Construction Issue Set

Volume 2 - Structural, Mechanical, Electrical,
Plumbing, Fire Protection, Swimming Pool

Issue Date: May 6, 2013

UCA HPER Center Renovation & Expansion

Student Lane & Farris Road
University of Central Arkansas
Conway, Arkansas

UCA Project Number: UCA-13-130
SMA Project Number: 1201
360 Project Number: 121050

360 THREESIXTY ARCHITECTURE

Stocks Mann Architects, PLC

GENERAL NOTES

DESIGN PARAMETERS

1. Design Codes - (All latest editions unless noted):
   A. International Building Code (IBC 2006)
   B. American Society of Civil Engineers (ASCE 7-05) Minimum Design Loads for Buildings and Other Structures
2. Foundation
   A. Shallow footings bearing on select fill are designed for a maximum soil bearing pressure of 2,500 psf for continuous or individual footings, based on a report by Terracon, dated October, 2012. Undercut and fill limits shall extend at least 5 feet beyond the building footprint. Soil below buildings shall be undercut and backfilled with compacted structural fill per soils report.
   B. If the soil is of questionable bearing value, the Engineer or Architect shall be notified immediately.
   C. After footing excavations are completed and before placing concrete, the excavated areas shall be inspected and approved by the Owner selected independent testing laboratory.
   D. The Soils Engineer is the sole judge of suitability of underlying material to support foundations and shall approve bearing material before foundation installation. See specifications.
   E. Coefficient of horizontal friction between concrete and soil = 0.35
   F. Minimum depth from exterior ground surface to bottom of foundations = 24 inches.
   G. Prepare site and place fill in accordance with the recommendations in the soils report noted above. Observe construction recommendations noted in the soils report. All fill material shall be in accordance with soils report recommendations.
   H. Construct non-basement floor slabs on the granular fill layer required by the plan notes. The granular fill shall be placed on non-expansive soil which has been place in accordance with the soils report.
   I. Backfill basement and retaining walls with ASTM C-33 No. 57 stone or equivalent approved by the soils Engineer. Extend stone from the base of walls outward at a 45 degree angle to the vertical.
   J. Backfilling:
   - Do not backfill basement walls and grade beams until bracing floors are in place or temporary bracing is installed.
   - Backfill in even lifts alternating from side to side.
   - Backfill under foundations with concrete or as approved by soils Engineer.
3. Roof Loads:
   A. Roof Dead Load (Low Slope).....20 psf
   B. Roof Live Load (Low Slope).....20 psf
   C. Roof Truss Dead Load (Top Chord).....8 psf + self-weight
   D. Roof Truss Dead Load (Bottom Chord).....10 psf
   E. Roof Truss Live Load.....18 psf
4. Floor Loads:
   A. General Floor Dead Load.....60 psf
   B. General Floor Live Load.....100 psf
5. Snow Load:
   A. Snow Load (IBC 2006)
   B. Ground Snow Load.....10 psf
   C. Exposure Coefficient Ce.....1.0
   D. Thermal Factor Ct.....1.0
   E. Importance Factor for Snow I.....1.1
   F. Roof Slope Factor Cs.....1.0
   G. Roof Snow Load.....Pf= 7.7 psf (use 11 psf Min)
6. Wind Load:
   A. Wind Loads (IBC 2006)
   B. Wind Speed.....90 mph
   C. Wind Exposure Category.....B
   D. Wind Importance Factor.....1.15

Component & Cladding Wind Pressures per ASCE 7-05 (90 MPH)

	Roof Pressures (psf)			Wall Pressures (psf)	
Area (sq. ft.)	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
≤10	+11, -17	+11, -37	+11, -59	+18, -20	+18, -24
25	+10, -16	+10, -37	+10, -52	+17, -19	+17, -22
50	+9, -16	+9, -37	+9, -47	+17, -18	+17, -21
75	+8, -16	+8, -37	+8, -43	+16, -18	+16, -20
≥100	+8, -15	+8, -37	+8, -41	+16, -17	+16, -19
	Dim "a" = 13'-10"			Dim "a" = 13'-10"	

Notes:
1. Wind loads are generated using ASCE 7 Method 2 - Analytical Procedure.
2. Refer to ASCE 7 Figures 6-11 through 6-17 for additional information and wall/roof diagrams.
3. Pressures listed are gross pressures. Dead weights of roofing materials have not been subtracted.

7. Seismic Loads:
   0.2 Sec Spectral Acceleration .....Ss = 0.4144
   0.2 Sec Site Coefficient .....Fa = 1.20
   0.2 Sec Design Acceleration .....Sds = 0.332
   1.0 Sec Spectral Acceleration .....S1 = 0.1639
   1.0 Sec Site Coefficient .....Fv = 1.64
   1.0 Sec Design Acceleration .....Sd1 = 0.179
   Site Class.....C
   Occupancy Category.....III
   Seismic Importance Factor.....1.25
   AISC Seismic Provisions.....Not Applicable
   Seismic Design Category.....C
   Basic Structural System .....Steel Systems Not Specifically Detailed for Seismic Resistance
   Seismic Force Resisting System.....Ordinary Steel Concentrically Braced Frames
   Response Modification Factor.....R=3
   Deflection Amplification Factor.....Cd=3
   Analysis Procedure.....Equivalent Lateral Force Procedure

   Non-Structural Component Seismic Exemption:
   A. Architectural Components:
   Architectural components must comply with seismic requirements of Chapter 13 ASCE 7. (SDC=C)
   B. Mechanical and Electrical Components:
   Mechanical and electrical components with an Ip= 1.0 are exempt from seismic requirements. Components with Ip>1.0 must comply with seismic requirements. (SDC=C)
   Mechanical and electrical components with an Ip=1.0 and either components are mounted 4 ft or less above a floor level and weight 400 lbs or less or flexible connections between components and the associated duct work, piping and conduit.
   Mechanical and Electrical componets with an Ip= 1.0 and the components weight 200lbs or less or distribution systems weighing 5 lb/ft or less.
   Component Seismic Importance Factor:
   The component importance factor Ip shall be =1.5 if any of the following conditions apply:
   . The component is required to function for the life/safety purposes after an earthquake, including fire protection sprinkler systems.
   The component contains hazardous materials.
   The structure is in or attached to an occupancy category IV structure and it is needed for the continued operation of the facility.

   I hereby certify that the structural plans submitted herewith are designed with the structural load carrying elements to resist the anticipated forces of the designated seismic zone in which the structure is located in accordance with Arkansas Code Annotated 12-80-101 et. seg.

   Date:_____, 2012

   _____
   Todd Robbins, P.E.
   Arkansas Registration No. 7041

GENERAL INFORMATION

1. All columns shall be centered on grid lines unless noted otherwise.
2. All column footings shall be centered on columns unless noted otherwise.
3. All wall footings shall be centered on walls unless noted otherwise.
4. Unless otherwise noted or detailed, concrete pads for mechanical equipment shall be 4" thick (minimum) and reinforced with #3 @ 12" OC each way centered.
5. Substitution of expansion anchors for embedded anchors shall not be permitted, Unless Approved by Engineer.
6. Contractor is responsible for coordinating weights, size, and location of actual mechanical units ordered.
7. Unless Directed Otherwise By Geotechnical Engineer all fill material under structure shall be sandy clay or clayey sand exhibiting a liquid limit less than 35. Fill material shall be placed in loose lifts not to exceed 8" and compacted to a density of not less than 95% of Modified Proctor Maximum Dry Density (ASTM D-1557) at or slightly wet of optimum moisture content. In place moisture and density of each lift shall be determined by in-situ field tests prior to placing additional fill.
8. Permanent stability of the building and components is not provided until the erection is completed as shown on the contract drawings. Erection stability and temporary supports required for construction including guys, braces, and shoring are the responsibility of the contractor.
9. Testing:
   A. Refer to specifications for specific requirements regarding sampling and testing.
   B. Where sampling and testing requirements are omitted from the specifications sample and test concrete as follows:
   B1. Contractor shall engage a testing laboratory acceptable to the owner and Architect. Test conducted shall be paid for by the contractor.
   B2. Prepare field samples of 4 compressive test cylinders in accordance with ASTM C31 and one slump test for each class of concrete placed each day. Samples shall be taken not less than once per day for each 50 cubic yards of concrete. Test for cylinders shall be conducted one at 7 days and 2 at 28 days, with remaining cylinders retained for future testing in case of low test results.

STRUCTURAL STEEL

1. Steel shape and plate materials:
   W Shapes - ASTM A992 or A572 Grade 50
   Pipe - A53 - Grade B 35 ksi
   Round HSS - A500 Grade C 42 ksi
   Rectangular HSS - A500 Grade B 46 ksi
   Built-Up shapes - A572 Grade 50
   All Others - A36 or A572 Grade 50
2. The fabrication and erection of structural steel shall comply with "The Code Standard Practice for Steel Buildings and Bridges" as published by AISC.
3. Unless detailed otherwise, connections shall comply with the typical connection details indicated on drawings. Where beam end reactions are shown and connection details are not indicated on the structural drawings, provide a design for the connection and submit to the structural engineer of record for approval. Where typical connection details and beam end reactions are omitted, beam connections shall be selected to support one half the total uniform load capacity indicated in "Allowable Uniform Load Tables" in part 2 of the AISC manual of steel construction, 13th edition.
4. Bolted Connections-
   A. Unless detailed otherwise, all field connections shall be made using 3/4" diameter ASTM A325N high strength bolts. Washers shall be installed under nuts.
   B. Use slip critical (A325SC) bolts for bracing, moment connections, cantilevers, tension members and at oversized or slotted holes where the force on joint is parallel to long axis of slot. Use A325N elsewhere.
   C. Where specifically identified on the drawings as slip critical all high strength bolts shall be tightened to comply with "slip critical" joints. Specifications are as follows:
   1. Installation of Alternate Design Bolts (Twist off Type)
   2. Direct tension Indicators
   3. Faying surfaces shall be prepared and inspected per RCSC Section 4.3 except as modified by AISC Sections J3.8 & J3.9.
   D. A490 and A325 high strength bolts shall not be reused that have been previously tightened.
   E. Unless specifically noted as slip critical connections, all bolted connections shall be visually inspected and comply with pre-tensioned specifications as follows:
   1. Installation of Alternate Design Bolts (Twist off Type)
   2. Direct tension Indicators
5. Welded Connections-
   A. Welding of structural steel shall comply with the latest edition of AWS D1.1 and all welds including field welds shall be made by AWS certified welders using E70XX electrodes and must meet CHARPY V-NOTCH requirements as applicable.
   B. All fillet welds to be visually inspected. All full penetration welds shall be inspected by ultrasonic testing or by other approved methods.
   C. Contractor shall remove back-up bars and run-off tabs projecting into or obstructing installation of building materials.
   D. Fabricator shall cope beams or otherwise provide weld access holes to allow proper installation and use of back-up bars at welded connections.
6. Steel erector is responsible for providing all necessary temporary bracing during erection.

STEEL JOISTS AND JOIST GIRDERS

1. Erect in accordance with AISC, SJI, OSHA and project specifications. Do not erect damaged joists. obtain corrective procedures from manufacturer. Do not field cut, drill or modify joists.
2. Provide bridging and anchor to supports per SJI & OSHA requirements.
3. Connection to Supports:
   A. Except where constructability does not allow, field bolt steel joist at column or at joist nearest columns. Where joist are bolted to columns provide vertical stabilizer plate for bottom chord.
   B. Except where constructability does not allow and have not been pre-assembled into panels, field bolt steel joist to supporting members equal to or longer than 40'-0". Note: Joist seats with slotted holes keep bolts in place even if welds are later applied or the slotted holes must be welded to supporting steel.
   C. Except for instances as noted above or as required by OSHA joist may be field welded per SJI requirements.
4. Locate pipe and equipment hangers and other concentrated loads only where loads are shown on joist shop drawings. Attachment method as approved by joist supplier where pipes and equipment are suspended from joist bottom chord.
5. Slope bearings to provide full contact with supports.
6. Provide clip angles, plates, etc., shown shop welded to members. Coordinate with structural steel fabricator.

STEEL ROOF DECK

1. Deck type and minimum steel thickness as noted on plans.
2. The deck shall be fastened to supporting steel in accordance with the manufacturer's instructions. Minimum deck fastening shall be as follows: Five- 5/8" round puddle welds at ends of panel and at each intermediate support. Side lap seams to be fastened with #12 TEKS at 18" OC. Long panel sides at support angles to be fastened with 5/8" round puddle welds at 12' OC along full length of panel.

COMPOSITE STEEL FLOOR DECK

1. See plan for size and required gage.
2. Steel deck shall be galvanized unless noted otherwise.
3. Provide pour stops, column closures, cover plates, and girder fillers per SDI standards as needed.
4. Minimum end bearing shall be 1.5".
5. Attach deck to supporting members with 4 - 5/8" puddle welds minimum per panel and 6 welded sidelap connections minimum per panel unless noted otherwise. At contractor's option power driven mechanical fasteners may be substituted for welds. Contractor shall submit manufacturers data for size of fastener and spacing for approval.
6. If required, use 3/4"Ø stud shear connectors as shown on the plans. Max spacing of studs shall be 36", and max spacing of deck attachments (including studs) to composite beams shall not exceed 16".
7. Refer to the Steel Deck Institute (SDI) standards for installation, storage, and all other construction practices.
8. Steel Studs shall have a finished length of (Deck rib height + 1.5").
9. Testing: Unless noted otherwise in specifications, contractor shall engage a testing laboratory acceptable to owner and Architect to provide a visual inspection of shear studs and to test field welded shear connectors in accordance with AWS D1.1 requirements, and inspect the deck for proper attachment and installation.
10. Unless noted otherwise on drawings, provide minimum temperature and shrinkage reinforcement of 6x6-W2.1xW2.1 WWF. WWF shall be supported on bolsters over each support. Reinforcing shall be 1" below top of concrete.

LIGHT GAGE METAL STUDS & MISC FRAMING

1. Light gauge structural studs shall be as designed by a professional Engineer licensed in the jurisdiction of the project. Submit shop drawings stamped and signed by professional Engineer.
   A. Exterior non-load bearing wall framing = As per designed but not less than 18 Gage.
   B. Interior non-load bearing partition studs = See Architectural drawings for size (25 gage non-structural shapes).
   C. For stud and track gages greater than or equal to 16GA, Fy=50ksi
2. All stud tracks shall match stud gage but not less than 18 ga. Tracks above or below glass curtain walls greater than 10 feet in height shall be a minimum of 16 ga.
3. All window and door openings in load bearing walls are to have double joist headers with double studs each end for bearing.
4. All walls shall have horizontal bridging spaced at intervals not exceeding 4'-0" OC maximum.
5. Non-load bearing walls shall be provided with slip-type support clips (deflection clips) to allow adjacent support deflection without damaging studs
6. For multi-story projects or projects with more than a single gage of stud, studs shall have ends color coded or size and gage permanently labeled on studs.
7. Load bearing studs shall be squarely seated against top and bottom tracks with gap not exceeding 1/8". Fasten both flanges of stud to top and bottom tracks.
8. Install supplementary framing, blocking, in stud framing as indicated in the Architectural drawings to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing. If supplementary support is not indicated comply with stud manufactures recommendations and industry standards in each case.
9. Tracks bearing on concrete shall be attached with a minimum 0.145"- pdf @ 8" OC or as noted on drawings.
10. At jambs, heads and sill of curtainwall window systems provideminimum 16GA support members unless detailed otherwise.

STAIRS & HANDRAILS/GUARDRAILS

1 All stairs and handrails / guardrails shall be designed by a professional engineer licensed in the jurisdiction of the project, based on the following design criteria, and calculations shall be signed and sealed:
   A. Stair stringers, treads and risers shall be designed to support 100 psf live load.
   B. Individual stair treads shall be designed to support a 300 pound concentrated load placed in a position that would cause maximum stress.
   C. Handrails and the top rail of guardrail systems shall be designed to withstand a uniform load of 50 plf or a 200 pound concentrated load, applied in any direction, and to transfer either load through the supports to the structure. Intermediate rails, balusters, and panel fillers shall be designed to withstand a horizontal load of 50 pound applied perpendicularly over an area not to exceed 1 ft square, including openings and spaces between rails. All loads listed are individual loads and do not need to be considered concurrently.

CAST IN PLACE CONCRETE

1 Minimum Concrete Compressive Strengths:
   A Footings f'c = 3,000 psi at 28 days. Max w/c=0.58
   B Interior Slabs-On-Grade f'c = 4,000 psi at 28 days. Max w/c=0.45 (no fly ash)
   C Ext Exposed Conc (Air Entrained) f'c = 3,500 psi at 28 days. Max w/c=0.48
   D. Elevated Slabs on Metal Deck f'c = 3,500 psi at 28 days. Max w/c=0.48 (no fly ash)
2. Before concrete is placed reinforcement shall be secured against displacement within tolerances permitted in section 7.5.2 of ACI code.
3. Where lap splices are required of deformed bars and not specifically indicated on drawings, splices shall be class B splice.
4. When bars of different size are lap spliced, the splice length shall be based upon larger bar.
5. Concrete protective covering for reinforcement at surfaces not exposed directly to the ground shall be 3/4" for slabs, joists, and walls and 1 1/2" for beam stirrups and column ties or spirals. Do not "wet stick" dowels.
6. The following minimum concrete cover shall be provided:
   A. Concrete cast against and permanently exposed to earth 3"
   B. Concrete exposed to earth or weather - No. 6 thru No. 18: 2"
   C. Concrete exposed to earth or weather - No. 5 and smaller: 1 1/2"
   D. Concrete not exposed to earth or weather:
   slabs, walls, joists No.14 and No. 18: 1 1/2
   slabs, walls, joists No.11 and smaller: 3/4"
7 Location and sizes of openings, sleeves, etc. required for other trades must be verified by these trades before placing concrete.
8 Contractor is responsible for "means and methods" of construction and shall provide adequate shoring to prevent collapse or damage to structural elements during construction.
9 Omit fly ash on all floor slabs.

SPECIAL INSPECTION (BASIC REQUIREMENTS)

1. Contractor shall notify inspection agency and architect with at least 24 hours notice when work requiring special inspection is being scheduled, and provide inspecting agency access to approved plans at the job site and access to and means for safe and proper inspection of work being performed. In addition the contractor shall retain and maintain special inspection records at the job site throughout the construction phase of the project.
2. Special inspectors shall observe work and keep records of all inspections, and furnish inspection reports to the contractor, architect, and if requested building official. Deficiencies or discrepancies in work performed shall be brought to the immediate attention of the contractor for correction. If deficiencies are not corrected, the architect and or building official shall be notified.
3. Continuous special inspection shall be the full-time observation of work by an approved inspection agency. Periodic special inspection is intermittent observation of work that has been completed, or the review of certificates or material marks as needed.
4. The following paragraphs outline the basic required verifications and inspection with applicable submittals required for inspection verification. These paragraphs are not intended to list all submittals or testing required. The contractor shall carefully review the specifications for other requirements and or submittals. The basic verification and testing requirements are as follows:
   VERIFICATION AND INSPECTION OF DRILLED PIER AND GRADE BEAM CONSTRUCTION:
   A. Testing agency shall observe drilling operations and maintain complete and accurate records for each pier thru continuous inspection.
   B. Testing agency shall verify and report placement locations, plumbness, pier size, bell diameter (if applicable), lengths, embedment depth (if applicable) and adequate end bearing strata.
   C. Probing of bottom of piers founded in rock may be required by geotechnical engineer. Where probing is required contractor shall submit for approval the type of equipment planned for use and methodology of use.
   VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION:
   A. Contractor shall obtain and a testing agency shall review and record material verification of high-strength bolts, nuts and washers, steel, non-shrink grout, and welders certifications.
   B. Inspection agency shall periodically review by visual inspection and report all bearing type connections for compliance with "snug tight" condition. For connections specified as "slip critical" inspection agency shall periodically review bolts per manufacturers recommendations for twist off type bolts or direct tension indicators.
   C. Contractor shall provide structural steel shop drawings for review and maintain copies on site for inspectors use. Refer to specifications for specific shop drawing requirements.
   D. Inspection of welded structural steel shall be as follows:
   1.Complete and partial penetration groove welds shall have continuous inspection and welds shall be tested using the ultrasonic testing method or other previously approved method at a frequency notes as follows:
   A. 10 welds or less.....100% Tested
   B. 10 to 20 welds.....50% Tested, but not less than 10
   C. 20 to 30 welds.....25% Tested, but not less than 10
   D. 30 or more.....10% Tested, but not less than 10
   E. HSS Trusses (Any).....100% Tested shop or field weld.
   2.Fillet welds greater than 5/16" or require multiple passes shall have continuous visual inspection.
   3.Single pass fillet welds 5/16" and smaller shall have periodic visual inspection.
   4.Roof and floor deck welds shall have periodic inspection verifying size, spacing, and quality.
   5.Floor shear studs shall have periodic inspection and testing as per AWS D1.1.
   E. Steel deck - Contractor shall provide shop drawings and manufacturers certificates for review and maintain copies on site for inspector's use. Refer to specifications for specific shop drawing requirements. Inspector shall periodically inspect deck type, placement, and attachment. Where mechanical fasteners are used contractor shall submit and maintain on-site manufacturers data for fasteners.
   F. Joists and joist girders - Contractor shall provide shop drawings for review and maintain on site shop drawings and manufacturers tags or certificates for inspectors use. Periodic inspection of joists shall include review of structural high strength bolts (if applicable), welding, location, and spacing of joists. Contractor is responsible for compliance with applicable OSHA requirements.
   VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION:
   A. As a minimum, contractor shall provide and maintain copies on site of the following submittals:
   1.Concrete mix designs and supporting data including admixture manufacturers data.
   2.Manufacturers data with application and installation instructions for all specified products and material certificates.
   3.Reinforcement shop drawings complying with ACI Detailing Manual (SP66). Include all information necessary for shop fabrication and for location and placing in the field.
   4.When required in contract documents, provide a pour placement plan.
   5.When required in contract documents, maintain material samples and mock-up panels.
   6.Shop drawings pertaining to formwork will not be reviewed by the design professional. Contractor has total control and responsibility for formwork as part of means and methods of construction.
   B. The inspection program shall provide for the following inspections:
   1.Periodically inspect formwork for general compliance with material quality and alignments, notify contractor of any deficiencies found. The contractor is responsible for the proper design and support of formwork as part of the means and methods responsibility.
   2.Periodically inspect reinforcing including pre-stressing tendons for grade, size, number, length, lap length, lap location, cover and support.
   3.Continuously verify use of required design mix.
   4.Periodically inspect concrete placement and consolidation for compliance with ACI 301 requirements.
   5.Periodic inspection for maintenance of specified curing temperature and techniques.
   6.Continuous inspection of post-tensioned construction for proper application of pre-stressed forces.
   7.Periodic inspection of the erection of precast members including grouting under-bearing members, bolted and field welded connections.
   8.Inspect formed surfaces for cracking, honeycombing, voids, spalling, pealing, and exposed reinforcing.
   C. This section outlines the basic tests to be conducted by the testing agency; however when conflicts exist between this section and the specifications, the specifications shall govern. The testing agency and the contractor shall review the specifications carefully for additional testing requirements. Testing includes but is not limited to the following:
   1.Compressive strength tests (ASTM C39) - prepare four (4) concrete test cylinders for every days placement or every (50) cubic yards. Test one cylinder at 7 days and two at 28 days. Retain one cylinder for possible testing at a later date.
   2.Slump test (ASTM C143) - perform one slump test from first two trucks and one for each set of cylinders taken. If any slump test is out of specified range, additional slump test shall be taken on each subsequent load until concrete is within specified range.
   3.Air entrainment tests (ASTM C231) - make one air content check per set of test cylinders.
   4.Contractor shall provide an enclosure for initial storage and curing of concrete test cylinders meeting ASTM C31. Fit enclosure with maximum/minimum thermometer, provided heating and cooling, and maintain enclosure at 70°F plus or minus 10°.
   5.Hot and cold weather concrete placement - at architects descretion temperature measurements may be taken when weather conditions may warrant hot or cold weather placement procedures.
   VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION:
   A. As a minimum, contractor shall provide and maintain copies on site the following submittals:
   1.Manufacturers data for each unit, accessory, and product with application and installation instructions and material certificates.
   2.Reinforcement shop drawings complying with ACI Detailing Manual include all information necessary for shop fabrication and for placing in the field.
   3.When required in contract documents, maintain material samples and mock-up panels.
   4.Contractor has total control and responsibility for temporary shoring and bracing as part of means and methods of construction.
   B. The inspection program shall shall provide for the following inspections:
   1.Periodic inspection of size and location of masonry units.
   2.Periodic inspection of reinforcement size, grade, and location.
   3.Periodically verify grout spaces are clean and mortar joints are properly constructed.
   4.Continuous inspection of grout placement and any welding of reinforcing.

SLAB ON GRADE

1. Provide a 4-inch clean medium-to-coarse sand or gravel compacted drainage fill below all interior slabs-on-grade unless noted or detailed otherwise.
2. A 15-mil minimum polyethylene film vapor retarder shall be placed below all interior slabs-on-grade.
3. Cut 75% of welded wire fabric or deformed rebar 3 inches on either side of a sawcut or construction control joint.
4. Provide bolsters or supports as needed to maintain reinforcement at proper location in slab.
5. Maximum water cement ratio shall not exceed the amount specified.
6. Saw cutting control joints shall proceed as soon as possible without chipping or spalling concrete. Lapsed time between casting and sawcutting shall not exceed 8 hours.

EPOXY ANCHORS

1. Where epoxy anchorage of threaded rods and rebar is approved by Engineer of record in concrete filled cells of cmu, use HILTI HY150 epoxy.
2. Where epoxy anchorage of threaded rods or rebar is approved by Engineer of record in cast-in-place concrete, use HILTI RE500.
3. Follow Manufacturers instructions for installation of holes.
4. Unless depth of embedment is not shown on contract drawings contact engineer of record for depth of embedment. As a minimum depth of embedment shall be indicated by manufacturer to develope full tensile strength of anchorage.
5. Where anchorage is required into hollow masonry contractor shall use HILTI HIT HY20 for masonry construction.

EXPANSION JOINT FILLER

1. Non-extruding premolded material composed of fiberboard impregnated with asphalt conforming to the requirements of ASTM D1751.

WATERSTOPS

1. Provide flexible strip construction joint waterstop RX-101, or RX-102, as manufactured by Volclay, or Swellstop, or Swellstop II, as manufactured by Sikaflex. RX-102 and Swellstop II shall be used with concrete members 8" thick or less.
2. Waterstop shall have a minimum of 2" cover to nearest concrete edge. Butt ends of waterstop together - do not lap.
3. Concrete surface shall be dry and cured for a minimum of 24 hours prior to application. Before application, a primer adhesive provided by waterstop manufacturer shall be applied. Follow manufacturer's recommendation for application. Waterstop may be mechanically fastened to concrete in addition to adhesive. Follow manufacturer's recommendation for attachment.

STRUCTURAL ABBREVIATIONS

ADD	ADDENDUM	LW	LONG WAY
ADDL	ADDITIONAL	LP	LOW POINT
ALT	ALTERNATE	MFR	MANUFACTURER
AB	ANCHOR BOLT	MK	MARK
&	AND	MSRY	MASONRY
ANG	ANGLE	MBA	MECHANICAL BAR ANCHOR
ARCH	ARCHITECT	MBM	METAL BUILDING MANUFACTURER
@	AT	MBS	MECHANICAL BAR SPLICE
BP	BASE PLATE	MO	MASONRY OPENINGS
BM	BEAM	MTL	MATERIAL
BMS	BEAMS	MIN	MINIMUM
BRG	BEARING	MISC	MISCELLANEOUS
BOT	BOTTOM	NF	NEAR FACE
B/	BOTTOM OF/BACK OF	NS	NEAR SIDE
BRDG	BRIDGING	NML WT	NORMAL WEIGHT
BLDG	BUILDING	NIC	NOT IN CONTRACT
CIP	CAST IN PLACE	NTS	NOT TO SCALE
CLG	CEILING	OC	ON CENTER
C OR CL	CENTER OR CENTERLINE	OPNG	OPENING
C/C	CENTER TO CENTER	OPP	OPPOSITE
CLR	CLEAR	OPP H	OPPOSITE HAND
COL	COLUMN	OF	OUTSIDE FACE
CP	COMPLETE PENETRATION	PL	PLATE
CONC	CONCRETE	PLBG	PLUMBING
CMU	CONCRETE MASONRY UNIT	PJF	PRE-MOLDED JOINT FILLER
CONN	CONNECTION	PP	PARTIAL PENETRATION
CONST	CONSTRUCTION	RAD	RADIUS
CJ	CONTROL JOINT	RECT	RECTANGULAR
CONT	CONTINUOUS	REF	REFERENCE
CONTR	CONTRACTOR	RE	REFER TO
CWA	COORDINATE WITH ARCHITECT	REINF	REINFORCING
DBA	DEFORMED BAR ANCHOR	REQ'D	REQUIRED
DBE	DECK BEARING ELEVATION	REV	REVISION
DL	DEAD LOAD	SCHED	SCHEDULE
DK	DECK	SECT	SECTION
DEP	DEPRESSED	SW	SHORT WAY
DET	DETAIL	SIM	SIMILAR
DIAG	DIAGONAL	SL	SLAB
DIA OR Ø	DIAMETER	SOG	SLAB ON GRADE
DIM	DIMENSION	SPA	SPACE, SPACING OR SPACES
DWLS	DOWELS	SPECS	SPECIFICATIONS
DN	DOWN	SQ	SQUARE
DWG	DRAWINGS	STD	STANDARD
DP	DRILLED PIER	STL	STEEL
EA	EACH	SDI	STEEL DECK INSTITUTE
EE	EACH END	SJI	STEEL JOIST INSTITUTE
EF	EACH FACE	STRUCT	STRUCTURE OT STRUCTURAL
ES	EACH SIDE	SUPPT	SUPPORT
EW	EACH WAY	SYMM	SYMMETRICAL
ELECT	ELECTRICAL	SYP	SOUTHERN YELLOW PINE
EL	ELEVATION	THK	THICKNESS
EQ	EQUAL	T	TOP
EJ	EXPANSION JOINT	T/	TOP OF
EXT	EXTERIOR	T/C	TOP OF CONCRETE
FF	FAR FACE	T/F	TOP OF FOOTING
FIN	FINISH	T/J	TOP OF JOIST
FS	FAR SIDE	T/L	TOP OF LEDGE
FLR	FLOOR	T/P	TOP OF PILASTER
FTG	FOOTING	T/SL	TOP OF SLAB
FDN	FOUNDATION	T/SOG	TOP OF SLAB ON GRADE
FRMG	FRAMING	T/S	TOP OF STRUCTURAL STEEL
GALV	GALVANIZED	TYP	TYPICAL
GA	GAUGE	UNO	UNLESS NOTED OTHERWISE
HT	HEIGHT	VB	VAPOR BARRIER
HP	HIGH POINT	VERT	VERTICAL
HORIZ	HORIZONTAL	VEF	VERTICAL EACH FACE
HEF	HORIZONTAL EA FACE	WB	WIND BRACE
IF	INSIDE FACE	WWF	WELDED WIRE FABRIC
INT	INTERIOR	WF	WIDE FLANGE
JBE	JOIST BEARING ELEVATION	W/	WITH
JT	JOINT	W/O	WITHOUT
JST	JOIST	WP	WORK POINT
K OR k	KIP= 1,000 lbs	WS	WATER STOP
LB	POUND	WT	WEIGHT
LT WT	LIGHT WEIGHT		
LTL	LINTEL		
LL	LIVE LOAD		
LONG	LONGITUDINAL		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		

CONCRETE MASONRY

1. Material specifications
   Concrete Masonry Units.....f'm = 1,500 psi
   Grout.....f'c = 3,000 psi
   Mortar.....Type S (ASTM C476)
   Reinforcing Bars.....Grade 60 (ASTM A615)
   Reinforcing Wire.....ASTM A82
2. Load bearing CMU shall be light weight type 1 and conform to ASTM C90.
3. Grout shall conform to ASTM C476 and be tested in accordance with ASTM C1019.
4. Mortar shall comply with Table 1, Proportion specification requirements of ASTM C270.
5. Masonry joint reinforcement shall be welded wire units in lengths not less than 10 feet, with matching corner and tie units. Reinforcement shall be w2.8 (9 gage) ladder or truss type with deformed continuous side rods and plain cross rods and shall have a width of 11/2" to 2" less than thickness of wall or partition. reinforcement shall be placed at first bed joint above and below concrete slabs and spaced no more than 16" oc unless noted otherwise in contract documents.
6. Refer to Architectural elevation drawings for location of wall control joints. If wall control joints are not shown on contract drawings place interior and exterior wall control joints at spacings not to exceed 30 feet on center.
7. Vertical CMU cells scheduled for filling with grout shall be kept clean of mortar droppings and debris. The unobstructed opening shall not be less than 2" x 3" on plan dimension.
8. Provide vertical reinforcing, same size as adjacent bar, at: Corners, ends, jambs, each side of control and expansion joints.
9. Continue vertical reinforcing floor to floor (or roof) and extend to top of parapet.
10. Provide standard hooks on bars terminating into a masonry face:
    -in walls at openings, heads, jambs, expansion joints, ends:
    -in beams at top, bottom, and ends.
11. Coordinate blockouts, reveals, holes, openings and built in items with all contract documents and trades.
12. Coordinate with architect the masonry block type required at firewalls.
13. Unless otherwise noted on drawings, top of CMU walls shall have masonry bond bm filled w/ grout and reinforced with 2-#5. Vert reinf shall extend into bond bm w/ std hook.
14. Corrosion protection for carbon steel accessories used in exterior wall construction or interior walls exposed to a mean relative humidity exceeding 75 percent shall comply with IBC Section 2103.13.7.2 (Hot dipped Galv) or Section 2103.13.7.3 (Epoxy coated).

Project Name

Enter address here

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360 THREESIXTY ARCHITECTURE

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aquatics consultant:
Counsilman-Hunsaker
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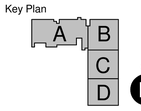
Key Plan



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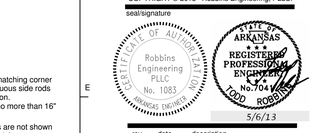

5/6/13

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

GENERAL NOTES

sheet number

S001

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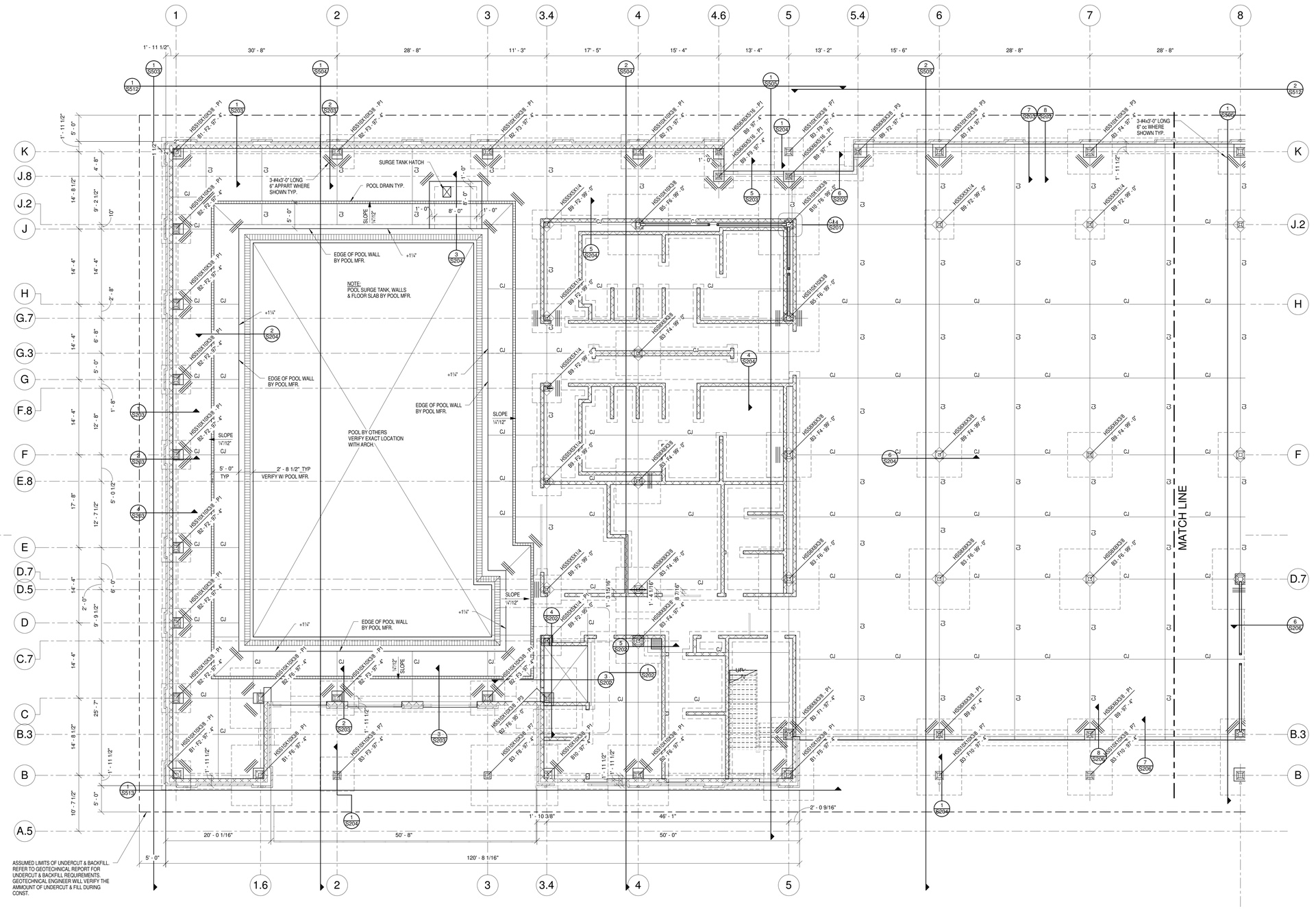

ASSUMED LIMITS OF UNDERCUT & BACKFILL. REFER TO GEOTECHNICAL REPORT FOR UNDERCUT & BACKFILL REQUIREMENTS. GEOTECHNICAL ENGINEER WILL VERIFY THE AMMOUNT OF UNDERCUT & FILL DURING CONST.

FOUNDATION NOTES:

TYP FLOOR SLAB CONST. - EL. = 100'-0"

1. PROVIDE 4" NORMAL WT. CONCRETE ON 10 MIL VAPOR RETARDER ON 4" GRANULAR FILL ON SELECT COMPACTED STRUCTURAL FILL. REINF w/ 6x6-W2.9xW2.9 WWF. PLACE WWF SHEETS ON CHAIRS. CUT 75% OF REINF @ CONTROL JOINTS.
2. ▨ INDICATES NON - LOAD BEARING CMU WALL.
3. SEE S2.1 FOR TYPICAL FOUNDATION DETAILS.
4. "CJ" INDICATES CONTROL JOINTS OR CONSTRUCTION JOINTS.
5. FOOTINGS ARE CENTERED ON COLUMNS EXCEPT WHERE NOTED OTHERWISE.

1 PARTIAL FOUNDATION PLAN
1/8" = 1'-0"

LEGEND

5/7/2013 8:02:54 AM

Project Name

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360 THREESIXTY ARCHITECTURE

owner:
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Key Plan

seal/signature

Robbins Engineering PLLC No. 1083

TODD ROBBINS No. 7041

5/6/13

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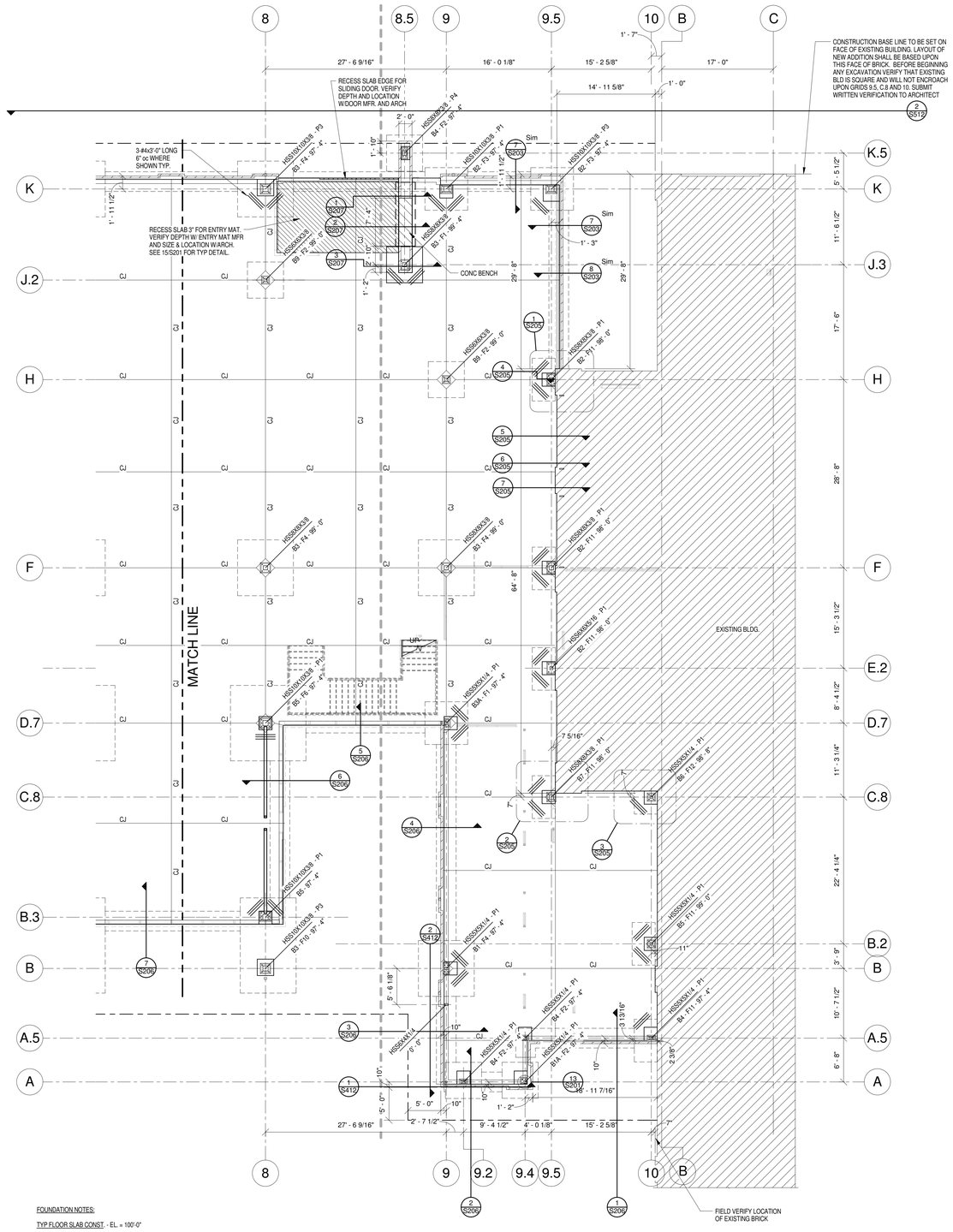
date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

PARTIAL FOUNDATION PLAN

sheet number

S101



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1 PARTIAL FOUNDATION PLAN
1/8" = 1'-0"

LEGEND

5/7/2013 8:02:56 AM

Project Name

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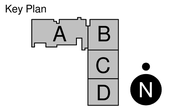
Key Plan



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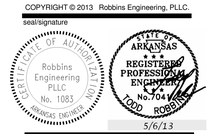

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	5/6/13	

date	05/06/13
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SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

PARTIAL FOUNDATION PLAN

sheet number

S102

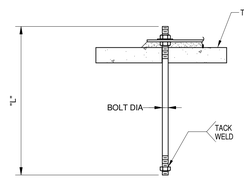
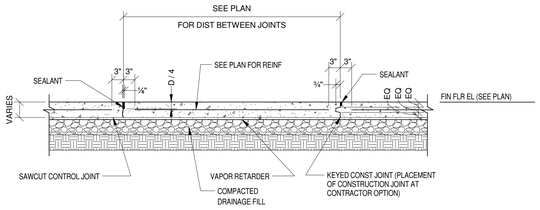


TABLE 1 - SCHEDULE		
BOLT DIA	"L"	PROJ
3/4"	1'-1"	5"
1"	1'-4"	5"
1 1/4"	1'-5"	6"
1 1/2"	1'-10"	6 1/2"

TABLE 2 - HOLE SIZE IN BASE PL & WASHER REQUIREMENTS			
BOLT DIA	MAX HOLE DIAMETER BASE PL.	MIN WASHER SIZE	MIN WASHER THICKNESS
3/4"	1 5/16"	2"	1/4"
7/8"	1 9/16"	2 1/2"	5/16"
1"	1 13/16"	3"	3/8"
1 1/4"	2 1/16"	3"	1/2"

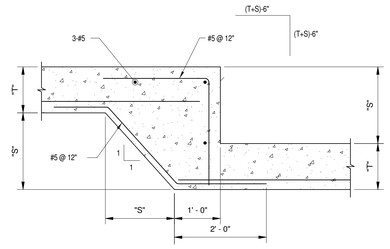
NOTES:
1. OMIT NON SHRINK GROUT ON PRE-ENGINEERED METAL BUILDINGS AND WHERE NOTED ON DRAWINGS.
2. AT CONTRACTOR'S OPTION LEVELING NUT UNDER BASE PLATE MAY BE OMITTED WHERE STEEL SHIM PACKS ARE USED.
3. USE F1554 GR36 THREADED ROD W/ NUT AT BOTTOM.
4. WHERE OVERSIZED OR SLOTTED HOLES ARE USED PROVIDE PLATE WASHERS AS INDICATED IN TABLE 2. CIRCULAR OR SQUARE WASHERS MEETING MIN SIZE REQUIREMENTS.

1 DETAIL - TYP. ANCHOR BOLT
3/4" = 1'-0"



NOTES:
1. SAWCUT CONC SLAB AS SOON AS PROCEDURE CAN BE COMPLETED WITHOUT SPALLING OR DAMAGING EDGE. SAWCUTTING MUST BE COMPLETED WITHIN 8 HOURS OF CONCRETE PLACEMENT.
2. REINFORCEMENT MUST STOP 3" EACH SIDE OF JOINT.
3. CONTRACTOR MAY PROVIDE EITHER SAWCUT CONTROL JOINT OR KEYED CONSTRUCTION JOINT WHERE "CJ" SHOWN ON DRAWINGS.
4. COORDINATE EXACT LOCATION OF CONTROL JOINTS WHERE ARCH DRAWINGS INDICATE CERAMIC TILE, STONE FLOORING OR TERAZZO. COORDINATE WITH ARCH.

2 TYPICAL SOG CONTROL JOINT DETAIL
3/4" = 1'-0"



NOTE:
1. CONTRACTOR SHALL COORDINATE PROPOSED FINISHED GRADE ELEVATION W/ PROPOSED TOP OF FOOTING ELEVATION TO VERIFY ADEQUATE CLEARANCE.

3 TYPICAL STEP FOOTING DETAIL
3/4" = 1'-0"

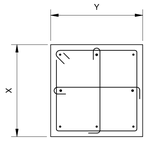
PAD FOOTING SCHEDULE

MARK	FOOTING SIZE	REINFORCEMENT
F1	4'-6"x4'-6"x1'-3"	5-#5 EW TOP&BOT
F2	5'-6"x5'-6"x1'-3"	6-#6 EW TOP&BOT
F3	6'-6"x6'-6"x1'-3"	7-#6 EW TOP&BOT
F4	8'-6"x8'-6"x1'-6"	9-#6 EW TOP&BOT
F5	9'-6"x9'-6"x2'-0"	10-#8 EW TOP&BOT
F6	11'-6"x11'-6"x2'-0"	12-#8 EW TOP&BOT
F7	5'-6"x7'-6"x1'-6"	6-#6 LONG DIR. TOP&BOT 8-#6 SHORT DIR. TOP&BOT
F8	11'-6"x16'-6"x2'-0"	12-#8 LONG DIR. TOP&BOT 17-#8 SHORT DIR. TOP&BOT
F9	5'-6"x9'-6"x1'-6"	6-#6 LONG DIR. TOP&BOT 8-#6 SHORT DIR. TOP&BOT
F10	8'-6"x14'-6"x2'-0"	9-#8 LONG DIR. TOP&BOT 15-#8 SHORT DIR. TOP&BOT
F11	3'-6"x6'-6"x1'-6"	4-#6 LONG DIR. TOP&BOT 7-#6 SHORT DIR. TOP&BOT
F12	3'-6"x3'-6"x2'-0"	4-#6 EW TOP&BOT

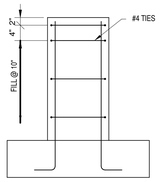
4 TYPICAL PAD FOOTING SCHEDULE
3/4" = 1'-0"

PEDESTAL REINFORCING SCHEDULE

MARK	SIZE X x Y	VERT REINF	TIES
P1	24"x24"	8-#6	#4 @ 10" OC
P2	16"x24"	6-#6	#4 @ 10" OC
P3	30"x30"	8-#6	#4 @ 10" OC
P4	16"x24"	6-#6	#4 @ 10" OC
P5	33"x33"	12-#6	#4 @ 10" OC
P6	16"x20"	6-#6	#4 @ 10" OC
P7	16"x16"	6-#6	#4 @ 10" OC

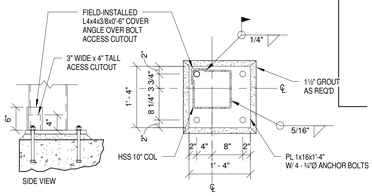


PEDESTAL PLAN



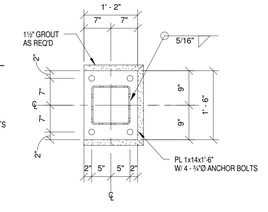
TIE PLACEMENT

5 TYPICAL PEDESTAL REINF. SCHEDULE
3/4" = 1'-0"

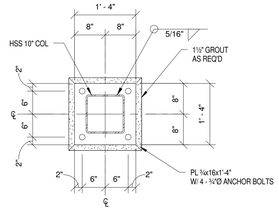


NOTE: SHOP-CUT BOLT ACCESS CUTOUT IN HSS AT CORNER OF HSS COVERING BASEPLATE BOLTHOLE. CUTOUT TO BE 3" WIDE EACH WAY FROM CORNER, AND 4" TALL. FIELD WELD COVER ANGLE TO COL AND BP AFTER COL INSTALLATION IS COMPLETE.

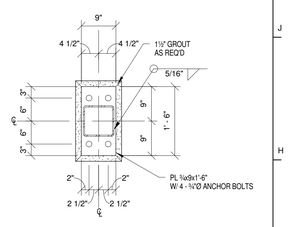
6 B1
3/4" = 1'-0"



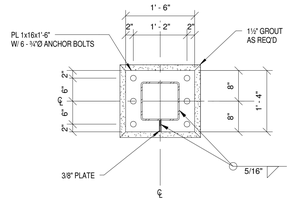
7 B2
3/4" = 1'-0"



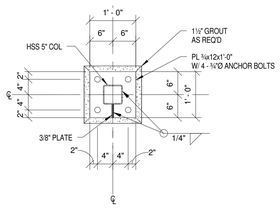
8 B3
3/4" = 1'-0"



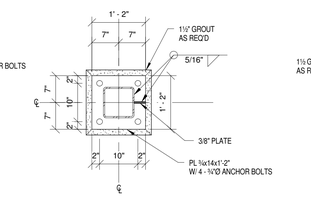
9 B4
3/4" = 1'-0"



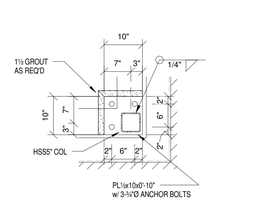
10 B5
3/4" = 1'-0"



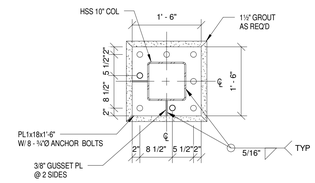
11 B6
3/4" = 1'-0"



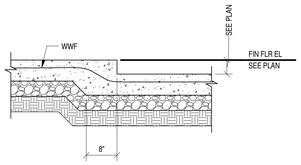
12 B7
3/4" = 1'-0"



13 B8
3/4" = 1'-0"



14 B9
3/4" = 1'-0"



15 TYPICAL RECESSED SLAB DETAIL
3/4" = 1'-0"

BASE PLATE DETAILS

Project Name

Enter address here

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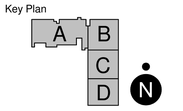

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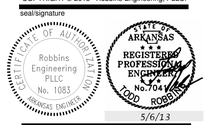

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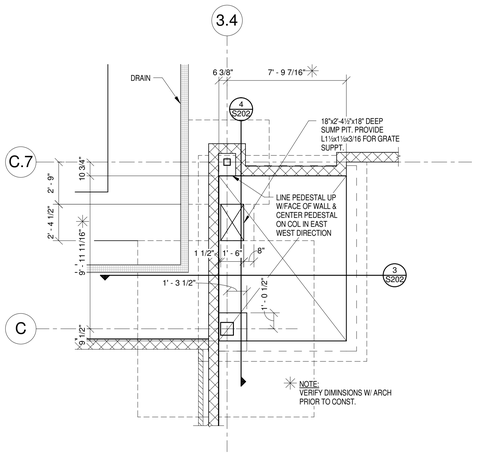
UCA project number	UCA-13-130

STANDARD FOUNDATION SECTIONS

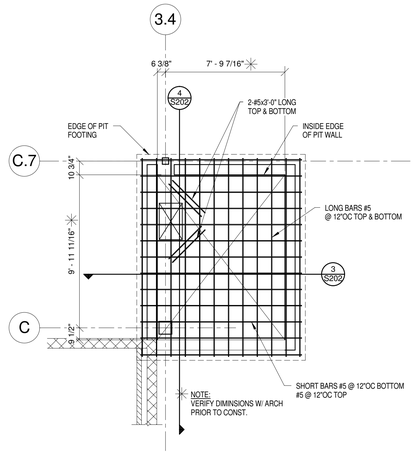
sheet number

S201

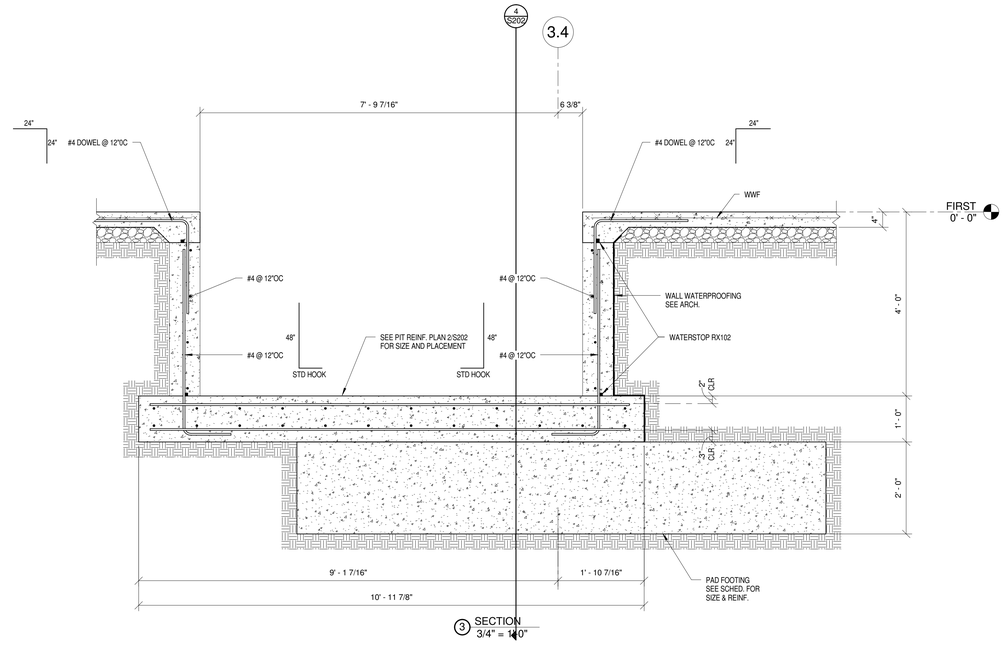
5/7/2013 8:03:00 AM



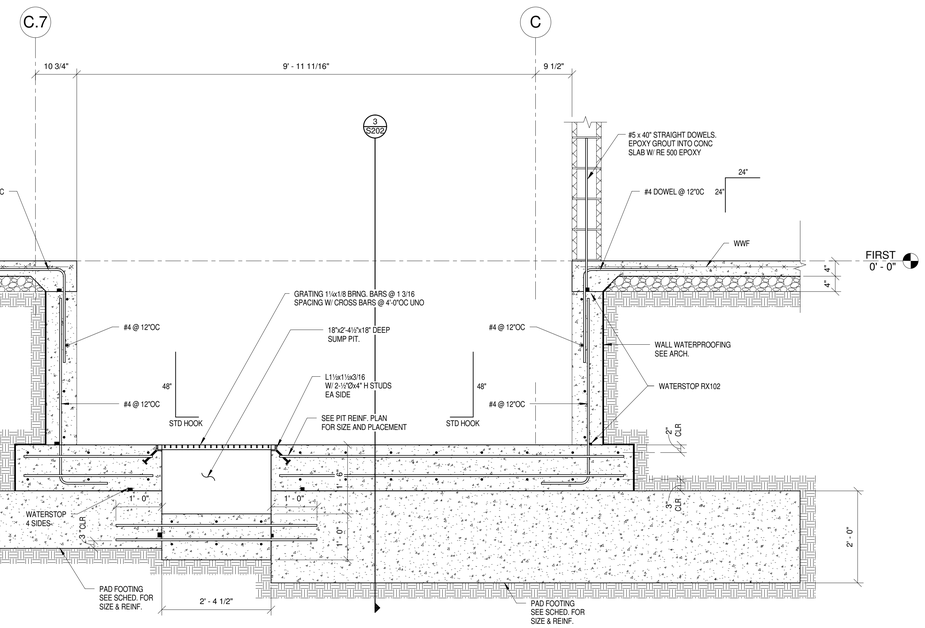
1 POOL EQUIP PIT PLAN
1/4" = 1'-0"



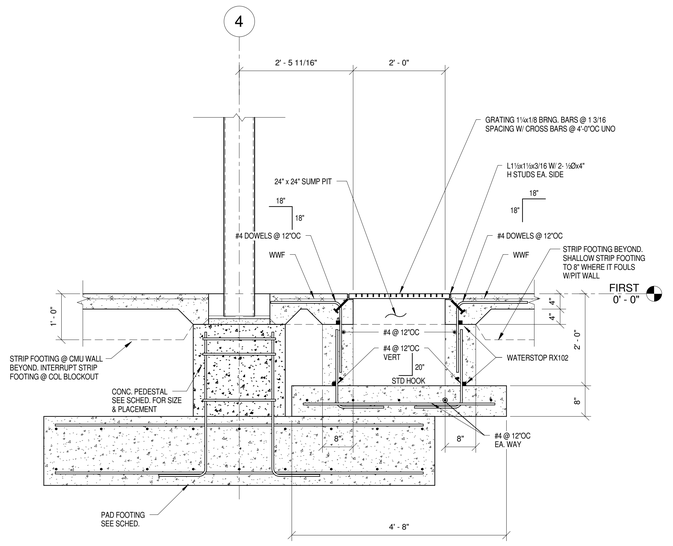
2 POOL EQUIP PIT REINF. PLAN
1/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"

5/7/2013 8:03:03 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

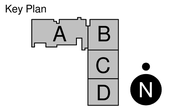
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

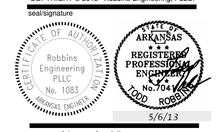
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



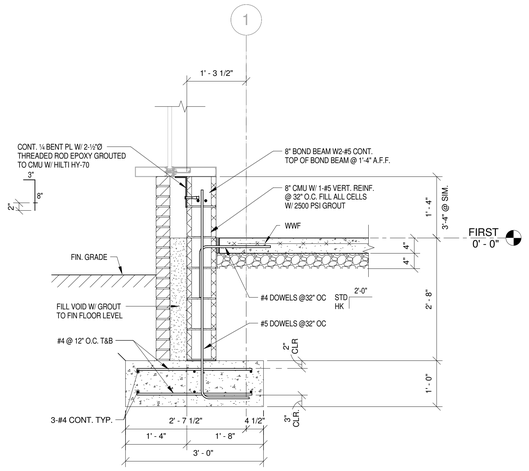
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

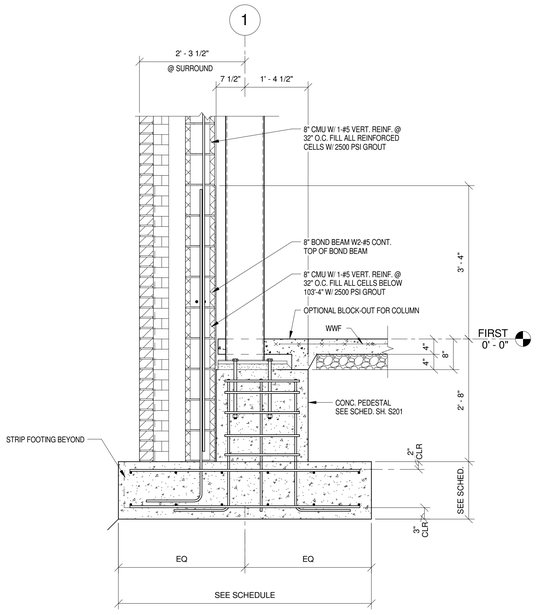
FOUNDATION SECTIONS

sheet number

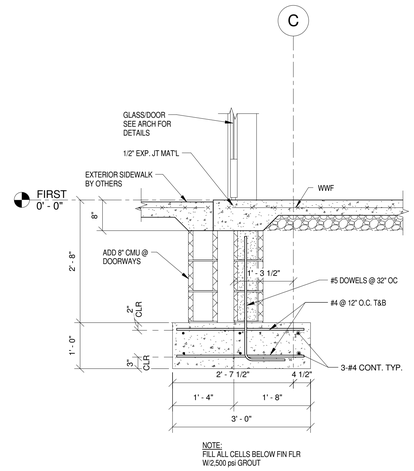
S202



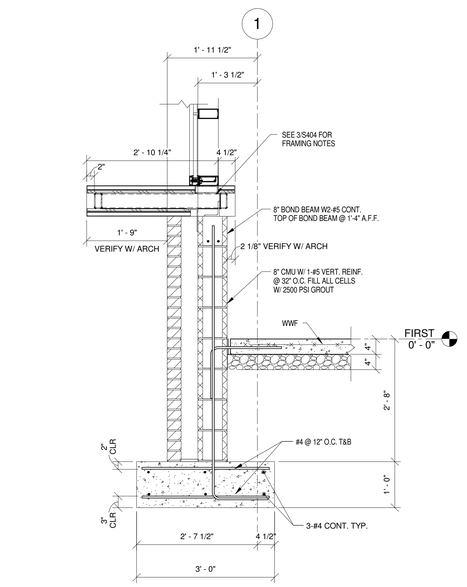
1 SECTION
3/4" = 1'-0"



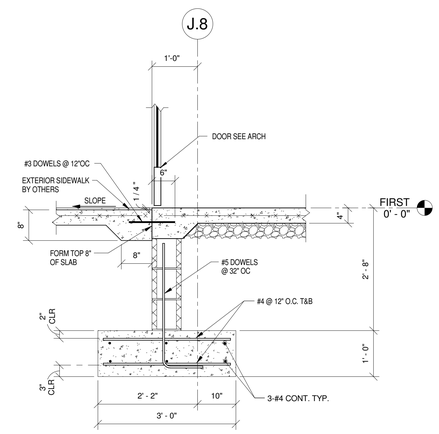
2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

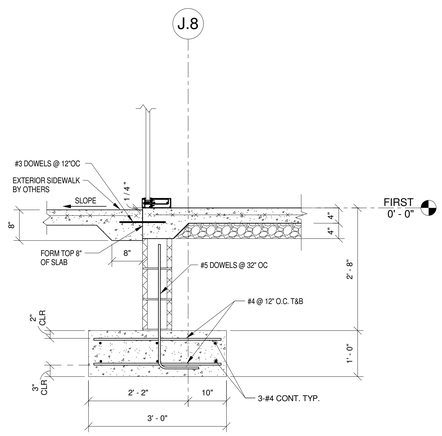


4 SECTION
3/4" = 1'-0"



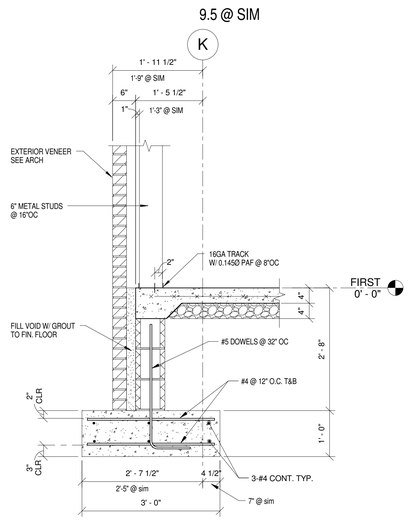
NOTE:
FILL ALL CELLS BELOW FIN FLR
W/2,500 psi GROUT

5 SECTION
3/4" = 1'-0"



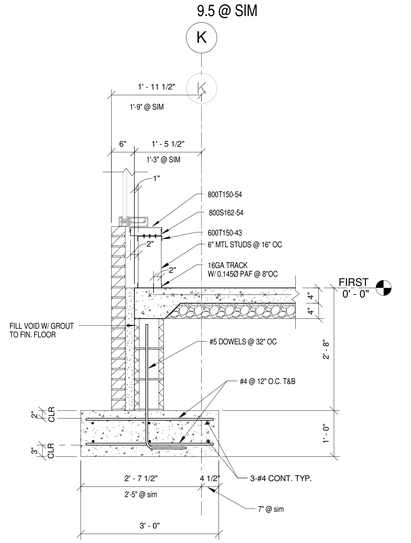
NOTE:
FILL ALL CELLS BELOW FIN FLR
W/2,500 psi GROUT

6 SECTION
3/4" = 1'-0"



NOTE:
FILL ALL CELLS BELOW FIN FLR
W/2,500 psi GROUT

7 SECTION
3/4" = 1'-0"



NOTE:
FILL ALL CELLS BELOW FIN FLR
W/2,500 psi GROUT

8 SECTION
3/4" = 1'-0"

5/7/2013 8:03:08 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
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Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
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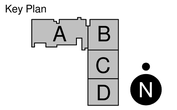
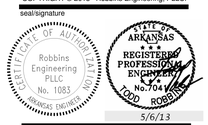
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



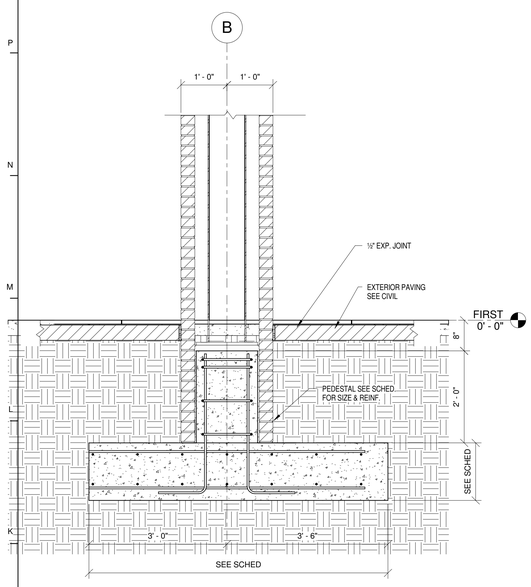
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

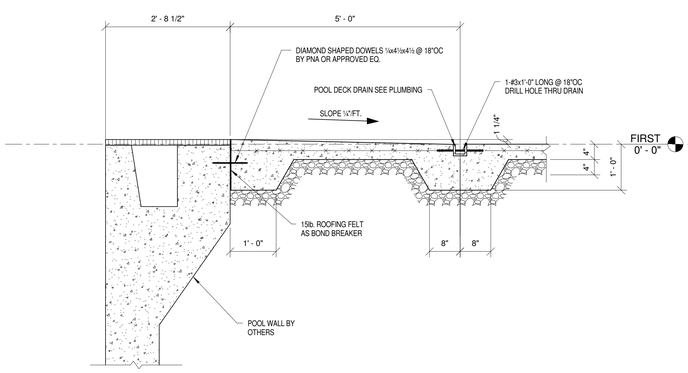
FOUNDATION SECTIONS

sheet number

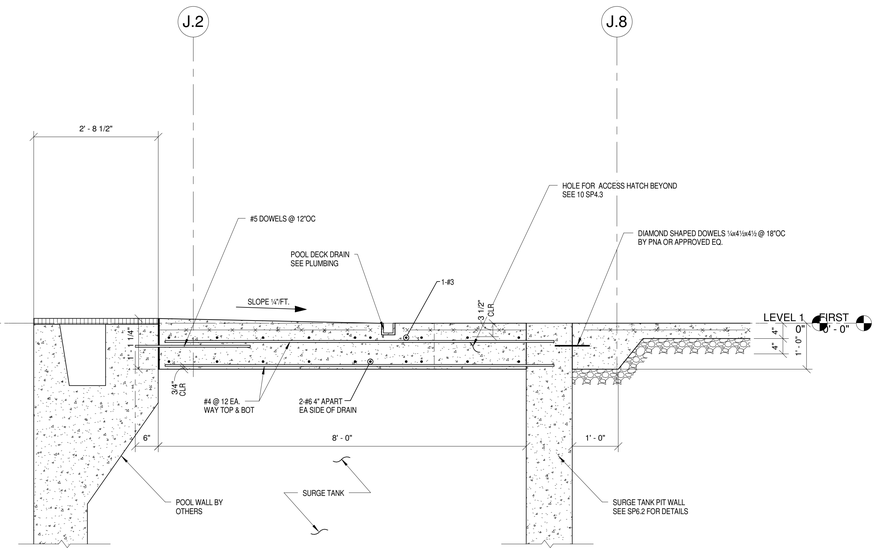
S203



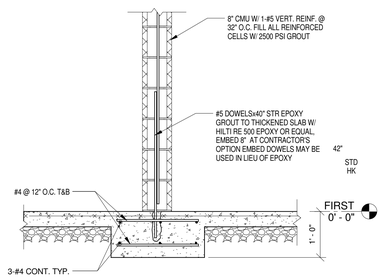
1 SECTION
3/4" = 1'-0"



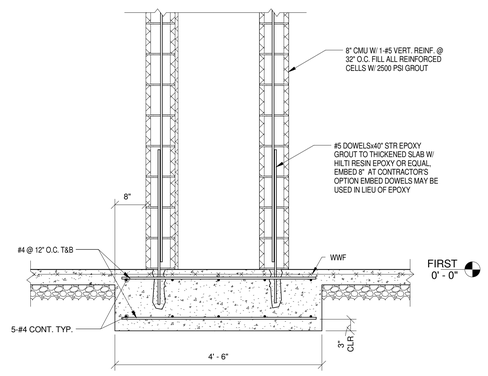
2 SECTION
3/4" = 1'-0"



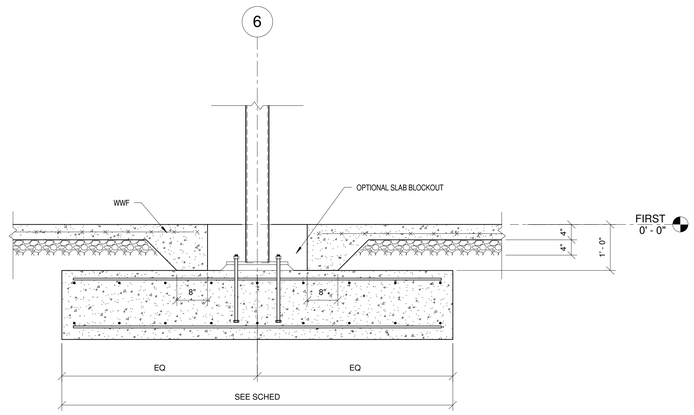
3 SECTION
3/4" = 1'-0"



DETAIL - THICKENED SLAB AT CMU PARTITIONS
4 3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"

5/7/2013 8:03:11 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

MEP engineer:
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structural engineer:
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10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
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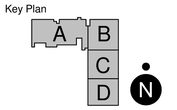
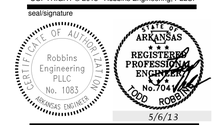
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



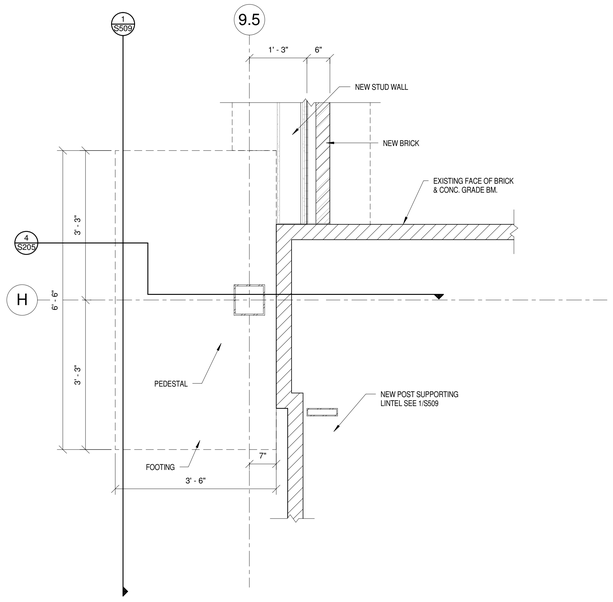
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

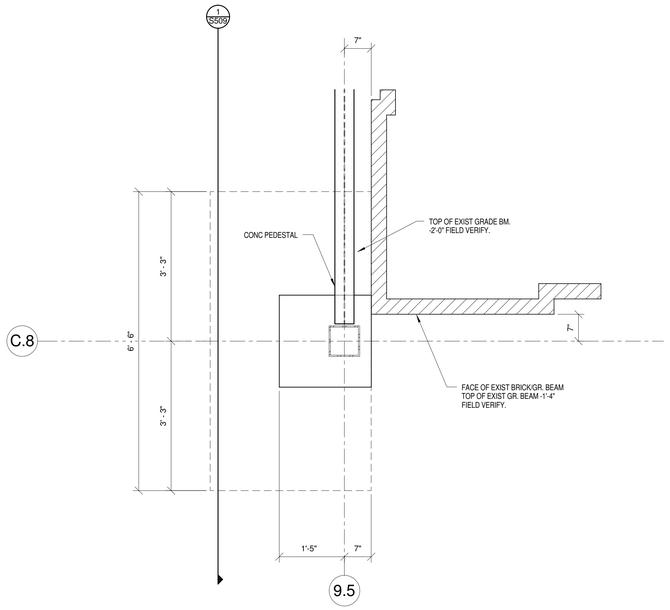
FOUNDATION SECTIONS

sheet number

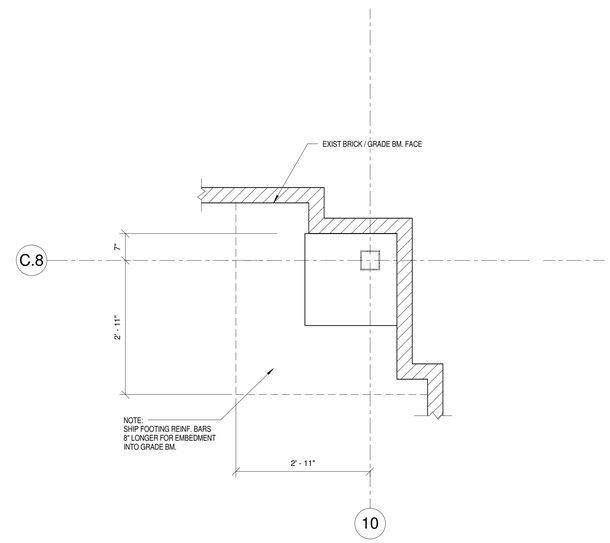
S204



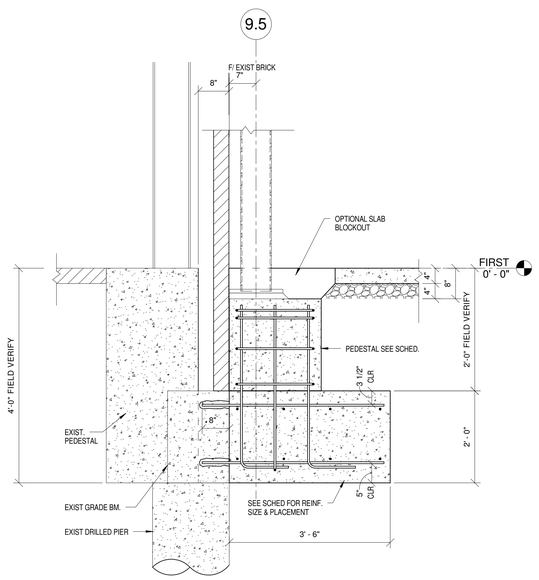
1 ENLARGED PLAN
3/4" = 1'-0"



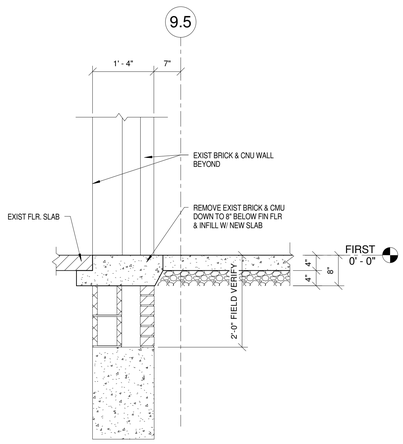
2 ENLARGED PLAN
3/4" = 1'-0"



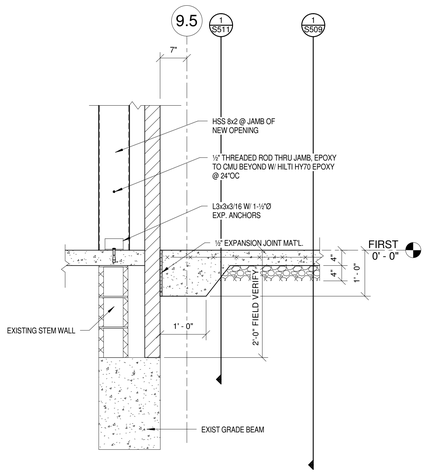
3 ENLARGED PLAN
3/4" = 1'-0"



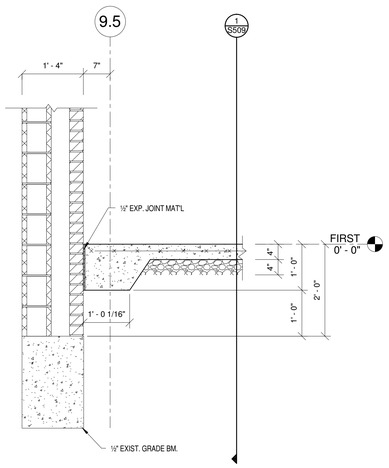
4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"

5/7/2013 8:03:15 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
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300 West 22nd Street
Kansas City, Missouri 64108
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Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
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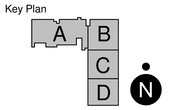
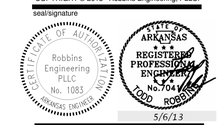
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



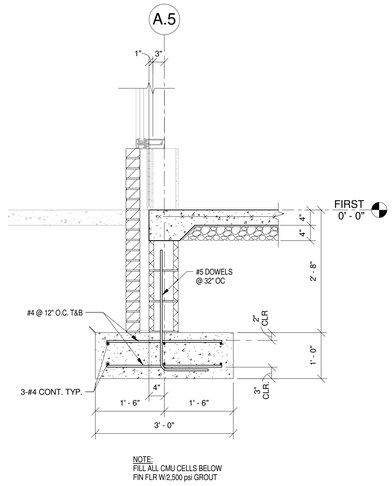
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

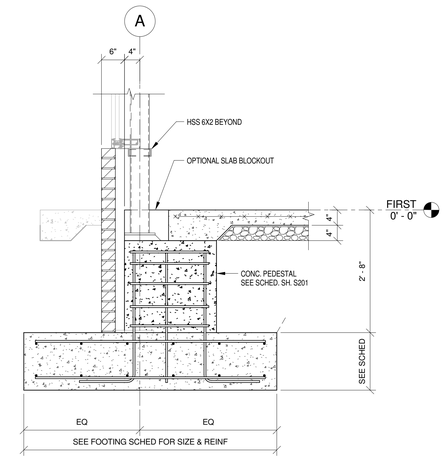
FOUNDATION SECTIONS

sheet number

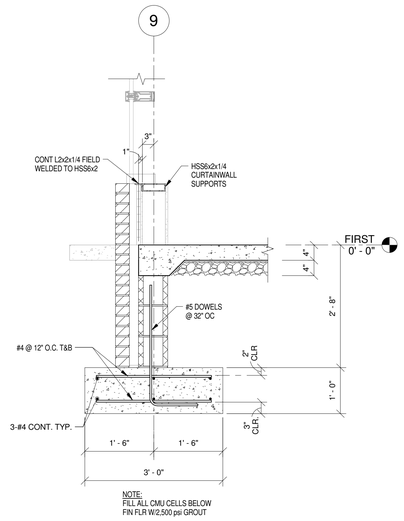
S205



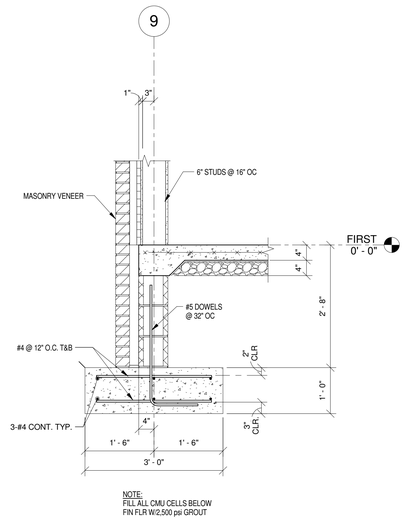
1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"

5 SECTION
3/4" = 1'-0"

6 SECTION
3/4" = 1'-0"

7 SECTION
3/4" = 1'-0"

8 SECTION
3/4" = 1'-0"

5/7/2013 8:03:20 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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aquatics consultant:
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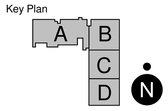
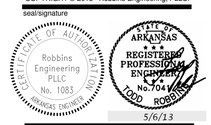
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



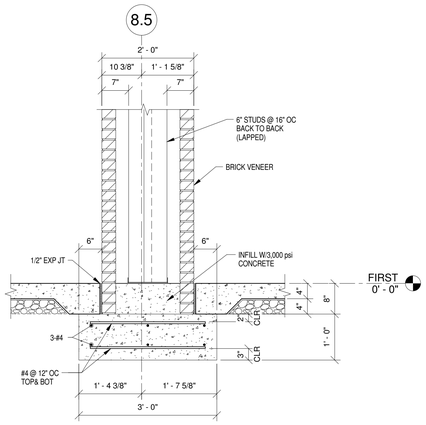
rev	date	description
	5/6/13	

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

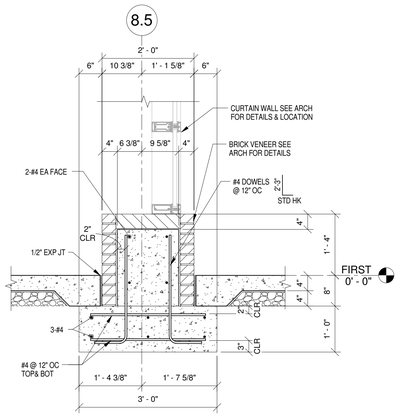
FOUNDATION SECTIONS

sheet number

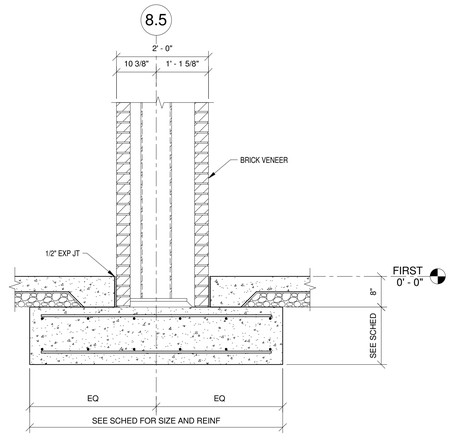
S206



1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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design architect:
360 Architecture
300 West 22nd Street
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P: (816) 472-2000

MEP engineer:
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structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
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civil engineer & landscape architect:
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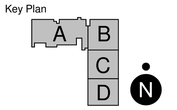
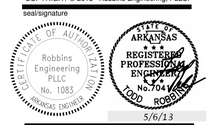
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



5/6/13

rev date description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

FOUNDATION SECTIONS

sheet number

S207

5/7/2013 8:03:22 AM

1. FLOOR SLAB CONSTRUCTION (TYPE 1): EL. VARIES (SEE SECTIONS) AFF (TYPICAL U.N.O.)

1A. FLOOR SLAB: 4½" NORMAL WT. CONCRETE MEASURED FROM BOTTOM OF DECK. REINF. W6x6-W2.9xW2.9 WWF.

1B. FLOOR DECK: 2" 20GA. GALV. COMPOSITE FLOOR DECK. ATTACH FLOOR DECK WITH 36/4 PATTERN AT END LAPS & INTERMEDIATE SUPPORTS. ¾"Ø PUDDLE WELDS AND 6" SIDELAP FASTENERS (#10 TEK), OR SEAM WELD PER SPAN.

2. FLOOR SLAB CONSTRUCTION (TYPE 2)@ STAIR LANDINGS):

2A. FLOOR SLAB: NORMAL WT. CONCRETE THICKNESS VARIES. REINF. W6x6-W2.9xW2.9 WWF.

2B. FLOOR DECK: 1" 22GA. GALV. NON-COMPOSITE FLOOR DECK. ATTACH WITH 33/4 PATTERN AT END LAPS & INTERMEDIATE SUPPORTS. ¾" WELD OR EQUIVALENT, AND ATTACH SIDELAPS @ 4 PLACES EQUALLY SPACED WITH #10 SCREWS.

3. LOW ROOF DECK (TYPE 3) SEE SECTIONS FOR DBE

ROOF DECK: 1½ x 22 GA WIDE RIB GALV. DECK. ATTACH W/ 36/5 PATTERN @ INTERMIDIATE SUPPORTS W/ ¾" PUDDLE WELDS OR EQUIVALANT. ATTACH SIDELAPS @ 18" OC W/#10 SCREWS. ATTACH PERIMETER EDGES @ 6" OC W/ ¾" PUDDLE WELDS OR EQUIVALANT.

4. T.O.S. REFERENCE ELEVATION AT 4½" BELOW FINISH FLOOR EXCEPT WHERE NOTED DIFFERENTLY ON SECTIONS.

5. VERIFY ELEVATOR DIMENSIONS AND LOCATION OF ELEVATOR WITH ARCH AND ELEVATOR MANUFACTURER PRIOR TO FABRICATION & DETAILING. VERIFY GUIDERAIL LOCATION.

6. VERIFY SIZE AND LOCATION OF MECHANICAL OPENINGS THRU FLOOR SLAB WITH MECHANICAL DWGS.

7. FOR FRAMING AROUND WALL OPENINGS, PROVIDE DOUBLE STUD JAMBS & HEADERS.

8. SEE S401 & S402 FOR TYPICAL FRAMING DETAILS.

9. NOTE: FILL ALL CELLS OF CMU WALLS

1 PARTIAL FRAMING PLAN
1/8" = 1'-0"

5/7/2013 8:03:23 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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P: (501) 370-9207

design architect:
360 Architecture
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P: (816) 472-2000

MEP engineer:
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structural engineer:
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civil engineer & landscape architect:
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P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan

seal/signature

CERTIFICATE OF AUTHORIZATION Robbins Engineering PLLC No. 1083 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 7041 TODD ROBBINS

5/6/13

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

PARTIAL SECOND FLOOR FRAMING PLAN

sheet number

S301

1. FLOOR SLAB CONSTRUCTION (TYPE 1): EL. VARIES (SEE SECTIONS) AFF (TYPICAL U.N.O.)

1A. FLOOR SLAB: 4½" NORMAL WT. CONCRETE MEASURED FROM BOTTOM OF DECK. REINF. W/6x6-W2.9xW2.9 WWF.

1B. FLOOR DECK: 2" 20GA. GALV. COMPOSITE FLOOR DECK. ATTACH FLOOR DECK WITH 36/4 PATTERN AT END LAPS & INTERMEDIATE SUPPORTS. ¾"Ø PUDDLE WELDS AND 6" SIDELAP FASTENERS (#10 TEK), OR SEAM WELD PER SPAN.

2. FLOOR SLAB CONSTRUCTION (TYPE 2)@ STAIR LANDINGS):

2A. FLOOR SLAB: NORMAL WT. CONCRETE THICKNESS VARIES. REINF. W/6x6-W2.9xW2.9 WWF.

2B. FLOOR DECK: 1" 22GA. GALV. NON-COMPOSITE FLOOR DECK. ATTACH WITH 33/4 PATTERN AT END LAPS & INTERMEDIATE SUPPORTS. ¾" WELD OR EQUIVALENT, AND ATTACH SIDELAPS @ 4 PLACES EQUALLY SPACED WITH #10 SCREWS.

3. LOW ROOF DECK (TYPE 3) SEE SECTIONS FOR DBE

ROOF DECK: 1½ x 22 GA WIDE RIB GALV. DECK. ATTACH W/ 36/5 PATTERN @ INTERMIDIATE SUPPORTS W/ ¾" PUDDLE WELDS OR EQUIVALANT. ATTACH SIDELAPS @ 18" OC W/#10 SCREWS. ATTACH PERIMETER EDGES @ 6" OC W/ ¾" PUDDLE WELDS OR EQUIVALANT.

4. T.O.S. REFERENCE ELEVATION AT 4½" BELOW FINISH FLOOR EXCEPT WHERE NOTED DIFFERENTLY ON SECTIONS.

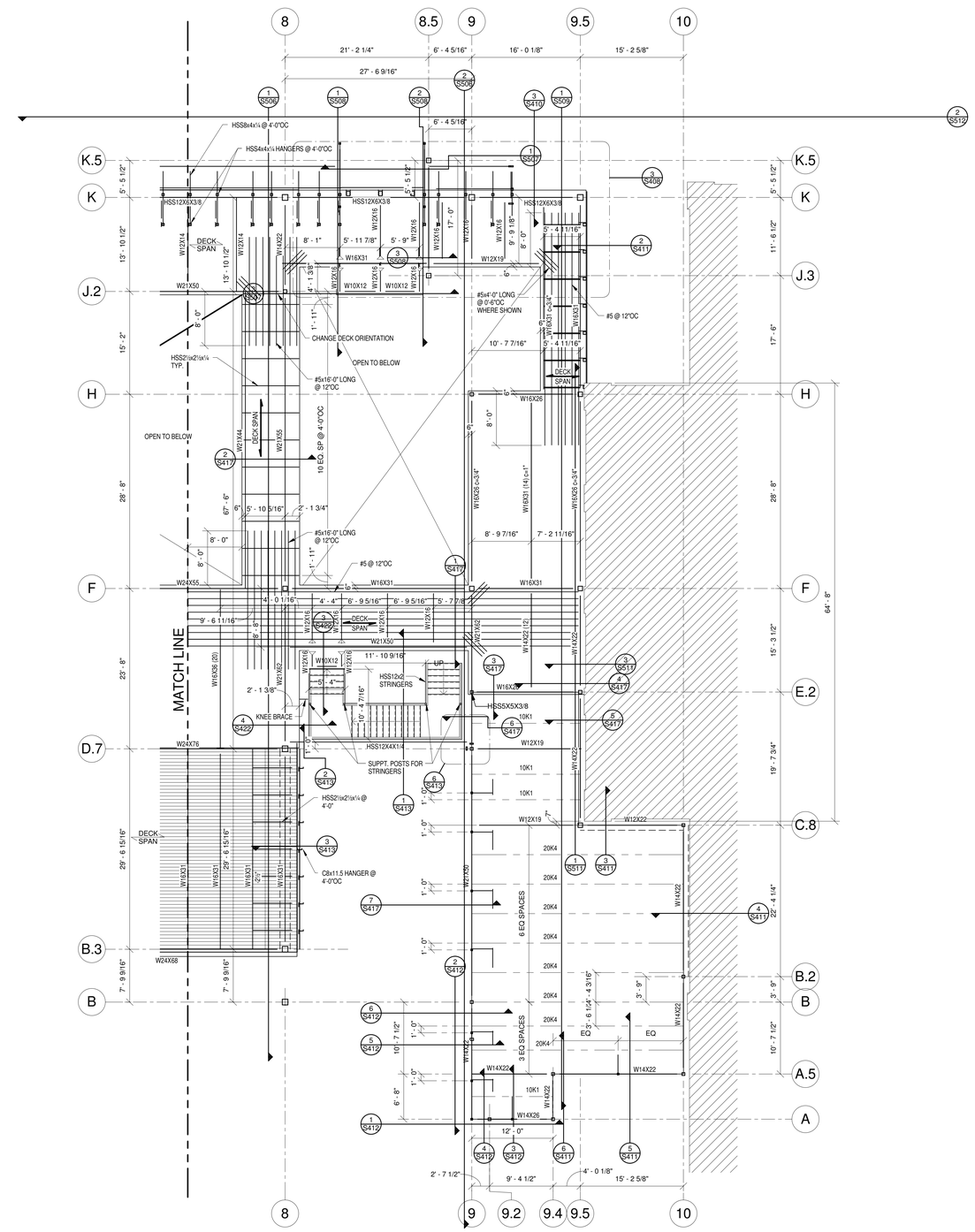
5. VERIFY ELEVATOR DIMENSIONS AND LOCATION OF ELEVATOR WITH ARCH AND ELEVATOR MANUFACTURER PRIOR TO FABRICATION & DETAILING. VERIFY GUIDERAIL LOCATION.

6. VERIFY SIZE AND LOCATION OF MECHANICAL OPENINGS THRU FLOOR SLAB WITH MECHANICAL DWGS.

7. FOR FRAMING AROUND WALL OPENINGS, PROVIDE DOUBLE STUD JAMBS & HEADERS.

8. SEE S401 & S402 FOR TYPICAL FRAMING DETAILS.

9. NOTE: FILL ALL CELLS OF CMU WALLS



1 PARTIAL FRAMING PLAN
1/8" = 1'-0"

5/7/2013 8:03:24 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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P: (501) 450-5000

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civil engineer & landscape architect:
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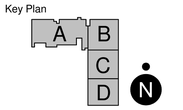
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature

CERTIFICATE OF AUTHORIZATION Robbins Engineering PLLC No. 1083 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 7041 JOHN ROBBINS

5/6/13

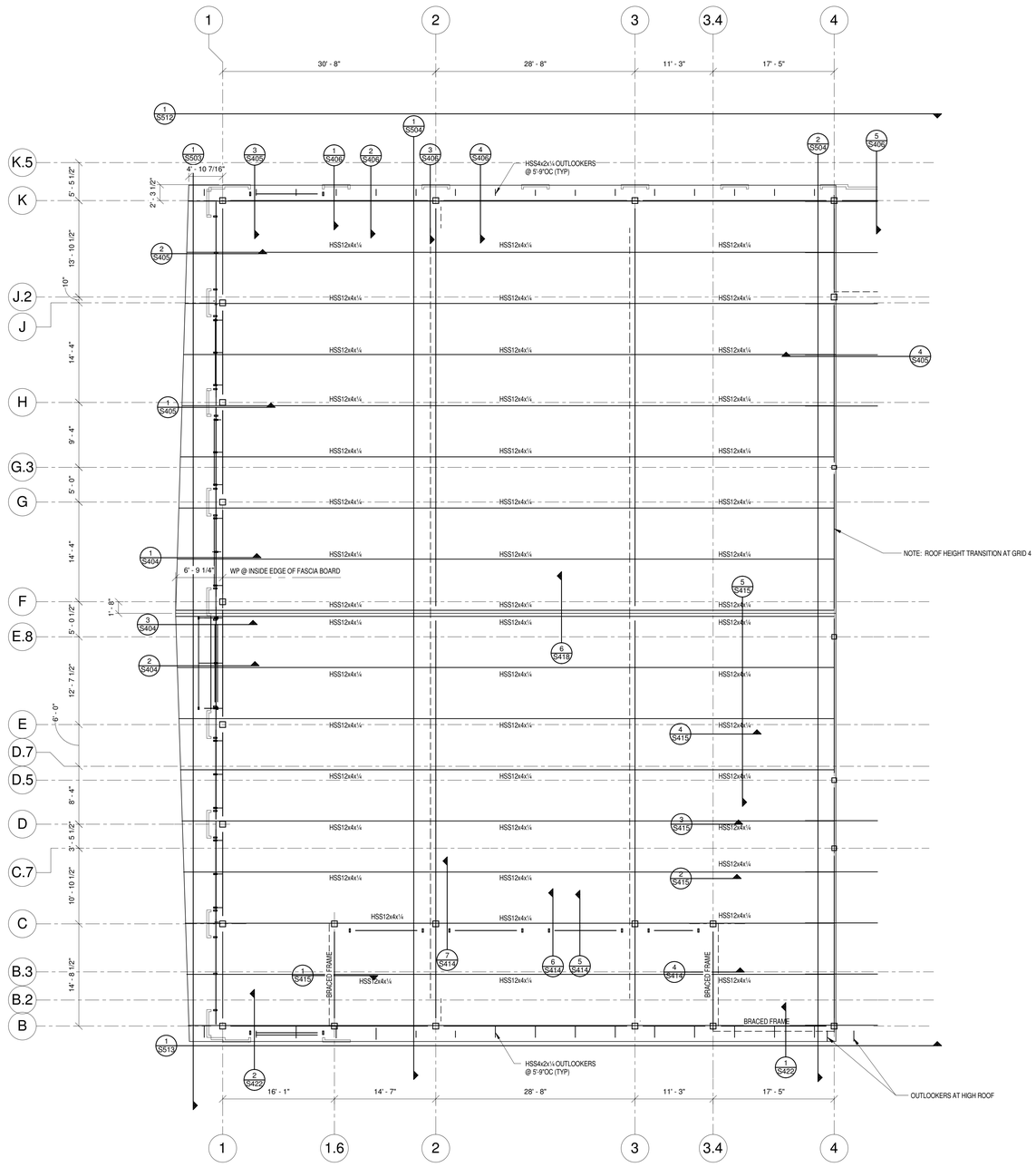
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

PARTIAL SECOND FLOOR FRAMING PLAN

sheet number

S302



ROOF DECK CONSTRUCTION:

1. ROOF DECK SHALL BE 1 1/2" 20/20 GAGE ACOUSTICAL CELLULAR DECK. ATTACH WITH 36/5 PATTERN 4- #10 SIDELAP FASTENERS AND 5/8" PUDDLE WELDS.
2. DECK ELEVATIONS VARY SEE SECTIONS.

1 Low Roof Framing Plan
1/8" = 1'-0"

5/7/2013 8:03:25 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
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P: (501) 450-5000

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P: (816) 472-2000

MEP engineer:
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P: (501) 664-7575

civil engineer & landscape architect:
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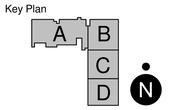
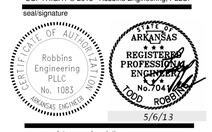
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



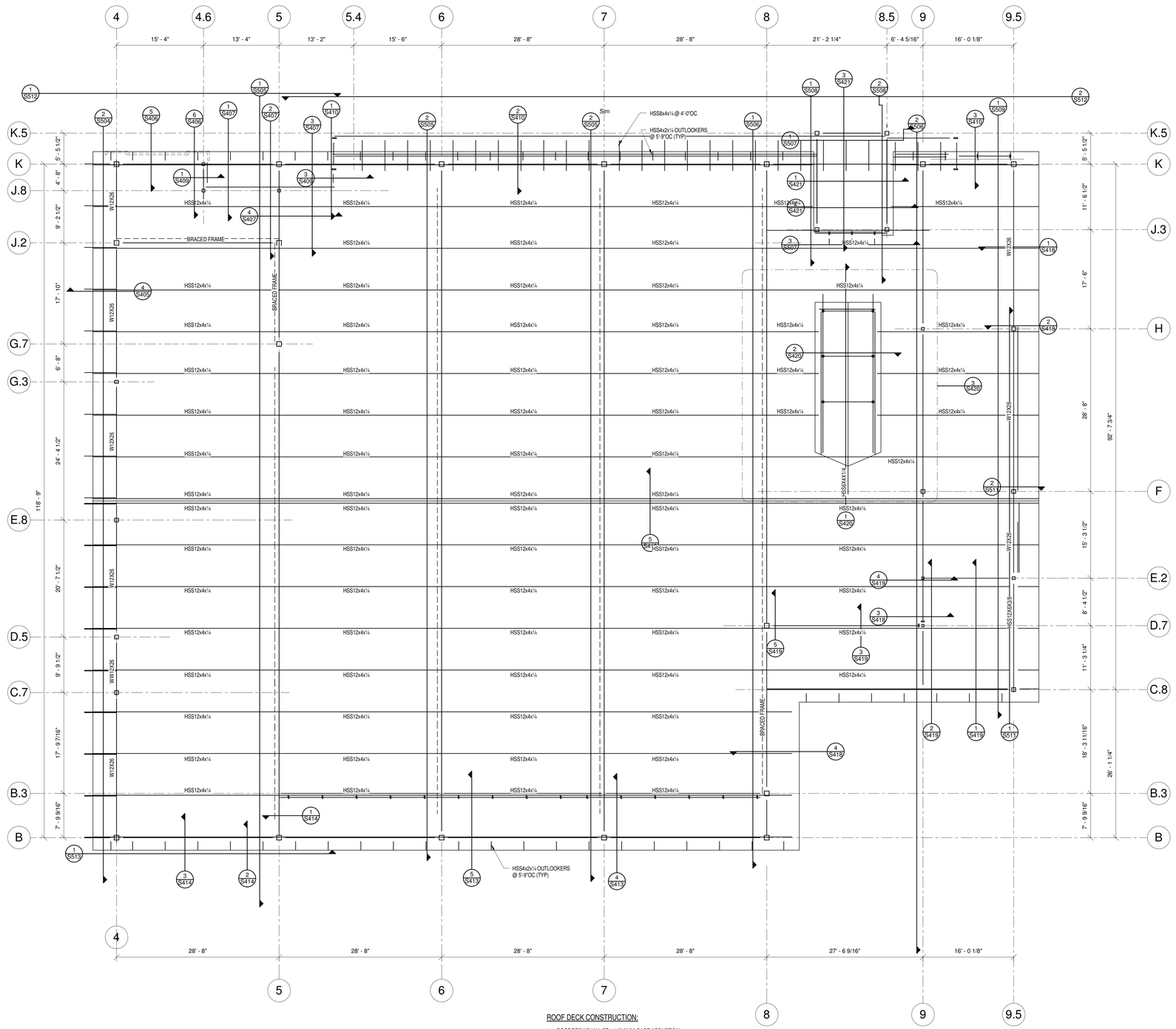
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

LOW ROOF FRAMING PLAN

sheet number

S303



ROOF DECK CONSTRUCTION:

1. ROOF DECK SHALL BE 1 1/2" 20/20 GAGE ACOUSTICAL CELLULAR DECK. ATTACH WITH 36/5 PATTERN 4- #10 SIDELAP FASTENERS AND 5/8" PUDDLE WELDS.
2. DECK ELEVATIONS VARY SEE SECTIONS.

N

1 High Roof Framing Plan
1/8" = 1'-0"

5/7/2013 8:03:27 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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P: (501) 450-5000

lead architect:
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design architect:
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structural engineer:
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P: (501) 664-7575

civil engineer & landscape architect:
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P: (501) 221-7880

aquatics consultant:
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10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan

seal/signature

Robbins Engineering PLLC No. 1083

TODD ROBBINS No.7041

5/6/13

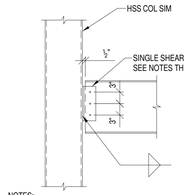
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

HIGH ROOF FRAMING PLAN

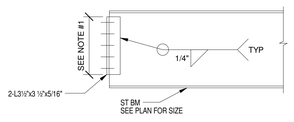
sheet number

S304



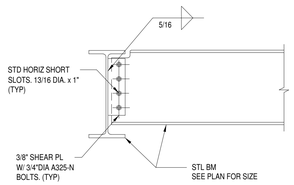
NOTES:
1. 3/4"DIA. A325N BOLTS.
2. PL THICKNESS = 3/8"
3. WELD SIZE = 5/16"
4. SHORT SLOTTED HOLES PERMITTED
   OVERSIZED AND LONG SLOTTED HOLES PROHIBITED.
5. 1 1/4" MIN HORIZ & VERT EDGE DISTANCE
   (CENTER OF STANDARD HOLE TO EDGE OF BEAM OR ANGLE).
6. 1 3/8" MIN HORIZ EDGE DISTANCE
   (CENTER OF SHORT SLOTTED HOLE TO EDGE OF BEAM OR ANGLE).
7. 1 1/4" MIN VERT EDGE DISTANCE
   (CENTER OF SHORT SLOTTED HOLE TO EDGE OF BEAM OR ANGLE).
8. USE FOR BEAM SIZES UP TO W21, FOR W24 BEAMS AND LARGER.
   USE WT SHEAR CONNECTION.

① SHEAR CONN BM TO COL
3/4" = 1'-0"



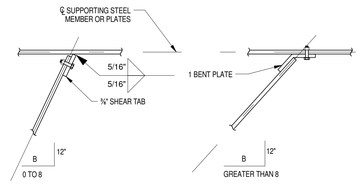
NOTE:
1. PROVIDE MAXIMUM NUMBER OF BOLTS AS DEPTH ALLOWS
   EXCEPT @ STAGGERED CLIP ANGLE CONN @ COLUMN WEBS.

② DETAIL - TYP DOUBLE ANGLE FRAMED
CONN-WELDED
3/4" = 1'-0"



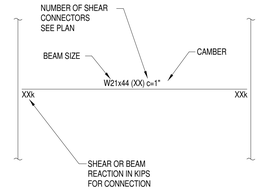
NOTES:
1. PROVIDE MAXIMUM NUMBER OF BOLTS AS THE WEB DEPTH ALLOWS.
2. SHEAR PL TO BE CLEARLY MARKED TO IDENTIFY.
3. OVERSIZED & LONG SLOTTED HOLES NOT PERMITTED.

③ SHEAR CONN BM TO BM
3/4" = 1'-0"

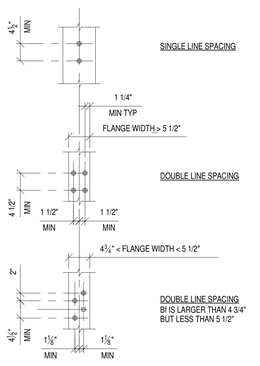


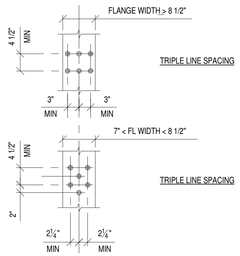
NOTES:
SHOP CONNECTIONS TO BE H.S. BOLTED
OR WELDED AT FABRICATOR'S OPTION.

④ DETAIL - TYP SKEWED SINGLE SHEAR
PLATE BM CONN
3/4" = 1'-0"



⑤ COMPOSITE BM DESIGNATION
3/4" = 1'-0"

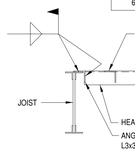




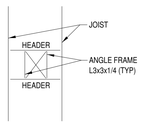
NOTES:
1. USE SINGLE LINE SPACING EXCEPT WHERE FIELD CONDITIONS
   REQUIRE MULTIPLE LINES.
2. MAX STUD SPACING 36" OR 8" DIAM.
3. START STUDS MIN 4" FROM EDGE OF COL.
4. MIN. SHEAR STUD DIA. =3/4"

⑥ SHEAR STUD LAYOUT
3/4" = 1'-0"

HEADER SCHEDULE	
JOIST SPACING	SIZE
UP TO 4'-6"	L3x3x1/4
4'-6" TO 6'-6"	L3 1/2x3x1/4-LLV
6'-7" TO 8'-0"	L4x3x5/16-LLV



SECTION



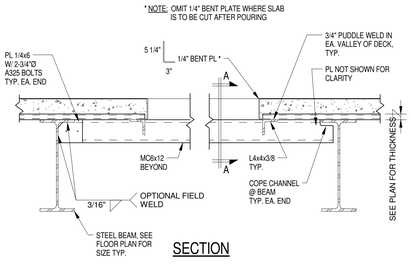
PLAN

NOTE:
VERIFY EXACT NUMBER, SIZE & LOCATION OF OPENINGS
W/ ARCHITECTURAL & MECHANICAL.

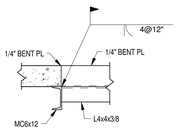
STEEL JOIST FRAMING

⑦ OPENING THRU ROOF DECK
3/4" = 1'-0"

* NOTE: OMIT 1/4" BENT PLATE WHERE SLAB
IS TO BE CUT AFTER POURING



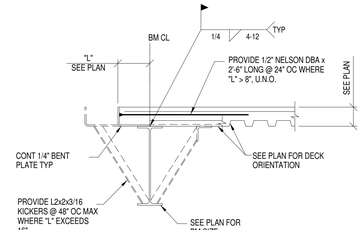
SECTION



NOTE:
PROVIDE SUPPORTS FOR OPENINGS
WITH ONE DIMENSION GREATER THAN 24". VERIFY
OPENINGS WITH MECH. DRAWINGS.

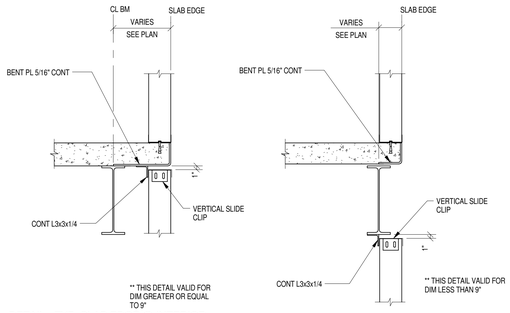
SECTION A-A

⑧ DETAIL - TYP. OPENING THRU FLOOR
DECK
3/4" = 1'-0"

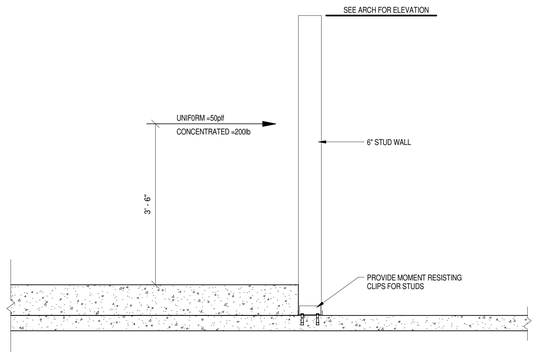


NOTES:
1. STANDARD ANGLE SIZES MAY BE USED IN LIEU OF BENT PLATES
   WHEN GEOMETRY PERMITS.
2. WHERE CURVED BENT PLATES OCCUR, USE TWO FLAT PLATES
   WELDED AT JOINT W/ ¼" FILLET WELD (4@12)

⑨ SLAB EDGE DETAIL
3/4" = 1'-0"



⑩ DETAIL - TYP. SLAB EDGE @ INTERIOR
OPENINGS
3/4" = 1'-0"



⑪ DETAIL-CANTILEVERED WALL EXISTING
RAMP
3/4" = 1'-0"

RE: A112b BETWEEN ACTIVITIES AREA 210 AND TRACK 215

NOTE:
LATERAL LOADS ARE SEPERATE LOADINGS
NOT TO BE APPLIED CONCURRENTLY.

5/7/2013 8:03:28 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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P: (501) 450-5000

lead architect:
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Little Rock, Arkansas 72201
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design architect:
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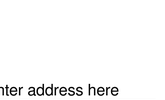
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

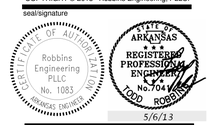
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



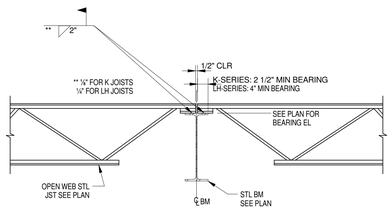
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

STANDARD FRAMING
SECTIONS

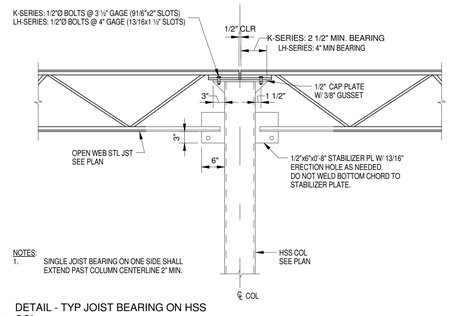
sheet number

S401



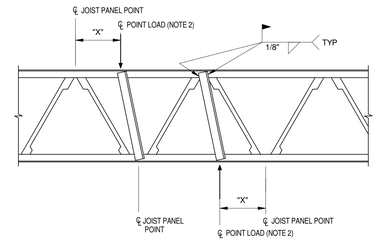
NOTES:
1. WHERE BEAM FLANGE IS < 5 ½", STAGGER JOISTS 6" TO OBTAIN MIN BEARING. DETAIL ALSO APPLIES TO SINGLE JOIST BEARING ON ONE SIDE.
2.

1 DETAIL - TYP JOIST BEARING ON STL BEAMS
3/4" = 1'-0"



NOTES:
1. SINGLE JOIST BEARING ON ONE SIDE SHALL EXTEND PAST COLUMN CENTERLINE 2" MIN.

2 DETAIL - TYP JOIST BEARING ON HSS COL
3/4" = 1'-0"



NOTES:
1. POINT LOADS ARE NOT PERMITTED EXCEPT WHERE INDICATED ON STRUCTURAL DRAWINGS OR SPECIFICATIONS.
2. FOR POINT LOADS IN EXCESS OF 250#, PROVIDE 2"x2"x¼" STRUT WHEN DISTANCE "X" EXCEEDS 4'.
3. IF STRUT FOULS WITH EXISTING DOUBLE ANGLE WEBS, A 1"Ø ROD MAY BE PLACED BETWEEN JOIST CHORDS FOR BOTTOM CHORD LOADS. CONTACT STRUCTURAL ENGINEER FOR ALTERNATIVE STRUT CONFIG FOR TOP CHORD LOADS.

3 DETAIL - TYP CONCENTRATED LOAD @ JOISTS
3/4" = 1'-0"

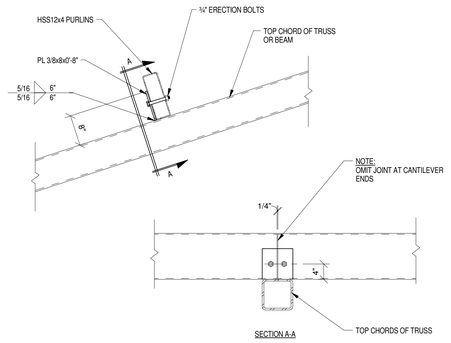
LOOSE STEEL LINTEL SCHEDULE (LSL)

CLEAR OPENING NOT TO EXCEED	LINTEL	BEARING EA END	REMARKS
6'-4" OR LESS	L3½x3½x5/16	8"	
OVER 6'-4" THRU 7'-4"	L4x3½x5/16 LLV	8"	
OVER 7'-4" THRU 9'-4"	L6x3½x5/16 LLV	8"	
OVER 9'-4" THRU 10'-8"	L7x4x7/16 LLV	8"	

LINTEL ANGLES

NOTES:
1. USE THIS SCHEDULE UNLESS LINTEL SIZES ARE NOTED OTHERWISE ON THE DRAWINGS OR DETAILS.
2. GALVANIZE ALL LINTELS EXPOSED TO EXTERIOR CONDITIONS.

4 LOOSE STEEL LINTEL SCHEDULE
3/4" = 1'-0"



5 DETAIL - TYP PURLIN TO TRUSS / BEAM
3/4" = 1'-0"

5/7/2013 8:03:28 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
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MEP engineer:
TME, INC.
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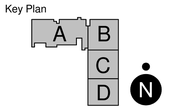
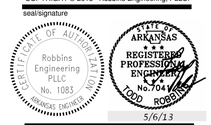
Key Plan



seal/signature



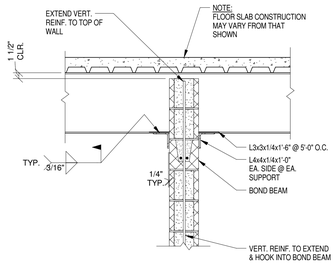
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

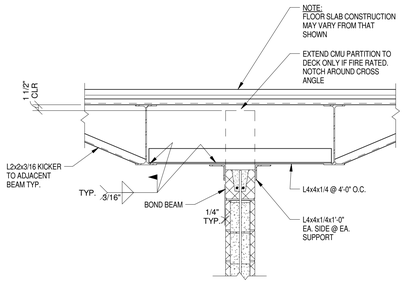
STANDARD FRAMING DETAILS

sheet number

S402

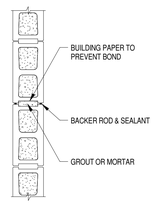


WALL PERPINDICULAR TO BEAMS

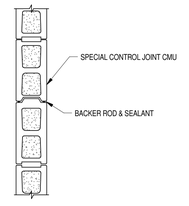


WALL PARALLEL TO BEAMS

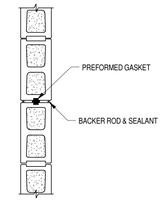
1 DETAIL - TYP. CMU PARTITION SUPPORT
3/4" = 1'-0"



TYP WALL CONTROL JOINT-OPTION 1



TYP WALL CONTROL JOINT-OPTION 2



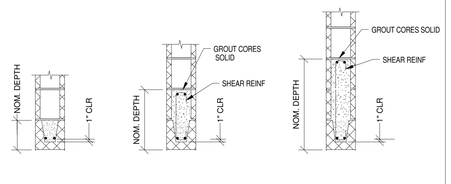
TYP WALL CONTROL JOINT-OPTION 3

NOTES:
1. SEE ARCH DRAWINGS FOR CONTROL JOINT LOCATIONS. IF CONTROL JOINTS ARE NOT LOCATED ON ARCHITECTURAL DRAWINGS PLACE @ SPACINGS NOT EXCEEDING 30'-0" OC.

2 DETAIL - TYP. WALL CONTROL JOINT (WCJ)
3/4" = 1'-0"

MASONRY LINTEL SCHEDULE (ML)

CLEAR CMU OPENING NOT TO EXCEED	NOMINAL DEPTH	REINFORCEMENT	SHEAR REINF
4'-8"	8"	2-#4	NA
6'-8"	8"	2-#5	NA
8'-0"	16"	2-#5 T&B	NA
10'-0"	16"	2-#5 T&B	#3 @ 8" OC
12'-0"	24"	2-#6 T&B	#3 @ 8" OC



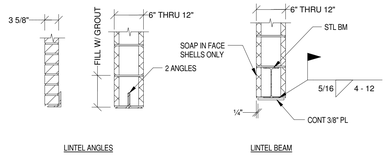
8" DEEP LINTEL | 16" DEEP LINTEL | 24" DEEP LINTEL

NOTES:
1. FOR SPANS 8'-0" AND LESS PROVIDE MINIMUM 8" BEARING. FOR SPANS GREATER THAN 8'-0" PROVIDE 16" BEARING @ JAMBS.
2. EXTEND BOTTOM REINF TO END OF BEARING EACH SIDE. TERMINATE TOP REINF W/ STD HOOK @ CONTROL JOINTS OR FREE EDGES.
3. PROVIDE SOLID GROUTED OR SOLID MASONRY JAMBS UNDER LINTEL EACH SIDE OF OPENING.
4. SPECIAL INSPECTION IS REQUIRED.
5. CONTROL OR EXPANSION JOINTS SHALL NOT BE PLACED @ BEARING POINTS OR WITHIN THE LINTEL.

3 MASONRY LINTEL SCHEDULE
3/4" = 1'-0"

LOOSE STEEL LINTEL SCHEDULE (LSL)

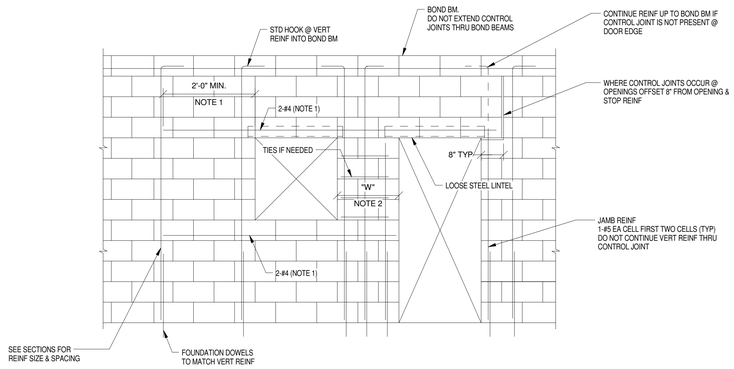
CLEAR OPENING NOT TO EXCEED	LINTEL	BEARING EA END	REMARKS
6'-4" OR LESS	L3½x3½x5/16	8"	
OVER 6'-4" THRU 7'-4"	L4x3½x5/16 LLV	8"	
OVER 7'-4" THRU 9'-4"	L5x3½x5/16 LLV	8"	
OVER 9'-4" THRU 10'-8"	L6x4x7/16 LLV OR W8x10	8"	



LINTEL ANGLES | LINTEL BEAM

NOTES:
1. USE THIS SCHEDULE UNLESS LINTEL SIZES ARE NOTED OTHERWISE ON THE DRAWINGS OR DETAILS.
2. PROVIDE SOLID REINFORCED CELLS AT EACH JAMB FOR OPENINGS LARGER THAN 6'-0"
3. GALVANIZE ALL LINTELS EXPOSED TO EXTERIOR CONDITIONS.

4 STEEL LINTEL SCHEDULE
3/4" = 1'-0"



NOTES:
1. PROVIDE 2-#4 BARS ABOVE & BELOW OPENINGS AND EXTEND 24" EA SIDE OF OPENING EXCEPT WHERE CONTROL JOINTS ARE LOCATED.
2. PROVIDE #3 TIES ⌐ AT 8" OC WHEN WIDTH "W" IS LESS THAN 48".
3. LOOSE STEEL LINTELS INDICATED, MASONRY LINTELS ARE SIMILAR.

5 DETAIL - TYP. WALL REINFORCEMENT
3/4" = 1'-0"

5/7/2013 8:03:29 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

MEP engineer:
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structural engineer:
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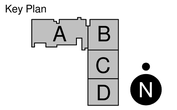
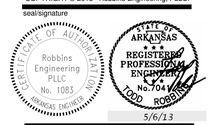
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



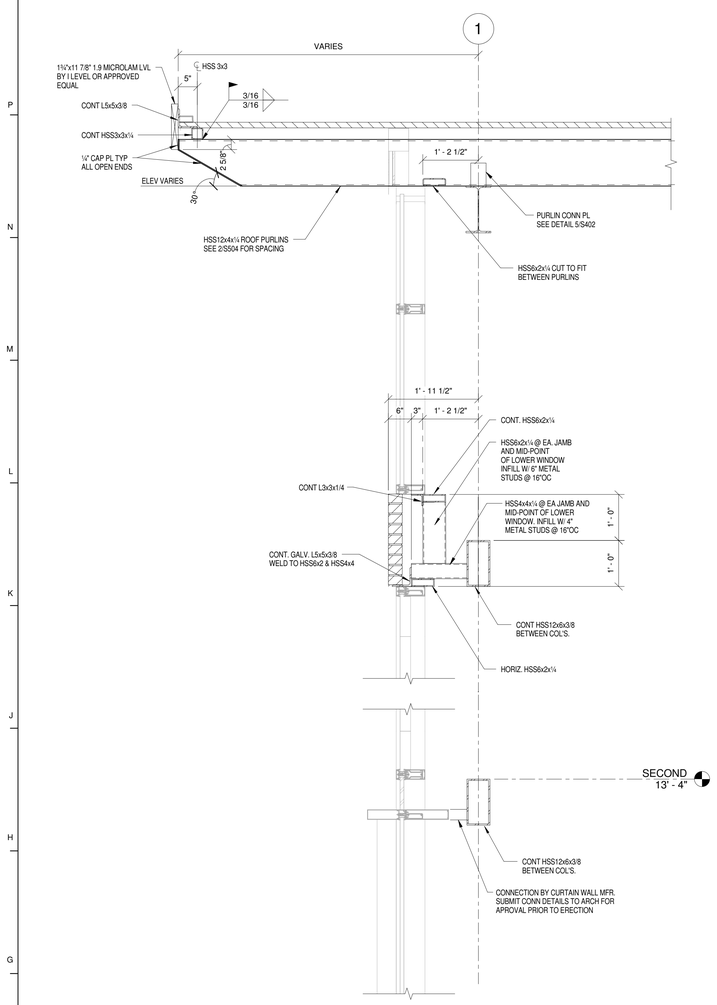
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

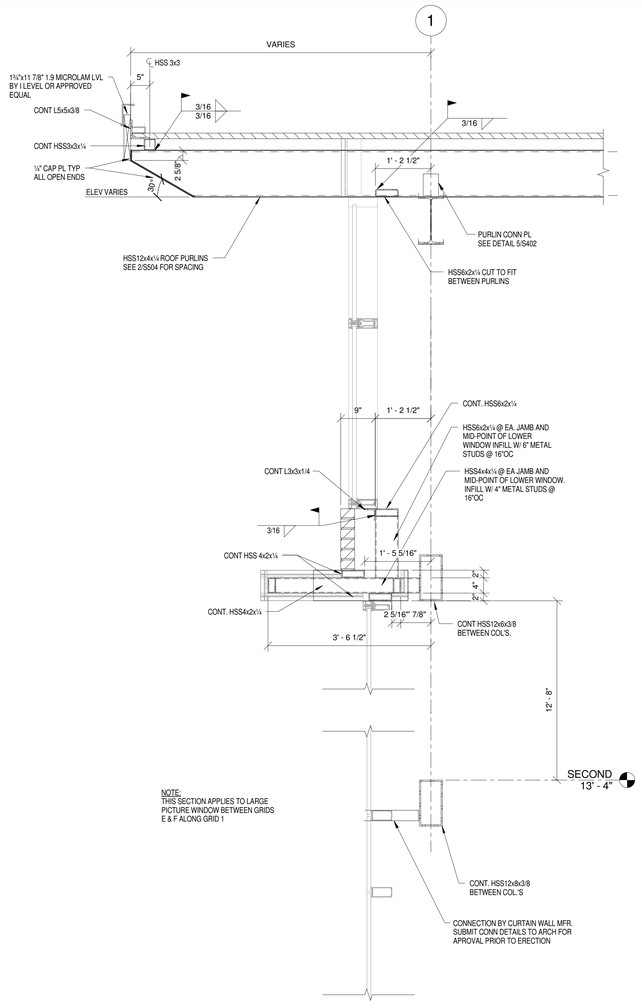
TYPICAL MASONRY DETAILS

sheet number

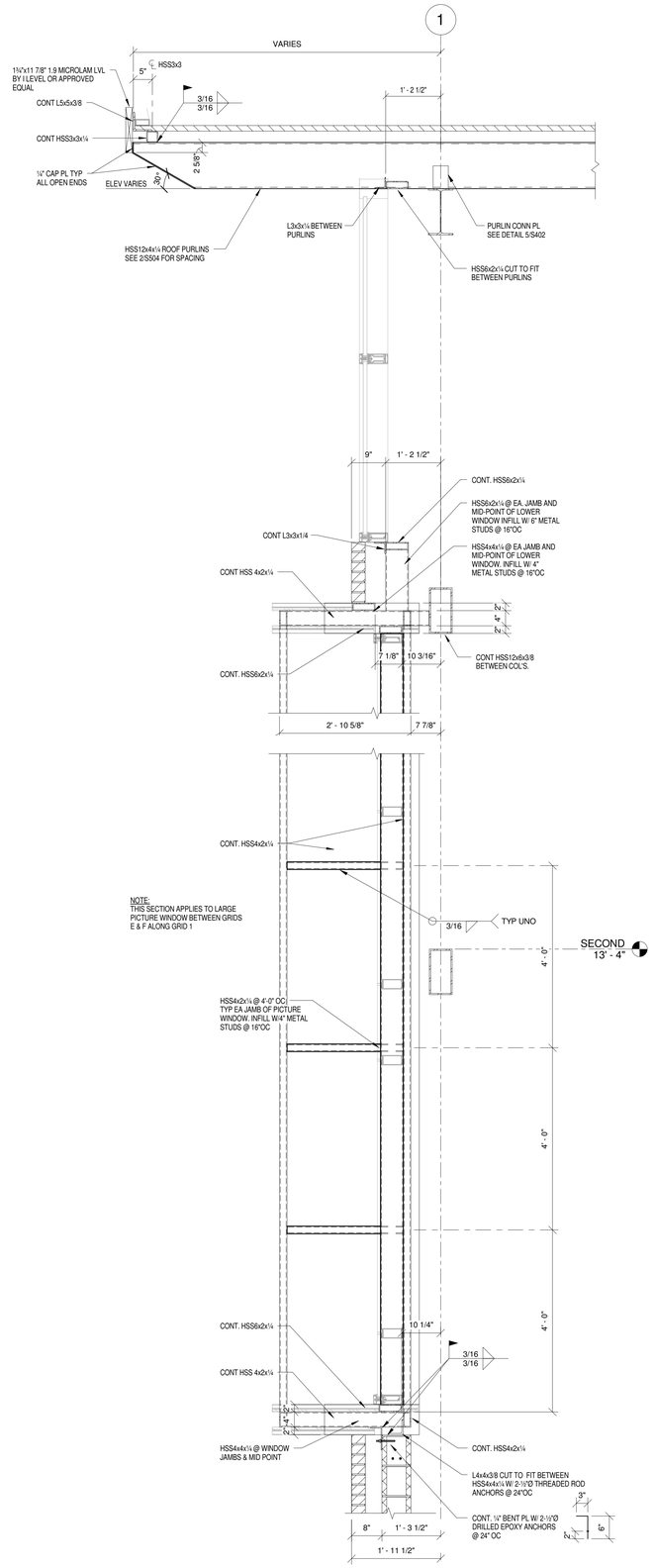
S403



① SECTION
3/4" = 1'-0"



② SECTION
3/4" = 1'-0"



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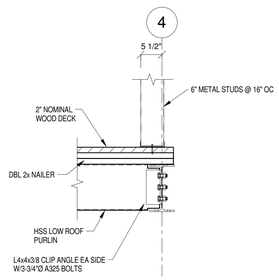

④ SECTION
3/4" = 1'-0"

5/7/2013 8:03:32 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
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lead architect:
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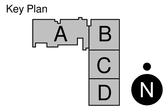
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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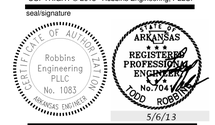

rev	date	description

date	05/06/13
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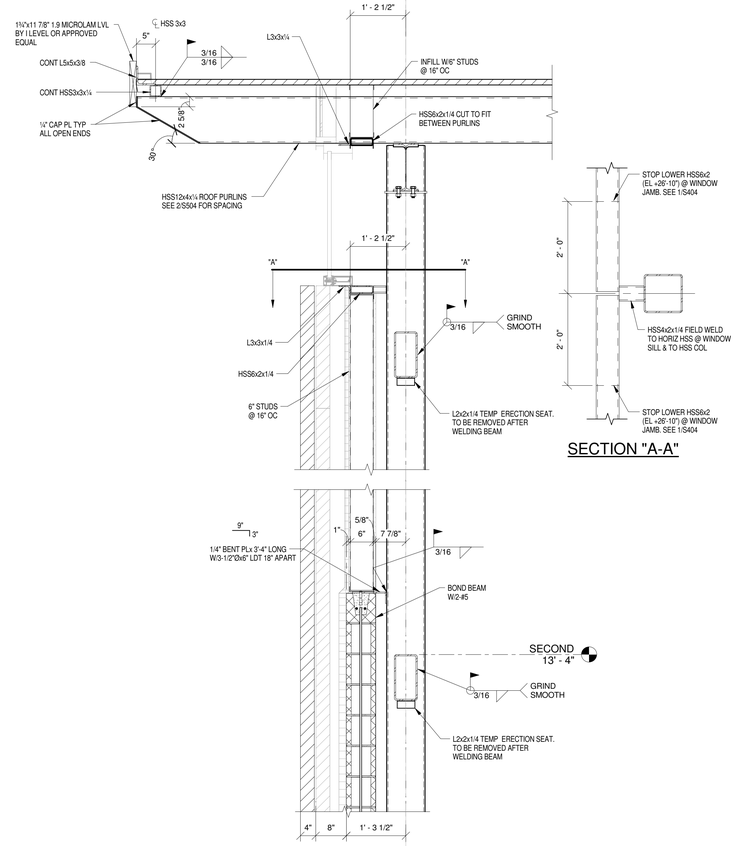
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

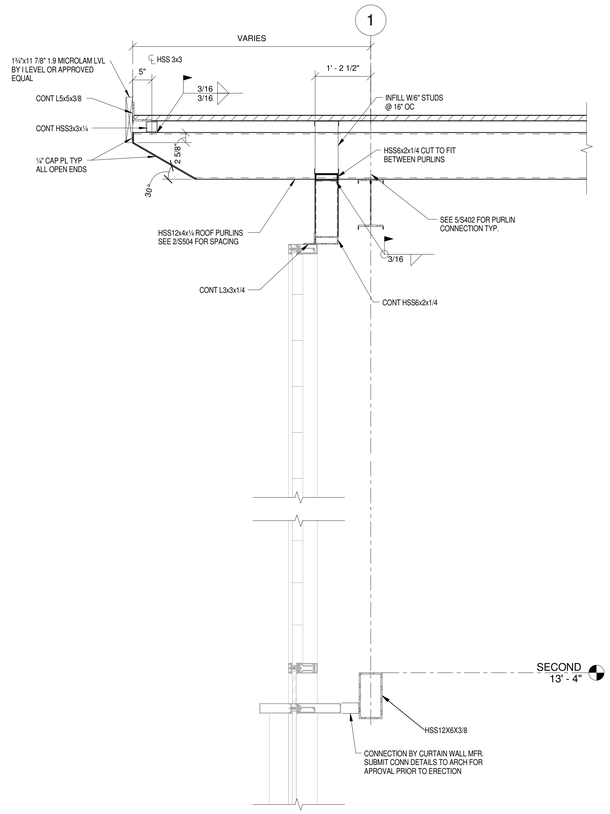
FRAMING SECTIONS

sheet number

S404



1 SECTION
3/4" = 1'-0"



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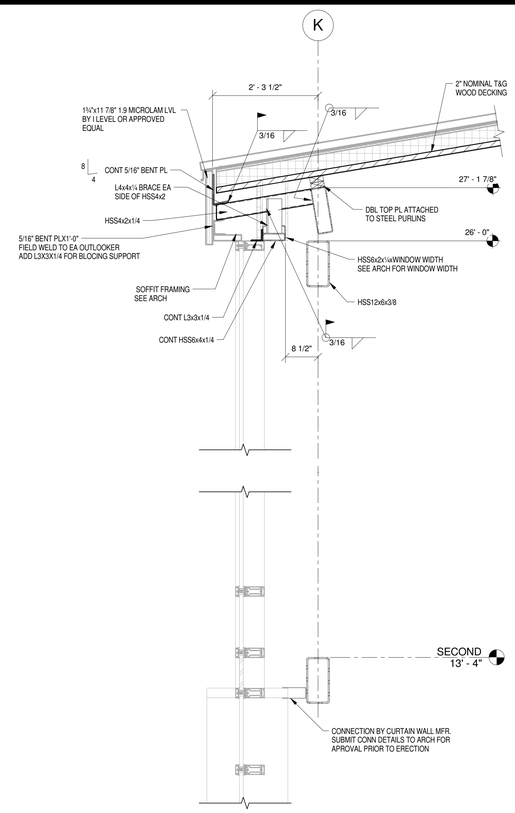
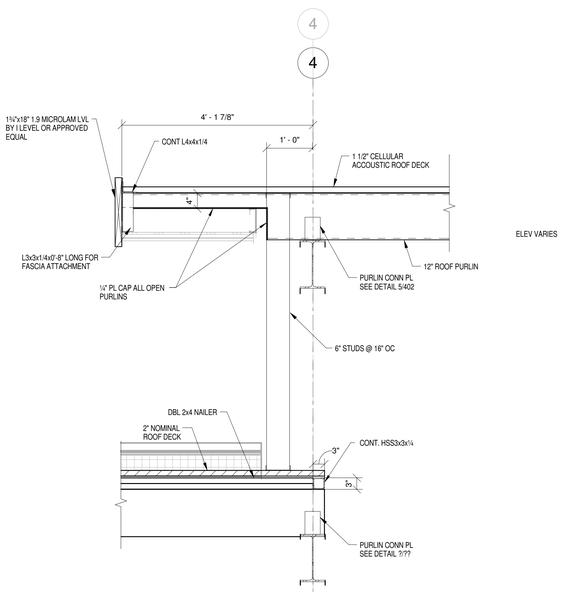


3 SECTION
3/4" = 1'-0"



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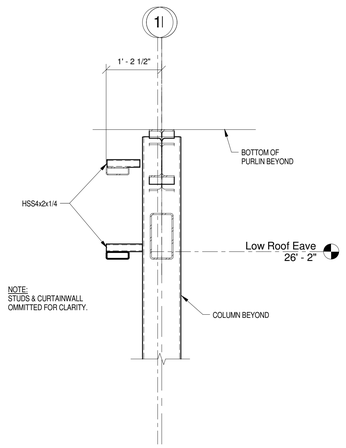
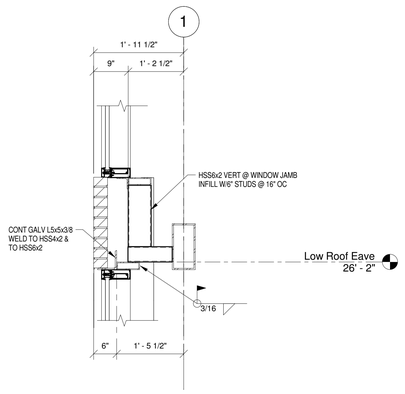


5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"

5/7/2013 8:03:38 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
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lead architect:
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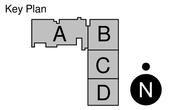


seal/signature

CERTIFICATE OF AUTHORIZATION Robbins Engineering PLLC No. 1083 ARKANSAS ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 7041 TODD ROBBINS

5/6/13

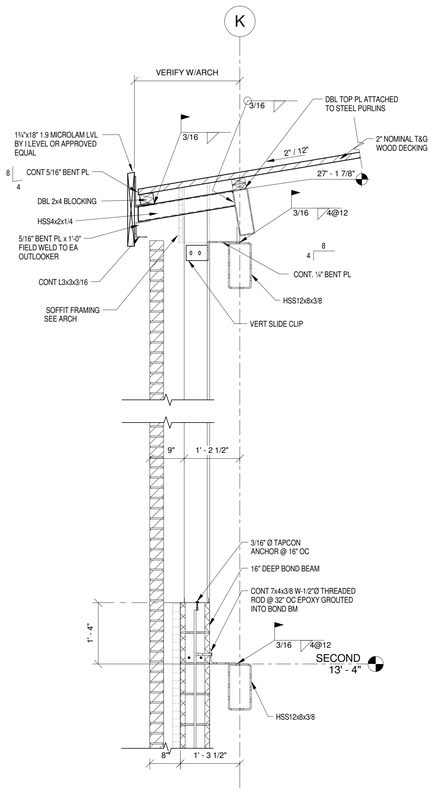
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

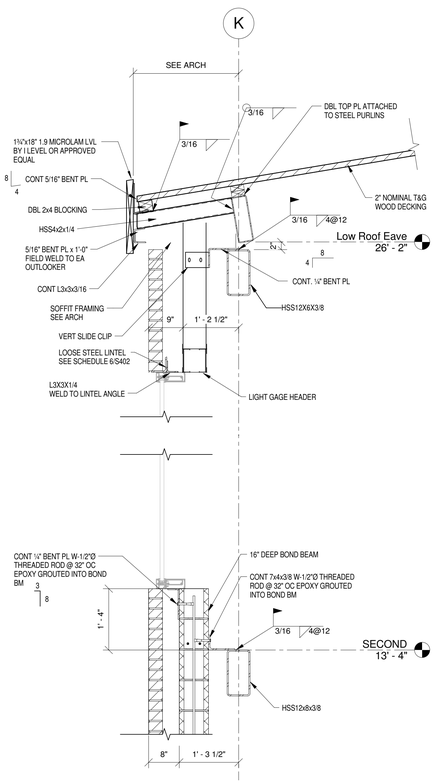
FRAMING SECTIONS

sheet number

S405



1 SECTION
3/4" = 1'-0"



2 SECTION
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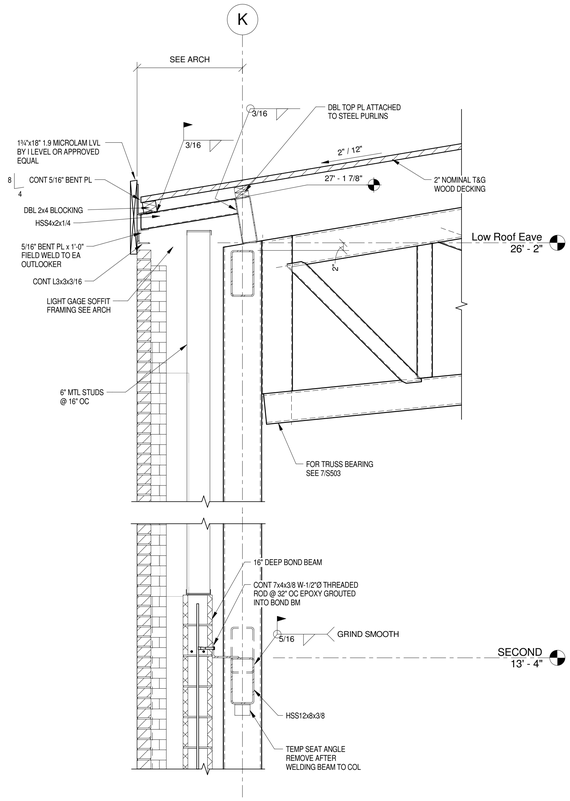
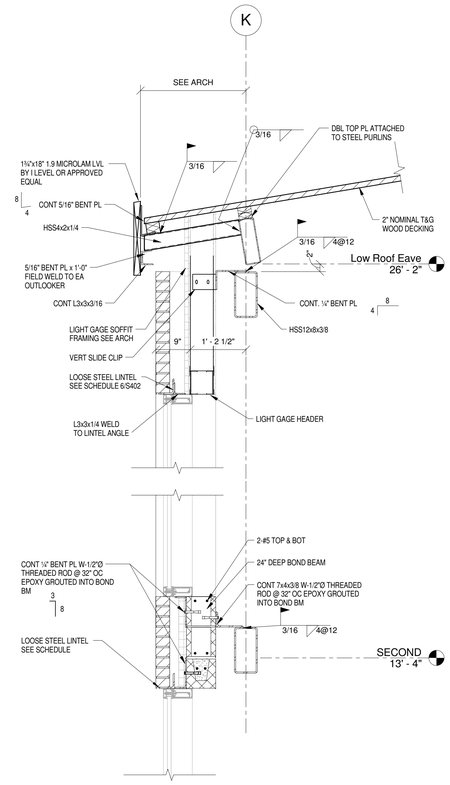
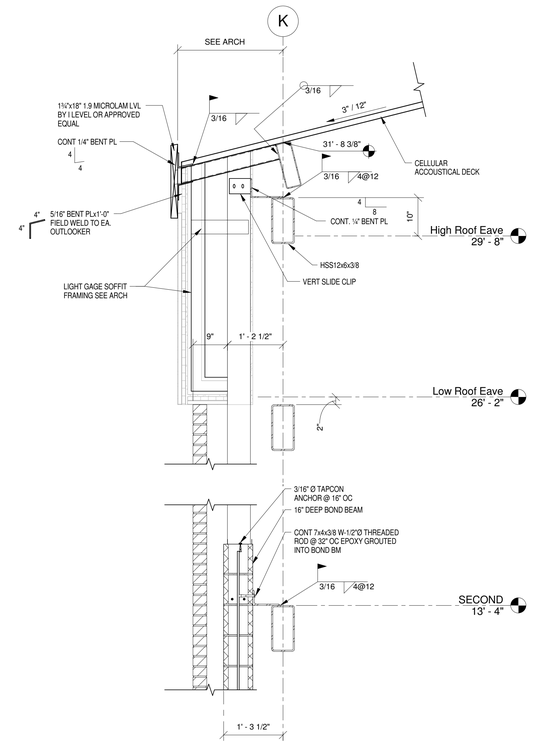


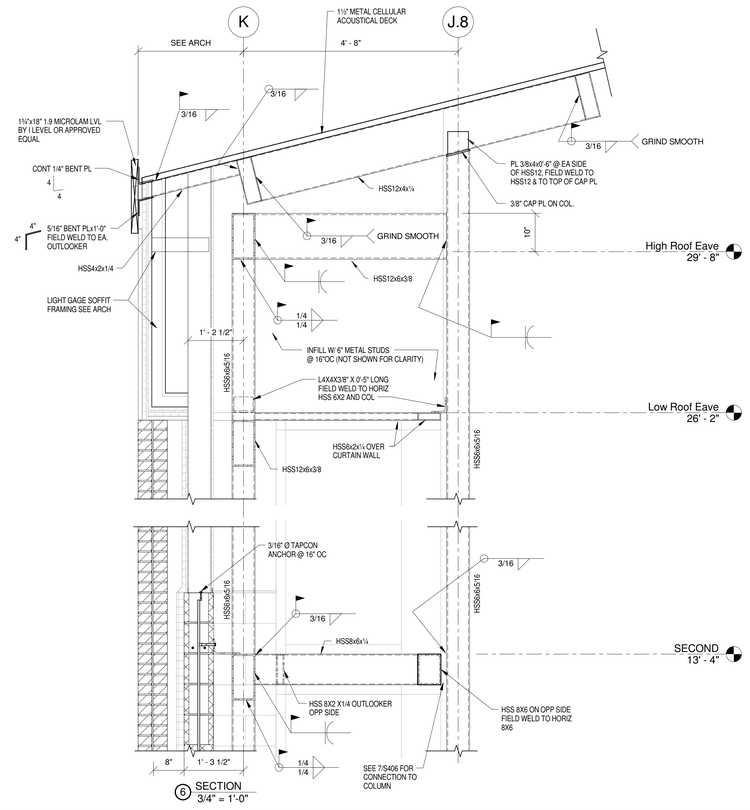
3 SECTION
3/4" = 1'-0"



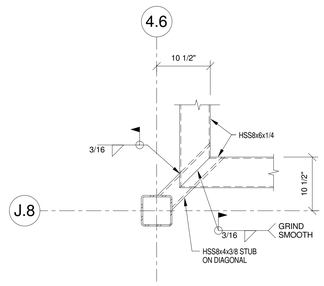
4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



7 ENLARGED PLAN AT CORNER
1" = 1'-0"

5/7/2013 8:03:43 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

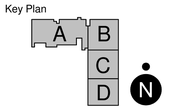
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

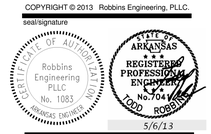
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



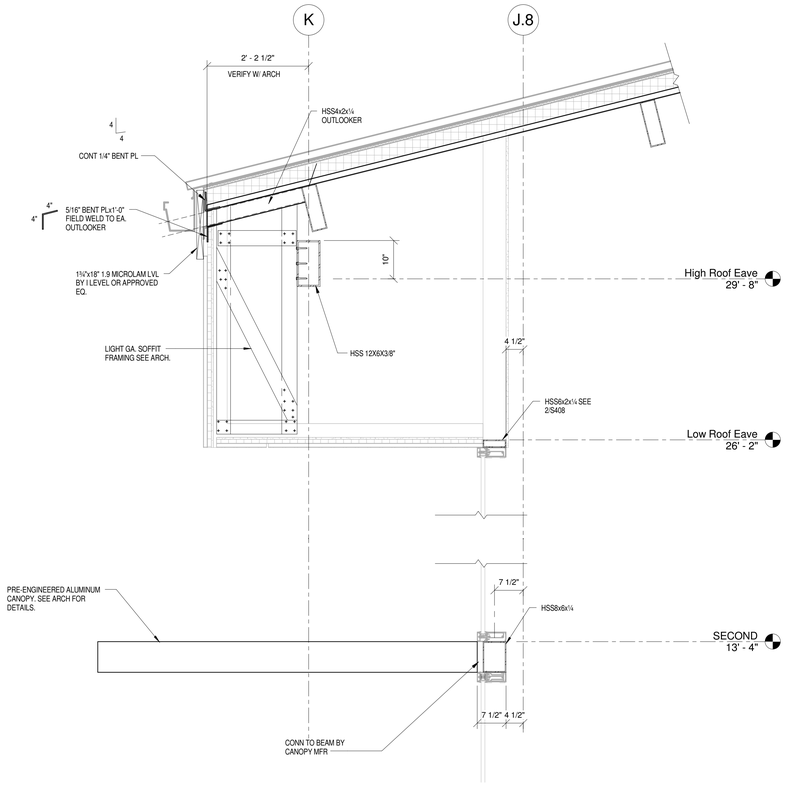
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

