ADDENDUM #4

February 25, 2011

Re: Harrisburg Area Community College
Public Safety Center – Law Enforcement Complex & Site Improvements
Solicitation # 11-13

From: Eastern PCM, LLC
Construction Manager – HACC
645 N. 12th Street, Suite 200
Lemoyne, PA 17043

To: All Planholders

This Addendum is hereby made part of the Plans and Project Manual dated January 21, 2011for the above referenced project. The provisions of this Addendum are intended to supplement the provisions of the Plans and Project Manual and/or supersede them where contradictory thereto.

This Addendum contains changes to the requirements of the Plans and Project Manual. Such changes shall be incorporated into the Plans and Project Manual and shall apply to work with the same meaning and force as if they had been included in the original Plans and Project Manual. Where this Addendum modifies a portion of a paragraph or phrase of the Project Manual, the remaining unmodified portion of the paragraph or phrase shall remain in force.

The conditions and terms of the Plans and Project Manual shall govern work described in this Addendum. Whenever the conditions of work, or the quality or quantity of materials or workmanship are not fully described in this Addendum, the conditions of work etc. included in the Plans and Project Manual for similar items of work shall apply to the work described in this Addendum. If no similar items of work are included in the Plans and Project Manual, the quality of material and workmanship shall be subject to the written acceptance of the Architect.

4.1 BID DATE RESCHEDULED

Section 00100 – Invitation to Bid – CHANGE FOURTH PARAGRAPH TO READ:

HACC will receive sealed bids for the work at Three Penn Center, 349 Wiconisco Street, Harrisburg, PA 17110 in Room 224 until **2:00pm on March 8, 2011**. Bids received after this time will not be accepted. ONLY BONAFIDE BIDS WILL BE ACCEPTED. Bids will be opened and read aloud immediately following the bid receipt time.

4.2 CHANGES TO THE PROJECT MANUAL

A. Section 00010 – Table of Contents

a. ADD: 05810 EXPANSION JOINT COVER ASSEMBLIES

b. DELETE: 08331 OVERHEAD COILING DOORS

c. ADD: 08361 SECTIONAL OVERHEAD DOORS

d. ADD: 12345 CASEWORK

B. Section 00440 – MBE/WBE Utilization Form

a. CLARIFICATION MBE/WBE Requirements: It is highly encouraged that all contractors utilize Small Woman and Minority (SWAM) Business Enterprises to the fullest extent possible while remaining competitive. There is no mandatory requirements/goals for percentage or dollar amount for this project. Per the Invitation to bid, HACC is committed to providing opportunities for SWAM business enterprises. HACC highly encourages SWAM firms to submit a proposal for the work and all bidders to proactively solicit SWAM firms in the preparation of their bid materials. Through the utilization of the required MBE/WBE utilization form, HACC monitors responsiveness and opportunities for SWAM business enterprises for all its projects. However, all small, woman, and minority business' must earn opportunities under the same criteria as any other business firm. Firms must be certified but there is no mandatory certification agency. Failure to complete the MBE/WBE form will result in rejection of the bid. In the event of identically qualified or very close bids the college may use the utilization of minority firms as an additional decision factor.

C. Section 00500 – Standard Form of Agreement

a. Article 4.1 – Contract Sum: Contract sum is a Stipulated Sum (check box adjacent to Stipulated Sum)

D. Section 01125 – Summary of Contracts

Bid Package No. 2 – General Trades, section 1:

a. ADD "05810 Expansion Joint Cover Assemblies"

b. DELETE "08331 Overhead Coiling Doors"

c. ADD "08361 Sectional Overhead Doors"

d. ADD "10155 Toilet Partitions"

e. ADD "10650 Operable Partitions"

f. ADD "12345 Casework"

Bid Package No. 2 – General Trades, section 2:

a. ADD "bbbb. Concrete equipment pads"

Bid Package No. 3 – Mechanical

a. Paragraph 2.c: DELETE “and concrete equipment bases”

b. Paragraph 2.d: DELETE “and concrete equipment bases”

Bid Package No. 4 – Electrical:

a. Paragraph 1.r: DELETE “16269 Variable-Frequency Motor Controllers”

b. Paragraph 2.p: DELETE “Variable-frequency motor controllers including inspection, testing, startup, adjusting, and training.”

E. Section 01352 – LEED Requirements

a. CLARIFICATION: The Innovation and Design Process Credit 2 – LEED Accredited Professional has already been achieved. However, this does not eliminate the requirements of Specification Section 01352, Paragraph 1.5.A. The General Trades Contractor and Mechanical Contractor will be required to identify a LEED Coordinator to represent their firms.

F. Section 02741 – Asphalt Paving

ADD the following paragraph:

1.8 Price Adjustment of Liquid Asphalt

A. This section provides for a price adjustment, in the form of payment to the Contractor or a rebate to the owner, for fluctuations in the cost of liquid asphalt used in the bituminous materials placed as part of the construction work for the proposed asphalt pavement installations. This adjustment applies to bituminous materials only (no adjustment will be made for labor or any other costs).

B. The liquid asphalt Price Index value for this project (hereafter the “IB”) shall be $490.00 / ton as obtained from the Pennsylvania Asphalt Pavement Association (see www.pahotmix.org) for the month of February 2011 in Zone 1.

C. Contractor shall provide Owner the quantity (in tons) of bitumen in mixture to be placed (hereafter “Q”) for the bituminous concrete base course and the ID-2 wearing course on the entire project within thirty (30) days of award of contract. Supporting calculations and/or documentation which justifies this quantity must be provided.

D. If the liquid asphalt Price Index value for the month during which the applicable material is placed (hereafter the “IP”) for Zone 1 as obtained from the Pennsylvania Asphalt Pavement Association results in the ratio IP / IB being less than 0.90, the Owner will receive an automatic price rebate based on the following formula (note that such rebate will be presented by the Contractor to the Owner in the form of a change order):

Price Rebate = (0.90 – (IP / IB))(Q)(IB)

E. If the IP for Zone 1 as obtained from the Pennsylvania Asphalt Pavement Association results in the ratio IP / IB being greater than 1.10, the Contractor will receive an automatic price increase based on the following formula (note that such increase will be presented by the Contractor to the Owner in the form of a change order):

Price Increase = ((IP / IB) – 1.10)(Q)(IB)

F. Contractor shall notify the Owner of any requested price increase and secure approval from same prior to ordering, furnishing, or placing any bituminous material or incurring any additional costs associated with an asphalt price increase. The quantities shall be verified with certified delivery tickets furnished to the construction manager.

G. If the ratio IP / IB falls within the range of 0.90 to 1.10, no price adjustment will be made for any bituminous materials placed during the relevant month.

G. Section 02833 – Steel Truss Bridge

a. Paragraph 1.2: ADD “Anderson Bridge” and “Pioneer Bridge” as pre-approved manufacturers.

H. Section 03300 – Cast-in-Place Concrete

a. Paragraph 2.12.E: DELETE this paragraph in its entirety.

I. Section 03532 – Concrete Floor Topping

a. REPLACE this section in its entirety.

J. Section 07413 – Perforated Metal Screen

a. Paragraph 1.6.C: DELETE this paragraph in its entirety.

b. Paragraph 2.1.B: REVISE to read, “Substitutions: Substitutions will be reviewed as identified in Specification Section 01600 Product Requirements.”

c. Paragraph 2.2.A.1: REVISE to read, “Aluminum Face Sheet: Smooth surface coil-coated, ASTM B209, 3003-H14 allow, 0.040 inch (1.0 mm) nominal thickness.”

K. Section 07423 – Aluminum Faced Composite Panel System

a. Paragraph 2.4.A.2: ADD Alpolic as an acceptable manufacturer.

L. Section 07615 – Aluminum Soffit System

a. Paragraph 2.1.A.4: ADD Fabral as an acceptable manufacturer.

b. Paragraph 2.2.A.6: REVISE to read, “Finish shall be selected by Architect from full range of manufacturer available colors including metallic finishes.”

M. Section 08800 – Glazing

a. Paragraph 2.5.C: DELETE this paragraph in its entirety.

b. Paragraph 2.5.A.1: ADD, “Glazing types as specified should be determined using Construction North as shown on the plans.”

N. Section 10425 – Signs

a. Paragraph 2.1.A.3: DELETE this paragraph in its entirety.

b. Paragraph 2.5: DELETE this paragraph in its entirety.

O. Section 10505 – Metal Lockers

a. Paragraph 2.5.B: REVISE last sentence to read, “Benches shall be 12” wide.”

P. Section 11488 – Shooting Range Baffles and Protection

a. Paragraph 2.3.D.3: REVISE height of interior face of range side walls to be 10’-0” from finish floor.

Q. Section 12345 – Casework

a. ADD this specification in its entirety.

R. Section 15086 – Duct Insulation

a. CLARIFICATION: Duct silencers will be insulated to match the adjacent ductwork. Provide access to service locations.

S. Section 15140 – Domestic Water Piping

a. Paragraph 3.2.D: DELETE this paragraph in its entirety.

b. Paragraph 3.12.F and 3.12.G: ADD “Copper joints can be soldered in lieu of brazing.”

T. Section 15160 – Storm Drainage Piping

a. Paragraph 2.6: DELETE this paragraph in its entirety.

U. Section 15189 – HVAC Water Treatment

a. Paragraph 1.4.C.1: REVISE to read “pH: Maintain a value within 6.0 to 8.5.”

b. Paragraph 2.1.A.: ADD “Fernox USA” to the list of acceptable manufacturers.

c. CLARIFICATION: A multi-metal treatment that protects aluminum, steel, iron and copper based metals should be used.

V. Section 15640 – Cooling Towers

a. Paragraph 2.1.P: REVISE to read “Controls: The cooling tower’s controls should operate as indicated in section 15940 – Sequence of Operation.”

W. Section 15732 – Packaged, Outdoor, Central-Station Air-Handling Units

a. CLARIFICATION: Packaged rooftop units shall be provided with all of the necessary sensors and equipment to comply with Section 15940 “Sequence of Operation.”

X. Section 15820 – Duct Accessories

a. Paragraph 2.11.L.5: DELETE the reference to aluminum construction.

Y. Section 15900 – HVAC Instrumentation and Controls

a. Paragraph 1.2.B.1: Third Sentence; DELETE “without third party software or hardware.”

b. Paragraph 2.2: DELETE 2.2.A.1 and 2.2.A.2.

c. Paragraph 2.2.A: ADD after Manufacturers: “Manufacturers will be considered provided their system is web based, remotely accessible and capable of interfacing with the Metasys system.”

Z. Section 16714 – Telecommunications System

a. CLARIFICATION: The manufacturer for the incoming phone cable (25 pair copper) can be provided by any cable supplier. This applies to the telephone cable only.

4.3 CHANGES TO THE DRAWINGS

A. Drawing C11: Add sketch SC-18 included in this addendum #4.

B. Drawing C13: Add sketch SC-10 included in this addendum #4.

C. Drawing C14: Add sketch SC-12 included in this addendum #4.

D. Drawing C15: Add sketch SC-14 included in this addendum #4.

E. Drawing C18: REVISE the size of the line from the water main in Industrial Road to the water meter pit to be 3-inch diameter.

F. Drawing C28: Add sketch SC-16 included in this addendum #4.

G. Drawing C29: DELETE wire mesh connection from curb to sidewalk on detail “on-site concrete curb and walk.”

H. Drawing C32: Add sketch SC-9, SC-11, SC-13, SC-15, and SC-17 included in this addendum #4.

I. Architectural Drawings (general): CLARIFICATION: Linear Metal Soffit indicated on drawings shall be modified to be Aluminum Soffit System as indicated in Specification Section 07615.

J. Drawing AA1.2:

   a. REVISE General Note No. 12 to read, "Refer to interior drawings for tack boards and marker boards."

   b. DELETE wall tag S3, wall cap detail. Wall and polymer cap shall be constructed as identified on IA4.1.

K. Drawing AA1.5: REVISE "Linear metal Soffit" designated in Legend. Ceiling Plans and corresponding sections shall be modified to "Aluminum Soffit System" as specified in Specification Section 07615 – Aluminum Soffit System.

L. Drawing AA1.6: REVISE "Linear metal Soffit" designated in Legend. Ceiling Plans and corresponding sections shall be modified to "Aluminum Soffit System" as specified in Specification Section 07615 – Aluminum Soffit System.

M. Drawing AA4.2: REVISE designation No. 34 to read, "Signage- 'Helvatica Bold' Font, 5" high, letters to be ½" thick- Anodized Aluminum finish- See mounting Detail 9/AA5.5."

N. Drawing AA6.4:

   a. ADD "EPX – Epoxy Paint" to the Room Finish Schedule Legend – Floor Finish.

   b. REVISE Room B106 floor finish to be EPX.

   c. REVISE the ceiling finish for Room B106 to read, "ACT2/PSTR/PNT."

O. Drawing IA4.1

   a. Detail 1/Administration: REVISE detail tag at reception desk in A130 Open Office to be 5/IA4.1.

   b. 2/B106 Range – Partial Plan: REVISE detail tag at base cabinets to be 4/IA4.1.

P. Drawing AB6.1:

   a. REVISE door schedule; Doors A201D, A301D, A401D, and A501D frame material shall be "aluminum" in lieu of H.M.

   b. CLARIFICATION: Basis of design for double hung windows shall be "Kawneer system 8400TL ISOLOCK H-HC70."

Q. Drawing SA1.1: REVISE Detail 2/SA1.1 to read, "ALTERNATE GC2 PLAN"

R. Drawing SA1.10: REVISE Detail 2/SA1.10 to read, "ALTERNATE GC2 PLAN"

S. Drawing SA1.20: REVISE Detail 2/SA1.20 to read, "ALTERNATE GC2 PLAN"

T. Drawing SA6.1: ADD WF6.0 to Wall Footing Schedule as follows: 6'-0" wide, 18" depth, #5 @ 12" o.c. reinforcing short way, (7) #5 reinforcing continuous.

U. Drawing MA1.1: ADD "Corridor A135 – coordinate location of thermostat with bulletin board."

V. Drawing MA5.1: DELETE the reference to work by the MC and the HC. Emergency generator engine exhaust will be by the EC from the generator connection to the rain cap.

W. Drawing MA5.2: ADD Detail #23 – duct roof penetration and support detail sketch SK-MA5.2-1, attached to this addendum #4.

X. Drawing PA5.2: CLARIFICATION: On Detail 7 Vent Thru Roof, it is acceptable to use rubber flashing compatible with the roofing system in lieu of lead shown.

Y. Electrical Drawings (general): CLARIFICATION: Final electrical connection to all devices, equipment, etc. will be made by the EC in lieu of others as noted on the plans. Coordinate requirements with supplier and other contractors.

Z. Drawing EA2.1:

   a. ADD: "Under base bid, provide power for projection screen in A110 from panel LB1. See drawing IA4.2 and coordinate final location. Refer to projection screen wiring diagram for requirements."

   b. ADD: "Under alternate bid GC-2, provide power for two (2) projection screens in A110 from panel LB1. See drawing IA4.2 and coordinate final location. Refer to projection screen wiring diagram for requirements. Coordinate the switch location with the Architect."

   c. REVISE: Change the power for the projection screen in A120 from a receptacle connection to the projection screen wiring detail. Coordinate the switch location with the Architect.

   d. REVISE: Change the power for the projection screen in A121 from a receptacle connection to the projection screen wiring detail. Coordinate the switch location with the Architect.

