



Addendum No.: 2

Date Of Addendum: 09/26/18

CT DAS | Construction Services | Office of Legal Affairs, Policy, and Procurement

Master Plan Phase III Renovations and Additions
Norwalk Community College
188 Richards Ave.
Norwalk, CT
BI – CTC – 467

Bid Due Date / Time:

October 3rd, 2018

1:00 pm

Previous Addendums: Addendum #1 dated 9/7/2018

TO: Prospective Bid Proposers:

This Addendum forms part of the "Contract Documents" and modifies or clarifies the original "Contract Documents" for this Project dated 06/01/18. Prospective Bid Proposers **shall** acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form.

Failure to acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form shall subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

Item 1: The bid opening will be changed from October 3, 2018 at 1:00 PM to October 10, 2018 at 1:00 PM

Item 2:

Question: What is the height of the tunnel and is this a confined space?

Response: The West Campus existing pipe tunnel is 5'-5" high and the walls are typically 5'-5" wide. Due to limited access and limited ventilation, the existing pipe tunnel was treated as a confined space on past projects.

Item 3:

Question: Sprinkler demo Theater

1. Are we to cut/cap & make safe?
2. Cut/cap, drop? Or cut drop and remove from building?

Response: The area within the heavy dashed line and dashed piping lines indicate demolish and remove from building. Solid lines indicate existing piping to remain; cap open lines at point of beginning of demolition.

Item 4:

Question: Which drawing contains the locations of the Boring log listed on C504? Also, a subsurface geotechnical report is shown within the project specifications and eight (8) borings were done, however five are shown on C504 boring and no location map. Please clarify.

Response: The borings are located on C101B Student Center Utility Plan and C301B Theater Utility Plan. Three borings; B-4, B-5 & B-6, not shown on the Civil drawings were for a proposed pedestrian bridge which was deleted from the project at the design development phase.

Item 5:

Question: Most civil drawings don't contain scale bar, only a scale, we will rely entirely on this and cannot make a cross check using the scale bar.

Response: The drawing scale is indicated in the sheet title block. Scale bars are not provided to comply with CT DAS/CS requirements.



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Item 6:

Question: C101A Student Center Demo Plan shows (via Legend on plan) the removal of Bituminous Pavement (roadway) yet on drawings L101 thru L1.03 now work is shown within this area, please clarify.

Response: The C101A Student Center Demo Plan is correct. The removal of the bituminous pavement for the roadway is required for the installation of the underground stormwater detention system shown on C101B.

Item 7:

Question: C101A Student Center Demo Plan shows bituminous apron or walk at the area of the existing building where the proposed addition is to be installed yet on the demo plan this work is not addressed, please clarify.

Response: C101A Student Center Demo Plan has been revised to reflect the removal of the existing bituminous apron/walk in the area of the proposed addition. The revision is reflected in the attached drawing set.

C101A – revised, Addendum No. 2, 09/21/18: To reflect the removal of existing apron/walk.

Item 8:

Question: For the scope of Fixed seating, 126100 We have been advised by the fabric manufacturer that the fabric is discontinued. Can you please confirm what fabric will replace that one.

Response: All bidders shall replace the specified fabric with the following specification revision:

In Section 12 61 13, Paragraph 2.5 A.1. Fabric

- DELETE:
- a. Manufacturer: ~~Protela~~
 - b. Ref: ~~W-12424 T~~
 - c. Style: ~~Pana Nevada~~
 - d. Color: ~~Red M2141~~

- SUBSTITUTE:
- a. Manufacturer: **Maharam**
 - b. Ref: **458640**
 - c. Style: **Messenger**
 - d. Color: **025 Mao**

Item 9:

Form 7001 - Equal or Substitute Product Request: Davis Furniture Company

Consultant's Review: REJECTED

Item 10:

Form 7001 - Equal or Substitute Product Request: Fred Krieger & Co.

Consultant's Review: APPROVED

Item 11:

Question: 06 40 23 2.10.4 Hardware, Locks: Directed by the Architect. Are there cabinet lock manufacturers specified?

Response: Cabinet locks are not called for in the architectural woodwork details of this project.

Item 12:

Question: Division 03, Please provide a specification for the void form insulation as indicated in detail 2/S2.11T

Response: For void former requirements see Sheet S0.01 General Notes, Section H. Concrete and Steel Reinforcement Notes, Note #20.



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Item 13:

Question: Division 09, Please provide a floor finish plan for the Theater Renovation and Addition.

Response: The floor plan room tags indicate interior finish materials of Floors, Walls, Base & Ceilings. Reference A7.00 Interior Color Schedule for specified basis of design color of materials.

Item 14:

Question: Division 09, Please provide a wall finish schedule for the Student Center Renovation/Addition and the Theater Renovation/Addition.

Response: The floor plan room tags and the interior elevations indicate wall finish materials. Reference A7.00 Interior Color Schedule for specified basis of design color of materials.

Item 15:

Question: Refer to Plan C301B Theater Utility Plan and L1.05 Theater Paving Plan herein attached. Note on C301B the proposed sanitary sewer line shown outside from Manhole 03, 04 and 05 is outside the full depth pavement as per the legend on the same plan, further on plan L1.05 Theater Paving Plan has a note to refer to the civil plans for curb and asphalt layouts and dimensions. Please clarify and also provide a proper grading plan showing existing and proposed contours for existing and proposed.

Response: The limits of full-depth paving shown on Drawing C301B – Theater Utility Plan is correct as shown. Detail 1/C501 shows the sewer line between SMH 03, 04, and 05 (up to the limit of full-depth construction) shows the surface treatment required. Full-depth pavement for this section is not necessary and not required. Top and Bottom of curb grades are shown on the plans.

Item 16:

Question: Refer to plan C301A Theater Demo Plan and based on the proposed sanitary sewer work as stated above the demo plan needs to be corrected/updated for bidding proposes, please clarify.

Response: The drawing as shown is correct. The sewer line installation is covered in the Detail 1/C501. Demolition for this section of the sewer line will be done at the time of sewer line installation.

Item 17:

Question: Refer to plans L1.05 Theater Paving Plan, C301B Theater Utility Plan and C502 Utility Details (which shows the cross section the full depth pavement), there is no detail showing the proposed concrete walk detail, please provide.

Response: Please Refer to L1.05 General Note #12 regarding demarcation between Civil and Landscape. Regarding the pedestrian concrete near the Theater, Refer to L1.04 Theater Materials plan for detail reference. This detail can be found on L3.00, detail number 6.

Item 18:

Question: Refer to the following plans C101A Student Center Demo Plan, C101B Student Center Utility Plan, L1.01 Student Center Materials Plan, L1.02 Student Center Grading Plan and L1.03 Student Center Paving Layout Plan. No on any of the plans is the pavement demolition, saw cutting pavement restoration shown for the proposed sanitary sewer pipe work shown on plan C1.01B, please clarify the limits of work in this area.

Response: Detail 1/C501 reflects the pavement excavation and restoration.

Item 19:

Question: Refer to plan 1.02 Student Center Grading Plan and C101B Student Center Utility Plan, please provide the necessary proposed contours for the areas not shown ie: roadway north to south of bldg addition and the proposed sanitary sewer East and west of the existing building and proposed addition, please clarify as soon as possible.

Response: Top and Bottom of curb grades are shown on the plans.

Item 20:

Form 7001 - Equal or Substitute Product Request: Sedia Systems

Consultant's Review: REJECTED



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Item 21:

Question: What products do ceiling types AC-A, AC-B, AC-C and AC-D correspond to in spec section 095113?

Response: AC-A Concealed Acoustic Panel corresponds to Paragraph 2.1 A. Large format Acoustical Panels.

AC-B Acoustic Plank with integrated service zones corresponds to Paragraph 2.1 B. Acoustical Plank, High NRC

AC-C Washable and Scrubbable Acoustic Panel corresponds to Paragraph 2.1 C. Acoustical Panels for Kitchen

AC-D Acoustic Panel shall be provided as added in Section 09 51 13 as follows:

In Section 09 51 13, Paragraph 2.1 add the following:

D. Acoustical panel, 1" thick mineral fiber "Optima" with square tegular edge for use with Interlude suspension system in "Blizzard White" finish by Armstrong World Industries (Basis of Design) unless otherwise noted. Subject to compliance with requirements specified, other acceptable manufacturers are USG or Certainteed.

Item 22:

Question: Reference 095113. Is the ceiling edge trim for all ceiling types the Gordon WS-1010? This product will not match the color of the Blizzard White grid.

Response: The Gordon WS-1010 Wall Angle Profile is a 1" x 1" reveal and is to be used in detail 02/A8.12S.

Provide manufacturer's standard wall moldings for other ceiling shadow moldings as indicated on Architectural Common sheet A8.10 Ceiling Details.

Item 23:

Question: Blizzard White grid is not recommended for kitchens. It gets dirty very easily. Flat white would be more appropriate. Do you want to make this change?

Response: Acknowledged, "Flat White" is acceptable at Ceiling type AC-C.

