

ADDENDUM #1

June 25, 2014

- Re: Harrisburg Area Community College Lancaster Welcome Center Renovations Solicitation # RFB15-01
- From: Eastern PCM, LLC Construction Manager – HACC 645 N. 12th Street, Suite 200 Lemoyne, PA 17043
- To: All Planholders

This Addendum is hereby made part of the Plans and Project Manual dated June 14, 2014 for the above referenced project. The provisions of this Addendum are intended to supplement the provisions of the Plans and Project Manual and/or supersede them where contradictory thereto.

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

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

1.1 PRE-BID MEETING MINUTES

Meeting minutes from the Pre-Bid Meeting held on June 17, 2014 are attached and are a part of this Addendum. In the event of a conflict between the information contained in the Pre-Bid Meeting Notes and the Drawings, Specifications and responses to questions contained in this Addendum, the latter shall take precedence.

1.2 SECOND SITE VISIT

A second opportunity for a site visit and tour will be available on June 26, 2014 at 9:00 am. The walk through will begin in the Lobby of the Main Building, adjacent to the existing Welcome Center. This will be an informal site visit. Questions raised will need to be submitted in writing to EPCM.

1.3 CHANGES TO THE DRAWINGS

- A. A030: Overall Plan Demolition
 - 1. REVISE Demolition Note 16 to read:

"Remove floor trough drain and cap drain line. Infill opening to match existing. Refer to Plumbing Demolition Plan for locations of all floor openings to be infilled."

2. REVISE Demolition Note 18 to read:

"Remove quarry tile floor as required so that there is a minimum ¼" below the existing adjacent concrete subfloor at corridor near the elevator and stairwell. Due to the slope of the floor, some areas may not have to be disturbed if already at or below ¼" minimum requirement to the existing adjacent concrete subfloor. Clean and prime subfloor (or existing tile) as recommended per manufacturer's warranty. Pour a minimum ¼" thick self leveling concrete to match existing adjacent subfloor level at corridor near the elevator and stairwell."

- 3. REVISE Detail 1: Overall Plan Demolition per SK-A030.01.
- B. A101: Enlarged Plans
 - 1. **REVISE** Detail 1: Enlarged Floor Plan per SK-A101.01.
 - 2. ADD Detail 5: Structural Framing Plan per SK-A101.01.
 - 3. ADD Detail A per SK-A101.02.
 - 4. ADD Detail B per SK-A101.02.
- C. A301: Interior Elevations
 - 1. **REPLACE** A301: Interior Elevations in its entirety.
- D. M002: Overall Plan Demolition
 - 1. **REPLACE** drawing M002: Overall Plan in its entirety.
- E. ID 1: Floor Plan
 - 1. **REPLACE** ID 1: Floor Plan in its entirety.
- F. ID 2: Flooring Pattern & Layout
 - 1. **REPLACE** ID 2: Flooring Pattern & Layout in its entirety.
- G. ID 4: Elevations
 - **1. REPLACE** ID 4: Elevations in its entirety.
- H. S-001: Structural Specifications
 - 1. **ADD** S 001: Structural Specifications in its entirety.

1.4 ATTACHMENTS

- A. Pre-Bid Meeting Minutes dated June 17, 2014.
- B. SK-A030.01: Overall Plan Demolition dated June 20, 2014.
- C. SK-A101.01: Enlarged Plans dated June 20, 2014.
- D. SK-A101.02: Enlarged Plans dated June 20, 2014.
- E. A301: Interior Elevations dated June 12, 2014.
- F. M002: Overall Plan Demolition dated June 12, 2014.
- G. ID-1: Floor Plan dated June 20, 2014.
- H. ID-2: Flooring Pattern & Layout dated June 20, 2014.
- I. ID-4: Elevations dated June 20, 2014.
- J. S-001: Structural Specifications dated June 20, 2014.

END OF ADDENDUM



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

Lancaster Welcome Center SOLICITATION # RFB15-01

Addendum	#	1	has	been	received.

Company:

Print Company Name

Received By:

Print Name

Signature

Date:

Please check one:

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

EASTERN PCM, LLC

HACC, Central Pennsylvania's Community College Lancaster Campus Lancaster Welcome Center Renovations

Pre-Bid Meeting

June 17, 2014 9:00 am

Meeting Minutes

Attendees

Jackie Bareuther – HACC Dan Mahan – HACC Dan Hoffman – Beers and Hoffmen Ltd., Architects Greg Lamay – Eastern PCM Peter Shkuda – Eastern PCM Bill Zuck – Dorgan & Zuck Matthew Hartman – Dorgan & Zuck Jeff Heindel – Hogg Construction Bob Eppley – East Coast Contracting Bill Raves – Titan Construction Shawn Rose – Titan Construction

Tom Davis – JEM Group Claire McNally – JEM Group Shawn Kingsley – New Age Development Dexter Lanigan – New Age Development Deron Henise – High Construction Michel Gibeault – High Construction Brett Lazicki – Silvertip, Inc. Steve Scholl – Silvertip, Inc. Mike Peachey – Poole Anderson Chris Evans – Horst Construction DJ Risk – Paul Risk Associates

1.0 Team Introductions

i.	Owner	HACC, Central Pennsylvania's Community College Lancaster Campus Eleanor Bosserman – Business Director, Lebanon/Lancaster (Not Present) Jackie Bareuther – Campus Dean – Student Affairs Dan Mahan – Campus Facilities Director
ii.	Architect	Beers and Hoffman Ltd., Architects Scott Shonk – Partner Architect (Not Present) Dan Hoffman – CADD Technician
iii.	Construction Manager	Eastern PCM, LLC Bill Morgan – Project Executive (Not Present) Greg Lamay – Sr. Project Manager Peter Shkuda – Project Engineer



- 1.1 Mr. Lamay noted that the Bid Form is made up of four to five pages, all of which must be filled out completely. A Bid Security is required in the amount of 10% of the bid plus consent of surety to provide a Performance and Payment Bond. A Non-Collusion Affidavit and a MBE/WBE Utilization Form are also required.
- 1.2 Bid Documents can be obtained from Eastern PCM. The Project Manual and Plans are dated June 12, 2014.
- 1.3 The schedule of the project is as follows:
 - a) Bid Date: Thursday, July 10, 2014, 2:00 PM EST at the Purchasing Office in the Ted Lick Administration Building Harrisburg Campus.
 - b) Contract Award: August 5, 2014
 - c) Notice to Proceed: August 18, 2014; Subject to receipt of all required supporting Contract Documentation.
 - d) Substantial Completion: March 15, 2015
- 1.4 A public bid opening will be held immediately following Bid receipt.
- 1.5 Working Hours will be 9:00 pm 7:00 am, Monday night through Friday morning; (4) 10 hour shifts. <u>Phasing Requirements</u>
 - a) HACC will remain an active campus throughout the construction. Classes are held during the daytime, evening, and weekends. Contractors are to schedule work so as not to impact Owner activities.
 - b) The Contractor may begin work in the conference room and two kitchen areas on August 18, 2014. The Contractor may not begin work in Career Services and existing Welcome Center until September 2, 2014.
- 1.6 All questions are to be directed to the office of the Construction Manager in writing via fax or e-mail (attn.: Greg Lamay): Fax (717) 233-1666, E-mail: epcm@easternpcm.com. The last day for questions is July 3, 2014 by end of business.
- 1.7 Addenda are expected to be issued via fax or UPS (depending on size) on the following dates subject to number and substance of questions received:
 - i. Addendum No. 1 Expected June 20, 2014; Including Meeting Minutes from the Pre-Bid Meeting
 - ii. Addendum No. 2 To be determined, if needed
- 1.8 This is a prevailing wage project. Refer to specifications for rate determination.
- 1.9 The building permit will be obtained and paid for by the Owner. Any trade specific permits (i.e. Electrical, Plumbing, etc.) are to be obtained and paid for by applicable contractors in accordance with jurisdictional requirements
- 1.10 Project Overview Scope of Work
 - a) The work will be performed under Single Prime Contract and consists of the renovation of approximately 15,000 sq. ft. of the first floor of the main building at the HACC Lancaster



Campus. The work includes selective demolition, construction of interior partitions and aluminum & glass wall systems, modifications to the electrical, plumbing, fire protection, and HVAC systems (including controls) and other related improvements to accommodate the planned renovations. Finishes include carpet, VCT, and ceramic tile.

