

APPENDIX 6B

MODULE 6 – 60% CONSTRUCTION DOCUMENTS REVIEW COMMENTS

District: Town of Northbridge

School: W. Edward Balmer Elementary School

Owner's Project Manager: Symmes Maini & McKee Associates, Inc.

Designer Firm: Dore & Whittier Architects, Inc.

Submittal Received Date: June 19, 2019

Review Date: June 20 – July 8, 2019

Reviewed by: Gienapp Architects, K. Brown, K. Sullivan, R. Hudson

MSBA REVIEW COMMENTS

The following comments¹ on the 60% construction documents submittal are issued pursuant to a review of the project submittal document for the new construction of the proposed project and presented as a 60% construction documents submission in accordance with the MSBA Module 6 Guidelines.

6B.1 Summary Comments

- Basic Project Information:
 - *Enrollment: Grades K-5 with an enrollment of 1,030 students, plus Pre-K (90 students).*
 - *PFA GSF: 167,352*
 - *Project Type: New Construction.*
 - *Construction Delivery Method: Construction Manager at Risk (Fontaine Brothers, Inc.)*
- Comments:
 - *The total project budget per the PFA is \$100,968,194, and the information provided in the 60% CD Updated Total Project Budget indicates \$100,968,194.*
 - *The construction cost estimates are \$79,364,084 (CMR's estimate by Fontaine Bros., Inc.) and \$79,223,343 (Designer's estimate by PM&C).*
 - *The construction budget per the PFA is \$79,492,663, and the information provided in the Updated Total Project Budget confirms that the construction cost of \$79,117,606 is within budget.*

¹ The written comments provided by the MSBA are solely for purposes of determining whether the submittal documents, analysis process, proposed planning concept and any other design documents submitted for MSBA review appear consistent with the MSBA's guidelines and requirements, and are not for the purpose of determining whether the proposed design and its process may meet any legal requirements imposed by federal, state or local law, including, but not limited to, zoning ordinances and by-laws, environmental regulations, building codes, sanitary codes, safety codes and public procurement laws or for the purpose of determining whether the proposed design and process meet any applicable professional standard of care or any other standard of care. Project designers are obligated to implement detailed planning and technical review procedures to effect coordination of design criteria, buildability, and technical adequacy of project concepts. Each city, town and regional school district shall be solely responsible for ensuring that its project development concepts comply with all applicable provisions of federal, state, and local law. The MSBA recommends that each city, town and regional school district have its legal counsel review its development process and subsequent bid documents to ensure that it is in compliance with all provisions of federal, state and local law, prior to bidding. The MSBA shall not be responsible for any legal fees or costs of any kind that may be incurred by a city, town or regional school district in relation to MSBA requirements or the preparation and review of the project's planning process or plans and specifications.

- *Many sections in the 60% CD submission reference the original DD submission rather than including those documents in this submission. In the next submission, provide all documents regardless of if they were included in previous submissions.*

RESPONSE: Acknowledged. All documents will be included in the next submission.

- *Although the Trade Bid Summary section includes lists of filed sub-bid relevant drawings, this list is missing in some of the specific filed sub-bid sections. This may be confusing for bidders. This should be reviewed and revised in the next submission.*

RESPONSE: The list of drawings for Trade Bid Summary sections will be populated before the bid set is issued, to assure the best possible coordination with the latest issue of drawings.

Exceptions to this are the sections for 07 00 01 - Waterproofing Dampproofing and Caulking and 14 00 01 - Elevators, which will be bid based on the 60% documents, hence the lists for those two sections are populated before the other sections.

- *Several sections in the Project Manual indicate missing paragraphs. This should be reviewed and included in the next submission. This missing information is primarily in Trade Bid Summary sections.*

RESPONSE: We assume this comment references missing paragraph numbers related to Filed (trade) Sub-Sub bids mainly in the Plumbing, HVAC, and Electrical Trade Bid Summary sections. Similar to the list of primary drawings for Trade bid categories, these will be completed just prior to issuing the bid set to maximize coordination with the consultants' specification sections.

6B.2 OPM Deliverables: *Unless specifically stated otherwise, the OPM deliverables are included in the submission with no response from MSBA required.*

6B.2.1 Submittal Review & Coordination

- Review designer submissions; make recommendations to Owner. Address each of the following items individually, and describe how each was evaluated.
- Coordinate design; include written recommendations to the Owner.
 - Technical accuracy, coordination & clarity.
 - Efficiency & cost effectiveness.
 - Operability.
 - Constructability.
 - Phasing.
 - Bid-ability.
 - Site access during construction.

- Coordinate the commissioning consultant's review.
 - Include Cx review & District response.
 - Incorporate Cx recommendations. *Commissioning consultant review comments for the 60% CD are included in the submission, however the Designer's response to the comments is not included. Provide the Designer's response to the 60% review comments as part of the response to this review.*
RESPONSE: Designer response to Cx reviewers' comments are attached.
- Coordinate the District response to MSBA comments of previous submittal.
 - Include MSBA review & District response.

6B.2.2 Project Schedule: All schedules should be presented in calendar days.

Update project schedule: As a minimum, the schedule update should provide the same level of detail as was included in Exhibit C of the Project Funding Agreement, expanded and updated to include milestones for Design Development, Bidding, Construction, and Closeout. The updated schedule should include proposed critical path and construction milestone information. In addition to the construction milestones, the schedule must also include the following information as listed in MSBA Module 7, Schedule Activities:

- Punch list start and end dates.
- Date of Project Registration with the US Green Building Council ("USGBC") or Collaboration for High Performance Schools ("CHPS").
- Provisional/Design package submittal date to USGBC or CHPS.
- Submittal date of 50% DCAMM Notification and 100% DCAMM Notification.
- General Contractor/Construction Manager request for final payment.
- Commissioning Consultant inspection (substantial completion plus approximately 10 months).
- Submittal date of Final Commissioning Report to MSBA.
- Submittal date of Final Construction package including but not limited to Final Commissioning Report to USGBC or CHPS.
- Anticipated issuance date of final Green School Program Certification letter from USGBC or CHPS.
- Submittal date to MSBA of Commissioning Certificate of Completion.
- Submittal date to MSBA of final reimbursement request.
- Indicate submission dates for the following approvals. In addition, provide dates for any other state or federal approval not listed below (the following list is not a comprehensive itemization of required state approvals; other requirements may apply, and some of the items listed below may not be applicable to this project). Indicate "Not Applicable" where appropriate:
 - DESE - Special Education approval by Department of Elementary and Secondary Education.
 - MHC – Project Notification Form and approvals by MA Historical Commission.

- OIG - Construction Manager at Risk approval by the Office of Inspector General.
- Executive Office of Energy and Environmental Affairs / EEA:
 - MEPA - MA Environmental Policy Act by Energy & Environmental Affairs:
 - ENF - Environmental Notification Form. *The submission indicates this is not applicable.*
 - EIR - Environmental Impact Report. *The submission indicates this is not applicable.*
 - Article 97 Land Disposition Policy approval by Energy & Environmental Affairs. *The submission indicates this is not applicable.*
 - MA DEP - Massachusetts Department of Environmental Protection. *The submission indicates this is not applicable.*
 - MA DOT - Massachusetts Department of Transportation. *The submission indicates this is not applicable.*
 - MA DPH - Massachusetts Department of Public Health. *The submission indicates this is not applicable.*
- EPA –NPDES National Pollutant Discharge Elimination System Notice of Intent approval by the US Environmental Protection Agency.
- MAAB - Accessibility variances by MA Architectural Access Board. *The submission indicates this is not applicable.*
- Indicate all required state reviews or permits on the milestone schedule including actual or planned dates of approval which are required in order to maintain the planned bidding and construction schedule and milestones indicated therein. For required state reviews or permit approvals which have not been obtained on schedule, provide a separate (sub network) schedule depicting recovery actions to obtain required approvals in order to maintain the bidding and construction schedule.
- A letter on District letterhead confirming that the Project has undergone review and obtained all necessary state reviews and approvals by any departments or agencies of the Commonwealth required by law to review the Project, including but not limited to the approvals listed above. Attach such letter of documentation evidencing such state reviews and approvals:
 - Identify any state reviews or permits for which approval has not been obtained as of the 60% Construction Documents submission date, and include in the District letter a status update including actions taken to date and actions planned to obtain the required approval(s) in order to comply with Project Funding Agreement (the "PFA") Section 4.12. and maintain the projected schedule milestones listed in OPM Deliverables. .

- Section 4.12 of the PFA, executed between the District and the MSBA, requires that each project successfully undergo review and obtain all necessary approvals “prior to the solicitation of construction bids, by any departments or agencies of the Commonwealth required by law to review such projects...” As part of the response to these 60% CD submission review comments, MSBA requires documentation that the District is in compliance with this requirement of the PFA.
- The schedule is to be updated and submitted to MSBA as often as is required to reflect any changes, including any changes to milestone dates, but must be submitted with each design submittal (DD, 60% CD, 90% CD).
- Indicate the date for submission to MSBA of the 60% and proposed dates for 90% Construction Documents submittals. The schedule is to incorporate 21 calendar day required duration for MSBA review of each submission, and a minimum of 14 calendar days for project team incorporation of MSBA review comments as well as all others into the project documents prior to the due date of the next submission or finalizing project documents for bidding. 35 calendar days for each submission is the minimum acceptable duration; if the project team believes additional time is required for any or all of the submissions the durations for these activities are to be increased accordingly.

6B.2.3 Scope and Budget

- Update project scope and budget:
 - Reconciled construction cost estimate including Designer/OPM comparison chart:
 - Prepare independent construction cost estimates pursuant to Section 8.1.2.2 of the Contract for Project Management Services, with escalation to the mid-point of construction, for comparison with the Designer’s cost estimate, based upon design development progress documents. *Designer’s cost estimate by PM&C indicates an escalation of 2.5%, and the CM’s cost estimate indicates an escalation of 2%. As part of the response to these review comments, clarify if these amounts reflect escalation to the mid-point of construction as required.*
RESPONSE: Escalation to the mid-point of construction is included in both the CM’s estimate and the PM&C estimate, within the rates. Escalation on the summary is to the start of construction.
 - CMR (if applicable):
 - If Owner has not yet contracted with a Construction Manager (CM), the OPM must

develop a construction cost estimate for comparison with the Designer's cost estimate.

- If the Owner has given the CM a Notice to Proceed, the OPM must review cost estimates provided by the Designer and CM and provide a detailed line by line reconciliation of the Designer's and CM's construction cost estimates. *A detailed line by line reconciliation of the Designer's and CM's cost estimates by the OPM was not provided. Provide this as part of the response to these review comments (please see template attachment at the end of the comments).*

RESPONSE: The Fontaine Final 60% Construction Documents estimate is the reconciled estimate. A comparison to the Designer's Final 60% Construction Documents estimate was attached in Section 6.B.2.3.2.

- Updated project budget in the total project budget format, based on the reconciled construction cost estimate. If the reconciled estimate is not used for the updated project budget, provide an explanation. *A construction budget of \$79,117,606 was used for the updated project budget, but this amount was not indicated to be the reconciled cost estimate. Clarify as part of the response to these review comments and resubmit a corrected project budget spreadsheet if necessary.*

RESPONSE: The Fontaine Final 60% Construction Documents estimate is the reconciled estimate.

- Value Engineering recommendations.
 - For any Value Engineering recommendations which have been accepted, provide a copy of the Committee vote. *As part of the response to this review, provide a copy of the Committee vote approving the timber framed entrance canopy in lieu of a metal canopy.*

RESPONSE: The certified June 12, 2019 School Building Committee meeting minutes containing the vote to approve the timber framed canopy are attached.

6B.3 Designer Deliverables: *Unless specifically stated otherwise, the Designer deliverables are included in the submission with no response from MSBA required.*

6B.3.1 General Requirements

- Submit updated work plan.
- Updated and expanded Basis of Design narrative description for all disciplines.
- Updated building code analysis.
- Provide a list identifying all proposed proprietary items (if any) with an affidavit which shall indicate that an elected body of the district (school

committee, city or town council, or selectmen, -but not ad-hoc building committee) has been presented with proposals for proprietary requirements approval action, has had an opportunity to investigate, or to require staff or consultant investigation upon each item so proposed, and has majority voted in an open public session that it is in the public interest to do so. Provide MSBA with a certified copy of the vote of the elected body. *The certified copy of the vote is not included in the submission; however, it is indicated that it would occur on the same date as the submission and would be submitted to MSBA on or after June 25, 2019. Provide this information in the response to this review and in the 90% CD submittal.*

RESPONSE: The proprietary items vote was not taken until the July 9, 2019 School Committee meeting. Due to a reduced summer meeting schedule, the certified School Committee minutes containing the proprietary vote will not be available until after their next meeting on August 7. D&W's signed Proprietary Vote Memo is included as part of this response to comments (attached). Final certified School Committee meeting minutes will be included in the 90% CD MSBA submission.

- Updated interior color theory statement describing proposed paint and material selections and colors for typical and special spaces, why they have been selected and how these selections relate to exterior materials and colors. Confirm that color and material selections have been presented to and approved by the District.
- Updated structural narrative including methods of lateral bracing and how requirements of earthquake code will be met.
- Updated structural calculations and required floor loads.
- Independent structural design review in compliance with the current edition of The Massachusetts State Building Code (an MSBA requirement for all projects with new construction over 10,000 sf). MSBA requires submission of a structural engineering peer review as part of the Final (100%) Construction Documents submission, to include documentation of resolution of any issues identified by the Peer Reviewer. Actions are to be advanced well prior to the 90% CD submission to engage the peer reviewer, and that scheduling be arranged to allow final structural design drawings and calculations to be submitted to the peer reviewer at the time of completion of the 90% Construction Documents submittal, in order to incorporate comments and response action reporting in the final construction documents and avoid delays. Confirm this process has been initiated. *Initiated but not included, scheduled to be issued to MSBA July 16, 2019. Provide this information in the 90% CD submittal.*

RESPONSE: The 60% CD Structural Peer Review letter is attached, along with the SER's responses to the comments.

- Updated energy calculations. *The submission indicates there is no change from previous submission.*
- Updated Life Cycle cost analysis for energy and water consuming devices. *The submission indicates there is no change from previous submission.*

- Updated heat gain and loss calculations for Heating, Ventilating and Air Conditioning systems. *The submission indicates there is no change from previous submission.*
- Updated calculations showing total electrical load. *The submission indicates there is no change from previous submission.*
- Updated security and visual access requirements:
 - Confirmation that the persons responsible for implementation of the District's emergency procedures, and responding emergency medical, fire protection, and police agency representatives have been consulted in the planning process and any associated requirements have been included in the project.
 - Identification of any other security related items particular to the District and/or the proposed project.
 - Verification that the following safety and security related issues have been reviewed and are in accordance with the District's procedures as noted above:
 - Main entrance design – describe District protocol for visitor entry and check-in related to the current design for visitors to remain in the vestibule versus a side sub-vestibule.
 - Classroom lockset hardware - confirm hardware functions are compatible with the District's protocols related to lockdown. *The submission indicates this is no substantive change from previous submission.*
 - Classroom / Instructional spaces visibility - confirm that the inclusion of sidelights at entrance locations is compatible with the District's current standards related to visibility from corridors and whether any related. *The submission indicates this is no substantive change from previous submission.*
 - Alternative entry locations - confirm project includes site and building signage, as may be required by District's emergency procedures, to identify locations where first responders may more directly reach a person needing medical attention; Knox Boxes; and provisions for building plans to be delivered to local fire and response agencies. *The submission indicates this is no substantive change from previous submission.*
 - Updated quality Control documents demonstrating:
 - Ceiling clearances.
 - Mechanical room and shaft sizes.
 - Coordinate specifications and drawings.
 - Filed sub-bid work.
 - Scheduling.
 - Equipment and power.
 - Existing and new construction.
 - Phasing.

6B.3.2 Space Summary

- Updated space summary and signed certification that reflects the current design. *Based on the space summary provided, the MSBA notes the following:*

<u>Spaces</u>	<u>PFA Space Summary</u>	<u>DD Space Summary</u>	<u>60% CD Space Summary</u>	<u>90% CD Space Summary</u>	<u>Difference to PFA</u>	<u>Comments</u>
Core Academic Spaces	62,850	62,850	62,850		-	This category has not changed since the PFA.
Special Education	13,530	13,530	13,530		-	This category has not changed since the PFA.
Art and Music	5,150	5,150	5,150		-	This category has not changed since the PFA.
Health & Physical Education	6,298	6,298	6,298		-	This category has not changed since the PFA.
Media Center	5,305	5,305	5,305		-	This category has not changed since the PFA.
Dining and Food Service	11,955	11,955	11,955		-	This category has not changed since the PFA.
Medical	810	810	810		-	This category has not changed since the PFA.
Administration & Guidance	3,040	3,040	3,040		-	This category has not changed since the PFA.
Custodial & Maintenance	2,630	2,630	2,630		-	This category has not changed since the PFA.
Total Building Net	111,568	111,568	111,568		-	This category has not changed since the PFA.
Non-Programmed Spaces						
IT Office/Repair	150	150	338		188	This category has increased by 188 nsf since the PFA.
Unoccupied MEP/FP Spaces	2,125	2,008	1,824		(301)	This category has decreased by 301 nsf since the PFA.
Unoccupied Closets, Supply Rooms & Storage Rooms	641	646	625		(16)	This category has decreased by 16 nsf since the PFA.
Toilet Rooms	3,955	3,937	3,943		(12)	This category has decreased by 12 nsf since the PFA.
Circulation (corridors, stairs, ramps, & elevators)	29,396	31,893	30,580		1,184	This category has increased by 1,184 nsf since the PFA.
Remaining	19,517	17,150	18,474		(1,043)	This category has decreased by 1,043 nsf since the PFA.
Total Building Gross	167,352	167,352	167,352		-	This category has not changed since the PFA.
Grossing Factor	1.50	1.50	1.50		-	This category has not changed since the PFA.

