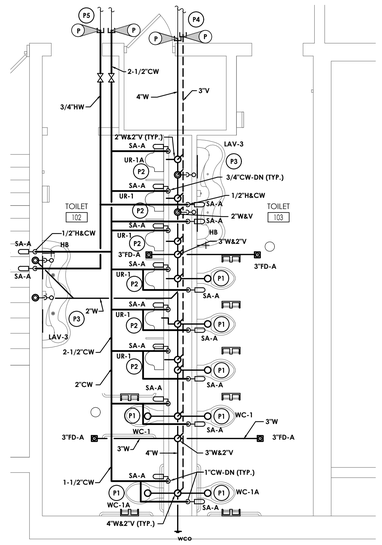
SHEET TITLE
HVAC DEMOLITION, NEW WORK, DETAILS, AND SCHEDULES PLAN

PROJECT NUMBER 70019.00

MP H204
DRAWING NUMBER



1 P201 **TOILET ROOMS #102 & #103 DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



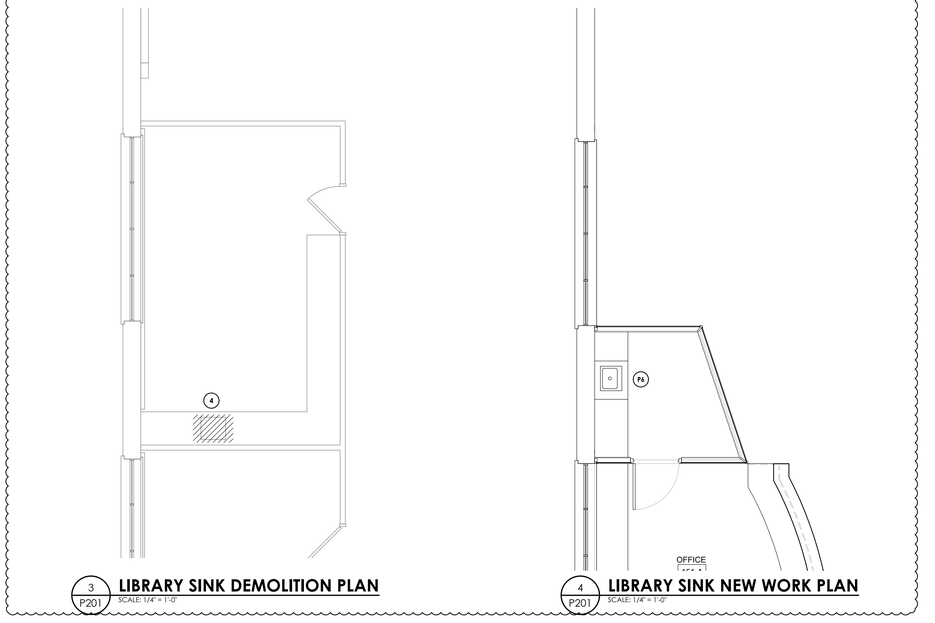
2 P201 **TOILET ROOMS #102 & #103 NEW WORK PLAN**
SCALE: 1/4" = 1'-0"

KEY NOTES - DEMOLITION

1. DISCONNECT AND REMOVE EXISTING PLUMBING FIXTURES SHOWN HATCHED. DISCONNECT AND REMOVED ASSOCIATED DOMESTIC WATER, SANITARY, AND VENT PIPING BACK TO ASSOCIATED MAIN LINE AND CAP.
2. DISCONNECT AND REMOVE EXISTING WATER PIPING SERVING TOILET TO BE DEMOLISHED. REMOVE BACK TO THIS POINT & CAP.
3. DISCONNECT AND REMOVE EXISTING WASTE & VENT PIPING SERVING TOILET TO BE DEMOLISHED. REMOVE BACK TO THIS POINT & CAP.
4. DISCONNECT AND REMOVE EXISTING SINK SHOWN HATCHED. DISCONNECT AND REMOVED ASSOCIATED DOMESTIC WATER, SANITARY, AND VENT PIPING BACK TO ASSOCIATED MAIN LINE AND CAP. PREPARE FOR NEW CONNECTION.

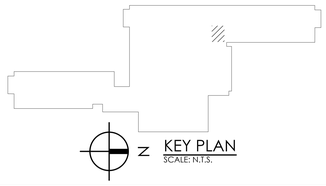
KEY NOTES - PLUMBING:

- P1 PROVIDE WATER CLOSET, FLUSH VALVE, SUPPORTS, WATER PIPING, SANITARY PIPING, & VENT PIPING.
- P2 PROVIDE URINAL, FLUSH VALVE, SUPPORTS, WATER PIPING, SANITARY PIPING, & VENT PIPING.
- P3 PROVIDE LAVATORY, FAUCET, P-TRAP, H & CW WATER PIPING, SHUT-OFF VALVES, SANITARY PIPING, & VENT PIPING.
- P4 EXTEND & CONNECT TO EXISTING WASTE & VENT PIPING. COORDINATE EXACT POINT OF CONNECTION TO EXISTING IN FIELD.
- P5 EXTEND & CONNECT TO EXISTING COLD & HOT WATER PIPING. COORDINATE EXACT POINT OF CONNECTION TO EXISTING IN FIELD.
- P6 PROVIDE DROP IN SINK. EXTEND EXISTING COLD AND HOT WATER PIPING, SANITARY AND VENT. COORDINATE EXACT POINT OF CONNECTION TO EXISTING IN FIELD.



3 P201 **LIBRARY SINK DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"

4 P201 **LIBRARY SINK NEW WORK PLAN**
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: N.T.S.

CPLteam.com
ARCHITECTURE = ENGINEERING = PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JG	JP	ISSUED FOR BID
2	04/01/2021	JG	JP	SED - ADDENDUM #3
2	04/16/2021	JG	JP	BID - ADDENDUM #1

ENVIRONMENTAL CONSULTANT
ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509
TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DAVID JOHN SAMMEL 023158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

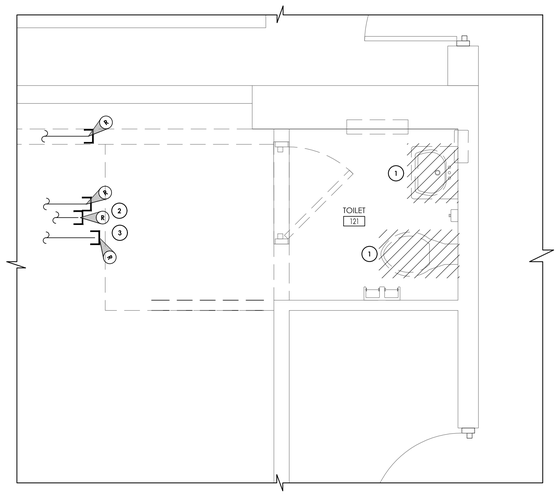
DATE	DRAWN	CHECKED
11/30/2020	RWR	CG

SCALE AS SHOWN

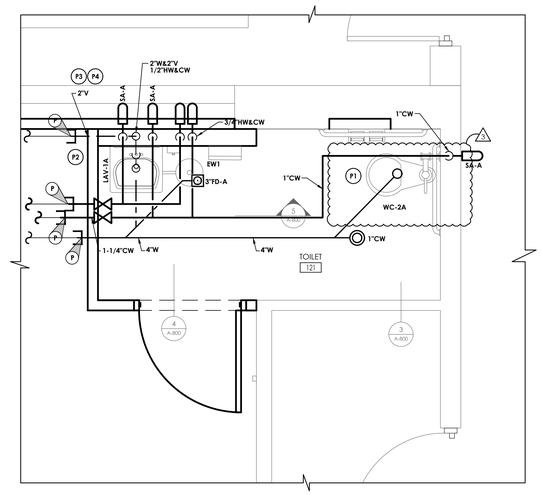
SHEET TITLE
TOILET ROOM PLUMBING DEMOLITION, AND NEW WORK PLAN

PROJECT NUMBER
70019.00

GF P201
DRAWING NUMBER



1 P202 **TOILET ROOM #121 DEMOLITION PLAN**
SCALE: 1/2" = 1'-0"



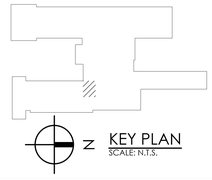
2 P202 **TOILET ROOM #121 NEW WORK PLAN**
SCALE: 1/2" = 1'-0"

KEY NOTES - DEMOLITION

1. DISCONNECT AND REMOVE EXISTING PLUMBING FIXTURES SHOWN HATCHED. DISCONNECT AND REMOVED ASSOCIATED DOMESTIC WATER, SANITARY, AND VENT PIPING BACK TO ASSOCIATED MAIN LINE AND CAP.
2. DISCONNECT AND REMOVE EXISTING WATER PIPING SERVING TOILET TO BE DEMOLISHED. REMOVE BACK TO THIS POINT & CAP.
3. DISCONNECT AND REMOVE EXISTING WASTE & VENT PIPING SERVING TOILET TO BE DEMOLISHED. REMOVE BACK TO THIS POINT & CAP.

KEY NOTES - PLUMBING:

- P1 PROVIDE WATER CLOSET, FLUSH VALVE, SUPPORTS, WATER PIPING, SANITARY PIPING, & VENT PIPING.
- P2 PROVIDE LAVATORY, FAUCET, P-TRAP, H & CW WATER PIPING, SHUT-OFF VALVES, SANITARY PIPING, & VENT PIPING.
- P3 EXTEND & CONNECT TO EXISTING WASTE & VENT PIPING, COORDINATE EXACT POINT OF CONNECTION TO EXISTING IN FIELD.
- P4 EXTEND & CONNECT TO EXISTING COLD & HOT WATER PIPING, COORDINATE EXACT POINT OF CONNECTION TO EXISTING IN FIELD.



N KEY PLAN
SCALE: N.T.S.

CPLteam.com
ARCHITECTURE ▪ ENGINEERING ▪ PLANNING

332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	-	ADDENDUM # 1
2	03/29/2021	JG	JP	ISSUED FOR BID
2	04/01/2021	JG	JP	SED - ADDENDUM #3
2	04/16/2021	JG	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DAVID JOHN SAMMEL 023158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT

81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	RWR	CG

SCALE AS SHOWN

SHEET TITLE
PLUMBING DEMOLITION, NEW WORK, AND RCP PLANS

PROJECT NUMBER
70019.00

KE P202
DRAWING NUMBER

Drawing Name: \\clarkpatterson.local\dfs\Projects3\Projects\Carmel CSD\2019 Bond Interior Alts\3D Design\06 CAD\AutoCAD\PLUM\P2\KE-P202.dwg
Date last plotted: 4/15/2021 10:17 AM
Plotted By: Nick Hens
Date last accessed: 4/15/2021 10:16 AM

WIRING LEGEND:

- S. SWITCH
  - (NONE) SINGLE POLE TOGGLE SWITCH
  - 2 TWO POLE TOGGLE SWITCH
  - 3 THREE WAY TOGGLE SWITCH
  - 4 FOUR WAY TOGGLE SWITCH
  - WP SINGLE POLE WEATHER PROOF SWITCH
  - K SINGLE POLE KEYED SWITCH
  - K2 TWO POLE KEYED SWITCH
  - K3 THREE WAY KEYED SWITCH
  - K4 FOUR WAY KEYED SWITCH
  - P SINGLE POLE SWITCH WITH PILOT LIGHT
  - TM SINGLE POLE SWITCH WITH ONE HOUR TIMER
  - T THERMAL SWITCH
  - TP THERMAL SWITCH WITH PILOT LIGHT
  - M MOMENTARY CONTACT SWITCH
- S_{II} ROMAN NUMERAL DESIGNATES NUMBER OF SWITCHES
- S_{a} LOWER CASE LETTER DESIGNATES SWITCH LEG
- SINGLE RECEPTACLE
- PLUG MOLD
- DUPLEX RECEPTACLE
- QUADRAPLEX RECEPTACLE
- SPECIAL RECEPTACLE
  - GFI GROUND FAULT CIRCUIT INTERRUPTER
  - WP WEATHER PROOF IN-USE COVER
  - SS SURGE SUPPRESSION
  - C COUNTER HEIGHT
  - TR TAMPER RESISTANT, UL LISTED
  - IG ISOLATED GROUND
  - RT RAIN TITE
  - E EMERGENCY
  - X TYPE X (SEE RECEPTACLE SCHEDULE)
- PP POWER POLE
- RECESSED FLOOR MOUNTED DUPLEX RECEPTACLE
- SURFACE MOUNTED FLOOR RECEPTACLE
- CEILING MOUNTED DUPLEX RECEPTACLE
- —C— CONDUIT
- —W— EXPOSED LOW VOLTAGE WIRING
- HORIZONTAL NON-METALLIC WIREWAY WITH DATA JACK OUTLETS AND ISOLATED GROUND TYPE DUPLEX RECEPTACLES
- VERTICAL NON-METALLIC WIREWAY WITH DATA JACK OUTLETS AND ISOLATED GROUND TYPE DUPLEX RECEPTACLES
- —WM— WIRE MOLD
- J. JUNCTION BOX
  - F FIRE SYSTEM
  - S SECURITY SYSTEM
- DISCONNECT SWITCH
- WP DISCONNECT SWITCH - WEATHER PROOF (NEMA 3R)
- F FUSED DISCONNECT SWITCH
- COMBINATION FUSED DISCONNECT/ MAGNETIC STARTER SWITCH
  - HOA HAND/OFF/AUTO
  - SS START/STOP
- M MANUAL STARTER
- VSD COMBINATION VARIABLE SPEED DRIVE AND DISCONNECT
- VSD VARIABLE SPEED DRIVE
- ST/SP PUSHBUTTON - START, STOP
- ST/SP/PL PUSHBUTTON - START, STOP, WITH PILOT LIGHT
- UP/DN/SP PUSHBUTTON - UP, DOWN, STOP
- EF-1 MOTOR WITH DESIGNATOR
- TC TIME CLOCK
- WH WATER HEATER
- HD HAND DRYER, HARD WIRED
- T THERMOSTAT
- HVP1-6 BRANCH CIRCUIT HOME RUN WITH PANEL NAME AND CIRCUIT NUMBER, QUANTITY OF ARROWHEADS DENOTES QUANTITY OF BRANCH CIRCUITS
  - GFI BKR. GFI TYPE BREAKER
  - A.F. BKR. ARC FAULT BREAKER
- BRANCH CIRCUIT WIRING, PROVIDE QUANTITIES OF CONDUCTORS REQUIRED FOR CIRCUITING AND SWITCHING AS INDICATED
- POWER LEG ONLY (NO SWITCH LEG BETWEEN ROOMS)
- HARDWIRE CONNECTION
- CU CONDUIT RISER UP
- CD CONDUIT RISER DOWN
- T TRANSFORMER
- TK TYPE "K" TRANSFORMER
- MUSHROOM HEAD PUSH BUTTON (EMERGENCY STOP)
- EMERGENCY BREAK GLASS STATION
- GROUNDING ROD

SINGLE LINE DIAGRAM LEGEND:

- EARTH GROUND
- CHASSIS GROUND
- 45 KVA 480-208/120V K-13 TRANSFORMER - KVA, PRIMARY AND SECONDARY VOLTAGE INDICATED. CONNECTIONS, K-RATING, AND SHIELD SPECIFIED
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- FUSE
- DISCONNECT/LOADBREAK SWITCH
- CIRCUIT BREAKER
- CIRCUIT BREAKER DRAWOUT MOUNTED (LOW VOLTAGE)
- AUTOMATIC TRANSFER SWITCH (NORMAL POSITION SHOWN)
- METER
- ENCLOSED CIRCUIT BREAKER
- LIGHTNING ARRESTER
- FUSED DISCONNECT SWITCH
- PANEL 208-120V 225A PANELBOARD- RATINGS AS SPECIFIED IN SINGLE LINE DIAGRAM AND ON PANELBOARD SCHEDULE

COMMUNICATIONS LEGEND:

- TELEPHONE (1) CAT3 - TELEPHONE JACK & CABLE
  - (NONE) STANDARD MODULAR JACK FOR TELEPHONE
  - W WALL MOUNTED TELEPHONE MODULAR JACK
  - P PUBLIC TELEPHONE MODULAR JACK
  - C COUNTER HEIGHT MODULAR JACK
- TELEPHONE FLOOR OUTLET (1) CAT3 - TELEPHONE JACK & CABLE
- DATA OUTLET WITH FLUSH BOX AND FACEPLATE (1) CAT6 - DATA JACK & CABLE
- COMPUTER FLOOR OUTLET (1) CAT6 - DATA JACK & CABLE
- COMBINATION TELEPHONE CABLE AND DATA OUTLETS IN DOUBLE GANG FLUSH MOUNTED BOX WITH FACEPLATE
- WT WIRELESS TRANSMITTER (PROVIDED BY OWNER) CONTRACTOR TO PROVIDE (2) CAT6 DATA JACKS & CABLING
- T/D BACK BOX FOR OWNER PROVIDED TEL/COM WIRING & DEVICES
- DATA RACK
- TV COAX CABLE (TYPE F CONNECTOR)
- P CEILING MOUNT LCD PROJECTOR
- SPEAKER (PUBLIC ADDRESS)
  - (NONE) CEILING MOUNTED
  - W WALL MOUNTED
- SPEAKER (LOCAL SOUND SYSTEM)
- SPEAKER HORN
- MICROPHONE JACK
- SJ SPEAKER JACK
- VOLUME CONTROL
- CLOCK
- DOUBLE FACE CLOCK
- CS COMBINATION CLOCK AND SPEAKER
- IC INTERCOM STATION
- PA MIC REMOTE PRE-AMPLIFIER AND PAGING MICROPHONE
- CJ CONSOLE JACK
- HL HOUSE LIGHT CONTROL STATION
- WB WALL BOX AS SPECIFIED
- FB FLOOR BOX

NOTE:

SYMBOLS SHOWN ON THIS ELECTRICAL SYMBOLS LIST ARE FOR REFERENCE PURPOSES ONLY. ALL OF THESE SYMBOLS MAY NOT BE USED FOR THIS PROJECT.

FIRE/LIFE SAFETY LEGEND:

- F FIRE ALARM PULL STATION
- FB FIRE ALARM BELL
- FH FIRE ALARM HORN
- FH FIRE ALARM HORN AND STROBE COMBINATION
- FH WP FIRE ALARM HORN AND STROBE COMBINATION, WEATHER PROOF
- FS FIRE ALARM SPEAKER
- FS C FIRE ALARM SPEAKER - CEILING MOUNTED
- FH FIRE ALARM SPEAKER AND STROBE COMBINATION
- F FIRE ALARM STROBE
- F FIRE ALARM STROBE - CEILING MOUNTED
- SMOKE DETECTOR
- WG SMOKE DETECTOR WITH GUARD
- CO CARBON MONOXIDE DETECTOR
- CH4 NATURAL GAS SENSOR
- HEAT DETECTOR
- COMBINATION SMOKE/HEAT DETECTOR
- F HEAT DETECTOR - 190° FIXED TEMPERATURE
- EXP HEAT DETECTOR - EXPLOSION PROOF
- BT BEAM SMOKE DETECTOR TRANSMITTER
- BR BEAM SMOKE DETECTOR RECEIVER
- DUCT DETECTOR
  - SA INDICATES INSTALLATION IN SUPPLY AIR
  - RA INDICATES INSTALLATION IN RETURN AIR
- RTS REMOTE TEST STATION FOR DUCT DETECTOR
- FIRE ALARM SHUT DOWN RELAY
- DH FIRE DOOR HOLD OPEN
- TS TAMPER SWITCH
- FS FLOW SWITCH
- FSS FIRE SUPRESSION ANSUL SYSTEM CONNECTION
- FR SMOKE DAMPER RELAY CONNECTION
  - SD/FD SMOKE DAMPER AND FIRE DAMPER
  - SD SMOKE DAMPER
- CONTROL MODULE, ADDRESSABLE
- AREA OF RESCUE CALL STATION
- ADA AREA OF RESCUE MASTER TELEPHONE STATION

SECURITY LEGEND:

- KP SECURITY KEY PAD
- VIDEO CAMERA
- VM CCTV VIDEO MONITOR
- MD PASSIVE INFRARED MOTION DETECTOR
- PR PROXIMITY CARD READER
- C CALL SWITCH
- DC DOOR CONTACT
- WC WINDOW CONTACT
- ES ELECTRIC STRIKE DOOR RELEASE
- MI MAGNETIC DOOR RELEASE
- DA DOOR ACTUATOR

NURSE CALL LEGEND:

- CB NURSE CALL BUTTON
- P NURSE CALL PATIENT BED STATION
- B NURSE CALL CODE BUTTON
- SA NURSE CALL STAFF ASSIST STATION
- S NURSE CALL STAFF STATION
- SD NURSE CALL DUTY/STAFF STATION
- D NURSE CALL DUTY STATION
- HO NURSE CALL LIGHT
- HC NURSE CALL CODE LIGHT
- HZ NURSE CALL ZONE LIGHT
- M NURSE CALL MASTER STATION
- E NURSE CALL EMERGENCY PULL STATION
- IR NURSE CALL INFRARED SENSOR

LIGHT FIXTURE LEGEND:

- XX LIGHTING FIXTURE (SEE LIGHTING FIXTURE SCHEDULE FOR LETTER DESIGNATION AND DESCRIPTION OF FIXTURES)
- EMERGENCY AND/OR NIGHT LIGHT LIGHTING FIXTURE
- EXIT LIGHTING FIXTURE UNIVERSAL MOUNT, SINGLE/DOUBLE FACE (WHERE USED, ARROW INDICATES CHEVRON DIRECTION)
- BATTERY POWERED EMERGENCY LIGHT
- EMERGENCY LIGHT REMOTE HEAD
- TRACK LIGHTING
- POLE MOUNTED LIGHTING (QUANTITY AND ORIENTATION OF HEADS AS SHOWN)
- OS OCCUPANCY SENSOR - CEILING MOUNTED
- OSW OCCUPANCY SENSOR - WALL MOUNTED
- LC LIGHTING CONTACTOR
- PC PHOTOCELL
- S. SWITCH
  - LV LOW VOLTAGE 1-4 BUTTON STATION (CONNECT TO LIGHTING CONTROL STATION)
  - O OCCUPANCY SENSOR SWITCH
  - D DIMMER
  - D3 THREE WAY DIMMER
  - DF DIMMER (FLUORESCENT)

PANEL LEGEND:

- EXISTING ELECTRICAL PANEL
- NEW ELECTRICAL PANEL XXX
  - MDP MAIN DISTRIBUTION PANEL
  - LVP LOW VOLTAGE PANEL
  - HVP HIGH VOLTAGE PANEL
  - LP LIGHTING CONTROL PANEL
  - IG ISOLATED GROUND PANEL
  - MSB MAIN SWITCH BOARD
  - MCC MOTOR CONTROL CENTER
  - TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
- ATS AUTOMATIC TRANSFER SWITCH
- ELECTRICAL SYSTEMS PANEL XXX
  - SACP SECURITY ALARM CONTROL PANEL
  - FACP FIRE ALARM CONTROL PANEL
  - PA PUBLIC ADDRESS CONTROL PANEL
  - FAAP FIRE ALARM ANNUNCIATOR PANEL

ELECTRICAL PANELBOARD LABELING PLACARD

LINE 1 - PANELBOARD NAME: PP1 (EXAMPLE)
LINE 2 - VOLTAGE AND PHASE:480/277V-3PH-4W (EXAMPLE)
LINE 3 - WHERE PANELBOARD IS FED FROM: FF MSB BREAKER #14 (EXAMPLE)

GENERAL ELECTRICAL NOTES:

1) HATCHED AREAS ////// DESIGNATE EXISTING EQUIPMENT TO BE REMOVED, UNLESS OTHERWISE NOTED.
2) ALL WORK TO BE DONE IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRIC CODE (NFPA 70).
3) CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS AND COORDINATE WITH EXISTING EQUIPMENT PRIOR TO BIDDING.