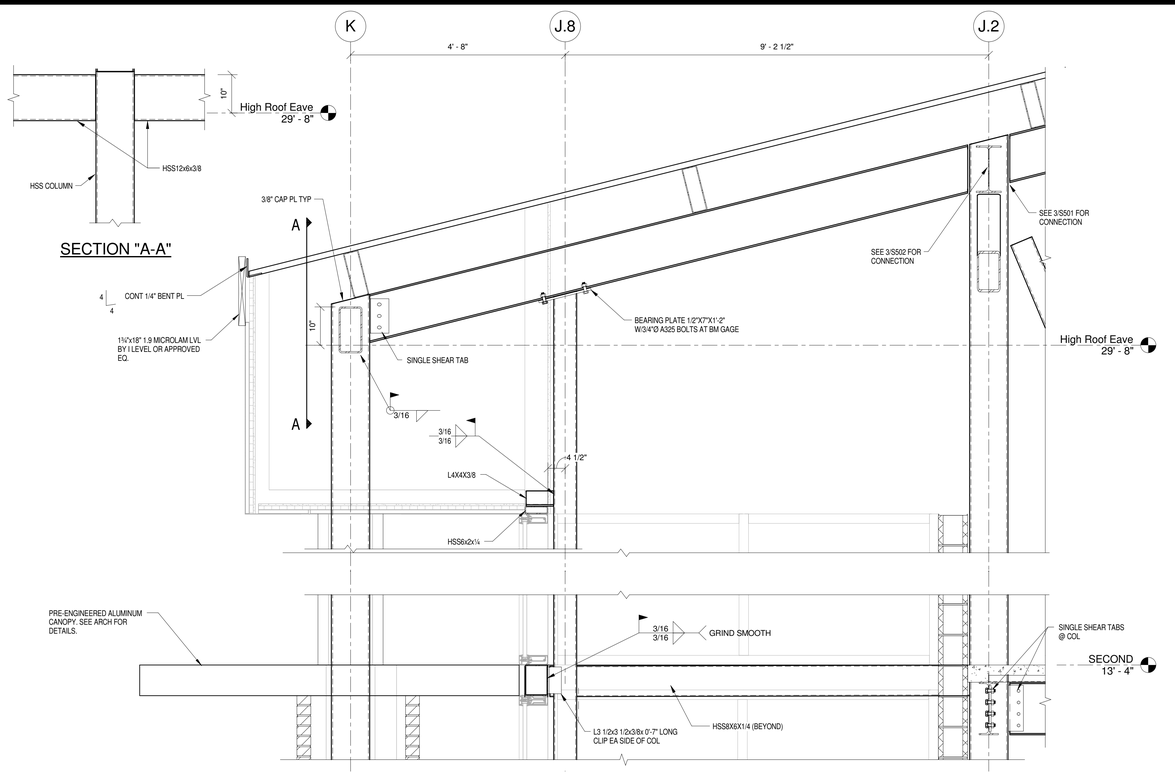
FRAMING SECTIONS

sheet number

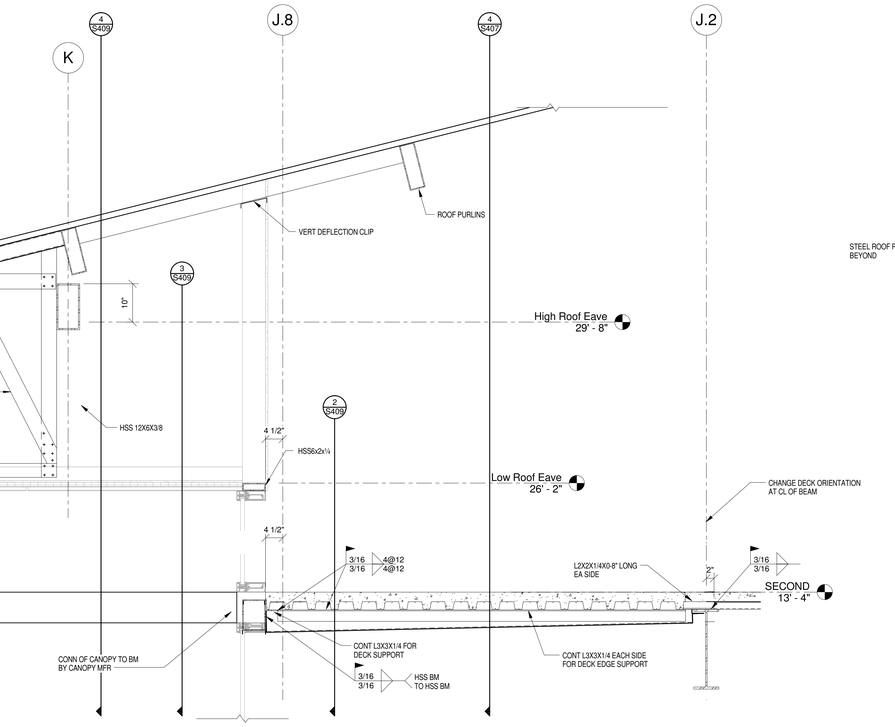
S406



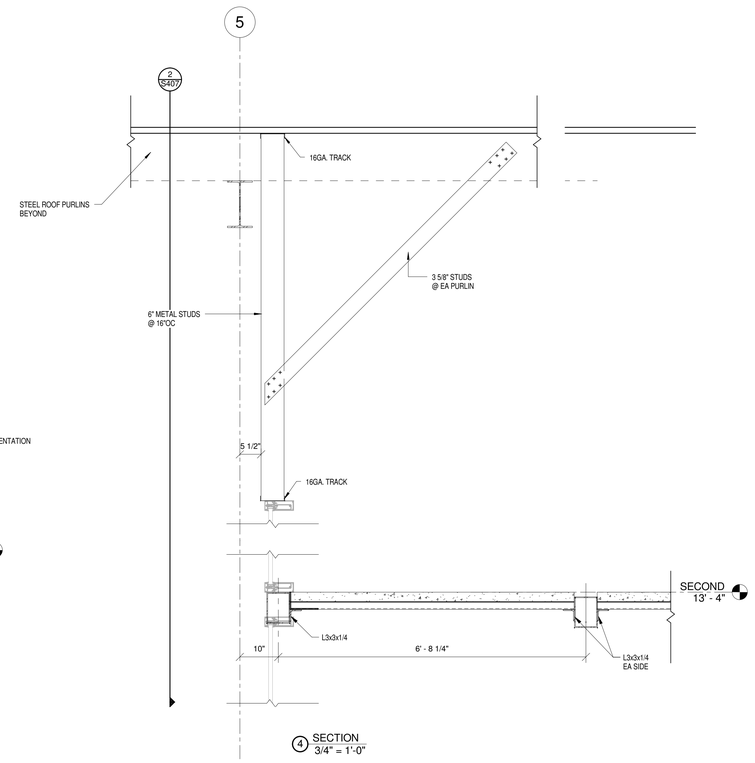
1 SECTION
3/4" = 1'-0"



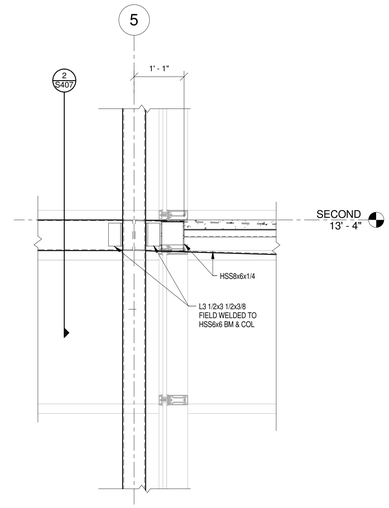
2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"

5/7/2013 8:03:47 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

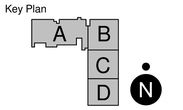
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

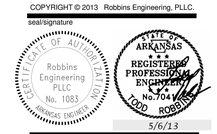
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



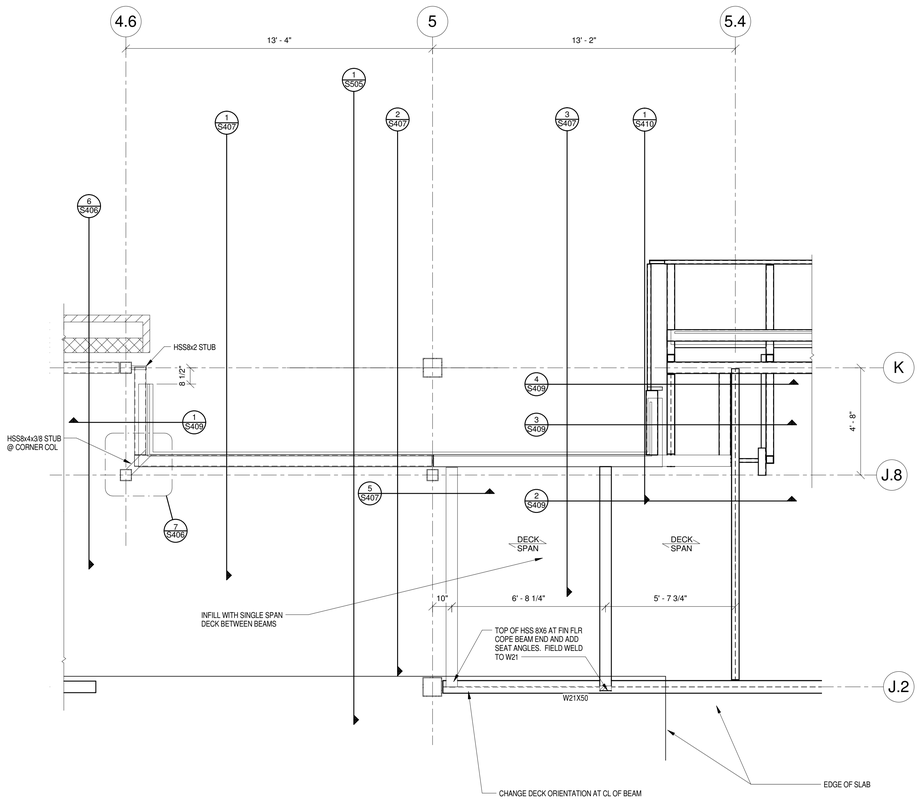
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

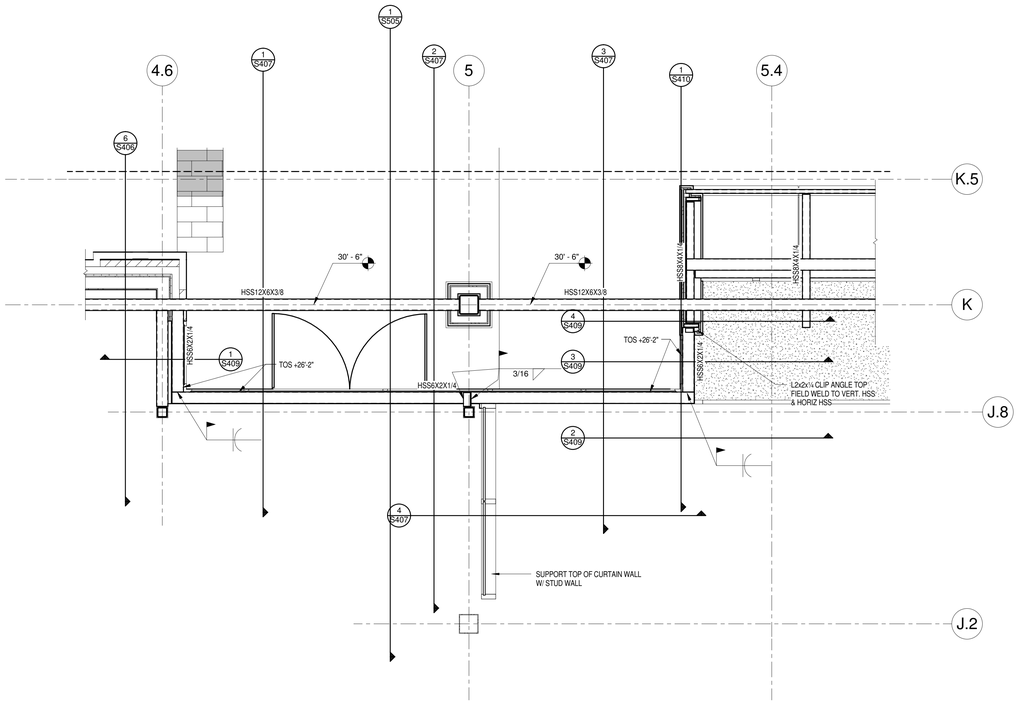
FRAMING SECTIONS

sheet number

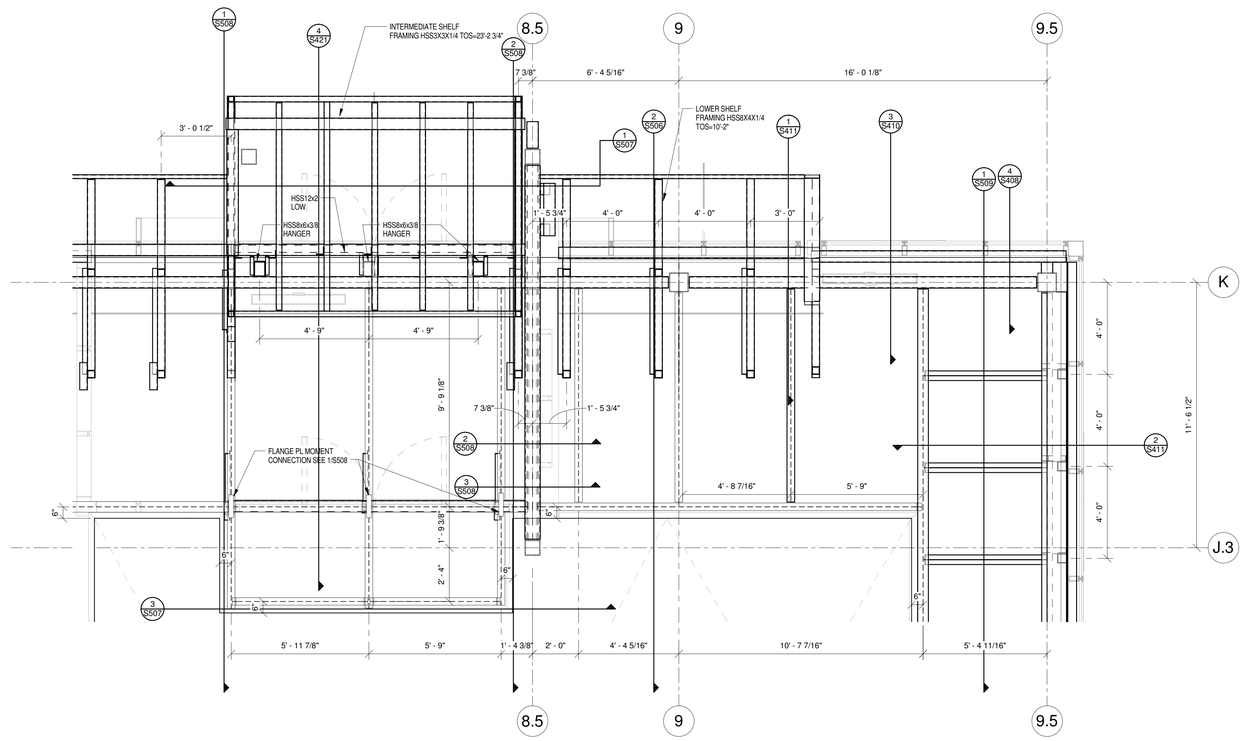
S407



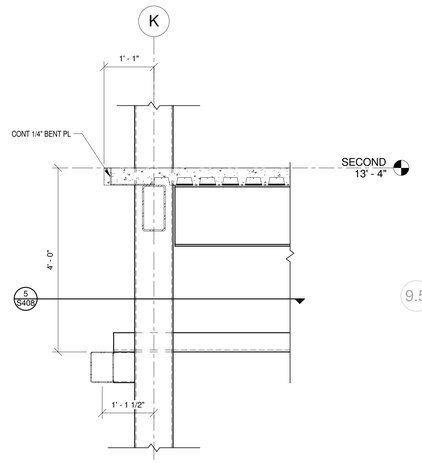
N ① ENLARGED PLAN AT NORTH ENTRY
3/8" = 1'-0"



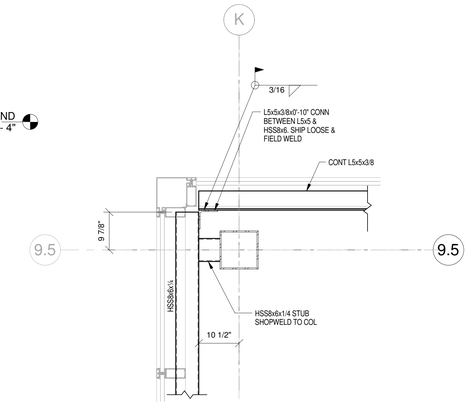
N ② ENLARGED PLAN - TOP OF CURTAINWALL
3/8" = 1'-0"



N ③ ENLARGED PLAN NE CORNER
3/8" = 1'-0"



④ SECTION
3/4" = 1'-0"



⑤ SECTION
3/4" = 1'-0"

5/7/2013 8:03:53 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan

seal/signature

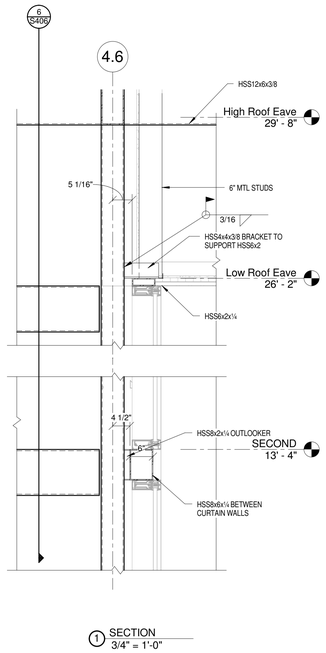
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

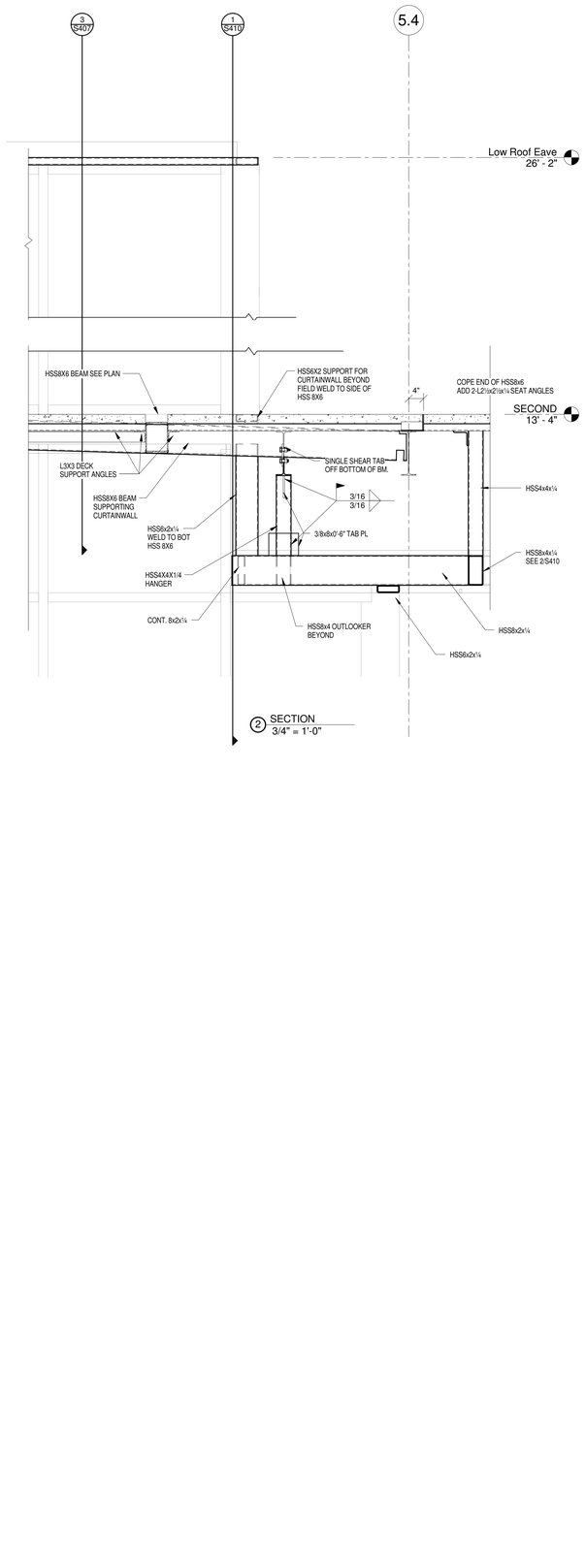
FRAMING SECTIONS

sheet number

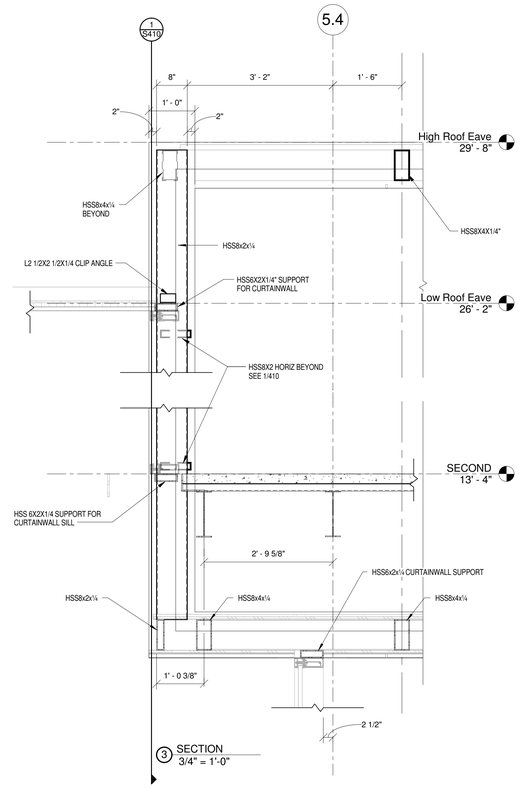
S408



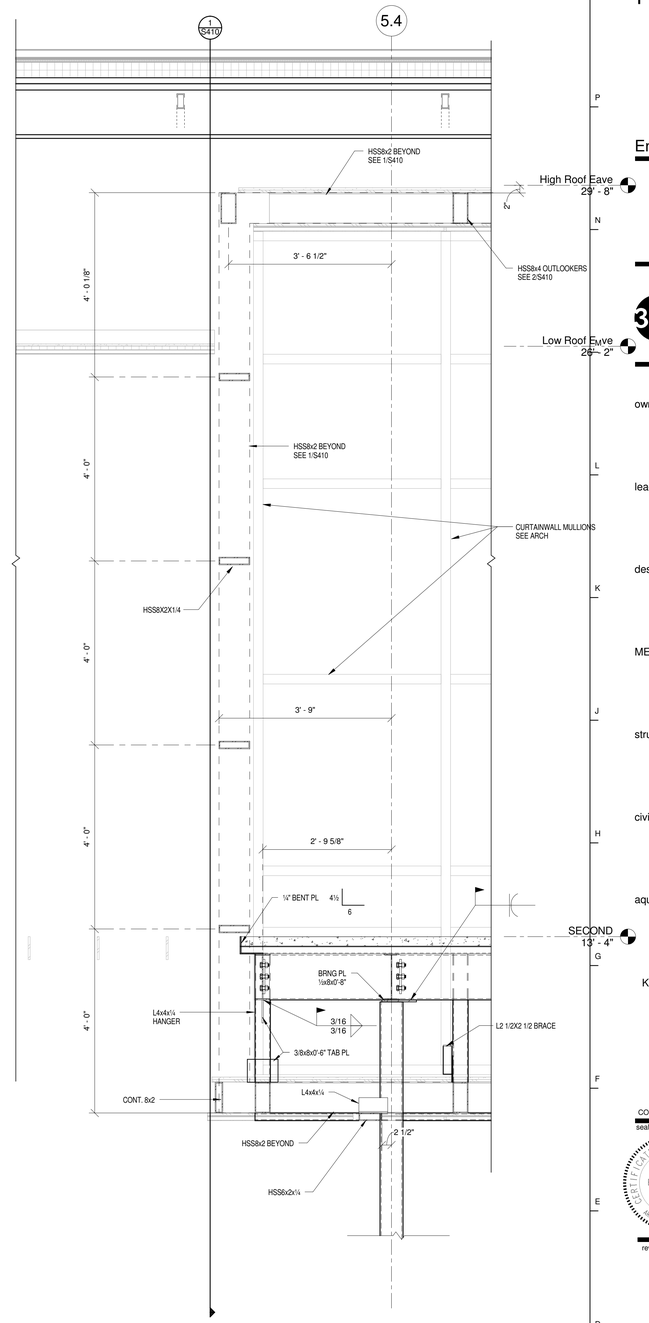
1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"

5/7/2013 8:03:56 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

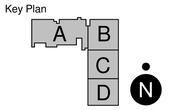
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

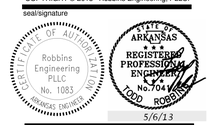
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



5/6/13

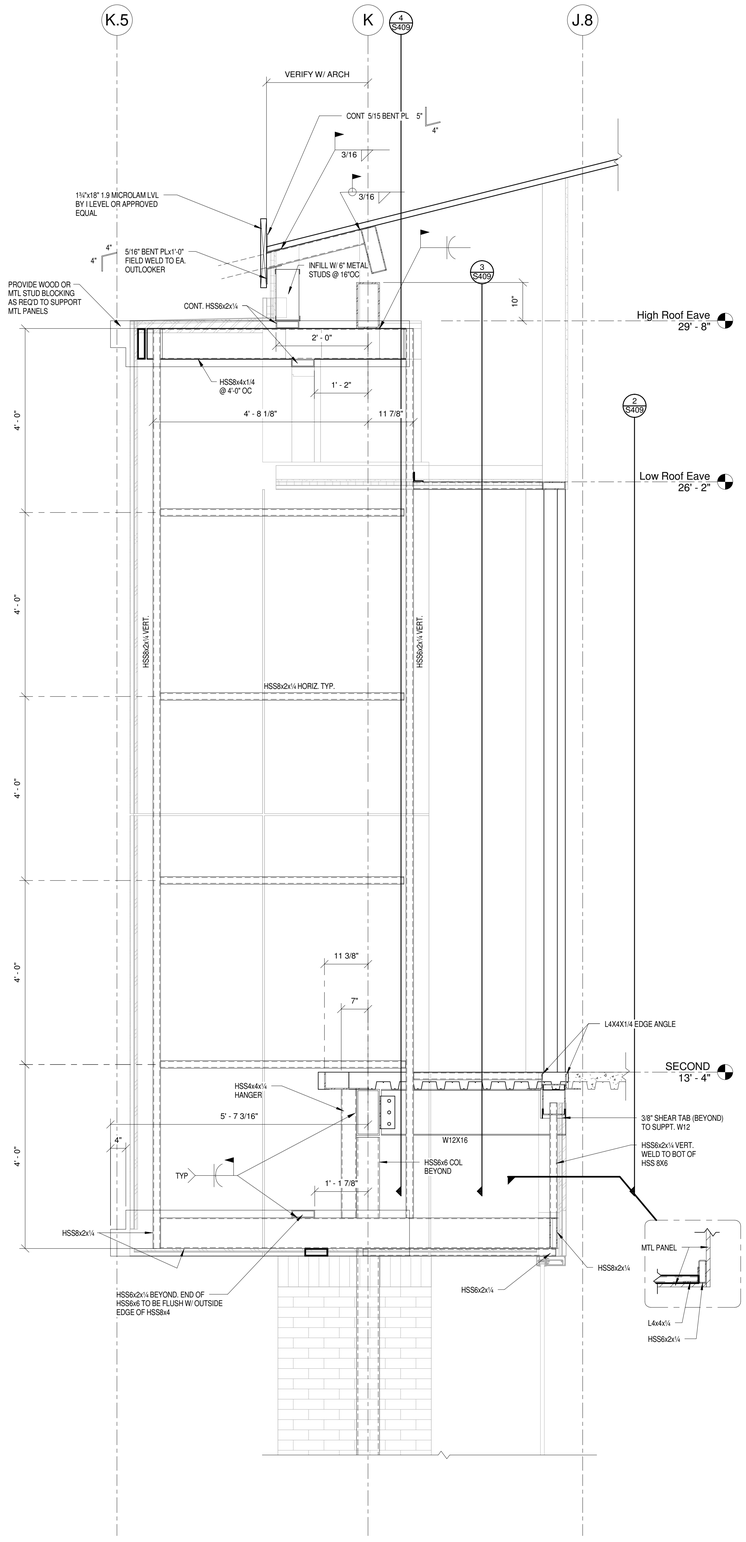
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

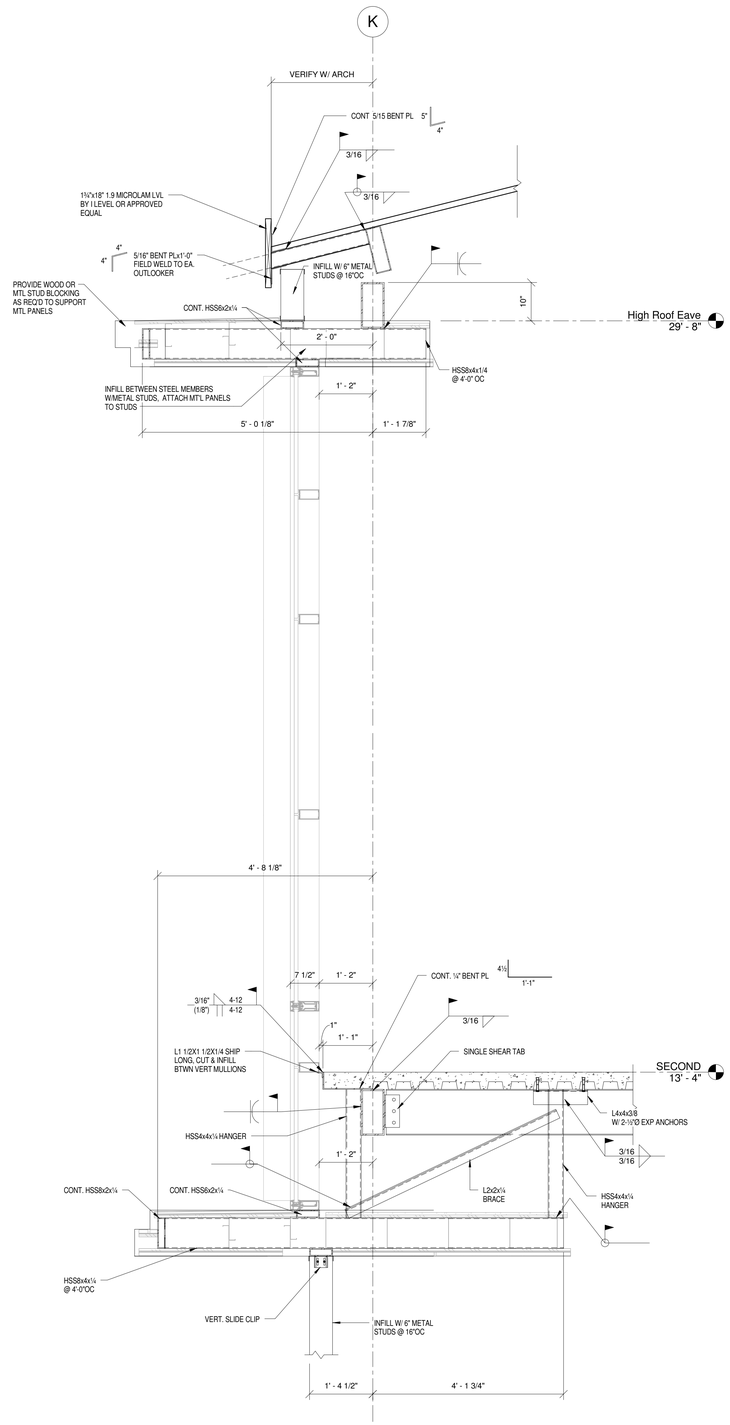
FRAMING SECTIONS

sheet number

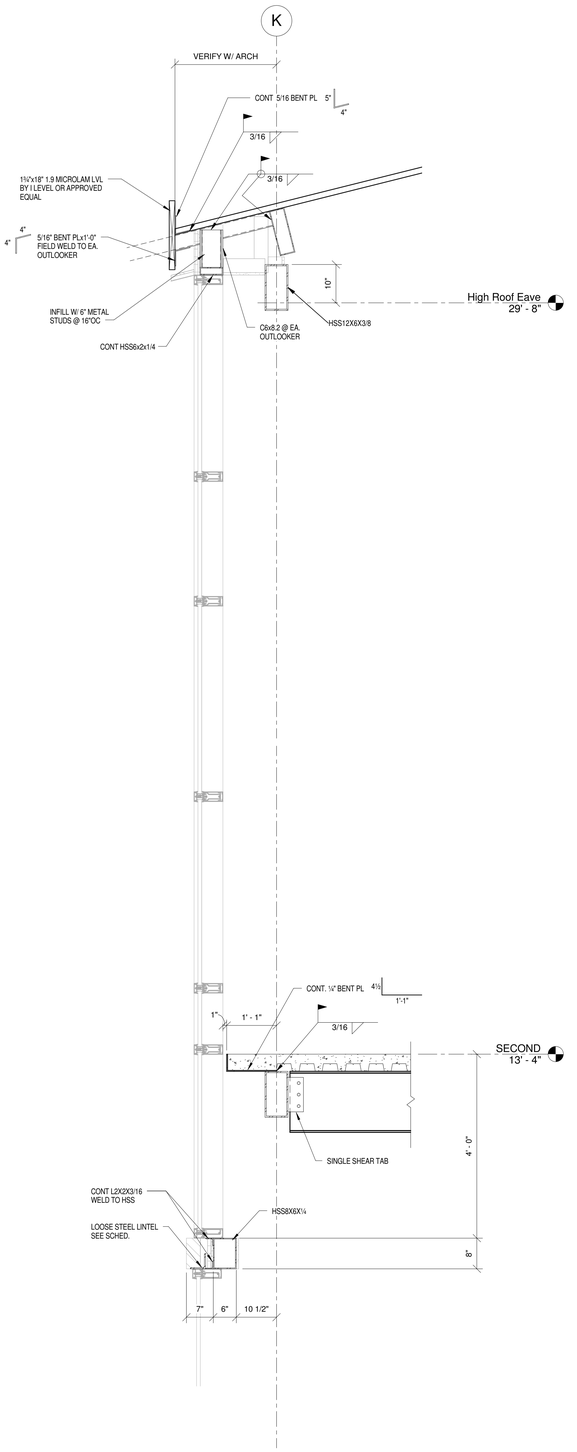
S409



1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

5/7/2013 8:03:59 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

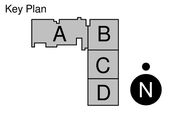
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

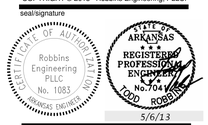
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



5/6/13

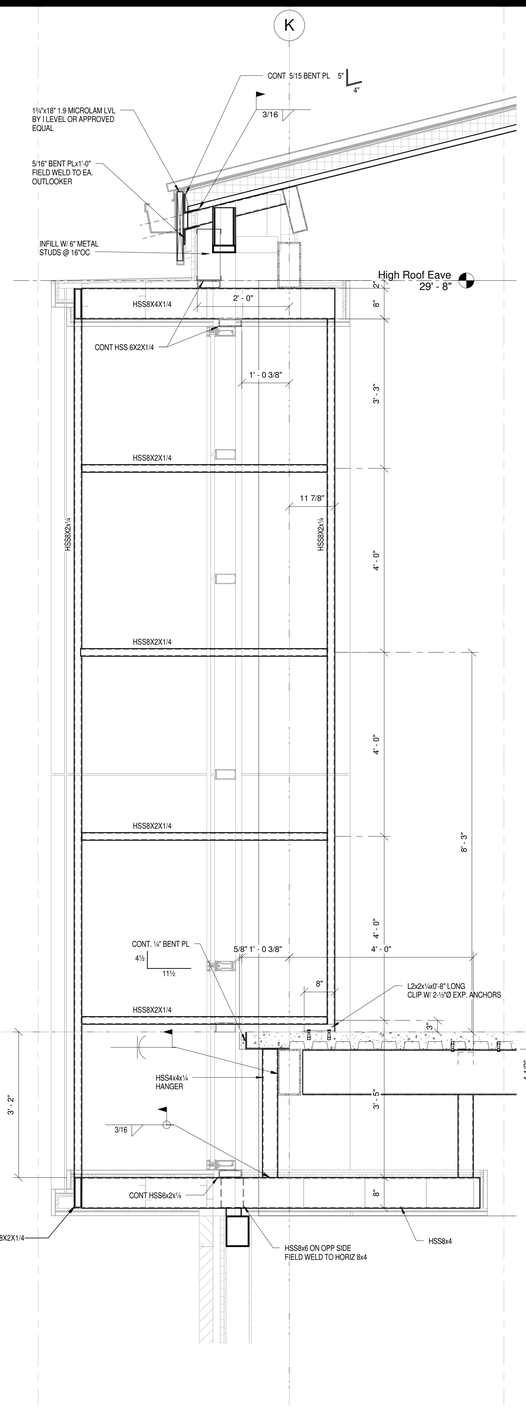
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

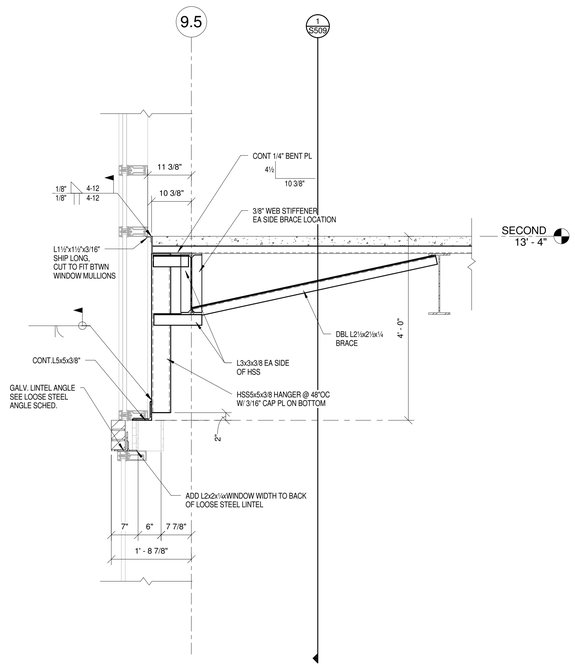
FRAMING SECTIONS

sheet number

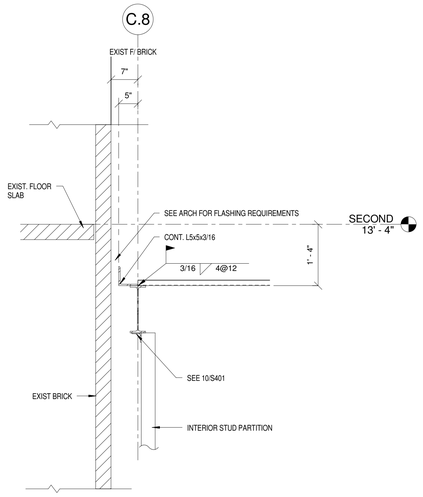
S410



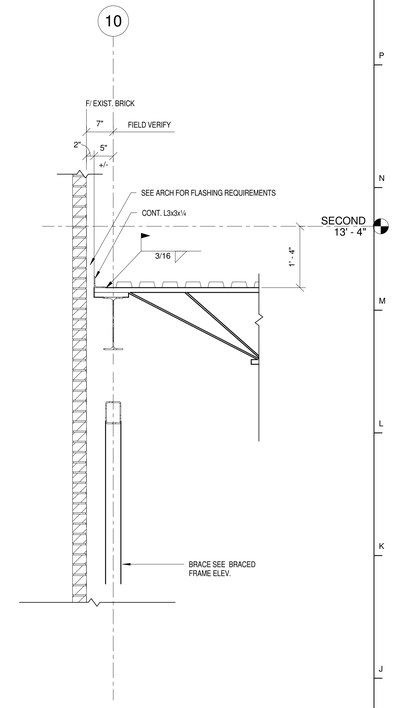
1 SECTION
3/4" = 1'-0"



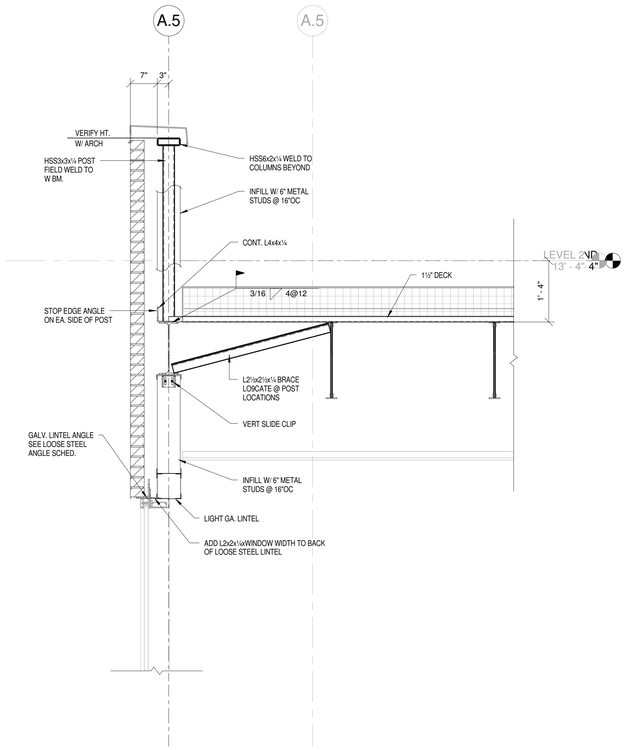
2 SECTION
3/4" = 1'-0"



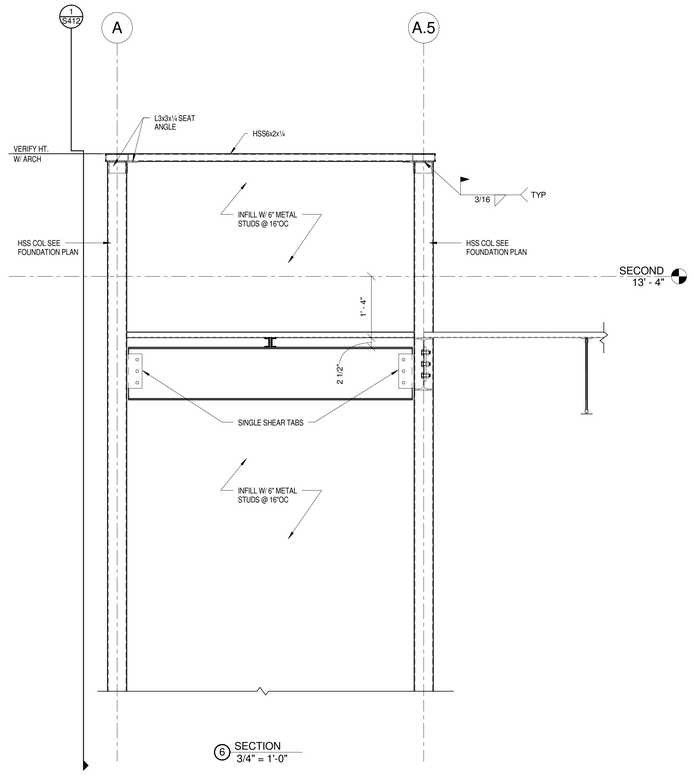
3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"

5/7/2013 8:04:03 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
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300 West 22nd Street
Kansas City, Missouri 64108
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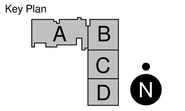
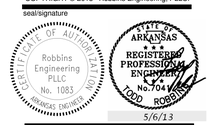
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



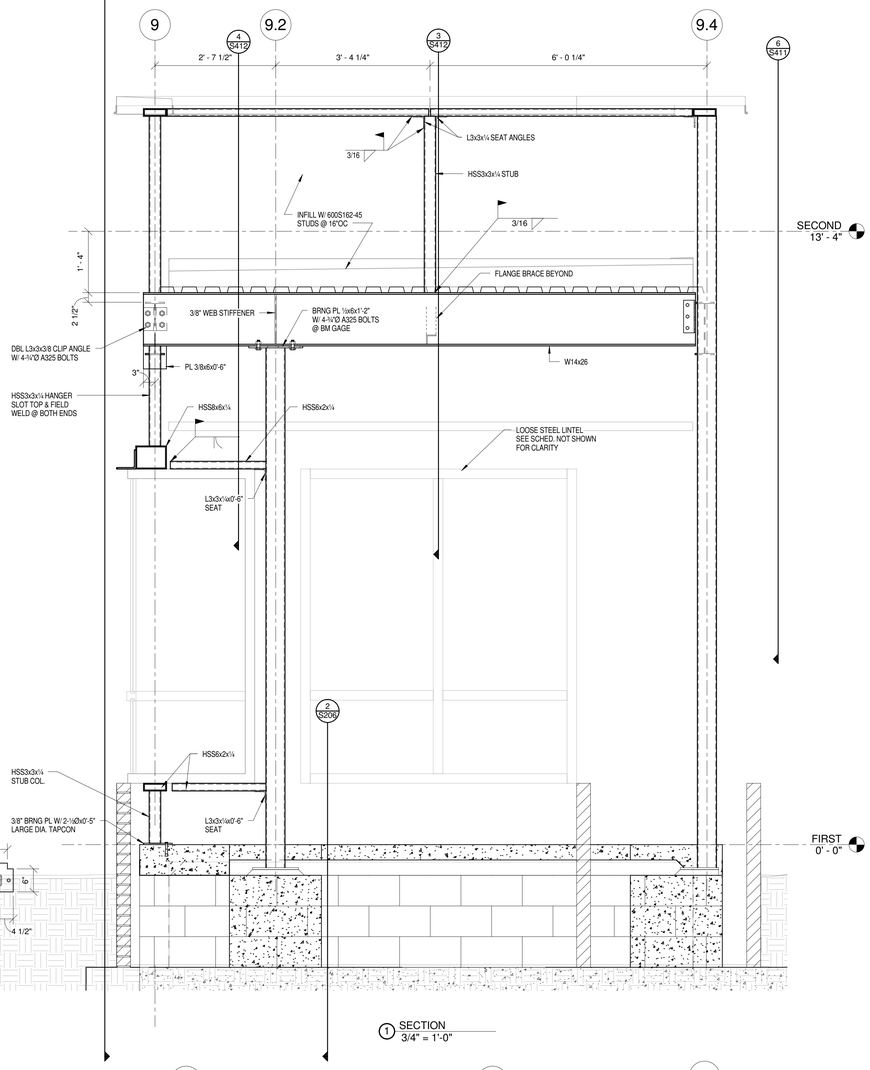
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

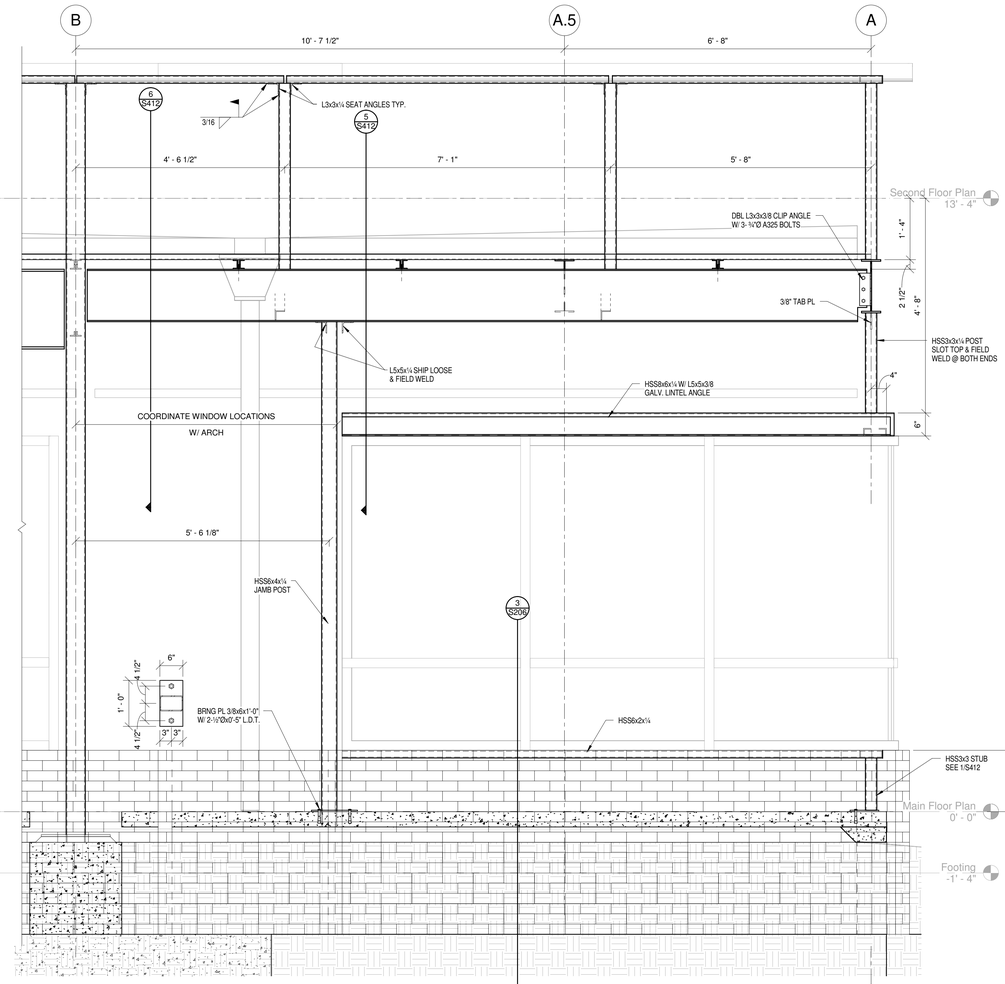
FRAMING SECTIONS

sheet number

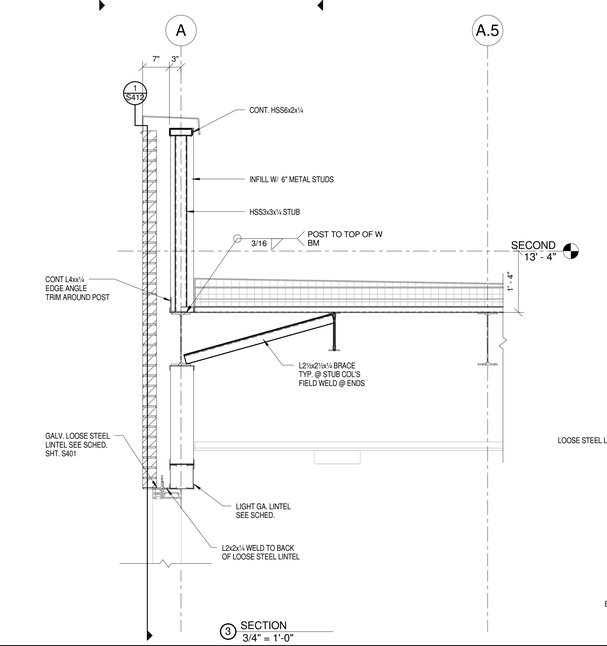
S411



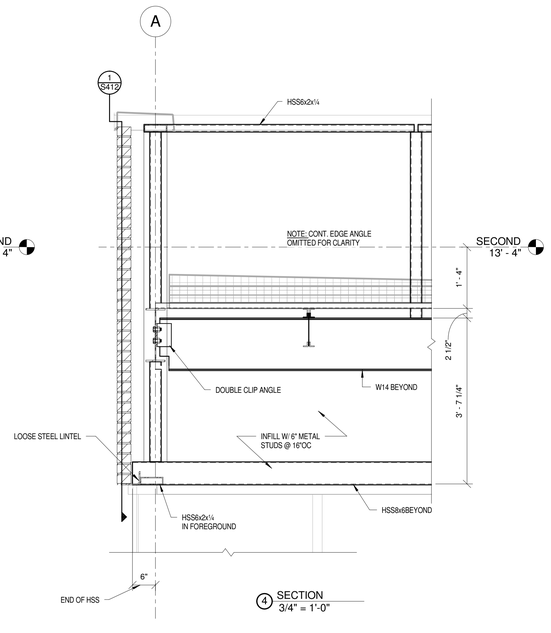
1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
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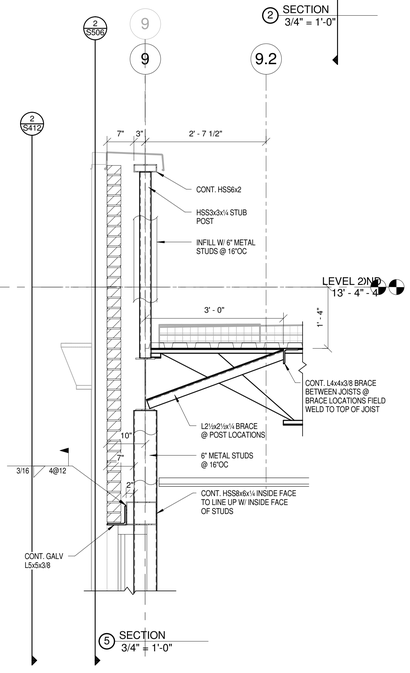

5 SECTION
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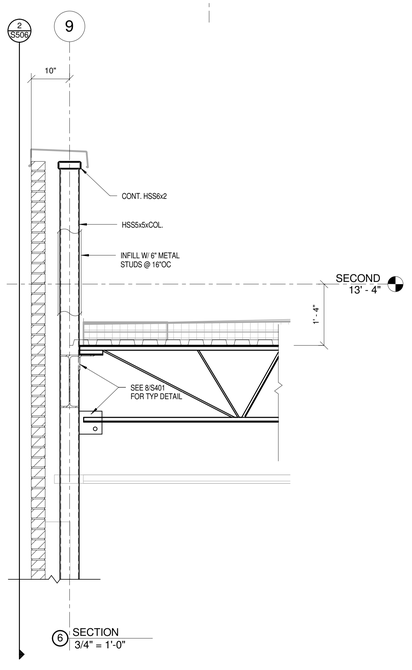


6 SECTION
3/4" = 1'-0"

5/7/2013 8:04:08 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan

seal/signature

rev	date	description

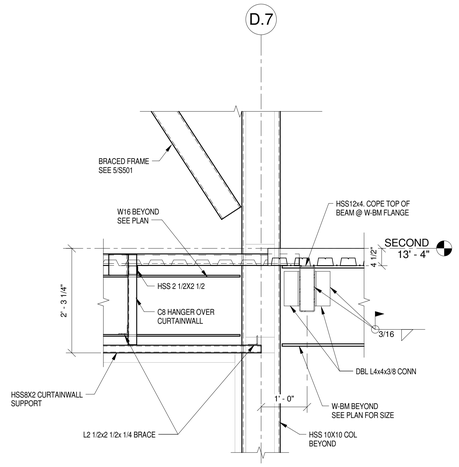
date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

FRAMING SECTIONS

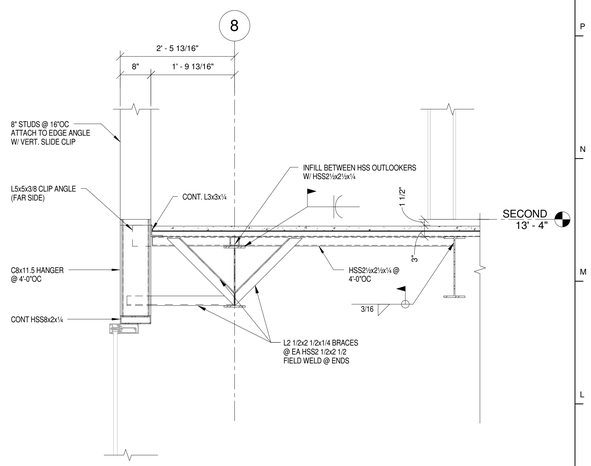
sheet number

S412

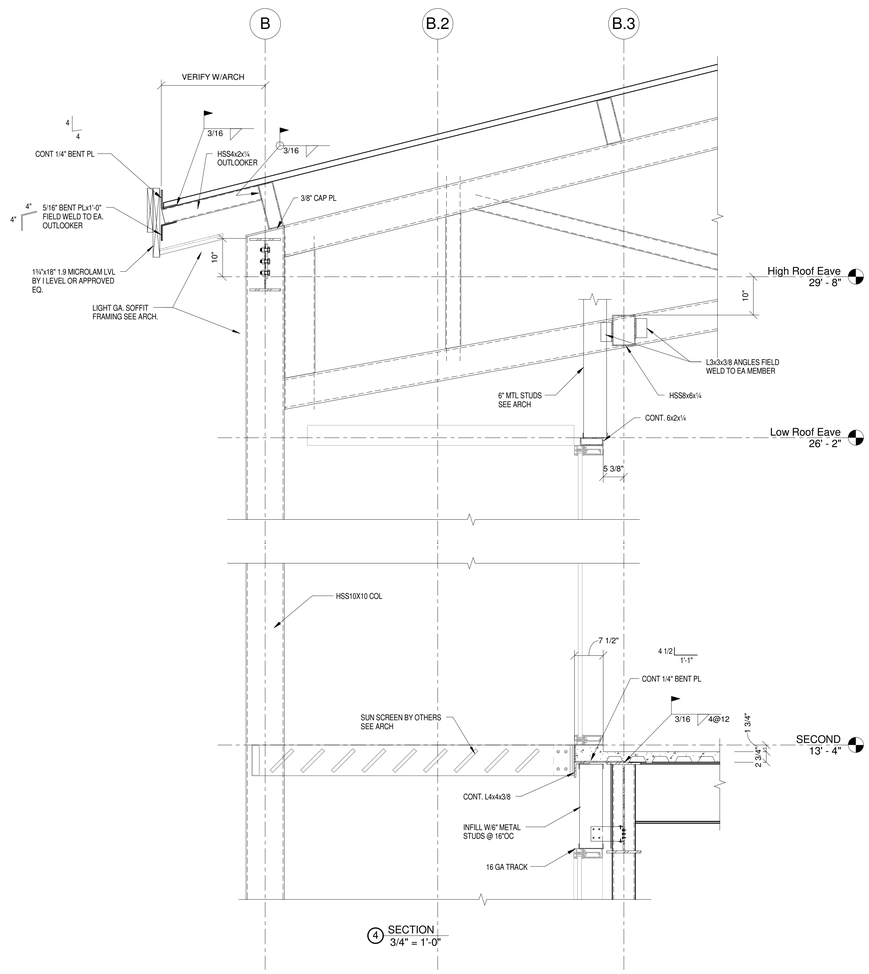
1 SECTION
3/4" = 1'-0"



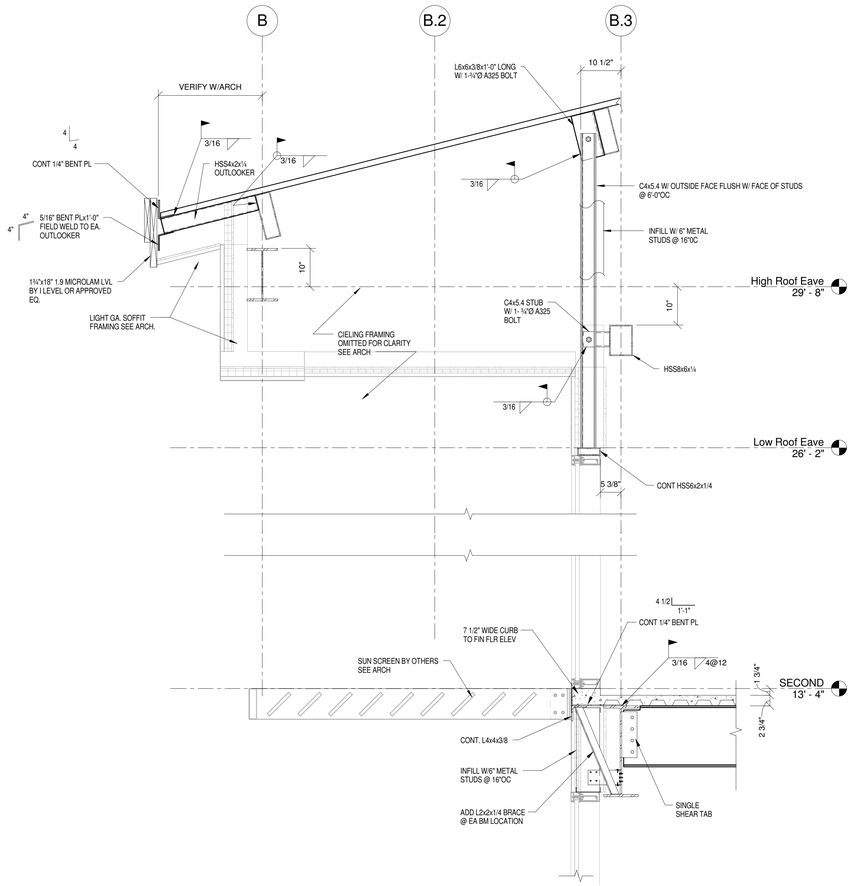
2 SECTION
3/4" = 1'-0"



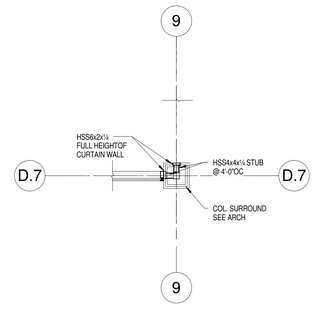
3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 DETAIL
1/4" = 1'-0"

5/7/2013 8:04:13 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
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aquatics consultant:
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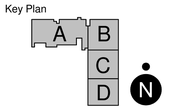
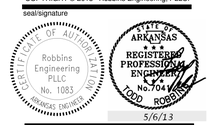
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



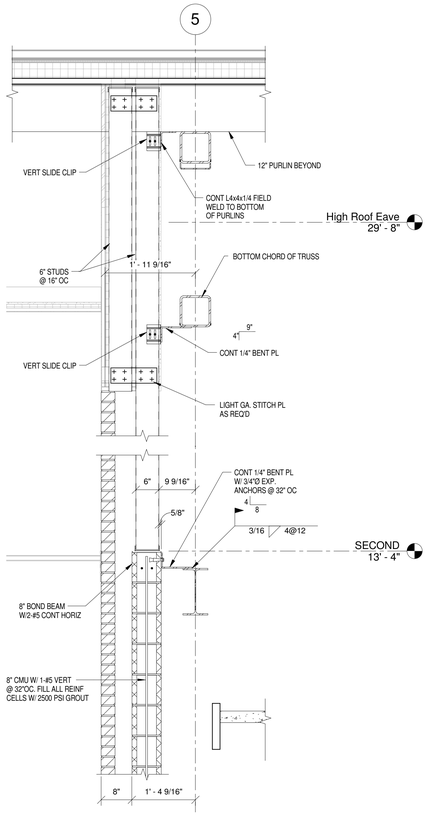
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

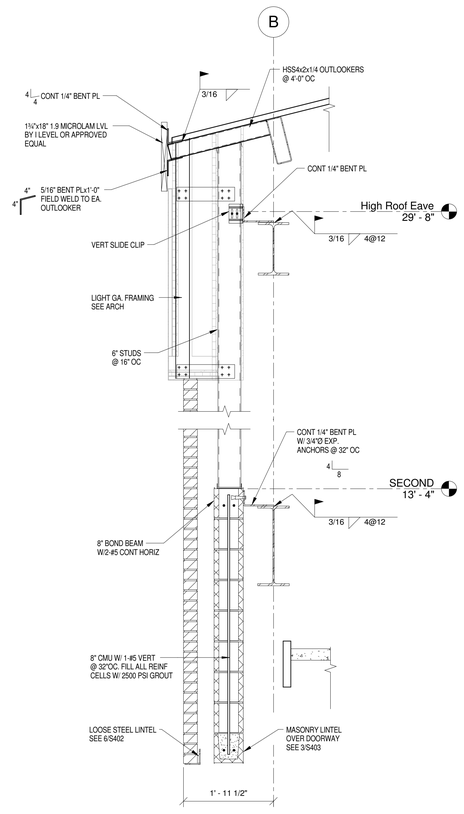
FRAMING SECTIONS

sheet number

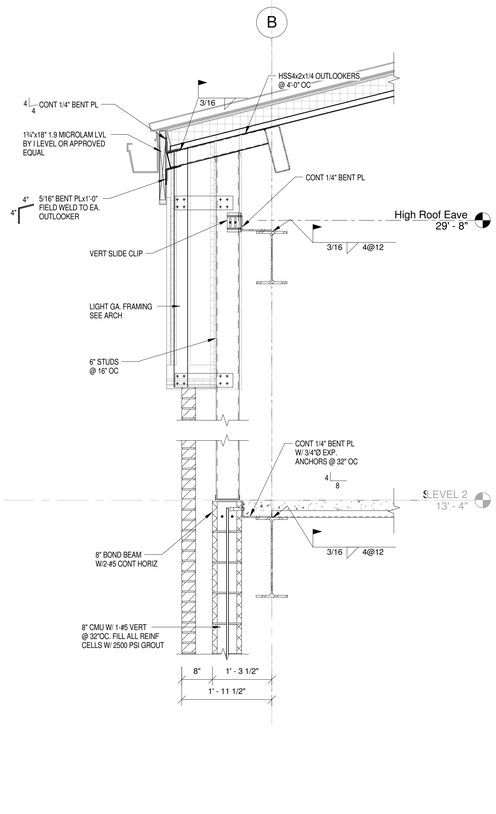
S413



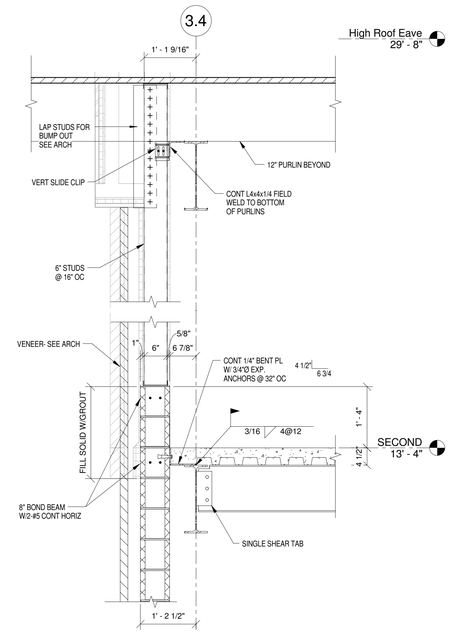
1 SECTION
3/4" = 1'-0"



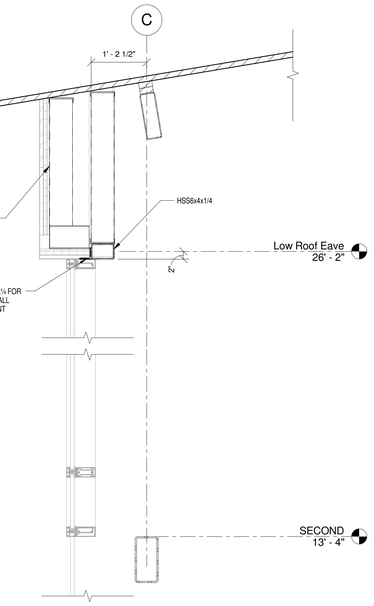
2 SECTION
3/4" = 1'-0"



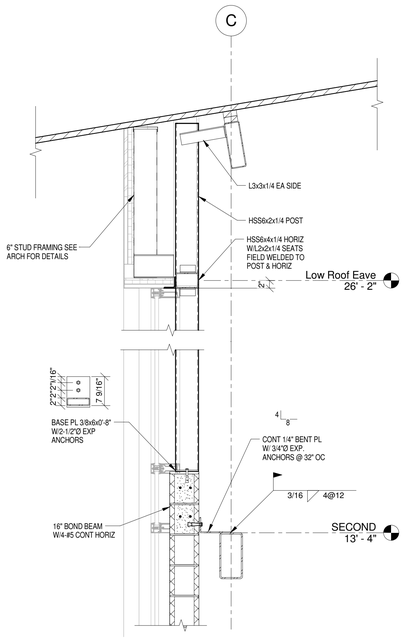
3 SECTION
3/4" = 1'-0"



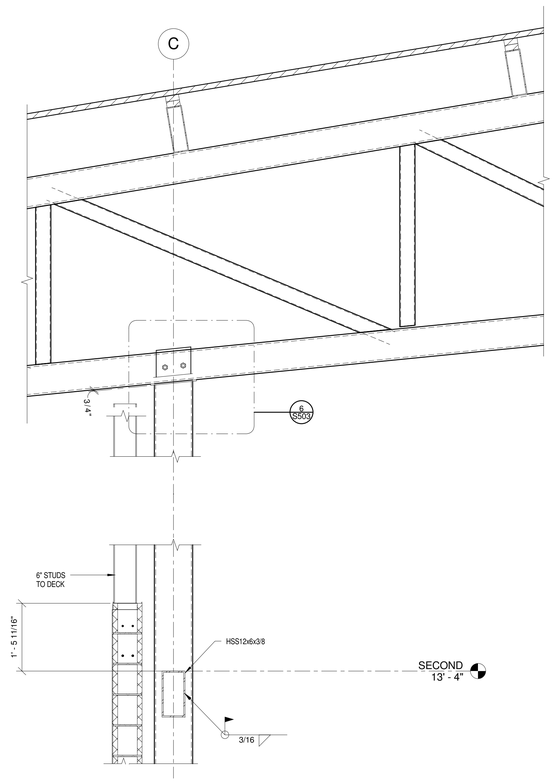
4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"

5/7/2013 8:04:19 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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Little Rock, Arkansas 72201
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civil engineer & landscape architect:
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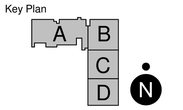
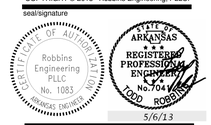
aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



5/6/13

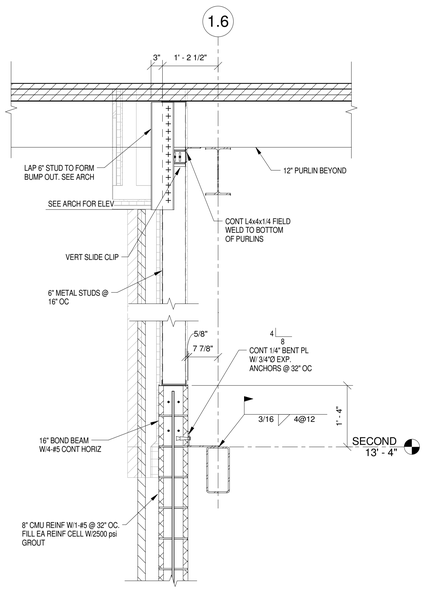
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

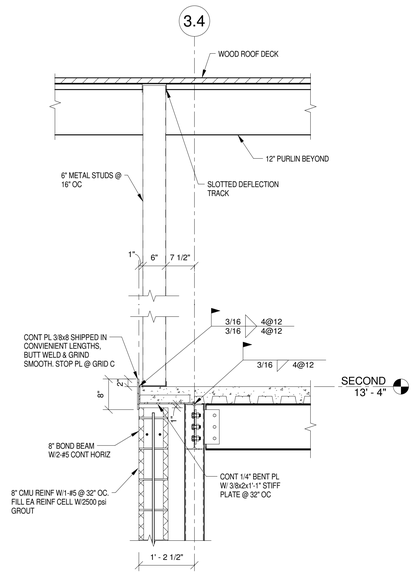
FRAMING SECTIONS

sheet number

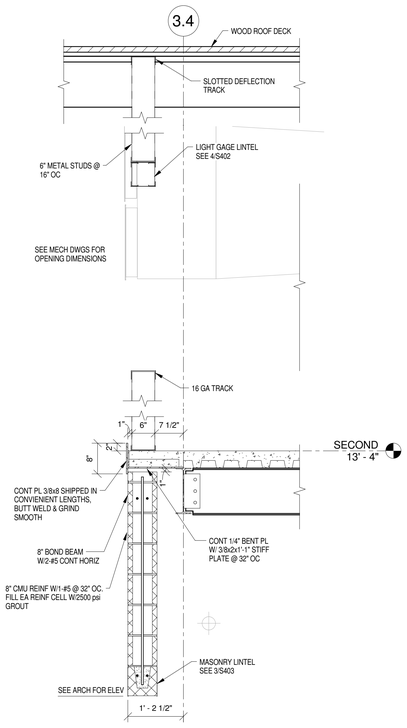
S414



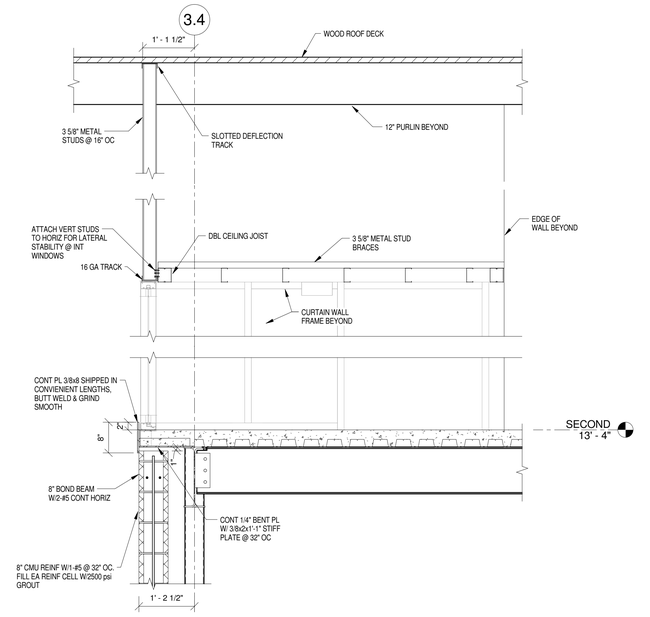
① SECTION
3/4" = 1'-0"



② SECTION
3/4" = 1'-0"



③ SECTION
3/4" = 1'-0"



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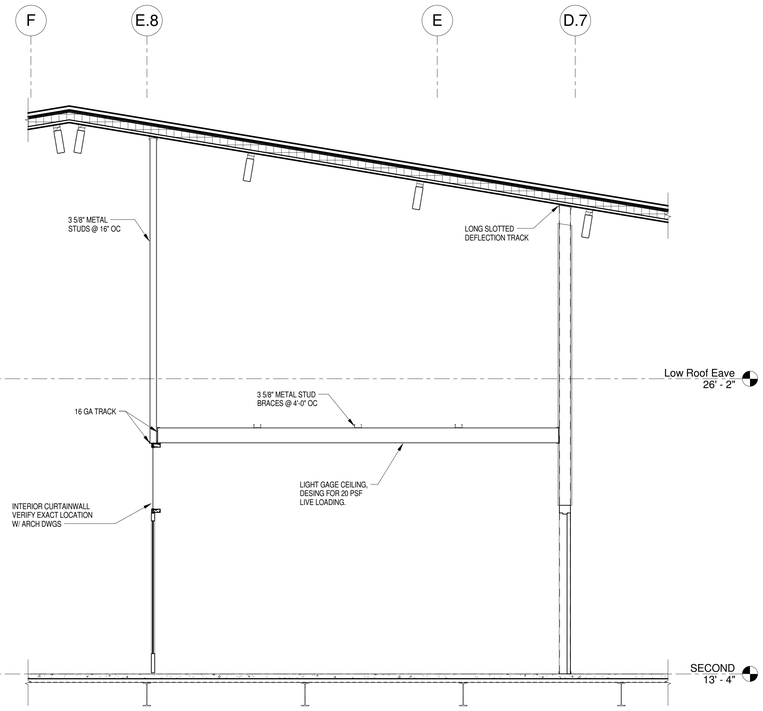


⑤ S415-5
3/8" = 1'-0"

5/7/2013 8:04:25 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

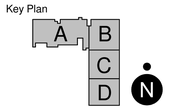
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

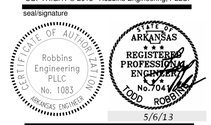
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



rev date description

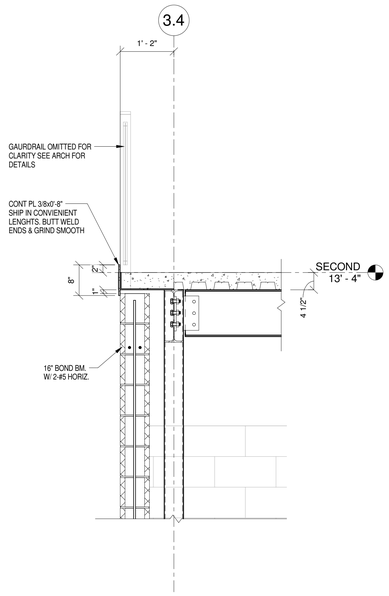
5/6/13

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

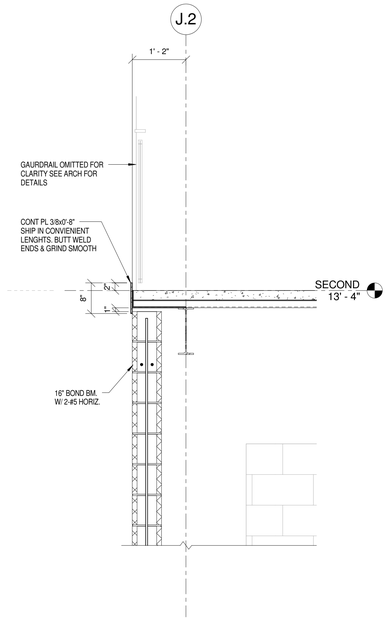
FRAMING SECTIONS

sheet number

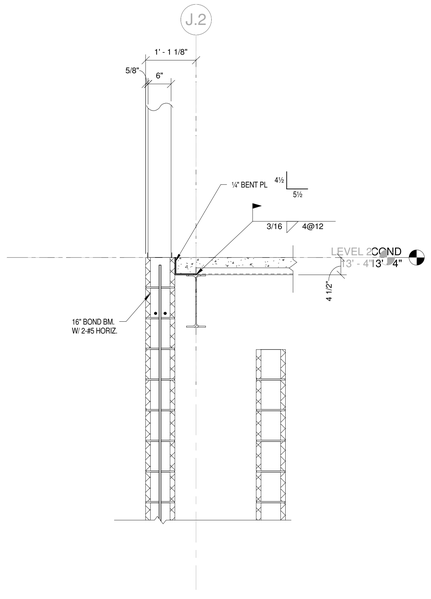
S415



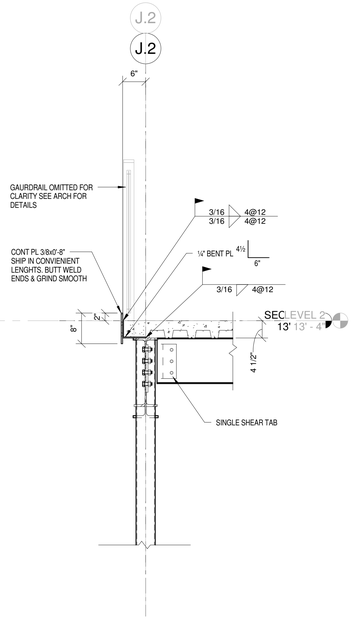
1 SECTION
3/4" = 1'-0"



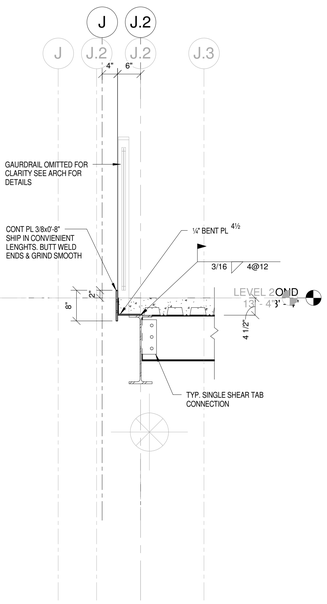
2 SECTION
3/4" = 1'-0"



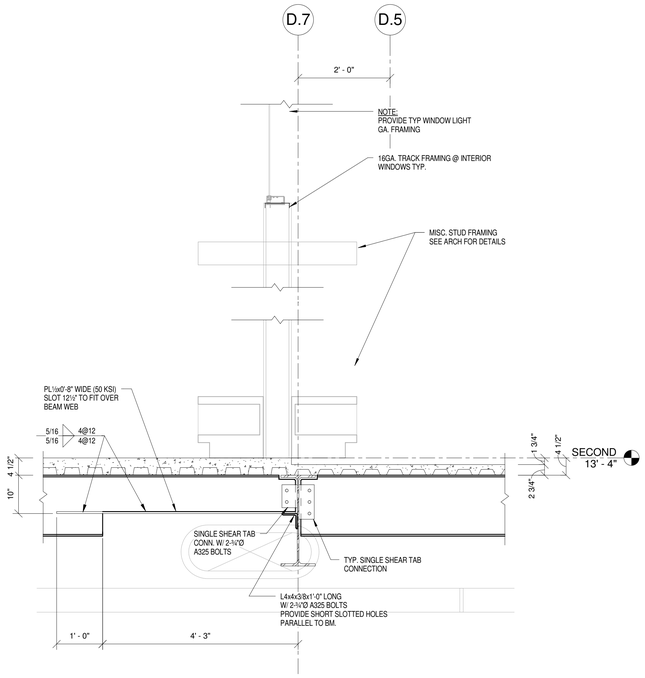
3 SECTION
3/4" = 1'-0"



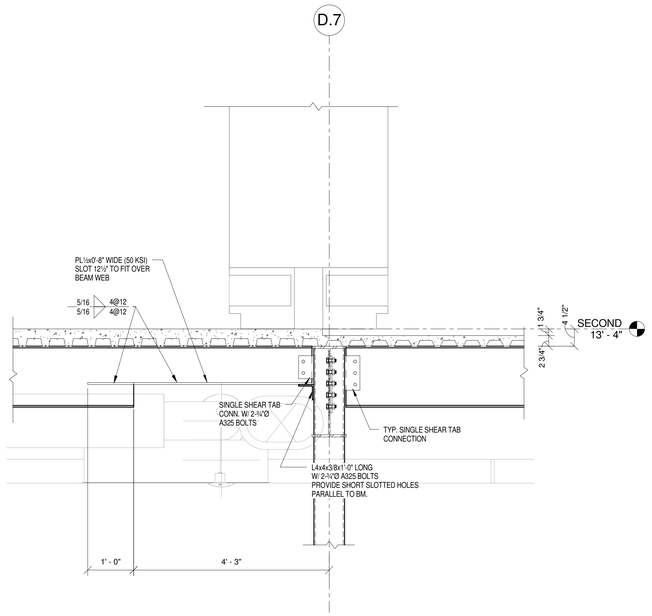
4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"

5/7/2013 8:04:32 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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aquatics consultant:
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St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan

seal/signature

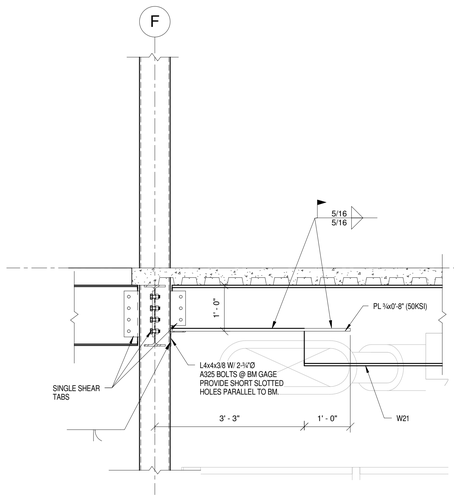
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

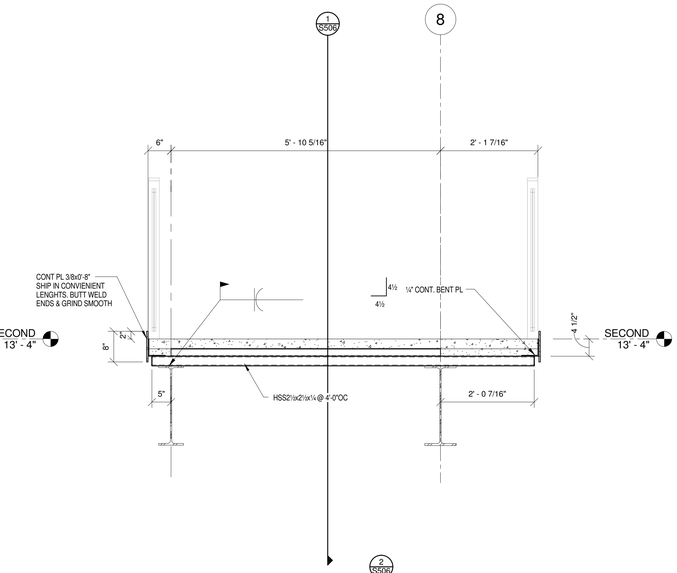
FRAMING SECTIONS

sheet number

S416



1 SECTION
3/4" = 1'-0"



2 SECTION
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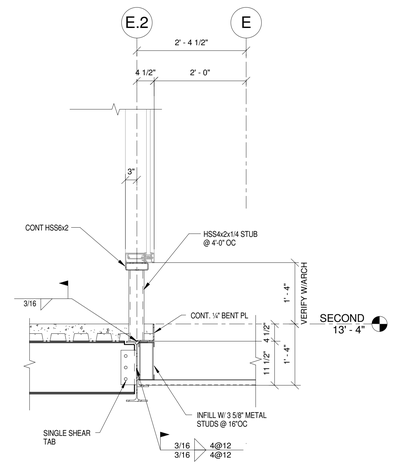
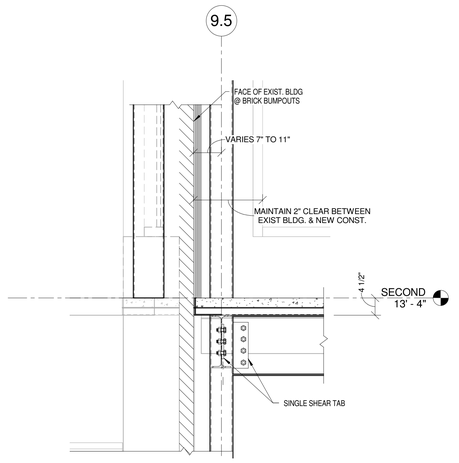
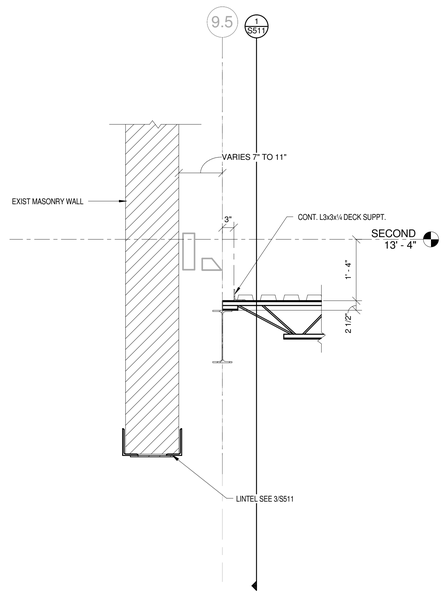


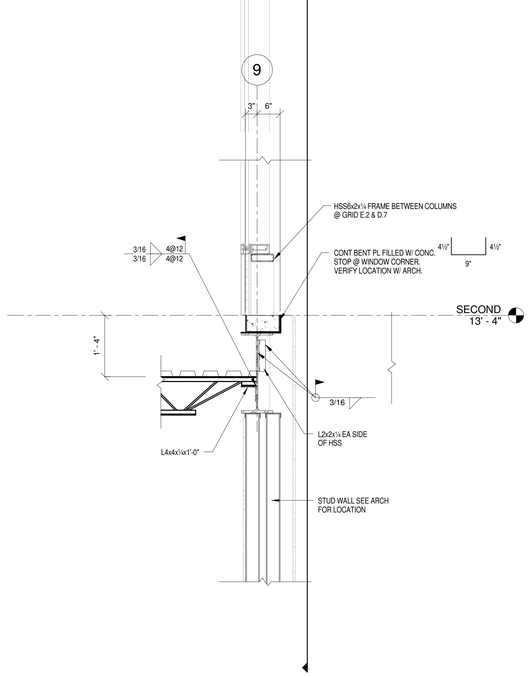
3 SECTION
3/4" = 1'-0"



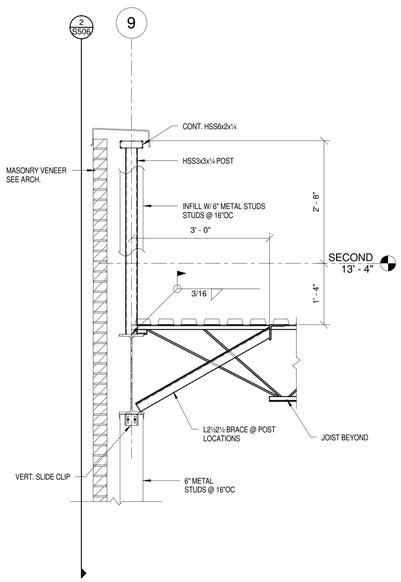
4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"

5/7/2013 8:04:37 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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St. Louis, Missouri 63127
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Key Plan

seal/signature

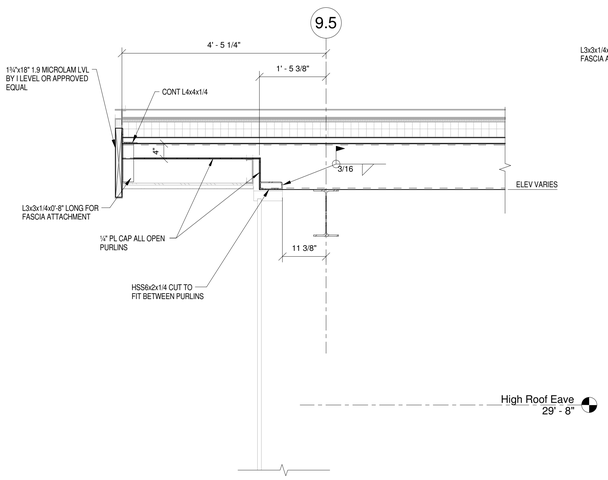
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

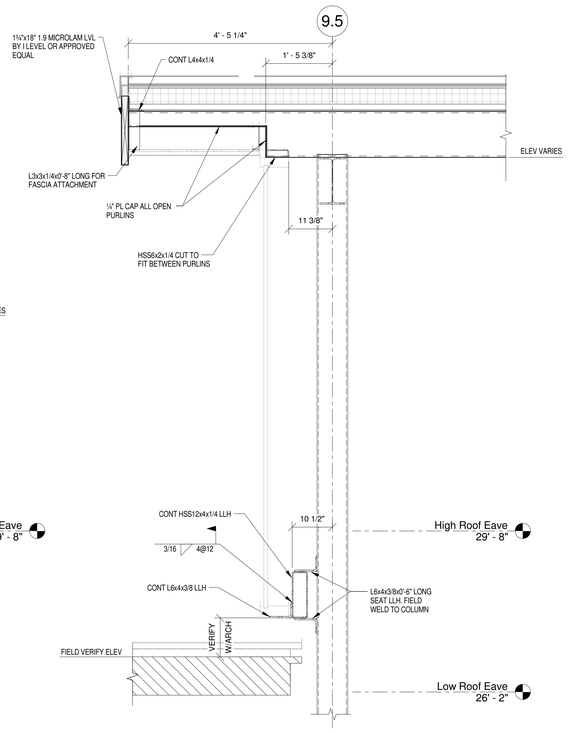
FRAMING SECTIONS

sheet number

S417



1 SECTION
3/4" = 1'-0"



2 SECTION
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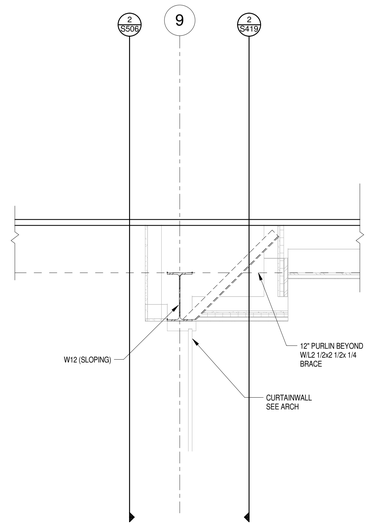
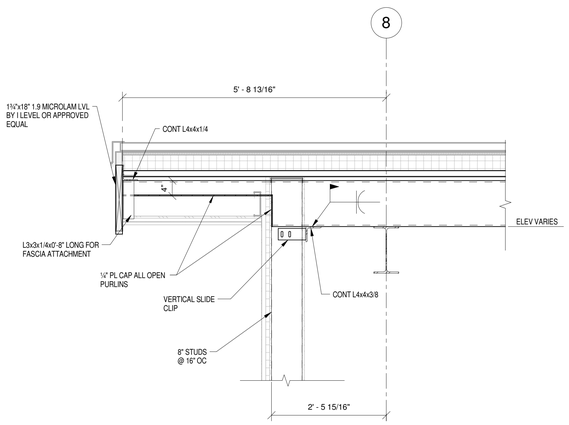


3 SECTION
3/4" = 1'-0"



4 SECTION
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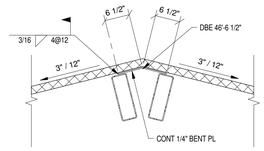
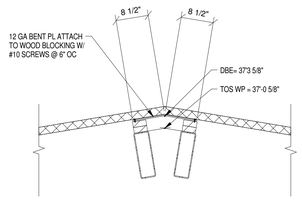


5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"

5/7/2013 8:04:41 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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P: (501) 450-5000

lead architect:
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P: (501) 370-9207

design architect:
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P: (816) 472-2000

MEP engineer:
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structural engineer:
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Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
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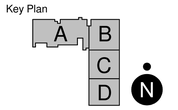
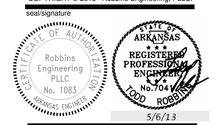
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



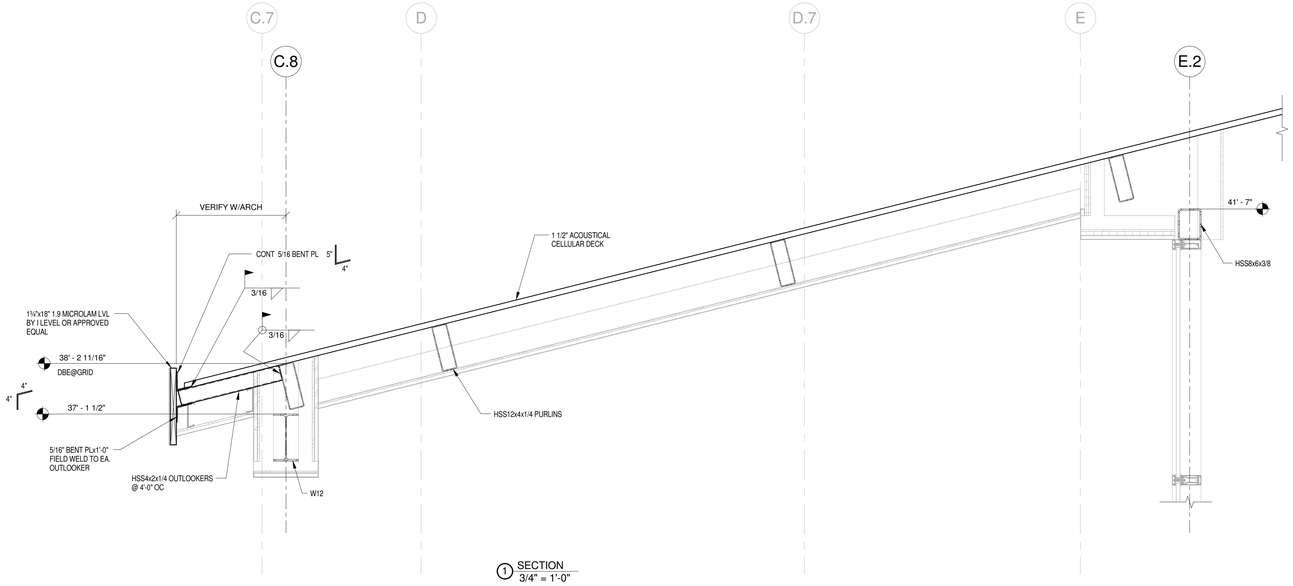
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

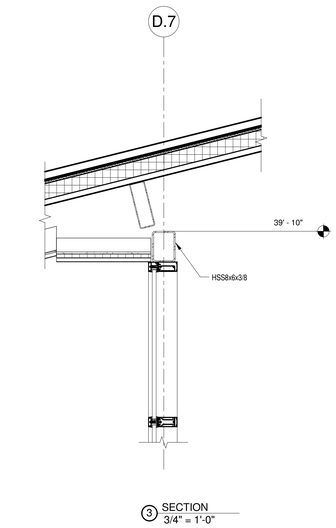
FRAMING SECTIONS

sheet number

S418



1 SECTION
3/4" = 1'-0"



3 SECTION
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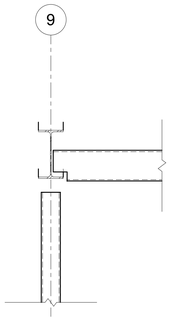

4 SECTION
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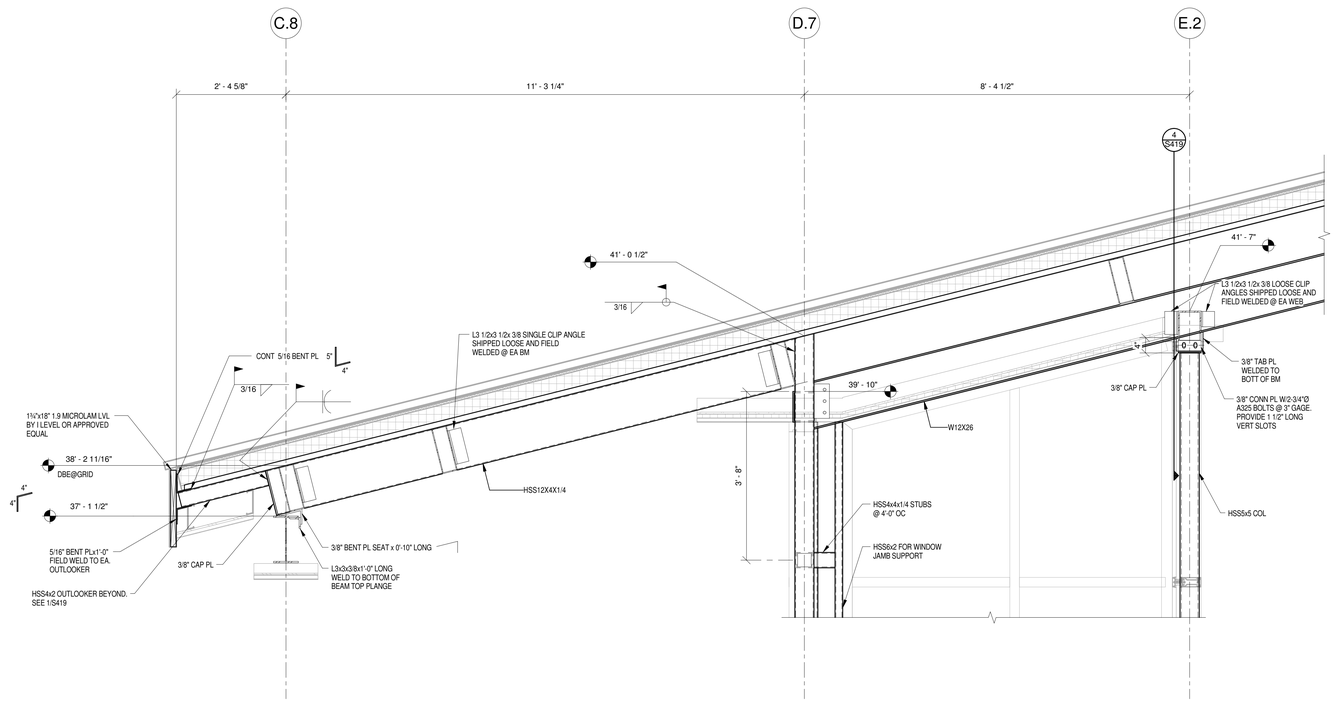
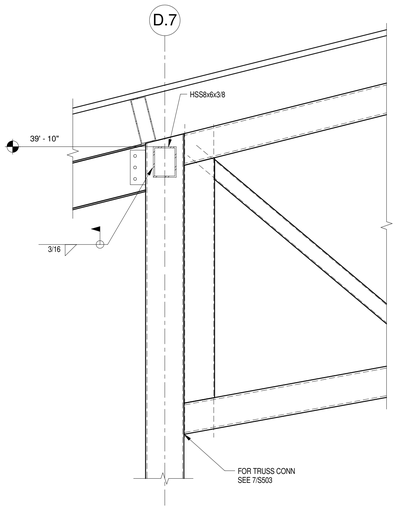


2 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"

5/7/2013 8:04:45 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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P: (501) 450-5000

lead architect:
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design architect:
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civil engineer & landscape architect:
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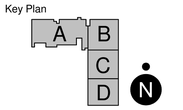
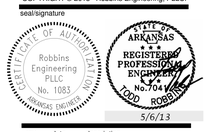
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



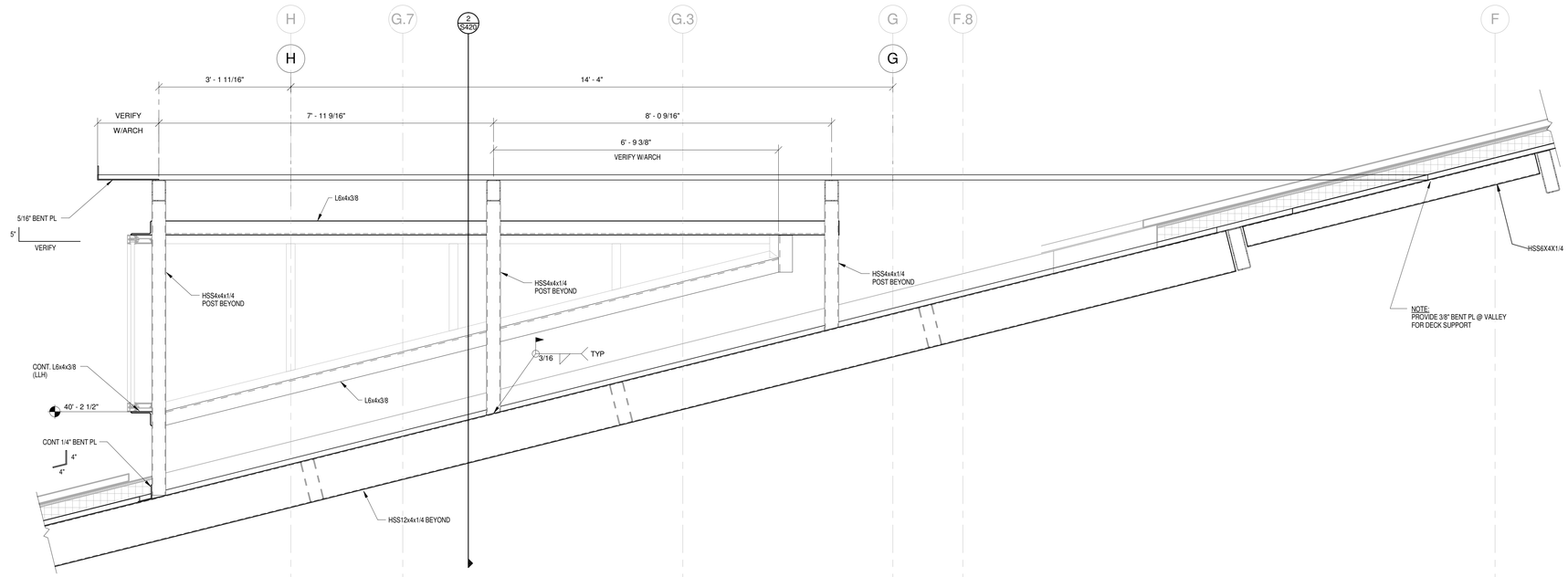
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

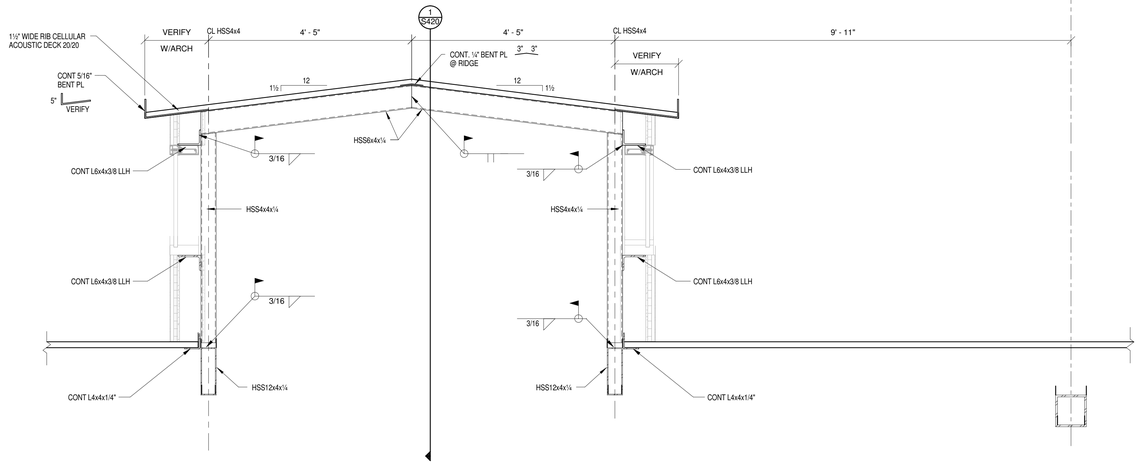
FRAMING SECTIONS

sheet number

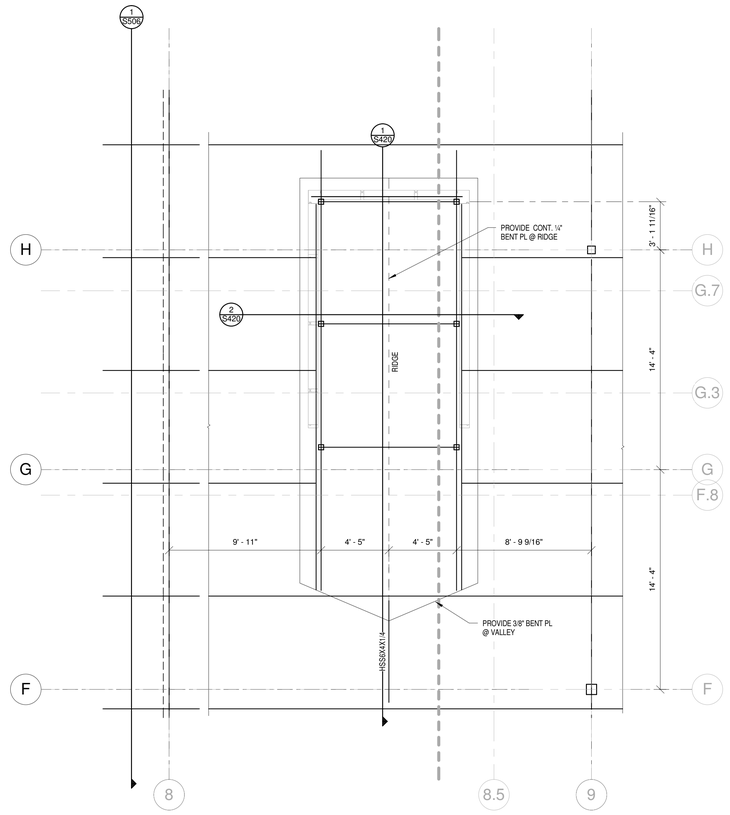
S419



1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 HIGH ROOF DORMER FRAMING PLAN
1/4" = 1'-0"

5/7/2013 8:04:47 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
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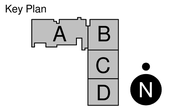
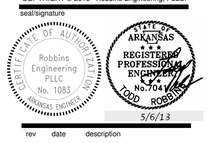
P: (314) 894-1245

Key Plan



seal/signature



5/6/13

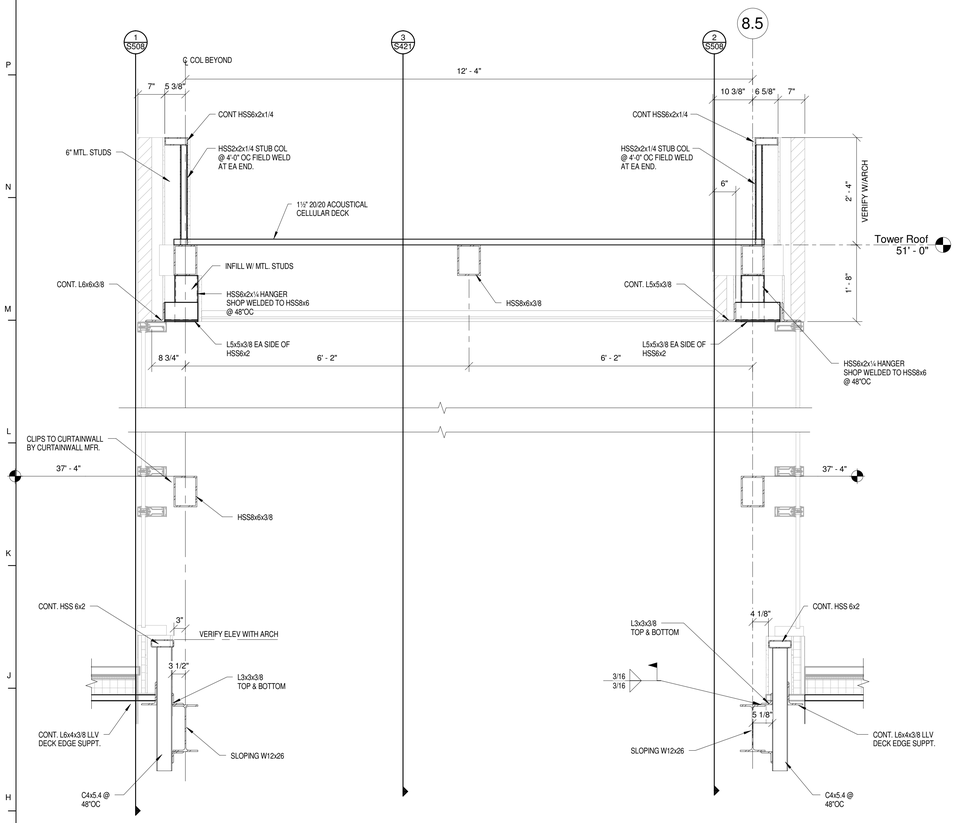
rev	date	description

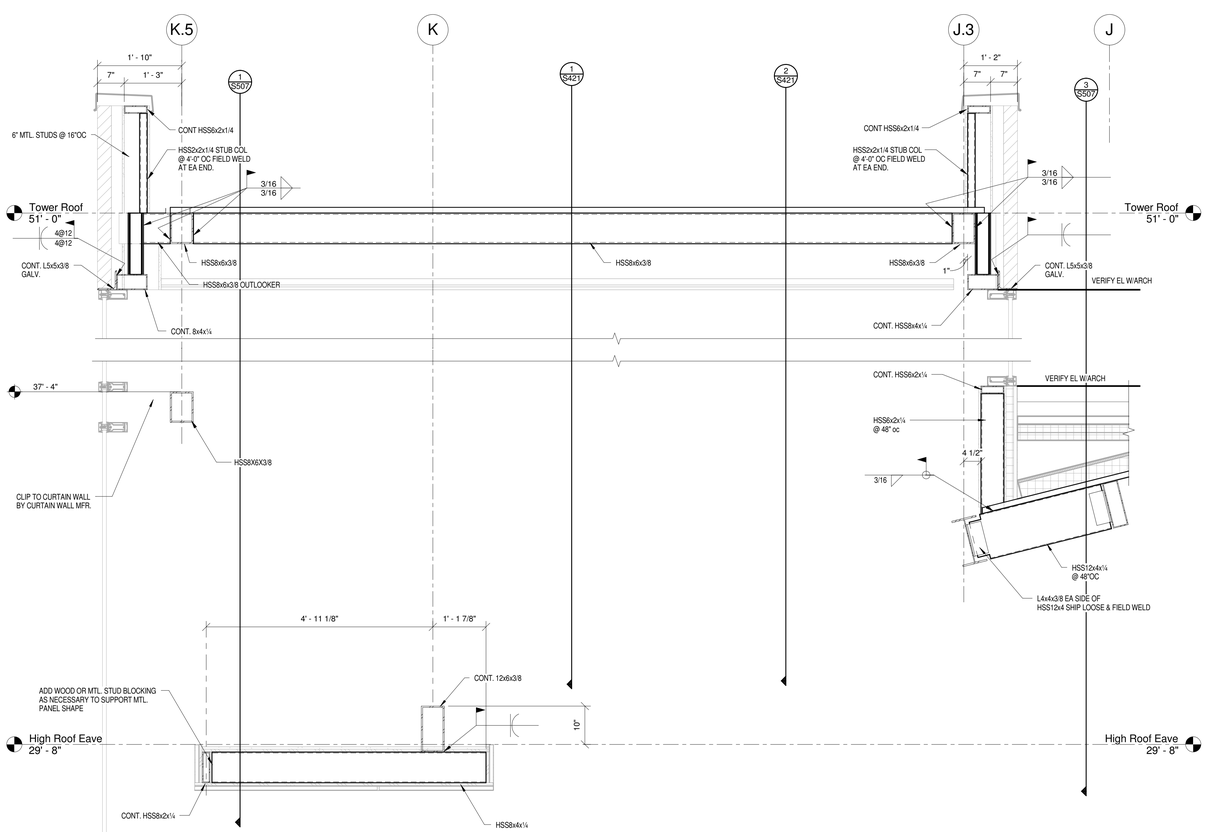
date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

FRAMING SECTIONS

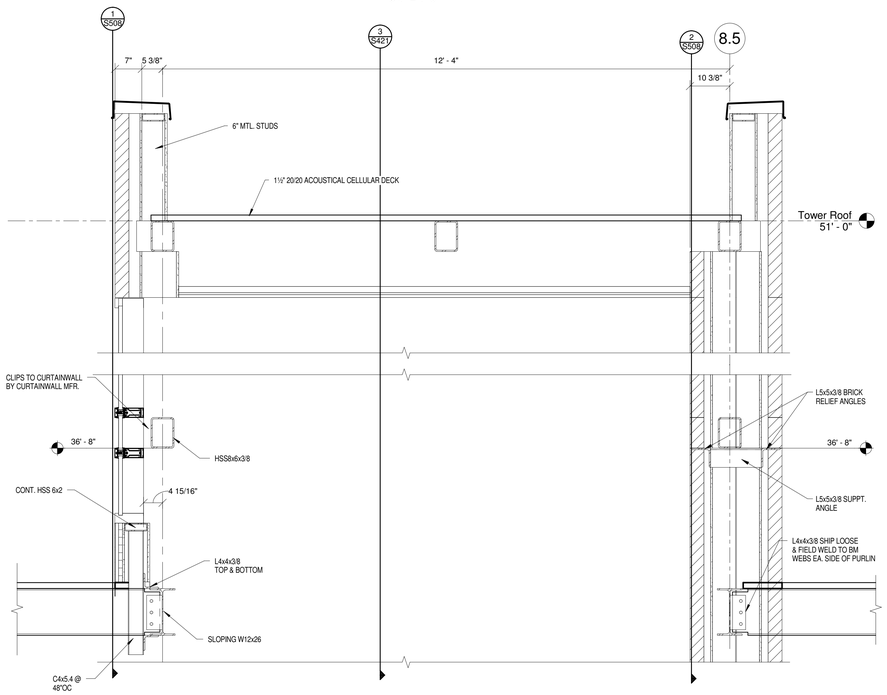
sheet number

S420

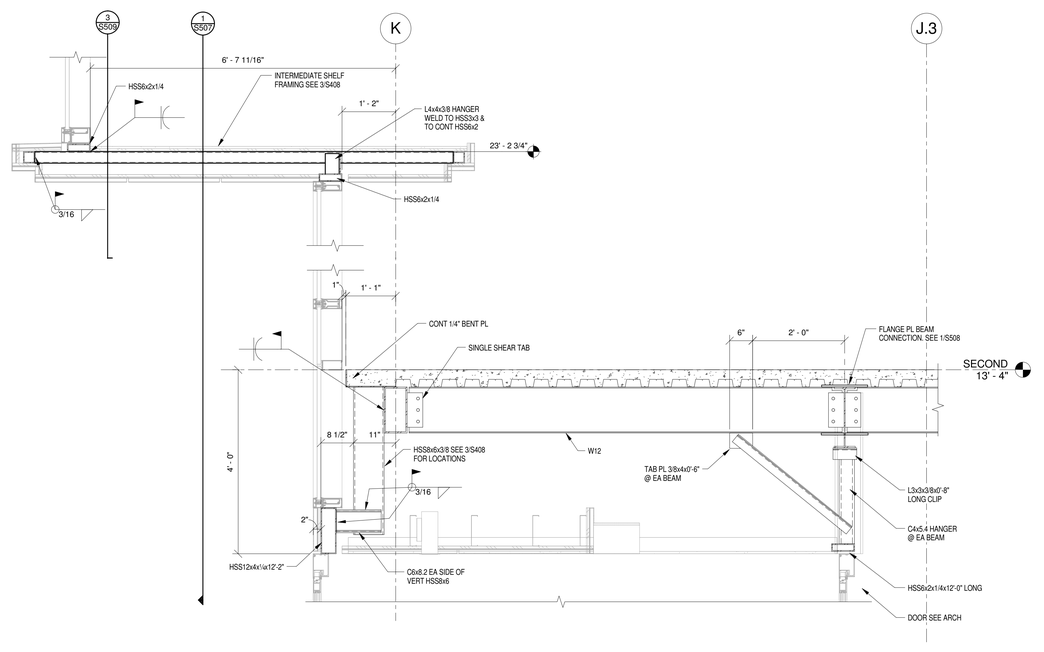




1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

4 SECTION
3/4" = 1'-0"

5/7/2013 8:04:51 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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aquatics consultant:
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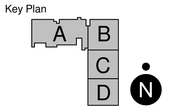
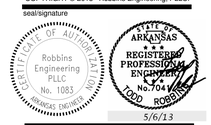
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



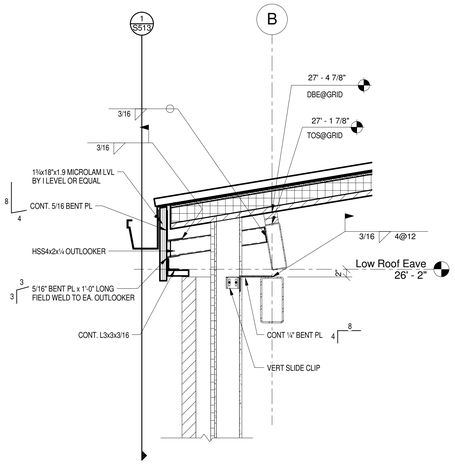
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

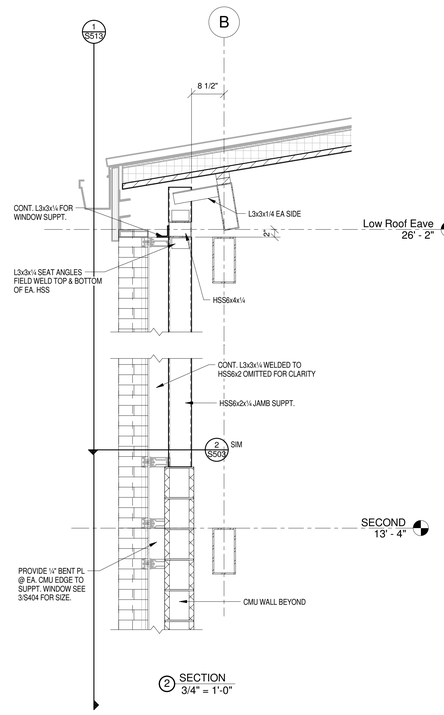
FRAMING SECTIONS

sheet number

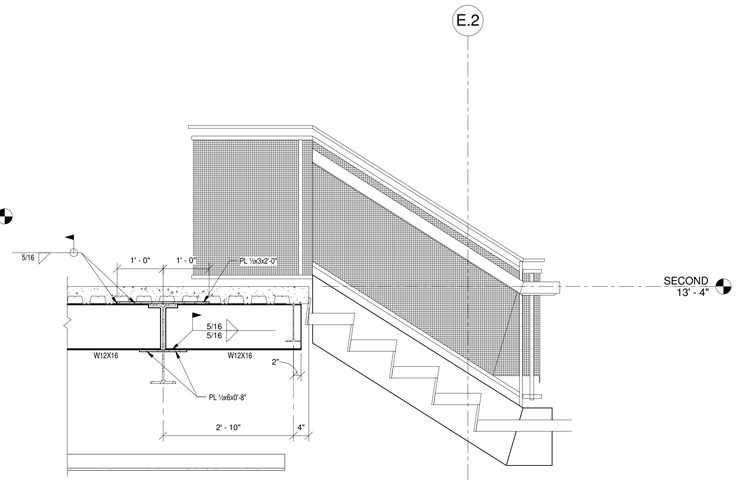
S421



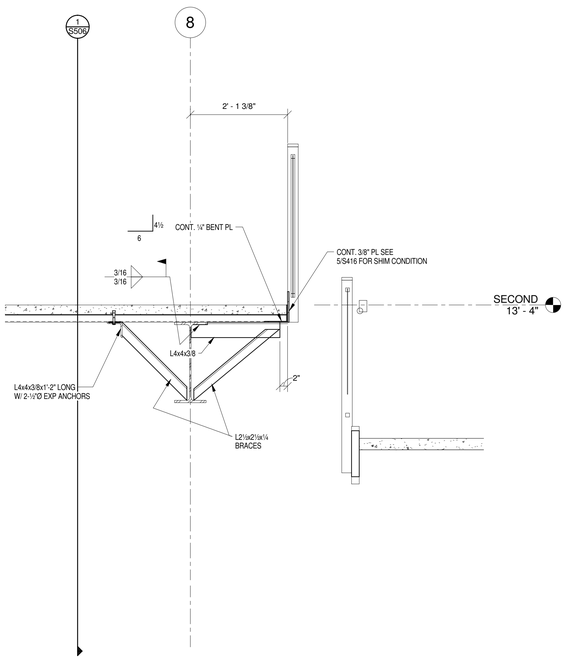
1 SECTION
3/4" = 1'-0"



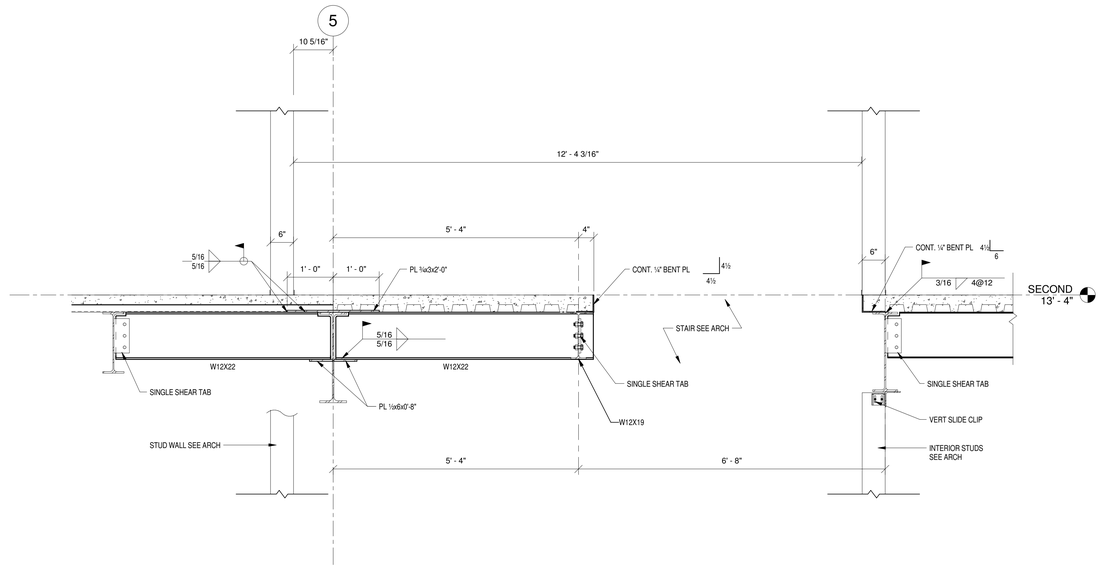
2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



5 SECTION
3/4" = 1'-0"

5/7/2013 8:04:56 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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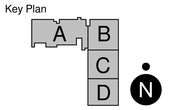
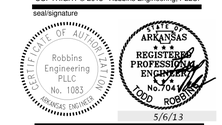
Key Plan



seal/signature



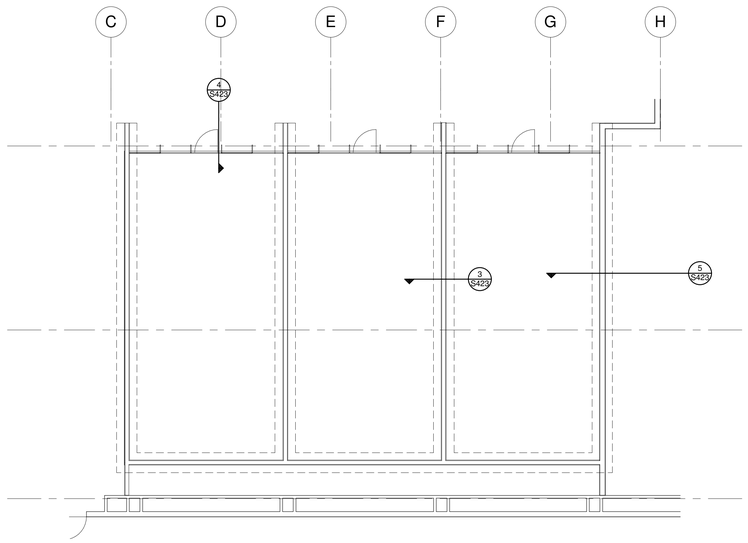
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

FRAMING SECTIONS

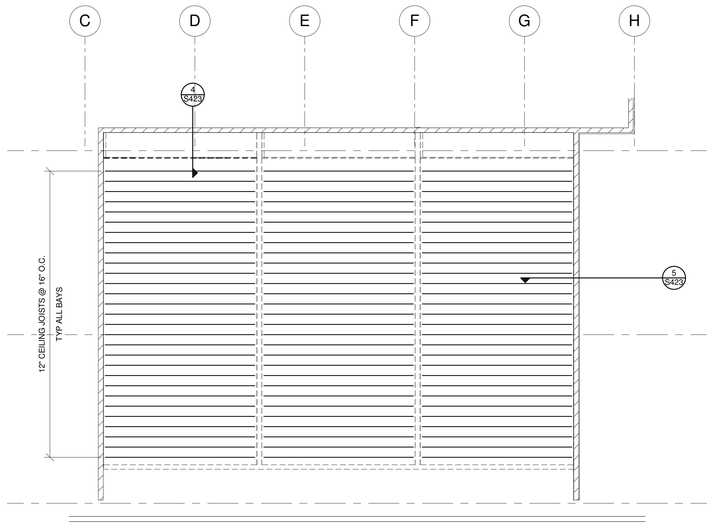
sheet number

S422

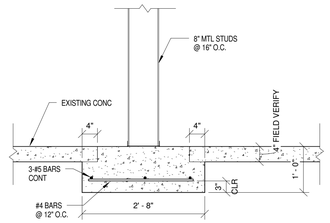


1 RAQUETBALL COURTS FOUNDATION PLAN
1/8" = 1'-0"

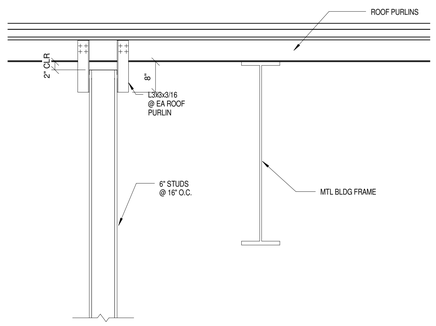
NOTE:
SOME PORTIONS OF EXIST WOOD SLEEPER SYSTEM WILL BE INFILLED W/ 3000psi NORMAL WT. CONCRETE. SEE SHEET A600 FOR LIMITS. REINF. W/ 6x6-W2.1xW2.1, SAW CUT CONTROL JOINTS @ 15'-0"OC EA. WAY. THOROUGHLY CLEAN EXIST. CONC. FLOOR AND COAT W/ CONC. BONDING AGENT PRIOR TO PLACING NEW CONC.



2 RAQUETBALL COURTS FRAMING PLAN
1/8" = 1'-0"

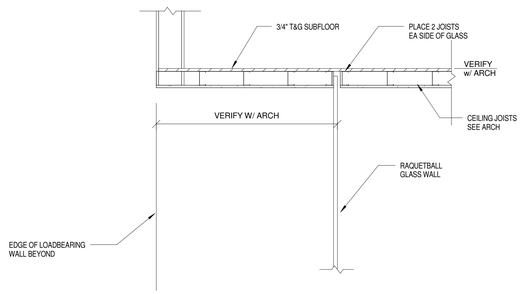


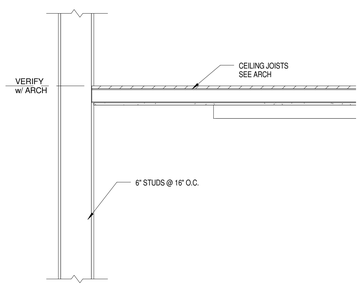
3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"

5 SECTION
3/4" = 1'-0"





NOTES:

1. LATERAL FRAMING LOADS = 5 PSF
2. ROOF/CEILING DL = 10 PSF
3. LL = 40 PSF
4. ▨ INDICATES CEILING EXTENDS TO ROOF.
5. SEE ARCH FOR SPECIFIC DIMENSIONS & LAYOUT.
6. DECK SHALL BE 3/4" T&g SUBFLOORING ATTACHED TO CEILING JOISTS W/ #10 SCREWS @ 12" O.C. IN THE FIELD & 6" O.C. ALONG EDGES.

5/7/2013 8:05:00 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

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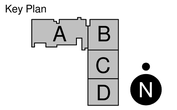
P: (314) 894-1245

Key Plan



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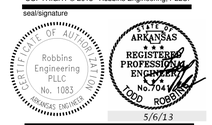


5/6/13

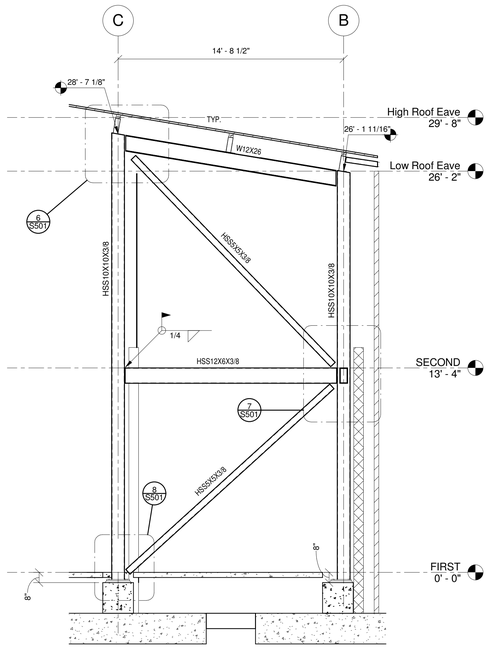
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

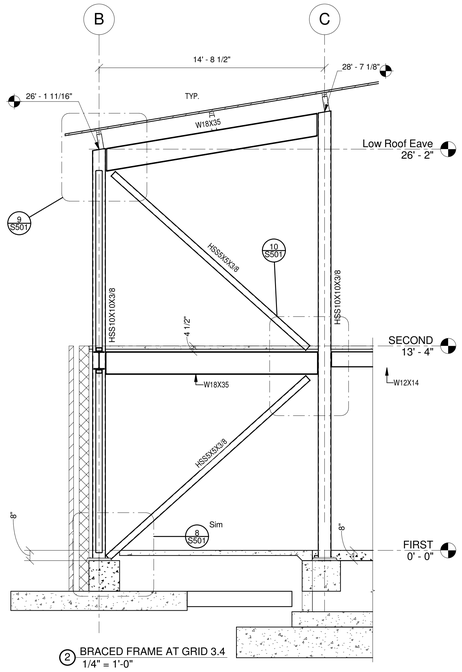
RAQUETBALL COURTS

sheet number

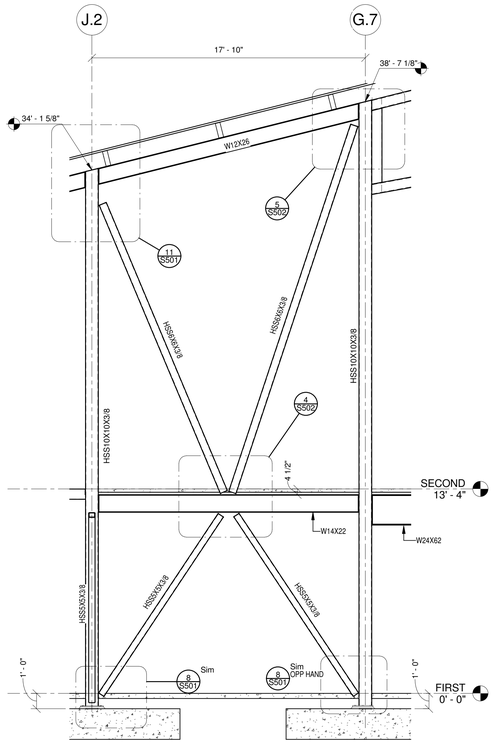
S423



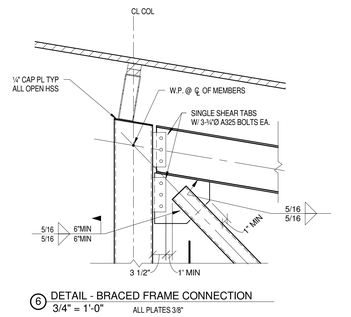
1 BRACED FRAME @ GRID 1.6
1/4" = 1'-0"



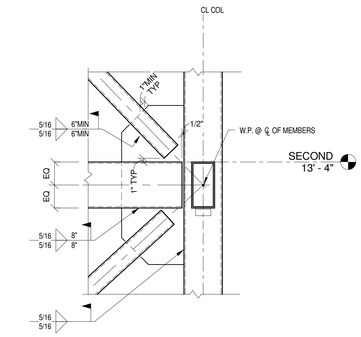
2 BRACED FRAME AT GRID 3.4
1/4" = 1'-0"



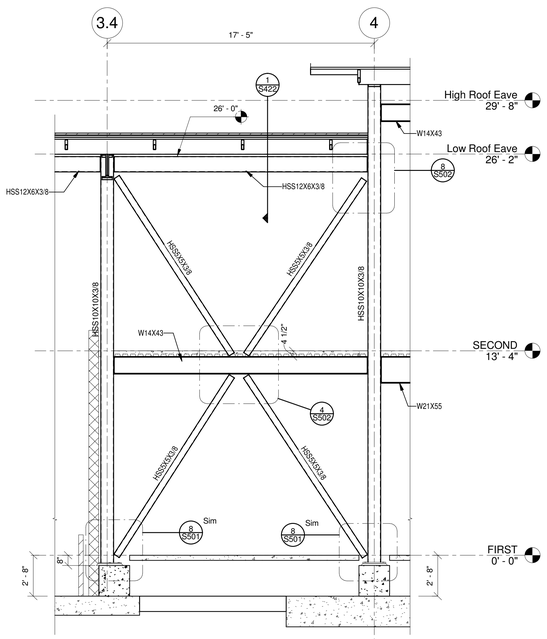
3 BRACED FRAME @ GRID 5
1/4" = 1'-0"



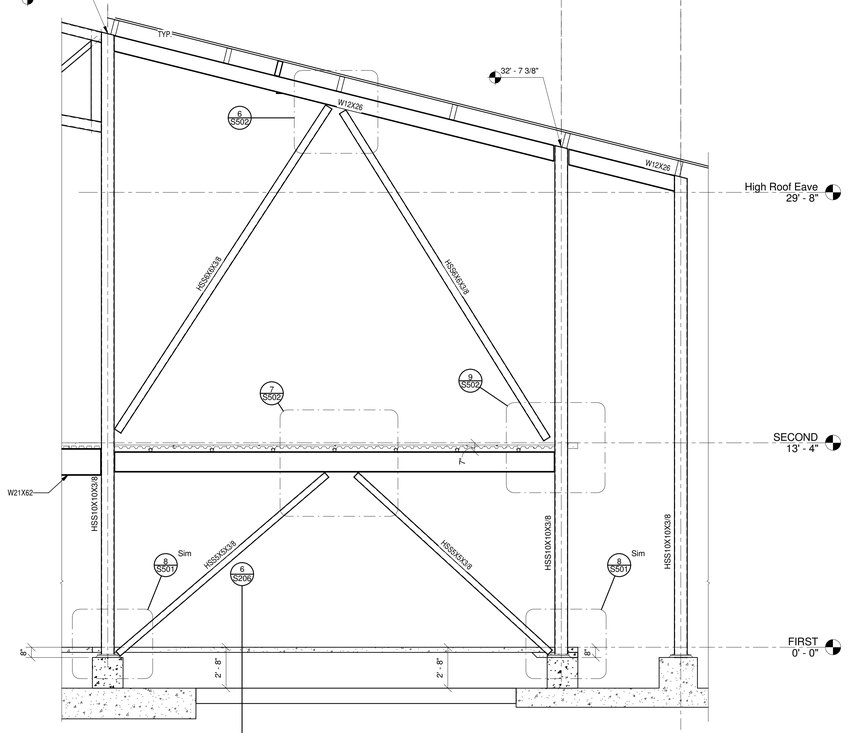
6 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0" ALL PLATES 3/8"



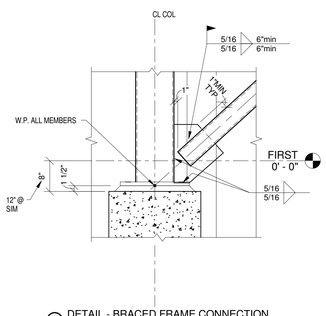
7 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0" ALL PLATES 3/8"



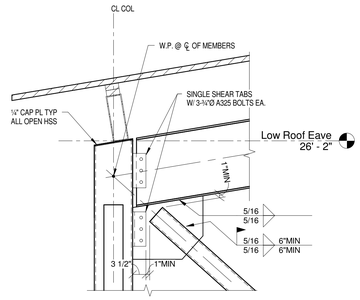
4 BRACED FRAME @ GRID B
1/4" = 1'-0"



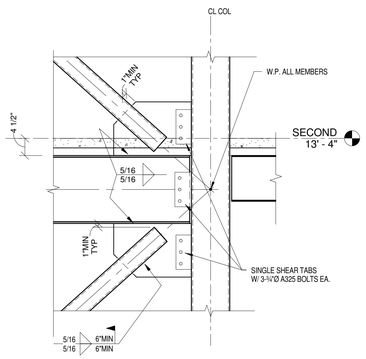
5 BRACED FRAME @ GRID 8
1/4" = 1'-0"



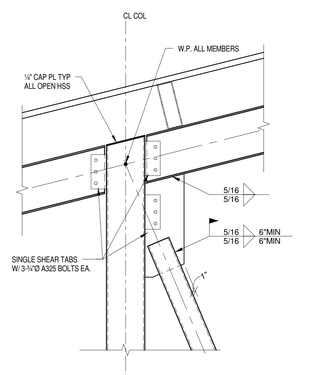
8 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"



9 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0" ALL PLATES 3/8"



10 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0" ALL PLATES 3/8"



11 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0" ALL PLATES 3/8"

5/7/2013 8:05:06 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
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Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

MEP engineer:
TME, INC.
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P: (501) 666-6676

structural engineer:
Robbins Engineering
10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan

seal/signature

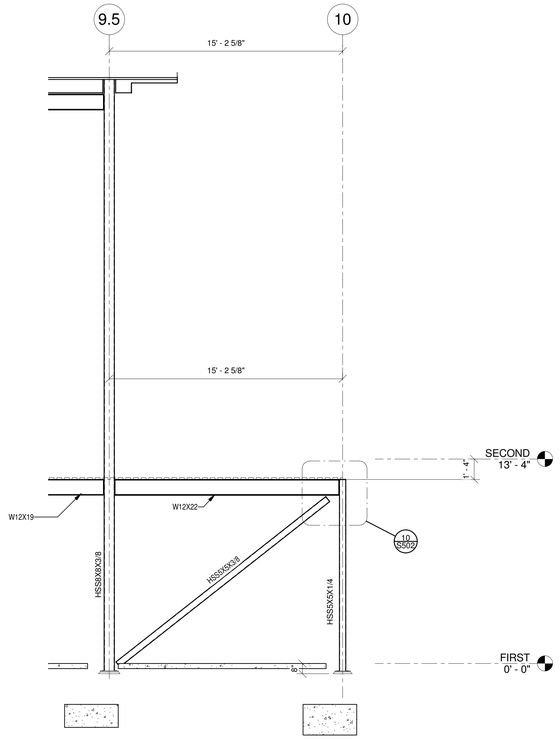
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

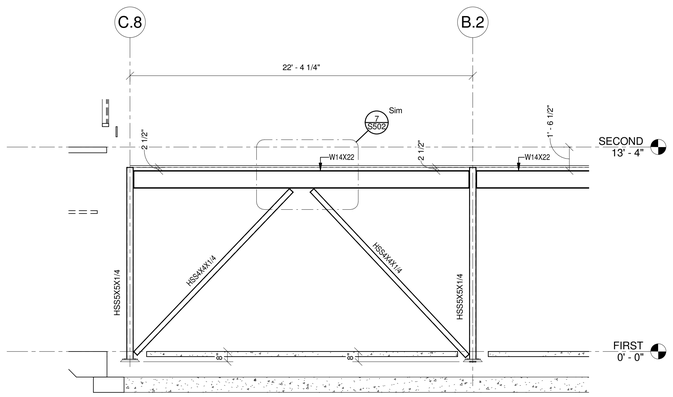
BRACED FRAME ELEVATIONS

sheet number

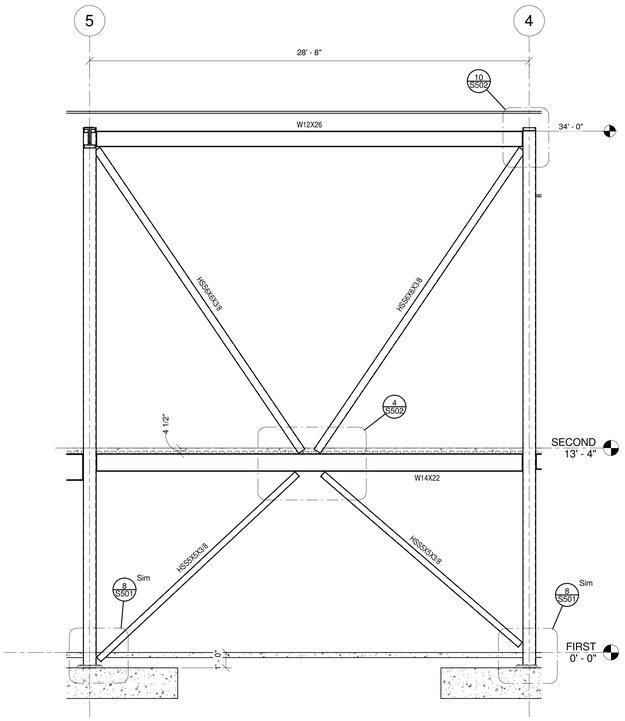
S501



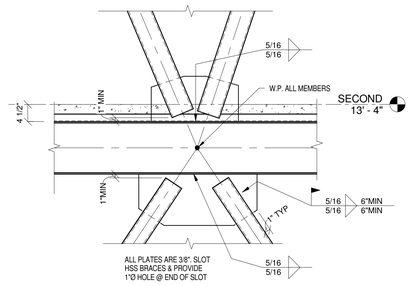
1 BRACED FRAME AT GRID C.8
1/4" = 1'-0"



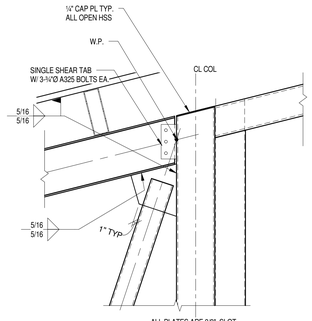
2 BRACED FRAME AT GRID 10
1/4" = 1'-0"



3 BRACED FRAME @ GRID J.2
1/4" = 1'-0"

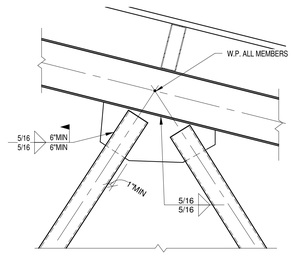


4 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"



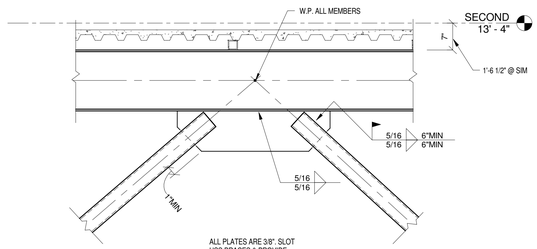
ALL PLATES ARE 3/8". SLOT
HSS BRACES & PROVIDE
1"Ø HOLE @ END OF SLOT

5 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"



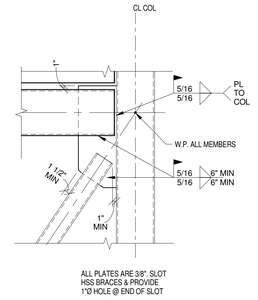
ALL PLATES ARE 3/8". SLOT
HSS BRACES & PROVIDE
1"Ø HOLE @ END OF SLOT

6 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"



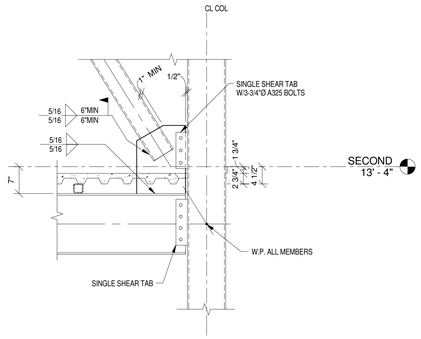
ALL PLATES ARE 3/8". SLOT
HSS BRACES & PROVIDE
1"Ø HOLE @ END OF SLOT

7 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"



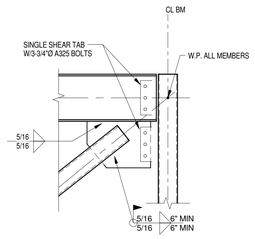
ALL PLATES ARE 3/8". SLOT
HSS BRACES & PROVIDE
1"Ø HOLE @ END OF SLOT

8 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"



ALL PLATES ARE 3/8". SLOT
HSS BRACES & PROVIDE
1"Ø HOLE @ END OF SLOT

9 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"



ALL PLATES ARE 3/8". SLOT
HSS BRACES & PROVIDE
1"Ø HOLE @ END OF SLOT

10 DETAIL - BRACED FRAME CONNECTION
3/4" = 1'-0"

5/7/2013 8:05:11 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
401 West Capitol, Suite 402
Little Rock, Arkansas 72201
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design architect:
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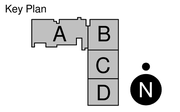
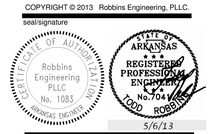
P: (314) 894-1245

Key Plan



seal/signature



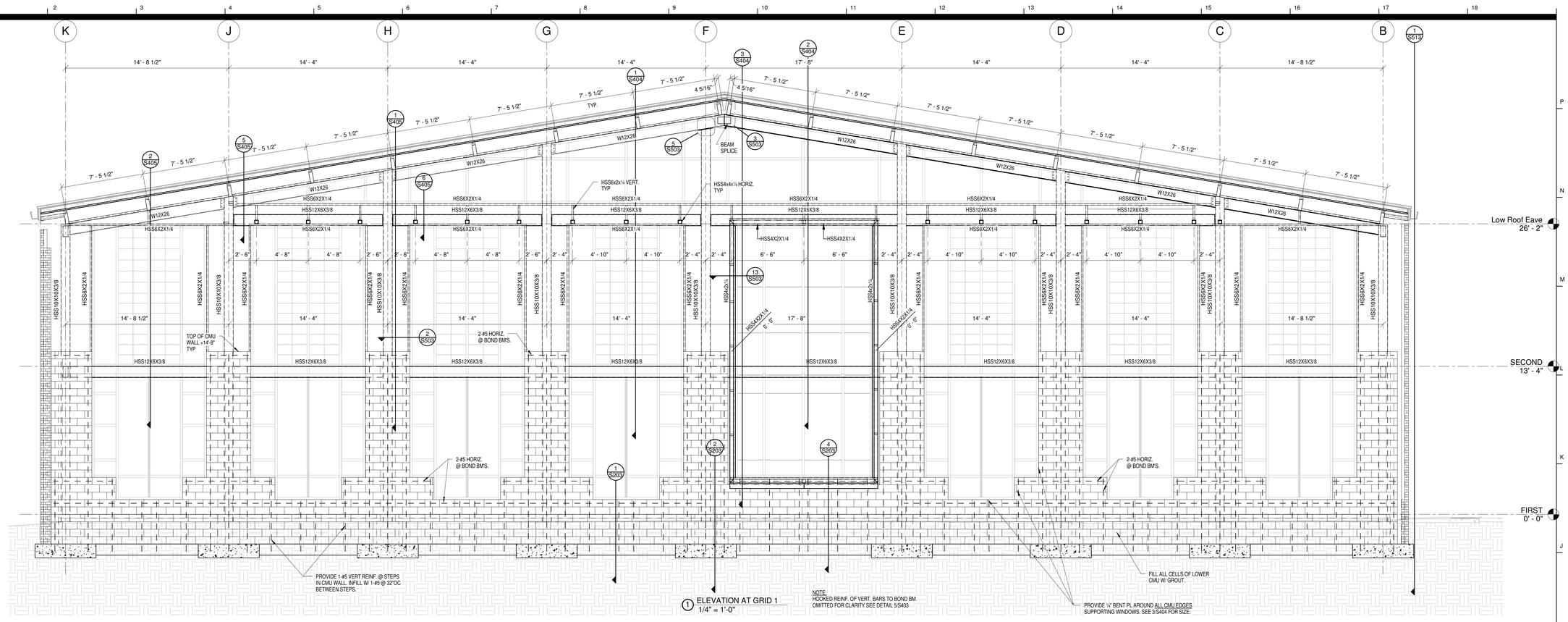
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

BRACED FRAME ELEVATIONS

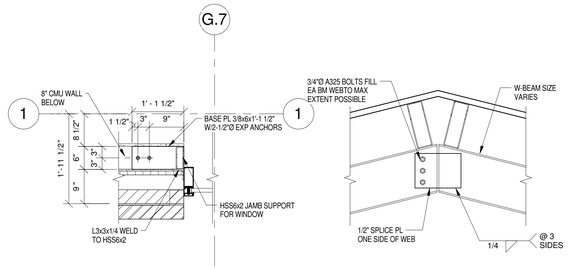
sheet number

S502



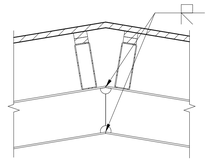
1 ELEVATION AT GRID 1
1/4" = 1'-0"

NOTE:
HOOKED REINF. OF VERT. BARS TO BOND BM. OMITTED FOR CLARITY SEE DETAIL 5/S403

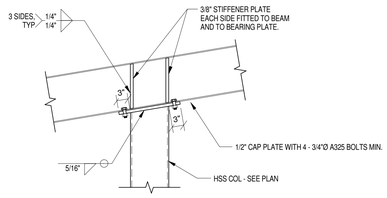


2 DETAIL - WINDOW JAMB SUPPORT
3/4" = 1'-0"

3 DETAIL - BEAM SPLICE AT RIDGE
3/4" = 1'-0"

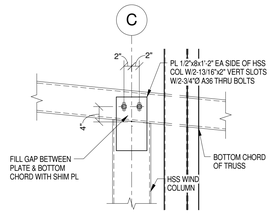


4 DETAIL - RIGID CONN AT RIDGE
3/4" = 1'-0"

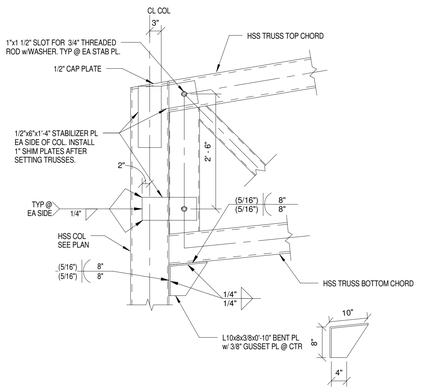


NOTES:
1. BEAM MAY BE SLOPED. COLUMN TO BE CUT ACCORDINGLY. STIFFENER PLATES TO REMAIN PLUMB AND IN LINE WITH HSS WALLS.

