

1. The finish plans call for Prefinished Wall Panel System PSP-1 and reference specification section 097753. This section is not included in the bid package, kindly provide specification section 097753.
 - a. Please refer to section 06 42 16 for PWP-1, instead of 09 77 53

1. Specification section 09 29 00, page 12, item 3.10, H, 5, e indicates a level 5 finish at textured coating and wall covering areas while item 3.10,H,5,f indicates textured coating and wall covering treated areas as the exceptions. Please clarify.
 - a. The sentence reads: EXCEPTIONS: REVERT TO LEVEL 4 WHERE ABOVE LISTED SURFACES ARE TO BE FINISHED WITH TEXTURED DECORATIVE TREATMENTS, WALL COVERING, PANELING, OR WALL GUARD.

Textured treatment is not a smooth, even, and level surface.
Textured coating is a paint coating w/ textured pattern.

2. Please provide the required capacity for the electric hoist monorail located in the General Purpose Lab, room 229.
 - a. Please refer to spec section 41 22 00 for requirement
3. Please provide details and specifications for the display board shown in detail 3/ I-301.
 - a. Please see the furniture specification package section 3 page 1 for product information.
4. Drawings A-110, A-111 & A-112 provides layouts & spacing for unistrut. Please provide required part numbers. In addition please confirm that 7/ S-306 shall be used for the mounting of same.
 - a. Please refer to spec section 04 45 23
5. Please provide unistrut part numbers for the overhead service carrier shown in 4/ QL-501.
 - a. Please refer to spec section 12 35 53 for engineering requirements.
6. Please provide steel plate sizes for overhead service carrier shown in 4/ QL-501.
 - a. Please refer to spec section 12 35 53 for engineering requirements.

7. Please provide mounting details for the snorkels located in the lab.
 - a. Please refer to spec section 11 53 13 for installation requirement.

8. RE:- Foundation Drainage- Structural drawing S-100 indicates a “Foundation Drain, See MEP Plans”; Drawing PP-100F indicates 4” PD (Perimeter Drainage) around basement area; Architectural sections indicates perimeter(foundation) Drainage along column line ‘C’ from column line ‘8’ to column line ‘13’, which is not shown on the plumbing drawings. Please clarify the extent and location of the foundation drain.
 - a. Please refer to plumbing drawings for the extent and location of the foundation drain.

9. Please provide a layout and part numbers for the unistrut grid at Clean rooms.
 - a. Reference Specification Section #05 45 23, Equipment Support System. This section includes the requirements for the Cleanroom Ceiling System supports as noted in 1.1.B.
 - b. Spec Section 05 45 23 also includes design requirements for the contractor to size the system, including loading criteria.

10. RE: Alternate #3- Please advise if Specification section 06 42 16 item 2.2, B, 4 applies to door tags C08A, C10A, C11, C28, C30A & C31 if Alternate #3 is accepted.
 - a. Yes, please refer to door schedule

11. At the request of one of the Air Spring manufacturers, please provide a manufacturer and model # for the owner furnished/ owner installed STM. If this is not available please provide vibration criteria for same.
 - a. The Owner provided STM is a custom unit, and vibration criteria are not available for publication.
 - b. Design criteria for the isolation block is the NIST A curve, shown in the following chart:

Figure 5. Generic vibration criterion NIST-A curve for critical areas in nanotechnology facilities. Several of the VC criteria are shown for reference.

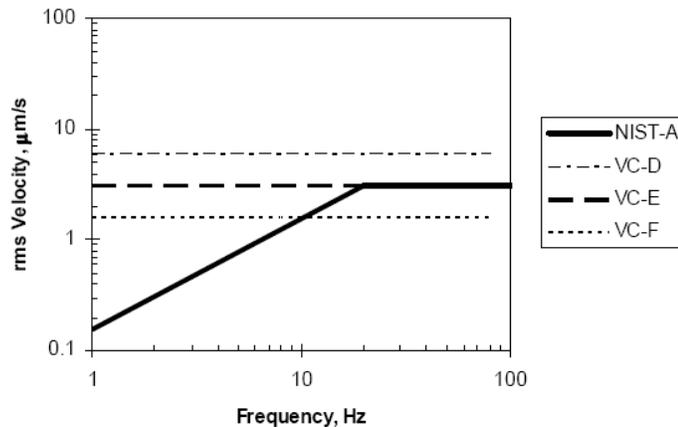


Table 3: Numerical definition of criterion curves shown in Figure 5.

Criterion	Definition
NIST-A	0.025 μm or 25 nm (1 μin) between 1 and 20 Hz; 3.1 $\mu\text{m/s}$ (125 $\mu\text{in/s}$) between 20 and 100 Hz
VC-D	6.25 $\mu\text{m/s}$ (250 $\mu\text{in/s}$) between 1 and 80 Hz
VC-E	3.1 $\mu\text{m/s}$ (125 $\mu\text{in/s}$) between 1 and 80 Hz
VC-F	1.6 $\mu\text{m/s}$ (62.5 $\mu\text{in/s}$) between 1 and 80 Hz

12. The Fiber Roll detail on dwg C-201 shows the Fiber Roll at the bottom of the Jute Mat Stabilized Slope, but the Fiber Roll shown on the Plan (dwgC-200) shows the Fiber Rolls elsewhere (not at the Stabilized Slope). Please clarify.
 - a. Fiber rolls are used for several different uses such as substitutes for hay bales or gravel check dams, plans are correct.

13. Site Demo Plan shows to remove Steam & Condensate Piping to Limits of Construction. Are the locations/routes of the piping known?
 - a. Piping is shown on the drawings – this is from actual field survey and is the best data we have.

14. What are the limits/location of the Bioretention area? (Ref. Spec 31 27 00).
 - a. Please refer to Sheet C-500 Overall Grading Plan. The bioretention limits include all the area within the 83 contour shown in the area between the two entrances from Brookhaven Ave.

1. Drawings QL-101A and QL-102A both show a crane rail with hoist at the Characterization Labs to be 'By Others', however Specification 412200 implies that the hoists, monorails, and trolleys are to be CFCI. Please confirm that the hoists, monorails, and trolleys are part of this contract.
 - a. It is CFCI. Will correct the drawing
2. The Bid Sheet, pg. 1 of 1, calls for the Contractor's Technical Representative to be named. Under Contractor's Contractual Representative, Philip Gardner, the BAS Contractual Representative is named. Is it the intent of the RFP that the Contractor should indicate the name of its own Contractual Representative in this space?
3. General Terms and Conditions Article 42(c) requires the Contractor to "accept BSA's DOE approved Worker Safety and Health Program and the Integrated Safety Management Program as its own" and to manage the work in accordance to those programs. Please provide a copy of those two specific programs or a reference as to where they can be found.
4. On the ISB project, does BNL require the Contractor to conduct pre-employment drug and/or alcohol screening of workers prior to starting work on site?
5. On the ISB project, does BNL require the Contractor to conduct post incident, or for cause drug and/or alcohol testing of workers, or is there any other criteria?
6. Drawing CD-100, Note 9 requires the Contractor to remove all abandoned utilities. Other than the removal of manholes and steam piping noted on CD0-100 and the reference to existing capped utilities on C-600, the scope of utility removal work is not shown. Currently there is abandoned utility removal work taking place on the site. Please provide a document that indicates abandoned utilities to be removed and existing utilities to remain that must be protected by the Contractor.

A. Note #9 will be deleted.

7. Article 27 of the General Terms and Conditions of the contract gives BSA the right to approve or disapprove Subcontractors without change in contract price. On other BNL projects, it was clarified that subcontractors' safety record is the sole criteria for BSA acceptance or rejection. On the ISB project, will the sole criteria for BSA rejection of a Subcontractor be the proposed Subcontractor's failure to meet the National Average standards for OSHA DART Rate, OSHA Recordable Incident Rate and/or EMR? If other criteria may be considered by BSA, please provide a specific list of potential reasons for rejecting Subcontractors.
8. Elevator shafts EL-01 and EL-02 are neither naturally nor mechanically vented. Is venting required? If so, how will it be accomplished?
 - a. No vent is needed for elevator serving 3 stories. Please refer to NYSBC section 3004

Per NYSBC SECTION 3004 - HOISTWAY VENTING

3004.1 Vents required. Hoistways of elevators and dumbwaiters penetrating more than three stories shall be provided with a means for venting smoke and hot gases to the outer air in case of fire.

1. The other roof area alternates that are to be added, the drawing says min. R 30 but the specs say min. R 25. Which should go with?

Response: please use R-30. Spec will be corrected.