Item 24:

Question: AC-D is shown as 2x2 and 2x4 in some locations on the RCP plans. Please clarify.

Response: AC-D sizes in both 2x2 and 2x4 shall be provided as shown on the RCPs. See item 19 of this addendum for specification of type AC-D.

Item 25:

Question: In the Norwalk Bid, the Security portion appears as if it's meant to stand alone, not to be bid to the GC but directly to the college itself. The language presents as "to be provided by others" (in multiple places), "Owner to approve Electrical subcontractors" (Security Contractor would be responsible for their own electrical and communications work) and so on – also it requires much aftercare and monitoring. My question is, would this be best pulled out from the main work in the RFP? I don't believe the college or the systems' office would mind with all things considered. Please advise.

Response: The security system specifications are for providing electrical conduit and back box infrastructure under this contract to support the installation of security system devices provided by the Owner under a separate contract. Division 28 10 00 Security Systems is revised to clarify the scope of this contract and the scope of future work by the Owner under separate contract.

DELETE: Division 28 10 00 Security Systems Issued 06/01/18, 27 pages

SUBSTITUTE: Division 28 10 00 Security Systems revised Addendum no. 2 (9/21/18), 30 pages. Attached to this Addendum.

All questions must be **written** (not **verbal** or by **phone**) and must be forwarded to the consulting Architect/Engineer (John Doherty, Email: Doherty@MitchellGiurgola.com) with copies sent to the DAS/CS Project Manager (Lisa Humble, Email: Lisa.Humble@ct.gov) and Construction Manager (Chris Haley, Email: Chris.Haley@Whiting-Turner.com)



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End of Addendum 2

Mellanee Walton

Mellanee Walton, Associate Fiscal Administrative Officer
State of Connecticut
Department of Administrative Services, Construction Services
Office of Legal Affairs, Policy, and Procurement

PART 1 – GENERAL

1.1 RELATED DOCUMENTS & INFORMATION

- A. General provisions of the Agreement, including the College of Connecticut “Standard Instructions to Bidders” and “Minimum Insurance Requirements”.
- B. Security Drawings: SC.01S, ~~SC-02~~, SC-02S, SC.01T, SC.02T, SC-RIS & SEC-DET, SEC-DET2;

1.2 PROJECT SUMMARY

Phase III of the Norwalk Community College Master Plan consists of the expansion and renovation of the existing cafeteria to convert it into a Student Center for the College’s West campus. Another part of this final phase will be to renovate the East Campus building’s existing Theater to serve and support the most current information technology resources for education and student performing arts.

These security system specifications are issued **for informational purposes** as it relates to providing the **electrical conduit and back box infrastructure under this contract to support the installation of** security devices.

Under this contract: Provide the electrical conduit and back box infrastructure to support the installation of security devices. The electrified door hardware and low voltage power supplies for electric exit devices will be provided by Division 08 71 00 Finish Hardware of this contract.

By the Owner under separate contract: Security devices such as card access system field panels, and associated ~~the~~ low voltage power supplies for the access system and electric locks, system cabling, the card readers, door position switches and request to exit devices will be provided and installed by the Owner under separate contract. The IP cameras and system cabling will be provided and installed by the Owner under separate contract.

~~The electrified door hardware will be provided and installed by others. The electrical conduit and back box infrastructure to support the installation of the security system devices was provided by others. The head-end Verint video management system including all the recorders and monitors are existing. The IP cameras will be provided and installed by others under a separate contract.~~

The College’s existing access control and security monitoring system on campus will be replaced as part of another project. The system will be capable of monitoring

~~and controlling alarm points and access control points through the use of distributed intelligent electronic intelligent field panels (IFPs). The College has recently adopted the RS2 security access control and security monitoring system as their standard on campus. The head-end RS2 system was installed as part of the Phase I project on the East campus. The RS2 system will be capable of monitoring and controlling alarm points and access control points through the use of distributed intelligent electronic intelligent field panels (IFPs). The contractor for this Phase III project will be responsible to interface with the existing campus system.~~

~~All bidders for this final master plan project must be certified dealers/integrators for the RS2 system. Bidders are required to provide documentation that the contractor is an authorized dealer for all products proposed and provide lists of contractor's staff that have been factory trained on the major systems being proposed.~~

The security systems for the campus shall be monitored and controlled from a centralized Security Operations Center (SOC) on campus with a location to be determined.

The communication between the ~~existing RS2 system's~~ **SMS system's** server and the intelligent field panels within this building that control the card readers and electrified door hardware shall reside on the campus IT network.

~~The RS2 access control system~~ **selected SMS access control system** shall have the capability of monitoring alarm conditions generated by intrusion detection devices. All perimeter doors of this building shall be monitored with door position switches. ~~Most~~ **All** of the perimeter doors as part of this project shall also be provided with electrified hardware to allow for automatic control (locking and unlocking) through the future SMS system.

The campus Video Management System (VMS) (PROVIDED BY **THE OWNER UNDER OTHERS SEPARATE CONTRACT**) shall consist of IP cameras and network video recorders (NVR). The IP cameras shall be recorded on NVRs to be located centrally on campus. The College has standardized on the Verint VMS for their campus surveillance solution and currently has about 200 IP cameras connected to it. The recorded or live video for viewing at the NVR workstation shall be transmitted via the campus network. The color IP cameras scheduled for the building shall **be** primarily located at the exits and pedestrian entrances of the facility as well as at the lobbies and common open areas within each facility. The IP cameras shall be powered via the network utilizing CAT 6 cable.

Bidders are required to provide documentation that the contractor is an authorized dealer for all products proposed and provide lists of contractor's staff that have been factory trained on the major systems being proposed.

1.3 SECURITY SYSTEM DESCRIPTION

This section provides a general description of the security work to be performed. Specific requirements are described in following sections.

A. Security Management System (SMS)

As part of another project, the College is in the process of designing and implementing a new Security Management System (SMS) for the campus access control and security monitoring functions.

The card reader technology has not yet been identified for this project. Select entrances within this building will be controlled with card readers.~~The College has recently adopted the RS2 security access control and security monitoring system as their standard on campus. The head end RS2 system was installed as part of the Phase I project on the East campus.~~

B. Video Management System (VMS) (Provided by the Owner under a Separate Contract)~~(PROVIDED BY OTHERS)~~

~~Provide~~ IP cameras shall use industry standard video compression protocols. The campus Video Management System (VMS) shall consist of IP cameras and network video recorders (NVR). The IP cameras shall be recorded on NVRs to be located centrally on campus. The College has standardized on the Verint VMS current version 6.4.2.

C. Communication System

New IP video cameras and the SMS smart panels shall communicate with the head end servers and recorders via the NCC campus network.

Security contractor shall be responsible to interface the College's IT department personnel to assure a fully operational security transmission system.

D. Manufacturers and Equipment Selection

Where a single manufacturer is listed in these specifications for a specific component, alternates may only be proposed after written approval by Owner prior to bid.

In all cases, it is the bidder's responsibility to ensure that proposed equipment will meet the functional and performance requirements. Any exceptions must be stated clearly in the relevant proposal section.

1.4 WORK INCLUDED

- A. Submit shop drawings, samples, training plan, testing plan, as-built drawings, operations manuals, and maintenance manuals. Attend site coordination meetings.
- B. Within two weeks of contract award, develop a project implementation schedule and coordinate the timeline with that of the general construction schedule. Create a project matrix based on the security implementation schedule which shall be updated and distributed weekly. The project matrix shall be reviewed via scheduled conference calls with the security project team or during a site meeting if necessary. The conference calls shall be scheduled at least monthly to insure timely reporting of any issues relative to installation progress or coordination, but may be required more frequently due to critical schedule or coordination issues.
- ~~C. Train security system operators, administrators, and supervisors in the complete operation of the system.~~
- ~~D. Commissioning: collect, develop, prepare and enter all initial database information including, but not limited to employee access data, alarm descriptors, alarm response messages, report styles, on-screen camera titles, video switching, and video recording schemes. Contractor shall submit to Owner suitable data entry forms within one week of bid award and shall instruct Owner on what data is required to complete the forms.~~
- ~~E. Test and debug all cable and associated components, sub-systems, and systems. Resolve defective items until complete acceptance by Owner. (Beneficial use shall not be considered acceptance).~~
- ~~F. Warrant and maintain system for one year from date of system acceptance. Provide pricing for comprehensive maintenance for 2nd through 5th years with this proposal).~~
- ~~G. Supply and install all specified equipment and low voltage cable. Terminate and tag all cabling. Connect security equipment to the building's power (convenience receptacles and plug-in transformers shall not be used).~~
- ~~H. Security contractor shall supply and install "local" conduit for equipment enclosures and power supplies in the IT closets. All power shall be hard-wired and all cable shall be concealed in metal conduit (and/or EMT) or raceway. Cabling for each security system component to the IT closets shall be via IT cable trays (provided by others).~~

- ~~I.~~ Supply, install, wire and connect low voltage power transformers and power supplies for field panels, door locks, cameras, card readers, etc. Install, connect and test fire alarm interrupt relays to specified lock power supplies.
- ~~J.~~ Supply and install low voltage power supplies (24 VDC) for the electrified door hardware (hardware by others).
- ~~K.~~**C.** Supply and install all standard and custom security equipment back boxes. Supply and install conduit, conduit stub-ups, pull boxes, junction boxes, termination boxes and back boxes. Metal conduit shall be installed where cable would otherwise be exposed, and as required by code. For dry wall construction, conduit may be limited to stub-ups from equipment back boxes to junction boxes within drop ceilings. Use of any type of raceway other than metal conduit is forbidden unless specifically approved by the Owner.
- ~~L.~~**D.** Attend site coordination meetings. Interface with the campus NCC IT department and their contractors to coordinate the integration between the security communication components and the communication components for the campus network.
- ~~M.~~ These specifications describe major components. The intent of this procurement is to assure a complete working system to be installed. Contractor shall furnish and install components as described plus all necessary items (e.g., connectors, jumpers, mounting hardware, etc.) to achieve the intent.
- ~~N.~~**E.** The security contractor shall be responsible under this contract for all electrical and installation work described above. Electrical subcontractors shall be subject to Owner approval.