- Comparison of the current design with the final educational program, and confirmation that there are no variations. If there are variations, the written summary must address the following:
 - Explanation of deviations within the space summary from the Project Funding Agreement. *The submission does not note any deviation other than to the Non-Programmed spaces (see 6A.3.2 above). Because the additional IT Office area is within the acceptable 1.50 grossing factor, and the added space is reallocated from other gross areas, MSBA accepts this variation to the approved project with no further action required.*
- The MSBA considers that deviations include changes in the size of a specific space, the total nsf of a program area (e.g. general classrooms, voc tech, dining etc.), the location of a space, the surrounding adjacencies of a space and or the intended purpose of the room.
- The submittal must clearly call out deviations to location and surrounding adjacencies through the use of redlines or “clouding.”
 - The explanation should clearly identify the basis of the change identifying both architectural and/or programmatic reasons.
 - If the basis of the change is programmatic, the submittal should include a red-lined version of the educational plan included in the Project Funding Agreement.
 - Regarding DESE approved SPED spaces:
 - If the District wishes to submit a change to its DESE approved submittal, it must a) confirm that all changes to SPED spaces are final; b) provide a new submittal utilizing the format of the original submittal requirements and clearly noting any changes through use of clouded floor plans and red-lined narratives and tables; and c) indicate how the project schedule can accommodate a potential resubmittal and approval by DESE. Please provide a separate package for changes to DESE approved SPED spaces. *Not Applicable per the submission.*
 - If the District chooses not to change from the DESE approved submittal it should confirm that the spaces are the same or explain when and how the spaces will be returned to the approved size, configuration and location.
- Regarding DESE approved Public Day Education spaces; *Not Applicable per the submission.*
 - If the District wishes to submit a change to its DESE approved submittal, it must a) confirm that all changes to Public Day Education spaces are final; b) provide a new submittal utilizing the format of the original submittal requirements and clearly noting any changes through use of clouded floor plans and red-lined

- narratives and tables; and c) indicate how the project schedule can accommodate a potential resubmittal and approval by DESE. Please provide a separate package for changes to Public Day Education Spaces.
 - If the District chooses not to change from the DESE approved submittal it should confirm that the spaces are the same or explain when and how the spaces will be returned to the approved size, configuration and location.
- Regarding DESE pre-approved Chapter 74 Program spaces; *Not Applicable per the submission.*

6B.3.3 Project Approvals

- Describe the status of the following approvals. In addition, provide the status of any other state or federal approval not listed below (the following list is not a comprehensive itemization of required state approvals; other requirements may apply, and some of the items listed below may not be applicable to this project). Provide a copy of the appropriate application forms and/or approval letters where applicable. Indicate "Not Applicable" where appropriate. For each agency approval required for this project, indicate the date when approval was received. All required approvals should have an associated approval date indicated as part of the 90% CD submission and prior to advertising for bids.
 - DESE - Special Education approval by Department of Elementary and Secondary Education.
 - MHC – Project Notification Form and approvals by MA Historical Commission.
 - OIG - Construction Manager at Risk approval by the Office of Inspector General.
 - Executive Office of Energy and Environmental Affairs / EEA:
 - MEPA - MA Environmental Policy Act by Energy & Environmental Affairs:
 - ENF - Environmental Notification Form. *The submission indicates this is not applicable.*
 - EIR - Environmental Impact Report. *The submission indicates this is not applicable.*
 - Article 97 Land Disposition Policy approval by Energy & Environmental Affairs. *The submission indicates this is not applicable.*
 - MA DEP - Massachusetts Department of Environmental Protection. *The submission indicates this is not applicable.*
 - MA DOT - Massachusetts Department of Transportation. *The submission indicates this is not applicable.*
 - MA DPH - Massachusetts Department of Public Health. *The submission indicates this is not applicable.*

- EPA –NPDES National Pollutant Discharge Elimination System Notice of Intent approval by the US Environmental Protection Agency.
- MAAB - Accessibility variances by MA Architectural Access Board. *The submission indicates this is not applicable.*
- Confirmation that the Project has undergone review and obtained all necessary approvals by any departments or agencies of the Commonwealth required by law to review the Project, including but not limited to the approvals listed above. Attach such letter of documentation evidencing such reviews and approvals. In accordance with Section 4.12 of the Project Funding Agreement (the “PFA”), the District must obtain such reviews or approvals prior to the solicitation of construction bids. For any required state reviews or permits for which approval has not been obtained as of the 60% Construction Documents submission date, provide a status update including actions taken to date and actions planned to obtain the required state reviews and permit approval(s) in order to comply with PFA Section 4.12 and maintain the projected schedule milestones listed in OPM Deliverables.
- List and target dates for all local zoning approvals, testing and permits.
- Provide a certification that all applicable utility officials have been contacted by the designer regarding each basic design, and utility connections.

6B.3.4 Cost Estimate

- Provide a construction cost estimate based on the 60% Construction Documents, including cost estimates for general conditions, overhead and profit, insurance, bonds, and all other items; and allowances expressed as percentage rates for construction contingencies and escalation to the mid-point of the construction period; and other mutually agreed upon contingencies. Prepare the construction cost estimate in the CSI MasterSpec format to Level 3 and M.G.L. c.149, §44F (filed sub-bid) format including a single line outline specification description for each item with the detailed unit rate or item cost buildup provided as a backup in each case.
- The date of the estimate should be no earlier than the date of 60% Construction Documents. *Date of the estimate is June 4, 2019 and submission of 60% CD is June 18, 2019. With the response to these comments, confirm if the cost estimate is based on the submission.*
RESPONSE: The cost estimate was based upon the 60% CD Pricing Set, issued May 17, 2019. The 60% CD MSBA submission issued June 18, 2019 is substantially similar to the 60% CD Pricing Set.
 - Provide a summary sheet including the following:
 - Date that the estimate was prepared (value date).
 - Anticipated bid date. *Not Included. Should be included in the next submission.*

RESPONSE: Acknowledged, and this will be addressed in the next submission.

- Project and contract number. *Not Included. Should be included in the next submission.*

RESPONSE: The MSBA project ID number (201502140001) will be listed on both the title sheet of the drawings and the cover of the Project Manual in subsequent submissions.

- Title and location of the project.
- Name of the Designer.
- Name of the Estimator.
- Site cost (including all utilities). *Utilities are not included. Should be included in the next submission.*

RESPONSE: Cost of Utilities totaling \$3,804,107 was included on Page 44 of the Fontaine Bros 60% CD estimate of 6/7/19, and on pages 39-41 of the PM&C 60% CD estimate of 6/7/19 (no isolated dollar number, mixed in with other sitework).

- Building cost (including fixed equipment).
- Estimated construction cost of each Phase of the work, totaled.
- Costs of Item 1 and Item 2 work, as distinguished in the General Contractor's bid forms, individually totaled.

6B.3.5 Drawings (developed to 60% CD progress level)

- Cover sheet showing a list of all drawings, symbols, abbreviations, notes, locations map (the project title should be visible when the drawings are rolled). *There are no symbols or abbreviations on the cover sheet and the title is not visible when the set is rolled. Please include these changes in the next submission.*

RESPONSE: The 60% CD submittal package includes a cover sheet, listing all drawings and consultants, and providing a location map. Due to the quantity of other information specific to each consultant's drawings (symbols, abbreviations, notes, etc.), legends related to consultant scope are located within each consultant's set of drawings, usually the first sheet in their set of drawings, such as drawings AG0.01, AG0.02 for architectural content; or in some cases on the particular sheet to which the symbols pertain, such as certain Structural drawings. There is not enough room on the title sheet for a comprehensive list of abbreviations and symbols.

We regret the title block including the project name oriented so that it is visible when the drawings are rolled was not included in the CD60 set. It will be included in the CD 90 submission.

- Site drawings showing the following:

- Layout and location of all proposed work with details.
- Existing and proposed contours including floor elevations at all entrances/exits showing drainage away from the building.
- Bench marks and boring locations. *The boring locations are not identified. Please include them in the next submission.*

RESPONSE: The Geotechnical Report is contained within Section 00 31 00 and 00 31 00.10 of the Project Manual. Within the report is a site plan showing the location of borings and test pits with a footprint of the existing and new schools to reference their locations on site. The Borings and Test Pit locations (along with drainage calc test pits) are shown on Sheets DA-EX and DA-PR in the Civil set. We do not recommend making them a darker line weight, as this get graphically more confusing on the already busy sheet. This information was included in the 60% CD submission.

- Landscaping and planting.
- All utility service lines, systems and structures for electricity, gas, oil, water, steam, telephone, CATV, fire alarm, sanitary and storm drainage.
- Contract limit line and storage area for construction materials. *No materials storage area is identified on the plans. Please include one in the next submission.*

RESPONSE: On drawing sheet AP-1.11, stockpile location is called out (#4) and Contractor lay-down/ storage/ trailers is called out as (#5).

- Site survey which includes, but is not limited to, all existing foundations, obstructions and other physical characteristics of the site.
- Demolition drawings and temporary work required. *Only site demolition plans are included. Please include building demolition plans in the next submission.*

RESPONSE: The existing Balmer School will be demolished by general (mass) demolition, with no phasing involved. For this demolition scope, we will include available drawings of the original structure as reference drawings in the 90% CD submission.

- Architectural drawings showing the following:
 - Floor plans of each floor, with dimensions, column locations, floor elevations, door and window designations, partition types, built in furniture and equipment, keyed to other architectural drawings and coordinated with exterior grade elevations at all interior/exterior transitions. *No floor elevations or exterior grades at transitions are included. Please include them in the next submission.*

RESPONSE: Finish floor elevations appear on the Horizontal Control Plans (A0.10 series drawings) that document the foundations and slabs for the building. The A0.10 drawing also includes a correlation to the civil grade elevation of the building,

which is uniform across the entire building footprint (at all entries).

- Large scale floor plans where required.
- Roof plans including equipment.
- Key plans / overall plans where required.
- Building Sections updated and coordinated with plans and elevations.
- Building elevations. All building elevations, including hidden elevations, fully developed, showing context and relation to exterior sloping grade around the building. *The exterior grades sloping away from the building are not included. Please include them in the next submission.*

RESPONSE: Finish grade variation in the northeast corner of the building will be shown on the elevations in the next submission and coordinated with the Civil and Landscape drawings.

- Wall sections indicating dimensions, flashing, anchorage, reinforcing, coursing, cladding, and all other conditions at wall, roof, foundation, interior floors.
- Exterior details, for roofing, flashing and other details showing all major conditions.
- Door, window, entrance, curtain wall and storefront, schedules, and details.
- Vertical circulation plans, sections and details including ramps, stairs, lifts and elevators.
- Guardrails and handrails including details.
- Interior elevations of all significant and typical spaces.
- Interior details including casework, paneling surfacing and acoustical treatment
- Reflected ceiling plans coordinated with fire protection, mechanical and electrical drawings.
- Ceiling details.
- Schedules (clearly define new or existing):
 - Doors.
 - Equipment, e.g. for services.
 - Partitions.
 - Finishes.
- Structural drawings showing the following:
 - Legend and/or graphical symbols on the first sheet of the structural drawings. *The legend with graphic symbols is not included. Please include one in the next submission.*

RESPONSE: In the Structural drawings, key notes are included on the sheets to which the notes refer, and, are in many cases accompanied by graphic symbols and abbreviation explanations; e.g. Sheets S1.11, S1.21, etc. The team feels it is more effective

to have the notes on the pages where the symbol or abbreviation might be encountered.

- Foundation plans with bottom grades showing layout of all footings, walls, slabs on grade including reinforcing, grade beams, and columns; include design soil bearing pressures and live loads for each area. *The bottom grades of footings are not included in the foundation plans. Please include them in the next submission.*

RESPONSE: Top of footing grade elevations are covered in Foundation Note #3 on S1.11, etc. and any variations from those general rules are noted on the foundation plan drawings. The bottom of footing elevation is easily computed using the footing schedules and footing thickness found on each foundation sheet. This information was included in the 60% CD MSBA set.

- Floor and roof plans of structural systems including framing, grades of finished floors and depressed areas, with locations and dimensions for all openings, coordinated with the architectural drawings. *The grades of finish floors are not included on the plans. Please include them in the next submission.*

RESPONSE: Finish Floor grade elevations are generically defined as 1st FF EL = 0'-0" and are keyed to the Civil Drawings in Foundation Note #3. This information will be completed in the next submission.

- Complete foundation wall elevation and typical sections, with reinforcing indicating location, dimensions and grades for all footings, steps and wall openings. *The foundation wall elevations are not included. Please include them in the next submission.*

RESPONSE: Top of foundation wall grade elevations are defined by structural details on sheet S2.01, etc. and refer to the Horizontal Control Plans in the A0.XX series of drawings. This information was included in the 60% CD MSBA set.

- Complete details and section with dimensions for all construction including expansion and construction joints, reinforcing and other embedded items. Coordinate construction and expansion joint details with specified materials including caulking and sealant. *An expansion joint detail is not included. Please include one in the next submission.*

RESPONSE: Expansion joint details at the fire wall are currently under development and will be included in the next submission.

- Schedules (with dimensions) for all lintels, beams, joists, and columns. Coordinate dimensions of all elements listed in the schedules with dimensions depicted on the plans. *The beam schedule is not included; consider including in the next submission.*

RESPONSE: *Brief column schedules are included on each foundation plan in the structural drawings. Column sizes are consistent for the full height of the building. D&W prefers to indicate beam and joist sizes directly on the framing plans, rather than on a remote schedule to assure better coordination. Schedules for lintel sizes are included in the S0.04 drawing based on maximum spans. This information was included in the 60% CD MSBA submission.*

- Structural supports required for mechanical equipment.
- General notes including the following information: class and 28-day strength of concrete for each portion, structural steel and concrete reinforcing design stresses for each type of structural member, concrete cover for each type of structural member, shrinkage and temperature steel requirements, reinforcing laps for main reinforcing and temperature steel; bend point, cutoff, and hook locations for all members, minimum beam and lintel bearing. *The minimum beam and lintel bearing is not included in the general notes. Please include in the next submission.*

RESPONSE: *Minimum bearing length for structural lintels and beams on masonry walls is indicated in notes at the lintel schedules and the detail of "Typical Steel Beam on CMU Detail" on drawing S0.04. This information was included in the 60% CD MSBA submission.*

- Fire protection drawings showing the following:
 - Legend and/or graphical symbols on the first sheet of the fire protection drawings.
 - Standpipe systems, sprinkler systems, suppression systems, fire pump where required, accessories, and piping.
 - All piping, equipment, fixtures, valves and devices. *Not all the piping is shown on the plans. Please include in the next submission.*

RESPONSE: *All piping will be shown in the next MSBA submission.*

- Design criteria shall be provided on the drawings in accordance with NFPA requirements. *The design criteria are not included on the plans. Please include them in the next submission.*

RESPONSE: *Design criteria will be included in the next MSBA submission.*

- Plumbing drawings showing the following:
 - Legend and/or graphical symbols on the first sheet of the plumbing drawings.
 - All work done by the Plumbing Subcontractor, which includes all water, gas, air, vacuum, medical gases, sanitary and storm wastes, and accessories.

- Trapping and venting of all plumbing fixtures including floor drains. Provide location dimensions for floor drains in coordination with the structural plans. *There is no floor drain detail showing the trap. Please include in the next submission.*
RESPONSE: Floor drain details will be included in the next MSBA submission.
- Water and gas supply sources, storm and sanitary discharge mains.
- All piping sizes shall be indicated on drawings and riser diagrams. Indicate all directions of flow and pitch on piping. *The direction of flow is not included on the piping lines on the plans. Please include the direction for flow on the plans in the next submission.*
RESPONSE: Direction of flow in major pipes will be included in the next MSBA submission.
- All accessories, valves, fixtures including all drinking fountains and grease traps for kitchen waste. *The grease trap is not shown on the plumbing plans, but it is located on the civil plans. Please show it on the plumbing plans in the next submission.*
RESPONSE: Both interior and exterior grease traps will be included in the next MSBA submission.
- All piping and connections required for other trades (e.g., kitchen equipment, HVAC make-up water, etc.). *The connections to kitchen equipment and boilers are not included on the plans. Please include them in the next submission.*
RESPONSE: Connections to kitchen equipment and boilers will be included in the next MSBA submission.
- Acid waste (where required), vents and neutralization systems for laboratories. *Not applicable.*
- Plumbing riser diagrams. *The plumbing riser diagram has not been included. Please include one in the next submission.*
RESPONSE: The plumbing riser diagram will be included in the next MSBA submission.
- Domestic water booster pumps, boiler feed water, meter location, hose bibs. *The boiler connections are not included. Please include them in the next submission.*
RESPONSE: Connections to boilers will be included in the next MSBA submission.
- Domestic hot water: storage tanks, piping material, hanger details. *The hanger detail is not included. Please include one in the next submission.*
RESPONSE: Hanger details will be included in the next MSBA submission.

- Backflow preventers, and cleanouts.
- Heating, Ventilating and Air Conditioning Drawings showing the following:
 - Legend and/or graphical symbols on the first sheet of the mechanical drawings.
 - Large scale plans of all mechanical & electrical spaces showing equipment to scale. *A large scale plan of the electrical room is not included. Please include one in the next submission.*

RESPONSE: A large scale plan of all electrical rooms, including the Main Electrical Room appears on 3/E3.00. This information was included in the 60% CD MSBA set.

- All piping and ductwork systems shall be located and sized. All ductwork shall be shown double line and drawn to scale.
- All systems shall be sized at all reductions and riser diagrams of piping and duct systems shall be indicated.
- All directions of flow and pitch on piping, and direction of flow and volumes for duct systems shall be indicated. *The direction of flow on the pipes are not included. Please include in the next submission.*

RESPONSE: Direction of flow in major pipes will be included in the next MSBA submission.

- All equipment shall have sufficient servicing and/or replacement space indicated on drawings. *Service and replacement space have not been indicated on the plans. Please indicate in the next submission.*

RESPONSE: Service clearances will be added to Mechanical and Electrical room plans the next MSBA submission.

- All equipment, accessories, valves and dampers identified as to type and size.
- Cooling system pumps, chillers, cooling towers, air handling units, ductwork system and dampers, fan details, temperature control system, air and hydronic balancing equipment, and schedules shall be indicated.
 - Cooling tower (where required) shall be indicated on the drawings showing site location, elevations and floor plan of equipment layout and typical flow diagram as related to the total HVAC system. *The submission indicates this is not applicable.*
- All fire and smoke dampers, access panels and doors. *Access panels are not included. Please include in the next submission.*

RESPONSE: D&W prefers not to attempt to document the location of all access doors and panels related to plumbing, fire protection, mechanical, and electrical drawings, as any locations required that are not documented properly would constitute a risk of a claim for additional compensation. The documents require that each trade provide all access doors required for

their scope, and to coordinate the sizes and locations with the trades who construct the walls which the doors will be installed in.

- Mechanical room designs:
 - Vent pipes for safety valves, relief valves, back pressure valves and tanks shall be extended above flat roofs in accordance with all governing authorities. *There is no detail showing vents through the roof. Please include one in the next submission.*
RESPONSE: Vent details will be included in the next MSBA submission.
 - In all designs for boiler and refrigeration plants, include a complete floor plan indicating location of all major mechanical equipment and sufficient service space. *The service and replacement space are not indicated on the plans. Please indicate in the next submission.*
RESPONSE: Service clearances will be added to the enlarged plans for the next submission.
 - In designs of new and/or replacement boiler and refrigeration plants, provide a flow diagram detailing steam or hot water distribution systems, return systems, including all existing equipment and their function, as well as any proposed expansions with all necessary instrumentation and controls.
- Electrical Drawings showing the following:
 - Legend and/or graphical symbols on the first sheet of the electrical drawings.
 - General arrangement: Outline layout of each floor.
 - Indicate interface with other systems. Identify any work by general contractor or other trades.
 - Interior lighting system: Light fixture schedules, circuiting location and mounting heights of all fixtures, receptacle and switch outlets, sizes and types of all lamps, conduits, all other accessories and riser diagrams shall be indicated on drawings. Designer shall specify that all electrical lighting fixtures be supported from the building structure, and shall be independent of ducts, pipes, ceilings and their supporting members. Comply with seismic design criteria. *The mounting heights are not included in the lighting schedule, and there is no lighting riser diagram included. Please include these items in the next submission.*
RESPONSE: Lighting mounting heights and riser diagram will be included in the next MSBA submission.
- Power system: Locations, types and method of control for all motors, heaters, appliances, controllers, starters, branch circuits, feeder conductors and conduits. Indicate riser diagrams. Show details and

indicate method of supporting electrical conduit. For larger projects, thermostats and control wiring are normally covered under the HVAC sub-contract, assure coordination.

- Fire Alarm, Data, Communications, CATV/CCTV Systems: Locations and types of all devices, outlets and equipment, service connections, wiring diagrams, all other essential details.
- Services: Location and details of all services, whether overhead or underground, feeder sizes, plans and elevations of switchgear and transformers, metering and service switchboard arrangements, wiring and ground fault diagram and bus ducts. *The service is not indicated in electrical room. Please include in the next submission.*

RESPONSE: Details of the electrical service will be included in the next MSBA submission.

- General and sub-stations: Location, size, method of connection and protection of all generators, transformers, exciters, motor generators, switch gear, and associated equipment, current characteristics and equipment capacities. Indicate equipment connections by means of one line and/or wiring diagrams and schedule all major items of equipment and all instruments.
- Underground work: The size and locations of manholes and types of cables, number, size, and location of ducts, locations, sizes and types of cable supports, fireproofing, duct line profile, and one-line diagram of connections.
- Pole line work: Location, length, treatment and class of poles, guying, cross arms, insulators, circuiting, transformers, protective and switching devices, lightning arresters, special structures, diagrams, current characteristics and grounding.
- Exterior lighting: Location, size, and type of transformers, luminary, poles, light standards, cables, ducts, and manholes, details of control equipment and connection diagrams.
- Emergency system (where provided) details including transfer switch, type of fuel.
- One-line diagram indicating load KVA, and available short circuit amperes at each transformer, switchboard, distribution panel board, branch circuit panel board, and at major pieces of equipment. *Load KVA is not indicated at the transformer. Please include in the next submission.*

RESPONSE: The finalized load KVA will be included in the next MSBA submission.

- Riser diagrams for all system.

6B.3.6 Project Manual (developed to 60% CD progress level)

- The format for the technical specifications shall be CSI Master format (current version) with separate sections for each of class of work required by M.G.L. c. 149 §44F.