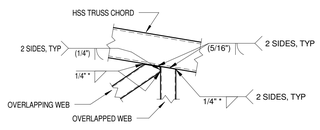
5 BEAM OVER COLUMN DETAIL
3/4" = 1'-0"



6 DETAIL - WIND COL SPLICE TO TRUSS
3/4" = 1'-0"

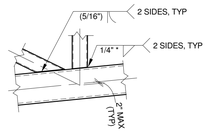


7 HSS TRUSS TYP BEARING DETAIL
3/4" = 1'-0"



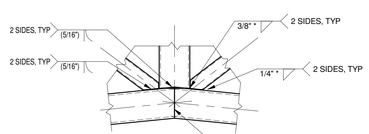
A. * FOR SKEWED FILLET WELDS, MINIMUM EQUIVALENT 90° FILLET SHOWN. FABRICATOR SHALL SIZE SKEWED FILLET WELDS TO ACHIEVE THE EQUIVALENT EFFECTIVE THROAT ACCOUNTING FOR Z-LOSS DIMENSION BASED ON WELDING PROCESS AND POSITION USED DURING FABRICATION.
B. OVERLAPPED MEMBER SHALL BE WELDED ALL AROUND FIRST. THEN OVERLAPPING MEMBER SHALL BE WELDED ALL AROUND.
C. OVERLAPPED CONNECTIONS ALLOWED WITHIN MIDDLE HALF OF TRUSS WITH MINIMUM OVERLAP = 50%. ±2" ECCENTRICITY ALLOWED TO MEET MINIMUM OVERLAP. OTHERWISE, USE GAPPED CONNECTION.

8 HSS TRUSS TYP OVERLAPPED "N" JOINT
3/4" = 1'-0"



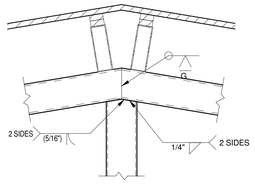
A. GAP BETWEEN WEBS MAY BE INCREASED BY FABRICATOR AS NEEDED TO ALLOW WELD DEPOSIT AROUND PERIMETER OF EACH WEB TO THE CHORD, PROVIDED WORKING POINT ECCENTRICITY DOES NOT EXCEED 2".
B. * FOR SKEWED FILLET WELDS, MINIMUM EUIVALENT 90° FILLET SHOWN. FABRICATOR SHALL SIZE SKEWED FILLET WELDS TO ACHIEVE THE EQUIVALENT EFFECTIVE THROAT ACCOUNTING FOR Z-LOSS DIMENSION (ACUTE SIDE) BASED ON WELDING PROCESS AND POSITION USED TO FABRICATE TRUSSES. OBTUSE SIDE SHALL BE INCREASED BY AWS D1.1ANNEX B EQUIVALENT LEG SIZE FACTOR BASED ON FINAL DETAILED CONNECTION ANGLES.

9 HSS TRUSS TYP GAPPED "N" JOINT
3/4" = 1'-0"

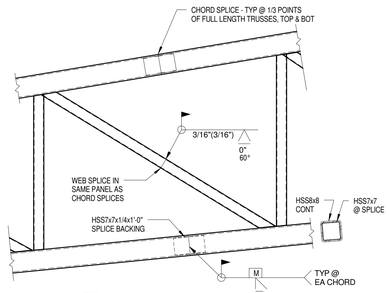


A. SEE NOTES FOR TYP OVERLAPPED AND GAPPED "N" JOINTS

10 HSS Truss BC Ridge Detail
3/4" = 1'-0"

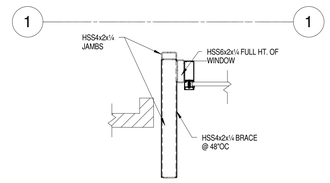


11 HSS TRUSS TC RIDGE DETAIL
3/4" = 1'-0"



NOTE:
ALL FULL PENETRATION WELDS (100%) ON TRUSSES SHALL BE CONTINOUSLY INSPECTED AND WELD SHALL BE TESTED BY ULTRASONIC TESTING METHODS OR OTHER PREVIOUSLY APPROVED METHOD.

12 HSS Truss Splice Detail
1/2" = 1'-0"



13 SECTION
3/4" = 1'-0"

5/7/2013 8:05:18 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
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Little Rock, Arkansas 72201
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design architect:
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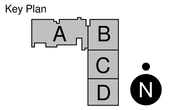
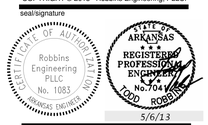
Key Plan



seal/signature



5/6/13

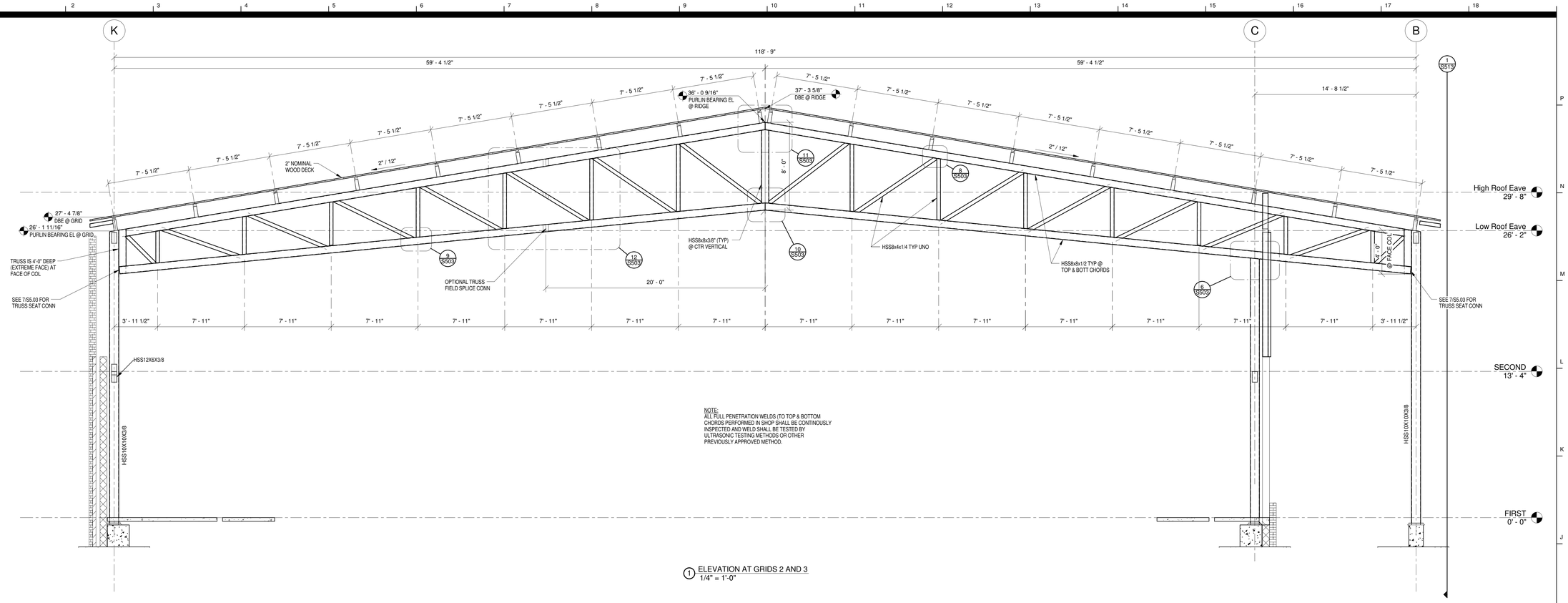
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

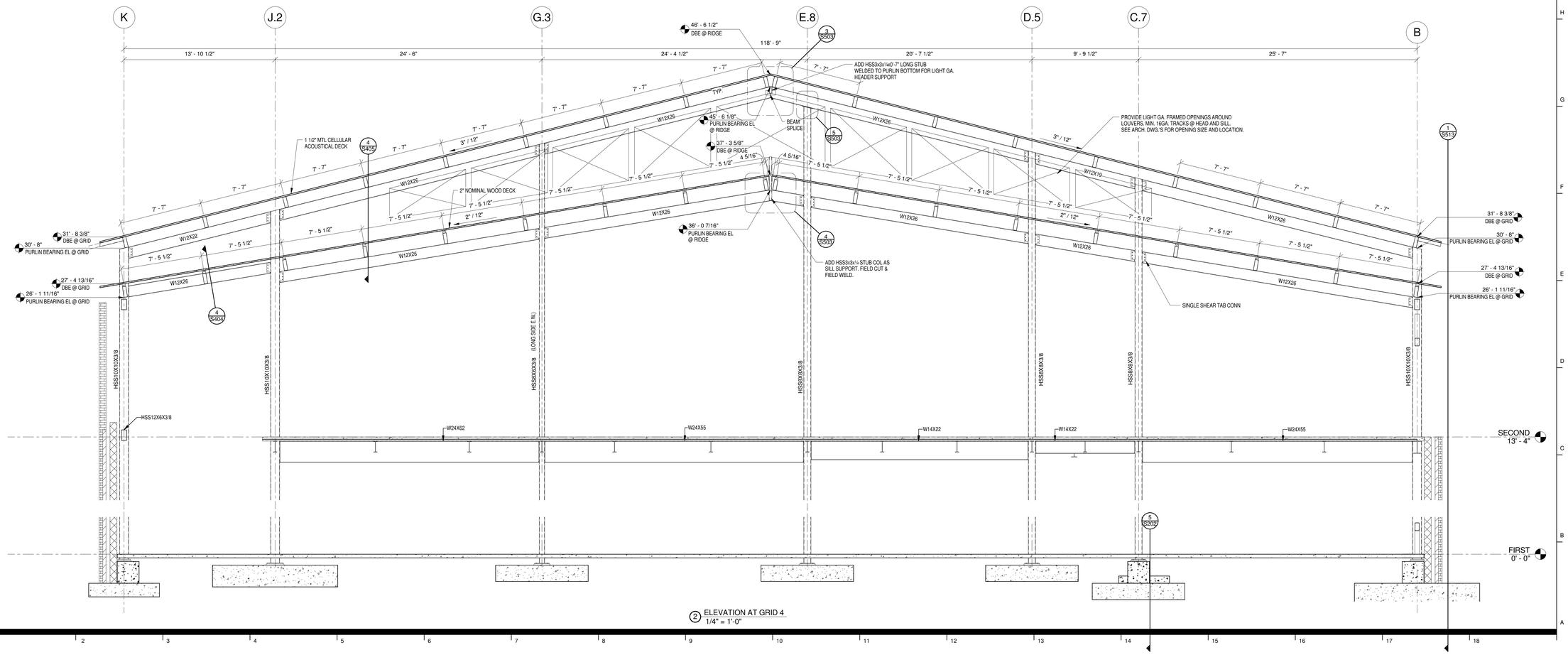
BUILDING FRAME ELEVATIONS

sheet number

S503



1 ELEVATION AT GRIDS 2 AND 3
1/4" = 1'-0"



2 ELEVATION AT GRID 4
1/4" = 1'-0"

5/7/2013 8:05:20 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
Stocks-Mann Architects, PLC
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Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
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P: (816) 472-2000

MEP engineer:
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structural engineer:
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10018 West Markham
Little Rock, Arkansas 72205
P: (501) 664-7575

civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
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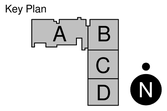
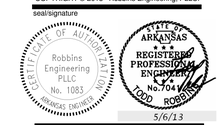
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



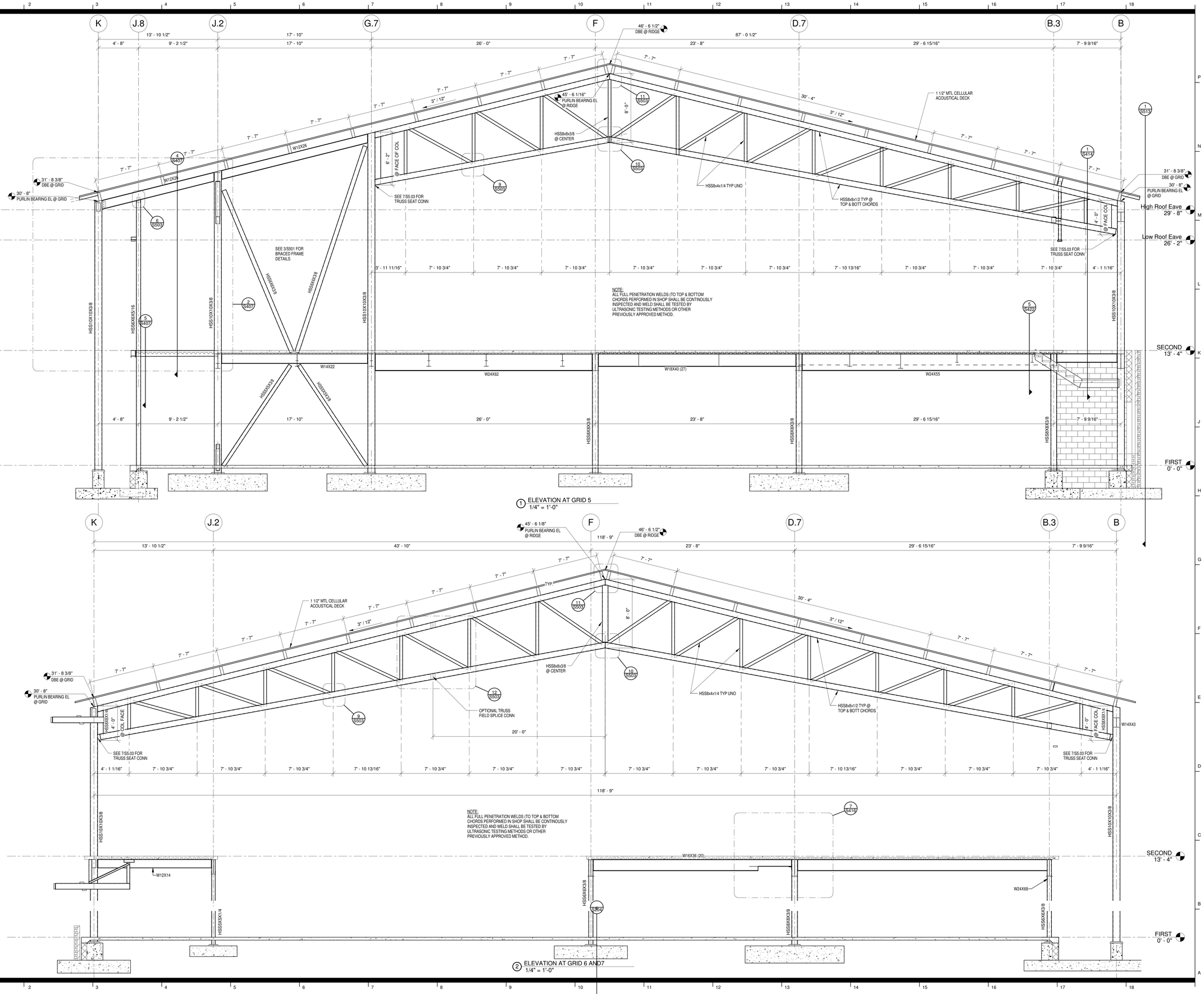
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

BUILDING FRAME ELEVATIONS

sheet number

S504



1 ELEVATION AT GRID 5
1/4" = 1'-0"

2 ELEVATION AT GRID 6 AND7
1/4" = 1'-0"

5/7/2013 8:05:22 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
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civil engineer & landscape architect:
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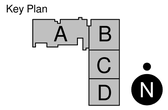
aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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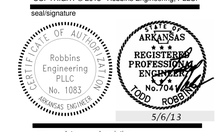


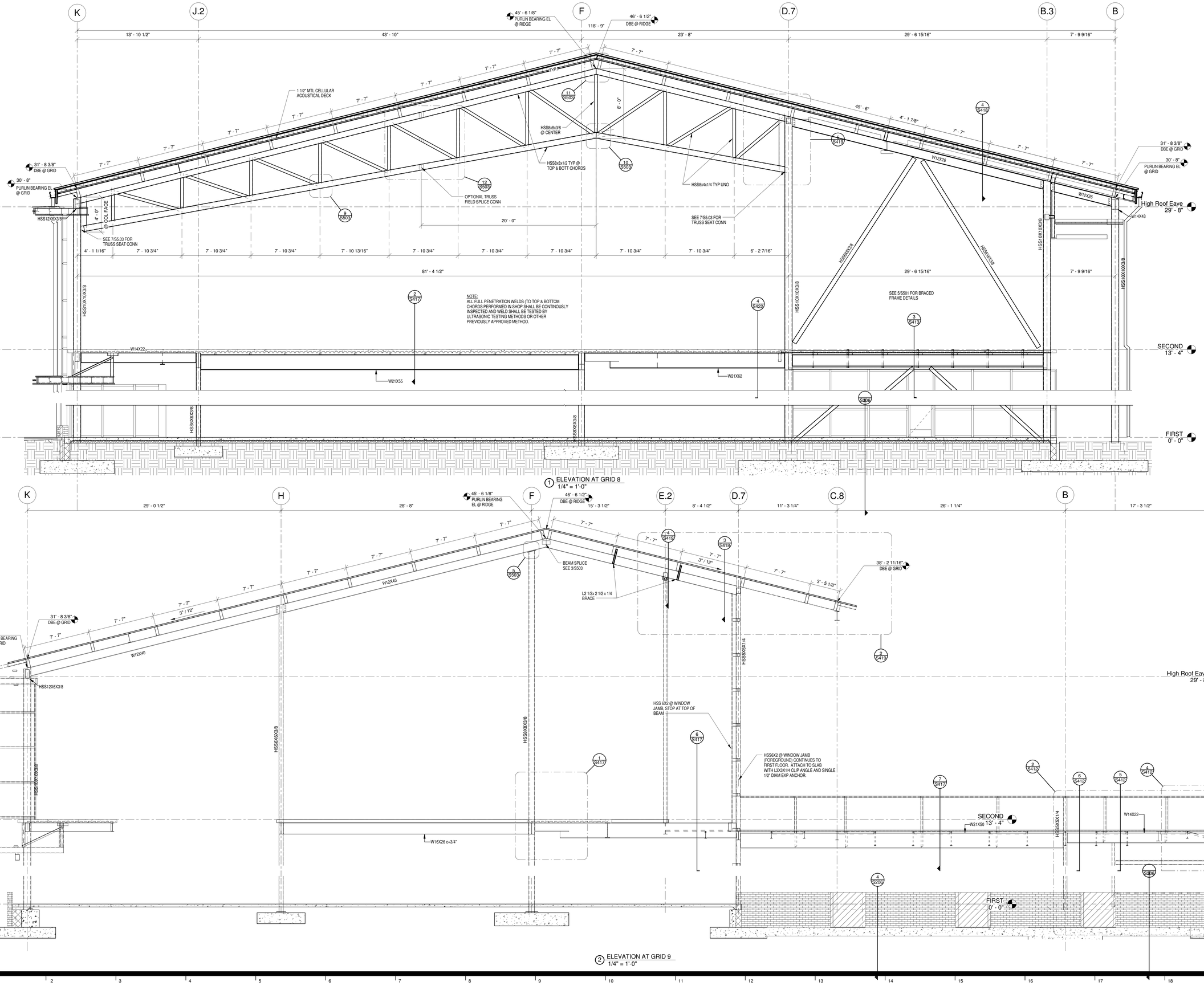
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

BUILDING FRAME ELEVATIONS

sheet number

S505



1 ELEVATION AT GRID 8
1/4" = 1'-0"

2 ELEVATION AT GRID 9
1/4" = 1'-0"

5/7/2013 8:05:27 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
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lead architect:
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aquatics consultant:
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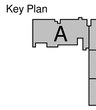
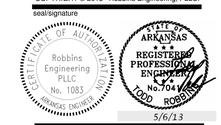
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



5/6/13

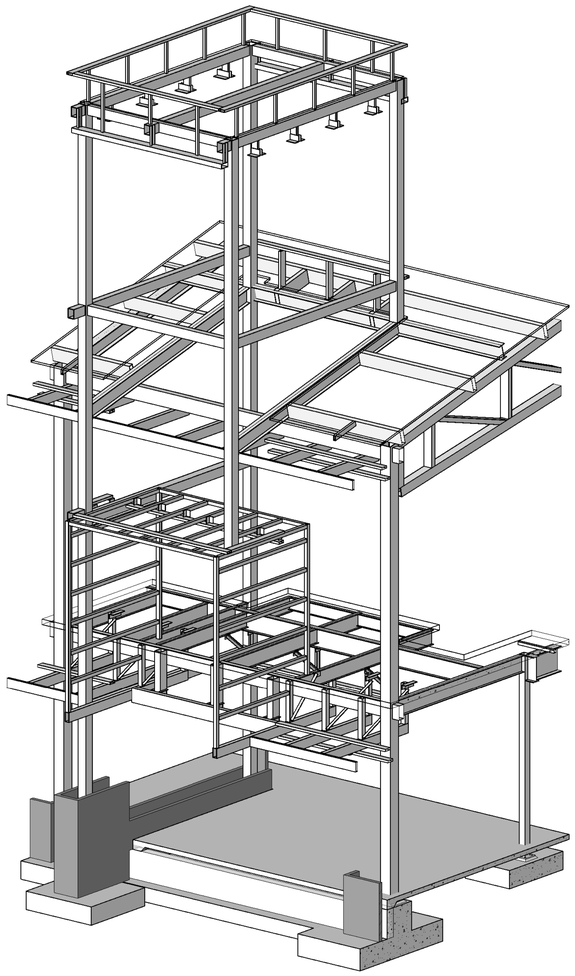
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

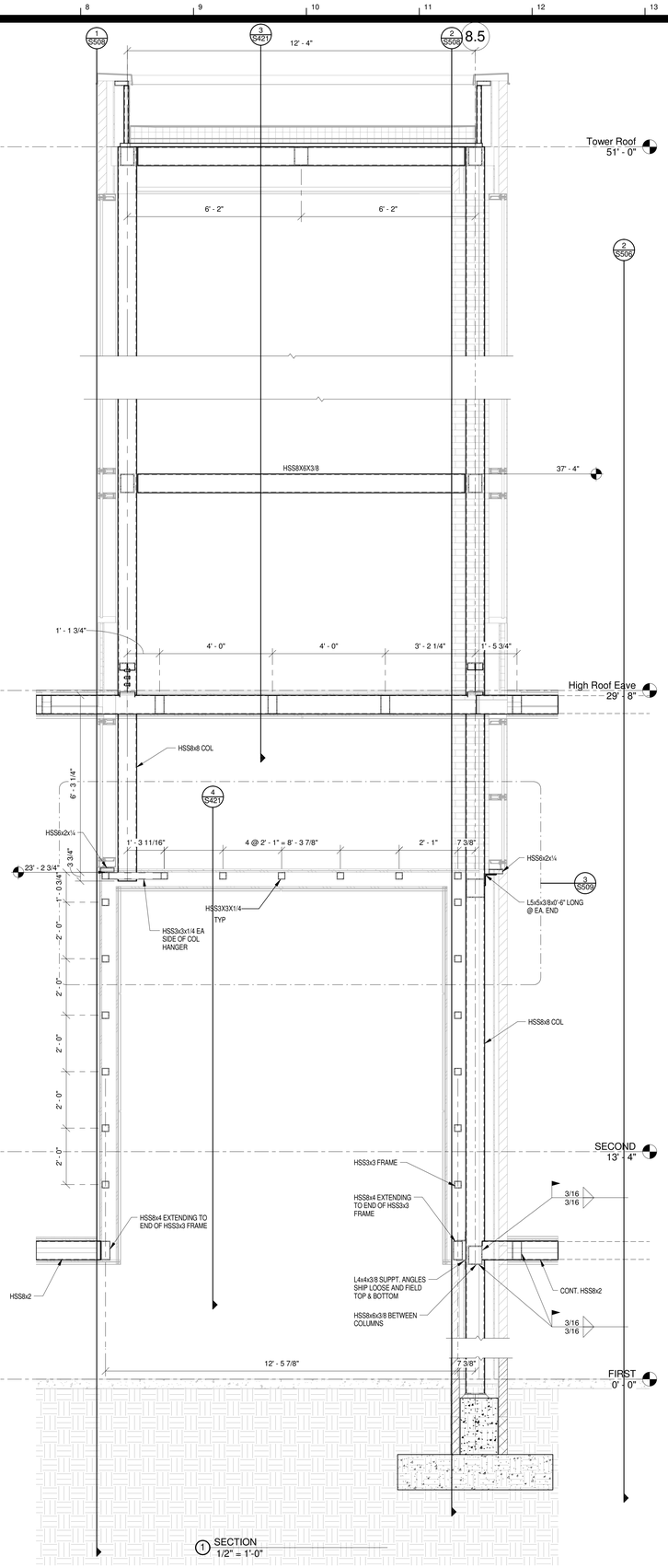
BUILDING FRAME ELEVATIONS

sheet number

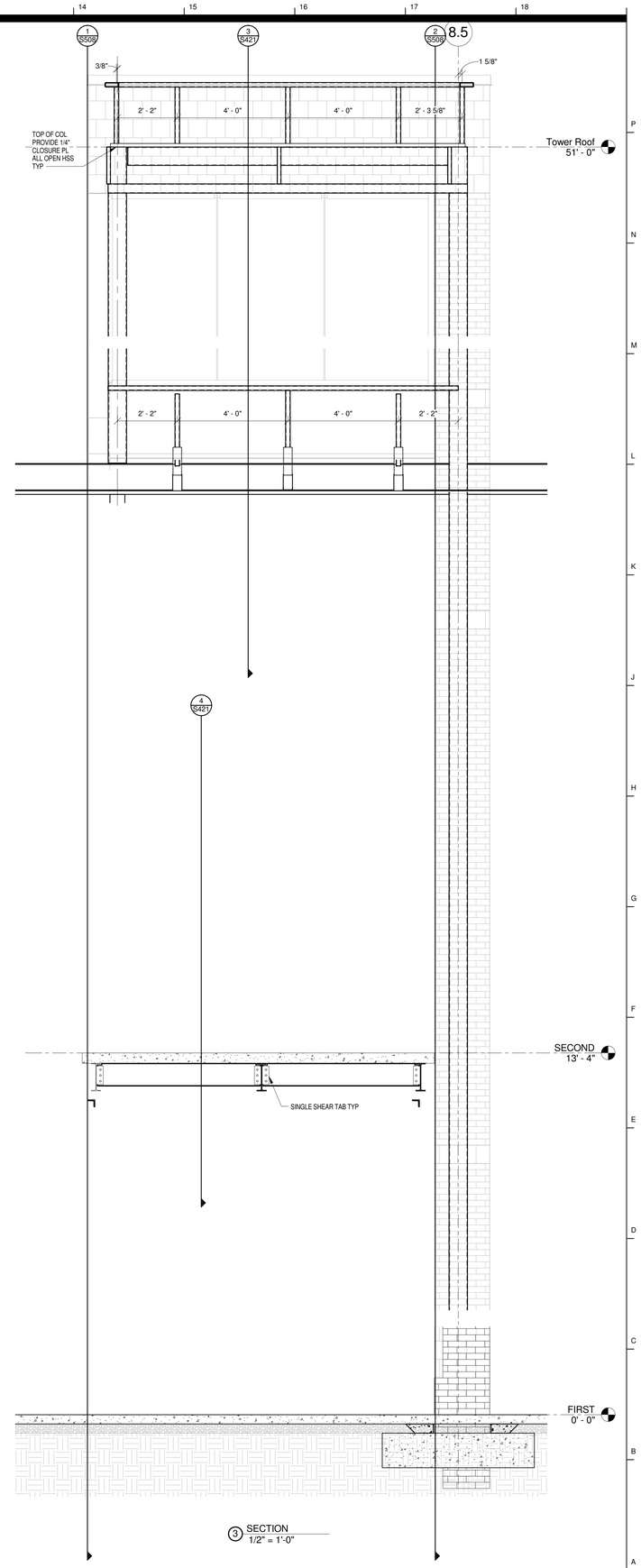
S506



2 3D Tower



1 SECTION
1/2" = 1'-0"



3 SECTION
1/2" = 1'-0"

5/7/2013 8:05:31 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
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aquatics consultant:
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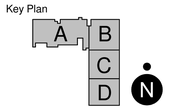
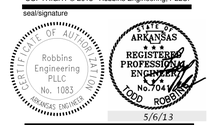
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



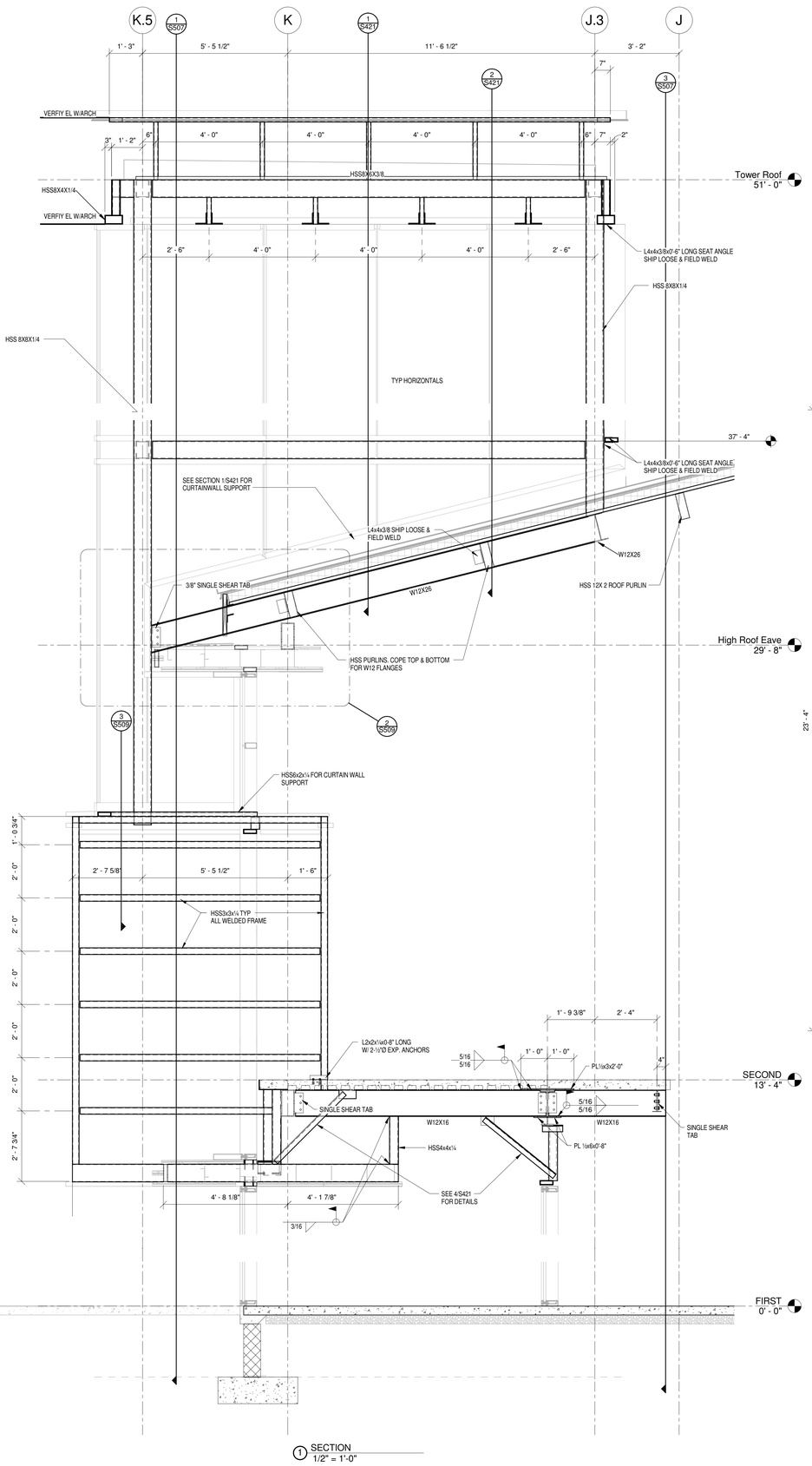
rev	date	description

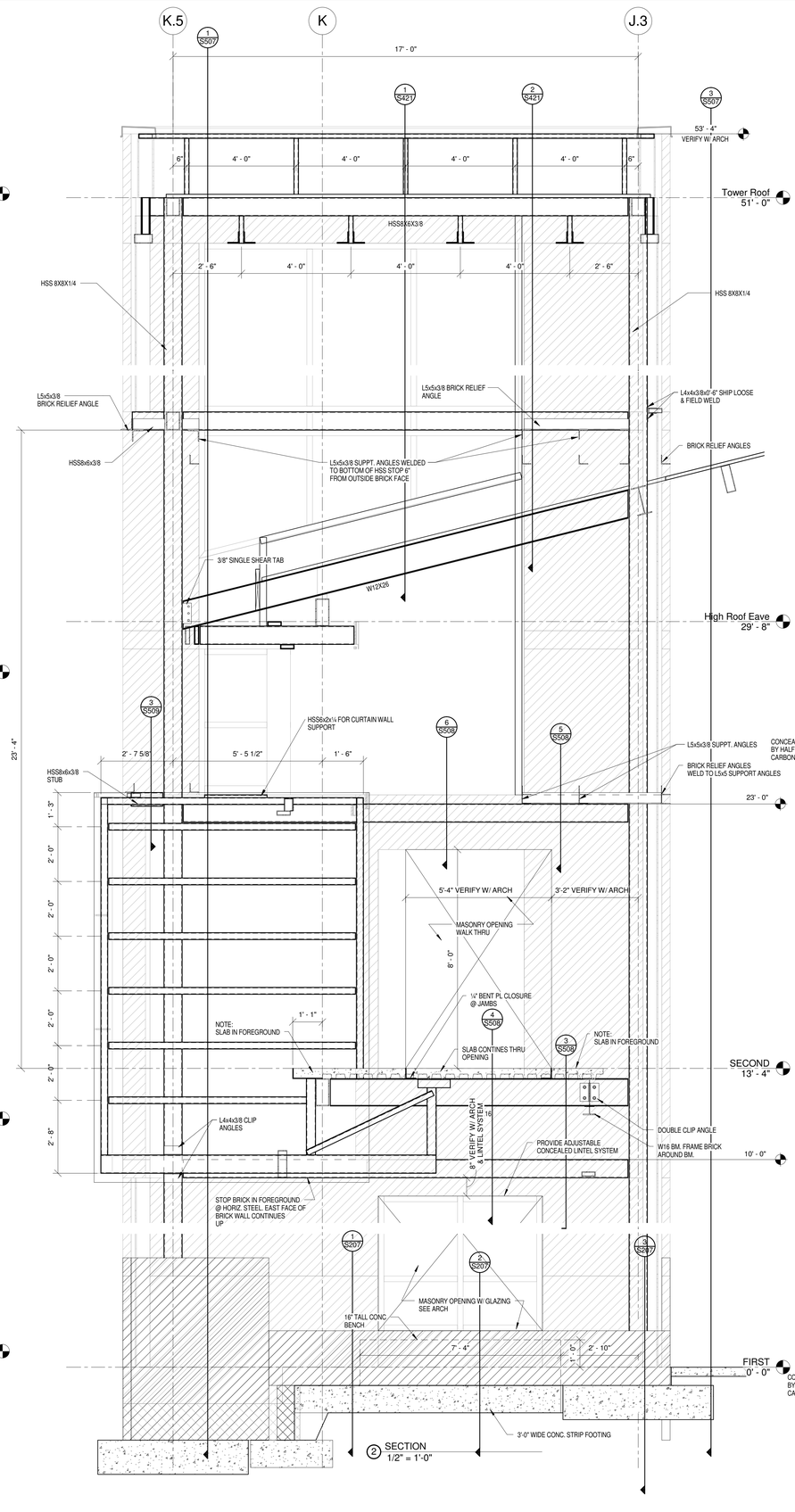
date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

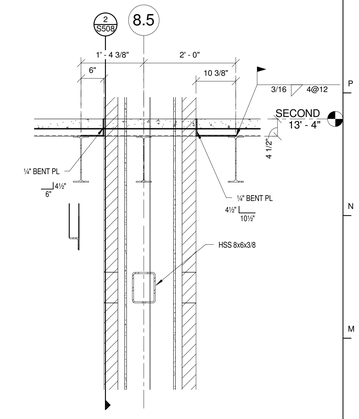
BUILDING FRAME ELEVATIONS

sheet number

S507







5/7/2013 8:05:36 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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structural engineer:
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P: (501) 664-7575

civil engineer & landscape architect:
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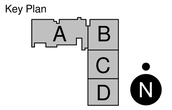
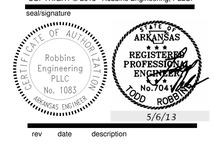
P: (501) 221-7880

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



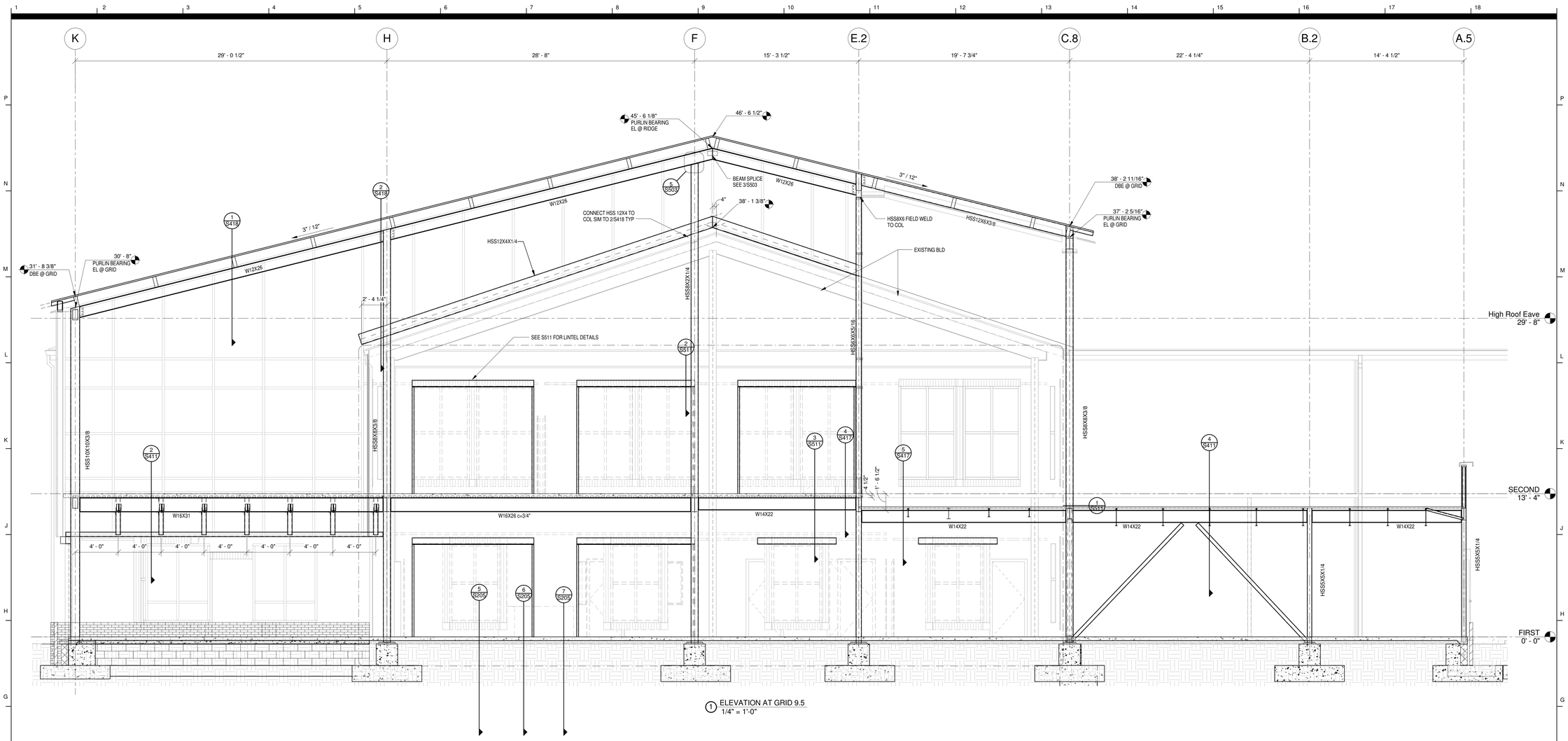
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

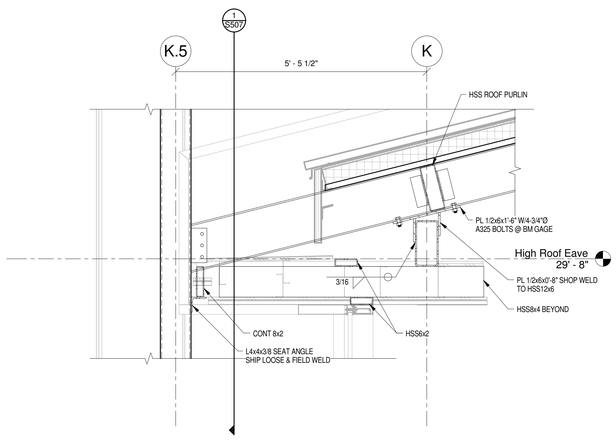
BUILDING FRAME ELEVATIONS

sheet number

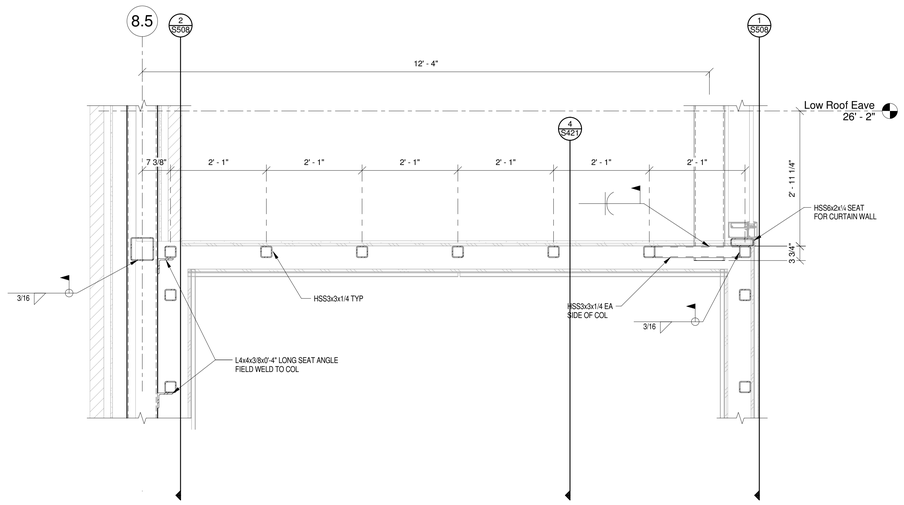
S508



1 ELEVATION AT GRID 9.5
1/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

5/7/2013 8:05:43 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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design architect:
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MEP engineer:
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P: (501) 221-7880

aquatics consultant:
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10733 Sunset Office Dr., 4th Floor
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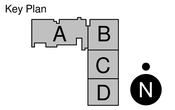
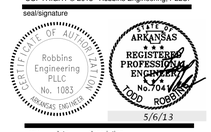
Key Plan



seal/signature



5/6/13

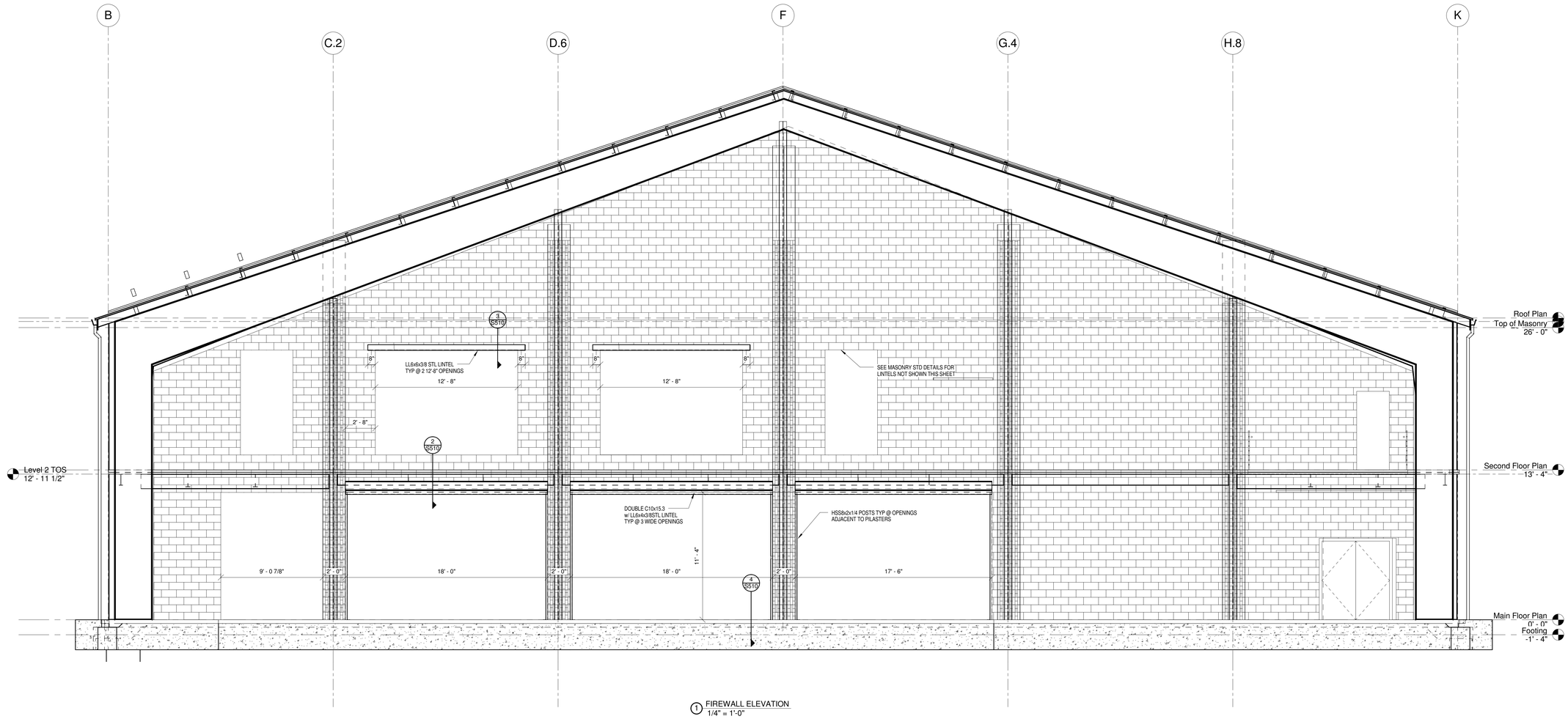
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

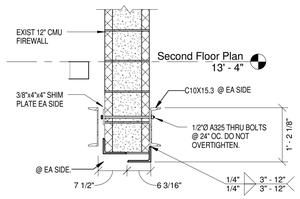
BUILDING FRAME ELEVATIONS

sheet number

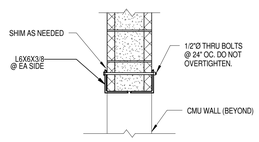
S509



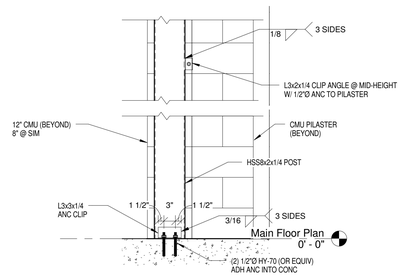
1 FIREWALL ELEVATION
1/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"

5/7/2013 8:05:47 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
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aquatics consultant:
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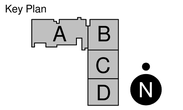
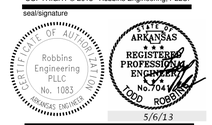
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



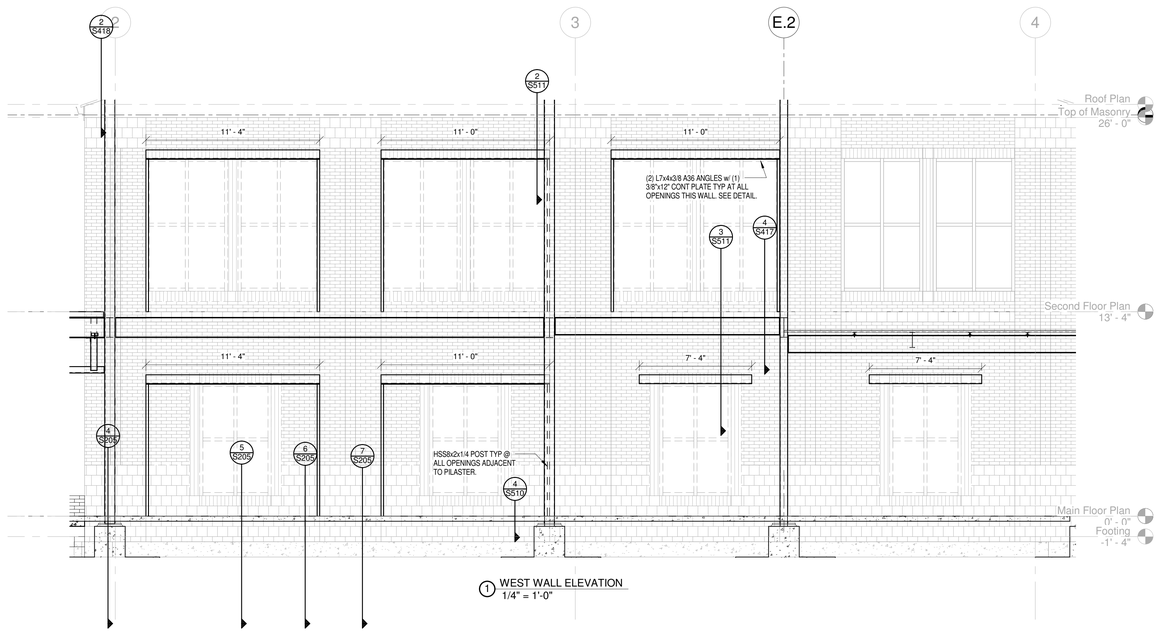
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

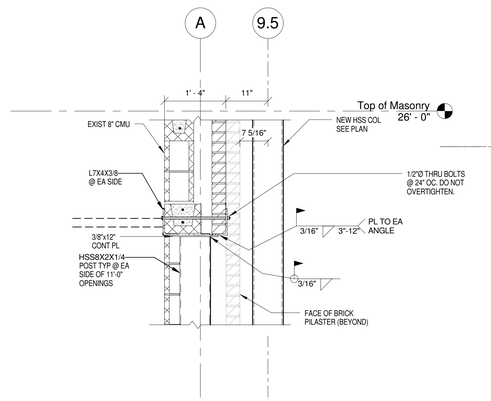
FIREWALL ELEVATION

sheet number

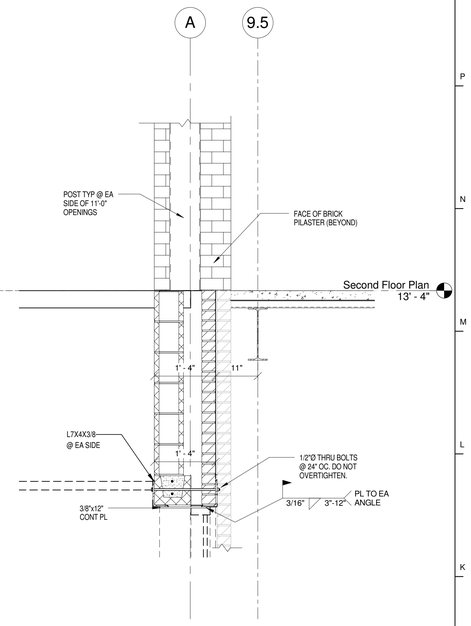
S510



1 WEST WALL ELEVATION
1/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
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10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
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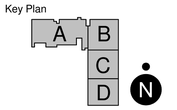
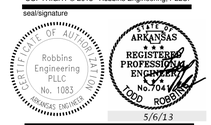
Key Plan



seal/signature



5/6/13

rev date description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

FIREWALL ELEVATION

sheet number

S511

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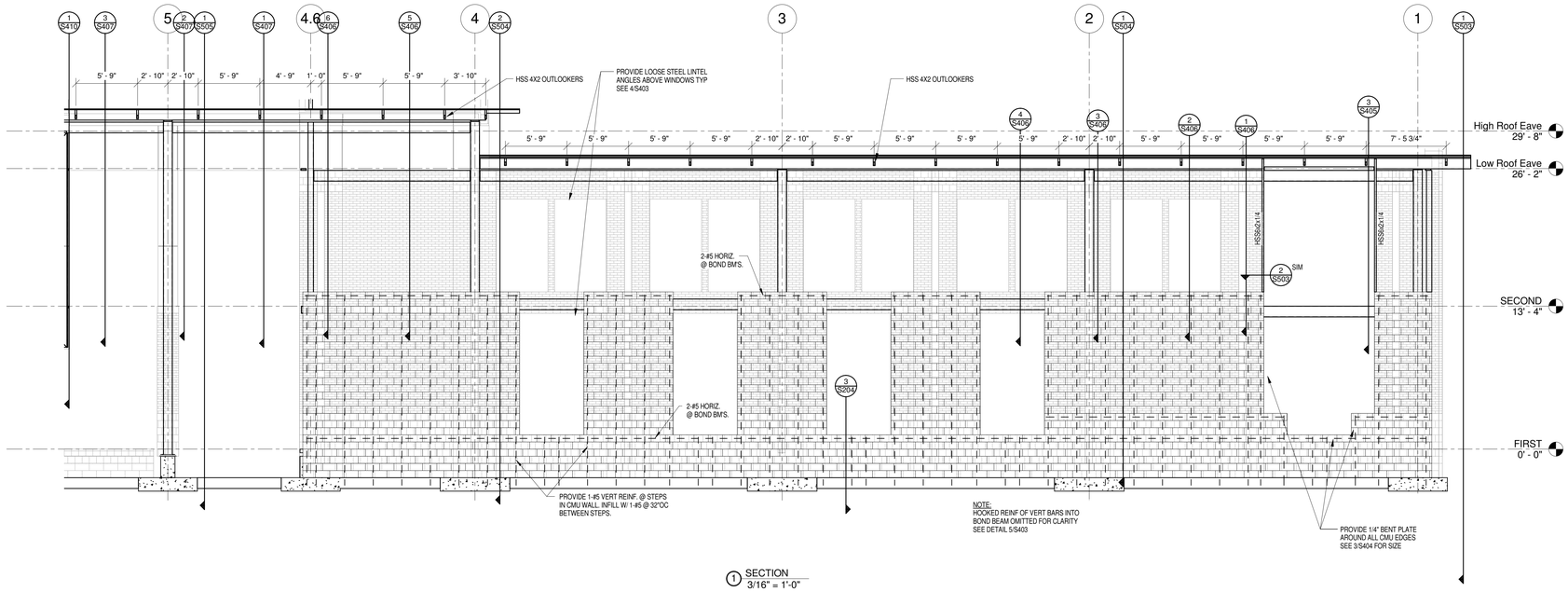
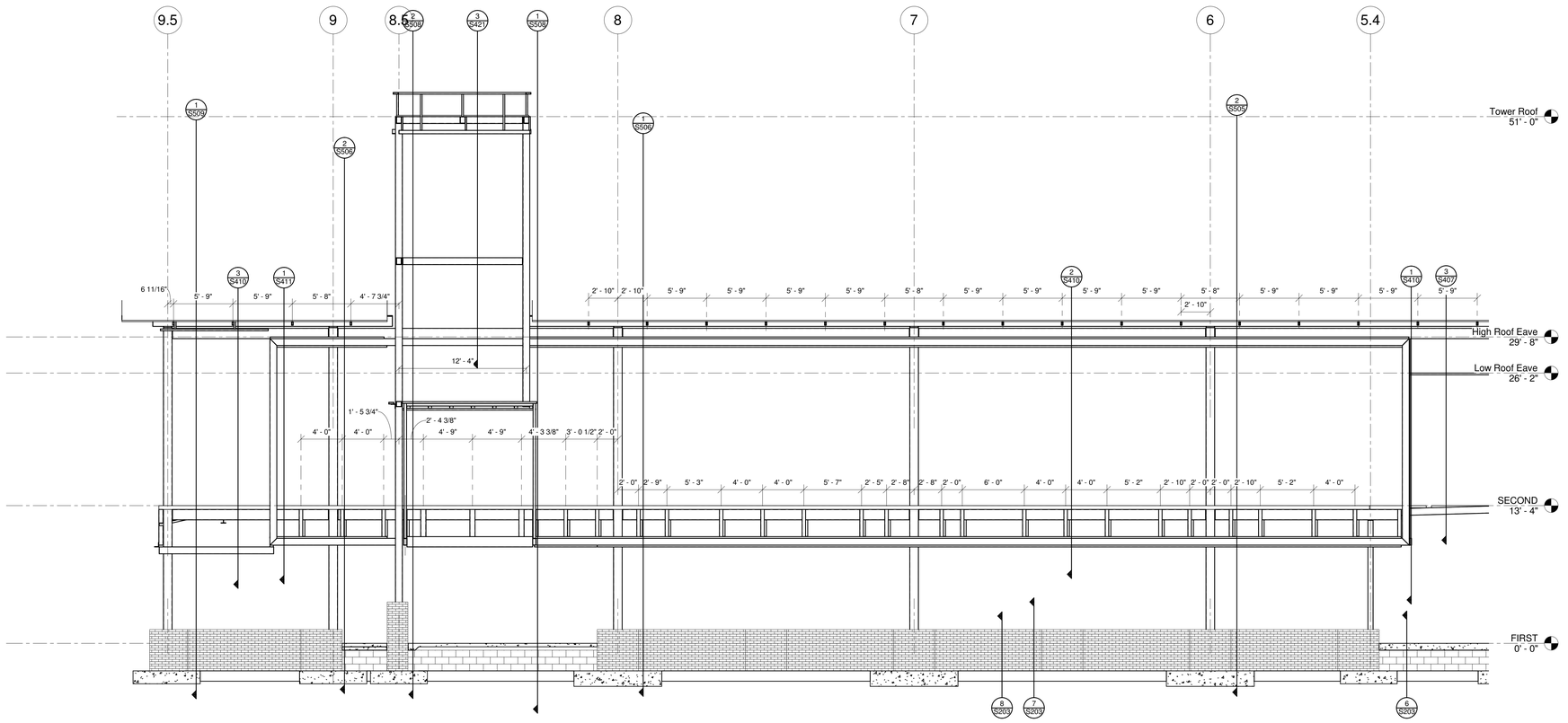


1 SECTION
3/16" = 1'-0"



2 SECTION
3/16" = 1'-0"

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
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201 Donaghey Ave.
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MEP engineer:
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structural engineer:
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civil engineer & landscape architect:
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aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
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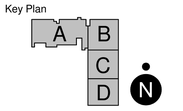
P: (314) 894-1245

Key Plan



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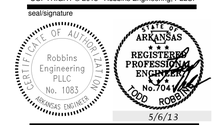

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

NORTH WALL ELEVATIONS

sheet number

S512

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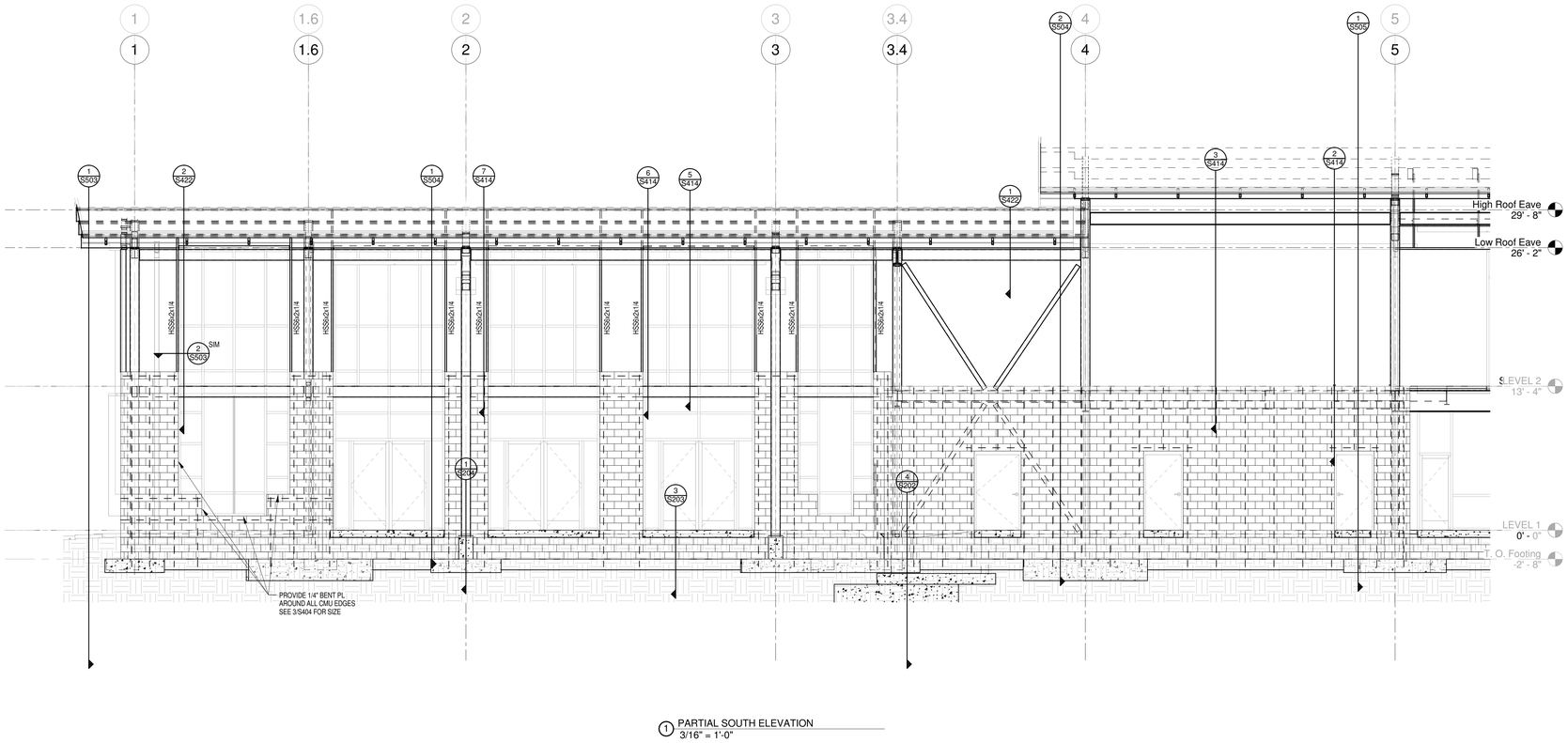

1 PARTIAL SOUTH ELEVATION
3/16" = 1'-0"

5/7/2013 8:05:53 AM

Project Name

Enter address here

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
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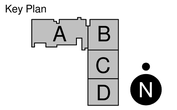

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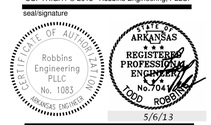

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360 project number	121050.00
UCA project number	UCA-13-130

SOUTH WALL ELEVATIONS

sheet number

S513

ENERGY RECOVERY AIR HANDLING UNIT (1 OF 2)

DESIGNATION		ERAHU-1
MANUFACTURER/MODEL		SEMCO EPH-13
UNIT CONFIGURATION		HORIZONTAL DRAW THRU
CASING INSULATION		2"- 3 PCF DENSITY
ISOLATION TYPE		2" SPRING ISOLATION
MAXIMUM UNIT LENGTH (MOD #1/ MOD #2)		13'-9"/ 19'-3"
MAXIMUM UNIT WIDTH (MOD #1/ MOD #2)		8'-2"/ 10'-8"
MAXIMUM UNIT HEIGHT (MOD #1/ MOD #2) (INCLUDE BASERAILS)		6'-2"/ 9'-2"
MAXIMUM OPERATING WEIGHT (LBS.) (MOD #1/ MOD #2)		6200/ 14250
BASE RAIL HEIGHT (INCHES)		8.25
SUMMER CONDITIONS	OUTSIDE AIR EDB/ EWB (DEG. F.)	96/77
	VENTILATION AIR LDB/ LWB (DEG. F.)	84/68
	SPACE EXHAUST AIR EDB/ EWB (DEG. F.)	75/62
	EXHAUST AIR LDB/ LWB (DEG. F.)	95/75
	TOTAL COOLING (TONS)	50.5
WINTER CONDITIONS	OUTSIDE AIR EDB/ EWB (DEG. F.)	16/12
	VENTILATION AIR LDB/ LWB (DEG. F.)	53/48
	SPACE EXHAUST AIR EDB/ EWB (DEG. F.)	75/62
	EXHAUST AIR LDB/ LWB (DEG. F.)	27/24
	TOTAL HEAT (MBH)	531.3
EXHAUST FAN SECTION	FAN TYPE	PLENUM AIRFOIL / CLASS II
	AIR FLOW (CFM)	5,400
	EXTERNAL STATIC PRESSURE (INCHES W.G.)	2.0
	TOTAL STATIC PRESSURE (INCHES W.G.)	3.75
	FAN RPM	1989
	FAN BHP	5.48
	MOTOR HP	7.5
	MOTOR VOLTAGE / PHASE	460 / 3
	ACCESS DOORS	NONE
	SECTION ACCESSORIES	FAN KILL SWITCH, LIGHTS
ACCESS SECTION	CASING LINER	SOLID
	SECTION AIR PRESSURE DROP (INCHES W.G.)	0.00
	ACCESS DOORS	DRIVE SIDE ONLY
	ACCESSORIES	MARINE LIGHT AND FAN KILL SWITCH
VENTILATION AIR FILTERS	AIR FLOW (CFM)	7,400
	FILTER DEPTH (INCHES)	2"
	FILTER TYPE	PLEATED/ MERV 6
	EFFICIENCY (%)	35
	INITIAL AIR PRESSURE DROP (INCHES W.G.)	0.01
	FINAL AIR PRESSURE DROP (INCHES W.G.)	0.12
EXHAUST AIR FILTERS	AIR FLOW (CFM)	4,000
	FILTER DEPTH (INCHES)	2
	FILTER TYPE	PLEATED/ MERV 6
	EFFICIENCY (%)	35
	INITIAL AIR PRESSURE DROP (INCHES W.G.)	0.01
	FINAL AIR PRESSURE DROP (INCHES W.G.)	0.12
ACCESS SECTION	CASING LINER	SOLID
	SECTION AIR PRESSURE DROP (INCHES W.G.)	0.00
	ACCESS DOORS	DRIVE SIDE ONLY
	ACCESSORIES	MARINE LIGHTS
MIXING BOX	CASING LINER	SOLID
	SECTION AIR PRESSURE DROP (INCHES W.G.)	0.25
	TOP DAMPER TYPE	PARALLEL BLADE
	BACK DAMPER TYPE	AIR FLOW MEASURING STATION
	DAMPER ACTUATOR	FURNISHED WITH AIR HANDLER
	ACCESS DOORS	DRIVE SIDE ONLY
COMBINATION ANGLE FILTER SECTION	AIR FLOW (CFM)	33,000
	FACE VELOCITY	463
	FILTER DEPTH (INCHES)	14
	FILTER TYPE	PLEATED/ MERV6 AND MERV 13
	EFFICIENCY (%)	35 AND 80
	INITIAL AIR PRESSURE DROP (INCHES W.G.)	0.13
	FINAL AIR PRESSURE DROP (INCHES W.G.)	1.04
	CASING LINER	SOLID
	ACCESS DOORS	NONE
HEATING WATER COIL	AIR FLOW (CFM)	12,000
	COIL FACE VELOCITY (FPM)	168
	ROWS	1
	FIN SPACING (FINS PER INCH)	4
	ENTERING AIR TEMPERATURE (DB DEG. F.)	40
	LEAVING AIR TEMPERATURE (DB DEG. F.)	55
	COIL AIR PRESSURE DROP (INCHES W.G.)	0.2
	ENTERING HEATING WATER TEMPERATURE (DEG. F.)	140
	LEAVING HEATING WATER TEMPERATURE (DEG. F.)	120
	HEATING WATER FLOW (GPM)	20
	COIL WATER PRESSURE DROP (FEET W.G.)	1.42
	TOTAL HEAT TRANSFER (MBH)	243.8
	CASING LINER	SOLID
	ACCESS DOORS	NONE
	DRAIN PAN	STAINLESS STEEL SLOPED IAQ
ACCESS SECTION	CASING LINER	SOLID
	SECTION AIR PRESSURE DROP (INCHES W.G.)	0.00
	ACCESS DOORS	DRIVE SIDE ONLY
	ACCESSORIES	MARINE LIGHTS
CHILLED WATER COIL	AIR FLOW (CFM)	33,000
	COIL FACE VELOCITY (FPM)	463
	ROWS	6
	FIN SPACING (FINS PER INCH)	8
	ENTERING AIR TEMPERATURE (DB/WB DEG. F.)	77/63
	LEAVING AIR TEMPERATURE (DB/WB DEG. F.)	55/54
	COIL AIR PRESSURE DROP (INCHES W.G.)	0.51
	ENTERING CHILLED WATER TEMPERATURE (DEG. F.)	42.0
	LEAVING CHILLED WATER TEMPERATURE (DEG. F.)	54.0
	CHILLED WATER FLOW (GPM)	165
	COIL WATER PRESSURE DROP (FEET W.G.)	13.3
	TOTAL HEAT TRANSFER (MBH)	1071.8
	SENSIBLE HEAT TRANSFER (MBH)	825.2
	CASING LINER	SOLID
	ACCESS DOORS	NONE
	DRAIN PAN	STAINLESS STEEL SLOPED IAQ
ACCESS SECTION	CASING LINER	SOLID
	SECTION AIR PRESSURE DROP (INCHES W.G.)	0.00
	ACCESS DOORS	DRIVE SIDE ONLY
	ACCESSORIES	MARINE LIGHTS
FAN SECTION	FAN TYPE	PLENUM AIRFOIL / CLASS II
	QUANTITY OF FANS	2
	AIR FLOW (CFM FOR EACH FAN)	16,500
	TOTAL STATIC PRESSURE (INCHES W.G.)	6.3
	EXTERNAL STATIC PRESSURE (INCHES W.G.)	2.0
	FAN RPM (EACH)	2011
	FAN BHP (EACH)	24.49
	MOTOR HP (EACH)	30
	MOTOR VOLTAGE / PHASE	460 / 3
	CASING LINER	SOLID
	ACCESS DOORS	DRIVE SIDE ONLY
	SECTION ACCESSORIES	FAN KILL SWITCH , MARINE LIGHTS
	FAN ACCESSORIES	THRUST RESTRAINTS

ENERGY RECOVERY AIR HANDLING UNIT (2 OF 2)

DISCHARGE PLENUM SECTION	CASING LINER	SOLID
	SECTION AIR PRESSURE DROP (INCHES W.G.)	-
	ACCESS DOORS	DRIVE SIDE ONLY
	ACCESSORIES	FAN KILL SWITCH, MARINE LIGHTS
	DRAIN PAN	STAINLESS STEEL SLOPED IAQ
ELECTRICAL	VOLTAGE/ PHASE	460/3
	FLA	120.4
	MCA	150.4
	MOCP	175
SOUND POWER LEVELS (CASING INLET AND OUTLET)	63 (DB 10^{-12} WATTS)	88 / 92
	125 (DB 10^{-12} WATTS)	96 / 95
	250 (DB 10^{-12} WATTS)	102 / 103
	500 (DB 10^{-12} WATTS)	102 / 104
	1000 (DB 10^{-12} WATTS)	87 / 94
	2000 (DB 10^{-12} WATTS)	83 / 89
	4000 (DB 10^{-12} WATTS)	78 / 83
	8000 (DB 10^{-12} WATTS)	72 / 74
REMARKS:	FURNISH LIGHTS AT FILTERS, ENERGY WHEEL AND FAN SECTIONS.	
	PROVIDE SINGLE POINT POWER CONNECTION.	
	PROVIDE ODP MOTORS	
	FURNISH WITH MOTORIZED BACKDRAFT DAMPERS AT OUTDOOR AND RETURN AIR INTAKES.	
	FURNISH WITH SUPPLY FANS WITH PIEZOMETER RING AIRFLOW MEASUREMENT	

POOL AIR HANDLING UNIT

DESIGNATION		PAHU-1
MANUFACTURER/MODEL		DESERT AIRE SA 50
UNIT CONFIGURATION		HORIZONTAL DRAW THRU
CASING INSULATION		2"-3 PCF DENSITY
ISOLATION TYPE		2" SPRING ISOLATION
MAXIMUM UNIT LENGTH		15'-1"
MAXIMUM UNIT WIDTH		7'-8"
MAXIMUM UNIT HEIGHT(NOT INCLUDING BASERAILS)		10'-2"
MAXIMUM OPERATING WEIGHT (LBS.)		9,000
BASE RAIL HEIGHT (INCHES)		12
MIXING BOX/ FILTER	SUPPLY AIR (CFM)	20,000
	RETURN AIR (CFM)	21,200
	OUTSIDE AIR (CFM)	2,800
	OUTSIDE AIR DAMPER TYPE	AIRFLOW MEASURING STATION
	RETURN AIR DAMPER TYPE	PARALLEL DAMPER
	RETURN AIR FILTER QTY	PARALLEL DAMPER
	RETURN AIR FILTER SIZE	4"/ MERV 8
	OSA AIR FILTER QTY	4
	OSA AIR FILTER SIZE	4"/ MERV8
	SUPPLY AIR FILTER SIZE	12"/ MERV13
SUPPLY FAN	AIRFLOW (CFM)	20,000
	EXTERNAL STATIC PRESSURE (INS. WG)	2.0
	TOTAL STATIC PRESSURE (INS. WG)	4.5
	FAN TYPE	FORWARD CURED
	FAN BHP	23.61
	FAN HP	25
	FAN RPM	1611
EXHAUST FAN	AIRFLOW (CFM)	4,000
	EXTERNAL STATIC PRESSURE (INS WG)	0.5
	TOTAL STATIC PRESSURE (INS WG)	2.5
	FAN TYPE	FORWARD CURVE
	FAN BHP	2.88
	FAN HP	3
	FAN RPM	1241
DESIGN CONDITIONS	SUMMER DESIGN TEMPERATURE (DB/WB)	85/78
	WINTER DESIGN TEMPERATURE	16
	ROOM TEMPERATURE DESIGN (DB)	88
	RELATIVE HUMIDITY RANGE	50%
	POOL WATER DESIGN TEMP	82
COMPRESSOR SECTION	REFRIGERANT	R-410A
	NUMBER OF CIRCUITS	2
	COMPRESSOR TYPE	SCROLL
	KW	110.6
	TOTAL UNIT CAPACITY (MBH)	638
	UNIT SENSIBLE CAPACITY (MBH)	329
	REHEAT CAPACITY (MBH)	478
POOL WATER HEATER	CIRCUIT 1 CAPACITY (MBH)	321
	CIRCUIT 1 GPM	40
	CIRCUIT 1 PRESSURE DROP (FT)	25
	CIRCUIT 2 CAPACITY (MBH)	486
	CIRCUIT 2 GPM	60
	CIRCUIT 2 PRESSURE DROP (FT)	25
SPACE HEATING COIL	AIR FLOW (CFM)	20,000
	COIL FACE VELOCITY (FPM)	533
	ROWS	1
	ENTERING AIR TEMPERATURE (DB DEG. F.)	-
	LEAVING AIR TEMPERATURE (DB DEG. F.)	96
	COIL AIR PRESSURE DROP (INCHES W.G.)	0.21
	ENTERING HEATING WATER TEMPERATURE (DEG. F.)	140
	LEAVING HEATING WATER TEMPERATURE (DEG. F.)	120
	HEATING WATER FLOW (GPM)	-
	COIL WATER PRESSURE DROP (FEET W.G.)	8.96
	TOTAL HEAT TRANSFER (MBH)	-
	CASING LINER	SOLID
	ACCESS DOORS	-
	DRAIN PAN	STAINLESS STEEL SLOPED IAQ
COOLING COIL	CIRCUIT 1 CAPACITY (MBH)	321
	CIRCUIT 1 GPM	40
	CIRCUIT 1 PRESSURE DROP (FT)	25
	CIRCUIT 2 CAPACITY (MBH)	486
	CIRCUIT 2 GPM	60
	CIRCUIT 2 PRESSURE DROP (FT)	25
ELECTRICAL DATA	MINIMUM CIRCUIT AMPS	124
	FULL LOAD AMPS	118
	VOLTAGE	480
	PHASE/ Hz	3/60
SOUND POWER LEVELS (CASING INLET AND OUTLET)	63 (DB 10^{-12} WATTS)	91 / 101
	125 (DB 10^{-12} WATTS)	93 / 96
	250 (DB 10^{-12} WATTS)	84 / 95
	500 (DB 10^{-12} WATTS)	77 / 89
	1000 (DB 10^{-12} WATTS)	79 / 86
	2000 (DB 10^{-12} WATTS)	69 / 80
	4000 (DB 10^{-12} WATTS)	64 / 75
	8000 (DB 10^{-12} WATTS)	59 / 69
REMARKS	PROVIDE INTEGRAL POOL AIR HANDLING UNIT CONTROLLER TO CONNECT TO EMS, VFDS	
	FOR EXHAUST AND SUPPLY FANS, ODP MOTORS, AND PROVIDE SINGLE POINT POWER CONNECTION.	
	FURNISH WITH MARINE LIGHTS IN ACCESSIBLE SECTIONS.	
	PRIMARY HEAT REJECTION IS TO BE THROUGH POOL HEATING WATER LOOP. SECONDARY HEAT	
	REJECTION IS THROUGH CHILLED WATER.	

ONE LINE PIPE SYMBOLS

—HWS—	HEATING WATER SUPPLY
—HWR—	HEATING WATER RETURN
—CHS—	CHILLED WATER SUPPLY
—CHR—	CHILLED WATER RETURN
—DCHS—	DISTRICT CHILLED WATER SUPPLY
—DCHR—	DISTRICT CHILLED WATER RETURN
—D—	CONDENSATE DRAIN
—BFW—	BOILER FEEDWATER
	BALL VALVE
	BUTTERFLY VALVE (LEVER HANDLE)
	BUTTERFLY VALVE (GEAR OPERATOR)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE (SWING CHECK)
	CHECK VALVE (BUTTERFLY CHECK)
	PRESSURE REDUCING VALVE
	CALIBRATED BALANCING VALVE
	VALVE AT RISER
	STRAINER W/ DRAIN VALVE
	UNION
	AIR TERMINAL / FAN COIL UNIT/HOT WATER RETURN CONTROL VALVE (2-WAY) ELECTRIC OR ELECTRONIC
	AIR TERMINAL / FAN COIL UNIT CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC
	FLEXIBLE PIPE CONNECTOR
	METAL BELLOWS PUMP CONNECTOR
H	AIR VENT (A - AUTO, H - HAND)
	PRESSURE AND TEMPERATURE TAP
PG	PRESSURE GAUGE
	THERMOMETER W/ INSERTION WELL
	FLANGE
	ELBOW, TURNED UP
	ELBOW, TURNED DOWN
	RISE OR DROP IN PIPE
	ELBOW
	TEE, SIDE CONNECTION
	TEE, OUTLET UP
	TEE, OUTLET DOWN
	CAPPED OUTLET
	CAPPED PIPE
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
TFD	PIPE TO FLOOR DRAIN
EMS	EMERGENCY MANAGEMENT SYSTEM INSERTION WELL

TWO LINE PIPE SYMBOLS

	ELBOW - FLANGED LONG RADIUS 45°
	ELBOW - FLANGED LONG RADIUS 90°
	ELBOW - WELDED LONG RADIUS 45°
	ELBOW - WELDED LONG RADIUS 90°
	END CAP
	FLANGES - SLIP ON
	FLANGES - WELD NECK
	REDUCERS - FLANGED CONCENTRIC
	REDUCERS - FLANGED ECCENTRIC
	REDUCERS - WELDED CONCENTRIC
	REDUCERS - WELDED ECCENTRIC
	TEE - FLANGED
	TEE - WELDED
	BUTTERFLY VALVE - LEVER OPERATOR
	BUTTERFLY VALVE - WORM GEAR OPERATOR
	BUTTERFLY VALVE - ACTUATOR
	CHECK VALVE - SWING CHECK
	CHECK VALVE - SILENT OR WAFER
	GATE VALVE - NON RISING STEM
	GATE VALVE - OUTSIDE STEM AND YOKE
	GLOBE VALVE
	STRAINER - Y
	SUCTION DIFFUSER
	FLEXIBLE CONNECTORS

DEMOLITION AND RENOVATION SYMBOLS

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	NEW EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	DUCT TO BE REMOVED
	EXISTING DUCT TO REMAIN
	NEW DUCT
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

DUCTWORK SYMBOLS

T	THERMOSTAT
CO2	CO2 SENSOR
	THERMOSTAT WIRING
FM	GPM FLUID FLOW METER
SA	SUPPLY AIR DUCT
RA	RETURN AIR DUCT
EA	EXHAUST AIR DUCT
CFM	CUBIC FEET PER MINUTE
EMS	ENERGY MANAGEMENT SYSTEM
ATC	AUTOMATIC TEMP CONTROLS
PPM	PARTS PER MILLION
ø	ROUND DIAMETER
	FLAT OVAL (MAJOR/MINOR)
	SHORT (1x) RADIUS ELL (RECTANGULAR OR ROUND) CENTERLINE RADIUS = 1d
	LONG (1.5x) RADIUS ELL (ROUND OR OVAL) CENTERLINE RADIUS = 1.5d
	SQUARE ELL
	STREAMLINE TAP (RECTANGULAR)
	STREAMLINE TAP (ROUND)
	CONICAL TAP
	STRAIGHT TAP
	LATERAL TAP
	MANUAL VOLUME DAMPER
M	MOTORIZED VOLUME DAMPER
20X12	RECTANGULAR DUCT (WIDTH/DEPTH)
	ROUND DUCT OFFSET
RISE	CHANGE IN ELEVATION (RISE, FALL)
	FLEXIBLE DUCT
	SUPPLY DUCT UP
	RETURN DUCT UP
	EXHAUST DUCT UP
SD	SUPPLY DUCT DOWN
RD	RETURN DUCT DOWN
ED	EXHAUST DUCT DOWN
	CEILING DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
AP	ACCESS PANEL
AP	ACCESS PANEL IN ROUND OR OVAL DUCT
X 4 X	TYPE - THROW / CFM SUPPLY AIR DEVICE
X X	TYPE / CFM RETURN/EXHAUST AIR DEVICE

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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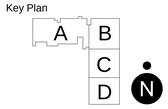
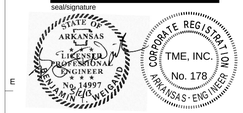


seal/signature



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date	05/06/13
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SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SCHEDULES AND LEGEND - HVAC

sheet number

M001

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FAN COIL UNITS- FOUR PIPE																						
							COOLING							HEATING					ELECTRICAL				
DESIGNATION	SERVES	REFERNCE PRODUCT	TYPE	AIRFLOW RATE (CFM)	EXTERNAL PRESSURE (IN. WATER)	FILTER TYPE	TOTAL CAPACITY (MBH)	ROWS	SENSIBLE CAPACITY (MBH)	AIR EDB/EWB (DEGREE F)	WATER FLOW RATE (GPM)	WATER EWT/LWT (DEGREE F)	WATER PRESSURE DROP (FT. WATER)	TOTAL CAPACITY (MBH)	AIR EDB (DEGREE F)	WATER FLOW RATE (GPM)	WATER EWT/LWT (DEGREE F)	WATER PRESSURE DROP (FT. WATER)	VOLTS	PHASE	HP	AMPS	REMARKS
FCU-101	POOL FILTRATION ROOM 131	TITUS HBE03	HORIZONTAL WITH PLENUM	274	-	1" STANDARD DISPOSABLE	6.32	3	5.1	75/63	1.1	42/54	0.95	6.81	70	0.70	140/120	0.8	120	1	1/20	0.8	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR
FCU-102	TELE/DATA 129	TITUS HBP06	HORIZONTAL EXPOSED	573	0.10	1" STANDARD DISPOSABLE	12.55	3	10.32	75/63	2.1	42/54	0.99	-	-	-	-/-	-	120	1	1/10	1.5	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR
FCU-103	ELEC. 130	TITUS HBP06	HORIZONTAL WITH PLENUM	573	0.10	1" STANDARD DISPOSABLE	12.55	3	10.32	75/63	2.1	42/54	0.99	-	-	-	-/-	-	120	1	1/10	1.5	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR
FUC-201	ELEC. 223	TITUS HBP02	HORIZONTAL WITH PLENUM	182	0.10	1" STANDARD DISPOSABLE	2.8	2	2.6	75/63	0.5	42/54	0.12	-	-	-	-/-	-	120	1	1/20	0.8	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR
FCU-202	EXIST STAIR 2010	TITUS HBP03	HORIZONTAL WITH PLENUM	211	0.10	1" STANDARD DISPOSABLE	5.62	3	4.44	75/63	0.9	42/54	0.76	5.46	70	0.60	140/120	0.55	120	1	1/20	0.8	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR
FCU-203	MECHANCAL (NATATORIUM) 224	TITUS HBE06	HORIZONTAL EXPOSED	572	-	1" STANDARD DISPOSABLE	12.5	3	10.28	75/63	2.10	42/54	0.98	13.65	70	1.40	140/120	4.7	120	1	1/10	1.5	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR
FCU-204	MECHANICAL (FITNESS) 226	TITUS HBE10	HORIZONTAL EXPOSED	869	-	1" STANDARD DISPOSABLE	24.95	4	18.9	75/63	4.20	42/54	2.53	20.98	70	2.10	140/120	2.2	120	1	1/10	1.5	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR
FCU-205	LOUNGE STORAGE 228	TITUS HBE03	HORIZONTAL EXPOSED	211	0.10	1" STANDARD DISPOSABLE	5.62	3	4.44	75/63	0.9	42/54	0.76	5.46	70	0.60	140/120	0.55	120	1	1/20	0.8	FURNISH WITH DISCONNECT AND ECM MOTOR. CONTROLS SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR

PUMPS													
									MOTOR SIZE		ELECTRICAL		
DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	WATER FLOW RATE (GPM)	TOTAL HEAD (FT. WATER)	ROTATION (RPM)	EFFICENCY (%)	BHP	MHP	VOLTS	PHASE	REMARKS
BP-1	ARMSTRONG	EXISTING MECHANICAL ROOM 208	B-1	4380 3X3X5	200	30	3600	84	2.44	3	480	3	FURNISH WITH OSHA GAURD AND SPARE SEAL AND A PREMIUM EFFICIENCY MOTOR
BP-2	ARMSTRONG	EXISTING MECHANICAL ROOM 208	B-2	4380 3X3X5	200	30	3600	84	2.44	3	480	3	FURNISH WITH OSHA GAURD AND SPARE SEAL AND A PREMIUM EFFICIENCY MOTOR
BP-3	ARMSTRONG	POOL FILTRATION ROOM 131	B-3	4380 2X2X6	60	30	1800	82.5	0.76	1	480	3	FURNISH WITH OSHA GAURD AND SPARE SEAL AND A PREMIUM EFFICIENCY MOTOR
CHP-1	ARMSTRONG	MECHANICAL (FITNESS) 226	CHILLED WATER	4300 5X5X11.5	650	60	1800	71	13.72	15	480	3	FURNISH WITH OSHA GAURD AND SPARE SEAL AND A PREMIUM EFFICIENCY MOTOR
HWP-1	ARMSTRONG	EXISTING MECHANICAL ROOM 208	HEATING WATER	4300 2X2X6	300	75	3600	89	7.33	10	480	3	PROVIDE SUCTION DIFFUSER WITH STRAINER, FURNISH WITH OSHA GAURD AND SPARE SEAL AND A PREMIUM EFFICIENCY MOTOR
HWP-2	ARMSTRONG	EXISTING MECHANICAL ROOM 208	HEATING WATER	4300 2X2X6	300	75	3600	89	7.33	10	480	3	PROVIDE SUCTION DIFFUSER WITH STRAINER, FURNISH WITH OSHA GAURD AND SPARE SEAL AND A PREMIUM EFFICIENCY MOTOR
HWP-3	ARMSTRONG	POOL FILTRATION ROOM 131	POOL HEATING	4300 2X2X6	60	30	1800	86	0.75	1.5	480	3	FURNISH WITH OSHA GAURD AND SPARE SEAL AND A PREMIUM EFFICIENCY MOTOR

BOILER (HEATING WATER)																	
DESIGNATION	REFERNCE PRODUCT	LOCATION	TYPE	PRIMARY FUEL	NATURAL GAS INPUT (MBH)	HEATING OUTPUT (MBH)	WATER ENTERING TEMPERATURE	WATER LEAVING TEMPERATURE	FLOW RATE	WATER PRESSURE DROP (IN. W.C.)	RATED PRESSURE (PSIG)	FLUE DIAMETER	OPERATING WEIGHT	VOLTS	PHASE	FULL LOAD AMPS	REMARKS
B-1	P-K MACH C2000	EXISTING MECHANICAL 208	CONDENSING HYDRONIC	NATURAL GAS	2000	1860	120	140	186	4	150	8"	1650	120	1	15	PROVIDE RELIEF VALVE PACKAGE
B-2	P-K MACH C2000	EXISTING MECHANICAL 208	CONDENSING HYDRONIC	NATURAL GAS	2000	1860	120	140	186	4	150	8"	1650	120	1	15	PROVIDE RELIEF VALVE PACKAGE
B-3	P-K MACH C750	POOL FILTRATION ROOM 131	CONDENSING HYDRONIC	NATURAL GAS	750	712	90	110	60	5	80	6"	695	120	1	13	PROVIDE RELIEF VALVE PACKAGE

VARIABLE FREQUENCY DRIVES											
DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	APPLICATION	RATED HORSEPOWER	EFFICENCY (%)	VOLTS	PHASE	MAX. OUTPUT CURRENT (AMPS)	REMARKS
VFD-CHP-1	DANFOSS	MECHANICAL (FITNESS) 226	CHP-1	6 STEP VVI	VARIABLE TORQUE	15	96	480	3	16.7	FURNISH W/ MANUAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS AND NEW EMS, AND INTERFACE
VFD-1-ERAHU-1	DANFOSS	MECHANICAL (FITNESS) 226	ERAHU-1 SUPPLY FANS	6 STEP VVI	VARIABLE TORQUE	60	96	480	3	77	FURNISH W/ MANUAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS AND NEW EMS, AND INTERFACE
VFD-2-ERAHU-1	DANFOSS	MECHANICAL (FITNESS) 226	ERAHU-1 EXHAUST FAN	6 STEP VVI	VARIABLE TORQUE	7.5	96	480	3	11	FURNISH W/ MANUAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS AND NEW EMS, AND INTERFACE
VFD-3-ERAHU-1	DANFOSS	MECHANICAL (FITNESS) 226	ERAHU-1 ENERGY WHEEL	6 STEP VVI	VARIABLE TORQUE	0.5	96	480	3	3	FURNISH W/ MANUAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS AND NEW EMS, AND INTERFACE
VFD-HWP-1	DANFOSS	EXISTING MECHANICAL ROOM 208	HWP-1	6 STEP VVI	VARIABLE TORQUE	10	96	480	3	14	FURNISH W/ MANUAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS AND NEW EMS, AND INTERFACE
VFD-HWP-2	DANFOSS	EXISTING MECHANICAL ROOM 208	HWP-2	6 STEP VVI	VARIABLE TORQUE	10	96	480	3	14	FURNISH W/ MANUAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS AND NEW EMS, AND INTERFACE
VFD-HWP-3	DANFOSS	POOL FILTRATION ROOM 131	HWP-3	6 STEP VVI	VARIABLE TORQUE	1.5	96	480	3	3	FURNISH W/ MANUAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS AND NEW EMS, AND INTERFACE

LOUVERS								
DESIGNATION	REFERNCE PRODUCT	TYPE	WIDTH (INCHES)	HEIGHT	DEPTH (INCHES)	MAXIMUM AIRFLOW (CFM)	PRESSURE DROP (IN. WATER)	REMARKS
LV-1	AMERICAN WARMING AND VENTILATING	LE-33	96	120	6	20,000	0.05	FURNISH WITH BIRD SCREEN. STANDARD KYNAR FINISH AND COLOR TO BE SPECIFIED BY ARCHITECT.

PLATE AND FRAME HEAT EXCHANGER													
					BOILER SIDE				POOL WATER SIDE				
DESIGNATION	REFERNCE PRODUCT	LOCATION	SERVES	HEATING CAPACITY (MBH)	WATER FLOW RATE (GPM)	EWT/LWT (DEGREE F)	WATER PRESSURE DROP (FT. WATER)	NO. OF PASSES	WATER FLOW RATE (GPM)	ETW/LWT (DEGREE F)	WATER PRESSURE DROP (FT. WATER)	NO. OF PASSES	REMARKS
HX-1	MUELLER ACCU-THERM	POOL FILTRATION ROOM 131	B-3	747	60	110/90	2.1	1	60	60/85	2.2	1	-

EXHAUST AIR TERMINALS											
DESIGNATION	SERVES	EXHAUST TYPE	ASSOCIATED SUPPLY TERMINAL	REFERENCE PRODUCT	INLET SIZE (INCHES)	OCCUPIED MAXIMUM AIRFLOW (CFM)	OCCUPIED MINIMUM AIRFLOW (CFM)	UNOCCUPIED MAXIMUM AIRFLOW (CFM)	UNOCCUPIED MINIMUM AIRFLOW (CFM)	PRESSURE DROP (INCHES W.G.)	REMARKS
ET-101	MEN'S LOCKER 139	GENERAL	ST-105	TUTTLE & BAILEY RR	8	600	250	250	0	0.83	MAXIMUM NC: 25 AT 0.6" INLET STATIC PRESSURE
ET-102	WOMEN'S LOCKER 136	GENERAL	ST-102	TUTTLE & BAILEY RR	8	600	250	250	0	0.83	MAXIMUM NC: 25 AT 0.6" INLET STATIC PRESSURE
ET-103	OFFICE 132/ LIFEGUARD 132A	GENERAL	ST-101	TUTTLE & BAILEY RR	8	250	150	150	0	0.06	MAXIMUM NC: 25 AT 0.6" INLET STATIC PRESSURE
ET-104	WET CLASSROOM 133	GENERAL	ST-103	TUTTLE & BAILEY RR	8	425	300	300	0	0.055	MAXIMUM NC: 25 AT 0.6" INLET STATIC PRESSURE
ET-105	FAMILY LOCKER 135	GENERAL	ST-104	TUTTLE & BAILEY RR	8	200	150	150	0	0.037	MAXIMUM NC: 25 AT 0.6" INLET STATIC PRESSURE

EXHAUST FANS														
DESIGNATION	REFERENCE PRODUCT	TYPE	SERVES	AIRFLOW RATE (CFM)	TOTAL STATIC PRESSURE (IN. WATER)	ROTATION (RPM)	DRIVE	SONES	WATTS	BHP	MHP	VOLTS	PHASE	REMARKS
EF-1	COOK 90C15DH	DOWNBLAST CENTRIFUGAL	JAN. 212, WOMEN 213, MEN 214	500	0.5	1550	DIRECT	8	95	-	1/8	120	1	FURNISH WITH DISCONNECT SWITCH, ODP MOTOR, MOTORIZED BACKDRAFT DAMPER, AND CURB.
EF-2	COOK 120FCRUB	UPBLAST CENTRIFUGAL	131, 131A	600	0.125	859	DIRECT	4.6	-	0.05	1/4	120	1	FURNISH WITH DISCONNECT SWITCH, ODP MOTOR, MOTORIZED BACKDRAFT DAMPER, AND CURB. PROVIDE FAN WITH FIBERGLASS CORROSION RESISTANT CONSTRUCTION.
EF-3	COOK 120FCRUBHP	UPBLAST CENTRIFUGAL	131B	150	0.125	559	DIRECT	1.1	-	0.01	1/24	120	1	FURNISH WITH DISCONNECT SWITCH, ODP MOTOR, MOTORIZED BACKDRAFT DAMPER, AND CURB. PROVIDE FAN WITH FIBERGLASS CORROSION RESISTANT CONSTRUCTION.

AIR AND DIRT SEPERATORS									
DESIGNATION	REFERNCE PRODUCT	SERVES	PIPE CONNECTION SIZE (INCHES)	MAXIMUM HEIGHT (INCHES)	MAXIMUM WIDTH (INCHES)	MAXIMUM FLOW RATE (GPM)	WATER VOLUME (GALLONS)	MAXIMUM PRESSURE DROP (FT. WATER)	REMARKS
AS-1	SPIROTHERM VSR 500	HEATING WATER	5	30	27.7	260	13.2	1.2	AIR SEPERATOR MAXIMUM VELOCITIES SHALL BE NO GREATER THAN 4 FEET PER SECOND.
AS-2	SPIROTHERM VDN 1000	CHILLED WATER	10	43	37.5	950	55.5	1.5	DIRT SEPERATOR MAXIMUM VELOCITIES SHALL BE NO GREATER THAN 4 FEET PER SECOND.

CEILING MOUNTED FANS										
							ELECTRICAL			
DESIGNATION	REFERENCE PRODUCT	TYPE	SERVES	FAN DIAMETER (FT)	SOUND LEVEL AT MAX SPEED (DBA)	DRIVE	MOTOR HP	VOLTS	PHASE	REMARKS
F-1	MACROAIR	MA14XL0506-AIRELITE	WEIGHTS 128/ CARDIO 218	14	51	DIRECT	1/2	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE
F-2	MACROAIR	MA14XL0506-AIRELITE	WEIGHTS 128/ CARDIO 218	14	51	DIRECT	1/2	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE
F-3	MACROAIR	MA08XL0506-AIRELITE	EXERCISE STUDIO (LARGE) 202	08	51	DIRECT	1/2	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE
F-4	MACROAIR	MA08XL0506-AIRELITE	EXERCISE STUDIO (LARGE) 202	08	51	DIRECT	1/2	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE
F-5	MACROAIR	MA08XL1606-AIRSTAR	EXERCISE STUDIO (LARGE) 202	08	40	DIRECT	1/6	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE
F-6	MACROAIR	MA08XL0506-AIRELITE	EXERCISE STUDIO (SMALL) 221	08	51	DIRECT	1/2	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE
F-7	MACROAIR	MA08XL0506-AIRELITE	EXERCISE STUDIO (MEDIUM) 220	08	51	DIRECT	1/2	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE
F-8	MACROAIR	MA08XL0506-AIRELITE	EXERCISE STUDIO (MEDIUM) 220	08	51	DIRECT	1/6	120	1	FURNISH WITH CONTROL SWITCH AND ADJUSTABLE FAN SPEED. SEE ELECTRICAL DRAWINGS FOR SWITCH LOCATION. SEE ARCHITECT FOR FINISH TYPE

AIR DISTRIBUTION DEVICES									
DESIGNATION	REFERENCE PRODUCT	TYPE	MAXIMUM AIRFLOW	TOTAL PRESSURE	NECK SIZE	PANEL SIZE	MAX N.C.	FINISH	REMARKS
SUPPLY AIR DEVICES									
A	TITUS TDC	CEILING LAY-IN MOUNT	100 CFM	0.02 in-wg	6" Ø	24" X 24"	25	PER ARCHITECT	-
B	TITUS TDC	CEILING LAY-IN MOUNT	225 CFM	0.06 in-wg	8" Ø	24" X 24"	25	PER ARCHITECT	-
C	TITUS TDC	CEILING LAY-IN MOUNT	400 CFM	0.08 in-wg	10" Ø	24" X 24"	25	PER ARCHITECT	-
D	TITUS TDC	CEILING LAY-IN MOUNT	550 CFM	0.08 in-wg	12" Ø	24" X 24"	25	PER ARCHITECT	-
E	TITUS TDC	CEILING SURFACE MOUNT	100 CFM	0.02 in-wg	6" Ø	24" X 24"	25	PER ARCHITECT	-
F	TITUS TDC	CEILING SURFACE MOUNT	225 CFM	0.06 in-wg	8" Ø	24" X 24"	25	PER ARCHITECT	-
G	TITUS 1700L	SIDE WALL	300 CFM	0.12 in-wg	12" X 6"	14" X 8"	25	PER ARCHITECT	PROVIDE OBD
H	TITUS 1700L	SIDE WALL	450 CFM	0.10 in-wg	12" X 10"	14" X 12"	25	PER ARCHITECT	PROVIDE OBD
I	TITUS 1700L	SIDE WALL	550 CFM	0.08 in-wg	18" X 6"	20" X 8"	25	PER ARCHITECT	PROVIDE OBD
J	TITUS 1700L	SIDE WALL	575 CFM	0.12 in-wg	18" X 10"	20" X 12"	25	PER ARCHITECT	PROVIDE OBD
K	TITUS CT-480	LINEAR BAR	585 CFM	0.05 in-wg	4" X 48"	6" X 48"	25	PER ARCHITECT	0 DEGREE DEFLECTION
L	TITUS CT-PP-0	LINEAR BAR	500 CFM	0.08 in-wg	4" X 48"	6" X 48"	25	PER ARCHITECT	PENCIL TYPE WITH 0 DEGREE DEFLECTION
M	TITUS TDC-AA	CEILING LAY-IN MOUNT	400 CFM	0.08 in-wg	12" Ø	24" X 24"	25	PER ARCHITECT	-
RETURN/EXHAUST AIR DEVICES									
1	TITUS PAR	CEILING LAY-IN MOUNT	100 CFM	0.04 in-wg	6" Ø	24" X 24"	25	PER ARCHITECT	-
2	TITUS PAR	CEILING LAY-IN MOUNT	200 CFM	0.04 in-wg	8" Ø	24" X 24"	25	PER ARCHITECT	-
3	TITUS PAR	CEILING LAY-IN MOUNT	350 CFM	0.05 in-wg	10" Ø	24" X 24"	25	PER ARCHITECT	-
4	TITUS PAR	CEILING LAY-IN MOUNT	700 CFM	0.08 in-wg	12" Ø	24" X 24"	25	PER ARCHITECT	-
5	TITUS PAR	CEILING LAY-IN MOUNT	3250 CFM	0.03 in-wg	22" X 22"	24" X 24"	25	PER ARCHITECT	-
6	TITUS PAR	CEILING SURFACE MOUNT	100 CFM	0.04 in-wg	6" Ø	24" X 24"	25	PER ARCHITECT	-
7	TITUS PAR	CEILING SURFACE MOUNT	200 CFM	0.04 in-wg	8" Ø	24" X 24"	25	PER ARCHITECT	-
8	TITUS 350 RL	SIDE WALL	300 CFM	0.03 in-wg	12" X 6"	14" X 8"	25	PER ARCHITECT	PROVIDE OBD
9	TITUS 350 RL	SIDE WALL	450 CFM	0.10 in-wg	12" X 10"	14" X 12"	25	PER ARCHITECT	PROVIDE OBD
10	TITUS 350 RL	SIDE WALL	575 CFM	0.10 in-wg	18" X 10"	20" X 14"	25	PER ARCHITECT	PROVIDE OBD
11	TITUS 350 RL	SIDE WALL	1500 CFM	0.10 in-wg	30" X 12"	32" X 14"	25	PER ARCHITECT	PROVIDE OBD
12	TITUS 350 FL	SIDE WALL	2000 CFM	0.05 in-wg	36" X 12"	38" X 14"	25	PER ARCHITECT	PROVIDE OBD
13	TITUS 350 RL	SIDE WALL	2800 CFM	0.10 in-wg	42" X 18"	44" X 20"	25	PER ARCHITECT	PROVIDE OBD
14	TITUS 350 FL	SIDE WALL	6400 CFM	0.06 in-wg	42" x 38"	44" x 40"	25	PER ARCHITECT	PROVIDE OBD
15	TITUS CT-480	LINEAR BAR	500 CFM	0.05 in-wg	4" X 48"	6" X 48"	25	PER ARCHITECT	0 DEGREE DEFLECTION
16	TITUS PAR	CEILING LAY-IN MOUNT	1800 CFM	0.03 in-wg	46" X 22"	48" X 24"	25	PER ARCHITECT	PROVIDE 46" X 24" NECK
X	EXISTING DEVICE	SUPPLY/ EXHAUST/ RETURN	N.A.	0.00 in-wg	N.A.	N.A.	N.A.	N.A.	EXISTING DEVICE

HPER Center Renovation & Expansion

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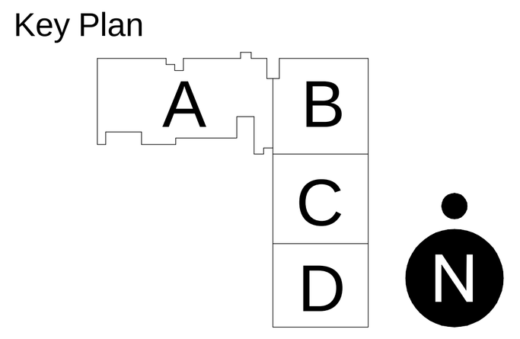
Key Plan



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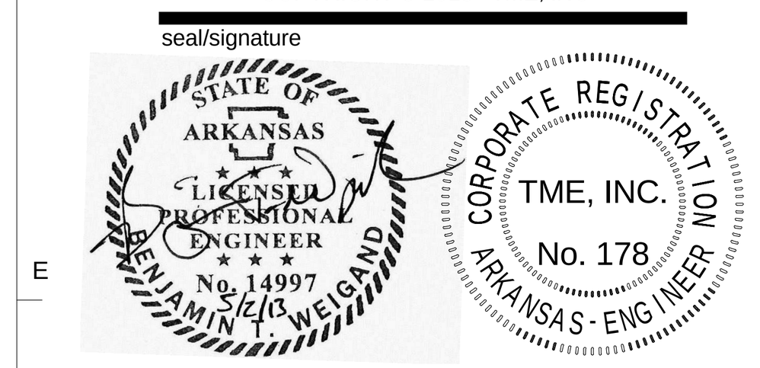

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SCHEDULES - HVAC

sheet number
M002

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SINGLE DUCT SUPPLY AIR TERMINALS WITH HOT WATER REHEAT COILS

			COOLING					HEATING													
DESIGNATION	REFERENCE PRODUCT	INLET SIZE (INCHES)	OCCUPIED MAX. AIRFLOW (CFM)	OCCUPIED MIN AIRFLOW (CFM)	UNOCCUPIED MAX. AIRFLOW (CFM)	UNOCCUPIED MIN. AIRFLOW (CFM)	MINIMUM INLET S.P. (IN. WATER)	OCCUPIED MAX. AIRFLOW (CFM)	OCCUPIED MIN. AIRFLOW (CFM)	UNOCCUPIED MAX. AIRFLOW (CFM)	UNOCCUPIED MIN. AIRFLOW (CFM)	ROWS	MBH	EAT (DEG. F)	LAT (DEG. F.)	HEATING COIL AIR PRESSURE DROP (INCHES W.G.)	GPM	EWT (DEG. F.)	LWT (DEG. F.)	WPD (FEET)	REMARKS
ST-101	TITUS DESV	06	200	100	100	0	0.6	130	100	100	0	2	6.3	55	97	0.09	0.8	140	120	0.09	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-102	TITUS DESV	08	425	150	150	0	0.6	150	150	150	0	2	7.5	55	99	0.19	0.8	140	120	0.13	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-103	TITUS DESV	06	325	235	235	0	0.6	235	235	235	0	2	9.2	55	90	0.2	1.2	140	120	0.19	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-104	TITUS DESV	06	150	100	100	0	0.6	100	100	100	0	1	3.9	55	90	0.02	1.4	140	120	0.91	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-105	TITUS DESV	08	425	150	150	0	0.6	150	150	150	0	2	7.5	55	99	0.19	0.8	140	120	0.13	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-106	TITUS DESV	10	690	360	360	0	0.6	360	360	360	0	2	14.1	55	90	0.23	1.3	140	120	0.2	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-107	TITUS DESV	16	2000	600	600	0	0.6	900	600	600	0	2	35.3	55	90	0.31	3.0	140	120	0.53	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-108	TITUS DESV	10	690	350	350	0	0.6	360	350	350	0	2	14.1	55	90	0.23	1.3	140	120	0.2	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-109	TITUS DESV	10	690	350	350	0	0.6	360	350	350	0	2	14.1	55	90	0.23	1.3	140	120	0.2	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-110	TITUS DESV	10	1200	250	250	0	0.6	600	250	250	0	2	23.5	55	90	0.57	4.3	140	120	2.16	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-111	TITUS DESV	10	1100	550	550	0	1	550	550	550	0	2	21.6	55	90	0.5	3.3	140	120	1.3	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-112	TITUS DESV	10	1100	250	250	0	1	550	250	250	0	2	21.6	55	90	0.5	3.3	140	120	1.3	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-113	TITUS DESV	10	690	355	355	0	1	355	355	355	0	2	14	55	90	0.23	1.3	140	120	0.19	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-114	TITUS DESV	10	1100	550	550	0	0.6	550	550	550	0	2	21.6	55	90	0.5	3.3	140	120	1.3	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-115	TITUS DESV	10	1100	250	250	0	1	550	250	250	0	2	21.6	55	90	0.5	3.3	140	120	1.3	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-116	TITUS DESV	10	800	250	250	0	1	400	250	250	0	2	15.7	55	90	0.29	1.6	140	120	0.29	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-117	TITUS DESV	10	900	250	250	0	0.6	550	250	250	0	2	21.6	55	90	0.35	3.3	140	120	1.3	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-118	TITUS DESV	06	200	100	100	0	1	100	100	100	0	2	5.4	55	103	0.09	0.8	140	120	0.09	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-119	TITUS DESV	06	175	100	100	0	0.6	100	100	100	0	2	5.4	55	103	0.07	0.8	140	120	0.09	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-120	TITUS DESV	06	200	100	100	0	0.6	100	100	100	0	2	5.4	55	103	0.09	0.8	140	120	0.09	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-121	TITUS DESV	06	350	125	125	0	0.6	125	125	125	0	2	6.1	55	98	0.22	0.8	140	120	0.09	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-122	TITUS DESV	06	250	100	100	0	0.6	125	100	100	0	2	6.1	55	98	0.13	0.8	140	120	0.09	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-123	TITUS DESV	08	600	150	150	0	1	300	150	150	0	2	11.8	55	90	0.34	1.3	140	120	0.28	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-124	TITUS DESV	08	400	150	150	0	0.6	200	150	150	0	2	8.7	55	93	0.17	0.8	140	120	0.13	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-201	TITUS DESV	16	2580	850	850	0	1	850	850	850	0	2	33.4	55	90	0.48	2.7	140	120	0.43	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-202	TITUS DESV	06	300	100	100	0	0.6	150	100	100	0	2	6.8	55	95	0.17	0.8	140	120	0.09	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-203	TITUS DESV	14	1600	625	625	0	1	800	625	625	0	2	31.4	55	90	0.29	2.6	1740	120	0.67	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-204	TITUS DESV	14	1600	625	625	0	0.6	800	625	625	0	2	31.4	55	90	0.29	2.6	140	120	0.67	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-205	TITUS DESV	12	1100	430	430	0	0.6	550	430	430	0	2	21.6	55	90	0.29	1.9	140	120	0.49	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-206	TITUS DESV	12	1550	625	625	0	1	775	625	625	0	2	30.4	55	90	0.52	4.2	140	120	2.42	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-207	TITUS DESV	12	1000	600	600	0	0.6	600	600	600	0	2	23.5	55	90	0.25	2.2	140	120	0.7	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-208	TITUS DESV	16	2100	750	750	0	1	1100	750	750	0	2	43.2	55	90	0.34	4.6	140	120	1.21	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-209	TITUS DESV	12	1575	350	350	0	1	775	350	350	0	2	30.4	55	90	0.53	4.2	140	120	2.42	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-210	TITUS DESV	14	1925	450	450	0	1	950	450	450	0	2	37.3	55	90	0.4	3.8	140	120	1.37	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT
ST-211	TITUS DESV	12	1050	350	350	0	0.6	525	350	350	0	2	20.6	55	90	0.27	1.7	140	120	0.42	MAXIMUM NC: 30 AT 0.6" INLET STATIC PRESSURE. PROVIDE WITH DISCONNECT

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HPER Center Renovation & Expansion

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University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

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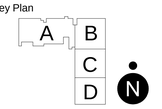
aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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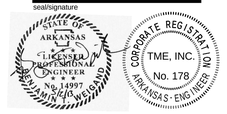


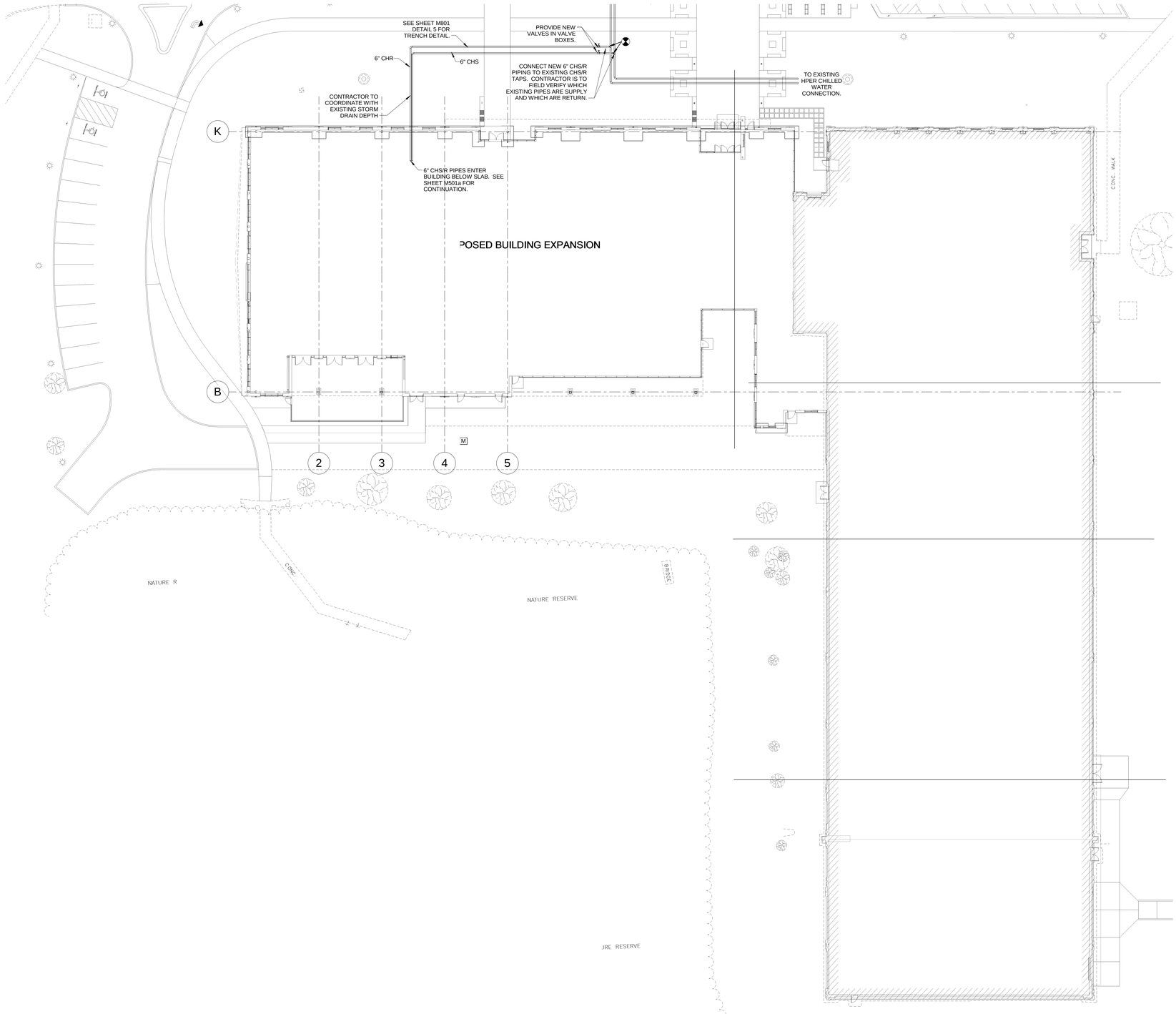
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SCHEDULES - HVAC

sheet number

M003



GENERAL NOTES:

1. ALL LOCATIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ACCESSORIES, ETC. ARE APPROXIMATE. CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING EXACT FIELD CONDITIONS.
2. ALL SYSTEMS WITH-IN THE SCOPE OF WORK WILL BE FULLY OPERATIONAL DURING CONSTRUCTION. INTERRUPTION OF BUILDING SERVICES AND UTILITIES SHOULD BE MINIMIZED WHEN POSSIBLE AND COORDINATED WITH OWNER.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.

CAUTION !!!

CONTRACTOR MUST HAVE ONE CALL LOCATE AND MARK ALL EXISTING UTILITIES PRIOR TO TRENCHING OR BORING. CONTRACTOR MUST LOCATE AND MARK ALL EXISTING CONDUITS AND PIPES OWNED BY PROPERTY OWNER PRIOR TO TRENCHING OR BORING. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATING. ANY DAMAGE TO EXISTING UTILITIES, RECORDED OR UNRECORDED, SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

N

1 SITE PLAN - MECHANICAL

1" = 20'-0"

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HPER Center Renovation & Expansion

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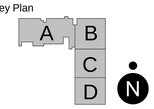
Key Plan



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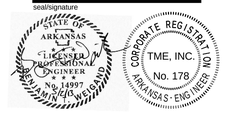


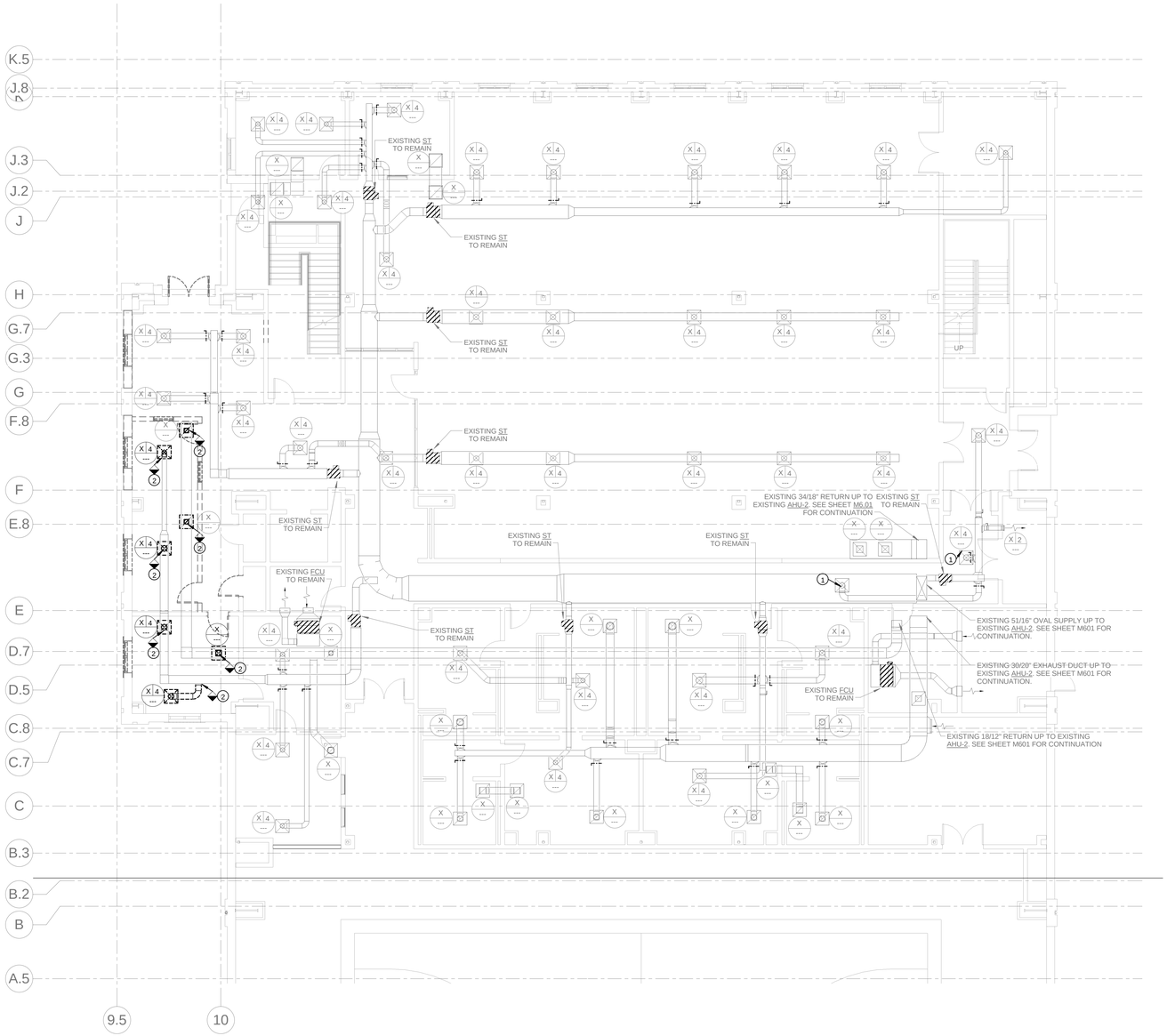
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SITE PLAN - HVAC

sheet number

M101



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4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.

KEYED NOTES:

1. IF ALTERNATE #2 IS ACCEPTED SUPPLY GRILLE TO BE RELOCATED.
2. DEMOLISH GRILLE CONNECTION AND CAP DUCTWORK.

DEMOLITION AND RENOVATION SYMBOLS

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	NEW EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	DUCT TO BE REMOVED
	EXISTING DUCT TO REMAIN
	NEW DUCT
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

N

1 FIRST FLOOR PLAN - HVAC DUCTWORK DEMOLITION - SECTOR B

1/8" = 1'-0"

5/2/2013 4:54:30 PM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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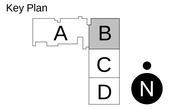
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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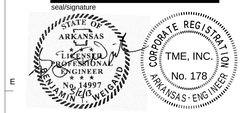


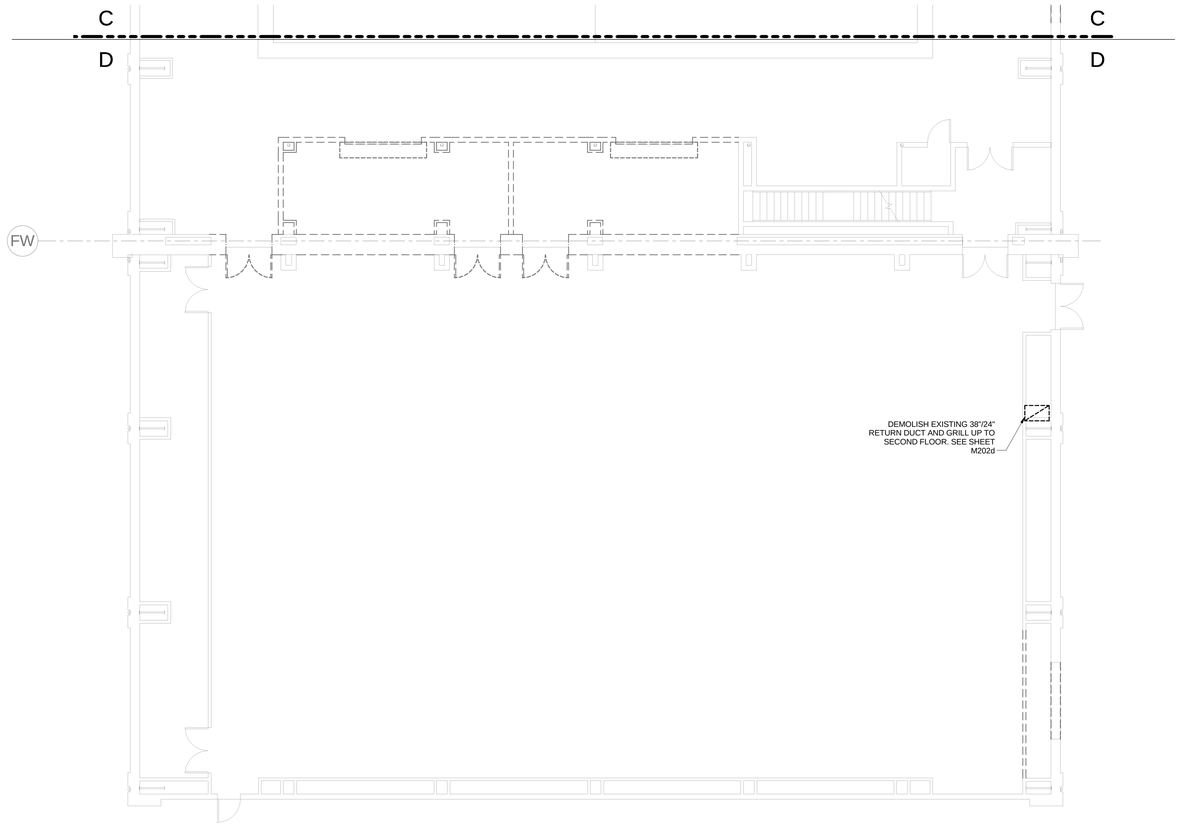
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN – HVAC DUCTWORK DEMOLITION - SECTOR B

sheet number

M201b



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DEMOLITION AND RENOVATION SYMBOLS

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	NEW EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	DUCT TO BE REMOVED
	EXISTING DUCT TO REMAIN
	NEW DUCT
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

N

1 FIRST FLOOR PLAN - HVAC DUCTWORK DEMOLITION - SECTOR D

1/8" = 1'-0"

5/2/2013 4:54:22 PM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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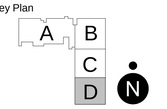
Key Plan



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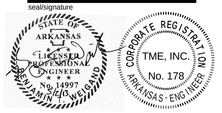


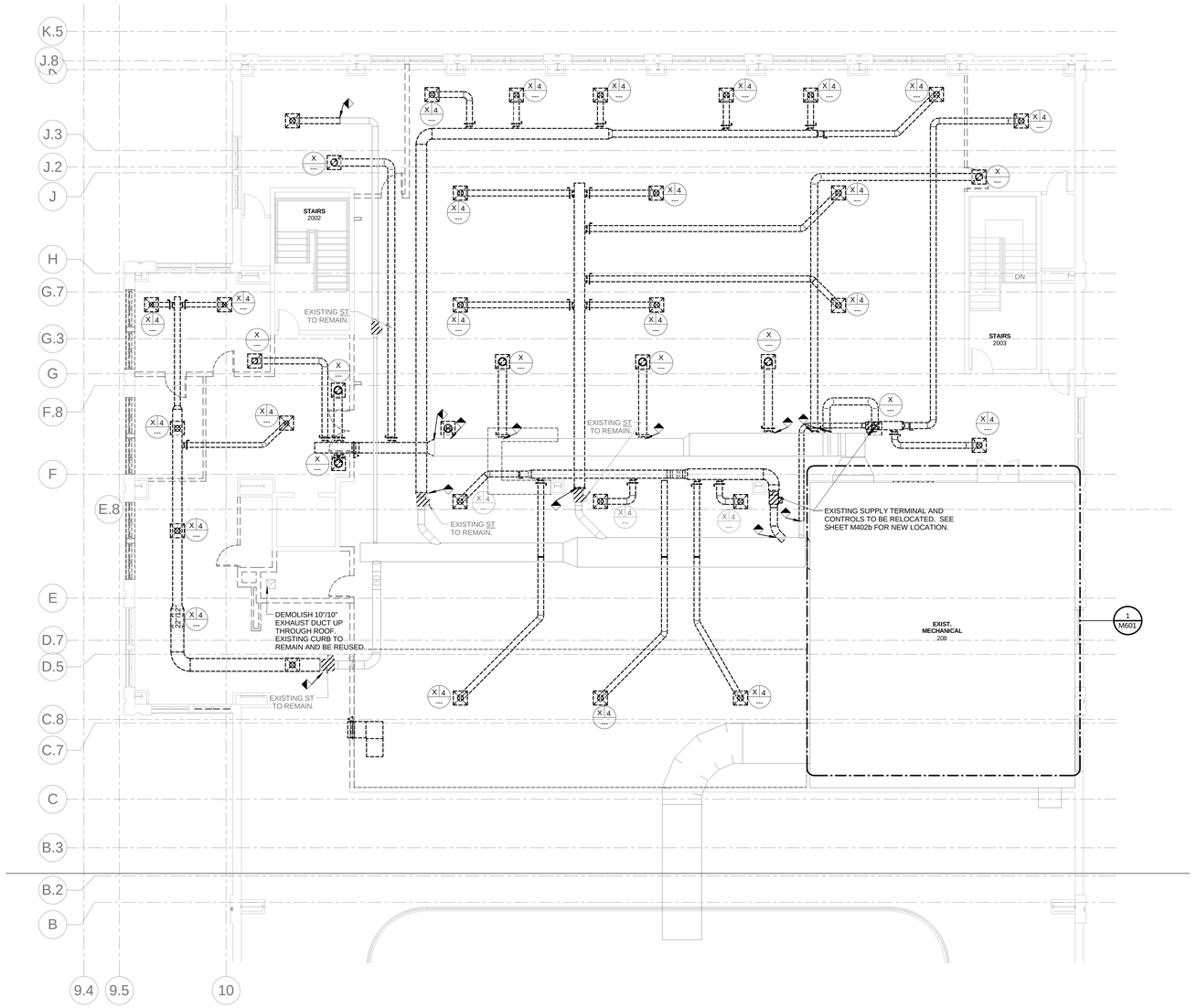
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - HVAC DUCTWORK DEMOLITION - SECTOR D

sheet number

M201d



GENERAL NOTES:

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DEMOLITION AND RENOVATION SYMBOLS

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	NEW EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	DUCT TO BE REMOVED
	EXISTING DUCT TO REMAIN
	NEW DUCT
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

N

1 SECOND FLOOR PLAN - HVAC DUCTWORK DEMOLITION - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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aquatics consultant:
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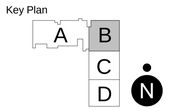
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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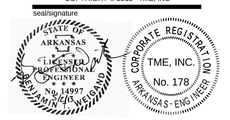


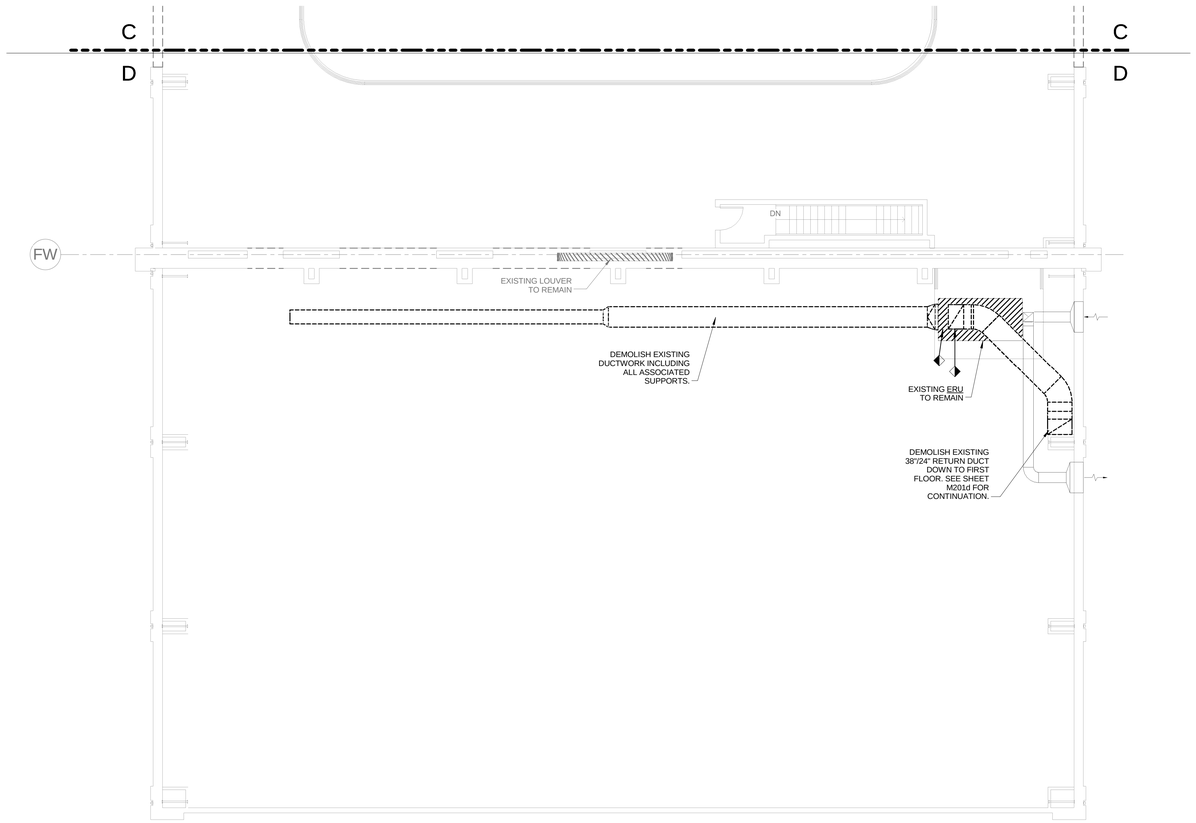
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HVAC DUCTWORK DEMOLITION - SECTOR B

sheet number

M202b



GENERAL NOTES:

1. ALL LOCATIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ACCESSORIES, ETC, ARE APPROXIMATE. CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING EXACT FIELD CONDITIONS.
2. ALL SYSTEMS WITH-IN THE SCOPE OF WORK WILL BE FULLY OPERATIONAL DURING CONSTRUCTION. INTERRUPTION OF BUILDING SERVICES AND UTILITIES SHOULD BE MINIMIZED WHEN POSSIBLE AND COORDINATED WITH OWNER.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.

DEMOLITION AND RENOVATION SYMBOLS

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	NEW EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	DUCT TO BE REMOVED
	EXISTING DUCT TO REMAIN
	NEW DUCT
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

N

1 SECOND FLOOR PLAN - HVAC DUCTWORK DEMOLITION - SECTOR D

1/8" = 1'-0"

5/2/2013 4:54:08 PM

HPER Center Renovation & Expansion

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aquatics consultant:
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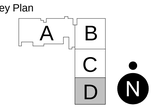
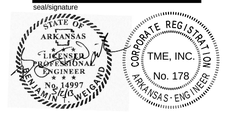
Key Plan



seal/signature



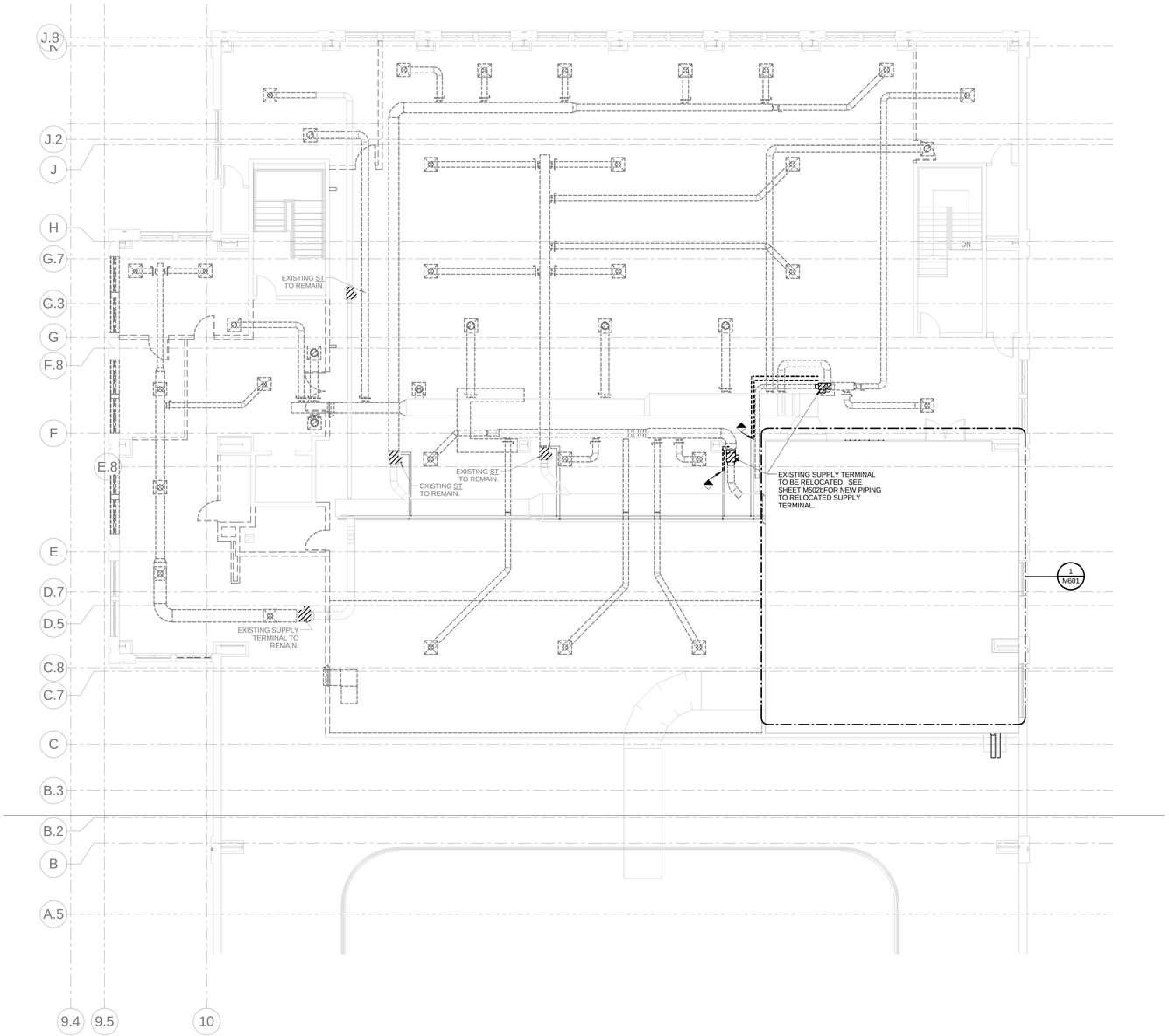
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HVAC DUCTWORK DEMOLITION - SECTOR D

sheet number

M202d



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3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.

DEMOLITION AND RENOVATION SYMBOLS

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	NEW EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	DUCT TO BE REMOVED
	EXISTING DUCT TO REMAIN
	NEW DUCT
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

N

1 SECOND FLOOR PLAN - HVAC PIPING DEMOLITION - SECTOR B

1/8" = 1'-0"

5/2/2013 4:54:02 PM

HPER Center Renovation & Expansion

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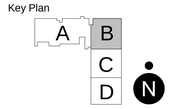
Key Plan



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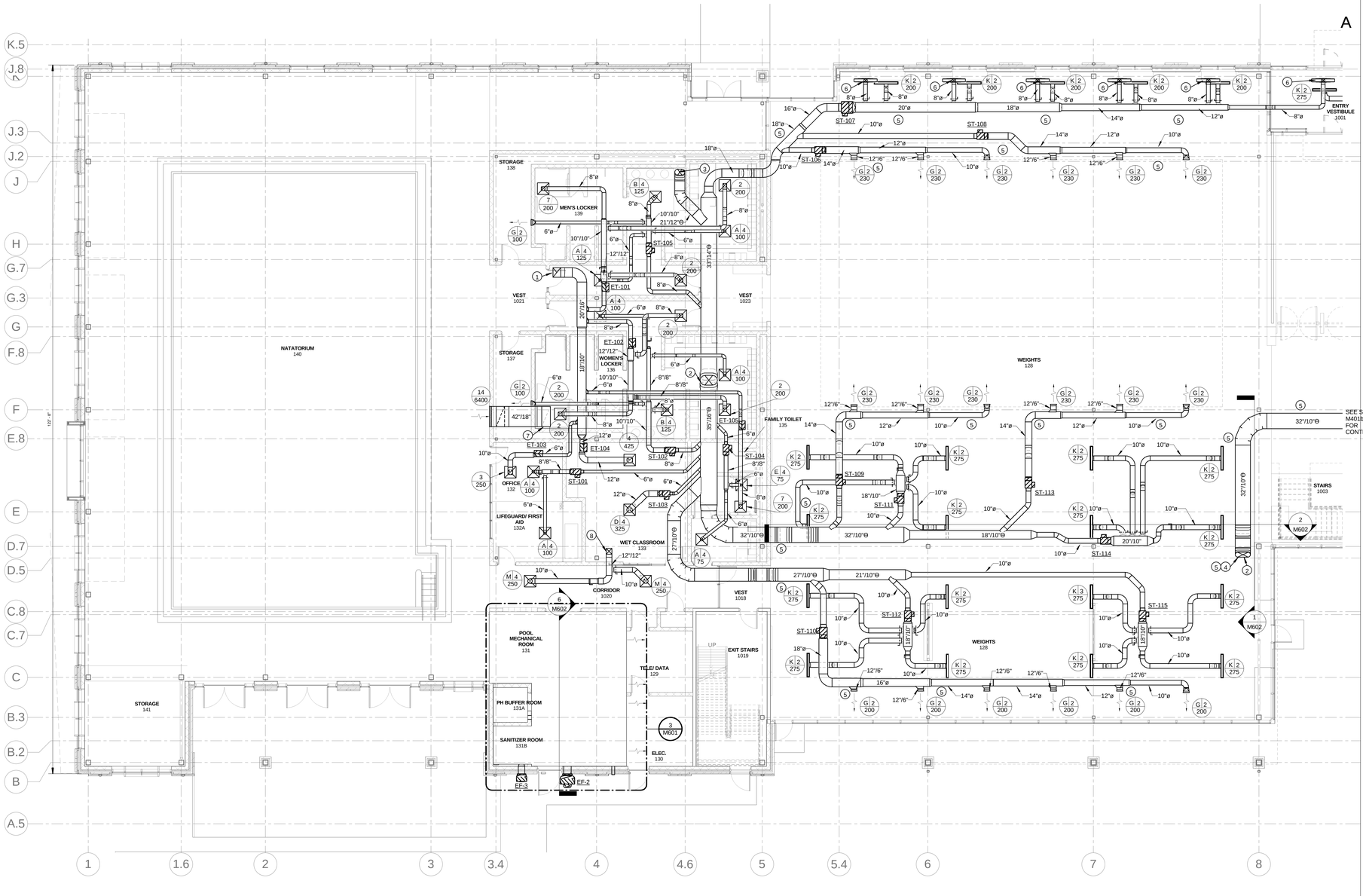
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HAVC PIPING DEMOLITION - SECTOR B

sheet number

M302b



GENERAL NOTES:

1. ALL LOCATIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ACCESSORIES, ETC. ARE APPROXIMATE. CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING EXACT FIELD CONDITIONS.
2. ALL SYSTEMS WITH-IN THE SCOPE OF WORK WILL BE FULLY OPERATIONAL DURING CONSTRUCTION. INTERRUPTION OF BUILDING SERVICES AND UTILITIES SHOULD BE MINIMIZED WHEN POSSIBLE AND COORDINATED WITH OWNER.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.
5. COORDINATE WITH FINAL STRUCTURAL SHOP DRAWINGS FOR DUCT ROUTES THROUGH STEEL.
6. EXPOSED DUCTWORK SHALL BE DOUBLE WALL IN CONSTRUCTION, UNLESS INDICATED OTHERWISE. REFER TO ARCHITECT FOR PAINT COLOR FOR EXPOSED DUCTWORK.
7. ALL DUCTWORK SERVING PAHU-1 SHALL BE ALUMINUM.

KEYED NOTES:

1. 20"/16" EXHAUST DUCT UP TO MECHANICAL (FITNESS) 226. SEE SHEET M402a FOR CONTINUATION.
2. 36"/20" OVAL SUPPLY DUCT DOWN FROM ERAHU-1 LOCATED IN MECHANICAL (FITNESS) 226. SEE SHEET M402a FOR CONTINUATION. PROVIDE Y-FITTING AT THIS LOCATION.
3. 21"/12" OVAL SUPPLY DUCT UP TO ST-201 LOCATED IN MECHANICAL (FITNESS) 226. SEE SHEET M402a FOR CONTINUATION.
4. 32"/10" SUPPLY DUCT UP FROM SECOND FLOOR. SEE SHEET M402a FOR CONTINUATION.
5. EXPOSED DUCTWORK SHALL BE DOUBLE WALL IN CONSTRUCTION.
6. 8"ø SUPPLY DUCT UP TO FLOOR GRILLE. FABRICATE TRANSITION TO MATCH NECK OF GRILLE.
7. 42"/18" RETURN DUCT UP TO MECHANICAL (FITNESS) 226. SEE SHEET M402a FOR CONTINUATION.
8. 12"/12" SUPPLY DUCT FROM FLOOR ABOVE. SEE SHEET M402a FOR CONTINUATION.