I apologize, but I still cannot find the appropriate schedule for the plate and frame exchanger specified. I have attached the page that you specified to locate the schedule but as you will see it still only has the schedule for a Shell and Tube exchanger. Please forward me the schedule if you can locate it so that I may provide a quotation to the bidders.

Response: Assume the question refers to Process Cooling Water Plate & Frame HX, and then you can locate the schedule on drawing PP-601 issued with addendum #2 on 05/07/10

1. Please provide exterior wall sections along column line '5' for the base bid.
 - a. Please refer to similar wall sections 1/A-371 and 2/A-320.
2. Please provide interior wall sections along column line '5' for the alternate bids.
 - a. Please refer to interior wall elevation at 1/A-435, and wall section at 1/I-302.
3. The finish key on drawing I-601 calls for PWP panels per specification section 097753 please be advised said specification section has not been included with the bid documents. We do have spec section 06 42 16 for Wood Paneling. Please clarify.
 - a. Spec section 06 42 16 takes precedence. Note attached revised Finish Key.
4. Details 2 & 3/ A-343 indicate a "¼" thick liner wall" around columns. Please provide specification for "liner wall".
 - a. Please refer to sheet 11/QL-502 for cleanroom wall liner, and spec section 13 61 16.
5. Details 1 & 2/ A-350 indicate "Precast Concrete Panel Cladding (Typ.)". A specification for precast concrete panels has not been provided with the bid documents. Please clarify.
 - a. It should change to Limestone Cladding (Typ.)
6. Please confirm segmented framing & glass is acceptable for the curtain walls.
 - a. Yes, it is intended to be segmented framing and glass per the dimensioning.
7. Specification section 09 84 13, Acoustical Panel System indicates 24" x 48" panels & drawing I-601 indicates 24" x 24". Please clarify.
 - a. See spec section 09 51 00
 - i. Acoustical Ceiling Tile AM-1 (office, lab) is 2x2 tile.
 - ii. Acoustical ceiling Tile AM-2 (specialty lab) is 2x2 tile
 - iii. Acoustical ceiling Tile AM-3 (corridor) is 2x8 plank
 - iv. Acoustical ceiling tile AMP-1 (lobby) is 2x6 metal plank
 - b. Section 09 84 13 is a sound damping material installed over the RF shielding.
8. Specification section 01 10 00 "Summary of Work", item 1.3,C states that a separate contract is to be issued by BNL for the "Early Site Preparation Package" which consists of site demolition of paving, building foundations subsurface and rough grading of the site. Please advise if the civil drawings issued in the bid set for the new Interdisciplinary Science Building indicate anticipated conditions after work of the separate contract has been completed. At this time the Earthwork Contractors are estimating from the Grading Plan and the Existing Conditions Plan. Please advise.
 - a. Yes, the drawing relate to site is the as-build condition after Site prep.
9. The Soil Borings and Geotech Report indicate two to six feet of "Fill" within the footprint of the new building. Should the contractor anticipate to 1) remove and replace the "Fill" material with new controlled fill?, 2) reinstall and compact the existing "Fill" material?, 3) keep the existing "Fill" material in place?
 - a. Most of the unsuitable material (fill) has been removed from the building footprint as part of pre-construction site work. In areas of utilities, fill shall be removed and replaced with structural fill. Some removal of fill should be anticipated, however the footprint should already have and the fill removed.
 - b. Please refer to structural sheet for further requirement on fill:
 - i. Per S-001 note B.8: ANY EXISTING FILL MATERIALS OR UNSUITABLE SOILS AS DETERMINED BY THE GEOTECHNICAL ENGINEER WITHIN THE BUILDING FOOTPRINT AND THE FOUNDATION AND SLAB ZONES OF INFLUENCE SHALL BE EXCAVATED AND REPLACED WITH PROPERLY COMPACTED FILL.

- ii. Per note B.9: THESE [FILL] SOILS ARE NOT SUITABLE FOR SUPPORT OF FOUNDATIONS OR SLABS ON GRADE AND SHALL BE EXCAVATED DOWN TO THE EXISTING NATIVE SOILS BENEATH AND REPLACED.

10. In addition to item #9 above, what should the Contractor anticipate to do with the fill outside the building footprint?

- a. Outside of footprint, in utility trenches, backfill with structural fill, under pavements – reference geotech report.

11. The complexity of all the systems and components that need to be understood and coordinated on this bid are substantial. I believe the Engineers at BSA and the Design Engineers/Architects may agree. The electrical systems, control systems, hvac and plumbing systems will take more time for the subcontractor's estimators and equipment vendors to produce comprehensive bids which in turn will help to provide for a better planned and executed project. It takes up to two weeks alone just to acquire the proper sub bidding coverage; and there are many equipment and controls vendors that will need time to understand the systems, ask questions (rfi's) and price them correctly. Having successfully bid on similar Laboratory Projects (a 280,000 sf FDA Lab and a 30,000 sf Pfizer Lab), it is my experience that state of the art high accuracy laboratories such as this will require more than the four weeks allotted for this bidding process (six to eight weeks is not unrealistic). Therefore, we herewith respectfully request a Bid Date extension of at least two weeks at this time. It is much better to have the additional time early in the bid process as opposed to getting an extra week just before the original bid date and then another extra week after that. That scenario doesn't provide us with the ability to plan ahead. Of course receiving an answer on this in a timely manner is also important. Thank you.

- a. Bid period has been extended two weeks.
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1. Drawing 1/A-420 dated 4/9/2010 shows toilet accessory TA-7A in the Toilet Rooms. Item TA-7A is not listed in the accessory schedule in Spec. Section 10 28 13. Please provide specifications for said item.
 - a. TA-7A should be change to TA-7C

2. Dwg QL- 101d, Clean room Equipment Schedule, references specification section 13 21 25. Please provide said specification.
 - a. Spec section 13 21 25 will be included in Addendum #2

3. Please confirm that the refrigerators shown in Pantry 104 & Pantry/ Recycle 281 are to be owner furnished & owner installed. If not please provide specification for same.
 - a. They are Owner Furnished and Owner Installed

4. Please advise if the (2) “45 Gallon Flammable Cabinets” shown in corridor C-30 on drawing QL-102B.1 are to be owner furnished & owner installed. If not please provide specification for same.
 - a. Please refer to Addendum #2

5. Re: QI-101C
 - a. Enlarged area pump rooms 196 & 197- Are MBE cylinder racks to be type E-4 or E-5.
 - i. E-4
 - b. MBE lab 167- Please provide a detail/ specification for the “Retractable, Flexible Exhaust Arm for Chamber Clean”

- c. 2/ QL-101C- Control Rm B10- Please define what items listed as “(2) racks” are. Are they OFOI/ CFCI??
 - i. Electronics Racks, Owner Furnished and Owner Installed.
 - d. In general this drawing does not define what items are what and what items are OFOI or CFCI. Please define.
 - i. This drawing does not stand alone. Refer to Architectural drawings for acoustical chamber information and RF shield information. Refer to QL drawings for laboratory table types, casework, and sink.
 - ii. Equipment Items shown dashed are Owner Furnished and Owner Installed.
6. Re: Pipe Identification—Please confirm that all mechanical trade piping will be identified utilizing colored marker field, lettering & arrows as per Sect. 20 05 53 pg.4 item 3.3 and that entire length of piping is not required to be painted.
- a. That’s correct understanding.
8. Re: Foundation Drainage for Alternate No.1 - Please provide layout for Alternate No. 1 foundation drainage.
- a. The perforated perimeter foundation drain is proposed for all of the basement walls. There will be no modifications to this work for Alternate #1.
9. Per the Finish Schedules, typical noted corridors call for finishes SR-1 and SR-2. Please provide the Pattern Layout of the (2) two colors in the corridors.
- a. Refer to drawing A-430 and A430B.1 for floor patterns and the I-400 series for floor finish distributions.

1. The cleanroom automatic doors are not called out which door no. ?

Door 139B and 141 are automatic sliding doors. All cleanroom door are on cleanroom door schedule.

Please refer to sheet QL-210 and spec section 08 42 30.

1. Spec 012300 – Alternate #7 – Please clarify if the deletion of the PWP-1 at the lobby is to include the PWP-1 as shown in the Interaction Spaces 194 and 205 as well.
 - A. For Alternate #7 all the PWP should be deleted from the project.
2. Elevation 8/I-201 – Please indicate where the mail slots exist on the plans.
 - A. See sheet IF-101 room 111 and IF-102 room 215.
3. Sections 3/A-311, 3/A-313, 1/A-320, and 4/A-330 – Please clarify the material of the internal portion of the window sill (painted gypsum board, plastic laminate, etc.).
 - A. Painted gypsum.