BUILDING:

4) INSTALLATION HEIGHT TO CENTER OF EQUIPMENT ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED TO BE:
   - RECEPTACLE = 18"
   - SWITCH = 44"
   - MODULAR JACK FOR WALL MOUNTED TELEPHONE = 52"
   - MODULAR TELEPHONE JACK = 18"
   - AUDIO/VISUAL FIRE ALARM INDICATORS = 88"
   - FIRE ALARM PULL STATIONS = 48"
   - TELEVISION OUTLET = 7'-0"
   - COMPUTER OUTLET = 18"
   - CALL SWITCH = 44"
   - REMOTE TEST STATION FOR DUCT DETECTOR = 52"
   - C = ABOVE COUNTER BACKSPLASH, COORDINATE WITH ARCHITECTURAL ELEVATIONS AND MILLWORK.
5) INSTALL DATA JACKS FOR CEILING MOUNTED WIRELESS TRANSMITTERS ABOVE CEILING IN ALL AREAS WHERE THERE IS AN ACCESSIBLE CEILING. PROVIDE FLUSH MOUNTED JACKS IN ALL HARD CEILINGS.
6) ALL CONDUIT AND WIRING TO BE CONCEALED IN WALLS, FLOOR, OR ABOVE CEILINGS UNLESS OTHERWISE NOTED OR APPROVED BY THE ARCHITECT/ENGINEER. ALL DEVICE OUTLET BOXES SHALL BE RECESSED UNLESS OTHERWISE NOTED OR APPROVED BY THE ARCHITECT/ENGINEER. WHERE APPROVED OR NOTED, SURFACE METAL RACEWAY AND DEVICE BOXES SHALL BE USED IN-LIEU OF CONDUIT AND CONCEALED BOXES AT NO EXTRA COST TO THE OWNER.
7) ALL CONDUIT ROUTES SHOWN ARE APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY FINAL ROUTE.
8) CONDUIT RUNS SHOWN ARE SCHEMATICAL AND DO NOT INDICATE THE NECESSARY FITTINGS AND JUNCTION BOXES THAT ARE INCLUDED IN THE SCOPE OF THE WORK.

GROUNDING:

9) ALL METAL RACEWAYS, INCLUDING CONDUIT, WIRE TROUGHS, WIREMOLD, ETC., SHALL BE GROUNDED. ALL CONNECTIONS IN METAL RACEWAYS SHALL BE COMPLETED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUS PATH TO GROUND THROUGHOUT THE ENTIRE LENGTH OF THE RACEWAY.

WIRING:

10) UNLESS NOTED OTHERWISE ON THE DRAWINGS OR ON THE EQUIPMENT WIRING SCHEDULE, EACH BRANCH CIRCUIT SHALL BE THREE (3) #12 AWG THHN/THWN (1 HOT, 1 NEUTRAL & 1 EQUIPMENT GROUND) IN 3/4" EMT CONDUIT. PROTECT EACH CIRCUIT WITH A 20 AMPERE, 1-POLE OVERCURRENT DEVICE UNLESS OTHERWISE NOTED. PROVIDE #10 AWG FOR 120V BRANCH CIRCUITS LONGER THAN 100 FEET. COMBINED NEUTRALS ARE NOT PERMITTED.

CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JG	JP	ISSUED FOR BID
2	04/01/2021	JG	JP	SED ADDENDUM #3
2	04/16/2021	JG	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT
ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509
TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DANIEL JOHN SAMUEL 029158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	MAY	JBT

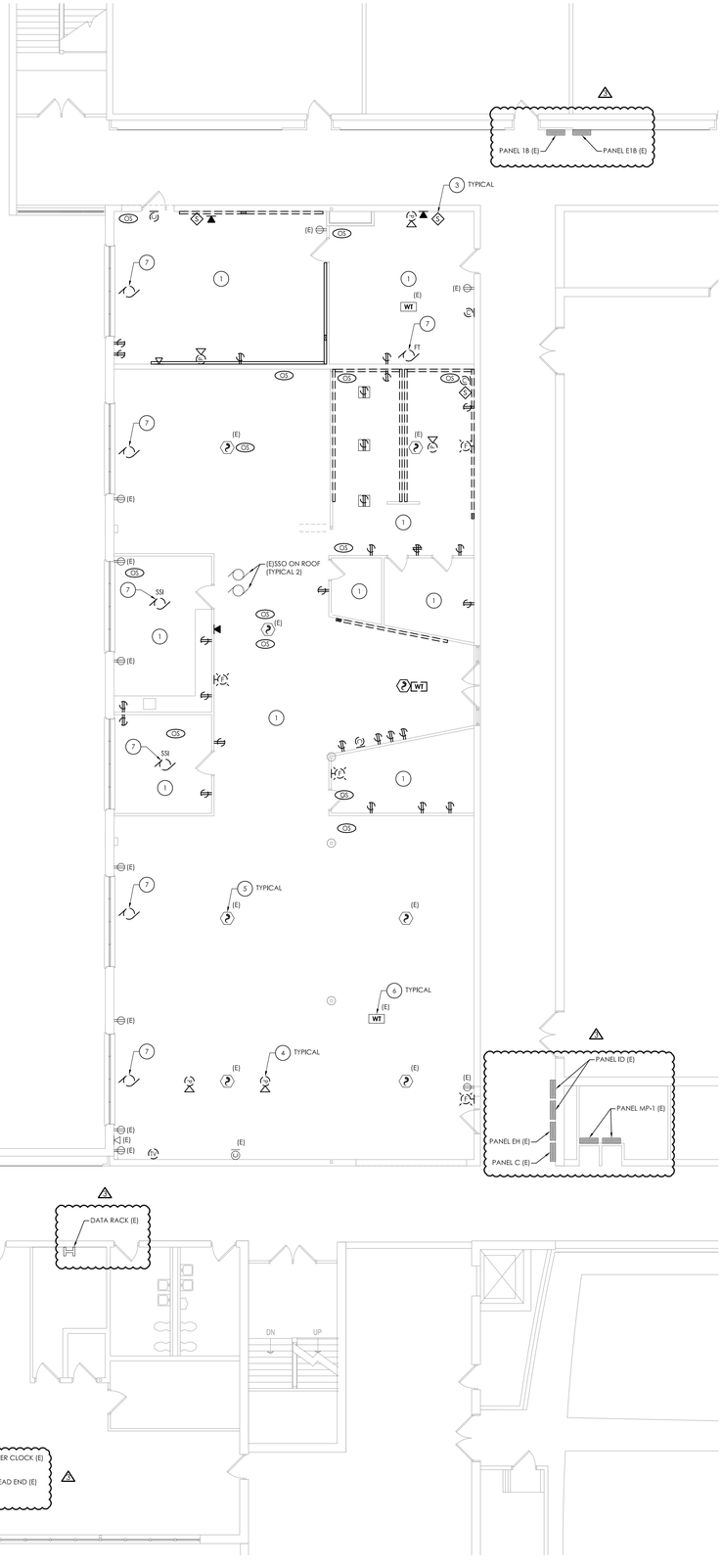
SCALE AS SHOWN

SHEET TITLE
ELECTRICAL LEGEND & NOTES

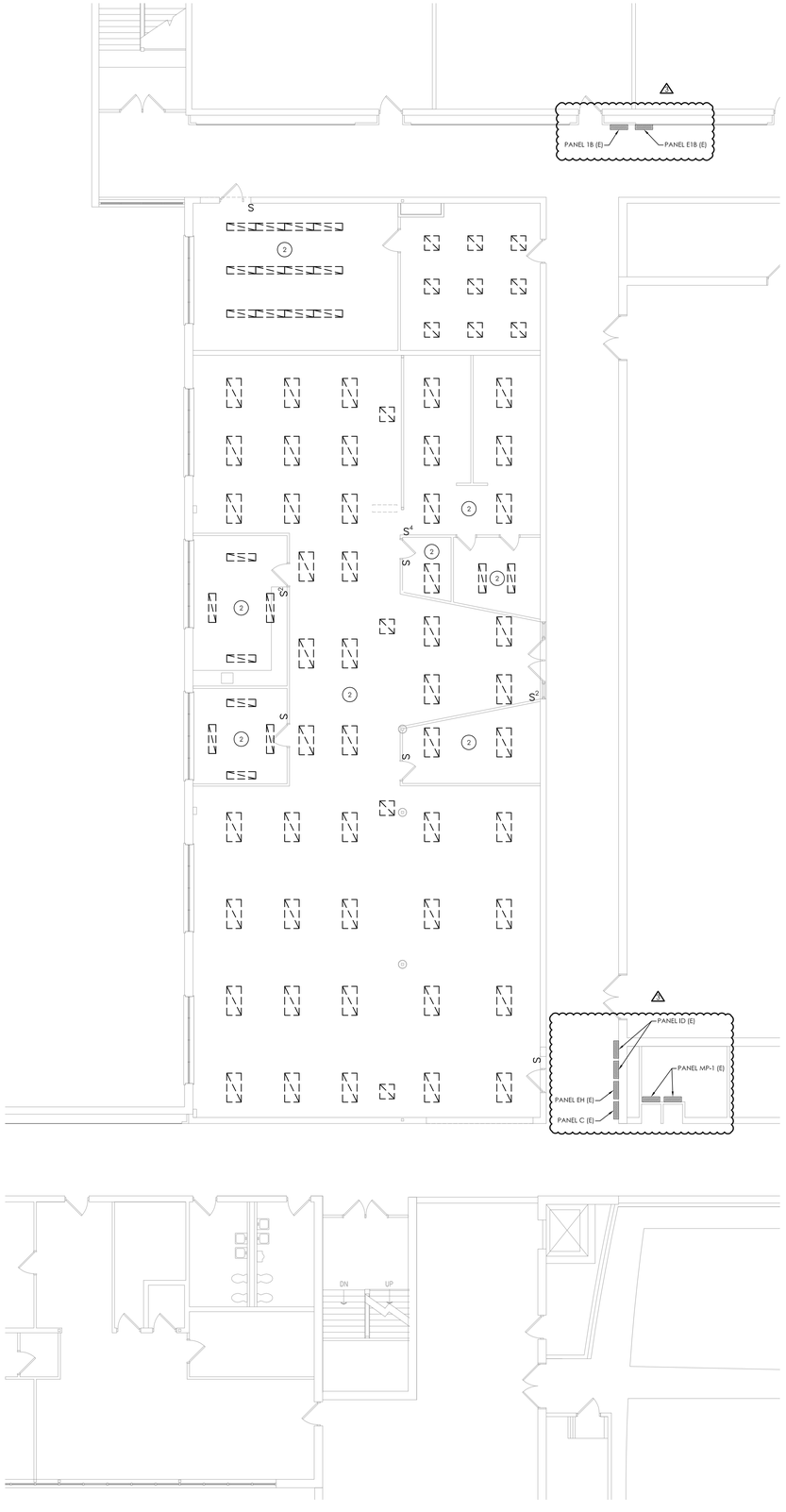
PROJECT NUMBER 70019.00

GEN E000
DRAWING NUMBER

Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ELEC\E01\GEN-E000.dwg
Date last accessed: 3/26/2021 8:47 AM
Date last plotted: 4/14/2021 3:45 PM
Plotted By: Michael Yamin



1 E101 **LIBRARY DEMOLITION PLAN**
SCALE: 1/8" = 1'-0"



2 E101 **LIBRARY LIGHTING DEMOLITION PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.

C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC. WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. ALL ITEMS (DEVICES, FIXTURES, ETC.) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.