1.5 **WORK BY OTHERS/OTHER DIVISIONS**

- A. For connectivity from the building to the central servers and recorders will be provided by others. The security contractor shall be responsible to interface with NCC IT department personnel to assure a fully operational security transmission system.
 - B. Electric door locking hardware and power transfer hinges, **see division 08 71 00 Finish Hardware** shall be provided and installed by the Architectural Door Hardware supplier.
 - C. Conduit, conduit stub-ups, riser sleeves, cable tray with “J” hooks, pull boxes,
-

and back boxes shall be supplied and installed under ~~separate electrical contract~~ **another division of this contract**. Metal conduit shall be used where cable would otherwise be exposed, and as required by code. For dry wall construction, conduit may be limited to stub-ups from equipment back boxes to junction boxes within drop ceilings.

- D. Installation, connection and testing of fire-alarm lock-power interrupt relays shall be provided at each IFP location (security closets) under ~~the fire alarm system~~ **another division of this contract**.
- E. Fire resistant, $\frac{3}{4}$ ", 4'x8' plywood backboards for security equipment at the IT closet locations shall be supplied and installed by others. Each closet location shall be provided with necessary 110 VAC 20 amp power both standard house power for fail-safe locks and UPS and generator for other security system elements.

1.6 RELATED SECTIONS

- A. Electrical- Section
- B. Architectural Doors- Sections 08100, 08110, 08120, 08300, 08330, 08450 & 08710.
- C. Electrical

1.7 SUBMITTALS

A. Shop Drawings

Within three (3) weeks of contract award, submit three (3) sets of the following for approval as ONE complete package. Submittal shall be rejected if items are missing.

1. List of all items being submitted.
2. Description of operation.
3. Technical specification data sheets for all items. Indicate specific model number and options on sheets covering multiple models and options. (NOTE: providing cut sheets with initial proposal does not acquit contractor of this requirement)
4. Samples of all exposed equipment and mounting hardware.
5. Plans showing device locations and cable/conduit routing.

6. Riser diagrams showing interconnections.
7. Detail drawings showing installation and mounting.
8. Wiring diagrams.
9. Point-to-point termination schedules.
10. All drawings shall be fully dimensioned and prepared in AutoCAD V.2010 compatible format. Contractor shall use the current version of the SIA/IAPSC CAD Security Symbols (V3.0 Oct. 2015). Construction documents in .dxf or .dwg format will be made available on diskette to the successful contractor.
11. Unless otherwise instructed, contractor should not order any equipment until approvals have been granted. Contractor shall identify in proposal any long lead-time items that will require early approval.
12. Compile and provide a list of deficiencies noted or missing infra-structure, interfaces, door hardware, power, network/fiber optic cable, etc. for correction by the associated discipline.
13. Acceptance of shop drawings shall not relieve contractor from compliance with these specifications. The check of shop drawings is for review of general conformance and compliance with the design concept of the project. Contractor shall remain responsible for meeting all the requirements of the contract documents, including the correlation of all quantities and dimensions; the selection of fabrication processes and techniques of construction; the coordination of work with other trades; and the performance of all work in a safe and satisfactory manner.

B. As-Built Drawings

One copy of the following shall be compiled into one (1) Operating and Maintenance Manual and shall be submitted for approval. A drawing set refers to items 5 through 10 listed above.

1. Operating manual.
2. Maintenance manual.
3. Configuration Manual:
 - a. Configuration diagrams

- b. As-built capacities and field expansion capabilities
 - c. Operating system and software configuration
 - d. Application software manual.
4. Full size, reproducible drawing set.
5. Full size set of blue or black line drawings.

Once approval has been granted, submit three (3) complete sets of the above documentation to the Owner. Documentation shall reflect the as-built and as-approved condition of the system. With the approved documentation, submit to Owner all drawing files on CD ROM in AutoCAD V.2010 .dwg or compatible .dxf format. Contractor shall use the current version of the SIA/IAPSC CAD Security Symbols (V3.0 Oct. 2015).

1.8 WARRANTY

- ~~A. Security contractor shall warrant the installed system and the software to be free of defects of materials and workmanship for a period of one year following the date of system acceptance by Owner. System acceptance shall be when all parts, components, sub-systems and systems have been tested and shown to be working in accordance with the specification and all record drawings have been approved.~~
- ~~B. During the warranty period any components, features or performance found not to meet these specifications shall be corrected at no additional cost to the Owner. This shall be regardless of any acceptance of shop drawings, as-built drawings or systems, unless their exception has been accepted in writing as part of the contractor's proposal and contract.~~
- ~~C. During the warranty period and as part of the warranty service, provide maintenance as described in 1.9.~~

1.9 MAINTENANCE

- ~~A. The bidder shall offer a complete contract maintenance service through a local repair shop capable of meeting the performance specifications described below. Contractor shall provide documentation to show that service engineers have been factory trained on the equipment that will be installed.~~
- ~~B. The contractor shall propose a comprehensive maintenance contract to cover the services described in Sections C & D below for a minimum of 4 years following the end of the warranty period (total 5 years from the date of system acceptance).~~

~~C. Provide the following services:~~

- ~~1. Emergency maintenance service shall be rendered within 4 hours of notification of emergency. (Emergency service shall be required if a system sub-system, device, or component failure requires the posting of additional security staff to maintain an equivalent security level.)~~
- ~~2. Non-emergency repair requests shall be rendered within 24 hours.~~
- ~~3. Replace defective parts and components as required and as described in Section D below.~~
- ~~4. Maintain manufacturer's software with upgrades of "fixes", "patches", and all new versions that have been released for at least one year.~~
- ~~5. Incorporate improved system reliability, as it becomes available.~~
- ~~6. Perform regularly scheduled preventive maintenance quarterly. This shall include cleaning of exposed equipment (e.g., lenses), adjustments, etc., and shall include a 100% field device inspection and test. Submit quarterly test and maintenance reports to Owner with documentation of all routine and emergency maintenance procedures performed during the prior period.~~

~~D. Replacement Parts.~~

- ~~1. The bidder shall maintain or shall have availability of replacement parts. An ample stock of components shall be carried or available for as long a period as demand warrants. This period shall extend well beyond the normal life expectancy of the equipment.~~
- ~~2. If original parts are no longer available, Owner shall be notified and shall have the choice of having the part replaced with the most current equivalent part, or of having all similar installed parts replaced with the most current equivalent part, at no cost to the Owner.~~
- ~~3. Any device that cannot be repaired on-site within 4 hours of arrival of the service representative shall be immediately replaced with a replacement device in good working order. Owner's device shall be re-installed when its repairs are complete.~~
- ~~4. Any part that cannot be repaired shall be replaced with a new part of the same make and model as the original.~~

1.10 COMMISSIONING

A. ~~The contractor shall be responsible for the collection, development and inputting of all data required by the system at start-up. The contractor shall submit to the Owner, within two weeks of contract award, such forms as are necessary for the Owner to determine what data is to be included, e.g. student, employee records (name, phone no., vehicle plate number, social security number, access level), alarm point descriptors, door propped alarm time delays, camera descriptors, etc. The contractor shall provide the Owner such instruction as may be required to intelligently make such selections.~~

B. ~~Commissioning shall include the following:~~

- ~~1. Collecting and inputting alarm zone and point descriptors, required operator response texts, standard and custom database and report styles.~~

1.11.8 CODES AND STANDARDS

All components, sub-systems and the implemented systems shall comply with all national, local and state codes, including but not limited to the following:

1. Local Building Codes.
2. NFPA-70, NEC-2004 (National Electrical Code)
3. NFPA-101, Life Safety Code.
4. American with Disabilities Act (ADA).
5. Underwriter Laboratory (UL).
6. Occupational Health and Safety Association requirements (OSHA).
7. National Electrical Contractors Association/National Electrical Installation Standards (NECA/NEIS).