AA. Drawing EA5.1: CLARIFICATION: Emergency generator engine exhaust system will be by the Electrical Contractor from the generator connection to the rain cap. Refer to details 10 and 11 on drawing MA5.1. Delete the reference to work by the MC and HC on detail 10. The EC will also provide the exhaust pipe insulation. Insulation will be 6" calcium silicate (ASTM C 533, 13 pcf density, k = 0.38 Btu-in/h-ft^2 at 100 °F) or 4" mineral fiber (ASTM C 547, 4 pcf density, k = 0.23 Btu-in/h-ft^2 at 75 °F) with type 316 stainless steel metal jacket.

BB. Drawing EA5.4:

   a. ADD projection screen wiring diagram sketch SK-EA5.4-1, attached to this addendum #4.

b. CLARIFICATION: On fire alarm riser diagram, the fiber optic cable to North Hall FACP is one strand of the six strand cable being installed.

CC. Drawing EA6.1: CLARIFICATION: Dimmer board DB-1 and DB-2 will be M.L.O. per the specifications. Delete the main circuit breaker shown on the one-line diagram.

DD. Drawing EA6.2: ADD "Shared neutral conductors are not permitted on the project."

EE. Drawing EA6.3:

a. ADD "Shared neutral conductors are not permitted on the project."

b. ADD "Provide (2) 20A/1P breakers in panel LB1 to power projection screens in A110. Under the base bid, one will be used for the screen and the other will be a SPARE. Under alternate GC-2, one will be used for each screen. Run 2#12, 1#12 grd, ¾" C to the unit and wire per the projection screen wiring detail and manufacturer's instructions."

4.4 ATTACHMENTS

A. Specification Section 05810 – Expansion Joint Cover Assemblies

B. Specification Section 08361 – Sectional Overhead Doors

C. Specification Section 12345 - Casework

D. Sketch SC-9 – Construction Parking/Laydown Area

E. Sketch SC-10 – Revision to Sheet 13.

F. Sketch SC-11 – Modified Basin Outlet Dimensions

G. Sketch SC-12 – Revision to Sheet 14

H. Sketch SC-13 – Modified Basin Outlet Structure

I. Sketch SC-14 – Revision to Sheet 15

J. Sketch SC-15 – Modified Basin Outlet Structure

K. Sketch SC-16 – Modified Basin Outlet Dimensions

L. Sketch SC-17 – Revised Confined Space/Trench elevation/Layout Plan

M. Sketch SC-18 – Revision to Sheet 11.

N. Sketch SK-MA5.2-1 – Duct Roof Penetration and Support Detail

O. Sketch SK-EA5.4-1 – Projection Screen Wiring Diagram

4.5 QUESTIONS

A. **Q:** Is the EC to assume that we can install our cables and not exceed the fill allowance for conduits per the NEC? Is the EC to assume that there are pull strings available for us to install our cables? If not, can a dollar allowance be added to the bid form to provide an adequate amount of time to dewater manholes, set up safety equipment, research conduit suitability, and attempt to install pull lines for our work?

A: No allowance will be provided. Electrical Contractor shall verify existing conditions.

B. **Q:** On drawing EA5.4 on the Fire Alarm Riser Diagram, there is a note saying fiber optic cable to North Hall via Telecom room. Is this an entirely separate cable or is this one strand of the 6 strand cable being installed?

A: On fire alarm riser diagram, the fiber optic cable to North Hall FACP is one strand of the six strand cable being installed.

C. **Q:** Electrical and Telephone Data manholes are shown on Print EA7.1. Is there a detail or spec on the manholes required?

A: Refer to Specification Section 02584 – Underground Ducts and Raceways for Electrical Systems.

D. **Q:** Panels LB1, NEA, and NELA are shown as Main Lug Only on the panel schedules on print EA6.3 but as main breaker on the One Line diagram on print EA6.1. Are these panels required to be Main Breaker MLO?

A: Panels LB1, NEA, and NELA shall have main circuit breakers as shown on the one-line diagram. Panel LB1 MCB shall be rated for 225 amps.

E. **Q:** Panel EA shown on the one line diagram on print EA6.1 does not have a panel schedule. What are the requirements for this panel?

A: Dimmer board DB-1 and DB-2 will be M.L.O. per the specifications. Delete the main circuit breaker shown on the one-line diagram.

F. **Q:** Sheet AA1.6 shows one roof hatch while sheets MA1.3 and MA1.4 show two roof hatches. Can you confirm the number of roof hatches and what locations are correct?

A: Drawing AA1.6 is correct. There is one roof hatch in the project to be installed in the mechanical room.

G. **Q:** The access road leading to the bridge on civil drawing 10 shows what look to be bollards but says “Planter NIC” Please clarify if these are bollards, what kind, and what prime owns them.

A: The planters will be provided by the Owner.

H. **Q:** What prime is responsible for the lines and numbers on the range floor?

A: Painting of the lines and numbers on the range floor is the responsibility of the General Trades Contractor.

I. **Q:** Are Track Line Markings required? The 3.06 specs appear to be generic.

A: Track line markings are required in accordance with Specification Section 02539 – Running Track.

J. **Q:** Please clarify if the ballistic baffles are to be supplied by the general trades prime contractor or the speciality construction/props.

A: The Specialty Construction/Props Contractor is responsible for the ballistic baffles.

K. **Q:** 01125 Summary of Contracts 1.7.C.2.c. and d. state that the Mechanical contractor is responsible for concrete equipment bases. Detail 10/SA3.2 states the equipment pads are supplied by the GC. Who is responsible? MC or GC?

A: Concrete equipment bases shall be the responsibility of the GC.

L. **Q:** Addendum 3 added spec sections 10155 Toilet Compartments and 10650 Operable Partitions. They are not listed in the revised Summary of Contracts specification. Please confirm that the general trades contractor is responsible for these two sections?

A: The General Trades Contractor is responsible for Toilet Compartments and Operable Partitions.

M. **Q:** Addendum 3 states that 'Signage will be provided and installed by the owner.' Please elaborate. Does this include all the signage specified in section 10425? Note 39 on AA4.5 states that the GC is to install all owner provided plaques. Will the wood blocks and plaques described in note 39 be furnished and installed by the owner?

A: Room Number and ADA signage will be provided and installed by the Owner. All other signage is to be included in the base bid. The Owner will provide plaques for the General Trades Contractor to install.

N. **Q:** Detail 3 on Drawing EA7.2 states that the EC is to provide the pole and anchor bolts. What size anchor bolts and what kind of pole- size, shape, material and manufacturer?

A: Refer to fixture schedule on Drawing EA7.2. Anchor bolt requirements shall be confirmed with manufacturer.

O. **Q:** #4 "Code Compliance" - Contractor's bid is to be in compliance with all Federal, State, Local, and applicable codes. Does this require that we obtain any local permits / licenses? If so, please advise us of the types of permits / licenses necessary

A: Trade specific permits are the responsibility of the respective contractors. The building permit will be obtained by the Owner.

P. **Q:** Which trade is responsible for work associated with the series AC drawings? The GC or all trades? If all trades, are the existing lights going to need to be temporarily suspended, or will they remain in the existing ceiling grid?

A: All electrical work associated with the AC drawings is the responsibility of the electrical contractor. Electrical contractor shall coordinate all work with general trades contractor.

Q. **Q:** The public safety building floor plans on the structural drawings show the alternate layout to be Alternate GC-4 but the architectural drawings show this to be Alternate GC-2. It looks like this is to be GC-2. Please clarify.

A: The alternate GC-4 shown on the structural drawings should read GC-2.

R. **Q:** Will you provide a blacktop escalator?

A: Refer to 4.2.F of this Addendum #4.

S. **Q:** Will there be any staging areas for overflow parking? for example, an aggregate base course for HACC vehicles to park on during construction.

A: See Sketch SC-9 and SC-18.

T. **Q:** Civil Drawing 18 Water service: The city will only tap the main and will not run line to meter vault per spec 02510-7, 3.4.13. The yearly costs to HACC for an 8" diameter service is $19,661.00 whether they use 1 gal or 1000 gal. The size of a vault for an 8" meter with backflow preventer is 18' long. A 3" diameter lateral for a fire hydrant will not allow enough flow through the hydrant, it needs to be 6" diameter.

A: Revise the size of the line from the water main in Industrial Road to the fire hydrant to be 6-inch diameter. Revise the size of the line from the water main in Industrial Road to the water meter pit be 3-inch diameter.

U. **Q:** Waterline – How are we to cross Industrial Road? Are we to figure a horizontal bore? (if this is the case, please provide details for the casing size that will be required.) or, are we to figure open cutting of the road?

A: See General Note #5 on Sheet 1 of the Site Improvements Plan.

V. **Q:** Civil Drawing sheet 17, note 5 connect to existing M-H – Drawing 28 shows new. Which is correct?

A: Sanitary Manhole SMH-1 is being placed in the existing sanitary line within the existing access drive.

W. **Q:** Civil Drawing 30 methane vent cap detail – Any idea of size and material? Vents in skid pad area, please provide detail of vent cap.

A: The existing methane vents are currently buried.

X. **Q:** Is there any Fire Protection systems required for the project other than the piping and (2) upright sprinkler heads shown in Room A104 on plumbing Dwg. PA1.3? There is also a specification section 15930 (Wet Pipe Fire Suppression Sprinklers).

A: All fire protection requirements are accurately shown on the bid documents.

Y. **Q:** 02300-7,3.8F Cut micro piles to 6" – 18" below bottom of footing and backfill with compacted 2a stone. Is this in the scope of the micro pile contractor or site contractor?

A: This is the responsibility of the General Trades Contractor per Specification Section 01125 – Summary of Contracts.

Z. **Q:** Is there a topping mixed used on the project? I couldn't find it but it is mentioned in section 3300, as a 3500 PSI Air entrained mix. My only concern on that would be the use of a steel troweled finish on air entrained concrete.

A: There is no concrete topping on the project. The only topping required is for the training tower which is specified in a separate section.

AA. **Q:** What is the distance from the new switchgear pad to K2 in Switch Cabinet #5?

A: This kirk key system is mechanical and the distance is not necessary for pricing.

BB. **Q:** There is no Grilles, Register and diffuser schedule. Can one be provided?

A: Grille, register and diffuser key is on drawing MA0.2.

CC. **Q:** There are two Duct Silencers on the roof but there is no schedule for the Duct silencers. Please provide the performance data so that these can be priced correctly

A: Duct silencer criteria is in Specification Section 15820.

DD. **Q:** Section 16130 3.1.B.3 states that conduit installed....Indoor-Exposed to severe damage shall be GRC. It lists Mechanical/Electrical rooms and the Training Tower. Does the firing range fall under this category, or may we use EMT in this area?

A: EMT is acceptable in the firing range.

EE. **Q:** Is there a Detail to how to support the roof duct?

A: SK-MA5.2-1 is applicable for all roof duct supports.

FF. **Q:** Can the requirement for AISC certified Steel Fabricator and AISC certified Erector be waived?

A: AISC criteria will not be waived.

GG. **Q:** Print EA5.3 shows a detail for the firing range emergency red light control. Print E0.1 shows a symbol for a Holophane fixture mounted on the wall as a red LED. This symbol does not prints EA1.1 or EA1.2. How many of these wall mounted fixtures are required and where are they located?

A: These fixtures are to be WF1 fixtures which are shown on the plans.

HH. **Q:** On print EA4.1 there is a gas emergency shutoff button. Who supplies, installs, and wires this button?

A: The Plumbing Contractor provides and wires per the plumbing drawings.

II. **Q:** Please clarify – is door #B101C a coiling door as specified? Or a sectional door as drawn on the elevations and indicated in the door schedule?

A: Specification for coiling door has been revised to be sectional overhead door.

JJ. **Q:** Addendum 2, Sections 13000 and 13090, Part 2, Section 2.1, A, 2 both list Kidde Fire Trainers, Inc. as acceptable suppliers of gas trainers. Although the technical requirements are virtually identical, Section 13080 for the Portable Car Fire prop does not list Kidde Fire Trainers as acceptable. Please advise if Kidde is acceptable to supply the prop specified in Section 13080 as well as 13000 and 13090.

A: Specification Section 13000, Paragraph 2.1.A.2 states Kidde Fire as acceptable. Specification Section 13090, Paragraph 2.1.A.2 states Kidde Fire as acceptable with their appropriate model stated. Specification Section 13080, Paragraph 2.1 identifies the "Raven Portable Car" as manufactured by FireBlast as the Basis of Design. Per paragraph 1.2.A "…Manufacturers of described prop who wish to provide a portable car trainer must meet the performance requirements defined in this specification."

KK. **Q:** Addendum 2, Section 13000, Part 2. Is the fire training system equipment supplier required to install gas detection sampling systems in either tower training room A401 and/or A403?

A: Yes. In accordance with NFPA 1402, gas detection systems are required for interior props where natural gas or propane is used as a source of combustion.

LL. **Q:** Addendum 2, Section 13080, Part 2, Section 2.3, A.4. Portable Car Fire Props typically are outfitted with a Fire Department connection that is connected to a water-cooling mist system to enhance the longevity of the Car Prop. Is a stainless steel sub-frame with fire department connection required to keep the Car Fire prop cool during operation?

A: The Basis of Design, "Raven Portable Car" does not utilize water cooling as the material and thickness of the metal does is not affected by the heat.

MM. **Q:** Addendum 2, Section 13090, Part 2, Section 2.3. Is there a required construction material for the mobile flame pilot module? Typical construction uses stainless steel.

A: The material used should be in conformance to the stated Basis of Design: FireBlast “FLAG II Advanced”, Kidde Fire Trainer “FIRETRAINER® O-100”

NN. **Q:** Will Victaulic piping be acceptable for the hydronics?

A: Piping systems will be per the specifications.

OO. **Q:** Ceiling heights for the existing classrooms that need painted in the North Hall?

A: Standard height of existing ceiling is approximately 9’-0” from existing drawings. Contractor is responsible to verify and match ceiling height as defined in the contract documents.

PP. **Q:** Ceiling height for the smoke building?

A: Contractor is responsible to verify existing conditions.

QQ. **Q:** The Metal Locker Spec calls the benches to be 9-1/2” wide the drawings call for 12” wide, which is correct, please clarify.

A: Specification modified to be 12” wide benches.

RR. **Q:** The painting specification indicated that the range floor is to receive a epoxy finish. Is this in addition to the concrete sealer as specified in 03356?

A: Revised to be EPX, Epoxy Coating. Concrete Sealer is not to be included in addition to the Epoxy Coating.

SS. **Q:** Drawing AB5.2 shows a movable maze wall system. Can you provide a specification and manufacturer for this. What prime is responsible for this work?

A: There is no manufacturer for this item. This is a custom assembly utilizing standard hollow metal door units, held in place with the mechanism shown.

TT. **Q:** I could not seem to locate a finish schedule for the training tower or the smoke building. Can you provide one

A: There is no finish schedule to the training tower, only new finish is floor topping as identified on the contract documents.

UU. **Q:** Note #12 on drawing AA1.2 mentions Tack Strip location on the I drawings and the 1/8” scale plans to have locations of Tack Boards in the corridors, no Tack Strip is sown nor Tack Boards in the corridors, are these required? If so please provide a location and sizes.

A: They are not required.