- For each item of material or equipment, the specifications shall provide for a minimum of three named brands of material or equipment and the words "or equal" or a description of material or equipment which can be met by a minimum of three manufacturers or producers, and the words "or equal". Proprietary products shall not be specified except as provided by M.G.L. c. 30, § 39M; however, when they are specified, proprietary specifications are subject to the "or equal" provisions of c. 30, § 39M.
- Do not specify that a product or system shall require prequalification for use prior to bidding.
- Include a copy of the geotechnical report, including locations and dates of test boring holes and results of soil investigation, including water levels, allowable solid bearing pressure and bottom grades of footing and slabs. *A preliminary geotechnical report is included as well as a more recent geotechnical report. These are labeled as "Phase 1 and Phase 2 in the Table of Contents. Phase 1 includes limited boring locations with limited information. Please consolidate and update these reports with a final geotechnical report for the next submission.*

RESPONSE: The "Phase 1" geotechnical report was an initial exploratory program of borings early in the feasibility phase. The "Phase 2" report incorporates all the Phase 1 data; plus an additional comprehensive program of borings and test pits. The Phase 2 report is considered the comprehensive, consolidated final report for the site. We will consider leaving the "Phase 1" report out of the project manual to avoid any confusion.

- List all required filed sub-bids specification sections. *It is not clear what sections are filed sub-bids. Filed sub-bid sections are indicated with "Filed Sub-Bid Summary" in the Table of Contents, however, the sections themselves refer back to these summaries for Filed Sub-bid information. The work of various sections indicate that they are part of a filed sub-bid but this isn't evident in the Table of Contents or section title. Example: Section 03 4500 Precast Architectural Concrete indicates that this section shall be included in the Masonry Trade Bid and refers back to the Masonry Trade Bid Summary. It must be clear which sections are included in filed sub-bids. Please revise for the next submission.*

RESPONSE: Each Filed Sub Bid (FSB) section lists the pertinent technical sections, and each technical section refers to the FSB section in its first paragraph. The Designer does not advise addressing this in the TOC, because some technical sections have work in them that's shared by multiple FSBs. To try to address this in the TOC would be messy, confusing, and unnecessarily long. FSB scopes are all cross-referenced sufficiently and clearly.

- Each filed sub-bid section shall detail all labor and materials required by the particular sub-trade.
- Staging, scaffolding cutting and patching, refuse collection and disposal, demolition work and cleaning task, allocation policy and proposed language shall be carefully assigned to avoid duplication or omission.

- Describe the extent of the work, the materials and workmanship, and include the work under the proper section. If any portion of the work included in a section of the specifications is to be performed by a trade covered by another section, there shall be clear and distinct cross-referencing between the sections. Merely to state "by others" is not acceptable.
- All "Work by Others" specification references are coordinated.
- Specify work in appropriate Sections according to local trade jurisdiction.
- In sections for which filed sub-bids are required, refrain from using such terms as "the Contractor," the "Heating Contractor," or "the Plumbing Contractor," but where necessary for clarity refer to the "HVAC Subcontractor," the "General Contractor" and so on. *There are several Trade Bid sections that refer to "The Contractor" in a non-specific way and assumes responsibility for the work of the section.*
Example: Section 33 4000 Storm Drainage Utilities refers to "the Contractor" as having carefully examined the site. Please replace like wording with "General Contractor" for next submission.

RESPONSE: General terms such as "the Contractor" will be replaced with terms specific to the scope of work, or be assigned to the Construction Manager, as this is a CM@R project. These issues will be addressed in the next MSBA submission.

- Alternates, if approved in writing by the owner, shall be properly described and cross-referenced in the project manual and drawings. *No Alternate section is provided and none are indicated in the drawings; however, Section 01 2300 Alternates is referenced at the beginning of several sections (especially in Article 1.03 Price and Payment Procedures). This should be reviewed and updated in the next submission.*

RESPONSE: Language regarding Alternates will be addressed in the next MSBA submission.

- Allowances are prohibited pursuant to M.G.L. c. 149, § 44G(A). *There appears to be a reference for allowances in regards to hazardous material removal. It is indicated to provide a cost "allowance for the removal and disposal of inaccessible or hidden ACM". However, this is provided in the report done by UEC (Universal Environmental Consultants). This should be reviewed and revised in the next submission.*

RESPONSE: Language regarding Allowances in connection with Haz Mat scope will be addressed in the next MSBA submission.

- Unit price items, if permitted or ordered by the owner, shall be properly described in the specifications. *In the list of unit prices included in Section 00 43 22 Unit Prices Form, only a few of the items indicate related Project Manual Sections and drawings. Consider including relevant Project Manual Sections and drawings for all unit prices for clarity.*

RESPONSE: Unit Price information will be reviewed, and any issues addressed in the next MSBA submission.

- Do not use general clauses intended to be all-inclusive in lieu of complete descriptions.
- Do not duplicate standard requirements that are contained in the contract form.
- Use consistency throughout. The word "will" shall be used to designate what the owner, authority, owner's project manager, or the designer can be expected to do, and the word "shall" shall be used to designate what is mandatory for the contractor or subcontractors to do. *"The Owner shall..." is used throughout the Project Manual. "The Designer shall..." is found in the General Conditions. This should be reviewed and revised in the next submission.*

RESPONSE: "Shall" terminology will be reviewed, and any issues addressed in the next MSBA submission.

- Use the same term throughout for the same subject and the term shall be the same as that used on the drawings. *"Gypsum" and "drywall" are both used in the Project Manual. "Gypsum" is the term primarily used in the drawings. This should be reviewed and coordinated in the next submission.*

RESPONSE: Project materials terminology will be reviewed, and any issues addressed in the next MSBA submission.

- Do not use the term "etc." *There are several instances of the use of "etc." Example: In Section 01 9113 General Commissioning has several listed items ending in "etc.". This should be reviewed and revised in the next submission.*

RESPONSE: The Designer engages in a continuous ongoing process of expunging terms such as "etc." from its specifications. We will address this issue in the next MSBA submission.

- Avoid such terms as "to the satisfaction of the designer", "as directed by the designer", "as approved" and "as required." *There are several instances where sections refer to items being "as approved by the Architect/Designer". Example: Section 21 0010 Fire Protection 2.10.E – "key lock system shall be as approved by the Architect". Example: Section 23 0010 HVAC 2.27.D.2 – "surface raceway may be used as approved by the Architect". This should be reviewed and revised in the next submission.*

RESPONSE: This issue will be addressed in the next MSBA submission.

- Avoid the use of symbols.
- Do not give numbers both in words and figures. Numbers less than 10 shall be written in words, 10 and higher numbers shall be written in figures. In expressing dimensions, figures such as 2 in., 16 in., 7 ft., 6 in., shall be used. *There are several instances where numbers are given in both words and figures. Example: Section 27 4000 Audio-Video Communication Systems or Section 26 0010 Electrical. Please provide figures and words where appropriate and not both together.*

RESPONSE: This issue will be addressed in the next MSBA submission.

- *Lengths and distances appear to use "or " instead of in. and ft.. Please revise accordingly.*

RESPONSE: This issue will be addressed in the next MSBA submission.

- Specify materials mined or manufactured in Massachusetts first and the United States of America second whenever possible.

6B.3.7 Project Coordination

- Verify all details are accurately cross-referenced to the correct plan sheet. *The details are not cross referenced to the plans. This should be reviewed and revised in the next submission.*

RESPONSE: Detail cross-referencing is an ongoing activity as the drawing set is being developed. Further development and resolution will be included in the next MSBA submission.

- Verify that the structural, mechanical, or other disciplines, do not conflict with architectural plans or specifications.
 - Structural dimensions match architectural drawings.
 - Column orientation matches architectural drawings.
 - Column grid lines match architectural drawings.
 - Column and bearing wall locations match architectural drawings.
 - Column locations coordinated with all other disciplines.
 - Seismic detailing coordinates with architectural drawings. *On sheet S4.02 – BF-10 on the second floor, the brace frame is not located in a wall; it is out in the open. Please review this and correct in the next submission. On sheet S4.01 – BF-3 on the first floor there are 2 windows that may interfere with the brace frames. Also on sheet S4.01 – BF-5 on the first floor, the corner of the transom interferes with the brace frame. Please review and revise these items in the next submission.*
RESPONSE: These issues will be addressed in the next MSBA submission.
 - Beams and columns protruding horizontally and vertically into stairwells, and other interior spaces.
 - The finish grade elevations coordinated between all disciplines. *The finish grade elevations are not included on the*

architectural plans, so they are not coordinated. Please coordinate in the next submission.

RESPONSE: Finish floor elevations appear on the Horizontal Control Plans (A0.10 series drawings) that document the foundations and slabs for the building. The A0.10 and S1 Series drawings (Foundation Note #3) also includes a correlation to the Civil grade elevation of the building, which is uniform across the entire building footprint (at all entries). This information was all included with the 60% CD drawings.

- Mechanical equipment power requirements and physical locations, including special information as to who mounts, connects, tests, etc.
- Verification of potential spatial conflicts in mechanical equipment.
- Room wall/floor/ceiling construction coordinated with the finish schedule.
- Civil earthwork grading and excavation plans are coordinated with architectural and landscape plans. *The architectural plans do not include floor elevations, so it could not be confirmed that they are coordinated. Please coordinate in the next submission.*

RESPONSE: Finish floor elevations appear on the Horizontal Control Plans (A0.10 series drawings) that document the foundations and slabs for the building. The A0.10 and S1 Series drawings (Foundation Note #3) also includes a correlation to the Civil grade elevation of the building, which is uniform across the entire building footprint (at all entries). This information was all included with the 60% CD drawings.

- All room numbers are coordinated between all disciplines.
- Equipment plan coordinates with architectural plans.
- All kitchen equipment connected to utility. *The plumbing plans do not show water, waste and gas lines connected to the kitchen equipment. Please include connections in the next submission.*

RESPONSE: Plumbing connections will be addressed in the next MSBA submission.



Commissioning Design Review

300 UNICORN PARK DRIVE, 5TH FLOOR

WOBURN, MA 01801

(P) 781.481.0210 (F) 781.481.0203 (W) www.f-t.com

Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
100% DD Document Review		Review Date: 3/13/2019			
H001	General	-	The project is reviewed as presented. Not all systems are complete as would be expected at DD.	GGD: Scope will be added and clarified as design progresses	
H002	M1.11 / General Duct	-	Consider indicating smooth elbow fittings in lieu of mitered shown, to improve flow and reduce static. Mitered should be used only when needed, with vanes.	GGD: Agree, Will revise to show smooth elbows where they will fit.	
H003	M1.11 / General Duct	-	Ductwork is not sized on drawings. Sizing cannot be evaluated.	GGD: Duct sizes will be included as the design progresses	
H004	M1.11 / General Duct	-	Consider limiting VAV inlet size ductwork to 3 diameters upstream, then transitioning to ductwork sized per medium-velocity criteria.	GGD: Agree, Will Comply	
H005	M1.11 / General Duct	-	VAV boxes are not scheduled. Selection cannot be evaluated.	GGD: Schedule data will be filled in as the design progresses	
H006	M1.11 / General Classroom	-	Design air balance does not appear to take into account make-up air for exhaust via classroom toilet rooms.	GGD: A Neutral or slightly positive air balance will be maintained; this shall be clarified as the design progresses	
H007	M1.11 / General Duct	-	Airflow is not consistently provided to common and corridor areas. It's unclear if these spaces are out of scope.	GGD: No areas within the building are outside of scope; common area design will be clarified as the design progresses	
H008	M1.11 / General	-	Consider providing supply to the vestibule for pressurization purposes. Additionally, the corridor(s) have several exterior doors and should be provided with airflow for positive pressurization.	GGD: Agree, Corridors and Vestibules shall be positively pressurized as the design progresses	



Commissioning Design Review

300 UNICORN PARK DRIVE, 5TH FLOOR

WOBURN, MA 01801

(P) 781.481.0210 (F) 781.481.0203 (W) www.f-t.com

Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
H009	M1.12 / General Duct	-	Exhaust ductwork is shown only for risers at core toilets. It's unclear if this system is intended to support all toilet / general building exhaust.	GGD: Exhaust scope shall be clarified as the design progresses	
H010	M1.41 / General Roof	-	Consider indicating make-up air intake locations and clear zones around exhaust discharge locations.	GGD: All Outdoor air intakes will be de-marked by a dashed radius indicating clearance required	
H011	M2.11 / General Pipe	-	Piping is not sized on drawings. Sizing cannot be evaluated.	GGD: Pipe sizing to be clarified as the design progresses	
H012	M2.11	-	Consider indicating a cabinet unit heater in the main vestibule.	GGD: Agree, Cabinet Unit Heaters to be included in the vestibule.	
H013	M2.11 / General Pipe	-	Consider indicating expansion compensation locations in hot water piping mains.	GGD: Agree, Expansion loops and/or fittings will be indicated where needed as the design progresses	
H014	M2.11 / General Pipe	-	Split system outdoor units are not shown on grade or roof.	GGD: Split system outdoor units shall be indicated on the roof	
H015	M2.12	-	It's assumed the ATC Panel is located near the interior boiler room door.	GGD: Agree, will show.	
H016	M2.12	-	HW piping risers are shown on boiler plan but labeled on main plan.	GGD: Will clarify	
H017	M2.13	-	Consider indicating intended refrigerant piping routing and branch controller locations.	GGD: Will comply	
H018	M2.13	-	Consider indicating condensate piping locations to be coordinated with plumbing.	GGD: Will comply	
H019	M2.13	-	Heating is not indicated at main toilet rooms near cafeteria.	GGD: This area will be heated, scope to be clarified as the design progresses	
H020	M3.01	-	The RTU schedule cooling section appears to be set up for chilled water and not DX cooling.	GGD: Will revise to be DX	



Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
H021	M3.01	-	Consider an occupancy setback for the gym unit, which is indicated to be constant volume (although VAV capable). Consider clarifying.	GGD: Gym, Caf, and Media Center will all be VAV to vary with the Occupant and cooling loads.	
H022	M3.01	-	Confirm boiler hot water temperature available at 96.1% efficiency as scheduled. Equipment is scheduled at 160F inlet temperature.	GGD: Efficiency is at AHRI conditions; Boiler Reset schedule will modulate the HHW setpoint from 160 to 110 based on building demand	
H023	M3.02	-	Consider adding a second elbow to the transfer duct detail to provide a z-duct for additional sound insulation.	GGD: Will consider and review with the Arch.	
H024	M3.03	-	Consider indicating shut-off valves and a hose for the make-up water fill at the expansion tank.	GGD: Make-up water provided by Div. 220000	
H025	M3.06	-	System airflows are not indicated. Consider requirements for life safety dampers to separate floors on multi-level units, based on total flow.	GGD: Will comply	
H026	M3.06	-	The chemical feed appears to be piped backwards.	GGD: Will review & correct	
H027	M3.06	-	Chilled water is not indicated in scope.	GGD: No Chilled Water in scope; Detail to be removed	
H028	M4.01 / General Controls	-	Heating setpoints are 72F but should match scheduled design of 70F (winter).	GGD: All setpoints shall be adjustable through the BMS; however, will modify all published setpoints to comply	
H029	M4.01	-	Consider indicating the radiant valves for on/off operation (low-flow).	GGD: Per the specifications, all Control valves under 1 GPM shall be 2-position	
H030	M4.02	-	Boiler plant control is shown as inline with pumps rather than primary / secondary as detailed.	GGD: Detail is incorrect; shall be updated to indicated variable primary flow	



Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
H031	M4.03	-	The RTU sequence includes information to equalize exhaust fan flow with outside air requirement. This does not appear to take into account any building pressurization or the exhaust flow from dedicated toilet exhaust.	GGD: Building pressurization will be factored in by setting a minimum O.A. setpoint	
H032	M4.05	-	The 100% OA RTU system is shown with a recirculation duct. Clarify.	GGD: Recirculation duct shall be utilized for warm-up, Cool-down, and CO2 demand control ventilation.	
H033	-	General	All commodity sections should be reduced to include only the applicable items.	GGD: This has been updated for MSBA DD submission	
H034	-	23 00 10 1.02	Include split system condensate piping.	GGD: Will comply	
H035	-	23 00 10 2.16	Grease exhaust kitchen ductwork is not specified.	GGD: Will add grease ductwork spec sections	
H036	-	23 00 10 2.28-U.16	Chilled water is not indicated in scope.	GGD: All chilled water references have been removed for MSBA DD submission	
60% CD Document Review					
Review Date: 6/3/2019					
H037	General	-	The project is reviewed as presented. The general progress of work is indicated throughout these comments.	GGD: Scope will be added and clarified as design progresses	
H038	General	-	Duct sizing and routing / connections, duct and terminal labeling, HW piping run-outs and schedules are in progress	GGD: Scope will be added and clarified as design progresses	
H039	General	-	All comments above that have not yet been addressed should be considered active. These have not necessarily been re-iterated in the current review.	GGD: Acknowledged.	



Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
H040	M1.11 / General Duct	-	Room names are not provided. It is difficult to assess the appropriateness of systems and sizing in that respect. There are multiple spaces without ventilation provided, as well, with no room names to assess applicability.	GGD: Room names shall be Shown for all spaces in next submission	
H041	M1.11 / General Duct	-	Constant volume dampers are provided for corridor ventilation. Based on the design operation, there may be an unwanted shift in airflow when the classroom ventilation load is low, due to return being uncontrolled. Ensure exhaust is aligned with corridor ventilation flow to keep any odors from moving throughout the building.	GGD: Will Comply	
H042	M1.11 / General Duct	-	Low velocity duct sizing is incomplete.	GGD: Duct sizing will be completed as design progresses	
H043	M1.11 / General Duct	-	The support rooms shared between classrooms are each provided with an individual zone. Consider combining into one of the classroom zones to minimize complexity.	GGD: This has been considered and is not appealing to the end-user.	
H044	M1.11 / General Duct	-	Ensure adequate clearance to VAV control panels is provided.	GGD: Will Comply	
H045	M1.11 / General Duct	-	There are multiple spaces which are not provided with ventilation	GGD: All spaces are provided with ventilation from either a displacement diffuser, a ceiling diffuser, or an Undercut door coupled with a return/ exhaust ceiling grille.	
H046	M1.11 / General Duct	-	Consider indicating specific locations for volume dampers to ensure accessibility, noise criteria and flow characteristics.	GGD: Volume dampers are required to be installed as close to the main duct as possible per "Branch duct Connection to Main" Detail on Drawing M3.02.	



Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
H047	M1.11 / General Duct	-	Consider locating classroom return inlets away from the center of the room. At high flow rates, noise can be a concern. Consider locating where no one might be sitting directly below.	GGD: A Central return air location is preferred for displacement ventilation air distribution effectiveness; all return grilles shall be sized for low velocity at max airflow conditions.	
H048	M1.12 / General Duct	-	Ensure door undercuts are called for where necessary.	GGD: Undercut doors are denoted by "UD" on the floor plans	
H049	M1.12 / General Duct	-	Medium-velocity duct sizing is in progress.	GGD: Duct sizing will be completed as design progresses	
H050	M1.12	-	Consider revising the duct routing near the RA duct riser to RTU-4. The local return will be difficult to balance and potentially very noisy at the terminal.	GGD: Agree, Will Revise	
H051	M1.13 / General Duct	-	Several rooms throughout the building are not provided with ventilation as would be expected. It is understood the design remains in progress.	GGD: All spaces are provided with ventilation from either a displacement diffuser, a ceiling diffuser, or an Undercut door coupled with a return/ exhaust ceiling grille.	
H052	M1.23 / General Roof	-	Consider indicating clearance circles around specific OA inlet locations to ensure the understanding of the design intent during coordination in the field.	GGD: All Outdoor air intakes are demarked by 25' circles on the roof plans. Will add a circle to Mechanical Room Intake Louver	
H053	M1.32 / General Level 3	-	Consider indicating specific duct construction to incorporate scoops or other methods for efficient airflow at the duct risers through the roof.	GGD: Will consider and incorporate where possible	



Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
H054	M1.41 / General Roof	-	The significance of the boundary shown is unclear. Ensure the equipment indicated is accessible on the roof. Consider locating such that additional safety railings are not required at the roof edge.	GGD: Will note all clearances for clarity & coordinate with roof edges.	
H055	M2.11 / General Pipe	-	Consider the need for radiant zones in the classroom toilet rooms. This wouldn't be expected except perhaps on the top level.	GGD: Agree; will review with Arch & Owner	
H056	M2.11 / General Pipe	-	Consider locating the thermostats nearer the locations of the return inlets as opposed to immediately next to the supply discharge to improve accuracy.	GGD: Thermostat location is driven by ease of accessibility and convenience; displacement diffusers adjacent to t-stats will not affect the accuracy because the air crawls along the floor until it finds a heat source.	
H057	M2.11 / General Pipe	-	Condensate drainage for DCU equipment is not indicated.	GGD: Condensate drainage shall be incorporated as the design progresses	
H058	M2.11 / General Pipe	-	CO2 sensors appear to be located with every zone. Consider reducing their application to classrooms and areas with high peak loads and variable ventilation requirements.	GGD: Agree; will review and reduce total CO2 sensor count	
H059	M2.13	-	Consider locating boiler room inlet and discharge air louvers apart to ensure the quality of air circulation.	GGD: Louvers are approx. 15' apart in the vertical plane	
H060	M2.21 / General Level 3	-	Consider whether heating will rise through all 3 stair tower levels. Ensure structure and design are aligned with heating design.	GGD: Unit heaters provided at 1st and 3rd floors	
H061	M3.06	-	Consider including exhaust-out airflow in the RTU Airflow Diagram. All flows appear to match, but the building would be expected to be provided with some level of overall pressurization.	GGD: Will Add Exhaust Out to Airflow Diagram	



Commissioning Design Review

300 UNICORN PARK DRIVE, 5TH FLOOR

WOBURN, MA 01801

(P) 781.481.0210 (F) 781.481.0203 (W) www.f-t.com

Subject: HVAC Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Terence Boland, PE
 F-T Review Date: 06/03/19

Item #: (H####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
H062	M3.06	-	Boiler plant is shown to be closely-spaced tees to the primary flow, but no pumps are indicated in details or schematic.	GGD: Details to be updated; close-spaced tee's not required for variable primary setup	
H063	M4.01	-	Consider removing "re-heat" from all VAV sequences.	GGD: Will comply	
H064	M4.01	-	VAV boxes are indicated to go to full-open when unoccupied, with heating modulating. They would be expected to modulate to an unoccupied flow to maintain heating only (ventilation not required). In a non-re-reheat setup, these should be closed or at minimum.	GGD: Agree; will revise sequence	
H065	M4.03	-	Consider revising supply air temperatures from RTU's. In heating mode, the discharge temperature would be expected to be at or above room temperature set point to ensure equity and allow radiant perimeter heat to account for space / envelope loss.	GGD: Displacement ventilation system design will not work with air discharge temperatures at or above setpoint.	
H066	M4.03 / RTU Controls	-	The RTU exhaust airflow would be expected to track, rather than match outside airflow. An offset would be expected for building pressurization.	GGD: Agree, will review & revise	
H067	M4.06	-	The DX cooling coil is not indicated in the control schematic for the kitchen ventilation. It's unclear what is the intent.	GGD: No cooling for MAU or HV-1; shall update sequence accordingly.	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
100% DD Document Review		Review Date: 3/13/2019			
E001	E0.02	N/A	Lumen and wattage information is missing from lighting fixture schedule.	GGD: This will be added as the project progresses.	
E002	E0.02	N/A	There is a mix of 120 Volt and 277 Volt lighting, confirm the intent. It is recommended to have all lighting voltage throughout the facility match.	GGD: Theater performance lighting is designed to be 120V. All other building lighting is 277V.	
E003	E0.03	N/A	Label utility pole with number per utility company requirements.	GGD: This will be coordinated with Utility Company.	
E004	E0.03	N/A	Include ductbank sections to call out conduit and ductbank sizing requirements.	GGD: Ductbank sections shall be called out in next submission.	
E005	E0.03 & E0.04	N/A	Provide underground conduit requirements for site lighting.	GGD: Conduit for lighting will be called out in next submission.	
E006	E0.03	N/A	Confirm overall primary electrical service routing and transformer location has been coordinated with the utility.	GGD: Utility is reviewing and will be coordinated going forward.	
E007	E0.03	N/A	There appears to be an violation of the utility company right of way and the light lighting pole.	GGD: This will be addressed in next submission.	
E008	E0.03 & E0.04	N/A	It is suggested to include handholes at each light pole (typical).	GGD: We shall provide a pull box at each pole as suggested.	
E009	E0.05	N/A	Ductbank sections are not shown on the site plans.	GGD: Ductbank sections are shown on E0.04.	
E010	E0.05	N/A	Provide ground rod at each lighting pole.	GGD: Not required by code.	
E011	E0.05	N/A	Include connection to generator enclosure to the generator ground grid.	GGD: Generator to be grounded per code.	
E012	E0.06	N/A	Confirm the transformer pad meets utility company requirements and has oil containment, the detail doesn't appear to include oil containment.	GGD: This will be coordinated with Utility Company.	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
E013	E1.11	N/A	Corridor doesn't appear to have emergency lighting. Provide emergency lighting within hallway.	GGD: Emergency lighting will be shown as lighting design progresses.	
E014	E1.11	N/A	Lighting in electrical rooms should be emergency lighting.	GGD: All lighting in Electric rooms shall be emergency.	
E015	E1.12, E1.13, E1.21, E1.22, E1.23, E1.31, E1.32, E1.33	N/A	Provide emergency lighting within the room.	GGD: This will be provided as project progresses	
E016	E1.11	N/A	Confirm if lighting scope is required in the area.	GGD: This will be provided as project progresses	
E017	General Lighting Note	N/A	There are double OS's and PC's on all lighting plans.	GGD: Architectural devices shall be turned off for next submission.	
E018	E1.13	N/A	It appears lighting scope is missing from the area.	GGD: Area in Kitchen with no lights is location of cooler & freezer, no lights required.	
E019	E1.12, E1.13, E1.21, E1.22, E1.23, E1.31, E1.32, E1.33	N/A	Floor plan appears to be missing exit signage.	GGD: Exit signage shall be coordinated for next submission.	
E020	General Power Note	N/A	Confirm receptacles are tamper proof as required per 2017 NEC.	GGD: Tamperproof note is shown on symbol list. Note shall be duplicated for General Power Notes.	
E021	E2.12, E2.13, E2.21, E2.22, E2.23, E2.31, E2.32, E2.33	N/A	Where are receptacles to be mounted along the glass?	GGD: This shall be coordinated as project progresses.	
E022	E2.34	N/A	Provide receptacles for maintenance of rooftop HVAC equipment in accordance with mechanical code.	GGD: Receptacles for roof top equipment is shown on Mechanical Schedule of Equipment on E3.06.	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
E023	E3.00	N/A	Provide grounding bar in electrical and tel / data rooms.	GGD: This shall be provided in next submission.	
E024	E3.00	N/A	There appears to be potential working space clearance issues in the electrical room given the minimum spacing shown for equipment.	GGD: Currently clearances appear to be acceptable.	
E025	E3.00	N/A	The electrical room appears to be cut off and the panelboards appear to be located within a wall.	GGD: This will be corrected for next submission.	
E026	E3.01	N/A	Provide circuit breaker ratings.	GGD: AIC ratings are shown on E3.02.	
E027	E3.03	N/A	Mounting and location of 2nd exit signage in electrical rooms for rooms with equipment rated 800Amps and above?	GGD: High/Low exit signage is covered under fixture schedule and notes.	
E028	E3.06	N/A	Include information for electrical load requirements of equipment.	GGD: This shall be coordinated as project progresses.	
E029	E4.00	N/A	Connection to elevator shutdown and recall?	GGD: No shutdown of elevator required. Elevator hoistway and machine room is not sprinklered.	
E030	E4.00	N/A	Provide connection for security, paging, and BMS.	GGD: This will be coordinated.	
E031	E4.13	N/A	Consider providing electric alarm bell above location of fire department connection.	GGD: This will be coordinated going forward.	
E032	E4.23	N/A	Consider removing heat detector in storage room.	GGD: This shall be addressed in next submission.	
E033	E4.13	N/A	Consider providing heat detection in the gym.	GGD: Not required by code, Building is fully sprinklered.	
E034	Typical	N/A	Consider defining this symbol on the legend.	GGD: This will be coordinated for next submission.	
E035	Typical	N/A	Consider providing remote indicator light outside of electrical rooms.	GGD: Not required by code. Will be coordinated with AHJ.	
E036	Typical	N/A	Consider decreasing the candela rating of strobes in hallways of 20 ft or less in width to 15cd.	GGD: Will be coordinated with AHJ.	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
E037	Typical	N/A	Consider providing magnetic door holds at smoke doors. Utilizing smoke detection in accordance with NFPA 72 17.7.5.6.	GGD: Will be coordinated with AHJ..	
E038	General	N/A	Consider providing area of refuge two way communication in accordance with the IBC at 2nd and 3rd floor elevator lobbies.	GGD: This will be coordinated for next submission.	
E039	General	N/A	Consider increasing smoke detector spacing in hallways following NFPA 72 Figure A.17.6.3.1.1(f)	GGD: This shall be reviewed as the project progresses.	
E040	E4.13	N/A	Consider providing CO detection in boiler room if gas fired equipment is present.	GGD: CO detection shall be provided at all locations of fossil fuel burning equipment.	
E041	E4.13	N/A	Consider providing smoke detection within 6 feet of FACP.	GGD: FACP location and smoke detector shall be coordinated with AHJ.	
E042	E4.22	N/A	Consider removing flow switches.	GGD: Flow switch connections shall be coordinated with Fire Protection Engineer.	
E043	General	N/A	Consider providing tamper switches at all standpipe isolation valves.	GGD: Flow switch connections shall be coordinated with Fire Protection Engineer.	
E044	E4.12	N/A	Consider providing smoke detection in emer. Electrical room 1128.	GGD: This shall be coordinated for next submission.	
E045	E4.13	N/A	Consider providing smoke detection in electrical rooms.	GGD: This shall be coordinated for next submission.	
60% CD Document Review			Review Date: 6/4/2019		
E046	General	N/A	There are multiple comments that were not addressed from the previous review. Please provide responses for clarification.	All comments have been addressed	
E047	E0.02	N/A	Confirm all catalog numbers have been updated / reviewed to ensure they match the latest manufacturer information.	This shall be coordinated before 90% CD Submission	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
E048	E0.03	N/A	Are these new utility pole or existing utility poles? Please confirm. Additionally, if these are new utility poles, the scope of work to bring new overhead utility service to them hasn't been identified yet.	Poles are existing and have been noted so on drawing.	
E049	E0.03	N/A	Confirm routing (including manhole placement) has been confirmed with the electrical utility.	Waiting for Utility Company response	
E050	E0.03	N/A	The ductbank routing appears to undercut the building, this typically would not be permitted by the electrical utilities easement. The ductbank should be a minimum of 10' off the building, however, the exact dimensions should be confirmed by the utility.	Waiting for Utility Company response	
E051	E0.03	N/A	It is unclear what this is point to, please confirm.	Comment is unclear. No point of reference.	
E052	E0.03	N/A	It is not recommended to route the secondary feeders under the building as they will be difficult to access in the event of a failure. It is recommended to route the ductbank through the courtyard.	Routing around building is not required and will incur added cost.	
E053	E0.03A	N/A	Confirm intent of this drawing, the information appears to be shown on the previous drawing.	Drawing shows existing overhead service being removed in relation to existing building.	
E054	E0.04	N/A	Provide a ground rod at each light pole.	Separate grounding conductor provided with lighting branch circuit.	
E055	E0.05	N/A	Provide bonding to rebar in concrete pad and generator enclosure.	Not required.	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
E056	E1.11, E1.12, E1.13, E1.21, E1.22, E1.23, E1.31, E1.32, & E1.33	N/A	Confirm height of the windows as the photocells appear to be located outside of the daylight harvesting zone.	Photocells are to be installed per the manufacturer's recommendations, as outlined in General Lighting Note #7	
E057	E1.11, E1.12, E1.13, E1.21, E1.22, E1.23, E1.31, E1.32, & E1.33	N/A	Exit Sign recommended.	Exit signs have been provided.	
E058	E1.11	N/A	There appear to be missing downlights from the background, please confirm.	Downlighting to be coordinated with Architect.	
E059	E1.11, E1.13, E1.21, E1.22, E1.23, E1.31, and E1.32	N/A	The background and the lighting layout don't appear to match, please confirm.	Lighting layout will be coordinated with Architect.	
E060	E1.12, E1.13, E1.23	N/A	Provide occupancy sensor.	No point of reference for desired location(s).	
E061	General	N/A	Provide a lighting control sequence of operation.	See ALCS Methods of Operation Notes for the ALCS One-Line Diagram shown on E0.02	
E062	E1.13	N/A	There doesn't appear to be adequate light for this bed area.	This will be addressed for next submission.	
E063	E1.13, E1.21, E1.31		Provide lighting control.	No point of reference for desired location(s).	
E064	E2.12		There appears to be conflicts between the equipment.	No point of reference for desired location(s).	
E065	E2.12		Confirm intent of camera configuration, should these be swapped?	Camera locations by Technology Designer	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
E066	E2.23, E2.24		Room appears to be missing a speaker, confirm.	Speaker locations by Technology Designer	
E067	E2.34		Confirm a receptacle is being provided with 25'-0" from all mechanical equipment mounted on the roof per code.	Rooftop receptacles are provided with rooftop equipment per the Electrical Schedule for Mechanical Equipment on sheet E3.06	
E068	E3.00		It is recommended to stack these (2) transformers in lieu of trapeze mounted.	This will be taken under consideration.	
E069	E3.00		It is recommended to trapeze mount this transformer rather than floor mount.	This will be taken under consideration.	
E070	E3.00		It is recommended to include a ground bus bar in each electrical room and data room.	This has been completed.	
E071	E3.00		Confirm if room is available to floor mount the transformer is lieu of trapeze mounting it.	No point of reference of mentioned transformer.	
E072	E3.01		Confirm location of the meter has been coordinated with the utility.	Waiting for Utility Company response	
E073	E3.01		Where are circuit breaker sizes indicated?	Circuit breaker sizes are shown on E3.02 - Electrical Panel Schedules	
E074	E3.01		Confirm Elevator disconnect switch is provided with shunt trip device for interface with the fire alarm panel.	Elevator will be on generator, therefore, no microswitch is required to kill power to battery pack as there will not be a battery pack.	
E075	E3.01		Where is telephone identified for the interface with the elevator system.	Refer to detail 2/E4.00	
E076	E3.01		Identify what these are feeding.	No point of reference for comment.	
E077	E3.01		SPD's required on all life safety panelboards.	SPDs will be provided for all panelboards, including Life Safety Panels.	
E078	E3.03		The GSC should be bonded to the ground grid via the neutral bus / lug, not the ground bus / lug.	Correct, refer to detail 1/E3.04	



Subject: Electrical Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Cameron Bellao
 F-T Review Date: 06/04/19

Item #: (E###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
E079	E3.03		It appears you are bonding the neutral to ground in multiple locations, this will cause nuisance tripping of the circuit breakers due to stray neutral current.	Refer to detail 1/E3.04	
E080	E4.11		Recommend fire alarm device be lowered to 15cd.	This will be taken under consideration.	
E081	E4.11, E4.12, E4.13, E4.21, E4.22, E4.23, E4.31, E4.32, E4.33		Confirm duct type smoke detector and fire smoke damper are not needed.	Duct smoke detectors will be provided per code.	
E082	E4.13		Recommended to add 15cd visual device.	This will be taken under consideration.	
E083	E4.13		Recommended to increase cd rating to 110cd	This will be taken under consideration.	
E084	E4.13, E4.31		Recommended to add pull station.	No point of reference for desired location(s).	
E085	E4.21		What is the pull station's location?	Pullstation has been moved to adjacent wall	
E086	E4.21, E4.22, E4.31, E4.32, E4.33		Confirm if Carbon dioxide detector is not needed.	CO2 detectors provided in all areas where kids may be napping (Pre-K, Kindegarten, Nurses area)	



Subject: Plumbing Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Keith Wanser
 F-T Review Date: 06/03/19

Item #: (P###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
100% DD Document Review			Review Date: 3/13/2019		
P001	P0.10		Consider finalizing service areas.	VAV: This work is in progress.	
P002	P0.10		Consider adding remarks for trap primer connection.	VAV: This work is in progress.	
P003	P0.10		Consider finalizing kitchen schedule.	VAV: Kitchen Equipment schedule will be updated in next submission.	
P004	P1.01		Consider providing invert elevations at end of sanitary and storm runs.	VAV: Invert elevations have been added to the drawings.	
P005	P1.01, P1.02, P1.03		Consider providing invert elevations at point of exit for coordination with Civil.	VAV: Exit point elevations have changed and are continually being coordinated with Civil.	
P006	P1.01, P1.02, P1.03		Consider showing storm overflow pipe runs. If connecting in vertical, confirm with codes and AHJ allowance of such methods. Pipe should be sized at double the rainfall rate if designed that way.	VAV: A separate overflow drainage system is now indicated on the drawings.	
P007	P1.01		Consider extending sanitary main to farthest fixtures for coordination.	VAV: This work is in progress.	
P008	P1.02, P1.03		Consider providing additional cleanouts along sanitary and storm main runs.	VAV: This work is in progress.	
P009	P1.02, P1.22		Consider moving FD closer to urinals for convenience.	VAV/DWA: This will be considered and addressed in next submission.	
P010	P0.10		Consider providing drinking fountain with bottle filler	VAV: This will be incorporated in next submission.	
P011	P1.03, P1.13, P1.21		Consider routing piping around electrical room.	VAV: The piping has been re-routed out of the electrical room.	
P012	P1.02, P1.03, P1.21, P1.22, P1.23, P1.31		Consider tagging plumbing fixtures.	VAV: Plumbing fixtures have been tagged.	
P013	P1.03		Consider tagging plumbing equipment.	VAV: This work is in progress.	



Subject: Plumbing Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Keith Wanser
 F-T Review Date: 06/03/19

Item #: (P###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
P014	P1.03		Consider providing a gas load summary and pressure requirements on plan.	VAV: This work is in progress.	
P015	P1.11, P1.12, P1.23, P1.31, P1.32, P1.33		Consider providing pipe callouts.	VAV: This work is in progress.	
P016	P1.01, P1.02, P1.03, P1.11, P1.12		Consider providing matchlines and drawing callouts for continuation of piping.	VAV: This work is in progress.	
P017	P1.02, P1.12, P1.21, P1.22, P1.32		Consider moving the hose bibb away from the ADA lavatory.	VAV: This will be incorporated in next submission.	
P018	P1.03, P1.13, P1.32		Consider providing a hose bibb at lavatories.	VAV: This work is in progress.	
P019	P1.13		Consider providing grease trap location on plan.	VAV: This will be incorporated in next submission, in coordination with KEQ consultant.	
P020	P1.13		Consider serving kitchen with required 140deg HW and 140deg HWC. If HW is only run at 140deg, consider providing every lavatory and handwashing sink with local thermostatic mixing valve	VAV: The most cost-effective and code-compliant way to achieve the comment will be considered and addressed in next submission.	
P021	P1.13		Consider routing gas main through corridor and not exposed in Gymnasium.	VAV: The horizontal gas main will be re-routed out of the Gymnasium.	
P022	P1.13		Consider showing all plumbing equipment for HW System.	VAV: This work is in progress.	
P023	P1.21		Consider routing storm risers in chase, coordinate piping with architect.	VAV/DWA: Riser locations currently being coordinated and will be addressed in next submission.	
P024	P1.22		Consider removing floor drain from electric room.	VAV: The floor drain in the electric room will be removed.	
P025	P1.22		Consider adding floor drain to group bathroom.	VAV: This will be incorporated in next submission.	