1.12 PROPOSAL

~~Prospective contractors shall provide all data requested below in a clear and concise format. If data is missing, Owner shall have the option of disqualifying the proposal.~~

A. ~~Provide a pricing sheet with unit material and labor costs, quantities and totals for all items. Manufacturer, model number, options, and finish/color shall identify all equipment items. Unit pricing shall include first year warranty and first year maintenance as described above and be valid for Adds and Deletes.~~

A. ~~Include separate line items for duties, license fees, bonds, insurance, etc.~~

- ~~B. Include line item pricing for each sub-contractor (identify by name), and for commissioning, testing, training, drawing submittals, and other services.~~
- ~~C. Provide separate price for maintenance contract for years 2, 3, 4, and 5.~~
- ~~D. Provide catalog sheets for all equipment. Where sheets cover multiple models and/or options, clearly indicate which model and/or options are proposed. Include one blank sample and one photo sample of the proposed access control card/badge.~~
- ~~E. Provide a written certification that the proposed products and services will meet these specifications. Clearly indicate any exceptions and/or substitutions with the reasons, cost implications, and benefits to the Owner. If specific exceptions are not indicated, it shall be assumed that the contractor shall comply with all aspects of these specifications. Security applications software shall be the standard, off-the-shelf products of the original manufacturer/supplier and shall be supplied complete with necessary use license and documentation. Bidders shall describe in the Technical Proposal the software version number, date issued, and list of end users for that version number (minimum 5). Custom, alpha or beta versions of the software shall not be acceptable. Contractors shall be required to disclose any restrictive codes, which may have been placed in the software to make it inoperable.~~
- ~~F. Provide documentation that contractor is an authorized dealer for all products proposed and provide lists of contractor's staff who have been factory trained on the major systems being proposed.~~
- ~~G. Provide a list of five installations of similar size that the contractor has completed with similar equipment over the last three years. Provide details of size, complexity, major equipment manufacturer make and model numbers, and client references with current phone numbers.~~
- ~~H. Provide a best estimate implementation schedule from contract award through system acceptance. Indicate critical tasks and tasks that rely on input, supply, or coordination with others. Identify any long lead purchase or fabricated items that require early shop drawing approvals.~~
- ~~I. Describe any equipment or services that are required but are not included in either your proposal or in the "Work by Others" section. Describe any site space requirements.~~
- ~~J. Provide one (1) original and four (4) copies of the proposal.~~

PART 2 - PRODUCT- ACCESS CONTROL/ALARM MONITORING (AC/AM) (By the Owner under separate contract)

2.1 SCOPE

- A. As part of another project, the College is in the process of designing and implementing a new Security Management System (SMS) for the campus access control and security monitoring functions. The system will be capable of monitoring and controlling alarm points and access control points through the use of distributed intelligent electronic intelligent field panels (IFPs).

2.2 OPERATION

- A. The new system will be capable of monitoring and controlling alarm points and access control points through the use of distributed intelligent electronic intelligent field panels (IFPs).

2.3 MATERIAL

A. Cable and Conduit

1. Provide cable in accordance with manufacturer's specification.
2. Cable shall be installed in rigid metal conduit for vertical stub-ups, where exposed, and where required by code. Use of any type of raceway other than rigid metal conduit is forbidden unless specifically approved by the Owner.
3. All cable shall be plenum rated where required by code.

B. Identification and Tagging

1. Labels, tags or other permanent markings shall be used to identify all cables, wires, terminal blocks and terminals. All markings shall clearly indicate the function, source and destination.
2. All identifications, markings, and labeling shall be clearly shown on as-built drawings.

GENERAL FEATURES

- A. The new system will be capable of monitoring and controlling alarm points and

access control points through the use of distributed intelligent electronic intelligent field panels (IFPs).

2.5 SYSTEM EQUIPMENT & COMPONENTS

A. Main AC/AM System

These security system specifications are issued for informational purposes as it relates to providing the electrical conduit and back box infrastructure to support the installation of security system devices.

The security devices such as card access system field panels, the low voltage power supplies, the card readers, door position switches and request to exit devices will be provided in future project phases by the Owner under a separate contract.

~~The College has recently adopted the RS2 security access control and security monitoring system as their standard on campus. The head-end RS2 system was installed as part of the Phase I project on the East campus. The RS2 system will be capable of monitoring and controlling alarm points and access control points through the use of distributed intelligent electronic intelligent field panels (IFPs).~~

B. Card Reader (By the Owner under a separate Contract)

B. _____

1. No access compromise shall be possible from circuitry accessible from within the reader. All critical circuitry shall be located within a secured area.
2. Reader system equipment shall operate as specified in environments of electromagnetic, radio frequency, and spurious electrical power line interference.
3. Reader shall be compatible with only one type of access card.
4. Visual and audible indication that a card has been decoded and deemed valid or invalid shall be provided at each reader. Reader visual indication shall normally be red when associated door/gate/roll-up is locked/closed/down and green during the time that the door/gate/roll-up is unlocked/open/up by valid card read, remote door release, or timed unlock.
5. Automatic Door Control and Alarm Annunciation:

- a. A reader or IFP shall constantly monitor the status of its associated door via a door position switch (DPS). DPS cabling shall be supervised by the system. A door opened without proper shunting from the card reader, motion detector, exit switch or other egress device, or a cable tamper, shall immediately annunciate an alarm.
- b. A valid access card read shall shunt any associated DPS and/or horn and activate the associated control device, e.g., lock/vehicle barrier arm/roll-up gate, to permit access for an adjustable (0-99 secs.) period that shall be initially set at 10 seconds. The control device shall re-lock immediately after the door has closed.
- c. Egress card readers, motion detectors, request-to-exit switches, and remote door release buttons shall shunt door contacts but shall not unlock the door where free mechanical egress is available, e.g., unlocked door handle or exit device (panic bar). They shall unlock doors where magnetic locks are used. Refer to Security Device Hardware Schedule for specific door hardware operation.
- d. If the door is held open for longer than the specified period of time (initially set at 10 seconds and adjustable to 99 seconds), an alarm shall be annunciated.
- e. After a "door held" condition has been detected, and the door subsequently closes, the system shall transmit a "door closed" advisory to the monitoring station.

C. Mounting

- 1. The height and location of the card readers is shown on security detail drawings (SEC-DET) and shall be confirmed in the field.
- 2. Flush mount standard readers on standard single gang back boxes, surface mount mullion readers as indicated on drawings. Mount readers per manufacturer's installation instructions with particular attention to required distances between the antennae and the reader electronics, and other metal, cabling, CRTs, and electrical/electronic components.
- 3. Card reader electronics boards (e.g., ARM, RM) shall be mounted in a locked Hoffman box installed above associated card reader controlled door. Box door shall be equipped with a tamper switch.

Reader Type and Models (By the Owner under a separate Contract) _____
D.

1. All card reader devices shall be HID contact-less smart card readers multi-tech iCLASs.
2. For select exterior doors (as shown on Detail Drawings) provide the HID multi-iCLASS RP10 contact-less smart card reader. For all other applications provide the HID iCLASS RP40 multi technology contact-less smart card reader (no exceptions).
3. At entrances provide an HID iCLASS module and adapter as part of the door station unit (as shown on Detail Drawings).

D.E. Intelligent Field Panel (IFP) —(By the Owner under a separate Contract)

1. Provide Controller and Input Modules in quantities required for specified quantities of readers and alarm/control devices.
2. The control modules for reader and door control shall be the RS2 EP-1502 two (2) card reader Controller with an additional control output and one monitoring input.
3. The input module for alarm devices (door position switches and duress buttons) shall be the MR-16IN Input modules for sixteen (16) supervised input points and two (2) output control relays.
4. Monitor each of the NCL-12 Controllers and associated module enclosure for tamper, loss of main AC power, and low battery power alarms. The enclosures shall be lockable.
5. Provide a minimum of 8-hour battery back up during loss of main power. Back-up power shall support all AC/AM functions including locks, horns, and egress sensors.
6. The RS2 Controllers and the associated modules shall operate in an off-line mode when there is a communication failure with the host system. Off-line mode shall provide full AC/AM functionality with no degradation of function, except that the IFP may not be capable of performing functions requiring data transmission to or from other IFPs or the host system. The Controller shall automatically upload all events logged since the failure, and accept a download of any database changes, when communication with the host is resolved.
7. Flash ROM for downloaded configuration programming.

8. The IFPs shall be manufactured by RS2 (no exceptions).

E.F. Equipment Enclosures

1. All enclosures for equipment supplied under these specifications shall be protected against tampering by being equipped with tamper switches or triggering mechanisms electrically compatible with and connected to the alarm system; or fully filled with an epoxy compound.
2. Internal wiring of device enclosures shall be such that the tamper switches and triggering mechanisms are not bypassed even though the detector itself is operating in the "ACCESS" mode.
3. All controls that affect detection sensitivity shall be located inside tamper resistant enclosure.
4. All enclosures shall be equipped with key locks with Underwriters' Laboratories listed locking cylinders. Provide Owner with 2 keys per enclosure. Similar types of enclosure, e.g., all power supply enclosures, shall be keyed alike.
5. All enclosures shall be equipped with door gaskets. All openings, e.g., for conduit, shall be sealed after installation. Enclosures shall be finished to resist the environment.
6. The enclosure for the RS2 access control system controller & processors shall be the NCL-12 no exceptions.