N

1 FIRST FLOOR PLAN - HVAC DUCTWORK - SECTOR A

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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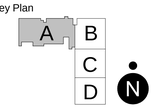
Key Plan



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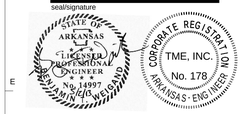


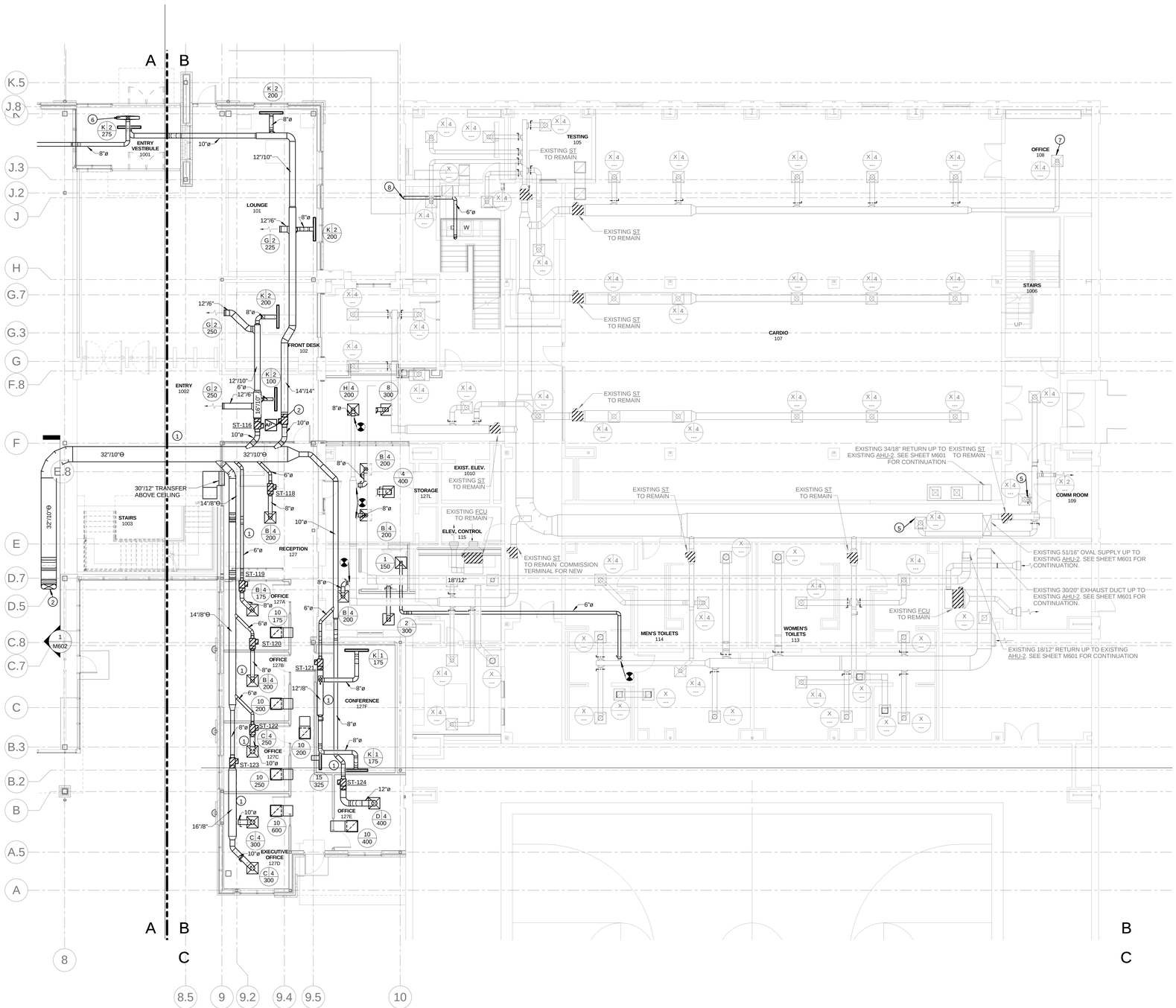
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - HVAC DUCTWORK - SECTOR A

sheet number

M401a



GENERAL NOTES:

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3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.
5. COORDINATE DUCTWORK ROUTE WITH FINAL STRUCTURAL SHOP DRAWINGS.
6. OFF-SET ARE TO BE MADE WITH RADIUS ELBOW.

KEYED NOTES:

1. ROUTE DUCTWORK IN COORDINATION WITH JOIST AND FINAL STRUCTURAL SHOP DRAWINGS.
2. 32"/10" OVAL SUPPLY DUCT UP TO SECOND FLOOR. SEE SHEET M402a FOR CONTINUATION.
3. PROVIDE ACCESS PANEL IN CEILING.
4. CONNECT NEW DIFFUSERS TO EXISTING SUPPLY MAIN.
5. IF ALTERNATE #2 IS ACCEPTED, SUPPLY GRILLE SHALL BE RELOCATED.
6. 8"ø SUPPLY DUCT UP TO FLOOR GRILLE. FABRICATE TRANSITION TO MATCH NECK OF GRILLE.
7. VERIFY EXISTING GRILLE LOCATION. REBALANCE DIFFUSER WITH AN AIRFLOW OF 400CFM.
8. PROVIDE DRYER VENT ABOVE WINDOW WITH DRYER VENT CAP.

N

1 FIRST FLOOR PLAN - HVAC DUCTWORK - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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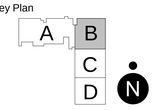
Key Plan



seal/signature

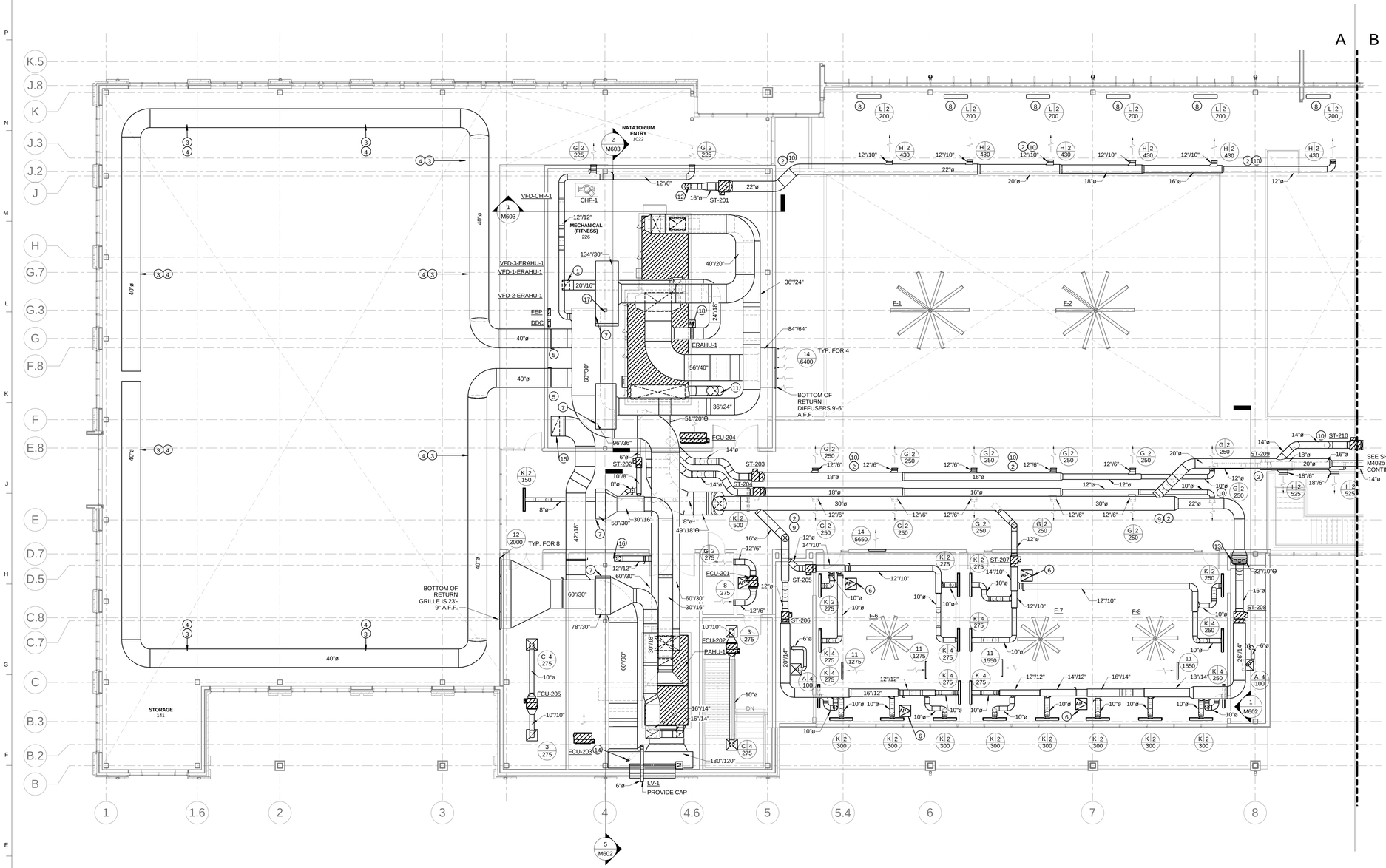
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - HVAC DUCTWORK - SECTOR B

sheet number

M401b



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4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.
5. ALL DUCTWORK SERVING PAHU-1 SHALL BE ALUMINUM.

KEYED NOTES:

1. 20"/16" EXHAUST DUCT DOWN TO FIRST FLOOR. SEE SHEET M201a FOR CONTINUATION.
2. EXPOSED DUCTWORK SHALL BE DOUBLE WALL IN CONSTRUCTION. ARCHITECT TO VERIFY PAINT COLOR.
3. FABRIC DUCTWORK ROUTED BELOW STRUCTURE VIA TRACK SECURED TO BUILDING STRUCTURE. PROVIDE WITH ALL ZIPPERED CONNECTIONS. COLOR OF DUCT SOCK TO BE COORDINATED WITH ARCHITECT. DUCT SOCKS SHALL BE EQUAL TO DUCTSOX MODEL CF FABRIC. PROVIDE CABLE STOP AT END OF DUCT SOX RUN. DUCT SOX VENT SIZE AND LOCATION TO PROVIDE 50FPM AT POOL AND POOL DECK LEVEL.
4. DUCT SOCK OPENINGS AT 5 O'CLOCK AND 8 O'CLOCK POSITIONS.
5. TRANSITION FROM METAL DUCT TO DUCK SOX VIA ZIPPER CONNECTION, AS DUCT LEAVES MECHANICAL ROOM AND ENTERS NATATORIUM.
6. ACCESS PANELS ARE TO BE PROVIDED WITH ARCHITECTURAL CEILING. SEE ARCHITECTURAL PLANS.
7. DUCTED PLENUM CONNECTED TO WALLED LOUVER ABOVE POOL ROOF. COORDINATE WITH STRUCTURAL MEMBERS. INSULATE AND BLANK OFF UNUSED PORTIONS OF LOUVER.
8. FLOOR GRILLES SUPPLIED FROM BELOW.
9. EXPOSED SUPPLY DUCTWORK SHALL BE ROUTED HIGH IN TRUSS SPACE.
10. EXPOSED DUCTWORK SHALL BE ROUTED 15'-0" ABOVE FINISHED FLOOR.
11. 36"/20" OVAL SUPPLY DUCT DOWN TO FIRST FLOOR. SEE SHEET M401a FOR CONTINUATION.
12. 21"/12" OVAL DUCT FROM FIRST FLOOR. SEE SHEET M401a FOR CONTINUATION.
13. 32"/10' OVAL SUPPLY DUCT DOWN TO FIRST FLOOR. SEE SHEET M401a FOR CONTINUATION.
14. 6"ø COMBUSTION DUCT FROM FIRST FLOOR AND THROUGH WALL 9'-6" A.F.F.
15. 42"/18" RETURN DUCT DOWN TO FIRST FLOOR. SEE SHEET 401a FOR CONTINUATION.
16. 12"/12" SUPPLY DUCT DOWN TO FIRST FLOOR. SEE SHEET M401a FOR CONTINUATION
17. CONSTRUCT SHEET METAL PLENUM AROUND STRUCTURAL COLUMN.
18. MOTORIZED DAMPER TO BE BALANCED TO PROVIDE 3325 CFM RETURN AIR TO EXHAUST.

N

1 SECOND FLOOR PLAN - HVAC DUCTWORK - SECTOR A

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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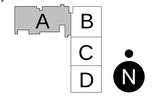
Key Plan



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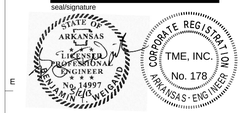


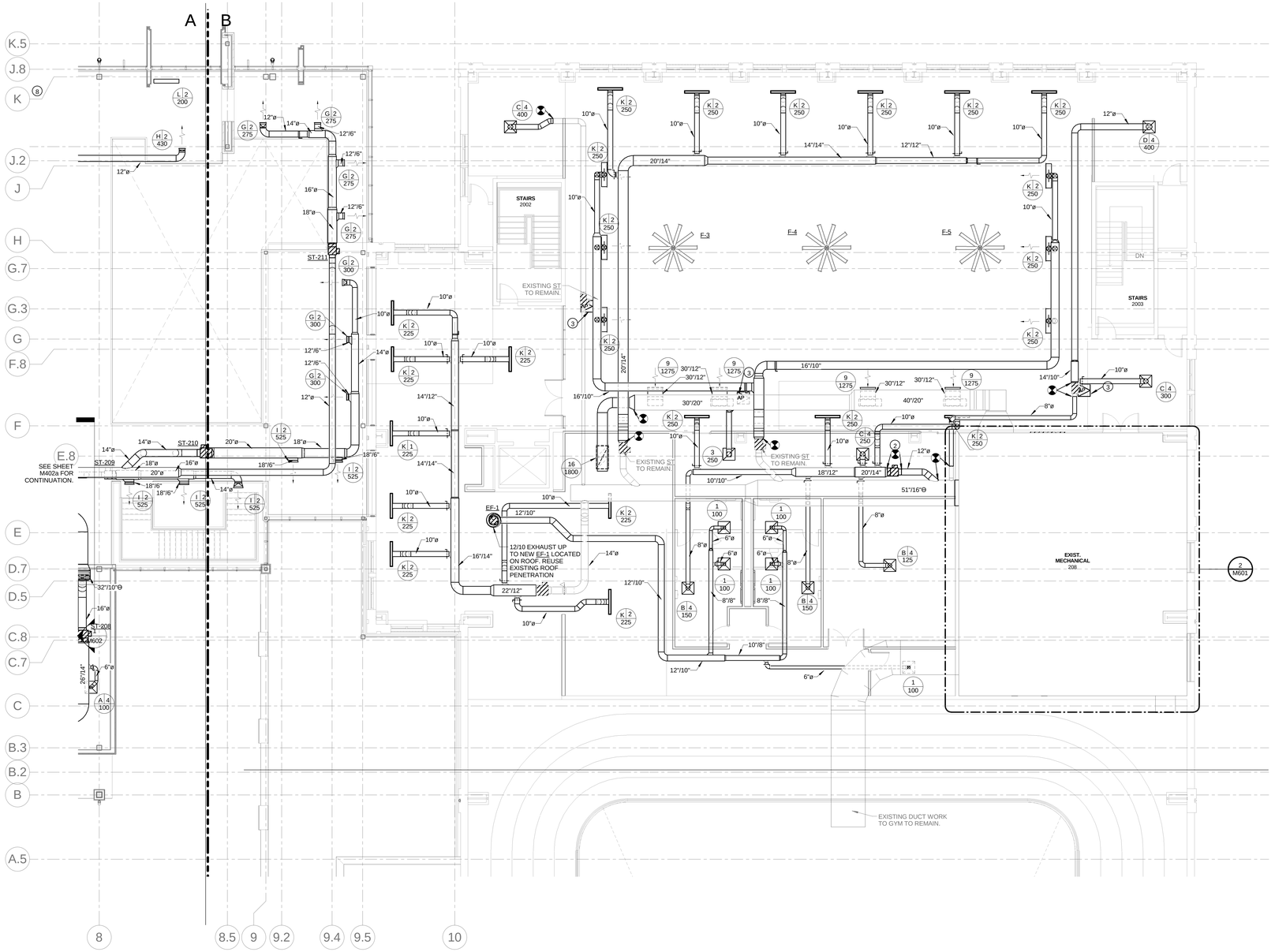
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HVAC DUCTWORK - SECTOR A

sheet number

M402a



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3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.

KEYED NOTES:

1. ALL EXPOSED DUCTWORK SHALL BE DOUBLE WALL IN CONSTRUCTION. VERIFY PAINT COLOR OF DUCTWORK WITH ARCHITECT.
2. EXISTING SUPPLY TERMINAL RELOCATED. SEE SHEET M202b FOR ORIGINAL LOCATION.
3. ARCHITECTURAL PANELS ARE TO BE PROVIDED WITH ARCHITECTURAL CEILING. SEE ARCHITECTURAL PLANS.

N

1 SECOND FLOOR PLAN - HVAC DUCTWORK - SECTOR B

1/8" = 1'-0"

5/2/2013 4:53:07 PM

HPER Center Renovation & Expansion

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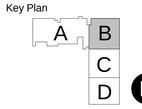
Key Plan



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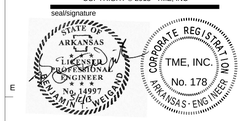


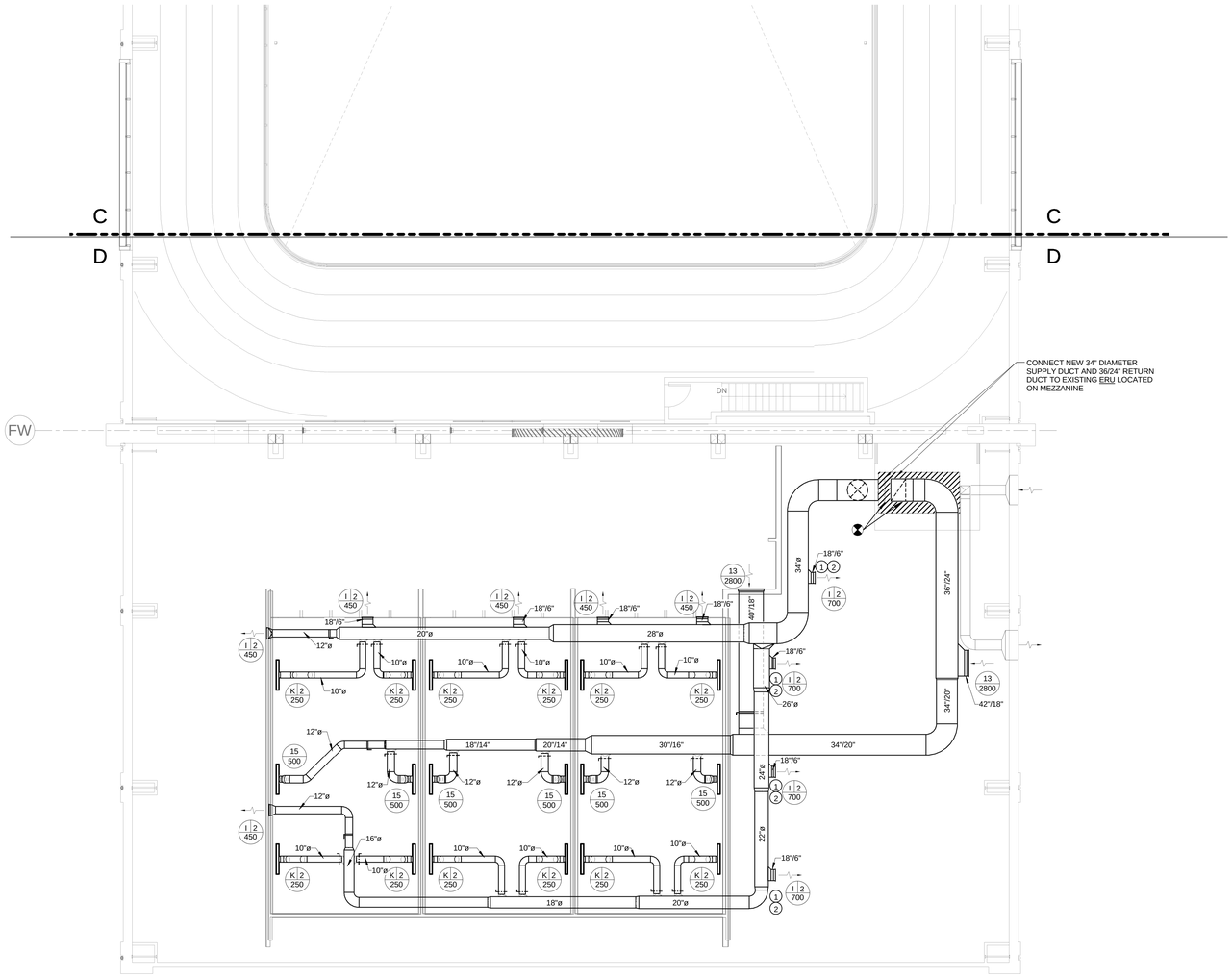
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HVAC DUCTWORK - SECTOR B

sheet number

M402b



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3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY TRANSITIONS AND DUCTWORK REQUIRED TO CONNECT EXISTING EQUIPMENT OR GRILLES.

KEYED NOTES:

(1) DIFFUSERS SHOULD BE MOUNTED AT A 45 DEGREE ANGLE TOWARD GROUND.

(2) EXPOSED DUCTWORK SHALL HAVE EXPOSED INSULATION.

N

1 **SECOND FLOOR PLAN - HVAC DUCTWORK - SECTOR D**

1/8" = 1'-0"

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
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Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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University of Central Arkansas
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P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
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P: (816) 472-2000

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structural engineer:
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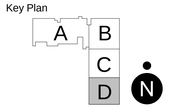
P: (501) 370-9207

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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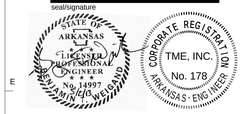


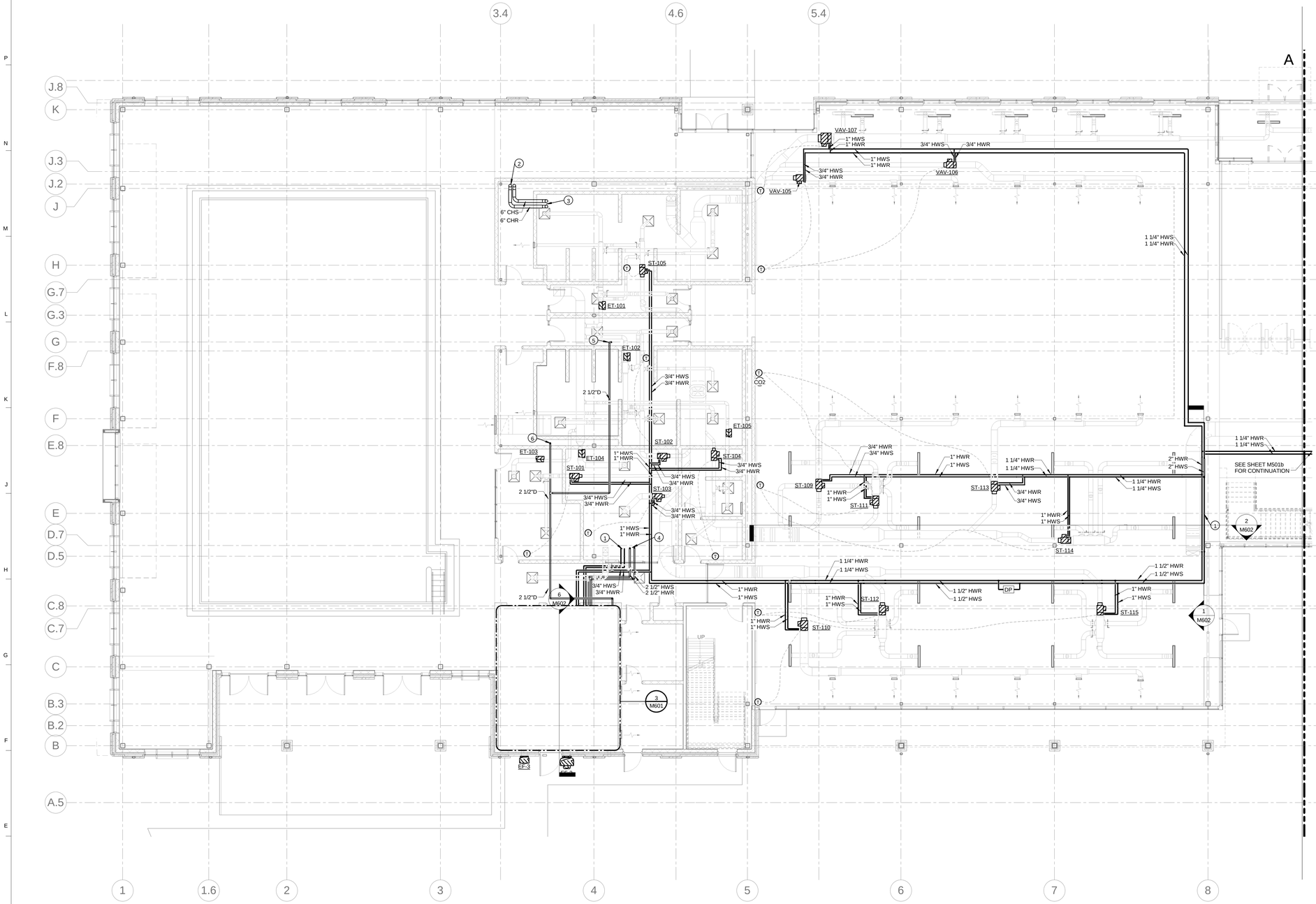
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HVAC DUCTWORK - SECTOR D

sheet number

M402d



GENERAL NOTES:

1. ALL LOCATIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ACCESSORIES, ETC, ARE APPROXIMATE. CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING EXACT FIELD CONDITIONS.
2. ALL SYSTEMS WITH-IN THE SCOPE OF WORK WILL BE FULLY OPERATIONAL DURING CONSTRUCTION. INTERRUPTION OF BUILDING SERVICES AND UTILITIES SHOULD BE MINIMIZED WHEN POSSIBLE AND COORDINATED WITH OWNER.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY TRANSITIONS AND DUCTWORK REQUIRED TO CONNECT EXISTING EQUIPMENT OR GRILLES.

KEYED NOTES:

1. 1 1/2" CHS/R FROM ABOVE. SEE SHEET M502a FOR CONTINUATION.
2. 6" CHS/R FROM BELOW SLAB. SEE SHEET M101 FOR CONTINUATION.
3. 6" CHS/R UP TO SECOND FLOOR. SEE SHEET M502a FOR CONTINUATION.
4. 3" HWR/S UP TO MECHANICAL ROOM (NATATORIUM) 224, TO CONNECT TO PAHU-1. SEE SHEET 502a FOR CONTINUATION.
5. 2-1/2" D DOWN FROM MECHANICAL ROOM (FITNESS) 226. SEE SHEET M502a FOR CONTINUATION.
6. 2" D DOWN FROM MECHANICAL ROOM (FITNESS) 226. SEE SHEET M502a FOR CONTINUATION.
7. HEATING WATER DIFFERENTIAL PRESSURE SENSOR.

N

1 FIRST FLOOR PLAN - HVAC PIPING - SECTOR A

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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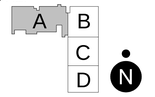
Key Plan



seal/signature

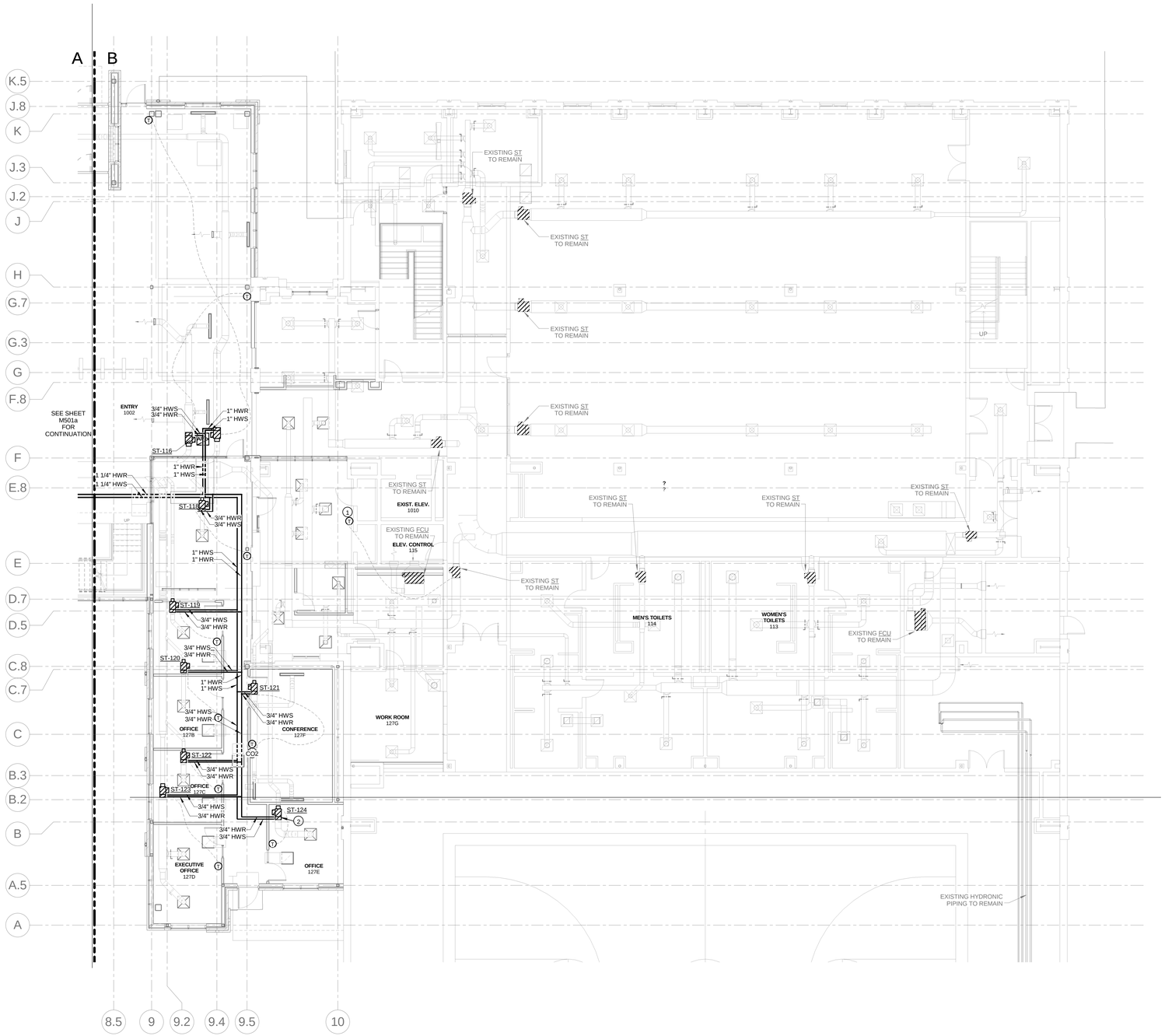
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - HVAC PIPING - SECTOR A

sheet number

M501a



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4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY TRANSITIONS AND DUCTWORK REQUIRED TO CONNECT EXISTING EQUIPMENT OR GRILLES.

KEYED NOTES:

(1) RELOCATE EXISTING THERMOSTAT FOR EXISTING SUPPLY TERMINAL.

(2) SUPPLY TERMINAL CONTROL VALVE SHALL BE A 3-WAY CONTROL VALVE.

N

1 **FIRST FLOOR PLAN - HVAC PIPING - SECTOR B**

1/8" = 1'-0"

5/2/2013 4:52:31 PM

HPER Center Renovation & Expansion

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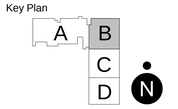
Key Plan



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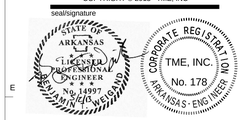


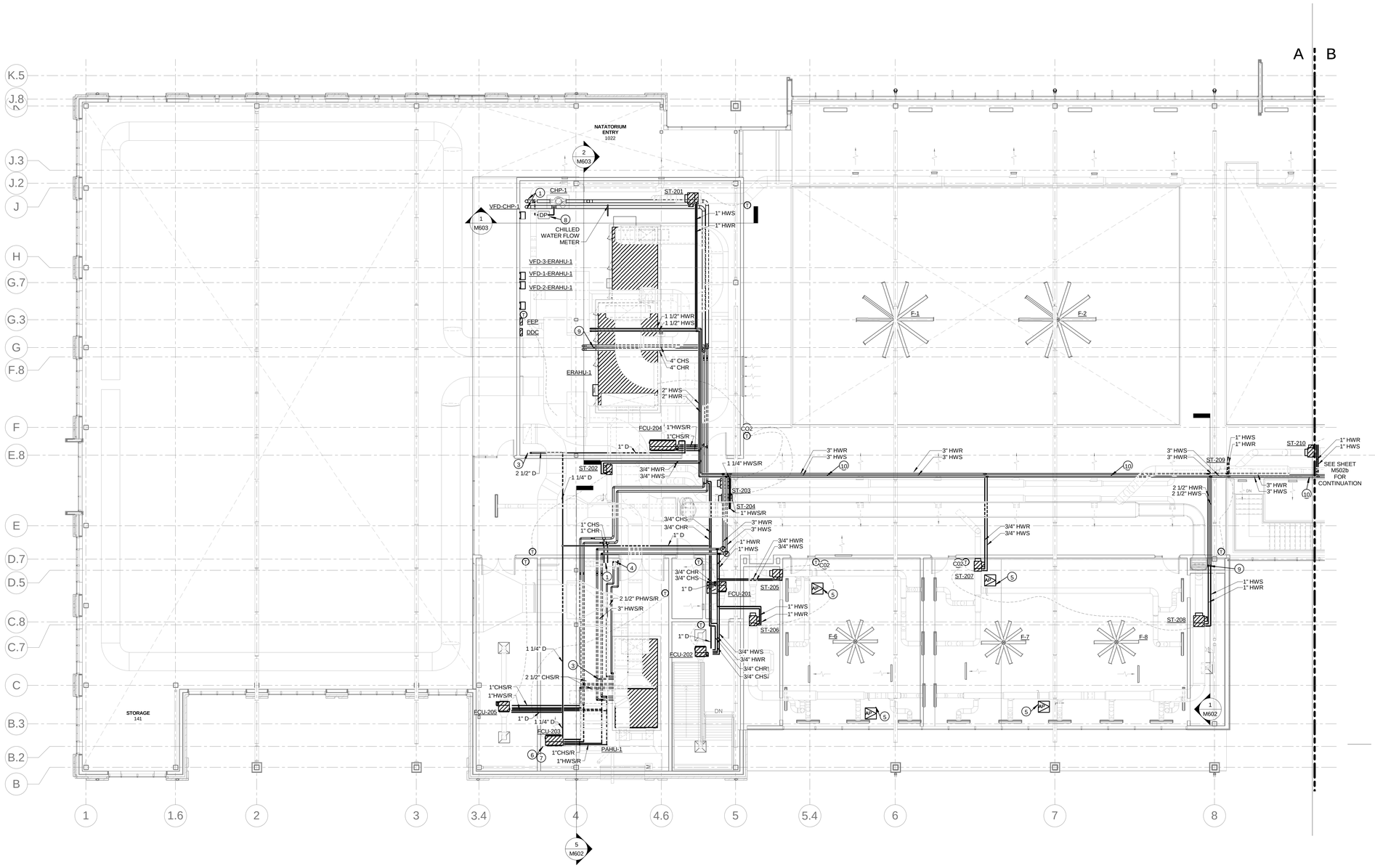
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - HVAC PIPING - SECTION B

sheet number

M501b



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3. WHEN POSSIBLE AND COORDINATED WITH OWNER.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.

   UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.

KEYED NOTES:

1. 1-1/2" CHS/R PIPES DOWN TO POOL MECHANICAL FILTRATION ROOM. SEE SHEET M501a FOR CONTINUATION.
2. 6" CHS/R PIPE FROM FIRST FLOOR. SEE SHEET M501a FOR CONTINUATION.
3. 2"D DOWN TO FIRST FLOOR. SEE SHEET M501a FOR CONTINUATION.
4. 2 1/2" PHWS/R DOWN TO POOL FILTRATION ROOM 131 TO CONNECT TO POOL HEATING LOOP. SEE SHEET M501a FOR CONTINUATION.
5. ACCESS PANELS ARE TO BE PROVIDED WITH ARCHITECTURAL CEILING. SEE ARCHITECTURAL PLANS FOR COORDINATION.
6. HEATING WATER CONTROL VALVE SHALL BE A 3-WAY CONTROL VALVE.
7. CHILLED WATER CONTROL VALVE SHALL BE A 3-WAY CONTROL VALVE.
8. CHILLED WATER DIFFERENTIAL PRESSURE SENSOR.
9. 2 1/2" HWS/R DOWN TO FIRST FLOOR. SEE SHEET M501a FOR CONTINUATION.
10. HYDRONIC PIPING SHALL BE INSTALLED AND ROUTED THROUGH TRUSS SYSTEM. COORDINATE WITH FINAL STRUCTURAL SUBMITTALS. INSTALL 24'-3" A.F.F.

N

1 SECOND FLOOR PLAN - HVAC PIPING - SECTOR A

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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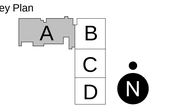
Key Plan



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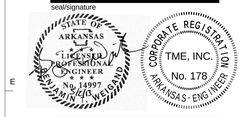


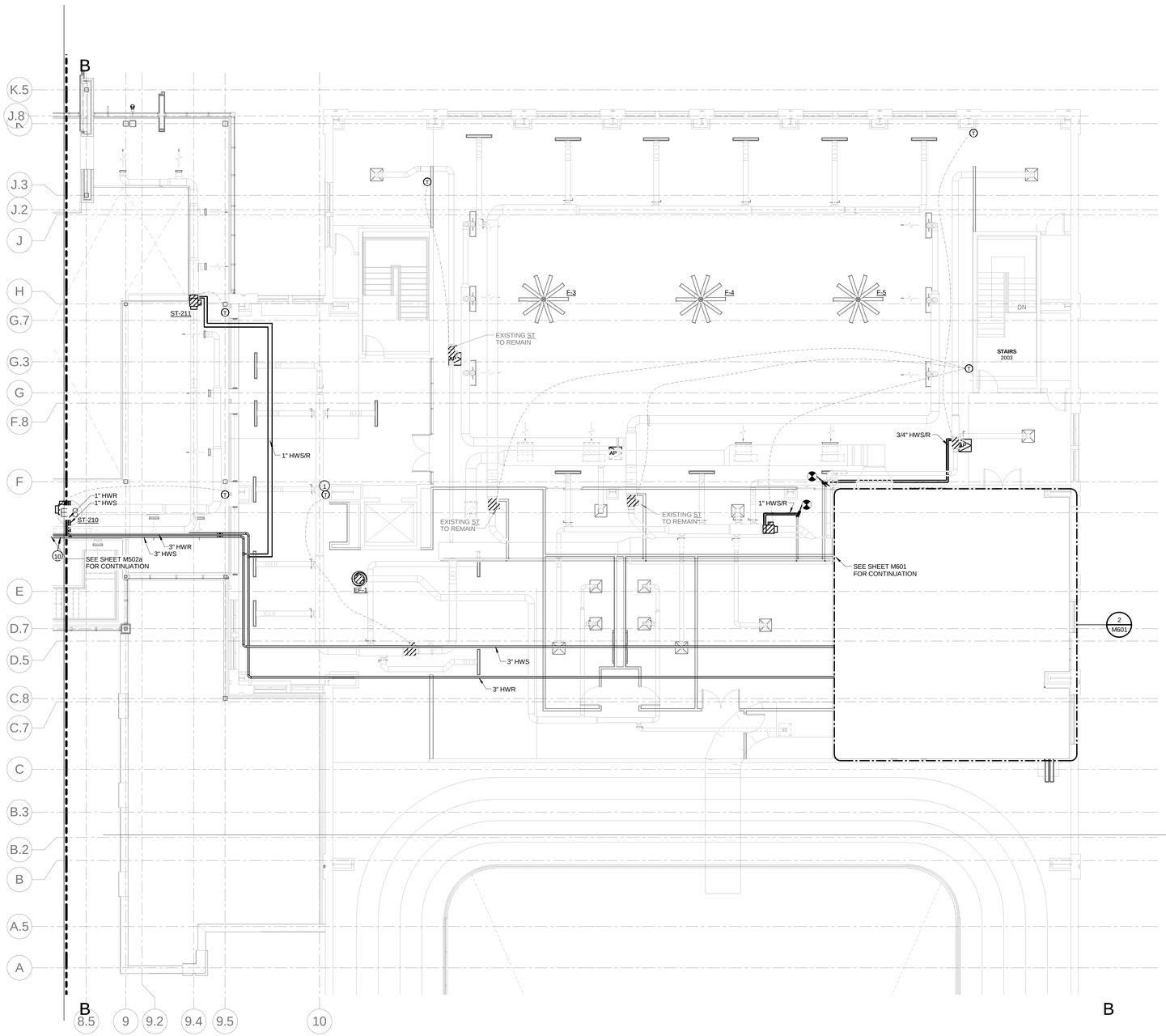
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HVAC PIPING - SECTOR A

sheet number

M502a



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4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.

KEYED NOTES:

(1) RELOCATE EXISTING THERMOSTAT FOR EXISTING SUPPLY TERMINAL.

N

1 SECOND FLOOR PLAN - HVAC PIPING - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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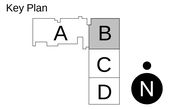
Key Plan



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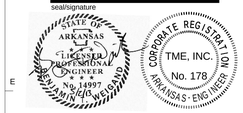


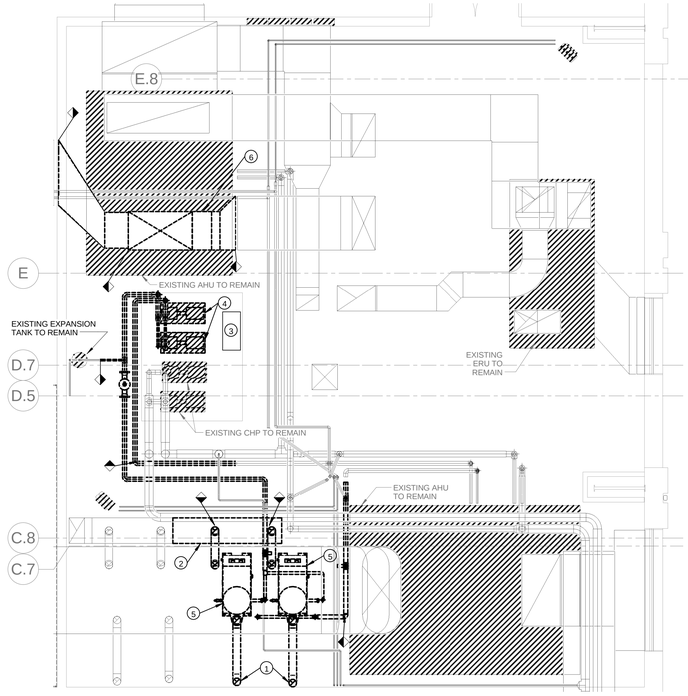
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - HVAC PIPING - SECTOR B

sheet number

M502b



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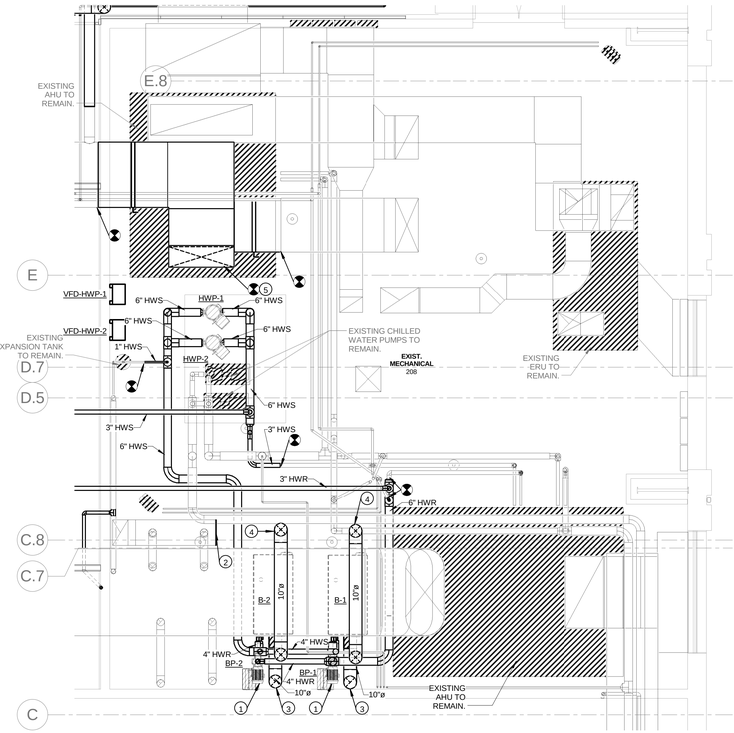
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING RESULTING FROM CONSTRUCTION.
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.
5. REFER TO HEATING WATER PIPING DIAGRAM ON SHEET M702.

KEYED NOTES:

1. DEMOLISH EXISTING 6" FLUE UP TO ROOF. EXISTING ROOF PENETRATION TO BE REUSED. SEE SHEET M601 DETAIL 2.
2. DEMOLISH AND CAP EXISTING COMBUSTION AIR DUCT.
3. DEMOLISH EXISTING VFD AND ASSOCIATED ELECTRICAL EQUIPMENT WITH EXISTING HWP.
4. DEMOLISH EXISTING HWP.
5. DEMOLISH EXISTING BOILER.
6. DEMOLISH EXISTING SUPPLY DUCTWORK. FROM EXISTING AHU. SEE SHEET M601 DETAIL 2 FOR NEW FITTING.

1 ENLARGED MECHANICAL ROOM 211 FLOOR PLAN - HVAC DEMOLITION

1/4" = 1'-0"



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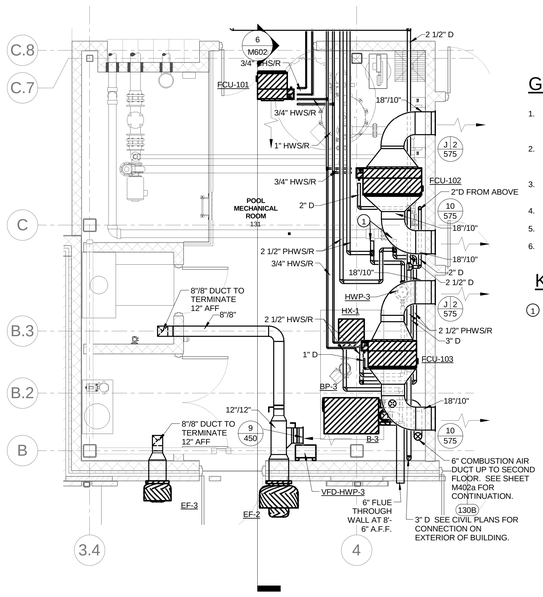
4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.
5. REFER TO HEATING WATER PIPING DIAGRAM ON SHEET M702.

KEYED NOTES:

1. BOILER PUMP LOCATED IN VERTICAL PIPING
2. CAP DUCTWORK.
3. 10" BOILER FLUE UP THROUGH EXISTING ROOF PENETRATIONS. EXPAND EXISTING PENETRATIONS FOR NEW FLUE SIZE.
4. 10" BOILER COMBUSTION AIR DUCT UP TO ROOF.
5. REBALANCE DUCTWORK TO ORIGINAL DESIGN CONDITIONS.

2 ENLARGED MECHANICAL ROOM 211 FLOOR PLAN - HVAC

1/4" = 1'-0"



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4. UCA WILL HAVE FIRST RIGHTS TO RETAIN ANY EXISTING EQUIPMENT.
5. REFER TO POOL HEATING WATER PIPING DIAGRAM ON SHEET M7.01.
6. ALL DUCTWORK SERVING EF-2, 3 SHALL BE ALUMINUM.

KEYED NOTES:

1. CONNECT 2-1/2" HWS/R TO POOL LOOP TEES. VERIFY EXACT LOCATION WITH POOL CONTRACTOR.

3 ENLARGED POOL FILTRATION ROOM 131 FLOOR PLAN - HVAC

1/4" = 1'-0"

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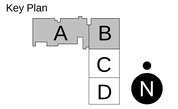
Key Plan



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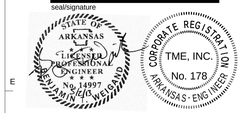

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

PARTIAL FLOOR PLANS - HVAC

sheet number

M601

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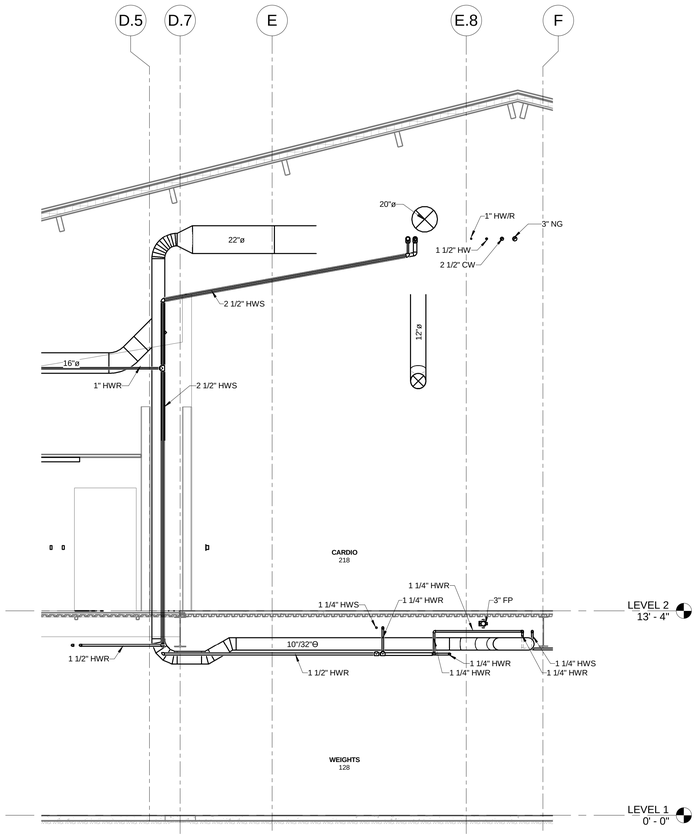
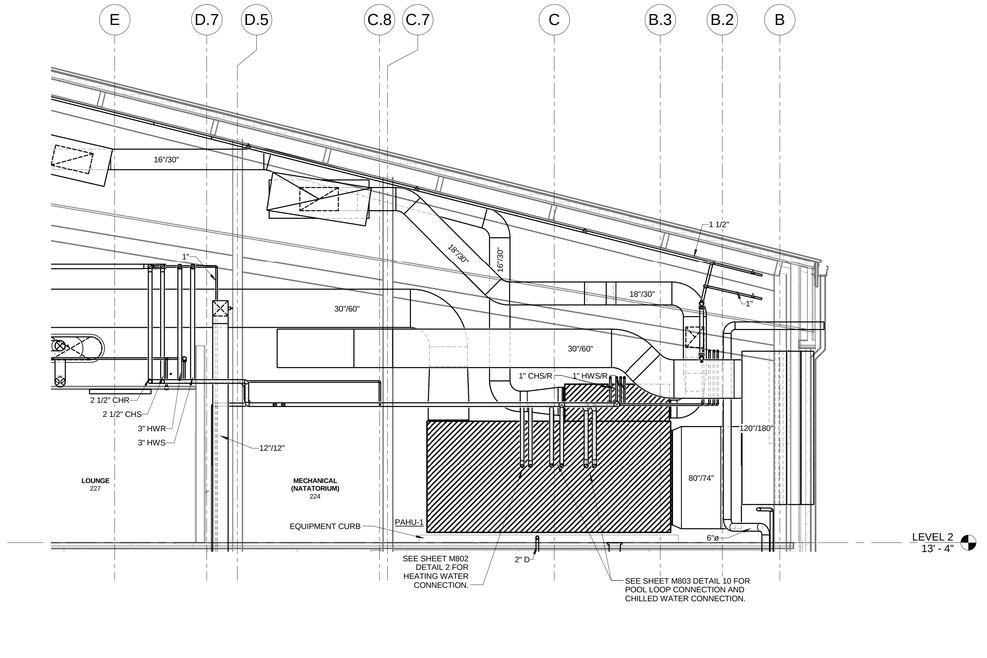
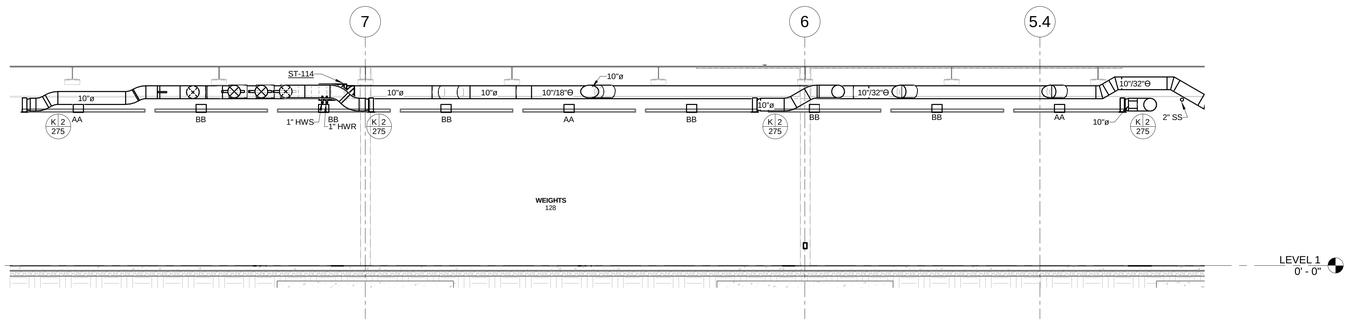


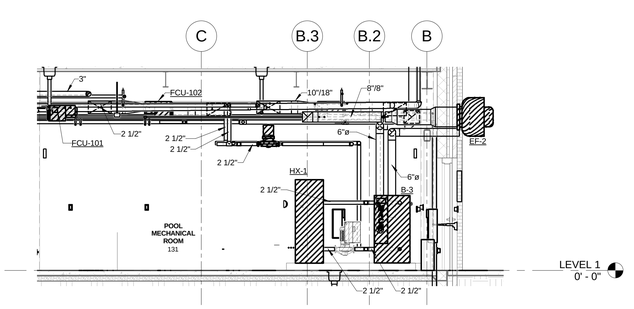
1 CHASE - HVAC SECTION
NOT TO SCALE



5 MECHANICAL (NATATORIUM) 224 - HVAC SECTION
NOT TO SCALE



2 WEIGHTS 128- HVAC SECTION
NOT TO SCALE



6 POOL FILTRATION ROOM - HVAC SECTION
NOT TO SCALE

5/2/2013 6:07:03 PM

HPER Center Renovation & Expansion

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Conway, Arkansas

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aquatics consultant:
Counsilman-Hunsaker
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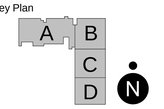
Key Plan



seal/signature

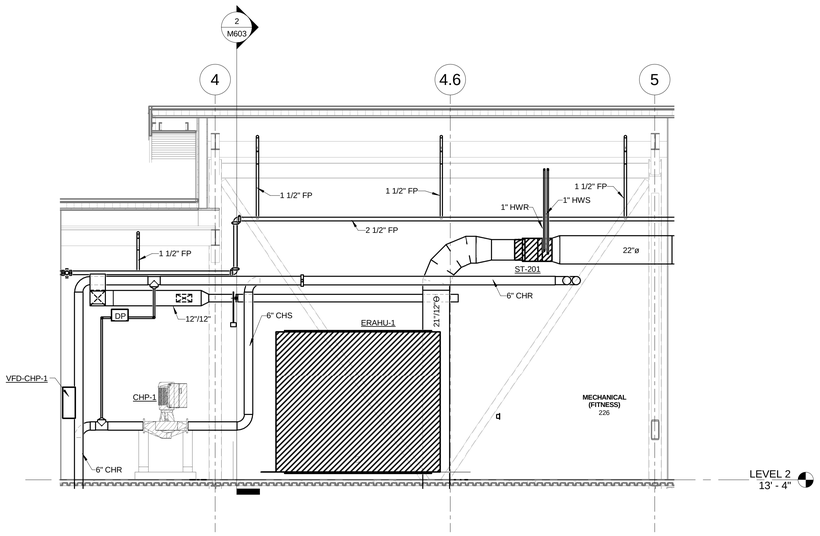
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

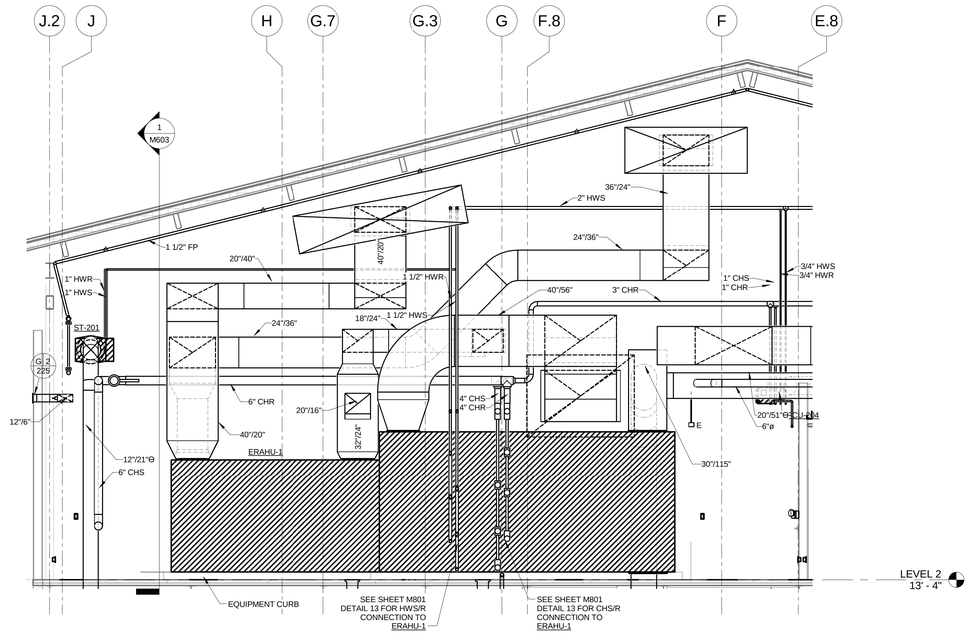
SECTIONS - HVAC

sheet number

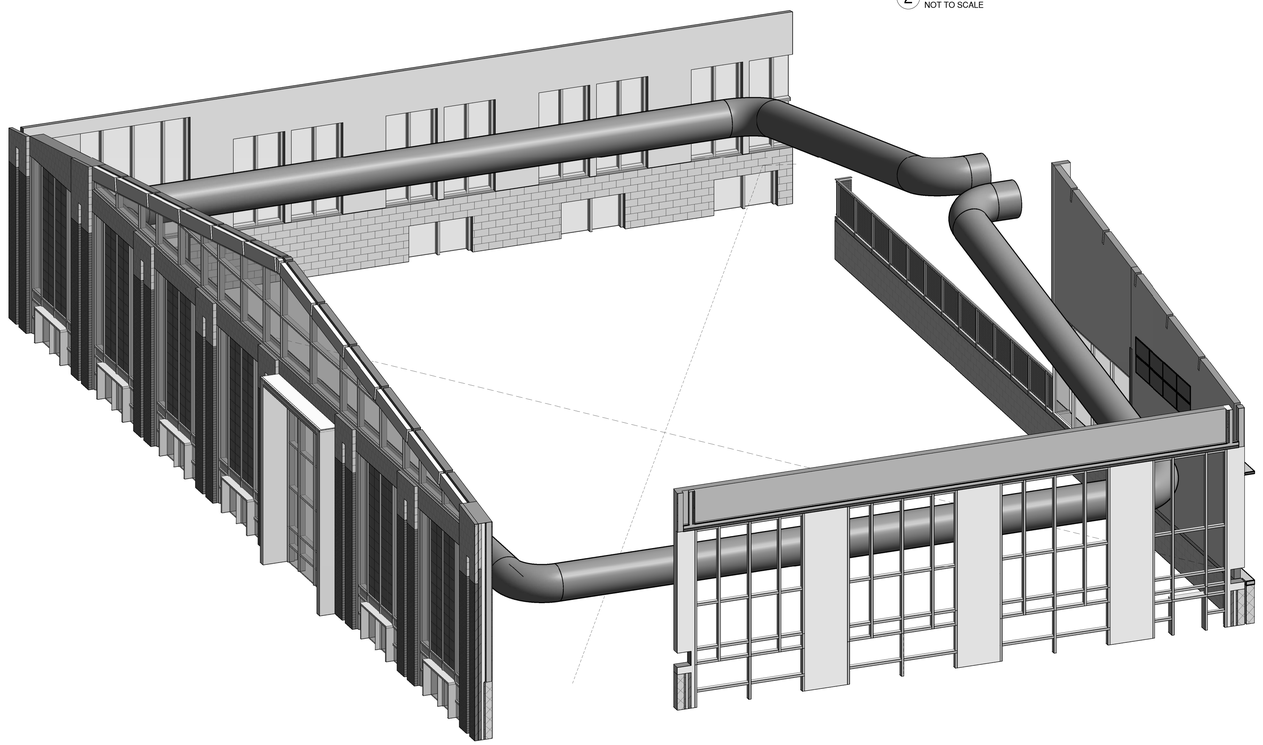
M602



1 MECHANICAL (FITNESS) 226 - HVAC SECTION 1
NOT TO SCALE



2 MECHANICAL (FITNESS) 226 - HVAC SECTION 2
NOT TO SCALE



5 NATATORIUM 224 - 3D
NOT TO SCALE

GENERAL NOTES:

1. 3D VIEWS ARE FOR REFERENCE ONLY AND ARE NOT TO SCALE
2. 3D VIEWS ARE NOT INTENDED TO SERVE AS CONSTRUCTION COORDINATION DRAWINGS.

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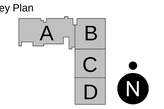
Key Plan



seal/signature

rev	date	description

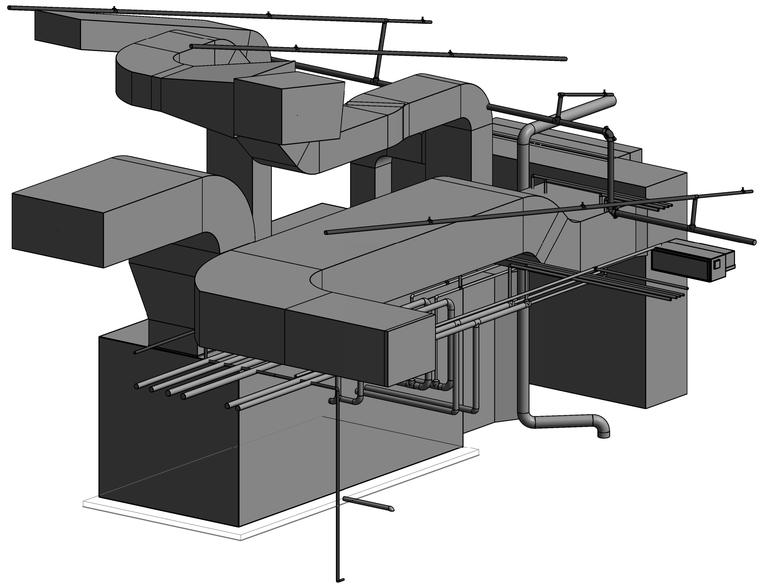
date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECTIONS AND 3D VIEWS - HVAC

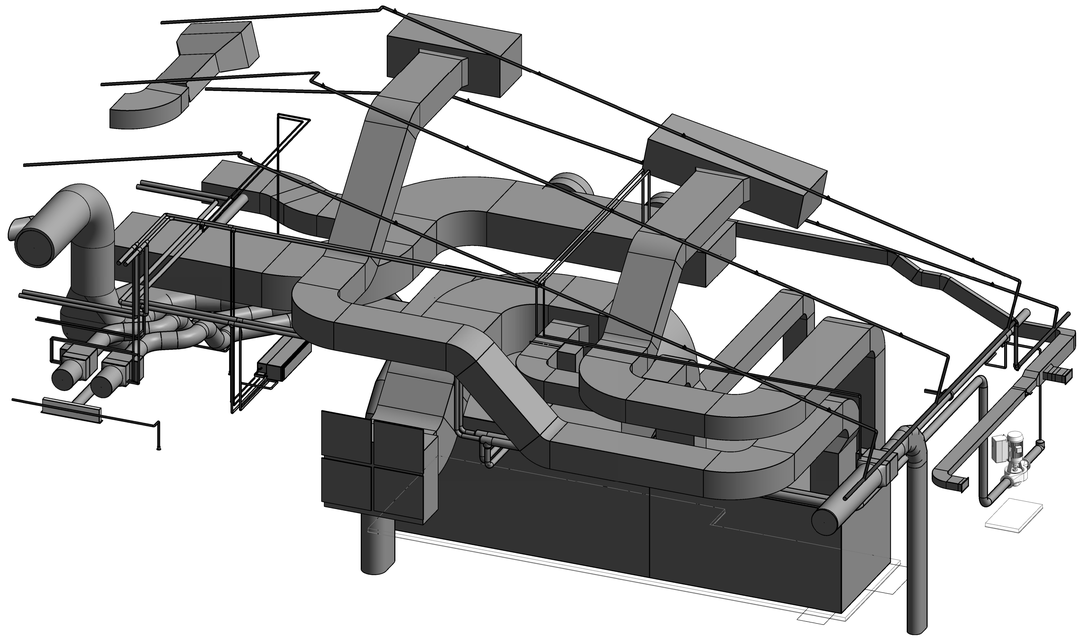
sheet number

M603

5/2/2013 6:06:41 PM



1 MECHANICAL (NATATORIUM)224 - 3D
NOT TO SCALE



2 MECHANICAL (FITNESS) 226 - 3D
NOT TO SCALE

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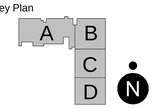
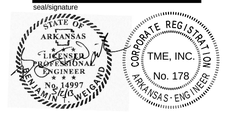


seal/signature



rev	date	description

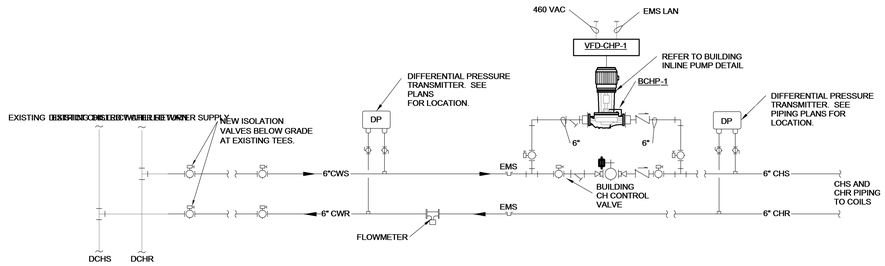
date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

3D VIEWS - HVAC

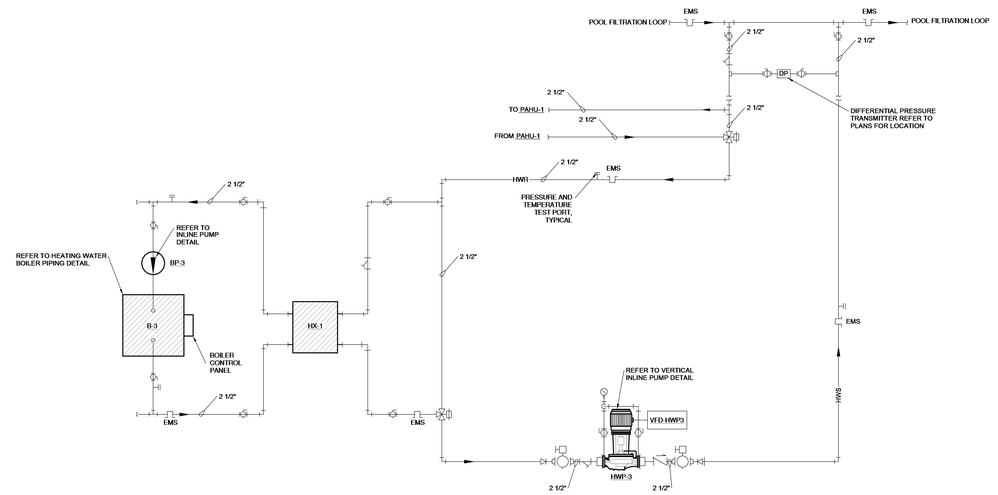
sheet number

M604

5/2/2013 6:06:20 PM



1 CHILLED WATER PIPING DIAGRAM
NOT TO SCALE



2 POOL HEATING WATER PIPING DIAGRAM
NOT TO SCALE

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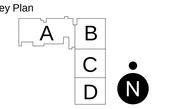
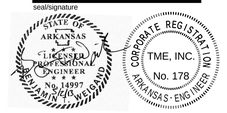
Key Plan



seal/signature



rev	date	description

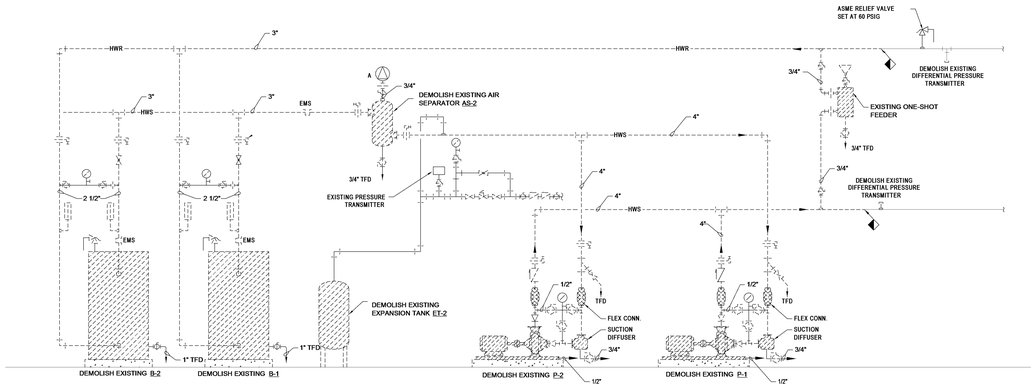
date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

PIPING DIAGRAMS - HVAC

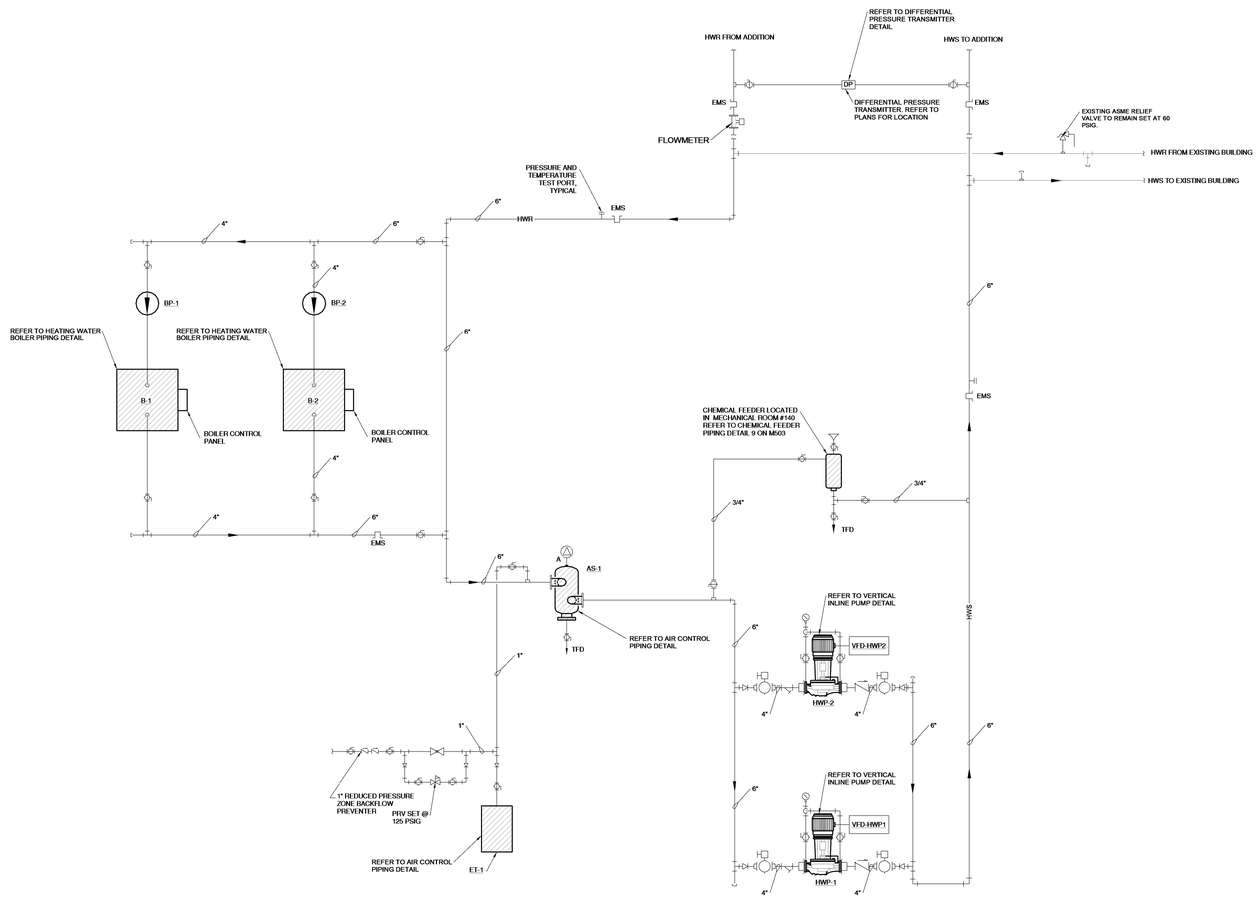
sheet number

M701

5/2/2013 4:50:33 PM



1 HEATING WATER DEMOLITION PIPING DIAGRAM
NOT TO SCALE



2 HEATING WATER PIPING DIAGRAM
NOT TO SCALE

5/2/2013 4:50:31 PM

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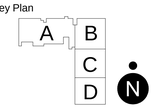
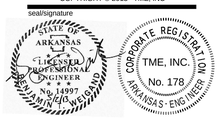


seal/signature



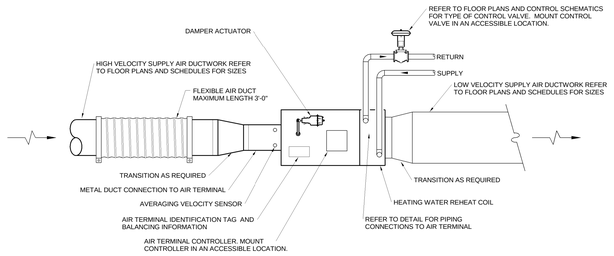
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

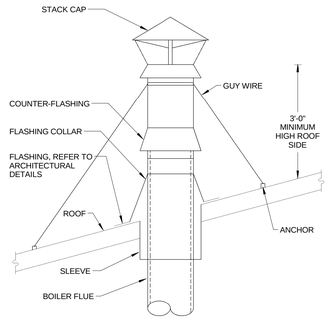
PIPING DIAGRAMS - HVAC

sheet number

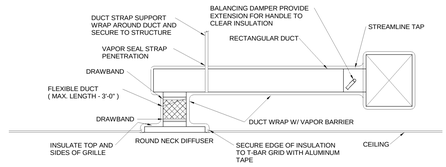
M702



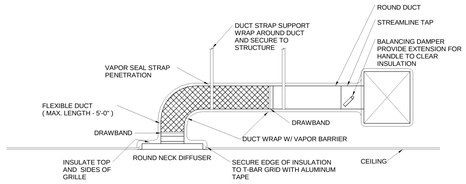
1 TYPICAL AIR TERMINAL DETAIL
NOT TO SCALE



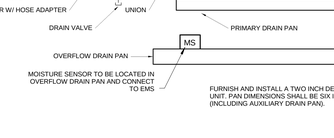
2 BOILER STACK DETAIL
NOT TO SCALE



3 DIFFUSER CONNECTION TO RECTANGULAR DUCT
NOT TO SCALE



4 DIFFUSER CONNECTION TO ROUND DUCT
NOT TO SCALE



MARK	A	B	C	D
TD-1	34"	12"	18"	4"

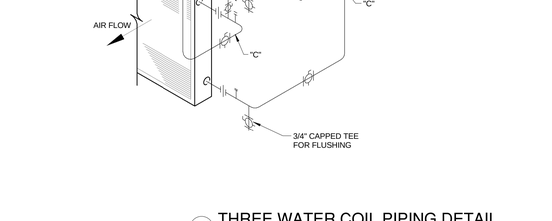
NOTE: ALL TRANSFER DUCTS SHALL BE INTERNALLY LINED WITH 1" THICKNESS DUCT LINER.

5 INSULATED RETURN AIR TRANSFER DUCT
NOT TO SCALE

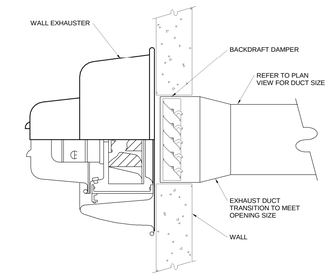
6 RECTANGULAR BRANCH DUCT CONNECTION
NOT TO SCALE

7 ROUND BRANCH DUCT CONNECTION
NOT TO SCALE

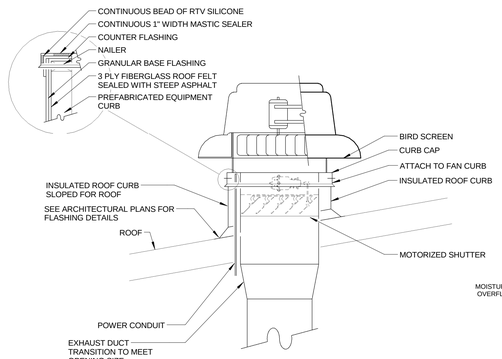
DESIGNATION	A	B	C	D	E	F	G
10	24"	24"	22"	22"	22"	12"	24"



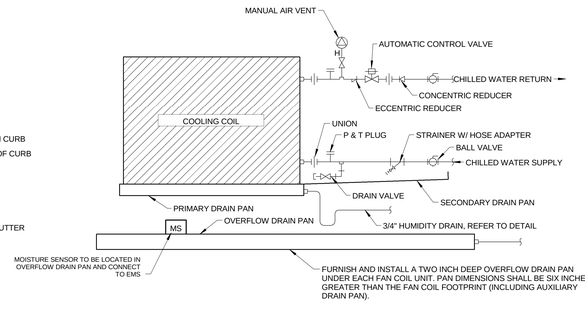
8 RETURN AIR GRILLE WITH ELL DETAIL
NOT TO SCALE



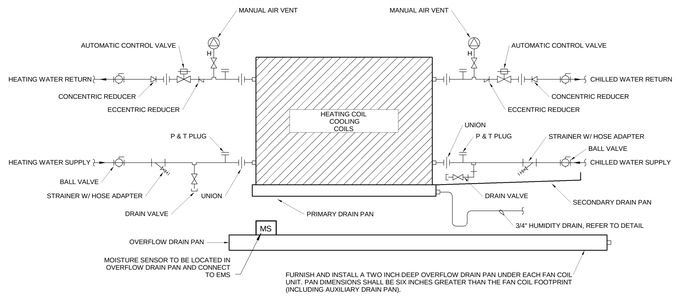
9 WALL EXHAUST FAN DETAIL
NOT TO SCALE



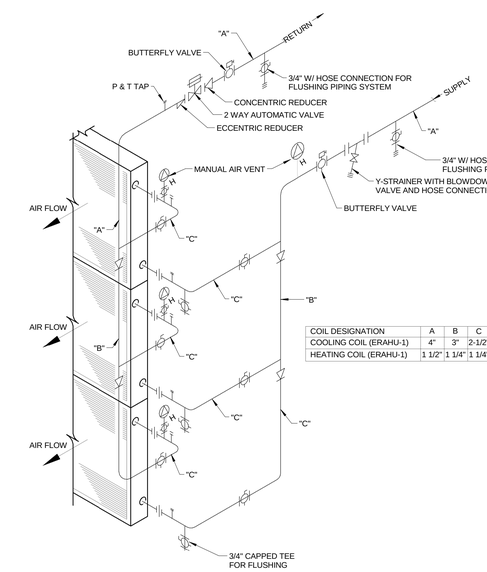
10 ROOFTOP DOWNBLAST EXHAUST FAN DETAIL
NOT TO SCALE



11 COOLING ONLY FAN COIL UNIT PIPING DETAIL
NOT TO SCALE



12 HORIZONTAL FAN COIL UNIT PIPING DETAIL
NOT TO SCALE



COIL DESIGNATION	A	B	C
COOLING COIL (ERAHU-1)	4"	3"	2-1/2"
HEATING COIL (ERAHU-1)	1 1/2"	1 1/4"	1 1/4"

13 THREE WATER COIL PIPING DETAIL
NOT TO SCALE

5/2/2013 4:50:29 PM

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Key Plan

seal/signature

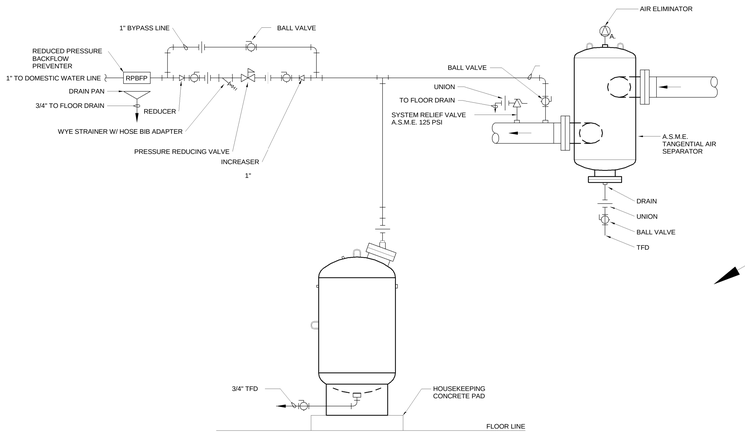
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

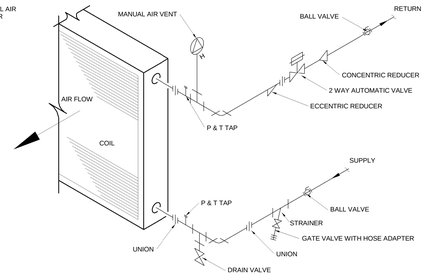
DETAILS - HVAC

sheet number

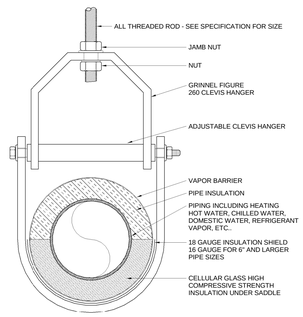
M801



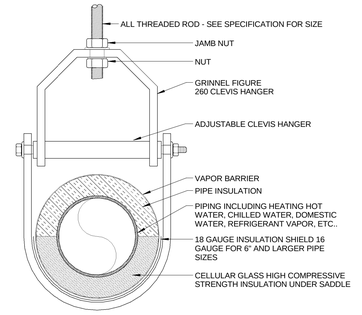
1 AIR CONTROL PIPING DETAIL
NOT TO SCALE



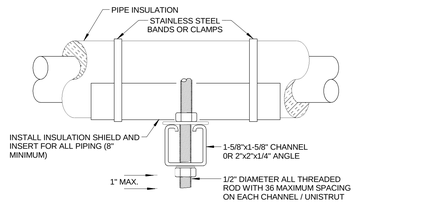
2 WATER COIL PIPING DETAIL
NOT TO SCALE



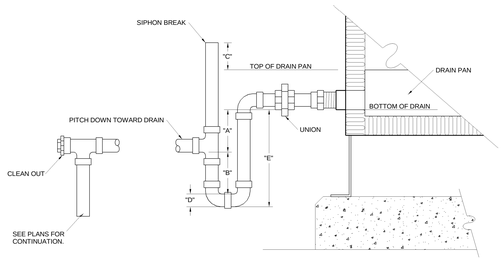
3 CLEVIS PIPE HANGER DETAIL 1
NOT TO SCALE



6 CLEVIS PIPE HANGER DETAIL 2
NOT TO SCALE



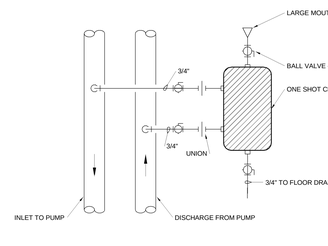
11 TRAPEZE PIPE HANGER DETAIL
NOT TO SCALE



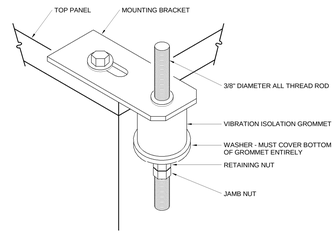
DRAW-THRU COIL
(NEGATIVE PRESSURE)
"A" = 1" + STATIC PRESSURE
"B" = 1/2 x "A"
"C" = 2"
"D" = PIPE DIAMETER
"E" = "A" + "B" + (1-1/2 x "D")
"F" = 1"

BLOW-THRU COIL
(POSITIVE PRESSURE)
"A" = 1" (MINIMUM)
"B" = 1" + STATIC PRESSURE
"C" = 2"
"D" = PIPE DIAMETER
"E" = "A" + "B" + (1-1/2 x "D")
"F" = 1"

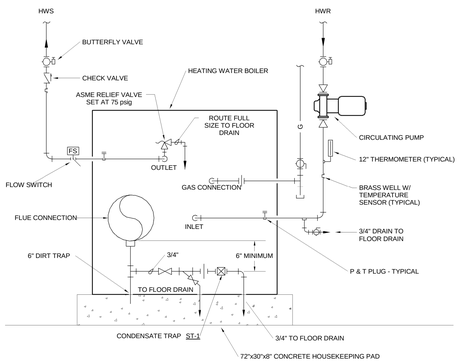
5 CONDENSATE DRAIN PIPING DETAIL
NOT TO SCALE



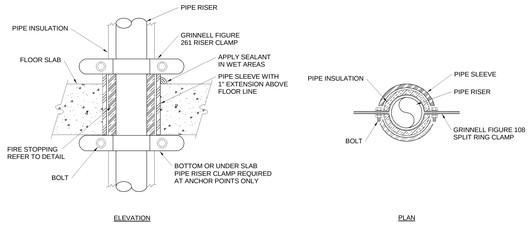
4 CHEMICAL FEEDER PIPING DETAIL
NOT TO SCALE



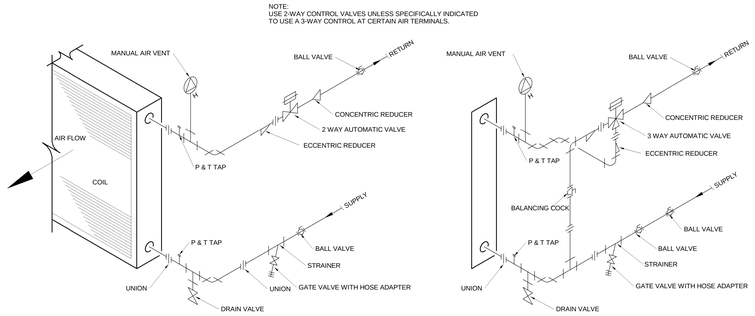
7 HANGER BRACKET DETAIL
NOT TO SCALE



8 HEATING WATER BOILER PIPING DETAIL
NOT TO SCALE



9 PIPE RISER SUPPORT/ANCHOR DETAIL
NOT TO SCALE



10 TYPICAL HOT WATER COIL PIPING DETAIL
NOT TO SCALE

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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aquatics consultant:
Counsilman-Hunsaker
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P: (314) 894-1245

Key Plan

seal/signature

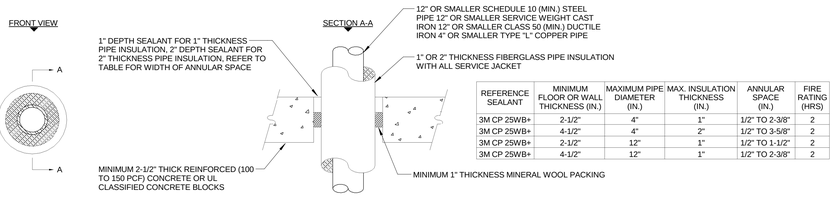
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

DETAILS - HVAC

sheet number

M802

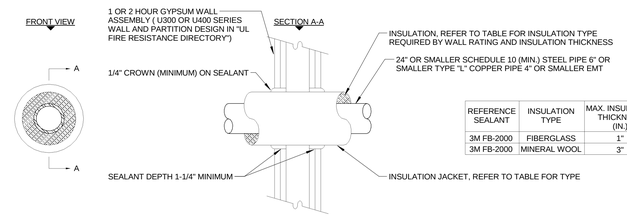


REFERENCE SEALANT	MINIMUM FLOOR OR WALL THICKNESS (IN.)	MAXIMUM PIPE DIAMETER (IN.)	MAX. INSULATION THICKNESS (IN.)	ANNULAR SPACE (IN.)	FIRE RATING (HRS)
3M CP 25WB+	2-1/2"	4"	1"	1/2" TO 2-3/8"	2
3M CP 25WB+	4-1/2"	4"	2"	1/2" TO 3-5/8"	2
3M CP 25WB+	2-1/2"	12"	1"	1/2" TO 1-1/2"	2
3M CP 25WB+	4-1/2"	12"	1"	1/2" TO 2-3/8"	2

NOTE:

THIS DETAIL REPRESENTS ONE MANUFACTURER'S RECOMMENDATION FOR A WALL TYPE. THE CONTRACTOR SHALL CONSULT THE FIRE STOPPING MATERIALS MANUFACTURER FOR SPECIFIC INFORMATION AND SPECIFIC INSTALLATION INSTRUCTIONS FOR THE WALLS AND PARTITIONS

1 INSULATED METAL PIPE PENETRATION THRU RATED CONCRETE FLOOR OR WALL
NOT TO SCALE

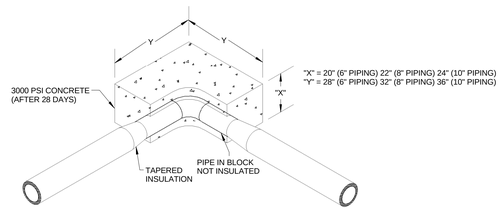


REFERENCE SEALANT	INSULATION TYPE	MAX. INSULATION THICKNESS (IN.)	FIRE RATING (HRS)	INSULATION SHEATHING MATERIAL
3M FB-2000	FIBERGLASS	1"	1	ASJ
3M FB-2000	MINERAL WOOL	3"	2	ASJ

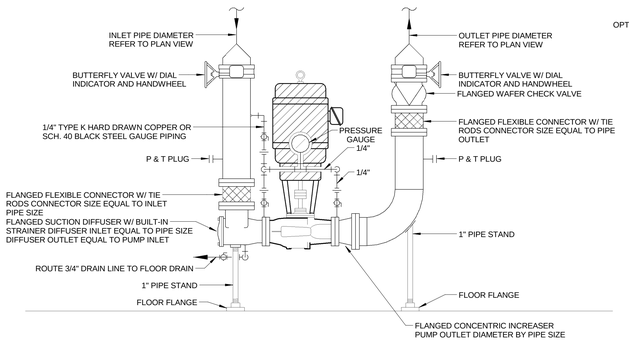
NOTE:

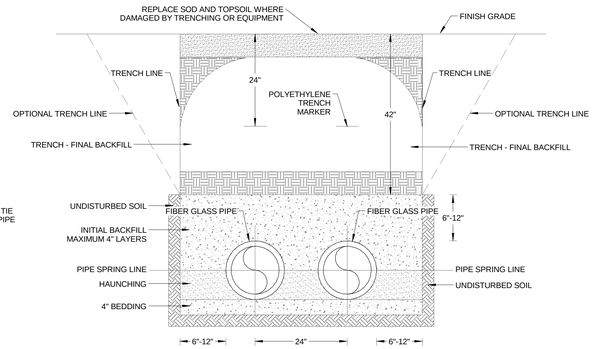
THIS DETAIL REPRESENTS ONE MANUFACTURER'S RECOMMENDATION FOR A WALL TYPE. THE CONTRACTOR SHALL CONSULT THE FIRE STOPPING MATERIALS MANUFACTURER FOR SPECIFIC INFORMATION AND SPECIFIC INSTALLATION INSTRUCTIONS FOR THE WALLS AND PARTITIONS APPLICABLE TO THIS PROJECT.

2 INSULATED METAL PIPE PENETRATION THRU RATED GYPSUM WALL
NOT TO SCALE



3 THRUST BLOCK DETAIL
NOT TO SCALE

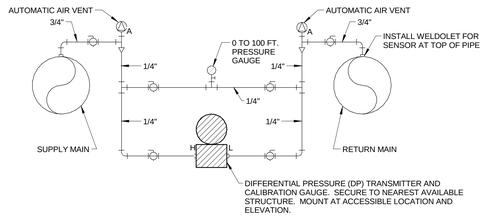




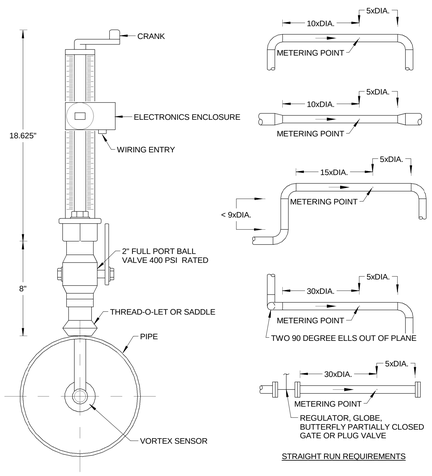
BEDDING - CRUSHED STONE OR FINE GRAVEL
- USED FOR LEVELING PIPE, UNSTABLE SOIL OR ROCKY CONDITIONS.

HAUNCHING - CRUSHED STONE OR FINE GRAVEL
- APPLIED IN MAXIMUM OF 6" LAYERS, AND EACH LAYER TAMPED INTO PLACE REMOVING ALL VOIDS BELOW PIPE.

INITIAL BACKFILL - CRUSHED STONE OR FINE GRAVEL - LAY IN 4"-6" LIFTS AND TAMPED SIMULTANEOUSLY.

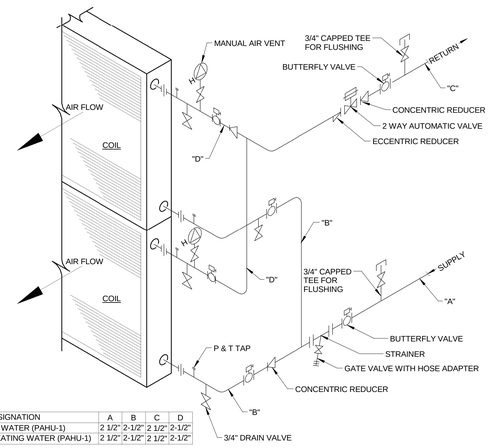


4 VERTICAL INLINE PUMP PIPING DETAIL
NOT TO SCALE

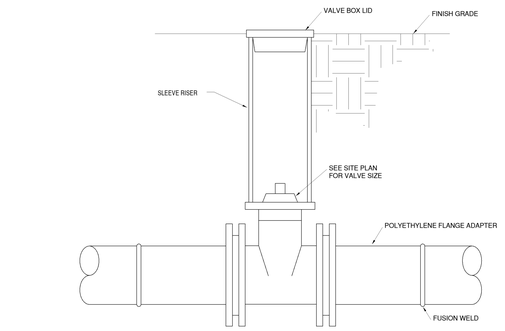


5 PIPE TRENCH DETAIL
NOT TO SCALE

6 DIFFERENTIAL PRESSURE TRANSMITTER DETAIL
NOT TO SCALE

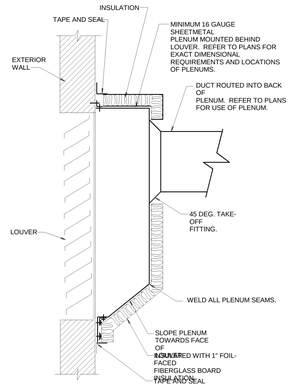


COIL DESIGNATION	A	B	C	D
CHILLED WATER (PAHU-1)	2 1/2"	2-1/2"	2 1/2"	2-1/2"
POOL HEATING WATER (PAHU-1)	2 1/2"	2-1/2"	2 1/2"	2-1/2"



7 VORTEX SHEDDING FLOW METER DETAIL
NOT TO SCALE

8 BURIED VALVE BOX DETAIL
NOT TO SCALE



9 INTAKE LOUVER DETAIL
NOT TO SCALE

10 TWO WATER COIL PIPING DETAIL
NOT TO SCALE

HPER Center Renovation & Expansion

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Conway, Arkansas

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aquatics consultant:
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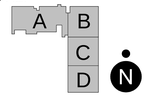
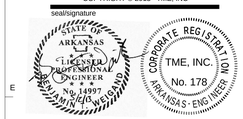
Key Plan



seal/signature



rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

DETAILS - HVAC

sheet number

M803

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GENERAL NOTES APPLICABLE TO ALL CONTROL DIAGRAMS:

1. ALL CONTROL DEVICES SHOWN ON THE CONTROL DIAGRAMS ARE FURNISHED BY THE ATC CONTRACTOR UNLESS OTHERWISE NOTED OR SPECIFIED.
2. ALL COMPONENTS REQUIRED FOR THE SEQUENCES OF OPERATION, SHOWN ON THE CONTROL DIAGRAMS, DESCRIBED IN THE SPECIFICATION, OR AS REQUIRED FOR A PROPERLY OPERATING SYSTEM SHALL BE FURNISHED AND INSTALLED BY THE ATC CONTRACTOR UNLESS OTHERWISE NOTED, SHOWN, OR SPECIFIED.
3. ATC CONTRACTOR IS RESPONSIBLE TO FURNISH, INSTALL, AND WIRE ALL COMPONENTS REQUIRED FOR INTEGRATION OF INFORMATION SHOWN TO BE ACCESSED BY THE EMS FROM OTHER SYSTEMS AND EQUIPMENT UNLESS OTHERWISE NOTED OR SPECIFIED.
4. ALL POWER WIRING AND TRANSFORMERS FOR SENSORS, ACTUATORS, AND OTHER CONTROL COMPONENTS AS REQUIRED FOR THE EMS AND/OR DDC SYSTEMS TO FUNCTION PROPERLY, SHALL BE FURNISHED AND INSTALLED BY THE ATC CONTRACTOR UNLESS OTHERWISE SHOWN, NOTED, OR SPECIFIED.
5. ALL POWER WIRING FOR SENSORS, ACTUATORS, AND OTHER DEVICES SHALL BE FROM THE DDC PANEL OR THE FEP PANEL OF THE ASSOCIATED SYSTEM.
6. ALL CONTROL, INTERLOCK, AND POWER WIRING SHALL BE INSTALLED PER THE ELECTRICAL SPECIFICATION, LOCAL, STATE, AND NATIONAL CODES. RACEWAY SHALL BE INSTALLED PER THE ELECTRICAL SPECIFICATIONS.
7. ALL CONTROL POINTS SHOWN ON THE CONTROL DIAGRAMS SHALL BE PROVIDED AND INTEGRATED INTO AN EMS SYSTEM GRAPHIC REPRESENTATIVE OF THE CONTROL DIAGRAMS.
8. ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, ALARM LIMITS, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS.
9. ALL CONTROL BANDS, SETPOINTS, TIME DELAYS, CONTROL LOOPS, AND OTHER PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.
10. ALL SETPOINTS SHALL BE ADJUSTABLE FROM THE EMS SYSTEM GRAPHIC(S).
11. SPACE SETPOINTS SHALL BE ADJUSTABLE FROM THE ROOM SENSOR UNLESS OTHERWISE SHOWN ON DRAWINGS OR SPECIFIED.
12. THE EMS SYSTEM GRAPHICS SHALL BE LINKED WITH ASSOCIATED BUILDING FLOOR PLANS FROM THE SPACE SENSOR OR AREA SERVED.
13. WHERE ONE SYSTEM IS ASSOCIATED WITH ANOTHER SYSTEM, THE SYSTEM GRAPHIC SHALL BE LINKED TO THE ASSOCIATED GRAPHIC AS WELL AS THE BUILDING FLOOR PLAN GRAPHIC. EXAMPLE - AN AIR HANDLING UNIT SYSTEM GRAPHIC SHALL BE LINKED TO THE CHILLED WATER SYSTEM GRAPHIC IN ADDITION TO BOTH BEING LINKED TO THE BUILDING FLOOR PLAN.
14. THE BUILDING FLOOR PLAN SHALL DISPLAY THE SPACE TEMPERATURE AT EACH SPACE SENSOR LOCATION WITH AREA SERVED DISPLAYED IN SEPARATE COLORS BASED ON THE CONDITION OF THE ZONE. EXAMPLE - ALARM, NORMAL, HIGH OR LOW TEMPERATURE, HIGH OR LOW HUMIDITY, ETC.
15. ALL BUILDING FLOOR PLANS AND SYSTEM GRAPHICS SHALL DISPLAY OUTSIDE AIR TEMPERATURE AND HUMIDITY.
16. THE FLOOR PLAN GRAPHICS SHALL BE LINKED TO A BUILDING GRAPHIC WITH A DIGITAL PHOTOGRAPH BACKGROUND OF THE ACTUAL BUILDING. DURING CONSTRUCTION A TEMPORARY GRAPHIC MAY BE USED THAT IS REPRESENTATIVE OF THE BUILDING.
17. THE BUILDING GRAPHIC SHALL BE LINKED WITH A CAMPUS MAP FOR THOSE FACILITIES WITH MORE THAN ONE BUILDING OR FACILITY.
18. ALL GRAPHICS SHALL BE SUBMITTED IN COLOR WITH THE ATC SUBMITTAL. FAILURE TO INCLUDE ALL GRAPHICS IN SUBMITTAL SHALL BE CAUSE FOR REJECTION OF COMPLETE SUBMITTAL.
19. VARIABLE FREQUENCY DRIVES ARE FURNISHED BY THE ATC CONTRACTOR, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR. REFER TO VARIABLE FREQUENCY DRIVE SCHEDULE. VERIFY ALL EXISTING MOTOR HORSEPOWER AND ELECTRICAL RATINGS PRIOR TO SUBMITTAL AND ORDERING VARIABLE FREQUENCY DRIVES.
20. POWER WIRING (PWR) FROM POWER SOURCE TO VARIABLE FREQUENCY DRIVES AND FROM VARIABLE FREQUENCY DRIVES TO MOTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
21. POWER WIRING (PWR) FROM POWER SOURCE TO MOTOR STARTERS AND FROM MOTOR STARTERS TO MOTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
22. POWER WIRING (PWR) FROM POWER SOURCE TO DDC, AND FEP PANELS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED ON DRAWINGS.
23. SYMBOLS USED IN THE LEGEND ARE INCLUDED FOR REFERENCE AND MAY NOT ALL BE USED ON THIS SPECIFIC PROJECT.
24. DETAILS SHOWN ON THE DETAIL SHEETS ARE INCLUDED FOR REFERENCE AND MAY NOT ALL BE USED ON THIS SPECIFIC PROJECT.
25. GLOBAL DDC SYSTEM POINTS ARE DEFINED AS A SINGLE POINT USED IN ALL SYSTEMS IN A BUILDING OR CAMPUS TO MAINTAIN CONSISTENCY OF CONTROL ACTIONS THROUGHOUT THE BUILDING OR CAMPUS. EXAMPLE: OUTSIDE AIR TEMPERATURE POINT SAMPLED ON THE NORTH SIDE OF A BUILDING USED TO ENABLE/DISABLE AIRSIDE ECONOMIZER OPERATION THROUGHOUT THE BUILDING OR CAMPUS.

LEGEND

- THREE PHASE POWER WIRING; FURNISHED AND INSTALLED BY ELECTRICAL (PWR)
- SINGLE PHASE POWER WIRING; FURNISHED AND INSTALLED BY ELECTRICAL (PWR)
- CONTROL AND INTERLOCK WIRING, FURNISHED AND INSTALLED BY ATC CONTRACTOR (ILK)
- EMS ETHERNET LAN COMMUNICATION WIRING, FURNISHED AND INSTALLED BY ATC CONTRACTOR (EMS LAN)
- EMS SUB-NETWORK COMMUNICATION WIRING, FURNISHED AND INSTALLED BY ATC CONTRACTOR (EMS SN)
- ROOM SENSOR COMMUNICATION WIRING, FUBNISHED AND INSTALLED BY ATC CONTRACTOR (EMS RS)
- COMMUNICATION WIRING FOR OTHER HVAC SYSTEMS, FURNISHED AND INSTALLED BY ATC CONTRACTOR (EMS OTH)
- PNEUMATIC CONTROL TUBING, FURNISHED AND INSTALLED BY ATC CONTRACTOR
- CONTROL PIPING, FURNISHED AND INSTALLED BY ATC CONTRACTOR
- LOCAL AREA NETWORK DATA PORT DROP, FURNISHED AND INSTALLED BY ELECTRICAL.

NC	NORMALLY CLOSED - POWERED OPEN
NO	NORMALLY OPEN - POWERED CLOSED
	NORMALLY CLOSED - POWERED OPEN RELAY CONTACT
	NORMALLY OPEN - POWERED CLOSED RELAY CONTACT
TFD	TO FLOOR DRAIN
S	PNEUMATIC CONTROL SUPPLY AIR CONNECTION
E-PWR	EMERGENCY (ESSENTIAL) ELECTRICAL POWER

DIRECT DIGITAL CONTROL POINT TYPES

- AI — DDC SYSTEM ANALOG INPUT POINT TYPE
- AO — DDC SYSTEM ANALOG OUTPUT POINT TYPE
- DI — DDC SYSTEM DIGITAL OR BINARY INPUT POINT TYPE
- DO — DDC SYSTEM DIGITAL OR BINARY OUTPUT POINT TYPE
- G AI — GLOBAL DDC SYSTEM ANALOG INPUT POINT TYPE
- G AO — GLOBAL DDC SYSTEM ANALOG OUTPUT POINT TYPE
- G DI — GLOBAL DDC SYSTEM DIGITAL OR BINARY INPUT POINT TYPE
- G DO — GLOBAL DDC SYSTEM DIGITAL OR BINARY OUTPUT POINT TYPE

ANALOG INPUT SENSORS

- T — DUCT TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
- T — OUTSIDE AIR TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
- T — ROOM TEMPERATURE SENSOR WITH SETPOINT, OVERRIDE PUSHBUTTON, AND DIGITAL DISPLAY; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
- T — ROOM TEMPERATURE SENSOR WITH SETPOINT, AND OVERRIDE PUSHBUTTON; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
- BSP — BUILDING STATIC PRESSURE SENSOR WITH DIGITAL DISPLAY; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR. REFER TO DETAIL F.
- DPS WM — DIFFERENTIAL PRESSURE SENSOR FOR WET MEDIA WITH DIGITAL DISPLAY; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR. ISOLATION VALVES AND TAPS IN PIPING BY MECHANICAL CONTRACTOR.
- H — DUCT RELATIVE HUMIDITY SENSOR; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
- T — STRAP ON TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
- FM LIQ — LIQUID FLOW METER - FURNISHED AND WIRED BY THE ATC CONTRACTOR. INSTALLED IN PIPING BY MECHANICAL CONTRACTOR
- T — AVERAGING DUCT TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR. REFER TO DETAIL I.
- T — PIPE TEMPERATURE SENSOR; FURNISHED AND WIRED BY THE ATC CONTRACTOR; THERMAL WELL INSTALLED IN THE PIPING BY THE MECHANICAL CONTRACTOR.
- H — ROOM HUMIDITY SENSOR: FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
- DSP — DUCT STATIC PRESSURE SENSOR WITH DIGITAL DISPLAY; FURNISHED, INSTALLED AND WIRED BY ATC CONTRACTOR.
- DPS — DIFFERENTIAL PRESSURE SENSOR WITH DIGITAL DISPLAY; FURNISHED, INSTALLED AND WIRED BY ATC CONTRACTOR.
- FM GAS — GAS FLOW METER - FURNISHED AND WIRED BY THE ATC CONTRACTOR. INSTALLED IN PIPING BY MECHANICAL CONTRACTOR

DIGITAL INPUT SENSORS

- TLL — LOW LIMIT TEMPERATURE SWITCH WITH MANUAL RESET; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR. DPDT SWITCH FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING. REFER TO DETAIL H.
- OCC — OCCUPANCY SENSOR; FURNISHED AND WIRED BY THE ATC CONTRACTOR, INSTALLED IN LIGHTING CIRCUIT BY ELECTRICAL CONTRACTOR.
- ES — END SWITCH: FURNISHED, INSTALLED AND WIRED BY ATC CONTRACTOR UNLESS OTHERWISE NOTED, SHOWN ON THE DRAWINGS, OR SPECIFIED.
- RM OCC — WALL MOUNTED ROOM OCCUPANCY SWITCH; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
- MS — MOISTURE SENSOR: FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
- HSL — HIGH STATIC PRESSURE LIMIT SWITCH WITH MANUAL RESET; FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR. DPDT SWITCH FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING. ORIENT FOR STATIC PRESSURE SENSING.
- CSR — CURRENT SENSING RELAY; FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
- FIL DP SW — FILTER DIFFERENTIAL PRESSURE SWITCH; FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
- RM OCC — CEILING MOUNTED ROOM OCCUPANCY SWITCH. FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.

OUTPUT DEVICES

- VA — CONTROL VALVE (2-WAY) WITH ELECTRIC OR ELECTRONIC ACTUATOR; FURNISHED AND WIRED BY ATC CONTRACTOR. INSTALLED IN PIPING BY MECHANICAL CONTRACTOR
- VA — CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC; FURNISHED AND WIRED BY ATC CONTRACTOR; INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.
- VA — BUTTERFLY CONTROL VALVE (2-WAY) WITH ELECTRONIC ACTUATOR; FURNISHED AND WIRED BY ATC CONTRACTOR; INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.
- VA — BUTTERFLY CONTROL VALVE (3-WAY) WITH ELECTRONIC ACTUATOR; FURNISHED AND WIRED BY ATC CONTRACTOR; INSTALLED BY MECHANICAL CONTRACTOR.
- FSDA — FIRE/SMOKE DAMPER ACTUATOR(S): FURNISHED AND INSTALLED BY SHEETMETAL CONTRACTOR. REFER TO DETAIL G.
- VA ES — CONTROL VALVE (2-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY ATC CONTRACTOR. INSTALLED IN PIPING BY MECHANICAL CONTRACTOR
- VA ES — CONTROL VALVE (3-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY ATC CONTRACTOR; INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.
- VA ES — BUTTERFLY CONTROL VALVE (2-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY ATC CONTRACTOR; INSTALLED BY MECHANICAL CONTRACTOR.
- VA ES — BUTTERFLY CONTROL VALVE (3-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY ATC CONTRACTOR; INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.
- FSDA ES — FIRE/SMOKE DAMPER ACTUATOR(S) WITH INTEGRAL END SWITCH: FURNISHED AND INSTALLED BY SHEETMETAL CONTRACTOR. REFER TO DETAIL G.

OTHER CONTROL DEVICES

- FEP — FIELD EQUIPMENT PANEL (FEP); FURNISHED AND INSTALLED BY ATC CONTRACTOR. POWER WIRING TO FEP BY ELECTRICAL CONTRACTOR.
- DDC — DIRECT DIGITAL CONTROL PANEL (DDC); FURNISHED AND INSTALLED BY ATC CONTRACTOR. POWER WIRING TO DDC PANEL BY ELECTRICAL CONTRACTOR

CONTROL DEVICES FURNISHED BY OTHER TRADES:

- HHL EQ — HUMIDITY HIGH LIMIT SENSOR; FURNISHED WITH THE STEAM HUMIDIFIER; INSTALLED AND WIRED BY ATC CONTRACTOR
- AFMS EQ — AIR FLOW MEASURING STATION; FURNISHED AND INSTALLED BY THE AIR HANDLING UNIT MANUFACTURER. WIRING FROM THE AFMS TO THE DDC PANEL BY ATC CONTRACTOR. POWER WIRING BY ELECTRICAL CONTRACTOR.
- VA EQ — CONTROL VALVE (2-WAY) WITH ELECTRIC OR ELECTRONIC ACTUATOR; FURNISHED WITH EQUIPMENT (EQ); WIRED BY ATC CONTRACTOR; INSTALLED IN PIPING BY MECHANICAL CONTRACTOR
- AFMS EQ — AIR FLOW MEASURING STATION WITH INTEGRAL CONTROL DAMPER; FURNISHED AND INSTALLED BY THE AIR HANDLING UNIT MANUFACTURER. WIRING TO DDC SYSTEM BY ATC CONTRACTOR. (NC)
- FAR SMK — FIRE ALARM PROGRAMMABLE RELAY (FAR) FOR SMOKE PURGE OPERATION (SMK); FURNISHED, INSTALLED, AND PROGRAMMED BY FIRE ALARM CONTRACTOR. FAR SHALL BE LOCATED IN SAME ROOM AS HVAC EQUIPMENT SERVED PER NFPA. ALL WIRING FROM FAR TO FIRE ALARM SYSTEM BY FIRE ALARM CONTRACTOR. INTERLOCK WIRING FROM FAR TO ATC PANEL BY ATC CONTRACTOR.
- DSD — DUCT MOUNTED SMOKE DETECTOR(S); FURNISHED, INSTALLED, AND WIRED BY FIRE ALARM CONTRACTOR AS PART OF THE FIRE ALARM SYSTEM.
- PLENUM FAN INLET BELL HOUSING AIRFLOW MEASURING STATION FURNISHED AND INSTALLED BY THE FAN MANUFACTURER.
- CENTRIFUGAL FAN INLET BELL HOUSING AIRFLOW MEASURING STATION FURNISHED AND INSTALLED BY THE FAN MANUFACTURER.
- T EQ — EQUIPMENT STRAP ON TEMPERATURE SENSOR; FURNISHED WITH EQUIPMENT; INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
- NC — CONTROL DAMPER; FURNISHED AND INSTALLED BY THE SHEETMETAL CONTRACTOR. DAMPER ACTUATOR FURNISHED INSTALLED AND WIRED BY ATC CONTRACTOR.
- FAR — FIRE ALARM PROGRAMMABLE RELAY (FAR); FURNISHED, INSTALLED, AND PROGRAMMED BY FIRE ALARM CONTRACTOR. DAMPER ACTUATOR FURNISHED INSTALLED AND WIRED BY ATC CONTRACTOR. INTERLOCK WIRING FROM FAR TO ATC PANEL BY ATC CONTRACTOR.

A DETAIL: CONTROL SYMBOL LEGEND

NOT TO SCALE

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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design architect:
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MEP engineer:
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5800 Evergreen Drive
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structural engineer:
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aquatics consultant:
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10733 Sunset Office Dr., 4th Floor
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Key Plan

A B C D N

seal/signature

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14997 REGISTERED — CORPORATE REGISTRATION TME, INC. No. 178 ARKANSAS · ENGINEER

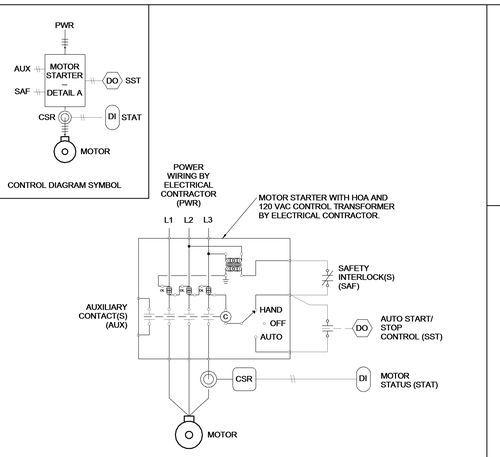
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

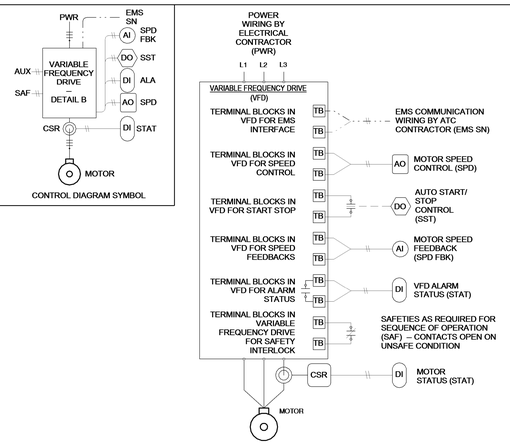
CONTROLS - HVAC

sheet number

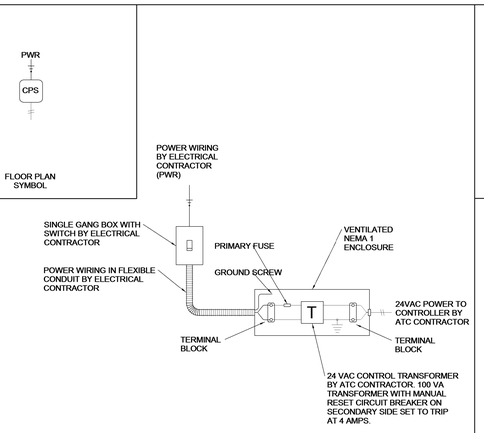
M901



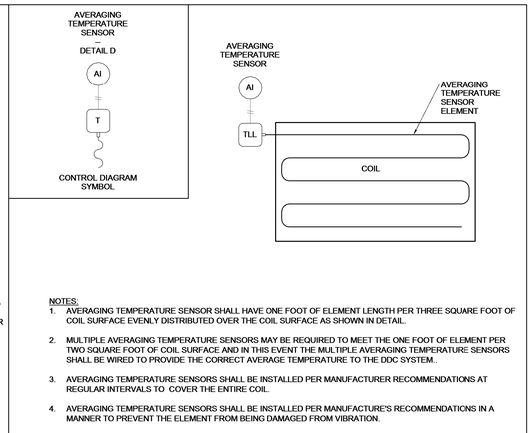
A DETAIL: MOTOR STARTER INTERLOCK DETAIL
NOT TO SCALE



B DETAIL: VARIABLE FREQUENCY DRIVE INTERLOCK
NOT TO SCALE

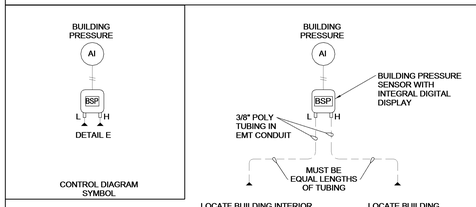


C DETAIL: SUPPLY AIR TERMINAL POWER SUPPLY
NOT TO SCALE



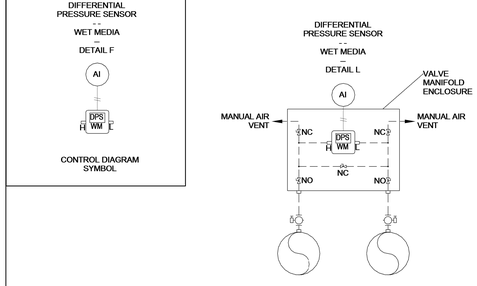
NOTES:
1. AVERAGING TEMPERATURE SENSOR SHALL HAVE ONE FOOT OF ELEMENT LENGTH PER THREE SQUARE FOOT OF COIL SURFACE EVENLY DISTRIBUTED OVER THE COIL SURFACE AS SHOWN IN DETAIL.
2. MULTIPLE AVERAGING TEMPERATURE SENSORS MAY BE REQUIRED TO MEET THE ONE FOOT OF ELEMENT PER TWO SQUARE FOOT OF COIL SURFACE AND IN THIS EVENT THE MULTIPLE AVERAGING TEMPERATURE SENSORS SHALL BE WIRED TO PROVIDE THE CORRECT AVERAGE TEMPERATURE TO THE DDC SYSTEM..
3. AVERAGING TEMPERATURE SENSORS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS AT REGULAR INTERVALS TO COVER THE ENTIRE COIL.
4. AVERAGING TEMPERATURE SENSORS SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS IN A MANNER TO PREVENT THE ELEMENT FROM BEING DAMAGED FROM VIBRATION.

D DETAIL: DUCT AVERAGING TEMPERATURE SENSOR
NOT TO SCALE



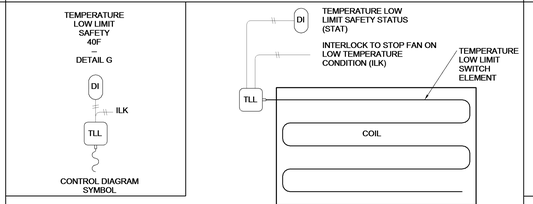
NOTES:
1. LOCATE BUILDING PRESSURE SENSOR TO ALLOW EQUAL LENGTHS OF TUBING TO BOTH INTERIOR AND EXTERIOR SENSING LOCATIONS.
2. CAPPED TEES ON DIFFERENTIAL PRESSURE TEST PORTS FURNISHED AND INSTALLED BY THE ATC CONTRACTOR.

E DETAIL: BUILDING PRESSURE SENSOR
NOT TO SCALE



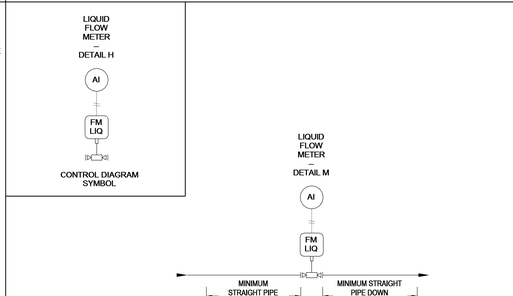
NOTES:
1. DIFFERENTIAL PRESSURE SENSOR FOR WET MEDIA WITH DIGITAL DISPLAY FURNISHED AND INSTALLED BY THE ATC CONTRACTOR.
2. VALVE MANIFOLD AND ENCLOSURE FOR DIFFERENTIAL PRESSURE SENSOR FURNISHED AND INSTALLED BY ATC CONTRACTOR.
3. ISOLATION VALVES AND TAPS IN PIPING SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
4. PIPING FROM ISOLATION VALVES TO VALVE MANIFOLD AND DIFFERENTIAL PRESSURE SENSOR BY ATC CONTRACTOR.

F DETAIL: DIFFERENTIAL PRESSURE SENSOR - WET MEDIA
NOT TO SCALE



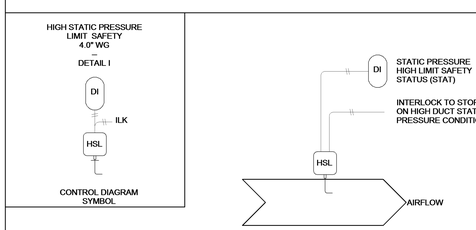
NOTES:
1. A MANUAL-RESET TEMPERATURE LOW LIMIT (TLL) SWITCH WITH DPST OR DPDT CONTACTS FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING SHALL BE PROVIDED. CONTACTS SHALL INCLUDE OPEN ON ALARM CONTACT FOR FAN SHUTDOWN AND A CLOSE ON ALARM CONTACT FOR ALARM STATUS.
2. TEMPERATURE LOW LIMIT SHALL HAVE ONE FOOT OF ELEMENT LENGTH PER ONE SQUARE FOOT OF COIL SURFACE EVENLY DISTRIBUTED OVER THE COIL SURFACE AS SHOWN IN DETAIL.
3. MULTIPLE TEMPERATURE LOW LIMIT SWITCHES MAY BE REQUIRED TO MEET THE ONE FOOT OF ELEMENT PER ONE SQUARE FOOT OF COIL SURFACE AND IN THIS EVENT THE MULTIPLE TEMPERATURE LOW LIMIT SWITCHES SHALL BE WIRED IN SERIES FOR FAN SHUTDOWN AND WIRED IN PARALLEL FOR ALARM STATUS.
4. INTERLOCK WIRING FROM THE TEMPERATURE LOW LIMIT SWITCH TO THE FAN CONTROLLER IS BY THE ATC CONTRACTOR.
5. TEMPERATURE LOW LIMIT SWITCH SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS AT REGULAR INTERVALS NOTED TO COVER THE ENTIRE COIL.
6. TEMPERATURE LOW LIMIT (TLL) SWITCHES SHALL HAVE SETPOINT ADJUSTMENT AND MANUAL RESET AT THE SWITCH.
7. TEMPERATURE LOW LIMIT SWITCH SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS IN A MANNER TO PREVENT THE ELEMENT FROM BEING DAMAGED FROM VIBRATION.

G DETAIL: TEMPERATURE LOW LIMIT SWITCH
NOT TO SCALE



NOTES:
1. INSTALL FLOW METER PER MANUFACTURERS INSTALLATION INSTRUCTION FOR MINIMUM LENGTH OF STRAIGHT PIPE UP AND DOWN STREAM OF FLOW METER TO MAINTAIN THE PUBLISHED METER ACCURACY.
2. INSTALL STANDARD CONCENTRIC REDUCERS AS REQUIRED TO MAINTAIN PUBLISHED METER ACCURACIES.
3. FLOW METER IS FURNISHED AND WIRED BY THE ATC CONTRACTOR; INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.

H DETAIL: LIQUID FLOW METER
NOT TO SCALE



NOTES:
1. A MANUAL RESET DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCH(ES) WITH DPST OR DPDT CONTACTS FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING SHALL BE PROVIDED. CONTACTS SHALL INCLUDE OPEN ON ALARM CONTACT FOR FAN SHUTDOWN AND A CLOSE ON ALARM CONTACT FOR ALARM STATUS.
2. DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCH(ES) SHALL BE INSTALLED TO SENSE DUCT STATIC PRESSURE AND STOP THE ASSOCIATED FAN TO PREVENT DAMAGE TO THE DUCT WORK.
3. MULTIPLE DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCHES MAY BE REQUIRED AS SHOW ON THE CONTROL DIAGRAMS. THE MULTIPLE DUCT HIGH STATIC LIMIT SWITCHES SHALL BE WIRED IN SERIES FOR FAN SHUTDOWN AND WIRED IN PARALLEL FOR ALARM STATUS.
4. INTERLOCK WIRING FROM THE DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCHES TO THE FAN CONTROLLER IS BY THE ATC CONTRACTOR.
5. DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCHES SHALL HAVE SETPOINT ADJUSTMENT AND MANUAL RESET AT THE SWITCH.
6. DUCT HIGH STATIC LIMIT (HSL) SWITCHES SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.

I DETAIL: DUCT STATIC PRESSURE HIGH LIMIT SWITCH
NOT TO SCALE

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HPER Center Renovation & Expansion

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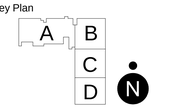
Key Plan



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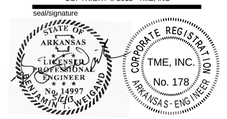


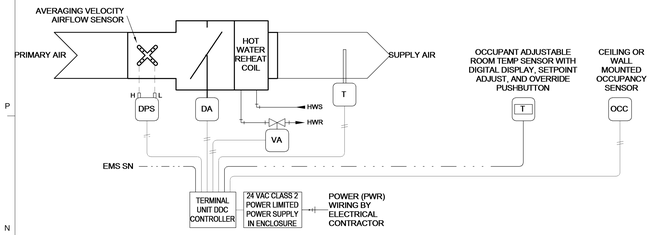
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

CONTROLS - HVAC

sheet number

M902



VAV SUPPLY AIR TERMINAL UNIT WITH HOT WATER REHEAT SEQUENCE OF OPERATION:

MODE OF OPERATION :
THE SUPPLY AIR TERMINAL UNIT MODE OF OPERATION SHALL BE OCCUPIED, STANDBY, OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, AN OVERRIDE FROM THE SPACE OCCUPANCY SENSOR, OR AN OCCUPANCY OVERRIDE SIGNAL FROM THE SPACE TEMPERATURE SENSOR OVERRIDE PUSHBUTTON.

OCCUPIED MODE :
THE SPACE TEMPERATURE SETPOINT SHALL BE ADJUSTABLE BY THE OCCUPANT AT THE THERMOSTAT BETWEEN A MINIMUM OF 68ºF AND A MAXIMUM OF 75ºF. THE TERMINAL UNIT PRIMARY AIR DAMPER OCCUPIED MINIMUM AIRFLOW AND OCCUPIED MAXIMUM AIRFLOW ARE AS SCHEDULED.

THE SPACE COOLING SETPOINT SHALL BE EQUAL TO THE SPACE TEMPERATURE SETPOINT PLUS 1ºF AND THE SPACE HEATING SETPOINT SHALL BE EQUAL TO THE SPACE TEMPERATURE SETPOINT MINUS 1ºF.

STANDBY MODE:
WHEN THE OCCUPANCY SENSOR INDICATES AN UNOCCUPIED SPACE DURING THE OCCUPIED SCHEDULED HOURS, THE UNIT SHALL BE IN STANDBY OPERATION AND OPERATE AS DESCRIBED IN OCCUPIED MODE WITH THE SPACE COOLING SETPOINT SHALL BE EQUAL TO THE SPACE TEMPERATURE SETPOINT PLUS 4ºF AND THE SPACE HEATING SETPOINT SHALL BE EQUAL TO THE SPACE TEMPERATURE SETPOINT MINUS 4ºF.

UNOCCUPIED MODE :
THE UNOCCUPIED SPACE TEMPERATURE SETPOINTS SHALL BE 65ºF SPACE HEATING SETPOINT AND 80ºF SPACE COOLING SETPOINT. THE TERMINAL UNIT PRIMARY AIR DAMPER UNOCCUPIED MINIMUM AIRFLOW AND UNOCCUPIED MAXIMUM AIRFLOW ARE AS SCHEDULED.

WHEN THE OCCUPANCY OVERRIDE PUSHBUTTON ON THE SPACE TEMPERATURE SENSOR IS INDEXED TO OCCUPIED, THE UNIT SHALL OPERATE IN THE OCCUPIED MODE FOR 2 HOURS.

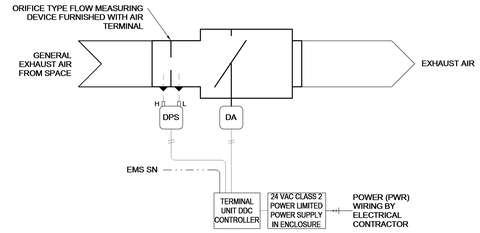
TERMINAL UNIT OPERATION:
ON AN INCREASE IN SPACE TEMPERATURE ABOVE THE SPACE COOLING SETPOINT, THE SUPPLY AIR TERMINAL UNIT PRIMARY AIR DAMPER SHALL BE MODULATED BETWEEN THE COOLING MINIMUM AND THE COOLING MAXIMUM AIR FLOW RATES TO SATISFY THE COOLING DEMAND BASED ON THE MODE OF OPERATION. ON A DECREASE IN SPACE TEMPERATURE BELOW THE SPACE COOLING SETPOINT, THE SUPPLY AIR TERMINAL UNIT PRIMARY AIR DAMPER SHALL MAINTAIN THE COOLING MINIMUM AIR FLOW RATES BASED ON THE MODE OF OPERATION.

ON A DECREASE IN SPACE TEMPERATURE BELOW THE SPACE HEATING SETPOINT, THE SUPPLY AIR TERMINAL UNIT PRIMARY AIR DAMPER SHALL MAINTAIN THE HEATING MINIMUM AIR FLOW RATE BASED ON THE MODE OF OPERATION. IF THE SPACE TEMPERATURE REMAINS BELOW THE SPACE HEATING SETPOINT WITH THE SUPPLY AIR TERMINAL UNIT AT MINIMUM HEATING AIRFLOW, THE HEATING WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SPACE HEATING SETPOINT SUBJECT TO A TERMINAL UNIT HIGH DISCHARGE AIR TEMPERATURE LIMIT OF 15ºF ABOVE THE SPACE HEATING SETPOINT. IF SPACE TEMPERATURE REMAINS BELOW THE SPACE HEATING SETPOINT WITH THE TERMINAL UNIT DISCHARGE AIR TEMPERATURE AT 15ºF ABOVE THE SPACE TEMPERATURE SETPOINT, THE SUPPLY AIR TERMINAL UNIT DAMPER SHALL BE MODULATED BETWEEN THE HEATING MINIMUM AND MAXIMUM SCHEDULED AIRFLOWS WHILE MAINTAINING A DISCHARGE AIR TEMPERATURE FROM THE TERMINAL UNIT 15ºF ABOVE THE SPACE HEATING SETPOINT WITH THE HEATING WATER CONTROL VALVE.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS. ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ALARM MONITORING :
AN ALARM WILL BE GENERATED AT THE EMS PC WORKSTATION IF ANY OF THE FOLLOWING OCCUR:
1. HIGH LEAVING AIR TEMPERATURE
2. LOW LEAVING AIR TEMPERATURE
3. SPACE HIGH TEMPERATURE ALARM
4. SPACE LOW TEMPERATURE ALARM
5. LOW AIRFLOW ALARM
6. HIGH AIRFLOW ALARM

1 VAV WITH HOT WATER REHEAT CONTROL DIAGRAM
NOT TO SCALE



GENERAL EXHAUST AIR TERMINAL UNIT SEQUENCE OF OPERATION:

MODE OF OPERATION :
THE GENERAL EXHAUST AIR TERMINAL UNIT MODE OF OPERATION SHALL BE OCCUPIED, STANDBY, OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, AN OVERRIDE FROM THE SPACE OCCUPANCY SENSOR, OR AN OCCUPANCY OVERRIDE SIGNAL FROM THE SPACE TEMPERATURE SENSOR OVERRIDE PUSHBUTTON.

OCCUPIED MODE :
THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE THE EXHAUST AIRFLOW TO MAINTAIN THE OCCUPIED SPACE OFFSET REQUIREMENTS AS SCHEDULED.

STANDBY MODE:
WHEN THE OCCUPANCY SENSOR INDICATES AN UNOCCUPIED SPACE DURING THE OCCUPIED SCHEDULED HOURS, THE UNIT SHALL BE IN STANDBY OPERATION, AIRFLOW SHALL RESET TO MINIMUM OCCUPIED AS SCHEDULED AND OPERATE AS DESCRIBED IN OCCUPIED MODE.

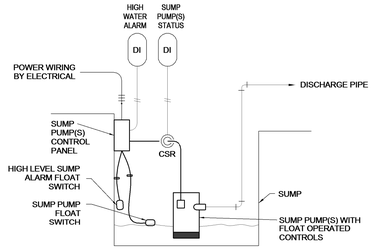
UNOCCUPIED MODE:
THE GENERAL EXHAUST AIR TERMINAL UNIT SHALL MODULATE THE EXHAUST AIRFLOW TO MAINTAIN THE UNOCCUPIED SPACE OFFSET REQUIREMENTS AS SCHEDULED.

WHEN THE OCCUPANCY OVERRIDE PUSHBUTTON ON THE SPACE TEMPERATURE SENSOR IS INDEXED TO OCCUPIED, THE UNIT SHALL OPERATE IN THE OCCUPIED MODE FOR 2 HOURS.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS. ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS PC WORKSTATION IF ANY OF THE FOLLOWING OCCUR:
1. SPACE HIGH AIRFLOW OFFSET ALARM
2. SPACE LOW AIRFLOW OFFSET ALARM
3. LOW EXHAUST AIRFLOW ALARM
4. HIGH EXHAUST AIRFLOW ALARM

2 EXHAUST AIR TERMINAL UNIT CONTROL DIAGRAM
NOT TO SCALE



SUMP PUMP SEQUENCE OF OPERATION(ELEVATOR SP-1, 2,& 3 LIFT STATION SP- 4 & 5)

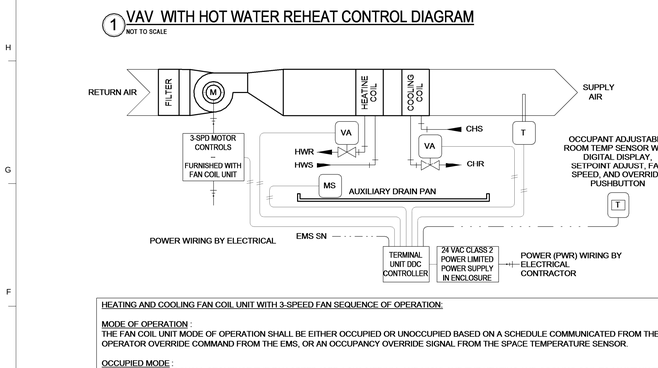
THE SUMP PUMP(S) ARE AUTOMATICALLY STARTED AND STOPPED BY FLOAT CONTROLS FURNISHED WITH SUMP PUMP(S). DDC PANEL DIGITAL INPUT WILL MONITOR SUMP PUMP(S) HIGH WATER ALARM AND SUMP PUMP(S) RUN STATUS. DUPLEX SUMP PUMPS WILL HAVE TWO (2) PUMP STATUS POINTS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:
1. HIGH WATER LEVEL IN SUMP

DIAGRAM GENERAL NOTES:

1. SUMP PUMP CONTROLLER SHALL BE FURNISHED WITH HIGH SUMP LEVEL ALARM.

3 SUMP PUMP CONTROL DIAGRAM
NOT TO SCALE



HEATING AND COOLING FAN COIL UNIT WITH 3-SPEED FAN SEQUENCE OF OPERATION:

MODE OF OPERATION :
THE FAN COIL UNIT MODE OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, OR AN OCCUPANCY OVERRIDE SIGNAL FROM THE SPACE TEMPERATURE SENSOR.

OCCUPIED MODE :
THE FAN COIL UNIT SHALL SEQUENCE THE FAN SPEED (OFF, LOW, MEDIUM, AND HIGH) AND THE HEATING AND COOLING COIL TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. FAN SPEED SHALL BE OCCUPANT SELECTABLE FOR MANUAL SPEED CONTROL OR AUTOMATIC SPEED CONTROL AS DESCRIBED BELOW.

THE SPACE TEMPERATURE SETPOINT SHALL BE ADJUSTABLE BY THE OCCUPANT AT THE THERMOSTAT BETWEEN A MINIMUM OF 68ºF AND A MAXIMUM OF 75ºF. THE SPACE COOLING SETPOINT SHALL BE EQUAL TO THE SPACE TEMPERATURE SETPOINT PLUS 1ºF AND THE SPACE HEATING SETPOINT SHALL BE EQUAL TO THE SPACE TEMPERATURE SETPOINT MINUS 1ºF.

ON AN INCREASE IN SPACE TEMPERATURE ABOVE THE OCCUPIED SPACE COOLING SETPOINT, THE DDC CONTROL SHALL CYCLE THE FAN COIL UNIT FAN ON AT LOW SPEED. THE DDC CONTROLS SHALL THEN MODULATE THE COOLING COIL CONTROL VALVE TO MAINTAIN THE OCCUPIED SPACE COOLING SETPOINT. IF THE SPACE TEMPERATURE REMAINS ABOVE THE COOLING SETPOINT WITH THE COOLING VALVE FULLY OPEN THE DDC CONTROLS SHALL SEQUENCE THE FAN TO MEDIUM SPEED TO SATISFY THE SPACE COOLING SETPOINT. IF THE SPACE TEMPERATURE CONTINUES TO REMAIN ABOVE THE SPACE COOLING SETPOINT THE FAN SHALL SEQUENCE TO HIGH SPEED. ON A DECREASE IN SPACE TEMPERATURE BELOW THE OCCUPIED SPACE COOLING SETPOINT THE REVERSE ACTION SHALL OCCUR.

ON AN DECREASE IN SPACE TEMPERATURE BELOW THE OCCUPIED SPACE HEATING SETPOINT, THE DDC CONTROL SHALL CYCLE THE FAN COIL UNIT FAN ON AT LOW SPEED. THE DDC CONTROLS SHALL THEN MODULATE THE HEATING COIL CONTROL VALVE TO MAINTAIN THE OCCUPIED SPACE HEATING SETPOINT. IF THE SPACE TEMPERATURE REMAINS BELOW THE SPACE HEATING SETPOINT WITH THE HEATING VALVE FULLY OPEN, THE DDC CONTROLS SHALL SEQUENCE THE FAN TO MEDIUM SPEED TO SATISFY THE SPACE HEATING SETPOINT. IF THE SPACE TEMPERATURE CONTINUES TO REMAIN BELOW THE SPACE COOLING SETPOINT THE FAN SHALL SEQUENCE TO HIGH SPEED. ON A INCREASE IN SPACE TEMPERATURE ABOVE THE OCCUPIED SPACE HEATING SETPOINT THE REVERSE ACTION SHALL OCCUR.

UNOCCUPIED MODE :
THE UNOCCUPIED SPACE TEMPERATURE SETPOINTS SHALL BE 65ºF SPACE HEATING SETPOINT AND 80ºF SPACE COOLING SETPOINT.

WHEN THE SPACE TEMPERATURE IS BETWEEN THE UNOCCUPIED SPACE HEATING AND SPACE COOLING SETPOINTS, THE FAN COIL UNIT FAN SHALL BE OFF AND THE HEATING AND COOLING COIL CONTROL VALVES SHALL BE CLOSED.

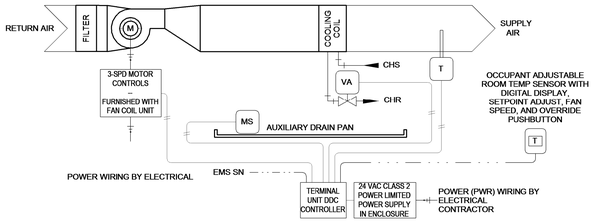
ON A DECREASE IN SPACE TEMPERATURE BELOW THE UNOCCUPIED SPACE HEATING SETPOINT, THE FAN COIL UNIT FAN SHALL CYCLE ON AT HIGH SPEED, THE HEATING COIL CONTROL VALVE SHALL OPEN 100%, AND THE COOLING COIL CONTROL VALVE SHALL REMAIN CLOSED. WHEN SPACE TEMPERATURE IS 3ºF ABOVE THE UNOCCUPIED HEATING SETPOINT, THE FAN SHALL STOP, AND THE HEATING COIL CONTROL VALVE SHALL CLOSE.

ON AN INCREASE IN SPACE TEMPERATURE ABOVE THE UNOCCUPIED SPACE COOLING SETPOINT, THE FAN COIL UNIT FAN SHALL CYCLE ON AT HIGH SPEED, THE COOLING COIL CONTROL VALVE SHALL OPEN 100%, AND THE HEATING COIL CONTROL VALVE SHALL REMAIN CLOSED. WHEN SPACE TEMPERATURE IS 3ºF BELOW THE UNOCCUPIED COOLING SETPOINT, THE FAN SHALL STOP, AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, EQUIPMENT ROTATION SEQUENCES, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS. ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ALARM MONITORING :
AN ALARM WILL BE GENERATED AT THE EMS PC WORKSTATION IF ANY OF THE FOLLOWING OCCUR:
A. HIGH LEAVING AIR TEMPERATURE
B. LOW LEAVING AIR TEMPERATURE
C. SPACE HIGH TEMPERATURE
D. SPACE LOW TEMPERATURE
E. FILTER RUN TIME EXCEEDED

4 TYPICAL HEATING AND COOLING FAN COIL UNIT CONTROL DIAGRAM
NOT TO SCALE



COOLING ONLY FAN COIL UNIT WITH 3-SPEED FAN SEQUENCE OF OPERATION:

MODE OF OPERATION :
THE FAN COIL UNIT MODE OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, OR AN OCCUPANCY OVERRIDE SIGNAL FROM THE SPACE TEMPERATURE SENSOR.

OCCUPIED MODE :
THE FAN COIL UNIT SHALL SEQUENCE THE FAN SPEED (OFF, LOW, MEDIUM, AND HIGH) AND THE COOLING COIL TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. FAN SPEED SHALL BE OCCUPANT SELECTABLE FOR MANUAL SPEED CONTROL OR AUTOMATIC SPEED CONTROL AS DESCRIBED BELOW.

THE SPACE TEMPERATURE SETPOINT SHALL BE ADJUSTABLE BY THE OCCUPANT AT THE THERMOSTAT BETWEEN A MINIMUM OF 68ºF AND A MAXIMUM OF 75ºF. THE SPACE COOLING SETPOINT SHALL BE EQUAL TO THE SPACE TEMPERATURE SETPOINT.

ON AN INCREASE IN SPACE TEMPERATURE ABOVE THE OCCUPIED SPACE COOLING SETPOINT, THE DDC CONTROL SHALL CYCLE THE FAN COIL UNIT FAN ON AT LOW SPEED. THE DDC CONTROLS SHALL THEN MODULATE THE COOLING COIL CONTROL VALVE TO MAINTAIN THE OCCUPIED SPACE COOLING SETPOINT. IF THE SPACE TEMPERATURE REMAINS ABOVE THE COOLING SETPOINT WITH THE COOLING VALVE FULLY OPEN THE DDC CONTROLS SHALL SEQUENCE THE FAN TO MEDIUM SPEED TO SATISFY THE SPACE COOLING SETPOINT. IF THE SPACE TEMPERATURE CONTINUES TO REMAIN ABOVE THE SPACE COOLING SETPOINT THE FAN SHALL SEQUENCE TO HIGH SPEED. ON A DECREASE IN SPACE TEMPERATURE BELOW THE OCCUPIED SPACE COOLING SETPOINT THE REVERSE ACTION SHALL OCCUR.

UNOCCUPIED MODE :
THE UNOCCUPIED SPACE TEMPERATURE SETPOINTS SHALL BE 65ºF SPACE HEATING SETPOINT AND 80ºF SPACE COOLING SETPOINT.

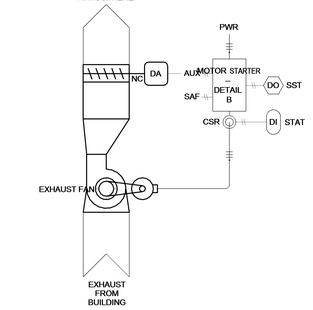
WHEN THE SPACE TEMPERATURE IS BELOW THE UNOCCUPIED SPACE COOLING SETPOINT, THE FAN COIL UNIT FAN SHALL BE OFF AND THE COOLING COIL CONTROL VALVES SHALL BE CLOSED.

ON AN INCREASE IN SPACE TEMPERATURE ABOVE THE UNOCCUPIED SPACE COOLING SETPOINT, THE FAN COIL UNIT FAN SHALL CYCLE ON AT HIGH SPEED, THE COOLING COIL CONTROL VALVE SHALL OPEN 100%. WHEN SPACE TEMPERATURE IS 3ºF BELOW THE UNOCCUPIED COOLING SETPOINT, THE FAN SHALL STOP, AND THE COOLING COIL CONTROL VALVE SHALL CLOSE.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, EQUIPMENT ROTATION SEQUENCES, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS. ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ALARM MONITORING :
AN ALARM WILL BE GENERATED AT THE EMS PC WORKSTATION IF ANY OF THE FOLLOWING OCCUR:
A. HIGH LEAVING AIR TEMPERATURE
B. LOW LEAVING AIR TEMPERATURE
C. SPACE HIGH TEMPERATURE
D. SPACE LOW TEMPERATURE
E. FILTER RUN TIME EXCEEDED

5 TYPICAL COOLING ONLY FAN COIL UNIT CONTROL DIAGRAM
NOT TO SCALE



EXHAUST FAN SEQUENCE OF OPERATION:
EXHAUST FAN SHALL BE STARTED AND STOPPED BY DDC PANEL DIGITAL OUTPUT BASED ON WEEKLY SCHEDULE. EXHAUST FAN SHALL TYPICALLY BE IN OPERATION AT ALL TIMES. MOTORIZED DAMPER SHALL OPEN ON FAN STARTUP AND SHALL CLOSE ON FAN SHUTDOWN.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:
1. EXHAUST FAN FAILURE

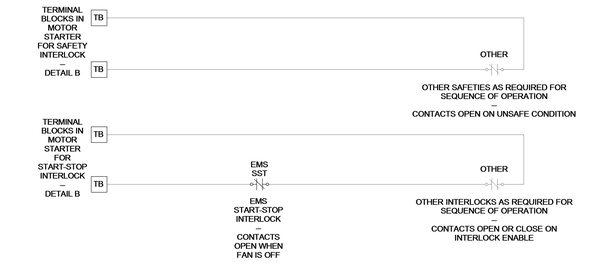


DIAGRAM GENERAL NOTES:

1. POWER WIRING TO MOTOR STARTER AND FROM MOTOR STARTER TO EXHAUST FAN MOTOR BY ELECTRICAL..
2. MOTOR STARTER FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO STARTER DETAIL C.
3. CONTROL WIRING FROM MOTOR STARTER TO DAMPER ACTUATOR SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR.
4. CONTROL DAMPER FURNISHED AND FACTORY MOUNTED WITH EXHAUST FAN. DAMPER ACTUATOR FURNISHED FACTORY MOUNTED WITH EXHAUST FAN.