VV. **Q:** Please clarify what the thickness is of the AR500 Steel in the Safety Ceiling Section 11488, 2.6, B

A: Safety Ceilings shall be constructed of 3/8" AR500 Steel. Refer to noted details for additional information.

WW. **Q:** Are hangers required for the underground sanitary waste and vent piping as shown on plumbing Dwg. PA1.1 and in Detail 2 on plumbing Dwg. PA5.2?

A: Hangers are required as noted on the drawings.

XX. **Q:** Is all of the existing Traffic Topping on the roof of the Training Building and Smoke Building to be removed in its entirety?

A: Refer to demolition and renovation note #10 for the training tower identified on DB1.1. Please refer to demolition and renovation note #6 for the smoke building on AD1.1.

YY. **Q:** Is the new Concrete Topping to be installed on the roof of the Training Building and Smoke Building to be protected with new Elastomeric Traffic Topping?

A: Concrete Floor Topping has been revised with an exterior grade concrete floor topping.

ZZ. **Q:** Is the new Concrete Topping to be installed on the entire roof area of the Training Building and Smoke Building?

A: See AB1.2 & AD1.1 for limits of new concrete.

AAA. **Q:** Are the specified Toppings for the Training Building and Smoke Building (Freeze Thaw Stable) and approved for (Exterior Use)?

A: Concrete Floor Topping has been revised with an exterior grade concrete floor topping.

BBB. **Q:** Refer to Drawing # AA1.4. Is the Acoustical Ceiling listed at 10'-8"H in Room B106 (adjacent to Area "A") to be included in Bid Package No. 2 General Trades? If the answer is yes. What type of ceiling tile is to be used as no ceiling tile is listed on the finish schedule?

A: Yes, ACT2 tile is to be used.

CCC. **Q:** There is a difference in the SRP wall height between the Specs that read 11488 2.3 D3, reads SRP wall height at 8 feet, another area reads 9 feet height and your plans page AA4.4 shows the height of the SRP to be at 10'. I just need the clarification of the correct height. Please onfirm thickness.

A: Height shall be 10'-0" as indicated on contract drawings.

DDD. **Q:** How are the duct and filters going to be supported on the roof? Is there a detail?

A: Detail issued in previous addenda for duct support.

EEE. **Q:** Please clarify if the glazing contractor should determine the Solarban Glass types from “True North” or “Construction North” as shown on the plans.

A: Contractor shall use “Construction North.”

FFF. **Q:** Drawing SA1.1 shows a WF6.0 Footing near the cooling tower pad but this footing is not identified on the footing schedule. Please provide info for a WF6.0.

A: WF6.0 shall be as follows: 6’-0” wide, 18” depth, #5 @ 12” o.c reinforcing short way, (7) #5 reinforcing continuous.

GGG. **Q:** Can you please provide a schedule for the vinyl applied signs, nothing is shown on the drawings or in the specifications regarding a count/location.

A: Vinyl graphics have been removed from the project.

HHH. **Q:** Specification section 03356 – Concrete Sealer, indicates that we are to apply a sealer to the Range and the Training Tower. The finish schedule indicates sealed concrete on the range along with some other rooms. Are the rooms that are not mention in the Concrete Sealer spec but indicated as sealed concrete on the finish schedule to receive a basic sealer from the concrete spec or should they also receive the sealer specified in the Concrete Sealer spec? Please clarify.

A: The Range is not to receive the concrete sealer. Floor finish in Range revised to be EPX. The primer and sealer are specified in the paint specification.

III. **Q:** The note on Drawing EA5.2 in the LEC Telecom Detail states the 25pr cable is Cat 3. The specifications state it must be BerkTek cable. The manufacturer does not make an indoor/outdoor Cat 3 cable. Please provide a catalog number of the cable desired for use.

A: This cable only can be provided by any cable supplier.

JJJ. **Q:** Section 3.2 calls for stopping the riser @ the top of bedrock and later calls for 2' into bedrock. Which is correct?

A: The intent is to drill the hole 2 feet into rock, but to stop the riser pipe at the top of rock.

KKK. **Q:** The grout is specified with a slump around 1". Section 3.3B calls for the addition of fine gravel or stiffing of the mix if grout takes increase. Addition of gravel or otherwise stiffening a mix with a slump this low will make it unpumpable. Please advise.

A: If gravel is added it should be in conjunction with modifying other aspects of the mix, such as water content and slump, as needed to maintain pumpability.

LLL. **Q:** Is the EC to assume that we can install our cables and not exceed the fill allowance for conduits per the NEC? Is the EC to assume that there are pull strings available for us to install our cables? If not, can a dollar allowance be added to the bid form to provide an adequate amount of time to dewater manholes, set up safety equipment, research conduit suitability, and ATTEMPT to install pull lines for our work? Shall the EC install a rope with our new cables to facilitate and future owner requirements for cable installations?

A: Electrical contractor shall assume that cables will not exceed the fill allowance. Electrical contractor shall verify existing conditions.

MMM. **Q:** Specification section 16442 under part2 Product data for panelboards, the neutral buss is rated at 200%. On print EA6.1 the neutral conductors feeding the panels are not large enough for 200% capacity. Are the panels to be supplied with 200% neutral capacity and the neutral wire feeding the panels to be sized accordingly?

A: Contractor to bid per the Drawings.

NNN. **Q:** Transformer T1 shown on print EA6.1 and EA2.1 does not have any grounding detailed. Is a separate trigrid required for this transformer outside the building?

A: It is grounded through the main switchgear per the NEC. No additional ground work is required.

OOO. **Q:** The bollard lights along the walking path are also not shown on the electrical drawings. Are these part of the electrical bid?

A: The bollard lights along the walking path are not considered part of the project.

PPP. **Q:** On print E A7.2 details 1 thru 3 and 6 the run out conduit to the next pole is labeled as 1" GRC. On detail 4 the run out conduit to the poles and receptacles is labeled as GRC. Spec section 16521 3.4-B for exterior lighting states for steel conduit in concrete foundations wrap the conduits with 0.10 inch thick pipe wrapping plastic tape applied with a 50% overlap. Spec section 16130 3.1-A-3 for raceways and boxes states for underground conduit use EPC 40 PVC. Can the underground conduit between pole bases be #40 PVC? Are any or all of the conduits located in the site bases required to be galvanized rigid conduit, and if so do they require to be coated with plastic tape or p-coat?

A: The conduit in the pole bases is GRC with wrap as noted in the specifications. It is acceptable to transition to PVC conduit between the site bases.

QQQ. **Q:** Requesting added spec to 15088 for generator exhaust and muffler insulation.

A: The generator exhaust system is to be provided by the EC. The exhaust pipe and associated equipment is already specified in section 16231.

RRR. **Q:** DRWG# PA1.4, Who supplies and installs the air compressor for the target system? Or are we connecting to an existing system by others?

A: The air compressor system is provided under the PROPS contract. The mechanical contractor provides the piping to the outlets as shown on the drawings.

SSS. **Q:** Section 11485;1.2:A3 The portable steel target section does not explain the description of the target or the number of targets to quote.

A: Refer to Specification Section 11485, Paragraph 2.4.B.

TTT. **Q:** On Section 11488:2.2:A States that the Acoustic/Ballistic wall material to be applied to the protective baffles and the next section 2.2:B states that the acoustical Cortega panels are applied to the protective baffles also. Drawing AA5.3 shows the Cortega acoustical panels only on the baffles. Which material do you want to attach to the protective baffles the Acoustic Ballistic wall material or the Acoustical Cortega ceiling panels.

A: Refer to Specification Section 11488, Paragraph 2.2.

UUU. **Q:** Section 11488:2.2:A States that the Acoustic/Ballistic wall material is 1 ½' thick, the plans drawing AA5.3 show the material as 2" thick. Please advise proper thickness for quote.

A: Contractor shall install specified product. Basis of Design shown is 1-1/2" thick, however, alternate manufacturers are acceptable of which thickness may vary up to 2" thickness.

VVV. **Q:** On page 31 there are details of the confined space trench. Are there any other details for the 4 vaults that are between the 48" Headwall and the trench? I also have some concern there is not enough height to build these vaults, due to pipe sizes, if there are also top slabs on them. Are there top slabs? If so, what is the thickness? The 21' x 21' square precast vaults (assuming all three are 21' x 21'?) - are all three 6.25 in height? Other than on page 31, are there any other views or details of these structures?

A: See Sketch -17 for revised detail.

WWW. **Q:** Civil Drawing sheet 29 – Paving details – spec reference PennDOT, drawing indicate commercial mix. Which one? If PennDOT please provide mix design.

A: Since site is not a PENNDOT project, contractor has option of providing either mix as shown in details or Superpave design per PENNDOT. All pavement mixes must be submitted in shop drawings prior to placement.

XXX. **Q:** Appendix A Geo Report – Do you have any elevations for boring PB-2?

A: Elevations noted in the PB-2 boring are taken from existing grade.

YYY. **Q:** Skid Pad Painting – Are we to paint the 3" colored square/dot or are we to paint lines connecting these squares/dots? If yes, what are the line width and color? Will the locations of the squares/dots be surveyed and or located by GPS utilizing a representative of the college to ensure accuracy?

A: The colored dots are to be painted, not the lines. Refer to notes on Sheet 35 regarding accuracy and HACC review.

ZZZ. **Q:** The scope states that the EC is to provide the Variable Frequency Drives for the project. Note B on drawing EA6.1 states that the mechanical contractor will provide the VFD's for EF 1 and 2. On drawing EA4.1 there are VFD's shown for Pumps 1A and B, and 2A and B. I cannot find a specification section for VFD's to supply these units. Please provide one for use for both contracts.

A: All VFDs are the responsibility of the Mechanical Contractor.

AAAA. **Q:** What size and type are the existing methane vents that are to be extended?

A: The vents are currently buried, so the size and type are unknown.

BBBB. **Q:** On sheet 29 of 37 on site concrete curb and walks, they show wire mesh going into curb from walk, please clarify if this monolithic or not.

A: Remove wire mesh connection from curb to sidewalk.

CCCC. **Q:** On print 20 of 37 on the utility plan site improvements there is a ductbank located in phase 2. The note attached to this duct bank states proposed duct bank and related electric and telephone lines and manholes.(see MEP plans) This duct bank is not shown on the electrical drawings. The duct bank for the building service is shown. Is this duct bank part of the electrical bid, if so is there a detail or electrical print showing this install?

A: The duct bank in phase 2 is a 2-way duct bank similar to detail D/E7.1 on EA 5.1. The duct bank is to be bid by the electrical contractor

DDDD. **Q:** The bollard shown around GC-6 Pad on civil drawing 11 show what look to be 28 bollards but pad GC-5 only look to show 10 or 11. Civil drawing 29 shows 14 bollards around each pad. Please clarify how many and what primes owns these

A: Provide bollards as shown on Sheet 11.

EEEE. **Q:** Please provide more details on the confined space prop. Clarify where the removable railings are needed. Clarify if metal grate is required over all exposed trench and what kind. Provide more details on the metal stairs and railings shown.

A: See Sketch -17 for revised detail.

FFFF. **Q:** Civil Drawing 36 – Pedestrian Bridge – Is there any reinforcing in the bridge deck?

A: Coordinate design of pedestrian bridge with pre-qualified bridge manufacturers per plan.

GGGG. **Q:** Civil Drawing 3 – Note 6 – Does anyone know the size of the grease separator?

A: Approximate dimensions are 7'-8" high, 30'-8" long, and 10' wide.

HHHH. **Q:** The civil plans alphanumerically identify the basins, which conflicts with the spillway lining details which identify the basins numerically. Please clarify.

A: Refer to attached sketches (SC-10, 12, and 14) for basin identification.

IIII. **Q:** Civil Drawing 11 & 29 of 37: Railroad Crossing – Does the full length of the track get set on a concrete foundation?

A: Concrete shall be provided under the track within the proposed crossing to 5 feet beyond on either side of the crossing.

JJJJ. **Q:** Please provide a detail for the steel cable ties used at the confined space/trench prop.

A: Contractor to provide steel cable adequate to tie down RCP as noted.

KKKK. **Q:** 6" gap in RCP pipe sections (confined space prop) – Where is this shown?

A: The gap shall be provided in the above grade RCP sections. Cannot be shown at scale provided in plans.

LLLL. **Q:** Will confined space piping under roadway need to be cast iron H2O loading?

A: Piping under the roadway shall meet H20 loading, however, HPDE pipes can be utilized.

MMMM. **Q:** Please provide a detail for the galvanized metal stairs, railings, and handrails.

A: See "General Notes for Confined Space/Trench Rescue Prop." Contractor is to provide shop drawings for review and approval prior to placement.

NNNN. **Q:** In the Contractor Parking Area, Construction Lay Down Area and Construction Trailer Area, what is the thickness and what type of stone in the areas?

A: See Sketch SC-9.

OOOO. **Q:** 02300-7,3.8B and 02300-7,3.8 C Is this covered within 02300-7,3.8D and will be paid for by unit price or is this considered 02300-6,3.4A and is to be performed by the contractor at no cost to the owner?

A: All work mentioned in the above sections should be considered part of the base bid.

PPPP. **Q:** If DEP establishes that “historic fills” on site must be removed to a landfill, is this to be performed at no cost to the owner?

A: Yes.

QQQQ. **Q:** Is there an explanation or scope of work for the WET land relocation?

A: Please refer to sketch SC-10 and attached description.

RRRR. **Q:** Confined Space Trench - The angle on which the grates sit is 3"x3"x 1/4". The grates are 1" x 1-1/8" openings. Please clarify what the height of the grates are supposed to be.

A: Make grate height suitable to withstand pedestrian loads.

SSSS. **Q:** Telephone Pole Prop - What kind of rope is to be attached to the crossmembers of each pole? How are they to be fastened?

A: 1” 3 strand polypropylene shall be used. Rope shall be fastened to cross-members with eye-bolts.

TTTT. **Q:** Is there a specified path of travel to access south side of Paxton Creek? Are the other bridges along the creek rated for the weight of the construction vehicles?

A: No specific traffic path has been determined. Contractor shall confirm bridges can handle construction vehicles.

UUUU. **Q:** Can we adjust any grades to help eliminate excess excavated materials? (this would save on hauling material off-site)

A: Excess materials can be utilized as backfill for the pedestrian bridge provided it meets required specifications.

VVVV. **Q:** Paving Overlay - Alternate No. 7: Is the overlay being placed on existing pavement without milling down the depth of proposed asphalt course? (1-1/2")

A: No.

WWWW. **Q:**

A:

XXXX. **Q:**

A:

END OF ADDENDUM

Please sign and return this page, via fax, to Eastern PCM, LLC at (717) 233-1666 indicating receipt of this Addendum.

Public Safety Center – Law Enforcement Complex and Site Improvements

Addendum #_____ has been received.

Company: _____
Print Company Name

Received By: _____
Print Name Signature

Date: _____

Please check one:

_____ We are bidding as a prime contractor
_____ We are not bidding
_____ We are a sub-contractor

SECTION 05810 - EXPANSION JOINT COVER ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawing and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Floor expansion joint cover assemblies.
2. Wall expansion joint cover assemblies.
3. Fire-rated expansion joint cover assemblies.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 3 Section "Cast-In-Place Concrete" for cast-in anchorage and frames for expansion joints cover assemblies in concrete floors and walls.
2. Division 7 Section "Joint Sealants" for elastomeric sealants and preformed foam sealants without metal frames.
3. Division 7 Section “TPO Membrane Roofing” for preformed membrane flashing that is an integral part of the membrane roofing system.
4. Division 7 Section “Manufactured Wall Panels” for preformed metal flexible expansion joint covers for use with the “ribbed” metal panels.