F.G. Door Position Switches (Magnetic Contacts) (By the Owner under a separate Contract)

1. Devices shall initiate an alarm signal whenever the switch housing is moved as much as 1 inch from the magnet housing.
2. Device housing shall be of cast non-ferrous durable material. Provide reasonable protection against moisture and dust.
3. Mechanism shall be adjustable so that the operating gap between faces of the switch housing and the magnet housing may be adjusted up to 1/2 in. to accommodate installation variances.
4. Switch shall be rated for minimum of 500,000 activations without malfunction.
5. Supply and install Sentrol, 1076 series concealed switches, or approved equal,

off-white, for doors. Surface mounted switches may be substituted only after Owner approval. NO CABLE SHALL BE EXPOSED. All wire shall be concealed or in conduit.

6. All door/gate switches shall be installed with end-of-line resistors at the door/gate location.

~~G. Motion Sensor~~

- ~~1. The motion sensor shall be designed to detect motion of a human body within a protected area by means of a combination of pulsed Doppler microwave technology and passive infrared (PIR) technology. The sensor shall require both technologies to sense motion before an alarm may occur. The sensor shall be UL listed and FCC certified.~~
 - ~~2. The PIR fields of view shall be focused on the pyroelectric sensing element by means of a plastic Fresnel lens mounted in the front cover of the housing. The PIR fields of view within the protected area shall consist of 22 long-range fields, 12 intermediate fields, 6 lower fields, and 4 lookdown fields. The lookdown fields shall be implemented by means of a mirror mounted adjacent to the pyroelectric sensing device and an infrared-transparent window mounted in the bottom surface of the sensor.~~
 - ~~3. The microwave sensing technology shall use a center frequency between 24.125 and 24.220 GHz. An adjustment for microwave sensitivity shall be provided on the circuit board. The sensor shall incorporate a microwave supervision system, which shall activate the alarm output if the microwave technology fails.~~
 - ~~4. The pyroelectric sensing element shall have protection against bugs and dust by means of a zero-clearance, gasketed bug guard. Sensor electronics shall be microcontroller-based. The sensor shall provide a logic-level remote LED enable input with selectable polarity.~~
 - ~~5. The sensor shall operate over an ambient temperature range of -13 to +145 degrees Fahrenheit (-25 to +65 degrees Celsius) and shall have compensation against loss of sensitivity as the ambient temperature nears human body temperature. The sensor shall provide at least 30 V/m of RF immunity in the range 10 MHz to 1,000 MHz, and at least 8,000 lux of white light immunity.~~
 - ~~6. The sensor housing shall be constructed of white, high-impact ABS plastic and shall be capable of wall or corner or ceiling mounting with an option for flush mounting at locations to be determined by the architect.~~
-

- ~~7.1. The Wall Mounted motion sensor shall be Honeywell model CK-DT-7550C series or approved equivalent.~~
- H. Electrified Door Hardware
1. All door hardware(per Hardware Schedule) including electrified panic devices, **electric exit device power supplies**, transfer hinges, electric locks, magnetic locks, electric strikes, etc., for this project shall be supplied and installed by **Division 08 71 00 of this contract.**~~others.~~ The security contractor shall be responsible for the wiring of these devices to the IFP and supplying, installing, and wiring all lock power supplies. The security contractor shall be responsible to connect to and test fire alarm interrupt relays to specified lock power supplies.
- I. ~~Door Prop Alarm (DPA)~~
- ~~1. Provide door prop alarms for local and remote monitoring of the secure status of the doors as indicated on the Security Device Drawings.~~
 - ~~2. A horn within the DPA shall sound (minimum 80dB) and a normally closed alarm output contact from the DPA shall be activated whenever a monitored door is held open beyond a user adjustable time (0-60 seconds).~~
 - ~~3. Local alarm and alarm output contact shall reset upon closure of the monitored door.~~
 - ~~4. The DPA shall be mounted in the wall adjacent to the monitored door(s) at 42 inches A.F.F. The unit shall mount in a 2 gang electrical box with a minimum depth of 2 ½ inches.~~
 - ~~5. Door prop alarm shall be Designed Security, Inc. Model ES411 Series.~~
- J.I. Power Supplies (By the Owner under a separate contract)
1. Low voltage power supplies for locks and security devices shall comply with applicable provisions of local building codes and national electrical code and shall meet requirements of all authorities having jurisdiction.
 2. Power supplies shall be mounted at IT & Security Closet locations and shall be UL listed, labeled or approved. Specification section above for enclosure requirements (tamper switches and locks) is applicable for all power supply enclosures.
 3. Power supplies shall be equipped with short circuit protection and overvoltage protection.
-

4. Lock power supplies shall be equipped with separate fuse for each lock device. For locks which require control from the building's life safety system, provide individual selectable fire alarm output power control. Fire alarm system relays shall cut selected fail safe lock power when activated.
5. Lock power supplies shall be connected to the building's emergency generator system.
6. Operating temperature of 0°C to 55°C.
7. Power supplies shall annunciate, via the SMS system, failure or malfunction of unit, open or short circuits, loss of main AC power, and low battery power.
8. It shall be the responsibility of the security contractor to connect the power supplies to the building's main power system.
9. Provide Altronix Maximal Power Supplies series or equivalent.

2.6 CLOSED CIRCUIT TELEVISION SYSTEM (Pprovided by eOwner under a separate contract)-OTHERS

2.7 SCOPE

These security system specifications are issued for informational purposes as it relates to providing the electrical conduit and back box infrastructure to support the installation of security system devices by others. The IP video cameras and video recording system will be provided as part of future project phases by the Owner and installed under a separate contract.

~~It is the intention of these specifications (ARE FOR INFORMATION PURPOSES ONLY) to set forth the minimum requirements for the performance of an integrated CCTV System to provide highly reliable surveillance and alarm assessment. The CCTV System shall consist of:~~

2.8 MATERIALS CCTV

A. Identification and Tagging (By the Owner under a separate Contract)

1. Labels, tags or other permanent markings shall identify all cables, wires, terminal blocks and terminals.
2. All markings shall clearly indicate the function, source and destination of all cabling, wiring and terminals. All markings shall be recorded on as-built drawings.

2.9 EQUIPMENT - CCTV

A. Video Management System (By the Owner under a separate Contract)

The campus Video Management System (VMS) shall consist of IP cameras and network video recorders (NVR). The IP cameras shall be recorded on NVRs to be located centrally on campus. The College has standardized on the Verint (current version 6.4.2) VMS for their campus surveillance solution. The recorded or live video for viewing at the NVR workstation shall be transmitted via the campus network. The NCC IT department will provide additional NVRs and new Cisco network PoE switches as required for this project.

The color IP cameras scheduled for the building shall primarily located at the exits and pedestrian entrances of the facility as well as at the elevator lobbies and stairwell entrances to each of the building's floors. The IP cameras shall be powered via the network utilizing CAT 6 cable.

B. Fixed Interior IP Camera Domes (Color) (By the Owner under a separate Contract)

1. The camera shall be a network enabled mini dome color camera, utilizing a ½.8” type progressive scan RGB CMOS technology sensor. Varifocal Lens: 3.0mm – 10.5mm
2. The camera shall be manufactured with a tamper-resistant casing and metal encapsulated electronics.
3. Resolution: 1920x1080. Remote zoom & focus, WDR forensic capture
4. Video Analytics: Video motion detection, Active tampering alarm Support for AXIS Camera Application Platform enabling installation of AXIS Video Motion Detection 3, AXIS Cross Line Detection, AXIS Digital Auto tracking and third-party applications
5. Cameras shall provide the option of flush or surface mounted depending upon location. Cameras to be flush mounted wherever possible provide flush mount kits for all.
6. The camera shall be equipped with a progressive scan 1.3 megapixel sensor, support WDR and shall provide images down to 0.1 lux in day mode and 0.02 lux in night mode and 0.0 lux with IR Illuminator on in B&W
7. Zipstream technology in H.264.
8. Support simultaneous individually configured Motion JPEG and H.264 video streams.
9. Support both unicast and multicast H.264 with support for both Constant and Variable Bit Rate.
10. Support Power over Ethernet according to IEEE 802.3af.
11. Operating condition -22° F to +122° F.
12. Provide P3225-VE IP camera manufactured by Axis no exception.

C. Special 360° Interior IP Camera Dome (By the Owner under a separate Contract)

1. The camera shall be a network enabled mini dome color camera, utilizing a 1/3.2
-

type progressive scan RGB CMOS technology sensor. 5MP (mega-pixel) 360°/180° angle of view.