6 EXHAUST FAN WITH MOTOR STARTER CONTROL DIAGRAM
NOT TO SCALE

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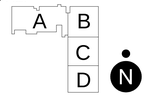
Key Plan



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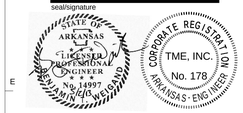


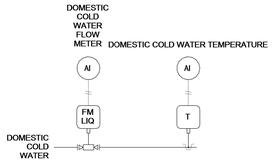
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

CONTROLS - HVAC

sheet number

M903



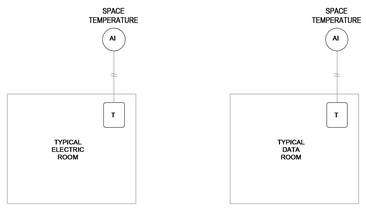
ENERGY MONITORING:
THE EMS SHALL MONITOR THE DOMESTIC COLD WATER FOR INSTANTANEOUS FLOW RATE, TEMPERATURE, AND USAGE. THE EMS TO PROVIDE INSTANTANEOUS USE, HOURLY, DAILY, MONTHLY, YEARLY USAGE AND PROVIDE COMPARATIVE DATA FROM PREVIOUS HOUR, DAY, MONTH, AND YEARS ON A DASH BOARD GRAPHIC IN THE EMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:
1. LOW DOMESTIC WATER TEMPERATURE
2. HIGH FLOW RATE

DIAGRAM GENERAL NOTES:

1. DOMESTIC COLD WATER FLOW METER FURNISHED AND WIRED BY THE ATC CONTRACTOR; INSTALLED BY THE MECHANICAL CONTRACTOR. REFER TO DRAWINGS FOR LOCATION OF METER.
2. THERMAL WELLS FOR TEMPERATURE SENSOR FURNISHED BY THE ATC CONTRACTOR, INSTALLED IN THE PIPES BY THE MECHANICAL CONTRACTOR.
3. PROVIDE WATER METERS IN NEW WATER SERVICE TO ADDITION, AND NEW HOT WATER SERVICE TO ADDITION.

1 DOMESTIC COLD WATER METERING CONTROL DIAGRAM
NOT TO SCALE



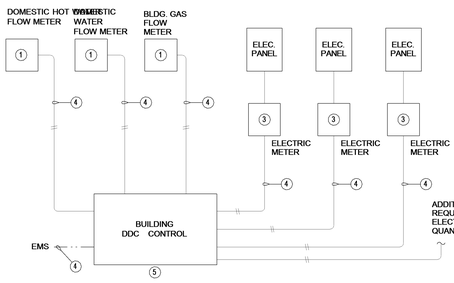
DATA & ELECTRIC ROOM TEMPERATURE MONITORING:
THE EMS SHALL PROVIDE CONTINUOUS TEMPERATURE DISPLAY AND TREND DATA FOR HOURLY, DAILY, MONTHLY, YEARLY VALUES.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:
1. HIGH TEMPERATURE

DIAGRAM GENERAL NOTES:

1. DATA ROOM(S) AND ELECTRICAL ROOM(S) SHALL BE PROVIDED WITH SPACE TEMPERATURE SENSORS. IN THE EVENT SPACE TEMPERATURE RISES ABOVE 85°F AN ALARM SHALL BE GENERATED AT THE EMS.

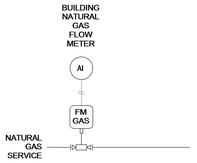
3 TYPICAL DATA & ELECTRICAL ROOM(S)
NOT TO SCALE



5 KEYED NOTES:

1. FLOW METER BY ATC CONTRACTOR.
2. UTILITY POWER METER BY UTILITY COMPANY.
3. KWH METER PROVIDED BY DIV. 26.
4. WIRING BY ATC CONTRACTOR.
5. BY ATC CONTRACTOR.
6. FLAT SCREEN MONITOR BY ATC CONTRACTOR, LOCATED AT LOBBY FOR CHILDREN'S INTERACTIVE & EDUCATIONAL TOOL.

5 BUILDING UTILITIES MONITOR AT MAIN LOBBY
NOT TO SCALE



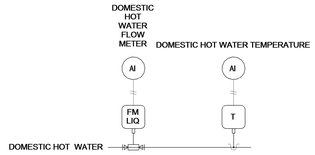
ENERGY MONITORING:
THE EMS SHALL MONITOR THE NATURAL GAS FOR INSTANTANEOUS FLOW RATE AND USAGE. THE EMS TO PROVIDE INSTANTANEOUS USE, HOURLY, DAILY, MONTHLY, YEARLY USAGE AND PROVIDE COMPARATIVE DATA FROM PREVIOUS HOUR, DAY, MONTH, AND YEARS ON A DASH BOARD GRAPHIC IN THE EMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:
1. HIGH USAGE
2. HIGH FLOW RATE

DIAGRAM GENERAL NOTES:

1. BUILDING NATURAL GAS FLOW METER FURNISHED AND WIRED BY THE ATC CONTRACTOR; INSTALLED BY THE MECHANICAL CONTRACTOR. REFER TO DRAWINGS FOR LOCATION OF METER.
2. PROVIDE NATURAL GAS METERS AT GAS LINES TO EXISTING BOILERS AND IN GAS LINE TO NEW BOILER SERVING THE POOL HEATER.

2 BUILDING NATURAL GAS METERING CONTROL DIAGRAM
NOT TO SCALE



DOMESTIC HOT WATER MONITORING
THE EMS SHALL MONITOR THE DOMESTIC HOT WATER TEMPERATURE.

ENERGY MONITORING:
THE EMS SHALL MONITOR THE DOMESTIC HOT WATER FOR INSTANTANEOUS FLOW RATE, TEMPERATURE, AND USAGE. THE EMS SHALL PROVIDE CONTINUOUS DISPLAY AND TREND DATA FOR HOURLY, DAILY, MONTHLY, YEARLY USAGE. THE EMS SHALL PROVIDE COMPARATIVE DATA FROM PREVIOUS HOUR, DAY, MONTH, AND YEARS ON A DASH BOARD GRAPHIC IN THE EMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:
1. HIGH DOMESTIC HOT WATER TEMPERATURE
2. LOW DOMESTIC HOT WATER TEMPERATURE
3. HIGH FLOW RATE

DIAGRAM GENERAL NOTES:

1. THERMAL WELLS FOR TEMPERATURE SENSOR FURNISHED BY THE ATC CONTRACTOR, INSTALLED IN THE PIPES BY THE MECHANICAL CONTRACTOR.
2. PROVIDE WATER METERS IN NEW WATER SERVICE TO ADDITION, AND NEW HOT WATER SERVICE TO ADDITION.

4 DOMESTIC HOT WATER MONITORING CONTROL DIAGRAM
NOT TO SCALE

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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360 Architecture
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MEP engineer:
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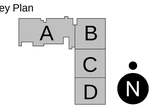
P: (314) 894-1245

Key Plan



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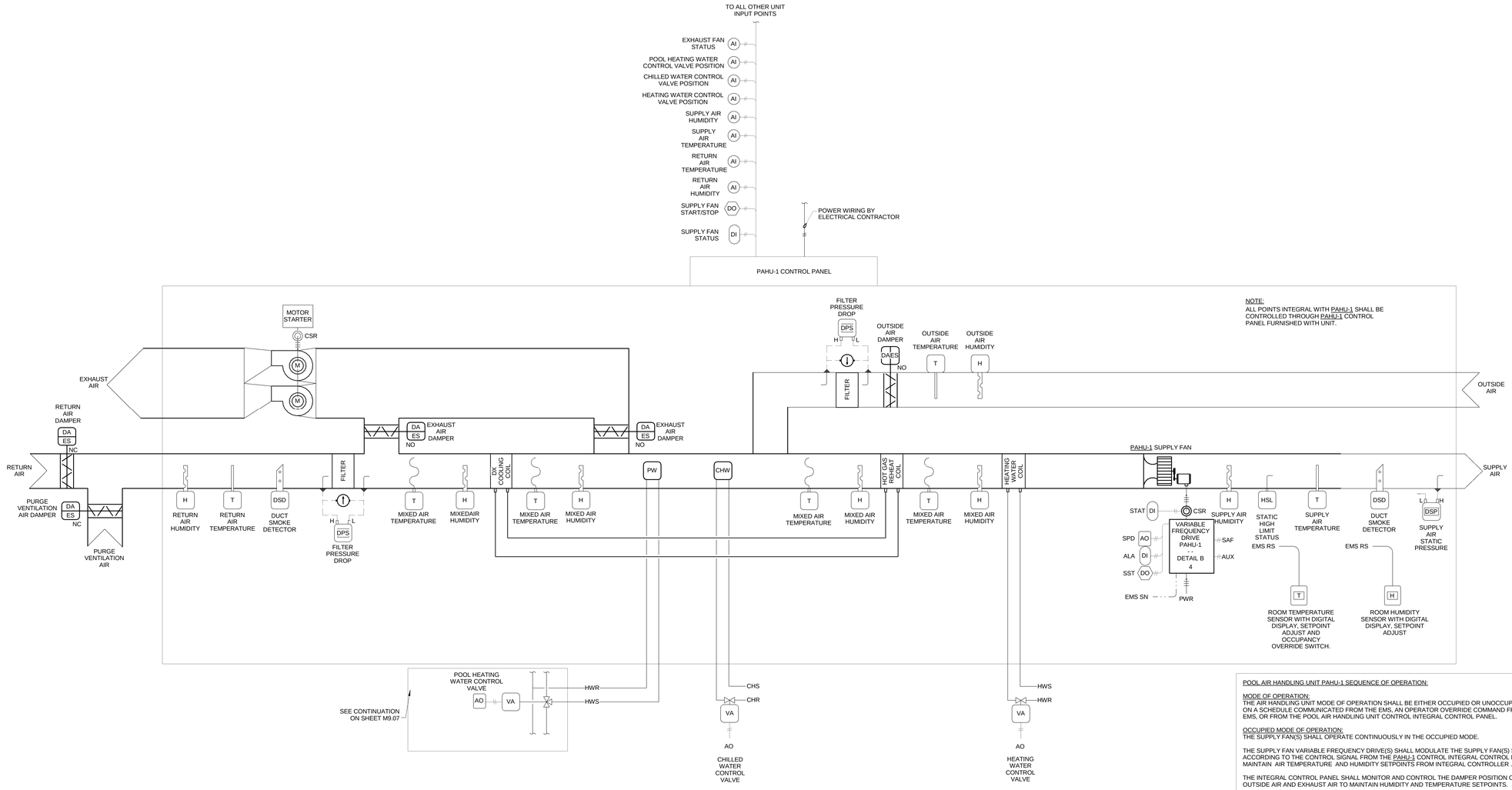
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

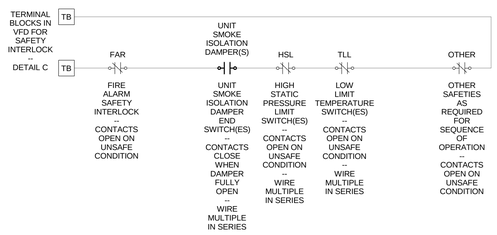
CONTROLS - HVAC

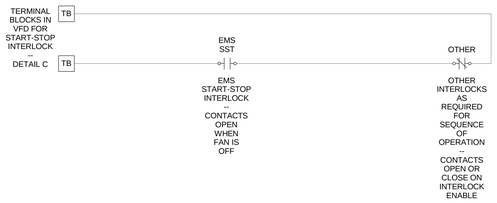
sheet number

M904



1 PAHU-1CONTROL DIAGRAM
NOT TO SCALE





2 PAHU-1 SUPPLY FAN(S) VFD INTERLOCKS
NOT TO SCALE

GENERAL & KEYED NOTES:

1. POWER WIRING (PWR) BY THE ELECTRICAL CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM FIELD EQUIPMENT PANEL TO CONTROLS REQUIRING POWER.
2. SMOKE DETECTOR, INSTALLATION, AND FIRE ALARM WIRING BY THE FIRE ALARM CONTRACTOR.
3. VARIABLE FREQUENCY DRIVE FURNISHED BY ATC CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO VARIABLE FREQUENCY DRIVE SCHEDULE, CONTROL DETAIL C.
4. WIRING FROM FIRE ALARM RELAY TO ATC SYSTEM TO ACCOMPLISH SEQUENCE OF OPERATION BY ATC CONTRACTOR.

POOL AIR HANDLING UNIT PAHU-1 SEQUENCE OF OPERATION:

MODE OF OPERATION:
THE AIR HANDLING UNIT MODE OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, OR FROM THE POOL AIR HANDLING UNIT CONTROL INTEGRAL CONTROL PANEL.

OCCUPIED MODE OF OPERATION:
THE SUPPLY FAN(S) SHALL OPERATE CONTINUOUSLY IN THE OCCUPIED MODE.

THE SUPPLY FAN VARIABLE FREQUENCY DRIVE(S) SHALL MODULATE THE SUPPLY FAN(S) SPEED ACCORDING TO THE CONTROL SIGNAL FROM THE PAHU-1 CONTROL INTEGRAL CONTROL PANEL TO MAINTAIN AIR TEMPERATURE AND HUMIDITY SETPOINTS FROM INTEGRAL CONTROLLER .

THE INTEGRAL CONTROL PANEL SHALL MONITOR AND CONTROL THE DAMPER POSITION OF THE OUTSIDE AIR AND EXHAUST AIR TO MAINTAIN HUMIDITY AND TEMPERATURE SETPOINTS.

THE POOL AIR HANDLING UNIT SHALL MODULATE ITS DX COIL TO MAINTAIN SPACE AIR TEMPERATURE AND HUMIDITY AT SETPOINTS. UPON A NEED OF THE POOL AIR HANDLING UNIT TO REJECT HEAT TO AN ALTERNATE SOURCE, THE POOL HEATING WATER CONTROL VALVE SHALL MODULATE OPEN. UPON A FURTHER CALL FOR HEAT REJECTION FROM THE PAHU-1 INTEGRAL CONTROL PANEL, THE CHILLED WATER CONTROL VALVE SHALL MODULATE OPEN.

ON A DECREASE IN SPACE TEMPERATURE BELOW HEATING SET POINT, THE POOL AIR HANDLING UNIT SHALL MODULATE ITS DX COILS TO PROVIDE HEATING. UPON A FURTHER CALL FOR HEATING, THE POOL AIR HANDLING UNIT SHALL MODULATE THE HEATING WATER CONTROL VALVE TO MAINTAIN THE SPACE TEMPERATURE AT SETPOINT.

UNOCCUPIED MODE OF OPERATION:
THE VENTILATION DAMPER SHALL BE CLOSED AND THE EXHAUST FAN SHALL BE MODULATED TO MINIMUM SPEED DURING THE UNOCCUPIED MODE. OTHERWISE, THE PAHU SHALL FOLLOW THE OCCUPIED MODE SEQUENC EOF OPERATIONS DURING THE UNOCCUPIED MODE.

NATATORIUM PURGE SEQUENCE:
THE PURGE VENTILATION DAMPER SHALL BE OPENED, THE RETURN AIR DAMPER SHALL BE CLOSED, AND THE EXHAUST FAN SHALL BE MODULATED TO MAXIMUM SPEED. OTHERWISE, THE PAHU SHALL FOLLOW THE OCCUPIED MODE SEQUENCE OF OPERATIONS DURING THE UNOCCUPIED MODE. THIS MODE OF OPERATION SHALL ONLY OCCUR AS A MANUAL OVERRIDE OF THE SYSTEM AT THE REQUEST OF POOL MAINTENANCE STAFF DURING A CHEMICAL "SHOCK" OF THE POOL. THE NATATIUM DOORS TO THE PATIO AREA WILL BE REQUIRED TO BE OPENED DURING THIS SEQUENCE.

SAFETIES IN ALL MODES OF OPERATION:
IN THE EVENT THE FIRE ALARM RELAY INDICATES AN UNSAFE CONDITION, THE SUPPLY FAN(S) SHALL STOP AND AN ALARM SHALL BE GENERATED AT THE EMS OPERATOR WORKSTATION.

IN THE EVENT THE STATIC PRESSURE EXCEEDS THE HIGH STATIC LIMIT SWITCH (HSL) SETPOINT OF 2.0 INCHES WATER GAUGE, AN ALARM SHALL BE GENERATED AT THE EMS OPERATOR WORKSTATION. THE SWITCH SHALL REQUIRE MANUAL RESET. THE SETPOINT IS ADJUSTABLE AT THE SWITCH.

FILTERS:
THE DDC PANEL SHALL MONITOR FILTER DIFFERENTIAL PRESSURE AND DISPLAY THE PRESSURE DROP ON THE EMS. AN ALARM SHALL BE GENERATED AT THE EMS WHEN FILTER DIFFERENTIAL PRESSURE EXCEEDS THE DIRTY FILTER ALARM SETPOINT. THE FILTER DIFFERENTIAL PRESSURE ALARM SETPOINT SHALL BE ADJUSTABLE AT THE EMS.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, EQUIPMENT ROTATION SEQUENCES, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE INTEGRAL CONTROL PANEL AND EMS.

ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS PC WORKSTATION IF ANY OF THE FOLLOWING OCCUR:
1. FAN FAILURE
2. HIGH SUPPLY AIR TEMPERATURE
3. SPACE HIGH TEMPERATURE
4. SPACE LOW TEMPERATURE
5. FILTER PRESSURE DROP HAS EXCEEDED ALLOWABLE LIMITS
6. HIGH STATIC PRESSURE SAFETY ALARM
7. FIRE ALARMS SAFETY ALARM
8. SPACE HIGH HUMIDITY

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Key Plan

A B C D N

seal/signature

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14997 REGISTERED ENGINEER

CORPORATE REGISTRATION TME, INC. No. 178 ARKANSAS · ENGINEER

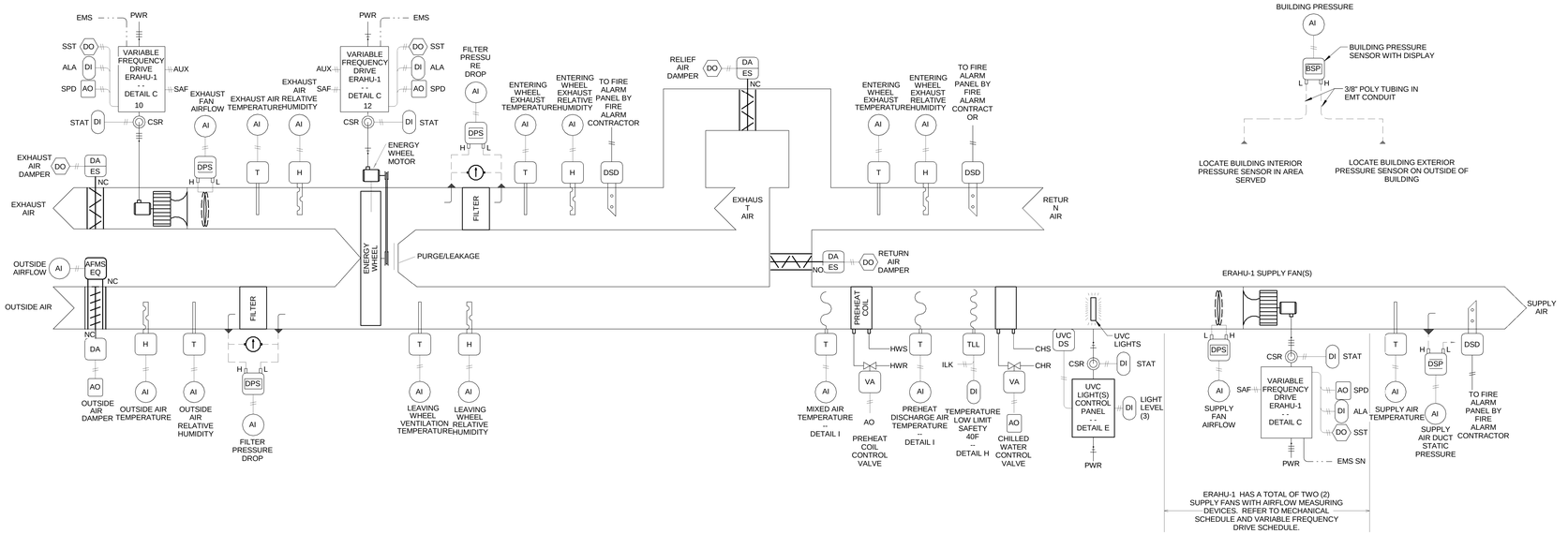
rev	date	description

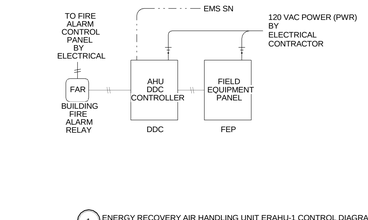
date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

CONTROLS - HVAC

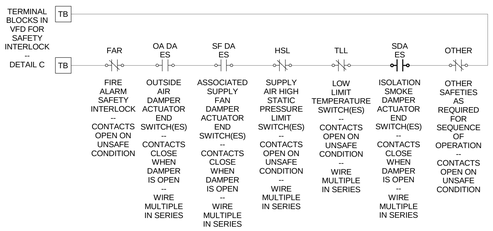
sheet number

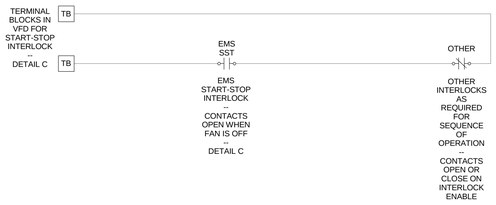
M905



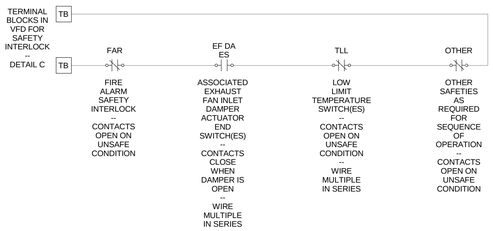


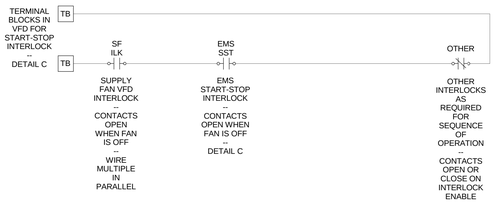
1 ENERGY RECOVERY AIR HANDLING UNIT ERAHU-1 CONTROL DIAGRAM
NOT TO SCALE



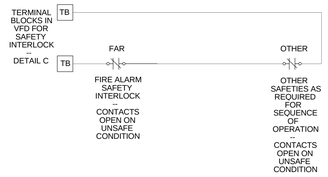


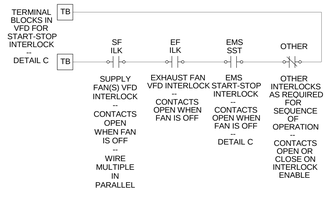
2 ERAHU-1SUPPLY FAN(S) VFD INTERLOCKS
NOT TO SCALE





3 ERAHU-1 EXHAUST FAN VFD INTERLOCKS
NOT TO SCALE





4 ERAHU-1 ENERGY RECOVERY WHEEL VFD INTERLOCKS
NOT TO SCALE

SHEET GENERAL & KEYED NOTES:

1. POWER WIRING (PWR) BY THE ELECTRICAL CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM FIELD EQUIPMENT PANEL TO CONTROLS REQUIRING POWER.
2. FAN INLET AIRFLOW MEASURING STATION FURNISHED AND INSTALLED BY FAN MANUFACTURER. DIFFERENTIAL PRESSURE SENSOR AND ASSOCIATED INSTRUMENT PIPING BY ATC CONTRACTOR.
3. CONTROL DAMPERS ARE FURNISHED AND INSTALLED BY THE SHEETMETAL CONTRACTOR. DAMPER ACTUATORS ARE FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
4. SMOKE DETECTOR, INSTALLATION, AND FIRE ALARM WIRING BY THE FIRE ALARM CONTRACTOR.
5. VARIABLE FREQUENCY DRIVE FURNISHED BY ATC CONTRACTOR FOR EACH SUPPLY AND EXHAUST FAN; INSTALLATION AND POWER WIRING BY THE ELECTRICAL CONTRACTOR; CONTROL AND INTERLOCK WIRING BY THE ATC CONTRACTOR. REFER TO VARIABLE FREQUENCY DRIVE SCHEDULE AND DETAIL C. NOTE THERE ARE MULTIPLE FANS IN EACH FAN WALL. SEE NOTE 12 BELOW FOR EXCEPTIONS.
6. FILTER GAUGES FURNISHED WITH FILTERS. INSTALLATION OF FILTER GAUGES AND INSTRUMENTATION PIPING IS BY ATC CONTRACTOR.
7. HUMIDIFIER FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. POWER WIRING BY ELECTRICAL CONTRACTOR. CONTROL AND INTERLOCK WIRING BY THE ATC CONTRACTOR. HIGH LIMIT HUMIDISTAT FURNISHED WITH THE HUMIDIFIER; INSTALLED AND WIRED BY THE ATC CONTRACTOR.
8. AIR HANDLING UNIT HAS MULTIPLE FANS WITH INTEGRAL FAN INLET AIRFLOW MEASURING STATIONS, AND INTEGRAL INLET DAMPERS. THE ATC CONTRACTOR SHALL FURNISH, INSTALL AND WIRE THE DIFFERENTIAL PRESSURE SENSORS FOR EACH FAN INLET AIRFLOW MEASURING STATION AND THE DAMPER ACTUATORS FOR EACH FAN INLET DAMPER.
9. SIZE CHILLED WATER CONTROL VALVE FOR 50% OF SCHEDULED WATER FLOW FOR INITIAL BUILDING CONSTRUCTION. WHEN ADDITIONAL FLOORS ARE ADDED REQUIRING CAPACITY ABOVE THE 50% WATER FLOW THE VALVE SHALL BE REPLACED UNDER SEPARATE CONTRACT OR CHANGE ORDER WITH A VALVE OF 100% OF SCHEDULED CAPACITY.
10. INITIAL AIRFLOW FOR EXHAUST FAN(S) SHALL BE SET AT THE VFD FOR 1600 CFM BY TAB CONTRACTOR.
11. INITIAL AIRFLOW FOR THE MINIMUM OUTSIDE AIR SHALL BE SET TO MAINTAIN 2500 CFM BY THE ATC CONTRACTOR.
12. ENERGY RECOVERY WHEEL VFD IS FURNISHED AND INSTALLED BY THE AIR HANDLING UNIT MANUFACTURER.

ENERGY RECOVERY AIR HANDLING UNIT ERAHU-1 SEQUENCE OF OPERATION:

MODE OF OPERATION:
THE ENERGY RECOVERY AIR HANDLING UNIT (ERAHU) MODE OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, OR AN OCCUPANCY OVERRIDE SIGNAL FROM THE SPACE TEMPERATURE SENSOR.

OCCUPIED MODE OF OPERATION:
ON AN OCCUPANCY COMMAND, THE OUTSIDE AIR AND RETURN AIR DAMPERS SHALL OPEN.

ON PROOF OF DAMPERS BEING OPEN FROM THE DAMPER END SWITCHES, THE SUPPLY AIR VFDS SHALL BE ENABLED. THE SUPPLY FANS SHALL OPERATE CONTINUOUSLY IN THE OCCUPIED MODE.

ON PROOF OF SUPPLY FAN OPERATION, THE VENTILATION AIR DAMPER SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE MINIMUM SCHEDULED VENTILATION AIRFLOW AT THE AIRFLOW MEASURING STATION. THE VENTILATION AIRFLOW SHALL BE RESET FROM MINIMUM TO MAXIMUM BASED ON THE ROOM CO2 SENSOR WITH THE HIGHEST VALUE. THE VENTILATION AIR SHALL BE AT MINIMUM IF ALL CO2 VALUES ARE LESS THAN 750 PPM CO2 AND AT MAXIMUM IF ANY CO2 VALUES ARE GREATER THAN 1000 PPM CO2. THE VENTILATION AIR SHALL BE RESET IN A LINEAR MANNER FROM THE MINIMUM VENTILATION AIRFLOW TO MAXIMUM VENTILATION AIRFLOW AS THE HIGHEST VALUE OF ANY CO2 SENSOR INCREASES FROM 750 PPM CO2 TO 1000 PPM CO2.

ON AN OCCUPANCY COMMAND, THE EXHAUST DAMPER SHALL OPEN AND ON PROOF OF DAMPER BEING OPEN FROM THE END SWITCHES THE EXHAUST FAN SHALL START. THE EXHAUST FAN VARIABLE FREQUENCY DRIVE SHALL MODULATE THE EXHAUST FAN(S) SPEED TO MAINTAIN THE EXHAUST STATIC PRESSURE AT SETPOINT OF 1.5 INCHES W.G.

THE SUPPLY FAN VARIABLE FREQUENCY DRIVE(S) SHALL MODULATE THE SUPPLY FAN(S) SPEED IN UNISON TO MAINTAIN THE SUPPLY AIR STATIC PRESSURE AS DETERMINED BY THE SUPPLY AIR STATIC PRESSURE SETPOINT OPTIMIZATION CALCULATIONS. IF ONE FAN FAILS TO START OR SHUTS DOWN, REMAINING FAN SHALL CONTINUE TO OPERATE AND A FAN FAILURE ALARM IS GENERATED AT THE EMS.

THE SUPPLY AIR STATIC PRESSURE SETPOINT IS DETERMINED BY THE EMS. THE EMS SHALL MONITOR THE DAMPER POSITION OF ALL SUPPLY AIR TERMINAL UNITS SERVED BY THE AIR HANDLING UNIT AND DETERMINE THE CRITICAL ZONE (CZ) SUPPLY AIR TERMINAL UNIT. THE CRITICAL ZONE (CZ) IS THE SUPPLY AIR TERMINAL UNIT WITH THE GREATEST PERCENTAGE OPEN DAMPER. THE INITIAL STATIC PRESSURE SETPOINT AT TRANSITION FROM UNOCCUPIED TO OCCUPIED OPERATION SHALL BE 1.5 INCHES WATER GAUGE. THE STATIC PRESSURE SETPOINT SHALL BE RESET BETWEEN 0.5 TO 2.0 INCHES WATER GAUGE TO OPTIMIZE FAN ENERGY AS FOLLOWS.

WHEN THE AHU CZ SUPPLY TERMINAL UNIT DAMPER IS LESS THAN 85% OPEN, THE SUPPLY FAN DISCHARGE STATIC PRESSURE SETPOINT SHALL BE RESET DOWNWARD BY 10% OF THE PREVIOUS SETPOINT AT A FREQUENCY OF 10 MINUTES UNTIL THE AHU CZ SUPPLY AIR TERMINAL UNIT DAMPER IS MORE THAN 90% OPEN OR THE STATIC PRESSURE SETPOINT HAS RESET DOWNWARD TO THE SYSTEM MINIMUM SETTING.

WHEN THE CZ DAMPER IS MORE THAN 95% OPEN, THE SUPPLY STATIC PRESSURE SETPOINT SHALL BE RESET UPWARD BY 10% OF THE PREVIOUS SETPOINT AT A FREQUENCY OF 5 MINUTES UNTIL THE CZ DAMPER IS MORE THAN 90% OPEN OR THE STATIC PRESSURE SETPOINT HAS RESET UPWARD TO THE SYSTEM MAXIMUM SETTING.

SUPPLY AIR TERMINAL UNIT(S) SERVED BY THE AIR HANDLING UNIT SHALL BE CAPABLE OF BEING EXCLUDED FROM THE STATIC PRESSURE OPTIMIZATION CALCULATIONS TO ALLOW FOR SUPPLY AIR TERMINAL UNITS THAT SERVE AREAS THAT ARE CONSTANT VOLUME OR REQUIRE FULL COOLING AT ALL TIMES.

WHEN OUTSIDE AIR TEMPERATURE IS 80°F AND ABOVE, THE ENERGY RECOVERY WHEEL SHALL BE OPERATED AT FULL SPEED. WHEN THE OUTSIDE AIR TEMPERATURE IS BETWEEN 50°F AND 80°F, THE WHEEL SHALL BE OPERATED AT MINIMUM SPEED TO KEEP THE ENERGY RECOVERY WHEEL CLEAN. WHEN THE OUTSIDE AIR TEMPERATURE IS BETWEEN 35°F AND 50°F, THE ENERGY RECOVERY WHEEL SPEED SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE LEAVING WHEEL AIR TEMPERATURE AT 55° F. WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 35°F, THE ENERGY RECOVERY WHEEL SHALL BE OPERATED AT MAXIMUM SPEED TO MINIMIZE HUMIDIFICATION REQUIREMENTS.

THE ENERGY RECOVERY WHEEL SHALL BE INTERLOCKED TO OPERATE ONLY WHEN THE SUPPLY FAN(S) AND THE EXHAUST FAN ARE IN OPERATION.

THE RELIEF AIR DAMPER AND RETURN AIR DAMPER SHALL BE MODULATED BY THE DDC TO MAINTAIN THE BUILDING PRESSURE AT SETPOINT OF +0.02 INCHES WATER COLUMN.

THE PREHEAT COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE PREHEAT DISCHARGE AIR TEMPERATURE AT SETPOINT OF 50°F.

THE CHILLED WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN THE SUPPLY AIR TEMPERATURE AT SETPOINT OF 55°F.

IN THE EVENT OF FREEZESTAT ALARM, THE CHILLED WATER CONTROL VALVE SHALL BE FULLY OPENED.

UNOCCUPIED MODE OF OPERATION:
THE SUPPLY FAN(S) SHALL BE OFF, THE EXHAUST FAN SHALL BE OFF, THE OUTSIDE AIR DAMPER SHALL CLOSE, AND THE EXHAUST DAMPERS SHALL CLOSE.

THE COOLING COIL CONTROL VALVES SHALL BE CLOSED. IF OUTSIDE AIR TEMPERATURE IS BELOW 38°F THE PREHEAT COIL CONTROL VALVE SHALL REMAIN IN CONTROL.

WHEN ANY SPACE TEMPERATURE SENSOR ASSOCIATED WITH THE AIR HANDLING UNIT INDICATES A TEMPERATURE OF 3°F BELOW THE UNOCCUPIED HEATING SETPOINT, THE AIR HANDLING UNIT SHALL BE STARTED. THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL REMAIN IN THE UNOCCUPIED POSITIONS, THE EXHAUST FAN AND ENERGY RECOVERY WHEEL SHALL REMAIN OFF. THE COOLING COIL CONTROL VALVE SHALL REMAIN CLOSED, AND THE ASSOCIATED SUPPLY AIR TERMINAL UNITS SHALL OPERATE IN THE UNOCCUPIED MODE UNTIL ALL SPACE TEMPERATURES ARE 1°F BELOW THE UNOCCUPIED HEATING SETPOINT. WHEN ALL SPACE TEMPERATURES ARE 1°F BELOW THE UNOCCUPIED HEATING SETPOINT THE AIR HANDLING UNIT SHALL STOP AND THE SYSTEM SHALL RETURN TO THE UNOCCUPIED MODE.

WHEN ANY SPACE TEMPERATURE SENSOR ASSOCIATED WITH THE AIR HANDLING UNIT INDICATES A TEMPERATURE OF 3°F ABOVE THE UNOCCUPIED COOLING SETPOINT, THE AIR HANDLING UNIT SHALL BE STARTED. THE OUTSIDE AND EXHAUST AIR DAMPERS SHALL REMAIN IN THE UNOCCUPIED POSITIONS, THE EXHAUST FAN AND ENERGY RECOVERY WHEEL SHALL REMAIN OFF. THE COOLING COIL CONTROL VALVE SHALL FULLY OPEN. THE ASSOCIATED SUPPLY AIR TERMINAL UNITS SHALL OPERATE IN THE UNOCCUPIED MODE. THE AIR HANDLING UNIT SHALL OPERATE UNTIL ALL SPACE TEMPERATURES ARE 1°F ABOVE THE UNOCCUPIED COOLING SETPOINT. WHEN ALL SPACE TEMPERATURES ARE 1°F ABOVE THE UNOCCUPIED COOLING SETPOINT THE AIR HANDLING UNIT SHALL STOP AND THE SYSTEM SHALL RETURN TO THE UNOCCUPIED MODE.

MORNING WARM-UP SEQUENCE:
BEFORE BUILDING OCCUPANCY, THE SUPPLY TERMINALS SHALL BE COMMANDED TO THEIR OCCUPIED SPACE TEMPERATURE SETPOINTS. THE ENERGY RECOVERY AIR HANDLER SHALL OPERATE IN "UNOCCUPIED MODE" DURING MORNING WARM-UP. WHEN THE OUTSIDE AIR TEMPERATURE IS 45 DEGREES OR BELOW, THE ENERGY RECOVERY AIR HANDLER SHALL BE SCHEDULED TO BECOME "OCCUPIED" 30 MINUTES AFTER THE SUPPLY TERMINALS.

SAFETIES IN ALL MODES OF OPERATION:
THE AIR HANDLING UNIT SHALL SHUTDOWN AND AN ALARM SHALL BE GENERATED AT THE EMS OPERATOR WORKSTATION IF THE FIRE ALARM RELAY INDICATES AN UNSAFE CONDITION.

IN THE EVENT THE SUPPLY FAN STATIC HIGH LIMIT SWITCH EXCEEDS THE PRESSURE SETPOINT OF 4.0 INCHES WATER GAUGE, THE AIR HANDLING UNIT SHALL SHUTDOWN AND AN ALARM GENERATED AT THE EMS OPERATOR WORKSTATION. THE SUPPLY FAN STATIC HIGH LIMIT SWITCH SETPOINT IS ADJUSTABLE AT THE SWITCH.

IN THE EVENT OF A LOW TEMPERATURE CONDITION BELOW THE TEMPERATURE LOW LIMIT SWITCH SETPOINT OF 38°F, THE AIR HANDLING UNIT SHALL SHUTDOWN AND AN ALARM SHALL BE GENERATED AT THE EMS OPERATOR WORKSTATION. THE TEMPERATURE LOW LIMIT SWITCH SETPOINT IS ADJUSTABLE AT THE SWITCH.

ON AIR HANDLING UNIT SHUTDOWN, THE SUPPLY FAN(S) SHALL STOP, THE EXHAUST FAN SHALL STOP, THE OUTSIDE AIR DAMPER SHALL BE CLOSED, THE EXHAUST DAMPER SHALL BE CLOSED, THE SUPPLY AIR SMOKE ISOLATION DAMPER(S) SHALL CLOSE, AND RETURN AIR SMOKE ISOLATION DAMPER(S) SHALL CLOSE. THE PREHEAT COIL CONTROL VALVE SHALL OPEN, AND THE COOLING COIL CONTROL VALVES SHALL CLOSE.

FILTERS:
THE DDC PANEL SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER(S) AND GENERATE AN ALARM IF FILTER DIFFERENTIAL PRESSURE EXCEEDS THE ALARM LIMIT SETPOINT. FILTER DIFFERENTIAL PRESSURE ALARM LIMIT SETPOINT SHALL BE ADJUSTABLE FROM THE EMS.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, EQUIPMENT ROTATION SEQUENCES, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS.

ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:

1. SUPPLY FAN FAILURE
2. EXHAUST FAN FAILURE
3. HIGH STATIC PRESSURE SAFETY
4. TEMPERATURE LOW LIMIT SAFETY SWITCH
5. HIGH SUPPLY AIR TEMPERATURE
6. FILTER DIFFERENTIAL PRESSURE EXCEEDS ALARM LIMIT

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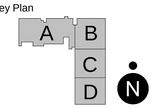
Key Plan



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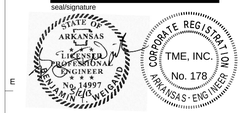

rev	date	description

date	05/06/13
phase	Bidding and Construction
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SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

CONTROLS - HVAC

sheet number

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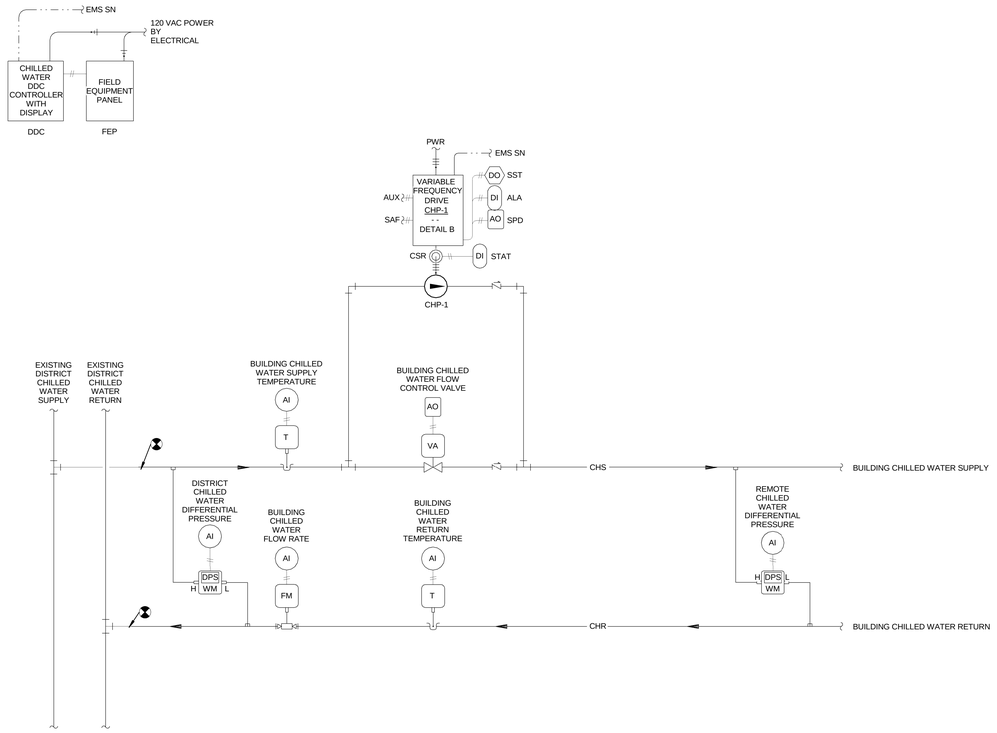

1 CHILLED WATER CONTROL DIAGRAM
NOT TO SCALE

BUILDING CHILLED WATER SYSTEM SEQUENCE OF OPERATION:

MODE OF OPERATION:
THE CHILLED WATER SYSTEM MODE OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS. AN OPERATOR OVERRIDE COMMAND FROM THE EMS, OR AN OCCUPANCY OVERRIDE SIGNAL FROM ANY SPACE TEMPERATURE SENSOR.

OCCUPIED MODE:
THE BUILDING VOLUMETRIC CONTROL VALVE MODULATES IN SEQUENCE WITH THE BUILDING CHILLED WATER PUMP TO MAINTAIN THE REMOTE BUILDING CHILLED WATER DIFFERENTIAL PRESSURE AT 15 PSIG.

ON SYSTEM START UP THE VOLUMETRIC CONTROL VALVE MODULATES TO MAINTAIN THE REMOTE CHILLED WATER DIFFERENTIAL PRESSSURE AT SETPOINT. IF AFTER 30 MINUTES THE CHILLED WATER VOLUMETRIC CONTROL VALVE IS 95% OR MORE OPEN AND THE REMOTE BUILDING CHILLED WATER DIFFERENTIAL PRESSURE REMAINS BELOW SETPOINT, THE BUILDING CHILLED WATER VOLUMETRIC CONTROL VALVE IS OVERRIDEN TO FULL OPEN, AND THE BUILDING CHILLED WATER PUMP IS ENABLED. THE BUILDING CHILLED WATER PUMP SPEED IS MODULATED BY THE VFD TO MAINTAIN THE REMOTE CHILLED WATER DIFFERENTIAL SETPOINT. THE CHILLED WATER VOLUMETRIC CONTROL VALVE SHALL REMAIN 100% OPEN ANY TIME THE BUILDING CHILLED WATER PUMP IS IN OPERATION.

WHEN THE PUMP SPEED IS 15% OR LESS OF FULL SPEED, THE PUMP IS DISABLED AND THE VOLUMETRIC CONTROL VALVE IS MODULATED TO MAINTAIN THE BUILDING REMOTE DIFFERENTIAL PRESSURE AT SETPOINT. A TIME DELAY OF 30 MINUTES SHALL BE ENABLED BEFORE THE PUMP SHALL BE ABLE TO RESTART.

THE BUILDING CHILLED WATER FLOW METER SHALL OVERRIDE THE BUILDING CHILLED WATER PUMP VFD AND THE BUILDING CHILLED WATER VOLUMETRIC CONTROL VALVE TO LIMIT THE CHILLED WATER USAGE TO THE MAXIMUM SCHEDULED FOR THE BUILDING.

SETPONTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, EQUIPMENT ROTATION SEQUENCES, ALARM LIMITS, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS.

ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ENERGY MONITORING:
THE EMS SHALL MONITOR THE CHILLED WATER FLOW AND TEMPERATURE FOR INSTANTANEOUS FLOW RATE AND USAGE. THE EMS TO PROVIDE INSTANTANEOUS USE, HOURLY, DAILY, MONTHLY, YEARLY USAGE AND PROVIDE COMPARATIVE DATA FROM PREVIOUS HOUR, DAY, MONTH, AND YEARS ON A DASH BOARD GRAPHIC IN THE EMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS PC WORKSTATION IF ANY OF THE FOLLOWING OCCUR:

A. CHILLED WATER PUMP FAILURE
B. HIGH CHILLED WATER TEMPERATURE
C. LOW SYSTEM PRESSURE
D. HIGH CHILLED WATER FLOW

GENERAL & KEYED NOTES:

1. POWER WIRING (PWR) BY THE ELECTRICAL CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM FIELD EQUIPMENT PANEL TO CONTROLS REQUIRING POWER.
2. VARIABLE FREQUENCY DRIVE FURNISHED BY ATC CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO VARIABLE FREQUENCY DRIVE SCHEDULE AND CONTROL DETAIL C.
3. CONTROL VALVES ARE FURNISHED AND WIRED BY THE ATC CONTRACTOR; INSTALLED IN THE PIPING BY THE MECHANICAL CONTRACTOR.
4. THERMAL WELLS FOR TEMPERATURE SENSORS FURNISHED BY THE ATC CONTRACTOR, INSTALLED IN THE PIPES BY THE MECHANICAL CONTRACTOR.
5. TAPS FOR PRESSURE SENSORS ARE FURNISHED AND INSTALLED IN THE PIPES BY THE MECHANICAL CONTRACTOR.

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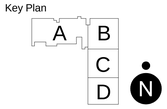

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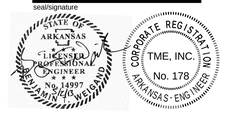

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CONTROLS - HVAC

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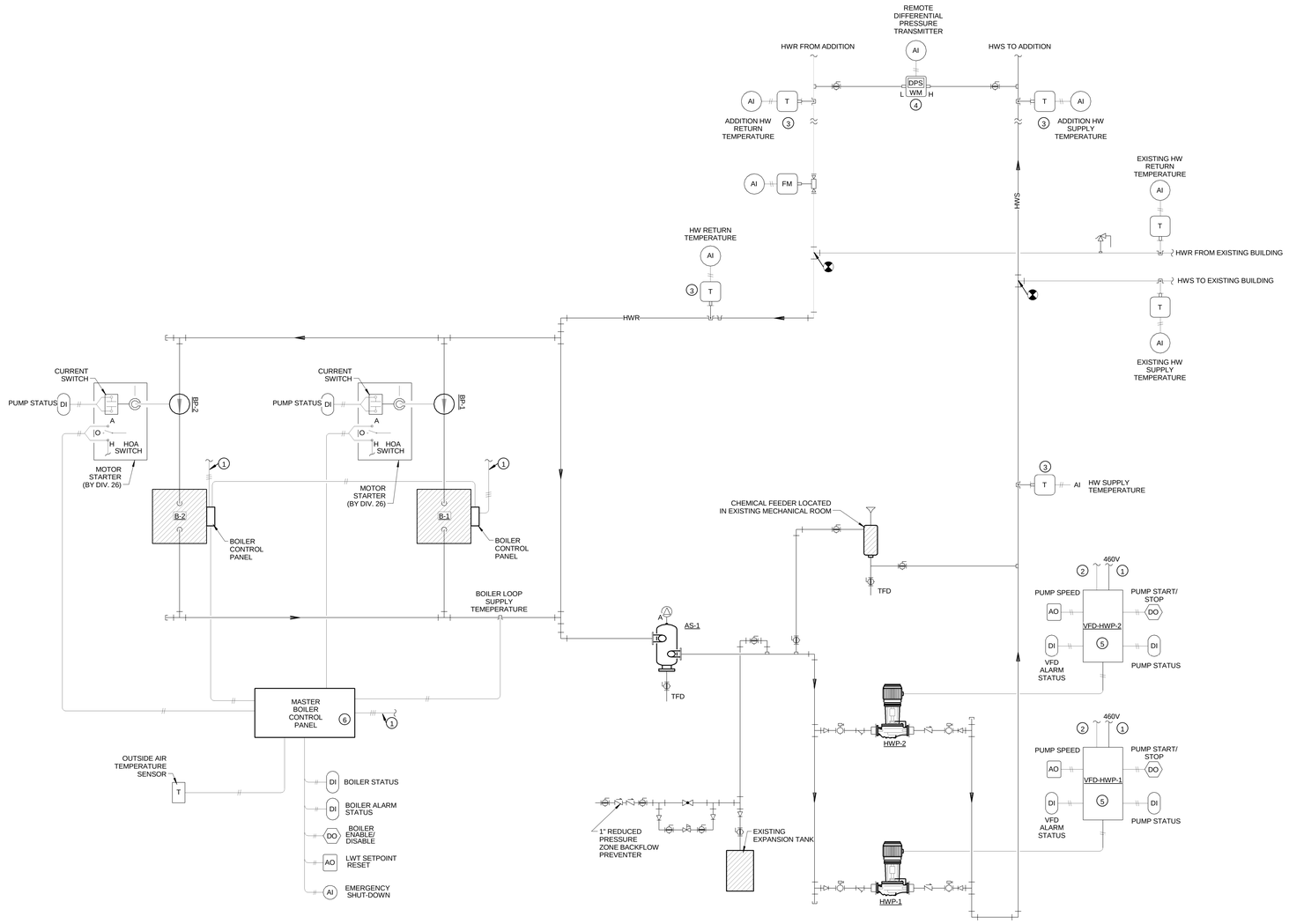

1 HEATING WATER CONTROL DIAGRAM
NOT TO SCALE

HEATING WATER SYSTEM SEQUENCE OF OPERATION:

MODE OF OPERATION:
THE HEATING WATER SYSTEM MODES OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, OR AN OCCUPANCY OVERRIDE SIGNAL FROM ANY SPACE TEMPERATURE SENSOR.

OCCUPIED MODE:
THE LEAD HEATING WATER PUMP SHALL OPERATE CONTINUOUSLY IN THE OCCUPIED MODE. THE HEATING WATER PUMP VFD MODULATES THE HEATING WATER PUMP SPEED TO MAINTAIN THE REMOTE HEATING WATER DIFFERENTIAL PRESSURE AT 10 PSIG.

IN THE EVENT THE LEAD HEATING WATER PUMP FAILS, THE LEAD HEATING WATER PUMP SHALL BE LOCKED OUT, AN ALARM GENERATED AT THE EMS AND THE ROTATION SEQUENCE SHALL BE INDEXED FOR THE STANDBY HEATING WATER PUMP TO BE ENABLED AS THE LEAD HEATING WATER PUMP. WHEN THE FAILURE IS RESET THE SEQUENCING PROGRAM SHALL BE NOTIFIED THAT THE STANDBY HEATING WATER PUMP IS AVAILABLE.

THE LEAD AND STANDBY HEATING WATER PUMPS SHALL BE AUTOMATICALLY ALTERNATED ON A REGULAR BASIS TO EQUALIZE RUNTIMES. OWNER SHALL BE ABLE TO SELECT ROTATION FREQUENCY FROM THE EMS BY SELECTING DAILY, WEEKLY, MONTHLY, OR CUSTOM ROTATION.

BOILER OPERATION SHALL BE ENABLED AND DISABLED BY DDC PANEL DIGITAL OUTPUT THROUGH THE MASTER BOILER CONTROL PANEL. MASTER BOILER CONTROL PANEL SHALL SEQUENCE THE BOILERS AS REQUIRED TO MAINTAIN THE HEATING WATER SUPPLY TEMPERATURE AT SETPOINT. DDC PANEL SHALL AUTOMATICALLY RESET THE HEATING WATER SUPPLY TEMPERATURE SETPOINT FROM 140 DEG. F (ADJUSTABLE) AT 20 DEG. F (ADJUSTABLE) OUTSIDE AIR TEMPERATURE AND BELOW TO 100 DEG. F (ADJUSTABLE) AT 60 DEG. F (ADJUSTABLE) OUTSIDE AIR TEMPERATURE AND ABOVE. MASTER BOILER CONTROL PANEL SHALL AUTOMATICALLY ALTERNATE THE BOILERS TO EQUALIZE WEAR.

WHEN A BOILER IS ENABLED, THE ASSOCIATED BOILER CIRCULATION PUMP SHALL BE STARTED AND THE BOILER ISOLATION VALVE SHALL OPEN.

UNOCCUPIED MODE:
THE HEATING WATER PUMP SHALL BE OFF AND THE BOILERS SHALL BE OFF.

IN THE EVENT ANY BUILDING AIR SYSTEM OR PROCESS IS ENABLED FOR OPERATION REQUIRING HEATING WATER, THE BUILDING HEATING WATER SYSTEM SHALL OPERATE IN THE OCCUPIED MODE. WHEN ALL BUILDING AIR SYSTEMS ARE UNOCCUPIED OR THERE IS NO REQUIREMENT FOR HEATING WATER, THE BUILDING HEATING WATER SYSTEM SHALL RETURN TO THE UNOCCUPIED MODE.

SAFETIES IN ALL MODES OF OPERATION:
THE MAIN GAS SHUT-OFF VALVE SHALL CLOSE BY EITHER THE EMERGENCY GAS SHUT-OFF BUTTON OR BOILER SAFETIES.

REFER TO BOILER AND BOILER MANAGEMENT SYSTEM (BMS) SPECIFICATIONS FOR ADDITIONAL SAFETIES.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, EQUIPMENT ROTATION SEQUENCES, ALARM LIMITS, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS.

ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

ENERGY MONITORING:
THE EMS SHALL MONITOR THE ADDITION HEATING WATER FLOW AND TEMPERATURE FOR INSTANTANEOUS FLOW RATE AND USAGE. THE EMS TO PROVIDE INSTANTANEOUS USE, HOURLY, DAILY, MONTHLY, YEARLY USAGE AND PROVIDE COMPARATIVE DATA FROM PREVIOUS HOUR, DAY, MONTH, AND YEARS ON A DASH BOARD GRAPHIC IN THE EMS.

ALARM MONITORING:
AN ALARM WILL BE GENERATED AT THE EMS IF ANY OF THE FOLLOWING OCCUR:

1. BOILER(S) SAFETIES ALARM
2. BOILER(S) LEAVING WATER LOW TEMPERATURE ALARM
3. HEATING WATER SUPPLY LOW TEMPERATURE ALARM
4. HEATING WATER RETURN LOW TEMPERATURE - ADVISORY
5. HEATING WATER PUMP VFD FAILURE
6. HEATING WATER PUMP FLOW FAILURE
7. HEATING WATER DIFFERENTIAL PRESSURE HIGH ALARM
8. HEATING WATER DIFFERENTIAL PRESSURE LOW ALARM
9. BOILER(S) STACK LOW TEMPERATURE ALARM < 100°F

KEYED NOTES:

1. ELECTRICAL POWER WIRING SPECIFIED IN DIVISION 26
2. VFD INTERFACE CONTROL WIRING. INTERFACE SHALL PROVIDE ACCESS TO THE PUMP CONTROL POINTS REQUIRED TO EXECUTE THE SEQUENCE OF OPERATION AS SHOWN AND ADDITIONAL POINTS AS REQUIRED TO MONITOR PUMP OPERATION.
3. TEMPERATURE SENSOR
4. DIFFERENTIAL PRESSURE TRANSMITTER SPECIFIED IN DIVISION 23
5. VARIABLE FREQUENCY DRIVE SPECIFIED IN DIVISION 23
6. THE BOILER MASTER CONTROL PANEL SHALL BE CAPABLE OF COMMUNICATING THE POINTS INDICATED BACK TO THE DDC CONTROL PANEL USING THE APPROPRIATE LANGUAGE (BACNET, LON, ETC). BOILER MANUFACTURER SHALL PROVIDE ANY AND ALL ADDITIONAL EQUIPMENT, SUCH AS GATEWAYS, TO ACCOMPLISH THIS REQUIRMENT.

HPER Center Renovation & Expansion

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Conway, Arkansas

Stocks Mann Architects, PLC

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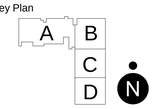
Key Plan



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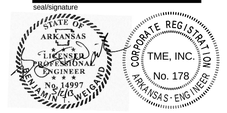

rev	date	description

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UCA project number	UCA-121050

CONTROLS - HVAC

sheet number

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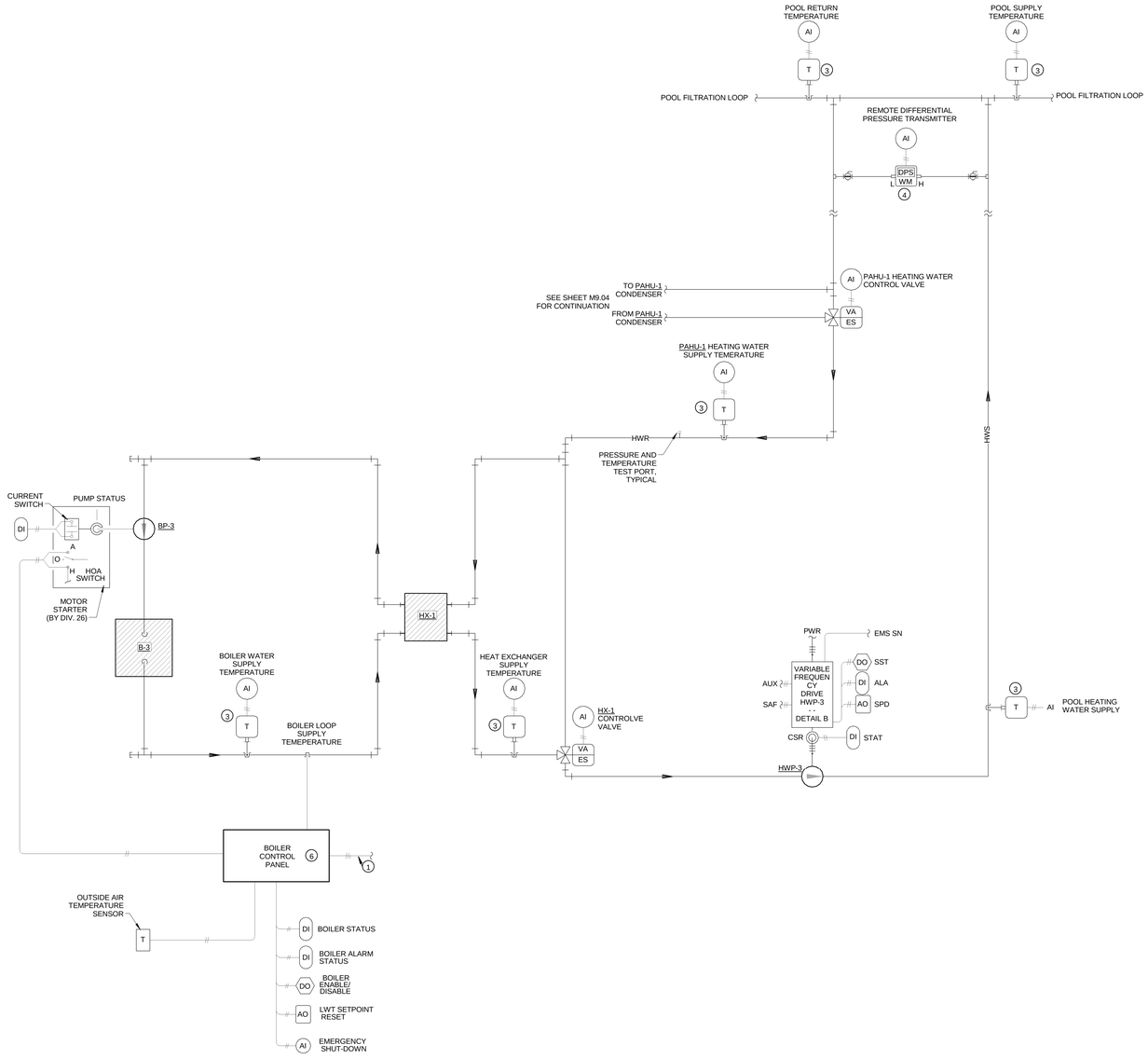

1 POOL HEATING WATER CONTROL DIAGRAM
NOT TO SCALE

POOL HEATING WATER SYSTEM SEQUENCE OF OPERATION:

HEATING WATER PUMPS:

UPON POOL RETURN TEMP OF 0.5 DEGREES BELOW ST POINT, HWP-3 SHALL BE STARTED, AND MODULATED TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT OF 10 PSI. IF THE HEATING WATER SUPPLY TEMPERATURE IS NOT AT ITS SETPOINT OF 105 DREGREES F AFTER 10 MINUTES, HX-1 THE CONTROL VALVE SHALL OPEN TO THE HEAT EXCHANGER AND THE BOILER SHALL BE ENABLED BY THE EMS THROUGH THE BOILER CONTROL PANEL. THE BOILER CONTROL PANEL SHALL MODULATE THE BOILER TO MAINTAIN POOL HEATING WATER SUPPLY TEMPERATURE AT SETPOINT OF 105 DEGREES F.

WHEN THE RETURN TEMPERATURE REACHES 0.5 DEGREES ABOVE SETPOINT, THE BOILER SHALL BE DISABLED, THE HX-1 CONTROL VALVE SHALL BE CLOSED TO THE HEAT EXCHANGER AND HWP-3 SHALL BE STOPPED.

PAHU-1 HEATING WATER CONTROL VALVE:
ON A CALL FROM THE POOL AIR HANDLER INTEGRAL CONTROL PANEL THRU THE EMS TO REJECT HEAT FROM THE PAHU-1 CONDENSER TO THE POOL HEATING WATER LOOP, THE 3-WAY VALVE SHALL MODULATE OPEN TO THE PAHU-1 CONDENSER LOOP. OTHERWISE, THE PAHU-1 HEATING WATER CONTROL VALVE SHALL BE NORMALLY CLOSED TO THE PAHU-1 CONDENSER.

BOILER CIRCULATING PUMPS:

BOILER CIRCULATING PUMP SHALL BE INTERLOCKED WITH ITS RESPECTIVE BOILER THROUGH A CONTROL RELAY. DDC PANEL SHALL MONITOR THE STATUS OF THE CIRCULATING PUMP.

KEYED NOTES:

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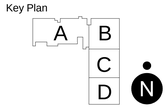

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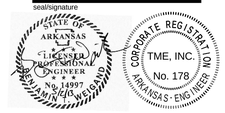

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LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL	LAMP	VOLTAGE	INPUT WATTS	DESCRIPTION
A	FOCAL POINT A-LIGHT AXIS	FSM4FL2T81C277SL850WH-12 G5LCW-8X4-T8HS-2-A-G-W BBR-F-FL-S12-NL4-T8-2S-W-UNV-E-1A/B-TB9	6-F32T8 / SPX50	277	168	12'L RECESSED FLUORESCENT WITH CONTINUOUS FROSTED ACRYLIC FLUSH LENS, 8' IN CEILING 4' DOWN WALL, (1) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLAST.
AA	FOCAL POINT A-LIGHT AXIS	FSM4FL2T81C277SL850WH-16 G516M-T8SD-2-A-(MOUNTING)-W-(2)D BBR-F-FL-S16-NL4-T8-2S-W-UNV-D(MARK7)-2A/B-TB9	8-F32T8 / SPX41	277	224	16'L RECESSED FLUORESCENT WITH CONTINUOUS FROSTED ACRYLIC FLUSH LENS. PROVIDE (2) 2-LAMP <10% LOW HARMONIC MARK 7 ELECTRONIC DIMMING BALLASTS AND (1) 4-LAMP <10% LOW HARMONIC MARK 7 ELECTRONIC DIMMING BALLAST.
B	COLUMBIA METALUX HE WILLIAMS	TRA14-232G-CLO-EPU RDI-232RP-UNV-ER81-U HETG-S14-232-A-EB2-UNV	2-F32T8 / SPX50	277	56	1'x4' RECESSED FLUORESCENT, (1) 2-LAMP 10% LOW HARMONIC BALLAST
BB	FOCAL POINT A-LIGHT AXIS	FSM4FL2T81C277SL850WH-16 G516M-T8SD-2-A-(MOUNTING)-W BBR-F-FL-S16-NL4-T8-2S-W-UNV-D-1A/B-VERIFY	8-F32T8 / SPX41	277	224	16'L RECESSED FLUORESCENT WITH CONTINUOUS FROSTED ACRYLIC FLUSH LENS. PROVIDE (2) 4-LAMP <10% LOW HARMONIC MARK 7 ELECTRONIC DIMMING BALLASTS.
C	COLUMBIA METALUX HE WILLIAMS	ST824-332G-FSA12125-3EU 2GC8-332A125-UNV-EB81-U 50G-S24-332-A12125-EB3-UNV	3-F32T8 / SPX50	277	84	2'x4' RECESSED FLUORESCENT WITH PRISMATIC LENS, (1) 2-LAMP 10% LOW HARMONIC ELECTRONIC BALLAST
CC	BIRCHWOOD EUREKA AXIS	NOL325-1T5-3-MW-FC-277-EB-SM 354135-FT521-277-SC-WH MBWV-S-3-T5-1-AP-UNV-E-1	1-F28T5 / SPX50 1-F21T5 / SPX50 1-F28T5 / SPX50	277	26	3' L FLUORESCENT WALL SCONCE (1) 1-LAMP <10% LOW HARMONIC ELECTRONIC BALLAST
D	PRESCOLITE VANTAGE CREE	LF6LED-6LFLED5-40K-WT-B6 A6VOPLED2-1140K-L660SCL KR613L-40K-277-KR6T-SSGC-FF	LED LED LED	277	16 16 18	6" RECESSED LED DOWNLIGHT
DD	FOCAL POINT A-LIGHT AXIS	FSM4FL2T81C277SL850WH-4 G54M-T8SD-2-A-(MOUNTING)-W-(2)D BBR-F-FL-S4-NL4-T8-2-W-UNV-D(MARK 7)-1-TB9	2-F32T8 / SPX50	277	56	4'L RECESSED FLUORESCENT WITH FROSTED ACRYLIC FLUSH LENS, (1) 2-LAMP <10% LOW HARMONIC MARK 7 ELECTRONIC DIMMING BALLAST.
E	COLUMBIA METALUX DAY-BRITE	CS8-432-EU-2CSWG4-CSSAD-2CHSC 8TSSF-232-UNV-EB81-U-(2) WG/SSF-4FT-B-AYC-CHAIN/SET-U TT232-UNV-1/4EB-2CG4	4-F32T8 / SPX50	277	112	8' LINEAR FLUORESCENT STRIP FIXTURE. (2) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLAST. PROVIDE WITH TWO CHAIN HANGER ASSEMBLIES AND WIRE GUARDS. MOUNT AT 8'-0" AFF UNLESS OTHERWISE NOTED.
EE	CALI EFFICIENT-TEC LED LINC	TL1000RLED-3.0K-CL-SC-PF-EC RL-2310-210-012 RLI-18-277-4200-70'	LED	277		70' LED COVE ACCENT LIGHTING. PROVIDE ALL TRANSFORMERS AND ACCESSORIES FOR A COMPLETE SYSTEM. TRANSFORMER TO BE 277V COMPATIBLE.
F	COLUMBIA METALUX DAY-BRITE	CS4-232-EU-CSWG4-2CHSC SSF-232-UNV-EB81-U-WG/SSF-4FT-B-AYC-CHAIN/SET-U T232-UNV-1/4-EB-CG4	2-F32T8 / SPX50	277	56	4' LINEAR FLUORESCENT STRIP FIXTURE. (1) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLAST. PROVIDE WITH TWO CHAIN HANGER ASSEMBLIES AND WIRE GUARDS. MOUNT AT 8'-0" AFF UNLESS OTHERWISE NOTED.
FF	CALI EFFICIENT-TEC LED LINC	TL1000RLED-3.0K-CL-SC-PF-EC RL-2310-210-012 RLI-18-277-4200-44'	LED	277		44' LED COVE ACCENT LIGHTING. PROVIDE ALL TRANSFORMERS AND ACCESSORIES FOR A COMPLETE SYSTEM. TRANSFORMER TO BE 277V COMPATIBLE.
G	LIGHTOLOGY GLOBAL LIGHTING VIBIA	0703SU-OCTO-21F1-BKSN 4240FVERIFY 0100-03	1- F24GU / SPX 50 1-F18 CFL 4-F32TT	277	20	DECORATIVE FLUORESCENT PENDANT
GG	CALI EFFICIENT-TEC LED LINC	TL1000RLED-3.0K-CL-SC-PF-EC RL-2310-210-012 RLI-18-277-4200-15'	LED	277		15' LED COVE ACCENT LIGHTING. PROVIDE ALL TRANSFORMERS AND ACCESSORIES FOR A COMPLETE SYSTEM. TRANSFORMER TO BE 277V COMPATIBLE.
H	FOCAL POINT A-LIGHT AXIS	FSM4FL2T81C277SL850WH-4 G54-T8HD-2-A-(MOUNTING)-W BBR-F-FL-S4-NL4-T8-2S-W-UNV-E-1A/B-TB9	2-F32T8 / SPX50	277	56	4'L RECESSED FLUORESCENT WITH FROSTED ACRYLIC FLUSH LENS, (1) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLAST.
HH	CALI EFFICIENT-TEC LED LINC	TL1000RLED-3.0K-CL-SC-PF-EC RL-2310-210-012 RLI-18-277-4200-13'	LED	277		13' LED COVE ACCENT LIGHTING. PROVIDE ALL TRANSFORMERS AND ACCESSORIES FOR A COMPLETE SYSTEM. TRANSFORMER TO BE 277V COMPATIBLE.
J	INSIGHT AMETRIX SPI	TM597-RCB1-277-W VN-LI-C-2CF050-277-W- EIW10993-2F50-PT02-277	2-F50LTT / SPX50	277	96	26"L SURFACE MOUNT FLUORESCENT WALL SCONCE. (1) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLAST.
JJ	BIRCHWOOD DAYOLITE AXIS	COL3251DR1INT84-MW-FC-CL-277-EB-SM PTP-EP-PBL-1U1D-32T8-WM-4'-VERIFY-277 BBW-S-NO-4-EX4-T8-1-1-W-UNV-ERS	2-F32T8 / SPX50	277	56	4' WALL MOUNT FLUORESCENT FIXTURE, (1) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLAST.
K	SPI	LIGHTRUSS LCA-4'- SUSPENSION SYSTEM (GENERAL CONTRACTOR PURCHASED, ELECTRICAL CONTRACTOR INSTALLED)	6-F24T5 / SPX41	277	168	4' SUSPENDED LINEAR FLUORSCENT. (2)-3 LAMP <10% LOW HARMONIC MARK 7 ELECTRONIC DIMMING BALLASTS. FIXTURE TO BE MOUNT 20'-0" AFF ON CONTINOUS SPI LIGHTRUSS TRACK.
KK	CALI EFFICIENT-TEC LED LINC	TL1000RLED-3.0K-CL-SC-PF-EC RL-2310-210-012 RLI-18-277-4200-7'	LED	277		7' LED COVE ACCENT LIGHTING. PROVIDE ALL TRANSFORMERS AND ACCESSORIES FOR A COMPLETE SYSTEM. TRANSFORMER TO BE 277V COMPATIBLE.
L	KENALL COOPER HE WILLIAMS	HASEF24T8-632-RS-1-277-2F-2H-6 CFR24-636-277-89BJEB82 50G-S24-632-SA12187-EB3/3-277	6-F32T8 / SPX50	277	168	2'x4' RECESSED FLUORESCENT WITH PRISMATIC LENS, TWO 3-LAMP 10% LOW HARMONIC BALLAST
LL	ALERA CORELITE FINELITE	PLK-8-3T8-20/80-CM192-OA-EU-MW-IBOB TB-WM-2T8-1C-UNV-AC360-ST-8' S16-DCO-8'-2T8-SC-91W-OPEN-277-AC-FE-C4-MARK7 DIM BAL.	4-F32T8 / SPX41	277	112	8' PENDANT MOUNT DIRECT/INDIRECT LINEAR FLUORESCENT. (2) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLASTS. MOUNT BOTTOM OF FIXTURE 9'-0" AFF
M	BIRCHWOOD A-LIGHT AXIS	JAK-325-2-TR-T8-8-CR-IC90-FW-277-EB G5-4X4-T8HS-2-A-XP-VERIFY BBR-F-FL-4'-EX4-T8-2-W-UNV-ERS-1/CNRB-WLC-W/BBRV-F-FL-4'-T8-2-W-UNV-ERS-1-DF	4-F32T8 / SPX50	277	112	8'L RECESSED FLUORESCENT. (2) 2-LAMP ZERO DEGREE ELECTRONIC BALLAST. 4' IN CEILING AND 4' ROUTED VERTICALLY DOWN WALL. PROVDE WITH INSIDE CORNER 90.
MM	ACOLYTE	HD24-RGB-W-30 (GENERAL CONTRACTOR PROVIDED, ELECTRICAL CONTRACTOR INSTALLED)	LED	277	25	COLOR CHANGING LED FIXTURE. FIXTURE TO BE PROVIDED WITH REQUIRED DMX PATCH CORDS TO PROPER FIXTURE OPERATION (FIXTURE IS INCLUDED IN ALTERNATE #4. ONLY TO BE PRICED IF ALTERNATE IS ACCEPTED)
N	FOCAL POINT DAY-O-LITE PRUDENTIAL	FSD55-D-8T8-S-277-U-CR-WH NAS-RND-4-FL-6T8-F-W-UNV P8950-6T8-FWA-TMW-SC-UNV-X3B	8-F32T8 / SPX50	277	224	5' DIAMETER RECESSED FLUORECENT. (2) 4-LAMP ELECTRONIC BALLASTS.
O	BIRCHWOOD DAYOLITE AXIS	COL3251DR1INT84-MW-FC-CL-277-EB-SM PTP-EP-PBL-1U1D-32T8-WM-4'-VERIFY-277 BBW-S-NO-4-EX4-T8-1-1-W-UNV-ERS	2-F32T8 / SPX41	277	32	4' WALL MOUNT DIRECT/INDIRECT LINEAR FLUORESCENT. FIXTURE TO BE MOUNTED 8'-0" AFF.
P	ALERA CORELITE FINELITE	PLK-16-3T8-20/80-CM244-OA-EU-MW-IBOB TB-WM-2T8-1C-UNV-AC360-ST-16' S16-DCO-16'-2T8-SC-91W-OPEN-277-AC-FE-C4-MARK7 DIM BAL.	8-F32T8 / SPX41	277	224	16' PENDANT MOUNT DIRECT/INDIRECT LINEAR FLUORESCENT. (2) 4-LAMP <10% LOW HARMONIC MARK 7 ELECTRONIC DIMMING BALLASTS. MOUNT BOTTOM OF FIXTURE 13'-0" AFF.
Q	ALERA CORELITE FINELITE	PLK-12-3T8-20/80-CM244-OA-EU-MW-IBOB TB-WM-2T8-1C-UNV-AC360-ST-12' S16-DCO-12'-2T8-SC-91W-OPEN-277-AC-FE-C4-MARK7 DIM BAL.	6-F32T8 / SPX41	277	168	12' PENDANT MOUNT DIRECT/INDIRECT LINEAR FLUORESCENT. (3) 2-LAMP <10% LOW HARMONIC MARK 7 ELECTRONIC DMMING BALLASTS. MOUNT BOTTOM OF FIXTURE 13'-0" AFF.
R	ALERA CORELITE FINELITE	PLK-8-3T8-20/80-CM192-OA-EU-MW-IBOB TB-WM-2T8-1C-UNV-AC360-ST-8' S16-DCO-8'-2T8-SC-91W-OPEN-277-AC-FE-C4-MARK7 DIM BAL.	4-F32T8 / SPX50	277	112	8' PENDANT MOUNT DIRECT/INDIRECT LINEAR FLUORESCENT. (2) 2-LAMP <10% LOW HARMONIC ELECTRONIC BALLASTS. MOUNT BOTTOM OF FIXTURE 20'-0" AFF
T	PRESCOLITE VANTAGE PHILLIPS	LF4LED-4LFLED5-40K-WT-B6 AV4LED-1100-L6060 OM4LED20840KNF-277-R4LED-CSS	LED	277	16	4" RECESSED LED DOWNLIGHT
U	LIGHTOLOGY GLOBAL LIGHTING VIBIA	0703SU-OCTO-21F1-BKSN 5000FVERIFY 0105-03	1- F24GU / SPX 50 1-F21 CFL 2- F24GU / SPX 50	277	20	DECORATIVE FLUORESCENT PENDANT, MOUNT BOTTOM OF FIXTURE 7'-6" AFF.
V	CAMMAN IMPACT LIGHTING DELRAY LIGHTING	P50108-57 P9564-332-(VERIFY) 6330-2-BLC-	3-F32T8 / SPX50	277	84	DECORATIVE CYLINDER PENDANT. FIXTURES MOUNTED AT HEIGHTS SHOWN IN ARCHITECURAL ELEVATIONS. PROVIDE 300" OF CABLE.
W	BIRCHWOOD DAYOLITE AXIS	COL3251DR1INT84-MW-FC-CL-277-EB-SM PTP-EP-PBL-1U1D-32T8-WM-4'-VERIFY-277 BBW-S-NO-4-EX4-T8-1-1-W-UNV-ERS	(2) T8		32	LINEAR WALL MOUNTED
X1	DUAL LITE SURELITES PHILIPS	PGN-W AEL2WH PLEMW	LED	277	12	7"L X 11" W LED SCONCE. EMERGENCY OPERATION ONLY. MOUNT FIXTURE AT 8'-0" AFF UNLESS NOTED OTHERWISE.
X2	DUAL LITE SURELITES PHILIPS	EZ-2I AEL2WH VU6L	LED	277	14	EMERGENCY LIGHTING UNIT WITH (2) ADJUSTABLE LAMP HEADS. SPECTRON SELF-TEST. MOUNT FIXTURE AT 8'-0" AFF UNLESS NOTED OTHERWISE.
X3	DUAL LITE SURELITES MC PHILBEN	LESCDRCWA ES7-2-S-WH-RW-ARL-C 44RLU-2-W-R	LED	277	3	DOUBLE FACE CEILING MOUNT EXIT SIGN. CHEVRONS AS INDICATED ON PLANS.
X4	DUAL LITE SURELITES MC PHILBEN	LESWSRXWA ES7-1-S-WH-R-W 44RLU-1-W-R	LED	277	3	SINGLE FACE WALL MOUNT EXIT SIGN. CHEVRONS AS INDICATED ON PLANS.
X5	DUAL LITE SURELITES MC PHILBEN	LESESRLWA ES7-1-S-WH-R-AL-E 44RLU-1-W-R	LED	277	3	SINGLE FACE END MOUNT EXIT SIGN. CHEVRONS AS INDICATED ON PLANS.
X6	DUAL LITE SURELITES MC PHILBEN	LESCSRXWA ES7-1-S-WH-R-C 44RLU-1-W-R	LED	277	3	SINGLE FACE CEILING MOUNT EXIT SIGN. CHEVRONS AS INDICATED ON PLANS.
X7	DUAL LITE SURELITES MC PHILBEN	LESCSRDWA ES7-1-S-WH-R-DA-C 44RLU-1-W-R	LED	277	5	SINGLE FACE CEILING MOUNT EXIT SIGN. CHEVRONS AS INDICATED ON PLANS.
X8	DUAL LITE SURELITES MC PHILBEN	LESCSRRWA ES7-1-S-WH-R-AR-C 44RLU-1-W-R	LED	277	5	SINGLE FACE CEILING MOUNT EXIT SIGN. CHEVRONS AS INDICATED ON PLANS.
Y	CALI LUMINII ACCLAIM	ALS450T-F-VERIFY-LED-5.0K-45D-HO-BF-WET-18' K-10-W-40K-SO-S-F-A-VERIFY-F1-PSD-96-24 ASK-141-AADN	LED	277	324	18'L SURFACE MOUNT LED WALL NICHE FIXTURE.
Z	BEGA A-LIGHT AXIS	4424P.537 X4-2-S-N-U-G-A-F-(VERIFY) WBS-F-2-T8-1-AP-277-E-1	1-F27CF / SPX50	277	27	2"L BUILDING MOUNT EXTERIOR WALL SCONCE. MOUNT BOTTOM OF FIXTURE AT 4'-6" AFF.

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HPER Center Renovation & Expansion

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Conway, Arkansas

Stocks Mann Architects, PLC

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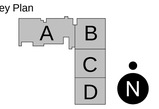
Key Plan



seal/signature

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SCHEDULES, LEGENDS AND GENERAL NOTES - ELECTRICAL

sheet number

E001

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLUORESCENT LIGHTING OUTLET - CEILING MOUNTED		SPECIAL PURPOSE OUTLET - NEMA CONFIGURATION (VOLTAGE, AMPACITY) INDICATED	SD	SMOKE DETECTOR
	EMERGENCY LIGHTING OUTLET - CEILING MOUNTED		DUPLEX RECEPTACLE	DD	DUCT DETECTOR
	1'X4' FLUORESCENT LIGHTING OUTLET	E	DUPLEX RECEPTACLE - EMERGENCY POWER	DDT	DUCT SMOKE DETECTOR
	1'X4' EMERGENCY FLUORESCENT LIGHTING OUTLET	S	COMBINATION SWITCH DUPLEX RECEPTACLE	TS	TAMPER SWITCH
	FLUORESCENT LIGHTING OUTLET - WALL MOUNTED	GFI/WP	DUPLEX RECEPTACLE - GROUND FAULT INTERRUPTING AND WEATHER-PROOF TYPES AS INDICATED ON PLANS	FS	FLOW SWITCH
	EMERGENCY FLUORESCENT LIGHTING OUTLET - WALL MOUNTED	HSKP	HOUSE KEEPING DUPLEX RECEPTACLE	DH	DOOR HOLDER
	FLUORESCENT STRIP FIXTURE		DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP - VERIFY MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS	RIR'A	PASSIVE INFRARED DOOR RELEASE
	FLUORESCENT STRIP FIXTURE - EMERGENCY		QUADRAPLEX RECEPTACLE	PIR	PASSIVE INFRARED DETECTOR
	INCANDESCENT, COMPACT FLUORESCENT, OR HID LIGHTING OUTLET - CEILING MOUNTED		DUPLEX RECEPTACLE - IN FLUSH MOUNTED CAST FLOOR BOX	WAP	WIRELESS ACCESS POINT
	EMERGENCY INCANDESCENT, COMPACT FLUORESCENT, OR HID LIGHTING OUTLET - CEILING MOUNTED		DUPLEX RECEPTACLE - FLUSH MOUNTED IN CEILING	CR	CARD READER - ACCESS CONTROL
	INCANDESCENT, COMPACT FLUORESCENT, OR HID LIGHTING OUTLET - WALL MOUNTED	J	CEILING MOUNTED JUNCTION BOX	EM	ELECTROMAGNETIC LOCK - ACCESS CONTROL
	UNDER CABINET FLUORESCENT LIGHTING OUTLET		NONFUSED DISCONNECT SWITCH - SIZE NOTED ON PLAN	EX	EXIT REQUEST BUTTON - ACCESS CONTROL
	EXIT SIGN		COMBINATION MOTOR STARTER AND DISCONNECT SWITCH		VIDEO CAMERA - CCTV
	EXIT SIGN - WALL MOUNTED		FUSED DISCONNECT		VIDEO CAMERA - CCTV - PENDANT MOUNT
	BATTERY-POWERED EMERGENCY LIGHT		ELECTRIC MOTOR		AUDIO VISUAL SYSTEM SPEAKER
LC	LIGHTING CONTACTOR		SURFACE MOUNTED PANEL BOARD		BRANCH CIRCUIT IN CONDUIT - HOT LEG, SWITCH LEG, NEUTRAL, AND EQUIPMENT GROUND
S	SINGLE-POLE SWITCH		FLUSH MOUNTED PANEL BOARD		BRANCH CIRCUIT HOMERUN - PANEL & CIRCUIT NUMBER INDICATED
S_3	THREE-WAY SWITCH		TELEPHONE TERMINAL BOARD		CONDUIT CONCEALED IN OR BELOW FLOOR SLAB
S_4	FOUR-WAY SWITCH		COMPUTER OUTLET		EMERGENCY CIRCUIT IN CONDUIT
S_E	SINGLE-POLE SWITCH - EMERGENCY CIRCUIT SWITCHED		TELEPHONE OUTLET		FLEXIBLE CONDUIT
S_D	DIMMER CONTROL SWITCH	W	TELEPHONE OUTLET - WALL MOUNTED	* ER	DASHED INDICATES EXISTING EXISTING RELOCATED
S_M	MANUAL MOTOR STARTER WITH OVERLOADS, TOGGLE OPERATED		COMBINATION TELEPHONE/COMPUTER OUTLET	AC NS	ABOVE COUNTER NON-SWITCHED
S_P	SINGLE-POLE SWITCH WITH PILOT LIGHT		COMBINATION TELEPHONE/COMPUTER OUTLET - FLUSH MOUNTED TYPE IN FLOOR SLAB	AFF AFG	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE
S_T	SINGLE-POLE SWITCH WITH TIMER	TV	COMBINATION TELEVISION OUTLET/DUPLEX RECEPTACLE		
	MULTI-LEVEL SWITCHES: Sa - SWITCHES 2 OUTBOARD LAMPS & Sb - SWITCHES INBOARD LAMPS	F	FIRE ALARM VISUAL DEVICE		
	MULTI-LEVEL SWITCHES: Sa - SWITCHES 2 OUTBOARD LAMPS & Sb - SWITCHES INBOARD LAMPS	F	FIRE ALARM AUDIO/VISUAL DEVICE		
	THREE-WAY MULTI-LEVEL SWITCHING	F	FIRE ALARM PULL STATION		
	PUSHBUTTON	H	HEAT DETECTOR		

GENERAL ELECTRICAL NOTES

1. EACH CIRCUIT SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR AND MULTI-WIRE CIRCUITS OF DIFFERENT PHASES MAY SHARE EQUIPMENT GROUND CONDUCTOR. EQUIPMENT GROUND CONDUCTOR SHALL NOT BE LESS THAN #12 AWG OR AS INDICATED ON THE DRAWINGS.
2. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER AND ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER USING BOLTED LUGS AT TERMINALS.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE SPECIFIED.
4. ALL WIRING DEVICES SHALL BE INSTALLED PLUMB, SQUARE AND TRUE AND ALL DEVICES INSTALLED AT A SINGLE LOCATION SHALL BE ALIGNED.
5. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE SPECIFIED.
6. ALL WORK SHALL COMPLY WITH THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE.
7. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL ELEVATIONS AND MILLWORK DETAILS FOR EXACT LOCATIONS OF ALL WIRING DEVICES.
8. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL CEILING PLAN FOR EXACT LOCATION OF ALL LAY-IN LIGHT FIXTURES.
9. ALL EXISTING BRANCH CIRCUITS NOT USED SHALL BE REMOVED BACK TO PANEL. THE CIRCUIT SHALL BE LABELED AS SPARE AND EXISTING CONDUIT SHALL REMAIN FROM PANEL TO ABOVE ACCESSIBLE CEILING SPACE.
10. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION IN AREAS OF RENOVATION. ALL WIRING DEVICES, LIGHT FIXTURES, WIRE AND CONDUIT THAT IS TO BE REMOVED SHALL BE STORED AS DIRECTED BY THE OWNER OR RELOCATED AS SHOWN ON THE NEW FLOOR PLANS. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED. ALL OUTAGES WHICH MAY RESULT SHALL BE COORDINATED WITH THE OWNER PRIOR TO THE WORK.
11. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING SCHEDULES IN ALL ELECTRICAL PANELS THAT ARE AFFECTED BY THIS WORK. UPDATED SCHEDULES ARE TO BE TYPEWRITTEN.
12. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING ALL SWITCHES, RECEPTACLES AND FIXED EQUIPMENT WITH THE BRANCH CIRCUIT PANEL NAME AND NUMBER SERVING EACH DEVICE.
13. ALL CONDUIT SHALL BE INSTALLED AS HIGH AS POSSIBLE (MOUNT TO BOTTOM OF STRUCTURE) TO AVOID CONFLICTS WITH DUCTWORK AND PIPING. THE ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION WITH THE MECHANICAL CONTRACTOR.
14. ON THREE PHASE, FOUR WIRE SYSTEMS, DO NOT USE A COMMON NEUTRAL ON MULTI WIRE BRANCH CIRCUITS. EACH CIRCUIT TO HAVE DEDICATED NEUTRAL. MORE THAN THREE CIRCUITS IN ANY ONE CONDUIT IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

GENERAL NOTES - FIRE ALARM SYSTEM:

1. ALL INSTALLATION OF CONDUIT, CABLE AND MATERIAL SHOWN ON SYSTEM LAYOUT PLANS SHALL BE PROVIDED BY THE FIRE ALARM AND ELECTRICAL CONTRACTOR.

2. THE ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT CONDUIT QUANTITIES AND SIZES WITH THE FIRE ALARM CONTRACTOR.

3. ALL ELECTRICAL WIRING SHALL MEET REQUIREMENTS SET FORTH BY ARTICLE 760 OF NFPA 70 (NATIONAL ELECTRIC CODE), NFPA 72, STATE AND LOCAL CODES AND ANY OTHER APPLICABLE CODES AND STANDARDS.

4. THE FIRE ALARM CONTROL PANEL SHALL BE WIRED THROUGH A SEPARATE CONDUIT TO A 20 AMP, 120VAC DEDICATED CIRCUIT BREAKER. THREE CONDUCTORS MUST BE RUN: HOT, GROUND AND NEUTRAL.

5. 120VAC WIRING AND LOW VOLTAGE CABLING SHALL NOT BE INSTALLED IN THE SAME CONDUIT.

6. ALL WIRING TERMINATING AT JUNCTION BOXES SHALL BE LABELED, NUMBERED OR COLOR-CODED AT BOTH ENDS.

7. ALL SYSTEM WIRING SHALL BE GROUND FAULT FREE.

8. ALL WIRING SHALL BE VERIFIED WITH THE FIRE ALARM EQUIPMENT SUPPLIER, AS TO QUANTITY, SIZE, ROUTING, CONDUIT SIZE, JUNCTION BOX REQUIREMENTS, ETC.

9. ALL WIRING IN EXPOSED AREAS SHALL BE IN CONDUIT. MINIMUM CONDUIT SIZE SHALL BE 3/4-INCH EMT. USE FLEX CONDUIT FOR WIRING DROPS TO DETECTORS, WATER FLOW SWITCHES AND TAMPER SWITCHES. FIRE WIRE PLENUM RATED CABLE IS ACCEPTABLE IN NON- EXPOSED AREAS. INSTALL CONDUIT NEAT AND SQUARE WITH BUILDING LINES. PROVIDE PROPER SUPPORT. ALL LENGTHS SHALL NOT EXCEED NEC GUIDELINES.

10. ALL CUTTING OF CONDUIT SHALL BE SQUARELY DONE WITH A HACKSAW AND NOT WITH A PIPE CUTTER. THE ENDS SHALL BE REAMED AND ALL BURRS REMOVED BEFORE INSTALLATION.

11. FIRE ALARM SYSTEM SHALL BE DESIGNED AND INSTALLED SUCH THAT ATTACK BY FIRE WITHIN AN EVACUATION SIGNALING ZONE SHALL NOT IMPAIR CONTROL AND OPERATION OF THE NOTIFICATION APPLIANCES OUTSIDE THAT EVACUATION SIGNALING ZONE. PERFORMANCE FEATURES AND TECHNICAL JUSTIFICATION TO ENSURE SURVIVABILITY SHALL BE PROVIDED IN THE DOCUMENTATION SUBMITTED TO THE AHJ.

12. ALL CIRCUITS NECESSARY FOR THE OPERATION OF THE NOTIFICATION APPLIANCES SHALL BE PROTECTED UNTIL THEY ENTER THE EVACUATION SIGNALING ZONE IN WHICH THEY SERVE. ANY OF THE FOLLOWING METHODS SHALL BE CONSIDERED ACCEPTABLE AS MEETING THE SURVIVABILITY REQUIREMENTS OF THIS SUBSECTION:
    (A) A 2-HOUR FIRE-RATED CIRCUIT INTEGRITY (CI) CABLE.
    (B) A 2-HOUR FIRE-RATED CABLE SYSTEM (ELECTRICAL CIRCUIT PROTECTIVE SYSTEM.
    (C) A 2-HOUR FIRE-RATED ENCLOSURE.
    (D) 2-HOUR PERFORMANCE ALTERNATIVES AS APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
    (E) PATHWAYS IN BUILDINGS FULLY PROTECTED BY AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH NFPA 13, WITH ANY INTERCONNECTING CONDUCTOR, CABLES, OR OTHER PHYSICAL PATHWAYS INSTALLED IN METAL RACEWAYS IN ACCORDANCE WITH ARTICLE 760 OF NFPA 70.

NOTE TO DESIGNER: METHOD (E) APPLIES IN MOST CASES. REFER TO 2010 NFPA 72, SECTION 24.3.5 "PATHWAY SURVIVABILITY" AND RETAIN OR DELETE METHOD (E) BASED ON THE PROJECT REQUIREMENTS.

13. ALL PENETRATIONS MADE BY THE INSTALLING CONTRACTOR SHALL BE SEALED AND FIRE STOPPED TO INSURE ROOM INTEGRITY, THE METHOD USED SHALL BE U.L. LISTED AND SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.

14. ALL ALARM INITIATING CIRCUITS SHALL BE CLASS B CONFIGURATION AND A MINIMUM OF 18-AWG WIRE SHALL BE USED, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.

15. ALL AUDIBLE / VISIBLE CIRCUITS SHALL BE CLASS B CONFIGURATION AND A MINIMUM OF 14-AWG WIRE SHALL BE USED, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.

16. ALL AUDIBLE / VISIBLE CIRCUITS SHALL BE SUPERVISED. T-TAPPING OR BRANCHING IS NOT PERMITTED.

17. ALL FIRE ALARM DEVICES (AUDIBLE / VISIBLE APPLIANCES, MANUAL PULL STATIONS, ETC.) SHALL BE RIGIDLY SUPPORTED AND SECURELY FASTENED TO WALL OR CEILINGS.

18. SMOKE DUCT DETECTORS ARE REQUIRED FOR THE HVAC SYSTEM ON THE SUPPLY SIDE WHEN THE CAPACITY RATING OF THE HVAC UNIT EXCEEDS 2,000-CFM AND REQUIRED ON THE RETURN SIDE WHEN THE CAPACITY OF THE UNIT EXCEEDS 15,000-CFM AND SERVES TWO OR MORE FLOORS. REFER TO MECHANICAL SHEETS FOR HVAC UNIT LOCATIONS.

19. FOR ANY SMOKE DUCT DETECTOR INSTALLED IN A CONCEALED LOCATION MORE THAN 10-FEET ABOVE FINISHED FLOOR OR IN ARRANGEMENT WHERE THE DETECTOR'S ALARM OR SUPERVISORY INDICATOR IS NOT VISIBLE, PROVIDE REMOTE ALARM OR SUPERVISORY INDICATOR IN LOCATION ACCEPTABLE TO THE AHJ WITH FUNCTION AND ASSOCIATED AIR HANDLING UNIT CLEARLY LABELED. REFER TO NFPA 72, SECTION 5.14.5.8 AND 5.14.5.9 (2002 EDITION) FOR MORE INFORMATION.

NOTE TO DESIGNER: NFPA 72, SECTION 5.14.5.8 AND 5.14.5.9 (2002 EDITION)
NFPA 72, SECTION 5.16.5.8 (2007 EDITION)
NFPA 72, SECTION 17.4.8 AND 17.4.9 (2010 EDITION)

20. PROVIDE AN ADDRESSABLE RELAY FOR HVAC SHUTDOWN. MOUNT RELAY WITHIN 3-FEET OF THE CONTROLLED DEVICE AT THE POINT WHERE IT IS BEING CONTROLLED.

21. ALL SMOKE DAMPERS WITH A DUCT THAT TRAVERSES A CORRIDOR SHALL BE OPERATED BY THE ZONE SERVED BY THAT CORRIDOR'S "SPOT TYPE" SMOKE DETECTOR(S).

22. ALL SMOKE DAMPERS WITHIN A DUCT THAT SERVE A CORRIDOR SHALL BE OPERATED BY THE ZONE SERVED BY THAT CORRIDOR'S "SPOT TYPE" SMOKE DETECTOR(S).

23. WHERE A SMOKE DAMPER IS INSTALLED OVER A SMOKE BARRIER DOOR, THE "SPOT TYPE" SMOKE DETECTORS ON EITHER SIDE OF THE DOOR SHALL ACTIVATE THE DAMPER. THESE MAY BE THE SAME SMOKE DETECTORS USED TO OPERATE DOOR HOLD OPEN DEVICES(S) IF PRESENT. IF NO "SPOT TYPE" SMOKE DETECTORS ARE INDICATED FOR THIS DOOR, PROVIDE AN ADDITIONAL "SPOT TYPE" DETECTOR ON EACH SIDE OF THE DOOR AND UTILIZE THESE TO ACTIVATE THE SMOKE DAMPER.

24. WHERE ITEMS 21, 22, 23 ABOVE DO NOT APPLY, A DUCT DETECTOR SHALL BE INSTALLED WITHIN 5-FEET HORIZONTALLY OF THE DAMPER AND THERE MAY NOT BE ANY AIR OUTLETS OR INLETS IN BETWEEN. THE DUCT DETECTOR MAY BE MOUNTED ON EITHER SIDE OF THE SMOKE DAMPER, BUT PREFERENCE SHALL BE GIVEN TO THE UPSTREAM SIDE.

NOTE TO DESIGNER: VERIFY NUMBERS ARE CORRECT IN THE NOTE ABOVE.

25. SMOKE DAMPERS FOR UNDUCTED AIR (AIR PLENUMS THROUGH SMOKE BARRIERS) SHALL BE OPERATED BY A "SPOT TYPE" DETECTOR WITHIN 5-FEET HORIZONTALLY OF THE DAMPER. THE "SPOT TYPE" SMOKE DETECTOR MAY BE MOUNTED ON EITHER SIDE OF THE SMOKE DAMPER, BUT PREFERENCE SHALL BE GIVEN TO THE UPSTREAM SIDE. DETECTORS SHALL BE LISTED FOR THE APPLICATION.

26. REFER TO MECHANICAL SHEETS FOR SMOKE DAMPER LOCATIONS.

27. FOR EACH ZONE INDICATED IN THE LIFE SAFETY PLANS, PROVIDE FOR THE SMOKE DAMPERS TO CLOSE UPON ACTIVATION BY ANY INITIATION DEVICE WITHIN THAT ZONE. THE INITIATION DEVICES SHALL INCLUDE THE RETURN AND SUPPLY DUCT SMOKE DETECTORS FOR THOSE HVAC UNITS SERVING THE ZONE. COORDINATE WITH MECHANICAL PLANS FOR FURTHER REQUIREMENTS.

28. REFER TO MECHANICAL CONTROL DRAWINGS FOR ADDITIONAL REQUIREMENTS ON FIRE ALARM SYSTEM INTERLOCKING SEQUENCE OPERATION, ETC.

29. PROVIDE ADDRESSABLE CONTROL RELAY ON ALL ELECTRICALLY CONTROLLED EGRESS PATHWAYS TO RELEASE DOORS UPON FIRE ALARM.

30. EACH DOOR HOLDER (IF APPLICABLE) SHALL BE OPERATED BY "SPOT TYPE" SMOKE DETECTORS. THERE SHALL BE ONE (1) SMOKE DETECTOR ON EACH SIDE OF THE DOOR AND EITHER SHALL ACTIVATE THE DOOR HOLDERS.

31. DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEANUP OF ALL TRADES IS COMPLETE AND FINAL. EXCEPTION: THE AHJ MAY REQUIRE DETECTORS TO BE OPERATIONAL DURING CONSTRUCTION. REFER TO NFPA 72, SECTION 5.7.1.11 (2002 EDITION) FOR MORE INFORMATION.

NOTE TO DESIGNER: NFPA 72, SECTION 5.7.1.11 (2002 EDITION)
NFPA 72, SECTION 5.7.1.11 (2007 EDITION)
NFPA 72, SECTION 17.7.1.11 (2010 EDITION)

32. ALL LOCATION OF EQUIPMENT SHALL BE ASSURED NOT TO INTERFERE WITH OTHER EQUIPMENT, MATERIALS OR DEVICES.

33. MANUAL PULL STATIONS SHALL BE MOUNTED AT 48-INCHES ABOVE FINISHED FLOOR MEASURED TO THE OPERABLE PART OF THE STATION.

34. MANUAL PULL STATIONS SHALL BE LOCATED WITHIN 5-FEET OF ALL EXIT DOORWAY OPENINGS ON EACH FLOOR. STATIONS SHALL BE LOCATED ON BOTH SIDES OF EXIT DOORWAY OPENINGS OVER 40-FEET.

35. MANUAL PULL STATIONS SHALL BE LOCATED SO THAT THE TRAVEL DISTANCE TO THE NEAREST STATION DOES NOT EXCEED 200-FEET, MEASURED HORIZONTALLY ON THE SAME FLOOR.

36. WALL MOUNTED AUDIBLE / VISIBLE APPLIANCES AND STAND-ALONE VISIBLE APPLIANCES SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80-INCHES AND NOT GREATER THAN 96" INCHES ABOVE THE FINISHED FLOOR. WHERE LOW CEILING HEIGHTS DO NOT PERMIT MOUNTING OF 80-INCHES, VISIBLE APPLIANCES SHALL BE MOUNTED WITHIN 6-INCHES OF THE CEILING.

37. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 36-INCHES OF DIRECT AIR STREAMS FROM SUPPLY DUCTS AND SHALL BE PLACED IN CENTER OF TILE ON LAY-IN CEILING APPLICATIONS.

38. NO HEAT DETECTOR SHALL BE LOCATED CLOSER THAN 36-INCHES TO ANY PART OF ANY HEAT GENERATING DEVICE IN MECHANICAL ROOMS SUCH AS FLUES, BOILERS, WATER HEATER, ETC.

39. NO HEAT DETECTOR SHALL BE LOCATED CLOSER THAN 12-INCHES TO ANY PART OF ANY LIGHT FIXTURE.

40. THE FIRE ALARM SYSTEM SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT" (ADA).

41. UPON COMPLETION OF INSTALLATION, A COMPLETE SET OF MARKED-UP FIELD DRAWINGS SHALL BE PROVIDED TO THE FIRE ALARM CONTRACTOR TO PREPARE AN "AS-BUILT" SET OF DRAWINGS FOR THE OWNER. ALL CHANGES SHALL BE SHOWN ON THESE DRAWINGS TO ASSURE ACCURACY FOR ANY FUTURE REFERENCE. ANY DEVIATIONS FROM BASIC DESIGN MUST MEET APPROVAL BY THE ENGINEER PRIOR TO CONTINUING WITH INSTALLATION.

42. ALL CEILING MOUNTED DEVICES SHALL BE COORDINATED WITH OTHER CEILING MOUNTED DEVICES. IF DEVICES NEED TO BE RELOCATED BASED ON EXISTING DEVICES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE SPACING REQUIREMENTS ARE MET FOR THE FINAL INSTALLED LOCATION BASED ON CODE, STANDARD AND ADAAG REQUIREMENTS. ADDITIONAL DEVICES MAY NEED TO BE INSTALLED.

43. ALL CEILING MOUNTED DEVICES SHALL BE INSTALLED IN THE CENTERLINE OF CEILING TILES. FOR HARD CEILING INSTALLATION, DEVICES SHALL BE ALIGNED WITH OTHER NEARBY CEILING MOUNTED DEVICES.

44. ALL VISUAL APPLIANCES SHALL BE PROGRAMMED TO 75 CANDELA, UNLESS NOTED OTHERWISE ON THE FIRE ALARM SYSTEM FLOOR PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CANDELA RATINGS BASED ON THE FINAL INSTALLED LOCATION. CANDELA RATINGS SHALL BE PROGRAMMED IN ACCORDANCE WITH ALL APPLICABLE CODE, STANDARD AND ADA REQUIREMENTS.

45. THE EXISTING SYSTEM SHALL REMAIN FULLY OPERATIONAL THROUGHOUT THE ENTIRE PROJECT UNTIL THE NEW SYSTEM HAS BEEN INSTALLED, TESTED AND CERTIFIED BY THE FIRE ALARM CONTRACTOR AND ACCEPTED BY THE OWNER. ONCE ACCEPTED, THE CONTRACTOR SHALL REMOVE THE EXISTING SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS AND CONSTRUCTION DOCUMENTS.

NOTE TO DESIGNER: ONLY USE ABOVE NOTE WHEN APPLICABLE.

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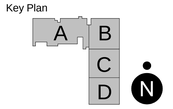
Key Plan



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SCHEDULES, LEGEND AND GENERAL NOTES

sheet number

E002

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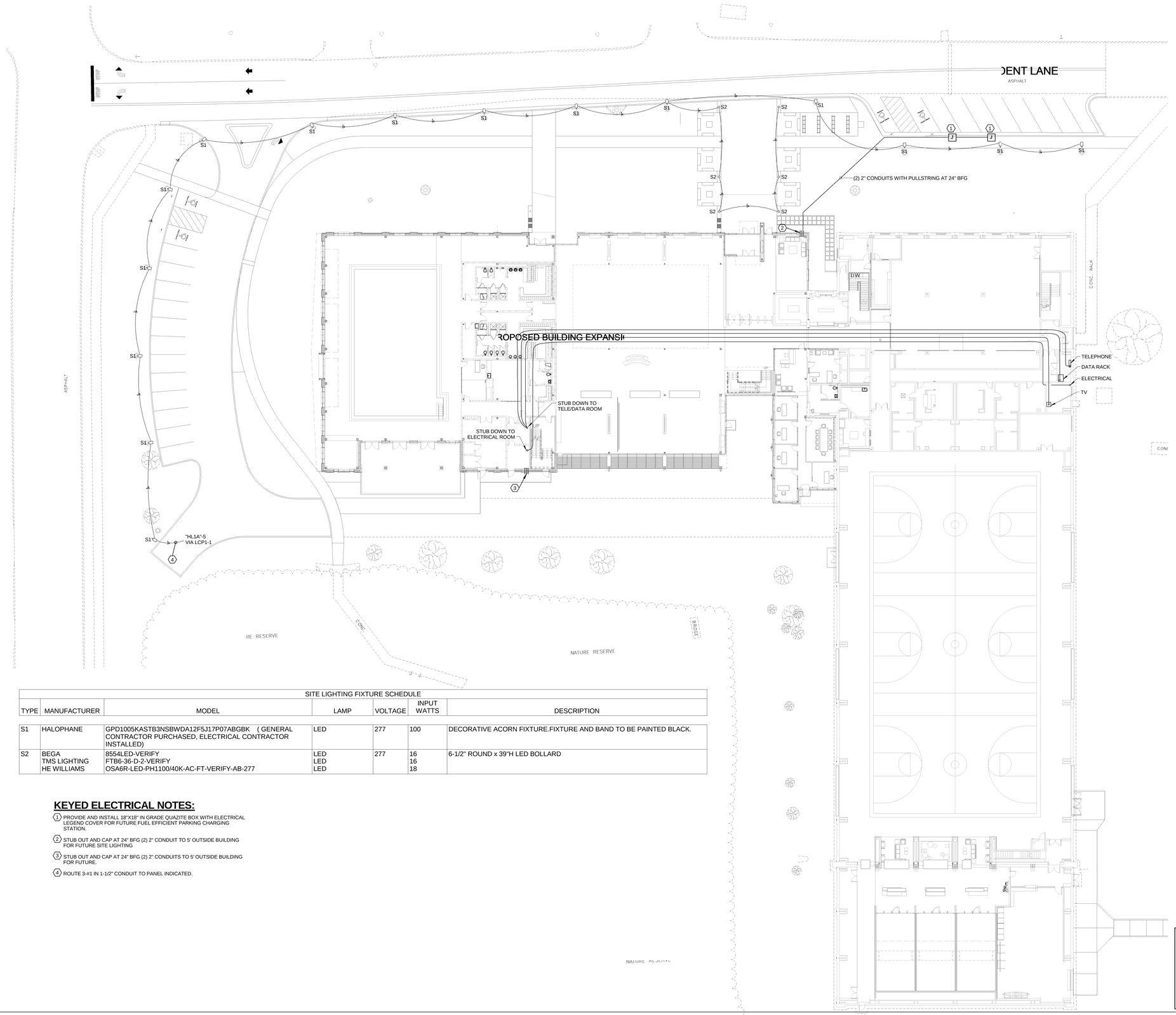

SITE LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	MODEL	LAMP	VOLTAGE	INPUT WATTS	DESCRIPTION
S1	HALOPHANE	GPD1005KASTB3NSBWDA12F5J17P07ABGBK (GENERAL CONTRACTOR PURCHASED, ELECTRICAL CONTRACTOR INSTALLED)	LED	277	100	DECORATIVE ACORN FIXTURE.FIXTURE AND BAND TO BE PAINTED BLACK.
S2	BEGA TMS LIGHTING HE WILLIAMS	8554LED-VERIFY FTB6-36-D-2-VERIFY OSA6R-LED-PH1100/40K-AC-FT-VERIFY-AB-277	LED LED LED	277	16 16 18	6-1/2" ROUND x 39"H LED BOLLARD

KEYED ELECTRICAL NOTES:

1. PROVIDE AND INSTALL 18"X18" IN GRADE QUAZITE BOX WITH ELECTRICAL LEGEND COVER FOR FUTURE FUEL EFFICIENT PARKING CHARGING STATION.
2. STUB OUT AND CAP AT 24" BFG (2) 2" CONDUIT TO 5' OUTSIDE BUILDING FOR FUTURE SITE LIGHTING
3. STUB OUT AND CAP AT 24" BFG (2) 2" CONDUITS TO 5' OUTSIDE BUILDING FOR FUTURE.
4. ROUTE 3-#1 IN 1-1/2" CONDUIT TO PANEL INDICATED.

CAUTION !!!

CONTRACTOR MUST HAVE ONE CALL LOCATE AND MARK ALL EXISTING UTILITIES PRIOR TO TRENCHING OR BORING. CONTRACTOR MUST LOCATE AND MARK ALL EXISTING CONDUITS AND PIPES OWNED BY PROPERTY OWNER PRIOR TO TRENCHING OR BORING. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATING. ANY DAMAGE TO EXISTING UTILITIES, RECORDED OR UNRECORDED, SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

1 SITE PLAN - ELECTRICAL

1" = 20'-0"

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lead architect:
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401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

MEP engineer:
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structural engineer:
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Little Rock, Arkansas 72212
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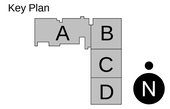
aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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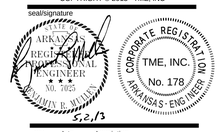


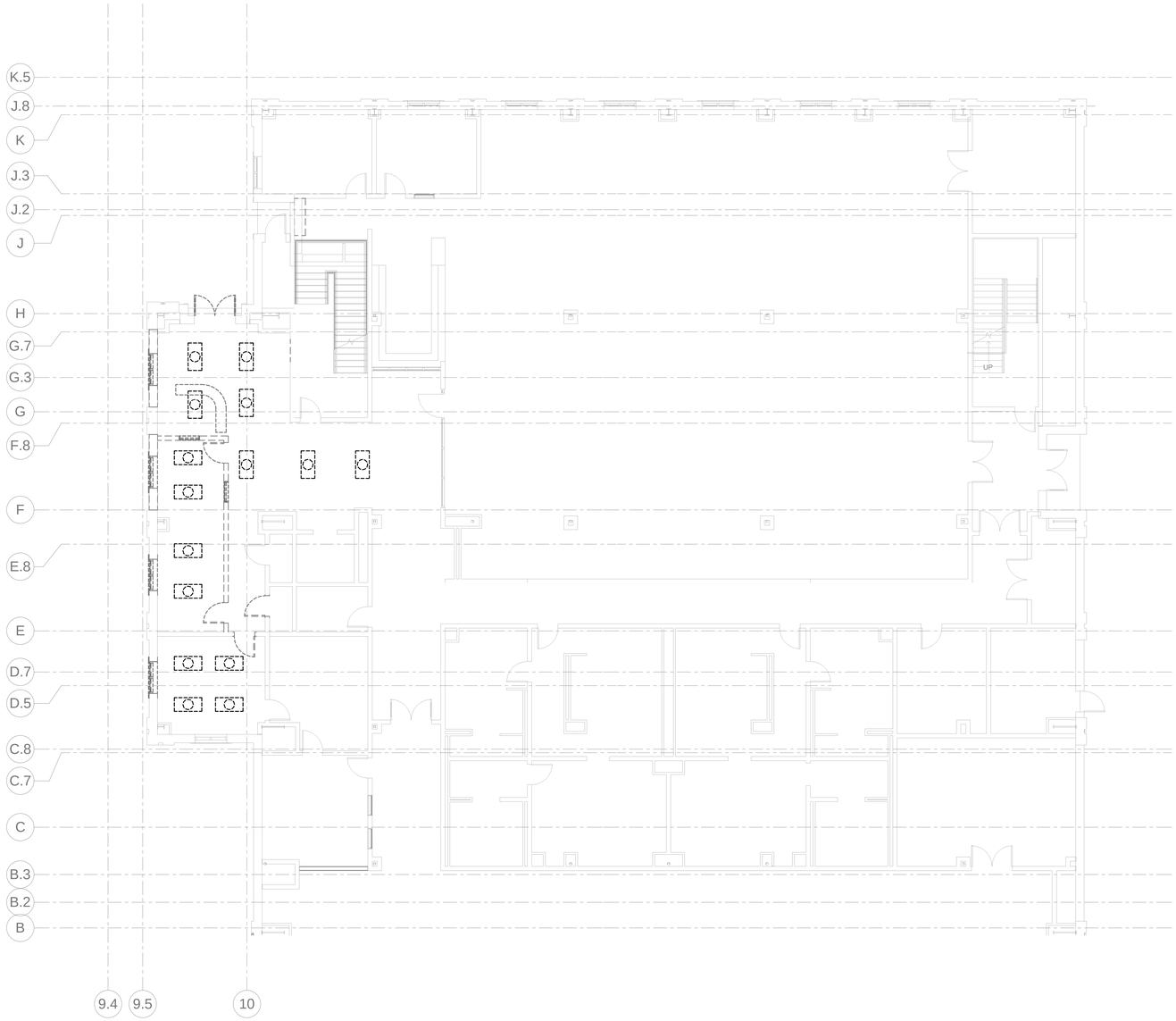
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SITE PLAN - ELECTRICAL

sheet number

E101



GENERAL ELECTRICAL DEMOLITION NOTES:

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N

1 **FIRST FLOOR PLAN - ELECTRICAL LIGHTING DEMOLITION - SECTOR B**

1/8" = 1'-0"

5/2/2013 2:47:28 PM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
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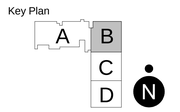

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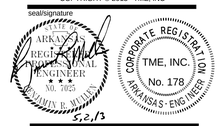


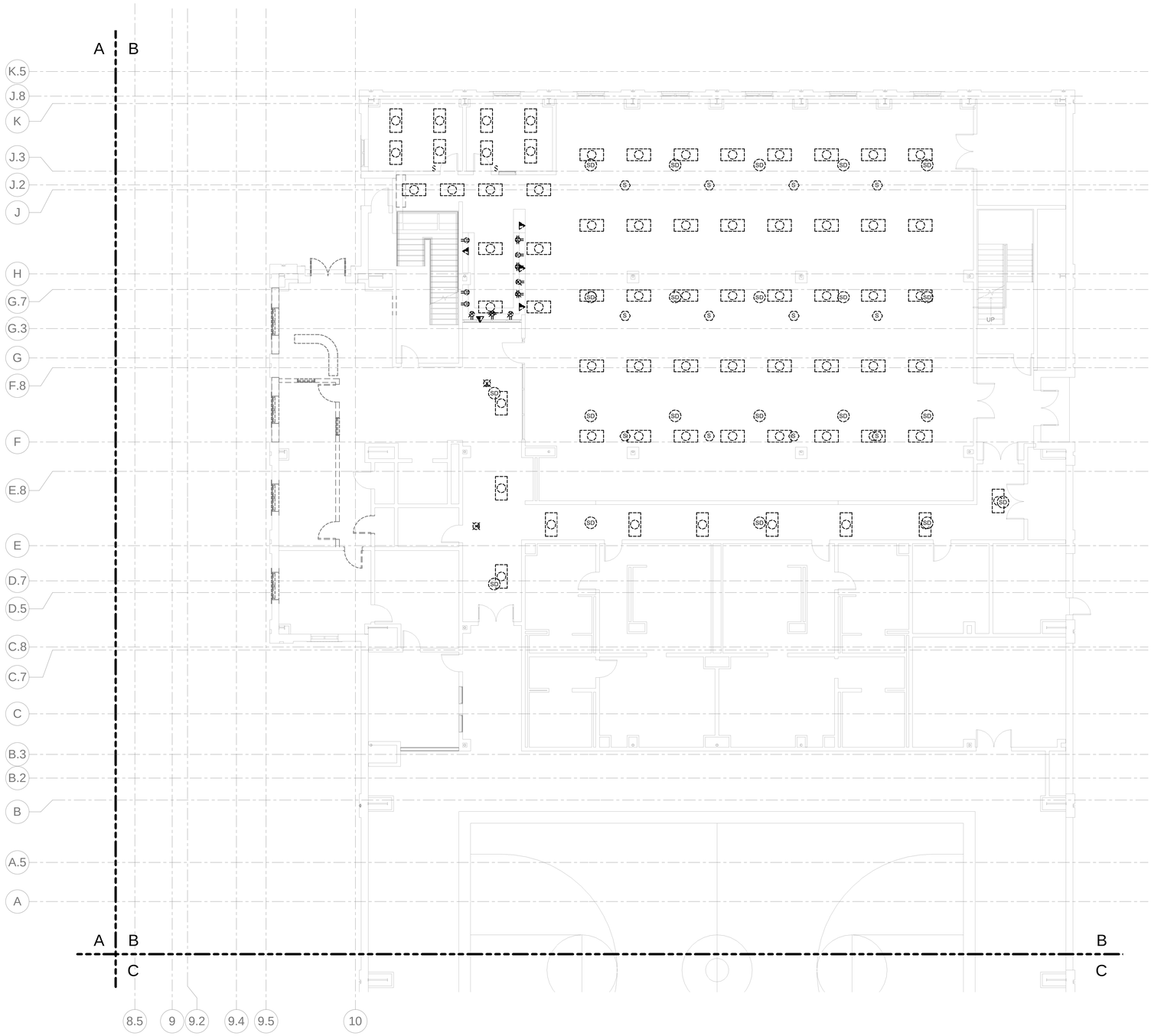
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - LIGHTING
BASE BID DEMOLITION -
SECTOR B

sheet number

E201b



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1 FIRST FLOOR PLAN - ELECTRICAL ALTERNATE 2 DEMOLITION - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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Conway, Arkansas

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360 THREESIXTY ARCHITECTURE

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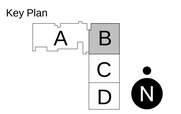
P: (314) 894-1245

Key Plan



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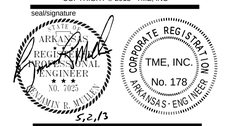


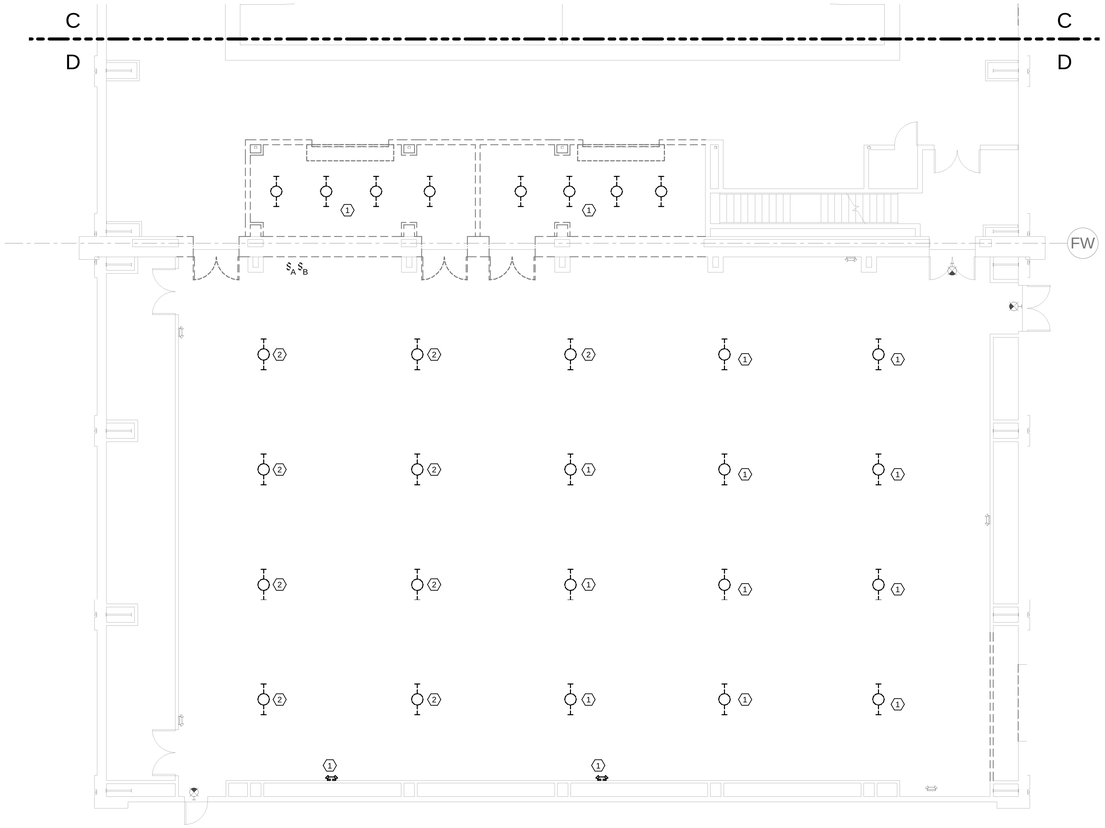
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - ELECTRICAL ALTERNATE 2 DEMOLITION - SECTOR B

sheet number

E201b.1



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KEYED ELECTRICAL NOTES:

1. EXISTING LIGHT FIXTURE TO BE DEMOLISHED.
2. EXISTING LIGHT FIXTURE TO BE REMOVED, CLEANED, RELAMPED AND RELCOATED AS SHOWN ON NEW PLANS.

N

1 FIRST FLOOR PLAN - ELECTRICAL LIGHTING DEMOLITION - SECTOR D

1/8" = 1'-0"

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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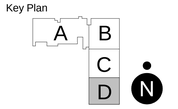
Key Plan



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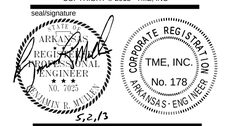


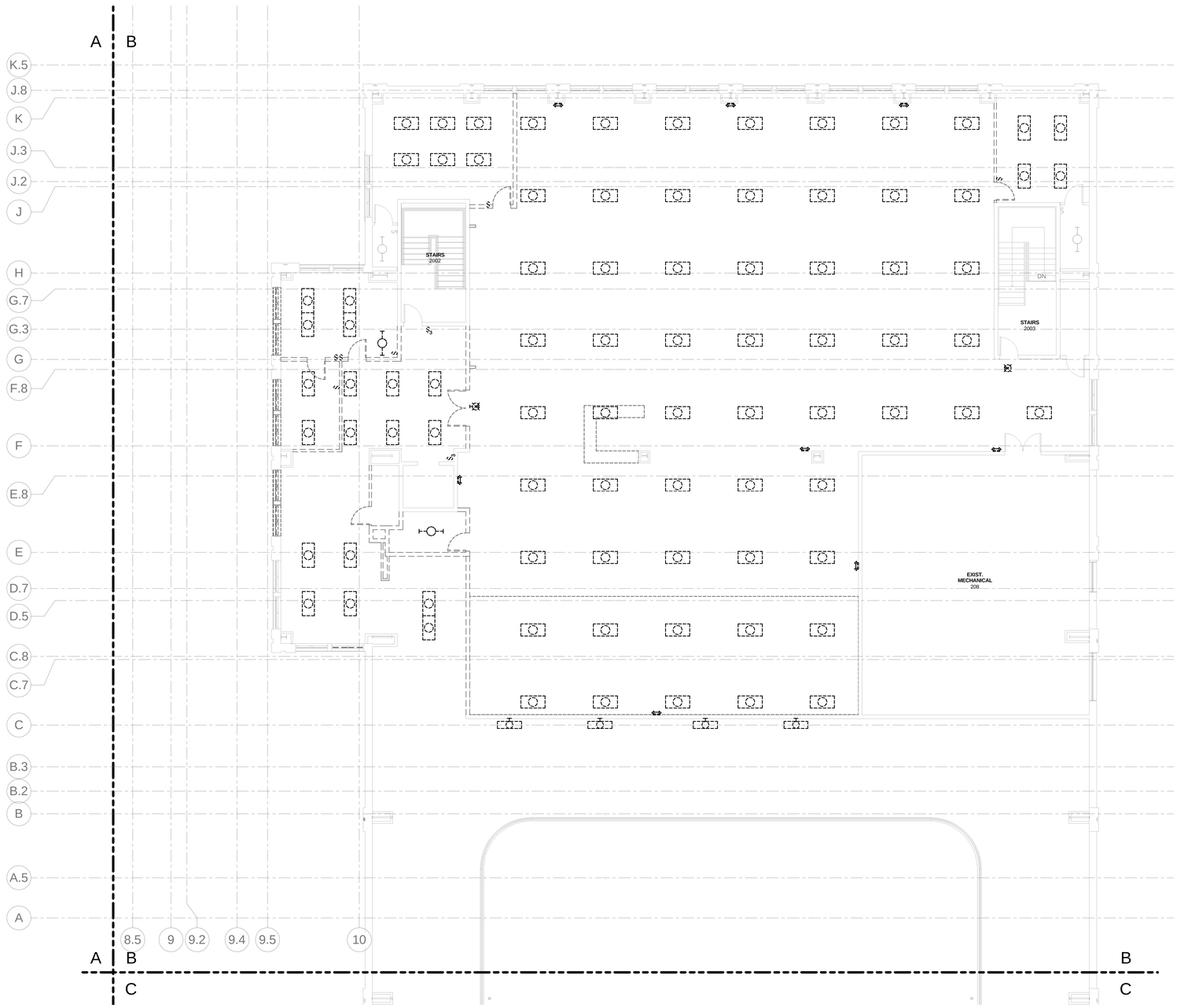
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - LIGHTING DEMOLITION - SECTOR D

sheet number

E201d



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N

1 SECOND FLOOR PLAN - ELECTRICAL LIGHTING DEMOLITION - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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Stocks Mann Architects, PLC

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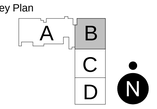
Key Plan



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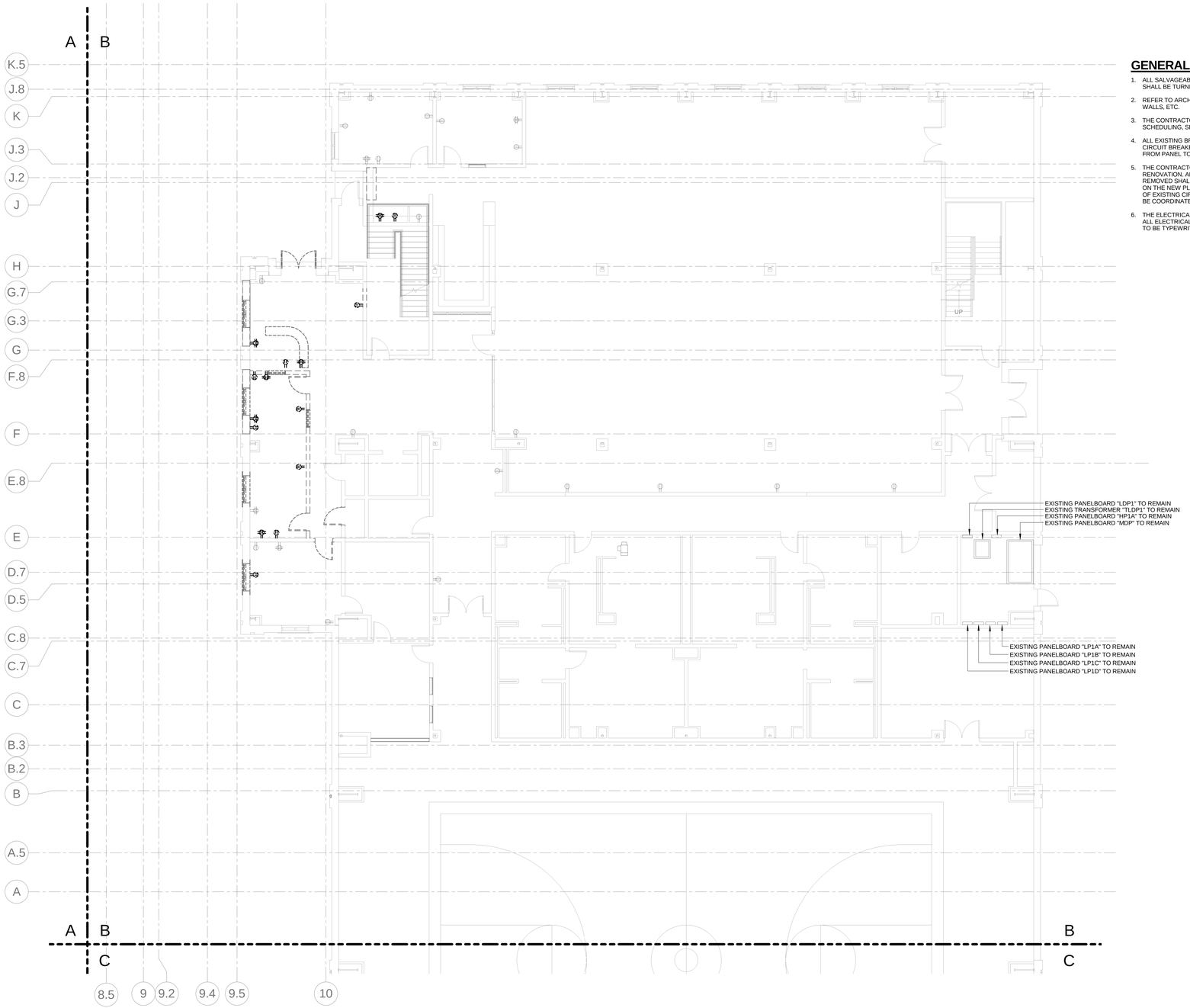
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - LIGHTING DEMOLITION - SECTOR B

sheet number

E202b



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N

1 **FIRST FLOOR PLAN - ELECTRICAL POWER DEMOLITION - SECTOR B**

1/8" = 1'-0"

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

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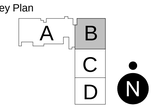
Key Plan



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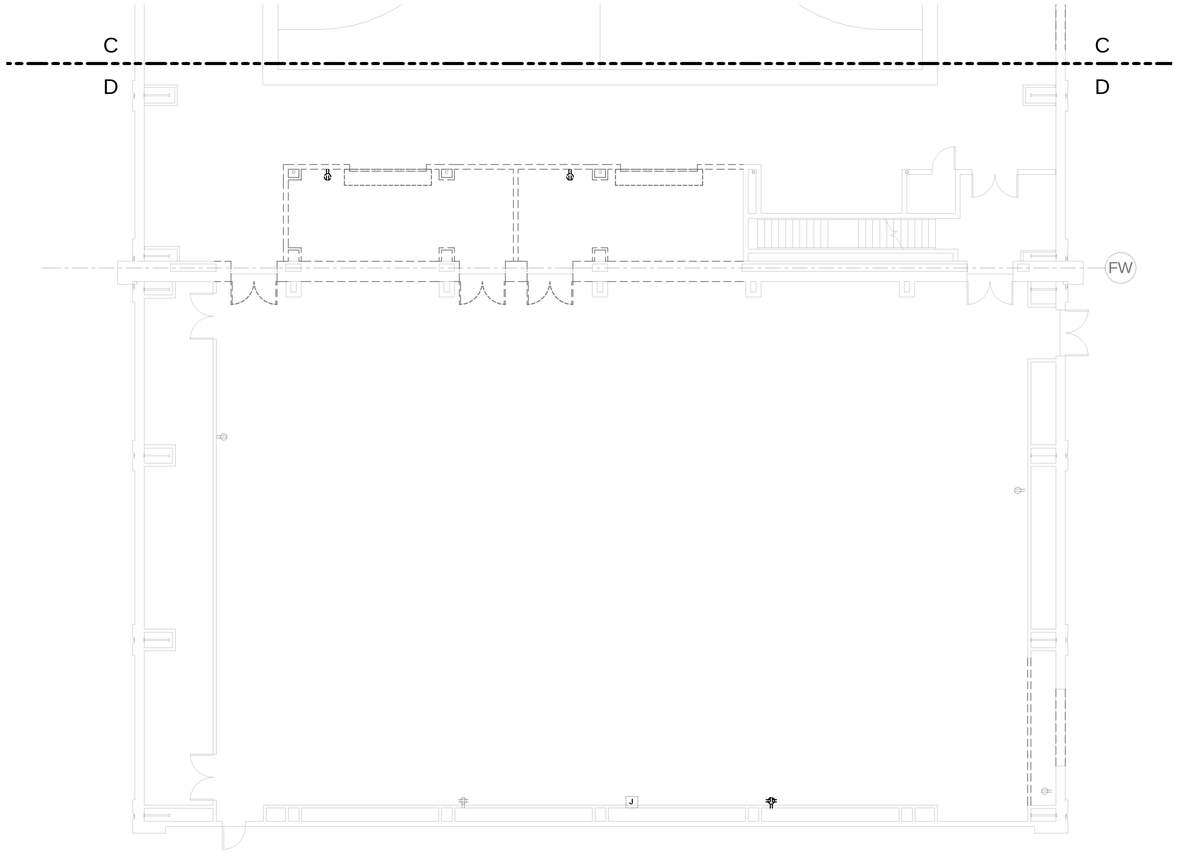
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - POWER DEMOLITION - SECTOR B

sheet number

E301b



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N

1 FIRST FLOOR PLAN - ELECTRICAL POWER DEMOLITION - SECTOR D

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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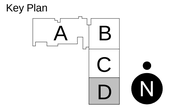
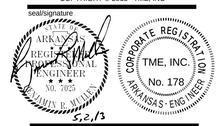
Key Plan



seal/signature



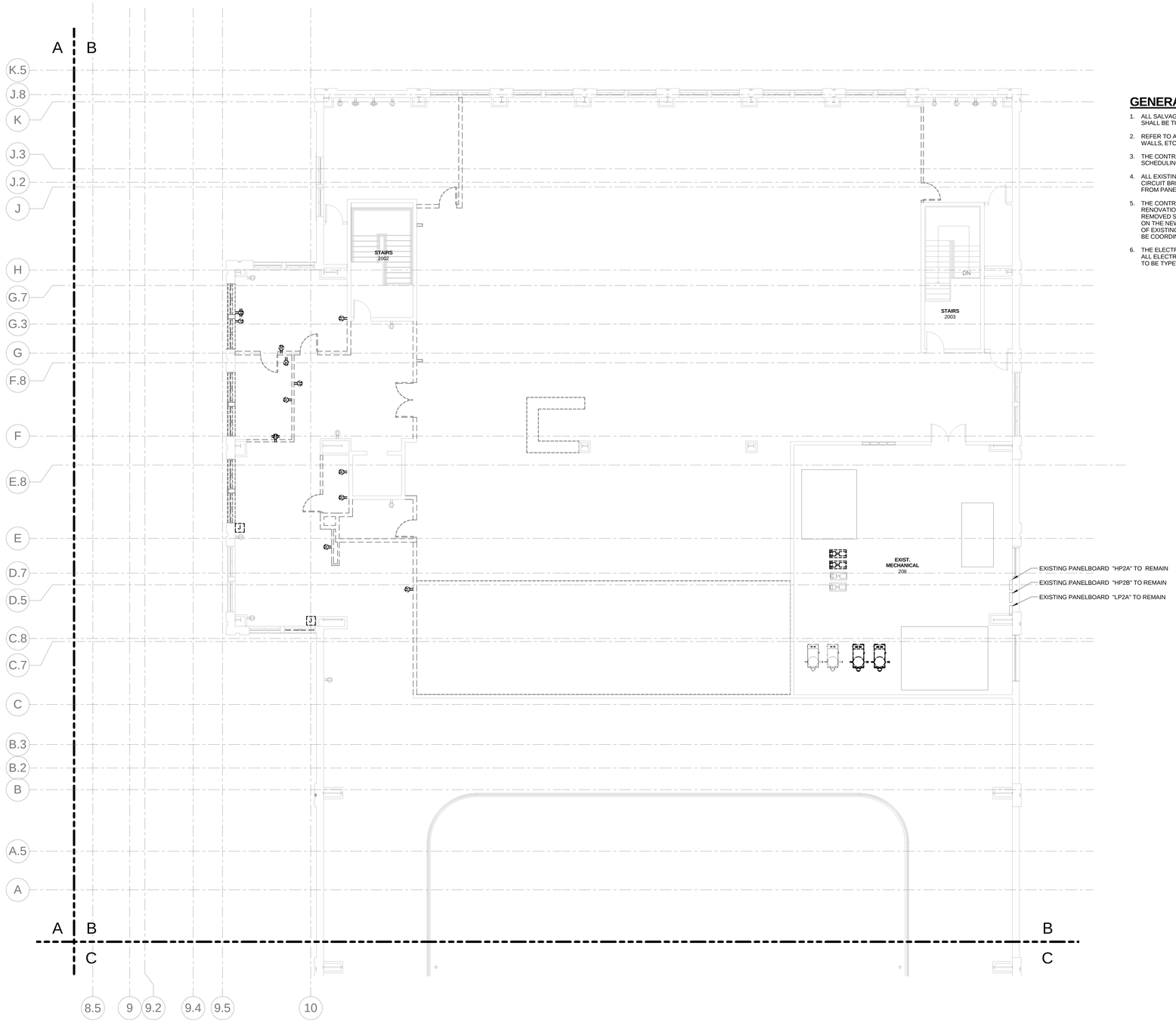
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - POWER DEMOLITION - SECTOR D

sheet number

E301d



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N

1 **SECOND FLOOR PLAN - ELECTRICAL POWER DEMOLITION - SECTOR B**

1/8" = 1'-0"

5/2/2013 2:48:15 PM

HPER Center Renovation & Expansion

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University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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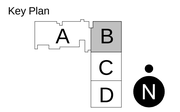
Key Plan



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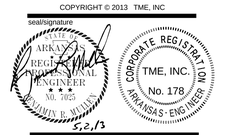


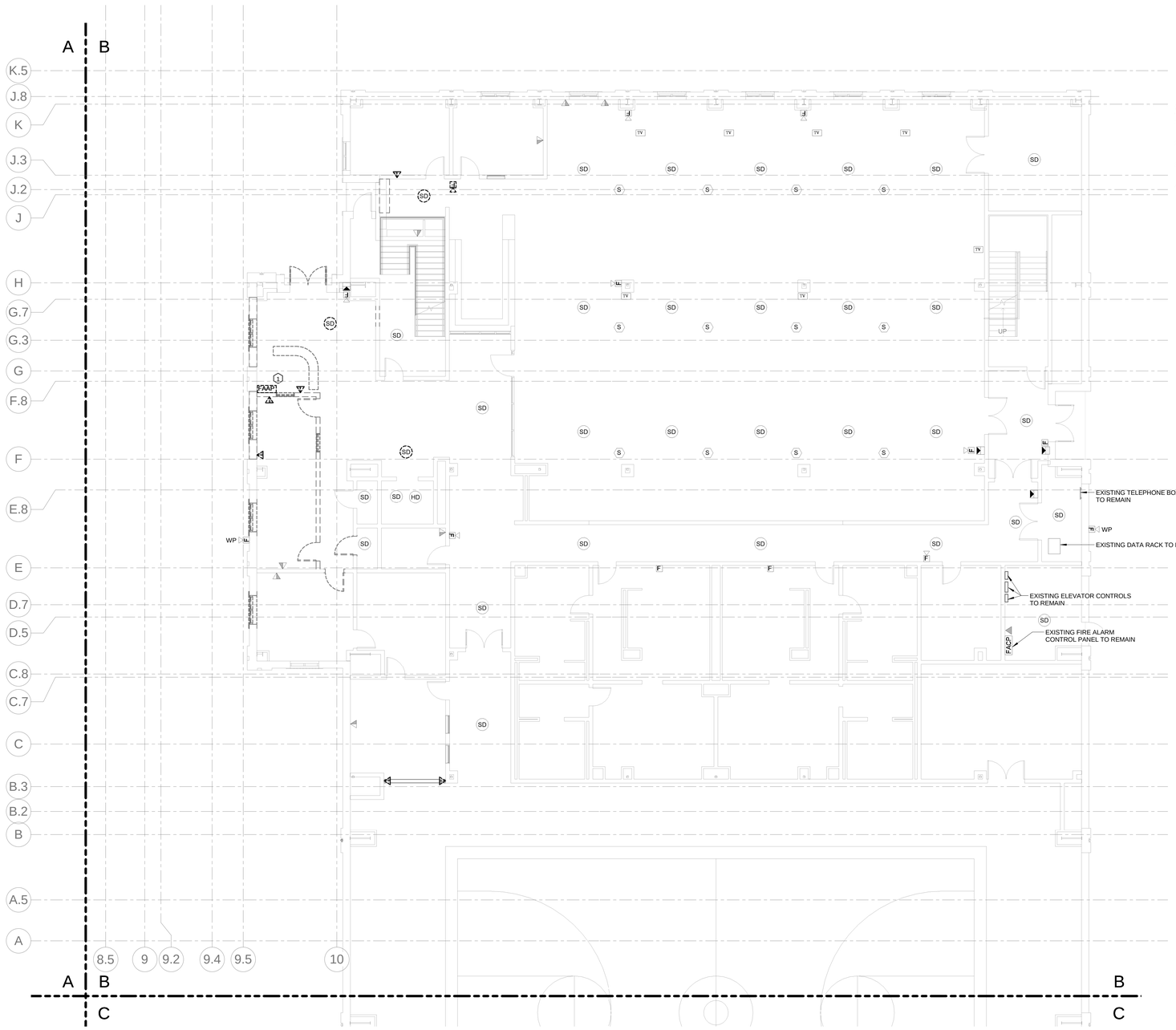
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - POWER DEMOLITION - SECTOR B

sheet number

E302b



GENERAL ELECTRICAL DEMOLITION NOTES:

1. ALL SALVAGEABLE ITEMS SUCH AS SMOKE DETECTORS, HORN/STROBES, ETC THAT ARE NOT TO BE REUSED SHALL BE TURNED OVER TO THE OWNER.
2. REFER TO ARCHITECTURAL PLANS FOR GENERAL DEMOLITION ITEMS SUCH AS CEILINGS, WALLS, ETC.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AS TO CONSTRUCTION SCHEDULING, SERVICE INTERRUPTIONS AND ACCESS TO WORK AREAS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION IN AREAS OF RENOVATION. ALL WIRING DEVICES, DEVICES, WIRE AND CONDUIT THAT IS TO BE REMOVED SHALL BE STORED AS DIRECTED BY THE OWNER OR RELOCATED AS SHOWN ON THE NEW PLAN. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED AND ALL OUTAGES WHICH MAY RESULT SHALL BE COORDINATED WITH THE OWNER PRIOR TO THE WORK.

N

1 **FIRST FLOOR PLAN - ELECTRICAL SYSTEMS DEMOLITION - SECTOR B**

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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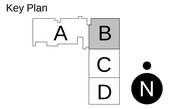
Key Plan



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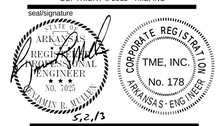


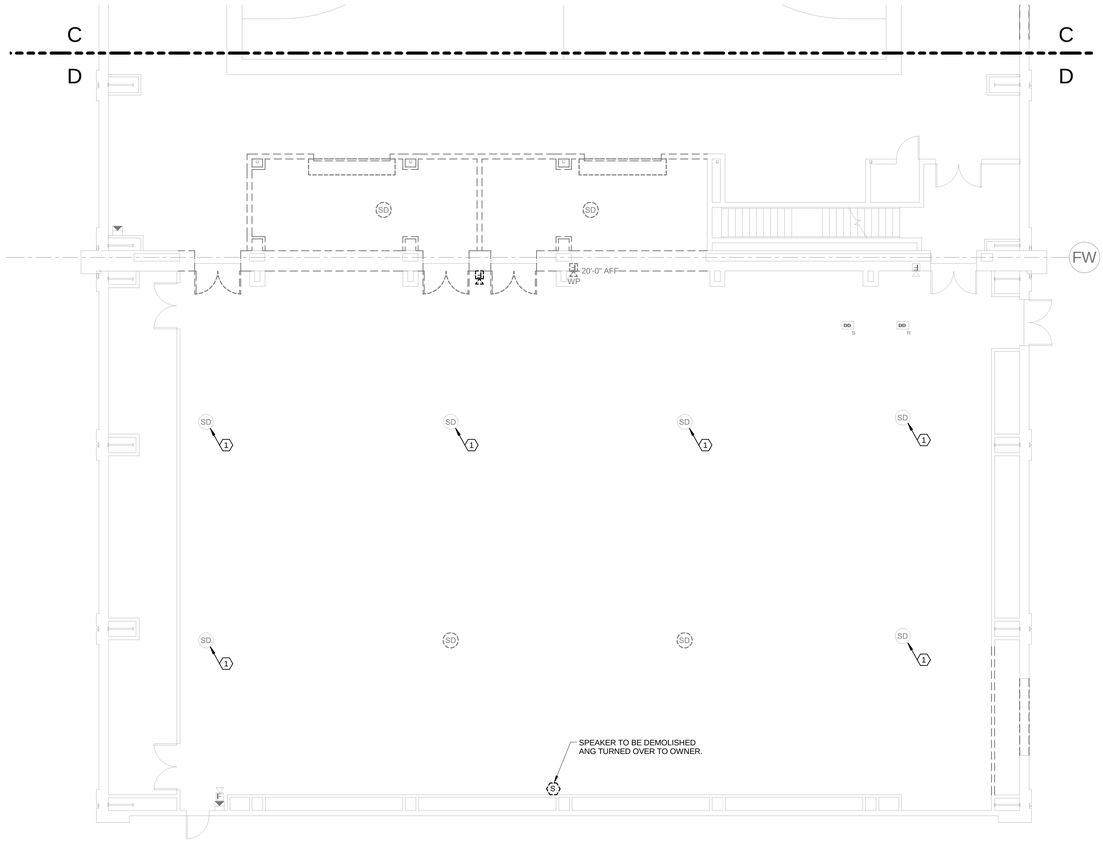
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - SYSTEMS DEMOLITION - SECTOR B

sheet number

E401b



GENERAL ELECTRICAL DEMOLITION NOTES:

1. ALL SALVAGEABLE ITEMS SUCH AS LIGHT FIXTURE, ETC THAT ARE NOT TO BE REUSED SHALL BE TURNED OVER TO THE OWNER.
2. REFER TO ARCHITECTURAL PLANS FOR GENERAL DEMOLITION ITEMS SUCH AS CEILINGS, WALLS, ETC.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AS TO CONSTRUCTION SCHEDULING, SERVICE INTERRUPTIONS AND ACCESS TO WORK AREAS.
4. ALL EXISTING BRANCH CIRCUIT NOT USED SHALL BE REMOVED BACK TO PANEL. THE CIRCUIT BREAKERS SHALL BE LABELED AS SPARE AND EXISTING CONDUIT SHALL REMAIN FROM PANEL TO ABOVE ACCESSIBLE CEILING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION IN AREAS OF RENOVATION. ALL WIRING DEVICES, LIGHT FIXTURES, WIRE AND CONDUIT THAT IS TO BE REMOVED SHALL BE STORED AS DIRECTED BY THE OWNER OR RELOCATED AS SHOWN ON THE NEW PLAN. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED AND ALL OUTAGES WHICH MAY RESULT SHALL BE COORDINATED WITH THE OWNER PRIOR TO THE WORK.
6. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING SCHEDULES IN ALL ELECTRICAL PANELS THAT ARE AFFECTED BY THIS WORK. UPDATED SCHEDULES ARE TO BE TYPEWRITTEN.