Subject: Plumbing Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Keith Wanser
 F-T Review Date: 06/03/19

Item #: (P###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
P026	P1.21, P1.22, P1.23, P1.31, P1.32		Consider removing HVAC equip if no plumbing connections are required. Including, but not limited to VAVs, fintube, etc.	VAV: The HVAC equipment has been removed.	
P027	P0.10		Confirm mounting heights of toilets for children. Provide additional water closet for staff bathroom if required.	VAV/DWA: Sink mounting heights currently being coordinated and will be addressed in next submission.	
P028	P1.33		Consider providing mains or callouts for piping to plumbing fixtures. Second floor appeared to be fed from below, but how is piping reaching third floor? At DD level, all mains should be run to serve fixtures.	VAV: This will be incorporated in next submission.	
P029	P1.41, P1.42, P1.43		Consider showing vent through roof (VTR) locations.	VAV: This will be incorporated in next submission.	
P030	P1.41, P1.42, P1.43		Consider showing gas piping to RTUs, if required.	VAV: Gas piping has been added to the drawings.	
P031	P1.43		Consider hiding all notes not related to scope.	VAV: The non-relevant notes have been removed.	
P032	P2.10		Consider providing additional details; plumbing fixture connections, gas connections to equipment, pipe hanger details, floor drain, etc	VAV: These details will be incorporated in next submissions, but at minimum will be on drawings for bidding.	
P033	P2.10		Consider providing one (1) expansion tank on the CW main serving both water heaters, prior to HWC connection.	VAV: This will be considered and addressed in next submission.	
P034	P2.10		Consider providing a 140deg HW main to serve the kitchen.	VAV: The most cost-effective and code-compliant way to achieve the comment will be considered and addressed in next submission.	
P035	P2.10		Consider providing the temperature of each HW main serving the building from the hot water system.	VAV: This will be considered and addressed in next submission.	



Subject: Plumbing Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Keith Wanser
 F-T Review Date: 06/03/19

Item #: (P####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
P036	P1.13, P2.10		Consider verifying pipe sizes match on plan and detail. Showing 3"HW main from hhot Water system, plan has a 4"HW main.	VAV: This work is in progress.	
P037	P2.10		Consider updating Town on Domestic Service detail.	VAV: Town water utility (WWC) just released its comments which include references to standard details, and will be incorporated in next submission.	
P038	P2.10		Consider updating drain note to include nearest floor drain, not sure there's a janitors sink near every backflow.	VAV: This will be considered and addressed in next submission.	
P039	P1.03, P1.13		Consider showing interior grease trap and kitchen waste & vent mains. Kitchen vent main should have its own kitchen vent through roof (KVTR).	VAV: This work is in progress.	
P040		22 00 10 - 7	Consider adding a line item for local isolation valves to groups or areas of fixtures.	VAV: This will be considered and addressed in next submission.	
P041		22 00 10 - 9	Consider adding information regarding minimum depth of bury to be below frost line; 4' or 5' depending on location typically.	VAV: This will be incorporated in next submission.	
P042		22 00 10 - 10	Consider adding line item in regards to maximum velocity of domestic piping.	VAV: This will be considered and addressed in next submission.	
P043		22 00 10 - 12	Consider adding line item in regards to ADA trap and valve wraps.	VAV: This will be incorporated in next submission.	
P044		22 00 10 - 13-15	Confirm information located within matches fixture schedule on plans.	VAV: This will be coordinated in next submission.	
P045		22 00 10 - 16	Consider updating spec section to match water heaters specified on drawings.	VAV: This will be coordinated in next submission.	
P046		22 00 10 - 16	Consider adding line item for emergency gas shut-off button serving the kitchen.	VAV: This will be addressed in next submission.	



Subject: Plumbing Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Keith Wanser
 F-T Review Date: 06/03/19

Item #: (P####)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
P047		22 00 10 - 18-19	Consider adding a line item in regards to balancing the HW system.	VAV: This will be incorporated in next submission.	
60% CD Document Review Review Date: 6/3/2019					
P001	P1.01		Recommend provide a sump and and oilseparator in the elevator pit per new Massachusetts requirement.	VAV: A sump pump with oil minder control panel will be added in next submission.	
P002	P1.01, P1.02		Recommend extend below grade waste piping to plumbing fixtures	VAV: This work is still in progress.	
P003	P1.01, P1.02		Recommend accounting for drop in invert due to dropping into the top of the pipe based on nonstandard connection angle.	VAV: Inverts have been calculated using side tee-wye fittings.	
P004	P1.01, P1.02		Recommend coordinating enclosures for pipe drop locations.	VAV: Pipe drops will be coordinated with Dore & Whittier.	
P005	P1.01, P1.02		Recommend listing the civil drawing to be referenced.	VAV: Civil drawing number will be added in the next submission.	
P006	P1.01, P1.02, P1.03		Recommend coordinating the installation of the perimeter drainage. If it does not enter into the building it can be done by Civil. If it does enter the building the piping should be indicated on the Plumbing Drawings.	VAV: Underslab drainage piping is within the building and will need to be performed by Plumbing trade.	
P007	P1.01, P1.02, P1.21, P1.22, P1.31, P1.32		Recommend indicating bow vent requirements for the island sink.	VAV: This work is still in progress.	
P008	P1.03		Recommend indicating the exterior grease interceptors on the Plumbing Drawings as Mass code lists the grease system as a dedicated system to be completely installed by the Plumber.	VAV: Exterior grease interceptor has been added to the drawings.	



Subject: Plumbing Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Keith Wanser
 F-T Review Date: 06/03/19

Item #: (P###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
P009	P1.03		Recommend indicating the below grade storm piping form the gymnasium on the below grade plan.	VAV: There is no below grade storm piping in the gymnasium. The storm pipes drop in the corners of the gymnasium.	
P010	P1.11, P1.12, P1.13, P1.31		Recommend indicating all piping as single line to coordinate with above grade piping legend.	VAV: Above ground piping will be changed to single line for the next submission.	
P011	P1.11, P1.12, P1.13		Recommend indicating a model number for the discharge plate of the overflow roof drain.	VAV: Overflow drain model numbers are indicated in the Plumbing specifications.	
P012	P1.11, P1.12, P1.13, P1.21, P1.22		Recommend showing all waste vent and water drops to each fixture.	VAV: This work is still in progress.	
P013	P1.11		Coordinate roof drain piping from above.	VAV: The roof drain piping will be coordinated for the next submission.	
P014	P1.11, P1.12, P1.13, P1.22		Recommend coordinating floor drain locations wit the Architect. 2 different locations are being indicated.	VAV: Floor drain locations will be coordinated with Dore & Whittier for the next submission.	
P015	P1.11, P1.12, P1.13, P1.31,		Recommend providing an enlarged 1/4 scale plan for the large bathroom group.	VAV: This work is still in progress.	
P016	P1.32		Recommend indicating ball valves on all branch lines and drops to fixtures.	VAV: This work is still in progress.	
P017	P1.13, P1.22 P1.23, P1.31, P1.32		Recommend including an enlarged 1/4" sclae plan of the kitchen.	VAV: A kitchen enlarged plan has been added to the drawings.	
P018	P1.23		Recommend providing clay traps on Art Room sinks	VAV: Solids interceptors will be added at each Art Room sink for the next submission.	
P019	P1.23, P1.41, P1.42, P1.43		Recommend indicating shut off valves and unions at each roof top piece of equipment.	VAV: A shut-off valve will be added at each RTU for the next submission.	
P020	P1.33		Recommend indicating the roof top unit on the roof plan.	VAV: RTUs have been added to the roof plans.	

[illegible]



Subject: Fire Protection Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Andrew Ciccariello
 F-T Review Date: 05/31/19

Item #: (F###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
100% DD Document Review			Review Date: 3/13/2019		
F001	FP0.10		Consider changing 4" DCVA to 6" in order to match pipe size shown serving the wet system	VAV: This will be considered and addressed in next submission.	
F003	FP1.13		Sprinkler layout for the kitchen area is not coordinated with the background. Consider revising.	VAV: This will be coordinated in next submission.	
F004	FP1.13		Sprinkler layout for the storeroom area is not coordinated with the background. Consider revising.	VAV: This will be coordinated in next submission.	
F005	FP1.11		Consider re-naming the 6" control valve to isolation valve. The purpose is to avoid confusion from the detail on sheet FP0.10 named "control valve" which depicts a floor control valve assembly.	VAV: This will be considered and addressed in next submission.	
F006	FP1.11		Consider moving standpipe into stair 5.	VAV/DWA: Stair 5 is considered a more ornamental stair (even though it is an egress stair). Design team is trying to avoid cluttered appearance. The comment will be considered and addressed in next submission.	
F007	FP1.11		Consider showing 6" main serving the standpipe in stair 3.	VAV: This will be considered and addressed in next submission.	
F008	FP1.11		Sprinkler layout for the pre kindergarten area is not coordinated with the background. Consider revising.	VAV: This will be coordinated in next submission.	
F009	FP1.21		Consider connecting 4" main to standpipe.	VAV: This will be considered and addressed in next submission.	
F010	FP1.21		Is the placement of the standpipe intended to be concealed in the stair 5 shaft? If so consider providing recessed fire department valve cabinet in stair 5.	VAV/DWA: Stair 5 is considered a more ornamental stair (even though it is an egress stair). Design team is trying to avoid cluttered appearance. The comment will be considered and addressed in next submission.	



Subject: Fire Protection Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Andrew Ciccariello
 F-T Review Date: 05/31/19

Item #: (F###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
F011	FP1.21		Consider locating 4" floor control valve in stairway for ease of accessibility. Typical for stair 5 and 2 on all floors.	VAV: This will be considered and addressed in next submission.	
F012	FP1.23		Consider classifying gymnasium as OH2. Light Hazard may not be appropriate if the gymnasium is used for fairs, foam mats, etc.	VAV: This will be considered and addressed in next submission.	
F013	FP1.33		Sprinkler layout for the classroom area is not coordinated with the background. Consider revising.	VAV: This will be coordinated in next submission.	
F014	FP1.11		Consider showing drain riser in stair 5 and stair 2.	VAV/DWA: Stair 5 is considered a more ornamental stair (even though it is an egress stair). Design team is trying to avoid cluttered appearance. The comment will be considered and addressed in next submission. Stair 2 is acceptable for riser location.	
F015	FP1.32		Sprinkler layout for the classroom area is not coordinated with the background. Consider revising.	VAV: This will be coordinated in next submission.	
F016	FP1.13		Consider removing one of the noted fire department connections. Coordinate with local Fire Department on which location they would prefer.	VAV: FDC's were specified by Northbridge Fire Chief - two locations desired.	
F017	FP1.13		Confirm overhang is made of non combustible material.	VAV/DWA: The overhang is constructed of noncombustible materials.	
F018	FP1.13		Sprinkler layout for the typical office & conference room area is not coordinated with the background. Consider revising.	VAV: This will be coordinated in next submission.	
F019	FP1.13		Consider removing the indicated pipe. It isn't connected to anything.	VAV: This will be considered and addressed in next submission.	



Subject: Fire Protection Design Review
 Project: MSBA - Northbridge - Balmer ES Cx
 Project Numbers: 170515.03
 Client: MSBA
 Architectural Firm: Dore & Whittier
 Engineering Firm: GGD
 F-T Review Engineer: Andrew Ciccariello
 F-T Review Date: 05/31/19

Item #: (F###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
F020	FP1.12		Consider relocating all standpipe isolation valves in the stairway.	VAV: This will be considered and addressed in next submission.	
F021	FP1.11		Consider removing the noted fire department connection. Coordinate with local Fire Department on which location they would prefer.	VAV: FDC's were specified by Northbridge Fire Chief - two locations desired.	
F022	-	2.04	Consider removing wet pipe alarm valve spec section.	VAV: This will be considered and addressed in next submission.	
F023	-	2.05	Consider removing dry pipe alarm valve spec section.	VAV: This will be considered and addressed in next submission.	
60% CD Document Review Date: 5/31/2019					
F001	FP1.11		6" standpipe control valve isn't connected to feed main. Consider connecting.	VAV: Control valve will be connected to the main in the next submission.	
F002	FP1.11		It appears there are special ornate ceilings. Consider coordinating with architect to use custom cover plates on the sprinklers so they blend in better.	VAV: This will be coordinated with Dore & Whittier.	
F003	General		Consider checking soffit heights to ensure sprinklers are not obstructed.	VAV: This will be reviewed and addressed for the next submission.	
F004	FP1.12		Consider revising sprinkler coverage. It appears sprinklers are laid out too far apart. (typical on first and second floor)	VAV: This will be reviewed and addressed for the next submission.	
F005	FP1.13		Appears there is no ceiling. Consider changing sprinklers in area to uprights. (Typical for areas with no ceilings)	VAV: This will be reviewed and addressed for the next submission.	
F006	FP1.13		Consider providing auto drip drain at bottom of elbow of all FDC's. It shall drain to the exterior.	VAV: Drip drains will be added for the next submission.	



Commissioning Design Review

300 Unicorn Park Drive, 5th Floor
Woburn, MA 01801

(P) 781.481.0210 (F) 781.481.0203 (W) www.f-t.com

Subject: Fire Protection Design Review
Project: MSBA - Northbridge - Balmer ES Cx
Project Numbers: 170515.03
Client: MSBA
Architectural Firm: Dore & Whittier
Engineering Firm: GGD
F-T Review Engineer: Andrew Ciccariello
F-T Review Date: 05/31/19

Item #: (F###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
F007	FP1.13		Consider providing K8.0 intermediate temp. sprinklers in kitchen, electrical rooms, and mechanical rooms due to the higher hazard classification.	VAV: This will be reviewed and addressed for the next submission.	
F008	FP1.13		Consider fixing graphical issues on service entrance.	VAV: This will be corrected for the next submission.	
F009	General		Consider providing a sprinkler schedule, details, and schematics.	VAV: Legend, details and diagrams are indicated on Dwg. FP0.10.	
F010	General		Consider providing hydraulic calculations of the most demanding sprinkler area in accordance with NFPA 13 and applicable insurer requirements.	VAV: Hydraulic calculations is work still in progress.	
F011	FP1.32		Sprinklers appear to be greater than 7' 6" from wall. Consider adding an extra row of sprinklers.	VAV: Sprinkler head spacing will be updated for the next submission.	
90% CD Document Review Review Date: dd/mm/yyyy					



3iVE
 Sub Contractor to Fitzmeyer and Tocci Associates, Inc.
 334 Washington St.
 Somerville, MA 02143
 Tel: 617-625-3483
 email: info@3iVE.com / 3iVE.com



Subject:	Enclosure Design Review
Project:	MSBA - Northbridge - Balmer ES Cx
Project Numbers:	170515.03
Client:	MSBA
Architectural Firm:	Dore & Whittier
Engineering Firm:	GGD
3iVE Consultant:	David de Sola
3iVE Review Date:	5/31/2019

DD PRICING SET REVIEW			Review Date: 3/12/2019		
Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-001	1/AG0.02		See detail.	DWA: THERE WAS NO COMMENT INCLUDED ON THE DRAWING.	
BECX-002	4/AG0.02		Can installers access these areas to insulate?	DWA: INSULATION WILL BE INSTALLED PRIOR TO INSTALLING GWB.	
BECX-003	N12/A1.50		Call out / show transition detail -- hard angle / gap / variable condition up column require flexible support.	DWA: TRANSITION DETAIL WILL BE REFINED AND SHOWED IN NEXT SUBMISSION.	
BECX-004	A9/A3.50		See detail.	DWA: THERE WAS NO COMMENT INCLUDED ON THE DRAWING, BUT WE BELIEVE THE RED-MARKS RELATE TO INCLUSION OF AVB WITHIN THE HOISTWAY VENT. DWA WILL EVALUATE NECESSITY AND INCLUDE IF INDICATED.	
BECX-005	A15/A3.50		Suggest use of transition membrane glazed into curtainwall pocket. Tremco ProGlaze ETA, for example.	DWA: COMMENT HERE DOES NOT RELATE TO COMMENT ON THE DRAWING? WE BELIEVE THE RED-MARKS RELATE TO INCLUSION OF AVB WITHIN THE ROOF HATCH CURB. DWA WILL EVALUATE NECESSITY AND INCLUDE IF INDICATED.	
BECX-006	F10/A3.50		Theoretical AVB.	DWA: SUGGESTION TO INCLUDE AVB WITHIN DUCT WORK CURB. DWA WILL EVALUATE NECESSITY AND INCLUDE IF INDICATED.	
BECX-007	L11/A3.50		Note that AVB should have continuous connection to roof drain flange.	DWA: SUGGESTION TO CONNECT AVB TO ROOF DRAIN FLANGE. DWA WILL INCLUDE IF POSSIBLE IN PRACTICE.	

DWA: SOME DD RESPONSES MAY NOT HAVE BEEN FULLY VISIBLE IN THE LAST EDITION. THEY HAVE BEEN CORRECTED.



3iVE
 Sub Contractor to Fitzmeyer and Tocci Associates, Inc.
 334 Washington St.
 Somerville, MA 02143
 Tel: 617-625-3483
 email: info@3iVE.com / 3iVE.com



Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-008	L15/A3.50		Movement / Alignment joint consideration	DWA WILL CONSIDER THE INCLUSION OF A MOVEMENT JOINT AT THE DETAILED CONDITION(S).	
BECX-009	L26/A3.50		SHOW AVB DESIGN INTENT	DWA WILL INCLUDE AVB IN NEXT EDITION OF DETAIL.	
BECX-010	R12/A3.50		Consider both expansion as well as voids of SPF. Solid mortar in front of rigid insul. is also option.	DWA WILL CONSIDER CAVITY FILL OPTIONS ON THIS DETAIL AND INCORPORATE IN NEXT EDITION OF DETAIL.	
BECX-011	R17/A3.50		Connection not clear.	DWA WILL CLARIFY ATTACHMENT OF TWO-PIECE FLASHING IN NEXT EDITION OF DETAIL.	
BECX-012	R22/A3.50		Show design intent of cont. AVB.	DWA: SUGGESTION TO INCLUDE AVB WITHIN SKYLIGHT CURB. DWA WILL EVALUATE NECESSITY AND INCLUDE IF INDICATED.	
BECX-013	R27/A3.50		Cold bridge	DWA WILL ATTEMPT TO ALLEVIATE COLD BRIDGE AND INCORPORATE IN NEXT EDITION OF DETAIL.	
BECX-014	G11/A6.50		Call out / show intended connection. Tape? TYP.	DWA WILL BETTER DEFINE CONNECTION OF UNDERSLAB VB IN NEXT EDITION OF DETAIL.	
BECX-015	M6/A6.50		Blow up lap of lap joint. Where / how does underslab barrier tie to opaque wall? Show TYP.	DWA WILL BETTER DEFINE CONNECTION OF UNDERSLAB VB TO OPAQUE WALL AVB IN NEXT EDITION OF DETAIL USING BLOWUP OF CONDITION.	
BECX-016	M12/6.50 and M17/6.50		How / Where is dampproofing continued below grade? Shown differently at different conditions.	DWA WILL BETTER DEFINE DAMPPROOFING SCOPE IN NEXT EDITION OF DETAIL AT VARIOUS CONDITIONS.	
BECX-017	M22/A6.50		Consider glazing flashing to CW. Show / Tie - in AVB.	DWA WILL BETTER DEFINE CONNECTION OF UNDERSLAB VB TO OPAQUE WALL AVB AT WINDOW SILL CONDITION IN NEXT EDITION OF DETAIL.	
BECX-018	A6 /A6.60		See detail.	DWA WILL SHOW AVB IN NEXT EDITION OF DETAIL.	
BECX-019	A8/A6.70		Field conditions unlikely to have perfect alignment. Consider joint that allows for misalignment between decking and tube.	DWA WILL CONTINUE STUDY OF THIS DETAIL AND ALLOW FOR FIELD TOLERANCES IN NEXT EDITION OF DETAIL.	
BECX-020	A16/A6.70		Consider reducing cap to brick dimension, run insulation up, flash over to achieve drainage.	DWA WILL CONTINUE STUDY OF THIS DETAIL AND ALLEVIATE COLD BRIDGE, IN CONCERT WITH POSITIVE DRAINAGE, IN NEXT EDITION OF DETAIL.	