J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

KEY NOTES:

1N DISCONNECT AND REMOVE ALL RECEPTACLES AS NOTED. PULL ALL WIRING BACK TO AN AREA ABOVE CEILING AND TAG FOR RE-USE.

2N DISCONNECT AND REMOVE ALL LIGHT FIXTURES AND SWITCHING. PULL ALL WIRING BACK TO AN AREA ABOVE CEILING AND TAG FOR RE-USE.

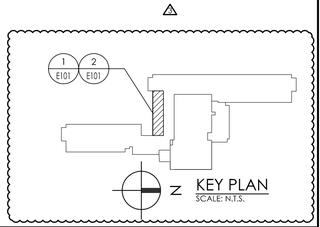
3N DISCONNECT AND REMOVE EXISTING SPEAKERS. TURN OVER TO OWNER. PULL WIRING BACK TO AN AREA ABOVE CEILING AND TAG FOR RE-USE.

4N DISCONNECT AND REMOVE PROJECTORS. TURN OVER TO OWNER. REMOVE ALL WIRING ASSOCIATED WITH PROJECTOR.

5N REMOVE EXISTING SMOKE DETECTORS AND STORE FOR RE-USE. PULL CABLING BACK TO AN AREA ABOVE DROP CEILING AND TAG FOR RE-USE.

6N REMOVE WIRELESS ACCESS POINT AND STORE FOR RE-USE. PULL CABLING BACK TO AN AREA ABOVE DROP CEILING AND TAG FOR RE-USE.

7N DISCONNECT ALL CONDUIT AND WIRING TO MECHANICAL EQUIPMENT AND REMOVE BACK TO SOURCE. LABEL ASSOCIATED CIRCUIT BREAKERS AS SPARE.



CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 1008 CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JG	JP	ISSUED FOR BID
2	04/01/2021	JG	JP	SED ADDENDUM #3
2	04/16/2021	JG	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT
ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509
TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DAVID JOHN SAMUEL 023158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	NRH	JJM

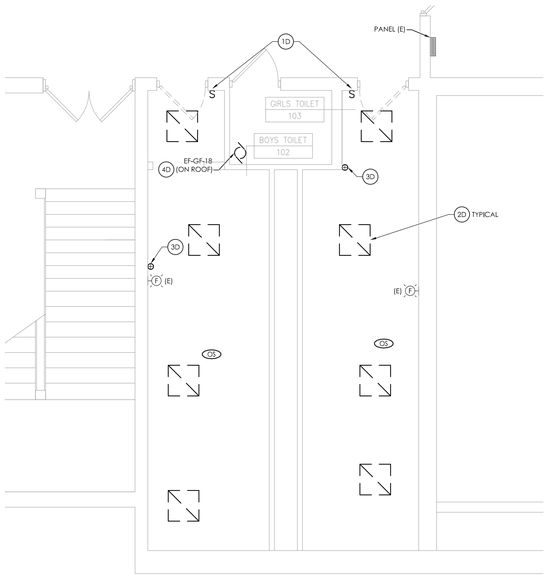
SCALE AS NOTED

SHEET TITLE
ELECTRICAL DEMOLITION PLANS

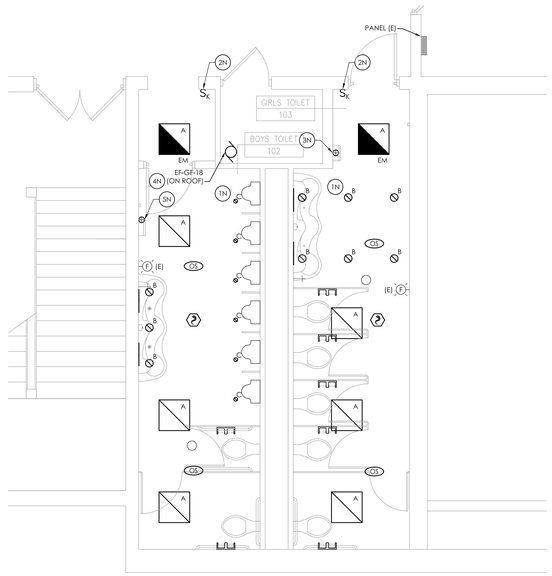
PROJECT NUMBER
70019.00

GF
E101
DRAWING NUMBER

Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ELEC\E1\GF Lib\GF-E101.dwg
Date last accessed: 4/14/2021 11:04 AM
Plotted By: Michael Yamin
Date last plotted: 4/14/2021 3:42 PM



1 / E201 **BASEMENT ELECTRICAL DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



2 / E201 **BASEMENT ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"

GENERAL DEMOLITION NOTES:

A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.

C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED. THE CONTRACTOR SHALL ASSUME WITHIN THE BASE BID A NOMINAL AMOUNT OF BRANCH CIRCUITS, FIXTURES, DEVICES, AND SYSTEMS WIRING WITHIN WALLS OR OPENINGS TO BE REMOVED OR RELOCATED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC. WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. ALL ITEMS (DEVICES, FIXTURES, ETC.) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.

J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

⚠1 K. FIRE ALARM CONTROL PANELS ARE SIMPLEX MODEL 4100 ES. JOHNSON CONTROLS IS THE DISTRICTS FIRE ALARM VENDOR. LOCAL OFFICE CONTACT IS 845.742.1489.

GENERAL NEW WORK NOTES:

A. FIXTURE MARK INDICATED ADJACENT TO NEW LIGHT FIXTURE. REFER TO LUMINAIRE SCHEDULE ON SHEET GEN-E900 FOR FIXTURE DESCRIPTION, NOTES AND SPECIFICATIONS.

DEMOLITION KEY NOTES:

1D DISCONNECT AND REMOVE EXISTING SWITCHES, BACK BOX, CONDUIT, AND WIRING TO REMAIN FOR RE-USE.

2D DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES. WIRING TO REMAIN FOR RE-USE.

3D DISCONNECT AND PULL BACK CONDUIT AND WIRING TO HAND DRYER TO AN AREA OUTSIDE OF DEMOLITION, TAG FOR RE-USE.

⚠1 4D DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRE FROM EQUIPMENT. PULL BACK OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

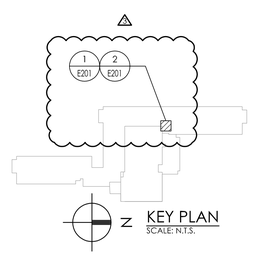
NEW WORK KEY NOTES:

1N CONNECT NEW LIGHT FIXTURES TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW FIXTURE LOCATIONS. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT BETWEEN FIXTURES AS NECESSARY.

2N PROVIDE KEYED SWITCHES. CONNECT TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY.

3N RECONNECT HAND DRYERS TO EXISTING TAGGED CIRCUITRY. REWORK/EXTEND CIRCUITRY AS NECESSARY TO ACCOMMODATE RE-LOCATION.

⚠1 4N CONNECT NEW EQUIPMENT TO EXISTING TAGGED CIRCUITRY. REWORK/EXTEND CIRCUITRY AS NECESSARY.



Z KEY PLAN
SCALE: N.T.S.

CPLteam.com
ARCHITECTURE = ENGINEERING = PLANNING

332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
⚠1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JKS	JP	ISSUED FOR BID
⚠2	04/01/2021	JKS	JP	SED ADDENDUM #3
⚠3	04/16/2021	JKS	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT
DAVID JOHN SAMMEL
023158
STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	MAY	JBT

