

**Time Line**

1. Comments were originally submitted to the Design Team on 10/10/06
2. Formal responses were received by OCOM on 10/28/06.
3. Each item was reviewed in joint meeting on 11/1/06 that included members of Admin, DRG, BOE, OCOM, YEE, and Turner.

**General Note**

Each resolution is meant to explain the decision on each comment and represents a reasonable consensus between the design team, Livingston BOE (and staff) and OCOM.

**60% Design Review Comments by Oversight Committee**

Item	Cat.	Comment Description	Resolution
1	PE Bldg	The emergency generator is sized at 10 watts per SF. This is excessive for the requirements. The fire department requested 50% of the area lighting and less that 50 % of the HVAC be connected. <i>The size of the generator was an estimate for space requirements and budget. The generator will be resized based on the requirements set by the Livingston Emergency Management Coordinator. The generator will be sized to provide power to the following areas: main gym, locker rooms, toilet &amp; shower areas, concession stand. The generator will also supply power to two of the four rooftop HVAC units for the main gym plus the unit servicing the locker room.</i>	OK- Generator will be reselected for smaller duty.
2	PE Bldg/ SCI	The drawings do not meet the NJSCC requirements for a 50% design development set of drawings. The drawings should be resubmitted to comply with the 60% submission requirements of the contract. Electrical design is dependant upon mechanical and plumbing design. <i>Electrical design is dependant upon mechanical and plumbing design. Electrical design therefore lags behind mechanical and plumbing. Since three weeks were taken out of the schedule, the electrical portion is not as complete as the other areas. Electrical design has continued since submission and is on schedule.</i>	OK. No further comment required.
3	REN.	Was a 2-pipe concept considered that would use existing water piping for both heating and cooling? Obviously would need to add chiller, consider exist. insulation, and required flow rates in existing piping (could use higher DT to reduce flow requirements). <i>Approximately one year before the referendum, a committee called FUSE fleshed out the educational scope, building requirements and budget. FUSE was a collection of Livingston residents, educators, and LBOE members. Concepts such as a brand new building, were discussed and either discarded or included. The footprint and square footage were hammered out. The air conditioning requirement for the new construction &amp; renovation areas was determined. The style of the building was agreed to by the FUSE Committee. From their efforts, the referendum was written and the scope developed. The current design team is tasked to maintain the functionality, budget, and schedule as was dictated by the referendum. The original high school was built in 1948 with additions in 55, 58, 66, 90, and 95. The existing school is approx. ¼ hot water, ¾ steam. The existing systems were a major consideration</i>  <i>in selecting a design for the new construction. Minimizing the types of systems the Livingston Facilities group would have to operate and maintain in one location was taken into consideration. The project budget would not allow for replacing the existing piping with a new system. Also prohibitive were the additional costs for the chiller, cooling tower, cooling tower pumps, cooling tower make-up water &amp; cooling water treatment systems. Plus the space that would be required for a central plant had not been allocated in the referendum design. The additional cost for a 2-pipe system was estimated to be \$1,000,000. In addition to cost and space considerations, 2-pipe system can only heat or cool, it does not easily switch from one mode to the other. When changing from heating to cooling, the water temperature has to be reduced to the correct chiller input water temperature. When going from cooling to heating the water temperature has to rise before entering the boiler to prevent causing thermal shock. During the transition periods of fall and spring, a 2-pipe system is difficult to control.</i>	OK. Agree that downsides outweigh upsides. No further discussion on this concept required.

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4	GEN	<p>Confirm that the building and its systems, as they are currently shown ("Proposed Design"), are predicted to consume 30% less energy than a "Base Building Design" according to ASHRAE Std. 90.1 Building Performance Rating Method (Appendix G of the standard). Provide printout of summary sheet for Livingston to incorporate into project documentation. <i>The Trane Trace 700™ Version 6.0.2 Building Energy Simulation program was utilized to analyze various design considerations. Only the new construction, the Science Wing and PE Building, are modeled. In the initial simulation the base building uses ASHRAE 90.1 1999 values per LEED 2.1. The results of the initial simulations did show a 30% energy reduction with the proposed system. As the architectural design has progressed, the model has been updated. ASHRAE 90.1-2004 will be the baseline values per LEED 2.2. Per the Smart Start brainstorming meeting, additional energy simulations are being performed as dictated by PSEG and documented in the meeting minutes. The second design alternative is modeled using the prescriptive options offered by Smart Start program</i></p> <p><i>i.e. lights, lighting controls, SEER values on DX systems, premium efficiency motors and upgraded insulation. The subsequent design alternatives are compared to the second design alternative for costing and efficiencies. These energy reductions are the basis for the Smart Start design incentives. The Smart Start Energy Simulation Report will be complete and available for review by mid-November. The LEED 2.2 template for EA Credit 1 (hard copy) would also be filled out for future submittal. Please note that the LEED documentation procedures have been dictated by the project team. Yee Engineering is maintaining a LEED 2.2 project file in our office. As MEPF activities are completed, the templates are updated (hardcopy) and saved there. All required documentation such as equipment cut sheets, invoices, etc. will be collected and saved in this file. The file will be turned over to DRG after our portion of the credits is completed.</i></p>	<p><b>OK.</b> Completion of a "final" energy simulation according to ASHRAE Std 90.1-2004 is expected very soon and will be submitted to the Livingston BOE. Accompanied by a cover letter, the design team will state the updated prediction for energy performance as it compares to the "Base Building Design" as defined in ASHRAE Std 90.1-2004. For maximum clarity, it will be stated as a percentage (e.g. 80% would signify that it consumes 20% less energy than "code-minimum" building).</p>
5	Music	<p><b>For the Music Wing, did not see sound attenuation measures typically required in "quiet" environments.</b> Due to the potential for mechanical (and other) noise in the new Music Wing, confirm that acoustical engineer has reviewed the current installation and ensured that concepts meet low sound pressure level requirements consistent with this application. Minimum concepts include ducted sound traps, low-speed ductwork, oversized fan wheels, properly selected outlets for low NC levels, suitable wall construction, vibration isolation, etc. <b>Same issue in Auditorium (dwg. M2.9).</b> <i>The music room and auditorium will be analyzed for sound reduction. To perform Noise Criteria (NC) calculations the following are required for acoustical analysis: 60%Construction Documents; duct sizes;flow rates (cfm); unit sound power data in octave bands - inlet, discharge, radiated.After the analysis, proper sound attenuation measures will be included in the construction documents. Please note that the auditorium has an existing system of which the diffusers are being relocated to match the new ceiling layout.</i></p>	<p><b>OK.</b> Appropriate acoustical treatments will be provided for Music Room based on results of analysis. No acoustical treatments will be provided for existing Auditorium HVAC system.</p>
6	Misc.	<p>Security Improvements are missing from plans. No visibility from main office to entry corridor. No doors to stop or slow visitors before being admitted by school personnel. - <i>Recommendation to Install vision glass on wall between main office and entry hall. Install doors at junction of "A" hall to contain visitors at the entry hall. Doors need to swing clear for morning and PM student traffic. LBOE will be handling the security via separate package for overall facility needs. Vision panels already scheduled as part of front entrance upgrades. DRG to provide additional design for second set of entry doors for Board's review and approval.</i></p>	<p><b>OK.</b></p>
7	Misc.	<p>Brick and block construction is time-consuming and expensive in high labor cost area like ours. - <i>Employ prefabricated concrete panels to erect building shell. This could cut three to five months off of construction time for the project. Prefabricated concrete panel systems are custom formed and attached to the structural steel system. Based on the buildings structural articulation and aesthetic requirements, these types of wall systems can be "more" expensive than brick. Modularity of the structural frame plays a huge role in this systems economy. In the case of the PE bldg, the structural frame follows the function of the spaces. The building itself has several angles based on sight constraints. This in of itself diminishes the modularity of the structure which makes a prefab system less attractive. In the case of the science building, aesthetics are critical to maintaining the existing architectural style of the overall facility. Gabled features and projected surface features through brick coursing would be costly to do as a prefab and would not provide the desired</i></p>	<p><b>OK.</b> Detailed information was presented by DRG that points to this project not being an appropriate application for prefabricated concrete panels.</p>