1.3 SUBMITTALS

A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.

B. Product data for each type of expansion joint cover assembly specified, including manufacturer's product specifications, installation instructions, details of construction relative to materials, dimensions of individual components, profiles, and finishes.

C. Shop drawings showing fabrication and installation of expansion joint cover assembly including plans, elevations, sections, details of components, joints, splices, and attachments to other units of Work.

D. Samples in the form of manufacturer's color charts, actual units, or sections of units showing full range of colors, textures, and patterns available for each exposed metal and elastomeric material of expansion joint cover assembly indicated.

1.4 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain expansion joint cover assemblies specified in this Section from one source from a single manufacturer. Coordinate compatibility with expansion joint cover assemblies specified in other sections.

B. Fire-Test-Response Characteristics: Where indicated, provide expansion joint cover assemblies identical to those assemblies whose fire resistance has been determined per ANSI/UL 263, NFPA 251, U.B.C. 43-1, or ASTM E 119, including hose stream test of vertical wall assemblies, by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire-Resistance Ratings: Not less than the rating of adjacent construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to the following:

1. Construction Specialties, Inc. (C/S Group) (specified).
2. Architectural Art Manufacturing, Inc.
3. Balco, Inc.
2. Metalines, Inc.
3. MM Systems, Inc.

2.2 MATERIALS

A. Aluminum: ASTM B 221, alloy 6063-T5 for extrusions; ASTM B 209, alloy 6061-T6, sheet and plate.

1. Protect aluminum surfaces to be placed in contact with cementitious materials with a protective coating.

B. Extruded Preformed Seals: Single or multicellular elastomeric profiles as classified under ASTM D 2000, designed with or without continuous, longitudinal, internal baffles. Formed to fit compatible frames, in color, as selected by Architect from manufacturer's standard colors.

C. Preformed Sealant: Manufacturer's standard elastomeric sealant complying with ASTM C 920, Use T, factory-formed and -bonded to metal frames or anchor members; in color, as selected by Architect from manufacturer's standard colors.

1. Joints 2 Inches Wide and Less: Withstand plus or minus 35 percent movement of the joint width without failure.

D. Fire Barriers: Designed for indicated or required dynamic structural movement without material degradation or fatigue when tested according to ASTM E 1399. Tested in maximum joint width condition with a field splice as a component of an expansion joint cover per ANSI/UL 263, NFPA 251, U.B.C. 43-1, or ASTM E 119, including hose stream test of vertical wall assemblies by a nationally recognized testing and inspecting agency acceptable to authorities having jurisdiction.

E. Accessories: Manufacturer's standard anchors, fasteners, set screws, spacers, flexible moisture barrier and filler materials, drain tubes, lubricants, adhesive, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.3 EXPANSION JOINT COVER ASSEMBLIES

A. General: Provide expansion joint cover assemblies of design, basic profile, materials, and operation indicated. Provide units comparable to those indicated or required to accommodate joint size, variations in adjacent surfaces, and dynamic structural movement without material degradation or fatigue when tested according to ASTM E 1399. Furnish units in longest practicable lengths to minimize number of end joints. Provide hairline mitered corners where joint changes directions or abuts other materials. Include closure materials and transition pieces, tee-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous joint cover assemblies.

B. Moisture Barrier: Provide manufacturer's continuous, standard, flexible vinyl moisture barrier under covers at locations indicated.

C. Fire-Rated Joint Covers: Provide expansion joint cover assemblies with manufacturer's continuous, standard, flexible fire barrier seals under covers at locations indicated to provide fire-resistive rating not less than the rating of adjacent construction.

D. Metal Floor-to-Floor Joint Cover Assemblies: Provide continuous extruded metal frames of profile indicated with seating surface and raised floor rim or exposed trim strip to accommodate flooring and concealed bolt and anchors embedded in concrete. Provide assemblies formed to receive cover plates of design indicated and to receive filler materials (if any) between raised rim of frame and edge of plate. Furnish depth and configuration to suit type of construction and to produce a continuous flush wearing surface with adjoining finish floor surface.

1. Partially Concealed Cover: Provide one frame on each side of joint, designed to accommodate manufacturer's floor cover plate and filler.
2. Exposed Cover: Provide one frame on each side of joint, designed to support floor plate and filler.
3. Flat Cover Plates: Provide cover plates of profile and wearing surface indicated. Extend flat plates to lap each side of joint.

    a. Filler Insert: Furnish abrasive-resistant flexible gasket filler between edge of cover plate and raised rim of frame to accommodate required movement.

4. Floor Cover Plate Wearing Surfaces: Provide cover plates with the following type of wearing surfaces.

    a. Plain.
    b. Recessed to receive full thickness of flooring material.

E. Floor-to-Wall Joints: Provide one frame on floor side of joint only. Provide wall side frame where required by manufacturer's design.

1. Angle Cover Plates: Attach angle cover plates for floor-to-wall joints to wall with countersunk, flat-head exposed fasteners secured to drilled-in-place anchor shields, unless otherwise indicated, at spacing recommended by joint cover manufacturer.

F. Wall-to-Wall Joint Assemblies: Provide interior wall expansion joint cover assemblies of same design and appearance as floor joint covers. Provide wallexp[ansion joint cover assemblies compatible with floor expansion joint cover assemblies design and appearance.

1. Fixed Metal Cover Plates: Provide a concealed, continuously anchored frame fastened to wall on both sides of joint. Extend cover to lap each side of joint and to permit free movement on each side. Attach cover to frame with cover in close contact with adjacent finish surfaces.
2. Flexible Filler: Secure the approved flexible filler between frames to compress and expand with movement.

G. Joint Cover Assemblies with Preformed Seals: Provide joint cover assemblies consisting of continuously anchored aluminum extrusions and continuous extruded preformed seals of profile indicated or required to suit types of installation conditions shown. Furnish extrusions designed to be embedded in or attached to concrete with lugs. Vulcanize or heat-weld splices (if any) to ensure hermetic joint condition.

1. Cover Plate: Include extruded aluminum cover plate fastened to one side of joint and extend plate to lap each side of joint to permit free movement with cover in close contact with adjacent contact surfaces.

H. Compression Seals: Preformed, elastomeric extrusions having internal baffle system in sizes and profiles shown or as recommended by the manufacturer. Provide lubricant and adhesive for installation recommended by the manufacturer.

I. Schedule of Expansion Joint Cover Assemblies: The following list is the basis of design. It is provided to establish criteria for style and quality of expansion joint cover assemblies to be provided. It is not meant to be proprietary (refer to Paragraph 2.1 above for a list of other acceptable manufacturers). The assemblies listed below are all manufactured by Construction Specialties, Inc. (The C/S Group).

1. Exterior wall-to-wall assemblies: #SF-200.
2. Interior flush floor-to-floor assemblies: #GFP-200.
3. Interior floor-to-wall assemblies: #PCW-2
4. Interior wall-to-wall assemblies for joints up to 2” wide: #SM-2N.
5. Interior wall-to-wall assemblies for joints wider than 2”: #LAS-400.

6. Interior corner wall-to-wall assemblies: #SMC-2N.
7. Interior wall-to-ceiling (acoustic tile ceilings): #HCW-200
8. Interior wall-to-ceiling (drywall ceilings): #FWSC-200
9. Interior ceiling-to-ceiling (drywall ceilings): #FWS-200
10. Interior opening head assemblies: Where the drawings show an opening in a wall that includes an expansion joint, use the same assembly at the head of the opening as detailed for the jambs of the opening unless specifically noted otherwise.

2.4 METAL FINISHES

A. General: Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations, except as otherwise indicated. Apply finishes to products in factory after fabrication. Protect finishes on exposed surfaces before shipment.

B. Aluminum Finishes: Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.

1. Class II, Clear-Anodized Finish: AA-M12C22A31 (Mechanical Finish: as fabricated, nonspecular; Chemical Finish: etched, medium matte; Anodic Coating: Class II Architectural, clear film thicker than 0.4 mil).

PART 3 - EXECUTION

3.1 PREPARATION

A. Manufacturer's Instructions: In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for phases of Work, including preparing substrate, applying materials, and protecting installed units.

B. Coordinate and furnish anchorages, setting drawings, templates, and instructions for installation of expansion joint cover assemblies to be embedded in or anchored to concrete or to have recesses formed into edges of concrete slab for later placement and grouting-in of frames.

C. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary to secure expansion joint cover assemblies to in-place construction, including threaded fasteners with drilled-in expansion shields for masonry and concrete where anchoring members are not embedded in concrete. Provide fasteners of metal, type, and size to suit type of construction indicated and provide for secure attachment of expansion joint cover assemblies.

3.2 INSTALLATION

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required to install expansion joint covers. Install joint cover assemblies in true alignment and proper

relationship to expansion joints and adjoining finished surfaces measured from established lines and levels. Allow adequate free movement for thermal expansion and contraction of metal to avoid buckling. Set floor covers at elevations to be flush with adjacent finished floor materials. Locate wall, ceiling and soffit covers in continuous contact with adjacent surfaces. Securely attach in place with required accessories. Locate anchors at interval recommended by manufacturer, but not less than 3 inches from each end and not more than 24 inches on center.

B. Continuity: Maintain continuity of expansion joint cover assemblies with a minimum number of end joints and align metal members mechanically using splice joints. Cut and fit ends to produce joints that will accommodate thermal expansion and contraction of metal to avoid buckling of frames. Adhere flexible filler materials (if any) to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.

C. Extruded Preformed Seals: Install seals complying with manufacturer's instructions and with minimum number of end joints. For straight sections provide preformed seals in continual lengths. Vulcanize or heat-weld field splice joints in preformed seal material to provide watertight joints using procedures recommended by manufacturer. Apply adhesive, epoxy, or lubricant-adhesive approved by manufacturer to both frame interfaces before installing preformed seal. Seal transitions according to manufacturer's instructions.

D. Fire Barriers: Install fire barriers, including transitions and end joints, according to manufacturer's instructions so that fire-rated construction is continuous.

3.3 CLEANING AND PROTECTION

A. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's instructions.

END OF SECTION 05810

SECTION 08361 - SECTIONAL OVERHEAD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes electrically operated aluminum sectional overhead doors.

B. Related Sections include the following:

1. Division 5 Section "Metal Fabrications" for miscellaneous steel supports.
2. Division 8 Section "Door Hardware" for lock cylinders and keying.
3. Division 16 Sections for electrical service and connections for powered operators and accessories.

1.3 DEFINITIONS

A. Operation Cycle: One cycle of a door is complete when it is moved from the closed position to the fully open position and returned to the closed position.

1.4 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide sectional overhead doors capable of withstanding the effects of gravity loads and the following loads and stresses without evidencing permanent deformation of door components:

1. Wind Loads: Determine loads based on the following minimum design wind pressures:

   a. Uniform pressure (velocity pressure) of 20 lbf/sq. ft., acting inward and outward.

2. Air Infiltration: Maximum rate not more than indicated when tested according to ASTM E 283.

   a. Maximum Rate: 0.08 cfm at 15 mph .

3. Impact Test for Flying Debris: Comply with ASTM E 1996, tested according to ASTM E 1886.

   a. Level of Protection: Enhanced Protection.

B. Operation-Cycle Requirements: Provide sectional overhead door components and operators capable of operating for not less than **10,000** cycles.
   1. Operation Cycle: One complete cycle begins wit door in closed position. Door is then moved to open position and back to closed position.

1.5 SUBMITTALS

A. Product Data: For each type and size of sectional overhead door and accessory. Include the following:

B. Shop Drawings: For special components and installations not dimensioned or detailed in manufacturer's product data.

C. Samples for Initial Selection: For exposed finishes.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for both installation and maintenance of units required for this Project.

B. Source Limitations: Obtain sectional overhead doors through one source from a single manufacturer.

   1. Obtain operators and controls from sectional overhead door manufacturer.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   1. Aluminum Doors with Insulated Aluminum Panels:
      a. Clopay Building Products Company; a Griffon Company.

      b. Amarr Garage Doors.
      c. Arm-R-Lite.
      d. Fimbel Door Corporation.
      e. General American Door Company.
      f. Haas Door; a Nofziger Company.
      g. Martin Door Manufacturing.
      h. Overhead Door Corp.
      i. Raynor.
      j. Wayne-Dalton Corp.

k. Windsor Door; a MAGNATRAX Corporation.

B. Basis-of-Design Product: Clopay Building Products Garage Doors; 902P or a comparable product from one of the following manufacturers:

1. Aluminum Doors with Glazed and Aluminum Panels:

a. Amarr Garage Doors.
b. Arm-R-Lite.
c. Fimbel Door Corporation.
d. Haas Door; a Nofziger Company.
e. Martin Door Manufacturing.
f. Overhead Door Corp.
g. Wayne-Dalton Corp.
h. Windsor Door; a MAGNATRAX Corporation.

2.2 ALUMINUM DOOR SECTIONS

A. Construct door sections with 6053-T5 anodized extruded-aluminum shapes, complying with ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated. Join stiles and rails by welding or with concealed aluminum or nonmagnetic stainless-steel through bolts, full height of door section. Form meeting rails to provide a weather-tight-seal joint. Provide reinforcement for hardware attachment.

B. Fabricate panels of aluminum sheet, complying with ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, not less than 0.040 inch thick, set in continuous vinyl channel retained with rigid, snap-in, extruded-vinyl moldings or with rubber or neoprene glazing gasket with aluminum stop.

C. Powder-Coat Finish: Manufacturer's standard powder-coat finish consisting of primer and topcoat according to coating manufacturer's written instructions for cleaning, pretreatment, application, thermosetting, and minimum dry film thickness.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

2.3 TRACKS, SUPPORTS, AND ACCESSORIES

A. Tracks: Manufacturer's standard, galvanized steel track system, sized for door size and weight, designed for lift type indicated and clearances shown, and complying with ASTM A 653/A 653M for minimum G60 zinc coating. Provide complete track assembly including brackets, bracing, and reinforcement for rigid support of ball-bearing roller guides for required door type and size. Slot vertical sections of track spaced at 2 inches apart for door-drop safety device. Slope tracks at proper angle from vertical or design to ensure tight closure at jambs when door unit is closed. Weld or bolt to track supports.

1. Provide tracks configured for the following lift types:
   a. High.

B. Track Reinforcement and Supports: Galvanized steel track reinforcement and support members, complying with ASTM A 36/A 36M and ASTM A 123/A 123M. Secure, reinforce, and support tracks as required for door size and weight to provide strength and rigidity without sag, sway, and vibration during opening and closing of doors.

1. Support and attach tracks to opening jambs with continuous angle welded to tracks and attached to wall. Support horizontal (ceiling) tracks with continuous angle welded to track and supported by laterally braced attachments to overhead structural members at curve and end of tracks.

   a. Repair galvanized coating on tracks according to ASTM A 780.

C. Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom and top of overhead door.

1. Provide motor-operated doors with combination bottom weatherseal and sensor edge.
2. Provide continuous flexible seals at door jambs for a weathertight installation.

2.4 HARDWARE

A. General: Provide heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.

B. Hinges: Heavy-duty galvanized steel hinges of not less than 0.070-inch- thick, uncoated steel at each end stile and at each intermediate stile, according to manufacturer's written recommendations for door size. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is not possible.