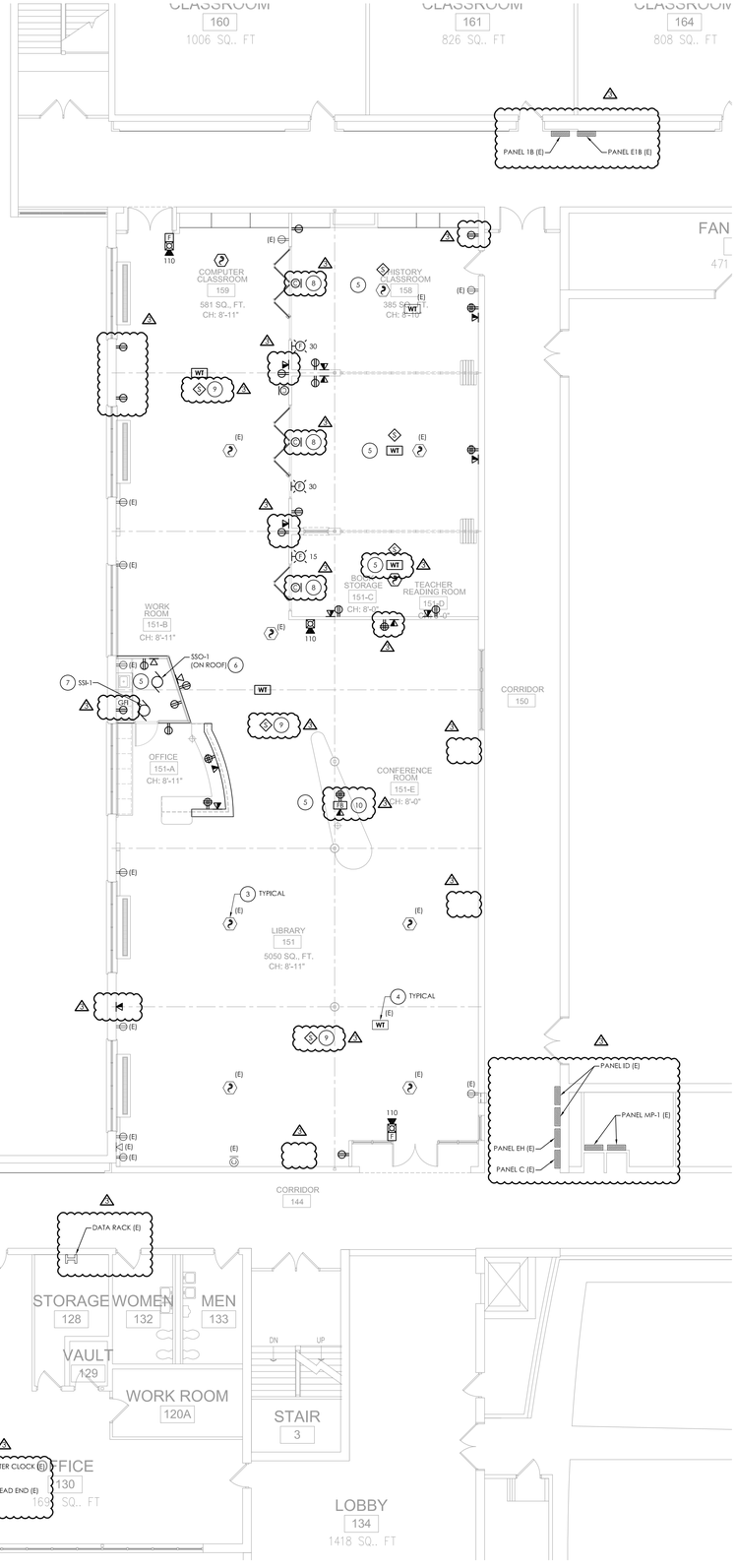
SCALE AS SHOWN

SHEET TITLE
BASEMENT AND FIRST FLOOR ELECTRICAL DEMOLITION AND NEW WORK PLANS

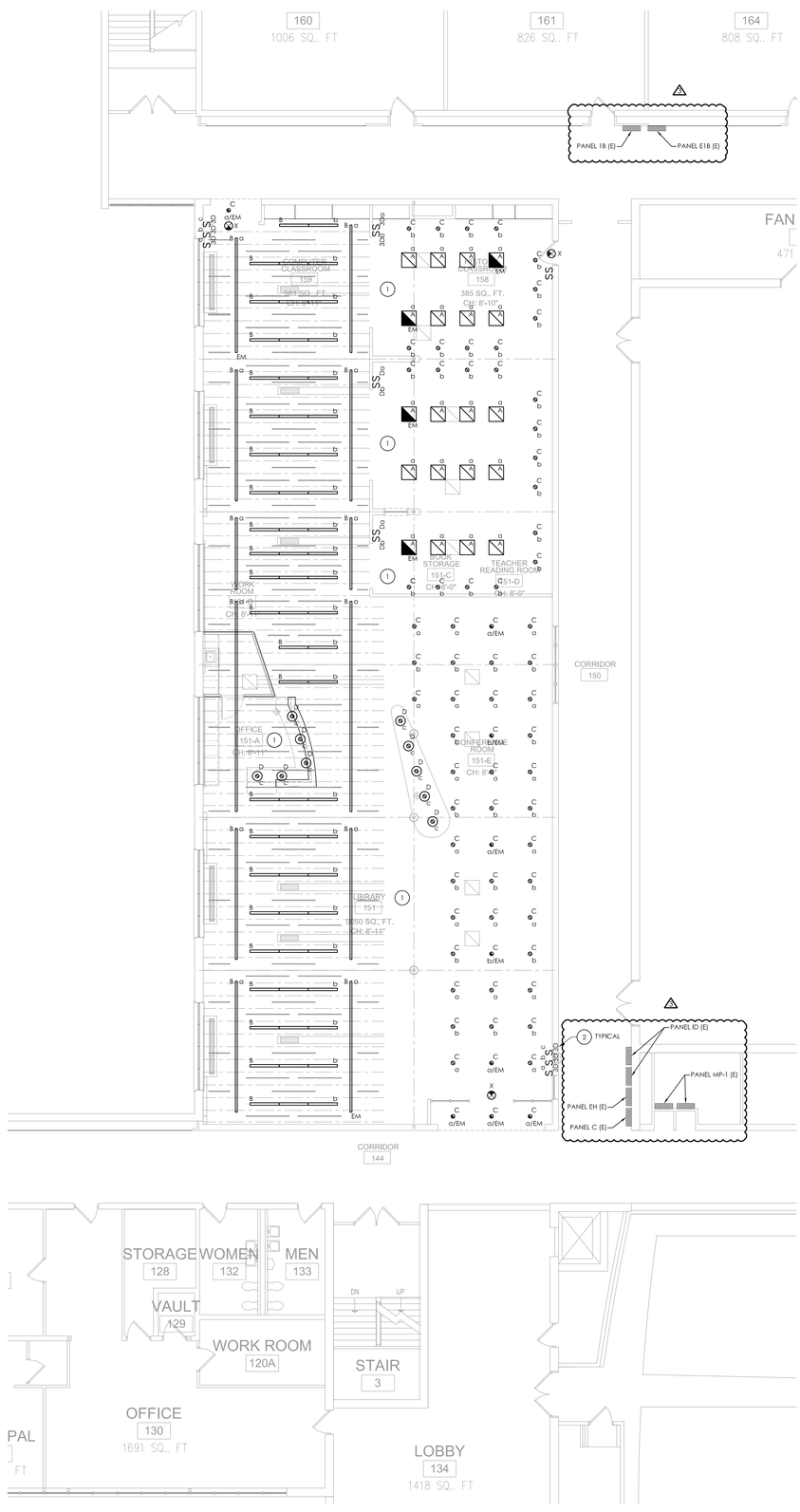
PROJECT NUMBER
70019.00

GF
E201
DRAWING NUMBER

Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ELEC\E2\GF-E201.dwg Date last accessed: 4/14/2021 1:39 PM Date last plotted: 4/14/2021 3:00 PM Plotted By: Michael Yamin



1 E201 **LIBRARY NEW WORK PLAN**
SCALE: 1/8" = 1'-0"



2 E201 **LIBRARY LIGHTING PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.

C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC. WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. ALL ITEMS (DEVICES, FIXTURES, ETC.) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

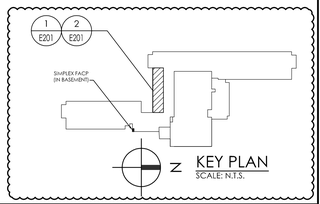
I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.

J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

K. FIRE ALARM CONTROL PANELS ARE SIMPLEX MODEL 4100 ES. JOHNSON CONTROLS IS THE DISTRICTS FIRE ALARM VENDOR. LOCAL OFFICE CONTACT IS 845.742.1489.

KEY NOTES:

1. CONNECT LIGHT FIXTURES TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW LIGHTING LAYOUT. REFER TO DRAWING GF-E900 FOR LIGHT FIXTURE TYPES.
2. PROVIDE NEW SWITCHING AS INDICATED. PROVIDE LOW-VOLTAGE WIRING FROM SWITCHES TO FIXTURES AS INDICATED BY SWITCHING PATTERNS DESIGNATED BY LOWERCASE LETTERS.
3. REPLACE EXISTING SMOKE DETECTORS IN LOCATIONS INDICATED. CONNECT TO EXISTING TAGGED WIRING.
4. REPLACE EXISTING WIRELESS ACCESS POINTS IN LOCATIONS SHOWN. CONNECT TO EXISTING TAGGED WIRING.
5. ALL NEW RECEPTACLES TO BE WIRED TO EXISTING TAGGED CIRCUITRY. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW RECEPTACLE LOCATIONS.
6. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM SSO UNIT ON ROOF TO PANEL FEEDING LIBRARY SPACE. PROVIDE (1) 20-AMP, 2-POLE CIRCUIT BREAKER IN PANEL TO ACCOMMODATE NEW UNIT.
7. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM SSI UNIT ON ROOF TO PANEL FEEDING LIBRARY SPACE. PROVIDE (1) 20-AMP, 2-POLE CIRCUIT BREAKER IN PANEL TO ACCOMMODATE NEW UNIT.
8. PROVIDE PRIMEX MODEL NO. 14155 WIRELESS CLOCK AT EACH LOCATION.
9. PROVIDE BOGEN MODEL NO. 5867725PG8WVK AT EACH LOCATION SHOWN. PROVIDE ALL WIRING BACK TO PA HEAD END IN MAIN OFFICE AREA.
10. PROVIDE FIRE RATED POKE-THROUGH HUBBELL MODEL NO. 51PT4X4BLJ, WITH ALL DEVICE INSERTS NECESSARY TO PROVIDE POWER AND DATA SHOWN. CORE-DRILL FLOOR TO ACCOMMODATE NEW POKE-THROUGH.



CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	JP	ADDENDUM #1
2	03/29/2021	JG	JP	ISSUED FOR BID
2	04/01/2021	JG	JP	SED ADDENDUM #3
2	04/16/2021	JG	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT
DAVID JOHN SAMMEL
023158
STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	NRH	JJM

SCALE AS NOTED

SHEET TITLE
LIBRARY
ELECTRICAL NEW WORK AND LIGHTING PLANS

PROJECT NUMBER
70019.00

GF
E201
DRAWING NUMBER

Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\3D Design\06 CAD\AutoCAD\ELEC\E2\GF LIB\GF-E201.dwg
Date last accessed: 4/14/2021 3:11 PM
Date last plotted: 4/14/2021 3:27 PM
Plotted By: Michael Yamin

LUMINAIRE SCHEDULE

MARK	DESCRIPTION	DESIGN MAKE	MODEL #	VOLTS	LAMP			REMARKS
					QTY	WATTS	MODEL #	
A	2X2 LED RECESSED TROFFER	HUBBELL LIGHTING	50L-G-D-24-SOF-C1-35K9-D400-D01-UNV	UNV	-	34	3500K	1
A/EM	2X2 LED RECESSED TROFFER WITH EMERGENCY BATTERY BACKUP	HUBBELL LIGHTING	50L-G-D-24-SOF-C1-35K9-D400-D01-UNV-EF	UNV	-	34	3500K	1,3,4
B	4" WIDE LED DIRECT/INDIRECT PENDANT	HUBBELL LIGHTING	4L-P-ED-STD-XX-08-SOF-C1-35K9-I050-D075-D01-1-UNV-FA1-W2	UNV	-	9W/FT	3500K	1,2
B/EM	4" WIDE LED DIRECT/INDIRECT PENDANT WITH EMERGENCY BATTERY BACKUP	HUBBELL LIGHTING	4L-P-ED-STD-XX-08-SOF-C1-35K9-I050-D075-D01-1-UNV-FA1-EF-W2	UNV	-	9W/FT	3500K	1,2,3,4
C	6" RECESSED LED DOWNLIGHT	HUBBELL LIGHTING	LTR-6RD-H-ML-25L-DM01-EM-LTR-6RD-T-ML-35K-9-MR-SS-WC-WT-FMR6-R	UNV	-	25	3500K	1
C/EM	6" RECESSED LED DOWNLIGHT WITH EMERGENCY BATTERY BACKUP	HUBBELL LIGHTING	LTR-6RD-H-ML-25L-DM01-LTR-6RD-T-ML-35K-9-MR-SS-WC-WT-FMR6-R	UNV	-	25	3500K	1,3,4
D	20" RING LED PENDANT	HUBBELL LIGHTING	32L-CR20-P-D-C4/AC4-35K-D100-D100-D01-UNV-OC-FA6-C4	UNV	-	25	3500K	1
X	LED EXIT SIGN	HUBBELL LIGHTING	CCESR	UNV	-	1	-	1,3,4

REMARKS:

1. FIXTURES TO BE CONNECTED TO EXISTING CIRCUITRY WITHIN SPACE.
2. XX NOTATION IN FIXTURE MODEL NUMBER INDICATES LENGTH. TOTAL LENGTH OF FIXTURE TO BE TAKEN FROM PLAN.
3. ALL FIXTURES SHOWN WITH AN "EM" DESIGNATION INDICATES EMERGENCY LIGHTING FIXTURE. PROVIDE EMERGENCY BATTERY BACKUP FOR EACH FIXTURE INDICATED.
4. ALL EMERGENCY FIXTURES "EM" SHALL HAVE 90-MINUTE BATTERY CAPACITY AND HAVE INTEGRAL TEST SWITCH.