KEYED ELECTRICAL NOTES:

(1) EXISTING SMOKE DETECTOR TO REMAIN.

N

1 FIRST FLOOR PLAN - ELECTRICAL SYSTEMS DEMOLITION - SECTOR D

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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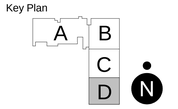
Key Plan



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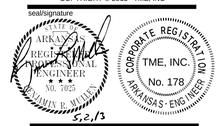


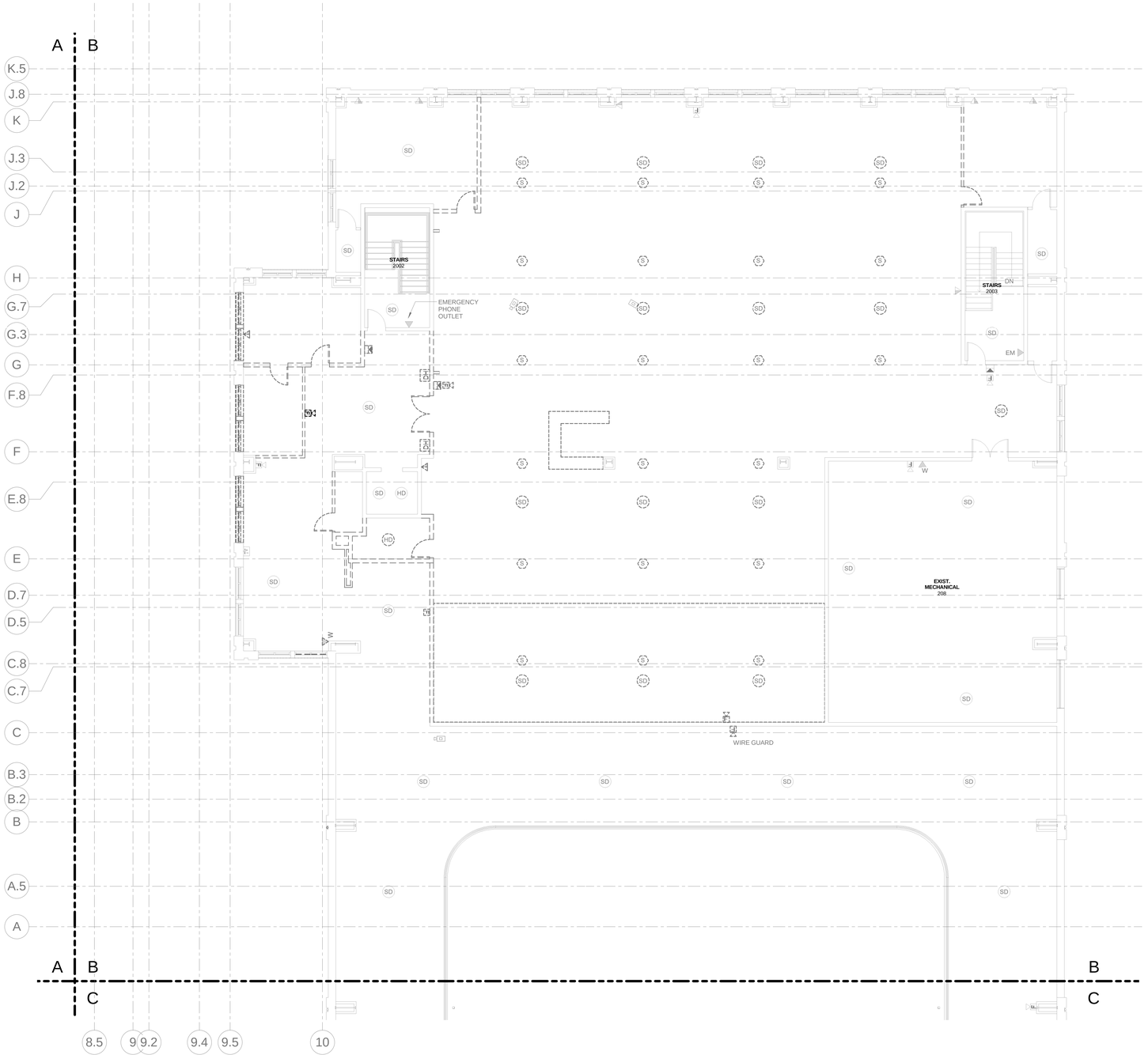
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - SYSTEMS DEMOLITION - SECTOR D

sheet number

E401d



GENERAL ELECTRICAL DEMOLITION NOTES:

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N

1 **SECOND FLOOR PLAN - ELECTRICAL SYSTEMS DEMOLITION - SECTOR B**

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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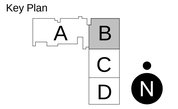
Key Plan



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rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - SYSTEMS DEMOLITION - SECTOR B

sheet number

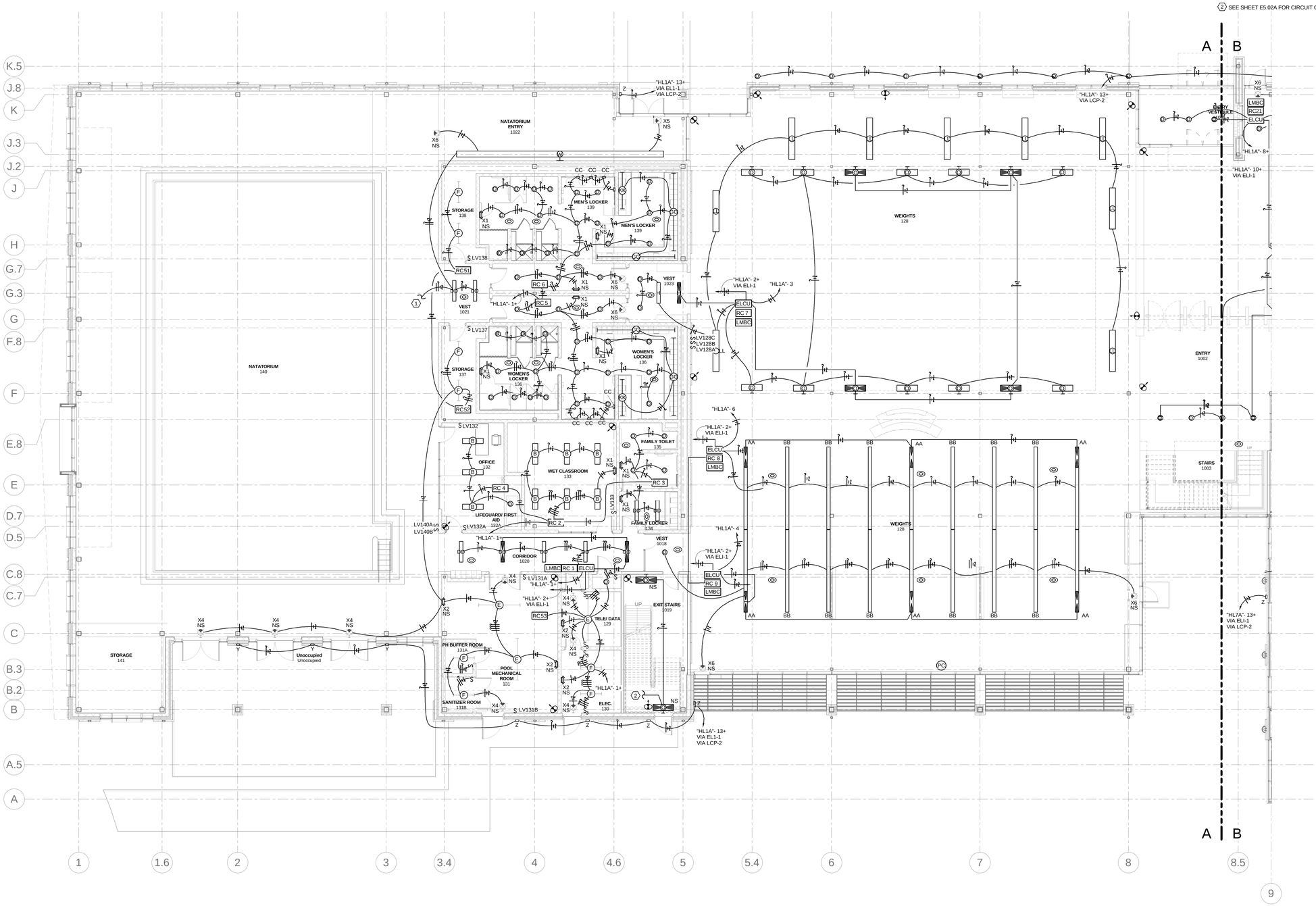
E402b

GENERAL NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.

KEYED ELECTRICAL NOTES:

1. CONNECT TO NATATORIUM LIGHTING ROOM CONTROLLER. SEE SHEET E5.02A FOR CIRCUIT CONTINUATION.
2. SEE SHEET E5.02A FOR CIRCUIT CONTINUATION.



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1 FIRST FLOOR PLAN - ELECTRICAL LIGHTING - SECTOR A

1/8" = 1'-0"

HPER Center Renovation & Expansion

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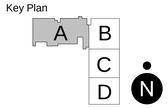
Key Plan



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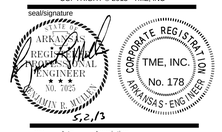


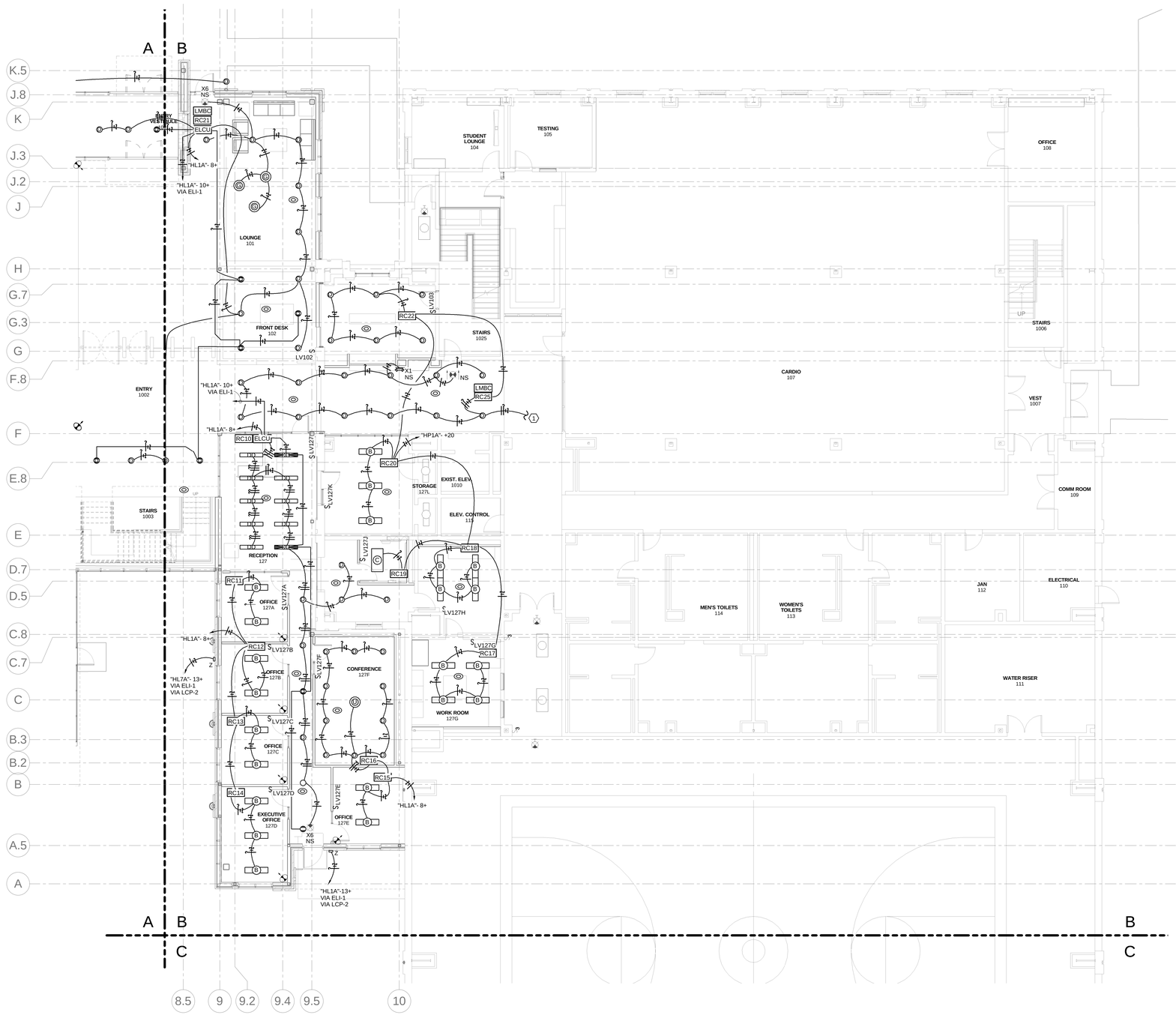
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - LIGHTING - SECTOR A

sheet number

E501a



GENERAL NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.

KEYED ELECTRICAL NOTES:

1. IF THE ALTERNATE IS ACCEPTED, ROUTE SWITCHED ROOM CONTROLLER LIGHTING CIRCUIT TO THE REMAINING CORRIDOR LIGHTING.

N

1 FIRST FLOOR PLAN - ELECTRICAL LIGHTING - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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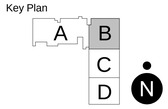
Key Plan



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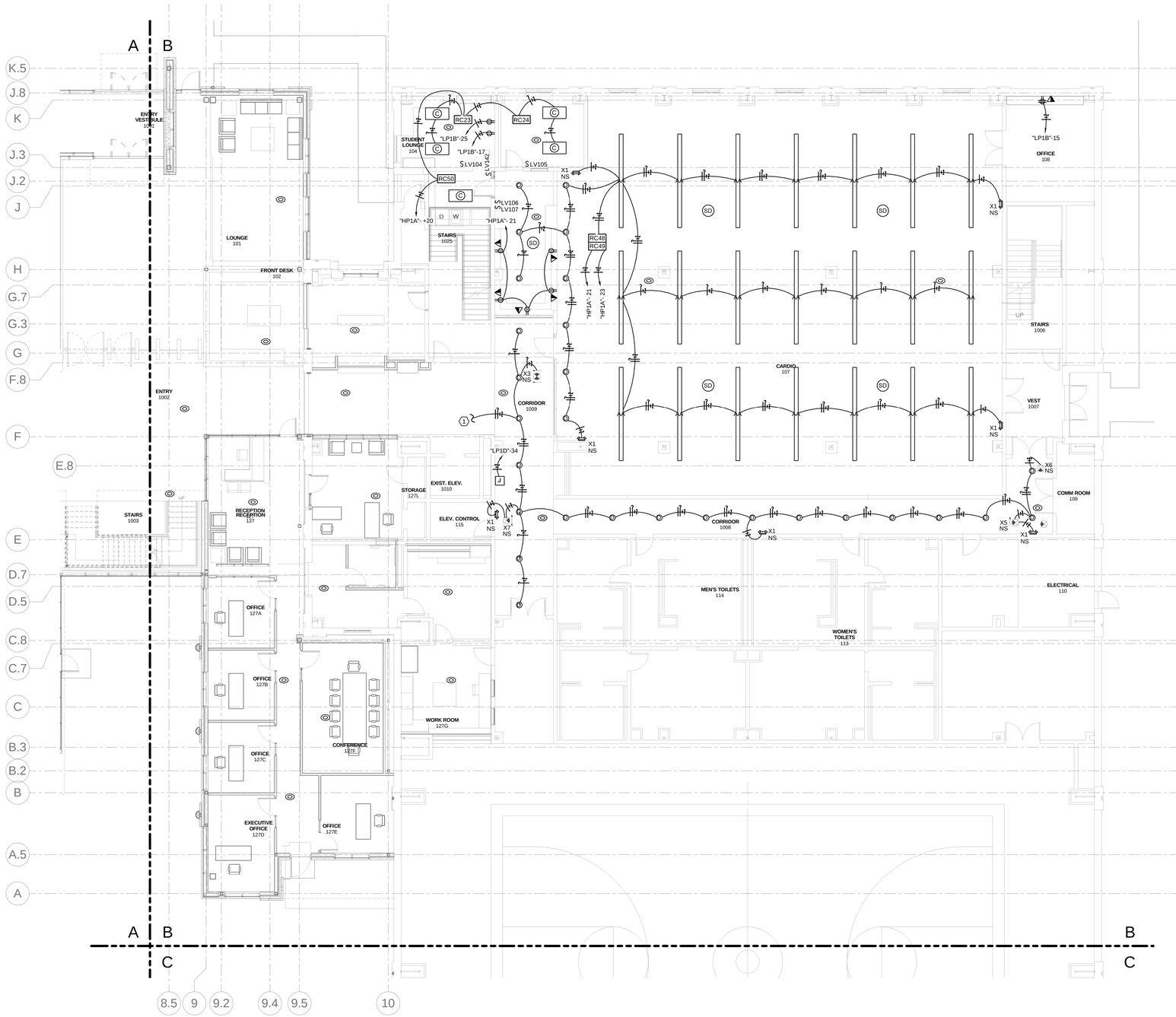
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - BASE BID
LIGHTING - SECTOR B

sheet number

E501b



GENERAL NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.
2. SEE ARCHITECTURAL PLANS FOR ALTERNATE BOUNDARY.

KEYED ELECTRICAL NOTES:

1. CONNECT TO NEW ROOM CONTROLLER LIGHTING CIRCUIT IN CORRIDOR 1004.

HPER Center Renovation & Expansion

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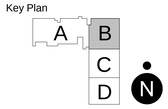
Key Plan



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rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - ALTERNATE ELECTRICAL - SECTOR B

sheet number

E501b.1

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1 **FIRST FLOOR PLAN - ELECTRICAL ALTERNATE ELECTRICAL - SECTOR B**

1/8" = 1'-0"

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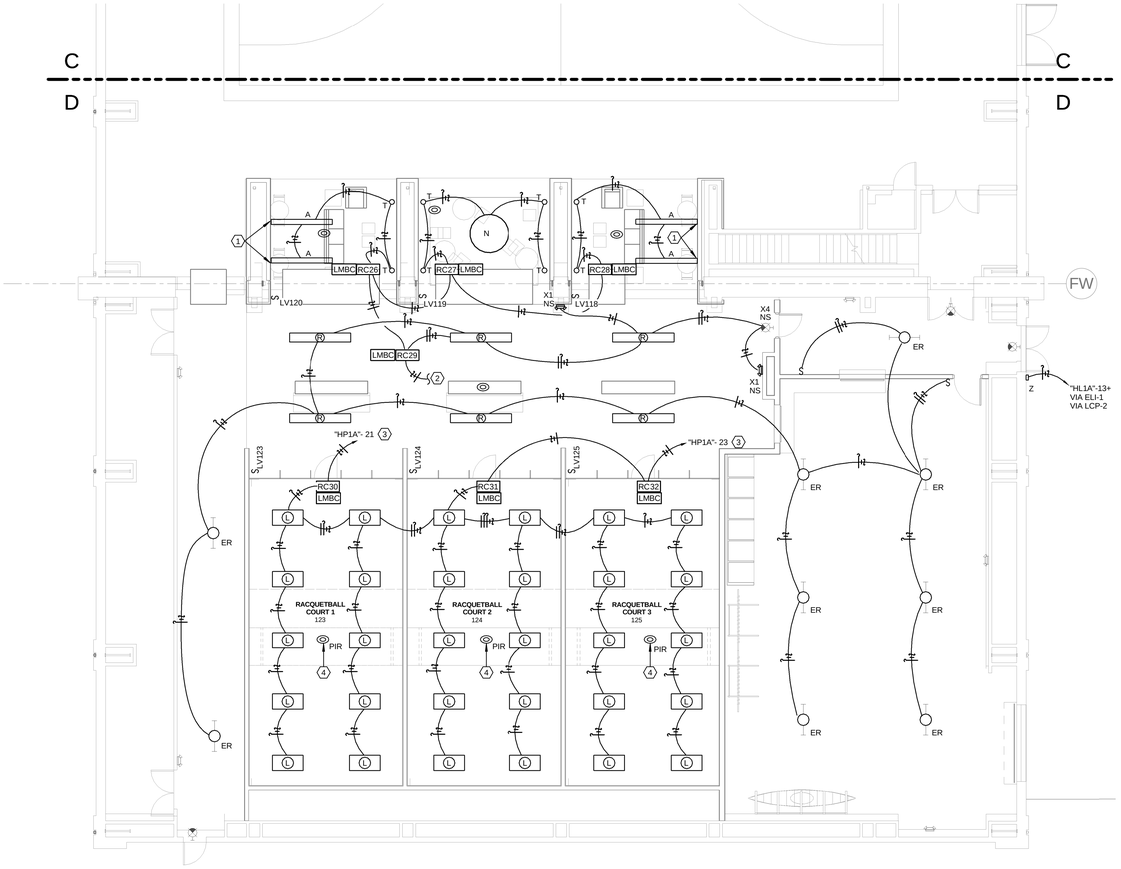

GENERAL NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.

KEYED ELECTRICAL NOTES:

1. ROUTE 4'-0" OF FIXTURE DOWN WALL.
2. CONNECT TO EXISTING LIGHTING CIRCUIT.
3. PROVIDE AND INSTALL NEW 1P,20A CIRCUIT BREAKER AND ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED.
4. PROVIDE PROTECTIVE COVER FOR DEVICE.

N

1 FIRST FLOOR PLAN - ELECTRICAL LIGHTING - SECTOR D

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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Key Plan

A B C D N

seal/signature

ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 7025 BENJAMIN R. MILLER

CORPORATE REGISTRATION TME, INC. No. 178 ARKANSAS ENGINEER

5/2/13

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - LIGHTING - SECTOR D

sheet number

E501d

GENERAL NOTES:

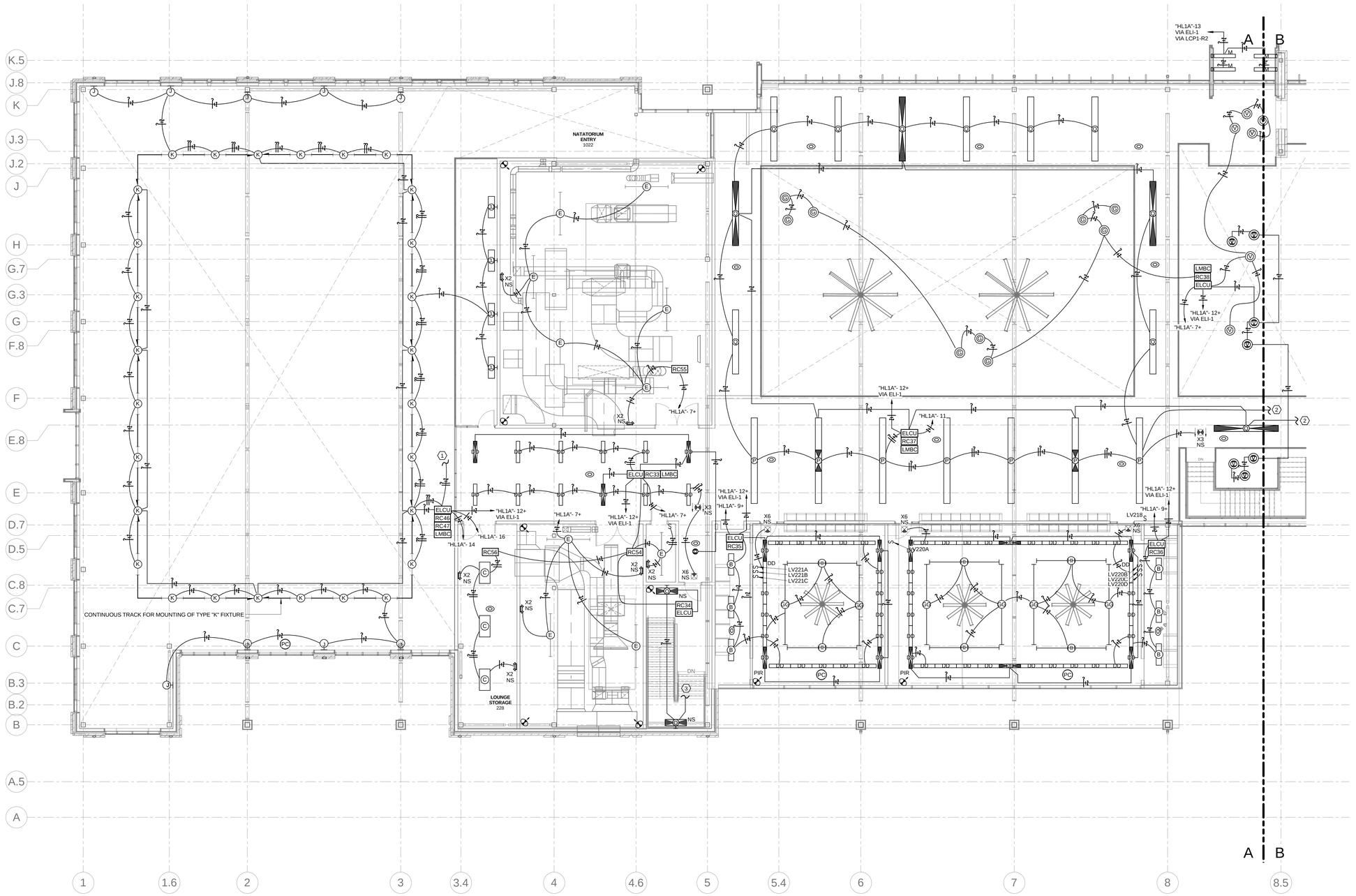
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.
2. TYPE "K" FIXTURE TO BE PROVIDED BY GENERAL CONTRACTOR.
3. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS OF PENDANT FIXTURES "G" AND "V".

KEYED ELECTRICAL NOTES:

(1) CONNECT TO NATATORIUM LIGHTING ROOM CONTROLLER. SEE SHEET E5.01A FOR CIRCUIT CONTINUATION.

(2) SEE SHEET E502B FOR CIRCUIT CONTINUATION.

(3) SEE SHEET E5.01A FOR CIRCUIT CONTINUATION.



N

1	SECOND FLOOR PLAN - ELECTRICAL LIGHTING - SECTOR A
	1/8" = 1'-0"

5/2/2013 5:33:35 PM

HPER Center Renovation & Expansion

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Key Plan

A B
C D

seal/signature

ARKANSAS REGISTERED PROFESSIONAL ENGINEER
No. 7025
BENJAMIN B. MILLS
5.2.13

CORPORATE REGISTRATION
TME, INC.
No. 178
ARKANSAS ENGINEER

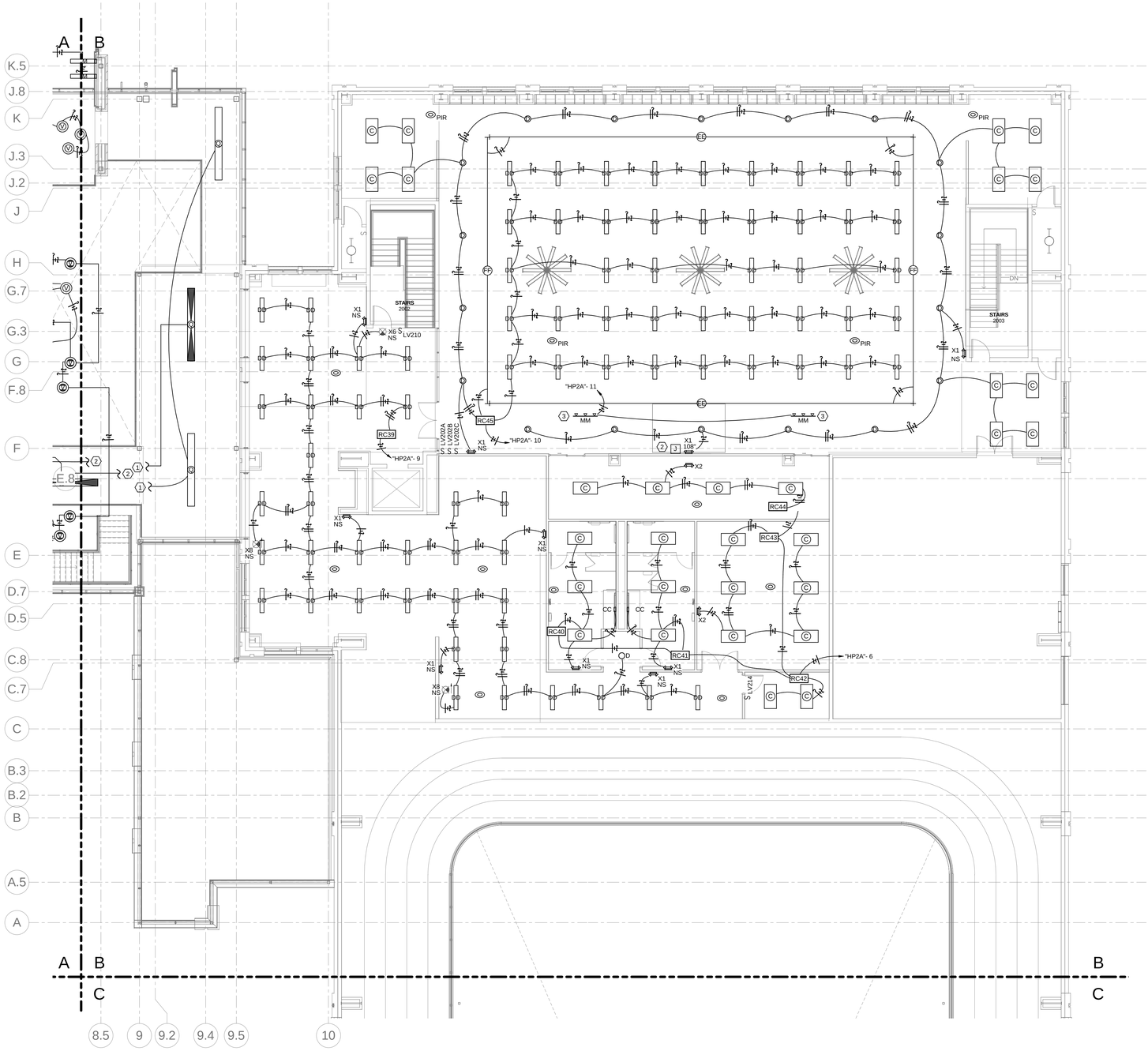
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - LIGHTING - SECTOR A

sheet number

E502a



GENERAL NOTES:

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.
2. COLOR CHANGING LED FIXTURE AND ETC MOSIAC CONTROL SYSTEM TO ONLY BE INCLUDED IN ALTERNATE #4.

KEYED ELECTRICAL NOTES:

1. SEE SHEET E502B FOR CIRCUIT CONTINUATION.
2. PROVIDE AND INSTALL ETC MTPC UNISON MOSIAC TESSERA CONTROLLER AND MRIO-A REMOTE SUDIO/TIMECODE MODULE AND POE SWITCH. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. CONTROL SYSTEM TO BE PROVIDED ONLY IF ALTERNATE #4 IS ACCEPTED.
3. PROVIDE AND INSTALL GENERAL CONTRACTOR PROVIDED COLOR CHANGING LED FIXTURE. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. FIXTURE TO BE PROVIDED ONLY IF ALTERNATE #4 IS ACCEPTED.

N

1 **SECOND FLOOR PLAN - ELECTRICAL LIGHTING - SECTOR B**

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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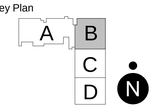
Key Plan



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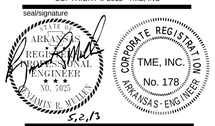


rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - LIGHTING - SECTOR B

sheet number

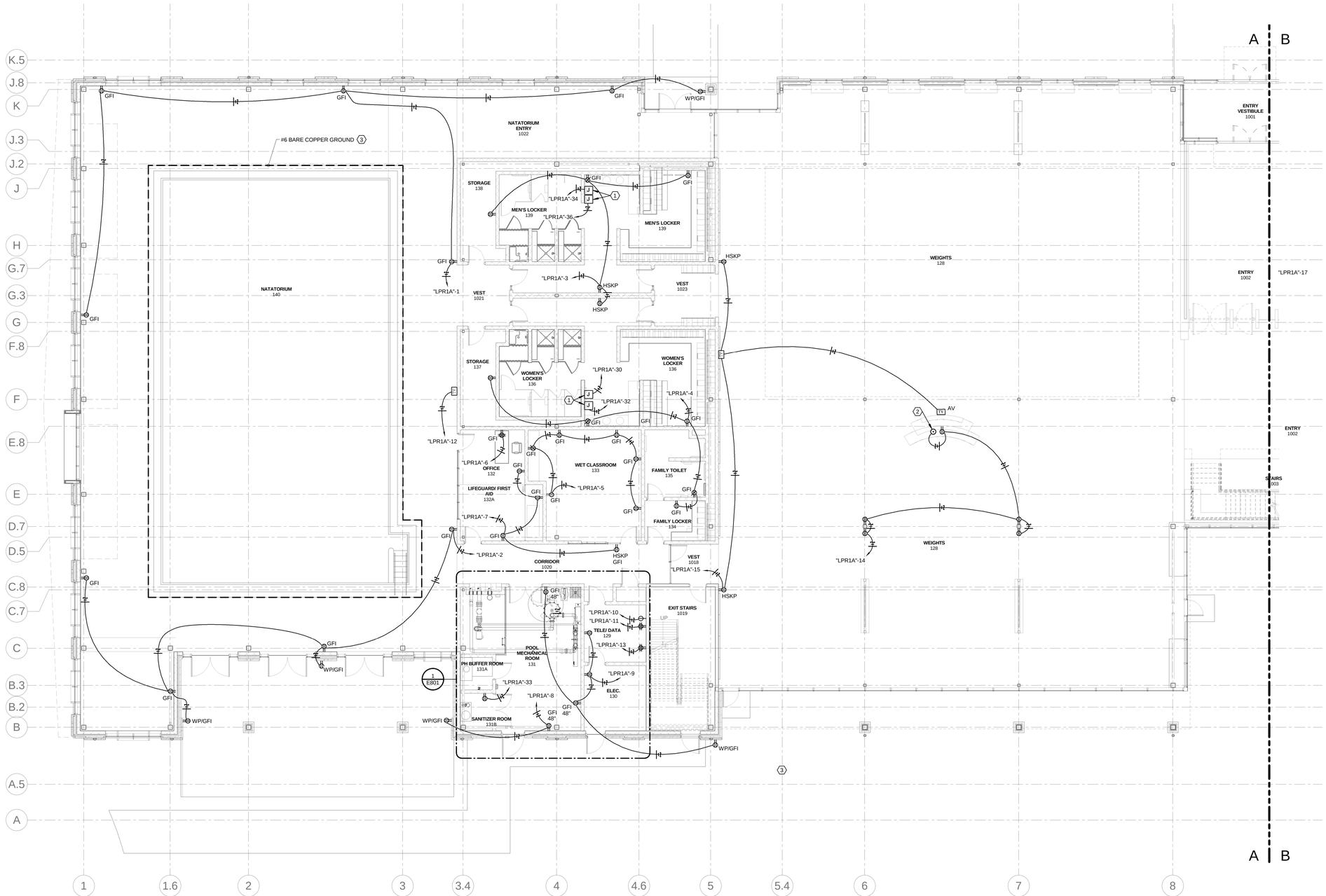
E502b

GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.
2. ALL RECEPTACLES IN NATATORIUM TO BE GFCI AND TO BE LOCATED NOT LESS THAN 10'-0" FROM THE INSIDE WALLS OF THE POOL.
3. ALL POOL SHELL REINFORCING STEEL INCLUDING AT LEAST 3'-0" OF THE PERIMETER DECK AND ALL METAL ANCHORS, INSERTS, FITTINGS, LIGHT NICHES, AND EQUIPMENT IN THE POOL AND WITHIN 5'-0" OF THE POOLS EDGE AS WELL AS ALL MECHANICAL EQUIPMENT IN THE FILTER AND ADJACENT CHEMICAL ROOMS MUST BE GROUNDED PER NEC ARTICLE 680.

KEYED ELECTRICAL NOTES:

1. PROVIDE AND INSTALL JUNCTION BOX IN WALL 5'-0" AFF FOR CONNECTION TO HAND DRYER.
2. PROVIDE AND INSTALL WIREMOLD 885B STEEL FLOOR BOX WITH (1) DEDICATED DUPLEX RECEPTACLE AND (1) TELE/DATA CONNECTION. ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED.
3. ROUTE #6 BARE COPPER GROUND WIRE FOR POOL GROUNDING AND ROUTE BACK TO GROUND BUS OF "MDP2".
4. MOUNTING PLATES FOR TV TO BE PROVIDED BY ELECTRICAL.



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1 FIRST FLOOR PLAN - ELECTRICAL POWER - SECTOR A

1/8" = 1'-0"

5/2/2013 4:39:50 PM

HPER Center Renovation & Expansion

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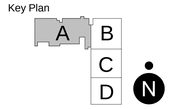
Key Plan



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rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - POWER - SECTOR A

sheet number

E601a

GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.
2. SEE SHEET E501B.1 FOR ALTERNATE #2 POWER.

KEYED ELECTRICAL NOTES:

1. PROVIDE AND INSTALL WIREMOLD SERIES #RFB4 FLOOR BOX WITH TWO DUPLEX RECEPTACLES, ONE DATA OUTLET, AND ONE PHONE OUTLET.
2. ROUTE ONE 1" CONDUIT IN FLOOR AND UP WALL FOR 120 VAC POWER CIRCUIT FOR FLOOR BOX.
3. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO FAN CONTROLLER FOR CEILING FANS IN OPEN WORKOUT AREA. CONTROLLER PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
4. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO TROPHY CASE LIGHTING.
5. PROVIDE AND INSTALL NEMA 5-30R SIMPLEX RECEPTACLE FOR CONNECTION TO DRYER AND ROUTE 3-#10 IN 3/4" CONDUIT TO PANEL INDICATED.

N

1 FIRST FLOOR PLAN - ELECTRICAL POWER - SECTOR B

1/8" = 1'-0"

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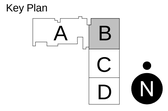
Key Plan



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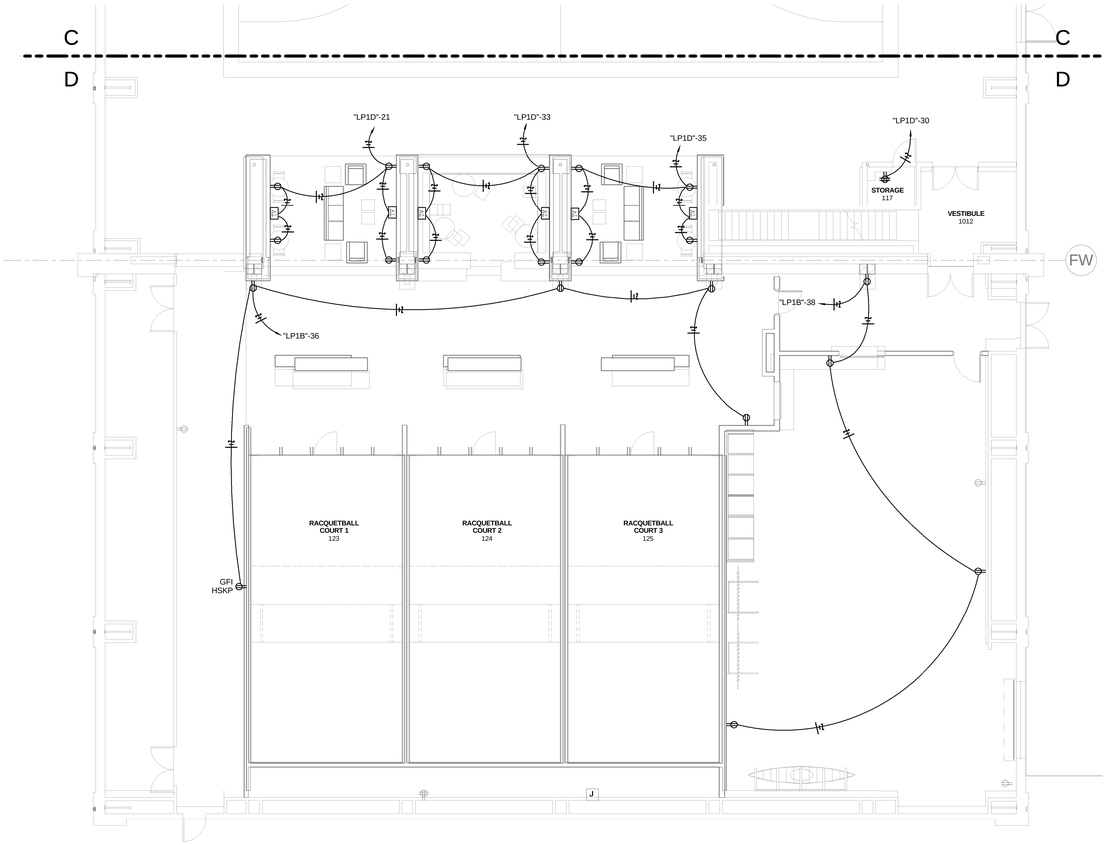
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - POWER - SECTOR B

sheet number

E601b



GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.

N

1 FIRST FLOOR PLAN - ELECTRICAL POWER - SECTOR D

1/8" = 1'-0"

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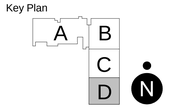
Key Plan



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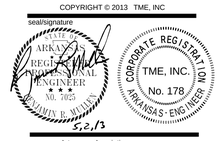


rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - POWER - SECTOR D

sheet number

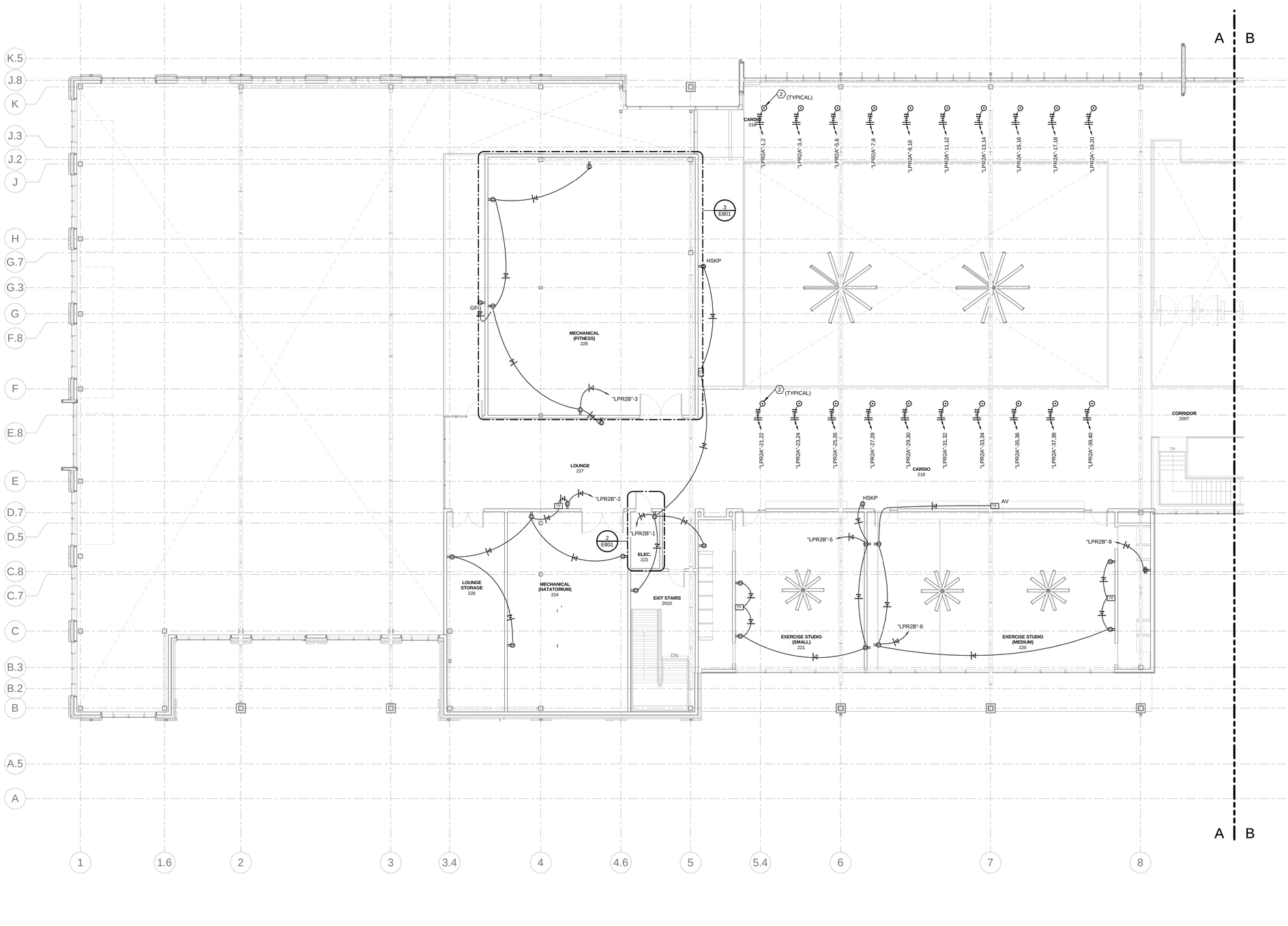
E601d

GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.

KEYED ELECTRICAL NOTES:

1. PROVIDE AND INSTALL WIREMOLD GAT SERIES POKE THRU WITH TWO DUPLEX RECEPTACLES AND TWO DATA OUTLETS. CIRCUIT RECEPTACLES ON SEPARATE CIRCUITS WITHIN POKE THRU.
2. PROVIDE AND INSTALL WIREMOLD 885B STEEL FLOOR BOX WITH (2) DEDICATED DUPLEX RECEPTACLES. ROUTE 3-#12 FOR EACH CIRCUIT IN (1) 3/4" CONDUIT TO PANEL INDICATED.



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1 SECOND FLOOR PLAN - ELECTRICAL POWER - SECTOR A

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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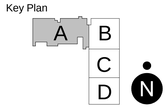
Key Plan



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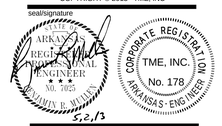


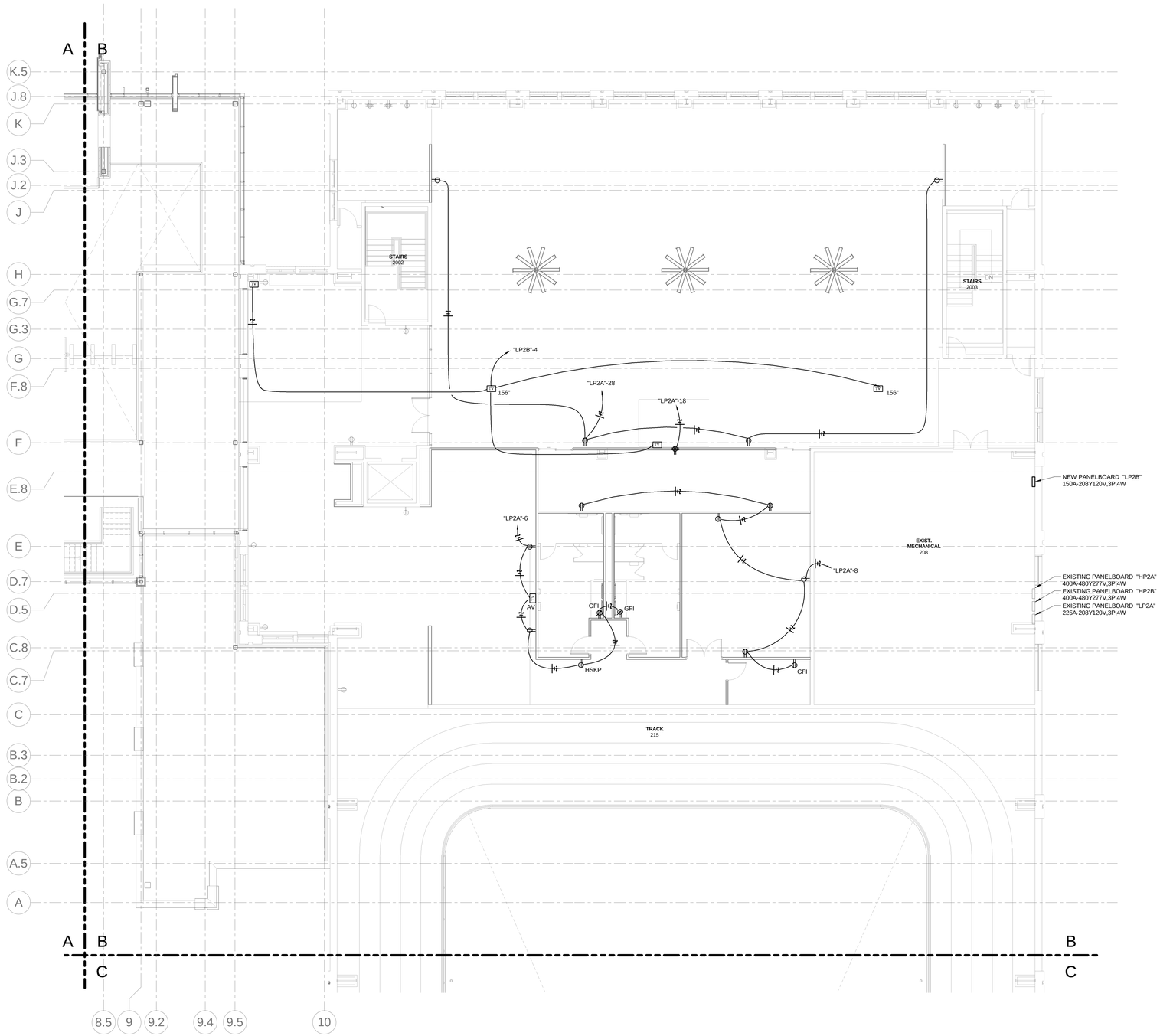
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - POWER - SECTOR A

sheet number

E602a



GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.

N

1 SECOND FLOOR PLAN - ELECTRICAL POWER - SECTOR B

1/8" = 1'-0"

5/2/2013 4:40:31 PM

HPER Center Renovation & Expansion

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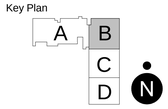
Key Plan



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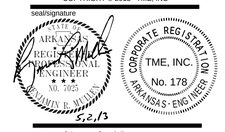

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - POWER - SECTOR B

sheet number

E602b

GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.
2. ALL DATA CABLING RUN UNDERGROUND SHALL BE OSP RATED, NO EXCEPTIONS. EXPOSED OSP CABLE WITHIN THE BUILDING SHALL BE LIMITED TO 49'-0". ANY OSP CABLE RUN GREATER THAT 49'-0" SHALL UTILIZE A CONSOLIDATION POINT PROVIDED BY ELECTRICAL CONTRACTOR. ALL TELEPHONE AND DATA DEVICES ARE ROUGH-IN ONLY. CABLING, FACE PLATES, TERMINATIONS AND TESTING ARE PROVIDED BY OWNER.
3. ALL NEW FIRE ALARM DEVICES SHALL MATCH EXISTING MANUFACTURE. PROVIDE NAC PANELS AS NECESSARY.
4. PROVIDE J-HOOKS 4'-0" ON CENTER FOR ALL CABLING PATHWAYS IN SPACES WITH ACCESSIBLE CEILING. PROVIDE A DEDICATED PATHWAY FOR ALL CABLING IN SPACES WITH INACCESSIBLE CEILING OR NO CEILING. IF EXPOSED, CONDUIT TO BE PAINTED TO MATCH STRUCTURE.
5. CAMERAS AND CAMERA WIRING TO BE PROVIDED BY OWNER. CONTRACTOR TO PROVIDE AND INSTALL ROUGH-IN ONLY.

KEYED ELECTRICAL NOTES:

1. FAN COIL UNIT "FCU" PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO MAKE FINAL CONNECTIONS. UNIT TO BE PROVIDED WITH DISCONNECT INSTALLED IN UNIT.
2. PROVIDE AND INSTALL JUNCTION BOX AT 48" FOR AUDIO VOLUME CONTROL PANEL. ROUTE 1" CONDUIT TO JUNCTION BOX IN CORRIDOR 1020.
3. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO HEATER FOR EXTERIOR CAMERAS. ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED.
4. PROVIDE AND INSTALL JUNCTION BOX RECESSED IN WALL WITH GASKETED COVER AND ROUTE (1) 3/4" CONDUIT TO UNDERWATER LIGHT NICHE.
5. PROVIDE AND INSTALL JUNCTION BOX AT 48" FOR AUDIO CONTROL PANEL. ROUTE 1" CONDUIT TO JUNCTION BOX IN CORRIDOR 1020.
6. PROVIDE JUNCTION BOX ABOVE CEILING FOR AV CONDUITS. ROUTE (1) 3" CONDUIT TO TELE/DATA 129.
7. PROVIDE AND INSTALL WIREMOLD 885B STEEL FLOOR BOX WITH (1) DEDICATED DUPLEX RECEPTACLE AND (1) TELE/DATA CONNECTION. ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED.

N

1 **FIRST FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR A**

1/8" = 1'-0"

5/2/2013 2:51:47 PM

HPER Center Renovation & Expansion

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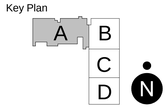
Key Plan



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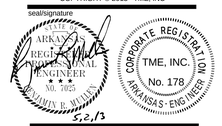


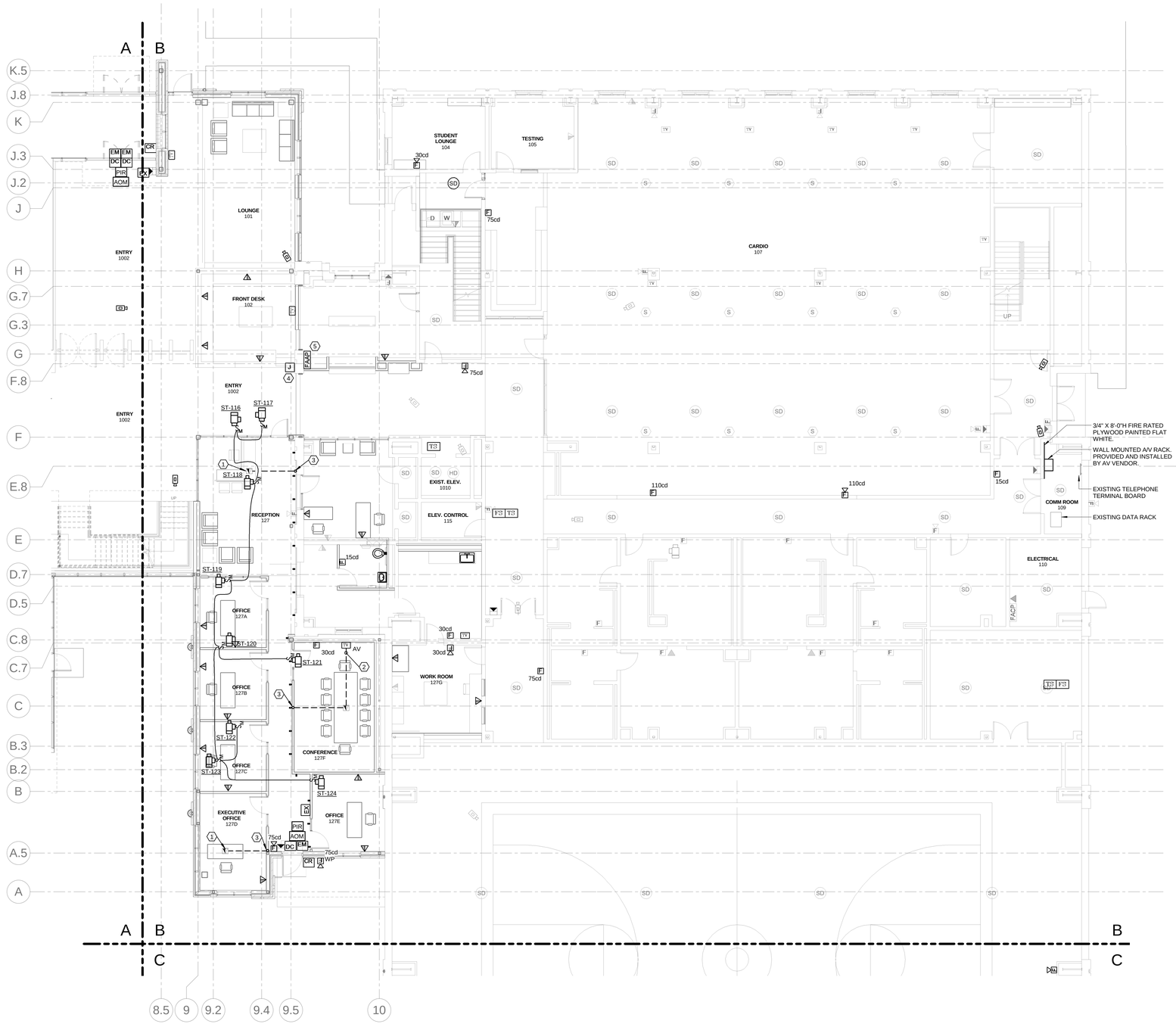
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR A

sheet number

E701a



GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.
2. ALL DATA CABLING RUN UNDERGROUND SHALL BE OSP RATED, NO EXCEPTIONS. EXPOSED OSP CABLE WITHIN THE BUILDING SHALL BE LIMITED TO 49'-0". ANY OSP CABLE RUN GREATER THAT 49'-0" SHALL UTILIZE A CONSOLIDATION POINT PROVIDED BY ELECTRICAL CONTRACTOR.
3. ALL NEW FIRE ALARM DEVICES SHALL MATCH EXISTING MANUFACTURE. PROVIDE NAC PANELS AS NECESSARY.
4. PROVIDE J-HOOKS 4'-0" ON CENTER FOR ALL CABLING PATHWAYS IN SPACES WITH ACCESSIBLE CEILING. PROVIDE A DEDICATED PATHWAY FOR ALL CABLING IN SPACES WITH INACCESSIBLE CEILING OR NO CEILING. IF EXPOSED, CONDUIT TO BE PAINTED TO MATCH STRUCTURE.
5. CAMERAS AND CAMERA WIRING TO BE PROVIDED BY OWNER. CONTRACTOR TO PROVIDE AND INSTALL ROUGH-IN ONLY.

KEYED ELECTRICAL NOTES:

1. PROVIDE AND INSTALL WIREMOLD SERIES #RFB4 FLOOR BOX WITH TWO DUPLEX RECEPTACLES, ONE DATA OUTLET, AND ONE PHONE OUTLET.
2. ROUTE ONE 1-1/4" CONDUIT FROM FLOOR BOX AND ROUTE UP IN WALL TO BEHIND TV AND INSTALL A DUAL GANG DEEP BOX WITH MUD RING. COORDINATE FURTHER DETAILS WITH A/V CONTRACTOR.
3. ROUTE ONE 1" CONDUIT AND STUB UP WALL TO ABOVE CEILING FOR TELEPHONE AND DATA CABLING.
4. PROVIDE AND INSTALL JUNCTION BOX FOR CONTROLLER FOR ALL CEILING FANS IN WEIGHTS/CARDIO ARE. CONTROLLER PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
5. RELOCATE EXISTING FIRE ALARM ANNUNCIATOR PANEL. COORDINATE WITH FIRE DEPARTMENT ENTERANCE PRIOR TO ROUGH IN.

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1 FIRST FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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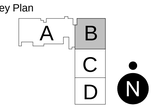
Key Plan



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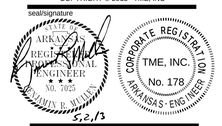

rev date description

date	05/06/13
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issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - SYSTEMS AND MECHANICAL POWER- SECTOR B

sheet number

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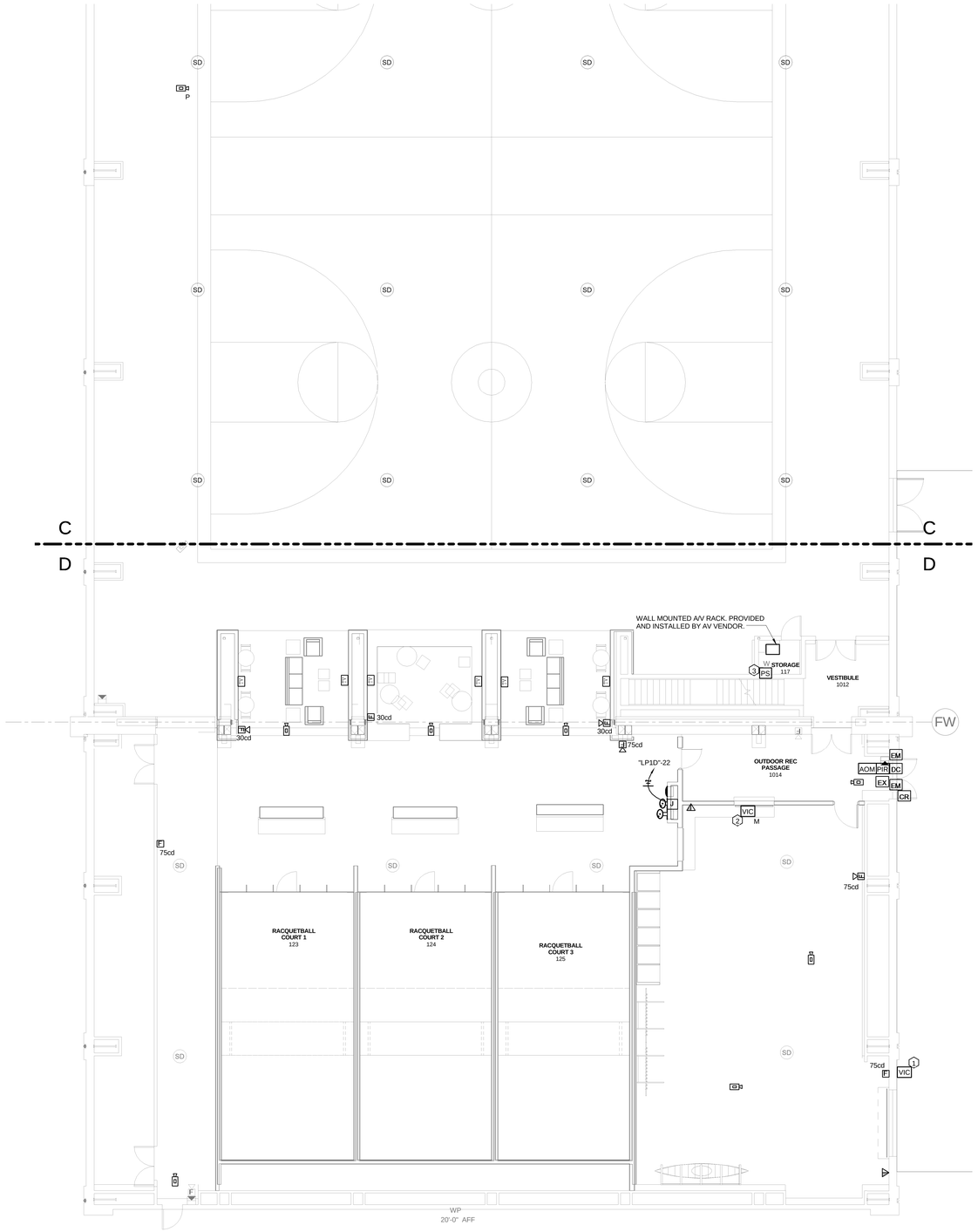

GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.
2. ALL DATA CABLING RUN UNDERGROUND SHALL BE OSP RATED, NO EXCEPTIONS. EXPOSED OSP CABLE WITHIN THE BUILDING SHALL BE LIMITED TO 49'-0". ANY OSP CABLE RUN GREATER THAT 49'-0" SHALL UTILIZE A CONSOLIDATION POINT PROVIDED BY ELECTRICAL CONTRACTOR.
3. ALL NEW FIRE ALARM DEVICES SHALL MATCH EXISTING MANUFACTURE. PROVIDE NAC PANELS AS NECESSARY.
4. PROVIDE J-HOOKS 4'-0" ON CENTER FOR ALL CABLING PATHWAYS IN SPACES WITH ACCESSIBLE CEILING. PROVIDE A DEDICATED PATHWAY FOR ALL CABLING IN SPACES WITH INACCESSIBLE CEILING OR NO CEILING. IF EXPOSED, CONDUIT TO BE PAINTED TO MATCH STRUCTURE.
5. CAMERAS AND CAMERA WIRING TO BE PROVIDED BY OWNER. CONTRACTOR TO PROVIDE AND INSTALL ROUGH-IN ONLY.

KEYED ELECTRICAL NOTES:

1. PROVIDE AIPHONE DOOR STATION MODEL JF-DVF-HID.
2. PROVIDE AIPHONE MASTER MONITOR STATION MODEL JF-2MED.
3. PROVIDE AIPHONE POWER SUPPLY MODEL PS-1820UL.

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1 **FIRST FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR D**

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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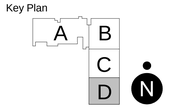
Key Plan



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rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR D

sheet number

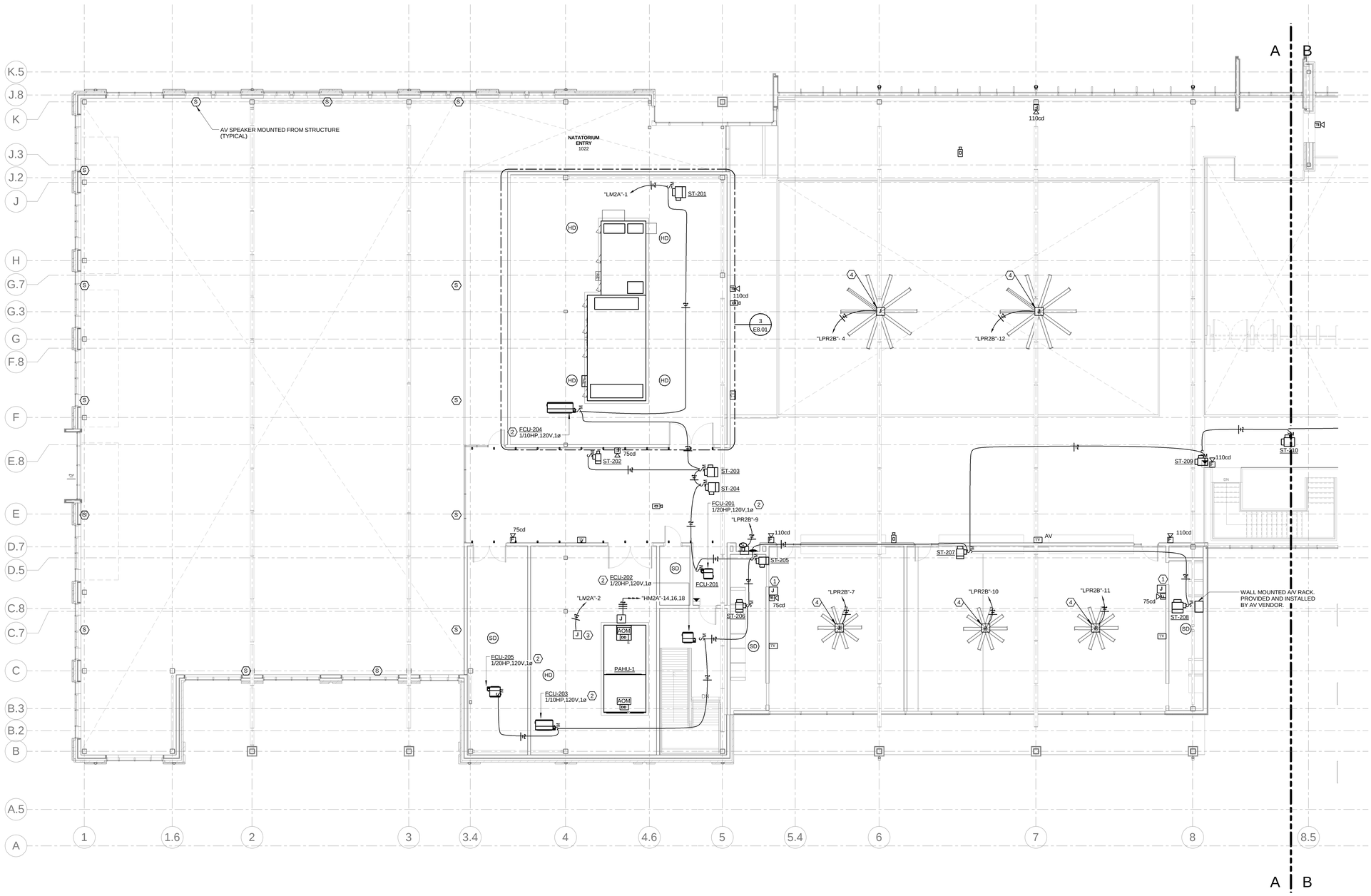
E701d

GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.
2. ALL DATA CABLING RUN UNDERGROUND SHALL BE OSP RATED, NO EXCEPTIONS. EXPOSED OSP CABLE WITHIN THE BUILDING SHALL BE LIMITED TO 49'-0". ANY OSP CABLE RUN GREATER THAT 49'-0" SHALL UTILIZE A CONSOLIDATION POINT PROVIDED BY ELECTRICAL CONTRACTOR.
3. ALL NEW FIRE ALARM DEVICES SHALL MATCH EXISTING MANUFACTURE. PROVIDE NAC PANELS AS NECESSARY.
4. PROVIDE J-HOOKS 4'-0" ON CENTER FOR ALL CABLING PATHWAYS IN SPACES WITH ACCESSIBLE CEILING. PROVIDE A DEDICATED PATHWAY FOR ALL CABLING IN SPACES WITH INACCESSIBLE CEILING OR NO CEILING. IF EXPOSED, CONDUIT TO BE PAINTED TO MATCH STRUCTURE.
5. CAMERAS AND CAMERA WIRING TO BE PROVIDED BY OWNER. CONTRACTOR TO PROVIDE AND INSTALL ROUGH-IN ONLY.

KEYED ELECTRICAL NOTES:

1. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO FAN CONTROLLER FOR ALL CEILING FANS IN OPEN WORKOUT AREA. CONTROLLER PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
2. FAN COIL UNIT "FCU" PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO MAKE FINAL CONNECTIONS. UNIT TO BE PROVIDED WITH DISCONNECT INSTALLED IN UNIT.
3. PROVIDE AND INSTALL JUNCTION BOX FOR POWER TO LARGE CONTROL VALVES AND DAMPERS. COORDINATE EXACT LOCATION WITH MECHANICAL AND CONTROLS CONTRACTOR.
4. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO CEILING FAN. COORDINATE EXACT LOCATION WITH ARCHITECT.



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1 SECOND FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR A

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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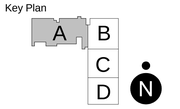
Key Plan



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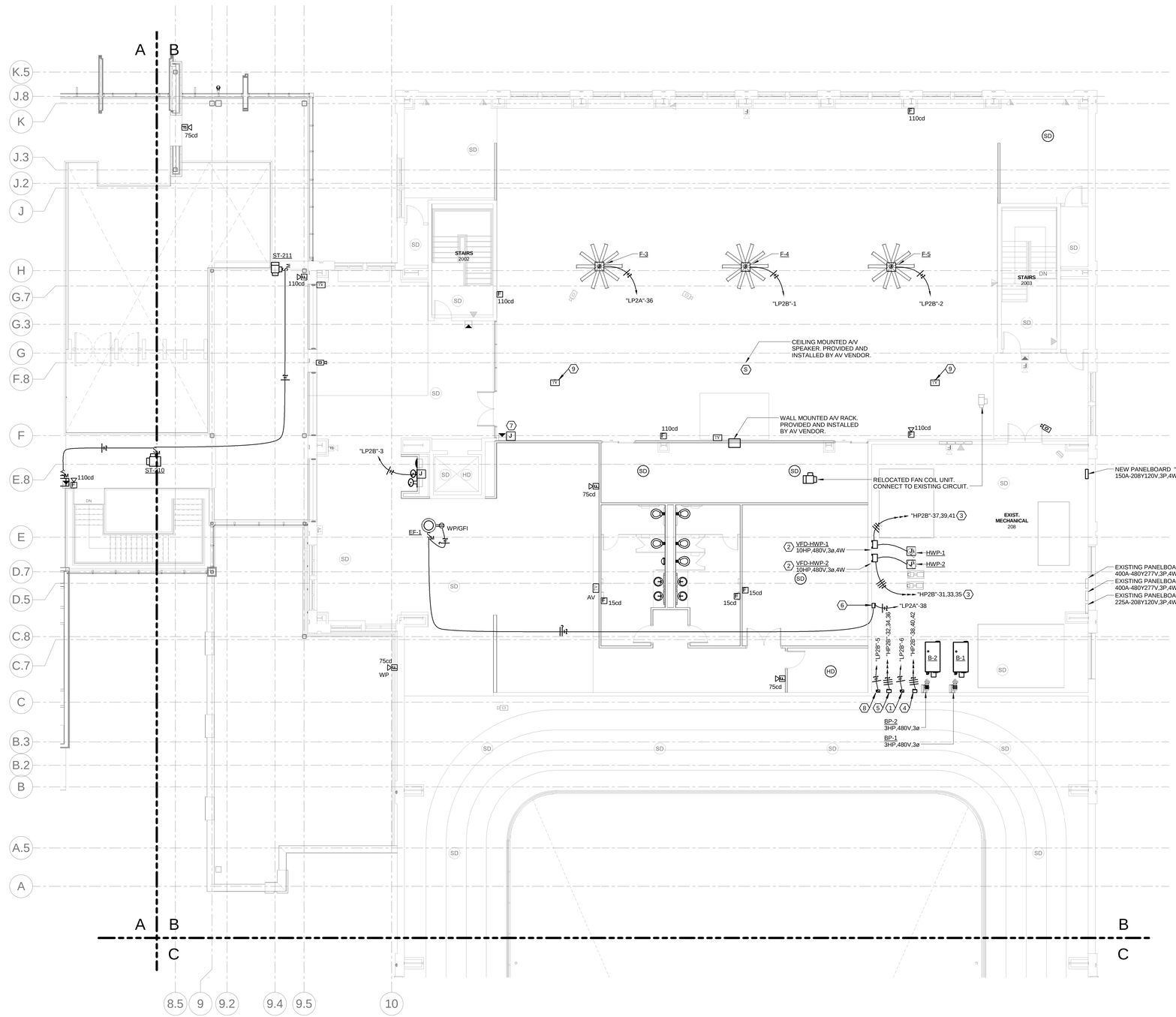
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR A

sheet number

E702a



GENERAL NOTES:

1. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT LOCATION OF ELECTRICAL DEVICES PRIOR TO ROUGH-IN.
2. ALL DATA CABLING RUN UNDERGROUND SHALL BE OSP RATED, NO EXCEPTIONS. EXPOSED OSP CABLE WITHIN THE BUILDING SHALL BE LIMITED TO 49'-0". ANY OSP CABLE RUN GREATER THAT 49'-0" SHALL UTILIZE A CONSOLIDATION POINT PROVIDED BY ELECTRICAL CONTRACTOR.
3. ALL NEW FIRE ALARM DEVICES SHALL MATCH EXISTING MANUFACTURE. PROVIDE NAC PANELS AS NECESSARY.
4. PROVIDE J-HOOKS 4'-0" ON CENTER FOR ALL CABLING PATHWAYS IN SPACES WITH ACCESSIBLE CEILING. PROVIDE A DEDICATED PATHWAY FOR ALL CABLING IN SPACES WITH INACCESSIBLE CEILING OR NO CEILING. IF EXPOSED, CONDUIT TO BE PAINTED TO MATCH STRUCTURE.
5. CAMERAS AND CAMERA WIRING TO BE PROVIDED BY OWNER. CONTRACTOR TO PROVIDE AND INSTALL ROUGH-IN ONLY.

KEYED NOTES:

1. PROVIDE AND INSTALL NEMA 1, 1P/30A FUSED DISCONNECT WITH DUAL ELEMENT, TIME DELAY FUSES FUSED AT 20 AMPS. ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED AND ROUTE 3-#12 TO BOILER B-1 AND MAKE FINAL CONNECTION.
2. VFD (VARIABLE FREQUENCY DRIVE) PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED/CONNECTED BY ELECTRICAL CONTRACTOR. PROVIDE A UNIT WITH EQUIPMENT LABEL.
3. ROUTE 3-#12 AND 1-#12 E.G. IN 3/4" CONDUIT TO PANEL INDICATED. ROUTE 3#12 AND 1-#12 E.G. IN 3/4" CONDUIT FROM VFD TO MOTOR AS SHOWN AND MAKE FINAL CONNECTIONS.
4. PROVIDE AND INSTALL NEMA SIZE 1, COMBINATION MOTOR STARTER 3P/30A DISCONNECT FUSED AT 15 AMPS (DUAL ELEMENT, TIME DELAY FUSES), START/STOP PUSH BUTTONS AND CONTROL TRANSFORMER. ROUTE 3-#12 AND 1-#12 EG. IN 3/4" SEALED METALLIX FLEX CONDUIT AND CONNECT TO BP-1. PROVIDE WITH EQUIPMENT LABEL.
5. PROVIDE AND INSTALL NEMA SIZE 1, COMBINATION MOTOR STARTER 3P/30A DISCONNECT FUSED AT 15 AMPS (DUAL ELEMENT, TIME DELAY FUSES), START/STOP PUSH BUTTONS AND CONTROL TRANSFORMER. ROUTE 3-#12 AND 1-#12 EG. IN 3/4" SEALED METALLIX FLEX CONDUIT AND CONNECT TO BP-2. PROVIDE WITH EQUIPMENT LABEL.
6. PROVIDE AND INSTALL NEMA SIZE 00, COMBINATION MOTOR STARTER 3P/30A DISCONNECT FUSED AT 15 AMPS (DUAL ELEMENT, TIME DELAY FUSES), START/STOP PUSH BUTTONS AND CONTROL TRANSFORMER. ROUTE 3-#12 AND 1-#12 EG. IN 3/4" SEALED METALLIX FLEX CONDUIT AND CONNECT TO EF-1. PROVIDE WITH EQUIPMENT LABEL.
7. PROVIDE AND INSTALL JUNCTION BOX FOR CONNECTION TO FAN CONTROLLER FOR CEILING FANS IN OPEN WORKOUT AREA. CONTROLLER PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
8. PROVIDE AND INSTALL NEMA 1, 1P/30A FUSED DISCONNECT WITH DUAL ELEMENT, TIME DELAY FUSES FUSED AT 20 AMPS. ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED AND ROUTE 3-#12 TO BOILER B-2 AND MAKE FINAL CONNECTION.
9. TV MOUNTED TO VERTICAL WALL OF COVE. COORDINATE SUPPORT DETAILS WITH STRUCTURAL.

1 SECOND FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR B

1/8" = 1'-0"

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HPER Center Renovation & Expansion

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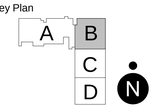
Key Plan



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rev	date	description

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SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - SYSTEMS AND MECHANICAL POWER - SECTOR B

sheet number

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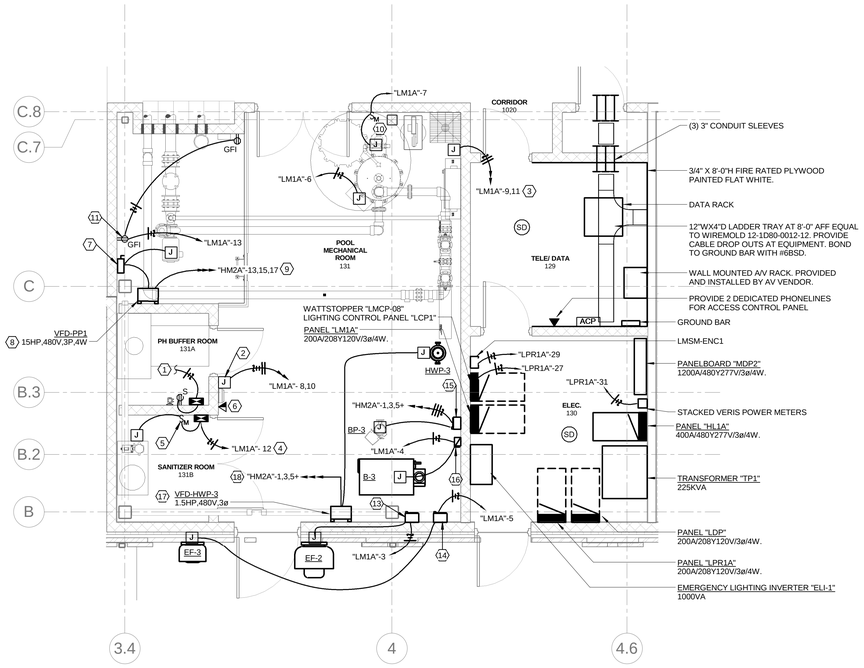
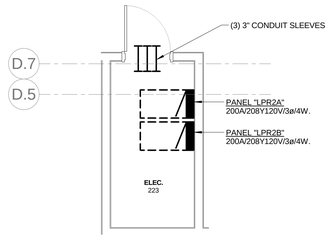


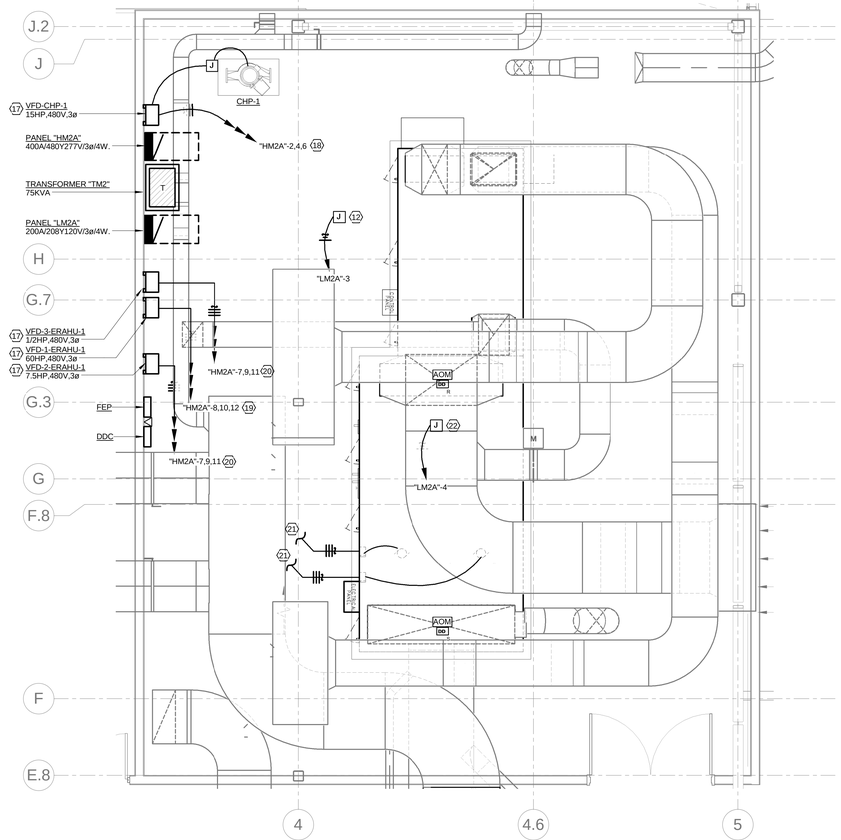
1 PARTIAL FIRST FLOOR PLAN - ELECTRICAL POWER & SYSTEMS - SECTOR A

1/4" = 1'-0"



2 ENLARGED ELEC. 223 - ELECTRICAL POWER - SECTOR A

1/4" = 1'-0"



3 ENLARGED MECHANICAL (FITNESS) 229 - ELECTRICAL POWER

1/4" = 1'-0"

GENERAL NOTES:

1. ALL POOL SHELL REINFORCING STEEL INCLUDING AT LEAST 3'-0" OF THE PERIMETER DECK AND ALL METAL ANCHORS, INSERTS, FITTINGS, LIGHT NICHES, AND EQUIPMENT IN THE POOL AND WITHIN 5'-0" OF THE POOLS EDGE AS WELL AS ALL MECHANICAL EQUIPMENT IN THE FILTER AND ADJACENT CHEMICAL ROOMS MUST BE GROUNDED PER NEC ARTICLE 680.
2. ALL CONDUIT IN PH BUFFER ROOM 131A AND SANITIZER ROOM 131B TO BE SCH 40 PVC. UNLESS OTHERWISE NOTED.
3. ALL CONDUIT IN POOL FILTRATION ROOM 131 TO EMT UNLESS OTHERWISE NOTED.
4. ALL POOL EQUIPMENT LOW VOLTAGE WIRING BY POOL EQUIPMENT CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT FOR LOW VOLTAGE WIRING.

KEYED ELECTRICAL NOTES:

1. PROVIDE AND INSTALL NEMA SIZE 00 STARTER WITH START/STOP CONTROL, CONTROL TRANSFORMER AND (2) NO/NC AUXILIARY CONTACTS. ROUTE 3-#12 IN 3/4" CONDUIT TO COMBINATION SWITCH/RECEPTACLE AND ROUTE (1) 3/4" CONDUIT TO RECIRCULATION PUMP FOR LOW VOLTAGE WIRING.
2. ROUTE 3-#12 IN 3/4" CONDUIT FROM CHEMICAL CONTROLLER TO STARTER FOR ACID PUMP AND ROUTE 3-#12 IN 3/4" CONDUIT FROM CHEMICAL CONTROLLER TO CHLORINE PUMP.
3. IF ALTERNATE #3 WITH UV TREATMENT SYSTEM IS ACCEPTED, PROVIDE AND INSTALL 2P/30A CIRCUIT BREAKER AND ROUTE 3-#10 IN 3/4" CONDUIT TO PANEL INDICATED AND CONNECT TO CONTROL PANEL. ROUTE (1) 3/4" CONDUIT FROM CONTROL PANEL TO CHEMICAL CONTROLLER FOR LOW VOLTAGE CONTROL WIRING.
4. PROVIDE AND INSTALL NEMA SIZE 00 STARTER WITH START/STOP CONTROL, CONTROL TRANSFORMER AND (2) NO/NC AUXILIARY CONTACTS. ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED AND ROUTE (1) 3/4" CONDUIT TO RECIRCULATION PUMP FOR LOW VOLTAGE WIRING.
5. PROVIDE AND INSTALL 1P-20A MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION AND ROUTE 3-#12 IN 3/4" CONDUIT TO STARTER IN KEYED NOTE #4 AND ROUTE 3-#12 IN 3/4" CONDUIT TO PUMP AND MAKE FINAL CONNECTIONS.
6. PROVIDE AND INSTALL TELE/DATA RECEPTACLE FOR CONECTION TO CHEMICAL CONTROLLER. VERIFY MOUNTING HEIGHT WITH POOL EQUIPMENT VENDOR PRIOR TO ROUGH-IN.
7. PROVIDE AND INSTALL NEMA 1 3P-30A FUSED DISCONNECT WITH DUAL ELEMENT, TIME DELAY FUSES FUSED AT 30 AMPS. ROUTE 3-#10 AND 1-#10 E.G. IN 3/4" CONDUIT TO PUMP AND MAKE FINAL CONNECTIONS. PROVIDE EQUIPMENT LABEL.
8. VFD (VARIABLE FREQUENCY DRIVE) PROVIDED BY POOL EQUIPMENT VENDOR, INSTALLED/CONNECTED BY ELECTRICAL CONTRACTOR. PROVIDE A UNIT WITH EQUIPMENT LABEL.
9. ROUTE 3-#10 AND 1-#10 E.G. IN 3/4" EMT CONDUIT TO PANEL INDICATED. ROUTE 3#10 AND 1-#10 E.G. IN 3/4" CONDUIT FROM VFD TO DISCONNECT AS SHOWN AND MAKE FINAL CONNECTIONS. ROUTE (1) 3/4" CONDUIT FROM VFD TO CHEMICAL CONTROLLER, (1) 3/4" CONDUIT TO FILTER CONTROL PANEL AND (1) 3/4" CONDUIT TO WATER FLOW SENSOR FOR LOW VOLTAGE CONTROL WIRING.
10. PROVIDE AND INSTALL 1P/30A MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION FOR FILTER AIR COMPRESSOR. ROUTE 3#10 IN 3/4" CONDUIT AND CONNECT TO PANEL INDICATED AND ROUTE 3-#10 IN 3/4" CONDUIT AND CONNECT TO COMPRESSOR.
11. PROVIDE AND INSTALL GFI DUPLEX RECEPTACLE IN PIT FOR CONNECTION TO SUMP PUMP.
12. PROVIDE AND INSTALL JUNCTION BOX FOR POWER TO LARGE CONTROL VALVES AND DAMPERS. COORDINATE EXACT LOCATION WITH MECHANICAL AND CONTROLS CONTRACTOR.

KEYED ELECTRICAL NOTES:

13. PROVIDE AND INSTALL NEMA SIZE 00, COMBINATION MOTOR STARTER 1P/30A DISCONNECT FUSED AT 15 AMPS (DUAL ELEMENT, TIME DELAY FUSES), START/STOP PUSH BUTTONS AND CONTROL TRANSFORMER. ROUTE 3-#12 AND 1-#12 E.EG. IN 3/4" SEALED METALLIX FLEX CONDUIT AND CONNECT TO EF-2. PROVIDE WITH EQUIPMENT LABEL.
14. PROVIDE AND INSTALL NEMA SIZE 00, COMBINATION MOTOR STARTER 1P/30A DISCONNECT FUSED AT 15 AMPS (DUAL ELEMENT, TIME DELAY FUSES), START/STOP PUSH BUTTONS AND CONTROL TRANSFORMER. ROUTE 3-#12 AND 1-#12 E.EG. IN 3/4" SEALED METALLIX FLEX CONDUIT AND CONNECT TO EF-3. PROVIDE WITH EQUIPMENT LABEL.
15. PROVIDE AND INSTALL NEMA SIZE 1, COMBINATION MOTOR STARTER 3P/30A DISCONNECT FUSED AT 15 AMPS (DUAL ELEMENT, TIME DELAY FUSES), START/STOP PUSH BUTTONS AND CONTROL TRANSFORMER. ROUTE 3-#12 AND 1-#12 E.EG. IN 3/4" SEALED METALLIX FLEX CONDUIT AND CONNECT TO BP-3. PROVIDE WITH EQUIPMENT LABEL.
16. PROVIDE AND INSTALL NEMA 1, 1P/30A FUSED DISCONNECT WITH DUAL ELEMENT, TIME DELAY FUSES FUSED AT 20 AMPS. ROUTE 3-#12 IN 3/4" CONDUIT TO PANEL INDICATED AND ROUTE 3-#12 TO BOILER AND MAKE FINAL CONNECTION.
17. VFD (VARIABLE FREQUENCY DRIVE) PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED/CONNECTED BY ELECTRICAL CONTRACTOR. PROVIDE A UNIT WITH EQUIPMENT LABEL.
18. ROUTE 3-#12 AND 1-#12 E.G. IN 3/4" CONDUIT TO PANEL INDICATED. ROUTE 3#12 AND 1-#12 E.G. IN 3/4" EMT CONDUIT FROM VFD TO JUNCTION BOX ON UNISTRUT BRACKET AND ROUTE 3-#12 AND 1-#12EG IN 3/4" SEALED METALLIC FLEX CONDUIT TO PUMP CHP-1 AS SHOWN AND MAKE FINAL CONNECTIONS.
19. ROUTE 3-3 AND 1-8 E.G. IN 1-1/4" EMT CONDUIT TO PANEL INDICATED.
20. ROUTE 3-12 AND 1#12 E.G. IN 3/4" EMT CONDUIT TO PANEL INDICATED AND ROUTE 3-#12 AND 1-#12 E.G. IN 3/4" EMT CONDUIT FROM VFD TO EXHAUST FAN MOTOR IN ERAHU-1 AND MAKE FINAL CONNNECTIONS.
21. PROVIDE AND INSTALL NEMA 1, 3P/60A FUSED DISCONNECT WITH DUAL ELEMENT, TIME DELAY FUSES FUSED AT 60 AMPS. ROUTE 3-#6 AND 1-#10 E.G IN 3/4" CONDUIT TO VFD-1-ERAHU-1 AND ROUTE 3-#6 AND 1-#10 E.G IN 3/4" SEALED METALLIC FLEX CONDUIT TO MOTOR IN UNIT. PROVIDE DISCONNECT WITH AUXILLARY CONTACTS AND ROUTE TO VFD-1-ERAHU-1 TO INDICATE POSITION OF DISCONNECT. COORDINATE MOUNTING LOCATION WITH MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO MAKE ALL FINAL CONNECTIONS FOR COMPLETE SYSTEM. PROVIDE DISCONNECT WITH EQUIPMENT LABEL.
22. ROUTE 3-#12 IN 3/4" CONDUIT AND CONNECT TO GFI RECEPTACLES AND LIGHT FIXTURES PROVIDED WITH UNIT.

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360 THREESIXTY ARCHITECTURE

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MEP engineer:
TME, INC.
5800 Evergreen Drive
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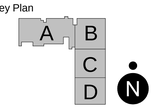
aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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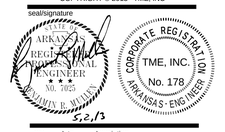


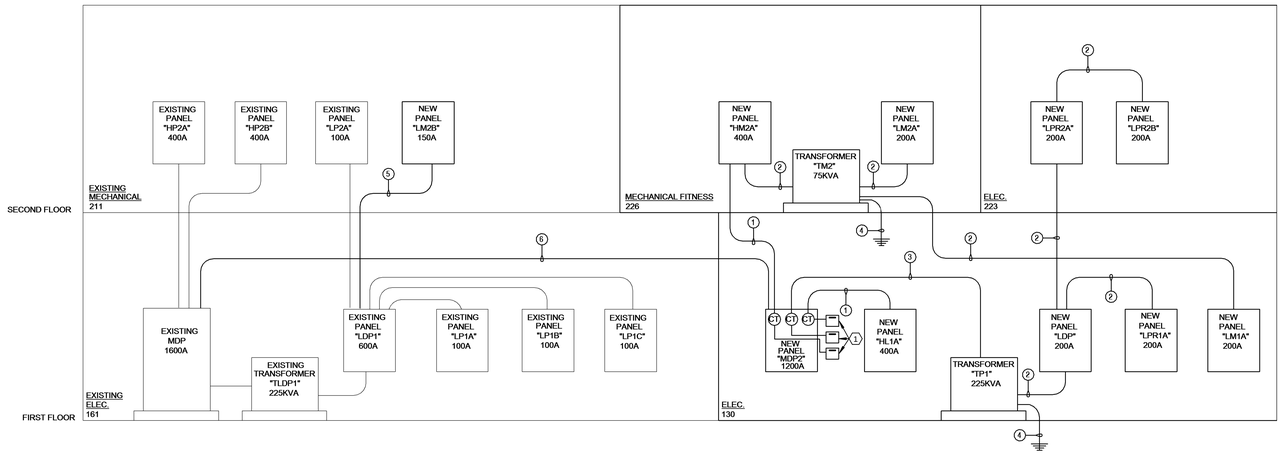
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

PARTIAL FLOOR PLANS - ELECTRICAL

sheet number

E801

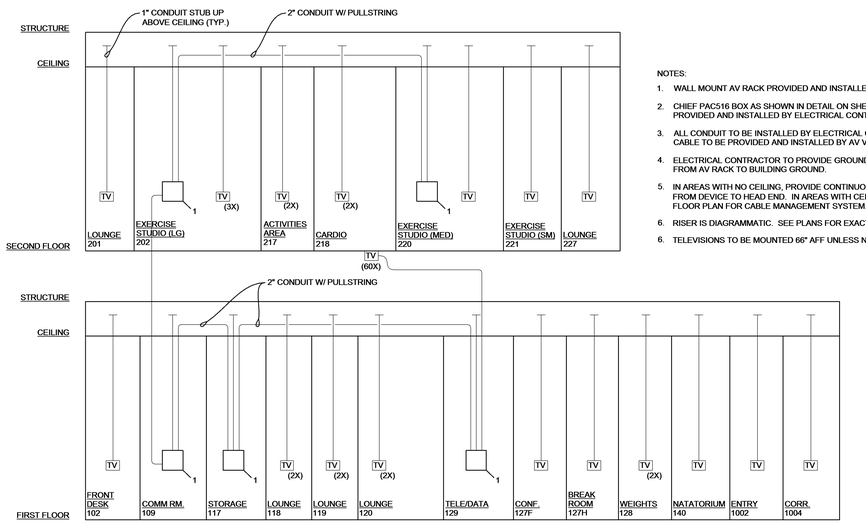


1 RISER DIAGRAM - ELECTRICAL
NOT TO SCALE

WIRE/CONDUIT SCHEDULE			
WIRE/ CABLE	QTY/TYPE	CONDUIT SIZE (IN.)	REMARKS
1	(2 SETS) 3-3/0 & 1-#3 E.G.	2"	EMT CONDUIT
2	3-#3/0, 1-#6 E.G.	2"	EMT CONDUIT
3	(2 SETS)3-4/0 KCMIL, 1-#2 EG	3"	EMT CONDUIT
4	1-#6 EG	3/4"	EMT CONDUIT
5	3-#1/0, 1-#6 EG	1-1/2"	EMT CONDUIT
6	(4 SETS) 3-350KCMIL, 1-#3/0 EG	3"	EMT CONDUIT

KEYED ELECTRICAL NOTES:

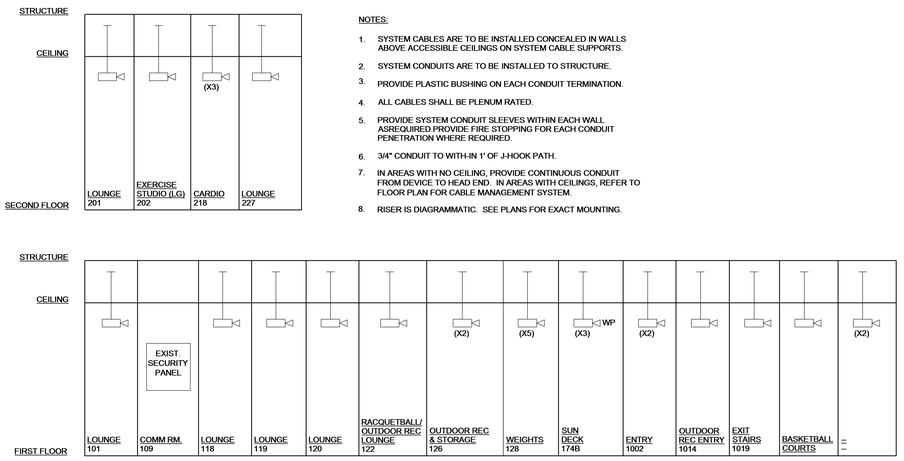
1. PROVIDE AND INSTALL POWER METER, VERIS #E50H5 BACNET MS/TP WITH #H6800 CURRENT TRANSDUCERS AND #AH04 FUSE PACK WITH VOLTAGE LEADS. ROUTE (1) 3/4" CONDUIT TO BAS SYSTEM FOR ENERGY MONITORING. ELECTRICAL CONTRACTOR TO COORDINATE WITH CONTROLS CONTRACTOR.



2 CATV RISER DIAGRAM
NOT TO SCALE

NOTES:

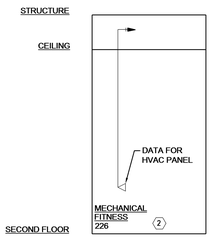
1. WALL MOUNT AV RACK PROVIDED AND INSTALLED BY AV VENDOR.
2. CHIEF PAC516 BOX AS SHOWN IN DETAIL ON SHEET E10.02, PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
3. ALL CONDUIT TO BE INSTALLED BY ELECTRICAL CONTRACTOR . AV CABLE TO BE PROVIDED AND INSTALLED BY AV VENDOR.
4. ELECTRICAL CONTRACTOR TO PROVIDE GROUNDING CONDUCTOR FROM AV RACK TO BUILDING GROUND.
5. IN AREAS WITH NO CEILING, PROVIDE CONTINUOUS CONDUIT FROM DEVICE TO HEAD END. IN AREAS WITH CEILINGS, REFER TO FLOOR PLAN FOR CABLE MANAGEMENT SYSTEM.
6. RISER IS DIAGRAMMATIC. SEE PLANS FOR EXACT MOUNTING.
6. TELEVISIONS TO BE MOUNTED 66" AFF UNLESS NOTED OTHERWISE.



NOTES:

1. SYSTEM CABLES ARE TO BE INSTALLED CONCEALED IN WALLS ABOVE ACCESSIBLE CEILINGS ON SYSTEM CABLE SUPPORTS.
2. SYSTEM CONDUITS ARE TO BE INSTALLED TO STRUCTURE.
3. PROVIDE PLASTIC BUSHING ON EACH CONDUIT TERMINATION.
4. ALL CABLES SHALL BE PLENUM RATED.
5. PROVIDE SYSTEM CONDUIT SLEEVES WITHIN EACH WALL ASREQUIRED.PROVIDE FIRE STOPPING FOR EACH CONDUIT PENETRATION WHERE REQUIRED.
6. 3/4" CONDUIT TO WITH-IN 1' OF J-HOOK PATH.
7. IN AREAS WITH NO CEILING, PROVIDE CONTINUOUS CONDUIT FROM DEVICE TO HEAD END. IN AREAS WITH CEILINGS, REFER TO FLOOR PLAN FOR CABLE MANAGEMENT SYSTEM.
8. RISER IS DIAGRAMMATIC. SEE PLANS FOR EXACT MOUNTING.

3 CCTV RISER DIAGRAM
NOT TO SCALE

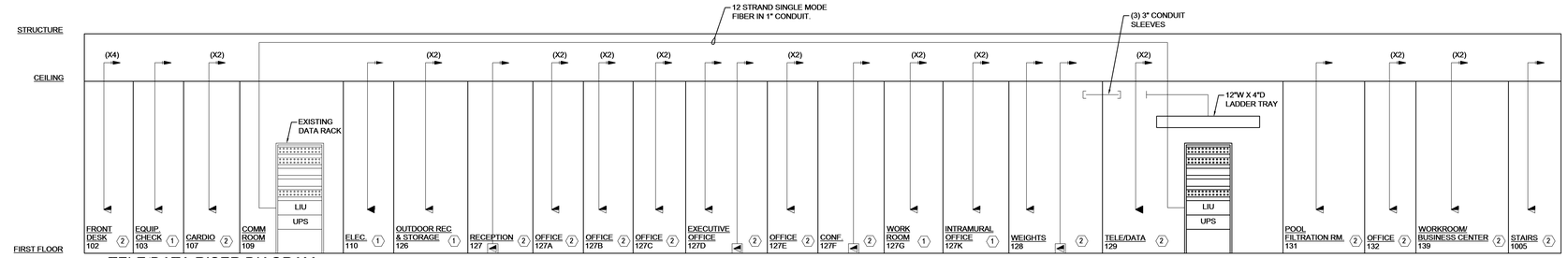


NOTES:

1. SYSTEM CABLES ARE TO BE INSTALLED ON SYSTEM CABLE SUPPORTS, REFER TO SHEET. NO EXPOSED CABLE SHALL BE INSTALLED IN OPEN AREAS. CABLE SHALL BE INSTALLED IN CONDUIT IN OPEN AREAS SUCH AS STAIRWELLS , MECHANICAL, AND ELECTRICAL ROOMS.
2. SYSTEM CABLES ARE TO BE INSTALLED AS HIGH TO STRUCTURE AS POSSIBLE, INCLUDING AREAS ABOVE CEILINGS.
3. PROVIDE PLASTIC BUSHING ON EACH CONDUIT TERMINATION.
4. 3/4" CONDUIT TO WITH-IN 1' OF CABLE TRAYS OR J-HOOK PATH.
5. ALL CABLES SHALL BE PLENUM RATED.
6. ALL WALL PARTITIONS ARE TO BE SEALED WITH CONDUIT AND BUSHINGS ON EACH END.
7. REFER TO OWNER'S VENDORS FOR TELEPHONE/DATA FOR EXACT TERMINATION LOCATIONS.
8. REFER TO SHEET E8.06 FOR ROOM LOCATIONS.
9. TELEPHONE/DATA SYSTEM IS OWNER FURNISHED, OWNER INSTALLED. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL CONDUIT AND BACK BOXES. REFER TO OWNER'S VENDOR FOR FURTHER DETAILS
10. IN AREAS WITH NO CEILING, PROVIDE CONTINUOUS CONDUIT FROM DEVICE TO HEAD END. IN AREAS WITH CEILINGS, REFER TO FLOOR PLAN FOR CABLE MANAGEMENT SYSTEM.
11. RISER IS DIAGRAMMATIC. SEE PLANS FOR EXACT MOUNTING.

KEYED NOTES:

1. ROUTE TELE/DATA DEVICES TO EXISTING DATA RACK.
2. ROUTE TELE/DATA DEVICES TO NEW DATA RACK.



4 TELE/DATA RISER DIAGRAM
NOT TO SCALE

HPER Center Renovation & Expansion

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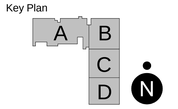
Key Plan



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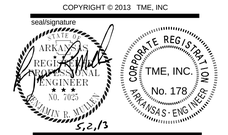

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UCA project number	UCA-121050

RISER DIAGRAMS

sheet number

E901

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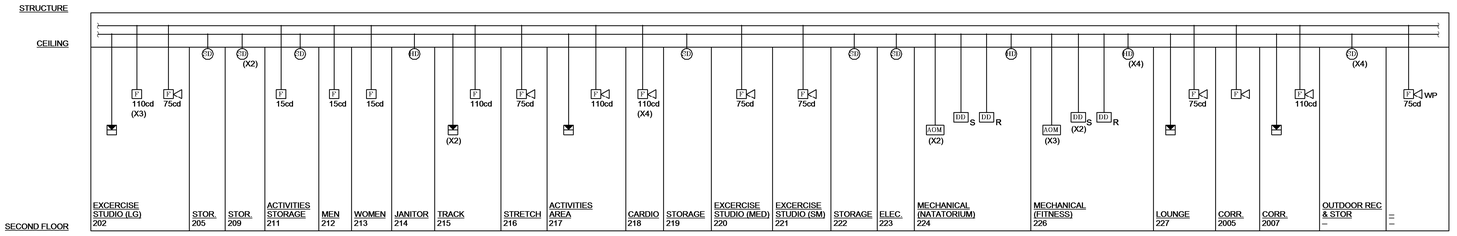
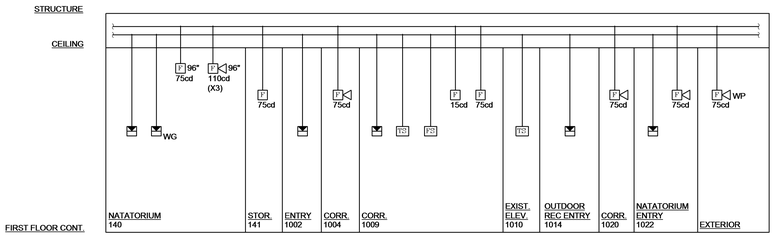
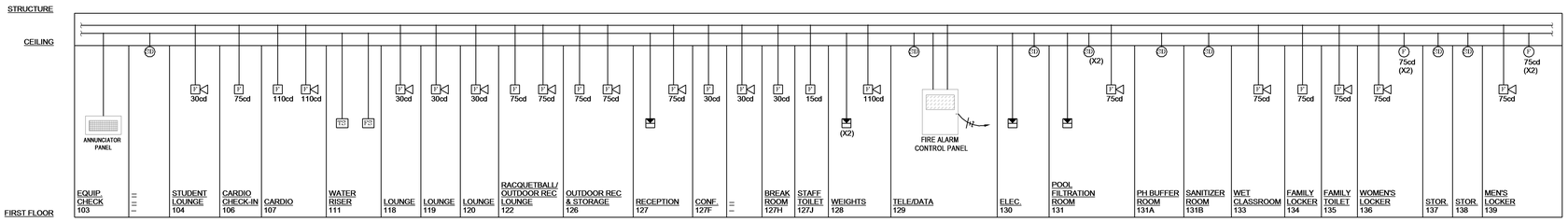




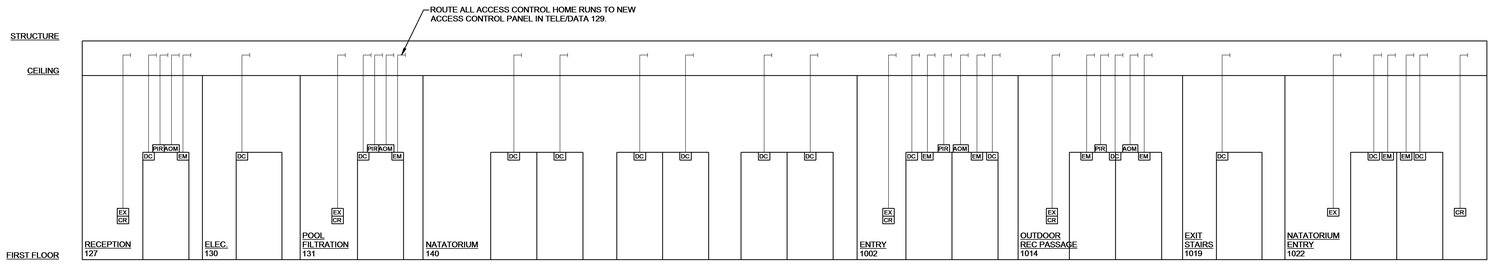
NOTES:

1. SYSTEM CABLES ARE TO BE INSTALLED IN CONDUIT.
2. PROVIDE PLASTIC BUSHING ON EACH CONDUIT TERMINATION.
3. ALL CABLE SHALL BE PLENUM RATED.
4. SYSTEM CONDUITS ARE TO BE INSTALLED AS HIGH AS POSSIBLE ABOVE CORRIDOR CEILINGS AND TO EITHER SIDE OF CORRIDOR.
5. ALL WALL PARTITIONS ARE TO BE SEALED WITH CONDUIT AND BUSHING ON EACH END.
6. IN AREAS WITH NO CEILING, PROVIDE CONTINUOUS CONDUIT FROM DEVICE TO HEAD END. IN AREAS WITH CEILINGS, REFER TO FLOOR PLAN FOR CABLE MANAGEMENT SYSTEM.
7. RISER IS DIAGRAMMATIC. SEE PLANS FOR EXACT MOUNTING.



1 FIRE ALAM RISER DIAGRAM

NOT TO SCALE



NOTES:

1. IN AREAS WITH NO CEILING, PROVIDE CONTINUOUS CONDUIT FROM DEVICE TO HEAD END. IN AREAS WITH CEILINGS, REFER TO FLOOR PLAN FOR CABLE MANAGEMENT SYSTEM.
2. RISER IS DIAGRAMMATIC. SEE PLANS FOR EXACT MOUNTING.

2 ACCESS CONTROL SYSTEMS RISER

NOT TO SCALE

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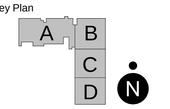

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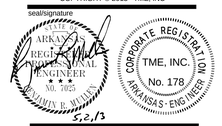

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date	05/06/13
phase	Bidding and Construction
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SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

RISER DIAGRAMS

sheet number

E902

OCCUPANCY SENSOR SYMBOLS SCHEDULE

NOTE: POWER SUPPLIES MAY BE SHARED FOR SENSORS WITHIN THE SAME CONTROL SPACE, UP TO THREE SENSORS PER POWER SUPPLY.

SYMBOL	DESCRIPTION
RC1	ROOM CONTROLLER RC1, WATT STOPPER #LMRC -101 RELAY #1: CORRIDOR 1020
RC2	ROOM CONTROLLER RC2, WATT STOPPER #LMRC -101 RELAY #1: WET CLASSROOM 133
RC3	ROOM CONTROLLER RC3, WATT STOPPER #LMRC -101 RELAY #1: FAMILY LOCKER 134/135
RC4	ROOM CONTROLLER RC4, WATT STOPPER #LMRC -101 RELAY #1: OFFICE/LIFEGUARD/FIRST AID 132
RC5	ROOM CONTROLLER RC5, WATT STOPPER #LMRC -101 RELAY #1: WOMENS LOCKER 136
RC6	ROOM CONTROLLER RC6, WATT STOPPER #LMRC -101 RELAY #1: MENS LOCKER 139
RC7	ROOM CONTROLLER RC7, WATT STOPPER #LMRC -102 RELAY #1: WEIGHTS 128, RELAY #2: WEIGHTS 128
RC8	ROOM CONTROLLER RC8, WATT STOPPER #LMRC -101 RELAY #1: WEIGHTS 128
RC9	ROOM CONTROLLER RC9, WATT STOPPER #LMRC -101 RELAY #1: WEIGHTS 128
RC10	ROOM CONTROLLER RC10, WATT STOPPER #LMRC -102 RELAY #1: RECEPTION 127, RELAY #2: CORR 1016
RC11	ROOM CONTROLLER RC11, WATT STOPPER #LMRC -101 RELAY #1: OFFICE 127A
RC12	ROOM CONTROLLER RC12, WATT STOPPER #LMRC -101 RELAY #1: OFFICE 127B
RC13	ROOM CONTROLLER RC13, WATT STOPPER #LMRC -101 RELAY #1: OFFICE 127C
RC14	ROOM CONTROLLER RC14, WATT STOPPER #LMRC -101 RELAY #1: OFFICE 127D
RC15	ROOM CONTROLLER RC15 WATT STOPPER #LMRC -101 RELAY #1: 127E
RC16	ROOM CONTROLLER RC16 WATT STOPPER #LMRC -102 RELAY #1: CONFERENCE 127F, RELAY #2:CONFERENCE 127F
RC17	ROOM CONTROLLER RC17 WATT STOPPER #LMRC -101 RELAY #1: WORK ROOM 127G
RC18	ROOM CONTROLLER RC18, WATT STOPPER #LMRC -101 RELAY #1: BREAK ROOM 127H
RC19	ROOM CONTROLLER RC19, WATT STOPPER #LMRC -101 RELAY #1: OFFICE 127J
RC20	ROOM CONTROLLER RC20, WATT STOPPER #LMRC -101 RELAY #1: OFFICE 127K
RC21	ROOM CONTROLLER RC21, WATT STOPPER #LMRC -102 RELAY #1: LOUNGE 101, RELAY #2: FRONT DESK 102,
RC22	ROOM CONTROLLER RC22, WATT STOPPER #LMRC -101 RELAY #1: EQUIP. CHECK 103

OCCUPANCY SENSOR SYMBOLS SCHEDULE

NOTE: POWER SUPPLIES MAY BE SHARED FOR SENSORS WITHIN THE SAME CONTROL SPACE, UP TO THREE SENSORS PER POWER SUPPLY.

SYMBOL	DESCRIPTION
RC23	ROOM CONTROLLER RC23 WATT STOPPER #LMRC -101 RELAY #1: STUDENT LOUNGE 104
RC24	ROOM CONTROLLER RC24 WATT STOPPER #LMRC -101 RELAY #1: TESTING 105
RC25	ROOM CONTROLLER RC25 WATT STOPPER #LMRC -101 RELAY #1: CORRIDOR 1004; RELAY #2: CORRIDOR 1009
RC26	ROOM CONTROLLER RC26, WATT STOPPER #LMRC -101 RELAY #1: LOUNGE 120
RC27	ROOM CONTROLLER RC27, WATT STOPPER #LMRC -101 RELAY #1: LOUNGE 119
RC28	ROOM CONTROLLER RC28, WATT STOPPER #LMRC -101 RELAY #1: LOUNGE 118
RC29	ROOM CONTROLLER RC29, WATT STOPPER #LMRC -101 RELAY #1: OUTDOOR REC ENTRY 1014
RC30	ROOM CONTROLLER RC30 WATT STOPPER #LMRC -101 RELAY #1: RACQUETBALL COURT 1 123
RC31	ROOM CONTROLLER RC31 WATT STOPPER #LMRC -101 RELAY #1: RACQUETBALL COURT 2 124
RC32	ROOM CONTROLLER RC32 WATT STOPPER #LMRC -101 RELAY #1: RACQUETBALL COURT 3 125
RC33	ROOM CONTROLLER RC33, WATT STOPPER #LMRC -101 RELAY #1: LOUNGE 227
RC34	ROOM CONTROLLER RC34, WATT STOPPER #LMRC -101 RELAY #1: EXIT STAIRS 2010
RC35	ROOM CONTROLLER RC35, WATT STOPPER #LMRC -101 RELAY #1: EXERCISE STUDIO (SMALL) 221
RC36	ROOM CONTROLLER RC36, WATT STOPPER #LMRC -101 RELAY #1: EXERCISE STUDIO (MEDIUM) 220
RC37	ROOM CONTROLLER RC37, WATT STOPPER #LMRC -101 RELAY #1: CARDIO 218
RC38	ROOM CONTROLLER RC38, WATT STOPPER #LMRC -102 RELAY #1: WEIGHTS 128, RELAY #2: ENTRY 1002
RC39	ROOM CONTROLLER RC39, WATT STOPPER #LMRC -101 RELAY #1: ACTIVITIES AREA 210
RC40	ROOM CONTROLLER RC40, WATT STOPPER #LMRC -101 RELAY #1: MEN 212
RC41	ROOM CONTROLLER RC41, WATT STOPPER #LMRC -101 RELAY #1: WOMEN 213
RC42	ROOM CONTROLLER RC42, WATT STOPPER #LMRC -101 RELAY #1: JANITOR 214
RC43	ROOM CONTROLLER RC43, WATT STOPPER #LMRC -101 RELAY #1: ACTIVITIES STORAGE 211
RC44	ROOM CONTROLLER RC44, WATT STOPPER #LMRC -101 RELAY #1: STORAGE 209

OCCUPANCY SENSOR SYMBOLS SCHEDULE

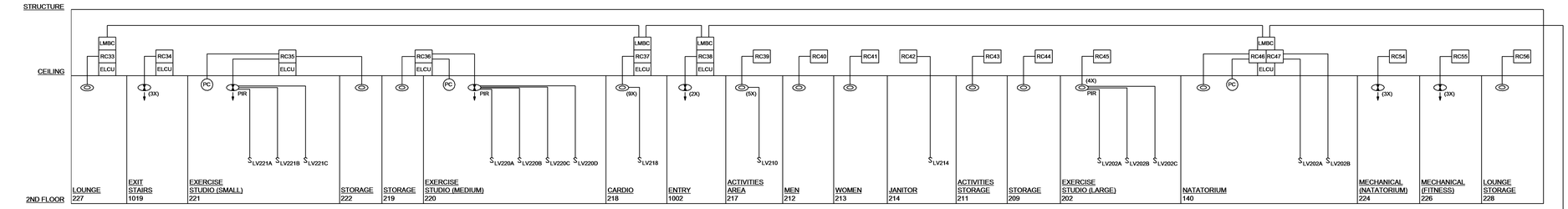
NOTE: POWER SUPPLIES MAY BE SHARED FOR SENSORS WITHIN THE SAME CONTROL SPACE, UP TO THREE SENSORS PER POWER SUPPLY.

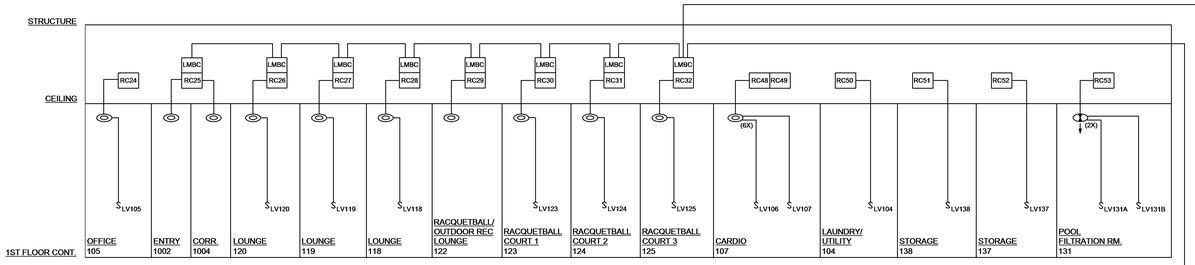
SYMBOL	DESCRIPTION
RC45	ROOM CONTROLLER RC45, WATT STOPPER #LMRC -101 RELAY #1: EXERCISE STUDIO (LARGE) 202
RC46	ROOM CONTROLLER RC46, WATT STOPPER #LMRC -101 RELAY #1: NATATORIUM 140
RC47	ROOM CONTROLLER RC47 WATT STOPPER #LMRC -101 RELAY #1: NATATORIUM 140
RC48	ROOM CONTROLLER RC48 WATT STOPPER #LMRC -101 RELAY #1: CARDIO 107
RC49	ROOM CONTROLLER RC49 WATT STOPPER #LMRC -101 RELAY #1: CARDIO 107
RC50	ROOM CONTROLLER RC50 WATT STOPPER #LMRC -101 RELAY #1: LAUNDRY 142
RC51	ROOM CONTROLLER RC51 WATT STOPPER #LMRC -101 RELAY #1: STORAGE 138
RC52	ROOM CONTROLLER RC52 WATT STOPPER #LMRC -101 RELAY #1: STORAGE 137
RC53	ROOM CONTROLLER RC53 WATT STOPPER #LMRC -101 RELAY #1: POOL FILTRATION 131
RC54	ROOM CONTROLLER RC54 WATT STOPPER #LMRC -101 RELAY #1: MECHANICAL FITNESS 224
RC55	ROOM CONTROLLER RC55 WATT STOPPER #LMRC -101 RELAY #1: MECHANICAL FITNESS 226
RC56	ROOM CONTROLLER RC56 WATT STOPPER #LMRC -101 RELAY #1: LOUNGE STORAGE 228
	ARROW IS ASSOCIATED WITH SENSOR DEVICE. DIRECTION OF ARROW INDICATES DIRECTION AND CENTERLINE OF REGION BEING MONITORED BY THE SENSOR DEVICE
	WATT STOPPER #LMDX-100 DIGITAL DUAL TECHNOLOGY CORNER MOUNT OCCUPANCY SENSOR: PLUG-N-GO AUTOMATIC CONFIRGURATION , PUSH-N-LEARN FUNCTIONALITY, CAT 5E DLM NETWORK, 40KHz SIGNAL RANGE, DETECTION SIGNATURE PROCESSING TO ELIMINATE FALSE TRIGGERS , RoHS COMPLIANT
	WATT STOPPER #LMDC-100 DIGITAL DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSOR: PLUG-N-GO AUTOMATIC CONFIRGURATION , PUSH-N-LEARN FUNCTIONALITY, CAT 5E DLM NETWORK,40KHz SIGNAL RANGE, 360 PIR COVERAGE, DETECTION SIGNATURE PROCESSING TO ELIMINATE FALSE TRIGGERS , RoHS COMPLIANT
PIR	WATT STOPPER #LMPC-100 DIGITAL DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSOR: PLUG-N-GO AUTOMATIC CONFIRGURATION , PUSH-N-LEARN FUNCTIONALITY, CAT 5E DLM NETWORK,40KHz SIGNAL RANGE, 360 PIR COVERAGE, DETECTION SIGNATURE PROCESSING TO ELIMINATE FALSE TRIGGERS , RoHS COMPLIANT
ENC1	NEMA 1 ENCLOSURE FOR DLM SEGMENT MANAGER #LMSM-201. SURFACE MOUNTED, SUITABLE FOR DAMP LOCATIONS, THIS DEVICE IS A BARRIER BETWEEN HIGH AND LOW VOLTAGE.
PC	WATT STOPPER #LMLS-400PHOTOCELL
LMBC	WATTSTOPPER #LMBC-300 DIGITAL NETWORK BRIDGE
ELCU	WATTSTOPPER #ELCU-100 EMERGENCY LIGHTING CONTROL UNIT
PIR	WATT STOPPER #LMPX-100 DIGITAL DUAL TECHNOLOGY CORNER MOUNT OCCUPANCY SENSOR: PLUG-N-GO AUTOMATIC CONFIRGURATION , PUSH-N-LEARN FUNCTIONALITY, CAT 5E DLM NETWORK, 40KHz SIGNAL RANGE, DETECTION SIGNATURE PROCESSING TO ELIMINATE FALSE TRIGGERS , RoHS COMPLIANT

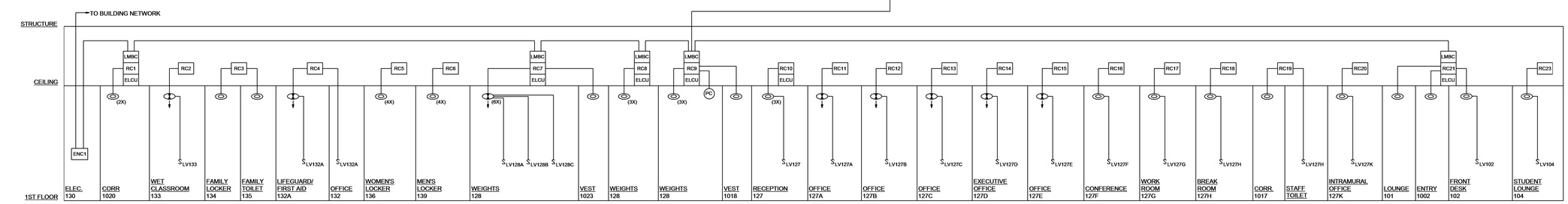
LIGHTING CONTROL PANEL SCHEDULE - LCP1

LOCATION: ELEC 130 — NOTES: LIGHTING CONTROL PANEL IS FED FROM LPR1A

RELAY NUMBER	POLES	LIGHTING	PANEL	CIRCUIT	DESCRIPTION
R1	1	PARKING LOT	HL1A	5	LIGHT FIXTURES S1, S2
R2	1	EXTERIOR BUILDING	HL1A	13	LIGHT FIXTURES D, M, Y, Z
R3	1	SPARE			
R4	1	SPARE			
R5	1	SPARE			
R6					
R7					
R8					







1 OCCUPANCY SENSOR RISER DIAGRAM
NOT TO SCALE

GENERAL INTERIOR LIGHTING CONTROL NOTES:

1. LOW VOLTAGE CONDUCTORS SHALL BE IN OWN CONDUIT/COMPARTMENT APART FROM LINE VOLTAGE CONDUCTORS. ALL CONDUIT SHALL NOT BE SMALLER THAN 3/4".
2. OCCUPANCY SENSOR VENDOR SHALL REFER TO FLOOR PLANS AND ADJUST TYPES, QUANTITIES, AND LOCATIONS AS REQUIRED FOR FULL COVERAGE OF EACH SPACE. THE CONTRACTOR SHALL ENSURE THAT OTHER ASSOCIATED EQUIPMENT IS PROVIDED AS REQUIRE.
3. CONTROL DETAILS ARE DIAGRAMMATIC TO ILLUSTRATE TYPICAL INTERCONNECTIONS AND SHALL TAKE PRECEDENCE FOR INDICATING THE QUANTITIES OF CONDUCTORS. THE FLOOR PLANS INTEND TO INDICATE LOCATIONS AND SHALL TAKE PRECEDENCE FOR INDICATING THE QUANTITIES OF DEVICES AND FIXTURES.
4. ALL EXPOSED CONDUIT TO BE PAINTED TO MATCH STRUCTURE COORDINATE WITH ARCHITECT.
5. ELECTRICAL CONTRACTOR TO SUBMIT LIGHTING CONTROL SEQUENCES TO ENGINEER AND OWNER FOR APPROVAL PRIOR TO PROGRAMMING LIGHTING CONTROL SYSTEM.
6. IN AREAS WITH NO CEILING, PROVIDE CONTINUOUS CONDUIT FROM DEVICE TO HEAD END. IN AREAS WITH CEILINGS, REFER TO FLOOR PLAN FOR CABLE MANAGEMENT SYSTEM.
7. RISER IS DIAGRAMMATIC. SEE PLANS FOR EXACT MOUNTING.

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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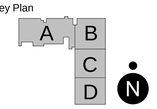
Key Plan



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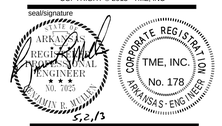

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

RISER DIAGRAMS

sheet number

E903

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LOW VOLTAGE SWITCH SCHEDULE

ID: LV-102			
PART #: LMSW-101			LOCATION: FRONT DESK 102
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC21	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL FIXTURES D.

ID: LV-103			
PART #: LMSW-101			LOCATION: EQUIP. CHECK 103
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC22	HP1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL FIXTURES D.

✳ ID: LV-104			
PART #: LMSW-101			LOCATION: STUDENT LOUNGE 104
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC23	HP1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL FIXTURES C.

✳ ID: LV-105			
PART #: LMSW-101			LOCATION: TESTING 105
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC24	HP1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL FIXTURES C.

✳ ID: LV-106			
PART #: LMSW-101			LOCATION: CARDIO CHECK-IN 106
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC48	HP1A-21	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL FIXTURES D.

✳ ID: LV-107			
PART #: LMSW-101			LOCATION: CARDIO 107
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC49	HP1A-23	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL FIXTURES AA.

ID: LV-127			
PART #: LMSW-102			LOCATION: RECEPTION 127
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC10	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL RECEPTION FIXTURES A.
2	RC10	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL CORRIDOR 1016 AND CORRIDOR 1017 FIXTURES A AND D.

ID: LV-127A			
PART #: LMSW-101			LOCATION: OFFICE 127A
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC11	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL OFFICE 127A FIXTURES B.

ID: LV-127B			
PART #: LMSW-101			LOCATION: OFFICE 127B
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC12	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL OFFICE 127B FIXTURES B.

ID: LV-127C			
PART #: LMSW-101			LOCATION: OFFICE 127C
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC13	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL OFFICE 127C FIXTURES B.

ID: LV-127D			
PART #: LMSW-101			LOCATION: EXECUTIVE OFFICE 127D
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC14	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXECUTIVE OFFICE 127D FIXTURES B.

ID: LV-127E			
PART #: LMSW-101			LOCATION: OFFICE 127E
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC15	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL OFFICE 127E FIXTURES B.

ID: LV-127FA			
PART #: LMDM-101			LOCATION: CONFERENCE 127F
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC16	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONFEERENCE 127F FIXTURES 127F

ID: LV-127FB			
PART #: LMSW-102			LOCATION: CONFERENCE 127F
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC16	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL CONFERENCE 127F FIXTURES D AND U.
2	RC16	HL1A-8	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL CONFERENCE 127F FIXTURES D AND U.

ID: LV-127G			
PART #: LMSW-101			LOCATION: WORK ROOM 127G
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC17	HP1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL WORK ROOM 127G FIXTURES B.

ID: LV-127H			
PART #: LMSW-101			LOCATION: BREAK ROOM 127H
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC18	HP1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL BREAK ROOM 127H FIXTURES B.

ID: LV-127J			
PART #: LMPW-101			LOCATION: STAFF TOILET 127J
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC19	HP1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL STAFF TOILET 127J FIXTURE C.

ID: LV-127K			
PART #: LMSW-101			LOCATION: INTRAMURAL OFFICE 127K
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC20	HP1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL INTRAMURAL OFFICE 127K FIXTURES B.

ID: LV-128A			
PART #: LMDM-101			LOCATION: WEIGHTS 128
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC8	HL1A-6	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL WEIGHTS FIXTURES AA AND BB.

ID: LV-128B			
PART #: LMDM-101			LOCATION: WEIGHTS 128
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC9	HL1A-4	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL WEIGHTS FIXTURES AA AND BB.

ID: LV-128C			
PART #: LMSW-102			LOCATION: WEIGHTS 128
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC8	HL1A-3	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL WEIGHTS FIXTURES LL.
2	RC8	HL1A-3	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL WEIGHTS FIXTURES O.

ID: LV-131A			
PART #: LMSW-101			LOCATION: POOL FILTRATION ROOM 131
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC20	HL1A-1	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL POOL FILTRATION ROOM 131 FIXTURES E.

ID: LV-131B			
PART #: LMSW-101			LOCATION: POOL FILTRATION ROOM 131
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC20	HL1A-1	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL POOL FILTRATION ROOM 131 FIXTURES E.

ID: LV-132			
PART #: LMSW-101			LOCATION: OFFICE 132
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC4	HL1A-1	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL OFFICE 132 FIXTURES B AND D.

ID: LV-132A			
PART #: LMSW-101			LOCATION: LIFEGUARD/FIRST AID 132A
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC4	HL1A-1	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL OFFICE 132/LIFEGUARD/ FIRST AID 132A FIXTURES B AND D.

ID: LV-133			
PART #: LMSW-101			LOCATION: WET CLASSROOM 133
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC2	HL1A-1	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL WET CLASSROOM 133 FIXTURES B.

ID: LV-137			
PART #: LMPW-101			LOCATION: STORAGE 137
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC51	HL1A-1	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL STORAGE 137 FIXTURES F.

ID: LV-138			
PART #: LMPW-101			LOCATION: STORAGE 138
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC52	HL1A-1	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL STORAGE 138 FIXTURES F.

ID: LV-140A			
PART #: LMDM-101			LOCATION: NATATORIUM 140
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC46	HL1A-16	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL NATATORIUM 140 FIXTURES K, J, AND JJ.

ID: LV-140B			
PART #: LMDM-101			LOCATION: NATATORIUM 140
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC47	HL1A-14	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL NATATORIUM 140 FIXTURES K, J AND JJ.

ID: LV-202A			
PART #: LMDM-101			LOCATION: EXERCISE STUDIO (LARGE)
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC45	HP2A-10	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD.

ID: LV-202B			
PART #: LMDM-101			LOCATION: EXERCISE STUDIO (LARGE)
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC45	HP2A-10	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES EE AND FF.

ID: LV-202C			
PART #: LMDM-101			LOCATION: EXERCISE STUDIO (LARGE)
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC45	HP2A-10	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES D

ID: LV-202D			
PART #: LMSW-104			LOCATION: EXERCISE STUDIO (LARGE) 202
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC45	HP2A-10	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD.
2	RC45	HP2A-10	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES EE AND FF.
3	RC45	HP2A-10	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES D.
4	RC45	HP2A-10	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL FIXTURES C

ID: LV-210			
PART #: LMSW-101			LOCATION: ACTIVITIES STORAGE 210
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC39	HP2A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL JANITOR 214 FIXTURES C.

ID: LV-214			
PART #: LMPW-101			LOCATION: JANITOR 214
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC42	HP2A-6	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL JANITOR 214 FIXTURES C.

ID: LV-218			
PART #: LMSW-102			LOCATION: CARDIO 218
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC37	HL1A-11	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL CARDIO FIXTURES P
2	RC37	HL1A-11	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL CARDIO FIXTURES Q.

ID: LV-220A			
PART #: LMDM-101			LOCATION: EXERCISE STUDIO (MEDIUM) 220
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC36	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD.

ID: LV-220B			
PART #: LMDM-101			LOCATION: EXERCISE STUDIO (MEDIUM) 220
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC36	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD.

ID: LV-220C			
PART #: LMDM-101			LOCATION: EXERCISE STUDIO (MEDIUM) 220
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC36	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES GG AND HH.

ID: LV-220D			
PART #: LMSW-104			LOCATION: EXERCISE STUDIO (MEDIUM) 220
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC36	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD,GG,HH.
2	RC36	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD,GG,HH.
3	RC36	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD,GG,HH.
4	RC36	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL STORAGE 219 FIXTURES B.

ID: LV-221A			
PART #: LMSW-102			LOCATION: EXERCISE STUDIO (SMALL) 221
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC11	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES M.

ID: LV-221A			
PART #: LMSW-102			LOCATION: EXERCISE STUDIO (SMALL) 221
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC35	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES GG,HH.

ID: LV-221C			
PART #: LMSW-104			LOCATION: EXERCISE STUDIO (SMALL) 221
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC35	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD,GG,HH.
2	RC35	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD,GG,HH.
3	RC35	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL EXERCISE STUDIO FIXTURES DD,GG,HH.
4	RC35	HL1A-9	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL STORAGE 222 FIXTURES B.

ID: LV-142			
PART #: LMPW-101			LOCATION: LAUNDRY 142
BUTTON	ROOM CONTROL	CIRCUIT	DESCRIPTION
1	RC50	HL1A-20	CONTROLLED BY TIME CLOCK SET HOURS, CONTROLLED BY LOW VOLTAGE SWITCH DURING NORMAL OPERATING HOURS, WIRED TO CONTROL LAUNDRY 142 FIXTURE C.

✳ DEVICE TO BE INSTALLED ONLY IF ALTERNATE IS ACCEPTED.

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HPER Center Renovation & Expansion

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Conway, Arkansas

Stocks Mann Architects, PLC

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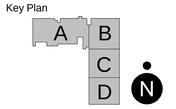
Key Plan



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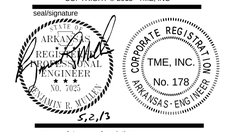


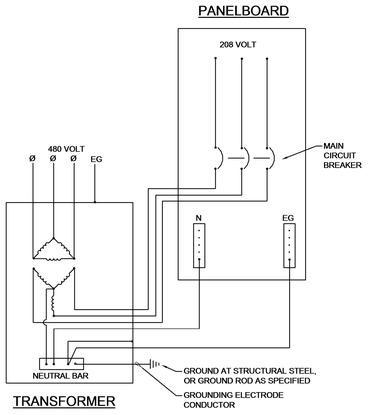
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

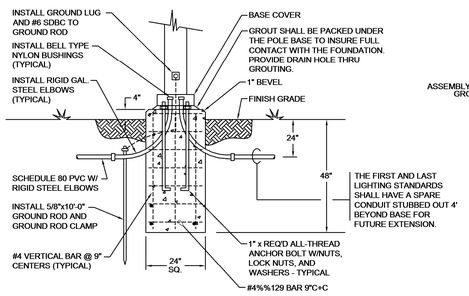
RISER DIAGRAMS

sheet number

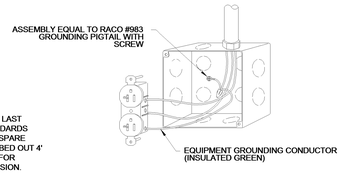
E904



1 GROUNDING AT TRANSFORMER/PANELBOARD DETAIL
NOT TO SCALE



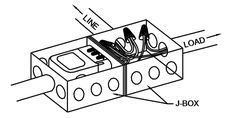
2 LIGHT POLE BASE DETAIL
NOT TO SCALE



NOTE:

1. UTILIZE SAME GROUNDING METHOD FOR SWITCHES.
2. PROVIDE MUD RING TO ACCOMMODATE BOX.

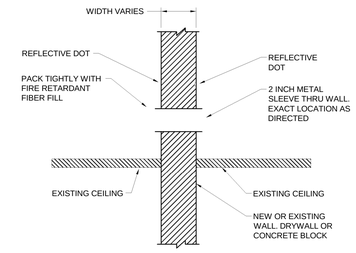
3 DEVICE JUNCTION BOX GROUNDING DETAIL
NOT TO SCALE



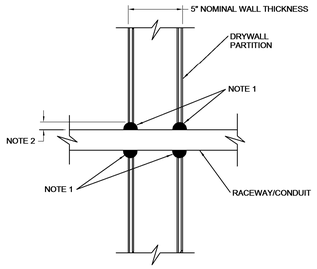
NOTES:

1. MOUNTING INSIDE A J-BOX. LOW VOLTAGE WIRING IS RUN TO LMRC ROOM CONTROLLER IN CONDUIT.

4 ROOM CONTROLLER WIRING DETAIL
NOT TO SCALE



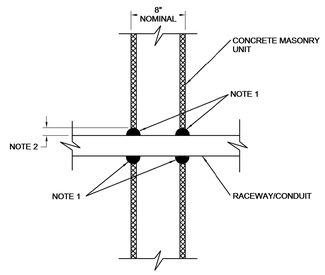
5 CONDUIT SLEEVE DETAIL
NOT TO SCALE



NOTES:

1. PROVIDE FIRESTOP SEALANT ALL AROUND RACEWAY, BOTH SIES OF WALL. REFER TO SPECIFICATIONS.
2. SPACE AROUND RACEWAY 1/4 INCH MINIMUM, 1 INCH MAXIMUM. ENLARGE AS REQUIRED.
3. ALL FIRESTOPPING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR.

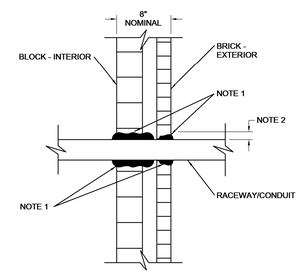
6 FIRESTOP DETAIL FOR DRYWALL OPENINGS
NOT TO SCALE



NOTES:

1. PROVIDE FIRESTOP SEALANT BIO #100 ALL AROUND RACEWAY, BOTH SIES OF WALL.
2. SPACE AROUND RACEWAY 1/4 INCH MINIMUM, 1 INCH MAXIMUM. ENLARGE AS REQUIRED.
3. ALL FIRESTOPPING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR.

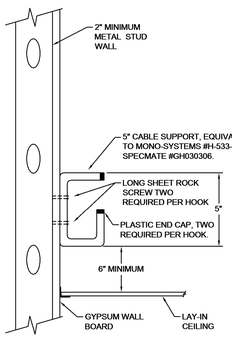
8 FIRESTOP DETAIL FOR MASONRY OPENING
NOT TO SCALE



NOTES:

1. PROVIDE FIRESTOP SEALANT BIO #100 ALL AROUND RACEWAY, BOTH SIDES OF WALL.
2. SPACE AROUND RACEWAY 1/4 INCH MINIMUM, 1 INCH MAXIMUM. ENLARGE AS REQUIRED.
3. ALL FIRESTOPPING SHALL BE PERFORMED BY THE GENERAL CONTRACTOR.

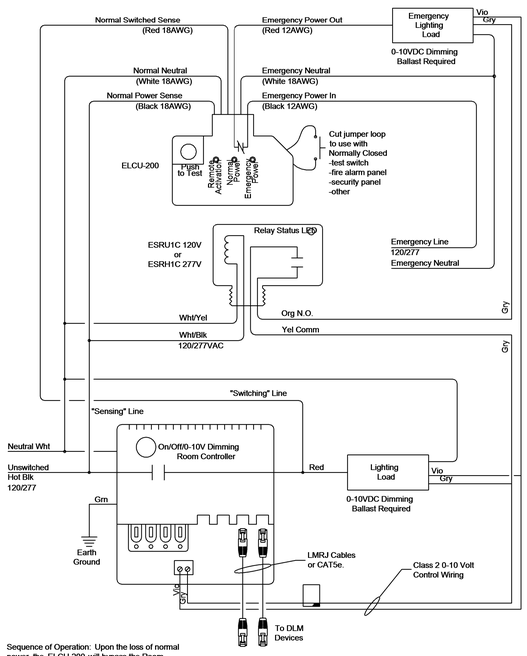
9 FIRESTOP DETAIL FOR EXTERIOR BLDG. OPENINGS
NOT TO SCALE



NOTE:

1. MOUNT CABLE SUPPORTS ABOVE ACCESSIBLE CORRIDOR CEILING AT 4'-0" ON CENTER ON BOTH SIDES OF CORRIDOR.

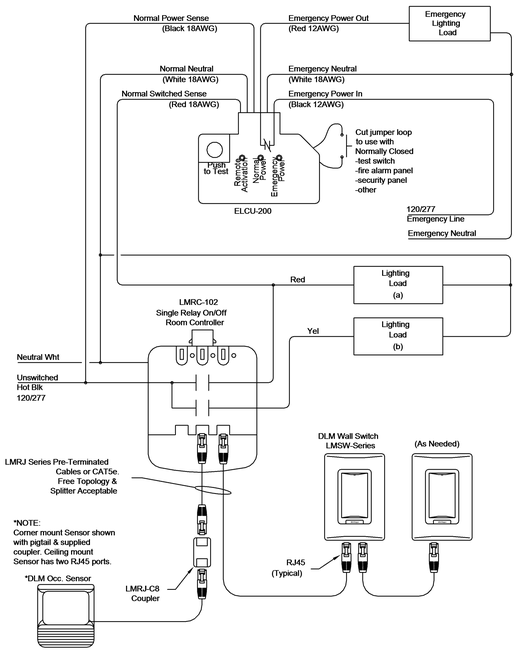
10 J-HOOK CABLE DETAIL
NOT TO SCALE



Sequence of Operation: Upon the loss of normal power, the ELCU-200 will bypass the Room Controller and force the emergency fixtures ON. The ESRU1C (120VAC) or ESRH1C (277VAC) will force the dimmed emergency fixture to 100%. The ELCU and ESR devices are UL924 listed and will monitor the same normal circuit.

Enhanced Room Controller with Emergency Bypass

11 ROOM CONTROLLER DIMMING DETAIL
NOT TO SCALE



Sequence of Operation: Upon the loss of normal power, the ELCU-200 will bypass the Room Controller and force the emergency fixtures ON.

Room Controller with Emergency Bypass

12 ROOM CONTROLLER WITH NO DIMMING DETAIL
NOT TO SCALE

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
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P: (501) 450-5000

lead architect:
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Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

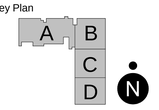
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
2725 Cantrell Road
Little Rock, Arkansas 72202
P: (501) 221-7880

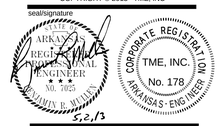
civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 370-9207

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature



rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

DETAILS - ELECTRICAL

sheet number

E1001

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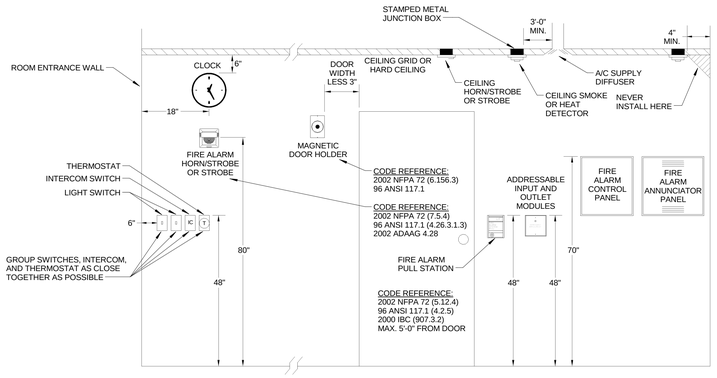
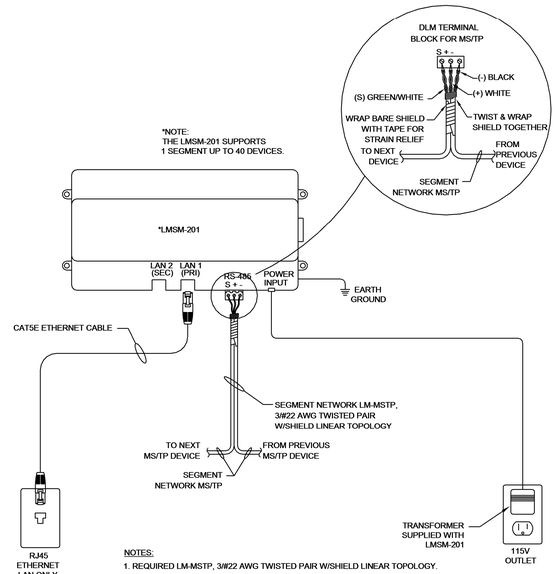


GENERAL NOTES:

1. COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECT AND WALL CONSTRUCTION PRIOR TO INSTALLATION.
2. AT EXTERIOR EXIT DOORS, FIRE ALARM PULL STATIONS SHALL BE CENTERED UNDER FIRE ALARM HORN/STROBES OR STROBES (WHERE APPLICABLE).
3. REFER TO FLOOR PLANS FOR DEVICE LOCATIONS.
4. PROVIDE DIMENSIONS LOCATED ON THIS DETAIL UNLESS OTHERWISE DIMENSIONED ON FLOOR PLANS.

1 LOW VOLTAGE MOUNTING DETAIL
NOT TO SCALE



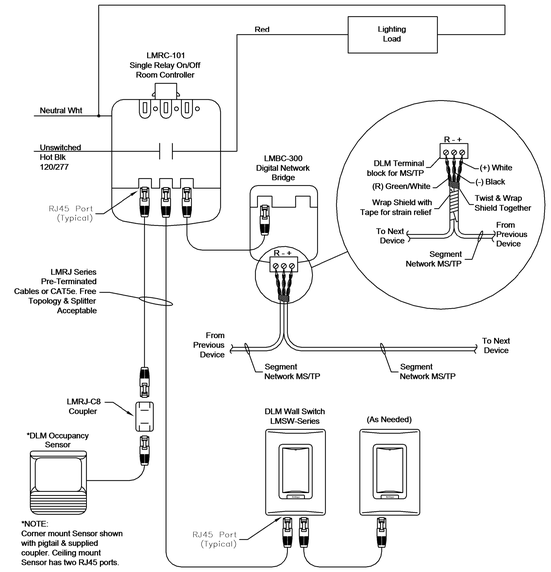
NOTES:

1. REQUIRED LM-MSTP, 3/#22 AWG TWISTED PAIR W/SHIELD LINEAR TOPOLOGY.
2. UP TO 40 (MAX) LMBC-300'S PER SEGMENT.
3. LMSM-201 MS/TP PORT CONNECTED IN THE MIDDLE OF THE SEGMENT.
4. BACNET/IP INTEGRATION BY SEGMENT MANAGER EXPORT TABLE ONLY.