Is it the intent of construction documents to install during the initial stages of the project portions of the new storm drainage system so they can be utilized as components of the Erosion Control System indicated by drawings C-200 & C-201?

- a. Phasing plans and construction logistics plans are not in our scope of work. For maximum efficiency and operation of the storm sewer and erosion control systems(s) The Rochester St. crossing, downstream to the CFN basin, and the CFN basin enlargement should be constructed in early phases prior to the addition of significant amounts of new impervious surface, trailers, materials, and vehicles within the ISB area.

Will BNL supply GSA documentation to Contractor to allow contractor to purchase furniture under GSA pricing?

- a. BNL to provide answer

Please confirm that the air barrier specified in section 07 27 16 is to be used at all locations where an air barrier is indicated on drawings (i.e. Behind masonry, Indiana Limestone, Preformed Metal Wall Panels, Alum Composite Panels, Insulated Metal Wall Panels, etc.).

- a. Yes.

- b. All utilities within the new building footprint, including the Alternate West Wing Addition, have either been re-routed or removed to locations outside the new building footprint.
 - i. Correct – the ISB building and west wing will not have any existing utilities conflicting within the footprint.
- 7. Please provide a specification for exterior window types ‘E1’, ‘E2’, ‘E3’, ‘E4’.
 - a. Please refer to spec section 08 81 02
- 8. Please advise if interior window types ‘1’, ‘2’, ‘3’ & ‘4’ are HM Frames or Interior Storefront. If said frames are to be Interior Storefront please provide specification.
 - a. Hollow Metal. Please note, type 3 is a fire rated window.



1. Please confirm spray fireproofing is not required for any structural steel in the building; currently there is no specification section for Spray Fireproofing.
 - a. **Confirmed. No spray fireproofing is required for structural steel in the building.**

2. Under spec section 112426 Tractel, Inc is listed as the base manufacturer and provides a permanently mounted horizontal life line system. Listed under the optional manufacturers is "Miller by Sperian, Sky Grip System"; this system is a temporary bolt on mounted fall protections system and does not seem to be an equal to the base Tractel, Inc. system. Is the Horizontal Life Line System intended to be a permanently mounted system or a temporary system? Or is the Sperian Temporary system truly considered equivalent?
 - a. **Intended to be a permanent system.**
 - b. **Optional will be Hy-safe, Soll by Sperian, Guardian, and Probel**

3. It is assumed that similar alternate vendors are interchangeable with the bases of design vendors. Please confirm that this is an acceptable assumption.
 - a. **NO.**

4. Drawing I-601 Finish Key indicates that finish category PWP is covered under spec section 097753, there is no such section. Is the PWP finish covered by spec section 064216?
 - a. **SPEC SECTION 064216 TAKES PRECEDENCE. NOTE REVISED FINISH KEY IN ADDENUM 2 DRAWINGS.**

5. Doors C10A, C08A, C28, & C30A appear to be surrounded by GWB that abuts wood paneling on one or both sides. Specification Section 064216-2.2B.4 notes that wood doors in walls with wood panel are to have matching wood veneer. Are the doors noted above to receive veneer matching the wood paneling? Please indicate on door schedule if these or any other doors are to receive wood veneer matching the wood paneling.
 - a. **Wood doors are solid wood door w/ stain finishes. Please refer to Door Schedule. Stain color to match veneer panel.**

6. Please indicate what is to happen at openings C10A, C08A, C28, & C30A if Alternate Area B is not constructed; should the wood panel wall continue flush across where these doors are indicated or should it step in as shown (with gyp. walls) for future expansion? Similarly please address the exterior elevation should the alternates not be accepted.
 - a. **If Alternate B is not constructed, the wood panel wall should step in as shown with gyp walls.**

7. The furniture specifications package includes a vendor proposal from Office Environments International; how is alternate # 5 to be submitted? Are we to carry OEI's pricing with our

management costs? Do we carry management costs only with the purchasing done by BNL?
Can we price out to multiple furniture subs?

- a. **BNL to advise**
8. Please provide a definition list of the abbreviations noted in the room finish drawings and schedule.
 - a. **Please see category and item in the finish key on sheet I-601.**
 9. See drawing AC-102A and EP-102A (CD's dated 4/9/2010), room # 201. Dwg. AC-102A shows a motorized projection screen on the east wall in this room, EP-102A does not provide power or switch location for the motorized projection screen. Please advise.
 - a. **Will provide power and switch in revised drawings.**
 10. See dwg. A-442 - ULV/MBE chamber I.B. details, (CD's dated 4/9/2010) which depicts embedded conduit/sleeve routing w/ dimensions. The E and P dwgs. do not show embedded conduit/sleeve routing for the equipment on the inertia block. Please add this information to the E/P dwgs.
 - a. **Please refer to Arch sheets for the embedded locations and information**

1. Detail for hot water heater piping on PP-501 shows 2 mixing valves for the 2 Lab Hot water heaters and 2 mixing valves for the domestic hot water. Plan PP-401A1 indicates only TW MX VALVE. Is this in addition to the 4 mixing valves required for the water heaters? If so Please provide detail for TW Mix valves. Also give size and specifications on mixing valves.
 - a. (AE response) Refer to Addendum 2, revised drawing PP-501 which revised detail 1 to show the TW mixing valve. Two mixing valves for the Domestic water and the Laboratory water as shown on details 1 7 2 of PP-501 are not required. Provide the single electronic mixing valve EVM-1 for each system as specified in 22 42 00 paragraph 2.7.
2. Plan PP-401A2 indicates floor drains in labs to be "D-1" According to schedule on PP-601 D-1 is a roof drain. Please clarify.
 - a. (AE response) Refer to Addendum 2, revised drawing PP-401A2 which revised the type to a D-3.
3. Spec section 226600 2.4 A specifies Lab floor drains only to be type 304 stainless steel. Please provide full spec with model numbers and options.
 - a. (AE response) Refer to Section 22 10 16, paragraph 2.5 Drains, type D-3.
4. Please provide specs for the perimeter drain pipe and fittings shown on plan PP-503. Note on plan says " Polyethylene. Please clarify.
 - a. (AE response) Refer to Section 22 14 00 Storm Drainage System Paragraph 2.1 Materials E. Pipe underdrain.
5. Plan PP-103A at vacuum Equipment notes to see detail 1/P-621. There is no vacuum equipment detail shown on Plan P-621. Please provide.
 - a. (AE response) The reference should be to detail 3 on PP-501.
6. Spec section 22 63 13 for specialty gases 2.7 C Fittings specifies "compression swagelok stainless steel fittings" for elbows and tees. Section 3.7 Installation of Fittings Valves and Components states that compression fittings may only be used for connection of gauges, etc..that require frequent removal. Does this mean all specialty gas pipe and fittings have to be welded? Please clarify.
 - a. (AE response) Yes.
7. Spec section 22 63 13 for specialty gases 2.5 C Containment Tubing specifies to "provide containment tubing where indicated on the drawings" There are no indications on the drawings for containment piping. Please confirm that none is required.
 - a. (AE response) The Silane, Ammonia, Methane, Hydrogen and Carbon Monoxide should be run with containment tubing.
8. Spec section 226313 Specialty Gases 1.1 C Scope 1. Includes; states " Gas panels" . Plans for Specialty gases D-101A thru D-102B.1 show Note 1 at all drops to gas cylinders which state "Terminate Specialty Gas Piping 72" AFF with valve and cap" Please clarify that there are no gas panels to be provided under Plumbing scope of work.
 - a. (AE response) Gas manifolds are to be provided where the piping is indicated to be capped.

9. Plumbing Spec section 226719 2.1 A. Process Cooling Water (PCW) specifies pipe materials for Mechanical Room 150 ONLY to be CVPVC Sch 80. Pipe materials spec 2. Specifies stainless steel with welded joints for 4" and under. Please clarify that all the 4" and 3" PCWS and PCWR piping throughout the labs and corridors are to be stainless steel with welded joints.
 - a. (AE response) Your description of the specification is Correct. BNL expressed concerns with leaks of the CPVC in laboratory and other occupied areas without floor drains so the material was changed to welded SS.

S303 & S304

FOUNDATION DRAINAGE SYSTEM

THIS SHOWS A PANEL MOUNTED ON FOUNDATION WALL
AND NOTES SEE ARCH. DWG.

A-312 SHOWS GRAVEL IN FRONT OF THE DRAINAGE PANEL

IS THE INTENT TO HAVE TWO TYPE'S OF DRAINAGE SYSTEM?

