STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0016

JOHN ELIAS BALDACCI
GOVERNOR

DAVID A. COLE
COMMISSIONER

October 29, 2009
Subject: **Trenton, Acadia Welcome Center**
Federal Project No. 16123.50
State Pin No.016123.50
Amendment No. 4

Dear Sir/Ms:

Make the following changes to the Bid Documents:

NOTE: All questions concerning this project **MUST** be faxed to 624-3431 in accordance with the "Notice To Contractors". This is the only method by which questions may be submitted.

Make the following changes to the Bid Documents:

In the Bid Book (pages 5 thru 12), **REMOVE** the "SCHEDULE OF ITEMS" 9 pages dated 091015 (replaced in amendment #2) and **REPLACE** with the attached new "SCHEDULE OF ITEMS" 10 pages dated 091023.

NOTE: Plan sheets will be FedExed/mailed to individuals who purchased plans in the quantity and size ordered.

IN THE SPECIAL PROVISONS:

A. Table of Content.
   1. **ADD** Division 12 and Section 123200 Furniture
   2. **ADD** section 107500 Flagpoles

B. SECTION 012700 unit prices
   1. **ADD**: Paragraph 3.1 "C. Unit price No.3 Furnish and install 2" water service pipe and branch circuit power wiring for the well pump (external to the well), per linear foot exceeding or less than that quantity indicated for the basis of design location."

C. Division 3
   1. **DELETE** Section 033000 Cast in Place Concrete in its entirety. **ADD** in its place Section 033000 Cast in Place Concrete, attached

D. Division 8
   1. **ADD** SECTION 086250 TUBULAR SKYLIGHTS, attached, in its entirety.

E. Division 9

1. SECTION 092116 - GYPSUM BOARDS

PART 2 – PRODUCTS
1. SECTION 2.05 GYPSUM BOARDS **ADD** THE FOLLOWING

D. Cementitious Backer board for ceramic tile shall be "Durock" tile backer board manufactured by United States Gypsum, Chicago, IL 60606; or approved equal as manufactured by National Gypsum.

1. Backer board shall be constructed of a concrete core with fiber glass mesh reinforcement and high density Portland cement surface.

2. Thickness of board shall be as 5/8 conforming to ASTM C 630 as a base for the application of ceramic tile at walls of toilet rooms and at other areas as scheduled.

2. SECTION 093013

a. **DELETE** 2.02, TILE MATERIALS B and C in its entirety. **ADD** in its place

"B. Tile: 12 in. by 12 in., and 4 in. by 12 in., and 2" x 2" glazed ceramic and porcelain mosaic tiles, equal to DALTILE "Designer Colours", DAL TILE "Vitrestone", DALTILE "Natural Hues" ,DALTILE "Porce Alto", and Keystones mosaic tile or equal approved by Owner's Representative.

C. Colors and finishes are as follows, and as indicated in the drawing Finish Schedule:

CT-01: (Wall tile)
DALTILE PRODUCT NAME DESIGNER COLOURS SIZE 12"X12" GLAZED COLOR DC15-WHITE

CT-02: (Wall tile)
DAL TILE PRODUCT NAME VITRESTONE SELECT SIZE 12"X12" GLAZED COLOR VS02-WHITE GRANITE

CT-02-A: (Floor tile)
DAL TILE PRODUCT NAME VITRESTONE SELECT SIZE 12"X12" COLOR VS02-WHITE GRANITE

CT-03: (Wall accent)
DALTILE PRODUCT NAME NATURAL HUES SIZE 12"X12" GLAZED COLOR SWEET PEA QH28

CT-04: (Wall accent)
DALTILE PRODUCT NAME NATURAL HUES SIZE 12"X12" GLAZED COLOR CINDER QH08

CT-05: Wall accent)
DALTILE PRODUCT NAME NATURAL HUES SIZE 12"X12" GLAZED COLOR GRAPE QH54

CT-06: (Wall accent)
DALTILE PRODUCT NAME NATURAL HUES SIZE 12"X12" GLAZED
COLOR REAL TEAL QH66

CT-07 (Floor tile, level, not sloped to drain)
DALTILE PRODUCT NAME PORCE ALTO SIZE 12"X12"
COLOR CD-39

CT-07A (Floor tile at showers only, slope to drain)
DAL TILE KEYSTONES, SIZE: 3" X 3"
COLOR: BISCUIT #D317"

b. 2.02, SETTING AND GROUT MATERIALS, **ADD**:

"D. Uncoupling Membrane: Provide crack suppression/waterproofing membrane product that complies with ANSI A118.10. Provide one of the following, or approved equal:
1. Nobleseal TS; The Noble Company.
2. KERDI; Schluter Systems LP;
3. DITRA; Schluter Systems LP.

E. Waterproof Membrane, Unreinforced, Fluid-Applied Product: Liquid-latex rubber, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D in a consistency suitable for trowel application and intended for use as waterproofing. Provide one of the following:

1. Boiardi Products Corporation; Elastiment 324/644.
2. Custom Building Products; LevelQuick Waterproofing and Anti-Fracture Membrane.
3. Jamo Inc.; Waterproof"

F. Division 10.

a. **ADD** section 107500 Flagpoles attached

G. Division 12

a. SECTION 123200, 2.02 FURNITURE, **ADD**:

"REF-1
Kitchen Aid Architect Series II
Right-hand Door Swing,
bottom mount refrigerator
Energy Star qualified
18.5 Cu. Ft.29 5/8" w x 65 ½" H
Location: Room #207 Break Room"

H. Division 26

a. SECTION 260943

(1) 2.1, B.: **DELETE** paragraph in its entirety.

b. SECTION 265600

(1) 2.7, D.: **DELETE** paragraph in its entirety.

I. Section 332100 – Water Supply Wells

a. **DELETE**: Paragraph 1.6 in its entirety, **ADD** in its place the following:

"1.6 OPTION#2

A. If for reasons not related to errors or negligence by the contractor the well is not acceptable to the owner fill the well hole with pea stone to within 6' of the top and fill the top 6' with concrete, mobilize to an alternate location on the site, as determined in the field, and bore a new well meeting the specifics of the Basis of Design Well.

B. Pricing for Option #2 shall be as outlined in Division 1 Option Section.

C. Unit price values for horizontal water service pipe and pump electrical service quantities (more than or less than those required for basis of design location) shall be as carried in Unit Prices Section."

ON PLAN SHEETS:

A. **DELETE** Sheet C-101 in its entirety. **ADD** in its place Sheet C-101, attached, revised and re-issued for Amendment #4.

B. **DELETE** Sheet C-102 in its entirety. **ADD** in its place Sheet C-102, attached, revised and re-issued for Amendment #4.

C. **DELETE** Sheet A-2.04 in its entirety. **ADD** in its place Sheet A-2.04, attached, revised and re-issued for Amendment #4.

D. **DELETE** Sheet A-3.01 in its entirety. **ADD** in its place Sheet A-A-3.01, attached, revised and re-issued for Amendment #4.

E. **DELETE** Sheet A-7.06 in its entirety. **ADD** in its place Sheet A-7.06, attached, revised and re-issued for Amendment #4.

F. **DELETE** Sheet A-7.16 in its entirety. **ADD** in its place Sheet A-7.16, attached, revised and re-issued for Amendment #4.

G. **DELETE** Sheet A-7.20 in its entirety. **ADD** in its place Sheet A-7.20, attached, revised and re-issued for Amendment #4.

H. **DELETE** Sheet A-7.21 in its entirety. **ADD** in its place Sheet A-7.21, attached, revised and re-issued for Amendment #4.

I. **DELETE** Sheet A-7.22 in its entirety. **ADD** in its place Sheet A-7.22, attached, revised and re-issued for Amendment #4.

J. **DELETE** Sheet A-7.23 in its entirety. **ADD** in its place Sheet A-7.23, attached, revised and re-issued for Amendment #4.

K. **DELETE** Sheet A-7.24 in its entirety. **ADD** in its place Sheet A-7.24, attached, revised and re-issued for Amendment #4.

L. **ADD** Sheet A-7.28, attached, issued for Amendment #4.

M. **DELETE** Sheet A-8.01 in its entirety. **ADD** in its place Sheet A-8.01, attached, revised and re-issued for Amendment #4.

N. **DRAWING S-000**: **ADD** Note 22 to A4/S-000 Masonry Notes as follows:

"22. IN 4" WALLS PROVIDE VERTICAL REINFORCING IN CENTER OF GROUT, AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AS FOLLOWS:

A. 1 #3 VERTICAL AT CORNERS, INTERSECTIONS, WALL ENDS, JAMBS AND EACH SIDE OF EXPANSION OR CONTROL JOINTS.

B. 1 #3 VERTICAL AT 48" ON CENTER TYPICAL. (UNLESS NOTED ON PLAN)

C. 1 #3 VERTICAL IN EACH CORE WITHIN 12 INCHES OF ALL WALL CORNERS."

O. **DELETE** Sheet ES-100 in its entirety. **ADD** in its place Sheet ES-100, attached, revised and re-issued for Amendment #4.

P. **DRAWING EL-100** – At Luminaire Schedule, **DELETE** Type F8 in its entirety. **ADD** in its place:

"Type: F8
Description: FOUR-HEAD INDIRECT/DIRECT LARGE DECO PENDANT
MFR: INSIGHT
Catalog Series Numbers: VCM574-T44 QUAD CLUSTER-CC-PP
Mounting: Pendant
Volts: 277
Lamp Qty.: 4
Total Watts: 188
Lamp Type: CF42W TRT 35K
Key Notes: 6, 7, 11"

Q. **DRAWING EL-101**: DELETE the type F17 luminaires in Fluids 135 and Waste Fluids 136. **ADD** type F2 luminaires in their places.

R. **DRAWING EL-101**: Refer to attached Sketch SKE-03 for revisions to lighting control panel schedule LCP2.

S. **DRAWING EL-101**: Refer to attached Sketch SKE-02 for lighting control revisions.

T. **DRAWING EP-101**: **DELETE** the explosion-proof receptacles in Fluids 135 and Waste Fluids 136. **ADD** duplex receptacles in their places.

U. **DRAWING EP-103**: At Detail C7, Electrical Schedule of Mechanical Equipment, DELETE Panel P7 designation for exhaust fan EF-7. **ADD** in its place: "P3".

V. **DRAWING EP-400**: Refer to attached Sketch SKE-04 for revisions to Panel Schedule P5.

PREVIOUSLY NOTED ITEMS:

RFI #6

Question #13: Landscaping, Find no specifications. Section 621 has quantity for 621.128 different than bid form plus 4 items have different group number.

Response: See the revised Special Provision 621, Landscaping, contained in Amendment #3

Question #26: C-10, Cut line at Rt. 3 states work by others – this cut line seems to include the area required to install site lighting per ES-102.

Response: *Outstanding item-to be addressed by future amendment.*

Question #35: Plan locations, Clarify exactly where temporary fencing is required related to "outside the drip line of trees" since project building is 3500 feet back from Rte. 3.

Response: *Outstanding item-to be addressed by future amendment.*

RFI #12

Question#1: Drawing EP-100, Detail F1-Propane Fuel Center, I question the placement of the 4 convenience receptacles in what will probably be a classified area around fuel hose, nozzle, etc. If actually needed there, they will need to be classified (Class 1 Div 1) units.

Response: The receptacles are not located within a classified hazardous location. However, underground wiring to the receptacles may pass through a classified location and, if so, will need to be sealed as required by NEC.

RFI #13

Question#1: Drawing EP-103, Detail C7-Schedule, EF-7 is intended as connected to panel P-7. Would PNL P-3 be correct?

Response: Yes. Please refer to "On Plan Sheets" section of this amendment for clarification.

RFI #14

Question#1: Drawing EP-101, Waste Fluid Room (136) + (135):

a) What fluids are anticipated to be transferred here? If busses are propane powered, there may be no need of Class 1, Div 2 rating of room electrical.
b) If room is to be classified, associated motors and controllers in same room will need to be also rated for Class 1, Div 1 or 2?

Response: Fluids 135 and Waste Fluids 136 are not classified hazardous locations. Please refer to "On Plan Sheets" section of this amendment for revisions to these rooms.

RFI #19

Question#4: In any areas where floor drains are required, a 12 x 12 can't be successfully pitched to the drain. Therefore, would you accept a 2 x 2 ceramic mosaic for these areas? If so, please state how you would like this product to be installed, including where any and all drains are located.

Response: Refer to revised Specifications and Drawings within this Amendment. As per revised specifications and drawings 3" x 3" ceramic mosaic is shown.

Question#8: On the first floor room 104, will the concrete be pitched to the drain with the installation of ceramic tile being standard thin-set application?

Response: Only shower area within room 104 will be pitched to the drain.

RFI #20

Question#1: Section 03300 does not include anything on the polished concrete floors. Is there a spec. on this?

Response: Section 033000 Cast in place concrete has been re-issued with different floor finish requirements in this amendment, as is the room finish schedule.

Question#2: Is the concrete for the polished concrete area to be colored or is the polished concrete to be painted per drawing A8.01?

Response: See response to RFI 20 Question 1.

RFI #21

Question: Section 093013, Ceramic Tile does not specify any waterproofing at the shower areas to receive ceramic walls and floors. Please provide a list of acceptable products.

Response: Please refer to revised Specifications within this Amendment.

RFI #22

Question#2: With regards to sitework, what determines which work is covered under MDOT Bid Items and which is incidental to the specific Building Divisions?

Response: Drawing C-101 depicts a match line, all work on the building side of the match line and site utilities that are depicted on ES100 through ES 102 are specific to building divisions, with the exception of Key Botanical schedules on C-57 and C 58 that are covered under their respective pay items.

RFI#23

Question#6: 101 Lobby shows wall panel system. Who is the manufacturer and what are the specs. for this?

Response: Refer to revised Specifications within previous Amendment 2

Question#7: 207 Break Room, where is the spec for the refrigerator?

Response: Refer to revised Specifications within this Amendment.

RFI #24

Question #1: There is a 6 step stair shown on C-101 that refers to the structural plans. This is not on the structural drawings. Is this stair to have rails at each side, and if so, what do they consist of? Please advise.

Response: *Outstanding item-to be addressed by future amendment.*

RFI #25

Question#1: Section055100, para 1.2A, Item 1 notes the lobby stair (01) to be stainless. I assume that this is a typo and that just the rails are to be stainless and that the stair is steel as shown on the Sections on A5.05.

Response: Only the rails are to be stainless, as shown on A5.05. Stringers and structural framing are to be painted.

Question#2: Stair 02 shown on drawing A5.02, shows the rail to be stainless steel. Are the Perforated Metal Mesh panels to be stainless as well? They are mentioned in the Metal Stair Spec but not the type of material.

Response: Perforated Metal is also to be stainless.

RFI #26

Question#1: We assume that the disadvantaged business enterprise goal for participation of 1.9% listed on page 21 of the USADOT Federal Transit Administration Contract Requirements (issued with addendum/amendment #1) supersedes the 5.8% goal contained in the notice attached to the Federal Project Requirements that was provided with the bid documents. Please advise if we are wrong.

Response: *Outstanding item-to be addressed by future amendment.*

RFI #27

Question#1: Please clarify; In spec section 084113-2 1.03 D and spec section 085113-2 1.04 C it calls for Windborne Debris Resistance. If this is required, the windows, glass, store front and curtain wall systems that are drawn and specified will not meet this impact resistance. Please advise if this is required.

Response: *Outstanding item-to be addressed by future amendment.*

RFI #28

Question#1: What are the depths and types of pavement in the parking lots from sta. 31+90 to 36+86 Lt. and sta. 43+68 to 44+56 Rt.? (Plan Sheet # C-13, C-14, & C-16)

Response: *Outstanding item-to be addressed by future amendment.*

RFI #29:

Question #3: Flagpole C-I01 refers to a flagpole - can find no specifications.
Response: Flagpole Specifications are included within this Amendment

Question #4: Fencing any specifications?

Response: Material Specifications for the fencing and appurtenances are provided on the Civil Site Drawings for Bus Maintenance Facility.

Question #5: Amendment I #2, what is new in the Table of Contents?

Response: Section 012300 Alternates changed to Section 012300 Options, added Drawing sheets C-59- C – 64 Environmental Plan Review, and Sheet C – 63 Boundary Plan.

Question #12: Bid Form What Line No. does the excavation and backfill for underground utilities belong in?

Response: Excavation and backfill for UG utilities as defined in DIVISION 33 sections should be carried under Division 33 Utilities. Please note Division 31 includes trenching.

Question #13: Our RFI 27 Your response was to coordinate - understood. Question was related to the fact that the temporary electrical and telephone, etc. cannot be installed until after these permanent services are extended from Route 3. Please confirm.

Response: Temp utility services are a part of the function of Scheduling of the project to meet the contractual deadline. Means and methods is fully a function of the contractor.

Question #14: Our RF132 Did not find a draft copy in Amendment #1.

Response: All RFI questions received via fax as specified are incorporated in amendments however they are renumbered in the order they are received by MDOT.

Question #15: Bid Form Line No. 0630 - is this meant for strictly the earthwork sub?

Response: *Outstanding item-to be addressed by future amendment.*

Question #16: Bid Form Line No. 0660 - is this meant for just the general contractor and all subs should bid by their specific line item number (i.e . their mobilization/demobilization and general conditions will be included in their specific Line No.)?

Response: *Outstanding item-to be addressed by future amendment.*

Question #17: SP-pg.37 Table refers to utilities coming in aerial but plan shows underground.

Response: Underground utility services to the site extend from aerial lines at Route 3.

Question #18: Standard Detail Pg. 83-86: Please verify which of these updates apply to this project so the Updates Standard Detail book can be updated just for this project and not the entire booklet.

Response: *Outstanding item-to be addressed by future amendment.*

Question #19: SP -pg.38 Is this applicable for this non-highway project, especially in light of the reference to $2,500/violation?

Response: *Outstanding item-to be addressed by future amendment.*

Question #20: SP -pg. 77 Is this applicable for this project?

Response: *Outstanding item-to be addressed by future amendment.*

Question #21: 5S - Section 656 Pg. 102 - clarify what is meant by reduction of 5% per occurrence per day.

Response: In addition to other remedies and consequences, as per Supplemental Specification, Section 656 Temporary Soil Erosion and Water Pollution Control, the 5% per occurrence per day is the amount of the reduction of the 656.75 for the "Failure by the Contractor to follow Standard Specification or Special Provision – Section 656 and/or the Contractor's own Soil Erosion and Pollution control Plan". The contract will be assessed a credit of 5% of the Unit Price of Item 656.75, per every "Failure" or occurrence per every day the "Failure" or occurrence is not resolved.

RFI #30:

Question #1: To what extent will field testing be required for this project. See 084113-10,3.03 and 085 113·11,3.03. For section 084113 there does not seem to be enough area to test as required by the specifications. Field testing can be a costly item, and the size of the project may not warrant field testing.

Response: Given the relatively small area of Aluminum Entrances and Storefronts, field testing as specified will be waived.

RFI #33 (MDOT #34):

Question #1: We are unable to locate specifications for the following items:

- Aluminum Fence
- Flagpole
- Concrete Pavers *GPCEI to respond in future Amendment response*.

Please provide all required specifications.

Response: Aluminum fence is specified on sheet C-401 cost and should be carried under division 32 pay item. Flagpole specification is provided within this Amendment.

RFI #34 (MDOT #35):

Question #1: We are unable to locate specifications for the following items:

- Plantings
- Floor Expansion Joint Covers
- Light Tubes

Please provide all required specifications.

Response: Light Tubes – Specification is provided within this Amendment

THE FOLLOWING QUESTIONS HAVE BEEN RECEIVED:

RFI #9

Question: Section 096500 Resilient Flooring 2.02 Specifies Dodge-Regupol rubber flooring. The finish Schedule on Drawing AS.OJ specifies RU8TL-Ol as Rappe ESD and RUBTL-02 as Centiva. Please clarify.

Response: This question was clarified in Amendment 2.

RFI #10:

Question: Section 085113 Aluminum Windows mentions the basis of design to be Kawneer 5500 Isoweb window, plus the Kawneer AA900 window is also mentioned. All of the window details shown for WI through W8 (A4 .30, A4.31, A4 .32) windows are of the AA900. Will the 5500 window be a part of this project? If so, where? Also, please clarify that the aluminum entrance doors are to be lhennally broken. (section 084113-7, 2.06,1.,a.)

Response: The Kawneer AA900 Isoweb window shall be the basis of design. The 5500 frame will not be a part of this project.

With regard to aluminum entrance doors, yes they are to be thermally broken.

RFI #33A (MDOT #33):

Question #1: Sheet AB.01 RUBTL01 This product is available in three sizes: 12 X 12 - 24 X 24 and 36 X 36. Please specify as to what size you would like.

Response: Please see response to RFI #9

RFI 37

Question #1: Are we to certify the building to the LEED-N.C.2.2. or is this to be LEEF-2009?

Response: This building is being certified to LEED-NC2.2.

Question #2: Drawing A7.06 shows a counter in room 207, Break Room, to go to elevation 1/A7.25. There is no detail showing what the counter is constructed of or supported by?

Response: Please refer to Amendment items herein for clarification.

RFI 38

Question: Doors 135A and 138A: Do you want these doors electrically operated? On all of the electrically operated doors, are you looking for 4-wire failsafe reversing edges or photoeyes or both?

Response: Doors 135A and 138A are to be manually operated, not electrically operated. For electrically operated doors we are requesting overhead doors to be equipped with failsafe reversing edges, not photo-eyes.

RFI 39

Question: Specification Section 075330-2.02, PVC sheet roofing is specified. We would like to submit the attached Firestone TPO roof membrane. Is this acceptable?

Response: The following information is required to evaluate the Firestone or any TPO membrane as an alternate to the Sarnafil :

- How does the Firestone TPO test results compare to the TPO ASTM requirements. This is similar to the table in the spec.
- What type of chemical provides the fire resistance for the Firestone TPO? – halogenated on non-halogenated
- Provide information on all of the materials proposed to be used with the Firestone TPO. Since this is to be a fully adhered system the TPO needs to have a fleece backing.
- Provide a standard 20 year warranty write-up for the Firestone TPO being proposed.
- What is the longest life for an installed Firestone TPO and where is it?
- How many of these types of roofs has the proposed roofer installed?

RFI 40

Question: Are the Trench Drains a cast in place drain or a manufactured item to be installed?

Response: These drains are to be manufactured system. Refer to Section 221119 Plumbing Specialties, Paragraph 2.13 I.

RFI #41

Question: There is a discrepancy at Bus Wash Room139. Finish schedule, plan A8.01 calls for exposed ceiling but sections 20/A4.08, 22/A4.09 and 2nd floor ceiling plan A6.02 shows a GWB attached to 2x6 metal stud. Please clarify

Response: Ceiling is to be moisture resistant GWB w/moisture resistant paint attached to 2x6 metal studs; Finish schedule has been revised.

RFI #42

Question #1: Structural Note #13, no schedule for 4" CMU, slit face cells in very small for reinforcement. (They are 3 cell CMU) Cells are approximately 3 ½ x 1 ½ w/closed top when layered in running bond cell opening is 1 ½" x ¾". Then we must add a #5 rebar to this restricted cell and grout, this would add huge labor costs to this job, reinforcement not shown E-3 or F-6/SB501 no reinforcement shown. But Architectural drawing 1/A4.01 reads 4" CMU w/vertical reinforcement.

Response: Masonry Note 22 has been added above to A4/S-000 by this addendum and as follows:

"22. IN 4" WALLS PROVIDE VERTICAL REINFORCING IN CENTER OF GROUT, AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AS FOLLOWS:
a. 1 #3 VERTICAL AT CORNERS, INTERSECTIONS, WALL ENDS, JAMBS AND EACH SIDE OF EXPANSION OR CONTROL JOINTS.
b. 1 #3 VERTICAL AT 48" ON CENTER TYPICAL. (UNLESS NOTED ON PLAN)
c. 1 #3 VERTICAL IN EACH CORE WITHIN 12 INCHES OF ALL WALL CORNERS."

Question #2: At room 139, south wall finish schedule says it is GWB/PTD. Wall section 2/A3.03 shows CMU, is this south wall glazed CMU exposed to room or 8" regular?

Response: Please refer to "On Plan Sheets" of Amendment 2, revised finish schedule A8-01. All walls at Bus Wash are glazed CMU exposed to room.

Question #3: Div 042000, sec. 1.04/G, Sample panels with GCMU shall be glazed on both sides. Room 139 shows glazing on 1 side. Are there any 2 sided glazed units in this project?

Response: Please refer to "On Plan Sheets" of Amendment 2, revised finish schedule A8-01, revised plan A7.04, and revised wall types A8-02, showing GCMU in rooms. There are walls with glazing both sides, but no 2-sided glazed units. 8" CMU walls with glazing both sides are to be constructed of back-to-back 4" GCMU. Please see specification Div 042000, sec.2.02 D.

Question #4: 04200 Summary Sec 1.02/5a, solid ground face masonry, is this the sill cap at 4" split-face CMU?

Response: Yes.

Question #5: Is rigid insulation to be 2 ½" behind CMU veneer or 2"?

Response: Rigid insulation is to be 2 ½" behind CMU veneer.

Question #6: CMU sill at top of split-face, can we use mitered corners?

Response: If manufactured mitered corners are not available, mitered corners may be fabricated by cutting and grinding. Corner block so fabricated is to be submitted and, if acceptable, will serve as a 'control sample' of the work to be installed in the field.

Question #7: Architectural drawings show more reinforcement than Structural Drawings (example:1/A4.25 (2) rebar at jams of door/structural notes 13/A Jams (1) #5, Example #2: 17A/4.07 shows stirrup rebar around bond beam rebar, but F7/SF-501 shows (6) #5 with no stirrup in 20" bond beam and (2) #5 in 16" deep bond beam). Do we use Architectural or Structural drawings for reinforcement?

Response: Maintain reinforcement indicated on Structural Drawings and in Structural Notes. Architectural representation of reinforcement shall be disregarded.

Question #8: UL rating shown in Div. 042000 2.03/A, UL 723 flame spread/smoke developed of zero Block Manufacturer, can not find, could you refer us to a book or section #?

Response: This refers to test method in Standard ANSI/UL 723 (ASTM E84 and NFPA 255). Test for Surface Burning Characteristics of Building Materials. Found in FIRE RESISTANCE DIRECTORY - Vol. 1, by Underwriters Laboratories Inc. We want to determine if manufacturer has tested proposed materials.

RFI #43

Question: In addendum #2, you note that the canopies are to be galvanized and painted. Is it correct to assume that the Fuel Station and Bus Shelter steel is galvanized as well? Also, is it meant for the paint over the galvanizing to be field applied or applied by the galvanizer? Big difference in fabrication costs, please advise.

Response: Yes, it is correct to assume that the fueling station steel and bus shelter steel is galvanized as well. On A2.04, in the Fuel Station Notes at upper right corner of the sheet, we ask for the steel to be hot-dipped galvanized and painted. The same note appears on A2.06 on the Bus Station notes. We also ask for all connections to be welded. Steel assemblies can be largely prefabricated and delivered to the site, with minimum welding of the sub-assemblies on-site; most priming and painting can be undertaken in the shop. However, the welds would have to be ground smooth and a zinc-rich primer (re-galvanizing) applied on the site, then touch-up painted.
Generally, shop finishes should be employed to the greatest extent possible. Please refer to the specifications Section 09 91 00 – PAINTING, 3.09 EXTERIOR PAINT SCHEDULE, A. Exterior Galvanized Metal: Semi-gloss Thermoset Solution Fluoropolymer, (3-coat system).

RFI #44

Question #1: (E. L. Shea) Specification Section 312316, Para 3.3.C requires proof rolling the subgrade with a 10 ton vibratory roller. Para 3.3.D states that "native soils can undergo substantial strength loss when subjected to construction traffic, etc…". the soils report prepared by FGS/CMT on page 10 mentions proof rolling any "existing or natural fill", but does not recommend proof rolling undisturbed native soils. This report on Page 6 cautions that the subgrade soils are susceptible to strength loss if disturbed. As FGS/CMT has identified at least some native soils as being sensitive, should any native soils be rolled?

Response: Thank you for your remarks. We wish to offer the following clarifications;

- We recommend that proof rolling should cover all subgrades of cut and fill areas with the exemption of the foundation trenches subgrade. Therefore we recommend that proof rolling requirements should read as follows: "Once graded, and immediately prior to placing and compacting engineered fill the subgrades should be proof-rolled and compacted in the presence of, and approved by, FGS/CMT, inc. to detect any weak or unstable areas that should be repaired. Proof rolling shall consist of a minimum of at least three passes in a north-south direction and then at least three passes in an east-west direction using a large (at least 10 tons) vibratory roller. The proof –rolling is intended to detect evidence of pumping, rutting or weaving, which indicates unstable and unsuitable materials, and should be completed under the supervision of the geotechnical engineer or his representative. In case the geotechnical engineer or his representative determines that vibratory compaction results in instability of the natural soils, an alternative method of compaction shall be approved. "

- Subgrade recommendations of page 6 of our report refer to treated and non-treated subgrade surfaces and cautions the contractor against disturbances related to combination of material-weather conditions-traffic/construction activities.

- We recommend reviewing the above in combination with paragraphs "Construction During Winter" and "Quality Control" (in section 4.5) of our report.

RFI #45

Question #1: ESI00- indicates (2) 4" conduits to generator EP 400 indicates (2) 5" conduits. Which is correct?

Response: Please refer to the "On Plan Sheets" section of Amendment #1.

Question #2: ES100 conduit route on normal power from transformer to firepump is not shown.

Response: Please refer to the "On Plan Sheets" section of this amendment.

Question #3: ELI02/101 One relay #11 controls 2 rooms 219 & 217 should there be a relay for each room?

Response: We believe the question is intended to refer to rooms 219 and 221 on Sheet EL-103, in which case each room is intended to have a separate relay in LCP-2. Please refer to the "On Plan Sheets" section of this amendment.

Question #4: EL102/101 relay #8 shown for rm 208 & 201 do we need to add relay?

Response: Please refer to the "On Plan Sheets" section of this amendment for revisions to lighting control panel schedules.

Question #5: EL102-LCP2-17 shows manually on switch but no switch is shown.

Response: Dimmer 'd' and switch 'c' control the lighting connected to LCP2-17. Please refer to the "On Plan Sheets" section of this amendment for revisions to lighting control panel schedules.

Question #6:ELI00, should note 3 on LCP2 apply to only relay 2,4, & 6?

Response: Because the note references the ½ of the lamps in the fixture, it is shown referenced at all relays associated with each fixture. Operationally, however, only one relay associated with each fixture will be controlled by the photocell.