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		<p>results the owner / twp is seeking as part of the master plan. The cavity wall construction methods adopted for this project are regarded as the premier exterior masonry wall system. The evidence is clear at this particular site due to the fact the original structure and subsequent additions continue to perform giving the facilities age. This type construction offers other benefits such as fire resistance and reduction of sound transmittance. Both are directly related to the health and safety of faculty and students. The design of a cavity wall system serves 2 functions. First, the interior wythe serves as a durable wall surface that will take the daily abuses of a typical high school. It also compliments the structure by using its mass to support the structural frame. This eliminates the need to over design steel connections to support lateral forces exerted on the building. Second, the exterior wythe of brick offers a low maintenance, long lasting exterior providing the building with a strong image of quality. Another major function of a cavity wall is to resist moisture penetration.</p> <p>The brick permits some moisture penetration as wind driven rain pounds on the exterior wythe of the wall. The wall system is designed to drain as moisture makes it way into the cavity and down the face of the exterior wythe. Vented weeps allow this moisture to exit the base of the wall. Our design takes this theory a step further by introducing vented weeps at the top of these walls. As wind pressures change at the top and bottom of the exterior face, air is allowed into the cavity to help dry out moisture conditions before more serious problems can develop such as mold and degradation of the structural system. Thermal properties are also enhanced as the air space in front of the insulation reduces the thermal bridging. The total "R" value of our wall system has been calculated at 19.8 and has been modeled into our energy program. Regionally, cavity wall construction is accepted and understood by contractors and their labor forces for these types of structures. Although these systems are more labor intense, most civil buildings / schools in New Jersey are</p> <p>constructed using these methods because they last.</p>	
8	SCI	<p>A3.3- Arch window in greenhouse and matching blank panel look weak. This is an important elevation. Review and provide alternate design. 8. Arched window ties the new science wing in with the front entrance that is scheduled. Brick panel serves a function in that it provides additional wall space for upper cabs in prep room behind it. Design team will consult with science supervisor and consider. Complete design coordination prior to bid.</p>	<p>OK. DRG will take a further look at this issue and provide an update when available.</p>
9	SP-V2	<p>2220- Calls for demolition of obstacle course. Will this be eliminated or is it to be relocated? 9. Obstacle course will not be relocated. Options will be investigated through the LBOE.</p>	<p>OK. Obstacle course will be ELIMINATED, not relocated. No further discussion on this matter.</p>
10	SP-V2	<p>2930- How is landscaping being handled? I thought it was part of the Owner's civil engineering scope. Landscaping will be designed as part of the Civil Engineer's scope. Complete design / coordination prior to bid.</p>	<p>OK.</p>
11	PE Bldg	<p>The emergency generator should be diesel powered, not gas per SCC and fire department. Per the Livingston Emergency Management Coordinator's request, the emergency generator is specified to be dual fuel, natural gas &amp; diesel fuel.</p>	<p>REVISED- It was discovered that Livingston EMC did not specify dual fuel. Final concept will include diesel fuel only as this will meet requirements and will reduce cost through elimination of gas-piping requirement.</p>

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12	GEN	<p><b>Systems will not be able to meet listed design requirements of 75F at 50% RH throughout the year.</b> Independent of system capacity, the current concept will continue to introduce hot, moist outside air (during warmer months) while the cooling is off (because space temp. is OK). This will likely lead to "sticky" or "clammy" conditions in the spaces. If moisture levels remain high for long enough, could have potential for mold and microbial growth. Recommend strong consideration of dedicated outdoor air system. <i>The HVAC design utilizes desiccant heat transfer wheels supplied with Air Handling Unit Packages for recovery of both sensible and latent heat by passing exhaust air through a heat recovery wheel. This system recovers over 70% of the sensible and latent heat from the exhaust air reducing the heating and cooling requirements of the HVAC Units. The design will be based on Semco heat recovery units that is one of several manufacturers that mates easily with Trane or other HVAC Units and can be provided as an integral part of the HVAC Unit eliminating a separate installation and split responsibility that often becomes a problem</i></p> <p><i>in installation and coordination. The design meets temperature and humidity control requirements and is conventional HVAC design in terms of first and operating costs as well as utilization of conventional, easily maintainable technology. A separate dehumidification system such as a Munters System, represent significant initial installation cost including coordination, extensive additional ductwork, substantial support structures when roof mounted and become an additional item to monitor and maintain.</i></p>	<p><b>REVISED-</b> Concern was confirmed, but issue was thorough discussed to consensus. Issue was resolved according to:</p> <ol style="list-style-type: none"> <li>1. By listing a design criteria, this is meant to signify that the installed systems will be capable of meeting it throughout the year (allowing for infrequent periods of deviation due to atypical weather extremes).</li> <li>2. Not all spaces/ rooms/ areas are, or will be, designed to maintain conditions below a maximum relative humidity level. For those that are, it will be clearly stated on the design documents to facilitate commissioning.</li> <li>3. Where a max. relative humidity maximum is required, the value will be changed from 50%RH to 60%RH, as it is more consistent with industry standards and prevents the oversizing of equipment for the purpose of dehumidification.</li> </ol>
13	GEN	<p>M3.02, M2.20- Unable to determine if new equipment is capable of meeting space dewpoint requirements during peak outside air conditions as thermal performance data is currently omitted. Update all equipment schedules to display predicted thermal performance data such as entering and leaving cooling coil conditions. <i>Please refer to item # 24 for thermal performance calculations. Equipment schedules will be updated.</i></p>	<p><b>REVISED-</b> Equipment schedules will be updated to reflect predicted performance by the manufacturers at design airflows and peak outdoor air conditions. At minimum, coil leaving air dewpoint temperatures will need to be below design space dewpoint by a margin that would allow for the anticipated moisture gain in the space.</p>
14	REN.	<p>Existing unit ventilator/ AC concept is still envisioned to be unattractive and more difficult to maintain than other alternatives (See previous letter issued regarding critical issues). While some of the design teams responses addressed some valid concerns, others did not. Livingston Facilities will need to decide whether this issue is worth pursuing. We believe that it is. <i>Although unit ventilators can be considered unattractive, the units are easy to maintain, inexpensive, and easily replaced. Will explain further.</i></p>	<p><b>OK-</b> This item was discussed at length. The final decision is to keep the unit ventilator concept as-is, except that all condensing units will be located on the roof. The expected costs from any alternate concepts are predicted to outweigh the potential benefits by a reasonable margin.</p>
15	FP	<p>FP2.1- Should there be a 2nd hose station at the other end of the building? <i>The sprinkler riser noted in first stairwell does not have nor require a hose connection. Science building second floor is not more than 30'-0" where a hose station will be required by code. Therefore, hose connection is not required at stairwells.</i></p>	<p><b>OK.</b></p>

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16	Misc.	These plans have not been subject to any professional review for educational adequacy or functionality. The work should be reviewed by another professional to act as a second set of eyes; a second opinion before construction advances to the next stage. This could identify problem areas which will be costly to address in construction. Neither "Value engineering" nor commissioning address these issues of suitability for the purpose of teaching. - <i>Recommend that 3rd part educational facility planner for a one-week review of these plans, at a cost of approximately \$7,500-\$15,000. Potential savings could be in the millions of dollars, as well as improved bldg performance and user satisfaction. Plans have been prepared by a professional. They have also been reviewed by the supervisors, the Principal, and the Superintendent. Plans and Educational Specifications have been approved by the state for educational adequacy. Final educational adequacy is expected in the next month.</i>	OK.
17	Misc.	Corridor from Main Bldg to Science Wing needs wider passageway to alleviate crowding and to provide better outside views for daylighting and mood. - <i>Widen connector corridor. Raise level of glass higher. Consider under-window benches to provide for a useful commons area. Corridor is scheduled @ 12'-6" wide clear. According to basic egress requirements, this corridor can process 750 occupants, 350 in each direction. Each corridor by floor is expected to process 175 occupants. Corridor is more than adequate. The glazing covers 40% of the available wall space in this corridor on both floors. Height of glazing in connector corridor is limited due to infrastructure running above ceiling.</i>	OK.
18	SP-V1	01010-5- Project is being set up as multi-prime contractors. Is this what the Owner wants? <i>Project is being written as a multi-prime because it is easier to convert "multiple prime" contract language to a "single prime". Market conditions will be analyzed at the time of bidding and final recommendations will be made.</i>	OK.
19	SP-V1	1030- Entire project seems to be Alternate pricing leading to contractor confusion. Architect needs to further clarify. <i>Project will include alternate pricing. It is recommended alternates be kept to a minimum. Market conditions will be analysed at the time of bidding and final recommendations will be made.</i>	OK.
20	SP-V2	Who from the Owner's side is handling the material selections and finishes (including the synthetic turf field)? <i>Recommendations will be made by professionals and reviewed with owner. Final selections will be made at the approval of the LBOE.</i>	REVISED- Regarding the synthetic turf football field, it seems that "Field Turf" would be a more appropriate choice, but issue to still be finalized. Other relevant issues with preferential issues will be reviewed with relevant school representatives.
21	PE Bldg	There is a considerable amount of heat and smoke detectors In the gym building. The amount of these initiating devices should be reduced being the building is fully sprinklered. <i>The fire protection system is designed per NFPA code</i>	OK
22	REN.	Majority of existing building has drop ceiling. FA cable should not be in conduit or tubing above ceilings. <i>Per NFPA code, the Fire Alarm cable is normally not in conduit, only piped when exposed.</i>	OK- In those instances where drawings or specifications call for conduit or tubing where it is not required, they will be corrected.
23	REN.	Since the design is to provide individual units for each room, are all of the rooms used in the summer? Could (and should) some rooms not be conditioned? <i>The LBOE requested a means to provide AC to the entire school not already air conditioned as an alternate. Limiting conditioned space for the school must not be based on current educational requirements since future requirements may change. However, rooms that are not being used in the summer should be set in the unoccupied made via the Building Management System (BMS).</i>	OK