C. Rollers: Heavy-duty ten ball steel rollers to be full floating ball bearing in case hardened steel races and mounted to fit the taper of the track. Extend roller shaft through both hinges where double hinges are required. Provide 3-inch- diameter roller tires for 3-inch- wide track and 2-inch- diameter roller tires for 2-inch- wide track.

D. Push/Pull Handles: For push-up-operated or emergency-operated doors, provide galvanized steel lifting handles on each side of door.

E. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on single-jamb side, operable from inside only.

F. Fabricate locking device assembly with lock, spring-loaded dead bolt, operating handle, cam plate, and adjustable locking bar to engage through slots in tracks.

1. Locking Bars: Single-jamb side operable from inside only.
2. Lock cylinder is specified in Division 8 Section "Door Hardware."

G. Chain Lock Keeper: Suitable for padlock.

H. If door unit is power operated, provide safety interlock switch to disengage power supply when door is locked.

2.5 COUNTERBALANCE MECHANISM

A. Extension Spring: Counterbalance mechanism with aircraft-type steel cable over ball-bearing sheaves. Provide oil-tempered wired springs with internal safety rods. Combine operation with a spring bumper in each horizontal track to cushion door at end of opening operation.

B. Torsion Spring: Counterbalance mechanism consisting of adjustable-tension torsion springs fabricated from oil-tempered-steel wire complying with ASTM A 229/A 229M, Class II, mounted on a cross-header tube or steel shaft. Connect to door with galvanized aircraft-type lift cables with cable safety factor of at least 7 to 1. Provide springs calibrated for a minimum of 10,000 cycles.

C. Cable Drums: Die cast-aluminum cable drums grooved to receive cable. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of shaft. Provide one additional midpoint bracket for shafts up to 16 feet long and two additional brackets at one-third points to support shafts more than 16 feet long unless closer spacing is recommended by door manufacturer.

D. Cable Safety Device: Include a spring-loaded, steel or bronze cam mounted to bottom door roller assembly on each side and designed to automatically stop door if either cable breaks.

E. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level shaft and prevent sag.

F. Provide a spring bumper at each horizontal track to cushion door at end of opening operation.

2.6 ELECTRIC DOOR OPERATORS

A. General: Provide electric door operator assembly of size and capacity recommended and provided by door manufacturer for door and operation-cycle requirements specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, remote-control stations, control devices, integral gearing for locking door, and accessories required for proper operation.

B. Comply with NFPA 70.

C. Disconnect Device: Hand-operated disconnect device or mechanism for automatically engaging chain-and-sprocket operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Mount disconnect device and operator so they are accessible from floor level. Include

interlock device to automatically prevent motor from operating when emergency operator is engaged.

D. Design operator so motor may be removed without disturbing limit-switch adjustment and without affecting emergency auxiliary operator.

E. Provide control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6, with NFPA 70, Class 2 control circuit, maximum 24-V, ac or dc.

F. Door-Operator Type: Unit consisting of electric motor and the following:

1. Trolley or drawbar type, with V-belt primary drive, chain-and-sprocket secondary drive, and quick release for manual operation.

G. Electric Motors: High-starting torque, reversible, continuous-duty, Class A insulated, electric motors complying with NEMA MG 1, with overload protection, sized to start, accelerate, and operate door in either direction from any position, at not less than 2/3 fps and not more than 1 fps, without exceeding nameplate ratings or service factor.
1. Coordinate wiring requirements and electrical characteristics of motors with building electrical system.

H. Remote-Control Station: Momentary-contact, three-button control station with push-button controls labeled "Open," "Close," and "Stop."

I. Obstruction Detection Device: Provide each motorized door with indicated external automatic safety sensor capable of protecting full width of door opening. Activation of sensor immediately stops and reverses downward door travel.

J. Limit Switches: Adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install door, track, and operating equipment complete with necessary hardware, jamb and head molding strips, anchors, inserts, hangers, and equipment supports according to Shop Drawings, manufacturer's written instructions, and as specified.

B. Fasten vertical track assembly to framing, spaced not less than 24 inches apart. Hang horizontal track from structural overhead framing with angle or channel hangers fastened to framing by welding or bolting or both. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.

3.2 STARTUP SERVICES

A. Engage a factory-authorized service representative to perform startup services.

1. Complete installation and startup checks according to manufacturer's written instructions.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.3 ADJUSTING

A. Lubricate bearings and sliding parts; adjust doors to operate easily, free from warp, twist, or distortion and with weather-tight fit around entire perimeter.

B. Adjust belt-driven motors as follows:

1. Use adjustable motor-mounting bases for belt-driven motors.
2. Align pulleys and install belts.
3. Tension belt according to manufacturer's written instructions.

C. Touch-up Painting: Immediately after welding galvanized track to track supports, clean field welds and abraded galvanized surfaces and repair galvanizing to comply with ASTM A 780.

END OF SECTION 08361

SECTION 12345 - CASEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, Division 0 - Bidding and Contract Requirements and Division 1 General Requirements apply to this Section.

1.2 SCOPE OF WORK

A. Provide all plastic laminate casework and related accessory items as specified herein. Refer to contract documents for specific details and requirements. Casework includes all storage components, accessory items, closure, fillers, and framing necessary for a complete installation, as identified by manufacturers product/model number, or reference thereto.
B. All casework shall be Flush Inset door/drawer design, as further described herein.
C. Specialty product systems as indicated by product designation within contract documents shall include, but not limited to: Steel framed island assemblies, steel framed technology clusters, adjustable and relocatable casework and computer modules.
D. General Conditions: The General Conditions, Supplementary General Conditions, Special Conditions, and General Requirements apply to all work in this Division.
E. Provide coordination with Mechanical and Electrical contractors for their respective installation of mechanical and electrical fixtures.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. General millwork and custom cabinetry unless specified herein or so noted on plans as included within this section.

B. Rubber, vinyl or other finished toe base.

C. Blocking with walls.

D. Sinks, faucets, fittings, traps, stops, tail pieces, vacuum breakers, and other fixtures, electrical and mechanical runs and connections.

E. Fixture installation/services connections: Setting and installation of equipment and fixtures, and related utility connections, are provided under the other sections of the Project Specification governing the utility.

1.4 SUBMITTALS

A. Submit in accordance with General, Supplementary, and Special Conditions.

B. Submit shop drawings for approval in the form of one reproducible sepia and one

print. Show materials, dimensions, cabinet-cut details, and sink locations.

C. Samples of colors shall be submitted upon award of contract for selection and coordination with other suppliers. Architect to have color choice from full range of laminates from laminate manufacturer. Architect may request and retain samples and catalog cuts as required for accessory and special items.

1.5 QUALIFICATIONS

A. LSI Corporation used to establish a standard of quality subject to compliance with requirements, of the Instructions to Bidders. Products that may be incorporated in the work include:

1. LSI Corporation of America, Inc.
2. Case System
3. Mastercraft
4. Stevens
5. Wood Metal Industries

B. Casework must conform to design, quality of materials, design intent, workmanship and exact performance function of casework components and details specified and implied by manufacturer's reference, and as shown on plans regardless of that manufacturer's "product standards"

C. Manufacturers shall submit evidence of at least 5 years experience and installations for similar type of project.

D. Manufacturers shall submit certified product test data in accordance with ANSI A161.1-1980, NEMA LD3-1991, and general static load testing performed and certified by an independent testing agency, covering the following areas of product performance, with these minimum results.

1.	Base cabinet construction/racking test:	800 lbs.
2.	Cabinet front joint loading test:	425 lbs.
3.	Wall cabinet static load test:	2,200 lbs.
4.	Drawer front joint loading test:	600 lbs.
5.	Drawer construction/static load test:	635 lbs.
6.	Cabinet adjustable shelf support device/static load test:	300 lbs.
7.	Particleboard screw holding power:	350 lbs.

E. The following performance details are project requirements and must be met by all Bidders whether named herein, or approved by Addendum. Deviations will not be allowed.

1. Design

a. All other Casework: LSI Corporation Style L-44, used to establish a standard of quality. Overlay door design with door/drawer front edge having 3mm PVC and cabinet body edge having FlatEdge PVC.

2. ADA-Americans with Disabilities Act Requirements: The special requirements specified herein shall be met, where specifically indicated on architectural plans as "ADA", or by General Note. To be in compliance with Federal Register Volume 56, No. 144, Rules and Regulations.
3. Lamination System: Doors, finished end panels, and other decorative exterior laminate surfaces shall be composed of minimum 3/4 inch core, laminated exterior with .030 inch high pressure plastic laminate, and interior with .020 inch high pressure cabinet liner. Lamination with hybrid P.V.A. Type III water resistant adhesives. Total thickness 13/16 inch. No exceptions.
4. Structural Cabinet Body: Cabinet backs shall be minimum 3/8 inch thick, inset from rear of body, fully housed four sides, and back-shimmed. Provide 3/4 inch thick stiffeners glued and fastened to back/body as specified herein. Back perimeter and stiffeners to be fully sealed with hot melt adhesive.
5. Interior Space: All cabinets shall have clear span interiors. No vertical dividers allowed unless by specified architectural design.
6. Heavy Components: Wall cabinet tops and bottoms, and all bookstack shelves shall be minimum 1 inch thick, for additional load support. Shelves in door cabinets 30 inches wide and over shall be 1 inch thick. Shelves in open cabinets, regardless of width, shall be 1 inch thick.
7. Structural Drawer Body: Drawer body material shall be multi-directional fiberboard with bottom recessed, captured all four sides and sealed with hot melt adhesive. Provide under body stiffener as specified herein. Particleboard bodies and/or surface-applied bottoms are not acceptable.
8. Drawer Suspension: Drawer slides shall be self-closing design, epoxy power-coated, with positive instop, outstop, and out-keeper. Kynamic (operational) load rating to be minimum 100 lbs. Minimum 150 lb. static load rating.
9. Structural Cabinet Support: Cabinet sub base shall be of a separate and continuous ladder-type platform design leveled and floor mounted prior to cabinet body replacement. Material to be exterior grade plywood. No cabinet sides-to-floor will be allowed.

F. Architect/Owner's opinion and decision shall be final in the evaluation of manufacturer's products for approval to bid or award of contract.

G. Guarantee: All materials produced by the Casework Manufacturer shall be guaranteed for a period of five years from manufacturer’s defects and workmanship. Other materials and equipment shall carry the Guarantee of the product manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS - BASE BID

A. Laminated Plastics/Finishes

1. High pressure plastic laminate, .030 inch thickness, for exterior cabinet surfaces shall meet NEMA LD3-1991 GP28 standards including thickness.
2. Exterior Color Selection Available:

    a. Standard finish vertical surface laminate from full range of 125 laminate manufacturer's colors consisting of wood grain patterns and solid colors.

b. Total of different colors available per project.
c. Manufacturers:Laminates to be selected from a combination of the follow-Ing laminate manufactures.

1. Wilsonart.
2. Nevamar
3. Pionite
4. Formica

3. Plastic Laminate Balancing Sheet: White high pressure cabinet liner, .020 inch thickness shall meet NEMA LD3-1991 CL 20 standards. Use for balancing exterior surface laminates.
4. Countertop High Pressure Plastic Laminate:

a. High pressure plastic laminate, textured finish .050 inch thickness or .042 inch postforming grade as detailed. Color as selected from manufacturer's full range of laminate patterns and colors.
b. Heavy gauge neutral colored backing sheet for balanced construction.

5. Pressure Fused Laminate/Interior Surfacing:

a. Melamine resin impregnated, 100 gram PSM minimum, surface laminated to core under pressure.
b. Shall meet NEMA LD3.1-1991 GP28 standards and NEMA LD3-1991 CL20 standards.
c. White pressure fused laminate for cabinet interiors behind door and drawers, interiors of all open cabinets unless otherwise specified, and underside of wall cabinet unless otherwise specified.
d. Shall be balanced at all concealed surfaces with phenolic backer. Unsurfaced coreboard not allowed.

B. High Performance Particle Board Core:

1. Particleboard to be 47 lb. density, of balanced 3-ply construction with moisture content not to exceed 8%. Particleboard shall conform to ANSI A208-1-1993, Type M-3.
2. Particleboard cabinet components to be of the following minimum core thickness prior to lamination:

a. 3/8" cabinet backs
b. 1/2": dividers, as detailed
c. 3/4": base and tall cabinet tops and bottoms, cabinet sides, drawer spreaders, door, drawer head, cabinet back rear hangstrips, dividers as detailed, exposed cabinet backs.
d. 1": wall cabinet tops and bottoms, door-cabinet shelving 30 inch width and over, exposed cabinet shelving and off-wall shelving of all widths.

C. Edging types: Provide one or more of the following in accordance with Paragraph 2.1.D, "Edging Locations":

1. 3mm thick PVC. Solid, high impact, purified, color-thru, acid resistant, pre-lamination primed edging, machine-applied with hot melt adhesives, automatically trimmed, inside/outside length-radiused for uniform appearance, buffed and corner-radiused for consistent design.

2. Flat Edge PVC, .020 inch. Solid, high impact, purified, color-thru, acid resistant PVC edging machine-applied with hot melt adhesives, automatically trimmed face, back, and corners for uniform appearance. Manufacturer option of .030 inches high-pressure plastic laminate if PVC is unavailable.

D. Edging Locations

1. Edging Locations on science lab casework: Provide edging types at the following locations:

   a. Door/Drawer-Front edging shall be 3 mm PVC selected from standard LSI colors.
   b. Cabinet end panel, top, bottom, door/drawer front spacer rail, divider(s), and shelf, shall be 3mm PVC at leading edge, selected from standard LSI colors.
   c. Top of drawer body to be FlatEdge PVC, white.

2. Edging locations on all other Casework: provide edging types at the following locations:

   a. Door/Drawer-Front edging shall be 3 mm PVC selected from 12 standard LSI colors.
   b. Cabinet Body edge, including door/drawer front spacer rail shall be flat edge PVC, color matched to door/drawer face.
   c. Interior body component edging, interior dividers, drawer body, shelf shall be FlatEdge PVC to match cabinet interior surface color, white.

E. Hardware:

1. Hinges

   a. Heavy duty, five knuckle 2 3/4 inch institutional type hinge shall meet ANSI/BHMA A156.9 Grade 1 requirements. Mill ground, hospital tip, tight pin feature with all edges eased. Hinge to be full wrap around type of tempered steel .095 inch thick. Each hinge to have minimum 9 screws, #7, 5/8 inch FHMS to assure positive door attachment.
   b. One pair per door to 48 inch height. One and one-half pair over 48 inch in height. Hinge to accommodate 13/16 inch thick laminated door and allow 270 degree swing.
   c. Finish to be LH-301 ChromeCoat Powder Finish or painted finish.

2. Pulls

   a. Wire design, Brushed Chrome. ADA compliant.