RFI #46

Question: Specification Section 075330-2.02; PVC sheet roofing is specified. We would like to submit the attached Firestone TPO Roofing membrane. Is this acceptable? (Firestone UlltraPly™ TPO is the proposed product substitution with documentation support submitted.)

Response: Please see response to RFI #39.

RFI #47

Question: There is a conflict in the grating size for the bus wash pit. The foundation plan notes on Drawing S-101 the grating at the bush wash pit to be 2" x 3/8" and metal fabrication specification 055000 item 2.0-B notes it to be 2" x 3/16". Which bar thickness do they want, 3/8" or 3/16". Also, item 2.07-C notes the grating to be ¾" x 3/16" at the service pit & utility trenches. Where are these located on the drawings?

Response: Use 3/8" bar thickness throughout bus wash pit grating. Section 055000 - Metal Fabrications is being revised at paragraph 2.07-B to read: …"Bearing bar size shall be 2" x 3/8" for the grating at the Bus Wash Area." Paragraph 2.07-C is deleted. Service pit and utility trenches are no longer included in this project.

RFI #48

Substitution Request: PDQ Door requests that sectional overhead doors by Raynor and Clopay be approved for bidding on this product. Attached please find product literature on the Clopay model 3722, and the Raynor TC 320.

Response: Both of these products are approved for bidding provided they both meet all criteria specified in the design documents, including specified warranty requirements, as indicated on your Substitution Request Form. In addition, they must meet the design intent in layout of operating sections and locations and style of windows, as shown in the design drawings (documents).

RFI #49

Question: Please clarify what forms are to be submitted if submitting a paper bid.

1. Acknowledgement of Bid Amendments?
2. Schedule of Items?
3. Contract Agreement, Offer and Award?
4. Bid Security?
5. Proposed Utilization Form?

Response: Forms as described in 1 – 5 above are to submitted with the bid along with forms that are listed in the "U.S.A DOT Federal Transit Administration Contract Requirements", per Amendment No. 1, as Attachment A, "Buy America Certification Requirement, Certificate of Compliance" and Attachment B, "Lobbying, Certification Regarding Lobbying".

RFI #50

Question: Can the site plan of the building sheet C-103 be made available in autocad format for take-off purposes? This would allow for a more accurate estimate and also would eliminate a day of digitizing. If not, the existing topography needs more labels. It is not clear on the drawings the elevations of the existing contours in all areas.

Response: Electronic MicroStation drawings will be made available upon written request using the RFI process. A release form will also be required and was included in Amendment #3.

RFI #51

Question: What is the extent of the dry shake floor hardener?

Response: The dry shake hardener has been eliminated and an integrally colored concrete added to section 033000 Cast in place concrete in this amendment and the room finish schedule will reflect all concrete floor finishes

RFI #52

Question: In section 0833 23-4, 2.03, B. refers to a coiling door # J483. Where is this door located? I cannot find it on the door schedule, or the floor plan. Also, do doors IJ 5A, and J38A

require operators, and are they to be fire rated? Also, has there been My response to the attached previous RFI (#10) ? I have not seen any.

Response: Paragraph 2.03 B has been deleted; door 148B does not exist. Doors 135A and 138A are the only coiling doors; they do not require operators, and they are not fire rated. Please see response to RFI #10 earlier in this Amendment.

RFI #53

Substitution Request: PDQ Door requests that the CHI Series 3212 sectional overhead door be considered an equal for bidding this product. Attached product information.

Response: This product is approved for bidding provided it meets all criteria specified in the design documents, including specified warranty requirements, as indicated on your Substitution Request Form. In addition, it must meet the design intent in layout of operating sections and locations and style of windows, as shown in the design drawings (documents).

RFI #54

Question#8: U.L. rating shown in Div. 042000 2.03/A U.L. 723 flame spread / smoke developed of zero, block manufacturer cannot seem to find, could you refer us to a book or section#?

Response: Refer to response given above, RFI#42; Question#8.

Question#9: Drawing SB-101 at column line A2 at exterior wall of Bus Wash, Wash Recycling, Lift Bay 01, Lift Bay 02 and Parts Receiving – T.O.W. = 113'-4", but10/a4.04 shows 8" concrete wall (typical). Is top of wall 117' or 113'-4" with steel studs?

Response: Refer to detail E6/SB-501. This detail applies at exterior walls along lines A2, AC, A1, A7, AD and A6.

Question#10: Drawing SB-100 at column line A6 top of wall = 117' from column line BF to door jamb of (113B) near column line AF – Is this the total length of top of wall 117'-0"? SB-101 column line A6 top of wall is marked 113'-4" – is this section at column line A6 concrete wall or steel studs?

Response: Top of wall designations label two separate areas of the same wall. Refer to detail E6/SB-501.

RFI #55

Question: In regards to the Acadia Gateway Facility in Trenton, will the request for an AISC shop cert. get waived for this project?

Response: No.

RFI #56

Question: Project has two wage rates-building & highway. The building wage rate for power equipment operators (Group I & 2) is $49.07 per hour and $48.96 per hour with fringes. Special provision section 104 (wage rates) states “when two or more wage rate schedules appear in the bid book, the highest rate shall prevail for each classification.” Two rates do appear in this bid book and the highest rate for all backhoes, excavators, loaders, bulldozers, & rollers are all over $48 per hour. Will all contractors be required to pay these substantially higher “building” rates to power equipment operators for all the work on this entire project for its duration?

Response: Special Provision, Section 104, (Wage Rates), was removed in Amendment #3

RFI #57

Question: There does not appear to be a clear scope of work for the earthwork pertaining to the building. Based on some of the previous amendments it appears some are confused as to what is paid as a measurable "pay item" and what is part of the "lump sum" building sitework. Is it safe to say that the "lump sum" earthwork item requires but is not limited to the following:

> Clearing, grubbing, earthwork, ledge blasting (open and trench). Structural, excavation of building, structural fill, structural backfill. underslab utilities, retaining wall, bituminous paving (both standard duty and heavy duty), aggregates, concrete pads. storm system, water system , sanitary system, fencing, stairs, pavement, striping, loam and seed, site signage, bollards, flag pole, bike racks, crushed stone, and under building slab.

Response: The Lump Sum building site work is as shown on Plan Sheets C-101 through C-405 of the plan set, however it excludes Landscaping which is paid for as noted in Special Provision 621 Landscaping.

RFI #58

Substitution Request: a. Morin Corp Metal Wall Panels vs. Centria Panels: Carlisle / Versico PVC vs. Sarnafil

Response:

a. Morin Corp Metal Wall Panels - please provide product literature or catalog cuts that illustrate that Morin Metal Wall Panels have similar design profiles and finishes consistent with that shown on the drawings.

b. Carlisle / Versico PVC - The Versico PVC roofing does not meet the specification requirements. Versico is a Type III not a Type II, Grade 1 PVC as specified and defined by ASTM D 4434.

RFI #59

Question: There was discussion at the pre-bid meeting that the completion date is October 29, 2011. Spec Section Special Provision-Section 107 (Time), page 43 states completion date is October 29, 2010. Please confirm actual date.

Response: Completion date is October 29, 2011.

RFI #60

Question: In Section 092116 Gypsum Board Systems...Page 4..2,05 Gypsum Boards ..Item A....they are calling for *5/8"* Toughrock abuse-resistant gypsum board. no regular type is in Spec ...are we to assume this is the product they want on all walls & ceilings on entire job??

Response: Tough Rock is good for all gypsum surfaces. For this sized project, it would not be worth having several different types of gypsum board, except in wet areas. Please refer to revisions to Section 092116 Specifications that include cementitious backer board such as "Durock" for behind ceramic tile.

RFI #61

Question #1: Foundation note 1 on S-000 calls for foundation and slab concrete to be 3,000 psi. Table in Section 033000, Paragraph 2.14 calls for 3500 psi concrete in foundations and 4000 psi concrete in slabs.

Response: Specification Section 033000 shall control the concrete strengths.

Question #2: Spec section 033000, Paragraph 2.7 C calls for color pigment as selected by Architect. The various colors differ quite a bit in cost. Could a color badge be provided? More importantly, what rooms are to have colored concrete floors or what areas receive color?

Response: *Response will be provided in future amendment responses.*

RFI #62

Question #1: Section 033000, Paragraph 2.14 K calls for synthetic fiber in the concrete (minimum of 1 lb per cu. yd.). What concrete is to receive fiber? Slab on grade? Elevated slabs? Exterior concrete? Foundations?

Response: All interior slabs on grade and elevated slabs shall receive the synthetic fiber reinforcement in addition to the steel reinforcements identifies.

Question #2: The polished concrete system for slabs listed on Dwg A8.01 appears to be a system for concrete countertops. Is this being deleted as discussed at the pre-bid meeting?

Response: *Response will be provided in future amendment responses.*

RFI #63

Question #1: Please clarify orientation of 3" light gauge metal zee clips in typical wall sections 1 on A 401 and 10 on A 404. They are labeled vertical but drawn horizontal.

Response: *Response will be provided in future amendment responses.*

Question #2: At 2" horizontal ribbed metal panels, should they be vertical?

Response: *Response will be provided in future amendment responses.*

Question #3: At 2" vertical metal panels, should they be horizontal?

Response: *Response will be provided in future amendment responses.*

Question #4: At 7/8" horizontal ribbed metal panels with vertical ¾" subgirts, should they be horizontal?

Response: *Response will be provided in future amendment responses.*

Question #5: At 1 ½" vertical metal panels, should they be horizontal?

Response: *Response will be provided in future amendment responses.*

RFI #64

Question #1: If Division 26 includes supply/install conduits and BHE pullboxes and transformer bases, what is potentially covered by the $250,000 allowance for Bangor Hydro?

Response: The allowance covers any Bangor Hydro Electric utility construction charges for items including, but not limited to utility pole placements and/or upgrades, primary underground cable and installation, and padmount transformers and installation.

Question #2: Electrical (Division 26) is lump sum price. Do we have to break, i.e. site work electrical vs. building electrical?

Response: The work of all Division 26 sections shall be included in the lump sum price.

Question #3: Is a temporary pole line along existing entrance driveway a permitted method of supplying temporary power to the building site? I have walked the area and believe pole-setting could be accomplished mostly by truck along the driveway. Would any further DEP or Corps or Engineers permits be required for this?

Response: This action would be allowed along the Old Turnpike Road, on the south side of centerline, as long the installation of the temporary poles would not further impact wetlands. If this cannot be accomplished, please provide further reason/justification of no other alternative

approaches to temporary power installation and the Department *may* consider a permit amendment process.

PREBID MEETING QUESTIONS OCTOBER 15, 2009

PB-1: James Nason of Perry and Morrill

a. What is the retainage on this project?

Response: Per Kevin Hanlon of MaineDOT responded that retainage will be held according to the standard specifications. That once the project is half complete, and defined by half the dollar value of the original contract, that MaineDOT would retain 5% of each following confirmed amounts of the remaining Request for Payments.

b. There is no specification on the FRP panel to use at the skylights?

Response: The specification is SECTION 08 45 23 - INSULATED TRANSLUCENT FIBERGLASS SANDWICH PANEL SKYLIGHT SYSTEM. This is an option to the SECTION 08 63 00 – METAL FRAMED SKYLIGHTS.

c. Division 13 in referenced in the bid form, but there is no Division 13 in the specifications. Please clarify.

Response: Was revised in Amendment #2 Bid Form.

d. 0001 is identified on the bid form, but I can't find reference to it in the documents?

Response: Was revised in Amendment #2 Bid Form.

e. There is no specification for mailboxes, roll-up screens or white boards. Please provide.

Response: ***Response will be provided in future amendment responses.***

f. On Drawing A17.14, there is a ledger describing equipment, but it references two different specification sections. There is one specification section which it says is part of the allowance. Are the other items also included in that or are they to be bid on?

Response: Was revised in Amendment #2 Bid Form.

g. Section 03300 doesn't include anything about polished concrete floors. Are the concrete floors polished areas to be colored?

Response: This is addressed in the revised section 03300 Cast in Place Concrete and the revised room finish schedule in this amendment

h. There is no section provided for Exterior Concrete requirements. Are we to assume everything is to come under Section 03300?

Response: All exterior concrete shall be as specified in Section 03300.

i. Stairs are shown outside, what is the specification on these stair units?

Response: Was described in Amendment #2.

j. Stairs are shown outside, what is the specification on these stair units?

Response: Was described in Amendment #2.

PB-2: Bill Boulier, Nickerson and O'Day

a. The revised Buy America requirements obviously added manufactured products which are typical, but there was a statement that said unless a waiver has been granted by FTA, has there been any other provisions to the Buy America requirement to allow, for instance, Canadian steel?

Response: ***Response will be provided in future amendment responses.***

b. The biggest question is in terms of the completion date that's specified as October of 2010?

Response: The duration of this project is 22 months, with completion in October 2011.

c. How are we to handle the crossing of Crippens with no in water work for this up to June 30? What is the thought on how that has changed unless that in water work requirement is eliminated?

Response: There is no plan for changing the duration of the project. The crossing of Crippens Brook and the constraints imposed by the Maine DEP have been issued as a part of these Construction Documents. It is the responsibility of the contractor, knowing the project duration and these constraints, to plan for these issues and schedule accordingly. Means and Methods of construction shall remain the responsibility of the successful Contractor. Any work associated with the temporary and/or permanent

crossing of this brook shall be between the subcontractor and the Contractor. All associated work will be considered as part of the Lump Sum construction Costs.

d. The bonding requirements have been changed dramatically with Amendment #1. Have those been addressed to be revised?

Response: Yes, see bid amendment #2. MaineDOT Standard Specifications shall apply.

e. Amendment #1 seemed to remove the testing allowance or addressing at least that portion of the bid form. I strongly recommend that there be an allowance put in for testing and inspection. The documents are quite onerous when it comes to testing and inspection and its a very indefinable quantity?

Response: Testing is the responsibility of the contractor per each specification section.

f. Obviously temporary utilities are required for the project, but we are talking 4000 feet of road to go back in, so I'm assuming that utilities will not be established until after the service is brought back to the site. There is no expectation that one has to run temporary poles to get 4,000 feet back to run power for whatever use?

Response: See response to RFI 29 Question 13

g. The last moment to provide bid questions in noon on the 26th. Can this be moved back?

Response: No, the date and time for final receipt of the questions shall remain unchanged.

PB-3: Chuck Snyder, Ed Hodson Masonry

a. With the 4" split-face CMU, it calls for vertical reinforcement in the architectural drawing. The cells on a 4" split-face block, normally they do not have cells, usually, they are solid block. When they do come with cells, they come in 3 cell units. When you lay these in a running bond pattern, the cell openings between the blocks is only 1 ½ x ¾" and we have to put #5 rebar down through?

Response: The 4" split-face shall have cores and shall be reinforced with #3 rebar. Note 22 has been added by this amendment to A4/S-000 which describes reinforcement requirements for the block.

b. In the Architectural drawings the bond beams show a rebar cage around the bond beam rebar, structural drawings do not show that. Which is right?

Response: **Bond beams will have running rebar, no cages.**

c. UL rating for the 4 inch split face #723, we can't find a book or section in the book that defines this UL listing. Can you provide help on locating this UL listing.

Response: ***Response will be provided in future amendment responses.***

d. In division 042000, Section 1.04/G, sample panels with GCMU shall be glazed on both sides. Room 139 shows glazing on one side. Is there any two-sided glaze used in this project?

Response: **AECOM: there are 2-sided glazed walls, but in the specs it states that you only have it in double faced or single glazed blocks back-to-back. This was clarified on the drawings included with Amendment #2.**

e. In division 042000, Summary Section 1.02/5A, solid ground faced masonry. Is this speaking about the SMUcap at the top of the 4 inch split face??

Response: ***Response will be provided in future amendment responses.***

h. Rigid insulation is shown in walls section. If you look at them behind the masonry, its drawn as being narrower than 2 ½'. And if it is 2 ½", we're going to have a ½" less airspace behind that veneer, which when we restrict that we're going to get efflorescence. Do you want to drop the the insulation thickness in this area back to 2 inches?

Response: **No, provide as specified.**

i. The CMU sill at the top of the split face, can we use mitered corners at outside corners?

Response: ***Response will be provided in future amendment responses.***

PB-4: Ken Shea

a. In Section 033000, when you order cement for the slab, you've got a requirement that says the maximum W/C should be 0.45 where deicer is being used and for exterior slabs you have a requirement of 0.55? It seems contradictory to me.

Response: **The Deicer W/C ratios for exterior and/or interior slabs applies on traveled ways where vehicles will be accessing these spaces…i.e. aprons, slabs, etc… For exterior concrete such as dumpster pads, propane tank pads, island concrete, the standard mix W/C applies.**

b. Proof roll and subgrade. Do I read it correctly that you want everything compacted to 95 % of ASTM underneath footings and slabs, the existing subgrade?

Response: The notes provided on S-000 are general in nature. The geotechnical report, which was provided as part of the construction document package governs on direction for site soils compaction and installations. See response to RFI 44 above.

c. Is there any insulation under the exterior slab that's got heat in it?

Response: Yes, See section A7/SB-501 and revisions to SB101 identified above.

PB-5: Jim Cameron of R.F Jordan

a. Getting back to the crossing of Crippens brook in a temporary fashion, will engineering drawings and stuff be required to install a temporary bridge across that?

Response: We expect that any means and methods associated with a temporary crossing of Crippens Brook will require submission and/or consultation with Maine DEP. The requirements will be the minimal amount of information to achieve the intent of the permit. That could well mean details of the methodology proposed, including sealed PE drawings to achieve such approvals.

PB-6 Mike Roix, Harold MacQuinn's

a. Does the power allowance also apply to the allowances for the wells, digging and the piping is all together in that allowance? I thought there was an allowance.

Response: No. The well allowance is for the well.

PB-7 Bill Boulier:

b. But there is no allowance for the well?

Response: Correct.

c. You have to base the bid on location one, right?

Response: Correct, the basis of design location is depicted on the drawings.

d. Obviously the excavation, the water, and the electrical going back to the building about 880 feet would be included with the base bid and option two is whatever

difference there is to cap it, fill it, move it, plus drill the new well at the option two location?

Response: The two depicted locations on the drawings were deleted in the first amendment. Option two is now an alternate location to be determined in the field in event the first well fails.

e. How are you addressing the water, electrical to that unknown location?

Response: Quantities for 2" water service and branch circuit power wiring for the well, external to the well, which differ from those carried in the base bid location shall be adjusted by unit cost. This is clarified by amendment herein.

Consider these changes and information prior to submitting your bid on November 18, 2009.

Sincerely,

Scott Bickford
Contracts & Specifications Engineer

SCHEDULE OF ITEMS REVISED:

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 PROJECT ITEMS					
0010	201.11 CLEARING	11.000 AC				
0020	203.2001 COMMON EXCAVATION - PLAN QUANTITY	22710.000 CY				
0030	203.21 ROCK EXCAVATION	150.000 CY				
0040	203.24 COMMON BORROW	9140.000 CY				
0050	206.07 STRUCTURAL ROCK EXCAVATION - DRAINAGE AND MINOR STRUCTURES	100.000 CY				
0060	304.104 AGGREGATE SUBBASE COURSE (PLAN QUANTITY)	13100.000 CY				
0070	403.207 HOT MIX ASPHALT 19.0 MM HMA	2710.000 T				
0080	403.210 HOT MIX ASPHALT 9.5 MM HMA	1130.000 T				
0090	403.213 HOT MIX ASPHALT 12.5 MM BASE	1580.000 T				
0100	409.15 BITUMINOUS TACK COAT APPLIED	820.000 G				

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0110	509.20 ALUMINUM ALLOY STRUCTURAL PLATE ARCH	LUMP	LUMP			
0120	603.15 12 INCH CULVERT PIPE OPTION I	40.000 LF				
0130	603.159 12 INCH CULVERT PIPE OPTION III	70.000 LF				
0140	603.179 18 INCH CULVERT PIPE OPTION III	280.000 LF				
0150	604.248 CATCH BASIN TYPE F6	1.000 EA				
0160	604.252 CATCH BASIN TYPE A5-C	1.000 EA				
0170	605.09 6" UNDERDRAIN - TYPE B	200.000 LF				
0180	606.353 REFLECTORIZED GUARDRAIL DELINEATOR POST	3.000 EA				
0190	609.11 VERTICAL CURB TYPE 1	1560.000 LF				
0200	609.12 VERTICAL CURB TYPE 1 - CIRCULAR	430.000 LF				
0210	609.234 TERMINAL CURB TYPE 1 - 4 FOOT	4.000 EA				

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0220	609.50 CONCRETE BASE FOR CURBING	1990.000 LF				
0230	610.08 PLAIN RIPRAP	40.000 CY				
0240	610.46 STONE BERM LEVEL LIP SPREADER	380.000 CY				
0250	613.319 EROSION CONTROL BLANKET	1580.000 SY				
0260	615.07 LOAM	950.000 CY				
0270	618.1401 SEEDING - METHOD #2, PLAN QUANTITY	160.000 UN				
0280	618.143 SPECIAL SEED MIX:	20.000 UN				
0290	619.1201 MULCH - PLAN QUANTITY	160.000 UN				
0300	620.58 NON WOVEN GEOTEXTILE	830.000 SY				
0310	621.01 EVERGREEN TREES (8 INCH - 12 INCH)	450.000 EA				
0320	621.025 EVERGREEN TREES (3 FOOT - 4 FOOT) GROUP A	12.000 EA				

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0330	621.026 EVERGREEN TREES (3 FOOT - 4 FOOT) GROUP B	45.000 EA				
0340	621.038 EVERGREEN TREES (5 FOOT - 6 FOOT) GROUP B	15.000 EA				
0350	621.043 EVERGREEN TREES (6 FOOT - 8 FOOT) GROUP A	18.000 EA				
0360	621.044 EVERGREEN TREES (6 FOOT - 8 FOOT) GROUP B	27.000 EA				
0370	621.126 SMALL DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP A	27.000 EA				
0380	621.128 SMALL DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP C	3.000 EA				
0390	621.18 MEDIUM DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP C	6.000 EA				
0400	621.196 MEDIUM DECIDUOUS TREE (1.75 INCH - 2 INCH CALIPER) GROUP B	12.000 EA				
0410	621.201 MEDIUM DECIDUOUS TREE (2 INCH - 2.50 INCH CALIPER) GROUP A	7.000 EA				
0420	621.203 MEDIUM DECIDUOUS TREE (2 INCH - 2.50 INCH CALIPER) GROUP C	5.000 EA				
0430	621.267 LARGE DECIDUOUS TREE (1.75 INCH - 2 INCH CALIPER) GROUP A	11.000 EA				

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0440	621.269 LARGE DECIDUOUS TREE (1.75 INCH - 2 INCH CALIPER) GROUP C	6.000 EA				
0450	621.273 LARGE DECIDUOUS TREE (2 INCH - 2.50 INCH CALIPER) GROUP A	13.000 EA				
0460	621.389 DWARF EVERGREENS (15 INCH - 18 INCH) GROUP A	178.000 EA				
0470	621.5312 DECIDUOUS SHRUB 10" - 12"	180.000 EA				
0480	621.54 DECIDUOUS SHRUBS (18 INCH - 24 INCH) GROUP A	467.000 EA				
0490	621.541 DECIDUOUS SHRUBS (18 INCH - 24 INCH) GROUP B	66.000 EA				
0500	621.546 DECIDUOUS SHRUBS (2 FOOT - 3 FOOT) GROUP A	76.000 EA				
0510	621.547 DECIDUOUS SHRUBS (2 FOOT - 3 FOOT) GROUP B	137.000 EA				
0520	621.553 DECIDUOUS SHRUBS (3 FOOT - 4 FOOT) GROUP B	62.000 EA				
0530	621.71 HERBACEOUS PERENNIALS GROUP A	72.000 EA				
0540	621.711 HERBACEOUS PERENNIALS GROUP B	72.000 EA				

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0550	621.80 ESTABLISHMENT PERIOD	LUMP	LUMP			
0560	627.75 WHITE OR YELLOW PAVEMENT AND CURB MARKING	2500.000 SF				
0570	629.05 HAND LABOR, STRAIGHT TIME	30.000 HR				
0580	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	20.000 HR				
0590	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	40.000 HR				
0600	652.33 DRUM	15.000 EA				
0610	652.35 CONSTRUCTION SIGNS	25.000 SF				
0620	656.75 TEMP SOIL EROS AND WATER POLL CONTROL	LUMP	LUMP			
0630	660.21 ON-THE-JOB TRAINING (BID)	2000.000 HR				
0640	801.093 2 1/2" SEWER FORCE MAIN	1350.000 LF				
0650	815.10 WELL CASING, AND GROUT DIV. 1 - SECTION 012700	50.000 LF				

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0660	815.11 WELL DRILLING - INCL. WATER PIPE, ELECTRICAL WIRE, AND SUPPORT CABLE DIV. 1 - SECTION 012700	300.000 LF				
0670	815.12 2" WATER SERVICE PIPE WITH BRANCH CIRCUIT POWER WIRING FOR WELL PUMP DIV.1 - SECTION 012700	850.000 LF				
0680	DIV. 1 MOBILIZATION / DEMOBILIZATION GEN. CONDITIONS	LUMP	LUMP			
0690	DIV. 1 MOBILIZATION / DEMOBILIZATION GEN. CONDITIONS - SECTION 332100 - NEW WATER WELL AND PIPING	LUMP	LUMP			
0700	DIV. 10 SPECIALTIES	LUMP	LUMP			
0710	DIV. 10 SPECIALTIES ALLOWANCE - SIGNAGE COST	$6,000	$6,000		$6,000	
0720	DIV. 10 SPECIALTIES ALLOWANCE - STORAGE EQUIPMENT COST	$60,000	$60,000		$60,000	
0730	DIV. 11 EQUIPMENT ALLOWANCE- VECHICLE MAINT. EQUIPMENT	$140,000	$140,000		$140,000	
0740	DIV. 11 EQUIPMENT TOOTHLESS RECYCLED WATER BUS WASH SYSTEM	LUMP	LUMP			

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0750	DIV. 12 FURNISHINGS ALLOWANCE - SECTION 123200 FURNISHINGS	$100,000	$100,000		$100,000	
0760	DIV. 14 CONVEYING EQUIPMENT	LUMP	LUMP			
0770	DIV. 21 FIRE SUPPRESSION	LUMP	LUMP			
0780	DIV. 22 PLUMBING	LUMP	LUMP			
0790	DIV. 23 HVAC	LUMP	LUMP			
0800	DIV. 26 ELECTRICAL	LUMP	LUMP			
0810	DIV. 26 ELECTRICAL ALLOWANCE - ELECTRICAL UTILITY CONST.	$250,000	$250,000		$250,000	
0820	DIV. 26 ELECTRICAL ALLOWANCE - TELEPHONE UTILITY CONST.	$75,000	$75,000		$75,000	
0830	DIV. 3 CONCRETE	LUMP	LUMP			
0840	DIV. 31 EARTHWORK @ BLD. SITE - SEE SHEET C-101 FOR LIMITS	LUMP	LUMP			
0850	DIV. 32 EXTERIOR IMPROVEMENTS	LUMP	LUMP			

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0860	DIV. 33 UTILITIES	LUMP	LUMP			
0870	DIV. 4 MASONRY	LUMP	LUMP			
0880	DIV. 5 METALS STEEL	LUMP	LUMP			
0890	DIV. 6 WOOD & PLASTIC CARPENTRY	LUMP	LUMP			
0900	DIV. 7 THERMAL & MOISTURE PROTECTION	LUMP	LUMP			
0910	DIV. 8 DOORS & WINDOWS	LUMP	LUMP			
0920	DIV. 9 FINISHES	LUMP	LUMP			
	SECTION 0001 TOTAL					.

SECTION 0002 OPTION 2

0950	DIV. 1 MOBILIZATION / DEMOBILIZATION GEN. CONDITIONS - SITE PLANS ALT. LOC. NEW WATER WELL AND PIPING	LUMP	LUMP			
	SECTION 0002 TOTAL					.

SECTION 0003 OPTION 3

CONTRACT ID: 016123.50 PROJECT(S): 016123.50

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
0960	DIV. 7 THERMAL & MOISTURE PROTECTION THERMOPLASTIC PVC STANDING SEAM ROOF SYSTEM	LUMP	LUMP			
	SECTION 0003 TOTAL					.

SECTION 0004 OPTION 4

0940	DIV. 8 DOORS & WINDOWS INSULATED TRANSLUCENT FIBERGLASS (FRP) SANDWICH PANEL SKYLIGHT SYS.	LUMP	LUMP			
	SECTION 0004 TOTAL					.

SECTION 0005 OPTION 4

0930	DIV. 11 EQUIPMENT MOBILE LIFT SYSTEM W/ ELECTRICAL POWER INC.	LUMP	LUMP			
	SECTION 0005 TOTAL					
	TOTAL BID W/ALL OPTIONS					

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. If the Contractor discovers any ambiguity, error, omission, conflict, or discrepancy, General Conditions Section 101.3.6 Priority of Conflicting Contract Documents shall control.

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
2. State of Maine Department of Transportation, “Standard Specifications,” Revision December 2002, and any revisions thereto, apply to this Section.

1.2 SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, integrally colored concrete, placement procedures, and finishes, for the following:

1. Footings.
2. Foundation walls.
3. Slabs-on-grade.
4. Elevated slabs.
5. Concrete toppings.
6. Under slab insulation at radiant heated slabs

B. Related Sections: Following description of work is included for reference only and shall not be presumed to be complete:
1. Division 1 section Allowances for testing and inspection allowance.
2. Division 1 waste management: Section 01 7419, Construction Waste Management and Disposal.
3. Division 1 general LEED requirements and forms: Section 01 8113, Sustainable Design and LEED Requirements.”
4. Division 7 – Building Insulation” for under slab vapor barrier
5. Division 23 - Radiant –Heating Hydronic piping to coordinate radiant floor heat requirements.
6. Division 31 Section "Earth Moving" for drainage fill under slabs-on-grade

1.3 REFERENCES

A. American Concrete Institute (ACI):

1. ACI 301 "Specification for Structural Concrete for Buildings."
2. ACI 302 IR "Recommended Practice for Concrete Floor and Slab Construction."
3. ACI 303.1 "Standard Specification for Cast-In-Place Architectural Concrete."
4. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing of Concrete."
5. ACI 305R "Recommended Practice for Hot Weather Concreting."
6. ACI 306R "Recommended Practice for Cold Weather Concreting."