3iVE
 Sub Contractor to Fitzmeyer and Tocci Associates, Inc.
 334 Washington St.
 Somerville, MA 02143
 Tel: 617-625-3483
 email: info@3iVE.com / 3iVE.com



Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-021	A16/A6.70		COLD BRIDGE	DWA WILL CONTINUE STUDY OF THIS DETAIL AND ALLEVIATE COLD BRIDGE IN NEXT EDITION OF DETAIL.	
BECX-022	A8.21		GEN NOTE: CONSIDER CURTAINWALL PROFILES FOR EXTERIOR GLAZING CONDITIONS WHERE POSSIBLE. IF STOREFRONT IS NECESSARY, CALL OUT INTERIOR PERFORMANCE SEAL TO EXTEND LIFE OF SYSTEM. EXTERIOR FACE SEALS EXPOSED TO UV AND ELEMENTS CAN FAIL SOON BEFORE BALANCE OF SYSTEM. CURTAINWALL CONNECTIONS CAN BE MADE IN MORE DURABLE CONFIGURATION AND ARE MORE ENERGY EFFICIENT BY DESIGN.	DWA NOTES THE REVEIWER'S SENTIMENT; HOWEVER CURTAINWALL DOES NOT FIT THE BUDGET MODEL FOR THE BUILDING. DWA WILL CONSIDER REVEIWER'S NOTATIONS REGARDING GASKETS IN NEXT EDITION OF DETAIL AND SPECIFICATIONS.	
BECX-023	A14/A8.50 and A19/A8.50		Face sealant exposed to UV and elements fails relatively quickly. Consider making seal sacrificial with secondary behind it. Additionally establish AVB continuity at back of system.	DWA WILL CONSIDER ADDING SECOND, SACRIFICIAL SEALANT JOINT, CONSULTING WITH TECHNICAL REPS AS TO SOUNDNESS OF THIS PRACTICE FOR LONG TERM JOINT PERFORMANCE.	
BECX-024	A14/A8.50		Theoretical AVB.	DWA WILL SHOW A CLEAR CONNECTION OF AVB TO DOOR FRAME IN NEXT EDITION OF DETAIL. REDLINED PROFILE MAY NOT BE ACHIEVABLE IN PRACTICE.	
BECX-025	E14/A8.50		See detail.	DWA WILL SHOW A CLEAR CONNECTION OF AVB TO DOOR FRAME IN NEXT EDITION OF DETAIL. REDLINED PROFILE MAY NOT BE ACHIEVABLE IN PRACTICE.	
BECX-026	E19/A8.50		See detail.	DWA WILL SHOW A CLEAR CONNECTION OF AVB TO DOOR FRAME IN NEXT EDITION OF DETAIL. REDLINED PROFILE MAY NOT BE ACHIEVABLE IN PRACTICE.	
BECX-027	E25/A8.50		See detail.	DWA WILL SHOW A CLEAR CONNECTION OF AVB TO DOOR FRAME IN NEXT EDITION OF DETAIL. REDLINED PROFILE MAY NOT BE ACHIEVABLE IN PRACTICE.	
BECX-028	A27/A.9.60		See detail.	DWA WILL DIMENSION TACK STRIPS IN NEXT EDITION OF DETAIL, OR BETTER DEFINE THEM IN THE SPECIFICATION.	
BECX-029	G12/A.9.60		See detail.	DWA WILL NOT DIMENSION TACK BOARDS IN THE INTERIOR ELEVATIONS - DIMENSIONS DEFINED IN SPECIFICATIONS.	
BECX-030	A27/A9.64		See detail.	DWA WILL DIMENSION TACK STRIPS IN NEXT EDITION OF DETAIL, OR BETTER DEFINE THEM IN THE SPECIFICATION.	
BECX-031	D27/A9.64		See detail.	DWA WILL DIMENSION TACK STRIPS IN NEXT EDITION OF DETAIL, OR BETTER DEFINE THEM IN THE SPECIFICATION.	



3iVE
 Sub Contractor to Fitzmeyer and Tocci Associates, Inc.
 334 Washington St.
 Somerville, MA 02143
 Tel: 617-625-3483
 email: info@3iVE.com / 3iVE.com



Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-032	A20/A9.65		See detail.	DWA WILL DIMENSION TACK STRIPS AND/OR PICTURE RAILS IN NEXT EDITION OF DETAIL, OR BETTER DEFINE THEM IN THE SPECIFICATION.	
BECX-033	E20/AQ1.50		See detail.	DWA WILL GIVE CRITICAL HORIZONTAL DIMENSIONS OF PLAN ELEMENTS IN BLOW-UP PLANS, NOT ON INTERIOR ELEVATIONS AS SUGGESTED. THIS TYPE OF DETAIL WILL BE AVAILABLE ON BID DRAWINGS.	
BECX-034	K14/AQ1.50		See detail.	DWA WILL DIMENSION TACK STRIPS AND/OR PICTURE RAILS IN NEXT EDITION OF DETAIL, OR BETTER DEFINE THEM IN THE SPECIFICATION. MARKER BOARD DIMENSIONS ARE DEFINED IN THE SPECIFICATIONS.	
BECX-035	P20/AQ1.52		See detail.	DWA WILL NOT DIMENSION MARKER BOARDS IN THE INTERIOR ELEVATIONS - DIMENSIONS DEFINED IN SPECIFICATIONS.	
BECX-036		Div 1C48:C53	Add where appropriate / Temporary Protection: Protect materials and assemblies in progress from incidental damage including exposure to cold; solar radiation; dust and debris; wetting and other destructive environmental variables from the time materials arrive on site until they are installed in a complete assembly. Protect exterior materials from wetting, UV damage, and the like to maintain "as new" performance, functional assembly, and manufacturer's warranties throughout.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-037		Div 1	01 30 3.06; 01 31 3.03: NOTE: EXTERIOR COORDINATION DRAWINGS REQUIRED. SEE BECX SECTION.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-038		Div 1	01 31 3.06 NOTE CUTTING AND PATCHING: QUALITY, APPEARANCE, AND FUNCTIONAL PERFORMANCE. QUALIFIED TRADES TO PERFORM CUTTING AND PATCHING WORK.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-039		Div 4	Add requirement for division 4 trades to attend BECx pre-installation meeting where page turn of relevant details will occur.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	

Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-040		Div 5	Confirm appropriate division has clear instructions on the preparation of steel where same will serve as substrate for exterior enclosure assemblies including peel and stick membrane. We suggest work is performed by water proofer to extent possible.	DWA WILL EVALUATE COMMENT AND INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS IF NEEDED.	
BECX-041		Div 5	Cold Metal Framing: Specify low profile fasteners with minimum interference / projection with respect to bridging, straps, other potential intersecting areas with metal panel. Metal panels are deleteriously affected by projecting fasteners as is makes seals more difficult; esp where strapping is affixed to steel studs on exterior side w/ pan head screws.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-042		Div 6	Confirm Specified manufacturers of AVB materials accept Specified treated wood substrates for adjoining use.	DWA WILL RESEARCH AND PROVIDE CORRECTION IF WARRANTED IN NEXT EDITION OF SPECIFICATIONS.	
BECX-043		Div 7	Add requirement for all division 7 trades whose work involves the exterior to attend BECx pre-installation meeting where page turn of relevant details will occur.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-044		Div 7	Add where appropriate: A suitable and robust transition membrane is intended to span all dissimilar exterior assemblies. Same include window and curtainwall to wall; roof; adjoining window; or self where shear or differential movement potential exists; expansion joints; louvers; mechanical penetrations and assemblies; hatchways; panel systems and the like. Examples of such transition material includes ProGlaze ETA by Tremco, Dow 123 tape.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-045		070002 / 2.03	Consider replacing loose laid vapor retarder will self-adhered membrane: AVB joints with loose laid material are difficult. Self-Adhered material has additional benefit of functioning as temporary roof during construction.	DWA WILL CONSIDER THE SUGGESTED PRODUCT IN VIEW OF CONSTRUCTION PRACTICES, COST, AND TECHNICAL FEASIBILITY ISSUES, AND MAKE AN APPROPRIATE RESPONSE IN THE SPECIFICATIONS.	

Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-046		Div. 8	Add requirement for all division 8 trades with exterior work attend BECx pre-installation meeting where page turn of relevant details will occur.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-047		Div. 8	Add note in appropriate location(s) all window systems must have AVB tie-in at performance plane of unit. Contractor to verify both location of functional performance plane per glazing and louver assembly and work with Manufacturer to verify intended AVB tie-in has material compatibility and is approved by Manufacturers of all adjacent materials and assemblies.	DWA WILL INCOPORATE SUGGESTED NOTES AT AN APPROPRIATE LOCATION IN THE SPECIFICATIONS, AND WILL COORDINATE WITH DETAILS IN THE DRAWINGS.	
BECX-048		Div. 9	Add requirement for all division 9 trades with exterior work to attend BECx pre-installation meeting where page turn of relevant details will occur.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-049		Div. 9	Add requirement for all division 9 trades with exterior work to attend BECx pre-installation meeting where page turn of relevant details will occur.	DWA WILL INCOPORATE SUGGESTED NOTES IN SPECIFICATIONS.	
BECX-050		72600	Add Note: Where vapor retarder also serves as air barrier, e.g., at grade conditions, all terminations to tie to adjacent air barrier in code compliant manner.	DWA WILL INCOPORATE SUGGESTED NOTES IN THE SPECIFICATIONS, AND WILL COORDINATE WITH DETAILS IN THE DRAWINGS.	
BECX-051		81110	Add Note: Where HM doors are part of the exterior assembly, same must be tied in to AVB assembly and insulated such that insulation is located on exterior side of AVB plane. Doors and frames are subject to field testing for air and water infiltration.	DWA WILL INCOPORATE SUGGESTED NOTES IN THE SPECIFICATIONS, AND WILL COORDINATE WITH DETAILS IN THE DRAWINGS, SUBJECT TO REALITIES OF BUILDING SEQUENCE.	
BECX-052		83310	Add Note: Where Coiling doors are part of the exterior assembly, same must be tied in to AVB assembly and insulated such that insulation is located on exterior side of AVB plane. Doors and frames are subject to field testing for air and water infiltration.	DWA: THERE ARE NO COILING DOORS THAT ARE PART OF THE EXTRIOR ASSEMBLY. THE SINGLE OVERHEAD DOOR ON THE BUILDING IS A SECTIONAL PANEL, INSULATED OVERHEAD DOOR. DWA WILL ENSURE AVB TIE-IN TO BEST POSSIBLE EFFECT IN DETAILS.	



3iVE
 Sub Contractor to Fitzmeyer and Tocci Associates, Inc.
 334 Washington St.
 Somerville, MA 02143
 Tel: 617-625-3483
 email: info@3iVE.com / 3iVE.com



Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-053		89000	Add Note: Where Louvers are part of the exterior assembly, same must be tied in to AVB assembly and insulated such that insulation is located on exterior side of AVB plane. Louver frames are subject to field testing for air and water infiltration.	DWA WILL INCOPORATE SUGGESTED NOTES IN THE SPECIFICATIONS, AND WILL COORDINATE WITH DETAILS IN THE DRAWINGS.	

60% CD PRICING SET REVIEW			Review Date: 5/31/2019		
Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-001	1/AG0.02		SEE PREVIOUS COMMENTS / NO CHANGE	DWA: THERE WAS NO COMMENT INCLUDED ON THE DRAWING FROM THE FIRST REVIEW, AND STILL NO COMMENT ON THE SHEET FROM SECOND REVIEW!	
BECX-002	N12/A1.50		SEE PREVIOUS COMMENTS	DWA: TRANSITION DETAIL HAS BEEN REFINED TO SHOW BOND BREAKER AT INSIDE WALL JOINT.	
BECX-003	A15/A3.50		SEE PREV NOTES	DWA: WE BELIEVE THE RED-MARKS RELATE TO INCLUSION OF AVB WITHIN THE ROOF HATCH CURB. DWA WILL INCLUDE IF INDICATED.	
BECX-004	F10/A3.50		SEE PREV NOTE	DWA: WE BELIEVE THE RED-MARKS RELATE TO INCLUSION OF AVB WITHIN THE MECHANICAL RTU CURB. DWA WILL EVALUATE INCLUDE IF INDICATED.	
BECX-005	L15/A3.50		SEE PREVIOUS NOTE	DWA WILL CONSIDER THE INCLUSION OF A MOVEMENT JOINT AT THE DETAILED CONDITION(S).	
BECX-006	L26/A3.50		SEE PREVIOUS NOTE	DWA WILL INCLUDE AVB IN NEXT EDITION OF DETAIL.	
BECX-007	R11/A3.50		SEE DETAIL	DWA: THERE IS NO WRITTEN COMMENT ON THE DETAIL, BUT RED MARKS SEEM TO INDICATE FILLING THE SPACE BELOW THE THRU-WALL FLASHING WITH INSULATION. DWA WILL DETAIL THE "GAP FILLER" INSULATION WITH A BEVELED TOP EDGE.	
BECX-008	R22/A3.50		SEE PREV NOTE	DWA: SUGGESTION TO INCLUDE AVB WITHIN SKYLIGHT CURB. DWA WILL INCLUDE IF INDICATED.	
BECX-009	R27/A3.50		SEE PREV NOTE	DWA: A CONTINUOUS AVB HAS BEEN INCLUDED IN THE DETAIL.	

Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-010	G16/A6.60		SEE DETAIL	DWA: DETAIL IS UNDER DEVELOPMENT AND WILL BE RESOLVED FOR THE NEXT SUBMISSION.	
BECX-011	G21/A6.60		SEE DETAIL	DWA: DETAIL IS UNDER DEVELOPMENT AND WILL BE RESOLVED FOR THE NEXT SUBMISSION.	
BECX-012	T11/A6.60		Consider thermal breaks between ties and structure. Typ.	DWA: WILL EVALUATE POTENTIAL THERMAL BRIDGE AND INCORPORATE A BREAK IF POSSIBLE. THERE MAY NOT BE A SPECIALTY ITEM AVAILABLE FOR THIS CONDITION.	
BECX-013	A8/6.61		Sequence? What is supporting AVB? Appears to be reversed.	DWA: THE AVB IS SUPPORTED BY THE ROOF DECK SHEATHING, THE STEEL PLATE, AND THE WALL SHEATHING. IF THE REVIEWER IS TALKING ABOUT THE GAP AT TOP OF STEEL, WE CAN FILL THE ROOF DECK FLUTES WITH BLOCKING TO PREVENT FLUTTERING OF THE AVB AT THOSE LOCATIONS. THERE IS NO ISSUE WITH SEQUENCE OF ASSEMBLY THAT WE CAN SEE.	
BECX-014	J8/6.61		STEEL SERVING AS AVB TRANSITION MUST RECEIVE APPROPRIATE SUBSTRATE PREP.	DWA: STEEL SUBSTRATE WILL RECEIVE COMPATIBLE SUBSTRATE PREP TO RECEIVE AVB MATERIAL. APPLIES TO A8/6.61 ABOVE AS WELL.	
BECX-015	J12/6.62		SEE DETAIL	DWA: SEE BECX-013 ABOVE, SAME RESPONSE	
BECX-016	A8/A6.70		Movement?	DWA: VERTICAL MOVEMENT OF THE STUDS IS COVERED WITH SLOTTED CONNECTIONS AT TOP OF STUD - IN SPECIFICATIONS. DWA WILL STUDY DETAIL AND INCLUDE SOFT JOINT AT TOP OF INSULATION/PANEL ASSEMBLY IF WARRANTED.	
BECX-017	A16/A6.70		SEE DETAIL	DWA: NO WRITTEN COMMENT, SO WE ARE GUESSING. VERTICAL MOVEMENT OF THE STUDS IS COVERED WITH SLOTTED CONNECTIONS AT TOP OF STUD - IN SPECIFICATIONS. DWA WILL STUDY DETAIL AND INCLUDE SOFT JOINT WHERE INDICATED IF WARRANTED.	
BECX-018	Q6/A6.70		SEE DETAIL	DWA: NO WRITTEN COMMENT, SO WE ARE GUESSING. VERTICAL MOVEMENT OF THE STUDS IS COVERED WITH SLOTTED CONNECTIONS AT TOP OF STUD - IN SPECIFICATIONS. DWA WILL STUDY DETAIL AND INCLUDE SOFT JOINT OR ALLOWANCE FOR MOVEMENT WHERE INDICATED IF WARRANTED.	

Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-019	A7/A6.71		SEE DETAIL	DWA: NO WRITTEN COMMENT, SO WE ARE GUESSING. VERTICAL MOVEMENT OF THE STUDS IS COVERED WITH SLOTTED CONNECTIONS AT TOP OF STUD - IN SPECIFICATIONS. DWA WILL STUDY DETAIL AND INCLUDE SOFT JOINT OR ALLOWANCE FOR MOVEMENT WHERE INDICATED IF WARRANTED.	
BECX-020	A15/A6.71		SEE DETAIL	DWA: NO WRITTEN COMMENT, SO WE ARE GUESSING. VERTICAL MOVEMENT OF THE STUDS IS COVERED WITH SLOTTED CONNECTIONS AT TOP OF STUD - IN SPECIFICATIONS. DWA WILL STUDY DETAIL AND INCLUDE SOFT JOINT OR ALLOWANCE FOR MOVEMENT WHERE INDICATED IF WARRANTED.	
BECX-021	S12/A7.11		SEE DETAIL	DWA: NO WRITTEN COMMENT, NO CLUE WHAT THE COMMENT IS.	
BECX-022	A14/A8.50 A19/A8.50 A25/8.50		SEE PREV HM NOTES	DWA: AVB IS CONNECTED TO DOOR FRAME VIA LOW-RISE FOAM INSULATION.	
BECX-023	A18/A8.51		COLD BRIDGE	DWA: WILL STUDY DETAIL AND ATTEMPT TO ELIMINATE COLD BRIDGE, POSSIBLY BY FILLING TOP OF STUD CAVITY WITH FOAM INSULATION. THIS MAY BE IMMATERIAL, AS THE ENTIRE DUCT PENETRATION IS A GIANT (NECESSARY) HOLE IN THE ENVELOPE.	
BECX-024	A24/A8.51		COLD BRIDGE	DWA: WILL STUDY DETAIL AND ATTEMPT TO ELIMINATE COLD BRIDGE, POSSIBLY BY FILLING TOP OF STUD CAVITY WITH FOAM INSULATION.	
BECX-025	G18/A.51		COLD BRIDGE	DWA: WILL STUDY DETAIL AND ATTEMPT TO ELIMINATE COLD BRIDGE, POSSIBLY BY FILLING TOP OF STUD CAVITY WITH FOAM INSULATION.	
BECX-026	G24/A8.51		COLD BRIDGE	DWA: WILL STUDY DETAIL AND ATTEMPT TO ELIMINATE COLD BRIDGE, POSSIBLY BY FILLING TOP OF STUD CAVITY WITH FOAM INSULATION.	



3iVE
 Sub Contractor to Fitzmeyer and Tocci Associates, Inc.
 334 Washington St.
 Somerville, MA 02143
 Tel: 617-625-3483
 email: info@3iVE.com / 3iVE.com



Item #: (BECX-###)	Drawing #:	Specification Section:	Item Description:	Architect/Engineer Response:	Status:
BECX-027	A8.60		<p>GEN NOTE: CONSIDER CURTAINWALL PROFILES FOR EXTERIOR GLAZING CONDITIONS WHERE POSSIBLE. IF STOREFRONT IS NECESSARY, CALL OUT INTERIOR PERFORMANCE SEAL TO EXTEND LIFE OF SYSTEM. EXTERIOR FACE SEALS EXPOSED TO UV AND ELEMENTS CAN FAIL SOON BEFORE BALANCE OF SYSTEM. CURTAINWALL CONNECTIONS CAN BE MADE IN MORE DURABLE CONFIGURATION AND ARE MORE ENERGY EFFICIENT BY DESIGN. IN RECENT CONVERSATIONS WITH SALEM GLASS AND OTHER LOCAL INSTALLERS, SENTIMENT THAT DETAILING OF STORE FRONT W/ ADDITIONAL MAINTENANCE ISSUES PUTS CW IN CLOSER \$ RANGE. VALUE ADDED TO PROJECT INCLUDES REDUCED MAINTENANCE, EXTENDED LIFE, IMPROVED ENERGY PERFORMANCE.</p>	<p>DWA: WE UNDERSTAND THAT CW IS A BETTER THERMAL PERFORMING SYSTEM. HOWEVER, THE BUDGET OF THE BUILDING WOULD BE SEVERELY STRESSED IF ALL SF WERE CONVERTED TO CW. OPERABLE SASH ARE MORE DIFFICULT TO INCLUDE WITHIN CW SYSTEMS. AS PREVIOUSLY STATED, WE WILL EVALUATE THE INTERIOR PERFORMANCE SEAL TO EXTEND THE LIFE OF THE SYSTEM.</p>	

MEMORANDUM



DORE & WHITTIER
ARCHITECTS, INC.

