

Addendum No. 4

Date: February 28, 2012

PROJECT: Long Branch – George L. Catrambone Elementary School

CONTRACT No.: ET-0068-C01

This Addendum shall be considered part of the Bid Documents issued in connection with the referenced project. Should information conflict with the Bid Documents, this Addendum shall supersede the relevant information in the Bid Documents.

A. Clarification of Addendum #2

The Authority has become aware that one of the bidders for the above-captioned procurement may have received an erroneous version of Addendum #2, and thus the Authority issues this Addendum #4 to correct any error, provide clarification to the affected bidder, and to inform the field of bidders of the circumstances of that potential error.

On February 17, 2012, Keating Building Company (KBC) contacted the Authority to advise that KBC had downloaded the form of Addendum #2 that had been posted to the Authority's website, but that KBC had not yet received the hard-copy Addendum package, with the Addendum Attachments. In response to this inquiry, the Authority's representative forwarded to KBC copies of the Addendum and attachments, by electronic mail. However, that transmittal included an earlier draft of the Addendum document that did not reflect revisions included in the final version of the document. Such revisions included the reordering of Addendum items in order of the Specification sections affected, the inclusion of clarifying language in various items in the Revisions to Project Manual section to provide explicit guidance for where additional language should be placed, and edits to clarify the insurance information provided in response to bidder questions 4 through 17.

This Addendum #4 is issued to alert KBC to this issue, to permit KBC to correct any calculations or assumptions KBC may have made in reliance on the erroneous document, and to advise all bidders that the Addendum #2 posted to the Authority's website includes the correct final version of the Addendum document (without attachments). For additional clarification, a copy of the correct version of Addendum #2 (with attachments),

matching the Addendum #2 document posted to the Authority's website on February 15, 2012, is attached as Item E.1 to this Addendum #4.

B. Revisions to the Project Manual

- 1) General Conditions, Section 6.5 LEED shall be revised as follows (additions in **bold and underlined** text; deletions in *strikethrough and italics*):

The Contractor shall construct the Project in accordance with the "green building principles," as identified and more fully provided for in the Design Manual **and Specification Section 018113 - Sustainable Design Requirements**, and tenets developed by the United States Green Building Council ("USGBC") and set forth in the Leadership in Energy & Environmental Design ("LEEDTM") "Green Building Rating System" (LEEDTM for Schools **2007** Version) to maximize energy efficiency and environmental sustainability for the Project. The Contractor shall cooperate with the Design Consultant and other Professional Services Consultants engaged by the Authority for the purpose of achieving **the requirements established in Specification Section 018113 - Sustainable Design Requirements 1.2A** ~~*Certification of the Project under LEEDTM for Schools Rating System, version 3 ("LEED v.3 for Schools")*~~. LEEDTM is a registered trademark of the USGBC.

- 2) General Conditions, Section 6.6 (Inspection of Work) shall be revised as follows (additions in **bold and underlined** text; deletions in *strikethrough and italics*):

6.6.2 The Contractor shall notify the Design Consultant, the PMF and the Authority in writing 72 hours prior to the need for required code inspections or special inspections. **It shall be the responsibility of the Contractor to schedule and arrange for all required code inspections from DCA, at the appropriate time and in accordance with established DCA procedures.** ~~*The Contractor shall not directly request any inspection from DCA.*~~ All communications with DCA shall be **copied to the** ~~*through the*~~ PMF.

- 3) Volume 1 of the Specifications, Section 01010 – Summary of Work, page 3, subsection 1.4A, revise amount of existing Unsuitable Materials Allowance as follows (additions in **bold and underlined** text; deletions in *strikethrough and italics*):

2. Unsuitable Materials ~~*\$150,000*~~ **\$275,000**

- 4) The engineer of record conducted a new NFPA 13 flow test on February 16, 2012, and based on the test results, determined that the existing water service, as tested, cannot support the fire suppression system as currently designed. Therefore the engineer has proposed that a further design solution for the insufficient water

C. Revision to Drawings

- 1) In Drawing SW-8, Sequence of Construction, Note Number 8, delete "24 months."

D. Responses to Untimely Bidder Questions

The Authority received a number of inquiries from Bidders beyond the deadline set for submission of Bidders' questions (January 31, 2012). While the Authority is not obligated to respond to any questions submitted beyond the deadline for submission of Bidders' questions, the Authority may, in its discretion, choose to respond to an untimely question when the question is deemed significant by the Authority. The following are the Authority's discretionary responses to certain untimely bidder questions.

1. **Question:** In specification section 098413 – Fixed Sound-Absorptive Panels, it states, "Provide 12,350 square feet minimum of wall and ceiling panels as indicated on drawings." If this quantity is greater than the actual quantity indicated on the drawings, which amount should we provide? Also, as the installed cost for ceiling panels would differ from the cost for walls panels, what percentage of the 12,350 should be wall and ceiling panels (if we are to follow that quantity)? (Keating Building Company, 2/3/2012)

Response: Provide wall and ceiling panels as indicated on drawings. In Specification Section 098413 – Fixed Sound Absorptive Panels, in subsection 2.2.L, delete the phrase "12,350 square feet minimum of". Refer to Drawing A-6.3 for location and quantity of sound absorbing wall panels and Drawing A-7.3 for locations and quantity of ceiling mounted sound absorbing panels.

2. **Question:** There is a section in the 099123 – Interior Painting Spec (1.4.B) and in the Description of Finish Colors table on A5-1 indicating Multicolor Paint Finishes. However, we could not find any P-1 entries in the Finish Schedule. Do any surfaces receive Multicolor Paint Finishes? (Keating Building Company, 2/3/2012)

Response: Refer to Drawing A-6.3 for location of "P-1" multicolor paint.

3. **Question:** The four (4) classrooms located at the top of drawing A1.3 appear to be mis-numbered. Please clarify. (Keating Building Company, 2/3/2012)

Response: Refer to Addendum No. 2 dated February 15, 2012, SK-3.

4. **Question:** In specification section 101400 – Signage, item 3.4.D calls for a Maximum Occupancy sign at "Library". Does this actually mean room 213, Media Center? (Keating Building Company, 2/3/2012)

Response: The Maximum Occupancy sign is for the Media Center.

5. **Question:** Drawing SW2 thru 5 have a different line of disturbance than drawing SW7 on the NE Corner. Please advise on the correct limit of disturbance. (Keating Building Company, 2/3/2012)

Response: Limit of Disturbance shown on Drawing SW-7 is accurate.

6. **Question:** Section 01010 1.3.B.4 Summary of Work states that there will not be an E-Rate program and no rebate or reimbursements will be pursued. It also states that all references in documents to the "E-Rate Contractor" shall be defined and interpreted as referring to the Contractor for General Construction and all work shall belong to and be performed by the Contractor for general Construction. Section 270000 1.3.A Summary of Work states that there will be an E-Rate program. Please confirm that there is no E-rate program required in this RFP for both the Owner and the Contractor. (Hall Building Corp, 2/6/2012)

Response: Section 01010 1.3.B.4 Summary Of Work is correct that there is no E-rate program and no rebate or reimbursements will be pursued. It also states that all references in documents to the "E-Rate Contractor" shall be defined and interpreted as referring to the Contractor for General Construction and all work shall belong to and be performed by the Contractor for General Construction. See also the Supplementary Conditions, Article 6.0, deleting Section 6.3 of the General Conditions (E-Rate Vendors and Installers) in its entirety.

7. **Question:** General Conditions, Section 6.5 mentions working with design and other consultants to obtain LEED certification; then section 018113 1.2 summary states follow LEED criteria but do not submit paperwork to USGBC for review for certification, building will not be LEED certified. Then again same spec section sets forth requirements for all LEED submittals, and hiring a LEED accredited professional as a LEED coordinator. If there will be no LEED certification, are we still performing all requirements in this spec? Who are we submitting to? For review and approval or for info only? Are we to hire a LEED coordinator?

Response: Refer to Item B.1 of this Addendum.

8. **Question:** General Conditions Section 6.17 calls for minimum one security guard. Please verify this requirement. Also specs require to submit a security plan and decide specifics then, which will prevent an accurate estimate for security. Please provide security requirements for bidding purposes. (Hall Building Corp, 2/6/2012)

Response: The Contractor's responsibilities relevant to Security, including the security guard requirement, are specified in Section 6.17 (Security) of the General Conditions. The purpose of the submission of the Contractor's Security Plan is to

ensure, prior to the start of Work, that the Contractor will meet these requirements. General Conditions Section 6.17.2 requires that the Contractor provide for at least one security guard to be present at the Project Site at all times when the Contractor is not on site. The number of security guards that may actually be required is dependent upon the Contractor's logistical plan for completion of the Project, including but not limited to, phasing, staging, and the storage of materials on Site.

9. **Question:** Section 01010 states Allowance to include material, labor, OH and profit. But 01020 says material in allowance, labor OH-profit in base bid. Please verify allowance amounts to include labor, overhead and profit for the allowance work. (Hall Building Corp, 2/6/2012)

Response: Section 01020 subsection 1.5.4 , which refers to the inclusion of labor, overhead and profit for installation of materials subject to an Allowance, is specific to Allowances for Products and Materials, and does not apply to the Allowances categories described in Section 01010 (Summary of Work), Section 1.4 for this procurement.

10. **Question:** Section 01010-1.4C describes allowance for unsuitable materials. The amount for this allowance (\$150,000) will not be enough for excavation, loading, transportation, disposal and replacement with clean structural fill of 15,000 cy unsuitable material. (Hall Building Corp, 2/6/2012)

Response: While the Unsuitable Materials Allowance Work category is meant to require bidders to include the disposition of 15,000 c.y. of unsuitable material within their schedules and project planning, the Authority recognizes that the actual quantities of unsuitable materials encountered, and the actual cost of the work, may or may not be fully covered by the Allowance Amount assigned to this category of Allowance Work. Furthermore, the Authority stresses that the Allowance language indicates that the unsuitable materials encountered may be addressed with excavation, transportation and disposal or "implementation of an approved alternate method of establishing appropriate subgrade preparation if such provides cost and/or schedule benefits to the Project." Additionally, upon review of this item, the Authority has reviewed its assumptions regarding the potential reuse of unsuitable material in other areas of the project site, and has revised its assumptions to reflect that approximately 25% of the estimated unsuitable material may need to be replaced with clean structural fill. Accordingly, the Allowance Amount for Unsuitable Materials will be increased from \$150,000 to \$275,000 per Item B.3 of this Addendum.

11. **Question:** Per Spec sections 01310-3.01D and 3.03, schedule to be cost-loaded if required. Section 3.02A-4.1 states to state dollar value of each activity coordinated with schedule of values. Please clarify whether schedule is to be cost-loaded or not since there is a significant difference in scheduling cost to be included in the bid. (Hall Building Corp, 2/6/2012)

Response: The Authority does not intend to request a cost-loaded schedule. That requirement shall be deleted. Refer to Item B.7 of this Addendum.

- 12. Question:** Section 6.6.2 of General Conditions, p. 24 states that the Contractor shall have no direct communication with DCA to request inspection, and requires 72 hour notice to CM/PMF/Authority for need for inspection. Please reconsider this requirement for efficiency. (Hall Building Corp, 2/6/2012)

Response: The cited language has been modified. Refer to Item B.2 of this Addendum.

- 13. Question:** Will the building permit process commence prior to or after the issuance of the Notice to Proceed? (Keating Building Company, 2/7/2012)

Response: The building permit process will commence after the issuance of the Construction Notice to Proceed.

- 14. Question:** Will the building permit process be contingent upon the completion of the constructibility review? (Keating Building Company, 2/7/2012)

Response: Given that the issuance of the Construction Notice to Proceed is contingent on the completion of the Constructibility Review, the answer is yes.

- 15. Question:** On drawing SW-8 note #8 Sequences of Construction, the building construction duration is identified as 24 months. This conflicts with the NJSDA's response to the project duration as clarified by Addendum No. 1. Revisions to the Project Manual Notes # 3 & # 4, please identify which duration is correct and/ or provide a Milestone schedule for clarification. (Keating Building Company, 2/7/2012)

Response: The Authority presumes that the cited "Notes#3 and #4" is a reference to Addendum No. 1 Items A.4 and A.5. Please refer to Item C.1 of this Addendum, deleting the reference to a 24-month construction period in note Number 8 on Drawing SW-8 Sequence of Construction. The revisions to project duration indicated in Addendum No. 1 to the Project Manual, Items B.4 and B.5 are correct.

- 16. Question:** Will the sign-in sheet from the Mandatory Pre-Bid Meeting be issued via addendum? (Keating Building Company, 2/7/2012)

Response: A list of bidders attending the Pre-Bid Meeting is posted on the Authority's website.

- 17. Question:** Note 3.3.C of specification 071113 indicates to apply damp proofing on exterior face of inner wythe of exterior masonry cavity walls. Details on

architectural drawings show type 1 air barrier in cavity walls. Please confirm if both damp proofing and air barrier are required on exterior face of inner wythe of exterior masonry cavity walls. (Terminal Construction Corporation, 2/8/2012)

Response: Apply damp proofing on exterior face of inner wythe of exterior masonry cavity walls below grade.

18. Question: The drawings call for 1" AL upstream and downstream of Heat Pumps.....ADD#2 was issued with new insulation specs only. These specs now call for all supply and return from Heat Pumps to be wrapped. Should we still line this duct? This would be double coverage and a large cost. (B.Harvey, 2/24/2012)

Response: Internally line the first ten feet of supply & return air ductwork from each heat pump. Remainder of duct externally wrapped with insulation of thickness and performance as indicated in the addended specifications. Externally wrapped portion shall overlap internally lined section by 12 inches.

E. Price Proposal dated 2/28/12

The CCE has been revised from \$32,726,924 to \$33,201,924. Bidders are hereby notified that they **MUST** use the attached revised Price Proposal form dated 2/28/12 for their submission.

F. Attachment

- 1) Previously Issued Addendum #2, dated February 15, 2012 (including attachments).

AS A REMINDER, ALL ALLOWANCES, INCLUDING THE NEW AND REVISED ALLOWANCES DESCRIBED IN THIS ADDENDUM # 4, MUST BE INCLUDED IN THE BASE BID PRICE.

END OF ADDENDUM NUMBER 4


Hugo Horcada
NJSDA Program Officer

2-28-2012

Date

NJSDA
1 West State Street
Trenton, NJ 08625

Date: February 28, 2012

PROJECT #: ET-0068-C01

DESCRIPTION: Long Branch – George L. Catrambone Elementary School

Addendum No. 4

Acknowledgement of Receipt of Addendum

Contractor must acknowledge the receipt of the Addendum by signing in the space provided below and returning via fax to (609-656-4609). Signed acknowledgement must be received prior to the Bid Due Date. Acknowledgement of the Addendum must be made in Section E.6 of the Price Proposal Submission.

Signature

Print Name

Company Name

Date

PRICE PROPOSAL

PRICE PROPOSAL SUBMISSION
to
NEW JERSEY SCHOOLS DEVELOPMENT AUTHORITY

For the following Package:

Contract Number: ET-0068-C01
Contract Name/Description: George L. Catrambone Elementary School
District: Long Branch
County: Monmouth

THIS PACKAGE IS COMPRISED OF THE FOLLOWING SCHOOL PROJECTS:

SCHOOL	CONSTRUCTION COST ESTIMATE
<u>George L. Catrambone Elementary School</u>	<u>\$33,201,924</u>

Bid of _____
(Bidder's Name) (Bidder's Federal I.D. #)

a Corporation organized and existing under the laws of the State of _____

or a partnership or joint venture consisting of _____

or an individual, trading as _____

There is a two-step bidding process for participation in this procurement:

First Step: A Bidder must first submit the "Project Rating Proposal." The NJSDA will determine a Bidder's Project Rating Limit based on this proposal.

Second Step: Along with a Technical Proposal prepared in accordance with the Request for Proposals, a Bidder must submit the "Price Proposal" which contains the price the Bidder intends to bid for the work as well as other required information.

Important Notes:

- 1) A Bidder may not submit a Price Proposal that exceeds its Project Rating Limit for a project.
- 2) A Bidder's Project Rating Limit cannot exceed the firm's Aggregate Limit.

A. Price Proposal Submission:

1. The Bidder shall complete and execute this Price Proposal and enclose it in an envelope that is **sealed and clearly marked** with the Bidder's Name, Contract Number, Contract Name, School District, County and the date of Price Proposal submission. The Bidder must submit its sealed Price Proposal to the NJSDA in accordance with Section 7 of the Request for Proposal (RFP).
2. The Price Proposals shall be subject to a public bid opening by the NJSDA on the date and time provided in the RFP.

B. Bidder:

1. All Bidders must be classified by the Department of the Treasury, Division of Property Management and Construction in all applicable trades; pre-qualified by the NJSDA in all applicable trades; registered with the Department of Labor; and registered with the Department of Treasury, Division of Revenue; and must provide valid contractor or trade licenses where applicable at the time of submission of this bid. **Time is of the essence for completion of the Project in this package.**
2. The Bidder **MUST** submit a copy of its Uncompleted Contracts Form. Uncompleted Contracts forms submitted by the Bidder and any required Subcontractors must reflect accurate and timely information. The amount set forth in the Uncompleted Contracts Form must reflect the amount of uncompleted work as of the date of the bid submission, or the date of the response to the RFP. In no instances will Uncompleted Contracts forms be acceptable where the date of the Form is greater than 120 days prior to the due date for bid or proposal submissions.
3. If the Bidder will be performing work with its "own forces" in any of the trades listed in the Bid Advertisement, the Bidder must be properly classified and pre-qualified to perform such work in the named trades, and must state its intention to perform such work with its "own forces." Failure to so state, and/or failure to indicate what firms will be performing the work in the trades identified in the Bid Advertisement, may cause the bid to be rejected.

C. Subcontractors:

1. The Bidder **MUST** name all subcontractors that will be performing work in any of the trades listed in the Bid Advertisement or required by statute.
2. All listed subcontractors identified in accordance with Section C.1. above must be classified by the Department of the Treasury, Division of Property Management and Construction in all applicable trades; pre-qualified by the NJSDA in all applicable trades; registered with the Department of Labor; and registered with the Department of Treasury, Division of Revenue; and must provide valid contractor or trade licenses where applicable at the time of submission of this bid.
3. All Bidders **MUST** submit a copy of the Uncompleted Contracts Form for any subcontractor identified in the bid advertisement. Uncompleted Contracts forms submitted by the Bidder and any required Subcontractors must reflect accurate and timely information. The amount set forth in the Uncompleted Contracts Form must reflect the amount of uncompleted work as of the date of the bid submission, or the date of the response to the RFP. In no instances will Uncompleted Contracts forms be acceptable where the date of the Form is greater than 120 days prior to the due date for bid or proposal submissions.

4. The Bidder shall list the SBE status of each subcontractor, where applicable.

D. SBE Opportunities:

1. The Bidder agrees it shall make a good faith effort to meet the requirements of the SBE Utilization Attachment contained in the Contract Documents in order to ensure that small business enterprises, as defined in that attachment and in applicable regulation, have the maximum opportunity to compete for and perform subcontracts.
2. The NJSDA requires the contractor to provide opportunities to SBE firms to participate in the performance of this engagement, consistent with NJSDA SBE set aside goals of 25%, awarding 5% of the contract value to registered Category 4 SBE firms; 5% of the contract value to registered Category 5 SBE firms; and 5% of the contract value to registered Category 6 SBE firms; and 10% of the contract value to SBE firms registered in any of the three Categories.

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GENERAL CONSTRUCTION WORK:

Firm	Address
SBE	DOL Contractor Registration # Federal I.D. #

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HVAC - STEAM AND HOT WATER HEATING AND VENTILATING APPARATUS WORK:

Firm	Address
SBE	DOL Contractor Registration # Federal I.D. #

=====

PLUMBING AND GAS FITTING WORK:

Firm	Address
SBE	DOL Contractor Registration # Federal I.D. #

=====

ELECTRICAL WORK:

Firm	Address
SBE	DOL Contractor Registration # Federal I.D. #

STRUCTURAL STEEL AND MISCELLANEOUS IRON WORK:

Firm Address

SBE DOL Contractor Registration # Federal I.D. #

=====

OTHER TRADE CLASSIFICATIONS NAMED IN BID ADVERTISEMENT (Name Trade Classification): _____

Firm Address

SBE DOL Contractor Registration # Federal I.D. #

=====

OTHER TRADE CLASSIFICATIONS NAMED IN BID ADVERTISEMENT (Name Trade Classification): _____

Firm Address

SBE DOL Contractor Registration # Federal I.D. #

E. Price:

1. The undersigned, as Bidder, declares:
 - That this Price Proposal is made, without collusion with any other person, firm or corporation;
 - That the Bidder has carefully examined the RFP and the forms of the Project Manual, Contract, Instructions to Bidders, Addenda, Specifications, Plans and all other Contract Documents;
 - That the Bidder has carefully examined the locations, conditions and classes of material for the proposed work;
 - That the Bidder agrees that it will provide all necessary machinery, tools, apparatus and other means of construction and will do all work and furnish all the materials called for in the Contract Documents in the manner therein prescribed; and
 - That this Price Proposal is submitted Net of Insurance, excluding all applicable insurance expenses and policy costs allocated to the on-site activities of the project as respects Workers' Compensation, Employer's Liability, Commercial General Liability, Owners Contractors Protective Liability, Excess/Umbrella Liability and Builder's Risk insurance.

2. In submitting this Price Proposal, the Bidder agrees:
 - That the NJSDA has the right to reject this Price Proposal in accordance with the terms of the RFP.
 - To hold this Price Proposal open for a period of one hundred twenty (120) calendar days from the date of the Price Proposal submission, unless this time period is extended by mutual agreement of the Bidder and the NJSDA.
 - To accomplish the work at the price bid, in accordance with the Contract Documents.

3. Base Bid Price:

- Total amount for the furnishing of all labor, materials, services, equipment and appliances required in conjunction with and properly incidental to all work, in conformance with all Contract Documents. **The price of allowances listed in the Specifications and/or by Addenda (um) must be included in the Base Bid Price.**
- In case of a discrepancy between the amount shown in words and the amount shown in figures, **the amount shown in words shall govern.**
- **The Public Opening and Reading of the Price is for informational purposes only and is not to be construed as an acceptance or rejection of any bid submitted.**

BASE BID PRICE:

_____ (In Words)

\$ _____ (In Figures)

4. Alternates: (Not Applicable)

5. Bid Bond:

The Bidder shall attach to this Price Proposal a Bid Bond, having a value of ten percent (10%) of the total base bid amount. Bid Bonds shall be returned to all unsuccessful Bidders in accordance with the Instructions to Bidders.

6. Addenda:

The Bidder acknowledges receipt and incorporated into this bid of the following Addenda:

Number: _____

Dated: _____

F. CERTIFICATION

The Bidder hereby certifies to the best of its knowledge and belief and under penalty of perjury under the laws of the United States and the State of New Jersey:

1. That all information provided herein is accurate and truthful.
2. That an affirmative action program of equal employment opportunity, pursuant to P.L. 1945, c. 169, the "New Jersey Law Against Discrimination," as supplemented and amended has been adopted by this organization to ensure that applicants are employed and employees are treated without regard to their race, creed, color, national origin, ancestry, marital status, sex, or affectional or sexual orientation, and that the selection and utilization of contractors, subcontractors, consultants, materials suppliers and equipment lessors shall be done without regard to their race, creed, color, national origin, ancestry, marital status, sex, or affectional or sexual orientation. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeships. The Bidder agrees to post in conspicuous places, available to employees and

applicants for employment, Notices to be provided by the NJSDA's Compliance Officer setting forth provisions of this nondiscrimination clause. Said affirmative action program addresses both the internal recruitment, employment and utilization of minorities and the external recruitment policy regarding minority contractors, subcontractors, consultants, materials suppliers and equipment lessors.

3. That the bid has been executed with full authority to do so; that the Bidder has not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with these projects; and that all statements contained in this bid and in this certification are true and correct and made with full knowledge that the NJSDA relies upon the truth of the statements contained in this bid and in the statements contained in this certification in awarding the contract for the projects.
4. That neither the Bidder nor its principals:
 - A. are currently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from bidding or contracting by any agency of government including but not limited to federal, state, regional, county or local government agency, in this or any other state including any department, division, commission, authority, office, branch, section and political subdivision or other governmental or quasi-governmental entity;
 - B. have, within a three-year period preceding this bid, been convicted or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public federal, state or local contract; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - C. are currently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph (B) of this certification; and
 - D. have, within a three-year period preceding this bid, had one or more public contracts (federal, state or local) terminated for cause or default.
5. The Bidder has a current, valid registration issued pursuant to the "Public Works Contractor Registration Act, "P.L. 1999, c. 238 (c. 34:11-56.48 et. seq)".
6. The Bidder has a current, valid Business Registration Certificate for State Agency and Casino Service Contractors issued by the NJ Department of Treasury to perform work in New Jersey.
7. The Bidder has current, valid contractor or trade licenses and permits required under applicable New Jersey law for any trade or specialty area in which the firm seeks to perform work.
8. That the Bidder will comply with Public Law 2005, Chapter 51 (N.J.S.A. 19:44A-20.13-20.25, superseding Executive Order 134 (2004)) and as amended by Executive Order 117 (2008), and submit a N.J. Division of Purchase and Property "Two-Year Chapter 51/Executive Order 117 Vendor Certification & Disclosure of Political Contributions" and "Ownership Disclosure Form" if awarded the bid.
9. That the Bidder is aware of its continuing responsibility to file an annual disclosure statement on "contributions" as that term is defined in P.L. 2005, c. 51 (formerly Executive Order 134 (2004)) or any "Business Entity," as that term is defined in P.L. 2005, c. 51, associated with the Bidder, on the "Disclosure of Political Contribution" form provided by the NJSDA, at the time such contribution is made." This applies to the contractor if the contractor receives contracts in

excess of \$50,000 from a public entity in a calendar year. It is the contractor's responsibility to determine if filing is necessary. Failure to so file can result in the imposition of financial penalties by ELEC. Additional information about this requirement is available from ELEC at 888-313-3532 or at www.elec.state.nj.us .

10. During the term of construction of the project(s) that comprise this package, the Bidder will have in place a suitable quality control and quality assurance program and an appropriate safety and health plan.
11. The amount of the Price Proposal and the value of the Bidder's outstanding incomplete contracts does not exceed the Bidder's Aggregate Rating.
12. Where the Bidder is unable to certify to any of the statements in this certification, the Bidder shall explain below.

IN WITNESS WHEREOF, the Bidder has caused this instrument to be signed, attested to and sealed.

Bidder: _____
(Legal Firm Name)

By: _____
(Signature) (Printed or Typed Name)

Title: _____

Address: _____

Telephone No.: _____

Fax No.: _____

Date: _____



Witness: _____

Printed or Typed Name: _____

Date: _____

END OF PRICE PROPOSAL



Addendum No. 2

Date: February 15, 2012

PROJECT: Long Branch – George L. Catrambone Elementary School

CONTRACT No.: ET-0068-C01

This Addendum shall be considered part of the Bid Documents issued in connection with the referenced project. Should information conflict with the Bid Documents, this Addendum shall supersede the relevant information in the Bid Documents.

A. Revisions to the Project Manual

- 1) Volume 1, Project Manual, Sample forms to be Completed upon Execution of Contract, NJSDA Accord Sample Insurance Certificate Forms; replace two Insurance Forms with Certificate of Insurance for Eligible and Ineligible Contractors
- 2) Volume 1 of the Specifications, Section 01010 – Summary of Work, page 3 subsection 1.4A:
Insert new Allowance category and amount, thus:

4.	<u>Additional Video Surveillance Equipment and Systems</u>	<u>\$100,000</u>
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- 3) Volume 1, Section 01010 – Summary of Work, page 3, subsection 1.4B “Constructability Review Allowance” shall be modified as follows (additions in **bold and underlined** text; deletions in *strikethrough and italics*):

- a. Replace the existing subsections 1.4.B.2 and 1.4.B.3 with new language, as follows:

- 2. Within five days of the Notice of Award and prior to commencing any Constructability Review Allowance Work, the Contractor shall submit to the Authority a detailed a proposal for all elements of the Constructability Review Allowance Work, describing the proposed costs to perform the Constructability Review Allowance Work, and including descriptions of activities, pricing (including hourly rates and estimates of number of hours to complete the Allowance Work), and any other relevant cost information, which shall be reviewed by the Authority for reasonableness and consistency with the Contractor’s response to the Approach to Constructability Review portion of the RFP response. If determined to be reasonable and acceptable, the Authority shall issue the Constructability Notice to Proceed. ~~The Contractor shall proceed with~~

~~Constructability Review Allowance activities in accordance with the provisions of Section 01020 – Allowances, except that the Constructability Notice to Proceed shall function as the necessary authorization to proceed with the Constructability Review activities referenced in Subsection 1.6 below. The Contractor is not required to submit an Allowance Authorization Form pursuant to Subsection 1.4.4 of Section 01020 – Allowances before commencing Constructability Review activities upon issuance of the Constructability Notice to Proceed.~~

3. The Contractor shall proceed with Constructability Review Allowance Work in accordance with the provisions of Section 01020 – Allowances. The Constructability Notice to Proceed shall also serve as the required authorization to invoice against the Constructability Allowance for such activities, and Contractor is not required to submit a proposed estimate of costs for the Constructability Review Activities prior to proceeding with such activities.

b. Insert the following new language as subsection 1.4.B.5:

5. When the Contractor determines to engage a subcontractor or sub consultant in order to perform all or part of the Constructability Review Allowance Work, the Contractor may invoice the Authority for the reasonable costs of the subcontractor's or sub consultant's services, and may include a five percent (5%) markup for work performed by such subcontractors or sub consultants. This markup shall compensate the Contractor for all profit and indirect costs associated with the performance of the Constructability Review Allowance Work.

4) Volume 1 of the Specifications, Section 01010 – Summary of Work, page 4, insert new subsection 1.4E, thus:

E. Additional Video Surveillance Equipment and Systems Allowance

1. The Additional Video Surveillance Equipment and Systems Allowance shall be utilized only after written authorization from the Authority, in accordance with Section 01020, for activities involving the provision and installation of additional security cameras in the quantities and locations described below.
 - i. The activities associated with this Allowance Work include the provision and installation of twelve (12) additional, exterior, five-megapixel video surveillance cameras, and seven (7) additional, interior, five-megapixel security cameras, in locations to be determined by the Authority. These allowance items are in addition to the quantities, locations and descriptions of security cameras, installation and infrastructure previously specified by the Contract Documents.
 - ii. The activities associated with this Allowance Work include the installation of the cameras and the furnishing of all conduit, wiring, cabling, infrastructure and equipment to support and connect the additional cameras to the security system, including any necessary additional electronics or other head-end equipment.
2. The Contractor shall proceed with Additional Video Surveillance Equipment and Systems Allowance Work in accordance with Section 01020 – Allowances and Specifications Section 282300.

5) Volume 1, Section No. 01850, Warranties and Bonds, Subsection 1.5.C.; replace “.....two (2) year...” with “....one (1) year...”

- 6) Volume 1, Table of Contents, Page TC-7: Section "230810 Mechanical Testing Requirements" shall be renumbered to "238010 Mechanical Testing Requirements."
- 7) Volume 2, Section 019113, General Commissioning Requirements, Page 1, paragraph 1.1.C.2: revise section number "230810" with "238010"
- 8) Volume 2, Section 019113, General Commissioning Requirements, Page 1, paragraph 1.1.C: Add "3, 08995 Building Envelope Commissioning"; Add "4, 260800 Electrical System Commissioning"
- 9) Volume 2, Section 034900, Glass Reinforced Concrete Columns, Page 3, paragraph 2.2.A.15: Add" and required to secure enclosure and eliminate movement"
- 10) Volume 2 Section 034900, Glass Reinforced Concrete Columns, Page 3, paragraph 2.2.A.16: Add, "16. Provide securely attached secondary galvanized metal stud framing as required around the structural support column. Framing shall "pack-out" any void space between the column and the inner face of the enclosure shell and provide for firm backing to the shell for secure attachment and elimination of shell movement."
- 11) Volume 2, Volume 2, Section 042000, Unit Masonry Page 6, paragraph 2.2.E.4; delete this statement and replace with: "Textures provided as indicated within "Exterior Materials Legend" on drawings A-3-1 through A.3.4
- 12) Volume 2, Section 042000, Unit Masonry Page 6, paragraph 2.2.E.5: delete this statement and replace with "Colors: provide two (2) colors as indicated within "Exterior Materials Legend" on drawings A-3.1 through A-3.4. All units shall be uniform and consistent in color.
 - a) CMU Veneer # 1 to match color EP Henry (Basis of Design) Fiori 400-ZS.
 - b) CMU Veneer #1A- to match color: EP Henry (Basis of Design) Fiori 400-ZS.
 - c) CMU Veneer #2- to match color: EP Henry (Basis of Design) Fiori 62-D.
 - d) CMU Veneer #2A- to match color: EP Henry (Basis of Design) Fiori 62-D."
- 19) Volume 2, Section 042000, Unit Masonry Page 7, paragraph 2.2.F.4: delete this statement and replace with

"Texture and Color

 - a) Interior CMU-1: Ground Face CMU; to match color: EP Henry (Basis of Design) Fiori 400-ZS.
 - b) Interior CMU-2: Ground Face CMU; to match color: EP Henry (Basis of Design)Fiori 62-D.
 - c) Interior CMU-3: Ground Face CMU; to match color: EP Henry (Basis of Design) Fiori 58-R."
- 20) Volume 2, Section 042000, Unit Masonry Page 19, paragraph 3.16.B: delete this paragraph in its entirety.
- 21) Volume 2, Section 042000, Unit Masonry Page 19, paragraph 3.16.C.:Delete in its entirety and replace with "Excess Masonry waste and legally dispose of off Owner's property"
- 22) Volume 2, Section 047200, Cast Stone Masonry, Page 1, Paragraph 1.3.C.: Insert the following new paragraph 2: "Location of joints between cast stone units must integrate with CMU veneer coursing/ joint pattern, except where required to align with CMU veneer movement joints."
- 23) Volume 2, Section 047200, Cast Stone Masonry, Page 5, Paragraph 3.2. Insert the follow sentence at start of paragraph C: "Provide 30 # asphalt saturated building paper bond break at all horizontal joints between cast stone units and CMU veneer (at both top and bottom of cast stone), full depth of CMU veneer less 1/4 inch."
- 24) Volume 2, Section 047200, Cast Stone Masonry, Page 5, Paragraph 3.2.: Revise the first sentence of paragraph E as follows: "Provide backer rod and sealant in all head joints between adjacent stones and at all horizontal, bond break joints."

- 25) Volume 2, Section 047200, Cast Stone Masonry, Page 5, Paragraph 3.2.: Revise paragraph H as follows:
 "Provide expansion, control and pressure-relieving joints of widths and locations required by Cast Stone Product Manufacturer, in line with CMU veneer movement joints, at 20'-0" on center maximum if distance between veneer joints exceeds 20'-0" and at all inside building corners."
- 26) Volume 2, Section 051200, Structural Steel Framing, Page 2, paragraph 1.6.A: Delete in its entirety.
- 27) Volume 2, Section 054000 Cold Formed Metal Framing, Page 1, paragraph 1.2.A.3.: Delete in its entirety and replace with, "Ceiling joist and soffit framing."
- 28) Volume 2, Section 055000, Metal Fabrications, Page 6, Paragraph 2.14.B: Delete in its entirety and replace with, "Factory / shop prime cast iron downspout boots with primer as specified in Division 09 Section "Interior Painting".
- 29) Volume 2, Section 055100 Metal Stairs, Page 1, Paragraph 1.2.A.1."Add, "and landings" after "stairs".
- 30) Volume 2, Section 055100 Metal Stairs, Page 5, Paragraph 2.6.B.2."Add, "intermediate and 2nd floor landings and platforms" after "Construct".
- 31) Volume 2, Section 055213, Pipe and Tube Railings: Delete entire Section 055213, dated October 20, 2011, ("Aluminum pipe and tube handrails and railings") and replace with REVISED attached Section 055213, dated February 7, 2012, ("Steel pipe handrails and railings").
- 32) Volume 2, Section 064023, Interior Architectural Woodwork, Page 5, paragraph 2.5.A.: Delete "Red Oak" and replace with, "Cherry".
- 33) Volume 2 Section 064023, Interior Architectural Woodwork, Page 5, paragraph 2.5.A.1.: Delete in its entirety.
- 34) Volume 2 Section 064023, Interior Architectural Woodwork, Page 7, paragraph 2.9.B.: Delete in its entirety and replace with:
 1. Species: Cherry
 2. Cut: Plain saw
 3. Veneer matching: Book match"
- 35) Volume 2, Section 071335, Fluid Applied Radon Vapor Barrier System, Page 2, paragraph 1.8.: Add "WARRANTY".
- 36) Volume 2, Section 071335, Fluid Applied Radon Vapor Barrier System, Page 3, paragraph 2.1.A.2.; Delete "287 Forbes Avenue, Hoffman Estates, Illinois (800) 327-9948".
- 37) Volume 2, Section 072100, Thermal Insulation, Page 2, paragraph 2.1.B: Delete, "Foil-Faced".
- 38) Volume 2, Section 072100, Thermal Insulation, Page 3, paragraph 2.2.B: Delete in its entirety.
- 39) Volume 2, Section 072100, Thermal Insulation, Page 4, paragraph 2.3.A.1: Add, "for ceilings and full depth for partitions."
- 40) Volume 2, Section 072100, Thermal Insulation, Page 4, paragraph 2.4: Delete "REINFORCED-POLYETHYLENE VAPOR RETARDER" in its entirety.
- 41) Volume 2, Section 072100, Thermal Insulation, Page 6, paragraph 3.5.F: Delete," Coordinate with Sections 077100 and 077200."
- 42) Volume 2, Section 072100, Thermal Insulation, Page 6, paragraph 3.6.A:Delete in its entirety and replace with, "Install bat insulation / sound attenuation blanket above top of suspended acoustical ceiling, 48 inches up either side of partition, and in partitions as indicated on Partition Types and Reflected Ceiling Plans."
- 43) Volume 2, Section 072100, Thermal Insulation, Page 7, 3.6.1 and 2: Delete in its entirety.
- 44) Volume 2, Section 072726, Fluid Applied Membrane Air Barriers, Page 1, paragraph 1.5.A.1: Delete, "and Type 2."

- 45) Volume 2, Section 074113, Metal Roof Panels, Page 1, paragraph 1.4.B: Add "licensed in the state of New Jersey" after "professional engineer."
- 46) Volume 2, Section 074113, Metal Roof Panels, Page 7, paragraph 2.3.A: Delete "UNDERLAYMNET MATERIALS" and replace with, "FOAM-PLASTIC BOARD INSULATION".
- 47) Volume 2, Section 074113, Metal Roof Panels, Page 8, paragraph 2.3.B.1.e: Add "or approved equal" after, "Corporation".
- 48) Volume 2, Section 074113, Metal Roof Panels, Page 8, paragraph 2.4.B and 2.4.D: Delete in their entirety.
- 49) Volume 2, Section 074113, Metal Roof Panels, Page 12, paragraph 3.5:"INSTALLATION OF VENTED BASE SHEET" shall be revised to read "INSTALLTION OF VAPOR BARRIER AND VENTED BASE SHEET".
- 50) Volume 2, Section 074113, Metal Roof Panels, Page 12, paragraph 3.5.A:Delete in its entirety and replace with, "Install ice and water shield over entire roof to form a complete vapor barrier. Also install ice and water shield at eaves, ridges, and around all projections and valleys as indicated on drawings."
- 51) Volume 2, Section 074120, Metal Wall Panels, Page 5, paragraph 2.4.B.2.c: Delete in its entirety and replace with, "Color: To match Architect's sample."
- 52) Volume 2, Section 074120, Metal Wall Panels, Page 6, paragraph 2.5.B.2.c: Delete in its entirety and replace with, "Color: To match Architect's sample."
- 53) Volume 2, Section 074120, Metal Wall Panels, Page 6, paragraph 2.7.A.2.c: Delete in its entirety and replace with, "Color: To match Architect's sample."
- 54) Volume 2, Section 075216, Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing Barrier System, Page 2, paragraph 1.5.B: Delete in its entirety.
- 55) Volume 2, Section 075216, Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing Barrier System, Page 4, paragraph 2.1.A.1.b: Delete in its entirety and replace with "Tremco".
- 56) Volume 2, Section 075216, Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing Barrier System, Page 4, paragraph 2.1.A.1.c: Delete in its entirety and replace with "Ecology Roof Systems".
- 57) Volume 2, Section 075216, Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing Barrier System, Page 7, paragraph 2.5.C.1.d: Add, "d. Dens-deck Prime Roof Board manufactured by G-P Gypsum Corporation, or approved equal."
- 58) Volume 2, Section 075216, Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing Barrier System, Page 6, paragraph 2.4.L: Add, "L. Vapor Barrier: Provide (2) two plies Type VI glass felt in Type 3 steep asphalt. Install per manufacture's recommendations."
- 59) Volume 2, Section 076500, Self-Adhering Flexible Membrane Flashing ("SAF") Systems, Page 1, paragraph 1.2.A: Delete, "rubberized asphalt, self-sealing", and replace with, "self-adhesive, waterproof membrane."
- 60) Volume 2, Section 076500, Self-Adhering Flexible Membrane Flashing ("SAF") Systems, Page 2, paragraphs 2.1.A, B, and C: Delete these paragraphs in their entirety and replace with the following two paragraphs:
 - "A. Cold applied, self-adhesive HDPE waterproofing membrane, with cross laminated, high density polyethylene carrier film; UL approved Class a Fire Rating.
 - B. Performance Requirements:
 1. Thickness, ASTM D3767, Method A: 0.060" nominal
 2. Resistance to hydrostatic head, ASTM D5385: 200' min.
 3. Low temperature flexibility, ASTM D1970: unaffected at -45 degrees F.
 4. Lap adhesive, ASTM D1876: 5.0 lb/in.

5. Tensile strength, ASTM D412: 325 psi min.
6. Tensile strength, ASTM D882: 5000 psi min.
7. Elongation, ASTM D412: 300% min.
8. Cracking cycling, 100 cycles, ASTM D836: unaffected at -25 degrees F.
9. Peel strength, ASTM D903: 9.0 lb/in.
10. Puncture resistance, ASTM E154: 50 lb min.
11. Presence, ASTM E96: .005 perms
12. Water absorption, ASTM D570: 0.1% max.
13. Color as selected by Architect from manufactures standard colors.”

- 61) Volume 2, Section 077100, Roof Specialties, Page 4, paragraph 2.5.A.1.b.: Delete in its entirety and replace with “Color to match Architect’s sample.”
- 62) Volume 2, Section 077100, Roof Specialties, Page 5, paragraph 2.7.A.5: Delete “supports” and replace with: “gutter chairs and straps.”
- 63) Volume 2, Section 077100, Roof Specialties, Page 6, paragraph 2.7.D.1: Delete in its entirety and replace with: “Color to match Architect’s sample.”
- 64) Volume 2, Section 077100, Roof Specialties, Page 6, paragraph 2.8.D: Delete in its entirety and replace with the following:

“Multi-purpose, asphaltic polyurethane-based, low odor, low VOC, quick curing, liquid flashing membrane.

 1. Non Volatile, ASTM C 1250: 95%
 2. Tensile strength: 400 psi
 3. Density: 8.5 lbs. /gal.
 4. Viscosity at 77 degrees F, ASTM D 2196-86: 600,000-1,500, 000
 5. Flash point: minimum 300 degrees F.
 6. Elongation, ASTM D412: Typical 300%
 7. Water Absorption: less than 0.7%
 8. Compound Stability: passes at 220 degrees F.
 9. Flexibility, ASTM D 816-82: pass at -40 degrees F.”
- 65) Volume 2, Section 077100, Roof Specialties, Page 8, paragraph 3.6.B: Delete, “12 inches apart” and replace with: “30 inches apart or as recommended by gutter manufacturer.”
- 66) Volume 2, Section 077200, Roof Accessories, Page 1, paragraph 1.4.A.6: Add”6. Pipe/utility penetration curbs.”
- 67) Volume 2, Section 077200, Roof Accessories, Page 2, paragraph 1.4.B: Add ”Provide shop drawings of custom designed pipe/utility penetration curbs.”
- 68) Volume 2, Section 077200, Roof Accessories, Page 7, paragraph 2.7.B.12: Revise ”full” to “fall”.
- 69) Volume 2, Section 078100, Sprayed Fire-Resistive Materials, Page 078100-6, paragraph 2.1.F: Delete in its entirety and replace with “Asbestos: provide products that are asbestos free”.
- 70) Volume 2, Section 079200, Joint Sealants, Page 2, paragraph 1.3.J: Add, “J. Provide non-staining and non-porous sample and tests of sealant on interior and exterior CMU.”
- 71) Volume 2, Section 079200, Joint Sealants, Page 3, paragraph 1.6.B.1: Delete “20 years” and replace with “10 years”.
- 72) Volume 2, Section 079200, Joint Sealants, Page 5, paragraph 2.8: Add the following:

“2.8 ACOUSTICAL JOINT SEALANTS

 - A. Acoustical Joint Sealant: Manufacturer’s standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. And ASTM E 90.”
- 73) Volume 2, Section 079200, Joint Sealants, Page 8, paragraph 3.7.A.3: Delete in its entirety.

- 74) Volume 2, Section 079200, Joint Sealants, Page 8, paragraph 3.7.A.5: Delete in its entirety.
- 75) Volume 2, Section 079200, Joint Sealants, Page 8, paragraph 3.7.B.3: Delete in its entirety.
- 76) Volume 2, Section 079200, Joint Sealants, Page 9, paragraphs 3.7.D.1.b., 3.7.D.3, and 3.7.D.4: Delete in their entirety.
- 77) Volume 2, Section 079200, Joint Sealants, Page 9, paragraphs 3.7.G.a and 3.7.G.2.b: Delete in their entirety.
- 78) Volume 2, Section 079200, Joint Sealants, Page 9, paragraph 3.7.H.4: Delete in its entirety.
- 79) Volume 2, Section 079500, Expansion Control, Page 2, paragraph 1.5.G: Add the following
- “G. Structural Loads
1. Allowable load on floor cover plates shall be 100 psf uniform load and 300 pounds concentric load with maximum 12,000 psi stress (6063-T5 aluminum extrusions) or 28,000 psi stress (6061-T6 aluminum plate) or 16,000 psi stress (5052-H32 aluminum sheet) or 36,000 psi stress (stainless steel plate) at full open position.”
- 80) Volume 2, Section 079500, Expansion Control, Page 3, paragraph 2.1: Delete in its entirety.
- 81) Volume 2, Section 079500, Expansion Control, Page 3, paragraph 2.2.A.2: Delete in its entirety.
- 82) Volume 2, Section 079500, Expansion Control, Page 3, paragraphs 2.2.I and J: Delete in their entirety.
- 83) Volume 2, Section 079500, Expansion Control, Page 3, paragraph 2.4.A: Delete in their entirety and replace with:
- “A. Interior expansion joint systems for floors, walls, and ceilings:
1. Glide plate seismic systems: aluminum frame with continuous aluminum glide plate
2. Center bar seismic systems: Aluminum frame with continuous center plate.
3. Size and Basis of Design model as indicated on drawings.”
- 84) Volume 2, Section 079500, Expansion Control, Page 079500-5, paragraph 2.4.B: Insert the following language after the phrase “(at gymnasium operable panel partition)”:
- “and as indicated on drawings.”
- 85) Volume 2, Section 079500, Expansion Control, Page 6, paragraph 2.4.C.1: Delete in its entirety and replace with the following:
- “1. Exterior expansion joint systems for horizontal and vertical applications.
2. Size and Basis of Design model as indicated on drawings.”
- 86) Volume 2, Section 079500, Expansion Control, Page 7, paragraph 2.4.D.2: Delete in its entirety and replace with the following:
- “2. Custom designed metal expansion joint roof covers: as detailed on drawings.”
- 87) Volume 2, Section 079500, Expansion Control, Page 8, paragraph 2.4.F.3: Add: “3. Mill finish.”
- 88) Volume 2, Section 079500, Expansion Control, Page 8, paragraph 2.4.G: Delete in its entirety.
- 89) Volume 2, Section 081416, Flush Wood Doors, Page 5, paragraph 3.2.A: Replace, “Door Hardware” with, “Finish Hardware.”
- 90) Volume 2, Section 081613, Fiberglass Clad Doors and Aluminum Framed, Page 1, paragraph 1.2.B.5: Add: “5. Division 26 Sections for electrical connections including conduit and wiring for door controls and operators.”
- 91) Volume 2, Section 081613, Fiberglass Clad Doors and Aluminum Framed, Page 1, paragraph 1.3.B.2: Add: “2. Details of conduit and preparations for power, signal, and control systems.”
- 92) Volume 2, Section 081613, Fiberglass Clad Doors and Aluminum Framed, Page 3, paragraph 1.9: Add the following:

“1.9 PERFORMANCE REQUIEREMENTS:

A. Windborne-Debris-Impact-Resistance Performance: Provide lovers and vents that pass missile-impact and cyclic-pressure tests when tested according to ASTM E 1886 and testing information in ASTM E 1996.

1. Large-Missile Impact: For aluminum-framed systems located within 30 feet of grade, large missile level “C”, Wind Zone 1.
2. Small-Missile Impact: For aluminum-framed systems located more than 30 feet above grade.”

93) Volume 2, Section 081613, Fiberglass Clad Doors and Aluminum Framed, Page 3, paragraph 2.1: Delete in its entirety.

94) Volume 2, Section 081613, Fiberglass Clad Doors and Aluminum Framed, Page 3, paragraph 2.2.A.3: Delete in its entirety.

95) Volume 2, Section 081613, Fiberglass Clad Doors and Aluminum Framed, Add: “Finish shall be 2-coat high performance fluoropolymer finish. Color to match Architect’s sample.”

96) Volume 2, Section 081613, Fiberglass Clad Doors and Aluminum Framed, Page 6: Add new paragraph 2.8 as follows:

“2.8 ALUMINUM FINISHES

A. High performance Organic Finish: 2-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, preferit, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Color and gloss as selected by Architect from manufactures full range of colors.”

97) Volume 2, Section 083113, Access Doors and Frames, Page 3, paragraph 2.2.D: Add the following: “Color of doors and frames as selected by Architect from manufacture’s full range of standard colors.”

98) Volume 2, Section 083323, Overhead Coiling Doors, Page 083323-4, paragraphs 2.10 A and 2.10 B: Delete both paragraphs in their entirety.

99) Volume 2, Section 084113, Aluminum Frames Entrances and Storefronts, Page 1, paragraph 1.2.B: Add the following:

“5. Division 26 Sections for electrical connections including conduit and wiring for door controls and operators.”

100) Volume 2, Section 084113, Aluminum Frames Entrances and Storefronts, Page 2, paragraph 1.4.E: Delete the phrase: “or AAMA 506.”

101) Volume 2, Section 084113, Aluminum Frames Entrances and Storefronts, Page 4, paragraph 1.5.C.2: Add the following:

“2. Details of conduit and preparations for power, signal, and control systems.”

102) Volume 2, Section 084113, Aluminum Frames Entrances and Storefronts, Page 6, paragraph 2.1.A.1: Delete: “Kawneer 1600 Storefront System” and replace with: “Kawneer IR 500 Framing Systems.”

103) Volume 2, Section 084113, Aluminum Frames Entrances and Storefronts, Page 7, paragraph 2.5.A.2: After the phrase “nominal width and stile” insert the following: “with 5 ¾” wide mid-rail.”

104) Volume 2, Section 084113, Aluminum Frames Entrances and Storefronts, Page 9, paragraph 2.8.A.1: Delete paragraph in its entirety and replace with: “Color and gloss: As selected to match Architect’s sample.”

105) Volume 2, Section 084413, Glazed Aluminum Curtain Walls, Page 8, paragraph 2.8.1: Delete in its entirety and replace with: “Color and gloss: To match Architect’s sample.”

106) Volume 2, Section 085113, Aluminum Windows, Page 2, paragraph 1.4.C: Delete: “or AAMA 506.”

- 107) Volume 2, Section 085113, Aluminum Windows, Page 9, paragraph 2.9.1: Delete in its entirety and replace with: "Color and gloss: To match Architect's sample."
- 108) Volume 2, Section 087100, Finish Hardware: Delete entire Section 087100, dated October 20, 2011, and replace with REVISED Section 087100, dated February 7, 2012, attached to this Addendum.
- 109) Volume 2, Section 088000, Glazing, Page 10, paragraph 2.13.D.4.b: After the phrase "argon gas-filled dehydrated air space," insert "per manufacturer's standards to meet performance requirements listed above."
- 110) Volume 2, Section 088000, Glazing, Page 11, paragraph 2.13.E.4.b: After the phrase "argon gas-filled dehydrated air space," insert: "per manufacturer's standards to meet performance requirements listed above."
- 111) Volume 2, Section 088000, Glazing, Page 12, paragraph 2.13.F.2.b: Delete in its entirety.
- 112) Volume 2, Section 088000, Glazing, Page 12, paragraph 2.13.F.6.b: After the phrase "argon gas-filled dehydrated air space," insert "per manufacturer's standards to meet performance requirements listed above."
- 113) Volume 2, Section 088000, Glazing, Page 13, paragraph 2.13.G.4.b: After the phrase "argon gas-filled dehydrated air space," insert "per manufacturer's standards to meet performance requirements listed above."
- 114) Volume 2, Section 088000, Glazing, Page 13, paragraph 2.13.H.:2.a.: Delete "Mape ShielP" and replace with: "Mape Shield."
- 115) Volume 2, Section 089000, Louvers and Vents, Page 2 paragraph 1.4.D: Add the following:
 - "D. Windborne-Debris-Impact-Resistance Performance: Provide louvers and vents that pass missile-impact and cyclic-pressure tests when tested according to ASTM E 1886 and testing information in ASTM E 1996.
 1. Large-Missile Impact: For aluminum-framed systems located within 30 feet of grade, large missile level "C", Wind Zone 1.
 2. Small-Missile Impact: For aluminum-framed systems located more than 30 feet above grade."
- 116) Volume 2, Section 088000, Glazing, Page 4, paragraph 2.6.B.1: Delete in its entirety and replace with, "Color and gloss: To match Architect's sample."
- 117) Volume 2, Section 092900, Gypsum Board, Page 3, paragraph 2.2.E.1: Insert at end of line: "and 5/8 inch."
- 118) Volume 2, Section 093000, Tiling, Page 4, paragraph 2.2.A: Delete: "Tile Type CT-1" and replace with: "Tile Types CT-1, CT-2, CT-3, CT-4, and CT-5".
- 119) Volume 2, Section 093000, Tiling, Page 5, paragraph 2.2.B: Delete: "Tile Type CT-2" and replace with: "Tile Types CT-6, CT-7, CT-8, CT-9, and CT-10."
- 120) Volume 2, Section 093000, Tiling, Page 5, paragraph 2.2.C: Delete, "Tile Type CT-3" and replace with: "Tile Types PT-1, PT-2, PT-3, PT-4, PT-5, PT-6, PT-7, PT-8, and PT-9".
- 121) Volume 2, Section 095113, Acoustical Panel Ceilings, Delete entire Section 095113, dated October 20, 2011, and replace with REVISED Section 095113, dated February 7, 2012, attached to this Addendum.
- 122) Volume 2, Section 096400, Wood Flooring, Page 1, paragraph 1.2.B.1: Delete paragraph in its entirety and replace with, "Division 09 Section, Staining and Transparent Finishing."
- 123) Volume 2, Section 096400, Wood Flooring, Page 3, paragraph 2.1.A: Delete paragraph in its entirety.
- 124) Volume 2, Section 096400, Wood Flooring, Page 3, paragraph 2.1.B: Delete the phrase: "Back of."
- 125) Volume 2, Section 096400, Wood Flooring, Page 3, paragraph 2.1.B.8: Delete paragraph in its entirety and replace with:

“8. Finish:

- a. Back of stage to proscenium opening / painted yellow line : Opaque stain; color and finish as selected by Architect from manufacture’s full range.
 - b. Front of stage to proscenium opening / painted yellow line: Stain; color and finish as selected by Architect from manufacturer’s full range.”
- 126) Volume 2, Section 096566, Resilient Athletic Flooring, Page 10, paragraph 3.3.B.1: Add the following after the end of the original sentence: “There shall be no cross seams in game line borders; seams shall be located at the corner of the game lines.”
- 127) Volume 2, Section 098413, Fixed Sound-Absorptive Panels, Page 1, paragraph 1.2 A: Add “wall and ceiling mounted” after the phrase “back-mounted.”
- 128) Volume 2, Section 099113, Exterior Painting: This section was inadvertently omitted from original Project Manual. The section is now included in this Addendum, see Section 099113, Exterior Painting, dated October 20, 2011, attached to this Addendum.
- 129) Volume 2, Section 099123, Interior Painting, Page 8, paragraph 3.5.I: Delete in its entirety.
- 130) Volume 2, Section 099300, Staining and Transparent Finishing, Page 1, paragraph 1.2.B.1: Delete in its entirety
- 131) Volume 2, Section 099300, Staining and Transparent Finishing, Page 2: Add the following paragraph 1.4B:
- “B. Mockups: Apply mockups of each finish system indicated and each color selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Architect will select one surface to represent surfaces and conditions for application of each type of finish system and substrate.
 - a. Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
 2. Final approval of stain color selections will be based on mockups.
 - a. If preliminary stain color selections are not approved, apply additional mockups of additional stain colors selected by Architect at no added cost to Owner.”
- 132) Volume 2, Section 099300, Staining and Transparent Finishing, Page 5, paragraph 3.6.B.: Delete in its entirety and replace with:
- “B. Water-Based Varnish over Stain System:
1. Stain Coat: Stain, opaque or semi-transparent, for interior wood. Stain as selected by Architect from manufacture’s full range.
 2. First Intermediate Coat: Water-based varnish matching topcoat.
 3. Second Intermediate Coat: Water-based varnish matching topcoat.
 4. Topcoat: Varnish, water based, clear, gloss level as selected by Architect.”
- 133) Volume 2, Section 101400, Signage, Page 8, paragraph 3.4.F:
- a. Insert the following language: “excluding Storage, Mechanical, and Toilet Rooms” after the phrase “from each space.”
 - b. Add: “Provide graphic representation of exit access pathways per International Fire Code requirements. See Egress Plans for egress information.”
- 134) Volume 2, Section 101400, Signage, Page 8, paragraph 3.4.J:
- a. Add: “and graphic” after “650 letters.”
 - b. Delete “furnished by the Architect” and replace with “furnished by the School District.”

- 135) Volume 2, Section 102123, Cubicle Curtain and Tracking System, Page 2, paragraph 2.3.G: Add, "sub framing" after the phrase "Wall brackets."
- 136) Volume 2, Section 102213, Wire Mesh Partitions, Page 4, paragraph 2.3.F: Add the following subsection 3 as follows:
 "3. Posts shall be spaced a maximum of 5'-0" on center."
- 137) Volume 2, Section 102226, Operable Partitions, Page 5, paragraph 2.2.L: Delete in its entirety.
- 138) Volume 2, Section 102226, Operable Partitions, Page 7, paragraph 2.7: Insert the following: "and SGI Classroom #120/#122" after the phrase "SGI Classroom #220/#218."
- 139) Volume 2, Section 102800, Toilet, Bath, and Laundry Accessories, Page 3, paragraphs, 2.2.B, 2.2.C, and 2.2.H: In each paragraph, delete "Owner" and replace with "School District".
- 140) Volume 2, Section 102800, Toilet, Bath, and Laundry Accessories, Page 102800-3, paragraph 2.2.E.:
 a. Subsection 2, "Mounting": Delete "Semi-recessed" and replace with "Surface mounted."
 b. Subsection 3, "Capacity": Delete "Manufacturer's standard" and replace with "minimum 30 napkins and 27 tampons."
 c. Subsection 5 "Exposed Material and Finish": Delete section in its entirety and replace with:
 "Materials: Cabinet: 18-8 S, type-304, 22 gauge stainless steel, all-welded construction. Exposed surfaces to have satin finish. Door: 18-8 S, type 304, 18-gauge stainless steel with satin finish and international graphic symbols to identify products dispensed and coin denomination."
 d. Add new subsection 7:
 "7. Mounting Height: Mount per Barrier-free requirements."
- 141) Volume 2, Section 102800, Toilet, Bath, and Laundry Accessories, Page 3, paragraph 2.2.F: Under subsection 4 "Material and Finish" delete "Stainless steel, No. 4 finish (satin)" and replace with: "Cabinet, flanges, door: 18-8 S, type-304, 22-gauge stainless steel, all-welded construction. Exposed surfaces to have satin finish."
- 142) Volume 2, Section 102800, Toilet, Bath, and Laundry Accessories, Page 3, paragraph 2.2.G:
 a. Under Subsection 4. "Minimum Waste-Receptacle Capacity": Delete "4 gal." and replace with "12 gallon, minimum."
 b. Under Subsection 5 "Material and Finish": Delete: "18-18S" and replace with "18-8S".
- 143) Volume 2, Section 102800, Toilet, Bath, and Laundry Accessories, Page 4, paragraph 2.2.J: Delete paragraph in its entirety and replace with: "Warm Air Hand Dryer: Surface mounted, ADA-compliant, vandal resistant, warm-air hand dryer with "no touch" operation controlled by electronic sensor and with manufacturer's standard cast iron white porcelain finish. Units shall have a minimum of 100/120V, 12.5 Amps, 60 Hz, 1500 Watts, heating element of 900W, 1/2 HP, 12,000 LFM, with drying time 15-20 seconds."
- 144) Volume 2, Section 105113, Metal Lockers, Delete entire Section 105113, dated October 20, 2011, and replace with REVISED Section 105113, dated February 7, 2012, attached to this Addendum.
- 145) Volume 2, Section 116143, Stage Curtains, Page 3, paragraph 2.2.A: Delete the first sentence and replace with, "All fabrics shall be woven from inherently flame resistant fibers (IFR)."
- 146) Volume 2, Section 116143, Stage Curtains, Page 3, paragraph 2.2.B: Delete paragraph in its entirety and replace with: "The front curtain and valance shall be manufactured from 54 inch inherently flame resistant (IFR) 26 oz. velour. The cyclorama setting consisting of border curtains, rear curtains, and masking legs shall be manufactured from 54 inch inherently flame resistant (IFR) 20 oz. velour."

- 147) Volume 2, Section 123201, Modular Laminate Casework, Page 1, paragraph 1.2.A: Add: “and reception desk” after, “Furnish and install high-pressure decorative laminate casework”.
- 148) Volume 2, Section 123201, Modular Laminate Casework, Page 9, paragraph 2.5.A: Add the following Subparagraph 6 as follows: “.6 Laminate color and texture to be selected by Architect from manufacture’s standards range.”
- 149) Volume 2, Section 123450, Wood Laboratory Casework and Equipment, Page 3, paragraph 1.7.A.5: Delete the third line: “Samples not meeting the following will be grounds for rejection of bid” and replace with: “Samples not meeting the following specifications will be rejected.”
- 150) Volume 2, Section 123450, Wood Laboratory Casework and Equipment, Page 4, paragraph 1.8.A.: Delete paragraph and replace with, “This contractor shall be responsible to provide a technically qualified representative to thoroughly instruct the Owner’s personnel in correct procedures of operating and maintaining this contract.”
- 151) Volume 2, Section 124813, Entrance Floor Mats and Frames, Page 1, paragraph 1.2.A: Add new subsection 2 as follows:
“2. Roll-up entrance walk-off mats.”
- 152) Volume 2, Section 124813, Entrance Floor Mats and Frames, Page 2, paragraph 2.1: Delete, “ROLL-UP MATS” and replace with: “ROLL-UP MATS IN RECESSED FRAME – TYPE EM-4.”
- 153) Volume 2, Section 124813, Entrance Floor Mats and Frames, Part 2, Page 3: Add new paragraph 2.5 as follows:
“2.5. ROLL-UP ENTRANCE WALK-OFF MATS – TYPES EM-1, EM-2, EM-3, EM-5, EM-6, EM-7, EM-8, AND EM-9
A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. American Floor Products Company, Inc.
2. Mats, Inc.
3. Musson Rubber Company
4. Or approved equal.
B. Roll-up entrance walk-off mat: surface laid removable walk-off mat, total thickness ½ inch minimum.
1. Face: Solution-dyed polypropylene, molded reinforced textile, high grade all weather, crush resistant, with UV-prohibitory, face weight 36 oz/sq. yard minimum.
2. Backing: Non-slip, recycled rubber, heavy duty construction, with beveled, barrier-free, tapered edge.
3. Pattern: Bi-level pattern, as selected by Architect from manufacturer’s standard patterns
4. Color: Face material and edge as selected by Architect from manufacturer’s standard colors.”
- 154) Volume 2, Section 142400, Hydraulic Elevators, Page 1, paragraph 1.2: Insert new subparagraph 8 as follows:
“8. Division 28 Section “Access Control”: Proximity Type Access Card Reader system and accessories.”
- 155) Volume 2, Section 142400, Hydraulic Elevators, Page 1, paragraph 1.3.A.7 and 1.3.A.8: Delete these sections in their entirety.
- 156) Volume 2, Section 211000, Double-Interlocked Fire Suppression Systems: Delete entire Section 21100, dated October 20, 2011, and replace with REVISED attached Section 211000, included as Item B.8 of this Addendum.
- 157) This section intentionally omitted.

- 158) This section intentionally omitted.
- 159) Volume 3, Section 230713, Duct Insulation, Page 8, Part 3: Delete paragraph 3.03 "Schedules" in its entirety and replace with the following:

"3.03 SCHEDULES

- A. Supply and return ducts connected to heat pumps and AC units: 2-inch flexible ductwrap R-5 minimum.
 - B. Kitchen Make-up Air Unit: 2-inch flexible ductwrap R-5 minimum.
 - C. Kitchen Hood Exhaust Duct and Kiln Exhaust Duct: high temperature zero clearance ductwrap (3M fire barrier ductwrap 15A or approved equal).
 - D. Supply Ducts and Outdoor Air Ducts From Equipment: 2-inch flexible ductwrap R-5 minimum.
 - E. Return Ducts Feeding Return Side of Energy Recovery Devices: 2-inch flexible duct wrap R-5 minimum.
 - F. Exhaust Ducts to Exhaust Fans Directly Without Recovery: non-insulated, except within 10-feet of exterior opening provide 2-inch flexible ductwrap R-5 minimum.
 - G. Other Supply, Outdoor Air, and Return Ducts: 2-inch flexible ductwrap R-5 minimum.
 - H. Supply and Return Ducts in Vertical Shafts: Rigid board, 2-inches thick, R-5 minimum."
- 160) Volume 3, Section 232113, Hydronic Piping, Page 17, Subsection 3.02 "Installation," Subsection L "Pipe Hangers and Supports": In item 9, replace reference to "Section 09 9000" with reference to "Division 9, Section 099123."
- 161) Volume 2, Section 260573, Circuit Protective Devices Coordination Study and Arc Flash Hazard Analysis,: Delete entire Section 260573, dated October 20, 2011, and replace with REVISED attached Section 211000, included as Item B.10 of this Addendum.
- 162) Volume 3, Section 260945, Stage Lighting Control System, Page 17, Paragraph 2.03 "Vision.Net Control System Specification": Under sub-paragraph B, delete item 1 in its entirety and replace with the following:
- "B.1. Each station shall be connected as an RS485 serial "daisy chain" using cable that is compatible with system and is recommended by manufacturer."
- 163) Volume 3, Section 260945, Stage Lighting Control System, Page 23, Paragraph 2.03 "Vision.Net Control System Specification": Delete Subsection J, items No. 1 and 2 in their entirety and replace with the following:
- "J.1. Manufacturer and model number of data cable shall be as recommended by system manufacturer."
- 164) Volume 3, Section 260945, Stage Lighting Control System, Page 28, Paragraph 2.09 "Data Cable Specification": Delete sub-paragraph A, and items No. 1 and 2 in their entirety and replace with the following:
- "A. Manufacturer and model of data cable shall be as recommended by system manufacturer."
- 165) Volume 3, Section 265100, Interior Lighting, Page 3, Subsection 2.01A "Luminaires": After "As indicated on luminaire schedule," insert: "on drawings E-3 and E-11."
- 166) Volume 3, Section 265100, Interior Lighting, Page 3, Subsection 2.02.A "Luminaire": In subsection 1, after "Furnish product as indicated on luminaire schedule," insert: "on drawings E-3 and E-11."
- 167) Volume 3, Section 265100, Interior Lighting, Page 3, Subsection 2.03 "Ballasts and Control Units": Under Subsection A, item No. 2, delete the words "or approved equal" from end of sentence.

- 168) Volume 3, Section 265100, Interior Lighting, Page 5, Subsection 2.04.B “Lamp Types”: After “As specified in luminaire schedule,” insert: “on drawings E-3 and E-11.”
- 169) Volume 3, Section 265100, Interior Lighting, Page 6, Subsection 2.04.F “Reflector Lamps”: Delete item No. 1 in its entirety and replace with the following:
 “F.1. Product: As shown on luminaire schedule (see sheets E-3 and E-11).”
- 170) Volume 4, Section 270000, Communications, Page 4, Subsection 1.5 “Division 27 Overview”: In Subsection 1.5D, replace reference to Specification Section “27 41 00 – Audio -Video Communications – E-Rate Contractor (AV controls and distribution only)” with reference to Specification Section “27 40 00 – Audio-Video Communications.”
- 171) Volume 4, Section No 270001, Communications, Page 4, Subsection 1.5, “Division 27 Overview”: In Subsection 1.5D, replace reference to Specification Section “27 41 00 Video/Audio Communications -- E-Rate Contractor (AV controls and distribution only) ” with reference to Specification “27 40 00 Video/Audio Communications.”
- 172) Volume 4, Section 270001, Communications, Page 24 (End of the Section), please replace “End of E-Rate Section 270000” with “End of E-Rate Section 270001.”
- 173) Volume 4, Section 274116.51, Integrated Audio-Video Systems and Equipment for Classrooms, Page 1, Subsection 1.2. “Scope of Specification”: In Subsection 1.2.A.1, after “VCR/DVD/CD Recorder/Players” insert: “(Provided and Installed by NJSDA).”
- 174) Volume 4, Section 282300, IP Video Surveillance:
- a. Page 4, Subsection 2.2. “CCTV Cameras”: In Subsection 2.2.B.c., replace “Vicon” with “Panasonic.”
 - b. Page 12, Subsection 3.1 “Installation”: Add new Subsection 3.1.O as follows:
 “ADDED NOTE: CCTV system submittals to include shop drawings locating all devices and mounting heights prior to rough-in of conduits and boxes.”
- 175) Volume 4, Section 312316, Excavation, Page 3, Subsection 3.2 “Excavation”: In Subsection 3.2.M, replace reference to Specification 02055 with reference to Specification 310516 “Aggregates for Earthwork.”
- 176) Volume 4, Section 323113, Chain Link Fences and Gates, Page 3, Subsection 2.3 “Components”: Under Subsection F, add: “Fencing fabric to be 9 gauge galvanized steel with a fused vinyl coating”
- 177) Volume 4, Section 323223, Segmental Retaining Wall, Page 8:
- a. Subsection 2.5.A: replace “12 x 72 x 24 inches ” with “8 x 18 x 21 ½ inches.”
 - b. Subsection 2.5.B: replace “1740 lbs.” with “105 lbs.”

B. Attachments Including Revised and New Specification Sections

- 1) Revised Insurance Certificate – Certificate of Insurance for Eligible Contractors
- 2) Revised Insurance Certificate – Certificate of Insurance for Ineligible Contractors
- 3) 055213 – Pipe Tube and Railings (7 Pages) Replace previously issued section in its entirety.
- 4) 087100 – Finish Hardware (44 Pages) Replace previously issued section in its entirety.
- 5) 095113 – Acoustical Panel Ceilings (13 Pages) Replace previously issued section in its entirety.
- 6) 099113 – Exterior Painting (5 Pages) Insert this section after Section 098413 – Fixed Sound Absorptive Panels.
- 7) 105113 – Metal Lockers (7 Pages) Replace previously issued section in its entirety.

- 8) 211000 – Double interlocked Fire Suppression Systems (24 Pages) Replace previously issued section in its entirety.
- 9) 230713 – Duct Insulation (9 Pages) Replace previously issued section in its entirety.
- 10) 260573 – Circuit Protective Device Coordination Study and Arc Flashing Analysis (2 Pages) Replace previously issued section in its entirety.
- 11) 260945 – Stage Lighting Control System (30 Pages) Replace previously issued section in its entirety.
- 12) 265100 – Interior Lighting (9 Pages) Replace previously issued section in its entirety.
- 13) 270000 – Communications GC (1 Page) Replace Page 4 Only.
- 14) 270001 – Communications E-Rate (2 pages) Replace Pages 4 and 24 Only.
- 15) 272001 – Wireless Data Communications E-Rate (1Page) Replace Page 7 Only.
- 16) 274116.51 – Integrated Audio Video Systems and Equipment for Classrooms (1 Page) Replace Page 1 Only.
- 17) 282300 – IP Video Surveillance (1 Page). Replace Page 12 Only.

C. Additional Specification Sections (Attachments)

Chlordane Impacted Soil Remediation Specifications

- 01011 – Project Description Summary
- 02250 – Excavation, Removal & Handling of Chlordane Impacted Materials
- 02260 – Waste Disposal Requirements
- Maser Drawing # 1 – Proposed Areas of Soil Remediation.

D. Revisions to the Project Drawings

Drawing A-1.1, Overall First Floor Plan

- Detail 1/A-1.1:
 - Revise room number per SK-1
 - Revise detail to provide pocket in CMU wall at door # 178 per Drawing A-1.4 and associated SK-3

Drawing A-1.2, Overall Second Floor Plan

- Detail 1/A-1.2:
 - Revise room number for “Girl’s” toilet room from 225.1 to 225.2.
 - Revise room number for “Stair” (located adjacent to Classroom 221) from S-201 to S-202.

Drawing A-1.3, First Floor Plan- Block “A”

- Detail 1/A-1.3:
 - Revise room numbering and door numbering per SK-2.
 - Revise room numbering and door numbering per SK-3.
 - Revise room and door numbering for “TR” serving SE Classroom 106 to be TR 106.2 and associated door 106.2.
 - Revise room and door numbering for “TR” serving SE Classroom 108 to be TR 108.2 and associated door 108.2.
 - Revise room numbering for “Girl’s Toilet” from 180.1 to 180.2 and associated door numbering from 180.1 to 180.2.

- Revise room and door numbering for “Kiln Room” to be room 113.2 and associated door to be 113.2.
- Provide new metal stud partition at “Toilet Room 124.2” per SK-3.
- Revise cabinetry designation in Block ‘A’ at Room # 101 from C1A to C2A.
- Revise cabinetry designation in Block ‘A’ at Rooms # 103, 105, 107 from C1 to C2.
- Entrance Mat Schedule:
 - Revise Schedule to include EM-8 & EM-9, and modify recessed mat EM-4 size to be 27’-0” L x 6’-8”W. EM-8: Cafetorium Door 155.7, 8’-0” wide x 6’-0” long, centerline of mat equals centerline of doors. EM-9: Gymnasium Door 155.2, 6’-0” wide x 6’-0” long, centerline of mat equals centerline of doors.

Drawing A-1.4, First Floor Plan- Blocks “B” & “D”

- Detail 1/A-1.4:
 - Revise partition tag at common wall of toilet room “TR 129.2” and “MECH. M-181.3” and common wall of toilet room “TR 131.2” and “MECH. M-181.3” to be “P4-8”
 - Revise partition tag at common wall of toilet room “TR 132.2” and “MECH. M-182.3” and common wall of toilet room “TR 134.2” and “MECH. M-182.3” to be “P4-8”
 - Delete partition tag “P4-6” at common wall of toilet room “TR 138.2” and “MECH. M-182.5”
 - Delete tag ‘WC-4’ at Classrooms #135, 139, 141, 143 and 145.
- Detail 2/A-1.4:
 - Revise detail to provide pocket in CMU wall at door #178 per SK-23.
- Detail 3/A-1.4:
 - Details shall be modified per attached SK-14.
- Detail 4/A-1.4:
 - Detail shall be replaced with attached detail on SK-15.
- Plan 5/A-1.4:
 - Revise recessed mat size and add porcelain tile base & border within Vestibule #160 per SK-29 and refer to Detail 2/A-8.2 & SK-28 for tile dimensions and tile pattern.
- Entrance Mat Schedule:
 - Revise schedule to include EM-8 & EM-9, and modify recessed mat EM-4 size to be 27’-0” L x 6’-8”W (GC to verify in field when Vestibule#160 walls are erected).
EM-8: Cafetorium Door 155.7, 8’-0” wide x 6’-0” long, centerline of mat equals centerline of doors. EM-9: Gymnasium Door 155.2, 6’-0” wide x 6’-0” long, centerline of mat equals centerline of doors.

Drawing A-1.5, First Floor Plan- Block “C”

- Detail 1/A-1.5:
 - Revise partition tag at “Light Booth 146” to be ‘P2’ in lieu of ‘P1-6’
- Detail 4/A-1.5:
 - Revise note ‘FLUID APPLIED VAPOR / GAS BARRIER SYSTEM TERMINATION’ to be ‘FLUID APPLIED RADON / VAPOR BARRIER SYSTEM’
 - Revise note ‘FINE GRADE GRANULAR FILL’ to be ‘DRAINAGE COURSE’
- Entrance Mat Schedule:
 - Revise schedule to include EM-8 & EM-9, and modify recessed mat EM-4 size to be 27’-0” L x 6’-8”W (GC to verify in field when Vestibule#160 walls are erected).
EM-8: Cafetorium Door 155.7, 8’-0” wide x 6’-0” long, centerline of mat equals centerline of doors. EM-9: Gymnasium Door 155.2, 6’-0” wide x 6’-0” long, centerline of mat equals centerline of doors.

Drawing A-1.6, Second Floor Plan- Block E”

- Entrance Mat Schedule:
 - Revise schedule to include EM-8 & EM-9, and modify recessed mat EM-4 size to be 27’-0” L x 6’-8”W (GC to verify in field when Vestibule#160 walls are erected).

EM-8: Cafetorium Door 155.7, 8'-0" wide x 6'-0" long, centerline of mat equals centerline of doors. EM-9: Gymnasium Door 155.2, 6'-0" wide x 6'-0" long, centerline of mat equals centerline of doors.

Drawing A-1.7, Gymnasium Layout Plans

- Detail 10/A-1.7:
 - Modify the 18" Wide Main Court Perimeter Line to add 2" wide painted "Out of Bounds Line" per SK-26.

Drawing A-2.1, Roof Plan

- Detail 1/A-2.1:
 - Revise extent of sloped roof overhang at Media Center per SK-4. Roof overhang shall terminate flush with exterior face of CMU veneer at two-story wall below.
 - Add following note at roof drains located in Block "B"- 'MINIMUM STARTING THICKNESS OF RIGID INSULATION SHALL BE 2" AT ROOF DRAINS (BLOCK 'D') AND SHALL TAPER IN ACCORDANCE WITH DETAILS ON DRAWING A-2.2'
- Detail 4/A-2.1:
 - Add the following note 'PROVIDE 6" THICK CONCRETE WITH 4" DRAINAGE COURSE. EXTEND CONCRETE 6" BEYOND CAST IRON PIPING ALL SIDES AND PROVIDE #3 PERIMETER REBAR AT CENTERLINE OF 6" DIMENSION & MIDPOINT OF SLAB'

Drawing A-2.2, Roof Plan Details

- Detail 12/A-2.2:
 - Revise detail title to be 'MOD. BIT. ROOF- UTILITY CURB'

Drawing A-3.1, Exterior Elevations

- Detail 1/A-3.1:
 - Revise exterior material #1 to be #1A per SK-5.
- Detail 2/ A-3.1:
 - Revise exterior material #1 to be #1A per SK-6.
- Detail 3/A-3.1:
 - Revise exterior material #1 to be #1A per SK-7.
 - Provide Cast Stone Window Sill at all Clerestory Windows per SK-7.
- Detail 4/A-3.1:
 - Revise exterior material #1 to be #1A per SK-8.
- Detail 5/A-3.1:
 - Revise note #3 as follows: 'PROVIDE DELEGATED DESIGN SHOP DRAWINGS BY SPECIALTY ENGINEER FOR ATTACHMENT OF UNIT TO EXTERIOR WALL, UTILIZING FLAT HEAD, COUNTERSUNK, STAINLESS STEEL, POST INSTALLED ANCHORS AT 12" O.C. MAX.'
- 'Exterior Materials Legend':
 - Revise item #26 to be "MJ= MOVEMENT JOINT- PROVIDE GALV. STEEL SHELF ANGLE SIM. TO DETAIL 8/S-4.1 AT ALL HORIZONTAL MJs. PROVIDE 30# ASPHALT SATURATED BUILDING PAPER BOND BREAK AT UNDERSIDE OF ANGLE, FULL DEPTH OF CMU VENEER. HOLD EDGE OF BOND BREAK 1/2" BACK FROM FACE OF CMU AND PROVIDE 3/4" DEEP CONTINUOUS BACKER ROD AND SEALANT.

Drawing A-3.2, Enlarged East & North Exterior Elevations

- Details 1/A-3.2 & 2/A-3.2:
 - Revise exterior material #1 to be #1A per drawing A-3.1 revisions and associated SK-5.
 - Revise exterior material #1A to be #1 per SK-9.

- Details 3/A-3.2 & 4/A-3.2:
 - Revise exterior material #1 to be #1A per drawing A-3.1 revisions and associated SK-6.
- Detail 4/A-3.2:
 - Revise exterior materials at building entrance per SK-10.
- 'Exterior Materials Legend':
 - Revise item #26 to be "MJ= MOVEMENT JOINT- PROVIDE GALV. STEEL SHELF ANGLE SIM. TO DETAIL 8/S-4.1 AT ALL HORIZONTAL MJs. PROVIDE 30# ASPHALT SATURATED BUILDING PAPER BOND BREAK AT UNDERSIDE OF ANGLE, FULL DEPTH OF CMU VENEER. HOLD EDGE OF BOND BREAK 1/2" BACK FROM FACE OF CMU AND PROVIDE 3/4" DEEP CONTINUOUS BACKER ROD AND SEALANT.
- 'Exterior Fixtures Legend'
 - Add fixture note as follows "PROVIDE TYPICAL WALL ANCHORAGE FOR ARM & ROD TYPE EXTERIOR LIGHT FIXTURE AS INDICATED ON DETAIL 12A/S-3.5. COORDINATE WITH THE FIXTURE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS." Refer to SK-S-8 for detail.

Drawing A-3.3, Enlarged West & South Exterior Elevations

- Details 1/A-3.3 & 2/A-3.3:
 - Revise exterior material #1 to be #1A per drawing A-3.1 revisions and associated SK-7.
- Details 3/A-3.3 & 4/A-3.3:
 - Revise exterior material #1 to be #1A per drawing A-3.1 revisions and associated SK-8.
- Details 5/A-3.3 & 6/A-3.3:
 - Revise exterior materials #1 and #1A as follows. Material #1 shall be changed to #1A. Material #1A shall be changed to #1.
- 'Exterior Materials Legend':
 - Revise item #26 to be "MJ= MOVEMENT JOINT- PROVIDE GALV. STEEL SHELF ANGLE SIM. TO DETAIL 8/S-4.1 AT ALL HORIZONTAL MJs. PROVIDE 30# ASPHALT SATURATED BUILDING PAPER BOND BREAK AT UNDERSIDE OF ANGLE, FULL DEPTH OF CMU VENEER. HOLD EDGE OF BOND BREAK 1/2" BACK FROM FACE OF CMU AND PROVIDE 3/4" DEEP CONTINUOUS BACKER ROD AND SEALANT.
- 'Exterior Fixtures Legend'
 - Add fixture note as follows "PROVIDE TYPICAL WALL ANCHORAGE FOR ARM & ROD TYPE EXTERIOR LIGHT FIXTURE AS INDICATED ON DETAIL 12A/S-3.5. COORDINATE WITH THE FIXTURE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS." Refer to SK-S-8 for detail.