B. American Society for Testing and Materials (ASTM):

1. ASTM C309 "Liquid Membrane-Forming Compounds for Curing Concrete."

2. ASTM C494 "Standard Specification for Chemical Admixtures for Concrete."
3. ASTM C979 "Standard Specification for Pigments for Integrally Colored Concrete."

C. American Association of State Highway and Transportation Officials (AASHTO):

1. AASHTO M194 "Chemical Admixtures."

1.4 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. LEED Submittals:

1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content.

a. Include statement indicating costs for each product having recycled content.

2. Product data indicating location of material manufacturer and extraction. Include statement indicating cost and distance from place of manufacturer and extraction to Project Site for each regionally manufactured material.
3. Complete "LEED Materials Documentation Sheet", section Credit 5.1 + 5.2 Regionally Manufactured Products".
4. Design Mixtures for Credit ID 1.1: For each concrete mixture containing fly ash as a replacement for Portland cement or other Portland cement replacements and for equivalent concrete mixtures that do not contain Portland cement replacements.

C. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mixing water to be withheld for later addition at Project site.

D. Design Mixes: For each type of integrally colored concrete.

1. Samples for Initial Selection: Manufacturer's color charts showing full range of colors available.
2. Qualification Data: For firms indicated in "Quality Assurance" Article, including list of completed projects.
3. Product Data: Submit manufacturer's complete technical data sheets for the following:

a. Colored admixture.
b. Curing compound.
c. Densifier and finish coat system

E. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

F. Samples: For waterstops and vapor retarder.

G. Welding certificates.

H. Qualification Data: For installer and manufacturer.

I. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates.

J. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Steel reinforcement and accessories.
5. Fiber reinforcement.
6. Waterstops.
7. Curing compounds.
8. Floor and slab treatments.
9. Bonding agents.
10. Adhesives.
11. Vapor retarders.
12. Semi-rigid epoxy joint filler.
13. Joint-filler strips.
14. Repair materials.
15. Densifier and finish coat system for polished concrete

K. Field quality-control test and inspection reports.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer must be certified according to the Department of Transportation's "Certificate of Ready Mixed Concrete Production Facilities".

C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

E. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."

F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

H. Preinstallation Conference: The contractor shall conduct conference at Project.

1. Flatwork (interior and exterior slabs) Preinstallation Conference: Conduct conference at Project site to review all details and requirements for the batching, mixing, transporting, placing, finishing, and curing all interior and exterior flatwork operations. Require representatives of each entity directly concerned with flatwork operation to attend, including the following:

   a. Contractor's superintendent.
   b. Resident Engineer
   c. Design Engineers Representative.
   d. Independent testing agency responsible for concrete design mixtures.
   e. Ready-mix concrete manufacturer.
   f. Flat work subcontractor.

I. Integrally Colored and Polished Concrete Mockups:

1. At location on Project selected by Engineer, place and finish a minimum 10 feet by 10 feet area.
2. For accurate color, the quantity of concrete mixed to produce the sample should not be less than 3 cubic yards (or not less than 1/3 the capacity of the mixing drum on the ready-mix truck) and should always be in full cubic yard increments. Excess material shall be discarded according to local regulations.
3. Construct mockup using processes and techniques intended for use on permanent work, including curing procedures. Include samples of control, construction, and expansion joints in sample panels. Mockup shall be produced by the individual workers who will perform the work for the Project.
4. Accepted [mockup] [field sample] provides visual standard for work of Section.
5. Mockup] [Field sample] shall remain through completion of work for use as a quality standard for finished work.
6. Mockup may be cast at a section of the building slab in a mechanical room or storage room at the Contractors option.

1.7 PROJECT CONDITIONS

A. Integrally Colored Concrete and Polished Concrete Environmental Requirements:

1. Schedule placements to minimize exposure to wind and hot sun before curing materials are applied.
2. Avoid placing concrete if rain, snow, or frost is forecast within 24-hours. Protect fresh concrete from moisture and freezing.
3. Comply with professional practices described in ACI 305R and ACI 306R.

B. Schedule delivery of concrete to provide consistent mix times from batching until discharge. Mix times shall meet manufacturer's written recommendations.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. LEED Requirements

1. Provide product manufactured and extracted within 500 miles of the project site.

B. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

C. Colored Concrete admixture: L.M. SCOFIELD COMPANY, Douglasville, Georgia and Los Angeles, California (800) 800-9900 or the appropriate local contact: Eastern Division – 201-672-9050, or approved equal.

D. Concrete Densifier and Finish Coat System: Formula One: L.M. SCOFIELD COMPANY, Douglasville, Georgia and Los Angeles, California (800) 800-9900 or the appropriate local contact: Eastern Division – 201-672-9050, or approved equal.

E. Concrete Densifier: Formula One SG : L.M. SCOFIELD COMPANY, Douglasville, Georgia and Los Angeles, California (800) 800-9900 or the appropriate local contact: Eastern Division – 201-672-9050, or approved equal.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

a. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

D. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.

E. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

F. Chamfer Strips: Wood, metal, PVC, or rubber 3/4 by 3/4 inch (19 by 19 mm), minimum.

G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

H. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

I. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.

2.3 STEEL REINFORCEMENT

A. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.

B. Reinforcing Bars: ASTM A 615/A 615M, deformed.

C. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60, deformed bars, assembled with clips.

D. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut bars true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

C. Rebar couplers, male and female threaded splices connectors for hairpin reinforcing:

1. If the contractor elects not to drill forms for placement of hairpins threaded splice connections shall be use equal to Dayton Superior concrete accessories.

2.5 Radiant heated slab insulation/ vapor barrier.

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. Assembled insulation, vapor barrier and PEX tube holding grid panel under interior concrete slabs: sized for ¾" & 1" PEX tubing. Verify PEX tubing size with section "238316 Radiant –Heating Hydronic piping".

a) Crete – Heat LLC
b) EZ Floor, Inc

B. Under Interior Slab on Grade Insulation:

1. Assembled insulation, vapor barrier and PEX tube holding grid panel under concrete slabs:

a. 2 inch floor slab insulation: 2-7/8 inches total thickness with 2 inches of solid EPS foam providing an R 10 and a 1170 psf compressive strength rating. Each panel to cover 8 square feet with an integral 10 mil polystyrene film providing a perm rating of .51 perms and a fastener for ¾ inch and 1 inch PEX tubing. The panels are to have protrusions approximately 2.6 inches in diameter and a height of approximately 0.9 inches. The protrusions to be aligned in alternating rows 3 inches apart on center to allow for an accurate tube placement on a 3" grid system.

1) Material Properties:

a) Flexural Strength in accordance with ASTM C203-99: Method 1, Procedure A Modified with results as follows: Shell Covered Face in Tension: 240 kPa maximum fiber stress and Exposed EPS Foam Insulation Face in Tension: 457 kPa maximum fiber stress

b) Compressive Resistance in accordance with ASTM C165-00 Modified with results of 56 kPa compressive resistance.
c) Density testing in accordance with ASTM D1622-03 Modified with results as follows: foam 1.646 lb./ft^3, and plastic shell and foam 1.95 lb./ft^3.
d) Dimensional Stability testing in accordance with ASTM D2126-04 7 day @ -40°C (-40°F) and 7 day @ 70C (158°F), 97% RH.
e) Water Absorption testing in accordance with ASTM C272-01 Modified resulted in .83 % by Volume Absorbed.
f) Water Vapor Permeance testing was done in accordance with ASTM E96-00 Modified, Plastic Shell Facing Humidity resulting in 0.51 perms.

C. Thermal Resistance testing in accordance with ASTM C518 Modified resulting in R10.

2.6 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type II.

B. Normal-Weight Aggregates: ASTM C 33, Class 3M coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 5 years satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.

C. Water: ASTM C 94/C 94M and potable.

2.7 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260. Sika AER by the Sika Chemical Corp. or approved equal.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A. . Eucon W12-75 by the Euclid Chemical Corp. “Pozzolith 200N by Master Builders “Plastocrete 161” by the Sika Chemical Corp. or approved equal
2. Non-Corrosive Accelerator: ASTM C 494, Type C or E, Accelguard 80 by the Euclid Chemical Co. or "Polar Set" by W. R. Grace and Co. or approved equal.

    a. Non –corrosive accelerator shall have long-term test data proving its non-corrosive effect on reinforcing steel

3. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
4. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
5. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

C. Colored Admixture for Integrally Colored Concrete: CHROMIX P® Admixture and CHROMIX ML®; L.M. SCOFIELD COMPANY.

1. Admixture shall be a colored, water-reducing, admixture containing no calcium chloride with coloring agents that are lime-proof and ultra-violet resistant.
2. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTM C494 and ASSHTO M194.
3. Manufacturers:

    a. Davis Colors.
    b. Lambert Corporation.
    c. Scofield, L. M. Company.
    d. Solomon Colors.

4. Colors:

    a. Cement: Color shall be gray.
    b. Sand: Color shall be locally available natural sand.
    c. Aggregate: Concrete producer's standard aggregate complying with specifications.
    d. Colored Admixture: Shall be a grey range. As selected by Architect from approved manufacturers standard color chart.

5. Add colored admixture to concrete mix according to manufacturer's written instructions.

D. Colored Admixture for Integrally Colored Concrete and polished concrete: FORMULA ONE WITH CHROMIX P® Admixture or CHROMIX ML®; L.M. SCOFIELD COMPANY.

2.8 WATERSTOPS

1. Self-Expanding Strip Waterstops: Manufactured rectangular or trapezoidal strip, sodium bentonite or other hydrophilic material for adhesive bonding to concrete. Parastop II by Paramount Technical Products, Inc. or approved equal Products:

2.9 CURING MATERIALS

A. Curing Compound for Integrally Colored Concrete: Curing compound shall comply with ASTM C309 and be of same manufacturer as colored admixture, for use with integrally colored concrete.

1. Curing and Sealing Compound: Cureseal-W™ Semi-gloss and Cureseal-S™ Matte; L.M. SCOFIELD COMPANY. Curing and sealing compound shall comply with ASTM C309 and be of same manufacturer as colored admixture, for use with integrally colored concrete.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Curing compound: Cure & Seal 30 EF non yellowing 30% solids acrylic copolymer curing and sealing compound that contributes to LEED EQ Credit 4.2.

1. Low odor and contains VOC < 100 g/L, making it VOC compliant in all regions.
2. Meets ASTM C309.
3. Low VOC curing and sealing compound can be used in all VOC restricted regions throughout the United States. STANDARDSASTM C309, Type 1 Class A & B AASHTO M-148, Type 1, Class A & B ADVANTAGES Contributes to LEED EQ Credit 4.2 Earth Friendly (EF), VOC < 100 g/L

4. Low Odor Non-Flammable Safe to Use & Store Meets ASTM C309
5. COLOR Milky white liquid, dries clear. Substrate will darken slightly and have a glossy appearance.

    a. Dayton Superior Company;
    b. Euclid Chemical Company.
    c. Kaufman Products, Inc
    d. Lambert Corporation.
    e. Meadows, W. R., Inc.

2.10 RELATED MATERIALS

A. Perimeter Isolation Joint: 2 lb. density, cross linked polyethylene with removable strip-off.

B. Epoxy Joint Filler: Two-component, semi rigid, 100 percent solids, and epoxy resin with a Shore A hardness of 80 per ASTM D 2240.

C. Deicer Protection (Exterior Concrete): Saltgard as manufactured by Pro So Co, Inc., or approved equal.

D. Water and Oil Repellent: A clear penetrating silane compound with oil repellency additives. Water and oil repellent shall be Sure Klean Weather Seal SLX100 as manufactured by Pro So Co, Inc. or approved equal.

E. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

F. Epoxy-Bonding Adhesive: A two-component, solvent-free, moisture-insensitive structural epoxy adhesive in compliance with ASTM C 881, Type I and Type II, Grade 2, Class B and C, and shall be Sikadur 32, Hi-Mod by Sika Corp. or approved equal.

G. Doweling Adhesive: A two-component, vinylester blend resin equal to HI HY150 adhesive as manufactured by Hilti Fastening Systems, Tulsa, Oklahoma or approved equal.

H. Floor Control: Control joints shall be saw cut or 1/4" wide soft-cut.

I. Construction Joints: See Drawing Details.

2.11 Non-Shrink Grout: Premixed compound with non-metallic aggregate, cement, water-reducing and plasticizing agents capable of minimum compression strength of 2,400 lbs. Non-shrink grout shall be "Eucon N-S" (non-metallic) by the Euclid Chemical Co., "Masterflow 713" (non-metallic) by Master Builders, Five Star Grout by U.S. Grout Corp., or approved equal REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.

4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.12 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash: 25 percent.
2. Combined Fly Ash and Pozzolan: 25 percent.
3. Ground Granulated Blast-Furnace Slag: 50 percent.
4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
5. Silica Fume: 10 percent.
6. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
7. Combined Fly Ash or Pozzolans, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

E. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

F. Lithium Densifier and Finish Coat System: Add lithium densifier after 28 days of curing. Grind to a grade 2 – Salt and pepper finish.

G. Lithium Densifier : Add lithium densifier SG after 28 days of curing.

2.13 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.

C. Table for Working Stress Concrete:

USE	STRENGTH 28 DAYS	MAXIMUM SIZE COARSE AGGREGATE	CEMENT MAXIMUM SLUMP AT PLACEMENT	TYPE OF CEMENT	WATER-CEMENT RATIO
Walls, Footings & Pads (air-entrained)	3000#/sq. in.	3/4"	2"-4"	II	0.50
Interior Slabs on Grade (non-air-entrained)	4000#/sq. in.	1 1/2"	2"-4"	II	0.52
Interior elevated Slabs (non-air-entrained)	3000#/sq. in.	3/4"	2"-4"	II	0.50
Exterior Slabs on Grade, Sidewalks, & Related Work (air-entrained)	4500#/sq. in.	3/4"	4"	II	0.45

D. All concrete shall contain the specified water-reducing admixture. All slabs placed below 50 degrees F shall contain the specified non-corrosive accelerator. All exterior concrete shall contain an approved air entraining admixture.

E. All exterior concrete, foundation walls and footings shall have an air content of five percent to seven percent.

F. Concrete Slabs: 3000-psi concrete for interior concrete slabs shall not be less than 2600-psi and not more than 3400-psi in 28 days. It is the intent of this requirement to lower the cement content to reduce concrete shrinkage for slabs.

G. All concrete subjected to deicers shall have a maximum water-cement ratio of 0.45.

H. All mix design, batching, placing, finishing, curing, joint sealing and patching of color conditioned concrete shall be in strict accordance with the manufacturers recommendations

I. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.

J. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus 1 or minus 1.5 percent, unless otherwise indicated:

1. Air Content: 6 percent for 3/4-inch- (19-mm-) nominal maximum aggregate size.

K. Do not air entrain concrete to trowel-finished interior floors. Do not allow entrapped air content to exceed 3 percent.

L. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

M. Synthetic Fiber: Uniformly disperse in concrete mix at manufacturer's recommended rate, but not less than 1 lb/cu. yd. (0.60 kg/cu. m).

N. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.14 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.15 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8 inch for exposed finished surfaces.
2. Class B, 1/4 inch for non exposed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.

1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 INSTALLATION OF INSULATION, VAPOR BARRIER AND PEX TUBE HOLDING GRID PANEL UNDER CONCRETE SLABS:

A. Coordinate installation with PEX Tubing layout drawing provided under section 238316 Radiant – Heating Hydronic piping.

B. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
2. All steel bars and wire shall be of size, gauge and length indicated, accurately bent or formed to shapes detailed or scheduled by experienced shops using methods that will not injure the materials.
3. Steel reinforcing shall not be bent in a manner that will injure the material or the embedding concrete. Bars with kinks or bends not shown on the plans shall not be used. Heating of reinforcement for bending will not be permitted. Bars shall be bent once only (no rebending or straightening allowed) unless shown as such on the drawings.
4. All details of reinforcement not shown or indicated on the drawings or specifically called for in the specifications shall conform to ACI 315.

5. Lap all bars at splices, corners and intersections a minimum of 36 bar diameters unless otherwise indicated.
6. All intersecting concrete walls shall be tied with #4L bars 3'-0" long, bent 18" x 18" spaced 12" on center, outside face only unless otherwise indicated.
7. Splices of reinforcement shall not be made at points of maximum stress. Splice lengths shall be a minimum of 36 bar diameters unless otherwise indicated and shall provide sufficient lap to transfer the stress between bars by bond and shear. Stagger splices of adjacent bars where possible. All splices and laps at corners and intersections shall be tied with wire at each end.
8. Where obstructions (pipes, conduit, ducts, etc.) prevent the intended placement of reinforcing, provide additional reinforcing as directed by the Engineer or his Representative around the obstruction to match that reinforcing interrupted.
9. Provide additional stirrups, ties, trim bars, etc., as directed around all openings, sleeves, pipes, and conduits, which pass through structural elements.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Coverage of bars (including stirrups and column ties) shall, unless otherwise shown, be as follows:

Footings:	3" soil face, 2" top
Slabs (on grade):	2" soil face, 1-1/2" top face
Slabs (elevated):	1" top and bottom
Beam and Column (piers) 1-1/2"	
Walls:	2" clear to form at exterior

2. Misplaced Reinforcing: If any reinforcing bars are found to be misplaced after concrete has been placed, the Engineer shall be notified immediately and no correction or cutting shall be made without his direction. Misplaced bars shall not be bent or kinked. Any redesign and/or reinforcing required because of misplaced bars shall be at the Contractor's expense.
3. All reinforcing shall be kept separate from soil, pipe, conduit ducts, etc., by approved non-metallic separators.
4. Reinforcement shall not have welded joints unless indicated on the drawings or unless prior approval has been given by the Engineer. Welding shall conform to the requirements of the American Welding Society Structural Welding Code for reinforcing steel D1.4. Field welding shall be performed by AWS certified welders.
5. Shop- or field-weld reinforcement according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. .
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls a maximum of 60 feet on center. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch more than 1 inch below finished concrete surface where joint sealants, specified in Division 07 Section "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 WATERSTOPS

A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

3.9 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.10 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:

1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in 1 direction.

1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings. Do not grind integrally colored floors exposed to view

1. Trowel: Precautions should be taken to ensure that the surface is uniformly troweled so that it will not be slippery. Do not over-trowel or burnish the surface.
2. Apply a trowel finish to surfaces indicated, exposed to view and to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
3. Finish surfaces to the following tolerances, according to ASTM E 1155:

a. Garage Maintenance and Storage: Provide overall values of flatness, FF 25; and of levelness, FL 20; with minimum local values of flatness, FF 17; and of levelness, FL 15.
b. Office Spaces: Provide overall values of flatness, FF 35; and of levelness, FL 25; with minimum local values of flatness, FF 24; and of levelness, FL 17; for slabs-on-grade.
c. Fork Lift Storage Areas: Provide overall values of flatness, FF 30; and of levelness, FL 20; with minimum local values of flatness, FF 24; and of levelness, FL 15.
d. Elevated Slabs: Provide overall value of flatness, FF 25.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated and where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

G. Grade II – Salt and pepper finish: Grind and polish concrete floors in lobby, vestibule and 1st floor corridors as indicated on finish schedule.

3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.13 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching “0.2 lb/sq. ft. x h” before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Do not cover integrally colored concrete floors with plastic sheeting.

D. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

E. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

F. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

    a. Water.
    b. Continuous water-fog spray.
    c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

    a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
    b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.

c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.14 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than 14 days' old.
3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

B. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

3.15 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least one month. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semi rigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.16 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 1/32 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.17 FIELD QUALITY CONTROL

A. Testing and Inspecting: Contractor shall engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M.

    a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location

of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate dos not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness according to ASTM E 1155 within 24 hours of finishing.

END OF SECTION 033000

SECTION 086250- TUBULAR SKYLIGHTS

PART 1 GENERAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. If the Contractor discovers any ambiguity, error, omission, conflict, or discrepancy, General Conditions Section 101.3.6 Priority of Conflicting Contract Documents shall control.

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
2. State of Maine Department of Transportation, "Standard Specifications," Revision December 2002, and any revisions thereto, apply to this Section.

1.2 WORK INCLUDED

A. Provide tubular skylight work as indicated on Drawings and as specified. Include, but do not limit to:
1. 14 in. diameter tubular skylights

1.3 RELATED WORK

A. Examine Contract Documents for requirements that affect work of this Section. Other specification Sections that directly relate to work of this Section include, but are not limited to:
1. Section 051200, STRUCTURAL STEEL; Structural steel framing to receive skylight.
2. Section 053100, STEEL DECKING.
3. Section 061000, ROUGH CARPENTRY; Wood blocking and curbs.
4. Section 079200, JOINT SEALANTS; Requirements for joint sealant work.

1.4 REFERENCES

A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2001

B. ASTM A 463/A 463M - Standard Specification for Steel Sheet, Aluminum Coated, by the Hot Dip Process; 2001a.

C. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized), by the Hot Dip Process; 2001a.

D. ASTM E 283 - Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

E. ASTM E 308-95 - Standard Practice for Computing the Colors of Objects by Using the CIE System

F. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls and Doors.

G. ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Curtain walls and Doors by Static Air Pressure Difference.

H. ASTM D 635 - Test Method for Rate of Burning and/or Extent of Time of Burning of Self-Supporting Plastics in a Horizontal Position.

I. ASTM D-1929 - Test Method for Ignition Properties of Plastics.

J. UL 181 - Factory Made Air Ducts and Air Connectors; 1998.

K. UL 790 - Standard for Tests for Fire Resistance of Roof Covering Materials; 1997.

L. ICBO/ICC AC-16 - Acceptance Criteria for Plastic Skylights; 2002.

1.5 PERFORMANCE REQUIREMENTS

A. Completed skylight assemblies shall be capable of meeting the following performance Requirement:
   1. Air Infiltration Test: Air infiltration will not exceed 0.30 cfm/sf aperture with a pressure delta of 1.57 psf across the tube when tested in accordance with ASTM E 283.
   2. Water Resistance Test: No uncontrolled water leakage at 10.5 psf pressure differential with water rate of 5 gallons/hour/sf when tested in accordance with ASTM E 547.
   3. Uniform Load Test:
      a. No breakage, permanent damage to fasteners, hardware parts, or damage to make system inoperable or cause excessive permanent deflection of any section when tested at a Positive Load of 150 psf (7.18 kPa) or Negative Load of 60 psf (2.87 kPa) in accordance with ICBO/ICC AC-16 Section A, or Negative Load of 70 psf (3.35 kPA) if tested per ICBO/ICC AC-16 Section B.
      b. All units shall be tested with a safety factor of (3) for positive pressure and (2) for negative pressure, acting normal to plane of roof in accordance with ASTM E 330.
   4. Fire Testing:
      a. When used with the Dome Edge Protection Band, all domes meet fire ratingrequirements as described in the 2006 International Building Code.
      b. Self-Ignition Temperature - Greater than 650 degrees F Per: U.B.C. Standard 26-6. See ASTM D-1929.
      c. Smoke Density - Rating no greater than 450 Per U.B.C. 8-1 (See ASTM Standard E 84) in way intended for use. Classification C.
      d. Rate of Burn and/or Extent - Maximum Burning Rate: 2.5 inches/min (62mm/min) Classification CC-2: U.B.C. Standard 26-7. See ASTM D 635.
      e. Rate of Burn and/or Extent - Maximum Burn Extent: 1 inch (25 mm) Classification CC-1: U.B.C. Standard 26-7. See ASTM D 635.

1.6 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

B. Shop Drawings.

C. Verification Samples: As requested by Architect.

D. Test Reports: Independent testing agency or evaluation service reports verifying compliance with specified performance requirements.

E. LEED Submittals:
   1. Credit IEQ 6.1: Product documentation of controllability of lighting systems.
      a. Include statement indicating costs for each product locally manufactured.
   2. List of Daylight Credits available for the products specified.
   3. Data on Energy Optimization Performance Credits for the products specified.
   4. Data on Regional Credits which may me available for the project location. (LEED 2.1).
   5. Data on Perimeter and Non-Perimeter Controllability of Systems for use of Daylight Dimmer option with the products specified.
   6. Data on potential Innovation in Design Credits which may be available for the innovative use of the products specified.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Engaged in manufacture of tubular skylights for minimum 10 years.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits

1.10 WARRANTY

A. Skylights: Manufacturer's standard warranty for 10 years.

B. Electrical Parts: Manufacturer's standard warranty for 5 years, unless otherwise indicated.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Solatube International, Inc.; 2210 Oak Ridge Way, Vista, CA92083. ASD. Tel: (760) 597-4425. Fax: (760) 597-4488. Email: info@solatube.com. www.solatube.com
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2.02 TUBULAR SKYLIGHTS

A. Tubular Skylights General : Transparent, self-mounted, reflective tube, and ceiling level diffuser assembly, transferring sunlight to interior spaces; complying with ICBO/ICC AC-16. All components made and assembled by one manufacturer.

B. Brighten Up Series: Solatube Model S290DS, 14 Inch (350 mm) Daylighting System.

C. Roof Dome Assembly: Transparent, UV and impact resistant dome with flashing base supporting dome and top of tube
1. Outer Dome Glazing: Type DA, 0.125 inch (3 mm) minimum thickness injection molded acrylic classified as CC2 material; UV inhibiting, impact modified acrylic blend.

2. LightTracker Reflector: Aluminum sheet, thickness 0.015 inch (0.4 mm) with Spectralight Infinity. Positioned in dome to capture low angle sunlight.

D. Flashing Base: One piece, seamless, leak-proof flashing functioning as base support for dome and top of tube.

1. Base Material: Sheet steel, corrosion resistant, meeting ASTM A 653/A 653M or ASTM A 463/A 463M, 0.028 inch (0.7 mm) thick.

2. 4” pitched metal, self mounted Type FPM, no pitch 6 inches (152 mm) high.
Base Pitched: Pitched Type FPM, 22.5 degrees slope from horizontal, 4 inches (102 mm) high.

3. Flashing Insulator: Type FI. Thermal isolation material for use under flashing.

E. Roof Flashing Turret Extensions: Provide manufacturer's standard extensions for applications requiring:

1. Type T012: Additional lengths of 12 inches (300 mm) extension.

F. Tube Ring: Attached to top of base section; 0.090 inch (2.3 mm) nominal thickness injection
molded high impact acrylic; to prevent thermal bridging between base flashing and tubing
and channel condensed moisture out of tubing.

G. Reflective Extension Tube: Aluminum sheet, thickness 0.015 inch (0.4 mm).

1. Interior Finish: Spectralight Infinity high reflectance specular finish on exposed reflective surface Visible spectrum (400 nm to 760 nm) greater than 99 percent. Total solar spectrum (400 nm to 2500 nm) less than 93 percent.

2. Color: a* and b* (defined by CIE L*a*b* color model) shall not exceed plus 2 or be less than minus 2 as determined in accordance to ASTM E 308.

3. Tube Diameter: Approximately 14 inches (250 mm).

4. Reflective 30 degree Adjustable tube: Aluminum sheet, thickness .015 inch (0.4 mm)

H. Interior Finish: Spectralight Infinity high reflectance specular finish on exposed reflective surface Visible spectrum (400 nm to 760 nm) greater than 99 percent.
Total solar spectrum (400 nm to 2500 nm) less than 93 percent.

I. Ceiling Ring: Injection molded, impact resistant acrylic. Nominal thickness is 0.110 inches.

J. Dual Glazed Diffuser Assembly:

1. Upper glazing: Acrylic plastic classified as CC2 material. The nominal thickness is 0.040 inches (1.020 mm).

2. Lower glazing (Optiview Fresnel Lens): Molded polycarbonate plastic classified as CC1 material. The nominal thickness is 0.022 inches (0.61 mm).

3. Diffuser Trim Ring: Injection molded acrylic.
   a. Stainless-tone Trim (Optiview Fresnel Lens): Type L5.

2.03 ACCESSORIES

A. Fasteners: Same material as metals being fastened, non-magnetic steel, non-corrosive metal of type recommended by manufacturer, or injection molded nylon.

B. Sealant: Polyurethane or copolymer based elastomeric sealant as provided or recommended by manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's printed instructions.

B. After installation of first unit, field test to determine adequacy of installation. Conduct water
test in presence of Owner, Architect, or Contractor, or their designated representative. Correct if needed before proceeding with installation of subsequent units.

3.04 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 107500 – FLAGPOLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. If the Contractor discovers any ambiguity, error, omission, conflict, or discrepancy, General Conditions Section 101.3.6 Priority of Conflicting Contract Documents shall control.
   1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
   2. State of Maine Department of Transportation, "Standard Specifications," Revision December 2002, and any revisions thereto, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Aluminum ground mounted flagpole.
   2. Truck, halyards, and accessories.
   3. Concrete flagpole foundation base.

B. Related Documents: The Contract Documents, as defined in Section 011000- Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

C. Related Sections:
   1. Section 033000 - Cast-In-Place Concrete: Concrete base.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM B 241 - Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.

1.4 SYSTEM DESCRIPTION

A. Performance Requirements:
   1. Pole With Flag Flying: Resistant without permanent deformation, 100 miles per hour wind velocity, non-resonant, safety design factor of 1.0.
   2. Flag Dimension: 4 foot x 6 foot. Coordinate recommended flag size with manufacturer.

1.5 SUBMITTALS

A. Section 013300 - Submittal Procedures: Procedures for submittals.
   1. Product Data: Data on pole, accessories, and configurations.
   2. Shop Drawings: Detailed dimensions, anchor requirements, imposed loads, and foundation system.
   3. Assurance/Control Submittals:
      a. Certificates: Manufacturer's certificate that Products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

A. Design flagpole foundation under direct supervision of a Professional Structural Engineer licensed in the State where Project is located, experienced in the design of flagpole supports.

1.7 DELIVERY, STORAGE AND HANDLING

A. Transport, handle, store, and protect products.

B. Spiral wrap flagpole with protective covering and pack in protective shipping tubes or containers.

C. Protect flagpole and accessories on site from damage or moisture.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with project requirements, manufacturers offering specified items which may be incorporated in the Work include the following:
1. American Flagpole, Division of Kearney-National Incorporated, Abingdon, VA (800) 368-7171.
2. Concord Industries, Incorporated, Addison, TX (800) 527-3902.
3. Eder Flag Manufacturing Company, Incorporated, Oak Creek, WI (800) 558-6044.
4. Pole-Tech Company, Incorporated, East Setauket, NY (800) 633-6733.

B. Section 01600 - Product Requirements: Product options and substitutions. Substitutions: Permitted.

2.2 MATERIALS

A. Pole Type: Commercial internal halyard cone tapered aluminum with ground sleeve.
1. Bases of design is a Eder flag Deluxe IH series pole.