2. The camera shall be manufactured with a vandal and dust resistant casing and metal encapsulated electronics.
3. Camera domes shall be equipped with a 10BASE-T/100BASE-TX Ethernet interface.
4. Cameras shall provide the option of flush or surface mounted depending upon location (refer to Camera Schedule for exact type).
5. The camera shall support several viewing modes: 360° overview, dewarped views such as panorama, double panorama and quad views. It shall also support digital pan-tilt-zoom.
6. Provide at least two video streams at full frame rate (30 fps) in HDTV 1080p (2592x1944) resolution using H.264.
7. Support Power over Ethernet according to IEEE 802.3af
8. Provide M3007-P/-PV IP camera with clear domes manufactured by Axis or approved equivalent.

D. Outdoor IP Camera (By the Owner under a separate Contract)

1. The camera shall be a network enabled mini dome color camera, utilizing a 1/2.8" type progressive scan RGB CMOS technology sensor. Varifocal Lens: 3.0mm – 10.5mm
2. The camera shall be manufactured with a tamper-resistant casing and metal encapsulated electronics.
3. Resolution: 1920x1080. Remote zoom & focus, WDR forensic capture
4. Video Analytics: Video motion detection, Active tampering alarm Support for AXIS Camera Application Platform enabling installation of AXIS Video Motion Detection 3, AXIS Cross Line Detection, AXIS Digital Auto tracking and third-party applications
5. Cameras shall provide the option of flush or surface mounted depending upon location. Cameras to be flush mounted wherever possible provide flush mount

kits for all.

6. The camera shall be equipped with a progressive scan 1.3 megapixel sensor, support WDR and shall provide images down to 0.1 lux in day mode and 0.02 lux in night mode and 0.0 lux with IR Illuminator on in B&W
7. Zipstream technology in H.264.
8. Support simultaneous individually configured Motion JPEG and H.264 video streams.
9. Support both unicast and multicast H.264 with support for both Constant and Variable Bit Rate.
10. Support Power over Ethernet according to IEEE 802.3af.
11. Operating condition -22° F to +122° F.
12. Provide P3225-LVE IP camera manufactured by Axis no exception.

E. Outdoor IP Camera Alternate (By the Owner under a separate Contract)

1. The alternate outdoor bullet type camera shall be a network enabled color camera, utilizing a 1/2.8 type PS Exmor technology imaging sensor 2.38MP, 1080P high definition,
2. The outdoor camera shall be manufactured with a vandal-resistant metal casing and metal encapsulated electronics.
3. The camera shall be IP66 and NEMA 4X-rated and operate between -40 to +55°C (-40° to +131°F), also when powered using Power over Ethernet.
4. 100dB Wide Dynamic Range, 30fps at 2 megapixel (1920x1080) resolution.
5. Min illumination, Color 0.1 lux, B/W 0.0 lux with built-in IR LEDs on
6. The camera focal length 3mm-8.5mm motorized varifocal lens
7. Support simultaneous individually configured Motion JPEG and H.264 video streams.
8. Support both unicast and multicast H.264 with support for both Constant and Variable Bit Rate.

9. Support Power over Ethernet according to IEEE 802.3af
10. The Outdoor Alternate Camera shall be manufactured by Samsung model SNO-6084R or approved equivalent.

F. 180 Degree IP Camera (By the Owner under a separate Contract)

The special application 180° mega pixel IP camera to be utilized to view designated interior areas which shall provide:

1. The image device shall consist of five (5) 1.3 Mpixel CMOS with 6,553,600 effective pixels
2. Electronic rolling shutter.
3. Automatic gain control.
4. Average, 5 zone independent exposure control.
5. Depth of Field is 1' to infinity.
6. Image size (HxV) two simultaneous streams: A standard 15 fps HD frame comprised of a 1280 x 320 situational awareness (SA) window plus a 1280 x 400 sub window allocated to up to four zoom windows; And a 5120 x1280 full res stream at 1 fps.
7. The field of view shall be 180 degrees x 48 degrees; 28 pixels per degree of field view.
8. The image resolution shall be everywhere within the field of view equivalent to resolution of 1.3 MP camera with a 33.7mm lens.
9. The compression shall be H.264.
10. The maximum frame rate shall be 15fps for SA and zoom, 1 fps for full resolution window.
11. The compression ratio shall be user selectable.
12. The Bandwidth requirement using H.264 at good quality compression- HD window at 15 fps, less than 2.0 Mbit/sec.; Full Res Image at 1 fps, less than 1 Mbit/sec.

13. Network protocols: TCP/IP, HTTP, SMTP, DHCP, RTP/RTSP (Currently), DNS, BONJOUR.
14. Interface: Internet Explorer, Firefox.
15. COMM Ports Ethernet 10 Base-T/100 Base.
16. Power requirements: 48v PoE, 12v DC.
17. Camera shall be manufactured by Scallop Vision, Model D7 180 IP Camera or approved equal.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Installation shall include the delivery, storage, setting in place, fastening to the building structure, interconnection of the system components, alignment, adjustment and all other work, whether or not expressly specified which is necessary to result in a tested and operational system.
- B. All installation practices shall be in accordance with, but not limited to, the specifications and drawings. Installation shall be performed in accordance with the applicable standards, requirements and recommendations of the National Electrical Code and any authorities having jurisdiction including the "National Electrical Contractors Association National Electrical Installation Standards (NECA/NEIS).
- C. During the installation and up to the date of final acceptance, the Contractor shall protect his finished and unfinished work against damage or loss. In case of such damage or loss, he shall replace or repair such work at no cost to the Owner.
- D. All equipment shall be firmly secured in place unless requirements of portability dictate otherwise. Fastenings and supports shall be adequate to support their loads with a safety factor of at least three.
- E. All boxes, equipment, etc., shall be plumb and square. The Contractor must take such precautions that are necessary to prevent and guard against electromagnetic and electrostatic hum, to supply adequate ventilation and to install the equipment to provide reasonable safety for the operator.
- F. In the installation of equipment and cables, considerations shall be given not only to operational efficiency, but also to overall aesthetic factors.
- G. Supply and install all fittings and accessories, whether or not they are specified, required for proper, safe and reliable operation of the system.
- H. No exposed equipment shall be installed without approval of design, finish and mounting details.

3.2 CABLE INSTALLATION (By the Owner under a separate Contract)

- A. System cabling shall be provided and installed ~~under this~~ **by the Owner under a separate contract.**

- B. All circuits shall be protected to avoid interruption of service due to short-circuiting or other conditions that might adversely affect the connected devices. Each individual signaling circuit shall be classified as a circuit pair.
- C. All cabling in racks, cabinets and junction boxes shall be neatly strapped, dressed and adequately supported. Cable installation shall conform to good engineering practices and to the standards of the most current National Electrical Code. Interconnections within console and the equipment racks for all video components (NVR) shall utilize prefabricated fiber or copper Patch Chords or CAT5/6 cables with RJ45 connectors at each end.
- D. All cables shall be labeled with an electronic labeler on both ends within 6" from the final termination
- E. Cables shall be terminated with the proper connector required for the associated operation of the equipment to which it is connected. Screw terminal blocks shall be furnished for all cables that interface with racks, cabinets, consoles or equipment modules. Wire shall be interfaced with screw terminal blocks through the use of spade lugs installed on the cable with an installation tool specifically recommended by the manufacturer of the lug. Evidence of the installation of cables and wires without the appropriate connectors, spade lugs and tools shall be sufficient cause for rejection of the work and reinstallation of the cables or wires.
- F. Where cables or wires require soldering, the soldering shall be done using rosin core solder and controlled temperature soldering equipment. Evidence of solder joints not made with rosin core solder or with non-temperature controlled tools shall be sufficient cause for rejection of the work and resoldering of all connections.
- G. Every cable or wire shall be labeled or coded at each end. Each terminal of each field terminal strip shall be permanently labeled or coded to show the zone, instrument or item served. Terminal blocks shall be numbered by circuit pairs, such as 1 to 25, 26 to 50, etc.
- H. All cables within a rack, console or junction box shall be grouped according to the signals being carried to reduce signal contamination. Separate groups should be formed for the following:
 - 1. Power cables.
 - 2. Video cables and audio cables carrying signals less than 2.0 V p-p.
- H. Coaxial cables shall be run in continuous lengths. No splices shall be permitted.

- I. Shielded conductors shall be installed in separate steel conduits and shall not occupy the same enclosure with unshielded conductors. Shielded conductors may be grouped together.
- J. Where shielded conductors enter a panel or enclosure, and where power wiring exists, provide physical isolation of signal and power conductors. Install sleeve on shield grounds in panels. Conduit connections shall be made to assure no interaction between power and signal circuits.
- K. Electrical self-stripping tap and pigtail connectors shall be tin plated brass "U" element contact. Connectors shall be 3M Brand Scotchlok 567 to 577.