CPLteam.com
ARCHITECTURE • ENGINEERING • PLANNING

332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JKS	JP	ISSUED FOR BID
2	04/01/2021	JKS	JP	SED ADDENDUM #3
3	04/16/2021	JKS	JP	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL
HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT
DAVID JOHN SAMUEL
023158
STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	NRH	JJM

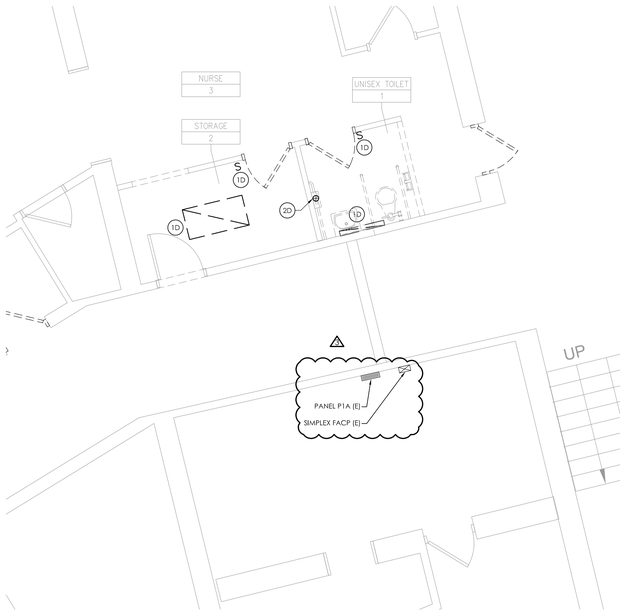
SCALE AS NOTED

SHEET TITLE
ELECTRICAL SCHEDULES

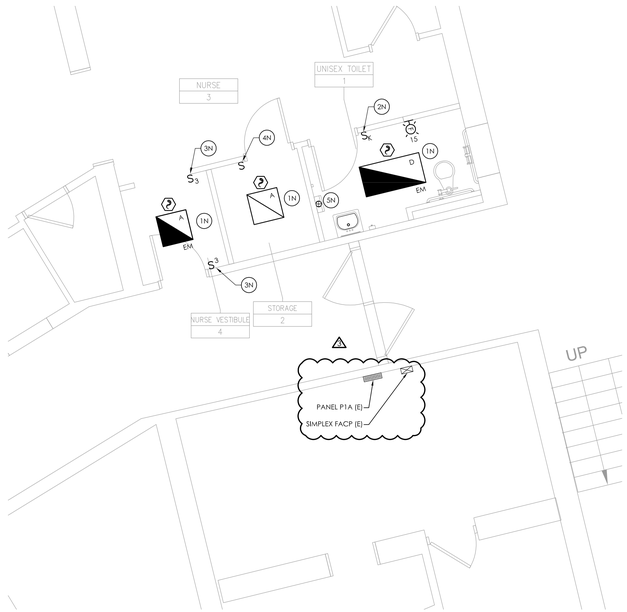
PROJECT NUMBER
70019.00

GF
E900
DRAWING NUMBER

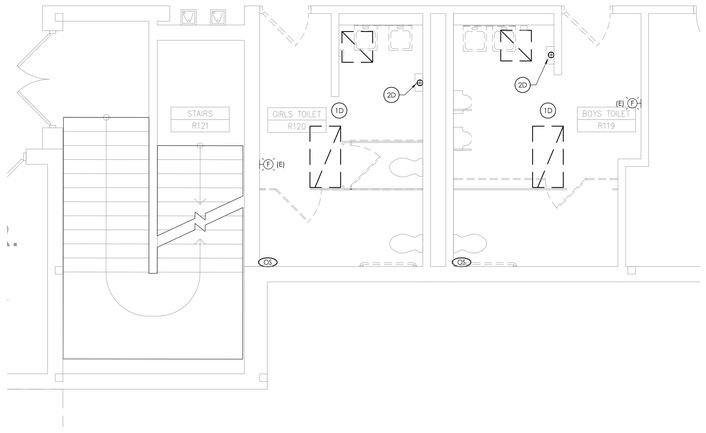
Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ELEC\E9\GF LIB\GF-E900.dwg Date last accessed: 4/14/2021 11:02 AM Plotted By: Michael Yamin
Date last plotted: 4/14/2021 3:44 PM



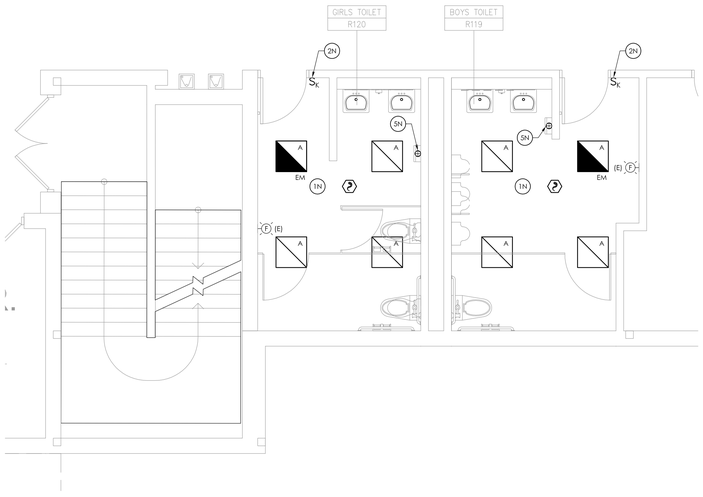
1 E201 **FIRST FLOOR ELECTRICAL DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



2 E201 **FIRST FLOOR ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"



3 E201 **BASEMENT ELECTRICAL DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



4 E201 **BASEMENT ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"

GENERAL DEMOLITION NOTES:

A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.

C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED. THE CONTRACTOR SHALL ASSUME WITHIN THE BASE BID A NOMINAL AMOUNT OF BRANCH CIRCUITS, FIXTURES, DEVICES, AND SYSTEMS WIRING WITHIN WALLS OR OPENINGS TO BE REMOVED OR RELOCATED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC., WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. ALL ITEMS (DEVICES, FIXTURES, ETC.) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.

J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

⚠1 K. FIRE ALARM CONTROL PANELS ARE SIMPLEX MODEL 4100 ES. JOHNSON CONTROLS IS THE DISTRICTS FIRE ALARM VENDOR. LOCAL OFFICE CONTACT IS 845.742.1489.

GENERAL NEW WORK NOTES:

A. FIXTURE MARK INDICATED ADJACENT TO NEW LIGHT FIXTURE. REFER TO LUMINAIRE SCHEDULE ON SHEET GEN-E900 FOR FIXTURE DESCRIPTION, NOTES AND SPECIFICATIONS.

DEMOLITION KEY NOTES:

(1D) DISCONNECT AND REMOVE EXISTING LIGHT FIXTURES AND SWITCHING, TAG CIRCUITRY FOR RE-USE.

(2D) DISCONNECT AND PULL BACK CONDUIT AND WIRING TO HAND DRYER TO AN AREA OUTSIDE OF DEMOLITION. TAG FOR RE-USE.

NEW WORK KEY NOTES:

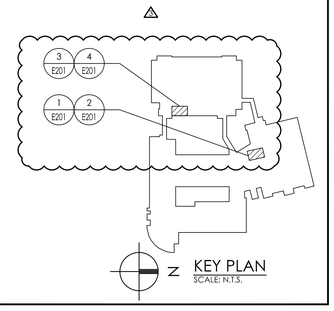
(1N) CONNECT NEW LIGHT FIXTURES TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW FIXTURE LOCATIONS. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT BETWEEN FIXTURES AS NECESSARY.

(2N) PROVIDE KEYED SWITCHES. CONNECT TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY.

(3N) PROVIDE NEW SWITCHING AS INDICATED. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM SWITCHING TO FIXTURE.

(4N) PROVIDE NEW SWITCH IN EXISTING SWITCH BOX. CONNECT TO EXISTING TAGGED CIRCUITRY.

(5N) RECONNECT HAND DRYERS TO EXISTING TAGGED CIRCUITRY. REWORK/EXTEND CIRCUITRY AS NECESSARY TO ACCOMMODATE RE-LOCATION.



KEY PLAN
SCALE: N.T.S.

CPLteam.com
ARCHITECTURE ▪ ENGINEERING ▪ PLANNING

332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 1005 CONSTRUCTION DOCUMENTS SUBMISSION
⚠1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JKS	JBT	ISSUED FOR BID
⚠2	04/01/2021	JKS	JBT	SED ADDENDUM #3
⚠3	04/16/2021	JKS	JBT	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DANIEL JOHN SAMMEL 033158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	MAY	JBT

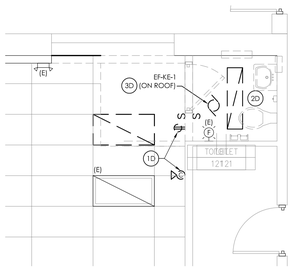
SCALE AS SHOWN

SHEET TITLE
BASEMENT AND FIRST FLOOR ELECTRICAL DEMOLITION AND NEW WORK PLANS

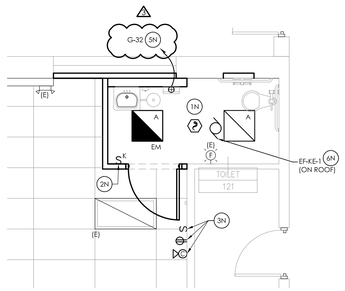
PROJECT NUMBER
70019.00

HS
E201
DRAWING NUMBER

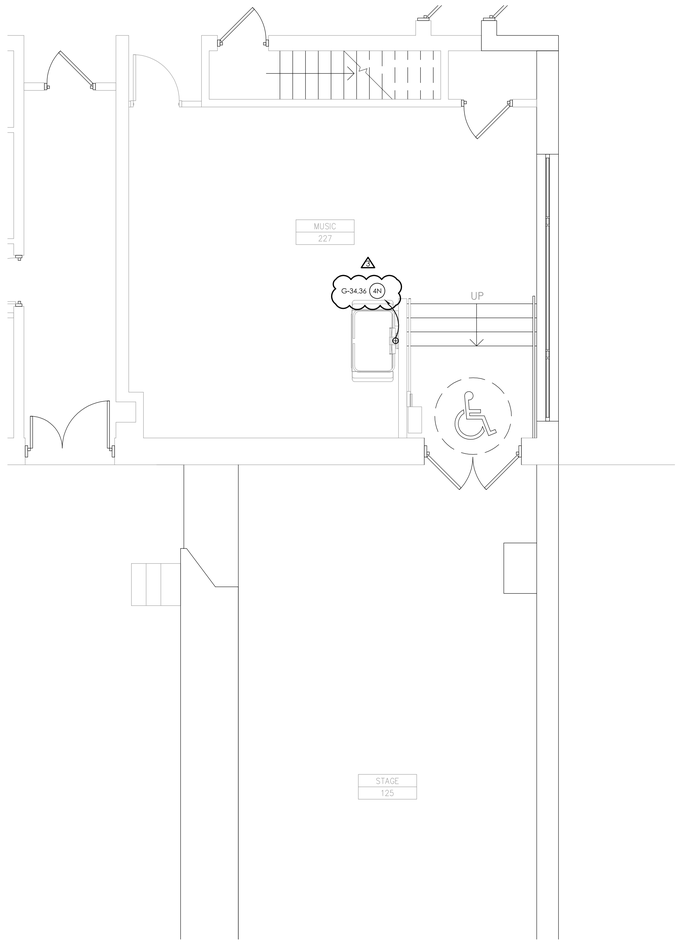
Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ELEC\E2\HS-E201.dwg
Date last accessed: 4/14/2021 1:45 PM
Date last plotted: 4/14/2021 2:58 PM
Plotted By: Michael Yamin



1 E201 **ELECTRICAL DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



2 E201 **ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"



3 E201 **ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"

GENERAL DEMOLITION NOTES:

A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.

C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED. THE CONTRACTOR SHALL ASSUME WITHIN THE BASE BID A NOMINAL AMOUNT OF BRANCH CIRCUITS, FIXTURES, DEVICES, AND SYSTEMS WIRING WITHIN WALLS OR OPENINGS TO BE REMOVED OR RELOCATED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC., WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. ALL ITEMS (DEVICES, FIXTURES, ETC.) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.

J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

△1 K. FIRE ALARM CONTROL PANELS ARE SIMPLEX MODEL 4100 ES. JOHNSON CONTROLS IS THE DISTRICTS FIRE ALARM VENDOR. LOCAL OFFICE CONTACT IS 845.742.1489.

GENERAL NEW WORK NOTES:

A. FIXTURE MARK INDICATED ADJACENT TO NEW LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE ON SHEET GEN-E900 FOR FIXTURE DESCRIPTION, NOTES AND SPECIFICATIONS.

DEMOLITION KEY NOTES:

1D EXISTING SWITCH, RECEPTACLE AND CLOCK TO BE RELOCATED. REMOVE DEVICES AND STORE. PULL ALL CONDUIT AND WIRING OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

2D DISCONNECT AND REMOVE LIGHTING AND SWITCHING. PULL WIRING BACK TO AN AREA OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

3D DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRE FROM EQUIPMENT. PULL BACK OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

NEW WORK KEY NOTES:

1N CONNECT NEW LIGHT FIXTURES TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW FIXTURE LOCATIONS. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT BETWEEN FIXTURES AS NECESSARY.