3. Drawer Slides

a. Standard Drawers: LSI Lab Series Slide, LH-376, self-closing design. White epoxy powder coated with positive in-stop, out-stop, and out-keeper to maintain drawer in 80% open position. Captive nylon rollers, front and rear. Minimum 100 lb. dynamic load rating at 50,000 cycles. Minimum 150 lb. static load rating.
b. Paper Storage Drawers: Full extension, 3-part progressive opening slide, minimum 100 lb., zinc plated or epoxy coated at manufacturer's option
c. Student Island Assembly Drawers, Full extension, 3-part progressive opening slide, minimum 100 lb. Zinc plated or epoxy coated at manufacturer's option
d. File Drawers: Full extension, 3-part progressive opening slide, minimum 100 lb. zinc plated or epoxy coated at manufacturer's option.
e. Provide body mounted molded rails for hanging file system for legal or letter size as indicated by manufacturer's model number

4. Catches: Catch to provide opening resistance in compliance with the Americans with Disabilities Act.

a. Provide one top-mounted magnetic catch for base, wall and tall cabinet door. Catch housing to be molded in White. LH-340ADA.
b. LH-345 Roller catch for mobile cabinets.

5. Adjustable Shelf Supports: To be LH-354 twin pin design with anti tip-up shelf restraints for both 3/4 inch and 1 inch shelves. Design to include keel to retard shelf slide-off, and slot for ability to mechanically attach shelf to clip. Load rating to be minimum 300 lbs. each support without failure, reference 1.4.D. Cabinet interior sides shall be flush, without shelf system permanent projection.

6. Wardrobe Rod: To be 1 1/16 inch rod, LH-362, supported by LH-363 flanges.

7. Locks: To be disc tumbler lock keyed alike per room and master keyed. Dull chrome finish.

a. Hinged doors and drawers National Lock No. M4-7054.

8. Coat Hooks:

a. Double Coat Hooks, ceiling mount - Satin Aluminum
b. Single Coat Hooks, ceiling mount - Satin Aluminum
c. Double Coat hooks, wall mount - Satin Aluminum
d. Single Coat Hooks, wall mount - Satin Aluminum

2.2 CONSTRUCTION

A. Detailed Requirements for Cabinet Construction

1. Sub-Base:

a. Cabinet Sub-Base: To be separated and continuous (no cabinet body sides-to-floor), water resistant exterior grade plywood with concealed fastening to cabinet bottom. Ladder-type construction of front, back and intermediates to form a secure and level platform to which cabinets attached.
b. Tubular steel 1 1/4" square base in brushed chrome, or black, furnished where specified.

2. Cabinet Top and Bottom:

a. Solid sub-top to be furnished for all base and tall cabinets.
b. Wall cabinet and library stack bottoms and tops to be 1 inch thick.
c. Exterior exposed wall cabinet bottoms to be Pressure Fused White laminate both sides. Assembly devices to be concealed on bottom side of wall cabinets.

3. Cabinet Ends

a. Holes drilled for adjustable shelves 1 1/4 inch on center.
b. Exposed exterior cabinet ends to be laminated with high pressure plastic laminate, balanced with high pressure cabinet liner interior surface.
c. Front edges shall be flush with door/drawer face.

4. Fixed and Adjustable Shelves

a. Thickness: Behind doors, to be 3/4 inch to 27 inches wide. One inch shelving at 30 inch wide cabinet and over.
b. Thickness at all widths of open cabinets to be 1 inch.

5. Cabinet Backs:

a. Cabinet back to be fully housed into sides, top, and bottom, recessed 7/8 inch from cabinet rear. Rear, unexposed, side of back to receive continuous bead of hot melt adhesive at joint between back and sides/top/bottom.
b. Hang rails shall be glued to rear of cabinet back and mechanically fastened to cabinet sides. Provide minimum of 2 at base, 2 at wall, and 3 at tall cabinets.
c. Exposed exterior backs to be high pressure plastic laminate balanced with high pressure cabinet liner.

6. Door and Drawer Fronts

a. Laminated door and drawer fronts to be 13/16 inch thick for all hinged and sliding doors. Drawer fronts and hinged doors are to overlay the cabinet body. Maintain a maximum 1/8 inch reveal between pairs of doors, between door and drawer front, or between multiple drawer fronts within the cabinet.
b. Stile and Rail doors shall be 13/16 inch thick glazed with full ¼ inch glass. Available hinged or sliding. All exposed lite-opening edges shall be trimmed and glazed with extruded vinyl glazing bead.

7. Drawers

    a. Drawer fronts shall be applied to separate drawer body component sub-front.
    b. Drawer sides shall be dadoed and glued to receive front and back, machine squared and held under pressure while hot melt glued and pinned together.
    c. Drawer bottom to be housed into front, sides and back. Underside of drawer to receive continuous bead of hot melt adhesive at joint between bottom and back/sides/front for sealing and rigidity. Reinforce drawer bottoms with 1/2 inch by 4 inch front-to-back intermediate underbelly stiffeners, hot melt glued and fastened. One at 24 inch, two at 36 inch, four at 48 inch.
    d. Paper storage drawers fitted with full width hood at back.
    e. All drawers shall have roller guides as specified under Paragraph 2.1.E.3.

8. Vertical and Horizontal Dividers: One of the following as indicated by cabinet number:

    a. Natural hardboard 1/4 inch thick, smooth both faces. Secured in cabinet with molded plastic clips.
    b. Pressure Fused laminate 3/4 inch thickness. Secured in cabinet with molded plastic clips or dowels.

9. Door/Drawer Front Rail: Provide minimum 3/4 inch x 6 inch x full width cabinet body rails immediately behind all door/drawer and multiple drawer horizontal joints to maintain exact body dimensions, close off reveal, and be locator for lock strikes.

10. ADA-Americans with Disabilities Act Requirements: The following special requirements shall be met, where specifically indicated on architectural plans as "ADA", or by General Note. To be in compliance with Federal Register Volume 56, No. 144, Rules and Regulations:

    a. Countertop height: with or without cabinet below, not to exceed a height of 34 inches A.F.F., (Above Finished Floor), at a surface depth of 24 inches.
    b. Kneecap clearance: to be minimum 27 inches A.F.F., and 30 inches clear span width.
    c. 12 inch deep shelving, adjustable or fixed: not to exceed a range from 9 inches A.F.F. to 54 inches A.F.F.
    d. Wardrobe cabinets: to be furnished with rod/shelf adjustable to 48 inches A.F.F. at a maximum 21 inch shelf depth.
    e. Sink cabinet clearances: in addition to 10.a,b. above, upper kneecap frontal depth to be no less than 8 inches, and lower toe frontal depth to be no less than 11 inches, at a point 9 inches A.F.F., and as further described in Volume 56, Section 4.1.9.

B. Countertops

1. General: High pressure plastic laminate bonded to particleboard core. Thickness as shown on plans. Underside to be properly balanced with heavy gauge backing sheet. Provide tops in as long as practical continuous lengths. Provide field glued spleens at joints. No joints closer than 24 inches either side of sink cutout.

C. Workmanship

1. All exposed exterior cabinet surfaces to be .030 inch high pressure laminate, color as selected from casework manufacturer's standards, minimum 53 colors/wood grains available. Laminate surface/balancing liner to core under controlled conditions, by approved and regulated laminating methods to assure a premium lamination. Natural-setting hybrid P.V.A. Type III water resistant adhesives that cure through chemical reaction, containing no health or environmentally hazardous ingredients, are required. Methods requiring heat are not allowed; "contract" methods of laminating are not allowed.
2. Cabinet parts shall be accurately machined and bored for premium grade quality joinery construction utilizing automatic machinery to insure consistent sizing of modular components. End panels shall be doweled to receive bottom and top.
3. Back panel shall be fully housed into, and recessed 7/8 inch from the back of cabinet sides, top, and bottom to insure rigidity and fully closed cabinet. Cabinet back shall be shimmed from rear of body for tight interior fit.
4. Drawer bottom shall be fully housed into and recessed 1/2 inch up from the bottom of sides, back and subfront. Sides of drawer shall be fully dadoed to receive drawer back, locked in fully to subfront, fastened with glue and mechanical fasteners.
5. 3/4 inch thick hang rails shall be glued to backside and mechanically fastened to end panels of all wall, base, and tall cabinets for extra rigidity and to facilitate installation.
6. Rear of cabinet back and underside of drawer bottom joints to receive a continuous bead of hot melt adhesive to add to unit body strength and develop moisture and vermin seal.
7. All cases shall be square, plumb, and true.
8. Case body and drawer workmanship and quality of construction shall be further evidenced by Independent Testing Laboratory results as described in 1.4.D.
9. Provide removable back panels and closure panels for plumbing access where shown on drawings.

PART 3 - EXECUTION

3.1 COORDINATION

A. Coordinate work of this Section with related work of other Sections as necessary to obtain proper installation of all items.

B. Verify site dimensions of cabinet locations in building prior to fabrication.

3.2 INSTALLATION

A. Storage and Protection: Casework shall be protected in transit. Store under cover in a ventilated building not exposed to extreme temperature and humidity changes. Do not store or install casework in building until concrete, masonry, and drywall/plaster work is dry.

B. Workmen: Install casework under the supervision of the manufacturer's representative with factory-trained mechanics certified by manufacturer.

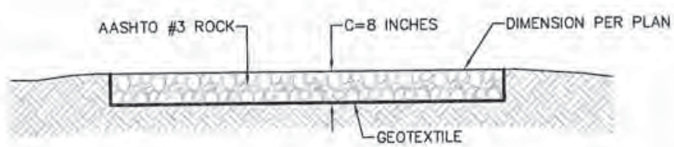
C. Workmanship

1. Erect casework straight, level and plumb and securely anchor in place. Scribe and closely fit to adjacent work. Cut and fit work around pipes, ducts, etc.
2. Install all items complete and adjust all moving parts to operate properly.
3. Leave surface clean and free from defects at time of final acceptance.

D. Guarantee: All materials shall be guaranteed for a period of 5 years from manufacturer's defects and workmanship.

E. Clean Up: Remove all cartons, debris, sawdust, scraps, etc., and leave spaces clean and all casework ready for Owner's use.

END OF SECTION 12345



MAINTENANCE: ROCK THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE.

CONSTRUCTION PARKING / LAYDOWN AREA

NOT TO SCALE

ADDENDUM NOTES:
1. ADDED DETAIL

ADDENDUM NO.: 4

REFER TO PLAN SHEET NO.: 32

PUBLIC SAFETY CENTER - SITE IMPROVEMENTS

SENATOR JOHN J. SHUMAKER PUBLIC SAFETY CENTER
OPTION 1B - PHASE 1 & 2 IMPROVEMENTS
FOR
HACC - CENTRAL PENNSYLVANIA'S COMMUNITY COLLEGE

CITY OF HARRISBURG — DAUPHIN COUNTY, PA

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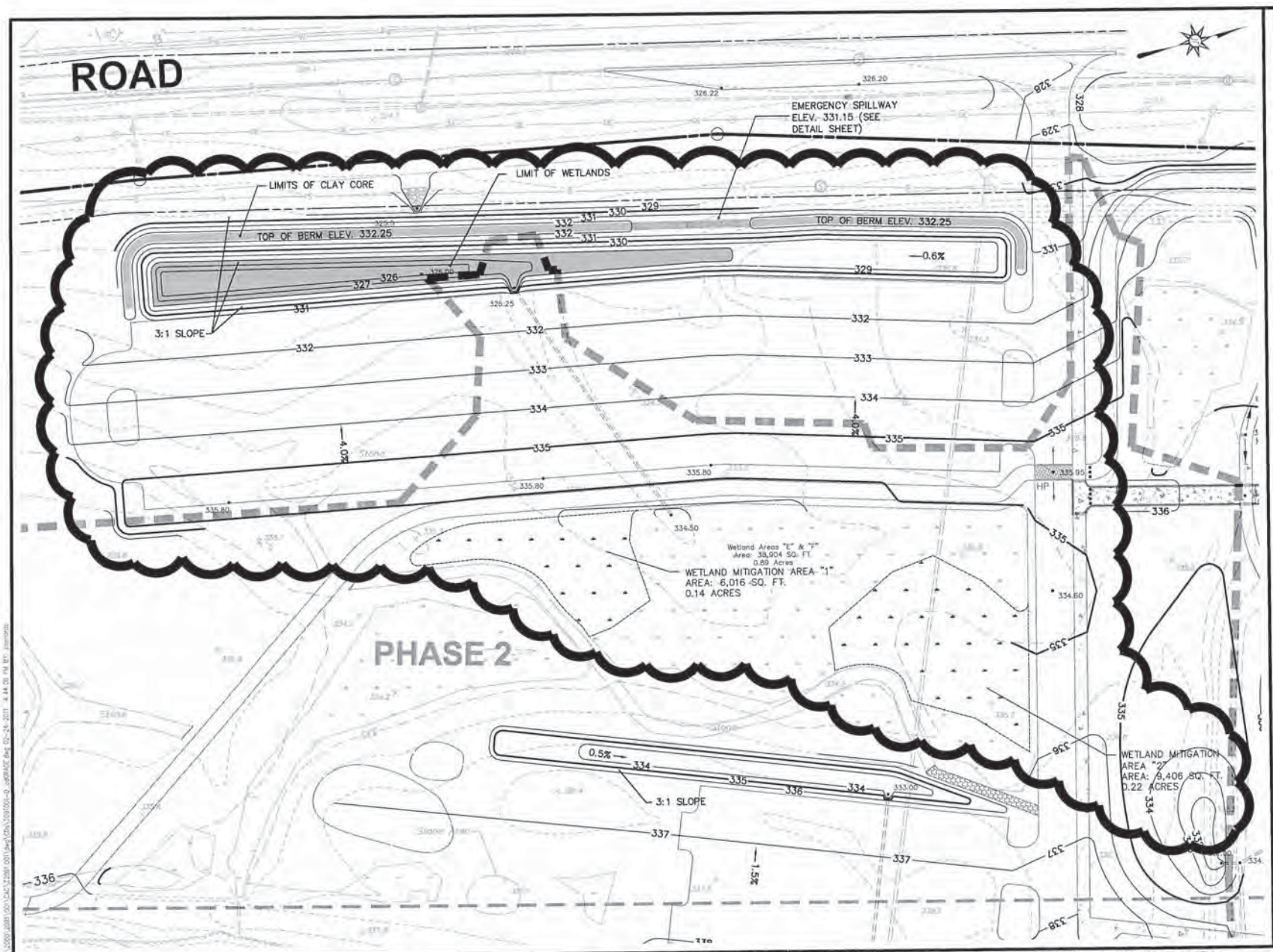
ENGINEERS • CONSULTANTS
470 Friendship Road, Suite 100
Harrisburg, PA 17111
phone // 717.635.2835
fax // 717.635.2836

SCALE:	AS SHOWN
DATE:	FEB. 24, 2011
K&W PROJECT:	2091.001
DRAWN BY:	ROE
CAD DRAWING:	2091001-I_cdDLTS.dwg
SHEET:	SC-9



GRAPHIC SCALE
0 .5 1
1" = 1 FEET

REFER TO PLAN SHEET NO.: 13

ADDENDUM NO.: 4

ADDENDUM NOTES:
1. MODIFIED BASIN 3 DIMENSIONS
2. ADDED WETLAND
3. ADDED WETLAND MITIGATION AREAS.