B. Flagpole: ASTM B 241; 6063-T6 wrought alloy aluminum, cone tapered.
1. Outside Butt Diameter: 6- inches.
2. Outside Tip Diameter: 3-1/2- inches.
3. Nominal Wall Thickness: 0.188 inches.
4. Nominal Height: 25 foot 0 inches, measured from top of flagpole base.
5. Mounting: Ground mounted to concrete foundation and base.

C. Truck Assembly: Aluminum; revolving; stainless steel ball-bearings, non-fouling.

D. Halyard: Stainless steel aircraft cable with four chrome plated bronze swivel snaphooks, plastic covered counterweight, and beaded sling.

E. Hand Crank: Removable type with automatic brake system to permit locking of flag in any position.

F. Collar: Spun aluminum to match pole.

G. Foundation Sleeve: 16 gauge steel, galvanized corrugated tube with 3/16 inch thick steel base plate and support plate, 3/4 inch diameter x 18 inch long ground spike, and steel centering wedges.

H. Concrete: Specified in Section 03300.

I. Flags: Furnished and installed by owner.

2.3 FINISHES

A. Metal Surfaces in Contact with Concrete: Asphaltic paint.

B. Aluminum: AA M32-C22-A41 Clear anodized.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.

B. Report in writing to engineer prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.

C. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the owner.

3.2 PREPARATION

A. Coat metal sleeve surfaces below grade and surfaces in contact with dissimilar materials with asphaltic paint.

3.3 INSTALLATION

A. Install flagpole base assembly, and accessories in accordance with manufacturer's published instructions.

B. Electrically ground flagpole installation.

C. Install foundation plate and centering wedges for flagpole base set in concrete base and fasten. Fill foundation tube sleeve with sand and compact.

3.4 CONSTRUCTION

A. Site Tolerances:
1. Maximum Variation From Plumb: One inch.

3.5 ADJUSTING AND CLEANING

A. Clean flagpole surfaces immediately prior to installation.

B. Adjust operating devices for smooth halyard and flag function.

END OF SECTION

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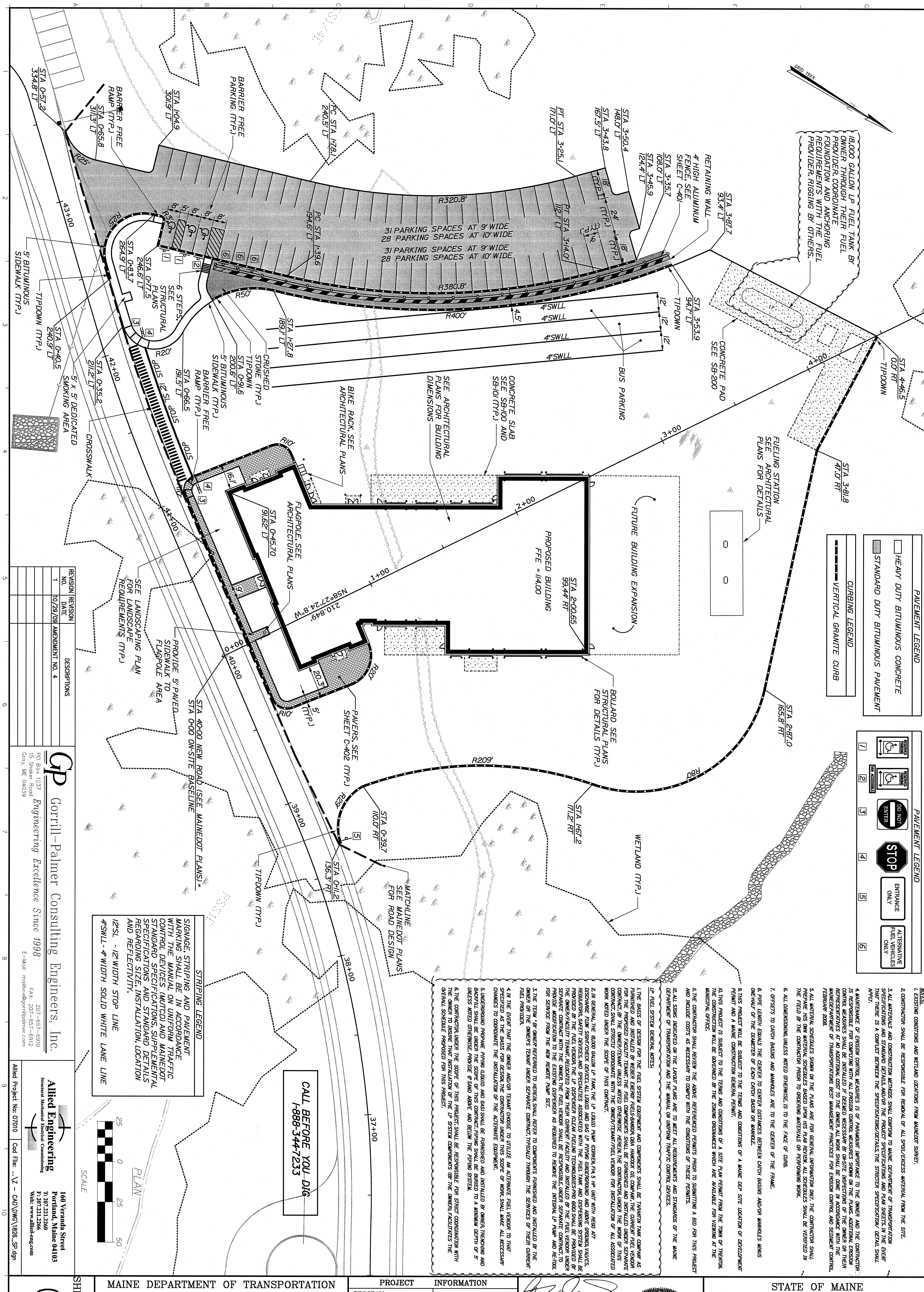


REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO. 4

Gorrill-Palmer Consulting Engineers, Inc.
Engineering Excellence Since 1998
PO Box 1237, 15 Shaker Road, Gray, ME 04039
207-657-6910 FAX: 207-657-6912
E-Mail: mailbox@gorrillpalmer.com

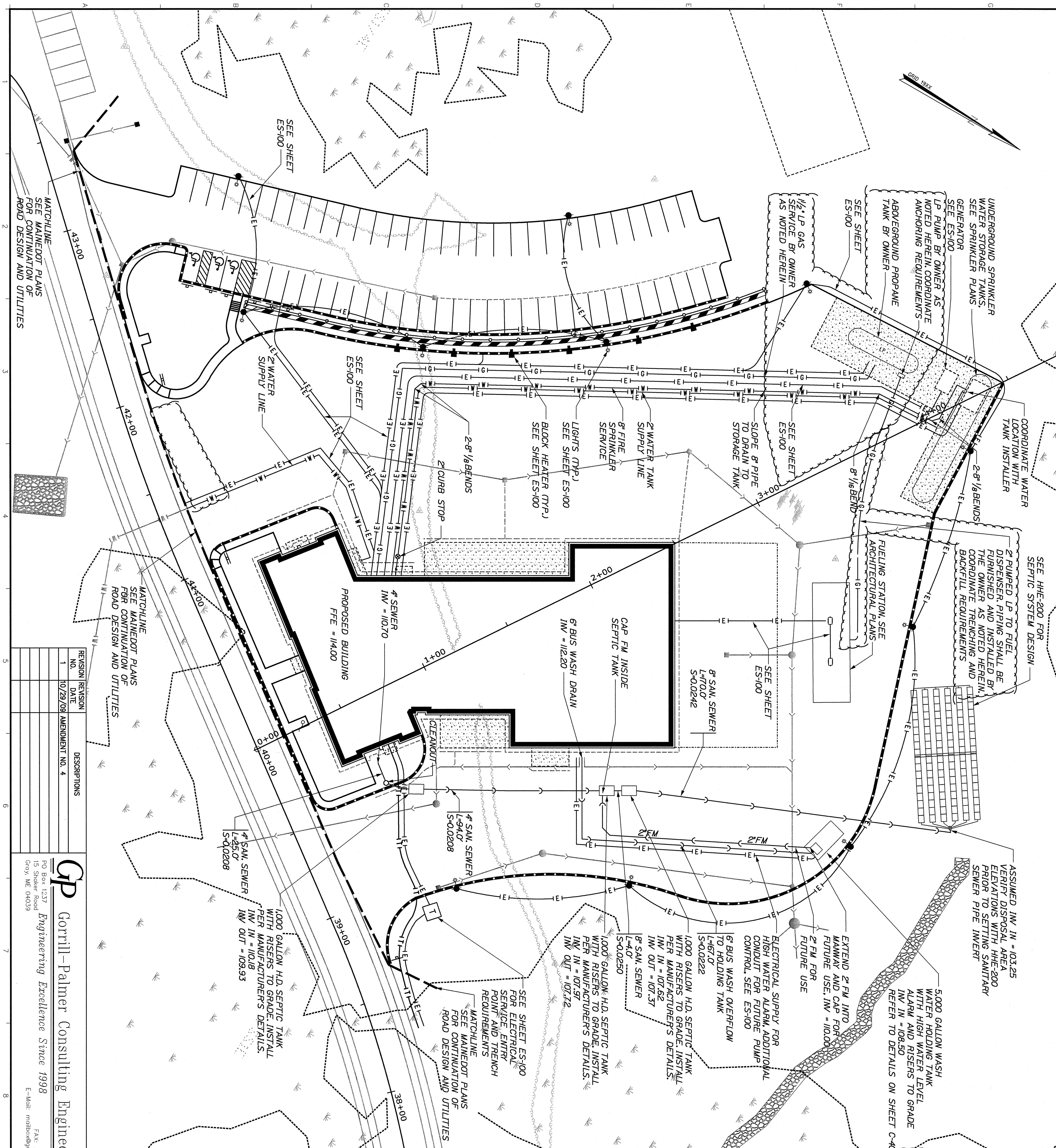
Allied Engineering
Structural Mechanical Electrical Commissioning
160 Veranda Street, Portland, Maine 04103
T: 207.221.2260 F: 207.221.2266
Web: www.allied-eng.com

Allied Project No: 07010 | Cad File: ...\Z - CAD\DWG\1826_SP.dgn

SHEET NUMBER	MAINE DEPARTMENT OF TRANSPORTATION	PROJECT INFORMATION			STATE OF MAINE DEPARTMENT OF TRANSPORTATION
C-101 OF 8	ACADIA GATEWAY FACILITY	PROGRAM	–	SIGNATURE	DATE
	BUS MAINTENANCE FACILITY	PROJECT MANAGER	WPF	P.E. NUMBER 6251	MAY 1, 2009
	Site Layout Plan	DESIGNER	–	DATE 10-26-09	FED PIN NO:
		CONSULTANT	ALLIED ENGINEERING		PIN NO: 16123.50
		PROJECT RESIDENT	–		
		CONTRACTOR	–		
		PROJECT COMPLETION DATE	–		

ALTON M. PALMER III No. 6251 LICENSED PROFESSIONAL ENGINEER — STATE OF MAINE

Filename: ...\Z - CAD\DWG\1826_UTIL.dgn   Division: HIGHWAY   Username: dburgess   Date:10/26/2009



NOTES:
1. ELECTRICAL INFORMATION, INCLUDING PRIMARY AND SECONDARY SERVICE AS WELL AS LIGHTING AND TELEPHONE, SHOWN FOR COORDINATION PURPOSES. REFER TO ELECTRICAL SITE PLAN ES-100 BY ALLIED ENGINEERING FOR DESIGN INFORMATION INCLUDING TRENCH SECTION.
2. SEE HHE-200 APPLICATION FOR SEPTIC SYSTEM INFORMATION.
3. COORDINATE ALL UTILITY ENTRY POINTS WITH APPROPRIATE TRADES PRIOR TO CONSTRUCTION.
4. COORDINATE INSTALLATION OF UNDERGROUND GAS PIPING WITH GAS TANK AND PUMP SUPPLIER.

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO. 4

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Allied Project No: 07010   Cad File: ...\Z - CAD\DWG\1826_UTIL.dgn

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

Utility Plan

PROJECT	INFORMATION
PROGRAM	–
PROJECT MANAGER	WPF
DESIGNER	–
CONSULTANT	ALLIED ENGINEERING
PROJECT RESIDENT	–
CONTRACTOR	–
PROJECT COMPLETION DATE	–

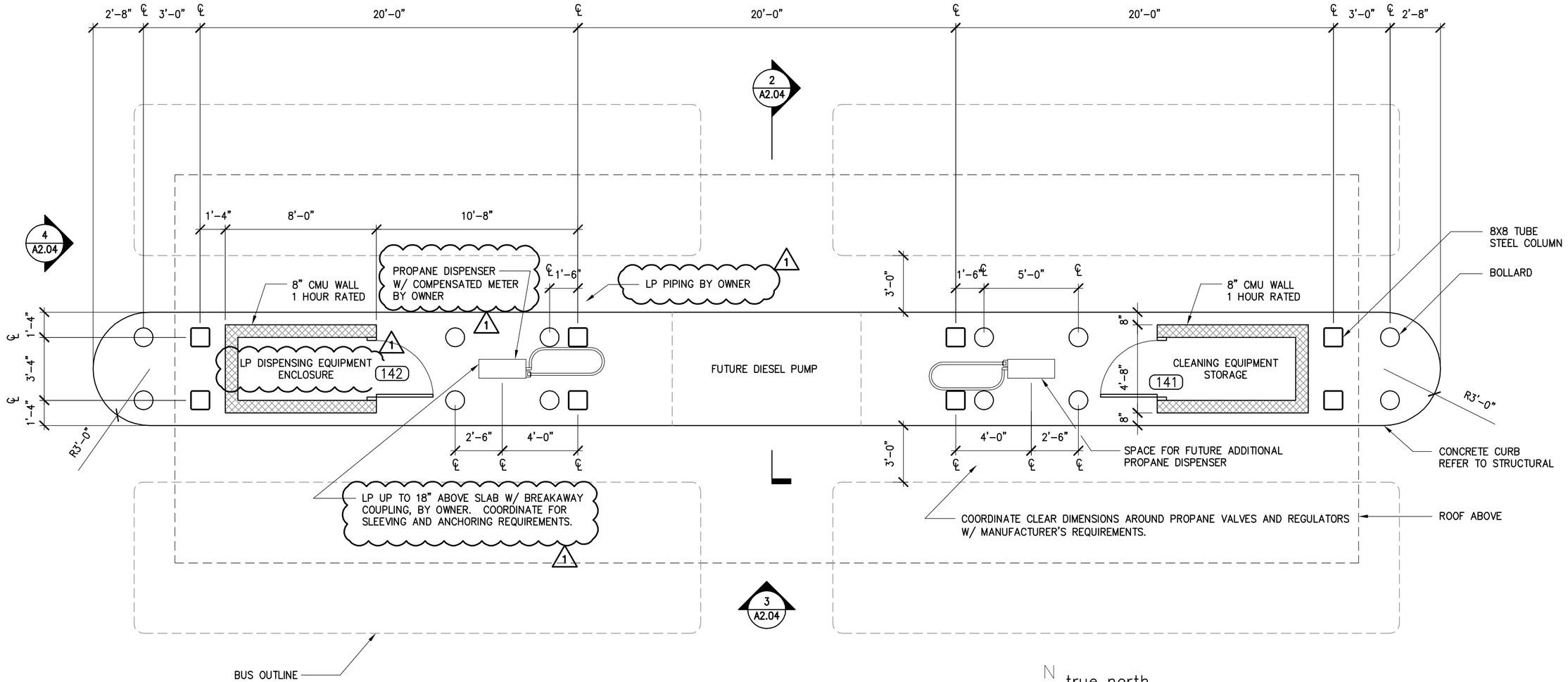
SIGNATURE
P.E. NUMBER 6251
DATE 10-26-09

STATE OF MAINE ALTON M. PALMER III No. 6251 LICENSED PROFESSIONAL ENGINEER

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

	DATE
FED PIN NO:	MAY 1, 2009
PIN NO: 16123.50	

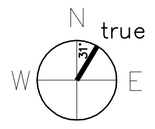
SHEET NUMBER C-102 OF 8



1 FUELING STATION FLOOR PLAN

1/4"=1'-0"

0 2' 4'

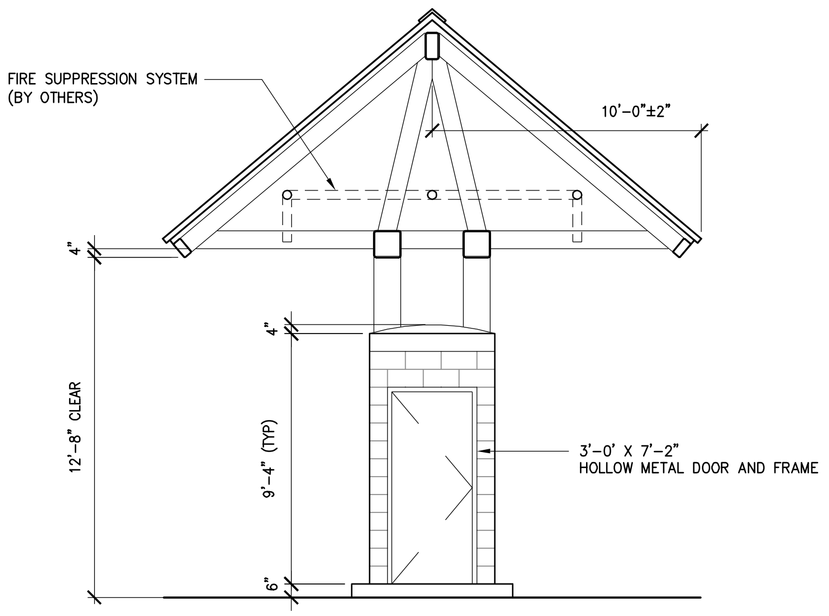


PROJECT NORTH
FUELING STATION ORIENTATION
REFER TO SITE PLAN SHEET A1.01

FUEL STATION NOTES:

1. ALL STEEL TO BE HOT-DIPPED GALVANIZED, EXCEPT FOR STANDING SEAM ROOFING.
2. ALL STRUCTURAL STEEL TO BE WELDED.
3. WELDS AT TUBE STEEL SHALL BE CONTINUOUS AROUND TUBE OPENINGS.
4. ALL WELDS SHALL BE GROUND SMOOTH AND RE-GALVANIZED.
5. PAINT ALL EXPOSED GALVANIZED STEEL. REFER TO PAINT MANUFACTURER'S REQUIREMENTS FOR PAINTING GALVANIZED METAL.
   PRIMER TO BE A MODIFIED AROMATIC POLYURETHANE PRIMER, (2) COATS.
   PAINT TO BE A HIGH GLOSS INDUSTRIAL ENAMEL – WHITE, (2) COATS.
6. STANDING SEAM ROOFING TO MATCH ADMINISTRATION BUILDING STANDING SEAM ROOFING.
7. EXPOSED DOVETAILED METAL DECK TO BE PAINTED WHITE.
8. PRIME AND PAINT ALL EXTERIOR 8" CMU WALLS LIGHT GRAY.
   PRIME 1 COAT, PAINT 2 COATS MIN.
9. THE BASIS OF DESIGN FOR THE FUEL SYSTEM EQUIPMENT AND COMPONENTS SHALL BE TARANTIN TANK COMPANY AS FURNISHED AND INSTALLED BY WEBER ENERGY FUELS–BANGER, DBA HANCOCK OIL COMPANY, THE CURRENT FUEL VENDER FOR THE PROPOSED FACILITY TENANT. THE FUEL COMPONENTS SHALL BE FURNISHED AND INSTALLED UNDER SEPARATE CONTRACT, BY THE OWNER/TENANT UNLESS NOTED OTHERWISE HEREIN. THE CONTRACTOR, UNDER THE WORK OF THIS CONTRACT, SHALL STRICTLY COORDINATE WITH THE OWNER/TENANT/FUEL VENDOR FOR INSTALLATION OF ALL ASSOCIATED WORK NOTED UNDER THE SCOPE OF THIS CONTRACT.
10. IN GENERAL, THE 18,000 GALLON LP TANK, THE LP LIQUID PUMP (CORKEN, F14, 5 HP UNIT WITH REGO A77 DISCHARGE FLOW SIGHT/CHECK DEVICE), ALL LIQUID AND GAS LP PIPING (UNDERGROUND AND ABOVE GROUND), VALVES, REGULATORS, SAFETY DEVICES, AND SPECIALTIES ASSOCIATED WITH THE FUEL TANK AND DISPENSING SYSTEM SHALL BE PROVIDED BY THE FUEL VENDOR. THE LP DISPENSER (CLEAN FUELING TECHNOLOGIES–PRO 6100) SHALL BE PROVIDED BY THE OWNER/FACILITY TENANT, RELOCATED FROM THEIR CURRENT FACILITY AND INSTALLED BY THE FUEL VENDOR UNDER SEPARATE CONTRACT WITH THE OWNER. THE FUEL VENDOR SHALL BE RESPONSIBLE, UNDER SEPARATE CONTRACT, TO PROVIDE MODIFICATION TO THE EXISTING DISPENSER AS REQUIRED TO REMOVE THE INTEGRAL LP PUMP AND RE-TOOL FOR SERVICE FROM THE NEW REMOTE PUMP SET.
11. THE TERM " BY OWNER " REFERRED TO HEREIN, SHALL REFER TO COMPONENTS FURNISHED AND INSTALLED BY THE OWNER OR THE OWNER'S TENANT UNDER SEPARATE CONTRACT, TYPICALLY THROUGH THE SERVICES OF THEIR CURRENT FUEL PROVIDER.
12. IN THE EVENT THAT THE OWNER AND/OR TENANT CHOOSE TO UTILIZE AN ALTERNATE FUEL VENDOR TO THAT SPECIFIED AS THE BASIS FOR DESIGN, THE CONTRACTOR UNDER THIS SCOPE OF WORK, SHALL MAKE ALL NECESSARY CHANGES TO COORDINATE THE INSTALLATION OF THE ALTERNATE EQUIPMENT.
13. THE CONTRACTOR, UNDER THE SCOPE OF THIS PROJECT, SHALL BE RESPONSIBLE FOR STRICT COORDINATION WITH THE OWNER TO INSURE THAT INSTALLATION OF THE LP SYSTEM COMPONENTS (BY THE OWNER), FACILITATES THE OVERALL SCHEDULE PROPOSED FOR THIS PROJECT.
14. PACKAGED FIRE SUPPRESSION SYSTEM, WHERE REQUIRED BY THE AUTHORITY HAVING JURISDICTION, SHALL BE FURNISHED AND INSTALLED BY THE OWNER, THROUGH THE FUEL SERVICE PROVIDER. COORDINATE AS REQUIRED.

1

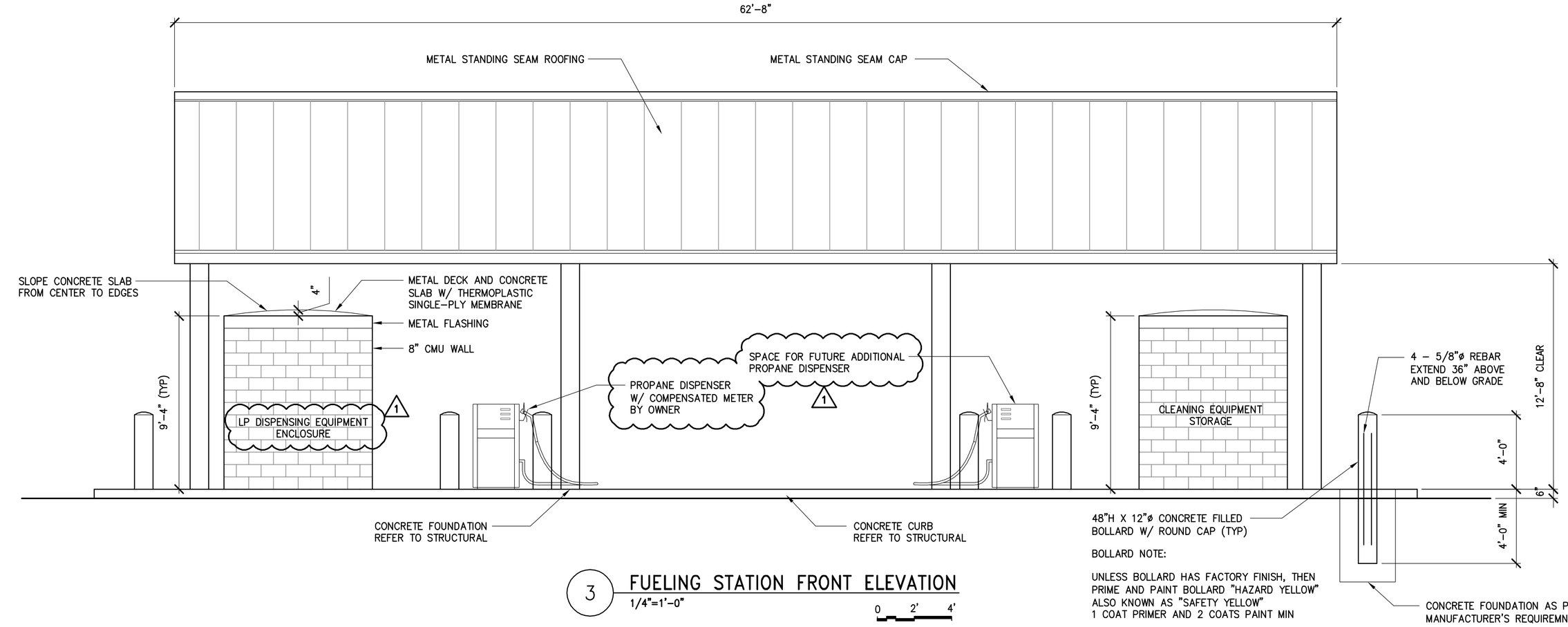


BOLLARDS AND PROPANE REGULATORS NOT SHOWN FOR CLARITY

2 FUELING STATION SECTION

1/4"=1'-0"

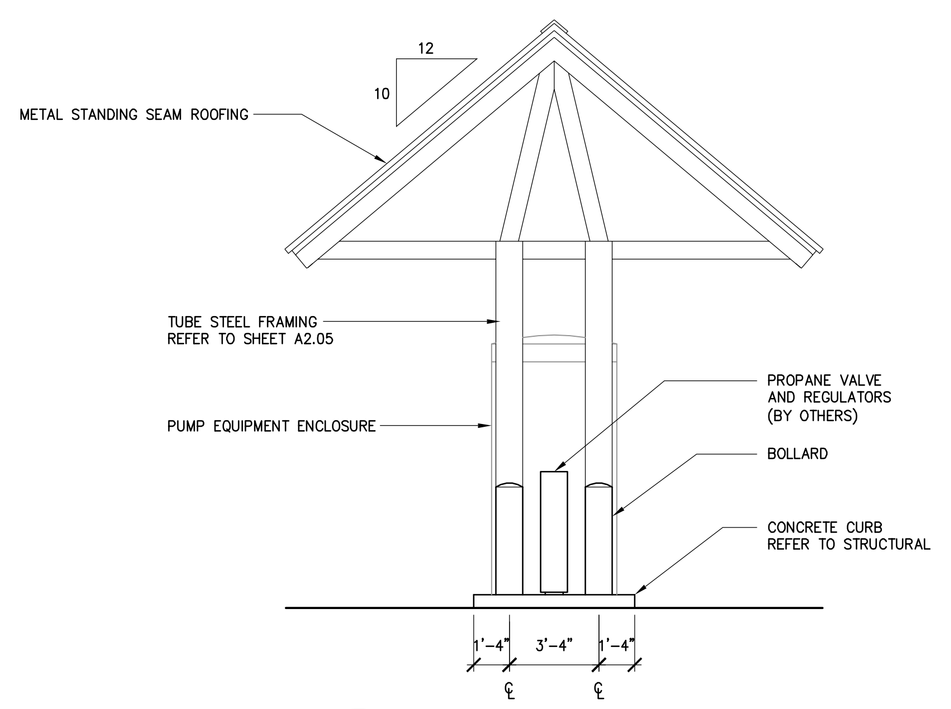
0 2' 4'



3 FUELING STATION FRONT ELEVATION

1/4"=1'-0"

0 2' 4'



4 FUELING STATION SIDE ELEVATION

1/4"=1'-0"

0 2' 4'

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

TRANSPORTATION

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Web: www.allied-eng.com

Allied Project No: 07010 | Cad File: A2.04.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE	
FED PIN NO:	PIN NO: 16123.50

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

INFORMATION		
PROJECT	–	SIGNATURE
PROGRAM	–	TERRY P. ROOKARD
PROJECT MANAGER	WPP	ARCH. LIN. NUMBER
DESIGNER	TV	3360
CONSULTANT	ALLIED ENGINEERING	DATE
PROJECT RESIDENT	–	MAY 1, 2009
CONTRACTOR	–	
PROJECT COMPLETION DATE	–	