Drawing A-3.4, Courtyard Elevations

- Details 1/A-3.4, 2/A-3.4 & 4/A-3.4:
 - Revise exterior material #1 to be #1A at all locations. Note, no changes shall be made for detail 3/A-3.4.
- Detail 3/A-3.4:
 - Provide Cast Stone Window Sill 'Exterior Materials Legend' #4 at all Clerestory windows, similar to SK-7.
- Detail 7/A-3.4:
 - Add cast-iron, Class 35, non-slip nosings, 3" W x tread width x 3/8" thickness, embedded flush into top of all exterior stair treads. Nosing shall have 1/2" radius edge, with galvanized wing nut anchorage system and stainless steel countersunk bolts. Provide abrasive, black, epoxy finish with aluminum oxide slip resistant grit.
- Details 7/A-3.4, 8/A-3.4 & 9/A-3.4:
 - Revise all exterior railings material to be hot-dipped galvanized steel finish, after fabrication.

- 'Exterior Materials Legend':
 - Revise item #26 to be "MJ= MOVEMENT JOINT- PROVIDE GALV. STEEL SHELF ANGLE SIM. TO DETAIL 8/S-4.1 AT ALL HORIZONTAL MJs. PROVIDE 30# ASPHALT SATURATED BUILDING PAPER BOND BREAK AT UNDERSIDE OF ANGLE, FULL DEPTH OF CMU VENEER. HOLD EDGE OF BOND BREAK 1/2" BACK FROM FACE OF CMU AND PROVIDE 3/4" DEEP CONTINUOUS BACKER ROD AND SEALANT.

Drawing A-4.2, Building Sections

- Detail 1/A-4.2:
 - Revise detail per SK-16 and SK-17.

Drawing A-4.4, Building Sections & Details

- Detail 1/A-4.4:
 - Replace term 'DESIGNATED' with 'DELEGATED' within note 'DESIGNATED DESIGN OF SECONDARY STEEL SUBFRAMING FOR CEILING AND UTILITY LOADS BY SPECIALTY ENGINEER, TYP.'
- Detail 2/A-4.4:
 - Revise detail to include curved gypsum wallboard 'beam' per SK-11.
- Detail 3/A-4.4:
 - Revise detail to include curved gypsum wallboard 'beam' per SK-12.
 - Revise interior wall finish note per SK-12.
 - Replace term 'DESIGNATED' with 'DELEGATED' within note 'DESIGNATED DESIGN OF SECONDARY STEEL SUBFRAMING FOR CEILING AND UTILITY LOADS BY SPECIALTY ENGINEER, TYP.'

Drawing A-4.5, Wall Sections

- Details 2/A-4.5 and 5/A-4.5:
 - Note for "CAST STONE UNIT B" shall be changed to "CAST STONE UNIT B-1"

Drawing A-4.6, Wall Sections

- Detail 4/A-4.6:
 - Note for "CAST STONE UNIT B" shall be changed to "CAST STONE UNIT B-1"

Drawing A-4.7, Wall Sections

- Detail 1/A-4.7:
 - Revise referenced drawing detail at building parapet to be 'REFER TO DETAIL 2/A-2.1'
- Detail 2/A-4.7:
 - Revise referenced drawing detail at building parapet to be 'REFER TO DETAIL 2/A-2.1 (SIM)'
 - Revise detail to clarify note regarding requirement for Delegated Design of cold formed metal stud framing per SK-31.
- Detail 3/A-4.7:
 - Revise designation "Wall Type = E-2A" to "Wall Type = E-2C" per SK-16.
 - Revise masonry lintel as indicated.
 - Revise finished ceiling at Vestibule #160 per attached SK-16. Refer to SK-18 and SK-19.
- Detail 4/A-4.7:
 - Revise finished ceiling at Vestibule #160 per attached SK-17. Refer to SK-18 and SK-19.
 - Furnish and install ceiling access panel in Vestibule #160 per SK-17.

Drawing A-4.8, Wall Sections

- Detail 5/A-4.8:
 - Note for "CAST STONE UNIT B" shall be changed to "CAST STONE UNIT B-1"

Drawing A-4.9, Wall Sections

- Detail 2/A-4.9:
 - Replace note 'FLUID-APPLIED VAPOR/GAS BARRIER SYSTEM. (TYP)' with the following note "FLUID-APPLIED RADON/ VAPOR BARRIER SYSTEM (TYP.)"

Drawing A-4.13, Wall Sections

- Detail 1/A-4.13:
 - Revise finished ceiling at Vestibule #160 per SK-18.
- Detail 2/A-4.13:
 - Delete note "CONCRETE SIDEWALK- REFER TO CIVIL DWGS"
- Detail 3/A-4.13:
 - Delete note "CONCRETE SIDEWALK- REFER TO CIVIL DWGS"

Drawing A-4.14, Wall Sections

- Detail 1/A-4.14:
 - Revise finished ceiling at Vestibule #160 per SK-17, SK-18 and SK-19.
 - Delete note "CONCRETE SIDEWALK- REFER TO CIVIL DRAWINGS"

Drawing A-4.15, Partition Types

- Detail 1/A-4.15:
 - Delete note 'HORIZONTAL TRUSS REINFORCING AT 16" O.C. VERTICALLY' and provide note 'HORIZONTAL LADDER TYPE REINFORCING PER SPECIFICATIONS, AT 16" O.C. MAX. UNLESS OTHERWISE NOTED'
- Detail 2/A-4.15:
 - Delete note 'HORIZONTAL TRUSS REINFORCING AT 16" O.C. VERTICALLY' and provide note 'HORIZONTAL LADDER TYPE REINFORCING PER SPECIFICATIONS, AT 16" O.C. MAX. UNLESS OTHERWISE NOTED'
 - Revise note 'CMU, 8" NOMINAL' to be 'CMU, 6" NOMINAL'
 - Revise note at cold formed joists to be '6SW18 COLD FORMED JOISTS AT 16" O.C. MAX. PROVIDE 16 GAUGE CLIP ANGLE EACH END WITH (2) #10 SELF TAPPING SCREWS'
 - Add the following note at cold formed joist attachment to CMU wall 'CONT. 16 GAUGE DEEP LEG TRACK – FASTEN TO CMU WITH MIN. 0.118" ϕ POWER ACTUATED FASTENERS AT EACH CLIP AND AT 12" O.C. MAX. (MIN. ALLOWABLE SHEAR = 130#/ EA.) IN HOLLOW CMU WITH 1" MIN. EMBEDMENT'
- Detail 3/A-4.15:
 - Add the following note #3:
'PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD ASSEMBLIES AT 30'-0" O.C. MAX. AND AT BOTH SIDES OF DOOR OPENINGS. ISOLATE FRAMING MEMBERS EACH SIDE OF CONTROL JOINT, UNLESS AT DOOR OPENINGS. PROVIDE JOINTS AT EQUAL INTERVALS ON EACH WALL PLANE.'
- Detail 4/A-4.15:
 - Add the following note #3:
'PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD ASSEMBLIES AT 30'-0" O.C. MAX. AND AT BOTH SIDES OF DOOR OPENINGS. ISOLATE FRAMING MEMBERS EACH SIDE OF CONTROL JOINT, UNLESS AT DOOR OPENINGS. PROVIDE JOINTS AT EQUAL INTERVALS ON EACH WALL PLANE.'

Drawing A-4.16, Masonry Details

- Detail 2/A-4.16:
 - Revise detail per SK-20.
- Detail 14/A-4.16:

- Revise Cast Stone Units “A” and “B” per SK-21.
- Provide new Cast Stone Units “B-1” and “B-2” per SK-21.
- Change Cast Stone Unit “C-1” face height dimension from 6” to 5-5/8”.
- Change Cast Stone Unit “D” face height dimension from 3-5/8” to 4” and change overall height from 4-5/8” to 5”.
- Detail 5/A-4.16:
 - Refer to SK-22 for new “Cast Stone Isometric Detail”
- Detail 6/A-4.16:
 - Refer to SK-22 for new “Cast Stone Isometric Detail”

Drawing A-4.17, Construction Details

- Detail 1/A-4.17:
 - Delete note ‘SELF TAPPING SCREW ANCHORS THROUGH PRESERVATIVE TREATED WOOD BLOCKING, REFER TO NOTE ABOVE (TYP)’ and provide the following note ‘PROVIDE PRESERVATIVE TREATED WOOD BLOCKING WITH SELF TAPPING SCREW ANCHORS PER DETAIL 2/A-2.1’

Drawing A-4.18, Construction Details

- Detail 3/A-4.18:
 - Delete note ‘AIR BARRIER TYPE 1 OVER ALL EXT. PLYWOOD, REFER TO PLYWOOD NOTE BELOW.’
 - Delete note ‘(2) LAYERS OF 5/8” APA C-C PLUGGED EXT. FIRE RETARDED TREATED PLYWOOD’ and replace with ‘2x PRESERVATIVE TREATED WOOD BLOCKING’

Drawing A-5.1, Room Finish Notes & Schedules

- Room Finish Schedule:
 - Revise Vestibule #160 as follows:
 - “FLOORS” shall be “PT**, EM-4”
 - “BASE” shall be “PT**”
 - “WALLS” shall be “CMU/PTD P-14”
 - “CEILING” shall be “GWB/PTD P-21, ACT-4”
 - “CEILING HT” shall be “14’-7” MIN*”
 - “NOTES” shall be “VAULTED, SEE DWG A-4.4”
 - Revise Stair # 200, 201 & 202 ceiling types from “GWB/PT” to “ACT-2”
 - Revise Stair # 200 ceiling height from “Varies” to “10’-0”
 - Revise Stair #201 ceiling height from “Varies” to “11’-6”
 - Revise Stair #202 ceiling height from “Varies” to “10’-0”
 - WOOD-2: Replace “Oak” with “Pine”
 - WOOD-3: Replace “Painted” with “Stained”.

Drawing A-5.2, Door Schedules

- Change doors # S-100.2, S-101.2 and S-102.2 ‘FRAME TYPE’ to ‘F1’
- Change doors # S-100.2, S-101.2 and S-102.2 ‘DOOR MAT.’ to ‘ALUM’
- Change doors # S-100.2, S-101.2 and S-102.2 ‘DOOR TYPE’ to ‘02’
- Change doors # 113 and #115 ‘H.W. SET’ to ‘09’
- Change door # 179.1 ‘FRAME TYPE’ to ‘F1’
- Change door #181 ‘DOOR MAT.’ To ‘ALUM’
- Add the following drawing note:
 - DOOR UNDERCUT NOTE:

ON THE MECHANICAL DRAWINGS, DOORS MAY BE SHOWN INDICATING "XX CFM" WHICH DESIGNATES THAT DOOR TO BE UNDERCUT TO PROVIDE THE CFM AIR FLOW INDICATED BASED ON THE FOLLOWING SCHEDULE:

- * PROVIDE 1/2" UNDERCUT UP TO 50 CFM
- * PROVIDE 3/4" UNDERCUT UP TO 75 CFM
- * PROVIDE 1" UNDERCUT UP TO 125 CFM

Drawing A-5.3, Door Schedule

- Change doors #149.1, 149.2, 149.3 and 149.4 'FRAME MAT.' to 'HM'
- Change doors #147.1, 147.3, 149.1-149.4, 150, 154, 155.1, 155.3, 155.4, 155.6, 157, 158, 177, 184, 185, S-200, S-201 and S-202 'FRAME TYPE' to 'F1'
- Change door #183 'DOOR MAT.' to 'ALUM'
- Change door #161.1 'DOOR TYPE' to '02A' per SK-30.
- Change door #223 'DOOR TYPE' from '19' to '02'
- Change door #223 'DOOR MAT.' to 'HM'
- Add the following drawing note:
 - DOOR UNDERCUT NOTE:
ON THE MECHANICAL DRAWINGS, DOORS MAY BE SHOWN INDICATING "XX CFM" WHICH DESIGNATES THAT DOOR TO BE UNDERCUT TO PROVIDE THE CFM AIR FLOW INDICATED BASED ON THE FOLLOWING SCHEDULE:
 - * PROVIDE 1/2" UNDERCUT UP TO 50 CFM
 - * PROVIDE 3/4" UNDERCUT UP TO 75 CFM
 - * PROVIDE 1" UNDERCUT UP TO 125 CFM

Drawing A-5.4, Door & Window Types

- Detail 1/A-5.4:
 - Delete detail title and replace with "DOOR FRAMES".
 - Add door frame type 'F2-B' as an insert to curtain wall 'CW-9' per SK-30.
 - Revise note "CONCEALED REMOVABLE MULLION" to "CONCEALED REMOVABLE MULLION AS INDICATED IN HARDWARE SCHEDULE"
 - Add door frame type 'F2-B' as an insert to curtain wall 'CW-9' per SK-30.
- Detail 2/A-5.4:
 - Delete detail title and replace with "DOOR FRAMES".
 - Revise note "CONCEALED REMOVABLE MULLION" to "CONCEALED REMOVABLE MULLION AS INDICATED IN HARDWARE SCHEDULE"
- Detail 3/A-5.4:
 - Add door type '02A' wood door per SK-30.
- Detail 4/A-5.4:
 - Delete Window Types 'W-7' and 'W-11'
- Detail 4/A-5.4:
 - Delete Curtain Wall Type 'CW-6'
- Detail 5/A-5.4:
 - Revise curtain wall Type 'CW-9' per SK-30.

Drawing A-5.5, Door & Window Details

- Detail 2/A-5.5:
 - Revise window sill per SK-33. This detail applies to all solid surface windows sills.

Drawing A-6.2, Cabinetry Details & Interior Elevations

- Details 1/A-6.2, 2/A-6.2, 3/A-6.2 and 4/A-6.2:
 - Delete note 'NOTE: RECEPTION DESK PROVIDED BY NJSDA, IN THE F,F&E PACKAGE'
- Detail 6/A-6.1:

- Revise detail title to be detail "6/A-6.2"
- Detail 7/A-6.1:
 - Revise detail title to be detail "7/A-6.2"
 - On 'PLAN VIEW', revise note to read 'DELETE SHELVING AT PRE-K/K CLASSROOMS, TO ACCOMMODATE TEACHER'S WARDROBE, REFER TO DTL. 5/A-6.1'
- Detail 8/A-6.2:
 - Revise detail to add partition bracing and relocate partition support structure per SK-24.
- Detail 9/A-6.2:
 - Add to following notes: 'PROVIDE BRACING AS DESIGNED BY THE CONTRACTOR'S SPECIALTY ENGINEER (DELEGATED DESIGN)' and 'PROVIDE COLD FORMED METAL STUD SOFFIT FRAMING SYSTEM'
- Detail 10/A-6.1:
 - Revise detail title to be detail "10/A-6.2"
- Detail 14/A-6.2:
 - Delete detail in its entirety.
- Detail 18/A-6.2:
 - Revise detail title scale to indicate ' SCALE: 1/4"= 1'-0" '
- Add new detail 21/A-6.2 per SK-25.

Drawing A-6.3, Gymnasium Interior Elevations

- Detail 2/A-6.3 Stage:
 - Revise detail per SK-27.

Drawing A-6.4, Stage Plan & Details

- Detail 1/A-6.4:
 - Revise note 'WOOD-2 (OAK)' to be 'WOOD-2'
 - Revise note 'WOOD-3: (Y. Pine-Painted Black)' to be 'WOOD-3'
 - Delete note "FLOOR TRANSITION OF OAK TO PINE PAINTED BLACK".
- Details 6, 9, 10, 11, 14 and 15/A-6.4:
 - Replace all references to 'RED OAK' and 'OAK' with 'CHERRY'
- Detail 6/A-6.4:
 - Revise wall base at front of stage from '4" VINYL BASE' to '1x6 CHERRY WOOD BASE'
- Detail 7/A-6.4:
 - Add secondary handrail. Refer to Detail 11/A-6.6 for railing type, mounting height and mounting details.
- Detail 9/A-6.2:
 - Revise detail per SK-34.
- Detail 10/A-6.4:
 - Delete this detail in its entirety.
- Detail 14/A-6.4:
 - Revise note '4" WOOD BASE 3/4" OAK TRIM' to be '1x CHERRY WOOD BASE-FULLY ENCLOSE METAL PLATE STAIR STRINGERS ON BOTH SIDES OF STAGE ENTRY STAIRS. ATTACHED THROUGH PLATE USING COUNTERSUNK SCREWS WITH MATCHING WOOD PLUGS (FLUSH WITH BOARD SURFACE. FASTEN CHERRY 1x1 TOP TRIM WITH BULL NOSED EDGE TO STRINGER BOARD'
 - Delete note '1x1 OAK TRIM WITH BULLNOSED EDGE'
- Detail 15/A-6.4:
 - Add the following note: '2x BEVELED, PRESERVATIVE TREATED WD. NAILERS CAST INTO SLAB EDGE AT SPACING REQ'D FOR ATTACHMENT OF WD. TRIM.'
- Detail 16/A-6.4:
 - Revise note 'T&G YELLOW PINE FLR'G PAINTED BLACK' to be 'T&G YELLOW PINE FLOORING'

Drawing A-6.6, Stair Plan, Sections & Details

- Details 1/A-6.6 and 10/A-6.6:
 - Delete 1 Hour Fire rated gypsum wallboard ceiling assembly at stairs S-200, S-201 and S-202. Refer to A-5.1 and A-7.4 drawing revisions accordingly.

Drawing A-7.1, Reflected Ceiling Plan- Block "A"

- Detail 1/A-7.1:
 - Revise ceiling finish tag at SGI #109 to be 'ACT-2'
- Revise drawing 'LEGEND' per SK-32.

Drawing A-7.2, Reflected Ceiling Plan- Blocks "B" & "D"

- Revise drawing 'LEGEND' per SK-32 (similar.)
- Detail 2/A-7.2:
 - Revise finished ceiling at Vestibule #160 per SK-19.

Drawing A-7.3, Reflected Ceiling Plan- Block "C"

- Revise drawing 'LEGEND' per SK-32 (similar.)
- Detail 1/A-7.3:
 - Add the following note: 'PROVIDE BRACING OF STRUCTURAL STEEL FRAMING PER DRAWING S-2.24'

Drawing A-7.4, Reflected Ceiling 2nd Floor Plan

- Legend:
 - Add control joint "CJ" designations per SK-13.
 - Revise drawing 'LEGEND' per SK-32 (similar.)
- Detail 1/A-7.4:
 - Modify Reflected Ceiling Plan at Media Center #213 per SK-13.
 - Revise Stair # 200, 201 & 202 ceiling types from "GWB/PT" to "ACT-2"

Drawing A-8.2, First Floor Finish Plan- Blocks "B" & "D"

- Detail 2/A-8.2:
 - Revise detail to provide pocket in CMU wall at door #178 per SK-23. Extend floor finish material accordingly.

Drawing F-1.1, First Floor Furniture Plan- Block "A"

- Detail 2/F-1.1:
 - Revise note "RECESSED UTILITY BOX" to be "RECESSED FLOOR BOX, PROVIDE CONCRETE FLOOR SLAB DEPRESSION AT ALL SLAB ON GRADE LOCATIONS PER DETAIL 17/S-1.1."
- Detail 3/F-1.1:
 - Revise note "RECESSED WATERPROOF UTILITY BOX" to be "RECESSED FLOOR BOX, PROVIDE CONCRETE FLOOR SLAB DEPRESSION AT ALL SLAB ON GRADE LOCATIONS PER DETAIL 17/S-1.1."
- Detail 4/F-1.1:
 - Revise note "UTILITY BOX (ON FLOOR)" to be "RECESSED FLOOR BOX, PROVIDE CONCRETE FLOOR SLAB DEPRESSION AT ALL SLAB ON GRADE LOCATIONS PER DETAIL 17/S-1.1."

Drawing F-1.4, Second Floor Furniture Plan- Block "E"

- Detail 1/F-1.4:
 - Revise room numbering for "Stair" (located adjacent to "4-5 #221") to be "Stair #202."

Drawing S-0.1, Load Definitions & Code Plans

- Notes, Footings & Foundations:
Add: "5. Where there is a conflict between architectural drawings and structural drawings, bottom of footing elevations and foundation types shown on structural plans S-2.11 through S-2.14 shall govern, unless specifically indicated otherwise. Adjust CMU foundation wall coursing accordingly."
- Notes, Specialty Engineering (Delegated Design), Note 1.A.:
Add the following to note 1.A.: "Cold formed steel framing shown on drawings is to convey intent of scope only. Ceiling, soffit, partition, and cladding cold formed systems shall be designed by Contractor's Specialty Engineer and shall conform to all other requirements of these documents. Supplemental cold formed framing members shall be designed to be supported by primary framing members/walls only, and shall not be suspended from metal deck."
- Notes, Specialty Engineering (Delegated Design), Add the following:
"G. Supplemental framing and bracing for basketball backstops, projector mountings, & privacy curtains."

Drawing S-1.1, Foundation Details

- Type 1 Bollard Detail, Detail 14/S-1.1:
Height of 8" dia. sched. 80 pipe shall be 39" above adjacent paving.
Limit domed concrete at top to 1", such that overall height of bollard shall be 40".
Top of concrete shall be flush with top of pipe where indicated on Site Civil drawings to receive decorative bollard cover.
- Type 2 Bollard Detail, Detail 19/S-1.1:
Height of 8" dia. sched. 80 pipe shall be 39" above adjacent paving.
Limit domed concrete at top to 1", such that overall height of bollard shall be 40".
Top of concrete shall be flush with top of pipe where indicated on Site Civil drawings to receive decorative bollard cover.
- Type 3 Bollard Detail, Detail 20/S-1.1:
Height of 8" dia. sched. 80 pipe shall be 39" above adjacent paving.
Limit domed concrete at top to 1", such that overall height of bollard shall be 40".
Top of concrete shall be flush with top of pipe where indicated on Site Civil drawings to receive decorative bollard cover.

Drawing S-2.11, First Floor & Foundation Plan – Block "A"

- First Floor & Foundation Plan – Block "A", 1/S-2.11:
Delete Foundation Plan Annotation 5, "Depress Slab for Floor Mats 1.5" "

Drawing S-2.12, First Floor & Foundation Plan – Block "B"

- First Floor & Foundation Plan – Block "A", 1/S-2.12:
Delete Foundation Plan Annotation 5, "Depress Slab for Floor Mats 1.5" "

Drawing S-2.13, First Floor & Foundation Plan – Block "C"

- First Floor & Foundation Plan – Block "A", 1/S-2.13:
Delete Foundation Plan Annotation 5, "Depress Slab for Floor Mats 1.5" "

Drawing S-2.14, First Floor & Foundation Plan – Block "D"

- Detail 2/S-2.14, Sketch SK-S-1:
Replace detail 2/S-2.14 as shown in attached Sketch SK-S-1.
- First Floor & Foundation Plan – Block "D", 1/S-2.14, Sketch SK-S-2:

Modify floor slab depression at entrance vestibule floor mat as shown in attached Sketch SK-S-2.

- First Floor & Foundation Plan – Block “D”, 1/S-2.14:
Delete Foundation Plan Annotation 5, “Depress Slab for Floor Mats 1.5” ” at Corridor 186 entrance.

Drawing S-2.21, Second Floor Framing Plan – Block “E”

- Second Floor Framing Plan – Block “E”, 1/S-2.21:
Add bond beam designation BB-13 (+12’-8”) at Elevator shaft 12” CMU wall and BB-7 (+12’-8”) at 8” CMU Elevator walls. Bond beam reinforcing shall be continuous around elevator shaft. Provide additional bond beam at each elevator rail bracket. Contractor to obtain final rail bracket locations from elevator manufacturer.
- Second Floor Framing Plan – Block “E”, 1/S-2.21:
Provide ML-9 at head of elevator pit ladder wall recess.
- Second Floor Framing Plan – Block “E”, 1/S-2.21, SK-S-3:
Revised reinforcing for shear walls at second floor to roof elevation, as shown hatched on attached SK-S-3.

Drawing S-2.22, Roof Framing Plan – Block “B”

- Roof Framing Plan – Block “B”, 1/S-2.22:
Delete C8x11.5 designation (B-12) at MAU-3 and MAU-7. Provide typical angle frame 9/S-4.1.
- Provide Framing Plan Annotation 3 typical at all rooftop equipment (MAU-3 and MAU-7).

Drawing S-2.23, Low Roof Framing Plan – Block “C”

- Provide Framing Plan Annotation 3 typical at all rooftop equipment (KMAU-1).
- Roof Framing Plan, 1/S-2.23, Sketch SK-S-9:
Modify roof framing at roof hatch as shown on attached sketch SK-S-9.
- Roof Framing Plan, 1/S-2.23, Sketch SK-S-10:
Provide detail 19/S-3.5 typical at guard rail post as shown on attached sketch SK-S-10.

Drawing S-2.24, Roof Framing Plan – Block “C”

- Second Floor Framing Plan – Block “C”, 1/S-2.24:
Provide Framing Plan Annotation 3 typical at all rooftop equipment (RTU-1, RTU-2, RTU-3, RTU-4, RTU-5, RTU-6, and RTU-7).
- Second Floor Framing Plan – Block “C”, 1/S-2.24, Sketch SK-S-11:
Provide detail 19/S-3.5 typical at guard rail post as shown on attached sketch SK-S-11.

Drawing S-2.25, Roof Framing Plan – Block “D”

- Roof Framing Plan – Block “D”, 1/S-2.25, Sketch SK-S-4:
Revise masonry lintel at door recess as shown on attached sketch SK-S-4.

Drawing S-2.31, Roof Framing Plan – Block “E”

- Roof Framing Plan – Block “E”, 1/S-2.31, Sketch SK-S-5:
Modify IMC roof framing as shown on attached Sketch SK-S-5.
Delete Joist Loading Diagram for 128DLHSP2.
- Roof Framing Plan – Block “E”, 1/S-2.31, Sketch SK-S-6:
Modify bearing wall lintels and elevator hoist beam as shown on attached Sketch SK-S-6.

Provide BB-8 at (+27'-4") in 8" CMU Elevator walls and BB-13 at (+27'-4") in 12" CMU Elevator walls. Bond beam reinforcing shall be continuous around elevator shaft.

- Roof Framing Plan – Block "E", 1/S-2.31, Sketch SK-S-12:
Provide detail 19/S-3.5 typical at guard rail post as shown on attached sketch SK-S-12.

Drawing S-3.2, Structural Sections/Details

- Detail 19/S-3.2, Sketch SK-S-7:
Provide reinforcing bar layout typical at Block A/E exterior wall as shown on attached Sketch SK-S-7.

Drawing S-3.4, Structural Sections/Details

- Detail 2/S-3.4: Modify "Slope Away 1:12" to be "Surface pitches downward 1:48 max."
- Detail 8/S-3.4:
 - Add nosing description "3" cast iron, slip-resistant, ribbed nosing w/ embedded steel wing anchors, OSHA Barrier-Free compliant, typ."
 - Modify "Cheek wall, beyond" to be "8" cheek wall, beyond".
- Detail 9/S-3.4: Modify wall reinforcing of 12" CMU from "#5@48" to "#5@32".
- Detail 10/S-3.4: Modify "3/8" th. alum. base plate – slope to match" to "3/8" th. galv. steel base plate – slope to match".

Drawing S-3.5, Structural Sections/Details

- Detail 12A/S-3.5, Sketch SK-S-8:
Provide detail 12A/S-3.5 typical at all wall mounted "Arm & Rod" light fixtures in as shown in attached sketch SK-S-8.
- Detail 22/S-3.5, Sketch SK-S-13:
Add detail 22/S-3.5 as shown on attached sketch SK-S-13.

Drawing S-4.1, Structural Schedules/Details

- Column Schedule:
Change column cap plate for columns designated HSS 15 and HSS 16 to 8"x12"x3/4".
- CMU Wall Vertical Reinforcing Schedule:
Change Grouting for wall type Mark W-7 from "Partial" grouted to "Full" grouted.
- Detail 8/S-4.1, Typ. MO Shelf Angle Detail:
Add note: "Provide 8/S-4.1 MO Shelf Angle Detail typical at all horizontal masonry veneer movement joints at locations shown on Architectural drawings. Interrupt at vertical control joints."
- Detail 9/S-4.1, Typ. Roof Penetration Framing Detail:
Add note:
 1. Provide 9/S-4.1 Roof Penetration Framing Detail typical at all roof penetrations.
 2. Provide sim. frame, typical at channel frames supporting rooftop mounted equipment."

Drawing M-1- First Floor Plan - Block "A" Mechanical Work

1. 1/M-1 -First Floor Plan - Block "A" Mechanical Work:
 - a. Revise MAU-2 exhaust duct above rooms 120, and 122 (refer to attached sketch SKM-1).
 - b. Identified radon piping.
2. Add Drawing Note Nos. 11 and 12 as follows:

"11. Provide Kroy type adhesive labels on ceiling tees or access doors to identify concealed valves, heat pumps, fire dampers, duct detectors, and similar concealed mechanical equipment that is directly above nameplate in ceiling space. Labels shall indicate HP number if serving heat pumps (HPX-X), and the air system if indicating duct detectors, (MAU-X).

12. Radon piping by others. Radon piping shown for coordination purposes only."

Drawing M-2 - First Floor Plan - Blocks "B" and "D" Mechanical Work

1. 1/M-2 First Floor Plan - Blocks "B" Mechanical Work:
 - a. Rooms 142 and 144, rotate ceiling mounted AC units to coordinate with lighting and ceiling grid.
 - b. Corridors 181 and 183, modify CUH-1 from floor mount the ceiling mount.
 - c. Identified radon piping.
2. 2/M-2 First Floor Plan - Block "D" Mechanical Work:
 - a. Identified Radon piping.Add Drawing Note Nos. 11 and 12 as follows:
3.

"11. Provide Kroy type adhesive labels on ceiling tees or access doors to identify concealed valves, heat pumps, fire dampers, duct detectors, and similar concealed mechanical equipment that is directly above nameplate in ceiling space. Labels shall indicate HP number if serving heat pumps (HPX-X), and the air system if indicating duct detectors, (MAU-X).

12. Radon piping by others. Radon piping shown for coordination purposes only."

Drawing M-3 - First Floor Plan - Block "C" Mechanical Work

1. 1/M-3 - First Floor Plan - Block "C" Mechanical Work
 - a. Corridor 183, modify CUH-1 from floor mount the ceiling mount.
 - b. Identified radon piping..
2. Add Drawing Note Nos. 14 and 15 as follows:

"14. Provide Kroy type adhesive labels on ceiling tees or access doors to identify concealed valves, heat pumps, fire dampers, duct detectors, and similar concealed mechanical equipment that is directly above nameplate in ceiling space. labels shall indicate hp number if serving heat pumps (HPX-X), and the air system if indicating duct detectors, (MAU-X).

15. Radon piping by others. Radon piping shown for coordination purposes only."

Drawing M-4 - Second Floor Plan - Block "E" Mechanical Work

1. 1/M-4 - Second Floor Plan - Block "E" Mechanical Work
 - a. HP5-215: Modify HP5-215 return duct to avoid conflict with partition support (refer to attached sketch SKM-4).

- b. Modify MAU-2 exhaust duct to M-225.6 such that duct does not cross hallway. Increase size of exhaust duct over rooms 215, 217, 219, 221 to handle the extra 200 cfm. (Refer to attached sketch SKM-4.)
 - c. Modify kiln exhaust duct route to feed relocated kiln exhaust fan over room 212, Tech. Coordinator. Change kiln exhaust duct size to 8/8. (Refer to attached sketch SKM-3.)
 - d. Identified radon piping.
- 2. 3/M-4 - Section:
 - a. Modify roof to match revised architectural drawing (refer to attached sketch SKM-2).
 - 3. Add detail 4/M-4 "Heat Pump Clearances" defining clearance requirements for heat pumps above ceilings. Clearance shall be 18-inches on all sides. Do not install any utilities: ductwork, piping, conduit, cable trays, etc., under the unit that may limit access. (Typical for all above ceiling heat pumps.)
 - 4. Add Drawing Note Nos. 12, 13 and 14 as follows:
 - "12. Duct detector access doors shall allow access to all portions of the control side of the duct detector. If possible, locate duct detectors after elbows with six duct diameters between the elbow and detector.
 - 13. Provide Kroy type adhesive labels on ceiling tees or access doors to identify concealed valves, heat pumps, fire dampers, duct detectors, and similar concealed mechanical equipment that is directly above nameplate in ceiling space. Labels shall indicate HP number if serving heat pumps (HPX-X), and the air system if indicating duct detectors (MAU-X)."
 - 14. Radon piping by others. Radon piping shown for coordination purposes only."

Drawing M-6 - First Floor Plan - Blocks "B" and "D" Mechanical Piping

- 1. 1/M-6 - First Floor Plan - Blocks "B" Mechanical Piping:
 - a. Rotate AC units in rooms 142 and 144 to coordinate with lighting.

Drawing M-8 - Second Floor Plan - Block "E" Mechanical Piping

- 1. 1/M-8 - Second Floor Plan - Block "E" Mechanical Piping:
 - a. Shift heat pumps in rooms 211, IDF, 225, and corridor.

Drawing M-9 First Floor Plans - Kitchen Mechanical Work and Mechanical Room Plan

- 1. 1/M-9 - First Floor Plan - Kitchen Mechanical Work
 - a. Delete Note Nos. 2 and 4 in their entirety and replace with the following:
 - "2. Dishwasher exhaust ductwork shall be welded aluminum. slope all horizontal sections back to dishwasher.

4. All ductwork associated with kitchen hood makeup air and exhaust shall comply with applicable codes and shall be constructed as specified in the latest edition of SMACNA Kitchen exhaust ductwork shall be 18 gauge stainless steel and of welded construction. conform to NFPA 96. Provide cleanouts. Wrap duct in high temperature zero clearance ductwrap (3M fire barrier ductwrap 15A , or approved equal)."

Drawing M-10 - Mechanical Schedules

1. Change TG-1 to 16 x 8.
2. Add Note No. 8 under Register and Diffuser Schedule as follows:

"8. When storage room transfer grille is to be installed in classrooms, refer to cabinetry drawings to verify clear mounting area of wall above. Locate TG-1 head at one course below ceiling line (typ)."
3. Modify Electric Heating Schedule, CUH -1 to be ceiling mounted.

Drawing M-14 - Mechanical Details

1. 1/M-14 - Fire Damper Detail, delete duct through roof detail. Add vertical fire damper detail. (Refer to attached sketch. SKM-5.)
1. 4/M-14 - Fire Damper Through Floor Detail:
 - a. Add Note Nos. 4 and 5 as follows:

"4. Access panels shall allow reach to the fire damper fusible link."

5. Dynamic style fire dampers shall be used where the associated air handlers are not interlocked to shut down upon a signal from a duct smoke detector."
2. Modify Note on detail 4 from "165 degree fusible link " to "165 degree fusible link and closure devices for dynamic style dampers".
3. 7M-14 Rooftop Equipment Support Detail
 - a. Delete "For all exhaust fans and condensing unit (EF and CU)" from detail 7.

Drawing M-18 - Roof Plan - Mechanical Work

1. Rotate walk in refrigerator condensing unit on roof by 90 degrees.
2. Relocate kiln exhaust fan over room 212, Tech.
3. Delete OSHA Rail Note for RTU-12 in its entirety and replace with the following:

"Provide OSHA compliant galvanized pipe guardrail system 3-feet minimum clear behind mechanical units."

Drawing P-4 - Second Floor Plan - Block "E" Plumbing Work

1. 1/P-4 - Second Floor Plan - Block "E" Plumbing Work:
 - a. Revise sizes of rain water conductors per State of New Jersey Department of Community Affairs Plumbing Review dated 1/13/12. Rainfall rate design changed from 4" to 5". (Refer to attached sketches SKP-1 through SKP-4.)
2. 2/P-4 -Restroom Plan:
 - a. Revise sizes of rain water conductors per State of New Jersey Department of Community Affairs Plumbing Review dated 1/13/12. Rainfall rate design changed from 4" to 5". (Refer to attached sketch SKP-5.)

Drawing P-8 - Natural Gas Riser Diagram and Storm Drainage Riser Diagram

1. 3/P-8 Storm Drainage Riser Diagram:
 - a. Revise sizes of rain water conductors per State of New Jersey Department of Community Affairs Plumbing Review dated 1/13/12. Rainfall rate design changed from 4" to 5". (Refer to attached sketch SKP-6.)

Drawing P-10 Plumbing Schedules

1. Plumbing Fixture Schedule:
 - a. WC-4: Revise flush valve specification to Sloan Royal #153-1.6 WB ES-S for grab bar conflict.

Drawing E-2 First Floor Plan - Blocks "B" and "D" - Electrical Lighting

1. In detail #2/E-2, add 'PD' designation to the three pendant light fixtures in vestibule 160.

Drawing E-4 Second Floor Plan – Block 'E' Electrical Lighting

1. Detail #1/E-4
 - a. In Stairs S-200, S-201, and S-202, revise the light fixture types to be 'FA', in lieu of 'FR'.

Drawing E-6 First Floor Plan - Blocks "B" and "D" Electrical Power

1. Detail #1/E-6, add drawing note 23 which pertains to the AC units located in Rooms 130 and 144, as follows:

- "23. Coordinate installation of ceiling mounted devices (i.e. light fixtures, smoke detectors, etc.) with placement of ceiling mounted AC unit. Coordinate with mechanical contractor".

Drawing E-10 Single Line Diagram

1. Detail #1/E-10, delete Drawing Note No. 10 in its entirety and replace with the following:
 - "10. Provide concrete pad. Top of pad to be 4" above finished grade and shall extend 3" around perimeter of enclosure. Refer to sheet #S-2.13 for reinforcing data and base conditions."

Drawing E-11 Lighting Control and Fire Alarm Riser Diagrams

1. In the Luminaire Schedule, add the following to the description for the type 'FL' light fixture: "Provide with fully adjustable aircraft cable supports."
2. Add the following fixture type:
 - a. Type: 'PD'.
 - b. Description: Stellar pendant. Traditional style pendant with vertical satellite stems and a single center stem from trim ring to canopy, 24" diameter by 7" deep dome, white swirl acrylic diffuser, oil rubber bronze finish.
 - c. Mounting: Pendant
 - d. Lamps: (4) F26 CF
 - e. Manuf/Cat #:OCL Architectural Lighting #ST1-P1AD-24-WS-ORB-4TT32-277-32-TLP or equal SPI, Visa, Camman or Winona

Drawing E-19 Site Plan - Electrical

1. Detail #1/E-19, for the illuminated sign at the front of the property on north side of school, revise the 1" conduits to be 2" conduits. Revise the applicable note to read "(4)#8 with (1)#10 ground in 2" PVC Sch. 80 C. and (1) spare 2" PVC Sch. 80 C. with pull string buried 42" below finished grade".

Drawing T-100 General Notes and legends

- Note 16 of Drawing T-100 revised to specify Walker RFB6-OG type floor box. – Refer to SKT-001
- Note 27 revised. Refer to SKT – 004
- Note 19, delete only "by Architect" from the cable tray location note.

Drawing T – 204 Door Details and Schedule

- Remove “Note: Door to contain delayed egress hardware” from Details 1, 2 & 3 of Drawing T-204. – Refer to SKT-003.

Drawing T – 204 Door Details and Schedule

- Access Control Security Door Schedule and the CCTV camera counts contained herein are to be disregarded.

Pan camera – Total Qty 1

Camera FCMD – Total Qty 2

Camera – Total Qty 50

To obtain CCTV Camera Count refer to Drawing T-209 CCTV Riser Diagram.

Also refer to the following plan Drawings for camera locations:

T – 111

T – 112

T – 113

T – 301

Drawing L3, Details 8 and 8-A

- Indicate that the enclosed 8” steel bollards are to be 3’-3” high with a flat top and the decorative cover to be 3’-4” above slab to top and then refer to our Type 2 Bollard Detail #19/s-1.1 which is being revised to a 3’-3” height. The drawing has been revised to include the above notes under SW-XL3B.

Drawing L-1, Landscape Plan

- On the playground area, indicate that all the semi-circle areas at the retaining wall are to be “specific area landscaping by the Owner”. The Drawing has been revised under SW-XL1B.
- Play area details, Between the flush curb and the retaining wall , the seeding and the landscaping will be completed by the Owner.

Drawings L-3 Detail 6.

- The height of the Light Fixture on the wall should not indicate a dimension, but refer to the architectural elevations A-3.2, A-3.3 & A-3.4 for mounting height locations. The drawing has been revised under SW-XL3A.

Drawings L-1; L-2; SW-4; SW-5; & SW-7.

- Confirm that the “floating” arrow near the generator on Sheets Sw-4, SW-5 & SW-7, L-1 & L-2 is not a missing note and delete it. The floating arrow has been deleted from the drawings. See SW-X5A
- Drawing L-1 indicates both a 2’ and 3’ mow strip. The strip is a mulched area and the label changed to no mow. See SW-XL1A

Drawing SW-11, Detail SW-11-8A

- Adjustable Vertical Post Indicator. Add a note to the detail which in effect states that the Post Indicator Valve (PIV) shall be electrically supervised by a listed fire alarm control unit. A note

has been added to the plan indicating that the PIV will be electronically monitored. See SW-X11A and SW-X11B

Drawing SW-10, Construction Details, Detail 19

- Detail SW10-19 states, "sign base, see structural drawings for details". The detail has been clarified by adding future, by others. See SW-X10B

Drawing SW-5, Utility Plan.

- The pipe between MH-7 and inlet A-2 is shown as 15"DIP; please amend to state "16" DIP". 15" DIP is not manufactured. 16" DIP is now shown on the plan and inverts adjusted lower by one inch.
-

Drawings L3, Detail 3 & 6; S 2, Detail 11.

- Revise the Chamfer on the luminaire Pole base from 2" to 1".

Drawing SW-2, Existing Condition Plan

- On west side of the property, a label to show the extent of the fence to be removed has been added to the plan. See SW-X2A

Drawing SW-10, Detail 3 Pipe Bedding Detail.

- That detail is not for HDPE, perforated or PVC pipe.

E. Revisions to the Project Drawings as per Sketches

SK-1	Referenced Drawing A-1.1
SK-2	Referenced Drawing A-1-3
SK-3	Referenced Drawing A-1.3
SK-4	Referenced Drawing A-2.1
SK-5	Referenced Drawing A-3.1
SK-6	Referenced Drawing A-3.1
SK-7	Referenced Drawing A-3.1
SK-8	Referenced Drawing A-3.1
SK-9	Referenced Drawing A-3.2
SK-10	Referenced Drawing A-3.2
SK-11	Referenced Drawing A-4.4
SK-12	Referenced Drawing A-4.4
SK-13	Referenced Drawing A-7.4
SK-14	Referenced Drawing A-1.4
SK-15	Referenced Drawing A-1.4

SK-16	Referenced Drawing A-4.7
SK-17	Referenced Drawing A-4.7
SK-18	Referenced Drawing A-4.13
SK-19	Referenced Drawing A-7.2
SK-20	Referenced Drawing A-4.16
SK-21	Referenced Drawing A-41.6
SK-22	Referenced Drawing A-4.16
SK-23	Referenced Drawing A-1.4
SK-24	Referenced Drawing A-6.2
SK-25	Referenced Drawing A-6.2
SK-26	Referenced Drawing A-1.7
SK-27	Referenced Drawing A-6.3
SK-28	Referenced Drawing A-8.2
SK-29	Referenced Drawing A-1.4
SK-30	Referenced Drawing A5.4
SK-31	Referenced Drawing A-4.7
SK-32	Referenced Drawing Reflected Ceiling Plans Legend
SK-33	Referenced Drawing A-5.5
SK-34	Referenced Drawing A-6.4
SK-S-1	Referenced Drawing S-2.14
SK-S-2	Referenced Drawing S-2.14
SK-S-3	Referenced Drawing S-2.21
SK-S-4	Referenced Drawing S-2.25
SK-S-5	Referenced Drawing S-2.31
SK-S-6	Referenced Drawing S-2.31
SK-S-7	Referenced Drawing S-3.2
SK-S-8	Referenced Drawing S-3.5
SK-S-9	Referenced Drawing S-2.23
SK-S-10	Referenced Drawing S-2.23
SK-S-11	Referenced Drawing S-2.24
SK-S-12	Referenced Drawing S-2.31
SK-S-13	Referenced Drawing S-3.5
SKM-1	Referenced Drawing M-1
SKM-2	Referenced Drawing M-4
SKM-3	Referenced Drawing M-4
SKM-4	Referenced Drawing M-4

SKM-5	Referenced Drawing M-14
SKP-1	Referenced Drawing P-4
SKP-2	Referenced Drawing P-4
SKP-3	Referenced Drawing P-4
SKP-4	Referenced Drawing P-4
SKP-5	Referenced Drawing P-4
SKP-6	Referenced Drawing P-8
SKT-001	Referenced Drawing T-100
SKT-002	Referenced Drawing T-113
SKT-003	Referenced Drawing T-204
SKT-004	Referenced Drawing T-100
SKT-005	Referenced Drawing T-100
SW-X2A	Referenced Drawing SW-2
SW-X5A	Referenced Drawing SW-5
SW-X6A	Referenced Drawing SW-6
SW-X10A	Referenced Drawing SW-10
SW-X10B	Referenced Drawing SW-10
SW-X11A	Referenced Drawing SW-11
SW-X11B	Referenced Drawing SW-11
SW-XL1A	Referenced Drawing L-1
SW-XL1B	Referenced Drawing L-1
SW-XL3A	Referenced Drawing L-3
SW-XL3B	Referenced Drawing L-3

F. Answer to Bidder Inquiries

Question No 1. Is the Maintenance Bond required for One Year or two Years? (EBK 1-30-12)

Reference General Conditions Article 19.0, "Warranties" and Specifications Section 01840, "Warranties and Bonds" Please confirm whether the contractor's warranty period is one or two years after Substantial Completion. (TRML 2-1-12)

There is a discrepancy with the length of the Warranty period in the front end of the Project Manual. Please clarify:

a) - GC Section, page GC-100, 1.0 Warranties, paragraph 1.2 Commencement of Contractor Warranties states "The warranties shall commence upon Substantial Completion of the Project and continue for (1) year, unless otherwise stated in the Contract Documents"

b) – Section 01815 – Warranties and Bonds, page 01850-2, paragraph 1.5.C states, "Co-sign all submittals. Contractor is responsible for coordination and completion of all warranty work during two (2) year warranty period" (BCC 1-27-12)

Reference General Conditions Article 19.0, "Warranties" and Specification Section 01840, "Warranties and Bonds," Please confirm whether the contractor's warranty period is one or two years after Substantial Completion. (EBK 1-30-12;& TRML 2-1-12)

Response: Refer to item A.5 on this Addendum.

Question No 2. Drawing S-0.1 contains a list of 11 Earthwork Items. Section 01013 contains a \$ 150,000 allowance for 15,000 cy of "unsuitable materials" and \$ 100,000 for 500 cy of "impacted materials". Is item # 6 on S-0.1 part of the base bid? Are items 7, 8 & 9 part of the allowances? (TPC 1-20-12 q1)

Response: Concerning Earthwork Items indicated on Drawing S-0.1 Items #6, 7, 8 and 9, these all pertain to the (5) five feet of soil as indicated in 1/S.01 and are part of the base bid. Section 01013 contains a \$150,000 allowance for managing "unsuitable materials" that may be encountered and deemed to be in addition to the base bid (e.g., for managing materials deeper than those defined in Item #6). The \$100,000 "impacted materials" allowance only applies to additional costs associated with the management of materials that contain compound concentrations above a regulatory standard that may need to be handled preferentially and/or disposed off-site and replaced.

Question No 3. On page PP-3 of the Price Proposal Submission Form, there are spaces to provide information for General Construction, HVAC, Plumbing, Electrical, Structural Steel, and two additional spaces for "Other Trade Classifications." With that stated I have a two part question. First, should the information for the list of subcontractors as outlined in C.1 of the Price Proposal Submission Form be filled out in the spaces? And if yes, there are more than two Other Trade classifications listed in the Bid Advertisement, so where should the additional trade classifications be listed? (KBC 1-30-12 q1)

Response: Section C.1, Subcontractors, of the Price Proposal states, "The Bidder MUST name all subcontractors that will be performing work in any of the trades listed in the Bid Advertisement or required by statute."

The Bid Advertisement for the project specifically states the following: "The project will also require identification of prequalified subcontractors in the principal trades of Plumbing (C030), Structural Steel (C020), Electrical (C047), and HVAC (C039)..." The naming/listing of these four (4) subcontractors are required on the Bidder's Price Proposal. They are the only subcontractors that need to be listed on the Bidder's Price Proposal.

Question No 4. Will the Owner's own forces and/or other Contractors retained by the Owner be enrolled in the OCIP if performing work at the project site? (KBC 1-31-12 q1)

Response: The Owner's own forces are not enrolled in the OCIP. All eligible prime contractors and subcontractors must be enrolled in the OCIP.

Question No 5. Please confirm that a deductible in the amount of \$250,000 for Contractor's Pollution Liability Insurance is acceptable to the Owner (KBC 1-31-12 q2)

Response: The SDA will not accept or permit insurance policies or coverage which include insurance coverage deductibles or self-insured retentions (SIRs) greater than \$100,000, absent provide express, written consent from the Authority premised upon

evaluation of the specific terms and conditions of the deductible or SIR, including the following considerations:

- a) Whether consent is sought for a deductible as distinguished from a self-insured retention;
- b) Whether the deductible/SIR applies per occurrence (regardless of the number of persons or organizations who sustain damage) or per claim (with a separate deductible applied to each person making a claim for damage);
- c) The Amount of the deductible/SIR, and whether the amount includes Defense and Loss Adjustment Expenses;
- d) For deductibles/SIRs in excess of \$1million, the Authority may require additional documentation to substantiate vendor's financial ability to fund the associated costs;
- e) The type of Coverage to which the deductible/SIR is applied;
- f) Whether the SDA is required to be included as an additional insured; and
- g) Whether the insurer providing the coverage with the deductible/SIR in excess of \$100,000 has a duty to defend the Authority.

Question No 6. Upon request, can the Contractor be provided with complete copies of each policy related to insurance coverages under the OCIP for its files? (KBC 1-31-12 q3)

Response: YES

Question No 7. Please confirm that the Commercial General Liability Insurance provided by the Owner under the OCIP will be primary for all occurrences at the Project site for enrolled parties. (KBC 1-31-12 q4)

Response: YES

Question No 8. Are OCIP general liability and excess policies dedicated solely for this Project and not shared with any other Projects? If not, what other projects share or will share these policies? (KBC 1-31-12 q5)

Response: All eligible projects which have commenced, or will commence, construction from March 31, 2009 through March 31, 2014 will be enrolled under the OCIP.

Question No 9. Please confirm that the OCIP excess policies also have a ten year completed operations extension (KBC 1-31-12 q6)

Response: YES

Question No 10 Do the OCIP excess limits replenish themselves annually except for the products and completed operations aggregate limit of liability. (KBC 1-31-12 q7)

Response: NO

Question No 11 Will cranes of any nature and other mobile equipment liability be covered under the OCIP General Liability and excess policies?. (KBC 1-31-12 q8)

Response: YES

Question No 12 There are two sample certificates of insurance contained in Volume 1. Please confirm that the Certificate of Insurance with \$5,000,000 excess liability insurance is the sample Certificate of Insurance for parties excluded from the OCIP. If that the case, can the language in the description portion of the certificate be revised to indicate that the coverage are for on-site activity as well? (KBC 1-31-12 q9)

Response: Yes, the Certificate described above is the Certificate for ineligible Contractors. A revised version of the Certificate for Ineligible Contractors, which reflects that the coverages are for on-site and off-site activity, and the Certificate for Eligible Contractors, are provided as Attachments to this Addendum. Refer to Items B.1 and B.2 of this Addendum.

Question No 13 Tiered excluded subcontractors with lower risk scope of work man not carry excess liability insurance in the amount of \$ 5,000,000. Will the Contractor be able to make exceptions to this general rule? (KBC 1-31-12 q10)

Response: SDA's Risk Management Division will review and will approve exceptions on a case-by-case basis.

Question No 14 Please confirm that builder's risk insurance under the OCIP will contain the following (KBC 1-31-12 q11):

- a. All Risk Coverage including full coverage for the perils of theft, vandalism, malicious mischief and collapse in the full amount of the contract sum.
- b.

Response: YES

- c. Earthquake, Flood and Windstorm coverage

Response: YES. Earthquake and Flood have sub-limits of \$100 million except Flood Zones A, V and Shaded X are \$5 million. Windstorm is included at full policy limits

- d. No coinsurance requirement – agreed amount coverage

Response: YES

- e. Policy will allow "Permission to Occupy"

Response: YES, 120 days after occupancy begins

- f. Policy will provide coverage for glass breakage.

Response: YES

- g. That there will be no exclusions for Steam Boiler Explosion, Mechanical Breakdown, Electrical Injury/Arcing or Testing

Response: Only hot testing is excluded

- h. A waiver of subrogation endorsement in favor of the Contractor, sub-consultants, and subcontractor of all tiers.

Response: NO

- i. Policy will name the Contractor, consultants, and all subcontractors of all tiers as additional insured's

Response: Yes, as required by contract and as their interest may appear

Question No 15 Other Builder's Risk Insurance Questions: (KBC 1-31-12 q12)

- a. How will responsibility for uninsured/underinsured losses be determined

Response: Responsibility for such losses will be determined based on the circumstances of the loss, in accordance with any applicable terms and conditions of the Contract.

- b. What is the amount of the debris removal sub limit, if any?

Response: 25% of the physical loss or damage not to exceed \$5 million.

Question No 16 If Bidder is a limited liability company, please confirm Bidder should supply information as if it was a "Corporation" where noted in the Price Proposal, for example "a Corporation organized and existing under the laws of the State of" would be answered with the relevant information for the LLC bidder (KBC 1-31-12 q13)

Response: Yes, an LLC should supply the relevant information as a corporate entity, with such relevant information particular to the LLC structure.

Question No 17 To encourage a better price proposal from bidders, SDA is strongly encouraged to consider a mutual waiver of consequential damages between the parties to any contract issued for the Project. Will SDA consider including this provision in the Contract? (KBC 1-31-12 q14)

Response: NO

Question No 18 Please confirm that if the Bidder is registered vendor with the New Jersey Casino Control Commission it has met the requirements in item 6 on page 6 of the Price Proposal requiring "Business Registration Certificate for State Agency and Casino Service Contractors" (KBC 1-31-12 q15)

Response: Refer to page 21 of the Request for Proposals (RFP), whereby Bidders must submit copies of their current, valid Business Registration Certificate for State Agency and Casino Service Contractors issued by the Department of the Treasury, Division of Revenue, for the Bidder and subcontractors in the trades listed in the Bid Advertisement.

Bidders can verify the validity of Business Registration Certificates by checking the NJ Division of Revenue On-Line Business Registration Certificate Service at https://www1.state.nj.us/TYTR_BRC/jsp/BRCLLoginJsp.jsp

Bidders should enter the Name Control (required*) and Taxpayer ID (Federal Employer ID Number) fields

Question No 19 In reference to paragraph 3.5 and 4.11 of the General Conditions; please confirm that there isn't any state or local municipality building permit costs that are to be provided (KBC 1-31-12 q16)

Response: Other than the DCA Building Permit described in the referenced sections of the General Conditions, the Authority will not provide for any other state or local municipality building permit costs that may be required, and Bidders should account for such costs in their bids.

Question No 20 Drawing E-2, Detail 2 – Fixture type H1 is not on the fixture schedule. Please advise (KBC 1-31-12 q19)

Response: See Drawing E-11 – Luminaire Schedule

Question No 21 Regarding the Phone System – Is refurbished equipment acceptable, or does everything need to be new? (KBC 1-31-12 q22)

Response: Equipment to be new.

Question No 22 There are numerous subcontractors and vendors that are interested in bidding the project but who are not yet in a position to ask questions at this time. What that said, we are not asking for a bid extension but would request that you extend the question deadline at least one week. Please advise (KBC 1-31-12 q24)

Response: Due to schedule constrains, is not possible to allow more time for questions.

Question No 23 Is the Contractor to procure the Commissioning Agent for the project as outlined in Specification Section 019113 - General Commissioning Requirements, Specification Section 089995 – Building Envelope Commissioning and Specification Section 230800 - Commissioning of HVAC or is the Contractor to work along with the commissioning agent to facilitate the commissioning? Please advice. (KBC 1-30-12 q2)

Response: The Construction Manager will provide the commissioning agent for the project. The general contractor will work along with the commissioning agent and assist through the commissioning process.

Question No 24 Should cabinetry in classrooms # 101, 103, 105 and 107 be C2a and C2 not C1 and C1A? (see A-6.1)

Response: Yes, C1 will be labeled C2 and C1A will be labeled C2A respectively.

Question No 25 Should west side classrooms #111 & 113 on A-13 be changed to 121 & 123 to agree with cabinetry # A-6.1?

Response: Yes, refer to addendum revisions to drawing A-1.3 room numbering.

Question No 26 Shelving note on 5/A-6.1 indicates no shelving at side wall at Pre-KK classrooms. All the C5 & C5OH rooms listed are Pre-KK. Is this note intended to delete the 5 high shelves

on 5/A-6.1? Typical shelving detail on 7/A-6.1 indicates 4 high shelves in the same location of the 5 high on 5/A-6.1 and 5 high at teacher's wardrobe with the note to "modify shelving" Please clarify.

Response: Delete lowest shelf on 5/A-6.1 for a total of (4) four shelves as also indicated on 7/A-6.2. Omit (5) five shelves in Pre-K/K closest to where teacher wardrobe is indicated.

Question No 27 On A-6.2 should elevation # 6, 7 and 10 be 6/A-6.2, 7/A-6.2 and 10/A-6.2 (not A-6.1):

Response: Yes, refer to addendum for revisions to drawing A-6.2.

Question No 28 A-1.3, should Exam Room #100.1 be changed to #100.2 to agree with C-7A on A-6.1?

Response: Yes, refer to addendum for revisions to drawing A-1.3.

Question No 29 A-1.3 should SGI Classroom #110 & 111 be changed to 120 & 122 with C9 on A-6.1?

Response: Yes, refer to addendum for revisions to drawing A-1.3.

Question No 30 5/A-6.5 should be S.22 be S.23?

Response: Yes, casework on detail 5/A-6.5 should be labeled S.23.

Question No 31 Should Cafetorium Parapets as 1/A-4.7 be similar to 2/A2.1? 11/A4.17 is not used.

Response: Yes, refer to addendum for revisions of detail references.

Question No 32 3/A-4/.18, what is the intent of note indicating 2 layers of 5/8" ply? Is this only over wood blocking?

Response: Refer to addendum for revisions to detail 3/A-4.18 indicating appropriate construction material.

Question No 33 A-1.3 off corridor # 178, there are two Mechanical Rooms #M-178.1 and two doors # 178.1. Please clarify.

Response: Refer to addendum for revised room number on drawing A-1.3.

Question No 34 Should Classroom, Storage and Toilet Rooms # 114 on A-1.3 be # 124? # A-1.4 = 124?

Response: Yes, refer to addendum for revised room numbering on drawing A-1.3.

Question No 35 STAGE WOOD APRON: Details 1/A-6.4 shows all exposed wood at the Stage Apron as Oak, transitioning to Pine when it is painted black. However, Detail 15/A-6.4 shows Pine up to the "painted yellow safety strip". Suggest confirming whether the exposed wood is Oak or Pine.

Response: Refer to Items A.122 to A.125 of this Addendum showing revisions to Specification Section 096400, Interior Architectural Woodworking for pine flooring. Stage front edge trim shall be cherry.

Question No 36 Specification Section 096466-Athletic Wood Flooring is not included in our documents that we received on January 4, 2012. Please provide

Response: Refer to Addendum #1.

Question No 37 Please provide size for both the standard and barrier-free lockers. Neither the plans elevations nor the specifications give the exact size.

Response: Refer to SK-14 and SK-15 for required locker sizes.

Question No 38 Specification section 066510 calls for Solid Surface Window Sills, Sections 2 & 3 on Drawing A-4.5 refer to Details 2 on A-5.5, which doesn't contain any information.

Response: Refer to addendum for detail 2/A-5.5 revisions.

Question No 39 Also, some room numbers for the casework indicated on A-6.1 do not correspond with floor plans. Please review and advise.

Response: Refer to addendum revisions for drawings A-1.1, A-1.2, A-1.3 and A-1.4 for corrected room numbering.

Question No 40 Please provide the location of the window types W-7 and W-11 curtain wall type CW-6.

Response: Refer to addendum revisions drawing A-5.4 for deletion of Window types W-7 and W-11 and Curtain Wall type CW-6.

Question No41 Stage Curtain Section 116143-part 2.1 CURTAIN FABRICS A. "Provide fabrics inherently and permanently flame resistant or chemically flame resistant by immersion." Inherently Flame Resistant and Chemically Flame Resistant are very different types of fabric with very different costs. Please advise as to which is to be provided.

Response: Refer to Items A.145 and A.146 of this Addendum showing revisions to Specification Section 116143 Stage Curtains.

Question No 42 : Stage Curtain Section 116143-Part 2.1 CURTAIN FABRIC A. "All fabrics shall be flame proofed by vat immersions process or shall be woven from inherently flame resistant fibers or 100% cotton. Inherently flame fabrics are not 100% cotton. Cotton fabrics are only flame retardant, which is less expensive, however, needs to be tested and or treated annually in order to maintain their resistance to flame. Based on being a school environment, we would normally recommend using inherently flame resistant fabric. Based on weights provided in the specifications, our assumptions for our proposal area currently the following:

Main Curtain & Valance: 26 oz IRF Charisma Velour.

Rear Curtain & Masking: 20 oz IFR Crescent Velour.

Please advise if this fabric assumption is acceptable, or if cotton should be provided, which would not meet the specification requirements of being inherently flame resistant.

Response: Refer to Items A.145 and A.146 of this Addendum showing revisions to Specification Section 116143 Stage Curtains.

Question No 43 BOLLARD HEIGHTS: Type 2 (Detail 19/S-1.1) does not match the height of "Decorative" bollard shown in Detail L3-8. Also, Type 1(Detail 14/S-1.1) does not match height of "Security" show in Detail L3-8A. (We also confirmed that "Collapsible" and "Removable" bollards differ.)

Response: Refer to addendum, Drawing S-1.1.

Question No 44 Elevator Hoist Beam Size & Orientation: Drawing S-2.21, A-1.9 & A-4.11 show the elevator's hoist beam installed parallel with the elevator door opening, but it appears that Drawing S-2.31 shows the hoist beam installed perpendicular to the masonry lintel above the elevator door. Suggest confirming orientation of the hoist beam. Also, it should be confirmed if the W8x24 dimension shown on S-2.31 is for the hoist beam. See attached (two pages).

Response: Refer to addendum, Drawing S-2.31.

Question No 45 Walk-In Refrigerator Door: Kitchen Drawings (K1.2 and K1.2) show this door opening **right-handed**, which would be useful for deliveries coming from the loading dock. However, Drawings A-0.3, A-0.4, A-1.1, A-1.5, and F-1.3 show the door opening **left-handed**, which may be useful for Kitchen Staff that need access to the walk-in unit throughout the day. Suggest confirming which way this door shall open: suggest reviewing same with District. See attached.

Response: Door shall remain left-handed as indicated on A-series drawings. Door shall be revised to be left-handed on drawings K-1.1 and K-1.2.

Question No 46 Drawing S-0.1 contains a list of 11 Earthwork Items. Section 01013 contains a \$150,000. allowance for 15,000 cy of "unsuitable materials" and \$100,000. For 500 CY of "impacted materials". Is item # 6 on S-0.1 part of base bid? Are items 7, 8 & 9 part of allowances?

Response: Earthwork Notes 6, 7, 8, and 9 on Drawing S-0.1 address the scope of work. Specification 01013 allowances are independent of the scope of work.

Question No 47 Stage Smoke Vents: Detail 5/A-2.2 shows a steel ladder with safety post at roof hatch/smoke vents, and reference Drawings A-4.0 and A-1.5. The floor plans do not show ladders to the smoke vents and the location of the vents centered over the Stage makes access via steel ladder very unlikely. Suggest clarifying that there are no steel ladders at the Stage.

Response: Detail 5/A-2.2: Delete note, "Steel ladder (See Detail)" and replace with, "Steel ladder as specified for roof hatches only."

Question No 48 Projectors by NJSDA: The symbol for the projector to be provided by NJSDA is often not accompanied by the numeric code from the furniture schedule. Suggest confirming whether or not all projectors shown will be furnished by NJSDA.

Response: Refer to addendum revisions for drawing A-7.1, A-7.2, A-7.3 and A-7.4 clarifying this requirement.

Question No 49 The Drawings (especially the furniture drawings) do not detail "F" block- which by the legend on drawing F-1.2, is listed for "Science Exploratory" classrooms. Specification section 104416, page 3, article 3.3, indicated application of 3.3A and 3.3C for science/exploratory classrooms, but these are not located on the drawings. In general, there appear to be 17 each CECs (cabinets) and 22 each (fire extinguishers) from the drawings, but such is inconsistent with the above cited specifications. Please clarify the quantity and type of each fire extinguisher required for the project.

Response: Refer to drawing A-6.5 for Science / Exploratory casework. See specification Section 104416 Fire Extinguisher, page 104416-3, paragraph 3.3 and drawing A-1.1 for location and types of fire extinguishers.

Question No 50 Exterior aluminum bracket detail # 5/1-3.1: on plan north and east elevations of the media center roof overhand, are only two brackets required?

Response: No, refer to details 1/A-3.1, 2/A-3.1, 1/A-3.2, 3/A-3.2 and 3/A-4.3 for required locations of bracket detail 5/A-3.1.

Question No 51 Under stage doors, #149.1, 149.2, 149.3, 149.4 indicated wood frame on A-5.3 schedule, but 11/A-6.4= 2" H.M. Jamb.

Response: Provide doors in accordance with detail 11/A-6.4. Refer to addendum for drawing A-5.3 schedule revisions.

Question No 52 15/A6.4, what is steel encased engineered floor system? Section 096400- Oak/Yellow Pine with wood sleepers.

Response: Refer to Specification Section 061053 Miscellaneous Rough Carpentry, page 061053-5, paragraph 2.8 Wood Sleeper System for Cafetorium Stage Floors for information.

Question No 53 Drawing A-1.4, Room #176: what is enclosure around ladder to roof? Is ladder to be per 10/A6.7?

Response: Refer to addendum sketch SK-14 for revised detail 3/A-1.4.

Question No 54 Section 102226-7, paragraph 2.7: SGI classroom # 120 and #122 should be added per 8/A6.2?

Response: Refer to Specification Section 102226 Operable Partitions.

Question No 55 Drawing A-1.4 what is "WC4" legend in classroom Pre-K/K, # 135, 139, 141, 143 and 145?

Response: Refer to addendum for drawing A-1.4, deleting tag 'WC-4'.

Question No 56 1/A-4.13, what is intent of "Metal Panels w/" note?

Response: Refer to addendum SK-18 for revised detail 1/A-4.13.

Question No 57 Section 101400-8. Schedule of signs paragraph 3.4F: Please clarify exact location /quantity of exit plan signs.

Response: Refer to addendum Specification Section 101400 Signage.

Question No 58 Drawing A-6.2, Detail 18/A-6.2 the wrong scale is indicated on the drawing detail. Please confirm that the scale of the detail is supposed to be $\frac{1}{4}"=1'0"$ and not $\frac{1}{2}"=1'-0"$ as shown.

Response: Refer to addendum for drawing A-6.2, detail #18 title revision.

Question No 59 Spec 113100 includes a refrigerator, however, F1.1 item #53 says the refrigerator is by the District. Please confirm that this item is by the District.

Response: Item #53 refrigerator is by the District, item # 103 refrigerator is by the GC.

Question No 60 2/A1.4 shows cubicle curtain track at PE Storage 176, however there is no ceiling shown on A7.1. Please provide a mounting height/detail.

Response: Refer to addendum for SK-14.

Question No 61 1/A1.5 shows cubical curtain track at Dress Storage 148, however there is no ceiling shown on A7.3. Please provide a mounting height /detail.

Response: Provide sub-framing and anchorage system to support privacy curtains- as designed by the specialty engineer (delegated design.) Refer to SK-14, note 6.

Question No 62 Electrical drawings- there is not power indicated on the trap primer, please clarify.

Response: Electrical power is not required.

Question No 63 Drawing A5.1- Janitor's Closet M-151.3 & 183.6 are noted as VIN-1. Please clarify if these two rooms are the receive VCT-1.

Response: Janitor's Closet M-151.3 and 183.6 floor material is VCT-1.

Question No 64 Spec 102226 Section 2.2.1 (page 5) indicates an infrared sensor system. All schedule operable partitions are to be manually operated. Please clarify if the intent is to have any electrically operated partitions.

Response: Refer to Item A.138 of this Addendum showing revisions to Specification Section 102226 Operable Partitions.

Question No 65 F1.4-item # 84 Swing & Supplemental Steel- Please confirm that the GC responsible for both the supplemental steel and the swing since the rest of the OT/PT equipment is shown by the District.

Response: Item #84 Swing and Supplemental Steel are both provided by the GC.

Question No 66 On A-1.8, call –out legend # 5- urinal screen w/overhead support structure but in #102113-2, paragraph 2.1C- urinal screen style: wall mounted. Please clarify.

Response: Urinal screens shall be wall mounted as specified in Specification Section 102113.

Question No 67 Design for radon piping on drawing A-0.5 does not appear to be coordinated with piping slopes of drawing P-1. Confirm radon mitigation is needed as the existing soils are sands (not granite, nor rock)-which typically are not subject to such mitigation.

Response: Radon mitigation is required per drawing A-0.5. Installation of radon piping and routing should be coordinated with all other construction, utilities and piping per drawing P-1.

Question No 68 Detail 5 on drawing A3.1 pertains to aluminum wall brackets. These appear on certain elevations, but are not show on any wall sections. Please provide a wall section detailing same. Indicate method and location of connections; indicate thickness of plate to be used for bracket, etc. Are the brackets subjected to loading and functional, or are they used for decorative purposes only. Please advise.

Response: Brackets are decorative only. Refer to addendum for clarification of detail 5/A-3.1, note 3 for providing Delegated Design by New Jersey Licensed Professional Engineer.

Question No 69 Does code require that the two exterior stairs 001 and 002 either be heat traced or be covered by a canopy? Please advise.

Response: No canopy or heat tracing is required at exterior stairs 001 and 002.

Question No 70 On behalf of the manufacturer representative, Reed Associates, we respectfully request approval of Steve Industries casework for application to specification sections 123201 and 12350. Document is faxed herewith. Please provide you email address so that the documentation may be forwarded to you as pdf files. Otherwise, please visit the following website to supplement these requests. <http://www.stevensind.com/>

Response: Refer to Addendum No. 1.

Question No 71 In reviewing the project specs provided on the above reference project we do not have the following sections that are in the table of contents.1. Section 096466 Athletic Wood Flooring

Response: Refer to Addendum No. 1

Question No 72 In reviewing the project specs provided on the above referenced project we do not have the following sections that are in the table of contents: 1. Section 099113 Exterior Painting

Response: Refer to Items A.128 and B.6 showing inclusion in this Addendum of Section 099113, Exterior Painting.

Question No 73 Note that detail SW9-18 (on dwg SW-9) for the roof drain detail has not been coordinated with detail 4/A-21 (on dwg A-21). Is a concrete pad required at the cast-iron cleanout? If so, provide detail.

Response: Provide construction in accordance with detail 4/A-2.1. Refer to addendum for drawing A-2.1, detail 4 revisions.

Question No 74 There is no power shown for the trap primers. (TRN 1-31-12)

Response: There is no power required.

Question No 75 Kiln Exhaust Fan (TRN 1-31-12)

Response: Sidewall discharge was not desirable. The fan will, however, be relocated. (Refer to attached sketch SKM-3.)

Question No 76 IDF # 2 Emergency Power: Sheet Note # 27, Drawing T-100, calls for racks and cabinets in MDF and IDF's to be on emergency power. Neither of the two panels listed for IDF # 2 (Room # 211) appear to be on emergency power; 1ERP5 is "optional standby" and 2RP6 is not emergency.(GWK 1-23-12)

Response:: All of the racks in the MDF are backed up by the generator. The rack that contains security, paging and telephone is on "emergency". The remainder of the racks in the MDF are on "optional standby". In the IDF rooms, only the rack that contains security, paging and telephone is on "emergency" power. The remainder of the racks in the MDF are on "normal". This was coordinated and discussed during design.

Question No 77 IDF #3 not found: Electrical Site Plan E-19 shows IDF #3 located in Block 'D', but this room cannot be found on floor plans. Also, there are details on the electrical drawings for the power at the MDF and the other two IDF's, but not for this IDF. (GWK 1-23-12)

Response: IDF # 3 not found: IDF #3 is in Block D. There is not a dedicated room for IDF #3, only a wall mounted data rack.

Question No 78 Site Lighting not on Emergency Power: The two sets of security gates are on emergency power, but it does not appear that any of the site lighting is on emergency power. Is this a concern? The paths of emergency egress leaving the building during a power outage at night would be dark.

Response: Egress lighting that is required to be on "emergency" is already connected as such. In addition to that, there are several parking lot lights that are wired to "security night light" circuits. The lights are connected to the generator on the optional standby branch.

Question No 79 Vestibule 160 pendent Light fixtures. Drawing E-2 shows three pendent light fixtures at Vestibule 160, but does not list the fixture type. (GWK 1-24-12)

Response: We will add fixture type to Luminaire Schedule as part of Addendum.

Question No 80 Vestibule 160 Exit Signs: Exit signs are shown centered above each set of doors from Lobby 159 to Vestibule 160 and from vestibule 160 to the exterior. Please confirm if it is acceptable to mount the exit signs on the aluminum curtain wall system from Vestibule 160 to the exterior.

Response: Ceiling mount the lights centered above the doors.

Question No 81 Drawing E-2, Detail 2 - Fixture type H1 is not on fixture schedule. (KTG)

Response: It is shown in the fixture schedule.

Question No 82 Drawing E-2, Detail 2 - Fixture type "Pendant" is not shown on the fixture schedule. (KTG)

Response: This will be added to luminaire schedule as part of addendum.

Question No 83 In review of the floor boxes designated on Wick Fisher White's drawings, I have found an error for Intertech to address. WFW designates the first floor (slab on grade) boxes to be Walker RFB6-OG. Drawing T-100 indicates an RFB4 floor box. Please revise the T series drawing. Also, please note the Second Floor poke-thru style floor boxes are Wiremold Evolution Series model 8ATCP boxes. Please ensure this does not conflict with your Technology documents.

Response: Note 16 of Drawing T-100 revised to specify Walker RFB6-OG type floor box. – Refer to SKT-001

Question No 84 On Detail 1, 2 & 3/ Sheet #T-204, should the note indicating that "Exit device with request to exit switch to deactivate the electronic panic bar" be eliminated? Does this relate to the Delayed Exit Hardware note or does it just deactivate the magnetic lock?

Response: Remove "Note: Door to contain delayed egress hardware" from Details 1, 2 & 3 of Drawing T-204. – Refer to SKT-003.

Question No 85 In Spec. Section 28 23 00, 3.1.Installation, **ADD Note:** In spec's or on drawings note that "CCTV system submittals to include shop drawings locating all devices and mounting heights prior to rough-in of conduits and boxes".

Response: Added paragraph 3.1. O – Refer to Items A.174.b and B.17 of this Addendum showing revisions to Specification 28 23 00 page 12 in bold type.

Question No 86 The note 27. on T-100 still should be revised to read: "Power for racks and cabinets at MDFs/IDFs shall be on separate circuits. All racks in MDF and selected racks in IDFs will be backed up by the generator. Refer to electrical drawings for circuit assignments".

Response: Note 27 on Drawing T-100 revised. Refer to SKT-004

Question No 87 On Sheet #T-100, Revise note #19 to delete only the words "by Architect" from the cable tray location note.

Response: "by Architect" removed from Note 19 on Drawing T-100 – Refer to SKT-005

Question No 88 270000 1.5 - D Replace "274100" for "274000"

Response: Replaced "274100" for "274000" in 1.5 - D – Refer to Item A.170 and B.13 of this Addendum, showing revisions to Specification 27 00 00, page 4.

Question No 89 274116.51 1.2 - A - 1 Add "(Provided and installed by NJSDA)"

Response: Added "(Provided and installed by NJSDA)" to Subsection A.1. Refer to Item A.173 of this Addendum showing revisions to Specification 27 41 16.51, at page 1.

Question No 90 270001 1.5 - D Replace "274100" for "274000"

Response: Replaced "274100" for "274000" in Subsection 1.5 D – Refer to Item A.171 of this Addendum showing revisions to Specification 27 00 01 at page 4.

Question No 91 270001 Correct end of Section to read "270001"

Response: Corrected end of Section to read "270001". Refer to Item A.172 of this Addendum showing revisions to Specification 27 00 01 page 24 in bold type.

Question No 92 272001 2.5 - 17 - a Provide alternate manufacturers and add "or approved equal"

Response: Provided 2 additional alternate manufacturers and add "or approved equal". Refer to Item B.15 of this Addendum showing revisions to Specification 27 20 01 page 7 in bold type.

Question No 93 On play areas, between the flush curb and the retaining wall there is no seeding or landscaping shown. Do these small areas get seeded or landscaped? *Provide section detail at this condition*

Response: A note has been added to the plan indicating that the owner completes the final landscaping.

Question No 94 Detail SW10-19 states, "sign base, see structural drawings for details". There is no structural detail available for this sign's foundation. See attached. *Sign and foundation are "Future, by others."*

Response: The detail has been clarified by adding future, by others.

Question No 95 Drawings SW-4, SW-5, SW-7, L-1, and L-2 have an arrow pointing to the sidewalk adjacent to the generator, but the arrow has no label. Should the label be added, or should the arrow be removed? See attached.

Response: The miscellaneous arrow has been removed.

Question No 96 Drawing SW-5 – the pipe between MH-7 and inlet A-2 is shown as 15" DIP; please amend to state "16" DIP". 15" DIP is not manufactured (BRH 1-13-12)

Response: 16" DIP is now shown on the plan and inverts adjusted lower by one inch.

Question No 97 The site detail sheets (SW-8 to SW-9) lack a detail for type A inlets. Please provide a detail. (BRH 1-13-12)

Response: The inlets in question are lawn inlets, no detail needed. The utility plan has been revised to indicate lawn inlets.

Question No 98 Please provide the size of the CMU to be used in decorative piers as shown on detail 15/SH-10. Also, foundation details are not clear for the same item. Is it concrete pier on spread footing? Please provide with clearer details

Response: The size of the decorative CMU block has been specified on the detail. A shop drawing is required for the final design of the fence, including footing design.

Question No 99 See Details L3-6 and 3/S2.11; suggest confirming if chamfered edge shall be 1" or 2".

Response: The chamfer will be 1".

Question No 100 Please provide the extent of the fence to be removed, shown on drawing SW-2, on west side of the property. (TRM 1-25-12)

Response: A label to show the extent of the fence to be removed has been added to the plan.

Question No 101 Item 3.4L of the Sign Schedule indicates signage for a Handicapped Loading Zone, but this Zone is not indicated on site plan SW-3. Please provide location(s) for the Handicapped Loading Zone. *Enlarged detail required?* (KTG 1-30-12)

Response: A Handicapped Loading Zone is not required and does not need to be designated on the plan.

Question No 102 SW-10-3, pipe bedding detail: We assume this section applies to pipe other than HDPE (SW9-3) and perforated (SW10-4)? If existing soil conditions require additional excavation and replacement with compacted bedding course, would this work be covered under the unsuitable materials allowance? (TPC 1-31-12)

Response: The detail has been revised to indicate that it is not for HDPE, perforated or PVC pipe.

Question No 103 With reference to specification section 323223 Segmental Retaining Walls, Keystone standard unit is 8" x 18" x 21 1/2" weight 105 lbs. Paragraph 2.5 fabrication calls for a 12" x 72" x 24" weight of 1740 lbs. would you please clarify the size of the unit. (TPC 1-31-12)

Response: Page 323223-88, section 2.5 has been adjusted in the specification has been adjusted to indicate 8" x 18" x 21 1/2" and a unit weight of 105 lbs.

Question No 104 Please provide the specifications for grass pavers. TRM 2-1-12)

Response: The grass paver and associated specification is provided on Sheet SW-11.

General Constructability Review Questions: Bidders have posed questions, both formally and informally, regarding the required Constructability Review (see General Conditions Sections 2.4 and 4.4 and Specifications Section 01010). Questions have been raised in regard to the purpose and anticipated outcome of the Constructability Review and, in particular, in regard to what type of post- Constructability Review changes might the Contractor be held responsible for. While a final determination of responsibility would ultimately be dependent upon the particulars of any specific change, the following are provided as examples of post-Constructability Review changes for which the Contractor would likely not be held responsible:

Response:

- A. Design Errors – Changes in the Work which become necessary due to an error in design which is not part of the required Constructability Review scope. Examples include:
- A change in the roof or floor structure made necessary due to a structural design calculation error on the part of the Design Consultant
 - A change to an HVAC unit made necessary due to a load calculation error on the part of the Design Consultant
 - Other changes to the Work made necessary due to design calculation errors on the part of the Design Consultant
- B. Code Compliance Issues – Changes in the Work which become necessary due to code compliance deficiencies in the Construction Documents. Examples include:
- The addition of an exit sign or other code compliance device not indicated in the Construction Documents but required by a DCA inspection
 - The addition of rated wall assembly due to a code compliance error on the part of the Design Consultant
 - Changes to the work made necessary for accessibility compliance
 - Other changes to the Work made necessary by DCA required redesign for code compliance
- C. Unforeseeable Conditions – Changes in the Work made necessary due to existing conditions which could not have been foreseen by the Contractor. Examples include:
- Changes made necessary due to existing subsurface structures or utilities which were not indicated in the Construction Documents
 - The addition of a booster pump because flow rates from existing water service are not sufficient to meet project requirements

While it is desirable that design deficiencies such as these might be identified during the Constructability Review based on the Contractor's experience, these are examples of items which are not a part of the required Constructability Review scope and therefore, likely not changes for which the Contractor would be held responsible.

Moreover, the SDA notes that the Constructability Review is an extension of the Contractor's existing responsibilities to review the plans and specifications and the Project Site, and to include in the Work any omitted details reasonably inferable to carry out the intent of the Contract Documents without additional charge, as well as promptly notify the Authority of any obvious, patent and readily observable errors, omissions inconsistencies or other defects in the Contract Documents. These

obligations have been required by the SDA's construction General Conditions for several years. Specifically, notwithstanding the specific and separately compensated activities of the Constructibility Review phase, Contractors on SDA projects are required to:

- promptly notify the Authority of all obvious, patent and readily observable errors, omissions, inconsistencies or other defects (including inaccuracies) which the Contractor may, or reasonably should, discover in the Contract Documents (General Conditions, Section 2.4);
- refrain from making a claim premised upon any obvious, patent and readily observable error, omission, inconsistency, conflict or other deficiency in the Contract Documents, unless the Contractor has first provided appropriate and timely notice to the Authority of such error, omission, inconsistency, conflict or other deficiency (General Conditions, Section 2.4);
- include in the Contract details of work omitted from the Plans and Specifications which are reasonably inferable to carry out the intent of the Contract Documents, or which are customarily included, as if such details were fully and correctly set forth and described in the Plans and Specifications, without entitlement to a Change Order (General Conditions, Section 2.6.1);
- acknowledge that, prior to submitting a bid on the Project, the Contractor carefully studied and reviewed all Documents relevant to the Project that have been prepared and furnished by the Authority, including but not limited to, the Contract Documents, any geotechnical reports or surveys of the Site, and, if applicable, the Remedial Action Work Plan (General Conditions, Section 4.4); and
- acknowledge that, prior to submitting a bid, in accordance with prudent and generally accepted construction practices, the Contractor inspected and examined the Project Site and surrounding locations and undertook other appropriate activities sufficient to familiarize itself with the readily observable conditions at the Site (General Conditions, Section 4.4.2).

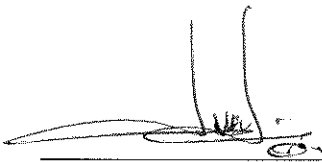
In light of these existing responsibilities, the Constructibility Review represents a compensated extension of the Contractor's responsibilities to review the Contract Documents and advise the Authority of any defects, conflicts or inconsistencies therein.