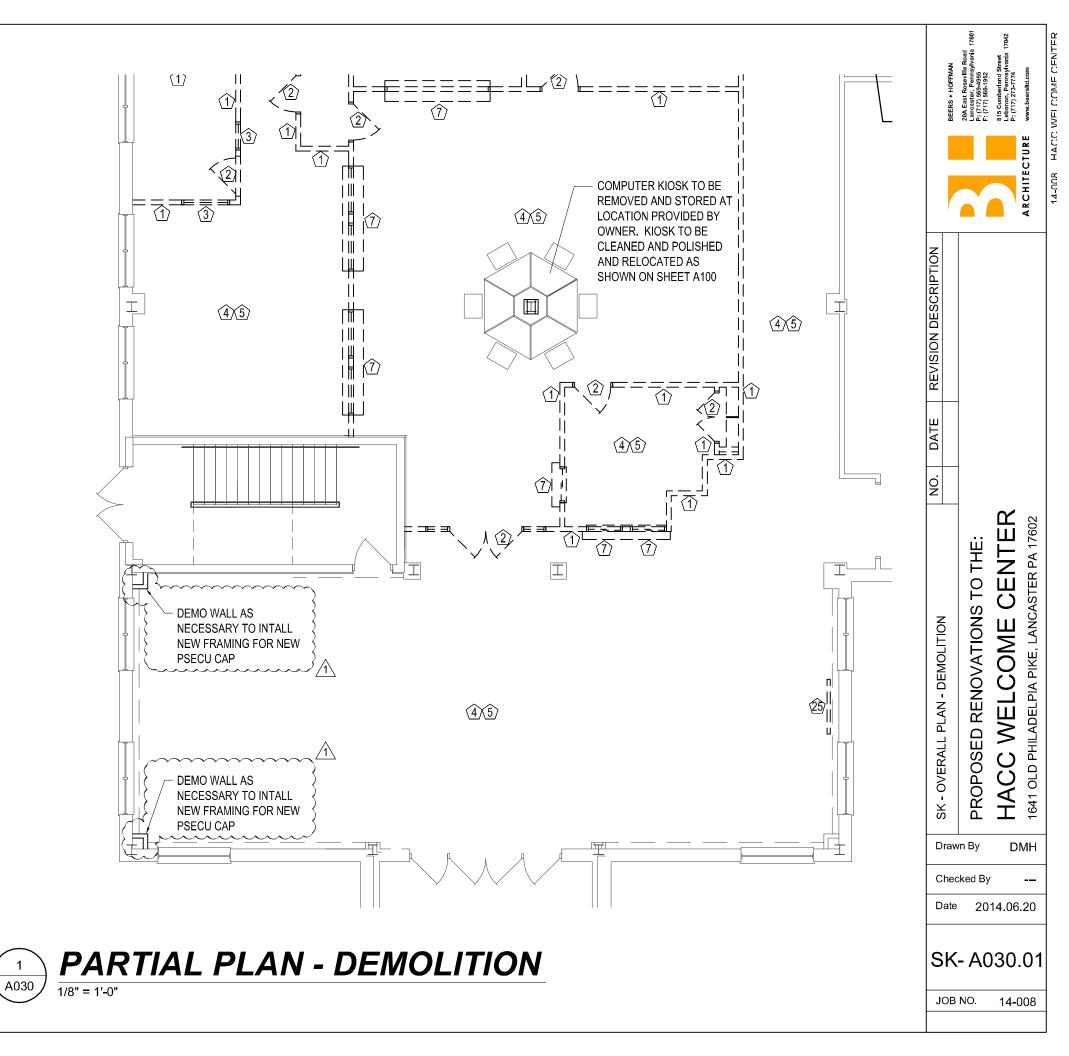
- 1.11 Contractors are to schedule site visits through Eastern PCM. Any questions answered during site visits are not official. Official questions must be submitted in writing.
- 1.12 Contractor parking and the dumpster location will be located at the loading dock in the back of the building.
- 1.13 The Contractor is responsible for temporary utilities and temporary toilet facilities.
- 1.14 Mr. Lamay noted that the new window penetrations in the back of the building may be used for a trash disposal.
- 1.15 Site Tour & Questions
 - Q: Will there be Liquidated Damages on this project?
 - A: Yes
 - Q: Will the Contractor have access to the first floor under the existing kitchen for utility access?
 - A: Access will be coordinated through the College.
 - Q: Will the spray-on fire protection need to be replaced when adding new hangers in the mechanical room?
 - A: This will be answered in an Addendum if not already addressed in the Bid Documents.

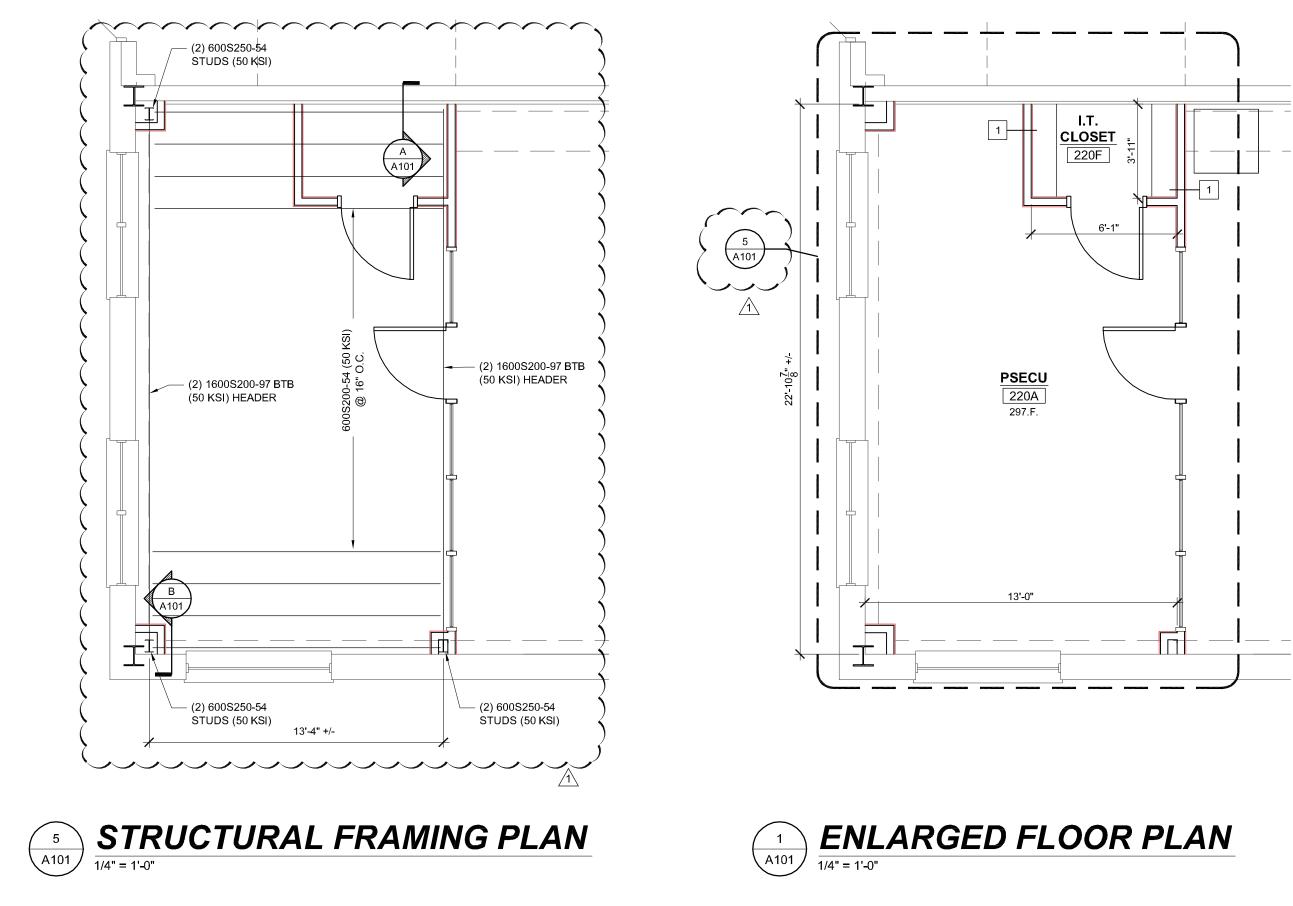
Respectfully Submitted, Peter J. Shkuda, Eastern PCM, LLC

The above summations are the interpretation of the author as to the items discussed and the decisions reached. Corrections or additions to these minutes are to be made in writing and sent to the attention of the writer no later than 5 days after receipt; otherwise, these minutes will stand as written.