FOR FULL OPERATIONAL DETAILS, ADJUSTMENTS AND MORE FEATURES OF THE PRODUCT, SEE THE DLM SYSTEM INSTALLATION GUIDE AT WWW.WATTSTOPPER.COM

LMSM-201 SEGMENT MANAGER

2 DIGITAL NETWORK SEGMENT MANAGER DETAIL
NOT TO SCALE

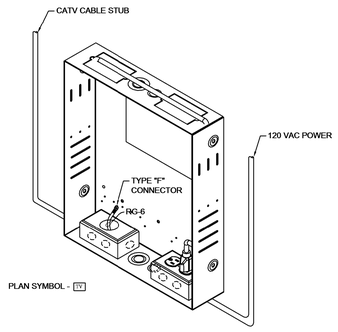


*NOTE:
Corner mount Sensor shown with pigtail & supplied coupler. Ceiling mount Sensor has two RJ45 ports.

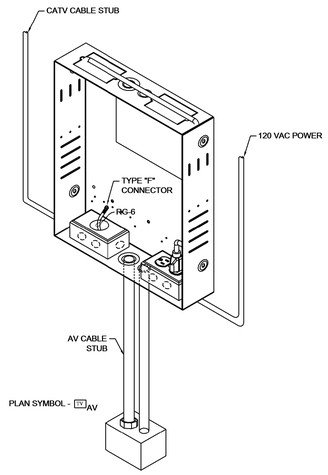
DEVICES ARE PRESET FOR PLUG N' GO ™ OPERATION, ADJUSTMENT IS OPTIONAL. SEQUENCE OF OPERATION: IN THIS CONFIGURATION THE LMRC-101 DEFAULTS TO MANUAL-ON/AUTOMATIC-OFF OPERATION. THE LMBC-300 NETWORK BRIDGE ALLOWS INDIVIDUAL DLM ROOM NETWORKS TO BE AGGREGATED INTO A NETWORKED SYSTEM THAT CAN BE REMOTELY MANAGED FROM A DLM SEGMENT MANAGER OR BUILDING AUTOMATION SYSTEM (BAS). MAXIMUM OF 4 ROOM CONTROLLERS, CONTROLLING UP TO 8 LOADS AND UP TO 24 COMMUNICATING DEVICES PER DLM LOCAL NETWORK. FOR FULL OPERATIONAL DETAILS, ADJUSTMENTS AND MORE FEATURES OF THE PRODUCT, SEE THE DLM SYSTEM INSTALLATION GUIDE AT WWW.WATTSTOPPER.COM

LMRC-101 & LMBC-300 Networked Wiring Diagram

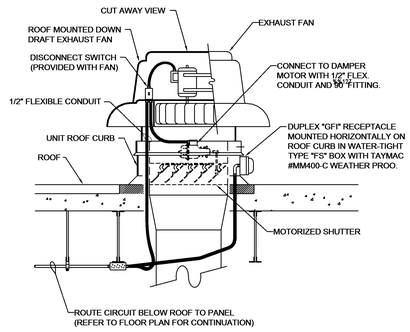
3 NETWORK BRIDGE WIRING DIAGRAM
NOT TO SCALE



4 CHIEF PAC516 BOX DETAIL
NOT TO SCALE



5 CHIEF PAC516 BOX DETAIL WITH ADDITIONAL AV CONNECTION
NOT TO SCALE



6 ROOF MOUNTED EXHAUST FAN DETAIL
NOT TO SCALE

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
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lead architect:
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Little Rock, Arkansas 72201
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design architect:
360 Architecture
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Kansas City, Missouri 64108
P: (816) 472-2000

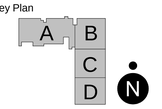
MEP engineer:
TME, INC.
5800 Evergreen Drive
Little Rock, Arkansas 72205
P: (501) 666-6676

structural engineer:
Robbins Engineering
2725 Cantrell Road
Little Rock, Arkansas 72202
P: (501) 221-7880

civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 370-9207

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



seal/signature

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

DETAILS - ELECTRICAL

sheet number

E1002

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372 A

EXISTING PANELBOARD: EXISTING MDP | VOLTAGE: 480Y277V/3ø/4W | CU BUS RATING: 1600A | MAIN: 3P-1200A MAIN CIRCUIT BREAKER | TOTAL CONNECTED VA: 308,902
LOCATION: EXISTING ELECTRICAL 115 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 106,439
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: EXISTING SERVICE TRANSFORMER | TOTAL B∅: 100,620 | TOTAL C∅: 101,843

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
					1	2					
			PANELBOARD "HP1A"	3/150	3	4	3/100	ELEVATOR			
					5	6					
			PANELBOARD "HP2A"	3/100	7	8	3/150	PANELBOARD "HP2B"			
					9	10					
					11	12					
			TRANSFORMER "TLDP1"	3/225	13	14	3/1200	PANELBOARD "MDP2"	106,439		
					15	16				100,620	
					17	18					101,843
					19	20					
			SPARE	3/150	21	22	3/150	SPARE			
					23	24					
				1/20	25	26	1/20				
				1/20	27	28	1/20				
				1/20	29	30	1/20				
				1/20	31	32	1/20				
				1/20	33	34	1/20				
				1/20	35	36	1/20				
				1/20	37	38	1/20				
				1/20	39	40	1/20				
				1/20	41	42	1/20				

NOTES: ★

A

EXISTING PANELBOARD: HP1A | VOLTAGE: 480Y277V/3ø/4W | CU BUS RATING: 400A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA:
LOCATION: EXISTING ELECTRICAL 115 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅:
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "MDP" | TOTAL B∅: | TOTAL C∅:

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
			LIGHTS- GYM SUS. LINE	1/20	1	2	1/20	LIGHTS- CORR 127 LT.LTS.			
			IN USE	1/20	3	4	1/20	LIGHTS- LT.LTS. SHOWERS			
			LIGHTS- CORRIDOR	1/20	5	6	1/20	LIGHTS- EQUIPMENT			
			LIGHTS- FITNESS CENTER OFF	1/20	7	8	1/20	LIGHTS- FITNESS CENTER 121			
			LIGHTS- STAIR 104	1/20	9	10	1/20	LIGHTS- FITNESS CENTER 123			
			PARKING LOT LIGHTS	2/20	11	12	1/20	LIGHTS- OUTSIDE			
					13	14	1/20	IN USE			
			HAIR DRYER	1/20	15	16	1/20	HAIR DRYER			
			HAIR DRYER	1/20	17	18	1/20				
			IN USE	1/20	19	20	1/20	**LIGHTING**			
			LIGHTING	**1/20**	21	22	1/20	LIGHTS- GYM STORAGE			
			LIGHTING	**1/20**	23	24	1/20	IN USE			
					25	26	1/20	IN USE			
			EXHAUST FAN EF-1	3/20	27	28	1/20	IN USE			
					29	30		SPACE W BUSSING			
			SPACE W BUSSING		31	32		SPACE W BUSSING			
			SPACE W BUSSING		33	34	1/20	PARKING LOT LIGHTS			
			SPACE W BUSSING		35	36	1/20	LIGHTS- NEW ADDITION			
			SPACE W BUSSING		37	38		SPACE W BUSSING			
			SPACE W BUSSING		39	40		SPACE W BUSSING			
			SPACE W BUSSING		41	42		SPACE W BUSSING			

NOTES: ★

A

EXISTING PANELBOARD: HP2A | VOLTAGE: 480Y277V/3ø/4W | CU BUS RATING: 400A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA:
LOCATION: EXISTING MECHANICAL 211 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅:
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "MDP" | TOTAL B∅: | TOTAL C∅:

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
			LIGHTS- NORTH COURT	1/20	1	2	1/20	LIGHTS- CENTER COURT			
			LIGHTS- NORTH COURT	1/20	3	4	1/20	LIGHTS- CENTER COURT			
			LIGHTS- NORTH COURT	1/20	5	6	1/20	**LIGHTING-209-214**			
			LIGHTS- SOUTH COURT	1/20	7	8	1/20	LIGHTS- COUNTERS TRACK			
			LIGHTING-210	1/20	9	10	1/20	**LIGHTING-202**			
			LIGHTING-202	1/20	11	12	1/20	SPARE			
			LIGHTS- GYM FUT. FUTURE	1/20	13	14	1/20	SPARE			
			LIGHTS- OFFICE 203, VENDING	1/20	15	16	1/20	SPARE			
			IN USE	1/20	17	18	1/20	SPARE			
			SPACE W BUSSING		19	20	1/20	SPARE			
			SPACE W BUSSING		21	22	1/20	SPARE			
			SPACE W BUSSING		23	24	1/20	SPARE			
			SPACE W BUSSING		25	26	3/20	EF-3			
			SPACE W BUSSING		27	28					
			SPACE W BUSSING		29	30		SPACE W BUSSING			

NOTES: ★

25 A

EXISTING PANELBOARD: HP2B | VOLTAGE: 480Y277V/3ø/4W | CU BUS RATING: 400A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA: 20,616
LOCATION: EXISTING MECHANICAL 211 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 6,872
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "MDP" | TOTAL B∅: 6,872 | TOTAL C∅: 6,872

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
					1	2					
			AHU-1	3/50	3	4	3/50	AHU-2			
					5	6					
			HRU-1	3/45	7	8	3/50	PUMP CONTROL PANEL			
					9	10					
					11	12					
			?	3/30	13	14	1/20	SPARE			
					15	16	1/20	SPARE			
					17	18	1/20	SPARE			
			?	3/15	19	20	1/20	SPARE			
					21	22	1/20	SPARE			
			SPARE	1/20	23	24	1/20	SPARE			
			SPARE	1/20	25	26	1/20	SPARE			
			SPACE W BUSSING		27	28	1/20	SPARE			
					29	30					
					31	32					
2106			HWP-1	3/15	33	34	3/15	BP-2	1330		
	2106				35	36				1330	
		2106			37	38					1330
2106			HWP-1	3/15	39	40	3/15	BP-1	1,330		
	2106				41	42				1330	
		2106									1330

NOTES: ★

A

EXISTING PANELBOARD: LP1A | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 225A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA:
LOCATION: EXISTING ELECTRICAL 115 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅:
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "LDP1" | TOTAL B∅: | TOTAL C∅:

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
			REC.- GYM 131	1/20	1	2	1/20	REC.- GYM 131			
			REC.- GYM 131	1/20	3	4	1/20	REC.- AWP- GYM 131			
			EQ-1 1/4 HP	1/20	5	6	1/20	REC.- S.TO. ROOMS			
			REC.- GYM 131	1/20	7	8	1/20	REC.- STO ROOMS			
			REC.- AWP- GYM 131	1/20	9	10	1/20	REC.- GYM 131			
			REC.- GYM 131	1/20	11	12	1/20	REC.- GYM 131			
			REC.- GYM 131	1/20	13	14	1/20	REC.- GYM 131			
			REC.- GYM 131	1/20	15	16	1/20	REC.- GYM 131			
			REC.- GYM 131	1/20	17	18	1/20	CURTAIN HOIST - GYM 131			
			EQ-2 1/4 HP	1/20	19	20	1/20	CURTAIN HOIST - GYM 131			
			REC.- GYM 131	1/20	21	22	1/20	REC.			
			REC.- GYM 131	1/20	23	24	1/20	REC.			
			IN USE	1/20	25	26	1/20	REC.			
			IN USE	1/20	27	28	1/20	REC.			
			RAIN BIRD	1/20	29	30	1/20	REC.			
			IN USE	1/20	31	32	1/20	REC.			
			TREADMILL	2/20	33	34	2/20	IN USE			
			TREADMILL		35	36		TREADMILL			
			TREADMILL	2/20	37	38	2/20	TREADMILL			
			TREADMILL		39	40		TREADMILL			
			TREADMILL	2/20	41	42	2/20	TREADMILL			

NOTES: ★

12 A

EXISTING PANELBOARD: LP2A | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 225A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA: 4,340
LOCATION: EXISTING MECHANICAL 211 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 1,280
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: | TOTAL B∅: 720 | TOTAL C∅: 2,340

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
			REC.- RUNNING TRACK 205	1/20	1	2	1/20	REC.- RUNNING TRACK 205			
			MOTORIZED DAMPER	1/20	3	4	1/20	MEDIA EAST ONE OUTSIDE 7			
			MOTORIZED DAMPER	1/20	5	6	1/20	**REC.- 212,213,217**			**1080**
			IN USE	1/20	7	8	1/20	**REC.-209,211,214**	**1080**		
			REC.- MECH. 208	1/20	9	10	1/20	ELEVATOR CONTROLLER			
			REC.- MECH. 208	1/20	11	12	1/20	VENDING MACHINE			
			REC.- JANITROL CHNG.	1/20	13	14	1/20	CWC			
			REC.- VENDING 202	1/20	15	16	1/20	BUFFERS			
			REC.- OFFICE 203	1/20	17	18	1/20	**REC. - 202**			**360**
			UNIT HEATER UH-2	1/20	19	20	1/20	E-1			
			SPARE	1/20	21	22	1/20	E-2			
			DDC PANEL	1/20	23	24	1/20	BOILER CONTROL PANEL			
			EF-2	1/20	25	26	1/20	PUMP CONTROL PANEL			
			SMOKE DAMPERS	1/20	27	28	1/20	**REC. - 202**		**720**	
			IN USE	1/20	29	30	1/20	CWC			
			N USE	1/20	31	32	1/20	CWC			
			N USE	1/20	33	34	1/20				
			N USE	1/20	35	36	1/20	**FANS 202**			**900**
			N USE	1/20	37	38	1/20	**EF-1**	**200**		
			N USE	1/20	39	40	2/60	SPARE			
			N USE	1/20	41	42					

NOTES: ★

22 A

EXISTING PANELBOARD: LP1C | VOLTAGE: 208Y120V/3ø/5W | CU BUS RATING: 200A | MAIN: 3P-150A MAIN BREAKER | TOTAL CONNECTED VA: 7,952
LOCATION: EXISTING MECHANICAL 211 | MFG AND TYPE: SQUARE D "NQOD" | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 2,352
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "LDP1" | TOTAL B∅: 2,000 | TOTAL C∅: 3,600

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
1176			CEILING FANS 202	1/20	1	2	1/20	CEILING FANS 202	1176		
★	1200		EWC-210	1/20	3	4	1/20	TV- 202,210		800	
		1800	BOILER B-2	1/20	5	6	1/20	BOILER B-1			1800
			SPARE	1/20	7	8	1/20	SPARE			
			SPARE	1/20	9	10	1/20	SPARE			
			SPARE	1/20	11	12	1/20	SPARE			
			SPACE WITH BUSSING		13	14		SPACE WITH BUSSING			
			SPACE WITH BUSSING		15	16		SPACE WITH BUSSING			
			SPACE WITH BUSSING		17	18		SPACE WITH BUSSING			
			SPACE WITH BUSSING		19	20		SPACE WITH BUSSING			
			SPACE WITH BUSSING		21	22		SPACE WITH BUSSING			
			SPACE WITH BUSSING		23	24		SPACE WITH BUSSING			
			SPACE WITH BUSSING		25	26		SPACE WITH BUSSING			
			SPACE WITH BUSSING		27	28		SPACE WITH BUSSING			
			SPACE WITH BUSSING		29	30		SPACE WITH BUSSING			
			SPACE WITH BUSSING		31	32		SPACE WITH BUSSING			
			SPACE WITH BUSSING		33	34		SPACE WITH BUSSING			
			SPACE WITH BUSSING		35	36		SPACE WITH BUSSING			
			SPACE WITH BUSSING		37	38		SPACE WITH BUSSING			
			SPACE WITH BUSSING		39	40		SPACE WITH BUSSING			
			SPACE WITH BUSSING		41	42		SPACE WITH BUSSING			

NOTES: ★ CIRCUIT BREAKER TO BE GFCI.

22 A

EXISTING PANELBOARD: LDP1 | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 600A | MAIN: 3P-600A MAIN CIRCUIT BREAKER | TOTAL CONNECTED VA: 7,952
LOCATION: EXISTING ELECTRICAL 115 | MFG AND TYPE: GE SPECTRA SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 2,352
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 42,000 | FED FROM: TRANSFORMER "TLDP1" | TOTAL B∅: 2,000 | TOTAL C∅: 3,600

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
					1	2					
			PANELBOARD "LP1A"	3/100	3	4	3/100	PANELBOARD "LP1B"			
					5	6					
			PANELBOARD "LP1C"	3/100	7	8	3/100	PANELBOARD "LP2A"			
2,352					9	10					
	2,000		PANELBOARD "LP2B"	3/150	11	12	1/20				
		3,600			13	14	1/20				
				1/20	15	16	1/20				
				1/20	17	18	1/20				
				1/20	19	20	1/20				
				1/20	21	22	1/20				
				1/20	23	24	1/20				
				1/20	25	26	1/20				
				1/20	27	28	1/20				
				1/20	29	30	1/20				
				1/20	31	32	1/20				
				1/20	33	34	1/20				
				1/20	35	36	1/20				
				1/20	37	38	1/20				
				1/20	39	40	1/20				
				1/20	41	42	1/20				

NOTES: ★

15 A

EXISTING PANELBOARD: LP1B | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 225A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA: 5,520
LOCATION: EXISTING ELECTRICAL 115 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 1,620
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "LDP1" | TOTAL B∅: 1,200 | TOTAL C∅: 2,700

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
			REC.- ELEC. 122	1/20	1	2	1/20	REC.- JANITOR. 121			
			REC.- STOR.R.C. 123	1/20	3	4	1/20	REC.- TLTS.			
			REC.- FITNESS CTR.123	1/20	5	6	1/20	REC.- TLTS.			
			CS MACHINE	1/20	7	8	1/20	REC.- TESTING 127			
			REC.- MUSIC 129	1/20	9	10	1/20	**REC.- 109**			
			REC.- OFFICE 126	1/20	11	12	1/20	**REC.- 109**			
			REC.- EQUIP CHECKIN 110	1/20	13	14	1/20	REC.- STATION 106			
	360		**REC.- 108**	1/20	15	16	1/20	**REC.- 109**			
		600	**REC.-104**	1/20	17	18	1/20	**SPARE**			
				1/20	19	20	1/20	REC.- REV. EQUIPRM 108			
			EWC	1/20	21	22	1/20	REC.- OFFICE 107			
		900	**REC. CHECK-IN**	1/20	23	24	1/20	REC.- MENS TLTS. 114			
600			**REC.-104**	1/20	25	26	1/20	MIRRS- ENTRY			
				1/20	27	28	1/20	**REC.-127,139**		**540**	
			REC.- FITNESS CTR. 123	1/20	29	30	1/20	**SPARE**			
			REC.-104	1/20	31	32	1/20	SUMP PUMP			
			SPARE	1/20	33	34	1/20	BUFFER			
			REC.- OFFICE 107	1/20	35	36	1/20	**REC.-122**			**900**
300			**REC.- 139**	1/20	37	38	1/20	**REC.-126,1014**	**720**		
	300		**REC.- 139**	1/20	39	40	2/60	EWC-104/214			
		300	**REC.- 139**	1/20	41	42		NEW ADDITION			

NOTES: ★

19 A

EXISTING PANELBOARD: LP1C | VOLTAGE: 208Y120V/3ø/5W | CU BUS RATING: 125A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA: 6,800
LOCATION: EXISTING ELECTRICAL 115 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 1,580
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "LDP1" | TOTAL B∅: 2,400 | TOTAL C∅: 2,820

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
			RECEIVE- TESTING 127	1/20	1	2	1/20	RECEIVE- E.C.I. 110			
			RECEIVE- P.C. 130	1/20	3	4	**2/30**	**REC.- 107 WASHER**			
			RECEIVE- OFFICE 128	1/20	5	6					
			ELEVATOR LIGHTS	1/20	7	8	1/20	RECEIVE- T.B.			
			ELEVATOR CONTROLS	1/20	9	10	1/20	RECEIVE- C.T.B.			
			FACU	1/20	11	12	1/20	**REC.- 127L**			**500**
			REC.- STOR. 132	1/20	13	14	1/20	**REC.- 127L**	**500**		
	900		**REC.- 103**	1/20	15	16	1/20	**REC.- 127L**		**600**	
		720	**REC.- 103**	1/20	17	18	1/20	**REC.- 127L**			**600**
360			**REC.- 127K**	1/20	19	20	1/20	**REC.- 127L**	**720**		
	900		**REC.- 127K, 127L**	1/20	21	22	2/30	IN USE			
		1000	**REC.- 127L**	1/20	23	24					
			IN USE	2/60	25	26	2/30	IN USE			
					27	28					
			SPARE	1/20	29	30	1/20	**REC.- 107 DRYER**			

NOTES: ★

7 A

EXISTING PANELBOARD: LP1D | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 225A | MAIN: MAIN LUGS ONLY | TOTAL CONNECTED VA: 2,400
LOCATION: EXISTING ELECTRICAL 115 | MFG AND TYPE: GE A SERIES | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 2,400
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "LDP1" | TOTAL B∅: 2,400 | TOTAL C∅:

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
			REC.- FITNESS 123	1/20	1	2	1/20	REC.- FITNESS 123			
			REC.- FITNESS 123	1/20	3	4	1/20	REC.- FITNESS 123			
			REC.- FITNESS 123	1/20	5	6	1/20	REC.- FITNESS 123			
			REC.- FITNESS 123	1/20	7	8	1/20	REC.- FITNESS 123			
			REC.- FITNESS 123	1/20	9	10	1/20	REC.- FITNESS 123			
			IN USE	1/20	11	12	1/20	REC.- FITNESS 123			
			REC.- FITNESS 123	1/20	13	14	1/20	TV- FITNESS 123			
			REC.- FITNESS 123	1/20	15	16	1/20	TV- FITNESS 123			
			REC.- FITNESS 123	1/20	17	18	1/20	TV- FITNESS 123			
			REC.- FITNESS 123	1/20	19	20	1/20	REC.- FITNESS 123			
			REC.- 120	**1/20**	21	22	**1/20**	**EWC-122**		**1200**	★
			REC.- FITNESS 123	2/20	23	24	1/20	REC.- FITNESS 123			
					25	26	1/20	REC.- FITNESS 123			
			REC.- FITNESS 123	2/20	27	28	1/20	REC.- FITNESS 123			
					29	30	1/20	**REC.- 117**			
					31	32	1/20	REC.- FITNESS 123			
			REC.- 119	**1/20**	33	34	**1/20**	**EWC-1009**		**1200**	★
			REC.- 118	**1/20**	35	36		STAGE W/ BUSSING			
			REC.- FITNESS 123	1/20	37	38	1/20	REC.- FITNESS 123			
			EXERCISE EQUIP. FITNESS 123	2/20	39	40	2/20	EXERCISE EQUIP. FITNESS 123			
					41	42					

NOTES: ★ CIRCUIT BREAKER TO BE GFCI.

372 A

PANELBOARD: "MDP2" | VOLTAGE: 480Y277V/3ø/4W | CU BUS RATING: 1200A | MAIN: 3P-1200A MAIN CIRCUIT BREAKER | TOTAL CONNECTED VA: 308,902
LOCATION: ELEC. 130 | MFG AND TYPE: SQUARE D "NF" | EQUIP. GND. CU BUS: YES | ISOL GND. CU BUS: NO | TOTAL A∅: 106,439
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: EXISTING "MDP" | TOTAL B∅: 100,620 | TOTAL C∅: 101,843

LOAD (VA) A∅	B∅	C∅	SERVES	P/T	CIR. NO.	CIR. NO.	P/T	SERVES	LOAD (VA) A∅	B∅	C∅
78,636					1	2			9,883		
	78,636		PANELBOARD "HM2A"	3/400	3	4	3/200	PANELBOARD "HL1A"		5,704	
		78,636			5	6					8,407
17,920					7	8	1/20				
	16,280		TRANSFORMER "TP1"	3/500	9	10	1/20				
		14,800			11	12	1/20				
				1/20	13	14	1/20				
				1/20	15	16	1/20				
				1/20	17	18	1/20				
				1/20	19	20	1/20				
				1/20	21	22	1/20				
				1/20	23	24	1/20				
				1/20	25	26	1/20				
				1/20	27	28	1/20				
				1/20	29	30	1/20				
				1/20	31	32	1/20				
				1/20	33	34	1/20				
				1/20	35	36	1/20				
				1/20	37	38	1/20				
				1/20	39	40	1/20				
				1/20	41	42	1/20				

NOTES: ★

5/2/2013 2:53:46 PM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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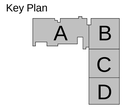
Key Plan



seal/signature

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

PANEL SCHEDULES - ELECTRICAL

sheet number

E1101

29 A

PANELBOARD: "HL1A" | VOLTAGE: 480Y277V/3ø/4W | CU BUS RATING: 400A | MAIN: 3P-200A MAIN CIRCUIT BREAKER | TOTAL CONNECTED VA: 23,994
LOCATION: ELEC. 130 | MFG AND TYPE: SQUARE D "NF" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 9,883
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "MDP2" | TOTAL BØ: 5,704 | TOTAL CØ: 8,407

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
2296			LTG - 129-139	1/20	1	2	1/20	INVERT LTG - 1018-1020, 128	840		
	1428		LTG - 128	1/20	3	4	1/20	LTG - 128		1848	
		1995	PARKING LOT LIGHTING	1/20	5	6	1/20	LTG - 128			1848
3006			LTG - 223,224,226,227	1/20	7	8	1/20	LTG - 101,127,1003,1016	2200		
	2128		LTG - 220,221	1/20	9	10	1/20	INVERT LTG - 127,1003,1016,102		300	
		2632	LTG - 218	1/20	11	12	1/20	INVERT LTG - 2ND FLOOR			1932
1541			EXTERIOR LIGHTING	1/20	13	14	1/20	LTG-140			
			SPARE	1/20	15	16	1/20	LTG-140			
			SPARE	1/20	17	18	1/20	SPARE			
			SPARE	1/20	19	20	1/20	SPARE			
			SPACE WITH BUSSING		21	22		SPACE WITH BUSSING			
			SPACE WITH BUSSING		23	24		SPACE WITH BUSSING			
			SPACE WITH BUSSING		25	26		SPACE WITH BUSSING			
			SPACE WITH BUSSING		27	28		SPACE WITH BUSSING			
			SPACE WITH BUSSING		29	30		SPACE WITH BUSSING			
			SPACE WITH BUSSING		31	32		SPACE WITH BUSSING			
			SPACE WITH BUSSING		33	34		SPACE WITH BUSSING			
			SPACE WITH BUSSING		35	36		SPACE WITH BUSSING			
			SPACE WITH BUSSING		37	38		SPACE WITH BUSSING			
			SPACE WITH BUSSING		39	40		SPACE WITH BUSSING			
			SPACE WITH BUSSING		41	42		SPACE WITH BUSSING			

NOTES: ★

284 A

PANELBOARD: "HM2A" | VOLTAGE: 480Y277V/3ø/4W | CU BUS RATING: 400A | MAIN: 3P-400A MAIN CIRCUIT BREAKER | TOTAL CONNECTED VA: 235,908
LOCATION: MECHANICAL FITNESS 226 | MFG AND TYPE: SQUARE D "NF" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 78,636
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "MDP2" | TOTAL BØ: 78,636 | TOTAL CØ: 78,636

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
901					1	2			7275		
★	901		RP-3, HWP-3	3/15	3	4	3/30	CHP-1		7275	
		901			5	6					7275
3810					7	8			22517		
	3810		VFD-2, VDF-3-ERAHU-1	3/20	9	10	3/100	VFD-1-ERAHU-1		22517	
		3810			11	12					22517
7275					13	14			36858		
	7275		VFD-PP1	3/30	15	16	3/150	PAHU-1		36858	★
		7275			17	18					36858
			SPARE	1/20	19	20	1/20	SPARE			
			SPARE	1/20	21	22	1/20	SPARE			
			SPACE WITH BUSSING		23	24		SPACE WITH BUSSING			
			SPACE WITH BUSSING		25	26		SPACE WITH BUSSING			
			SPACE WITH BUSSING		27	28		SPACE WITH BUSSING			
			SPACE WITH BUSSING		29	30		SPACE WITH BUSSING			
			SPACE WITH BUSSING		31	32		SPACE WITH BUSSING			
			SPACE WITH BUSSING		33	34		SPACE WITH BUSSING			
			SPACE WITH BUSSING		35	36		SPACE WITH BUSSING			
			SPACE WITH BUSSING		37	38		SPACE WITH BUSSING			
			SPACE WITH BUSSING		39	40		SPACE WITH BUSSING			
			SPACE WITH BUSSING		41	42		SPACE WITH BUSSING			

NOTES: ★ CIRCUIT BREAKER TO BE GFCI.

136 A

PANELBOARD: "LDP" | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 200A | MAIN: 3P 200A MAIN BREAKER WITH FEED THRU LUGS | TOTAL CONNECTED VA: 49,000
LOCATION: ELEC. 130 | MFG AND TYPE: SQUARE D "NQOD" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 17,920
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "TP1" TRANSFORMER | TOTAL BØ: 16,280 | TOTAL CØ: 14,800

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
10,920					1	2			7,000		
	9,280		PANELBOARD "LPR1A"	3/200	3	4	3/200	PANELBOARD "LPR2A"		7,000	
		8,800			5	6					6,000
			SPARE	1/20	7	8	1/20	SPARE			
			SPARE	1/20	9	10	1/20	SPARE			
			SPACE WITH BUSSING		11	12		SPACE WITH BUSSING			
			SPACE WITH BUSSING		13	14		SPACE WITH BUSSING			
			SPACE WITH BUSSING		15	16		SPACE WITH BUSSING			
			SPACE WITH BUSSING		17	18		SPACE WITH BUSSING			
			SPACE WITH BUSSING		19	20		SPACE WITH BUSSING			
			SPACE WITH BUSSING		21	22		SPACE WITH BUSSING			
			SPACE WITH BUSSING		23	24		SPACE WITH BUSSING			
			SPACE WITH BUSSING		25	26		SPACE WITH BUSSING			
			SPACE WITH BUSSING		27	28		SPACE WITH BUSSING			
			SPACE WITH BUSSING		29	30		SPACE WITH BUSSING			
			SPACE WITH BUSSING		31	32		SPACE WITH BUSSING			
			SPACE WITH BUSSING		33	34		SPACE WITH BUSSING			
			SPACE WITH BUSSING		35	36		SPACE WITH BUSSING			
			SPACE WITH BUSSING		37	38		SPACE WITH BUSSING			
			SPACE WITH BUSSING		39	40		SPACE WITH BUSSING			
			SPACE WITH BUSSING		41	42		SPACE WITH BUSSING			

NOTES: ★

49 A

PANELBOARD: "LM1A" | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 200A | MAIN: 3P-200A MAIN BREAKER WITH FEED THRU LUGS | TOTAL CONNECTED VA: 17,820
LOCATION: ELEC. 130 | MFG AND TYPE: SQUARE D "NQOD" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 7,470
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "TM2" TRANSFORMER | TOTAL BØ: 6,000 | TOTAL CØ: 4,350

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
★ 420			POOL LIGHTING	1/20	1	2	1/20	ST101-115, ET-1-4, FCU1-3	1050		
	100		EF-2	1/15	3	4	1/20	BOILER B-3		1950	★
		100	EF-3	1/15	5	6	1/30	POOL FILTER CONTROL PANEL			1500 ★
★ 3600			POOL FILTER AIR COMPRESSOR	1/30	7	8	1/20	CHEMICAL CONTROLLER	1200		★
★	2750		UV POOL TREATMENT SYSTEM	2/30	9	10	1/20	CHEMICAL CONTROLLER		1200	★
★		2750			11	12	1/20	POOL CHLORINE PUMP			★
1200			SUMP PUMP	1/20	13	14	1/20	SPARE			
			SPARE	1/20	15	16	1/20	SPARE			
			SPARE	1/20	17	18		SPACE WITH BUSSING			
			SPACE WITH BUSSING		19	20		SPACE WITH BUSSING			
			SPACE WITH BUSSING		21	22		SPACE WITH BUSSING			
			SPACE WITH BUSSING		23	24		SPACE WITH BUSSING			
			SPACE WITH BUSSING		25	26		SPACE WITH BUSSING			
			SPACE WITH BUSSING		27	28		SPACE WITH BUSSING			
			SPACE WITH BUSSING		29	30		SPACE WITH BUSSING			
			SPACE WITH BUSSING		31	32		SPACE WITH BUSSING			
			SPACE WITH BUSSING		33	34		SPACE WITH BUSSING			
			SPACE WITH BUSSING		35	36		SPACE WITH BUSSING			
			SPACE WITH BUSSING		37	38		SPACE WITH BUSSING			
			SPACE WITH BUSSING		39	40		SPACE WITH BUSSING			
			SPACE WITH BUSSING		41	42		SPACE WITH BUSSING			

NOTES: ★ CIRCUIT BREAKER TO BE GFCI.

8 A

PANELBOARD: "LM2A" | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 200A | MAIN: 3P-200A MAIN BREAKER | TOTAL CONNECTED VA: 2,800
LOCATION: MECHANICAL FITNESS 226 | MFG AND TYPE: SQUARE D "NQOD" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 2,200
MOUNTING: lm | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: "TM2" TRANSFORMER | TOTAL BØ: 600 | TOTAL CØ:

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
1800			ST-201-211, FCU 201-205	1/20	1	2	1/20	CONTROL VALVES-224	400		
	400		CONTROL VALVES-226	1/20	3	4	1/20	ERAHU-1 REC./LIGHTING		200	
			SPARE	1/20	5	6	1/20	SPARE			
			SPARE	1/20	7	8	1/20	SPARE			
			SPARE	1/20	9	10	1/20	SPARE			
			SPACE WITH BUSSING		11	12		SPACE WITH BUSSING			
			SPACE WITH BUSSING		13	14		SPACE WITH BUSSING			
			SPACE WITH BUSSING		15	16		SPACE WITH BUSSING			
			SPACE WITH BUSSING		17	18		SPACE WITH BUSSING			
			SPACE WITH BUSSING		19	20		SPACE WITH BUSSING			
			SPACE WITH BUSSING		21	22		SPACE WITH BUSSING			
			SPACE WITH BUSSING		23	24		SPACE WITH BUSSING			
			SPACE WITH BUSSING		25	26		SPACE WITH BUSSING			
			SPACE WITH BUSSING		27	28		SPACE WITH BUSSING			
			SPACE WITH BUSSING		29	30		SPACE WITH BUSSING			
			SPACE WITH BUSSING		31	32		SPACE WITH BUSSING			
			SPACE WITH BUSSING		33	34		SPACE WITH BUSSING			
			SPACE WITH BUSSING		35	36		SPACE WITH BUSSING			
			SPACE WITH BUSSING		37	38		SPACE WITH BUSSING			
			SPACE WITH BUSSING		39	40		SPACE WITH BUSSING			
			SPACE WITH BUSSING		41	42		SPACE WITH BUSSING			

NOTES: ★

(SECTION 2) 80 A

PANELBOARD: "LPR1A" | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 200A | MAIN: 3P-200A MAIN BREAKER WITH FEED THRU LUGS | TOTAL CONNECTED VA: 29,000
LOCATION: ELEC. 130 | MFG AND TYPE: SQUARE D "NQOD" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 10,920
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "LDP" | TOTAL BØ: 9,280 | TOTAL CØ: 8,800

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
1080			REC - 140	1/20	1	2	1/20	REC - 140	1080		
	1080		REC - 139	1/20	3	4	1/20	REC - 134-136		1080	
		1080	REC - 133	1/20	5	6	1/20	REC - 132			360
900			REC - 128,132A,102D	1/20	7	8	1/20	REC - 131	900		
	1080		REC - 129-131	1/20	9	10	1/30	REC - 129 DATA RACK		1000	
		1000	REC - 129 DATA RACK	1/20	11	12	1/20	REC - 240			400
1000			REC - 129 AV/RACK	1/20	13	14	1/20	REC - 128	900		
	540		REC - 128	1/20	15	16	1/20	REC - 101,102		540	
		720	REC - 102	1/20	17	18	1/20	REC - 102			720
720			REC - 127,127A	1/20	19	20	1/20	REC - 127,127A,127B	900		
	720		REC - 127B,127C	1/20	21	22	1/20	REC - 127C, 127D		900	
		720	REC - 127D, 127E	1/20	23	24	1/20	REC - 127F			720
1080			REC - 127E, 127F	1/20	25	26	1/20	REC - 127F	360		
	200		LIGHTING CONTROL PANEL	1/20	27	28	1/20	CAMERA HEATER		200	
		200	LIGHTING DIGITAL NETWORK	1/20	29	30	1/20	HAND DRYERS 136			1440 ★
200			POWER METERS	1/20	31	32	1/20	HAND DRYERS 136	1440		★
	500		CHEMICAL FEED 131B	1/20	33	34	1/20	HAND DRYERS 139		1440	★
			SPACE WITH BUSSING		35	36	1/20	HAND DRYERS 139			1440 ★
			SPACE WITH BUSSING		37	38	1/20	REC - 120	360		
			SPACE WITH BUSSING		39	40	1/20	SPARE			
			SPACE WITH BUSSING		41	42	1/20	SPARE			

NOTES: ★ CIRCUIT BREAKER TO BE GFCI.

56 A

PANELBOARD: "LPR2A" | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 200A | MAIN: 3P-200A MAIN BREAKER WITH FEED THRU LUGS | TOTAL CONNECTED VA: 20,000
LOCATION: ELEC. 223 | MFG AND TYPE: SQUARE D "NQOD" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 7,000
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "LDP" | TOTAL BØ: 7,000 | TOTAL CØ: 6,000

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
500			RECPT - CARDIO 235	1/20	1	2	1/20	RECPT - CARDIO 235	500		
	500		RECPT - CARDIO 235	1/20	3	4	1/20	RECPT - CARDIO 235		500	
		500	RECPT - CARDIO 235	1/20	5	6	1/20	RECPT - CARDIO 235			500
500			RECPT - CARDIO 235	1/20	7	8	1/20	RECPT - CARDIO 235	500		
	500		RECPT - CARDIO 235	1/20	9	10	1/20	RECPT - CARDIO 235		500	
		500	RECPT - CARDIO 235	1/20	11	12	1/20	RECPT - CARDIO 235			500
500			RECPT - CARDIO 235	1/20	13	14	1/20	RECPT - CARDIO 235	500		
	500		RECPT - CARDIO 235	1/20	15	16	1/20	RECPT - CARDIO 235		500	
		500	RECPT - CARDIO 235	1/20	17	18	1/20	RECPT - CARDIO 235			500
500			RECPT - CARDIO 235	1/20	19	20	1/20	RECPT - CARDIO 235	500		
	500		RECPT - CARDIO 235	1/20	21	22	1/20	RECPT - CARDIO 235		500	
		500	RECPT - CARDIO 235	1/20	23	24	1/20	RECPT - CARDIO 235			500
500			RECPT - CARDIO 235	1/20	25	26	1/20	RECPT - CARDIO 235	500		
	500		RECPT - CARDIO 235	1/20	27	28	1/20	RECPT - CARDIO 235		500	
		500	RECPT - CARDIO 235	1/20	29	30	1/20	RECPT - CARDIO 235			500
500			RECPT - CARDIO 235	1/20	31	32	1/20	RECPT - CARDIO 235	500		
	500		RECPT - CARDIO 235	1/20	33	34	1/20	RECPT - CARDIO 235		500	
		500	RECPT - CARDIO 235	1/20	35	36	1/20	RECPT - CARDIO 235			500
500			RECPT - CARDIO 235	1/20	37	38	1/20	RECPT - CARDIO 235	500		
	500		RECPT - CARDIO 235	1/20	39	40	1/20	RECPT - CARDIO 235		500	
			SPARE	1/20	41	42	1/20	SPARE			
			SPARE	1/20	43	44	1/20	SPARE			
			SPARE	1/20	45	46	1/20	SPARE			
			SPARE	1/20	47	48	1/20	SPARE			
			SPACE WITH BUSSING		49	50		SPACE WITH BUSSING			
			SPACE WITH BUSSING		51	52		SPACE WITH BUSSING			
			SPACE WITH BUSSING		53	54		SPACE WITH BUSSING			
			SPACE WITH BUSSING		55	56		SPACE WITH BUSSING			
			SPACE WITH BUSSING		57	58		SPACE WITH BUSSING			
			SPACE WITH BUSSING		59	60		SPACE WITH BUSSING			
			SPACE WITH BUSSING		61	62		SPACE WITH BUSSING			
			SPACE WITH BUSSING		63	64		SPACE WITH BUSSING			
			SPACE WITH BUSSING		65	66		SPACE WITH BUSSING			
			SPACE WITH BUSSING		67	68		SPACE WITH BUSSING			
			SPACE WITH BUSSING		69	70		SPACE WITH BUSSING			
			SPACE WITH BUSSING		71	72		SPACE WITH BUSSING			
			SPACE WITH BUSSING		73	74		SPACE WITH BUSSING			
			SPACE WITH BUSSING		75	76		SPACE WITH BUSSING			
			SPACE WITH BUSSING		77	78		SPACE WITH BUSSING			
			SPACE WITH BUSSING		79	80		SPACE WITH BUSSING			
			SPACE WITH BUSSING		81	82		SPACE WITH BUSSING			
			SPACE WITH BUSSING		83	84		SPACE WITH BUSSING			

NOTES: ★

35 A

PANELBOARD: "LPR2B" | VOLTAGE: 208Y120V/3ø/4W | CU BUS RATING: 200A | MAIN: 3P-200A MAIN BREAKER | TOTAL CONNECTED VA: 12,600
LOCATION: ELEC. 223 | MFG AND TYPE: SQUARE D "NQOD" | EQUIP. GND. CU BUS: YES | ISOL. GND. CU BUS: NO | TOTAL AØ: 3,636
MOUNTING: SURFACE | ENCLOSURE: NEMA 1 | MINIMUM A.I.C. RATINGS: 10,000 | FED FROM: PANELBOARD "LPR2A" | TOTAL BØ: 4,632 | TOTAL CØ: 4,332

LOAD (VA) AØ	BØ	CØ	SERVES	P/T	CIR NO.	CIR NO.	P/T	SERVES	LOAD (VA) AØ	BØ	CØ
1080			REC - 218,222,223,227,2010	1/20	1	2	1/20	REC - 224,227	1080		
	1080		REC - 226,227	1/20	3	4	1/20	CEILING FANS 218		1176	
		900	REC - 221	1/20	5	6	1/20	REC - 220			1080
1176			CEILING FAN 221	1/20	7	8	1/20	REC - AV RACK	300		
★	1200		EWC-218	1/20	9	10	1/20	CEILING FAN 220		1176	
		1176	CEILING FAN 220	1/20	11	12	1/20	CEILING FAN 218			1176
			SPARE	1/20	13	14	1/20	SPARE			
			SPARE	1/20	15	16	1/20	SPARE			
			SPARE	1/20	17	18	1/20	SPARE			
			SPACE WITH BUSSING		19	20		SPACE WITH BUSSING			
			SPACE WITH BUSSING		21	22		SPACE WITH BUSSING			
			SPACE WITH BUSSING		23	24		SPACE WITH BUSSING			
			SPACE WITH BUSSING		25	26		SPACE WITH BUSSING			
			SPACE WITH BUSSING		27	28		SPACE WITH BUSSING			
			SPACE WITH BUSSING		29	30		SPACE WITH BUSSING			
			SPACE WITH BUSSING		31	32		SPACE WITH BUSSING			
			SPACE WITH BUSSING		33	34		SPACE WITH BUSSING			
			SPACE WITH BUSSING		35	36		SPACE WITH BUSSING			
			SPACE WITH BUSSING		37	38		SPACE WITH BUSSING			
			SPACE WITH BUSSING		39	40		SPACE WITH BUSSING			
			SPACE WITH BUSSING		41	42		SPACE WITH BUSSING			

NOTES: ★ CIRCUIT BREAKER TO BE GFCI.

5/2/2013 2:53:47 PM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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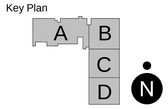
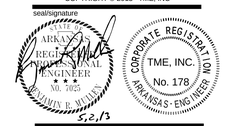
Key Plan



seal/signature



rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

PANEL SCHEDULES - ELECTRICAL

sheet number

E1102

PLUMBING FIXTURE SCHEDULE

ITEM	FIXTURE	DESCRIPTION	CW	HW	TRAP
WC-1	WATER CLOSET ADA ACCESSIBLE	AMERICAN STANDARD 3351.001 "AFWALL FLOWISE", VITREOUS CHINA, ELONGATED BOWL, WALL MOUNTED; TRIM: SLOAN 8111-1.6/1.1 "SOLIS" EXPOSED DUAL FLUSH VALVE, 1.6 GALLON FULL FLUSH CYCLE, 1.1 GALLON REDUCED FLUSH CYCLE; SEAT: CENTOCO 1500 STSCCSS "INSTITUTIONAL", FINISH WHITE; SUPPORT: ZURN Z-1203-NL (NR)-XH HORIZONTAL AND/OR Z-1204-NL (NR)-XH VERTICAL, SINGLE OR DOUBLE AS REQUIRED, EXTRA-HEAVY-DUTY 750LB CARRIER. 1. RIM OF FIXTURE SHALL BE MOUNTED AT 17" ABOVE FINISHED FLOOR. 2. CONTROL FOR ADA FLUSH VALVE SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREA.	1"		INTEGRAL
WC-2	WATER CLOSET	AMERICAN STANDARD 3351.001 "AFWALL FLOWISE", VITREOUS CHINA, ELONGATED BOWL, WALL MOUNTED; TRIM: SLOAN 1118-1.6/1.1 "SOLIS" EXPOSED FLUSH VALVE, 1.6 GALLON FULL FLUSH CYCLE, 1.1 GALLON REDUCED FLUSH CYCLE; SEAT: CENTOCO 1500 STSCCSS "INSTITUTIONAL", FINISH WHITE; SUPPORT: ZURN Z-1203-NL (NR)-XH HORIZONTAL AND / OR Z-1204-NL (NR)-XH VERTICAL, SINGLE OR DOUBLE AS REQUIRED, EXTRA-HEAVY-DUTY 750LB CARRIER.	1"		INTEGRAL
UR-1	URINAL	AMERICAN STANDARD 6550.005 "ALLBROOK FLOWISE", VITREOUS CHINA, SIPHON JET, 3/4" TOP SPUD; TRIM: SLOAN 8186-0.5 "SOLIS" EXPOSED SENSOR OPERATED FLUSH VALVE, 0.5 GALLON FLUSH CYCLE; SUPPORT: ZURN Z-1222.	3/4"		INTEGRAL
UR-2	URINAL ADA ACCESSIBLE	AMERICAN STANDARD 6550.005 "ALLBROOK FLOWISE", VITREOUS CHINA, SIPHON JET, 3/4" TOP SPUD; TRIM: SLOAN 8186-0.5 "SOLIS" EXPOSED SENSOR OPERATED FLUSH VALVE, 0.5 GALLON FLUSH CYCLE; SUPPORT: ZURN Z-1222. NOTE: FIXTURE SHALL BE MOUNTED SUCH THAT LIP IS 17" ABOVE FINISHED FLOOR.	3/4"		INTEGRAL
L-1	LAVATORY ADA ACCESSIBLE	AMERICAN STANDARD 0475.047 "AQUALYN", VITREOUS CHINA, OVAL BASIN, 20" X 17" SIZE, FRONT OVERFLOW, COUNTER MOUNTED; TRIM: SLOAN EAF-275-ISM SOLAR POWERED, SENSOR ACTIVATED, ELECTRONIC FAUCET, 0.5 GPM FLOW, MCGUIRE 155-WC DRAIN; INSULATION KIT: TRUEBRO 103 E-Z "LAVGUARD". BRADLEY MODEL S59-4000A ASSE 1070 MIXING VALVE WITH MOUNTING BRACKET.	3/8"	3/8"	1-1/4"
L-2	LAVATORY ADA ACCESSIBLE	AMERICAN STANDARD 0356.421 "LUCERNE", VITREOUS CHINA, RECTANGULAR BASIN, 20" X 18" SIZE, FRONT OVERFLOW, WALL MOUNTED; TRIM: SLOAN EAF-275-ISM SOLAR POWERED, SENSOR ACTIVATED, ELECTRONIC FAUCET, 0.5 GPM FLOW, MCGUIRE 155-A DRAIN; SUPPORT: ZURN Z-1231.	3/8"	3/8"	1-1/4"
S-1	SINK ADA ACCESSIBLE	JUST SL-ADA-2019-A-GR, 20" X 19" X 6-1/2" SIZE, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, SELF-RIMMING, J-35-SSF S.S. FLAT STRAINER; TRIM: T&S BRASS B-2741 SIDE VALVE CONTROL FAUCET, GOOSENECK SPOUT, B-0199-07 VANDAL-RESISTANT AERATOR, CERAMIC DISC, SINGLE LEVER HANDLE.	1/2"	1/2"	1-1/2"
SH-1	SHOWER ADA COMPLIANT	LEONARD AQUATROL 4500 PRESSURE BALANCING SHOWER VALVE, STAINLESS STEEL BALANCING PISTON, BRONZE AND STAINLESS STEEL INTERNAL PARTS, ADJUSTABLE LIMIT STOP, ANGLE CHECKSTOPS, MINIMUM 1.5 GPM FLOW. PROVIDE WITH LEONARD MODEL 62003 WALL GRAB BAR AND HAND SHOWER SYSTEM WITH 36" ADA WALL GRAB BAR OR STAINLESS STEEL, SLIDE MECHANISM, DOUBLE CHECK VALVE AND ON/OFF-PAUSE CONTROL, 2.5 GPM FLOW.	1/2"	1/2"	2"
SH-2	SHOWER	LEONARD AQUATROL 4500 PRESSURE BALANCING SHOWER VALVE, STAINLESS STEEL BALANCING PISTON, BRONZE AND STAINLESS STEEL INTERNAL PARTS, ADJUSTABLE LIMIT STOP, ANGLE CHECKSTOPS, MINIMUM 1.5 GPM FLOW. LEONARD H-14 LOW FLOW ABS SHOWER HEAD WITH BALL AND 1.5 GPM FLOW RATE.	1/2"	1/2"	2"
SS-1	SERVICE SINK	AMERICAN STANDARD 7745.811, FLORWELL, ENAMELED CAST IRON, 28" X 28" X 13" SIZE, CORNER MODEL, VINYL RIM GUARD, FLAT GRID DRAIN, MOP HANGER, HOSE AND BRACKET; TRIM: T&S BRASS B-0665-BSTP POLISHED CHROME SERVICE SINK FAUCET, THREADED SPOUT, PAIL HOOK, WALL BRACE, LEVER HANDLES, LOOSE KEY STOPS, VACUUM BREAKER.	3/4"	3/4"	3"
SS-2	SERVICE SINK	AMERICAN STANDARD 7692.008 "LAKEWELL", ENAMELED CAST IRON, 22" X 18" SIZE, BLANK BACK, STAINLESS STEEL RIM GUARD, WITH 7798.176 3" TRAP STANDARD WITH CLEANOUT; TRIM: T&S BRASS B-0665-BSTP POLISHED CHROME SERVICE SINK FAUCET, THREADED SPOUT, PAIL HOOK, WALL BRACE, LEVER HANDLES, LOOSE KEY STOPS, VACUUM BREAKER.	3/4"	3/4"	3"
EWC-1	ELECTRIC WATER COOLER ADA COMPLIANT	MODEL HTHBWF-0VLSERGRN PROVIDES 8.0 GPH OF 50'F DRIN KING WATER AT 90'F AMBIENT AND 80'F INLET WATER. BOTTLE FILLER SHALL BE RECES SED DESIGN AND INCLUDE ELECTRONIC SENSOR ACTIVATION WITH 20-SECOND AUTOMATIC WATER SHUT-OFF. SHALL PROVIDE 1.1 GPM FLOW RATE WITH LAMINAR FLOW TO PREVENT SPLASHING. SHALL INCLUDE WATERSENTRY PLUS FILTER, CERTIFIED TO NSF/ANSI 61 AND 372 FOR LEAD REDUCTION, WITH VISUAL MONITOR TO INDICATE WHEN REPLACEMENT IS NECESSARY. FOUNTAIN SHALL BE OVAL DESIGN WITH SELF-CLOSING PUSHBARS AND CONTOURED BASIN, SHALL INCLUDE HIGH-EFFICIENCY SJ8GRN WATER CHILLER.	3/8"		1-1/4"
EWC-2	ELECTRIC WATER COOLER ADA COMPLIANT	MODEL HTHBWF-0VLERGRN PROVIDES 8.0 GPH OF 50'F DRIN KING WATER AT 90'F AMBIENT AND 80'F INLET WATER. BOTTLE FILLER SHALL BE RECESSED DESIGN AND INCLUDE ELECTRONIC SENSOR ACTIVATION WITH 20-SECOND AUTOMATIC WATER SHUT-OFF. SHALL PROVIDE 1.1 GPM FLOW RATE WITH LAMINAR FLOW TO PREVENT SPLASHING. SHALL INCLUDE WATERSENTRY PLUS FILTER, CERTIFIED TO NSF/ANSI 61 AND 372 FOR LEAD REDUCTION, WITH VISUAL MONITOR TO INDICATE WHEN REPLACEMENT IS NECESSARY. FOUNTAIN SHALL BE OVAL DESIGN WITH SELF-CLOSING PUSHBARS AND CONTOURED BASIN, SHALL INCLUDE HIGH-EFFICIENCY SJ8GRN WATER CHILLER.	3/8"		1-1/4"

PLUMBING EQUIPMENT SCHEDULE

ITEM	FIXTURE	DESCRIPTION	ELECTRICAL
SP-1	SUMP PUMP	ZOELLER MODEL BN57 "MIGHTY-MATE" SUBMERSIBLE PUMP, ALL CAST IRON CONSTRUCTION, STAINLESS STEEL GUARD AND HANDLE, CAST IRON IMPELLOR, WATER TIGHT, DUST TIGHT AND PERMENTANTLY OILED BEARINGS, 34 GPM AT 10 FEET OF HEAD, INTEGRAL FLOAT OPERATED MECHANICAL SWITCH, SINGLE PIGGY-BACK VARIABLE LEVEL FLOAT SWITCH. UL LISTED	1/3 HP, 115 VOLT, SINGLE PHASE, 9.7A, 3 WIRE CORD AND PLUG

PLUMBING PIPING SPECIALTIES SCHEDULE

ITEM	DESCRIPTION	SIZE DATA	CW	HW
RPZ-1	WILKINS 975XL, ALL BRONZE CONSTRUCTION, REDUCED PRESSURE TYPE, COMPLETE WITH STRAINER, TEST COCKS, BALL VALVES, AND AIR GAP.	--	1"	
RD-1	ZURN ZC-100-C-E-R, CAST IRON DOME, UNDERDECK CLAMP, STATIC EXTENSION, RECEIVER.	AS NOTED		
HB-1	T&S BRASS B-0737 SILL FAUCET, CHROME PLATED, ELONGATED LOCK SHIELD CAP, LOOSE KEY, 3/4" SIZE, WITH CHROME FINISH VACUUM BREAKER.	--	3/4"	
FS-2	ZURN ZN-1901-2-32, WITH A.R.E. INTERIOR, POLISHED NICKEL BRONZE FRAME AND HALF GRATE, ALUMINUM BOTTOM STRAINER, 12" X 12" X 8" DEEP.	AS NOTED		
FS-1	ZURN ZN-1901-32, WHITE A.R.E. INTERIOR, POLISHED NICKEL BRONZE FRAME AND FULL GRATE, ALUMINUM BOTTOM STRAINER, 12" X 12" X 8" DEEP. PROSET TRAP GUARD	AS NOTED		
FPWH	ZURN Z-1300 "ECOLOTROL", ANTI-SIPHON, NON-FREEZE, 3/4" SIZE, NICKEL BRONZE CASING AND ALL BRONZE INTERIOR PARTS, POLISHED NICKEL BRONZE FACE, INTEGRAL BACKFLOW PREVENTER, UNION ELBOW INLET, WALL CLAMP AND KEY HANDLE.	--		
FD-1	ZURN ZN-415-B, 5" POLISHED NICKEL BRONZE STRAINER, PROSET TRAP GUARD.	AS NOTED		

WATER HAMMER ARRESTOR SCHEDULE

P.D.I. UNITS	A	B	C	D	E	F
FIXTURE UNITS	1-11	12-32	33-60	61-113	114-154	155-330

CLASSIFICATIONS ESTABLISHED BY THE PLUMBING AND DRAINAGE INSTITUTE "STANDARD P.D.I.-WH201".

APPROVED MANUFACTURERS:

1. ZURN, WADE, J.R. SMITH, JOSAM, MIFAB

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	BALL VALVE
	CHECK VALVE (SWING CHECK)
	UNION
	PRESSURE GAUGE
	THERMOMETER W/ INSERTION WELL
	ELBOW, TURNED UP
	ELBOW, TURNED DOWN
	RISE OR DROP IN PIPE
	TEE, SIDE CONNECTION
	TEE, OUTLET UP
	TEE, OUTLET DOWN
	CAPPED OUTLET
	CAPPED PIPE

SYMBOL	DESCRIPTION
	NEW EQUIPMENT
	EXISTING EQUIPMENT
SS	SANITARY SEWER (SS) BELOW FLOOR
SS	SANITARY SEWER (SS) ABOVE FLOOR
V	SANITARY VENT (V)
CW	COLD WATER (CW)
HW	HOT WATER (HW)
HWR	HOT WATER RETURN (HWR)
G	NATURAL GAS - LOW PRESSURE (G)
WC-1	PLUMBING FIXTURE
FD	FLOOR DRAIN
VTR	VENT THRU ROOF
COP	CLEANOUT PLUG
FCO	FLOOR CLEANOUT
WCO	WALL CLEANOUT
COTG	CLEANOUT TO GRADE
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
R1 / M3.1	RISER NUMBER / SHEET NUMBER } RISER DESIGNATION

ADA REQUIREMENTS

THIS APPLIES TO HANDICAPPED ACCESSIBLE FIXTURES ONLY.

WATER CLOSETS: THE HEIGHT OF WATER CLOSETS SHALL BE 17" TO 19" MEASURED TO THE TOP OF THE TOILET SET. SEATS SHALL NOT BE SPRUNG TO RETURN TO A LIFTED POSITION. THE WATER CLOSET SHALL BE LOCATED 18" FROM THE SIDE WALL TO THE CENTER LINE OF THE BOWL. HAND OPERATED FLUSH CONTROLS SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS NO MORE THAN 29" ABOVE THE FINISH FLOOR. SEE ARCHITECTURAL DRAWINGS FOR GRAB BAR LOCATIONS.

URINALS: THE URINALS SHALL BE WALL HUNG WITH AN ELONGATED RIM AT A MAXIMUM OF 17" ABOVE THE FINISH FLOOR. HAND OPERATED FLUSH CONTROLS SHALL BE MOUNTED NO MORE THAN 44" ABOVE FINISH FLOOR.

LAVATORIES: LAVATORIES SHALL BE MOUNTED WITH THE RIM OR COUNTER SURFACE NO HIGHER 34" ABOVE THE FINISH FLOOR. PROVIDE A CLEARANCE OF AT LEAST 29" ABOVE THE FINISH FLOOR TO THE BOTTOM OF THE APRON. KNEE SPACE SHALL BE 8" FROM BOTTOM EDGE OF APRON TO THE LEADING EDGE OF THE BOTTOM OF THE BOWL. THE BOTTOM OF THE BOWL SHALL BE A MINIMUM OF 27" ABOVE THE FINISH FLOOR. ALL WATER AND DRAIN PIPING UNDER LAVATORIES SHALL BE INSULATED WITH A FOAM INSERT COVERED WITH A 1/8" VINYL OUTER SHELL. ANGLE STOPS SHALL HAVE A FLIP TOP ACCESS.

FAUCETS - BATHTUB - SHOWER CONTROLS: CONTROLS SHALL BE LEVER HANDLES OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBF.

SHOWER: A SEAT SHALL BE PROVIDED IN SHOWER STALLS 36"X36". THE SEAT SHALL BE MOUNTED ON THE WALL OPPOSITE OF THE CONTROLS AND 17" TO 19" FROM THE BATHROOM FLOOR AND SHALL EXTEND THE FULL DEPTH OF THE STALL. SHOWER CONTROLS SHALL BE MOUNTED ON THE WALL OPPOSITE OF THE SEAT AND SHALL BE LOCATED ON THE SAME WALL AS THE SHOWER HEAD, AT MINIMUM HEIGHT OF 38" AND A MAXIMUM HEIGHT OF 48". IN ADDITION TO THE FIXED SHOWER HEAD PROVIDE A HAND HELD SHOWER SPRAY UNIT WITH A HOSE AT LEAST 60" LONG THAT CAN BE USED BOTH AS A FIXED SHOWER HEAD AND AS A HAND HELD SHOWER HEAD. IN A 30"X 60" SHOWER UNIT A FIXED SEAT SHALL BE PROVIDED, IT SHALL BE A FOLDING TYPE AND SHALL BE MOUNTED ON THE WALL ADJACENT TO THE CONTROLS. SEE ARCHITECTURAL DRAWINGS FOR GRAB BAR LOCATIONS.

SINKS: SINKS SHALL BE MOUNTED WITH THE RIM OR COUNTER SURFACE NO HIGHER 34" ABOVE THE FINISH FLOOR. PROVIDE A KNEE CLEARANCE OF AT LEAST 27" HIGH, 30" WIDE, AND 19" DEEP. SINKS SHALL BE A MAXIMUM OF 6 1/2" DEEP. ALL WATER AND DRAIN PIPING UNDER LAVATORIES SHALL BE INSULATED WITH A FOAM INSERT COVERED WITH A 1/8" VINYL OUTER SHELL. ANGLE STOPS SHALL HAVE A FLIP TOP ACCESS.

DRINKING FOUNTAINS / WATER COOLERS: WHERE ONLY ONE DRINKING FOUNTAIN IS PROVIDED ON A FLOOR THERE SHALL BE A DRINKING FOUNTAIN WHICH IS ACCESSIBLE TO INDIVIDUALS WHO USE WHEEL CHAIRS AND ONE ACCESSIBLE TO THOSE HAVING DIFFICULTY BENDING OR STOOPING. THIS CAN BE ACCOMPLISHED BY USING A "HI-LO" FOUNTAIN. LOWEST SPOUT SHALL BE NO HIGHER THAN 36" ABOVE FINISHED FLOOR AND HIGHEST SPOUT SHALL BE MOUNTED AT 40" ABOVE FINISH FLOOR. SPOUTS SHALL BE AT FRONT OF THE UNIT AND SHALL DIRECT THE WATER FLOW IN A TRAJECTORY THAT IS PARALLEL OR NEARLY PARALLEL TO THE FRONT OF THE UNIT. THE SPOUT SHALL PROVIDE A FLOW OF WATER AT LEAST 4" HIGH. CONTROLS SHALL BE FRONT MOUNTED OR SIDE MOUNTED NEAR THE FRONT EDGE. CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBF. WALL MOUNTED UNITS SHALL HAVE A CLEAR KNEE SPACE OF BETWEEN THE BOTTOM OF THE APRON AND THE FINISHED FLOOR AT LEAST 27" HIGH, 30" WIDE, AND 17" TO 19" DEEP. FOUNTAINS SHALL NOT PROTRUDE MORE THAN 4" OUT INTO WALKWAYS.

PLUMBING GENERAL NOTES:

1. ALL WORK IS TO CONFORM TO THE LATEST EDITIONS OF THE AR. STATE PLUMBING CODE, AR. STATE GAS CODE, NFPA AND ALL LOCAL ORDINANCES.

2. BY NECESSITY, THESE DRAWINGS REFLECT A SYSTEM DESIGNED AROUND SPECIFIC REFERENCE PRODUCTS, THE SOLUTION OF WHICH HAS IMPACTED THE DESIGNS OF OTHER TRADES (ELECTRICAL, STRUCTURAL, ETC). IF ALTERNATE MANUFACTURERS, FUEL SOURCES, SIZES, OR MODEL NUMBERS ARE SUBMITTED OR BID, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS TO COORDINATE ALL DIFFERENCES PRIOR TO BID. THE SUBSTITUTING CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL PAY FOR CHANGES REQUIRED TO OTHER TRADES IF ALTERNATE EQUIPMENT IS BID OR INSTALLED AT THE CONTRACTORS OPTION.

3. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRIC RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, FITTING, OR COMPONENT. CONTRACTOR SHALL NOT SCALE DRAWINGS. EQUIPMENT SCHEDULES SHALL TAKE PRECEDENCE OVER CONFLICTING DRAWING INFORMATION. DRAWINGS SPECIFIC TO THIS DISCIPLINE DO NOT LIMIT THE RESPONSIBILITY OF WORK REQUIRED BY CONTRACT DOCUMENTS. REFER TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND OTHER DRAWINGS FOR COMPLETE INFORMATION.

4. EXCEPT WHERE MODIFIED BY SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF ANY ITEM, IN THE DRAWINGS OR SPECIFICATIONS OR BOTH, CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM, REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.

5. EXACT LOCATION OF ALL EQUIPMENT AND PIPING SHALL BE COORDINATED WITH OTHER TRADES. CEILING MOUNTED SPRINKLER, LIGHTING AND ELECTRICAL REQUIREMENTS TAKE PRECEDENCE OVER CEILING MOUNTED MECHANICAL REQUIREMENTS.

6. ALL PLUMBING SYSTEMS SHALL BE INSTALLED AS PER SPECIFICATIONS AND GOVERNING CODES.

7. INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS OR DETAILS, BUT NOT SHOWN ON PLANS, AND VICE-VERSA, SHALL BE PROVIDED AS IF EXPRESSLY REQUIRED BY BOTH.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THAT OF OTHER TRADES, HVAC, STRUCTURAL, CIVIL, ETC. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING DETAILS AND DIMENSIONS. REFER TO CIVIL PLANS FOR ALL UTILITY CONNECTION POINTS OUTSIDE THE BUILDING.

9. REFER TO SPECIFICATIONS OR SCHEDULES ON DRAWINGS FOR ACCEPTABLE MANUFACTURERS AND MODELS OF PLUMBING FIXTURES AND EQUIPMENT, AND PROPER APPLICATIONS OF SAME.

10. PROVIDE CLEANOUTS IN ALL SANITARY, STORM DRAINAGE & OVERFLOW LINES, WHETHER SHOWN OR NOT, AT INTERVALS NOT TO EXCEED 50 FEET, AT EACH DIRECTION 45 DEGREES AND GREATER, AND ON ALL VERTICAL RISERS AT A HEIGHT OF 18" A.F.F. AT THE BASE OF EACH STACK.

11. PROVIDE PRESSURE REDUCERS IN WATER SUPPLY LINES TO KEEP PRESSURE BELOW 70 PSI AT ALL OUTLETS. MINIMUM PRESSURE ACCEPTABLE AT WATER OUTLETS IS 25 PSI AT DIRECT SUPPLY FLUSH VALVES, AND 8 PSI AT ALL OTHER OUTLETS.

12. INSULATE ALL WATER LINES ABOVE FLOOR. INSULATE ALL HORIZONTAL STORM LINES (EXCLUDING OVERFLOW LINES) ABOVE FLOOR.

13. INSULATE ALL CONDENSATE LINES INSIDE BUILDING AS PER INSULATION REQUIREMENTS FOR COLD WATER LINE, IN SPECIFICATIONS.

14. SLOPE ALL SANITARY AND STORM LINES ARE 1/4" PER FOOT FOR PIPES LESS THAN 3" IN DIAMETER, AND NOT LESS THAN 1/8" PER FOOT FOR PIPES 3" AND LARGER. VERIFY INVERTS WITH SITE DRAWINGS AND COORDINATE INSTALLATION TO ASSURE PROPER FLOW.

15. SLEEVE AND SEAL ALL PIPE PENETRATIONS THRU RATED WALLS AND FLOORS. PIPE SLEEVES THROUGH FLOORS SHALL TERMINATE A MINIMUM OF 2" ABOVE FINISHED FLOOR. PLASTIC PIPING SHALL NOT BE USED TO PENETRATE FIRE RATED CONSTRUCTION.

16. PROVIDE WATER HAMMER ARRESTORS IN BRANCH WATER LINES AS REQUIRED BY GOOD PRACTICE, AT ALL QUICK CLOSING VALVES OR MINIMUM OF ONE ARRESTOR FOR EACH FIXTURE OR BANK OF FIXTURES.

17. PROVIDE STOP VALVES AT EVERY FIXTURE ON BOTH HOT AND COLD WATER SUPPLY LINES. VALVES, ESCUTCHEONS, FITTINGS, ETC. SHALL BE CHROMIUM PLATED WHERE PIPING IS EXPOSED.

18. PROVIDE PRO-SET TRAP GUARD OR EQUAL FOR ALL NEW FLOOR DRAINS.

19. ALL PIPE DROPS FROM CEILING PLENUM TO BELOW FLOOR SHALL BE MADE IN FURR-OUTS AT COLUMNS, IN WEBB OF BEAMS AT COLUMNS, OR IN WALLS UNLESS SHOWN OTHERWISE.

20. ALL EXPOSED OR ACCESSIBLE P-TRAPS SHALL BE CHROME PLATED AND PROVIDED WITH BOTTOM CLEANOUT PLUGS

21. PROVIDE INSULATION AT ALL EXPOSED HOT WATER & DRAIN PIPING FOR HANDICAP FIXTURES PER ANSI A117.1 AND ADA REQUIREMENTS.

22. SEE THIS SHEET FOR PLUMBING LEGEND AND FIXTURE SCHEDULE.

23. EXISTING INFORMATION SHOWN WAS GATHERED FROM "AS BUILT" DRAWINGS AND JOB SITE VISITS. EVERY ATTEMPT HAS BEEN MADE TO SHOW EXISTING SERVICES CORRECTLY. HOWEVER CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL EXISTING CONDITIONS AND MAKE ALL NECESSARY ADJUSTMENTS IN THE FIELD AT NO EXTRA COST TO THE OWNER/ARCHITECT/ENGINEER.

24. HOT AND COLD WATER SUPPLIES TO FIXTURES SHALL BE AS SHOWN IN PLUMBING FIXTURE SCHEDULE.

25. ALL SUPPLIES SHALL BE PROVIDED WITH A HIGH EAR COUPLING EQUAL TO MUELLER NO. C-100HE (1/2", 3/4", OR 1" SIZE) AT THE WALL (ANCHORED TO CROSS-MEMBER SUPPORT) BEFORE PIPE ENTERS ROOM SPACE TO ASSURE NO PIPE MOVEMENT WITHIN WALL CAVITY.

26. COLD WATER SUPPLY TO ELECTRIC WATER COOLERS SHALL NOT BE INSTALLED ABOVE RECESSED ELECTRICAL UTILITY BOX.

27. ALL VENTS THROUGH ROOF SHALL BE PROVIDE WITH 6# LEAD FLASHING OR ELASTOMERIC FLASHING SYSTEM TO MAINTAIN ROOF WARRANTY.

28. PROVIDE GAS COCK, DIRT LEG, AND UNION AT ALL FINAL CONNECTIONS OF GAS PIPING TO EQUIPMENT.

29. WHERE THIS SYMBOL OCCURS ON THE DRAWINGS, REFERENCE SHOULD BE MADE TO THE KEYED NOTES ON THAT SAME SHEET AND THE CORRESPONDING NUMBER OF NOTE.

30. JN ALL AREAS SUBJECT TO FREEZING, WATER PIPING SHALL BE INSTALLED ON THE THERMAL SIDE OF THE INSULATION.

31. THE CONTRACTOR SHALL, PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT, VISIT JOB SITE TO VERIFY SIZE, ELEVATION, LOCATION, ETC., OF ANY EXISTING PIPING NOTED, SHOWN OR IMPLIED, TO WHICH NEW PIPING IS RELATED OR CONNECTED.

32. CUT WALLS, FLOORS OR CEILINGS AS REQUIRED TO INSTALL NEW PIPING. ALL FURRING AND REPAIRING SHALL BE BY THE GENERAL CONTRACTOR. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR.

33. NO STRUCTURAL MEMBERS MAY BE CUT OR MODIFIED WITHOUT THE WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER.

34. WHERE EXISTING FIXTURES AND EQUIPMENT ARE REMOVED AND NOT REPLACED IN PROJECTS OTHER THAN HOSPITALS, CAP ALL PIPING WITH WALLS, FLOORS OR CEILINGS AS REQUIRED FOR CONCEALMENT. IN HOSPITAL PROJECTS, REMOVE PIPNG BACK TO MAIN AND CAP.

35. EXISTING FLOOR DRAINS SHALL BE THOROUGHLY CLEANED AND BUFFED. PIPING SHALL BE RODDED AND CLEANED TO THE POINT OF CONNECTION TO MAIN.

36. EXISTING PIPE TO WHICH NEW PIPE IS CONNECTED SHALL BE RODDED, FLUSHED AND CLEANED FROM POINT OF CONNECTIONS TO MAIN OUTSIDE BUILDING.

37. REMOVE ALL EXISTING PIPING WHICH IS DEEMED INOPERABLE AS A RESULT OF THIS CONTRACT UNLESS SHOWN OR NOTED OTHERWISE.

38. EACH FIXTURE OR GROUP OF FIXTURES SHALL BE PROVIDED WITH A SHUT OFF VALVE IN THE CEILING SPACE. PROVIDE AN ACCESS PANEL IN SOLID CEILINGS.

39. LOCATION OF FLOOR DRAINS IN MECHANICAL ROOMS SHALL BE COORDINATED WITH MECHANICAL EQUIPMENT AND MECHANICAL CONTRACTOR.

40. CONTRACTOR SHALL PAY FOR ALL LICENSES, PERMITS, FEES, AND UTILITY FEES REQUIRED TO DO THE WORK OF THIS CONTRACT.

41. MAINTAIN A DISTANCE OF 10'-0" FROM A SANITARY VENT THROUGH THE ROOF AND ANY FRESH AIR INTAKES.

42. ALL PIPING IS TO BE CONCEALED UNLESS NOTED OTHERWISE. ALL EXPOSED PIPING IS TO BE CHROMIUM PLATED.

43. PROVIDE BACKFLOW PREVENTERS OR ANTI-SIPHON DEVICES AT ALL LOCATIONS WHERE THERE IS A POSSIBILITY OF CROSS CONTAMINATION.

44. MAKE ALL UTILITY CONNECTIONS AND INSTALLATIONS IN FULL ACCORDANCE WITH ALL UTILITY REGULATIONS. PROVIDE ALL ADDITIONAL APPERTENANCES AS REQUIRED BY THE UTILITY COMPANY. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.

45. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, DOCUMENTS AND SERVICES RELATED TO THE INSTALLATION OF THE WORK.

46. MAINTAIN ALL MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR ALL FIXTURES AND EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PLUMBING FIXTURES.

47. CUTTING OF ROOF AND FLASHING OF PIPE CURBS, SANITARY VENT THROUGH ROOF, ETC., SHALL BE COORDINATED WITH AND PERFORMED BY THE ROOFING CONTRACTOR, AT THIS CONTRACTOR'S EXPENSE, TO MAINTAIN THE ROOF WARRANTY.

48. ALL ABOVE GRADE HORIZONTAL PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE. ALL RAIN CONDUCTORS AND OVERFLOW RAIN CONDUCTORS SHALL BE ROUTED THROUGH THE JOISTS (OR TRUSSES) FOR AS GREAT A DISTANCE AS POSSIBLE, WHILE MAINTAINING PROPER SLOPE, BEFORE DROPPING BELOW THE JOISTS (OR TRUSSES).

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HPER Center Renovation & Expansion

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Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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Key Plan

A | B
C
D

N

seal/signature

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14997 REGISTERED

CORPORATE REGISTRATION TME, INC. No. 178 ARKANSAS - ENGINEER

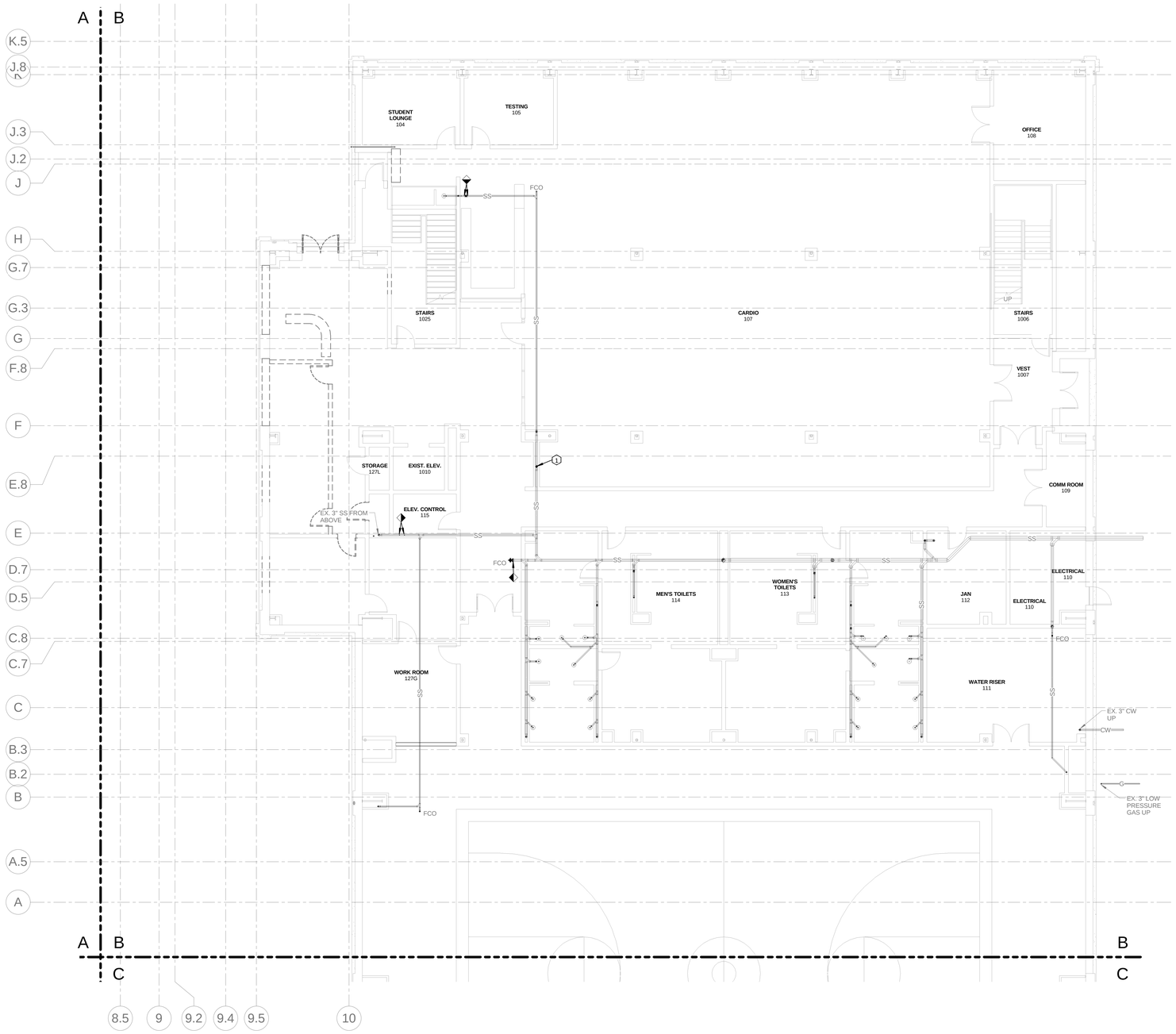
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

LEGENDS, NOTES AND SCHEDULES - PLUMBING

sheet number

P001



DEMOLITION LEGEND

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

KEYED DEMOLITION NOTE:

1. DEMO AND CAP SANITARY SEWER FLUSH WITH FLOOR. PATCH TO MATCH SURROUNDING FLOOR.

1 FIRST FLOOR UNDERSLAB PLAN - PLUMBING DEMOLITION

1/8" = 1'-0"

5/2/2013 8:48:48 AM

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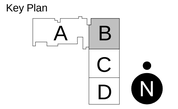
Key Plan



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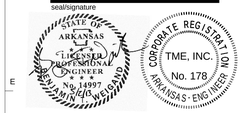


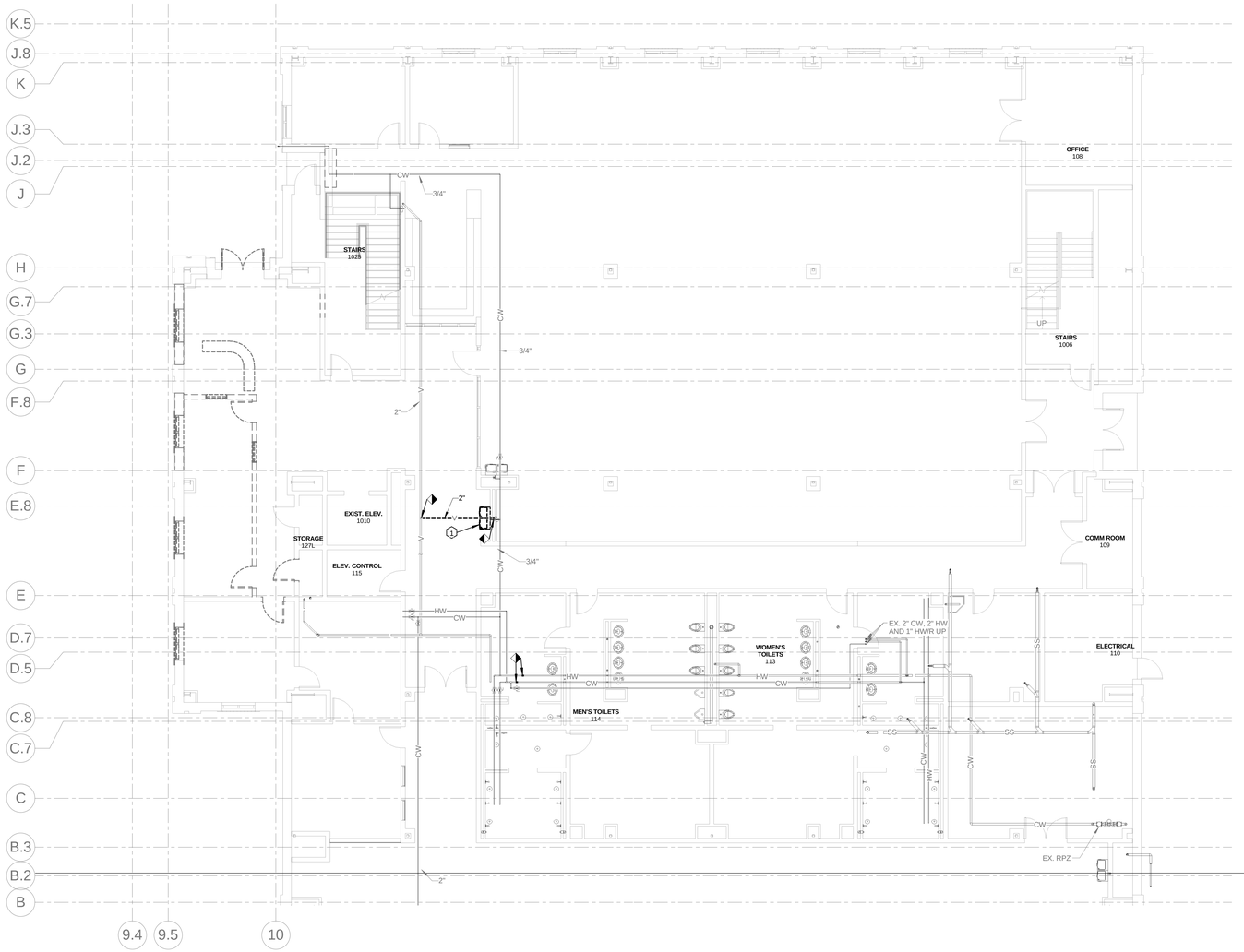
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

UNDERSLAB PLAN - PLUMBING DEMOLTION

sheet number

P101



DEMOLITION LEGEND

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

KEYED DEMOLITION NOTE:

1 BASE PLAN: FIXTURE TO REMAIN.

ALTERNATE #1: REMOVE FIXTURE AND DEMO EXISTING SANITARY VENT AND DOMESTIC SUPPLIES BACK TO MAIN. CAP SANITARY SEWER FLUSH WITH FLOOR.

N

1 FIRST FLOOR PLAN - PLUMBING DEMOLITION - SECTOR B ALTERNATE PLAN

1/8" = 1'-0"

5/2/2013 8:49:01 AM

HPER Center Renovation & Expansion

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Key Plan

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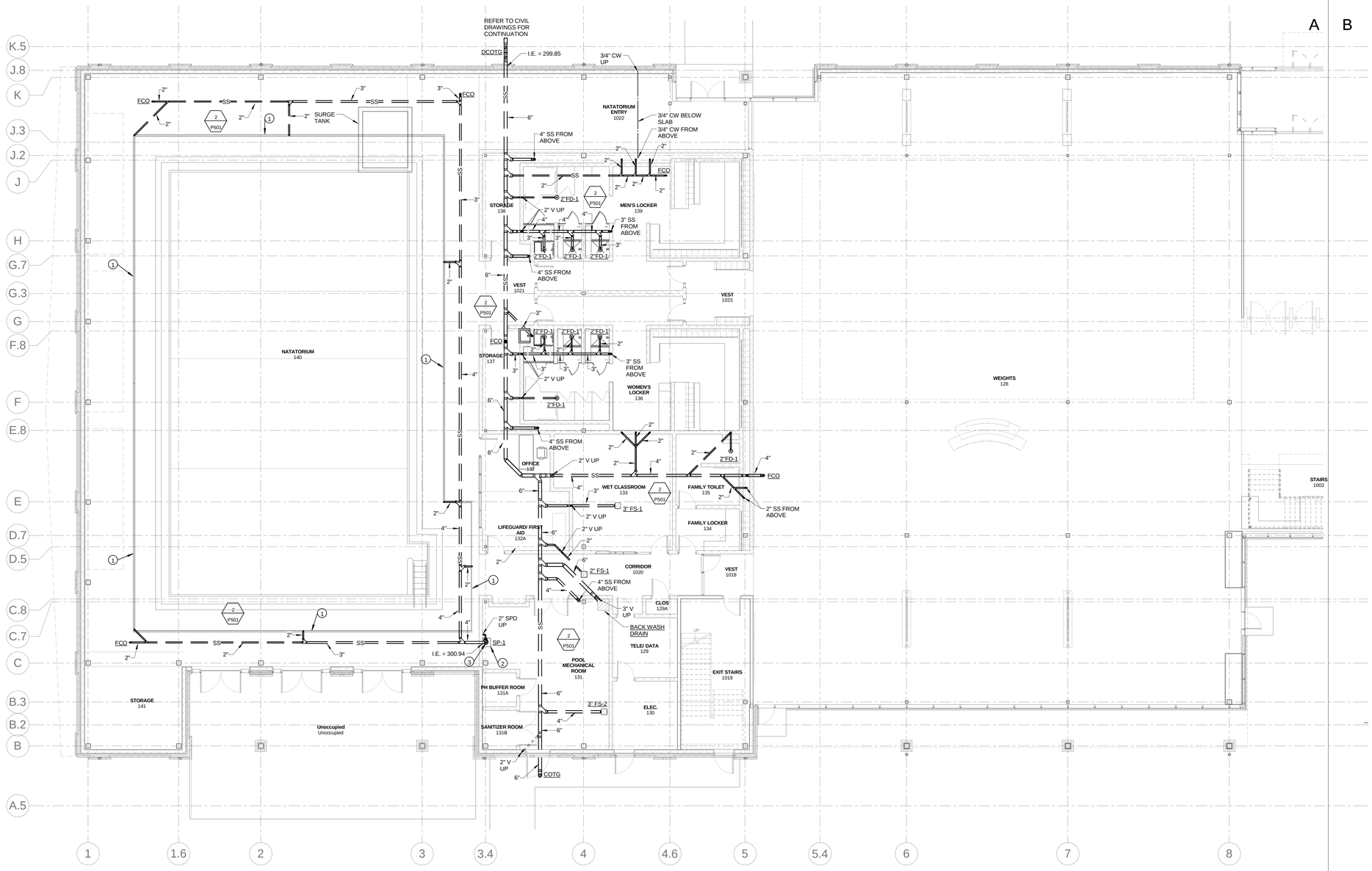
FIRST FLOOR PLAN - PLUMBING DEMOLITION - SECTOR B ALTERNATE PLAN

sheet number

P101b



KEYED PLUMBING NOTE:

1. STEGMEIER LLC FRONTIER DECK DRAIN WITH REMOVABLE TOP DRAIN WITH DOUBLE WALL BASE AND SNAP IN TOP. COORDINATE COLOR WITH ARCHITECT.
2. 18" X 18" X 18" SUMP WITH GRATE.
3. 4" SS TURN DOWN TO SUMP. PROVIDE WITH AN AIR GAP EQUAL TO TWICE THE SIZE OF PIPE OPENING.

N

1 FIRST FLOOR UNDERSLAB PLAN - PLUMBING - SECTOR A

1/8" = 1'-0"

5/2/2013 8:49:25 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
201 Donaghey Ave.
Conway, Arkansas 72035
P: (501) 450-5000

lead architect:
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401 West Capitol, Suite 402
Little Rock, Arkansas 72201
P: (501) 370-9207

design architect:
360 Architecture
300 West 22nd Street
Kansas City, Missouri 64108
P: (816) 472-2000

MEP engineer:
TME, INC.
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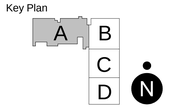
P: (501) 666-6676

structural engineer:
Robbins Engineering
2725 Cantrell Road
Little Rock, Arkansas 72202
P: (501) 221-7880

civil engineer & landscape architect:
Development Consultants Inc.
2200 N Rodney Parham Rd. #220
Little Rock, Arkansas 72212
P: (501) 370-9207

aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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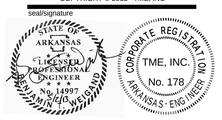


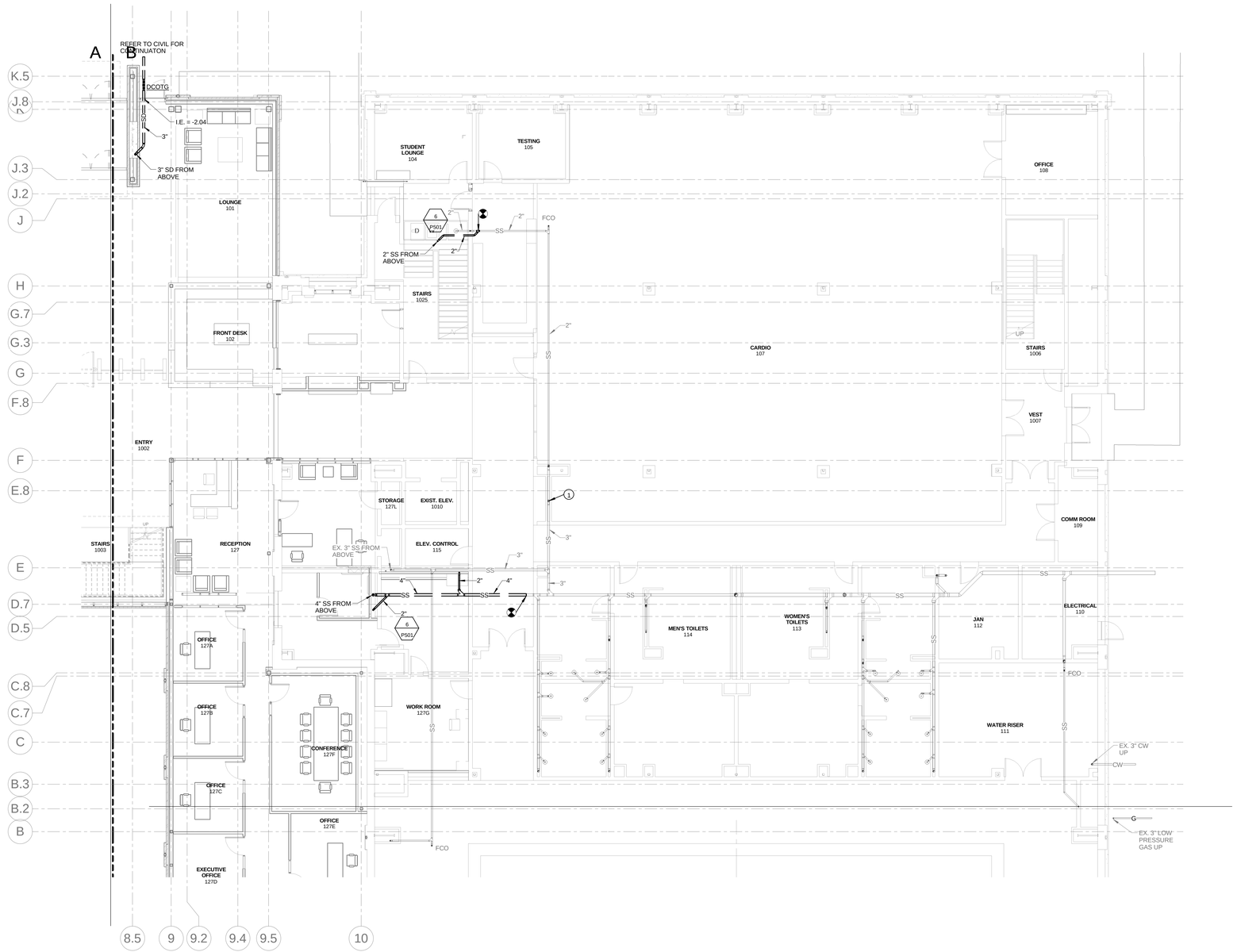
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

UNDERSLAB PLAN - PLUMBING - SECTOR A

sheet number

P201a



N

1 FIRST FLOOR UNDERSLAB PLAN - PLUMBING - SECTOR B

1/8" = 1'-0"

5/2/2013 8:49:44 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Conway, Arkansas

Stocks Mann Architects, PLC

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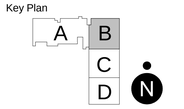
Key Plan



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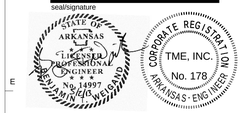


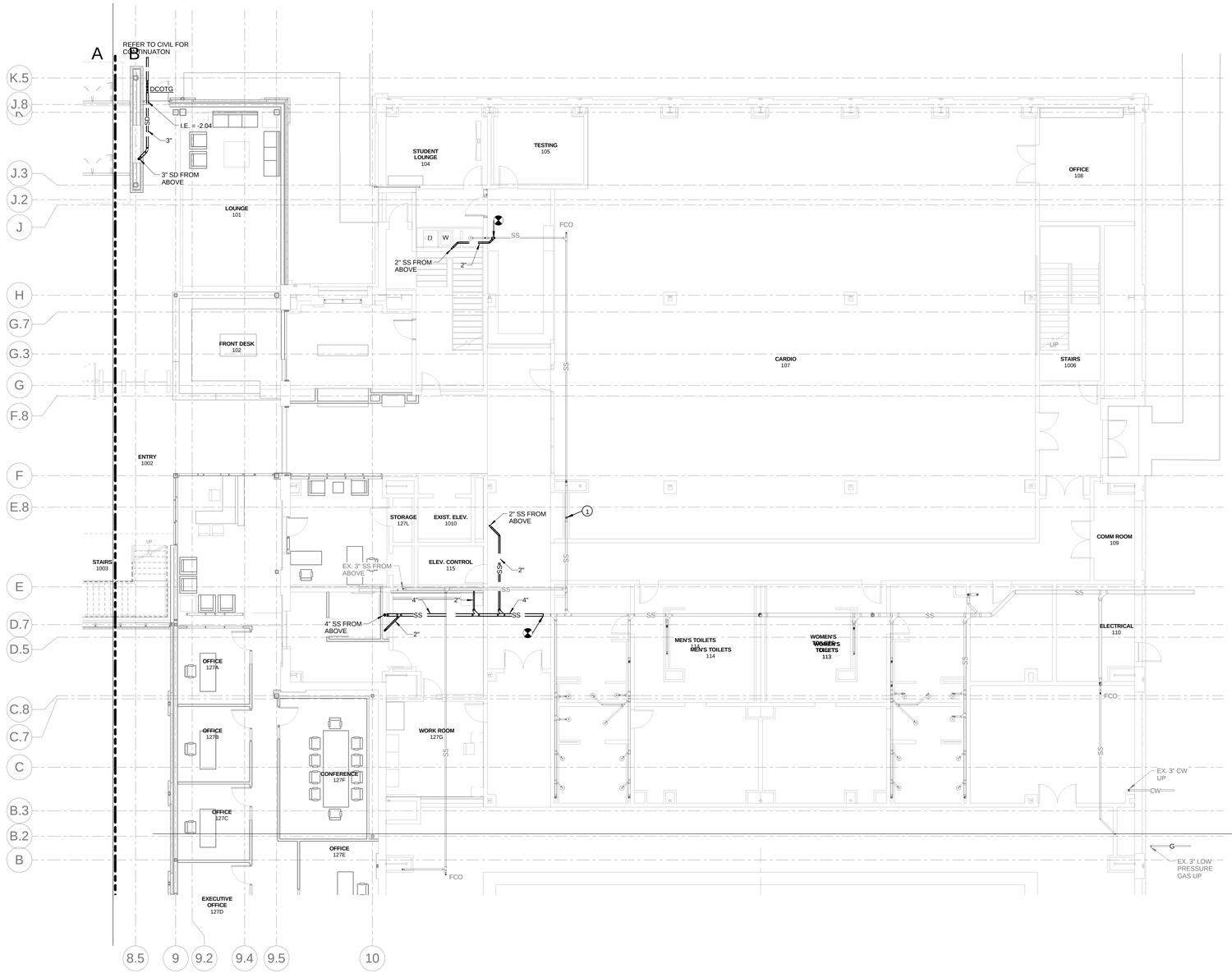
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

UNDERSLAB PLAN - PLUMBING - SECTOR B

sheet number

P201b



N

1 FIRST FLOOR UNDERSLAB PLAN - PLUMBING - SECTOR B ALTERNATE PLAN

1/8" = 1'-0"

5/2/2013 8:50:03 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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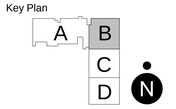
Key Plan



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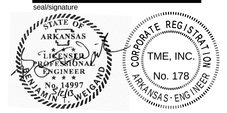


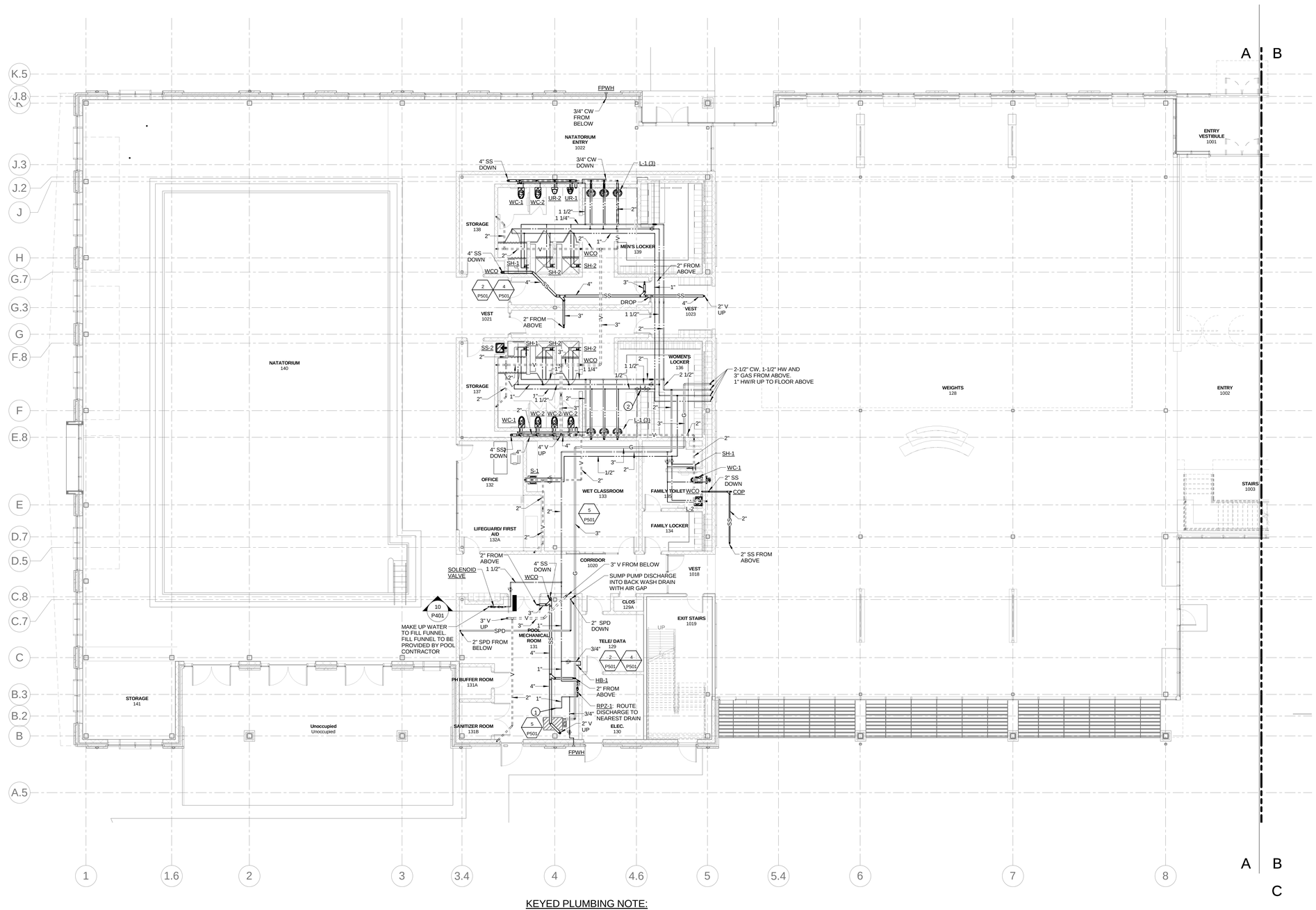
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

UNDERSLAB PLAN - PLUMBING - SECTOR B ALTERNATE PLAN

sheet number

P201b.1



KEYED PLUMBING NOTE:

1. 1" MAKE-UP WATER FOR POOL BOILER SYSTEM. REFER TO SHEE M501A FOR CONTINUATION.
2. BELL AND GOSSETT CIRCUIT SETTER OR APPROVED EQUAL SET TO 1/2 GPM.

N

1 **FIRST FLOOR PLAN - PLUMBING - SECTOR A**

1/8" = 1'-0"

5/2/2013 10:06:21 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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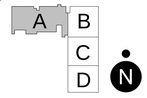
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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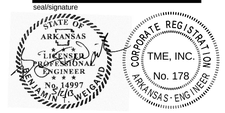


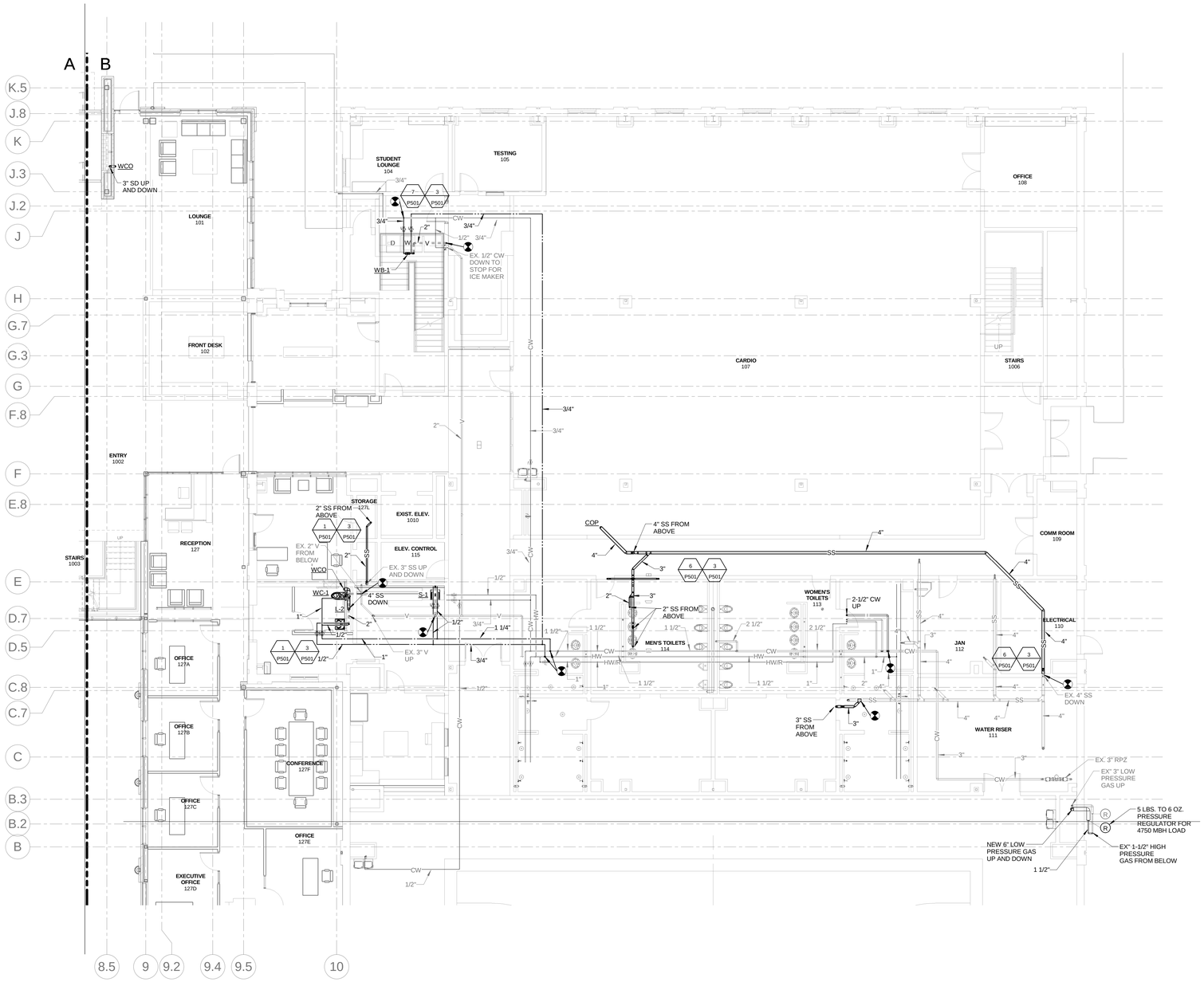
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - PLUMBING - SECTOR A

sheet number

P301a



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1 FIRST FLOOR PLAN - PLUMBING - SECTOR B

1/8" = 1'-0"

5/2/2013 10:05:17 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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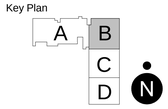
Key Plan



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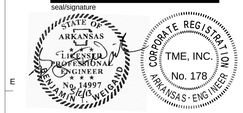


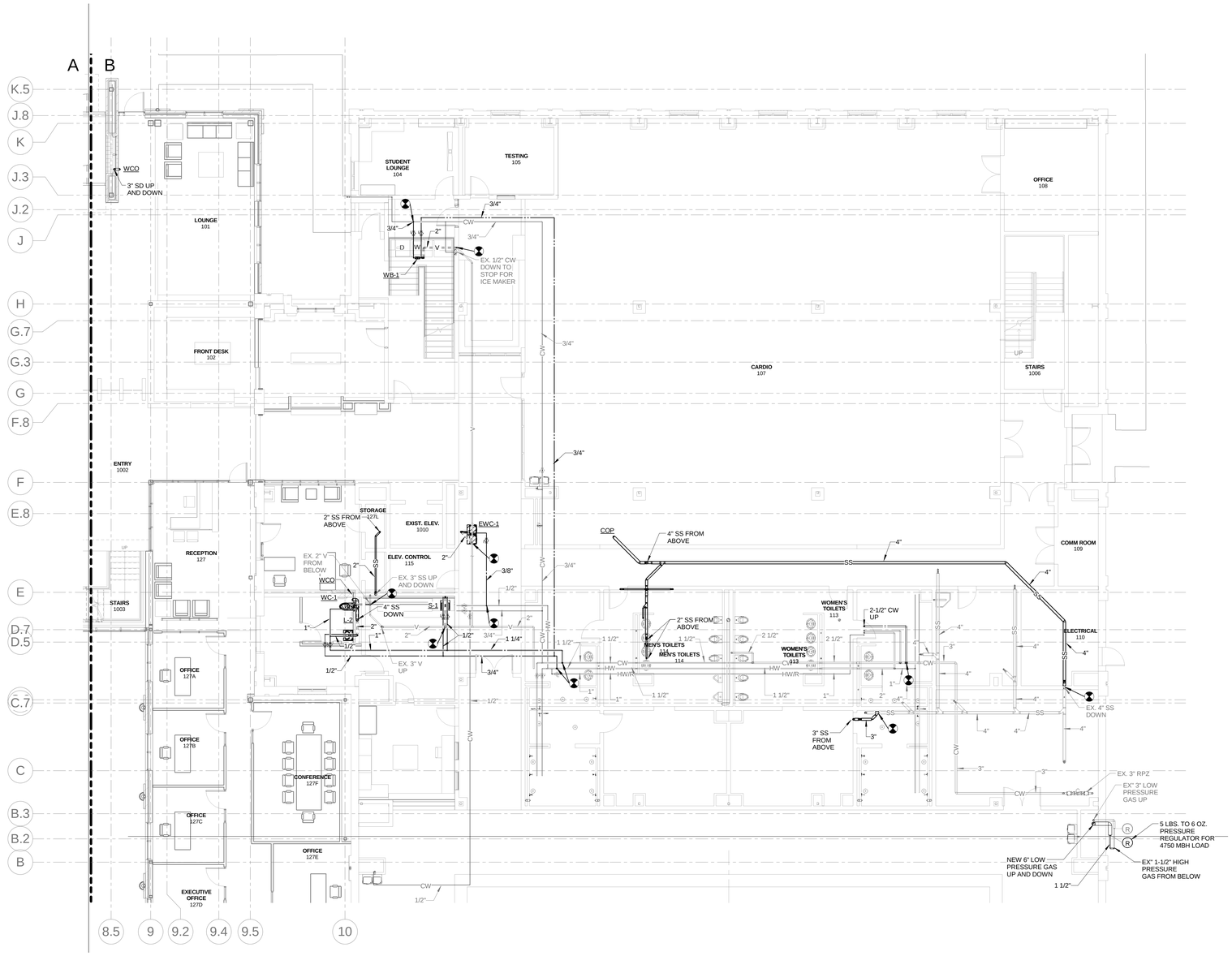
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - PLUMBING - SECTOR B

sheet number

P301b



N

1 FIRST FLOOR PLAN - PLUMBING - SECTOR B ALTERNATE PLAN

1/8" = 1'-0"

5/2/2013 10:04:25 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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aquatics consultant:
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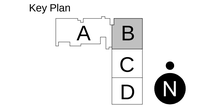
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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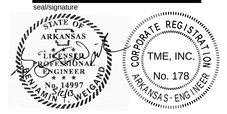


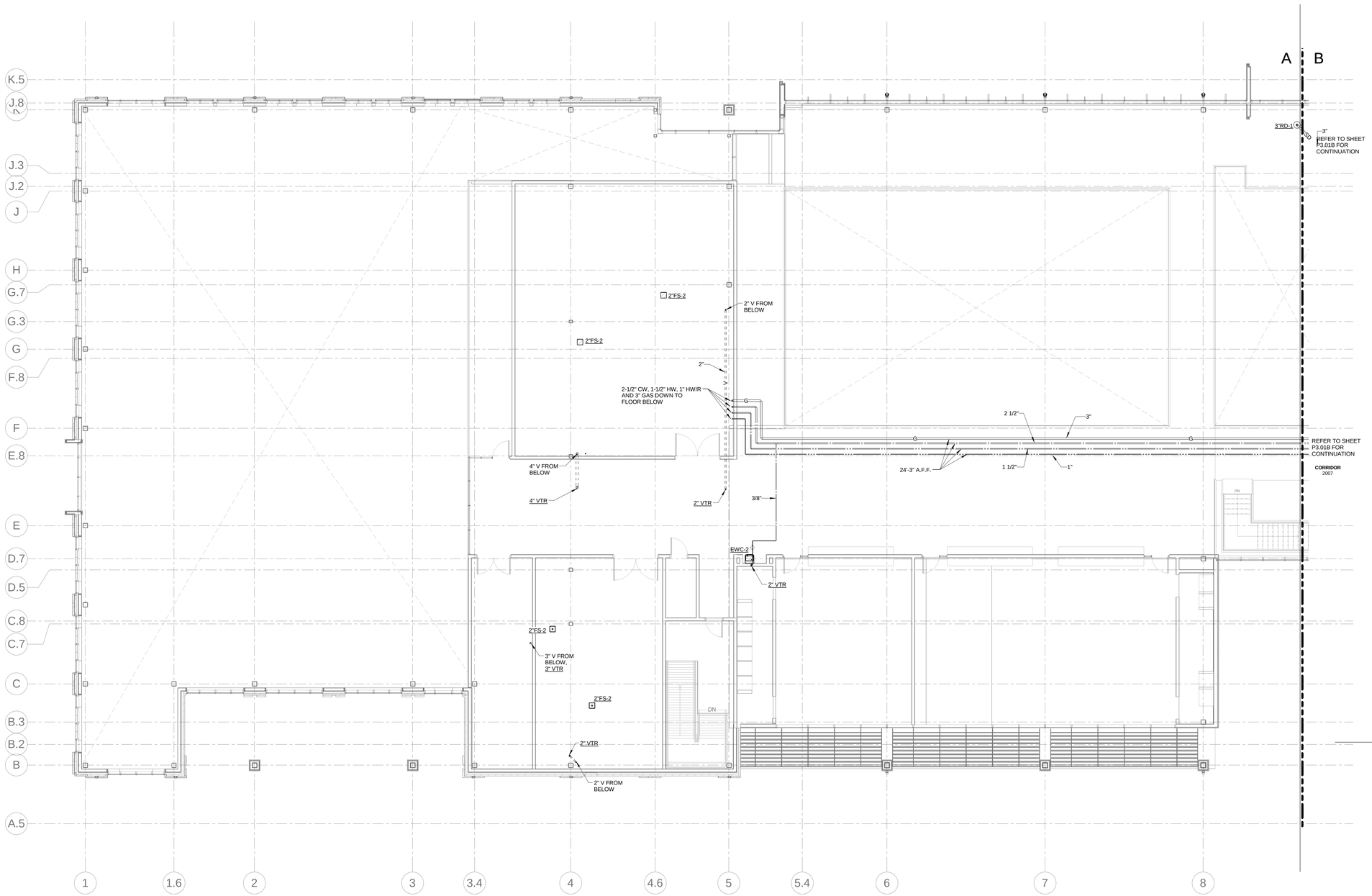
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - PLUMBING - SECTOR B ALTERNATE PLAN

sheet number

P301b.1



N

1 **SECOND FLOOR PLAN - PLUMBING - SECTOR A**

1/8" = 1'-0"

5/2/2013 10:09:50 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

owner:
University of Central Arkansas
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aquatics consultant:
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St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan

A B C D N

seal/signature

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 14997 — BENJAMIN D. REINHARD

CORPORATE REGISTRATION — TME, INC. — No. 178 — ARKANSAS - ENGINEER

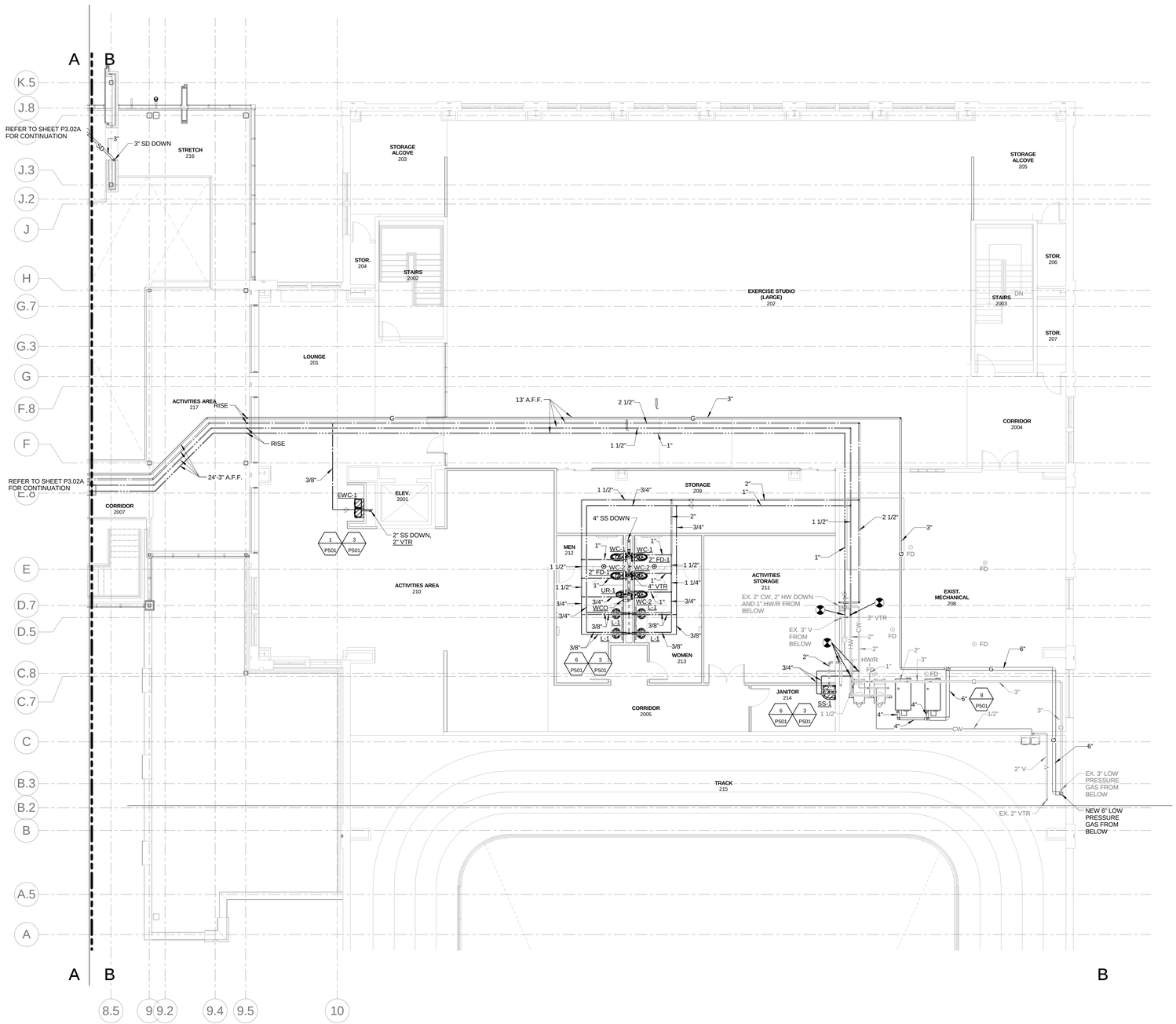
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - PLUMBING - SECTOR A

sheet number

P302a



N

1 SECOND FLOOR PLAN - PLUMBING - SECTOR B

1/8" = 1'-0"

5/2/2013 10:28:25 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
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Stocks Mann Architects, PLC

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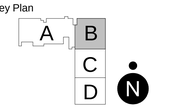
Key Plan



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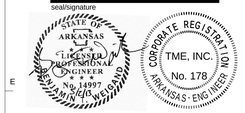


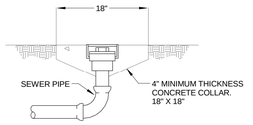
rev date description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

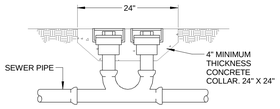
SECOND FLOOR PLAN - PLUMBING - SECTOR B

sheet number

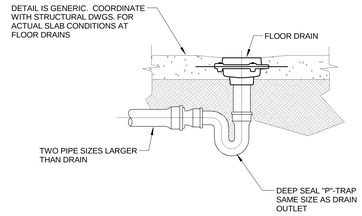
P302b



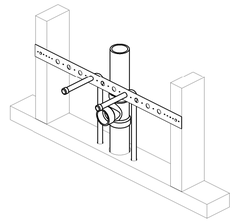
1 CLEANOUT TO GRADE DETAIL
NOT TO SCALE



2 DOUBLE CLEAN-OUT TO GRADE DETAIL
NOT TO SCALE



3 COMBINATION WASTE AND VENT DETAIL
NOT TO SCALE

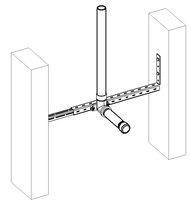


SHOWN WITH HOLDRITE #101-26 COPPER JACKETED BRACKET. (ALSO AVAILABLE FOR 16" STUD BAY #101-18)

4 LAVATORY OR SINK PIPE SUPPORT DETAIL
NOT TO SCALE

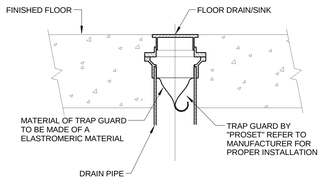
HOLDRITE #414-R-1/2, #415-R-3/4" AND # 416-R-1". ISOLATE TUBING FROM METAL FRAMING

5 THRU STUD ISOLATION DETAIL
NOT TO SCALE

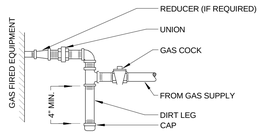


SHOWN WITH HOLDRITE STOUT BRACKET. ATTACH DROP=EARED 90°DIRECTLY TO BRACKET.

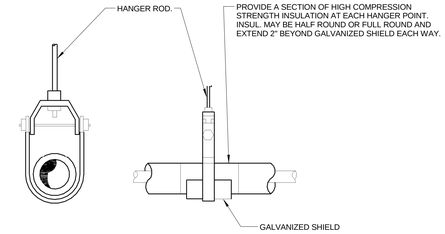
6 TOILET OR OTHER SINGLE SUPPLY SUPPORT DETAIL
NOT TO SCALE

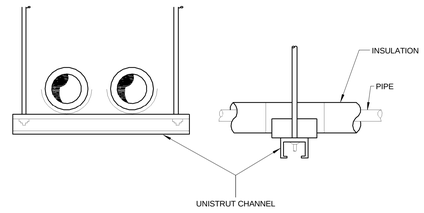


7 TRAP GUARD DETAIL
NOT TO SCALE



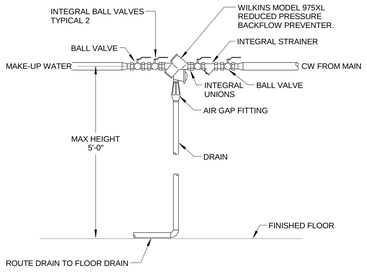
8 TYPICAL GAS EQUIPMENT CONNECTION DETAIL
NOT TO SCALE





9 WATER PIPING HANGER DETAIL
NOT TO SCALE

10 FILTER ROOM NORTH ELEVATION
NOT TO SCALE



11 MAKE-UP WATER RPZ DETAIL
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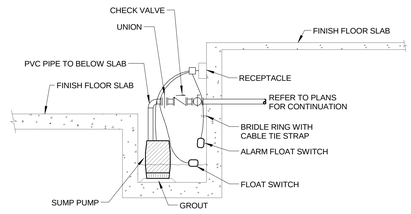

12 SUMP PUMP DETAIL
NOT TO SCALE

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
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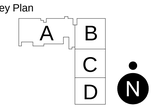
Key Plan



seal/signature

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

DETAILS - PLUMBING

sheet number

P401

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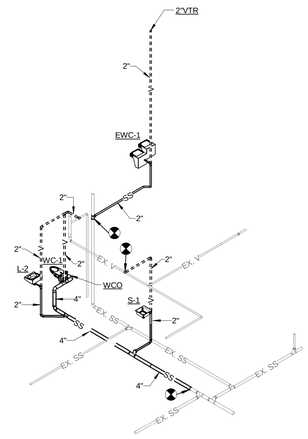

1 SANITARY WASTE RISER DIAGRAM - 1
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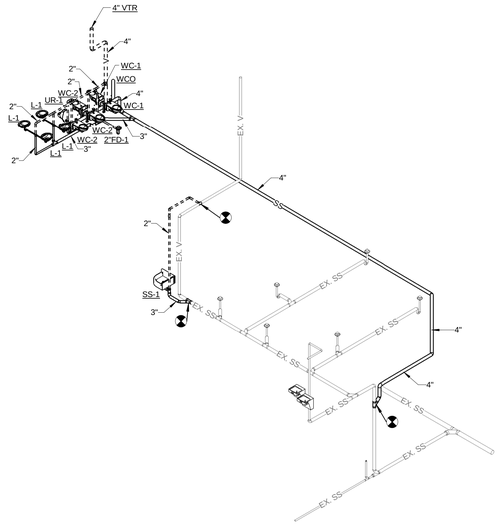

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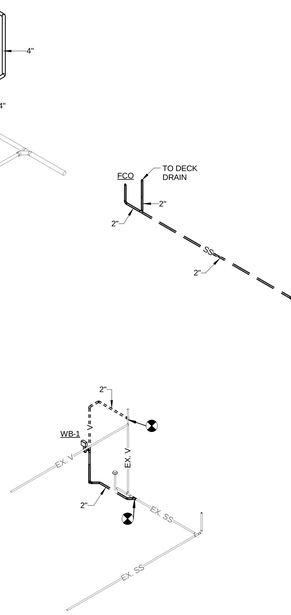

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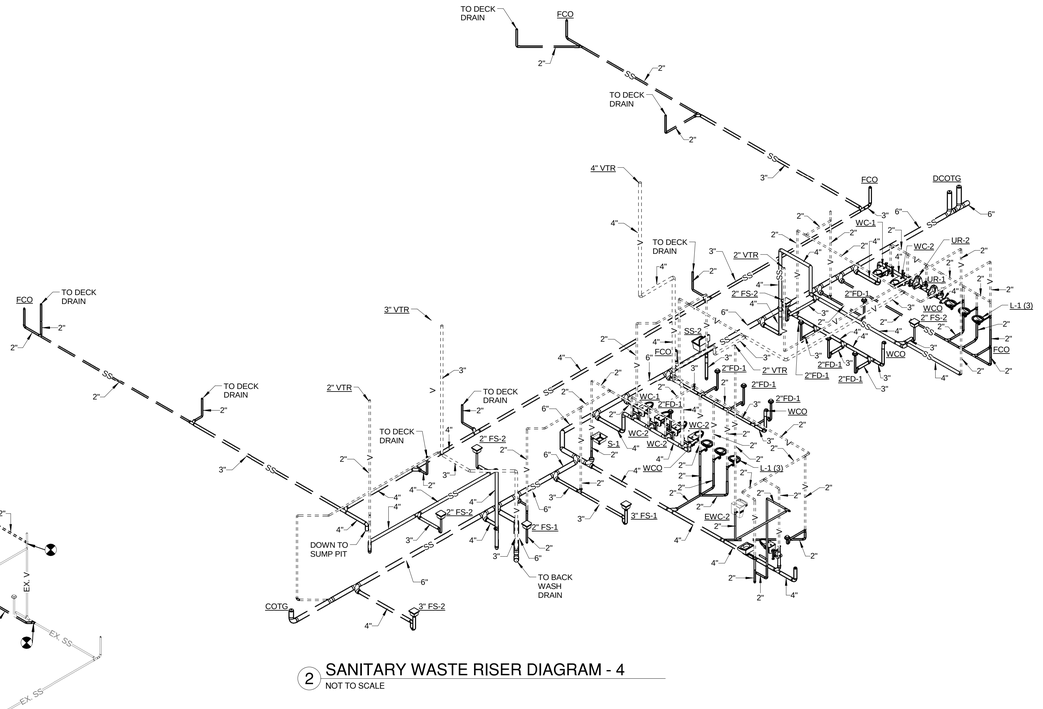

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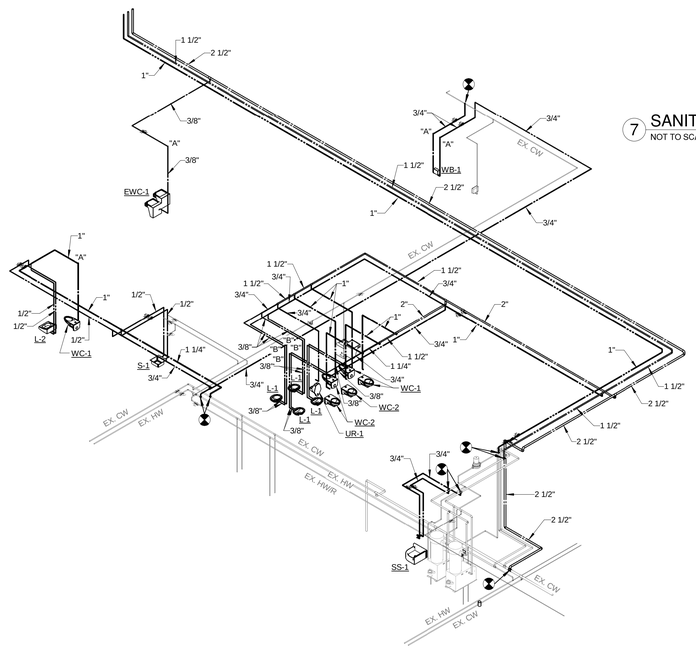
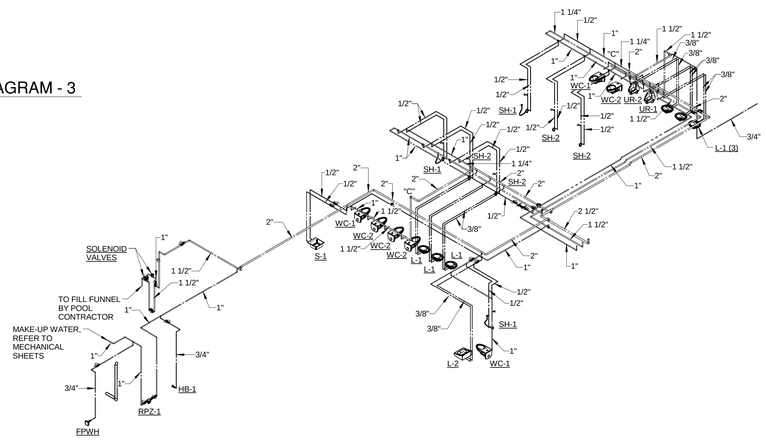


3 WATER RISER DIAGRAM - EAST
NOT TO SCALE



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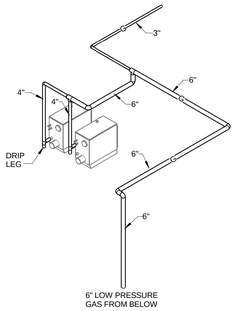

8 NATURAL GAS RISER DIAGRAM - 2
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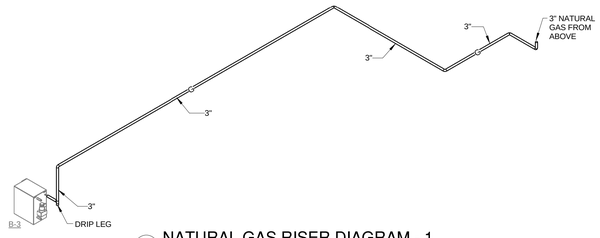

5 NATURAL GAS RISER DIAGRAM - 1
NOT TO SCALE

5/2/2013 10:29:07 AM

HPER Center Renovation & Expansion

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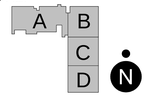
Key Plan



seal/signature

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

RISERS - PLUMBING

sheet number

P501

FIRE PROTECTION KEYED NOTES:

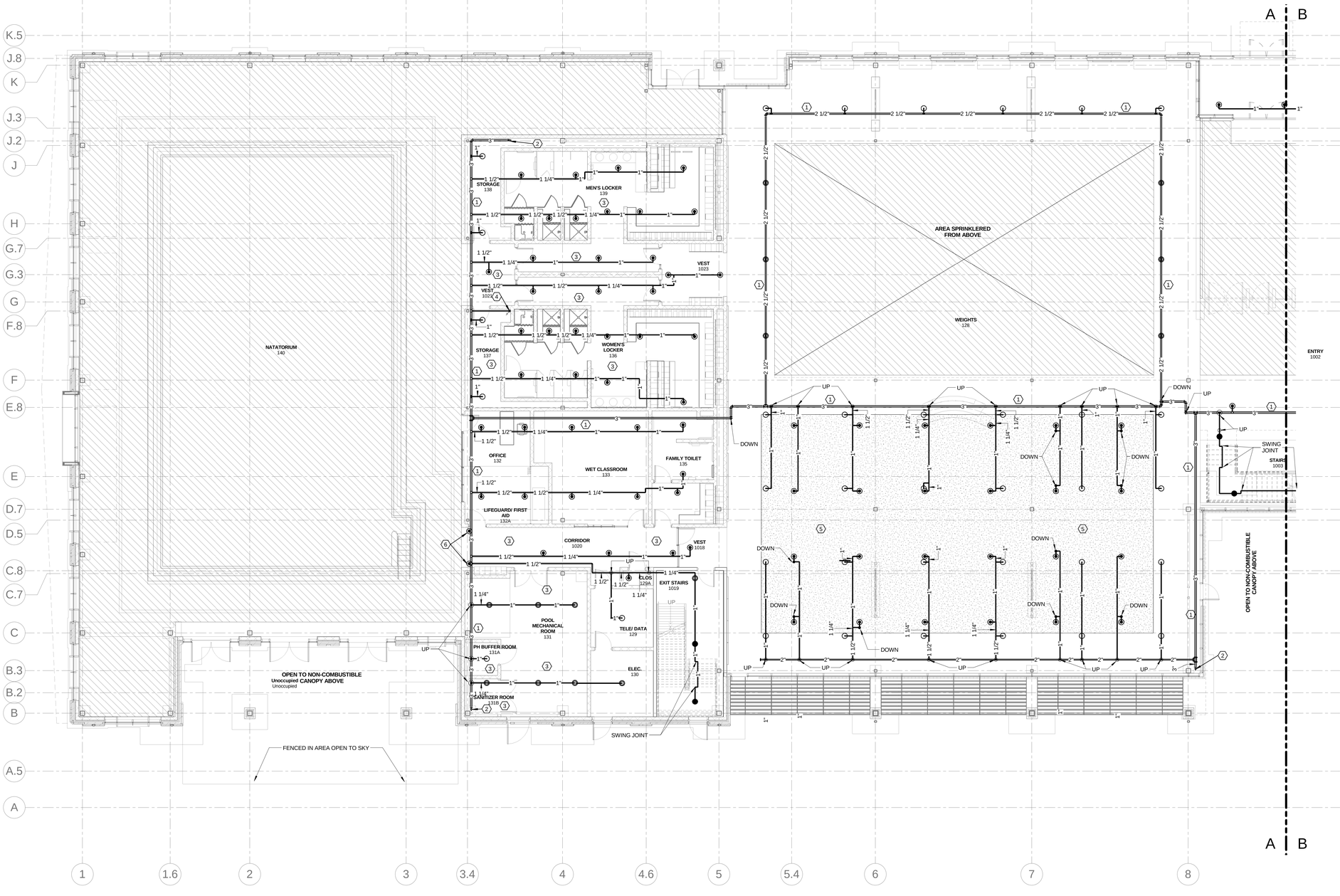
1. NEW SPRINKLER MAIN PIPING.
2. NEW 3" VERTICAL SPRINKLER MAIN UP TO SECOND FLOOR.
3. FIRE PROTECTION CONTRACTOR SHALL INSTALL CORROSION RESISTANT SPRINKLER HEADS IN THIS AREA.
4. AUXILIARY DRAIN VALVE DISCHARGED INTO JANITOR SINK.
5. FIRE PROTECTION CONTRACTOR SHALL USE EXTREME CAUTION WHEN COORDINATING WITH MECHANICAL AND ELECTRICAL EQUIPMENT IN THIS AREA. THERE IS VERY LIMITED SPACE ABOVE CEILING CLOUD.
6. FIRE PROTECTION CONTRACTOR SHALL INSTALL CLOSELY SPACED SPRINKLERS NOT MORE THAN 6'-0" ON CENTER.

FIRE PROTECTION LEGEND:

- NEW FIRE PROTECTION PIPING
- NEW BRASS/BRONZE STANDARD SPRAY UPRIGHT SPRINKLER HEAD
- NEW BRASS/BRONZE STANDARD SPRAY UPRIGHT SPRINKLER HEAD ON 1" SPRIG
- NEW CHROME PENDENT SPRINKLER HEAD WITH CHROME RECESSED ESCUTCHEON PLATE
- NEW CHROME STANDARD SPRAY PENDENT SPRINKLER HEAD WITH CHROME HEAD GUARD
- INDICATES AREA OPEN TO ABOVE NOT SPRINKLERED

FIRE PROTECTION KEYED NOTES:

1. FIRE PROTECTION CONTRACTOR SHALL PROVIDE MODIFICATIONS TO THE EXISTING FIRE SPRINKLER SYSTEM TO PROVIDE THE REMAINING PORTIONS OF THE EXISTING BUILDING AS WELL AS THE NEW ADDITION AREAS WITH SPRINKLER PROTECTION.
2. FIRE PROTECTION CONTRACTOR SHALL NOT INSTALL STEEL PIPE ON THIS PROJECT PER UCA REQUIREMENTS. ONLY TYPE K COPPER OR CPVC PIPING SHALL BE USED.
3. CPVC PIPING SHALL NOT BE INSTALL IN EXPOSED AREAS.



N

1 FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR A

1/8" = 1'-0"

5/2/2013 10:32:06 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Conway, Arkansas

Stocks Mann Architects, PLC

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Key Plan

A | B
C | D
N

seal/signature

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER BENJAMIN D. WEIGEL No. 14997 — CORPORATE REGISTRATION TME, INC. No. 178 ARKANSAS ENGINEER

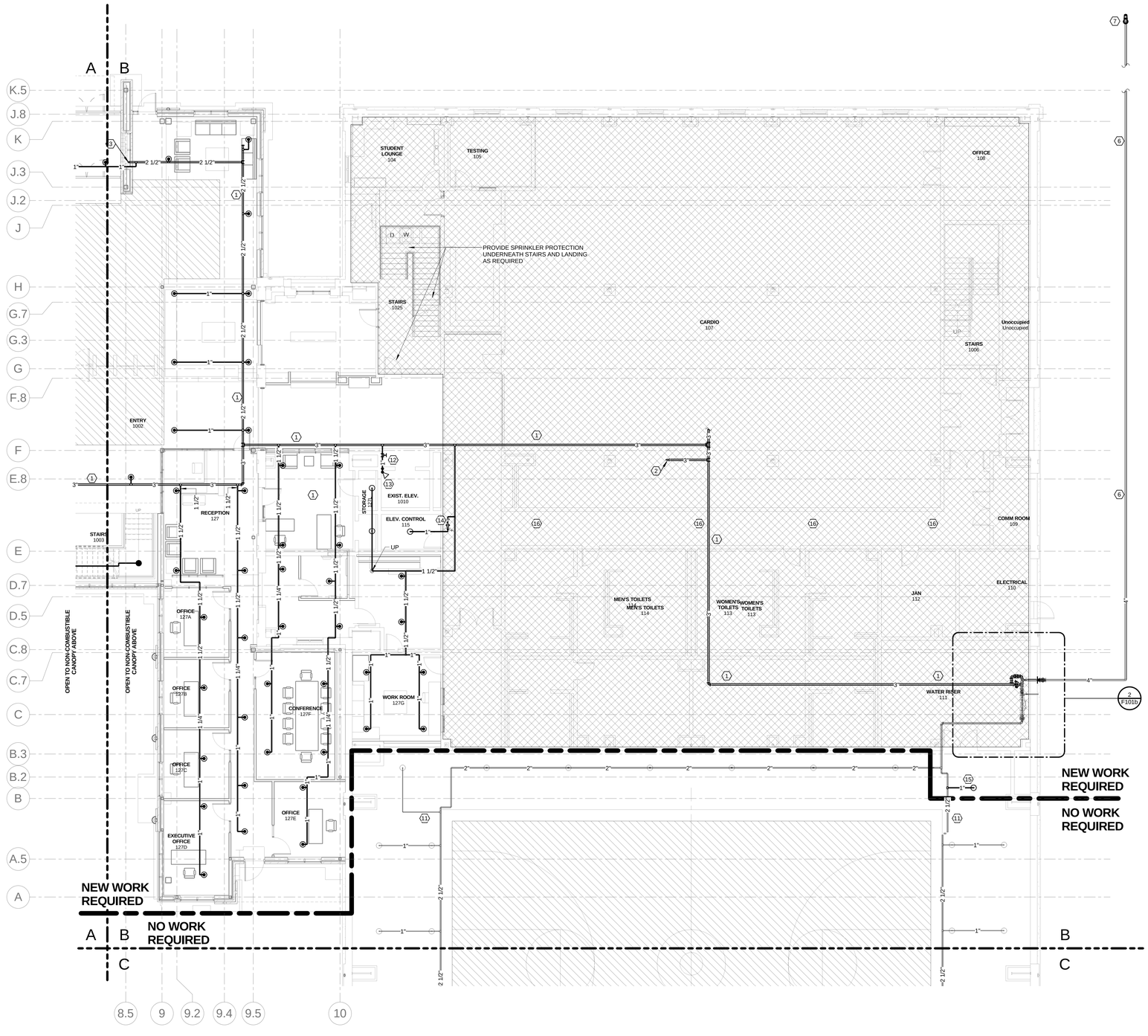
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR A

sheet number

F101a



FIRE PROTECTION KEYED NOTES:

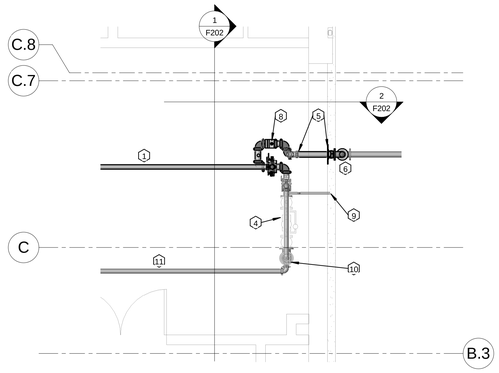
1. FIRE PROTECTION CONTRACTOR SHALL PROVIDE MODIFICATIONS TO THE EXISTING FIRE SPRINKLER SYSTEM TO PROVIDE THE REMAINING PORTIONS OF THE EXISTING BUILDING AS WELL AS THE NEW ADDITION AREAS WITH SPRINKLER PROTECTION.
2. FIRE PROTECTION CONTRACTOR SHALL NOT INSTALL STEEL PIPE ON THIS PROJECT PER UCA REQUIREMENTS. ONLY TYPE K COPPER OR CPVC PIPING SHALL BE USED.
3. CPVC PIPING SHALL NOT BE INSTALLED IN EXPOSED AREAS.

FIRE PROTECTION KEYED NOTES:

1. NEW 3" SPRINKLER MAIN PIPING.
2. NEW 3" VERTICAL SPRINKLER MAIN UP TO SECOND FLOOR.
3. ROUTE NEW 2 1/2" SPRINKLER PIPING INSIDE WALL CAVITY CLOSE TO INTERIOR SIDE OF WALL TO THE SPRINKLER HEAD LOCATED AT TOP OF TOWER. (REFER TO SHEET F1.02B FOR CONTINUATION) PROVIDE AND INSTALL INSULATION BETWEEN THE SPRINKLER PIPING AND EXTERIOR SIDE OF WALL.
4. EXISTING 4" BACKFLOW PREVENTOR TO REMAIN.
5. EXISTING 2 1/2" x 2 1/2" x 4" SIAMISE FIRE DEPARTMENT CONNECTION AND ASSOCIATED BLACK STEEL PIPING TO BE REMOVED BACK TO 4" GROOVED 45°FITTING.
6. INSTALL NEW 4" GALVANIZED PIPE AND FITTINGS TO OUTSIDE THROUGH EXISTING HOLE IN WALL AND DROP DOWN TO NEW 4" UNDERGROUND PIPING TO NEW STORZ FREE STANDING FIRE DEPARTMENT CONNECTION.
7. NEW 5" STORZ CHROME FREE STANDING FIRE DEPARTMENT CONNECTION WITH 30° TURN DOWN AND KNOX LOCKING CAP.
8. EXISTING 4" GROOVED CHECK VALVE TO REMAIN.
9. EXISTING MAIN DRAIN DISCHARGE TO OUTSIDE TO REMAIN.
10. EXISTING 3" PIPING UP TO SECOND FLOOR.
11. EXISTING SPRINKLER SYSTEM TO REMAIN.
12. NEW 1" INDICATING CONTROL VALVE WITH TAMPER SWITCH
13. BRASS/BRONZE HORIZONTAL SIDEWALL SPRINKLER HEAD LOCATED IN ELEVATOR PIT. REFER TO SHEET F2.01 FOR DETAILS.
14. NEW ELEVATOR EQUIPMENT ROOM SPRINKLER SYSTEM CONTROL VALVE ASSEMBLY. REFER TO SHEET F2.01 FOR DETAILS.
15. INSTALL BRASS/BRONZE UPRIGHT SPRINKLER HEAD AND ASSOCIATED BRANCH LINE IN EXISTING DRY SPOT.
16. THERE IS AN ADD ALTERNATE FOR THIS AREA. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR DETAILS.

FIRE PROTECTION LEGEND:

- EXISTING FIRE PROTECTION PIPING TO REMAIN
- NEW FIRE PROTECTION PIPING
- NEW UNDERGROUND PIPING
- EXISTING UPRIGHT SPRINKLER HEADS
- NEW CHROME PENDENT SPRINKLER HEAD WITH CHROME RECESSED ESCUTCHEON PLATE
- NEW CHROME STANDARD SPRAY PENDENT SPRINKLER HEAD WITH SPRINKLER HEAD GAURD
- NEW BRASS/BRONZE HORIZONTAL SIDEWALL SPRINKLER HEAD
- INDICATES AREA OPEN TO ABOVE
- INDICATES EXISTING AREA CURRENTLY NOT SPRINKLERED. FIRE PROTECTION CONTRACTOR SHALL PROVIDE SPRINKLER PROTECTION FOR THE ENTIRE HATCHED AREA.