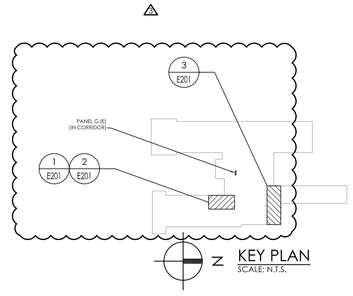
2N PROVIDE KEYED SWITCHES. CONNECT TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY.

3N RELOCATED SWITCH AND RECEPTACLE. CONNECT TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW LOCATIONS. WIRELESS CLOCK TO BE RELOCATED HERE. COORDINATE FINAL PLACEMENT WITH OWNER.

4N ALTERNATE NO. 1:
PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM CHAIR LIFT TO PANEL CP. PROVIDE (1) 20-AMP, 2-POLE CIRCUIT BREAKER IN PANEL TO ACCOMMODATE CHAIR LIFT.

△1 5N PROVIDE (2) #12, (1) #12 GND IN 3/4"C FROM PANEL LP TO NEW HAND DRYER LOCATION. UTILIZE 20-AMP, 1-POLE CIRCUIT BREAKER TO ACCOMMODATE HAND DRYER.

6N CONNECT NEW EQUIPMENT TO EXISTING TAGGED CIRCUITRY. REWORK/EXTEND CIRCUITRY AS NECESSARY.

△1 

Z KEY PLAN
SCALE: N.T.S.

CPLteam.com
ARCHITECTURE ▪ ENGINEERING ▪ PLANNING

332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0717
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 1008 CONSTRUCTION DOCUMENTS SUBMISSION
△1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JKS	JBT	ISSUED FOR BID
△1	04/01/2021	JKS	JBT	SED ADDENDUM #3
△1	04/16/2021	JKS	JBT	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT DANIEL JOHN SAMMEL 033158 STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

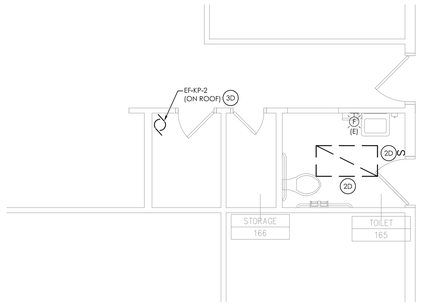
DATE	DRAWN	CHECKED
11/30/2020	MAY	JBT

SCALE AS SHOWN

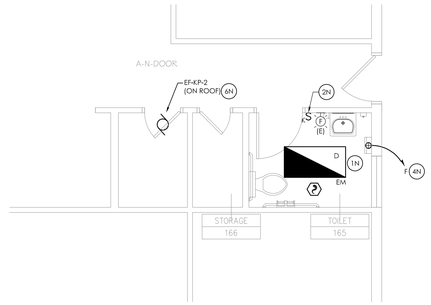
SHEET TITLE
FIRST FLOOR ELECTRICAL DEMOLITION AND NEW WORK PLANS

PROJECT NUMBER
70019.00

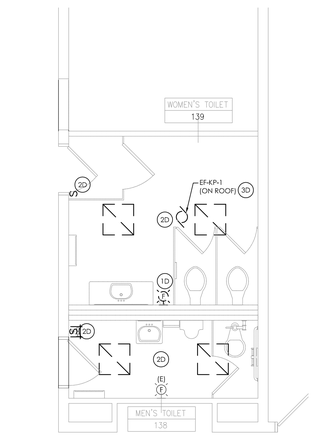
KE
E201
DRAWING NUMBER



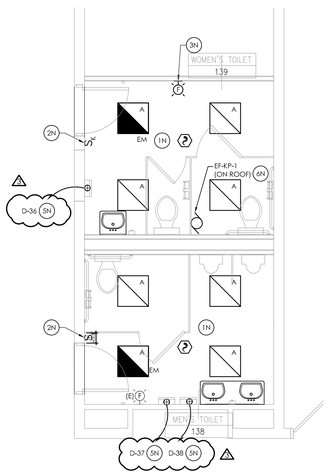
1 E201 **ELECTRICAL DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



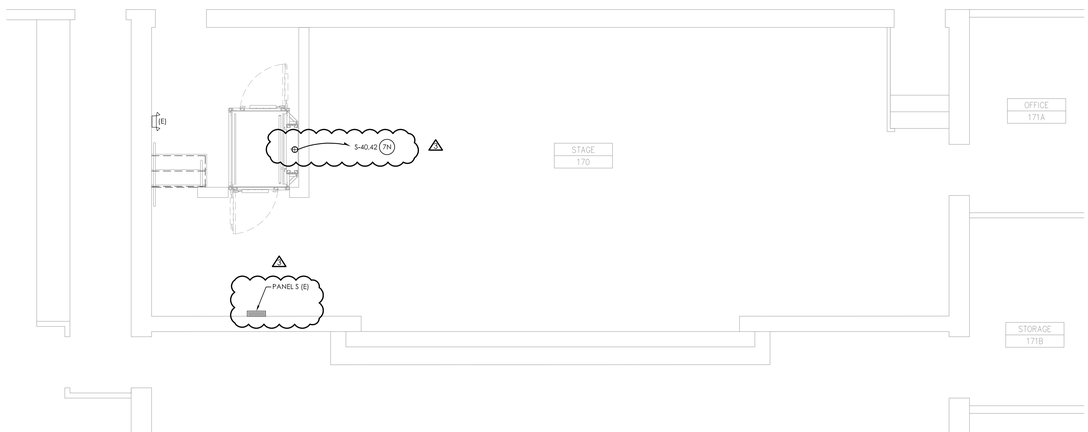
2 E201 **ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"



3 E201 **ELECTRICAL DEMOLITION PLAN**
SCALE: 1/4" = 1'-0"



4 E201 **ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"



5 E201 **ELECTRICAL NEW WORK PLAN**
SCALE: 1/4" = 1'-0"

GENERAL DEMOLITION NOTES:

A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.

C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED. THE CONTRACTOR SHALL ASSUME WITHIN THE BASE BID A NOMINAL AMOUNT OF BRANCH CIRCUITS, FIXTURES, DEVICES, AND SYSTEMS WIRING WITHIN WALLS OR OPENINGS TO BE REMOVED OR RELOCATED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC., WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. ALL ITEMS (DEVICES, FIXTURES, ETC.,) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.

J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

K. FIRE ALARM CONTROL PANELS ARE SIMPLEX MODEL 4100 ES. JOHNSON CONTROLS IS THE DISTRICTS FIRE ALARM VENDOR. LOCAL OFFICE CONTACT IS 845.742.1489.

GENERAL NEW WORK NOTES:

A. FIXTURE MARK INDICATED ADJACENT TO NEW LIGHT FIXTURE. REFER TO LUMINAIRE SCHEDULE ON SHEET GEN-E900 FOR FIXTURE DESCRIPTION, NOTES AND SPECIFICATIONS.

B. AT EACH (X) SYMBOL, REFER TO DRAWING GEN-E900 FOR FURTHER INFORMATION.

DEMOLITION KEY NOTES:

1D DISCONNECT AND REMOVE STROBE DEVICE. PULL WIRING BACK TO A POINT OUTSIDE DEMOLITION AND TAG FOR RE-USE. STROBE AND WIRING TO BE RE-USED.

2D DISCONNECT AND REMOVE LIGHTING AND SWITCHING. PULL WIRING BACK TO AN AREA OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

3N DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRE FROM EQUIPMENT. PULL BACK OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

NEW WORK KEY NOTES:

1N CONNECT NEW LIGHT FIXTURES TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW FIXTURE LOCATIONS. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT BETWEEN FIXTURES AS NECESSARY.

2N PROVIDE KEYED SWITCHES. CONNECT TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY.

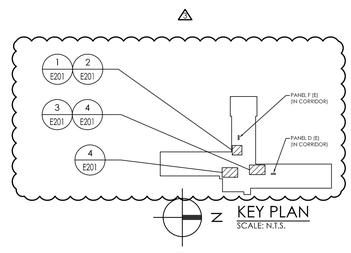
3N RELOCATED STROBE DEVICE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW LOCATIONS.

4N PROVIDE (2) #12, (1) #12 GND IN 3/4"C FROM PANEL F TO NEW HAND DRYER LOCATION. UTILIZE EXISTING SPARE CIRCUIT BREAKER NUMBER 34 TO FEED NEW HAND DRYER.

△ **5N** PROVIDE (2) #12, (1) #12 GND IN 3/4"C FROM PANEL D TO NEW HAND DRYER LOCATION. UTILIZE EXISTING SPARE CIRCUIT BREAKERS INDICATED TO FEED NEW HAND DRYERS.

6N CONNECT NEW EQUIPMENT TO EXISTING TAGGED CIRCUITRY. REWORK/EXTEND CIRCUITRY AS NECESSARY.

△ **7N** ALTERNATE NO. 1:
PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM PANEL S TO NEW CHAIR LIFT. PROVIDE (1) 20-AMP, 2-POLE CIRCUIT BREAKER IN PANEL TO ACCOMMODATE NEW CHAIR LIFT.



△ Z KEY PLAN
SCALE: N.T.S.

CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING
332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS

NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
△1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JG	JBT	ISSUED FOR BID
△2	04/01/2021	JG	JBT	SED ADDENDUM #3
△3	04/16/2021	JG	JBT	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT
DAVID JOHN SAMMEL
023158
STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT
81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	MAY	JBT

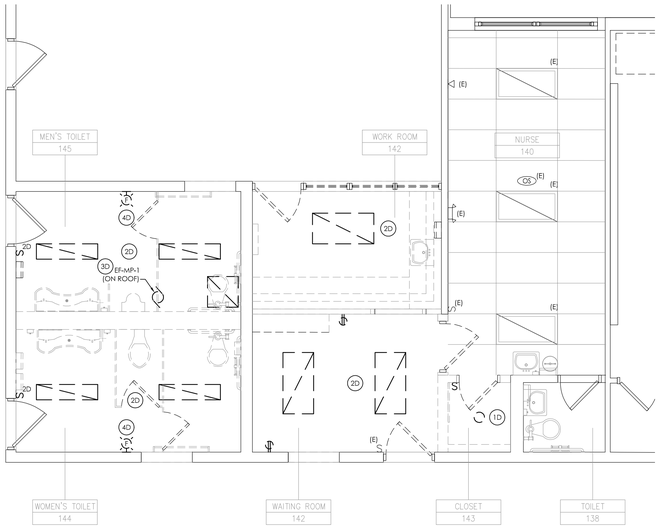
SCALE AS SHOWN

SHEET TITLE
FIRST FLOOR ELECTRICAL DEMOLITION AND NEW WORK PLANS

PROJECT NUMBER
70019.00

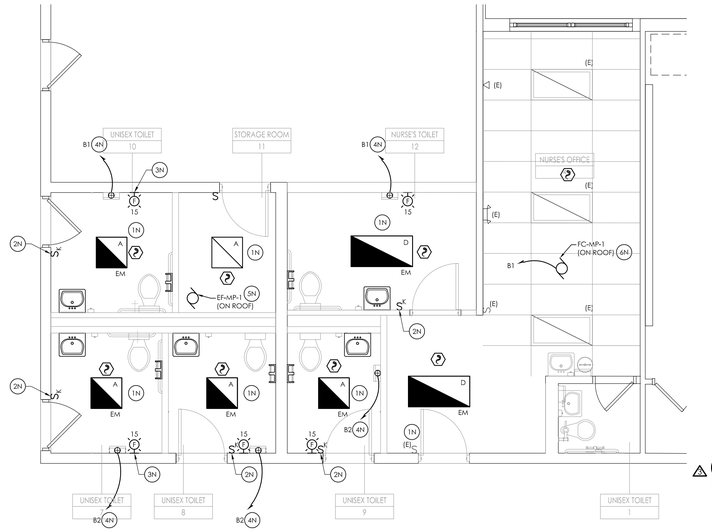
KP
E201
DRAWING NUMBER

Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ELEC\E2\KP-E201.dwg Date last accessed: 4/14/2021 1:55 PM Plotted By: Michael Yamin Date last plotted: 4/14/2021 2:50 PM



1 E201 FIRST FLOOR ELECTRICAL DEMOLITION PLAN

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



2 E201 FIRST FLOOR ELECTRICAL NEW WORK PLAN

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

GENERAL DEMOLITION NOTES:

A. ALL ITEMS SHOWN ARE TO BE REMOVED UNLESS LABELED AS (E) EXISTING TO REMAIN. ANY DEVICE, AS WELL AS ITS ASSOCIATED CIRCUITING, AND CONDUIT, LABELED "(E)" SHALL REMAIN, UNLESS OTHERWISE NOTED.