3.5 GROUNDING

- A. A single system ground point shall be established for the system. This shall consist of a single grounding point to which all grounds shall be connected.
- B. The system ground shall be located in the base of the security equipment racks. It shall consist of copper bar sufficient in size to accommodate the required grounds.
- C. The system ground is to be connected to the local ground bus by conductors, which has not more than 0.1-ohm total resistance. Under no conditions shall AC neutral either in a power panel or in receptacle outlets be used for a reference ground.
- D. Contractor shall provide RF shielding and RF filtering for all systems and components to ensure no interaction with potential RF systems in proximity to the site.

3.6 FINISHES

Equipment finishes shall be manufacturer's standard unless otherwise noted in the specification. All finishes, whether standard or custom, shall be submitted for approval.

3.7 TESTING (By the Owner under a separate Contract)

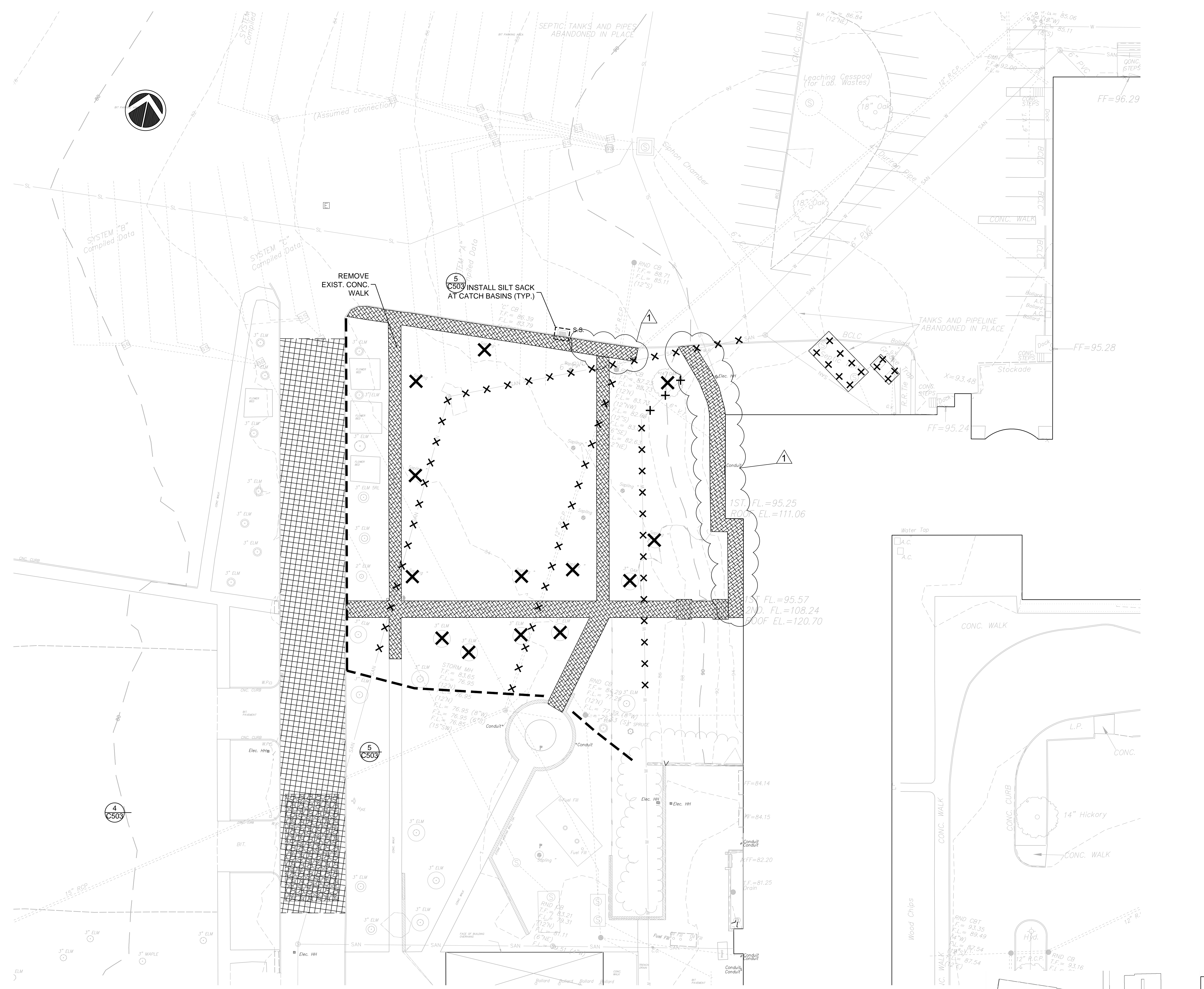
- A. When the Contractor has completed system tests to his/her satisfaction and when the system record documents, including drawings, operation and maintenance manuals, are complete, notify in writing that the system fulfills the specifications and is ready for acceptance testing.
- B. Approved software packages shall be entered into the security computer systems and debugged. The contractor shall be responsible for documenting and entering the initial database into the system. The contractor shall provide the necessary blank forms with instruction to the owner to fill-in all the required data information

that will make up the database. The database shall then be reviewed by the contractor and entered into the system. A copy of the document and a copy of the recorded database on a diskette shall be made available for review on a later date. Prior to full operation, a complete demonstration of the computer real-time functions shall be performed in the presence of the Owner.

- C. Upon satisfactory on-line operation of the system software, the entire installation including all subsystems shall be inspected. The Contractor shall perform all tests, furnish all test equipment and consumable supplies necessary and perform any work as required to establish performance levels for the system in accordance with the specifications. Each device shall be tested as a working component of the completed system. All system controls shall be inspected for proper operation and response. The scope of the inspection work shall include, but not be limited to, the following:
1. Document all measured values and control settings for the system. These values and settings shall be recorded in the operation and maintenance manuals and shall be made available at the time of acceptance testing, following the indicated testing procedures.
 2. Check each system including all inputs and outputs for compliance with the performance standards.
 3. Function of all remote sensors for proper operations and testing of all wiring. The test shall include operating each device as it should operate in normal usage. No operations are to be simulated for this test.
 4. Check each control and monitoring function from all origination points to all controlled locations for proper operation.
 5. Adjust each piece of equipment as required for optimum quality and to meet the manufacturer's published specifications.
 6. Check to insure that all systems are free from spurious oscillation and radio frequency pickup both in the absence of any input signal and also when the system is driven to full output.
 7. Establish tentative normal settings for all systems controls. All setup controls shall be adjusted for optimum system performance and shall be marked for reference.
 8. Demonstrate the power-up and power-down procedure for each system. These procedures shall be documented and then incorporated into the systems operation manual.

- D. All tests shall be documented by the Contractor and shall be witnessed by the Owner and the Owner's representative. Following the system test and inspection, the Owner's representative shall prepare a list of any outstanding work, which must be completed by the Contractor prior to issuance of the certificate of substantial completion.
- E. Upon receipt of the Contractor's notice that all punch list items from previous inspections are complete, the Owner's representative shall re-inspect the work for final acceptance. The Contractor shall provide all test equipment, materials and personnel as required assisting in the final acceptance test. The final acceptance test shall consist of the following:
 - 1. The Contractor shall verify that all record documentation is complete.
 - 2. The operation of all system and equipment shall be demonstrated by the Contractor to comply with the contract documents. Both subjective and objective tests may be required by the Owner and the Owner's representative to determine compliance with the specifications.
- F. Upon completion of the re-inspection, the Owner's representative shall either accept the system as being substantially complete or advise the Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, the entire procedure shall be repeated. Time and expenses expended by the Owner's representative for additional re-testing (beyond the initial and the first re-test) shall be back charged to the Contractor.
- G. The inspections and tests may be suspended at the option of the Owner's representative if it is his opinion that major components of the system are defective. The Contractor shall have personnel available at the job site to make adjustments and repairs and take corrective action during the tests.
- H. The system shall be accepted as complete when all work has been completed; all remedial work is performed; all documentation is complete, accurate and accepted; and the Owner's personnel has received the specified training.
- I. Complete logs of tests shall be retained by the Contractor for inspection and review at any time after the testing has started. Upon final completion of system tests the log records shall be submitted.
- J. Submit detailed test checklist and descriptive methodology for approval at least 4 weeks prior to start of test.