2 ENLARGED RISER ROOM PLAN - FIRE PROTECTION

1/4" = 1'-0"

1 FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR B

1/8" = 1'-0"

5/2/2013 10:31:19 AM

HPER Center Renovation & Expansion

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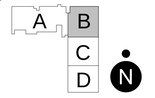
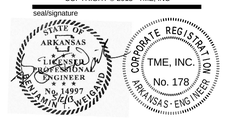
Key Plan



seal/signature



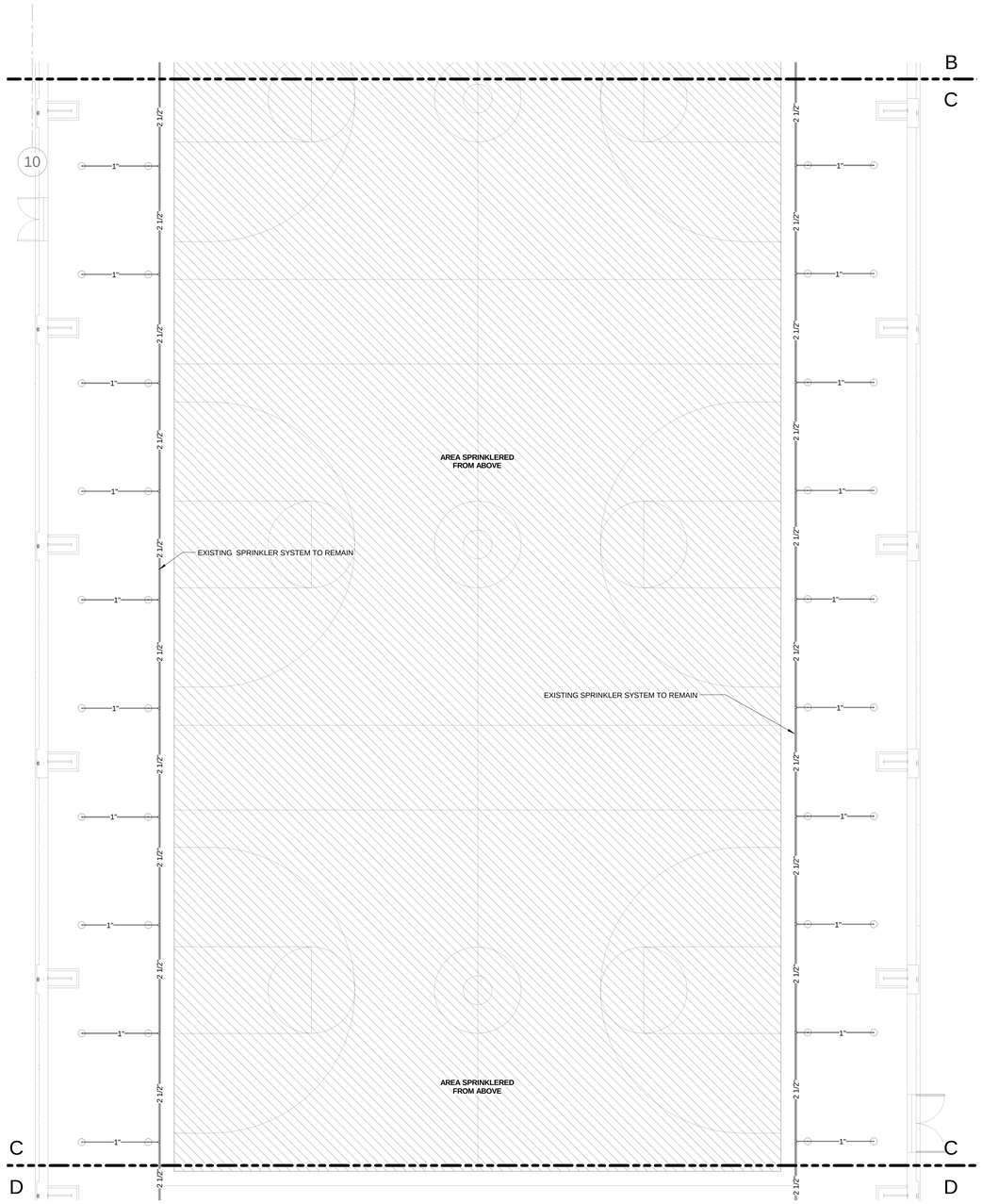
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR B

sheet number

F101b



FIRE PROTECTION NOTE:

1. THIS SHEET IS PROVIDED FOR REFERENCE USE ONLY.

N

1 FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR C

1/8" = 1'-0"

5/2/2013 10:30:46 AM

HPER Center
Renovation &
Expansion

Student Ln. & Farris Rd.
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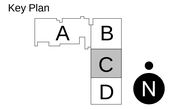
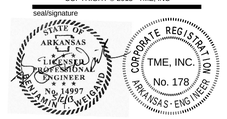
Key Plan



seal/signature



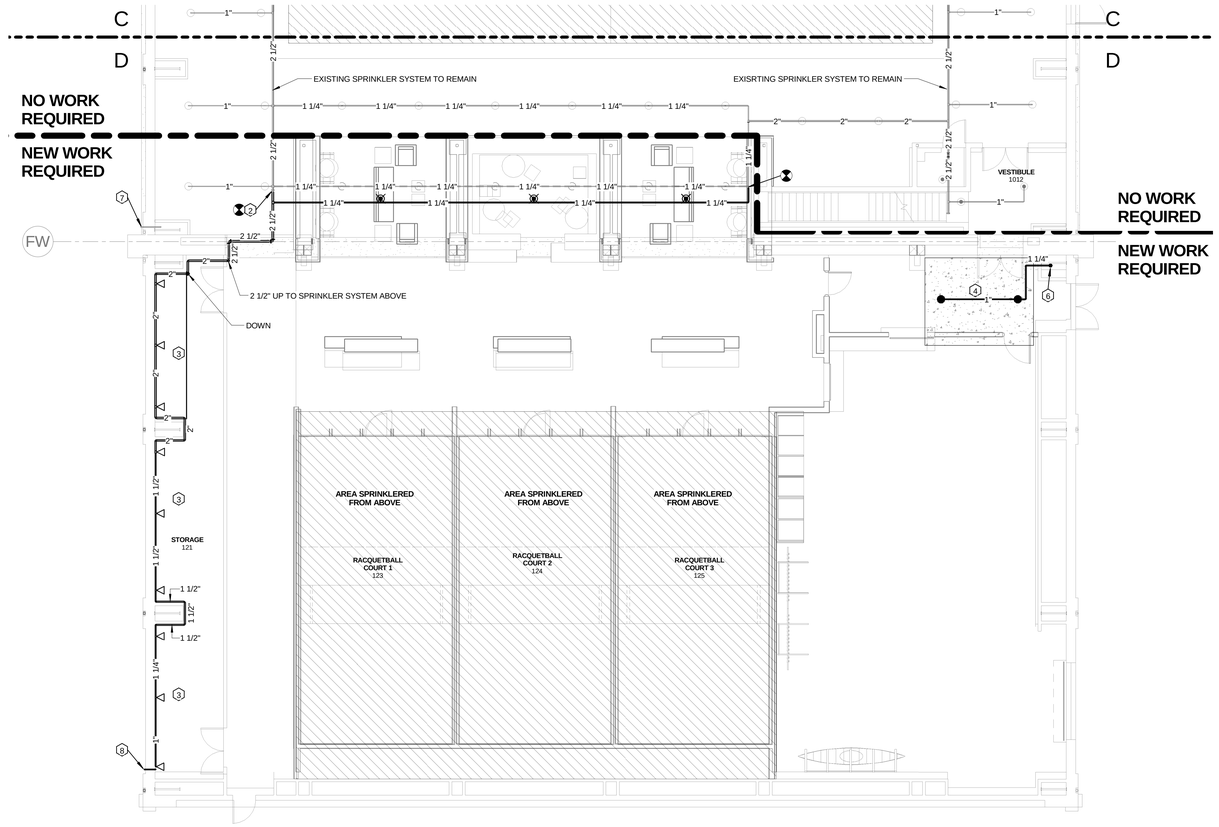
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR C

sheet number

F101c



FIRE PROTECTION KEYED NOTES:

1. FIRE PROTECTION CONTRACTOR SHALL PROVIDE MODIFICATIONS TO THE EXISTING FIRE SPRINKLER SYSTEM TO PROVIDE THE REMAINING PORTIONS OF THE EXISTING BUILDING AS WELL AS THE NEW ADDITION AREAS WITH SPRINKLER PROTECTION.
2. FIRE PROTECTION CONTRACTOR SHALL NOT INSTALL STEEL PIPE ON THIS PROJECT PER UCA REQUIREMENTS. ONLY TYPE K COPPER OR CPVC PIPING SHALL BE USED.

FIRE PROTECTION KEYED NOTES:

1. NEW 2 1/2" TYPE K COPPER SPRINKLER MAIN.
2. CONNECT NEW 2 1/2" TYPE K COPPER TO EXISTING 2 1/2" SPRINKLER MAIN VIA DIELECTRIC UNION.
3. INSTALL BRASS/BRONZE HORIZONTAL SIDEWALL SPRINKLER HEADS UNDERNEATH THE EXISTING CROSS BEAM.
4. BRASS/BRONZE PENDENT SPRINKLER HEAD WITH CHROME HEAD GAURD INSTALLED UNDERNEATH MECHANICAL MEZZANINE.
5. NEW 2 1/2" TYPE K COPPER SPRINKLER MAINTO UPPER SPRINKLER HEADS. (REFER TO SHEET F1.02D FOR CONTINUATION)
6. BRANCH LINE PIPING DOWN FROM ABOVE. (REFER TO SHEET F1.02D FOR CONTINUATION)
7. EXISITNG TEST CONNECTION DISCHARGE PIPING FROM UPPER LEVEL TO REMAIN.
8. NEW AUXILIARY DRAIN DISCHARGE PIPING FROM UPPER LEVEL. (REFER TO SHEET F1.02D FOR CONTINUATION)

FIRE PROTECTION LEGEND:

- EXISTING FIRE PROTECTION PIPING TO REMAIN
- EXISTING FIRE PROTECTION PIPING TO BE REMOVED
- NEW FIRE PROTECTION PIPING
- EXISTING UPRIGHT SPRINKLER HEADS TO REMAIN
- EXISTING UPRIGHT SPRINKLER HEADS TO BE REMOVED
- NEW EXTENDED COVERAGE CHROME PENDENT SPRINKLER HEAD WITH CHROME RECESSED ESCUTCHEON PLATE
- BRASS/BRONZE HORIZONTAL SIDEWALL SPRINKLER HEAD
- BRASS/BRONZE PENDENT SPRINKLER HEAD WITH CHROME HEAD GAURD
- INDICATES AREA OPEN TO ABOVE

N

1 **FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR D**

1/8" = 1'-0"

5/2/2013 10:30:32 AM

HPER Center Renovation & Expansion

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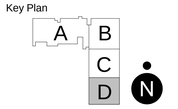
P: (314) 894-1245

Key Plan



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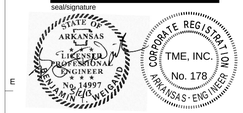


rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

FIRST FLOOR PLAN - FIRE PROTECTION - SECTOR D

sheet number

F101d

FIRE PROTECTION KEYED NOTES:

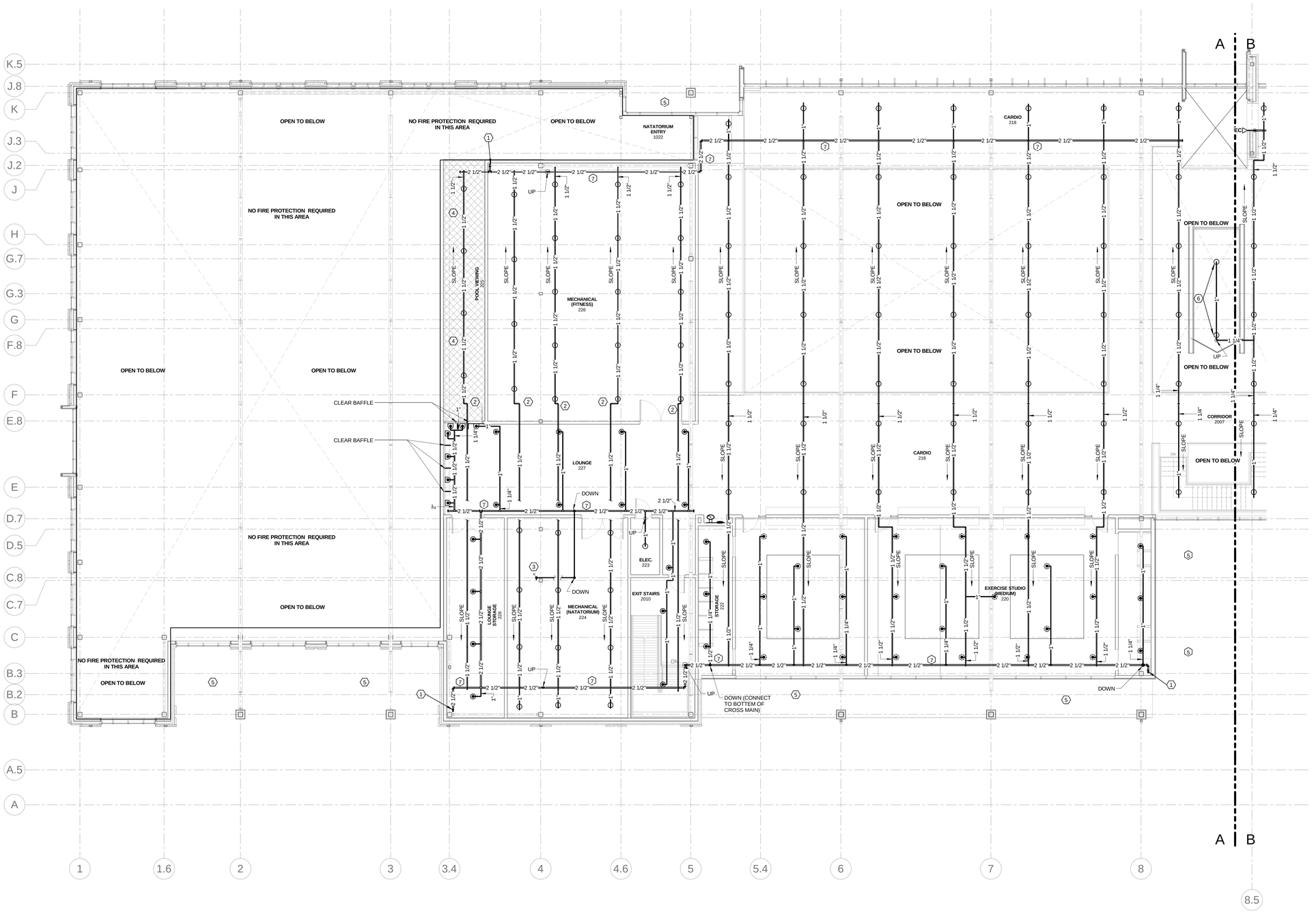
1. VERTICAL SPRINKLER MAIN PIPING UP FROM FIRST FLOOR.
2. SWING JOINT.
3. AUX DRAIN VALVE AND PIPING DISCHARGE AT FLOOR DRAIN. (REFER TO PLUMBING DRAWINGS FOR DRAIN LOCATION.)
4. SPRINKLER HEADS IN THIS AREA SHALL BE CORROSION RESISTANT.
5. NON COMBUSTIBLE CANOPY.
6. SPRINKLER HEADS LOCATED IN CLEARESTRY. (REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.)
7. NEW 2 1/2" SPRINKLER MAIN.

FIRE PROTECTION LEGEND:

- NEW FIRE PROTECTION PIPING
- NEW BRASS/BRONZE STANDARD SPRAY UPRIGHT SPRINKLER HEAD
- NEW CHROME PENDENT SPRINKLER HEAD WITH CHROME RECESSED ESCUTCHEON PLATE
- CONCEALED PENDENT SPRINKLER HEAD WITH CHROME COVER PLATE.
- CHROME PENDENT WINDOW SPRINKLER HEAD WITH TWO PIECE CHROME ESCUTCHEON
- INDICATES AREA EXPOSED TO CORROSIVE ENVIRONMENT. INSTALL CORROSIVE RESISTANT SPRINKLER HEADS IN THIS AREA.

FIRE PROTECTION KEYED NOTES:

1. FIRE PROTECTION CONTRACTOR SHALL PROVIDE MODIFICATIONS TO THE EXISTING FIRE SPRINKLER SYSTEM TO PROVIDE THE REMAINING PORTIONS OF THE EXISTING BUILDING AS WELL AS THE NEW ADDITION AREAS WITH SPRINKLER PROTECTION.
2. FIRE PROTECTION CONTRACTOR SHALL NOT INSTALL STEEL PIPE ON THIS PROJECT PER UCA REQUIREMENTS. ONLY TYPE K COPPER OR CPVC PIPING SHALL BE USED.
3. CPVC PIPING TO SHALL NOT BE INSTALLED IN EXPOSED AREAS.



N

1 SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR A

1/8" = 1'-0"

5/2/2013 10:30:15 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
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Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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360 Architecture
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aquatics consultant:
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Key Plan

A B C D N

seal/signature

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14997 BENJAMIN D. HEIGHT

CORPORATE REGISTRATION TME, INC. No. 178 ARKANSAS ENGINEER

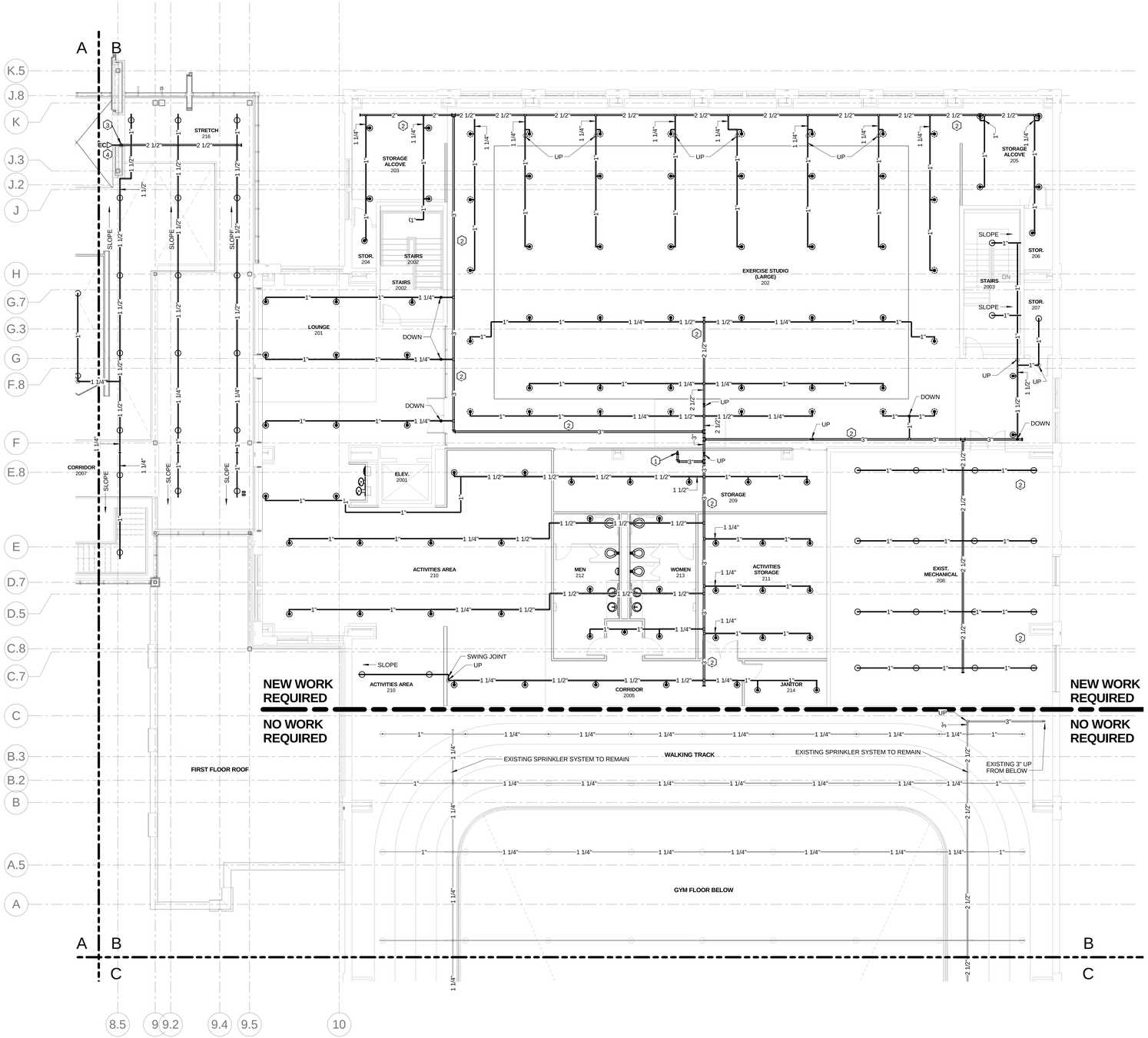
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR A

sheet number

F102a



FIRE PROTECTION KEYED NOTES:

1. FIRE PROTECTION CONTRACTOR SHALL PROVIDE MODIFICATIONS TO THE EXISTING FIRE SPRINKLER SYSTEM TO PROVIDE THE REMAINING PORTIONS OF THE EXISTING BUILDING AS WELL AS THE NEW ADDITION AREAS WITH SPRINKLER PROTECTION.
2. FIRE PROTECTION CONTRACTOR SHALL NOT INSTALL STEEL PIPE ON THIS PROJECT PER UCA REQUIREMENTS. ONLY TYPE K COPPER OR CPVC PIPING SHALL BE USED.
3. CPVC PIPING TO SHALL NOT BE INSTALLED IN EXPOSED AREAS.

FIRE PROTECTION KEYED NOTES:

1. NEW 3" SPRINKLER MAIN UP FROM BELOW.
2. NEW SPRINKLER MAIN.
3. NEW 2 1/2" VERTICAL SPRINKLER MAIN UP FROM BELOW LOCATED INSIDE WALL CAVITY. FIRE PROTECTION CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND INSULATION CONTRACTOR TO PROVIDE INSULATION BETWEEN THE SPRINKLER PIPING AND EXTERIOR WALL.
4. CHROME EXTENDED COVERGE SPRINKLER HEAD LOCATED AT TOP OF TOWER.

FIRE PROTECTION LEGEND:

- EXISTING FIRE PROTECTION PIPING TO REMAIN
- NEW FIRE PROTECTION PIPING
- EXISTING UPRIGHT SPRINKLER HEADS
- NEW CHROME PENDENT SPRINKLER HEAD WITH CHROME RECESSED ESCUTCHEON PLATE
- NEW CONCEALED PENDENT SPRINKLER HEAD WITH WHITE COVER PLATE
- EC NEW CHROME HIGH TEMPERATURE EXTENDED COVERGAE HORIZONTAL SIDEWALL SPRINKLER HEAD WITH CHROME RECESSED ESCUTCHEON
- INDICATES AREA OPEN TO ABOVE

N

1 **SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR B**

1/8" = 1'-0"

5/2/2013 10:29:36 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Conway, Arkansas

Stocks Mann Architects, PLC

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civil engineer & landscape architect:
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aquatics consultant:
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10733 Sunset Office Dr., 4th Floor
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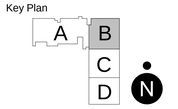
Key Plan



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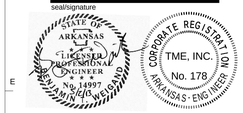


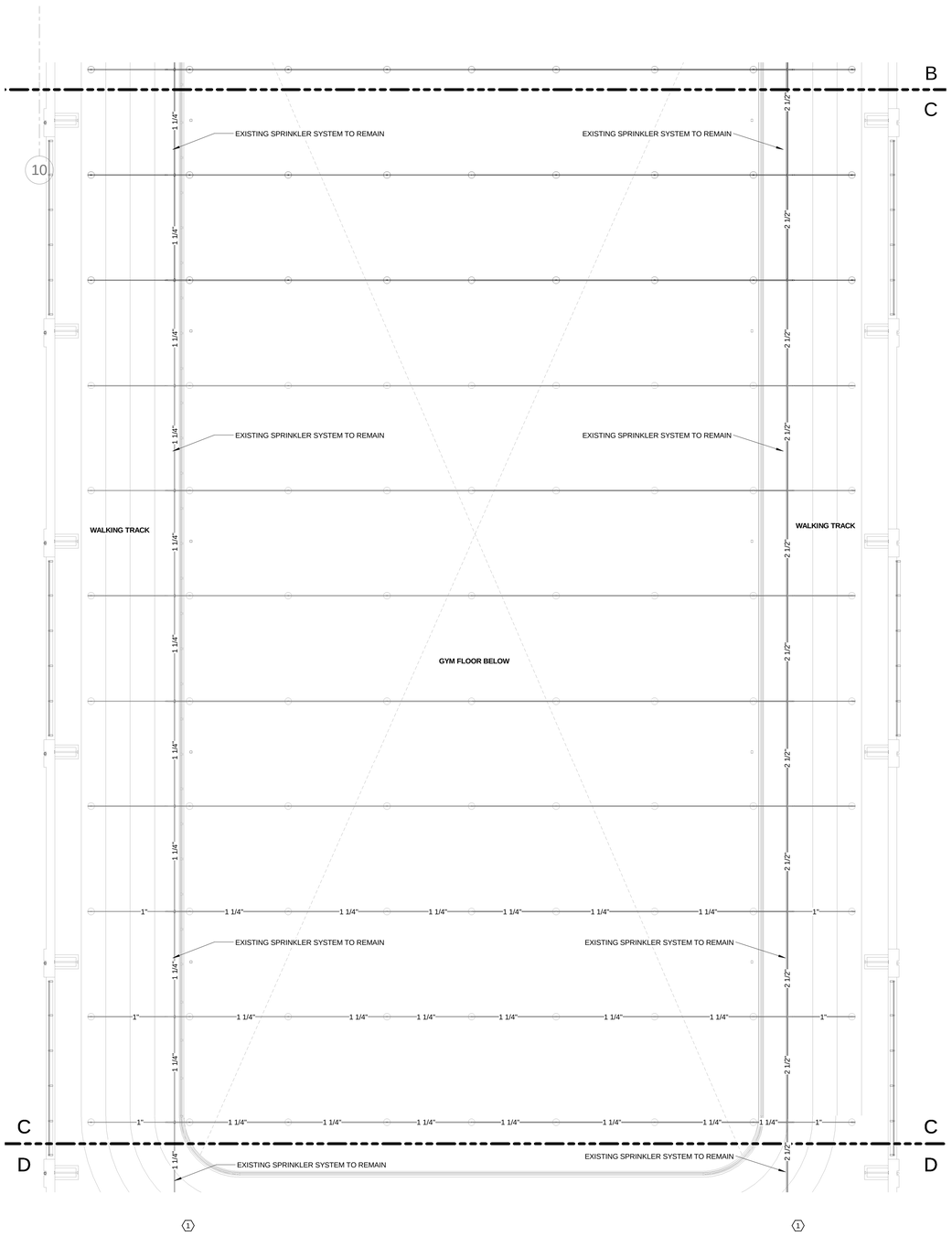
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR B

sheet number

F102b



FIRE PROTECTION NOTE:

1. THIS SHEET IS PROVIDED FOR REFERENCE USE ONLY.

N

1 SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR C

1/8" = 1'-0"

5/2/2013 10:29:03 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
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Conway, Arkansas

Stocks Mann Architects, PLC

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lead architect:
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design architect:
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MEP engineer:
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10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
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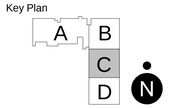
Key Plan



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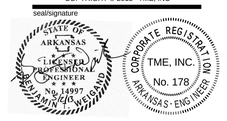

rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR C

sheet number

F102c

FIRE PROTECTION KEYED NOTES:

1. FIRE PROTECTION CONTRACTOR SHALL PROVIDE MODIFICATIONS TO THE EXISTING FIRE SPRINKLER SYSTEM TO PROVIDE THE REMAINING PORTIONS OF THE EXISTING BUILDING AS WELL AS THE NEW ADDITION AREAS WITH SPRINKLER PROTECTION.
2. FIRE PROTECTION CONTRACTOR SHALL NOT INSTALL STEEL PIPE ON THIS PROJECT PER UCA REQUIREMENTS. ONLY TYPE K COPPER OR CPVC PIPING SHALL BE USED.
3. CPVC PIPING SHALL NOT BE INSTALLED IN EXPOSED TO AREAS.

FIRE PROTECTION KEYED NOTES:

1. EXISTING SPRINKLER SYSTEM TO REMAIN.
2. EXISTING AUXILIARY DRAIN PIPING DOWN TO FIRST FLOOR TO REMAIN.
3. NEW TYPE K COPPER SPRINKLER MAIN PIPING UP FROM BELOW.
4. NEW TYPE K COPPER SPRINKLER MAIN PIPING.
5. CONNECT NEW COPPER SPRINKLER MAIN TO EXISTING SPRINKLER MAIN VIA A NEW DIELECTRIC UNION.
6. NEW AUXILIARY DRAIN PIPING.
7. INSTALL NEW AUXILIARY DRAIN PIPING TIGHT TO WALL DOWN TO FIRST FLOOR. SEE SHEET F1.01D FOR CONTINUATION.
8. CHROME INSTITUTIONAL PENDENT SPRINKLER HEADS LOCATED IN LOWER CEILING.
9. NEW 1 1/4" BRANCH LINE PIPING TO SPRINKLER HEADS BELOW MECHANICAL MEZZANINE.

FIRE PROTECTION LEGEND:

- EXISTING FIRE PROTECTION PIPING TO REMAIN
- NEW FIRE PROTECTION PIPING
- EXISTING UPRIGHT SPRINKLER HEADS
- NEW BRASS/BRONZE STANDARD SPRAY UPRIGHT SPRINKLER HEAD
- NEW CHROME INSTITUTIONAL PENDENT SPRINKLER HEAD WITH CHROME ESCUTCHEON PLATE EQUIVALENT TO A TYCO RAVEN

N

1 SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR D

1/8" = 1'-0"

5/2/2013 10:28:44 AM

HPER Center Renovation & Expansion

Student Ln. & Farris Rd.
University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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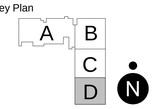
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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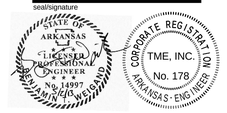


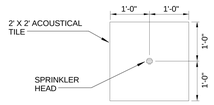
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

SECOND FLOOR PLAN - FIRE PROTECTION - SECTOR D

sheet number

F102d



1 CENTER LINE OF 2' TILE DETAIL

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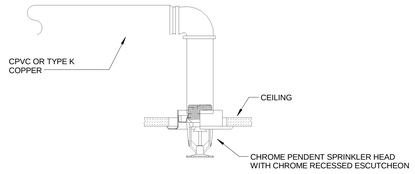
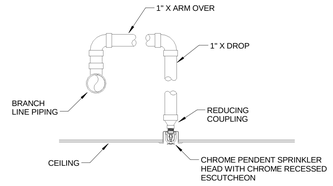


2 RECESSED SPRINKLER HEAD DETAIL

NOT TO SCALE:



3 RETURN BEND DETAIL

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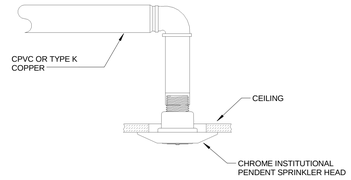
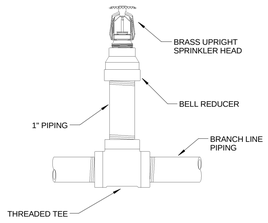


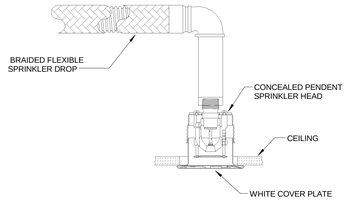
4 INSTITUTIONAL PENDENT DETAIL

1/8" = 1'-0"



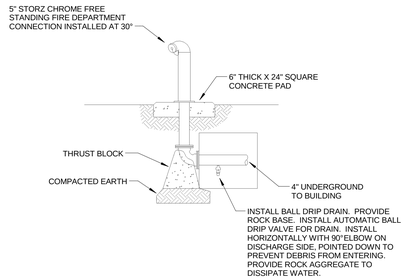
5 UPRIGHT SPRINKLER HEAD ON 1" SPRIG DETAIL

NOT TO SCALE



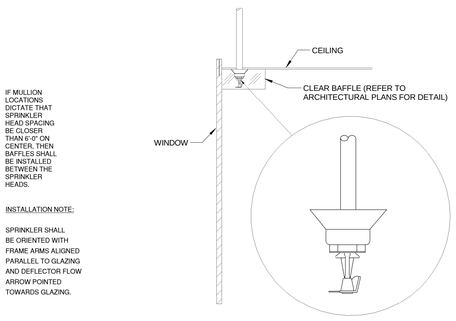
6 CONCEALED SPRINKLER HEAD DETAIL

NOT TO SCALE:



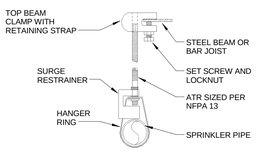
7 FREE STANDING 30°STORZ FIRE DEPARTMENT CONNECTION DETAIL

NOT TO SCALE:



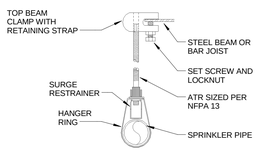
8 WINDOW SPRINKLER DETAIL

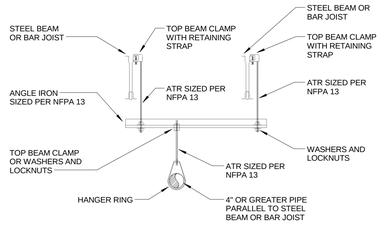
NOT TO SCALE:



9 TOP BEAM CLAMP HANGER DETAIL

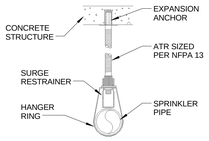
NOT TO SCALE:





10 TRAPEZE HANGER DETAIL

NOT TO SCALE



11 CONCRETE HANGER DETAIL

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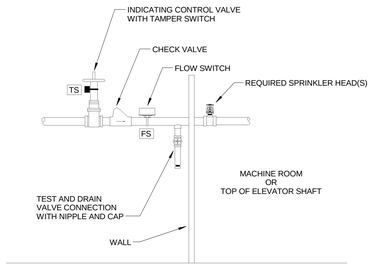

12 ELEVATOR MACHINE ROOM SYSTEM CONNECTION DETAIL

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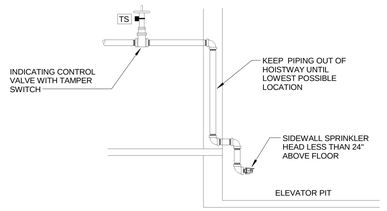

13 ELEVATOR PIT DETAIL

NOT TO SCALE:

FIRE PROTECTION NOTES:

1. REFER TO NOTES ON DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. FIRE PROTECTION CONTRACTOR SHALL BASE BID ON CAREFUL COORDINATION OF THE MECHANICAL, PIPING, ELECTRICAL AND STRUCTURAL SYSTEMS IN THE BUILDING.
3. PROVIDE A COMPLETE HYDRAULICALLY CALCULATED, FULLY AUTOMATIC WET PIPE SPRINKLER SYSTEM THROUGHOUT THE BUILDING AS INDICATED ON THE CONTRACT DOCUMENTS. FIRE PROTECTION CONTRACTOR SHALL INSTALL THE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH ALL APPLICABLE NFPA STANDARDS, JOB SPECIFICATIONS, LOCAL CODE, AND OWNERS INSURANCE UNDERWRITERS REQUIREMENTS.
4. FIRE PROTECTION SYSTEMS, PIPING, VALVES AND APPURTENANCES INDICATED ON THE DRAWING ARE DIAGRAMMATIC ONLY. FIRE PROTECTION CONTRACTOR SHALL VERIFY EQUIPMENT SELECTIONS, PIPE ROUTING, ETC. FOR CODE COMPLIANCE, INSURANCE COMPLIANCE. AND ARCHITECTURAL AND STRUCTURAL CONFORMITY. FIRE PROTECTION CONTRACTOR SHOULD THOROUGHLY SURVEY THE PROPERTY AND REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL CONSTRUCTION DOCUMENTS PRIOR TO BID. THERE IS LIMITED SPACE, IN CERTAIN AREAS, AVAILABLE FOR PIPE ROUTING.
5. FIRE PROTECTION SHOP DRAWINGS SHALL HAVE COMPLETE REFLECTED CEILING PLANS INDICATING LOCATION OF EACH SPRINKLER HEAD, AS WELL AS PIPING LAYOUTS. PROVIDE ADDITIONAL SPRINKLER HEADS (OVER CODE MINIMUM) IF REQUESTED BY THE ARCHITECT, TO OBTAIN SYMMETRICAL CEILING LAYOUTS.
6. ALL ABOVE GROUND FIRE PROTECTION PIPING SHALL BE TYPE K COPPER. CPVC PIPING AND FITTINGS EQUIVALENT TO BLAZEMASTER IS ALSO AN ALLOWBLE MATERIAL. STEEL PIPING AND FITTINGS ARE NOT ALLOWED TO BE INSTALLED ON THIS PROJECT PER UCA REQUIREMENTS. EXCEPTION: REFER TO RISER DETAILS ON SHEET F2.02.
7. HYDRAULIC CALCULATIONS SHALL BE BASED ON THE HYDRANT FLOW TEST SHOWN ON THESE DRAWINGS.
8. THE SPRINKLER SYSTEM SHALL INTERFACE WITH THE BUILDING FIRE ALARM SYSTEM.
9. ALL CONTROL VALVES SHALL HAVE ELECTRONIC SUPERVISION.
10. SEE SPECIFICATIONS AND PROJECT MANUAL FOR SYSTEM REQUIREMENTS. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR BUILDING DETAILS.
11. SPECIAL CONSIDERATION SHALL BE GIVEN TO AREAS THROUGH THE BUILDING SUCH AS DROPPED SOFFITS, RAISED CEILING AND LIGHTING SOFFITS THAT NECESSITATE ADDITIONAL SPRINKLER HEADS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING DETAILS.
12. GENERAL CONTRACTOR SHALL CONDUCT A COORDINATION MEETING WITH THE SUBCONTRACTORS TO ESTABLISH CLEARANCE REQUIREMENTS NEEDED FOR MECHANICAL, PLUMBING AND ELECTRICAL WORK PRIOR TO FABRICATION OF THE SPRINKLER SYSTEM.
13. ALL CEILING MOUNTED SPRINKLER HEADS SHALL BE CHROME WITH CHROME RECESSED ESCUTCHEONS.
14. ALL NEW SPRINKLER HEADS SHALL BE OF THE QUICK RESPONSE TYPE.
15. ALL SPRINKLER HEADS INSTALLED IN STORAGE 137, STORAGE 138, MEN'S LOCKER 139, WOMEN'S LOCKER 136 PH BUFFER ROOM 131A, SANITIZER ROOM 131B, VEST1021, CORRIDOR 1030, POOL FILTRATION ROOM 131 AND POOL VIEWING 225 SHALL BE THE CORROSION RESISTANT TYPE SPRINKLER HEADS.
16. FIRE PROTECTION CONTRACTOR SHALL RESPONSIBLE FOR PROVIDING PROTECTION FOR THE SPRINKLER HEADS IN ALL AREAS WHERE THE CEILING OR SURROUNDING AREAS ARE TO BE PAINTED OR TEXTURE SPRAYED. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL SPRINKLER HEAD PROTECTION AFTER PAINT WORK IS COMPLETE. ANY SPRINKLER HEAD WITH PAINT OR TEXTURE OVERSPRAY SHALL BE REPLACED BY THE FIRE PROTECTION CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
17. PROVIDE AUXILIARY DRAINS FOR ALL TRAPPED PIPING SECTIONS IN ACCORDANCE WITH NFPA 13.
18. INSTALL PIPING HORIZONTALLY AND AT RIGHT ANGLES TO WALLS AND CEILINGS.
19. PAINT FIRE PROTECTION PIPING IN MECHANICAL ROOMS OSHA RED.
20. FIRE PROTECTION PLANS SHALL BE SUBMITTED TO THE OWNER'S INSURANCE UNDERWRITERS, CONWAY CORPORATION, CONWAY FIRE DEPARTMENT, AND ANY OTHER REQUIRED LOCAL AND STATE AUTHORITIES.

5/2/2013 10:28:26 AM

HPER Center Renovation & Expansion

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University of Central Arkansas
Conway, Arkansas

Stocks Mann Architects, PLC

360 THREESIXTY ARCHITECTURE

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design architect:
360 Architecture
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MEP engineer:
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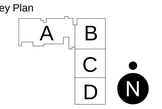
aquatics consultant:
Counsilman-Hunsaker
10733 Sunset Office Dr., 4th Floor
St. Louis, Missouri 63127
P: (314) 894-1245

Key Plan



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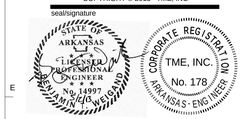


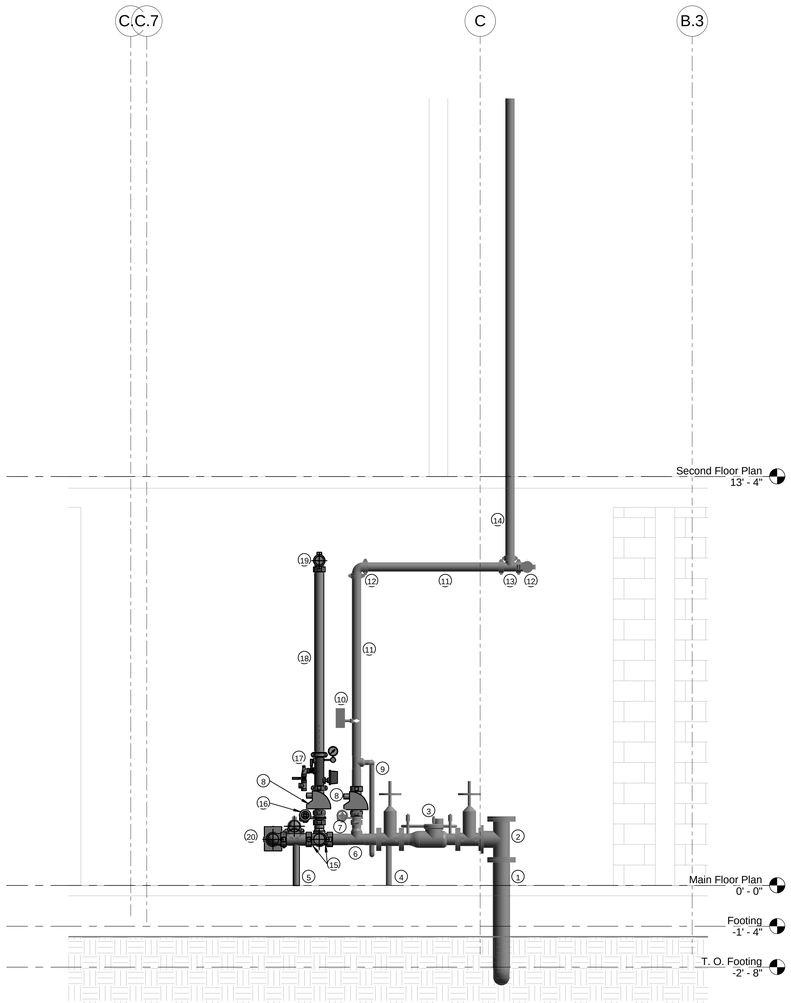
rev	date	description

date	05/06/13
phase	Bidding and Construction
issued for	Construction
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-121050

GENERAL NOTES AND DETAILS - FIRE PROTECTION

sheet number

F201



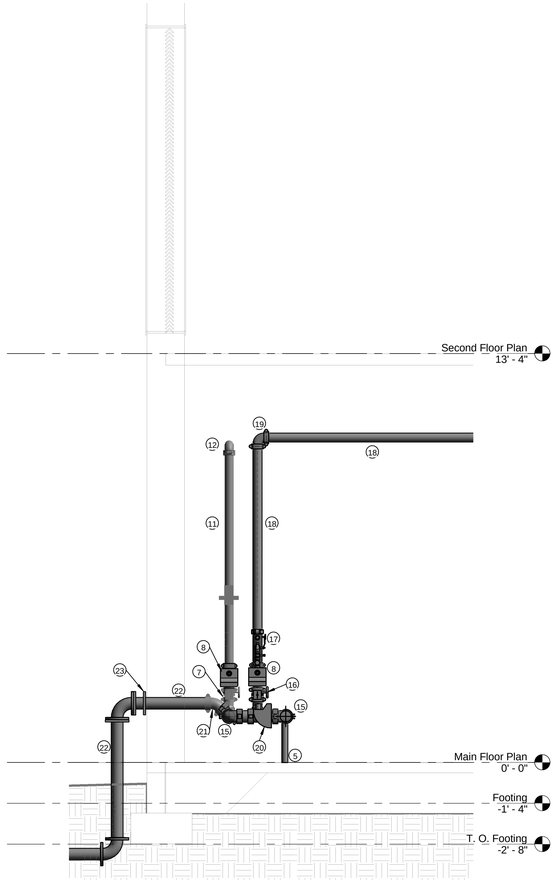
EQUIPMENT NOMENCLATURE:

1. EXISTING 6" LEAD IN
2. EXISTING 6" FLANGED TEE
3. EXISTING 4" BACKFLOW PREVENTOR
4. EXISTING PIPE STAND
5. NEW PIPE STAND
6. EXISTING 4" HEADER
7. EXISTING 3" GROOVED CONTROL VALVE
8. NEW 3" GROOVED CHECK VALVE
9. EXISTING AUXILIARY DRAIN VALVE DISCHARGE TO OUTSIDE
10. EXISTING FLOW SWITCH
11. EXISITNG 3" STEEL PIPING TO EXISTING SPRINKLER SYSTEM
12. EXISTING 3" GROOVED ELL
13. EXISTING 3" GROOVED TEE
14. EXISTING 4" STEEL PIPING UP TO EXISTING UPPER LEVEL SPRINKLER SYSTEM
15. NEW 4" GROOVED ELL
16. NEW 3" CONTROL VALVE WITH TAMPER SWITCH
17. NEW 3" GROOVED SPRINKLER SYSTEM RISER MANIFOLD COMPLETE WITH WATER FLOW SWITCH, PRESSURE GUAGE AND TEST AND DRAIN CONNECTION
18. NEW 3" TYPE K COPPER PIPING TO NEW SPRINKLER SYSTEM
19. NEW 3" K COPPER ELL
20. EXISITNG 4" GROOVED CHECK VALVE, TO NEW FREE STANDING STORZ FIRE DEPARTMENT CONNECTION, RELOCATED.
21. EXISTING 4" GROOVED 45°ELL
22. NEW 4" GALVANIZED PIPE AND FITTINGS TO FREE STANDING STORZ FIRE DEPARTMENT CONNECTION
23. NEW EXTERIOR GRADE CAST BRASS/ BRONZE WALL PLATE

WATER FLOW INFORMATION

STATIC:	95 PSI
RESIDUAL:	90 PSI
FLOW:	50 PSI
OUTLET COEFFIENT:	.90
ADJUSTED GPM:	1186 GPM
DATE:	12-12-12
TIME:	10:15 AM
BY:	TME AND CONWAY CORPORATION

STATIC AND RESIDUAL HYDRANT LOCATED ON THE NORTH EAST CORNER OF BUILDING



1 FIRE PROTECTION RISER DETAIL 1

1/2" = 1'-0"

2 FIRE PROTECTION RISER DETAIL 2

1/2" = 1'-0"

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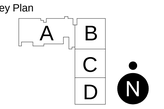
Key Plan



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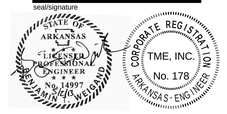

rev	date	description

date	05/06/13
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360 project number	121050.00
UCA project number	UCA-121050

FIRE PROTECTION RISER DETAILS

sheet number

F202

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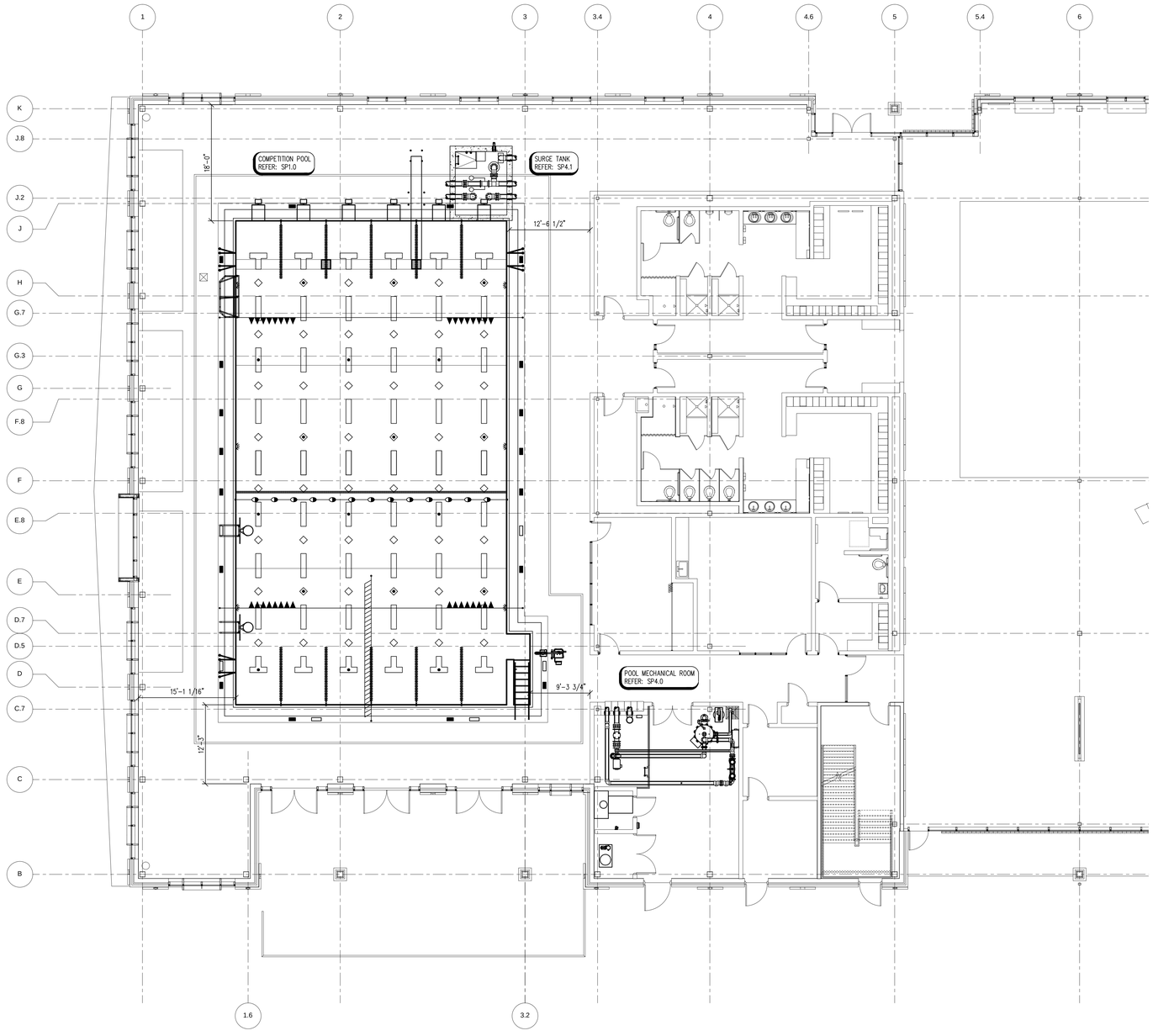

DESIGN DATA

	UNITS	COMPETITION POOL
LENGTH	FT.	75'-0 3/4"
WIDTH	FT.	42'-0"
WATER SURFACE AREA	SQ. FT.	3,180
PERIMETER	FT.	241'-1 1/2"
VOLUME	GALLON	177,770
CIRCULATION SYSTEM & FILTERS		
POOL TURNOVER RATE	HOUR	4.23
RECIRCULATION RATE	GPM	700
FILTRATION RATE (MAX. DESIGN)	GPM/SQ. FT.	1.3
FILTER AREA REQUIRED	SQ. FT.	538.5
FILTRATION RATE (ACTUAL)	GPM/SQ. FT.	1.2
FILTRATION AREA (ACTUAL)	SQ. FT.	595
FILTER BACKWASH RATE	GPM/SQ. FT.	.5
BACKWASH FLOW RATE (PER FILTER)	GPM	298
SURGE CAPACITY	GALLON	3830
DESIGN FILL RATE	GPM	247
DESIGN FILL TIME	HOUR	12
BATHER LOAD	PERSON	152

SHEET INDEX

GENERAL POOL NOTES

1. ⏥ DENOTES WATER DEPTH FROM WATER LEVEL.
2. POOL FINISH SHALL BE DIAMOND BRITE WITH A 5" VERTICAL CERAMIC TILE BAND AND A 1'-0" PERIMETER TILE BAND WITH TILE DECK MARKINGS.
3. ALL POOL FLOOR AREAS 18" AND SHALLOWER AND ALL STAIR TREADS SHALL HAVE A SLIP RESISTANT FINISH.
4. TYPICAL POOL DIMENSIONS SHOWN ARE FROM INSIDE FINISHED POOL WALL.
5. REFER TO POOL STRUCTURAL DRAWINGS FOR ALL DIMENSIONS RELATING TO THE THICKNESS OF THE POOL SHELL.
6. THE JUNCTION BETWEEN THE SWIMMING POOL WALL AND THE FLOOR SHALL BE COVED WITH A MINIMUM 6" RADIUS, OR AS NOTED.
7. DEPTH MARKERS AND WARNING SIGNS ARE SHOWN IN APPROXIMATE LOCATIONS. DEPTH MARKERS AND WARNING SIGNS MAY NOT EXCEED 25'-0" APART FROM EACH OTHER, AND SHALL BE PLACED AT EVEN FOOT INTERVALS PER LOCAL CODE.
8. ALL PROPRIETARY NAMES MENTIONED ARE TO DESIGNATE PERFORMANCE STANDARDS. EQUIVALENT PRODUCTS MUST BE SUBMITTED FOR APPROVAL.
9. SLIP RESISTANT DECK FINISH REQUIRED. REFER TO ARCHITECT.
10. REFER TO PLUMBING FOR DECK DRAINS AND HOSE BIBBS.
11. ALL SURFACE WATER SHALL DRAIN AWAY FROM THE POOL.
12. REFER TO ELECTRICAL FOR GFI OUTLETS IN NATATORIUM.
13. ELECTRICAL INSPECTOR SHALL APPROVE INSTALLATION OF BONDING GRID FOR POOL REINFORCING AND ALL POOL EMBEDS PRIOR TO PLACEMENT OF CONCRETE.
14. NO GROUND WATER SHALL BE ALLOWED TO RISE ABOVE ANY PORTION OF THE POOL BOTTOM DURING CONSTRUCTION.
15. REFER TO SWIMMING POOL SPECIFICATIONS FOR COMPETITION RACE COURSE TOLERANCES.

POOL ALTERNATES

ALTERNATE #3 – THIS ALTERNATE IS TO PROVIDE A MEDIUM PRESSURE ULTRA-VIOLET LIGHT DISINFECTION SYSTEM FOR THE COMPETITION POOL.

1 SP0.0 **POOL REFERENCE PLAN**
1/8" = 1'-0" 04/16/13

N

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seal/signature

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 13017 SCOTT W. HESTER 5/6/13

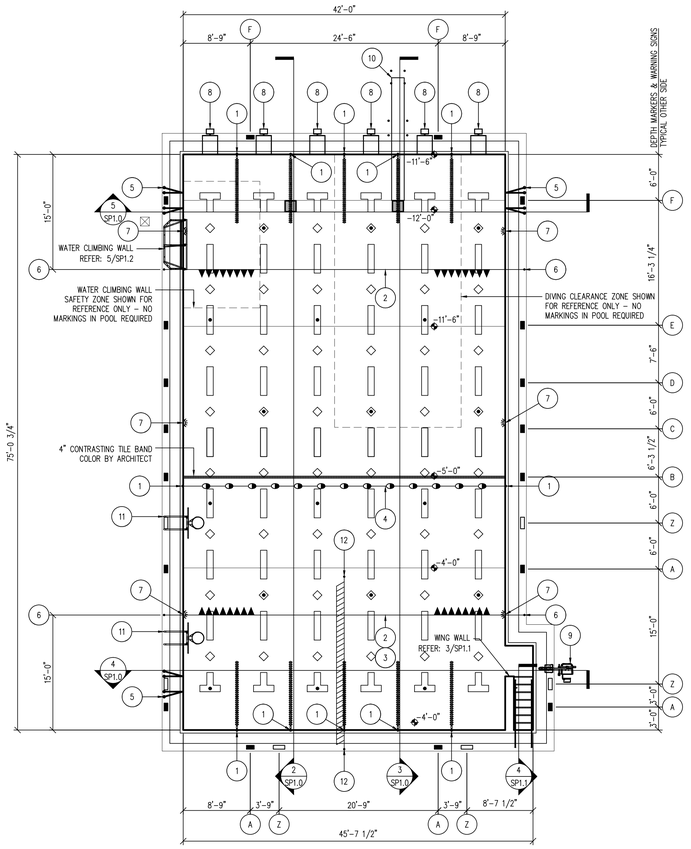
rev	date	description

date	05/06/2013
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

POOL REFERENCE PLAN

sheet number

SP0.0



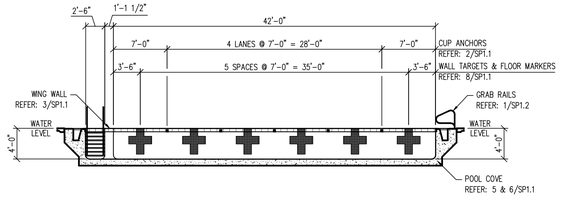
1 SP1.0 **COMPETITION POOL PLAN**
1/8" = 1'-0" 05/01/13

DEPTH & WARNING SIGNAGE SCHEDULE

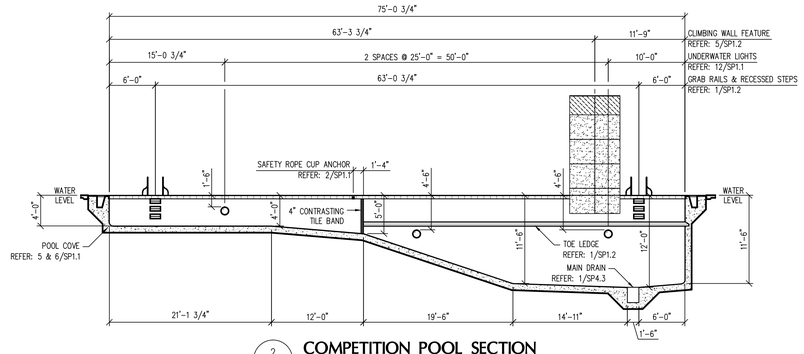
ID	SIGNAGE
A	4 FT 0 IN
B	5 FT 0 IN
C	7 FT 0 IN
D	9 FT 0 IN
E	11 FT 6 IN
F	12 FT 0 IN
Z	NO DIVING

POOL EQUIPMENT LEGEND

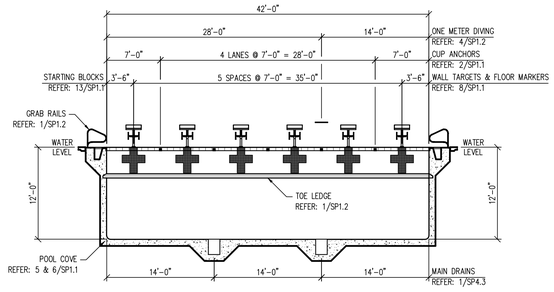
LEGEND	ID	ITEM
	1	CUP ANCHOR REFER: 2/SP1.1
	2	BACKSTROKE PENNANT
	3	FALSE START ROPE ASSEMBLY
	4	SAFETY ROPE
	5	GRAB RAILS AND RECESSED STEPS REFER: 1/SP1.2
	6	STANCHION POST AND ANCHOR REFER: 11/SP1.1
	7	UNDERWATER LIGHT REFER: 12/SP1.1
	8	DECK MOUNTED STARTING PLATFORM AND ANCHOR REFER: 13/SP1.1
	9	POOL LIFT AND ANCHOR REFER: 2/SP1.2
	10	ONE METER DIVING PLATFORM AND MOUNT REFER: 4/SP1.2
	11	WATER BASKETBALL REFER: 3/SP1.2
	12	WATER VOLLEYBALL STANCHION POST, ANCHOR & NET REFER: 14/SP1.1
	N/A	DEPTH MARKERS REFER: 7/SP1.1
	N/A	WARNING SIGNS REFER: 7/SP1.1
N/A	N/A	PORTABLE LIFEGUARD CHAIR



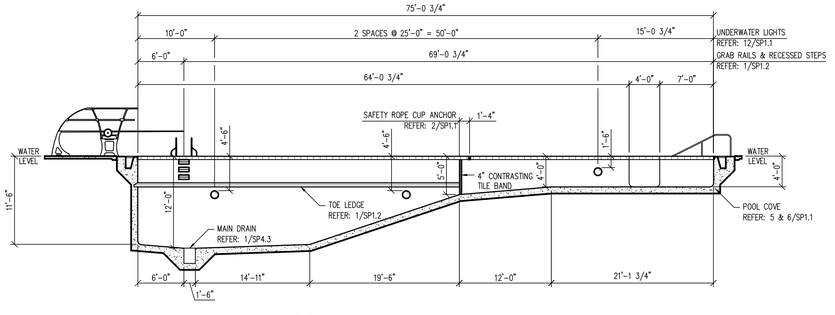
4 SP1.0 **COMPETITION POOL SECTION**
1/8" = 1'-0" 04/16/13



2 SP1.0 **COMPETITION POOL SECTION**
1/8" = 1'-0" 04/16/13



5 SP1.0 **COMPETITION POOL SECTION**
1/8" = 1'-0" 04/16/13



3 SP1.0 **COMPETITION POOL SECTION**
1/8" = 1'-0" 05/01/13

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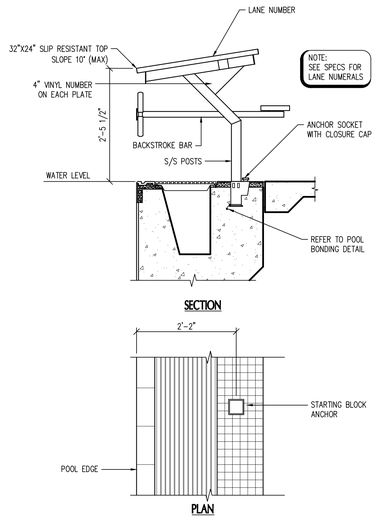
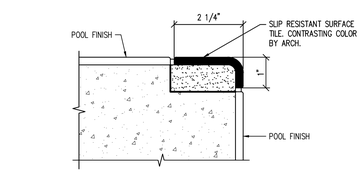
COMPETITION POOL PLAN & SECTIONS

sheet number

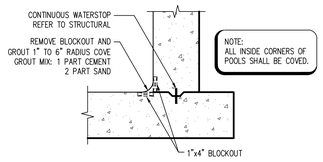
SP1.0



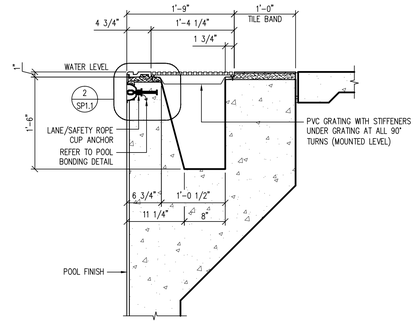
13 SP1.1 STARTING BLOCK
3/4" = 1'-0" 05/02/13



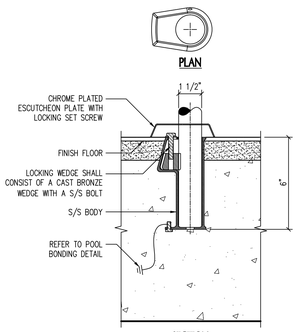
9 SP1.1 CONTRASTING NOSING
6" = 1'-0" 05/02/13



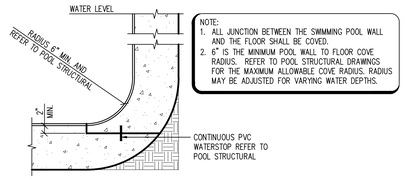
5 SP1.1 CAST IN PLACE CONCRETE COVE
3/4" = 1'-0" 11/08/12



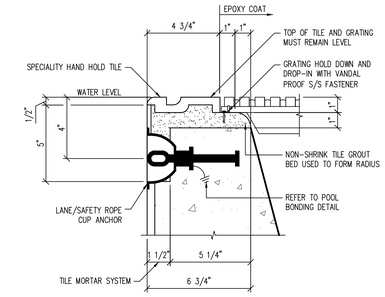
1 SP1.1 CONCRETE DECK LEVEL GUTTER
1" = 1'-0" 03/19/13



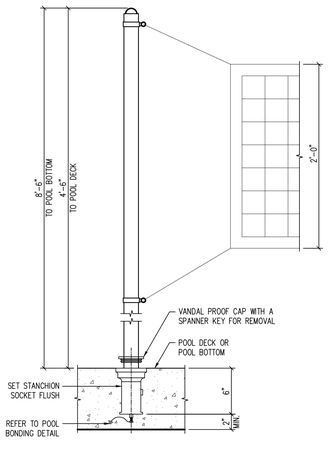
10 SP1.1 WEDGE ANCHOR
3" = 1'-0" 11/08/12



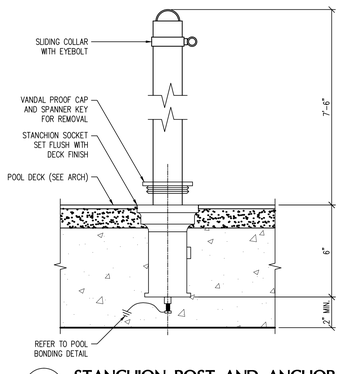
6 SP1.1 PNEUMATICALLY APPLIED CONCRETE COVE
3/4" = 1'-0" 04/16/13



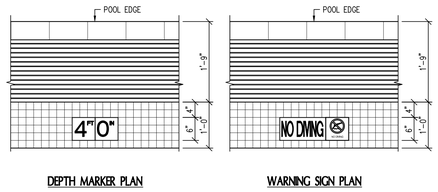
2 SP1.1 GUTTER LIP
3" = 1'-0" 11/08/12



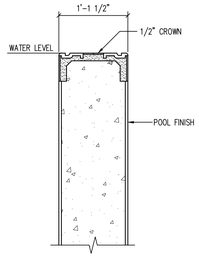
14 SP1.1 WATER VOLLEYBALL STANCHION POST AND ANCHOR
1 1/2" = 1'-0" 03/19/13



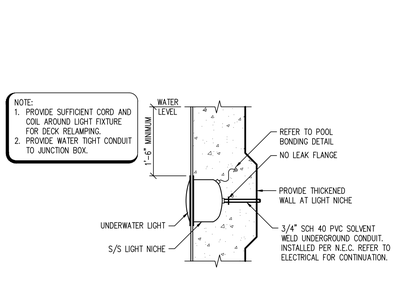
11 SP1.1 STANCHION POST AND ANCHOR
3" = 1'-0" 11/08/12



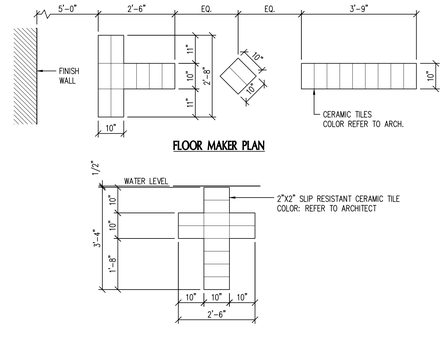
7 SP1.1 DEPTH MARKER AND WARNING SIGN
3/4" = 1'-0" 05/02/13



3 SP1.1 WING WALL SECTION
1" = 1'-0" 11/08/12



12 SP1.1 UNDERWATER LIGHT
3/4" = 1'-0" 11/08/12



8 SP1.1 WALL TARGETS & FLOOR MARKERS
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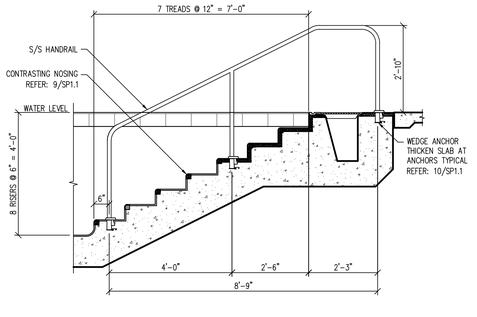

4 SP1.1 STAIR SECTION
1/2" = 1'-0" 04/16/13

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 13017 SCOTT W. HESTER 5/17/13

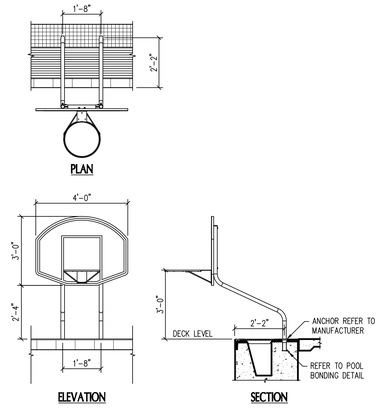
rev	date	description

date	05/06/2013
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

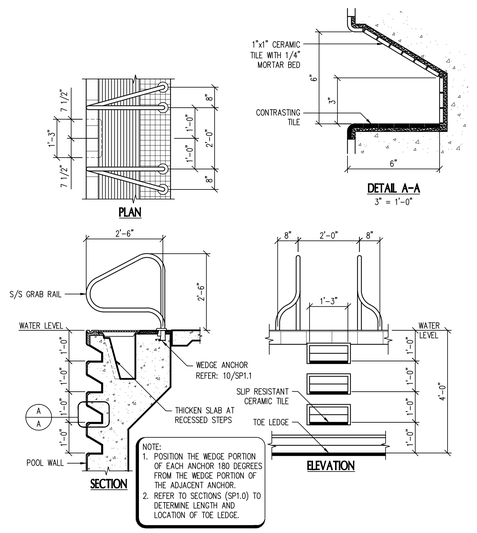
COMPETITION POOL DETAILS

sheet number

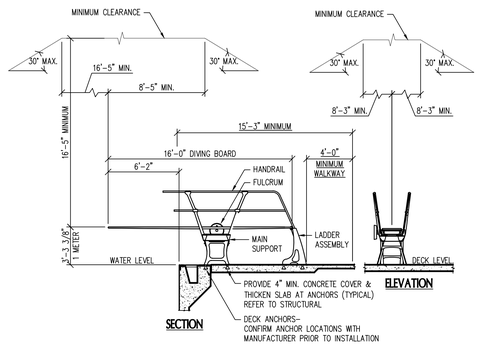
SP1.1



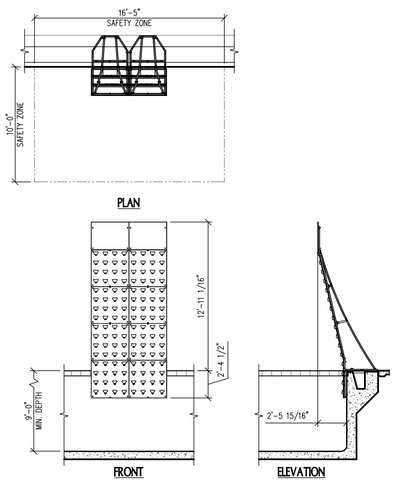
3 SP1.2 **WATER BASKETBALL**
3/8" = 1'-0" 05/02/13



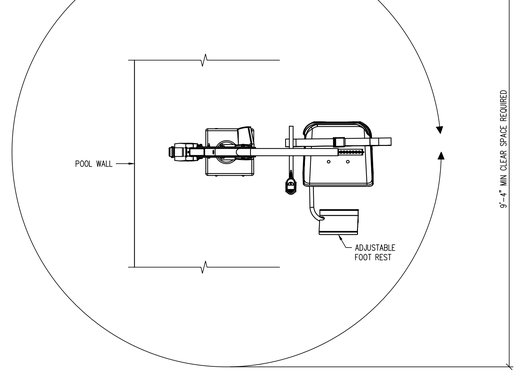
1 SP1.2 **GRAB RAILS & RECESSED STEPS**
1/2" = 1'-0" 05/02/13

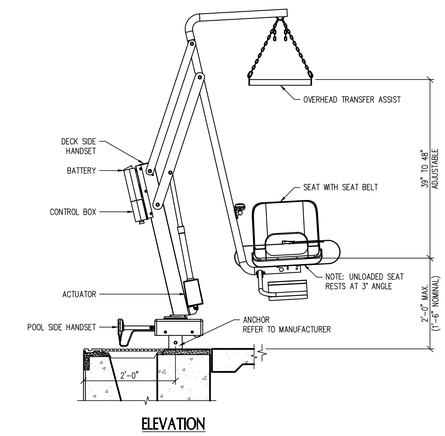


4 SP1.2 **ONE METER DIVING STAND**
3/16" = 1'-0" 11/08/12



5 SP1.2 **WATER CLIMBING WALL**
3/16" = 1'-0" 11/30/12





2 SP1.2 **POOL LIFT**
3/4" = 1'-0" 05/02/13

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rev date description

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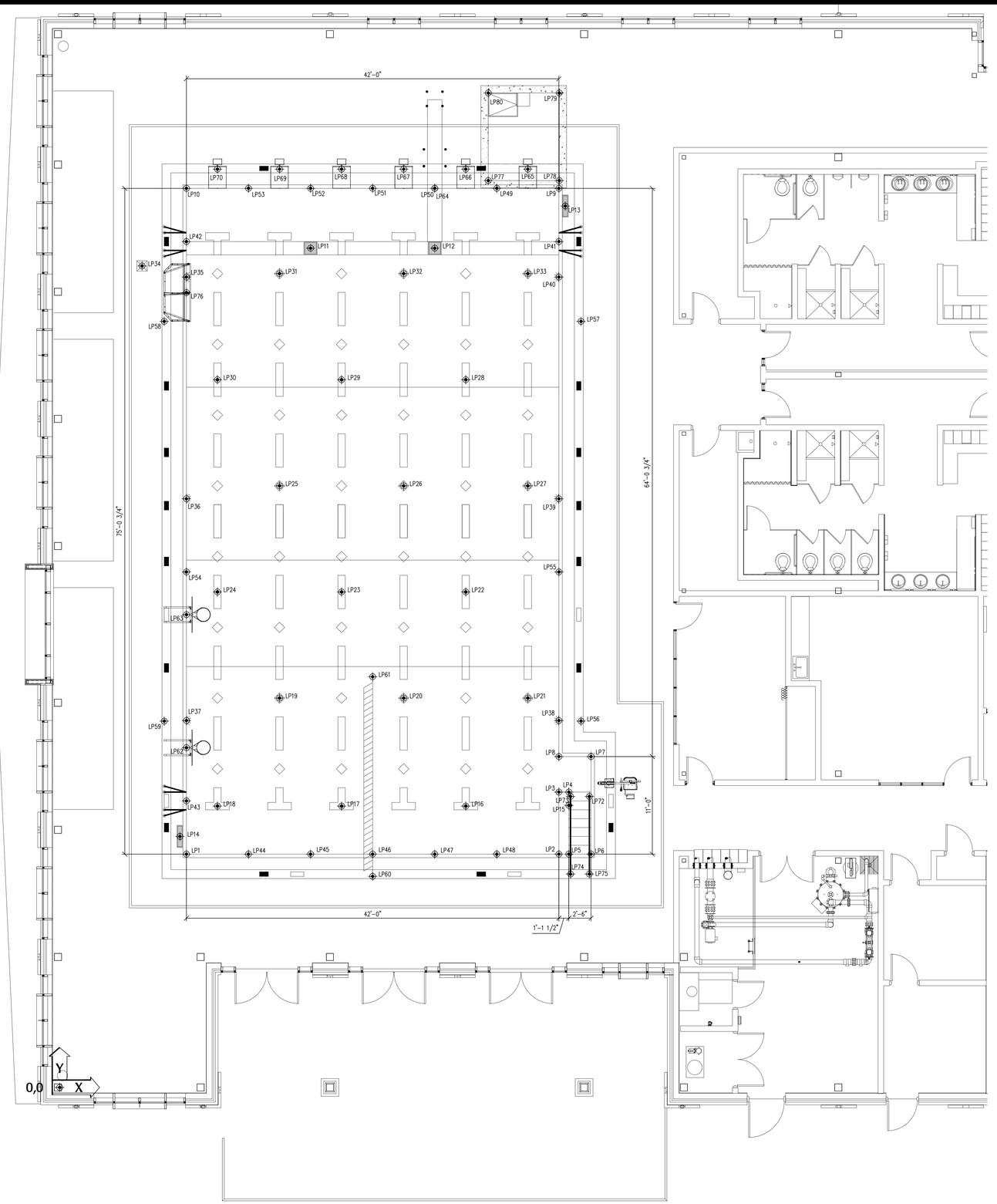
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

COMPETITION
POOL
DETAILS

sheet number

SP1.2



LOCATION POINT SCHEDULE

LP#	X	Y	DESCRIPTION
1	14'-3 1/2"	26'-3 5/8"	CONSTRUCTION POINT
2	56'-3 1/2"	26'-3 5/8"	CONSTRUCTION POINT
3	56'-3 1/2"	33'-3 5/8"	CONSTRUCTION POINT
4	57'-5"	33'-3 5/8"	CONSTRUCTION POINT
5	57'-5"	26'-3 5/8"	CONSTRUCTION POINT
6	59'-11"	26'-3 5/8"	CONSTRUCTION POINT
7	59'-11"	37'-3 5/8"	CONSTRUCTION POINT
8	56'-3 1/2"	37'-3 5/8"	CONSTRUCTION POINT
9	56'-3 1/2"	101'-4 3/8"	CONSTRUCTION POINT
10	14'-3 1/2"	101'-4 3/8"	CONSTRUCTION POINT
11	28'-3 1/2"	94'-7 3/8"	CENTER OF MAIN DRAIN
12	42'-3 1/2"	94'-7 3/8"	CENTER OF MAIN DRAIN
13	57'-0 1/4"	99'-4 1/2"	GUTTER DROPOUT BOX
14	13'-6 3/4"	28'-3 1/2"	GUTTER DROPOUT BOX
15	57'-5"	31'-9 5/8"	WALL INLET
16	45'-9 1/2"	31'-8 5/8"	FLOOR INLET
17	31'-9 1/2"	31'-8 5/8"	FLOOR INLET
18	17'-9 1/2"	31'-8 5/8"	FLOOR INLET
19	24'-9 1/2"	43'-10 3/4"	FLOOR INLET
20	38'-9 1/2"	43'-10 3/4"	FLOOR INLET
21	52'-9 1/2"	43'-10 3/4"	FLOOR INLET
22	45'-9 1/2"	55'-10 1/4"	FLOOR INLET
23	31'-9 1/2"	55'-10 1/4"	FLOOR INLET
24	17'-9 1/2"	55'-10 1/4"	FLOOR INLET
25	24'-9 1/2"	67'-9 7/8"	FLOOR INLET
26	38'-9 1/2"	67'-9 7/8"	FLOOR INLET
27	52'-9 1/2"	67'-9 7/8"	FLOOR INLET
28	45'-9 1/2"	79'-9 1/2"	FLOOR INLET
29	31'-9 1/2"	79'-9 1/2"	FLOOR INLET
30	17'-9 1/2"	79'-9 1/2"	FLOOR INLET
31	24'-9 1/2"	91'-9"	FLOOR INLET
32	38'-9 1/2"	91'-9"	FLOOR INLET
33	52'-9 1/2"	91'-9"	FLOOR INLET
34	9'-3 1/2"	92'-7 3/8"	SIGHT SUMP
35	14'-3 1/2"	91'-4 3/8"	UNDERWATER LIGHT
36	14'-3 1/2"	66'-4 3/8"	UNDERWATER LIGHT
37	14'-3 1/2"	41'-4 3/8"	UNDERWATER LIGHT
38	56'-3 1/2"	41'-4 3/8"	UNDERWATER LIGHT
39	56'-3 1/2"	66'-4 3/8"	UNDERWATER LIGHT
40	56'-3 1/2"	91'-4 3/8"	UNDERWATER LIGHT
41	56'-3 1/2"	95'-4 3/8"	GRAB RAILS & RECESSED STEPS
42	14'-3 1/2"	95'-4 3/8"	GRAB RAILS & RECESSED STEPS
43	14'-3 1/2"	32'-3 5/8"	GRAB RAILS & RECESSED STEPS
44	21'-3 1/2"	26'-3 5/8"	CUP ANCHOR
45	28'-3 1/2"	26'-3 5/8"	CUP ANCHOR
46	35'-3 1/2"	26'-3 5/8"	CUP ANCHOR
47	42'-3 1/2"	26'-3 5/8"	CUP ANCHOR
48	49'-3 1/2"	26'-3 5/8"	CUP ANCHOR
49	49'-3 1/2"	101'-4 3/8"	CUP ANCHOR
50	42'-3 1/2"	101'-4 3/8"	CUP ANCHOR
51	35'-3 1/2"	101'-4 3/8"	CUP ANCHOR
52	28'-3 1/2"	101'-4 3/8"	CUP ANCHOR
53	21'-3 1/2"	101'-4 3/8"	CUP ANCHOR
54	14'-3 1/2"	58'-1 3/8"	SAFETY ROPE CUP ANCHOR
55	56'-3 1/2"	58'-1 3/8"	SAFETY ROPE CUP ANCHOR
56	58'-9 1/2"	41'-3 5/8"	STANCHION POST ANCHOR
57	58'-9 1/2"	86'-4 3/8"	STANCHION POST ANCHOR
58	11'-9 1/2"	86'-4 3/8"	STANCHION POST ANCHOR
59	11'-9 1/2"	41'-3 5/8"	STANCHION POST ANCHOR
60	35'-3 1/2"	23'-9 5/8"	WATER VOLLEYBALL ANCHOR
61	35'-3 1/2"	46'-3 5/8"	WATER VOLLEYBALL ANCHOR
62	14'-3 1/2"	38'-3 5/8"	WATER BASKETBALL
63	14'-3 1/2"	53'-3 5/8"	WATER BASKETBALL
64	42'-3 1/2"	101'-4 3/8"	ONE METER DIVING
65	52'-9 1/2"	103'-6 3/8"	STARTING BLOCK ANCHOR
66	45'-9 1/2"	103'-6 3/8"	STARTING BLOCK ANCHOR
67	38'-9 1/2"	103'-6 3/8"	STARTING BLOCK ANCHOR
68	31'-9 1/2"	103'-6 3/8"	STARTING BLOCK ANCHOR
69	24'-9 1/2"	103'-6 3/8"	STARTING BLOCK ANCHOR
70	17'-9 1/2"	103'-6 3/8"	STARTING BLOCK ANCHOR
71	–	–	NOT USED
72	59'-8 3/4"	32'-9 5/8"	HANDRAIL END POINT
73	57'-7 1/4"	32'-9 5/8"	HANDRAIL END POINT
74	57'-7 1/4"	24'-0 5/8"	HANDRAIL END POINT
75	59'-8 3/4"	24'-0 5/8"	HANDRAIL END POINT
76	14'-3 1/2"	89'-7 3/8"	CLIMBING WALL FEATURE
77	48'-4"	102'-2 7/8"	SURGE TANK
78	56'-4"	102'-2 7/8"	SURGE TANK
79	56'-4"	112'-1 3/8"	SURGE TANK
80	48'-4"	112'-1 3/8"	SURGE TANK

1 SP2.0 **POOL LOCATION POINT PLAN & SCHEDULE**
3/16" = 1'-0"
05/02/13

N

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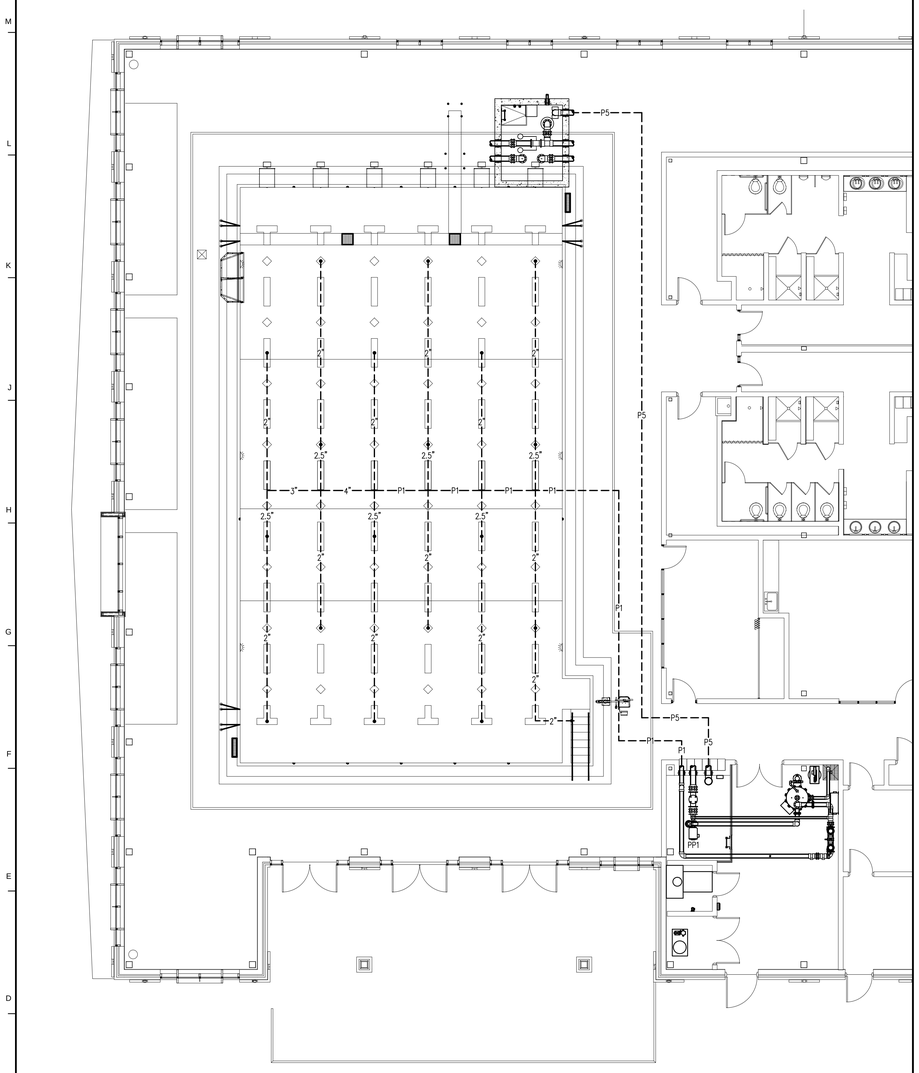
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

POOL LOCATION PLAN

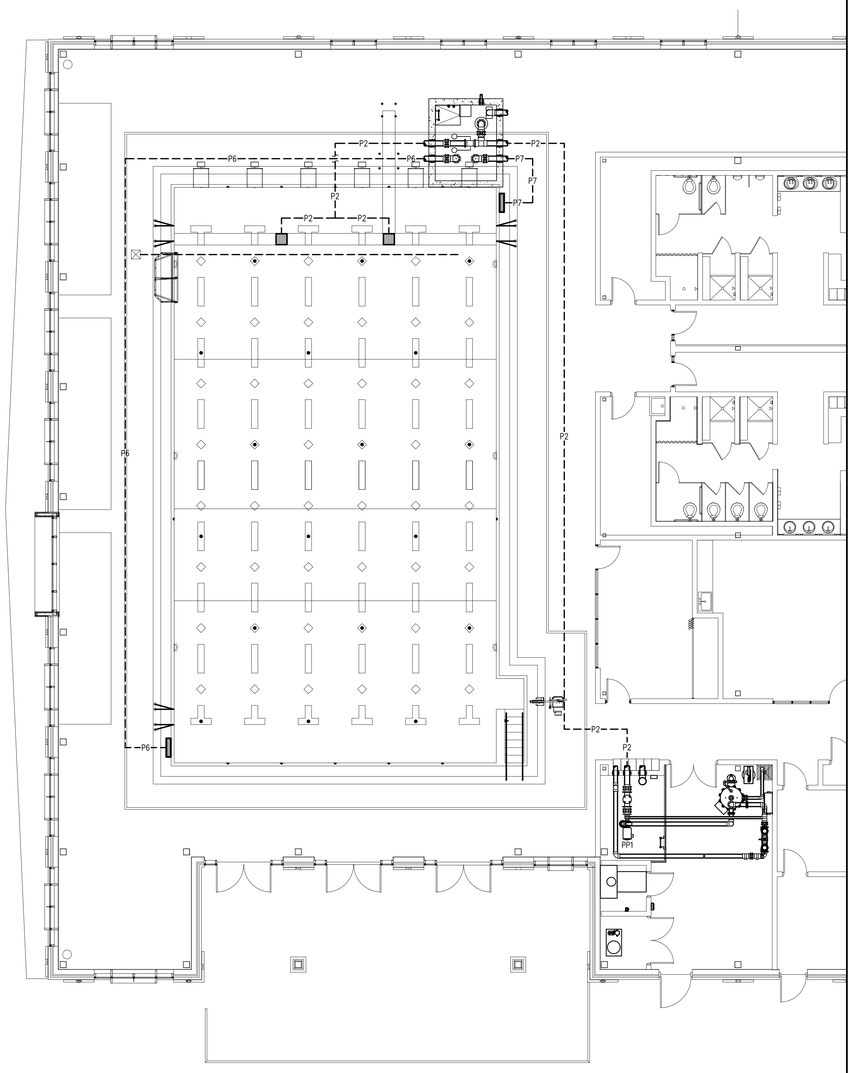
sheet number

SP2.0



2 SP3.0 **POOL RETURN PIPING PLAN**

1/8" = 1'-0" 05/02/13



1 SP3.0 **POOL SUCTION PIPING PLAN**

1/8" = 1'-0" 05/02/13

GENERAL PIPING NOTES

1. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERATIONAL PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. PIPE SIZES INDICATED ARE NOMINAL, I.P.S.
3. UNLESS OTHERWISE NOTED, ALL OVERHEAD PIPING SHALL BE TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB.
4. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).
5. ALL VALVES SHALL BE INSTALLED SO THAT THE VALVE REMAINS IN SERVICE WHEN THE EQUIPMENT OR PIPING ON THE EQUIPMENT SIDE OF THE VALVE IS REMOVED.
6. PROVIDE CHAIN WHEEL OPERATORS FOR ALL VALVES IN EQUIPMENT ROOMS MOUNTED GREATER THAN 7'-0" ABOVE FINISHED FLOOR; CHAIN SHALL EXTEND TO 7'-0" ABOVE FINISHED FLOOR LEVEL.
7. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
8. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES AND SITE CONDITIONS. OFFSETS, EXPANSION LOOPS, OR TRANSITIONS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
9. ALL PIPING INDICATED SHALL BE CONSIDERED DIAGRAMMATIC.
10. ALL SWIMMING POOL PIPING ROUTED BELOW THE POOL SHELL SHALL BE CONCRETE ENCASED SCHEDULE 40 PVC, OR ALL SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. REFER: 6/SP4.3 & 7/SP4.3
11. ALL UNDERGROUND OR EXPOSED SWIMMING POOL PIPING SHALL BE SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO PLANS AND SPECIFICATIONS FOR ANY SPECIFIC REQUIREMENTS REGARDING PLACEMENT AND BACKFILLING OF BELOW GRADE POOL PIPE.
12. ALL DIMENSIONS INDICATED FROM THE FINISH WALL SURFACE AND DO NOT ACCOUNT FOR ANY VARIATIONS IN EITHER GRADE OR SLOPE DISTANCES.
13. THE CHEMICAL SENSOR LINE SHALL BE A 3/4" TO 1" DIAMETER, SCHEDULE 80 PVC PIPE EXTENDED FROM THE WET CELL SENSOR TO ITS RESPECTIVE FILL FUNNEL AND THE BACKWASH CATCH BASIN OR PUMP SUCTION.
14. CONTRACTOR SHALL ADJUST ALL FLOOR INLETS SO AS TO ACHIEVE AN EVEN FLOW DISTRIBUTION THROUGHOUT SYSTEMS.
15. ALL PIPE TEES TO BE SIZED FOR LARGEST PIPE CONNECTION.
16. SURGE TANK VENT PIPING TO ATMOSPHERE
17. ALL GUTTER DROPOUT LINES TO SLOPE 1/8" PER FOOT MINIMUM

PUMP SCHEDULE

			SPECIFICATIONS			PUMP REQUIREMENTS REFER TO ELECTRICAL
ID	DESCRIPTION		GPM	TDH	HP	
PP1	RECIRCULATION PUMP		700	70	15	E
PP2	ACID FEED PUMP		–	–	FRAC.	D
PP3	CHLORINE BOOSTER PUMP		–	–	3/4	D
	A	REMOTE PUMP START	B	15 MINUTE TIMER		
	C	EMERGENCY STOP	D	INTERLOCK WITH RECIRCULATION PUMP		
	E	VARIABLE FREQUENCY DRIVE				

PIPE SCHEDULE

ID	DESCRIPTION
P1	6" FROM POOL FILTER TO INLETS
P2	8" FROM MAIN DRAINS TO PP1
P3	6" FROM PP1 TO POOL FILTER
P4	3" PRECOAT LINE
P5	8" FROM FILL FUNNEL TO SURGE TANK
P6	8" FROM DROPOUT BOX TO SURGE TANK
P7	8" FROM DROPOUT BOX TO SURGE TANK
P8	3" SURGE TANK VENT
P9	3" FROM POOL FILTER TO BACKWASH CATCH BASIN

PIPING LEGEND

LEGEND	QTY.	ITEM
▲	1	WALL INLET REFER: 3/SP4.3
◉	18	FLOOR INLET REFER: 2/SP4.3
⊠	1	SIGHT SUMP REFER: 5/SP4.3
▭	2	GUTTER DROPOUT BOX REFER: 4/SP4.3
▭	2	18"X18" MAIN DRAIN REFER: 1/SP4.3
- - - -	N/A	BELOW GRADE PIPING

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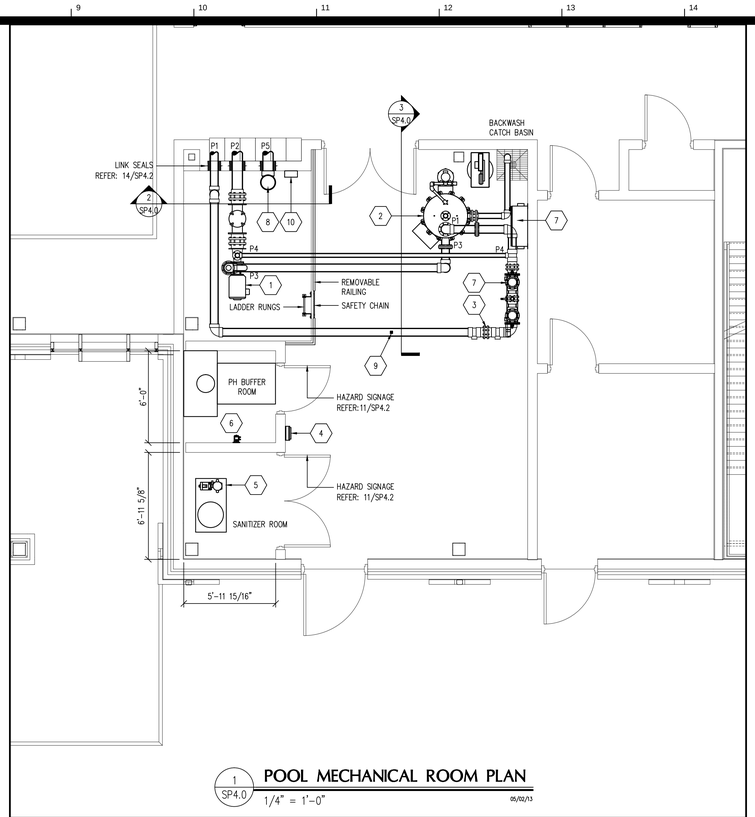
POOL
PIPING
PLANS

sheet number

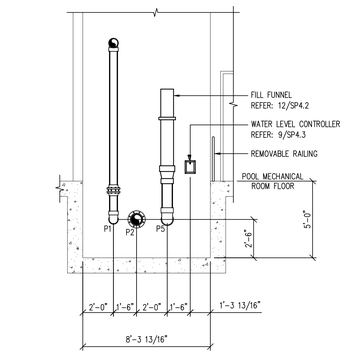
SP3.0



1 SP4.0 **POOL MECHANICAL ROOM PLAN**

1/4" = 1'-0"

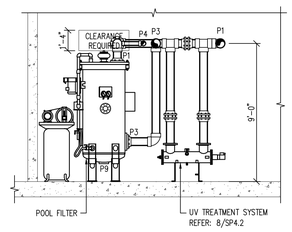
05/02/13



2 SP4.0 **POOL MECHANICAL ROOM SECTION**

1/4" = 1'-0"

05/02/13



3 SP4.0 **POOL MECHANICAL ROOM SECTION**

1/4" = 1'-0"

05/19/13

GENERAL POOL MECHANICAL ROOM NOTES

1. ALL POOL EQUIPMENT MUST BE INSTALLED ON HOUSEKEEPING PADS PROVIDED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
2. EQUIPMENT ROOM FLOOR MUST SLOPE 1/4" TO 1/2" TO FLOOR DRAINS.
3. PUMP PIT FLOOR MUST SLOPE MIN 1/4" TO 1/2" TO SUMP PIT. REFER TO PLUMBING.
4. THE FLOOR DRAINS INDICATED ARE IN APPROXIMATE LOCATIONS. REFER TO PLUMBING.
5. PROVIDE HOSE BIBBS FOR HOUSE CLEANING PURPOSES. REFER BUILDING MECHANICAL DRAWINGS.
6. THE INSIDE SURFACES OF THE BACKWASH CATCH BASIN SHALL BE WATERPROOFED. REFER TO SPECIFICATION.
7. VENTILATION OF POOL MECHANICAL ROOM AND CHEMICAL STORAGE AREAS PER LOCAL, STATE AND INTERNATIONAL MECHANICAL CODE MINIMUM. REFER TO MECHANICAL.
8. THE FOLLOWING INFORMATION SHALL BE LAMINATED AND POSTED IN THE POOL MECHANICAL ROOM: BACKWASH PROCEDURE, POOL FILLING & DRAINING, VALVE REFERENCE CHART, POOL MECHANICAL ROOM PLAN, POOL PIPING SCHEMATICS & POOL SYSTEMS SCHEMATICS.
9. REFER TO MECHANICAL FOR HVAC SYSTEMS DESIGN.
10. REFER TO ARCHITECTURAL DRAWINGS FOR LADDER RUNGS, SAFETY CHAIN, & REMOVABLE RAILING AT PUMP PIT.

PIPING

1. MINIMUM 7' – 0" CLEARANCE BENEATH ALL OVERHEAD PIPING.
2. INSTALL AND SUPPORT OVERHEAD AND VERTICAL PIPING PER SPECIFICATION REQUIREMENTS.
3. LABEL AND IDENTIFY ALL PIPING IN COMPLIANCE WITH THE SPECIFICATIONS.
4. ALL FLOW METERS SHALL BE SIZED TO MATCH THE PIPE ON WHICH IT IS INSTALLED. PROVIDE PRESSURE GAUGES ON INFLUENT AND EFFLUENT SIDE OF EACH FILTRATION SYSTEM AND A FULL LINE SIZE FLOW METER ON FILTER RETURN.
5. THE BACKWASH PIPING SHALL TERMINATE NO CLOSER THAN 6" ABOVE THE FLOOD RIM OF THE BACKWASH CATCH BASIN OR TWICE THE PIPE DIAMETER, WHICHEVER IS GREATER.
6. HYDROSTATICALLY TEST ALL PIPING AT 50 PSI FOR TWO HOURS AND MAINTAIN A PRESSURE OF 20 PSI IN ALL PIPING THROUGHOUT CONSTRUCTION. SECURE ALL FIXTURES PER SPECIFICATION REQUIREMENTS BEFORE HYDROSTATIC TEST.

FILTERS

1. ALL FILTER SUPPORTS SHALL BE SEISMICALLY RATED FOR THE SEISMIC ZONE IN WHICH IT IS INSTALLED IN ACCORDANCE WITH LOCAL AND/ OR STATE REQUIREMENTS.
2. FILTER MANUFACTURER TO CERTIFY FILTER MEDIA.
3. VALVES SHALL BE PROVIDED TO BACKWASH EACH FILTER VESSEL INDEPENDENTLY.
4. FILTER TANK ASSEMBLIES SHALL BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL FOR A MAXIMUM FLOW RATE OF 1.6 GPM PER SQUARE FOOT OF FILTER MEDIA.
5. PROVIDE HARD PLUMBED SCHEDULE 80 PIPE FROM BOTTOM OF THE FILTER TANK TO WASTE PIT IN ORDER TO DRAIN TANK AND MEDIA ON AN AS NEEDED BASIS. PIPE SHALL BE SLOPED FROM FILTER TANK TO WASTE PIT.
6. PROVIDE NON-HAZARDOUS, NON-TOXIC, FILTER MEDIA. PARTICLE SIZE SHALL HAVE MEDIAN PORE SIZE OF NO GREATER THAN 20 MICRONS.

CHEMICAL TREATMENT

1. CHEMICAL FEED REQUIREMENTS – REFER TO THE POOL SYSTEMS SCHEMATIC(S) ON SP5.0.
2. INTERLOCK POOL CIRCULATION PUMP(S) WITH ITS CORRESPONDING WATER CHEMISTRY CONTROLLER, CHEMICAL FEED PUMP(S), AND HEATER(S).
3. PROVIDE SIGNAGE ON CHEMICAL ROOM DOORS IN COMPLIANCE WITH THE STATE FIRE CODE.
4. SECURE CHEMICAL METERING PUMP FEED LINES TO WALL AND/OR OVERHEAD WITH CLIPS OR DEVICES THAT DO NOT CRIMP, DISTORT OR ALLOW HIGH AND LOW AREAS IN TUBING RUNS. PLACE CHECK VALVE AND SHUT-OFF VALVE BEFORE LINES ENTER POOL RETURN PIPING.
5. WATER CHEMISTRY CONTROLLERS SHALL CONTROL THE SANITIZING SYSTEM AND PH CONTROL SYSTEM AND SHUT THEM DOWN UPON LOSS OF SAMPLE STREAM FLOW.
6. THE CHEMICAL CONTROL SYSTEM BYPASS LINE SHALL SAMPLE WATER AFTER THE FILTERS AND BEFORE THE HEATER BYPASS LINE.
7. VERIFY REMOTE ACCESS CAPABILITY TO ALL CHEMICAL CONTROLLERS. REFER TO ELECTRICAL.

PUMPS

1. PROVIDE INFLUENT AND EFFLUENT GAUGES FOR EACH PUMP. PRESSURE GAUGES HAVE A RANGE OF 0-100 PSI. COMPOUND GAUGES HAVE A RANGE OF 0-30 HG / 0-60 PSI.

ELECTRICAL

1. GFCI'S PROVIDED AT OUTLETS. REFER TO ELECTRICAL.
2. POOL EQUIPMENT ROOM AND CHEMICAL STORAGE AREAS SHALL BE PROVIDED WITH ARTIFICIAL LIGHTING SUFFICIENT TO ILLUMINATE ALL EQUIPMENT AND SUPPLIES. REFER TO ELECTRICAL.
3. PROVIDE ELECTRICAL CONNECTION TO POOL HEATERS. REFER TO ELECTRICAL.

PUMP SCHEDULE

ID	DESCRIPTION	SPECIFICATIONS GPM	TDH	HP	PUMP REQUIREMENTS REFER TO ELECTRICAL
PP1	RECIRCULATION PUMP	700	70	15	E
PP2	ACID FEED PUMP	–	–	FRAC.	D
PP3	CHLORINE BOOSTER PUMP	–	–	3/4	D

A	REMOTE PUMP START	B	15 MINUTE TIMER
C	EMERGENCY STOP	D	INTERLOCK WITH RECIRCULATION PUMP
E	VARIABLE FREQUENCY DRIVE		

EQUIPMENT SCHEDULE

ID	ITEM
1	RECIRCULATION PUMP (PP1) REFER: 1/SP4.2
2	FILTER SYSTEM
3	HEATER LOOP
4	CHEMICAL CONTROLLER REFER: 4/SP4.2
5	CHLORINE FEED PUMP REFER: 9/SP4.2
6	ACID FEED PUMP REFER: 5/SP4.2
7	UV TREATMENT SYSTEM & CONTROLLER REFER: 8/SP4.2
8	FILL FUNNEL REFER: 12/SP4.2
9	FLOW METER SENSOR REFER: 13/SP4.2
10	WATER LEVEL CONTROLLER REFER: 9/SP4.3
11	SUMP PUMP

PIPE SCHEDULE

ID	DESCRIPTION
P1	6" FROM POOL FILTER TO INLETS
P2	8" FROM MAIN DRAINS TO PP1
P3	6" FROM PP1 TO POOL FILTER
P4	3" PRECOAT LINE
P5	8" FROM FILL FUNNEL TO SURGE TANK
P6	8" FROM DROPOUT BOX TO SURGE TANK
P7	8" FROM DROPOUT BOX TO SURGE TANK
P8	3" SURGE TANK VENT
P9	3" FROM POOL FILTER TO BACKWASH CATCH BASIN

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seal/signature

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 13017
SCOTT W. HESTER
5/19/13

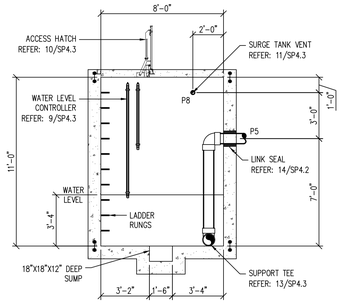
rev date description

date	05/06/2013
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

POOL MECHANICAL ROOM PLAN & SECTIONS

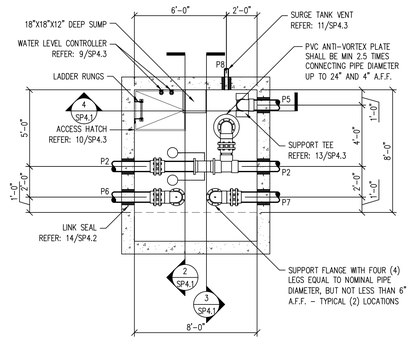
sheet number

SP4.0



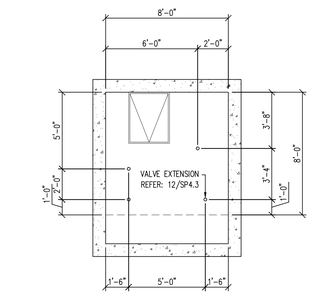
4 SP4.1 **SURGE TANK SECTION**

1/4" = 1'-0" 05/02/13



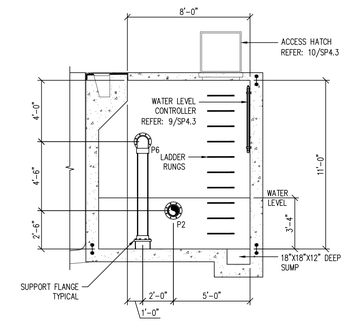
1 SP4.1 **SURGE TANK PLAN**

1/4" = 1'-0" 05/02/13



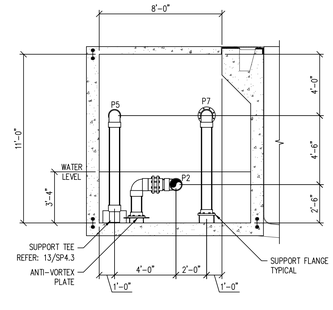
5 SP4.1 **VALVE EXTENSION PENETRATIONS**

1/4" = 1'-0" 03/19/13



2 SP4.1 **SURGE TANK SECTION**

1/4" = 1'-0" 03/19/13



3 SP4.1 **SURGE TANK SECTION**

1/4" = 1'-0" 05/02/13

SURGE TANK NOTES

1. A WATERPROOFING COATING SHALL BE PROVIDED TO ALL INTERIOR SURFACES OF SURGE TANK INCLUDING LID.
2. PROVIDE WATER TIGHT PIPE PENETRATIONS AND INTERFACES WITHIN THE SURGE TANK.
3. REFER TO POOL STRUCTURAL DRAWINGS FOR SURGE TANK STRUCTURAL SHELL DESIGN.
4. CONTRACTOR TO COORDINATE SLEEVES IN SLAB OVER SURGE TANK FOR VALVE EXTENSIONS POSITIONED DIRECTLY ABOVE SURGE TANK VALVES BELOW.
5. DRILL 1" DIAMETER HOLE ON TOP OF ELBOW. TYPICAL ALL GUTTER DROPOUT LINES.
6. LADDER RUNGS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
7. REFER TO POOL STRUCTURAL DRAWINGS FOR WATER STOPS.

PUMP SCHEDULE

ID	DESCRIPTION	SPECIFICATIONS GPM	TDH	HP	PUMP REQUIREMENTS REFER TO ELECTRICAL
PP1	RECIRCULATION PUMP	700	70	15	E
PP2	ACID FEED PUMP	–	–	FRAC.	D
PP3	CHLORINE BOOSTER PUMP	–	–	3/4	D
A	REMOTE PUMP START	B	15 MINUTE TIMER		
C	EMERGENCY STOP	D	INTERLOCK WITH RECIRCULATION PUMP		
E	VARIABLE FREQUENCY DRIVE				

PIPE SCHEDULE

ID	DESCRIPTION
P1	6" FROM POOL FILTER TO INLETS
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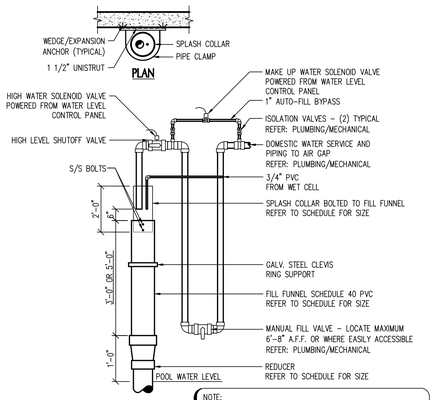
POOL
SURGE
TANK PLAN
& SECTIONS

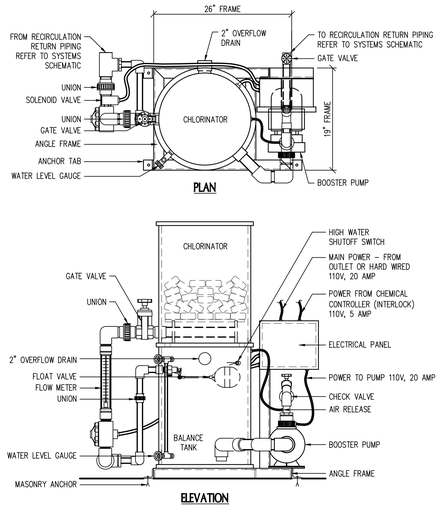
sheet number

SP4.1

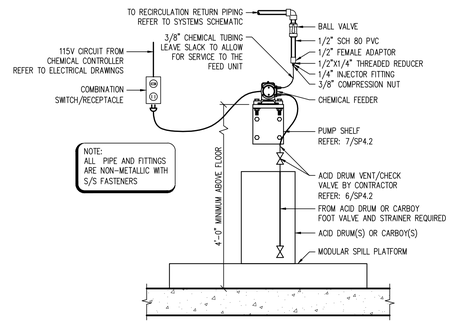


FILL FUNNEL SCHEDULE				
FRESH WATER SUPPLY GPM (MIN.)	FILL FUNNEL SIZE	REDUCER SIZE	SPLASH COLLAR SIZE	FILL LINE SIZE TO POOL
247	12"	12"–8"	10"	8"

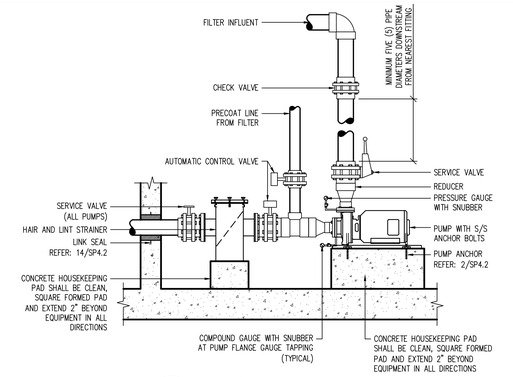
12 SP4.2 **FILL FUNNEL** 3/8" = 1'–0" 05/02/13



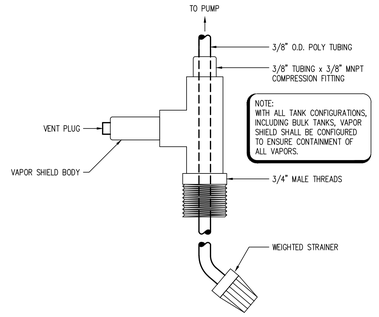
9 SP4.2 **CHLORINATION SYSTEM** 1" = 1'–0" 11/08/12



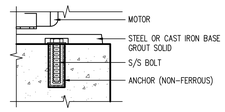
5 SP4.2 **ACID SYSTEM** 3/4" = 1'–0" 02/07/13



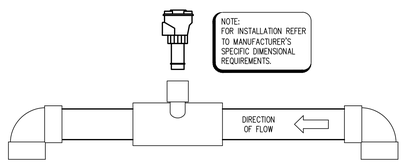
1 SP4.2 **TYPICAL PUMP DETAIL** 1/2" = 1'–0" 04/16/13



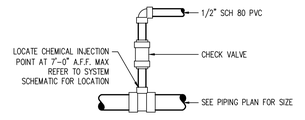
6 SP4.2 **ACID VENT PIPING** 6" = 1'–0" 11/08/12



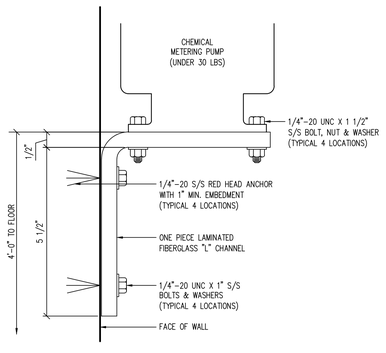
2 SP4.2 **PUMP ANCHOR** 1 1/2" = 1'–0" 11/08/12



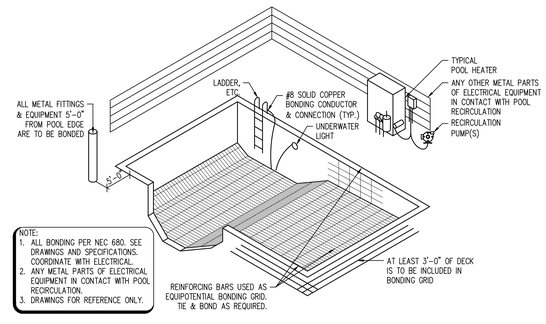
13 SP4.2 **FLOW METER SENSOR** 3/4" = 1'–0" 11/08/12



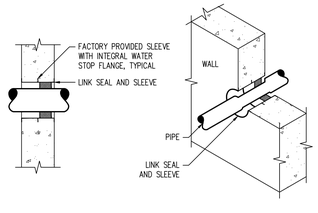
10 SP4.2 **CHEMICAL TAP AND VALVE** 3/4" = 1'–0" 11/08/12



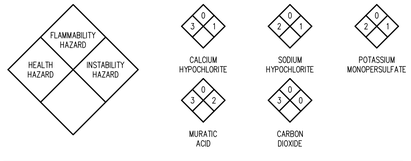
7 SP4.2 **CHEMICAL PUMP SHELF** 6" = 1'–0" 11/08/12



3 SP4.2 **TYPICAL POOL BONDING DETAIL** NTS 04/16/13



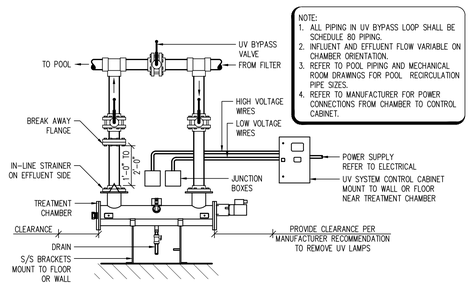
14 SP4.2 **LINK SEAL** 3/4" = 1'–0" 11/08/12



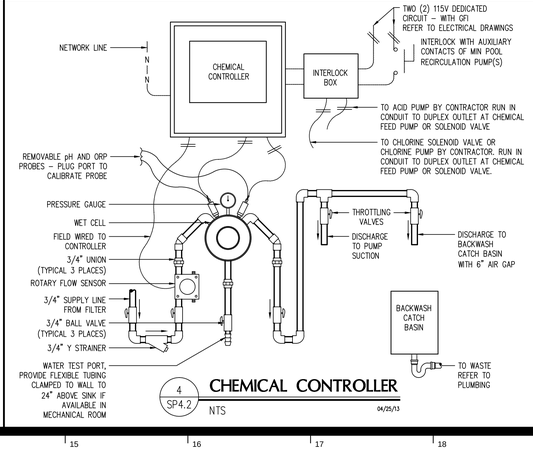
RATING EXPLANATION GUIDE			
RATING	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD
4	CAN BE LETHAL	BELOW 73 DEGREES F	MAY EXPLODE AT NORMAL TEMPERATURES AND PRESSURES
3	CAN CAUSE SERIOUS OR PERMANENT INJURY	ABOVE 73 DEGREES, BELOW 100 DEGREES F	MAY EXPLODE AT HIGH TEMPERATURE OR SHOCK
2	CAN CAUSE TEMPORARY INCAPACITATION OR RESIDUAL INJURY	ABOVE 100 DEGREES F, BELOW 200 DEGREES F	VIOLENT CHEMICAL CHANGE AT HIGH TEMPERATURES OR PRESSURES
1	CAN CAUSE SIGNIFICANT IRRITATION	ABOVE 200 DEGREES F	NORMALLY STABLE. HIGH TEMPERATURES MAKE UNSTABLE
0	NO HAZARD	WILL NOT BURN	STABLE

CONFIRM SIGNAGE WITH LOCAL FIRE MARSHAL AND/OR BUILDING CODES PRIOR TO INSTALLATION.

11 SP4.2 **HAZARD SIGNAGE** NTS 11/08/12



8 SP4.2 **UV TREATMENT SYSTEM** 1/2" = 1'–0" 11/08/12



4 SP4.2 **CHEMICAL CONTROLLER** NTS 04/25/13

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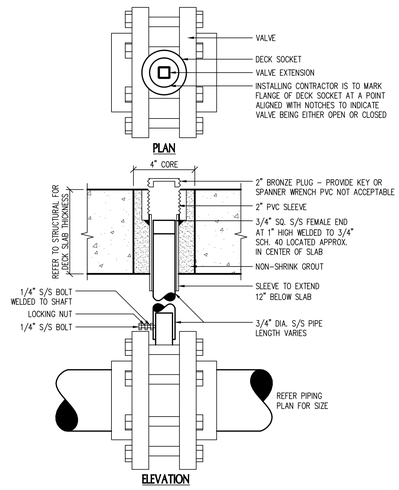
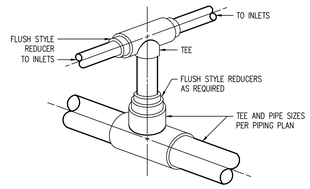
POOL MECHANICAL DETAILS

sheet number

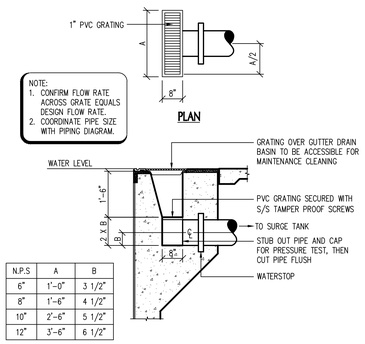
SP4.2



12 SP4.3 **VALVE EXTENSION**
3" = 1'-0" 11/08/12



8 SP4.3 **PIPE CONNECTION**
1" = 1'-0" 11/08/12



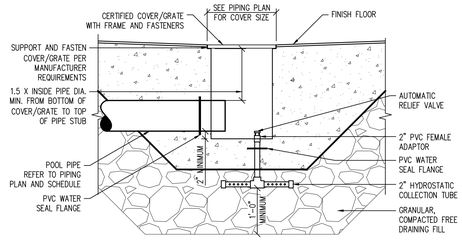
N.P.S	A	B
6"	1'-0"	3 1/2"
8"	1'-6"	4 1/2"
10"	2'-6"	5 1/2"
12"	3'-6"	6 1/2"

4 SP4.3 **GUTTER DROPOUT BOX**
1/2" = 1'-0" 11/08/12

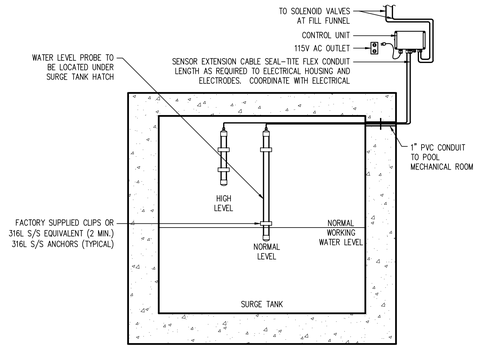
NOTE:
1. ALL MAIN DRAINS SHALL BE CONSTRUCTED TO COMPLY WITH THE VIRGINIA GRAEME BAKER ACT AND ASME A112.19.8.2007/2008A.
2. MAIN DRAINS MAY USE MULTIPLE VGB COMPLIANT GRATES SECURELY FASTENED PER MANUFACTURER RECOMMENDATIONS.

MAIN DRAIN DEPTH SCHEDULE

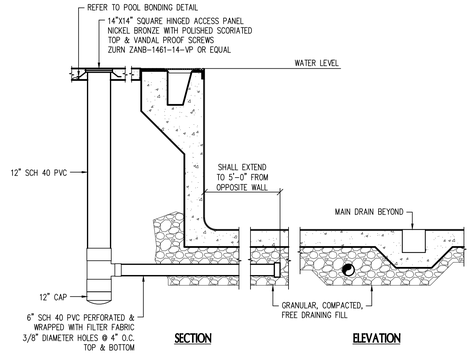
STUB SIZE (NPS)	MINIMUM DEPTH
2"	12"
3"	12"
4"	14.5"
6"	19.5"
8"	24.5"
10"	29.5"
12"	34"
14"	37"



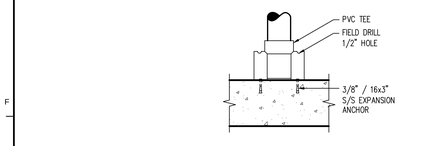
1 SP4.3 **MAIN DRAIN**
3/4" = 1'-0" 04/16/13



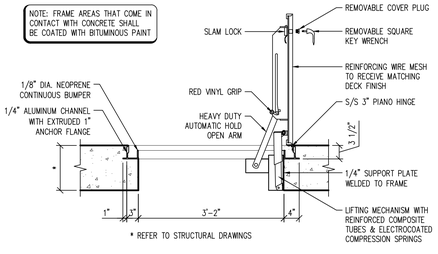
9 SP4.3 **WATER LEVEL CONTROLLER**
3/4" = 1'-0" 04/16/13



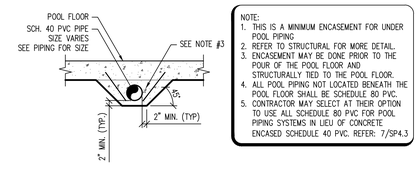
5 SP4.3 **SIGHT SUMP**
3/8" = 1'-0" 04/16/13



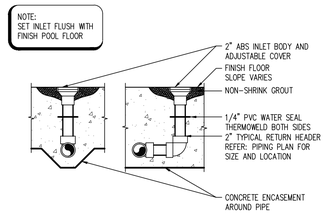
13 SP4.3 **SUPPORT TEE**
3/4" = 1'-0" 11/08/12



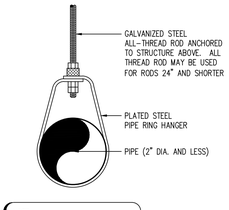
10 SP4.3 **SURGE TANK ACCESS HATCH**
3/4" = 1'-0" 11/08/12



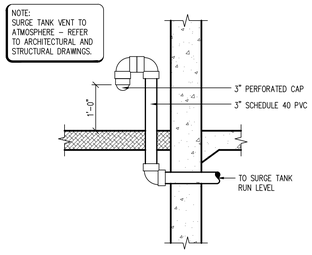
6 SP4.3 **CONCRETE ENCASED PIPE**
1/2" = 1'-0" 04/16/13



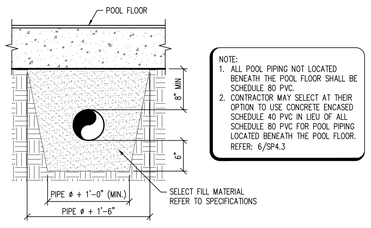
2 SP4.3 **FLOOR INLET**
1" = 1'-0" 11/08/12



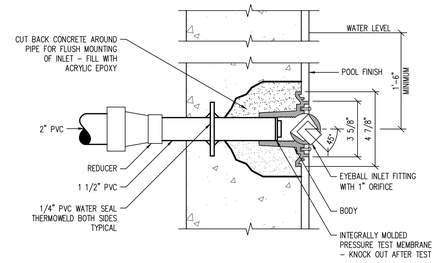
14 SP4.3 **SWIVEL RING PIPE HANGER**
1 1/2" = 1'-0" 11/08/12



11 SP4.3 **SURGE TANK VENT**
3/4" = 1'-0" 11/08/12



7 SP4.3 **BELOW GRADE PIPING**
1" = 1'-0" 04/16/13



3 SP4.3 **WALL INLET**
3" = 1'-0" 04/16/13

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER SCOTT W. HESTER 5/7/13

rev	date	description

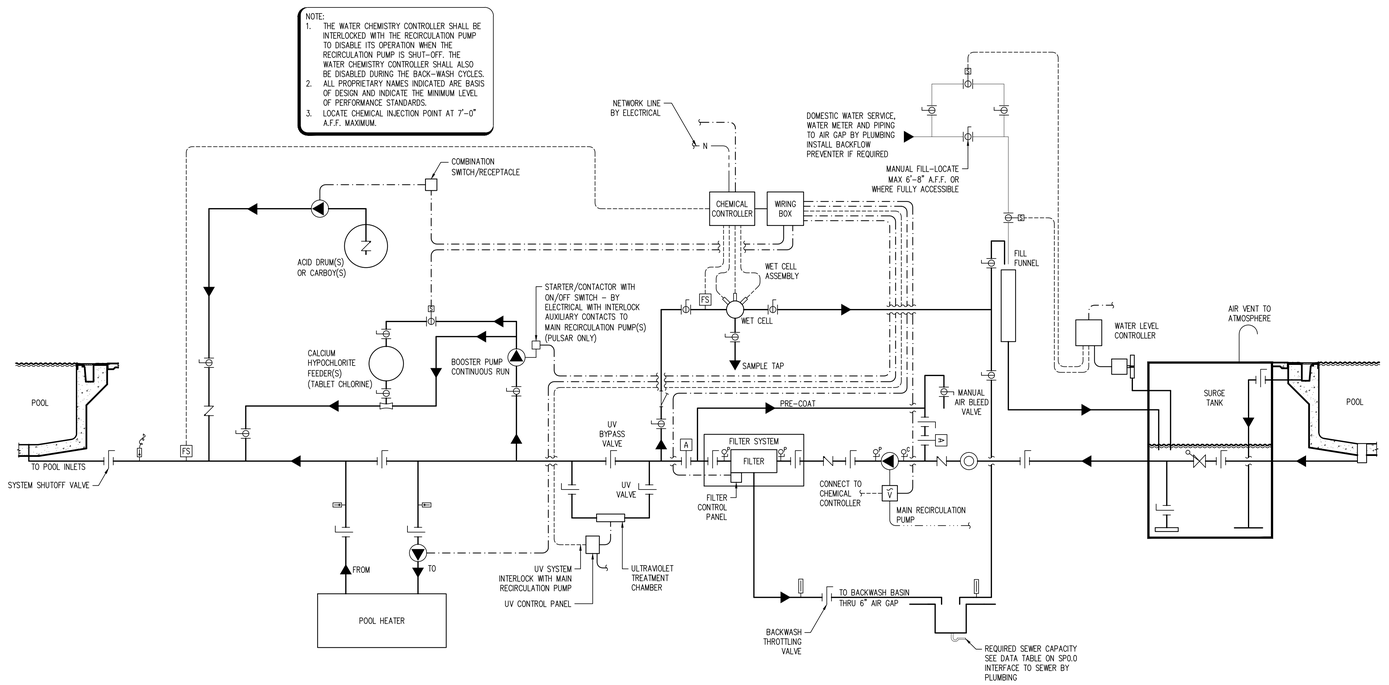
date	05/06/2013
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

POOL MECHANICAL DETAILS

sheet number

SP4.3

NOTE:
1. THE WATER CHEMISTRY CONTROLLER SHALL BE INTERLOCKED WITH THE RECIRCULATION PUMP TO DISABLE ITS OPERATION WHEN THE RECIRCULATION PUMP IS SHUT-OFF. THE WATER CHEMISTRY CONTROLLER SHALL ALSO BE DISABLED DURING THE BACK-WASH CYCLES.
2. ALL PROPRIETARY NAMES INDICATED ARE BASIS OF DESIGN AND INDICATE THE MINIMUM LEVEL OF PERFORMANCE STANDARDS.
3. LOCATE CHEMICAL INJECTION POINT AT 7'-0" A.F.F. MAXIMUM.



SCHEMATIC LEGEND

LEGEND	ITEM
	FLOW DIRECTION
	BUTTERFLY VALVE
	BALL VALVE
	GATE VALVE
	MODULATING FLOAT VALVE
PRV	PRESSURE REDUCING VALVE
S	SOLENOID VALVE
	SWING GATE CHECK VALVE
	THREE WAY VALVE
	DUCK BILLED VALVE
	PUMP
	HAIR AND LINT STRAINER
	"Y" STRAINER
F	FLOW METER
FI	FLOW INTERLOCK
FS	FLOW SENSOR
	IMPACT FLOW METER
	VENTURI FLOW METER
W	WATER METER
AV	AUTOMATIC AIR VENT
MV	MANUAL AIR VENT
P	PRESSURE GAUGE AND COCK
C	COMPOUND GAUGE AND COCK
	DIGITAL TEMP SENSOR
	THERMOMETER
G	GEAR
A	PNEUMATIC ACTUATOR
S	SOLENOID
	POWER CORD
	FLOW CONTROL VALVE
V	VARIABLE FREQUENCY DRIVE
	LOW VOLTAGE CONTROL
	WATER LINE
	1 PHASE POWER
	3 PHASE POWER
	VENT LINE
	CO_2 LINE
N	NETWORK LINE

1 SP5.0 **POOL SYSTEMS SCHEMATIC**
NTS 05/01/13

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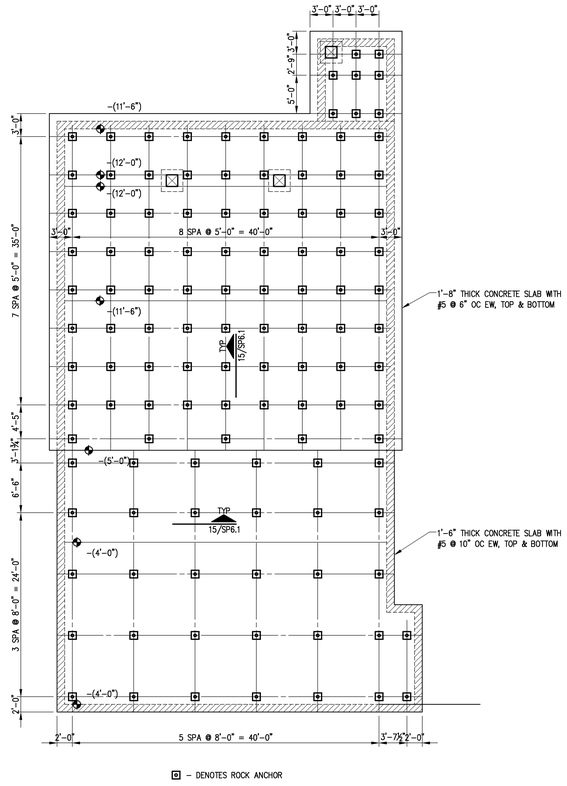
POOL SYSTEMS SCHEMATIC

sheet number

SP5.0

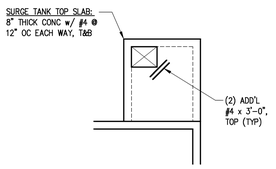


◘ – DENOTES ROCK ANCHOR

COMPETITION POOL ANCHORAGE PLAN

SCALE: 1/8" = 1'-0" 0' 1' 2' 4' 8' 16'

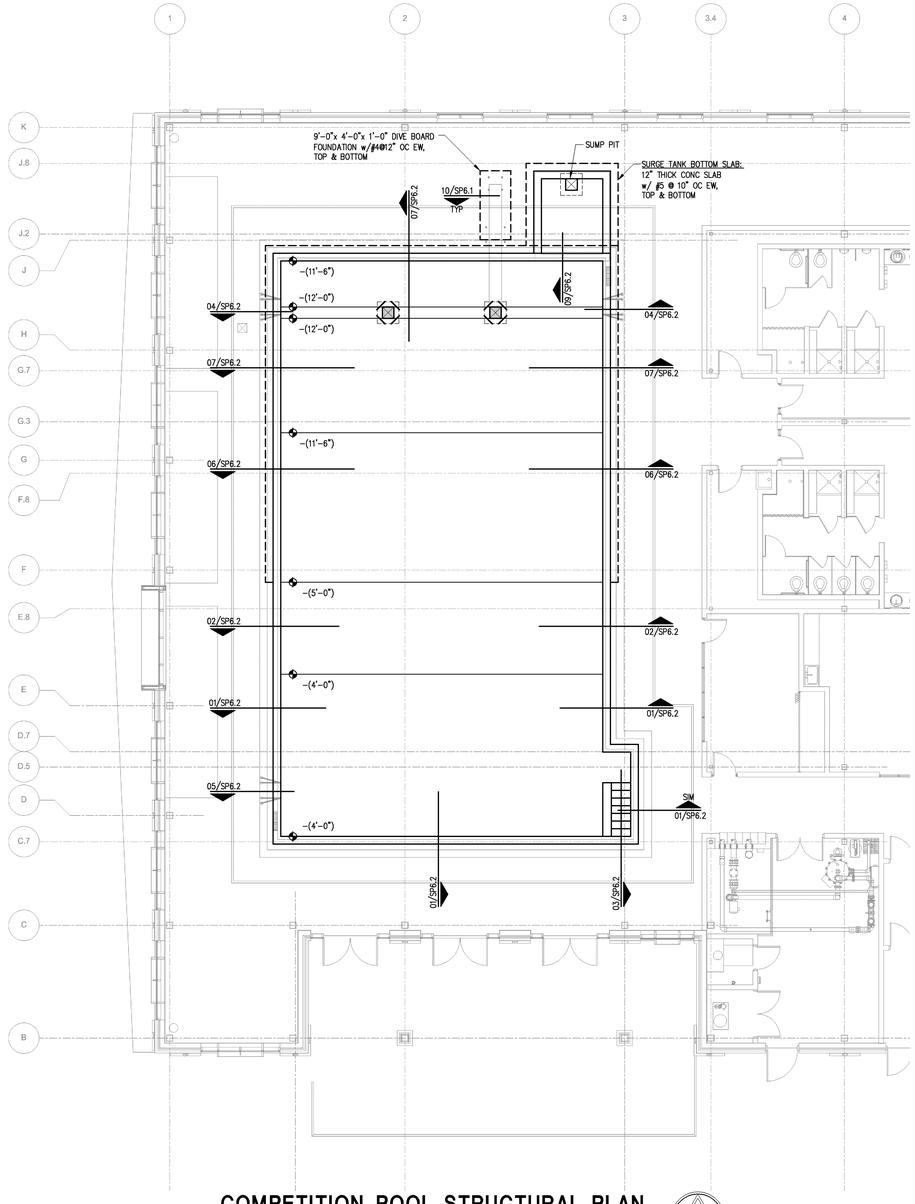
PLAN NORTH



SURGE TANK TOP SLAB

SCALE: 1/8" = 1'-0" 0' 1' 2' 4' 8' 16'

PLAN NORTH



COMPETITION POOL STRUCTURAL PLAN

SCALE: 1/8" = 1'-0" 0' 1' 2' 4' 8' 16'

PLAN NORTH

PLAN NOTES:

1. WATER ELEVATION OF POOL = +(0'-0"). SEE CIVIL DRAWINGS FOR CORRELATION TO ACTUAL SITE ELEVATION.
2. PROVIDE COMPACTED, FREE DRAINING FILL UNDER ALL POOL BOTTOM SLABS. SEE NOTE P/G4 ON SHEET SP6.1 – GENERAL NOTES & TYPICAL DETAILS.
3. PROVIDE 5'-0"x5'-0"x24" GRANULAR, COMPACTED, FREE DRAINING FILL UNDER EACH DRAIN. PROVIDE HYDROSTATIC RELIEF VALVE (HRV) AT EACH DRAIN.
4. PROVIDE ELECTRICAL GROUNDING FOR ALL REINFORCING AND EMBEDDED ITEMS, SEE ELECTRICAL DRAWINGS.
5. SEE SWIMMING POOL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
6. WALLS ARE TYPICALLY SHOWN ON PLAN AT FOUNDATION LEVEL. SEE DETAILS & COORDINATE WITH SWIMMING POOL DRAWINGS FOR ALL WALL DETAIL ABOVE BASE SLAB.
7. ELEVATIONS ARE GIVEN RELATIVE TO POOL WATER SURFACE, UNO. COORDINATE WITH SWIMMING POOL DRAWINGS.
8. ALL ELEVATIONS ARE TO POOL FINISH.

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STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 14590 CHARLES RODNEY MCCOMAS

rev date description

date	05/06/2013
phase	Bidding and Construction
issued for	CONSTRUCTION
SMA project number	1201
360 project number	121050.00
UCA project number	UCA-13-130

COMPETITION POOL STRUCTURAL PLAN

sheet number

SP6.0

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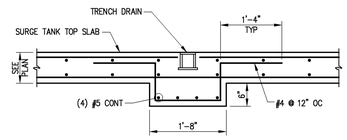
360° THREESIXTY ARCHITECTURE

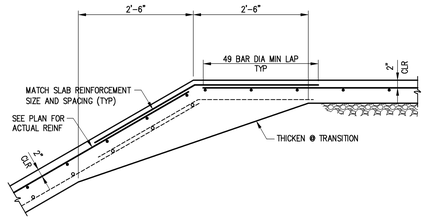


SECTION

SCALE: ¾" = 1'-0"

POOL-018

11 SP6.1

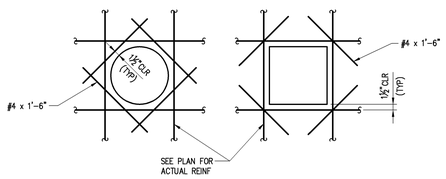


TYPICAL BOTTOM SLAB TRANSITION DETAIL

SCALE: ¾" = 1'-0"

POOL-008

06 SP6.1



TYP REINFORCING AT EMBEDDED ITEMS

SCALE: NTS

POOL-001

01 SP6.1

GENERAL POOL STRUCTURAL NOTES

PG1. Building Codes:
Model: International Building Code 2006.
Concrete: American Concrete Institute ACI 318-05, American Concrete Institute ACI 350-01.
PG2. See geotechnical report for soil and groundwater conditions.
PG3. HRV = Hydrostatic relief valves.
PG4. All Slabs shall be placed on compacted, free-draining, frost-free drainage course:
Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve. All fill shall be compacted to a minimum dry density of 95% of the Modified Proctor maximum dry density (ASTM-D1557, placed in 6" to 8" lifts. See project geotechnical report for further recommendations.

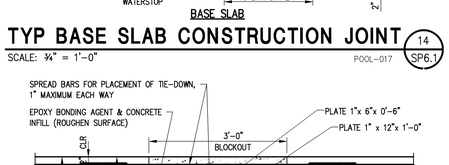
Drainage Course Thickness: 12" For water depths of 0'-0" to 3'-0"
12" For water depths greater than 3'-0"
12" For Surge Tank

PG5. The construction documents indicate design of a completed reinforced concrete structure. The structural details have been prepared based on cast-in-place concrete methods. If alternate means and methods of concrete placement are employed that may alter the completed project, the contractor must submit proposed revisions and signed/sealed calculations to the Architect/Engineer for approval prior to fabrication or construction.
PG6. The pool structure has been designed to withstand all anticipated loadings under both full and empty conditions in accordance with the criteria of ACI 350 for a non-jointed structure.
PG7. During construction the pool structure should not be completely filled with water with no backfill present. If the pool is to be filled with water with no backfill, all walls greater than 6'-0" in height must be laterally braced at maximum intervals of 2'-0" on center. Lateral bracing shall be placed within 2'-0" of the top of the wall.
PG8. **The hydrostatic relief valves are part of the pool shell design, and are intended to balance buoyant forces caused by groundwater that is higher than the pool bottom when the pool is empty. The hydrostatic relief valves must remain open and in operation whenever the pool is empty. If the hydrostatic relief valves are not operational, significant deflection of and damage to the pool shell structure is possible. Contractor is responsible for control of groundwater levels during construction. Refer to the project geotechnical report for additional information.**

REINFORCED CONCRETE AND SHOTCRETE NOTES

PC1. Pool base slab shall be cast-in-place concrete. Pool walls shall be either cast-in-place concrete or shotcrete (wet-mix or dry-mix).
PC2. All concrete and shotcrete shall be 4000 psi minimum 28 day compressive strength with 6% air entrainment. Limit water to cementitious material ratio (w/c) to 0.42.
PC3. All reinforcing steel shall be detailed, supplied and placed in accordance with these construction documents and with ACI 318-05, ACI 315-05, and CRSI MSP-1-01.
PC4. All reinforcing steel shall be shop fabricated to conform to ASTM A615, Grade 60.
PC5. All pool concrete amd shotcrete shall be "wet" cured using hoses and polyethylene covering.
PC6. Reinforcing clearance: 2" Pool walls, surge tank walls
2" Pool bottom slabs, surge tank slabs
3" All surfaces cast or shot against earth

PC7. Fully encase all underslab piping in concrete unless noted otherwise.

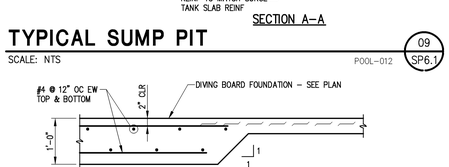


TYPICAL PIPE ENCASEMENT DETAIL

SCALE: NTS

POOL-015

12 SP6.1

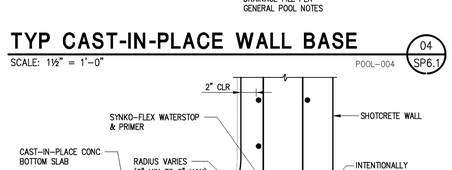


TYP BOTTOM SLAB TRANSITION DETAIL

SCALE: ¾" = 1'-0"

POOL-009

07 SP6.1



TYPICAL DRAIN BOX DETAIL

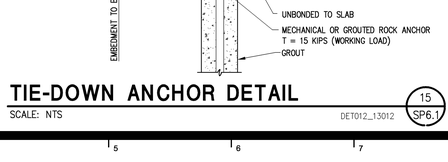
SCALE: ¾" = 1'-0"

POOL-002

02 SP6.1

SLAB LAP SPLICE LENGTHS			
SHALLOW END		DEEP END	
TOP BARS	BOTTOM BARS	TOP BARS	BOTTOM BARS
#6	–	#5	#5
48"	–	40"	32"

BAR DEVELOPMENT & SPLICE LENGTHS				
BAR	TENSION DEVELOPMENT		SPLICES	
	TOP BARS	OTHER	TOP BARS	OTHER
#3	19"	15"	25"	20"
#4	25"	19"	33"	25"
#5	31"	24"	41"	32"
#6	37"	29"	49"	38"
#7	54"	42"	71"	55"
#8	62"	48"	81"	63"
#9	70"	54"	92"	71"
#10	79"	61"	103"	80"
#11	87"	67"	114"	88"

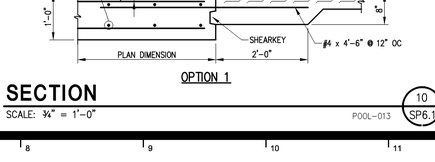


TYP CONCRETE WALL CONSTRUCTION JOINT

SCALE: ¾" = 1'-0"

POOL-016

13 SP6.1

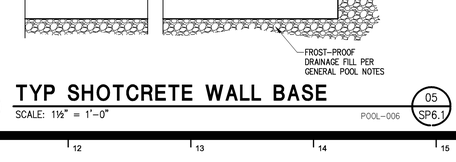


TYPICAL SECTION AT SURGE TANK

SCALE: ¾" = 1'-0"

POOL-011

08 SP6.1



TYPICAL POOL WALL CORNER DETAIL

SCALE: ¾" = 1'-0"

POOL-003

03 SP6.1

TYP BASE SLAB CONSTRUCTION JOINT

SCALE: ¾" = 1'-0"

POOL-017

14 SP6.1

TYPICAL SUMP PIT

SCALE: NTS

POOL-012

09 SP6.1

TYP CAST-IN-PLACE WALL BASE

SCALE: 1½" = 1'-0"

POOL-004

04 SP6.1

TIE-DOWN ANCHOR DETAIL

SCALE: NTS

DET012_13012

15 SP6.1

SECTION

SCALE: ¾" = 1'-0"

POOL-013

10 SP6.1

TYP SHOTCRETE WALL BASE

SCALE: 1½" = 1'-0"

POOL-006

05 SP6.1

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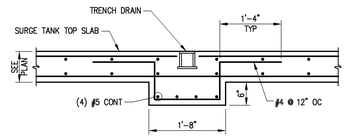
GENERAL NOTES & TYPICAL DETAILS

sheet number

SP6.1

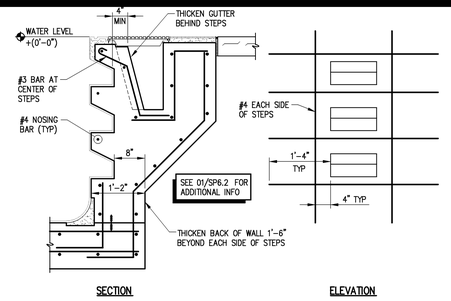


SECTION

SCALE: ¾" = 1'-0"

POOL-018

08 SP6.2



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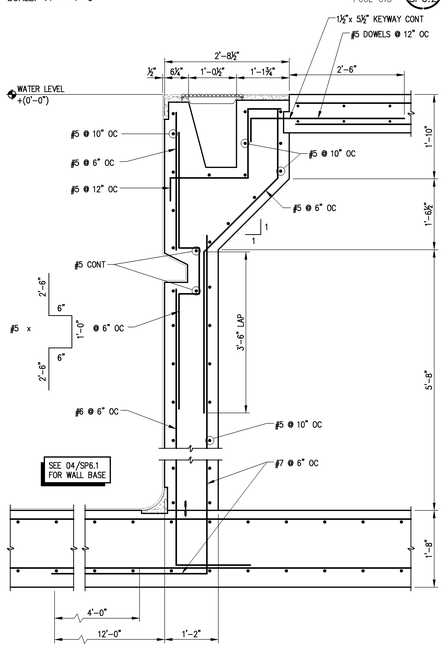
SCALE: ¾" = 1'-0"

DET006_13012

05 SP6.2



SECTION

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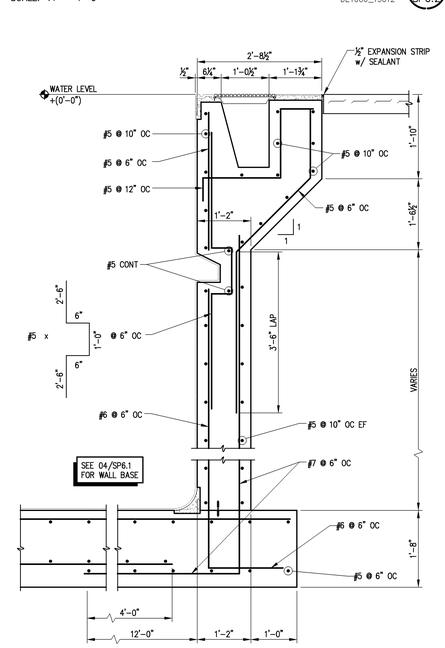
DET008_13012

09 SP6.2



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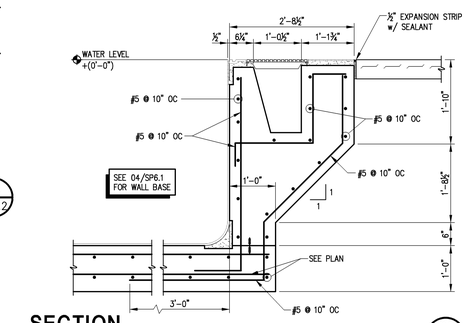
DET003_13012

06 SP6.2



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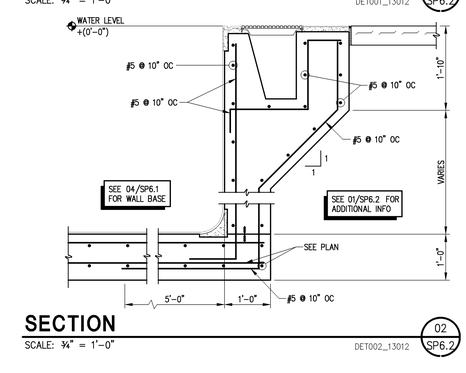
DET001_13012

01 SP6.2



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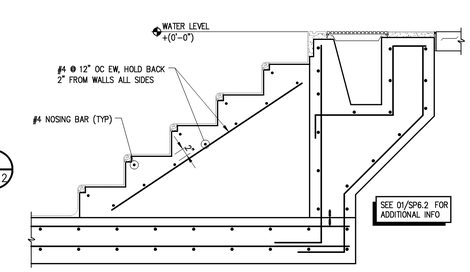
DET005_13012

03 SP6.2

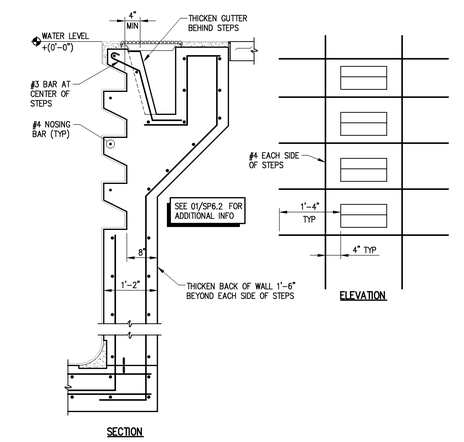


SECTION

SCALE: ¾" = 1'-0"

DET002_13012

02 SP6.2



SECTION

SCALE: ¾" = 1'-0"

DET004_13012

07 SP6.2

SECTION

SCALE: ¾" = 1'-0"

DET007_13012

04 SP6.2

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STATE OF ARKANSAS ★★★ LICENSED PROFESSIONAL ENGINEER ★★★ No. 14590 CHARLES RODNEY MCCOMAS

rev | date | description

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SECTIONS AND DETAILS

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