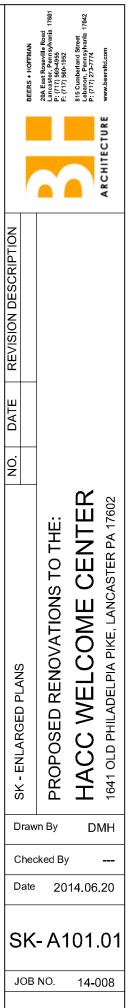
cc: All Attendees Eleanor Bosserman Scott Shonk Bill Morgan

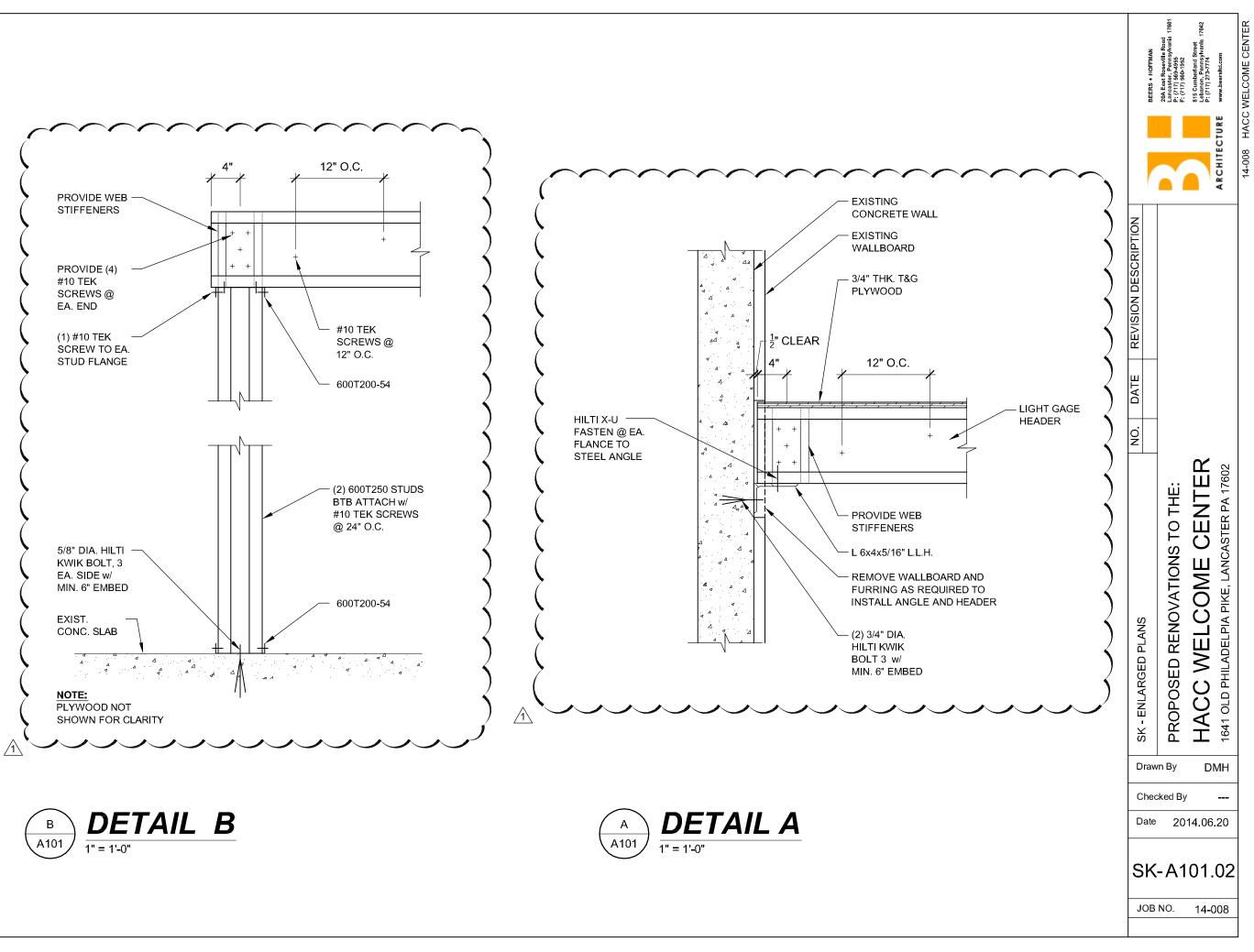






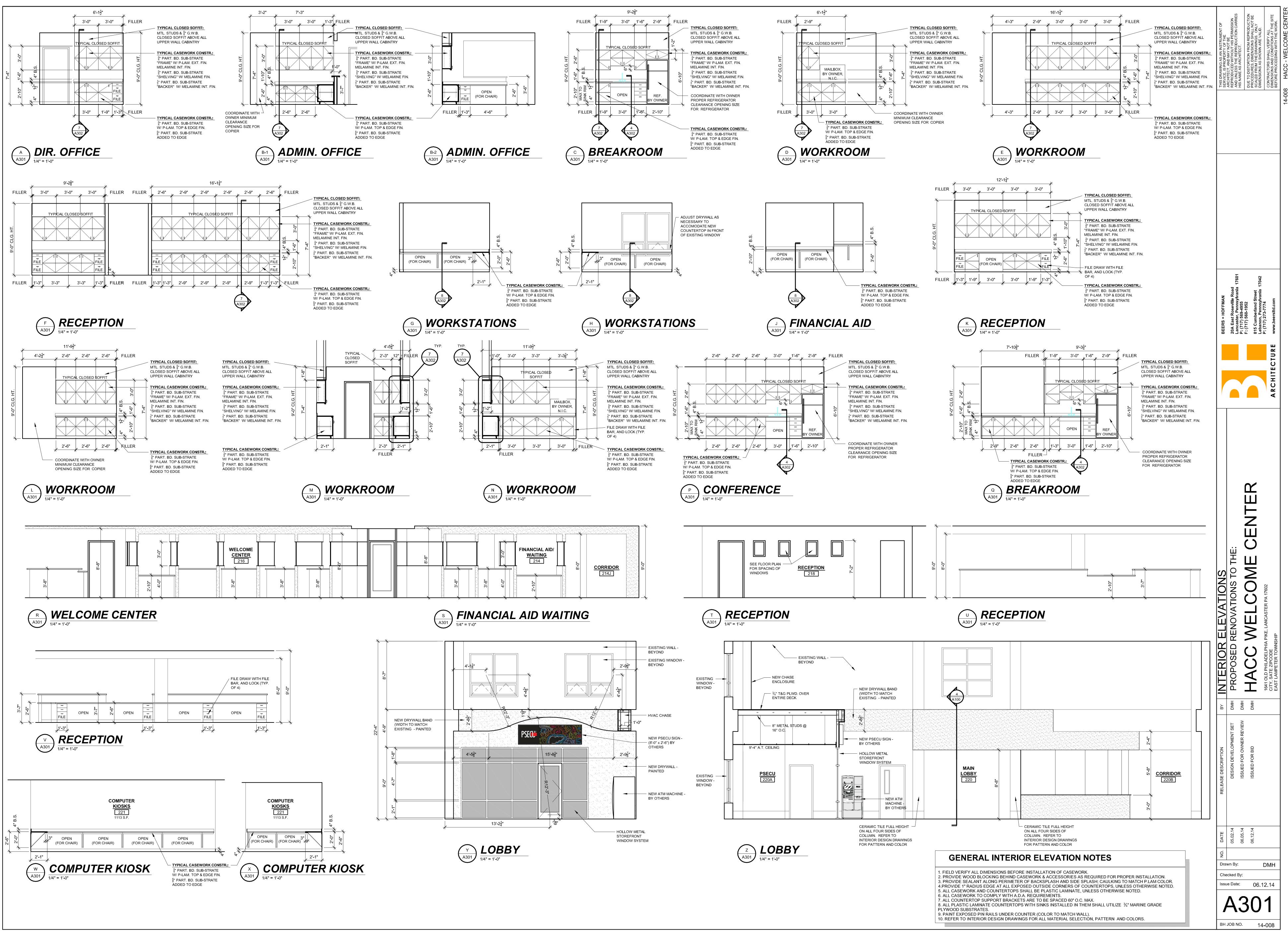


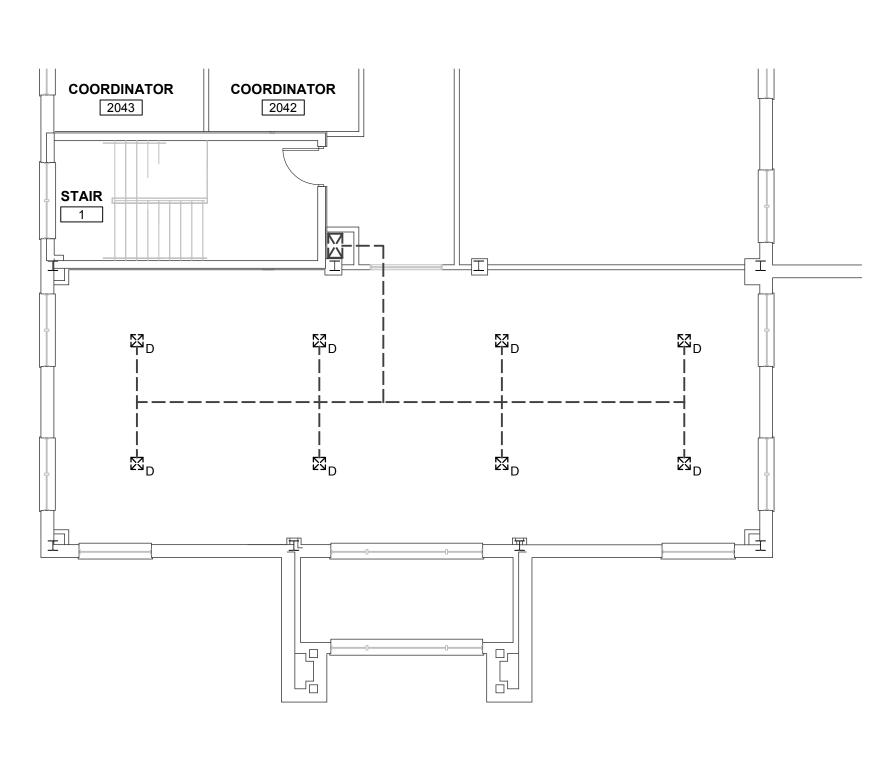






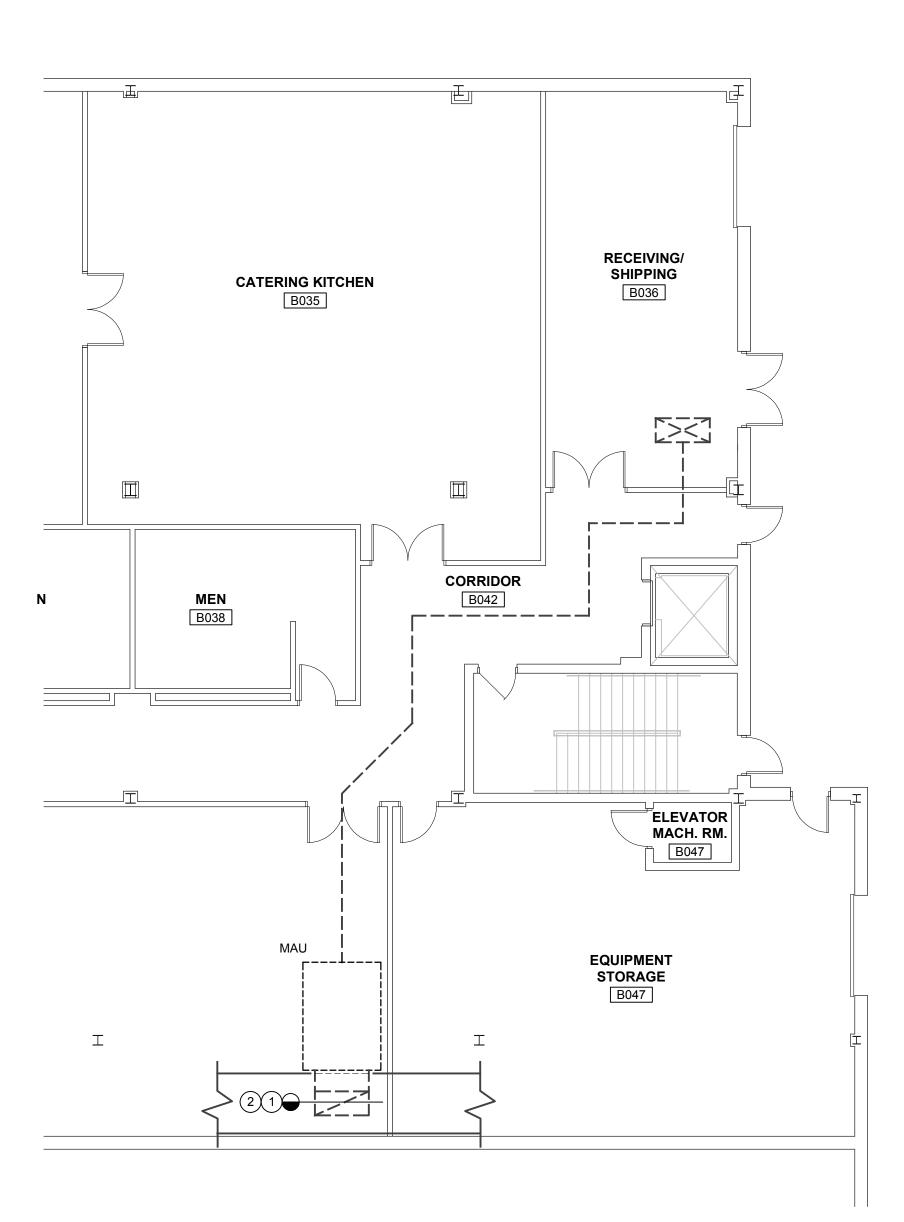






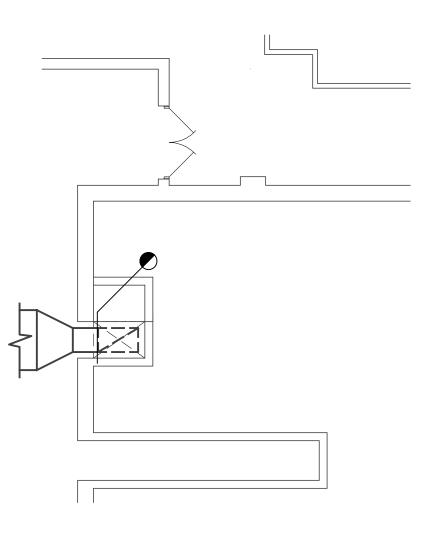
PARTIAL UPPER LEVEL - HVAC DEMOLITION PLAN SCALE: 1/8"=1'-0"





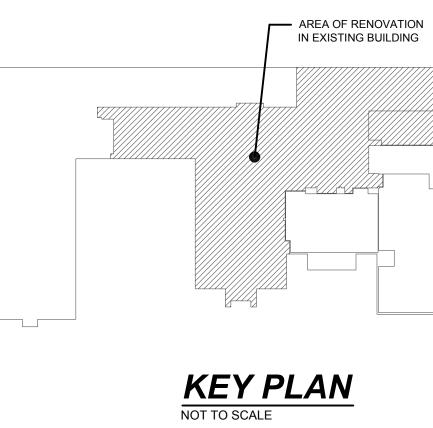
PARTIAL LOWER LEVEL - HVAC DEMOLITION PLAN SCALE: 1/8"=1'-0"

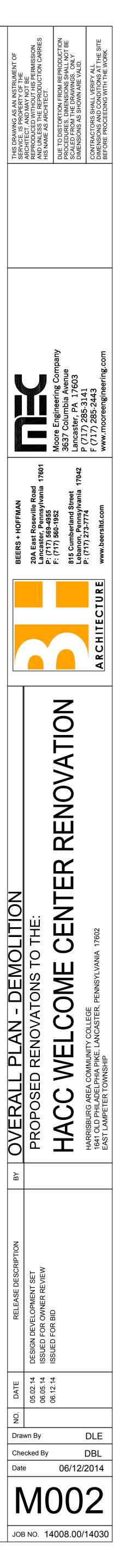
DRAWING DEMOLITION NOTES: CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING DUCTWORK AND MAKE-UP UNIT AND ALL ASSOCIATED APPURTENANCES IN THEIR ENTIRETY FROM POINT OF DISCONNECTION INDICATED NO LONGER REQUIRED. 2) CONTRACTOR SHALL PATCH AND SEAL EXISTING DUCT OPENING NO LONGER REQUIRE TO MAKE CLOSURE AIR TIGHT.

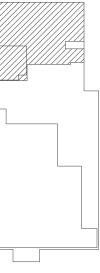


PARTIAL LOWER LEVEL MECHANICAL ROOM **HVAC DEMOLITION PLAN** SCALE: 1/8"=1'-0"

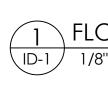
- DRAWING DEMOLITION NOTES: CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING DUCTWORK FROM POINT OF DISCONNECTION INDICATED WITH
- REMOVAL AND ALTERATION OF LARGE GROUP TOILET AREA ABOVE. REFER TO DRAWING M100 FOR NEW HVAC WORK THIS AREA.