Please provide drainage board as indicated and gravel at the bottom only.

A-313 INDICATES 4" GRAVEL UNDER FLOOR SLAB AND
S-303, S-304 & S-309 SHOWS SLAB ON GRADE
PLEASE CLARIFY?

Per BNL, the gravel subbase could be eliminated.

CD-100 GENERAL NOTE # 4

REMOVE TRANSITE PIPE

HAS THIS BEEN REMOVED ? IF NOT REQUEST LOCATION
AND QUANTITLY OF TRANSITE PIPE TO BE REMOVED?

Response – Refer to the area where there is demolition of the hydrant and tree to be removed for transplanting along Rochester St. The transite pipe associated with the hydrant to be removed will be abandoned and the water line will be capped.

Q 5.3) WILL THE CLEARING & GRUBBING / SELECT CLEARING BE DONE BY OTHERS?

Response – clearing and grubbing / site clearing has been completed by others.

Q 5.5) C-200 EROSION CONTROL SHOWS A SEDIMENT BASIN SYSTEM AND AT THE PRE BID MEETING IT WAS STATED TO SET UP FIELD OFFICE TRAILERS ON THE SOUTH SIDE THERE MAYBE A CONFLICT, PLEASE ADVISE

Adjust location Of trailers to coordinate with sediment basin.

Q 6) C-601 DATED 4-9-10 THE 24" D.I.P. TO BE SALVAGED: CONTRACT DOCUMENTS STATE THAT EXISTING 24" D.I.P. ON SITE TO BE SALVAGED AND INCORPORATED IN NEW STORM DRAINAGE. IF THIS MATERIAL IS NOT SUITABLE FOR, USE. WILL OWNER PAY FOR NEW 24" D.I.P. MATERIAL?

Response – BNL and site prep contractor removed and recycled noted 24" DIP. Salvage note has been removed from plans– purchase of new DIP is now required.

ISB RFI #020

Please confirm quantities of signage required for the project as we counted them up and came up with different numbers as per enclosed schedule, please review and advise.

- a. The quantities of each sign type shown on the plans are documented below.

SIGN TYPE	QUANTITY
TYPE A	36
TYPE B	42
TYPE C	2
TYPE D	2
TYPE E	9
TYPE F	9
TYPE G	2
TYPE H	9
TYPE I	7
TYPE J	4
TYPE K	108
TYPE L	2
TYPE M	1
TYPE O	14
TYPE P	7
TYPE Q	6
TYPE R	20
TYPE S	6
TYPE T	20
TOTAL	306

10. What are the dimensions for the basins for the Sanitary & Storm Pump Lift Stations? Diameter & Dept?
 - a. The diameter of the basins are 48" as scaled on drawing PP-100F. The depths are identified on the same drawing.

11. On Plan PP-401A3 in the MBE Lab PCWS & R and CDA piping is shown coming up through floor. What are they hooking up to? No equipment is shown here on Plan QL-101C. Please provide detail
 - a. The piping is running below the first floor and is stubbed up for the ARPES SYSTEM and MBE SYSTEM. Final connection will be by owner.

1. RFI-01: Drawing CD-100, General note #4 indicates that there is transite pipe required to be removed. Please indicate the amount of piping as there is no detail showing an elevation, section, etc.
 - a. Response – Refer to the area where there is demolition of the hydrant and tree to be removed for transplanting along Rochester St. The transite pipe associated with the hydrant to be removed will be abandoned and the water line will be capped.

2. RFI-02: Drawing C-200, General note #6 indicates that there is work outside of the limits of contract (LOC). Please clarify the scope of work outside of the LOC.
 - a. Note #6 to be changed to read as follows:
CONTRACTOR SHALL COORDINATE WORK WITH OWNER TO SCHEDULE ROAD CLOSURE.
CONTRACTOR SHALL PROVIDE A CONSTRUCTION PLAN SHOWING THE LOCATION OF TEMPORARY BARRIERS AND A STATEMENT IDENTIFYING THE DATES WHEN THE ROAD WILL BE CLOSED.

1. Drawing E-503 / Spec 270528 – Spec indicates 1" conduit to cable tray for voice-data outlets and 1-1/2" conduit to accessible ceilings for surface raceway, but details show 1-1/4" conduit for both applications. Please clarify.

Detail 11/E-503 and 12/E-503 shall be changed to 1"C.

2. Drawing T-601 / Spec 270532 – Spec and riser mention about site cabling for the telecommunication system to Building 515. Please clarify if this scope is in this contract or by BNL. If by this contract, please provide the length, advise if any conduit is required in Building 515, and who is responsible for the termination at Building 515.

Site cabling is in project scope. Terminations in building 515 are not in project scope however all work in building 515 shall be coordinated with BNL. See new telecommunications site drawing TS-101 for additional information.

3. Spec 263623 – Please provide the size of the conduit and wire for the ATS control wiring.

See detail 1/E-501 key note #10. This note states to provide 8#12 control wires in minimum 1" c from each ATS to generator.

4. Specs 265600 and 260533 – Spec 265600 Section 3.1.G states "run wiring for site lighting power in 1-1/4" Schedule 40 PVC, however 260533 Section 2.3.C.1 states that "concrete encased Schedule 40 PVC may be used". Please clarify what conduit is to be used and if concrete encasement is required for site lighting.

See drawing ES-102 for site lighting conduit sizes. Concrete encasement is required and depth shall be 30" minimum.

5. Drawing Y-001 – Drawing has a symbol for a CCTV surveillance camera under the security system symbols, which is shown on the Y-series floor plans. Who is responsible for the CCTV System? If this contract is responsible, please provide specifications as well as wiring methods and risers.

BNL is responsible for the CCTV system.

6. Drawing E-401 and E-502 indicate IRGB in the service corridors C02 and C23, and IRTS in the labs, however drawing E-404 and E-405 do not show the exact quantity and location of those grounding devices. Please clarify if we need IRGB and IRTS in the service corridors and labs.

Refer to detail 9/E-401.

7. Drawing EP-100 – Please identify what the symbol that is 'LGB' inside of a rectangle in B05 represents.

Refer to detail 9/E-401.

8. Drawing EL-100 shows a fixture type FX in the shower/toilet room B26, however this fixture is not noted on the fixture legend. Please provide the fixture information for 'FX'.

Fixture schedule will be updated to include the shower type fixture.

9. Drawing EL-101 – Elevator and pump rooms (196 & 197) both show type 'FD' fixtures that has been used in both areas but the symbol is shown differently in the elevator than in the two pump rooms. Please clarify the correct fixture at these locations.

Both fixtures are Type FD but with different mounting configurations. The pump room is ceiling mounted and the elevator pit is wall mounted.

10. Drawing EL-102A – Please clarify the fixture type in open office #252 – the symbol looks like 'FA', however the fixture is designated 'FB'.

This is an open office area. Fixture Type is correct, symbol will be coordinated.

11. Drawing EL-102A – Please clarify the fixture types in Room 229 – some fixtures like a type 'FD', however are designated 'FA'.

The fixtures should be Type FD.

12. Drawing EL-102A – In stair #3 and in front of seminar room 201, type 'A' fixtures are noted, however a different symbol has been used in each location. Please clarify the correct lighting fixtures at these two locations.

Type A is correct. Fixture symbols in front of seminar room will be coordinated.

13. Y-701 – Door 123A is listed as being laser control unit interlocked with door 123B, however no hardware is listed. Please provide.

This door is not a security door however is locked and unlocked via the laser entry control system. Door will have electric lock and door contact.

14. Y-701.1 – Doors 184A, 184B, and 235 are listed as having the laser interlock, however the hardware listed does not include the interlock controller. Please clarify.

Controller is specified in section 26 70 00. E.C. is responsible for providing this

system and any interface with the security system.

15. Spec 05120 Section 1.2.B.2.b calls for the structural steel erector to be an AISC Certified Erector. Based on the limited size of the structural steel portion of this project as well as the limited pool of certified erectors, we ask that this provision be waived.
 - a. We believe it is in the best interests of the project for the erector to be AISC certified. Do not recommend to waive the provision.

16. Sections 3&4/A-310 at the Cleanroom Mech. Level shows an edge angle that refers to the structural drawings, however when you reference S-102A and 2/S-310, no edge angle is indicated. Please advise if this angle is required, and if so, please indicate the size.
 - a. Please refer to detail C/S311,

#12) On plan PP401 A3 there is piping shown in Pump Room 106 on lower left corner of plan.
Where does this piping continue to?
And where does it go when it drops?