B. INFORMATION ON DRAWINGS WAS OBTAINED THROUGH FIELD OBSERVATION AND AS-BUILT DOCUMENTATION. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF ANY DEVICES AND CABLING THAT MAY NOT BE SHOWN ON DRAWING AT NO ADDITIONAL COST TO OWNER.

C. DRAWINGS ARE GRAPHICAL REPRESENTATIONS OF APPROXIMATE EQUIPMENT AND DEVICE LOCATIONS. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXACT EXTENT OF ELECTRICAL WORK REQUIRED TO COMPLETE THE PROJECT. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATION AND EXISTING BUILDING DOCUMENTS. OTHER ELECTRICAL ITEMS MAY EXIST FOR WHICH THE CONTRACTOR IS RESPONSIBLE AT NO ADDITIONAL COST.

D. THE CONTRACTOR SHALL REMOVE THE EXISTING ELECTRIC IN AREAS OF NEW RENOVATIONS TO ACCOMMODATE NEW CONSTRUCTION. REROUTING OF EXISTING MAY BE REQUIRED AT NEW OPENINGS IN EXISTING CONSTRUCTION OR INTERFERENCE WITH OTHER NEW WORK AS NOTED IN THE FOLLOWING NOTES.

E. DRAWINGS INDICATE SPECIFIC ITEMS TO BE REMOVED AND/OR RELOCATED IN ORDER TO INDICATE GENERAL SCOPE. ADDITIONAL ITEMS NOT INDICATED, BUT NECESSARY FOR PROJECT RENOVATIONS, SHALL BE REMOVED, RELOCATED AND/OR REROUTED. THE CONTRACTOR SHALL ASSUME WITHIN THE BASE BID A NOMINAL AMOUNT OF BRANCH CIRCUITS, FIXTURES, DEVICES, AND SYSTEMS WIRING WITHIN WALLS OR OPENINGS TO BE REMOVED OR RELOCATED AS REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION.

F. COORDINATE DEMOLITION OF EQUIPMENT, DEVICES, ETC., WITH OTHER DISCIPLINES AS APPLICABLE. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS AND NOTES FOR COORDINATION.

G. ALL ITEMS (DEVICES, FIXTURES, ETC.) SHOWN ARE TO BE REMOVED UNLESS LABELED AS EXISTING TO REMAIN - (E). THESE ITEMS AND THEIR RELATED WIRING/CONDUIT SHALL BE REMOVED BACK TO THE SOURCE CONTROL PANEL/PANELBOARD UNLESS OTHERWISE NOTED. ON CIRCUITS WHERE OTHER DEVICES, FIXTURES, ETC. ARE FOUND THAT MUST REMAIN, MAINTAIN CIRCUIT CONTINUITY BY PROVIDING ADDITIONAL WIRING, TO FEED THROUGH TO THESE REMAINING ITEMS. RELOCATE ANY CIRCUITS THAT REMAIN, TO AVOID CONFLICT WITH NEW CONSTRUCTION AS REQUIRED. PROPERLY TERMINATE ALL WIRING.

H. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL ITEMS AND/OR EQUIPMENT BEING REMOVED AS PART OF THE PROJECT. THE OWNER SHALL HAVE THE RIGHT OF RETAINING ANY ITEMS BEING REMOVED.

I. CONTRACTOR SHALL PROVIDE NEW COVERPLATES ON ALL UNUSED FLUSH MOUNT DEVICE BOXES UPON COMPLETION OF PROJECT.

J. FIREPROOFING AND/OR FIRE STOP MATERIALS REMOVED FROM FIRE RATED WALLS AND CEILINGS AS A RESULT OF DEMOLITION SHALL BE RE-INSTALLED USING AN APPROVED METHOD AS DESCRIBED IN ASSOCIATED PROJECT SPECIFICATIONS.

K. FIRE ALARM CONTROL PANELS ARE SIMPLEX MODEL 4100 ES. JOHNSON CONTROLS IS THE DISTRICTS FIRE ALARM VENDOR. LOCAL OFFICE CONTACT IS 845.742.1489. △1

GENERAL NEW WORK NOTES:

A. FIXTURE MARK INDICATED ADJACENT TO NEW LIGHT FIXTURE. REFER TO LUMINAIRE SCHEDULE ON SHEET GEN-E900 FOR FIXTURE DESCRIPTION, NOTES AND SPECIFICATIONS.

DEMOLITION KEY NOTES:

1D DISCONNECT AND REMOVE ALL FIXTURES AND DEVICES IN THEIR ENTIRETY. DISCONNECT AND REMOVE ALL CONDUIT AND WIRING BACK TO SOURCE.

2D DISCONNECT AND REMOVE LIGHTING AND SWITCHING. PULL WIRING BACK TO AN AREA OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

3D DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRE FROM EQUIPMENT. PULL BACK OUTSIDE OF DEMOLITION AND TAG FOR RE-USE.

4D DISCONNECT AND REMOVE EXISTING STROBE DEVICE AND PULL WIRING BACK TO A POINT OUTSIDE OF DEMOLITION. STROBE AND WIRING TO BE RE-USED.

NEW WORK KEY NOTES:

1N CONNECT NEW LIGHT FIXTURES TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW FIXTURE LOCATIONS. PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT BETWEEN FIXTURES AS NECESSARY.

2N PROVIDE KEYED SWITCHES. CONNECT TO EXISTING CIRCUITRY TAGGED FOR RE-USE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY.

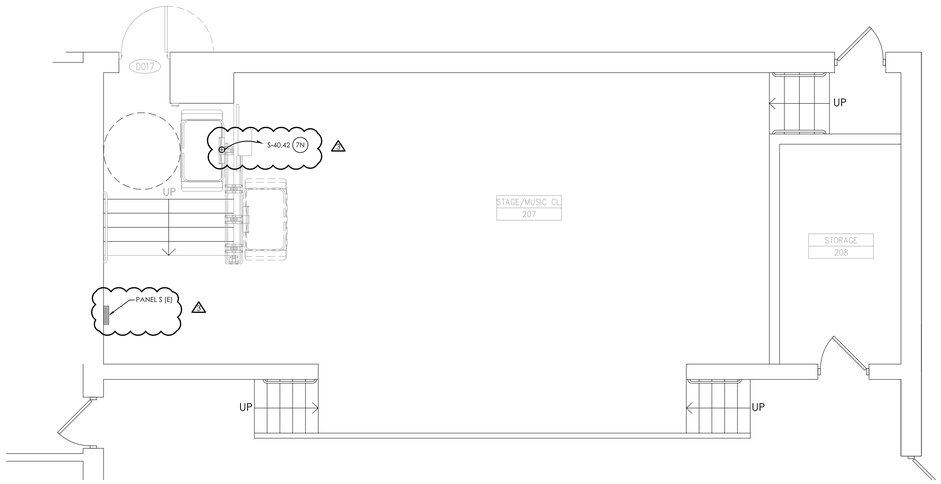
3N RELOCATED STROBE DEVICE. REWORK/EXTEND EXISTING CIRCUITRY AS NECESSARY TO ACCOMMODATE NEW LOCATIONS.

4N PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM PANEL B1 AND B2 TO NEW HAND DRYER LOCATIONS INDICATED. PROVIDE 20-AMP, 1-POLE CIRCUIT BREAKER, (2) IN SPACES, IN PANEL B1, AND (3) IN SPACES IN PANEL B2 TO ACCOMMODATE NEW HAND DRYERS. CIRCUIT BREAKER TO BE UL LISTED AND LABELED FOR USE IN THIS PANEL. CIRCUIT BREAKER TO MATCH AIC RATING OF PANEL.

5N CONNECT NEW EQUIPMENT TO EXISTING TAGGED CIRCUITRY. REWORK/EXTEND CIRCUITRY AS NECESSARY.

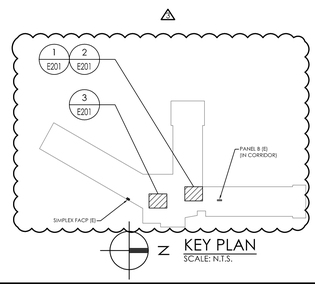
6N PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM FAN COIL TO PANEL B1. PROVIDE 20-AMP, 1-POLE CIRCUIT BREAKER IN PANEL TO ACCOMMODATE NEW FAN COIL.

7N ALTERNATE NO. 1:
PROVIDE (2) #12, (1) #12 GND IN 3/4" CONDUIT FROM PANEL B2 TO NEW CHAIR LIFT. PROVIDE (1) 20-AMP, 2-POLE CIRCUIT BREAKER IN PANEL TO ACCOMMODATE NEW CHAIR LIFT.



3 E201 FIRST FLOOR ELECTRICAL NEW WORK PLAN

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



KEY PLAN
SCALE: N.T.S.

CPLteam.com
ARCHITECTURE + ENGINEERING + PLANNING

332 NY-100
SOMERS, NEW YORK 10589
TEL (914) 276-0777
FAX (914) 276-0779

REVISIONS NO.	DATE	BY	CHKED	DESCRIPTION
1	11/30/2020	LJ	CG	SED 100% CONSTRUCTION DOCUMENTS SUBMISSION
△ 1	01/07/2021	-	-	ADDENDUM #1
2	03/29/2021	JG	JBT	ISSUED FOR BID
△ 2	04/01/2021	JG	JBT	SED ADDENDUM #3
△ 3	04/16/2021	JG	JBT	BID ADDENDUM #1

ENVIRONMENTAL CONSULTANT

ADELAIDE ENVIRONMENTAL HEALTH ASSOCIATES INC.
1511 ROUTE 22, SUITE C24
BREWSTER, NY 10509

TEL. 845. 278. 7710
FAX. 845.278.7750

REGISTERED ARCHITECT
DAVID JOHN SAMMEL
023158
STATE OF NEW YORK

CARMEL CENTRAL SCHOOL DISTRICT

81 SOUTH STREET, P.O. BOX 296, PATTERSON, NEW YORK 12563

CARMEL HIGH SCHOOL SED#: 48.01.02.06.0.003.022
GEORGE FISCHER MIDDLE SCHOOL SED#: 48.01.02.06.0.008.018
MATTHEW PATERSON SCHOOL SED#: 48.01.02.06.0.010.013
KENT ELEMENTARY SCHOOL SED#: 48.01.02.06.0.001.017
KENT PRIMARY SCHOOL SED#: 48.01.02.06.0.004.016

DATE	DRAWN	CHECKED
11/30/2020	MAY	JBT

SCALE AS SHOWN

SHEET TITLE
FIRST FLOOR ELECTRICAL DEMOLITION AND NEW WORK PLANS

PROJECT NUMBER
70019.00

MP
E201
DRAWING NUMBER

Drawing Name: S:\Projects\Carmel CSD\2019 Bond Interior Alts\D Design\06 CAD\AutoCAD\ELEC\E2\MP-E201.dwg Date last accessed: 3/26/2021 8:47 AM Date last plotted: 4/14/2021 2:48 PM Plotted By: Michael Yamin