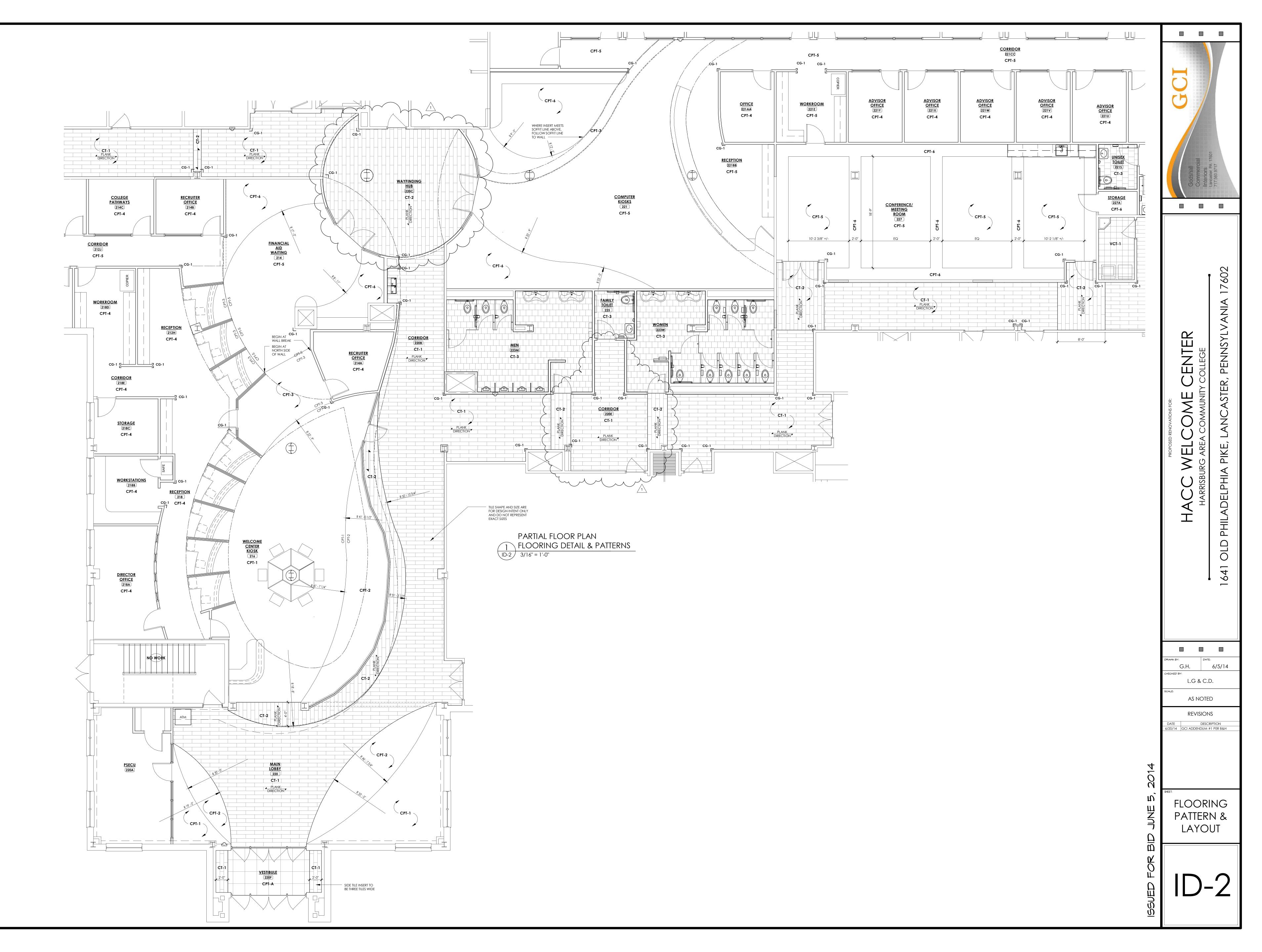


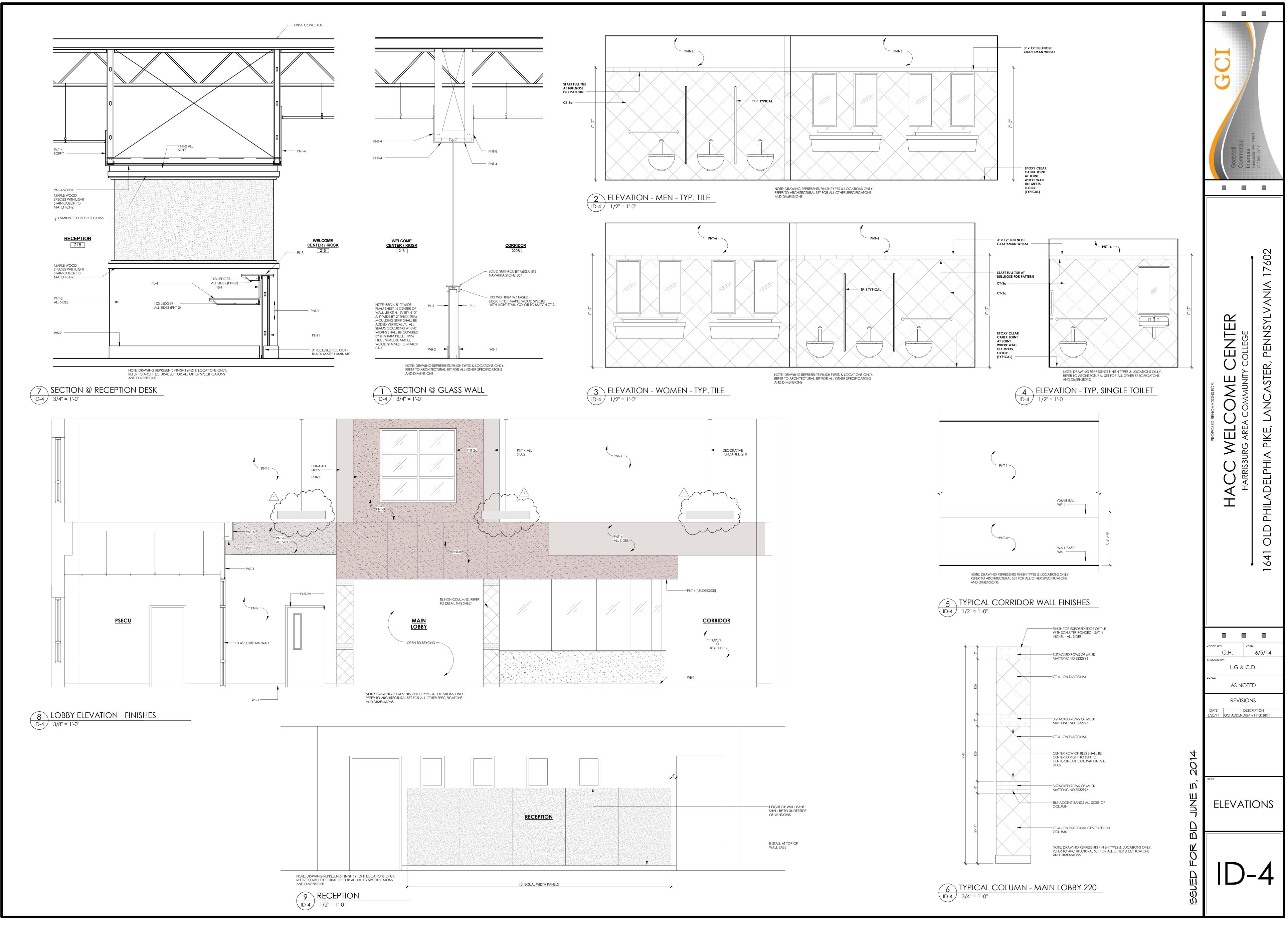


1 FLOOR PLAN - FLOOR FINISHES

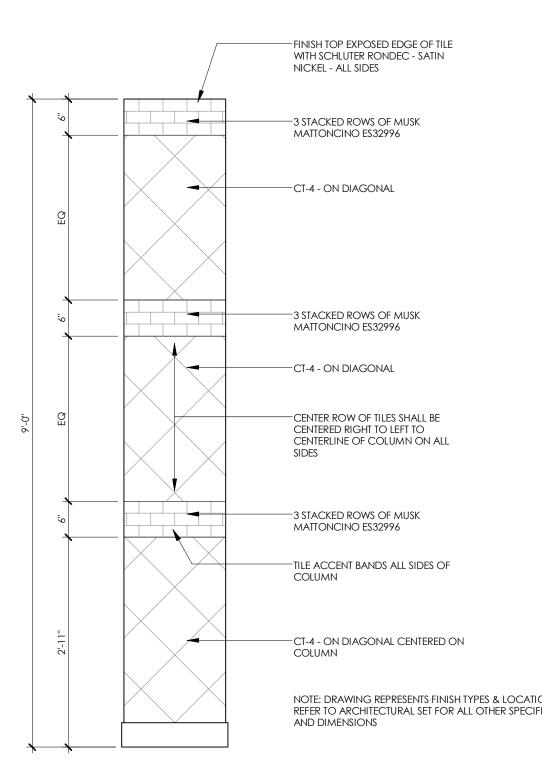
CG	Corner Guard	
CPT	Carpet	
CT	Ceramic Tile	
D	Doors	
HDW	Hardware	
LVT	Luxury Vinyl Tile	
PL	Plastic Laminate	
PNT	Paint	
QT	Quartz Tile	
RS	Rubber Strips	
RT	Rubber Tile	
SS	Solid Surface	
ST	Stair Tread	
STN	Stain	
SV	Sheet Vinyl	
TB	Tack Board	
VCT	Vinyl Composition Tile	
VWC	Vinyl Wallcovering	
WB	Wall Base	