Response: Those pipes were erroneously copied and should have been deleted. They can be ignored.

ISB RFI #029

1. E-501 detail 2 shows 36" stone/gravel sub-base for equ. Pad is this the intent?
 - a. Electrical drawings are diagrammatic in nature. Refer to drawings C-700, S-101A and S-301 for construction details.

2. Please clarify the acoustical lining requirements for downstream / upstream of all VAV Boxes and Fans. Refer to note on detail #3/M-504 "silencer where scheduled". However, there is no reference to silencers on the VAV Box schedule. Please clarify.
 - a. Supply silencers scheduled in DWG. M-601 are to be installed inside AHU's and are to be provided by AHU manufacturer. Return and exhaust silencers are duct mounted, which are to be provided by mechanical/ductwork contractor. No silencers are required/scheduled for VAV air terminals.

Question 1)

REF: VOLUME II, DIVISION 22 - PLUMBING

Section 22 63 21, Part 2.9 – ‘Phase Separators’, describes in detail a specific type of liquid nitrogen phase separator (which my company offers). These type phase separators are designed for MBE (Molecular Beam Epitaxy) devices and I have noticed an “MBE Lab, Room 167” on the drawings. However, I have been unable to find the location of such a device in any of the drawings. Can you indicate where the phase separator can be found in the drawings or if this is actually a requirement in the scope of the liquid nitrogen system?

Response: A phase separator specification was included if it was required at the supply to the dewar filling station. LN2 is only being piped to the filling station as described in the specification and as shown.

Question 2)

REF: VOLUME II, DIVISION 22 - PLUMBING

Section 22 63 21 describes the need for several other specific pieces of equipment which are also unidentifiable in the drawings. Example: 2.4 Flexible Static Piping System; 2.7 B & C – vacuum insulated valves; 2.8 Piping Accessories. Can you indicate where these components can be found in the drawings or if these are still requirements in the scope of the liquid nitrogen system?

Response: The Flexible Static Vacuum piping was included if required at the Dewar Filling Station. Valves 2.7 B & C were included if they would be required at the Dewar Filling Station.

Question 3)

REF: VOLUME II, DIVISION 22 - PLUMBING

Section 22 63 21, Part 2.1 3. lists only one suitable manufacturer for the ‘Piping system and components.’ Will BNL consider the use of other equals / alternates? My company has recently participated in bidding liquid nitrogen systems for several other buildings on the BNL campus for which we were considered an approved equal / and or specifically listed as an approved vendor.

Response: Substitutions would be considered, follow section 01 25 13 Product Substitutions.

11. Drawings E-401 and E-502 indicate IRGB in the service corridors C02 and C23 and IRTS in the Labs but drawings E-404 and E-405 does not show exact quantity and location for those grounding devices. Do we need IRGB and IRTS in the service corridors and labs? Please clarify

Previously Responded

12. What is the proper conduit method for site lighting? Do we need concrete encasement for conduit? Please clarify. (265600 3.1.G stated “run wiring for site lighting power in 1 ¼” Schedule 40 PVC” but 260533 2.3.C.1 stated concrete encased schedule 40 PVC may be used ...”)

Previously Responded

13. Specification and riser drawing reference Site cabling for Telecommunication system to Building 515. Who is responsible for this work (BNL or GCs)? If GC iss responsible please provide distance (length) for this run? Do we need any conduit in Bldg 515? Who is responsible for termination on Bldg 515?

Previously Responded

14.

FOAM –FILLED (INSULATED) METAL WALL PANELS-

(exterior walls @ MBE lab, Clean Room & Seminar room @ 2nd Floor)

As per specs. Section 07 42 13

Specs call out for two colors- A & B

Please specify quantities of each color or what is the breakdown of colors square footage, the percentage ratio between the two?

Response: It is the contractors' responsibility to provide their own quantity calculation.

Can you please indicate which windows are getting the solar shades for this project? We are bidding and found it to be very unclear

Response: The term Solar (Sun)/Shades (Screen) has been used interchangeably. The Sun Shade should be provided to the south side of the windows. Please refer to floor plans and elevations and details.

3. Sections 1/S-303 and 2/S-303 require that the cantilevered walls at the ULV Chamber be fully backfilled prior to pouring adjacent structures, which would include the inner ULV Chamber walls. The stated purpose of this requirement is to realize the anticipated 1" deflection at the top of the cantilevered wall.
- a. If the 2" isolation joint between the top of the cantilevered walls and the inner ULV Chamber walls is to remain after the wall deflects approximately 1" under backfill load, then the gap between walls at the base of the wall would be approximately 3". Is that the design intent?
 - b. If the answer to 3a is YES, the dimension strings between outside walls on Sections 4/S-305 and 6/S-305 will be reduced by as much as 2". Will that required adjustment meet the design intent?
 - c. If the answer to 3a is YES, the mat slab in the ULV chamber cannot be constructed until after backfilling when the ultimate location at the top of the cantilevered wall is known so that the base of the mat slab and reinforcing dowels can be located properly. This serves to lengthen the basement construction period. Is the construction sequence described herein consistent with the design intent?
 - d. ACI tolerance allows for vertical alignment deviation in foundation walls of 3/8" in 10'-0". The addition of that tolerance in a 26' high wall could potentially further impact the reduction in the dimension strings on Sections 4/S-305 and 6/S-305. Will that be acceptable?
 - e. Would the design engineer consider moving out the cantilevered walls an appropriate distance to compensate for a larger than 2" isolation gap that would accommodate both the anticipated deflection as well as the vertical alignment tolerances? That would be particularly helpful at the wall on column line B which is intended to be poured within 2" of the inner ULV Chamber wall.

Response: It is not the design intent that the cantilevered basement walls should be fully backfilled prior to constructing the ULV chamber walls.

- a. The design intent is to maintain a minimum isolation joint width of 2 inches along the full height of the wall.

- b. The footprint and location of the ULV chamber are fixed and will not change.
- c. The ULV chamber dimensions are fixed. How to ensure that the 2" minimum isolation gap is maintained along gridline B after the wall deflects is a function of the contractor's means and methods. The width of the pump room may be adjusted to maintain the current location of the walls along 5.1 and 7.9 and the 2" isolation gap. With these adjustments, the ULV chamber can be constructed concurrently with or prior to the construction of the cantilevered basement walls.
- d. This is acceptable provided that any misalignments do not reduce the footprints of the inertia masses and the ULV chamber or the minimum allowable isolation gap width.
- e. Conceptually, it is structurally acceptable to move the wall along gridline B outward. Additional review is required by Architecture. The contractor shall submit a sketch with the new proposed wall location for review and approval prior to proceeding. The walls along gridlines 5.1 and 7.9 shall remain as currently dimensioned.

4. Sections 1/S-303 and 2/S-303 show a 27' high cantilevered concrete wall with no horizontal joints. Is it permissible to place horizontal construction joints in these walls so that they can be poured in two lifts?

Response: It is structurally acceptable to place horizontal construction joints in the cantilevered basement walls.

6. Drawing EL-100 & EL-101A: Drawings show individual remote drivers for each type "C" and "C1" fixtures. One drive is capable of handling the entire room. Please advise if it is acceptable to use one driver per room instead of per fixture.

a. One driver can be used for each room.

7. Addendum #2 – Clarification #24 – If the mail slots shown in 8/I-201 are shown on the furniture alternate drawings ('IF' Series), please clarify if they are to be priced as part of the Furniture Alternate or as part of the Base Bid.

a. Mail slots shall be included as a part of the base bid.

ISB RFI #037

1. M-602 Air terminal Unit Sched. Mar. VVR-E-228 Rm. Served 251, ?? (What is?)
 - a. ??? was for the missing room number when we issue the bid package. See Dwg's M-102A & M-202A, the air terminal in question serves two rooms, one is room 251, the other room is 252. The room #252 was added to the sched in add#2.

2. PP-502 Detail 5-xx what does LNW stand for?
 - a. It should read LN2 – Liquid Nitrogen. Same for detail 7.

3. PP-601 Vacuum Equip Sched. Is vacuum pump supposed to be 460V/1 phase?
 - a. It should be 460V/3 Phase.

4. D-102A Is symbol list available for specialty gases
 - a. Use drawing PE-001 for the symbols and abbreviations used for the Specialty Gases.

5. FX-101A Clarify note for 8" F DN&Rise, what is BFP? What should be seen for continuation?
 - a. Refer to the riser diagram on dwg FX-640 for the overall arrangement of the fire water services, bypass, backflow preventers and alarm valving. The reference to Dwg P101AF is for the two 8" Fire services coming into the building Mech Room.