Question No 106

Constructability Review Payment and Invoicing: Questions have been raised regarding the methodology for documentation, payment and billing of Constructibility Review Allowance Work, noting that Specification Section 01010, subsection 1.4.B.4 does not provide guidance for the billing of services performed by sub consultants engaged by the Contractor to perform all or part of the Constructibility Review Allowance Work. By this Addendum, the Authority has modified Specification Section 01010 to provide guidance for the documentation and billing of services performed by sub consultants to complete the Constructibility Review Allowance Work.

Response: Bidders are referred to Item A-2 of this Addendum

End of Addendum No. 2



2-15-12.

Hugo Horcada
NJSDA Program Officer

Addendum No 2

Date: February 15, 2012

PROJECT: Long Branch – George L. Catrambone Elementary School

CONTRACT No.: ET-0068-C01

Addendum No. 2

Acknowledgement of Receipt of Addendum

Contractor must acknowledge the receipt of the Addendum by signing in the space provided below and returning via fax to (609-656-4609). Signed acknowledgement must be received prior to the Bid Due Date. Acknowledgement of the Addendum must be made in Section E.6 of the Price Proposal Submission.

Signature

Print Name

Company Name

Date

ACORD CERTIFICATE OF INSURANCE

PRODUCER

Broker's Name
 Broker's Address
 Broker's Address

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS TO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE	
A	Your General Liability Insurer (AM Best Rated A- or Better)
B	Your Automobile Liability Insurer (AM Best Rated A- or Better)
C	Your Excess Liability Insurer (AM Best Rated A- or Better)
D	Your Workers Compensation Insurer (AM Best Rated A- or Better)
E	Your Equipment Floater Coverage (AM Best Rated A- or Better)

INSURED

Your Company's Name
 Your Company's Address
 Your Company's Phone #

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	POLICY NUMBER	01/01/2011	01/01/2012	GENERAL AGGREGATE	\$1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	\$1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY	\$1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	\$1,000,000
	<input checked="" type="checkbox"/> PER PROJECT				FIRE DAMAGE (Any one fire)	\$50,000
	<input type="checkbox"/>				DAMAGE TO RENTED PREMISES (Ea occurrence)	\$100,000
	<input type="checkbox"/>				MED EXP (Any one person)	\$5,000
B	AUTOMOBILE LIABILITY	POLICY NUMBER	01/01/2011	01/01/2012	COMBINED SINGLE LIMIT	\$1,000,000
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per Person)	
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE	
C	EXCESS LIABILITY	POLICY NUMBER	01/01/2011	01/01/2012	EACH OCCURRENCE	\$1,000,000
	<input checked="" type="checkbox"/> OCCUR				AGGREGATE	\$1,000,000
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	POLICY NUMBER	01/01/2011	01/01/2012	WC STATUTORY LIMITS <input checked="" type="checkbox"/>	
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH ACCIDENT	\$500,000
	THE PROPRIETOR/PARTNERS/ <input type="checkbox"/> INCL				DISEASE - POLICY LIMIT	\$500,000
	EXECUTIVE OFFICERS ARE: <input type="checkbox"/> EXCL				DISEASE - EACH EMPLOYEE	\$500,000
E	Equipment Floater	POLICY NUMBER	01/01/2011	01/01/2012	Equipment Value	\$

DESCRIPTION OF OPERATIONS/LOCATION/VEHICLES/SPECIAL ITEMS -
 DOE #-Contract (#) District- School Name-(Type of Work)-(Contract Amount)

All Off Site Activities and Operations away from a NJSDA OCIP Project Site except Automobile Liability and Equipment Floater are primary and non-contributory at all times. The following are named as additional insureds on General Liability, Automobile and Excess Liability, except Workers Compensation: NJ Schools Development Authority, The EDA, NJ Department of Education, The State, The CM, the (Project School District), and the (Design Consultant) and their respective officers, directors, members, employees, representatives, and agents.

CERTIFICATE HOLDER	CANCELLATION
NJSDA 1 West State Street P.O. Box 991 Trenton, NJ 08625	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

CONTRACTORS ELIGIBLE FOR OCIP

ACORD CERTIFICATE OF INSURANCE

PRODUCER
 Broker's Name
 Broker's Address
 Broker's Address

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS TO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANY COMPANIES AFFORDING COVERAGE	
A	Your General Liability Insurer (AM Best Rated A- or Better)
COMPANY	
B	Your Automobile Liability Insurer (AM Best Rated A- or Better)
COMPANY	
C	Your Excess Liability Insurer (AM Best Rated A- or Better)
COMPANY	
D	Your Workers Compensation Insurer (AM Best Rated A- or Better)
COMPANY	
E	Your Equipment Floater Coverage (AM Best Rated A- or Better)

INSURED
 Your Company's Name
 Your Company's Address
 Your Company's Phone #

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT <input checked="" type="checkbox"/> PER PROJECT <input type="checkbox"/> <input type="checkbox"/>	POLICY NUMBER	01/01/2011	01/01/2012	GENERAL AGGREGATE	\$1,000,000
					PRODUCTS - COMP/OP AGG	\$1,000,000
					PERSONAL & ADV INJURY	\$1,000,000
					EACH OCCURRENCE	\$1,000,000
					FIRE DAMAGE (Any one fire)	\$50,000
					DAMAGE TO RENTED PREMISES (Ea occurrence)	\$100,000
					MED EXP (Any one person)	\$5,000
B	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/>	POLICY NUMBER	01/01/2011	01/01/2012	COMBINED SINGLE LIMIT	\$1,000,000
					BODILY INJURY (Per Person)	
					BODILY INJURY (Per accident)	
					PROPERTY DAMAGE	
C	EXCESS LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> OTHER THAN UMBRELLA FORM	POLICY NUMBER	01/01/2011	01/01/2012	EACH OCCURRENCE	\$5,000,000
					AGGREGATE	\$5,000,000
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY THE PROPRIETOR/PARTNERS/ <input type="checkbox"/> INCL EXECUTIVE OFFICERS ARE: <input type="checkbox"/> EXCL	POLICY NUMBER	01/01/2011	01/01/2012	WC STATUTORY LIMITS <input checked="" type="checkbox"/>	
					EACH ACCIDENT	\$500,000
					DISEASE - POLICY LIMIT	\$500,000
					DISEASE - EACH EMPLOYEE	\$500,000
E	Equipment Floater	POLICY NUMBER	01/01/2011	01/01/2012	Equipment Value	\$

DESCRIPTION OF OPERATIONS/LOCATION/VEHICLES/SPECIAL ITEMS -
 DOE # - Contract (#), District - School Name - (Type of Work) - (Contract Amount)
 All On-Site and Off Site Activities and Operations away from a NJSDA OCIP Project Site except Automobile Liability and Equipment Floater are primary and non-contributory at all times. The following are named as additional insureds on General Liability and Excess Liability, except Workers Compensation: NJ Schools Development Authority, The EDA, NJ Department of Education, The State, The CM, the (Project School District), and the (Design Consultant) and their respective officers, directors, members, employees, representatives, and agents.

CERTIFICATE HOLDER
 NJSDA
 1 West State Street
 P.O. Box 991
 Trenton, NJ 08625

CANCELLATION
 SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

SECTION 055213 - PIPE AND TUBE RAILINGS

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. Steel pipe handrails and railings.

- B. Related Sections:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood blocking for anchoring railings.
2. Section 092216 "Non-Structural Metal Framing" for metal backing for anchoring railings.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design railings, including comprehensive engineering analysis by a qualified New Jersey licensed professional engineer, using performance requirements and design criteria indicated.

- B. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:

1. Steel: 72 percent of minimum yield strength.

- C. Structural Performance: Railings shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails and Top Rails of Guards:

- a. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Infill of Guards:

- a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
b. Infill load and other loads need not be assumed to act concurrently.

- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

- E. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:

1. Manufacturer's product lines of mechanically connected railings.
2. Railing brackets.
3. Grout, anchoring cement, and paint products.

- B. LEED Submittals:

1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.

- C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

- D. Samples for Initial Selection: For products involving selection of color, texture, or design.

- E. Delegated-Design Submittal: For installed products indicated including fasteners for anchoring railings to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional New Jersey licensed engineer responsible for their preparation.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of railing from single source from single manufacturer.

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

- C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
3. AWS D1.6, "Structural Welding Code - Stainless Steel."

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

1.7 COORDINATION AND SCHEDULING

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

- B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- C. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- 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. Steel Pipe and Tube Railings:
 - a. Pisor Industries, Inc.
 - b. Wagner, R & B, Inc.; a division of the Wagner Companies
 - c. Or approved equal.

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

2.3 STEEL AND IRON

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.
 - 1. Provide galvanized finish for exterior installations and where indicated.

2.4 FASTENERS

- A. General: Provide the following:
 - 1. Hot-Dip Galvanized Railings: Type 304 stainless-steel or hot-dip zinc-coated steel fasteners complying with ASTM A 153/A 153M or ASTM F 2329 for zinc coating.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
- C. Fasteners for Interconnecting Railing Components:

1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.
 2. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for railings indicated.
 3. Provide square or hex socket flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: Torque-controlled expansion anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
1. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- D. Shop Primers: Provide primers that comply with Section 099123 "Interior Painting."
- E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- F. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- G. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.
 1. Water-Resistant Product: At exterior locations provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

2.6 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with welded connections unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Form changes in direction as follows:
 - 1. By radius bends.
- J. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- K. Close exposed ends of railing members with prefabricated end fittings.
- L. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch (6 mm) or less.
- M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.
 - 1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers, or other means to transfer loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.
- N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

2.7 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are

not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

- D. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.8 STEEL AND IRON FINISHES

A. Exterior Galvanized Handrails and Railings:

1. Hot-dip galvanize exterior steel and railings, including hardware, after fabrication.
2. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.
3. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.
4. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
5. Fill vent and drain holes that will be exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

- B. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

C. Interior Painted Handrails and Railings:

1. Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.

2. Apply shop finish paint coat as indicated in Section 099123 "Interior Painting". Color as selected by Architect from manufacture's full range of colors.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.

- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
2. Set posts plumb within a tolerance of 1/16 inch in 3 feet (2 mm in 1 m).
3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet (5 mm in 3 m).

- C. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.

- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.
- B. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches (50 mm) beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches (150 mm) of post.

3.3 ATTACHING RAILINGS

- A. Anchor railing ends at walls with round flanges anchored to wall construction and welded to railing ends.
- B. Attach railings to wall with wall brackets. Provide brackets with 1-1/2-inch (38-mm) clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
 - 1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
 - 2. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- C. Secure wall brackets and railing end flanges to building construction as follows:
 - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
- D. Install removable railing sections as indicated on drawings.

3.4 ADJUSTING AND CLEANING

- A. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.5 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

END OF SECTION 055213

SECTION 087100 – FINISH HARDWARE

PART 1 GENERAL:

1.01 GENERAL REQUIREMENTS:

- A. Work of this section, as shown or specified shall be in accordance with the contract documents.

1.02 WORK INCLUDES:

- A. Work of this Section includes all labor, materials, equipment and services necessary to furnish all the finish hardware as shown on the drawings and specified herein.

1.03 RELATED DOCUMENTS:

- A. General Conditions.
- B. Supplementary Conditions.
- C. Division 1.
- D. Hollow Metal Doors and Frames – Section 081113.
- E. Flush Wood doors – Section 081416.
- F. Aluminum-Framed Entrances and Storefronts – Section 084113.
- G. Exterior Painting – Section 099113.
- H. Interior Painting – Section 099123

1.04 REFERENCES:

- A. American National Standards Institute - ANSI 156.18 - Materials and Finishes.
- B. ANSI A117.1 - Specifications for making buildings and facilities usable by physically handicapped people.
- C. BHMA - Builders Hardware Manufacturers Association.
- D. DHI - Door and Hardware Institute.
- E. NFPA - National Fire Protection Association
- F. NFPA 80 - Fire Doors and Windows.
- G. NFPA 105 - Smoke and Draft Control Door Assemblies.
- H. NFPA 252 - Fire Tests of Door Assemblies.
- I. UL - Underwriters Laboratories.

- J. Building Code of the State of New Jersey
- K. SDI - Steel Door Institute.
- L. WDI - Wood Door Institute.
- M. AWI - Architectural Woodwork Institute.
- N. NAAM - National Association of Architectural Metal Manufacturers.

1.05 QUALITY ASSURANCE:

- A. Hardware: shall be suitable and adapted for its required use and shall fit its designated location. Should any hardware as shown, specified or required fail to meet the intended requirements or require modification to suit or fit the designated location, determine the correction or modification necessary and notify the Architect in ample time to avoid delay in the manufacture and delivery of hardware.
- B. Fire rated openings: provide hardware complying with NFPA Standard No. 80 requirements of authorities having jurisdiction.
- C. Hardware Supplier Qualifications: The Hardware Supplier shall have been regularly engaged in the sale and distribution of Finish Hardware for projects of comparable scope and size for a minimum of five (5) years. The Hardware Supplier shall have an AHC of the Door and Hardware Institute on staff who will be responsible for overseeing the scheduling, detailing, ordering, and coordinating of Finish Hardware, and shall be available for consultation with the Architect, at no additional cost to the Owner, during progress of construction. The Hardware Supplier shall be a direct factory authorized distributor for all Finish Hardware items being furnished in accordance with this Specification.

1.06 SUBMITTALS:

- A. Submittals: shall be in accordance with Conditions of the Contract, Division 1, and Specification sections.
- B. Hardware submission: Submit hardware schedule in vertical format as illustrated by the "Sequence and Format for Hardware Schedule" pamphlet published by the Door and Hardware Institute. Schedules which do not comply will be returned for correction before checking.
- C. Hardware schedule shall clearly indicate architect's hardware set and manufacturer of each item proposed.
- D. Hardware Supplier shall provide all product information, wiring diagrams, and electrical data to the Electrical Contractor.
- E. Samples: Submit samples as requested by Architect. Do not proceed with installation until samples have been approved. Approved samples may be installed in the work after substantial completion of work.

1.07 PRODUCT HANDLING:

- A. Pack finish hardware in manufacturer's containers, complete with trimmings, bolts, screws, washers, etc., as required for application. Each container shall bear a suitable label which shall state the quantity and kind of contents of said container, as well as identifying marks relating to the approved Hardware Schedule and its location in the project.
 - 1. Knobs, handles, pulls and other items of finish hardware with easily damaged finishes shall be individually wrapped before placing in containers and with sufficient sheet cloth or cotton-backed paper which shall be adequately secured all as necessary to protect the finishes.
 - 2. Finish hardware shall be delivered, as directed, to the building site or the factories of the various fabricators of metal or wood work to which such hardware is to be applied. Deliver hardware in the order required and in ample time to permit application at the building, or fabricators' shops, within the time required for the completion of the building.

1.08 JOB CONDITIONS:

- A. Field Service: The hardware supplier shall assign a competent representative, acceptable to the Architect, to be at the job site each time a major shipment of finish hardware is received. Such representative shall assist in "checking in" these shipments and shall secure a receipt covering the contents of each shipment. In addition, such representative shall be available for immediate call to the job site when, in the opinion of the Architect, his presence is necessary.
- B. Templates: Promptly following approval of the Hardware Schedule by the Architect, furnish and deliver template information, to the fabricators, of items to which finish hardware is to be applied.
 - 1. Such deliveries shall be made in ample time to avoid delays in such work of said fabricators. Provide drawings, schedules and detailed information to other trades as necessary for them to accommodate and prepare their work to receive the finish hardware.
- C. Cooperation and Coordination: Prior to the installation of any finish hardware, all parties and trades having responsibility to any of all of the openings for the job, shall meet in a pre-construction meeting, for instruction on the proper installation of finish hardware with the manufacturers representative.
 - 1. Cooperate and coordinate work with that of other trades supplying materials or performing work in contact with, connecting to, underlying, or overlaying the work of this Section.
 - 2. Provide complete data of requirements for work of this Section to those other trades whose work is affected by or dependent upon the work of this Section.

3. Furnish all items to be built into other work in ample time to avoid delaying the progress of such work.
 4. Examine all drawings covering the work of this Section and refer to all other drawings, including mechanical and electrical drawings, which may affect the work of this Section or require coordination by this trade.
- D. Existing Conditions: Verify all existing conditions in the field to ensure compatibility with hardware specified in the Hardware Sets herein. Any discrepancies between the existing field conditions and hardware specified shall be brought to the attention of the Architect immediately. Hardware Supplier shall not order any hardware until all discrepancies are rectified and the Architect grants written approval.

PART 2 PRODUCTS:

2.01 GENERAL:

- A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware are indicated herein. Products are identified by using appropriate hardware designation numbers.

2.02 MANUFACTURERS:

- A. Provide hardware as indicated in hardware sets. References to specific products are used to establish minimum standards as the basis of design, except as noted below:
- B. Proprietary Requirements: Keying system shall be a proprietary system as manufactured by Ingersoll-Rand / Schlage as specified herein. No substitutions shall be accepted.

2.03 HANGING MEANS:

- A. Hinges:
 1. In general, where new hinges are to be provided at existing frames, existing condition must be verified before determining which hinge shall be provided so that new hinges will fit existing frame cut out size and locations.
 2. Doors up to 60" in height shall be furnished with two hinges. Furnish one additional hinge for each 30" of door height or fraction there after.
 3. Hinges shall be of types, sizes and materials as required to suit door weights thickness and fire ratings.
 4. Unless otherwise specified, hinges shall be heavy weight. Doors over 3'-4" in width shall receive 5 x 4½ .190 gauge hinges.
 5. Hinge sizes shall be detailed so that the least amount of projection shall be visible from the frame.
 6. Unless otherwise specified, hinges shall have concealed ball bearings (combination

anti-friction or oil impregnated) and five (5) knuckles.

7. All hinges shall have non-rising pins.
8. All keyed reverse bevel doors shall be furnished with non-removable pins.
9. Hinge Series: Ives BB1HW series, see hardware sets for sizes.
10. Approved Manufacturers: Hager, Stanley or approved equal.

B. Continuous Hinges:

1. For interior or exterior doors up to 450lbs, and 4'-0" wide.
2. To be constructed of extruded aluminum 6063-T6 alloy with thermoplastic polyester bearings.
3. Shall meet ANSI/BHMA A156.25.
4. Provide 12-24 x 1/2" steel self tapping screws and #12 x 1 1/2" Flathead Wood Screws, unless otherwise specified.
5. Hinge Series: Ives 112HD or 224HD, as specified in hardware sets.
6. Approved Manufacturers: Stanley , Markar or approved equal.

2.04 MORTISE LOCKSETS AND LATCHSETS:

A. Mortise Locksets:

1. Lock cases to be constructed with a protected leading edge and screw configuration that limits access to operating parts.
2. Lock cases are to be multi-functional that transform into different functions without opening the lock case.
3. Lock components to be manufactured of zinc dichromate plated steel. Manufacturers utilizing plastic parts, spacers and/or bushings are not acceptable.
4. Lock components to incorporate a spring loaded fusible link for Fire/Life Safety. Manufacturers utilizing gravity, fusible link are acceptable.
5. Latchbolts to have a standard 2 3/4" backset with a full 3/4" throw.
6. Latchbolts to be non-handed, field reversible without opening the lock case.
7. Latchbolts to be 2-piece anti-friction, manufactured from stainless steel. Solid latchbolts and/or plastic anti-friction devices are not acceptable.

8. Cylinders to be secured by a cast stainless steel, dual retainer. Manufacturers utilizing screws and/or stamped retainers are not acceptable.
9. Manufacturers utilizing an exposed toggle on edge of door as "locked indicator" are not acceptable.

B. Lever Trim:

1. Lever assembly (external) to be one-piece design attached by threaded bushing. Lever assembly (internal) shall be attached by screwless shank. Lever attachment by common tools (allen nuts and/or set screws) are not acceptable.
2. Thru-bolt lever assemblies through the door for positive interlock. Manufacturers utilizing a through the door spindle for attachment are not acceptable.
3. Levers to have independent rotation in both directions.
4. Spring cages are to be incorporated into the lever assemblies.
5. Hub blocking plate to be solid, cast stainless steel. Manufacturers utilizing open hub designs are not acceptable.
6. Spindles to be independent, designed to "break-away" at a maximum of 75psi torque.

C. Thumbturns:

1. Thumbturn and back-plate to be manufactured from castings and comply with ANSI 117 accessibility standard.

D. Deadbolts:

1. Deadbolts to be 1 3/4" total length; have standard 1" throw with a minimum 3/4" internal engagement when fully extended.
2. Deadbolts to be constructed of stainless steel, incorporating a security roller pin with a minimum Rc60 rating for surface hardness.

E. Strikes:

1. Strikes to be non-handed and bridged to ensure dead latching. Manufacturers utilizing fillers of any kind for dead latch engagement are not acceptable.
2. Mounting tabs are to be automatic self adjusting, vertically and horizontally for door bevel and strike alignment.

- F. Lock Series & Design: Schlage L Series Heavy Duty Mortise Locks, lever trim as specified in hardware sets. Locks must be compatible with the proprietary keying system.

G. Certifications:

1. Provide mortise locksets that comply with ANSI A156.13, Series 1000, Operational Grade 1 and Security Grade 1 with all standard trims.
2. Provide mortise locksets that comply with UL10C and UBC 7-2 positive pressure requirements.
3. Provide mortise locksets that comply with ANSI/ASTM F476-76 Grade 40, UL Listed for locksets utilizing concealed cylinders.

2.05 EXIT DEVICES:

- A. Exit Devices shall be touch bar type, as specified in hardware sets.
 1. Furnish stainless steel touch bars on all exit devices.
 2. Touch bar end caps shall be recessed.
 3. Touch bar sub assembly shall be minimum .160" thick, with minimum .060 supports.
 4. Touch bar surface shall be minimum 2-1/4" high x 18" long for 36" doors, and minimum 2-1/4" high x 24" long for doors wider than 36".
- B. Furnish exit devices, less bottom rod, on all cross corridor pairs of doors, where doors are for compartmentalization only (smoke doors, or 20 minute labeled doors).
- C. Rim and Mortise type devices shall have 3/4" throw latch bolt. Surface and Concealed Vertical Rod devices shall have 5/8" throw latch bolts.
- D. Rim panic devices shall provide:
 1. Static load force resistance in excess of 2000 lbs.
 2. 90 degree latch bolt/strike engagement.
 3. The ability to compensate for deteriorating or weak frame installation by providing greater latch bolt/strike contact.
 4. Latch bolt security dead latching shall be standard.
- E. All fire doors shall receive devices U.L. listed for Fire Exit Hardware.
- F. Exit device push bars shall be equipped with a fluid sound dampening feature.
- G. Furnish roller strikes, which interlock the door to the frame (499F), for all rim devices and surface vertical rod devices.
- H. All internal springs shall be compression type. Extension springs and torsion springs will not be accepted.
- I. Where lever trim is specified, levers shall match the balance of the project.

1. Escutcheons of all lever trim shall be forged brass or bronze, with (4) thru-bolts anchoring trim assembly to exit device chassis.
 2. Levers shall be solid forged brass or bronze.
 3. Lever return springs shall be compression type. Extension springs and/or torsion springs will not be accepted.
 4. Cylinders shall be recessed from face of escutcheon.
- J. Lever trim shall be breakaway type. (When rotational force of 25 ft.lbs. is applied, lever trim appears to break, and drop into a "down" position. Uplift motion will reset trim to normal function, without disassembly).
1. Lever shall be protected by a shear pin which will withstand a rotational force of 55 ft.lbs. before shearing, to prevent further damage to lever. Under no circumstances will lever separate from the escutcheon.
- K. Where electrified latch retraction is specified, provide device with powerful continuous duty solenoid to retract the latch bolt(s) for momentary unlocking or for extended periods of time.
- L. Where electrified trim is specified, provide device with electrically locking (fail safe) or electrically unlocking (fail secure) trim.
1. Provide appropriate power supply & power transfer(s), as required for application.
 2. Use only on fire exit devices when under the control of an automatic fire alarm system.
 3. Coordinate with electrical specifications and drawings, and owner's security consultant.
- M. Furnish all necessary Glass Bead Kits where exit device may interfere with raised glass beads on doors.
- N. Certifications:
1. Devices shall be UL listed for Panic Hardware (FVSR) SA163.
 2. Fire Devices shall be UL listed Fire Exit Hardware (GXHX) R4501, A Label.
 3. All devices shall be tested in accordance to ANSI A156.3, Grade 1.
 4. Cycle Testing: Exit devices shall be certified by an independent testing lab for 1,000,000 cycles. BHMA standard for Grade 1 is 250,000 cycles. UL standard is 100,000 cycles.
- O. Exit Device Series: Von Duprin 98/99 series, Basis of Design, or approved equal.

- P. Approved Manufacturers: Falcon 25 Series, Precision 2000 Series, or approved equal.

2.06 CLOSERS:

- A. All surface closers shall exceed ANSI A156.4 Grade 1 requirements in all aspects as called for below. All closers shall have certification by an independent testing laboratory of 10,000,000 cycles without failure.
- B. Closer cylinders shall be cast iron. Closer pinions shall be dual heat treated. Pinion and piston shall be steel alloy. Piston diameter shall be minimum 1-1/2".
- C. Closers shall be barrier free with spring tension adjustable from size 1 to size 5.
- D. Closers shall maintain control of the door in all conditions. Closers shall have 3 non critical adjusting valves: latch, main and backcheck. Backcheck shall take affect at 45 (AVB) degrees of opening for parallel arm closers and 70 degrees for regular arm closers. Closers with pressure relief valves are not acceptable.
- E. All closers shall have forged main arms. Forearms of parallel arm closers shall be forged. Parallel arm brackets shall be forged. All parallel arm joints shall have bronze bushings with minimum 5/8" diameter pins. Cylinders, arms, brackets and mounting plates shall be powder coated.
- F. Provide all plates, brackets and special templates when needed for interface with particular header, door and wall conditions and neighboring hardware. Consult factory for special template ("ST" suffix to closer number) pricing.
- G. All closers shall be installed so that closer bodies are positioned on room side of doors to and from corridors. Out-swing doors shall have an extra heavy duty parallel arm (EDA). Parallel arm shall be used on connecting doors between rooms.
- H. All exterior closers shall have all weather fluid that does not require seasonal adjustment to control speed of door, and shall exhibit the same viscosity from -30 ° F to +120° F.
- I. All closers shall have a powder coated aluminum finish on cylinder, arm and accessories. There shall be a full metal, powder coated cover.
- J. All Closers shall comply with UL 10C requirements for positive pressure testing.
- K. All closers shall be of one manufacturer's products. All closers shall be inspected after installation by a factory representative to insure proper adjustment and operation.
- L. Closer Series: LCN 4011/4111 series.
- M. Approved Manufacturers: Corbin DC8000 Series, Falcon SC71 Series, or approved equal.

2.07 FLUSH BOLTS AND COORDINATORS:

- A. Manual Flush Bolts: Shall be Ives FB458/FB358 series, furnished with DP2 dustproof strikes for all bottom bolts. Top bolts shall be furnished with proper extensions to allow for easy operation.
- B. Self Latching Flush Bolts: Shall be Ives FB51P/FB61P series, furnished with DP2 dustproof strikes for all bottom bolts. Furnish wear plates as required.
- C. Automatic Flush Bolts: Shall be Ives FB31P/FB41P series, furnished with DP2 dustproof strikes for all bottom bolts. Furnish wear plates as required.
- D. Coordinators: Shall be Ives COR series. Furnish all fillers, mounting brackets, carry bars and special cut outs for use with exit devices, as required. Finish shall be black.
- E. Approved Manufacturers: Ives, Burns Manufacturing, Rockwood, or approved equal.

2.08 PROTECTION PLATES:

- A. All kick plates and mop plates unless otherwise noted shall be 8" high x 2" less door width (LDW), beveled three sides x .050 thick.
- B. Approved Manufacturers: Burns Manufacturing, Rockwood, or approved equal.

2.09 MAGNETIC HOLDERS:

- A. Magnetic holders to be field selectable for 12VDC 0.03 amps; 24VAC/24DC, 0.02 amps; 120VAC, 0.02 amps.
- B. Housing shall be cast metal. Armature bracket shall be cast metal.
- C. Provide armature extensions and ball coupler assemblies as necessary to suit application.
- D. Holding force shall be 35lbs.
- E. Approved Manufacturers: Rixson, ABH or approved equal.

2.10 MISC COMPONENTS

A. Power Transfers:

1. Provide electric power transfers where power must be transferred from the frame to the door for electrified door hardware.
2. Units must be completely concealed when the door is in the closed position.
3. Units must not prohibit door from opening to its maximum potential (up to 180 degrees)
4. Units must be capable of housing up to 10 24 gauge wires with a rating of 24VDC, 1 ampere.
5. Approved manufacturers: Von Duprin EPT-10 , Falcon EPT10 , Securitron EPT or approved equal.

2.11 DOOR STOPS:

- A. Stops: Provide stops to limit the degree of opening, helping to prevent damage to adjacent walls, columns, equipment, the door or its hardware.
1. Wall stops: Furnish concave bumper at locations Locksets having a button operational feature, and convex at all other locations.
 - a. Furnish toggler mounting at dry wall sub-straight locations.
 - b. Furnish wood screws at wood substrate locations.
 - c. Furnish Expansion Shield mounting at masonry sub-straight locations.
 2. Floor Stops: All stops to be fastened to concrete shall use expansion shields and machine screws.
- B. Approved Manufacturers: Ives, Rockwood , Burns or approved equal.

2.12 OVERHEAD STOPS:

- A. Overhead Stops: Stainless steel. Non-plastic mechanisms and finished metal end caps. Provide field-changeable hold-open, friction and stop-only functions. Coordinate templates for door and wall conditions and neighboring hardware. Furnish drop plates at locations where regular arm closer are used in conjunction with overhead stops. See hardware sets for specific model numbers.
- B. Approved Manufacturers: Glynn's Johnson , Rixson ,ABH , or approved equal.

2.13 KEY REQUIREMENTS:

- A. Final keying: requirements to be determined by the Owner. A meeting must take place between the owner, the end user, the owner's representative, and the hardware distributor prior to cylinders being ordered, to establish the keying requirements and required keyway.

- B. Key System: Perimeter Doors: Ingersoll Rand / Schlage Everest Primus High-Security Key Control System. Interior doors: Schlage Everest in a restricted keyway. Exterior and Interior doors shall be operated by the same high level Master Key.
- C. Interchangeable Cores: Everest Primus 20-740 cores, Everest 23-030 full size interchangeable cores.
- D. Provide Concealed Key Control (CKC) keyset symbol stamping on the side of each master keyed core. Provide visual key control for all operating and master keys.
- E. Construction keying: provide brass keyed-alike temporary cores plus 10 operating keys for all cylinders, interior and exterior.
- F. Provide: Three (3) change keys for each differently keyed lock. Provide (3) control keys for construction cores, and (3) control keys for permanent cores. Provide 10 copies of each level Master Key, Grand Master Key, and/or Great Grand Master Key. Permanent keys and cores: secured shipment direct from point of origination to the owner. Provide bitting list, ship direct from point of origin to the owner upon project completion.
- G. Provide a key control system including envelopes. Labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150 percent of the number of locks required for the project.
 - 1. Provide four hinged panel type cabinet for wall mounting.

2.14 WEATHER SEALS AND THRESHOLDS:

- A. Weather Seals and Thresholds: Zero as Scheduled.
- B. Perimeter seals: shall be of compressible black Neoprene material. Housing shall be solid alum stock. Furnish seals on three sides of the opening. Coordinate the amount of material is required in each specified opening.
- C. Seals shall be mechanically fastened to door frame.
- D. Door sweeps: shall be extruded aluminum and black neoprene sweep.
 - 1. Fasten door sweeps with wood screws for wood doors and sheet metal screws for hollow metal and fiberglass reinforced doors.
 - 2. Door sweep shall be 1 ¼" in overall height with a ½" high neoprene sweep.
 - 3. Mount door sweep on the exterior side of the door, with the neoprene engaged with the threshold or finish floor.
- E. Thresholds: shall be extruded aluminum meeting ADA requirements. They shall not exceed 1/2" in height with a wall thickness of .125" unless specified otherwise. Coordinate templates for any and all hardware, which may require cutouts or slots within the threshold for the proper installation of that hardware.

1. Furnish threshold with non-slip epoxy abrasive bonded within the grooves of the threshold.
2. Thresholds shall extend a minimum of 1" past the exterior face of the door, and have returned closed ends.
3. Set all thresholds in grout, and seal with silicone caulk.
4. Fasten thresholds with expansion shield mounting at masonry sub-straight locations, and wood screws at wood substrate locations.

PART 3 **EXECUTION:**

3.01 **ACCEPTABLE INSTALLERS:**

- A. Factory trained and certified, and carries a factory-issued card certifying that person as a "Certified Installer".

3.02 **PREPARATION:**

- A. Ensure that walls and frames are square and plumb before hardware installation.
- B. The installer shall notify the architect, in writing, of all unacceptable condition that could affect the proper operation of the finish hardware.
- C. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
- D. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.
- E. Existing frames and doors scheduled to receive new hardware: carefully remove existing hardware and turn over to Owner. Patch and fill wood frames and doors with solid wood stock or dowel material before cutting for new hardware. Do not reuse existing screw holes fill and re-pilot.

3.03 **INSTALLATION:**

- A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation.
 1. Unless otherwise specified, locate all hardware in accordance with the recommended locations for builders hardware for standard doors and frames as published by the Door and Hardware Institute.
 2. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

3. Unless otherwise specified or detailed, install thresholds with the bevel in vertical alignment with the outside door face. Notch and closely fit thresholds to frame profile. Set thresholds in full bed of sealant.
4. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
5. Locate floor stops not more than 4 inches from the wall.
6. Drill pilot holes for fasteners in wood doors and/or frames.
7. Shim doors as required to maintain proper operating clearance between door and frame.
8. Use only fasteners supplied by or approved by the manufacturer for each respective item of hardware.
9. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for reuse.
10. Where necessary, adjust doors and hardware as required to eliminate binding between strike and latchbolt. Doors should not rattle.
11. Install door closers on corridor side of lobby doors, room side of corridor doors, and stair side of stairways.
12. Adjust spring power of door closers to insure exterior and fire rated doors will consistently close and latch doors under existing conditions. Adjust all other door closers to insure opening force does not to exceed 5 lbs.
13. Adjust "sweep", "latch", & "back check" valves on all door closers to properly control door through out the opening and closing cycle. Adjust total closing speed as required to comply with all applicable state and local building codes.
14. Deliver to the owner 1 complete set of installation and adjustment instructions, and tools as furnished with the hardware.

3.04 QUALITY ASSURANCE:

- A. After installation has been completed, the hardware supplier and manufacturers representative for locksets, door closers, exit devices, and overhead stops shall check the project and verify compliance with installation instructions, adjustment of all hardware items, and proper application according to the approved hardware schedule. Hardware supplier shall submit a list of all hardware that has not been installed correctly.
- B. After installation has been completed, the hardware supplier and manufacturers representative shall meet with the owner to explain the functions, uses, adjustment, and maintenance of each item of hardware.

3.05 ADJUSTING AND CLEANING:

- A. Adjust and check for proper operation and function. Replace units which cannot be adjusted to operate freely and smoothly.
- B. At final completion, and when H.V.A.C. equipment is in operation, installer shall make final adjustments to and verify proper operation of all door closers and other items of hardware. Lubricate moving parts with type lubrication recommended by the manufacturer.
- C. All hardware shall be left clean and in good operation. Hardware found to be disfigured, defective, or inoperative shall be repaired or replaced.
- D. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of space or area, return to work during week prior to acceptance or occupancy, and make final check and adjustment of hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors.

3.06 EXTRA STOCK

- A. See hardware sets for additional hardware. Additional hardware is to be delivered directly to the owner for maintenance purposes.
- B. Extra screws shall be furnished to the contractor for installation purposes. See hardware sets for a detailed listing of extra screws.
- C. All extra hardware items, fasteners, and special installation tools are to be turned over to the owner at completion of the project.

3.07 DEMONSTRATION:

- A. Demonstrate electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

3.08 PROTECTION:

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.
- B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.09 SCHEDULE OF FINISH HARDWARE:

A. See door schedule in drawings for hardware set assignments.

Hardware Group No. 01

For use on door(s):

112.2

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA CONTINUOUS HINGE	112HD EPT	628 IVE
2	EA POWER TRANSFER	EPT-10	689 VON
1	EA MULLION	KR4954	689 VON
1	EA PANIC HARDWARE	WS-RX-99EO	626 VON
1	EA PANIC HARDWARE	WS-RX-99L 996L X 17 LEVER	626 VON
1	EA RIM CYLINDER	20-057-ICX	626 SCH
1	EA MORTISE CYLINDER	20-059	626 SCH
2	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
2	EA SURFACE CLOSER	4111 SCUSH	689 LCN
2	EA CUSH SHOE SUPPORT	4110-30	689 LCN
2	EA BLADE STOP SPACER	4110-61	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA ROD & LATCH GUARD	RG-27	630 VON
2	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
2	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
2	EA DOOR POSITION SWITCH	679-05 HM	SCE
2	CARD READER	REFER TO COMMUNICATIONS SECTION	
1	POWER SUPPLY	REFER TO ELECTRICAL REQUIREMENTS	
1		LOCAL ALARM – REFER TO ELECTRICAL REQUIREMENTS	

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED.
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER. WHICH WILL SIGNAL EXIT DEVICE TO UNLOCK THE TRIM AND ALLOW AUTHORIZED ENTRY.
3. FREE EGRESS AT ALL TIMES VIA THE EXIT DEVICE.

Hardware Group No. 02

For use on door(s):

S-100.2 S-101.2 S-102.2

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA CONTINUOUS HINGE	112HD EPT	628	IVE
2	EA POWER TRANSFER	EPT-10	689	VON
1	EA MULLION	KR4954	689	VON
2	EA PANIC HARDWARE	RX99EO	626	VON
1	EA MORTISE CYLINDER	20-061-ICX	626	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK	ZER
1	EA RAIN DRIP	142A	AL	ZER
2	EA DOOR SWEEP	98A	AL	ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL	ZER
2	EA DOOR POSITION SWITCH	679-05 HM		SCE
1		LOCAL ALARM REFER TO ELECTRICAL REQUIREMENTS		

Hardware Group No. 02A

For use on door(s):

181 183

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
3	EA CONTINUOUS HINGE	112HD EPT	628	IVE
3	EA POWER TRANSFER	EPT-10	689	VON
1	EA MULLION	KR4954	689	VON
2	EA PANIC HARDWARE	RX99EO	626	VON
1	EA PANIC HARDWARE	QEL-RX-99NL-OP	626	VON
1	EA RIM CYLINDER	20-057-ICX	626	SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA DOOR PULL	VR910NL	630	IVE
3	EA SURFACE CLOSER	4111 SCUSH	689	LCN
3	EA CUSH SHOE SUPPORT	4110-30	689	LCN
3	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK	ZER
1	EA RAIN DRIP	142A	AL	ZER
2	EA DOOR SWEEP	98A	AL	ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL	ZER

1	EA	POWER SUPPLY	PS914-2Q-FA	GRY VON
3	EA	DOOR POSITION SWITCH	679-05 HM	SCE
2		CARD READER	REFER TO COMMUNICATIONS SECTION	
2			LOCAL ALARM REFER TO ELECTRICAL REQUIREMENTS	
1			WEATHERSTRIPPING BY DOOR MANUFACTURER	

Hardware Group No. 03

For use on door(s):

113.3 115.1 157.3 158.1

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
1	EA CONTINUOUS HINGE	112HD	628 IVE
1	EA PANIC HARDWARE	99EO	626 VON
1	EA SURFACE CLOSER	4111 SCUSH	689 LCN
1	EA CUSH SHOE SUPPORT	4110-30	689 LCN
1	EA BLADE STOP SPACER	4110-61	689 LCN
1	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
1	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
1	EA DOOR POSITION SWITCH	679-05 HM	SCE
1		LOCAL ALARM REFER TO ELECTRICAL REQUIREMENTS	
1		WEATHERSTRIPPING BY DOOR MANUFACTURER	

Hardware Group No. 04

For use on door(s):

112.1

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA CONTINUOUS HINGE	112HD	628	IVE
1	EA MULLION	KR4954	689	VON
2	EA FIRE EXIT HARDWARE	99L-BE 996L-BE X 17 LEVER	626	VON
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA THRESHOLD	656A X SIZE AS REQUIRED	AL	ZER
2	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 05 - NOT USED

Hardware Group No. 06

For use on door(s):

113.2	125.1	127.1	129.1	131.1	132.1
133.1	134.1	135.1	136.1	137.1	138.1
139.1	140.1	141.1	143.1	145.1	

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA STOREROOM LOCK	L9080T 17A	630	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA OVERHEAD STOP	900S	630	GLY
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 07

For use on door(s):

101.1	103.1	104.1	105.1	106.1	107.1
108.1	110.1	113.1	114.1	116.1	117.1
118.1	119.1	121.1	123.1	124.1	151.3
201.1	202.1	203.1	204.1	205.1	206.1
207.1	208.1	210.1	214.1	215.1	216.1
217.1	219.1	221.1			

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652 IVE
1	EA STOREROOM LOCK	L9080T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 08

For use on door(s):

114

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652 IVE
1	EA ELECTRIC HINGE	5BB1HW 4.5 X 4.5 TW4	652 IVE
1	EA EL STOREROOM LOCK	L9080TEL-RX 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4111 EDA	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE
1	EA DOOR POSITION SWITCH	679-05 HM	SCE
1	CARD READER	REFER TO COMMUNICATIONS SECTION	
1	POWER SUPPLY	REFER TO ELECTRICAL REQUIREMENTS	

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER WHICH WILL ALLOW AUTHORIZED ENTRY.

Hardware Group No. 09

For use on door(s):

101	103	104	105	106	107
108	109	110	113	115	116
117	118	119	120	121	122
123	124	125	126	127	128
129	131	132	133	134	135
136	137	138	139	140	141
143	145	161.1	173.4	200	201
202	203	204	205	206	207
208	209	210	214	215	216
217	218	219	220	221	222
222.2					

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652 IVE
1	EA CLASSROOM LOCK	L9070T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4111 EDA	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER

TEMPLATE FOR 180 DEGREE SWING WHERE INDICATED ON DRAWINGS

Hardware Group No. 10

For use on door(s):

178.1	178.2	178.3	178.4	178.5	178.6
180.10	180.11	180.12	180.6	180.7	180.8
180.9	181.1	181.2	181.3	182.2	182.3
182.4	182.5	182.6	182.7	182.8	183.5
211.1	223.1	223.2	223.3	223.4	223.5
223.6	225.10	225.11	225.6	225.7	225.8
225.9					

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652 IVE
1	EA STOREROOM LOCK	L9080T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4111 EDA	689 LCN
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

TEMPLATE DOOR FOR 180 DEGREE SWING

Hardware Group No. 10A

For use on door(s):

173.3 180.5 183.10 225.5

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652 IVE
1	EA STOREROOM LOCK	L9080T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4111 CUSH	689 LCN
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 11

For use on door(s):

100.2 106.2 108.2 124.2 125.2 127.2
 129.2 131.2 132.2 133.2 134.2 135.2
 136.2 137.2 138.2 139.2 140.2 141.2
 143.2 145.2

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5	652 IVE
1	EA PRIVACY SET	L9044 17A	630 SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

TEMPLATE FOR 180 DEGREE SWING WHERE INDICATED ON DRAWINGS

Hardware Group No. 12 - NOT USED

Hardware Group No. 13

For use on door(s):

S-100.1 S-200 S-201 S-202 S101.1 S102.1

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5	652	IVE
2	EA FIRE EXIT HARDWARE	9927L-BE-F-LBR 996L-BE X 17 LEVER	626	VON
2	EA SURFACE CLOSER	4111 EDA	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA WALL STOP	WS407CCV	630	IVE
2	EA MAGNETIC HOLD-OPEN	SEM 1980	AL	LCN
2	EA FINGER GUARD	2248A 76"	AL	NGP
2	EA FINGER GUARD	2252C 79-3/4"		NGP
1	SET SEALS	8144FS X SIZE AS REQUIRED	BRN	ZER

Hardware Group No. 14

For use on door(s):

180.1 180.2 183.1 183.2 183.8 183.9
 225.1 225.2

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA MORTISE DEADBOLT	L463T XB11-720	626	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA PUSH PLATE	8200 4" X 16"	630	IVE
1	EA PULL PLATE	8302-0 4" X 16"	630	IVE
1	EA SURFACE CLOSER	4011	689	LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CCV	630	IVE
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 15

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For use on door(s):

180.3 180.4 183.3 183.4 225.3 225.4

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA FACULTY TOILET LOCK	L9486T 17A L583-375	630	SCH
1	EA STD CORE ONLY, HOTEL	30-120 X EVEREST D	626	SCH
1	EA SURFACE CLOSER	4011	689	LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CCV	630	IVE
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 16

For use on door(s):

130 142 144 146 162

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA ELECTRIC HINGE	5BB1HW 4.5 X 4.5 TW4	652	IVE
1	EA EL STOREROOM LOCK	L9080TEL-RX 17A	630	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA SURFACE CLOSER	4111 EDA	689	LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CCV	630	IVE
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE
1	CARD READER	REFER TO COMMUNICATIONS SECTION		
1	POWER SUPPLY	REFER TO ELECTRICAL REQUIREMENTS		

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER WHICH WILL ALLOW AUTHORIZED ENTRY.
3. TEMPLATE DOOR FOR 180 DEGREE SWING AS INDICATED ON THE FLOOR PLANS.

Hardware Group No. 16A

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Addendum 2

Feb 15, 2012

For use on door(s):

111 161.2 164 211

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA ELECTRIC HINGE	5BB1HW 4.5 X 4.5 TW4	652	IVE
1	EA EL STOREROOM LOCK	L9080TEL-RX 17A	630	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA SURFACE CLOSER	4011	689	LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CCV	630	IVE
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE
1	CARD READER	REFER TO COMMUNICATIONS SECTION		
1	POWER SUPPLY	REFER TO ELECTRICAL REQUIREMENTS		

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER WHICH WILL ALLOW AUTHORIZED ENTRY.
3. TEMPLATE DOOR FOR 180 DEGREE SWING AS INDICATED ON THE FLOOR PLANS.

Hardware Group No. 17

For use on door(s):

178 182 182.9

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5	652	IVE
2	EA FIRE EXIT HARDWARE	9927L-BE-F-LBR 996L-BE X 17 LEVER	626	VON
2	EA SURFACE CLOSER	4111 EDA	689	LCN
2	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA WALL STOP	WS407CCV	630	IVE
2	EA MAGNETIC HOLD-OPEN	SEM 1980	AL	LCN
2	EA FINGER GUARD	2248A 76"	AL	NGP
2	EA FINGER GUARD	2252C 79-3/4"		NGP
2	EA SILENCER	SR64	GRY	IVE

TEMPLATE FOR 180 DEGREE SWING WHERE INDICATED ON DRAWINGS

Hardware Group No. 17A

For use on door(s):

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178.7

180.13

223

Provide each DE door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5	652 IVE
2	EA FIRE EXIT HARDWARE	9927L-BE-F-LBR 996L-BE X 17 LEVER	626 VON
2	EA SURFACE CLOSER	4011	689 LCN
2	EA KICK PLATE	8400 4" X 1" LDW	630 IVE
2	EA WALL STOP	WS407CCV	630 IVE
2	EA MAGNETIC HOLD- OPEN	SEM 1980	AL LCN
2	EA FINGER GUARD	2248A 76"	AL NGP
2	EA FINGER GUARD	2252C 79-3/4"	NGP
2	EA SILENCER	SR64	GRY IVE

1. TEMPLATE FOR 180 DEGREE SWING WHERE INDICATED ON DRAWINGS
2. TIE WALL MAGNET INTO FIRE ALARM SYSTEM

Hardware Group No. 17B - NOT USED

Hardware Group No. 18

For use on door(s):

100

102

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652 IVE
1	EA CLASSROOM LOCK	L9070T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4111 EDA X ST2730	689 LCN
1	EA OVERHEAD STOP	900S	630 GLY
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 19

For use on door(s):

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102.1

102.2

162.2

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652 IVE
1	EA OFFICE LOCK	L9050T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 20

For use on door(s):

171

172

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652 IVE
1	EA PASSAGE SET	L9010 17A	630 SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 21

For use on door(s):

100.1

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652 IVE
1	EA PRIVACY SET	L9040 17A	630 SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 22

For use on door(s):

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148

182.1

211.2

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652 IVE
1	EA STOREROOM LOCK	L9080T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4011	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 23

For use on door(s):

160.3

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA CONTINUOUS HINGE	112HD EPT	628 IVE
2	EA POWER TRANSFER	EPT-10	689 VON
1	EA EXIT DEVICE	WS-RX9927L-E996L X 17 LEVER	626 VON
1	EA EXIT DEVICE	WS-RX9927EO	626 VON
1	EA RIM CYLINDER	20-057-ICX	626 SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
2	EA SURFACE CLOSER	4111 SCUSH	689 LCN
2	EA CUSH SHOE SUPPORT	4110-30	689 LCN
2	EA BLADE STOP SPACER	4110-61	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA ROD & LATCH GUARD	RG-27	630 VON
2	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
2	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
2	EA DOOR POSITION SWITCH	679-05 HM	SCE
1	CARD READER	REFER TO COMMUNICATIONS SECTION	
1	POWER SUPPLY	REFER TO ELECTRICAL REQUIREMENTS	
1		WEATHERSTRIPPING BY DOOR MANUFACTURER	

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED.
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER. WHICH WILL SIGNAL EXIT DEVICE TO UNLOCK THE TRIM AND ALLOW AUTHORIZED ENTRY.
3. FREE EGRESS AT ALL TIMES VIA THE EXIT DEVICE.

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Hardware Group No. 24

For use on door(s):

160.1 160.2

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA CONTINUOUS HINGE	112HD	628	IVE
2	EA EXIT DEVICE	WS-RX9927L-996L X 17 LEVER	626	VON
2	EA RIM CYLINDER	20-057-ICX	626	SCH
2	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626	SCH
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA ROD & LATCH GUARD	RG-27	630	VON
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK	ZER
1	EA RAIN DRIP	142A	AL	ZER
2	EA DOOR SWEEP	98A	AL	ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL	ZER
2	EA DOOR POSITION SWITCH	679-05 HM		SCE

Hardware Group No. 25

For use on door(s):

159.3

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
1	EA CONTINUOUS HINGE	112HD	628	IVE
1	EA CONTINUOUS HINGE	112HD EPT	628	IVE
1	EA POWER TRANSFER	EPT-10	689	VON
1	EA PANIC HARDWARE	9927L-LBR 996L X 17 LEVER	626	VON
1	EA PANIC HARDWARE	QEL-RX-9927L-LBR 996L X 17 LEVER	626	VON
2	EA RIM CYLINDER	20-057-ICX	626	SCH
2	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL	ZER
1	EA POWER SUPPLY	PS914-2Q-FA	GRY	VON
1	CARD READER	REFER TO COMMUNICATIONS SECTION		
1		WEATHERSTRIPPING BY DOOR MANUFACTURER		

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED.
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER, WHICH WILL SIGNAL EXIT DEVICE TO RETRACT THE LATCH AND ALLOW AUTHORIZED ENTRY.
3. FREE EGRESS AT ALL TIMES VIA THE EXIT DEVICE.

Hardware Group No. 26

For use on door(s):

173.5

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
1	EA CONTINUOUS HINGE	112HD EPT	628 IVE
1	EA POWER TRANSFER	EPT-10	689 VON
1	EA PANIC HARDWARE	QEL-RX-99NL-OP	626 VON
1	EA RIM CYLINDER	20-057-ICX	626 SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
1	EA DOOR PULL	VR910NL	630 IVE
1	EA SURFACE CLOSER	4111 SCUSH	689 LCN
1	EA CUSH SHOE SUPPORT	4110-30	689 LCN
1	EA BLADE STOP SPACER	4110-61	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
1	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
1	EA POWER SUPPLY	PS914-2Q-FA	GRY VON
1	EA DOOR POSITION SWITCH	679-05 HM	SCE
2	CARD READER	REFER TO COMMUNICATIONS SECTION	
1		LOCAL ALARM REFER TO ELECTRICAL REQUIREMENTS	
1		WEATHERSTRIPPING BY DOOR MANUFACTURER	

Hardware Group No. 27

For use on door(s):

174

175

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA CONTINUOUS HINGE	112HD	628 IVE
2	EA MANUAL FLUSH BOLT	FB458	626 IVE
1	EA DUST PROOF STRIKE	DP1	626 IVE
1	EA STOREROOM LOCK	L9080T 17A	630 SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
1	EA ASTRAGAL	44STST	AL ZER
1	EA SURFACE CLOSER	4111 SCUSH	689 LCN

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1	EA	CUSH SHOE SUPPORT	4110-30	689	LCN
1	EA	BLADE STOP SPACER	4110-61	689	LCN
1	EA	OVERHEAD STOP	900S	630	GLY
2	EA	FINGER GUARD	2248A 76"	AL	NGP
1		SET SEALS	8144 X SIZE AS REQUIRED	BLK	ZER
1	EA	RAIN DRIP	142A	AL	ZER
2	EA	DOOR SWEEP	98A	AL	ZER
1	EA	THRESHOLD	655A X SIZE AS REQUIRED	AL	ZER
2	EA	DOOR POSITION SWITCH	679-05 HM		SCE
1			LOCAL ALARM REFER TO ELECTRICAL REQUIREMENTS		
1			WEATHERSTRIPPING BY DOOR MANUFACTURER		

Hardware Group No. 28
 For use on door(s):

151.2	165	166	167	168	169
170					

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA OFFICE LOCK	L9050T 17A	630	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CCV	630	IVE
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 29
 For use on door(s):

162.1	173.1	173.2	185.1	222.1
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Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA PRIVACY SET	L9040 17A	630	SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CCV	630	IVE
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 30
 For use on door(s):

February 7, 2012

FINISH HARDWARE
 0871000 - 31

NJSDA PROJECT NO.
 ET-0068-C01

Addendum 2
Feb 15, 2012

155.5

163

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652 IVE
1	EA CLASSROOM LOCK	L9070T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4011	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL ZER
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 31

For use on door(s):

177

185

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5	652 IVE
1	SET CONST LATCHING BOLT	FB61P	630 IVE
1	EA DUST PROOF STRIKE	DP2	626 IVE
1	EA CLASSROOM LOCK	L9070T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA COORDINATOR	COR X FL	628 IVE
2	EA SURFACE CLOSER	4011	689 LCN
2	EA OVERHEAD HOLDER	104H	630 GLY
2	EA ARMOR PLATE	8400 36" X 1" LDW	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
2	EA FINGER GUARD	2252C 79-3/4"	NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL ZER
2	EA SILENCER	SR64	GRY IVE

Hardware Group No. 32

For use on door(s):

February 7, 2012

Addendum 2

Feb 15, 2012

FINISH HARDWARE
0871000 - 32

NJSDA PROJECT NO.
ET-0068-C01

147.1 147.3 155.1 155.3 155.4 155.6

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652 IVE
2	EA PANIC HARDWARE	9927L-LBR 996L X 17 LEVER	626 VON
2	EA RIM CYLINDER	20-057-ICX	626 SCH
2	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
2	EA SURFACE CLOSER	4111 SCUSH	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
2	EA FINGER GUARD	2252C 79-3/4"	NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL ZER
2	EA SILENCER	SR64	GRY IVE

Hardware Group No. 33

For use on door(s):

185.2

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA CONTINUOUS HINGE	112HD EPT	628 IVE
2	EA POWER TRANSFER	EPT-10	689 VON
1	EA MULLION	KR4954	689 VON
1	EA PANIC HARDWARE	RX99EO	626 VON
1	EA PANIC HARDWARE	QEL-RX-99NL-OP	626 VON
1	EA RIM CYLINDER	20-057-ICX	626 SCH
1	EA MORTISE CYLINDER	20-061-ICX	626 SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
2	EA DOOR PULL	VR910NL	630 IVE
2	EA SURFACE CLOSER	4111 SCUSH	689 LCN
2	EA CUSH SHOE SUPPORT	4110-30	689 LCN
2	EA BLADE STOP SPACER	4110-61	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
2	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
1	EA POWER SUPPLY	PS914-2Q-FA	GRY VON
2	EA DOOR POSITION SWITCH	679-05 HM	SCE
2	CARD READER	REFER TO COMMUNICATIONS SECTION	
1		LOCAL ALARM REFER TO ELECTRICAL REQUIREMENTS	
1		WEATHERSTRIPPING BY DOOR MANUFACTURER	

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED.
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER. WHICH WILL SIGNAL EXIT DEVICE TO RETRACT THE LATCH AND ALLOW AUTHORIZED ENTRY.
3. FREE EGRESS AT ALL TIMES VIA THE EXIT DEVICE.

Hardware Group No. 33A

For use on door(s):

186

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA CONTINUOUS HINGE	112HD EPT	628 IVE
2	EA POWER TRANSFER	EPT-10	689 VON
1	EA MULLION	KR4954	689 VON
1	EA PANIC HARDWARE	WS-RX-99EO	626 VON
1	EA PANIC HARDWARE	WS-RX-99L E996L X 17 LEVER	626 VON
1	EA RIM CYLINDER	20-057-ICX	626 SCH
1	EA MORTISE CYLINDER	20-059	626 SCH
2	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
2	EA SURFACE CLOSER	4111 SCUSH	689 LCN
2	EA CUSH SHOE SUPPORT	4110-30	689 LCN
2	EA BLADE STOP SPACER	4110-61	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
2	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
2	EA DOOR POSITION SWITCH	679-05 HM	SCE
2	CARD READER	REFER TO COMMUNICATIONS SECTION	
1	POWER SUPPLY	REFER TO ELECTRICAL REQUIREMENTS	
1		LOCAL ALARM REFER TO ELECTRICAL REQUIREMENTS	

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED.
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER. WHICH WILL SIGNAL EXIT DEVICE TO UNLOCK THE TRIM AND ALLOW AUTHORIZED ENTRY.
3. FREE EGRESS AT ALL TIMES VIA THE EXIT DEVICE.

Hardware Group No. 34
For use on door(s):

156.1

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
2	EA POWER TRANSFER	EPT-10	689	VON
1	EA MULLION	KR4954	689	VON
1	EA PANIC HARDWARE	RX99EO	626	VON
1	EA PANIC HARDWARE	QEL-RX-99L 996L X 17 LEVER	626	VON
1	EA RIM CYLINDER	20-057-ICX	626	SCH
1	EA MORTISE CYLINDER	20-061-ICX	626	SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626	SCH
2	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
2	EA DOOR PULL	VR910NL	630	IVE
2	EA SURFACE CLOSER	4111 EDA	689	LCN
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA WALL STOP	WS407CCV	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
2	EA FINGER GUARD	2252C 79-3/4"		NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL	ZER
2	EA SILENCER	SR64	GRY	IVE
1	EA POWER SUPPLY	PS914-2Q-FA	GRY	VON
2	EA DOOR POSITION SWITCH	679-05 HM		SCE
1	EA CARD READER	REFER TO COMMUNICATIONS SECTION		

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED.
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER. WHICH WILL SIGNAL EXIT DEVICE TO RETRACT THE LATCH AND ALLOW AUTHORIZED ENTRY.
3. FREE EGRESS AT ALL TIMES VIA THE EXIT DEVICE.

Hardware Group No. 35

For use on door(s):

156

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA CONTINUOUS HINGE	112HD EPT	628 IVE
2	EA POWER TRANSFER	EPT-10	689 VON
1	EA MULLION	KR4954	689 VON
1	EA PANIC HARDWARE	RX99EO	626 VON
1	EA PANIC HARDWARE	QEL-RX-99NL-OP	626 VON
1	EA RIM CYLINDER	20-057-ICX	626 SCH
1	EA MORTISE CYLINDER	20-061-ICX	626 SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
2	EA DOOR PULL	VR910NL	630 IVE
2	EA SURFACE CLOSER	4111 SCUSH	689 LCN
2	EA CUSH SHOE SUPPORT	4110-30	689 LCN
2	EA BLADE STOP SPACER	4110-61	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
2	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
1	EA POWER SUPPLY	PS914-2Q-FA	GRY VON
2	EA DOOR POSITION SWITCH	679-05 HM	SCE
1	CARD READER	REFER TO COMMUNICATIONS SECTION	
1		WEATHERSTRIPPING BY DOOR MANUFACTURER	

SYSTEM OPERATION:

1. DOOR NORMALLY CLOSED AND LOCKED.
2. ENTRANCE BY VALID CREDENTIAL AT CARD READER. WHICH WILL SIGNAL EXIT DEVICE TO RETRACT THE LATCH AND ALLOW AUTHORIZED ENTRY.
3. FREE EGRESS AT ALL TIMES VIA THE EXIT DEVICE.

Hardware Group No. 36
For use on door(s):

147.2 155.2 155.7

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA CONTINUOUS HINGE	112HD EPT	628	IVE
2	EA POWER TRANSFER	EPT-10	689	VON
1	EA MULLION	KR4954	689	VON
2	EA PANIC HARDWARE	RX99EO	626	VON
1	EA MORTISE CYLINDER	20-061-ICX	626	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK	ZER
1	EA RAIN DRIP	142A	AL	ZER
2	EA DOOR SWEEP	98A	AL	ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL	ZER
2	EA DOOR POSITION SWITCH	679-05 HM		SCE
1		LOCAL ALARM REFER TO ELECTRICAL		
1		WEATHERSTRIPPING BY DOOR MANUFACTURER		

\Hardware Group No. 37
For use on door(s):

183.6 183.7

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA CONTINUOUS HINGE	112HD	628	IVE
1	EA MULLION	BY CURTAIN WALL MFG		
2	EA PANIC HARDWARE	WS-RX-99L 996L X 17 LEVER	626	VON
2	EA RIM CYLINDER	20-057-ICX	626	SCH
2	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626	SCH
2	EA SURFACE CLOSER	4111 SCUSH SRI	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA THRESHOLD	566A X SIZE AS REQUIRED	AL	ZER
2	EA DOOR POSITION SWITCH	679-05 HM		SCE
1		WEATHERSTRIPPING BY DOOR MANUFACTURER		

INSTALLATION AND MAINTENANCE NOTES:

1. PANIC DEVICE TO BE MOUNTED ON THE EXTERIOR OF THE BUILDING, TO PROVIDE EGRESS FROM COURTYARD.
2. INSTALLATION NOTE: DRILL SEVERAL WEEP HOLES UNDER THE MECHANISM CASE TO PROVIDE DRAINAGE AND PREVENT ACCUMULATION OF WATER
3. MAINTENANCE NOTE: INTERNAL MOVING PARTS CAN BE LUBRICATED ANNUALLY OR BI-ANNUALLY WITH A NON-PETROLEUM BASED SPRAY LUBRICANT, SUCH AS SILICON SPARY, TO SUPPORT EXTERIOR APPLICATION.
4. PETROLEUM BASED LUBRICANTS CANNOT BE USED AS THEY DO NOT REACT WELL WITH THE
 FACTORY APPLIED SELF-LUBRICATING COATING SUPPLIED ON ALL INTERNAL MOVING PARTS. THE FACTORY APPLIED COATING WILL REPEL WATER FROM COLLECTING ON THE INTERNAL MOVING PARTS.

Hardware Group No. 38

For use on door(s):

157 158

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652 IVE
2	EA PANIC HARDWARE	9927L-LBR 996L X 17 LEVER	626 VON
2	EA RIM CYLINDER	20-057-ICX	626 SCH
2	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
2	EA SURFACE CLOSER	4111 EDA	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA WALL STOP	WS407CCV	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
2	EA FINGER GUARD	2252C 79-3/4"	NGP
2	EA SILENCER	SR64	GRY IVE

Hardware Group No. 39

For use on door(s):

153 157.1 213.1 215.2

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652 IVE
1	EA STOREROOM LOCK	L9080T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 40

For use on door(s):

157.2

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5	652 IVE
1	EA CLASSROOM LOCK	L9070T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 41

For use on door(s):

213.2

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652 IVE
1	EA PANIC HARDWARE	99L 996L X 17 LEVER	626 VON
1	EA RIM CYLINDER	20-057-ICX	626 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4111 EDA	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

TEMPLATE DOOR FOR 180 DEGREE SWING AS INDICATED ON PLANS

Hardware Group No. 42

For use on door(s):

154 174.4 179.1

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
2	EA MANUAL FLUSH BOLT	FB358	626	IVE
1	EA DUST PROOF STRIKE	DP2	626	IVE
1	EA STOREROOM LOCK	L9080T 17A	630	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
2	EA ARMOR PLATE	8400 36" X 2" LDW	630	IVE
2	EA WALL STOP	WS407CCV	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
2	EA FINGER GUARD	2252C 79-3/4"		NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL	ZER
2	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 43 - NOT USED

Hardware Group No. 44

For use on door(s):

150 184

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	SET AUTO FLUSH BOLT	FB41P	630	IVE
1	EA DUST PROOF STRIKE	DP2	626	IVE
1	EA CLASSROOM LOCK	L9070T 17A	630	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA COORDINATOR	COR X FL	628	IVE
2	EA MOUNTING BRACKET	MB1F	600	IVE
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA WALL STOP	WS407CCV	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
2	EA FINGER GUARD	2252C 79-3/4"		NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL	ZER
2	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 45
 For use on door(s):

213

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
6	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652 IVE
2	EA PANIC HARDWARE	9927L-LBR 996L X 17 LEVER	626 VON
2	EA RIM CYLINDER	20-057-ICX	626 SCH
2	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
2	EA SURFACE CLOSER	4111 SCUSH	689 LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
2	EA FINGER GUARD	2252C 79-3/4"	NGP
2	EA SILENCER	SR64	GRY IVE

Hardware Group No. 46
 For use on door(s):

213.3

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5	652 IVE
1	EA OFFICE LOCK	L9050T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4011	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 47 - NOT USED

Hardware Group No. 48
 For use on door(s):

152

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
1		ALL HARDWARE BY WALK IN REFRIG MANUFACTURER	

Hardware Group No. 49

For use on door(s):

149.1 149.2 149.3 149.4

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
4	EA HINGE	5BB1 4.5 X 4.5	652 IVE
2	EA SURFACE BOLT	SB453-8-TB	603 IVE
1	EA MORTISE DEADBOLT	L463T XB11-720	626 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA PULL PLATES	94C 3 1/2" X 5"	630 ROC
2	EA FINGER GUARD	2248A 76"	AL NGP
2	EA FINGER GUARD	2252C 79-3/4"	NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL ZER

Hardware Group No. 50

For use on door(s):

151.1 151.5

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652 IVE
1	EA CLASSROOM LOCK	L9070T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA ARMOR PLATE	8400 36" X 1" LDW	630 IVE
1	EA ARMOR PLATE	8400 36" X 2" LDW	630 IVE
1	EA DOOR HOLDER	FS452-4"	626 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

Hardware Group No. 51

For use on door(s):

151.4

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
6	EA HINGE	5BB1 4.5 X 4.5 NRP	652 IVE
1	EA CONST LATCHING BOLT	FB61T	630 IVE
1	EA CLASSROOM LOCK	L9070T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
4	EA ARMOR PLATE	8400 36" X 1" LDW	630 IVE
2	EA DOOR HOLDER	FS452-4"	626 IVE
2	EA WALL STOP	WS407CCV	630 IVE
2	EA FINGER GUARD	2248A 76"	AL NGP
2	EA FINGER GUARD	2252C 79-3/4"	NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL ZER
2	EA SILENCER	SR64	GRY IVE

Hardware Group No. 52

For use on door(s):

184.1

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA FIRE EXIT HARDWARE	98L-F 996L-17 LEVER	626	VON
1	EA RIM CYLINDER	20-057-ICX	626	SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
1	EA SURFACE CLOSER	4111 EDA	689	LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CCV	630	IVE
1	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA FINGER GUARD	2252C 79-3/4"		NGP
3	EA SILENCER	SR64	GRY	IVE

TEMPLATE DOOR FOR 180 DEGREE SWING AS INDICATED ON PLANS

Hardware Group No. 53

For use on door(s):

159.1

159.2

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfr
2	EA CONTINUOUS HINGE	112HD	628	IVE
2	EA PANIC HARDWARE	9927L-LBR 996L X 17 LEVER	626	VON
2	EA RIM CYLINDER	20-057-ICX	626	SCH
2	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626	SCH
2	EA SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA BLADE STOP SPACER	4110-61	689	LCN
2	EA KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA FINGER GUARD	2248A 76"	AL	NGP
1	EA THRESHOLD	545A X SIZE AS REQUIRED	AL	ZER
1		WEATHERSTRIPPING BY DOOR MANUFACTURER		

Hardware Group No. 54

For use on door(s):

187

Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
2	EA CONTINUOUS HINGE	112HD	628 IVE
2	EA MANUAL FLUSH BOLT	FB458	626 IVE
1	EA DUST PROOF STRIKE	DP2	626 IVE
1	EA STOREROOM LOCK	L9080T LLL X 17A	630 SCH
1	EA PRIMUS CORE ONLY	20-740 (OUTSIDE CORE)	626 SCH
1	EA DOOR PULL	VR900	630 IVE
1	EA SURFACE CLOSER	4111 SCUSH SRI	689 LCN
2	EA FINGER GUARD	2248A 76"	AL NGP
1	SET SEALS	8144 X SIZE AS REQUIRED	BLK ZER
1	EA RAIN DRIP	142A	AL ZER
2	EA DOOR SWEEP	98A	AL ZER
1	EA THRESHOLD	655A X SIZE AS REQUIRED	AL ZER
1		WEATHERSTRIPPING BY DOOR MANUFACTURER	

Hardware Group No. 55

For use on door(s):

212

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish Mfr
3	EA HINGE	5BB1HW 4.5 X 4.5	652 IVE
1	EA OFFICE LOCK	L9050T 17A	630 SCH
1	EA CORE ONLY	23-030 X EVEREST D (INSIDE CORE)	626 SCH
1	EA SURFACE CLOSER	4111 EDA	689 LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630 IVE
1	EA WALL STOP	WS407CCV	630 IVE
1	EA FINGER GUARD	2248A 76"	AL NGP
1	EA FINGER GUARD	2252C 79-3/4"	NGP
3	EA SILENCER	SR64	GRY IVE

END OF SECTION 08710

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

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. This Section includes acoustical panels and exposed suspension systems for ceilings.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete at ceilings.

1.3 RELATED SECTIONS

- A. Related sections include the following:
 - 1. Division 09 Section "Gypsum Board".
 - 2. Division 21 and 23 Sections "Mechanical Work".
 - 3. Division 26 Section "Electrical Work".

1.4 DEFINITIONS

- A. AC: Articulation Class.
- B. CAC: Ceiling Attenuation Class.
- C. LR: Light Reflectance coefficient.
- D. NRC: Noise Reduction Coefficient.

1.5 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
 - 2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - 3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
 - 4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
 - 5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
7. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
8. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.
9. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems.
10. ASTM E 1264 Classification for Acoustical Ceiling Products.
11. ASTM E 1477 Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
12. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
13. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material.

B. ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"

1.6 SUBMITTALS

- A. Product Data: For each type of acoustical ceiling panels indicated.
- B. Coordination Drawings: Reflected ceiling plans, 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. Ceiling suspension system members.
 2. Method of attaching hangers to building structure.
 - a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.
 3. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
 4. Minimum Drawing Scale: 1/8 inch = 1 foot.
- C. Samples for Initial Selection: For components with factory-applied color finishes.
- D. LEED Submittals:
 1. Product Data for Credit MR 4.1 and MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.
 2. Product Data for Credit EQ 4.1: For sealants, including printed statement of VOC content.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each acoustical panel ceiling.
- F. Maintenance Data: For finishes to include in maintenance manuals.
- G. Warranty: Provide manufacturer's standard 10 year no-sag warranty from date of substantial completion.

1.7 QUALITY ASSURANCE

February 7, 2012

ACOUSTICAL PANEL CEILINGS
095113 - 2

NJSDA PROJECT NO.
ET-0068-C01

Addendum 2
Feb 15, 2012

- A. Source Limitations:
1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
 2. Suspension System: Obtain each type through one source from a single manufacturer.
- B. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system through one source from a single manufacturer.
- C. Fire-Test-Response Characteristics: Provide acoustical panel ceilings that comply with the following requirements:
1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.
 - b. Identify materials with appropriate markings of applicable testing and inspecting agency.
 2. Surface-Burning Characteristics: Provide acoustical panels with the following surface-burning characteristics complying with ASTM E 1264 for Class A materials as determined by testing identical products per ASTM E 84:
 - a. Smoke-Developed Index: 450 or less.
- D. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.
 2. CISCA's Recommendations for Acoustical Ceilings: Comply with CISCA's "Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings--Seismic Zones 0-2."
 3. CISCA's Guidelines for Systems Requiring Seismic Restraint: Comply with CISCA's "Guidelines for Seismic Restraint of Direct-Hung Suspended Ceiling Assemblies--Seismic Zones 3 & 4."
 4. UBC Standard 25-2, "Metal Suspension Systems for Acoustical Tile and for Lay-in Panel Ceilings."
 5. ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads."

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.9 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

1.10 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.11 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. Acoustical Ceiling Panels: Full-size panels equal to 2.0 percent of quantity installed.
2. Suspension System Components: Quantity of each exposed component equal to 2.0 percent of quantity installed.
3. Hold-Down Clips: Equal to 2.0 percent of quantity installed.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANELS, GENERAL

- A. Recycled Content: Provide acoustical panels with recycled content such that postconsumer recycled content plus one-half of preconsumer recycled content constitutes a minimum of 20 percent by weight.
- B. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.
1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches away from test surface per ASTM E 795.
- C. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.
- D. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

2.2 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type ACT-1:

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24 in x 48 in x 7/8 in as indicated on drawings
5. Edge Profile: Beveled Tegular for interface with 9/16" Dimensional Tee.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.75.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
8. Articulation Class (AC): ASTM E 1111; Classified with UL label on product carton 180.
9. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
10. Flame Spread: ASTM E 1264; Class A (UL)
11. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.85.
12. Antimicrobial Protection: Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.
13. Products: Subject to compliance with requirements, provide one of the following:
 - a. Armstrong World Industries, Inc., Cirrus Open Plan, basis of design;
 - b. USG Interiors, Inc.;
 - c. BPB Celotex;
 - d. Or approved equal.

2.3 SUSPENSION SYSTEMS

- A. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized (galvanized steel, aluminum, or stainless steel) as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
- a. Structural Classification: ASTM C 635 Intermediate Duty.
 - b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
 - c. Acceptable Product: 9/16" Dimensional Tee.
- B. High Humidity Finish: Comply with ASTM C 635 requirements for Coating Classification for Severe Environment Performance where high humidity finishes are indicated.
- C. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- D. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least three design load, but not less than 12 gauge.
- E. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.
- F. Accessories

2.4 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type ACT-2:

1. Surface Texture: Medium
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24in x 48in x 5/8in as indicated on drawings.
5. Edge Profile: Square Lay-In for interface with 15/16" Exposed Tee.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.70.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
8. Articulation Class (AC): ASTM E 1111; Classified with UL label on product carton Not Applicable.
9. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
10. Flame Spread: ASTM E 1264; Class A (UL)
11. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.85.
12. Dimensional Stability: Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
13. Antimicrobial Protection: Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.
14. Products: Subject to compliance with requirements, provide the following:
 - a. Armstrong World Industries, Inc.: School Zone Fine Fissured, Basis of Design;
 - b. USG Interior, Inc.;
 - c. BPB Celotex;
 - d. Or approved equal.

2.5 SUSPENSION SYSTEMS

- A. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized (galvanized steel, aluminum, or stainless steel) as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
1. Structural Classification: ASTM C 635 Intermediate Duty.
 2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
 3. Acceptable Product: 15/16" Exposed Tee.
- B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least time three design load, but not less than 12 gauge.
- D. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.
- E. Accessories

2.6 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type ACT-3:

1. Surface Texture: Smooth
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24in x 48in x 5/8in
5. Edge Profile: Square Lay-In.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, N/A.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 40
8. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
9. Flame Spread: ASTM E 1264; Fire Resistive
10. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.80.
11. Dimensional Stability: Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
12. Antimicrobial Protection: Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.
13. Products: Subject to compliance with requirements, sprovide one of the following:
 - a. Armstrong World Industries, Inc.: CleanRoom VL, unperforated, Basis of design;
 - b. USG Interiors, Inc.;
 - c. BPB Celotex;
 - d. Or approved equal.

2.7 SUSPENSION SYSTEMS

A. Components:

1. Main Beams: All main beams shall be commercial-quality 3105-H24 aluminum chassis co-extruded with polyvinyl chloride.
 - a. EA7900 Main Beams are 1-11/16 inch web height with 15/16 inch exposed flange with integral flexible gasket .
 - b. End detail: Stainless steel splice clips.
 - c. Structural Classification: ASTM C 635, Intermediate Duty.
2. Cross Tees: All cross tees shall be commercial-quality 3105-H24 aluminum chassis co-extruded with polyvinyl chloride .
 - a. Cross tees have 1-11/16 inch web height with 15/16 inch exposed flange with integral flexible gasket.
 - b. End detail: Hook type with holes available to accept #6 self-tapping screws for seismic installations.
 - c. EA7940 - 4 foot cross tees
 - d. EA7920 - 2 foot cross tees
3. Wall Molding, EA7801 -15/16 inch commercial-quality 3105-H24 aluminum chassis co-extruded with polyvinyl chloride with integral flexible gasket.
4. Hold Down Clip - Extruded polyvinyl chloride clip to work with 1/16 inch to 3/4 inch panels.

- B. Finish: Lightly textured white polyvinyl chloride and match the actual color of the selected ceiling tile, unless noted otherwise.
- C. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- D. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least three times design load, but not less than 12 gauge.

2.8 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type ACT-4:

- 1. Surface Texture: Fine
- 2. Composition: Mineral Fiber
- 3. Color: White
- 4. Size: 24 inches x 24 inches x 3/4 inches.
- 5. Edge Profile: Square Lay-In for interface with 15/16" Exposed Tee.
- 6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.70.
- 7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
- 8. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
- 9. Flame Spread: ASTM E 1264; Class A (UL)
- 10. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.90.
- 11. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
- 12. Antimicrobial Protection: Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.
- 13. Acceptable Product:
 - a. Armstrong World Industries Inc. Ultima 1910, basis of design;
 - b. USG Interiors, Inc.;
 - c. BPB Celotex;
 - d. Or approved equal.

2.9 SUSPENSION SYSTEMS

- A. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized (galvanized steel, aluminum, or stainless steel) as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
 - 1. Structural Classification: ASTM C 635 Intermediate Duty.
 - 2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
 - 3. Acceptable Product: 15/16" Exposed Tee.
- B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

- C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least three design load, but not less than 12 gauge.
- D. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

2.10 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type ACT-5:

- 1. Surface Texture: Fine
- 2. Composition: Mineral Fiber
- 3. Color: White
- 4. Size: 24 in x 24 in x 7/8 in as indicated on drawings
- 5. Edge Profile: Beveled Tegular for interface with 9/16" Dimensional Tee.
- 6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.75.
- 7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
- 8. Articulation Class (AC): ASTM E 1111; Classified with UL label on product carton 180.
- 9. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
- 10. Flame Spread: ASTM E 1264; Class A (UL)
- 11. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.85.
- 12. Antimicrobial Protection: Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.
- 13. Products: Subject to compliance with requirements, provide one of the following:
 - a. Armstrong World Industries, Inc., Cirrus Open Plan, basis of design;
 - b. USG Interiors, Inc.;
 - c. BPB Celotex;
 - d. Or approved equal.

2.11 SUSPENSION SYSTEMS

- A. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized (galvanized steel, aluminum, or stainless steel) as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
 - a. Structural Classification: ASTM C 635 Intermediate Duty.
 - b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
 - c. Acceptable Product: 9/16" Dimensional Tee.
- B. High Humidity Finish: Comply with ASTM C 635 requirements for Coating Classification for Severe Environment Performance where high humidity finishes are indicated.
- C. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

- D. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least three design load, but not less than 12 gauge.
- E. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.
- F. Accessories

2.12 ACOUSTICAL CEILING UNITS

Acoustical Panels Type ACT-6:

- 1. Surface Texture: Medium
- 2. Composition: Mineral Fiber
- 3. Color: White
- 4. Size: 24in x 24in x 5/8in as indicated on drawings.
- 5. Edge Profile: Square Lay-In for interface with 15/16" Exposed Tee.
- 6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.70.
- 7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
- 8. Articulation Class (AC): ASTM E 1111; Classified with UL label on product carton Not Applicable.
- 9. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
- 10. Flame Spread: ASTM E 1264; Class A (UL)
- 11. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.85.
- 12. Dimensional Stability: Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
- 13. Antimicrobial Protection: Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.
- 14. Products: Subject to compliance with requirements, provide the following:
 - a. Armstrong World Industries, Inc.: School Zone Fine Fissured, Basis of Design;
 - b. USG Interior, Inc.;
 - c. BPB Celotex;
 - d. Or approved equal.

2.13 SUSPENSION SYSTEMS

- A. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized (galvanized steel, aluminum, or stainless steel) as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
 - 1. Structural Classification: ASTM C 635 Intermediate Duty.
 - 2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
 - 3. Acceptable Product: 15/16" Exposed Tee.

- B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least three design load, but not less than 12 gauge.
- D. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.
- E. Accessories

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
 - 1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 3. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 4. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 - 5. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other

- devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
 7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 8. Do not attach hangers to steel deck tabs.
 9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
1. Arrange directionally patterned acoustical panels as follows:
 - a. As indicated on reflected ceiling plans.
 - b. Install panels with pattern running in one direction parallel to long axis of space.
 - c. Install panels in a basket-weave pattern.
 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
 3. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
 4. For reveal-edged panels on suspension system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension system surfaces and panel faces flush with bottom face of runners.
 5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
 6. Install hold-down clips in areas indicated, in areas required by authorities having jurisdiction, and for fire-resistance ratings; space as recommended by panel manufacturer's written instructions, unless otherwise indicated.
 7. Protect lighting fixtures and air ducts to comply with requirements indicated for fire-resistance-rated assembly.

3.4 FIELD QUALITY CONTROL

- A. Tests and Inspections: Testing and inspecting of completed installations of acoustical panel ceiling hangers and anchors and fasteners shall take place in successive stages, in areas of extent and using methods as follows. Do not proceed with installations of acoustical panel ceiling hangers for the next area until test results for previously completed installations of acoustical panel ceiling hangers show compliance with requirements.
1. Extent of Each Test Area: When installation of ceiling suspension systems on each floor has reached 20 percent completion but no panels have been installed.
 - a. Within each test area, testing agency will select 1 of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 200 lbf of tension; it will also select one of every 2 postinstalled anchors used to attach bracing wires to concrete and will test them for 440 lbf of tension.
 - b. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.
- B. Remove and replace acoustical panel ceiling hangers and anchors and fasteners that do not pass tests and inspections and retest as specified above.

3.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 099113 - EXTERIOR PAINTING

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. This Section includes surface preparation and the application of paint systems on the following exterior substrates:
1. Exterior gypsum board.
 2. Ferrous and Non-Ferrous Metals
- B. Related Sections include the following:
1. Division 05 Sections for shop priming of metal substrates with primers specified in this Section.
 2. Division 08 Sections for factory priming windows and doors with primers specified in this Section.
 3. Division 09 Section "Interior Painting" for surface preparation and the application of paint systems on interior substrates.
 4. Division 09 Section "Staining and Transparent Finishing" for surface preparation and the application of wood stains and transparent finishes on exterior wood substrates.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of topcoat product indicated.
- C. Samples for Verification: For each type of paint system and each color and gloss of topcoat indicated.
1. Submit Samples on rigid backing, 8 inches square.
 2. Step coats on Samples to show each coat required for system.
 3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- D. LEED Submittal:
1. Product Data for Credit EQ 4.2: For paints, including printed statement of VOC content and chemical components.
- E. Job Mock-up:
1. Minimum 100 sq. ft. mock-up application of specified coating system on each type of surface. (Provide separate mock-up for each color blend.)