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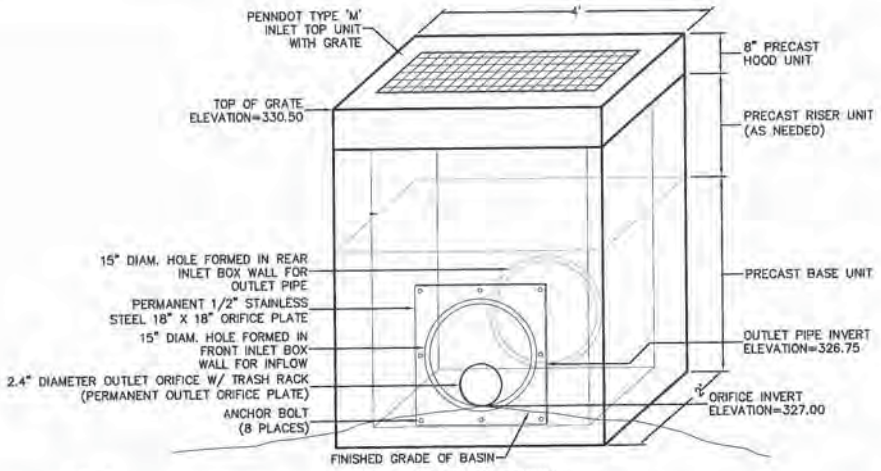
CITY OF HARRISBURG — DAUPHIN COUNTY, PA

SCALE:	1"=60 FEET
DATE:	FEB. 24, 2011
K&W PROJECT:	2091.001
DRAWN BY:	ROE
CAD DRAWING:	2091001-D_cdGRADE.dwg
SHEET:	SC-10



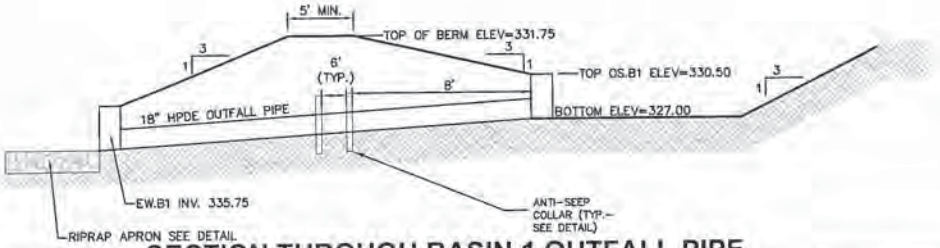
ISOMETRIC VIEW

NOTES:

1. THE PROPOSED OUTLET STRUCTURE SHALL BE A STANDARD TYPE "M" INLET IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTION 605 AND STANDARDS FOR ROADWAY CONSTRUCTION, RC-34.
2. SECURE THE ORIFICE PLATE TO THE SIDE OF THE INLET BOX USING (8) 5/16"ø x2" STAINLESS STEEL BOLTS AND APPROPRIATE ANCHORS.
3. DURING INSTALLATION OF THE ORIFICE PLATE, PLACE THIN LAYER OF BLACK MASTIC MATERIAL BETWEEN THE ORIFICE PLATE AND THE INLET BOX WALL AS A GASKET TO CREATE A WATERTIGHT SEAM.
4. IF RISER SECTIONS ARE REQUIRED TO PRODUCE AN INLET BOX OF SUFFICIENT HEIGHT TO MEET THE DIMENSIONS REQUIRED BY THE PROJECT, THE JOINT BETWEEN EACH INLET BOX RISER SECTION SHALL BE SEALED WITH BLACK MASTIC SEALING COMPOUND.

STORMWATER MANAGEMENT BASIN PERMANENT OUTLET STRUCTURE - OSB1

NOT TO SCALE



SECTION THROUGH BASIN 1 OUTFALL PIPE

NOT TO SCALE

ADDENDUM NOTES:
1. MODIFIED BASIN OUTLET DIMENSIONS

ADDENDUM NO.: 4

REFER TO PLAN SHEET NO.: 32

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CITY OF HARRISBURG DAUPHIN COUNTY, PA

SCALE:	AS SHOWN
DATE:	FEB. 24, 2011
K&W PROJECT:	2091.001
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CAD DRAWING:	2091001-I_cdDLTS.dwg
SHEET:	SC-11

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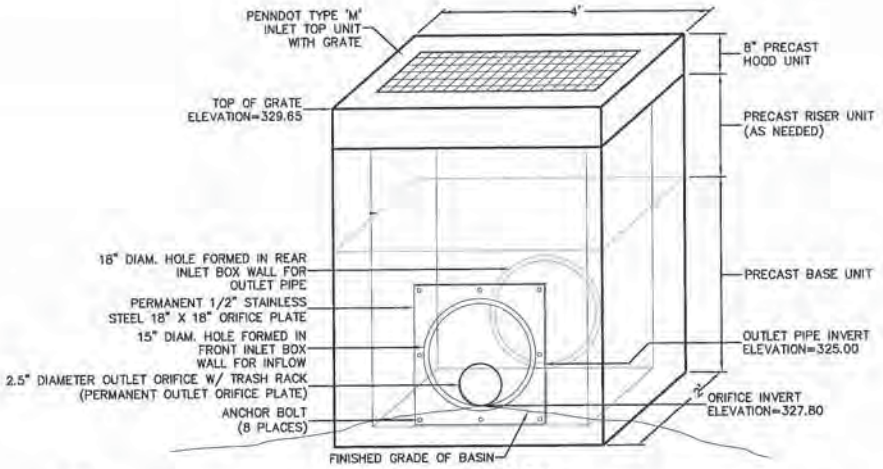
CITY OF HARRISBURG
PUBLIC SAFETY CENTER - SITE IMPROVEMENTS
SENATOR JOHN J. SHUMAKER PUBLIC SAFETY CENTER
FOR
OPTION 1B - PHASE 1 & 2 IMPROVEMENTS
HACC - CENTRAL PENNSYLVANIA'S COMMUNITY COLLEGE
SCALE: 1"=60 FEET
DATE: FEB. 24, 2011
K&W PROJECT: 2091.001
DRAWN BY: ROE
CAD DRAWING: 2091001-D_cdGRADE.dwg
SHEET: SC-12
ADDENDUM NO.: 4
REFER TO PLAN SHEET NO.: 14
ADDENDUM NOTES:
1. MODIFIED BASIN 1 DIMENSIONS
2. ADDED WETLANDS
3. LINE BOTTOM OF SWALE 1 TO CLAY TO LIMITS SHOWN.
GRAPHIC SCALE
1" = 1 FEET
LIMIT OF WETLANDS
EMERGENCY SPILLWAY ELEV. 330.55 (SEE DETAIL)
TOP OF BERM ELEV. 331.75
LIMIT OF WETLANDS
LIMITS OF CLAY CORE
3:1 SLOPE
SWALE 1
1.0%
HP 332.92
PHASE 1
326
327
330
331
332
333
334
325.75
332.55



ISOMETRIC VIEW

NOTES:

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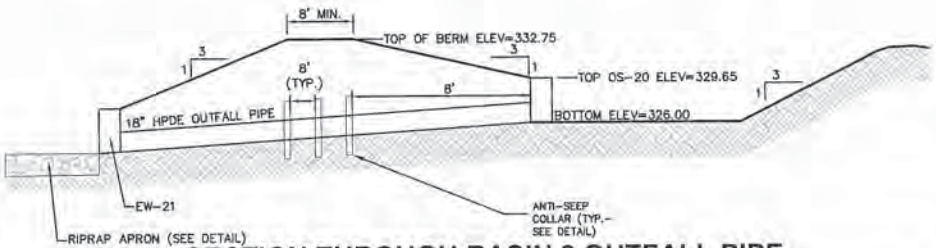
STORMWATER MANAGEMENT BASIN
PERMANENT OUTLET STRUCTURE - OS-20 - BASIN 3

NOT TO SCALE



SECTION THROUGH BASIN 3 OUTFALL PIPE

NOT TO SCALE

ADDENDUM NOTES:
1. MODIFIED BASIN OUTLET STRUCTURE.

ADDENDUM NO.: 4

REFER TO PLAN SHEET NO.: 32

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FOR
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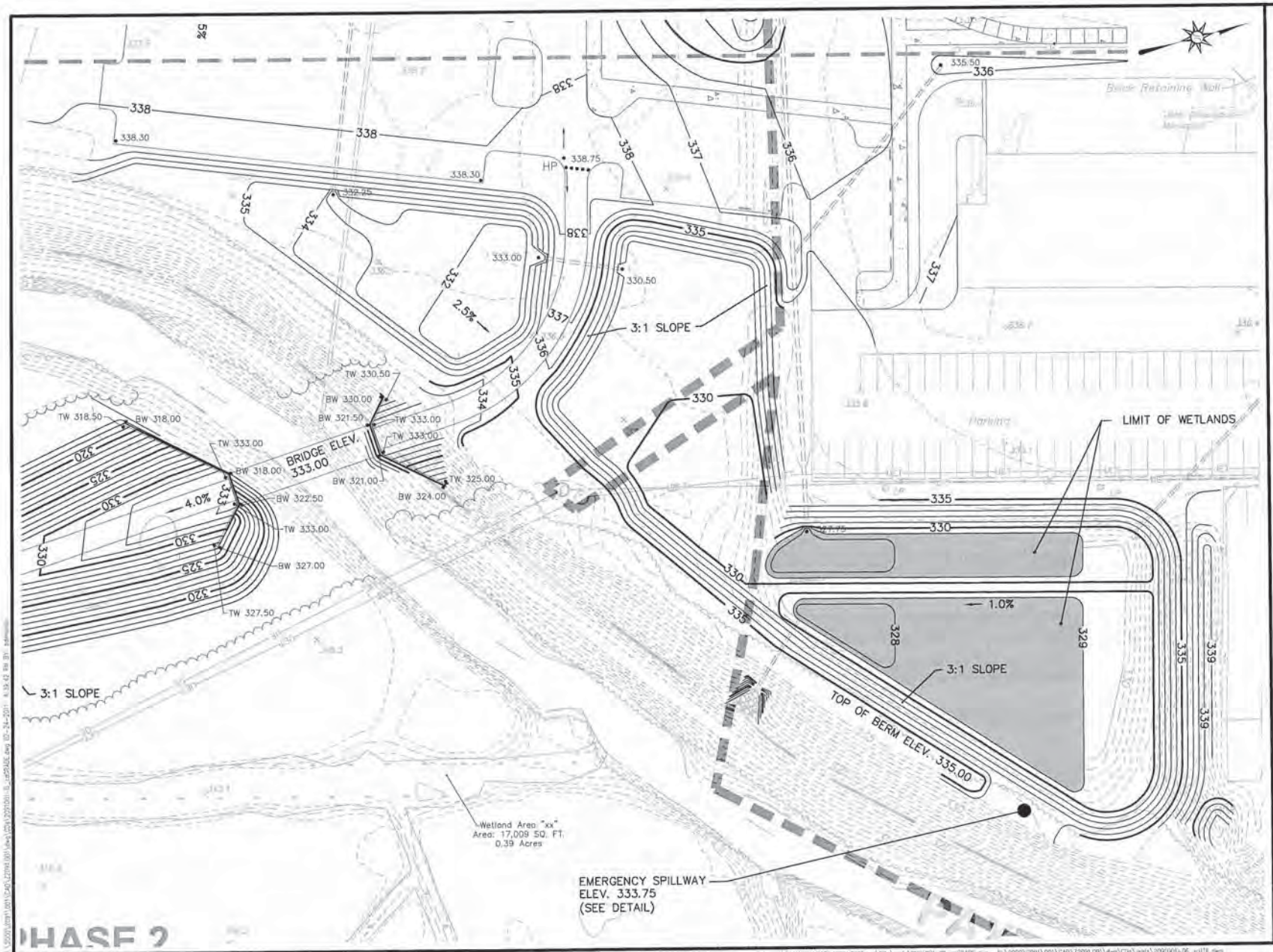
DAUPHIN COUNTY, PA
CITY OF HARRISBURG

SCALE:	AS SHOWN
DATE:	FEB. 24, 2011
K&W PROJECT:	2091.001
DRAWN BY:	ROE
CAD DRAWING:	2091001-I_cdDLTS.dwg
SHEET:	SC-13



GRAPHIC SCALE
1" = 1 FEET

REFER TO PLAN SHEET NO.: 15

ADDENDUM NO.: 4

ADDENDUM NOTES:
1. MODIFIED DETENTION BASIN DIMENSIONS
2. ADDED WETLAND
3. SHORTEN RIPRAP LENGTH WITHIN BASIN

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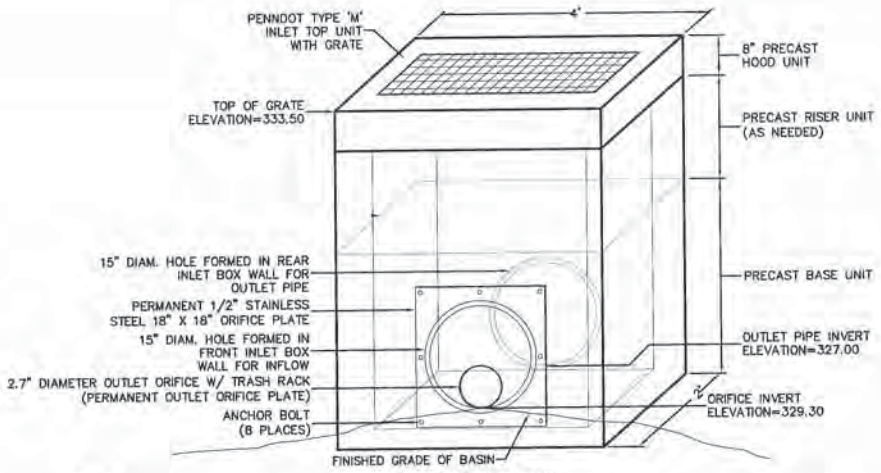
CITY OF HARRISBURG — DAUPHIN COUNTY, PA

SCALE:	1"=50 FEET
DATE:	FEB. 24, 2011
K&W PROJECT:	2091.001
DRAWN BY:	ROE
CAD DRAWING:	2091001-D_cdGRADE.dwg
SHEET:	SC-14



ISOMETRIC VIEW

NOTES:

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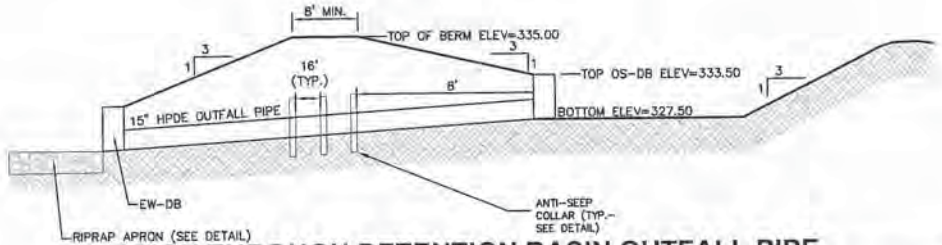
STORMWATER MANAGEMENT BASIN PERMANENT OUTLET STRUCTURE - OSDB

NOT TO SCALE



SECTION THROUGH DETENTION BASIN OUTFALL PIPE

NOT TO SCALE

ADDENDUM NOTES:
1. MODIFIED BASIN OUTLET STRUCTURE.