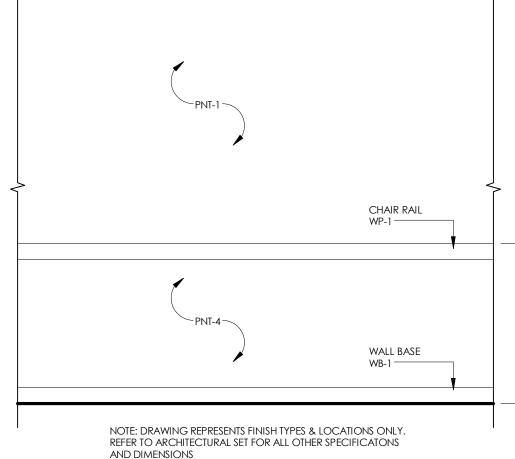




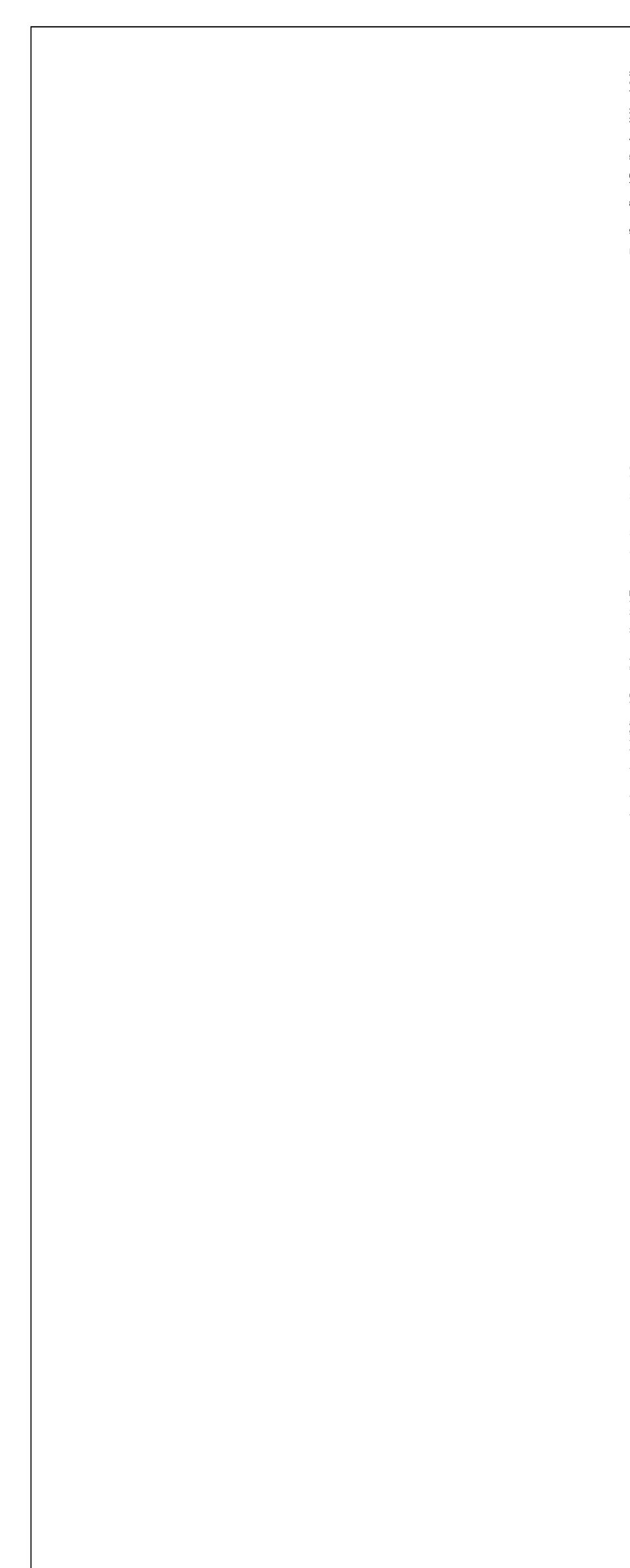












STRUCTURAL SPECIFICATIONS AND GENERAL CONDITIONS (04-12)

- **GENERAL** 1. All work shall be performed in accordance with local applicable codes and regulations. Appropriate safety
- measures satisfying local and OSHA requirements shall be provided.
- Proper temporary bracing of all construction work in progress is the Contractor's responsibility.
 If during demolition existing conditions do not agree with information shown on the design drawings, the Contractor shall notify the Engineer immediately.
- The Contractor shall be responsible for the location and protection of all existing utilities during construction and the
- repair of any damaged facilities.
- Sections and details shown, while drawn for specific locations, are intended to establish the general types of details to be used throughout.
- 6. Drawings should not be scaled. Contact the Engineer for clarification of any dimension in question.
- All dimensions shall be verified by the Contractor. Layout shall be checked and coordinated between all construction documents and specifications prior to the start of work.
- Shop drawings prepared by the subcontractors, suppliers, etc. shall be reviewed by the Engineer for conformance with design concept only. Each shop drawing submitted shall be stamped, initialed and dated as being reviewed by the construction manager/general contractor. Work shall not begin without the review by the Engineer.
- Any engineering design provided by others and submitted for review or record shall bear the stamp and signature of a professional structural engineer registered in the state in which the project is located.
 DESIGN DATA
- 1. Building Code = 2009 International Building Code
- Floor Load:
 2.1. Dead Load = 65 PSF (includes structure weight)
- 2.2. Live Loads (reduced as permitted by Code):2.2.1. Lobbies = 100 PSF
- 2.2.2. Offices = 50 PSF
- 2.2.3. 1st Floor Corridors = 100 PSF 2.2.4. Corridors = 80 PSF
- 2.2.5. Restrooms = 60 PSF
- Lateral Soil Load (Assumed):
 3.1. Soil Unit Weight = 120 PCF
- 3.2. At-Rest Pressure = 60 PSF/FT.
- 3.3. Active Pressure = 42 PSF/FT.4. Concrete Masonry Design Method:
- 4.1. Design per ASD
- 4.2. Loads indicated are ASD loads5. Concrete Design Method:
- 5.1. Design per LRFD
- 5.2. Loads indicated are ASD loads6. Structural Steel Design Method:
- 6.1 Design per ASD

6.2. Loads indicated are ASD loads
CONSTRUCTION PROCEDURES AND SAFETY REQUIREMENTS

- 1. The contract structural drawings and specifications represent the finished structure. Unless otherwise indicated,
- they do not indicate the means or methods of construction.
 Provide all measures necessary to protect the workmen and other persons during construction. Provide all necessary measures to avoid excessive stresses and to hold the structural elements in place during construction. Such measures shall include, but not be limited to, bracing, shoring for construction equipment, shoring for earth
- banks, forms, scaffolding, planking, safety nets, support and bracing for cranes and hoists, guying, etc.
 Engage properly qualified persons to determine where and how temporary precautionary measures shall be used.
- Observation visits to the site by structural engineer's field representative shall not include the items noted above.
 Supervise and direct the work so as to maintain sole responsibility for all construction means, methods, techniques, sequences, and procedures. Retain the services of a professional structural engineer licensed in the state in which the project is located to design and supervise any scaffolding for workmen, and all shoring of forms

and elements of the construction.

- FOUNDATION CONSTRUCTION1. Allowable soil bearing pressure (net) assumed in design is 3,000 PSF (pounds per square foot).
- 2. Soil bearing capacity shall be field verified by an approved soil testing agency and documented in writing to the Engineer.
- If soil of design capacity is not encountered at footing elevations shown, excavate to a depth necessary to attain design capacity and extend foundations as required. Obtain Engineer's approval prior to lowering the foundations.
- The bottoms of all exterior footings shall extend a minimum of 3'-0" below finished grade unless noted otherwise.
 Excavate all foundations to reasonable exact outline and depth avoiding over-excavation and cave-in of surrounding material. Bottoms of all foundations shall be dry, soil proof-rolled, and rock surfaces leveled and cleared of loose debris prior to pouring.
- Neatly level and trim all foundation excavations prior to setting steel.
 Pipes extending under footings shall be placed before footing is placed and the void produced in laying the pipe
- shall be filled with 3,000 psi concrete.
 8. Thoroughly compact all foundation and slab subgrade material prior to placement of stone bases or concrete.
 9. Provide weathertight covering for all foundations after excavation; do not expose to rainwater or freezing.
- Where foundations are formed, backfill edges immediately after form removal.
 No fill or backfill shall be placed against retaining or foundation walls until grout or concrete has attained design atranath and supporting members are in place, uplace prior written approval is obtained from the Engineer.
- strength and supporting members are in place, unless prior written approval is obtained from the Engineer.
 All backfill shall be granular material approved by the Engineer. Backfill shall be deposited and machine compacted in 8-inch maximum layers. Compaction shall be a minimum of 95% of the maximum dry weight density at the optimum moisture content in accordance with ASTM D1557 (Modified Proctor) as verified by a testing laboratory.
 All backfill adjacent to retaining structures shall be compacted using hand operated equipment; no heavy equipment shall be allowed within 5 feet of any wall.
- 14. For all foundation construction that will be exposed to freezing temperatures during construction, the bottom of all footings (interior and exterior) shall extend a minimum of 3'-0" below grade (at no additional cost to the owner). Contractor shall contact the Engineer of Record for approval to lower foundations and obtain concrete pier sizes, if necessary.