6. FX-501 Detail 2 confirm header diameter for alarm check valves.
 - a. Assume an 8" header unless hydraulic calculations allow a smaller header size.

Mr. Gardner, electrical specification Section 260943 (Low Voltage Lighting Control System), item 1.3A states " Lighting Control Equipment in this section shall be furnished by Section 25 50 00 and installed by Div 26". Is the intent to have the Building Automation System contractor furnish the low voltage lighting control system or does the BAS talk via BACnet to the Lighting Management Hub as shown on electrical plan E-610 and system is furnished and installed by Div. 26?

Response: Section 260943-1.3A is correct. System and system components shall be furnished by 255000 and installed by Div 26.

15. Drawing EL-100 & EL-101A: Drawings show individual remote drivers for each type “C” and “C1” fixtures. Manufacturer stated that one driver can handle whole room. Since driver is very expensive (\$3,000.00 each) Is it OK to figure one driver for each room instead of each fixture?
- One driver can be used for each room.
16. Can plenum cable without conduit be used above accessible ceiling for the Fire Alarm System?
- YES.
17. Drawing E-505, QL-501---With regards to Overhead Service Carriers, are receptacles pre-wired to a junction box location, where electrical contractor provides power feed only or will field installation of receptacles and wiring be required? Also details show occupancy sensor and light fixtures for Overhead Service Carrier, who is providing those (Electrician or OH Service Carrier Manufacturer)?
- Outlets are prewired to location above the ceiling by the manufacturer. Light fixtures are by the manufacturer. Occupancy sensor and associated connection to lights is by the electrical contractor.
18. Are Overhead Service Carriers pre-piped for mechanical work or is this work field installed?
- OSC's are pre-piped/wired for mechanical work.

ISB RFI #040

2. RFI-04: Drawing T-601 What is the strand count for the single mode fiber from ISB Room 132 to ISB Room 231?
 - a. Provide 12 strand count single mode fiber

3. RFI-05: Drawing T-601 What is the strand count for the multi-mode fiber from ISB Room 132 to ISB Room 231?
 - a. Provide 12 strand count multi-mode fiber

1. RFI-01: Drawing CD-100, General note #4 indicates that there is transite pipe required to be removed. Please indicate the amount of piping as there is no detail showing an elevation, section, etc.
 - a. Response – Refer to the area where there is demolition of the hydrant and tree to be removed for transplanting along Rochester St. The transite pipe associated with the hydrant to be removed will be abandoned and the water line will be capped.

2. RFI-02: Drawing C-200, General note #6 indicates that there is work outside of the limits of contract (LOC). Please clarify the scope of work outside of the LOC.
 - a. Note #6 to be changed to read as follows:
CONTRACTOR SHALL COORDINATE WORK WITH OWNER TO SCHEDULE ROAD CLOSURE.
CONTRACTOR SHALL PROVIDE A CONSTRUCTION PLAN SHOWING THE LOCATION OF TEMPORARY BARRIERS AND A STATEMENT IDENTIFYING THE DATES WHEN THE ROAD WILL BE CLOSED.

1. What are the $\pm 6'$ wide shaded areas on the Penthouse Alternate RCP drawings?
 - a. The intent is to show the overhang in shaded area. Will turn the shading off.
2. Please advise the extent of the 1'6" thick Limestone parapet shown on detail 1/ A-313. The building section 1/ A-301 is a section with the West Wing included. Please provide sections and plan views without the West Wing illustrating location of said Parapet.
 - a. Previously answered. Please refer to sheet A204 for the extent of the limestone parapet.
3. Please provide connection details for the 1'6" thick parapet to the building structure. Structural details (ref. 1, 7, 18/ S-311) along column line '5' at elevation 32' does not show embeds, connection details, etc.
 - a. Please provide a 3/8" x 6" wide continuous galvanized plate along the length of parapet.
4. Please provide engineering criteria for the light gauge steel framing at the proposed 4" thick limestone panels, more specifically the weight of the limestone panels(per square foot) to utilized in design of exterior wall framing system.
 - a. Please refer to spec section 04 42 03 for requirement.
5. The North Elevation on drawing A-201 depicts an approximately 4'high limestone band above the curtainwall at elevation. Please provide wall sections through exterior wall for the North Elevation.
 - a. Please refer to sheets A370 series for all curtainwall sections. A350 series for plans, A360 series for elevations.
6. Please confirm that sect 12 36 65 Engineered Quartz Fabrications is to be utilized for bathroom countertops and not for laboratory work surfaces.
 - a. EQF-1 is to be utilized as countertop in the restrooms and pantries. Solid Lab countertop, 12 35 53, is to be utilized as the countertops in the labs. Please see sheet I-601 for clarification.

19. Please confirm that glass type 'GL-1' is to be by "Rudy Art" and not "Ruby".
 - a. Confirm, GL-1 should be RUDY ART GLASS STUDIO, as shown on sheet I-601.

20. RE: Furniture Finishes Specification Package Volume II,pg. labeled Section 1 Page 1 indicates Finish Number M11 as Wood finish for workstations(O-1, O-2, O-3). Is this finish for the drawer fronts of the storage items within the above referenced stations.? If not, please advise what the wood finish applies to.
 - a. Please see section 5 of volume 1, vendor proposal, for 0-1, 0-2, and 0-3 detailed specifications. The part number or part description will explain which part of the system is wood and should receive the M11 painted wood finish.

21. The Specified curtainwall manufacturer requires details (Profile, Width, fastening Details) of the aluminum stool as called for in specification section 08 44 13.
 - a. Please provide stool where applicable. The profile will be model #069-264, Kawneer

Q 10 C-400 GUIDE RAILING REFER TO NYSDOT STANDARDS:
NYSDOT M606-1R2 CABLE GUIDE RAILING
NYSDOT M606-3 BOX BEAM GUIDE RAIL
NYSDOT M606-6 CORRUGATED BEAM GUIDE RAIL
PLEASE CLARIFY WHICH APPLIES

Response: Use NYDOT M606-6 Corrugated Beam Guide Rail

2. Please provide a power wiring diagram for the Low Voltage Control System and indicate what kind of wire (or cable) that can be run from relay to fixture locations. Please advise if this assumption is correct – run one hot, one neutral, and one switch leg from each relay to a controlled fixture location by that relay and for each office four wires are needed which can not be shared or spliced.

Response: All low voltage devices are daisy chained together on a control link and wired back to the I/O modules of the relay panel via low voltage wiring. All devices are smart devices and addressable so the central system tells the device how to be controlled and the devices send a low voltage signal back to the panel for override purposes and occupancy detection. The relay panels are wired back to the fixtures via line voltage wiring to physically turn the lights ON/OFF. There is no physical low or line voltage wiring between the fixtures and the control devices (occupancy sensors, override switches, photocells). EC to provide the plenum rated control wiring as recommended by system manufacturer.

3. Spec 260943 Section 1.3.A states “Lighting control equipment included in this section shall be furnished by section 25500 and installed by Div. 26” Spec 255000 does not mention or reference spec 260943 at all and only mentions in Section 1.1.D to provide future system expansion to include monitoring of the lighting control system. Please make reference to the proposed lighting control system in the BMS specification.

Response: The specification section 25 50 00 shall be revised to reflect the following statements:

? Products Supplied But Not Installed Under This Section

1. Provide the Low Voltage Lighting Control System as described in section 26 09 43. Turn system components over to division 26 for installation.

Addendum 2

Page 3 of 17:

- Sheet No. PP-640 was to be issued as a new drawing. It was not included. Instead Sheet No. FX-640 was included with drawings issued.
- Response: Sheet FX-640 is the correct sheet to be issued. Sheet PP-640 does not exist.

Page 7 of 17:

- PLUMBING heading includes "FXE" drawings which are FIRE PROTECTION (Sprinkler)
- Drawing PP-640 referenced is new and does not replace an existing drawing
- Sheet FX-640 is the correct sheet to be issued. Sheet PP-640 does not exist.

Page 16 of 17:

- Item 35—Vacuum Equipment detail on PP-501 is 3, not 2. Clarified in Addendum #4

Addendum 3

Page 5 of 8:

- Item 24- Drawing designation should read PP-101B.1, not PP-1-1B.1 Clarified in Addendum #4

Page 6 of 8:

- Item 35- Drawing number referenced and Pump Room # appears to be wrong; I believe this should read "Drawing PP-401A3" and Pump Room 196, not 106. Clarified in Addendum #4

Page 7 of 8:

- Item 41- All Specialty Gas symbols and abbreviations **are not** included on PE-001, however, they are all identified in Spec. Section 22 63 13. Clarified in Addendum #4

1. Addendum #3 – Clarification #37 does not answer the original question. Please provide a specification of the solar shades (manufacturer, finish, etc.) and please provide sections/details (depth, dimensions, etc.).
 - a. Please refer to spec section 08 44 13, par. 2.3.G Sun Shades.
2. Drawings T-001, T-101A, and T-501 – T-101A shows a triangle symbol with the letters 'OC' next to it, however this symbol is not shown on the symbol list and detail drawings. Please clarify what this symbol represents (how many jacks and pairs of Cat 6 cable are required at these locations).
 - a. The triangle with the OC designation is an overhead carrier mounted outlet similar in configuration to Detail 14/E5.01.
3. Spec 123553 Section 2.8 – Please provide the data requirements since the overhead service carriers are to be prepped and prewired.
 - a. See above. Note that wiring of data outlets is intended to be performed by the telecommunications contractor.
4. Spec 123553 Section 2.8.B. lists Fisher Hamilton Nautilus as the basis of design. Since there are no other manufacturers listed as equal, should we assume that the lab casework section 2.1.A.1 manufacturers are also to be listed as acceptable vendors for the overhead service carriers?
 - a. The same manufacturers listed for the Laboratory casework are acceptable for the Overhead Service Carrier, Casework system and Overhead Service Carriers shall be provided from a single manufacturer.
5. Spec 123553 Section 2.9 for the Laser Shelf. None could be located on the drawings, please clarify the locations, if any, for these shelves.
 - a. There is no Laser shelves.
6. Spec 115313 Section 2.5.A states that the manufacturers are to be determined. Please clarify what manufacturers are acceptable.
 1. Flow Sciences, Inc., 2025 Mercantile Drive, Leland, NC 28451 Tel: 800 849-3429. website: <http://www.flowsciences.com>
Substitution are permitted subject to Subject to section 01 61 00
7. Drawing Y-102B is listed on G-011, however it was not in the set of drawings that was downloaded off of the BNL website. Please provide this drawing.
 - a. This drawing is in volume 2.

Drawing Y-701 Access Control System Door Schedule and the corresponding floor plans do not match. Which takes precedence?

Response: Precedence of documents will depend upon the nature of any discrepancies. Please provide examples illustrating where the two documents don't agree.

26. Security drawings:

a. Only conduit and cable shall be provided and installed under the contract, no cameras.

- Please specify what type of cable shall be installed for security cameras and what trade is to install all necessary conduit and cable for the cameras?

Response: CCTV system is by BNL. Cable will be Cat. 6 installed by telecommunication contractor. EC is to provide junction boxes and pathways only to tray for this system. Minimum conduit size for cameras is 1" C.

ITEM # 26 GRAVEL COULD BE ELIMINATED --- BUILD. 4" SUB-BASE MATERIAL
CAN BE AN ADD ALT. TO THE BASE BID?

Response: Please provide an allowance for the item.

DWG. TS-101 TELECOMM FIBER ROUTING PLAN:
* IS THIS A NEW CABLE PULLED THROUGH AN EXISTING SYSTEM?

Response: Refer to drawing ES-101 for new ductbank and new manhole installations for this contract.

IF NOT:
* IS THIS LINE IN CONDUIT AND IF SO WHAT SIZE?

Response: All wiring is in conduit. Refer to ES-101 for additional details.

* IS THE CONDUIT CONCRETE ENCASED?

Response: Refer to drawing ES-101 for new ductbank and new manhole installations for this contract.

* ARE THE NEW MHXX (10'LX6'WX8'D)?

Response: Refer to drawing ES-101 & note 1 for manhole requirements.

* DOES THE EXCAVATION STOP 5' OUTSIDE OF BUILD. 515 & 515N.E.T
CRAWL AREA?

Response: Existing ductbank enters B515. New conduit shall be installed from entrance point to 1st floor fiber room as indicated.

* AT WHAT ELEVATION DOES THIS LINE ENTER AT BUILD. 515

BASEMENT?

Response: 2 feet below grade into crawlspace of B515

ISB RFI #059

1. Section 11 53 00 and Section 11 53 13

It appears that the specifications for Balance Stations E-6 & E-7 are located in two different specification sections. It appears on page 7 of Section 11 53 00, F & G and it also appears on page 13 of Section 11 53 13, 2.4 VENTILATED BALANCE SAFETY ENCLOSURE. Please clarify what is the correct specification for the ventilated balance enclosures.

Response: Refer to Spec 11 53 00 for model number and manufactures. Spec 11 53 13 for basis of design, description, construction and features.

2. Section 12 35 53

QL Drawings: please verify that unless noted otherwise, all tops are 1" black epoxy as spelled out in Section 12 35 53, 2.3A

Response: Correct

3. Section 12 35 53

Confirm that there is no stainless steel work surfaces as called out on page 28 of Section 12 35 53, 2.14 E. I was unable to locate any SS work surfaces in the QL set.

Response: There are no stainless steel work surfaces.

Provide stainless steel liner and epoxy work surface at fume hoods as noted with "S/S liner". See QL drawings for location

4. Section 11 53 01

Page 6 of Section 11 53 00, D. Cylinder Restraints lists USA Safety Solutions model #GB"--"FS. "--" is a number in the catalog of USA Safety Solutions. Please give the exact model required for this item.

Response: Cylinder Restraints lists USA Safety Solutions model #GB"100"FS

5. 2" and 4" Dia. Point Exhaust (Example in room 137) Please confirm that all sizes and components of the Point Exhaust system shown in both elevation 15/QL-202 and Room QL-101A (example) are the responsibility of MEP contractors and do not fall within the responsibility of Sections 11 53 00 or 11 53 13 or 12 35 53.

**Response: Duct drops are shown in Mechanical Drawings
Refer to General Notes on Mechanical drawings.**

6. 1" Chemical Resistant Plastic Laminate Tops and Shelves, mobile base cabinets, 12 35 53

Please confirm that 1" chemical resistant laminate tops and shelves are only used at the US—M shelving units and MB--B units.

Response: US—M shelving : provide 18 gauge steel shelves as specified in section 12 35 53 2.6.A

MB--- (All mobile base cabinets) : provide epoxy resin top as specified in section 12 35 53 2.3.A

- 1) In reference to Dwg. "S-208", section 5 (profile for LSP-3 joist) indicate W.P. EL as 42'-4 7/8" and JBE EL as 42'-1 3/4" at column line F.5 (joist seat depth 3 1/8"). The joists seat depth is to be required to be increased to fit a seat. Similar problem at column line E.

In general, the joist bearing elevations shown in the joist profiles show the top of column elevation at the gridline, which is not the centerline of the joist bearing. The sections on S-504 show the actual joist seat conditions.

Joist seat at low end, see 6/S-504. Depth is 7 1/4" at center of seat.

Joist seat at high end, see 4/S-504. Depth is per 6/S-504: 7 1/4" at center of seat.

- 2) In reference to Dwg. "S-208", section 2 (profile for HSP-11 & HSP-13 joist) show 3 1/4" seat depth (both ends) for HSP-13 and 2 3/4" seat depth (both ends) for HSP-11. The joists seat depth is to be required to be increased to fit a seat (preferably 7 1/4").

HSP-11:

Joist seat at low end, see 6/S-504. Depth is 7 1/4" at center of seat.

Joist seat at high end, the depth at the center of the seat is 6 3/4" per 2/S-208.

HSP-13:

Joist seat at low end: drawing erroneously says 3 1/4"; will be revised to say 7 1/4"

Joist seat at high end: the depth at the center of the seat is 7 1/4" per 5/S-504; JBE in detail will be revised per section.

Drawing A-601 has hardware group 42 labeled for sound control doors #B12A & #B14. This group does not exist in section 08 71 00. Spec section 08 34 73 references sound seals & hardware prep but no other hardware. Please clarify.

Response: B12A and B14A, Sound control door, Door hardware group # 42
B12 and B14, EMI door by shielding manufacturer
B13 and B15, Acoustic Doors by manufacturer

HDW #42

1 set Cam Lift Hinges; by Acoustic Door Manufacturer	-
1 ea Passage Latchset 45H0N x 3J x 630	Best
1 ea Closer 4041 x 689, pull side	LCN
1 ea Kick Plate 8 inch x 32D Rockwood	
1 ea Mop Plate 6 inch x 32D	Rockwood
1 set Acoustic Seal Gasketing, head & jambs; by Acoustic Door Manufacturer	-
1 ea Automatic Door Bottom ; by Acoustic Door Manufacturer	-

Note: Any additional hardware required furnished by Acoustic Door Manufacturer.

- 1) Dwg. A-202 Elev. 1 South indicates Metal Composite System carried in the same plane as Glass Curtain Wall System (7'-0" high)
 1. Does the above question refer to detail 5/A202, SOUTH ELEVATION @CLEANROOM?. The metal panel system carries same metal panel in different colors. (please refer to legend)
 2. There is no curtain wall system in detail 1/A202 with the exception on the 2nd floor which has no metal panel. Please clarify what's your question.

Dwg. A-311 Sect. 3 indicates Mtl Composite System Cladding (3'-11-1/2" plus soffit. Remainder is Curtain Wall not blanked off.

1. Does the above question refer to detail 3/A311 – SOUTHWALL SECTION @WINDOW?

If yes, detail 3/ A311 reference to elevation at 1/A203, windows at the south offices area; curtain wall in these area does not blanked off.

If you are referring to detail relate to the first part of the question 5/A202, then please see detail 1/A311

2. Not very sure what's the question here. Please clarify

- 2) Dwg. A-315 Sect. 6 indicates Horizontal Mtl Siding on vertical supports to bottom of wall.

Dwg. A-335 indicates Mtl Composite Panel System which is not indicated on Sect. 6

Response: Detail 4/A335, indicates Metal panel at the bottom and siding at top which match 6/A315; also Detail 10/A335, indicate siding to underside of the roof, which match 6/A315.

- 3) Provide cross section of the North Elev, Col. Line H between Col 7 & 14.
 1. Response: Similar to detail 1/A370.

1. Spec 260913 and 4/E-503 – Spec section indicates that the project needs a power monitoring and control system as shown in a riser drawing. No riser has been provided for this system. Please clarify.
 - a. Refer to note 1 on detail 4/e5-03. Provide digital meter as shown on single line diagrams E-601, E6-02, E6-03 and E6-04. Refer to specifications for additional information.

2. Drawing Y-001 – What is the model number for the air sampling smoke detector sampling port (Symbol – S in an octagon)? Is this part of the fire alarm system? Please clarify.
 - a. The air-sampling smoke detector sampling port is a part of the Fenwal Analaser system specified as part of the fire alarm system. Selection of a sampling port type is part of the overall design of the air-sampling smoke detection system sampling network to be performed by the equipment vendor

RFI #71

1. ON DRAWING C-500, PLEASE DEFINE THE ELEVATION CONTOURS IN THE CENTER OF THE WORK AREA. IF THE BUILDING HAS ALREADY BEEN DEMOLISHED, ARE THE GRADES SHOWN DEPICTING THE CURRENT ELEVATIONS ON SITE? ADDEND.# 2 STATES BUILDING HAS ALREADY BEEN UNDERCUT AND REPLACED WITH STRUCTURAL FILL; WHAT ARE THE CURRENT ELEVATIONS IN THIS AREA?

Response: C-500 is accurate and contours are clear. Existing elevations, upon start of ISB contract, will be as shown on sheet C-500.

2. PER VOL. 1 CIVIL DRAWINGS C-500; IF THE ALTERNATE BOUNDARY IS NOT TAKEN, WHAT HAPPENS AT THE WEST SIDE OF THE PROPOSED BUILDING? (RESPREAD TOPSOIL?) ; AT WHAT ELEVATION?

Response: Assume grades will remain at the same elevations shown on plan C-500 with little change.

23. Kindly provide a specification for the aluminum grating adjacent the ULV Chambers, we are unable to locate one.
Response: The aluminum grating is specified in 055010 Miscellaneous metals, See 055010-2.6-C
24. Please provide Make and Model # for all floor drains, roof drains, and overflow roof drains. The schedule on PP-601 does not show this.
Response: See Specification Section 22 10 16 Plumbing Piping.
25. Please provide Make and Model # for PRV-1 for domestic Water System and Lab Water System shown on Drawing PP-501.
Response: See Specification Section 22 10 16 Plumbing Piping.
27. Please confirm that the underground Lab Waste Piping is single wall Polypropylene and not double containment.
Response: Yes, it is single wall as specified in Section 22 66 00 Waste Transfer.
28. Is there a detail on supporting the liquid nitrogen lines from the tank to the fill station? I cannot find any.
Response: No, a detail was not specifically provided. A simple low T-style pipe support with a Concrete sonotube footing is envisioned. Follow requirements of Section 20 05 29.
29. We are having difficulty finding the type of piping for the vacuum, air, air below ground, nitrogen, etc. Can you provide a piping schedule to clarify?
Response: Refer to attached Schedule identifying Specification Section for each Piping System.

Please confirm qty by louver type L1 through L7. Where is L7 shown-cannot find.

Response: It is on top of the Cleanroom Mechanical Roof, belong to Mechanical scope. L7 is deleted.

I was contacted by Tom Quirk from Whiting & Turner about some channel hardware for some of our glass that was specified for the Interdisciplinary Science Building. I am attaching the only drawings I have. Are these channels a custom fabrication? The reason I ask is that Tom wanted a price for the glass & hardware. **(reference to interior window elevation 5 and 6)**

Response: The details shown depict our intention of how the glass should be installed. If Rudy has hardware that meets the concept shown in our drawings they are welcome to price their hardware. The channels do not need to be a custom fabrication.

10. Please confirm that all enclosed space in the penthouse is to receive Concrete Sealer.

Response: Confirm

31. Driving or Vibrating sheeting or soldier piles is not permitted. Sheeting can be pushed and however this method may cause cracks, leaks or damage when working in close proximity to MH-73.

1. Is vibratory work excluded from the entire property?
 1. No, only limitations are vibrations associated with pile driving.

2. Is sheeting or H-pile and lagging allowed except near MH-73?
 1. As long as no vibration impacted on experiment in other buildings on campus, sheeting and H piles are acceptable even near MH-73 provided piles are augered. Need to obtain approval and coordinate with BNL.

3. How close can shoring go adjacent to MH-73 assuming no vibration equipment is used?
 1. Structurally speaking, the shoring can be right up against MH-73; however, there should be some setback for practical reasons. Care would have to be taken not to damage the existing structure, vault, components and piping.

Piping System	Piping Specification #	Comments
Compressed Dry Air	22 67 19	
Underground Compressed Air	23 21 10	New section issued in Addendum #6
Domestic Cold Water	22 10 16	
Underground Domestic Cold Water	22 11 00	
Domestic Hot Water Supply & Return	22 10 16	
Deionized Water Supply & Return	22 60 80	
Lab Cold Water	22 10 16	Same as Domestic Cold Water
Lab Hot Water Supply & Return	22 10 16	Same as Domestic Hot Water
Nitrogen Gas (Utility)	22 67 19	
Liquid Nitrogen	22 63 21	
Lab Waste & Vent	22 66 00	
Process Cooling Water Supply & Return	22 67 19	
RO Water Supply & Return	22 60 80	
Sanitary Waste & Vent	22 10 16	
Storm	22 10 16	
Tempered Water Supply & Return	22 10 16	Same as Domestic Hot Water
Ammonia Gas	22 63 13	
Argon Gas	22 63 13	
Argon/Helium Gas	22 63 13	
Carbon Dioxide Gas	22 63 13	
Carbon Monoxide Gas	22 63 13	
Helium Gas	22 63 13	
Hydrogen Gas	22 63 13	
High Purity Nitrogen Gas	22 63 13	

Piping System	Piping Specification #	Comments
Lab Air (Cylinder)	22 63 13	
Methane Gas	22 63 13	
Oxygen Gas	22 63 13	
Process Vacuum	22 67 19	
Silane	22 62 13	
Specialty Gas	22 63 13	
Perimeter Drain	22 14 00	Same as Underdrain
Forced Main	22 10 16	

Please clarify scope of work in the spec section 26 09 13 (Power Monitoring & Control System) as this work is not shown on the drawings.

Response: Refer to specification section 26 23 00 – 2.4-D, 26 24 13 - 2.3-C and single line drawings the depict Digital Metering symbols. [DM]

I reviewed all 3 addendums and still don't see clarification on where window treatments should be. Please advise.

Response: Under the applications/scope section 2.2 of specification 12 24 14, you will find the locations of roller shades as:

A. Roller Shade Schedule:

1. Shade Type SH-1: Manual operating, chain drive, sunscreen roller shades in **exterior windows.**
2. Shade Type SH-2: Manual operating, chain drive, room darkening blackout roller shades, operating independently of each other, in **exterior windows of Seminar Room 201, and in interior windows of Labs 137 and 138.**