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24	GEN	M.O- OA design condition should use peak Evap. Condition (78 wet-bulb) rather than the 95/ 75 condition shown due to high outside (ventilation) air quantities being introduced into the buildings. New equipment would be undersized if listed condition is used (78 WB vs. 75 WB requires 25% more capacity on outside air load). <i>The 95/75 are standard conditions required by code. The USGBC requires 30% additional fresh air. The packaged HVAC units offer their manufacture's standard capacities, which may not exactly match the required need. The units are selected to meet or exceed the required outdoor air.</i>	<b>REVISED-</b> Issue was discussed at great length, but not resolved. Discussion points from OCOM included: 1. Code does not specify 95/ 75 as the proper outdoor air conditions. It does not specify any outdoor conditions to be used for selection of equipment. 2. For consistency with industry convention, design team will need to choose "peak" outdoor air conditions based on likelihood of occurrence (0.4%, 1%, or 2% of year). 3. In regards to the "manufacturer's standard capacities" (as explained as the available data in the catalogs during the 11/1 meeting), this issue should not impact the final unit selections since the information presented in catalogs is meant to be a convenience, not a constraint. Recommend obtaining actual performance predictions via computer selection from the manufacturer. 4. While it is good that each unit is capable of the proper outdoor airflow, the cooling and heating capacities must meet requirements based on the peak amount of airflow at the outdoor air conditions coincident with the peak load in the space.
25	GEN	Separately, confirm that the whole building energy simulation is based on the 2004 revision to Std. 90.1, which is the relevant standard for version 2.2 of the LEED-NC program. <i>Please refer to item # 4.</i>	<b>OK-</b> Per item #4, energy simulation will be updated and reported to Livingston Admin.
26	GEN	Note that the current LEED score-card does not seem to be based on the requirements of version 2.2 (October 2005). Update scorecard to reflect relevant version. (Note that current prediction of 30% less than base building, using Std. 90.1-2004, would actually yield 6 points according to v2.2). <i>Will comply &amp; update score card.</i>	<b>OK.</b>
27	Specs	15971- It does not seem to anywhere specify exactly what information the new BMS will display when it comes to new mechanical equipment. Recommend that this is specified in required detail. <i>When the mechanical design is further developed, a User Requirements Specification (URS) will be generated by the Livingston Facilities Group with input from Yee Engineering. The URS typically will specify control points, alarm conditions, screen design, sequence of operations, trending, etc. This document will be utilized by the team configuring the BMS and a means for the Commissioning Agent to confirm system operation.</i>	<b>OK-</b> After some discussion, it was confirmed that Livingston Facilities Personnel and Administration will be a part of the development process. A complete points list, sequence of operations, and workstation requirements will be included in the bid documents.



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28	Misc.	Cafeteria: Improve overall student dining experience, as well as increase seating capacity more than half the year. - <i>Recommendation to construct outside patio seating area in the area between current kitchen and music rooms. This will provide add'l seating in season. Cost is extremely small, as it requires only a hardscape surface, which will replace the current unsightly broken pavement, and some tables and chairs. Area can be separated from parking lot. Area for indoor seating has been increased from 7100 sf to 9000sf to accommodate 3 lunch sessions. Outdoor seating areas will be considered and recommendations made by LOBE.</i>	OK.
29	Misc.	Construct unique learning spaces in Science Wing. - <i>Provide a pond between Science and Main Bldg, for biology and chemistry use. Adjacent, provide a long, flat surface for use by physics and robotics (like a bocce court). Consider a "dropping point" from second floor. Provide rooftop space for meteorology and astronomy. Science area has been reviewed by the supervisor, the Principal, and the Superintendent as has been deemed adequate to deliver all areas of the sciences.</i>	OK.
30	Misc.	Multiple rooftop mechanical equipment units will be unsightly. - <i>Combine into fewer units. Build mansard roof, parapets, or some other way to conceal mech eqpt. Mansard is scheduled at all new construction and serves a dual purpose. First, it will act as a screen for all HVAC equipment scheduled at the roof. Secondly, the design compliments the existing structure which was dictated to the design team by the Livingston Twp Planning Board as meeting the township's master plan. Deviation would require approvals from township.</i>	OK. New construction will "screen" view of rooftop units.
31	GEN	At 60% we expected to see dimensions and names/ numbers of column lines <i>Complete design / coordination prior to bid.</i>	OK
32	PE Bldg	A2.3- There is a large area of wasted space located behind the elevator (and difficult to maintain as it appears to be a pit). It would be inexpensive to create enclosed useable space. <i>The area behind the elevator is enclosed and is scheduled for storage space.</i>	OK
33	PE Bldg	A2.3- Is the second floor intended to be used during school hours? If so, Owner should examine length of circulation? <i>The building is being constructed to satisfy the physical education program. Circulation is achieved by 2 sets of stairs and elevator strategically placed adjacent to locker rooms at first floor. These vertical access elements process students directly to the stations on the second floor. Schedules will be evaluated and adjustments made based on daily program requirements..</i>	OK
34	PE Bldg	A3.5- If the gym is going to be used during regular school hours, then the design of E/A3.5 should be enhanced. <i>The façade in question provides direct access to and from the existing building. Doors scheduled are more than adequate to process the number of students anticipated.</i>	OK
35	SCI	A2.1- Rooms A113 and A115 do not have windows in plan. Windows are shown in elevation. Which is it? <i>Rooms will receive windows. Complete design / coordination prior to bid.</i>	OK
36	SCI	A2.2- Rooms A202, A203, A204, A214, and A215 do not have windows in plan. Windows are shown in elevation. Which is it? <i>Complete design / coordination prior to bid.</i>	OK
37	SCI	A2.9- First floor of main entry is larger than second floor. This does not work with elevations. <i>Complete design / coordination prior to bid.</i>	OK
38	SCI	A3.3- Elevations do not show soldier course at base of walls. Soldier course shown on wall section 1/A4.1. <i>Complete design / coordination prior to bid.</i>	OK
39	SCI	A3.3- Arch window bridge connection does not relate to anything. Review and provide alternate design. <i>Arched window breaks up the facade and provides a different experience for faculty / students as they travel to and from science wing. Comment noted. Design team to consider</i>	OK
40	SCI	A3.7- Delete dormers on side elevations. Keep it simple with the emphasis on the front elevation. <i>Existing mechanicals require fresh air intake. Dormers provided serve this function.</i>	OK
41	SCI	A4.6- Windows shown no B/A3.5 do not appear in Section 17/A4.6. Which is it? <i>Complete design / coordination prior to bid.</i>	OK

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42	SCI	A7.15 and 7.16- What is the Alternate Ceiling bid? Spec does not refer to alternate. <i>Alternate bid was to brighten existing corridors. Complete design / coordination prior to bid.</i>	OK
43	SCI	A9.G1- Appliances shown in Consumer Science. No specification section for appliances. <i>Complete design / coordination prior to bid.</i>	OK
44	SP-V2	2075- Asbestos roof removal has been included as part of the general contract. Need to coordinate with environmental remediation scope. <i>Asbestos removal is "not" included in the general contract. Language is in specification which gives direction to GC on coordination. Environmental consultant has been engaged by the LBOE. Complete design / coordination prior to bid.</i>	OK
45	SP-V2	2300- Excavation depths need to be established in coordination with geo-tech report (address issue of unsatisfactory fill). <i>Complete design / coordination prior to bid.</i>	OK
46	SP-V2	2300- Who is the "Engineer" referenced. Does the Owner have a geo-technical engineer to perform these services? <i>Soils engineer has been engaged by the LBOE and reports have been generated. These reports have been issued in the specs and have been provided in the 35% and 60% submittals.</i>	OK
47	PE Bldg	There is not enough spare capacity in some panel. Should have up to 20% in some types of new panels. <i>As the design progresses, the panels will be adjusted for spare capacity. Our general guidelines are for 10% minimum to 30% spare capacity.</i>	OK
48	SCI	There is no location for the science wing power panels. Is this off the main building? There is no new service shown on the site plans. <i>At this time, PSEG has not committed to providing new service to either the Science Wing or the PE building. The request for additional service is being reviewed by their engineers. When PSEG completes their study and relays their decision, the drawings will be updated.</i>	OK
49	SCI	The electrical riser diagram is incomplete <i>Will be completed.</i>	OK
50	SCI	Confirm that the exclusive use and spacing of heat detectors in the majority of non-sprinklered spaces is compliant with current code. <i>Designed per NJ DOE 6-22.</i>	OK
51	GEN	What is the short circuit rating of the breaker panels and breakers. You need a indication from PSE&G what the max design should be. This is both a safety and cost issue which affects the estimate. <i>Designed per NEC-70, ratings shall be added as design progresses.</i>	OK
52	GEN	The needs to be some sort of grounding grid for the building steel and electrical system. <i>When the electrical service configuration is confirmed by PSEG, and the design progresses, this will be added to the drawings.</i>	OK
53	REN.	The Board in their meetings asked for the second floor to be conditioned as a priority. Does the design take this into consideration? <i>Yes, the current design provides a framework for conditioning all spaces either during this project or with future funds. The design allows for alternate bid packages to be developed.</i>	OK
54	?	The lab acid waste pipe shows no collection or monitoring system before exiting building. <i>Outdoor neutralization for the acid discharge was requested by the Livingston facilities group. Details will appear on the Civil Drawings.</i>	OK
55	REN.	Has the project considered extension of sprinklers throughout the existing school, which would eliminate the need for fire alarm devices, fire separation requirements and any other improvements required for a building that is not fully sprinklered building? <i>The proposed sprinkler system design is based on the actual square footage being renovated, the original scope of work, and the original budget. All new areas will be sprinklered and the system will extend as far as possible into the existing system as practical.</i>	OK



Item	Cat.	Comment Description	Resolution
56	SCI	Current concept calls for shut-down of exhaust systems for fume hoods and chemical storage cabinets. Confirm that this is acceptable based on knowledge of materials being stored. <i>The 520 cfm of outdoor air required will be exhausted thru the hood. When the hood sash closes there is a bypass to keep the 520 cfm constant. There is a local ventilation override switch in case the school wants to run a hood 24/7 if they have an experiment going. This would energize the attending air handling unit and work in both normal and economy cycle modes. The fume hoods under consideration were designed for the pharmaceutical industry with enhanced baffling and controls to reduce the quantity of fumes that are released when the sash is initially opened. The added benefit of reducing the quantity of outdoor air requiring conditioning is a significant energy savings. The design has been reviewed by PSEG Smart Start personnel and discussed with DCA. This design affords significant energy savings and was included as one of the 30% energy reduction measures.</i>  <i>We do not have a list of chemicals being stored.</i>	<b>OK-</b> Because laboratory fume hoods will not be storing chemicals during unoccupied hours, the design team is planning to shut down exhaust fans. Also, although chemicals will be stored during unoccupied periods in the prep rooms, they will be housed in sealed fire safety cabinets. As such, no exhaust is required for these either.
57	GEN	MD.6- For demo plan- Area "H", work seems to show demolition of a significant portion of the HVAC system serving the area, with a note to rebalance. Assuming that it is a DX system, there could be significant operating issues if the system is not rated for duty at this lower airflow. Confirm that the equipment was evaluated sufficiently to confirm that this lower airflow is OK. <i>Yes, the modifications to existing system will be evaluated for the reduced air flow once the information from the manufacturer is obtained from actual shop drawings.</i>	<b>OK-</b> Although this issue has not yet been reviewed, the MEP will design an airflow bypass, if necessary, to ensure that unit operates at no less than manufacturer's recommended minimum design airflow.
58	PE Bldg	Strongly recommend installation of integral heat recovery (not heat pipe technology) in the new Gym units to capture energy from the large amounts of exhausted air. While an equal-size unit with heat recovery is more expensive, the heat recovery allows for reduction of cooling and heating capacity, which should lead to minimal, if any, additional cost. <i>Spoke with Yee on 10/9- said heat recovery is included in these units. Yes, heat/energy recovery is included in all systems that can obtain the proper intake vs. exhaust ratio. Refer to Item #12 for further information.</i>	<b>OK-</b> Units for the Gymnasium, Locker Rooms, and Corridors of the PE Bldg will be provided with integral exhaust air heat recovery.
59	Café	M2.6- Why have 2 RTUs for the Cafeteria? These serve the same, relatively small area and both split exposures. Seems to be clear-cut instance where the number of units should be reduced. <i>Two units are utilized because of roof framing requirements, duct sizes and capacities closer to design than one individual unit.</i>	<b>OPEN-</b> Agreed that 2 units would not be appropriate in this instance. DRG to confirm that structure is adequate and redesign.
60	Café	Exhaust air required by kitchen hoods are not shown. As such, confirm that combined exhaust air quantities of RTUs E-1, E-2, and E-3 is sufficient for make-up air (IMC-2003 requires that similar amount of make-up air is provided as is exhausted). <i>The RTUs are not interlocked with the kitchen hood exhaust. The outdoor air quantity is derived from the code requirements. The kitchen hoods have their own dedicated make-up air system.</i>	<b>OK-</b> Kitchen make-up air is delivered through auxiliary make-up air system. Since it is not dependant on the RTU(s) for make-up air, it does not need to be interlocked.
61	Café	Recognizing that outside air requires approx. \$4,000 per 1000 CFM to condition per year, confirm that RTUs E-1, E-2, and E-3 are interlocked with the kitchen exhaust system so that the outside air quantities reduce when the kitchen exhaust is not in use. <i>Please refer to item # 60</i>	Repeat of 60.
62	GEN	It seems that there are details that have not received a constructability review. Please ensure that this happens to avoid unnecessary and costly delays. <i>Details are still being developed review will take place.</i>	<b>OK</b>
63	PE Bldg	S403- There are 2 – 18" long W12x16 beams shown. These may be quite difficult to install. Please revisit the framing in this area. <i>The two beams in question are approximately 22 " in plan and longer when you account of the slope. The flanges are only 4" wide on these beams and the steel will be erected prior to the masonry. We do not see an issue here, but will review and see if any adjustments can be made.</i>	<b>OK</b>
64	GEN	S501- Details F4-F6 – Consider doweling into existing footing to prevent differential settlement <i>Doweling is additional cost that we do not see a necessary. The footing in section F4 is beside and on top, the footing in F6 is below and will have the footing from F4 each side of the pier that will lock the new around the existing to help reduce the differential settlement.</i>	<b>OK</b>

Item	Cat.	Comment Description	Resolution
65	GEN	S502- Numerous details: Many details show the structural members imbedded in the masonry wall. Is one supporting the other and what about deflection? <i>The foundations are designed to support the CMU walls. The steel is designed to support the floor loading. Of course with the steel beams partially embedded into the CMU walls, the loads will be shared. The beam will pick-up part of the weight of the second floor and the CMU will prevent the beams from deflecting and carry some of it's load.</i>	OK
66	GEN	S601- Notes: 'Steel Floor Deck: Note 5' The note allows for additional concrete to be placed that is not necessary. Would it not make more sense to calculate the required camber so that the weight of the wet concrete deflects the steel sufficiently so that the final slab thickness is as designed? <i>Steel beams have a minimum camber that can be placed on them. The beams on this project are not placed at a constant spacing due to an irregular column grid so each beam will receive a different amount of concrete loading requiring a different camber. Steel beams all have a rolling tolerance so two beams of the same size can have different properties that will make them react and deflect differently under the same loading. Our office has reviewed the design and limited the concrete load deflection of the beam to 3/4" deflection. If the concrete load deflection is over that, we will camber the beam to minimize the final deflection from the theoretical line. Also, cambering of the beams does nothing to eliminate the deflection of the metal deck between beams.</i>  <i>From our experience on many projects over the last 16 + years, we have found that some contractor do not allow for the additional concrete required for the deflecting deck and beams in their estimates so we have added this note to make them aware of the issue so that they do not try for an extra during construction.</i>	OK
67	FP	From pressure test results, are booster pumps required? This is an expensive fail-safe operation. <i>A flow test has been requested as of 9-27-06 through the Building's &amp; Ground Manager to review if Booster/Fire Pump will be required at the new buildings.</i>	OK
68	HVAC	M2.13- DP (Head) for new pumps seem too small. Again, unclear as to what this system serves without a flow diagram. However, I imagine that there may be a more effective, and less costly concept that could use larger pumps of a smaller quantity. For example, if P-1 and P-2 are distribution pumps (again, check head), then couldn't boiler flow be achieved through isolation valves and flow limiters? <i>Yes, P-1 and P-2 pump head are listed incorrectly. The head should be listed at 70' not 7.0' as a starting point. The exact head will be calculated after the final piping design is complete. The pumps for each boiler are as per the boiler manufactures requirements.</i>	OK
69	Misc.	Daylighting improvements still absent from all areas of the science wing. No significant increases in natural lighting vs. existing facility.- <i>Recommendation to design windows and façade to allow for maximum entry of natural light. Consider use of clerestories; smaller windows atop main glass. The proposed design does incorporate the maximum amount of glazing given the orientation of the classrooms and prep area in the science building. Elevations presented in June 2006 provided for two alternatives, both of which had merit. The board has directed the design team to incorporate the maximum amount of glazing based on this very issue. Main science labs currently incorporate glazing that stretched from top of base cabinetry to the underside of the ceiling (scheduled for 10'-0" high) at the exterior walls. Total glazing square footage is nearly 200 sf in each room. Glazing specifications will be carefully accessed based on solar orientation and requirement of the space. These specifications will take into consideration the following: Improved life cycle cost through integration with artificial lighting (SC); Increase user productivity (Tvis); Reduced emissions through reduced building operational costs ("R" Value); Distribution of natural light deep into space; Reduction of glare. Computer daylighting analysis will be provided to support USGBC LEED credit 8.1. Design enhancements may be revealed as the design team assimilates the final analysis into the design.</i>	OK- Note that DRG intends to obtain LEED Credit 8.1, which would signify that "daylighting" was provided for 75% of all regularly occupied spaces (new construction). Achieving this credit will provide 3rd party assurance that spaces have higher than normal daylighting.
70	Misc.	Security has not been provided to separate the publicly -used bldg areas from the rest of the building. - <i>Recommendation to design in outside doors and proper corridors so visitors can access Music Rooms, Auditorium without entering other parts of the bldg. Outside doors are scheduled for direct or indirect access to music areas. Recommendations based on the LOSC #6 will be considered.</i>	OK.

Item	Cat.	Comment Description	Resolution
71	Misc.	Cafeteria does not have adequate outside window space for view, daylight, and ventilation. Students are crowded into this space for short periods of time; outside views will provide relief, intellectual recharging, and may reduce potential for lunchroom mischief. In addition, current kitchen location places grease barrels and trash in a high-visibility location near main parking entrance. - <i>Rotate kitchen into the "new" cafeteria space (current faculty dining). This opens existing kitchen for seating with windows to the outside. Only cost is new connections for appliances (some gas pipes, electric, plumbing lines) and the windows themselves. Skylights are scheduled to be replaced with clear glazing to allow for better natural lighting. Window modifications on the exterior walls will be considered based on available budget as these modifications were outside the scope of this referendum.</i>	OK.
72	Misc.	Cafeteria still designed on old "lunch line" model. Traffic does not flow well. Serving capacity is very limited. Service cannot be scaled back to offer limited afternoon or after hours services, potentially increasing revenue and providing more and better service. - <i>Install food court-type stations. One for salad bar, another for hot food, another sandwiches, snacks, etc. This improves flow, as well as improves user satisfaction and potentially increases food revenue. Design team is in consultation with the provider to streamline the serving of the students. Upon final recommendations, the design team will provide these enhancements as part the of the overall cafeteria upgrades.</i>	OK. DRG to provide timeline for completion of this analysis.
73	Misc.	Cafeteria: Improve flexibility for use in meetings and school or outside groups. - <i>Raise ceiling height and install movable partitions that can divide the room into more than two parts. Provide identifiable access point from outside for visitors to meetings held in cafeteria. Moveable partition will remain as part of the cafeteria renovation. Expanded cafeteria areas will also offer small group and conference areas for programs during school and after hours. Ceilings are being replaced as part of the HVAC upgrades and will be scheduled as high as existing structure will allow.</i>	OK. Satisfies request.
74	Misc.	Science Wing: Provide for unique needs of differing science disciplines. Physics, for example, could benefit from higher ceilings on second floor to allow for dropping and acceleration exercises. Physics should also have moveable lab stations to allow open floor area. - <i>Eliminate fume hoods in rooms dedicated to physics. Provide some lower height ADA sinks. Employ dark green counters vs. black, to make labs more gender-neutral (vs. masculine black). Science labs designed for maximum flexibility to serve programs of all the sciences. Ceilings scheduled at 10' high provide adequate space for physics experiments. ADA design criteria is required and scheduled in each and every room. Color recommendations will be made by professionals and reviewed with owner. Final selections will be made at the approval of the LBOE.</i>	OK. Agree that rooms should be designed with a degree of flexibility.
75	Misc.	Auditorium is in need of repair. Backstage scenery space is inadequate and dangerous. - <i>Specify exact auditorium improvements. Address lighting, audio, use of balcony, etc. The current plan calls for removal seats, ceilings in the "house", floor finishes. Provide new ceilings, house lights, finished paint and cosmetic enhancements at walls / proscenium, new floor finishes and new seating. Provisions for conduit will also be addressed for sound system purchased outside the construction contract.</i>	OK.
76	Misc.	To improve security and reduce potential for student-on-student violence, design all new restrooms with doorless, baffled entries, like at airports. (Stalls are still partitioned inside.) Use smaller restrooms in greater numbers to minimize large gatherings in limited-visibility areas, a potential security issue. - <i>Doorless baffles have been shown to reduce violence and mischief in restrooms, with no reduction in privacy. Almost zero cost. Design team to consult with DCA for HVAC / life safety requirements. Information will be presented to the LBOE to consider. Final design direction will be made by LBOE.</i>	OK
77	Misc.	No designated areas for student socialization and interaction. This is a desirable activity and will take place no matter what; failure to provide space for this simply creates traffic jams and problem areas. - <i>Build spaces for this function. Possible areas include along the connector corridor to Science, and an enlarged main entry. Enhanced front entrance and plaza areas will provide areas for student socialization. The PE building main entrance also provides for this function as the main stair can be used as a back drop for student gatherings, honors presentations, or poetry reading program.</i>	OK
78	Misc.	Student newspaper space is extremely small. - <i>Designate a larger area for this. Alternate space is available. LBOE to address through scheduling / programming.</i>	OK. Not to be addressed through design or new construction.

Item	Cat.	Comment Description	Resolution
79	Misc.	Custodian's trash dock at rear of bldg is unsightly at a place of high visitor visibility (next to football field.) - <i>Enclose and or improve this area. Due to the redesign of the parking lot, the scope of the site design will provide for enhancements in the service areas. Further examination of this area will be considered. Complete design / coordination prior to bid.</i>	OK
80	Misc.	All permanent teaching podiums should have wiring built in for AC power, data, and projection. This eliminates cords across the floor. - <i>Check design. Design incorporates these basic requirements as we are aware of the associated tripping hazards. Complete design / coordination at 100%.</i>	OK
81	Misc.	Provide wide-door access for PE storage, music, shop, auditorium, and theatre production areas, to allow material to move in and out.- <i>Check design. Design incorporates these basic requirements with (2) 3'-0" door leafs and removable mullions. Complete design / coordination prior to bid.</i>	OK
82	PE Bldg	SP-3- Has Owner determined which necessary constructions easements are required from adjacent property Owners'? Example is the retaining wall at the Gym and the Madonna Drive R.O.W. at the Gym. <i>LBOE is working with Site and Civil Engineer to address these issues with the township.</i>	OK. Project is staying on BOE property. As such, there are no plans to extend onto or regrade adjacent property.
83	GEN	Recommend providing CO2 based control of outside (ventilation) airflow in densely occupied spaces such as the new Gym. This new system would monitor CO2 levels (effected by occupants exhaling), and modulate the outside airflow based on the measured value. Believe this to be a no-brainer in many cases as outside airflow costs approx. \$4,000 per 1,000 CFM to condition each year. <i>CO2 sensors are planned for the auditorium, science wing and PE building. This is one of the design alternatives being analyzed in the Smart Start Energy Simulation Report.</i>	<b>REVISION-</b> For areas where average occupancy is often less than peak occupancy (locker rooms, gyms, etc.), the units will be provided with CO2 sensors, and modulating outdoor and return/exhaust air dampers. This will allow those systems to modulate the quantity of outdoor air based on CO2 (indicative of occupancy) - saving considerable energy.
84	Specs	For HW piping, experience has shown that press-fit method is extremely cost-effective with no experienced difficulties. Recommend adding to specification as approved equal. <i>The specifications calls for grooved joint piping system which is equivalent to "Pressfit". "Pressfit" is trade name from the "Victaulic" Company for that type of product but only for schedule 5 pipe. Since this is a public bid, a specific manufacturer may not be specified unless the District deems it necessary.</i>	<b>OPEN-</b> Item was revised by others after meeting. <b>RESPONSE-</b> It seems that there is some confusion. The actual method/ system being referred to by OCOM is "ProPress" by Viega. This system is different than the Victaulic system. "ProPress" is a solderless copper piping system for sizes 1/2" to 4". <b>RECOMMENDATION-</b> Include as allowable method in piping portion of the specifications.
85	PE Bldg	The specification call for the fire alarm system to be purchased from System Sales Corporation. This should not be restricted to a single distributor. Systems Sales is presently not the company supplying equipment to the Livingston BOE. <i>This was in specification for estimating purposes. It will be removed before bidding.</i>	OK
86	PE Bldg/ SCI	There is no general receptacles, kitchen or HVAC power shown. <i>These will be added.</i>	OK
87	GEN	M2.1- Shown supply diffuser in south entrance does not work with the architectural construction. Change to side-wall or other suitable SAD. <i>This layout item will be corrected.</i>	OK
88	GEN	Recommend that mechanical drawings show sequence of operations and points list for the new building management system. That way, there is no misunderstanding about who is doing what after the contractors are secured. <i>I/O list will be developed and the sequence of operation expanded. Please refer to item # 27.</i>	OK

Item	Cat.	Comment Description	Resolution
89	GEN	S502- Detail S3 & S4: How do you form the step in the slab? <i>Means and methods of the contractor. The lower slab can be poured and then the upper slab poured with a bonding agent. The contractor can provide box out formwork to pour both at the same time and then patch the formwork attachment point after the concrete has sufficiently set or numerous other options.</i>	OK
90	GEN	S502- Detail S3 & S4- How do you place 8" block in between 2 I-beams spaced 14" c/c? <i>You can not place 8" CMU in between two beams 14" apart with a slab above. These details will be revised.</i>	OK
91	GEN	S503- Bottom left detail: Why is the beam being cut to the shape shown? <i>To provide the overhang with the correct architectural depth and the required structural depth of the member.</i>	OK
92	GEN	S601- 'Cantilever Beam Connection' Is there a web plate on both sides? Is a top splice plate needed? Is the weld on one edge of the splice plate? <i>There is a fitted stiffener plate each side of the beam as noted in the detail. There is no top splice plate. What is indicated is the base plate of a column up in it where to occur at the same location. The weld could be made all from one side of a fillet weld on each side.</i>	OK
93	HVAC	M2.13- Functionality of new boiler work relatively unclear without flow diagram inclusive of control system components, pumps, etc. <i>The entire boiler room is not 100% complete. A flow diagram will be included showing all control items.</i>	OK
94	Misc.	Science Wing: Prep room space is inadequate. Ratio should be one prep room per two classrooms/labs. Current design leaves one room per floor without adjacent prep space. - <i>Lay out floor plan, with greenhouse removed, to provide for add'l prep space. Prep room space has been reviewed by Science Supervisor and the New Jersey Department of Education and has been deemed adequate. Space adjacent to greenhouse has been scheduled as prep space at the second floor. Area scheduled as Mechanical Room at the first floor may have space remaining to provide separate prep room there by providing "individual" prep spaces for all science classrooms. Complete design / coordination prior to bid.</i>	OK. Spaces to remain as currently shown in the design.
95	Misc.	TV studio space exceeds that requested by the dept. Double banks of editing bays not required, as these are not in use all the time. - <i>Cut back TV studio space. This could accommodate the robotics lab without the need to construct that new part of the building. TV Studio is designed as approved by the scope of the original referendum. Final design direction will be made by LBOE.</i>	OK. Design to remain as-is.
96	Misc.	Lavatory facilities required for after-hours and weekend sports and other activities held on school grounds. - <i>Provide outside-accessible restrooms that can be locked from the building side for security. Outside facilities have been provided in new PE bldg which includes toilet areas, snack bar, and maintenance areas. The existing building incorporates renovated toilet areas at the back of the existing aux. gym which provides for the visitors side. Both areas will have access without having to open main facility. Complete design / coordination at 100%.</i>	OK.
97	GEN	M.0- Provide all louvers with finish that will match color of exterior of building (if not specified, will likely come as mil finish). <i>Louver colors will be coordinated in the architectural specifications.</i>	OK.
98	PE Bldg	SP-1- How close is the Gym to the Madonna Drive property line? Does the wall rating (none noted on floor plan) take this into account? <i>PE building is scheduled approximately 5'-0" off of the Madonna Drive property line and 15' of the Madonna Drive curb line. This will require the wall to be rated for a 1 hour under a construction type of IIB. Comment noted. Complete design / coordination prior to bid.</i>	OK
99	PE Bldg	SP-2.3- Calls for 8' tall cast iron rain water leader boots. <i>8' cast iron boots are indestructible and will take the abuse of vandals.</i>	OK. Although a premium, agree that this will likely avoid even more significant cost in the future.
100	PE Bldg	SP2.4- Provide larger landscaping beds against school building at the front. <i>Type and vegetation and maintenance must be factored. Design team / civil engineer to consider. Complete design / coordination prior to bid.</i>	OK
101	PE Bldg	SP2.4- Delete paving and provide landscaping in area of bridge connection. <i>Area of concern is the extreme north of the building and will not receive any direct sunlight to facilitate growth of vegetation. Comment noted. Design team to consider.</i>	OK



Item	Cat.	Comment Description	Resolution
102	PE Bldg	A3.5- Owner needs to determine what (if any) covered connection they want between the existing school and the gym. <i>No covered connection considered at this time due to the proximity of both structures (Approx 25'-0"). Considerations for "heated walkway" were discussed at the Oct. 16th Board of Education meeting. Design team to consider. Complete design / coordination prior to bid.</i>	OK
103	SP-V1	1200- Who collects progress documentation and monitors it from the Board's side (Steve R.?). Will this documentation be made available to the public? <i>Progress documentation will be collected from the Contractor and evaluated by the Construction Manager and the Architect. Payment to the contractor will be subject to these reviews.</i>	OK
104	SP-V2	07311-2- Asphalt shingle warranty is 30-years. Minimal cost add to go with 40-year. <i>40 year will be scheduled. Complete design / coordination at prior to bid.</i>	OK
105	SP-V2	Architect needs to provide update of LEED status based on current documentation. Are we still on target for the 28-29 points noted during our 5/24/06 meeting. <i>LEED status document will be updated throughout the design process. The project is currently on track for 31 points.</i>	OK. This will include updating to version 2.2.
106	PE Bldg	The fire alarm riser indicted a zone system. The spec describes a multiplexed system. The riser should be changed. <i>The drawings and specifications will be coordinated.</i>	OK
107	PE Bldg	There are no fire alarm devices shown for the suppression or HVAC systems. <i>These will be added.</i>	OK
108	PE Bldg/ SCI	The lighting is placed on the drawings but not circuited. There is no lighting fixture schedule. The design light levels are not know to the reviewers. <i>The lighting circuitry and fixture schedules will be added.</i>	OK
109	PE Bldg	A means of testing the generator under load needs to be incorporated in the design. <i>As the design progresses, testing requirements will be included in the specifications.</i>	OK
110	PE Bldg	A means of testing the generator under load needs to be incorporated in the design. <i>Please refer to item # 109</i>	OK
111	REN.	Were the existing unit ventilators being replaced as a part of the original scope- before the AC requirement was added? <i>Approximately three-quarters of the unit ventilators were being replaced due to architectural renovations. As the scope developed, it was decided that remainder of the unit ventilators would be replaced because of age and/or condition. This was independent of the air conditioning requirement.</i>	OK
112	REN.	Will the design accommodate the elimination of the AC alternate without revisions to the design documents? <i>Yes.</i>	OK
113	GEN	M.0- General notes seem to be calling for quite a bit of field coordination by the contractors, while also specifying min. clearance on equipment, ceiling ht. in mech. spaces, etc. Confirm that survey has been completed to ensure that all new work shown is readily constructable. <i>All new work into the existing building has been field checked for the new installations. The note on M.O. is a reminder for the contractors to install equipment with ease of access for maintenance personnel.</i>	OK
114	GEN	Has this project been registered for LEED yet? <i>The LBOE is currently soliciting bids for a LEED's facilitator. The design team is looking forward to the project being registered with the USGBC once that contract is in place.</i>	OK
115	SCI	M2.1, M2.2- Recommend including airflow diagram of Science Wing to ensure proper airflow balance and room relative pressurizations (air flowing in the proper direction from less contaminated to more contaminated rather than the opposite. <i>Room pressurization to control contaminant flow is not a school requirement. Students should be directed to perform work under the hoods. The fume hoods are designed to provide a safe environment. All of the air-flow requirements are indicated on the drawings.</i>	OK. Constant volume system will be designed to incorporate pressurization cascade from hallways to rooms to prep rooms.
116		M3.02- For condensing units, model listed in schedules does not appear on provided cut-sheets. It seems like it would be a SEER 15- please confirm. <i>Model numbers will be corrected or correct cut sheets provided before bidding. The SEER number is a part of the unit schedule and will be listed there.</i>	OK



Item	Cat.	Comment Description	Resolution
117	Specs	15840- Specifying 1 filter does not provide sufficient information for selection as different filter performances are available in a 1" thick filter. Must specify a MERV rating. <i>The units are UL labeled with the 1" throw away filters. Only one inch thick filters fit the standard filter rack. Other size filter racks are not available. The unit warranty is based on the entire unit as supplied by the manufacturer. Any change will void their warranty.</i>	<b>REVISION-</b> All filters used on this project will be specified according to the available space (including depth- e.g. 1", 2", etc.), <b>AND</b> the particulate removal performance levels- either according to a percentage (Dust-spot method using ASHRAE Std. 52.1) or Minimum Efficiency Reporting Value (MERV) using ASHRAE Std 52.2. Stating only 1" is somewhat equivalent to specifying a requirement for paint, but not specifying a color. Secondly, in each case, the MERV levels should be made as high as the unit's pressure performance will allow. Note that filters can be pleated and "V-banked" for lower pressure performance at higher particulate removal levels. See OCOM comments at 30% drawings for add'l info.
118	GEN	Are existing boilers being replaced because they are insufficient for new duty? <i>The existing boilers were evaluated. Two hot water boilers had considerable wear and maintenance problems. These boilers are being replaced per Livingston Facilities request.</i>	<b>OK-</b> Livingston requested replacement due to age and condition.
119	HVAC	M2.13- As it is a HW system, and the pumps appear to be selected near a "run-out" condition, the "net-positive suction head required" will be at its highest. Although it is a closed system, confirm that the pumps will have sufficient NPSHA to avoid cavitation. <i>When the pumps are selected after the final piping system is completed, the pumps will have sufficient head</i>	<b>OK-</b> Independent of pump head, YEE confirmed that pumps will be checked for cavitation concerns.
120	Misc.	Provide ability to prestage custodial equipment at various locations around the building. - <i>Use new and existing storage spaces. Comment noted. Design team has reviewed with Buildings and Grounds and has made considerations in the Science Building, the PE Building, existing building at the back of renovated TV / Radio areas and the area behind the old main gym at the south side of the existing building. LBOE shall advise design team if any other areas can be enhanced. Enhancements will be considered based on current budget.</i>	<b>OK</b>
121	Demo	AD.1- Has the scope been coordinated with the Owner's environmental remediation work to ensure no duplication. (Example: Both calling for roof removal, VAT, electric lighting ballasts, etc). <i>Areas of demolition have been identified by the design team. LBOE environmental consultant will test these areas and remediate prior to start of construction in these areas. Complete design / coordination prior to bid.</i>	<b>OK</b>
122	Demo	AD.1- General notes refer to work by others. Who are these "others" Is the intent to say that the work is not included by this contract and is to be preformed by Owner? <i>All notes provided are not always used throughout projects. These items will be identified by design team and confirmed. Complete design / coordination prior to bid.</i>	<b>OK</b>
123	Demo	AD.1- General notes calls for various items to be removed and turned over to Owner. Has Owner reviewed these notes to ensure that they want these materials and have the necessary storage space when the work starts? <i>Design team to confirm. Complete design / coordination prior to bid.</i>	<b>OK</b>
124	PE Bldg	SP2.4- Sidewalk along Madonna Drive stops in the middle of nowhere. Continue up along side of existing school to drive way curb cut. <i>Civil scope requires underground utilities in the areas in questions. Sidewalk enhancement will have to be incorporated in these areas. Design team to consider. Complete design / coordination prior to bid.</i>	<b>OK</b>

Item	Cat.	Comment Description	Resolution
125	PE Bldg	SP2.4- What is the design for the courtyard (towards Madonna Drive) between the existing building and the Science wing? <i>Area between science and existing building is scheduled to be seeded. Complete design / coordination prior to bid.</i>	OK
126	PE Bldg	A2.5- Stamped concrete paving drawing duplicates what is shown on site plan drawings. Should be shown in one area only <i>Correct. Design team to confirm. Complete design / coordination prior to bid.</i>	OK
127	PE Bldg	A3.3- Does not show aluminum balustrade called for in B/A3.3. Same for 14/A4.4. <i>Design team to confirm. Complete design / coordination prior to bid.</i>	OK
128	PE Bldg	A7.1- Section needs to clarify what is happening in ceiling. <i>Design team to confirm. Complete design / coordination prior to bid.</i>	OK
129	SCI	A1.1- Refers to National Electric Code/2002. The state uses National Electric Code/2005. <i>Comment noted, will be revised. Complete design / coordination prior to bid.</i>	OK
130	SCI	A2.2- Bridge connector does not show cornice. Cornice shown in Section 10/A4.4. <i>Design team to confirm. Complete design / coordination prior to bid.</i>	OK
131	SCI	A2.35- Stamped concrete paving drawing duplicates what is shown on site plan drawings. Should be shown in one area only. <i>Same as 126</i>	OK
132	SCI	A3.3- Show RWL on elevation. See note about 8' tall cast iron boots. <i>Design team to confirm. Complete design / coordination prior to bid.</i>	OK
133	SCI	A3.4- Elevation has three different door openings and three different transom designs. Standardize the design. Same comment applies to B/A3.3. <i>Transom design compliments interior ceiling systems scheduled in this area. Different frame / glazing conditions provides for additional light natural light enhancing the interior corridors. Complete design / coordination prior to bid.</i>	OK
134	SP-V1	General Conditions AIA201/CMA (1992) need to be reviewed by Owner. <i>General Conditions have been issued to the Owner. LBOE should also issue to Attorney for front end review and comment. LBOE to expedite</i>	OK
135	SP-V1	Supp. Gen. Cond. Article 2 <i>Same as 134</i>	OK
136	SP-V1	Give contractor five sets of drawings and a set of sepias and let them handle their printing needs. <i>Confirmed. Will be written into specifications.</i>	OK
137	SP-V1	01010-4- Need to develop scope of work to be performed by Owner Design team to confirm. <i>Complete design / coordination prior to bid.</i>	OK
138	SP-V1	1300- Who will be collecting the Owner's submittals and performing the reviews (this is in addition to what the CM and Architect do). This information will be valuable for future maintenance operations. <i>The Contractor will provide and the Commissioning Agent, Architect will review the submittals. Final collection of all approved shop drawings will be conducted by Construction Manager with support from Contractor, Commissioning Agent, and Architect.</i>	OK
139	SP-V2	02075A- How does this differ from 02075? <i>Both sections have been incorporated. Design team will confirm the subtle issues between each and formulate on document. Complete design / coordination prior to bid.</i>	OK
140	SP-V2	7180- Why have water repellent spec for precast concrete when the spec does not call for any precast concrete? <i>Information included in case there is an area that requires this component. Design team to confirm. Complete design / coordination prior to bid.</i>	OK
141	SP-V2	7233- Where is simulated slate to be used? Not noted on roof drawings. <i>Information included in case there is an area that requires this component. Design team to confirm. Complete design / coordination prior to bid.</i>	OK
142	SP-V2	7460- Where is vinyl siding intended to be used? Not noted on building elevations. Why even use it? <i>There is no vinyl siding scheduled on this project. Design team to confirm. Complete design / coordination prior to bid.</i>	OK
143	SP-V2	07810 and 07820- Why do we need two skylight specifications? Only skylights appear in greenhouse. <i>Replacing skylights in Café with clear tinted skylights. Design team to confirm. Complete design / coordination prior to bid.</i>	OK
144	SP-V2	Exterior decorative mouldings not spec'd. What is intended? Wood should not be used. <i>Durable synthetic materials are scheduled for decorative moldings to reduce cost. Design team to confirm. Complete design / coordination prior to bid.</i>	OK

Item	Cat.	Comment Description	Resolution
145	PE Bldg	Fire alarm riser diagram indicates the panel as a stand alone system with central station monitoring. This should be a remote panel to the existing building fire alarm system. <i>The drawings will be corrected.</i>	OK
146	SCI	FA horns (4) in the auditorium seem excessive. Do not exceed max db levels. <i>The fire alarm horn/strobes in the auditorium are designed per NFPA code.</i>	OK
147	SCI	M.0- Typo on design conditions. CAD symbol for degrees is shown as 1/8. <i>This will be corrected.</i>	OK
148	GEN	MD.5- Text size is not consistent with other drawings. <i>This will be corrected.</i>	OK
149	REN.	Connections between Condensing units and unit ventilators show 3 lines. 2 of them would be liquid and suction lines- what is the 3rd? (hot-gas bypass??) <i>This will be corrected.</i>	OK
150	Specs	For Volume III, add appropriate footer information to specification as current version is very difficult to sort through. <i>This will be corrected.</i>	OK
151	Specs	15971- Any reason that Honeywell is omitted from approved bidders list? <i>Livingston currently has the Johnson Metasys BMS installed. It would be beneficial for the district to maintain Johnson Metasys as a standard for consistency, reduction in spare parts, training, and maintenance. However due to 18A, Bidding Specification Law for Public Schools, three qualified suppliers must be listed. If LBOE cannot list Johnson Metasys as a district standard, Honeywell Excel 5000 system can be added.</i>	OK
152	Specs	15971- Currently states that control system contractor is to perform final calibrations after completion of installation. Thermistors are not calibratable devices. Please clarify intention. <i>The calibrations refer to the controller input signal, not the sensor.</i>	OK
153	GEN	S501- Details F3-F6 and F9 – Show the width of the bottom slope of fill <i>The width of the bottom slope of fill is indicated in section F1 and is and is labeled as typical.</i>	OK
154	GEN	S501- Detail F6 – Underpinning details need to be shown as should method of construction to prevent damage to existing. <i>This is a means and method of the contractor. Typically this underpinning width will be no more than 3'-0" wide and the existing footing should be able to span this small amount of undermining. If the contractor does not feel that he can excavate these areas, place the reinforcement steel, get the inspection and cast the concrete in a timely manner, he can shore the excavation</i>	OK
155	GEN	S501- Detail F8 – Is the intent to have the fill in the shape indicated? <i>Yes.</i>	OK
156	GEN	S601- 'Typical Slope Between Footing' indicates 2 min on 1 min. does that mean that a 2 on 8 is OK? <i>No, but an 8 on 2 is okay.</i>	OK
157	GEN	S601- 'Typical Thru Plate Detail' at top of column: How do you make the 'interior' welds? <i>This detail is at the top of the tube so the slots will be made from the top of the tube down. This allows the two plates to be welded prior to be inserted into the slots in the tube and then welded to the exterior faces of the tube.</i>	OK
158	Plumb.	P2.1- Designation "AR" on pipelines not on P1 list. <i>Will be added to the list.</i>	OK
159	Plumb.	P2.24- ST-1 only 37 gal- seems small for 750MBtuh Boiler. ST-2 for adjacent unit of 1.5MMBtuh is 500 Gal. <i>Storage tank size corrected to indicate 318 Gallons</i>	OK
160	Plumb.	There are no boundary lines around the boiler packages to delineate field vs. pre-piped package. <i>Detail clarified to show field piping connection point to factory piped package.</i>	OK
161	Plumb.	Unions required for regulator not shown. <i>Please clarify the regulator in question. Plumbing details shown at 60% show only one PRV at mechanical make-up (with unions).</i>	OK
162	FP	Is freeze-protection for the wet-pipe system required anywhere? Around outdoor fire dept. connections- for example? <i>Freeze protection not required in system. FDC pipe portion does not contain water, until fire department pumps water into FDC.</i>	OK
163	FP	FP2.16- Lower right- there is a note. "Question of new pipes" should be deleted. <i>Note stating, "Question of new pipes" will be deleted.</i>	OK

Item	Cat.	Comment Description	Resolution
164	Misc.	Building temperatures exceed 90 degrees in late Spring and early Fall,during regular school year. Temperatures above 78 degrees will measurably lower student academic performance, as demonstrated in published studies. All building occupants will be uncomfortable at temperatures in this range. - <i>Air condition all classrooms in the high school, both old rooms and new. This can be accomplished now, while unit ventilators are being replaced, at lower cost than at any other time. Move priority for this item from "Add-Delete" to a definite part of the job. Air conditioning of areas "not" receiving area renovations are being designed a part of this project. Most of these spaces are general classrooms. Air conditioning is designed to be delivered through unit vents and split system condensers placed on the roof. Budget will dictate how much of this scope can be achieved after educational goals of he project have been met.</i>	OK. Agree that this item is important, but is entirely dependent on available funding as it was not planned to be a part of this project in the referendum.
165	Misc.	Science Wing Façade: Designs (both A & B) neither match nor complement the existing bldg. Fenestration (window shape and placement) is not consistent with the main bldg, nor does it introduce a complementary design style. Brick is unlikely to match. Design is rectangular and uninspired; devoid of detailing or interest. <i>(Consider the prisonlike look of the Heritage Middle School additions)- Re-evaluate and re-design façade, and offer new design options to the BOE. Consider how the library bldg, also on the oval, brought an updated classical look, demonstrating that the facility is new, which conveys value to the community which paid for it. Still, it maintains respect for existing look. Comment is very subjective. The design team was directed toward a contextual fit by township officials early in the process. The design team concurs with this approach as the statement made by the current architectural language provides an identifiable sense of place / purpose for the proposed use. Elevations have been presented to LBOE and to township officials without exception.</i>  <i>Enhancement through various fenestration details and brick coursing will set structure apart without deviating from these basic requirements.Brick selections have been collected and are currently being evaluated. Design team has been successful in matching brick / mortar colors in the past without issue. Design specifications call for a masonry mock up by the contractor prior to commencement of construction which will allow a final critique.</i>	OK
166	Misc.	Maximize availability of outside exposures for windows, especially southern exposures, to give most possible daylighting. Do not occupy these valuable exposures with "non-human" uses. - <i>Relocate mechanical room in science wing to north end of bldg, so that classrooms can have that view. Eliminate greenhouse altogether and use that wall to provide light to students; not plants. Greenhouse can be replaced with an outside prefab greenhouse, if needed, at a cost far below science bldg cost/SqFt. Add glass to outside walls of stairwells, to maximize light &amp; view. Mech room can get inside window to provide a teaching point. Mechanical space was strategically placed along Madonna Drive to help mitigate the cost of providing services onto the property and for ease of access for service contractors. There is gas, water, and electrical availability which will allow us to do so. 8 of the 14 classrooms provide a view to the township's green. Current orientation of the building provides an area of much needed parking also required of the project. Schematics generated during</i>  <i>the pre-ref process revealed current layout being the best use of the space available.Fenestration has been incorporated into the stairwells current design. Considerations will be made with regard to additional fenestration.</i>	OK
167	Misc.	Provide increased teacher workspaces, closer to classrooms and not as part of teacher cafeteria. Give teachers areas in which to make phone calls, do prep, and hold one-on-one meetings. Current teacher's lounge does not provide a quiet, private area free of distractions. - <i>Designate areas throughout bldg for teacher workrooms. Provide desks that can be shared through use of lockable file cabinets. Provide outside phone lines for calls to and from parents. Provide small kitchens- with a dishwasher- for a useful, comfortable, and clean work area. Areas designated as SGI can be used if provided with the utilities described above. Work spaces have been reviewed by the supervisors, the Principal, and the Superintendent. Current plan provides for flexibility and needs dictate.</i>	OK
168	Misc.	Intercom system specifications are too limiting so as not to permit another bid by any other distributor or mfr. They specify a mfr. and a distance from the project of the distributor as a spec for the job. This is not a relevant requirement; it is there only to lock in the job. Spec even includes the distributor's phone number. - <i>Eliminate specifications written by vendor. (Note; Even the vendor who wrote this spec doesn't qualify; he wrote it for a job in Edison and now he's too far away.) Check all specs for competitiveness. Design team to confirm. Complete design / coordination prior to bid.</i>	OK

Item	Cat.	Comment Description	Resolution
169	Misc.	Traditional film darkrooms are a use of space which is no longer teaching a current technology. In coming years, students will be unable to procure supplies to pursue this method. - <i>Remove and repurpose darkrooms for other uses, either in art or other disciplines. This space can be used for add'l workshops, art teacher prep areas, etc. LBOE: Outside scope of this referendum.</i>	OK. Agree that scope should not be extended beyond original charter.
170	Misc.	Ensure lockers will accommodate current large student backpacks. Plan for need to access/inspect lockers. - <i>Properly size lockers. Consider automatic centrally-controlled locks that can all be opened at once. Considerations for back packs have been incorporated in the plans in locker rooms areas. Design team to confirm with LBOE for locker types in new science wing. Complete design / coordination prior to bid</i>	OK