2. Upon approval by specifier, mock-ups serve as standard for the work.
3. Mock-up shall remain as part of the completed project.

1.4 QUALITY ASSURANCE

A. MPI Standards:

1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F .

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.6 PROJECT CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F .

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Del Technical Coatings.
2. Duroñ Inc.
3. M.A.B. Paints.
4. Or approved equal.

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

B. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Gypsum Board: 12 percent.

- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

- D. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer, per SSPC-5P recommendations.

- E. Exterior Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:
1. Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
 2. Testing agency will perform tests for compliance of paint materials with product requirements.
 3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

- A. Exterior Ferrous Metals:
 - a. Prime Coat: Rust-inhibitive alkyd primer.
 - b. Intermediate and Top Coat: Exterior semi-gloss acrylic latex enamel.

- B. Exterior Non-Ferrous Metals:
 - a. Prime Coat: Anti-Corrosive alkyd primer
 - b. Intermediate and Top Coat: Exterior semi-gloss acrylic latex enamel.

- C. Exterior Gypsum Board Substrates:
 - a. Prime Coat: Exterior latex.
 - b. Intermediate and Top Coat: Exterior latex semi-gloss.

END OF SECTION 099113

SECTION 105113 - METAL LOCKERS

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. Welded corridor lockers.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of metal locker.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal locker and bench.
- B. LEED Submittals:
 - 1. Product Data for Credit IEQ 4.4: For composite wood products used in lockers, documentation indicating that product contains no urea formaldehyde.
- C. Shop Drawings: For metal lockers.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
 - 2. Show locker trim and accessories.
 - 3. Include locker identification system and numbering sequence.
- D. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Full-size units of the following metal locker hardware items equal to 10 percent of amount installed for each type and finish installed, but no fewer than five units:
 - a. Identification plates.
 - b. Hooks.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver metal lockers until spaces to receive them are clean, dry, and ready for their installation.

1.8 FIELD CONDITIONS

- A. Field Measurements: Verify actual dimensions of recessed openings by field measurements before fabrication.

1.9 COORDINATION.

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other Sections to ensure that metal lockers can be supported and installed as indicated.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of metal lockers that fail in materials or workmanship, excluding finish, within specified warranty period.

1. Failures include, but are not limited to, the following:

- a. Structural failures.
- b. Faulty operation of latches and other door hardware.

2. Damage from deliberate destruction and vandalism is excluded.

3. Warranty Period for Welded Metal Lockers: Lifetime from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain metal lockers, and locker benches, and accessories from single source from single locker manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Accessibility Requirements: For lockers indicated to be accessible, comply with applicable provisions in ICC A117.1.

2.3 WELDED LOCKERS

- A. Products: Subject to compliance with requirements, provide one of the following:
1. DeBourgh Mfg. Co., all-welded lockers with Sentry II latch, Basis of Design;
 2. Penco Products, Inc.
 3. Republic Storage Systems Company.
 4. Or approved equal.
- B. Locker Construction
1. Lockers to be welded unibody construction with exposed welds sanded smooth.
 2. No bolts, screws or rivets used in assembly of locker units.
 3. Ship lockers set-up, ready to be anchored in place in accordance with manufacturer's instructions.
- C. Body of Lockers:
1. Exterior sides, Tops, Bottoms, Tier Dividers and Fascia: Constructed of 16 gauge domestic cold rolled sheet steel for maximum durability.
 2. Backs: Solid sheet of 18 gauge cold rolled sheet steel welded to frames of sides and intermediate partitions.
 3. Shelves and Intermediate Partitions: Constructed of 18 gauge cold rolled sheet steel welded to sides and intermediate partition construction. Shelves provided in lockers 60 inches and taller, located to provide a minimum of 12 inches clearance.
- D. Continuous Door Strike:
1. Tier dividers, tops and bottoms constructed of 18 ga. to provide four-sided, continuous door strike for a secure, sanitary and intrusion-free locker while door is in closed position.
- E. Doors:
1. Doors are 16 gauge steel, formed outer panel with double bends on both sides and a single bend on top and bottom with 18 gauge steel formed stiffener panel.
 2. Door stiffener runs top to bottom on hinge side of door and is securely welded to outer door to form a reinforced channel for additional torque-free strength and sound reduction when closing door. (Inner panel not available on 9 inch wide or box lockers 12 inches high or less).
- F. Door Ventilation:
1. Doors with three-dimensional vertical vents formed on fronts and backs of door providing 21% ventilation per square inch.
- G. Latching
1. Sentry II Recessed Gravity Latch, DeBourgh, Basis of Design
 - a. Door containing stainless steel cup recessed into formed door.
 - b. 12 gauge steel finger lift mechanism.
 - c. Spring activated nylon slide latching enclosed in steel latch channel allows closing of door while padlock or built-in lock is in position
 - d. Rubber bumpers riveted to door stops for silent operation.
 - e. Meets ICC A117.1 standards.
- H. Hinges:
1. 16 gauge continuous piano hinge on the right side of the opening.
 2. Hinges welded to door and riveted to locker frame.
- I. Slope Tops:
1. Provide 18 gauge all welded slope top with 25 degree pitch, attached at factory with concealed fasteners. Slope top to be in addition to standard 16 gauge flat top.

J. Closed Base:

1. Provide 4 inch high, 14 gauge welded steel base enclosed on all four sides, securely welded to locker bottom.

K. Reinforced Bottom:

1. Provide 16 gauge spacer channel welded to locker bottom from front to back for a more secure installation (when closed bases are not used).

L. Filler Panels: Manufacturer's standard fabricated from 18 gauge solid steel finished to match lockers.

M. Finish:

1. Complete locker unit to be thoroughly cleaned, phosphatized and sealed.
2. Finish to be baked pure TGIC polyester powder coat with a minimum 2-3 mil thickness.
3. Color of lockers shall be chosen from manufacturer's 47 standard colors.

2.4 LOCKER ACCESSORIES

A. Hooks:

1. Hooks to be heavy duty forged steel with ball ends and zinc plated.
2. Provide two single wall hooks and one double ceiling hook in each locker opening 20 inches or taller.

B. Numbering

1. Furnish each locker with polished aluminum number plate with etched black numbers.
2. Locate number plate near center of each door.
3. Owner to furnish numbering sequence.

2.5 LOCKER BENCHES

B. Provide bench units with overall assembly height of 17-1/2 inches (445 mm).

C. Bench Tops: Manufacturer's standard one-piece units, with rounded corners and edges.

1. Size: 42" long by 20" wide by 1 3/4" thick as indicated on drawings.
2. Laminated clear hardwood with one coat of clear sealer on all surfaces and one coat of clear lacquer on top and sides.
3. Bench back: Minimum 42" L and extends from a point 2" maximum above the seat to a point 18" minimum above the bench. Benches must be strong enough to withstand a vertical and horizontal force of 250 pounds applied at any point on the bench.

D. Fixed Pedestals: Manufacturer's standard supports, with predrilled fastener holes for attaching bench top and anchoring to floor, complete with fasteners and anchors, and as follows:

1. Tubular Steel: 1-1/4-inch- (32-mm-) diameter steel tubing threaded on both ends, with standard pipe flange at top and bell-shaped cast-iron base; with baked-enamel or powder-coat finish; anchored with exposed fasteners.

- a. Color: As selected by Architect from manufacturer's full range.

2.4 FABRICATION

- A. Fabricate metal lockers square, rigid, without warp, and with metal faces flat and free of dents or distortion. Make exposed metal edges safe to touch and free of sharp edges and burrs.
 - 1. Form body panels, doors, shelves, and accessories from one-piece steel sheet unless otherwise indicated.
 - 2. Provide fasteners, filler plates, supports, clips, and closures as required for complete installation.
- B. Fabricate each metal locker with an individual door and frame; individual top, bottom, and back; and common intermediate uprights separating compartments. Factory weld frame members of each metal locker together to form a rigid, one-piece assembly.
- C. Equipment: Provide each locker with an identification plate and the following equipment:
 - 1. Double-Tier Units: One double-prong ceiling hook and two single-prong wall hooks.
- D. Welded Construction: Factory preassemble metal lockers by welding all joints, seams, and connections; with no bolts, nuts, screws, or rivets used in assembly of main locker groups. Factory weld main locker groups into one-piece structures. Grind exposed welds flush.
- E. Accessible Lockers: Fabricate as follows:
 - 1. Locate bottom shelf no lower than 15 inches (381 mm) above the floor.
 - 2. Where hooks, coat rods, or additional shelves are provided, locate no higher than 48 inches (1219 mm) above the floor.
- F. Continuous Base: Formed into channel or zee profile for stiffness, and fabricated in lengths as long as practical to enclose base and base ends of metal lockers; finished to match lockers.
- G. Continuous Sloping Tops: Fabricated in lengths as long as practical, without visible fasteners at splice locations; finished to match lockers.
 - 1. Sloping-top corner fillers, mitered.
- H. Recess Trim: Fabricated with minimum 2-1/2-inch (64-mm) face width and in lengths as long as practical; finished to match lockers.
- I. Filler Panels: Fabricated in an unequal leg angle shape; finished to match lockers. Provide slip-joint filler angle formed to receive filler panel.
- J. Boxed End Panels: Fabricated with 1-inch- (25-mm-) wide edge dimension, and designed for concealing fasteners and holes at exposed ends of nonrecessed metal lockers; finished to match lockers.
 - 1. Provide one-piece panels for double-row (back-to-back) locker ends.
- K. Finished End Panels: Designed for concealing unused penetrations and fasteners, except for perimeter fasteners, at exposed ends of nonrecessed metal lockers; finished to match lockers.
 - 1. Provide one-piece panels for double-row (back-to-back) locker ends.
- L. Center Dividers: Full-depth, vertical partitions between bottom and shelf; finished to match lockers.

2.5 ACCESSORIES

- A. Fasteners: Zinc- or nickel-plated steel, slotless-type, exposed bolt heads; with self-locking nuts or lock washers for nuts on moving parts.

- B. Anchors: Material, type, and size required for secure anchorage to each substrate.
 - 1. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls for corrosion resistance.
 - 2. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine walls, floors, and support bases, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install lockers level, plumb, and true; shim as required, using concealed shims.
 - 1. Anchor locker runs at ends and at intervals recommended by manufacturer, but not more than 36 inches (910 mm) o.c. Using concealed fasteners, install anchors through backup reinforcing plates, channels, or blocking as required to prevent metal distortion.
 - 2. Anchor single rows of metal lockers to walls near top of lockers and to floor.
 - 3. Anchor back-to-back metal lockers to floor.
- B. Welded Lockers: Connect groups together with standard fasteners, with no exposed fasteners on face frames.
- C. Equipment:
 - 1. Attach hooks with at least two fasteners.
 - 2. Attach door locks on doors using security-type fasteners.
 - 3. Identification Plates: Identify metal lockers with identification indicated on Drawings.
 - a. Attach plates to each locker door, near top, centered, with at least two aluminum rivets.
- D. Trim: Fit exposed connections of trim, fillers, and closures accurately together to form tight, hairline joints, with concealed fasteners and splice plates.
 - 1. Attach recess trim to recessed metal lockers with concealed clips.
 - 2. Attach filler panels with concealed fasteners. Locate filler panels where indicated on Drawings.
 - 3. Attach sloping-top units to metal lockers, with closures at exposed ends.
 - 4. Attach boxed end panels using concealed fasteners to conceal exposed ends of nonrecessed metal lockers.
 - 5. Attach finished end panels using fasteners only at perimeter to conceal exposed ends of nonrecessed metal lockers.
- E. Fixed Locker Benches: Provide no fewer than two pedestals for each bench, uniformly spaced not more than 72 inches (1830 mm) apart. Securely fasten tops of pedestals to undersides of bench tops, and anchor bases to floor.

3.3 ADJUSTING

- A. Clean, lubricate, and adjust hardware. Adjust doors and latches to operate easily without binding. Verify that integral locking devices operate properly.

3.4 PROTECTION

- A. Protect metal lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit use during construction.
- B. Touch up marred finishes, or replace metal lockers that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION 105113

SECTION 21 1000

DOUBLE-INTERLOCKED FIRE SUPPRESSION SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

- A. This Section includes the following fire-suppression piping inside the building:
1. Double interlock preaction sprinkler systems.

1.03 REFERENCES

- A. ASME (BPV IX) - Boiler and Pressure Vessel Code, Section IX - Welding and Brazing Qualifications; The American Society of Mechanical Engineers.
- B. ASME B.1.20.1 - General Purpose Pipe Threads; The American Society of Mechanical Engineers.
- C. ASME B16.3 - Malleable Iron Threaded Fittings; The American Society of Mechanical Engineers.
- D. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers.
- E. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers.
- F. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- G. ASTM A536 - Standard Specification for Ductile Iron Castings.
- H. ASTM A733 - Standard Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples.

- I. ASTM A865/A865M - Standard Specification for Threaded Couplings, Steel, Black or Zinc-Coated (Galvanized) Welded or Seamless, for Use in Steel Pipe Joints.
- J. ASTM B32 - Standard Specification for Solder Metal.
- K. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
- L. MSS SP-80 - Bronze Gate, Globe, Angle and Check Valves; Manufacturers Standardization Society.
- M. MSS-110 - Ball Valves, Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; Manufacturers Standardization Society.
- N. NFPA 13 - Standard for the Installation of Sprinkler Systems; National Fire Protection Association.
- O. NFPA 291 - Recommended Practice for Fire Flow Testing and Marking of Hydrants; National Fire Protection Association.
- P. UL 213 - Standard for Rubber Gasketed Fittings for Fire Protection Service; Underwriters Laboratories Inc.
- Q. UL 262 - Gate Valves for Fire Protection Service; Underwriters Laboratories Inc.
- R. UL 312 - Check Valves for Fire Protection Service; Underwriters Laboratories Inc.
- S. UL 393 - Standard for Indicating Pressure Gauges for Fire Protection Service; Underwriters Laboratories Inc.
- T. UL 1091 - Standard for Butterfly Valves for Fire Protection Service; Underwriters Laboratories Inc.
- U. UL 1474 - Standard for Adjustable Drop Nipples for Sprinkler Systems; Underwriters Laboratories Inc.

1.04 SYSTEM DESCRIPTIONS

- A. Double Interlock Pre-action Sprinkler System: The system utilizes a rate of temperature rise detection system and pressurized air in the sprinkler piping. The deluge valve is arranged to open when both the air pressure is reduced in the sprinkler piping and the detection system operates. If the detection system operates due to damage, or malfunction, the valve will not open. If the sprinkler piping is damaged or sprinkler head is broken or fused, the valve will not open.

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DOUBLE-INTERLOCKED FIRE SUPPRESSION SYSTEMS
21 1000-2

NJSDA PROJECT NO.
ET-0068-C01

Addendum No 2
Feb 15, 2012

- B. The sprinkler system shall be designed by Fire Protection Contractor to be compatible with the new Architectural Room layout and to avoid interference with the structural, electrical, HVAC and plumbing work in the building. All sizing shall be based on hydraulic calculations. The Fire Protection Contractor shall establish the piping elevation for new mains, cross-mains and branches. The elevations and locations of all new fire main and sprinkler piping shall be coordinated with architectural floor plans and cross sections. Rise up or drop down piping to make it fit in the space. Provide drain connections with gate valves at low points. All zones shall be drained in mop sink to nearest janitor closet or to outside as required in field.
- C. Design of the systems shall be such, as to keep all piping concealed in all areas with ceilings. Sprinkler heads shall be symmetrically located as required to provide proper coverage, approved by the Architect, and to avoid interference with lights, diffusers, grilles or other ceiling mounted equipment. Heads located in ceiling tile shall be installed in center of tiles or center of joists in exposed steel areas. Architects shall approve locations of all heads. Furnish additional heads that may be required for coordinated ceiling pattern without additional cost, even though number of heads may exceed minimum code requirements. Fire protection main piping locations in areas without ceiling shall be approved by the Architect.
- D. Sprinkler piping shall be sized using hydraulic calculations based on water flow tests provided by building design engineer. The fire protection work shall be subject to the approval of Local Fire Department, Insurance Carrier and State of New Jersey. Underwriter having jurisdiction. Additional sprinkler heads shall be provided, if required by Local Fire Department and insurance carrier, etc. All devices and materials pertaining to all fire protection work shall bear the UL listing or F.M. approval. The Contractor shall install additional sprinkler heads above and below soffits areas, clouds above sound absorbing plank sheets. Sprinkler equipment and installation shall be in accordance with recommendations of Owner's Underwriters and approval by Local Fire Department.
- E. Supervisory switches to be furnished and installed on all valves and wired by the Electrical Contractor. See Division 26.
- F. The sprinkler system shall be hydraulically designed for hazard, flow density and design area specified per NFPA 13. Any design criteria, whether or not given on the drawings, shall be subject to the approval of the local and state authorities having jurisdiction and insurance carrier. The Contractor shall size all sprinkler piping and loop for each floor. The Contractor shall have 10% safety factor in hydraulic calculations. The fire lines shall be over sized, if required to have minimum pressure drop in system and to get adequate water flows from fire main and at the top of highest point.
- G. Fire protection drawings shall be stamped by the Fire Protection Contractor.

1.05 PERFORMANCE REQUIREMENTS

- A. Standard Piping System Component Working Pressure: Listed for at least 175 psig.
- B. The local Department of Licenses and Inspections, Owners insurance carrier shall approve fire-suppression sprinkler system design.
 - 1. Margin of Safety for Available Water Flow and Pressure: 10 psig, including losses through water-service piping, valves, and backflow preventers.
 - 2. Sprinkler Occupancy Hazard Classification shall be Ordinary Hazard Density. Hydraulic calculations shall be prepared using NFPA-13, local Fire Departments and Owners insurance carriers. For dry pipe and double-interlocked pre-action systems, the Contractor shall increase by 30 percent densities in compliance with NFPA 13.
- C. Seismic Performance: Fire-suppression piping shall be capable of withstanding the effects of earthquake motions determined according to NFPA 13.

1.06 SUBMITTALS

- A. Product Data: For the following:
 - 1. Piping materials, including dielectric fittings and sprinkler specialty fittings.
 - 2. Pipe hangers and supports.
 - 3. Sprinklers, escutcheons, and guards. Include sprinkler flow characteristics, mounting, finish, and other pertinent data.
 - 4. Alarm devices, including electrical data.
- B. Shop Drawings: Diagram power, signal, and control wiring.
- C. Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by the local Authority Having Jurisdiction, New Jersey Department of Community Affairs, Owners Insurance Carrier, including hydraulic calculations.
- D. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping" and Test Certificate.
- E. Welding certificates.

- F. Field quality-control test reports.
- G. Operation and Maintenance Data: For sprinkler specialties to include in emergency, operation, and maintenance manuals.

1.07 QUALITY ASSURANCE

A. Installer Qualifications:

- 1. Installer's responsibilities include designing, fabricating, and installing fire-suppression systems and providing professional engineering services needed to assume engineering responsibility. Base calculations on results of fire hydrant flow test.
 - a. Engineering Responsibility: Preparation of working plans, calculations, and field test reports by a qualified professional engineer licensed in the State of New Jersey.
 - b. Calculations: Preparation of hydraulic calculations for each sprinkler zone.
 - c. Any contractor performing fire protection equipment work shall have the appropriate certification issued by the NJ Division of Fire Safety, or, in the case of fire alarm work, DFS certification, licensed electrical contractor, or licensed electrical contractor.

B. Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX.

C. NFPA Standards: Fire-suppression-system equipment, specialties, accessories, installation, and testing shall comply with the following:

- 1. NFPA 13, "Installation of Sprinkler Systems."

1.08 COORDINATION

A. Coordinate layout and installation of sprinklers with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.

1.09 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.

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1. Sprinkler Cabinets: Finished, wall-mounted, steel cabinet with hinged cover, with space for minimum of six spare sprinklers plus sprinkler wrench. Include number of sprinklers required by NFPA 13 and sprinkler wrench. Include separate cabinet with sprinklers and wrench for each type of sprinkler on Project.
2. Location of cabinet shall be determined by the Owner.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.02 STEEL PIPE AND FITTINGS

- A. Piping 2 inch and smaller: Threaded-End, Standard-weight Steel Pipe; ASTM A 53, Grade B welded seam; Schedule 40 with factory or field formed threaded ends.
1. Malleable-Iron Threaded Fittings: ASME B 16.3.
 2. Galvanized Malleable-Iron Threaded Fittings: ASME B 16.3.
 3. Steel Threaded pipe Nipples: ASTM A 733, made of the same material as the pipe.
 4. Steel Threaded Couplings: ASTM A 865 steel pipe.
- B. Piping 2-1/2 inch and larger: Standard-weight Steel Pipe; ASTM A 53, Grade B seamless; Schedule 40 with factory or field-formed roll grooved ends.
1. Grooved-Joint Piping Systems:
 - a. Manufacturers:
 - 1) Anvil International, Inc.
 - 2) Central Sprinkler Corp.
 - 3) Ductilic, Inc.
 - 4) JDH Pacific, Inc.
 - 5) National Fittings, Inc.

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- 6) Shurjoint Piping Products, Inc.
 - 7) Southwestern Pipe, Inc.
 - 8) Star Pipe Products; Star Fittings Div.
 - 9) Victaulic Co. of America.
 - 10) Ward Manufacturing
 - 11) Or approved equal
- b. Grooved-End Fittings: UL listed/FM approved, ASTM A 536, ductile iron casting with OD matching steel pipe OD.
- c. Grooved-End Pipe Couplings: UL 213 and AWWA C606, rigid pattern, unless otherwise indicated; gasketed fitting matching steel pipe OD. Include ductile iron housing with keys matching steel pipe and fitting grooves, prefabricated rubber gasket listed for use with housing, and steel bolts and nuts.
- C. Dry pipe shall have galvanized pipe Schedule 40.
- D. All pneumatic air piping shall be copper pipe with soldered connections and extended from air compressor, to dry pipe valve. The air piping shall be installed high, and drop shall be made tight to walls in a neat manner. High air piping shall be supported on channels. Copper tubing shall be ASTM B88, with ASME B16.18 cast copper, or ASME B16.22 wrought copper fittings. Make solder joints with ASTM B32 Sn95 solder and no-lead flux.

2.03 DIELECTRIC FITTINGS

- A. Assembly shall be copper alloy, ferrous, and insulating materials with ends matching piping system.
- B. Dielectric Unions: UL Listed/FM approved; factory-fabricated assembly, designed for 250-psig minimum working pressure at 180 deg Fahrenheit. Include insulating material that isolates dissimilar materials and ends with inside threads according to ASME B 1.20.1.
1. Manufacturers:
 - a. Capitol Manufacturing Co.
 - b. Central Plastics Company.
 - c. Epco Sales, Inc.
 - d. Hart Industries International, Inc.
 - e. Watts Industries, Inc.; Water Products Div.

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- f. Zurn Industries, Inc.; Wilkins Div.
 - g. Or approved equal
- C. Dielectric Flanges: Factory-fabricated companion-flange assembly, for 175-psig minimum working-pressure rating as required for piping system.
- 1. Manufacturers:
 - a. Capitol Manufacturing Co.
 - b. Central Plastics Company.
 - c. Epco Sales, Inc.
 - d. Watts Industries, Inc.; Water Products Div.
 - e. Or approved equal
- D. Dielectric Flange Insulation Kits: Components for field assembly shall include CR or phenolic gasket, PE or phenolic bolt sleeves, phenolic washers, and steel backing washers.
- 1. Manufacturers:
 - a. Advance Products and Systems, Inc.
 - b. Calpico, Inc.
 - c. Central Plastics Company.
 - d. Pipeline Seal and Insulator, Inc.
 - e. Or approved equal
- E. Dielectric Couplings: Galvanized steel with inert and non-corrosive thermoplastic lining and threaded ends and 300-psig working-pressure rating at 225 degrees Fahrenheit.
- 1. Manufacturers:
 - a. Calpico, Inc.
 - b. Lochinvar Corp.

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- c. Or approved equal
- F. Dielectric Nipples: Electroplated steel with inert and non-corrosive thermoplastic lining, with combination of plain, threaded, or grooved ends and 300-psig working-pressure rating at 225-degrees Fahrenheit.
 - 1. Manufacturers:
 - a. Perfection Corporation.
 - b. Precision Plumbing Products, Inc.
 - c. Victaulic Co. of America.
 - d. Or approved equal

2.04 SPRINKLER SPECIALTY FITTINGS

- A. Sprinkler specialty fittings shall be UL listed/FM approved, with 175-psig minimum working-pressure rating, and made of materials compatible with piping.
- B. Outlet Specialty Fittings:
 - 1. Manufacturers:
 - a. Anvil International, Inc.
 - b. Central Sprinkler Corp.
 - c. Ductilic, Inc.
 - d. JDH Pacific, Inc.
 - e. National Fittings, Inc.
 - f. Shurjoint Piping Products, Inc.
 - g. Southwestern Pipe, Inc.
 - h. Star Pipe Products; Star Fittings Div.
 - i. Victaulic Co. of America.

- j. Ward Manufacturing.
- k. Or approved equal
- 2. Mechanical T and Cross Fittings: UL 213, ductile-iron housing with gaskets, bolts and nuts, and threaded, locking-lug, or grooved outlets.
- 3. Snap-On, Strapless Outlet Fittings and Boltless couplings are prohibited.
- C. Sprinkler Drain and Alarm Test Fittings: Cast or ductile-iron body; with threaded or locking-lug inlet and outlet, test valve, and orifice and sight glass.
 - 1. Manufacturers:
 - a. Central Sprinkler Corp.
 - b. Fire-End and Croker Corp.
 - c. Viking Corp.
 - d. Victaulic Co. of America.
 - e. Or approved equal
- D. Sprinkler Branch-Line Test Fittings: Brass body with threaded inlet, capped drain outlet, and threaded outlet for sprinkler.
 - 1. Manufacturers:
 - a. Elkhart Brass Mfg. Co., Inc.
 - b. Fire-End and Croker Corp.
 - c. Potter-Roemer; Fire-Protection Div.
 - d. Or approved equal
- E. Sprinkler Inspector's Test Fitting: Cast or ductile-iron housing with threaded inlet and drain outlet and sight glass.
 - 1. Manufacturers:
 - a. AGF Manufacturing Co.

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- b. Central Sprinkler Corp.
 - c. G/J Innovations, Inc.
 - d. Triple R Specialty of Ajax, Inc.
 - e. Or approved equal
- F. Drop-Nipple Fittings: UL 1474, adjustable with threaded inlet and outlet, and seals.
- 1. Manufacturers:
 - a. CECA, LLC.
 - b. Merit.
 - c. Or approved equal
- G. Dry-Pipe-System Fittings: UL listed/FM approved for dry-pipe service.

2.05 LISTED FIRE-PROTECTION VALVES

- A. Valves shall be UL listed/FM approved with 175-psig minimum pressure rating.
- B. Ball Valves 2 inch and smaller: Comply with UL 1091, except with ball instead of disc.
- 1. NPS 1-1/2 inch and Smaller: Bronze body with threaded ends.
 - 2. NPS 2 inch: Bronze body with threaded ends or ductile-iron body with grooved ends.
 - 3. Manufacturers:
 - a. NIBCO
 - b. Victaulic Co. of America.
 - c. Or approved equal
- C. Butterfly Valves 2-1/2 and larger: UL 1091.
- 1. Bronze, cast-iron, or ductile-iron body with flanged ends.
 - a. Manufacturers:

- 1) Central Sprinkler Corp.
- 2) Globe Safety Products, Inc
- 3) McWane, Inc.; Kennedy Valve Div.
- 4) Mueller Company.
- 5) NIBCO.
- 6) Pratt, Henry Company
- 7) Victaulic Co. of America.
- 8) Or approved equal

D. Check Valves NPS 2 inch and Larger: UL 312, swing type, cast-iron body with flanged ends.

1. Manufacturers:

- a. AFAC Inc.
- b. American Cast Iron Pipe Co.; Waterous Co.
- c. Central Sprinkler Corp.
- d. Clow Valve Co.
- e. Crane Co.; Crane Valve Group; Crane Valves.
- f. Crane Co.; Crane Valve Group; Jenkins Valves.
- g. Firematic Sprinkler Devices, Inc.
- h. Globe Fire Sprinkler Corporation.
- i. Grinnell Fire Protection.
- j. Hammond Valve.
- k. Matco-Norca, Inc.
- l. McWane, Inc.; Kennedy Valve Div.
- m. Mueller Company.
- n. NIBCO.
- o. Potter-Roemer; Fire Protection Div.

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- p. Reliable Automatic Sprinkler Co., Inc.
- q. Star Sprinkler Inc.
- r. Stockham.
- s. United Brass Works, Inc.
- t. Venus Fire Protection, Ltd.
- u. Victaulic Co. of America.
- v. Watts Industries, Inc.; Water Products Div.
- w. Or approved equal

E. Gate Valves: UL 262, OS&Y type.

1. NPS 2-inch and Smaller: Bronze body with threaded ends.

a. Manufacturers:

- 1) Crane Co.; Crane Valve Group; Crane Valves.
- 2) Hammond Valve.
- 3) NIBCO.
- 4) United Brass Works, Inc.
- 5) Or approved equal

2. NPS 2-1/2 inch and Larger: Cast-iron body with flanged ends.

a. Manufacturers:

- 1) Clow Valve Co.
- 2) Crane Co.; Crane Valve Group; Crane Valves.
- 3) Crane Co.; Crane Valve Group; Jenkins Valves.
- 4) Hammond Valve.
- 5) Milwaukee Valve Company.
- 6) Mueller Company.
- 7) NIBCO.
- 8) Red-White Valve Corp.
- 9) United Brass Works, Inc.
- 10) Or approved equal

- F. Indicating Valves: UL 1091, with integral indicating device.
1. Indicator: Electrical, 115-V ac, prewired, single-circuit, supervisory switch.
 2. NPS 2-inch and Smaller: Ball or butterfly valve with bronze body and threaded ends.
 - a. Manufacturers:
 - 1) Milwaukee Valve Company.
 - 2) NIBCO.
 - 3) Victaulic Co. of America.
 - 4) Or approved equal
 3. NPS 2-1/2 inch and Larger: Butterfly valve with cast- or ductile-iron body; with flanged ends.
 - a. Manufacturers:
 - 1) Central Sprinkler Corp.
 - 2) Grinnell Fire Protection.
 - 3) McWane, Inc.; Kennedy Valve Div.
 - 4) Milwaukee Valve Company.
 - 5) NIBCO.
 - 6) Victaulic Co. of America.
 - 7) Or approved equal

2.06 UNLISTED GENERAL-DUTY VALVES

- A. Ball Valves NPS 2-inch and Smaller: MSS SP-110, 2-piece copper-alloy body with chrome-plated brass ball, 600-psig minimum CWP rating, blowout-proof stem, and threaded ends.
- B. Check Valves NPS 2-inch and Smaller: MSS SP-80, Type 4, Class 175 minimum, swing type with bronze body, nonmetallic disc, and threaded ends.
- C. Gate Valves NPS 2 inch and Smaller: MSS SP-80, Type 2, Class 175 minimum, with bronze body, solid wedge, and threaded ends.
- D. Globe Valves NPS 2-inch and Smaller: MSS SP-80, Type 2, Class 175 minimum, with bronze body, nonmetallic disc, and threaded ends.

2.07 SPRINKLERS

- A. Sprinklers shall be UL listed/FM approved, with 175-psig minimum pressure rating.
- B. Manufacturers:
1. AFAC Inc.
 2. Central Sprinkler Corp.
 3. Firematic Sprinkler Devices, Inc.
 4. Globe Fire Sprinkler Corporation.
 5. Grinnell Fire Protection.
 6. Reliable Automatic Sprinkler Co., Inc.
 7. Star Sprinkler Inc.
 8. Venus Fire Protection, Ltd.
 9. Victaulic Co. of America.
 10. Viking Corp.
 11. Or approved equal
- C. Automatic Sprinklers: With heat-responsive element complying with the following:
1. UL 199, for commercial applications.
- D. Sprinkler Types and Categories: Nominal 1/2-inch orifice for "Ordinary" temperature classification rating, unless otherwise indicated or required by application.
1. Orifice: 1/2 inch, with discharge coefficient K between 5.3 and 5.8.
- E. Sprinkler types, features, and options as follows:
1. Concealed ceiling sprinklers, including coverplate.
 2. Upright sprinklers in exposed areas.

2. Air System Piping: Include retard feature and caption "AIR" on dial face.

2.09 VALVE CABINETS

- A. Valve cabinets shall be equal to Larsen's Model VC-181812, recessed steel cabinet, nominal 18-inches by 18-inches by 8-inches deep, with steel trim and door frame, clear vision panel in door, and one 2-1/2-inch fire department valve with cap and chain.

2.10 PIPE HANGERS AND SUPPORTS

- A. Hangers and Supports: Comply with NFPA 13 for hanger materials.

2.11 DELUGE VALVE

- A. Deluge valve shall be equal to Viking model E-1 with Viking trim.

2.12 AIR SUPPLY SYSTEM

- A. Air supply system shall be equal to Viking model D-1 or D-2, sized to establish required air pressure within 30 minutes.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Perform fire-hydrant flow test according to NFPA 13 and NFPA 291. Use results for system design calculations required in Part 1 "Quality Assurance" Article.
- B. Report test results promptly and in writing.

3.02 PIPING APPLICATIONS, GENERAL

- A. Flanges, flanged fittings, unions, nipples, and transition and special fittings with finish and pressure ratings same as or higher than system's pressure rating may be used in aboveground applications, unless otherwise indicated.

3.03 SPRINKLER SYSTEM PIPING APPLICATIONS

- A. Wet-Pipe Sprinkler System, 175-psig Maximum Working Pressure:
 1. NPS 2 inch and Smaller: Threaded-end, black, Schedule 40 steel pipes; malleable-iron threaded fittings; and threaded joints.

2. NPS 2-1/2 inch and Larger: Roll-grooved-end, black, Schedule 40 steel pipe; roll-grooved-end fittings; roll-grooved-end-pipe couplings; and roll-grooved joints.
- B. Dry-Pipe and Pre-Action Sprinkler System, 175-psig Maximum Working Pressure:
1. Sprinkler-Piping Fitting Option: Specialty sprinkler fittings, NPS 2 inch and smaller, including mechanical-T and -cross fittings may be used downstream from sprinkler zone valves. NPS 2 inch and Smaller: Threaded-end, galvanized, Schedule 40 steel pipe; galvanized malleable iron threaded fittings; and threaded joints.
 2. NPS 2-1/2 inch and Larger: Roll-grooved-end, galvanized, Schedule 40 steel pipe; roll-grooved-end fittings; roll-grooved-end-pipe couplings; and roll-grooved joints.

3.04 VALVE APPLICATIONS

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
1. Listed Fire-Protection Valves: UL listed/FM approved for applications where required by NFPA 13.
 - a. Shutoff Duty: Use ball, butterfly, or gate valves.
 2. Unlisted General-Duty Valves: For applications where UL Listed/FM approved valves are not required by NFPA 13.
 - a. Shutoff Duty: Use ball, butterfly, or gate valves.
 - b. Throttling Duty: Use ball or globe valves.

3.05 JOINT CONSTRUCTION

- A. Refer to Division 21 Section 21 0500 - "Common Work Results for Fire Suppression" for basic piping joint construction.
- B. Grooved Joints: Assemble joints with listed coupling and gasket, lubricant, and bolts.
1. Steel Pipe: Roll-groove piping as indicated. Use grooved-end fittings and rigid, grooved-end-pipe couplings, unless otherwise indicated.
 2. Dry-Pipe Systems: Use fittings and gaskets listed for dry-pipe service.

- C. Dissimilar-Metal Piping Joints: Construct joints using dielectric fittings compatible with both piping materials.
1. NPS 2 inch and Smaller: Use dielectric unions, couplings, or nipples.
 2. NPS 2-1/2 inch to NPS 4 inch: Use dielectric flanges.
 3. NPS 5 inch and Larger: Use dielectric flange insulation kits.

3.06 PIPING INSTALLATION

- A. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated, as far as practical.
1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Engineer before deviating from approved working plans.
 2. Install sprinkler systems piping according to NFPA-13.
- B. Use approved fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.
- C. Install unions adjacent to each valve in pipes NPS 2 inch and smaller. Unions are not required on flanged devices or in piping installations using grooved joints.
- D. Install flanges or flange adapters on valves, apparatus, and equipment having NPS 2-1/2 inch and larger connections.
- E. Install "Inspector's Test Connections" in sprinkler system piping, complete with shutoff valve, sized and located according to NFPA 13.
- F. Dry pipe and pre-action system piping shall be pitched at a minimum slope of 1/2 inch per 10 feet.
- G. Install sprinkler piping with drains for complete system drainage.
- H. Install alarm devices in piping systems.
- I. Inserts, Hangers and Supports: Comply with NFPA 13 for hanger materials.

1. The pipe supports hangers, hangers rods, support risers, couplings, seismic separation assembly, sway bracings, horizontal loads, etc., shall be installed per NFPA-13 Chapter 9 hanging, bracing and restraint of system piping.
2. Inserts:
 - a. Provide inserts for placement in concrete formwork.
 - b. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
 - c. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4-inches.
 - d. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
 - e. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut recessed into and grounded flush with slab.
- J. Earthquake Protection: Install piping according to NFPA 13 to protect from earthquake damage.
- K. Install pressure gauges on riser or feed main, at each sprinkler test connection. Include pressure gauges with connection not less than NPS 1/4 inch and with soft metal-seated globe valve, arranged for draining pipe between gauge and valve. Install gauges to permit removal, and install where they will not be subject to freezing.
- L. Drain dry-pipe sprinkler piping.
- M. Pressurize and check dry-pipe and pre-action sprinkler system piping air-pressure maintenance devices and air compressors.
- N. Fill wet-pipe sprinkler system piping with water.
- O. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
- P. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

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- Q. The Contractor shall be responsible for installation of sleeves. When penetrating floors and walls the Contractor shall coordinate with the General Contractor for all locations. The respective Contractor shall seal pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required.
- R. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- S. Install valves with stems upright or horizontal, not inverted. Remove protective coatings after installation.
- T. Provide OS&Y, gate or butterfly valves for shut-off or isolating service. All shut-off valves shall be supervised open, electrically or by pad locking as shown on plans.
- U. Apply masking tape or paper cover to ensure concealed sprinklers, cover plates, and sprinkler escutcheons do not receive field paint finish. Remove after painting. Replace painted sprinklers.
- V. Flush entire piping system of foreign matter. Provide additional piping and valves in loop to drain water after flushing.
- W. Require test be witnessed by authority having jurisdiction and Owner's insurance underwriter.
- X. Provide cabinet-mounted on wall near sprinkler valve or as directed in field, containing extra sprinkler heads, each type and wrench suitable for each head type as required by NFPA.
- Y. Provide inspectors test connection on each zone and system.
- Z. All hangers shall be UL approved, galvanized as required. The hangers, exposed to view, shall be primed by Fire Protection Contractor and painted by General Contractor. See Division 09 for painting required by the hangers.
- AA. Sleeves and escutcheons will be provided at all points where walls or floors are pierced. The space between pipe wall and sleeve will be packed with non-flammable material such as, mineral wool or glass fiber. .
- BB. Drain valve, test connections, control valves, alarm valves shall be identified with approved enameled tags indicating their use. Signs shall meet Factory Mutual standards.
- CC. A riser plate shall be permanently affixed to each calculated system riser, providing hydraulic data in accordance with N.F.P.A. requirements.

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- DD. All fire protection systems, piping shall have tag with gloss enamel paint. The tags shall be provided for cabinets, piping entrances to space adjacent to valves, near doors to pipe spaces and every 25 feet interval on long pipe runs entire fire suppression system. Additional requirement, provide nameplate for all systems.
- E. Provide escutcheon plates at all points where pipes enter room exposed to view, chrome plated cast brass escutcheons shall be provided.

3.07 VALVE INSTALLATION

- A. Install listed fire-protection valves, unlisted general-duty valves, specialty valves and trim, controls, and specialties according to NFPA 13 and authorities having jurisdiction.
- B. Install listed fire-protection shutoff valves supervised-open, located to control sources of water supply. Install permanent identification signs indicating portion of system controlled by each valve.

3.08 SPRINKLER APPLICATIONS

- A. General: Use sprinklers according to the following applications:
 - 1. Rooms without Ceilings: Upright type sprinklers.
 - 2. Rooms with Suspended Ceilings: Concealed sprinklers with plate.
 - 3. Pre-Action Sprinkler Systems: Pendent with plate.

3.09 SPRINKLER APPLICATIONS

- A. Install sprinklers in patterns indicated.
- B. Sprinklers shall be installed in the center of the tiles.
- C. Do not install pendent or wet-type sprinklers in areas subject to freezing. Use dry-type sprinklers with water supply from heated space.

3.10 CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment to allow service and maintenance.

- C. Connect water-supply piping to fire-suppression piping. Include backflow preventer between potable water piping and fire protection piping.
- D. Connect compressed-air supply to dry-pipe and pre-action sprinkler piping.

3.11 LABELING AND IDENTIFICATION

- A. Install labeling and pipe markers on piping according to requirements in NFPA 13.

3.12 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - 3. Energize circuits to electrical equipment and devices.
 - 4. Start and run air compressors.
 - 5. Flush; test, and inspect sprinkler systems according to NFPA 13, Systems Acceptance Chapter.
 - 6. Coordinate with fire alarm tests. Operate as required.
- B. Report test results promptly and in writing to Engineer and authorities having jurisdiction.

3.13 CLEANING AND PROTECTION

- A. Clean dirt and debris from sprinklers.
- B. Remove and replace sprinklers with paint other than factory finish.
- C. Protect sprinklers from damage until Substantial Completion.

3.14 ELECTRICAL WIRING

- A. All electrical wiring for Fire Alarm system shall be done by Electrical Contractor, except the preaction systems. All wiring preaction systems shall be done by the Fire Protection Contractor.

The wiring shall be done per manufactures recommendation. All control wiring shall be provided by preaction equipment manufacturer.

- B. 120 volts wiring and conduits shall be provided by Electrical Contractor up to preaction control panel. The wiring and conduits from this control panel to preaction systems shall be done by the Fire Protection Contractor.
- C. The wiring from heat detectors to control panel shall be done by the Fire Protection Contractor. The heat detector shall be compatible with fire alarm systems coordinate with Electrical Contractor. All wiring shall be furnished and installed per Division 26.

END OF SECTION 21 1000

SECTION 23 0713

DUCT INSULATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

- A. Duct insulation.
- B. Duct Liner.
- C. Insulation jackets.

1.03 RELATED SECTIONS

- A. Section 09 9123 - Interior Painting: Painting insulation jackets.
- B. Section 23 0553 - Identification for HVAC Piping and Equipment.

1.04 REFERENCES

- A. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2004.
- B. ASTM B 209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric); 2004.
- C. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2004.
- D. ASTM C 553 - Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2002.
- E. ASTM C 612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2004.
- F. ASTM C 1071 - Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material); 2005.

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- G. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.
- H. ASTM E 96/E 96M - Standard Test Methods for Water Vapor Transmission of Materials; 2005.
- I. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 1996 (Reapproved 2002).
- J. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.
- K. SMACNA (DCS) - HVAC Duct Construction Standards - Metal and Flexible; Sheet Metal and Air Conditioning Contractors' National Association; 2005.
- L. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.; 2003.
- M. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations; National Fire Protection Association; 2001.

1.05 SUBMITTALS

- A. See Section 01300 - Submittals.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- C. Samples: Submit two samples of any representative size illustrating each insulation type.
- D. Manufacturer's Instructions: Indicate installation procedures which ensure acceptable workmanship and installation standards will be achieved.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section with not less than three years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified in this section, with minimum three years of experience.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.

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- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION

- A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E 84, NFPA 255, or UL 723.

2.02 GLASS FIBER, FLEXIBLE

- A. Manufacturer:

1. Knauf Fiber Glass
2. Johns Manville Corporation
3. Owens Corning Corp.
4. CertainTeed Corporation
5. Or approved equal.

- B. Insulation: ASTM C 553; flexible, noncombustible blanket.

1. 'K' value: 0.30 at 75 degrees F, when tested in accordance with ASTM C 518.
2. Maximum Service Temperature: 450 degrees F.
3. Maximum Water Vapor Sorption: 5.0 percent by weight.

- C. Vapor Barrier Jacket:

1. Kraft paper with glass fiber yarn and bonded to aluminized film.
2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E 96/E 96M.

3. Secure with pressure sensitive tape.

D. Vapor Barrier Tape:

1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive. Compatible with insulation manufacturer's vapor barrier.

E. Outdoor Vapor Barrier Mastic:

1. Manufacturers:

a. Foster Model Safetee HI.

b. Or approved equal.

2. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.

F. Tie Wire: Annealed steel, 16 gage.

2.03 GLASS FIBER, RIGID

A. Manufacturer:

1. Knauf Fiber Glass

2. Johns Manville Corporation

3. Owens Corning Corp

4. CertainTeed Corporation;

5. Or approved equal.

B. Insulation: ASTM C 612; rigid, noncombustible blanket.

1. 'K' value: 0.24 at 75 degrees F, when tested in accordance with ASTM C 518.

2. Maximum service temperature: 450 degrees F.

3. Maximum Water Vapor Sorption: 5.0 percent.

4. Maximum Density: 8.0 lb/cu ft.

C. Vapor Barrier Jacket:

1. Kraft paper with glass fiber yarn and bonded to aluminized film.
2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E 96/E 96M.
3. Secure with pressure sensitive tape.

D. Vapor Barrier Tape:

1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive. Compatible with insulation manufacturer's vapor barrier.

2.04 KITCHEN GREASE HOOD EXHAUST DUCT INSULATION

- A. All kitchen grease hood exhaust ducts shall be insulated with lightweight, non-asbestos, inorganic foil encapsulated ceramic fiber blanket duct wrap. The thickness of the duct wrap shall be as recommended by the manufacturer to provide the equivalent resistance characteristics of a 2-hour fire-rated shaft enclosure.
- B. The duct wrap system shall be UL listed, and shall provide "zero inch" clearance to combustible materials in conformance with the latest edition of NFPA 96.
- C. The duct wrap shall be installed in accordance with the manufacturer's instructions, and the requirements of NFPA 96.
- D. The grease hood exhaust duct wrap system shall be 3M Fire Barrier Duct Wrap 15A, or similar product by Certainteed, Pyroscat, or approved equal.

2.05 JACKETS

- A. Canvas Jacket: UL listed 6 oz/sq. yd. plain weave cotton fabric treated with dilute fire retardant lagging adhesive.
 1. Lagging Adhesive:
 - a. Compatible with insulation.
- B. Aluminum Jacket: ASTM B 209 (ASTM B 209M).
 1. Thickness: 0.016 inch or 0.020 inch sheet.
 2. Finish: Smooth.

3. Joining: Longitudinal slip joints and 2 inch laps.
4. Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner.
5. Metal Jacket Bands: 3/8 inch wide; 0.015 inch thick aluminum.
6. Metal Jacket Bands: 3/8 inch wide; 0.010 inch thick stainless steel.

2.06 DUCT LINER

A. Manufacturers:

1. Knauf Fiber Glass
2. Johns Manville Corporation
3. Owens Corning Corp
4. CertainTeed Corporation
5. Or approved equal.

B. Insulation: Incombustible glass fiber complying with ASTM C 1071; rigid board; impregnated surface and edges coated with acrylic polymer shown to be fungus and bacteria resistant by testing to ASTM G 21.

1. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
2. Service Temperature: Up to 250 degrees F.
3. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
4. Minimum Noise Reduction Coefficients:
 - a. 1/2 inch Thickness: 0.30.
 - b. 1 inch Thickness: 0.45.
 - c. 1-1/2 inches Thickness: 0.60.
 - d. 2 inch Thickness: 0.70.

C. Adhesive: Waterproof, fire-retardant type.

- D. Liner Fasteners: Galvanized steel, self-adhesive pad, impact applied, or welded with integral or press-on head.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that ducts have been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. Insulated ducts conveying air below ambient temperature:
 - 1. Provide insulation with vapor barrier jackets.
 - 2. Finish with tape and vapor barrier jacket.
 - 3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
 - 4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
 - 5. Insulate body of all supply air diffusers and registers.
- D. Insulated ducts conveying air above ambient temperature:
 - 1. Provide with standard vapor barrier jacket.
 - 2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.
- E. Ducts Exposed in Mechanical Equipment Rooms or Finished Spaces: Finish with canvas jacket sized for finish painting or aluminum jacket.
- F. Exterior Applications: Provide insulation with vapor barrier jacket. Cover with caulked aluminum jacket with seams located on bottom side of horizontal duct section.
- G. External Duct Insulation Application:

1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
2. Seal joints, pins and washers with vapor barrier compound equal to Foster 60-25, reinforced with open mesh glass fiber, or approved method.
3. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
4. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
5. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.

H. Duct and Plenum Liner Application:

1. Adhere insulation with adhesive for minimum 90 percent coverage.
2. Secure insulation with mechanical liner fasteners. Refer to SMACNA HVAC Duct Construction Standards - Metal and Flexible for spacing.
3. Seal and smooth joints. Seal and coat transverse joints.
4. Seal liner surface penetrations with adhesive.
5. Duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.

I. Metal Corner Reinforcement:

1. Provide insulation stops and metal corner reinforcement at all openings in insulation for access doors, panels, control instruments, and damper operators.
2. Fabricate from galvanized steel, and finish with no raw edges showing.

J. Kitchen Grease hood Exhaust Duct Insulation: Apply ceramic fiber duct wrap in multiple layers, with staggered joints and continuous vapor barrier seal.

3.03 SCHEDULES

- A. Supply and return ducts connected to heat pumps and AC units: 2-inch flexible ductwrap R-5 minimum.
- B. Kitchen Make-up Air Unit: 2-inch flexible ductwrap R-5 minimum.

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- C. Kitchen Hood Exhaust Duct and Kiln Exhaust Duct: high temperature zero clearance ductwrap (3M fire barrier ductwrap 15A or approved equal).
- D. Supply Ducts and Outdoor Air Ducts From Equipment: 2-inch flexible ductwrap R-5 minimum.
- E. Return Ducts Feeding Return Side of Energy Recovery Devices: 2-inch flexible ductwrap R-5 minimum.
- F. Exhaust Ducts to Exhaust Fans Directly Without Recovery: non-insulated, except within 10-feet of exterior opening provide 2-inch flexible ductwrap R-5 minimum.
- G. Other Supply, Outdoor Air, and Return Ducts: 2-inch flexible ductwrap R-5 minimum.
- H. Supply and Return Ducts in Vertical Shafts: Rigid board, 2-inches thick, R-5 minimum.

END OF SECTION 23 0713

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SECTION 26 0573

**CIRCUIT PROTECTIVE DEVICE COORDINATION STUDY
AND ARC FLASH HAZARD ANALYSIS**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

- A. Circuit protective device coordination study: Overcurrent and ground fault (where applicable).
- B. Arc flash hazard analysis.

1.03 REFERENCES

- A. NFPA 70 - National Electrical Code; National Fire Protection Association.
- B. NFPA 70E - Standards for Electrical Safety in the Work Place; National Fire Protection Association.

1.04 SUBMITTALS

- A. Study Results: Protective device coordination study and arc flash hazard analysis in hard copy for review, and in hard copy and electronic version on CD when approved. Submit one copy of arc flash equipment labels. Both coordination study and arc flash hazard analysis shall be submitted at the same time as protective devices submittals.

PART 2 - PRODUCTS

2.01 CIRCUIT PROTECTIVE DEVICE COORDINATION STUDY

- A. Circuit protective device coordination study shall be performed by using the latest version of the computer software, CAPTOR, by SKM System Analysis, or equal by ETPA or ArcAD.
- B. The analysis shall clearly define the proposed coordination among circuit breakers, fuses, transformers, magnetizing inrush currents, fault current (including ground fault), motors and cable damage curves, proposed ratings and settings.

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- C. The study shall include:
 - 1. All new circuit protective devices.
- D. Where coordination is required by NFPA 70 to be selectively coordinated, the selection of all circuit protective devices and settings shall comply with the requirements of the code. Selective coordination shall include all regions of the trip range (including long time, short time, instantaneous, thermal, magnetic). This may require frame size and trip technology different from what is needed if selective coordination is not considered. Basis of design is shown on the drawings. Alternate manufactures and model selection is acceptable if criteria are met and are approved.

2.02 ARC FLASH HAZARD ANALYSIS

- A. Perform an arc flash hazard analysis as described in NFPA 70E, which includes the flash protection boundary, the incident energy exposure, and required protective fire resistant (FR) clothing class at a minimum.
- B. The analysis shall be performed by using the latest version of Arc Flash by SKM Systems Analysis, or approved equal.
- C. The study shall include:
 - 1. All new equipment.

END OF SECTION 26 0573

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AND ARC FLASH HAZARD ANALYSIS
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SECTION 26 0945

STAGE LIGHTING CONTROL SYSTEM

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

- A. Stage Lighting Control System.

1.03 SUBMITTALS

- A. Specification Conformance Document: Indicate whether the submitted equipment meets specification exactly as stated.
- B. Shop Drawings; include:
1. Schematic (one-line diagram) of entire system including all devices, wiring and connections.
 2. 1/8" scale floor plans showing all equipment devices in system
- C. Product Data: Catalog cut sheets with performance specifications demonstrating compliance with specified requirements.
- D. Sequence of Operation to describe how system will operate.

1.04 QUALITY ASSURANCE

- A. Manufacturer: Minimum ten years experience in manufacture of stage lighting control systems.
- B. Stage lighting control system components:
1. Listed by UL specifically for the required loads. Provide evidence of compliance upon request.

1.05 PROJECT CONDITIONS

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A. Do not install equipment until following conditions can be maintained in spaces to receive equipment:

1. Ambient temperature: 10 degrees to 35 degrees C (50 degrees to 90 degrees F).

1.06 WARRANTY

A. Provide manufacturer's 1-year parts and labor warranty.

PART 2 - PRODUCTS

2.01 GENERAL

A. The dimmer racks shall be fully digital, designed specifically for entertainment and architectural lighting, and shall consist of 24 or 48 dimmer module spaces. Dimmer rack systems shall be ETL and cETL marked devices. Rack setup and preset data shall, as standard, be fully user programmable on a per rack or system wide basis. The dimmer rack shall report rack status to a remote personal computer or control console and, as an option, report dimmer status information.

B. Mechanical:

1. The dimmer rack shall be a freestanding, dead front switchboard, substantially framed and enclosed with 16-gauge formed steel panels. All rack components shall be properly treated, primed and finished in fine texture, scratch resistant, coating.
2. The 48 module dimmer rack shall not exceed 80" H x 24.5" W x 23.6" D. Racks shall be designed to allow for adjacent mounting and for bolting to the floor. The 24 module dimmer rack shall not exceed 57"H x 24.5"W x 23.6"D. Rack doors shall not increase the total rack depth by more than 1.0", and will not increase the rack footprint.
3. The dimmer rack shall be designed to allow for easy insertion and removal of all modules without the use of tools. Optional dimmer row tie down bars shall be available to mechanically block each row of six dimmer modules into the rack and require the use of a tool. Dimmer supports shall be provided for precise alignment of dimmer modules into power and signal connector blocks.
4. Rack spaces shall be mechanically keyed such that modules of greater current capacity cannot be accepted for that space. Racks that allow modules of higher wattage to plug into the same space shall not be acceptable.
5. Multiple low-noise fans shall be provided to allow redundancy in case of fan failure. The fans shall maintain the temperature of all components at proper operating levels with dimmers at any load, providing the ambient temperature of the dimmer room does not

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exceed 95 degrees Fahrenheit (35 degrees Celsius). Air shall flow over the surfaces of the heat generating components using a combination of convection and fan assisted airflow. Each rack shall be outfitted with a lockable door that does not impede airflow in any manner.

6. Fans shall be gradually controlled between off and full speed in order to minimize fan noise under all operating conditions. In the event of a rack over temperature condition, a warning shall be displayed on the rack LCD display and remote personal computer (via web browser) and control console (via web browser). If the temperature rises 5 degrees C over the warning threshold, the dimmer rack shall shut down automatically. The system shall also provide low temperature shutdown below 33 degrees Fahrenheit (1 degrees Celsius) to prevent condensation damage to system electronics.
7. Load terminations shall be clearly marked with the dimmer rack circuit number. Signal terminations shall be by plug-in screw terminals or insulation displacement to facilitate contracting and servicing and shall be clearly labeled. Rear access shall not be required for rack installation and termination.
8. Module numbering shall be clearly marked via a numbering strip on the front of the dimmer module tray. Standard number strips shall be available in two channel module configurations. Custom lamacoid number strips may be used on custom installations.

C. Electrical:

1. Dimmer racks shall operate at 90 to 264VAC 3-phase, 4 wire + ground or 90 to 264VAC, 1 phase, 2 wire + ground, 47 - 63 Hz at a maximum of 800A per phase. 2400A per phase bussing across adjacent multiple racks shall be possible.
2. Load circuit wiring terminals for line, neutral, and ground terminals shall accept up to a #6 AWG wire. An optional terminal adapter accepting up to #2 AWG wire shall be available. The fault current protection of the rack shall be 50,000 AIC. Provisions shall be made for optional amp trap devices to provide 100,000 AIC fault current protection if required.
3. Dimmer racks shall be available with side or bottom power feeds to meet a wide range of installation requirements.

D. Rack Electronics, Physical:

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1. The main dimmer control electronics shall be housed in a Rack Processor Module (RPM). The dimmer control electronics shall be completely digital without employing any digital to analog demultiplexing schemes or analog ramping circuits.
2. All rack setup and preset data shall be stored in a non-volatile manner and may be transferred to a replacement Rack Processor Module without losing data.
3. Each Rack Processor Module shall have a back-lit LCD display with a six key (minimum) keypad for rack setup, preset control, testing, rack status, error and diagnostics. Bi-Color LED's shall indicate "Network Connection", "DMX512 Port A", "DMX512 Port B", "Processor OK", "Module Event", "Panic", "Over temperature" "Phase A", "Phase B", "Phase C", "Active Processor".
4. An optional backup Rack Processor Module shall provide full redundant tracking processor functions. The Backup RPM shall track all setup, preset and other commands at all times without any operator action. The Backup RPM shall take over all communications and dimming control upon automatic activation.
5. All rack setup and preset data shall be electronically transferable between the main Rack Processor Module and the backup RPM in case of the replacement of either of the modules. Rack set up data shall be stored in non-volatile memory.
6. The Rack Processor Module shall provide signal connections in conjunction with optional power supply units. The RPM shall provide the only point for contractor connection of signal cables and PANIC activation. The contractor connections shall be made with two-part plug in screw terminals (dedicated connector per input) or crimped RJ45 connectors for ease of installation. The RPM shall feature an integrated Ethernet switch to permit the cross connection of up to 4 dimmer racks in a single dimmer room. RPM to RPM Ethernet connections shall be made with pre-made RJ45 patch cables.
7. All DMX512 and RS485 communication ports and remote contact input connections shall be optically isolated from all processor electronics by a minimum of 2,500V RMS isolation.
8. The Rack Processor Module shall have the provision to select any of a maximum of 96 dimmer outputs to be activated by the PANIC function. The PANIC function shall be activated or de-activated by one or more local or remote contact closures.

E. Rack Electronics, Control and Communications:

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1. The control electronics shall provide the following control and communication inputs as standard:
 - a. An Ethernet control input. This input can support a connection to a Strand ShowNet system. Each Ethernet control input can generate Reporting messages for the dimmer rack. This input shall also allow for local connection to a personal computer, providing setup, playback, dimming reporting features, and the ability to load rack-operating software.
 - b. Two optically isolated DMX512 control inputs. The first input shall accept DMX512 only. The second DMX512 input may be configured to accept DMX512, or Strand Lighting's Vision.net architectural protocol.
 - c. Optically isolated contact inputs, for external switching interfaces (24V 100ma). These closures are dedicated for:
 - 1) PANIC ON Momentary Turns Panic On.
 - 2) PANIC OFF Momentary Turns Panic Off.
 - 3) FIRE ALARM Maintained Turns Panic On, no Override.

F. Rack Electronics, Features:

1. The rack electronics shall provide two levels of operator interface:
 - a. A local standard interface that includes six menu keys and a bitmapped backlit LCD display (minimum 16 character x 2 line) to access standard system menus.
 - b. A networked customizable Web based interface that includes status displays, configuration and maintenance utilities, integrated on-line help system, and alert emails. Support for wireless PDA's shall allow query and control functions.
2. The dimmer control electronics shall have 16 bit (minimum) fade processing and a dimmer update rate better than 16 ms (60 Hz) or 20 ms (50 Hz). Dimmers set to the same level shall output within +/- .5V of each other, regardless of phase or input voltage, providing the desired level is less than the phase input voltage less the dimmer insertion voltage.
3. The dimmer output levels shall be regulated for incoming line voltage variations. The regulation shall adjust for both RMS voltage and frequency changes of the incoming AC wave form. Regulation shall maintain the desired output voltage +/- .5V volt for the entire operation range (90 - 264 VAC). The regulation shall compensate for variations of the AC waveform on a dimmer-by-dimmer basis. There shall be no interaction between dimmers in the system or any other equipment. The output shall be regulated to the user programmable maximum voltage level on a dimmer-by dimmer basis. The processor

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response time to incoming line changes shall take no more than 16 ms (60 Hz) or 20 ms (50 Hz). Dimming systems that do not respond to line voltage and frequency variations shall not be acceptable.

4. The control electronics shall allow the maximum output levels of individual dimmers to be adjusted, e.g. to compensate for load circuit voltage loss. The selected dimmer curve shall regulate so that the curve is proportional to the programmed maximum voltage.
5. The RPM shall also have the capability to support dimmers of different types and sizes that may be mixed throughout the rack. Individual dimmers may be dimmed or switched (non-dim). The individual phase control or switching of positive and negative line voltage half cycles shall not be acceptable, as the net resultant DC line current may damage or degrade line supply transformers.
6. As a standard, dimmer rack status reporting shall report the following conditions/data:
 - a. Rack input line voltage per phase.
 - b. DMX512 Port A input fail.
 - c. DMX512 Port B input fail.
 - d. Phase failure (A, B and C).
 - e. Rack temperature.
 - f. Rack overtemp warning (100 degrees Fahrenheit.) (37 degrees Celsius).
 - g. Rack overtemp shutdown (105 degrees Fahrenheit.) (40 degrees Celsius).
 - h. Rack under temp shutdown (32 degrees Fahrenheit) (0 degrees Celsius).
7. IGBT dimmer modules shall be fully status reporting as a standard. Optional Dimmer Reporting Cards (DRC) can be factory installed into a standard SCR dimmer modules. All status reporting dimmers and shall report the following conditions/data:
 - a. Dimmer type in slot. (Dimmer dipswitch set at factory).
 - b. Load (Wattage) per dimmer.
 - c. Deviation from recorded dimmer load.
 - d. No dimmer load.

- e. Excess DC on dimmer.
 - f. Overload on dimmer.
 - g. Power device failure (short circuit or open circuit).
 - h. Circuit breaker open.
 - i. Dimmer fault.
 - j. Change in dimmer type fitted.
 - k. RMS Phase current per rack phase.
 - l. Dimmer module temperature (w/module shutdown on and over temperature condition).
 - m. Forced on at dimmer module.
 - n. Dimmer panic.
8. The control electronics shall provide the following setup functions that shall be user programmable on a per rack or system wide basis:
- a. DMX512 Port A patch.
 - b. DMX512 Port B patch.
 - c. Architectural controls for Vision.net control systems.
 - d. Set rack and circuit ID's (CID).
 - e. Dimmer reporting enable/disable. (By dimmer module).
 - f. Set dimmer level (%).
 - g. Set dimmer maximum voltage (12V - 260V in 1V steps).
 - h. Set SCR dimmer maximum voltage (24V - 260V in 1V steps).
 - i. Set dimmer minimum level (0 to 99%).
 - j. Set dimmer curve.
 - k. Set dimmer response time.

- l. Set control input priority logic.
 - m. Set status reporting parameters.
 - n. Program user curves.
9. The DMX512 Port A and B patching shall support a rack start address and individual dimmer patch. The architectural patch shall define the rack circuit/room/channel relationship for Vision.net control systems.
10. The control electronics shall provide a facility to disable the output of any individual dimmer by setting the level to 0. It shall also be possible to enable and disable dimmer status reporting on a per dimmer basis.
11. The control electronics shall contain Vision.net user programmable presets, a permanent blackout preset (preset 0) and a user-definable power up preset. It shall be possible to record individual preset crossfade times, including preset 0. The presets shall be user programmable as a snapshot of the current dimmer outputs resulting from all dimmer control sources according to selected control logic, on a per rack or system wide basis. Each preset may have an individual crossfade time between 0 seconds and 60 minutes.
12. The control electronics shall support a user assignable "control lost" Vision.net preset. Each rack shall, in the event of loss of control signal according to the selected port logic, maintain the last levels for a user programmable period ranging from 0 seconds to 60 minutes. After this time period it shall automatically fade to the "control lost" preset. Alternatively it shall be possible to program the rack to indefinitely hold the last dimmer levels. It shall be possible to continue control without an active control signal using any of the architectural presets. Time resolution to be a minimum of one second.
13. The processor shall provide an architectural Vision.net control system preset capability of 125 channels for each of 255 separate rooms with programmable fade times. Time resolution to be a minimum of one second.
14. The system shall provide the ability to set one or a group of dimmers to any level.
15. The control electronics shall provide the ability to set a library or user programmable 100-point curve (processor to apply a linear interpolation between the user points) to any individual dimmer. Library curves shall be:
 - a. Square curve.
 - b. S-curve.

- c. Linear power output curve.
16. User selectable curves shall be:
- a. Non-dim (switched) with a programmable trigger level 0 - 99%.
 - b. Electronic ballast fluorescent curve with a kick-start voltage and user programmable top set and bottom cut-off point.
 - c. Magnetic ballast fluorescent curve with user programmable top set and bottom cut-off point.
 - d. Five user defined programmable curves, programmed with up to 100 steps. The processor is to apply a linear interpolation between the user points.
17. Each dimmer shall have one of three user programmable response (rack will fade to the new target level in the defined response time) in order to optimize lamp filament life and speed of operation:
- a. Fast (30 ms).
 - b. Normal (100 ms).
 - c. Slow (300 ms).
18. The system processor shall provide a number of user programmable control logic schemes, regulating the logical relationship between dimmer control sources. It shall be possible to set the way in which various control inputs interact with each other to create priorities between all control inputs.
19. It shall be possible to load new rack operating software via the Ethernet connection to the dimmer rack. There shall be no requirement to turn power to the rack off during the loading of rack software, and in addition the Panic facility and Redundant Tracking Backup (RTB) processors shall be fully operational during software loading to the active processor. It shall be possible to load new rack operating software into the processor, regardless of the state of the program storage.

G. Dimmer Modules:

- 1. The dimmer modules shall be designed using advanced, state-of-the-art components specifically for entertainment lighting. IGBT dimmer modules for 120 volt applications shall be available in dual 20 amp and single 50 amp configurations. SCR Dimmer modules for 120 volt applications shall be available in single 20 amp 3 wire fluorescent, dual 15 amp, dual 20 amp, single 50 amp and single 100 amp configurations. Modules of

similar types shall be interchangeable allowing systems with both SCR and IGBT dimmers to be configured freely. Systems that do not permit the mixing of SCR and IGBT dimmers shall not be accepted.

2. The dimmer modules shall be designed using advanced, state-of-the-art components. The dimmer module shall be capable of "hot patching" cold, incandescent loads up to its full rated capacity without malfunction with the control signal at full ON.
3. All single and dual dimmer modules shall be available with optional dimmer status reporting.
4. The dimmer modules shall be fully plug-in and factory wired. Dimmer modules shall be of rugged and heavy-duty construction enclosed by a formed aluminum chassis. Power and signal pins shall be recessed in a self-aligning housing to avoid handling, storage, and insertion damage. A contoured handle shall be provided for ease of insertion and withdrawal. All chassis parts, except heat sinks, shall be properly treated, primed and finished in fine texture, scratch resistant, coating. Each module shall be labeled with the Philips Strand Lighting logo and rating. Modules constructed of molded plastic for structural support shall not be acceptable. Dimmer modules shall be ETL and cETL listed and CE marked devices.
5. Dimmer modules shall be keyed so that dimmer modules of greater capacity shall not be interchangeable.
6. Non-Dim modules shall be available to provide dedicated non-dim circuits not employing SSR devices. Dual modules shall be available providing non-dim/non-dim configurations. Each non-dim shall be provided with a primary circuit breaker of the appropriate rating. Non-dims shall be designed so they can be used for inductive loads.
7. IGBT dual dimmer modules shall be available with current ratings of 20 amps. IGBT single dimmer modules shall be available with current ratings of 50 amps. Each module shall offer full dimmer status reporting to match all other modules in the C21 Advanced Technology product family. IGBT Dimmer modules shall be fully interchangeable with standard SCR dimmer modules of the same current rating and may be used in systems with standard SCR dimmers. They shall conform to the following specification:
 - a. The insertion loss (voltage drop across the complete dimmer at full load current while producing a full output sine wave) shall be less than three volts RMS. Insertion loss at reduced dimmer loading shall not vary significantly from that produced with a full rated load. IGBT Dimmers with insertion loss greater than three volts RMS at full rated load shall not be acceptable.

- b. IGBT dimmers shall regulate dimmer output to within +/- 0.5 volts RMS of the assigned setting. Regulating response shall occur in the same power line cycle as the disturbance when the dimmer is in Reverse Phase Control (RPC) mode.
- c. IGBT dimmers shall not use zero cross detection to synchronize to the power line. Dimmer output voltage shall be unaffected by severely distorted or noisy power line waveforms.
- d. IGBT dimmers shall automatically switch from Reverse Phase Control (RPC) mode to Forward Phase Control (FPC) mode when inductive loads are detected. In RPC mode the dimmer is on from the beginning of the half-cycle until the desired output voltage is reached. In FPC mode, the dimmer turns on within the half-cycle and stays on until the end of the half-cycle. Use of RPC mode, when load type and other conditions permit, reduces the level of lamp filament noise. IGBT dimmers may also be user set to FPC or RPC modes for LED luminaires.
- e. Low Harm mode shall reduce harmonic currents present on the feed neutral conductor by automatically switching the dimmers in the system to an optimum configuration of FPC and RPC operation. The reduction in neutral current shall be a minimum of 33% with a maximum of 100%, depending upon load sizes and their associated levels.
- f. Each IGBT dimmer will detect operating conditions and take active measures to protect itself (and the load). Protective measures shall include, but are not limited to the following:
 - 1) At power-up, each dimmer will detect excessive line voltages. When over-voltage is detected, the dimmer will not turn on its load. Dimmers shall withstand line voltages up to 230 VAC for an indefinite period and up to 280 VAC for fifteen minutes with no damage.
 - 2) Each dimmer shall detect excessive heat sink operating temperatures and automatically reduce its own "fall time", which minimizes the production of heat.
 - 3) Each dimmer shall detect load current in excess of its own rating. An overload will cause a dimmer to shut down.
- 8. Each dimmer module shall contain circuit breakers, associated solid state switching modules, filters, power and control components.
- 9. Standard dimmer electronics shall be completely solid state. They shall utilize two silicon controlled rectifiers in a back-to-back electrical configuration. The full load of the circuit is to be carried and controlled by the silicon controlled rectifiers.

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10. Each 120 volt dimmer shall be protected by a single pole fully magnetic circuit breaker of the appropriate current rating and 10,000 AIC surge rating mounted on the face plate of the dimmer module so that the trip current is not affected by ambient or rack temperature. The circuit breaker shall be rated for tungsten loads having an inrush rating of no less than 20 times normal current and shall disconnect the power to the dimmer module before damage can be done to the dimmer power components. The circuit breakers shall be rated for 100 percent switching duty applications and shall be UL, and cUL marked devices.

H. Dimmer Module Power Devices:

1. SSR power devices shall be encapsulated, epoxy filled high impact plastic cases with optically isolated firing circuits, control circuitry, and two silicon controlled rectifiers (SCR's). There shall be a minimum of 2,500 (4,000 in 50Hz systems) volts RMS of isolation between the AC line and the control lines of the SCR. The SCR shall be in an industry standard format that is easily field replaceable without removing any other electrical or electronic devices.

I. SCR Power Device Filtering:

1. Each SCR power device dimmer module shall have an integral inductive filter to reduce the rate of current rise time resulting from the SSR switching on. The filter shall limit objectionable harmonics, reduce lamp filament sing and limit the radio frequency interference on line and load conductors.
2. Basic Rise dimmers shall have a rise time of not less than 350 microseconds measured at 90 degrees conduction angle from 10% to 90% of output wave form with dimmer operating at maximum load. Voltage rate of rise (slew rate) must not exceed 420 millivolts per microsecond in any point of the wave under full load conditions.
3. Medium rise time dimmers shall have a rise time of not less than 500 (250 at 50Hz) microseconds measured at 90 degrees conduction angle from 10% to 90% of output wave form with dimmer operating at maximum load. Voltage rate of rise (slew rate) must not exceed 300 millivolts per microsecond in any point of the wave under full load conditions.
4. Hi-Rise dimmers shall have a rise time of not less than 800 (400 at 50Hz) microseconds measured at 90 degrees conduction angle from 10% to 90% of output wave form with dimmer operating at maximum load. Voltage rate of rise (slew rate) must not exceed 210 millivolts per microsecond in any point of the wave under full load conditions.
5. IGBT dimmers shall have a rise time of not less than 1000 microseconds measured at 90 degrees conduction angle from 10% to 90% of output wave form with dimmer operating

at maximum load. Voltage rate of rise (slew rate) must not exceed 210 millivolts per microsecond in any point of the wave under full load conditions.

J. Approved Manufacturer and Products.

1. Dimmer racks, modules and control electronics shall be Strand Lighting C21 Advanced Technology dimmer racks.

2.02 200 SERIES CONTROL CONSOLE SPECIFICATION

A. Overview:

1. The control console shall be a microprocessor based lighting system designed specifically for the control of theatrical, television, and live performance dimming systems.

B. Channel Capacity:

1. The console shall support the processing of up to 512 dimmers with either 12/24 or 24/48 control channels, arranged in either two scenes of manual potentiometers or with expanded control capacity in a single scene configuration.

C. Mechanical:

1. The console shall consist of a free standing tabletop console with LED status indicators and an LCD display.
2. The control surface shall be constructed of custom designed metal panels in Strand Blue, The control panels shall fit into a folded steel chassis with four rubber feet.

D. Electrical:

1. The supply voltage shall be 18VDC (from power supply). The 200 Series shall be powered through the use of an independent power supply with a molded plug appropriate to the specific geographic locale of use. No internal modification to the system is required to enable operation at 100VAC, 110VAC, 220VAC or 240VAC.
2. The following data input/output connectors shall be provided:
 - a. DMX512: 5-pin XLR - Female.
 - b. MIDI in/out/thru: 5-pin DIN - Female
3. The power supply shall be UL, cUL listed and the entire system shall be CE marked.

E. Operational Features:

1. The system shall be available to link any dimmer or group of dimmers to a single channel. It shall be possible to set every dimmer with a level (0% to 100%) that shall scale the channel level proportionally.
2. Submaster Storage: capacity shall be related to channel size. The 12/24 channel console shall have 48 submaster scenes arranged on two pages of 24, the 24/48 channel console shall have 96 submaster scenes arranged on two pages of 48.
3. Grand Master and Blackout Switch: the entire system output shall be mastered by this potentiometer and switch.
4. Channel Faders: in two scene mode each of the two scenes of 12 [24] control channels shall be identified by a channel number and associated potentiometers which operate over the scale of 0 to 10 (Full).
5. Mode Selector Switches: shall select fader operation between Single preset, Two preset and Submaster Mode.
 - a. In Two preset Mode; the console shall be operated in two scene manual preset fashion.
 - b. In Single preset mode, the console shall provide expanded channel capacity and be operated in two scene manual preset fashion through the use of a preset "hold" button utilizing all of the system potentiometers.
 - c. In submaster mode all of the potentiometers shall perform as fully overlapping scene masters, providing proportional control over a maximum of 48 [96] recorded scenes (memories or cues) in two pages.
6. Flash Switches: a "bump" button with a LED indicator associated with each channel or scene potentiometer shall be provided to flash channels or scenes to a level set by the flash level potentiometer. These switches shall be instructed to operate in a flash, solo, solo + flash or disengaged (off) fashion. When the console is in record mode, the switches shall be used for rapid recording the total live output into a selected submaster.
7. The console shall include a special effects package that includes the following features:
 - a. Up to 24 special effects in 4 pages of 6 with 99 steps each.
 - b. Effect type may be Chase, Build, Cycle, Random, and Audio Input.

- c. Effect direction may be Forward, Reverse, or Bounce.
 - d. Up to six effects can be active simultaneously. The start, stop, fade time, and running speed (step time) of each effect can be controlled individually.
 - e. The type and direction of any active effect may be altered at any time and is immediately effective without altering the pre-recorded status.
 - f. The fade in and fade out time of each effect is set by the FX fade time potentiometer and adjustable from instant (0) to 2 minutes.
 - g. Effects may be controlled by Audio (sound-to-light) or a MIDI compatible control device.
 - h. Individual steps and their contents may be inserted or deleted.
8. It shall be possible to create and edit Scenes and Effects either Live or in a Blind mode.
9. Playback Controls: playback of channels shall be provided via manual channel faders, memory recorded submasters, the previously described manual scene masters, or through special effects playback.
- a. The Preset mode A/B manual split crossfader shall have separate incoming and outgoing preset controllers to provide a dipless crossfade between the two manual or manual and hold preset potentiometers. An associated LED bar graph shall individually track the progress of active up and down manual or timed fades.
 - b. The submaster mode A/B manual split crossfader shall have separate incoming and outgoing preset controller to provide a dipless crossfade between sequential and/or non-sequential recorded submasters.
 - c. The Time fader potentiometers shall enable the A/B crossfader to perform split timed fades between 0 (manual) and 10 minutes. Timed crossfades may be stopped, paused and continued, manually over-ridden or reversed at any time prior to fade completion.
 - d. The special effects playback controls shall allow the recording of 24 effects in 4 pages with 99 steps each. Up to 6 simultaneous effects can be running concurrently.
10. Setup and Configuration functions for the console shall include the following functions:
- a. Contrast and backlight control of the LCD display.

- b. Record Enable or Record Lock.
 - c. The external input may be selected to operate from a sound-to-light or MIDI interaction.
- 11. An integral 4 row by 20 column (80 character) backlit LCD display shall be provided to access setup information plus create, preview, and modify recorded scenes and effects.
 - 12. The console shall maintain its memory for one month without power (by internal rechargeable batteries.) The console shall distinguish between being turned off and loss of power. If switched off a series of diagnostic tests shall be run before the desk is operational. After power loss the console shall be restored to the same state, including running effects and timed fades.
 - 13. User and field service personnel oriented diagnostic tests and an electronic fault log shall be provided.

F. Weights And Dimensions:

- 1. The 12/24 channel console shall be no larger than 29 inches W x 14.60 inches D x 3.75 inches H and shall weigh no more than 9.5lb (4.3kg).
- 2. The 24/48 channel console shall be no larger than 39.76 inches W x 14.60 inches D x 3.75 inches H and shall weigh no more than 11.5lb (5.7kg).

G. Operating Environment:

- 1. The console should be operated under general office level conditions, with a minimum of dust.
- 2. The maximum operating ambient temperature shall be 32 - 95 degrees Fahrenheit (0 - 35 degrees Celsius).
- 3. The relative humidity shall be 10% - 95% (non-condensing).

H. Included Furnishings: One power supply.

2.03 VISION.NET CONTROL SYSTEM SPECIFICATION

A. Capacities:

- 1. The system shall support up to 255 rooms with a maximum of 125 control channels per room, which can be connected to an unlimited number of dimmers, relays, or DMX512

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controlled equipment. The control connection between stations and to Strand dimming and relay systems shall be via standard Cat 5e cable using the Vision.net control protocol. For DMX512 applications an optional Vision.net to DMX512 module shall be available.

2. Star wiring shall be supported using any number of available 4 port Vision.net data hubs.
3. Large-scale systems consisting of multiple Vision.net networks may be linked using a Strand Lighting ShowNet Ethernet network.
4. No central processor shall be required. Systems requiring a separate processor shall not be acceptable.

B. Interconnection:

1. Each station shall be connected as an RS485 serial "daisy chain" using cable that is compatible with the system and is recommended by the manufacturer.
2. It shall be possible to change standard control stations at any location on the data network without requiring additional wiring or alterations to the wiring specification. Touchscreen stations shall require a separate power feed to operate the station electronics.

C. Vision.net Configuration Interface:

1. The system shall support a digital communications link for station configuration and set up.
2. An RS232 programming station shall be used for connecting a Personal Computer operating Vision.net/Vision.net Design software to the data network.

D. Vision.net Designer Configuration Software:

1. Designer software shall be a graphical set up and configuration program designed to operate under Windows operating systems.
2. An astronomical clock shall be available on any system touchscreen capable of being programmed to any geographical location in the world. The clock shall be able to execute any number of daily, weekly or date specific events at fixed times, or offset relative to sunset and sunrise.
3. The system shall support 125 control channels per room with up to 255 rooms per system. Any number of dimmers may be assigned to a room.

4. Each room shall be capable of having any combination or quantity of control stations.
5. It shall be possible to change stations at any location by replacing it with a different station type, and modifying the systems configuration file accordingly.
6. Each room shall have 32 presets available, regardless of the number of rooms or number of channels within each room. Presets shall be selected from control stations, or shall be "played back" automatically by time clock events. Each preset shall have its own programmable fade, delay and hold time and may be linked for sequential playback in a single sequence, or using system macros a continuous loop if required.
7. Programmable delay, fade and hold times shall be available in the following increments; instant, 1 sec., 2 sec., 3 sec., 5 sec., 7 sec., 10 sec., 15 sec., 30 sec., 1 min., 5 min., 15 min., 60 min.
8. It shall be possible to allocate a name or label to every room, panel, station, preset and group in the system.
9. It shall be possible during system configuration to create macros using a "Smart" button. Smart buttons shall carry out a sequence of standard system commands. It shall be possible to program Smart buttons from any control station pushbutton, remote input or, automatically using the astronomical time clock. It shall be possible to assign any of the system commands to any station pushbutton, external device input, time clock event, or Macro step. Smart buttons shall support if - then commands to allow for extended programming flexibility.
10. In cases where an area is to be divisible for separate or combined control, it shall be possible to combine the constituent rooms either manually or with automatic partition switches. Rooms are combined using a "Room Link" touchscreen button. Rooms that are not linked shall maintain their own presets, levels and channels. "Room Link" coordinates the selection of presets within the combined rooms from any control station within those rooms.
11. The following commands shall be programmable to any system button:
 - a. Preset.
 - b. Preset/Off.
 - c. Toggle.
 - d. Smart.
 - e. Raise.

- f. Lower.
 - g. Select Map.
 - h. Share.
12. The system shall include an output simulation mode allowing the system designer to test all configurations prior to system installation.
13. Touchscreen configuration shall be supported with simple drag and drop tab, button, slider, sliders, and text entities.
14. Tabbed touchscreen pages may be created for:
- a. Buttons and Sliders.
 - b. Palette Monitor.
 - c. Web Browser.
 - d. Real Time Clock.
15. Touchscreens may optionally be connected to a Strand Lighting ShowNet Ethernet network to connect to Palette series control consoles or Network control devices. In this mode of operation, it shall be possible to view console pages that display information on Cues, Submasters, Macros, Lamp Check and Channels.

E. Vision.net Control Stations:

- 1. The control station faceplates shall be free of visible fasteners and shall be of aesthetic appearance.
- 2. Station faceplates shall be fabricated of Lexan polycarbonate plastic.
- 3. Control stations shall be supplied in a wide selection of custom colors with white being the default standard.
- 4. On control stations with sliders, the sliders shall have 1.75" travel with color keyed slider knobs.
- 5. Control station push buttons shall have color keyed engravable button caps with long life two color LED backlighting for active indication of a selected function or level backlighting when off or not selected.