SPECIAL INSPECTION REQUIREMENTS

- The following types of work require special inspection based on Section 1704 of the 2009 International Building Code. The owner will employ special inspectors who shall provide special inspections for compliance with the construction documents and other references noted. Reports shall be submitted to the Engineer and Building Official on a periodic basis. A final report shall be submitted documenting required special inspections and correction of any discrepancies prior to the end of construction.
- 1.1. Soils
- 1.1.1. Verify materials below footings are adequate to achieve the design bearing capacity.1.1.2. Verify excavations are extended to proper depth and have reached proper material.
- 1.1.3. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of
- controlled fill with a total depth greater than 12".
 1.1.4. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly.
 2. Concrete Construction
- 2.1. Periodic inspection of reinforcing steel for compliance with
- approved Construction Documents and ACI 318, Sections 3.5 and 7.1 7.7.
 2.2. Periodically verify the use of required concrete design mixtures, in accordance with ACI 318, Chapter 4 and Section 5.2 5.4.
- 2.3. Verify sampling of fresh concrete to determine slump, air content and temperature when making
- specimens for strength tests, in accordance with ACI 318, Sections 5.6 and 5.8.2.4. Periodic inspection for maintenance of curing temperatures and techniques to ensure compliance with
- ACI 318, Sections 5.11 5.13. 3. Masonry Construction (Level I Inspection)
- 3.1. Periodically verify proportions of site-prepared mortar, construction of mortar joints, and location of reinforcement and connectors for compliance with construction documents.
- 3.2. Periodically verify size and location of structural elements; type, size, and location of anchors, including masonry anchorage to structural members; and protection of masonry during cold weather (<40°F) or hot weather (>90°F).
 3.3. Periodic inspection of size, grade, and type of reinforcement. Continuous inspection is required for
- welding of reinforcing bars.3.4. Periodic inspection, prior to grouting, to verify clean grout space, placement of reinforcement and
- connectors, proportions of site-prepared grout, and construction of mortar joints.3.5. Continuously verify grout placement to ensure compliance with code and construction document provisions.
- 3.6. Continuously verify preparation of any required grout specimens, mortar, specimens, and/or prisms.
 3.7. Periodically verify compliance with required inspection provisions of the construction documents and approved submittals.
- 4 Sprayed Fire-Resistant Materials
- 4.1. Inspect surfaces of structural elements prior to application of sprayed fire-resistant materials.
 4.2. Verify substrate ambient temperatures before and after application of sprayed fire-resistant materials.
- 4.3. Verify that proper thickness and density of sprayed fire- resistant materials is provided on the appropriate surfaces.
 4.4. Verify bond strength of the cured sprayed fire-resistant materials to substrate material.
- STRUCTURAL STEEL
- All steel construction shall be in accordance with the Specification for Structural Steel Buildings, March 9, 2005 (AISC 360), the Specification for Structural Joints Using ASTM A325 or A490 Bolts, June 30, 2004, the Code of Standard Practice for Steel Buildings and Bridges, March 18, 2005 (AISC 303), and the AISC Steel Construction Manual, 13th edition.
- 2. All welding shall be performed in accordance with the requirements of the AWS Code, D1.1, Structural Welding Code Steel, latest edition, and AISC Specifications using the proper electrode from AWS D1.1 Table 3.1 and
- performed only by qualified welders.3. Structural steel shall conform to the requirements of ASTM A36.4. Shop drawings for the fabrication and erection of all structural steel shall be submitted to and approved by the
- Since a wings for the habitcation and erection of all structural steer shall be submitted to and approved by the Engineer prior to fabrication.
 The Contractor shall notify the Engineer of any fabrication or erection errors or deviations and receive written
- approval before field corrections are made.Bolted connections of structural steel shall be made using high strength steel bolts conforming to ASTM A325.
- Bolts shall be 3/4" minimum in diameter unless noted otherwise.All high strength bolts shall be snug tight unless noted otherwise. A snug tight condition is as defined in Section
- 1.2.2. in the AISC Design Guide 17.
 The Contractor shall be responsible for the temporary bracing of all steel during erection and until construction is
- complete.9. The Contractor shall furnish all plates, clip and seat angles, and connections for completion of the structure,
- even if such items are not specifically called for on the structural drawings.10. Structural and miscellaneous steel fabricators shall be responsible for obtaining all field dimensions necessary
- for the completion of their work.11. Minimum size of fillet welds, unless otherwise noted, is to be 3/16-inch fillet. Chip, wirebrush clean, and prime paint all field welds.
- Summary of Paint System (Reference Steel Structures Painting Council A Guide to the Shop Painting of Structural Steel):
- 12.1. For all work temporarily exposed to weather for six (6) months or less: No paint required 12.2. For all work temporarily exposed to weather for greater than six (6) months:
- 12.2.1. Surface Preparation = SSPC-SP 2
- 12.2.2. Pretreat = None required
- 12.2.3.Paint Application = SSPC-PA 112.2.4.Number of Coats = One
- 12.2.5. Primer = SSPC-Paint 15
- 12.2.6. Touch-up = As per manufacturer specifications
- 12.2.7. Dry Film = 2.0 mils 12.3. For all work permanently exposed to weather:
- 12.3.1. Surface Preparation = SSPC-SP 3
- 12.3.2. Pretreat = None required
- 12.3.3.Paint Application = SSPC-PA 112.3.4.Number of Coats = Three minimum
- 12.3.4. Number of Coats = 1 free minimum 12.3.5. Primer = SSPC-Paint 25
- 12.3.6. Touch-up = As per manufacturer specifications
- 12.3.7. 2nd Coat = SSPC Paint 21
- 12.3.8. Finish Coat = SSPC Paint 2112.3.9. Dry Film Thickness = First Coat: 1.5 to 2.0 mils
 - Second Coat: 2.0 mils
 - Finish Coat: 2.0 mils Total = 5.5 to 6.0 mils
- 12.4. Surfaces within 2 inches of welds shall be free of material that would prevent proper welding or produce
- objectionable fumes while welding is being done. 12.5. For Structural steel that will receive sprayed fireproofing: no primer or finish paint. If steel is painted, a
- proper bonding agent must be applied to ensure proper adhesion of the sprayed fireproofing.

CAST-IN-PLACE CONCRETE CONSTRUCTION

 All concrete work shall conform to the requirements of ACI 318, Building Code Requirements for Reinforced Concrete, latest edition and ACI 301, Specifications for Structural Concrete for Buildings, latest edition, including all revisions, except as modified herein.

2. Concrete shall be supplied by a qualified ready-mixed concrete plant in accordance with the following requirements:

MIN. 28-DAY MAX. TYPE 1 SLUMP TYPE OF CONSTRUCTION COMP. W/C PORTLAND RANGE (1) Footings, Interior slabs-on-grade <= 4" thk., 3,000 PSI 0.53 5 BAGS 3" - 6" (2) Walks slabs-on-grade > 4" thk 4 000 PSI 0.45 6 BAGS 3" - 6"					5 1
& slabs-on-deck	TYPE OF CONSTRUCTION	COMP.	W/C	PORTLAND	
(2) Walls slabs on oracle > /" the / 000 PSI 0.45 6 RACS 3" -6 "		3,000 PSI	0.53	5 BAGS	3" - 6"
	(2) Walls, slabs-on-grade > 4" thk.	4,000 PSI	0.45	6 BAGS	3" - 6"

2.1. Entrained Air = 4 to 7% for (all exposed concrete, footings, piers, exterior slabs, and where otherwise noted).2.1.1. All concrete exposed to freezing temperature shall be air-entrained, U.N.O.

2.2. Coarse aggregate shall be AASHTO NO. 57 stone. Maximum aggregate size = 1.5"2.3. Submit mix designs to Engineer for approval. No admixtures permitted without Engineer's approval.

- 2.4. Chloride containing admixtures are not permitted.
- 2.5. Fine aggregate must be natural sand, unless approved by the Engineer.2.6. Air-entraining admixtures are not permitted on trowel finished slabs.
- At Contractor's option, fly ash, ground granulated blast furnace slag, or other pozzolans may be substituted for Portland cement, up to 25% of the cementitious content. Concrete mixes using these materials must be approved by the Engineer.
- 4. When concrete arrives at the project with slump below that suitable for placement, as indicated by the Specifications, water may be added only if neither the maximum permissible water-cement ratio nor the maximum slump is exceeded. The water shall be incorporated by additional mixing equal to at least half of the total mixing required. Discharge of the concrete shall be completed within 1-1/2 hours, or before the truck drum has revolved 300 revolutions, whichever comes first, after the introduction of the mixing water to the cement and aggregates or the introduction of the cement to the aggregates. Truck batch slips must include time of batching, total drum revolutions upon arrival at site, and quantity of water (in gallons) per cubic yard available to be added to attain the maximum design water-cement ratio.
- Reinforcing steel shall be deformed, billet-steel conforming to ASTM A615 Grade 60. Welding of reinforcing steel must be approved by the Engineer and shall be performed in accordance with the requirements of the AWS Code, D1.4, Structural Welding Code Reinforcing Steel latest edition and be performed only by qualified welders.
 When specified, welded wire fabric shall conform to ASTM A185 and supplied in flat sheets only. Bar chairs are
- required at the recommended spacing for structural slabs.
- Reinforcing steel splices shall be ACI Class B splices unless indicated otherwise.
 Provide adequate bolsters, hi-chairs, support bars, etc., to maintain specified clearance for the entire length of all reinforcing bars. Provide accessories which are plastic tipped or galvanized with turned-up ends for reinforcement at all faces of exposed concrete, interior or exterior.
- Shop drawings for the fabrication and placement of reinforcing steel shall be submitted to and approved by the Engineer before fabrication commences.
- Concrete shall be placed only after approval of the reinforcement and mix designs by the acting special inspection
 agency or the Engineer. Contractor is responsible for coordinating inspections prior to concrete placement
- agency or the Engineer. Contractor is responsible for coordinating inspections prior to concrete placement.
 11. Schedule the pouring of foundations on the same day the excavation is completed.
 12. Cure all concrete in accordance with accepted ACI Standards and conformance to ACI 308.1, Standard Specification for Curing Concrete, latest edition, for the worst case weather conditions anticipated during the curing period. All concrete construction and procedures shall conform to the requirements of ACI 306.1, Standard Specification for Cold
- Weather Concreting, latest edition.13. No aluminum of any type shall be allowed in the concrete work unless coated to prevent aluminum-concrete
- reaction.14. Mechanically vibrate concrete. Slabs-on-grade need only be vibrated around floor ducts and other embedded items.15. Do not place pipes, ducts, reglets or chases in structural concrete or composite floor systems without approval of
- the structural engineer.
- Maximum free drop of any concrete = 5'-0".
 Chamfer all exposed concrete edges a minimum of 3/4" x 3/4".
- 18. Provide a minimum of concrete cover for reinforcing bars as follows unless noted otherwise on drawings:
- 18.1. Footings = 3 inches earth face, 2 inches all others, U.N.O.
 18.2. Concrete walls, beams, and piers = 2 inches earth face, 1-1/2 inches all others, U.N.O.
 19. Six (6) test cylinders shall be prepared for every 50 cubic yards of concrete placed on any given day to represent the second second
- Six (6) test cylinders shall be prepared for every 50 cubic yards of concrete placed on any given day to represent all concrete placed on that day. Two (2) cylinders shall be tested at seven (7) days and two (2) cylinders shall be tested at 28 days for verification of concrete design strength with two (2) cylinders remaining.
 Concrete Finishes, as defined in Chapter 5 of ACI 301, shall be as follows, U.N.O.:
- 20.1. Formed surfaces not exposed to public view: Rough-form finish
- 20.2. Formed surfaces exposed to public view: Smooth-form finish
- 20.3. Walls as indicated: Rubbed finish 20.4. Typical interior commercial/industrial floor: Troweled finish
- 20.5. Floors to receive ceramic tile, portland cement, terrazzo, etc.: Scratch finish
- 20.6. Exterior slabs on grade, walkways, etc.: Non-slip broom finish
- 21. Concrete submittals required to be reviewed and approved by the Engineer prior to cast-in-place concrete construction include, but are not limited to: Mix designs, Reinforcement Shop Drawings.
- METAL DECKING
- 1. Installation of all decking shall be in strict accordance with the Steel Deck Institute (SDI) specifications and with manufacturer's recommendations. Steel deck shall be manufactured by a member of the Steel Deck Institute.
- All floor deck shall be galvanized and all roof deck shall be painted, U.N.O. Composite metal deck for floor slabs shall have a min. yield strength = 40 KSI. Deck shall be a minimum 3-span continuous where possible.
- Deck shall be attached to the steel structure using 5/8" diameter puddle welds at 12" o.c. with sidelaps fastened with #10 TEK screws at 12" o.c., U.N.O. Alternate fasteners must be approved by the Engineer.
- 4. Store and handle decking so as to prevent damage.
- Provide a 1/4" thick bent plate or angle at all floor/roof edges U.N.O.
- 6. Provide accessories as needed to provide a complete system. Contractor shall refer to Manufacturer's specifications for accessories for specialty deck types (e.g. Epicore, Arch Deck, etc.).
- All floor or roof deck penetrations > 6" (square or dia.) shall be properly reinforced with angle frames or slab
- reinforcing as specified by the Engineer.
- 8. All welding shall be performed in accordance with the requirements of the AWS Code, D1.3, Structural Welding Code Sheet Steel, latest edition, and shall be performed only by qualified welders.

CONCRETE MASONRY CONSTRUCTION

- All concrete masonry shall conform to the requirements of ASTM C90 unless noted otherwise. Concrete r construction shall conform to the requirements of ACI 530/ASCE 5/TMS 402, building code requirements Masonry Structures, latest edition and ACI 530.1/ASCE 6/TMS 602, Specifications for Masonry Structures edition, including all supplements.
- 28 day design compressive strength of masonry (f'm) used is as follows:
 2.1. Standard Masonry = 1,500 psi
- 3. The Contractor shall be responsible for the temporary bracing of all masonry construction. Bracing shall n in place until masonry has had sufficient time to gain design strength. Where masonry attaches to floor ar the function are bracket as a sufficient time to gain design strength.
- roof systems, bracing shall remain in place until the diaphragm has been anchored in its final position.Grout lifts for reinforced masonry walls shall not exceed 5 feet in height. High lift grout procedures may b only after written approval is provided by the Engineer.
- All mortar shall conform to ASTM C270. Mortar shall be Type S (2/1/9 mix ratio of cement/lime/sand) with average 28 day compressive strength of 1,800 psi for above grade walls (except Ivany Block). Mortar shal Type M (4/2/12 mix) with an average 28 day compressive strength of 2,500 psi for Ivany walls, walls belov or walls exposed to earth.
- Grout shall conform to the requirements of ASTM C476. Fill grouted cores, bond beams, and wall reinforce where shown on plans with 3,000 psi small aggregate concrete mix with 8"-11" slump. Grout samples sha tested per the Cast-in-place Concrete Construction specifications.
 Horizontal joint reinforcement shall consist of truss type ASTM A82 cold drawn No. 9 gauge galvanized with a standard with a stand
- steel, located 16" o.c. Cross rods to be welded to side rods at 16" o.c. to form a truss. Lap splices 6" minir
 Provide horizontal reinforcing in the two courses above and below openings and at the top of walls or part
 8. Masonry cores below grade shall be grouted solid.
- Head joints shall be mortared solid the full depth of the face shell. Webs shall be fully mortared at grouted
 A minimum of one course of masonry shall be grouted solid below transitions in masonry thickness.
 Cold Weather Masonry Construction shall conform to the requirements of AC1 530.1/ASCE 6/TMS602, lat
- edition.
 12. Reinforcing steel shall be deformed, billet-steel conforming to ASTM A615 Grade 60. Welding of reinfor steel must be approved by the Engineer and shall be performed in accordance with the requirements of the Code, D1.4, Structural Welding Code Reinforcing Steel latest edition and be performed only by qualified
- welders. Shop drawings for the fabrication and placement of reinforcing steel shall be submitted to and ap by the Engineer before fabrication commences.13. Submittals required to be reviewed and approved by the Engineer prior to concrete masonry construction
- include, but are not limited to: Mix designs, Reinforcement Shop Drawings, Vertical Control Joint Location
 14. Mortar shall be sampled and tested according to ASTM C 270, C 780, and C 1586.
 15. Wet setting of reinforcing steel is prohibited unless approved by the Engineer.
- COLD-FORMED STEEL FRAMING
- All structural members shall be in conformance with the Specification for the Design of Cold-Formed Steel Structural Members, AISI, latest edition. Manufacturer shall verify all design applications of framing memb shown on the drawings.
- Cold-formed steel supplier shall prepare complete structural calculations and shop drawings for all framin members, connections and accessories. Supplier shall submit design calculations and shops drawings pr
- by a structural engineer licensed in the state of Pennsylvania for review.
 3. All framing members shall be formed from corrosion-resistant steel corresponding to the following require
 3.1. 16 Gage (54 Mils), 14 Gage (68 Mils), and 12 Gage (97 Mils) framing components shall be formed from steel conforming to the minimum requirements of ASTM A653, Grade D, with a minimum yield stress
- 50,000 psi.
 3.2. 18 gage (43 Mils) and 20 gage (33 Mils) framing components shall be formed from steel conforming t minimum requirements of ASTM A653, Grade A with a minimum yield stress of 33,000 psi.
 3.3 Galvanized framing products shall be coated in accordance with the requirements of ASTM A525
- 3.3. Galvanized framing products shall be coated in accordance with the requirements of ASTM A525.
 4. When masonry veneer is anchored to cold-form steel backing, framing shall be corrosion resistant and ha a minimum base metal thickness of 0.043 in. (43 mils. 18 gage).
 5. Connections of all framing components shall be with self-drilling screws or welding. When connecting material screws or welding.
- 5. Connections of an naming components shall be with sell-drilling screws of weighting. When connecting mate greater than 1/4" in thickness, holes shall be pre-drilled prior to installation of fastener. Screws shall be of sufficient size to insure the strength of the connection. Wire tying of framing components shall not be perr All welds shall be touched up with paint conforming to the manufacturer's requirements.
- All welding shall be performed in accordance with the requirements of the AWS Code, D1.3, Structural V Code - Sheet Steel, latest edition, and shall be performed only by gualified welders.
- End bearing and bridging details shall be as stipulated in the AISI Specifications and as shown on the dra B. Field cutting of steel framing members shall be by saw or shear. Torch cutting will not be permitted.
 Temperature brains shall be provided and remain in place until work is permeably stabilized.
- Temporary bracing shall be provided and remain in place until work is permanently stabilized.
 Installation Stud Wall Systems:
- 10.1. Where splicing of track is necessary between stud spacings, a piece of stud shall be placed between adjacent tracks and fastened by weld or screw to each side of the track, each end.
 10.2. Splicing of framing components, other than track or multi-story stud walls, is not permitted.
- Splicing of framing components, other than track or multi-story stud walls, is not permitted.
 Studs shall be plumbed, aligned and secured to the continuous runner tracks at each end and each s
 Mechanical bridging of the type and spacing described shall be installed prior to the installation of fac materials. Minimum spacing of bridging shall be 4'-0", unless indicated otherwise by light-gauge fram
- engineer. 10.5. Installation of sheathing, wallboard or any other collateral material shall be performed in accordance product manufacturer's specification.

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