DATE: July 9, 2019
TO: Northbridge School Committee
COPY: W.E. Balmer ES
School Building
Committee
SMMA (OPM)
File
FROM: Thomas Hengelsberg, AIA
Project Manager
PROJECT: W. Edward Balmer Elementary School
PROJECT NO: 17-0759
SUBJECT: Proprietary Specifications for Vote

Dear Northbridge School Committee,

Mass. General Laws, Chapter 30 Section 39M(b), require that materials specifications in construction contracts name a minimum of three manufacturers for each material or product specified in order to provide for competitive bidding. Specifications that restrict competition to less than three manufacturers may only be used for "sound reasons in the public interest" after a reasonable investigation. A proprietary specification must be approved by an elected body, which in this case will be the Northbridge School Committee.

The reasoning for each proprietary specification is outlined on the following pages in a format that provides for the official recording of the vote. Each of these proprietary designations should be approved in separate votes.

Sincerely,

DORE & WHITTIER ARCHITECTS

Thomas Hengelsberg, AIA, NCARB, LEED AP, MCPPO
Project Manager

ARCHITECTS
PROJECT MANAGERS

260 Merrimac Street Bldg 7
Newburyport, MA 01950
978.499.2999 ph
978.499.2944 fax

212 Battery Street
Burlington, VT 05401
802.863.1428 ph
802.863.6955

www.doreandwhittier.com

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 05 12 00 - Structural Steel Framing

Product: Engineered Masonry Break-Away Fire Release Connector

Manufacturer: FERO Corporation

- A fire wall is designed into the building to subdivide it into smaller fire compartments, per the building code. Given the building configuration, this is the lowest cost method to achieve the required fire resistance. The lowest cost construction method for the fire wall is a free-standing masonry wall, which is stabilized by bracing it to the structure on each side of the fire wall in a way that will allow the collapse of either structure without damaging the wall or causing it to collapse. The project proposes using a "break-away" connector designed to melt in the heat of the fire for this purpose.
- The FERO Company is the only known source for connection clips that have been designed, engineered, and tested specifically for this purpose. FERO clips are custom engineered to meet the structural loading and fire performance requirements for every project, which is unique. While other components such as aluminum could be used, which would melt in a fire condition before the collapse of the structure, aluminum is generally not considered a load-bearing product. Any non-tested products used would have to be custom-engineered and tested to provide the same engineering assurance as the FERO product. Custom testing would present significant cost and potentially significant and unknown time delays to the project.
- Using the FERO Masonry Break-Away Fire Release Connectors (although proprietary) would facilitate the least expensive fire wall construction technique without representing significant added cost for the material, as the quantity of clips that would be required is relatively minor in comparison to the other material costs involved.

The Awarding Authority for the project hereby finds and determines after discussions with Dore & Whittier Architects Inc. the project Architect as presented above, and after reasonable investigation of other feasible alternatives, as reviewed by the Owner's procurement office, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being **FERO Break-Away Fire-Release Connector** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:



NAME / TITLE:

Michael LeBasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 08 35 13.23 - Folding Fire Separation Doors

Product: Accordion Horizontal-Acting Automatic Fire Door

Manufacturer: Won-Door Corporation "FireGuard" Door

- At the fire walls on each level of the building, a 2-hour fire-rated opening protective (door) is required to allow passage through the wall from one side of the building to the other. The design intent as dictated by the SBC Working Group is that this fire door be as minimal as possible to allow the maximum clear width in the corridor. This improves circulation efficiency during heavily-used times of the day, and most importantly, eliminates posts, columns, or other projections that can be injurious to small children who could walk into them. The clear width is also important aesthetically to not divide the building visually and spatially.
- If the building goes into fire alarm mode, the door closes automatically, and can be re-opened using a clearly identified push-to-exit button located on each side of the door jamb. The door is powered on the emergency electrical system (generator backup) with a self-contained battery backup in the event of power failure and generator failure.
- The product specified is the only type of opening protective that conforms to all of these design intents: 2-hour fire rated, full-width clear opening, fully automatic function.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, as reviewed by the Owner's procurement office, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the accordion horizontal-acting automatic fire door manufactured by Won-Door Corporation be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LoBrasseur

NAME / TITLE:

Michael LoBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 08 63 00 - Metal-Framed Skylights

Product: Translucent Panel Skylights

Manufacturers: Kalwall or Major Industries (Two options)

- The product is used to provide tempered, glare-free daylight to interior spaces with thermal performance that is superior to other forms of skylights.
- The size of the skylight assemblies in the project requires a metal-framed system, consistent with the products specified.
- The products specified are the only type that can meet the energy performance criteria within the budget.
- There are three manufacturers who can meet the product requirements of the specification: Kalwall, Structures Unlimited, and Major Industries, however Kalwall and Structures Unlimited are related (Structures Unlimited utilizes Kalwall panel products) and will not bid on the same projects.
- Structures Unlimited deals mainly in very large expanses of translucent roof panels, so smaller skylights of the size indicated for this project are more suitable to Kalwall products.
- Two competitors are available for this product, not three as is preferred by MGL Ch 30. As such, this material must be designated as a proprietary product to the listed manufacturers.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc. the project Architect as presented above, and after reasonable investigation of other feasible alternatives, as reviewed by the Owner's procurement office, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the translucent panel skylights manufactured by Kalwall Corporation and Major Industries be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LoBrasseur

NAME / TITLE:

Michael LoBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 08 71 00 – Door Hardware

Product: Lockset Cores and Keys - "Primus" Cylinders and Patented Keying System

Manufacturer: Schlage, an Allegion PLC brand.

- It is the Owner's desire to have the project locks match other school district buildings, which use a Schlage "Primus" Interchangeable Core cylinder.
- Cores from different manufacturers are not guaranteed to be interchangeable; i.e. Schlage FSIC cores do not fit in Sargent FSIC locksets.
- Use of products of the same manufacturer will provide for seamless interchangeability and master-keying with the owner's proprietary key system already in use.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **Schlage "Primus" cylinders and patented keying system** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 08 80 00 - Protective Framed Glazing Assemblies

Product: Insulated Batter-Resistant Glazing

Manufacturers: School-Guard "SG-4", or, 3M "S&S Window Films" (Two Options)

- Protective security glazing was voted by the SBC during the Schematic Design phase to be included at the Main Entrance door vestibule glazing, Pre-K Entrance door vestibule glazing, and Main Office window glazing.
- The specified products are designed to provide a high degree of batter-resistance that will slow down or deter an intruder to the school for a reasonable cost. The glazing is manufactured using a high-strength proprietary clear interlayer that holds the glass together once broken. The products are designed to slow down forced entry using blunt objects of firearms by as much as five minutes or more, buying valuable time for law enforcement to be alerted and arrive on scene.
- Board members should note, these products are NOT ballistic (bullet-resistant) glazing, which would come at a substantially higher cost.
- These glazing products are available in dual thermal pane and interior single pane configurations, and can be installed into all of the specified window, door, and storefront glazing systems on the project.
- School-Guard is locally based in Adams, MA and manufactured in Pittsfield, MA. It should be noted that the MSBA looks favorably upon locally manufactured products used in its school projects.
- These two products are the only ones available on the market that can achieve the design and security goals, and meet the project budget.
- Two competitors are available for this product, not three as is preferred by MGL Ch 30. As such, this material must be designated as a proprietary product to the listed manufacturers.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, as reviewed by the Owner's procurement office, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the insulated batter-resistant glazing manufactured by School-Guard, Inc. or 3M Corporation be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE: ☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE: 7-9-19

SIGNATURE / RECORDED BY: Michael LoBrasseur

NAME / TITLE: Michael LoBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 08 80 00 – Glazing - insulated translucent glazing units

Product: "Solera", OR, "Okalux Plus"

Manufacturers: Advanced Glazing Inc. or Okalux Inc. (Two options)

- Exterior glazing on the project at the high, or "clerestory" level of the Gymnasium incorporate insulated translucent glazing, which is designed to admit generous amounts of natural day light without glare or "hot spots" associated with typical clear glazing, while providing a high degree of thermal resistance.
- Glare resistance is a key design requirement in an athletic space where hot spots can temporarily blind players, create unfair advantages, and otherwise disturb play and sporting events.
- Thermal resistance is a key design requirement to minimize energy use in the building.
- These products are the only two on the market that can achieve both of these design requirements while being able to fit into the typical aluminum curtain wall or storefront systems specified on the project.
- Two competitors are available for this product, not three as is preferred by MGL Ch 30. As such, this material must be designated as a proprietary product to the listed manufacturers.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the insulated translucent glazing units, "Solera", or, "Okalux Plus" be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 09 84 00 – Sound Absorbing Acoustical Wall panels

Product: "EcoSe" or "Texona"

Manufacturers: Knauf Inc., or, Akusto Inc. (Two Options)

- These panels are used for acoustical wall absorption in high volume spaces or in spaces that need to reduce the reverberation of noise.
- Only two manufacturers with these products on the market meet ASTM E84 and LEED indoor air quality requirements for the wall panel system. They are Knauf EcoSe and Akusto Texona acoustic wall panels.
- The design team continues to investigate this product and is working with our LEED consultant regarding meeting the acoustical and indoor air quality LEED credits.

If these products are not designated as proprietary, and acoustical wall panels are required, there could be a negative impact on LEED credits, or a "field assembled" system of acoustic panels would be needed, which would likely cost the same or more than factory-made panels, may not be as durable, and may exhibit quality control issues due to the field assembly. Alternatively, other acoustic options or solutions would have to be verified with the acoustical consultant.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **Knauf EcoSe and Akusto Texona** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

Michael Lebrasseur 7-9-19

SIGNATURE / RECORDED BY:

Michael Lebrasseur

NAME / TITLE:

Michael Lebrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 09 84 00 – Sound Absorbing Acoustical Wall panels for High-Abuse areas

Product: Tectum wall panels

Manufacturers: Armstrong Inc.

- These panels are used for acoustical wall absorption specifically in the Gymnasium, a high volume that need to reduce the reverberation of noise, and is a high abuse environment requiring a stronger panel system.
- Only one manufacturer with this product on the market meet ASTM E84 and LEED indoor air quality requirements for the wall panel system. It is Armstrong "Tectum" acoustic wall panels.
- The design team continues to investigate this product and is working with our LEED consultant regarding meeting the acoustical and indoor air quality LEED credits.

If these products are not designated as proprietary, and acoustical wall panels are required, there could be a negative impact on LEED credits, or a "field assembled" system of acoustic panels would be needed, which would likely cost the same or more than factory-made panels, may not be as durable, and may exhibit quality control issues due to the field assembly. Alternatively, other acoustic options or solutions would have to be verified with the acoustical consultant.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **Tectum Acoustic Wall Panels by Armstrong Inc.** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 10 44 00 – Fire Protection Specialties

Product: Exterior Key Lock Box - "Rapid Access System - KnoxBox Series 3200"

Manufacturer: The Knox Company

- Per the policies of the Northbridge Fire Department, a specific exterior key box is required for the project to guarantee compatibility with fire department equipment and training, and to assure emergency access to the building.
- The proprietary product shall be KnoxBox Series 3200, as manufactured by The Knox Company.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **"Rapid Access System" KnoxBox Series 3200 by The Knox Company** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 12 24 00 – Window Shades

Product: Automatic Emergency Rolled Shade Closer and Notification System: "SecurShade"

Manufacturer: SecurShade Company

- This product is an adaptation of conventional rolled fabric shades using their standard parts and mounting hardware, but fitting them with a quick-release clutch on each shade roll, which is low-voltage-wired to a room node.
- One room node controls all the shades in that room. Each node communicates via dedicated WiFi to a building communication panel in the main office. This is independent of, and should not be confused with the building WAN system.
- Each room has a small handheld remote controller with one button. A quick push of the button lowers the shades only the room for that remote. This is called "normal mode".
- If an emergency or intruder is detected, with a four-second push of the remote button, the roll clutch lets go and the shades instantly drop throughout the entire building, putting the school immediately into "lockdown mode". This single action instantly signals the entire school that an emergency is unfolding and they should take immediate lockdown precautions and await further instructions.
- Simultaneously, law enforcement first responders are notified of the emergency via 911 telephone signal from the system communications panel in the main office. The communication panel also tells responders the room location in the building where the alarm originated.
- Once the emergency or drill has concluded, shades must be raised manually. The clutch device is not yet compatible with motorized window shades.
- The product is proprietary, as there is no comparable equivalent on the market.
- Board members should note, this product will be carried as an Alternate in the project.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **"SecurShade" system by SecurShade Company** be included in the specifications, **as an Alternate**, for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LoBrasser

NAME / TITLE:

Michael LoBrasser, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 27 20 00 - Data Communication System, Wireless Access Points

Product: AP250 and/or AP550, or equivalent current model

Manufacturer: Aerohive

- Northbridge Public Schools has developed a district-wide standard for IT Wireless Access Points, to which the Balmer project will be subject.
- It is in the best interest of the Awarding Authority to utilize the same wireless access points currently used at other facilities and buildings in the District, in order to have a system accessible to and familiar to the IT staff.
- Systems of one manufacturer will provide for simplified maintenance and management of the system, resulting in reduced costs to the Owner.
- By matching the systems already in place, compatibility of the new building to the existing systems in use by the Owner will assure seamless transfer of data.
- The Aerohive AP250 and/or AP550 has been designated by the Northbridge PS Director of Technology as the district standard.
- It may be possible to competitively procure the vendor who will supply this technology, and/or procure the item off the State Bid List.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the Wireless Access Points AP250 and/or AP550 manufactured by Aerohive, or equivalent current model be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LoBrasseur

NAME / TITLE:

Michael LoBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 27 20 00 - Data Communication System, Network Switches

Product: 5400R Series chassis switches, or equivalent current model

Manufacturer: Aruba

- Northbridge Public Schools has developed a district-wide standard for IT Network Switches, to which the Balmer project will be subject.
- It is in the best interest of the Awarding Authority to utilize the same network switches currently used at other facilities and buildings in the District, in order to have a system accessible to and familiar to the IT staff.
- Systems of one manufacturer will provide for simplified maintenance and management of the system, resulting in reduced costs to the Owner.
- By matching the systems already in place, compatibility of the new building to the existing systems in use by the Owner will assure seamless transfer of data.
- The Aruba 5400R Series has been designated by the Northbridge PS Director of Technology as the district standard.
- It may be possible to competitively procure the vendor who will supply this technology, and/or procure the item off the State Bid List.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **5400R Series Network Switches manufactured by Aruba, or equivalent current model** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 27 50 00 – Video Intercom System

Product: Model "IX2"

Manufacturer: AiPhone

- Northbridge Public Schools is developing a district-wide standard for Video Intercom Systems, to which the Balmer project will be subject.
- It is in the best interest of the Awarding Authority to utilize the same video intercom system currently used at other facilities and buildings in the District, in order to have a system accessible to and familiar to the IT staff.
- Systems of one manufacturer will provide for simplified maintenance and management of the system, resulting in reduced costs to the Owner.
- By matching the systems already in place, compatibility of the new building to the existing systems in use by the Owner will assure seamless transfer of data.
- The AiPhone IX2 system has been designated by the Northbridge PS Director of Technology as the district standard.
- It may be possible to competitively procure the vendor who will supply this technology, and/or procure the item off the State Bid List.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **Video Intercom System Model "IX2", manufactured by AiPhone** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 28 10 00 - Integrated Electronic Security Systems

Product: Access Control and Card Reader:

Proximity Card Readers: "Model 921 MultiClass SE RPK40"

Controller: "Access Control Manager"

Manufacturer: Avigilon

- Northbridge Public Schools is currently prioritizing and developing a district-wide security upgrade project. It is likely that the decisions made on this current project will be setting a new District Standard for future projects, including the Balmer ES project.
- It is in the best interest of the Awarding Authority to utilize the same access control and building security system currently used at other facilities and buildings in the District, in order to have a system accessible to and familiar to the Maintenance staff.
- Systems of one manufacturer will provide for simplified maintenance and management of the system, resulting in reduced costs to the Owner.
- By matching the systems already in place, compatibility of the new building to the existing systems in use by the Owner will assure seamless transfer of data.
- The Avigilon platform has been designated by the Northbridge PS Director of Technology as the district standard.
- It may be possible to competitively procure the vendor who will supply this technology, and/or procure the item off the State Bid List.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **Integrated Access Control System platform manufactured by Avigilon, Proximity Card Readers: "Model 921 MultiClass SE RPK40"; Controller: "Access Control Manager", or equivalent current product** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBasseur

NAME / TITLE:

Michael LeBasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 28 10 00 - Integrated Electronic Security Systems

Product: Intrusion Detection System:

Model: "PowerSeries" Neo Control Panel with DSC associated components sized for the project, including but not limited to:

**DSC power supply
DSC 8-zone expansion modules
DSC Neo Keypads
DSC PIR Motion Detectors**

Manufacturer: DSC

- Northbridge Public Schools is currently prioritizing and developing a district-wide security upgrade project. It is likely that the decisions made on this current project will be setting a new District Standard for future projects, including the Balmer ES project.
- It is in the best interest of the Awarding Authority to utilize the same access control and building security system currently used at other facilities and buildings in the District, in order to have a system accessible to and familiar to the Maintenance staff.
- Systems of one manufacturer will provide for simplified maintenance and management of the system, resulting in reduced costs to the Owner.
- By matching the systems already in place, compatibility of the new building to the existing systems in use by the Owner will assure seamless transfer of data.
- The DSC platform has been designated by the Northbridge PS Director of Technology as the district standard for Intrusion detection.
- It may be possible to competitively procure the vendor who will supply this technology, and/or procure the item off the State Bid List.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **Integrated Intrusion Detection System platform manufactured by DSC, Model "PowerSeries" Neo Control Panel with DSC associated components, or equivalent current product** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

BALMER ELEMENTARY SCHOOL
RECORD OF PROPRIETARY PRODUCTS DESIGNATION AND VOTE
July 1, 2019

Section 28 10 00 - Integrated Electronic Security Systems

Product: Video Surveillance Platform/System:

Cameras Model: "Avigilon Enterprise NVMS v.7" for number of cameras; or particular camera models to suit specific interior and exterior conditions; will select best current model at time of bid.

Video Management Server Model: "NVR4-PRM-XXTB" running Aviation Control Center Camera Licenses as required to support project, with video storage for 60 days.

Manufacturer: Avigilon

- Northbridge Public Schools is currently prioritizing and developing a district-wide security upgrade project. It is likely that the decisions made on this current project will be setting a new District Standard for future projects, including the Balmer ES project.
- It is in the best interest of the Awarding Authority to utilize the same video surveillance platform/system currently used at other facilities and buildings in the District, in order to have a system accessible to and familiar to the Maintenance staff.
- Systems of one manufacturer will provide for simplified maintenance and management of the system, resulting in reduced costs to the Owner.
- By matching the systems already in place, compatibility of the new building to the existing systems in use by the Owner will assure seamless transfer of data.
- The Avigilon platform has been designated by the Northbridge PS Director of Technology as the district standard.
- It may be possible to competitively procure the vendor who will supply this technology, and/or procure the item off the State Bid List.

The Awarding Authority for the project, hereby finds and determines after discussions with Dore & Whittier Architects Inc., the project Architect as presented above, and after reasonable investigation of other feasible alternatives, that it is in the best interests of the Owner and the public at large to have certain portions of the work, being the **Video Surveillance Platform/System manufactured by Avigilon: Cameras Model: "Avigilon Enterprise NVMS v.7"; Video Management Server Model: "NVR4-PRM-XXTB"; or equivalent current product** be included in the specifications for such project as a proprietary specification and not provide for "or equal" substitutions.