6. Stations shall have modular construction to permit any combination of button keypads or faders up to 4 gangs. Expansion stations shall be available.
7. Keypads on all buttons stations shall be engravable. Keypads may be exchanged at any time to permit upgrading or changing engraving and keycap colors.
8. Faceplates shall be die cut to precisely match any and all fader and button combinations required. Faceplate engraving shall be an available option.
9. Faceplates and key and fader caps shall be color coordinated.
10. All control stations shall have a unique address between 1 and 255 configured at the initial system start up.
11. A Vision.net control station may consist of up to, 8 push buttons and 12 sliders for fader operation in channel control or optionally up to 12 submasters.
12. Expansion modules shall be available to expand the capacity of any stations as required in the system design.
13. Button stations shall be available with an integral IR receiver port for a remote control of any button station.
14. All button stations shall provide inputs for up to 8 occupancy sensors and photocells. A contact closure interface for remote inputs or keyswitches shall also be standard.
15. Control stations require flush mounted masonry ("ears-in") back boxes, with a minimum depth of 3.5". Backboxes must be grounded/earthed in accordance with local wiring practices to provide a discharge path to ground for static electricity.
16. Control stations shall be supplied complete with a sub-plate, which is screwed to the flush mounting back box with the screws provided. The sub-plate allows the control station to be hinged into position and secured with hexagonal setscrews on the bottom edge of the trim ring.
17. Data line terminations shall be via a screw-terminal plug and socket to facilitate removing a control station while maintaining the continuity of the data network.

F. Vision.net Slider With Pushbutton Stations:

1. Each station shall have a MANUAL (Take Control) button, which shall give control to the manually operated channel sliders.
2. Stations shall be available with 3, 6, 9, 12 or 15 sliders plus a proportional master. It shall be possible to allocate multiple channels within a room to a single slider.

3. Channels not allocated to a slider shall either go out or remain at the previously selected preset level when MANUAL is selected according to the configuration software.
4. Sliders may also be configured in submaster mode allowing them to operate as group masters.
5. All buttons may be programmed to over write their default settings. Each button may be assigned any of the following functions:
 - a. Preset.
 - b. Preset/Off.
 - c. Toggle.
 - d. Smart.
 - e. Raise.
 - f. Lower.
 - g. Select Map.
6. Smart button commands including room combine, cross room commands and commands to Strand Lighting Light Palette and Rack Palette controllers.
7. Each preset button shall have a push and hold record function, which will allow the current slider settings to be recorded into one of the presets available from the local pushbuttons. Fade, Hold and Delay times for these presets will remain unchanged by this record action. If desired this function may be disabled when a station is configured.

G. Vision.net Pushbutton Stations.

1. All button stations shall be fully configurable.
2. Each button may be assigned any of the following functions:
 - a. Preset.
 - b. Preset/Off.
 - c. Toggle.

- d. Smart.
 - e. Raise.
 - f. Lower.
 - g. Select Map.
- 3. Smart button commands including room combine, cross room commands and commands to Strand Lighting Light Palette and Rack Palette controllers.
 - 4. Each station shall store all active control information at all times. No central processor shall be required.
 - 5. All buttons shall have blue and amber backlighting LED's. LED's shall be fully programmable with high and low levels to indicate the status of a button and provide back lighting for all button legends.
 - 6. Each station shall have programmable inputs for Photocell or occupancy sensors.
- H. Remote Driver Interface/Relay Driver Interface:
- 1. Each Interface shall accept up to 8 momentary contact closures at their inputs.
 - 2. In addition to Vision.net data input, the Interfaces shall require an additional 24-volt dc power supply.
- I. Portable Enclosure Kits:
- 1. Portable Enclosure Kits shall enable standard stations to be converted to portable units. Kits shall be supplied complete with 25-ft. cable and mating connectors.
- J. Data Cable Specification:
- 1. Manufacturer and model number of data cable shall be as recommended by system manufacturer.
- K. Documentation:
- 1. An Operations Manual and Installation Instructions are supplied with each system. Project installation & connection drawings shall be supplied as specified.
- L. Environmental Specification:

1. For all control stations and associated equipment, the following recommendations shall apply:
 - a. Ambient temperature extremes: 32 - 104 Degrees Fahrenheit (0 - 40 Degrees Centigrade).
 - b. Recommended ambient temperature: 64 - 77 Degrees Fahrenheit (18 - 25 Degrees Centigrade).
 - c. Relative humidity: 10% - 90% non-condensing.
 - d. General conditions: Office level cleanliness - Interior use only.

2.04 VISION.NET CONTROL SYSTEM SPECIFICATION

- A. System shall be a fully integrated digital lighting control system, utilizing digital communications between stations, and the control devices (dimmers, relays, and DMX-512 controlled equipment) in the system as required.
- B. Capacities:
 1. The system shall support up to 255 rooms with a maximum of 125 control channels per room, which can be connected to an unlimited number of dimmers, relays, or DMX512 controlled equipment. The control connection between stations and to dimming and relay systems shall be via standard Cat 5e cable using the Vision.net control protocol. For DMX512 applications an optional Vision.net to DMX512 module shall be available.
 2. Star wiring shall be supported using any number of available 4 port Vision.net data hubs.
 3. Large-scale systems consisting of multiple Vision.net networks may be linked using a Strand Lighting ShowNet Ethernet network.
 4. No central processor shall be required. Systems requiring a separate processor shall not be acceptable.
- C. Interconnection:
 1. Each station shall be connected as an RS485 serial "daisy chain" using Belden 1583A Cat 5e cable.

2. It shall be possible to change standard control stations at any location on the data network without requiring additional wiring or alterations to the wiring specification. Touchscreen stations shall require a separate power feed to operate the station electronics.

D. Vision.net Configuration Interface:

1. The system shall support a digital communications link for station configuration and set up.
2. An RS232 programming station shall be used for connecting a Personal Computer operating Vision.net Design software to the Vision.net data network.

2.05 VISION.NET DESIGNER CONFIGURATION SOFTWARE

A. General:

1. Designer software shall be a graphical set up and configuration programmed designed to operate under Windows operating systems.
2. An astronomical clock shall be available on any system touchscreen capable of being programmed to any geographical location in the world. The clock shall be able to execute any number of daily, weekly or date specific events at fixed times, or offset relative to sunset and sunrise.
3. The system shall support 125 control channels per room with up to 255 rooms per system. Any number of dimmers may be assigned to a room.
4. Each room shall be capable of having any combination or quantity of control stations.
5. It shall be possible to change stations at any location by replacing it with a different station type, and modifying the systems configuration file accordingly.
6. Each room shall have 32 presets available, regardless of the number of rooms or number of channels within each room. Presets shall be selected from control stations, or shall be "played back" automatically by time clock events. Each preset shall have its own programmable fade, delay and hold time and may be linked for sequential playback in a single sequence, or using system macros a continuous loop if required.
7. Programmable delay, fade and hold times shall be available in the following increments; instant, 1 sec., 2 sec., 3 sec., 5 sec., 7 sec., 10 sec., 15 sec., 30 sec., 1 min., 5 min., 15 min., 60 min.

8. It shall be possible to allocate a name or label to every room, panel, station, preset and group in the system.
9. It shall be possible during system configuration to create macros using a "Smart" button. Smart buttons shall carry out a sequence of standard system commands. It shall be possible to program Smart buttons from any control station pushbutton, remote input or, automatically using the astronomical time clock. It shall be possible to assign any of the system commands to any station pushbutton, external device input, time clock event, or Macro step.
10. In cases where an area is to be divisible for separate or combined control, it shall be possible to combine the constituent rooms either manually or with automatic partition switches. Rooms are combined using a "Room Link" touchscreen button. Rooms that are not linked shall maintain their own presets, levels and channels. "Room Link" coordinates the selection of presets within the combined rooms from any control station within those rooms.
11. The following commands shall be programmable to any system button:
 - a. Preset.
 - b. Preset/Off.
 - c. Toggle.
 - d. Smart.
 - e. Raise.
 - f. Lower.
 - g. Select Map.
12. The system shall include an output simulation mode allowing the system designer to test all configurations prior to system installation.
13. Touchscreen configuration shall be supported with simple drag and drop tab, button, slider, sliders, and text entities.
14. Tabbed touchscreen pages may be created for:

- a. Buttons and Sliders.
 - b. Palette Monitor
 - c. Web Browser.
 - d. Real Time Clock
15. Touchscreens may optionally be connected to a Strand Lighting ShowNet Ethernet network to connect to Palette series control consoles or Network control devices. In this mode of operation, it shall be possible to view console pages that display information on Cues, Submasters, Macros, Lamp Check and Channels

2.06 VISION.NET TOUCHSCREEN STATIONS

A. Specific Features:

1. All Vision.net touchscreens shall be full color displays. Systems that do not support color displays shall not be acceptable.
2. Users may choose either a 7-inch or a 15-inch full VGA display.
3. Each display shall support multiple tabs to allow users to organize their displays to meet a wide range of applications. Tabs shall support the following applications:
 - a. Programmable Sliders that can be scaled and programmed as both channel controls and submasters. Three fader sizes are available allowing system programmers to optimize the number of faders displayed on screen for maximum flexibility.
 - b. Touchscreen buttons shall be available in a variety of sizes and shapes permitting system designers the flexibility to allow buttons to define their function through shape and color.
 - c. All displays, faders, buttons and tabs shall have text labels in a choice of fonts, sizes and colors.
 - d. Real Time clock display with full system programming.
4. Systems with network connections shall also support tabs with:
 - a. Web Browser capability allowing access to Strand ShowNet network devices.
 - b. Remote control and monitoring access to Strand Lighting Palette, Light Palette and Rack Palette control consoles.

- c. Any screen can have a color graphic background to permit a wide range of custom graphic options for system designers. Backgrounds may be any bit-mapped image. Alternately backgrounds may be assigned a wide range of colors.

2.07 AV INTERFACE/RELAY DRIVER INTERFACE

A. Specific Features:

1. Each Interface shall accept up to eight momentary contact closures at their inputs.
2. In addition to Vision.net data input, the Interfaces shall require an additional 24-volt dc power supply.

2.08 PORTABLE ENCLOSURE KITS

- ### **A. Manufacturer and model of data cable shall be as recommended by system manufacturer.**

2.09 DATA CABLE SPECIFICATION.

A. Specific Features:

1. Vision.net stations Belden 1583A Cat 5 cable, or approved equal.
2. DMX512 Belden 9829, or approved equal.

2.10 DOCUMENTATION

A. Specific Features:

1. An Operations Manual and Installation Instructions are supplied with each system. Project installation and connection drawings shall be supplied as specified.

2.11 ENVIRONMENTAL SPECIFICATION

A. Specific Features:

1. For all control stations and associated equipment, the following recommendations shall apply:
 - a. Ambient temperature extremes: 32° - 104° F (0° - 40° C).
 - b. Recommended ambient temperature: 64° - 77° F (18° - 25° C).

- c. Relative humidity: 10% - 90% non-condensing.
- d. General conditions: Office level cleanliness - Interior use only.

2.12 CONNECTOR STRIP SPECIFICATION

A. General Description:

1. PCS Series Connector Strips shall consist of an extruded aluminum raceway and cover with a minimum wall thickness of not less than .125 inches and a minimum cross section of not less than 5 inches high x 4 inches deep. Unless otherwise specified, raceway and cover shall be furnished in a low gloss black finish. Raceway and cover shall be inherently rustproof.
2. Connector strip raceway shall have provisions for an integral internal low voltage barrier.
3. Internal wiring shall be of a minimum 125 degree Celsius cross-link polyester in gauges as required by amperage of specified connectors and receptacles.
4. Internal wiring shall terminate to molded barrier terminal blocks of proper amperage, size and capacity. Terminal blocks shall be clearly marked and identified for incoming field wiring.
5. External connector strip circuit identification shall consist of minimum 2 inch high die cut vinyl characters in the color specified herein or as shown on drawings.
6. Lengths and circuitry of each connector strip shall be as specified herein or as shown on drawings.
7. Connector strips shall be furnished with mounting brackets and hardware in the type as specified herein or as shown on drawings. One mounting bracket for every five (5) feet of raceway will be provided. Unless otherwise specified, mounting brackets shall be furnished in a low gloss black finish.
8. Connector strips shall be UL listed and labeled for use in the United States and in Canada and marked suitable for damp locations.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install equipment in accordance with manufacturer's installation instructions.

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- B. Provide complete installation of system in accordance with Contract Documents.
- C. Provide dedicated network between Digital Network Lighting Control Manager computer and Lighting Management Panels.
- D. Provide equipment at locations and in quantities indicated on Drawings. Provide any additional equipment required to provide control intent.
- E. Define each dimmer's/relay's load type, assign each load to a zone, and set control functions.
- F. Mount exterior daylight sensors to point due north with constant view of daylight.
- G. Ensure that daylight sensor placement minimizes sensors view of electric light sources; ceiling mounted and fixture-mounted daylight sensors shall not have direct view of luminaries.
- H. Season lamps at full intensity according to lamp manufacturer's recommendation.
- I. Lead lengths to lamp sockets not to exceed 3-feet for T4 4-pin compact lamps and T5 BIAx, and 7-feet for T5, T5-HO, T8 U-bend, and T8 linear fluorescent lamps.
- J. Rapid starts sockets must meet IEC 60400.
- K. Low voltage control wiring may be installed without conduit where routed concealed above lay-in ceilings or within stud walls. Low voltage control wiring routed exposed or within block wall to be installed in conduit.
- L. Low voltage control wiring not installed in conduit to be plenum rated.

3.02 SERVICE AND SUPPORT

- A. Startup and Programming:
 - 1. Provide factory certified field service engineer to make minimum of three site visits to ensure proper system installation and operation under following parameters
 - a. Qualifications for factory certified field service engineer:
 - 1) Minimum experience of two years training in the electrical/electronic field.
 - 2) Certified by the equipment manufacturer on the system installed.
 - b. Make first visit prior to installation of wiring. Review:
 - 1) Low voltage wiring requirements.

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- 2) Separation of power and low voltage/data wiring.
- 3) Wire labeling.
- 4) Lighting Control Panel locations and installations.
- 5) Control locations.
- 6) Device locations.
- 7) Load circuit wiring.
- 8) Connections to other equipment.
- 9) Installer responsibilities.
- 10) Power Panel locations.

c. Make second visit upon completion of installation of Lighting Control System:

- 1) Verify connection of power wiring and load circuits.
- 2) Verify connection and location of controls.
- 3) Verify system operation.

d. Make third visit to demonstrate and educate Owner's representative on system capabilities, operation and maintenance.

B. Tech Support:

1. Provide factory direct technical support hotline 24 hours per day, 7 days per week.

3.03 CLOSEOUT ACTIVITIES

A. Training Visit:

1. Lighting Control System Manufacturer to provide one day additional on-site system training to site personnel.

END OF SECTION 260945

SECTION 26 5100

INTERIOR LIGHTING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.02 SECTION INCLUDES

- A. Interior luminaires and accessories.
- B. Emergency lighting units.
- C. Exit signs.
- D. Ballasts.
- E. Fluorescent dimming ballasts and controls.
- F. Fluorescent lamp emergency power supply.
- G. Lamps.
- H. Luminaire accessories.

1.03 REFERENCES

- A. ANSI C78.379 - American National Standard for Electric Lamps - Reflector Lamps - Classification of Beam Patterns; 1994 (R 2003).
- B. ANSI C82.1 - American National Standard for Lamp Ballast - Line Frequency Fluorescent Lamp Ballast; 2004.
- C. ANSI C82.4 - American National Standard for Ballasts for High-Intensity-Discharge and Low Pressure Sodium Lamps (Multiple-Supply Type); 2002.
- D. NECA/IESNA 500 - Recommended Practice for Installing Indoor Commercial Lighting Systems; National Electrical Contractors Association; 1998.

- E. NECA/IESNA 502 - Recommended Practice for Installing Industrial Lighting Systems; National Electrical Contractors Association; 1999.
- F. NEMA WD 6 - Wiring Devices - Dimensional Requirements; National Electrical Manufacturers Association; 2002.
- G. NFPA 70 - National Electrical Code; National Fire Protection Association; 2005.
- H. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; National Fire Protection Association; 2006.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- B. Product Data: Provide dimensions, ratings, and performance data.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Quality Assurance. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- D. Data sheet for ballast showing ballast factor, ballast efficacy factor for different quantities of lamps used, power factor, THD, type of start.
- E. Data sheet for all types of lamps showing nominal wattage, color temperature, initial lumen, CRI, and average rated life.
- F. Operation and Maintenance Data: Instructions for each product.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70 and NFPA 101.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years experience.
- C. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

1.06 EXTRA MATERIALS

- A. See Section 01600 - Products and Substitutions for additional provisions.
- B. Furnish two of each plastic lens type.

- C. Furnish two replacement lamps for each lamp type.
- D. Furnish two of each ballast type.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Luminaires: As indicated on the luminaire schedule (see sheets E-3 and E-11).
- B. Ballast & Lamps: General Electric Co., Philips Lighting Co., Osram Sylvania Inc., Universal Lighting Technologies Inc., or approved equal (for ballasts only).

2.02 LUMINAIRES

- A. Luminaire:
 - 1. Product: Furnish product as indicated in the luminaire schedule (see sheets E-3 and E-11).

2.03 BALLASTS AND CONTROL UNITS

- A. Fluorescent Ballasts: ANSI C82.1, high power factor, solid state ballast, suitable for lamps specified.
 - 1. Voltage: Match luminaire voltage.
 - 2. Certify fluorescent ballast design and construction by Certified Ballast Manufacturers, Inc., or approved equal.
 - 3. Product:
 - a. Fluorescent ballasts shall be electronic type and operate lamps at a frequency above 42k Hz to minimize interference with infrared control system, with no visible flicker (<5% flicker index).
 - b. Ballasts shall be specifically designed to operate the number and type of lamps for each luminaire as indicated on the luminaire schedule. Ballasts designed for larger number of lamps than needed for the luminaires are not acceptable.
 - c. Ballasts shall operate at an input frequency of 60 Hz, and an input voltage of 108 to 132 (120 volt circuit), or 249 to 305 (277 volt circuit) with no damage to the ballast.

- d. Ballasts shall provide transient immunity as specified by ANSI C82.41-1991, location Category A1.
- e. Ballasts shall provide starting sequence consistent with ANSI Standard C82.11-1993.
- f. Ballasts shall operate as a parallel circuit allowing remaining lamps to maintain full light output if one or more lamps fail.
- g. Ballasts shall tolerate sustained open circuit and short circuit output conditions without damage to the ballasts.
- h. Ballasts shall be UL listed as Class P, and for use in indoor or Type 1 outdoor applications, and shall contain a temperature sensing device that shall switch the ballast off if excessive internal temperature develops.
- i. Ballasts shall tolerate operation in ambient temperatures up to 105 degree F without damage.
- j. Ballasts shall comply with limits of FCC Part 18, Subpart C Limits for Non-Consumer Equipment for EMI and RFI.
- k. Lamp current crest factor (ratio of peak to RMS lamp current) shall be 1.7 or less in accordance with lamp manufacturer's recommendations and ANSI C82.11-1993.
- l. Input current total harmonic distortion shall not exceed 20%.
- m. Ballasts shall be fully encapsulated (potted) to ensure maximum thermal and structural integrity, and shall contain no PCBs.
- n. Ballasts shall not be affected by lamp failure and shall deliver normal lamp life.
- o. Operating temperature shall not exceed 60 degrees C at any point on the case during normal operation.
- p. Ballasts shall be marked with manufacturer's name, part number, supply voltage, power factor, open circuit voltage, current draw for each lamp type, and UL listed.
- q. Ballast shall have the following characteristics:
 - 1) Type of Starting: Programmed Rapid Start
 - 2) Ballast Factor: Not less than 0.88, but not greater than 1.00.
 - 3) Power Factor: Not less than 0.95.

- r. Ballasts that reduce average rated life of lamps shall not be accepted.
- B. High Intensity Discharge (HID) Ballasts: ANSI C82.4, mercury vapor; metal halide; low pressure sodium; or high pressure sodium lamp ballast, suitable for lamp specified.
 - 1. Voltage: Match luminaire voltage.
 - 2. Product:
 - a. All ballasts for metal halide luminaires shall be high power factor, pulse start type, of voltage as specified in luminaire schedule, and shall meet current ANSI specifications, with the exception that ballasts for all mogul base horizontally mounted metal halide lamps be injection start type.
 - b. All ballasts for high pressure sodium luminaires shall be high power factor, constant wattage auto-transformer type, of voltage specified, and shall meet current ANSI specifications.
- C. Fluorescent and Incandescent Dimming Control Units: Linear slide type rating as required. Voltage shall match luminaire voltage.
 - 1. Ballast: Selected by dimming system manufacturer as suitable for operation with control unit.
 - 2. Lamps: Suitable for lamp type and quantity specified for luminaire.
 - 3. Control Unit: Lutron Nova T-Star, or approved equal. Refer to section 26 2726, Wiring Devices - Wall Dimmers.
- D. All ballasts for outdoor use shall be low temperature type (-20 degrees F).

2.04 LAMPS

- A. General: All lamps shall meet Federal TCLP Standards for maximum mercury content.
- B. Lamp Types: As specified in luminaire schedule.
- C. Incandescent Lamps:
 - 1. Product: Incandescent lamps shall be inside frosted, reflector type, or as otherwise noted. Lamps shall be the rating specified in the Luminaire Schedule, or as required to suit each luminaire.

D. Fluorescent Lamps:

1. Product:

a. Linear Fluorescent:

- 1) Color: 3500 K
- 2) Type T8, minimum CRI 85, average rated life at 3 hours per start: 24,000 hours. Wattage/initial lumen at 25 degrees C: 17W/1350, 25W/2100, 32W/2950.
- 3) Type: T5, minimum CRI 82, average rated life at 3 hours per start: 20,000 hours. Wattage/initial lumen at 35 degrees C: 14W/1350, 21W/2100, 28W/2900.

b. Compact Fluorescent:

- 1) Color: 3500 K
- 2) Type: T4 - 4 pin - quad or triple tube. Average rated life at 3 hours per start: 12,000 hours. Wattage/initial lumen at 25 degrees C: 13W/900, 18W/1200, 26W/1800, 32W/2400, 42W/3200, 57W/4300.

E. High Intensity Discharge (HID) Lamps:

1. Product: High intensity discharge lamps shall be of the type and rating required for each luminaire. Furnish color corrected type lamps where indicated.

F. Reflector Lamps: Beam patterns in accordance with ANSI C78.379.

1. Product: As shown on luminaire schedule (see sheets E-3 and E-11).

G. Provide owner with 10% spare lamps of each type specified.

2.05 ACCESSORIES

A. Product: Diffusers:

1. Plastic lenses, diffusers or shields specified shall be 100% virgin acrylic, plexiglass or polycarbonate in sizes and shapes to property fit the luminaire.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) or NECA 501 (industrial lighting).

- B. Install suspended luminaires and exit signs using pendants supported from swivel hangers. Provide pendant length required to suspend luminaire at indicated height.
- C. Support luminaires larger than 2 x 4 foot size independent of ceiling framing.
- D. Locate recessed ceiling luminaires as indicated on reflected ceiling plan.
- E. Install surface mounted luminaires and exit signs plumb and adjust to align with building lines and with each other. Secure to prevent movement. Continuous rows longer than 16 feet shall be mounted on steel channel which shall be suspended from structural ceiling from aligner hangers.
- F. Exposed Grid Ceilings: Support surface mounted luminaires in grid ceiling directly from building structure.
- G. Exposed Grid Ceilings: Provide auxiliary members spanning ceiling grid members to support surface mounted luminaires.
- H. Exposed Grid Ceilings: Fasten surface mounted luminaires to ceiling grid members using bolts, screws, rivets, or suitable clips.
- I. Install recessed luminaires to permit removal from below to allow access to an outlet box in the ceiling, as required by NEC.
- J. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.
- K. Support for Recessed and Semi-recessed Accessible Ceiling Fixtures: Support fixtures from overhead structure. Units may not be solely supported from suspended ceiling support system. Install fixture support rods or wires at a minimum of 2 No. 12 gauge rods or wires for each fixture in diagonally opposite corners, including troffers, downlights, etc., and attach to building structure.
 - 1. In addition to supporting fixtures from the overhead structure, install support clips for recessed fixtures, securely fastened to ceiling grid members, at or near each fixture corner.
 - 2. Fixtures Smaller than Ceiling Grid: Install a minimum of 2 No. 12 gauge rods or wires for each fixture.
- L. Support for Suspended Fixtures: Brace pendants and rods from building structure to limit swinging. Support stem-mounted, single unit, suspended fluorescent fixtures with twin-stem hangers (two pendants/rods per single fixture supported from building structure). For continuous rows, use tubing or stem for wiring at one point, and tubing or rod for suspension for each unit length of chassis, including one at each end. Support to building structure with pendants/rods at each end and every 8 feet.

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- M. Install wall mounted luminaires, emergency lighting units, and exit signs at height as indicated on Drawings.
- N. Install accessories furnished with each luminaire.
- O. Connect luminaires, emergency lighting units, and exit signs to branch circuit outlets provided under Section 26 0537 using flexible conduit.
- P. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire.
- Q. Bond products and metal accessories to branch circuit equipment grounding conductor.
- R. Install specified lamps in each emergency lighting unit, exit sign, and luminaire.
- S. Interface with air handling accessories.
- T. Provide any baffles and/or gaskets needed to prevent light leaks around luminaires.
- U. Recessed luminaires shall be designed to fit the make and type of ceiling to be installed, and shall include plaster frames where installed in plaster ceilings, mounting yokes where required for support from ceiling construction, and independent support form structure members where the weight of luminaires would cause deformation of the ceiling.

3.02 FIELD QUALITY CONTROL

- A. Perform field inspection, testing, and adjusting in accordance with Section 01 4000.
- B. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

3.03 ADJUSTING

- A. Aim and adjust luminaires as directed.
- B. Position exit sign directional arrows as indicated.

3.04 CLEANING

- A. Clean electrical parts to remove conductive and deleterious materials.
- B. Remove dirt and debris from enclosures.
- C. Clean photometric control surfaces as recommended by manufacturer.

D. Clean finishes and touch up damage.

3.05 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate luminaire operation for minimum of two hours.

3.06 PROTECTION

A. Relamp luminaires that have failed lamps at Substantial Completion.

3.07 LUMINAIRE SCHEDULE

A. Refer to drawings.

END OF SECTION 26 5100

- C. 27 30 00 – Voice Communications – E-Rate Contractor
- D. 27 40 00 – Audio-Video Communications only)
- E. 27 50 00 – Distributed Communications and Monitoring Systems – General Contractor
- F. 27 80 00 – Building Automation System – General Contractor
- G. 28 00 00 – Electronic Safety and Security – General Contractor

1.6 DRAWING OVERVIEW

- A. Associated “T” drawing series:
- B. General Contractor Drawings:
 - 1. T-100 – General Notes and Legend
 - 2. T-111 – First Floor Technology Plan Section A and Courtyard
 - 3. T-112 – First Floor Technology Plan Section B and D
 - 4. T-113 – First Floor Technology Plan Section C
 - 5. T-121 – Second Floor Plan Technology Plan
 - 6. T-201 – Typical Riser Diagram
 - 7. T-202 – Typical Riser Diagram
 - 8. T-203 – Typical Riser Diagram
 - 9. T-204 – Door Details and Schedule
 - 10. T-205 – Jack Matrix
 - 11. T-206 – Jack Matrix
 - 12. T207 - Lightning Protection Details
 - 13. T-208 - Lightning Protection Details
- C. E-Rate Contractor Drawings:
 - 1. TE-100 – E-Rate General Notes and Legend
 - 2. TE-111 – E-Rate First Floor Technology Plan Section A and Courtyard
 - 3. TE-112 – E-Rate First Floor Technology Plan Section B and D
 - 4. T-113 – E-Rate First Floor Technology Plan Section C
 - 5. TE-121 – E-Rate Second Floor Plan
 - 6. TE-201 – E-Rate Typical Riser Diagram
 - 7. TE-202 – E-Rate Typical Riser Diagram
 - 8. TE-203 – E-Rate Jack Matrix
 - 9. TE-204 - E-Rate Jack Matrix (continued)
 - 10. TE-205 – E-Rate Jack Riser Diagram
 - 11. TE-206 – E-Rate Network Diagram

1.7 ADMINISTRATIVE REQUIREMENTS

- A. Project Meetings
 - 1. Job Start Meeting:
Before starting the work the Contractor shall attend a job start meeting at which his Project Foreman and Project Manager and any other the parties as the Project Coordinator may designate shall be present. This meeting is intended to familiarize contractor personnel with the other parties to this and other projects being undertaken at the same time, to review all requests for facilities by the Contractor and subcontractors, to review the requirements and concerns, to permit the designers to review and interpret the project documents and for the Contractor to discuss the anticipated project schedule established in this Agreement.
 - 2. Facility Review:
Contractor shall conduct a walk through with the Project Coordinator of all work areas, describing specific work methods and proposed schedules, before commencing work, enabling the Project Coordinator to identify areas of concern, desired installation timetables and review important procedural and safety precautions.
 - 3. Weekly Project Meetings:

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- f. All wiring will be in conduit as approved by Engineer – GENERAL CONTRACTOR to install the conduit and cable tray. E-RATE CONTRACTOR to install the wiring.

1.4 RELATED PROJECTS

NOT APPLICABLE TO THIS SPECIFICATION

1.5 DIVISION 27 OVERVIEW

- A. 27 10 00 – Structured Cabling - E-Rate Contractor
- B. 27 20 00 – Data Communications – E-Rate Contractor
- C. 27 30 00 – Voice Communications – E-Rate Contractor
- D. 27 40 00 – Video/Audio Communications
- E. 27 50 00 – Distributed Communications and Monitoring Systems – General Contractor
- F. 27 80 00 – Building Automation System – General Contractor
- G. 28 00 00 – Electronic Safety and Security – General Contractor

1.6 DRAWING OVERVIEW

- A. Associated “T” drawing series:
- B. General Contractor Drawings:
 - 1. T-100 – General Notes and Legend
 - 2. T-111 – First Floor Technology Plan Section A and Courtyard
 - 3. T-112 – First Floor Technology Plan Section B and D
 - 4. T-113 – First Floor Technology Plan Section C
 - 5. T-121 – Second Floor Plan Technology Plan
 - 6. T-201 – Typical Riser Diagram
 - 7. T-202 – Typical Riser Diagram
 - 8. T-203 – Typical Riser Diagram
 - 9. T-204 – Door Details and Schedule
 - 10. T-205 – Jack Matrix
 - 11. T-206 – Jack Matrix
 - 12. T207 - Lightning Protection Details
 - 13. T-208 - Lightning Protection Details
- C. E-Rate Contractor Drawings:
 - 1. TE-100 – E-Rate General Notes and Legend
 - 2. TE-111 – E-Rate First Floor Technology Plan Section A and Courtyard
 - 3. TE-112 – E-Rate First Floor Technology Plan Section B and D
 - 4. T-113 – E-Rate First Floor Technology Plan Section C
 - 5. TE-121 – E-Rate Second Floor Plan
 - 6. TE-201 – E-Rate Typical Riser Diagram
 - 7. TE-202 – E-Rate Typical Riser Diagram
 - 8. TE-203 – E-Rate Jack Matrix
 - 9. TE-204 - E-Rate Jack Matrix (continued)
 - 10. TE-205 – E-Rate Jack Riser Diagram
 - 11. TE-206 – E-Rate Network Diagram

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NEW JERSEY SCHOOLS DEVELOPMENT AUTHORITY
NEW GEORGE L. CATRAMBONE ELEMENTARY SCHOOL

BECICA ASSOCIATES LLC
PROJ. NO. EDA-04002

END OF E-RATE SECTION 27 00 01

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17. Acceptable Manufacturers:
 - a. Commscope / Systemax
 - b. Leviton
 - c. Panduit
 - d. Or Approved Equal

2.6 WIRELESS ACCESS POINT (WAP)

- A. The Wireless Data Network shall be a major source of data connectivity within the building. The WAP shall be dual radio 802.11a/b/g/n with omni-directional antennas – 2.4 GHz (2dBi) and 5 GHz (3dBi). The WAPs shall include mounting brackets and screws and shall have a RP SMA female connector for external antenna attachment.
- B. The Wireless Access Points shall conform with the following specifications:
 1. Application support and over-the-air Quality of Service (QoS)
 - a. Quality of Service Rules
 - 1) Configurable dynamic QoS rules
 - 2) Over-the-air upstream and downstream resource reservation
 - 3) Automatic, stateful flow detectors for SIP, H.323, Cisco SCCP, SpectraLink SVP, and Vocera
 - 4) User-configurable static and dynamic QoS rules per application (user defined) and per user (stations, users, and port numbers)
 - 5) Call admissions control and call load balancing
 2. Security:
 - a. Authentication:
 - 1) Combination of captive portal, 802.1x and open authentication
 - 2) 802.1x with EAP-Transport Layer Security (EAP-TLS), Tunneled TLS (EAP-TTLS), Protected EAP (PEAP) MS-CHAPv2, Smartcard/Certificate, lightweight EAP (LEAP), EAP-FAST and EAPMD5, with mutual authentication and dynamic, per user, per session unicast and broadcast keys.
 - 3) Secure HTTPS w/ customizable captive point utilizing RADIUS
 - b. Encryption support: Static and dynamic 40-bit and 128-bit WEP keys, TKIP with MIC, AES
 - c. Security policy:
 - 1) Radius assisted, per user and per ESSID access control via MAC filtering
 - 2) Multiple ESSID/BSSID each with flexibility of separate and shared security policy
 - d. Rouge detection and suppression: Any radio can scan both 802.11a and 802.11b/g for rouges
 3. Mobility:
 - a. Supports zero-loss hand-off over layer 2/3 infrastructure
 4. Centralized management:
 - a. Zero configuration: Automatically selects power and channel settings
 - b. System management:
 - 1) Centralized and remote management and software upgrades via System Director webbased GUI. SNMP, Cisco-like Command Line Interface (CLI) via serial port, SSH, Telnet, centrally managed via EzRF Network Manager

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GC SECTION 27 41 16.51

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT FOR CLASSROOMS

PART 1 – GENERAL

1.0 RELATED DOCUMENTS

- A. Section 27 40 00 "Audio-Video Communications".
- C. Drawings, General Conditions, and Special Conditions related to this project are found in this Division, as well as the other Divisions included in the Contract Documents.
 - 1. It is the obligation and responsibility of the CONTRACTOR to carefully read all Sections and Divisions in order to ensure compliance with this specification.

1.1 SCOPE OF WORK

- A. Refer to Section 27 40 00 "Audio-Video Communications" for details.

1.2 SCOPE OF SPECIFICATION

- A. This section includes the minimum requirements for the following equipment to be installed in all classrooms as well as Instrumental/Choral rooms:
 - 1. VCR/DVD/CD Recorder/Players (provided and installed by NJSDA)
 - 2. Video Projectors (provided and installed by NJSDA)
 - 3. Video Projector Ceiling Mount
 - 4. Video Viewing Screens
 - 5. Speakers
 - 6. Microphones and Wireless Systems
 - 7. Amplifiers
 - 8. Sound System Over-ride Relay

1.3 SUBMITTALS

- A. The CONTRACTOR shall submit product data (manufacturer catalog cut sheets) for all equipment, whether specified in this section or not, that are part of the proposed solution to the ENGINEER and shall not install any equipment until such product data sheets have been approved in writing.

1.4 FUNCTIONAL SYSTEM DESCRIPTION

- A. Refer to Section 27 40 00 "Audio-Video Communications" for details.

PART 2 - PRODUCTS

2.0 VCR/CD/DVDs FOR CLASSROOMS

- A. Available Manufacturers/Vendors
 - 1. Sony
 - 2. Magnavox
 - 3. RCA
 - 4. Or Approved Equal
- B. The VCR/DVD/CD required for this application must accept both RCA Audio/Composite Video Inputs and Outputs.

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- C. The unit shall utilize four head recording/play-back technology to allow for optimal performance.

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- E. All cable shall be installed at a minimum distance of three (3) inches from sources of hot water, steam or condensate.
- F. Conduit sleeves shall be installed in all cable penetrations through all concrete or block. All conduit sleeves shall be properly fire stopped and sealed in accordance with Section 16050.
- G. Prior to final acceptance the Contractor shall provide accurate documentation listing all equipment installed applicable to this section. The list shall include the following information: Description of equipment, equipment part numbers, equipment serial numbers, Manufacturer's warranty period and location(s) of equipment. The Contractor shall provide the Owner with all equipment manuals as supplied by the Manufacturer. Any information to be found inaccurate during the one year warranty period shall require that the Contractor re-verify all equipment information at no additional cost to the Owner. Re-verifications shall be completed within one (1) week after notification of any discrepancy. The Contractor shall submit one (1) copy of all documentation to the Engineer.
- H. The Contractor shall provide a camera index on the inside cover of each camera power supply indicating connected cameras and loads. The total connected camera load and maximum load capacity of the power supply shall also be clearly indicated.
- I. All cabling entering the CCTV equipment cabinet(s) and console(s) must be installed in conduit or raceway. All cabling within the cabinet shall be neatly bundled and secured to the cabinet with tie wraps to avoid cable strain on connectors and terminations. In no instance shall the point of connection serve as the support for a cable bundle. All conduit sleeves shall be ground smooth to remove any sharp edges and burrs.
- J. All cabling shall be supported and protected at all holes, penetration points, boxes, conduits, etc. with protective grommets or approved material that will protect the cabling from abrasion.
- K. Prior to commencing the camera installation, the Contractor shall verify the desired field of view of each camera. The mounting location of a camera relative to the field of view shall be verified with the Owner.
- L. The Contractor shall provide equalization amplification and ground loop transformers as required to overcome poor video signals and ensure the best image quality.
- M. After installation of wiring and equipment has been completed, all cabling shall be tested by the Contractor to ensure continuity, freedom from grounds (except those that are intentional and required for electrical protection) and insulation resistance in accordance with UL requirements and applicable electrical regulations. The Contractor shall furnish and utilize suitable instruments such as ammeters, voltmeters, meggers, etc.
- N. Refer to Division 01850 WARRANTIES AND BONDS for Support and Warranty details.
- O. **ADDED NOTE: CCTV system submittals to include shop drawings locating all devices and mounting heights prior to rough-in of conduits and boxes".**

3.3 CLEAN UP

- A. At the completion of the work, the Contractor shall thoroughly check and clean all equipment pertinent to this section as well as cleaning areas around the equipment. All exposed surfaces shall be cleaned to meet the Owner's requirements.

3.4 TESTING

Addendum No 2 Feb. 15, 2012

OCTOBER 20, 2011

IP VIDEO SURVEILLANCE
28 23 00 GC - 12

NJSDA PROJECT NO.
ET-0068- C01



Consulting, Municipal & Environmental Engineers
Planners • Surveyors • Landscape Architects

331 Newman Springs Road
Suite 203
Red Bank, NJ 07701
Tel: 732.383.1950 • Fax: 732.383.1984

CHLORDANE IMPACTED SOIL REMEDIATION SPECIFICATIONS

FOR

CATRAMBONE ELEMENTARY SCHOOL

FOR THE

NEW JERSEY SCHOOLS DEVELOPMENT AUTHORITY

AND

BECICA ASSOCIATES LLC

PREPARED BY:

**MASER CONSULTING P.A.
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701**

January 30, 2012

**Addendum No 2
Feb. 15, 2012**

MC PROJECT NO. 05001712J

TABLE OF CONTENTS

CHLORDANE IMPACTED SOIL REMEDIATION

Section	Title
01011	Project Description Summary
02250	Excavation, Removal & Handling of Chlordane Impacted Materials
02260	Waste Disposal Requirements
Drawing #1	Proposed Areas of Soil Remediation

SECTION 01011 - PROJECT DESCRIPTION SUMMARY

1.0 SCOPE

The specifications referred to herein are for the remediation of chlordane impacted soil at the proposed new Catrambone Elementary School on Park Ave in the City of Long Branch, Monmouth County, New Jersey. These specifications are technical descriptions and requirements for the soil remediation related work. They shall be used in conjunction with the site plan drawings prepared by Maser Consulting P.A. (Maser Consulting) and with the plans and specifications prepared by the Project Architect, Becica Associates, LLC. All contractual and payment information is contained in the Becica Associates, LLC specifications, and the conditions and requirements of Becica Associates, LLC. Specifications shall apply to the soil remediation work.

2.0 DRAWINGS

Drawing # 1 PROPOSED AREAS OF SOIL REMEDIATION - Prepared by Maser Consulting dated January 30, 2012.

3.0 PROJECT DESCRIPTION

The contractor shall furnish all labor, materials, tools, equipment and other appurtenances necessary to properly perform all work listed in the specifications contained herein and shown on the contract drawings described above.

The portion of the site where the chlordane impacted soil is located is an area within the outline of the former Elberon Elementary School. The areas of impacted soil will be located on-site prior to contractors mobilization. Topsoil or other material from these areas is not to be stripped or removed prior to initiating remedial activities.

Remedial activities for this project comprise the excavation and stockpiling of the chlordane impacted soil. Soil excavation will continue at the direction of the Engineer (Maser Consulting) or until confirmation soil samples indicate no further need for excavation. The Engineer will be responsible for observing excavation activities, collecting and laboratory analysis of the post-excavation soil samples, with the aid of the Contractor, from the base and sidewalls of the excavation. The Contractor shall expect a lag time of approximately three (3) days between the time of post-excavation sample collection and the receipt of laboratory results, and is encouraged to plan accordingly while generating the bid. Once the impacted material has been removed and post-excavation sample results have been received, the contractor will be required to either:

1. At the Engineer's direction, and in consultation with the Licensed Site Remediation Professional (LSRP), use the chlordane impacted materials to backfill an area immediately above the subgrade within the foundation footprint of the building, to be

compacted and covered by other materials, including non-impacted fill, the chemical vapor barrier and the concrete floor slab; or,

2. At the Engineer's direction, and in consultation with the LSRP, dispose of the chlordane impacted materials at an off-site licensed facility. If this course is selected Contractor shall make all appropriate arrangements with said facility, including, but not limited to completion of all applicable characterization sampling and transportation in compliance with applicable regulations.

This remedial work will be implemented under the Impacted Materials Allowance with specific direction at a later date by the NJSDA, Engineer and LSRP.

SECTION 02250 – EXCAVATION, REMOVAL & HANDLING OF CHLORDANE
IMPACTED MATERIALS

1.0 GENERAL

1.1 Related Documents

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

1.2 Summary

- A. This Section includes the following:

1. The excavation and removal of chlordane impacted soils in conjunction with soil remediation.

- B. Related Sections include the following:

1. Section 01011 - Summary of Work
2. Section 02260 - Waste Disposal Requirements.
3. Section 310513 - Soils for Earthwork
4. Section 310516 - Aggregates for Earthwork
5. Section 310520 - Slope Protection & Erosion Control
6. Section 311000 - Site Clearing
7. Section 312000 - Earth Moving
8. Section 312213 - Rough Grading
9. Section 312316 - Excavation
10. Section 312317 - Trenching
11. Section 312319 - Dewatering
12. Section 312323 - Fill

1.3 Measurement and Payment

- A. Excavation and stockpiling of the top five feet of material in the remediation areas area part of the base bid.
- B. The costs for either on-site re-use of the material or off-site disposal of the chlordane impacted material will be drawn from the Impacted Materials Allowance.
- C. The weighing of all trucks entering and/or exiting the disposal site(s) and backfill source site(s), empty and loaded will be required. A record or log of all truck traffic per day, along with weight tickets will be required.

Long Branch, NJ

- D. Measurement for the volume of backfill material, and transportation shall be based on the number of tons from individual truck weight tickets from a certified scale actually transported to the site as submitted to and approved by the Engineer.
- E. Measurement for the volume of disposal material, and transportation shall be based on the number of tons from individual truck weight tickets from a certified scale actually transported to the disposal site as submitted to and approved by the Engineer.
- F. Measurement for the preferential handling of chlordane impacted material will be based on the actual volume in cubic yards of material excavated from the remedial excavation. The volume (cubic yards) will be calculated based on surveyed widths, lengths and depths of the remedial excavations as submitted to and approved by the Engineer.

1.4 Submittals

- A. Bills of lading shall be provided to the Engineer (Maser Consulting) to document the source(s) of all imported fill and topsoil.
- B. Submit name of imported materials suppliers. Provide materials from same source throughout the work. Change of source requires approval.

2.0 EXECUTION2.1 General

- A. The contractor is responsible for preparing a Health and Safety Plan (HASp) for the soil remediation work. The Contractor shall supply proof that all of the contractor's personnel on the job relating to soil remediation are properly trained as required by OSHA regulations, 29 CFR 1910 and 29 CFR 1926.
- B. The Contractor shall comply with New Jersey Department of Environmental Protection (NJDEP) Guidance Document for the Remediation of Contaminated Soil (1998). Excavation of chlordane impacted soils will be under the observation of the Engineer.
- C. The Contractor shall be solely responsible for means, methods, techniques, sequences and safety precautions associated with the actual excavating operations. This includes, but is not limited to, maintaining the appropriate slopes on the sides of the excavation and safety protection around the open excavation in accordance with OSHA requirements. Provide all necessary protection to insure that daily vehicle operation and/or pedestrian traffic will be protected from open trenches and work being performed.
- D. Stockpile chlordane impacted soil in locations as directed by Engineer. Excavated soils shall be placed on and covered with plastic sheeting until reused on-site or removed from the site.

Long Branch, NJ

- E. The Contractor shall provide for waste classification laboratory analyses for the known contaminated material and any suspected contaminated material generated from the excavation per the disposal facilities acceptance protocol. These analyses shall be conducted by an NJDEP-certified laboratory. All analyses shall be in accordance with NJDEP regulations. Following receipt of waste classification analytical results and approval of disposal facility, Contractor shall provide for the loading, transportation and disposal of all contaminated materials.
- F. Post-excavation soil sample collection and laboratory analysis (to be performed by the Engineer (Maser Consulting) shall proceed immediately upon removal of chlordane impacted soil. The contractor will assist the Engineer with post-excavation soil sampling.
- G. The Contractor will need to continuously coordinate its actions with those of the Engineer to facilitate a smooth and orderly progression of the remediation activities.
- H. Remove and dispose of all vapor, products, sludge, liquids, and soil in accordance with all Federal, State, and Local Statutes.
- I. Upon direction from the Engineer, the Contractor may be directed to backfill the remedial excavation with Certified Clean Fill.
- J. Certified Clean Fill: Certified clean fill for the purposes of remediation shall represent, uncontaminated, non-water soluble, non-decomposable, inert solids, such as quarry process rock, soil, sand or gravel from a certified virgin source. Based on visual inspection, imported certified clean fill shall not contain free liquids, extraneous debris, or solid waste. Documentation of certified clean fill shall be in accordance with the NJDEP Alternative and Clean Fill Guidance (current updated version) along with a written certification provided by the supplier of the fill material that to the best of the affiant's knowledge and belief the fill material being imported does not contain constituents of concern in excess of a New Jersey Soil Cleanup Criteria, and that the material originates from a natural environment without degradation caused by human influences. All environmental analyses shall be conducted by an NJDEP-certified laboratory. All costs are to be borne by the Contractor.
- K. No imported fill or topsoil shall be delivered to the site until all required certifications have been provided and the material has been approved by the Engineer.
- L. Upon Direction from the Engineer, the Contractor may be required to re-use the chlordane impacted material to backfill an area immediately above the subgrade within the foundation footprint of building to be complicated and covered by other materials. The backfill location (s) will be designated by the Engineer.

2.2 Examination

Long Branch, NJ

- A. Examine areas and conditions for compliance with requirements for, removal and or re-use of chlordane impacted material and conditions affecting performance of work.

2.3 Field Quality Control and Scheduling

- A. The contractor shall notify the Construction Manager a minimum of one week prior to initiating removal activities.
- B. Contractor shall call the New Jersey One-Call (1-800-272-1000) to obtain utility mark-outs prior to excavation.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of *replaced* or additional work with specified requirements.

SECTION 02260 - WASTE DISPOSAL REQUIREMENTS

1.01 GENERAL

1.01 Description

- A. This section specifies the requirements for disposal of uncontaminated wastes and hazardous and non-hazardous contaminated wastes generated during the soil remediation. This includes disposal of chlordane impacted soil, historic fill and construction wastes, etc.

1.02 Applicable Codes and Standards

- A. USEPA, 40 CFR, Part 261, Identification and Listing of Hazardous Waste, latest edition.
- B. N.J.A.C. 7:26-G Hazardous Waste Regulations, latest edition.

2.0 PRODUCTS

2.01 Materials/Equipment

- A. The Contractor shall use watertight waste containers, dump and tank trucks conforming to applicable New Jersey Department of Transportation (DOT) Regulations.
- B. The Contractor shall be responsible for labeling hazardous and non-hazardous waste containers with labels conforming to Federal, State and local regulations.

3.0 EXECUTION

3.01 General Requirements

- A. The Contractor shall be responsible for locating appropriate disposal facilities for all wastes generated during the entire course of the Contract. Such wastes may include, but are not limited to, uncontaminated debris and site demolition materials, non-hazardous solid wastes, and hazardous solid wastes.
 - 1. The Contractor shall provide the Engineer (Maser consulting) with the names and locations of all proposed disposal facilities prior to transportation of any waste materials from the site. All proposed disposal facilities must be approved by the Engineer.

- B. The Contractor shall be responsible for coordinating the safe legal transportation and off-site disposal of all waste material and any encountered groundwater generated during the entire course of the Contract. Transportation and disposal of waste materials shall be in accordance with all applicable Federal, State and local codes and regulations.
 - 1. The Contractor shall provide the Owner with the names and DEP licenses of all proposed transporters prior to the removal of any waste materials from the site. All proposed transporters must be approved by the Engineer.
- C. The Contractor shall ensure that off-site tracking of mud and soil is minimized in accordance with the requirements of the soil erosion plan.

If, in the Engineer's or Owner's opinion, the paved surfaces of the site and/or adjacent streets are affected by the transportation of materials from the loading area, the Contractor shall supply mechanized road cleaning equipment to clean the paved surfaces at no additional cost. Any wash water generated will be disposed of in accordance with applicable Federal, State and local codes and regulations at no additional cost.

3.02 Waste Characterization

- A. The Contractor shall coordinate and pay for all necessary sampling and analyses of stockpiled soils to be disposed of off-site in order to properly characterize them as either non-hazardous or hazardous, thereby ensuring the application of appropriate handling, transportation and disposal methods.
 - 1. The Contractor shall provide the Engineer with copies of the waste characterization analytical results a minimum of 5 working days prior to transportation of any waste materials from the site.
- B. The Contractor shall coordinate and pay for all necessary sampling and analyses of wastewater generated during the entire Contract to properly characterize it and ensure appropriate handling, transportation and disposal methods. Such wastewater includes, but is not limited to water generated during decontamination operations.

3.03 Disposal of Non-Hazardous Site Demolition Materials

- A. All debris, rubbish and other materials resulting from remediation and/or construction operations shall be safely and legally removed from the site and

disposed of in accordance with applicable Federal, State and local codes and regulations. Burning of any debris or rubbish on-site shall not be permitted.

- B. All tractors and all trailers proposed to haul must be properly licensed by the NJDEP and display the appropriate sticker. No vehicle lacking registration and decal will be loaded.
- C. The Contractor shall provide to the Engineer daily disposal receipts showing the location and amount disposed, name and signature of truck driver and authorized recipient at disposal site.
- D. No vehicle transporting waste materials will be permitted to leave the site until it is logged out by an Owner's Representative.

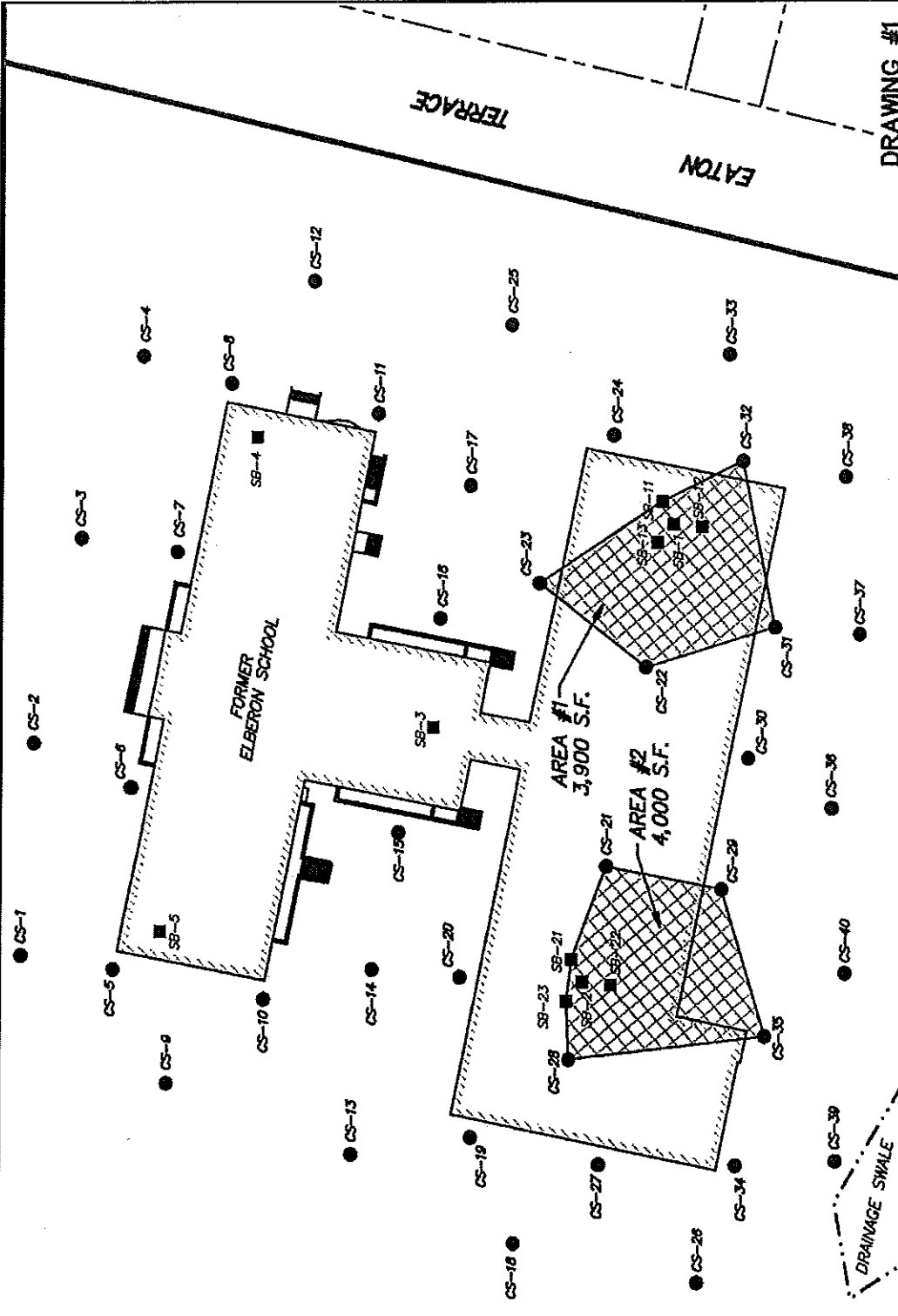
3.04 Disposal of Contaminated Wastes

- A. The Contractor shall be responsible for the proper handling and transportation of all non-hazardous and hazardous contaminated wastes. Transport of contaminated solid and/or liquid wastes shall be in accordance with all applicable Federal, State (including NJDEP and NJDOT) and local codes and regulations.
 - 1. The Contractor shall prepare all necessary manifests for transportation and disposal of the waste materials.
 - 2. All vehicles and containers used to transport contaminated waste materials must be appropriately labeled.
- B. No vehicle transporting contaminated waste materials will be permitted to leave the site until it is logged out by the Owner's Representative.
- C. All trucks used to transport contaminated waste materials must be of watertight body construction and be lined with plastic. The trucks must be securely covered with plastic and tarps prior to exiting the site.
- D. In the event of an accident or spill during transportation, the Contractor shall immediately notify the Engineer and Owner. All spilled material shall be removed by the Contractor and property damage restored, all at the Contractor's expense.
- E. Bills of Lading and Waste Manifests.
 - 1. Upon the removal of non-hazardous and hazardous wastes from the work site, the Contractor shall submit bills of lading to the Engineer on a daily

basis, a copy of which is to be included as part of the "Close Out" documentation. Such bills of lading shall contain:

Contractor's Name
Contractor's Address
Permit Number
Quantity of Waste Removed
Location, Name, and EPA ID Number of Waste Generator Facility
Name of Disposal Facility and its EPA ID Number
Disposal Facility Address
Date Removed from Work Site
Signature of Driver
Signature Receipt by Disposal Facility

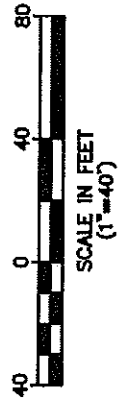
2. The Contractor shall be responsible for the completion of all required hazardous waste manifest forms for hazardous materials regardless of material classification. Once completed and verified, the forms will be signed by an approved Owner's representative. A copy of the forms shall be submitted to the Engineer and Owner after they are signed by the disposal site. All truck weights must be indicated on the forms. Upon disposal at the approved facility, a certificate of disposal shall be issued to the Owner. The certificate of disposal shall include: A reference to the manifest number for each shipment; the name address and EPA ID Number of each facility at which the wastes were ultimately treated or destroyed; and the address and EPA ID Number of the generator facility.



LEGEND

- TEST BORING LOCATION
- TEST BORING LOCATION
- ▨ CHLORDANE IMPACTED AREA

NOTES:
 1. AREA OF CHLORDANE IMPACTED SOIL IS ESTIMATED.
 2. FILL MATERIAL USED FOR BACKFILL OF CHLORDANE IMPACTED SOIL EXCAVATION MUST BE NUSDA CERTIFIED CLEAN FILL.



JOB NUMBER:	05-007148	DATE:	JAN. 30, 2012
SCALE:	1"=40'	LATEST REVISION:	
INDEX NUMBER:	HAD25587	DESIGN BY:	
SHEET NUMBER:			

DRAWING #1

FOR

PROPOSED AREAS OF SOIL REMEDIATION

PROPOSED CATRAMBONE ELEMENTARY SCHOOL

LOT 1, BLOCK 22.01

CITY OF LONG BRANCH MONMOUTH COUNTY NEW JERSEY

Addendum No 2
 Feb. 15, 2012

MASER CONSULTANTS, P.A.
 Consulting, Municipal & Environmental Engineers
 Planners, Surveyors, Landscape Architects

State of N.J. Certificate of Authorization: 246A27965600
 email: solutions@monmouthmty.com

HAMILTON OFFICE
 American Metro Plaza
 100 American Metro Blvd., Suite 152
 Hamilton, N.J. 08619
 Phone (609) 587-8200
 Fax (609) 587-8200

PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

Becica Associates LLC
 Architecture/Engineering
 500 South Kings Highway
 Cherry Hill, New Jersey 08034
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 F: 856.354.6367
 W: www.becica.com



ASSOCIATED DOCUMENT
Addendum 2

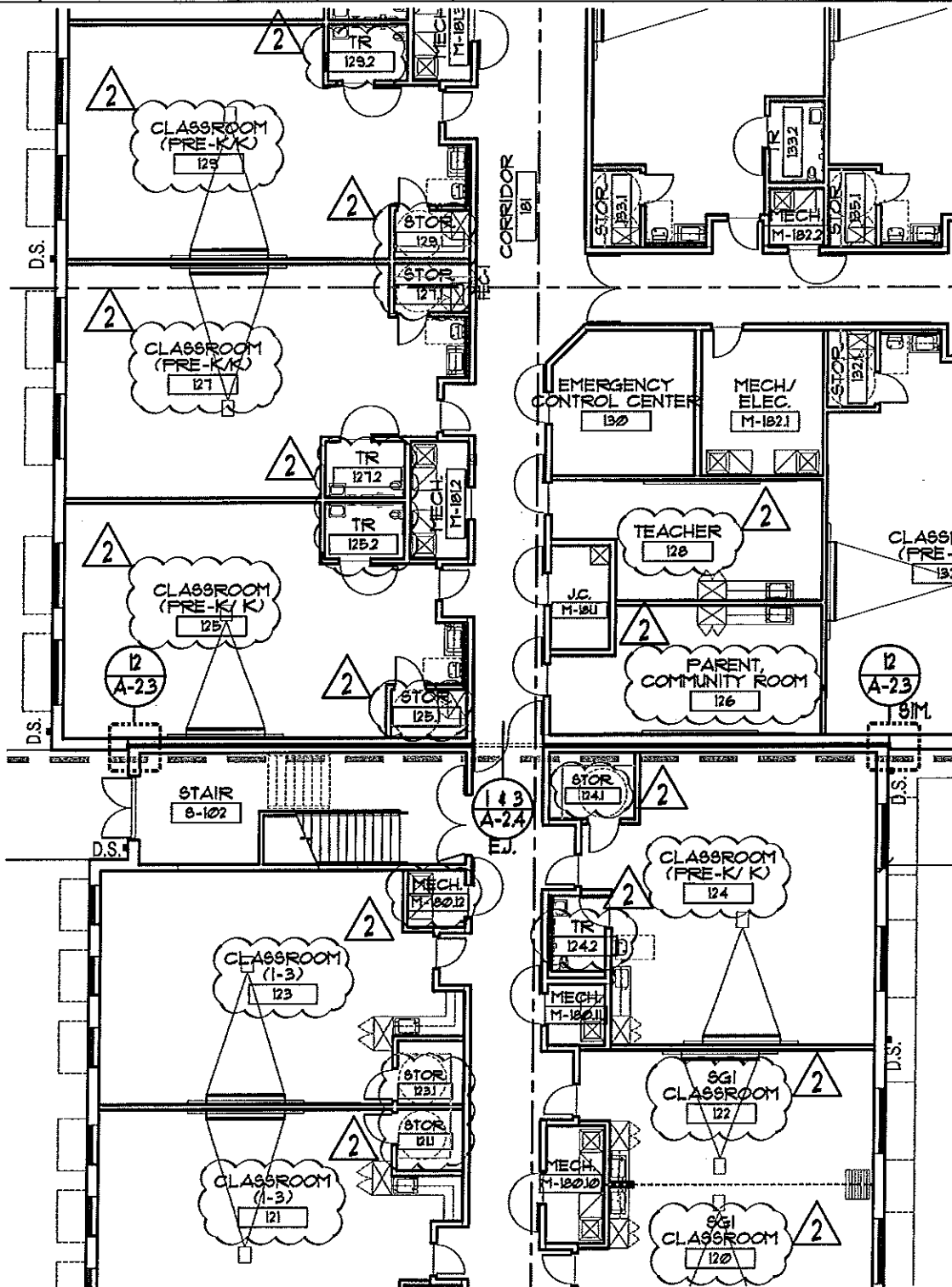
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DRAWN BY: RWS
 CHECKED: DATE: 02-07-12
 BY: SAB

Signature/Date
 STEVEN A. BECICA, R.A. N.J. AI 21A1012197600

PROJECT NO.
 EDA-04002

SHEET NO.: **SK-1**
 DATE: 02-07-12



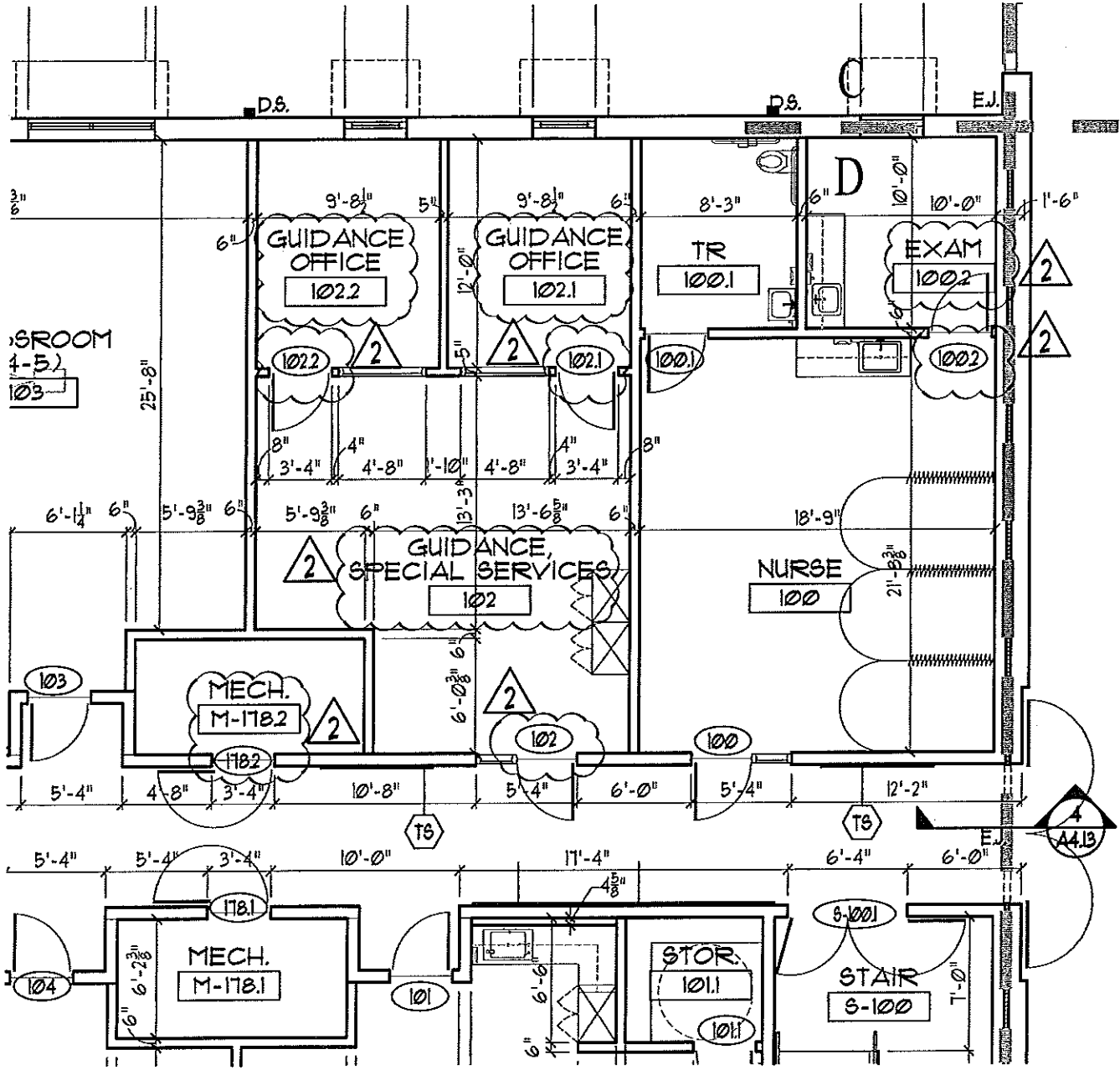
1 FIRST FLOOR PLAN
 A-1.1 SCALE: 1/16" = 1'-0"

PROJECT:
George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

Becica Associates LLC
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 500 South Kings Highway
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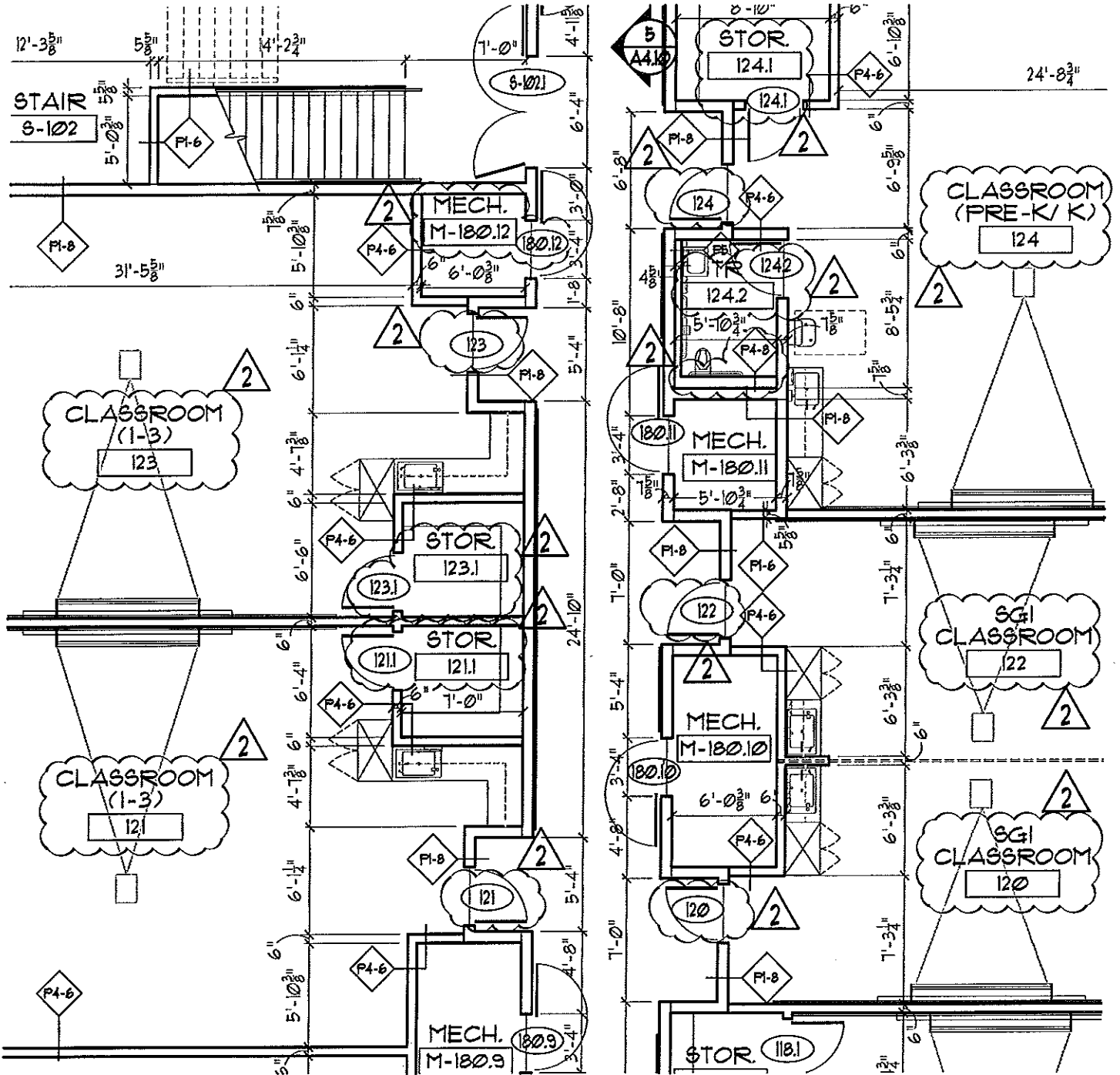
PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
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1 FIRST FLOOR PLAN- BLOCK "A"
 A-1.3 SCALE: 1/8"=1'-0"

PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
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ASSOCIATED DOCUMENT
Addendum 2

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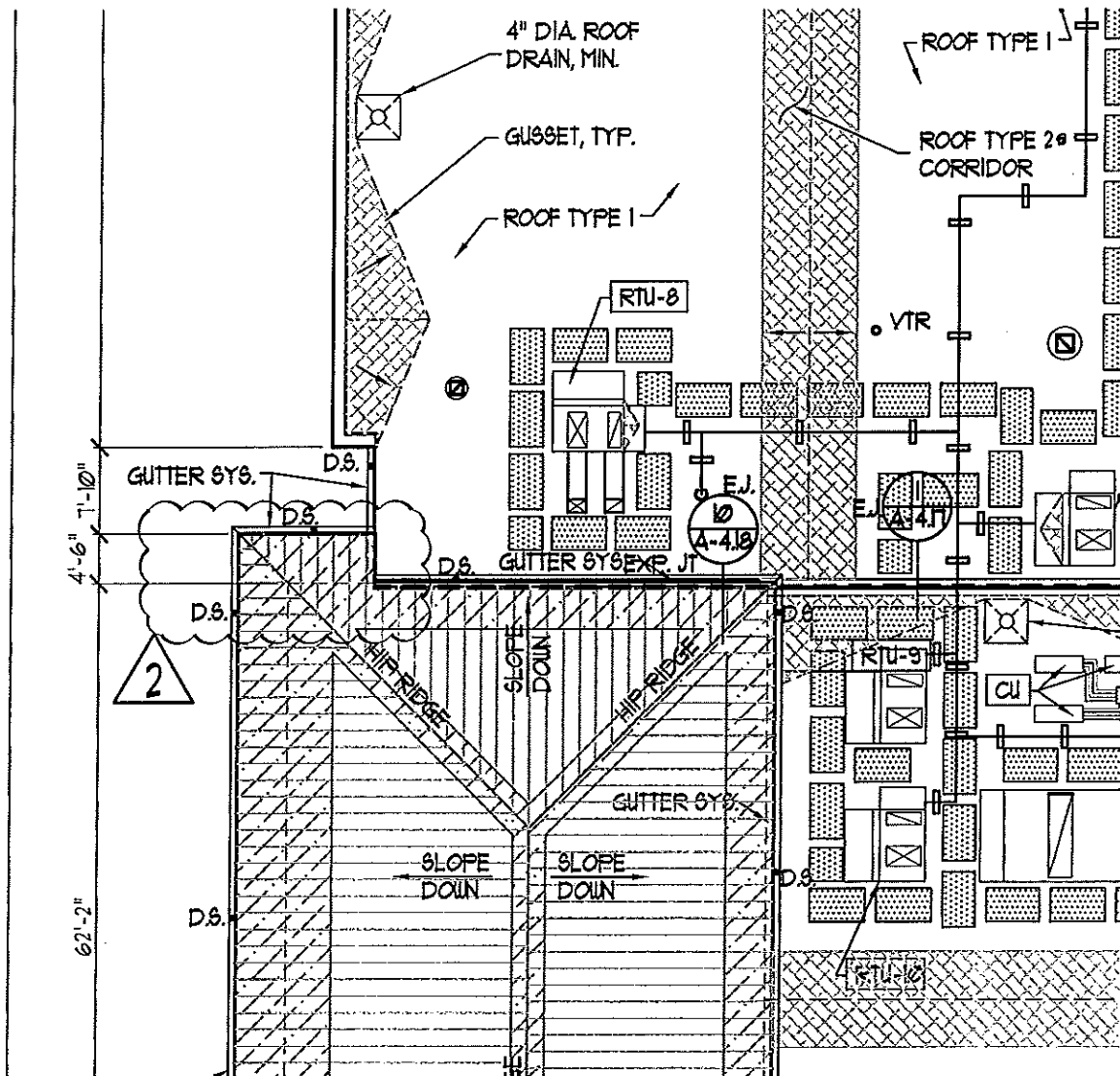
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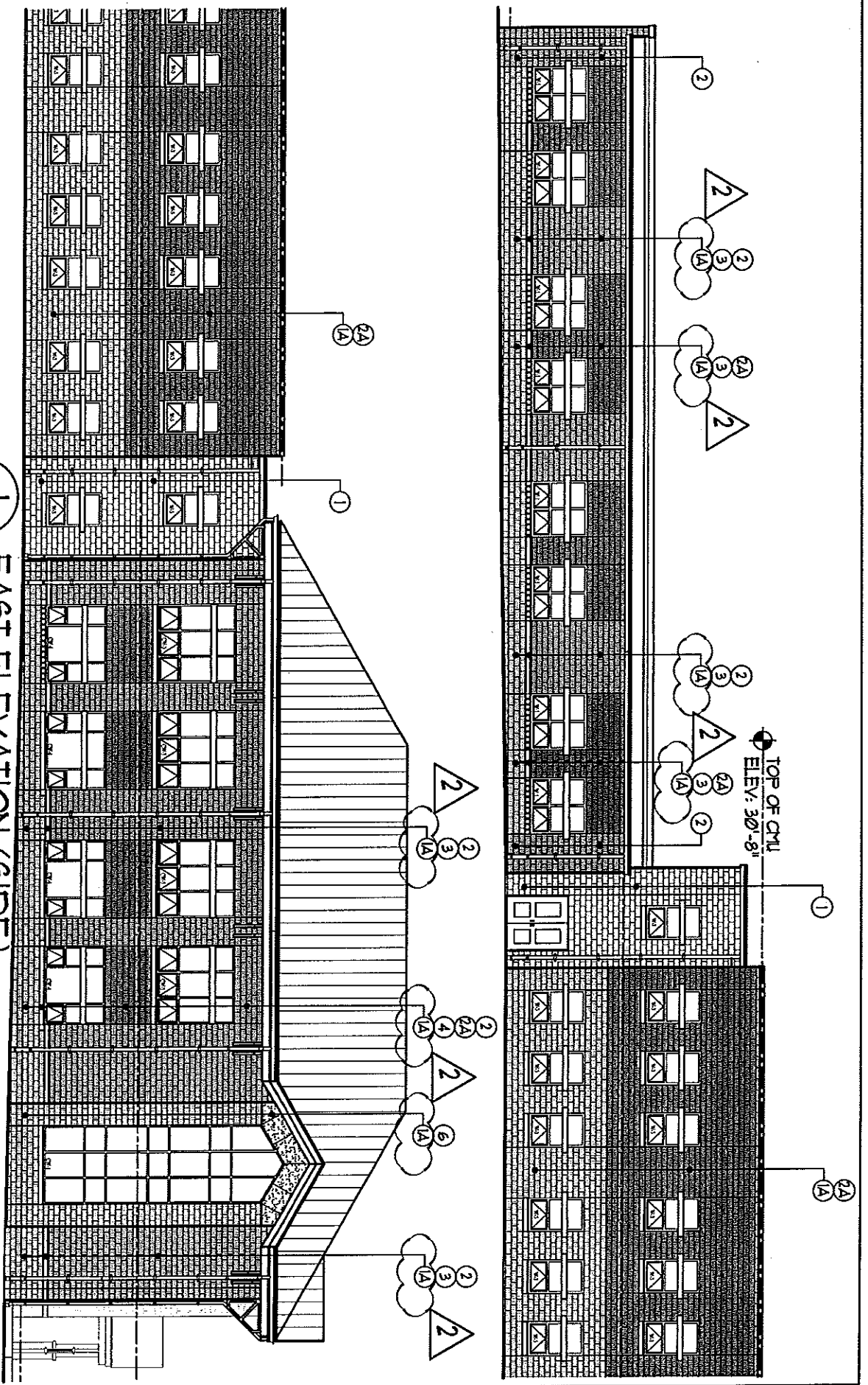
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Sylvia A. Becica, R.A., N.J. A121410137600

PROJECT NO.
EDA-04002

SHEET NO.:
SK-4
DATE: 02-07-12



1 ROOF PLAN
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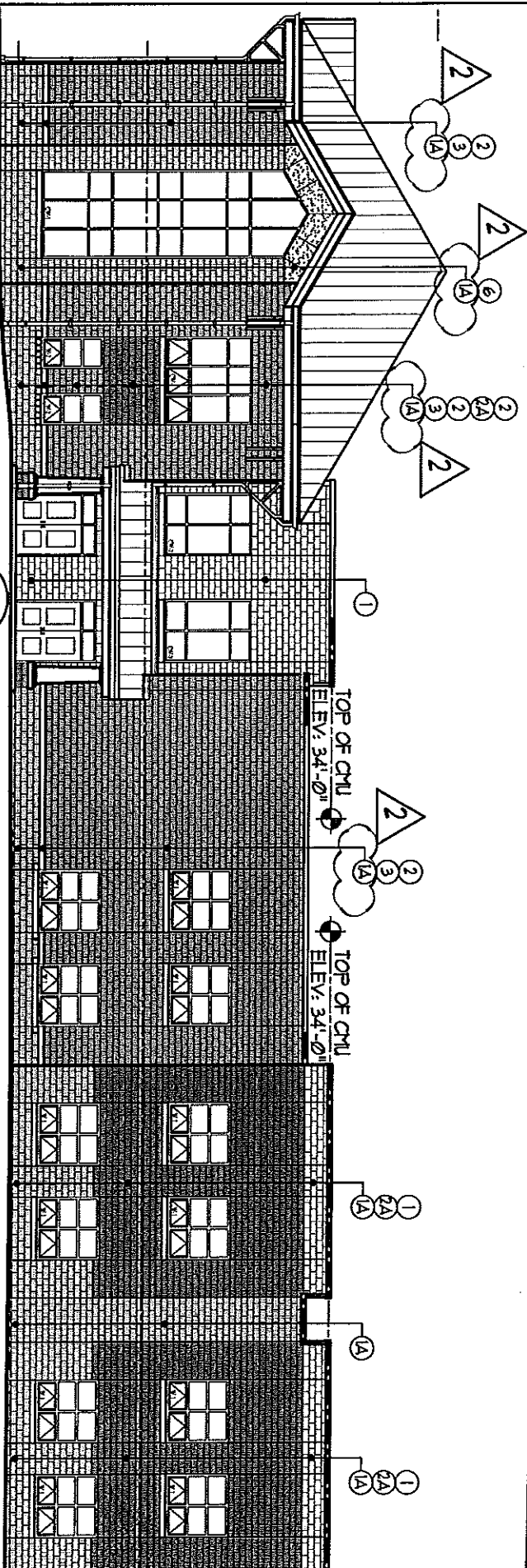
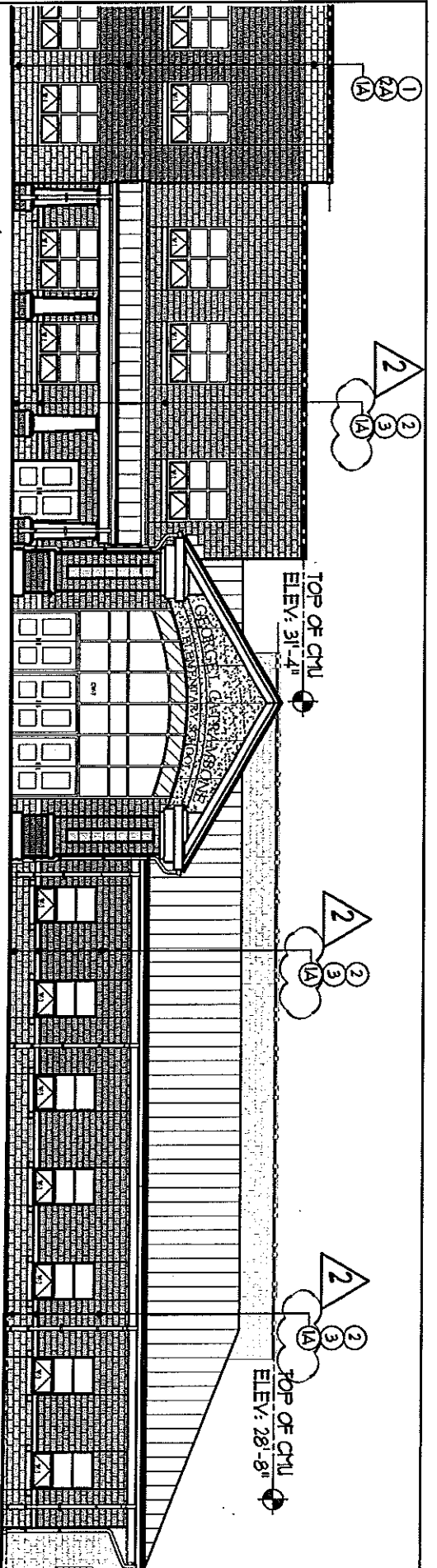


Addendum No 2

1 EAST ELEVATION (SIDE)
A-3.1 SCALE: 1/8"=1'-0"

PROJECT Georgel I. Caltrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SK-5	BECICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856.995.1180 F: 856.354.6967 W: Becica.com NJ Certification of Authorization: Architecture - 23A000237001 / Engineering - 24A000000000
SIGNATURE/DATE Steven A. Becica, P.L.A. N.J. AI 23A000237001	REFERENCED DRAWING DETAIL/SHEET # 1 / A-3.1	DATE: 02-07-12 CHECKED: SAB	
	DATE: 10-20-11		

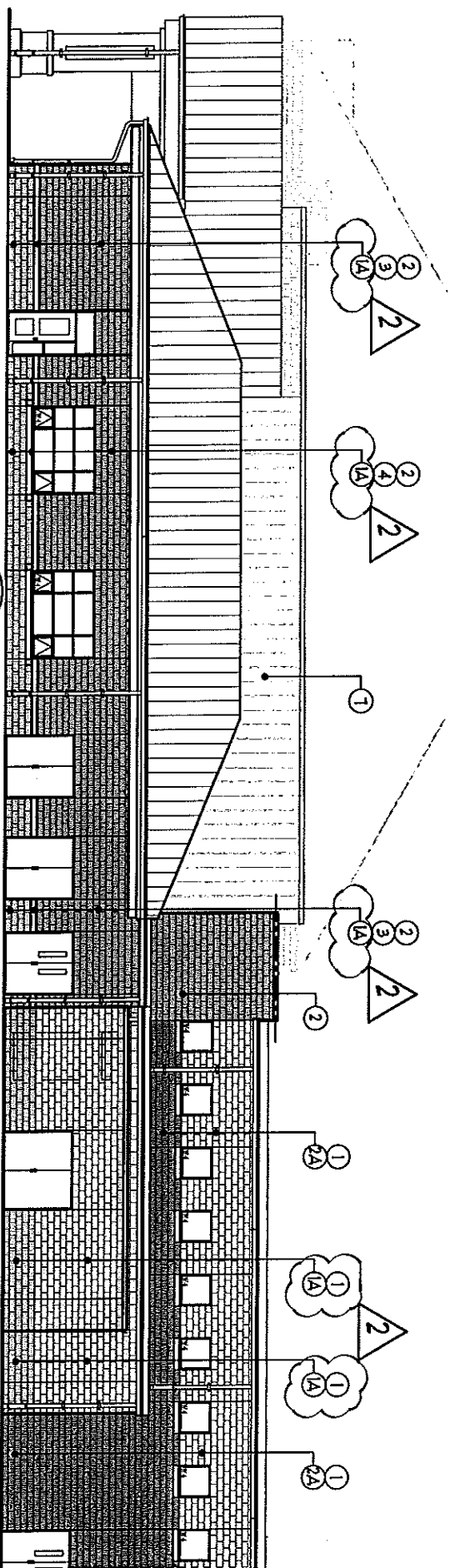
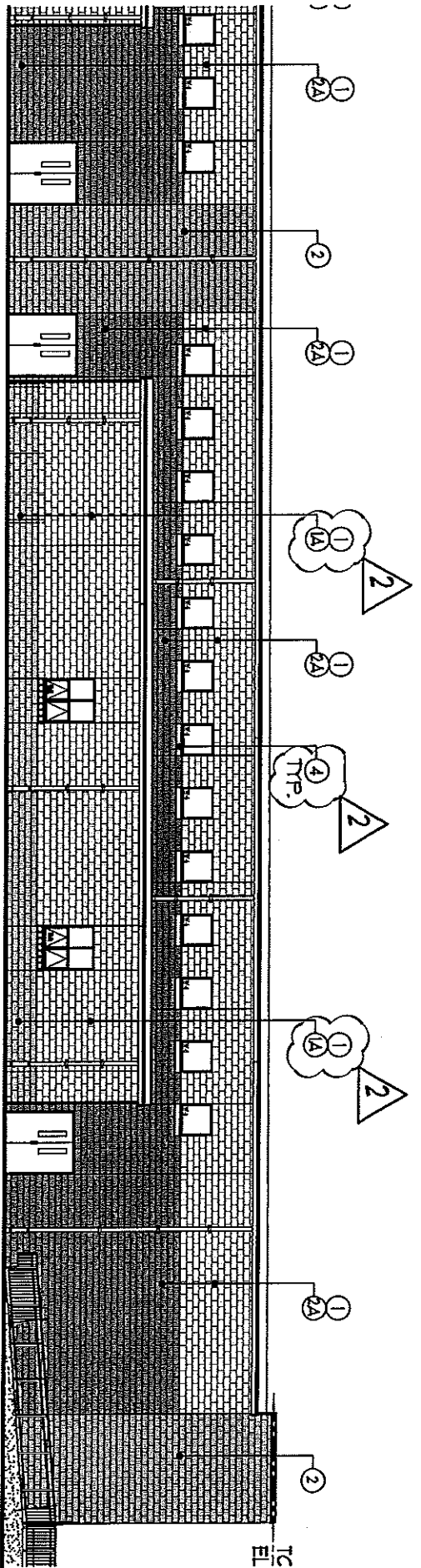




2 NORTH ELEVATION (FRONT)
A-3.1 SCALE: 1/8"=1'-0"

Addendum No 2

PROJECT George I. Catrambone Elementary School 240 Park Avenue Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740		PROJECT NO. EDA-04002		SHEET NO. SK-6		BECCICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856.795.1180 F: 856.354.6367 W: Beccica.com NJ Certificates of Authorization: Architecture: 240202700 / Engineering: 240480220	
SIGNATURE/DATE STEVEN A. BECCICA, P.A., N.J. #1241034037/600		REFERENCED DRAWING DETAIL/SHEET # 2 / A-3.1		DATE: 02-07-12 CHECKED: SAB		BA	



Addendum No 2

3 WEST ELEVATION (SIDE)
A-3.1 SCALE: 1/8"=1'-0"

PROJECT
 Georget L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

PROJECT NO.
 EDA-04002

SHEET NO.
 SK-7

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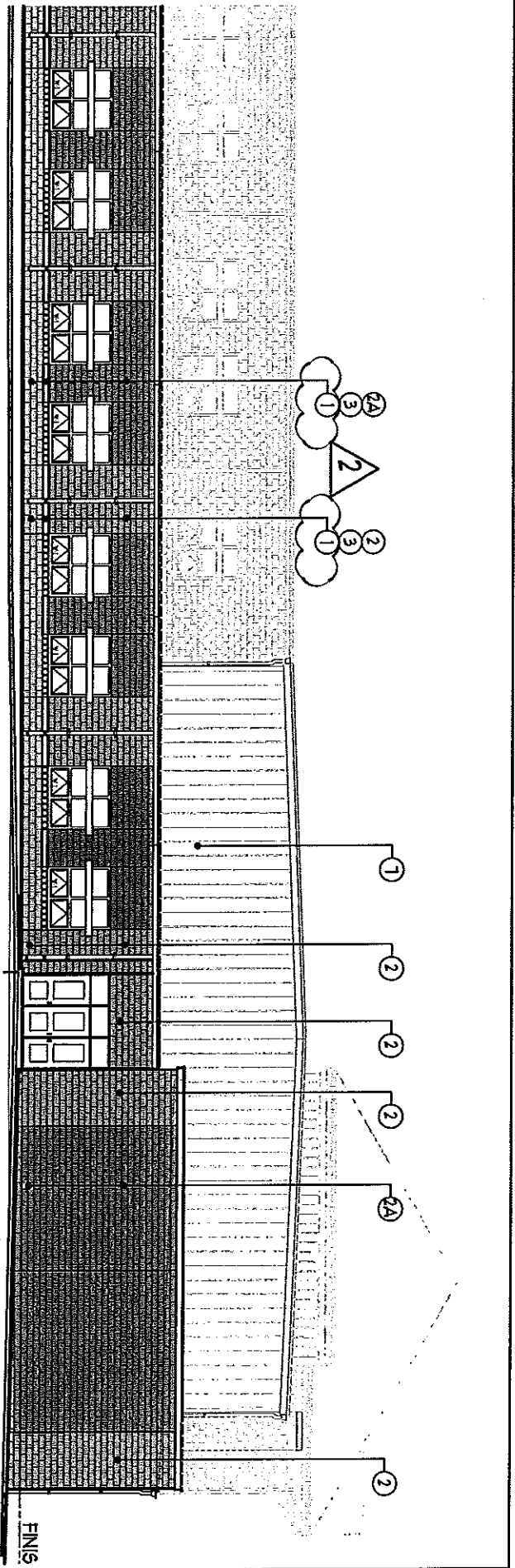
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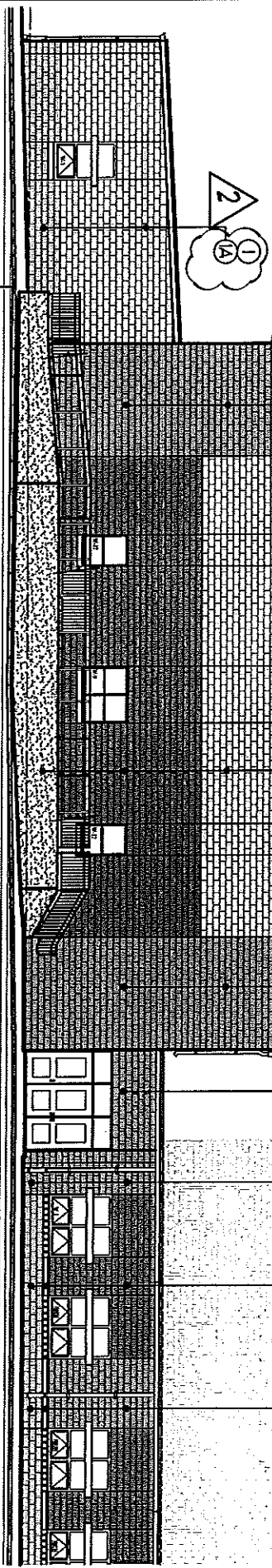
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 W: beccia.com
 NY: Certificate of Architectural
 Architecture - 240602720 / Engineering - 240602720



Signature/Date
 Steven A. Becca, P.E., N.J. Lic. 240602720



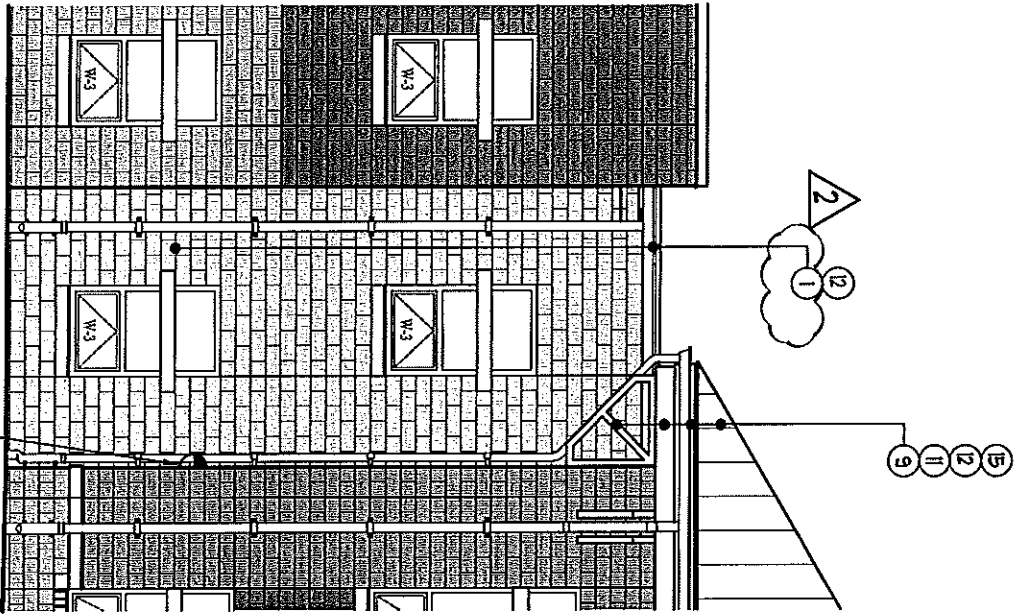
TOP OF CHU
ELEV. 28'-8"



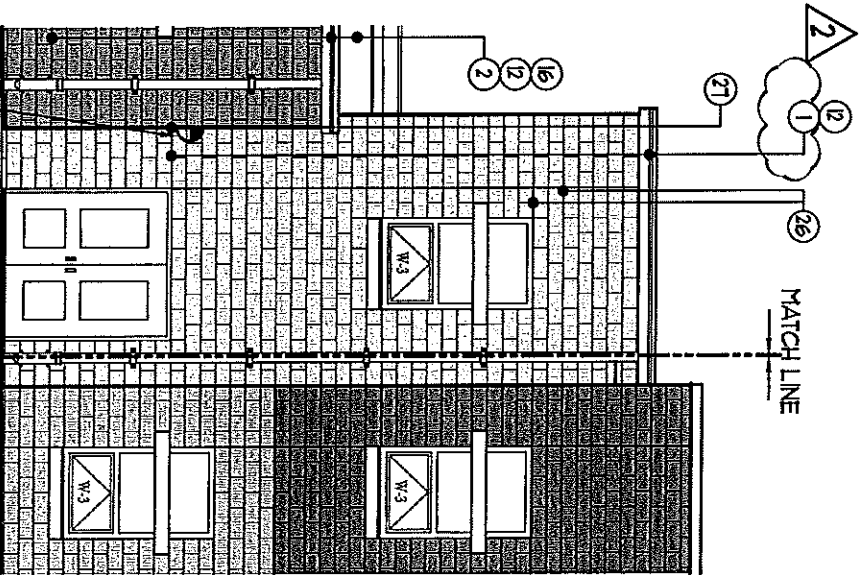
Addendum No 2

4 SOUTH ELEVATION (REAR)
A-3.1 SCALE: 1/8"=1'-0"

PROJECT George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740		PROJECT NO. EDA-04002		SHEET NO. SK-8		BECICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08004 P: 856-795-1180 F: 856-354-6367 W: becica.com NJ Certificate of Authorization: Architecture - 2410002770 / Engineering - 3400002660	
SIGNATURE/DATE Steven A. Becica, P.A., N.J. # 2410002770		REFERENCED DRAWING DETAIL/SHEET # 4 / A-3.1		DATE: 02-07-12 CHECKED: SAB			



1 EAST ELEVATION
A-32 SCALE: 1/8" = 1'-0"



2 EAST ELEVATION
A-32 SCALE: 1/8" = 1'-0"

Addendum No 2

PROJECT
Georgel Caltrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

PROJECT NO.
EDA-04002

REFERENCED DRAWING
 DETAIL/SHEET # 1,2/A-3,2

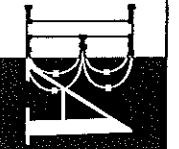
DATE: 10-20-11

SHEET NO.
SK-9

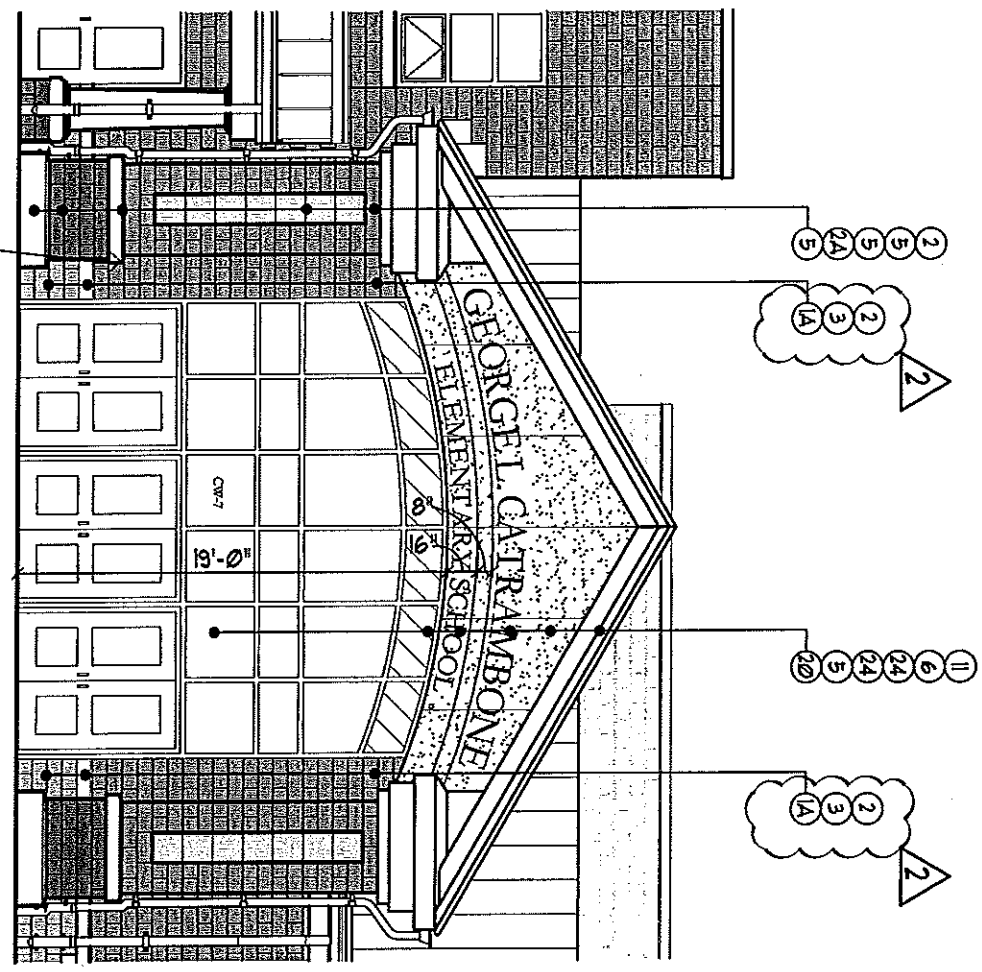
DATE: 02-07-12

CHECKED: SAB

BEICICA ASSOCIATES LLC
 Architecture/Engineering
 300 South Kings Highway
 Cherry Hill, New Jersey 08034
 P: 856-295-1186
 F: 856-398-6967
 NY: beicica.com
 NJ: beicica.com
 All Certificates of Authorization



Signature/Date
 Steven A. Beicica, P.A., N.J. Architectural License No. 10137300



4 NORTH ELEVATION
A-32 SCALE: 1/8"=1'-0"

Addendum No 2

PROJECT George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SK-10	BECICA ASSOCIATES LLC <i>Architecture/Engineering</i> 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856.795.1180 F: 856.524.6967 NY: becica.com NJ: Certificates of Authorization: Architecture - 24020007210 / Engineering - 24020007210
SIGNATURE/DATE STEVEN A. BECICA, P.A., N.J.A.T. #21401937000	REFERENCED DRAWING DETAIL/SHEET # 4 / A-3.2	DATE: 02-07-12 CHECKED: SAB	DATE: 10-20-11



PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

Becica Associates LLC
Architecture/Engineering
500 South Kings Highway
Cherry Hill, New Jersey 08034
P: 856.795.1180
F: 856.354.6367
W: www.becica.com



ASSOCIATED DOCUMENT
Addendum 2

REFERENCED DRAWING
DETAIL/SHEET # 2 / A-4.4
DATE: 10-20-11

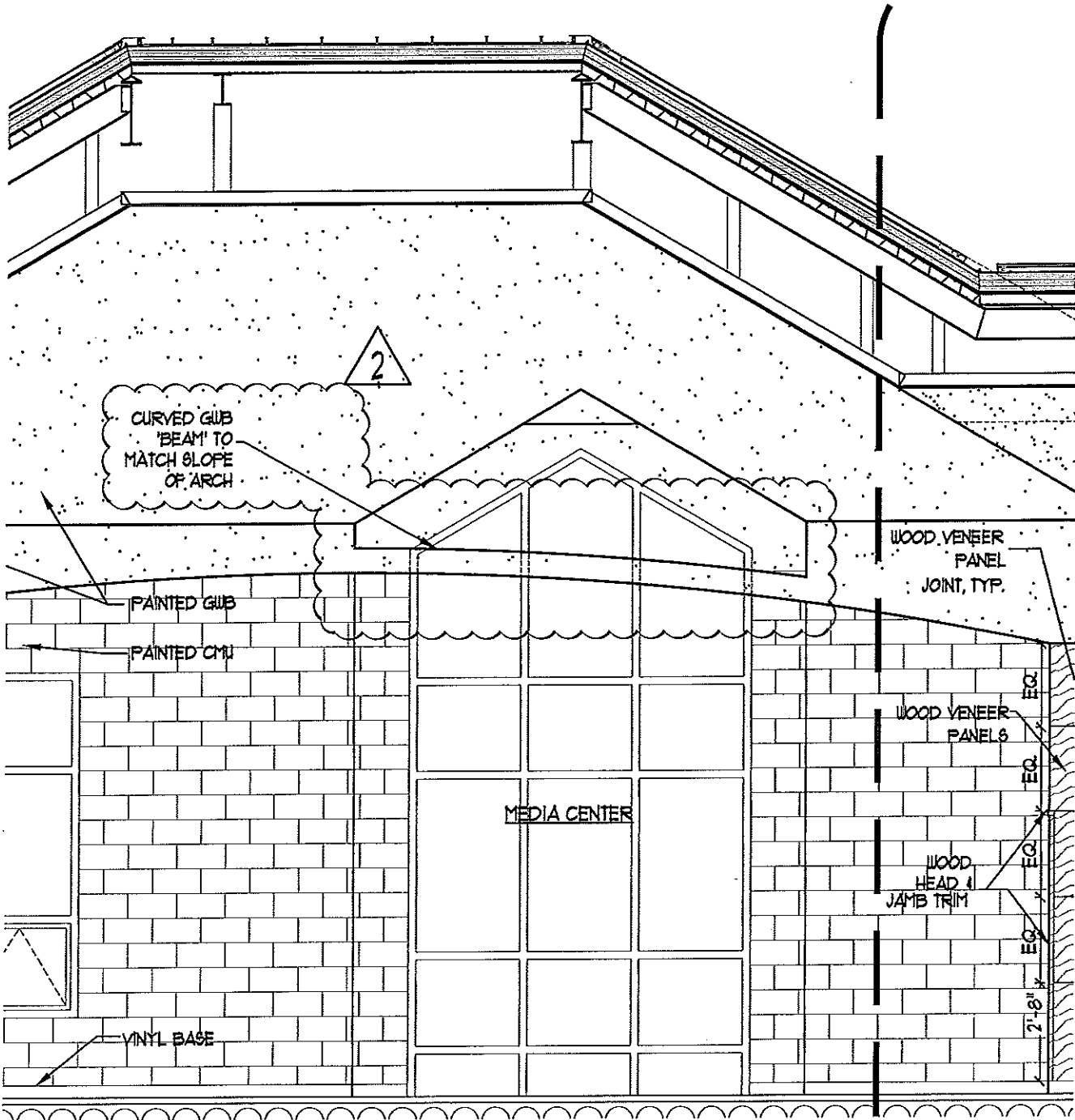
DRAWN BY:
RWS

CHECKED:
DATE: 02-07-12
BY: SAB

Signature/Date
Steven A. Broca, R.A. N.J.A.I. #1A0137600

PROJECT NO.
EDA-04002

SHEET NO.:
SK-11
DATE: 02-07-12



2 BUILDING SECTION
A-4.4 SCALE: 1/4" = 1'-0"

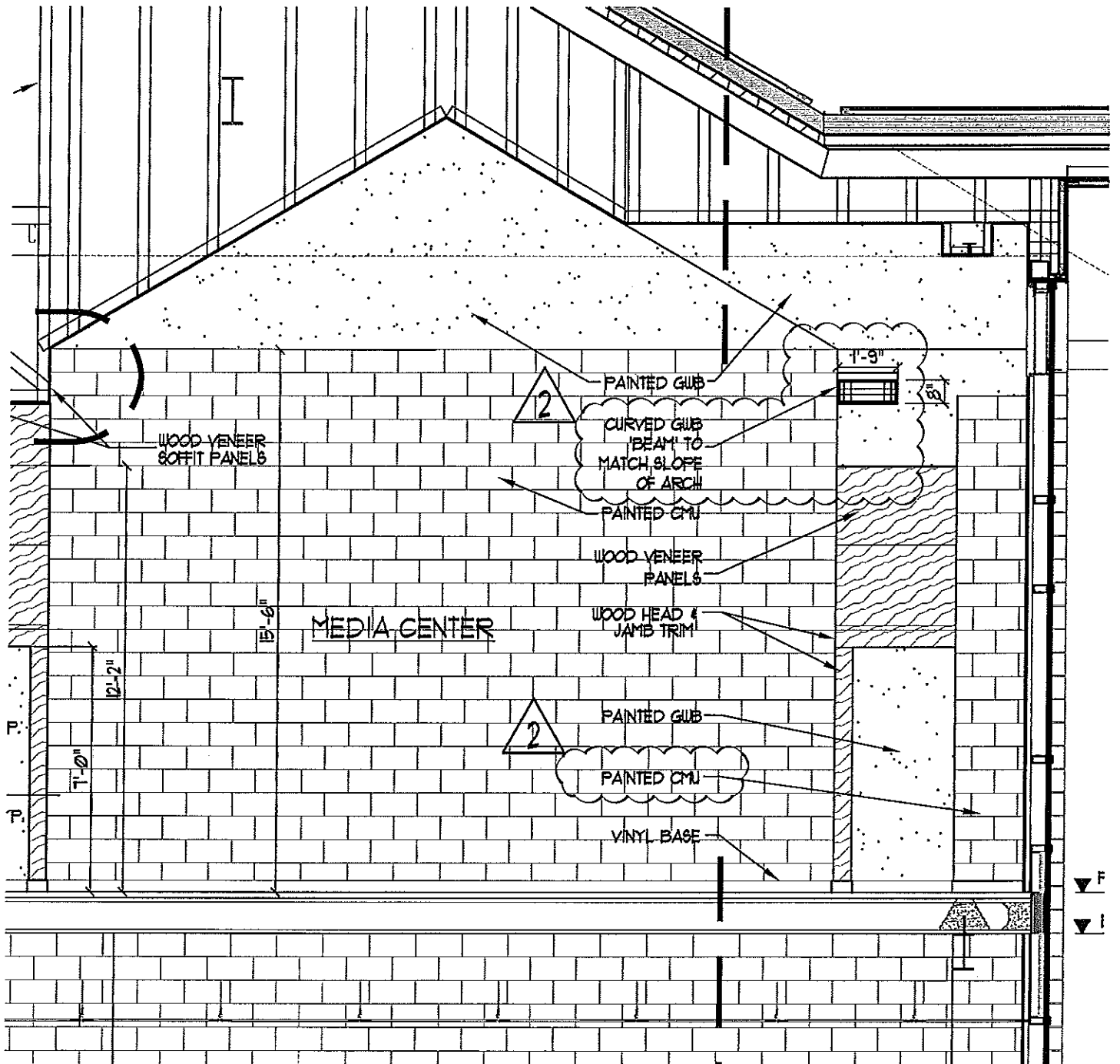
PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

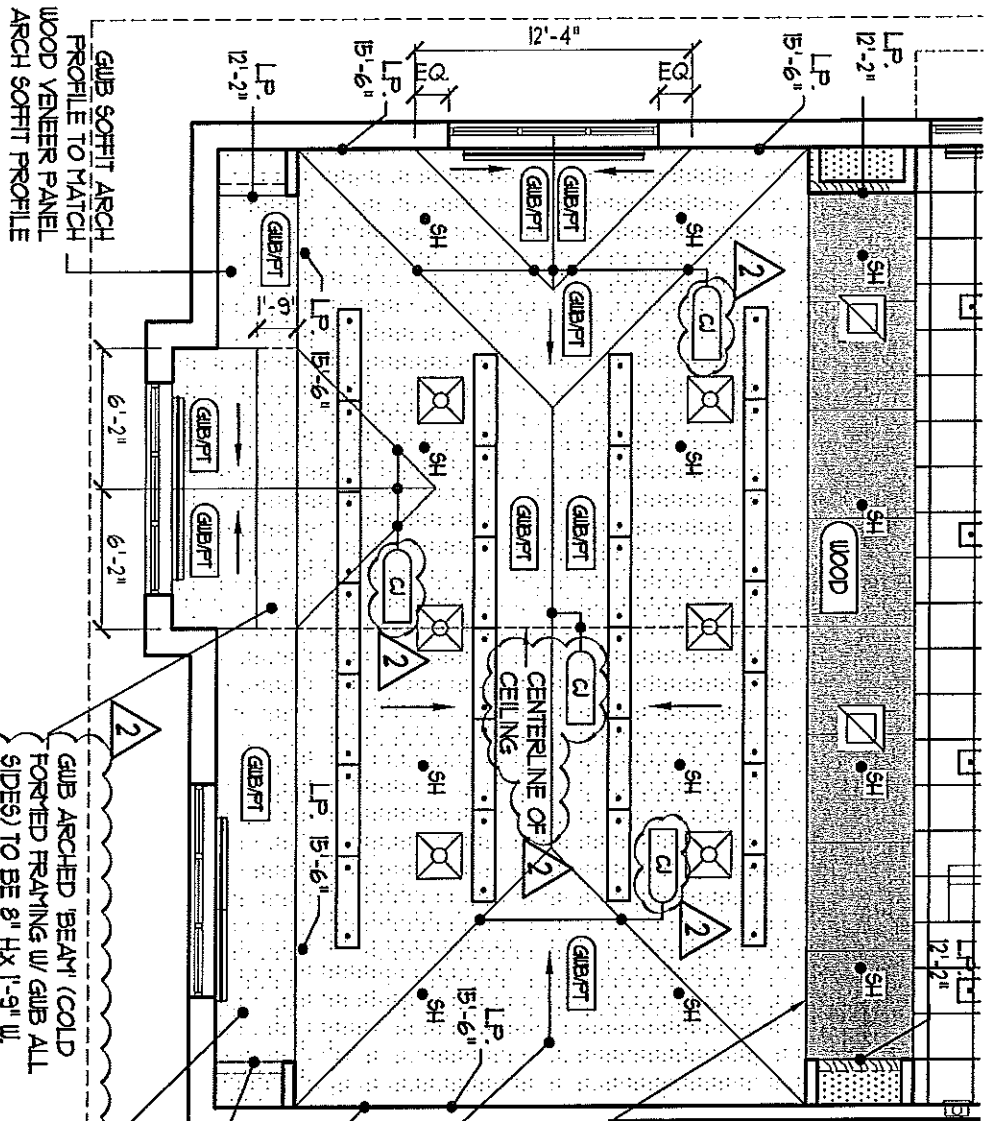
Becica Associates LLC
Architecture/Engineering
500 South Kings Highway
Cherry Hill, New Jersey 08034
P: 856.795.1180
F: 856.354.6367
W: www.becica.com



ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # 3 / A-4.4 DATE: 10-20-11	DRAWN BY: RWS	CHECKED: DATE: 02-07-12 BY: SAB	Signature/Date STEVEN A. BECICA, P.A. N.J. AI 01A0137600	PROJECT NO. EDA-04002	SHEET NO.: SK-12 DATE: 02-07-12
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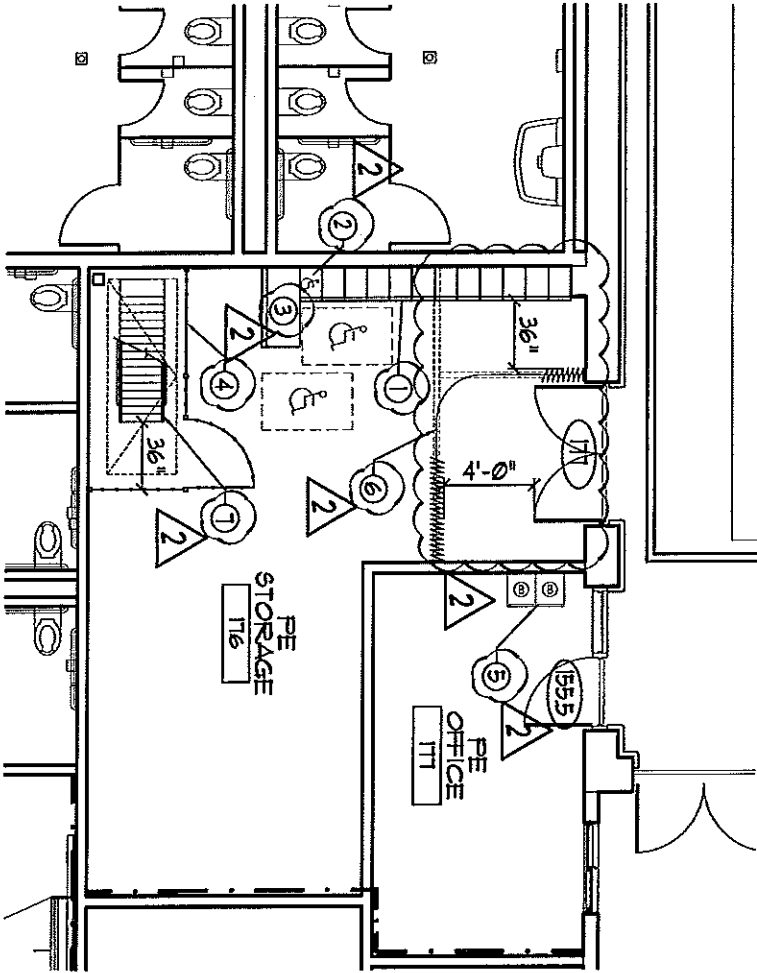
3 BUILDING SECTION
A-4.4 SCALE: 1/4" = 1'-0"



1 SECOND FLOOR REFLECTED CEILING PLAN
A-1.4 SCALE: 1/8" = 1'-0"
Addendum No 2

PROJECT Georgel I. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SK-13	BECICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856.795.1180 F: 856.334.6367 NY Decatur.com NJ Certificate of Authorization:
SIGNATURE/DATE Steven A. Becica, P.E., N.J. License No. 23A000297000	REFERENCED DRAWING DETAIL SHEET # 1 / A-7.4	DATE: 02-07-12 CHECKED: SAB	ARCHITECT'S SEAL/STAMP



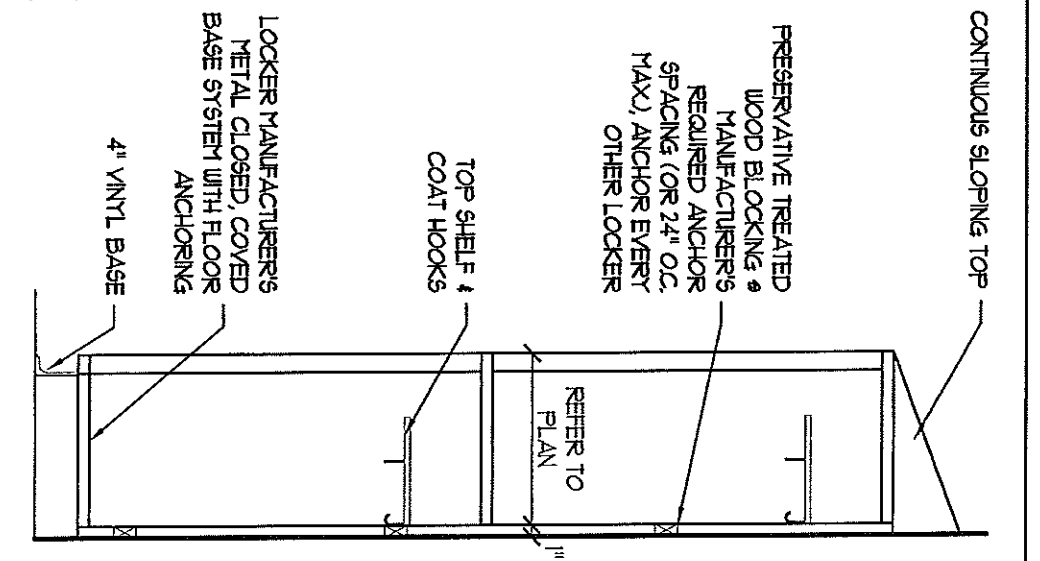
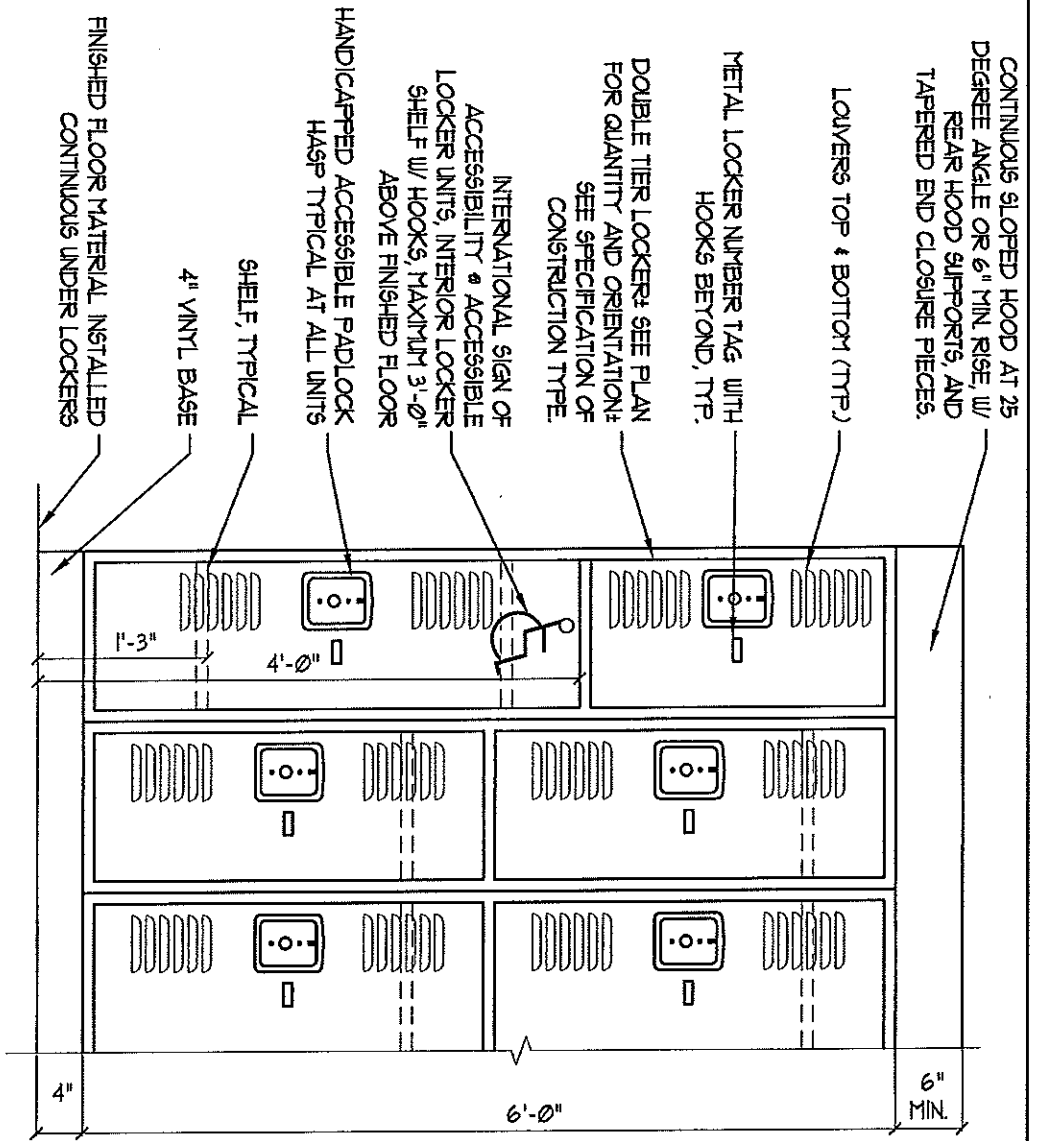


3 PE STORAGE - RM 116
A-14 SCALE: 1/8" = 1'-0"

- ① (1) DOUBLE TIER LOCKER UNITS (12"U x 18"D x 6'-0"H), REFER TO 4/A-14.
- ② (1) DOUBLE TIER ACCESSIBLE LOCKER UNIT (12"U x 18"D x 6'-0"H) REFER TO 4/A-14.
- ③ BENCH, 42" L x 20" W
- ④ WIRE MESH PANEL SYSTEM W/ 3'-0" WIDE GATE. ANCHOR TO CEILING STRUCTURE AND FLOOR
- ⑤ (2) DOUBLE TIER LOCKER UNITS (15"U x 18"D x 6'-0"H) SH. TO 4/A-14.
- ⑥ PROVIDE SUB-FRAMING AND ANCHORAGE SYSTEM TO SUPPORT PRIVACY CURTAINS- AS DESIGNED BY THE SPECIALTY ENGINEER (DELEGATED DESIGN) ROOMS #148 & #16.
- ⑦ PROVIDE ALTERNATING TREAD LADDER PER DETAIL #10/A-6.1.

Addendum No 2

PROJECT George L. Cetrabone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SK-14	BECICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856-795-1180 F: 856-354-6307 W: beca.com No Certification of Authorization: Architecture - 21A00002709 / Engineering - 21C00002030
SIGNATURE/DATE Steven A. Benco, R.A., N.J. # 2410879700	REFERENCED DRAWING DETAIL/SHEET # 3 / A-14 DATE: 10-20-11	DATE: 02-07-12 CHECKED: SAB	



Addendum No 2

4 LOCKER DETAILS
A-14 SCALE: NTS

Signature/Date
 STRONG, A. BECCA, P.E., N.J. License # 21A10337650

PROJECT
George I. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

PROJECT NO.
EDA-04002

REFERENCED DRAWING
 DETAIL/SHEET # 4 / A-14

DATE: 10-20-11

SHEET NO.
SK-15

DATE: 02-07-12

CHECKED: SAB

BECCA ASSOCIATES LLC
 Architecture/Engineering
 300 South Kings Highway
 Cherry Hill, New Jersey 08034
 P: 856.795.1180
 F: 856.434.6967
 www.becca.com
 NJ Certificate of Authorization:
 Architecture - 21A10337650 / Engineering - 21E10337650



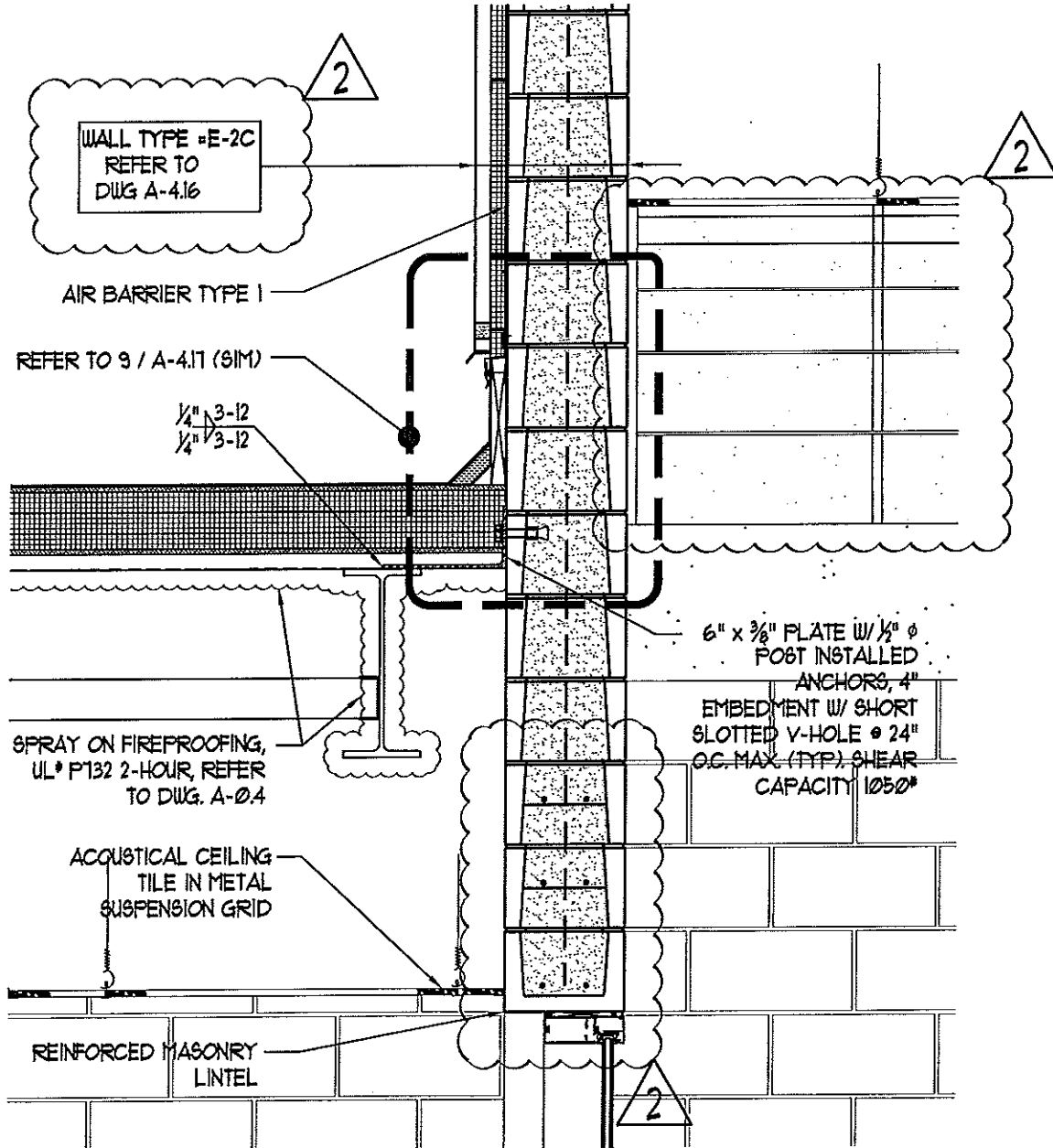
PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

Becica Associates LLC
Architecture/Engineering
500 South Kings Highway
Cherry Hill, New Jersey 08034
P: 856.795.1180
F: 856.354.6367
W: www.becica.com



ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # 3 / A-4.7 DATE: 10-20-11	DRAWN BY: RWS	CHECKED: DATE: 02-07-12 BY: SAB	Signature/Date STEPHEN A. BECICA, R.A. N.J. 0211137600	PROJECT NO. EDA-04002	SHEET NO.: SK-16 DATE: 02-07-12
--	--	------------------	---------------------------------------	---	--------------------------	--



3 WALL SECTION
A-4.7 SCALE: 3/4" = 1'-0"

PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

Becica Associates LLC
Architecture/Engineering
500 South Kings Highway
Cherry Hill, New Jersey 08034
P: 856.795.1180
F: 856.354.6367
W: www.becica.com



ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # 4 / A-4.7 DATE: 10-20-11	DRAWN BY: RWS	CHECKED: DATE: 02-07-12 BY: SAB	Signature/Date STAVEN A. BECCA, R.A. N.J.A.I. 21A10137600	PROJECT NO. EDA-04002	SHEET NO.: SK-17 DATE: 02-07-12
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CEILING ACCESS PANEL SPECIFICATIONS:

- PANEL SIZE: 22"x30" CLEAR OPENING
- 16 GA. GALV. STEEL FRAME, MIN.
- 18 GA. GALV. STEEL DOOR MIN. W/ 1-1/2" FIRE RESISTANT RATED INSULATION
- CONCEALED, CONT. PIANO HINGE OPENING TO 90 DEGREES
- SELF CLOSING/ SELF LATCHING
- FLUSH, 1/4" ALLEN KEY EXTERIOR LATCH W/ INTERIOR LATCH RELEASE
- 2 HOUR FIRE RESISTANT RATED FOR HORIZONTAL APPLICATIONS
- UPWARD SWINGING DOOR ASSEMBLY.
- PRIMED AND PAINTED (WHITE)
- INSTALL PER MANUFACTURER'S REQS

- 2
- PROVIDE SUPPLEMENTAL FRAMING TO AT FIRE RATED CEILING ACCESS PANEL:
 - COORDINATE PANEL LOCATION WITH REMOVABLE ACOUSTICAL CEILING TILE GRID.
 - REFER TO PANEL SPECIFICATIONS AS NOTED ABOVE.

ACOUSTICAL TILE CEILING (VAULTED)

FIRE RESISTANT RATED COLD FORMED STEEL TRUSSES, UL DESIGN NO. 521

4" MIN. GALV. METAL STUDS @ 16" O.C. MAX. TO MAINTAIN CONTINUITY OF UL DESIGN NO. F521

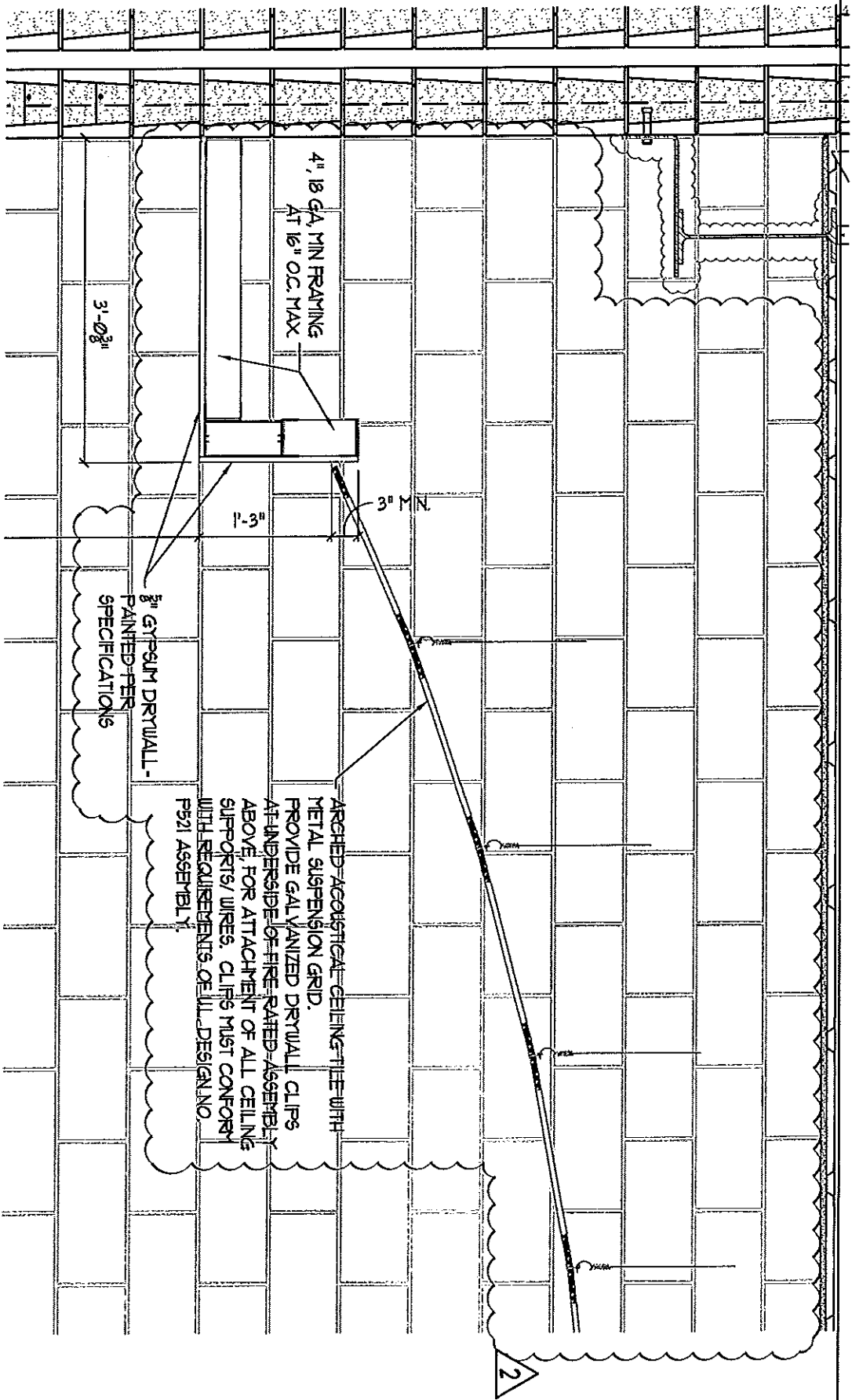
1" JOINT AND SEALANT

METAL SOFFIT PANEL

ALUMINUM CURTAIN WALL SYSTEM

REFER TO DETAIL 8, DWG A-4.18

4 WALL SECTION
A-4.7 SCALE: 3/4" = 1'-0"



Addendum No 2

1 WALL SECTION
A-4.13 SCALE: 3/4" = 1'-0"

PROJECT Georgel L. Caltrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740		PROJECT NO. EDA-04002		SHEET NO. SK-18		BECICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856.954.1180 F: 856.954.6967 W: becica.com NJ Certificate of Authorization:	
SIGNATURE/DATE Steven A. Becica, P.A., N.J. 12/24/2012		REFERENCED DRAWING DETAIL SHEET # 1/A-4.13		DATE: 02-07-12 CHECKED: SAB		Architects - 240/200/200 / 240/200/200	



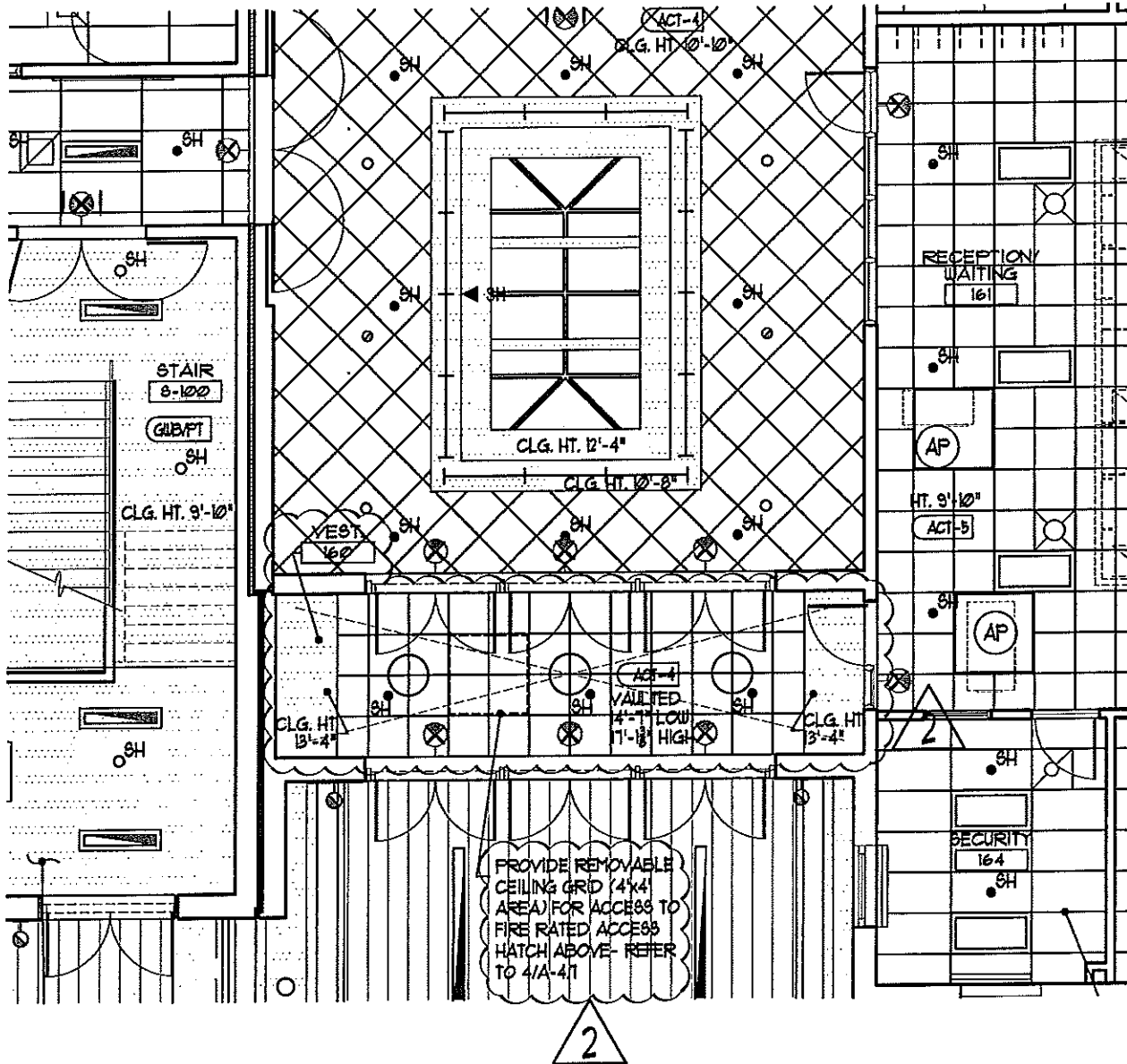
PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

Becica Associates LLC
 Architecture/Engineering
 500 South Kings Highway
 Cherry Hill, New Jersey 08034
 P: 856.795.1180
 F: 856.354.6367
 W: www.becica.com



ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # 2/A-7.2 DATE: 10-20-11	DRAWN BY: RWS	CHECKED: DATE: 02-07-12 BY: SAB	Signature/Date STEVEN A. BECICA, P.A. N.J.A.I. #1A101137600	PROJECT NO. EDA-04002	SHEET NO.: SK-19 DATE: 01-25-12
--	--	------------------	---------------------------------------	--	--------------------------	--



2 REFLECTED CEILING PLAN- BLOCK "D"
 A-72 SCALE: 1/8" = 1'-0"

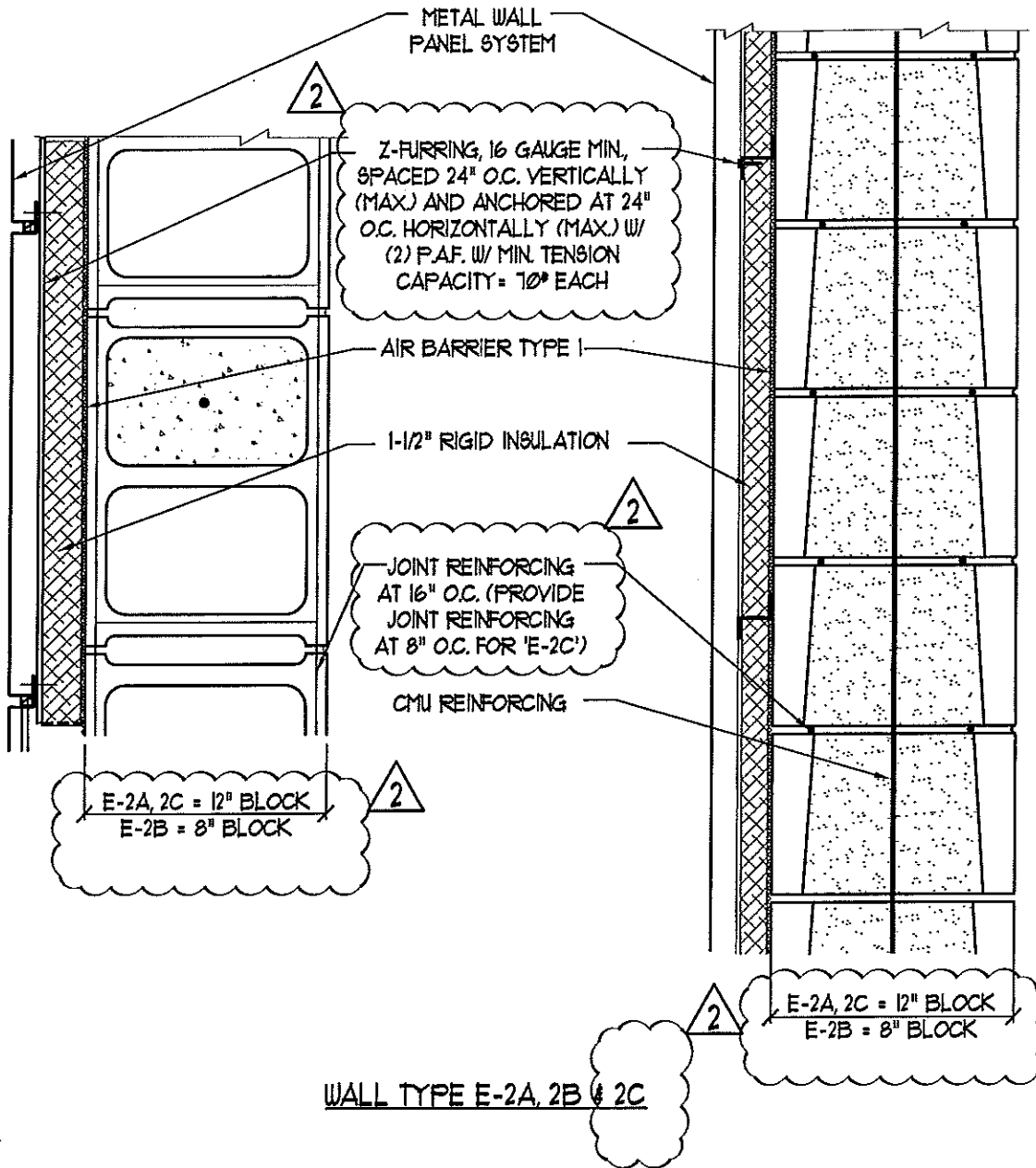
PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

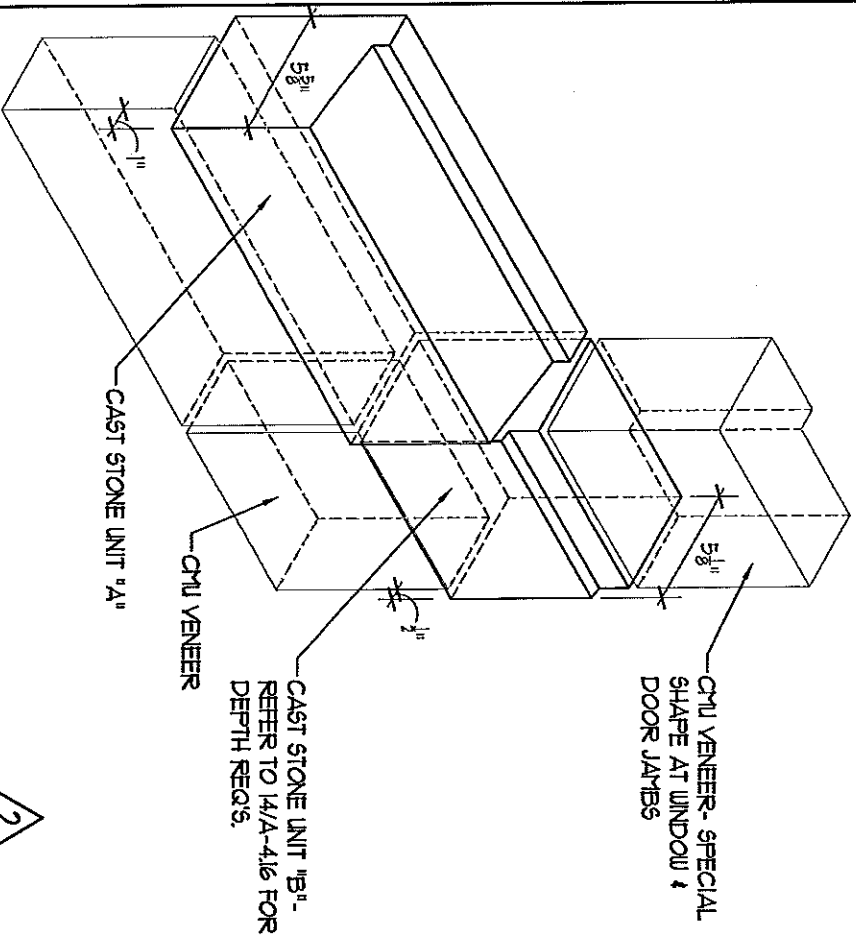
Becica Associates LLC
Architecture/Engineering
500 South Kings Highway
Cherry Hill, New Jersey 08034
P: 856.795.1180
F: 856.354.6367
W: www.becica.com



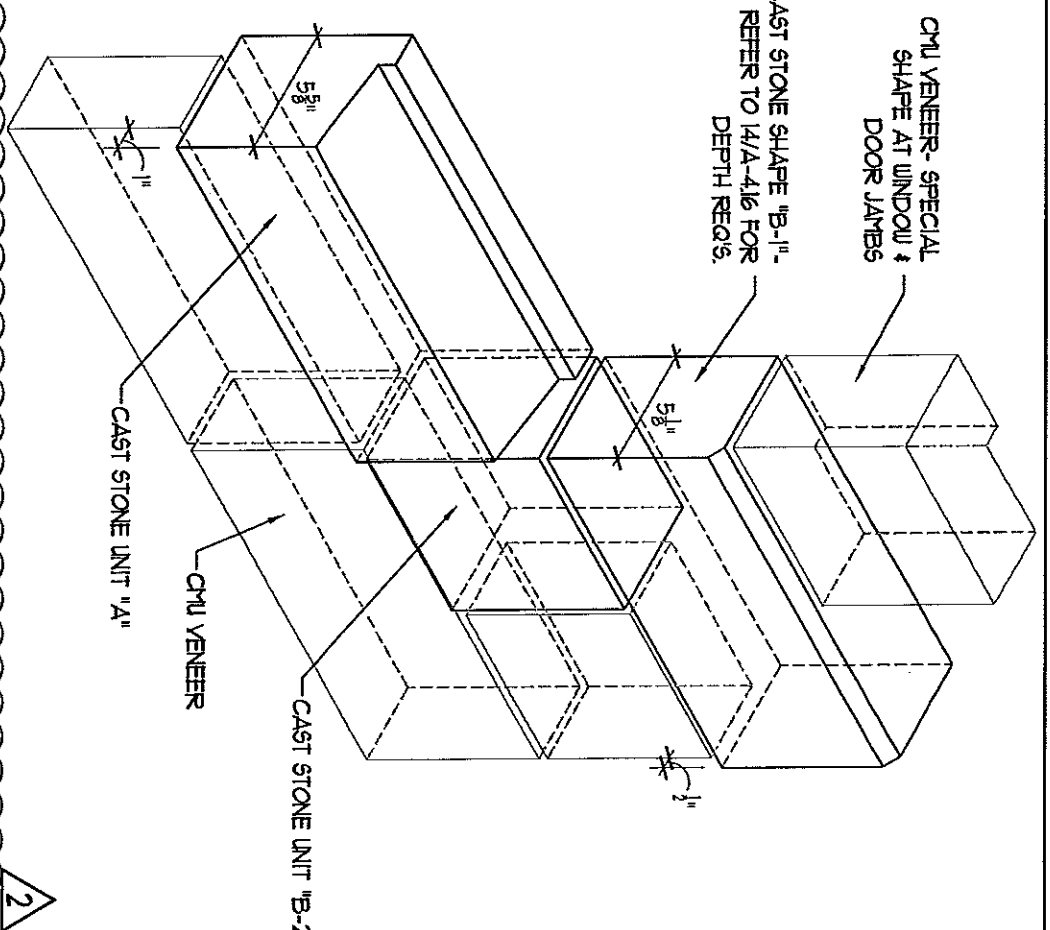
ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # 2/A-4.16 DATE: 10-20-11	DRAWN BY: RWS	CHECKED: DATE: 02-07-12 BY: SAB	Signature/Date STEVEN A. BECICA, R.A. N.J.A.I.21A101137600	PROJECT NO. EDA-04002	SHEET NO.: SK-20 DATE: 02-07-12
--	---	------------------	---------------------------------------	---	--------------------------	--



2 TYP MASONRY WALL TYPE DETAILS
A4.16 SCALE: 1-1/2" = 1'-0"



5 CAST STONE ISOMETRIC DETAIL
 A4.16 SCALE: 1-1/2" = 1'-0"



6 CAST STONE ISOMETRIC DETAIL
 A4.16 SCALE: 1-1/2" = 1'-0"

Addendum No 2

PROJECT George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SK-22	BECICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08094 P: 856.795.1180 F: 856.334.4367 NY: bcc@bca.com NY Certification of Authorization: Architecture - 2406007300 / Engineering - 2406008300
Signature/Date Steven A. Becica, P.E., N.J. # 2406007300	REFERENCED DRAWING DETAIL SHEET # 5/5/A-4-16	DATE: 02-07-12 CHECKED: SAB	DATE: 10-20-11



PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

Becica Associates LLC
 Architecture/Engineering
 500 South Kings Highway
 Cherry Hill, New Jersey 08034
 P: 856.795.1180
 F: 856.354.6367
 W: www.becica.com



ASSOCIATED DOCUMENT
Addendum 2

REFERENCED DRAWING
 DETAIL/SHEET # 2 / A-1.4
 DATE: 10-20-11

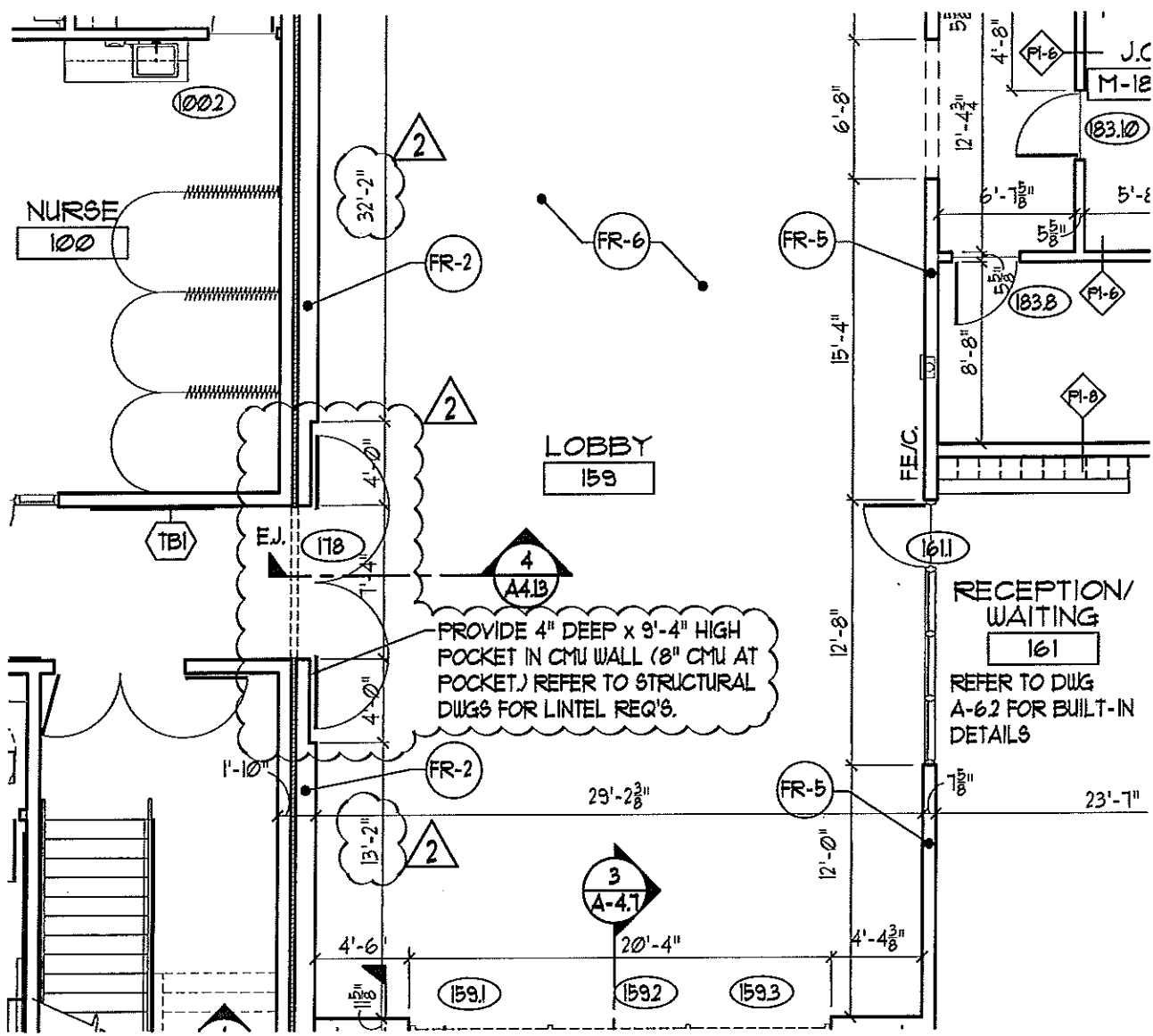
DRAWN BY:
 RWS

CHECKED:
 DATE: 02-07-12
 BY: SAB

Signature/Date
 STEVEN A. BECICA, P.E., N.J. AI 21A101137500

PROJECT NO.
 EDA-04002

SHEET NO.:
SK-23
 DATE: 02-07-12



2 FIRST FLOOR PLAN- BLOCK "D"
 A-1.4 SCALE: 1/8" = 1'-0"

PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

Becica Associates LLC
Architecture/Engineering
500 South Kings Highway
Cherry Hill, New Jersey 08034
P: 856.795.1180
F: 856.354.6367
W: www.becica.com



ASSOCIATED DOCUMENT
Addendum 2

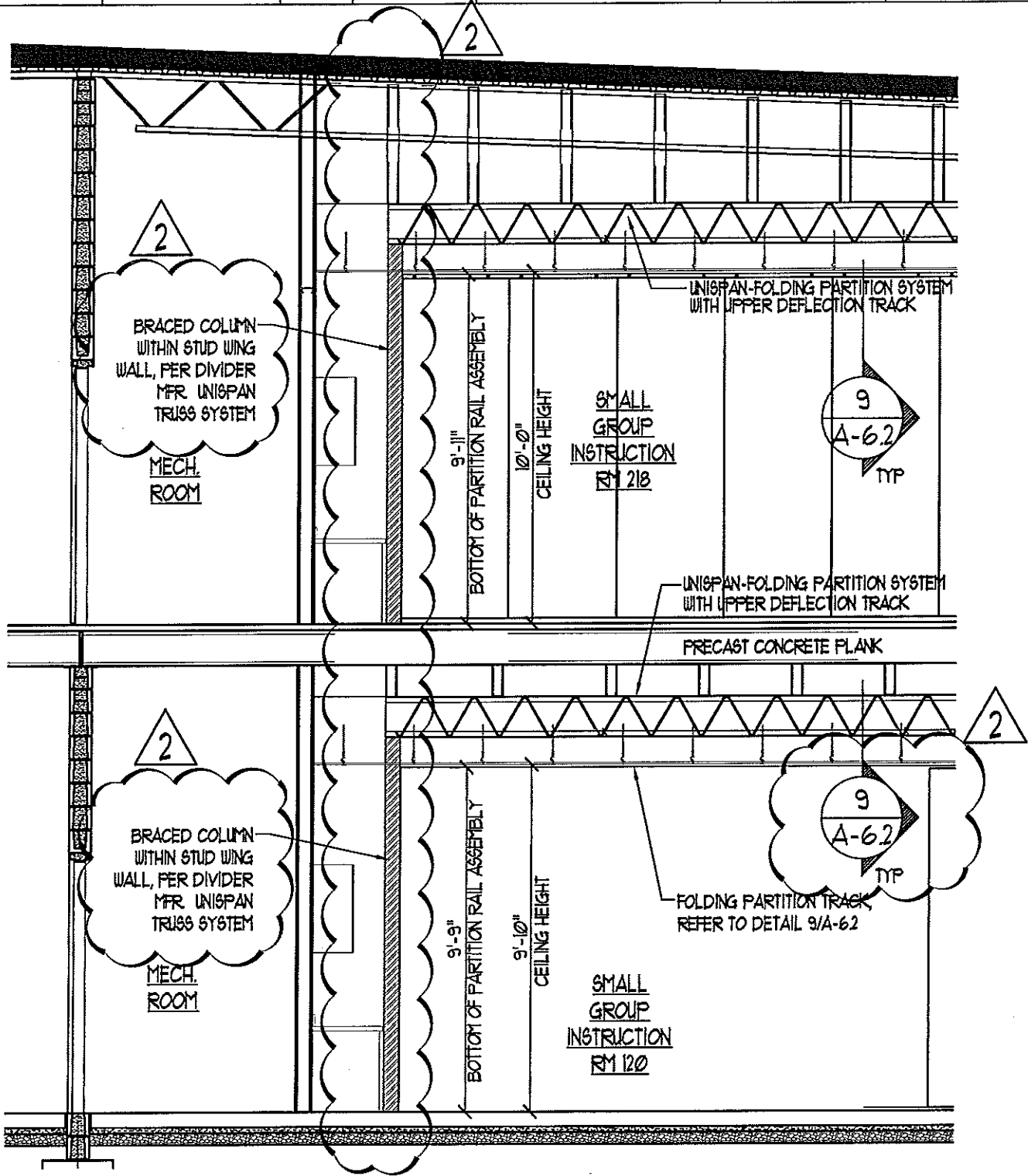
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DETAIL/SHEET # 8/A-6.2
DATE: 10-20-11

DRAWN BY: VJF
CHECKED: DATE: 02-07-12
BY: SAB


Signature/Date
STEVEN A. BECICA, R.A., N.J.A.I. 21A101137600

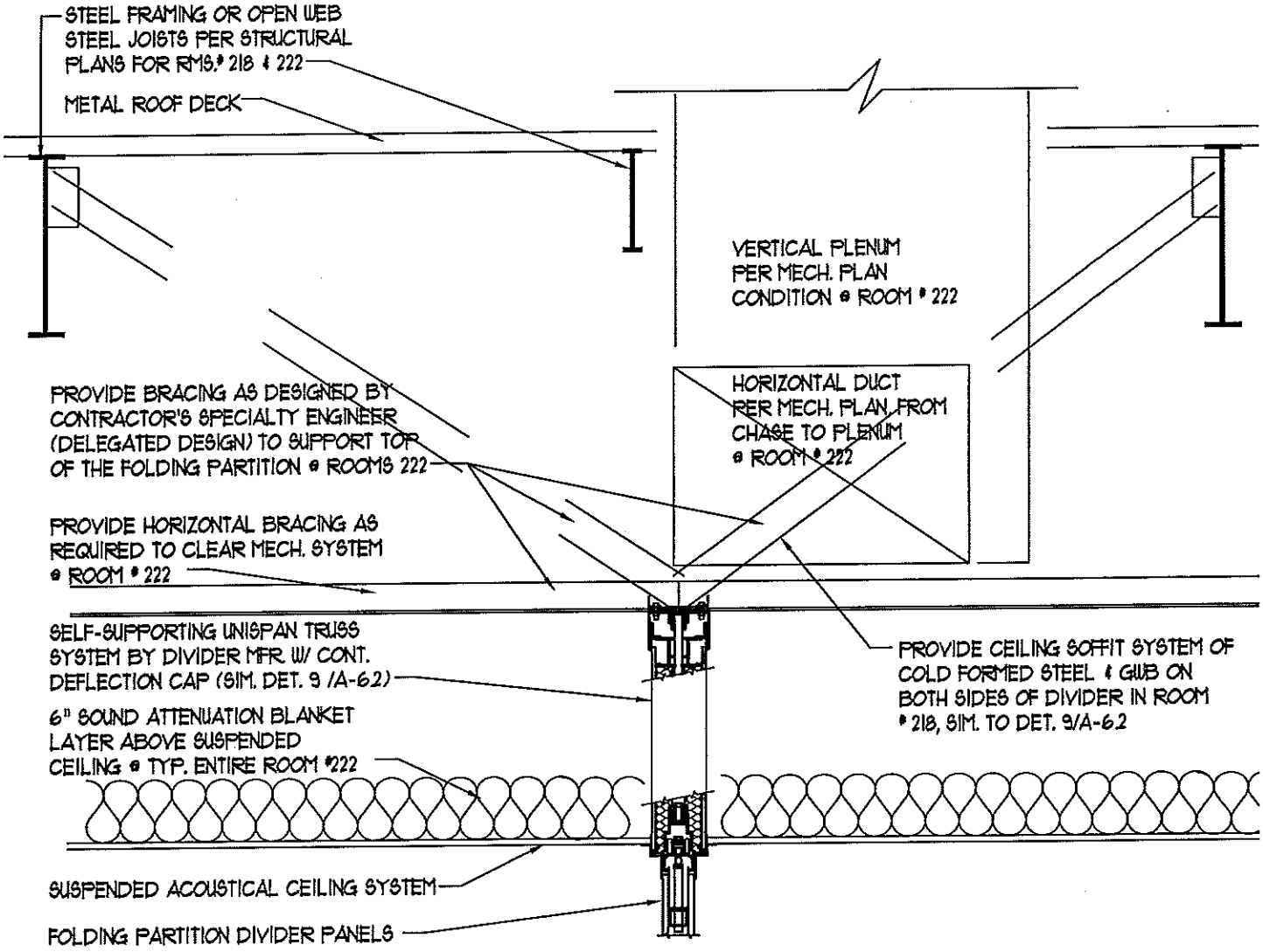
PROJECT NO.
EDA-04002

SHEET NO.: SK-24
DATE: 02-07-12



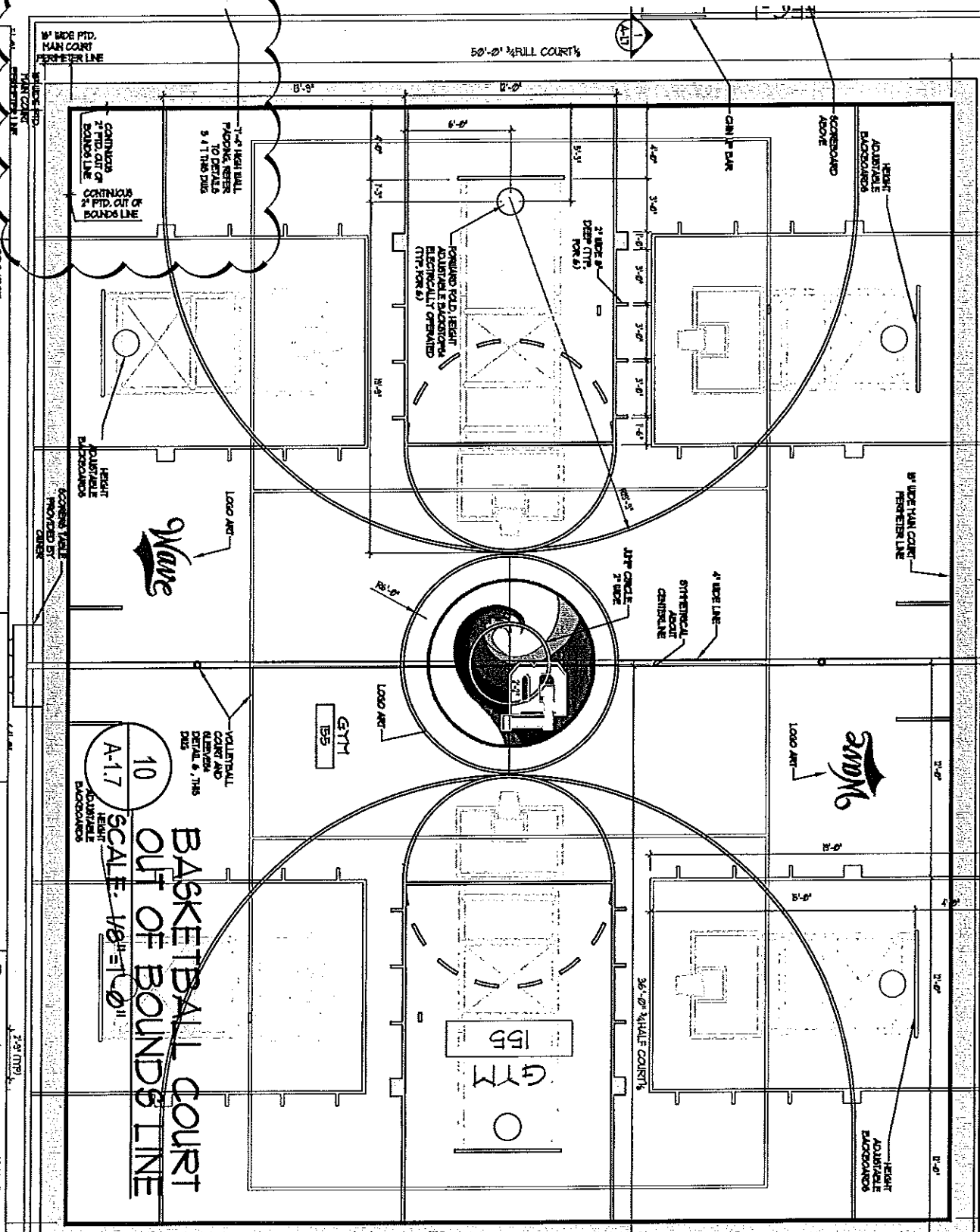
8 FOLDING PARTITION ELEVATION - SGI ROOMS
A-6.2 SCALE: 1/4"=1'-0"