REFER TO PLAN SHEET NO.: 32

ADDENDUM NO.: 4

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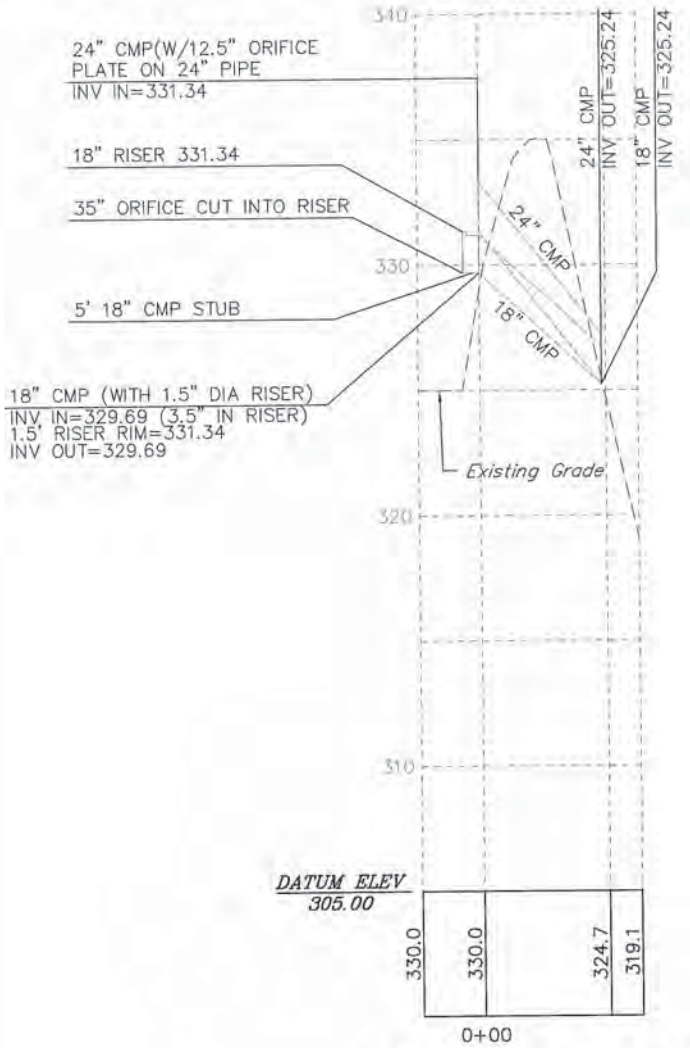
CAD DRAWING:	2091001-I_cdDLTS.dwg
SHEET:	SC-15



Existing Fire Pond
BASIN PROFILE

SCALE: 1"=50 FEET HORIZONTAL
1"=5 FEET VERTICAL

ADDENDUM NOTES:
1. MODIFIED BASIN OUTLET DIMENSIONS
2.

ADDENDUM NO.: 4

REFER TO PLAN SHEET NO.: 28

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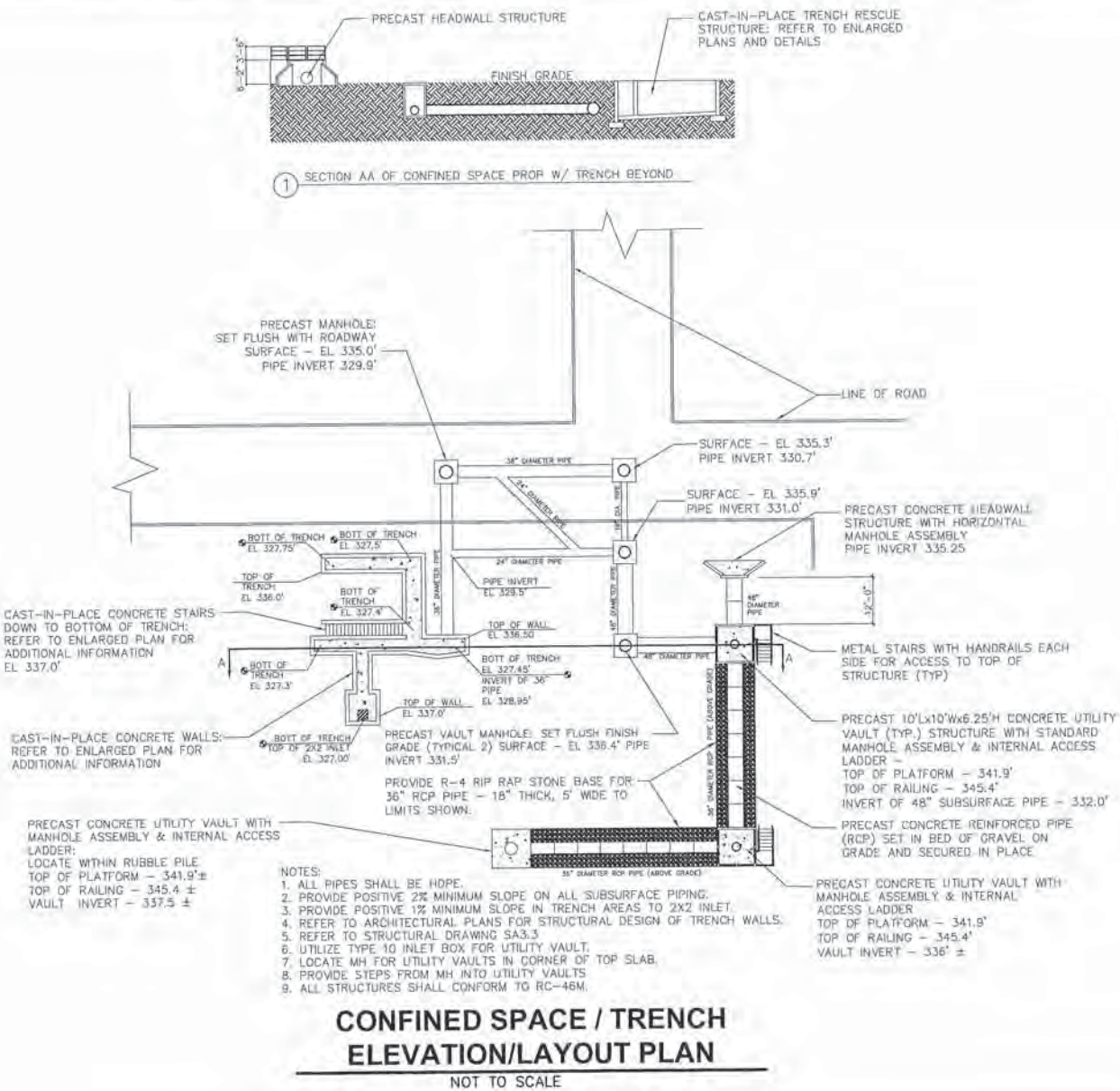
CITY OF HARRISBURG — DAUPHIN COUNTY, PA

SCALE:	1"=50 FEET
DATE:	FEB. 24, 2011
K&W PROJECT:	2091.001
DRAWN BY:	ROE
CAD DRAWING:	2091001-H_cdPROF.dwg
SHEET:	SC-16



NOTES:
1. ALL PIPES SHALL BE HDPE.
2. PROVIDE POSITIVE 2% MINIMUM SLOPE ON ALL SUBSURFACE PIPING.
3. PROVIDE POSITIVE 1% MINIMUM SLOPE IN TRENCH AREAS TO 2X2 INLET.
4. REFER TO ARCHITECTURAL PLANS FOR STRUCTURAL DESIGN OF TRENCH WALLS.
5. REFER TO STRUCTURAL DRAWING SA3.3
6. UTILIZE TYPE 10 INLET BOX FOR UTILITY VAULT.
7. LOCATE MH FOR UTILITY VAULTS IN CORNER OF TOP SLAB.
8. PROVIDE STEPS FROM MH INTO UTILITY VAULTS.
9. ALL STRUCTURES SHALL CONFORM TO RC-46M.

CONFINED SPACE / TRENCH ELEVATION/LAYOUT PLAN

NOT TO SCALE

ADDENDUM NOTES:
1. REVISED DETAIL

ADDENDUM NO.: 4

REFER TO PLAN SHEET NO.: 32

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SCALE: 1"=50 FEET
DATE: FEB. 24, 2011
K&W PROJECT: 2091.001
DRAWN BY: ROE
CAD DRAWING: 2091001-C_cdSITE.dwg
SHEET: SC-18
ADDENDUM NO.: 4
REFER TO PLAN SHEET NO.: 9,
ADDENDUM NOTES:
1. ADDED TEMPORARY GRAVEL CADET PARKING
GRAPHIC SCALE
50 25 0 50
1" = 50 FEET
4" WIDE LANE STRIPING (TYPICAL)
GUIDERAIL
GRASS AREA
40' (TYP.)
12'(TYP.)
50'
END FENCE
R10'
25'
20'
74'
22'
PROPOSED EDGE OF PAVEMENT (TYP.)
NEW GRASS AREA
8' HIGH CHAINLINK FENCE
PAVEMENT STRIPING (TYP.)
10'
40'
24'
9'(TYP.)
36'
18'
R40'
8' WIDE CROSSWALK
(TYP.)

CRABTREE ROHRBAUGH & ASSOCIATES
ARCHITECTS
401 E. WINDING HILL ROAD - MECHANICSBURG PA 17055
717-458-0272 FAX 717-458-0047 www.cra-architects.com

PUBLIC SAFETY
CENTER - LAW
ENFORCEMENT
COMPLEX

PROJECT
2319

FEBRUARY 17, 2011
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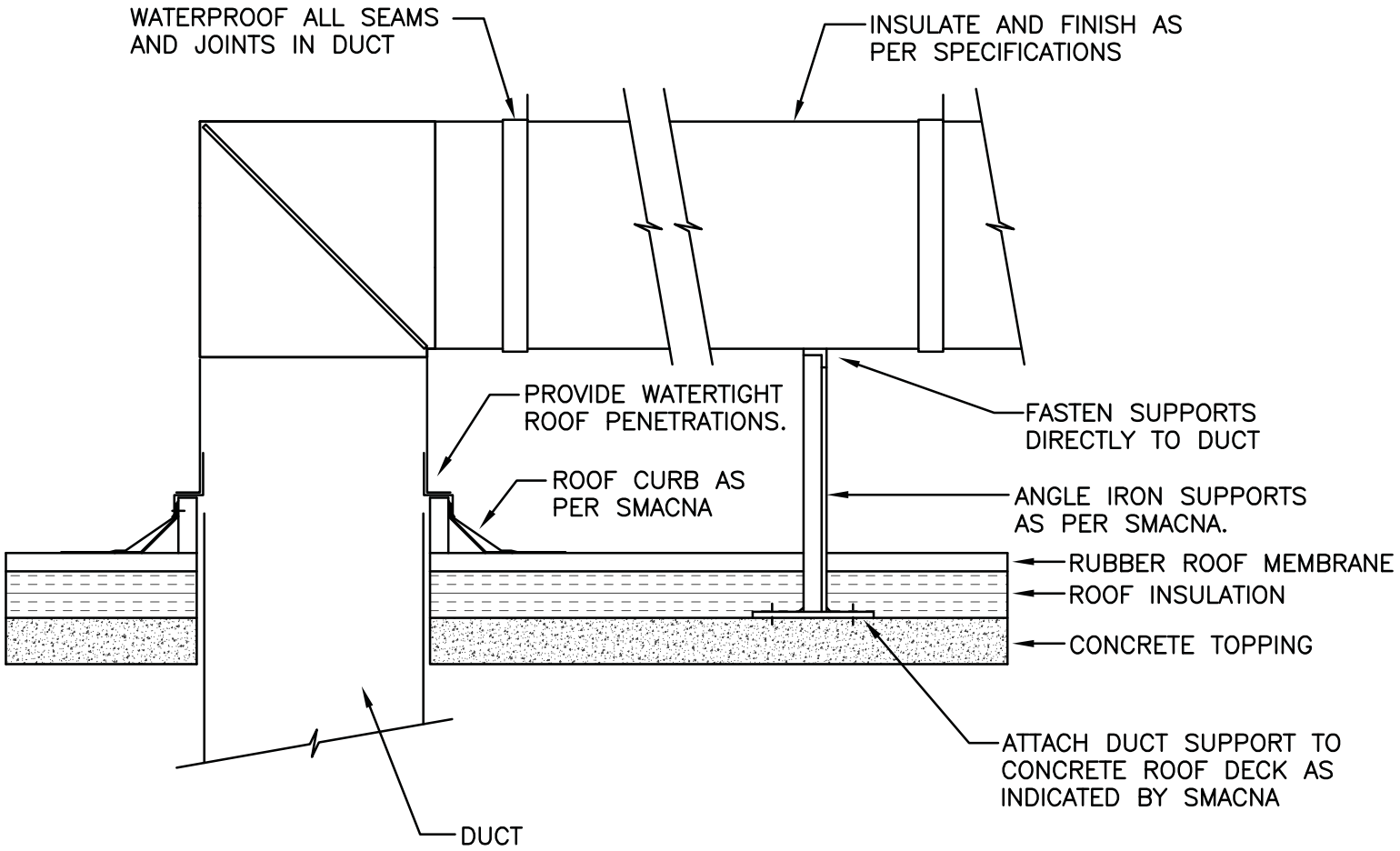
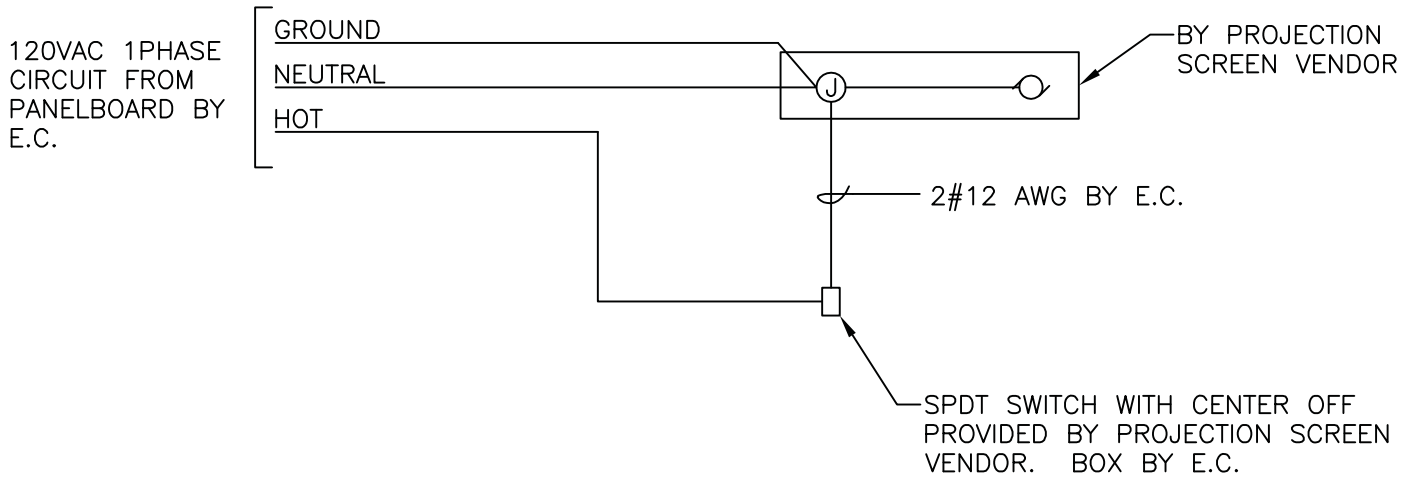
SK-MA5.2-1

ADDENDUM 4
DRAWING REF MA5.2



23 / MA5.2 DUCT ROOF PENETRATION AND SUPPORT DETAIL

NO SCALE



PROJECTION SCREEN WIRING DIAGRAM (TYP)

SCALE: NONE

PROJECT 2319

SK-EA5.4-1

FEBRUARY 18, 2011

PUBLIC SAFETY CENTER - LAW ENFORCEMENT COMPLEX

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