- END OF SECTION -

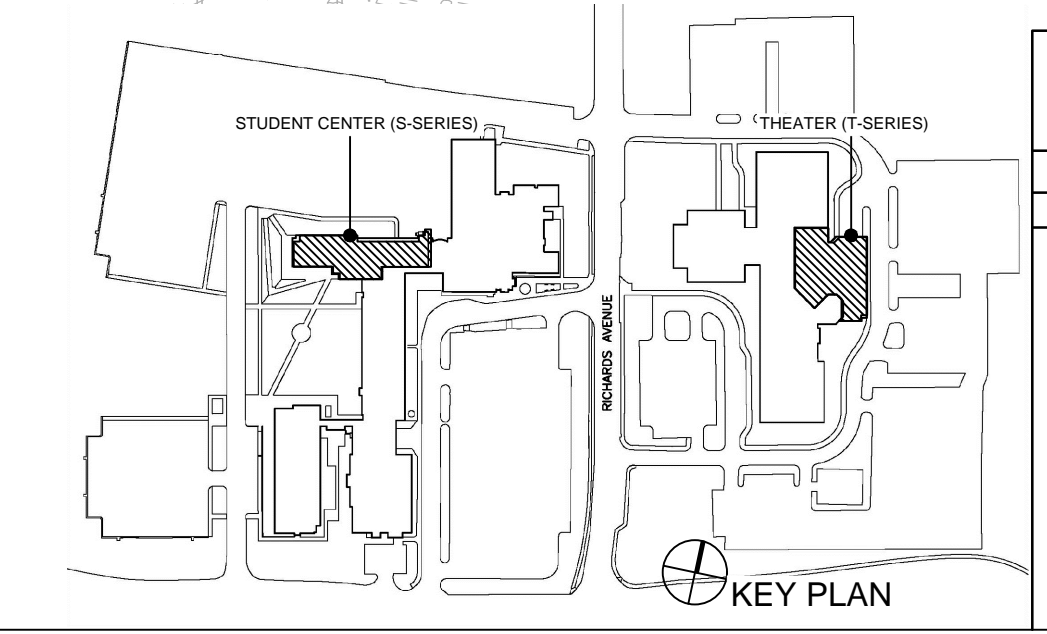
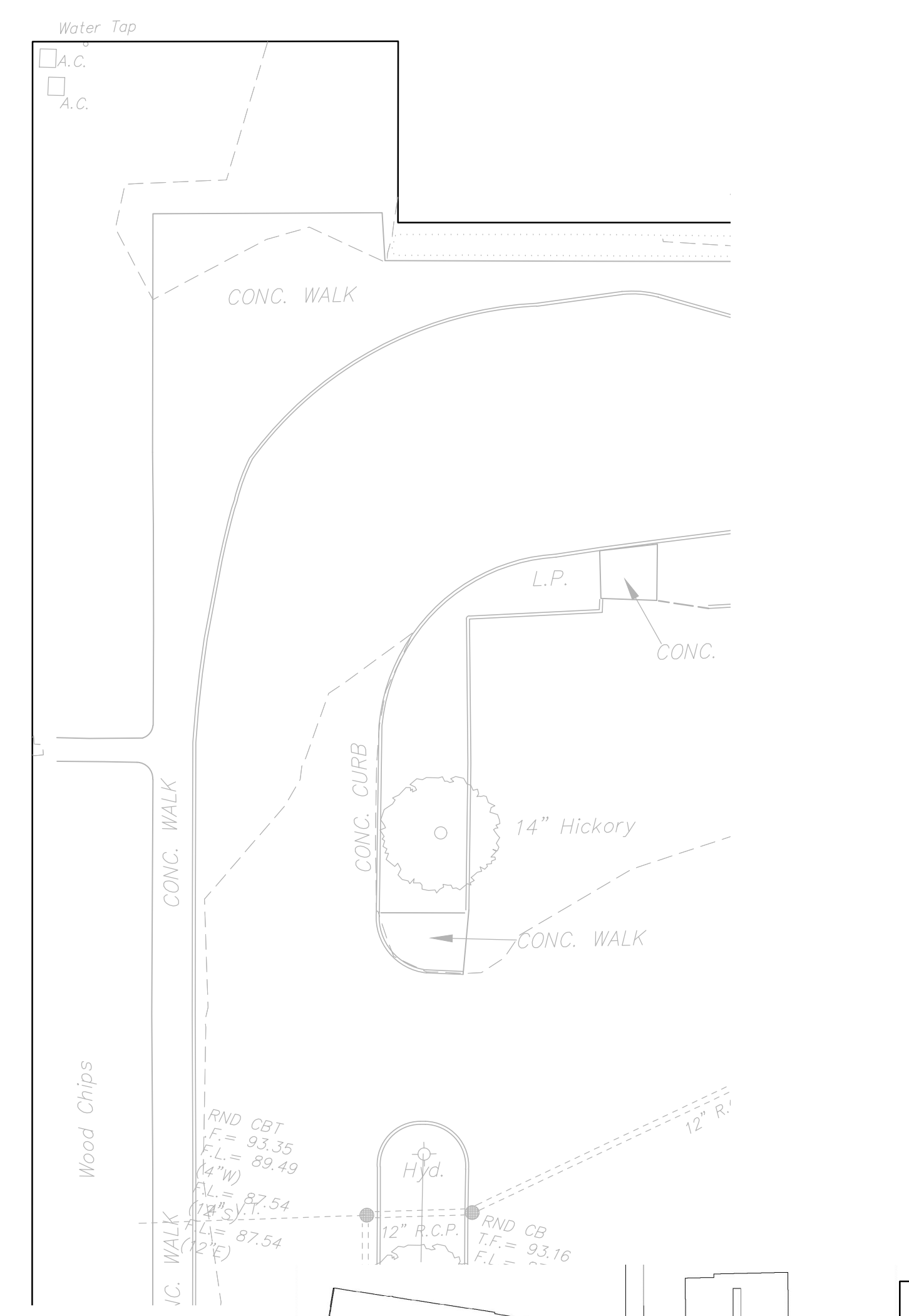


LEGEND

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING CONCRETE WALK TO BE REMOVED
- EXISTING SITE ITEM TO BE REMOVED
- EXISTING TREE TO BE REMOVED
- CONTRACT LIMIT LINE

DEMOLITION NOTES

1. CONTRACTOR SHALL STRIP AND STORE TOPSOIL IN ALL AREAS TO BE DISTURBED OR REGRADED.
2. ALL MATERIAL TO BE REMOVED SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR AWAY FROM THE SITE OR DELIVERED AS DIRECTED BY THE OWNER.
3. CONTRACTOR TO "CALL BEFORE YOU DIG" AT 811 OR 1-800-922-4455 PRIOR TO COMMENCING CONSTRUCTION.
4. LOCATION OF ALL UTILITIES ARE SHOWN DIAGRAMMATICALLY & MAY BE INCOMPLETE. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES DONE BY THIS WORK SHALL BE REPAIRED BY THE CONTRACTOR.
5. PROTECTION OF ALL EXISTING TREES TO REMAIN SHALL BE A PRIORITY. DO NOT STOCKPILE, PARK OR PERFORM ANY MECHANICAL OPERATIONS WITHIN THE DRIPLINE OF EXISTING TREES. NO STORAGE OF MATERIALS OR SOIL SHALL BE ALLOWED IN THESE AREAS. ALL FILL AND EXCAVATION REQUIRED WITHIN THE DRIPLINE OF ALL EXISTING TREES TO REMAIN SHALL BE COMPLETED BY HAND UNLESS OTHERWISE APPROVED BY LANDSCAPE ENGINEER.
6. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING TREES AND VEGETATION. DAMAGE TO VEGETATION SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS BY THE CONTRACTOR.
7. OWNER'S REPRESENTATIVE SHALL BE CONSULTED BEFORE ANY WORK SHALL COMMENCE.
8. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FROM ANY UTILITY COMPANY OR OTHER GOVERNMENT AGENCIES HAVING JURISDICTION OVER THE WORK.
9. CARE SHOULD BE TAKEN IN ALL EXCAVATIONS DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES.
10. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO HIS CONTRACT OPERATIONS.
11. CONTRACTOR SHALL MAINTAIN PROPER SIGNS, BARRICADES, AND FENCES TO PROPERLY PROTECT THE WORK EQUIPMENT, PERSONS AND PROPERTY FROM DAMAGE.
12. CONTRACTOR TO MAINTAIN SAFE VEHICULAR AND PEDESTRIAN ACCESS WITHIN SITE THROUGHOUT ALL CONSTRUCTION ACTIVITIES.
13. ALL ITEMS REQUIRING REMOVAL SHALL BE REMOVED TO FULL DEPTH TO INCLUDE BASE MATERIAL AND FOOTINGS OR FOUNDATIONS AS APPLICABLE, AND LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR.
14. CONTRACTOR TO COLLECT CONFIRMATORY SOIL SAMPLES FROM EXCAVATION OF GREASE TRAP REMOVAL IN LABORATORY SUPPLIED SAMPLE JARS FOR ANALYSIS OF OIL AND GREASE BE EPA METHOD 9071 BY A STATE OF CT APPROVED ANALYTICAL LABORATORY. SOIL SAMPLE RESULTS TO BE COMPARED TO THE CT DEEP REMEDIATION STANDARD REGULATION (RSRs) CRITERIA INCLUDING RESIDENTIAL DIRECT EXPOSURE CRITERIA (RES-DEC) ESTABLISHED AT 500 MG/KG (PPM). ANALYTICAL RESULTS EXCEEDING (RES-DEC) MAY REQUIRE REMEDIATION BY EXCAVATION, TRANSPORTATION AND DISPOSAL OFF-SITE AT A LICENSED DISPOSAL FACILITY.



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