PROJECT: George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740				Beca Associates LLC <i>Architecture/Engineering</i> 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856.795.1180 F: 856.354.6367 W: www.becica.com			
ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL SHEET # A-6.2 DATE: 10-20-11	DRAWN BY: VJF	CHECKED: DATE: 02-07-12 BY: SAB	PROJECT NO.: EDA-04002	SHEET NO.: SK-25 DATE: 02-07-12	Signature/Date STEVEN A. BECA, P.E. N.J. AI 211010137600	



2

21 LATERAL BRACING @ RM. 222 & 218 DIVIDER PARTITION
 A-6.2 SCALE: 3/4" = 1'-0"



Addendum No 2

Signature/Date
 SEVERI A. BECCA, P.A. N.J.A.I. 21A:10-3.17600

PROJECT
 George I. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

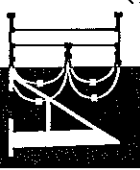
PROJECT NO.
 EDA-04002

REFERENCED DRAWING
 DETAIL SHEET # 10/A-1.7
 DATE: 10-20-11

SHEET NO.
 SK-26

DATE: 02-07-12
 CHECKER: SAB

BECCA ASSOCIATES LLC
 Architecture/Engineering
 500 South Kings Highway
 Cherry Hill, New Jersey 08004
 P: 856-795-1180
 F: 856-354-0397
 W: becca.com
 No Certificates of Authorization
 Architects - 21A-C0007200 / Engineers - 24C-0102000



BASKETBALL COURT
OUT OF BOUNDS LINE

10
 A-1.7
 SCALE: 1/8" = 1'-0"

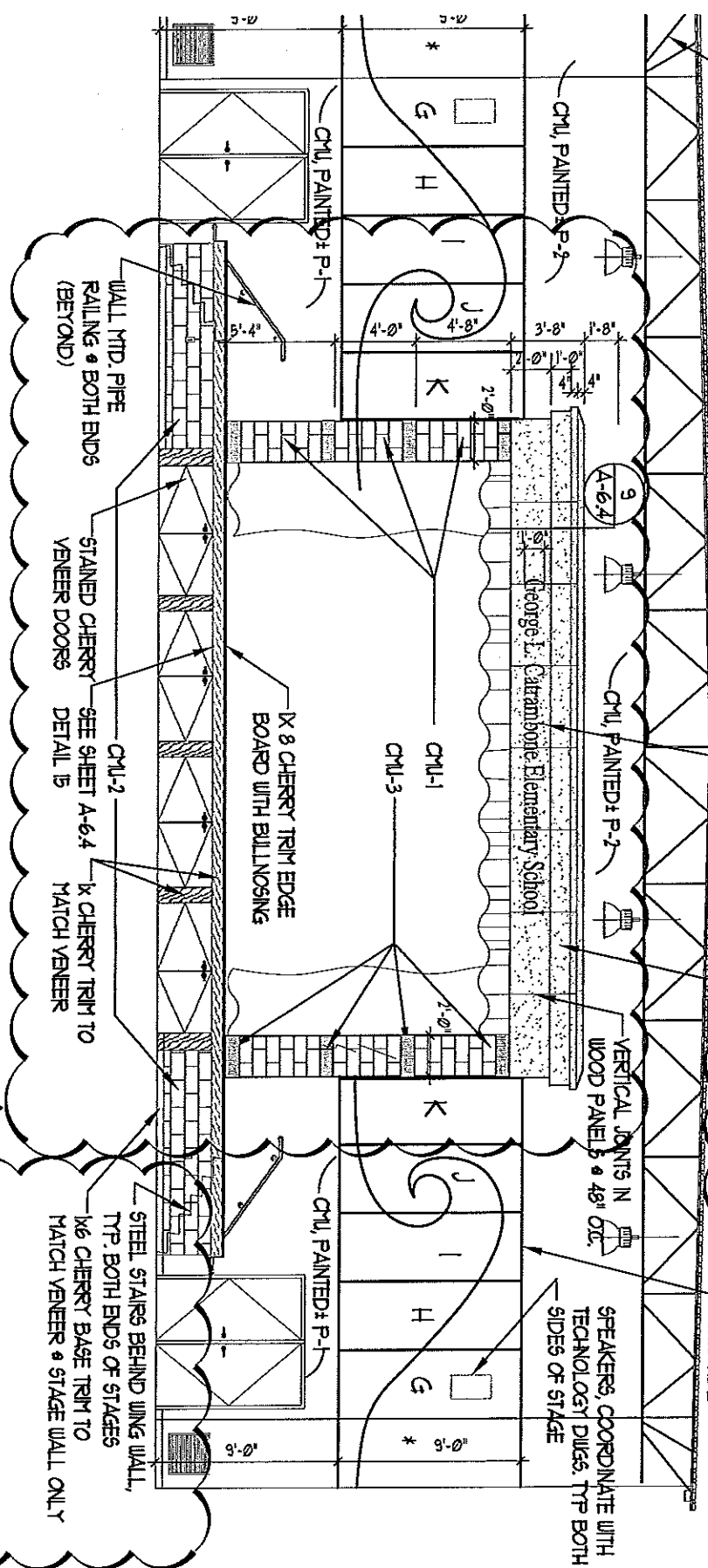
STEEL ROOF TRUSS BEYOND

12" TALL 3/4" THK NATURAL SATIN BRASS

CHERRY VENEER WRAPPED PANEL w/ CLEAR COAT

GAP DESIGN MIRRORRED THIS SIDE

SPEAKERS, COORDINATE WITH TECHNOLOGY DUES. TYP BOTH SIDES OF STAGE



2 STAGE
A-6.3 SCALE: 1/8" = 1'-0"

Addendum No 2

PROJECT George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SK-27	BECICA ASSOCIATES LLC Architecture/Engineering 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856-975-1180 F: 856-354-0367 W: becica.com No Certificates of Authorization Architect - 2400007700 / Engineer - 2400002050
SIGNATURE/DATE STEVEN A. BECICA, R.A. NJ AT 2400007700	REFERENCED DRAWING DETAIL SHEET # 2/A-6-3 DATE: 10-20-11	DATE: 02-07-12 CHECKED: SAB	

PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

Becica Associates LLC
 Architecture/Engineering
 500 South Kings Highway
 Cherry Hill, New Jersey 08034
 P: 856.795.1180
 F: 856.354.6367
 W: www.becica.com



ASSOCIATED DOCUMENT
 Addendum 2

REFERENCED DRAWING
 DETAIL/SHEET # A-5.4
 DATE: 10-20-11

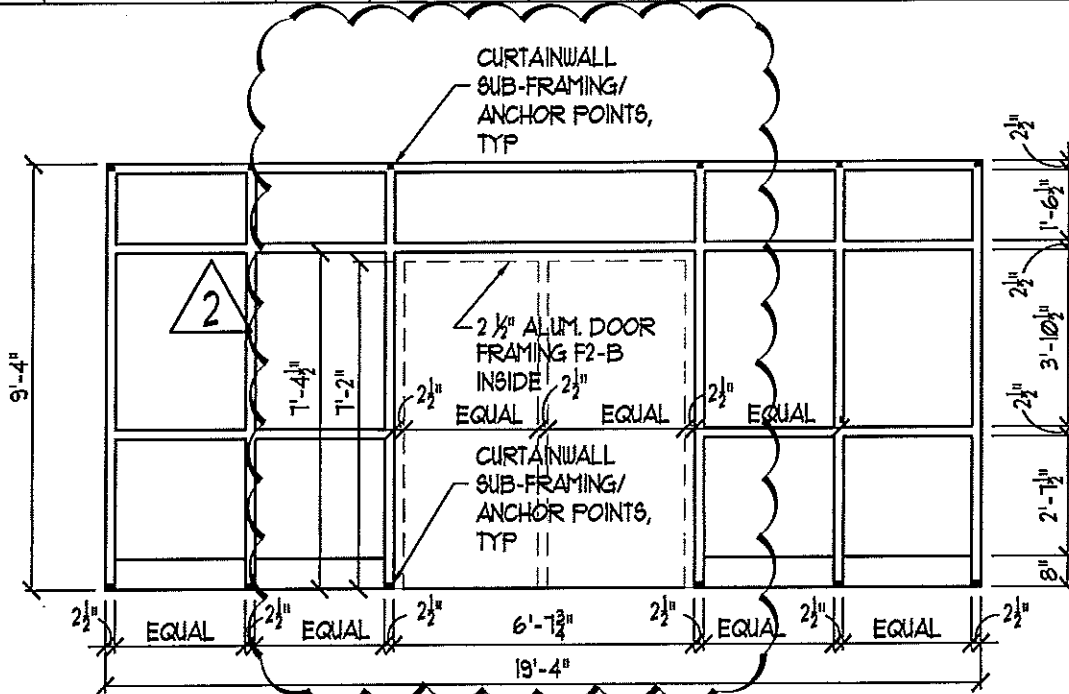
DRAWN BY:
 VJF

CHECKED:
 DATE: 02-07-12
 BY: SAB

Signature/Date
 Steven A. Becica, R.A. N.J. A121137600

PROJECT NO.
 EDA-04002

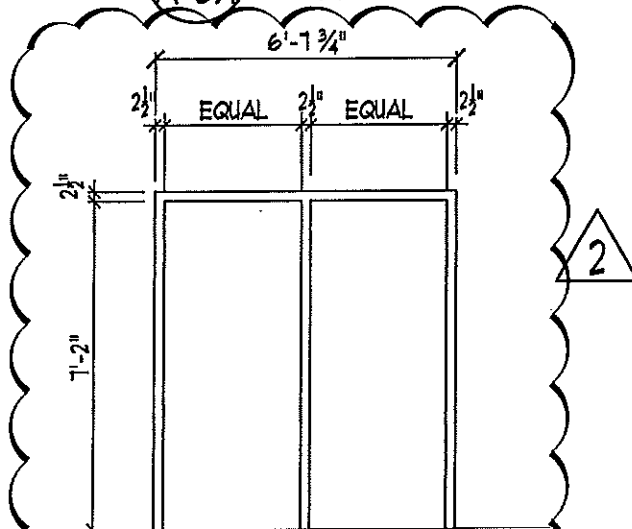
SHEET NO.:
 SK-30
 DATE: 02-07-12



CW-9 - COURT YARD ENTRANCES

5 CURTAIN WALL TYPES

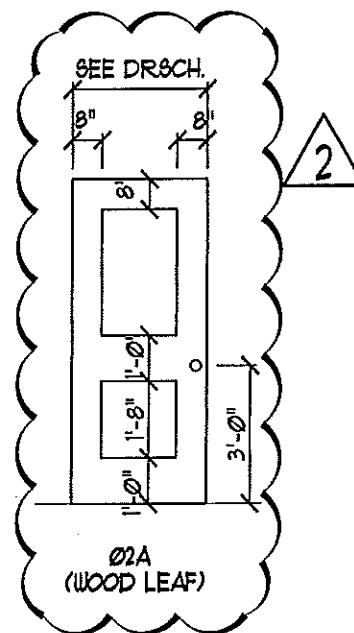
A-5.4 SCALE: 1/4" = 1'-0"



F2-B
 FRAMES FIT INTO BOTH
 COURTYARD CURTAIN
 WALL FRAMING OPENINGS
 CW-9

1 DOOR FRAME TYPES

A-5.4 SCALE: 1/4" = 1'-0"



Ø2A
 (WOOD LEAF)

3 DOOR TYPES

A-5.4 SCALE: 1/4" = 1'-0"

PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

Becica Associates LLC
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500 South Kings Highway
Cherry Hill, New Jersey 08034
P: 856.795.1180
F: 856.354.6367
W: www.becica.com



ASSOCIATED DOCUMENT
Addendum 2

REFERENCED DRAWING
DETAIL/SHEET # 2 / A-4.7
DATE: 10-20-11

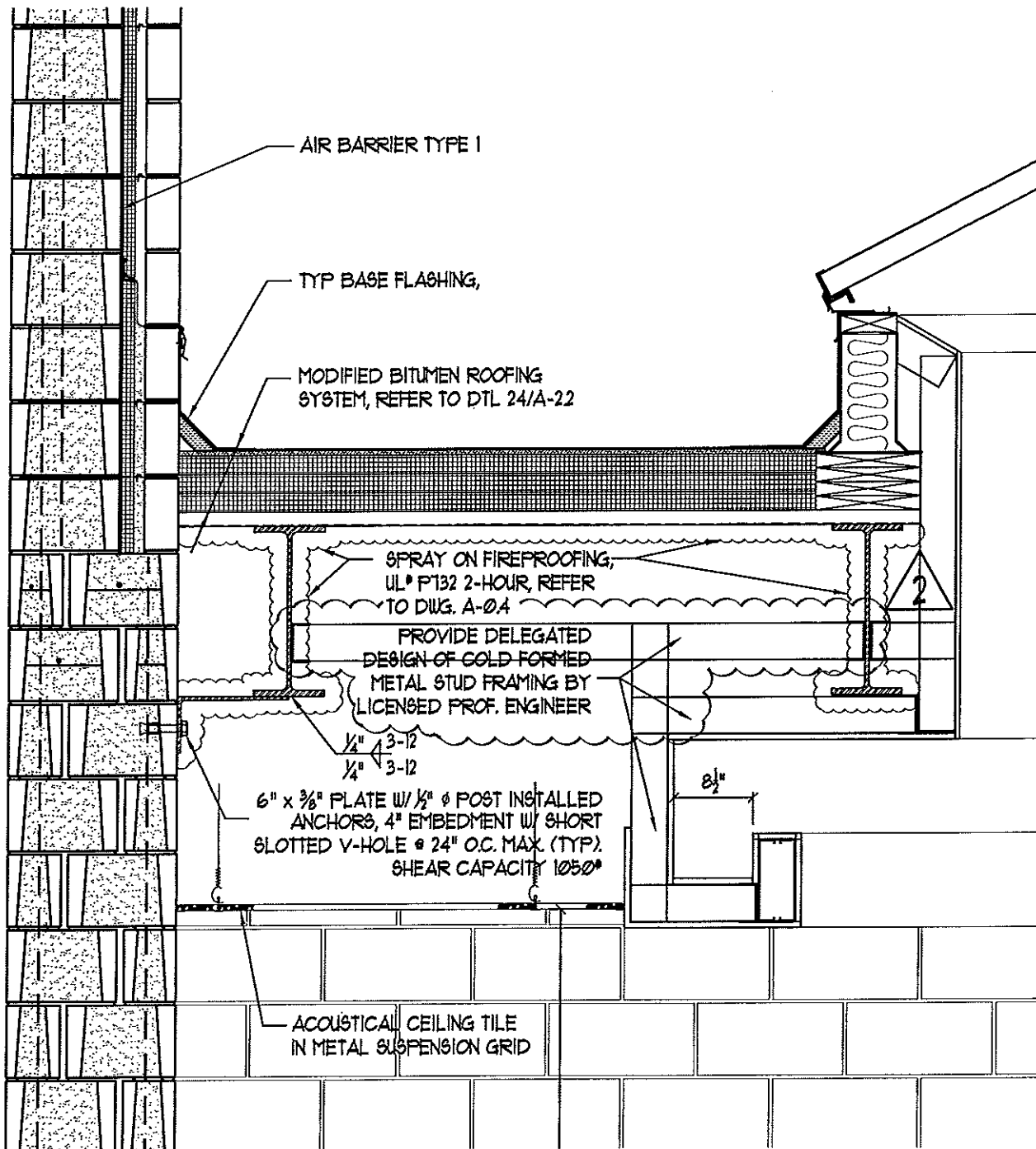
DRAWN BY:
RWS

CHECKED:
DATE: 02-07-12
BY: SAB


Signature/Date
STEVEN A. BECICA, P.E., N.J. AI 21A101137600

PROJECT NO.
EDA-04002















SHEET NO.:
SK-31
DATE: 02-07-12



2 WALL SECTION
A-4.7 SCALE: 3/4" = 1'-0"

PROJECT: George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740				Becica Associates LLC <i>Architecture/Engineering</i> 500 South Kings Highway Cherry Hill, New Jersey 08034 P: 856.795.1180 F: 856.354.6367 W: www.becica.com			
ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # LEGEND DATE: 10-20-11	DRAWN BY: RWS	CHECKED: DATE: 02-07-12 BY: SAB	PROJECT NO. EDA-04002		SHEET NO.: SK-32 DATE: 02-07-12	
<small>Signature/Date</small> <small>STEVEN A. BECICA, P.A. N.J. AI 211010137600</small>							

LEGEND

- 
 48" x 48" ACCESS HATCH TO HEAT PUMP ABOVE CEILING, LOCATE AND CONFIGURE ACCESS PANEL TO ALLOW ACCESS TO SERVICE UNIT
- 
 24" x 48" FINE TEXTURE, BEVELED REGULAR ACOUSTICAL CEILING TILES
- 
 24" x 48" MEDIUM TEXTURE, SQUARE LAY-IN ACOUSTICAL CEILING TILES
- 
 24" x 48" UNPERFORATED, SMOOTH TEXTURE, SQUARE LAY-IN ACOUSTICAL CEILING TILES
- 
 24" x 24" FINE TEXTURE, SQUARE LAY-IN ACOUSTICAL CEILING TILES
- 
 24" x 24" FINE TEXTURE, BEVELED REGULAR ACOUSTICAL CEILING TILES
- 
 24" x 24" MEDIUM TEXTURE, SQUARE LAY-IN ACOUSTICAL CEILING TILES
- 
 GYPSUM WALL BOARD - PAINTED
- 
 EXPOSED STRUCTURE, DUCTWORK AND UTILITIES, PAINTED
- 
 METAL SOFFIT PANEL
- 
 SOUND ABSORBENT CEILING PANELS ANCHORED TO UNDERSIDE OF ROOF DECKING
- 
 STUCCO
- 
 WOOD VENEER PANELS
- 
 CONTROL JOINT WITH BACKER ROD & SEALANT- ISOLATE SUPPORTING FRAMING EACH SIDE OF JOINT.

2


 OVERHEAD PROJECTOR UNIT PROVIDED BY NJSDA, BRACKET PROVIDED BY G.C.

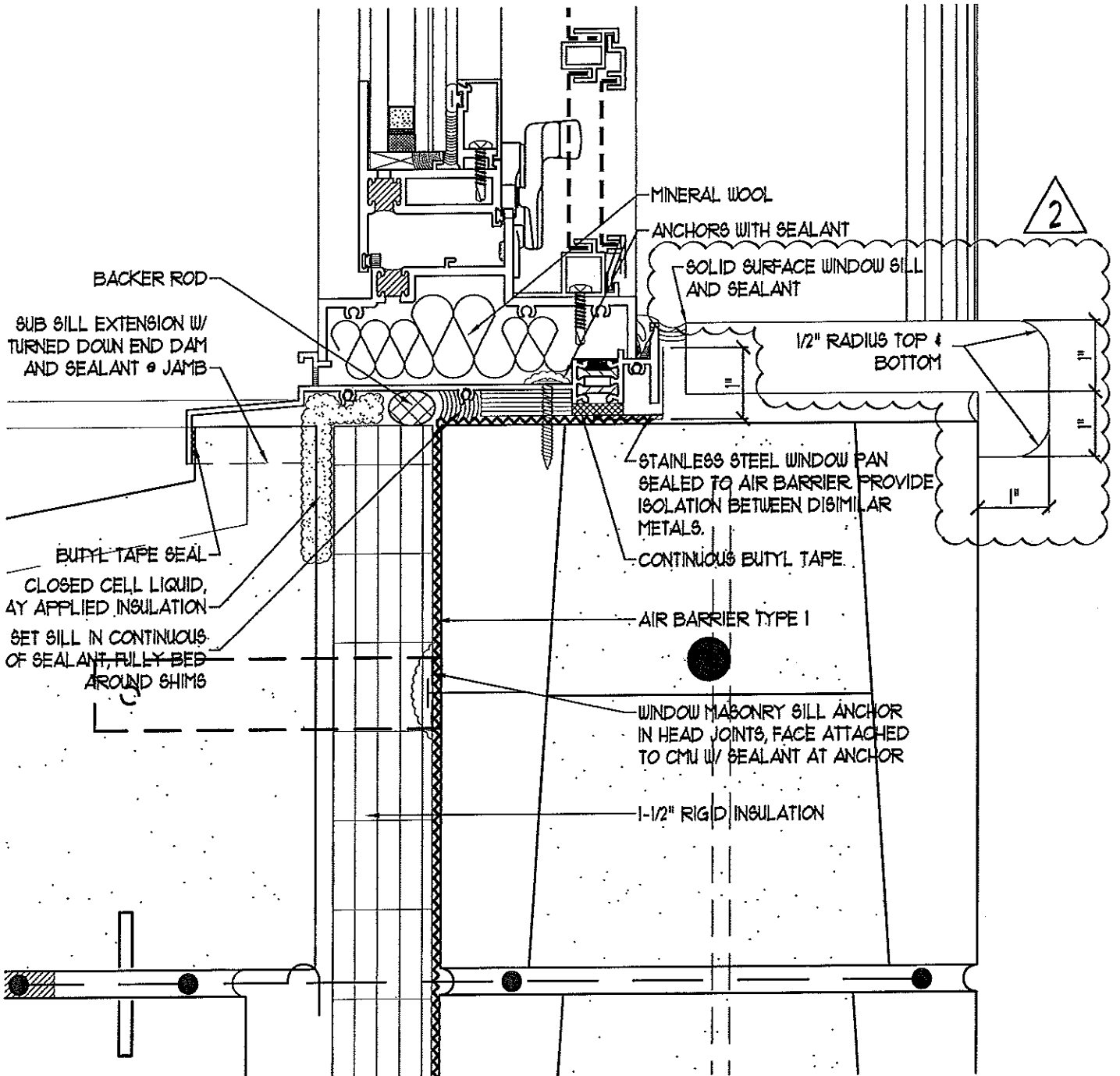
PROJECT:
 George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

Becica Associates LLC
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ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # 2/A-5.5 DATE: 10-20-11	DRAWN BY: RWS	CHECKED: DATE: 02-07-12 BY: SAB	Signature/Date Steven A. Becica, P.E., N.J. AT 21101137600
--	--	------------------	---------------------------------------	---

PROJECT NO. EDA-04002	SHEET NO.: SK-33 DATE: 02-07-12
--------------------------	--



2 TYP ALUMINUM WINDOW SILL DETAIL
 A-5.5 SCALE: 6" = 1'-0"

PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
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ASSOCIATED DOCUMENT
Addendum 2

REFERENCED DRAWING
 DETAIL/SHEET # 9/A-6.4
 DATE: 10-20-11

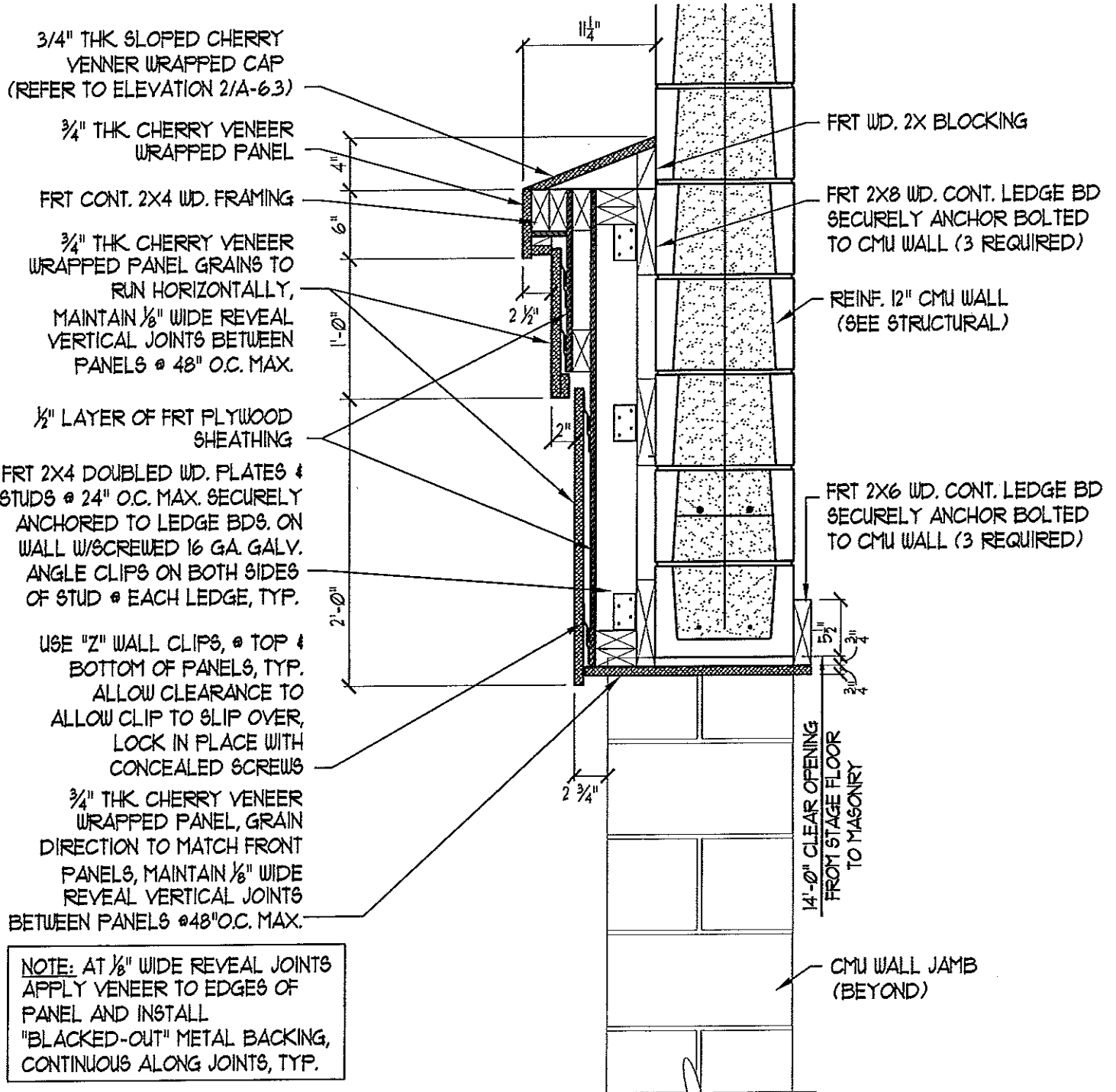
DRAWN BY:
 VJF

CHECKED:
 DATE: 02-07-12
 BY: SAB

Signature/Date
 Steven A. Becica, R.A. N.J.A.E. 21A10137600

PROJECT NO.
 EDA-04002

SHEET NO.:
SK-34
 DATE: 02-07-12



NOTE: AT 1/8" WIDE REVEAL JOINTS APPLY VENEER TO EDGES OF PANEL AND INSTALL "BLACKED-OUT" METAL BACKING, CONTINUOUS ALONG JOINTS, TYP.

2

9 DETAIL ABOVE STAGE
 A-6.4 SCALE: 1"=1'-0"

PROJECT:

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ASSOCIATED DOCUMENT
Addendum 2

REFERENCED DRAWING
 DETAIL/SHEET # 2/S-2.14
 DATE: 10/20/11

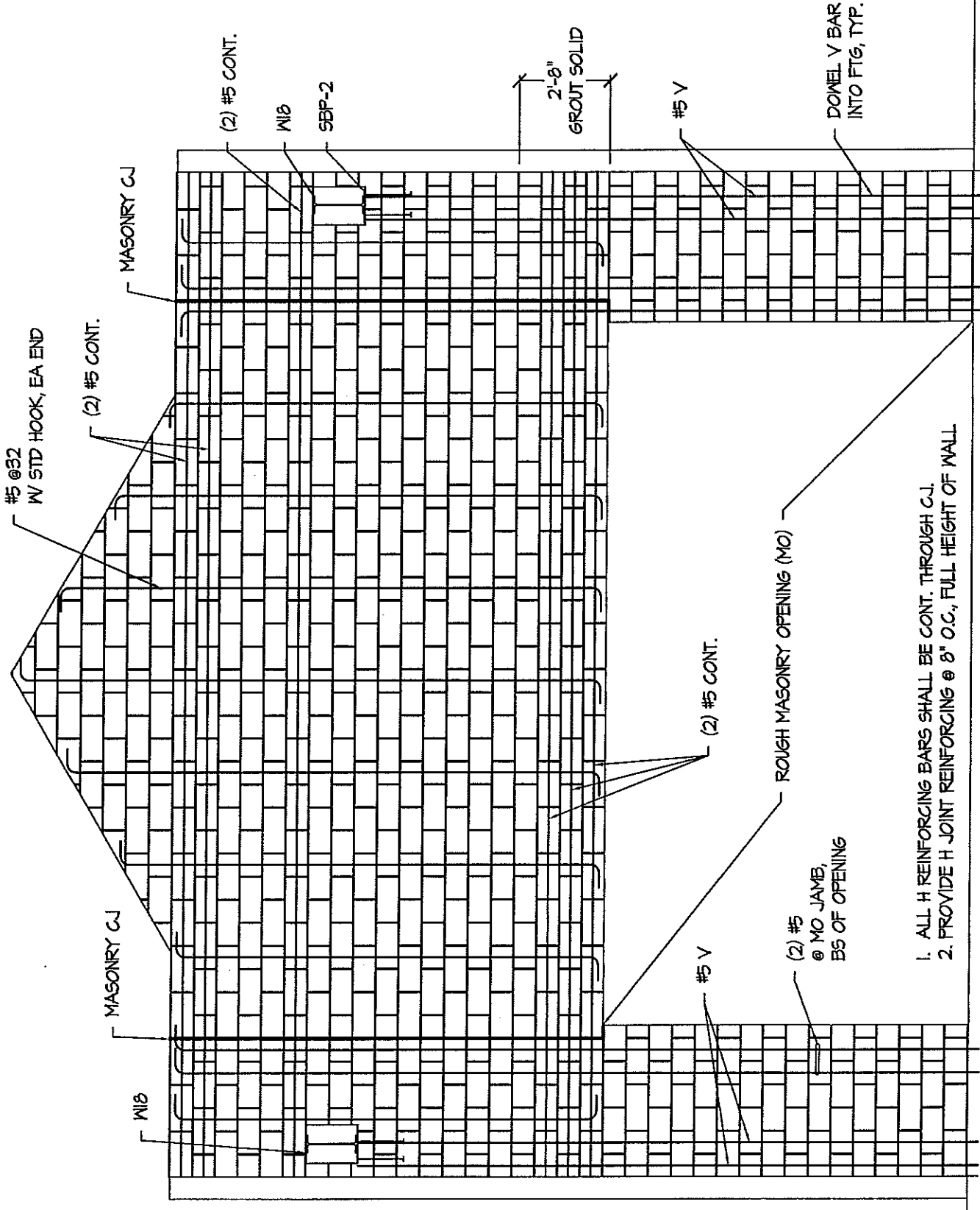
DRAWN BY:
 LMS

CHECKED:
 DATE: 02/07/12
 BY: IJB

Signature/Date
 FROM J BECICA, P.E. NJ 21GE09743200

PROJECT NO.
 EDA-04002

SHEET NO.:
SK-S-1
 DATE: 02/07/12



1. ALL H REINFORCING BARS SHALL BE CONT. THROUGH CJ.
2. PROVIDE H JOINT REINFORCING @ 8" O.C., FULL HEIGHT OF WALL

2 DETAIL
 S-2.14 SCALE: 1/8" = 1'-0"

PROJECT:

George L. Catrambone Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

Long Branch Board of Education

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ASSOCIATED DOCUMENT

Addendum 2

REFERENCED DRAWING

DETAIL/SHEET # 1/S-2.14

DATE: 10/20/11

DRAWN BY:

LMS

CHECKED:

DATE: 02/07/12

BY: IJB

Signature/Date

For J Becica, P.E. NJ 240E02743200

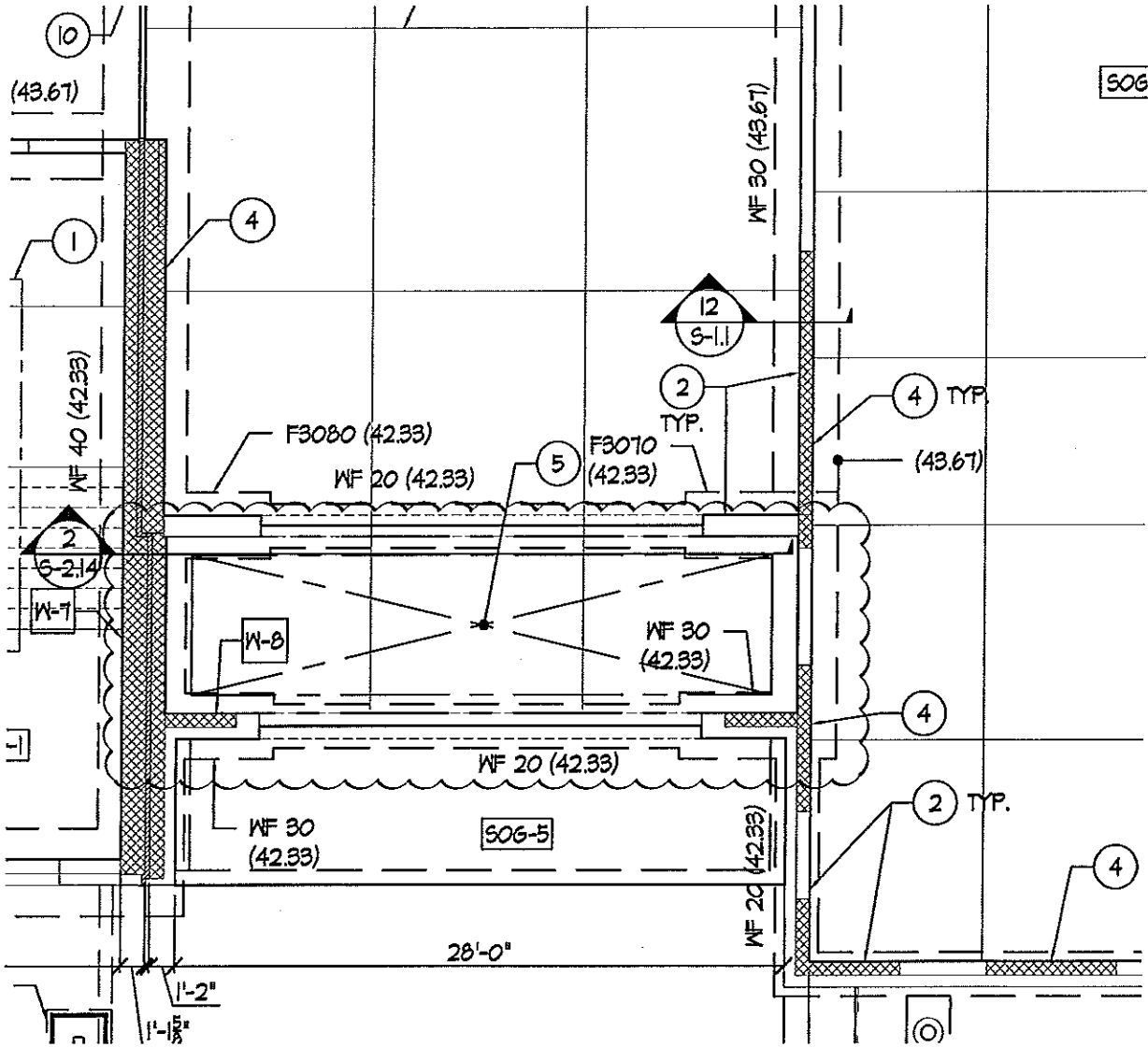
PROJECT NO.

EDA-04002

SHEET NO.:

SK-S-2

DATE: 02/07/12



① FIRST FLOOR & FOUNDATION PLAN - BLOCK "D"
 S-2.14 SCALE: 1/8"=1'-0"
 PARTIAL FOUNDATION PLAN

PROJECT:

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240 Park Avenue, Long Branch, New Jersey 07740
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ASSOCIATED DOCUMENT
Addendum 2

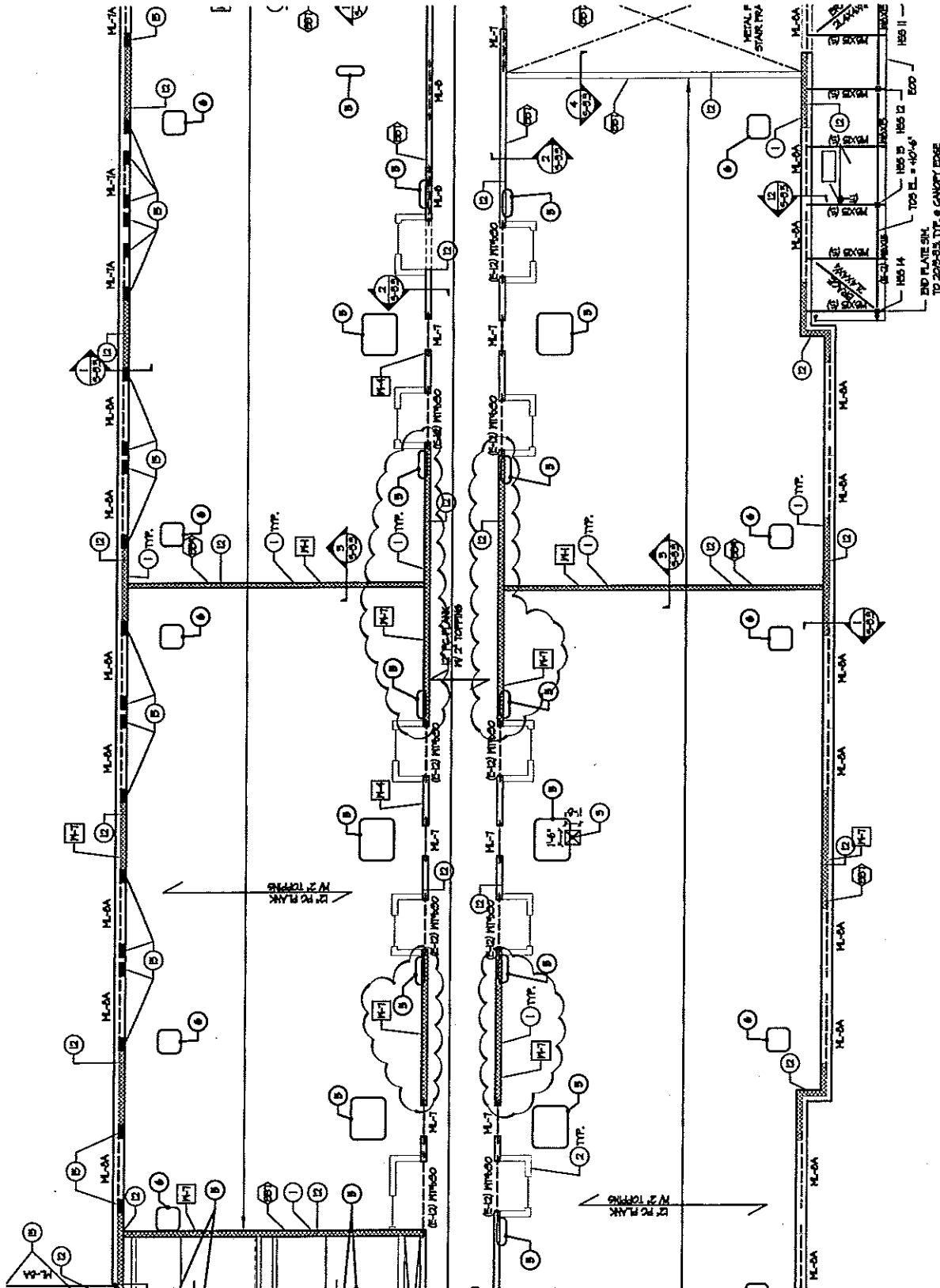
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DETAIL/SHEET # 1/S-2.21
DATE: 10/20/12

DRAWN BY: LMS
CHECKED: DATE: 02/07/12
BY: JJB

Signature/Date
Tuan J Becica, P.E. NJ 246E02743200

PROJECT NO.
EDA-04002

SHEET NO.: SK-S-3
DATE: 02/07/12



1 SECOND FLOOR FRAMING PLAN - BLOCK "E"
5-2.2 SCALE: 1/16"=1'-0"
PARTIAL PLAN

PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
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Addendum 2

REFERENCED DRAWING
 DETAIL/SHEET # 1/S-2.25
 DATE: 10/20/11

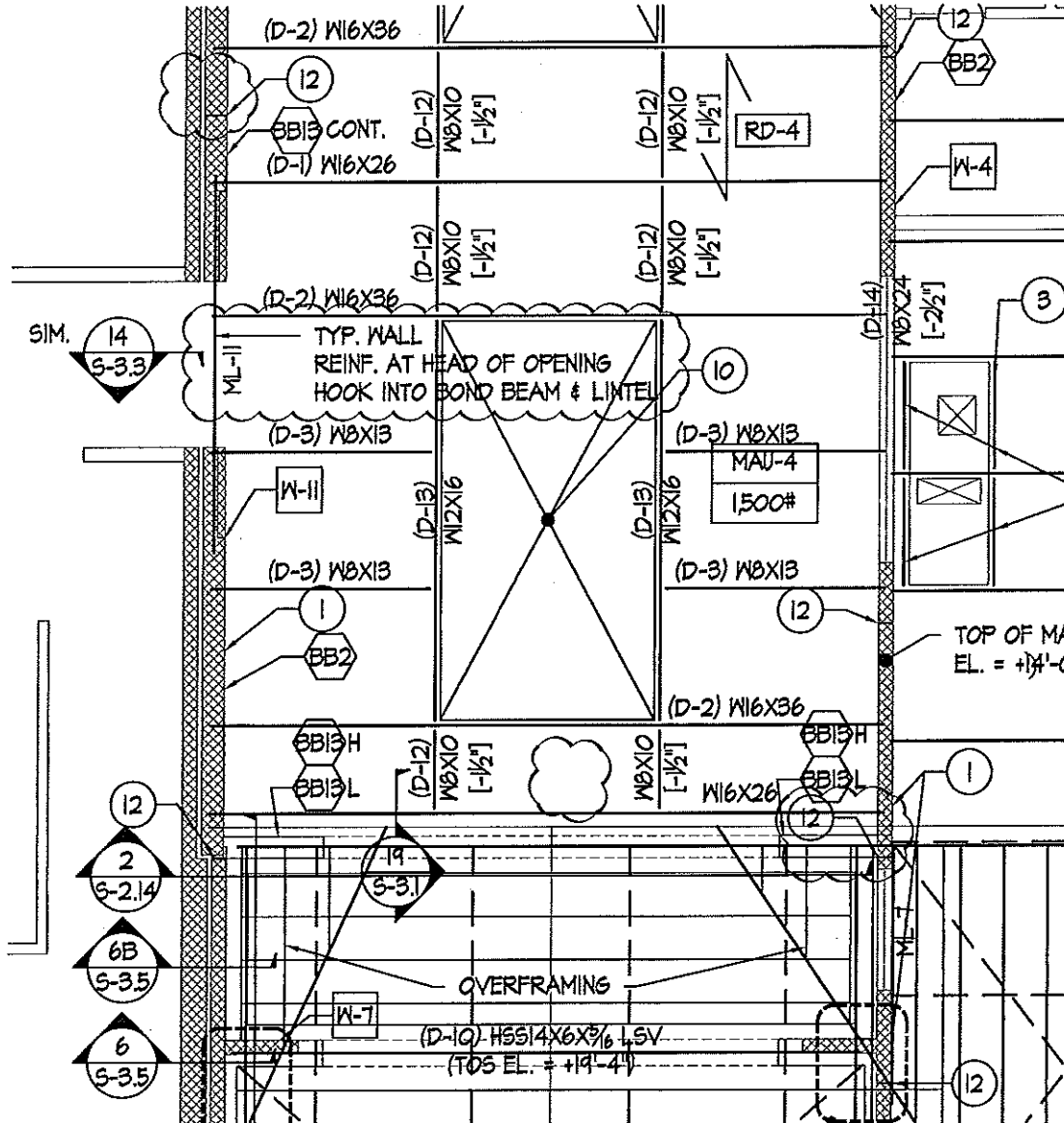
DRAWN BY:
 LMS

CHECKED:
 DATE: 02/07/12
 BY: IJB

Signature/Date
 Ivan J Becica, P.E. NJ 24600743800

PROJECT NO.
 EDA-04002

SHEET NO.:
SK-S-4
 DATE: 02/07/12



1 ROOF FRAMING PLAN - BLOCK "D"
 S-2.25 SCALE: 1/8"=1'-0"
 PARTIAL FRAMING PLAN

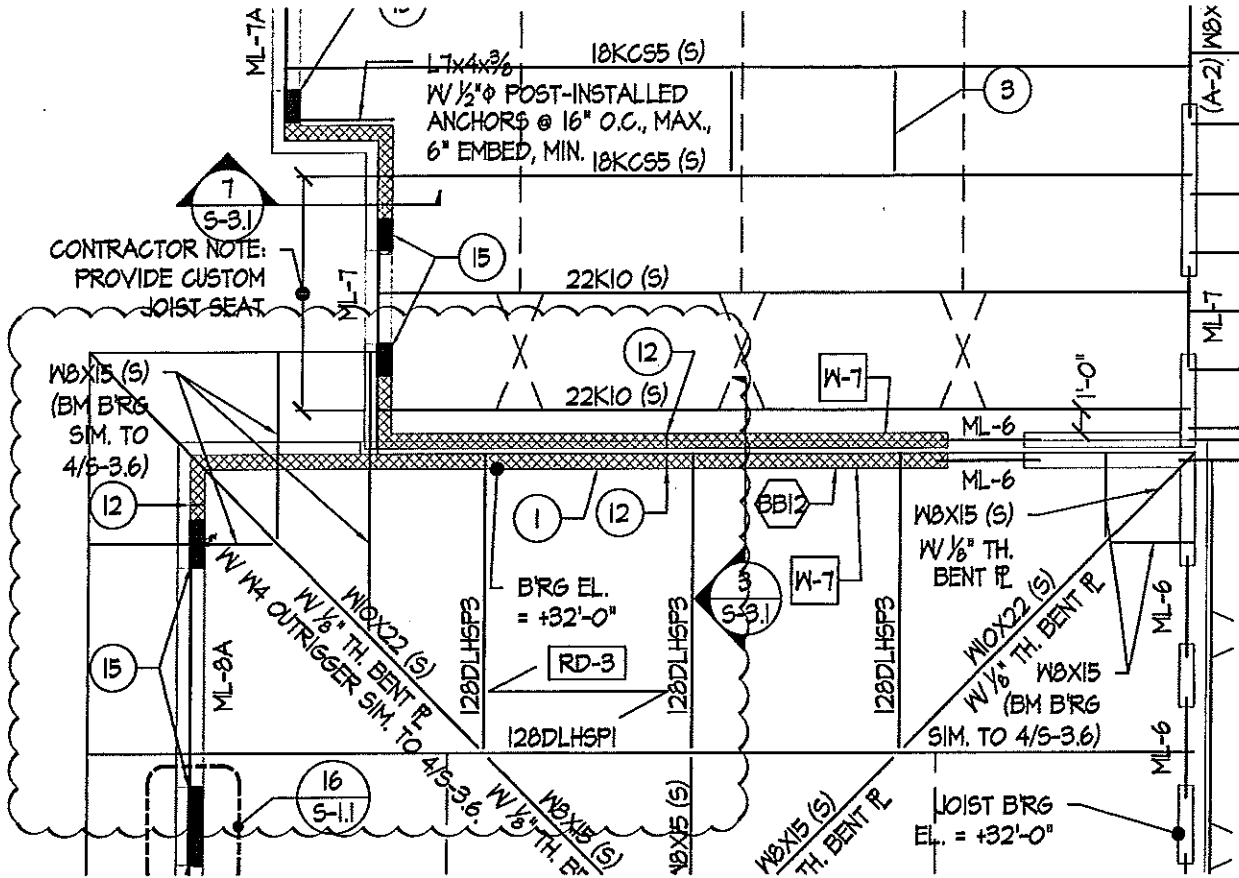
PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

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ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # 1/S-2.31 DATE: 10/20/11	DRAWN BY: LMS	CHECKED: DATE: 02/07/12 BY: IJB	Signature/Date IVAN J Becica, P.E. NJ 240802743200	PROJECT NO. EDA-04002	SHEET NO. SK-S-5 DATE: 02/07/12
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1 ROOF FRAMING PLAN - BLOCK "E"
 (S-2.3) SCALE: 1/8" = 1'-0" PARTIAL ROOF FRAMING PLAN

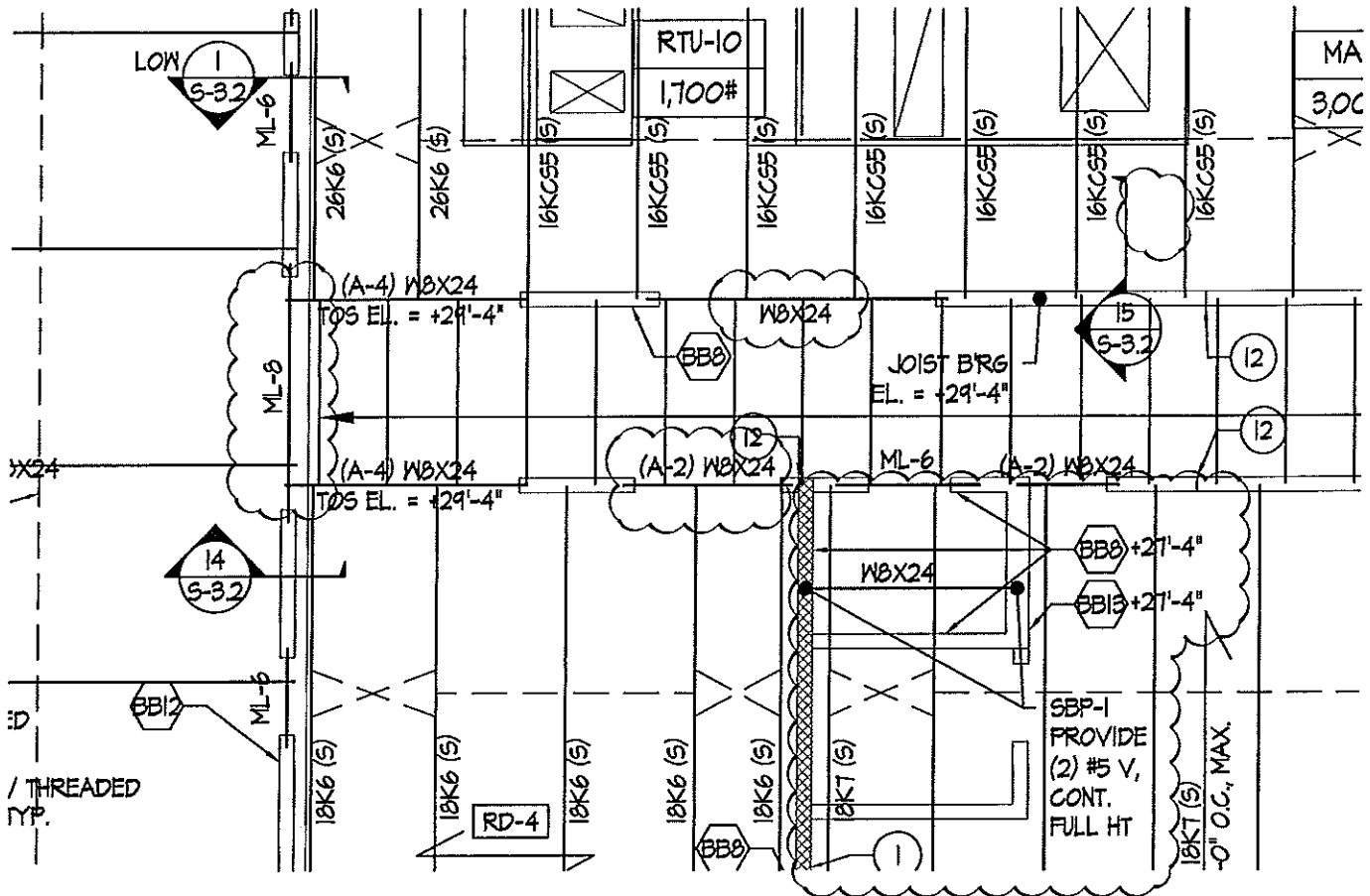
PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
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1 ROOF FRAMING PLAN - BLOCK "E"
 S-2.3 SCALE: 1/8" = 1'-0"
 PARTIAL ROOF FRAMING PLAN

PROJECT:

George L. Catrambone Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

Long Branch Board of Education

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ASSOCIATED DOCUMENT

Addendum 2

REFERENCED DRAWING

DETAIL/SHEET # 19/S-3.2

DATE: 10/20/11

DRAWN BY:

LMS

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DATE: 02/07/12

BY: IJB

Signature/Date

IVAN J BECICA, P.E. NJ 240502743200

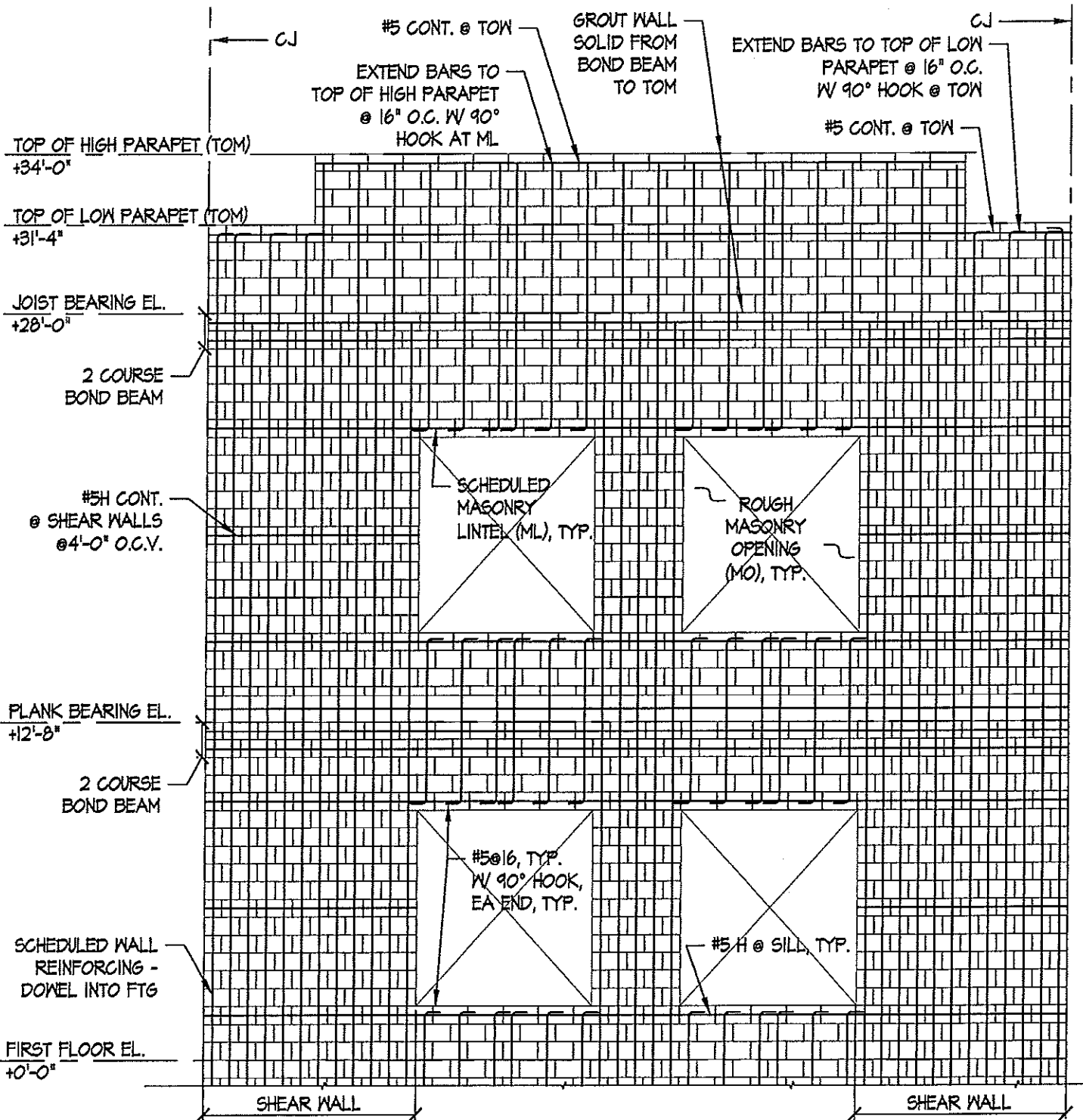
PROJECT NO.

EDA-04002

SHEET NO.:

SK-S-7

DATE: 02/07/12



19 DETAIL
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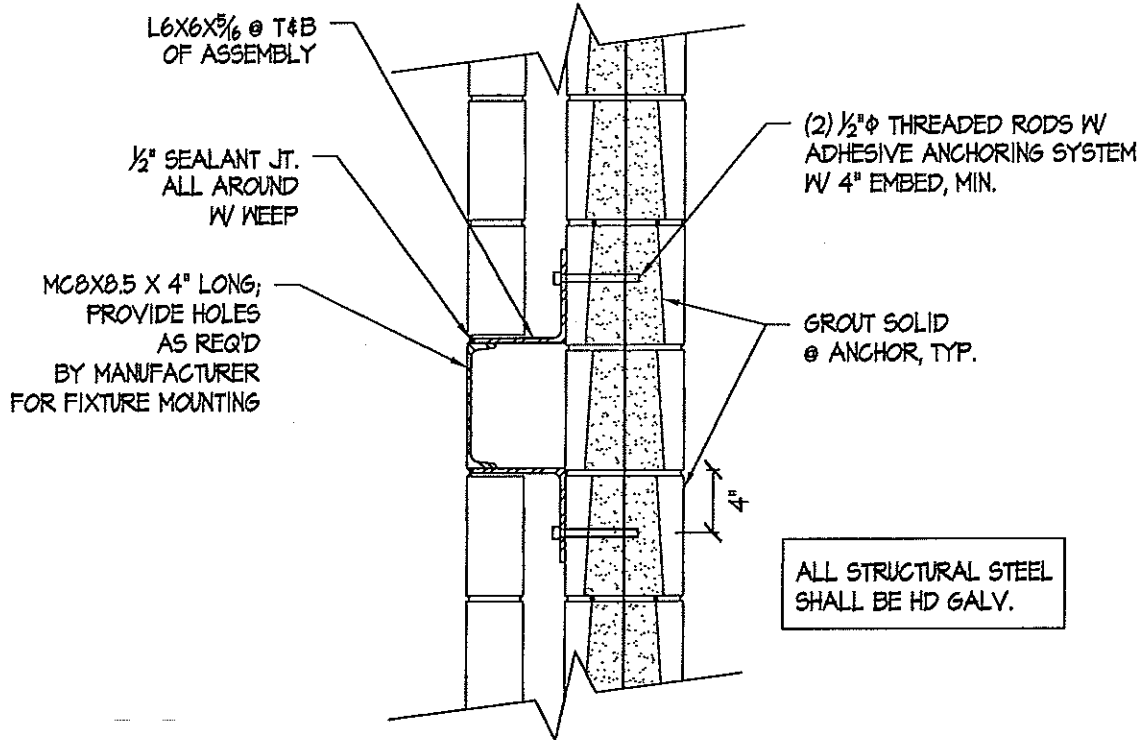
PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
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ASSOCIATED DOCUMENT Addendum 2	REFERENCED DRAWING DETAIL/SHEET # S-3.5 DATE: 10/20/11	DRAWN BY: LMS	CHECKED: DATE: 02/07/12 BY: IJB	Signature/Date NANJ BECICA, P.E. NJ 240E02743100	PROJECT NO. EDA-04002	SHEET NO.: SK-S-8 DATE: 02/07/12
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12A DETAIL
 S-3.5 SCALE: 3/4"=1'-0"

PROVIDE DETAIL 12A/S-3.5 AS TYPICAL AT ALL WALL MOUNTED "ARM & ROD" LIGHT FIXTURES.

PROJECT:

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 240 Park Avenue, Long Branch, New Jersey 07740
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 500 South Kings Highway
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Addendum 2

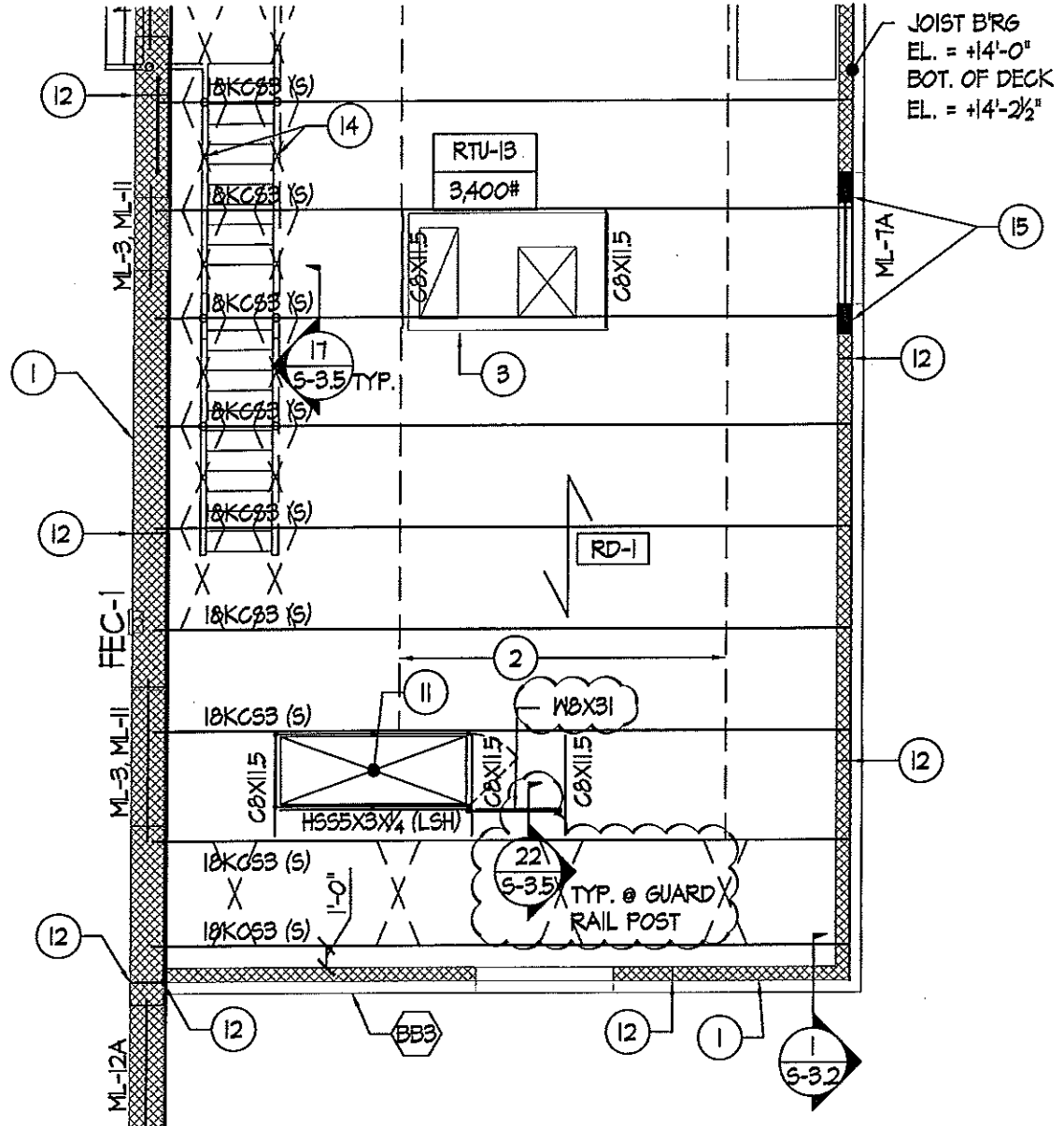
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 DATE: 10/20/11

DRAWN BY: LMS
 CHECKED: DATE: 02/07/12
 BY: IJB

Signature/Date
 IAN J BECICA, P.E., NJ 24GE0743200

PROJECT NO.
EDA-04002

SHEET NO.:
SK-S-9
 DATE: 02/07/12



1 LOW ROOF FRAMING PLAN - BLOCK "C"
 5-2.23 SCALE: 1/8"=1'-0"
 PARTIAL ROOF FRAMING PLAN

PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
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 New Jersey 07740

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 Architecture/Engineering
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 Cherry Hill, New Jersey 08034
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Addendum 2

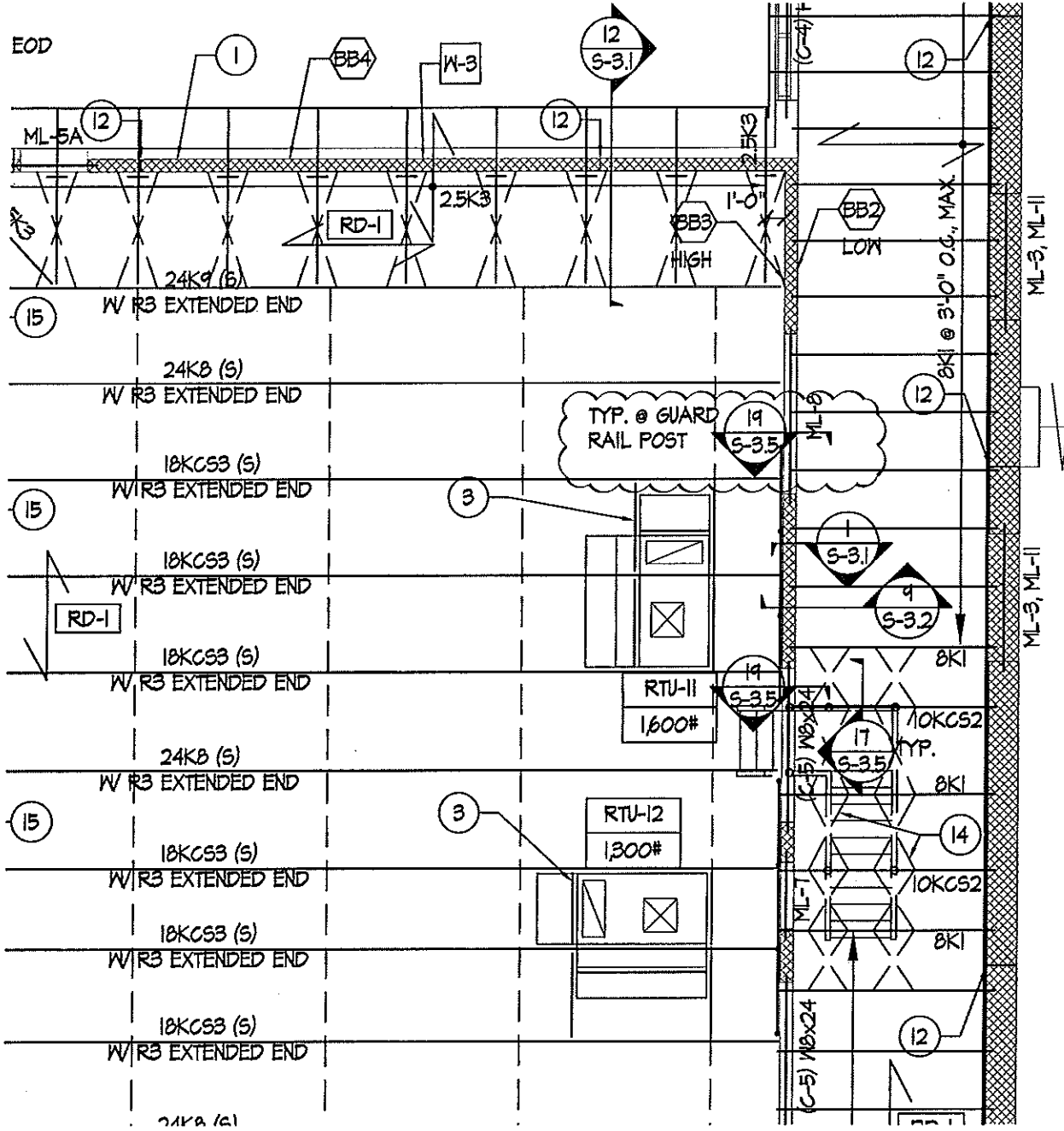
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 DETAIL/SHEET # 1/S-2.23
 DATE: 10/20/11

DRAWN BY: LMS
 CHECKED: DATE: 02/07/12
 BY: LJB

Signature/Date
 IVAN J BECICA, P.E. NJ 240E02743000

PROJECT NO.
 EDA-04002

SHEET NO.: **SK-S-10**
 DATE: 02/07/12



1 LOW ROOF FRAMING PLAN - BLOCK "C"
 S-2.23 SCALE: 1/8"=1'-0"
 PARTIAL ROOF FRAMING PLAN

PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
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ASSOCIATED DOCUMENT

Addendum 2

REFERENCED DRAWING

DETAIL/SHEET # 1/S-2.24
DATE: 10/20/11

DRAWN BY:

LMS

CHECKED:

DATE: 02/07/12
BY: LJB

Signature/Date
TAM J BECICA, P.E. NJ 240E00743200

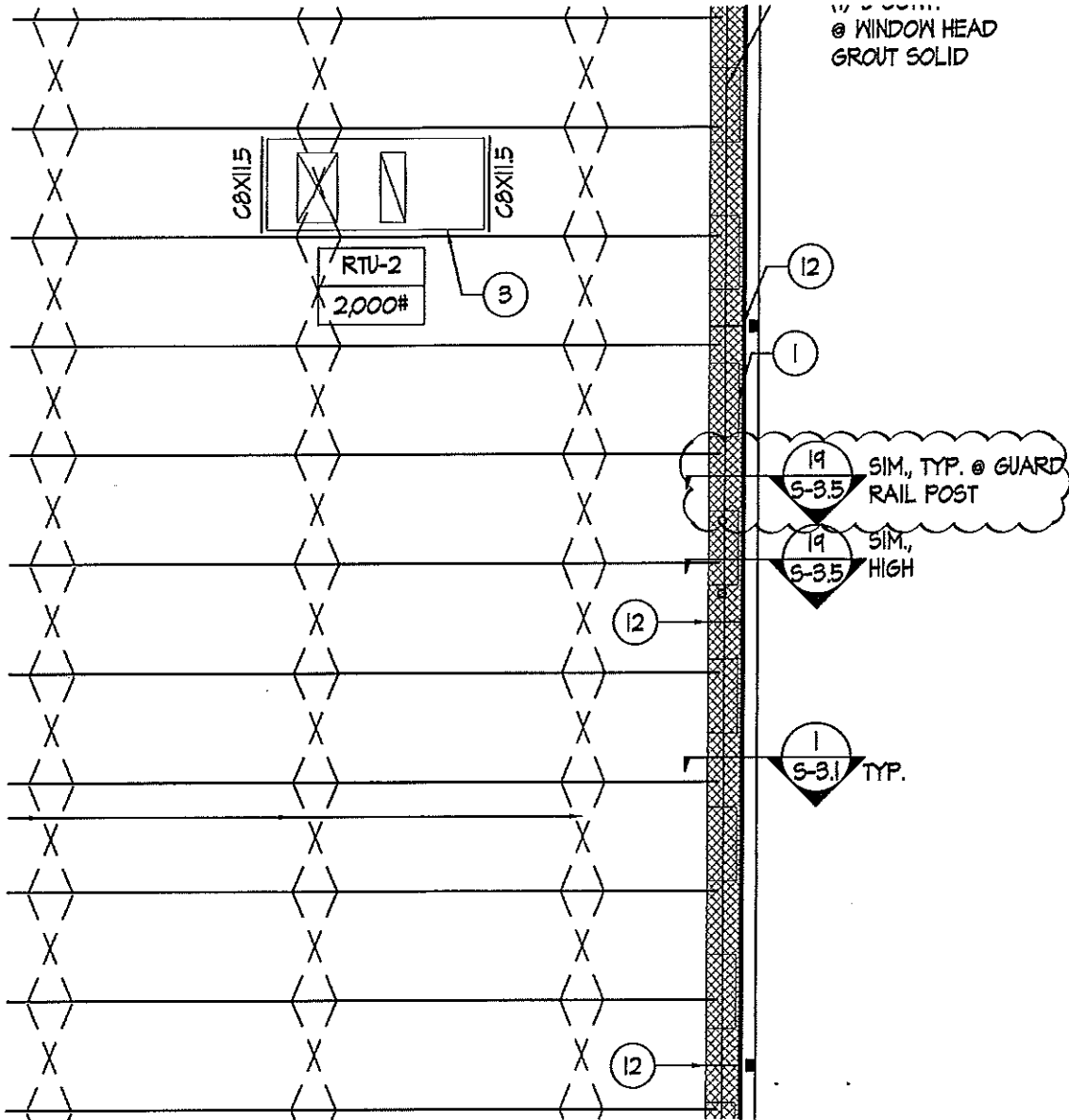
PROJECT NO.

EDA-04002

SHEET NO.:

SK-S-11

DATE: 02-07-12



HIGH ROOF FRAMING PLAN - BLOCK "C"

& CLERESTORY LINTELS

PARTIAL FRAMING PLAN

1
S-2.24

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

PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
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Addendum 2

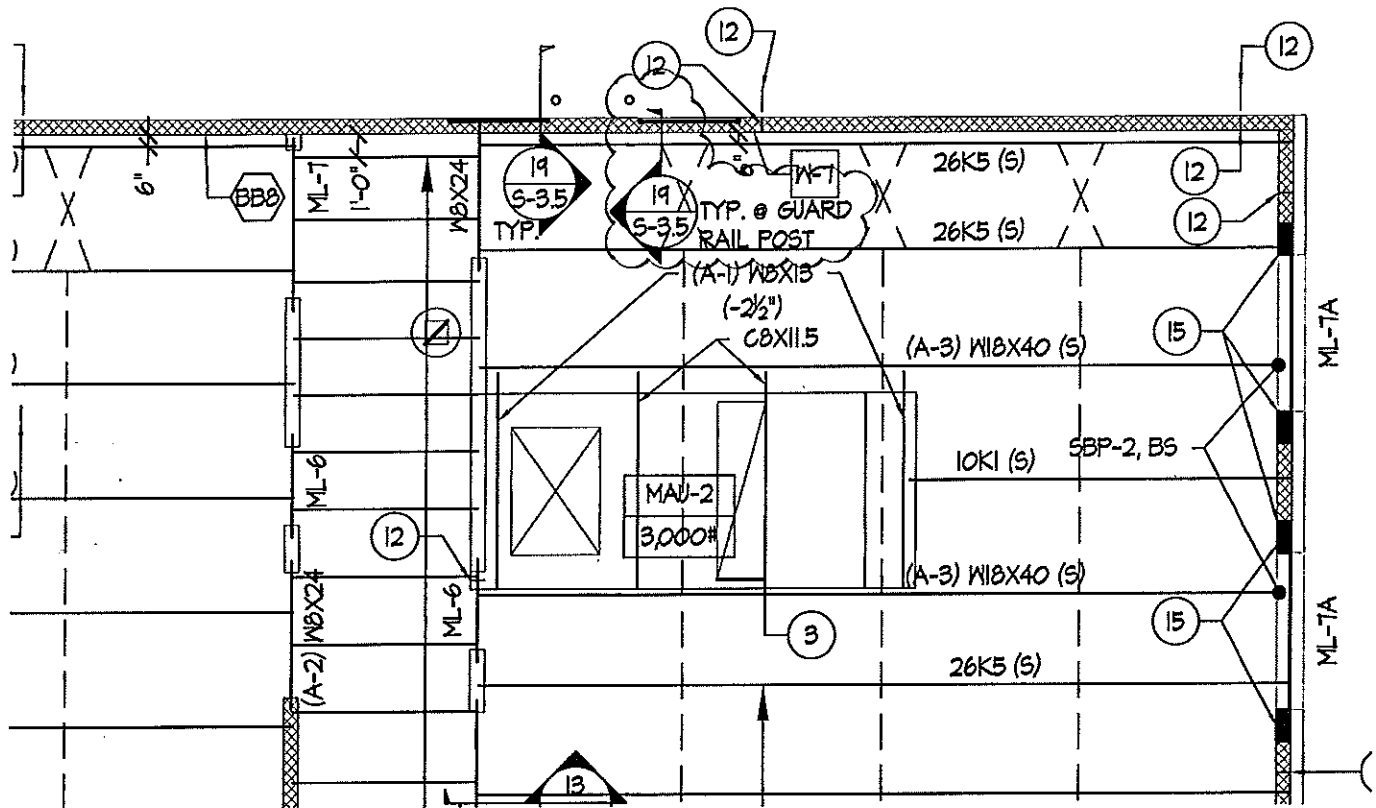
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 DETAIL/SHEET # 1/S-2.31
 DATE: 10/20/11

DRAWN BY: LMS
 CHECKED: DATE: 02/07/12
 BY: JJB

Signature/Date
 Ivan J Becica, P.E. NJ 240E0743000

PROJECT NO.
 EDA-04002

SHEET NO.:
SK-S-12
 DATE: 02/07/12



1 ROOF FRAMING PLAN - BLOCK "E"
 S-2.31 SCALE: 1/8" = 1'-0"
 PARTIAL ROOF FRAMING PLAN

PROJECT:

George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
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Addendum 2

REFERENCED DRAWING

DETAIL/SHEET # S-3.5
 DATE: 10/20/11

DRAWN BY:

LMS

CHECKED:

DATE: 02/07/12
 BY: JJB

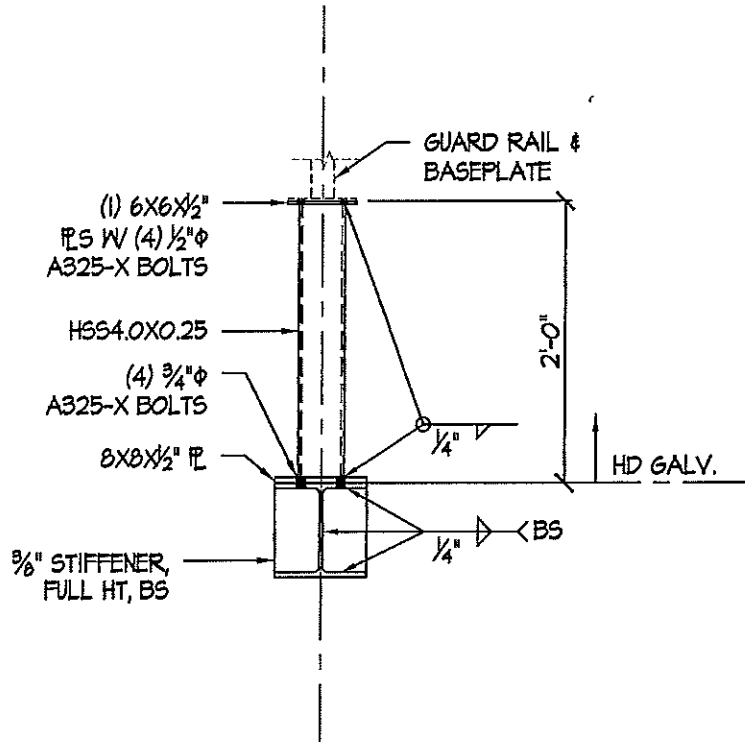
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 P.E. NJ 240E02743200

PROJECT NO.

EDA-04002

SHEET NO.:

SK-S-13
 DATE: 02/07/12



22 DETAIL
 S-3.5 SCALE: 3/4" = 1'-0"

PROJECT:

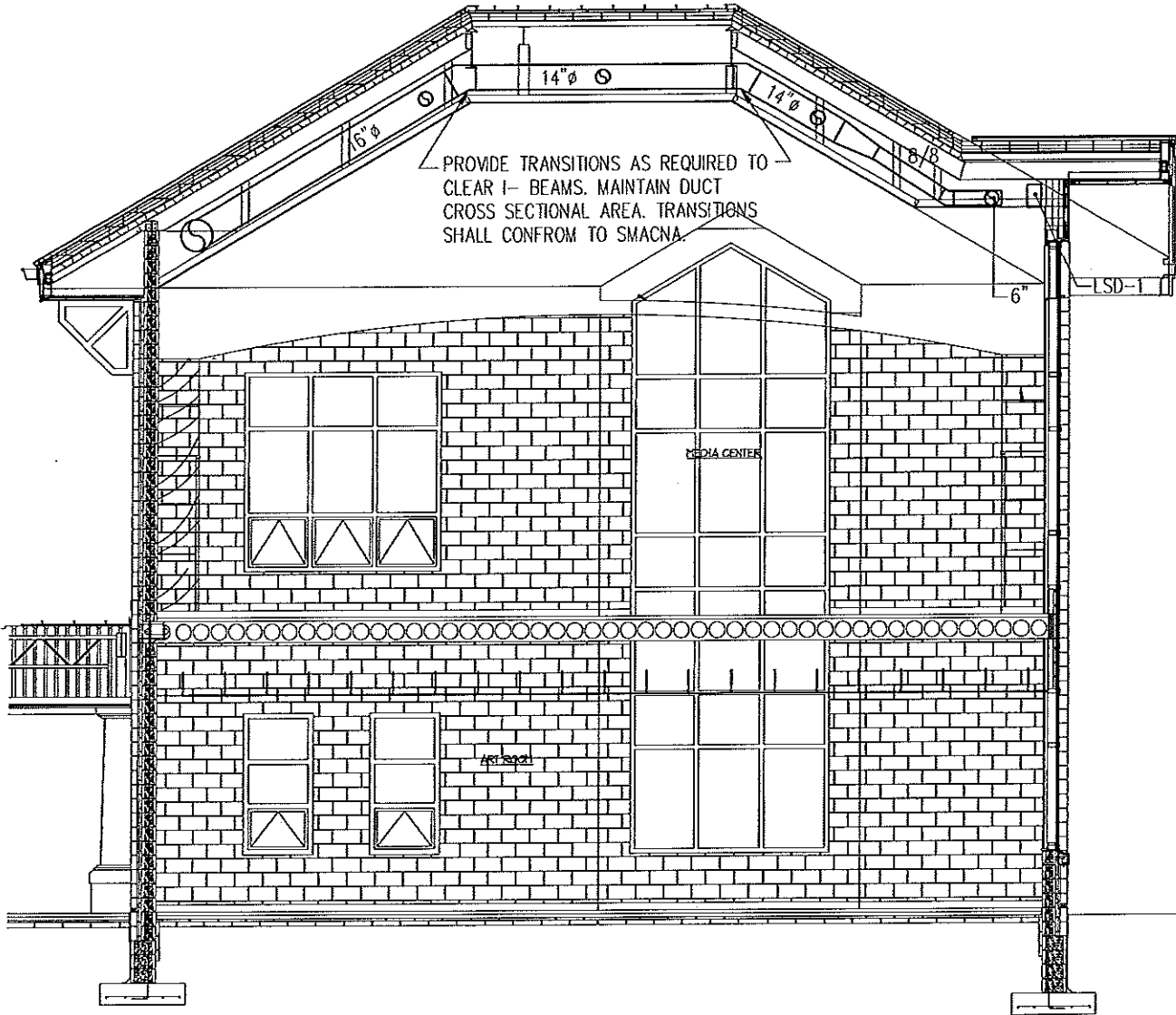
George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

WFW
Wick Fisher White
111 South Independence Mall East
Suite 400 • Philadelphia, Pa 19106
215-627-4200 • www.wfw.com
Project No. 070314-000

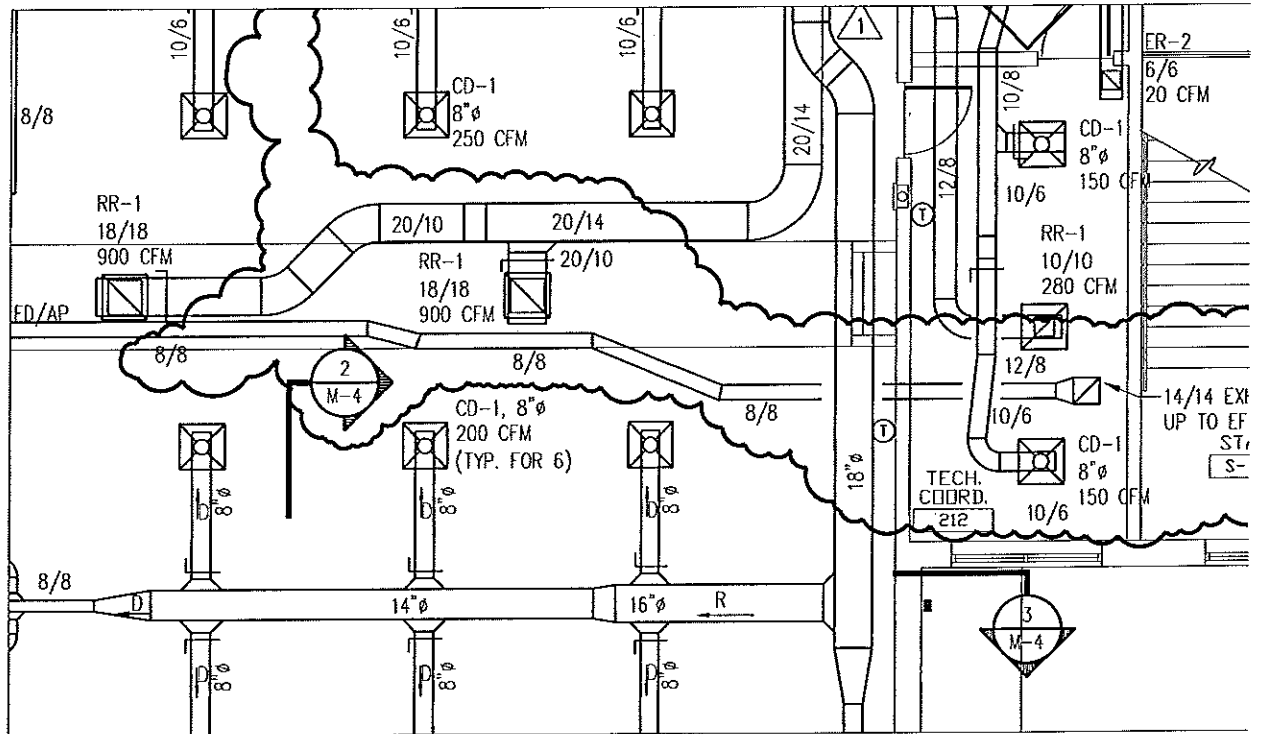


Addendum No 2

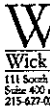
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-----------------------------------	--	-----------------	---------------------------------------	--------------------------	--



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



Addendum No 2

Signature/Date	PROJECT George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SKM-3	 <small>Wick 111 South Side 400 215-477-07</small>
	REFERENCED DRAWING DETAIL/SHEET # 1 / M-4 DATE: 01-31-12	DATE: 02-07-12 CHECKED: WFW		

PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

WFW
Wick Fisher White
111 South Independence Mall East
Suite 400 • Philadelphia, Pa 19106
215-627-0200 • www.wfw.com
Project No. 070314-000



Addendum No 2

ASSOCIATED DOCUMENT
M-4

REFERENCED DRAWING
DETAIL/SHEET # 1/M-4
DATE: 01-31-12

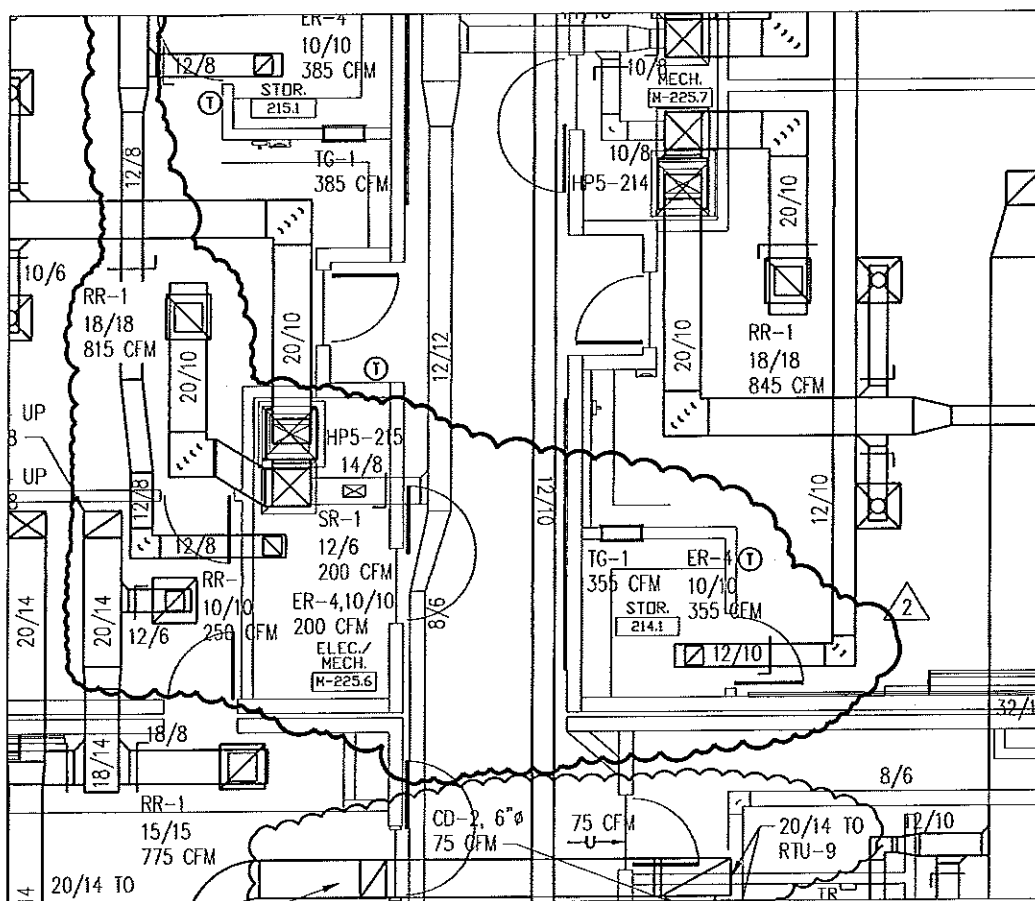
DRAWN BY:
WW

CHECKED:
DATE: 01-31-12
BY: WFW

Signature/Date

PROJECT NO.
EDA-04002

SHEET NO.:
SKM-4
DATE: 02-07-12



PROJECT:

George L. Catrambone Elementary School
240 Park Avenue, Long Branch, New Jersey 07740
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

WFW
Wick Fisher White
111 South Independence Mall East
Suite 400 • Philadelphia, Pa 19106
215-627-0200 • www.wfweng.com
Project No. 070314-00

DBA

Addendum No 2

ASSOCIATED DOCUMENT M-14	REFERENCED DRAWING DETAIL/SHEET # 1/M-14 DATE: 01-31-12	DRAWN BY: WW	CHECKED: DATE: 01-31-12 BY: WFW	Signature/Date	PROJECT NO. EDA-04002	SHEET NO.: SKM-5 DATE: 02-07-12
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RETAINING ANGLES--BOLTED TO SLEEVE -- DO NOT SECURE TO WALLS -- ANGLES TO ENCOMPASS ALL FOUR SIDES

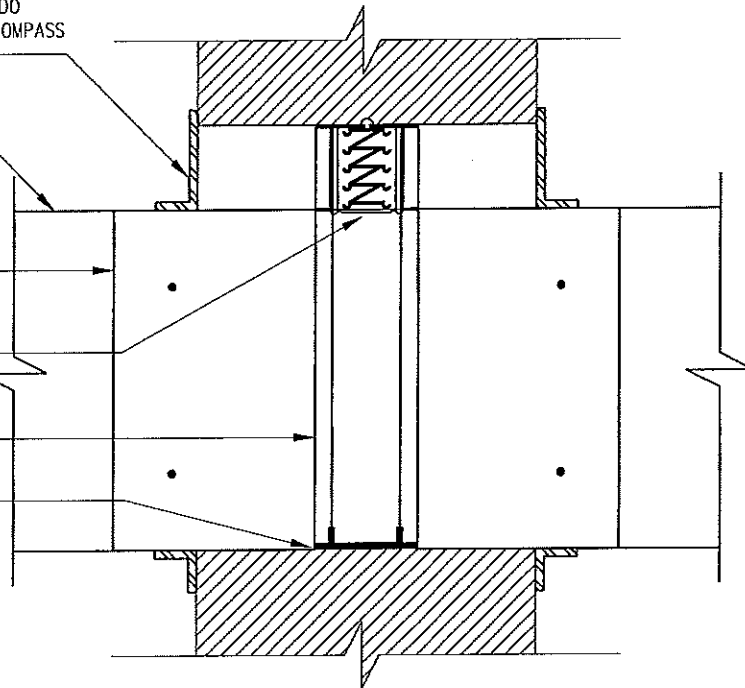
DUCT

SLEEVE

165° FUSIBLE LINK & CLOSURE DEVICES FOR DYNAMIC STYLE DAMPERS

FIRE DAMPER, BOLT OR WELD TO SLEEVE

PROVIDE 1/4" CLEARANCE



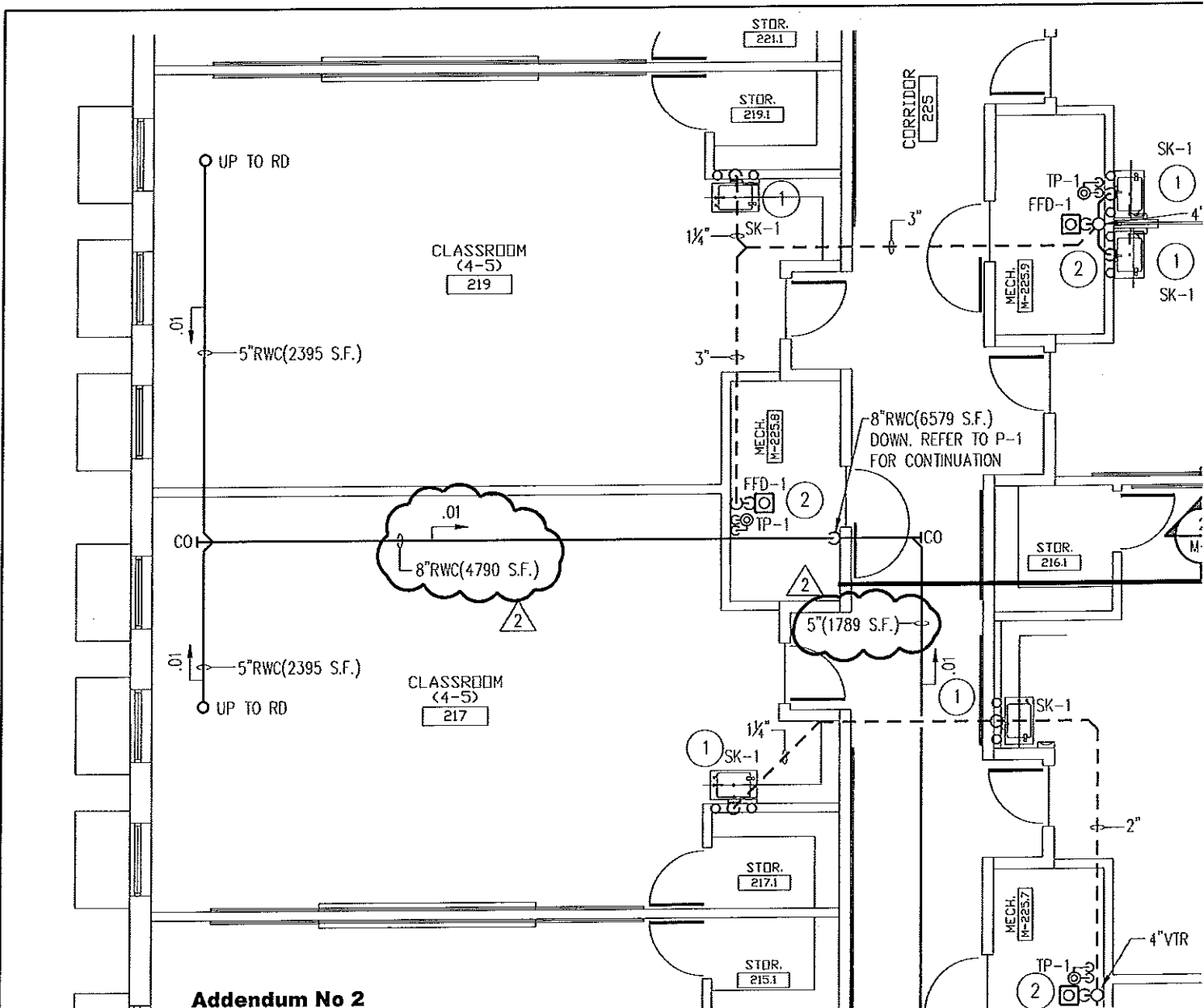
1
M-14

FIRE DAMPER DETAIL


SCALE : NONE

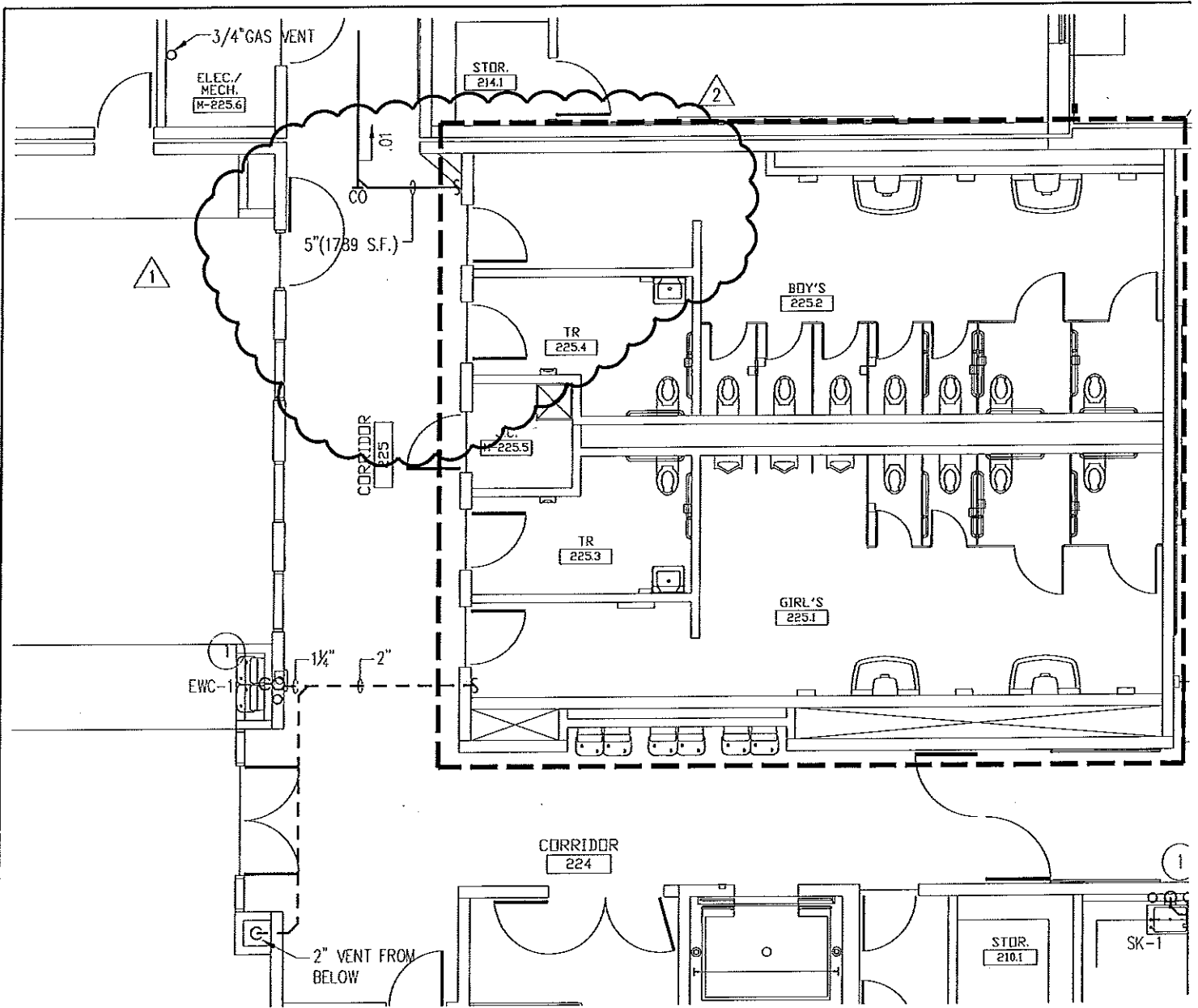
NOTES:

1. FIRE DAMPERS SHALL BE CONSTRUCTED AND INSTALLED ACCORDING TO NFPA 90A AND UL LABELED.
2. PROVIDE AN ACCESS PANEL FOR EACH FIRE DAMPER SECTION.
3. ACCESS PANELS SHALL ALLOW REACH TO THE FIRE DAMPER FUSIBLE LINK.
4. DYNAMIC STYLE FIRE DAMPERS SHALL BE USED WHERE THE ASSOCIATED AIR HANDLERS ARE NOT INTERLOCKED TO SHUT DOWN UPON A SIGNAL FROM A DUCT SMOKE DETECTOR.



Addendum No 2

Signature/Date	PROJECT George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SKP-1
	REFERENCED DRAWING DETAIL/SHEET # 1/P-4 DATE: 10-20-11	DATE: 02-07-2012 CHECKED: WFW	 Wick Fi 111 South End Suite 400 & P1 215-627-0039 Pro



Addendum No 2

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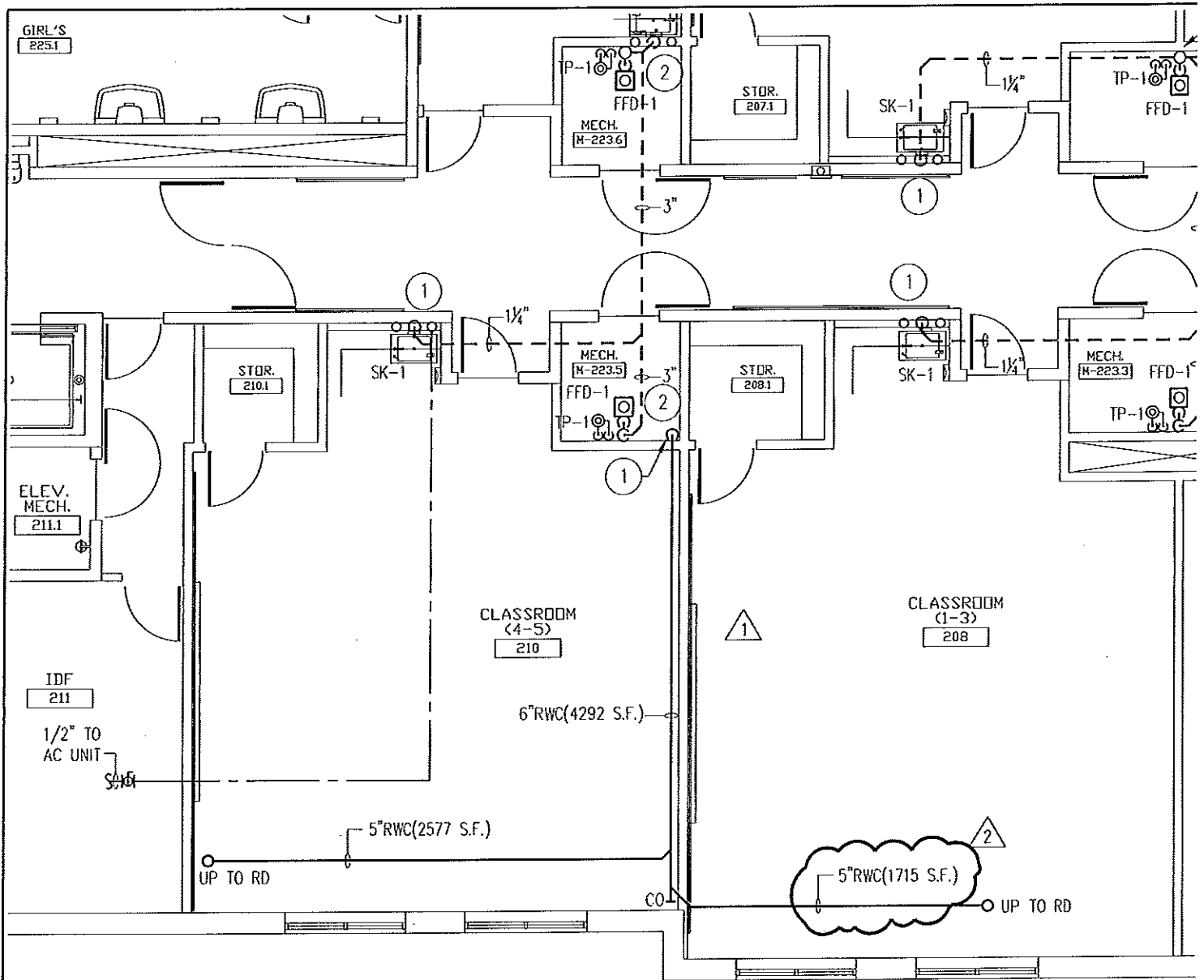
PROJECT
George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

ELEV.
211.1

PROJECT NO.
EDA-04002
 REFERENCED DRAWING
 DETAIL SHEET # 1/P-4
 DATE: 10-20-11

SHEET NO.
SKP-2
 DATE: 02-07-2012
 CHECKED: WFW





Addendum No 2

Signature/Date _____

PROJECT
George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

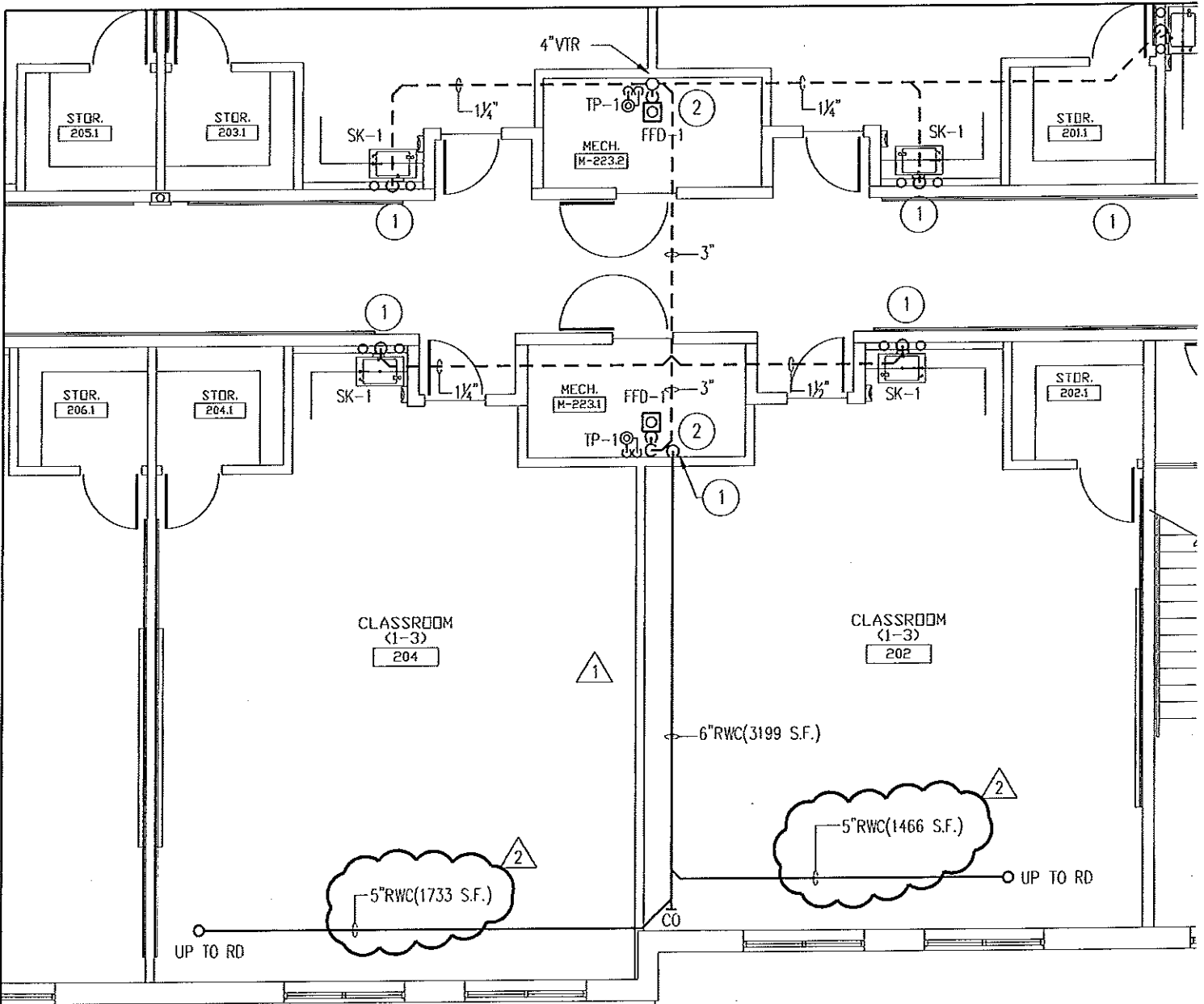
PROJECT NO.
EDA-04002


REFERENCED DRAWING
 DETAIL/SHEET # 1/P-4
 DATE: 10-20-11

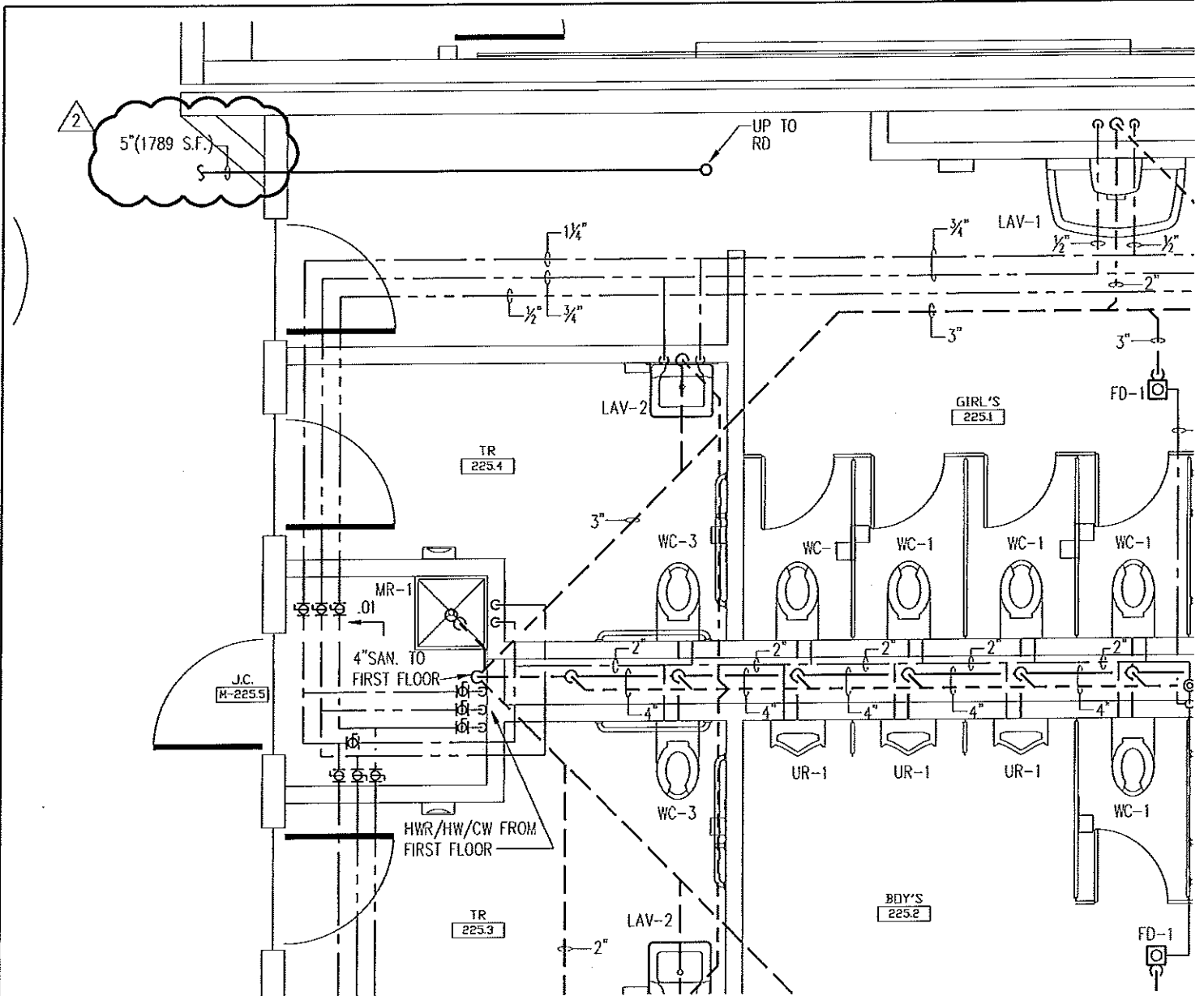
SHEET NO.
SKP-3

DATE: 02-07-2012
 CHECKED: WFW





Addendum No 2 Signature/Date _____	PROJECT George L. Catrambone Elementary School 240 Park Avenue, Long Branch, New Jersey 07740 Long Branch Board of Education 540 Broadway, Long Branch, New Jersey 07740	PROJECT NO. EDA-04002	SHEET NO. SKP-4	 <small>111 South 1st Suite 400 215-627-0200</small>
	REFERENCED DRAWING DETAIL/SHEET # 1/P-4 DATE: 10-20-11	DATE: 02-07-2012 CHECKED: WFW		



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PROJECT
George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

PROJECT NO.
EDA-04002

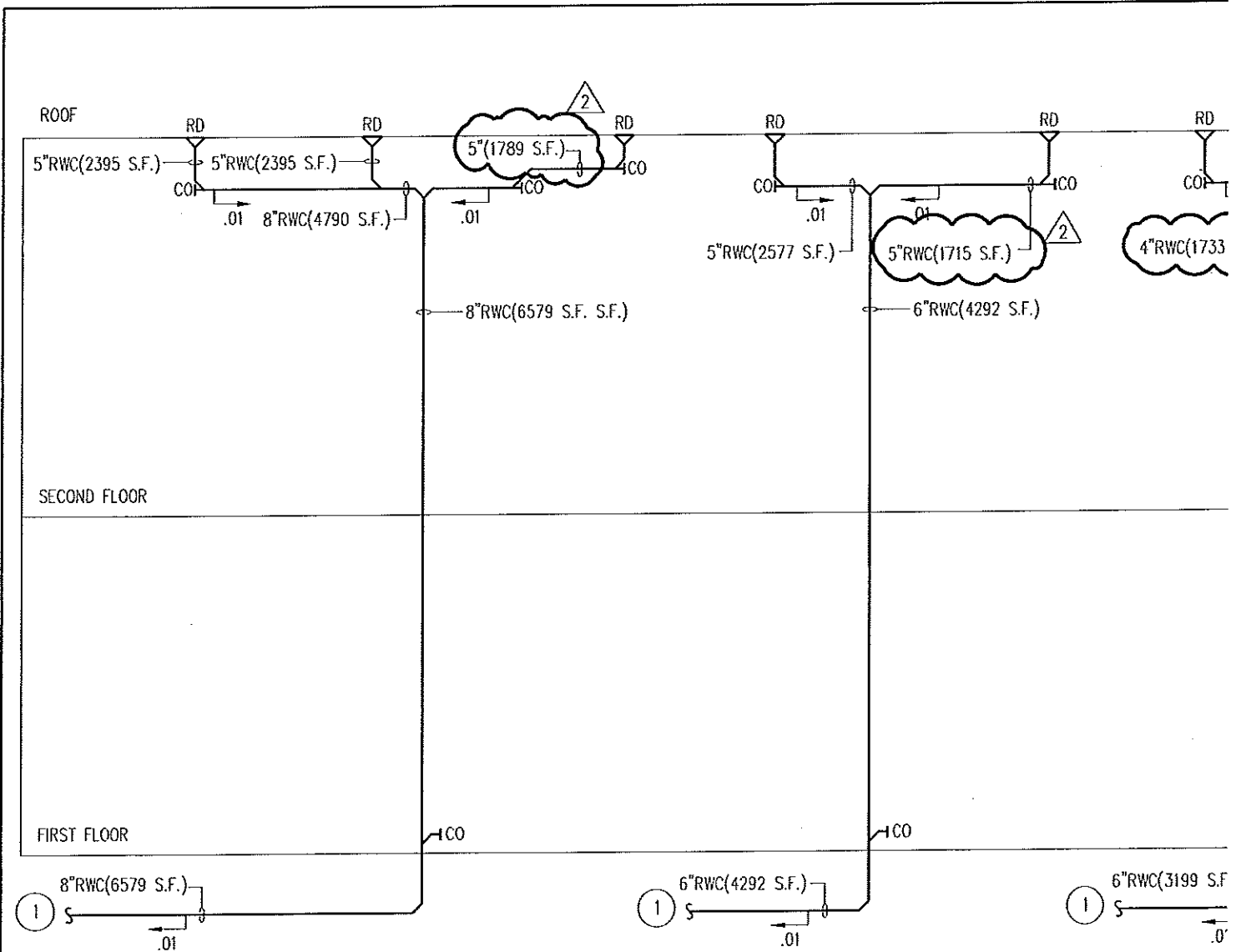
REFERENCED DRAWING
 DETAIL/SHEET # 2/P-4

DATE: 10-20-11

SHEET NO.
SKP-5

DATE: 02-07-2012
 CHECKED: WFW





Addendum No 2

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PROJECT
George L. Catrambone Elementary School
 240 Park Avenue, Long Branch, New Jersey 07740
 Long Branch Board of Education
 540 Broadway, Long Branch,
 New Jersey 07740

PROJECT NO.
EDA-04002

REFERENCED DRAWING
 DETAIL/SHEET # **3/P-8**

DATE: **10-20-11**

SHEET NO.
SKP-6

DATE: **02-07-2012**

CHECKED: **WFW**





FLOOR MOUNTED OUTLET, REQUIRES A
1-1/4" EMT CONDUIT. SEE NOTE 16 FOR
BOX TYPES. SEE MATRIX FOR DETAILS.

16. ALL FLOOR MOUNTED DATA/VOICE/VIDEO JACK PLATES IN FIRST FLOOR ROOMS REQUIRE A 1-1/4" EMT CONDUIT AND A WALKER RFB6-OG TYPE BOX WITH WATER PROTECTED COVER. SECOND FLOOR POKE-THRU FLOOR BOXES ARE WIREMOLD EVOLUTION SERIES MODEL BATCP BOXES.

REFERENCE DRAWING T-100

INTERTECH ASSOCIATES, INC.



COMMUNICATIONS & ELECTRICITY
CONSULTING ENGINEERS
CERTIFICATE NO. B4642702760

77-01 BOHANNAN ROAD SUITE 2-1411 BIRMGHAM, AL 35209

PROJECT No.: EDA-04002

SKETCH TITLE: George L. Catrambone ES
Floor Box Change

DATE: JANUARY 18, 2012 Addendum No 2

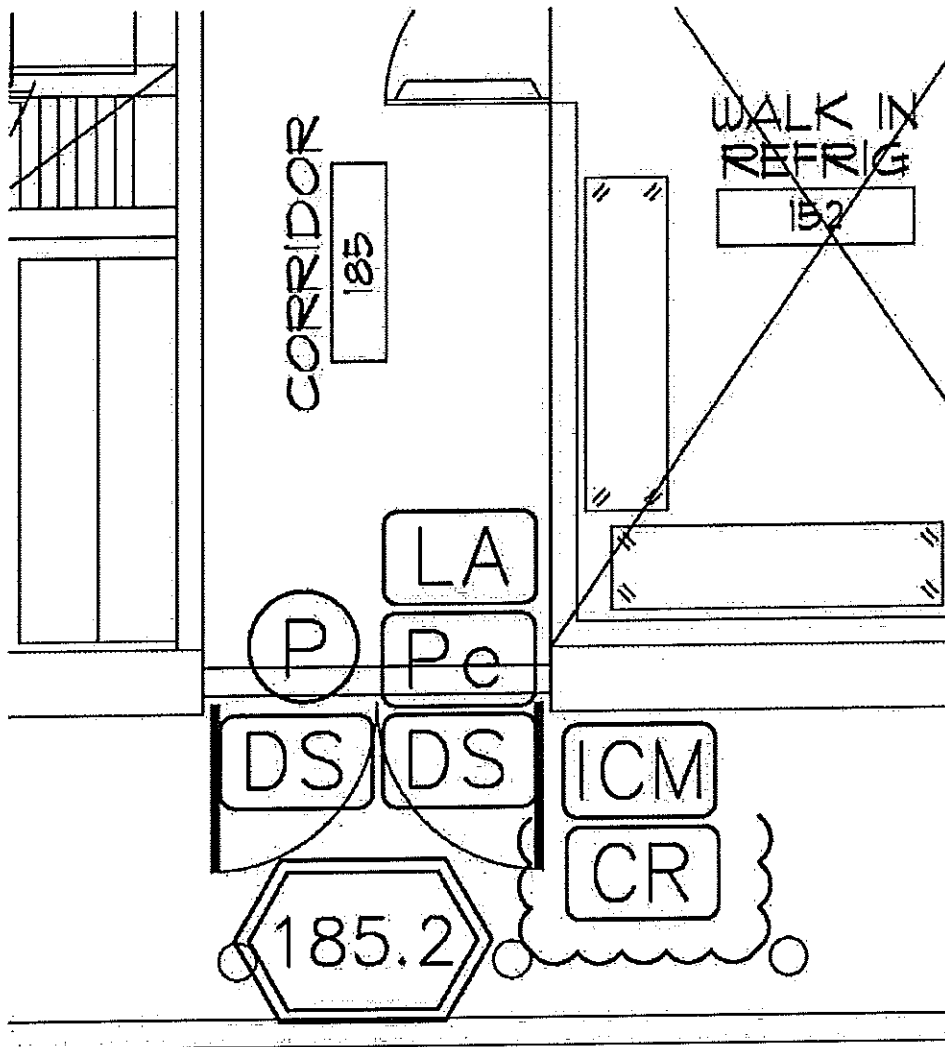
DRAWN BY: DH

CHECKED BY: PS

SCALE: NTS

SKETCH NO.: SKT-001

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REFERENCE DRAWING T-113

INTERTECH ASSOCIATES, INC.



COMMUNICATIONS & ELECTRONICS
CONSULTING ENGINEERS
CERTIFICATE NO. 24047284700

17-85 BUREAU ROAD SUITE 2-143 FARMERS BRIDGE NY 11731

PROJECT No.: EDA-04002

SKETCH TITLE: George L. Catrambone ES
Add Card Reader

DATE: JANUARY 18, 2012 Addendum No 2

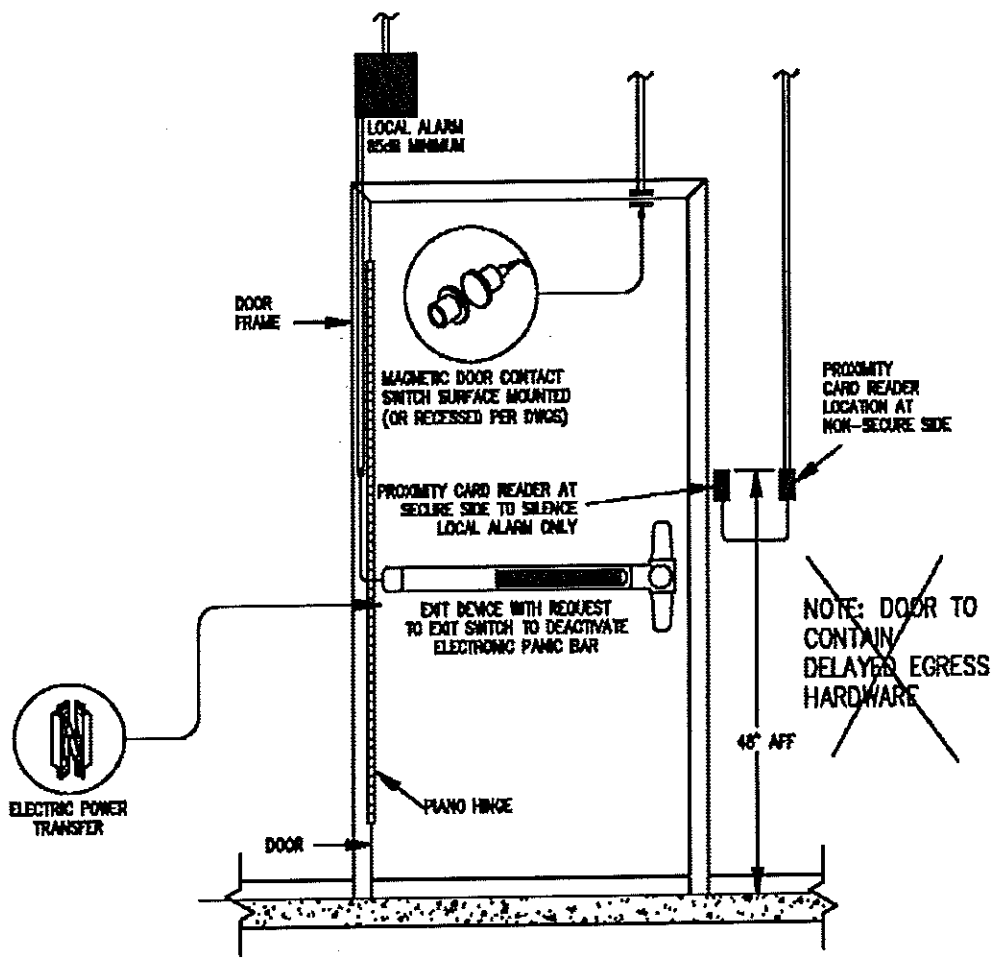
DRAWN BY: DH

CHECKED BY: PS

SCALE: NTS

SKETCH NO.: SKT-002

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 COMMUNICATIONS & ELECTRONICS
 CONSULTING ENGINEERS
 CERTIFICATE NO. 2461788799
 77-00 DOWLING ROAD, SUITE 2-140 FARMINGDALE, NY 11735

PROJECT No.: EDA-04002

SKETCH TITLE: George L. Catrambone ES
 Remove Delayed Egress Reference
 DATE: JANUARY 18, 2012 Addendum No 2

DRAWN BY: DH
 CHECKED BY: PS
 SCALE: NTS
 SKETCH NO.: **SKT-003**

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27. POWER FOR RACKS AND CABINETS AT MDFs/IDFs SHALL BE ON SEPARATE CIRCUITS. ALL RACKS IN MDF AND SELECTED RACKS IN IDFs WILL BE BACKED UP BY THE GENERATOR. REFER TO ELECTRICAL DRAWINGS FOR CIRCUIT ASSIGNMENTS.

REFERENCE DRAWING T-100

INTERTECH ASSOCIATES, INC.



COMMUNICATIONS & ELECTRONICS
CONSULTING ENGINEERS
CERTIFICATE NO. 24047308700

77-36 BORDEN ROAD SUITE 4-101 BIRMINGHAM, AL 35242

PROJECT No.: EDA-04002

SKETCH TITLE: George L. Catrambone ES
Revise Note 27

DATE: JANUARY 31, 2012 Addendum No 2

DRAWN BY: DH

CHECKED BY: PS

SCALE: NTS

SKETCH NO.: SKT-004

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19. CABLE TRAYS IN CORRIDORS SHALL BE 4" X 12" MINIMUM FOR SOLE USE BY TECHNOLOGY CABLING. TYPICALLY LOCATED IN CENTER OF CORRIDOR. FINAL LOCATION OF CABLE TRAYS IN CORRIDORS MUST BE COORDINATED WITH ELECTRICAL AND MECHANICAL DRAWINGS.

REFERENCE DRAWING T-100

INTERTECH ASSOCIATES, INC.



COMMUNICATIONS & ELECTRONICS
CONSULTING ENGINEERS
CERTIFICATE NO. 84247881000

17-02 BUREAU BUREAU SOUTH 4-1413 PHOENIX, AZ 85008

PROJECT No.: EDA-04002

SKETCH TITLE: George L. Catrambone ES
Revise Note 19

DATE: FEBRUARY 8, 2012 Addendum No 2

DRAWN BY: DH

CHECKED BY: PS

SCALE: NTS

SKETCH NO.: SKT-005

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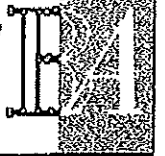
Elberon Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

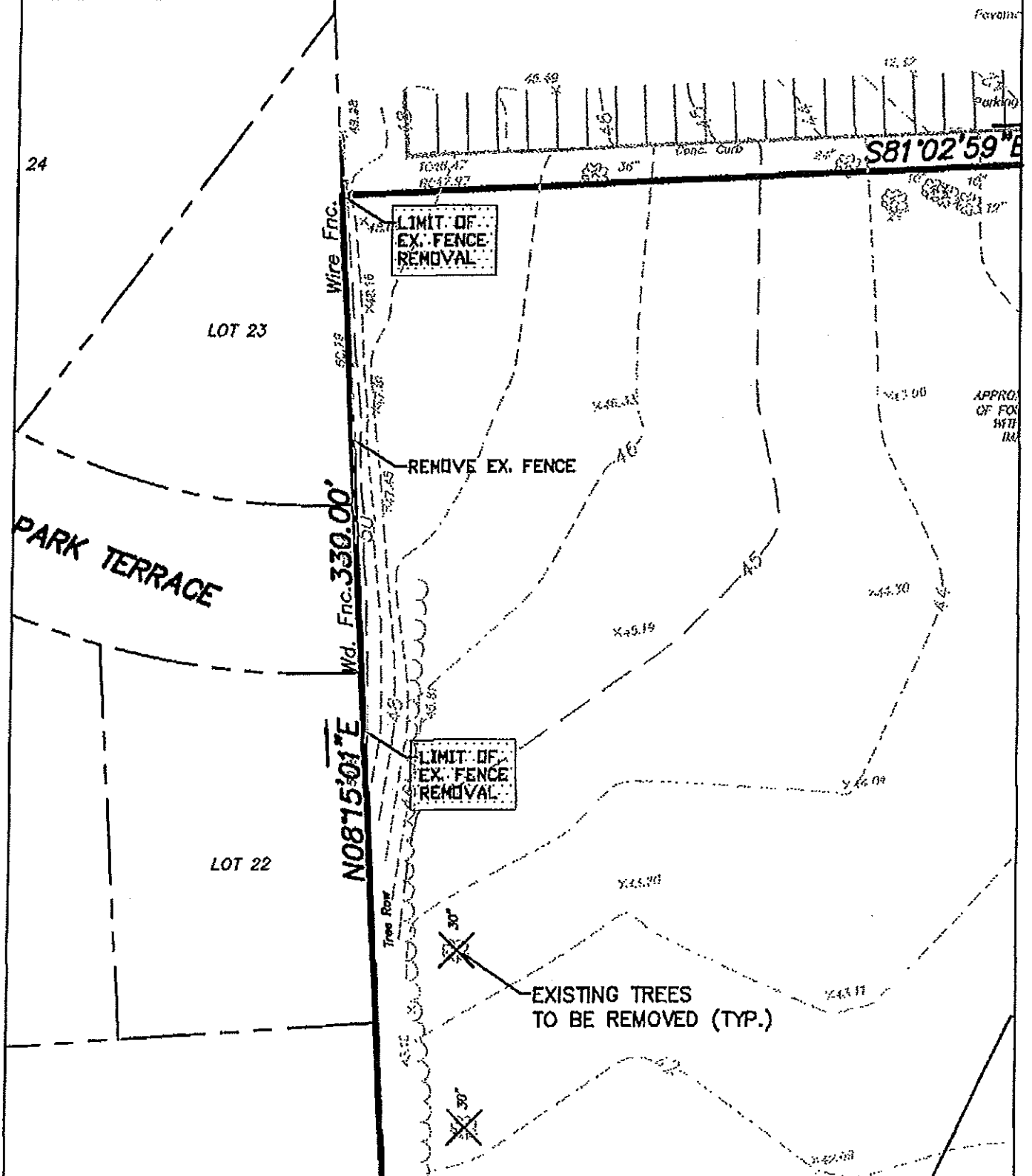
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

Addendum No 2
Feb. 15, 2012

Becica Associates LLC
Architecture/Engineering
500 South Kings Highway
Cherry Hill, New Jersey 08034
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F: 856.354.6367
W: www.becica.com



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Elberon Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

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Addendum

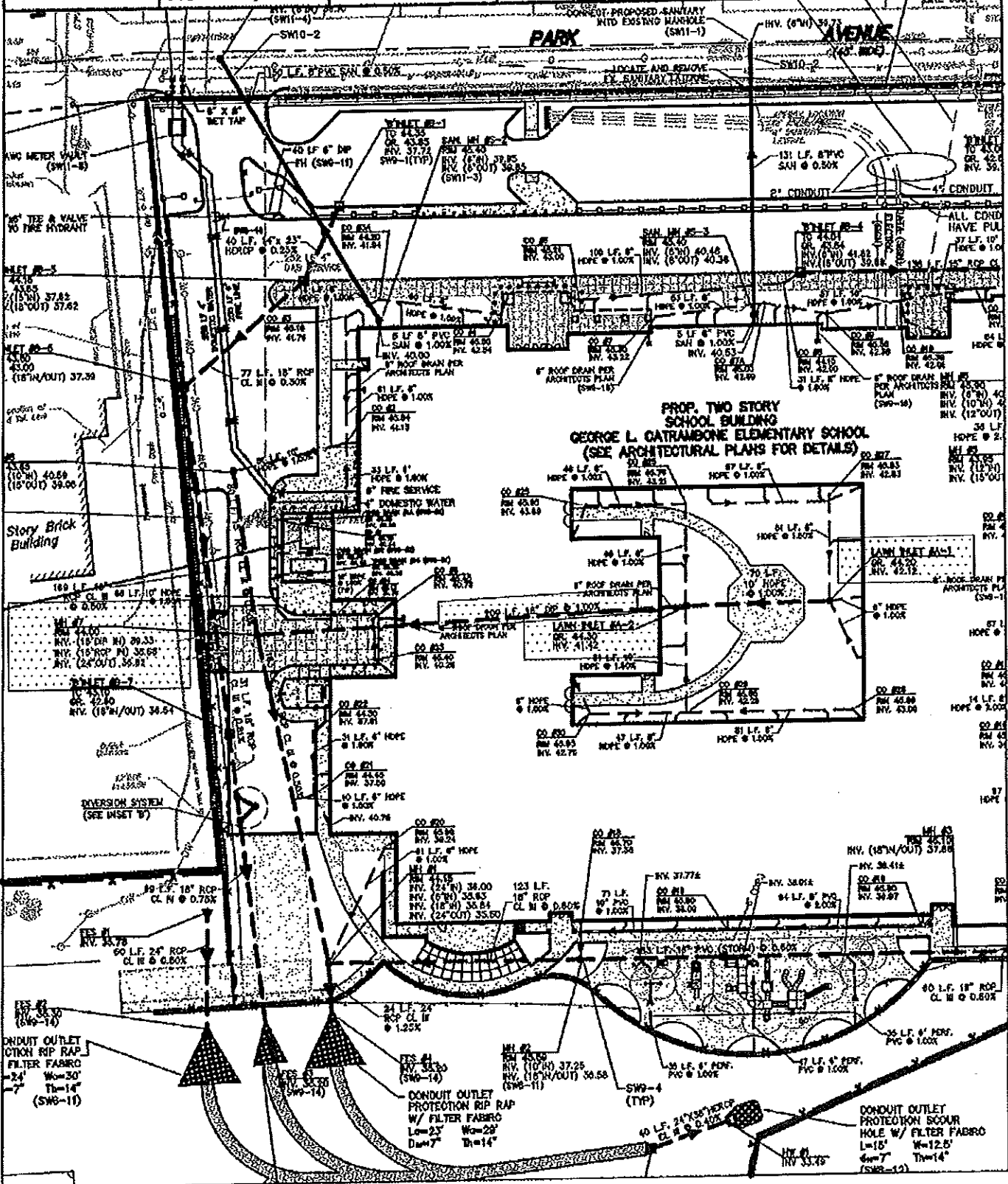
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DATE: 02-09-12

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EDA-04002

SHEET NO.:
SW-X5A
DATE: 02-09-12



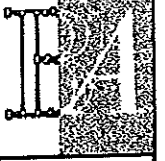
Elberon Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

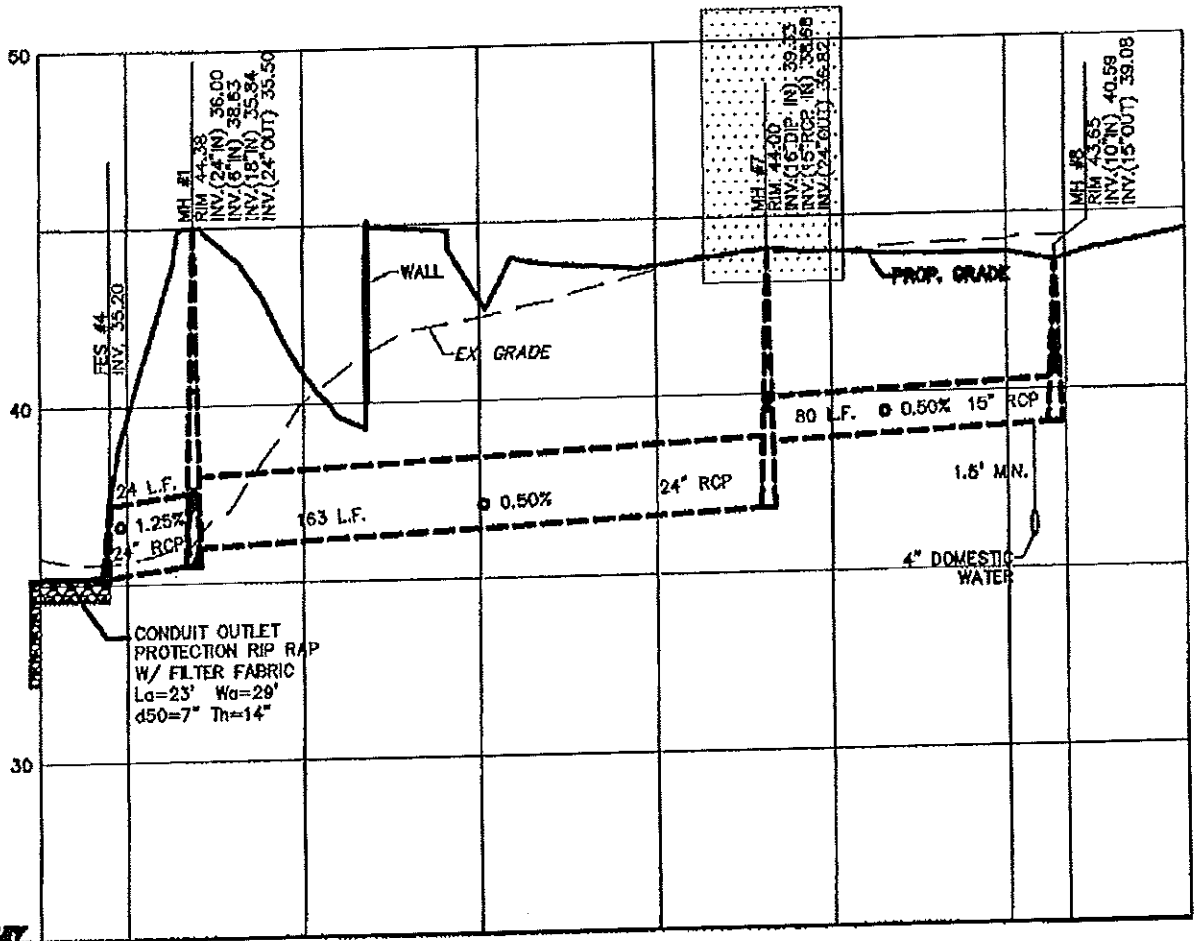
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

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DATED
02/09

F.E.S. #4 TO MH #8

Elberon Elementary School

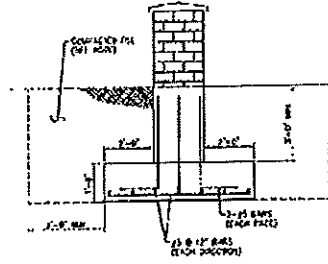
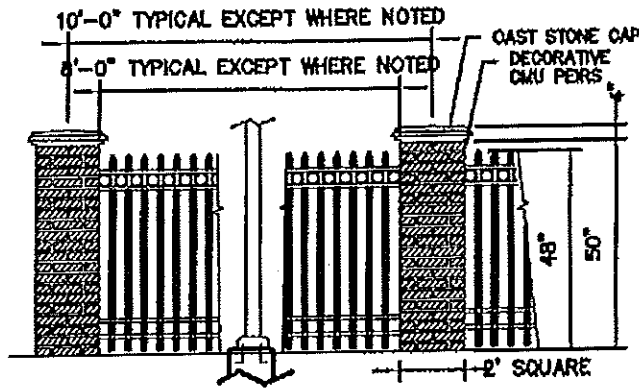
240 Park Avenue, Long Branch, New Jersey 07740

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Addendum No 2
Feb. 15, 2012

ASSOCIATED DOCUMENT Addendum	REFERENCED DRAWING DETAIL/SHEET# SW-10 DATE: 02-09-12	DRAWN BY: ATB	CHECKED: DATE: 02-09-12 BY: ATB	PROJECT NO. EDA-04002	SHEET NO: SW-X10A DATE: 02-09-12
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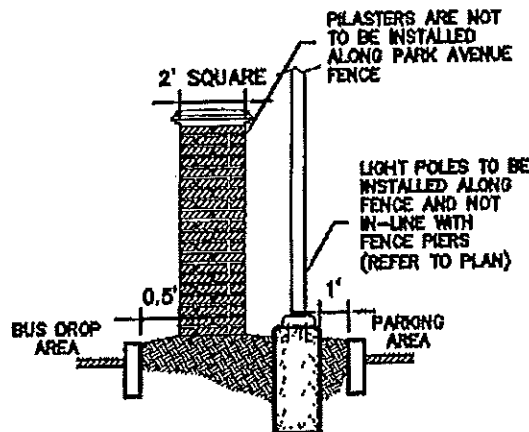


ALUMINUM FENCE AND SW10-15 DECORATIVE PIER DETAIL

FOUNDATION DETAIL N.T.S.

N.T.S.

5. COMPACTION OF THE BACKFILL SHOULD ACHIEVE NINETY PERCENT (90%) OF THE MAXIMUM DENSITY.
6. THE PREPARATION OF THE FOOTING SUBGRADE SHOULD BE INSPECTED BY A GEOTECHNICAL ENGINEER USING APPROPRIATE LABORATORY AND FIELD TESTING SUPPORT.
5. PLASTERS ARE NOT DESIGNED TO RESIST IMPACT FROM TRAFFIC LOAD. PLASTERS SHALL NOT BE INSTALLED ALONG THE PARK AVENUE FENCE.
6. THE FENCE SHALL BE AN ALUMINUM FENCE STYLE AS MANUFACTURED BY:
 - (A) JORTH WINDOW PLUS REGENCY SERIES FENCE STYLE
 - (B) ELEGANT ALUMINUM PRODUCTS, E-SIGNATURE, 2 CHANNEL STANDARD FENCING
 - (C) OR APPROVED EQUAL.
7. THE CMU BLOCKS SHALL HAVE A DECORATIVE SPLIT FACE. CMU BLOCK SIZE SHALL BE 15" x 15" BY 7 5/8" OR APPROVED EQUAL.



SIDE PROFILE N.T.S.

- NOTE:
1. FENCE TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
 2. COMPACTION OF THE FOOTING SUBGRADE SHOULD ACHIEVE A DENSITY OF AT LEAST NINETY-FIVE (95) PERCENT OF THE MAXIMUM DENSITY FOR THE MATERIAL AS DETERMINED IN THE LABORATORY WHEN TESTED IN ACCORDANCE WITH THE MOST RECENT ASTM D1557 STANDARD.

Elberon Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

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540 Broadway, Long Branch,
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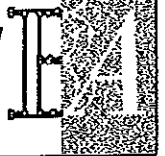
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Addendum

REFERENCED DRAWINGS

DETAIL/SHEET# SW-10

DATE: 02-09-12

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DATE: 02-09-12

BY: ATB

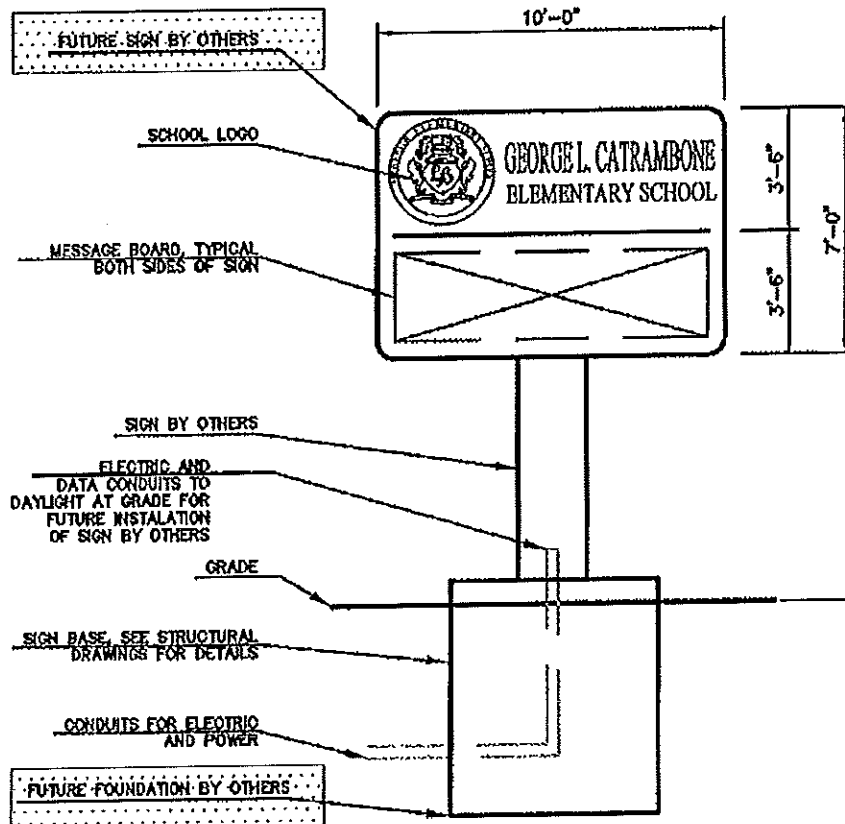
PROJECT NO.

EDA-04002

SHEET NO.:

SW-X10B

DATE: 02-09-12



THIS WORK INCLUDES THE INSTALLATION
OF ELECTRIC AND DATA CONDUITS FOR
THE FUTURE CONSTRUCTION OF THE SCHOOL
IDENTIFICATION SIGN. THE IDENTIFICATION
SIGN IS EXCLUDED FROM THIS CONTRACT.

LONG BRANCH BOARD OF EDUCATION SIGN DETAIL

N.T.S.

SW10-19

Elberon Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

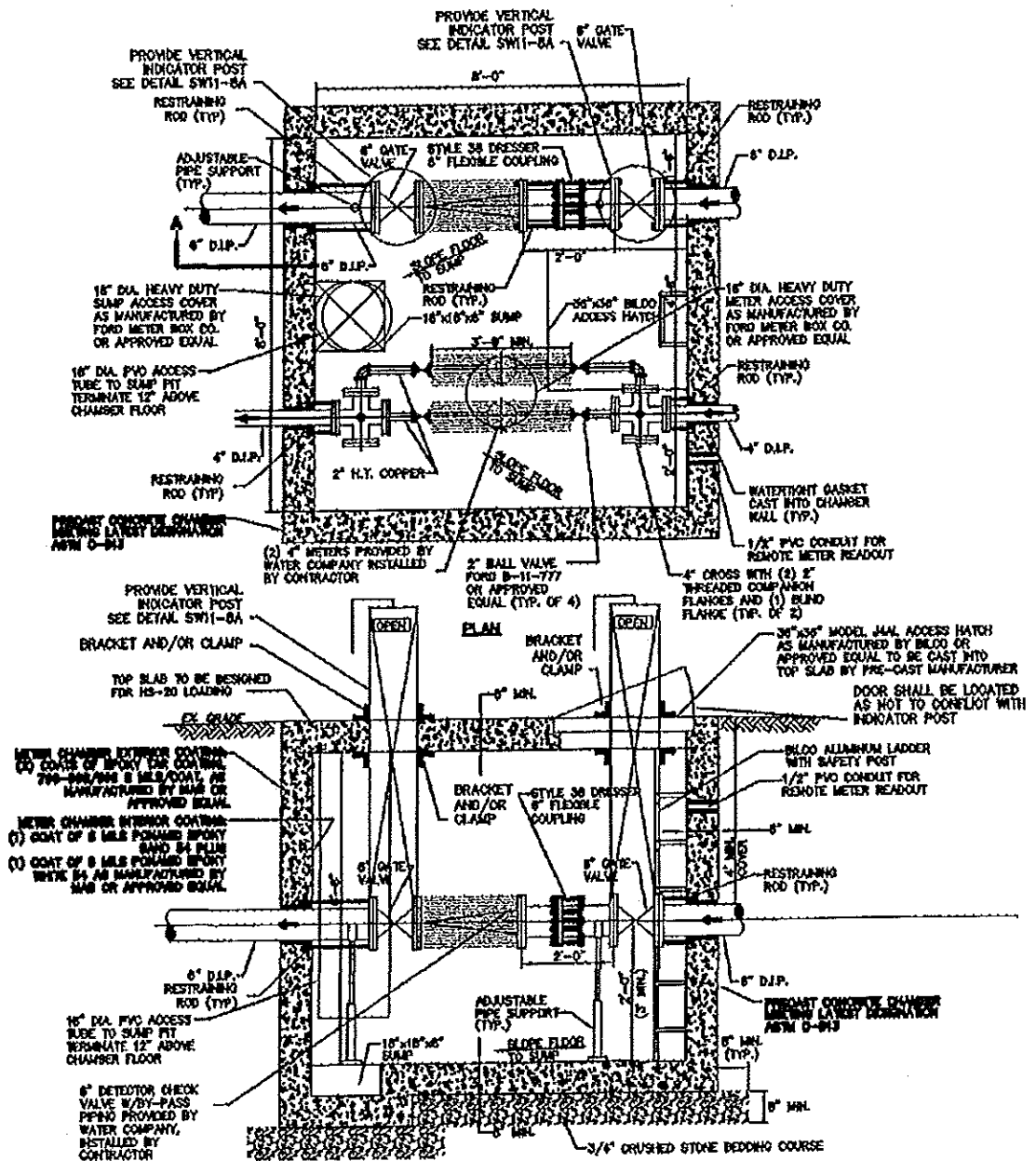
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Feb. 15, 2012

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METER CHAMBER EXTERIOR COATING:
1) COAT OF 3 MILS POLYURETHANE
2) COAT OF 3 MILS POLYURETHANE
3) COAT OF 3 MILS POLYURETHANE
METER CHAMBER INTERIOR COATING:
(1) COAT OF 3 MILS POLYURETHANE
(2) COAT OF 3 MILS POLYURETHANE
(3) COAT OF 3 MILS POLYURETHANE

- NOTES:**
1. ACCESS TO CHAMBER BY 30" MODEL JAL FLUSH WATER TIGHT ACCESS DOOR OR APPROVED EQUAL. ALUMINUM LADDER AT 1' O.C. MUST BE PROVIDED. ENTIRE CHAMBER INSIDE AND OUTSIDE MUST BE COMPLETELY WATERPROOFED. AREAS AROUND CHAMBER MUST BE GRADED TO DRAIN WATER AWAY FROM CHAMBER.
 2. ALL CHAMBER AND PIPING CONSTRUCTION SUBJECT TO WATER COMPANY APPROVAL PRIOR TO SERVICE CONNECTION.
 3. "LADDER-UP" SAFETY POST BY BILCO (OR APPROVED EQUAL) SHALL BE INSTALLED.
 4. ALL JOINTS WITHIN THE CHAMBER SHALL BE FLANGED TYPE JOINTS. ALL JOINTS OUTSIDE OF CHAMBER SHALL BE MECHANICAL TYPE JOINTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 5. CONTRACTOR TO SUPPORT PIPING AS REQUIRED.
 6. POST INDICATOR VALVE (PIV) SHALL BE ELECTRONICALLY SUPERVISED.

SW1-6 METER CHAMBER DETAIL

H.T.S.

Elberon Elementary School

240 Park Avenue, Long Branch, New Jersey 07740

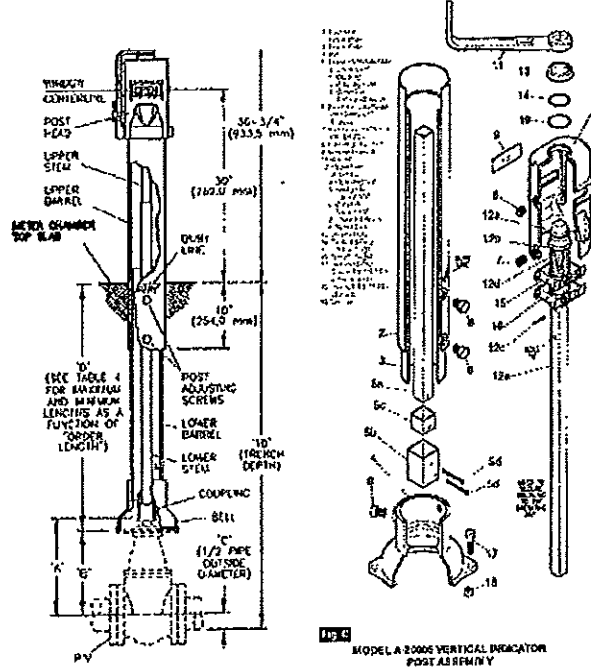
Long Branch Board of Education
540 Broadway, Long Branch,
New Jersey 07740

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Feb. 15, 2012

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MODEL A 2000 VERTICAL INDICATOR POST ASSEMBLY

TABLE 1
Dimensions in inches

Valve Size	A	B	Capac	Turns To Open
14	32.42	20.22	46	46
16	37.00	24.50	53	53

Dimension 'A' for Meter (BSP) Double Die Post Indicator Valves

TABLE 2
Dimensions in inches

Valve Size	A	D	Turns To Open
6	14.21	12.72	11.0
8	17.75	16.00	13.0
10	20.88	24.79	15.0
12	26.60	27.91	16.0
14	33.27	29.15	17.0
16	36.44	34.28	18.0

Dimension 'A' & 'D' for Meter Resilient Wedge Post Indicator Valves

TABLE 3

Pipe Size	Connection C in inches
4	2.50
6	2.62
8	2.75
10	2.87
12	3.00
14	3.12
16	3.25

Dimension 'C' = 1/2 of Pipe O.D. (Typical for underground pipe)

TABLE 4

Valve Size	Dimension D in inches
4	12.25
6	16.50
8	18.25
10	21.00
12	24.00
14	27.00
16	30.00

Dimension 'D' as a function of 'Valve Size'

TABLE 5
MINIMUM TRENCH DEPTHS FOR SMALLER RESILIENT WEDGE POST INDICATOR VALVES

Valve Size	Over Length A	Over Length B	Over Length C	Over Length D	Over Length E	Over Length F
4"	36"	36"	36"	36"	36"	36"
6"	42"	42"	42"	42"	42"	42"
8"	48"	48"	48"	48"	48"	48"
10"	54"	54"	54"	54"	54"	54"
12"	60"	60"	60"	60"	60"	60"
14"	66"	66"	66"	66"	66"	66"
16"	72"	72"	72"	72"	72"	72"

- NOTES:**
- ADJUSTABLE VERTICAL INDICATOR POSTS MODEL A200000 AS MANUFACTURED BY MULLER COMPANY (177425-427) OR APPROVED EQUAL SHALL BE ATTACHED TO THE 6" FPC SERVICE LINE VALVES CONTAINED WITHIN THE METER CHAMBER.
 - EACH VALVE SHALL HAVE A SEPARATE INDICATOR POST.
 - INDICATOR POSTS SHALL BE SECURED TO THE CONCRETE TOP SLAB OF THE METER CHAMBER BY CAST IRON CLAMP AND BRACKET. THE BRACKET SHALL BE SECURED TO THE SLAB FROM THE TOP OF SLAB AND FROM THE BOTTOM OF THE METER CHAMBER SLAB.
 - THE BURY LINE SHALL BE LOCATED AT THE ELEVATION OF THE TOP OF THE METER CHAMBER SLAB.
 - PRIOR TO INSTALLATION CONTRACTOR SHALL PROVIDE A SHOP DRAWING DETAILING FULL INSTALLATION.
 - A MASTER LOCK OR APPROVED EQUAL PAD LOCK SHALL BE PROVIDED ON THE POST VALVE. THE PADLOCK SHALL BE KEPT TO OTHER PACKAGES USED FOR THE ACCESS.
 - THE POST INDICATOR VALVE SHALL BE ELECTRICALLY MONITORED BY A LOGGING SYSTEM CONTING...

Elberon Elementary School

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Addendum No 2

Feb. 15, 2012

ASSOCIATED DOCUMENT
Addendum

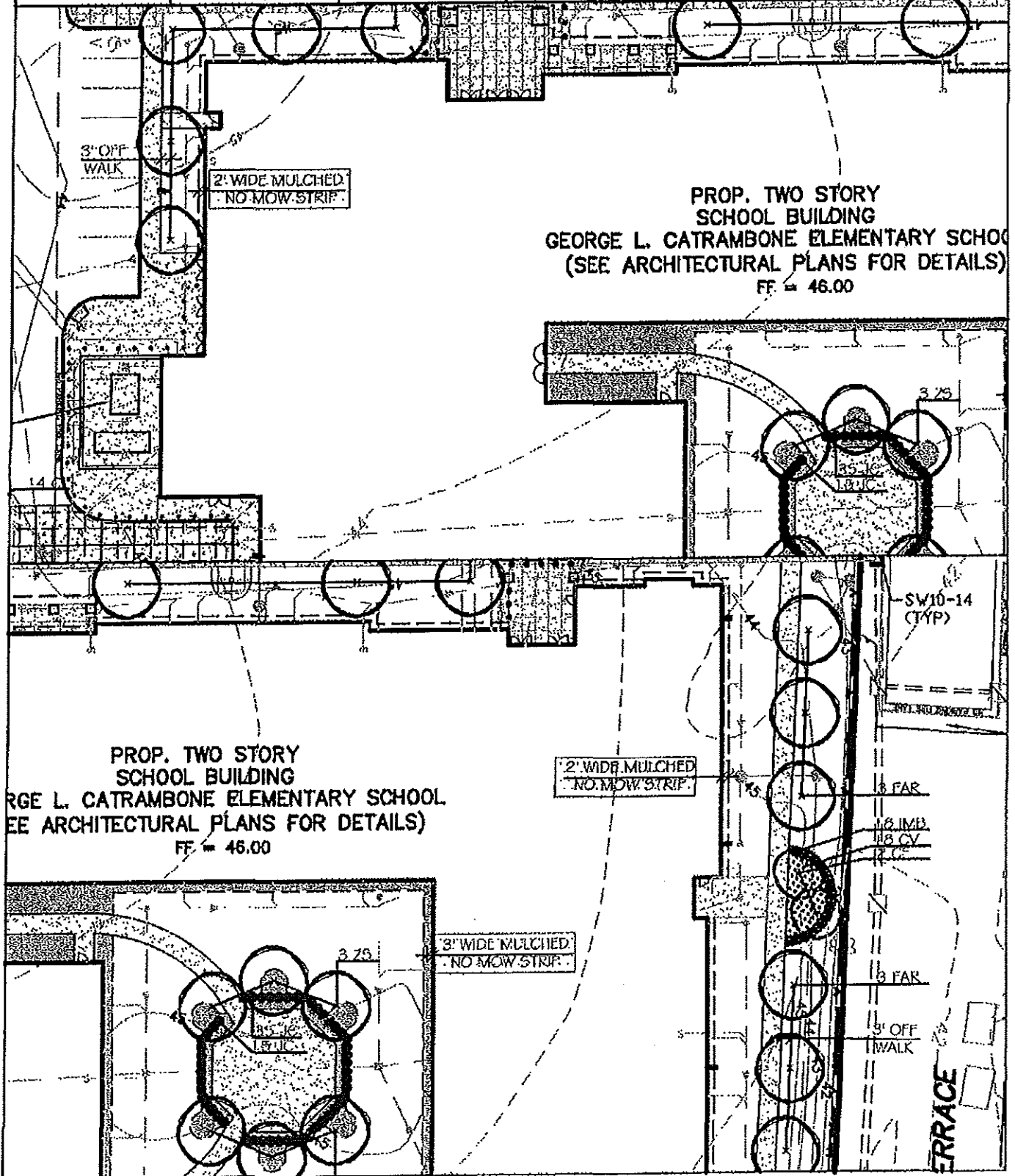
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DATE: 02-09-12

DRAWN BY:
ATB

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DATE: 02-09-12
BY: ATB

PROJECT NO.
EDA-04002

SHEET NO:
SW-XL1A
DATE: 02-09-12



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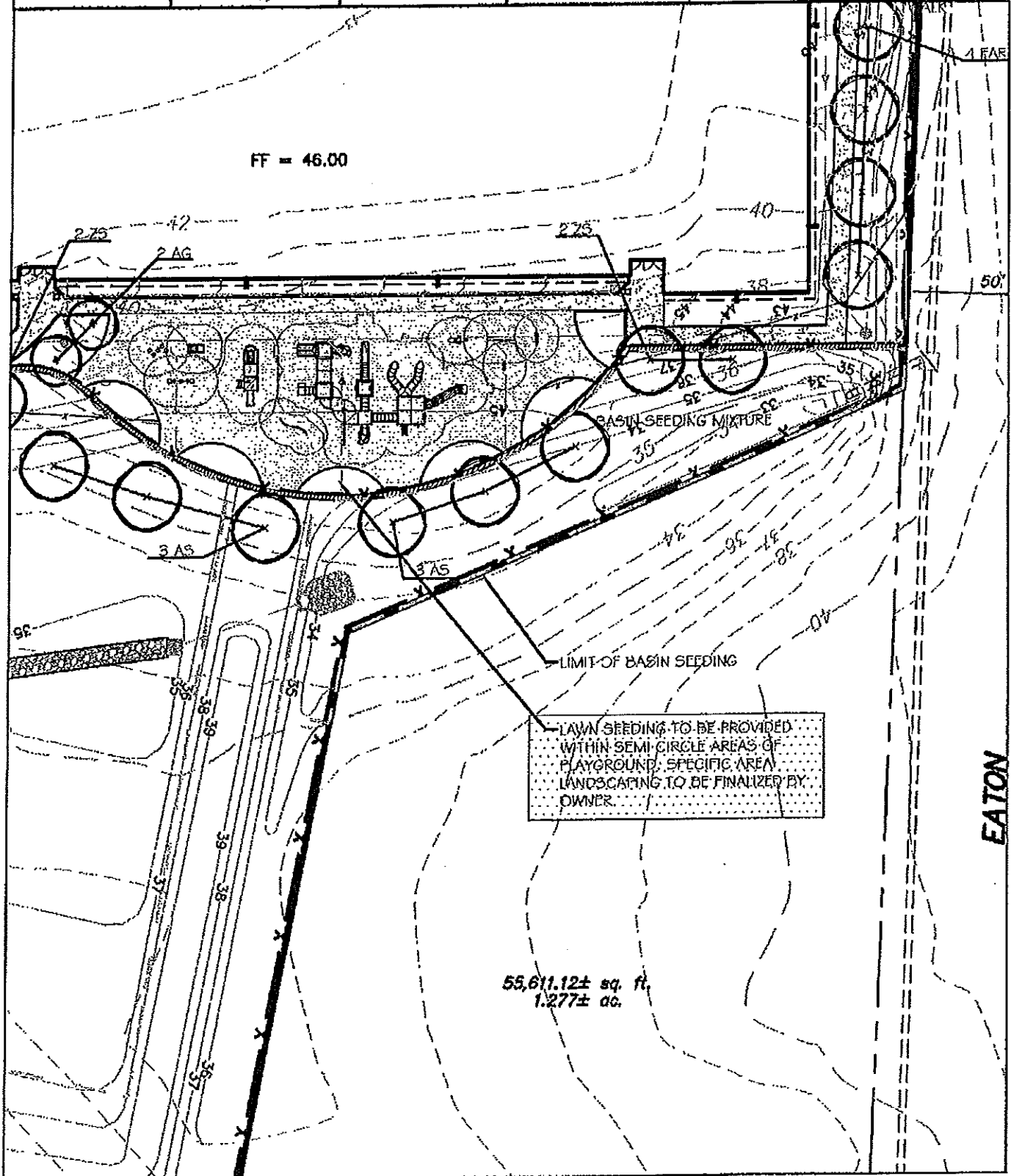
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ASSOCIATED DOCUMENT
Addendum

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DETAIL SHEET # L-3
DATE: 02-09-12

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BY: ATB

PROJECT NO.
EDA-04002

SHEET NO.:
SW-XL3A
DATE: 02-09-12

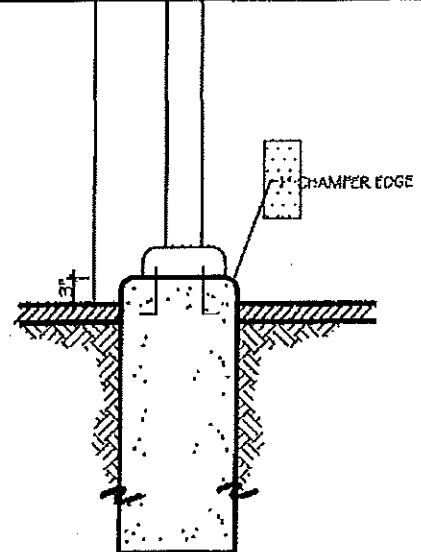
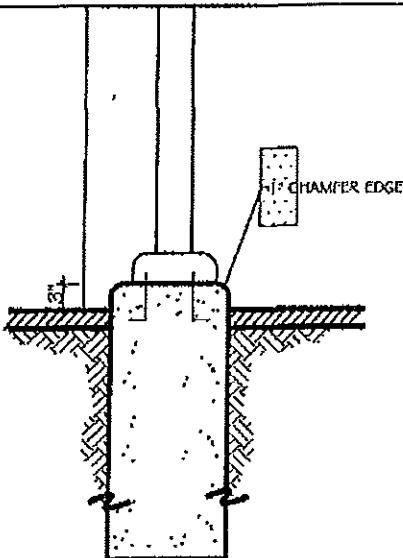
MOUNTING HEIGHT
PER ARCHITECTURAL ELEVATIONS
A3, 2, A-3, B & A3, 4

L3-8 LUMINAIRE DETAILS

NOT TO SCALE

NOTES:

1. LUMINAIRE AND POLES TO BE MANUFACTURED BY K/M LIGHTING OR APPROVED EQUAL.
2. LUMINAIRES ARE TO BE BLACK IN COLOR.



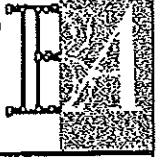
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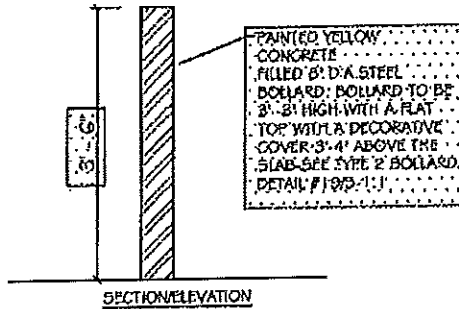
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DATE: 02-09-12
BY: ATB

PROJECT NO.
EDA-04002

SHEET NO.:
SW-XL3B
DATE: 02-09-12



SECTION/ELEVATION
1. CONTRACTOR SHALL SUBMIT
SHOP DRAWINGS FOR APPROVAL
PRIOR TO CONSTRUCTION

L3-8A SECURITY BOLLARD (TYP.)

SCALE: 1" = 1'-0"