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

FUELING STATION I

SHEET NUMBER
A2.04
OF

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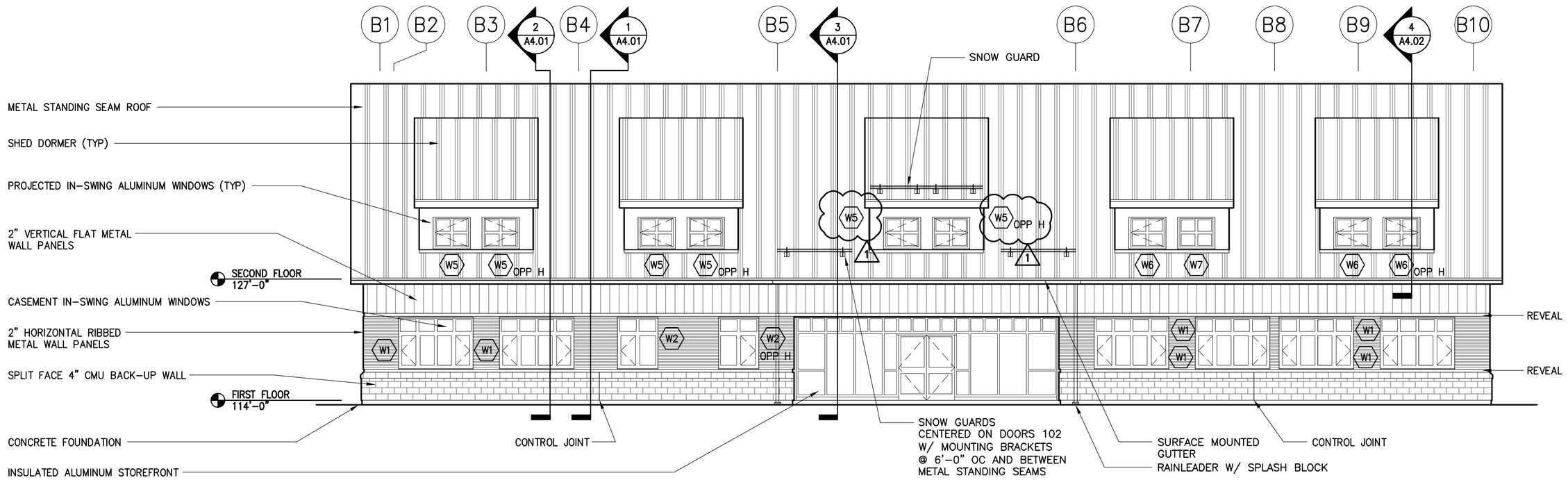
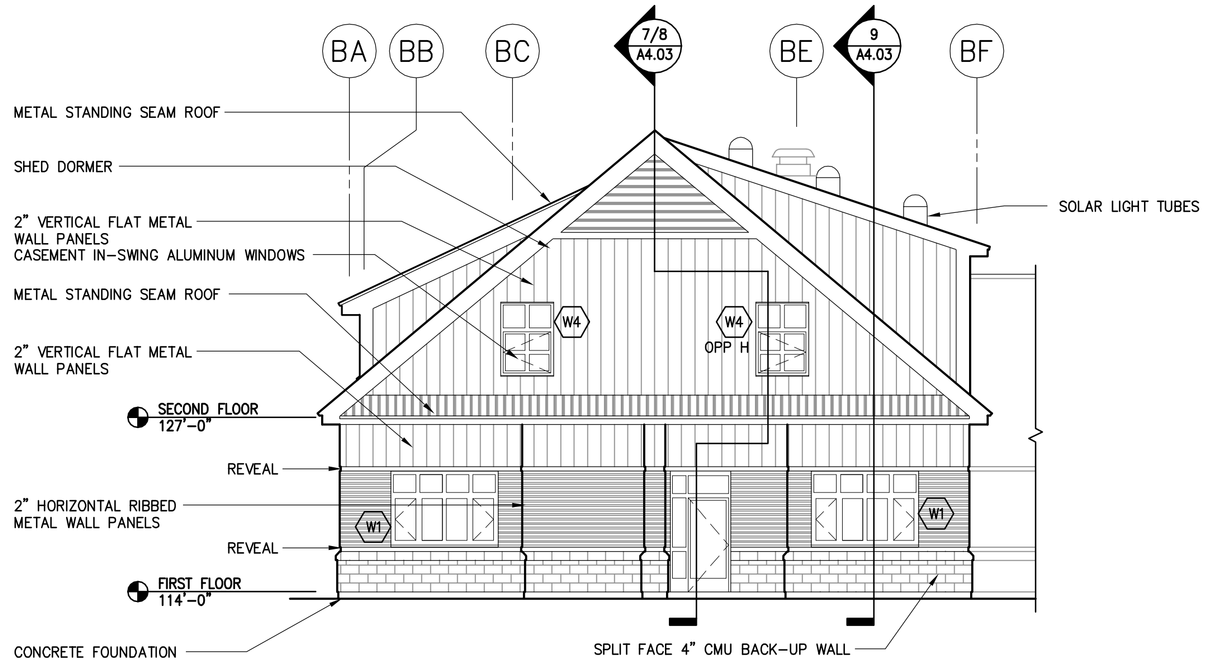
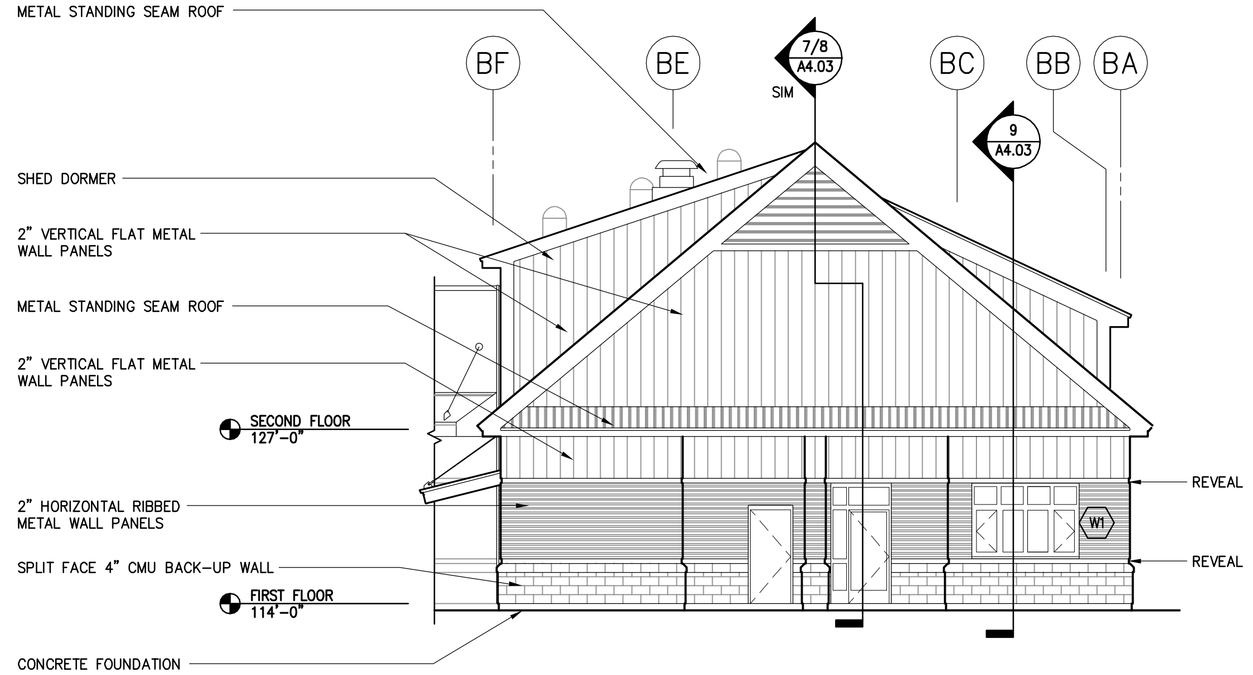


1 SOUTH EAST ELEVATION (ADMIN. BLDG.)
1/8"=1'-0"



2 NORTHEAST ELEVATION (ADMIN. BLDG.)
1/8"=1'-0"



3 SOUTHWEST ELEVATION (ADMIN. BLDG.)
1/8"=1'-0"

EXTERIOR ELEVATION NOTE:

EXTERIOR ELEVATIONS ARE SCHEMATIC AND MAY BE IN CONFLICT WITH OTHER DRAWINGS. REFER TO PLANS, WALL SECTIONS AND DETAILS FOR ACCURATE DESIGN AND DIMENSIONS.

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

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F: 207.221.2266
Web: www.allied-eng.com

Allied Project No: 07010 | Cad File: A3.01.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE

FED PIN NO:
PIN NO: 16123.50

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE MAY 1, 2009

PROJECT INFORMATION		
PROGRAM	–	
PROJECT MANAGER	WPP	
DESIGNER	TV	
CONSULTANT	ALLIED ENGINEERING	
PROJECT RESIDENT	–	
CONTRACTOR	–	
PROJECT COMPLETION DATE	–	

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

EXTERIOR ELEVATIONS I
ADMINISTRATION BUILDING

SHEET NUMBER
A3.01
OF

Username: –
Division: –
Date: –
Filename: –
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Filename: – Date: – Division: – Username: –

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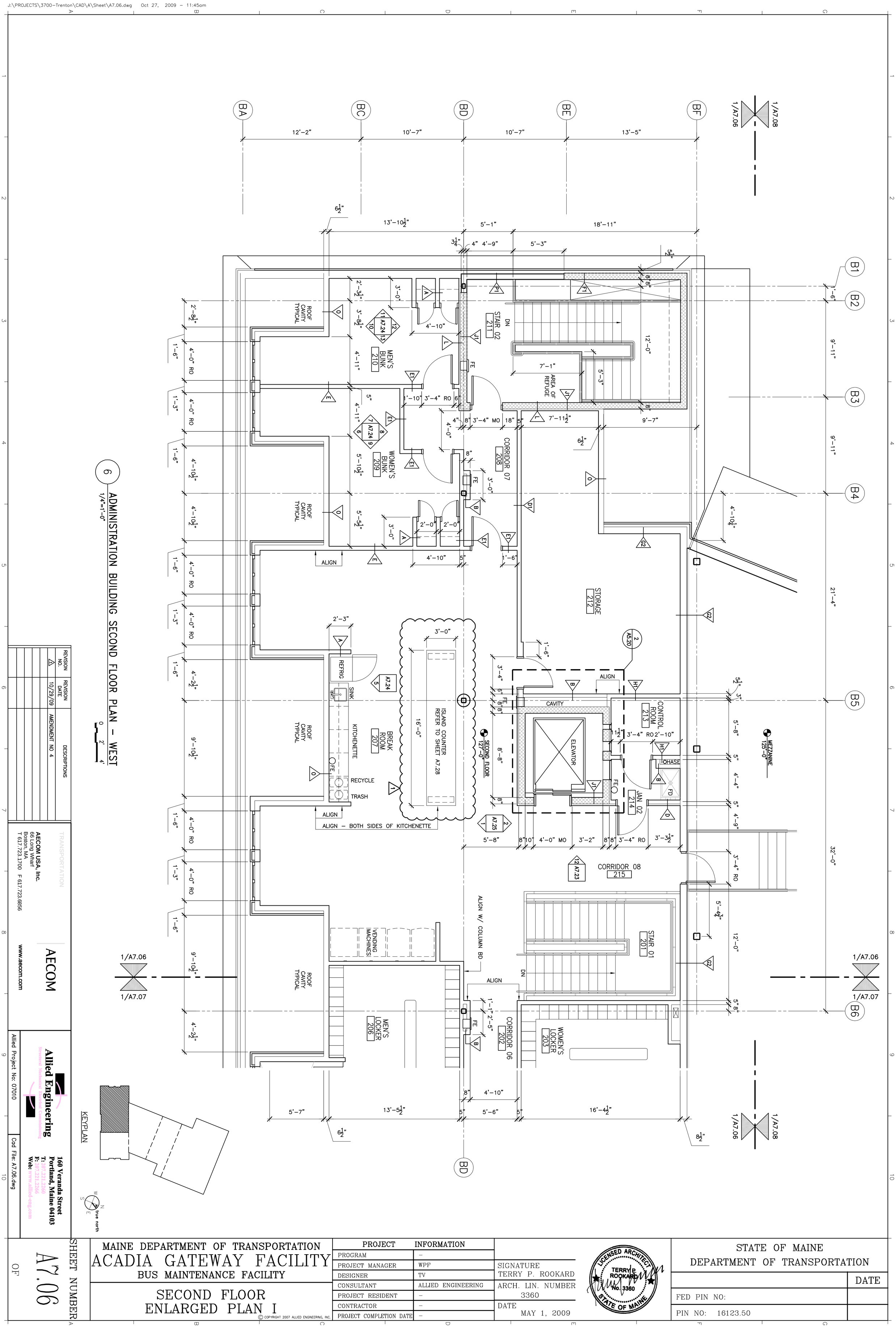

6 ADMINISTRATION BUILDING SECOND FLOOR PLAN – WEST

1/4"=1'-0"

0 2' 4'

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

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Allied Project No: 07010

Cad File: A7.06.dwg

MAINE DEPARTMENT OF TRANSPORTATION

ACADIA GATEWAY FACILITY

BUS MAINTENANCE FACILITY

SECOND FLOOR ENLARGED PLAN I

PROJECT	INFORMATION
PROGRAM	–
PROJECT MANAGER	WPF
DESIGNER	TV
CONSULTANT	ALLIED ENGINEERING
PROJECT RESIDENT	–
CONTRACTOR	–
PROJECT COMPLETION DATE	–

SIGNATURE
TERRY P. ROOKARD

ARCH. LIN. NUMBER
3360

DATE
MAY 1, 2009

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE

FED PIN NO:

PIN NO: 16123.50

SHEET NUMBER A7.06 OF

Filename: – Date: – Division: – Username: –

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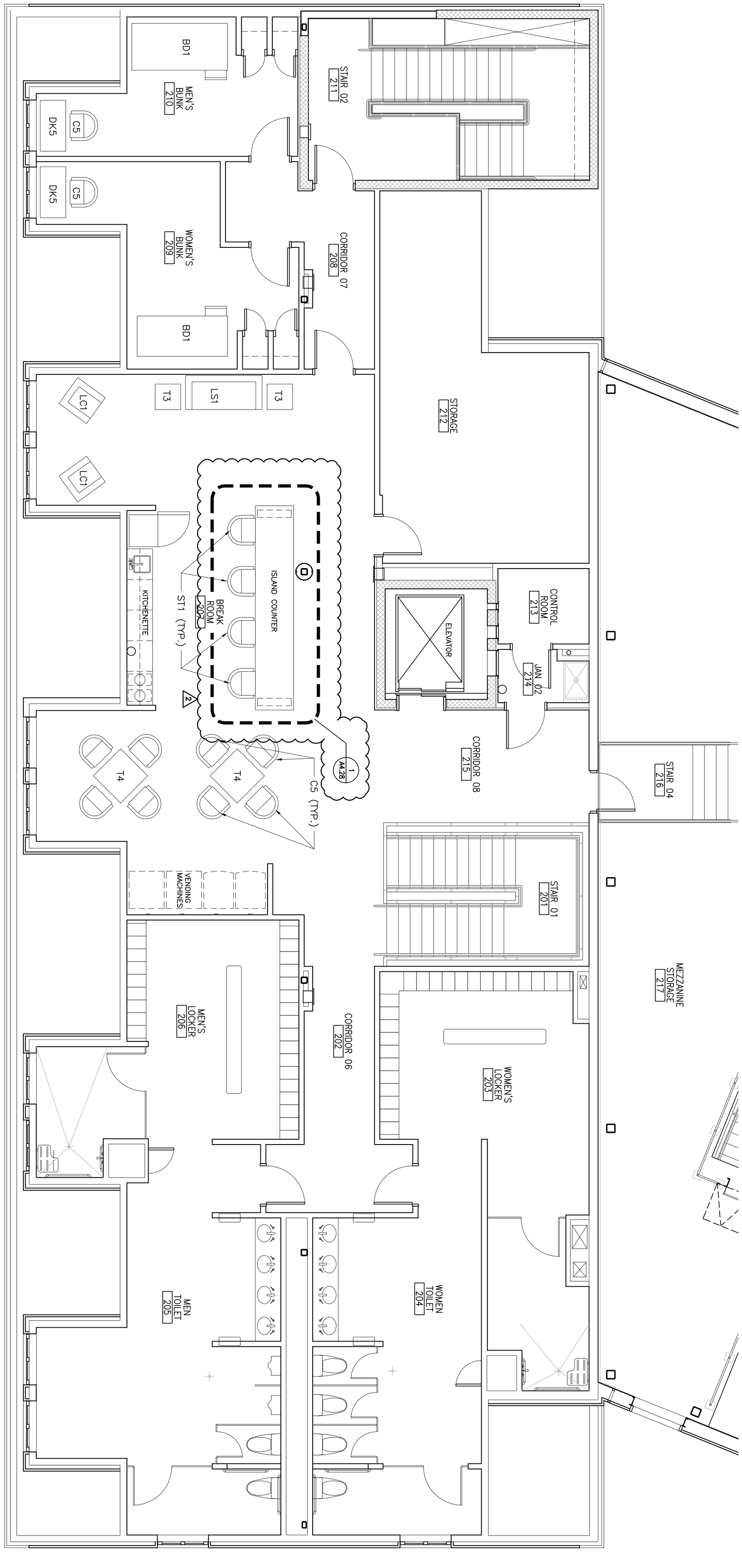

1 ADMINISTRATION BUILDING SECOND FLOOR FURNITURE PLAN

1/4"=1'-0"

0 2' 4'

KEYPLAN

true north

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/15/09	ADDENDUM NO 2
2	10/29/09	AMENDMENT NO 4

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Cad File: A7.16.dwg

MAINE DEPARTMENT OF TRANSPORTATION

ACADIA GATEWAY FACILITY

BUS MAINTENANCE FACILITY

ADMINISTRATION BUILDING SECOND FLOOR FURNITURE PLAN

PROJECT	INFORMATION
PROGRAM	–
PROJECT MANAGER	WPF
DESIGNER	TV
CONSULTANT	ALLIED ENGINEERING
PROJECT RESIDENT	–
CONTRACTOR	–
PROJECT COMPLETION DATE	–

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE
MAY 1, 2009

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

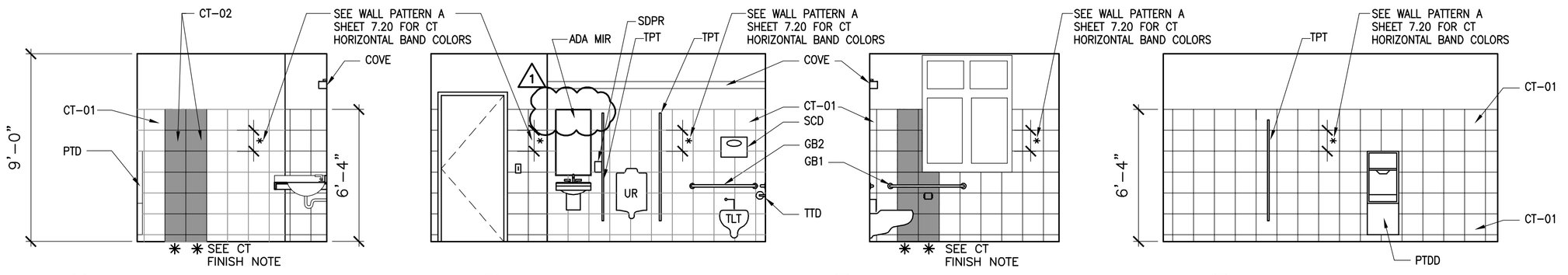
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE

FED PIN NO:

PIN NO: 16123.50

SHEET NUMBER A7.16 OF

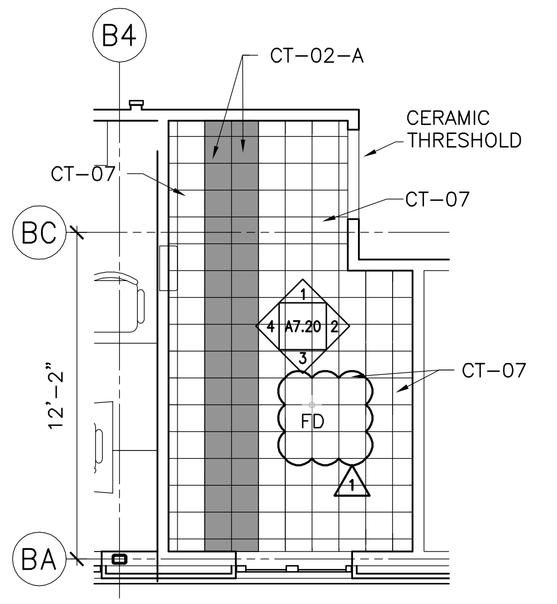


1 MEN TOILET 115
1/4"=1'-0"

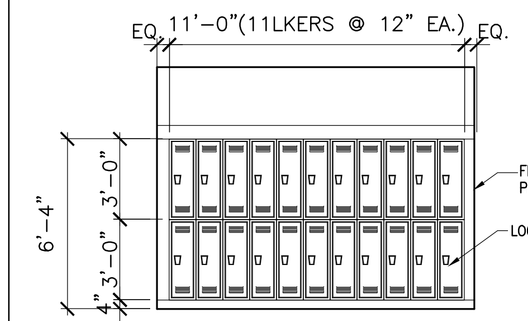
2 MEN TOILET 115
1/4"=1'-0"

3 MEN TOILET 115
1/4"=1'-0"

4 MEN TOILET 115
1/4"=1'-0"



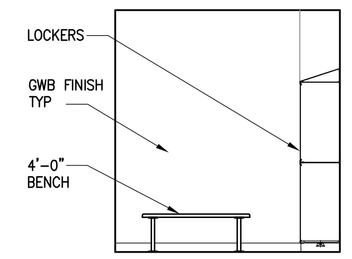
5 MEN TOILET 115 FLOOR PATTERN
1/4"=1'-0"



16 MAIN. LOCKER 105
1/4"=1'-0"

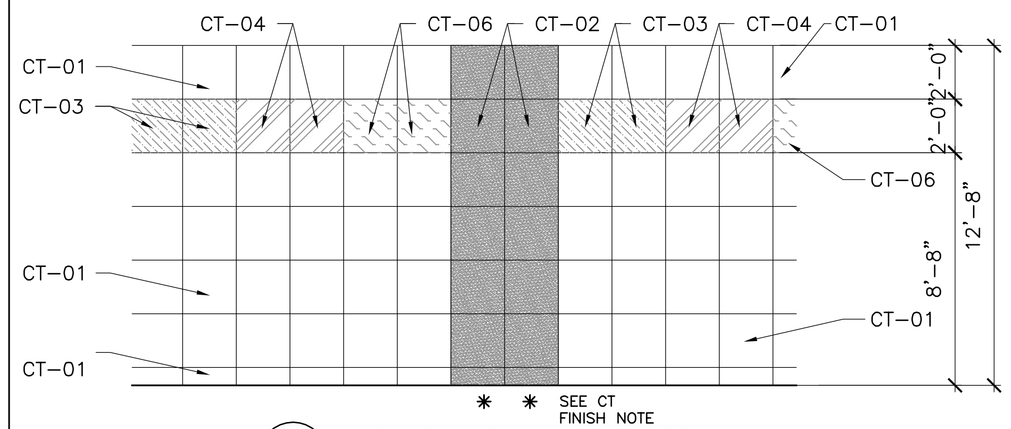
17 MAIN. LOCKER 105
1/4"=1'-0"

18 MAIN. LOCKER 105
1/4"=1'-0"



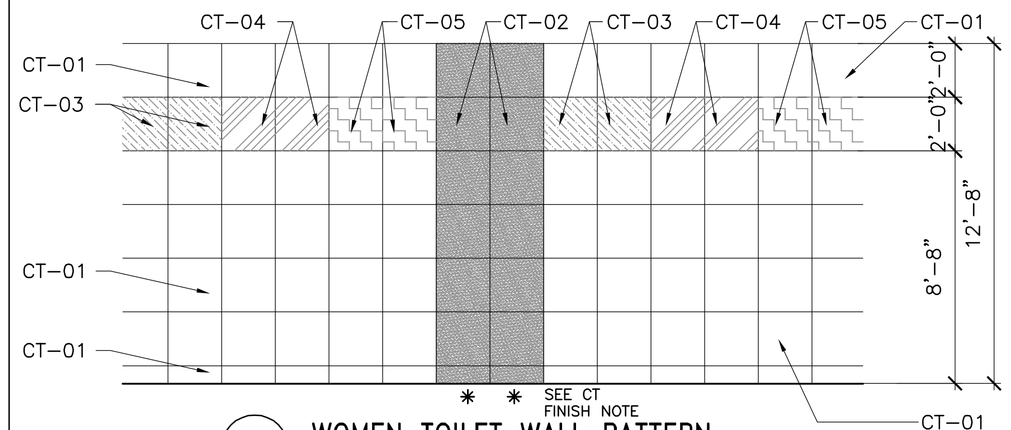
19 MAIN. LOCKER 105
1/4"=1'-0"

NOTE: PATTERNS TO CLARIFY TILE COLORS ONLY

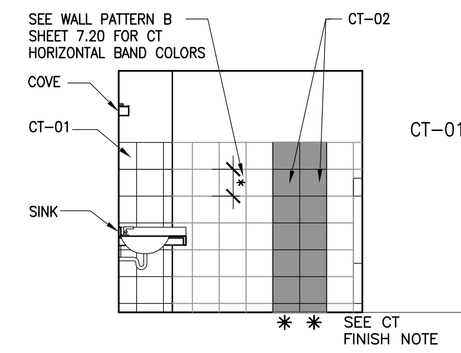


A MEN TOILET WALL PATTERN
1/2"=1'-0"

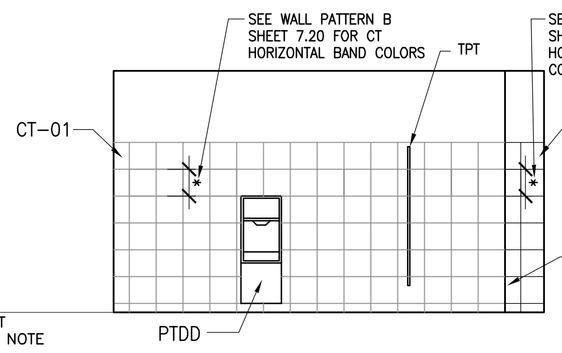
NOTE: PATTERNS TO CLARIFY TILE COLORS ONLY



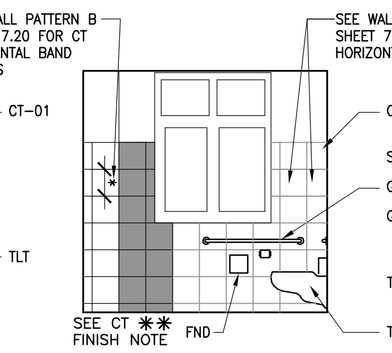
B WOMEN TOILET WALL PATTERN
1/2"=1'-0"



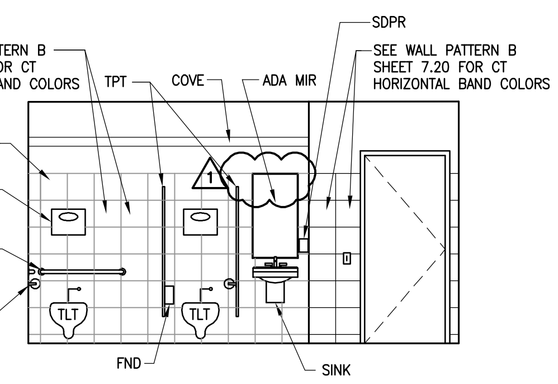
6 WOMEN TOILET 114
1/4"=1'-0"



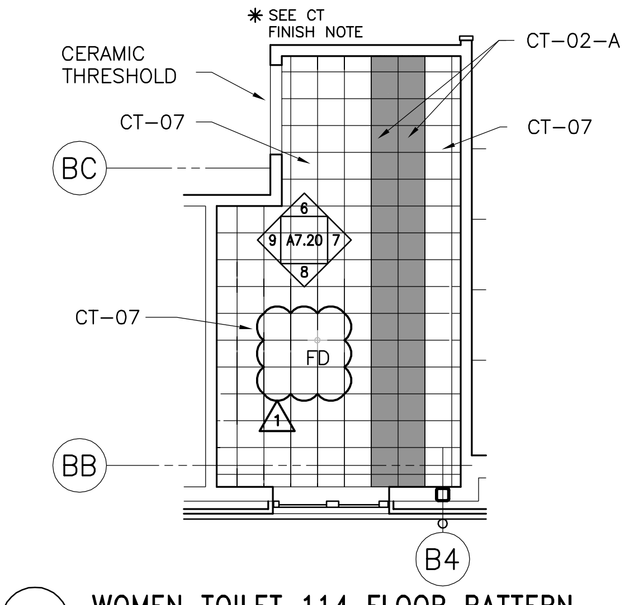
7 WOMEN TOILET 114
1/4"=1'-0"



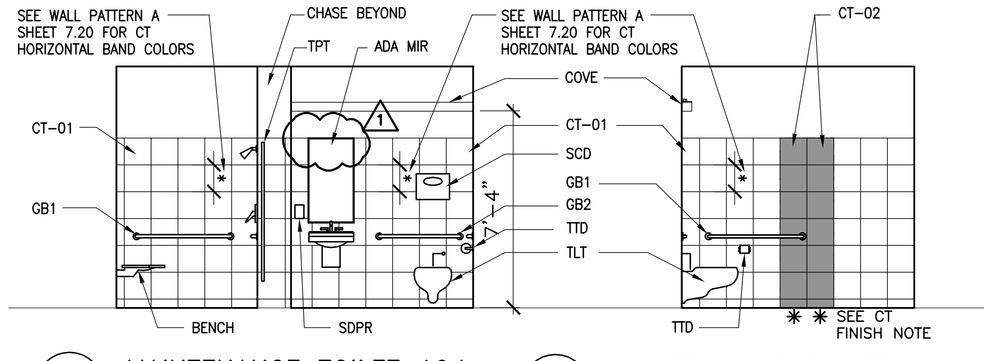
8 WOMEN TOILET 114
1/4"=1'-0"



9 WOMEN TOILET 114
1/4"=1'-0"

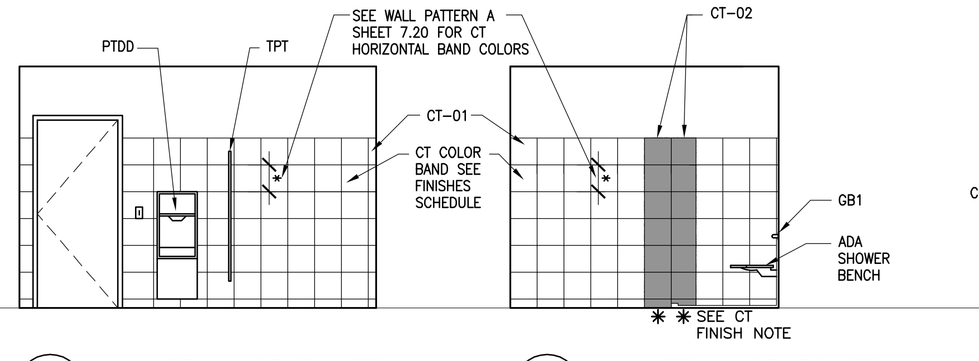


10 WOMEN TOILET 114 FLOOR PATTERN
1/4"=1'-0"



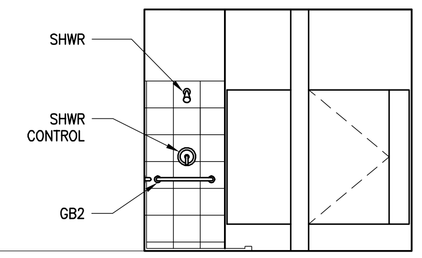
11 MAINTENANCE TOILET 104
1/4"=1'-0"

12 MAINTENANCE TOILET 104
1/4"=1'-0"

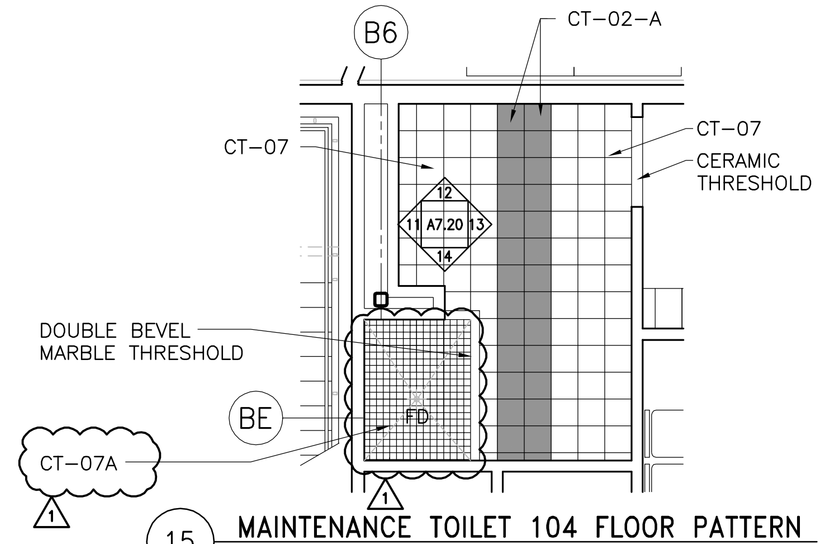


13 MAINTENANCE TOILET 104
1/4"=1'-0"

14 MAINTENANCE TOILET 104
1/4"=1'-0"



20 MAINTENANCE TOILET 104
1/4"=1'-0"



15 MAINTENANCE TOILET 104 FLOOR PATTERN
1/4"=1'-0"

NOTE:
REFER TO A7.21 FOR ADA ACCESIBLE FIXTURE HEIGHTS.

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

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Allied Project No: 07010 | Cad File: A7.20.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE	
FED PIN NO:	
PIN NO:	16123.50

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE
MAY 1, 2009

PROJECT INFORMATION		
PROGRAM	-	
PROJECT MANAGER	WPP	
DESIGNER	TV	
CONSULTANT	ALLIED ENGINEERING	
PROJECT RESIDENT	-	
CONTRACTOR	-	
PROJECT COMPLETION DATE	-	

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

INTERIOR ELEVATIONS I

SHEET NUMBER
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OF

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Division: -
Date: -
Filename: -
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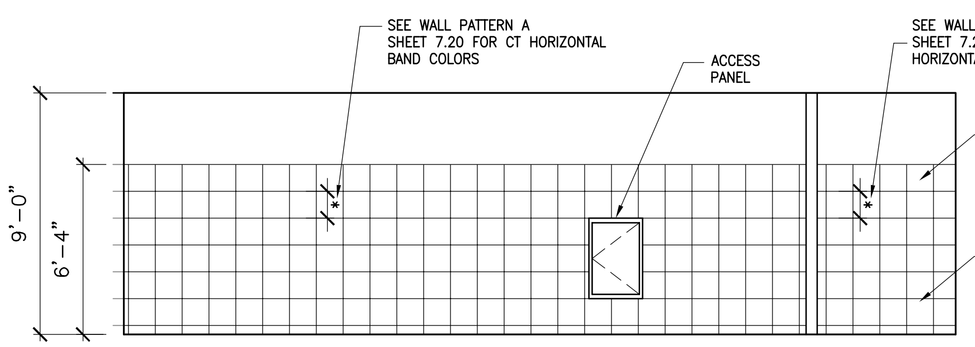
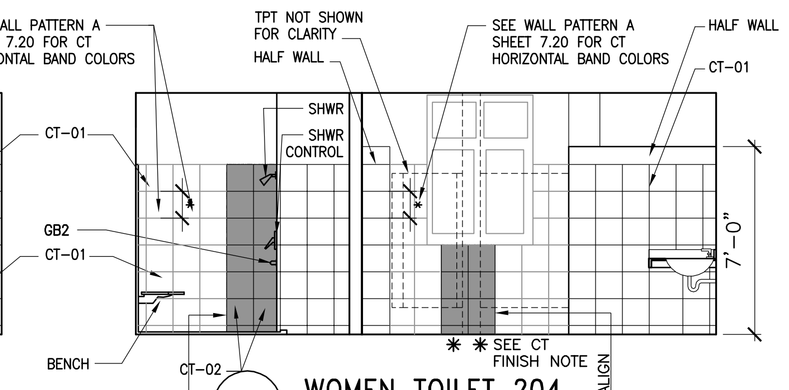
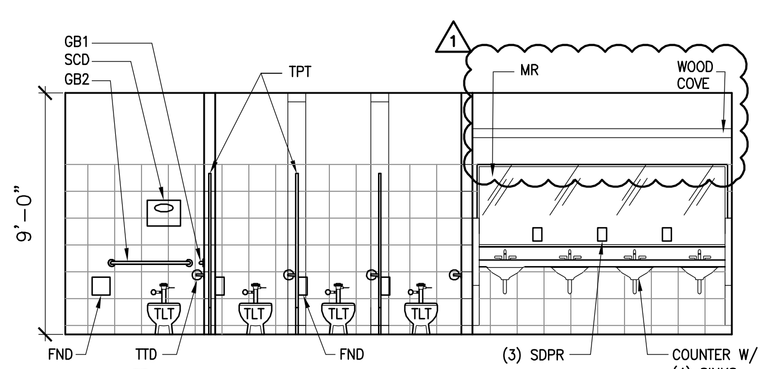


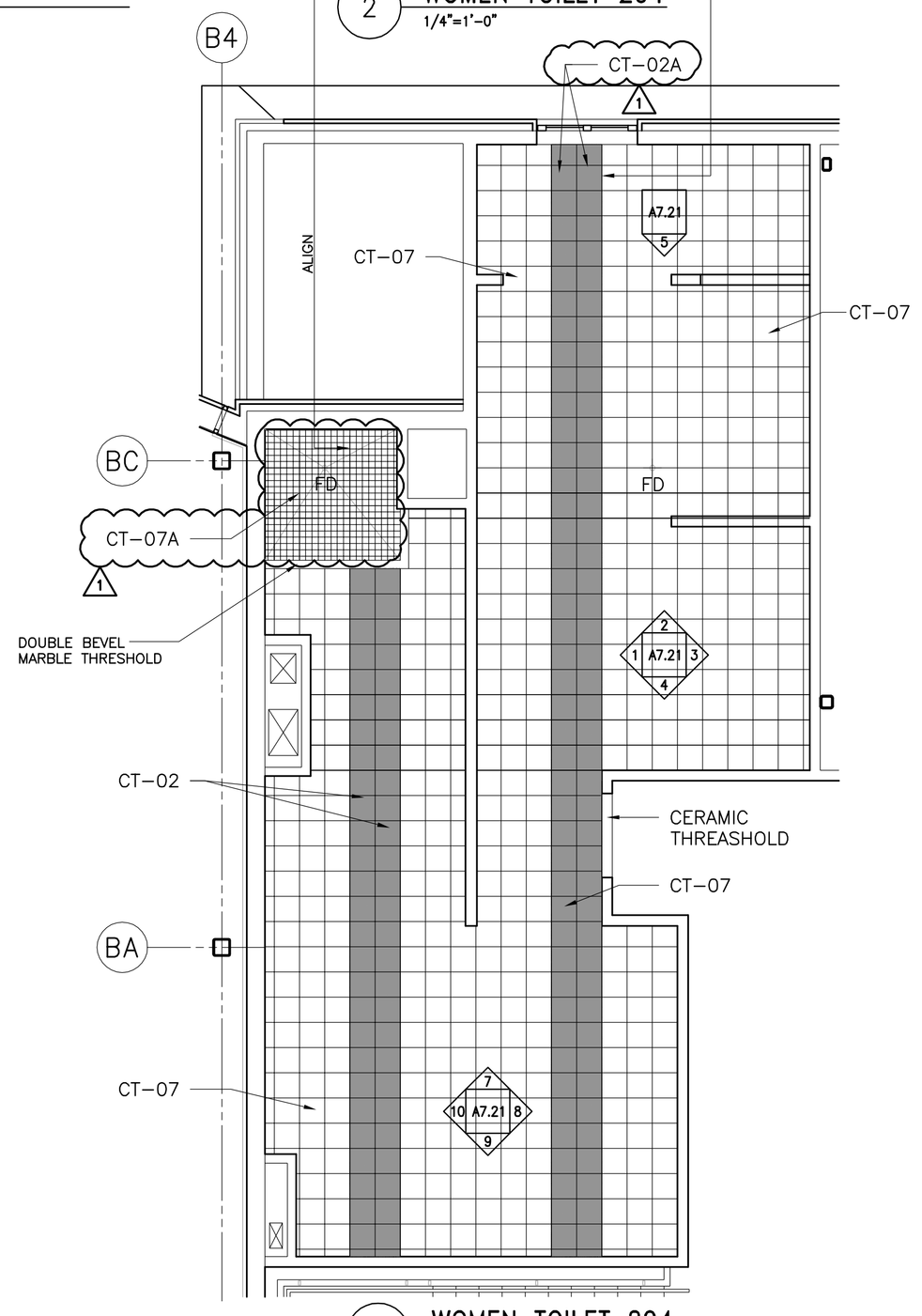
1 WOMEN TOILET 204
1/4"=1'-0"



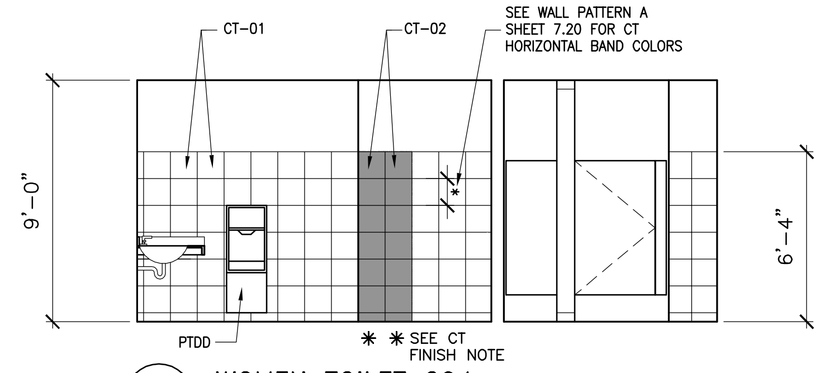
2 WOMEN TOILET 204
1/4"=1'-0"



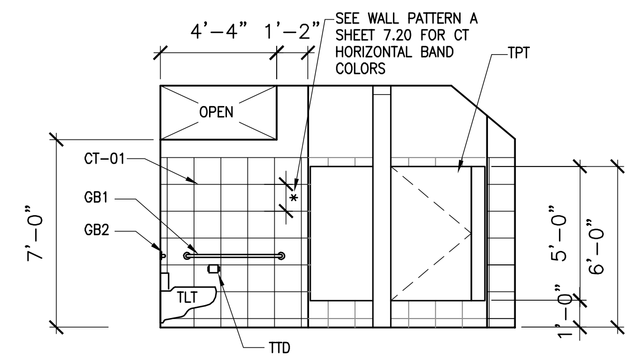
3 WOMEN TOILET 204
1/4"=1'-0"



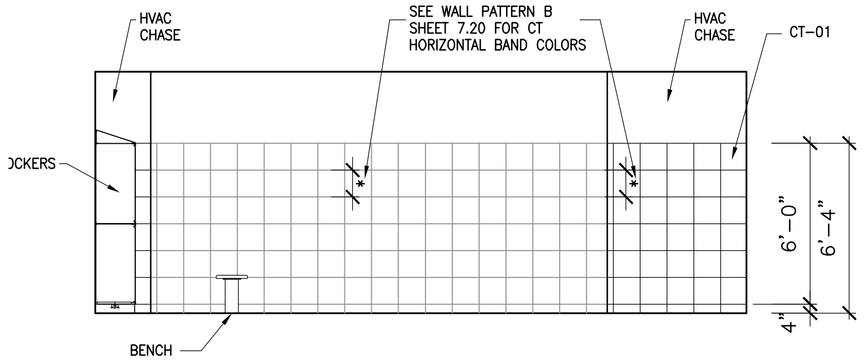
6 WOMEN TOILET 204
1/4"=1'-0"



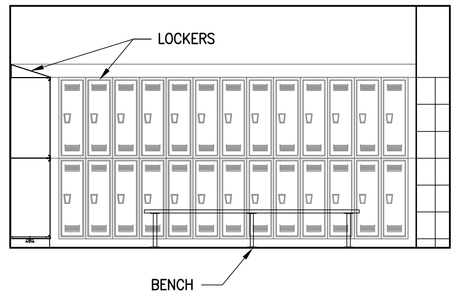
4 WOMEN TOILET 204
1/4"=1'-0"



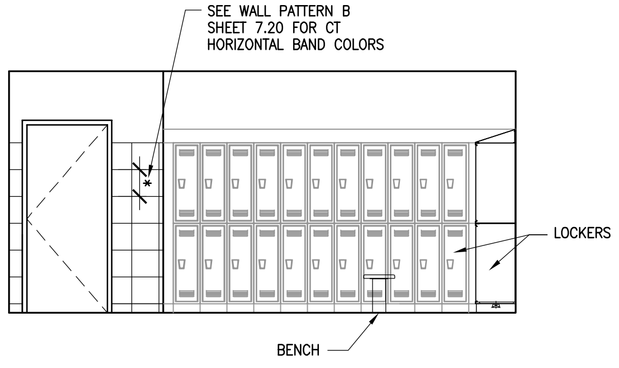
5 WOMEN TOILET 204
1/4"=1'-0"



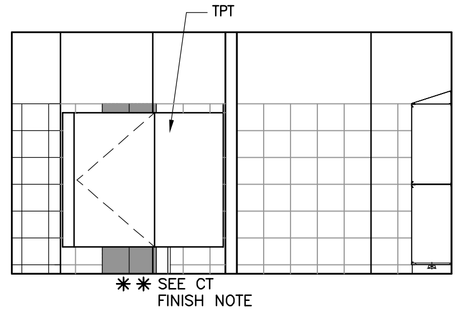
10 WOMEN LOCKER 203
1/4"=1'-0"



9 WOMEN LOCKER 203
1/4"=1'-0"



8 WOMEN LOCKER 203
1/4"=1'-0"



7 WOMEN LOCKER 203
1/4"=1'-0"

INTERIOR ABBREVIATIONS

CT	CERAMIC TILE
FND	FEMININE NAPKIN DISPOSAL
LKERS	LOCKERS
GB1	42" GRAB BAR
GB2	36" GRAB BAR
MIR	MIRROR
PTDD	PAPER TOWEL DISPOSAL & DISPOSAL
SCD	SEAT COVER DISPENSER
SDPR	SOAP DISPENSER
SHWR	SHOWER
SK	SINK
TPT	TOILET PARTITION
TLT	TOILET
TTD	TOILET TISSUE DISPENSER
UR	URINAL

CT FINISH NOTE:

✱ HORIZONTAL CERAMIC TILE BAND. REFER TO A8.01 FOR COLOR SCHEDULE.

✱✱ ALIGN VERTICAL CERAMIC TILE BAND ON WALL WITH CERAMIC TILE BAND ON FLOOR.

REVISION NO.	REVISION DATE	DESCRIPTIONS
4	10/29/09	AMENDMENT NO 4

TRANSPORTATION

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Allied Project No: 07010 | Cad File: A7.21.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE

FED PIN NO:

PIN NO: 16123.50

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE MAY 1, 2009

PROJECT INFORMATION	
PROGRAM	–
PROJECT MANAGER	WPP
DESIGNER	TV
CONSULTANT	ALLIED ENGINEERING
PROJECT RESIDENT	–
CONTRACTOR	–
PROJECT COMPLETION DATE	–

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

INTERIOR ELEVATIONS II

SHEET NUMBER
A7.21
OF

Username: –
Division: –
Date: –
Filename: –
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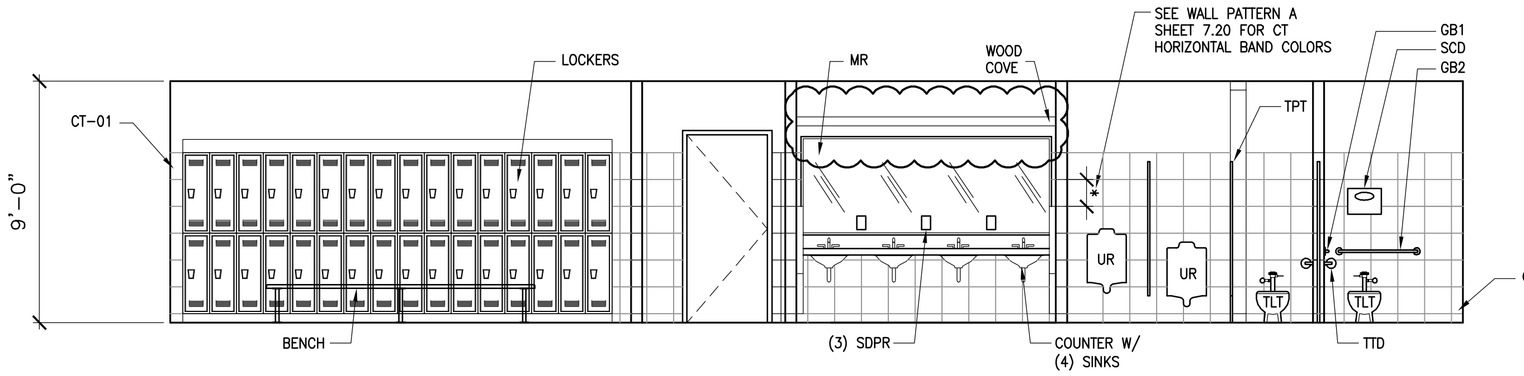
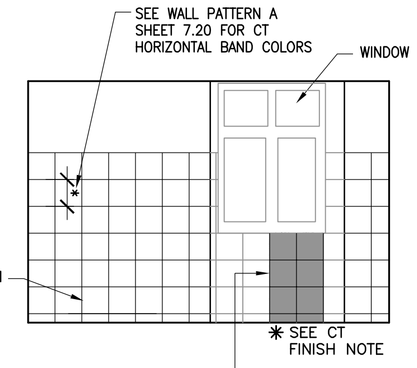
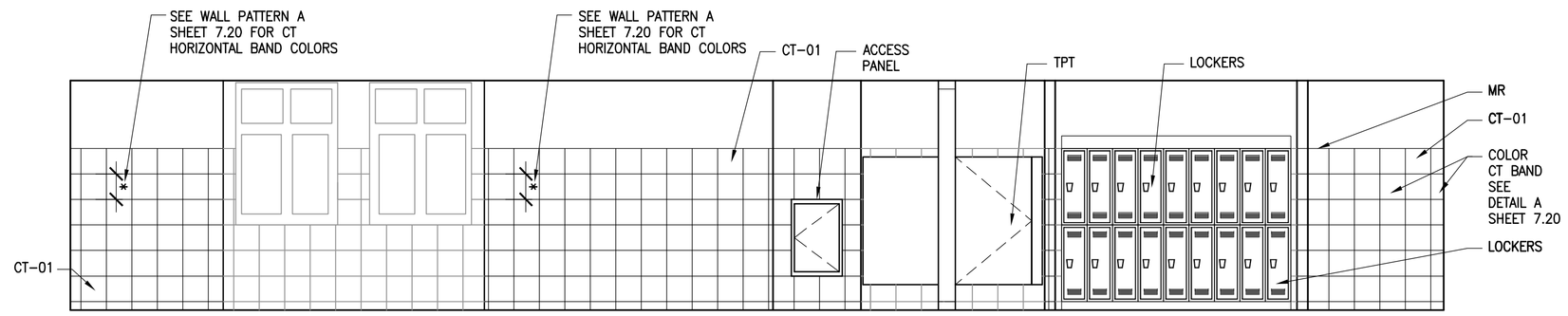


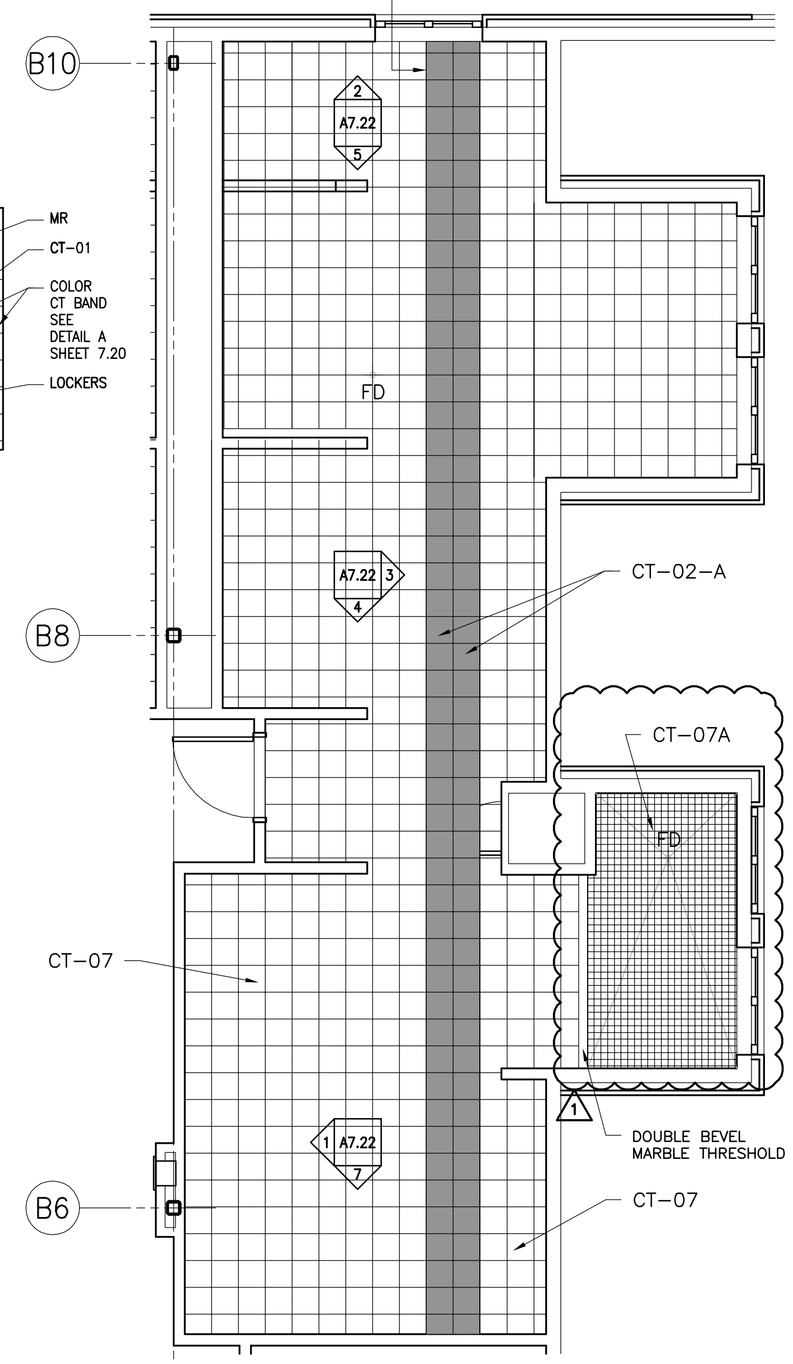
1 MEN TOILET / LOCKER 205-206
1/4"=1'-0"



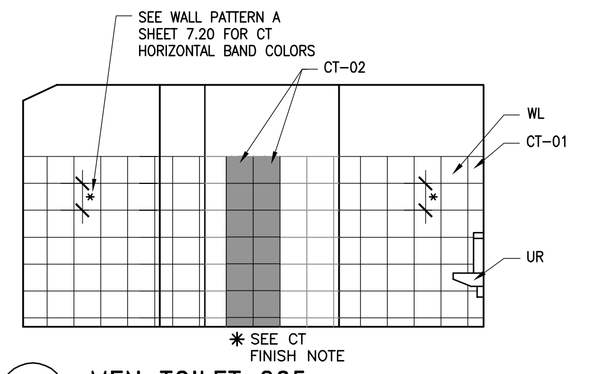
2 MEN TOILET / LOCKER 205-206
1/4"=1'-0"



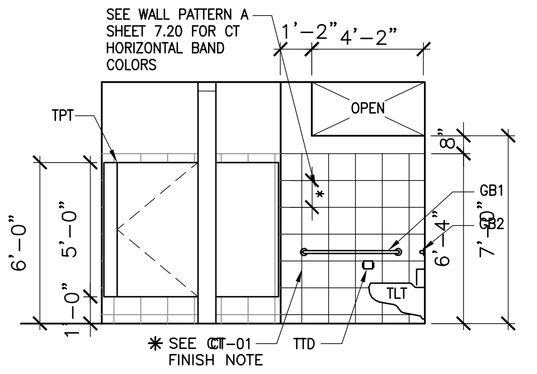
3 MEN TOILET / LOCKER 205-206
1/4"=1'-0"



6 MEN TOILET / LOCKER 205-206
1/4"=1'-0"

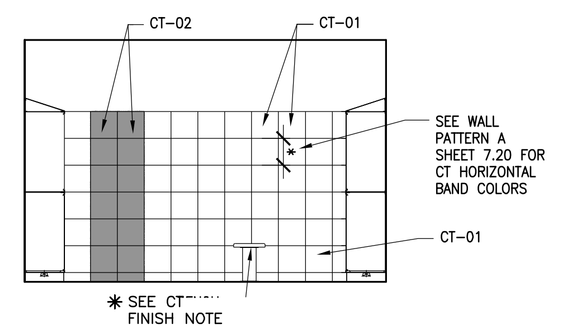


4 MEN TOILET 205
1/4"=1'-0"

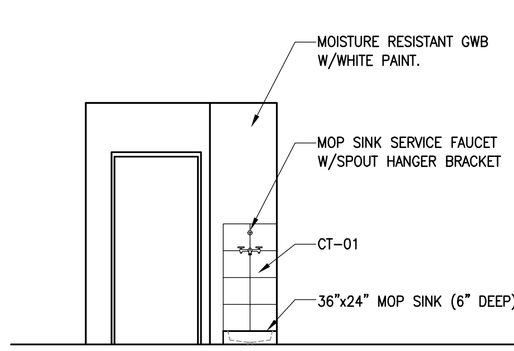


5 MEN TOILET 205
1/4"=1'-0"

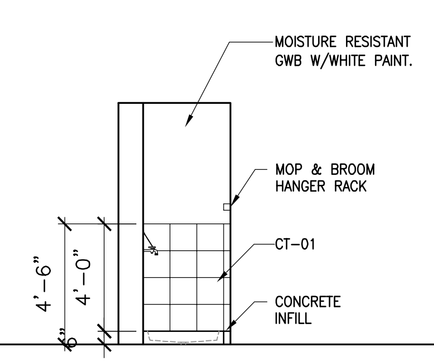
8 JANITOR CLOSET 02 (214)
1/4"=1'-0"
JANITOR CLOSET 01 (123) SIMILAR



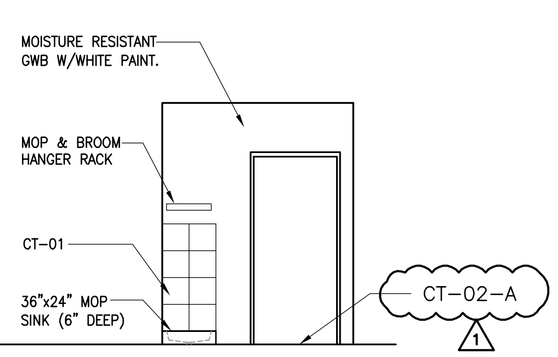
7 MEN LOCKER 206
1/4"=1'-0"



9 JANITOR CLOSET 02 (214)
1/4"=1'-0"
JANITOR CLOSET 01 (123) SIMILAR



10 JANITOR CLOSET 02 (214)
1/4"=1'-0"
JANITOR CLOSET 01 (123) SIMILAR



11 JANITOR CLOSET 02 (214)
1/4"=1'-0"
JANITOR CLOSET 01 (123) SIMILAR

✱ CT FINISH NOTE:
ALIGN CERAMIC TILE BAND ON WALL WITH CERAMIC TILE BAND ON FLOOR.

NOTE:
REFER TO A7.21 FOR ADA ACCESIBLE FIXTURE HEIGHTS.

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

TRANSPORTATION

AECOM
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Allied Project No: 07010 | Cad File: A7.22.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE	
FED PIN NO:	
PIN NO:	16123.50

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE MAY 1, 2009

PROJECT INFORMATION	
PROGRAM	–
PROJECT MANAGER	WPP
DESIGNER	TV
CONSULTANT	ALLIED ENGINEERING
PROJECT RESIDENT	–
CONTRACTOR	–
PROJECT COMPLETION DATE	–

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

INTERIOR ELEVATIONS III

SHEET NUMBER
A7.22
OF

Filename: – Date: – Division: – Username: –
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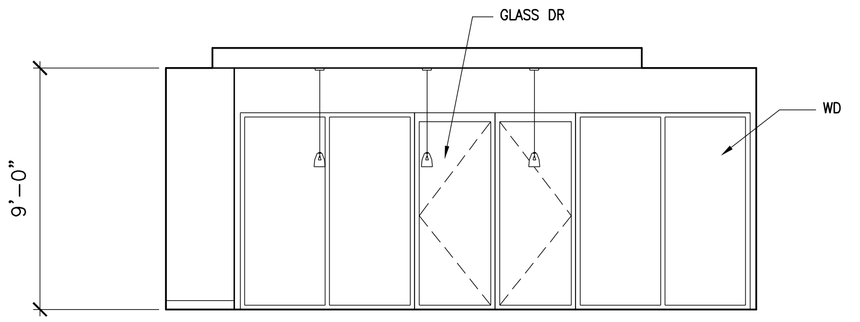
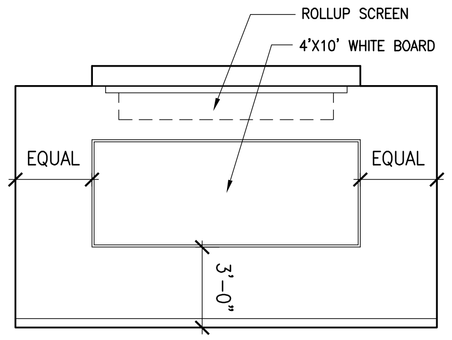
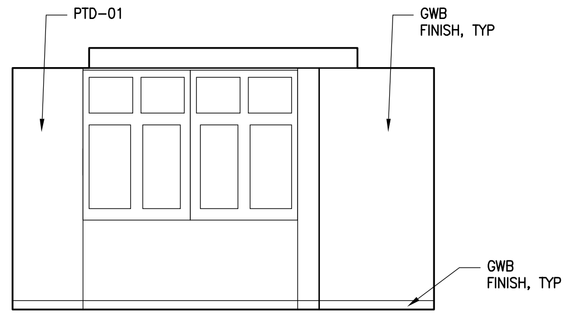


1 CONFERENCE ROOM 109
1/4"=1'-0"

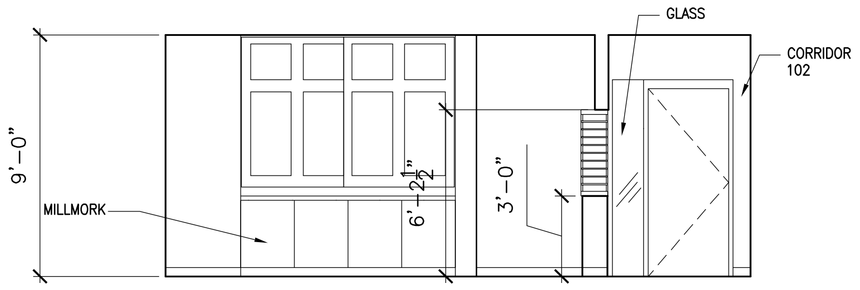


2 CONFERENCE ROOM 109
1/4"=1'-0"

3 CONFERENCE ROOM 109
1/4"=1'-0"



4 CONFERENCE ROOM 109
1/4"=1'-0"



5 DISPATCH 117
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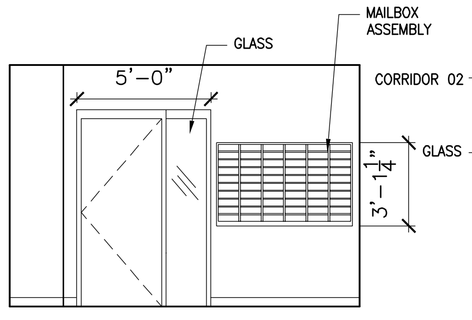
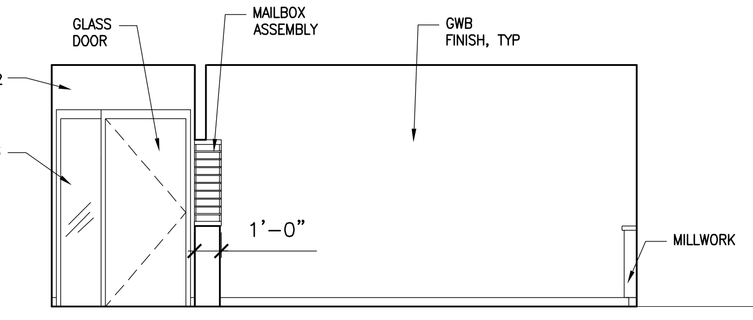
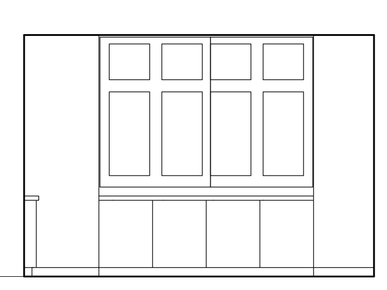


6 DISPATCH 117
1/4"=1'-0"

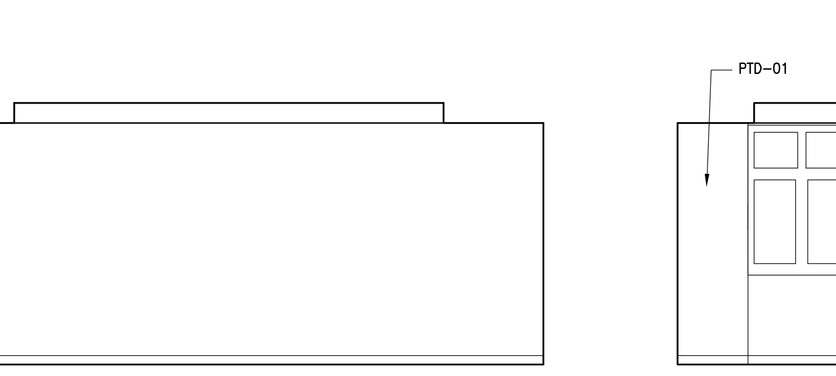


7 DISPATCH 117
1/4"=1'-0"

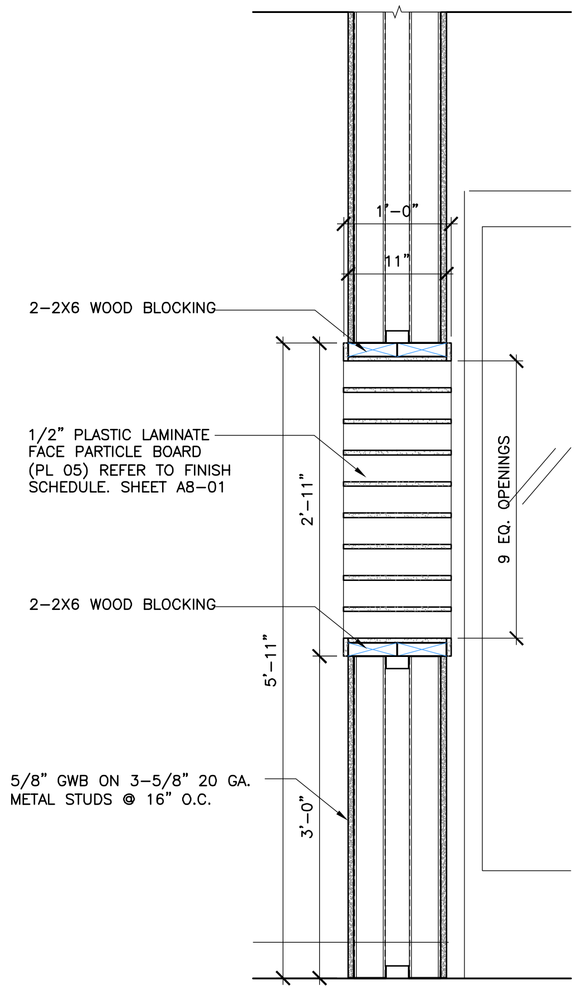


8 DISPATCH 117
1/4"=1'-0"

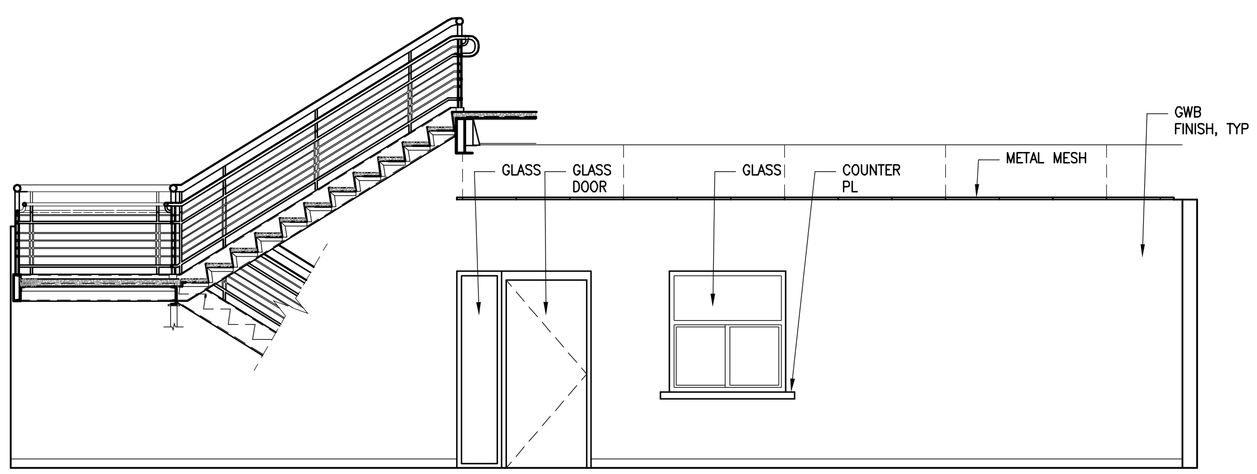
9 LOBBY 101
1/4"=1'-0"



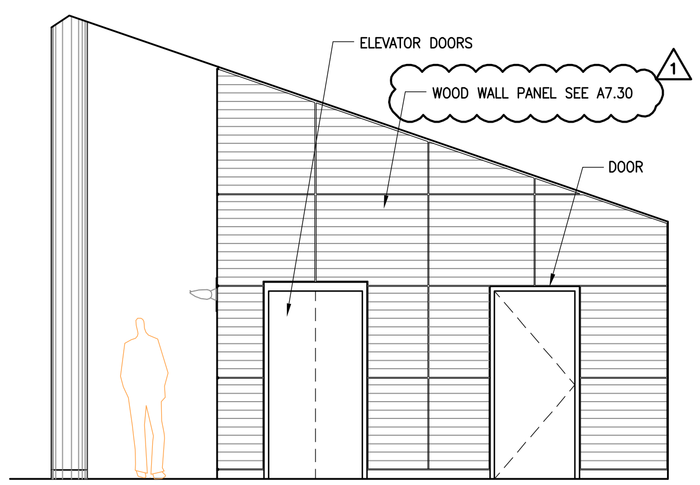
10 LOBBY 101
1/4"=1'-0"



13 MILLWORK DISPATCH 117 SEC
1"=1'-0"



11 LOBBY 101
1/4"=1'-0"



12 CORRIDOR 07 (215)
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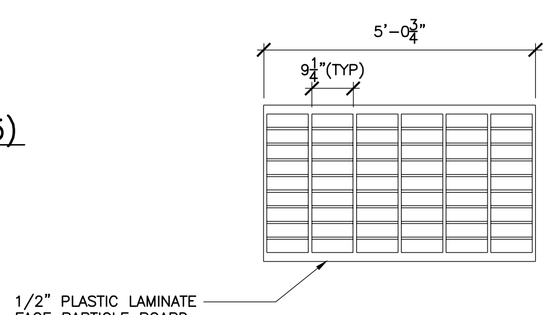

14 MILLWORK DISPATCH 117 ELEV
1/2"=1'-0"

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

TRANSPORTATION
AECOM
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Allied Project No: 07010 | Cad File: A7.23.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE	
FED PIN NO:	
PIN NO: 16123.50	

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE MAY 1, 2009

PROJECT INFORMATION			
PROGRAM	–	WPP	–
PROJECT MANAGER	–	TV	–
DESIGNER	–	ALLIED ENGINEERING	–
CONSULTANT	–	PROJECT RESIDENT	–
CONTRACTOR	–	PROJECT COMPLETION DATE	–

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

INTERIOR ELEVATIONS IV

SHEET NUMBER
A7.23
OF

Username: –
Division: –
Date: –
Filename: –
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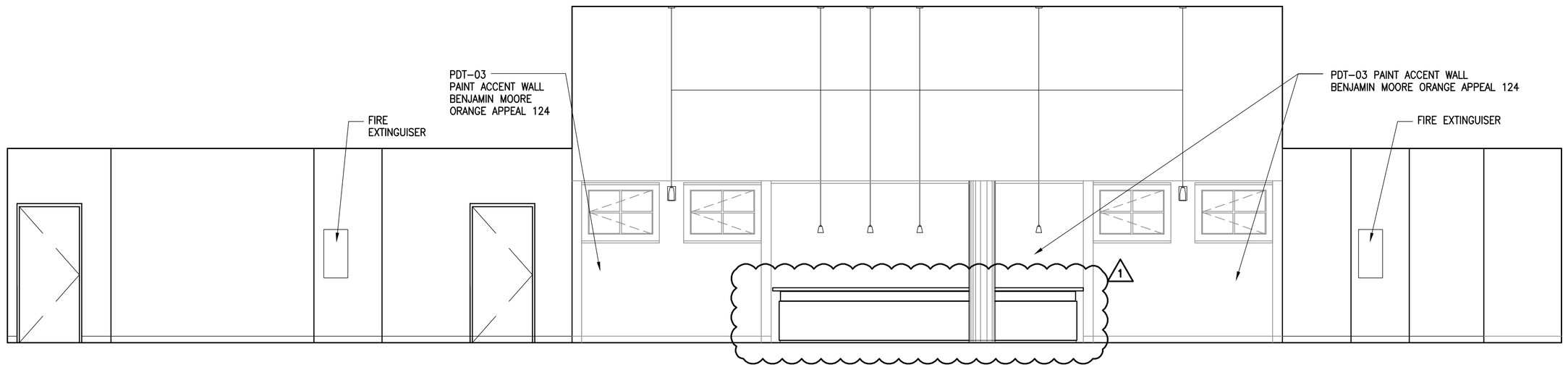

1 CORRIDOR 202-208
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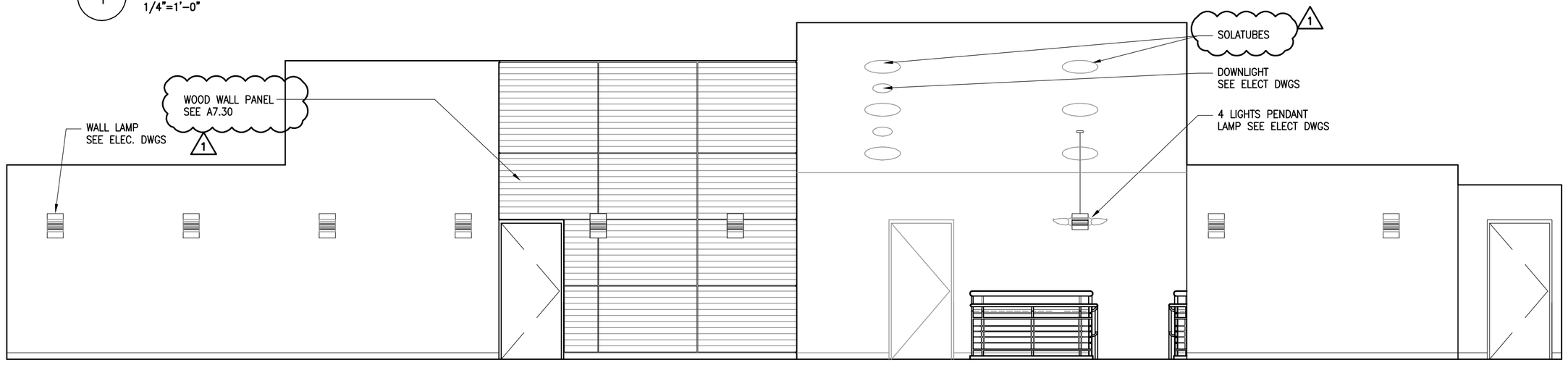

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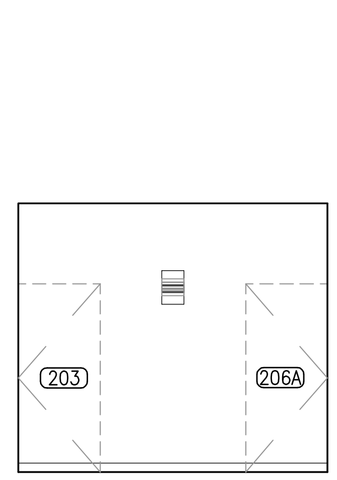

3 CORRIDOR 05 (202)
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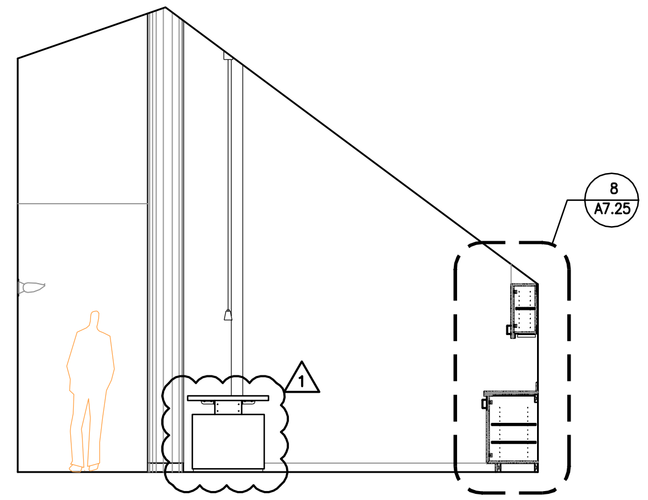

4 CORRIDOR 208
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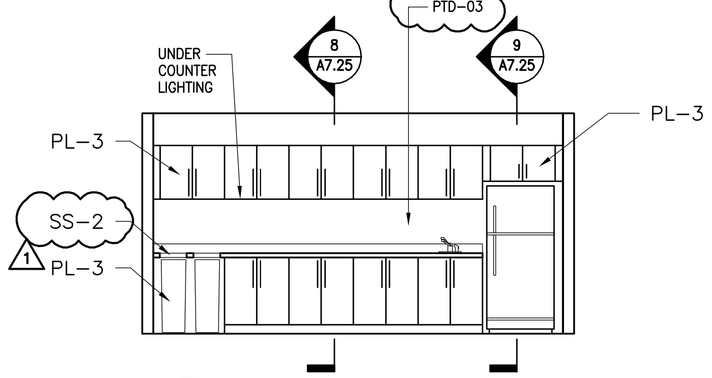

5 KITTCHENETTE
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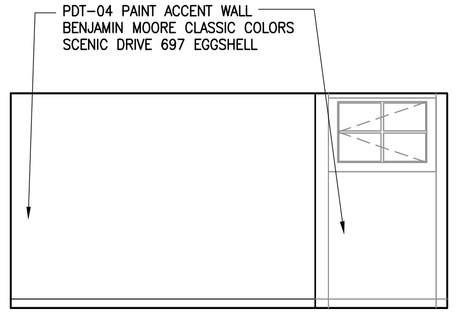

6 WOMEN'S BUNK 209
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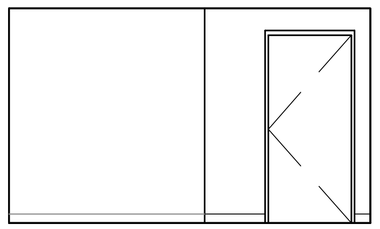

7 WOMEN'S BUNK 209
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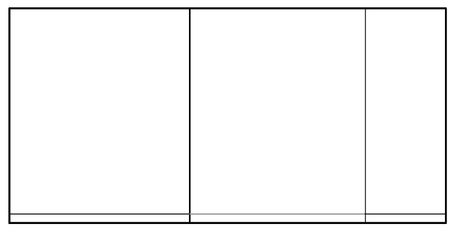

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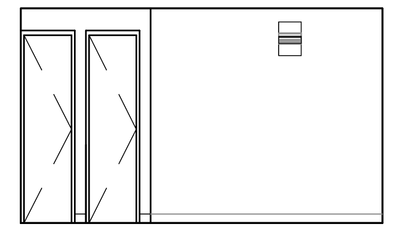

9 WOMEN'S BUNK 209
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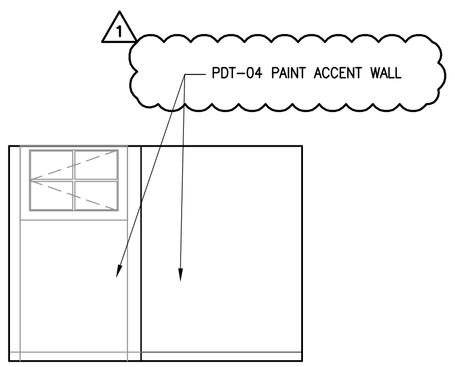

10 MEN'S BUNK 210
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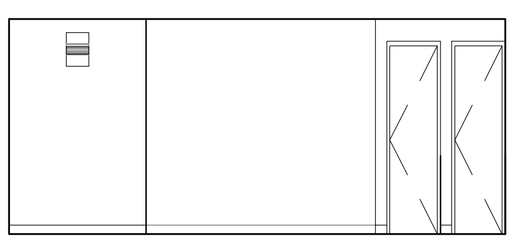

11 MEN'S BUNK 210
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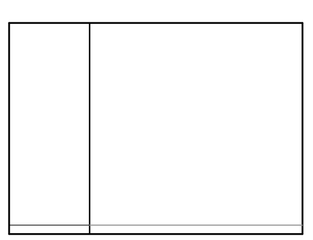

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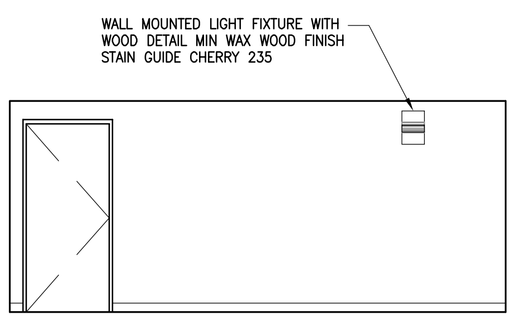

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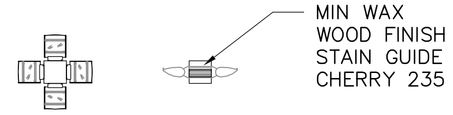

14 LOBBY STAIR PENDANT DETAIL
1/4"=1'-0"

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

TRANSPORTATION

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Allied Project No: 07010 | Cad File: A7.24.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE

FED PIN NO:

PIN NO: 16123.50

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE MAY 1, 2009

PROJECT INFORMATION		
PROGRAM	–	
PROJECT MANAGER	WPF	
DESIGNER	TV	
CONSULTANT	ALLIED ENGINEERING	
PROJECT RESIDENT	–	
CONTRACTOR	–	
PROJECT COMPLETION DATE	–	

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

INTERIOR ELEVATIONS V

SHEET NUMBER
A7.24
OF

Username: –
Division: –
Date: –
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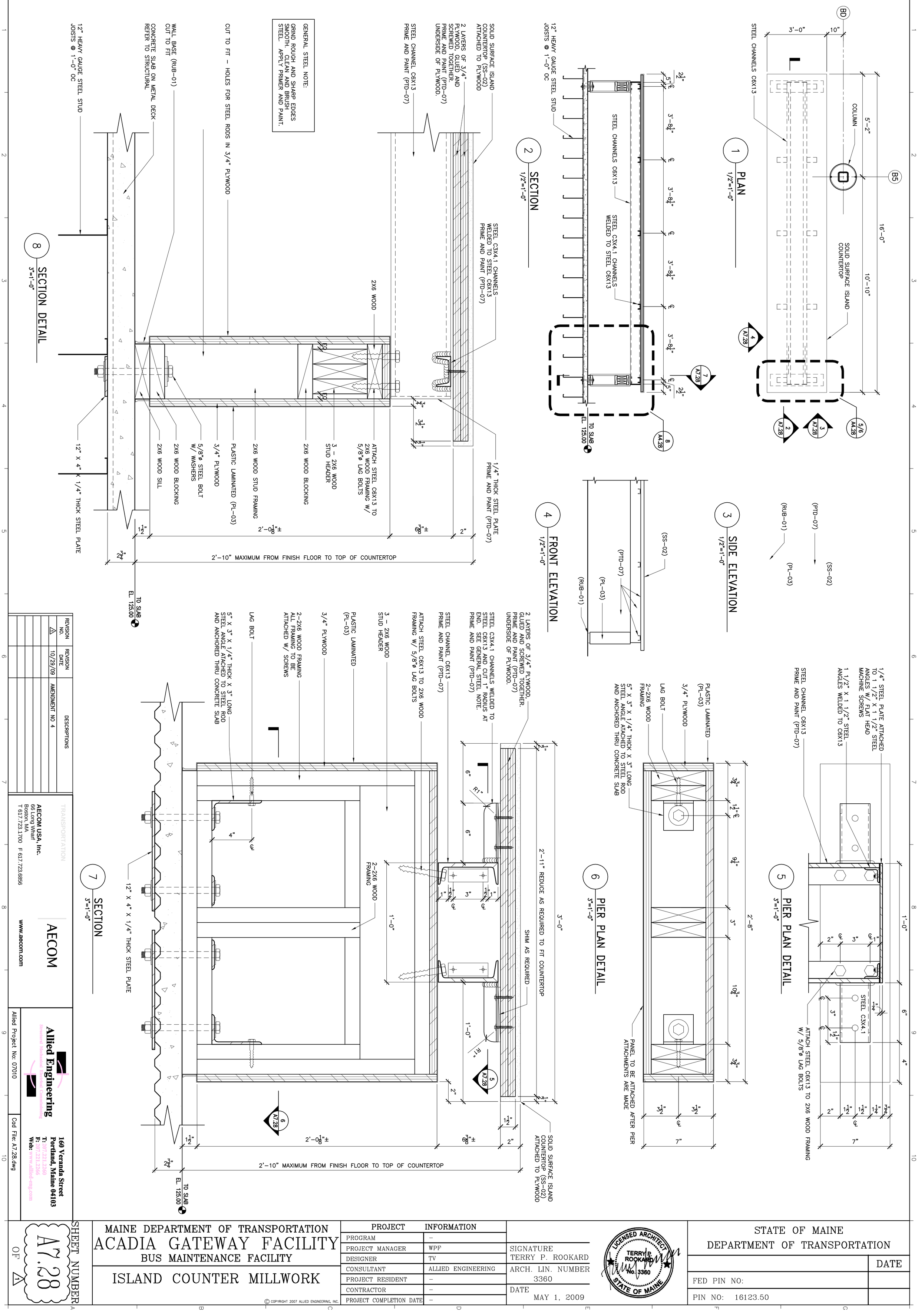

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/29/09	AMENDMENT NO 4

TRANSPORTATION

AECOM

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Allied Project No: 07010

Cad File: A7.28.dwg

SHEET NUMBER A7.28 OF 1

MAINE DEPARTMENT OF TRANSPORTATION

ACADIA GATEWAY FACILITY

BUS MAINTENANCE FACILITY

ISLAND COUNTER MILLWORK

PROJECT	INFORMATION
PROGRAM	–
PROJECT MANAGER	WPF
DESIGNER	TV
CONSULTANT	ALLIED ENGINEERING
PROJECT RESIDENT	–
CONTRACTOR	–
PROJECT COMPLETION DATE	–

SIGNATURE
TERRY P. ROOKARD
ARCH. LIN. NUMBER
3360
DATE
MAY 1, 2009

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

	DATE
FED PIN NO:	
PIN NO: 16123.50	

FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR		BASE		NORTH WALL		EAST WALL		SOUTH WALL		WEST WALL		CEILING			NOTES
		FINISH	COLOR	FINISH	COLOR	FINISH	COLOR	FINISH	COLOR	FINISH	COLOR	FINISH	COLOR	FINISH	COLOR	HEIGHT	
101	LOBBY	POL CON	PC-01	RUB-01		PAINT		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	MTL MESH	FF	10'-0"	PLYBOO PANEL @ ELEV. WALL
102	VESTIBULE	POL CON	PC-01	NONE	–	GLASS		GLASS		GLASS		GLASS		MTL MESH	FF	10'-0"	PTD-01 @ SOFFIT ABOVE GLAZING, STEEL GRATE @ FLOOR
103	STAIR 01	POL CON	PC-01	NONE										NONE	–	VARIES	SEE SHEET A5.01
104	MAINTENANCE TOILET	CT		CT		CT/GWB-PTD		CT-GWB	CT-PT	CT-GWB	CT-PT	CT-GWB	CT-PT	GWB-PTD	WHITE	9'-0"	SEE SHEET A7.20 FOR TILE DESIGNATION
105	MAINTENANCE LOCKER ROOM	CCC		RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
106	COPY	POL CON	PC-01	RUB-01	PTD-02	GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
107	TELEPHONE / COMMUNICATIONS CLOSET	POL CON	PC-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	±11'-6"	1 HOUR RATED CEILING
108	STORAGE	POL CON	PC-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	
109	CONFERENCE ROOM	CPT-01	–	RUB-01		GWB-PTD	PTD-02	GWB-PTD	PTD-02	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
110	GENERAL MANAGER'S OFFICE	CPT-01	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-02	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
111	OPEN OFFICE	CPT-01	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-02	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
112	OFFICE CORRIDOR	POL CON	PC-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	MTL MESH	FF	9'-6"	
113	OPERATIONS ASSISTANT & ACCOUNTING OFFICE	CPT-01		RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-02	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
114	WOMEN	CT	CT	CT	CT	CT/GWB	CT	GWB-PTD/CT	CT	GWB-PTD	CT	GWB-PTD	CT	ACT-01	WHITE	9'-0"	SEE SHEET A7.20 FOR WALL / FLOOR PATTERN
115	MEN	CT	CT	CT	CT	CT/GWB	CT	GWB-PTD/CT	CT	GWB-PTD	CT	GWB-PTD	CT	ACT-01	WHITE	9'-0"	SEE SHEET A7.20 FOR WALL / FLOOR PATTERN
116	OPERATIONS MANAGER'S OFFICE	CPT-01	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-02	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
117	DISPATCH OFFICE	CPT-01	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-02	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
118	CORRIDOR 01	POL CON	PC-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	MTL MESH	FF	9'-6"	
119A	CORRIDOR 02	POL CON	PC-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-6"	
119B	CORRIDOR 02	POL CON	PC-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-6"	
120	STAIR 02	CFS	–	PTD CMU		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	VARIES	
121	MECHANICAL / ELECTRICAL ROOM 01	CCC	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	±11'-6"	2 HOUR RATED CEILING
122	STORAGE ROOM	RUBBER	RUBTL-02	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
123	JANITOR CLOSET 01	CT-02	RUBTL-02	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
124	PARTS AND RECEIVING	CCC	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING
125	PARTS STORAGE	CCC	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING
126	SHOP	CCC	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING
127	CORRIDOR 03	CCC	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	
128	MAINTENANCE EQUIPMENT STORAGE	CCC	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING
129	BUILDING MAINTENANCE SUPPLY STORAGE	CFH	–	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING
130	STAIR 03	CCC	–	NONE		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXP-PTD	WHITE	VARIES	
131	CORRIDOR 04	CCC	–			GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	9'-0"	
132	MAINTENANCE OFFICE	RUBBER	RUBTL-02	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
133	LIFT BAY 01	CCC	–	NO BASE		GWB/PLWD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXP-PTD	WHITE	VARIES	
134	LIFT BAY 02	CCC	–	NO BASE		GWB/PLWD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXP-PTD	WHITE	VARIES	
135	WASH RECYCLING	CCC	–	NO BASE		GCMU	TBD	GCMU	TBD	GCMU	TBD	GCMU	TBD	EXP-PTD	WHITE	VARIES	GCMU TO 9'-0"
136	FLUIDS	CCC	–	NO BASE		GCMU	TBD	GCMU	TBD	GCMU	TBD	GCMU	TBD	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING, GCMU TO 9'-0"
137	WASTE FLUIDS	CCC	–	NO BASE		GCMU	TBD	GCMU	TBD	GCMU	TBD	GCMU	TBD	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING, GCMU TO 9'-0"
138	TRASH AND RECYCLING	CCC	–	NO BASE		GCMU	TBD	GCMU	TBD	GCMU	TBD	GCMU	TBD	GWB-PTD	WHITE	9'-0"	1 HOUR RATED CEILING, GCMU TO 9'-0"
139	BUS WASH	CCC	–	NO BASE		GCMU	TBD	GCMU	TBD	GCMU	TBD	GCMU	TBD	GWB-PTD	WHITE	18'-3"±	GCMU TO 9'-0"
140	BUS STORAGE	CFH	–	NO BASE		CMU/EXP		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXP-PTD	WHITE	9'-0"	
201	STAIR 01	POL/CON	PC-01	–		PAINT	CLR-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	VARIES	
202	CORRIDOR 06	RUBBER	RUBTL-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	10'-0"	
203	WOMEN'S LOCKER ROOM	CT		CT		GWB-PTD		GWB-PTD/CT	PTD-01	GWB-PTD/CT	PTD-01	GWB-PTD/CT	PTD-01	ACT-01	WHITE	9'-0"	SEE SHEET A7.21 FOR TILE DETAIL
204	WOMEN'S TOILET	CT		CT		CT/GWB-PTD	CT	GWB-CT	CT-PTD	GWB-CT	PTD-CT	GWB-CT	PTD-CT	ACT-01	WHITE	9'-0"	SEE SHEET A7.21 FOR WALL / FLOOR PATTERN
205	MEN'S TOILET	CT		CT		CT/GWB-PTD	CT	GWB-CT	CT-PTD	GWB-CT	PTD-CT	GWB-CT	PTD-CT	ACT-01	WHITE	9'-0"	SEE SHEET A7.22 FOR WALL / FLOOR PATTERN
206	MEN'S LOCKER ROOM	CT		CT		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	SEE SHEET A7.22 FOR WALL / FLOOR PATTERN
207	BREAK ROOM	RUBBER	RUBTL-01	RUB-01		GWB-PTD	–	GWB-PTD	PTD-03	GWB-PTD	PTD-03	GWB-PTD	PTD-03	GWB-PTD	WHITE	SEE SECT	SEE SHEET A7.24 FOR PAIN DETAIL
208	CORRIDOR 06	RUBBER	RUBTL-01	RUB-01		GWB-PTD		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	10'-0"	1 HOUR RATED CEILING
209	WOMEN'S BUNK	CPT2	–	RUB-01		GWB-PTD		GWB-PTD	PTD-04	GWB-PTD	PTD-04	GWB-PTD	PTD-04	GWB-PTD	WHITE	8'-0"	
210	MEN'S BUNK	CPT2	–	RUB-01		GWB-PTD	PTD-04	GWB-PTD	PTD-04	GWB-PTD	PTD-04	GWB-PTD	PTD-04	GWB-PTD	WHITE	8'-0"	
211	STAIR 02	CFS	–	PTD CMU		GWB-PTD	PTD-02	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	VARIES	1 HOUR RATED CEILING
212	STORAGE	RUBBER	RUBTL-02	RUB-01		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	VARIES	1 HOUR RATED CEILING
213	ELEVATOR CONTROL ROOM	RUBBER	RUBTL-02	RUB-01		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	11'-0"	1 HOUR RATED CEILING, CEILING MUST CLEAR PENETRATIONS – A5.20
214	JANITOR CLOSET 02	CT-02	RUBTL-02	RUB-01		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	ACT-01	WHITE	9'-0"	
215	CORRIDOR 07	RUBBER	RUBTL-01	RUB-01		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	WHITE	VARIES	
216	STAIR 04	CCC	–	–		–		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	–	–	–	
217	MEZZANINE STORAGE	CCC	–	–		–		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXPOSED	–	–	
218	STAIR 03	CCC	–	–		–		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	–	–	–	
219	MECHANICAL	CCC	–	–		GWB		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXPOSED	WHITE	SEE SECT	
220	MEZZANINE	CCC	–	–		CMU/GWB		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXPOSED	WHITE	SEE SECT	
221	COMPRESSOR	CCC	–	–		CMU		GWB-PTD	PTD-01	GWB-PTD	PTD-01	GWB-PTD	PTD-01	EXPOSED	WHITE	SEE SECT	

FINISH SCHEDULE ABBREVIATIONS:

(ACT) ACOUSTICAL CEILING TILE
(CFH) CONCRETE FLOOR HARDENER
(CCC) COLORED CONDITIONED CONCRETE
(CLR) CLEAR
(CPT) CARPET
(CT) CERAMIC TILE
(EXP) EXPOSED
(EXP) EXPOSED
(GWB) GYPSUM WALLBOARD
(PLYWD) PLYWOOD
(POL CON) POLISHED CONCRETE
(PTD) PAINT
(RUB) RUBBER
(RUBTL) RUBBER TILE
(WD) WOOD

CPT-01:
Straight talk P/6892: 50cm and 1m
Modular carpet with Underscore ES
cushion – Design Snap Back, Color 221
Limestone, Face Fiber 100% Milliken
Certified WearOn Type 6,6 Nylon

CPT-02:
Theory P/6387: 36"x36" Tufted Modular
Carpet with comfort Plus cushion –
Design Quite Please, Color 408 CAMEL,
Face fiber 100% Milliken Certified
WearOn Type 6,6 Nylon

PL-01:
Plastic laminate
Wilsonart Laminate 4860-07
SILVER ALCHEMY

PL-02:
Plastic laminate
Wilsonart Laminate 1300-60
GREY

PL-03:
Plastic laminate
Wilsonart Laminate 7931-78
Zaffran

PL-05:
Plastic Laminate
Wilsonart Laminate D12-60
Regimental Red
(MAIL BOXES)

RUB-01
WALL BASE ROPPE 123 CHARCOAL

RUBTL-01:
CENTIVA PATTERN GOOD ALE WOODS
COLOR HY-GW-40 SURFACE RUBBER
EDGE STANDARD

RUBTL-02:
NORA SYSTEMS
NORAMORY LUXOR
#4900 "BASILICA"
RUBTL-01

CT-01:
DALTILE PRODUCT NAME DESIGNER
COLOURS SIZE 12"X12" GLAZED
COLOR DC15-WHITE

CT-02:
DAL TILE PRODUCT NAME VITRESTONE
SELECT SIZE 12"X12" GLAZED
COLOR VS02-WHITE GRANITE

CT-02-A:
DAL TILE PRODUCT NAME VITRESTONE
SELECT SIZE 12"X12" GLAZED
COLOR VS02-WHITE GRANITE

CT-03:
DALTILE PRODUCT NAME NATURAL HUES
SIZE 12"X12" GLAZED
COLOR SWEET PEA QH28

CT-04:
DALTILE PRODUCT NAME NATURAL HUES
SIZE 12"X12" GLAZED
COLOR CINDER QH08

CT-05:
DALTILE PRODUCT NAME NATURAL HUES
SIZE 12"X12" GLAZED
COLOR GRAPE QH54

CT-06:
DALTILE PRODUCT NAME NATURAL HUES
SIZE 12"X12" GLAZED
COLOR REAL TEAL QH66

CT-07
DALTILE PRODUCT NAME PORCE ALTO
SELECT SIZE 12"X12"
COLOR CD-39

CT-07A
DALTILE PRODUCT NAME KEYSTONES
SELECT SIZE 3"X3"
COLOR BISCUIT D317

GCMU
GLAZED CMU
TRENWYTH
COLOR: TBD

PTD-01:
BENJAMIN MOORE
CHANTILLY LACE
2121-70

PTD-02:
BENJAMIN MOORE
RAPTURE (RED)
CC-66

PTD-03:
BENJAMIN MOORE
PAINT ACCENT WALL
ORANGE APPEAL
124

PTD-04:
BENJAMIN MOORE
LINEN WHITE
1-70

PTD-5:
BENJAMIN MOORE
AURA BLUE NOVA 825
SEMI-GLOSS

PTD-6:
BENJAMIN MOORE
AURA SPRING MEADOW
GREEN 2031-40
SEMI-GLOSS

PTD-07:
BENJAMIN MOORE
STORM AF-700

PTD ALL DOORS:
BENJAMIN MOORE
COS COB STONEWALL 1483

POL CONC / PC-01:
POLISHED CONCRETE
SCOFIELD SYSTEMS
FORMULA ONE
LITHIUM DENSIFIER & FINISH COAT
SYSTEM WITH CHOMIX NATURAL
CONCRETE ADMIXTURE POLISHED &
FINISHED TO GRADE 2, SALT & PEPPER
FINISH

CFH:
CONCRETE FLOOR HARDENER

CCC:
COLORED CONDITIONED CONCRETE
SCOFIELD SYSTEMS CHROMIX ADMIXTURE
CHROMIX P.

STAINLESS STEEL GRATING:
VESTIBULE ROOM 102
KADEE INDUSTIRES
SS CLEAN TREAD
KD98 (1-1/8")STAINLESS STEEL GRATING

MAT:
4'x4' FORDOM
4'x8' FORDOM
CHOCOLATE – FRE.140

SS-SOLID SURFACE:
TOILETROOM COUNTERS
1. MONT BLANC
2. KITCHEN COUNTER & ISLAND
CORIAN COLOR
MANDARIN

WOOD PANEL
½" PLYBOO

REVISION NO.	REVISION DATE	DESCRIPTIONS
1	10/15/09	ADDENDUM NO 2
2	10/29/09	AMENDMENT NO 4

TRANSPORTATION
AECOM USA, Inc.
66 Long Wharf
Boston, MA
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AECOM
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Structural Mechanical Electrical Commissioning
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Allied Project No: 07010 | Cad File: A8.01.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE

FED PIN NO: –
PIN NO: 16123.50

LICENSED ARCHITECT TERRY P. ROOKARD No. 3360 STATE OF MAINE

PROJECT INFORMATION		
PROGRAM	–	SIGNATURE
PROJECT MANAGER	WPP	TERRY P. ROOKARD
DESIGNER	TV	ARCH. LIN. NUMBER 3360
CONSULTANT	ALLIED ENGINEERING	
PROJECT RESIDENT	–	DATE MAY 1, 2009
CONTRACTOR	–	
PROJECT COMPLETION DATE	–	

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

FINISH SCHEDULE

SHEET NUMBER
A8.01
OF

Filename: – Date: – Division: – Username: –
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1. THE BASIS OF DESIGN FOR THE FUEL SYSTEM EQUIPMENT AND COMPONENTS SHALL BE TARANTIN TANK COMPANY AS FURNISHED AND INSTALLED BY WEBER ENERGY FUELS-BANGOR, DBA HANCOCK OIL COMPANY, THE CURRENT FUEL VENDOR FOR THE PROPOSED FACILITY TENANT. THE FUEL COMPONENTS SHALL BE FURNISHED AND INSTALLED UNDER SEPARATE CONTRACT, BY THE OWNER/TENANT UNLESS NOTED OTHERWISE HEREIN. THE CONTRACTOR, UNDER THE WORK OF THIS CONTRACT, SHALL STRICTLY COORDINATE WITH THE OWNER/TENANT/FUEL VENDOR FOR INSTALLATION OF ALL ASSOCIATED WORK NOTED UNDER THE SCOPE OF THIS CONTRACT.

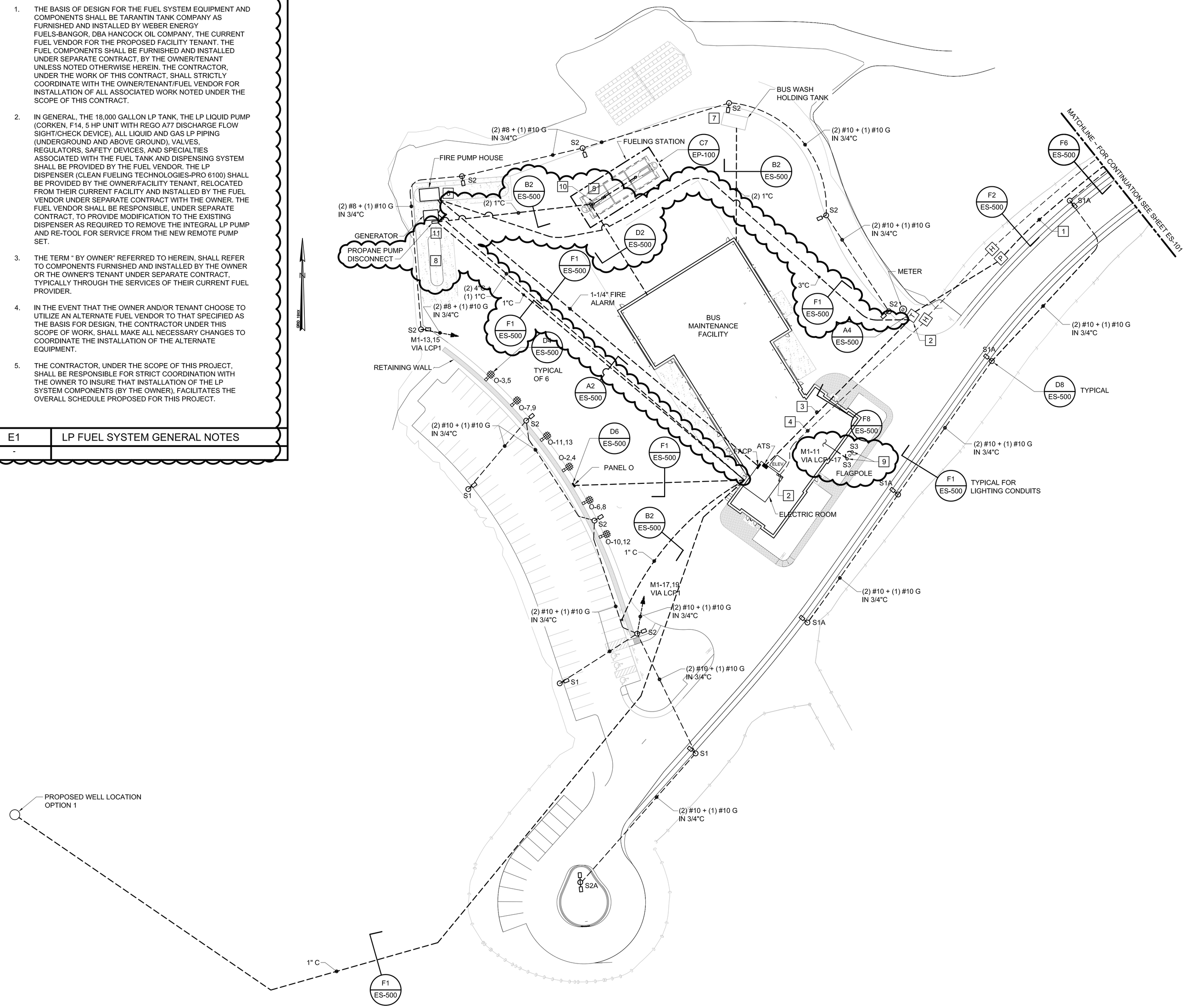
2. IN GENERAL, THE 18,000 GALLON LP TANK, THE LP LIQUID PUMP (CORKEN, F14, 5 HP UNIT WITH REGO A77 DISCHARGE FLOW SIGHT/CHECK DEVICE), ALL LIQUID AND GAS LP PIPING (UNDERGROUND AND ABOVE GROUND), VALVES, REGULATORS, SAFETY DEVICES, AND SPECIALTIES ASSOCIATED WITH THE FUEL TANK AND DISPENSING SYSTEM SHALL BE PROVIDED BY THE FUEL VENDOR. THE LP DISPENSER (CLEAN FUELING TECHNOLOGIES-PRO 6100) SHALL BE PROVIDED BY THE OWNER/FACILITY TENANT, RELOCATED FROM THEIR CURRENT FACILITY AND INSTALLED BY THE FUEL VENDOR UNDER SEPARATE CONTRACT WITH THE OWNER. THE FUEL VENDOR SHALL BE RESPONSIBLE, UNDER SEPARATE CONTRACT, TO PROVIDE MODIFICATION TO THE EXISTING DISPENSER AS REQUIRED TO REMOVE THE INTEGRAL LP PUMP AND RE-TOOL FOR SERVICE FROM THE NEW REMOTE PUMP SET.

3. THE TERM " BY OWNER" REFERRED TO HEREIN, SHALL REFER TO COMPONENTS FURNISHED AND INSTALLED BY THE OWNER OR THE OWNER'S TENANT UNDER SEPARATE CONTRACT, TYPICALLY THROUGH THE SERVICES OF THEIR CURRENT FUEL PROVIDER.

4. IN THE EVENT THAT THE OWNER AND/OR TENANT CHOOSE TO UTILIZE AN ALTERNATE FUEL VENDOR TO THAT SPECIFIED AS THE BASIS FOR DESIGN, THE CONTRACTOR UNDER THIS SCOPE OF WORK, SHALL MAKE ALL NECESSARY CHANGES TO COORDINATE THE INSTALLATION OF THE ALTERNATE EQUIPMENT.

5. THE CONTRACTOR, UNDER THE SCOPE OF THIS PROJECT, SHALL BE RESPONSIBLE FOR STRICT COORDINATION WITH THE OWNER TO INSURE THAT INSTALLATION OF THE LP SYSTEM COMPONENTS (BY THE OWNER), FACILITATES THE OVERALL SCHEDULE PROPOSED FOR THIS PROJECT.

E1	LP FUEL SYSTEM GENERAL NOTES
-	



A1	SITE ELECTRICAL PART PLAN
1" = 40'-0"	

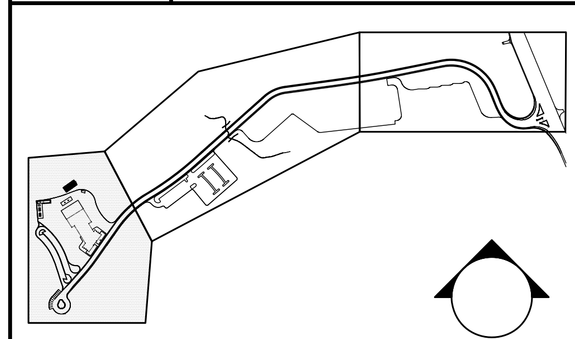
F9	TYPE S1, S1A, S2 & S2A
NO SCALE	

- H TELCOM/CATV HANDHOLE, MINIMUM 18" x 36" x 24", SIZE PER NEC FOR NUMBER OF CONDUITS INSTALLED
- P 4' x 6' PULL BOX WITH 32" COVER PLATE IN ACCORDANCE WITH UTILITY STANDARDS
- T TRANSFORMER
- POLE MOUNTED LIGHT

E9	LEGEND
NO SCALE	

1. UNDERGROUND PRIMARY ELECTRICAL WIRING. PROVIDED BY BANGOR HYDRO ELECTRIC. CONDUITS PROVIDED BY DIV 26.
2. PAD MOUNT TRANSFORMER, CT'S AND METER PROVIDED BY BANGOR HYDRO ELECTRIC COMPANY. VAULT PROVIDED BY DIVISION 26.
3. SECONDARY ELECTRIC SERVICE. SEE ONE-LINE DIAGRAM FOR REQUIREMENTS.
4. UNDERGROUND TELEPHONE SERVICE. PROVIDE (3) 4" CONDUIT WITH PULL ROPE, PER TELEPHONE/CATV PROVIDERS REQUIREMENTS.
5. TERMINATE AT TELEPHONE BOARD IN MECH/ELECT ROOM 121
6. PROVIDE ONE TYPE H2A LUMINAIRE AT FIRE PUMP HOUSE ENTRANCE ~ CONNECT TO FIRE PUMP HOUSE PANELBOARD FURNISHED BY DIVISION 21 ~ COORDINATE WITH DIVISION 21.
7. WIRE AND CONNECT FLOAT SWITCH FOR HOLDING TANK ALARM. SEE SHEET EP-101 FOR ALARM UNIT LOCATION.
8. COMPLY WITH NEC FOR WIRING METHODS AND SEALS FOR HAZARDOUS LOCATIONS.
9. PROVIDE IN-GRADE UP-LIGHT TYPE S3 TO LIGHT FLAGPOLE; HYDREL #6700-B-SP-FLCAS, 277V, WITH 175W MH LAMP, MOUNT FLUSH WITH GRADE
10. PROVIDE 20A, 1P, WP, DISCONNECT SWITCH FOR DISPENSER CIRCUIT. PROVIDE (2)#10+(1)#10G TO CIRCUIT P5-21.
11. PROVIDE 30A, 3P, WP FUSED DISCONNECT SWITCH MOUNTED ON UNISTRUT RACK FOR PROPANE PUMP. PROVIDE 20A, 3P CIRCUIT BREAKER AT L1-10,12,14 AND (3)#10+(1)#10G.

B9	KEY NOTES



A9	KEY PLAN
NOT TO SCALE	

REVISION NUMBER	REVISION DATE	DESCRIPTION
1	10-29-2009	REVISED AND RE-ISSUED FOR AMENDMENT No. 4

Allied Engineering
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Allied Project No: 07010 | Cad File: 07010ES.DWG

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

DATE

FED PIN NO:

PIN NO: 16123.50

MAINE REGISTERED PROFESSIONAL ENGINEER CATHERINE A. FAUCHER No. 7671

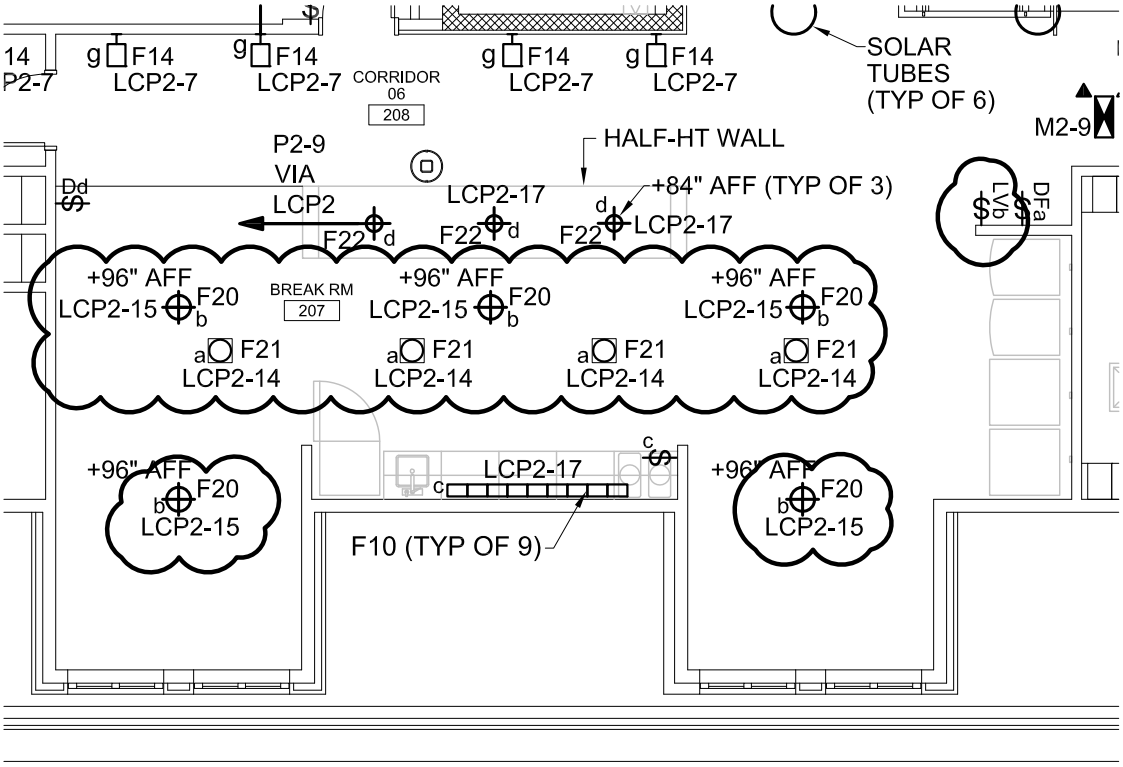
INFORMATION		SIGNATURE	P.E. NUMBER	DATE
PROJECT PROGRAM	–			
PROJECT MANAGER	WPF			
DESIGNER	–			
CONSULTANT	ALLIED ENGINEERING		01 MAY, 2009	
PROJECT RESIDENT	–			
CONTRACTOR	–			
PROJECT COMPLETION DATE	–			

MAINE DEPARTMENT OF TRANSPORTATION
ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

SITE ELECTRICAL PART PLAN

SHEET NUMBER
ES-100
OF

Username: –
Division: –
Date: – Oct 26, 2009 – 8:51am
Filename: – N:\Projects\2007\07010 ~ MDOT Acadia Gateway Facility\00 Drawing Files_Bus Building\07010_Es.dwg



SKE-02 AMENDMENT No. 4	REVISE RELAY NUMBERS IN BREAK RM 207	
	MDOT ACADIA GATEWAY FACILITY BUS MAINTENANCE FACILITY	
	Scale: 1/8"=1'-0"	Project No: 07010
	Date: 10-29-2009	CAD File: 07010_EL.DWG

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LIGHTING CONTROL PANEL SCHEDULE ~ LCP2

NETWORK PANEL TO LCP1

DESIGNATION: M2-39	**MOUNTING: SURFACE**
CONTROL VOLTAGE: 277/480	LOCATION: **STORAGE ROOM 212**
	PROJECT: ACADIA BUS FACILITY

RELAY NO	CIRCUIT	NOTE	DESCRIPTION
1	M2-3	2, 3	LIFT BAY LIGHTING
2	M2-3	2, 3	LIFT BAY LIGHTING
3	M2-5	2, 3	BUS STORAGE LIGHTING
4	M2-5	2, 3	BUS STORAGE LIGHTING
5	M2-7	2, 3	BUS STORAGE LIGHTING
6	M2-7	2, 3	BUS STORAGE LIGHTING
7	M2-9	2	**SECOND FLOOR CORRIDOR**
8	M2-9	2	**STAIR 01 201**
9	M2-13	2	BUS WASH LIGHTING
10	M2-11	2	MEZZANINE STORAGE/STORAGE
11	M2-23	2	**MECHANICAL 219**
12	**M2-23**	**2**	**COMPRESSOR 221**
13	**M2-21**	**2**	**MEZZANINE STORAGE 217**
14	**M2-9**	**2**	**BREAK ROOM SWITCH GROUP 'a'**
15	**M2-9**	**4**	**BREAK ROOM SWITCH GROUP 'b'**
16			SPARE
17	P2-9	**4**	BREAK ROOM 120V LIGHTING
18			SPARE
19			SPARE
20			SPARE
21			SPARE
22			SPARE
23			SPARE
24			SPARE

NOTES:

1. PROGRAM FOR AUTO ON/AUTO OFF CONTROL VIA ASTRONOMICAL CLOCK
2. PROGRAM FOR MANUAL-ON/TIME-OFF.
3. PROGRAM FOR AUTO OFF VIA PHOTCELL FORCING LIGHT FIXTURES TO TURN 1/2 LAMPS OFF WHEN THERE IS ADEQUATE DAYLIGHT.
4. **SWITCHES AND/OR DIMMERS INDICATED ON THE FLOOR PLAN SHALL BE CONNECTED TO THE LOAD SIDE OF THE RELAY AND SHALL BE ENABLED ONLY DURING SCHEDULED 'ON' PERIODS. PROGRAM RELAY FOR AUTO ON/AUTO OFF VIA TIME SCHEDULE.**

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PANEL SCHEDULE ~ P5

VOLTAGE: **208/120V**				MLO:			MOUNTING: **SURFACE**
3 PHASE, 4 WIRE				MCB: **225**			LOCATION: **MECHANICAL ROOM 121**
AIC: **10K**							PROJECT: **ACADIA BUS BLDG**
CIRCUIT BREAKER				CIRCUIT LOAD (KVA)			BRANCH CIRCUIT DESCRIPTION
CKT NO	BRKR SIZE	NO OF POLE	PH	A	B	C	
1	20	2	A	1.44			WELL PUMP
3			B		1.44		
5	20	1	C			0.36	TELEPHONE BACKBOARD RECEPT
7	20	1	A	0.36			TELEPHONE BACKBOARD RECEPT
9	20	1	B		0.18		SHOP BENCH RECEPT
11	20	1	C			0.18	SHOP BENCH RECEPT
13	20	1	A	0.18			SHOP BENCH RECEPT
15	20	1	B		0.18		SHOP BENCH RECEPT
17	20	1	C			0.18	MAINT BAY BENCH RECEPT
19	20	1	A	0.18			MAINT BAY BENCH RECEPT
21	20	1	B		**0.25**		**PROPANE DISPENSER**
23	20	1	C				**SPARE**
25	20	1	A				**SPARE**
27	20	1	B				**SPARE**
29	20	1	C				SPARE
31	20	1	A				SPARE
33	20	1	B				SPARE
35	20	1	C				SPARE
37	20	1	A				SPARE
39	20	1	B				SPARE
41	20	1	C				SPARE
			SUBTOTAL:	2.16	2.05	0.72	
2	20	1	A				**SPARE**
4	20	1	B				**SPARE**
6	20	1	C				**SPARE**
8	20	1	A				**SPARE**
10	20	1	B				**SPARE**
12	20	1	C				**SPARE**
14	20	1	A				**SPARE**
16	20	1	B				**SPARE**
18	20	1	C				**SPARE**
20	20	1	A				**SPARE**
22	20	1	B				**SPARE**
24	20	1	C				**SPARE**
26	20	1	A				**SPARE**
28	20	1	B				**SPARE**
30	20	1	C				**SPARE**
32	20	1	A				**SPARE**
34	20	1	B				**SPARE**
36	20	1	C				**SPARE**
38	20	1	A				**SPARE**
40	20	1	B				**SPARE**
42	20	1	C				**SPARE**
			SUBTOTAL:	0.00	0.00	0.00	

SKE-04

AMENDMENT No. 4

REVISIONS TO PANEL SCHEDULE P5

MDOT ACADIA GATEWAY FACILITY
BUS MAINTENANCE FACILITY

Scale: NONE	Project No: 07010
Date: 10-29-2009	CAD File: 07010_EL.DWG

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