VOTED BY THE NORTHBRIDGE SCHOOL COMMITTEE

VOTE:

☒ APPROVED AS PROPRIETARY ☐ NOT APPROVED

DATE:

7-9-19

SIGNATURE / RECORDED BY:

Michael LeBrasseur

NAME / TITLE:

Michael LeBrasseur, Chairman

July 16, 2019

Tim Cella Mowatt, P.E.
Senior Structural Engineer
Engineer Design Group, Inc.
350 Main Street
Malden, MA 02148

**RE : W.Edward Balmer Elementary School
Northbridge, MA
Independent Structural Engineer Review
RSV # 72 -19**

Dear Tim:

The following is the list of questions and comments. These questions and comments are based on the structural, architectural drawings dated 06/18/2019, and Geotechnical report prepared by Lahlaf Geotechnical Consulting, Inc, dated October 3, 2107.

Drawing No. S0.01 (General Notes)

- Revisited Site Class to D. (See Geotechnical Report).
- Provide design base shear for Zone C.

Drawing No. S1.11 (Level 1 Foundation Plan – Area A)

- Brace frame along Col. Grid line 7.6 and between Column Grid lines " F . 5 " and " G. 3 " is shown as Area A – BF – 10, please clarify,

Drawing S.1.13 (Level 1 Foundation – Area C)

- 8 " CMU Shear wall is shown between Column Grid lines " M. 1 " - " N - 5" and " 12. 2 " - " 13 "
Please clarify,

Drawing No. S1- 21 (Level 2 Framing Plan – Area A)

- Please confirm whether beam to Column moment connection is required at Column – Grid line " F . 7 " - " 5 . 3 " .
- What is the intend of beam to column moment connection at brace frame BF -10, along Column Grid line " 7. 6 " ?

Drawing No. S1.22 (Level 2 Framing Plan B)

- Why Area B Area A.
- Confirm whether beam to column moment connection is required at Column Grid line "G.8 " - " 5. 3 " .

Drawing No. S1.23 (Level 2 Framing Plan – Area C)

- How lateral loads are resolved at Canopy roof to foundation elements ?
- Confirm whether beam to Column moment connection is required at Column Grid lines " 12 " - " H- 5 " .
- Confirm whether beam to Column moment connection is required at Column Grid lines " 12 2 " - " N – 5 " .

DWG S1.43

- WF Size of beams between " W 8 " - " W 6. 1 " along Col. Grid line Z 2.3 " - " Z 2.5 " . and W.8 between Col. Grid line " Z2. 3" - "Z 2.5 " missing.

Drawing No S2.02 (Sections)

- Sections 3, reinforcing for grade beam, not shown.

Additional Questions and Comments

- Provide loads at all diagonal bracings.
- Please confirm whether shear lugs are required at exterior columns at brace frames. base plates.

Please call if you have any questions.

Yours truly,

Victor Verma, P.E., Principal
RSV ASSOCIATES

CC Joel Seeley (SMMA)
CC: VV /DW



Engineers Design Group Inc.

350 Main Street
Malden, MA 02148

Phone: 781-396-9007
Fax: 781-396-9008
www.edginc.com

www.edginc.com

July 18, 2019

Via email only to thengelsberg@DoreandWhittier.com

Tom Hengelsberg, AIA, LEED AP, NCARB, MCPPO

Dore and Whittier Architects, Inc.

212 Battery Street

Burlington, VT 05401

**Re: W. Edward Balmer Elementary School
Northbridge, Massachusetts
EDG Responses – Independent Structural Engineer Review
EDG Project Number: 2017-061**

Dear Tom:

The following are our responses to the questions and comments contained in the July 16, 2019 Independent Structural Engineer Review correspondence from RSV Associates.

Drawing No. S0.01 (General Notes)

- Revisited Site Class to D. (See Geotechnical Report).
EDG Response: See updated drawings for Site Class D.
- Provide design base shear for Zone C.
EDG Response: base shear for Area C is $v=366$ kips and this will be indicated on s0.01.

Drawing No. S1.11 (Level 1 Foundation Plan – Area A)

- Brace frame along Col. Grid line 7.6 and between Column Grid lines "F.5" and "G. 3" is shown as Area A – BF – 10, please clarify.
EDG Response: EDG will rename the braces to coordinate with match line locations

Drawing S.1.13 (Level 1 Foundation – Area C)

- 8" CMU Shear wall is shown between Column Grid lines "M. 1" - "N - 5" and "12. 2" - "13". Please clarify.
EDG Response: This shear wall is not used and will be deleted. This diaphragm is stabilized by the gymnasium shear walls. Moment frames are added to the perimeter as local stabilization.

Drawing No. S1- 21 (Level 2 Framing Plan – Area A)

- Please confirm whether beam to Column moment connection is required at Column – Grid line "F.7" - "5.3".
EDG Response: There is no moment connection at the intersection of Grid Lines F.7 and 5.3. See updated drawings.
- What is the intent of beam to column moment connection at brace frame BF -10, along Column Grid line "7.6"?
EDG Response: The moment connection provides flange-to-column connection to stabilize the column out of plane (north/south).

Drawing No. S1.22 (Level 2 Framing Plan B)

- Why Area B Area A.
EDG Response: The areas of the building are designated for clarity. Area A and Area B are one structure and Area C is a second.
- Confirm whether beam to column moment connection is required at Column Grid line "G.8" - "5.3".
EDG Response: There is no moment connection at the intersection of Grid Lines G.8 and 5.3. See updated drawings.

Drawing No. S1.23 (Level 2 Framing Plan – Area C)

- How lateral loads are resolved at Canopy roof to foundation elements?
EDG Response: The Main Lateral Force Resisting System for the wood canopy is moment frames. Refer to Detail 2 on drawing S3.06 for detail. Note that the wood canopy is not part of the Early Release Package.
- Confirm whether beam to Column moment connection is required at Column Grid lines "12" - "H-5".
EDG Response: Moment connection is not required and will be deleted from the drawings.
- Confirm whether beam to Column moment connection is required at Column Grid lines "12 2" - "N – 5".
EDG Response: See updated drawings. Moment connections are shown along Grid Line n.5 for local stabilization of the low roof.

DWG S1.43

- WF Size of beams between "W8" - "W6.1" along Col. Grid line Z2.3" - "Z2.5" and W.8 between Col. Grid line "Z2.3" - "Z2.5" missing.
EDG Response: These members have been sized. See updated structural drawings.

Drawing No S2.02 (Sections)

- Sections 3, reinforcing for grade beam, not shown.
EDG Response: Refer to Section 4 on Drawing S2.02

Additional Questions and Comments

- Provide loads at all diagonal bracings.

EDG Response: Loads on diagonal braces will be added to the drawings for the 051200 connection engineer.

- Please confirm whether shear lugs are required at exterior columns at brace frames base plates.

EDG Response: Shear lugs are not proposed for exterior columns at brace frames and base plates. Anchor rods are locked to the column via welded washer plates. The shear loads pass from the base plate to the foundations through the anchor bolts and base plate - to - leveling plate friction. Non shrink grout is used between the leveling plate and the top of foundation wall.

Please forward this correspondence to the OPM and peer review engineer.

Very Truly Yours,

Engineers Design Group, Inc.



Timothy L. Cella-Mowatt, PE, LEED AP

PROJECT MINUTES

Project:	New W. Edward Balmer Elementary School	Project No.:	17020
Prepared by:	Joel Seeley	Meeting Date:	6/12/19
Re:	School Building Committee Meeting	Meeting No:	45
Location:	High School Media Center	Time:	6:30pm
Distribution:	School Building Committee Members, Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
✓	Joseph Strazzulla	Chairman, School Building Committee	Voting Member
✓	Melissa Walker	School Business Manager	Voting Member
	Alicia Cannon	Representative of the Board of Selectmen	Voting Member
✓	Michael LeBrasseur	Chairman, School Committee	Voting Member
✓	Paul Bedigian	Representative of the Building, Planning, Construction Committee	Voting Member
✓	Steven Gogolinski	Representative of the Finance Committee	Voting Member
✓	Jeffrey Tubbs	Community Member with building design and/or construction experience	Voting Member
✓	Peter L'Hommedieu	Community Member with building design and/or construction experience	Voting Member
	Jeff Lundquist	Community Member with building design and/or construction experience	Voting Member
	Andrew Chagnon	Community Member with building design and/or construction experience	Voting Member
✓	Spencer Pollock	Parent Representative	Voting Member
	Adam Gaudette	Town Manager	Non-Voting Member
✓	Amy McKinstry	Interim Superintendent of Schools	Non-Voting Member
✓	Richard Maglione	Director of Facilities	Non-Voting Member
✓	Karlene Ross	Principal, W. Edward Balmer Elementary School	Non-Voting Member
✓	Jill Healy	Principal, Northbridge Elementary School	Non-Voting Member
✓	Gregory Rosenthal	Director of Pupil Personnel Services	Non-Voting Member
✓	Lee Dore	D & W, Architect	
✓	Thomas Hengelsberg	D & W, Architect	
	David Fontaine	Fontaine Bros, CM	
✓	David Fontaine, Jr	Fontaine Bros, CM	
	David Barksdale	Fontaine Bros, CM	
	Jim Mauer	Fontaine Bros, CM	
✓	Joel Kent	Fontaine Bros, CM	
✓	Joel Seeley	SMMA, OPM	

Item #	Action	Discussion
45.1	Record	Call to Order, 6:40 PM, meeting opened.
45.2	Record	<p>Public Comment</p> <ol style="list-style-type: none"> 1. Erin Donohue spoke of the need for playing fields in the town and the importance of keeping the current designed playfields in the project. 2. Kate Tracey spoke of the numerous public meetings the School Building Committee hosted for community input and decisions leading up to the town voters approving the project as designed. 3. Robert Dziekiewicz spoke of the lengthy community outreach process of the School Building Committee and the support for the current designed playfields.
45.3	Record	A motion was made by P. Bedigian and seconded by S. Pollock to approve the 5/29/19 School Building Committee meeting minutes. No Discussion, motion passed unanimous by those attending.
45.4	Record	J. Seeley distributed and reviewed the Budget Tracking Form thru 5/31/19, attached, for the Total Project Budget
45.5	Record	<p>Warrant No. 27 was reviewed.</p> <p>Committee Discussion:</p> <ol style="list-style-type: none"> 1. M. LeBrasseur asked if there will be additional invoices from Graves Engineering? <i>J. Seeley indicated yes, there could one final invoice.</i> <p>A motion was made by M. LeBrasseur and seconded by P. Bedigian to approve Warrant No. 27. No discussion, motion passed unanimous.</p>
45.6	Record	<p>J. Seeley distributed and reviewed Easement Application from Verizon, attached, in the amount of \$75.00 to be funded out of Utility Company Fees Budget ProPay Code 0601-0000, which has a balance of \$192,750.</p> <p>A motion was made by J. Tubbs and seconded by S. Gogolinski to approve the Easement Application. No discussion, motion passed unanimous.</p>
45.7	Record	<p>J. Seeley distributed and reviewed Designer Amendment No. 15, dated 6/12/19 for Geotechnical Engineering services during the Design and Construction Administration Phases, in the amount of \$57,695.00 to be charged against ProPay Budget 0204-0300, which has a balance of \$75,430.00, attached.</p> <p>A motion was made by M. LeBrasseur and seconded by S. Pollock to approve Designer Amendment No. 15, dated 6/12/19 and recommend signature by A. Cannon. No discussion, motion passed unanimous.</p>
45.8	Record	<p>J. Seeley distributed and reviewed Designer Amendment No. 16, dated 6/12/19 for Hazardous Materials Consultancy services during the Design Phases, in the amount of \$23,100.00 to be charged against ProPay Budget 0204-0200, which has a balance of \$100,000.00, attached.</p> <p>A motion was made by J. Tubbs and seconded by S. Gogolinski to approve Designer Amendment No. 16, dated 6/12/19 and recommend signature by A. Cannon. No discussion, motion passed unanimous.</p>

Item #	Action	Discussion
45.9	Record	<p>J. Seeley distributed and reviewed Designer Amendment No. 17, dated 6/12/19 for Geoenvironmental Engineering services during Construction Administration Phase, in the amount of \$16,170.00 to be charged against ProPay Budget 0204-0300, which has a balance of \$17,735.00, attached.</p> <p>A motion was made by P. Bedigian and seconded by M. LeBrasseur to approve Designer Amendment No. 17, dated 6/12/19 and recommend signature by A. Cannon. No discussion, motion passed unanimous.</p>
45.10	Record	<p>J. Seeley distributed and reviewed Designer Amendment No. 18, dated 6/12/19 for Horticultural Soils Testing, in the amount of \$4,257.00 to be charged against ProPay Budget 0203-9900, which has a balance of \$94,500.00, attached.</p> <p>A motion was made by S. Gogolinski and seconded by M. LeBrasseur to approve Designer Amendment No. 18, dated 6/12/19 and recommend signature by A. Cannon. No discussion, motion passed unanimous.</p>
45.11	Record	<p>J. Seeley distributed and reviewed OPM Amendment No. 2, dated 6/12/19 for Owner's Structural Peer Review, in the amount of \$3,250.00 to be charged against ProPay Budget 0102-0000, which has a balance of \$40,000.00, attached.</p> <p>A motion was made by P. Bedigian and seconded by J. Tubbs to approve OPM Amendment No. 2, dated 6/12/19 and recommend signature by A. Cannon. No discussion, motion passed unanimous.</p>
45.12	J. Seeley	Committee to provide J. Seeley feedback on the listed meeting dates for the 90% Construction Documents Meetings and Agenda Schedule. J. Seeley will include on the next meeting agenda.
45.13	R. Maglione	R. Maglione will provide direction on the final list of Proprietary Specifications.
45.14	L. Dore	L. Dore to review fence or netting options for the left field line of the baseball field parallel to Crescent Street.
45.15	T. Hengelsberg	T. Hengelsberg to confirm appropriate working clearances for the boiler room equipment.
45.16	J. Seeley	J. Seeley indicated the flow meter to measure the existing infiltration and inflow (I/I) from the existing Balmer School on-site sanitary sewer distribution system was installed by DPW on 5/13/19. Based on the first-round of data, it appears that there is minimal infiltration (groundwater) entering the school's on-site sanitary sewer distribution system. JGS will follow-up with DPW in mid-July on the final results.
45.17	Record	J. Seeley provided an overview of the MSBA Design Status Review meeting held on 6/12/19 at D&W offices in Newburyport. The meeting went well and no issues were surfaced.
45.18	Record	<p>T. Hengelsberg presented updated operational and testing information on the "Won-Door" VE Item A.09, attached.</p> <p>A motion was made by J. Tubbs and seconded by S. Pollock to approve VE Item A.09 to provide two pair of swinging doors on the second and third floors, but add an electronic door actuator to one leaf on each pair, in lieu of the "Won-Door", for a savings of approximately \$40,000. No discussion, motion passed unanimous.</p> <p>T. Hengelsberg to incorporate the VE item into the 90% Construction Documents.</p>

Item #	Action	Discussion
45.19	Record	<p>T. Hengelsberg presented VE Item to provide a glue-lam and wood decking entry canopy in lieu of a metal framed entry canopy, attached.</p> <p>A motion was made by S. Gogolinski and seconded by P. L'Hommedieu to approve VE Item glue-lam and wood decking entry canopy in lieu of a metal framed entry canopy, for a savings of \$47,673. No discussion, motion passed unanimous.</p> <p>T. Hengelsberg to incorporate the VE item into the 90% Construction Documents.</p>
45.20	T. Hengelsberg	T. Hengelsberg to provide clarification on the lock-down versus egress function of the classroom locksets.
45.21	T. Hengelsberg	T. Hengelsberg to provide the approximate cost on the two options that could be pursued relative to credits for Electric Charging Stations: 1) provide and install Electric Charging Stations, including the electrical conduits and cabling connected to the building, and 2) including just the electrical conduits to the building, with the Electric Charging Stations and cabling installed in the future under a separate project.
45.22	Record	T. Hengelsberg distributed and reviewed the 4/10/19 Technology Design Meeting Minutes, 4/10/19 Mechanical Controls Meeting Minutes, 5/8/19 Technology Design Meeting Minutes, and 5/8/19 Salvage and Construction Phasing Meeting Minutes.
45.23	J. Kent A. McKinstry J. Seeley	<p>J. Kent provided an overview of the updated the Site Logistics Plans. J. Kent reviewed the cost impact of providing sod in lieu of seed for the two U-6 playfields and the two U-8 playfields, the U-6 is an add of \$10,650 and the U-8 is an add of \$22,500.</p> <p>Committee Discussion:</p> <ol style="list-style-type: none"> 1. J. Kent to develop the NFPA 241 plan. 2. J. Kent to review the Site Logistics Plans with the Police and Fire Departments. 3. J. Kent to provide a simplified version of the Site Logistics Plans for public distribution to A. McKinstry and J. Seeley. A. McKinstry to distribute to parents and J. Seeley to post on the project web-site. 4. The Committee decided to defer any decision on adding the Sod until 2021.
45.24	Record	J. Strazzulla provided an overview of the Neighborhood Informational Meeting held on 6/8/19 at the Balmer School, presentation attached. After the meeting, members of the SBC, FBI and SMMA walked the Mason Road property line with several of the Mason Road property owners. The property owners with personal property constructed on town-owned land were notified to relocate the constructed personal property by 6/28/19.
45.25	Record	D. Fontaine Jr. distributed and reviewed the Reconciled 60% Construction Documents Construction Cost Estimates from FBI and PM&C, attached. The FBI estimate reflects a construction cost of \$79,117,606 and the PM&C estimate reflects a cost of \$78,714,975, both below the construction budget of \$79,492,663.
45.26	Record	A Motion was made by M. LeBrasseur and seconded by P. Bedigian to approve the 60% Construction Documents Submittal and authorize submission to the MSBA. No discussion, motion passed unanimous.
45.27	Record	J. Seeley provided an update from the Trade Contractor Prequalification Committee.

Item #	Action	Discussion
		Three Elevator Trade Contractor Qualification packages and six Waterproofing Trade Contractor Qualification packages were received and the Prequalification Committee will meet on 6/25/19 to review.
45.28	Record	<p>Site Permitting - J. Seeley provided an overview of the site permitting as follows:</p> <p>Conservation Commission</p> <ol style="list-style-type: none"> 1. NOI Hearing closed and draft Order of Conditions has been issued, attached. <p>Planning Board</p> <ol style="list-style-type: none"> 1. Planning Board issued Final Site Plan Approval Conditions, attached.
45.29	Record	J. Strazzulla provided an update from the Ground Breaking Ceremony Committee on the Ground Breaking Ceremony scheduled for 9:00am on 6/15/19. T. Hengelsberg distributed the Ground Breaking Ceremony Flyer, attached.
45.30	Record	Committee Questions - none
45.30	J. Seeley R. Maglione	<p>Old or New Business</p> <ol style="list-style-type: none"> 1. J. Seeley to poll the Committee on availability for the 7/2/19 SBC meeting. 2. J. Seeley distributed and reviewed the 4/23/19 School Committee minutes, attached, voting to name the school Northbridge Elementary School. 3. T. Hengelsberg reviewed the existing electrical transformer and emergency generator issue, attached, that occurred on 4/28/19. R. Maglione will test the emergency generator under full load on 6/14/19. 4. T. Hengelsberg presented the Mass Notification System currently included in the project. After review, the Committee agrees to keep this system in the project.
45.31	Record	Next SBC Meeting: 6/18/19 at 6:30 pm at the High School Media Center. The anticipated agenda item is to vote to approve the Early Site Package Amendment.
45.32	Record	A Motion was made by S. Gogolinski and seconded by M. LeBrasseur to adjourn the meeting. No discussion, motion passed unanimous.

Attachments: Agenda, Budget Tracking Form, Warrant No. 27, Easement Application from Verizon, Designer Amendment No. 15-18, OPM Amendment No. 2, 4/10/19 Technology Design Meeting Minutes, 4/10/19 Mechanical Controls Meeting Minutes, 5/8/19 Technology Design Meeting Minutes, and 5/8/19 Salvage and Construction Phasing Meeting Minutes, Neighborhood Informational Meeting presentation, Reconciled 60% Construction Documents Construction Cost Estimates from FBI and PM&C, draft Order of Conditions, Final Site plan Approval Conditions, Ground Breaking Ceremony Flyer, 4/23/19 School Committee minutes, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes